



MADRIX

LIGHTING CONTROL

MADRIX 5 User Manual

[Software User Guide]

Version: MADRIX 5.7.

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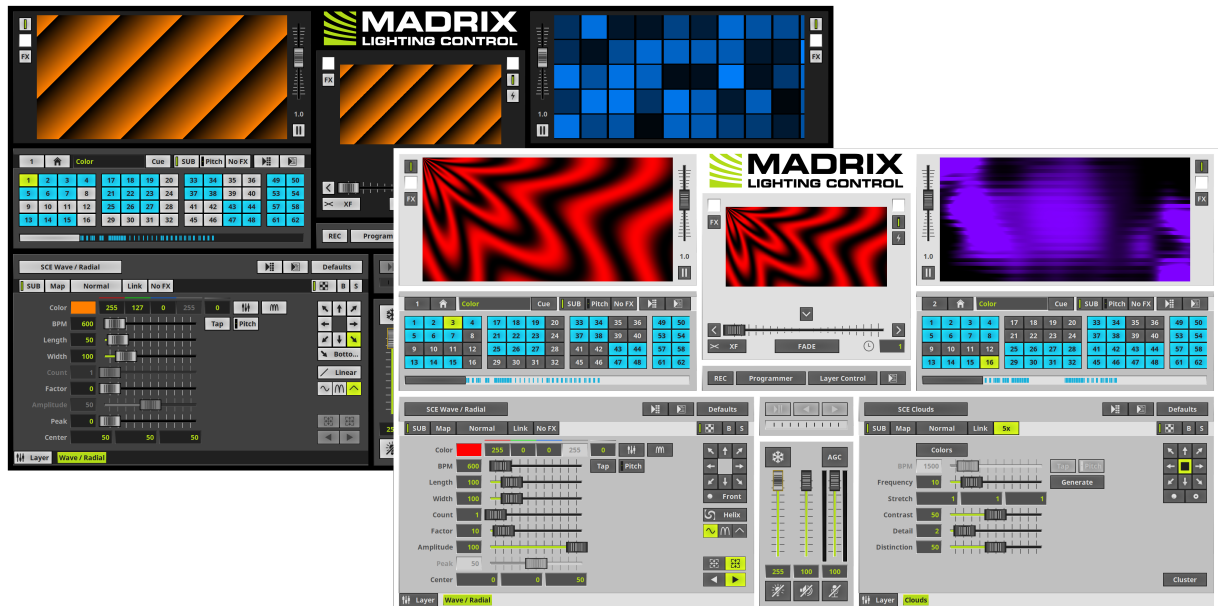
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//PART 1

Introduction

1 Introduction



Welcome To MADRIX 5

The MADRIX 5 Software is an outstanding tool for modern LED control and the ultimate software for 2D pixel mapping and 3D voxel mapping.

It is an advanced LED lighting controller. MADRIX 5 combines stunning real-time effects with an easy to use user interface that will allow you to create unique lighting patterns very easily. A wide range of software features allow for [nearly] endless possibilities and many options available to you. Please use this user guide to learn how to operate the software and its various tools.

Thank you for choosing MADRIX!

How To Use This User Guide

- Press **F1** on your keyboard while working with the application to quickly call up the MADRIX 5 Help and Manual.
- [LINKS](#) are displayed in this color. Simply click through and you will be taken to the corresponding part within the same topic.
- »[LINKS](#) will take you away from the topic which you are currently reading to another section in this guide or to an external website.
- This user guide is available in English.

Topics Of This Chapter

- »[Glossary](#)
- »[System Requirements](#)
- »[MADRIX KEY \[Software License\]](#)
- »[MADRIX KEY \[Activation\]](#)
- »[Update From MADRIX 2 Or 3 To MADRIX 5](#)
- »[Supported Fixtures \[LED Products\]](#)
- »[Supported Interfaces \[DMX512 / Art-Net\]](#)
- »[Web Links](#)

1.1 Glossary

2D

MADRIX 5 makes it possible to control numerous LED fixtures, also of different kinds, and to position them according to your needs in nearly any form or shape. This could be LED walls, arch shapes, ceilings, stripes, tiles, dance floors, etc. You can control pixel by pixel [pixel mapping].

3D

MADRIX 5 supports volumetric pixel rendering as well [voxel mapping]. That means, MADRIX 5 also allows you to control real 3D LED matrices. This approach is fundamentally different to the 3D projections or the physical layout of 2D surface areas that are widely known nowadays.

Art-Net

Art-Net is a communication protocol that allows to distribute DMX512 data over Ethernet network. Often, so-called Art-Net nodes then act as Ethernet-to-DMX512 converters and hardware interfaces. MADRIX LUNA is such an Art-Net node, for example.

Art-Net Remote

Art-Net Remote refers to DMX512 input that is sent and received over Ethernet network.

CITP

Is another communication protocol for exchanging information, often used between media servers, lighting consoles, and visualizers.

Colorlight 5A, Colorlight A8, Colorlight T9, Colour Smart Link

Are network-based communication protocols to control compatible LED fixtures and classified as DVI-based output in MADRIX 5.

DMX512 [DMX-OUT]

DMX512, often abridged to DMX, is an unidirectional communication protocol used mainly to control stage lighting, which uses 5-pin XLR connectors as defined by the standard. 3-pin connectors are also common, but not defined as standard connectors.

When working with DMX-based products, each fixture needs a specific attribution via its DMX channel and its DMX universe. With the specific DMX channel and DMX universe, the LED product can be identified directly for a correct communication with the fixture.

DMX-IN

You can send or receive DMX512 data. DMX-IN refers to DMX512 input, which you can receive in MADRIX 5.

DMX Channel

A total of 512 DMX channels is available per DMX universe. Each DMX channel is an individual control channel. Valid values range from 0 to 255, with a total of 256 values.

DMX Universe

A DMX universe contains 512 DMX channels and represents 1 DMX line. To control more than 512 DMX channels, more than 1 DMX universe needs to be used. For example, 2 DMX universes represent 1024 DMX channels.

For example, you can control 170 **RGB** fixtures per DMX universe. That means, calculating 170 fixtures x 3 channels results in 510 DMX channels. Therefore, channel 511 and 512 will be left empty.

And if you are using more than 170 fixtures, those DMX channels will be assigned to a new DMX universe [e.g., DMX universe 2].

DVI

DVI is another way to output a video signal for your LEDs. Certain LED products use this type of communication. MADRIX 5 features 2 DVI outputs, which are 1-to-1 output windows. You can then send the DVI outputs to any graphics card port [such as, VGA, HDMI, DVI, etc.]. Other solutions use screen-capturing to capture such a DVI output window and send them to the LED controller via Ethernet.

EuroLite T9

Is a network-based communication protocol to control compatible LED fixtures and classified as DVI-based output in MADRIX 5.

Fixture

When talking about an LED product, the specific product is often called fixture. When talking about fixtures, often you will automatically get the information about the number of color channels [e.g., RGB] and the number of pixels.

Input

MADRIX 5 can send data out, but at the same time data can be sent to the software. That means data is sent to the MADRIX PC through various means [mostly USB or network]. MADRIX 5 can then be controlled remotely by you, or you can merge or use incoming signals, etc.

IP Address

Is an identifier for devices that enables network communication. When using network protocols, it needs to be set up for each individual sender or recipient in the network.

KiNET

KiNET, the Color Kinetics network protocol, is another communication protocol. It transfers data over Ethernet network as well. Only declared Color Kinetics products work with this type of protocol.

MAC Address

Is a unique, technical identifier for interfaces in a network.

MA-Net

Is a proprietary communication protocol from MA Lighting between compatible products in a network.

MIDI

MIDI is short for Musical Instrument Digital Interface, a well-known technical standard that provides standardized ways for equipment to communicate. In case of MADRIX 5, MIDI can be used for MIDI Time Code, MIDI notes, or other MIDI hardware, such as DJ/VJ controllers.

NDI

Network Device Interface is a network-based video technology by NewTek.

OSC

OSC stands for OpenSoundControl. It is a widespread format to communicate between systems.

Output

To control your LEDs, MADRIX 5 needs to send data to the LEDs. In this way it communicates with your controllers and/or your LEDs. This is referred to as output. There are different ways on how this process can work [e.g., protocols]. But most importantly, you need to configure which output method MADRIX 5 should use in order to control your LED products.

Philips hue

Is a proprietary range of products including communication protocol for personal wireless lighting made by Signify under the Philips brand.

Pixel

A pixel refers to one lighting point. When using RGB LEDs, one pixel usually includes 1 [or 2] red LEDs, 1 blue LED, and 1 green LED. 1 control channel is required for each color [3 in total per pixel], but as a total they represent one pixel. LED fixtures often have a certain number of pixels per unit.

Pixel Mapping

MADRIX 5 contains an effect generator as well as a graphics render engine that support pixel rendering for 2D effects and volume rendering for 3D effects.

Remote HTTP

Remote HTTP is a way to control MADRIX 5 remotely using standards known from the internet [HTTP - Hypertext Transfer Protocol].

RGB

The acronym stands for Red, Green, Blue. The 3 colors are the main colors for additive color mixing of LED fixtures. As a result, a vast number of colors can be mixed.

RGBW

The acronym stands for Red, Green, Blue, White. The 4 colors are also used for additive color mixing of LED fixtures. As a result, a vast number of colors can be mixed.

Spout

Spout is a real-time video sharing framework for Windows.

Streaming ACN [sACN / E1.31]

Streaming ACN or sACN or E1.31 is another communication protocol that allows DMX512 data to be transmitted over Ethernet. Data is broadcasted by MADRIX 5 to recipients in the network.

Subnet Mask

Is a technical grouping mechanism for network devices. When using network protocols, it needs to be set up for each sender or recipient in the network for correct data routing.

Virtual LED Matrix

MADRIX 5 needs to know how your LED installation looks like and which fixtures you want to use. [You can use the Matrix Generator or the Patch for this task.] In the end you will have configured the virtual LED matrix with its total pixel count in X, Y, and Z set up as the Matrix Size as well as the position and location of each pixel or fixture. The virtual LED matrix represents your LED installation in MADRIX 5.

Volume Rendering / Voxel Mapping

MADRIX 5 contains an effect generator as well as a graphics render engine that support pixel rendering for 2D effects and volume rendering for 3D effects.

Voxel

Voxel is short for volumetric pixel. In addition to its pixel mapping features [2D], MADRIX 5 can control 3D LED matrices, which is called voxel mapping. Lighting effects are correctly mapped to each voxel of a 3D LED matrix.

XLR Pin Layout

XLR connectors are used for DMX512. There are different types.

5-Pin, Female

5-Pin Male

Pin Assignment

3-Pin, Female

3-Pin, Male



- 1 Ground
- 2 Data -
- 3 Data +
- 4 Spare
- 5 Spare



1.2 System Requirements

This topic includes:

- [Supported Operating Systems](#)
- [Minimum System Requirements](#)
- [Optimal Computer Specifications](#)
- [Guidelines](#)
- [Setting The Graphics Processor](#)
- [Using NVIDIA Workstation Graphics Cards](#)

Supported Operating Systems

- Microsoft Windows 10
- Microsoft Windows 11
- 64 bit only
- Please keep the system, drivers, and updates up to date.
- MADRIX 5 is Windows-based.

Minimum System Requirements

Optimal Specifications Will Often Be Higher:

- 2.0 GHz dual-core CPU

- OpenGL 2.1 graphics card
- 2 GB RAM
- 1 GB free harddisk space
- 1280 x 768 screen resolution
- Network card
- Sound card
- USB 2.0

Additional Minimum Requirements For Windows 11:

- 4 GB RAM
- DirectX12 graphics card with WDDM 2.0 driver [incl. OpenGL 2.1]
- TPM 2.0
- UEFI incl. Secure Boot
- 9" display

Optimal Computer Specifications

While MADRIX 5 will run under the minimum system requirements described above, the optimal system specifications will vary greatly depending on your usage. The performance of the MADRIX 5 Software on your computer system will depend mainly on these factors:

- Pixel resolution [2D], voxel resolution [3D], and total Matrix Size.
- Type of output [DVI output usually requires more performance. DVI-based output allows to put out a higher number of pixels.]
- MADRIX Effects in use and their individual settings [Different effects in MADRIX 5 require different performance. For example, SCE Fluid, SCE Metaballs, and SCE Plasma are among the effects that require the most performance.]
- Number of Layers in use per Storage Place.
- Number of Storage Places in use [1 or 2] and render mixing via the Crossfader.

- Map Settings [The Matrix Size, and thus the pixel resolution on which effects are rendered, can easily scaled up to twice the size, for example. This will increase the performance requirements of an effect considerably.]
- Previews used in 3D Mode [3D Mode requires considerably more performance of the graphics card than 2D Mode does.]

The more pixels/voxels, Layers, and Storage Places are used, the more computer performance is required. If you aren't sure if your configuration is sufficient, use the MADRIX 5 Software in demo mode to test the software prior to purchase.

Due to the third dimension, controlling projects in 3D quickly increases the number of voxels that should be rendered live by the software. Here are some examples for your information and consideration:

Example 3D Resolution Per Preview [X x Y x Z]	Total Number Of Voxels Across 3 Activated Previews	2D Resolution Examples For Comparison
10 × 10 × 10	$10 \times 10 \times 10 \times 3 = 1,000 \times 3 = 3,000$ Voxels	$50 \times 50 = 2,500$ Pixels $640 \times 480 = 307,200$ Pixels 1280×720 [HD, 720p] = 921.600 Pixels 1920×1080 [Full HD, 1080p] = 2,073,600 Pixels 3840×2160 [4K UHD] = 8,294,400 Pixels
25 × 25 × 25	$25 \times 25 \times 25 \times 3 = 15,625 \times 3 = 46,875$ Voxels	
50 × 50 × 50	$50 \times 50 \times 50 \times 3 = 125,000 \times 3 = 375,000$ Voxels	
75 × 75 × 75	$75 \times 75 \times 75 \times 3 = 421,875 \times 3 = 1,265,625$ Voxels	
100 × 100 × 100	$100 \times 100 \times 100 \times 3 = 1,000,000 \times 3 = 3,000,000$ Voxels	
125 × 125 × 125	$125 \times 125 \times 125 \times 3 = 1,953,125 \times 3 = 5,859,375$ Voxels	
1000 × 1000 × 4	$1000 \times 1000 \times 4 = 4,000,000 \times 3 = 12,000,000$ Voxels	

Guidelines

Important Information

General

- Pay attention to the minimum system requirements.
- Necessary input devices, output devices, and accessories are generally required, but not listed separately.
[For example, this includes computer mouse, keyboard, monitor, and cables.]
- MADRIX 5 generally runs on notebooks/laptops as well as desktop computers.
Desktop computers are recommended since their desktop-grade components usually provide more performance and better component cooling.
- The recommended specifications can usually be found in so-called 'Gaming PCs' or 'Workstations' should you prefer to acquire a pre-configured system.
- The more performance the system provides, the better.

CPU [Main Processor]

- Choose components of the two latest product generations.
[Older generations are usually not recommended.]
- Pay special attention to the details of product names and product descriptions!
Unobtrusive abbreviations can make an enormous difference towards the provided performance.
[This refers to single letters or product line suffixes, such as K, HK, T, U, Y, to determine more powerful desktop editions or weaker mobile editions.]
- The base frequency of the CPU is very important.
A CPU with fewer threads and a higher base frequency might outperform a CPU with more threads and a much lower base frequency per thread.

Memory [RAM]

- Using external media and using a lot of it in layers will use a lot of RAM [such as video files in HD resolution, Full-HD resolution, or higher].
As such, a lot of RAM may be required. Opt for at least 8 GB or better 16 GB / 32 GB.
- Choose the latest technology [DDR5].
- Choose the highest memory frequency that your CPU/mainboard officially supports.
- Choose high RAM speeds in order to achieve the high access and load times [CAS/CL timings].

- Load your mainboard with the number of memory sticks required for the highest bandwidth [such as, dual-channel, triple-channel, or quad-channel configurations].

Storage

- Solid-state drives [SATA SSD and NVMe M.2 SSD] allow you to quickly load files by providing very high read speeds [especially for image files and video files].

Network Card

- Network-based communication protocols require a network card.
- Large projects with hundreds of DMX universes over Art-Net or Streaming ACN require special attention to Ethernet network components. Recommendations include:
 - High-quality network components [cards, managed switches, cables, etc.]
 - 1 GBit/s
 - A quality server network card [on-board adapters or USB converters are not recommended!]
 - You may share the data load/network traffic across several network cards [in case of Art-Net, for example].

GPU [Graphics Card]

- Choose components of the two latest product generations.
[Older generations are usually not recommended.]
- When using DVI output, you might require a graphics card with at least 2 monitor outputs to
 - A] drive the monitor,
 - B] connect to the LED controller/video processor,
 - C] connect possibly even more devices.
- An OpenGL 2.1, dedicated, high-performance, gaming graphics card is recommended [an integrated/shared graphics processing unit is not recommended].
- When using an NVIDIA workstation graphics card, it is necessary to change the driver settings for optimal performance.

Learn more [Using NVIDIA Workstation Graphics Cards](#)

2D And 3D

- When using 2D fixtures with a high pixel resolution as well as 3D fixtures in one, single Patch, the system requirements can extremely increase.
Please contact inoage/MADRIX for more information!

Misc.

- Make sure to check »[PC Power Management](#)

- **Make sure to follow** » [Tips \[Microsoft Windows / Networks / USB\]](#)
- **Error and omissions excepted.**

Contact

Please contact us if you need more information. » [Imprint And Copyright](#)

CPU Guidelines

- The following guidelines and examples can help assess the required computer performance of your project.
- To evaluate the required performance for your needs, it is recommended to test the software on the computer system beforehand.
- Please take all important information as provided above into consideration.
- **We cannot provide a guarantee that your requirements are met by the recommendations given below as they can drastically vary depending on each individual scenario.**

Utilized Total Number Of Voxels [Matrix Size In X x Y x Z]	Number Of Effect Layers	Minimum Required CPU Performance		Graphics Card
		Thread s	Base Frequency Per Thread	
16,384	2	4	3.2 GHz	Dedicated GPU [NVIDIA GeForce RTX Series recommended]
16,384	4	8	3.5 GHz	Dedicated GPU [NVIDIA GeForce RTX Series recommended]
16,384	8	8	3.5 GHz	Dedicated GPU [NVIDIA GeForce RTX Series recommended]
262,144	2	8	3.5 GHz	Dedicated GPU [NVIDIA GeForce RTX Series recommended]
262,144	4	12	3.2 GHz	Dedicated GPU [NVIDIA GeForce RTX Series recommended]

262,144	8	12	3.2 GHz	Dedicated GPU [NVIDIA GeForce RTX Series recommended]
1,048,876	2	16	3.6 GHz	Dedicated GPU [NVIDIA GeForce RTX Series recommended]
1,048,876	4	16	3.6 GHz	Dedicated GPU [NVIDIA GeForce RTX Series recommended]
1,048,876	8	24	3.6 GHz	Dedicated GPU [NVIDIA GeForce RTX Series recommended]
2,097,152	2	32	3.2 GHz	Dedicated GPU [NVIDIA GeForce RTX Series recommended]
2,097,152	4	32	3.2 GHz	Dedicated GPU [NVIDIA GeForce RTX Series recommended]

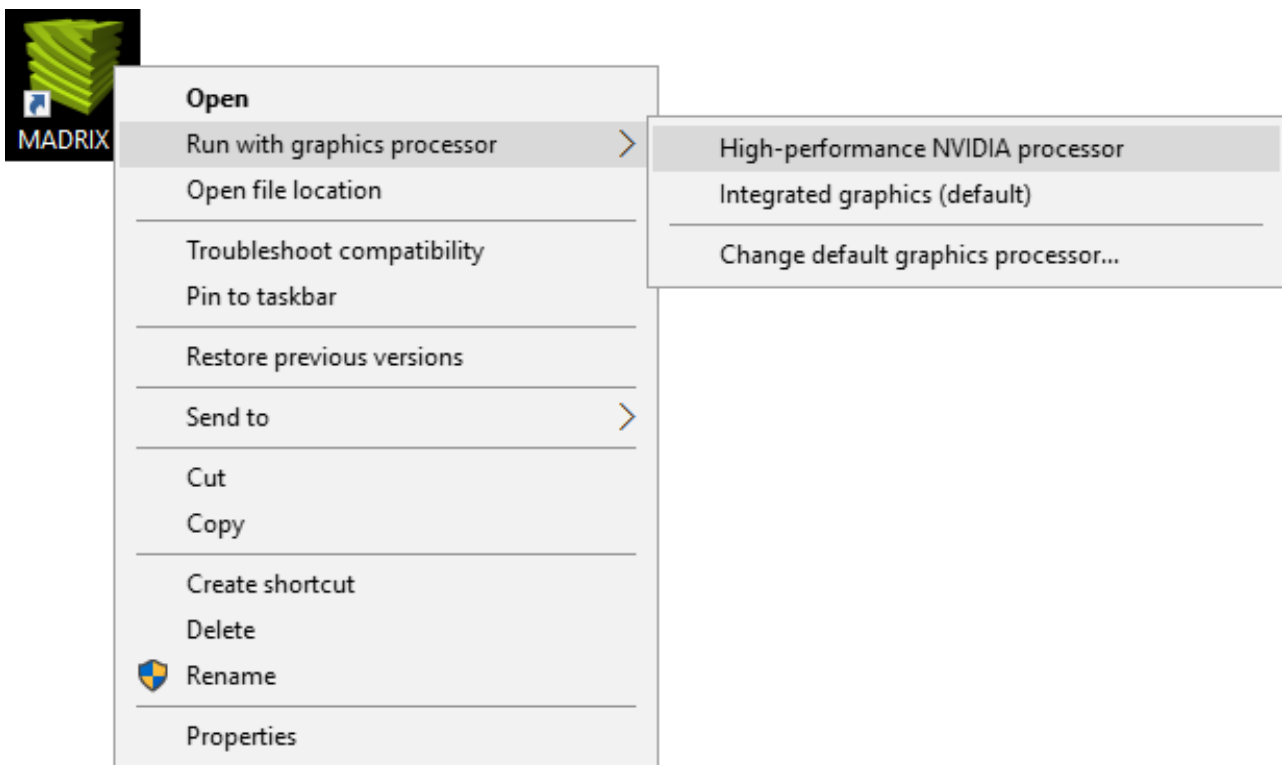
Setting The Graphics Processor

Choosing High Performance

When using a computer that offer two graphics cards, it is recommended to choose the high-performance graphics processor. This is especially the case for laptops/notebooks, which often provide a dedicated video processor as well as an integrated graphics card.

[This option is not available when only one graphics card is being used.]

- ***Right Mouse Click on the Application Icon > Run with graphics processor > High-performance processor***

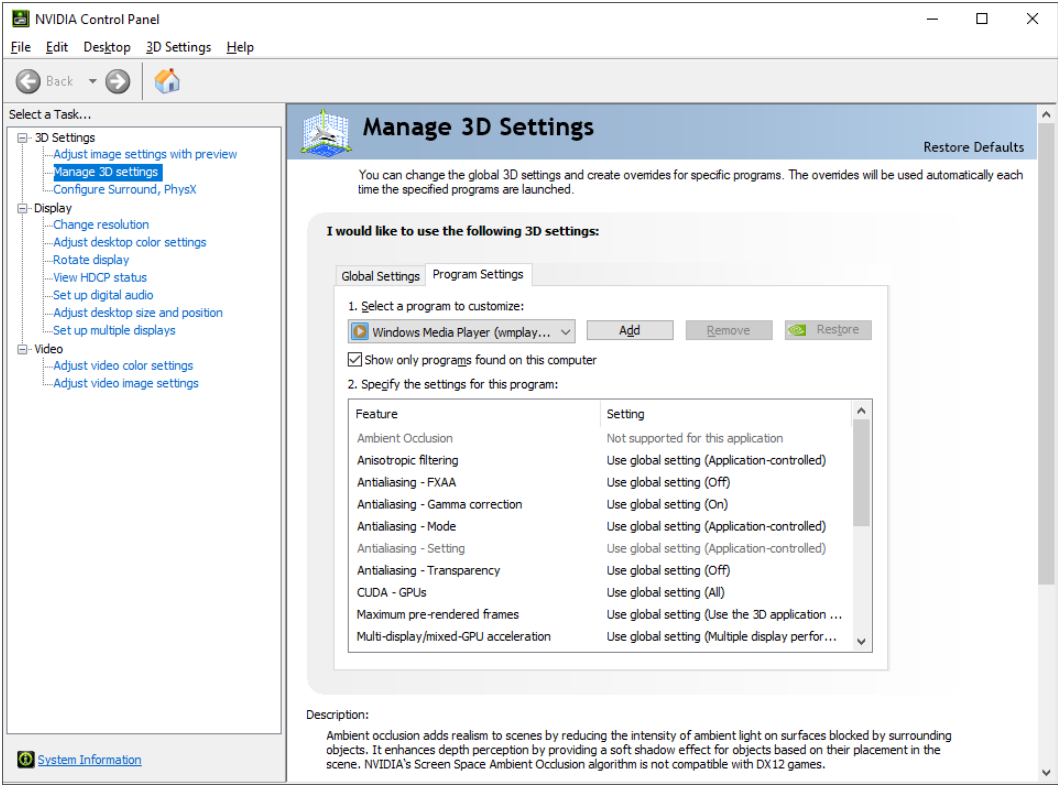
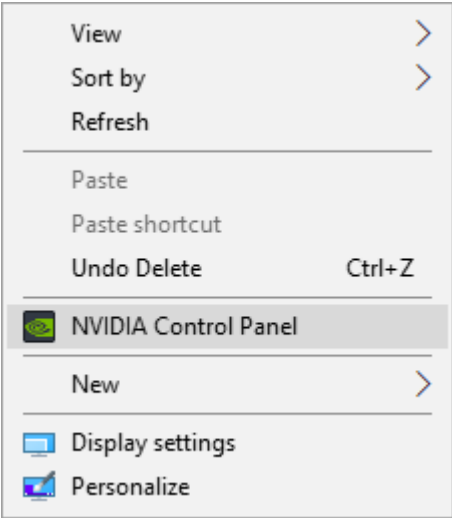


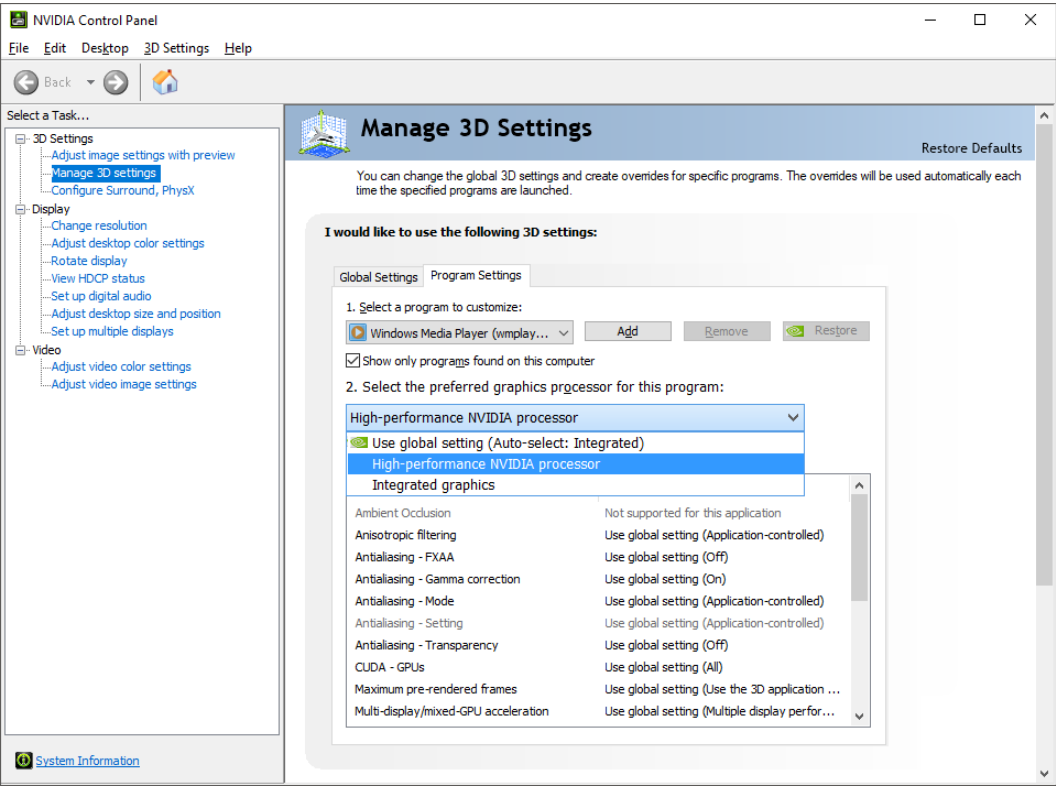
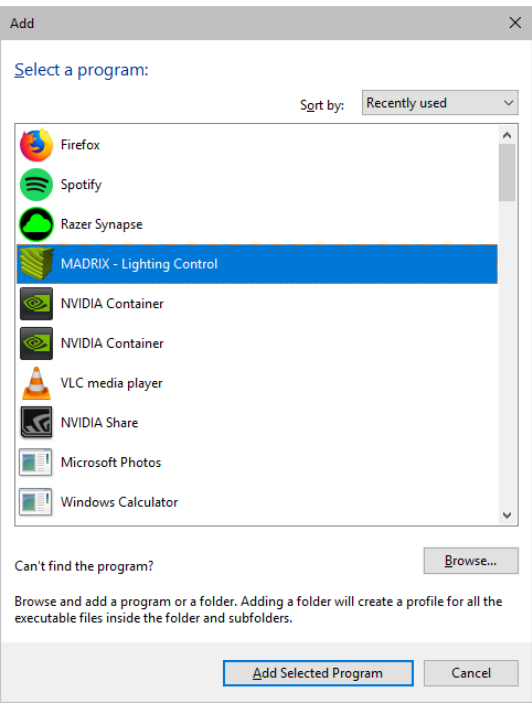
Selecting The Default Graphics Processor

NVIDIA

If the default graphics processor is set to the integrated graphics card, you should select your high-performance graphics card as the default option. The step-by-step instructions below refer to drivers for NVIDIA graphics cards.

- In Windows 10/11, go to **Desktop > Right Mouse Click > NVIDIA Control Panel > 3D Settings > Manage 3D settings > Program Settings > 1. Select a program to customize > Add > Choose MADRIX 5 > Click Add Select Program > 2. Select the preferred graphics processor for this program: > Choose High-performance processor > Click Apply**

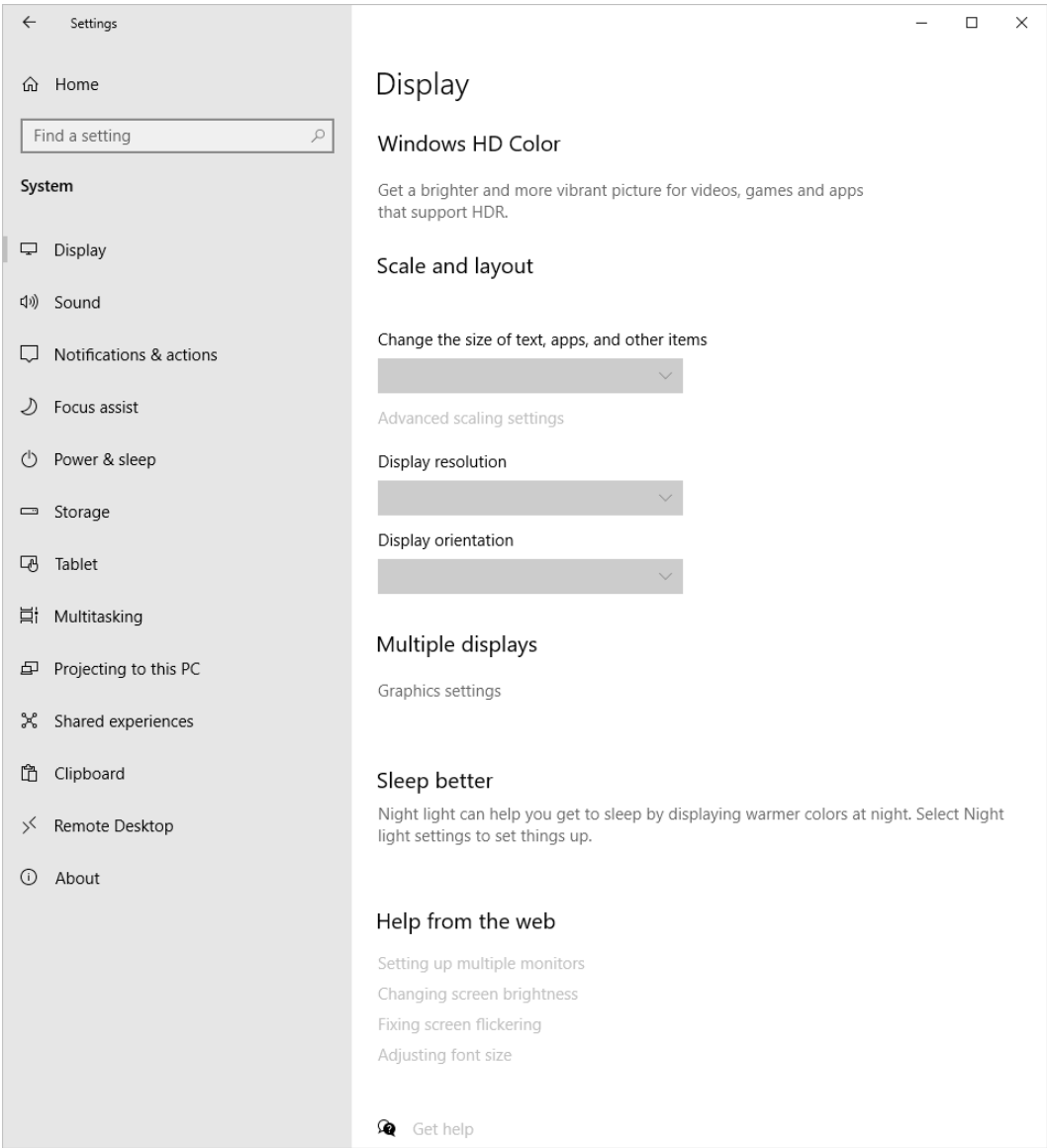


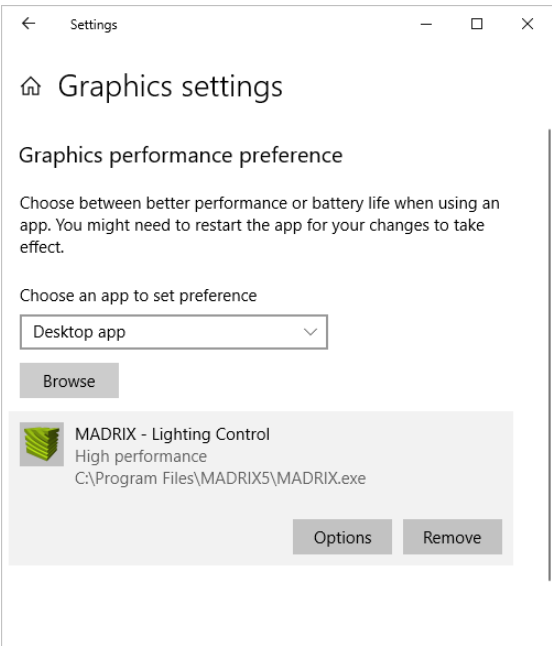
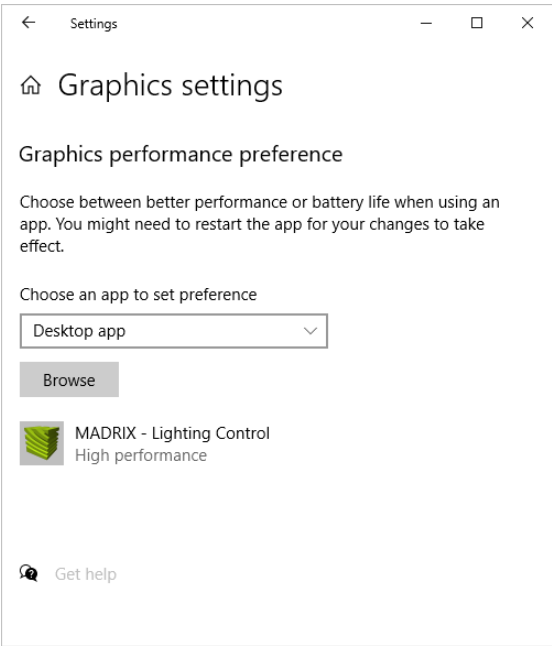


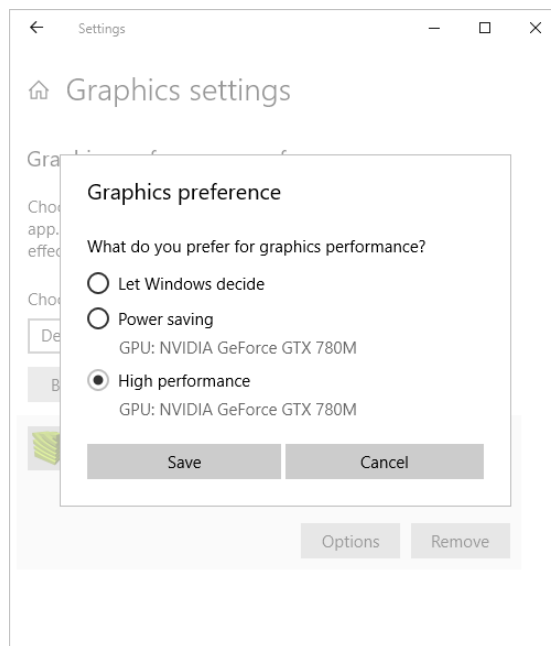
General

You can set the default graphics processor in the Windows operating system. If the default graphics processor is set to the integrated graphics card, you should select your high-performance graphics card as the default option.

- **1]** In Windows 10, go to **Start > Settings > System > Display > Graphics Settings**
 - In Windows 11, go to **Start > Settings > System > Display > Graphics**
- **2]** **Choose an app to set preference > Desktop App**
- **3]** Click **Browse** and navigate to the installation directory. By default **C:\Program Files\MADRIX5**
- **4]** Select **MADRIX.exe** and confirm with **Add**
- **5]** Select **MADRIX - Lighting Control** and click **Options**
- **6]** Choose **High performance** in **Graphics preference** and confirm with **Save**



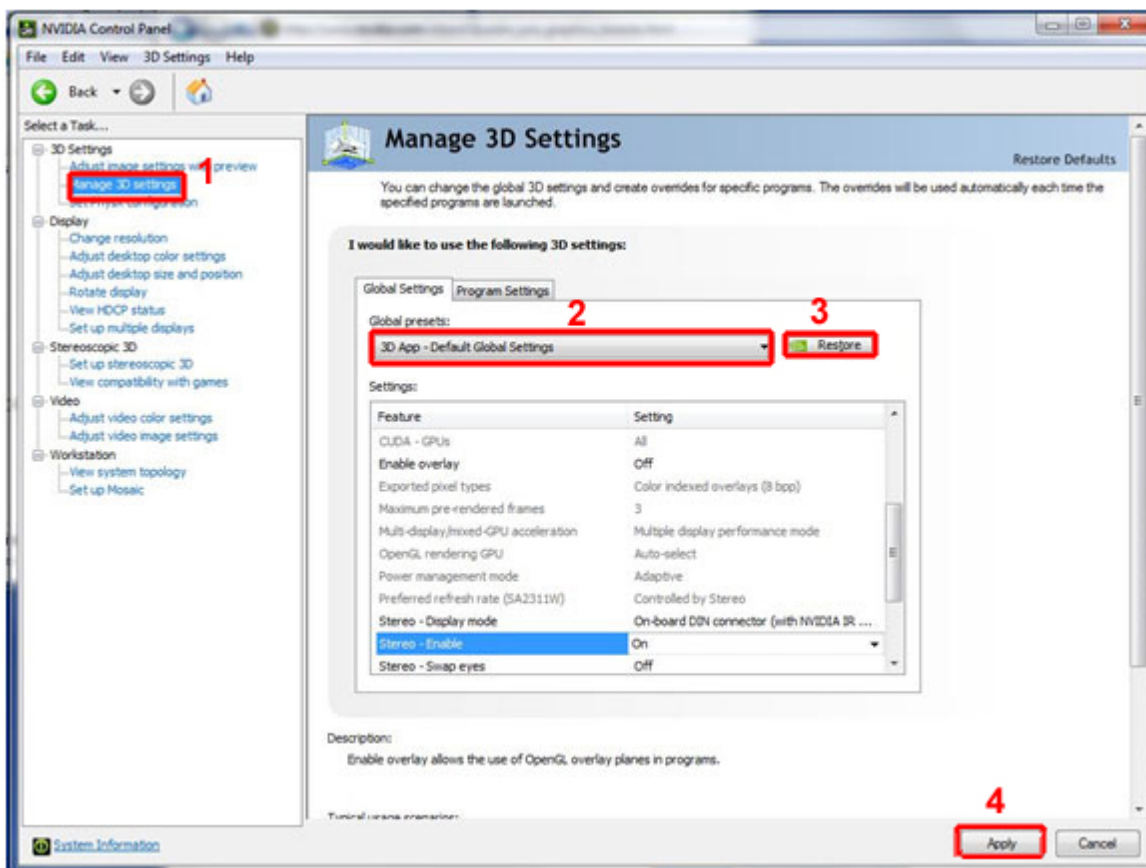




Using NVIDIA Workstation Graphics Cards

When using an NVIDIA Quadro/RTX AXXXX graphics card, please set up the following settings:

- In Windows 10/11, go to **Desktop > Right Mouse Click > NVIDIA Control Panel > 3D Settings > Manage 3D settings > Global Settings > Global presets:** > Choose **Workstation App - Dynamic Streaming** > Click **Restore** > Click **Apply**



MADRIX 5 will show a message to you on the first start should you not have activated the preset yet.

1.3 MADRIX KEY [Software License]

This topic includes:

- [Overview](#)
- [Demo Mode](#)
- [MADRIX 5 KEY preprogrammer](#)
- [Important Information](#)
- [Interruption-Free Operation](#)
- [MADRIX KEY & MADRIX 5 License](#)
- [End-Of-Life](#)

Overview



The MADRIX KEY is a USB dongle.

It needs to be connected to your computer. Only then, it activates the full license of the software and corresponding output. You will receive your personal MADRIX KEY, when purchasing a MADRIX 5 Software product.

The MADRIX 5 Licenses are available as:

- **MADRIX 5 preprogram mer**
[Provides no output for MADRIX 5, but removes major limitations of the demo mode.]
- **MADRIX 5 start**
[Provides the output license for 1,024 (2x 512) DMX channels and 16,384 (128 x 128) DVI pixels for MADRIX 5.]
- **MADRIX 5 entry**
[Provides the output license for 6,144 (12x 512) DMX channels and 262,144 (512 x 512) DVI pixels for MADRIX 5.]
- **MADRIX 5 basic**
[Provides the output license for 16,384 (32x 512) DMX channels and 1,048,576 (1,024 x 1,024) DVI pixels for MADRIX 5.]
- **MADRIX 5 professional**
[Provides the output license for 65,536 (128x 512) DMX channels and 2,097,152 (2,048 x 1,024) DVI pixels for MADRIX 5.]
- **MADRIX 5 ultimate**
[Provides the output license for 262,144 (512x 512) DMX channels and 2,097,152 (2,048 x 1,024) DVI pixels for MADRIX 5.]

- **MADRIX 5 maximum**

[Provides the output license for 1,048,576 (2,048x 512) DMX channels and 2,097,152 (2,048 x 1,024) DVI pixels for MADRIX 5.]

The MADRIX KEY is a USB software protection dongle. Thank you for your understanding!

Demo Mode

MADRIX 5 offers a demo mode. As such, you can download the latest MADRIX 5 Software to test for free at »www.madrix.com

What are the features of the Demo Mode?

- You can test MADRIX 5 for free.
- The software is fully functional [within the demo limitations].
- Demo mode is useful for computer and other hardware performance tests.
- Files and settings of demo mode are fully compatible with the full version [it is the same software].
- You can test the basic connection to fixtures and controllers for DMX-based output protocols by using the Highlight Mode of the Device Manager, which sends value 255 on all 512 channels to the selected devices [full-on white].
- MADRIX 5 runs in Demo Mode if you do not connect a valid MADRIX KEY to your computer.

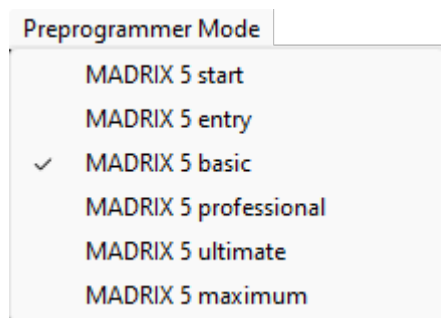
What are the limitations of the Demo Mode?

- All Previews and DVI Outputs display '! NO MADRIX 5 KEY !'.
- All Previews and DVI Outputs have a color-changing, rotating cross on top.
- DVI Outputs [incl. External Preview windows] only send out black.
- The fixture mask is disabled and all Previews have a reduced overall brightness.
- There is no output of any other control data. That means no Art-Net, DMX512, KiNET, Philips hue, Streaming ACN, ColourSmart Link, Colorlight A8, Colorlight 5A, Colorlight T9, Eurolite T9, CITP, HTTP, NDI, or Spout is sent out.

MADRIX 5 KEY preprogrammer

The MADRIX 5 KEY preprogrammer / MADRIX 5 License preprogrammer is a special software license for project preparation.

- It does not enable any data output.
- It does, however, remove other major limitations of the Demo Mode:
 - All Previews do **not** display '! NO MADRIX 5 KEY !' anymore.
 - All Previews and DVI outputs do **not** have a color-changing, rotating cross on top.
 - DVI output (External Previews in DVI mode) is the main DVI output and solely sends out black.
 - DVI outputs (External Previews in Window mode or Full Screen mode) **only** display a semi-transparent, pulsing, and moving text ('PREPROGRAMMER').
 - All Previews have the **full** brightness.
- A special **Preprogrammer Mode** menu item becomes available that allows you to simulate any of the regular software licenses.
 - This can help you assess if your project can be realized with a given software license.
 - This can mainly be assessed with the help of the unlocked DMX channels or DVI voxels as shown in the Previews. Learn more: »[3 Previews](#)



Important Information

- **The MADRIX KEY is the most important item when you buy MADRIX 5. Do not lose it!**
- **A MADRIX KEY is not bound to one computer and can be used with each of your computers.**
- **Do not connect the MADRIX KEY to your computer before installing the MADRIX 5 Software.**

- **Only 1x MADRIX KEY can be connected to the software. If you connect several KEYs, the highest available license will be used to unlock the software.**

Interruption-Free Operation

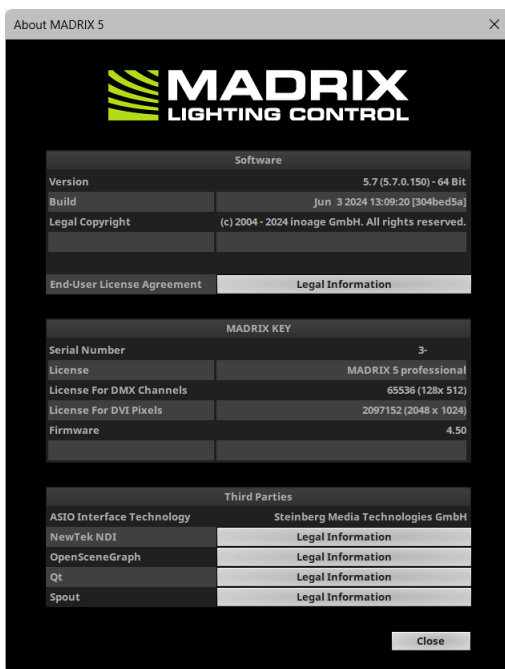
To ensure interruption-free operation of the software and devices, please make sure to check the power saving settings of Windows. Learn more »[PC Power Management](#)

MADRIX KEY & MADRIX 5 License

License Check

You can check which MADRIX 5 License your MADRIX KEY provides.

- Start the MADRIX 5 Software.
- Go to the menu **Help > MADRIX > License...**
- A new window will open.



- **Note 01:** It is not usually the case, but MADRIX KEYs can have an expiration date.
 - The date when the KEY/License stops to work will be shown here [in the format YYYY/MM/DD HH:MM:SS (Time Zone)].
 - **N/A** is shown if the date has expired.

Expiration Date	2020/02/01 00:00:00 (UTC)
-----------------	---------------------------

- **Note 02: Invalid MADRIX KEY / MADRIX 5 License** - Indicates that the connected MADRIX KEY:
 - uses an outdated firmware version [To remedy, update the firmware of the MADRIX KEY].
 - is in Firmware Update Mode [To remedy, update the firmware of the MADRIX KEY].
 - has an expired license [To remedy, renew the license via your dealer/the manufacturer].

MADRIX 5 Software

- Purchase a MADRIX 5 Software product that includes a MADRIX KEY with a MADRIX 5 License to unlock the corresponding features or output in the MADRIX 5 Software.
- Online activation is initially required one time. Learn more »[MADRIX KEY \[Activation\]](#)
- Physical shipment of the boxed MADRIX KEY required.

MADRIX 5 Licenses

- Require a valid, empty, and metallic MADRIX KEY.
- Online activation is initially required one time. Learn more »[MADRIX KEY \[Activation\]](#)
- Only one MADRIX 5 License is possible per MADRIX KEY.

MADRIX 5 License Upgrades

- Upgrade your MADRIX 5 License on your MADRIX KEY to a higher license in order to increase the available output.
- MADRIX 5 License Upgrades to higher licenses are possible several times per MADRIX KEY.
- Online activation is initially required one time. Learn more »[MADRIX KEY \[Activation\]](#)
- Require a valid and metallic MADRIX KEY with a MADRIX 5 License.

MADRIX 5 Software Updates

- Take advantage of the latest MADRIX 5 Software. This will even automatically increase your available output. Update from MADRIX 2 or MADRIX 3.
- Online activation is initially required one time. Learn more »[MADRIX KEY \[Activation\]](#)
- The MADRIX 5 Software Update is free of charge if you have bought MADRIX Software on April 01, 2017 or any later date.
- Requires a valid and metallic MADRIX KEY. Any green MADRIX KEY needs to be disabled and physically replaced, i.e. purchase of 1x MADRIX KEY required.

MADRIX Hardware

- All MADRIX hardware requires a MADRIX KEY with a valid MADRIX 5 License in order to work with the MADRIX 5 Software.
- No MADRIX hardware product provides a MADRIX 5 Software license automatically. A MADRIX KEY is always needed.

End-Of-Life



This electrical device and its accessories need to be disposed of properly. Do not throw the device into normal trash or household waste. Please recycle packaging material whenever possible.

1.4 MADRIX KEY [Activation]

This topic includes:

- [Overview](#)
- [Online Activation](#)
- [Manual File Creation](#)

Overview

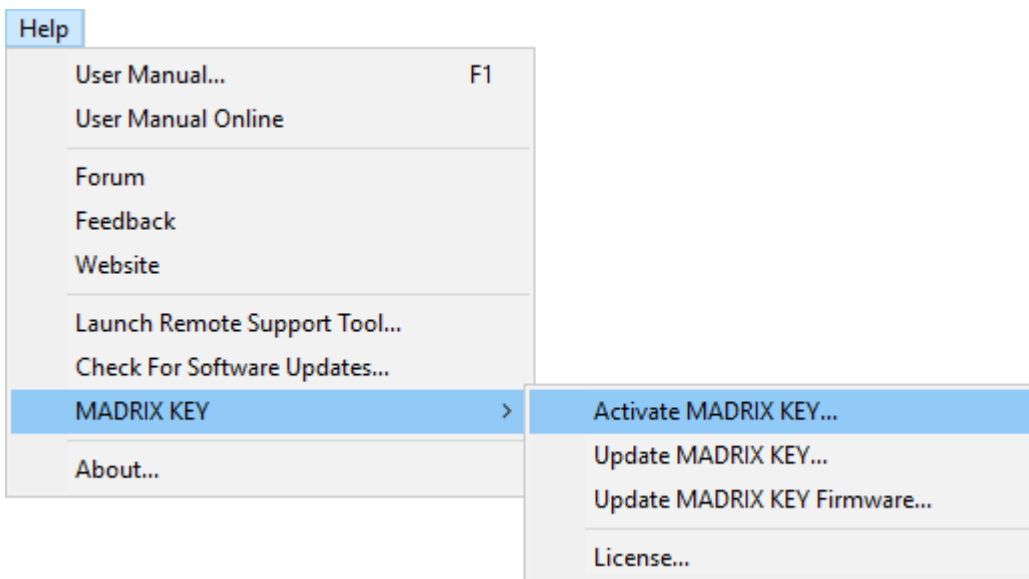
Please activate your MADRIX KEY first, when using the MADRIX 5 Software for the first time [or when having acquired a MADRIX 5 License, MADRIX 5 License Upgrade, or MADRIX 5 Software Update].



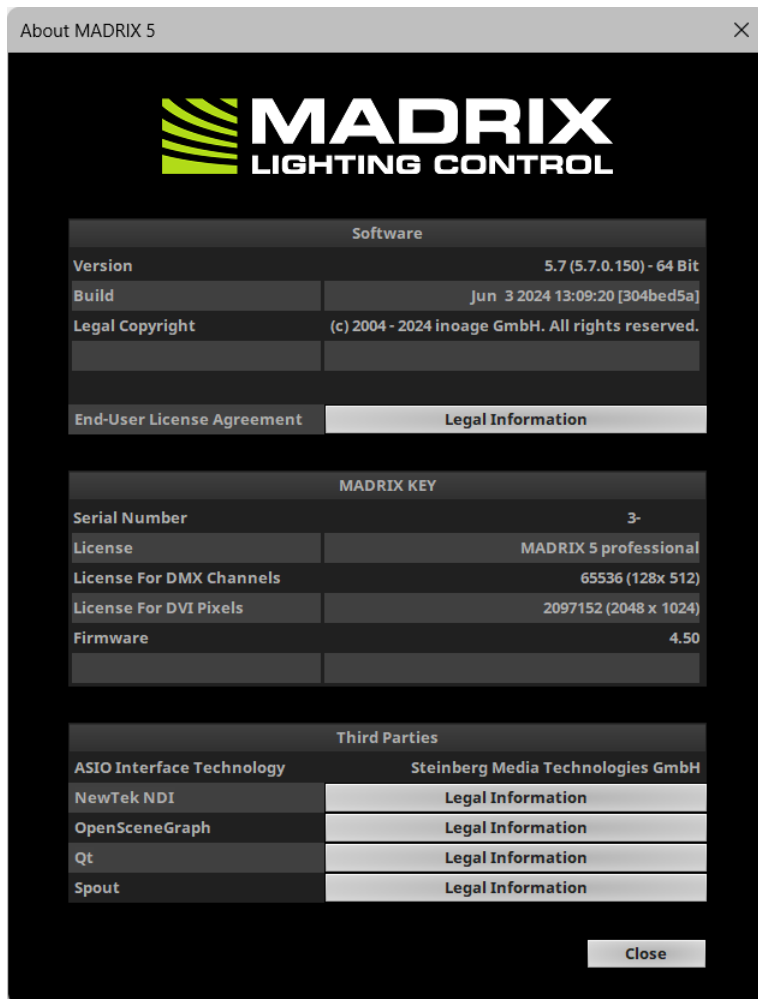
Online Activation

Please follow the steps described in the **MADRIX 5 Quick Start Guide** or below:

- 1]** Make sure you are online. An active internet connection is required for the activation.
- 2]** Download the latest MADRIX 5 Software from www.madrix.com or use at least MADRIX in version 5.7.
- 3]** Connect the MADRIX KEY to your computer and install the MADRIX 5 Software.
- 4]** Start MADRIX 5 now and go to the menu **Help > MADRIX KEY > Activate MADRIX KEY...**



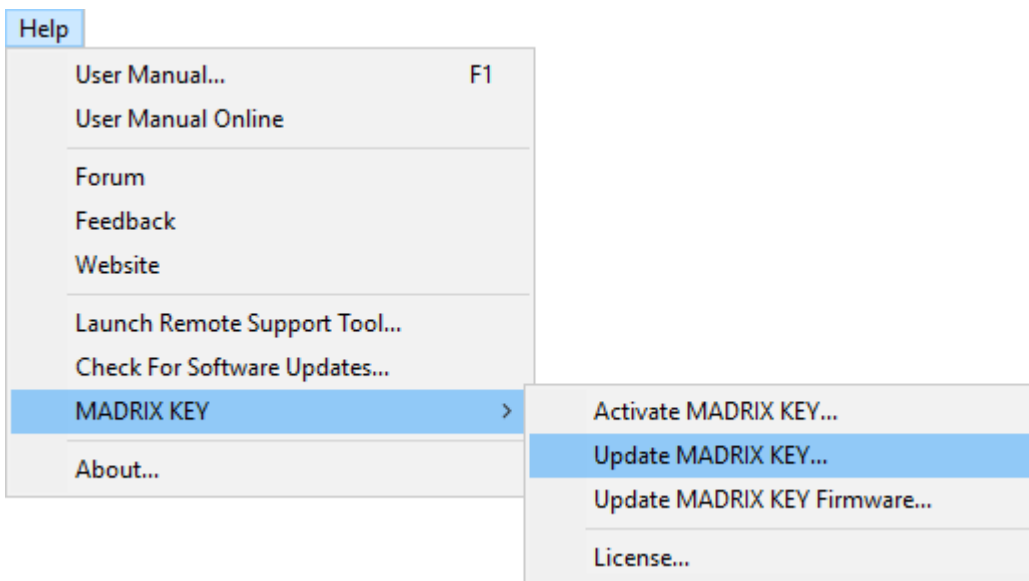
5] Enter your ticket number and follow the on-screen instructions. Double-check your MADRIX 5 License in the menu **Help > MADRIX KEY > License...**



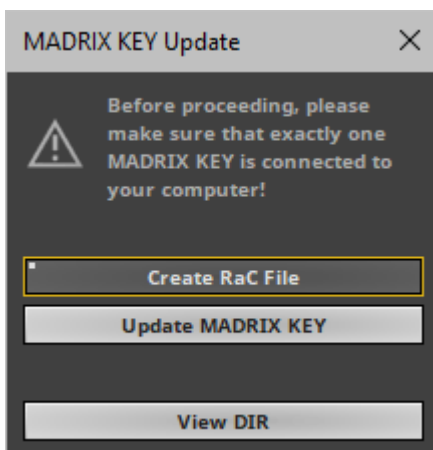
Manual File Creation

For the update process, you might be asked to manually create files from the MADRIX KEY. Please follow the steps below:

- 1]** Connect exactly one MADRIX KEY to your computer!
- 2]** Start MADRIX 5.
- 3]** Go to the menu **Help > MADRIX KEY > Update MADRIX KEY...**



And a new window will open.



4] Click **Create RaC File**.

- Save the file to your harddisk.
- MADRIX 5 will automatically choose the serial number of the MADRIX KEY as file name and add the file type *.WibuCmRaC as file extension depending on the MADRIX KEY.
- After the successful creation, the software will open the directory on your harddisk again.
- Use **View Dir** to manually open the directory where you just saved the file.
- This file needs to be sent to your supplier/dealer by e-mail.

5] You will receive a new RaU file from your supplier by e-mail.

- Save it onto the harddisk of your computer.
- This file will be of the file type *.WibuCmRaU.

6] Go again to **Help > MADRIX KEY > Update MADRIX KEY...** and click **Update MADRIX KEY**

7] Select the RaU file on your harddisk and click **OK**

8] After the successful update, the software will automatically create a new receipt file.

- The file will be of the file type *.WibuCmRaC.
- The software will open the directory on your harddisk again.
- Please send the receipt file to your supplier/dealer by e-mail.

9] Restart MADRIX 5.

10] Double-check if the update or upgrade was successful under **Help > MADRIX KEY > License...**

1.5 Update From MADRIX 2 Or 3 To MADRIX 5

This topic includes:

- [Introduction](#)
- [Setup File Conversion](#)
- [Fixture Library Conversion](#)
- [Image Files](#)

Introduction

MADRIX 5.7. is a version of the MADRIX 5 Software series.

Before that, MADRIX 2 and MADRIX 3 were available for several years. Users may choose to update your software license from MADRIX 2 or 3 to MADRIX 5.

As such, this topic summarizes key points to remember when updating.

Setup File Conversion

MADRIX 2

MADRIX 5 uses its own file types. Please follow these steps to convert your MADRIX 2 Setup file into a MADRIX 3 Setup file using MADRIX 2, which can then be loaded into MADRIX 5:

- Install MADRIX 2.14i [or higher].
- Start MADRIX 2 and load your current Setup [of the file type *.ms2].
[Go to the menu **File > Open Setup...**]
- Go to the menu **File > Export > Export for MADRX3... > Setup...**
- A new window opens. Simply enter a name for the file and click **Save**
- Start MADRIX 5 and load your newly created MADRIX Setup file [of the file type *.msz].
[Go to the menu **File > Open Setup...**]

MADRIX 3

- MADRIX 5 can automatically load MADRIX 3 Setup files [of the file type *.msz].
- Once saved in MADRIX 5, they are MADRIX 5 files.
- Make sure to make a backup of your old MADRIX 3 files before converting them to MADRIX 5 files.
- MADRIX 3 cannot load MADRIX 5 files.

Fixture Library Conversion

MADRIX 2

MADRIX 5 uses its own file types. Please follow these steps to convert your MADRIX 2 Fixture Library file into a MADRIX 3 Fixture Library file, which can be loaded into MADRIX 5:

- Install MADRIX 2.14j [or higher].

- Start the MADRIX 2 Fixture Editor and load your currently used Fixture Library [of the file type *.mfl].
[Go to the menu **File > Open Library...**]
- Go to the menu **File > Export Library for MADRX3...**
- A new window opens. Simply enter a name for the file and click **Save**
- Start the MADRIX 5 Fixture Editor and load your newly created MADRIX Fixture Library [of the file type *.mflx].
[Go to the menu **File > Open Library...**]

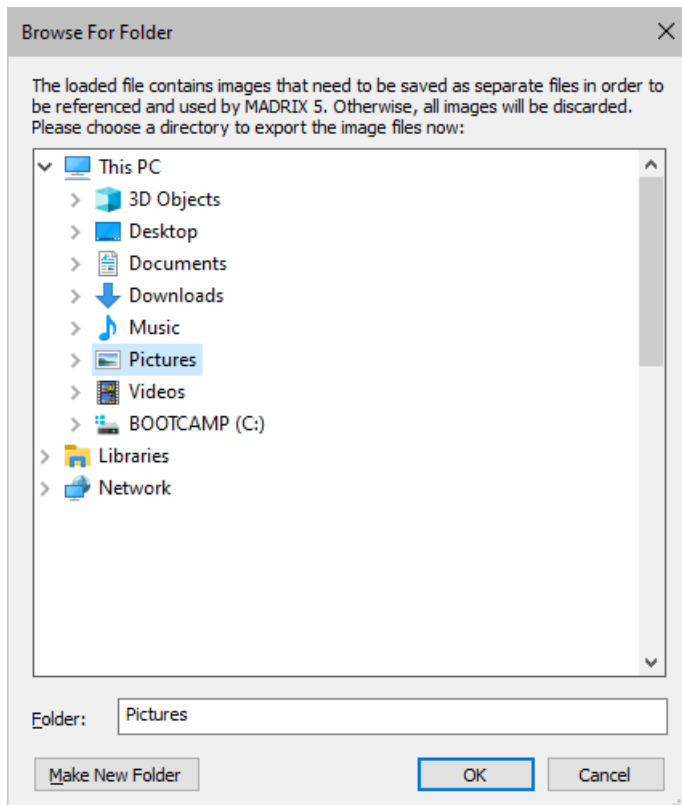
MADRIX 3

- MADRIX 5 can automatically load MADRIX 3 Fixture Library files [of the file type *.mflx].
- Once saved in MADRIX 5, they are MADRIX 5 files.
- Make sure to make a backup of your old MADRIX 3 files before converting them to MADRIX 5 files.
- MADRIX 3 cannot load MADRIX 5 files.

Image Files

MADRIX 3

- MADRIX 5 can automatically load MADRIX 3 Setup files [of the file type *.msz].
- MADRIX 5 does not save image files anymore in a MADRIX 5 Setup File. In contrast, MADRIX 3 did store imported images in the MADRIX 3 Setup File.
- When loading a MADRIX 3 Setup File which contains images files in MADRIX 5, MADRIX 5 will ask you for a directory on your system in order to export these images first.



- After the export, MADRIX 5 will reference the directory and load images when required.
- If you do not assign an export folder, any images included in the MADRIX 3 Setup File will be discarded and cannot be used by MADRIX 5 anymore.
- Learn more here: »[SCE Image](#)

1.6 Supported Fixtures [LED Products]

This topic includes:

- [Overview](#)
- [Communication With LED Products](#)
- [MADRIX 5 Fixture Library](#)
- [MADRIX Fixture Editor](#)
- [Additional Support](#)

Overview

The MADRIX software already includes a very large selection of configuration for various lighting fixtures. This includes 1 channel fixtures, RGB and RGBW fixtures, LED Tubes, LED sticks, LED panels, and curtains to name a few. All fixture profiles are stored in the so-called MADRIX Fixture Library. The software has access to this library and thus knows all included fixture configurations. Learn more about the MADRIX Fixture Library below.

Communication With LED Products

- Depending on your LED product, communication with your LEDs is done through interfaces, controllers, drivers, or directly with the fixtures.
- MADRIX supports various industry-wide communication standards to send data to your LEDs.
- These standards include DMX512, DVI, Art-Net, and many more.
- Learn more »[OUTPUT Settings](#)

MADRIX 5 Fixture Library

The MADRIX 5 Fixture Library is a file that includes all current fixture profiles. The library will be updated with every new MADRIX 5 version as well.

The library includes profiles for products by #G-LEC, Acclaim Lighting, Acme, Alkalite, American DJ, Blizzard Lighting, Botex, BriTeQ, CHAUVET, Chroma-Q, Chromlech, Clay Paky, CLS, Coemar, Color Kinetics, Creative Consultants, Designgroup, Ehrgeiz, Elation Professional, EUROLITE, EXPOLITE, Extra Dimensional Technologies, Futurelight, GLP, Highlite, Ilumenite, img Stage Line, INSTA, LEDWalker, Lightmaster, Litecraft, Magic Led, magiclights Eventtechnology, Martin Professional, Mega Lite, Neo-Neon, Nova Vision NY, PixelRange, QuadLED, ROBE, Room Division, Schnick Schnack, Showtec, Stairville, Teko, TRAXON, Varytec, Yifeng Light, and many more!

You can create your virtual LED matrix in MADRIX 5 using fixtures with the help of the »[Matrix Generator](#) or »[Patch Editor](#)

If you do not find your fixture in the library, you can create your own fixtures. Learn more about the MADRIX 5 Fixture Editor below.

MADRIX 5 Fixture Editor

The MADRIX 5 Fixture Editor is a separate application that will be automatically installed together with MADRIX 5. You can simply configure your own fixture profiles using this handy tool. In this way, MADRIX 5 ensures the support of available fixtures on the market. Learn more »[MADRIX 5 Fixture Editor](#)

Additional Support

We constantly want to make sure that we support all available products on the market. And we want to support your fixtures. If you have a lighting fixture that is currently not supported by MADRIX 5 or if you need help with your fixture, please contact us! »[Imprint And Copyright](#)

1.7 Supported Interfaces [DMX512 / Art-Net]

This topic includes:

- [Supported DMX512 Interfaces](#)
- [Supported Art-Net Interfaces](#)

Supported Live DMX512 USB Interfaces

MADRIX 5

- MADRIX USB ONE
- MADRIX NEO
- MADRIX PLEXUS
- MADRIX LUNA 4
- MADRIX LUNA 8
- MADRIX LUNA 16
- MADRIX NEBULA
- MADRIX STELLA
- MADRIX ORION

Supported Live Art-Net Interfaces

MADRIX 5

- MADRIX PLEXUS
- MADRIX LUNA 4
- MADRIX LUNA 8
- MADRIX LUNA 16
- MADRIX NEBULA
- MADRIX STELLA
- MADRIX ORION

Third Parties

All interfaces that are fully compatible with Art-Net [Art-Net I, Art-Net II, Art-Net 3, Art-Net 4] will work with MADRIX 5. Support is defined by product compatibility with Art-Net and not limited to specific brands.

1.8 Web Links

This topic includes:

- [Overview](#)

Overview

You can find a selection of useful internet links here:

- MADRIX Website
» www.madrix.com
- Drivers
» www.madrix.com/support/download
- User Guides [Online And Downloadable PDF]
» help.madrix.com
- Hardware Technical Manuals / Quick Start Guides [Downloadable PDF]
» help.madrix.com
- Online Forum
» www.madrix.com/support/forum
- Software Release Notes
» www.madrix.com/products/software/releases
- Online Text Tutorials
» help.madrix.com/tutorials/html/index.html
- Video Tutorials
» www.madrix.com/training/video-tutorials

//PART 2

Getting Started

2 Getting Started

This topic includes:

- [Introduction](#)
- [Topics Of This Chapter](#)

Introduction

Learn in this chapter how to

- install the MADRIX 5 Software,
- get started quickly,
- configure audio input and output,
- create a stable operation environment.

Topics Of This Chapter

- » [Installation Process](#)
- » [Starting The Software](#)
- » [Language Settings](#)
- » [5-Step Quick Start](#)
- » [Audio And Sound](#)
- » [PC Power Management](#)
- » [Tips \[Microsoft Windows / Networks / USB\]](#)
- » [Using The Mouse](#)
- » [Tips \[Workflow\]](#)
- » [Examples](#)
- » [2D Or 3D \[X, Y, Z\]](#)
- » [Tips And Tricks](#)

2.1 Installation Process

This topic includes:

- [Important Notes](#)
- [Using The MADRIX USB Flash Drive](#)
- [Downloading The Software Online](#)
- [Setup Process](#)
- [Uninstallation](#)
- [Software Update](#)

Important Information

- **Please note regarding Purchased Products, Demo Mode, and Updates:**
 - The MADRIX 5 Software can be downloaded from »www.madrix.com. Regular updates of the software are also available online. If no MADRIX KEY is connected, the software will run in demo mode.
 - Learn more »[MADRIX KEY \[Software License\]](#)
- **It is highly recommended to always use the latest software update.**

Using The MADRIX USB Flash Drive

When using a MADRIX USB flash drive for the installation process, please connect the drive to a free USB port of your operational computer. The MADRIX 5 setup will start automatically using an Auto Installer. Please wait until the setup has fully loaded. Then, proceed with the [Setup Process](#) as described below. When the Auto Installer does not launch, please navigate to the drive in Windows and manually start the setup process by performing a double-click on **MADRIX_64Bit_Install.exe**

Downloading The Software Online

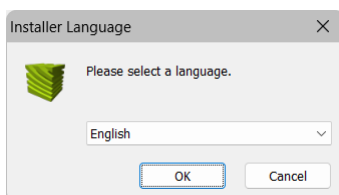
- Download **MADRIX_Full_Install.exe** from »www.madrix.com
- After downloading the installer, please double-click with your mouse on this file in order to start the setup process.
- Please wait while the Auto Installer is loading the setup.
- Afterwards, proceed with the [Setup Process](#) as described below.

Setup Process

Please make sure to:

- 1]** Log into Windows as administrator [Admin].
- 2]** Let the computer process the setup. This may take some minutes depending on the speed of your computer.
- 3]** Allow Windows to install all drivers. Windows may ask for your permission to install drivers and expects your confirmation. Please search for such pop-up windows; they might have opened in the background and might be covered by other windows.
- 4]** Connect your MADRIX KEY before you start a software update [not during the first installation]. In this way, the MADRIX KEY firmware can automatically be updated if required.

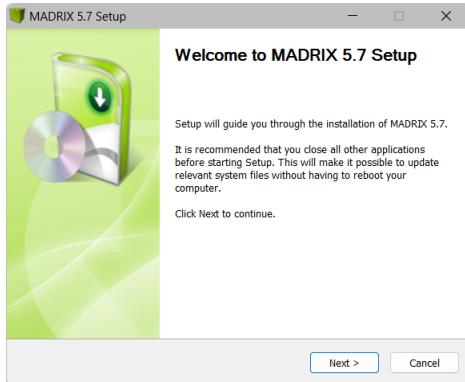
Please install the MADRIX 5 Software before you connect a MADRIX KEY or a MADRIX hardware interface.



Step 1]

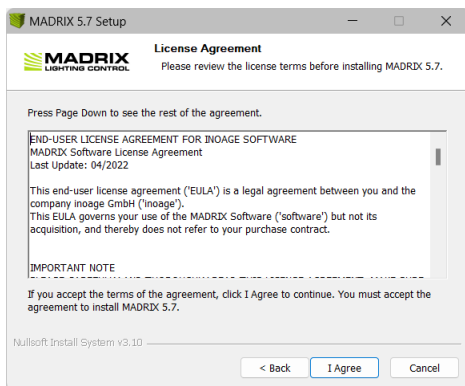
- Select your preferred language.
And confirm with **OK**

- You can always quit the setup by clicking **Cancel**



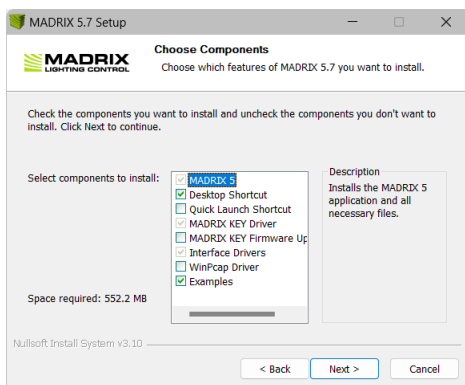
Step 2]

- Click **Next** to start the installation.
- Click **Back** in order to return to a previous step during the setup process.



Step 3]

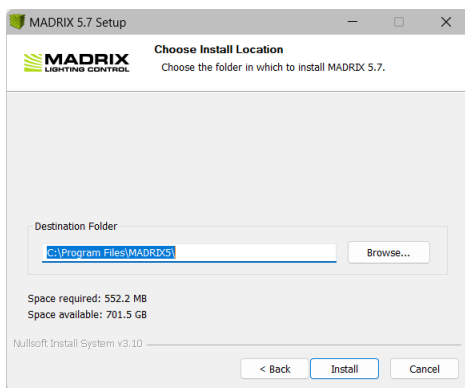
- The **License Agreement** will appear. It outlines the terms you are agreeing to by installing the software. You must accept these terms in order to continue.
- Please click **I Agree**



Step 4]

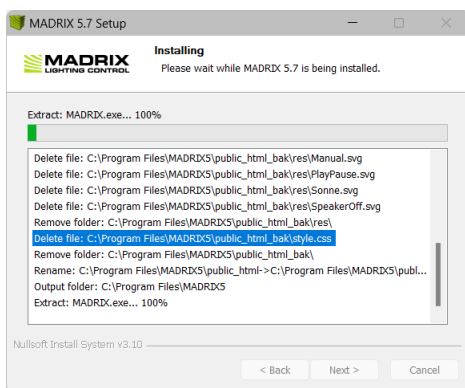
- This window allows you to select which components and which drivers you want to install. A description is given for each item.
- **MADRIX 5** - Is a required component. It refers to the MADRIX 5 Software and all additional software tools.
- **Desktop Shortcut** - Select if you wish to create a shortcut to the MADRIX 5 Software on your Windows desktop.
- **Quick Launch Shortcut** - Select if you wish to create a shortcut to the MADRIX 5 Software in your Windows taskbar.

- **MADRIX KEY Driver** - Is a required component. Installs the MADRIX KEY driver. The USB software protection dongle activates the license [MADRIX 5 KEY preprogrammer/ start/ entry/ basic/ professional/ ultimate/ maximum].
- **MADRIX KEY Firmware Update** - Installs the latest firmware on connected USB protection dongles.
 - **Please disconnect any unwanted dongles or deselect the option!** You can always update your MADRIX KEYS later.
 - The installer will attempt to check online if a newer firmware version is available and use it accordingly for the update.
 - If the online check fails, the update will be done offline using the minimum or current firmware version provided by the installer.
- **Interface Drivers** - Is a required component. Copies the drivers for MADRIX hardware interfaces to the installation directory and installs them for USB ONE, PLEXUS, NEO, LUNA 4/8/16, NEBULA, STELLA, ORION, USB SMPTE.
- **WinPcap Driver** - Select if you wish to use the DVI device types Colorlight 5A, Colorlight A8, Colorlight T9, EuroLite T9, or ColourSmart Link.
- **Examples** - Select if you wish to install examples including setups, effects, scripts, etc. Learn more »[Examples](#)
- **Next** - Click Next after choosing the components in order to continue.



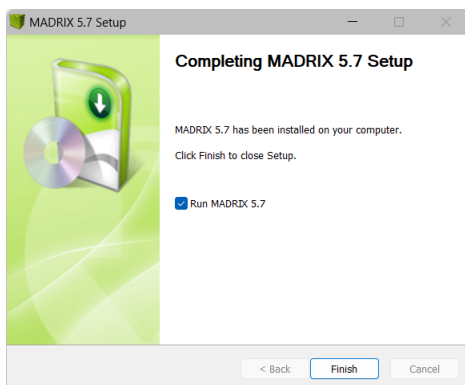
Step 5]

- Choose an installation directory on your harddisk where the software will be installed. A default **Destination Folder** will automatically be provided by the setup.
- **Browse...** - Click to change the folder.
- **Install** - Click to start the installation process.



Step 6]

- The installation process may take a few minutes.
- **Installation Complete** - Click **Next** when this message shown.



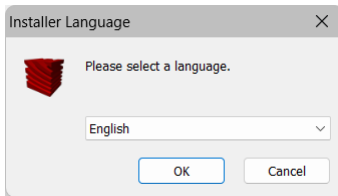
Step 7]

- **Run MADRIX 5** - Deselect if you do not wish to start the software now.
- **Finish** - Click to quit the setup.

- When starting MADRIX 5 for the first time, please make sure to learn more about working with Windows.

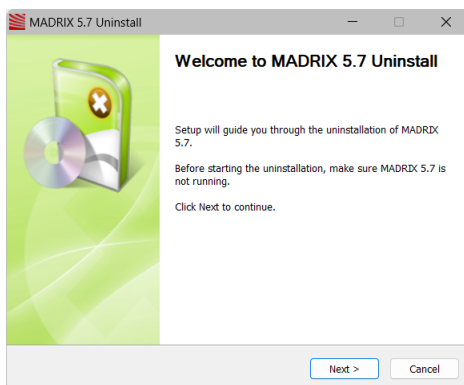
Learn more » [Tips \[Microsoft Windows / Networks / USB\]](#)

Uninstallation



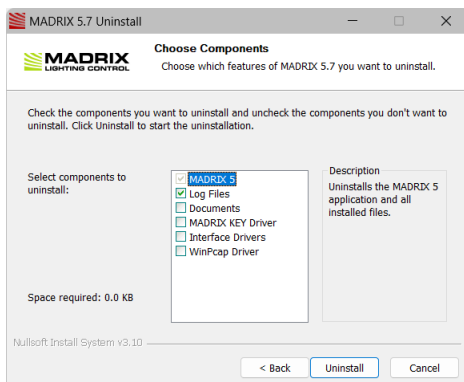
Step 1]

- Please select your preferred language and confirm with **OK**
- You can always quit the uninstaller by choosing **Cancel**
- Click **Back** in order to return to a previous step during the process.



Step 1]

- Click **Next** to start the uninstallation.



Step 2]

- This window allows you to select which components and which drivers you want to uninstall. A description is given for each item.
- **MADRIX 5** - Is a required component. It refers to the MADRIX 5 Software.
- **Log Files** - Select if you wish to remove all files saved for logging. By default, the component is selected.
- **Documents** - Select if you wish to remove the Documents folder specific to this software from the My Documents directory; except log files. By default, the component is not selected.

- **MADRIX KEY Driver** - Select if you wish to uninstall the drivers of the MADRIX KEY. By default, the component is not selected.

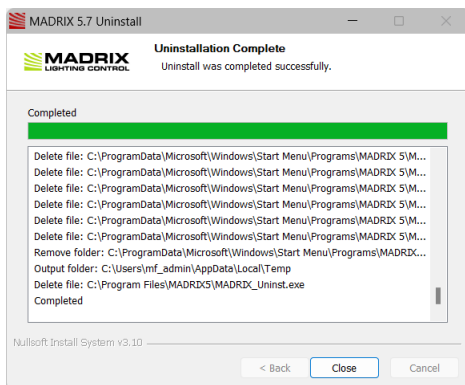
[Only remove it if no other software, such as MADRIX RADAR, requires the driver. If you have such software installed and are using it, do not remove the driver.]

- **Interface Drivers** - Select if you wish to uninstall the drivers of the MADRIX hardware interfaces. By default, the component is not selected.

- **WinPcap Driver** - Select if you wish to uninstall the WinPcap driver. By default, the component is not selected.

[Only remove it if no other software requires the drivers. If you have such software installed and are using it, do not remove the driver.]

- **Uninstall** - Click Uninstall after choosing the components in order to continue.



Step 3]

- The uninstallation process may take a short while.
- **Uninstallation Complete** - Click **Close** when this message shown.

Software Update

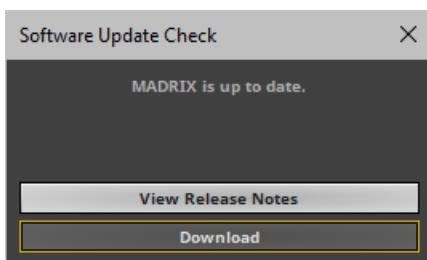
Checking For New Software Versions

It is always recommended to run the latest software version. MADRIX 5 can search for new software updates.

- Select the menu **Help > Check For Software Updates...**

Or you can let MADRIX 5 automatically search for updates.

- To do so, select the menu **Preferences > Options... > Startup > Check For Software Updates**
- Choose **Skip Update** if you would like to skip a particular version.
- **View Release Notes** - Is a link that will open your default web browser and launch the MADRIX website to show all changes and improvements of MADRIX 5 Software updates.
- **Download** - Is a direct link to quickly download the latest MADRIX 5 Software version.

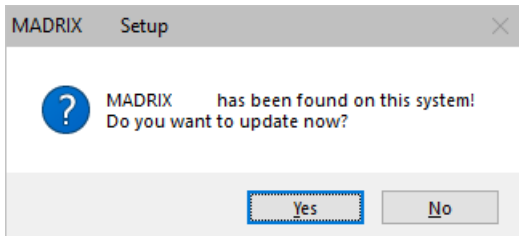


Installing New Software Versions

When a new software version has been released, please update your current MADRIX 5 installation to the newest version.

- Check and download the latest MADRIX 5 Software directly as described above.
- You can also directly download it from »www.madrix.com
- It is not required to deinstall MADRIX 5 before you install a new software version.

- Instead, follow the process described under [Downloading The Software Online](#)
- The installer will ask you if you would like to update your current MADRIX 5 Software installation. Confirm with **Yes**



2.2 Starting The Software

This topic includes:

- [Introduction](#)
- [Desktop Shortcut](#)
- [Windows Start Menu](#)
- [Splash Screen](#)

Introduction

You can start the MADRIX 5 Software in different ways. Among those, the Windows Start Menu is the standard way to launch applications under the Windows operating system.

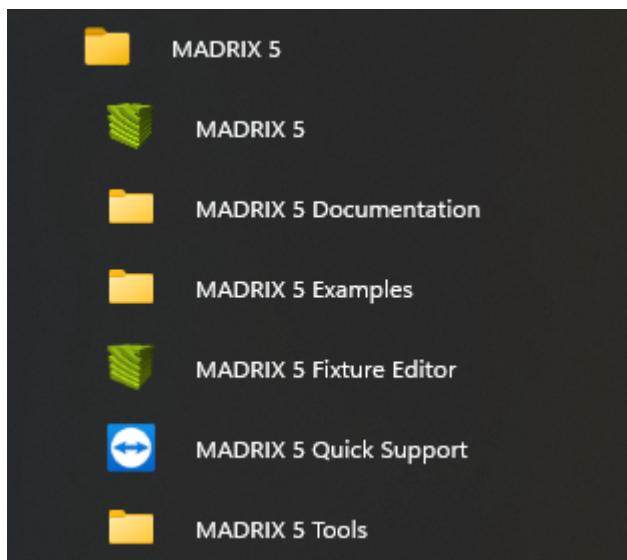
Desktop Shortcut



- **Left Mouse Double-Click** - Perform a double-click with your left mouse button on the desktop shortcut in order to start the MADRIX 5 Software.
 - It is required that the shortcut has been manually placed on the Desktop or was automatically installed during the »[Installation Process](#)

Windows Start Menu

- In Windows, go to **Start [Windows Logo] > All apps > MADRIX 5**



- **MADRIX 5**
 - Starts the MADRIX 5 Software.
- **MADRIX 5 Documentation**
 - Opens the folder C:\Program Files\MADRIX5\documents including license documents and user manuals for MADRIX 5, MADRIX 5 Fixture Editor, and MADRIX 5 Script.

- **MADRIX 5 Examples**

- Opens the folder C:\Users\Public\Documents\MADRIX5 Samples including sample files, when selected and installed during the installation process.

- - Learn more » [Examples \[Samples\]](#)

- **MADRIX 5 Fixture Editor**

- Launches the MADRIX 5 Fixture Editor.

- Learn more » [Extra Tools](#)

- **MADRIX 5 Quick Support**

- Launches the MADRIX 5 Quick Support tool, which may be used then contacting MADRIX technical support.

- Learn more » [Extra Tools](#)

- **MADRIX 5 Tools**

- Opens the folder C:\Program Files\MADRIX5\tools

- Included tools are **MADRIX 5 Restore**, **MADRIX 5 Time Code Sender**, **MADRIX 5 verbose**, **MADRIX KEY Firmware Updater**

- Learn more » [Extra Tools](#)

Splash Screen

After starting the software and before the software is fully loaded and available, a so-called splash screen will be shown first.

- **Left Mouse Click And Hold + Drag And Drop** - Allows you to change the position of the splash screen on your display.

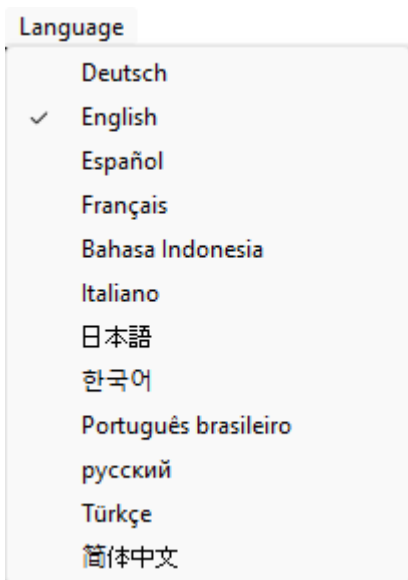


2.3 Language Settings

This topic includes:

- [Changing The User Interface Language](#)

Changing The User Interface Language



Before starting to work with the MADRIX 5 Software, you can choose the language of the user interface. Navigate to the main menu at the top of the software window.

- In the menu **Language**, choose from:
 - **Deutsch** [German]
 - **English**
 - **Español** [Spanish]
 - **Français** [French]
 - **Bahasa Indonesia** [Indonesian]
 - **Italiano** [Italian]
 - 日本語 [Japanese]

- 한국어 [Korean]
- **Português brasileiro** [Brazilian Portuguese]
- **русский** [Russian]
- **Türkçe** [Turkish]
- 简体中文 [Simplified Chinese]

[This user manual is only written in English.]

2.4 5-Step Quick Start

This topic includes:

- [Introduction](#)
- [First Use](#)

Introduction

If you want to quickly start using the MADRIX 5 Software, we recommend to at least set up the following initial configuration.

First Use

Step 1] Configure The Virtual LED Matrix

You need to tell MADRIX 5 how your LED installation looks like and how many fixtures [or pixels, voxels] you wish to use. Start by using the Matrix Generator for this task or use the default configuration. By default, MADRIX 5 will have set up 50 x 50 x 1 DMX-based RGB pixels.

Learn more »[Matrix Generator](#)

Step 2] Configure Audio

Many MADRIX Effects work without audio. But many MADRIX Effects do require audio input. Configure audio to see stunning S2L or M2L effects that react to the music in real time and play back video files with their audio track.

Learn more » [Audio And Sound](#)

Step 3] Configure Output

MADRIX 5 needs to communicate with your LED fixtures. The software is very versatile and supports many industry standards and communication protocols to put out data. Because of this, you need to configure which output method MADRIX 5 should use to control your LEDs.

Learn more » [OUTPUT Settings](#)

Step 4] Basic User Interface And The Crossfader

MADRIX 5 is very easy to use. To quickly see results, it is recommended learn a few basics about the user interface first.

Learn more » [Crossfader](#)

Learn more » [Main Output / Master / Audio Levels](#)

Step 5] MADRIX Effects

There is a whole variety of stock effects and lighting visuals available to you. And you can customize all of them. Begin to use the creative power of MADRIX 5 and start using the built-in MADRIX Effects.

Learn more » [Effects](#)

2.5 Audio And Sound

This topic includes:

- [Introduction](#)
- [Audio Configuration In The Windows Operating System](#)
- [Audio Configuration In The MADRIX 5 Software](#)
- [Troubleshooting](#)

Introduction

- [Overview](#)
- [Audio-Input Sources](#)
- [Audio-Output Sources](#)

Overview

MADRIX 5 supports audio input as well as audio output.

- Audio input is used for a variety of MADRIX Effects and therefore audio-reactive visuals. The software uses incoming audio signals to create lighting effects. These include the S2L, M2L, and MAS Effects.
- Audio output is used as audio playback for video files in the SCE Video Effect.

MADRIX 5 can work with an audio signal and it can work without an audio signal. But audio input is highly recommended. S2L and M2L Effects will create unique real-time effects based on sound, which will take your lighting display to the next level.

Audio-Input Sources

Audio input can come from different sources [internal or external]. It is just a matter of configuration. MADRIX 5 will allow you to set up every device that the Microsoft Windows operating system offers for recording.

Internal sources:

- Software music players [including MP3 and other audio file types or music tracks]
- Other music software or audio applications
- Microphone [e.g., built into notebooks]
- Audio-CD
- Stereo Mix
- Others

External sources:

- Line-In
- Microphone
- SPDIF
- Others

Audio-Output Sources

Audio output can only come from two sources in MADRIX 5:

- SCE Video, including videos that have an audio track played back in this MADRIX Effect.
Learn more » [SCE Video](#)
- Timelines, including audio segments.
Learn more » [Timeline Editor](#)
- [The MADRIX 5 Software is primarily a lighting-control tool without advanced audio functions.]

Audio Configuration In The Windows Operating System

- [Overview](#)
- [Sound Recording Device](#)
- [Sound Playback Device](#)
- [Volume Mixer](#)

Overview

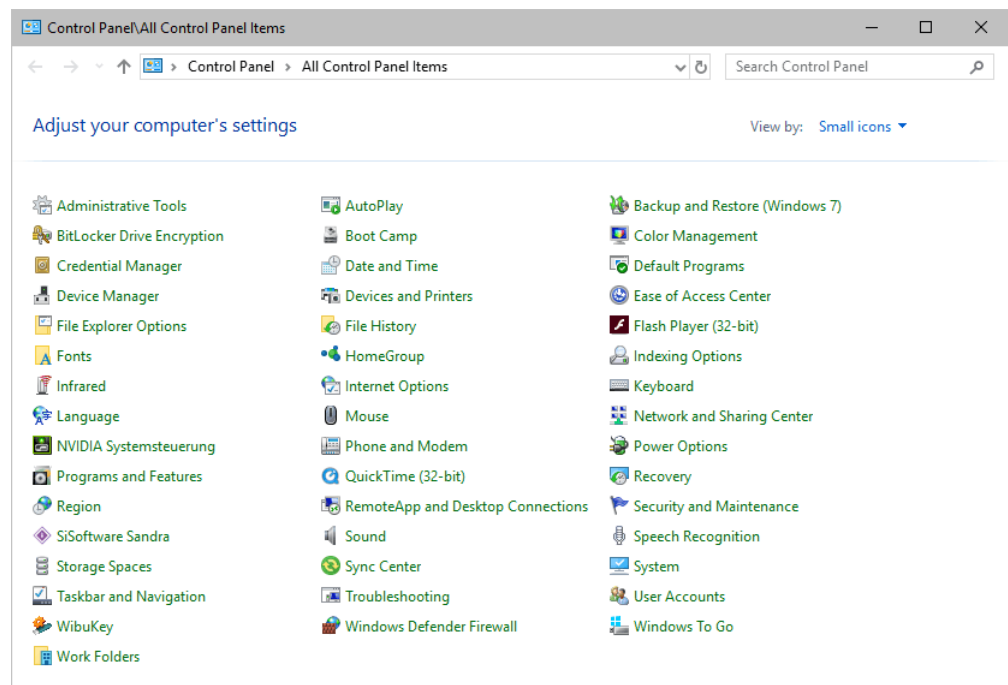
If MADRIX 5 should use audio input or audio output, you have to define the proper audio device in Windows first.

Sound Recording Device

The Recording device is used for audio input.

Alternatively, you can use your audio-output device as source for audio input as well, thanks to the available loopback functionality. Simply select the corresponding audio device in the MADRIX 5 Software; as explained below.

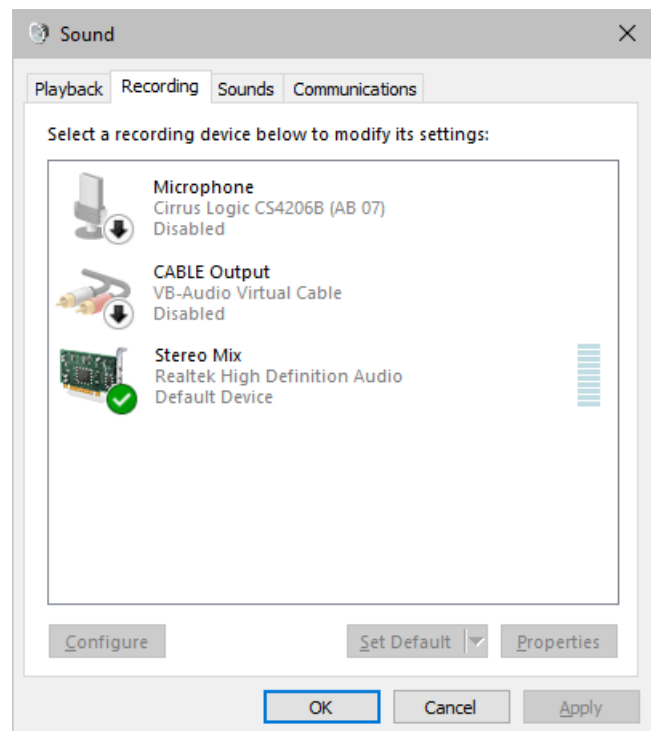
- In Windows 10, go to **Start > Windows System > Control Panel > Sound**
- In Windows 11, go to **Start > Settings > System > Sound > More sound settings**



- A new window will open.

- Select

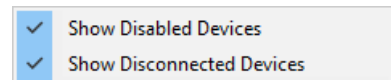
Recording



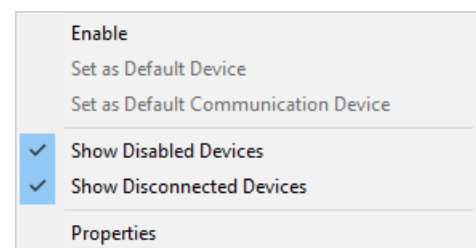
- Call up the context menu by using a right click with your mouse in this window [**Right Mouse Click**].

- Enable **Show Disabled Devices**

- Enable **Show Disconnected Devices**



- Stereo Mix usually is the recommended recording device: **Right Mouse Click** on **Stereo**



Mix and choose

Enable

- Or you can use any other input source.

- **Right Mouse**

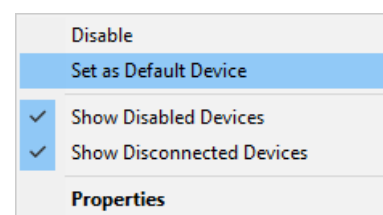
Click on the input source

[e.g., Line In] and

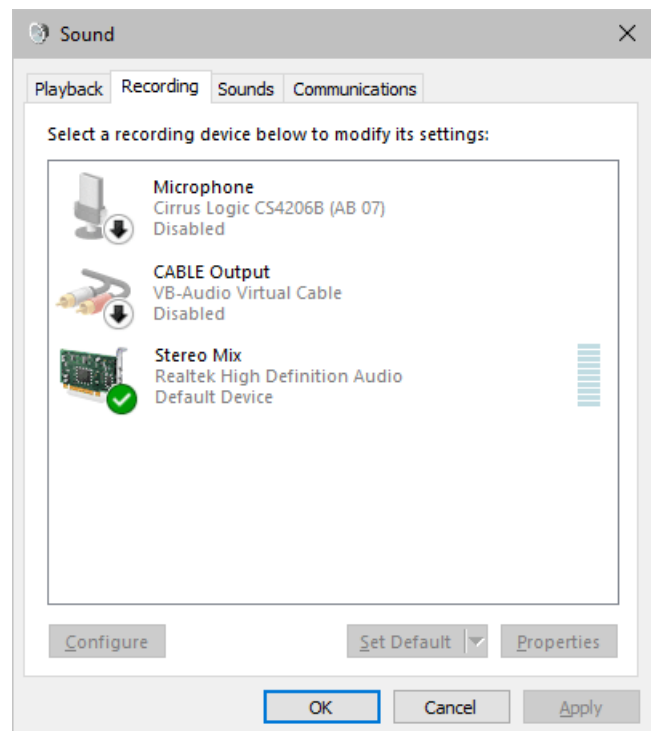
choose **Enable**

- [You may have to plug an audio jack into Line In before it gets activated in Windows.]

- Afterwards, also click **Set as Default Device** in the context menu.



- Finally, **Stereo Mix** [or any other input source] is activated and correctly set as recording source.
- MADRIX 5 can now analyze your music from software applications [such as Windows Media Player or Winamp] or use the signal from your defined input source.
- Click **OK**

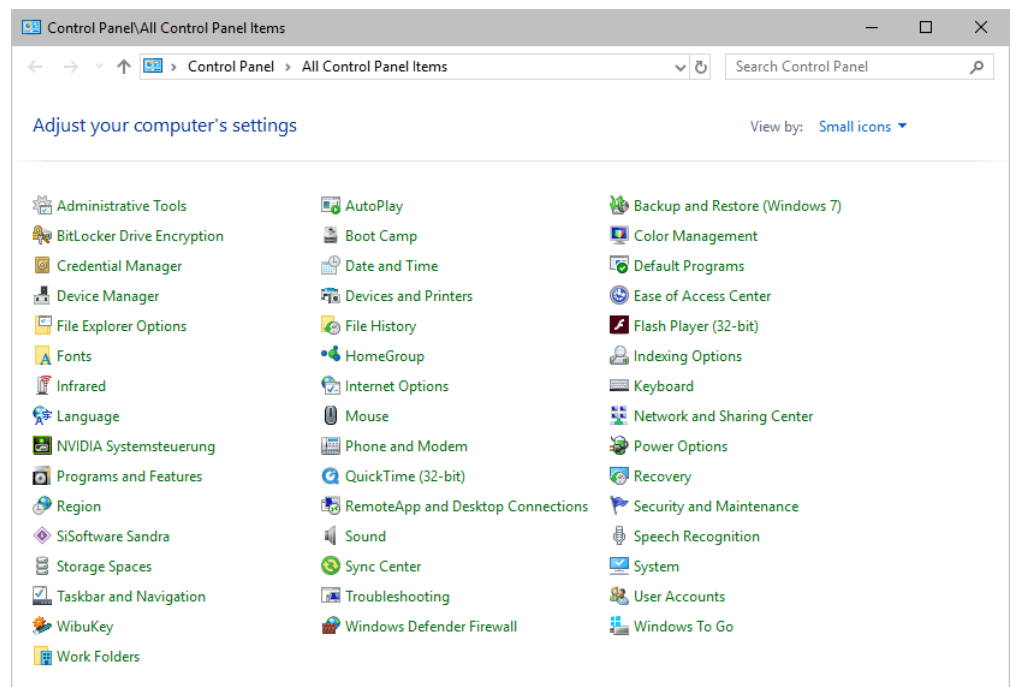


Sound Playback Device

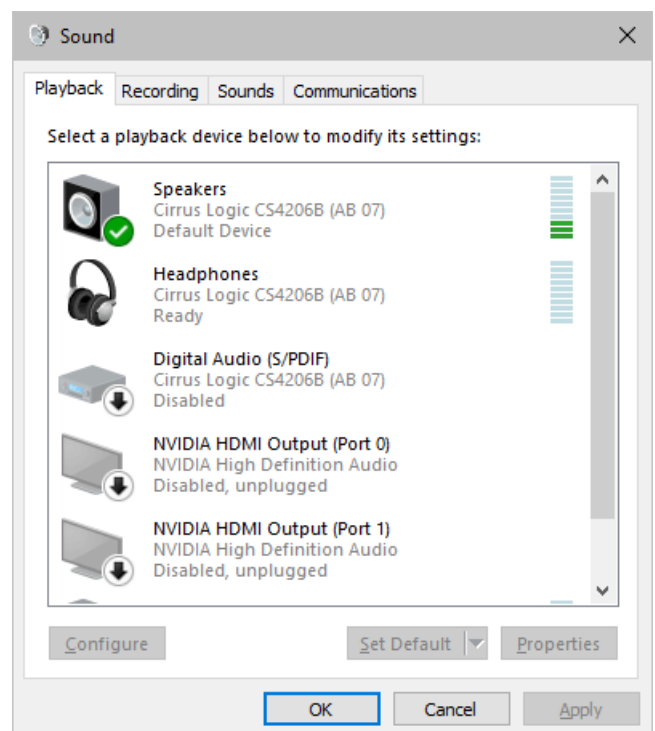
The Playback device is used for audio output.

Alternatively, you can use your audio-output device as source for audio input as well, thanks to the available loopback functionality. Simply select the corresponding audio device in the MADRIX 5 Software; as explained below.

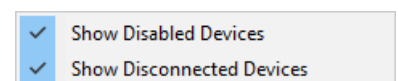
- In Windows 10, go to **Start > Windows System > Control Panel > Sound**
- In Windows 11, go to **Start > Settings > System > Sound > More sound settings**



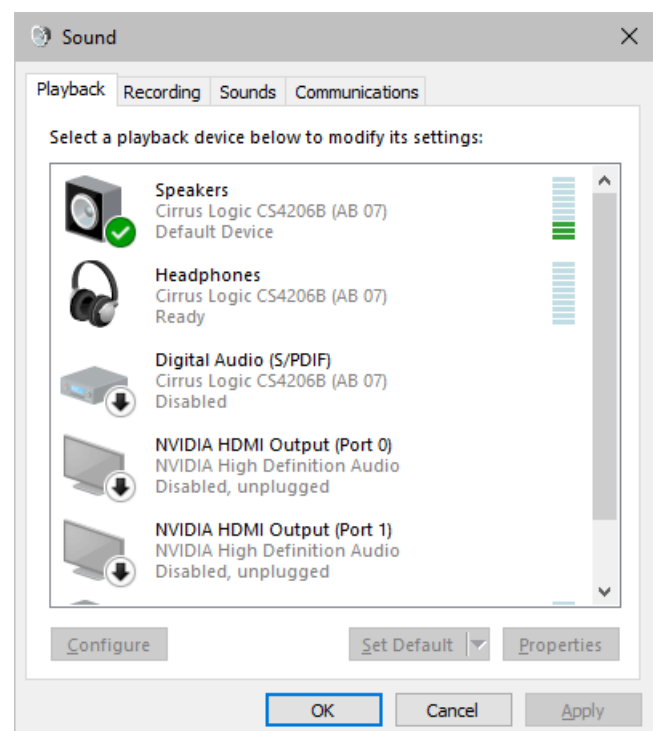
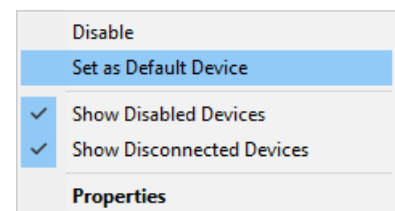
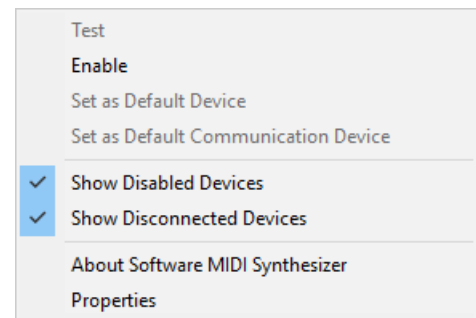
- A new window will open.
- Select **Playback**



- Call up the context menu by using a right click with your mouse in this window [**Right Mouse Click**].
- Enable **Show Disabled Devices**



- Enable **Show Disconnected Devices**
- Choose your preferred audio-output device [such as **Speakers**]: **Right Mouse Click** on **Speakers** and choose **Enable**
- Or you can use any other playback device.
 - **Right Mouse Click** on the playback device [e.g., Digital Audio] and choose **Enable**
- Afterwards, also click **Set as Default Device** in the context menu.
- Finally, **Speakers** [or any other output device] is activated and correctly set as playback device.
- MADRIX 5 can now send out audio.
- Click **OK**



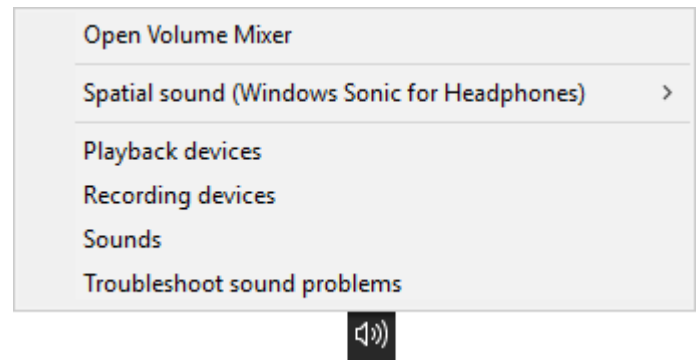
Volume Mixer

Make also sure to set the right settings for the Windows Volume Mixer.

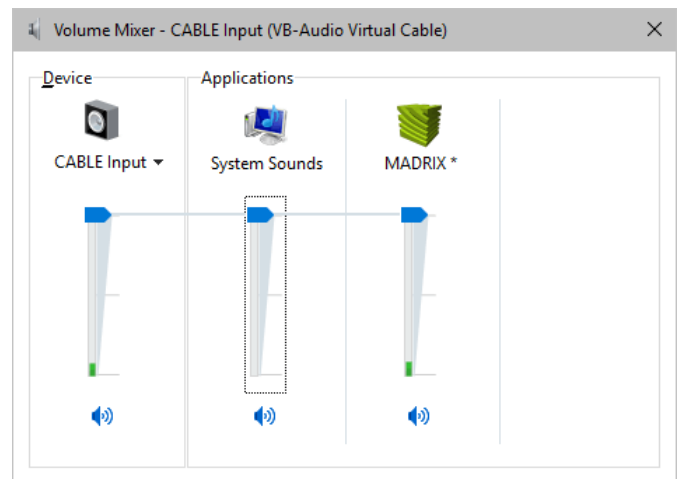
- Find the **Windows Taskbar** and its toolbars.
[It is usually positioned at the bottom of the monitor.]



- **Right Mouse Click** on the Sound symbol
- Choose **Open Volume Mixer**



- Make sure that your recording devices and playback devices have the right sound level.
- Make sure that it is higher than 0, or no sound can be processed by the MADRIX 5 Software.



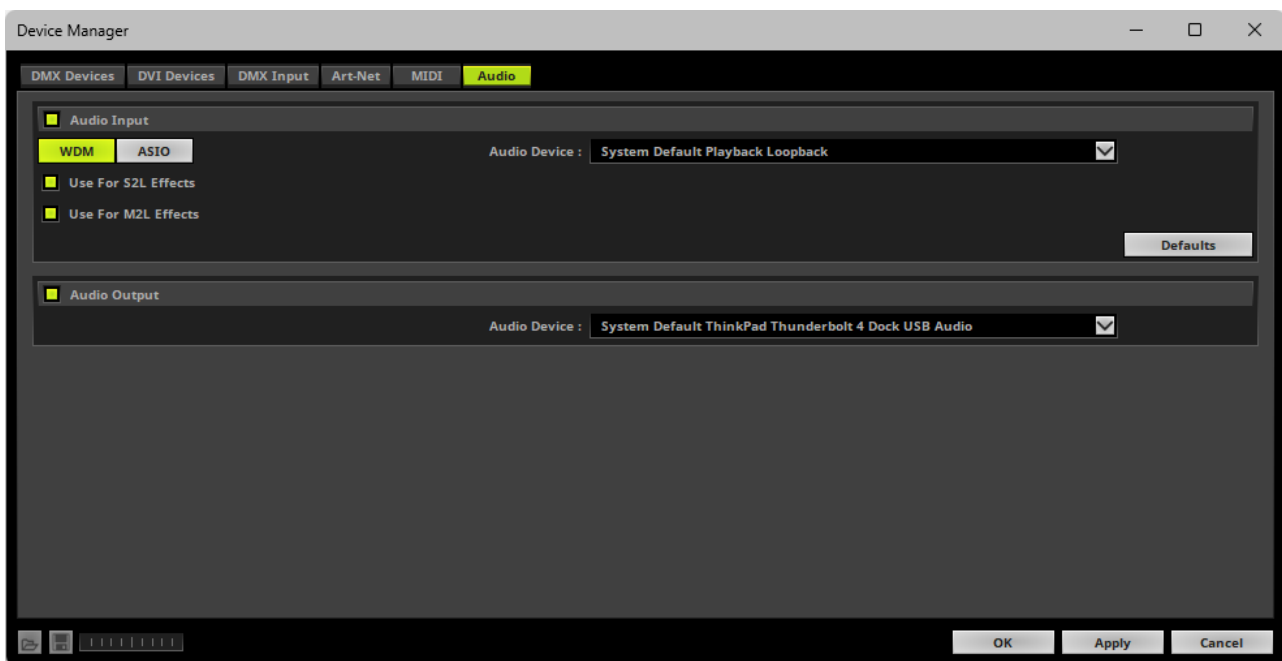
Audio Configuration In The MADRIX 5 Software

- [Overview](#)
- [Audio-Input Configuration With WDM](#)
- [Audio-Input Configuration With ASIO](#)
- [Audio-Output Configuration](#)

- [Audio Performance](#)
- [Volume](#)

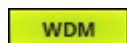
Overview

- Go to the menu **Preferences > Device Manager... > Audio**
[Keyboard shortcut: **F4 > Audio**]



Audio-Input Configuration With WDM

- Enable **Audio Input**



- Enables the standard Windows audio drivers [Windows Driver Model]. It is activated by default.

- **Audio Device** - Shows all available audio-input sources.
 - You can properly assign your device by selecting the device from the drop-down list.

Audio Device :	System Default Playback Loopback	
	System Default	Playback
	System Default	Recording
	ThinkPad Thunderbolt 4 Dock USB Audio	Kopfhörer
	NVIDIA High Definition Audio	ASUS PA329CV
	Realtek(R) Audio	Lautsprecher
	Realtek(R) Audio	Mikrofon
	ThinkPad Thunderbolt 4 Dock USB Audio	Mikrofon

- **Stereo Mix** - Is the accumulation of all channels and often is used.
- **System Default Playback** - Is the device that is selected as default device in the Windows operating system for playback [as explained above]. If the device is changed in Windows, MADRIX will switch devices automatically as well.
- **System Default Recording** - Is the device that is selected as default device in the Windows operating system for recording [as explained above]. If the device is changed in Windows, MADRIX will switch devices automatically as well.
- **Loopback** - Uses output devices as input. As such, you can simply use the sound output of the computer as input source for the MADRIX 5 Software, for example. [**System Default Playback Loopback** is therefore highly recommended as the default option.]
- If you cannot select your preferred audio input device, make sure it is correctly set up in Windows. Learn more

[Sound Recording Device](#)

- **Use For S2L Effects** - Is activated by default. Deactivate this option if incoming audio signals should not be used for MADRIX 5 S2L Effects [not recommended].
- **Use For M2L Effects** - Is activated by default. Deactivate this option if incoming audio signals should not be used for MADRIX 5 M2L Effects [not recommended].

Audio-Input Configuration With ASIO

ASIO [Audio Stream Input/Output] is a widely known audio standard.

Above all, the standard provides low latency; a feature often requested by professionals. When using ASIO, the MADRIX 5 audio analysis will be faster and more precise. While the WDM drivers often provide 100 FPS, even higher sampling rates are possible with ASIO.

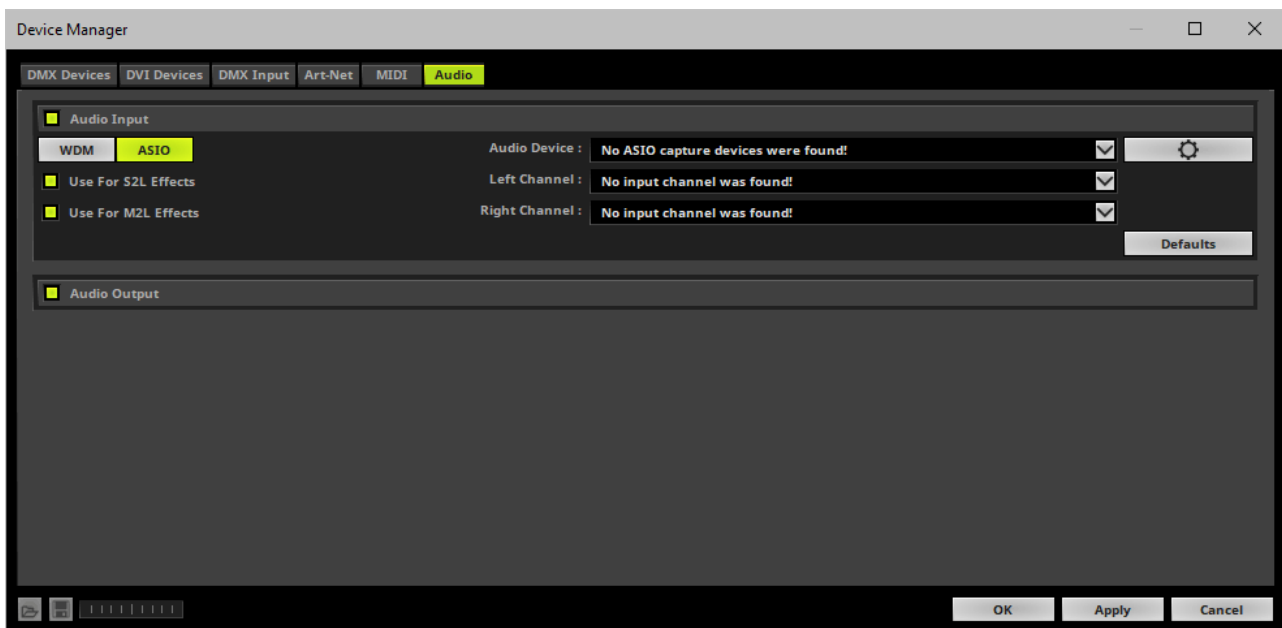
ASIO is a trademark and software of Steinberg Media Technologies GmbH.



- **Before using ASIO with MADRIX 5, please make sure that the ASIO drivers are installed on your computer. If the drivers are not installed, MADRIX 5 will not be able to find the ASIO audio hardware.**
 - **It is recommended to connect external ASIO hardware [a USB sound card, for example] directly to a USB controller of your PC. It is not recommended to use a USB hub or the front-USB of your computer.**
 - **Use USB 2.0.**
-
- Enable **Audio Input**



- Enables the ASIO audio drivers.



Configure the following settings:

- **Audio Device** - Select your interface or sound card in this drop-down list.
- **Left Channel** - Select the appropriate device for the left audio channel.
 - If you are seeing the message **No input channel was found!** [like shown in the screenshot above], please connect your ASIO device.
- **Right Channel** - Select the appropriate device for the right audio channel.
 - If you are seeing the message **No input channel was found!** [like shown in the screenshot above], please connect your ASIO device.
- **Use For S2L Effects** - Is activated by default. Deactivate this option if incoming audio signals should not be used for MADRIX 5 S2L Effects [not recommended].
- **Use For M2L Effects** - Is activated by default. Deactivate this option if incoming audio signals should not be used for MADRIX 5 M2L Effects [not recommended].



Will let you configure your ASIO device further if advanced settings are available. Usually, the ASIO drivers that come with your interface will be launched. Make sure that your ASIO hardware is connected. Or else, no configuration window may be launched.

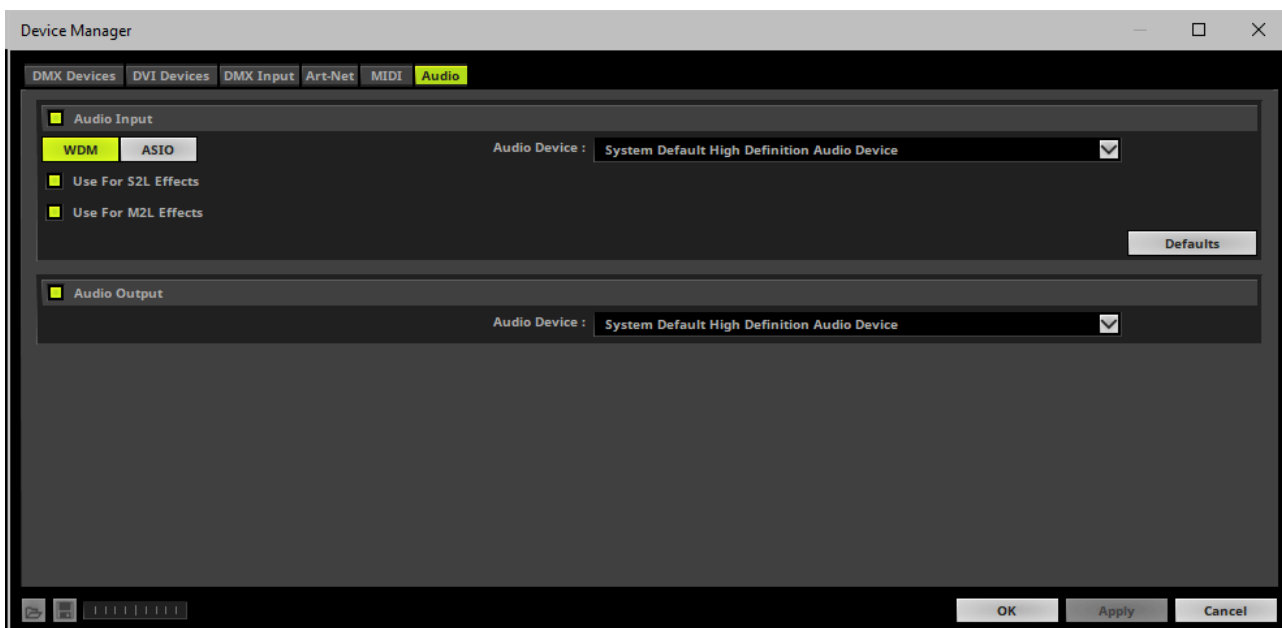
- In this configuration window you can set various settings. The music analysis will be more precise if the latency / amount of samples is as low as possible. Often, this setting is called 'Buffersize'. You can achieve milliseconds

with ASIO. 1000 frames represent 1 ms. 500 frames represent 2 ms. 250 frames represent 4 ms, and so on. You will be able to see the number of frames that is captured in the Task Watcher.

- Click **Apply** to save the settings.

Audio-Output Configuration

- Enable **Audio Output**



- **Audio Device** - Shows all available audio output devices.
 - You can properly assign your devices by selecting the device from the drop-down list.
 - **System Default** is the device that is selected as default device in the Windows operating system [as explained above]. If the device is changed in Windows, MADRIX will switch devices automatically as well.
 - If you cannot select your preferred audio output device, make sure it is correctly set up in Windows. Learn more [Sound Playback Device](#)

Audio Performance

The results of the audio analysis are mainly influenced by the following factors:

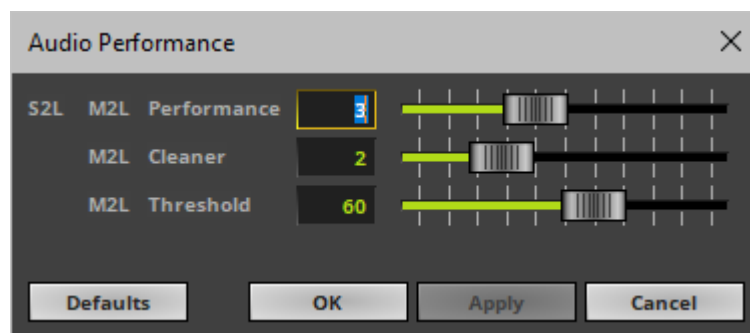
- Computer speed.
- Level of the audio signal.
- Audio Performance settings.

You are able to adjust Audio Performance settings, which are the parameters for the audio analysis.

- Go to the menu **Preferences > Audio Performance...**

[Keyboard shortcut: **Ctrl+Alt+A**]

- A new window will open.



- **S2L M2L Performance** - Defines how much data is available for the audio analysis. The default value is 3.
 - The higher the value, the more data is available and the more precisely especially M2L Effects can be. That also means that the delay increases [in ms]. If the value is too high, it can affect the performance of MADRIX 5/of the computer.
- **M2L Cleaner** - Works only for M2L Effects and harmonic frequencies. It cleans the incoming audio signal for resonances and secondary frequencies to filter out unwanted tones.
 - The higher the value, the more likely a note/tone has in fact occurred in the music. But the higher the value, the more notes will be filtered out as well.
- **M2L Threshold** - Works only for M2L Effects and defines a threshold value.
 - The higher the value, the more likely a certain note/tone has in fact occurred in the music.
 - The lower the value, the more notes will be used for M2L Effects.
 - **Setting up a very low M2L Sensibility value [such as 0] can require a lot of computer performance and might negatively affect the display of S2L Effects and M2L Effects. Increase the value again if you are experiencing any issues.**
- **Defaults** - Restores the default settings.

- **OK** - Applies any changes and closes the window.
- **Apply** - Applies any changes without closing the window. [In this way, this allows you to quickly test different settings. Change the settings, click Apply, and observe the results for S2L and M2L Effects.]
- **Cancel** - Disregards any changes and closes the window.

Different styles of music may require different Audio Performance settings for an optimal display.

Volume

The volume or audio input level as well as audio output level can be controlled on the user interface.

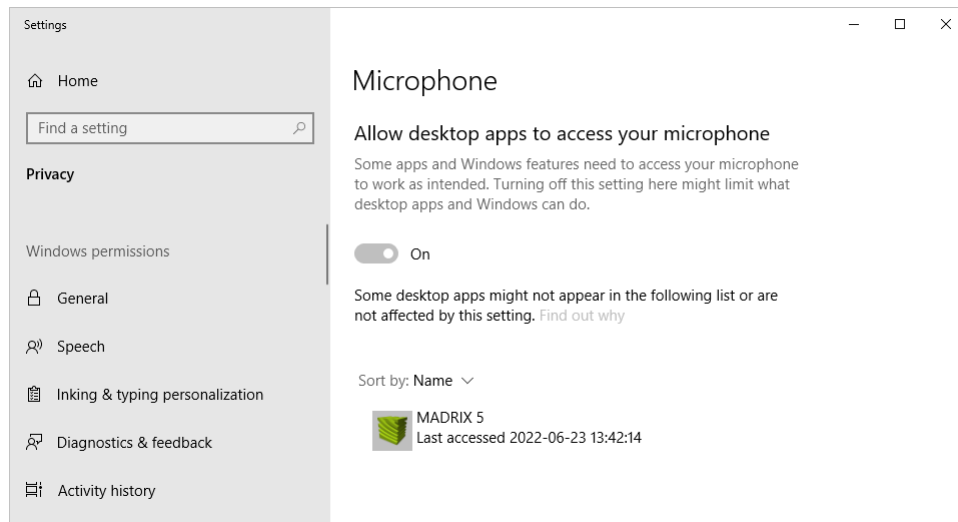
- Learn more » [Main Output / Master / Audio Levels](#)
- Learn more » [SCE Video](#)

Troubleshooting

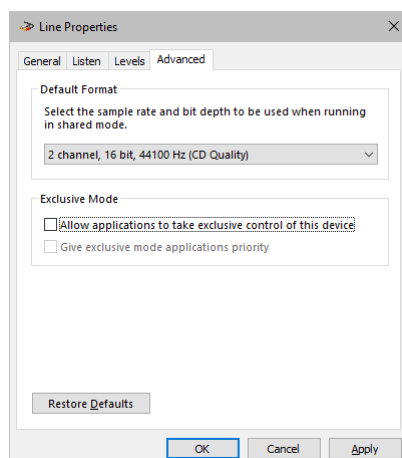
If you are having problems with the audio configuration, try the following:

- In MADRIX 5, select **Preferences > Device Manager... > Audio > Defaults** to restore the default settings. Alternatively, select the correct audio device [e.g., Stereo Mix]. Then, click **Apply**. Click **OK** to close the window.
- Check the Windows audio settings and see if your recording or playback devices are configured correctly.
- Check that the Windows Volume Mixer has the right sound levels and is not set to 0.
- Check the installation of the [latest] drivers of your sound card.
- Check the installation of Microsoft DirectX®.
- Test with a different sound card.
- If you are encountering problems with ASIO [when effects freeze or single frequencies overmodulate], change the latency settings. A higher latency and thus lower capture frame rates can solve the problem.

- You may need to grant permission in the Windows operating system and its Privacy settings to use the microphone.
 - In Windows 10, go to **Start > Settings > Privacy > Microphone > Allow access to the microphone on this device > Change > On** and **Allow desktop apps to access your microphone > On**
 - In Windows 11, go to **Start > Settings > Privacy & security > Microphone > Let apps access your microphone > On** and **Let desktop apps access your microphone > On**



- Make sure that MADRIX 5 is allowed to take control of the audio device.
 - In Windows 10, go to **Start > Windows System > Control Panel > Sound > Recording > Right-Mouse Click on the device > Properties > Advanced** and deactivate **Allow applications to take exclusive control of this device**
 - In Windows 11, go to **Start > Settings > System > Sound > All sound devices > Click on the device > General > Audio > Allow apps and Windows to sue this device for audio > Allow**



2.6 PC Power Management

This topic includes:

- **Why Is Power Management Important?**

- [Usage](#)
- [Activate High Performance](#)
- [How To Change USB Power Settings](#)

Why Is Power Management Important?

We strongly recommend to deactivate all power saving options in Microsoft Windows in order to ensure an interruption-free operation of MADRIX 5.

Microsoft Windows operating systems offer a wide variety of power management options. In most cases, laptops, notebooks, and netbooks benefit from a longer battery life if a good power management is in use. But certain problems might occur because of computer power savings nevertheless:

- After a while your MADRIX KEY cannot be identified by the software anymore.
- Your hardware interfaces are suddenly deactivated.

Usage

Make sure to set up power-saving settings especially if you are using:

- A MADRIX KEY [USB dongle]
- MIDI controllers [via USB]
- USB hardware interfaces [such as MADRIX NEO]
- A notebook/laptop to run MADRIX 5

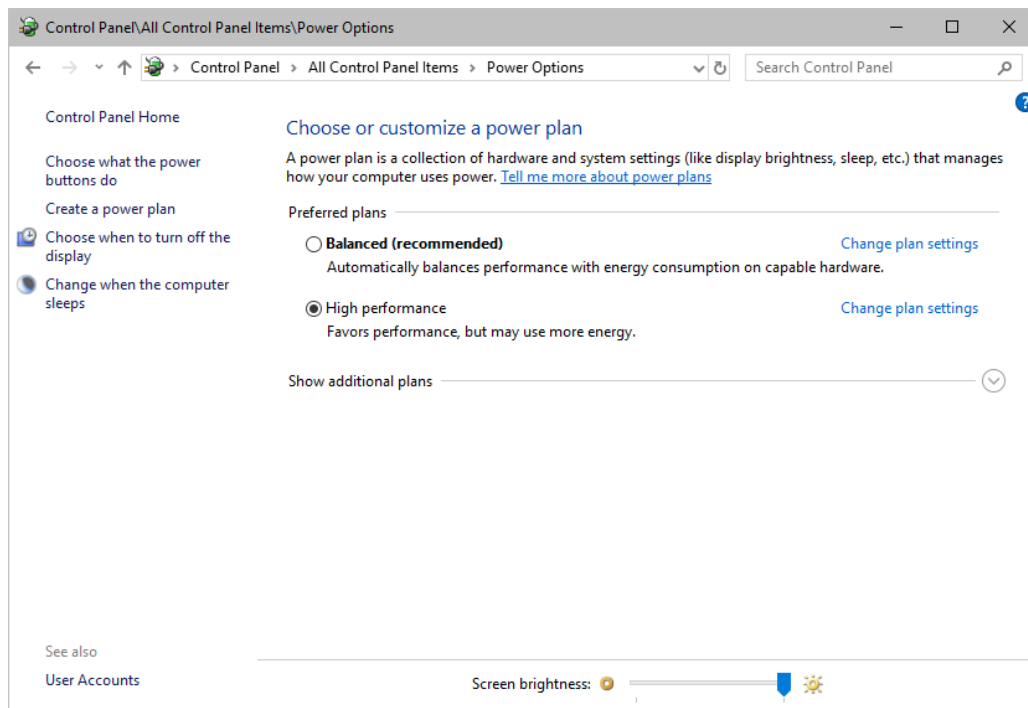
Additionally:

- Make sure to change the USB power settings.
- Especially for notebooks, we recommend to activate the High performance power plan.

Activate High Performance

This setting will make sure that your notebook or laptop will have all its potential performance available for MADRIX 5.

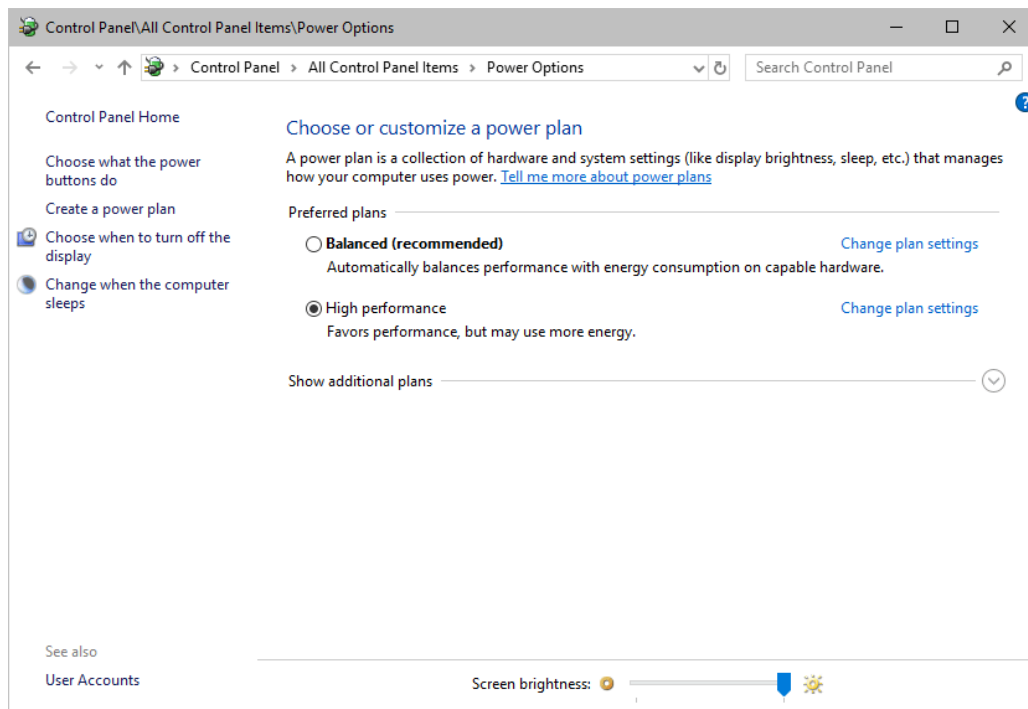
- In Windows 10, select **Start > Windows System > Control Panel > Power Options**, and change the power plan to **High performance**
[You might need to click on **Show additional plans**].
- In Windows 11, select **Start > Settings > System > Power & battery > Power > Power Mode** and change the power plan to **Best performance**



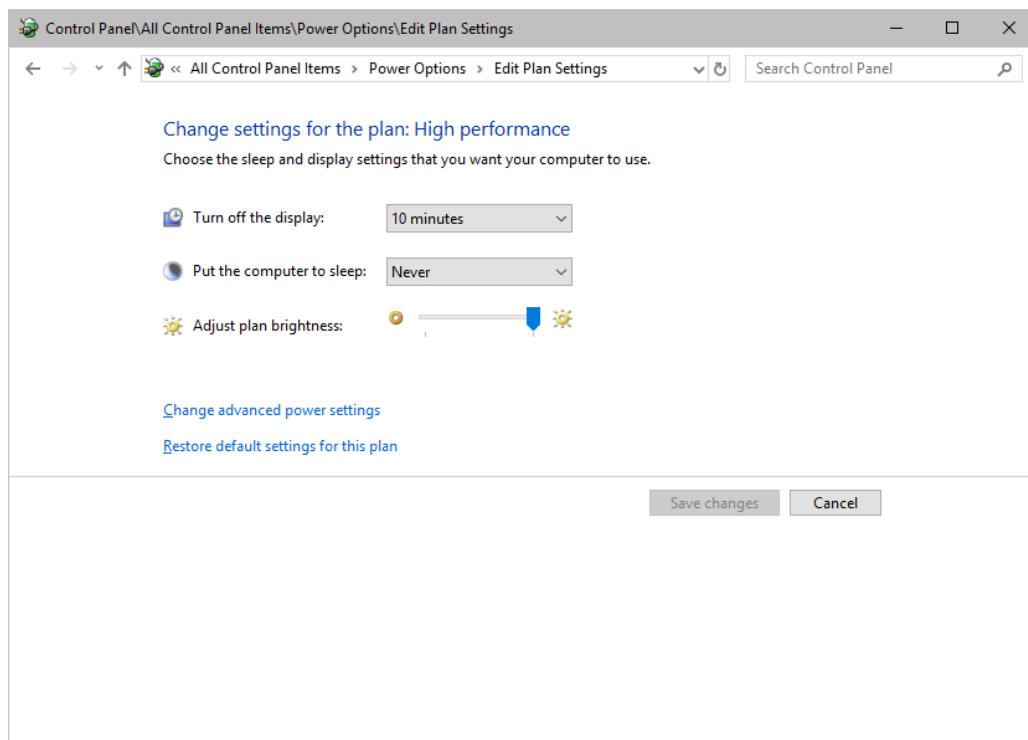
How To Change USB Power Settings

- In Windows 10, select **Start > Windows System > Control Panel > Power Options > Change plan settings**

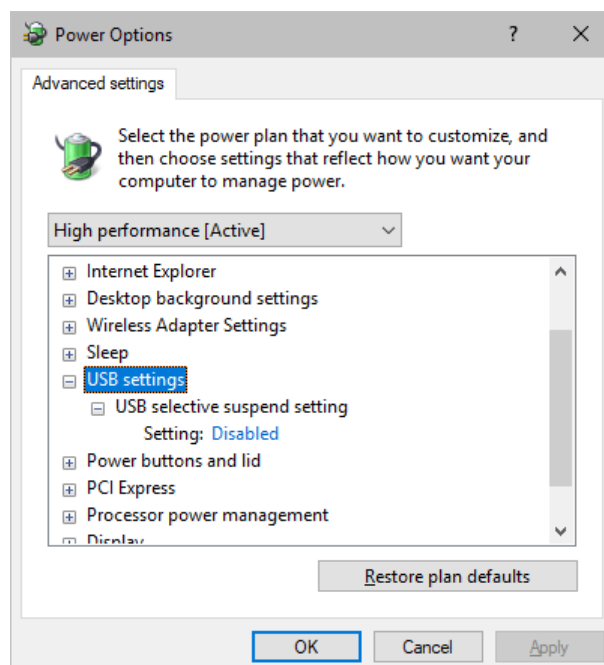
- In Windows 11, select **Start > Control Panel > Hardware and Sound > Power Options > Edit power plan**



- Click **Change advanced power settings**



- Especially the **USB settings** are important. Disable the suspend settings!



- Change any other settings that might interrupt the operation as required.

2.7 Tips [Microsoft Windows / Networks / USB]

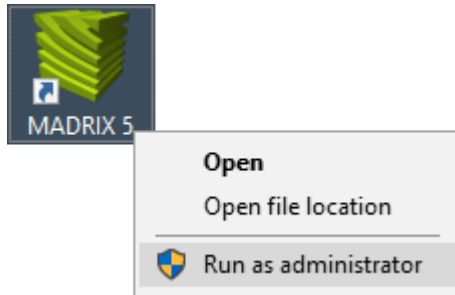
This topic includes:

- [Errors When Saving Files](#)
- [USB](#)
- [The Windows Firewall](#)
- [Working With Ethernet Networks](#)
- [Changing The Priority Of Network Adapters](#)
- [Working With Files](#)
- [Operating System Security](#)
- [Up-To-Date Drivers](#)
- [Windows Restart / Shut Down](#)
- [Monitoring Computer Performance](#)

Error When Saving Files

If you are experiencing issues when trying to save files, there are two solutions to this problem:

- **Right Click > Run as administrator**
 - In order to save files as a user that is logged-in into Windows, you need to have the permissions set by Windows to do so.
 - When you do not have the right permissions, saving files can lead to errors.
 - To circumvent such issues, you can run the MADRIX Software as administrative computer user, the so-called administrator.
 - Perform a **right mouse click** on the **MADRIX.exe** [or a shortcut to the MADRIX 5 Software] and choose **Run as administrator**
 - **Note:** You need to have access to the administrator account (i.e., password). Logging in as administrator grants extensive rights for any computer changes. If you are not familiar with Windows or computers, please seek advice.



▪ **Choose A Different Directory**

- When you are experiencing issues and running as administrator is not an option, choose a different directory on your harddisk to save the files.
- There are locations on your computer/harddisk where you will have the permission to save files. Choose such a location.
- Examples are:

C:\Users\USERNAME\Desktop

C:\Users\USERNAME\Documents

[**USERNAME** specifies your Windows account name.]

USB

Among others, USB is an important way to work with MADRIX 5, MADRIX KEYS, MADRIX hardware interfaces, MIDI controllers, etc. In order to ensure a stable work environment, we highly recommend setting up corresponding USB settings in Windows.

Learn more »[PC Power Management](#)

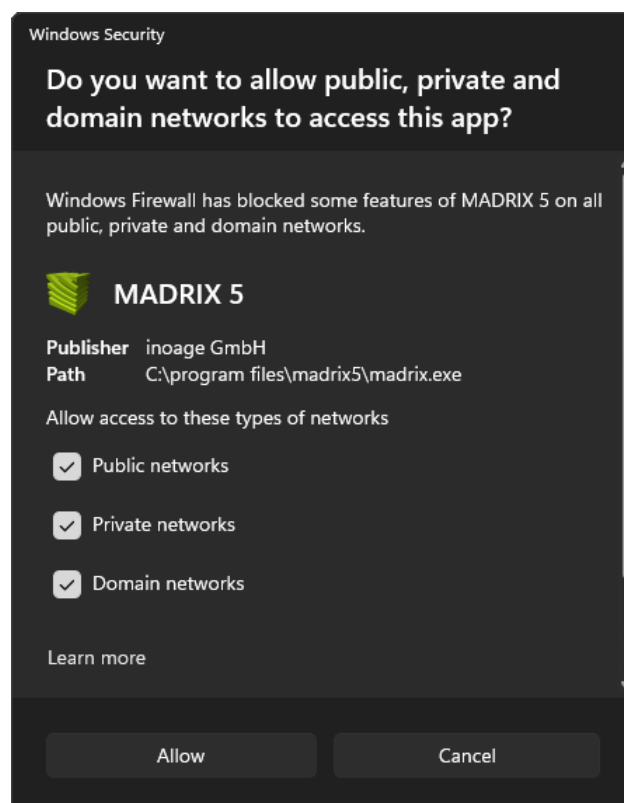
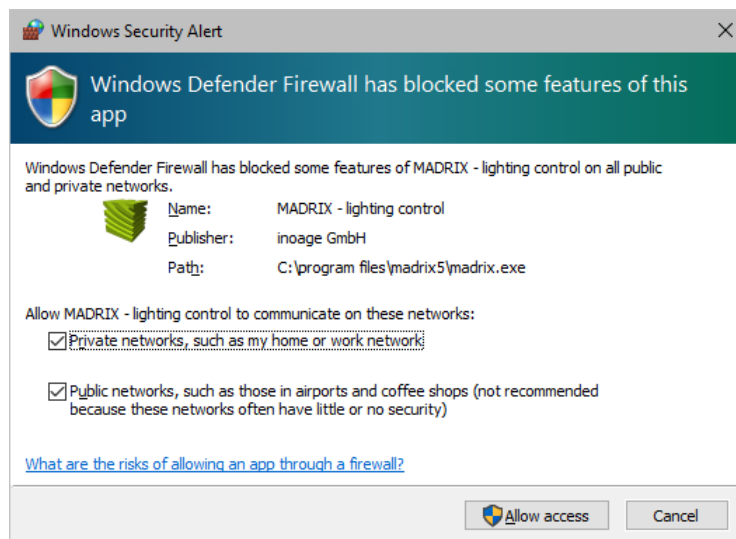
The Windows Firewall

Correct Settings

The primary purpose for the Windows Firewall [or any other firewall] is to block any unwanted incoming data and access. But this can lead to problems, when data that should go through is automatically blocked.

MADRIX 5 will automatically set the correct firewall settings for you during the installation process.

Please follow the steps below if this Windows message appears when you start the MADRIX 5 Software for the first time.



Set the checkmark for

- **Public networks**
- **Private networks**

- **Domain networks**

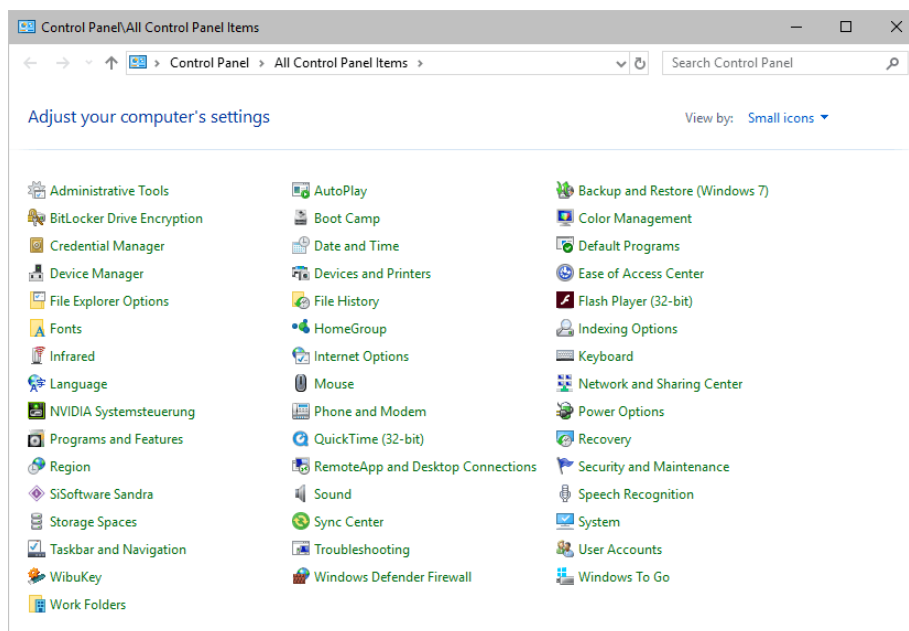
- Click **Allow** to confirm.

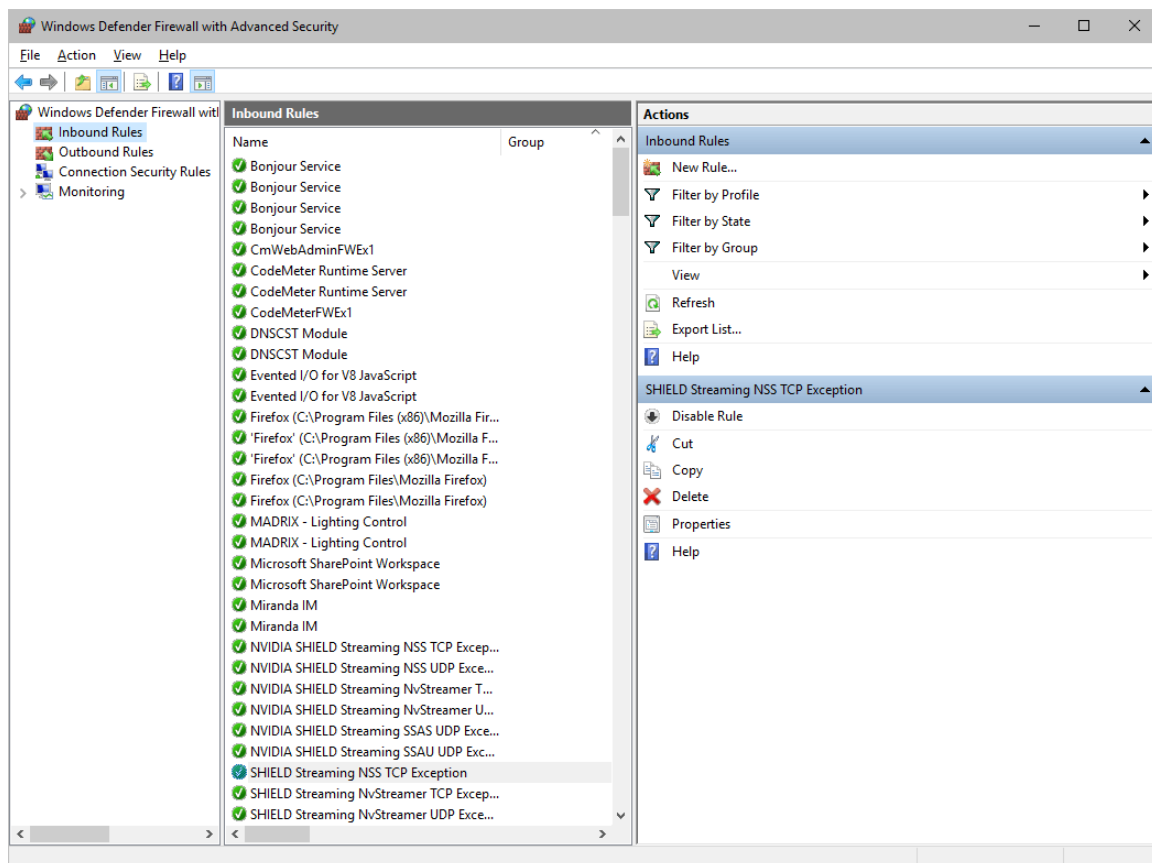
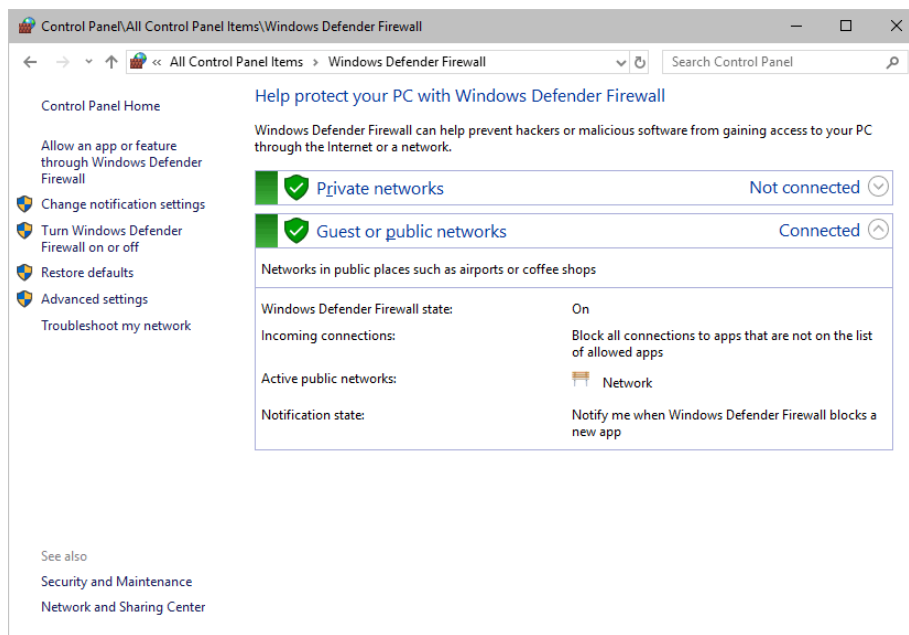
Not selecting all options is likely to cause problems with network communication.

Resetting The Settings

If you have already chosen the wrong options MADRIX 5, you can delete the settings and choose again.

- In Windows 10, go to **Start > Windows System > Control Panel > Windows Defender Firewall > Advanced settings > Inbound Rules**
- In Windows 11, go to **Start > Settings > Privacy & security > Windows Security > Open Windows Security > Firewall & network protection > Advanced settings > Inbound Rules**





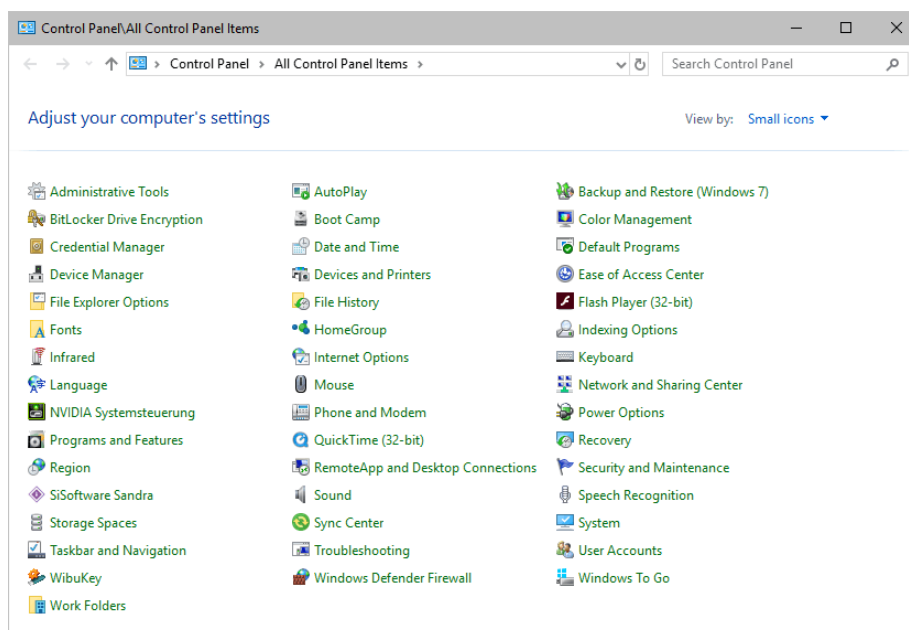
- Select and delete any entries relating to MADRIX 5 [e.g., madrix.exe, MADRIX - music makes the light, MADRIX - LIGHTING CONTROL].
- With your next start of MADRIX 5, select both options as described above.

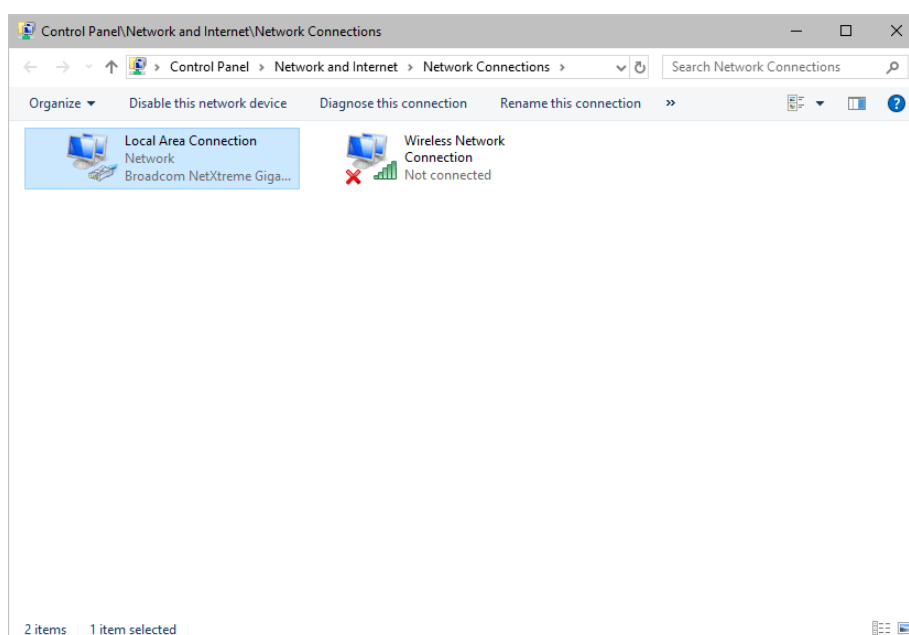
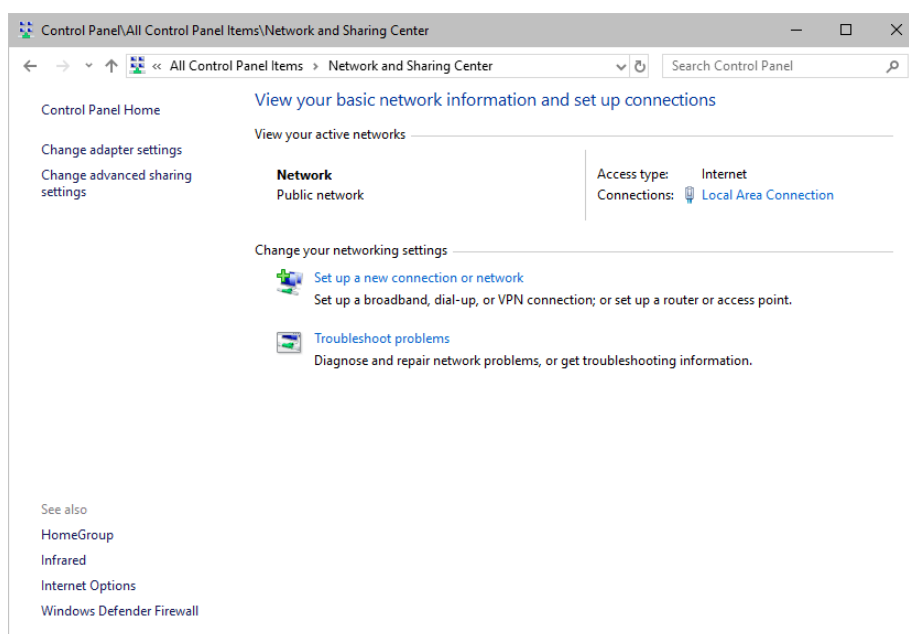
Working With Ethernet Networks

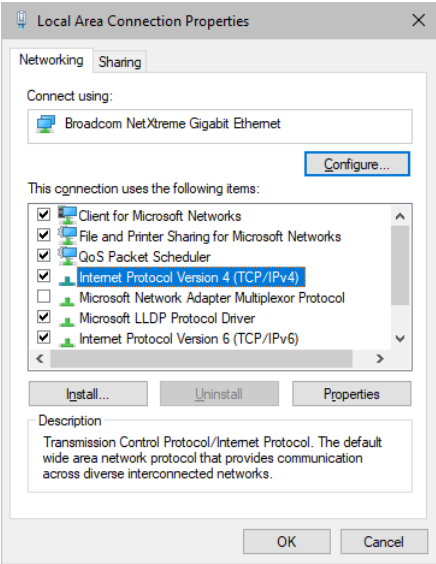
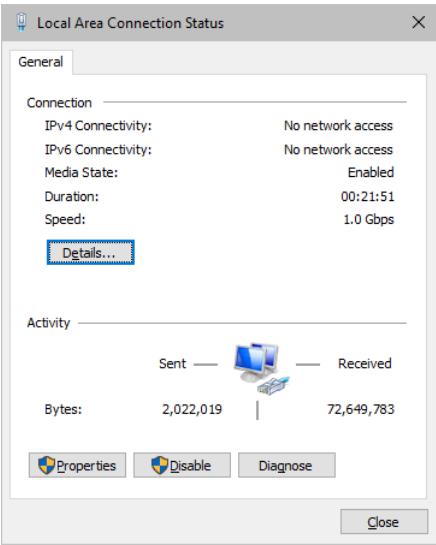
Configuration Of Network Settings

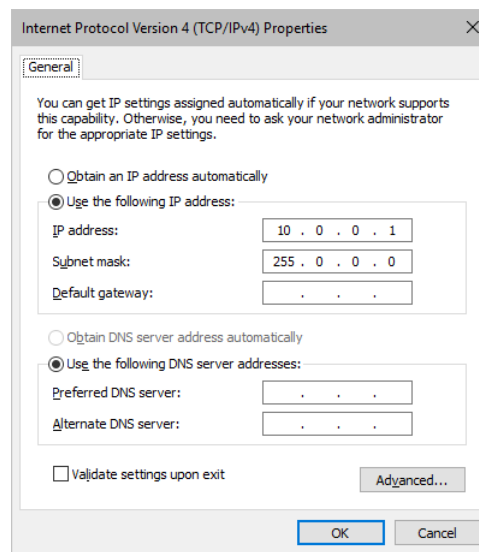
When working with network-based products and MADRIX 5 [for example, Art-Net, KiNET, sACN, etc.], you will have to set up the IP address of your network card in Windows. Learn how to set it up here.

- In Windows 10, go to **Start > Windows System > Control Panel > Network and Sharing Center > Change adapter settings > Local Area Connection > Properties > Internet Protocol Version 4 (TCP/IPv4) > Properties**
- In Windows 11, go to **Start > Control Panel > Network and Internet > Network and Sharing Center > Change adapter settings > Ethernet > Right-Mouse Click > Properties > Internet Protocol Version 4 (TCP/IPv4) > Properties**









Set up the following settings:

- Enable **Use the following IP address:**
- **IP address** - Sets the IP address for this computer and this network card.
 - If you have several network cards in your computer, you can set up an individual address for each network card.
 - An IP address has 4 parts. Enter the complete address as explained in the specific chapter of this user guide [e.g., 10.0.0.1].
 - You only have to enter the numbers.
- **Subnet mask** - Sets up the Subnet mask for this computer.
 - This is an important part of the network settings, just as the IP address.
 - A Subnet mask has 4 parts. Enter the complete address as explained in the specific chapter of this user guide [e.g., 255.0.0.0].
 - You only have to enter the numbers.
- **OK** - Click to save your settings.
 - [Make also sure to close the **Local Area Connection Settings** with **OK** and close the **Local Area Connection Status** window with **Close**.]
- Restart the MADRIX 5 Software if you have changed any network settings!

Learn more below.

Using Several Devices In A Network

Usually, you will use at least 2 devices in a network [for example, 1 MADRIX PC and 1 Art-Net node or 1 MADRIX PC and 1 console]. As explained above, you will need to configure various network settings not only for your MADRIX PC but also for the other devices.

To be able to communicate with each other, all devices have to be in "the same network". That means:

- All devices need to be physically connected with each other [through network equipment, such as hubs or switch and/or network cables]
- All devices need to have compatible network settings

Using several devices in a network does not mean that all should have the same IP address. That will not work!

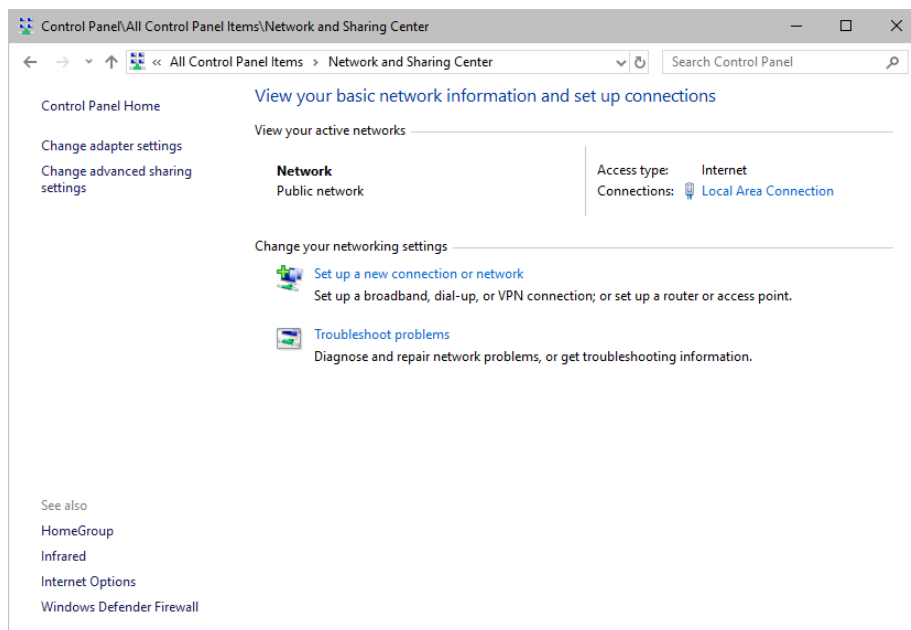
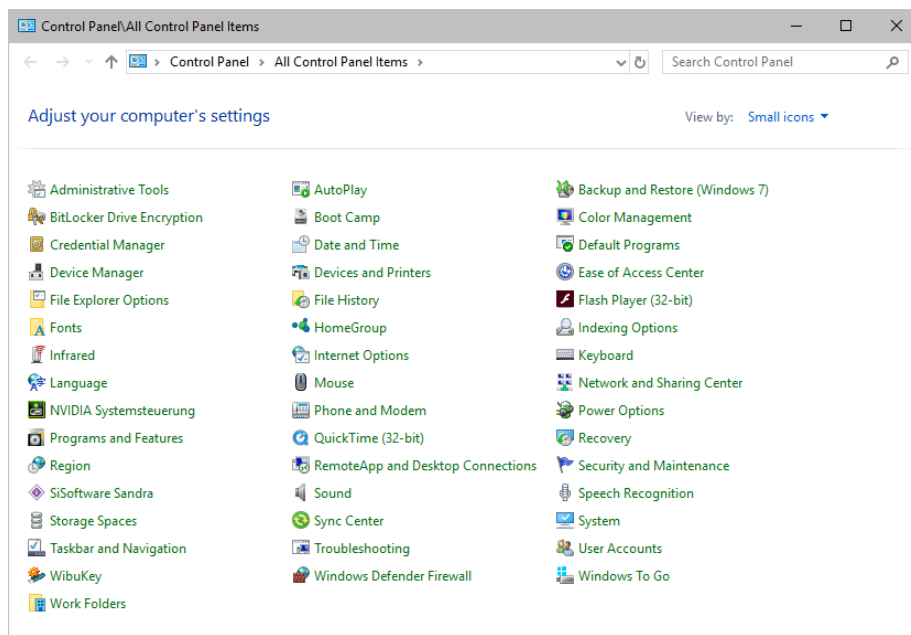
Instead, follow these rules:

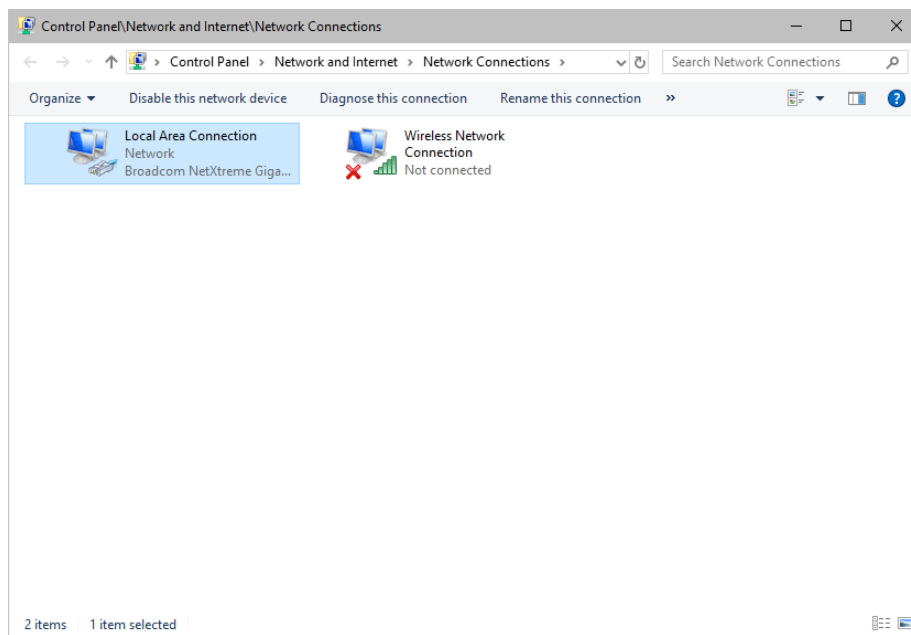
- **Set up all devices within the same IP address range, but never with the same IP address [for example, MADRIX PC: 10.204.226.101 and Art-Net node: 10.204.226.102]**
- **Set up all devices with the same Subnet mask e.g., 255.0.0.0]**
- **If recommended, set up all devices with the same Default gateway [e.g., 10.0.0.1]**

Changing The Priority Of Network Adapters

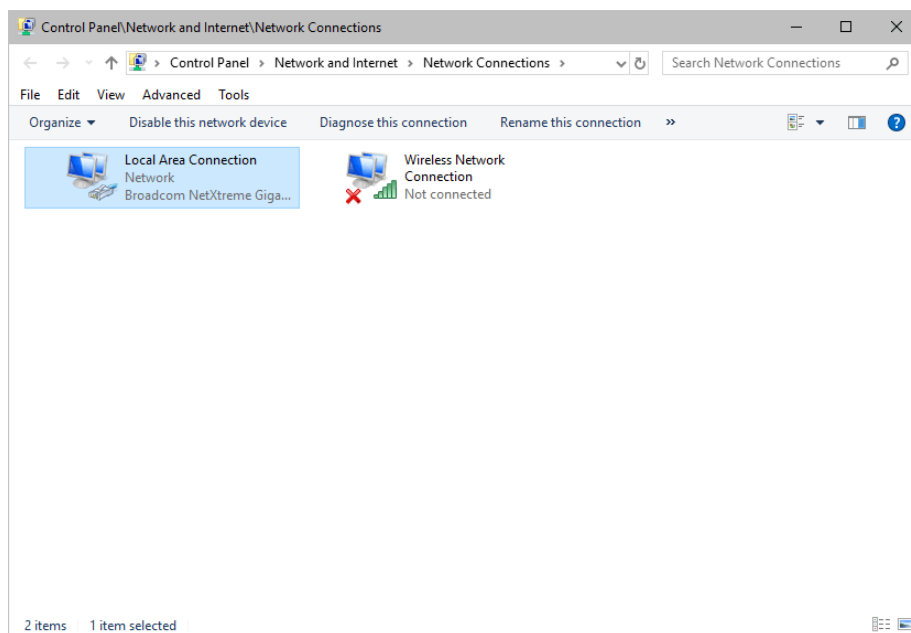
You can change the order in which Windows and MADRIX 5 accesses your network adapters. By changing the order, you can specify which network adapter [network card] is used first and as the main connection.

- **1]** In Windows 10, go to **Start > Windows System > Control Panel > Network and Sharing Center > Change adapter settings**

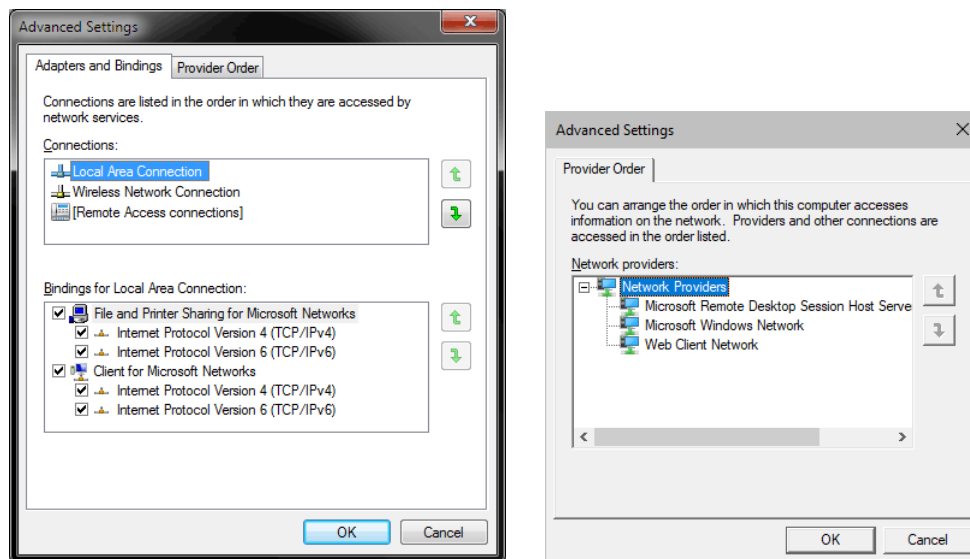




- **2]** Press **Alt** on your keyboard.
 - A menu appears at the top, which is otherwise hidden.



- **3]** Go to **Advanced > Advanced Settings...**
 - A new window opens.



- **4]** Select your preferred network connection[s] in the list of **Connections:**
- **5]** Change the order by clicking on the **green up and down arrow buttons** on the right hand side.
 - The connection which is listed on top, is the first and prioritized adapter.
- **6]** Click OK to confirm.
- **7]** Restart your computer.

Working With Files

When working with computers in general, you should be aware that any digital data is sensitive and prone to failure and hardware errors.

We recommend

- to save regularly when creating a show in MADRIX 5.
- to make backup copies of your show files from time to time [MADRIX 5 Setup files]
- to make backup copies to different or external storage mediums [e.g., USB stick/thumbdrive].

Operating System Security

It is recommended

- to keep Windows up-to-date by installing security updates using **Windows Update**
- to use a virus detection software when working with files from external sources.

Up-To-Date Drivers

Please always keep all component drivers up to date by installing the latest available driver. Among others, this may include drivers for:

- Processor
- Graphics Card
- USB
- Capture Card
- Sound/Audio Card
- Video Codecs

Windows Restart / Shut Down

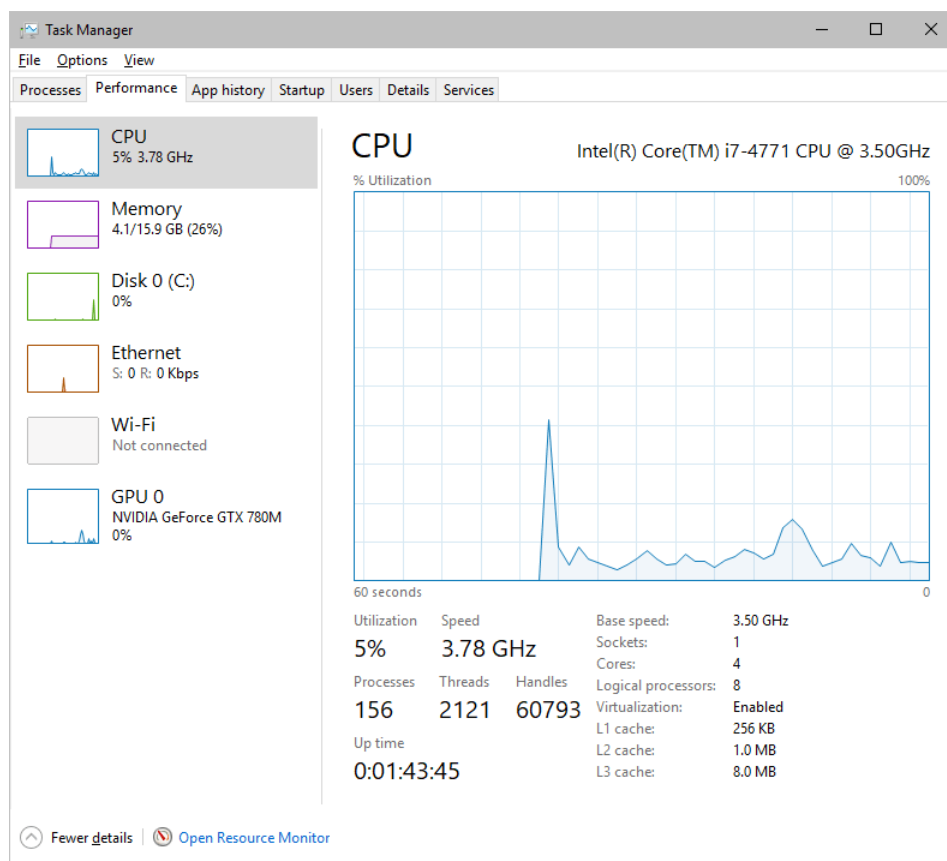
According to the requirements of Windows, MADRIX 5 will behave in the following way:

- MADRIX 5 will be closed instantly, when you trigger a Restart or Shut Down of Windows.
- If you have not saved any changes yet, you may be provided the chance and a short time frame [30 seconds] to react and save your progress before the MADRIX 5 Software is forcefully closed by Windows itself.
- **Make sure to save your files before executing a Restart or Shut Down!**

Monitoring Computer Performance

Windows allows you to monitor the overall performance of your computer.

- Press **Ctrl + Alt + Del** and choose **Start Task Manager**
[German shortcut: Strg + Alt + Entf]
- A new window opens [Task Manager].
- Go to **Performance**



- You can now monitor the **CPU Usage** as well as the **Memory** usage.
- MADRIX 5 has its own monitoring tools.
Learn more » [Tools](#)

2.8 Using The Mouse

This topic includes:

- [Overview](#)

Overview

The mouse is the main input device to work with a software like MADRIX 5. In this topic various general functionalities are provided as an overview.

Deviating functionality is explained throughout this manual when necessary. Some controls on the user interface can support several of the functionalities described below.

Left Mouse Click

- Click once on the left mouse button to perform various actions:

Selection - Selects a button, fader, list item, text, number, on the user interface.

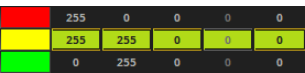
Open Window - Opens a window that grants access to another part of the software.

[A small, black square will be shown as overlay on top of the control in the upper left corner if you hover with your mouse of the button.]

Show Selection Menu - Opens a submenu for you to choose and select a different item from the provided options.

[Two small, black lines will be shown as overlay on top of the control in the upper left corner if you hover with your mouse of the button.]

Examples



	255	0	0	0	0
	255	255	0	0	0
	0	255	0	0	0



Left Mouse Click

- Click once on the left mouse button to perform various actions:

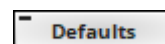
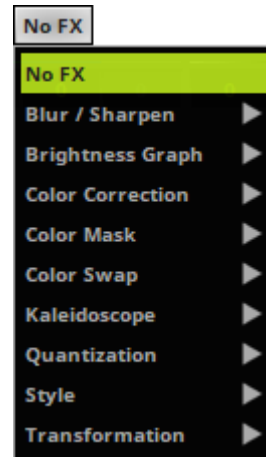
[Requires a right-mouse click if the overlay is shown on top of the control in the upper right corner.]

Activate / Deactivate - Activates or deactivates a button or check box in order to enable or disable the corresponding functionality.

Action - Activates a button once to perform a specific action.

[A black line will be shown as overlay on top of the control in the upper left corner if you hover with your mouse of the button.]

Examples



Left Mouse Click And Hold

- Click once on the left mouse button, continue to hold the button, and finally release the mouse button to perform various actions:

Move - Moves a control, such as a fader, to a different position in order to set a different value.

Increase / Decrease - Select a number in an input field and move the mouse up or down while

Examples



Left Mouse Click And Hold

- Click once on the left mouse button, continue to hold the button, and finally release the mouse button to perform various actions:

continuing to hold the left mouse button in order to increase or decrease the selected value.

Show Control - Shows the full control, such as a vertical slider or color control, for you to set a different value.

[A visual representation will be shown as overlay on top of the control.]

Examples

Activate Temporarily - Activates a specific functionality only as long as you continue to hold the mouse button.



Drag And Drop - Click with the left mouse and hold. A small + appears after a short while. Continue to hold and move your mouse to the same kind of control. Release the mouse button to paste a copy onto the other control.



Use the keyboard buttons **Ctrl** [for copying] or **Shift** [for moving] in addition to remove the wait time to immediately perform the drag and drop.

Left Mouse Double-Click

- Quickly click twice on the left mouse button to perform various actions:

Restore Default Value - Double-click on a control, such as a horizontal fader, to restore the default value.

Examples

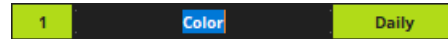
Left Mouse Double-Click

- Quickly click twice on the left mouse button to perform various actions:

Edit Value - Allows you to edit an item in a list.

Activate Permanently - Double-click on a control, such as a button, to activate the functionality until you click on the control again to deactivate it.

Examples



Right Mouse Click

- Click once on the right mouse button to perform various actions:

Context Menu - Shows the corresponding context menu and hence allows you to perform further actions.

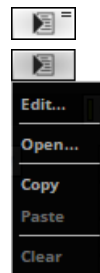
[Two small, black lines will be shown as overlay on top of the control in the upper right corner if you hover with your mouse of the button.]

[Requires a left-mouse click if the overlay is shown on top of the control in the upper left corner.]

Edit Value - Allows you to edit an item in a list or multiple items when multiple items have been selected first.

Restore Default Value - Right click on a control, such as a vertical fader, to restore the default value.

Examples



Mouse Wheel [Scrolling]

- Use the mouse wheel on a currently selected vertical or horizontal slider for scrolling, thereby increasing or decreasing the corresponding value.
- Use the following keyboard modifiers to change the granularity of the value changes:

Shift + Ctrl + Alt + Mouse Wheel = Factor 0.01x

Ctrl + Alt + Mouse Wheel = Factor 0.1x

Ctrl + Mouse Wheel = Factor 10x

Shift + Ctrl + Mouse Wheel = Factor 100x

Example:

Shift + Ctrl + Alt + Mouse Wheel = +/- 1

Ctrl + Alt + Mouse Wheel = +/- 4

The default BPM parameter changes = +/- 40

Ctrl + Mouse Wheel = +/- 400

Shift + Ctrl + Mouse Wheel = +/- 4000

Examples

Mouse Hovering

- Use the mouse pointer to hover over controls of the software's user interface in order to show tooltips for this control.
 - Tooltips provide more information and details about the functionality of the control [such as, faders and buttons].
 - The majority of user-interface controls are equipped with a helpful tooltip.
 - Even if a control is currently deactivated, a tooltip will be shown if available.

Examples



overrides the master to turn off the main output



opens the Deinterlacing Mode Selection

2.9 Tips [Workflow]

This topic includes:

- [Windows Taskbar](#)
- [On-Screen Keyboard](#)

Windows Taskbar

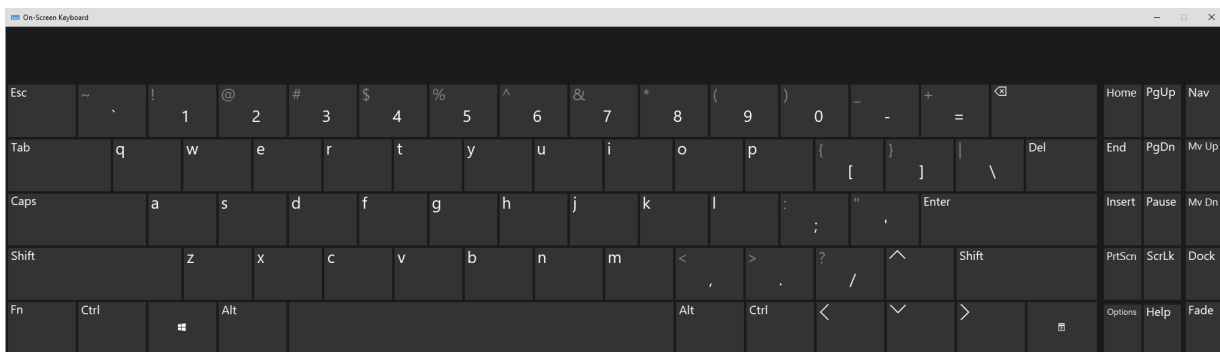
If do not wish to use the integrated full-screen mode of the software [[»Full-Screen Mode](#)], you can still maximize the screen size that is available to you.

- In Windows 10/11, **Right Mouse Click** on the Windows Taskbar > **Taskbar settings**
- Or go to **Start > Settings > Personalization > Taskbar**
- Set **Automatically hide the taskbar in desktop mode** to **On**
- Set **Use small taskbar buttons** to **On**

On-Screen Keyboard

If you are missing a physical keyboard on your computer, if you currently cannot reach it, or if it is not accessible to you in any other way, you can choose to use the on-screen keyboard provided by the Windows operating system.

- In Windows 10, go to **Start > Windows Ease of Access > On-Screen Keyboard**
- In Windows 11, go to **Start > Settings > Accessibility > Keyboard > On-screen keyboard > On**



2.10 Examples [Samples]

This topic includes:

- [Installation](#)
- [More Information](#)

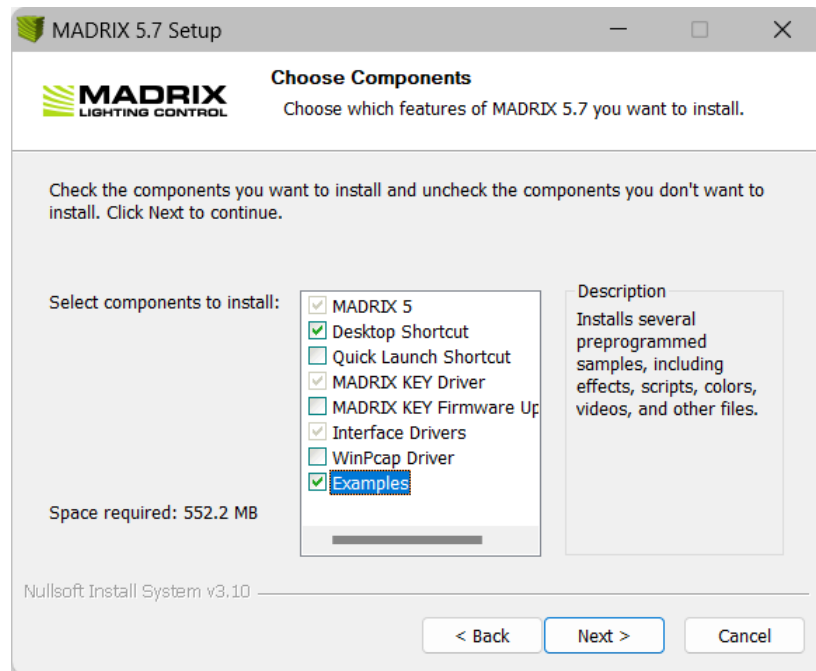
Installation

During the MADRIX 5 installation process, you can choose to install various examples. These samples include:

- Color Tables,
- Scripts,
- Setups,
- Storage Places [Effects],

- And video files in *.mrec file format.

During the setup, choose **Examples** from the list of components.



After the installation, you can find the examples on your hard disk.

- Use the Windows Start Menu: **Start [Windows Logo] > All apps > MADRIX 5 > MADRIX 5 Examples**
- Navigate to C:\Users\Public\Public Documents\MADRIX5 Samples\

More Information

MADRIX 5 uses a variety of different kinds of files.

Learn more » [File Types](#)

2.11 2D Or 3D [X, Y, Z]

This topic includes:

- [Introduction](#)
- [Settings](#)
- [2D \[X-Axis And Y-Axis\]](#)
- [3D \[X-Axis, Y-Axis, And Z-Axis\]](#)

Introduction

MADRIX 5 is a versatile and powerful software that can control 2D and/or 3D LED installations.

You can use MADRIX 5

- to map and control pixel by pixel [pixel mapping, 2D].
- to map and control volumetric pixels, i.e. voxels [voxel mapping, 3D].
- to combine both options.

Settings

Virtual LED Matrix

You automatically choose to work with a 2D or 3D project by configuring the virtual LED matrix in the Matrix Generator or Patch Editor.

- If Z is 1, then you are automatically working in 2D.
- If Z higher than 1, then you are automatically working in 3D.

Learn more » [Matrix Generator](#)

Learn more » [Patch Editor](#)

Workflow

In addition, many other parts of the software can work in 2D mode or in 3D mode. For example:

- Previews
- Effects
- Mapping

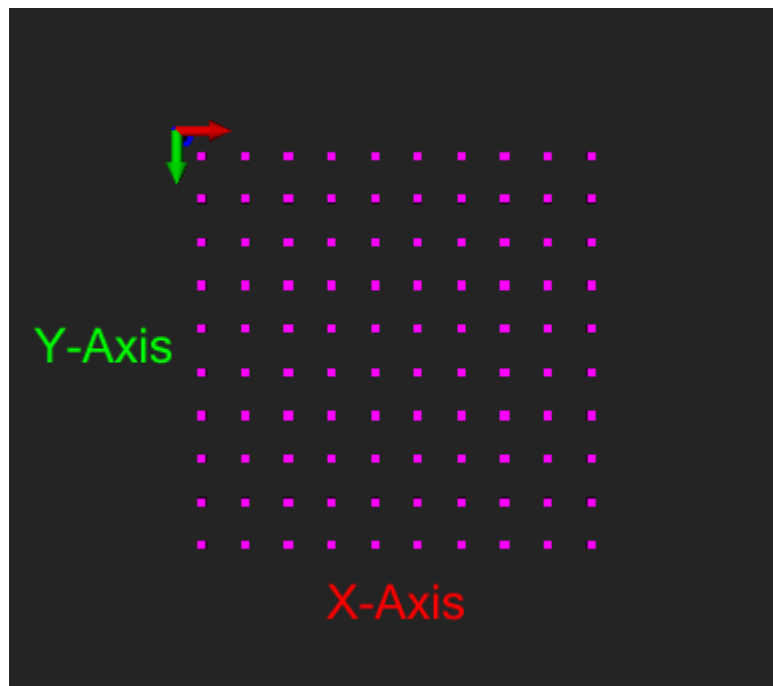
Learn more » [3 Previews](#)

Learn more » [MADRIX Effects](#)

Learn more » [Mapping / Tiling / Rotation](#)

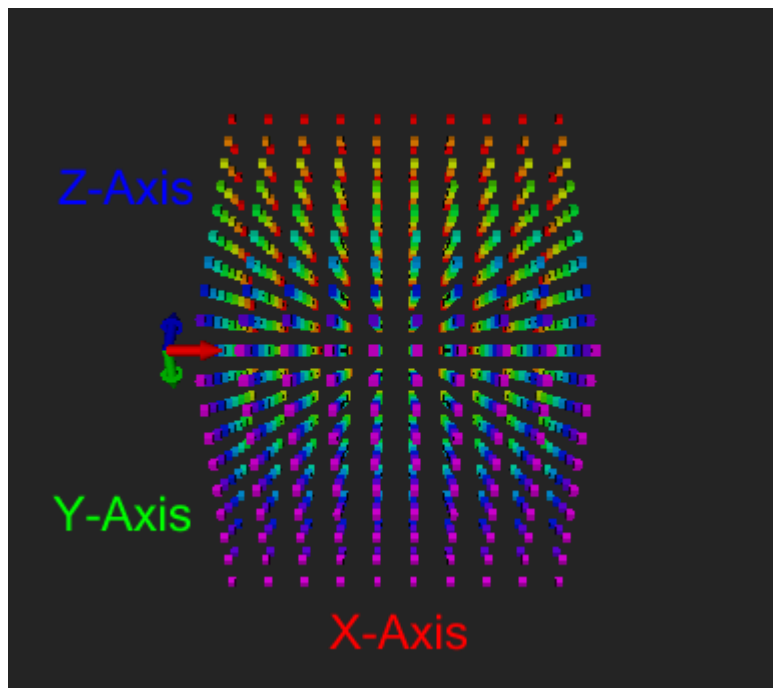
2D [X-Axis And Y-Axis]

- In 2D, only 2 axes are involved:
 - X-Axis [horizontal]
 - Y-Axis [vertical]



3D [X-Axis, Y-Axis, And Z-Axis]

- In 3D, 3 axes are involved:
 - X-Axis [horizontal]
 - Y-Axis [vertical]
 - Z-Axis [depth] [Z-levels]



2.12 Tips And Tricks

This topic includes:

- **MADRIX KEY Serial Number**
- **Message Windows**
- **Tooltips**

MADRIX KEY Serial Number

You can quickly retrieve the serial number for products that activate a MADRIX 5 Software License.



If you want to retrieve the serial number of your MADRIX 5 product [copy and paste], follow these steps:

1] Go to the menu **Help > MADRIX KEY > License...**

[A new window will open.]

2] Left Mouse Double-Click - Quickly click twice with the left mouse button on the serial number in order to automatically select it.

3] Right Mouse Click > Copy - Click once on the right mouse button to call up the context menu and then choose **Copy**.

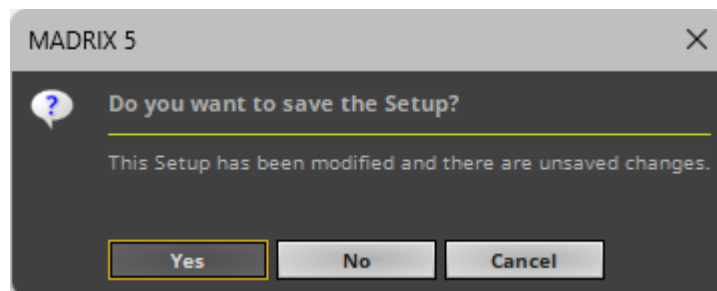
[Keyboard shortcut: **Ctrl+C**]

4] Right Mouse Click > Paste - Click once on the right mouse button to call up the context menu again and then choose **Paste** in order to insert the serial number into a separate document, for example.

[Keyboard shortcut: **Ctrl+V**]

Message Windows

When working with MADRIX 5 , you might see notifications and messages for your information and attention.



If you want to retrieve the content of such a message [copy and paste], you can do the following:

- **Ctrl+C** - Press this key combination on the keyboard in order to copy the text of the message to the clipboard.
- **Ctrl+V** - Pastes the copied text from the clipboard to any text processing software application which you may have opened [e.g., e-mail client, word processor, etc.]

Tooltips

Most of the controls of the MADRIX 5 user interface [e.g., buttons, text and input fields, sliders etc.] can show you details about the functionality of the control. A tooltip will be shown that includes more information.

- **Mouse Hover** - Use the mouse cursor to hover over a specific control; please do not click on the control. One second later, you will see a small window that includes the tooltip and as such more information for you about the control you are looking at.

Learn more » [Using The Mouse](#)



click and hold to freeze the main output or double-click to freeze permanently

//PART 3

User Interface [GUI]

3 User Interface [GUI]

This topic includes:

- [Introduction](#)
- [Overview](#)
- [Topics Of This Chapter](#)

Introduction

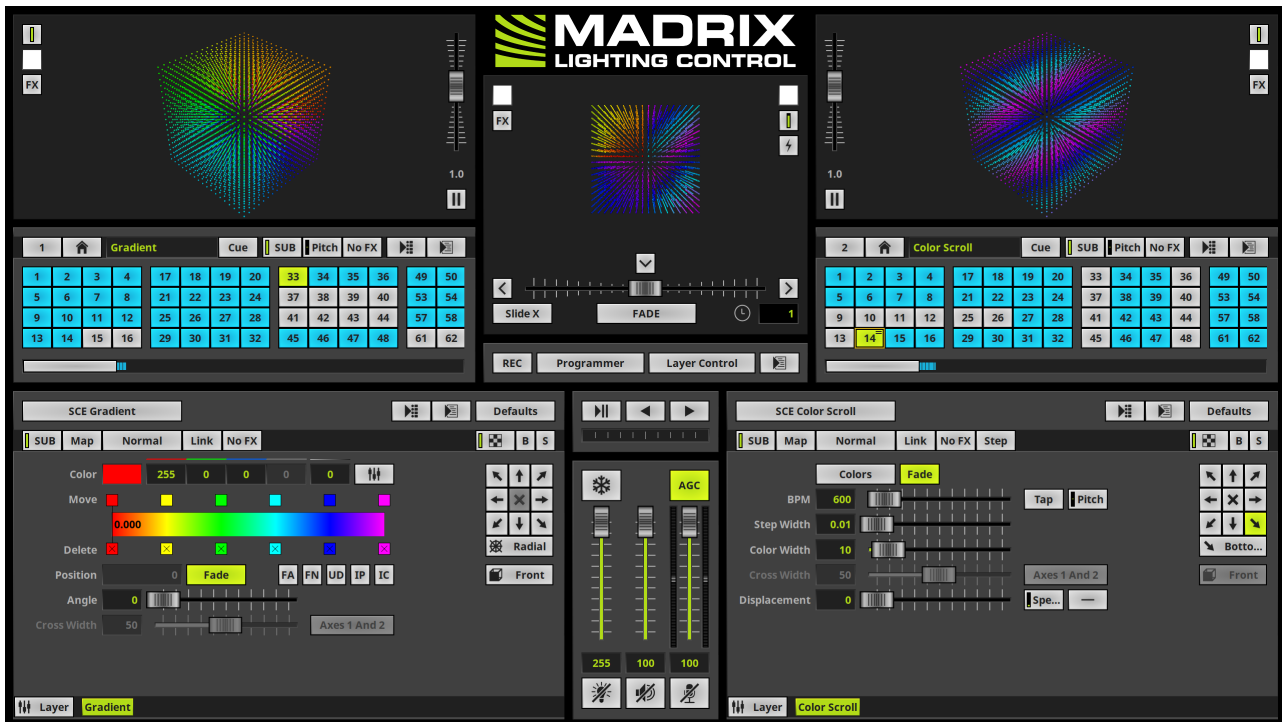
The user interface is what you see of the software.

You will immediately see it when starting MADRIX 5 for the first time. This graphical user interface [abbr.: GUI] provides visual feedback, controls, and information for you.

The GUI is one of the most important parts of MADRIX 5. We designed it with you—the user—in mind and to provide great usability, easy to use controls, and the most efficient ways to operate the software. The following topics will help you get to know the different parts and individual elements of the layout.

Overview

The GUI of MADRIX 5 is divided into different parts. The following chapters will explain each section in more detail.



Topics Of This Chapter

- » [Menu](#)

This topic introduces the menu bar of the software found at the top of the screen.

- » [Operating Modes \[Programmer / Operator\]](#)

MADRIX 5 provides different modes for different parts of the overall workflow.

- » [3 Previews](#)

3 Preview Windows [Preview Deck A, Preview Deck B, and Preview Output] will show you a preview of your lighting effects. They are explained in detail here.

- » [Crossfader](#)

Learn how to use the Crossfader.

- » [Main Output / Master / Audio Levels](#)

What is the purpose of these controls? It is explained in this topic.

- » [Controls \[Deck A / Deck B\]](#)

Quickly set up the global filters and other controls.

- » [Storages](#)

A brief overview will introduce all the controls of Storage Deck A and Storage Deck B.

- » [Storage Places \[256 x 256\]](#)

Learn how to manage and organize your visuals.

- » [Effect Areas \[Deck A / Deck B\]](#)

How can I use Effects? Effect Area Deck A and Effect Area Deck B will be explained here.

- » [Cue List Section](#)

These buttons are used to control the automatic playlist feature of MADRIX 5.

- » [Full-Screen Mode](#)

You can use the full size of your monitor to display the user interface of MADRIX 5.

- » [Touch Screen](#)

An additional touch screen interface is built right into MADRIX 5. Learn more about it in this topic.

3.1 Menu

This topic includes:

- [Introduction](#)
- [Extra Information Displayed](#)
- [File Menu](#)
- [View Menu](#)
- [Preferences Menu](#)
- [Tools Menu](#)
- [Previews Menu](#)
- [Help Menu](#)

Introduction

Several menus are located at the top of the MADRIX 5 window. In addition, there are several sub-menus to choose from.

File View Preferences Tools Previews Language

Help

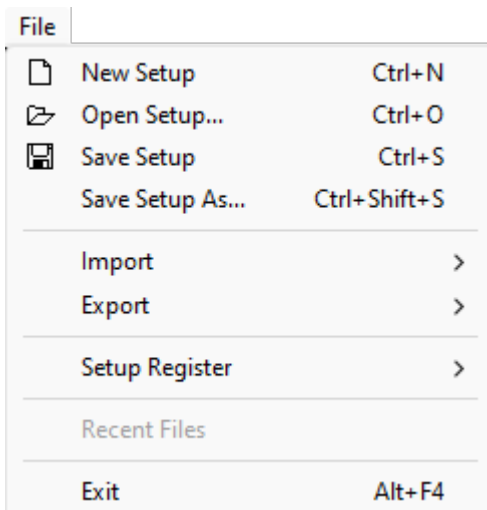
Extra Information Displayed

Ctrl+N - This represents a keyboard shortcut that will perform the action directly rather than using the menu.

... - Indicates that a new window will open on top of the main MADRIX 5 window.

> - Indicates that this entry has sub-entries.

File Menu

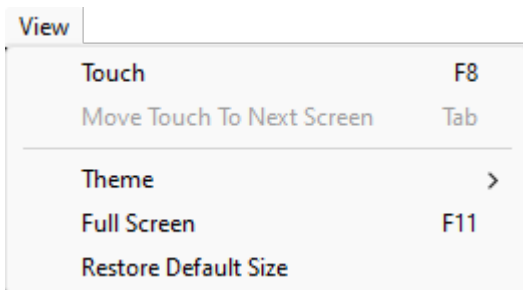


- **New Setup** - Creates a new MADRIX 5 Setup file. This file will include your entire show and certain configurations of the software. A new Setup file is empty.
- **Open Setup...** - Loads a previously saved Setup file [of the file type *.msz or *.msx].

- **Save Setup** - Saves your show settings in an external file [of the file type *.msz or *.msx] in order to preserve them.
- **Save Setup As...** - Saves your Setup file as a separate, duplicate file. And you can choose a different name.
- **Import** - Loads different parts of a show into your currently opened Setup file.
You may load a complete **Storage** [including all of its Storage Places], a single **Storage Place**, a **Patch**, the **Group Control**, **DMX Device Settings**, and **DVI Device Settings**
[These items will be explained throughout this user guide.]
- **Export** - Saves the above described parts of a show into external files.
You may save a **Storage**, a **Storage Place**, a **Patch**, the **Group Control**, **DMX Device Settings**, and **DVI Device Settings**
Choose **Export > Storage Place > All...** to save all occupied Storage Places, all in separate files.
- **Setup Register** - Shows preregistered Setups.
Options... - Opens the Options window for configuration.
Learn more » [Setup Register](#)
- **Recent Files** - Displays Setup files that were used last. Click on an entry to quickly load this Setup file.
- **Exit** - Closes the software.

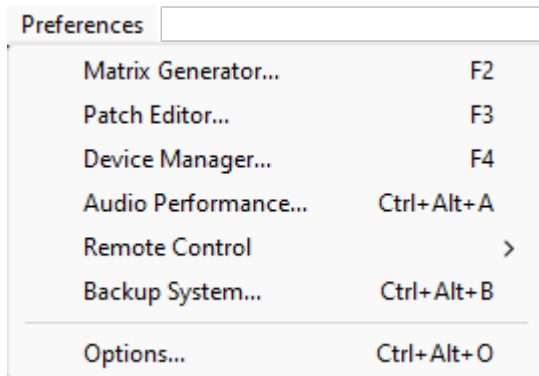
Learn more » [File Types](#)

View Menu



- **Touch...** - Opens the additional touch screen user interface to control MADRIX 5 via a touch screen panel.
Learn more » [Touch Screen](#)
- **Move Touch To Next Screen...** - Relocates the additional touch screen user interface to the next monitor or display [away from the main monitor].
Learn more » [Touch Screen](#)
- **Theme > Dark** - Activates the user interface theme that is darker.
- **Theme > Light** - Activates the user interface theme that is light.
- **Theme > Switch To Next Theme** - Changes away from the currently selected theme to the next theme [either light or dark].
- **Full Screen** - Maximizes the graphical user interface to fit the entire screen of your monitor.
Learn more » [Full Screen Mode](#)
- **Restore Default Size** - Applies the default window size. As such, it resets any changes in size you made to the MADRIX 5 window by moving its borders with the mouse.

Preferences Menu



- **Matrix Generator...** - Setting up your virtual LED matrix is a required step. This tool is the easiest way to do that.
Learn more » [Matrix Generator](#)
- **Patch Editor...** - Is an advanced tool to set up your virtual LED matrix, which is required. The Patch Editor offers much more options than the Matrix Generator.
Learn more » [Patch Editor](#)
- **Device Manager...** - Is the main tool to configure your [hardware] devices.
Learn more » [OUTPUT Settings](#), » [INPUT And Remote Control](#), » [Audio And Sound](#)
- **Audio Performance...** - Offers advanced options for the audio analysis.
Learn more » [Audio And Sound](#)
- **Remote Control...** - Offers different options for controlling MADRIX 5 remotely [incl. HTTP, OSC, DMX, and MIDI].
Learn more » [INPUT And Remote Control](#)
- **Backup System...** - Allows you to set up a fallback solution.
Learn more » [Backup System](#)
- **Options ...** - Allows you to configure various important settings for the software.
Learn more » [Options](#)

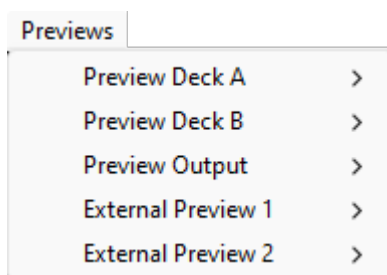
Tools Menu

Tools	
Colors...	Ctrl+Alt+C
Groups...	F9
Cue Lists...	F7
Timelines...	F10
Scheduling...	
DMX Fader Tool...	Ctrl+Alt+F
<hr/>	
Logfile...	F6
Task Watcher...	F5
DMX Watcher...	Ctrl+Alt+D
MIDI Watcher...	Ctrl+Alt+M
<hr/>	
Record Editing...	Ctrl+Alt+R
<hr/>	
Identify	Ctrl+Alt+I

- **Colors...** - Opens the editor to manage Global Colors.
Learn more » [\[Global\] Colors And Intensity](#)
- **Groups...** - Opens the Group Control.
Learn more » [Fixture Groups](#)
- **Cue Lists...** - Opens the Cue List Editor.
Learn more » [Cue List Editor](#)
- **Timelines...** - Opens the Timeline Editor.
Learn more » [Timeline Editor](#)
- **Scheduling...** - Opens the Scheduling features.
Learn more » [Scheduling](#)
- **DMX Fader Tool...** - Allows you to send individual DMX values on top of any other data output.
Learn more » [Tools](#)
- **Logfile...** - Keeps track of all warnings and error messages as well as information about the computer system.
Learn more » [Tools](#)
- **Task Watcher...** - Provides detailed operational information.
Learn more » [Tools](#)

- **DMX Watcher...** - Allows you to monitor any DMX Output or DMX Input.
Learn more » [Tools](#)
- **MIDI Watcher...** - Allows you to monitor incoming MIDI signals.
Learn more » [Tools](#)
- **Record Editing...** - Opens a tool to edit recorded MADRIX Effects.
Learn more » [Recording](#)
- **Identify** - Visibly highlights the user interface as long as it is enabled or via protocol commands for easier visual identification of this MADRIX 5 instance as a device within a system.
Learn more » [Art-Net](#)
Learn more » [RDM](#)

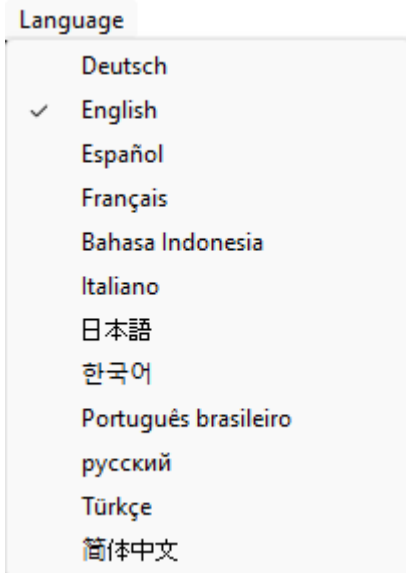
Previews Menu



MADRIX 5 features a number of Preview Windows. These sub-menus give access to their context menus.

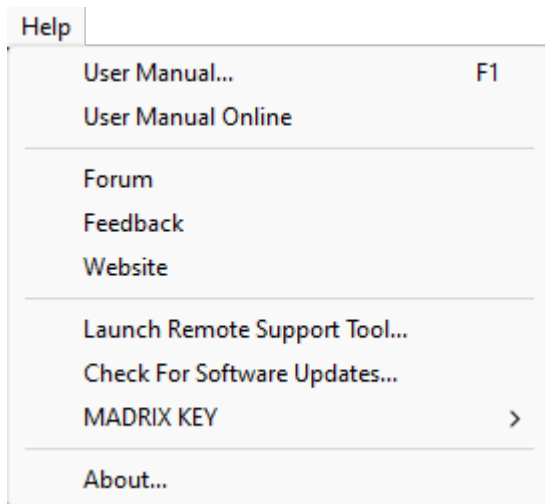
Learn more » [3 Previews](#)

Language Menu



- **Deutsch** - Activates the **German** language for the software user interface.
- **English** - Activates the **English** language for the software user interface.
- **Español** - Activates the **Spanish** language for the software user interface.
- **Français** - Activates the **French** language for the software user interface.
- **Bahasa Indonesia** - Activates the **Indonesian** language for the software user interface.
- **Italiano** - Activates the **Italian** language for the software user interface.
- 日本語 - Activates the **Japanese** language for the software user interface.
- 한국어 - Activates the **Korean** language for the software user interface.
- **Português brasileiro** - Activates the **Brazilian Portuguese** language for the software user interface.
- **русский** - Activates the **Russian** language for the software user interface.
- **Türkçe** - Activates the **Turkish** language for the software user interface.
- 简体中文 - Activates the **Simplified Chinese** language for the software user interface.

Help Menu



- **User Manual...** - Opens this user guide, locally on your computer.
- **User Manual Online** - Opens this user guide online by calling up a website using your default web browser. This requires an internet connection.
- **Forum** - Is an online link that will take you to the MADRIX Online Forum, where users and developers exchange ideas about MADRIX 5. This requires an internet connection.
- **Feedback** - Is an online link that will open your web browser with the MADRIX Contact Form. If you wish, please enter your comments into the form and send it to us. Thank you! This requires an internet connection.
- **Website** - Is an online link for the MADRIX website »www.madrix.com. This requires an internet connection.
- **Launch Remote Support Tool...** - Opens the external support tool provided with MADRIX 5. This requires an internet connection. MADRIX technical support may request that you launch this tool for further assistance.
- **Check For Software Updates...** - Checks online if a software update is available for downloading. This requires an internet connection.
- **MADRIX KEY > Activate MADRIX KEY...** - Allows you activate the MADRIX KEY.
Learn more »[MADRIX KEY \[Activation\]](#)
- **MADRIX KEY > Update MADRIX KEY...** - Allows you to update the MADRIX KEY.
- **MADRIX KEY > Update MADRIX KEY Firmware...** - Allows you to update the firmware of your MADRIX KEY.

Learn more » [MADRIX 5 KEY Firmware Update](#)

Learn more » [MADRIX KEY \[Activation\]](#)

- **License...** - Opens the **About** window to show the MADRIX KEY and its MADRIX 5 Software License.
- **About...** - Provides information about the MADRIX 5 Software, the MADRIX KEY you own, and legal information.

3.2 Operating Modes [Programmer / Operator]

This topic includes:

- [Introduction](#)
- [Programmer](#)
- [Operator](#)
- [Important Notes](#)

Introduction

MADRIX 5 introduces operating modes. There are two modes available. Each mode represents a different workflow, i.e. programming and creating effects and operating the software live.

You can choose the operating mode on the main user interface [below the crossfader]:

- [Programmer](#)
- [Operator](#)



Programmer

This operating mode is the main mode to preprogram your show and create your visuals and effects.

- All changes to the MADRIX 5 Setup file will be communicated as a modification. The MADRIX 5 Software will ask if the Setup file should be saved when exiting the software, for example.
- When working with Storage Places, all changes and modifications to your visuals and effects will be applied when switching away from your last used Storage Place. If you call up this Storage Place again, all of your last changes will be there [the last state will be activated again].
- All tools and features are available to you.

Operator

This operating mode is the main mode to operate the software live.

Due to the nature of this mode, certain features work differently or are not available.

- You may change a number of settings during live operation, but those changes are only temporarily and will not be communicated as changes to the MADRIX 5 Setup file.
- When working with Storage Places, you may change the effect parameters, but these changes will not be applied. If you switch away from your last used Storage Place and call it up again later, the state of the Programmer mode will be there. Any changes in the Operator mode will be discarded.
- You may use live features [such as Submaster, Speed Pitch, Speed Master, FX Filters, etc.], but in general they will also be discarded eventually.
- Many tools and features are not available to you. For example, many of the regular functionality is disabled [such as New, Open, Save, Import, Export, Copy, Cut, Paste, Drag & Drop, Edit, Record].
- You may open a MADRIX 5 Setup file.
- Cue List Editor, Timeline Editor, and Group Control only make playback functionality available, but no edit functionality.
- Global Color Lists and Global Colors can be accessed, but not edited or managed.
- **Note:** If you create a new visual while having Operator mode enabled, you may change back to Programmer mode in order to save your Setup file including the new effect.

Important Notes

- The Operating Mode will be saved in the MADRIX 5 Setup file. You may decide to restore or disregard its state when loading a Setup file.

3.3 Views

This topic includes:

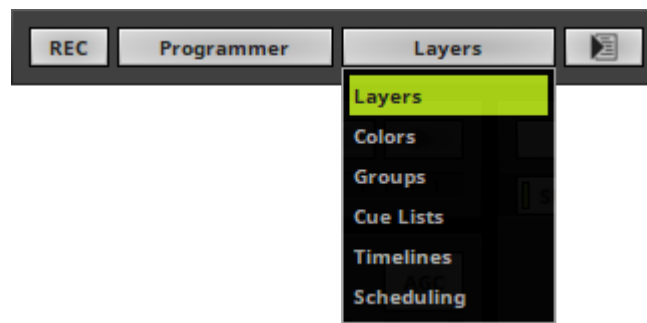
- [Introduction](#)
- [Layers](#)
- [Groups](#)
- [Cue Lists](#)
- [Timelines](#)
- [Scheduling](#)

Introduction

MADRIX 5 offers different views on the main user interface.

You can choose the view on the main user interface [below the crossfader]:

- [Layers](#)
- [Colors](#)
- [Groups](#)
- [Cue Lists](#)
- [Timelines](#)
- [Scheduling](#)



Layers

The Layers view is the main view to create effects and visuals.

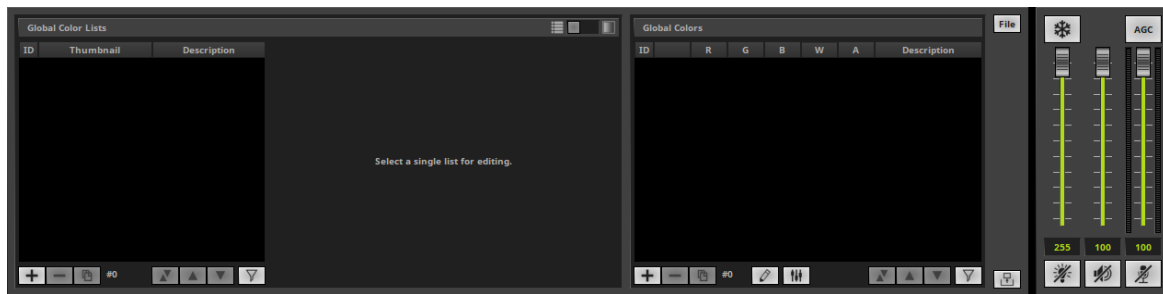
Learn more » [Effect Areas \[Deck A / Deck B\]](#)



Colors

Colors can be set up as Global Colors to be used and referenced in all visuals.

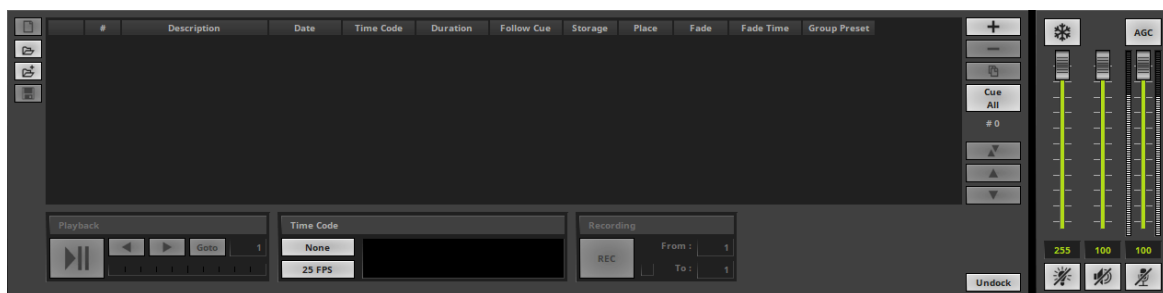
Learn more » [\[Global\] Colors And Intensity](#)



Cue Lists

Cue Lists are automated playlists and based on a scheduler. It offers the possibility to precisely manage the automatic playback of effects.

Learn more » [Cue List Editor](#)



Groups

Fixture groups allow you to organize fixtures that are included in your Patch in clusters and then to control them together as a group.

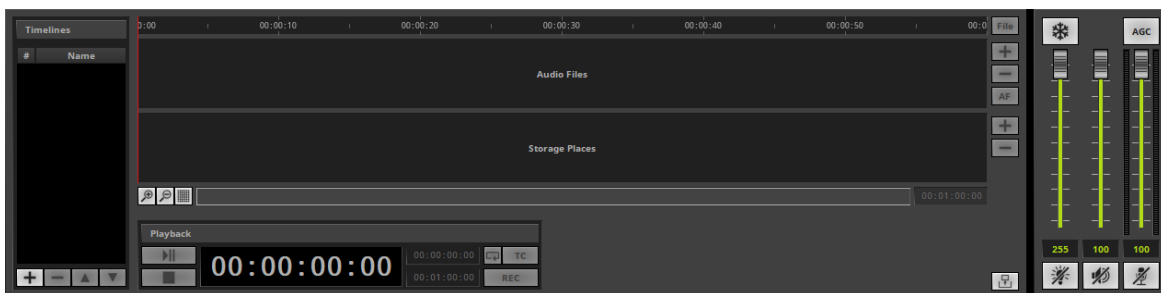
Learn more » [Fixture Groups \[Group Control\]](#)



Timelines

Timelines and the Timeline Editor offer unprecedented possibilities to create a light show that syncs to music.

Learn more » [Timeline Editor](#)

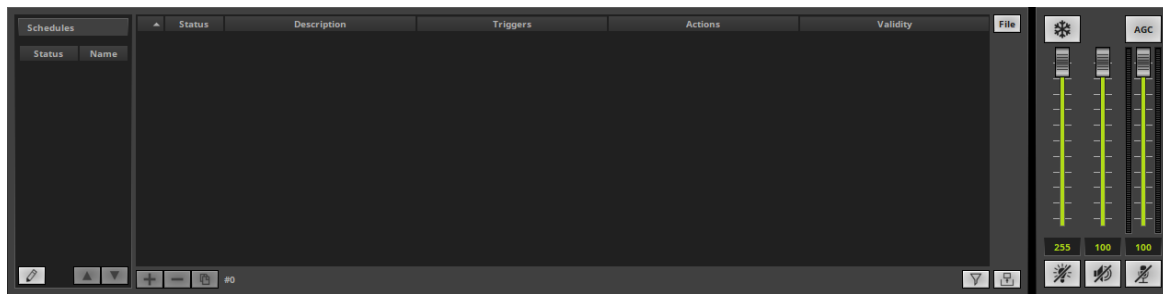


Scheduling

Advanced schedules, including calendar functions, are easily available to you.

While Schedules do incorporate advanced workflows, one of their main areas of application is the [time] management of several Cue Lists and/or Timelines.

Learn more » [Scheduling](#)



3.4 3 Previews

This topic includes:

- [Introduction](#)
- [2D Or 3D Mode](#)
- [Working With Previews](#)
- [More Information](#)
- [Options](#)
- [DVI Output And External Previews](#)
- [Troubleshooting](#)

Introduction



MADRIX 5 features 3 main Previews.

That means that you can have a look at your effects and visuals before they are displayed on your LED installation. These are live previews and they show everything in real time.

- **Preview Deck A**

- **Preview Deck B**
- **Preview Output**
- **Preview Deck A / Preview Deck B** - Located to the upper left and to the upper right of the user interface. They represent the two preview windows for the 2 Effect Pipelines.
- **Preview Output** - Is located in the middle. This window is a preview of the actual data output that is sent to your interfaces/LEDs.
- A MADRIX 5 Preview is a technical representation of your installation. You will see the individual pixels/voxels and how the effects will look on your LEDs, but not realistic renderings of your projects you may know from visualizers.
- DVI output is explained at the end of this topic. Learn more [DVI Output And External Previews](#)

2D Or 3D Mode

As explained earlier, you can use MADRIX 5 to control 2D and/or 3D projects. [Learn more »[2D Or 3D \[X, Y, Z\]](#)]

The 3 Previews support a 2D mode and a 3D mode to adequately represent your LED installation. In this way, they are an important part of your workflow when working with your project.

- Go to the menu **Previews > Preview Deck A/Deck B/Output > 2D Mode** to choose 2D mode for the left/right/middle Preview.



- Go to the menu **Previews > Preview Deck A/Deck B/Output > 3D Mode** to choose 3D mode for the left/right/middle Preview.



You can use the Previews in 3D Mode, even if your virtual LED matrix is only 2D.
And you can use the Previews in 2D Mode, even if your virtual LED matrix is in 3D.

Working With Previews

Overview

You have different options of working with each Preview. It depends on 2D mode or 3D mode which options are available to you.

2D Mode

Using The Mouse

[**Stretch Pixels** needs to be deactivated.]

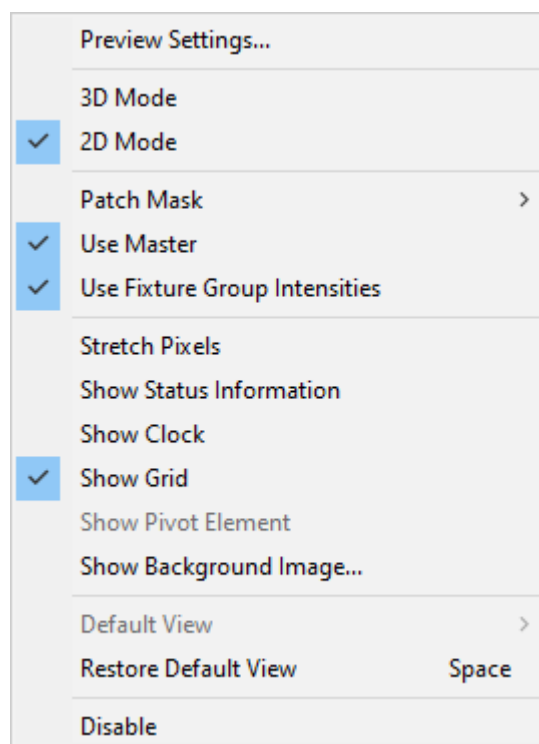
- **Left Mouse Click And Hold And Move** - Click with your left mouse button on a Preview, continue to hold, and move your mouse in order to move and relocate the Preview.
- **Middle Mouse Click And Hold And Move** - Click with your middle mouse button on a Preview, continue to hold, and move your mouse in order to move and relocate the Preview.
- **Right Mouse Click And Hold And Move** - Click with your right mouse button on a Preview, continue to hold, and move your mouse in order to zoom in or to zoom out.

- **Left Mouse Double-Click** - Perform a double-click with your left mouse button to reset the Preview to its default view. This removes any changes, such as zoom or relocation.
- **Right Mouse Click** - Calls up the context menu as explained below.
- **Scroll Wheel** - Click on a Preview to focus it. Then, use the scroll wheel of your mouse to zoom in or to zoom out.

Keyboard Shortcuts

- **Spacebar** - Use the spacebar on your keyboard to reset the Preview to its default view. This removes any changes, such as zoom or relocation.

Context Menu



- **Preview Settings...** - Is only available in 2D mode. Opens the Preview Settings for the associated preview.

[More Information](#)

- **3D Mode** - Switches to 3D mode.
- **2D Mode** - Is activated in 2D mode.

- **Patch Mask** - Is only available for Preview Output. [More Information](#)
- **Use Master** - Is only available for Preview Output. Applies the Master to the Preview Output. Deactivate it if the middle Preview should not reflect the main brightness and instead is always shown at full intensity.
- **Use Fixture Group Intensities** - Is only available for Preview Output. Applies the Fixture Groups to the Preview Output. Deactivate it if the middle Preview should not reflect the group brightness values and instead is always shown at full intensity.
- **Stretch Pixels** - Extends the Preview to the full size. The content [i.e., the effects] will also be stretched.
- **Show Status Information** - Provides further information and displays the name of the Preview, the current size of the virtual LED matrix, the current frames per second of this preview [FPS], and which Storage [e.g., S1] and which Storage Place [e.g., P1] are currently selected.
- **Show Clock** - Will display the system time in the preview.
- **Show Grid** - Activates an optical raster separating the single pixels. If the resolution or the zoom level is too high, the grid will not be visible anymore.
- **Show Background Image...** - You may load various image files as background images for your Previews. They will replace the standard gray background color.
 - Supported file formats include: Bitmap (*.bmp), GIF (*.gif), JPEG (*.jpg, *.jpeg, *.jpe, *.jfif), PBM (*.pbm), PGM (*.pgm), PNG (*.png), PPM (*.ppm), SVG (*.svg), TIFF (*.tif, *.tiff), TGA (*.tga), XBM (*.xbm), XPM (*.xpm)
- **Restore Default View** - Resets the Preview to the default size and position. This removes any changes, such as zoom or relocation.
- **Disable** - Deactivates a Preview. This can be helpful to save computer resources and increase performance.

3D Mode

Using The Mouse

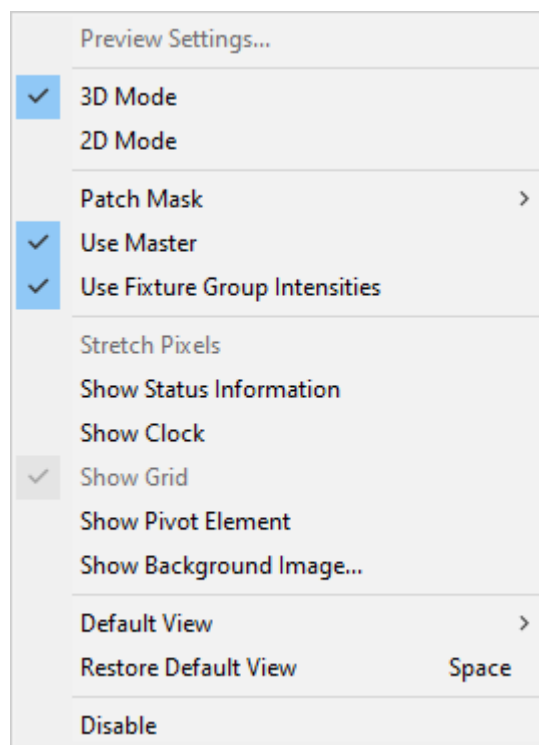
- **Left Mouse Click And Hold And Move** - Click with your left mouse button on a Preview, continue to hold, and move your mouse in order to rotate the 3D Preview. You can also add a spin and let the Preview rotate constantly.
- **Middle Mouse Click And Hold And Move** - Click with your middle mouse button on a Preview, continue to hold, and move your mouse in order to move and relocate the Preview.

- **Right Mouse Click And Hold And Move** - Click with your right mouse button on a Preview, continue to hold, and move your mouse in order to zoom in or to zoom out.
- **Left Mouse Double-Click** - Perform a double-click with your left mouse button to reset the Preview to its default view. This removes any changes, such as zoom or relocation.
- **Right Mouse Click** - Calls up the context menu as explained below.
- **Scroll Wheel** - Click on a Preview to focus it. Then, use the scroll wheel of your mouse to zoom in or to zoom out.

Keyboard Shortcuts

- **Spacebar** - Use the spacebar on your keyboard to reset the Preview to its default view. This removes any changes, such as zoom or relocation.

Context Menu



- **Preview Settings...** - Is only available in 2D mode. Opens the Preview Settings for the associated preview. [More Information](#)
- **3D Mode** - Is activated in 3D mode.

- **2D Mode** - Switches to 2D mode.
- **Patch Mask** - Is only available for Preview Output. [More Information](#)
- **Use Master** - Applies the Master to the Preview Output. Deactivate it if the middle Preview should not reflect the main brightness and instead is always shown at full intensity.
- **Use Fixture Groups Intensity** - Applies the Fixture Groups to the Preview Output. Deactivate it if the middle Preview should not reflect the group brightness values and instead is always shown at full intensity.
- **Show Status Information** - Provides further information and displays the name of the Preview, the current size of the virtual LED matrix, the current frames per second of this preview [FPS], and which Storage [e.g., S1] and which Storage Place [e.g., P1] are currently selected.
- **Show Clock** - Will display the system time in the Preview.
- **Show Pivot Element** - Displays a helpful icon for visual guidance. Three arrows are always shown at position X=0, Y=0, Z=0 [not matter if the Preview is rotated]. The X-axis is red [horizontal; width], the Y-axis is green [vertical; height], and the Z-axis is blue [level; depth].
- **Show Background Image...** - You may load various image files as background images for your Previews. They will replace the standard gray background color.
 - Supported file formats include: Bitmap (*.bmp), GIF (*.gif), JPEG (*.jpg, *.jpeg, *.jpe, *.jfif), PBM (*.pbm), PGM (*.pgm), PNG (*.png), PPM (*.ppm), SVG (*.svg), TIFF (*.tif, *.tiff), TGA (*.tga), XBM (*.xbm), XPM (*.xpm)
- **Default View** - Choose your point of view and the default view for this Preview.
- **Restore Default View** - Resets the Preview to its Default View. This removes any changes, such as zoom or relocation.
- **Disable** - Deactivates a Preview. This can be helpful to save computer resources and increase performance. Especially, 3D mode requires a lot of computer performance.

More Information

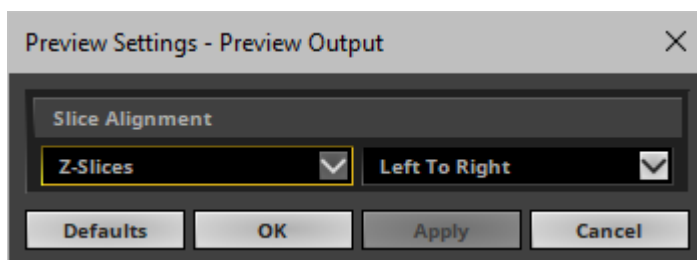
Overview

The Previews mainly show your effects and visuals. Depending on different settings and requirements they convey additional information.

Note: The different scenarios explained below can apply at the same time.

Preview Settings > Slice Alignment

- **Right Mouse Click** on a Preview > **Preview Settings...** - Opens further settings for the associated preview. You can change the settings for each preview individually.



- **The following settings only apply when the preview is set to 2D Mode, but your Patch includes fixtures on multiple Z-layers [Z > 1]:**
- You can set up the **Slice Type**. Choose from **X-Slices**, **Y-Slices**, or **Z-Slices**
- You can set up the **Slice Order**. Choose from **Left To Right**, **Right To Left**, **Top To Bottom**, or **Bottom To Top**
- **X-Slices** - MADRIX 5 shows slices along the X-axis.
- **Y-Slices** - MADRIX 5 shows slices along the Y-axis.
- **Z-Slices** - MADRIX 5 shows slices along the Z-axis.
- In this way, you can define, for example, how the different Z-layers are shown in the preview. This can be especially useful, when using Z-layers for different content and not necessarily 3D effects.
- **Z-Slices / Left To Right** is the default setting.

▪ Example:

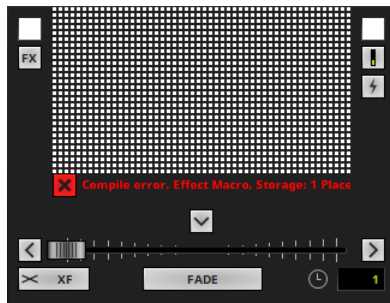
	Left To Right	Right To Left	Top To Bottom	Bottom To Top
X-Slices				
Y-Slices				
Z-Slices	 [Default]			

- **Note:**
- You may change the Preview Settings when in Operator mode or switch to Operator mode when the Preview Settings are still open.

Messages

- **Clear Message** - Only the Preview Output offers this option. MADRIX 5 may show information or error messages in the Preview Output.
- **X** - Discards any messages that MADRIX 5 shows. The messages will not be displayed anymore.

- Such a message could look like this:



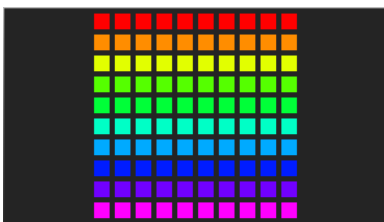
Intensity

When controlling LED lighting, the intensity of the light output makes up a large factor of the light design. The Previews will represent your intensity settings.

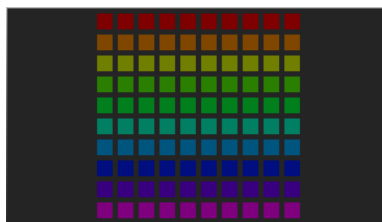
There are many ways how to control the intensity in MADRIX 5. The main examples are:

- **Master**, including **Blackout**
Learn more » [Main Output / Master / Audio Levels](#)
- **Storage Place Submaster**
Learn more » [Storages](#)
- **Layer Submaster**
Learn more » [Effect Areas \[Deck A / Deck B\]](#)
- **Layer Opacity**
Learn more » [Layers](#)
- **Colors**
Learn more » [\[Global\] Colors And Intensity](#)

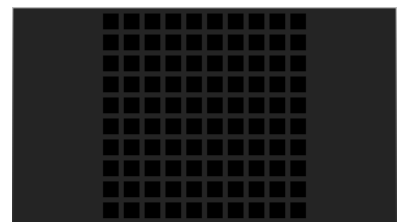
Master Set To 255



Master Set To 127



Master Set To 0 / Blackout



Rendering

One of the main features of MADRIX 5 is that it renders visuals and effects live in real time. Regarding the overall performance, you can define a specific setting in the Options that will also influence the Previews. Depending on your settings, MADRIX 5 will include all voxels in the rendering process or only the ones that are patched.

Learn more » [Performance](#)



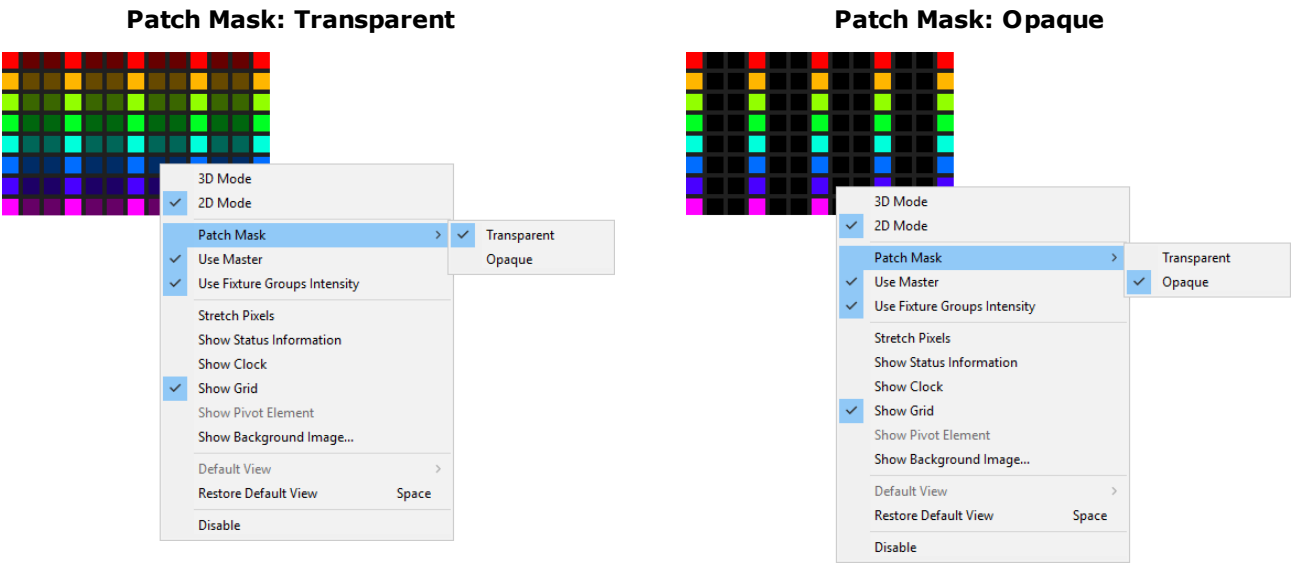
Patch Mask

When letting MADRIX 5 render all voxels, you can further decide how the Previews work. Voxels that are used [a fixture is set up at this position] are displayed brighter than voxels without LED fixtures. Compared to this, MADRIX 5 offers two choices in order to show or hide voxels that are not used. This will influence all 3 Previews. Positions without fixtures will be dark gray or they will not be shown and set to black.

Note: The Patch Mask will only fully apply, when your performance settings include all voxels, as explained above. If your performance options are set to only include patched voxels, the voxels will always be shown opaque. Changing the Patch Mask setting will not influence the Previews anymore.

Note: In demo mode, **Patch Mask > Transparent** is always automatically enabled and this setting cannot be changed in order to make sure that you see your effects and fixtures when not having a MADRIX KEY connected.

- **Right Mouse Click** on the **Preview Output > Patch Mask > Transparent/Opaque**
- Or go to the menu **Previews > Preview Output > Patch Mask > Transparent/Opaque**

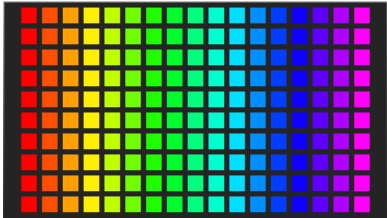


MADRIX 5 License

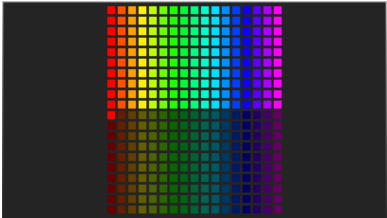
The Previews will indicate if you are using a higher output [as set by the virtual LED matrix in the Matrix Generator or Patch Editor] than your MADRIX 5 License provides. Unlicensed areas will be shown darker.

Select **Help > MADRIX KEY > License...** to check your MADRIX 5 License and product serial numbers.

Output Fully Covered By License



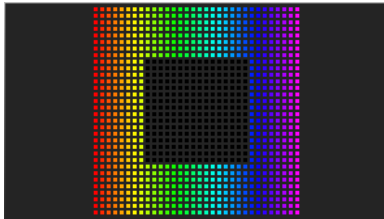
Output Not Fully Covered By License



Individual Patch

When setting up an individual Patch in the Patch Editor, there might be areas where no fixtures are located according to your LED installation. These areas without any fixtures will automatically be displayed darker to indicate that this area is not in use.

Preview Example



Corresponding Patch Example

		5	10	15
	U001	U001	U001	U001
	C001	C049	C097	C145
5	U001			U001
	C193			C337
10	U001			U002
	C385			C049
15	U002	U002	U002	U002
	C097	C145	C193	C241

Options

You can change further settings of the Previews.

Learn more » [User Interface](#)

Learn more » [Performance](#)

DVI Output And External Previews

The 3 Preview windows explained above are technical representations of the effects MADRIX 5 creates for you. But they are not pixel-perfect outputs.

DVI is another way to work with LED products which requires such a correctly sized output. To use DVI, MADRIX 5 offers other options.

The following MADRIX 5 KEYS support DVI output:

- **MADRIX 5 KEY start**
- **MADRIX 5 KEY entry**
- **MADRIX 5 KEY basic**
- **MADRIX 5 KEY professional**
- **MADRIX 5 KEY ultimate**
- **MADRIX 5 KEY maximum**

DVI output allows you to easily control large LED pixel walls or use screen-capturing, for example.

Learn more » [DVI](#)

Troubleshooting

Invalid OpenGL Version

MADRIX 5 might show the following error message:

- **Preview Disabled**
Invalid OpenGL Version : 1.1
Minimum Required Version : 2.1

If the Previews show this error message, it means that there is a problem with the graphics card of the computer:

- The graphics card might be too old and might not support OpenGL 2.1.
- The driver of the graphics card for the Windows operating system might be outdated.

To solve the issue:

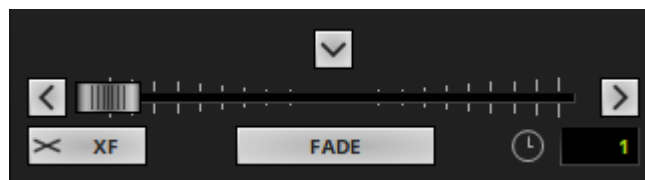
- Check if your computer's graphics card supports OpenGL 2.1. If it is not supported, your computer/the graphics card does not meet the minimum requirements of MADRIX 5. Please upgrade to a newer graphics card, which supports OpenGL 2.1.
- Download and install the latest driver version for your graphics card in order to update the driver. [You might need to restart the computer afterwards.]

3.5 Crossfader

This topic includes:

- [Introduction](#)
- [Overview](#)
- [Crossfader](#)
- [Fade Types](#)

Introduction



The Fade Area, including the important Crossfader, is positioned right in the middle of the MADRIX 5 user interface.

Overview



Crossfader - Determines which Effect Pipeline is send to the output, i.e. visuals from which side. Perform a right mouse click to reset to the default value [50%]. Learn more [Crossfader](#)



Fade To Left - Triggers an automatic fade to the left and applies the currently set Fade Time and Fade Type.



Fade To Middle - Triggers an automatic fade to the middle and applies the currently set Fade Time and Fade Type.



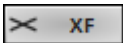
Fade To Right - Triggers an automatic fade to the right and applies the currently set Fade Time and Fade Type.

Skip To Left - Perform a double-click in order to immediately skip to the left [without applying a Fade Time or Fade Type].

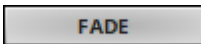
Skip To Middle - Perform a double-click in order to immediately skip to the middle [without applying a Fade Time or Fade Type].

Skip To Right - Perform a double-click in order to immediately skip to the right [without applying a Fade Time or Fade Type].

Learn more [Crossfader](#)



Fade Type - Defines how the fade will look like. Perform a right mouse click to reset to the default value [XF]. Learn more [Fade Types](#)



Automatic Fade - Is part of the Crossfader. It triggers an automatic fade and applies the currently set the Fade Time and Fade Type from left to right or right to left. Learn more [Crossfader](#)



Fade Time - Is part of the Crossfader. It specifies the duration of the fade, when an automatic fade is triggered. [To change the time, select the value via left double-click first. Then, enter a value using the keyboard, use the mouse wheel, or use a left mouse click and hold while dragging the mouse up or down.] Learn more [Crossfader](#)

Crossfader

Overview

The Crossfader specifies which effect [from Deck A or Deck B] is displayed on Preview Output. As such, the Crossfader specifies the source of the final output. The Preview Output will show you the results and the final output towards your LEDs.

- Set the Crossfader to the far left to show only the effect of Deck A [Preview Deck A/Storage Deck A].
- Set the crossfader to the far right to show only the effect of Deck B [Preview Deck B/Storage Deck B]
- Any position in between is also possible to mix both effects.

Automatic Fades

- **FADE** - Starts an automatic fade.
 - The fader will automatically fade to the other side according to the Fade Time and the Fade Type.
 - If the fader is positioned on the right side, it will automatically move to the left side. If the fader starts on the left side, it will move to the right side.
- **Fade Time** - Defines the duration of the automatic fade.
 - Set the time using seconds and tenths of seconds.
 - To change the time, select the value via left click first. Then, enter a value using the keyboard, use the mouse wheel, or use a left mouse click and hold while dragging the mouse up or down.
 - Example: Enter '2.5' for a fade duration of 2.5 seconds.
- **Fade To Left / Fade To Middle / Fade To Right** - Click on the arrow buttons to fade to a specific position: left, middle, right.

Manual Fades

- **Left Mouse Click And Hold And Drag** - Click with your left mouse button on the Crossfader, continue to hold, and move your mouse in order to change its position. You can fade manually in this way.
- **Left Mouse Click** - Click with your left mouse button directly on the Crossfader panel to instantly change the position to the mouse location.

- **Left Mouse Double-Click** - Perform a double-click with your left mouse button directly on the Crossfader panel to reset the Crossfader to 50%, i.e. to the exact middle position between left and right.
- **Right Mouse Click** - Perform a right click with your mouse on the Crossfader to reset the Crossfader to 50%, i.e. to the exact middle position between left and right.
- **Skip To Left / Skip To Middle / Skip To Right** - Perform a double-click on the arrow buttons to instantly skip to a specific position: left, middle, right.

Examples

Crossfader To The Left



Crossfader To The Right



Fade Types

All fades [manual and automatic] are of a certain type. By changing the Fade Type, you can change how a fade will look like. Learn more [Fade Types](#)

Fade Types

Introduction

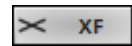
The Crossfader creates a fade between Deck A and Deck B. You can specifically control the visual result of the fade:

- You can choose from different types of fades using the drop-down list as shown below.
- The fade types will influence how Effect Deck A is mixed with Effect Deck B during the fade or vice versa.



Overview

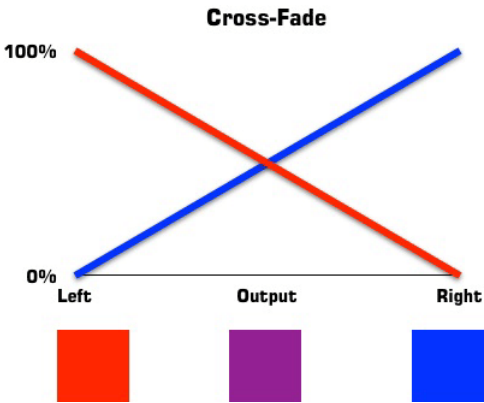
The following table describes how the different fade types work.
For these examples, let us assume that Effect Deck A is currently playing and that you would want Effect Deck B to be displayed next. So we will fade from Preview Deck A to Preview Deck B.



Cross-Fade

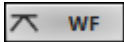
A Cross-fade starts by dimming Effect on Deck A linearly from 100% to 0% during the fade time. But at the same time, Effect on Deck B starts to fade in until it is fully shown at the end of the fade. As a result an interpolation of the colors of Deck A and Deck B will be used during the fade.

At the beginning of the whole fade procedure, Effect on Deck A stands at 100%, while Effect on Deck B is not displayed [0%]. Halfway through, both effects are dimmed to 50%, as you can see in the picture. Neither Effect on Deck A nor Effect on Deck B are displayed with 100%. That is why the cross-fade appears to be darker. At the end of the fading



procedure, Effect on Deck A stands at 0%, while Effect on Deck B is shown with 100%.

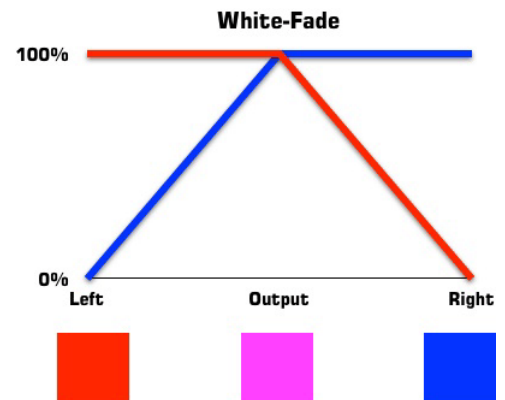
A cross-fade is only started when the new effect has already started to render and provides usable data.

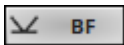


White-Fade

A White-fade is the opposite of a black-fade. It starts with Effect on Deck A being shown at 100% for the first half of the fade time. At the same time, Effect on Deck B fades in during the first half until it is also shown with 100%. Afterwards, Effect on Deck B remains at 100% for the rest of the fade procedure, while Effect on Deck A is dimmed from 100% to 0%.

Halfway through, both effects are shown with 100%. Because of that, a white-fade does not necessarily display a white color in middle position. Instead, this fade type uses addition of all color values. For example, if you are using a SCE Color in pure red on Effect on Deck A [255, 0, 0] and SCE Color in turquoise/cyan on Effect on Deck B [0, 255, 255], the result will indeed be a pure white halfway through as it adds up to 255, 255, 255. But using a SCE Color in pure red on Effect on Deck A [255, 0, 0] and SCE Color in pure green on Deck B [0, 255, 0], this results in pure yellow in the middle of the fade procedure [255, 255, 0], for example.

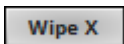
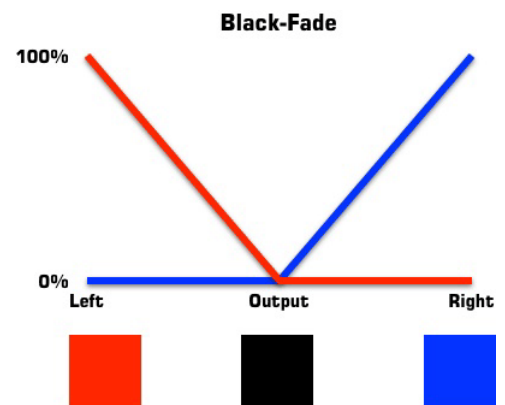




Black-Fade

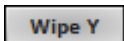
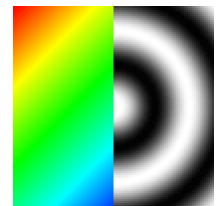
A Black-fade starts with dimming Effect on Deck A from 100% to 0% for the first half of the fade time. Effect on Deck B remains at 0% during this time. Then, halfway through the fade procedure, Effect on Deck B starts to increase until 100% shown. Effect on Deck A was already at 0% and remains at this level for the rest of the fade.

Since both effects are shown with 0% in the middle of the fade, this always results in a black output, and therefore the name.



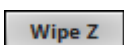
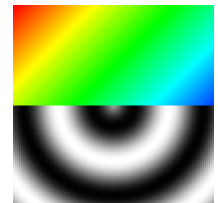
Horizontal Wipe

Wipes one side over another horizontally [from the right or left side]. The currently active effect stays and will be shown in the background until the new effect fully covers the output.



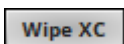
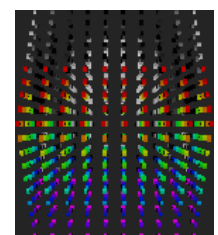
Vertical Wipe

Wipes one side over another vertically [from above or below]. The currently active effect stays and will be shown in the background until the new effect fully covers the output.



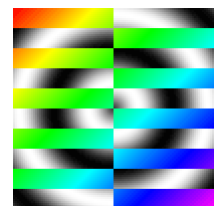
Depth Wipe

Wipes one side over another vertically [from back or front]. The currently active effect stays and will be shown in the background until the new effect fully covers the output.



Horizontal Cross Wipe

Wipes one side over another horizontally [from the right and the left side] and splits the new effect at the same time during the fade. The currently active effect will be

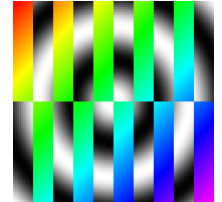


shown in the background until the new effect fully covers the output.

Wipe YC

Vertical Cross Wipe

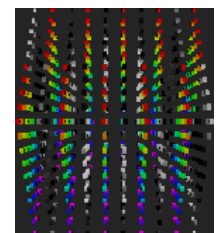
Wipes one side over another vertically [from the top and the bottom side] and splits the new effect at the same time during the fade. The currently active effect will be shown in the background until the new effect fully covers the output.



Wipe ZC

Depth Cross Wipe

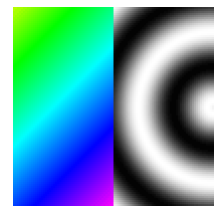
Wipes one side over another vertically [from the back and the front] and splits the new effect at the same time during the fade. The currently active effect will be shown in the background until the new effect fully covers the output.



Slide X

Horizontal Slide

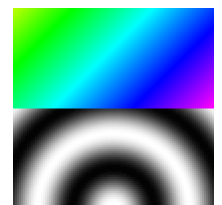
Pushes the old effect out of the frame horizontally [from the left to the right and vice versa]. The currently running effect will move accordingly to the side until it vanishes.



Slide Y

Horizontal Slide

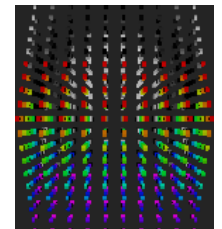
Pushes the old effect out of the frame vertically [from the top to the bottom and vice versa]. The currently running effect will move accordingly to the top or bottom until it vanishes.



Slide Z

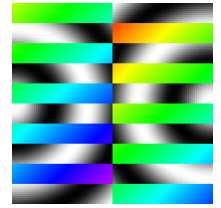
Depth Slide

Pushes the old effect out of the frame vertically [from the back to the front and vice versa]. The currently running effect will move accordingly to the top or bottom until it vanishes.

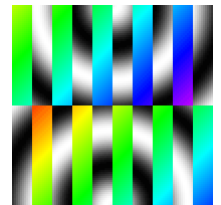


Slide XC**Horizontal
Cross Slide**

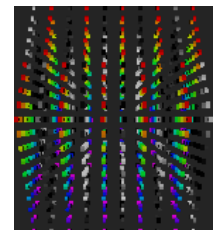
Pushes the old effect out of the frame horizontally [from the left to the right and vice versa] and splits both effects at the same time during the fade. The currently running effect will move accordingly until it vanishes.

**Slide YC****Vertical
Cross Slide**

Pushes the old effect out of the frame vertically [from the top to the bottom and vice versa] and splits both effects at the same time during the fade. The currently running effect will move accordingly until it vanishes.

**Slide ZC****Depth
Cross Slide**

Pushes the old effect out of the frame vertically [from the back to the front and vice versa] and splits both effects at the same time during the fade. The currently running effect will move accordingly until it vanishes.



3.6 Main Output / Master / Audio Levels

This topic includes:

- **Introduction**
- **Main Output Controls**
- **Master**
- **Audio Output Level**
- **Audio Input Level**

Introduction

The Main Output and accompanying Master, Audio Output Level, and Audio Input Level are central controls of the MADRIX 5 user interface.

- Several controls are available for the Main Output [including Color Filter, FX Filter, and Strobe].

- The Master controls the overall brightness of the Main Output [i.e. of the LED fixtures].
- The Audio Output Level controls the maximum sound level that is sent.
- The Audio Input Level controls the maximum sound level that is received and used for the real-time audio analysis.



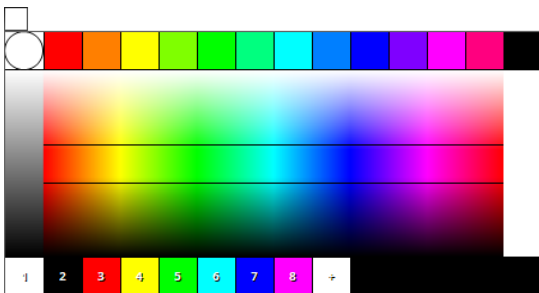
Main Output Controls

Main Output Color Filter

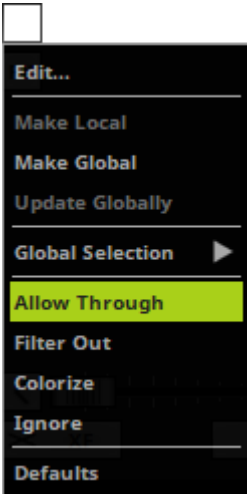


Color Filter - Filters the colors of the Main Output.

- **Left Mouse Click And Hold** - Select the color using the Color Picker to activate the Color Filter.
- You can also use Global Colors. Learn more » [\[Global\] Colors And Intensity](#)



- **Right Mouse Click** - Calls up the context menu.



Edit... - Calls up the Color Fader Box.

Make Local - Converts a Global Color to a Local Color. Learn more » [\[Global\] Colors And Intensity](#)

Make Global - Converts a Local Color to a Global Color. Learn more » [\[Global\] Colors And Intensity](#)

Update Globally - Allows you to change a modified Global Color everywhere by updating it globally. Learn more » [\[Global\] Colors And Intensity](#)

Global Selection - Allows you to choose a Global Color as this color. Learn more » [\[Global\] Colors And Intensity](#)

▪ Choose from the following modes:

Allow Through - Lets only the color that is chosen through and filters every other color out.

Filter Out - Removes the color that is chosen and lets all other colors through.

Colorize - Applies the chosen color as tint color.

Ignore - Allows you to quickly deactivate the filter, especially when controlling it remotely via a lighting console [instead of needing to set it to Allow Through with color White].

Defaults - Restores the default color. The default value is Allow Through with color White, which means that no filter is active.

Main Output FX Filter



Filter - Applies special filters to quickly change your visuals. Learn more » [Filters \[FX\]](#)

Main Output Strobe



Strobe - This strobe applies directly to the Main Output.



Left Mouse Click and Hold - Activates the strobe. Continue to hold as long as the strobe should be active [Flash button].

- Simply release the mouse button to deactivate the strobe again.



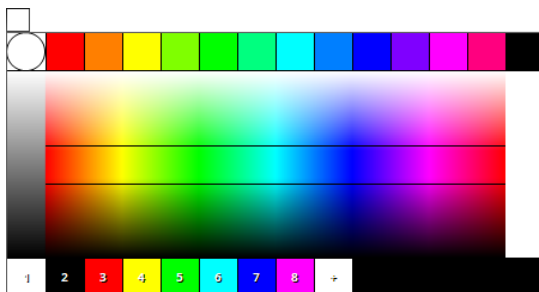
Strobe Frequency - Sets the speed of the strobe.

- **Left Mouse Click and Hold** - Allows you to choose the frequency.
- **Right Mouse Click** - Restores the default value. The default value is 6.3 Hz.

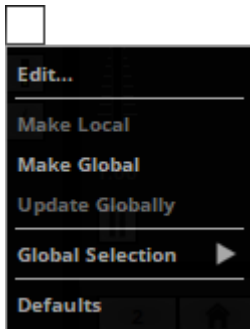


Strobe Color - Allows you to choose the color of the strobe.

- Simply hover over the new color with your mouse and release the mouse button to select the color.
- You can also use Global Colors. Learn more » [\[Global\] Colors And Intensity](#)



- **Right Mouse Click** - Calls up the context menu.



Edit... - Calls up the Color Fader Box.

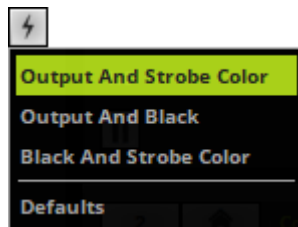
Make Local - Converts a Global Color to a Local Color. Learn more » [\[Global\] Colors And Intensity](#)

Make Global - Converts a Local Color to a Global Color. Learn more » [\[Global\] Colors And Intensity](#)

Update Globally - Allows you to change a modified Global Color everywhere by updating it globally. Learn more » [\[Global\] Colors And Intensity](#)

Global Selection - Allows you to choose a Global Color as this color. Learn more » [\[Global\] Colors And Intensity](#)

Defaults - Restores the default color. The default value is White.



Strobe Mode - Defines how the main output strobe works.

- **Right Mouse Click** - Calls up the context menu. You can choose from 3 different modes:

Output And Strobe Color - Strobes between the regular output and the strobe color you have chosen. As such, it will affect the effects that are put out. But if for the most part the output has the same color as the strobe, the actual strobe effect might be difficult to see.

Output And Black - Strobes between the regular output and the color black. The strobe color you have chosen will be ignored. Choose this mode if you want to make sure that the output itself is strobed.

Black And Strobe Color - Strobes only between the color black and the strobe color you have chosen. The output will be ignored. Chose this mode if you want to achieve a pure strobe that is independent of the output and will always be clearly visible.

[Depending on the visual result you want to achieve, one mode might be more favorable than the others.]

Defaults - Restores the default value. The default value is Output And Strobe Color.

Main Output Macro



Main Output Macro

The Main Output Macro is 1 of 4 locations to apply a Macro.

A Macro is a Script written to further influence the functionality of the effect or output. A Macro is not necessary, but can add further functionality to your project. The Main Output Macro is a Macro that affects the entire main output.

Learn more » [Macros And Scripts](#)

Master

Overview



Freeze - Puts the output on hold [pauses it]. Click and hold the mouse button to freeze temporarily. Double-click it to freeze it permanently; click again to deactivate.



Fader - Use the fader to directly control the intensity.
By default the Fader is set to 255, the maximum value.

Input Field - Directly enter a value ranging from 0 to 255.

The Input Field will also display the currently set up value.

A value of 0 is shown in red in order to make its severe affect on the visual outcome clear.



Blackout - Forces an immediate blackout on the output. Click it once to render the output completely black. When activated, the button will pulsate in red. Click again to deactivate the function. Blackout does not affect the value of the master fader.

Options

- Go to **Preferences > Options... > Previews > General**

[Keyboard shortcut: **Ctrl+Alt+O > Previews**]

- **Use Master** - Applies the Master to the Preview Output. Deactivate it if the middle Preview should not reflect the main brightness and instead is always shown at full intensity.

Learn more » [Previews](#)

Audio Output Level

Overview



Fader - Use the fader to directly control the audio output level. The Fader will limit the sent level.

- By default the Fader is set to 100, the maximum value.
- The audio output level is only available when Audio Output is enabled in the Device Manager.

Input Field - Directly enter a value ranging from 0 to 100 [in %].

The Input Field below will display the currently set fader value.

A value of 0 is shown in red in order to make its severe affect on the visual outcome clear.



Mute Audio Output - Disables the audio output. When activated, the button will pulsate in red. Click again to deactivate. Mute does not affect the value of the audio output fader.

More Information

Learn more » [Audio And Sound](#)

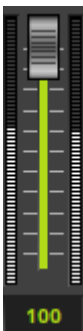
Audio Input Level

Overview



AGC - Activates Automatic Gain Control. When activated, the button will glow green and MADRIX 5 will automatically and constantly increase or decrease the input level to receive the optimal sound level.

- Automatic Gain Control will be interrupted as long as you are manually controlling the Fader with the help of the mouse.



Fader - Use the fader to directly control the input level. The Fader will limit the incoming level.

- By default the Fader is set to 100, the maximum value.

- The audio input level is only available when Audio Output is enabled in the Device Manager.

Input Field - Directly enter a value ranging from 0 to 100 [in %].

The Input Field below will display the currently set fader value.

A value of 0 is shown in red in order to make its severe affect on the visual outcome clear.



Mute Audio Input - Disables the audio input. When activated, the button will pulsate in red. Click again to deactivate. Mute does not affect the value of the audio output fader.

Optimal Input Level

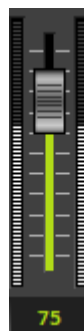
To get optimal results from the audio analysis, it is recommended to set up the audio input level correctly.

- Adjust the audio signal in order to avoid an input signal that is too low.
- Levels that are too low will negatively affect the quality of the audio analysis.
- Red lights indicate that levels are too high.
- Use the **AGC** [Automatic Gain Control] for automatic control.

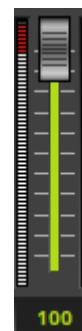
Audio Input Too Low



Optimal Input Level



Audio Input Too High



More Information

Learn more » [Audio And Sound](#)

3.7 Controls [Deck A / Deck B]

Topics of this chapter:

- [Overview](#)
- [Submaster Deck A/Deck B](#)
- [Color Filter Deck A/Deck B](#)
- [Filter \[FX\] Deck A/Deck B](#)
- [Speed Master Deck A/Deck B](#)

Overview

Next to Preview Deck A and next to Preview Deck B you will find different controls that affect the outcome of the entire Deck A or Deck B. They are available to you per side, as explained below.



Submaster Deck A/Deck B

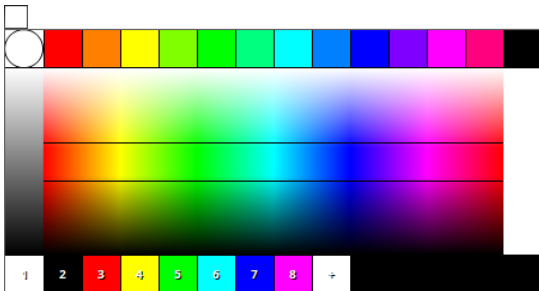


- **Submaster** - Controls the intensity of the entire Deck A or Deck B.
- It will affect the visual outcome on the left or right side, independently of which Storage, Storage Place, or Layer is selected.
- **Left Mouse Click And Hold** - Select the required value by moving the fader with the help of your mouse. Release the mouse button to set up the specific value [The fader will disappear automatically].
- A value of 255 means full intensity.
- A value of 0 means no intensity and will render the effect completely black. A value of 0 is shown in red in order to make its severe affect on the visual outcome clear. The button itself pulsates in red as well.
- The tooltip shows the currently set value.

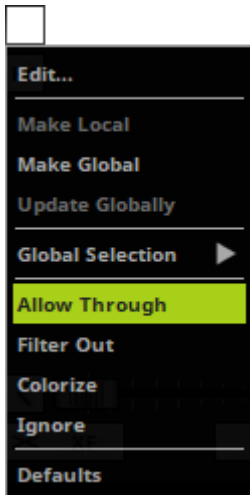
Color Filter Deck A/Deck B



- **Color Filter** - Filters the colors of the entire Deck A or Deck B.
- **Left Mouse Click And Hold** - Select the color using the Color Picker to activate the Color Filter.
 - You can also use Global Colors. Learn more » [\[Global\] Colors And Intensity](#)



- **Right Mouse Click** - Calls up the context menu.



- **Edit...** - Calls up the Color Fader Box.

Make Local - Converts a Global Color to a Local Color. Learn more »[\[Global\] Colors And Intensity](#)

Make Global - Converts a Local Color to a Global Color. Learn more »[\[Global\] Colors And Intensity](#)

Update Globally - Allows you to change a modified Global Color everywhere by updating it globally. Learn more »[\[Global\] Colors And Intensity](#)

Global Selection - Allows you to choose a Global Color as this color. Learn more »[\[Global\] Colors And Intensity](#)

- Choose from the following modes:

Allow Through - Lets only the color that is chosen through and filters every other color out.

Filter Out - Removes the color that is chosen and lets all other colors through.

Colorize - Applies the chosen color as tint color.

Ignore - Allows you to quickly deactivate the filter, especially when controlling it remotely via a lighting console [instead of needing to set it to Allow Through with color White].

- **Defaults** - Restores the default color. The default value is Allow Through with color White, which means that no filter is active.

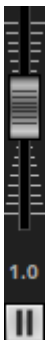
Filter [FX] Deck A/Deck B



- **Filters FX** - Special filters can be applied to an entire Effect Pipeline Deck A or Deck B to quickly change your visuals.
- Learn more » [Filters \[FX\]](#)

Speed Master Deck A/Deck B

Overview



- **Speed Master Deck A/Deck B** - Allows you to speed up or slow down effects.
- Each Speed Master influences the speed of the entire Deck A or Deck B.
- The Speed Masters work as a multiplier of the current speed of an effect [that includes the BPM of a Layer, the Pitch of a Layer, and the Pitch of a Storage Place.]
- A value of 0 is shown in red in order to make its severe affect on the visual outcome clear.
- Example: A Speed Master of 2.0 will double the current speed.

How To Use

- Move the fader upwards to increase the speed.
- Move the fader downwards to decrease the speed.
- The default value is 1.0 [which is normal speed].
- A value of 0.0 will stop the effects.
- The highest value is +10.
- The lowest value is -10.
- Negative values will reverse the direction of effects [if possible].
- Double-click or right-click on the Speed Master button to reset to the value of 1.0

Pause



- **Pause** - Will halt the effect.
- **Left Mouse Click And Hold** - Pauses the effect as long as you hold the mouse button [temporarily].
- **Left Mouse Double-Click** - Pauses the effects permanently. A single click deactivates the permanent stop again.

Options

You can define the value range of the Speed Masters in the Options.

Learn more »[User Interface](#)

3.8 Storages

This topic includes:

- [Introduction](#)
- [Overview](#)

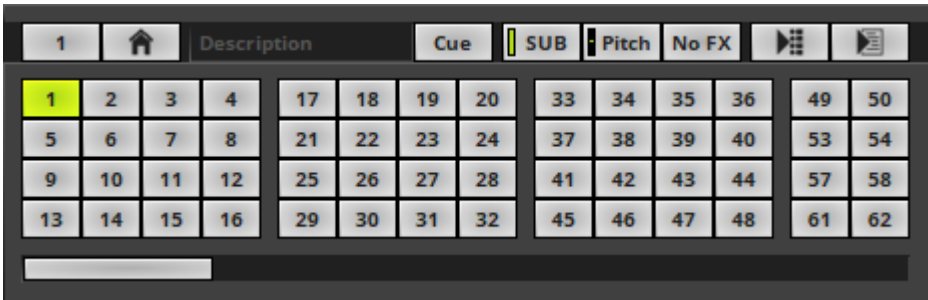
- [Selecting A Storage](#)
- [Submaster](#)
- [Storage Options](#)

Introduction

MADRIX 5 features 2 separate Storage Areas [on Deck A and Deck B]. They are positioned directly below Preview Deck A and Preview Deck B.

As will be explained in the next chapter, you can use so-called Storage Places to organize your lighting effects. In addition, all Storage Places and further options are managed with the help of Storages.

- MADRIX 5 features a total of 256 Storages.
- 1 Storage includes 256 Storage Places.



Overview



Storage Selection - Select which Storage you would like to use via Left Mouse Click.
Learn more [Selecting A Storage](#)

Storage Options - Calls up various options for Storages via Right Mouse Click. Learn more [Storage Options](#)



Home - Instantly jumps back to your currently selected Storage Place and brings it into focus [Keyboard shortcut: **Ctrl+F**].

Description

Storage-Place Description - Allows you to enter a description for each individual Storage Place. Enter any text. The label will also be used for other MADRIX 5 features, such as the Touch Screen, Cue Lists, or Timelines.



Cue - Automatically adds the currently selected Storage Place to the current Cue List. The newly created Cue List entry will include all applied parameters, like the description or the fade duration and fade type of the crossfader. Learn more »[Cue List Editor](#)



Submaster - Calls up the Submaster of the Storage Place to adjust the intensity of the complete effect including all of its Layers. It applies only to the currently selected Storage Place and can be set up for every Storage Place individually. Learn more [Submaster](#)



Speed Pitch - Calls up the Pitch slider of the Storage Place to adjust the speed of the complete effect including all of its Layers. It applies only to the currently selected Storage Place and can be set up for every Storage Place individually. The tooltip shows the currently set value.

A value of 0.0 is shown in red in order to make its severe affect on the visual outcome clear. The button itself pulsates in red as well.



Filters/Effects FX - Special filters can be applied to a Storage Place including all of its Layers in order to quickly change your visuals. Learn more »[Filters \[FX\]](#)



Storage Place Parameter Chaser - Controls the Storage Place Parameter Chaser for advanced customization of effects. It applies only to the currently selected Storage Place and can be set up for every Storage Place individually. Learn more »[Chaser](#)



Storage Place Macro Editor - Controls the Storage Place Macro Editor to add macros to the effect. It applies only to the currently selected Storage Place and can be

set up for every Storage Place individually. Learn more » [Macros And Scripts](#)

1

Storage Place - Represents a single Storage Place. Learn more »[Storage Places](#)

[\[256 x 256\]](#)

Selecting A Storage

- You can freely choose which Storage to use on the left side or the right side of MADRIX 5.
- Click on the Storage Selection Button and a submenu will open. Simply select which Storage you would like to use [Numbers 1 to 256].
- The currently selected Storage is shown in green.
- Occupied Storages [which include customized Storage Places] are shown in blue.
- **When switching to another Storage, MADRIX 5 will not automatically select a specific Storage Place for you. The currently selected Storage Place remains selected until you selected the next one.**

1															
1	17	33	49	65	81	97	113	129	145	161	177	193	209	225	241
2	18	34	50	66	82	98	114	130	146	162	178	194	210	226	242
3	19	35	51	67	83	99	115	131	147	163	179	195	211	227	243
4	20	36	52	68	84	100	116	132	148	164	180	196	212	228	244
5	21	37	53	69	85	101	117	133	149	165	181	197	213	229	245
6	22	38	54	70	86	102	118	134	150	166	182	198	214	230	246
7	23	39	55	71	87	103	119	135	151	167	183	199	215	231	247
8	24	40	56	72	88	104	120	136	152	168	184	200	216	232	248
9	25	41	57	73	89	105	121	137	153	169	185	201	217	233	249
10	26	42	58	74	90	106	122	138	154	170	186	202	218	234	250
11	27	43	59	75	91	107	123	139	155	171	187	203	219	235	251
12	28	44	60	76	92	108	124	140	156	172	188	204	220	236	252
13	29	45	61	77	93	109	125	141	157	173	189	205	221	237	253
14	30	46	62	78	94	110	126	142	158	174	190	206	222	238	254
15	31	47	63	79	95	111	127	143	159	175	191	207	223	239	255
16	32	48	64	80	96	112	128	144	160	176	192	208	224	240	256

Submaster



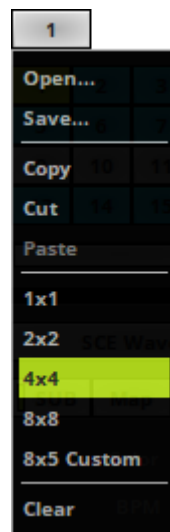
- **Submaster** - Defines intensity of a selected Storage Place including all of its Layers. It only works for the Storage Place you have currently selected.
- **Left Mouse Click And Hold** - Select the required value by moving the fader with the help of your mouse. Release the mouse button to set up the specific value [The fader will disappear automatically].
- A value of 255 means full intensity.
- A value of 0 means no intensity and will render the effect completely black. A value of 0 is shown in red in order to make its severe affect on the visual outcome clear. The button itself pulsates in red as well.
- The tooltip shows the currently set value.

[The Storage Submaster does not control the main output brightness. If you want to adjust the overall intensity, you need to use the »[Submaster Deck A/Deck B](#) or the »[Master](#).]

Storage Options

Overview

- **Right Mouse Click** - Opens the context menu.



- **Open...** - Loads a complete MADRIX 5 Storage from a previously saved, external file [of the file type *.mstz or *.mstx].
A new window opens for you to select the file on your harddisk.
- **Save...** - Saves the current Storage including all of its Storage Places in an external file [of the file type *.mstz or *.mstx]. Simply enter a **File name** when the new window opens, choose a location, and click **Save**
- **Copy** - Copies the current Storage into the clipboard as a duplicate.
- **Cut** - Copies the current Storage into the clipboard and applies a **Clear**.
- **Paste** - Inserts a copy of a Storage from the clipboard into the currently selected Storage.
- **1x1** - Selects a different layout with very large Storage Place buttons. See below.
- **2x2** - Selects a different layout with large Storage Place buttons. See below.
- **4x4** - Selects a different layout with normal-sized Storage Place buttons. This is the default view. See below.
- **8x8** - Selects a different layout with small Storage Place buttons. Is the only layout that does not require horizontal scrolling, since all 256 Storage Places can be shown. However, no numbering or thumbnails can be shown. See below.
- **Custom** - Selects a layout that you can customize in the Options. 8x5 is the default value. Using a custom layout is especially useful when using MIDI controllers and adjusting the software's layout to the button layout of the controller. See below.
- **Clear** - Removes the current Storage including all of its Storage Places and restores the default, blank Storage.

Layout

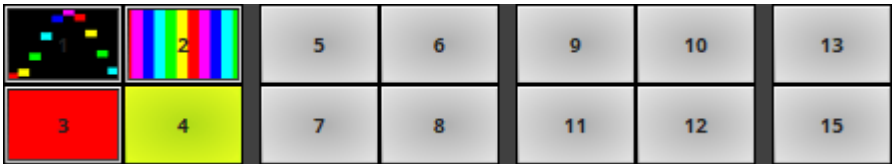
Overview

The Storage Options allow you to select one of 5 different layouts.

1x1



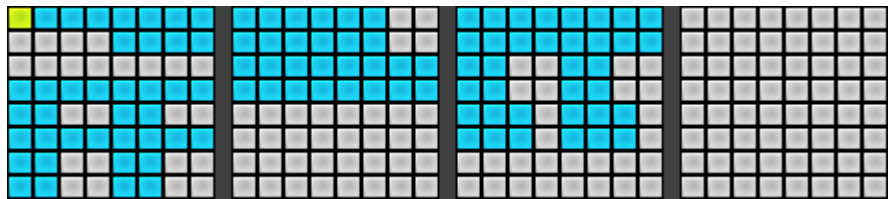
2x2



4x4 [Default]

1	2	3	4	17	18	19	20	33	34	35	36	49	50
5	6	7	8	21	22	23	24	37	38	39	40	53	54
9	10	11	12	25	26	27	28	41	42	43	44	57	58
13	14	15	16	29	30	31	32	45	46	47	48	61	62

8x8



Custom [Customizable]

1	2	3	4	5	6	7	8	41	42	43	44	45	46	47
9	10	11	12	13	14	15	16	49	50	51	52	53	54	55
17	18	19	20	21	22	23	24	57	58	59	60	61	62	63
25	26	27	28	29	30	31	32	65	66	67	68	69	70	71
33	34	35	36	37	38	39	40	73	74	75	76	77	78	79

Options

You can change the custom layout of Storage Places in the options.

See »[User Interface](#)

3.9 Storage Places [256 x 256]

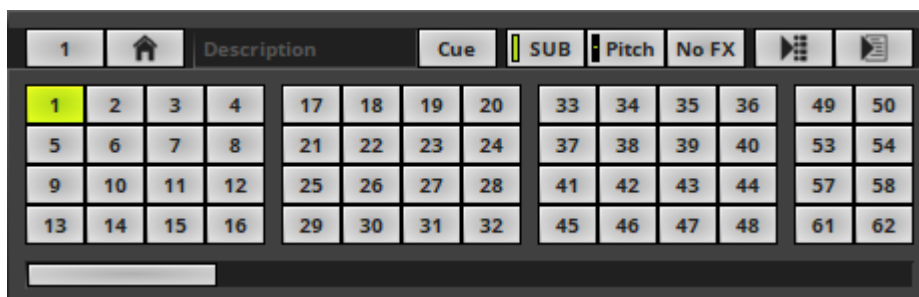
This topic includes:

- [Introduction](#)
- [Overview](#)
- [Workflow](#)
- [Controls](#)
- [Working With Storage Places](#)
- [Context Menu](#)
- [Thumbnails](#)
- [Export / Import](#)
- [Important Information](#)

Introduction

MADRIX 5 uses so-called Storage Places [storage bins] to store and organize your lighting visuals.

- Storage Places are part of a Storage.
[Because of this, a Storage offers options that affect a single Storage Place or all of its included Storage Places.]
- The screenshot below shows the complete **Storage Deck A** including the **numbered Storage Places** [Storage Place 1 to 62 can be seen by default]. Learn more »[Storages](#)



Overview

- A single Storage contains 256 Storage Places. And MADRIX 5 offers up to 256 Storages.
- In total, you have therefore access to 256 x 256 Storage Places.

Workflow

- Storage Places allow you to access, manage, and organize your different lighting visuals.
- In order to use MADRIX Effects and light effects, you need to set them up first.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Controls



- Shows an empty Storage Place with its default configuration.
[The default MADRIX Effect is: SCE Color with the color Black.]



- Shows a preselected Storage Place, which is not active yet.



- Shows the currently selected Storage Place. This Storage Place is active on the selected Storage.

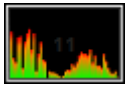


- Shows that this Storage Place contains visuals configured by you. The Storage Place is occupied and not empty.



- Shows a Storage Place that is currently selected on the other side. You can only select a Storage Place once on either side. This Storage Place is shown already on the left or the

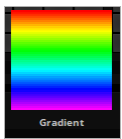
right side and cannot be accessed.



- You can increase the size of a Storage Place as shown on the user interface [Learn more »[Storages](#)]. When the size is large enough, MADRIX 5 will include a small Thumbnail preview of the MADRIX Effect that is stored in the Storage Place. Learn more below.



- You can decrease the size of a Storage Place as shown on the user interface [Learn more »[Storages](#)]. When the size is too small, MADRIX 5 will only show small icons.



- Shows a Thumbnail. Hover with your mouse over a single Storage Place in order to see a small preview of the MADRIX Effect that is stored in the Storage Place. The Thumbnail can be generated automatically or manually. Learn more [below](#)



- The scroll bar at the bottom is used for scrolling through the panel.



- Is part of the scroll bar and shows the location of occupied Storage Places.




- Is part of the scroll bar and shows the location of the currently selected Storage Place.

Working With Storage Places

Using The Mouse

- **Left Mouse Click** - Click with your left mouse button directly on a single Storage Place to select and activate it. MADRIX 5 will automatically fade to the new Storage Place according to the Fade Time and Fade Type of the crossfader.
- **Left Mouse Double-Click** - Perform a double-click with your left mouse button directly on a single Storage Place to select and activate it immediately without using the Fade Time and Fade Type of the crossfader.
- **Right Mouse Click** - Calls up the context menu as explained below.
- **Left Mouse Click And Hold And Swipe/Drag** - Click with your left mouse button in the general direction of the Storage Place panel, continue to hold, and move your mouse in order to swipe and drag the entire panel. This allows you to navigate through the Storage Place panel. [You can also use the scroll bar at the bottom.]
- **Scroll Wheel** - Click in the the general direction of the Storage Place panel to focus it. Then, use the scroll wheel of your mouse to scroll through the panel.

-  Click with your left mouse on this scroll bar to scroll through the Storage Place panel.

Automatic Fade

- MADRIX 5 automatically applies an automatic fade according to the Fade Time and Fade Type of the Crossfader when you are switching from one Storage Place to another Storage Place within one, single Storage.
- Example: S1 P34 is currently selected. Now, select S1 P22 and MADRIX 5 will automatically do a crossfade for you [incl. Fade Time and Fade Type].
- [Perform a Left Mouse Double-Click to not use the automatic fade. This will activate the next Storage Place without a crossfade.]

Drag And Drop [Copy/Cut/Paste]

Copy And Paste

- **Left Mouse Click And 2 Sec. Hold** - You can perform a Copy and Paste with the mouse.
Use a left mouse click on a Storage Place and continue to hold for 2 seconds. A small + appears. Continue to hold and move your mouse to another Storage Place. Release the mouse button to paste a copy onto the new Storage Place.
Use the keyboard button **Ctrl** in addition to remove the wait time to immediately perform the drag and drop.

Cut And Paste

- **Left Mouse Click And 2 Sec. Hold + Shift** - You can perform a Cut and Paste with the mouse.
Use a left mouse click on a Storage Place and continue to hold for 2 seconds. Press Shift in addition. A small rectangle appears. Continue to hold the buttons and keys and move your mouse to another Storage Place. Release the mouse button to move the previously selected Storage Place to the new position.
Use the keyboard button **Shift** in addition to remove the wait time to immediately perform the drag and drop.

Drag And Drop

- **File Drag And Drop** - You can select a MADRIX 5 Storage Place file [of the file type *.mispz or *.mispx] in Windows and drag it to a Storage Place of your choice in MADRIX 5 in order to load it in MADRIX 5.

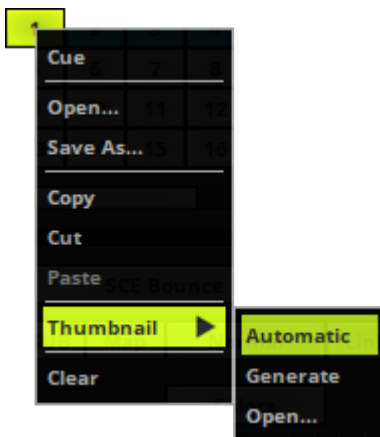
Keyboard Shortcuts

- **Arrow Keys** - Use the 4 arrow keys on your computer keyboard to navigate and in order to preselect a specific Storage Place.
- **Spacebar/Enter** - Press the Spacebar or Enter key on your keyboard to actively select a preselected Storage Place.
- **Page Up/Page Down** - Press the Page Up and Page Down keys to scroll through the Storage Place panel back and forth.
- **Home/End** - Press the Home key to instantly display the first Storage Place [P1]. Press the End key to instantly display the last Storage Place [P256].
- **Ctrl+F** - Press F to instantly jump back to your currently selected Storage Place and to bring it into focus.

Context Menu

There are several options available for each Storage Place via a context menu.

- **Right Mouse Click** on a Storage Place to call up the context menu.
- A small window will be shown.



You can use the following options:

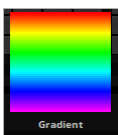
- **Cue** - Adds the currently selected Storage Place to the current Cue List.

- **Open...** - Loads a previously saved MADRIX 5 Storage Place file [of the file type *.mspz or *.mspx]. A new window opens for you to select the file on your harddisk.
- **Save...** - Saves the current Storage Place configuration to an external file [of the file type *.mspz or *.mspx]. A new window opens for you to select a location on your harddisk. Simply enter a name and click **Save**
 - The default MADRIX Effect, SCE Color with the color Black, cannot be saved unless you change the the Storage Place Description. Learn more »[Storages](#)
- **Copy** - Copies the current Storage Place configuration into the clipboard as a duplicate.
- **Cut** - Copies the current Storage Place configuration into the clipboard and applies a **Clear**
- **Paste** - Inserts a copy of a Storage Place from the clipboard into the currently focused Storage Place.
- **Thumbnail** - Defines how MADRIX 5 manages the Thumbnail of the currently selected Storage Place. Learn more [below](#)
- **Clear** - Removes the current Storage Place configuration and restores the default, blank Storage Place.

Thumbnails

Hover with your mouse over a single Storage Place in order to see a small preview of the MADRIX Effect that is stored in the Storage Place.

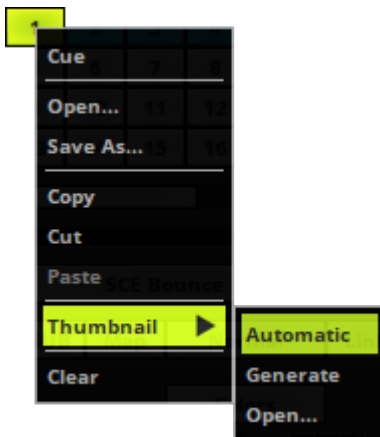
Thumbnails are shown in 256 x 256 pixel resolution.



When using the context menu of a Storage Place, you can set up how MADRIX 5 manages the Thumbnail of each individual Storage Place. First, make sure that the currently selected Storage Place is also the active Storage Place of this Storage.

- **Right Mouse Click** on a Storage Place to call up the context menu.
- A small window will be shown.

- Navigate to **Thumbnail**



- **Automatic** - Is activated by default. MADRIX 5 will automatically generate a new Thumbnail each time you leave this Storage Place and switch to another Storage Place. That means the Thumbnail preview will always be up to date and show the last visual status.

- **Generate** - Allows you to manually generate a new Thumbnail at this moment. Automatic will then be deactivated as a result.

Once a manual Thumbnail has been generated, MADRIX 5 will use this Thumbnail until you manually generate a new Thumbnail or activate Automatic again.

- **Open...** - Allows you to load a custom image and have it shown as Thumbnail for this Storage Place.

The original aspect ratio of an image will be kept, but the longer edge will be limited to 256 pixels.

Supported image formats include

- Bitmap [of the file type *.bmp]
- GIF [of the file type *.gif]
- JPG [of the file types *.jpg, *.jpeg, *.jpe, *.jfif]
- PNG [of the file type *.png]
- TIFF [of the file types *.tif, *.tiff]

Once an image has been loaded, MADRIX 5 will use it as the Thumbnail until you load a new image or activate Automatic again.

You can also define how thumbnails look. Learn more »[User Interface](#)

Export / Import

Import

Learn more » [File Types](#)

File Menu

- Go to the menu **File > Import > Storage Place > Storage Place Deck A / Deck B...**
- You can import previously saved MADRIX 5 Storage Place file [of the file type *.mspz or *.mspx] onto the currently selected Storage Place on the left or on the right side. A new window opens for you to select the file on your harddisk. [This is the same functionality as Open... from the context menu.]

Drag And Drop

- **File Drag And Drop** - You can select a MADRIX 5 Storage Place file [of the file type *.mspz or *.mspx] in Windows and drag it to a Storage Place of your choice in MADRIX 5 in order to load it in MADRIX 5.

Export

File Menu

- Go to the menu **File > Export > Storage Place > Storage Place Deck A / Deck B...**
You can export the currently selected Storage Place to an external file [of the file type *.mspz or *.mspx]. A new window opens for you to select a location on your harddisk. Simply enter a name. [This is the same functionality as Save... from the context menu.]
- Go to the menu **File > Export > Storage Place > All...**
You can export all currently occupied Storage Place to individual, external files [of the file type *.mspz or *.mspx]. A new window opens for you to select a location on your harddisk. Simply enter one name and MADRIX 5 will automatically add the Storage Place number to the file as well.

Important Information

- **Make sure to save your MADRIX 5 Setup file after configuring your MADRIX Effects [and working with Storage Places].**
- **When switching to a different Storage, MADRIX 5 will not automatically select a new Storage Place for you. When switching to another Storage, you need to actively select a different Storage Place if that is what you want.**

3.10 Effect Areas [Deck A / Deck B]

This topic includes:

- [Overview](#)
- [Programmer View](#)
- [Effect Selection](#)
- [Individual Controls \[Effect Settings\]](#)
- [Universal Controls \[Layer Settings\]](#)

Overview

The MADRIX Effects are one of the most important parts of the software. The user interface offers dedicated work areas for you to work with visuals [Effect Area Deck A and Effect Area Deck B].

When you select an empty Storage Place, the corresponding Effect Area will look like this by default:



Programmer View

- **In order to have access to the Effect Areas, make sure to select the Programmer and Layers view first!**

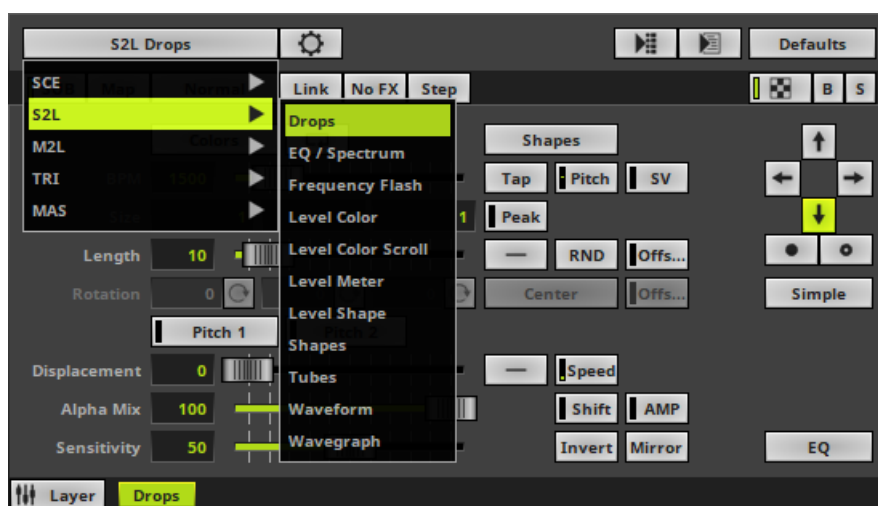


Effect Selection

- **Effect Selection**
 - **Left Mouse Click** - Allows you to select a specific MADRIX Effect from the library of stock effects.

SCE Color

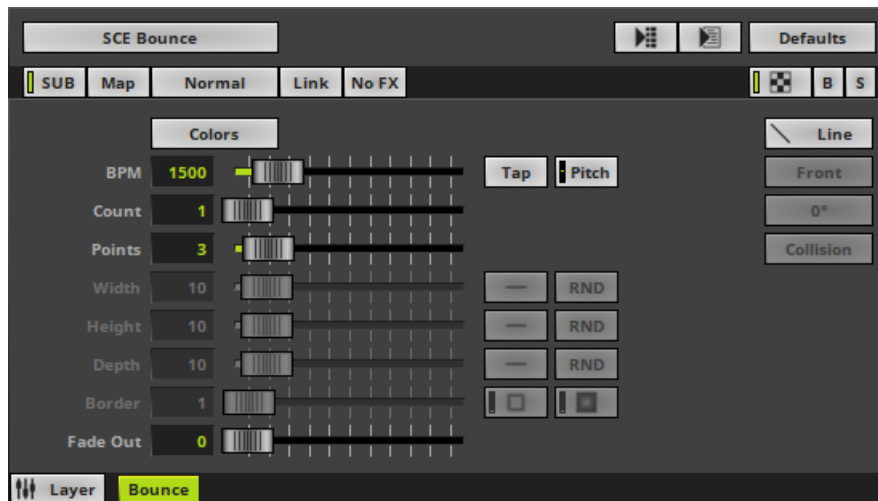
- SCE Color is the default setting.
- Learn more » [Effects \[Visuals\]](#)
- Learn more » [MADRIX Effects](#)

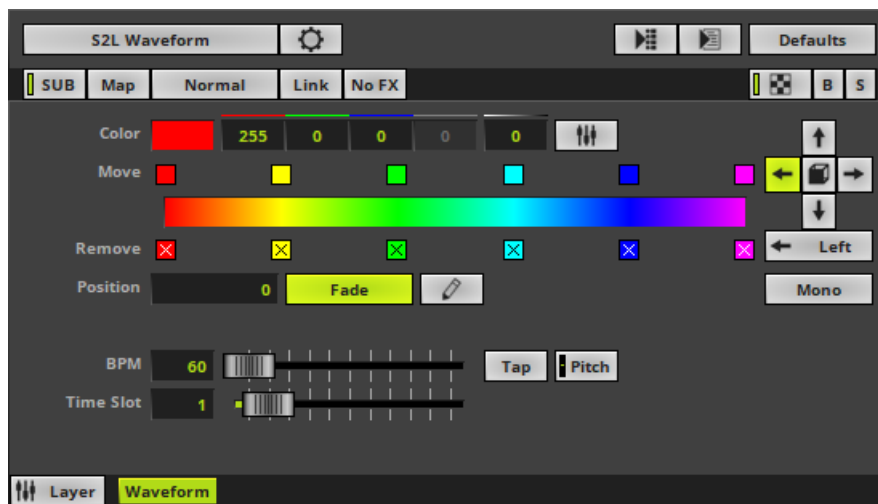


Individual Controls [Effect Settings]

Each MADRIX Effect has its own buttons and controls. In this way you can customize your visuals as you wish.

Have a look at the 3 examples below and you will see that the standard controls [see below] are always there, while the rest of them changes with every effect.





Universal Controls [Layer Settings]

At the same time, a standard set of controls is available for each MADRIX Effect [i.e. each Layer] for additional customization. Learn more » [Layers](#)

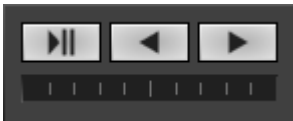


3.11 Cue List Section

This topic includes:

- [Overview](#)
- [Controls](#)
- [More Information](#)

Overview



The MADRIX 5 main user interface offers 3 quick access buttons to control the current Cue List.

Controls



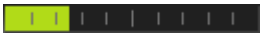
Next - Skips to the next Cue List entry.



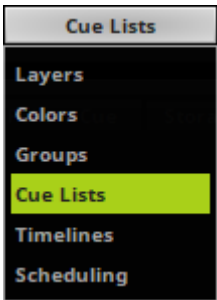
Previous - Goes back to the previous Cue List entry.



Play/Pause - Starts or stops the current Cue List.



Progress - Shows the progression of the current Cue regarding its Duration with the help of a progress bar.



Cue Lists - Changes the view and opens the Cue List Editor. More options will be available to you then.

More Information

You need to configure a Cue List in order to use the Cue List features.

Learn more »[Cue List Editor](#)

3.12 Full-Screen Mode

This topic includes:

- [Overview](#)
- [Options](#)

Overview

- Go to the menu **View > Full Screen**
[Keyboard shortcut: **F11**]
- Press **F11** again to deactivate the full-screen mode.

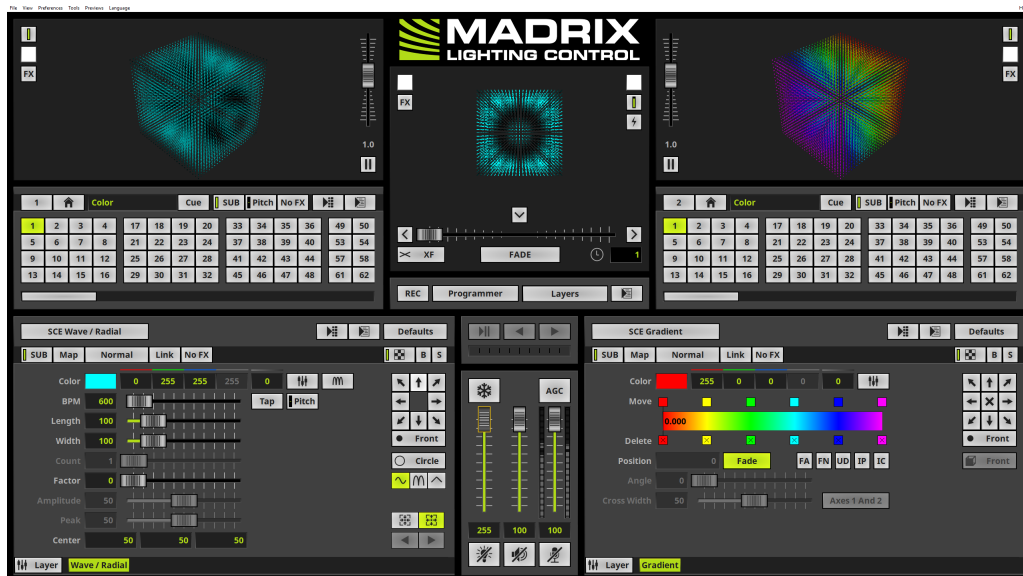
The graphical user interface [GUI] can be extended to fill the entire size of your monitor. This mode is called Full Screen. There is a difference between maximizing the user interface window or enabling the full-screen mode:

- The title bar will not be visible anymore in the full-screen mode, which saves space for the user interface.
- In addition, you can choose to show the menu bar or to hide the menu bar to save further space. Change the setting as described below. By default, the menu bar is shown.

MADRIX 5 will also automatically hide the

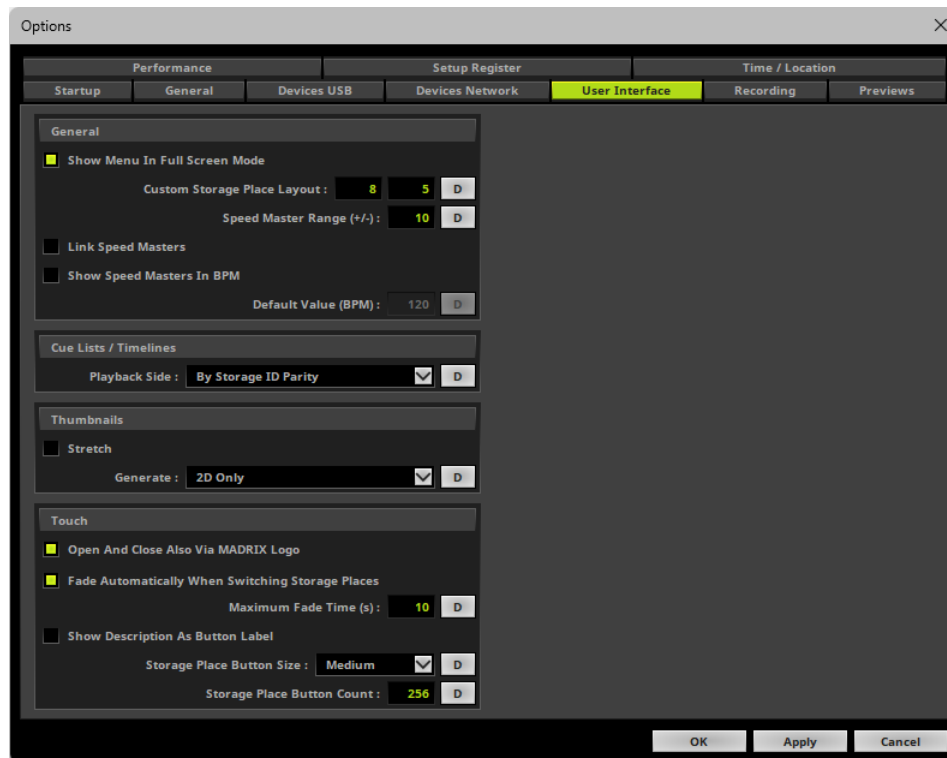
Windows taskbar in the full-screen mode.

[Use the Windows key on your keyboard to temporarily access the taskbar again.]



Options

- Go to the menu **Preferences > Options... > User Interface**



- **General > Show Menu In Full Screen Mode** - Shows the menu bar also in Full Screen mode. Deactivate this option to hide the menu in Full Screen mode. [By default, the menu is shown in Full Screen mode.]

3.13 Touch Screen

Topics of this chapter:

- [Overview](#)
- [Important Notes](#)
- [Options](#)
- [Moving The Touch Screen To A Different Monitor](#)

Overview

- Go to the menu **View > Touch...**
[Keyboard shortcut: **F8**]
- Or when enabled in the settings, you can open/close the touch screen window by clicking on the **MADRIX Logo**.

The touch-screen interface was especially designed to provide you with an intuitive and easy to use interface. It was designed for touch-screen panels, but can also be used with the help of the mouse.



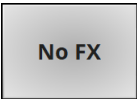
The touch screen interface provides a selection of controls of the regular user interface [as explained in the previous chapters].



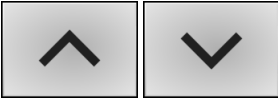
Submaster Deck A / Deck B



Color Filter Deck A / Deck B



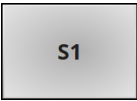
Filter [FX] Deck A / Deck B



Close/Open Preview



Storage Place Scroll



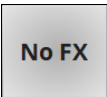
Storage Selection



Storage Places [Occupied, Currently Selected, Empty]



Main Output Color Filter



Main Output FX Filter



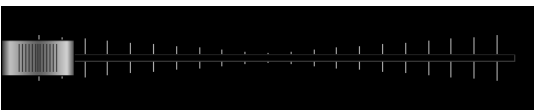
Main Output Strobe Color



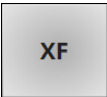
Main Output Strobe Frequency



Main Output Strobe



Crossfader



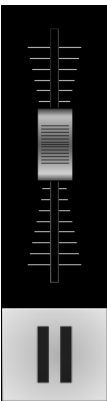
Crossfader Fade Type



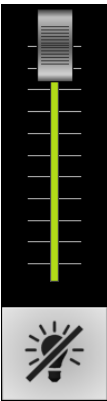
Automatic Fade



Crossfader Fade Time

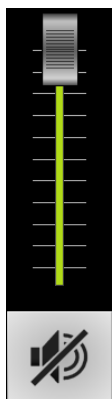


Speed Master Deck A



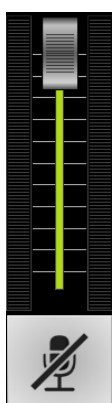
Master

Blackout



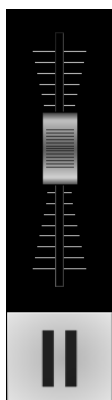
Audio Output Level

Mute Audio Output



Audio Input Level

Mute Audio Input



Speed Master Deck B

Important Notes

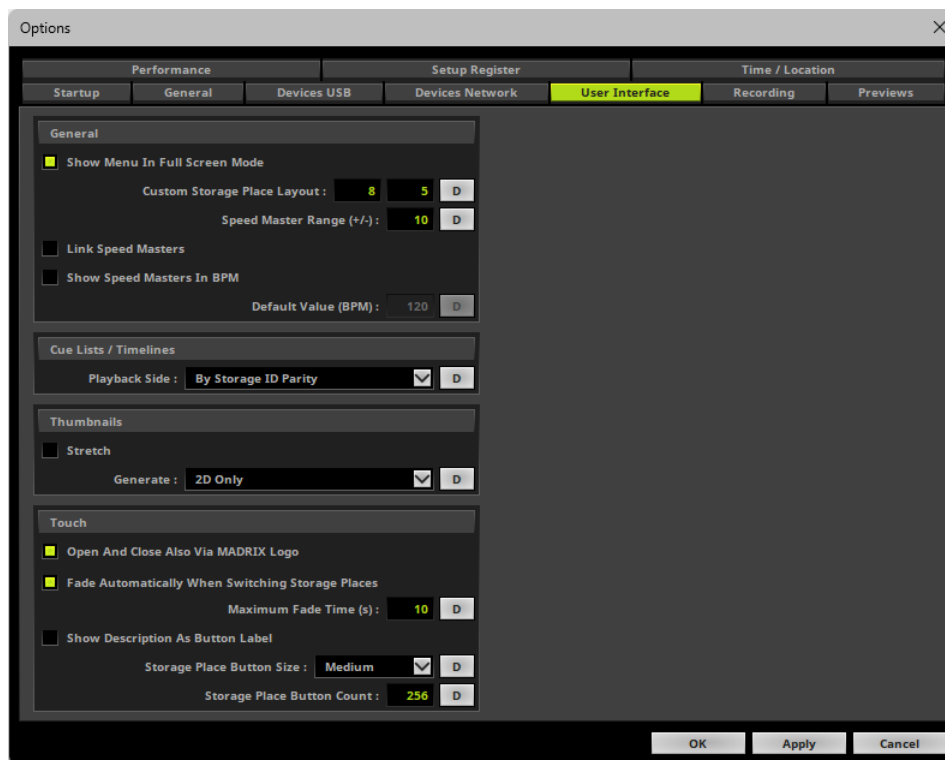
- All 3 Previews of the main MADRIX 5 user interface will be disabled, when the Touch Screen is activated and has the focus. This ensures high performance.

However, they will be activated again when the user interface has the focus again [click on the user interface to get the focus].

- A Cue List is not available, when using the Touch Screen. / The Touch Screen is not available when a Cue List is running.

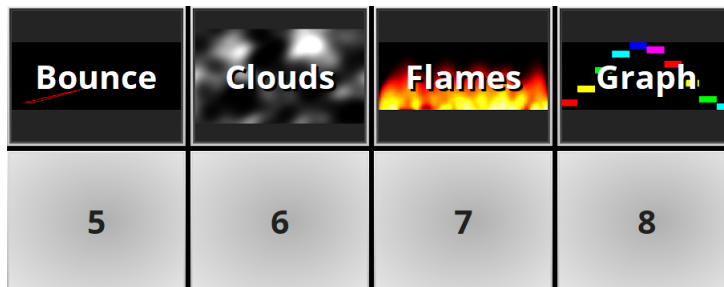
Options

- Go to the menu **Preferences > Options... > User Interface**



- **Touch:**
- **Open And Close Also Via MADRIX Logo** - Allows you to open or close the Touch Screen Interface by clicking on the MADRIX logo.
- **Fade Automatically When Switching Storage Places** - Activate this option if the Crossfader should make an automatic crossfade when you select a new Storage Place on the opposite Storage [e.g., from S1 P1 to S2 P1].

- **Maximum Fade Time (s)** - Defines the maximum Fade Time in seconds you can set up in the Touch Screen for the automatic fade of the Crossfader.
 - **D** - Restores the default value. The default value is 10 s.
- **Show Description As Button Label** - Will show the individual Description of a Storage Places on the Touch Screen interface instead of the standard numbering [1, 2, 3, etc]. If the Storage Place has the standard Description **Color**, the standard numbering will be shown.



- **Storage Place Button Size** - Choose from three different size of how small or large Storage Places are shown on the Touch Screen Interface.
 - Chose from **Small, Medium, Large**.
 - **D** - Restores the default value. The default value is Medium.
- **Storage Place Button Count** - Choose how many Storage Places are shown on the touch interface.
 - Enter a value from 1 to 256.
 - **D** - Restores the default value. The default value is 256.

Moving The Touch Screen To A Different Monitor

- Go to the menu **View > Move Touch To Next Screen**
- **Tab** - Or use the Tabulator key on your keyboard [repeatedly] to move the Touch Screen interface to your first, second, third, etc. computer monitor or display. [This only works when the Touch Screen Window has the focus.]



//PART 4

Using The Software

4 Using The Software

This topic includes:

- [Introduction](#)
- [Topics Of This Chapter](#)

Introduction

MADRIX 5 already is an easy-to-use, user-friendly, and reliable Windows software.

You can use it to create complex lighting scenes and entire shows from a normal computer or laptop. You can learn how to use MADRIX 5 in this chapter.

Topics Of This Chapter

- » [MADRIX 5 Setup \[New / Open\]](#)
- » [Matrix Generator](#)
- » [Patch Editor](#)
- » [DVI Patch](#)
- » [CSV Fixture List Import](#)
- » [Merging Patches](#)
- » [Replacing Or Updating Patched Fixtures](#)
- » [Background Image](#)
- » [Fixture Groups \[Group Control\]](#)
- » [\[Global\] Colors And Intensity](#)
- » [Effects \[Visuals\]](#)
- » [Filters \[FX\]](#)
- » [Layers](#)
- » [Mapping / Tiling / Rotation](#)

- » [Chasers](#)
- » [Tools](#)
- » [Backup System](#)
- » [File Types](#)
- » [Recording](#)
- » [MREC Conversion](#)

4.1 MADRIX 5 Setup [New / Open]

This topic includes:

- [Introduction](#)
- [New Setup](#)
- [Open Setup](#)
- [Setup Options](#)

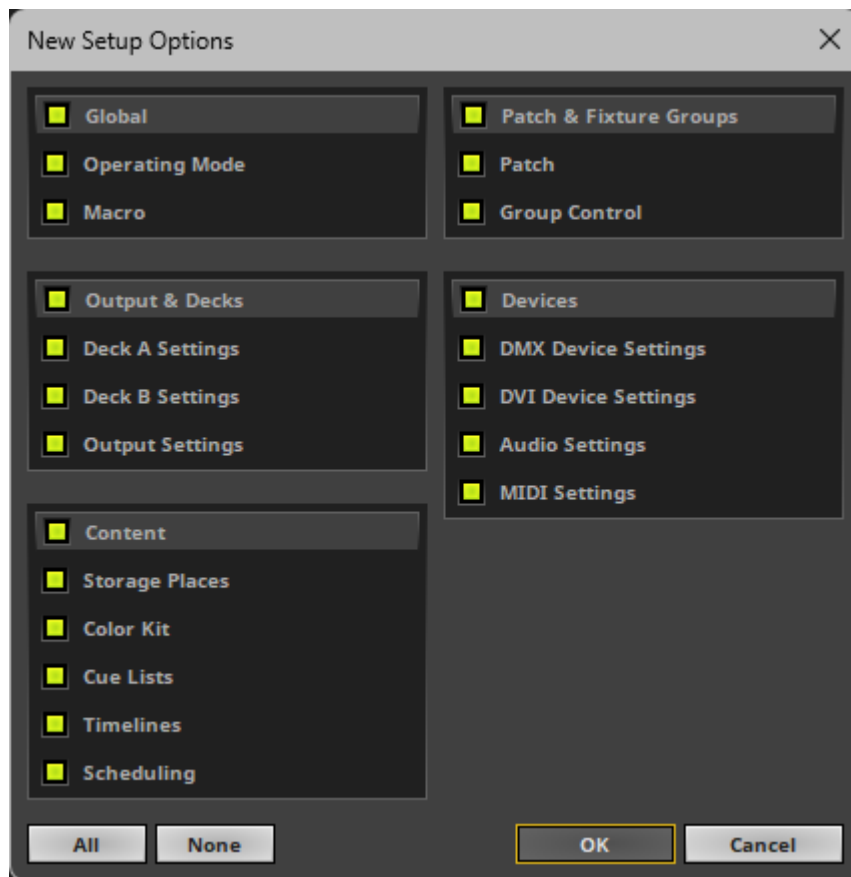
Introduction

The MADRIX 5 Setup file is the most important file type you are working with when using the MADRIX 5 Software. The Setup file includes your configuration and visuals.

Note: The MADRIX 5 Setup file does not include videos or images. These are both only referenced from your harddisk. [When moved or deleted, MADRIX 5 cannot access them anymore.]

New Setup

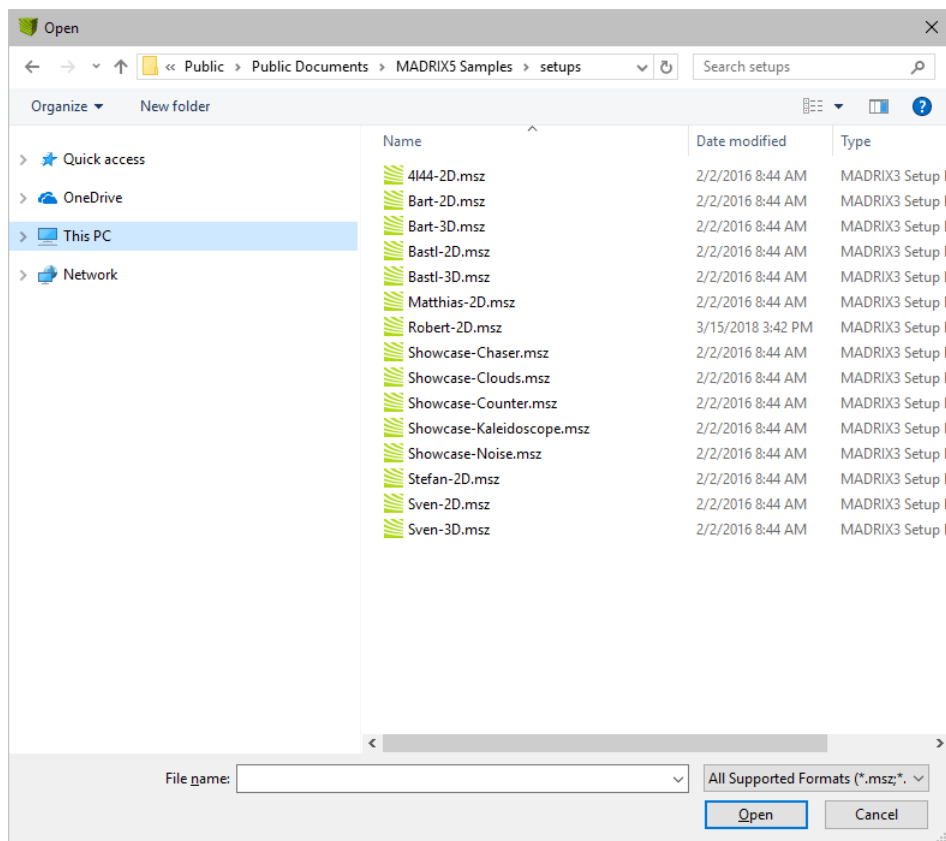
- Go to the menu **File > New Setup**
[Keyboard shortcut: **Ctrl+N**]



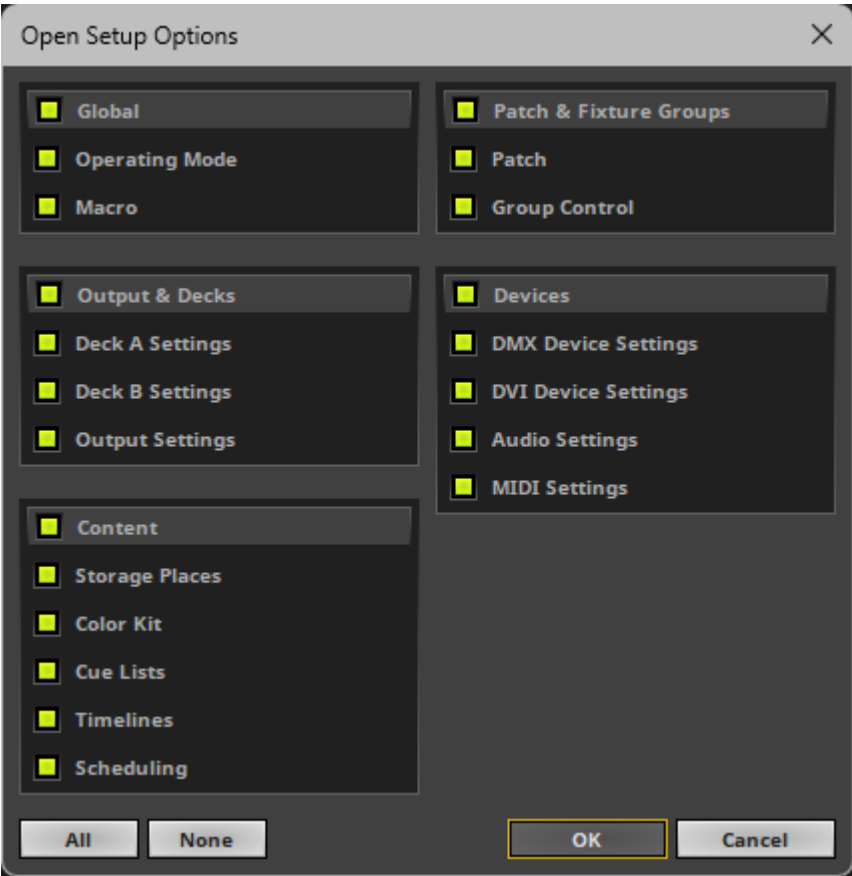
- When creating a new MADRIX 5 Setup, you can choose which components to disregard and reset to their default values or empty states.
- All items that are selected will be cleared and made new.
- Learn more [below](#)

Open Setup

- Go to the menu **File > Open Setup...**
[Keyboard shortcut: **Ctrl+O**]
- Choose a Setup file from your harddisk.



- Select which parts to load from the Setup file.
- All items that are selected will loaded from the Setup file.
- Any settings that are deselected will remain as they currently are and not be loaded from the Setup file.
- Learn more [below](#)



Setup Options

The following items can be selected/deselected when creating a new Setup file or when loading an existing Setup file.

Setup Options	Includes	Learn More
<ul style="list-style-type: none">▪ Global	<ul style="list-style-type: none">▪ Operating Mode - Includes if Programmer mode or Operator mode are selected.▪ Macro - Includes the Main Output Macro.	<ul style="list-style-type: none">▪ Learn more<ul style="list-style-type: none">»Operating Modes [Programmer / Operator]▪ Learn more<ul style="list-style-type: none">»Macros And Scripts

<ul style="list-style-type: none"> ▪ Output & Decks 	<ul style="list-style-type: none"> ▪ Deck A Settings - Includes the settings of the left deck, including Submaster, Color Filter, Filter FX, and Speed Master. ▪ Deck B Settings - Includes the settings of the right deck, including Submaster, Color Filter, Filter FX, and Speed Master. ▪ Output Settings - Includes the settings of the main output, including Color Filter, Filter FX, Strobe, Master, Freeze, Blackout, as well as Audio Output Level, and Audio Input Level. 	<ul style="list-style-type: none"> ▪ Learn more »Controls [Deck A / Deck B] ▪ Learn more »Main Output / Master / Audio Levels
<ul style="list-style-type: none"> ▪ Content 	<ul style="list-style-type: none"> ▪ Storage Places - Includes all Storage Places, which include all effects, visuals, and Layers, and accompanying settings, such as Storage Place Description, Storage Place Submaster, Storage Place Speed Pitch, Storage Place Filter FX, Storage Place Parameter Chaser, and Storage Place Macro. ▪ Color Kit - Includes Global Color Lists and Global Colors. ▪ Cue Lists - Includes one or more Cue Lists and all of their settings and cues. ▪ Timelines - Includes one or more Timelines and all of their settings, audio segments, and cue segments. ▪ Scheduling - Includes all Schedules and their Events. 	<ul style="list-style-type: none"> ▪ Learn more »Storage Places [256 x 256] ▪ Learn more »[Global] Colors And Intensity ▪ Learn more »Cue List Editor ▪ Learn more »Timeline Editor ▪ Learn more »Scheduling
<ul style="list-style-type: none"> ▪ Patch & Fixture Groups 	<ul style="list-style-type: none"> ▪ Patch - Includes the Patch including Fixture Groups. ▪ Group Control - Includes all group control presets and settings. 	<ul style="list-style-type: none"> ▪ Learn more »Patching ▪ Learn more »Fixture Groups [Group Control]
<ul style="list-style-type: none"> ▪ Devices 	<ul style="list-style-type: none"> ▪ DMX Device Settings - Includes all settings for DMX-based devices that are configured in the Device Manager. 	<ul style="list-style-type: none"> ▪ Learn more »OUTPUT Settings

	<ul style="list-style-type: none">▪ DVI Device Settings - Includes all settings for DVI-based devices that are configured in the Device Manager.▪ Audio Settings - Includes all main audio settings, including Audio Performance, Audio Input, and Audio Output.▪ MIDI Settings - Includes all settings of MIDI devices.	<ul style="list-style-type: none">▪ Learn more » Audio And Sound▪ Learn more » MIDI [IN / OUT]
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4.2 Patching

This topic includes:

- [Introduction](#)
- [Topics Of This Chapter](#)

Introduction

Patching fixtures and thereby telling the software which fixtures to control, where they are placed, and how they are addressed is a very important step of the overall first configuration of a project.

The MADRIX 5 Software offers different tools and features to achieve this.

Topics Of This Chapter

Patching include the following topics:

- » [Matrix Generator](#)
- » [Patch Editor](#)
- » [DVI Patch](#)

- » [CSV Fixture List Import](#)
- » [Merging Patches](#)
- » [Replacing Or Updating Patched Fixtures](#)
- » [Background Image](#)

4.2.1 Matrix Generator

This topic includes:

- [Introduction](#)
- [When To Use The Matrix Generator](#)
- [Overview](#)
- [Step-By-Step Configuration](#)
- [Settings](#)
- [Examples For Start Corner, Main Orientation, and Snake Mode](#)
- [2D DMX Configuration](#)
- [2D DVI Configuration](#)
- [3D DMX Configuration](#)
- [3D DVI Configuration](#)
- [Important Notes](#)
- [Further Configuration](#)
- [Further Tips](#)

Introduction

You need to tell the MADRIX 5 Software

- 1] which LED fixtures you are going to use.
- 2] how many LED fixtures you are going to use.
- 3] how they are placed.

This configuration of the virtual LED matrix is stored in a so-called Patch file.

Setting up the virtual LED matrix/the Patch file is a requirement! It is necessary for the initial configuration of MADRIX 5.

MADRIX 5 offers 2 tools for this task:

- **Matrix Generator**
- **Patch Editor**

When To Use The Matrix Generator

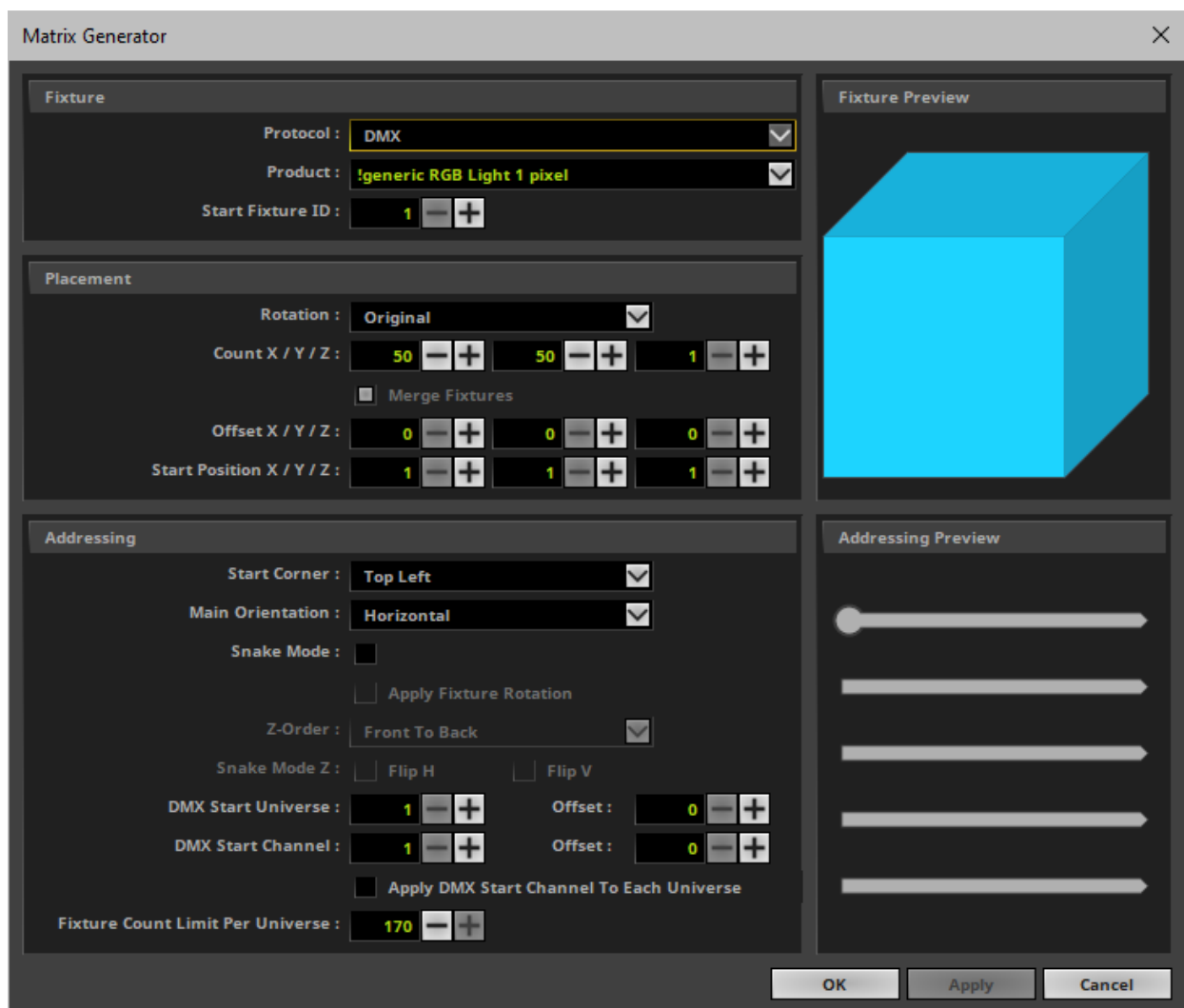
The Matrix Generator helps you to generate a virtual LED matrix automatically according to your settings. This automatic process can be very helpful, when your LED installation is set up in a very simple, logical, or linear way and only uses 1 fixture type. The Patch file will be automatically generated by MADRIX 5 for you.

The Patch Editor is a graphical editor to directly create the Patch file. The Patch Editor offers the same functions as the Matrix Generator and many more options. It allows you to configure your virtual matrix in great detail. You can place LED fixtures freely and individually. If you have more than 1 kind of fixture, use the Patch Editor.

This topic explains the Matrix Generator.

Overview

- Go to **Preferences > Matrix Generator...**
[Keyboard shortcut: **F2**]
- A new window will open.



- Now, configure your virtual LED matrix according to the following settings.

Step-By-Step Configuration

To work with the Matrix Generator, follow these steps:

- 1] Open the Matrix Generator.
- 2] Set up all settings, including **Fixture**, **Placement**, and **Addressing**.
- 3] Click **Apply** to confirm your settings and MADRIX 5 will create the Patch file automatically for you.

- Click **OK** to confirm your settings and to close the Matrix Generator.
- Click **Cancel** to discard any changes and to close the Matrix Generator.

Settings

In this user guide it is not possible to give universal recommendations for the required settings, because every LED project is different. You need to configure the settings of the Matrix Generator according to your individual LED setup.

1] Fixture

This section defines which fixtures you want to use.

To assist you, a **Fixture Preview** is shown that includes the start channel in blue, the number of pixels, and orientation. [Imagine to look directly at the LED products in camera view.]

- **Protocol** - First, choose the general type of LED fixture you are using [**DMX** or **DVI**].
 - DMX-based fixtures include DMX512, Art-Net, Streaming ACN [sACN / E1.31], Color Kinetics [KiNET], and Philips hue.
 - DVI-based fixtures include DVI, ColourSmart Link, Colorlight A8, Colorlight 5A, Colorlight T9, and Eurolite T9 products.
 - If you wish to used both fixture types at the same time, please configure your virtual LED matrix with the help of the »[Patch Editor](#)

Note: If **DVI** is selected, all controls that are not relevant to DVI fixtures will be disabled.

- **Product** - Second, choose your exact LED product.
 - You can use the downward triangle to call up the complete list of fixtures.
 - Perform a left mouse click and you can use the input field as a filter to type in the fixture you are looking for.
 - If your fixture is not yet available, please see »[Supported Fixtures \[LED Products\]](#)
- **Start Fixture ID** - Defines where MADRIX 5 starts indexing fixtures. The Fixture ID is a unique identifier for each fixture that is added.
 - The default value is 1.
 - When using the Matrix Generator, the default setting is also recommended setting.
 - When using the Patch Editor, the Start Fixture ID needs to be a number that is not yet occupied by fixtures in

the Patch. Each fixture needs its own, unique Fixture ID. MADRIX 5 will automatically provide the next number that is free to use. [You will not be able to add new fixtures if an ID is not unique.]

- **A general option for DMX:** Select *!generic RGB Light 1 pixel* for any LED product with RGB LEDs and 3 DMX channels.
- **A general option for DMX:** Select *!generic RGBW Light 1 pixel* for any LED product with RGBW LEDs and 4 DMX channels.
- **A general option for DVI:** Select *!generic DVI 1x1 RGB* for any DVI-based LED product and simply enter the pixel resolution under **Placement**

2] Placement

This section defines how many fixtures you want to use and how they are placed.

- **Rotation** - Uses the original rotation of the fixtures, as defined in the »[MADRIX 5 Fixture Editor](#). Or you can add to all of your fixtures a rotation of 90°, 180°, 270°.
- **Count X / Y / Z** - Defines the number of LED fixtures you are using.
 - **X** sets the number of fixtures on the X-axis [horizontal; width].
 - **Y** sets the number of fixtures on the Y-axis [vertical; height].
 - **Z** sets the number of fixtures on the Z-axis [level; depth].
 - **Please set up the number of fixtures you are using. Do not enter the total number of pixels. All fixtures profiles are already implemented with their specific number of LED pixels.**
 - **When setting up a 2D virtual LED matrix, Z should be 1. If Count Z is higher than 1, you will automatically create a 3D LED matrix.**
 - **The maximum value that can be entered is 65536. The number that can actually be used by you has theoretic limits as well as practical limits. Learn more [Limitations](#)**
- **Merge Fixtures** - Is only available for **Protocol > DVI**.
 - Activate this option if all your DVI fixtures, should be merged to one fixture. This can save computer performance.
 - Deactivate this option, if you want to be able to manage all your DVI fixtures separately, for example when creating a »[DVI Patch](#)
- **Offset X / Y / Z** - Adds spacing [gaps] to your virtual LED matrix separately for the X-axis, Y-axis, and Z-axis.
 - The value defines the size of the gaps between fixtures in pixels.
 - A value of 0 means that all fixtures are placed next to each other without spacing.
 - For example, a value of 1 means that 1 pixel spacing is added between fixtures.

- **Start Position X / Y / Z** - Positions fixtures correctly on the workspace.
 - In case of the Patch Editor, it can prevent fixtures to overlap. In general, you will not be able to add new fixtures if their positions overlap. However, you can intentionally allow overlapping fixtures if you want to.
» [Learn more](#)
- **Note:** When using DMX-based products, please pay attention to the maximum number of DMX channels according to your MADRIX 5 License and according to the performance of your PC.
- **Note:** When using DVI-based products, please pay attention to the maximum number of supported DVI voxels according to your MADRIX 5 License and according to the performance of your PC.

3] Addressing

This section defines the numbering of fixtures [DVI] and addressing of fixtures [DMX]. Since MADRIX 5 will do this automatically, certain parameters need to be specified by you on how MADRIX 5 should number or address fixtures automatically.

To assist you, a graphic is shown. [Imagine to look directly at the LED products in camera view.]

Please note: All fixture profiles are automatically working in HTP mode [Highest Takes Precedence].

[For example, you have 2 fixtures with the same DMX address. But due to their different locations in the MADRIX Patch, they receive different color values. Because HTP is activated for these fixtures, the highest color value will be put out onto the LEDs.]

When using the Patch Editor, you can choose not to set up all Addressing in the Add Fixtures window. The Patch Editor allows you to configure each fixture individually later.

- **Start Corner** - Defines where the automatic addressing starts and works together with Main Orientation. Learn more [Examples](#)
- **Main Orientation** - Defines if MADRIX 5 automatically addresses fixtures in a horizontal or vertical way. Addressing will start at the Start Corner and continue to the opposite direction [e.g., from left to right]. Please see the example below. Learn more [Examples](#)

- **Snake Mode** - Without Snake Mode, MADRIX 5 will address row by row or column by column [e.g., left to right, left to right, left to right, etc.]. With Snake Mode, MADRIX 5 will use alternate directions for each row or column [e.g., left to right, right to left, left to right, etc.]. Learn more [Snake Mode](#)
- **Apply Fixture Rotation** - Only works when Snake Mode is enabled. Rotates fixtures in each alternating row by 180°.
- **Z-Order** - Is only available for 3D. Defines if addressing in 3D starts with the first Z-axis in front [**Front To Back**] or with the last Z-axis in the back [**Back To Front**].
- **Snake Mode Z** - Is only available for 3D. Automatic addressing of fixtures on the Z-axis is done level by level. Activate this option if the Start Corner for each alternating level should be different.
 - **Flip H** - Switches the Start Corner horizontally [e.g., from Top Left to Top Right].
 - **Flip V** - Switches the Start Corner vertically [e.g., from Top Left to Bottom Left].
 - Activate both, Flip H and Flip V, to assign the complete opposite Start Corner [e.g., from Top Left to Bottom Right].
- **DMX Start Universe** - MADRIX 5 will start addressing using this DMX universe and automatically increment the DMX universe for each fixture when necessary.
 - A total of 512 DMX channels is available per DMX universe.
 - If your fixture addressing is greater than 512, MADRIX 5 will automatically assign a new DMX universe and start at DMX channel 1 in this new universe again.
 - **The maximum number that can be entered has theoretic limits as well as practical limits. Learn more [Limitations](#)**
 - When using the Patch Editor, MADRIX 5 will automatically calculate the next free start universe according to the fixture profile you have currently selected [Fixture > Product] and according to any changes you are making regarding your Patch.
 - In order for this to work, Auto-Address needs to be enabled in the Patch Editor [Preferences > Automatically Address New DMX Fixtures].
 - **Offset** - Allows you to define deviating addressing when fixtures need to be assigned to a new universe.
 - For example, fixtures are assigned to universe 1, 5, and 9 with an offset of 3, instead of the linear way of 1, 2, and 3.
- **DMX Start Channel** - MADRIX 5 will start the addressing using this DMX channel and automatically increment the DMX channel for each fixture.
 - Valid values range from 1 to 512.
 - **Note:** The maximum viable start channel will be calculated by the software depending on the fixture. E.g., for a 3-channel fixture, the maximum DMX Start Channel can be set as 510. If you need to set it to a higher value, you can do so manually in the »[Patch Editor](#)
 - When using the Patch Editor, MADRIX 5 will automatically calculate the next free start channel according to the fixture profile you have currently selected [Fixture > Product] and according to any changes you are making

regarding your Patch.

- In order for this to work, Auto-Address needs to be enabled in the Patch Editor [Preferences > Automatically Address New DMX Fixtures].
- **Offset** - Allows you to quickly add additional values to the addresses of each newly created fixture.
- For example, 3-channel fixtures will have start channels 1, 11, 21, 31, etc. with an offset of 7, instead of 1, 4, 7, 10, etc.
- **Apply DMX Start Channel To Each Universe** - Uses the entered value for each DMX universe instead of only the first universe.
- **Fixture Count Limit Per Universe** - Defines the maximum number of fixtures the MADRIX 5 Software will place and address in a single DMX universe.
 - By default, the maximum number will automatically be provided. Adjust the number as needed or leave the default value.

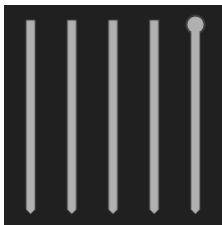
4] Confirmation


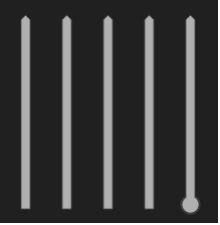
- Click **Apply** to confirm your settings.
- Click **OK** to close the window.

Examples For Start Corner, Main Orientation, and Snake Mode

Start Corner And Main Orientation

DMX Start Corner	Main Orientation: Horizontal	Main Orientation: Vertical
------------------	------------------------------	----------------------------

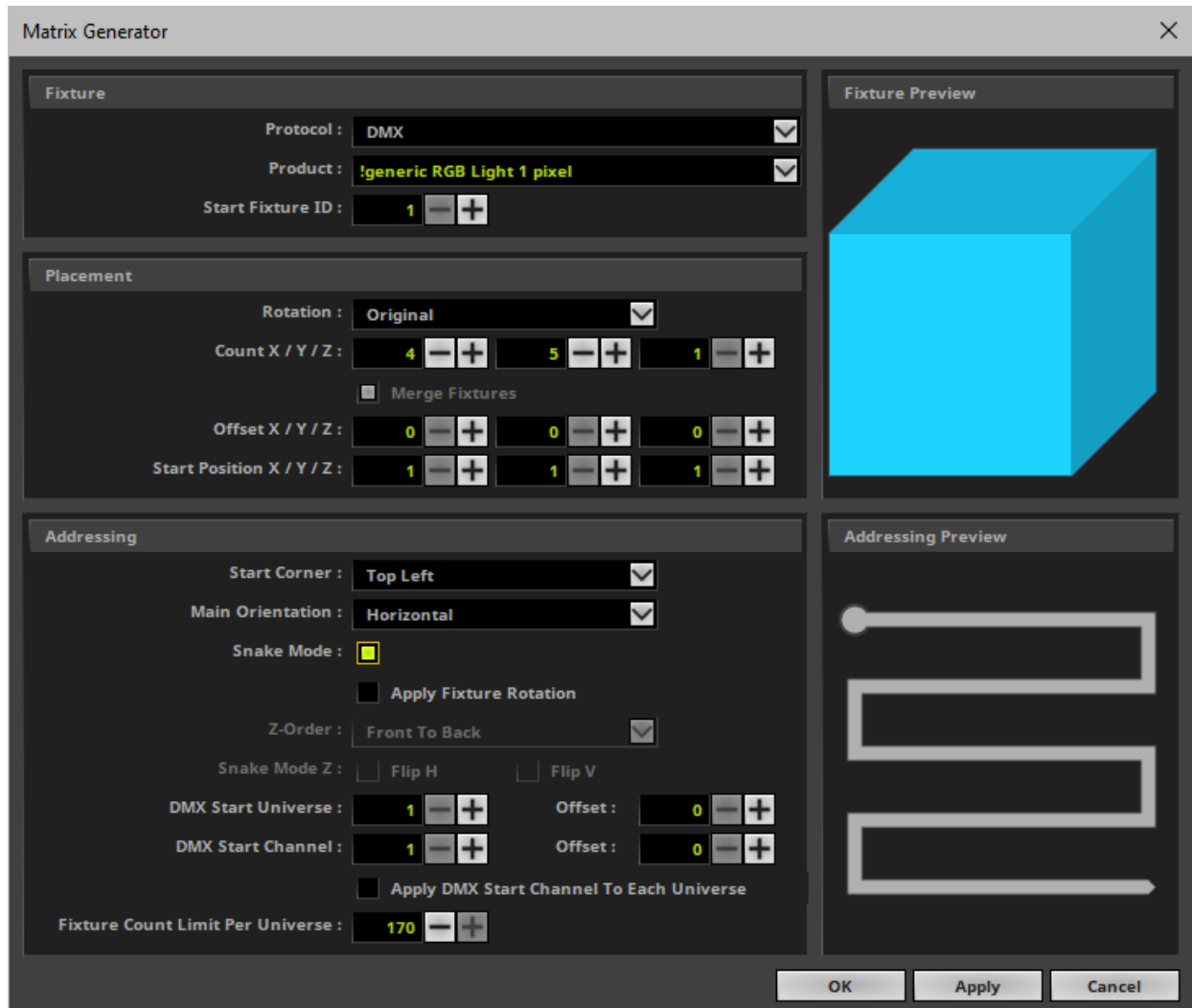
Top Left	 <p>Addressing:</p> <ul style="list-style-type: none"> - Downwards - From Left to Right - From Left to Right - From Left to Right - etc. 	 <p>Addressing:</p> <ul style="list-style-type: none"> - To the Right - From Top to Bottom - From Top to Bottom - From Top to Bottom - etc.
Top Right	 <p>Addressing:</p> <ul style="list-style-type: none"> - Downwards - From Right to Left - From Right to Left - From Right to Left - etc. 	 <p>Addressing:</p> <ul style="list-style-type: none"> - To the Left - From Top to Bottom - From Top to Bottom - From Top to Bottom - etc.

Bottom Left	 <p>Addressing:</p> <ul style="list-style-type: none"> - Upwards - From Left to Right - From Left to Right - From Left to Right - etc. 	 <p>Addressing:</p> <ul style="list-style-type: none"> - To the Right - From Bottom to Top - From Bottom to Top - From Bottom to Top - etc.
Bottom Right	 <p>Addressing:</p> <ul style="list-style-type: none"> - Upwards - From Right to Left - From Right to Left - From Right to Left - etc. 	 <p>Addressing:</p> <ul style="list-style-type: none"> - To the Left - From Bottom to Top - From Bottom to Top - From Bottom to Top - etc.

Snake Mode

- Without Snake Mode, MADRIX 5 will address row by row or column by column [e.g., left to right, left to right, left to right, etc.].
- With Snake Mode, MADRIX 5 will use alternate directions for each row or column [e.g., left to right, right to left, left to right, etc.].
- In this example we configured a virtual LED matrix of 4 x 5 pixels using **Snake Mode**

- The **Matrix Generator** settings would look like this:



- In theory, the LEDs are arranged as follows: 3 channels per LED [due to RGB], 4 fixtures per row, and a total of 5 rows. Please see the illustration below:

1		4		7		10
2	→	5	→	8	→	11
3		6		9		12
						↓
22		19		16		13
23	←	20	←	17	←	14
24		21		18		15
↓						
25		28		31		34
26	→	29	→	32	→	35
27		30		33		36
						↓
46		43		40		37
47	←	44	←	41	←	38
48		45		42		39
↓						
49		52		55		58
50	→	53	→	56	→	59
51		54		57		60

2D DMX Configuration

To configure a 2D LED matrix with DMX-based fixtures, follow these steps:

- 1] Choose **Protocol > DMX**
- 2] Choose your **Product**
- 3] Set up **Rotation** if required
- 4] Set up **Count X** and **Count Y**
- 5] Set **Count Z** to **1**
- 6] Set up **Offset X** and **Offset Y** if required
- 7] Set **Offset Z** to **0**
- 8] Set up **Start Corner** and **Main Orientation**
- 9] Set up **Snake Mode** and **Apply Fixture Rotation** if required
- 10] Set up **DMX Start Universe**, **DMX Start Channel**, and **Fixture Count Limit Per Universe**

2D DVI Configuration

To configure a 2D LED matrix with DVI-based fixtures, follow these steps:

Merge Fixtures

- 1] Choose **Protocol > DVI**
- 2] Choose your **Product**
- 3] Set up **Rotation** if required
- 4] Set up **Count X** and **Count Y**
- 5] Set **Count Z** to **1**
- 6] Leave **Merge Fixtures** activated

Separate Fixtures

- 1] Choose **Protocol > DVI**
- 2] Choose your **Product**
- 3] Set up **Rotation** if required
- 4] Set up **Count X** and **Count Y**
- 5] Set **Count Z** to **1**
- 6] Deactivate **Merge Fixtures**
- 7] Set up **Start Corner** and **Main Orientation** if required
- 8] Set up **Snake Mode** and **Apply Fixture Rotation** if required

3D DMX Configuration

To configure a 3D LED matrix with DMX-based fixtures, follow these steps:

- 1] Configure all Settings as described under [Settings](#)

3D DVI Configuration

To configure a 3D LED matrix with DVI-based fixtures, follow these steps:

Merge Fixtures

- 1] Choose **Protocol > DVI**
- 2] Choose your **Product**
- 3] Set up **Rotation** if required
- 4] Set up **Count X** and **Count Y** and **Count Z**
- 5] Leave **Merge Fixtures** activated
- 6] Set up **Z-Order**

Separate Fixtures

- 1] Choose **Protocol > DVI**
- 2] Choose your **Product**
- 3] Set up **Rotation** if required
- 4] Set up **Count X** and **Count Y** and **Count Z**
- 6] Deactivate **Merge Fixtures**
- 7] Set up **Offset X / Y / Z** if required
- 8] Set up **Start Corner** and **Main Orientation** if required
- 9] Set up **Snake Mode** and **Apply Fixture Rotation** if required
- 10] Set up **Z-Order** and **Snake Mode Z** if required

Important Notes

LED Fixtures	Comments
EUROLITE LSD	The fixtures are pre-patched and included with their amount of pixels. Please only define how many fixtures you are using and not the total number of pixels.
Color Kinetics eW Flex SLX, Color Kinetics iColor Flex SLX	If your are using a PDS-150, a sPDS-480ca, or a PDS-60ca with one or two strings per controller, please select the correct fixture.

Limitations

Count X / Y / Z

- The maximum value you can enter is 65536 by default.
- Please note that this is a theoretical limit.
- The maximum value that can be used depends on the capabilities of your computer.
 - The graphics card needs to support these values. [The Logfile shows the highest available values for your current system via **viewport size X** and **viewport size Y** in combination with **2D texture size** for 2D mode and **3D texture size** for 3D mode. Search for these items or choose Filter > Previews. Learn more »[Tools](#)]
 - The overall computer performance defines the maximum resolution your PC can handle in 2D or 3D. Learn more »[System Requirements](#)
 - The available, contiguous memory also defines the maximum available resolution [RAM; up to the theoretic maximum of 2 GB as a 32-bit application, which is much lower in practice].
- Examples:
 - It is not feasible to set up extremely high resolutions, such as 65536 x 65536 x 65536 or 500 x 500 x 500, for example.
 - High values can be useful when setting up extremely rectangular 2D matrices, such as 10000 x 20 x 1 or 20 x 10000 x 1, for example.

DMX Start Universe

- The maximum value you can enter is 2048 by default and the maximum value.
- You can change the maximum value in by changing the Virtual DMX Universes setting in the Options.
Learn more »[Performance](#)
- It is possible to use more virtual DMX universes than actual DMX universes by using less than 512 DMX channels per universe.
- The actual number of DMX universes [i.e. DMX channels] that can be used for output depends on your MADRIX 5 License.
»[MADRIX KEY \[Software License\]](#)

Further Configuration

- MADRIX 5 offers many more options to configure your virtual LED matrix.
Learn more »[Patch Editor](#)
- If your fixture is not yet available or if you would like to add it,
please see »[Supported Fixtures \[LED Products\]](#)

Further Tips

Make sure to save your MADRIX 5 Setup File after the configuration process.

4.2.2 Patch Editor

This topic includes:

- [Introduction](#)
- [When To Use The Patch Editor](#)
- [Additional Information](#)
- [Step-By-Step Configuration](#)

- [Examples](#)
- [User Interface Of The Patch Editor](#)
- [Menu](#)
- [Options](#)
- [Patch Properties Overview](#)
- [2D Or 3D](#)
- [Working With The Patch Editor](#)
- [Fixture Configuration](#)
- [Locking Fixtures](#)
- [How The Patch Affects The Live Previews](#)
- [DMX Map](#)
- [Further Tips](#)

Introduction

You need to tell the MADRIX 5 Software

- 1] which LED fixtures you are going to use.
- 2] how many LED fixtures you are going to use.
- 3] how they are placed.

This configuration of the virtual LED matrix is stored in a so-called Patch file.

Setting up the virtual LED matrix/the Patch file is a requirement! It is necessary for the initial configuration of MADRIX 5.

MADRIX 5 offers 2 tools for this task:

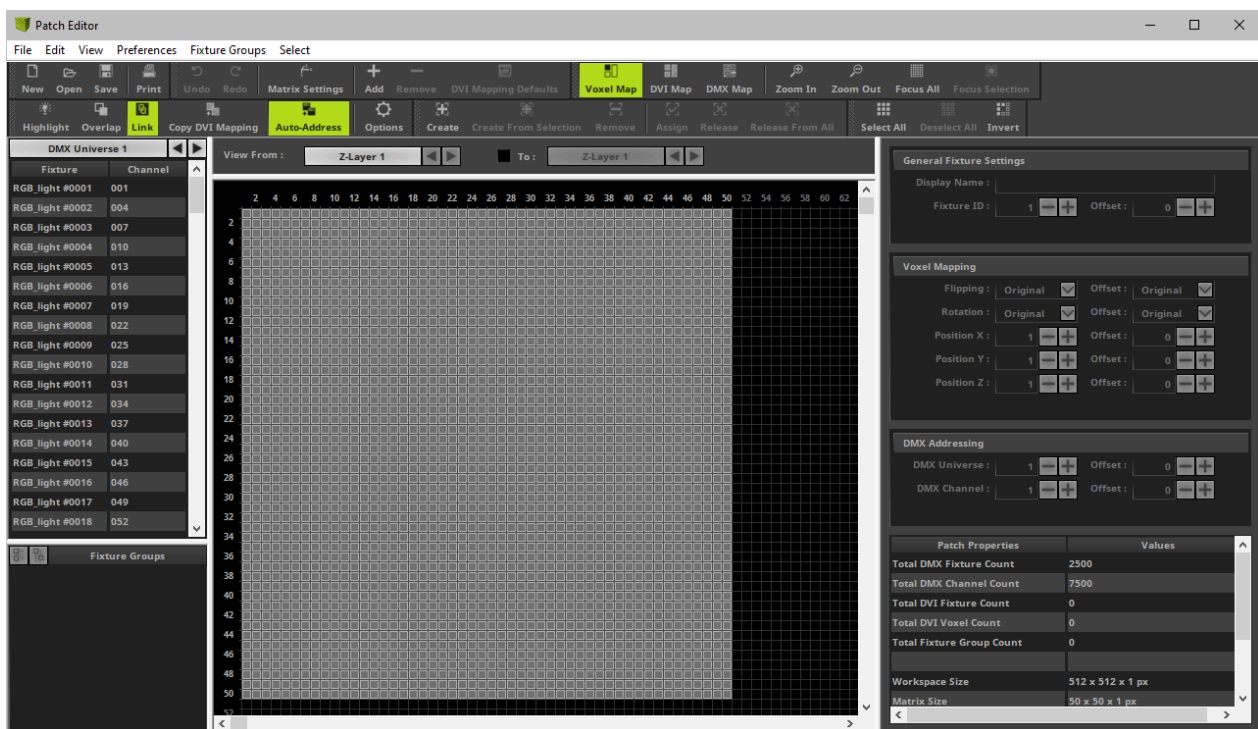
- **Matrix Generator**
- **Patch Editor**

When To Use The Patch Editor

The Matrix Generator helps you to generate a virtual LED matrix automatically according to your settings. This automatic process can be very helpful, when your LED installation is set up in a very simple, logical, or linear way and only uses 1 fixture type. The Patch file will be automatically generated by MADRIX 5 for you.

The Patch Editor is a graphical editor to directly create the Patch file. The Patch Editor offers the same functions as the Matrix Generator and many more options. It allows you to configure your virtual matrix in great detail. You can place LED fixtures freely and individually. If you have more than 1 kind of fixture, use the Patch Editor.

This topic explains the Patch Editor.



Additional Information

The Patch Editor is a powerful tool. While this chapter explains the main features, there are several other chapters that explain more advanced topics regarding the Patch Editor.

- » [DVI Patch](#)
- » [CSV Fixture List Import](#)
- » [Merging Patches](#)
- » [Replacing Or Updating Patched Fixtures](#)
- » [Background Image](#)
- » [Keyboard Shortcuts \[Patch Editor\]](#)

Step-By-Step Configuration

To work with the Patch Editor, follow these steps:

- 1] Open the Patch Editor.
- 2] Delete all currently included fixtures [except when they are needed].
- 3] Add all fixtures you require and configure them accordingly.
- 4] Set up the Matrix Settings.
- 5] Close the Patch Editor.

1] Open The Patch Editor

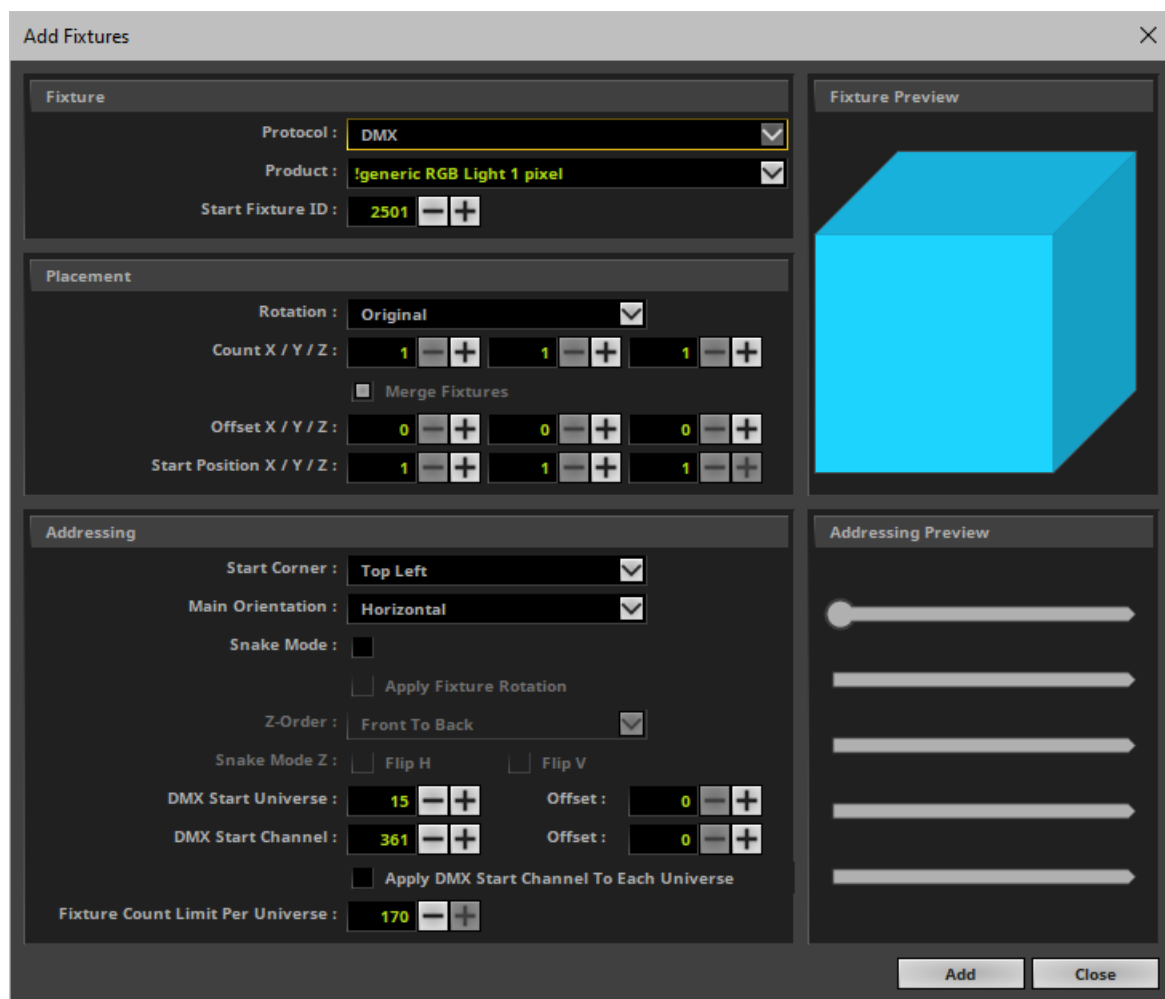
- Go to the menu **Preferences > Patch Editor...**
[Keyboard shortcut: **F3**]
- A new window will open.
- The Patch Editor is a separate window. Hence, you will be able to control MADRIX 5 while working with the Patch Editor.

2] Delete Fixtures

- Click **Select All** to select all fixtures or single-handedly select unnecessary fixtures.
[Keyboard shortcut: **Ctrl+A**]
- Click **Delete** to delete the selected fixtures from the workspace.
[Keyboard shortcut: **Del**]
- You can also click **New** to create a new Patch file and remove all fixtures at once.
[Menu **File > New Patch**; Keyboard shortcut: **Ctrl+N**]

3] Add And Configure Fixtures

- Click **Add +** to add new fixtures to the workspace.
[Keyboard shortcut: **Ins**]
- A new window will open.
- Add your fixtures as explained in the chapter »[Matrix Generator](#)

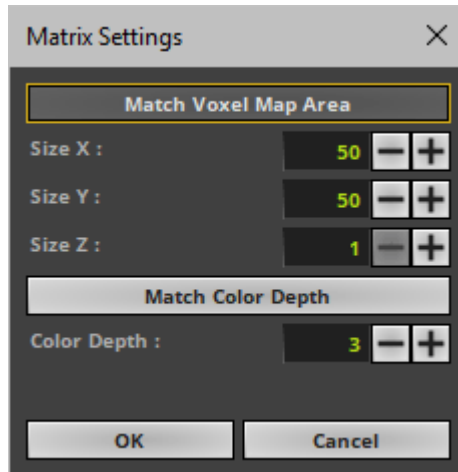


- Click **Add** to add your fixtures.
- Repeat the steps if you wish to add more fixtures or fixtures of different types.
- Click **Close** to close the window.
- The Patch Editor is very flexible. Fixtures can simply and are often required to be rearranged, readdressed, added, and deleted later. Adding fixtures is an initial step to create the individual Patch for your individual LED installation.
- Configure your fixtures further if needed. [Please see below]

4] Set Up The Matrix Settings

- After you have set up and configured all of your fixtures, it is important to define the Matrix Settings.

- Click **Matrix Settings**
[menu **Edit > Matrix Settings...**]
- A new window will open.



The virtual LED matrix represents your LED fixtures. Therefore, it is the area on which the MADRIX Effects are rendered and displayed, and ultimately sent to your output. MADRIX 5 needs to know in pixels/voxels how large your LED project is in total.

Set up the Matrix Size according to all of these parameters:

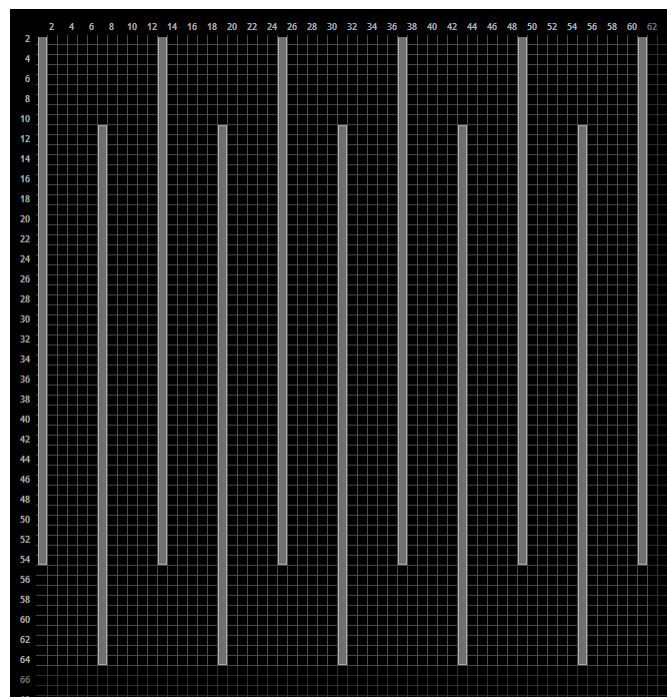
- **Match Voxel Map Area** - Automatically adjusts the Matrix Size Settings to the fixtures that are placed in the Voxel Map of the Patch Editor.
- **Size X** - Defines the total size of the virtual LED matrix in X in pixels/voxels [horizontal; width].
- **Size Y** - Defines the total size of the virtual LED matrix in Y in pixels/voxels [vertical; height].
- **Size Z** - Defines the total size of the virtual LED matrix in Z in pixels/voxels [level; depth].
 - Choose **Size Z = 1** to work in 2D.
 - Choose a value higher than 1 and MADRIX 5 will automatically create a virtual matrix in 3D.
- **Match Color Depth** - Automatically adjusts the Matrix Color Depth Settings to the color depth of the fixtures that are placed in the Voxel Map of the Patch Editor.
- **Color Depth** - Defines the number of color channels your LED fixtures use.
[For example, a color depth of 3 resembles RGB and a color depth of 4 represents RGBW.]
- Confirm your changes with **OK**

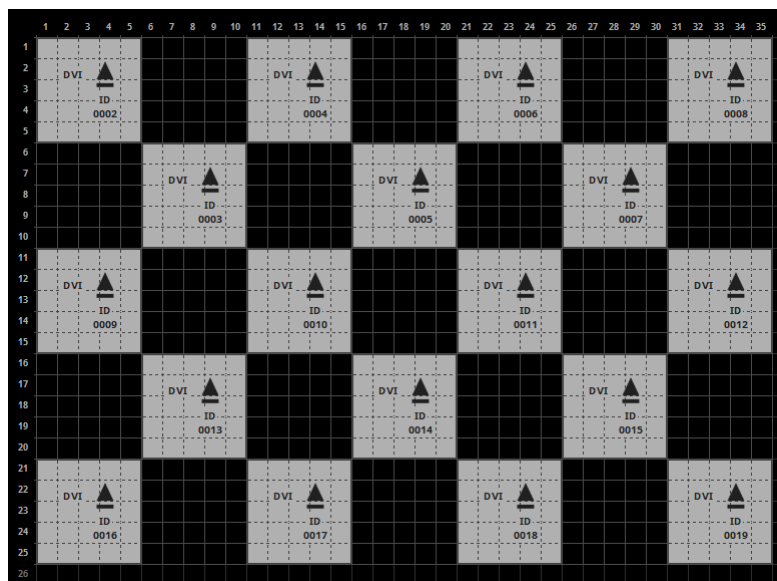
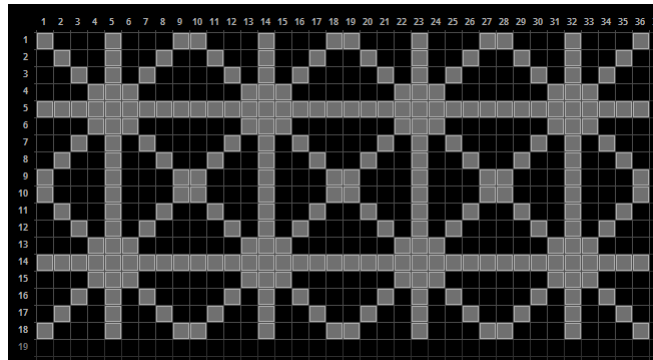
5] Close The Patch Editor

- Close the Patch Editor when you have fully set up and configured your Patch correctly.
[Continue to learn how to work with the Patch Editor below.]
- When you want to close the Patch Editor, click **X**
or go to the menu **File > Close** when you want to close the Patch Editor.
[Keyboard shortcut: **F3**]
- When you save your MADRIX 5 Setup file, the Patch file is automatically included.

Examples

- **Note:** Each LED project is different. That is why each Patch in the Patch Editor will look different. There are no general settings that can be applied to every project. Instead, please make sure that the Patch is set up in MADRIX 5 according to your individual LED installation.
- Here are just a few examples of how a Patch could look like:





User Interface Of The Patch Editor

Overview

The user interface of the Patch Editor is divided into several, different parts.

- On top, you will find the menu.
- Below the menu, you see the toolbar.
- Below the toolbar, 3 sections are available.

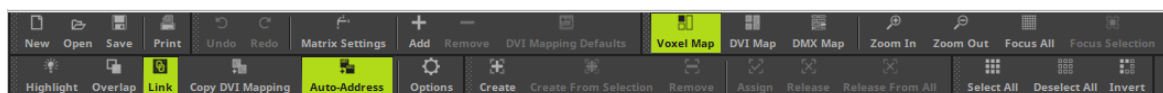
- On the left side, you see the Fixture List.
- The middle section represents a graphical version of your workspace and of your virtual LED matrix. [There are three different view modes available for this section. Learn more below.]
- On the right side, you can use various settings for the fixture configuration.
- Rearrange the width of each section by dragging the section edges.
- Hide the left section or the right section by dragging their edge to the outer border of the Patch Editor window. Display them again by dragging the border back.

Choose *View > Restore Default Window Layout* in order to reset the layout of the Patch Editor to its original settings [or if you are experiencing graphical glitches].

Menu And Toolbar

The Patch Editor has a separate menu and a toolbar for shortcuts:

- All items of the menu are explained below.
- The toolbar provides shortcuts to convenient tasks and includes the majority of options that are also included in the menu.
 - You can rearrange the toolbar using **Left Mouse Click And Drag And Drop**



Fixture List [Left Side]

The left side of the Patch Editor shows the Fixture List:

- The Fixture List provides information and allows you to select specific fixtures.
 - You can choose to show DVI fixtures [**DVI**] and DMX fixtures [**DMX Universes**]. Select it if you want to see DVI fixtures or which particular DMX universe.
 - DMX fixtures are shown with their name, index number, and DMX start channel.
 - DVI fixtures are shown with their index number, and if DVI Mapping is active.

- Select fixtures with your mouse and they will be automatically selected in the graphical middle section. Select several fixtures by using the **Shift** or **Ctrl** button in addition.
- Select the Fixture List and use the **Left Arrow Key** and the **Right Arrow Key** to navigate through all DMX Universes and DVI.

DMX Universe 1	
Fixture	Channel
RGB_light #0001	001
RGB_light #0002	004
RGB_light #0003	007
RGB_light #0004	010
RGB_light #0005	013
RGB_light #0006	016
RGB_light #0007	019
RGB_light #0008	022
RGB_light #0009	025
RGB_light #0010	028
RGB_light #0011	031
RGB_light #0012	034
RGB_light #0013	037
RGB_light #0014	040
RGB_light #0015	043
RGB_light #0016	046
RGB_light #0017	049
RGB_light #0018	052

Information And Configuration [Right Side]

The right side of the Patch Editor is a context-sensitive panel that shows different items depending on your selection [fixtures, fixture groups, no selection].

- Learn more about the right section to configure your fixtures and read the information provided below.

General Fixture Settings

Display Name :

Fixture ID : Offset :

Voxel Mapping

Flipping : Offset :

Rotation : Offset :

Position X : Offset :

Position Y : Offset :

Position Z : Offset :

DMX Addressing

DMX Universe : Offset :

DMX Channel : Offset :

Patch Properties	Values
Total DMX Fixture Count	2500
Total DMX Channel Count	7500
Total DVI Fixture Count	0
Total DVI Voxel Count	0
Total Fixture Group Count	0
Workspace Size	512 x 512 x 1 px
Matrix Size	50 x 50 x 1 px
Voxel Map Area X	1 - 50 (50 px)
Voxel Map Area Y	1 - 50 (50 px)
Voxel Map Area Z	1 (1 px)

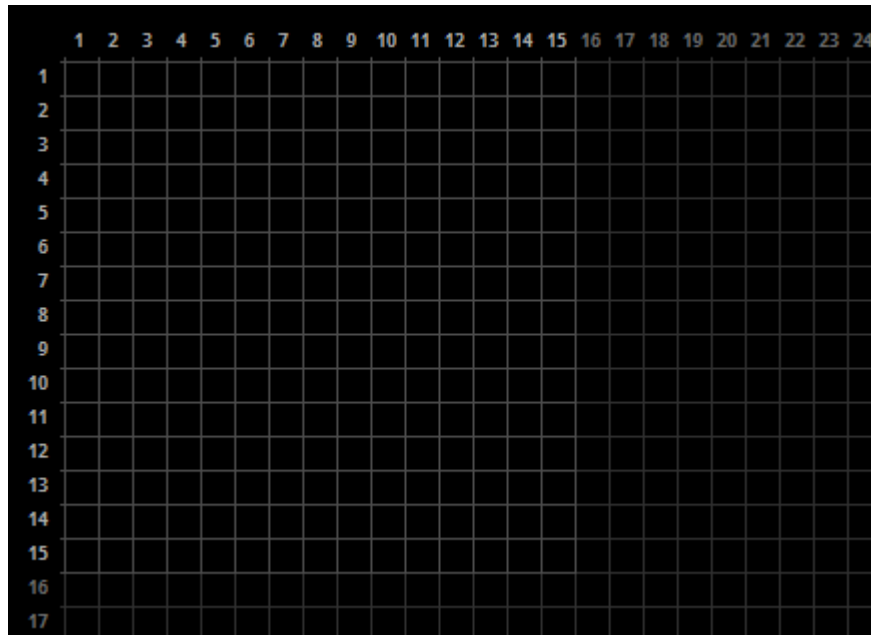
Graphical Overview [Middle Section]

- The middle section is the most important section.
- 3 view modes are available for the graphical overview:
 - **Voxel Map** - Is the default view mode to work with the Patch Editor. The following explanations mainly reference this view mode!
 - **DVI Map** - Is only relevant when working with DVI fixtures. Learn more »[DVI Patch](#)
 - **DMX Map** - Allows you to view the Patch with regards to occupied and used DMX channels. This mode will be explained separately. Learn more [DMX Map](#)
- The Voxel Map shows fixtures and settings in the following ways:
 - The size of the virtual LED matrix [Matrix Settings] is shown with the help of a light gray grid.
 - The total workspace you can work on is shown with the help of a dark gray grid.
 - You can see the position of fixtures.
 - DMX fixtures are shown in dark gray. Locked DMX fixtures are shown in dark orange. Selected DMX fixtures are

shown in green. Selected but locked DMX fixtures are shown in orange.

- DVI fixtures are shown in light gray. Locked DVI fixtures are shown in light orange. Selected DVI fixtures are shown in green. Selected but locked DVI fixtures are shown in orange.

- There is an integrated system for error and information messages. A message box will be displayed at the bottom of the middle section. Close the message with **x**



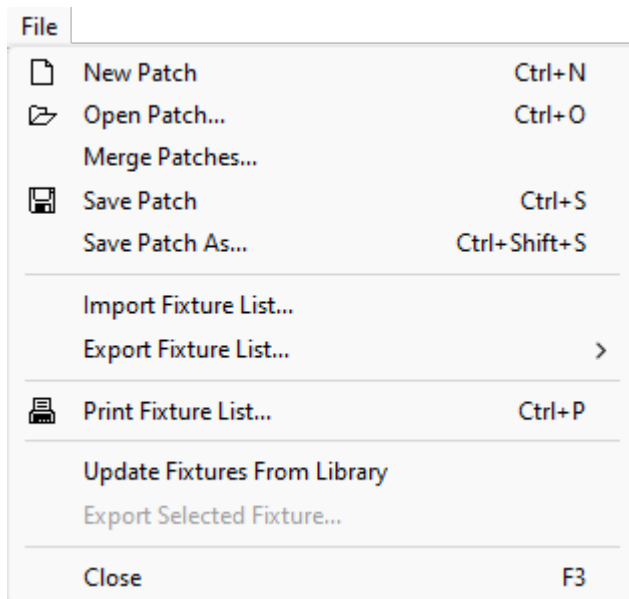
x The fixtures' positions overlap! Please change the settings or allow fixtures to overlap explicitly.

The following workflows are mainly relevant for the view mode *Voxel Map* , but can also work selectively in the *DMX Map* .

Menu

- **Ctrl+N** - This is a keyboard shortcut that will perform the action directly rather than using the menu.
- ... - Indicates that an extra window will open on top of the Patch Editor window.

File Menu



CVC

- **New Patch** - Removes all fixtures and creates a new and empty workspace [MADRIX 5 can only have one Patch file at a time].
- **Open Patch...** - Loads a previously saved patch file.
- **Merge Patches...** - Allows you to merge different Patch files and combine them in order to create a single, large Patch file.
Learn more » [Merging Patches](#)
- **Save Patch** - Saves the Patch file in its current state.
- **Save Patch As...** - Saves the Patch file as a new file.
- **Import Fixture List...** - Allows you to import a list of fixtures in CSV file format.
Learn more » [CSV Fixture List: Import](#)
- **Export Fixture List...** - Allows you to export the currently patched fixtures as a convenient HTML site or CSV file for further use.
Learn more » [CSV Fixture List: Export](#)

- **Print Fixture List...** - Allows you to send the currently patched fixtures as a convenient list directly to your printer.
- **Update Fixtures From Library** - Allows you to refresh all fixture profiles in the Patch from the currently loaded MADRIX 5 Fixture Library, in case you changed fixture profiles that are included in the Fixture Library with the help of the Fixture Editor.
Learn more »[Replacing And Updating Already Patched Fixtures](#)
- **Export Selected Fixture...** - Allows you to save a fixture directly from the Patch to an external file [of the file type *.mfix] without using the Fixture Editor. Simply select a fixture in the Patch Editor first. Then, choose a name.
- **Close** - Closes the Patch Editor.

Edit Menu

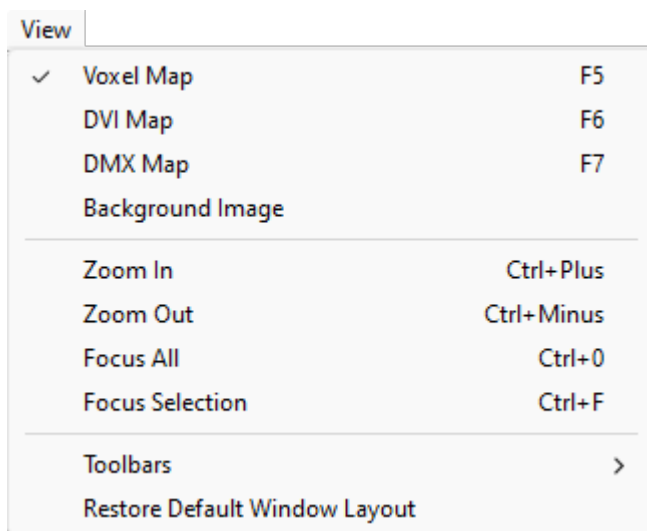
Edit	
Undo	Ctrl+Z
Redo	Ctrl+Y
Matrix Settings...	Ctrl+Alt+M
Add Fixtures...	Ins
Remove Selected Fixtures	Del
Replace Selected Fixtures...	Ctrl+Alt+R
Restore DVI Mapping Defaults For Selection	Ctrl+R
Move Map Area To Matrix Origin	Ctrl+Home
Flip Selection Horizontally	Ctrl+Page Down
Flip Selection Vertically	Ctrl+Page Up
Flip Selection Horizontally And Vertically	Ctrl+End
Rotate Selection By 90°	Page Down
Rotate Selection By 180°	End
Rotate Selection By 270°	Page Up
Lock Selected Fixtures	Ctrl+K
Unlock Selected Fixtures	Ctrl+Shift+K

- **Undo** - Restores the previous state of the Patch and reverts your last actions.
- **Redo** - Recreates the state again after having performed an Undo.
- **Matrix Settings...** - Defines the main settings of the Patch file [as explained above].
- **Add Fixtures...** - Opens a new window in order to add fixtures to the workspace.
- **Remove Selected Fixtures** - Removes the selected fixtures from the workspace.
- **Replace Selected Fixtures...** - Allows you to replace already patched fixtures. Learn more »[Replacing And Updating Already Patched Fixtures](#)
- **Restore DVI Mapping Defaults For Selection** - Is only relevant when working with DVI fixtures. Learn more »[DVI Patch](#)
- **Move Map Area To Matrix Origin** - Moves the entire map area and all of its included fixtures to position 1, 1, 1.
- **Flip Selection Horizontally** - Flips all the selected fixtures horizontally. This flips the entire selection once as one block instead of all fixtures individually.
- **Flip Selection Vertically** - Flips all the selected fixtures vertically. This flips the entire selection once as one block instead of all fixtures individually.
- **Flip Selection Horizontally And Vertically** - Flips all the selected fixtures horizontally and vertically. This flips the entire selection once as one block instead of all fixtures individually.
 - When flipping multiple fixtures, these 3 functions will flip the entire block of fixtures. The position of each fixture will change as they are flipped using the central point of all fixtures.
 - Therefore, it is different to the **Flipping** that can be applied in the section **Voxel Mapping** when a fixture is selected. That function will flip each fixture individually and not change the positions.
- **Rotate Selection By 90°** - Changes the rotation of the selected fixtures by 90°. This rotates the entire selection once as one block instead of all fixtures individually.
- **Rotate Selection By 180°** - Changes the rotation of the selected fixtures by 180°. This rotates the entire selection once as one block instead of all fixtures individually.
- **Rotate Selection By 270°** - Changes the rotation of the selected fixtures by 270°. This rotates the entire selection once as one block instead of all fixtures individually.
 - When rotating multiple fixtures, these 3 functions will rotate the entire block of fixtures. The position of each fixture will change as they are rotated using the central point of all fixtures.
 - Therefore, it is different to the **Rotation** that can be applied in the section **Voxel Mapping** when a fixture is

selected. That function will rotate each fixture individually and not change the positions.

- **Lock Selected Fixtures** - Sets selected fixtures into a state where they cannot be modified anymore in order to prevent any changes. Learn more [Locking Fixtures](#)
- **Unlock Selected Fixtures** - Returns fixtures to their normal state where they can be modified again. Learn more [Locking Fixtures](#)

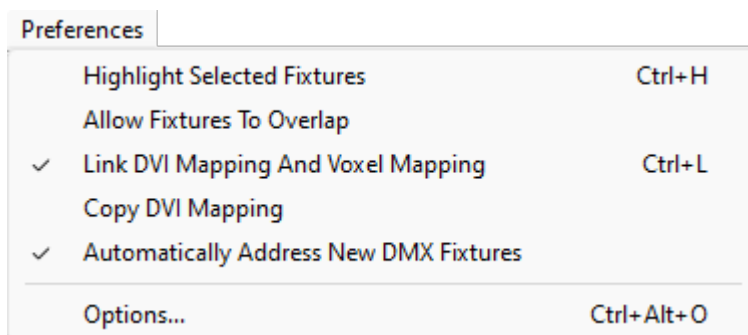
View Menu



- **Voxel Map** - Is one of three view modes. It is the default view mode to work with the Patch Editor.
- **DVI Map** - Is one of three view modes. It is only relevant when working with DVI fixtures. Learn more »[DVI Patch](#)
- **DMX Map** - Is one of three view modes. Allows you to view the Patch with regards to occupied and used DMX channels. Learn more [DMX Map](#)
- **Background Image** - Is an additional viewing feature for Voxel Map and DVI Map. Allows you to load an image into the background to make placing fixtures easier. Learn more »[Background Image](#)
- **Zoom In** - Determines the level of detail. Zoom in to see single fixtures, their assigned universe, channel, and rotation.
- **Zoom Out** - Determines the level of detail and allows you to see more of the workspace.
- **Focus All** - Automatically adjusts the zoom level to show all fixtures on the workspace.

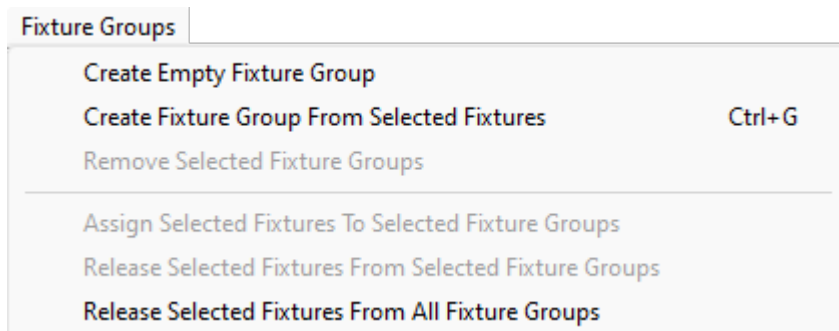
- **Focus Selection** - Automatically adjusts the zoom level to show all currently selected fixtures.
- **Toolbars** - Shows or hides the corresponding toolbars and icons [**File**, **Edit**, **View**, **Preferences**, **Fixture Groups**, **Select**].
- **Restore Default Window Layout** - Restores the default user interface and layout of the Patch Editor.

Preferences Menu



- **Highlight Selected Fixtures** - Makes selected fixtures flash with white color. This makes it easier to identify and see them on stage. This feature is available for DMX-based fixtures.
- **Allow Fixtures To Overlap** - Allows fixtures as well as their DVI Mapping to be arranged on top of each other on the virtual LED matrix. If deactivated, you cannot place any fixture on a position that is already occupied by another fixture or DVI Map.
- **Link DVI Mapping And Voxel Mapping** - Is only relevant when working with DVI fixtures. Learn more »[DVI Patch](#)
- **Copy DVI Mapping** - Is only relevant when working with DVI fixtures. Learn more »[DVI Patch](#)
- **Automatically Address New DMX Fixtures** - Automatically sets up the DMX addresses for DMX fixtures that are added to the Patch by newly adding or copying them. Learn more below.
- **Options...** - Will open a new window in order to change various options of the Patch. Learn more below

Fixture Groups Menu



- **Create Empty Fixture Group** - Creates a fixture groups which does not contain any fixtures yet.
- **Create Fixture Group From Selected Fixtures** - Creates a fixture group that automatically includes all fixtures that have been selected before.
- **Remove Selected Fixture Groups** - Removes all fixture groups that are currently selected from the Patch.
- **Assign Selected Fixtures To Selected Fixtures Groups** - Adds all currently selected fixtures to all fixture groups that are currently selected.
- **Release Selected Fixtures From Selected Fixture Groups** - Releases all currently selected fixtures from all fixture groups that are currently selected.
- **Release Selected Fixtures From All Fixture Groups** - Releases all currently selected fixtures from all fixture groups that they are assigned to.
- Learn more » [Fixture Groups \[Group Control\]](#)

Select Menu

Select	
Select All	Ctrl+A
Deselect All	Ctrl+D
Invert Selection	Ctrl+I
<hr/>	
Select All From Selected Fixture Groups	Ctrl+Alt+A
Deselect All From Selected Fixture Groups	Ctrl+Alt+D

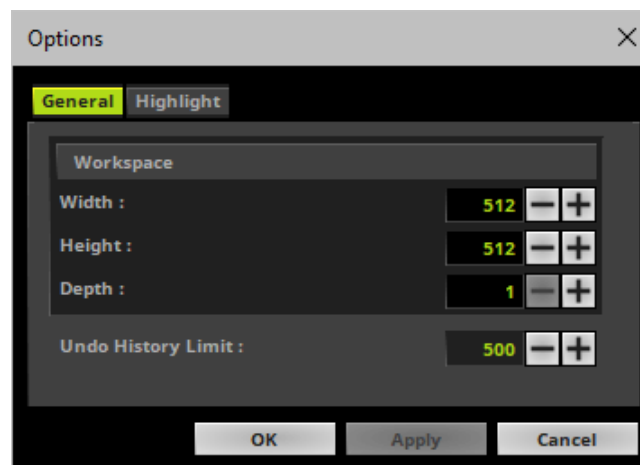
- **Select All** - Selects every single fixture that is included in your Patch. At the same time, all fixtures will be selected in the Fixture list on the left.
- **Deselect All** - Revokes the current fixture selection.
- **Invert Selection** - Selects every fixture except the ones you have currently selected.
- **Select All From Selected Fixture Groups** - Selects all fixtures that are assigned to the currently selected Fixture Group.
- **Deselect All From Selected Fixture Groups** - Revokes the fixture selection from all fixtures that are assigned to the currently selected Fixture Group.

Options

Overview

- In the Patch Editor, go to the menu **Preferences > Options...**
[Keyboard shortcut: **Ctrl+Alt+O**]

General



Workspace

The workspace allows you to freely position fixtures and work with them on a grid.

By default, the workspace size is set to 512 x 512 x 1 pixels [X x Y x Z].

- If needed, change the size of the workspace according to your needs by adjusting **Width**, **Height**, and **Depth**
- MADRIX 5 will automatically increase the size of the workspace if you are adding fixtures to positions that are outside of the current workspace size.

Note: The workspace is the large grid you are working on. In contrast, the virtual LED matrix [i.e., Matrix Settings] tells MADRIX 5 the total size of the fixtures and of the LED installation.

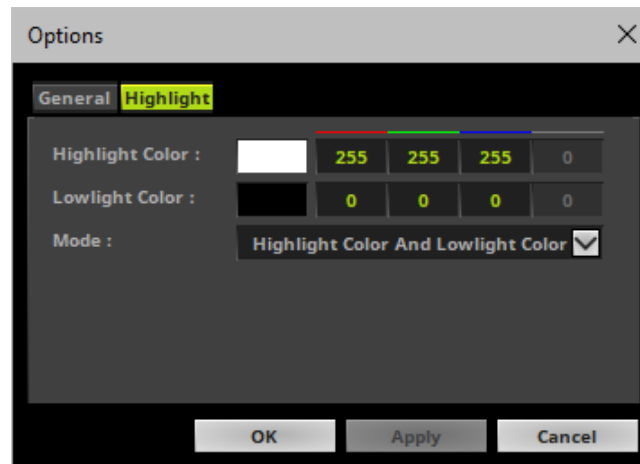
Undo And Redo

You can use Undo and Redo to revert actions while working in the Patch Editor.

By default, the Patch Editor allows 500 steps to be reversed.

- If needed, change this so-called **Undo History Limit** according to your needs.

Highlight



Highlight Options allow you to change how the built-in Highlight mode for fixtures work [menu **Preferences > Highlight Selected Fixtures**].

- **Highlight Color** - Defines the color that is sent to highlighted fixtures. The default color is white.
- **Lowlight Color** - Defines the color that is sent to all other fixtures that are currently not highlighted. The default color is black.
- **Mode** - Defines how the highlight mode works. Select from 2 options:
 - **Highlight Color And Lowlight Color** - Uses the defined **Highlight Color** and highlights all selected fixtures. All fixtures that are currently not selected will receive the defined **Lowlight Color**. This is useful to single out fixtures in a test environment.
 - **Highlight Color And Output** - Uses the defined **Highlight Color** and highlights all selected fixtures. All fixtures that are currently not selected will receive the current output of the MADRIX 5 Software. This is useful during a show to not interrupt the control data and effects for all other fixtures.

Patch Properties Overview

The Patch Editor can provide a useful overview over the most important settings, such as Matrix Size and Workspace. The overview is provided in the lower right corner. First, make sure that no fixture is selected!

Patch Properties	Values
Total DMX Fixture Count	2500
Total DMX Channel Count	7500
Total DVI Fixture Count	0
Total DVI Voxel Count	0
Total Fixture Group Count	0
Workspace Size	512 x 512 x 1 px
Matrix Size	50 x 50 x 1 px
Voxel Map Area X	1 - 50 (50 px)
Voxel Map Area Y	1 - 50 (50 px)
Voxel Map Area Z	1 (1 px)

- **Patch Properties** - The following information is available to you:
 - **Total DMX Fixture Count** - Shows the overall number of DMX fixtures that are currently included in your Patch file.
 - **Total DMX Channel Count** - Shows the overall number of DMX channels that are currently included in your Patch file.
 [DMX channels that are patched multiple times are only counted once.]
 [Non-color channels of fixtures are counted.]
 [DMX Input Mapping and the DMX Fader Tool are not counted.]
 - **Total DVI Fixture Count** - Shows the overall number of DVI fixtures that are currently included in your Patch file.
 - **Total DVI Voxel Count** - Shows the overall number of DVI voxels, that is 2D pixels and 3D voxels, that are currently included in your Patch file.
 [DVI Voxels that overlap in the Voxel Map are counted multiple times.]
 - **Total Fixture Group Count** - Shows the overall number of Fixture Groups that are currently included in your Patch file.
 - **Workspace Size** - Shows the currently set up size of the [Workspace](#)
 - **Matrix Size** - Shows the currently set up [Matrix Size](#) in the Matrix Settings.
 - **Voxel Map Area X** - Shows the size of the area on which fixtures are patched and located in X, independently of the Matrix Size that is defined.
 - **Voxel Map Area Y** - Shows the size of the area on which fixtures are patched and located in Y, independently of the Matrix Size that is defined.
 - **Voxel Map Area Z** - Shows the size of the area on which fixtures are patched and located in Z,

independently of the Matrix Size that is defined.

- **DVI Map Area X** - Is only visible when DVI fixtures are included in the Patch. Shows the size of the area on which DVI fixtures with DVI Mapping are patched and located in X. » [DVI Patch](#)
- **DVI Map Area Y** - Is only visible when DVI fixtures are included in the Patch. Shows the size of the area on which DVI fixtures with DVI Mapping are patched and located in Y. » [DVI Patch](#)
- **DVI Map Area Z** - Is only visible when DVI fixtures are included in the Patch. Shows the size of the area on which DVI fixtures with DVI Mapping are patched and located in Z. » [DVI Patch](#)

2D Or 3D

Overview

- MADRIX 5 can control 2D projects as well as 3D projects.
Learn more » [2D Or 3D \[X, Y, Z\]](#)
- You automatically choose to work in 2D or in 3D, when you add new fixtures or set up the virtual LED matrix [Matrix Settings].
Learn more [above](#)

Z-Levels

Make sure to select the view mode *voxel Map* first.

- The Patch Editor only provides a 2D, graphical representation, even if you are working in 3D.
- To access and configure all fixtures of a 3D project, you can select the different Z-levels that make up your project.
- When working in 2D, only one Z-level is needed and available [**Z-Layer 1**].



- When working in 3D, you can select and view each Z-level according to your needs.

A] You want to select only one Z-level:

- 1] **View From** - Select the **Z-Layer** you wish to see and work with.
- 2] Leave **To** deactivated.
- 3] You will be able to select and work with the fixtures of only 1 Z-level at a time.



B] You want to select several or all Z-levels at once:

- 1] **View From** - Select the first **Z-Layer** you wish to see and work with.
- 2] **To** - Activate it. Then, select the last **Z-Layer** you wish to work with.
- 3] All Z-levels and their corresponding fixtures within that range of Z-levels will be selectable.

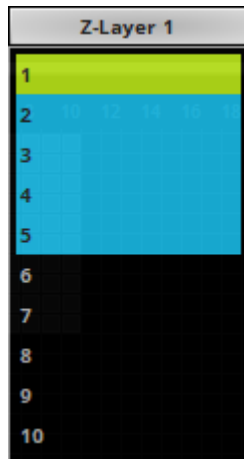
Example:

If you want to select and work with all fixtures of your 3D project that features 10 Z-levels, set up **View From Z-Layer 1 To Z-Layer 10**



- If you now want to select all fixtures, click **Select All** [or press **Ctrl+A**].
- If you want to select one fixture, simply click on it.
- If you want to select a fixture and all other corresponding fixtures on the same position on each Z-level, make sure to use the ways of selecting multiple fixtures as described below [e.g., rectangular selection mode via Shift].
- If you are selecting multiple fixtures on the Z-level you currently see, all corresponding fixtures on each Z-level will also be selected.
- Use the Fixture List [on the left side of the Patch Editor] to double-check which fixtures you have currently selected.

- More Information:



- Z-Layers with a **green** background show the currently selected Z-level.
- Z-Layers with a **blue** background show the currently occupied and used Z-levels. There are fixtures patched on those Z-Layers.
- Z-Layers with a **black** background show Z-levels that are set up in the Matrix Size, but there are no fixtures patched on those Z-levels.

Working With The Patch Editor

The following workflows are mainly relevant for the view mode *Voxel Map* , but can also work selectively in the *DMX Map* .

Overview

- **Selection**

A] **Left-click** on a single fixture in the graphical middle section in order to select it.

B] **Left-click** a fixture in the Fixture List and it will automatically be selected in the graphical middle section.

- **Deselection**

A] While holding **Ctrl** on your keyboard, **left-click** on a single fixture in the graphical middle section in order to deselect it.

B] While holding **Ctrl** on your keyboard, **left-click** a fixture in the Fixture List and it will be deselected again.

- **Multiple Selection**

New Selection

A] Do not position your mouse cursor over a fixture, but over an empty area. Hold your **left mouse button** and drag your mouse. A marquee selection mask will become visible. It is displayed with the help of a dotted line. All

fixtures within this selection mask will be selected.

B] If you have your mouse cursor positioned over a fixture, hold down **Shift** on your keyboard. In addition, hold your **left mouse button** and drag your mouse. A marquee selection mask will become visible. It is displayed with the help of a dotted line. All fixtures within this selection mask will be selected.

C] Select several fixtures via **Shift+left click** or **Ctrl+left click** in the Fixture List and they will be automatically selected in the graphical middle section.

Add To Current Selection

A] While having already fixtures selected: Hold down **Ctrl** on your keyboard and do not position your mouse cursor over a fixture, but over an empty area. In addition, hold your **left mouse button** and drag your mouse. Another marquee selection mask will become visible. It is displayed with the help of a dotted line. All fixtures within the new selection mask will be selected in addition the the already selected fixtures.

B] While having already fixtures selected: Hold down **Ctrl** on your keyboard and hold down **Shift** on your keyboard if you have your mouse cursor positioned over a fixture. In addition, hold your **left mouse button** and drag your mouse. A marquee selection mask will become visible. It is displayed with the help of a dotted line. All fixtures within the new selection mask will be selected in addition the the already selected fixtures.

C] Add more fixtures to your selection in the Fixture List via **Shift+left click**, **Ctrl+left click**, or **Ctrl+Shift+left click** and they will be automatically selected in the graphical middle section.

▪ **Zoom**

- Use the **scroll wheel** to zoom in or to zoom out.

▪ **Navigation**

- Press the **Spacebar** on your keyboard [and continue to hold it] and **left-click** in order to drag the graphical middle section for navigation. [You can also use the scroll bars.]

▪ **Position [Drag And Drop]**

- Select a fixture first [make sure to release the mouse button again]. Your selection will stand out from the rest of the Patch. The perform a **left mouse click** on the fixture again and continue to hold the mouse button. Then, move your cursor. Drop the fixture on the new position and it will automatically snap to this position according to the grid.

- This also works with multiple fixtures.

- Use drag and drop in combination with holding **Ctrl** on your keyboard to copy fixtures and the DMX universe and DMX channel will be automatically adjusted [if this option is activated in the menu]. Learn more [Copying Fixtures](#)

- The view will automatically follow your mouse and scroll automatically if you reach the edges of the current viewport.

▪ **Constrained Drag**

- Hold down **Alt** on your keyboard while positioning fixtures with the mouse via drag and drop in order to lock in the X-axis, Y-axis, or the movement at 45° angles. This allows you to move fixtures only in X, Y, or 45° angles.

- The view will follow your mouse cursor and scroll automatically if you reach the edges of the current viewport.

- **Position [Keyboard]**

- Select one or several fixtures and use the **Arrow keys** on your keyboard to move them to a different position.

- **Rotation**

- Select multiple fixtures and use **Page Up** or **Page Down** on your keyboard to rotate the entire block of fixtures. They will be literally rotated using the central point of all fixtures. Hence, the position will be changed automatically. [In contrast, if you select several fixtures and adjust the Rotation in the Fixture settings, each fixture will be rotated individually. Their positions will not change.]

Copying DVI Fixtures

Single DVI Fixtures

- Select a single DVI fixture while holding **Ctrl**. Then, continue to hold Ctrl and the **left mouse button** and drag your mouse and a copy of the DVI fixture will be created. Simply release the mouse at the fixture's new position.

Multiple DVI Fixtures

- Select multiple DVI fixtures while holding **Ctrl**. Now hold down the **left mouse button** at the same time on any of the selected fixtures. Drag your mouse and copies of the DVI fixtures in a corresponding pattern will be created. Simply release the mouse at the fixtures' new position.

Copying DMX Fixtures [Auto Addressing]

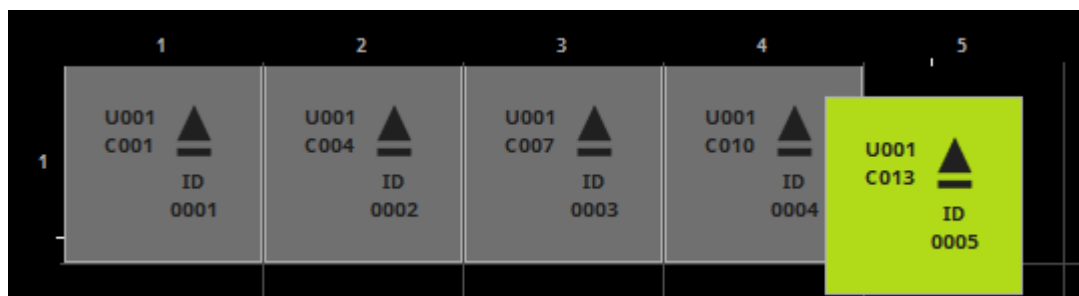
Overview

Pay attention when using auto addressing and double-check if each fixture is addressed correctly!

- Copying DMX fixtures has been improved by adding auto addressing.
- If auto addressing is enabled, MADRIX 5 will automatically increase the DMX channel [and DMX universe] of the copied fixture.
- In the Patch Editor, go to **Preferences > Automatically Address New DMX Fixtures** to activate auto addressing.
- Disable this feature and the copied fixtures will have the same DMX channel and universe as their sources.

Single Fixtures

- Select a single DMX fixture while holding **Ctrl**. Then, continue to hold Ctrl and the **left mouse button** and drag your mouse and a copy of the DMX fixture will be created. Simply release the mouse at the fixture's new position.
- The DMX channel and the DMX universe will be automatically adjusted if auto addressing is enabled.
- **Example:** The original fixture at position 1,1 is patched to DMX universe 1 and channel 1. It requires 3 DMX channels. Therefore the first copy, fixture number 2, is automatically set to channel 4, and so on.



Multiple Fixtures

- If you select several DMX fixtures, auto addressing also works. The intelligent function calculates the next free DMX address for each of the copied DMX fixtures and automatically adjusts the DMX channel and the DMX universe for each fixture.
- **Example 1:** A row of four linearly addressed fixtures shall be copied at once [6 DMX channels per fixture]. Result: Each fixture will be addressed to the next free DMX address in comparison to the previous fixture.



- **Example 2:** A row of four linearly addressed fixtures shall be copied at once, while fixture number 3 has a higher address than fixture number 4 [6 DMX channels per fixture]. Result: Fixture number 7 has also a higher DMX address than fixture number 8.

	1	2	3	4	5	6	7	8
1	U001 C001 ID 0001		U001 C007 ID 0002		U001 C019 ID 0004		U001 C013 ID 0003	
2	U001 C025 ID 0005		U001 C031 ID 0006		U001 C043 ID 0008		U001 C037 ID 0007	

- **Example 3:** A row of three linearly addressed fixtures should be copied at once, while spacing and an offset is added to fixture number 3 [6 DMX channels per fixture]. Result: Fixture number 6 continues with the next free addressing of fixture number 5 and does not have an additional offset, while keeping the spacing.

	1	2	3	4	5	6	7	8
1	U001 C001 ID 0001		U001 C007 ID 0002				U001 C013 ID 0003	
2	U001 C019 ID 0004		U001 C025 ID 0005				U001 C031 ID 0006	

Highlight Selected Fixtures



- Makes corresponding fixtures flash for better identification. This makes it easier to see them on stage/in your LED installation. That means, if you select one or several fixtures within the Patch Editor, the corresponding LED fixtures in your installation will light up completely white.
- This feature is available for DMX-based fixtures without restrictions.
- Highlighting DVI-based fixtures is possible. For the feature to work, make sure that the External Previews are set to DVI Map Mode.

Allow Fixtures To Overlap



- This feature allows fixtures to overlap. In order to rearrange the Patch, a fixture may be dragged/repositioned to the position of another fixture.

Fixture Configuration

The following workflows are mainly relevant for the view mode *Voxel Map* , but can also work selectively in the *BMX Map* .

Overview

- In order to configure a fixture in the Patch Editor, select it first.
- The corresponding information will be displayed in the third column.
- When selecting multiple fixtures, settings can be confirmed with **OK** and will apply to each fixture individually.
- **Configure each fixture according to your requirements!**

General Fixture Settings

Display Name : RGB_light #0001

Fixture ID : 1 + - Offset : 0 + -

Apply Reset

Voxel Mapping

Flipping : Original ▾ Offset : Original ▾

Rotation : Original ▾ Offset : Original ▾

Position X : 1 + - Offset : 0 + -

Position Y : 1 + - Offset : 0 + -

Position Z : 1 + - Offset : 0 + -

Apply Reset

DMX Addressing

DMX Universe : 1 + - Offset : 0 + -

DMX Channel : 1 + - Offset : 0 + -

Apply Reset

Fixture Properties	Values
Fixture ID	1
Manufacturer	!generic
Fixture Name	RGB Light
Operation Mode	1 pixel
Protocol	DMX
Size	1 x 1 x 1 px
Color Depth	3
DMX Channel Count	3
Valid DMX Address Range	1 - 512

▪ **General Fixture Settings**

- **Display Name** - Defines a label for the fixture.
- **Fixture ID** - Defines the unique identifier for this fixture. Each fixture needs its own, unique Fixture ID.
- Always confirm with **OK**

▪ **Voxel Mapping** - Includes settings that refer especially to pixel mapping and voxel mapping [e.g., the position of fixtures].

- **Flipping** - Allows you to flip a fixture horizontally, vertically, or both. Learn more [below](#)
- **Rotation** - Allows you to rotate a fixture. Learn more [below](#)

- **Position X** - Defines the horizontal position of the fixture.
- **Position Y** - Defines the vertical position of the fixture.
- **Position Z** - Defines the depth position of the fixture.
- Always confirm with **OK**

- **DMX Addressing** - Includes settings that refer especially to the DMX address of a fixture.
 - **DMX Universe** - Defines the second part of the DMX address of DMX fixtures. Usually, each fixture has a specific and unique DMX address. Learn more »[Glossary](#)
 - **DMX Channel** - Defines the first part of the DMX address of DMX fixtures. Usually, each fixture has a specific and unique DMX address. Learn more »[Glossary](#)
 - Always confirm with **OK**

- **Offset** - Allows you to quickly add or subtract values from a setting.
- For example, if you have multiple fixtures selected and want to increase all their DMX channels by 3, simply add an Offset of 3.
- Valid values for Position X, Position Y, and Position Z range from -10000 to +10000.
- Note: Do not immediately use the Spacebar on your keyboard for navigation within the the Patch Editor window after confirming any offsets with OK. First, bring the focus back to the main window again via left mouse click. Otherwise, Spacebar will trigger OK again and set everything to value 1 [for Position X, Position Y, Position Z, DMX Universe, DMX Channel].**

- **OK** - Always confirm any changes with OK.
- **Reset** - Allows you to discard changes before having confirmed any changes in order to use the values that were set up last.

- **Fixture Properties** - Provides basic information about the fixture profile of the currently selected fixture.
 - **Fixture ID** - Shows the unique identifier of the fixture.
 - **Manufacturer** - Shows the name of the manufacturer of the fixture as defined in the MADRIX 5 Fixture Editor.
 - **Fixture Name** - Shows the name of the fixture as defined in the MADRIX 5 Fixture Editor.
 - **Operation Mode** - Shows the mode of the fixture as defined in the MADRIX 5 Fixture Editor.

 - **Protocol** - Shows the type of the fixture as defined in the MADRIX 5 Fixture Editor.
 - **Size** - Shows the amount of pixels/voxels of the fixture as defined in the MADRIX 5 Fixture Editor.
 - **Color Depth** - Shows the color depth of the fixture as defined in the MADRIX 5 Fixture Editor.

- **DMX Channel Count** - Shows the number of DMX channels that the fixture uses as defined in the MADRIX 5 Fixture Editor.

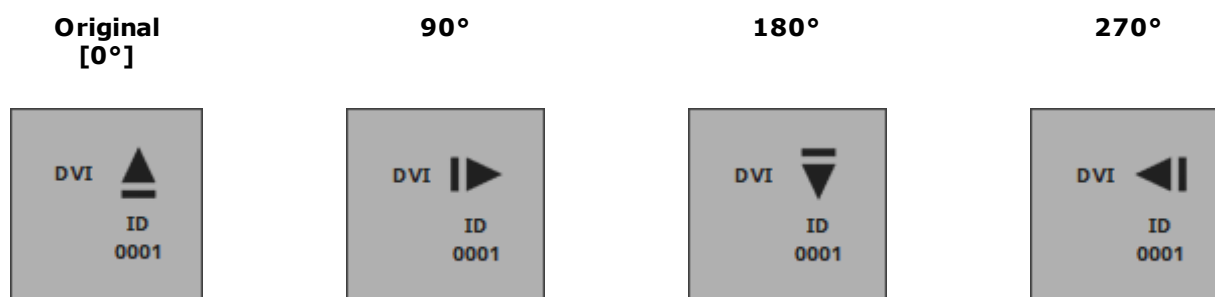
- **Valid DMX Address Range** - Shows the lowest and highest possible DMX channel address for the fixture as defined in the MADRIX 5 Fixture Editor.

- **DVI Mapping** - Shows if an individual DVI Mapping is configured for the DVI fixture.

- **DVI Mapping** - Is only relevant for DVI fixtures. Learn more » [DVI Patch](#)

Fixture Rotation

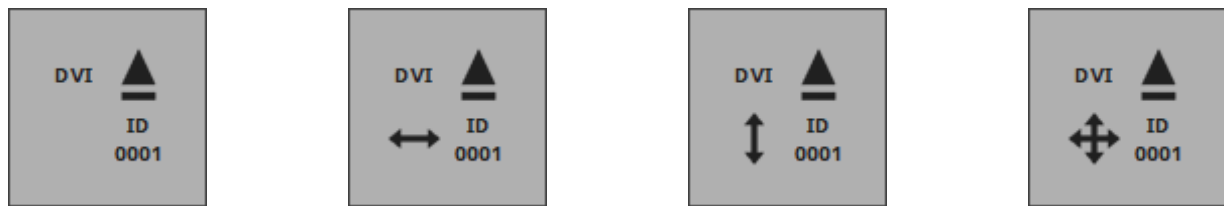
- Fixture rotation is shown for both DMX and DVI fixtures with the help of a solid arrow.
- A small baseline indicates the opposite direction of the direction the arrow shows for better identification.



Fixture Flipping

- Fixture flipping is shown for both DMX and DVI fixtures with the help of a double arrow [two-way symbol].
- If a fixture is not flipped, no symbol will be shown.
- **Flipping is applied to the original fixture position, before rotation.**





Locking Fixtures

As listed [above](#), you can choose to lock fixtures or unlock them again.

Select one or more fixtures first and then use

- **Edit > Lock Selected Fixtures**

[Keyboard shortcut: **Ctrl + K**]

or

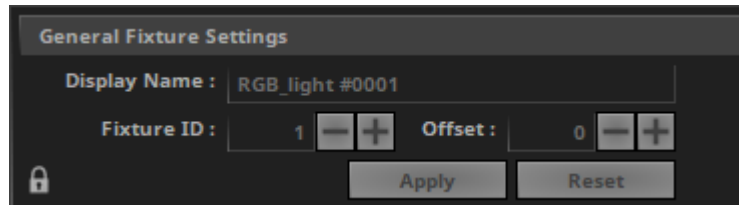
- **Edit > Unlock Selected Fixtures**

[Keyboard shortcut: **Ctrl + Shift + K**]

- DMX fixtures are shown in dark gray. Locked DMX fixtures are shown in dark orange. Selected DMX fixtures are shown in green. Selected but locked DMX fixtures are shown in orange.
- DVI fixtures are shown in light gray. Locked DVI fixtures are shown in light orange. Selected DVI fixtures are shown in green. Selected but locked DVI fixtures are shown in orange.

	1	2	3	4
1	U001 C001 ID 0001	U001 C004 ID 0002	U001 C007 ID 0003	U001 C010 ID 0004
2	DVI ID 2501	DVI ID 2502	DVI ID 2503	DVI ID 2504

- The settings of a locked fixture cannot be edited.
 - This includes General Fixture Settings, Voxel Mapping, DVI Mapping, and DMX Addressing.
 - You will see a locked icon under General Fixture Settings. [You will need to select such a locked fixture first.]



- Locking affects the entire fixture, including its DMX channel in the DMX Map View or its DVI Map in the DVI Map View.
- Locked fixtures cannot be moved, re-positioned, or removed. Drag & drop is also not possible.
- Locked fixtures can be copied. Their locked state will not be applied and copied fixtures will therefore be unlocked.

How The Patch Affects The Live Previews

- All Previews [including Preview Deck A, Preview Deck B, Preview Output as well as External Preview 1 and External Preview 2] are affected by your individual Patch [i.e. virtual LED matrix].
- The Patch represents your LED installation on a more technical level.
- The Previews will represent the Patch and in this way your LED installation.
- Learn more » [3 Previews](#)

DMX Map

The DMX Map is one of three view modes that are available for the Patch Editor.

- **Voxel Map** - Is the default view mode in order to work with the Patch Editor and the Patch.
- **DVI Map** - Is only relevant when working with DVI fixtures. Learn more » [DVI Patch](#)

- **DMX Map** - Allows you to view the Patch with regards to occupied and used DMX channels.

- To display DMX Channel mode, click **DMX Map**

[menu **View > DMX Map**]

[Keyboard shortcut: **F7**]

	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+10	+11	+12	+13	+14	+15
1:	U001 C001			U001 C004			U001 C007			U001 C010			U001 C013			U001 C016
17:			U001 C019			U001 C022			U001 C025			U001 C028			U001 C031	
33:		U001 C034			U001 C037			U001 C040			U001 C043			U001 C046		
49:	U001 C049			U001 C052			U001 C055			U001 C058			U001 C061			U001 C064
65:			U001 C067			U001 C070			U001 C073			U001 C076			U001 C079	
81:		U001 C082			U001 C085			U001 C088			U001 C091			U001 C094		
97:	U001 C097			U001 C100			U001 C103			U001 C106			U001 C109			U001 C112
113:			U001 C115			U001 C118			U001 C121			U001 C124			U001 C127	
129:		U001 C130			U001 C133			U001 C136			U001 C139			U001 C142		

- The DMX Map:
 - Is a separate view mode. But it is not independent from the Voxel Map. If you change something here, the corresponding settings will also change in the Voxel Map.
 - Shows all 512 DMX channels per DMX universe.
 - Shows the fixtures not based on their pixel/voxel count, but on the DMX channels they use.
 - Shows 16 DMX addresses per row. If a fixtures uses DMX channels that are located on several rows, the Patch Editor will display such a fixture with the help of a split arrow.
 - Is another way to work with DMX fixtures. It will be empty if you are only using DVI fixtures.
 - Can be used to work with DMX fixtures. A lot of the workflows of the Voxel Map will work here as well.
- In order to work in a specific DMX universe, select the particular **DMX Universe** first.



Further Tips

Make sure to save your MADRIX 5 Setup file after the configuration process.

You may also save and/or export the Patch file [of the file type *.mpz or *.mpx] separately. In the Patch Editor, go *File > Save Patch As...*

4.2.3 DVI Patch

This topic includes:

- [Introduction](#)
- [Usage](#)
- [How DVI Hardware Controllers Work](#)
- [Step-By-Step Configuration](#)
- [DVI Mapping](#)
- [Important Information](#)
- [DVI Map Mode For The External DVI Outputs](#)
- [Example](#)

Introduction

This chapter is an addition to the chapter »[Patch Editor](#)

Please read the chapter Patch Editor in order to learn more about the Patch in general. This chapter focuses on working with DVI fixtures.

Patch Editor and DVI Patch are about one and the same tool. The term DVI Patch specifically refers to working with DVI fixtures.

- Go to the menu **Preferences > Patch Editor**
[Keyboard shortcut: **F3**]

Usage

On the one hand, working with DMX-based fixtures is relatively easy and can be managed with the help of the Patch Editor without much difficulty. You can simply add fixtures, rotate them, or add space between fixtures, for example. Without the DVI Patch, on the other hand, it would not be possible to add rotation or spacing to DVI-based fixtures, because of how DVI hardware controllers work.

The DVI Patch allows you to add

- rotation
- flipping
- spacing

to your LED installations with DVI fixtures.

The DVI Patch can be used when working with DVI fixtures and the following output methods:

- » [DVI](#)
- » [Proprietary DVI Devices \[5A / A8 / T9\]](#)

How DVI Hardware Controllers Work

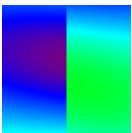
DVI controllers receive a signal [input] and map it to the LED fixtures [output]. But due to their construction, DVI controllers usually need to receive the input images in a linear way, in one whole block of information [often like a rectangle] — no matter how the actual LED installation looks like.

You could also say that DVI controllers expect DVI fixtures to be installed in a predefined way. If you install the DVI fixtures differently, you need to change the input, too.

In other words, when your LED installation looks like this for example:



Then, your DVI controller will probably need the input signal to look like this:



This is no problem for MADRIX 5. It will transform the signal for your DVI controller according to your Patch configuration.

While the DVI fixtures represent your LED installation in MADRIX 5 and its Previews, you can customize their DVI Mapping settings for the controller that receives the signal. As shown above, DVI fixture settings and their DVI Mapping often are two different things **if** you add rotation, flipping, or spacing. That is why you will have to configure the normal DVI fixture settings and their DVI Mapping settings separately.

The Patch Editor provides three view modes. Regarding the DVI Patch, the **DVI Map** is of special importance, since makes it possible to configure the required DVI Mapping of the DVI fixtures.

Step-By-Step Configuration

In order to work with DVI fixtures, follow the instructions below:

- 1]** Position your DVI fixtures in the graphical workspace of the Patch Editor according to your LED installation [using the view mode **Voxel Map**].

- 2] Set up the size of your virtual LED matrix [using the **Matrix Settings**]. Normally, the area it defines should include all of your DVI fixtures.
- 3] Activate the view mode **DVI Map** [Keyboard shortcut: **F6**] in the Patch Editor.
- 4] Adjust the DVI Mapping of every single DVI fixture according to the requirements of your DVI hardware controller. [The DVI Mapping of the first DVI fixture normally starts at position X:1, Y:1.]
- 5] When using »[DVI](#), activate the DVI Map Mode of the external DVI Outputs. When using »[Proprietary DVI Devices \[5A / A8 / T9\]](#), Step 5 is not required.

Step 1 and 2 are explained in the chapter »[Patch Editor](#)

Step 3, 4, and 5 will be explained below.

Step 3, 4, and 5 are only necessary, if you wish to add spacing, rotation, or flipping to your Patch that includes DVI fixtures.

DVI Mapping

Overview

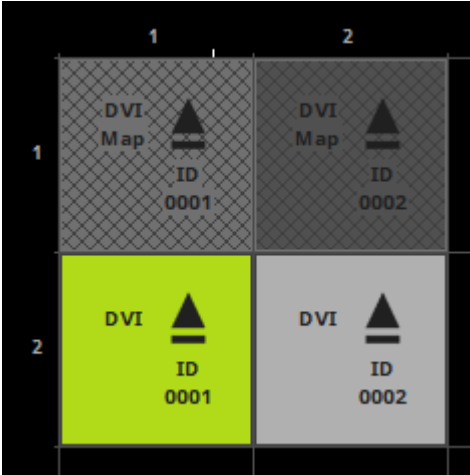
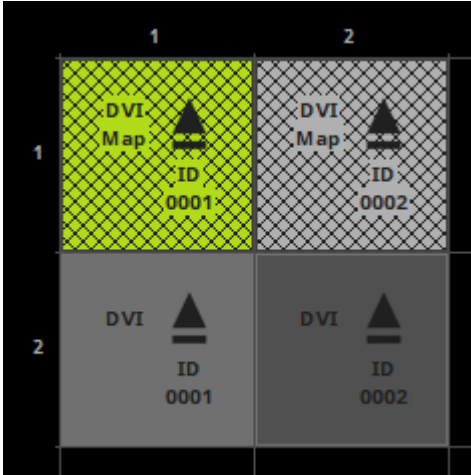
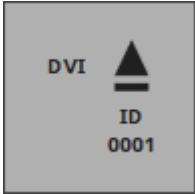
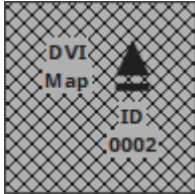




The DVI Mapping of DVI fixtures represents the fixture configuration for the DVI hardware controller. DVI Mapping settings can include their own position, rotation, and flipping settings. In order to work with DVI Mapping, you need to activate the DVI Map of the Patch Editor.

- In the Patch Editor, select **View > DVI Map**
[Keyboard shortcut: **F6**]

You only need DVI Mapping if you are using DVI fixtures in a different way than what the DVI controller expects.

Comparison Of Voxel Map And DVI Map

DVI Mapping Shown In The Voxel Map	DVI Mapping Shown In the DVI Map
<div></div> <p>DVI Mapping is inactive in the Voxel Map. It is shown in gray with a diagonal grid.</p> <p>[Column 1 shows a selected DVI fixture and its DVI Mapping. Column 2 shows a non-selected fixture and its DVI Mapping.]</p>	<div></div> <p>DVI Mapping is active in the DVI Map. It is shown in yellow with a diagonal grid.</p> <p>[Column 1 shows a selected DVI fixture and its DVI Mapping. Column 2 shows a non-selected fixture and its DVI Mapping.]</p>
<div></div> <p>When DVI fixture and its DVI Mapping have the same position, the DVI fixture is shown.</p>	<div></div> <p>When DVI fixture and its DVI Mapping have the same position, the DVI Mapping is shown.</p>
<div> By default, DVI fixture and DVI Mapping settings are linked together. If a setting, such as rotation, is changed for the fixture or the DVI Mapping, the opposite</div>	<div> By default, DVI fixture and DVI Mapping settings are not linked together. If a setting, such as rotation, is changed for the fixture or the DVI Mapping, the opposite</div>

<p>setting [DVI Mapping or fixture, respectively] will receive the same change or a corresponding offset. Deactivate the feature in the menu Preferences > Link DVI Mapping And Voxel Mapping [Keyboard shortcut: Ctrl+L]. If activated, the icon glows green in the toolbar.</p>	<p>setting [DVI Mapping or fixture, respectively] will not receive the same change or a corresponding offset. Deactivate the feature in the menu Preferences > Link DVI Mapping And Voxel Mapping [Keyboard shortcut: Ctrl+L]. If deactivated, the icon glows gray in the toolbar.</p>
<div> </div> <p>DVI fixtures can overlap. That means that one fixture can be positioned over another fixture. You need to activate the feature in the menu Preferences > Allow Fixtures To Overlap. If activated, the icon glows green in the toolbar.</p>	<div> </div> <p>DVI fixtures with adjusted DVI Mapping settings can overlap. That means that one Map can be positioned over another Map. You need to activate the feature in the menu Preferences > Allow Fixtures To Overlap. If activated, the icon glows green in the toolbar.</p>
<div> </div> <p>DVI fixtures can be copied very easily. Before copying a DVI fixture, you can decide how its DVI Mapping is handled during the copy process. Enable or disable the feature in the menu Preferences > Copy DVI Mapping</p> <p>A] Disabled: If a DVI fixture is copied, the DVI Mapping is reset to its default settings. That means it will have the settings of the newly copied DVI fixture. In fact, the copied DVI fixture has its own DVI Mapping.</p> <p>B] Enabled: If a DVI fixture is copied, the DVI Mapping includes the same settings as the DVI Mapping of the source or the settings plus a corresponding offset.</p> <p>If activated, the icon glows green in the toolbar.</p>	<p>In the DVI Map, DVI Mapping settings cannot be copied like DVI fixtures. Please switch back to the Voxel Map.</p>
<p>Restore the default DVI Mapping settings of selected DVI fixtures by clicking</p>	<p>Restore the default DVI Mapping settings of selected DVI fixtures by clicking</p>

<p>Edit > Restore DVI Mapping Defaults For Selection [Keyboard shortcut: Ctrl+R]. If clicked, the icon shortly flashes green in the toolbar.</p>	<p>Edit > Restore DVI Mapping Defaults For Selection [Keyboard shortcut: Ctrl+R]. If clicked, the icon shortly flashes green in the toolbar.</p>
---	---

Interaction And Settings



- The DVI Mapping of DVI fixtures can be used and interacted with in the Patch Editor just as any other fixture. In other words, it can be positioned with the mouse or keyboard, for example.
Learn more »[Patch Editor](#)
- You may also edit the DVI Mapping settings directly.
 - Make sure view mode **DVI Map** is active.
 - Select the DVI Mapping of a DVI fixture and go to the section **DVI Mapping** to the right.
 - You may change the **Flipping**, **Rotation**, or **Position X**, **Position Y**, **Position Z**.
 - You can also add or subtract an **Offset** for each of these items.
 - Always confirm with **OK**Learn more »[Patch Editor](#)
- At the same time, the section **Fixture Properties / Value** shows all necessary information for the DVI Mapping.

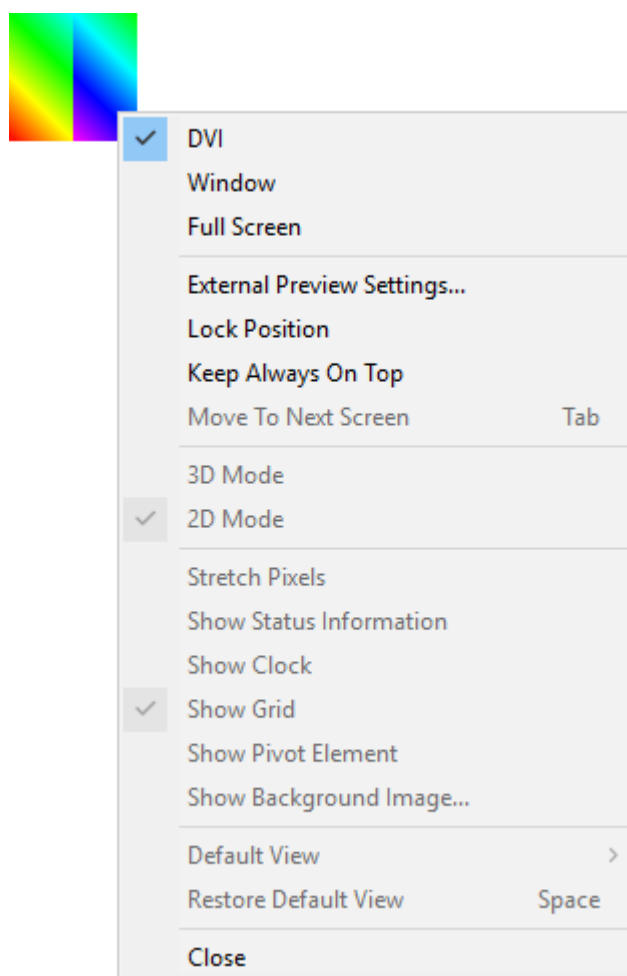
Important Information

- When working in 2D, make sure to position your DVI fixtures and their DVI Mapping always on the first Z-level. That means *Position Z* must be 1!
- Learn more »[Patch Editor](#)

DVI Map Mode For The External DVI Outputs

- DVI Map Mode is automatically activated for a DVI output if you have configured a DVI Map in the Patch Editor.
- The external DVI outputs offer a number of additional configuration settings. Make sure to configure everything as needed!

Learn more »[DVI](#)

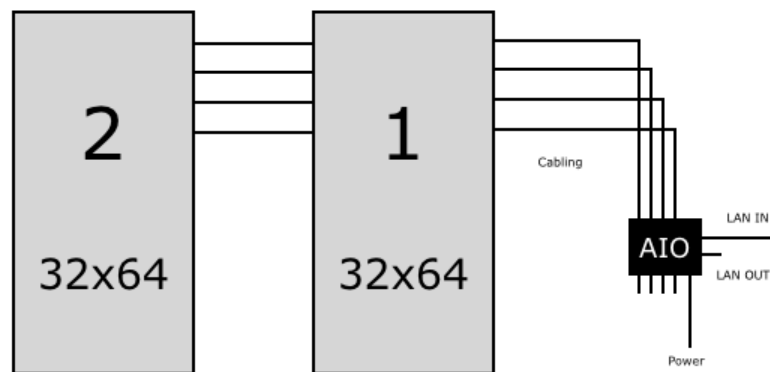


Example

How To Configure Two Rotated EUROLITE LSD 37.5

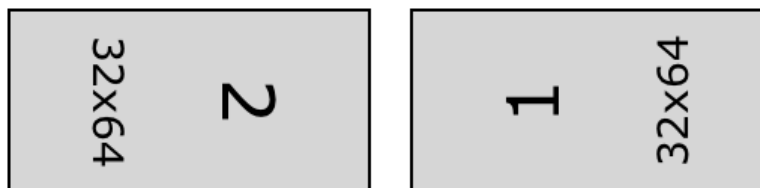
Normal Setup

The normal setup of two EUROLITE LSD 37.5 fixtures looks like this [schematic]:



Sample Setup

In this example, we will configure the two fixtures to be installed like this [schematic; without space]:

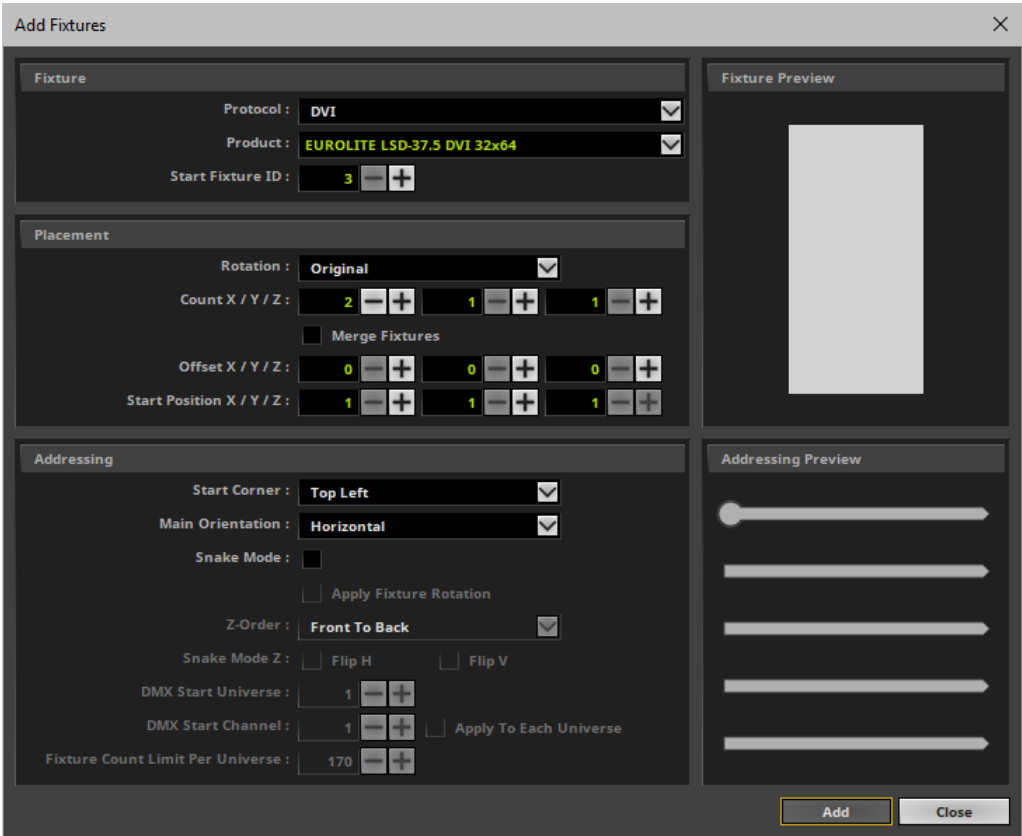


Step 1] Adding DVI Fixtures

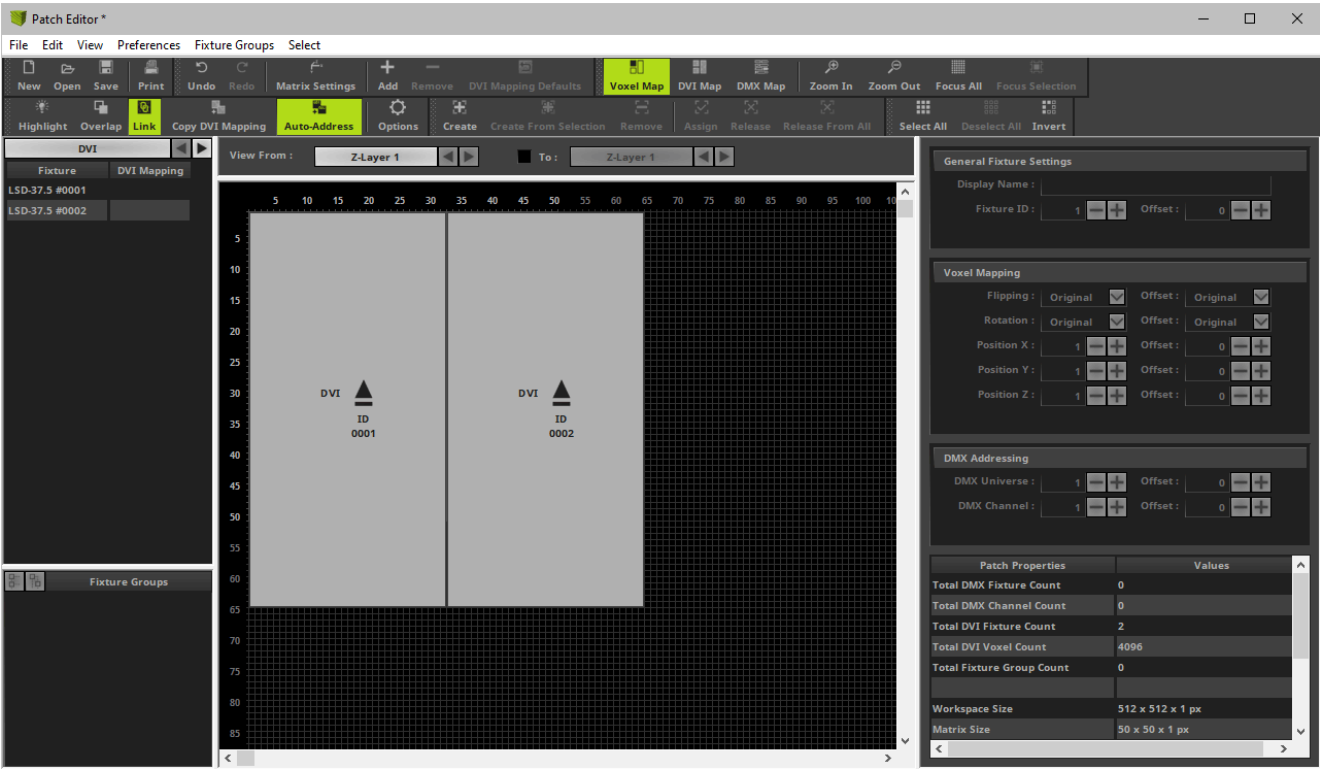
1] Create a new Patch. Go to the menu **File > New Patch** [Keyboard shortcut: **Ctrl+N**].

2] Add the two fixtures. Go to the menu **Edit > Add Fixtures...** [Keyboard shortcut: **Ins**]. Make sure **not** to select **Merge Fixtures**

Use the settings as shown in the screenshot:

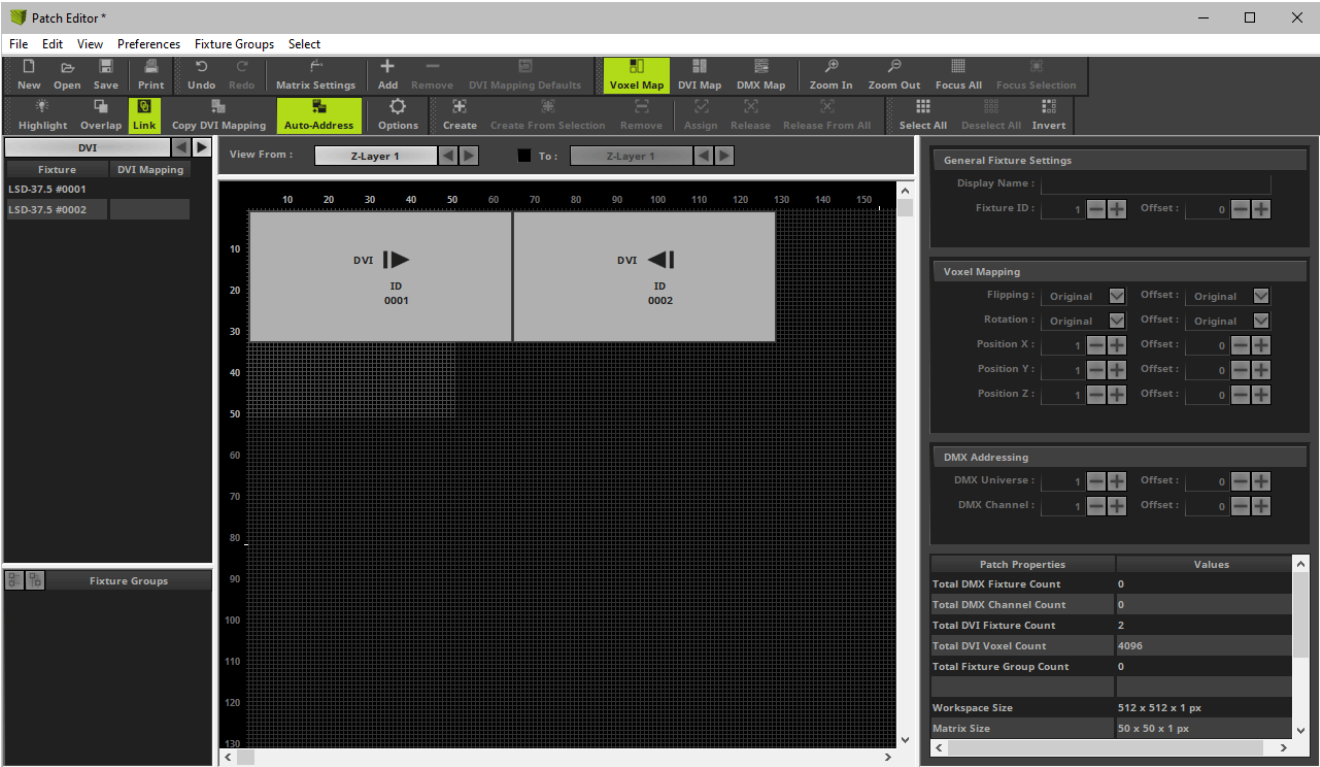


3] The Patch will look like this:



4] We need to rotate both fixtures to match the LED installation. The left fixture is rotated by 90°. The right fixture is rotated by 270°.

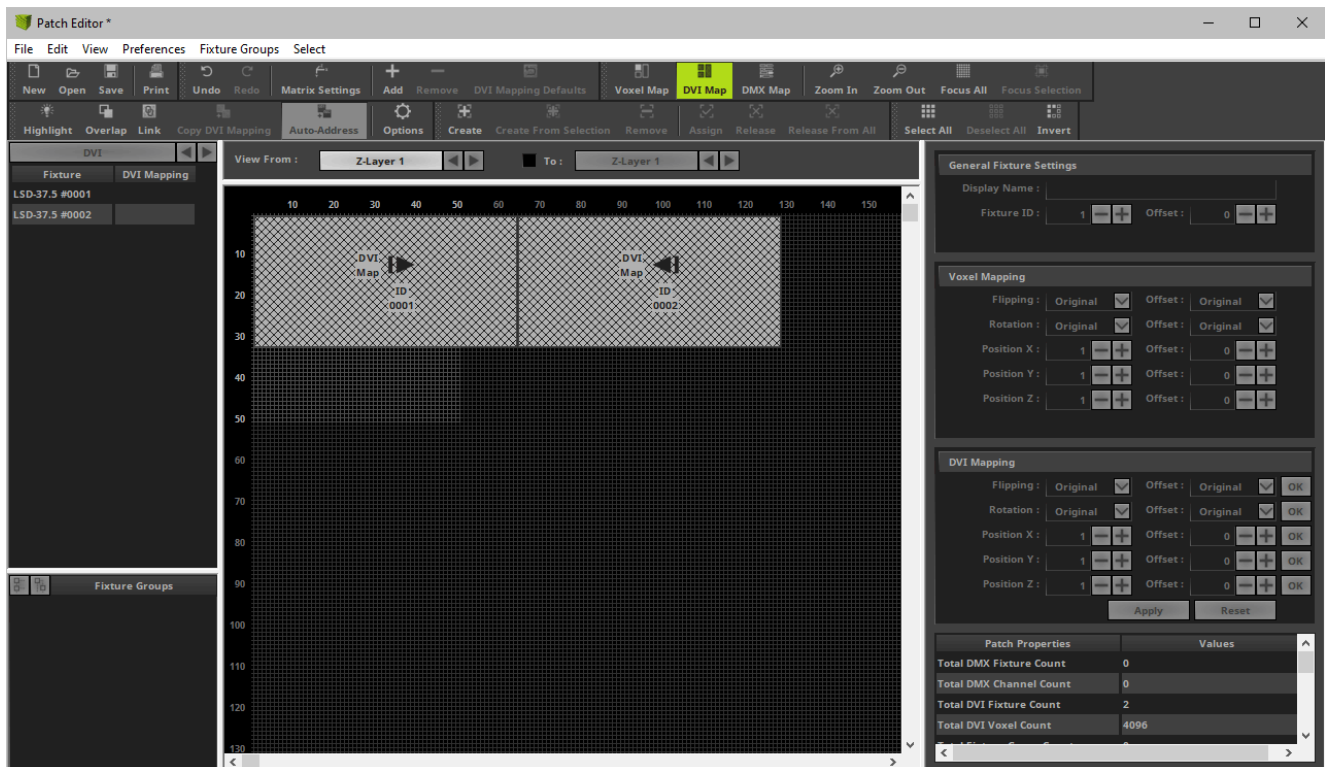
[If you receive an error message about the fixtures being out of range, move your fixture towards a free location on your workspace. Then, rotate them and move them back.]



Step 2] DVI Map

5] Switch to the DVI Map. Select **View > DVI Map**

[Keyboard shortcut: **F6**]



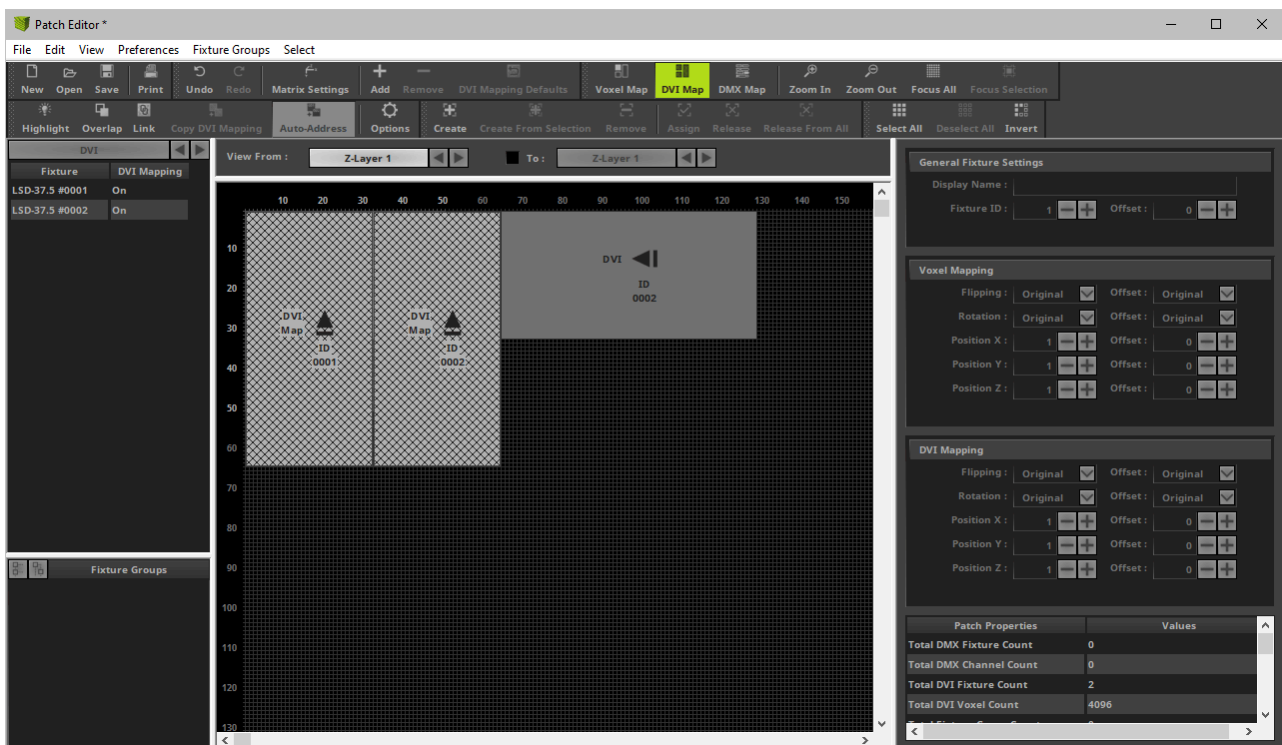
Step 3] DVI Mapping

6] Deactivate **Link**

7] Select the first DVI fixture with its DVI Mapping and position it in the center of your workspace. In the section **DVI Mapping**, change **Rotation** to **Original** and click **OK**

8] Select the second DVI fixture with its DVI Mapping and position it in the center of your workspace. In the section **DVI Mapping**, change **Rotation** to **Original** and click **OK**

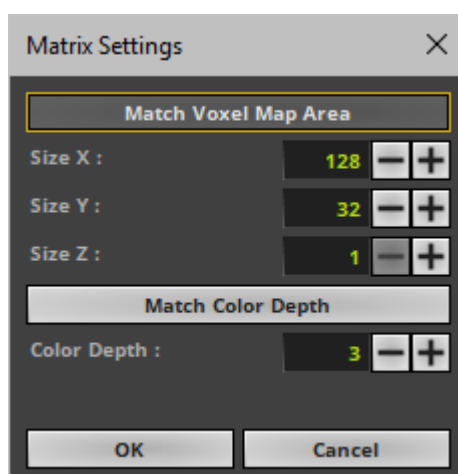
9] Arrange both DVI fixtures with their DVI Mapping next to each other in the upper left corner. The DVI Mapping of DVI fixture 1 is positioned at **Position X: 1, Position Y: 1, Position Z: 1**. The DVI Mapping of DVI fixture 2 is located at **Position X: 33, Position Y: 1, Position Z: 1**.



10] Switch back to the Voxel Map. Select **View > Voxel Map** [Keyboard shortcut: **F5**].

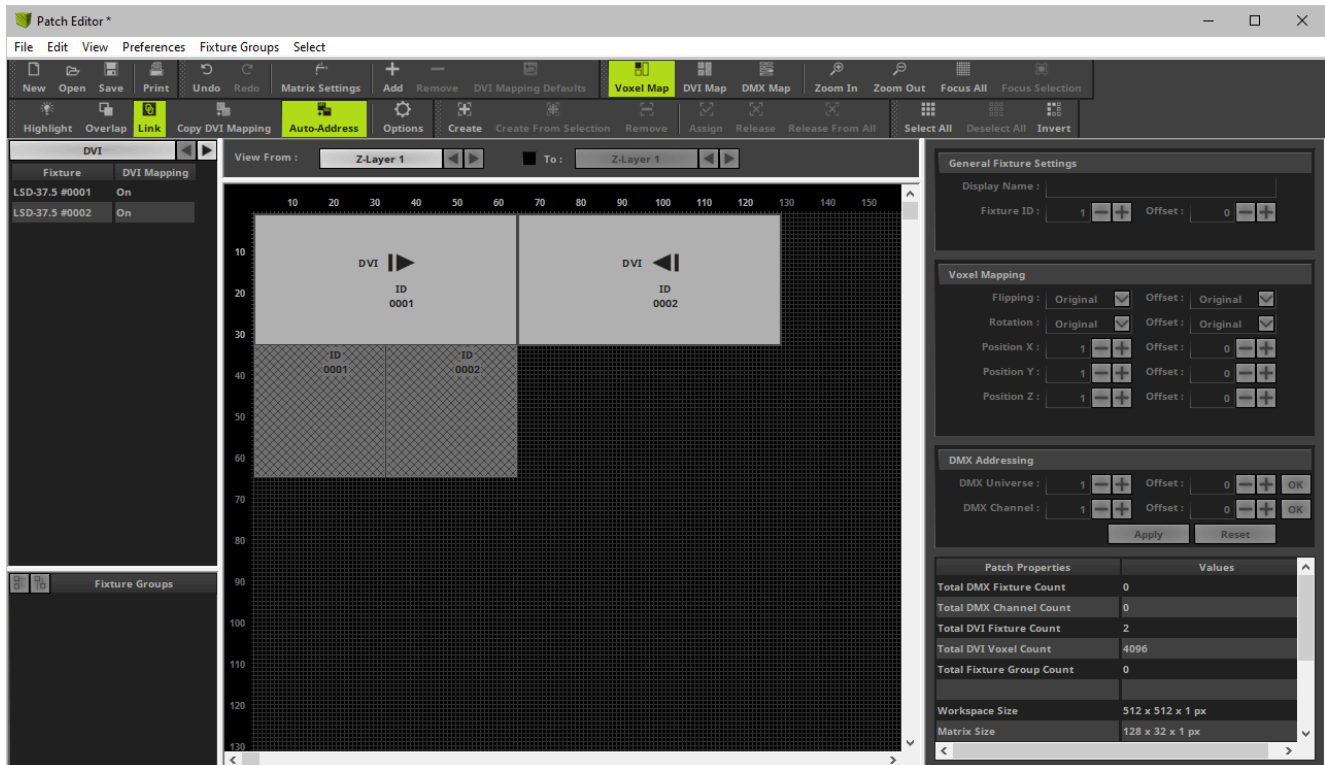
Step 4] Matrix Settings

11] Go to the menu **Edit > Matrix Settings....** Enter **Size X: 128**, **Size Y: 32**, **Size Z: 1**, and **Color Depth: 3**. The virtual LED matrix now matches the size of both fixtures in total.

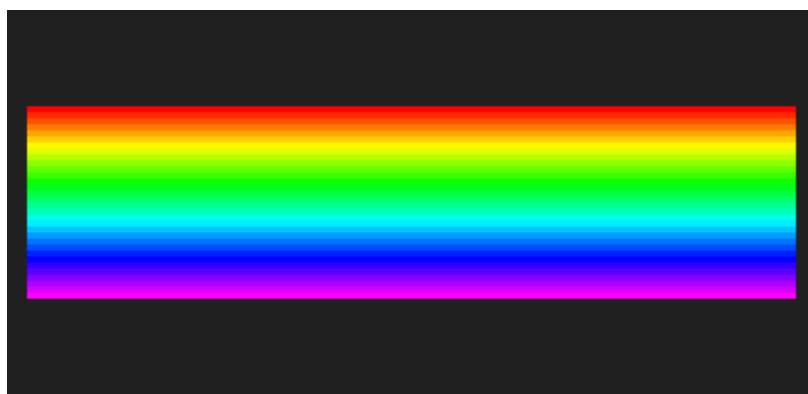


Step 5] Result

12] Your final Patch should look like this:



12] The DVI fixtures and therefore the 3 Previews will represent your LED installation:



- It was necessary to configure the DVI Mapping of the fixtures separately because the DVI hardware controller expects to receive the input signal like this [also shown above in the [Normal Setup](#)].
- The EUROLITE LSD 37.5 works with the EuroLite T9 protocol. No screen-capturing is needed and therefore the external DVI output window is not needed for this example.

Tips

- Make sure that DVI Mapping and DVI fixtures are not linked in the DVI Map [Disable **Link** mode].
- If you receive an error message about the fixtures being out of range, then move your fixture towards a free location on your workspace.

Further Tips

Please make sure to save your MADRIX 5 Setup file after the configuration process.

You may also save and/or export the Patch as a separate file [of the file type *.mpz or *.mpx].

4.2.4 CSV Fixture List: Import

This topic includes:

- [Introduction](#)
- [Examples](#)
- [Data Requirements](#)
- [Step-By-Step Instructions](#)
- [Importing Several Fixture Lists](#)
- [Troubleshooting](#)

Introduction

Depending on your lighting design, you may wish to control very complex LED layouts. You may also have already created your design in a separate software tool.

The widely used CSV file format can be imported into the Patch Editor of the MADRIX 5 Software. It will quickly

generate complex patch layouts based on data of third-party software, such as visualizers, consoles, CAD software, other lighting design tools, or even manually.

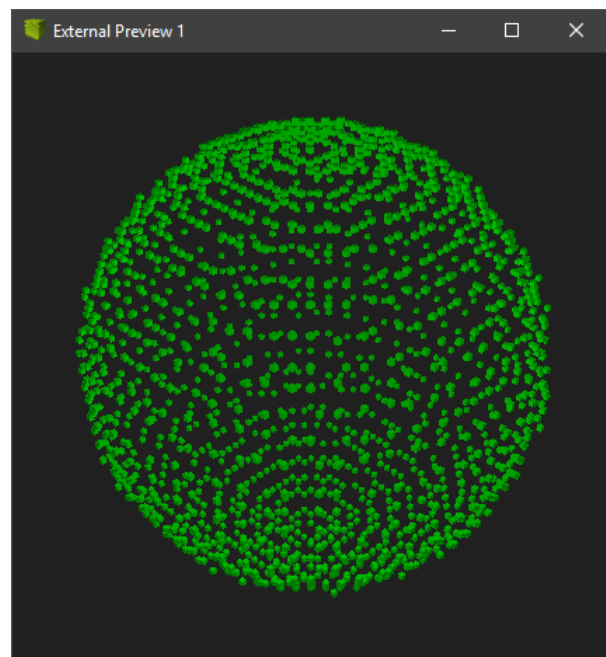
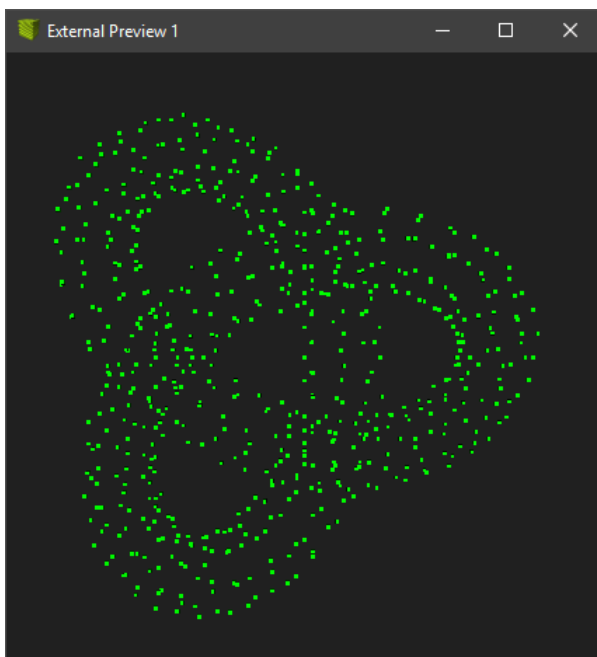
CSV is an acronym and stands for comma-separated values. This is a very general file format that makes it easy to record, save, and exchange structured data.

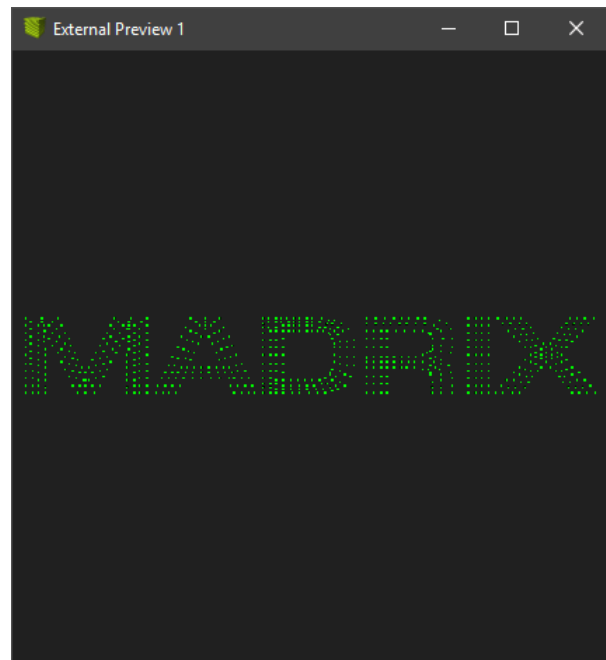
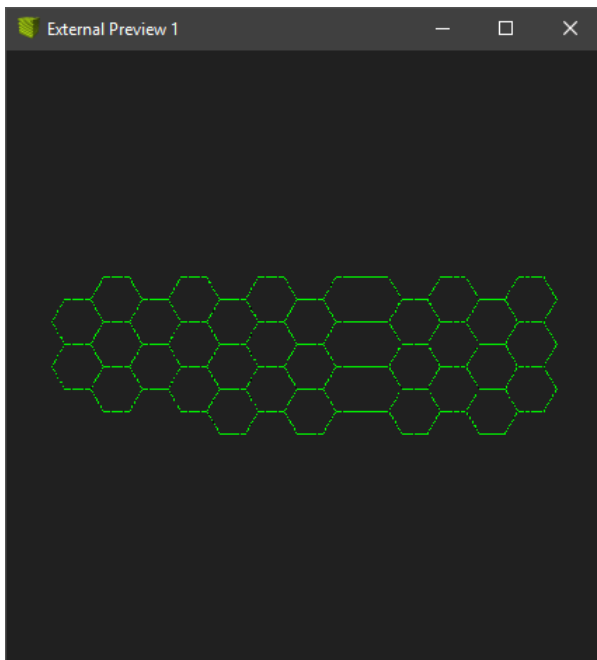
It is widely available in other software tools for data import and export. This also means that data which is not yet available in this format can usually be converted into CSV or can even be created manually/semi-automatically.

The CSV Fixture List Import is a feature that is part of the MADRIX 5 Patch Editor. Learn more » [Patch Editor](#)

Examples

The CSV Fixture List Import makes it possible to very quickly create complex layouts, such as the following examples.





Data Requirements

CSV files are usually text files with tabularly structured data. Since CSV is a very general file format, the data can be structured in many different ways.

The MADRIX 5 Software is extremely flexible and has a variety of options during the import process in order to be able to process as many different CSV files as possible.

The MADRIX 5 Software expects a file in the following format:

- Files in UTF-8 encoded format are supported. [In order to not misinterpret special characters.]
 - A Unicode Byte Order Mark [BOM] can be included but will be skipped automatically.
- Files in UTF-16 encoded format with BOM [Little Endian/LE or Big Endian/BE] are supported.
- CRLF, LF, and CR line endings are supported.
- Each line will be interpreted as data set, except for the following rules:
 - Any line can be used as header line [optional].
 - Empty lines or invalid lines can be included but will be skipped automatically.

- Each data set includes data fields that are separated
- Each data field, except the last data field of a line, ends with a single, special characters, i.e. field separators.
- Text that should be processed can be included in a pair of special characters, i.e. text delimiters.
- If text delimiters are used, only whitespace [spaces, tabulators] is allowed outside of those delimiters, which then is automatically ignored.
- If text delimiters are used, no additional text can be outside of those delimiters.
- Should field separators and text delimiters be interpreted as valid data, they need to be included within text delimiters themselves.
- Field separators and text delimiters should be the same for all data sets throughout the whole file.
- All data sets should have the same amount of data fields. Otherwise they will be filled up with empty data fields automatically.
- MADRIX 5 works pixel-based [2D] / voxel-based [3D].

Step-By-Step Instructions

To import a list of fixtures into the Patch Editor, follow these steps:

- 0]** Export your lighting design as CSV file.
- 1]** Open the Patch Editor.
- 2]** Start the CSV import process.
- 3]** Define CSV Import Settings.
- 4]** Define Fixture List Import Settings and end the CSV import process.
- 5]** Set up the final Patch.

0] Export Your CSV File

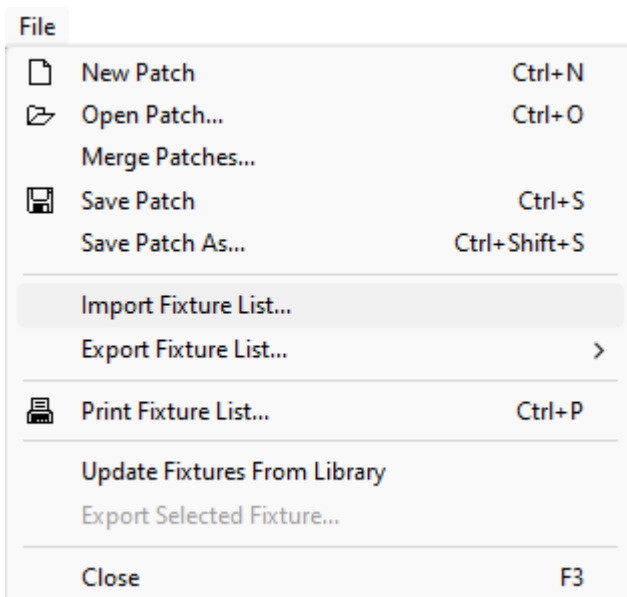
- Export your fixture list in the CSV file format from your visualizer, console, CAD software, other lighting design tool, or create it manually.
[Alternatively, export your data from your software tool in the native file format that is possible and then convert it to CSV with the help of a spreadsheet program, for example.]

1] Open The Patch Editor

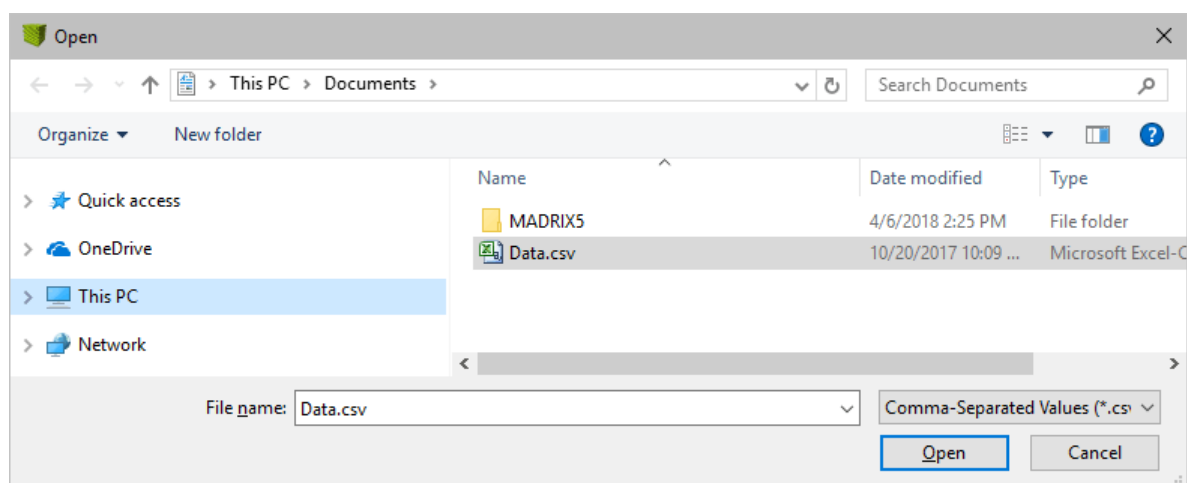
- Go to the menu **Preferences > Patch Editor...**
[Keyboard shortcut: **F3**]
- A new window will open.

2] Start The CSV Import Process

- In the Patch Editor, go to **File > Import Fixture List...**

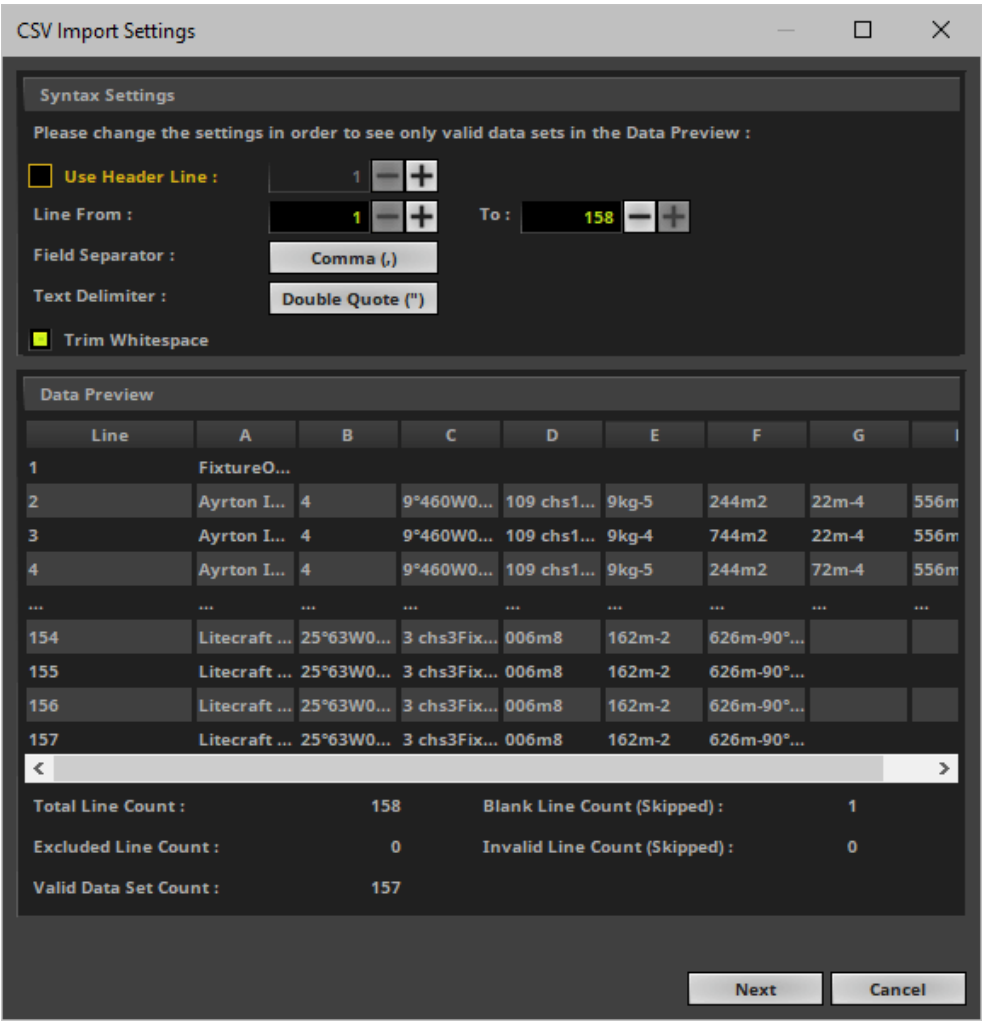


- A new window will open. Select your CSV file in the File dialog and confirm with **Open**



2] Define CSV Import Settings

The main import process has two separate steps. This is the first step.



Syntax Settings

Set up the Syntax Settings according to all of the parameters below. Double-check by using the Data Preview.

Use the Data Preview to see how the data will be processed. If not configured correctly, your data will not be imported in a way that makes sense. The data should be structured and previewed in a useful way. For example, fixture names should be identifiable as such and fixture positions should be only sensible numbers instead of text. [Please see the next screenshot below.]

- **Use Header Line** - Defines if the CSV file has a descriptive first line that provides a definite name for each data set and column. Activate this option if there is a header line. Set up the line number where this header line is located. The default value is 1.

[Otherwise the text provided in this line would be seen as usable data and errors would occur during the import process. If activated, the header line will be automatically excluded from the data sets.]

- **Line From To** - Defines all the lines that the MADRIX 5 Software imports as data sets. Therefore, you can define a range of line numbers in order to include or exclude specific lines. The default values range from 1 to the maximum line number that can be found in the file.
[If a header line is used, it will be excluded automatically.]
- **Field Separator** - Defines how data sets are separated within the CSV file. Data can be structured using specific characters. The default value is Comma.
 - **None** - There is no character used to separate the data fields.
 - **Space** - A single space [] separates the data fields.
 - **Tabulator** - Uses a tabulator [tab] for the separation.
 - **Comma** - A comma [,] separates the data fields.
 - **Semicolon** - A semicolon [;] separates the data fields.
 - **Period** - A period [.] separates the data fields.
 - **Colon** - A colon [:] separates the data fields.
 - **Underscore** - An underscore [_] separates the data fields.
 - **Hyphen** - A hyphen [-] separates the data fields.
 - **Pipe** - A pipe [|] separates the data fields.
 - **Custom Character...** - Allows you to define the field separator individually if it cannot be selected via the options above. Define the custom character by entering it via the keyboard and confirm with **OK**
- **Text Delimiter** - Allows you to define how text is marked in the data fields.
 - **None** - There is no character to mark text.
 - **Single Quote** - A single quote ['] marks text.
 - **Double Quote** - A double quote ["] marks text.
 - **Custom Character...** - Allows you to define the field separator individually if it cannot be selected via the options above. Define the custom character by entering it via the keyboard and confirm with **OK**
- **Trim Whitespace** - Defines if the software should automatically remove spaces, tabulators, and other whitespace characters that might be unnecessarily included in the data fields. Data sets, which are already clean or cleaned up in this way, are required in order to be able to process them without issues.

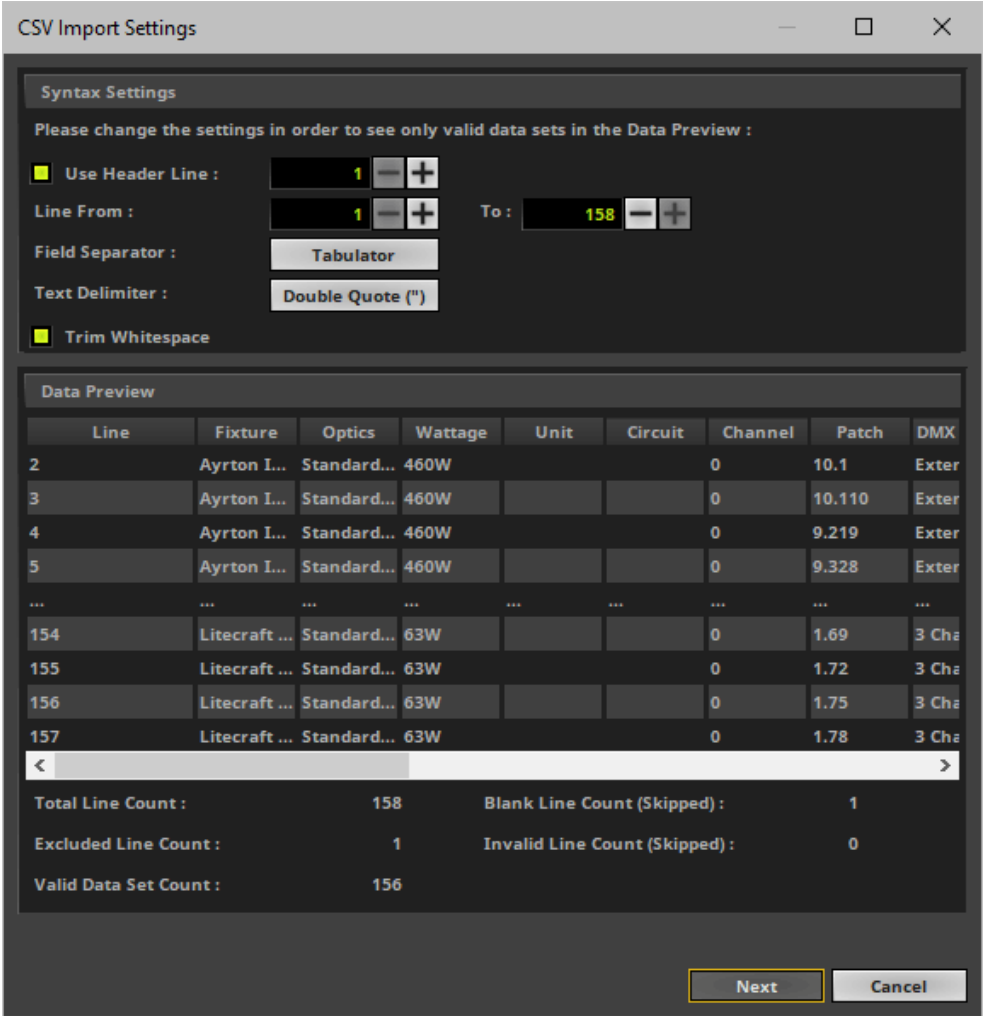
Data Preview

The Data Preview shows a preview of how the software will process the data sets that are included in the CSV file.

- Since you might want to import a very high number of data sets, only the first four lines are shown as well as the last four lines.
- By default, the line numbers are shown in addition to the various columns [A to Z].
- If Use Header Line is activated, the descriptions provided by the header line will be automatically used as column titles.
- If Line From To is customized to exclude certain lines, the data preview will reflect that.
- **Total Line Count** - Shows the overall number of lines that is found in the CSV file.
- **Excluded Line Count** - Shows how many lines are not included in the import process according to the Syntax Settings [such as the header line, for example].
- **Valid Data Set Count** - Shows how many data sets will be imported according to the Syntax Settings.
- **Blank Line Count (Skipped)** - Shows how many blank lines are skipped in the process [lines that do not contain any valid data sets].
- **Invalid Line Count (Skipped)** - Shows how many lines are seen as invalid and are therefore skipped and not included in the process [lines that contain invalid data sets].
- Follow the advice of the error messages if they appear at the bottom.

If you know that your CSV file should not have any blank or invalid lines, or that it should have more valid data sets, you should double-check your software data export and the final CSV file. [A text editor or spreadsheet program might also help to manually make any required adjustments in that case.]

- The following screenshot is a sample how such Data Preview could look like:



If your Data Preview shows sensible and useful data, continue with a click on **Next**

4] Define Fixture List Import Settings

The main import process has two separate steps. This is the second step.

Fixture List Import Settings

Fixture Settings Assignment

Please assign the fixture settings according to the contents of the columns :

Line	Fixture	Optics	Wattage	Unit	Circuit	Channel	Patch	DMX Mode	DMX Cha...	Layer	Focus	Filters	Gobos	Access...
Assignment :	None	None	None	None	None	None	None	None	None	None	None	None	None	None
2	Ayrton I...	Standard...	460W			0	10.1	Extended...	109	Fixtures				
3	Ayrton I...	Standard...	460W			0	10.110	Extended...	109	Fixtures				
4	Ayrton I...	Standard...	460W			0	9.219	Extended...	109	Fixtures				
5	Ayrton I...	Standard...	460W			0	9.328	Extended...	109	Fixtures				
...
154	Litecraft ...	Standard...	63W			0	1.69	3 Chann...	3	Fixtures				

Product Settings

Please assign the products according to your requirements :

Position Settings

Scale X / Y / Z :

Start Position X / Y / Z :

Rotation Settings

Direction :

DMX Address Settings

Field Separator :

Index :

Import Preview

Import Preview not available! Please correct the errors first.

1 / 2

The assignment of 'Product' is required! Please change the Fixture Settings Assignment.

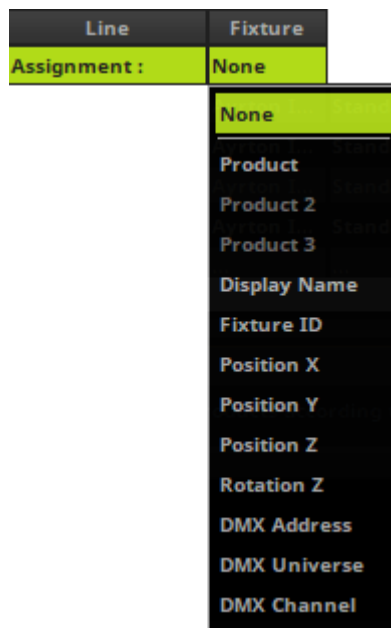
Back OK Cancel

Fixture Settings Assignment

Now, assign your imported data sets to the corresponding settings in the MADRIX 5 Software.

- **Left Mouse Double-Click** - Perform a double-click with your left mouse button on the corresponding column in the line **Assignment:** and change **None** to one the following fixture settings.

[If you defined a header line in the first step, the columns are now appropriately named according to the CSV contents. This helps assigning the fixture settings in this step. Otherwise, the columns are named A to Z.]



You can assign the following fixture settings:

- **Product** - Assigns this column to a fixture/product. According to all the different products that are found, you can assign fixture profiles below by using **Product Settings**
- **Product 2** - Is available if the complete product name is split into several parts/data fields.
- **Product 3** - Is available if the complete product name is split into several parts/data fields.
- **Display Name** - Assigns this column to the [short] name for fixtures used in the Fixture Editor and ultimately in the Patch Editor.
- **Fixture ID** - Assigns this column to the Fixture ID that is used in the Patch Editor as a unique identifier for each fixture.
- **Position X** - Assigns this column to the horizontal position of fixtures. It is assumed that fixture are included in the CSV data with their middle position.
- **Position Y** - Assigns this column to the vertical position of fixtures. It is assumed that fixture are included in the CSV data with their middle position.
- **Position Z** - Assigns this column to the depth position of the fixture. It is assumed that fixture are included in the CSV data with their middle position. [For a 2D patch, this value is 1 and will even be assigned automatically if this column is not assigned.]
- **Rotation Z** - Assigns this column to the rotation of the fixture around the Z-axis.
- **DMX Address** - Assigns this column to both, the DMX universe and the DMX channel. This means that the column needs to include the data for both of those fixture settings. [If assigned, DMX Universe as well as DMX Channel are not available separately anymore.]

- **DMX Universe** - Assigns this column to the DMX universe of fixtures. [If assigned, DMX Address is not available anymore.]
- **DMX Channel** - Assigns this column to the DMX start channel of fixtures. [If assigned, DMX Address is not available anymore.]
- **You need to assign at least Product**
 - Aside from Product, all other settings are optional. The more settings you can assign, the more data can be used in the MADRIX 5 Software.
 - Each fixture setting can only be assigned once.
 - It is not necessary to assign fixture settings to all columns/data fields that are found in the file.
 - If you do not assign all of the fixture settings above, those will be ignored and default values will be generated automatically for the corresponding settings for each fixture.
 - If Position X is not assigned, all fixtures will be placed at position X = 1, which is the left border of the Patch.
 - If Position Y is not assigned, all fixtures will be placed at position Y = 1, which is the top border of the Patch.
 - If Position Z is not assigned, all fixtures will be placed at position Z = 1, which is the front border of the Patch.
 - If Rotation Z is not assigned, they will be placed in the original rotation according to the MADRIX 5 Fixture Library.
 - If DMX Address, DMX Universe, or DMX Channel are not assigned, fixtures will be addressed automatically in ascending order.
 - If only DMX Universe is assigned, the DMX channel will be set to 1.
 - If only DMX Channel is assigned, the DMX universe will be set to 1.
 - If Display Name is not assigned, fixtures will be named based on a combination of the fixture profile and the fixture ID.
 - It is assumed that the fixture IDs provided in the CSV file are decimal numbers and unique. If Fixture ID is not assigned, fixtures will be numbered in ascending order automatically.
- The following screenshot is a sample how such Fixture Settings Assignment could look like, including making use of a header line:

Fixture Settings Assignment										
Please assign the fixture settings according to the contents of the columns :										
Line	Fixture ID	Fixture	Manufact...	Mode	Short Na...	UNIVERSE	ADDRESS	x	y	z
Assignment :	Fixture ID	Product	None	None	Display N...	DMX Uni...	DMX Cha...	Position X	Position Y	Position Z
2	PDS1- 1-1	iColourFL...	Philips	3ch	RGB Node	1	1	1952	6436	19
3	PDS1- 1-2	iColourFL...	Philips	3ch	RGB Node	1	4	2014	6455	19

Product Settings

- Becomes only available when a **Product** has been assigned in the **Fixture Settings Assignment**
- When Product has been assigned in the Fixture Settings Assignment, you need to further specify the correct product and fixture profile from the MADRIX 5 Fixture Library.
- **You need to assign the correct fixture profile to the products found in the data sets.**
- Each different product that was found in the data sets will be listed separately.
- You can individually assign a fixture profile to each product that was found.
- At least one product needs to be assigned.
- You do not have to assign a product to all of the Source Products. Unassigned products will be ignored automatically.
- **Count** - Shows the number of fixtures of this type included in the CSV file.
- **Source Products** - Shows the products found in the CSV file.
- **Assigned Products** - Shows the fixture profiles of MADRIX 5 assigned to the source products.
- **Rotation** - Shows the chosen rotation of assigned products.
- **Size** - Shows the the size of the fixture in X x Y x Z [in px].

Product Settings				
Please assign the products according to your requirements :				
Count	Source Products	Assigned Products	Rotation	Size
366		None	None	None
194	SGM LT 200	SGM LT-200 2m Vertical	Original	1 x 54 x 1 px

- **Left Mouse Double-Click** - Perform a double-click with your left mouse button on the column **Assigned Products > None**
- A new window will open.



- **Protocol** - Choose the general fixture protocol.
 - **DMX** - Makes all DMX-based fixture profiles available as **Product**
 - **DVI** - Makes all DVI-based fixture profiles available as **Product**
- **Product** - Choose the corresponding fixture profile from the MADRIX 5 Fixture Library.
[This is the product selection known from the Matrix Generator and Patch Editor.]
- **Rotation** - Choose the corresponding fixture rotation. The fixture preview to the right will help you assess the correct rotation.
- **Merged Count X / Y** - Is only available for Protocol DVI. Allows you to merge the chosen DVI product into a larger DVI fixture. Choose the number of fixtures in **X** and **Y** accordingly.

Position Settings

The CSV import process proves extremely useful when you can assign the fixture settings Position X, Position Y, and Position Z. Depending on your imported data sets, you may want to adjust the settings further regarding the position of fixtures.

- Becomes only available when **Position X**, **Position Y**, and/or **Position Z** have been assigned respectively in the **Fixture Settings Assignment**
- **Note: When importing fixtures that are larger than 1 pixel/voxel, these position settings/coordinates will be used as the center of the fixture.** This affects the Scale and Start Position accordingly.
- It is assumed that the fixture positions provided in the CSV file represent the center of the fixture.
- **Scale X / Y / Z** - Changes the total dimensions in X, Y, and Z by proportionally increasing or decreasing the horizontal, vertical, and depth aspects with the help of a multiplicative factor. **Note:** The overall Matrix Size of

the Patch affects the performance!

- **Entering negative values, such as -1, will invert [i.e. mirror] the position of imported fixtures along the corresponding axis [X, Y, or Z].** It does, however, not flip the orientation of fixtures.

[By default, the distances are applied according to the scale and in the units of the CSV data. These might fundamentally differ from the MADRIX 5 Software: E.g. meters or pixel pitch compared to pixels in MADRIX 5.]

- **Start Position X / Y / Z** - Defines an offset for the position of fixtures instead of always starting at 1 / 1 / 1.

[By default, the software automatically crops/removes any empty spaces the data sets might produce regarding the start position. This means that the start position of the first fixture is set to 1 / 1 / 1 in order to reduce the Matrix Size. If you need to set your fixtures to a certain area, use this setting to enter the appropriate offset.]

Rotation Settings

The rotation of fixtures in the CSV data sets might be different to the rotation of the corresponding fixture profiles of the MADRIX 5 Fixture Library.

- Becomes only available when **Rotation Z** has been assigned in the **Fixture Settings Assignment**
- It is assumed that the fixture rotations provided in the CSV file are provided in degrees.
- Free angles can be included but will be rounded up to the next available quarter rotation [0°, 90°, 180°, 270°].
- **Direction** - Allows you to define the general direction of the rotation.
 - **Clockwise** - Defines the rotation according to the direction of the clock.
 - **Counterclockwise** - Defines the rotation as the opposite of the normal clock rotation.
- **Offset** - Allows you to add [in case of clockwise rotation] or subtract [in case of counterclockwise rotation] from the rotation value set in the data sets.
 - **Original** - Leaves the rotation as defined in the data sets.
 - **90°** - Offsets the rotation value by 90 degrees.
 - **180°** - Offsets the rotation value by 180 degrees.
 - **270°** - Offsets the rotation value by 270 degrees.

DMX Address Settings

The DMX addresses of the CSV data sets might be managed differently than the settings of the MADRIX 5 Software.

- Becomes only available when **DMX Address**, **DMX Universe**, and/or **DMX Channel** have been assigned respectively in the **Fixture Settings Assignment**
- It is assumed that the DMX addresses provided in the CSV file are provided as decimal numbers.
- **Field Separator** - Is only available when DMX Address has been assigned in the Fixture Settings Assignment. Defines the way DMX universe and DMX channel are combined as a single DMX address.
 - **Space** - A single space [] separates universe and channel.
 - **Tabulator** - Uses a tabulator [tab] for the separation.
 - **Comma** - A comma [,] separates universe and channel.
 - **Semicolon** - A semicolon [;] separates universe and channel.
 - **Period** - A period [.] separates universe and channel.
 - **Colon** - A colon [:] separates universe and channel.
 - **Underscore** - An underscore [_] separates universe and channel.
 - **Hyphen** - A hyphen [-] separates universe and channel.
 - **Pipe** - A pipe [|] separates universe and channel.
 - **Custom Character...** - Allows you to define the field separator individually if it cannot be selected via the options above. Define the custom character by entering it via the keyboard and confirm with **OK**
- **Index** - Defines how the DMX addressing starts in the CSV data sets regarding DMX universe as well as DMX channel.
 - **0-Based** - DMX addressing starts with value 0 and ranges from 0 to 255.
 - **1-Based** - DMX addressing starts with value 1 and ranged from 1 to 256.

Import Preview

While configuring all options in the Fixture List Import Settings dialog, the Import Preview shows a preview of the overall properties that will be set after the import process has been finished.

- **DMX Fixture Count** - Shows the total number of DMX fixtures that will be imported.
- **DVI Fixture Count** - Shows the total number of DVI fixtures that will be imported.
- **Fixture IDs** - Shows the range of unique identifiers that will be imported [or generated automatically by the software if not assigned in the Fixture Settings Assignment].
- **Map Area X** - Shows the range of positions where which fixtures will be patched and located in X as well as the total size of that area in brackets.
- **Map Area Y** - Shows the range of positions where which fixtures will be patched and located in X as well as the total size of that area in brackets.

- **Map Area Z** - Shows the range of positions where which fixtures will be patched and located in X as well as the total size of that area in brackets.
- **DMX Universes** - Shows the range of DMX universes that will be imported [or generated automatically by the software if not assigned in the Fixture Settings Assignment].
- **DMX Channels** - Shows the range of DMX channels that will be imported [or generated automatically by the software if not assigned in the Fixture Settings Assignment].

Message And Errors

The software will show various messages and errors below the Import Preview to guide you through the process.

- Red Exclamation Mark - Shows errors that you will have to fix. Otherwise, the import process cannot be finalized.
- Gray Exclamation Mark - Shows messages that hold valuable information for you. Please decide to adjust the settings accordingly or choose to leave the settings as they are and regard this message only as information.

End The CSV Data Import

Since the Fixture List Import Settings dialog is the second step of the main import process, the main import process will end after this step.

Double-check and confirm all of your settings via the Import Preview before ending the process!

- **OK** - Imports the configured data into the Patch Editor.

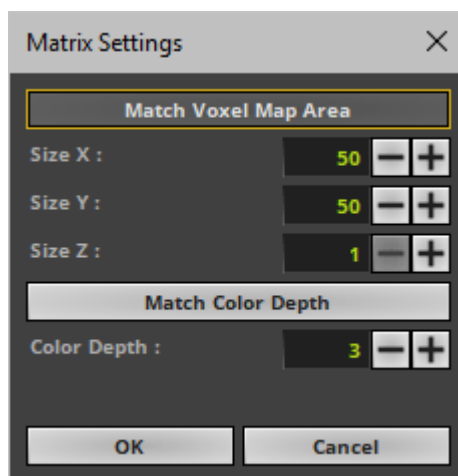
5] Set Up The Final Patch

After the import process, the final Patch is not yet finished since just now you have imported a large list of fixtures, but not created a Patch for the MADRIX 5 Software yet.

- Double-check all imported fixtures. Repeat the CSV Fixture List Import process and modify your data or import settings if you are not satisfied with the result, or do any required changes manually in the Patch Editor [[»Patch](#)

[Editor](#)].

- After you have set up and configured all of your fixtures, it is important to define the Matrix Settings.
- Click **Matrix Settings**
[menu **Edit > Matrix Settings...**]
- A new window will open.



The virtual LED matrix represents your LED fixtures. Therefore, it is the area on which the MADRIX Effects are rendered and displayed, and ultimately sent to your output. MADRIX 5 needs to know in pixels/voxels how large your LED project is in total.

Set up the Matrix Settings manually or use the semi-automatic options: according to all of these parameters:

- **Match Voxel Map Area** - Automatically defines the total size of the virtual LED matrix in X, Y, and Z according to the placed fixtures.
- **Match Color Depth** - Automatically defines the number of color channels your LED fixtures use according to the placed fixtures.
- Confirm with **OK**
- Close the Patch Editor when you have finished the configuration.

Importing Several Fixture Lists

If you wish to import several, different CSV files, i.e. several fixture lists, follow these steps:

- Import the first CSV file/fixture list.
- Save the Patch as a separate file via **Patch Editor > File > Save Patch As...**
- Import the second CSV file/fixture list.
- Save the second Patch as a separate file via **Patch Editor > File > Save Patch As...**
- Repeat the process for all the different fixture lists.
- In the Patch Editor, use **File > Merge Patches...** in order to combine all separately saved Patch files.

Learn more » [Merging Patches](#)

Troubleshooting

If you are encountering problems, please work through the following checklist:

- **The assignment of 'Product' is required! Please change the Fixture Settings Assignment.**
If you see this message, you need to assign the fixture setting Product in the section Fixture Settings Assignment.
- **The assignment of one or more products is required. Please change the settings.**
If you see this message, you need to assign the correct fixture profile to the products found in the data sets in the section Product Settings.
- If you want to undo a Fixture Settings Assignment or assign a setting to a different column, set the incorrect column to **None** again and assign the fixture settings to the correct column instead.
- If you are not satisfied with the results, please double-check:
 - Your software data export from your third-party software, such as visualizers, consoles, CAD software, other lighting design tools, or other software for data export.
 - The CSV file
 - The CSV Import Settings [step one of the main import process]
 - The Fixture List Import Settings [step two of the main import process]
- Or modify the data sets manually [a text editor or spreadsheet program might help in this case]

- Check any messages or errors of the CSV Import Settings [step one of the main import process] or Fixture List Import Settings [step two of the main import process] and act accordingly by fixing the error and evaluating if the settings a message refers to need to be modified or can remain unchanged.
- Instead of assigned all fixture settings that are provided in the CSV file, you may choose not to assign certain settings and let the MADRIX 5 Software use or generate default values instead.

4.2.5 CSV Fixture List: Export

This topic includes:

- [Introduction](#)
- [HTML](#)
- [CSV](#)

Introduction

You may wish to export the data from your created Patch file in order to use it in other third-party tools or other ways.

Two formats are available:

- **HTML**
- **CSV**

The CSV Fixture List Export is a feature that is part of the MADRIX 5 Patch Editor. Learn more »[Patch Editor](#)

HTML

The HTML export creates a pre-formatted list with the most important information about your MADRIX 5 Patch.

Step-By-Step Instructions

To export a list of fixtures from the Patch Editor to HTML, follow these steps:

- 1] Open the Patch Editor.
- 2] Create your MADRIX 5 Patch.
- 3] Export to HTML.

1] Open The Patch Editor

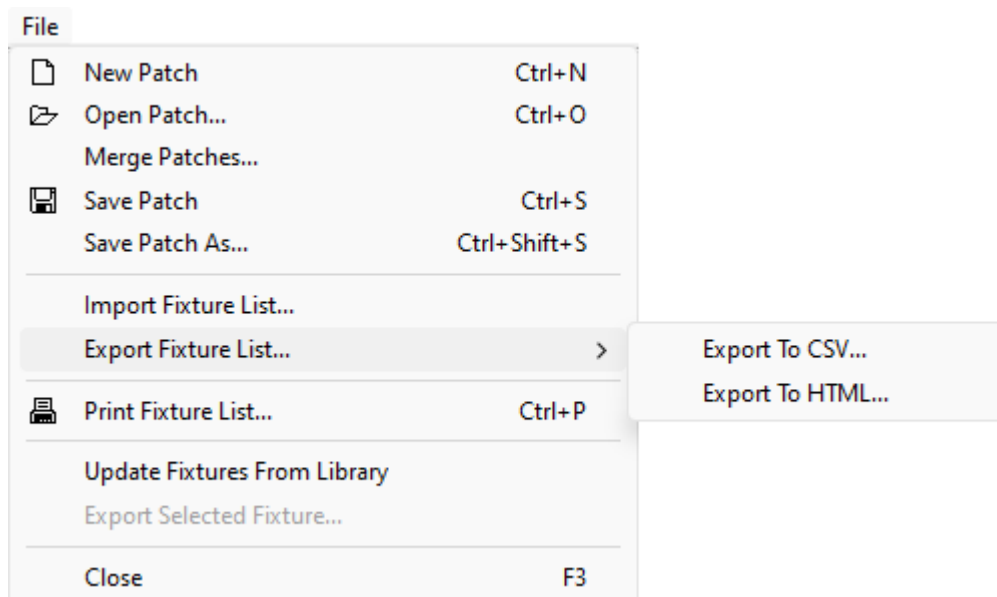
- Go to the menu **Preferences > Patch Editor...**
[Keyboard shortcut: **F3**]
- A new window will open.

2] Create Your MADRIX 5 Patch

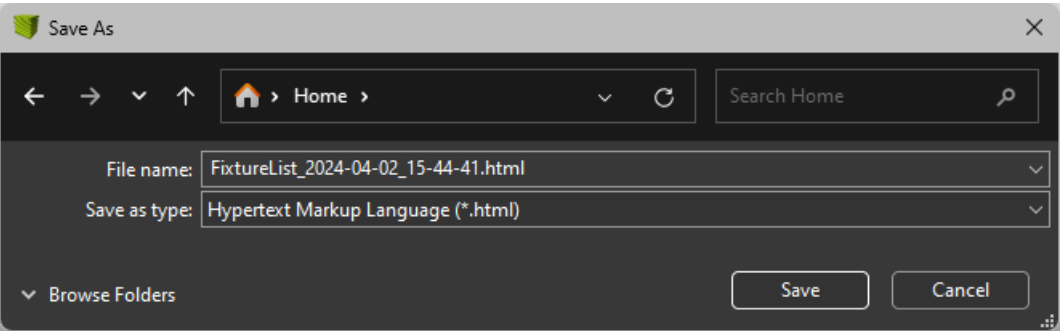
- Create the Patch you require to control your LED project. Learn more »[Patch Editor](#)

3] Export To HTML

- In the Patch Editor, go to the menu **File > Export Fixture List... > Export To HTML...**



- Choose the location on your computer to store the file:



- As the result, you can open the file with a web browser:

MADRIX
LIGHTING CONTROL

MADRIX 5.6a

Printed : 2024/04/02 15:51:45

Matrix Size : X=50, Y=50, Color Depth : 3

ID	Display Name	Mode	Manufacturer	Type	X	Y	Rot.	Flip	U	CH
1	RGB_light #0001	1 pixel	!generic	DMX	(1,	1)	-	-	1	1
2	RGB_light #0002	1 pixel	!generic	DMX	(2,	1)	-	-	1	4
3	RGB_light #0003	1 pixel	!generic	DMX	(3,	1)	-	-	1	7
4	RGB_light #0004	1 pixel	!generic	DMX	(4,	1)	-	-	1	10
5	RGB_light #0005	1 pixel	!generic	DMX	(5,	1)	-	-	1	13
6	RGB_light #0006	1 pixel	!generic	DMX	(6,	1)	-	-	1	16
7	RGB_light #0007	1 pixel	!generic	DMX	(7,	1)	-	-	1	19
8	RGB_light #0008	1 pixel	!generic	DMX	(8,	1)	-	-	1	22
9	RGB_light #0009	1 pixel	!generic	DMX	(9,	1)	-	-	1	25
10	RGB_light #0010	1 pixel	!generic	DMX	(10,	1)	-	-	1	28
11	RGB_light #0011	1 pixel	!generic	DMX	(11,	1)	-	-	1	31
12	RGB_light #0012	1 pixel	!generic	DMX	(12,	1)	-	-	1	34
13	RGB_light #0013	1 pixel	!generic	DMX	(13,	1)	-	-	1	37
14	RGB_light #0014	1 pixel	!generic	DMX	(14,	1)	-	-	1	40
15	RGB_light #0015	1 pixel	!generic	DMX	(15,	1)	-	-	1	43
16	RGB_light #0016	1 pixel	!generic	DMX	(16,	1)	-	-	1	46
17	RGB_light #0017	1 pixel	!generic	DMX	(17,	1)	-	-	1	49
18	RGB_light #0018	1 pixel	!generic	DMX	(18,	1)	-	-	1	52
19	RGB_light #0019	1 pixel	!generic	DMX	(19,	1)	-	-	1	55
20	RGB_light #0020	1 pixel	!generic	DMX	(20,	1)	-	-	1	58

CSV

The widely used CSV file format can also be exported from the Patch Editor of the MADRIX 5 Software.

CSV is an acronym and stands for comma-separated values. This is a very general file format that makes it easy to record, save, and exchange structured data.

It is widely available in other software tools for data import and export. This also means that data which is not yet available in this format can usually be converted into CSV or can even be created manually/semi-automatically.

License Requirements

This feature requires a valid MADRIX 5 software license on a MADRIX KEY.

This includes:

MADRIX 5 start

MADRIX 5 entry

MADRIX 5 basic

MADRIX 5 professional

MADRIX 5 ultimate

MADRIX 5 maximum

If no valid software license is recognized, the data cannot be exported.

Step-By-Step Instructions

To export a list of fixtures from the Patch Editor to CSV, follow these steps:

- 1]** Open the Patch Editor.
- 2]** Create your MADRIX 5 Patch.
- 3]** Export CSV data.
- 4]** Import CSV into your third-party tool and manually assign if necessary.

1] Open The Patch Editor

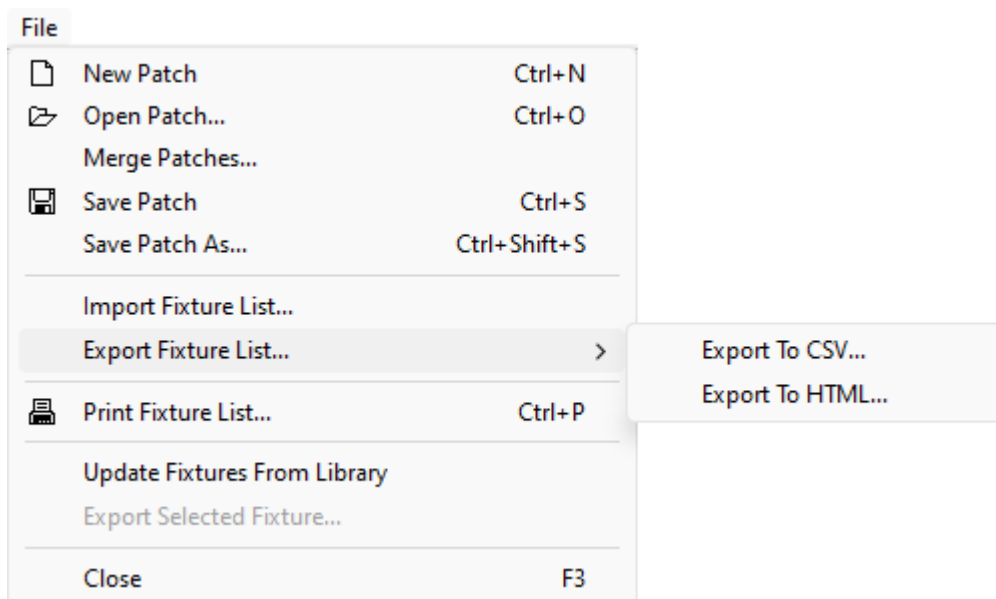
- Go to the menu **Preferences > Patch Editor...**
[Keyboard shortcut: **F3**]
- A new window will open.

2] Create Your MADRIX 5 Patch

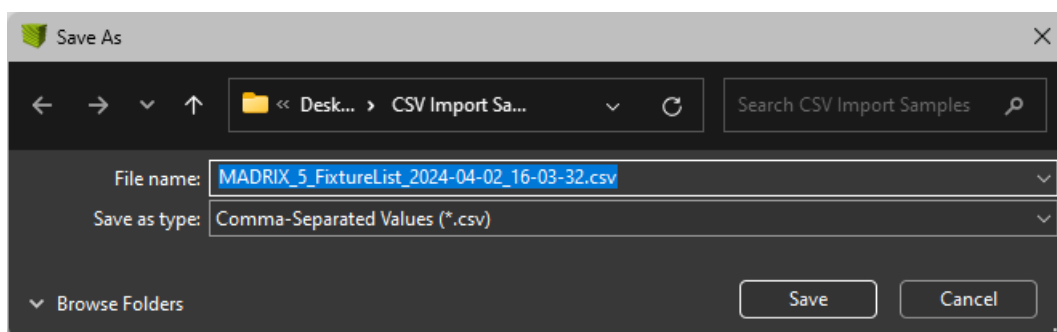
- Create the Patch you require to control your LED project. Learn more » [Patch Editor](#)

3] Export CSV Data

- In the Patch Editor, go to the menu **File > Export Fixture List... > Export To CSV...**



- Choose the location on your computer to store the file:



- As the result, a file is saved that can be imported or viewed with a spreadsheet application, for example:

Identifier	Manufacturer	Fixture	Display Name	Type	Mode	Channel Count	Color Depth	Universe	Channel	Groups	Position X	Position Y	Position Z	Rotation X	Rotation Y	Rotation Z	Flip H	Flip V
1 !generic	RGB Light	RGB_light #0001	DMX	1 pixel	3	3	1	1	0	0	0	0	0	0	0	0	0	0
2 !generic	RGB Light	RGB_light #0002	DMX	1 pixel	3	3	1	4	1	0	0	0	0	0	0	0	0	0
3 !generic	RGB Light	RGB_light #0003	DMX	1 pixel	3	3	1	7	2	0	0	0	0	0	0	0	0	0
4 !generic	RGB Light	RGB_light #0004	DMX	1 pixel	3	3	1	10	3	0	0	0	0	0	0	0	0	0
5 !generic	RGB Light	RGB_light #0005	DMX	1 pixel	3	3	1	13	4	0	0	0	0	0	0	0	0	0
6 !generic	RGB Light	RGB_light #0006	DMX	1 pixel	3	3	1	16	5	0	0	0	0	0	0	0	0	0
7 !generic	RGB Light	RGB_light #0007	DMX	1 pixel	3	3	1	19	6	0	0	0	0	0	0	0	0	0
8 !generic	RGB Light	RGB_light #0008	DMX	1 pixel	3	3	1	22	7	0	0	0	0	0	0	0	0	0
9 !generic	RGB Light	RGB_light #0009	DMX	1 pixel	3	3	1	25	8	0	0	0	0	0	0	0	0	0
10 !generic	RGB Light	RGB_light #0010	DMX	1 pixel	3	3	1	28	9	0	0	0	0	0	0	0	0	0
11 !generic	RGB Light	RGB_light #0011	DMX	1 pixel	3	3	1	31	10	0	0	0	0	0	0	0	0	0
12 !generic	RGB Light	RGB_light #0012	DMX	1 pixel	3	3	1	34	11	0	0	0	0	0	0	0	0	0
13 !generic	RGB Light	RGB_light #0013	DMX	1 pixel	3	3	1	37	12	0	0	0	0	0	0	0	0	0
14 !generic	RGB Light	RGB_light #0014	DMX	1 pixel	3	3	1	40	13	0	0	0	0	0	0	0	0	0
15 !generic	RGB Light	RGB_light #0015	DMX	1 pixel	3	3	1	43	14	0	0	0	0	0	0	0	0	0
16 !generic	RGB Light	RGB_light #0016	DMX	1 pixel	3	3	1	46	15	0	0	0	0	0	0	0	0	0

- The following columns and their corresponding data will be exported:

Identifier**Manufacturer****Fixture****Display Name****Type****Mode****Channel Count****Color Depth****Universe****Channel****Groups****Position X****Position Y****Position Z****Rotation X****Rotation Y****Rotation Z****Flip H****Flip V**

- These columns refer to the following data in the MADRIX 5 Patch Editor:

CSV Export	MADRIX 5 Patch Editor
Identifier	Fixture ID

Manuf acturer	Manufacturer
Fixture	Fixture Name
Display Name	Display Name
Type	DMX DVI
Mode	Operation Mode
Chann el Count	Channel Count
Color Depth	Color Depth
Univer se	Universe
Chann el	Channel
Groups	<i>list of Fixture Groups, which include the fixture.</i>
Positio n X	Position X
Positio n Y	Position Y
Positio n Z	Position Z

Rotation X	<i>always value 0.</i>
Rotation Y	<i>always value 0.</i>
Rotation Z	<i>rotation in Degrees.</i>
Flip H	<i>value 0 = Disabled. value 1 = Enabled.</i>
Flip V	<i>value 0 = Disabled. value 1 = Enabled.</i>

4] Import CSV Data Into Third-Party Tools

- The above workflow is optimized for the Capture visualizer/visualisation software [»<https://www.capture.se/>].

This application will try to read the column names and automatically assign their data correctly, but you will certainly have to manually adjust the settings for specific settings as well [e.g., Mode or Identifier].

4.2.6 Merging Patches

This topic includes:

- [Introduction](#)
- [Overview](#)
- [Step-By-Step Instructions](#)

Introduction

Merging several Patches into a single Patch is a feature and part of the MADRIX 5 Patch Editor. Learn more »[Patch Editor](#)

Overview

While the Patch Editor can only load and activate 1 Patch at a time, it allows you to merge Patches together. That means you can combine separate Patch files into one Patch file.

- The Patch Editor allows you to merge 2 Patches in one procedure.
- By repeating the procedure, you can merge more than 2 Patches.

Merging several Patches can be useful, for example, when:

- Working on a large LED installation and first creating and testing the Patch for each section separately.
- Having different team members create different parts of an overall Patch.
- Wanting to join two separate LED projects into one larger project later.

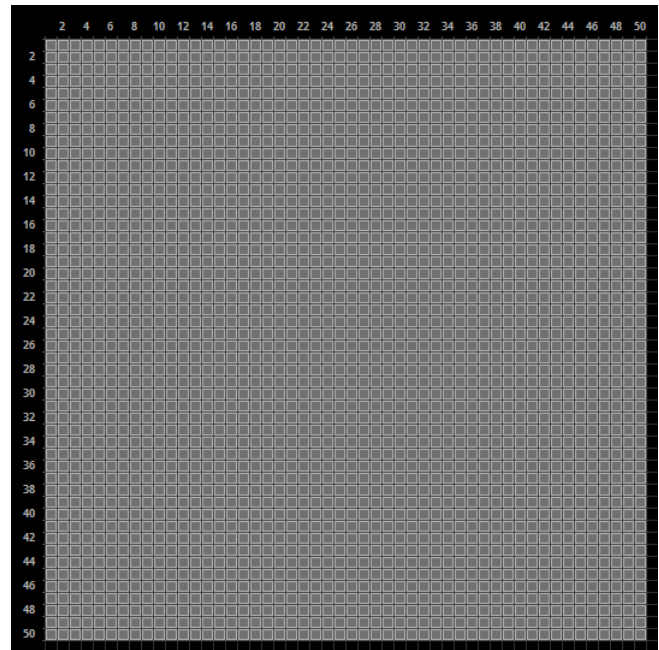
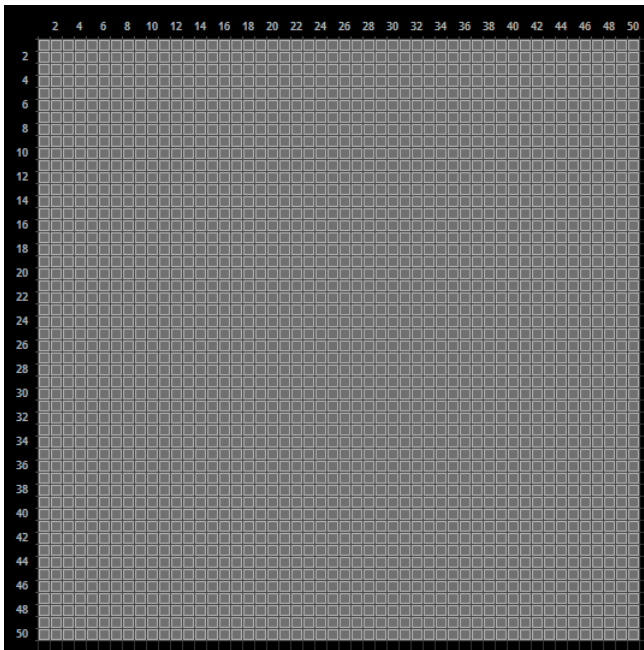
Step-By-Step Instructions

1] Create Your Patches

- In order to merge two Patches, the different Patches need to be ready and available first.
- Make sure to have all Patch files saved and available in one location, such as the hard drive of your computer.

Patch 1 Example

Patch 2 Example



2] Load Patch 1

- Load Patch 1 in the Patch Editor [menu **Preferences > Patch Editor... > File > Open Patch...**].
- Or load Patch 1 as part of a MADRIX 5 Setup [menu **File > Open Setup...**].

3] Activate The Merge Patches Feature

- Go to the menu **Preferences > Patch Editor... > File > Merge Patches...**
- Select Patch 2 from its stored location, such as the hard drive of your computer.
- A new window will open.

Merge Patches

General Information

Properties	Patch 1	Patch 2	Merged Patch
DMX Fixture Count	2500	2500	5000
DVI Fixture Count	0	0	0
Fixture Group Count	0	0	0

Merge Settings

Please change the values for Adjusted Patch 2 and Merged Patch according to your requirements :

Properties	Patch 1	Patch 2	Adjusted Patch 2
Fixture IDs	1 - 2500	1 - 2500	2501 - 5000
Fixture Group IDs	N/A	N/A	N/A
Map Area X	1 - 50 (50 px)	1 - 50 (50 px)	1 - 50 (50 px)
Map Area Y	1 - 50 (50 px)	1 - 50 (50 px)	1 - 50 (50 px)
Map Area Z	1 (1 px)	1 (1 px)	1 (1 px)
DMX Universes	1 - 15	1 - 15	1 - 15

Properties	Patch 1	Patch 2	Merged Patch
Matrix Size X	50 px	50 px	50 px
Matrix Size Y	50 px	50 px	50 px
Matrix Size Z	1 px	1 px	1 px
Color Depth	3	3	3

OK
Cancel

4] Adjust The Settings

- The Merge Patches windows provides information about Patch 1 and Patch 2 and it requires you to adjust several settings in order that both Patches are merged according to your requirements.
- See the following table for more information:

General Information

Properties	Patch 1	Patch 2	Merged Patch
DMX Fixture Count	Shows the total number of DMX fixtures included in Patch 1.	Shows the total number of DMX fixtures included in Patch 2.	Shows the total number of DMX fixtures that will be included when the Patches are merged into one Patch.
DVI Fixture Count	Shows the total number of DVI fixtures included in Patch 1.	Shows the total number of DVI fixtures included in Patch 2.	Shows the total number of DVI fixtures that will be included when the Patches are merged into one Patch.
Fixture Group Count	Shows the total number of fixture groups in Patch 1.	Shows the total number of fixture groups in Patch 2.	Shows the total number of fixture groups that will be included when the Patches are merged into one Patch.

Merge Settings			
Properties	Patch 1	Patch 2	Adjusted Patch 2
Fixture IDs	Shows the unique identifiers for fixtures included in Patch 1.	Shows the unique identifiers for fixtures included in Patch 2.	<ul style="list-style-type: none"> - Since all Fixture IDs need to be unique, the settings for Patch 2 need to be adjusted here. - Adjust this setting as needed. - MADRIX 5 will automatically provide a sensible suggestion for you [Spacebar - Restores this automatic value]. - Please enter the first Fixture ID and MADRIX 5 will automatically set up the range of values.
Fixture Group IDs	Shows the unique identifiers for fixture groups included in Patch 1.	Shows the unique identifiers for fixture groups included in Patch 2.	<ul style="list-style-type: none"> - Since all Fixture Group IDs need to be unique, the settings for Patch 2 need to be adjusted here. - Adjust this setting as needed.

			<p>[Left Mouse Double-Click - Allows the value to be edited. Enter - Applies the edited values.]</p> <p>- MADRIX 5 will automatically provide a sensible suggestion for you [Spacebar - Restores this automatic value].</p> <p>- Please enter the first Fixture Group ID and MADRIX 5 will automatically set up the range of values.</p>
Map Area X	Shows where fixtures are mapped in Patch 1 along the X-axis (e.g., position 1 - 50) and how many pixels are mapped in X in total (e.g., 50 px).	Shows where fixtures are mapped in Patch 2 along the X-axis (e.g., position 1 - 50) and how many pixels are mapped in X in total (e.g., 50 px).	<p>- Defines the adjusted position of Patch 2 in X.</p> <p>- Allows you to position Patch 2 to the left, to the right, or overlapped on top of Patch 1.</p> <p>- Adjust this setting as needed.</p> <p>[Left Mouse Double-Click - Allows the value to be edited. Enter - Applies the edited values.]</p> <p>- Please enter the first position in X and MADRIX 5 will automatically set up the value range.</p>
Map Area Y	Shows where fixtures are mapped in Patch 1 along the Y-axis (e.g., position 1 - 50) and how many pixels are mapped in Y in total (e.g., 50 px).	Shows where fixtures are mapped in Patch 2 along the Y-axis (e.g., position 1 - 50) and how many pixels are mapped in Y in total (e.g., 50 px).	<p>- Defines the adjusted position of Patch 2 in Y.</p> <p>- Allows you to position Patch 2 above, below, or overlapped on top of Patch 1.</p> <p>- Adjust this setting as needed.</p> <p>[Left Mouse Double-Click - Allows the value to be edited. Enter - Applies the edited values.]</p> <p>- Please enter the first position in Y and MADRIX 5 will automatically set up the value range.</p>

Map Area Z	Shows where fixtures are mapped in Patch 1 along the Z-axis (e.g., position 1) and how many pixels are mapped in Z in total (e.g., 1 px).	Shows where fixtures are mapped in Patch 2 along the Z-axis (e.g., position 1) and how many pixels are mapped in Z in total (e.g., 1 px).	<ul style="list-style-type: none"> - Defines the adjusted position of Patch 2 in Z. - Allows you to position Patch 2 in front, behind, or overlapped on top of Patch 1. - Adjust this setting as needed. <p>[Left Mouse Double-Click - Allows the value to be edited. Enter - Applies the edited values.]</p> <ul style="list-style-type: none"> - Please enter the first position in Z and MADRIX 5 will automatically set up the value range.
DMX Universes	Shows which DMX universes are used in Patch 1.	Shows which DMX universes are used in Patch 2.	<ul style="list-style-type: none"> - Defines the adjusted DMX universes for Patch 2. - Allows you to re-address your fixtures. - Adjust this setting as needed. <p>[Left Mouse Double-Click - Allows the value to be edited. Enter - Applies the edited values.]</p> <ul style="list-style-type: none"> - Please enter the first DMX universe and MADRIX 5 will automatically set up the value range.

Properties	Patch 1	Patch 2	Merged Patch
Matrix Size X	Shows the total number of DMX fixtures included in Patch 1.	Shows the total number of DMX fixtures included in Patch 2.	<ul style="list-style-type: none"> - Defines the Matrix Size in X that will be set when the Patches are merged into one Patch. - Adjust this setting as needed. <p>[Left Mouse Double-Click - Allows the value to be edited. Enter - Applies the edited values.]</p>

			<ul style="list-style-type: none"> - MADRIX 5 will automatically provide the maximum value as a suggestion for you [Spacebar - Restores this automatic value]. - Make sure that all fixtures from Patch 1 and Patch 2 will be included in the final Matrix Size.
Matrix Size Y	Shows the total number of DVI fixtures included in Patch 1.	Shows the total number of DVI fixtures included in Patch 2.	<ul style="list-style-type: none"> - Defines the Matrix Size in Y that will be set when the Patches are merged into one Patch. - Adjust this setting as needed. [Left Mouse Double-Click - Allows the value to be edited. Enter - Applies the edited values.] - MADRIX 5 will automatically provide the maximum value as a suggestion for you [Spacebar - Restores this automatic value]. - Make sure that all fixtures from Patch 1 and Patch 2 will be included in the final Matrix Size.
Matrix Size Z	Shows the total number of fixture groups in Patch 1.	Shows the total number of fixture groups in Patch 2.	<ul style="list-style-type: none"> - Defines the Matrix Size in Z that will be set when the Patches are merged into one Patch. - Adjust this setting as needed. [Left Mouse Double-Click - Allows the value to be edited. Enter - Applies the edited values.] - MADRIX 5 will automatically provide the maximum value as a suggestion for you [Spacebar - Restores this automatic value]. - Make sure that all fixtures from Patch 1

			and Patch 2 will be included in the final Matrix Size.
Color Depth	Shows the maximum color depth as defined in Patch 1.	Shows the maximum color depth as defined in Patch 2.	<ul style="list-style-type: none"> - Defines the color depth that will be set when the Patches are merged into one Patch. - Adjust this setting as needed. [Left Mouse Double-Click - Allows the value to be edited. Enter - Applies the edited values.] - MADRIX 5 will automatically provide the maximum value as a suggestion for you [Spacebar - Restores this automatic value]. - Make sure to use the maximum color depth from Patch 1 and Patch 2 in order to allow for all possible fixtures.

- Please set up all settings of the column **Adjusted Patch 2** as required and confirm with **OK**
- You can abort the process at any time with **Cancel**

5] Result

- As a result of the Merge Patches procedure, you will now have created 1 Patch out of 2 Patches.
- **Overlapping** will be activated in the Patch Editor automatically if needed.
- The **Workspace** of the Patch Editor will be extended automatically if needed.
- All imported fixtures of Patch 2 will be automatically selected for you after the procedure.
- You can use **Undo** or **Redo** to rewind the procedure or apply it again after a rewinding.
- Make sure to save your Patch or MADRIX 5 Setup afterwards!

Merge Settings Result Example

Merge Patches

General Information

Properties	Patch 1	Patch 2	Merged Patch
DMX Fixture Count	2500	2500	5000
DVI Fixture Count	0	0	0
Fixture Group Count	0	0	0

Merge Settings

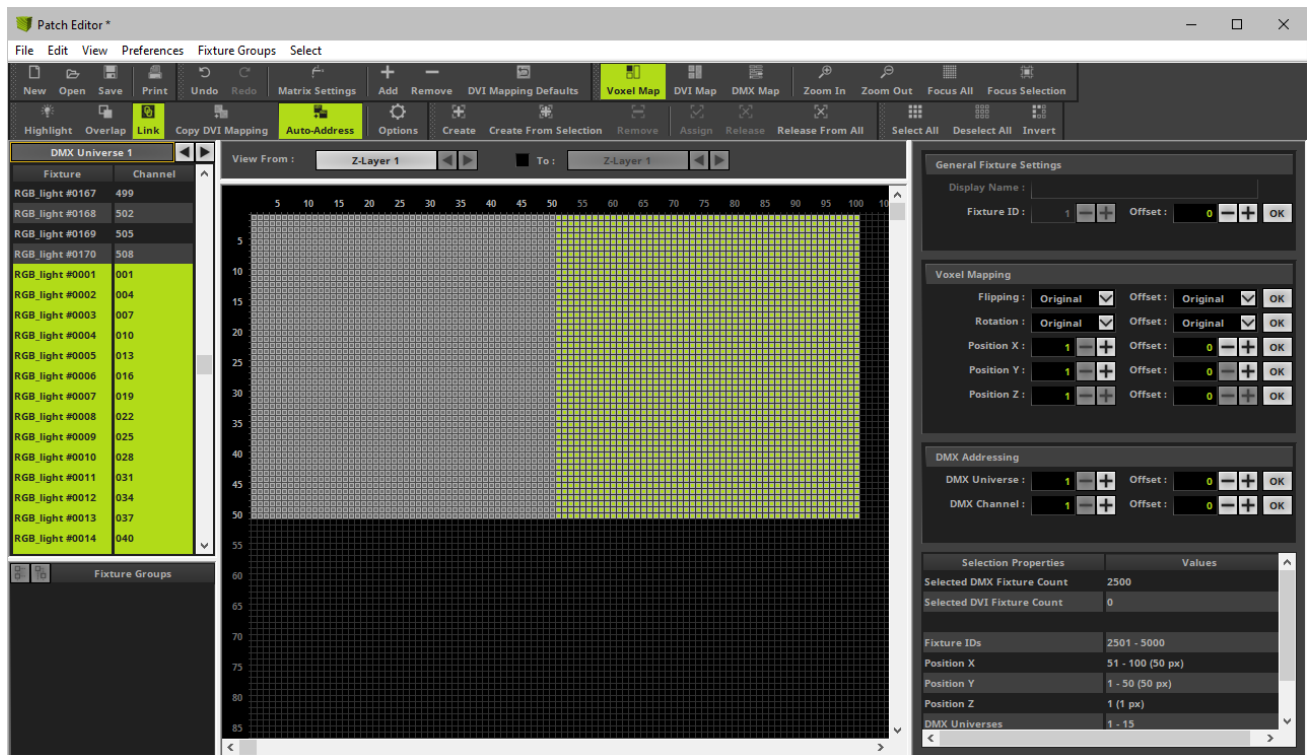
Please change the values for Adjusted Patch 2 and Merged Patch according to your requirements :

Properties	Patch 1	Patch 2	Adjusted Patch 2
Fixture IDs	1 - 2500	1 - 2500	2501 - 5000
Fixture Group IDs	N/A	N/A	N/A
Map Area X	1 - 50 (50 px)	1 - 50 (50 px)	51 - 100 (50 px)
Map Area Y	1 - 50 (50 px)	1 - 50 (50 px)	1 - 50 (50 px)
Map Area Z	1 (1 px)	1 (1 px)	1 (1 px)
DMX Universes	1 - 15	1 - 15	16 - 30

Properties	Patch 1	Patch 2	Merged Patch
Matrix Size X	50 px	50 px	100 px
Matrix Size Y	50 px	50 px	50 px
Matrix Size Z	1 px	1 px	1 px
Color Depth	3	3	3

OK
Cancel

Merged Patch Result Example



4.2.7 Replacing Or Updating Patched Fixtures

This topic includes:

- [Introduction](#)
- [Updating Patched Fixtures](#)
- [Replacing Patched Fixtures](#)

Introduction

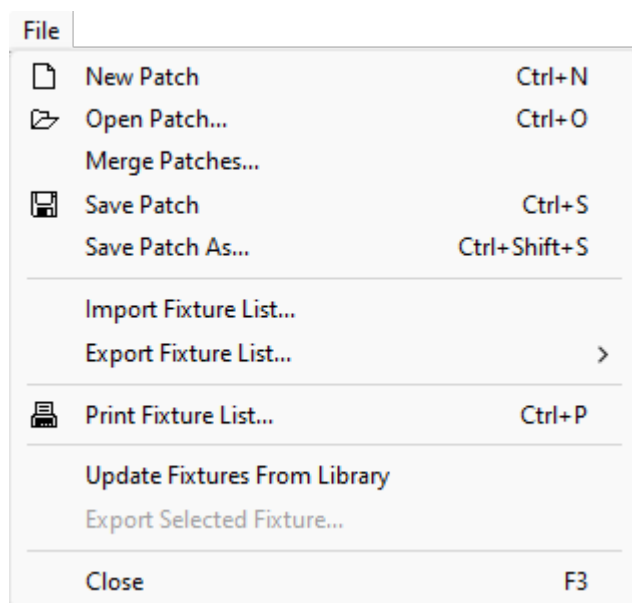
Replacing or updating already patched fixtures is a feature and part of the MADRIX 5 Patch Editor. Learn more » [Patch Editor](#)

Even after placing your fixtures and creating your Patch in the Patch Editor, you may need to update or even replace fixture profiles afterwards.

[Clearing the existing Patch would also discard important information, such as DMX addressing and placement in X, Y, and Z, and thus creating an entirely new Patch would be a time-consuming process.]

Updating Patched Fixtures

- Go to the menu of the Patch Editor **File > Update Fixtures From Library**



- It can be used in case you changed and modified existing fixture profiles in the Fixture Library with the help of the Fixture Editor.
- This refreshes all fixture profiles in the Patch from the currently loaded MADRIX 5 Fixture Library.
- MADRIX 5 will not update fixtures under certain circumstances:
 - That is the case, when the Fixture Library does not contain the fixture types of the Patch, i.e. the unique fixture IDs are not included (UUID).
 - Or when a DVI fixture is made out of more voxels than defined in the Fixture Library, for example when having chosen Merge Fixtures while adding them.

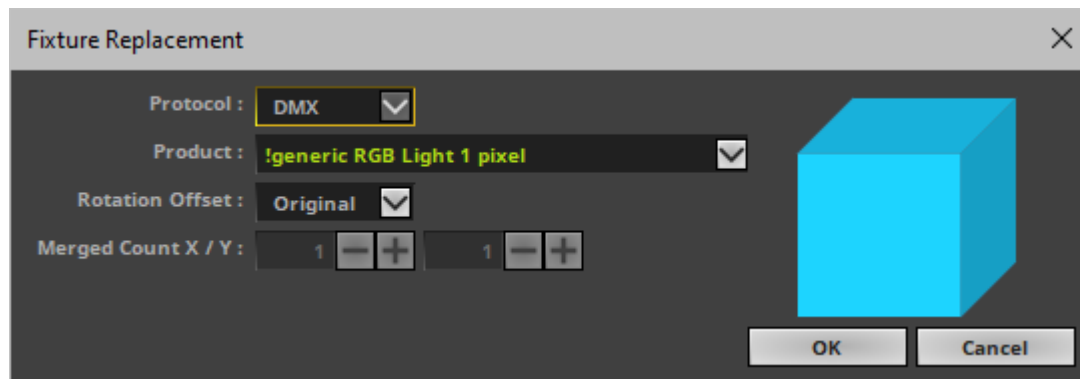
Replacing Patched Fixtures

In order to replace fixtures, follow the steps below:

- **1]** Select the patched fixture or patched fixtures you wish to replace.
 - Locked fixtures cannot be replaced. Make sure to unlock them first.
- **2]** Go to the menu of the Patch Editor **Edit > Replace Selected Fixtures...**

Edit	
Undo	Ctrl+Z
Redo	Ctrl+Y
<hr/>	
Matrix Settings...	Ctrl+Alt+M
<hr/>	
Add Fixtures...	Ins
Remove Selected Fixtures	Del
Replace Selected Fixtures...	Ctrl+Alt+R
Restore DVI Mapping Defaults For Selection	Ctrl+R
Move Map Area To Matrix Origin	Ctrl+Home
<hr/>	
Flip Selection Horizontally	Ctrl+Page Down
Flip Selection Vertically	Ctrl+Page Up
Flip Selection Horizontally And Vertically	Ctrl+End
<hr/>	
Rotate Selection By 90°	Page Down
Rotate Selection By 180°	End
Rotate Selection By 270°	Page Up
<hr/>	
Lock Selected Fixtures	Ctrl+K
Unlock Selected Fixtures	Ctrl+Shift+K

- A new window will open.

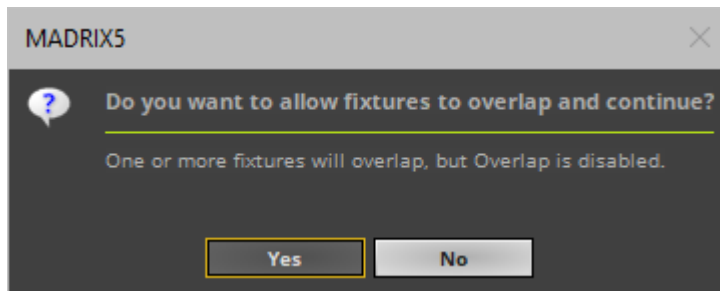


- **3]** Choose the fixture profile that should replace the currently selected fixtures:
 - To assist you, a **Fixture Preview** is shown that includes the start channel in blue, the number of pixels, and orientation. [Imagine to look directly at the LED products in camera view.]
- **Protocol** - Choose the general type of LED fixture [**DMX** or **DVI**].
 - DMX-based fixtures include DMX512, Art-Net, Streaming ACN [sACN / E1.31], Color Kinetics [KiNET], and Philips hue.
 - DVI-based fixtures include DVI, ColourSmart Link, Colorlight A8, Colorlight 5A, Colorlight T9, and Eurolite T9 products.
- **Product** - Choose your exact LED product.
 - You can use the downward triangle to call up the complete list of fixtures.
 - Perform a left mouse click and you can use the input field as a filter to type in the fixture you are looking for.
 - If your fixture is not yet available, please see »[Supported Fixtures \[LED Products\]](#)
- **Rotation Offset** - Choose if the fixture needs to be rotated [**Original**, **90°**, **180°**, **270°**].
- **Merged Count X / Y** - Is only available for Protocol DVI. Allows you to merge the chosen DVI product into a larger DVI fixture. Choose the number of fixtures in **X** and **Y** accordingly.
- Confirm your selection via **OK**. Abort the process via **Cancel**.
- **4a]** Same Voxel Count – If you chose to replace the fixtures with profiles that have the same size, i.e. the same number of voxels, the fixture replacements can be found at the exact same position as the previously patched fixtures.
- **4b]** Different Voxel Count – If you chose to replace the fixtures with profiles that have a different size, i.e. a different number of voxels, you will be asked if you wish to enable **Overlapping**
 - Confirm with **Yes** and the fixture replacements will start at the position of the original fixtures, but at the same time they will overlap over other fixtures that are placed on the Patch.

Make sure to check the DMX addressing of all of your fixtures in this case, since the fixture


replacements require more channels than were previously used!

- Confirm with **No** and the process will be aborted and no fixtures will be replaced.



- **5]** Check your Patch:

- Make sure that your Matrix Settings [Matrix Size] include the new fixture replacements as well.
- Fixture replacements will be assigned to the same Fixture Group in case the previously patched fixtures were already assigned to a Fixture Group.
- If you changed the Display Name of your previously patched fixtures, the fixture replacements will adopt it. If you left the default description, the fixture replacements will use their own default descriptions instead.
- When replacing DMX fixtures with DVI fixtures, the DVI Map will be placed behind the DVI fixture. In case of position conflicts, you will be asked if Overlapping should be enabled.
- When replacing DVI fixtures with DMX fixtures, the DMX addressing will be set to the next available DMX address or to DMX universe 0 and DMX channel 0. Change the assignment according to your requirements.
- Should you choose fixture replacements that use a higher color depth, you will be notified. Go to **Edit > Matrix Settings...** and change the **Color Depth** accordingly.

 One or more fixtures have 4 color channels, but the color depth of the matrix is only 3! It is recommended to change the Matrix Settings.

4.2.8 Background Image

This topic includes:

- [Introduction](#)
- [Overview](#)
- [Settings](#)

Introduction

In order to help you with the placement of fixtures for your Patch, you may load a background image. As such, this is a feature of the MADRIX 5 Patch Editor. Learn more »[Patch Editor](#)

Overview

While the Patch Editor allows you to semi-automatically place fixtures according to your requirements, loading an image into its background can assist you with the manual placement of fixtures.

- Go to the menu **Preferences > Patch Editor...**
[Keyboard shortcut: **F3**]

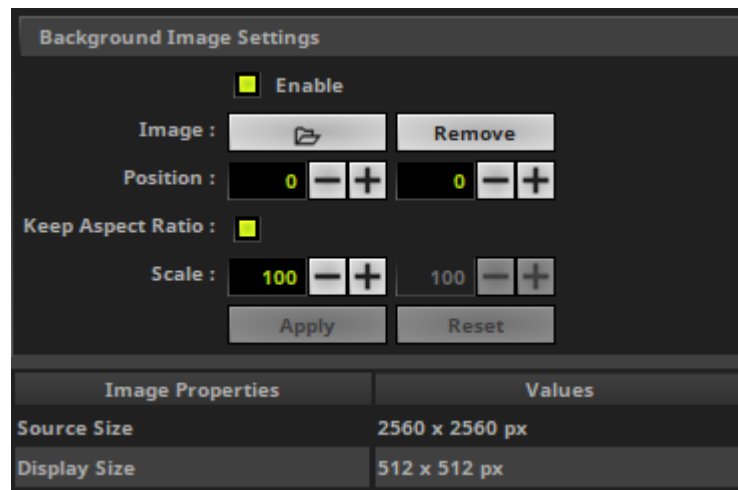
- A new window will open.

In the Patch Editor, go to **View > Background Image**

- In the Patch Editor, choose to **View > Voxel Map / DVI Map / DMX Map** in order to close the Background Image View again.

Settings

Adjust the following settings according to your needs:



Background Image Settings

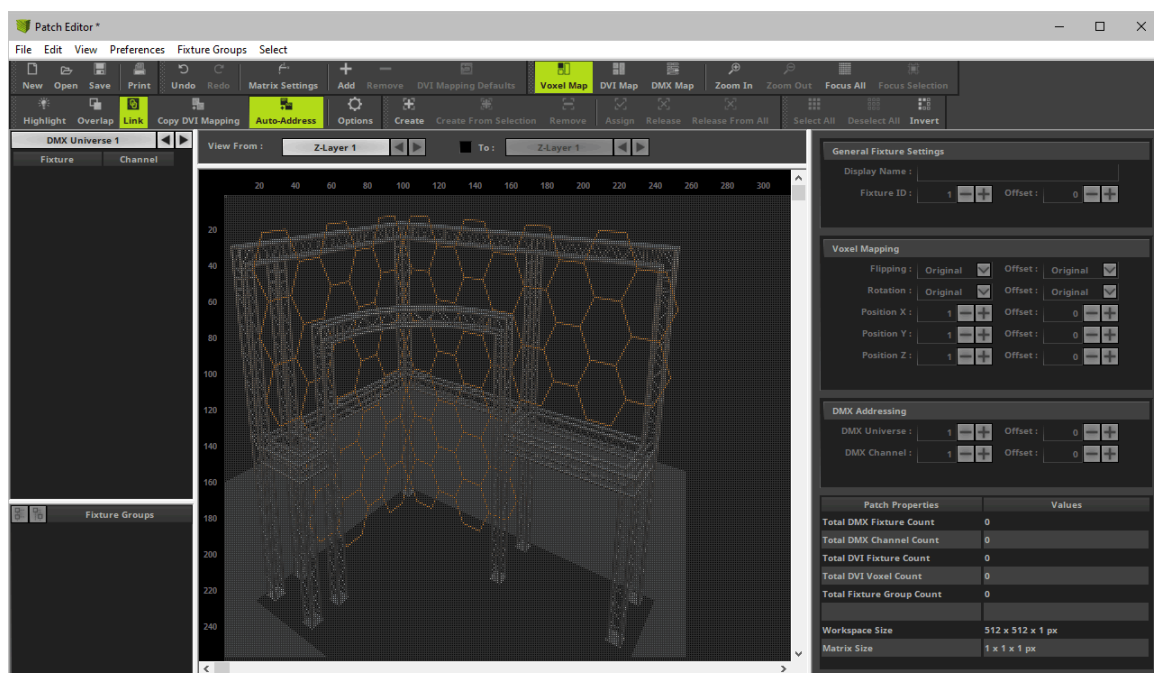
- **Enable** - Activates the usage of the background image. Deactivate it in order to hide the image again.
- **Image > Load** - Allows you to select the background image from your harddisk.
 - Supported file formats include: Bitmap (*.bmp), GIF (*.gif), JPEG (*.jpg, *.jpeg, *.jpe, *.jfif), PNG (*.png), TIFF (*.tif, *.tiff)
- **Image > Remove** - Removes the selected file again.
- **Position** - Defines the location of the image on the workspace of the Patch Editor in X and Y. Confirm with **Apply**
- **Keep Aspect Ratio** - Is enabled by default. Places the image using its original aspect ratio. Otherwise, the image can be scaled independently in X and Y. Confirm with **Apply**
- **Scale** - Allows you to scale the image and therefore adjust its size in X and Y. Scale Y is not available if Keep Aspect Ratio is activated. Confirm with **Apply**
- **Apply** - Always confirm any changes.
- **Reset** - Restores the last used values again.

Using The Mouse

- **Left Mouse Click And Hold And Move** - Click with your left mouse button on the image, continue to hold, and move your mouse in order to position the image accordingly.

- Hold down **Alt** on your keyboard additionally in order to lock in the X-axis, Y-axis, or the movement at 45° angles. This allows you to move the image only in X, Y, or 45° angles.
- **Right Mouse Click And Hold And Move** - Click with your right mouse button on the image, continue to hold, and move your mouse in order to scale the image.
 - Hold down **Alt** on your keyboard additionally in order to lock in the width or height. This allows you to scale the image only in X or Y.

Example



- In the Patch Editor, choose to **View > Voxel Map / DVI Map / DMX Map** in order to close the Background Image View again.

4.2.9 Virtual DMX Universes

This topic includes:

- [Introduction](#)
- [Virtual DMX Universes In MADRIX 5](#)
- [MADRIX 5 License](#)

- Options

Introduction

Even though Ethernet communication protocols are most commonly used in projects nowadays [Art-Net, sACN], these still are based on DMX512 and its concepts of DMX universes and DMX channels.

A DMX universe contains 512 DMX channels. To control more than 512 DMX channels, more than 1 DMX universe needs to be used.

Installation sizes span a wide range, from the smallest to the largest projects. Using, and thus requiring, a large number of universes has become the standard.

The MADRIX 5 Software allows you to configure and manage such large pixel-mapping projects both in terms of what the software offers for configuration as well as its license system.

Throughout MADRIX 5, a number of places are ultimately needed for this configuration process.

To make patching easier, the concept of virtual DMX universes is used.

Virtual DMX Universes In MADRIX 5

Overview

The concept of virtual DMX universes separates the assignment of universes in the software from the on-device configuration of devices themselves.

In this way, the configuration is much more flexible.

Among other advantages, devices can be easily replaced should it become necessary or a Patch might be used for another project without many changes if at all required.

Or the pixel-mapping section is part of a much larger overall lighting setup and its network nodes need to be assigned to as specific range of universes within the entire configuration, for example.

Patch Editor

Patching hereby refers to the process of not only placing and positioning fixture profiles [that is, basic definitions of how a lighting fixture works] on the virtual LED matrix, but also assigning the correct DMX start address and DMX universe.

For complex patches, the Patch Editor is the tool of choice in MADRIX 5.

For ease of use, patching usually starts with DMX channel 1 in DMX universe 1.

Of course, the DMX assignment can be freely done.

However, the maximum DMX universe that can be assigned is limited. It is limited to 2048 universes by default, and can be increased to 4096 in the Options. [More on that below.]

In the **Patch Editor**, in the **Voxel Map** or **DMX Map**, navigate to **DMX Addressing > DMX Universe** to change the assigned virtual DMX universe.

Device Manager

Any device that is added appears under **Device Manager > DMX Devices**. Navigate to **Universe** and you can assign the virtual DMX universe of the patch in the Patch Editor to this output device.

That is why the maximum universe here is also limited to 2048 universes by default, and can be increased to 4096 in the Options. [More on that below.]

Device Configuration

Art-Net 4 allows to assign devices up to universe 32768.

sACN allows to assign devices up to universe 63999.

MADRIX 5 allows you to set these numbers in the Art-Net Device Configuration and ACN Device Configuration. They define the universe that is sent out by the device.

However, when using ArtPollReply packets and output devices are found automatically [Art-Net nodes], the assignment

is already reflected in MADRIX 5 and cannot be changed anymore, since it is ultimately a setting of device itself [usually via web configuration].

Changing the universe assignment on the devices themselves is especially needed when using Art-Net in broadcast mode.

When using Art-Net in unicast mode, you can even leave the assignment on the devices themselves and also occupy universes multiple times across the devices, since each device only receives the data that is specified for this particular device.

Take 3x MADRIX LUNA 8 for example. By default, on their web configuration they each have assigned their output ports DMX 1 - DMX 8 to universes 1 - 8. In the Device Manager > DMX Devices, you could simply assign the virtual Universe to 1-8 for the first device, 9-16 for the second device, and 17-24 for the third device. Since they would receive data in unicast mode, they would receive the correct data nevertheless, although the output universes are 1 through 8 for each device.

DMX fixtures connected to those Art-Net nodes only need the correct DMX start address set up for them, since the universe is determined by the DMX line they are connected to.

MADRIX 5 License

The limit of 2048 virtual universes in the Patch Editor and Device Manager > DMX Devices relates to the maximum number of universes the largest MADRIX 5 License is able to output.

But note this: The MADRIX 5 License does not license the number of universes, but the number of channels!

To make it easier to comprehend, the number 2048 is often referenced. But actually 1,048,576 DMX channels are unlocked [which is 2048 x 512 channels calculated].

However, you might only wish to use a certain number of channels per universe, and not the full amount of 512 channels.

For example, when fully using MADRIX 5 ultimate and assigning 256 channels per universe, you would use 262144 DMX channels not over 512 universes but across 1024 virtual universes.

If you would do the same with with MADRIX 5 maximum, you would not only use 2048 universes, but require 4096 virtual universes.

That is why, the limit of 2048 can be changed in the Options, as explained below.

Options

You can change the maximum limit that can be assigned as virtual universe in the Patch Editor and Device Manager > DMX Devices [which is also used in the DMX Fader Tool].

- Go to the menu **Preferences > Options... > Performance > Virtual DMX Universes > Output**
- The default value is **2048**
- The maximum value is **4096**
- Confirm changes with **Apply** and **OK**

4.3 Fixture Groups [Group Control]

This topic includes:

- [Introduction](#)
- [Managing Fixture Groups](#)
- [Controlling Fixture Groups](#)
- [Using Fixture Groups As Map Settings Preset](#)
- [Calling Group Presets Using A Cue List](#)

Introduction

Fixture groups allow you to organize fixtures that are included in your Patch in clusters and then to control them together as a group.

Note: Fixture groups are part of the Patch. Changing the Patch will likely result in changes to the Fixture Groups as well.

To work with fixture groups, follow these steps:

- 1] Manage your fixture groups.
- 2] Control your fixture groups.

Managing Fixture Groups

Overview

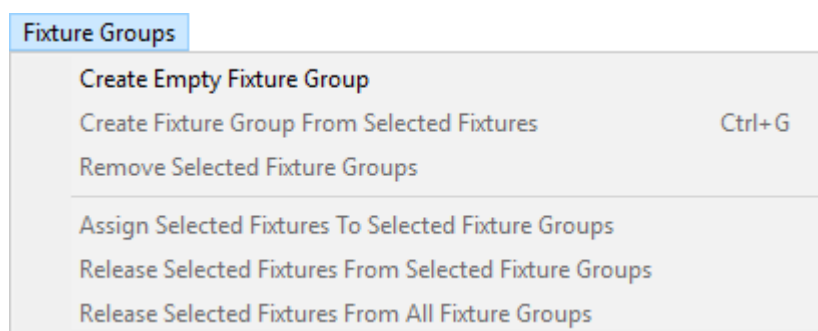
Fixture Groups are managed in the Patch Editor.

- Go to the menu **Preferences > Patch Editor**
[Keyboard shortcut: **F3**]

Menu

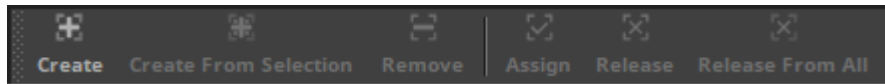
Within the Patch Editor, a dedicated menu is available.

- Go to **Fixture Groups**



Toolbar

All items from the menu shown above are also available for quick access in the toolbar of the Patch Editor.



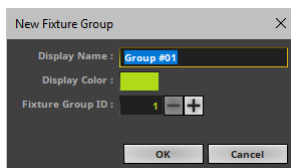
Creating Fixture Groups

A] Creating An Empty Fixture Group



1] Go to **Fixture Groups > Create Empty Fixture Group**

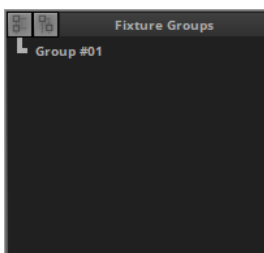
[Toolbar: **Create**]



2] A new window opens.

- Enter a **Display Name**
 - Choose a name that helps you easily identify the fixture group later.
- Set the **Display Color**
 - This color is useful to distinguish between fixture groups when controlling them in the Group Control. Learn more [Controlling Fixture Groups](#)
- Set the **Fixture Group ID**
 - The ID is a unique identifier for this specific fixture group.
 - Each fixture group must have a different ID!

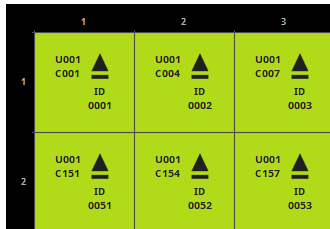
[The Fixture Group ID is different to the Display Name of the fixture group. Several fixture groups can have the same Display Name, but the ID must be different.]



- The new fixture group will be created. The fixture group will not yet include any fixtures.

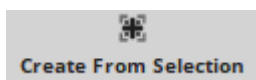
[See the bottom left of the Patch Editor.]

B] Creating A Fixture Group From Currently Selected Fixtures



1] First, select all the fixtures you wish to include in the fixture group.

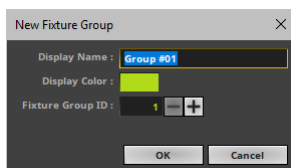
Learn more » [Patch Editor](#)



2] Go to **Fixture Groups > Create Fixture Group From Selected Fixtures**

[Keyboard shortcut: **Ctrl+G**]

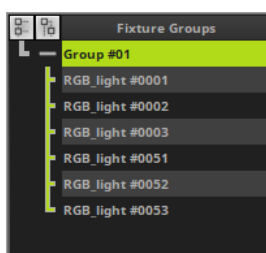
[Toolbar: **Create From Selection**]



3] A new window opens.

- Enter a **Display Name**
 - Choose a name that helps you easily identify the fixture group later.
- Set the **Display Color**
 - This color is useful to distinguish between fixture groups when controlling them in the Group Control. Learn more [Controlling Fixture Groups](#)
- Set the **Fixture Group ID**
 - The ID is a unique identifier for this specific fixture group.
 - Each fixture group must have a different ID.

[The Fixture Group ID is different to the Display Name of the fixture group. Several fixture groups can have the same Display Name, but the ID must be different.]



- The new fixture group will be created. All previously selected fixtures will already be assigned to the fixture group.

[See the bottom left of the Patch Editor.]

Working With The Fixture Group List

The Patch Editor will show your fixture groups in the bottom left. Use the following options to work with the list of fixture groups:



Expand List - Shows the fixture groups including the fixtures that are assigned to the fixture groups.



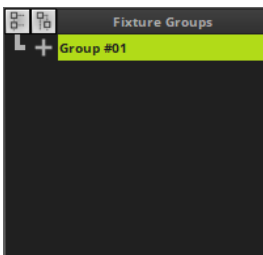
Collapse List - Shows only the fixture groups.



Expand Item - Shows the fixture group and extends the list to show the fixtures assigned to this particular fixture group.



Collapse Item - Shows the fixture group but hides the fixture assigned to this particular fixture group.

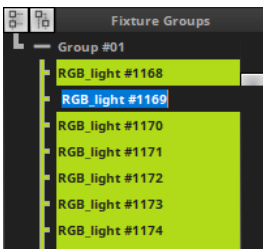


Fixture Group Selection - Shows the currently selected fixture group.



Fixture Selection - Shows the currently selected fixtures of a fixture group.

- At the same time, the fixture will be selected in the list of fixtures in the general Patch Editor. Learn more » [Patch Editor](#)



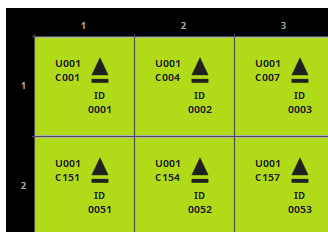
Left Mouse Double Click - Allows you to rename a single fixture group [and thereby editing **General Fixture Group Settings > Display Name**] or single fixture [and thereby editing **General Fixture Settings > Display Name**].

Right Mouse Click - Allows you to rename several fixture groups [and thereby editing **General Fixture Group Settings > Display Name**] or several fixtures [and thereby editing **General Fixture Settings > Display Name**] at

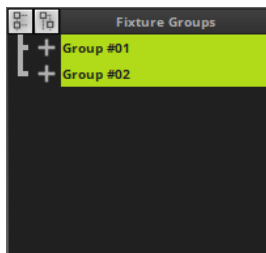
once. First, select multiple list entries via Right Mouse Click or via Strg + Left Mouse Click.

Assigning Fixtures To A Fixture Group

Follow these steps if you wish to assign fixtures to an empty fixture group or if you wish to add more fixture to a fixture group that already includes fixtures:



1] Select all fixtures you wish to assign to an existing fixture group.



2] Select the fixture group or multiple fixture groups in the fixture group list in the bottom left of the Patch Editor. Both, fixtures and fixture groups, will now be selected in the Patch Editor.



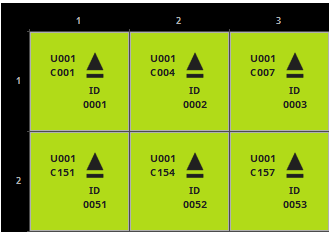
3] Go to **Fixture Groups > Assign Selected Fixtures To Selected Fixture Groups**

[Toolbar: **Assign**]

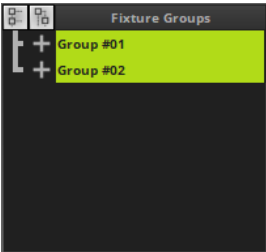
- The Patch Editor will assign all selected fixtures to the selected fixture groups.

Releasing A Fixture From A Fixture Group

Follow these steps if you want to revoke the assignment of a fixture from a single fixture group or multiple fixture groups:



1] Select all fixtures you wish to release.



2] Select the fixture group or multiple fixture groups in the fixture group list in the bottom left of the Patch Editor. Both, fixtures and fixture groups, will now be selected in the Patch Editor.



3] Go to **Fixture Groups > Release Selected Fixtures From Selected Fixture Groups**

[Toolbar: **Release**]

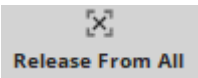
- The Patch Editor will release all selected fixtures from all selected fixture groups.

Releasing A Fixture From A Fixture Group

Follow these steps if you want to revoke the assignment of a fixture from a single fixture group or multiple fixture groups:



1] Select all fixtures you wish to release.



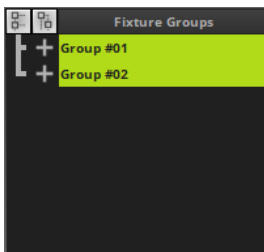
2] Go to **Fixture Groups > Release Selected Fixtures From All Fixture Groups**

[Toolbar: **Release From All**]

- The Patch Editor will release all selected fixtures from all the fixture groups they are currently assigned to.

Removing Fixture Groups

Follow these steps if you want to remove fixture groups from the Patch:



1] Select all fixture groups you wish to remove.



2] Go to **Fixture Groups > Remove Selected Fixture Groups**

[Toolbar: **Remove**]

- The Patch Editor will remove all selected fixture groups from the Patch.

Fixture Group Settings

Overview

- Select a fixture group [to the left of the Patch Editor] in order to change its settings [to the right of the Patch Editor].
- You can also select multiple fixture groups in order to change their settings.

The screenshot displays the MADRIX 5.7 software interface for configuring a fixture group. It is divided into three main sections:

- General Fixture Group Settings:**
 - Display Name:** A text field containing "Group #01".
 - Display Color:** A color selection box showing a bright yellow-green color.
 - Fixture Group ID:** A numeric field with "1", accompanied by minus and plus buttons.
 - Offset:** A numeric field with "0", accompanied by minus and plus buttons.
 - Buttons:** "Apply" and "Reset" buttons.
- Fixture Group Control Settings:**
 - Default Value:** A numeric field with "255", accompanied by minus and plus buttons.
 - Minimum Value:** A numeric field with "0", accompanied by minus and plus buttons.
 - Maximum Value:** A numeric field with "255", accompanied by minus and plus buttons.
 - Offset:** Three numeric fields, each with "0", each accompanied by minus and plus buttons.
 - Buttons:** "Apply" and "Reset" buttons.
- Fixture Group Properties Table:**

Fixture Group Properties	Values
Fixture Group ID	1
Fixture Count	1

General Fixture Group Settings

- **Display Name** - Allows you to change the name for the fixture group. [Or use the default name provided by MADRIX 5.]
- **Display Color** - Allows you to change the individual color for the fixture group.
 - This color is useful to distinguish between fixture groups when controlling them in the Group Control.
 - Learn more [Controlling Fixture Groups](#)
- **Fixture Group ID** - Defines the unique identifier for the selected fixture group.

Fixture Group Control Settings

- **Default Value** - Defines the standard value of a fixture group fader. This is important when launching the Group Control for the first time and when restoring the default values in the Group Control.
 - Valid values range from 0 to 255 [0% to 100% intensity]. By default, the default is set to 255.

- **Minimum Value** - Defines the lowest value a fixture group can be set to.
 - Setting a fixture group fader to 0 will set the intensity to this Minimum Value.
 - Valid values range from 0 to 255 [0% to 100% intensity]. By default, the default is set to 0.
- **Maximum Value** - Defines the highest value a fixture group can be set to.
 - Setting a fixture group fader to 255 will set the intensity to this Maximum Value.
 - Valid values range from 0 to 255 [0% to 100% intensity]. By default, the default is set to 255.
- Learn more [Controlling Fixture Groups](#)
- **Apply** - Always confirm any changes with Apply.
- **Reset** - Allows you to discard changes before having confirmed any changes in order to use the values that were set up last.

Controlling Fixture Groups

Creating Fixture Groups

- **First, make sure to create fixture groups in the Patch Editor.**
 - **Otherwise, the Group Control will be empty and no fixture group can be controlled.**
 - Learn more [Managing Fixture Groups](#)

Overview

Fixture groups are controlled in the Group Control.

You can open the Group Control in 3 ways:

- Go to the menu **Tools > Groups...**
- Press **F9**
- Or click **Layers > Groups** on the user interface.

To close the Group Control and change back to the Programmer view:

- Go to **Tools > Groups...**
- Press **F9**
- Or click **Groups > Layers** on the user interface.



- The Group Control will include a fader for each fixture group you have created.
- Each individual fader will be shown with the color you have set up as the fixture group's **Display Color**
- Each individual fader will be shown with the label you have set up as the fixture group's **Display Name**



Undock - Creates a separate window to freely use the window detached from the main user interface. The separated window can be enlarged in size and shown on multiple monitors.



Dock - Brings the separate, detached window back again into the main user interface.

Controlling A Fixture Group

Control

- Use the fader of a fixture group to control its intensity.

Fixture Group Faders

- Each fader regulates the intensity of a single fixture group.
 - You can set the fader to a specific position.
 - You can enter a value in the input field.
 - You can flash the fader.

Important Information

- **You will immediately see the changes in the Preview Output.**
- **When controlling fixture groups, your settings will be immediately applied and visible on the output/the LEDs!**

Mouse Control And Keyboard Shortcuts

- **Single Selection**
 - A single fader regulates the intensity of a single fixture group.
 - **Left Arrow / Right Arrow** - Quickly switch between faders by using the left or right arrow key.
- **Multiselection**
 - Use **Ctrl + Left Mouse Click** to select multiple faders at the same time. A green outline will show that a fader is selected. When multiple faders are selected, you can control them at the same time.
 - Use **Shift + Left Mouse Click** to select multiple faders at the same time. A green outline will show that a fader is selected. When multiple faders are selected, you can control them at the same time.
 - **Ctrl+A** - Selects all faders of the Group Control.
 - **Ctrl+D** - Deselects the current fader selection.
- **Flash**
 - Use the button showing the fixture group's Display Name or the keyboard shortcut **Spacebar**
 - It instantly sets the intensity to 255 as long as you hold the button/key down.
 - To use this feature, the fader needs to be set to a lower value than 255 first.
- **Restoring The Default Value**
 - **Left Mouse Double-Click** - Perform a double-click with your left mouse button directly on a single or multiple faders to restore the **Default Value**

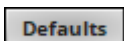
- **Right Mouse Click** - Perform a click with your right mouse button directly on a single or multiple faders to restore the **Default Value**

Minimum Values And Maximum Values

- A fixture group fader in the Group Control always ranges from 0 to 255, independently of what Minimum Value or Maximum Value you have defined for the fixture group.
- Setting a fixture group fader to 0 will set the lowest intensity for this fixture group as defined by **Minimum Value**.
 - That means that a fader set to 0 will not necessarily set the intensity of the fixture group to 0. Instead, it will be set to the minimum value you defined.
- Setting a fixture group fader to 255 will set the highest intensity for this fixture group as defined by **Maximum Value**.
 - That means that a fader set to 255 will not necessarily set the intensity of the fixture group to 255. Instead, it will be set to the maximum value you defined.

Restoring The Default Fixture Group Values

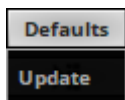
Quickly reset any changes and set all fixture group faders to their default values in the Group Control:



- Restores the default fixture group values for all fixture groups as defined by their **Default Value**

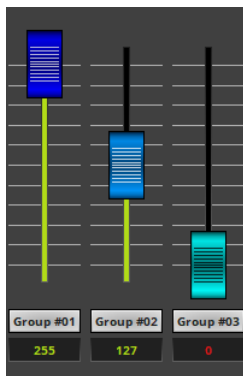
Updating The Default Fixture Group Values

Quickly update all default fixture group values using the Group Control:



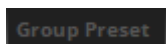
- Overwrites the **Default Value** as defined in the Patch Editor with the current fader position of the Group Control for each fixture group individually.

Saving a Fixture Group Preset



1] Set each fixture group fader to its required position.

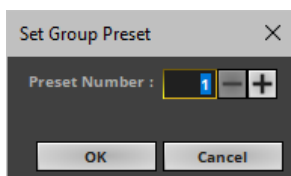
- A value of 0 is shown in red in order to make its severe affect on the visual outcome clear.



2] Enter a description for the Group Preset.



3] Click **Set**



4] A new window opens.

- Define the **Preset Number**
 - Your Group Preset will be saved there.
 - Valid values range from 1 to 256.
 - MADRIX 5 will automatically suggest the next free Group Preset number [which is one number higher than the currently highest preset number].



5] MADRIX 5 will save the currently set fader positions as a Group Preset.

- Saved presets will be shown as blue on the left side of the Group Control.
- Empty Group Presets are deactivated and shown in gray.

Calling A Saved Group Preset



- **Left Click** - Calls a previously saved Group Preset. MADRIX 5 will automatically fade according to the Fade-In Time.
 - Make sure to click on preset number shown in blue.
 - An activated Group Preset will be shown in green for a short while. This indicates that it has been activated.

- **Left Mouse Double-Click** - Calls a previously saved Group Preset and activate it immediately without using the Fade-In Time.
 - Make sure to click on preset number shown in blue.
 - An activated Group Preset will be shown in green for a short while. This indicates that it has been activated.

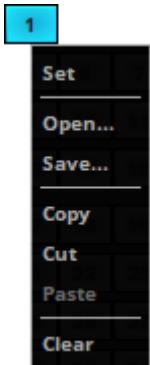
- **Note:** MADRIX 5 will not automatically overwrite a Group Preset!
 [When changing group values, you need to save the current values again as a Group Preset or overwrite an existing Group Preset if you want to store the new values.]

Fading Between Group Presets



- Fade-In Time** - Defines the duration of the automatic fade between fader positions [in s], when selecting a different Group Preset.
- To change the time, select the value via left double-click first. Then, enter a value using the keyboard, use the mouse wheel, or use a left mouse click and hold while dragging the mouse up or down.
 - A value of 0 means that no fade-in is applied. Faders will be set immediately to their new positions [using a hard transation].

Group Preset Context Menu



- **Right Mouse Click** on a Group Preset number to quickly perform various actions.

Set - Saves the current group values as Group Preset to this Group Preset number.

Open... - Loads a previously saved MADRIX 5 Group Preset file [of the file type *.mgpz or *.mgpx]. A new window opens for you to select the file on your harddisk.

Save... - Stores a previously saved Group Preset as an external file [of the file type *.mgpz or *.mgpx]. A new window opens for you to select a location on your harddisk. Simply enter a name and click **Save**

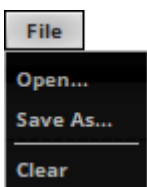
Copy - Copies a previously saved Group Preset into the clipboard as a duplicate.

Cut - Copies a previously saved Group Preset into the clipboard and then applies a Clear

Paste - Inserts a copy of a Group Preset from the clipboard into the currently focused Group Preset.

Clear - Removes the currently focused Group Preset.

Group Control File Menu



- Click on **File** to open a submenu.

Open... - Loads a previously saved MADRIX 5 Group Control file [of the file type *.mgcz or *.mgcx]. A new window opens for you to select the file on your harddisk.

Save As... - Saves the Group Control to an external file [of the file type *.mgcz or *.mgcx]. This includes all Group Presets and the Fade-In Time. A

new window opens for you to select a location on your harddisk. Simply enter a name and click **Save**

Clear - Removes all Group Presets and restores the default Fade-In Time.

Chasing Group Values



Group Value Chaser - Allows you to chase group values.

- The Group Value Chaser will also be saved when saving a Group Preset.
- Learn more »[Chaser](#)

Drag And Drop [Copy/Cut/Paste]

Copy And Paste

- **Left Mouse Click And 2 Sec. Hold** - You can perform a Copy and Paste with the mouse.

Use a left mouse click on a Group Preset and continue to hold for 2 seconds. A small **+** appears. Continue to hold and move your mouse to another Group Preset number. Release the mouse button to paste a copy onto the new Group Preset.

Use the keyboard button **Ctrl** in addition to remove the wait time to immediately perform the drag and drop.

Cut And Paste

- **Left Mouse Click And 2 Sec. Hold + Shift** - You can perform a Cut and Paste with the mouse.

Use a left mouse click on a Group Preset and continue to hold for 2 seconds. Press Shift in addition. A small rectangle appears. Continue to hold the buttons and keys and move your mouse to another Group Preset number. Release the mouse button to move the previously selected Group Preset to the new position.

Use the keyboard button **Shift** in addition to remove the wait time to immediately perform the drag and drop.

Drag And Drop

- **File Drag And Drop** - You can select a MADRIX 5 Group Preset file [of the file type *.mgpz or *.mgpx] in Windows and drag it to a Group Preset of your choice in MADRIX 5 in order to load it in MADRIX 5.

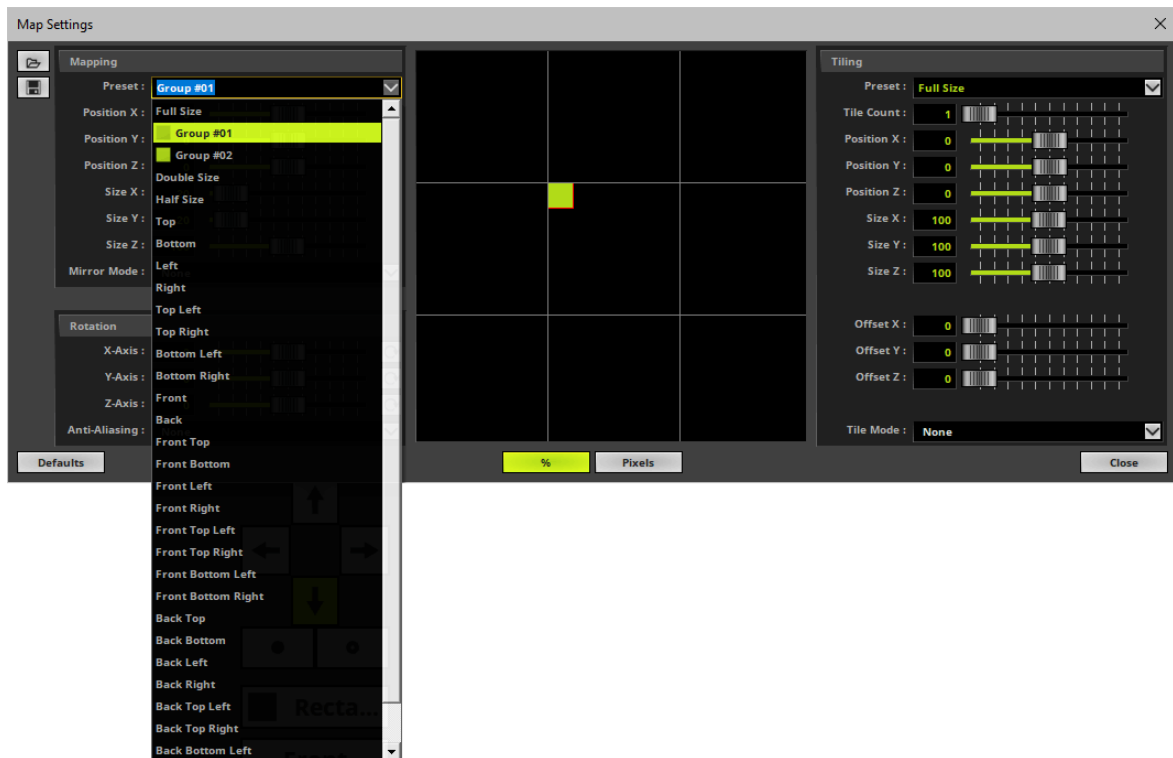
Using Fixture Groups As Map Settings Preset

In addition to controlling fixture groups directly in the Group Control, you can use fixture groups in other ways. Since fixture groups include specific fixtures, these fixtures cover a well-defined area of the Patch. As such, you can use a fixture group as preset for the Map Settings of a Layer.

- Click **Map**



- A new window will open.
- Go to **Mapping > Preset** or **Tiling > Preset**
- The list will include an item for each fixture group you have created by using the fixture group's **Display Name** [You will find these items below **Full Size**]
- Select the fixture group from the list.
- MADRIX 5 will automatically set the correct Map Settings.
 - The Mapping or Tiling will be repositioned and resized according to the fixture group.
 - The adjusted Map Settings will always be a rectangular selection since MADRIX 5 uses the bounding box of the fixture group with only its largest dimensions in X, Y, and Z.

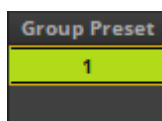


- Learn more » [Mapping / Tiling / Rotation](#)

Calling Group Presets Using A Cue List

Controlling fixture groups in the Group Control is mainly a live feature that works independently of other controls, such as Storage Places for example. But you can further integrate Group Presets into your workflow. You can use a Cue List to trigger Group Presets for each Cue.

- Open the **Cue List Editor** and make sure to set up the **Group Preset** for a Cue where required.
 - Valid values range from 1 to 256.



- Learn more » [Cue List Editor](#)

4.4 [Global] Colors And Intensity

This topic includes:

- [Introduction](#)
- [Overview](#)
- [Local Colors](#)
- [Global Colors](#)
- [Options](#)
- [Using Colors](#)
- [Intensity](#)

Introduction

Choosing the right colors is an important part when creating the lighting visuals you wish to use.

This chapter explains the different ways of working with colors in MADRIX 5.

Overview

Color Channels

- MADRIX 5 controls up to 4 channels per pixel or voxel.
 - That can be 1-channel fixtures, 2-channel fixtures, RGB fixtures, or RGBW fixtures for example.
- The software automatically adjusts the color-selection tools according to the number of channels used by your fixtures [Color Depth].
 - For example:

1 Channel



2 Channels



3 Channels [e.g., RGB]



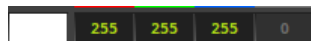
4 Channels [e.g., RGBW]



- Every color channel can have a total of 256 values.
 - Valid values range from 0 – 255 [8 bit].
 - 0 is the lowest value [Minimum = 0].
 - 255 is the highest value [Maximum = 255].
- Additive color mixing is used to produce a whole variety of different colors.
- Examples Of Colors:

White [RGB]

255, 255, 255

**Black [RGB]**

0, 0, 0

**Red [RGB]**

255, 0, 0

**Green [RGB]**

0, 255, 0

**Blue [RGB]**

0, 0, 255



Global Colors And Local Colors

- MADRIX 5 provides a number of different controls for choosing colors, such as single colors, color gradients, or lists of colors. More information is provided below.
 - Each MADRIX 5 Effect [SCE, S2L, M2L, TRI] provides the color controls that work best for it.
- Moreover, you can use Global Colors or Local Colors according to your preferred way of working:
 - Local Colors allow you to define individual colors for each of your created visuals [that is, effects and visuals in a Layer in a Storage Place].
 - Local Colors are set up anew for each new Layer. Local colors that have been set up in one Layer, cannot be quickly selected in the next Layer. They have to be set up again.
 - **Global Colors, on the other hand, can be set up once and selected in your MADRIX Effects and**

Layers as needed.

- If you change Global Colors, they are updated everywhere in an instant.
 - Global Colors are a central point to manage your colors and can be used to create quick access to your most commonly used colors, gradients, and lists of colors.
 - Global Colors can be used to create a reusable catalog of colors without creating numerous files.
 - Global Colors simplify the process of applying a pre-determined color scheme to your project.
 - Most importantly, Global Colors provide the possibility to quickly change the colors of many MADRIX Effects/Layers/Storage Places, retroactively after having already created all of them.
 - They are available in your current MADRIX Setup, or can be loaded as files into another Setup.
 - Global Colors can also be used for Color Filter Deck A/Deck B, the Main Output Color Filter, and Main Output Strobe.
- The software allows you to work only with Global Colors, only with Local Colors, or a combination of both.
 - You can also always convert from one to the other.

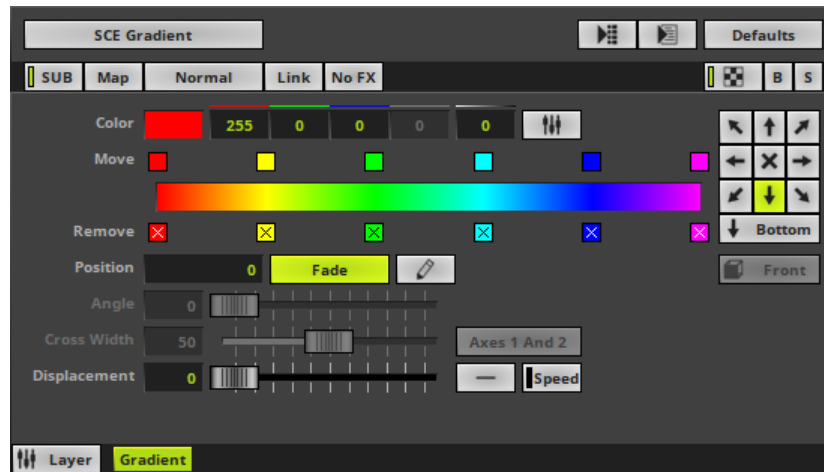
Local Colors

How To Access Local Colors

Select any MADRIX 5 Effect to call up its parameters. This will also present the corresponding color options.

Learn more on how to select an MADRIX 5 Effect » [Effects \[Visuals\]](#)





Global Colors

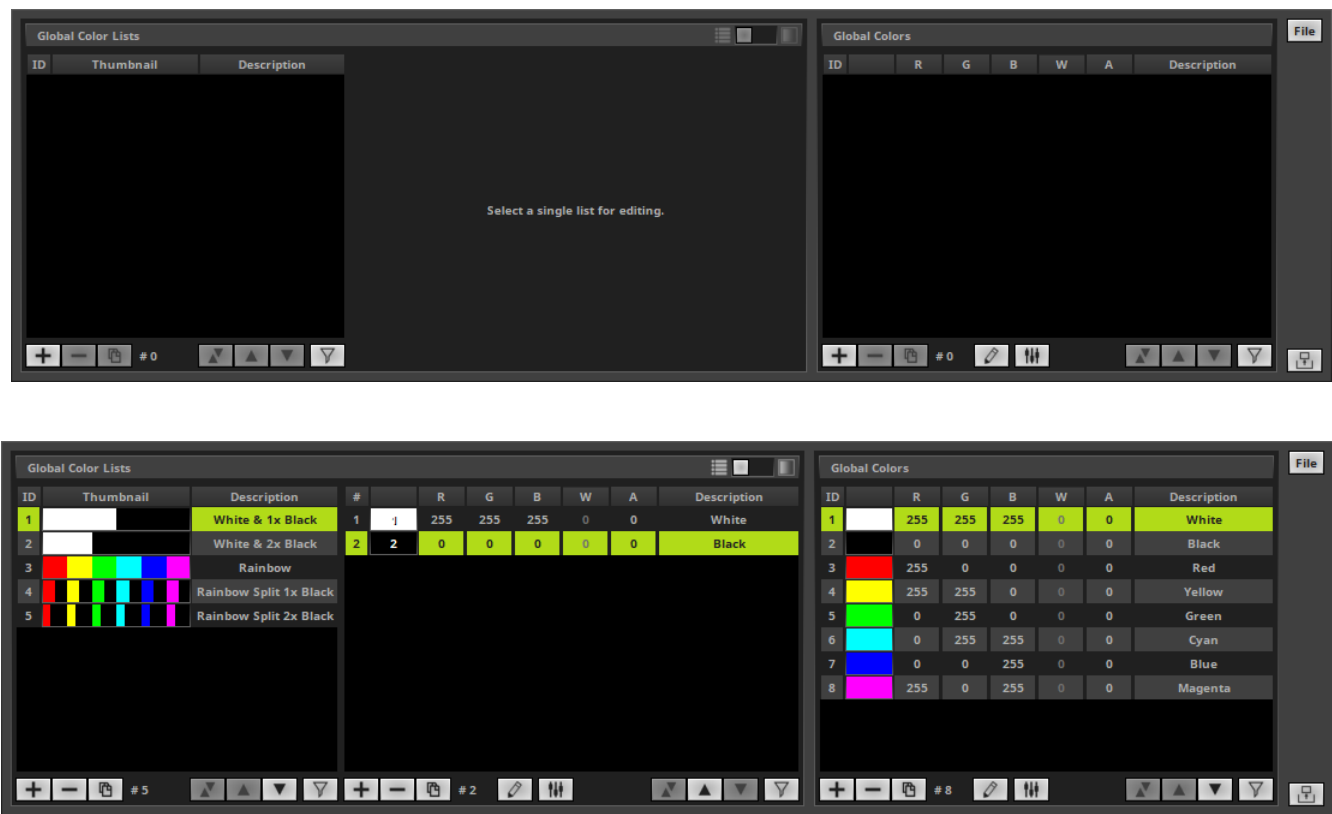
How To Access Global Colors

You can access Global Colors in 3 ways:

- Go to the menu **Tools > Colors...**
- Or press **Ctrl+Alt+C**
- Or click **Layers > Colors** on the user interface.

To close the Timeline Editor again and change back to the original MADRIX 5 user interface:

- Go to the menu **Tools > Colors...**
- Or press **F10**
- Or click **Colors > Layers** on the user interface.



Undock - Creates a separate window to freely use the Editor window detached from the main user interface. The separated window can be enlarged in size and shown on multiple monitors.



Dock - Brings the separate, detached window back again into the main user interface.

Global Color Lists

Overview

You will find the Global Color Lists on the left side. The list view is accompanied by an editing area to its right.

Global Color List – Table Type

Global Color List – Gradient Type



Global Color Lists:

- Are ID-based
- Can be custom sorted
- Allow multi-selection
- Allow multi-inline-editing
- Allow drag and drop for sorting
- Can be filtered



Mode - Use this toggle to switch between **Table** type and **Gradient** type.

- Global Color Lists therefore include Color Tables as well as Color Gradients.

ID

Can be edited.

A unique, numerical identifier is assigned to each Global Color List.

Notes:

- This is not an index. Each Global Color List has its own ID, which remains; even if the order or position is being changed. As such, the ID does not represent the order on the user interface.
- The list of IDs can include gaps. In this way, you can freely add or remove lists and your existing lists and visuals will not be affected, i.e. they remain referenced via their ID.

Left Mouse Click + Hold And Drag - Allows you to choose to rearrange the order.

Thumbnail

Shows a preview image of the Global Color List. Table types and Gradient types are shown differently.

Description Can be edited.

Allows you to write a label for better identification of Global Color Lists that goes beyond the simple ID.

By default, the Description has been left empty.



Add - Creates a new Global Color List.

By default, new Global Color Lists include one color, which is white.



Remove - Removes the currently selected Global Color Lists. Select one or more lists first.



Duplicate - Copies the currently selected Global Color Lists and adds them as new Global Color Lists to the list.



Count - Shows the total number of Global Color Lists.



Swap Position - Swaps the position of the currently selected Global Color Lists in the list. Select one or more lists first.



Position Up - Changes the order, and moves the currently selected Global Color Lists one item higher up in the list.



Position Down - Changes the order, and moves the currently selected Global Color Lists one item lower down in the list.



Filter - Activates the filter.

- Enter any text to filter out items that do not include this text. The button is shown in green if the filter is active.
- Terms can be case-insensitive. You don't have to use capital letters.
- Feel free to use terms that are incomplete. For example, **mad** will include results for **MADRIX**.
- You may specify certain columns by using a colon [:].
- For example: **Description:2** shows only lines where the number is included in the Description and not the ID, for example.

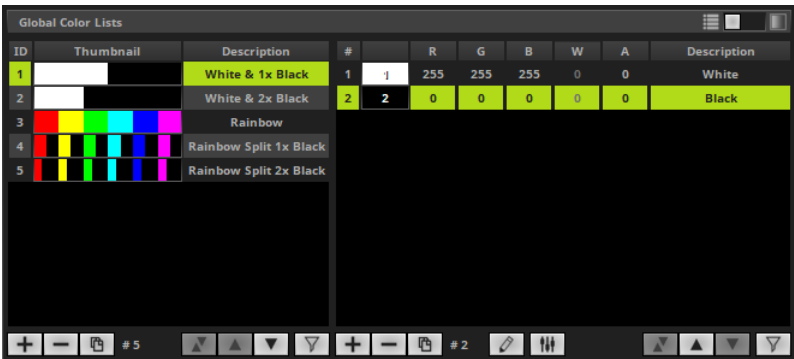
- Swap, Position Up, and Position Down are disabled while a filter is active.

Ctrl+F - Opens the filter.

Esc - Closes the filter.

Right Mouse Click - Resets the filter [and closes it again if it is still open].

Editing A Global Color List – Table Type



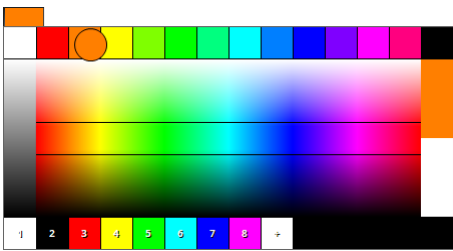
Note: First, select a single list for editing.

- #
- The colors that are included in a Global Color List:
- Are index-based. [No gaps are possible and the index number also represents the order number.]
 - Can be custom sorted
 - Allow multi-selection
 - Allow multi-inline-editing
 - Allow drag and drop for sorting
 - Can be filtered
- Left Mouse Click + Hold And Drag** - Allows you to choose to rearrange the order.

You can assign Global Colors to a Global Color List!



Thumbnail - Shows a preview image of the color.



Left Mouse Click + Hold And Drag - Allows you to choose a color directly with the help of the mouse. Learn more [Color Picker](#)

Right Mouse Click - Opens the context menu.

Edit... - Opens the Fader Box. Learn more [Fader Box](#)



Make Local - Converts a Global Color to a Local Color.

Make Global - Converts a Local Color to a Global Color.

Update Globally - Allows you to change a modified Global Color everywhere by updating it globally.

Global Selection - Allows you to choose a Global Color as this color.

R G B W A

Can be edited.
Shows the current color value for the color channels red, green, blue, white, and alpha.

Description

Can be edited.
Allows you to write a label for better identification of the color.
By default, the Description has been left empty.
Note: If a Global Color is referenced, the Description of the Global Color is being used.



Add - Creates a new color.
By default, the new color is white.

You can assign Global Colors to a Global Color List!



Remove - Removes the currently selected colors. Select one or more colors first.



Duplicate - Copies the currently selected Global Color Lists and adds them as new Global Color Lists to the list.



Count - Shows the total number of colors.



Edit Menu - Calls up a small context menu.



Invert - Inverts the color values and changes to the complimentary color.

Grayscale - Converts to gray color values.

Defaults - Restores the default settings [a Global Color List with one color white].



Fader Box - Opens the Fader Box. Learn more [Fader Box](#)



Swap Position - Swaps the position of the currently selected colors in the list. Select one or more lists first.



Position Up - Changes the order, and moves the currently selected colors one item higher up in the list.



Position Down - Changes the order, and moves the currently selected colors one item lower down in the list.

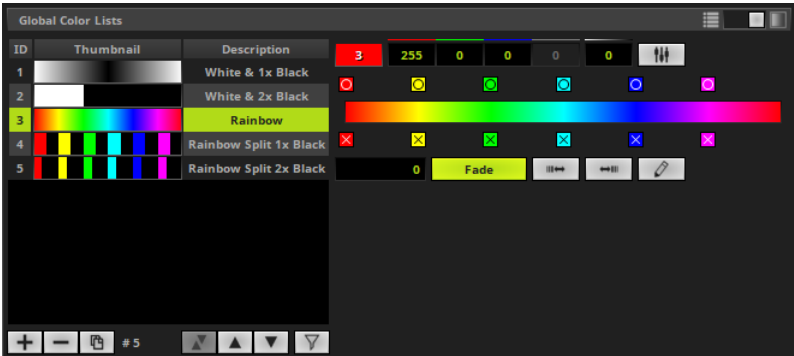


Filter - Activates the filter.

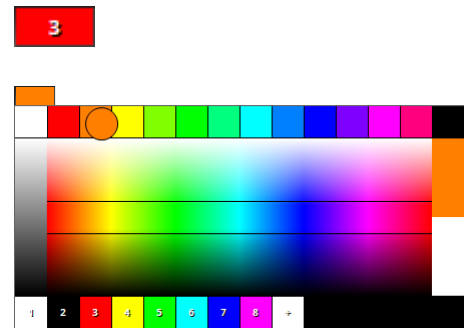
- Enter any text to filter out items that do not include this text. The button is shown in green if the filter is active.
- Terms can be case-insensitive. You don't have to use capital letters.
- Feel free to use terms that are incomplete. For example, **mad** will include results for **MADRIX**.
- You may specify certain columns by using a colon [:].
- For example: **Description:2** shows only lines where the number is included in the Description and not the ID, for example.
- Swap, Position Up, and Position Down are disabled while a filter is active.

- Ctrl+F** - Opens the filter.
- Esc** - Closes the filter.
- Right Mouse Click** - Resets the filter [and closes it again if it is still open].

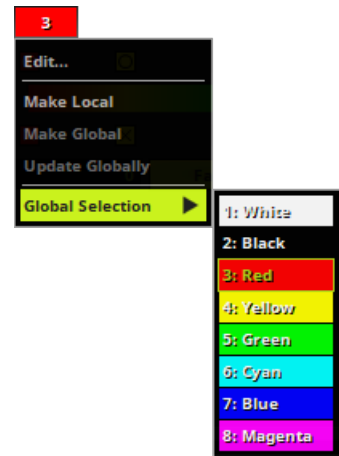
Editing A Global Color List – Gradient Type



Note: First, select a single list for editing.



- Thumbnail** - Shows a preview image of the color.
- Left Mouse Click + Hold And Drag** - Allows you to choose a color directly with the help of the mouse. Learn more [Color Picker](#)
- Right Mouse Click** - Opens the context menu.
- Edit...** - Opens the Fader Box; as explained below.



- Make Local** - Converts a Global Color to a Local Color.
- Make Global** - Converts a Local Color to a Global Color.
- Update Globally** - Allows you to change a modified Global Color everywhere by updating it globally.
- Global Selection** - Allows you to choose a Global Color as this color.

You can assign Global Colors to a Global Color List!

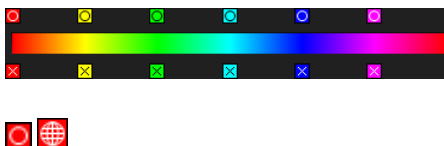


Color Channels - Input Fields - You can use these input fields to choose a color. Use one of 3 ways:

- A]** Click into an input field and enter a number between 0 and 255 for each channel.
- B]** Click into an input field and use the spacebar to set a value to either 0 or 255.
- C]** Click into an input field and continue to hold the mouse button. Then, move your mouse up or down to adjust the value.
 - Up to 4 color channels plus alpha [R, G, B, W, A] are available depending on the settings of your virtual LED matrix [Color Depth].



Fader Box - Opens the Fader Box. Learn more [Fader Box](#)



Color Gradient - Shows the entire gradient.

- o** - Represents the position of the color and can be moved with the help of the mouse.
- x** - Removes the color from the gradient.

Circle / Globe - Shows that this color references a Global Color [as defined to the right hand side].



Position - Defines the position of the color along the gradient from 0.000 to 1 [0 % to 100 %].



Fade - Creates a smooth transition to the next color for the currently selected color.

Deactivate it to create a harsh transition [cut].



Fade All - Activates a smooth color transitions for all colors.

Fade None - Deactivates smooth color transitions for all colors.

Uniform Distances - Make sure that all colors have the same distance to each other.

Invert Position - Change and inverses the position of all colors.

Invert Colors - Inverts each color and thus creates the complementary equivalents of the colors before.

Defaults - Restores the default settings [a Global Color List with one color white].

Global Colors

You will find single Global Colors on the right side.

ID		R	G	B	W	A	Description
1		255	255	255	0	0	White
2		0	0	0	0	0	Black
3		255	0	0	0	0	Red
4		255	255	0	0	0	Yellow
5		0	255	0	0	0	Green
6		0	255	255	0	0	Cyan
7		0	0	255	0	0	Blue
8		255	0	255	0	0	Magenta

ID

Can be edited.

A unique, numerical identifier is assigned to each Global Color.

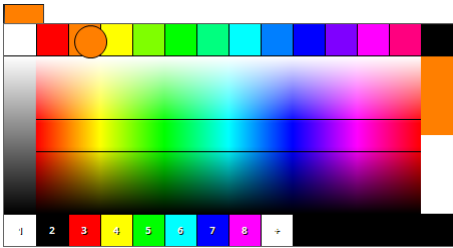
Notes:

- This is not an index. Each Global Color List has its own ID, which remains even if the order or position is being changed.
- The list of IDs can include gaps. In this way, you can freely add or remove lists and your existing lists will not be affected, i.e. their reference/assignment via their ID remains.

Left Mouse Click + Hold And Drag - Allows you to choose to rearrange the order.



Thumbnail - Shows a preview image of the Global Color.



Left Mouse Click + Hold And Drag - Allows you to choose a color directly with the help of the mouse. Learn more [Color Picker](#)

Description

Can be edited.
Allows you to write a label for better identification of Global Colors that goes beyond the simple ID.
By default, the Description has been left empty.



Add - Creates a new Global Color List.

- By default, a new Global Color is white.
- If you have already selected a Global Color, it will be duplicated.



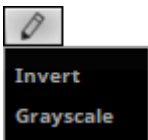
Remove - Removes the currently selected Global Color Lists. Select one or more lists first.



Duplicate - Copies the currently selected Global Color Lists and adds them as new Global Color Lists to the list.



Count - Shows the total number of Global Color Lists.



Edit Menu - Calls up a small context menu.

- Invert** - Inverts the color values and changes to the complimentary color.
- Grayscale** - Converts to gray color values.



Fader Box - Opens the Fader Box. Learn more [Fader Box](#)



Swap Position - Swaps the position of the currently selected Global Color Lists in the list. Select one or more lists first.



Position Up - Changes the order, and moves the currently selected Global Color Lists one item higher up in the list.



Position Down- Changes the order, and moves the currently selected Global Color Lists one item lower down in the list.



Filter - Activates the filter.

- Enter any text to filter out items that do not include this text. The button is shown in green if the filter is active.
- Terms can be case-insensitive. You don't have to use capital letters.
- Feel free to use terms that are incomplete. For example, **mad** will include results for **MADRIX**.
- You may specify certain columns by using a colon [:].
- For example: **Description:2** shows only lines where the number is included in the Description and not the ID, for example.

- Swap, Position Up, and Position Down are disabled while a filter is active.

Ctrl+F - Opens the filter.

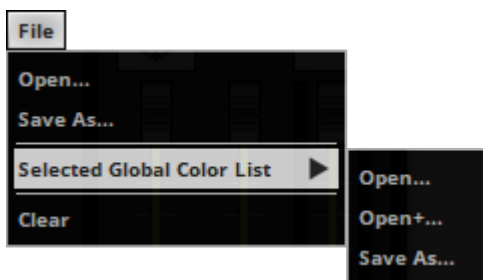
Esc - Closes the filter.

Right Mouse Click - Resets the filter [and closes it again if it is still open].

File

The following file-management options are available:

[Navigate to the right side of the window.]



Left Mouse Click - Opens the context menu.

Open... - Loads a previously saved MADRIX Color Kit file [of the file type *.mckx]. Choose the file from your system.

Save As... - Stores your current Global Color Lists and Global Colors in an external file as MADRIX Color Kit [of the file type *.mckx].

Selected Global Color List... - Refers only to the currently selected Global Color List on the left side.

Open... - Loads a previously saved MADRIX Color Table file [of the file type *.mctx]. Choose the file from your system.

Open+... - Loads a previously saved MADRIX Color Table file [of the file type *.mctx] and appends it to the currently configured Global Ccolor List. Choose the file from your system.

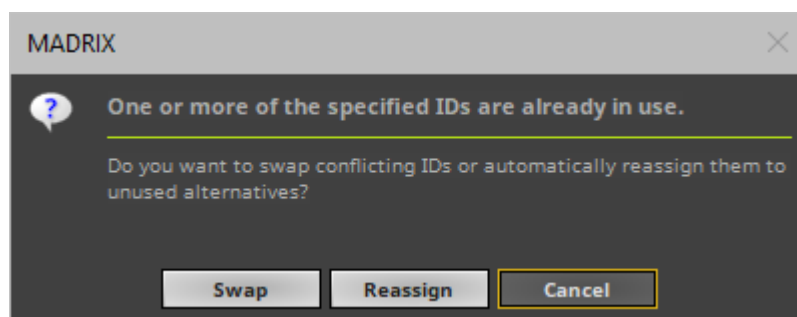
Save As... - Stores your currently selected Global Color List in an external file as MADRIX Color Table file [of the file type *.mctx].

Clear - Removes all colors.

Details

IDs

- You will be shown the following message if you edit an ID and enter a number which is already assigned.



- **Swap** - Switches both IDs. The Global Color List or Global Color you are currently editing will receive the ID you have just entered and the other list will receive the other ID.

- **Reassign** - The existing ID will not change and the Global Color List or Global Color you are currently editing

will be assigned the next free ID.

- **Cancel** - Discards the changes and leaves the ID as it was before.

Global Colors Lists

- Global Color Lists: Table Type and Gradient Type are interchangeable.
 - You can load a Global Color List – Gradient Type into a Color Table. The Color Table will simply ignore the available positions and fades of the gradient and apply a Table Type automatically.
 - You can load a Global Color List – Table Type into a Color Gradient. The Color Gradient will simply use the positions and fades that you applied to the Gradient Type or it will automatically use the default positions and fades.
- Global Color Lists do require to contain a color, but only at least 1 color.
- Global Color Lists – Gradient Type are seamless.

Visual Indicators



Indicates a Local Color.



Indicates a Global Color.



Indicates a Global Color, that has been modified.

If the color is not made local or updated globally, the changes will be applied and the color will be converted to a Local Color automatically [for example, when switching away from the Storage Place or closing the Color Table].

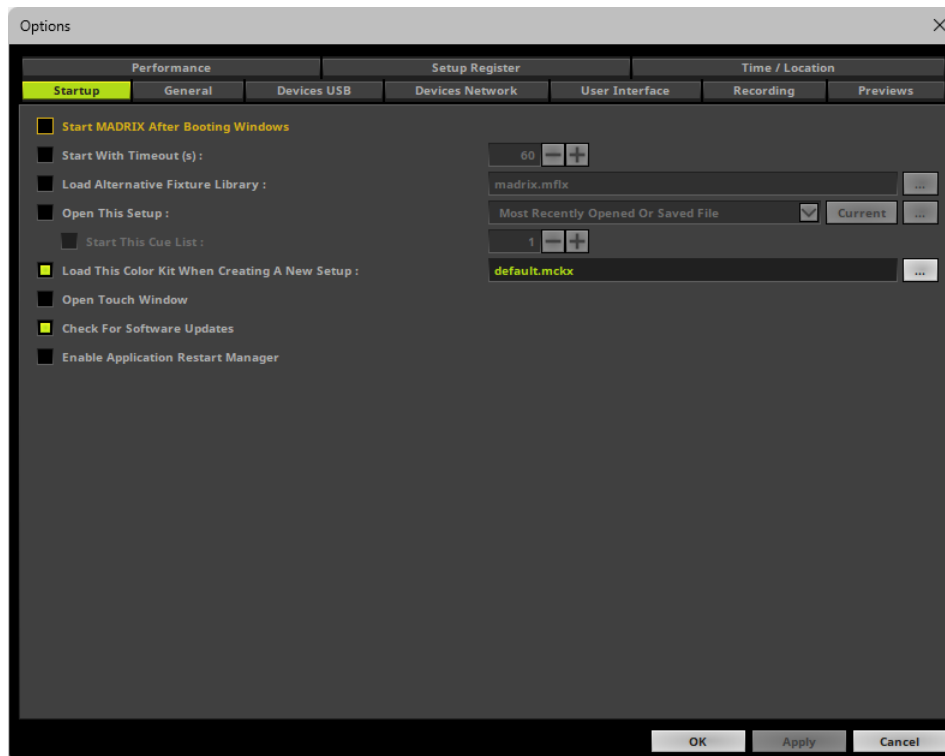


Indicates that a Global Color had been referenced, but that Global Color has been removed in the meantime [dangling state].

If you restore or create the Global Color [in this example with ID 3] again, the reference is restored.

Options

- Go to the menu **Preferences > Options... > Startup**



- Load This Color Kit When Creating A New Setup** - Automatically loads a specific Color Kit, including Global Color Lists and Global Colors, when you create A new MADRIX 5 Setup.
 - Is enabled by default and the default Color Kit is already selected [default.mckx].
 - Choose the file via the button ...
 - The default Color Kit will be installed by the MADRIX 5 Setup and is available at C:\Program Files\MADRIX5\

Using Colors

Overview

- [Strobe](#)

- [Color Filters](#)
- [Base Color / Color / Filter](#)
- [Color Table](#)
- [Color Gradient](#)
- [M2L Color Table](#)
- [Color Picker](#)
- [Fader Box](#)

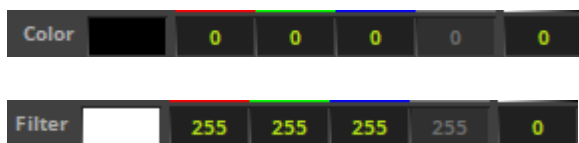
Strobe

- Main Output Strobe
 - » [Main Output / Master / Audio Levels](#)

Color Filters

- Main Output Color Filter
 - » [Main Output / Master / Audio Levels](#)
- Color Filter Deck A / Deck B
 - » [Controls \[Deck A / Deck B\]](#)

Base Color / Color / Filter



- The most basic color controls can be found in MADRIX 5 Effects such as SCE Color, SCE Capture, or M2L Color Change.



Left Mouse Click + Hold And Drag - Allows you to choose a color directly with the help of the mouse. Learn more [Color Picker](#)

R G B W Can be edited.

A Shows the current color value for the color channels red, green, blue, white, and alpha.

Input Fields - You can use these input fields to choose a color. Use one of 3 ways:

A] Click into an input field and enter a number between 0 and 255 for each channel.

B] Click into an input field and use the spacebar to set a value to either 0 or 255.

C] Click into an input field and continue to hold the mouse button. Then, move your mouse up or down to adjust the value.

- Up to 4 color channels [R, G, B, W] are available depending on the settings of your virtual LED matrix [Color Depth].

Alpha is only available for certain MADRIX 5 Effects. Defines an individual Opacity for a single color. The color becomes transparent and blends with the background.



Fader Box - Opens a separate window to choose colors via faders. Learn more below.

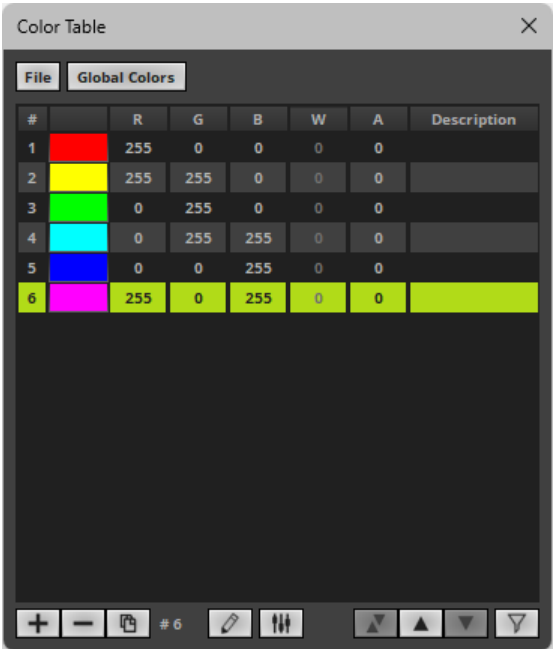


Phase Mode - Uses all color channels separately to define the colors.

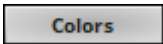
Is only available for certain MADRIX 5 Effects, such as SCE Wave / Radial.

Color Table

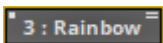
Overview



- A lot of MADRIX 5 Effects use the Color Table. However, not all options are available in all effects.



Colors - Opens the Color Table.



- Once a Global Color List has been selected, the button will show its ID and Description.
- **Mouse Hover + Scroll Wheel** - Allows you to quickly cycle through all available Global Color Lists when you use the mouse wheel while hovering above the button with the cursor.
- **Focus + Left Arrow Key/Right Arrow Key** - Allows you to quickly cycle through all available Global Color Lists when the button has the focus.



Loop Mode - All colors in the Color Table will be used in their respective order [from top to down].

Shuffle Mode - All colors in the Color Table will be used but randomly selected without a specific order. Once all colors have been shown, the order will be shuffled again. [The same color will not be shown twice in succession; except when using fewer than 3 colors or if colors have been added multiple times to a Color Table.]

Random Mode - Randomly generates new colors. The colors in the Color Table will be ignored.



Fade - Adds a smooth transition between colors with the help of intermediate colors instead of switching with hard cuts between colors.



Mix Mode - Randomly uses colors from of the Color Table for each single fill.



Page Color Mode - Is only available when having set up multiple colors. Activates Page Color Mode for the Color Table. Each individual color in the Color Table will be used per page [with each line having the same color].

Line Color Mode - Is only available when having set up multiple colors. Activates Line Color Mode for the Color Table. Each individual color in the Color Table will be used per single line [thus allowing to create multi-color pages].

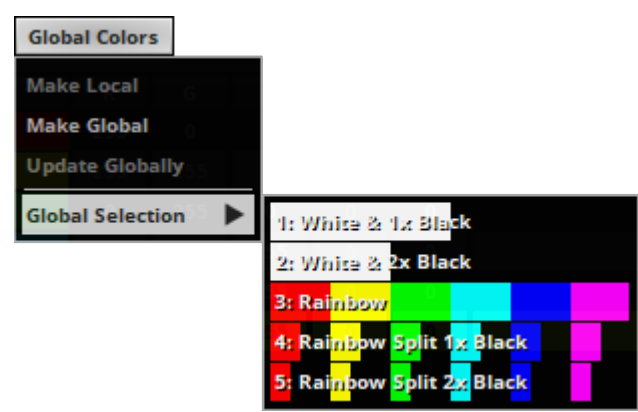


File Menu - Grants access to various file-management operations.

Open... - Loads a previously saved MADRIX Color Table file [of the file type *.mctx]. Choose the file from your system.

Open+... - Loads a previously saved MADRIX Color Table file [of the file type *.mctx] and appends it to the currently configured Color Table. Choose the file from your system.

Save As... - Stores your current Color Table in an external file as MADRIX Color Table file [of the file type *.mctx].



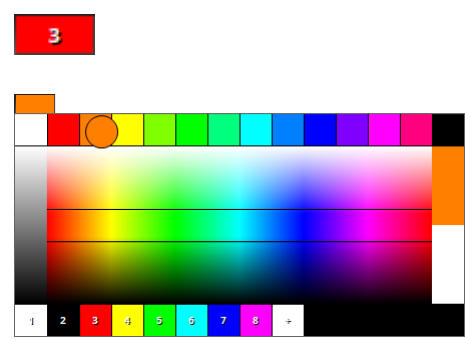
- Make Local** - Converts a Global Color to a Local Color.
- Make Global** - Converts a Local Color to a Global Color.
- Update Globally** - Allows you to change a modified Global Color everywhere by updating it globally.
- Global Selection** - Allows you to choose a Global Color List or Global Color.

#

The colors that are included in a Color Table:

- Are index-based. [No gaps are possible and the index number also represents the order number.]
- Can be custom sorted
- Allow multi-selection
- Allow multi-inline-editing
- Allow drag and drop for sorting
- Can be filtered

Left Mouse Click + Hold And Drag - Allows you to choose to rearrange the order.



- Thumbnail** - Shows a preview image of the color.
- Left Mouse Click + Hold And Drag** - Allows you to choose a color directly with the help of the mouse. Learn more [Color Picker](#)

R G B W A

Can be edited.
Shows the current color value for the color channels red, green, blue, white, and alpha.

Description

Can be edited.

Allows you to write a label for better identification of the color.

By default, the Description has been left empty.

Note: If a Global Color is referenced, the Description of the Global Color is being used.



Add - Creates a new color.

- By default, the new color is white.

- If you have already selected a, it will be duplicated.



Remove - Removes the currently selected colors. Select one or more colors first.



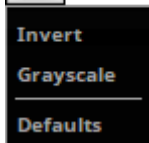
Duplicate - Copies the currently selected colors and adds them as new colors to the list.



Count - Shows the total number of colors.



Edit Menu - Calls up a small context menu.



Invert - Inverts the color values and changes to the complimentary color.

Grayscale - Converts to gray color values.

Defaults - Restores the default settings [a Global Color List with one color white].



Fader Box - Opens the Fader Box. Learn more [Fader Box](#)



Swap Position - Swaps the position of the currently selected colors in the list. Select one or more lists first.



Position Up - Changes the order, and moves the currently selected colors one item higher up in the list.



Position Down - Changes the order, and moves the currently selected colors one item lower down in the list.



Filter - Activates the filter.

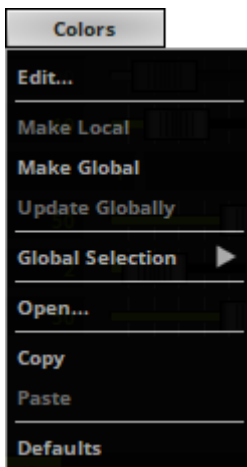
- Enter any text to filter out items that do not include this text. The button is shown in green if the filter is active.
- Terms can be case-insensitive. You don't have to use capital letters.
- Feel free to use terms that are incomplete. For example, **mad** will include results for **MADRIX**.
- You may specify certain columns by using a colon [:].
- For example: **Description:2** shows only lines where the number is included in the Description and not the ID, for example.
- Swap, Position Up, and Position Down are disabled while a filter is active.

Ctrl+F - Opens the filter.

Esc - Closes the filter.

Right Mouse Click - Resets the filter [and closes it again if it is still open].

Context Menu



Right Mouse Click - You can call up the context menu by performing a right mouse click on **Colors**

- A small window will be shown.

Edit... - Opens the Color Table [in the same way you can open the window by clicking on **Colors** with the left mouse button].

Make Local - Converts a Global Color List to Local Colors.

Make Global - Converts Local Colors to a Global Color List.

Update Globally - Allows you to change a modified Global Color List everywhere by updating it globally.

Global Selection - Allows you to choose a Global Color List as these colors.

Open... - Loads a previously saved Color Table from an external file [of the file type *.mctx].

A new window opens for you to select the file on your harddisk.

Copy - Copies the current colors into the clipboard as a duplicate.

Paste - Applies all colors from the clipboard to the current Color Table.

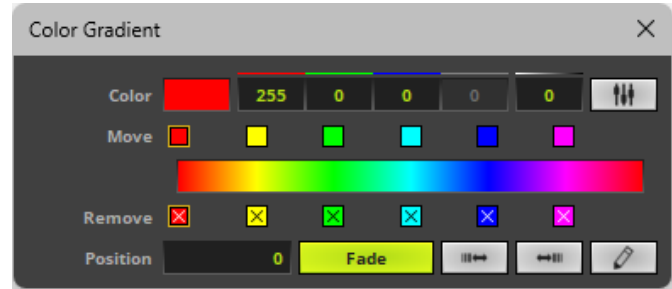
Defaults - Restores all default colors.

Color Gradient

Overview

- The Color Gradient control is available in two versions:

Color Gradient – Window



Color Gradient – Effect Control

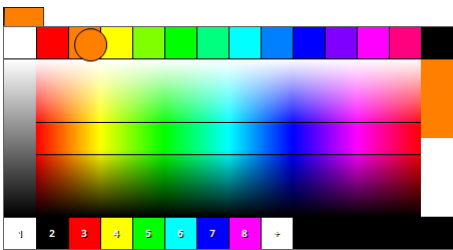


3

Thumbnail - Shows a preview image of the color.

Left Mouse Click + Hold And Drag - Allows you to choose a color directly with the help of the mouse. Learn more [Color Picker](#)

Right Mouse Click - Opens the context menu.

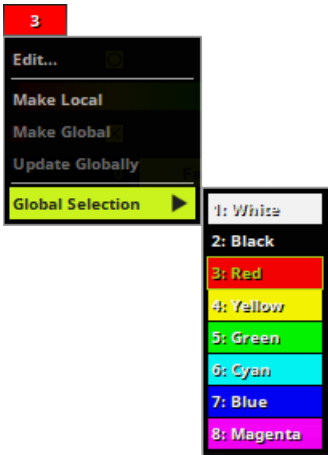


Edit... - Opens the Fader Box; as explained below.

Make Local - Converts a Global Color to a Local Color.

Make Global - Converts a Local Color to a Global Color.

Update Globally - Allows you to change a modified Global Color everywhere by updating it globally.



Global Selection - Allows you to choose a Global Color as this color.

R G B W A

Can be edited.
Shows the current color value for the color channels red, green, blue, white, and alpha.



Fader Box - Opens the Fader Box. Learn more [Fader Box](#)

Add - Click inside the large colored area to create a new color at this particular position with the particular color you picked. Simply drag and drop it afterwards to change its position. Change the color values as described above.

Relocate - Select and hold a color [using the small square button] and move the mouse if you want to move a color to a different position.

Remove - Click the small x-button at the bottom of a color to remove it.



Position - Defines the position of a color on the Color Gradient.

Fade

Fade - Adds a transition between colors with the help of intermediate colors instead of switching with hard cuts between colors. This option is available separately for each color of the Color Gradient.



Keep Relative Distances - Activating this control before editing the position of colors allows you to keep the relative distance between all colors to the left or to the right during the editing process.



Fade All - Activates a smooth color transitions for all colors.

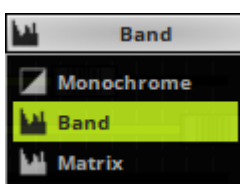
Fade None - Deactivates smooth color transitions for all colors.

Uniform Distances - Make sure that all colors have the same distance to each other.

Invert Position - Change and inverses the position of all colors.

Invert Colors - Inverts each color and thus creates the complementary equivalents of the colors before.

Defaults - Restores the default settings [a Global Color List with one color white].



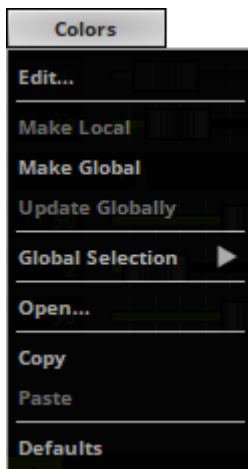
Color Mode - Allows you to choose the Color Mode.

Monochrome - Displays the effect only in White [and Black].

Band - Applies the colors of the Color Gradient to each object individually [e.g., an EQ band].

Matrix - Applies the colors of the Color Gradient to the virtual LED matrix and the effect as a whole.

Context Menu



Right Mouse Click - You can call up the context menu by performing a right mouse click on **Colors**

- A small window will be shown.

Edit... - Opens the Color Table [in the same way you can open the window by clicking on **Colors** with the left mouse button].

Make Local - Converts a Global Color List to Local Colors.

Make Global - Converts Local Colors to a Global Color List.

Update Globally - Allows you to change a modified Global Color List everywhere by updating it globally.

Global Selection - Allows you to choose a Global Color List as these colors.

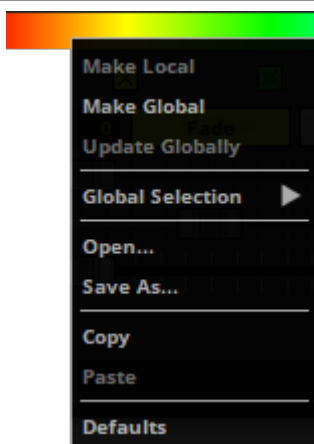
Open... - Loads a previously saved Color Table from an external file [of the file type *.mctx].

A new window opens for you to select the file on your harddisk.

Copy - Copies the current colors into the clipboard as a duplicate.

Paste - Applies all colors from the clipboard to the current Color Table.

Defaults - Restores all default colors.



Right Mouse Click - You can call up the context menu by performing a right mouse click on on the color gradient itself.

- A small window will be shown.

Make Local - Converts a Global Color List to Local Colors.

Make Global - Converts Local Colors to a Global Color List.

Update Globally - Allows you to change a modified Global Color List everywhere by updating it globally.

Global Selection - Allows you to choose a Global Color List as these colors.

Open... - Loads a previously saved Color Table from an external file [of the file type *.mctx].

A new window opens for you to select the file on your harddisk.

Save As... - Stores the current color gradient in an external file as MADRIX Color Table [of the file type *.mctx].

Copy - Copies the current colors into the clipboard as a duplicate.

Paste - Applies all colors from the clipboard to the current Color Table.

Defaults - Restores all default colors.

Keyboard Shortcuts

There are several keyboard shortcuts available.

- Learn more » [Keyboard Shortcuts \[MADRIX 5\]](#)

M2L Color Table

Color Table

FileGlobal Lists

Note		R	G	B	W	A	Description
C		255	255	0	0	0	
G		127	255	0	0	0	
D		0	255	0	0	0	
A		0	255	127	0	0	
E		0	255	255	0	0	
B		0	127	255	0	0	
G♭ / F♯		0	0	255	0	0	
D♭ / C♯		127	0	255	0	0	
A♭ / G♯		255	0	255	0	0	
E♭ / D♯		255	0	127	0	0	
B♭ / A♯		255	0	0	0	0	
F		255	127	0	0	0	
c		153	153	0	0	0	
g		76	153	0	0	0	
d		0	153	0	0	0	
a		0	153	76	0	0	
e		0	153	153	0	0	
b		0	76	153	0	0	
g♭ / f♯		0	0	153	0	0	
d♭ / c♯		76	0	153	0	0	
a♭ / g♯		153	0	153	0	0	
e♭ / d♯		153	0	76	0	0	
b♭ / a♯		153	0	0	0	0	
f		153	76	0	0	0	

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24

- M2L Effects can make use of a special M2L Color Table.

The M2L Color Table is based on the regular Color Table.

- The same controls are available. Learn more [Color Table](#)

Note

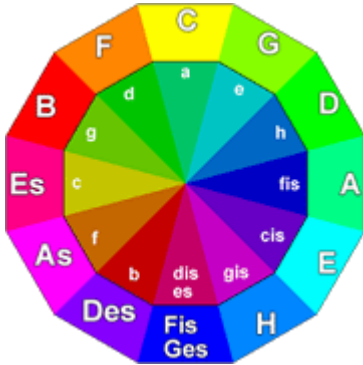
Instead of using an numerical index, the M2L Color Table is based on 24 specific notes. You can decide which color is assigned to which key.

- For example:

C [written in capital letters] represents C-major and has a pure yellow as its color value [RGB: 255, 255, 0].

C-minor [written as lower case **c**] has a darker yellow assigned [RGB: 153, 153, 0].

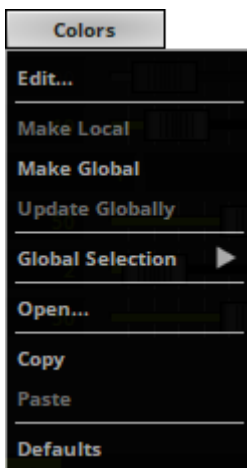
Left Mouse Double-Click - Perform a double-click with your left mouse button on this column in order to be able to change the note in this row.



Default Color Table - The **Circle of Fifths** from music education is used for the default M2L Color Table. Starting with C, this notion describes a circle. Because of that, the relationship of the keys is visible from the arrangement.

- Adjacent keys are named parallel keys. The greater the distance between two keys, the less related they are. To support this fact, complementary colors are used in MADRIX 5.
- The outer ring of the circle describes the major keys, the inner ring the minor keys.
- While colors describe the tonality, the scale of the color is being expressed with the help of the brightness.

Context Menu



Right Mouse Click - You can call up the context menu by performing a right mouse click on **Colors**

- A small window will be shown.

Edit... - Opens the Color Table [in the same way you can open the window by clicking on **Colors** with the left mouse button].

Make Local - Converts a Global Color List to Local Colors.

Make Global - Converts Local Colors to a Global Color List.

Update Globally - Allows you to change a modified Global Color List everywhere by updating it globally.

Global Selection - Allows you to choose a Global Color List as these colors.

Open... - Loads a previously saved Color Table from an external file [of the file type *.mctx].

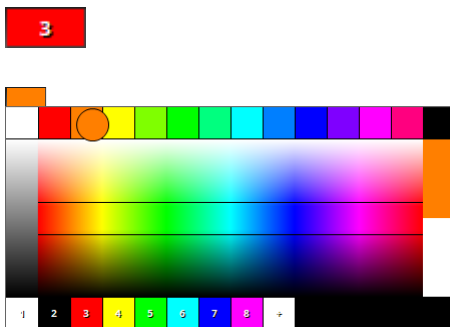
A new window opens for you to select the file on your harddisk.

Copy - Copies the current colors into the clipboard as a duplicate.

Paste - Applies all colors from the clipboard to the current Color Table.

Defaults - Restores all default colors.

Color Picker



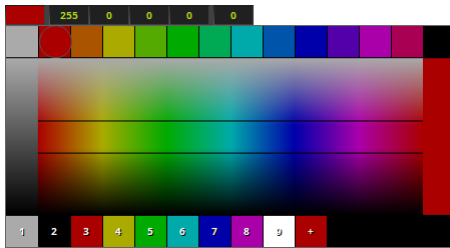
Left Mouse Click + Hold And Drag - Allows you to choose the color directly with the help of the mouse. [In general, the Color Picker only affects R, G, and B. W and A have to be changed manually.]

▪ Layout:

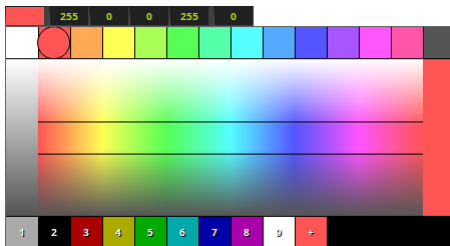
- Top: 14 presets are available to quickly choose the most common colors.
- Left Side: Choose gray values, ranging from black at the bottom to white at the top.
- Right Side: Top represents the currently selected color. Bottom represents the previous color.
- Bottom: Shows all available Global Colors.



Alpha - The Color Picker shows if you have set an alpha value [with the help of a checkerboard pattern].



W - If you have set up a white color value when using RGBW fixtures, the Color Picker will show colors darker or lighter accordingly.

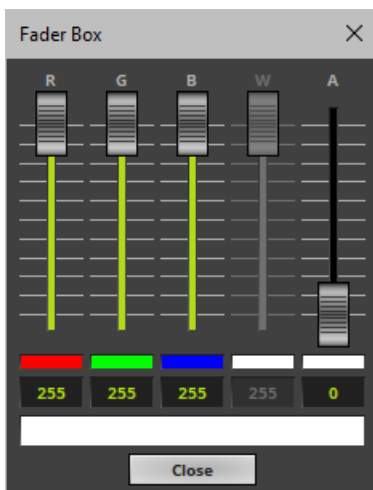


Fader Box



Fader Box - Opens the Fader Box.

- Use the fader for each color channel separately to adjust the color [**R**, **G**, **B**, **W**, **A**].
- The color mixing and the final color will be shown at the bottom.
- The color field at the bottom can also be used via **Left Mouse Click + Hold And Drag** to directly choose the color with the help of the mouse.
- **Close** - Closes the Fader Box.



Drag And Drop [Copy And Paste]

You can perform drag and drop across many locations of the software.

Left Mouse Click And Hold - You can perform a Copy and Paste with the mouse.

Click with the left mouse button and drag away. A small + appears. Now, continue to hold and drag the mouse to another color control and release the mouse to instantly apply the colors.

▪ **Global Color Lists**

- You can drag a single Global Color List into a Color Table window, into a Color Gradient window, or onto a Color Gradient. [This replaces the previous colors.]
- You can drag a single Global Color List onto the Colors button from a Color Table, M2L Color Table, or Color Gradient. [This replaces the previous colors.]
- You can drag one or several colors from a Global Color List into the Global Colors, a Color Table window, an M2L Color Table window, into a Color Gradient window, or onto a Color Gradient. [This adds the colors.]

▪ **Global Colors**

- You can drag one or several Global Colors into a Global Color List, into a Color Table, into an M2L Color Table, into a Color Gradient window, or onto a Color Gradient. [This adds the colors.]

▪ **Color Tables / M2L Color Tables**

- You can drag one or several colors from a Color Table into a Global Color List, into the Global Colors, into a Color Table, into an M2L Color Table, into a Color Gradient window, or onto a Color Gradient. [This adds the colors.]
- You can drag from the Colors button of a Color Table or M2L Color Table into the list of Global Colors Lists.

▪ **Color Gradients**

- You can drag from the Colors button of a Color Gradient into the Global Colors Lists, onto the Colors button of a Color Table, M2L Table, or Color Gradient, and into a Color Gradient window, or onto a Color Gradient.

File Drag And Drop - You can select a MADRIX 5 Color Table file [of the file type *.mctx] in Windows and drag it to a color control of your choice in MADRIX 5 in order to load it in MADRIX 5.

- One or more MADRIX 5 Color Table files [of the file type *.mctx] can be dropped in the list of Global Colors Lists. [This adds them as new Global Color Lists.]
- A single MADRIX 5 Color Table file [of the file type *.mctx] can be dropped into a Color Table, into an M2L Color Table, into a Color Gradient window, onto a Color Gradient, or on the Colors button from a Color Table, M2L Color Table, or Color Gradient. [This replaces the previous colors.]

Intensity

The user interface of MADRIX 5 mainly provides 4 options to control the brightness:

- **Master** - Controls the overall brightness.
Learn more » [Main Output / Master / Audio Levels](#)
- **Submaster A / B** - Controls the brightness of the entire Deck A or Deck B.
Learn more » [Controls \[Deck A / Deck B\]](#)
- **Storage Place Submaster** - Controls the complete brightness of the entire Storage Place, including all of its Layers.
Learn more » [Storages](#)
- **Layer Submaster** - Controls the complete brightness of the Layer.
Learn more » [Effect Areas \[Deck A / Deck B\]](#)
- **Layer Opacity** - Makes the Layer transparent. This is mainly useful when using at least 2 Layers or more. If you are using only 1 Layer, the Submaster controls the Layer brightness.
Learn more » [Layers](#)

4.5 Effects [Visuals]

This topic includes:

- [MADRIX Effects](#)
- [Selecting An Effect](#)
- [Variety Of Effects](#)
- [Configuration Of Effects And Layers](#)
- [Using Several Effects And Saving Effects](#)

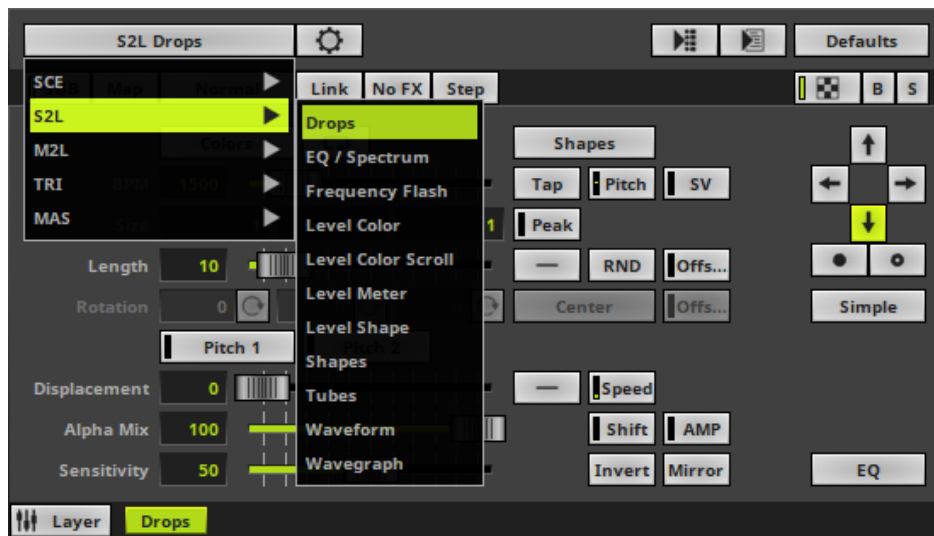
MADRIX Effects

MADRIX 5 allows you to quickly produce an extraordinary light show. This is the purpose and probably most important part of the software.

- The term MADRIX Effects includes all lighting visuals and patterns you can create with MADRIX 5 and display on your LEDs.
- MADRIX 5 is a unique LED lighting controller. It is an effect generator with a graphics render engine and also includes media server features.
- You can use the integrated effects of the effect generator or external content [such as images or video files].
- MADRIX 5 allows you can create stunning real-time lighting visuals with ease.

Selecting An Effect

- Choosing a lighting effect is simple.
- Thanks to its user interface layout, MADRIX 5 includes 2 dedicated areas [Effect Area A and Effect Area B].
- By default, SCE Color is selected.
- A drop-down list allows you to select a MADRIX Effect.
- Simply click on **SCE Color** to select a MADRIX stock effect from the list.
- Click on the MADRIX Effect in order to select it.



Variety Of Effects

MADRIX 5 offers a large variety of effects and visuals. All MADRIX Effects are arranged into 5 distinct categories with various features:

- **SCE** - Static Color Effects
- **S2L** - Sound2Light Effects
- **M2L** - Music2Light Effects
- **TRI** - Trigger Effects
- **MAS** - MADRIX Script Effect

Learn more » [MADRIX Effects](#)

Configuration Of Effects And Layers

- Every single MADRIX Effect has different controls to easily customize how the effect looks and behaves.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

- Extra settings provide further option for customization. In addition, you can combine each effect with every other effect. This allows you to create an unlimited amount of different lighting effects.

Learn more »[Layers](#)

Using Several Effects And Saving Effects

MADRIX 5 offers certain possibilities to manage and organize your effects.

- Effects will be automatically saved in the selected Storage Place in Programmer mode.

Learn more »[Operating Modes \[Programmer / Operator\]](#)

- MADRIX 5 offers 256 x 256 Storage Places. Hence, you will be able to create a lot of effects and storing is automatically handled by the software.

Learn more »[Storage Places \[256x 256\]](#)

- On the other hand, Storage Places and other configurations are ultimately saved in MADRIX 5 Setup files.

Do not forget to regularly save your MADRIX 5 Setup file!

Learn more »[MADRIX 5 Setup \[New / Open\]](#)

4.6 Filters [FX]

This topic includes:

- [Introduction](#)
- [Overview](#)

Introduction

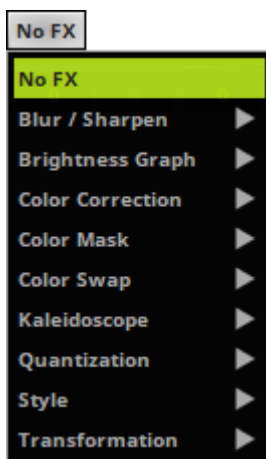


- Applies a special filter to quickly change your visuals.

- You can choose to quickly change your visuals with the help of filters.

- There are several categories to choose from. Each category contains several options to change the visual appearance of your effect.
- MADRIX 5 offers filters in 4 distinct locations, but they can be activated at the same time if needed.
- **Main Output Filter** - Applies the filter to the Main Output. That means that the overall and final output is affected. Learn more »[Crossfader And Main Output](#)
- **Filter Deck A / Filter Deck B** - Applies the filter to an entire effect pipeline, Deck A or Deck B. That means that all Storages, Storage Places, and Layers will be affected. Learn more »[Controls \[Deck A / Deck B\]](#)
- **Storage Place Filter** - Applies the filter to a single Storage Place and its Layers. That means that the Storage Place and all of its included Layers will be affected. Learn more »[Storages](#)
- **Layer Filter** - Applies the filter to a single Layer. That means that only the single Layer will be affected. Learn more »[Layers](#)
- **Right Mouse Click** - Resets the filter to its default value [**No FX**].

Overview



No FX - Disables all additional filters. The effect will be displayed as normal.



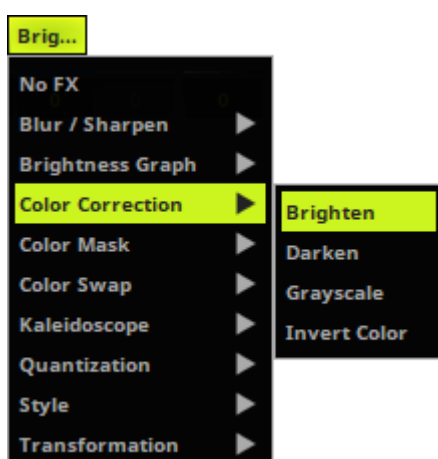
Blur / Sharpen - Includes 5 modes to blur/smudge and 1 mode to sharpen the effect.

- **Blur** softens the visuals.
- **Blur B-Spline** softens the visuals.
- **Blur Catmull Rom** softens the visuals.
- **Blur Gauss** softens the visuals.
- **Blur Mitchell** softens the visuals.
- **Sharpen** increases the contrast.



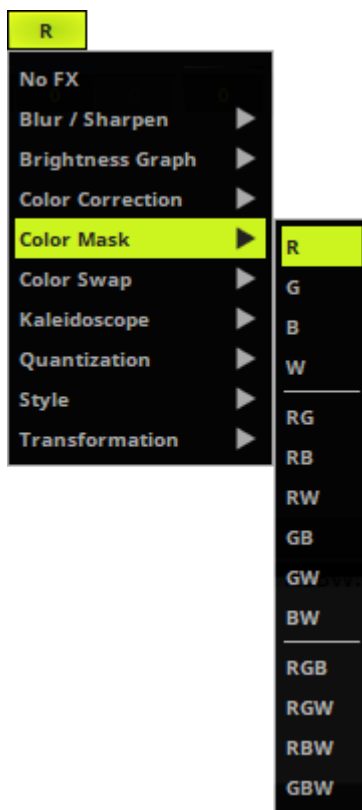
Brightness Graph - Includes 3 modes to show the brightness of an effect by plotting a graph from it.

- **XYZ**
- **XZY**
- **YXZ**



Color Correction - Includes 4 modes to change the colors of your effect.

- **Brighten** increases the intensity.
- **Darken** decreases the intensity.
- **Grayscale** uses only shades of gray.
- **Invert Color** inverts the color values.

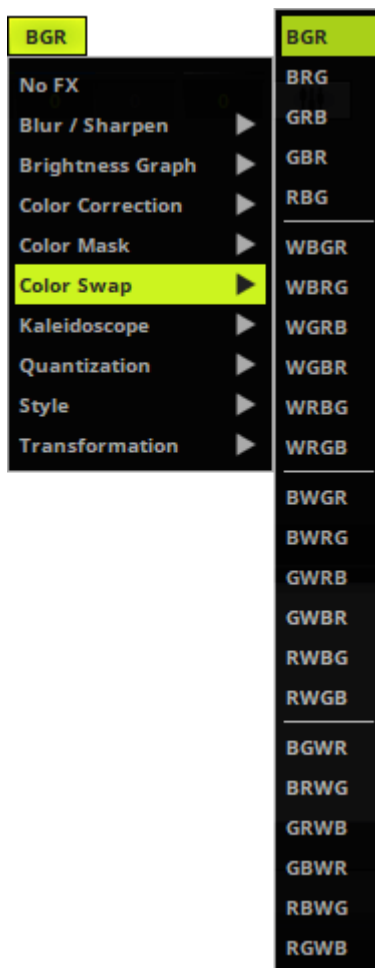


Color Mask - Includes various modes to filter colors.

- **R** shows only red color values.
- **G** shows only green color values.
- **B** shows only blue color values.
- **W** shows only white color values.

- **RG** shows only red and green color values.
- **RB** shows only red and blue color values.
- **RW** shows only red and white color values.
- **GB** shows only green and blue color values.
- **GW** shows only green and white color values.
- **BW** shows only blue and white color values.

- **RGB** shows only red, green, and blue color values.
- **RGW** shows only red, green, and white color values.
- **RBW** shows only red, blue, and white color values.
- **GBW** shows only green, blue, and white color values.



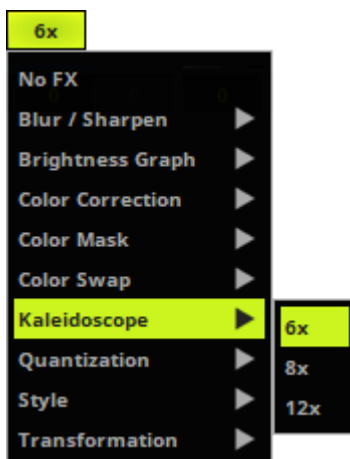
Color Swap - Includes various modes to swap colors with each other from RGB or from RGBW.

- **BGR** swaps from RB to BR.
- **BRG** swaps all three colors.
- **GRB** swaps from RG to GR.
- **GBR** swaps all three colors.
- **RBG** swaps from GB to BG.

- **WBGR** swaps all four colors.
- **WBRG** swaps all four colors.
- **WGRB** swaps from RBW to WRB.
- **WGBR** swaps from RW to WR.
- **WRBG** swaps from RGW to WRG.
- **WRGB** swaps all four colors.

- **BGWR** swaps all four colors.
- **BRWG** swaps all four colors.
- **GWRB** swaps all four colors.
- **GWBR** swaps from RGW to GWR.
- **RWBG** swaps from GW to WG.
- **RWGB** swaps from GBW to WGB.

- **BGWR** swaps from RBW to BWR.
- **BRWG** swaps all four colors.
- **GRWB** swaps all four colors.
- **GBWR** swaps all four colors.
- **RBWG** swaps from GBW to BWG.
- **RGWB** swaps from BW to WB.



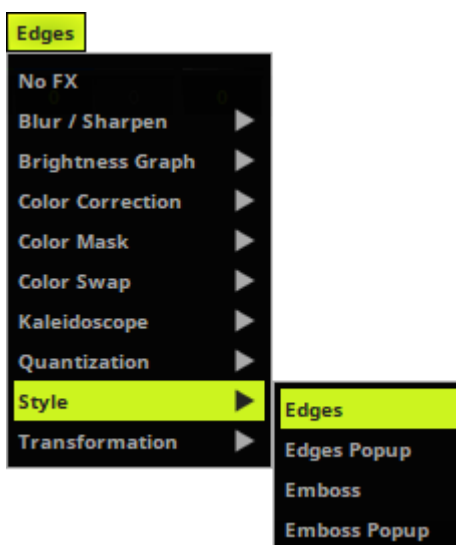
Kaleidoscope - Includes 3 modes to change the style of your effect.

- **6x** applies triangular mirrors.
- **8x** applies rectangular mirrors.
- **12x** applies triangular mirrors and adds additional mirroring.



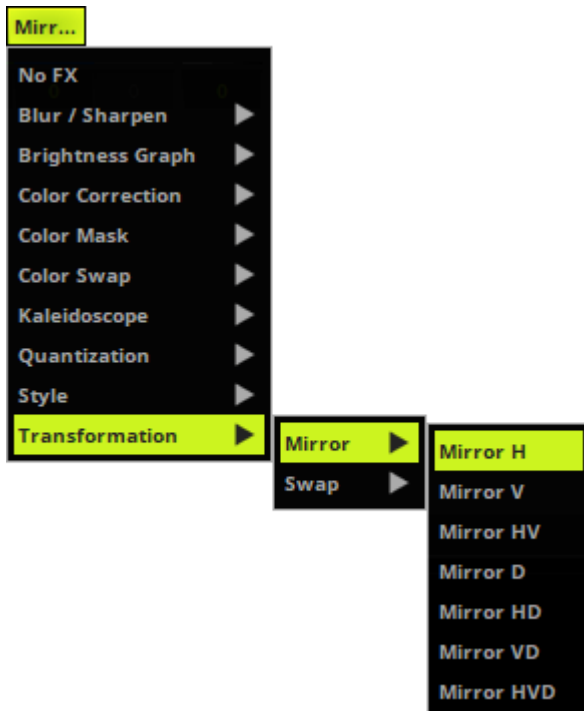
Quantization - Includes 3 modes to change the colors of your effect.

- **Low** summarizes adjacent colors slightly to create a comic-like style with harder edges.
- **Middle** summarizes adjacent colors to create a comic-like style with harder edges.
- **High** summarizes adjacent colors a lot to create a comic-like style with harder edges.



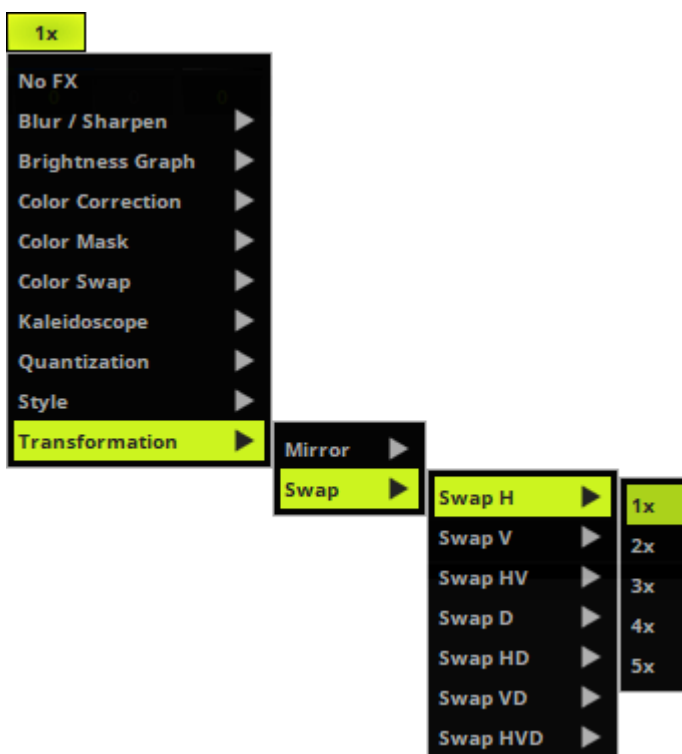
Style - Includes 4 modes to highlight the edges of effects or to add an imprinted visual style.

- **Edges** highlights the edges of objects and colors.
- **Edges Popup** highlights the edges of objects and colors.
- **Emboss** creates bevels and imprints of objects.
- **Emboss Popup** creates bevels and imprints of objects.



Transformation - Includes 7 modes to flip the effect quickly.

- **Mirror H** flips the effect horizontally.
- **Mirror V** flips the effect vertically.
- **Mirror HV** flips the effect horizontally and vertically.
- **Mirror D** flips the effect regarding the depth.
- **Mirror HD** flips the effect horizontally and regarding the depth.
- **Mirror VD** flips the effect vertically and regarding the depth.
- **Mirror HVD** flips the effect horizontally, vertically, and regarding the depth.



- **Swap H > 1x/2x/3x/4x/5x** splits the effect the selected number of times and switches the parts horizontally.
- **Swap V > 1x/2x/3x/4x/5x** splits the effect the selected number of times and switches the parts vertically.
- **Swap HV > 1x/2x/3x/4x/5x** splits the effect the selected number of times and switches the parts horizontally and vertically.
- **Swap D > 1x/2x/3x/4x/5x** splits the effect the selected number of times and switches the parts in the depth.
- **Swap HD > 1x/2x/3x/4x/5x** splits the effect the selected number of times and switches the parts horizontally and in the depth.

- **Swap VD > 1x/2x/3x/4x/5x** splits the effect the selected number of times and switches the parts vertically and in the depth.

- **Swap HVD > 1x/2x/3x/4x/5x** splits the effect the selected number of times and switches the parts horizontally, vertically, and in the depth.

4.7 Layers

This topic includes:

- [Introduction](#)
- [Layer Tabs](#)
- [Context Menu](#)
- [Layer Settings](#)
- [Layer View](#)

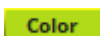
Introduction



- MADRIX Effects and Layers are closely related.
- Layers can be used to combine visuals and to create completely new effects.
- By default, only 1 Layer is created and shown.
- You can choose to use only 1 Layer or multiple Layers. Using multiple Layers can alter the displayed visuals immensely.
- MADRIX 5 supports an unlimited number of Layers.
[The actual number of Layers available for use depends on your computer performance and Matrix Size.]

- This chapter describes ways to work with Layers in particular.
 - A general overview about the controls for Layers and MADRIX Effects is provided in a previous chapter. Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Layer Tabs

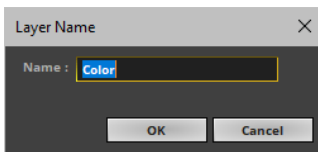


Color



Clouds olor

- Every Layer is represented by a Layer Tab.
- Layer Order
 - Left Mouse Click And Hold And Move** - Changes the order of Layers via Drag and Drop.
 - When changing the order, you change the visual outcome of your effect.
- Copy And Paste
 - Left Mouse Click and 2 Sec. Hold** - You can perform a Copy and Paste with the mouse.
 - Use a left mouse click on a Layer and continue to hold for 2 seconds. A small **+** appears. Continue to hold and move your mouse to another Layer area.
 - Release the mouse button to paste a copy of the Layer.
 - Use the keyboard button **Ctrl** in addition to remove the wait time to immediately perform the drag and drop.
- Cut And Paste
 - **Shift + Left Mouse Click And Hold And Move** - You can perform a Cut and Paste with the mouse.
 - Use the keyboard button **Shift** and use a left-mouse click on a Layer and continue to hold and then move the mouse in order to move the Layer.
- Keyboard Shortcuts
 - Learn more » [Keyboard Shortcuts \[MADRIX 5\]](#)



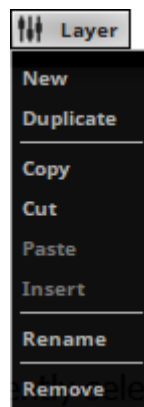
- **Layer Name** - You can change the Layer's label.
- **Right Mouse Click > Rename or Double-Click on Layer Tab** - Allows you to rename the description label of the Layer tab. Simply enter a new name and click **OK**

Context Menu

A context menu offers various options when working with Layers.

You can access the Layer context menu in 3 ways:

- **Right Mouse Click** on **Layer**
- Or **Right Mouse Click** on a Layer Tab



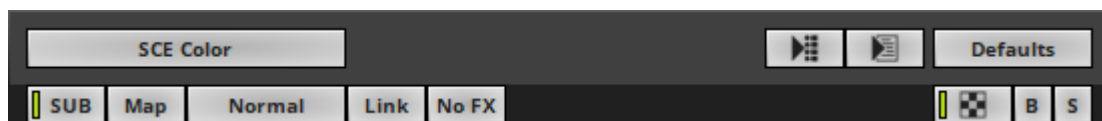
- **Layer > New** - Creates a new Layer.
- **Layer > Duplicate** - Creates an exact copy of the currently selected Layer.
- **Layer > Copy** - Copies the Layer into the clipboard of the computer.
- **Layer > Cut** - Copies the Layer into the clipboard and removes the Layer.

- **Layer > Paste** - Applies all settings of the Layer in the clipboard to the currently selected Layer.
- **Layer > Insert** - Creates a new Layer and applies all settings of the Layer in the clipboard to the currently selected Layer.
- **Layer > Rename** - Allows you to change the label of the Layer.
- **Layer > Remove** - Removes the currently selected Layer entirely.

Layer Settings

Overview

Various buttons and controls have universal functions. They are available for each MADRIX Effect / Layer:



- [Effect Parameter Chaser](#)
- [Layer Macro](#)
- [Defaults](#)
- [Submaster](#)
- [Map Settings](#)
- [Mix Modes](#)
- [Link](#)
- [Filters \[FX\]](#)
- [Stepped Rendering](#)
- [Opacity](#)
- [Blind And Solo](#)

Effect Parameter Chaser



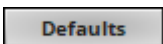
Effect Parameter Chaser - Controls the Effect Parameter Chaser to add playlist functionality to the Layer. Learn more » [Chaser](#)

Layer Macro



Effect Macro Editor - Controls the Effect Macro Editor to add scripting functionality to the Layer. Learn more » [Macros And Scripts](#)

Defaults



Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

Submaster



Submaster - Regulates the intensity of an effect.

- Click **SUB** and the button extends into a fader.
- Make sure to click and continue to hold the mouse button at the same time.
- Afterwards, simply move the fader with the help of your mouse.
- Release the mouse button to set up the specific value [The fader will disappear automatically].
- A value of 255 means full intensity.
- A value of 0 means no intensity and will render the effect completely black. A value of 0 is shown in red in order to make its severe affect on the visual outcome clear. The button itself and the Layer tab pulsate in red as well.
- The tooltip shows the currently set value.

The Submaster allows you to solely adjust the intensity of the running effect or Layer. To adjust the intensity of all running effects you have to use the Master.

Learn more » [Main Output / Master / Audio Levels](#)

Map Settings

Modifying the Map Setting allows to freely resize, reposition, and further modify every MADRIX Effect.

Learn more » [Mapping / Tiling / Rotation](#)

Mix Modes

Overview

Just like an image-editing software, you can use different Mix Modes to mix Layers with each other. This results in diverse color combinations and often completely new effects. These can also be referred to as blend modes.

How Mix Modes Work

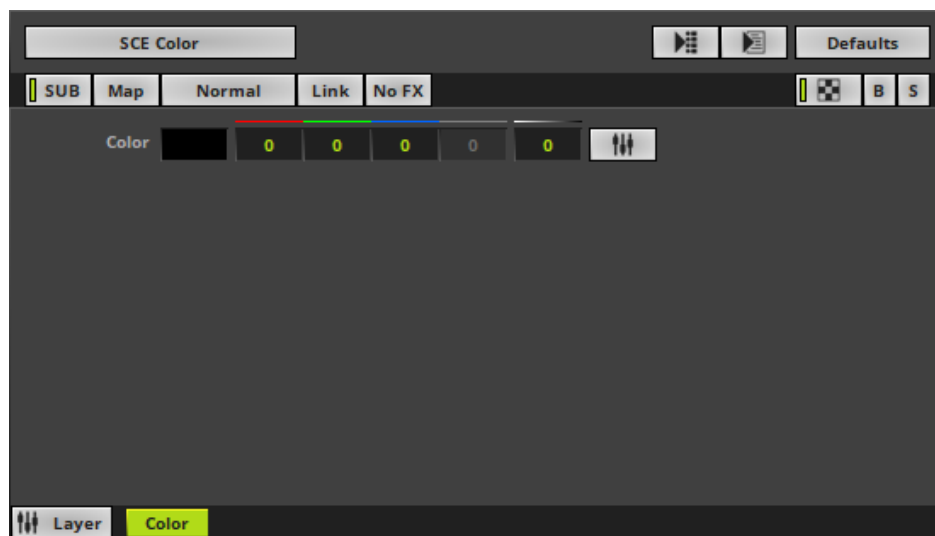
- Mix Modes are based on basic mathematical calculations.
- As such, Mix Modes combine the color values [tonal values] of 2 Layers in different ways. A foreground Layer and a background Layer are used.
- All Mix Modes, except for Mask, work pixel by pixel and color channel by color channel.
 - Each single pixel of the foreground Layer is combined with the corresponding pixel of the background Layer.
 - Each color channel of a single pixel is combined with the equivalent color channel of the corresponding pixel.

Applying A Mix Mode

- You can use Mix Modes if you have at least 2 Layers [foreground and background]. Then, you can apply the Mix Mode to the second Layer.
- In MADRIX 5, the second Layer is positioned to the right. It is the foreground Layer. In MADRIX 5, the last Layer is on top.
- If you apply the Mix Mode to the first Layer, nothing will happen.
- You can decrease [or increase] the impact that each Layer has on the visual result by using the Opacity slider.
- In the example below, Mix Mode **Mask** is selected.



- By default, **Normal** is selected.
- **Right Mouse Click** - Resets the filter to its default value [**Normal**].



List Of Mix Modes



Normal

Normal - Is the default setting.

If you do not wish to use a Mix Mode or if you want to deactivate a selected Mix Mode, choose **Normal**.

Normal is also a Mix Mode and the default way of how Layers are mixed together. Since it is the default Mix Mode, you can only use the Opacity Slider to change the visual outcome. If you set Opacity of Layer 2 to 50%, you will create a result like a cross-fade between the two Layers.

If you change the position of one Layer with the position of the other Layer, the result will not look the same.

Darken

Darken - Compares both Layers and only uses the darkest color value for each color channel per pixel [this will be the lower color value].

The result will look the same if you change the position of one Layer with the position of the other Layer.

Multiply

Multiply - Multiplies the color values of each pixel of Layer 2 with the color values of each pixel of Layer 1.

[Values are converted to always ensure a maximum color value of 255].

The result will look the same if you change the position of one Layer with the position of the other Layer.

Color Burn

Color Burn - Is the inversion of Color Dodge.

Layer 1 will be darkened by Layer 2. The darker Layer 2, the darker the result.

If you change the position of one Layer with the position of the other Layer, the result will not look the same.

Linear Burn

Linear Burn - Is subtractive color mixing.

The color values of both Layers will be added up. But when the result is lower

than 255, the values will be set to 0 [black].

The result will look the same if you change the position of one Layer with the position of the other Layer.

Lighten (HTP)

Lighten (HTP) - Is the inversion of Darken.

It compares both Layers and only uses the brightest color value for each color channel per pixel [this will be the higher color value].

Is at the same time the Mix Mode HTP, applying the Highest Takes Precedence principle for DMX values.

The result will look the same if you change the position of one Layer with the position of the other Layer.

Screen

Screen - Is the inversion of Multiply.

Layer 2 and Layer 1 will be negatively multiplied and often brighten each other.

The result will look the same if you change the position of one Layer with the position of the other Layer.

Color Dodge

Color Dodge - The brighter Layer 2, the brighter will be Layer 1.

A completely black Layer 2 will not change Layer 1.

A completely white Layer 2 will brighten every color channel, except for black color values.

If you change the position of one Layer with the position of the other Layer, the result will not look the same.

Linear Dodge

Linear Dodge - Will simply add up the color values of both Layers.

The result will look the same if you change the position of one Layer with the position of the other Layer.

Overlay

Overlay - Is a combination of Multiply and Screen.

The result depends the intensity of Layer 1. If Layer 1 is darker than 50% Gray, the color values of both Layers will be multiplied. If Layer 1 is brighter than 50% Gray, the color values will be negatively multiplied and the amount will be doubled. A Layer 2 with 50% Gray will have no affect on Layer 1.

If you change the position of one Layer with the position of the other Layer, the result will not look the same.

Soft Light

Soft Light - Layer 2 will modulate the color values of Layer 1 and create soft mixtures in areas of highlights and shadows.

[Overlay is quite similar, but creates sharp contrasts instead.]

If you change the position of one Layer with the position of the other Layer, the result will not look the same.

Hard Light

Hard Light - Creates the result of Overlay, when changing the position of Layer 2 with the position of Layer 1.

It compares the intensity of both Layers.

If Layer 2 is brighter than 50% Gray, Layer 1 will be brightened.

If Layer 2 is darker than 50% Gray, Layer 1 will be darkened.

If you change the position of one Layer with the position of the other Layer, the result will not look the same.

Vivid Light

Vivid Light - Will mainly increase the contrast of highlights and shadows.

The result is like a combination of Color Burn for shadows and Color Dodge for highlights.

If you change the position of one Layer with the position of the other Layer, the result will not look the same.

Linear Light

Linear Light - Increases the contrast.

It is similar to Linear Burn, but color values of Layer 2 have greater affect.

If you change the position of one Layer with the position of the other Layer, the result will not look the same.

Pin Light

Pin Light - Is like a combination of Darken and Lighten.

It compares the color values of both Layers and creates one of three results. Average color values will often remain unaffected.

The result can be twice the brightness of Layer 2 darkened by a full 255 if Layer 1 is darker than that.

The result can also only be Layer 1 if Layer 1 is brighter than the first result and darker than the third result.

Or the result can be twice the brightness of Layer 2 if Layer 1 is brighter than that.

If you change the position of one Layer with the position of the other Layer, the result will not look the same.

Hard Mix

Hard Mix - Only uses the six primary colors red, green, blue, yellow, cyan, magenta, or black, or white.

Color channels will be mixed and either be set to 0 or 255. [255 will be set for every color channel result from 1 to 254. 0 will be set, when the color channel result is 0.]

The result will look the same if you change the position of one Layer with the position of the other Layer.

Difference

Difference - Will calculate the difference between color values for each pixel.

[If the result is negative, it will be multiplied by -1 to always have positive color values.]

Differences in color values will be easily visible for each pixel. If both pixels are identical, the difference will be 0 and thus black could be the maximum result for a pixel.

The result will look the same if you change the position of one Layer with the position of the other Layer.

Exclusion

Exclusion - Bright color areas will invert the color values of the corresponding area of the other Layer.

White areas will completely invert the color.

Very dark areas [black] will change nothing on the other Layer.

Average gray values will heavily change the contrast, up to a complete gray.

The result will look the same if you change the position of one Layer with the position of the other Layer.

Subtract

Subtract -

If you change the position of one Layer with the position of the other Layer, the result will not look the same.

Divide

Divide -

If you change the position of one Layer with the position of the other Layer, the result will not look the same.

Mask

Mask - Uses the alpha channel of Layers.

It will merge the Layers together. The result will only be visible on areas where the two Layers overlap. The rest will be set to black.

The result will look the same if you change the position of one Layer with the position of the other Layer.

Negative Mask

Negative Mask -

If you change the position of one Layer with the position of the other Layer, the result will not look the same.

Link

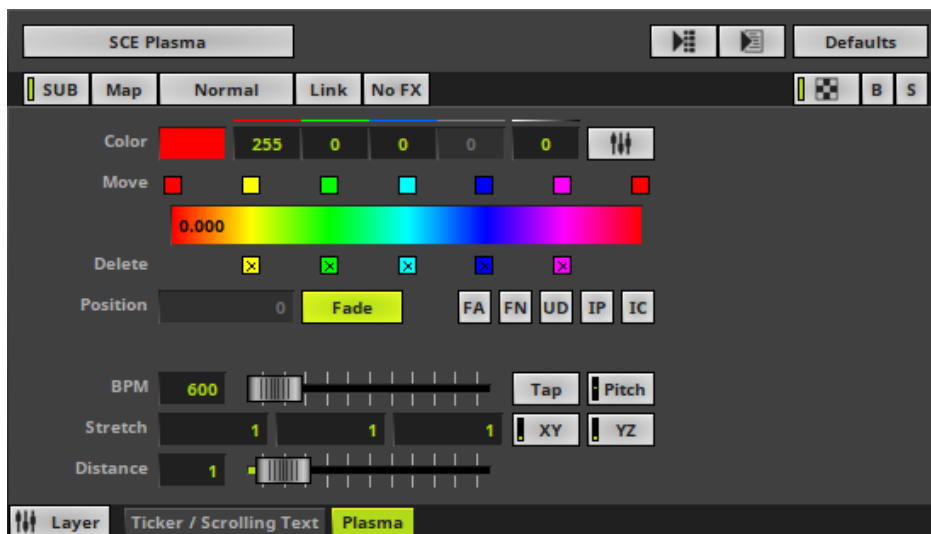
Overview



- **Link** - Combines 2 Layers with each other.
- If you activate Link mode, the currently selected Layer will be linked to the Layer underneath. It means that it will be linked to the **Layer left to it**.

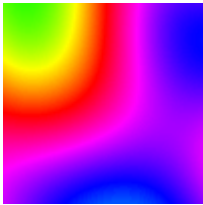
Example 1

1] Select a Storage Place and create 2 Layers . Choose SCE Ticker / Scrolling Text for Layer 1. Choose SCE Plasma for Layer 2.



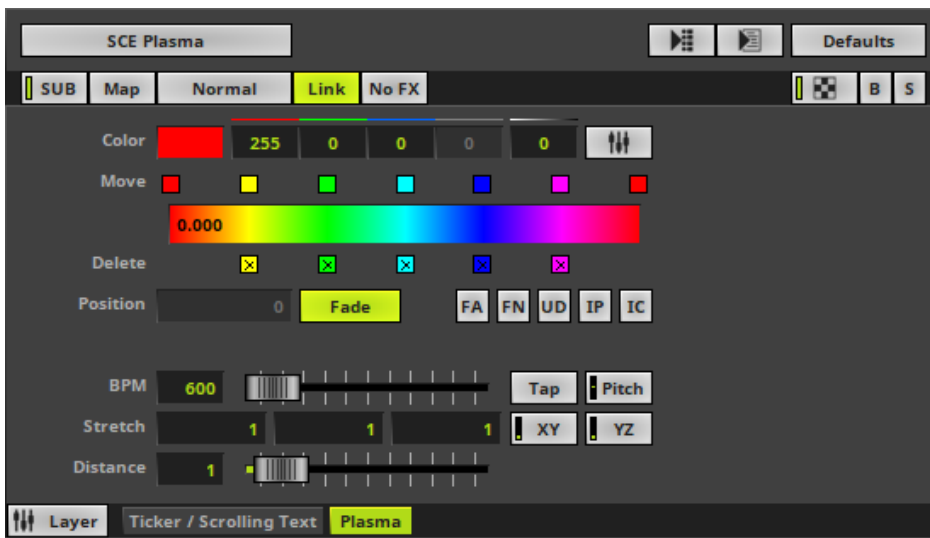
adsda

2] As a first result, you will see the following image in the Previews. Because of the standard settings, the Layer order, and the 2 Layers, only SCE Plasma is visible.



Without Link Mode

3] Activate Link Mode. The button glows green.



4] As a result, both Layers will be merged and the preview looks completely different. The text will be filled with the Plasma effect and in this way, both Layers are used to create a new effect.



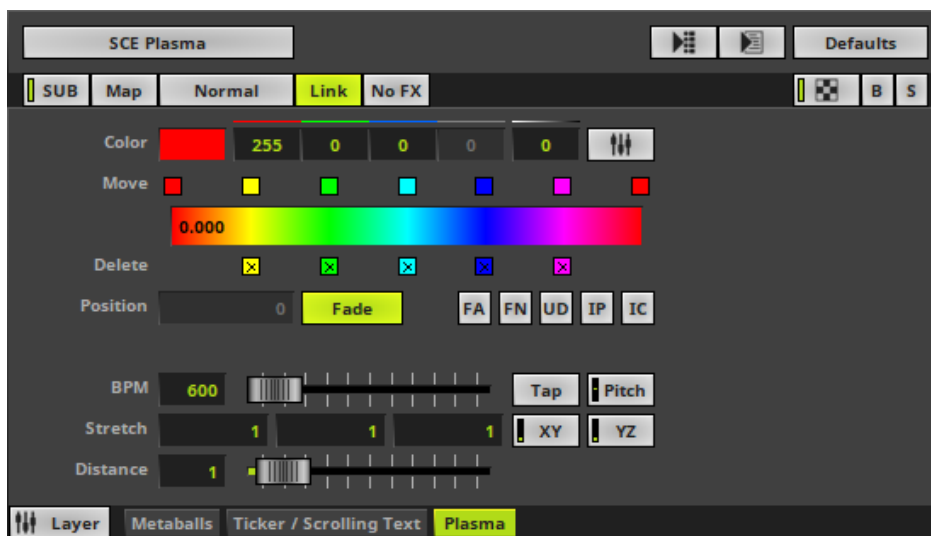
With Link Mode

Example 2

- You could describe Link Mode differently.
- As previously described, effects may be build out of several Layers. Each Layer can contain a different MADRIX Effect.

- All Layers of that effect will be used to render the visual outcome. When rendering the visuals, Mix Modes, Opacity, position of Layers, etc. will all be included in the render process.
- Because of this, Link Mode can also be very useful when using more than two Layers.
- Use Link Mode and MADRIX 5 will handle two linked Layers like one Layer in the render process.

1] Select a Storage Place and create 3 Layers. Choose SCE Metaballs for Layer 1. Choose SCE Ticker / Scrolling Text for Layer 2. Choose SCE Plasma for Layer 3 and activate Link Mode for Layer 3.



2] As a result, you can see that the Plasma effect of Layer 3 is only visible on the text of Layer 2. The Metaballs effect [Layer 1] has not been affected at all.



3] If we now add a fourth Layer [SCE Gradient at Layer position 2] and activate Link Mode for this Layer, we will see that the text looks still the same. But the Metaballs effect [Layer 1] now has the colors of the Color Gradient.



Filters [FX]

No FX

Filters - Special filters can be applied to Layers in order to quickly change your visuals. Learn more » [Filters \[FX\]](#)

Stepped Rendering

Step

Stepped Rendering - Is only available for specific MADRIX Effects. It only applies to any movement of the input, i.e. when a Direction other than Stop is activated. Instead of creating a smooth transition for the movement from one voxel to the next voxel [sub-pixel rendering], MADRIX 5 will move the input from voxel to voxel and from step to step without this transition. This might create a rougher overall movement, but it

can produce a visually better outcome on the LEDs in certain cases [such as slow movement of large text].

Opacity

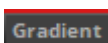


Layer Opacity - Makes the Layer transparent. This is mainly useful when using at least 2 Layers or more.

- If you are using only 1 Layer, the submaster controls the Layer brightness.
- The default value is 255 [100%].
- Perform a right-click to reset to 255 [100%].
- A value of 0 means no opacity and will render the effect completely black. A value of 0 is shown in red in order to make its severe affect on the visual outcome clear. The button itself and the Layer tab pulsate in red as well.

Blind And Solo

Blind Mode and Solo Mode are 2 modes to quickly hide or show Layers. You can quickly include or exclude them from the visual end result of your effect.



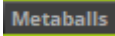
Blind - Hides the currently selected Layer.

- The Layer will not be visible anymore in the Previews and Output, but you will still be able to adjust its settings. In this way, you may have a look at your created effect excluding certain Layers.
- Blind Mode will stay activated even if you switch to other Layers or Storage Places.
- The Layer tab will pulsate in red if Blind Mode is active.

- Blind Mode also affects Link Mode. A Layer with an activated Link Mode will also be set to Blind Mode if Blind Mode is activated for the Layer it is linked to.



Solo - Hides every Layer except the currently selected Layer. Hence, this Layer is the only one that will be displayed.



- Solo Mode will stay activated even if you switch to other Layers or Storage Places.
- The Layer tab will pulsate in green if Solo Mode is active.
- Solo Mode overrides Blind Mode.

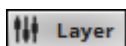
Layer View

Overview

You can switch between 2 views.

- By default, the regular Effect Area is shown.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)



- **Layer View** - Activates the second view available for Layers.
 - The user interfaces changes as shown below [4 Layers are currently active in this example].



- When switching between Storage Places, the last used view will be remembered by the software.

Solo And Blind

- **Solo** - Activates Solo Mode for the corresponding Layer.
- **Blind** - Activates Blind Mode for the corresponding Layer.

Faders

- Each fader regulates the Opacity of a single Layer.
 - You can set the fader to a specific position.
 - You can enter a value in the input field.
 - You can flash the fader.
 - A value of 0 is shown in red in order to make its severe affect on the visual outcome clear. The Layer tab itself pulsates in red as well.

Mouse Control And Keyboard Shortcuts

- **Single Selection**
 - A single fader regulates the Opacity of the corresponding Layer.
 - **Left Arrow / Right Arrow** - Quickly switch between faders by using the left or right arrow key.

▪ Multiselection

- Use **Ctrl + Left Mouse Click** to select multiple faders at the same time. A green outline will show that a Layer is selected. When multiple faders are selected, you can control them at the same time.
- Use **Shift + Left Mouse Click** to select multiple faders at the same time. A green outline will show that a Layer is selected. When multiple faders are selected, you can control them at the same time.
- **Ctrl+A** - Selects all faders of all Layers.
- **Ctrl+D** - Deselects the current fader selection.

▪ Flash

- Use the button showing the Layer's Name or the keyboard shortcut **Spacebar**
- It instantly sets the intensity to 255 as long as you hold the button/key down.
- To use this feature, the fader needs to be set to a lower value than 255 first.

▪ Restoring The Default Value

- **Left Mouse Double-Click** - Perform a double-click with your left mouse button directly on a single or multiple faders to restore the **Default Value**
- **Right Mouse Click** - Perform a click with your right mouse button directly on a single or multiple faders to restore the **Default Value**

4.8 Mapping / Tiling / Rotation

This topic includes:

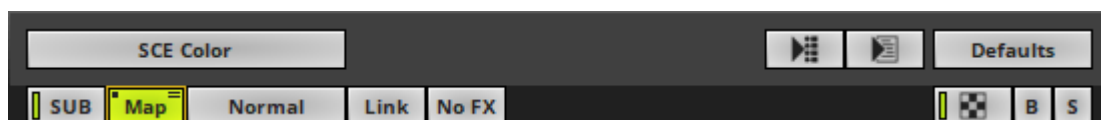
- [Introduction](#)
- [Important Information](#)
- [Overview](#)
- [Mapping](#)
- [Mapping Example](#)
- [Using Fixture Groups As Mapping Preset](#)
- [Rotation](#)
- [Rotation Example](#)
- [Tiling](#)
- [Tiling Example](#)
- [Using Fixture Groups As Tiling Preset](#)
- [Saving And Loading](#)
- [Drag And Drop \[Copy And Paste\]](#)
- [Context Menu](#)

Introduction

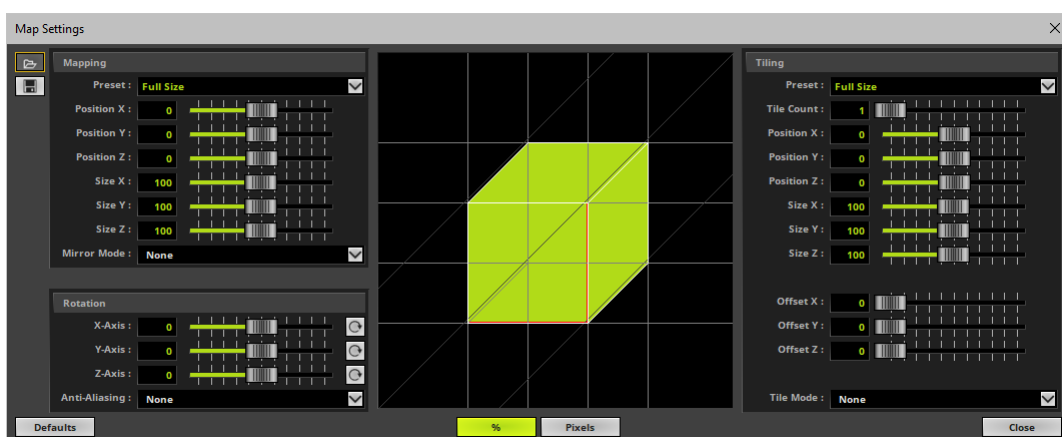
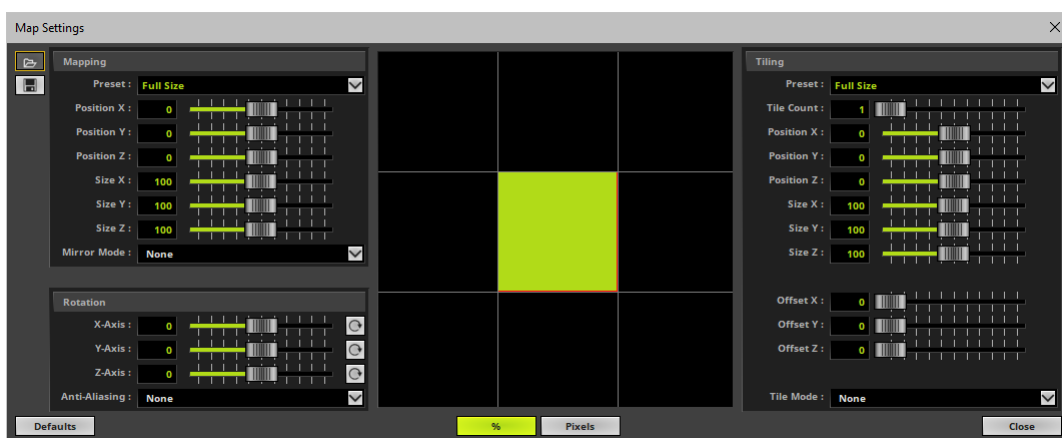
You can resize, reposition, and further modify every MADRIX Effect; independently of your configuration in the Matrix Generator or Patch Editor.

By default, every Layer [i.e. every MADRIX Effect] is shown on the complete virtual LED matrix [Matrix Size]. It is mapped to the complete LED installation. You can change that.

- Click **Map**



- A new window will open [in 2D or 3D view according to the Matrix Settings].



Important Information



Before you start making any changes, choose between relative values in percent [%] or absolute values in pixels [*Pixels*].

Overview

The Map Settings window has 4 sections:

- [Mapping](#)
- [Rotation](#)
- [Tiling](#)
- and a graphical overview showing you the consequences of your changes.
 - You will see a graphical 2D or 3D model of the virtual LED matrix.
 - Because you can change the size and position of a Layer, the graphical model will change accordingly.
 - Various guidelines referring to all edges of the graphical model will help you with the perspective [e.g., through parallel shift].
 - You can also use the mouse to position the graphical model.
 - The graphical model represents your virtual LED matrix, which is your LED installation.
- All 3 options can be used in combination [Mapping / Rotation / Tiling].
- All 3 options are powerful ways to customize visuals.
- All options refer to the virtual LED matrix [Matrix Size] you have configured in the Matrix Generator or Patch Editor.
- You can save Map Settings to an external file or load previously saved settings from an external file.
Learn more [Saving And Loading](#)
- Click **Defaults** to cancel any changes and restore the default settings.

- Click **Close** to close the window.

Mapping

Mapping allows you to change the size and position of a Layer.

In this way, you can assign different MADRIX Effects to different areas of your LED installation [and also different fixtures].

- **Preset** - Instead of adjusting the below values manually, you can decide to use these presets. MADRIX 5 will then automatically adjust the above settings accordingly. The default value is Full Size.
- **Position X** - Defines the horizontal position of the Layer.
- **Position Y** - Defines the vertical position of the Layer.
- **Position Z** - Defines the position of the Layer in the depth.
- **Size X** - Defines the horizontal size of the Layer.
- **Size Y** - Defines the vertical size of the Layer.
- **Size Z** - Defines the size of the Layer in the depth.
- **Mirror Mode** - Mirrors the Layer [flipping]. You can choose to not apply mirroring [**None**], to mirror horizontally [**Mirror H**], vertically [**Mirror V**], regarding the depth [**Mirror D**], or in any combination [e.g., **Mirror HVD**]. The default value is None.

Mapping Example

- Set up a virtual LED matrix of 100 x 100 x 1.
- Create 2 Layers.
- For Layer 1, choose **SCE Plasma** and the preset **Left** in the section **Mapping**
- For Layer 2, choose **SCE Wave / Radial** and the preset **Right** in the section **Mapping**
- The result could look like this:



Using Fixture Groups As Mapping Preset

Fixture groups, when configured in the Patch Editor, are available as presets for Mapping and Tiling.

Learn more » [Fixture Groups \[Group Control\]](#)

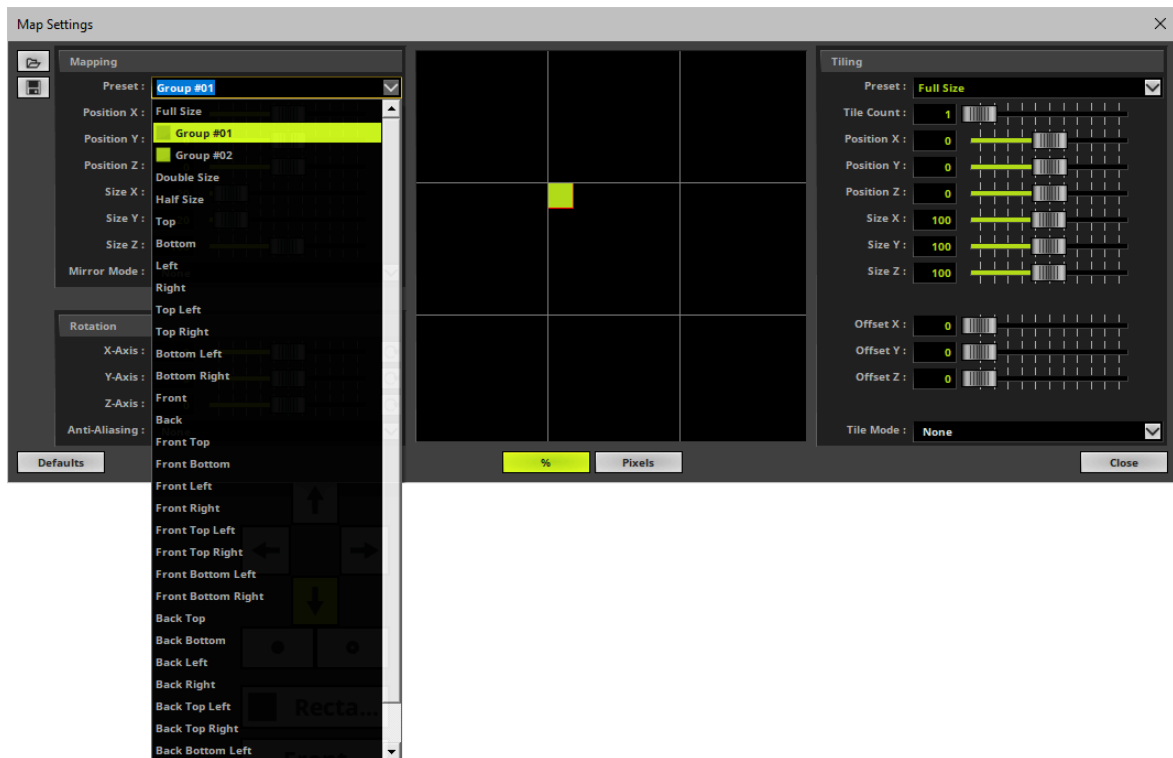
1] Go to **Mapping > Preset**

- When your Patch includes Fixture Groups, as configured in the Patch Editor, the list of presets will include an item for each fixture group you have created. You will see the fixture group's Display Name.
- You will find these items below **Full Size**

2] Select the fixture group from the list.

3] MADRIX 5 will automatically set the correct settings.

- The Mapping will be set according to the fixture group.
- The adjusted Map Settings will always be a rectangular selection. MADRIX 5 uses the bounding box of the fixture group with its largest dimensions in X, Y, and Z.



Rotation

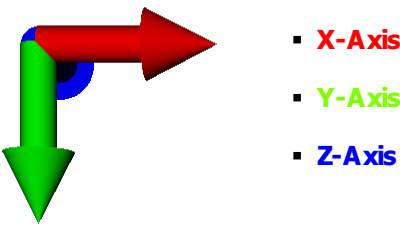
This section allows you to rotate a Layer.

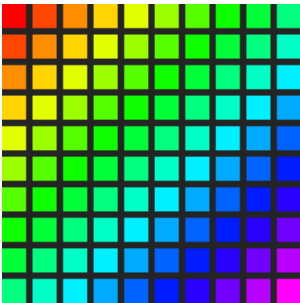
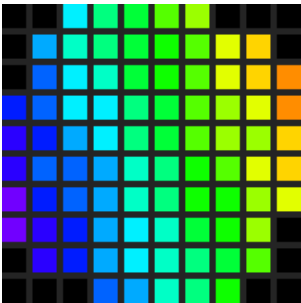
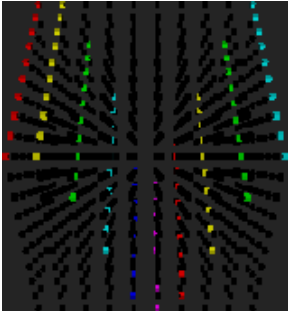
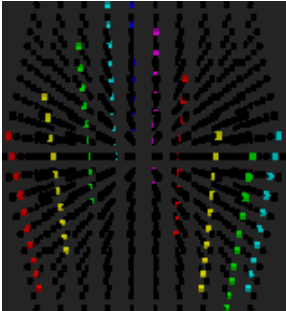
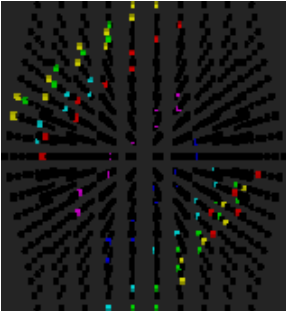
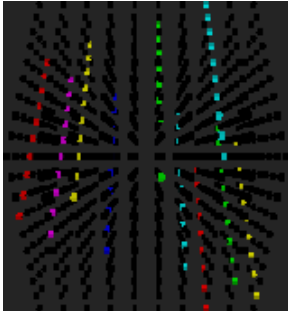
You can rotate layers once or continuously.

- **X-Axis** - Defines the clockwise or counter-clockwise rotation of the Layer in percent **around** the X-axis.
- **Y-Axis** - Defines the clockwise or counter-clockwise rotation of the Layer in percent **around** the Y-axis.
- **Z-Axis** - Defines the clockwise or counter-clockwise rotation of the Layer in percent **around** the Z-axis.
- **Anti-Aliasing** - Rotating a MADRIX Effect can produce hard edges for certain visuals. Anti-aliasing improves the image quality by reducing the hard edges.
 - Choose **None**, **2x**, or **4x**
 - [The higher the setting, the more performance will be required.]
 - The default value is None.



- Animates the Layer and rotates it around the corresponding axis permanently.

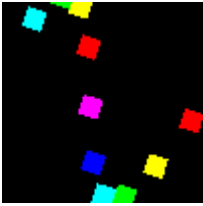


No Rotation	X-Axis Rotation [Around the X-axis]	Y-Axis Rotation [Around the Y-axis]	Z-Axis Rotation [Around the Z-axis]
	-	-	
			

Rotation Example

- Set up a virtual LED matrix of 100 x 100 x 1.
- Use only 1 Layer.
- For Layer 1, choose **SCE Graph** and set **Z-Axis** to **45** in the section **Rotation**

- The result could look like this:



Tiling

This section allows you to duplicate the Layer and its content.

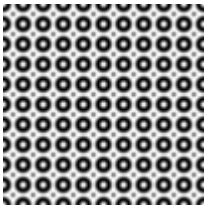
You can use it to create new repeating or mirrored patterns [Depending on the settings it might remind you of a kaleidoscope]. It also means that you can show the same content, and the same MADRIX Effects, on different parts of your LEDs or different LED fixtures.

- **Preset** - Instead of adjusting the below values manually, you can decide to use these presets. MADRIX 5 will then automatically adjust the below settings accordingly [except for Tile Count]. The default value is Full Size.
- **Tile Count** - Scales the Layer to a fraction of its size and therefore creates the number of tiles as set by this value. Is an automatic way to tile the Layer and influences the sizes below and always centers the positions. Tile mode **Repeat** is automatically activated. E.g., a Tile Count of 4 will reduce the size to 25% and create 4 Layers.
- **Position X** - Defines the horizontal position of the Layer.
- **Position Y** - Defines the vertical position of the Layer.
- **Position Z** - Defines the position of the Layer in the depth.
- **Size X** - Defines the horizontal size of the Layer.
- **Size Y** - Defines the vertical size of the Layer.
- **Size Z** - Defines the size of the Layer in the depth.
- **Offset X** - Defines the spacing between repeated or mirrored sections regarding the X-axis and only works when a Tile Mode other than None is selected.
- **Offset Y** - Defines the spacing between repeated or mirrored sections regarding the X-axis and only works when a Tile Mode other than None is selected.
- **Offset Z** - Defines the spacing between repeated or mirrored sections regarding the X-axis and only works when a Tile Mode other than None is selected.

- **Tile Mode** - You can choose to not apply tiling [**None**], to tile repeatedly [**Repeat**], horizontally [**Mirror H**], vertically [**Mirror V**], regarding the depth [**Mirror D**], or in any combination [e.g., **Mirror HVD**]. The default value is None.

Tiling Example

- Set up a virtual LED matrix of 100 x 100 x 1.
- Use only 1 Layer.
- For Layer 1, choose **SCE Wave / Radial** and set **Tile Count** to **11** in the section **Tiling**
- The result could look like this:



Using Fixture Groups As Tiling Preset

Fixture groups, when configured in the Patch Editor, are available as presets for Mapping and Tiling.

Learn more » [Fixture Groups \[Group Control\]](#)

1] Go to **Tiling > Preset**

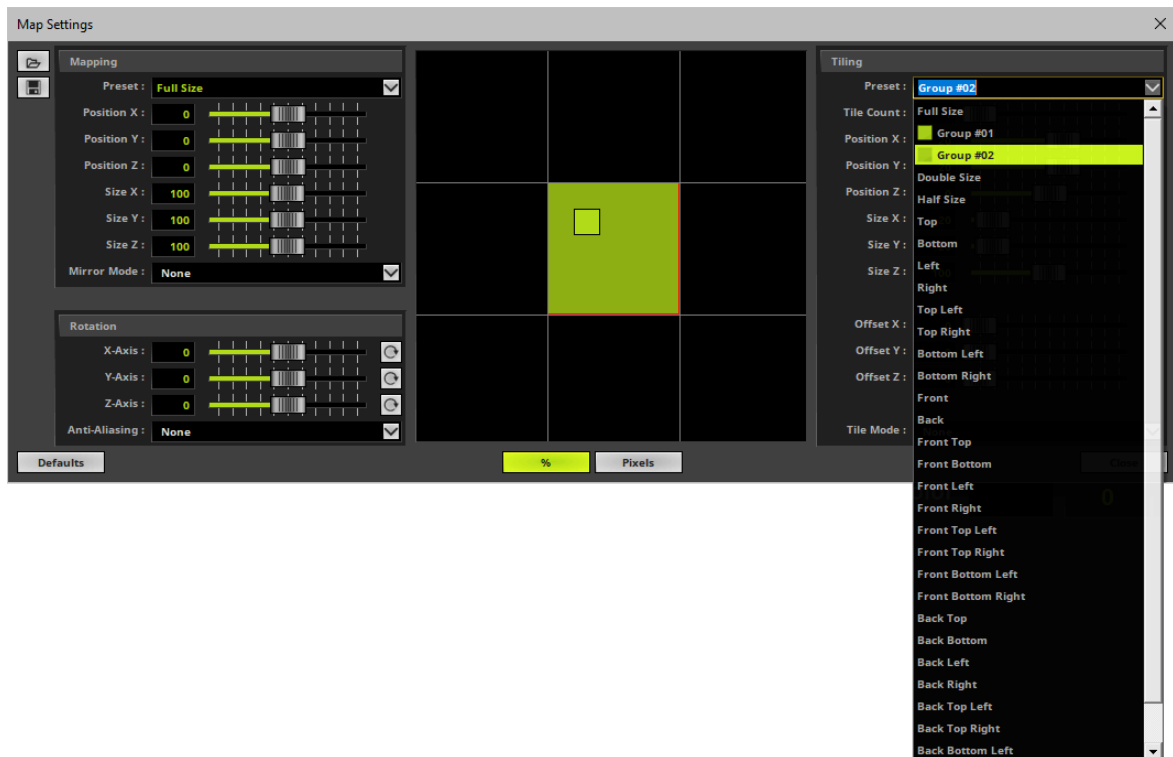
- When your Patch includes Fixture Groups, as configured in the Patch Editor, the list of presets will include an item for each fixture group you have created. You will see the fixture group's Display Name.
- You will find these items below **Full Size**

2] Select the fixture group from the list.



3] MADRIX 5 will automatically set the correct settings.

- The Tiling will be set according to the fixture group.

- The adjusted Map Settings will always be a rectangular selection. MADRIX 5 uses the bounding box of the fixture group with its largest dimensions in X, Y, and Z.



Saving And Loading

-  - Loads Maps Settings from a previously saved, external file [of the file type *.mmapx]. A new window opens for you to select the file on your harddisk.
-  - Saves the current Map Settings, including all mapping, tiling, and rotation settings, in an external file [of the file type *.mmapx]. Simply enter a **File name** when the new window opens, choose a location, and click **Save**

Drag And Drop [Copy And Paste]

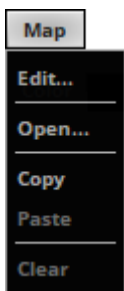
- **Left Mouse Click And Hold** - You can perform a Copy and Paste with the mouse.

Click with the left mouse button on the **Map** button and hold for 3 seconds. A small **+** appears. Now, continue to hold and drag the mouse to another **Map** button of another Layer and release the mouse to instantly copy the settings to the other Layer.

Use the keyboard button **Ctrl** in addition to remove the wait time to immediately perform the drag and drop.

Context Menu

- **Right Mouse Click** - You can call up the context menu by performing a right mouse click on **Map**
- A small window will be shown.



You can quickly perform the following actions:

- **Edit...** - Opens the Map Settings window [in the same way you can open the window by clicking on **Map** with the left mouse button].
- **Open...** - Loads Maps Settings from a previously saved, external file [of the file type *.mmapx].
A new window opens for you to select the file on your harddisk.
- **Copy** - Copies all your mapping, tiling, and rotation settings for this Layer into the clipboard.
- **Paste** - Applies all settings that are stored in the clipboard to this Layer. [In this way, you can quickly copy and paste Map Settings from one Layer to other Layers.]

- **Clear** - Clears all changes and restores the default settings [in the same way you can restore the default settings by clicking **Defaults** in the Map Settings window].

4.9 Chasers

This topic includes:

- [Introduction](#)
- [Overview](#)
- [Example](#)
- [Creating A Chaser](#)
- [Fade Time And Animations](#)
- [Starting And Pausing A Chaser](#)
- [Context Menu](#)
- [Drag And Drop \[Copy And Paste\]](#)
- [More Information](#)

Introduction

A Chaser is a powerful and creative tool within MADRIX 5. It offers a lot of possibilities to further customize visuals or your workflow in MADRIX 5.




You can set up a Chaser to remember specific settings. MADRIX 5 can then automatically chase them or you can manually load and control them as needed.

A Chaser:

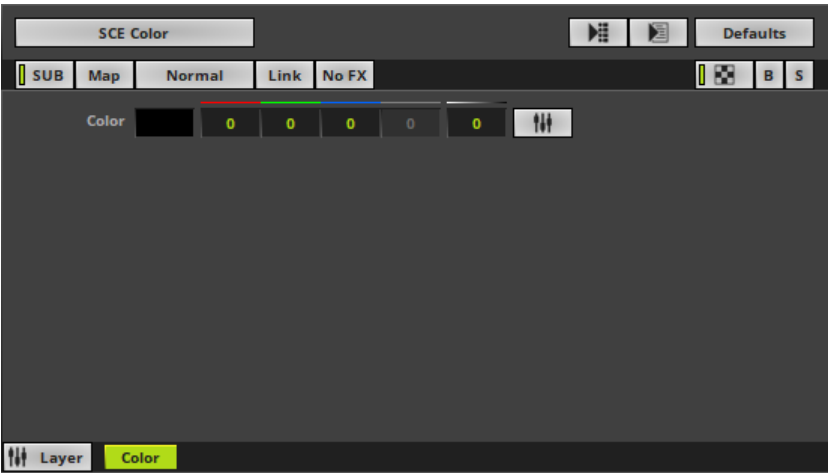
- Can be used as a playlist to change and customize visuals.
- Is a list of Steps played back as a sequence.
- Can be time-controlled or controlled manually.
- Each Step remembers the settings as you configured them.
- Can even be used to create animations.

Overview

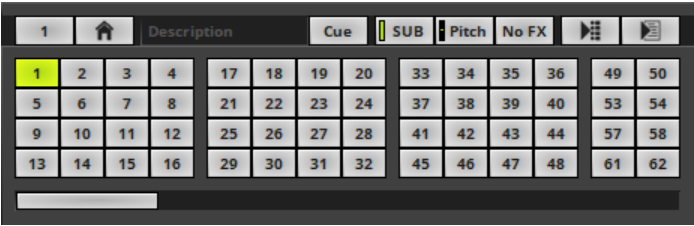
MADRIX 5 offers 3 different Chasers:

Effect Parameter Chaser	Storage Place Parameter Chaser	Group Value Chaser
<ul style="list-style-type: none"> Can be configured for Layers only. Learn more »Layers Can be configured for every single Layer. Visuals can be customized by chasing MADRIX Effect settings and Layer settings. Can be seen as an easy way to customize effects instead of using a Macro. Learn more »Macros And Scripts Is different to a Cue List. Each Cue in a Cue List references a single Storage Place. An Effect Parameter Chaser can be used independently from a Cue List and can be set up for each single Layer. 	<ul style="list-style-type: none"> Can be configured for Storage Places, including their Layers. Learn more »Storage Places [256 x 256] Can be configured for every single Storage Place and can include every single Layer of that Storage Place. Visuals can be customized by chasing Storage Place settings and Layer settings. Can be seen as an easy way to customize effects and workflows instead of using a Macro. Learn more »Macros And Scripts Is different to a Cue List. Each Cue in a Cue List references a single Storage Place. A Storage Place Parameter Chaser can be used independently from a Cue List and can be set up for each single Storage Place. 	<ul style="list-style-type: none"> Can be configured in the Group Control to further control fixture groups. Learn more »Fixture Groups [Group Control] Can only be used to chase fixture group values. 

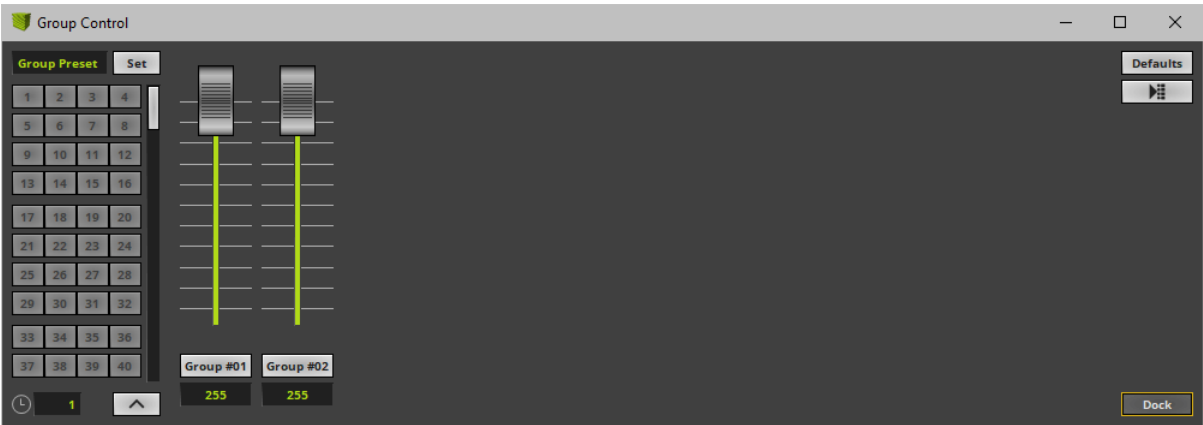
Effect Parameter Chaser



Storage Place Parameter Chaser



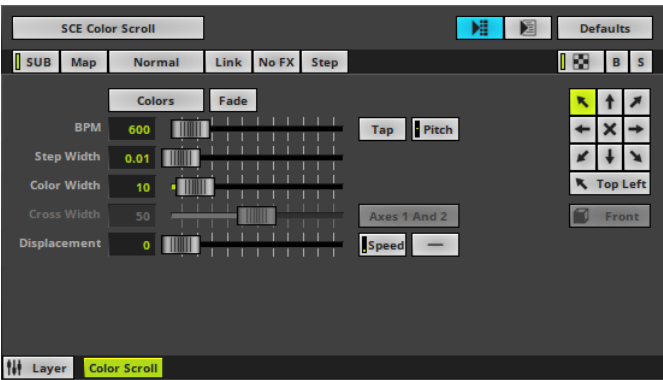
Group Value Chaser



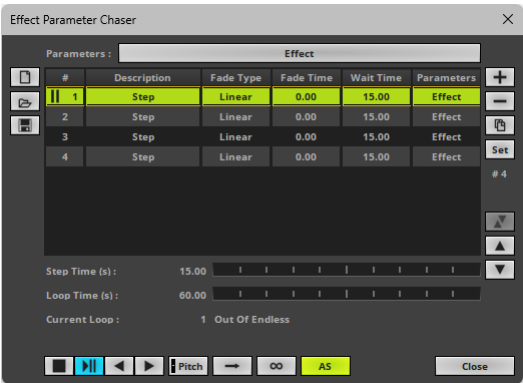
Example

An Effect Parameter Chaser, for example, offers many ways to customize visuals. In this first example, we will use the Effect Parameter Chaser to set 4 different movement directions for SCE Color Scroll within 60 seconds.

Step 1]

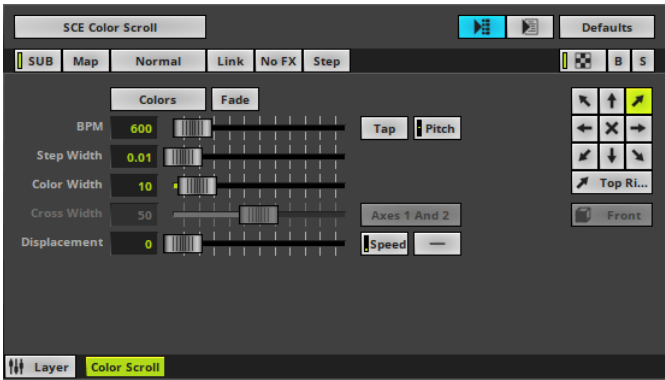


For the first 15 seconds, MADRIX 5 should show SCE Color Scroll with the **Direction Top Left**

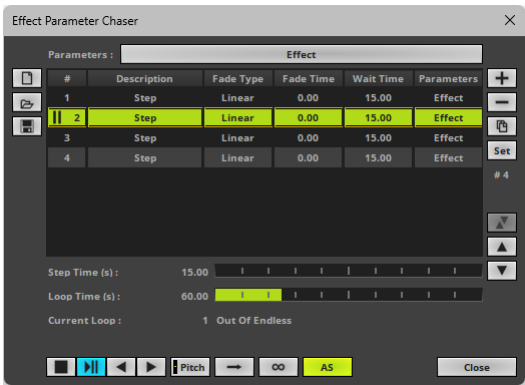


Preview

Step 2]

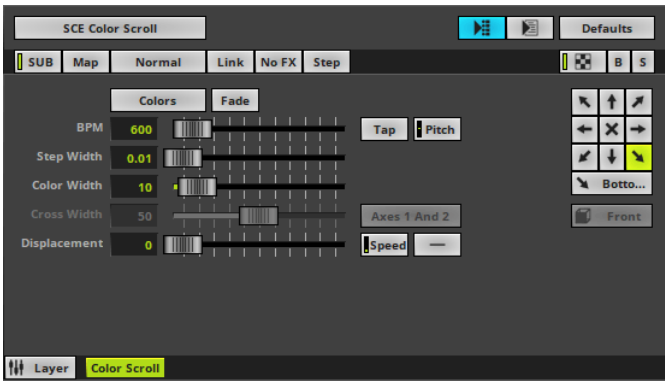


For the next 15 seconds, MADRIX 5 should show SCE Color Scroll with the **Direction Top Right**

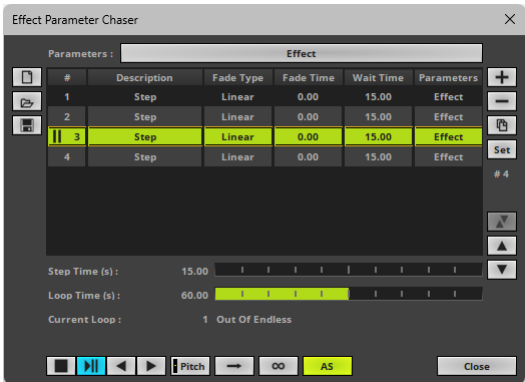


Preview

Step 3]

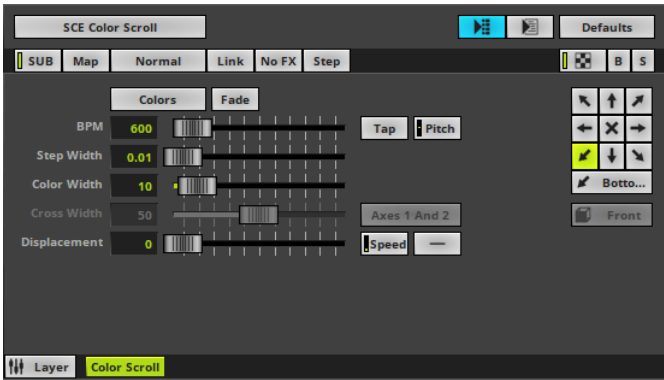


For the next 15 seconds, MADRIX 5 should show SCE Color Scroll with the **Direction Bottom Right**

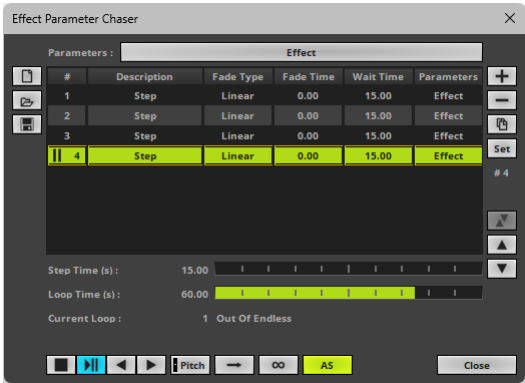


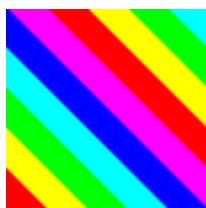
Preview

Step 4]




For the last 15 seconds, MADRIX 5 should show SCE Color Scroll with the **Direction Bottom Left**



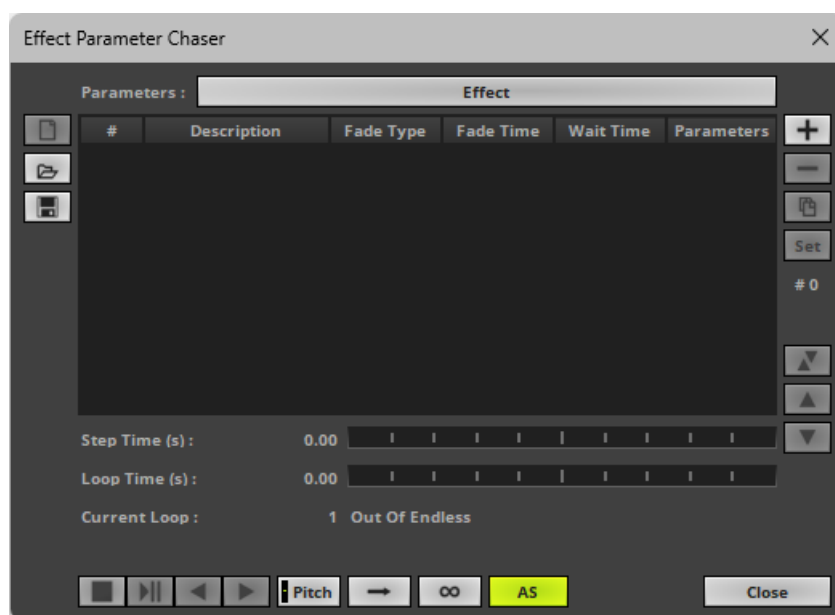
**Preview**

Creating A Chaser

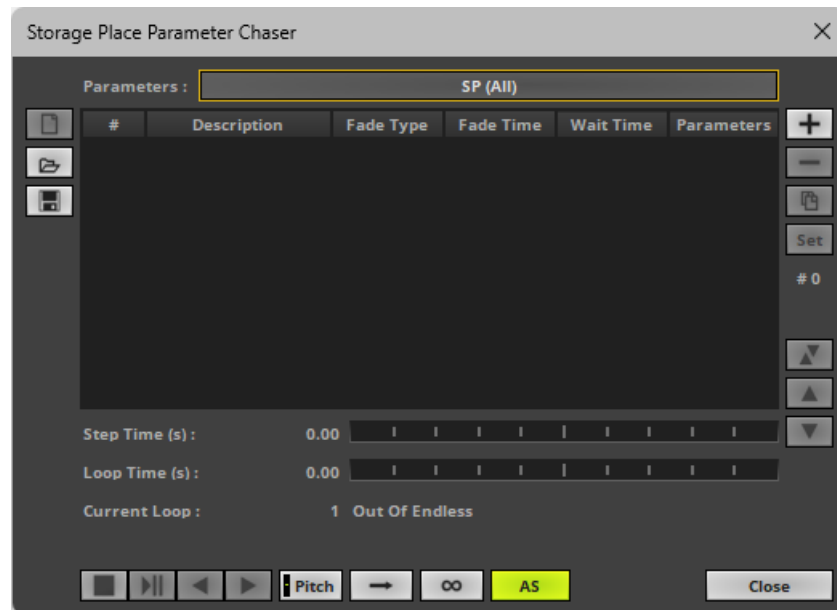
Overview

- **Right Mouse Click** on  > **Edit...**
- A new window will open.

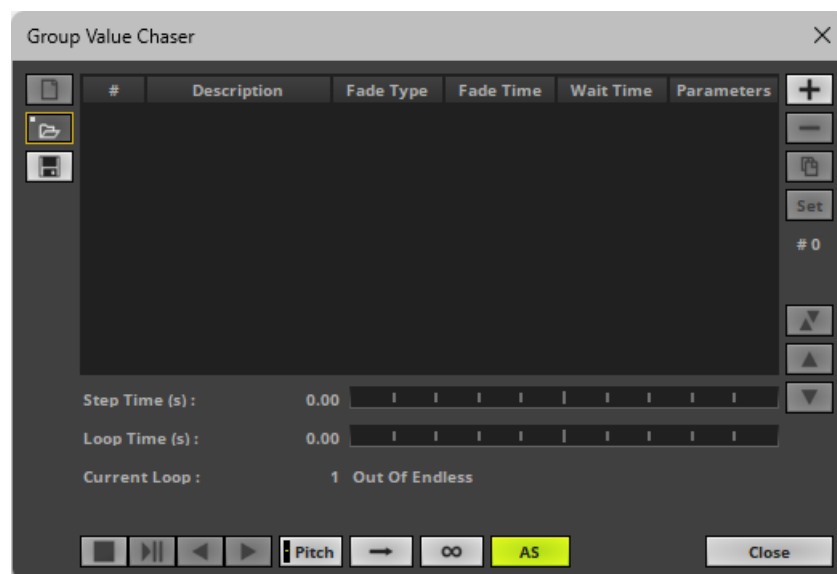
Effect Parameter Chaser



Storage Place Parameter Chaser



Group Value Chaser



Step-By-Step Configuration

- 1] Select which kind of Parameters to include for a Step.
- 2] Add Steps.
- 3] Control the Chaser playback.

1] Selection Of Parameters

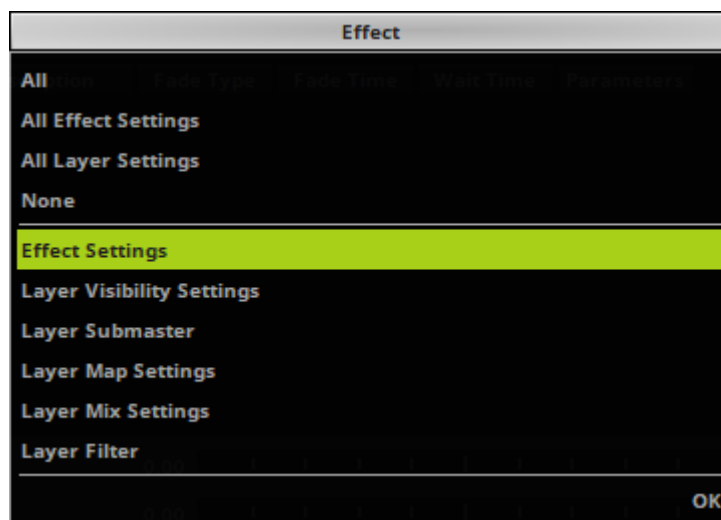
You can use each Step to change a variety of settings.

- You can freely choose which kind of Parameters should be included in a Step.
- Each Step can include different kind of Parameters.
- That also means that you can exclude certain kind of Parameters for each Step.
- Only the kind of Parameters that has been selected and is therefore included in a Step will be chased.
- Parameters that are not included in a Step will not be chased and can still be used in the normal way.
- Any combination of the settings described below is possible.

▪ **Parameters**

- **Left Mouse Click** - Opens the Parameters submenu for selection.

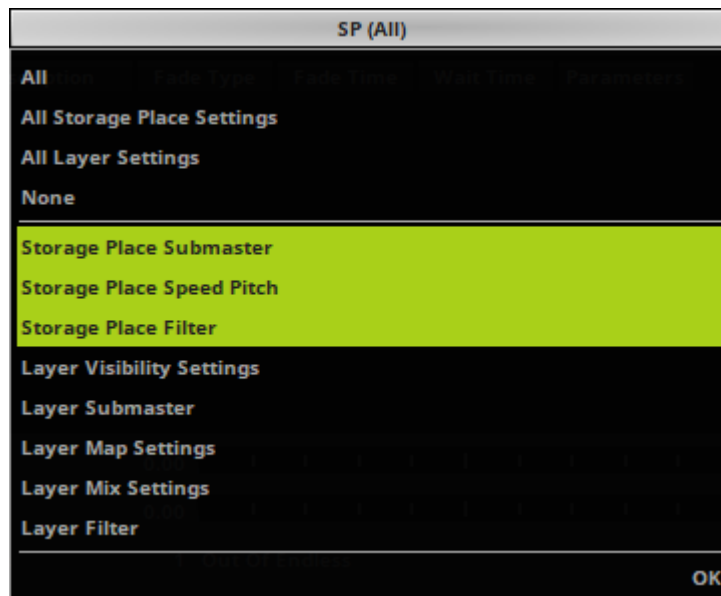
Effect Parameter Chaser



- **All** - Includes all available Parameters in a Step [Effect Settings, Layer Visibility Settings, Layer Submaster, Layer Map Settings, Layer Mix Settings, Layer Filter].
- **All Effect Settings** - Includes all available Effect Parameters in a Step [Effect Settings].
- **All Layer Settings** - Includes all available Layer Parameters in a Step [Layer Visibility Settings, Layer Submaster, Layer Map Settings, Layer Mix Settings, Layer Filter].

- **None** - Includes no Parameters [can be used to add empty Steps/pauses, for example].
- **Effect Settings** - When selected, includes all the individual settings of a MADRIX Effect that are exclusive to this effect.
 - This can be any effect setting, such as colors, directions, modes, etc.
 - You can change single effect settings or multiple effect settings at the same time.
 - For example: Stretch, Contrast, and Detail for SCE Clouds. Learn more »[SCE Clouds](#)
- **Note: Steps that include Effect Settings as Parameters will only fully work for the same kind of MADRIX Effect! The Effect Settings of such a Step will be ignored by other MADRIX Effects.**
- **Layer Visibility Settings** - When selected, includes the visibility settings of this Layer, including **Opacity**, **Blind**, and **Solo**.
 - Learn more »[Layers](#)
- **Layer Submaster** - When selected, includes **submaster** of this Layer.
 - Learn more »[Layers](#)
- **Layer Map Settings** - When selected, includes the **Map Settings** of this Layer.
 - Learn more »[Mapping / Tiling / Rotation](#)
- **Layer Mix Settings** - When selected, includes the **Mix Mode** and **Link Mode** settings of this Layer.
 - Learn more »[Layers](#)
- **Layer Filter** - When selected, includes the **Filter [FX]** settings of this Layer.
 - Learn more »[Layers](#)
- **OK** - Confirms your selection of Parameters and closes the Parameters submenu.

Storage Place Parameter Chaser



- **All** - Includes all available Parameters in a Step [Storage Place Submaster, Storage Place Speed Pitch, Storage Place Filter, Layer Visibility Settings, Layer Submaster, Layer Map Settings, Layer Mix Settings, Layer Filter].
- **All Storage Place Settings** - Includes all available Storage Place Parameters in a Step [Storage Place Submaster, Storage Place Speed Pitch, Storage Place Filter].
- **All Layer Settings** - Includes all available Layer Parameters in a Step [Layer Visibility Settings, Layer Submaster, Layer Map Settings, Layer Mix Settings, Layer Filter].
- **None** - Includes no Parameters [can be used to add empty Steps/pauses, for example].
- **Storage Place Submaster** - When selected, includes the **submaster** of the Storage Place.
 - Learn more » [Storages](#)
- **Storage Place Speed Pitch** - When selected, includes the **speed pitch** of the Storage Place.
 - Learn more » [Storages](#)
- **Storage Place Filter** - When selected, includes the **Filter [FX]** of the Storage Place.
 - Learn more » [Storages](#)
- **Layer Visibility Settings** - When selected, includes the visibility settings of all Layers, including **Opacity**, **Blind**, and **Solo**.
 - These are the same Layer settings, which the Effect Parameter Chaser can control for a single Layer.
- **Layer Submaster** - When selected, includes **submasters** of all Layers.
 - These are the same Layer settings, which the Effect Parameter Chaser can control for a single Layer.

- **Layer Map Settings** - When selected, includes the **Map Settings** of all Layers.
 - These are the same Layer settings, which the Effect Parameter Chaser can control for a single Layer.
- **Layer Mix Settings** - When selected, includes the **Mix Mode** and **Link Mode** settings of all Layers.
 - These are the same Layer settings, which the Effect Parameter Chaser can control for a single Layer.
- **Layer Filter** - When selected, includes the **Filter [FX]** settings of all Layers.
 - These are the same Layer settings, which the Effect Parameter Chaser can control for a single Layer.
- **OK** - Confirms your selection of Parameters and closes the Parameters submenu.

Group Value Chaser

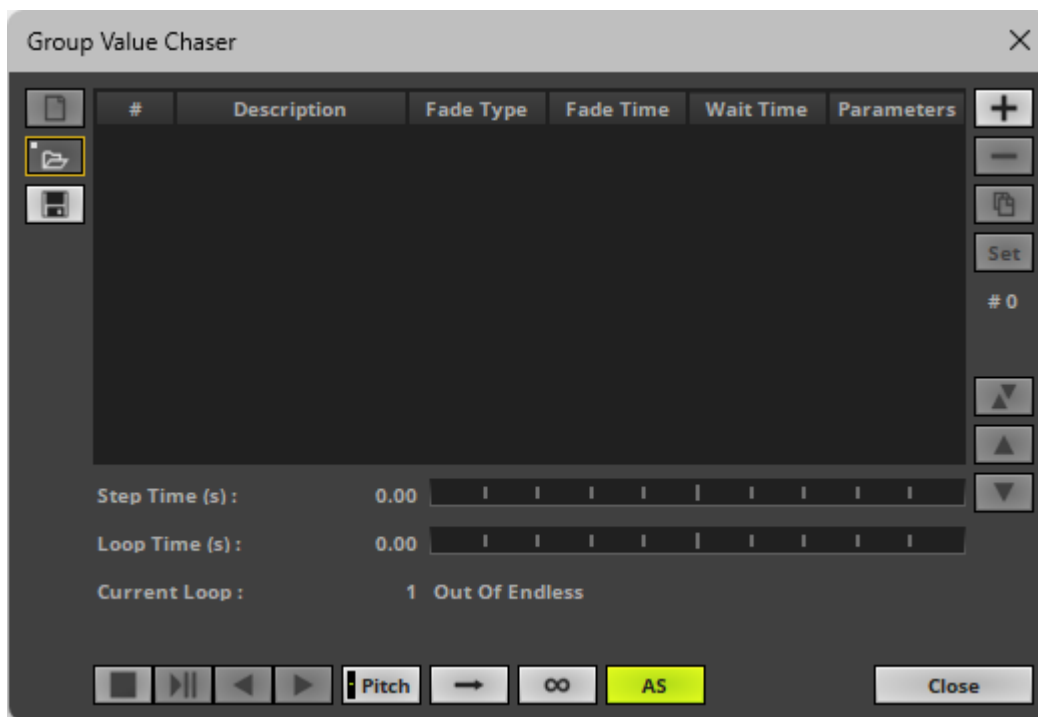
- It is not necessary to select any Parameters, since only one set of Parameters can be chased [fixture group values].

2] Adding New Steps Or Editing Steps

Overview

A Chaser is represented by a list of Steps in the Chaser window.

- Add and configure or edit Steps as needed.
- A Chaser normally runs through the list in a sequence. The order is defined by the Playback Mode.
[The direction may also be reversed when using negative values for the Speed Pitch or the Speed Masters. Learn more below.]
- When a loop is set up, the Chaser repeats.



Adding Or Editing Steps

Use the following controls on the right side of the Chaser window:



Add Step - Adds a new Step to the list.

- The newly added Step includes all currently set Parameters [according to your **Parameters** selection. Learn more [Selection Of Parameters](#)].
- A newly added Step will be created with the default values for Fade Time, Fade Type, Wait Time, and Description.
- First, make sure that the visuals look as intended, that all settings are defined as required, and then add the Step.
- Please stop the Chaser if it is currently running.



Remove Steps - Removes all currently selected Steps from the list.



Duplicate Steps - Copies the currently selected Steps and adds them as new Steps to the list.



Set - Updates the Step by overwriting the saved settings in the Step with the current settings.

- **Note:** Before updating a Step, make sure that your current settings are correctly set. This includes all settings on the user interface as well as the selection of **Parameters** of the Chaser window. It is therefore highly recommended to 1) first load the Step [if a Fade Time is set up, wait until the Step has fully loaded and stopped], 2) second to change all required settings, and 3) update the Step via **Set**. Learn more [Activating A Step / Loading A Step](#)

Synchronize Parameter Selection - Is only visible when necessary and if a Step is selected. Shows that your current selection of **Parameters** [learn more [Selection Of Parameters](#)] is different to the Parameters of the selected Step [learn more [Parameters](#)]. In order to set the selection of Parameters to the Parameters of the Step, click the equal sign.



3

▪ Shows the total number of Steps in the Step list. An empty list shows # 0



Swap Position - Swaps the position of Steps in the Step list when several Steps are selected first.



Position Up - Changes the order, and positions currently selected Steps one item higher up in the list.



Position Down - Changes the order, and positions currently selected Steps one items lower down in the list.

Configuring Steps In the Step List

Use the following columns of the Step list:

- #
 - Shows the continuous index number of this Step in the list.
 - This index number cannot be edited in the list.
 - But you can change the order of Steps by changing the position of Steps via **Swap Position**, **Position Up**, and **Position Down**

- Description**
- Allows you to provide a label for the specific Step. Perform a left mouse double-click and enter any name or text.
 - The default value is Step.
- Fade Type**
- Defines how the Step is faded in, when a Fade Time has been set.
 - You can choose from a variety of types [**Linear**, **Ease In Bounce**, **Ease Out Bounce**, **Ease In Out Bounce**, **Ease In Circular**, **Ease Out Circular**, **Ease In Out Circular**, **Ease In Cubic**, **Ease Out Cubic**, **Ease In Out Cubic**, **Ease In Sinusoidal**, **Ease Out Sinusoidal**, **Ease In Out Sinusoidal**, **Ease In Exponential**, **Ease Out Exponential**, **Ease In Out Exponential**].
 - The default value is Linear.
- Fade Time**
- Defines how long the Step is faded in [in s]. Change it to any time. This creates an automatic transition from one Step to another Step.
 - When possible a smooth transition is automatically created by gradually increasing or decreasing values for Parameters.
 - Certain Parameters **can** be used for a smooth transition.
 - Certain Parameters **cannot** be used for a smooth transition and will be selected or switched on or off at the beginning of the Fade Time.
 - The transition is affected by Fade Type and Fade Time.
 - Valid values range from 0.0 to 99999.99.
 - The default value is 0.0 [which means that there is no transition/fade-in by default].
 - Learn more [Fade Time And Animations](#)
- Wait Time**
- Defines how long the Step is shown before skipping to the next Step in the list [in s].
 - Is separate from the Fade Time, which means it does not include the Fade Time.
 - Valid values range from 0.0 to 99999.99.
 - The default value is 1.0.
- Parameters**
- Shows which Parameters were included for this specific Step.
 - This column cannot be edited in the list.
 - But you can specify the values by selecting the **Parameters** before adding a new Step via **+** or before changing an existing Step via **Set**

Monitoring The Duration

See the following controls at the bottom of the Chaser window:

- Step Time (s)** ▪ Shows the duration of the currently selected or currently running Step in seconds as well as graphically as a progress bar.
- Loop Time (s)** ▪ Shows the duration of the overall loop including all Steps in seconds as well as graphically as a progress bar.
- Current Loop** ▪ Shows in which loop the Chaser currently is. Only when an overall loop has been completed, the count will be increased.

Managing Chasers

Use the following controls on the left side of the Chaser window:



New - Immediately removes all items from the list.



Open - Loads a previously saved Chaser from an external file [of the file type *.mepcz or *.mepcx for Effect Parameter Chasers; of the file type *.msppcz or *.msppcx for Storage Place Parameter Chasers; of the file type *.mgvcz or *.mgvcx for Group Value Chasers].
- A new window opens for you to select the file on your harddisk.



Save - Saves the Chaser to an external file.

3] Controlling The Chaser Playback

Control the Chaser playback using the following controls at the bottom of the Chaser window:



Stop - Stops the Chaser.



Stopped - Shows that the Chaser has been stopped.



Play/Pause - Starts the Chaser or pauses the playback and remembers the current position.

- Playback will start from the beginning if the Chaser has not been started before or if the playback has been stopped via **Stop**

- Playback will continue from the current position if the Chaser has been paused.



Playing - Shows that the Chaser is currently running.

Paused - Shows that the Chaser has been paused.



Previous Step - Returns to the previous Step and plays back that Step.

- If the Chaser has not been running, playback will stop after the Fade Time of this Step has passed.

- If the Chaser is running, playback will continue with the following Step automatically.



Next Step - Skips to the following Step and plays back that Step.

- If the Chaser has not been running, playback will stop after the Fade Time of this Step has passed.

- If the Chaser is running, playback will continue with the following Step automatically.



Pitch - Defines the overall speed of the Chaser and the Step List. It works as a multiplier/a factor.

- Example: A pitch of 2.0 will double the current speed.
- Move the fader upwards to increase the speed.
- Move the fader downwards to decrease the speed.
- The default value is 1.0 [which is normal speed].
- A value of 0.0 will stop the Chaser.
- The highest value is +10.
- The lowest value is -10.

- Negative values will reverse the playback direction. When setting a negative pitch during playback, the current Step will be fully played and only after its Step Time is over, the following Step will be chased.
- [The playback direction depends on the Playback Mode.]
- Right-click on the Pitch button to reset to the value of 1.0
- The tooltip shows the currently set value.



Playback Mode - Defines in which order Steps are played back. This only affects the order in the Step List, not the playback direction of a Step itself.

- **Forward** - Steps will be played back in the order of the Step List.
- **Backward** - Steps will be played back as configured in the Step List but backwards.
- **Ping Pong** - Steps will be played from top to bottom in the Step List and then from bottom to top again. The first and last Step will be played only once every time.
- **Random** - Steps will be chosen randomly and only once during a single loop. The random order remains when pausing playback. Only when stopping the Chaser, the order will be randomly created again.

∞										
∞	1x	11x	21x	31x	41x	51x	61x	71x	81x	91x
	2x	12x	22x	32x	42x	52x	62x	72x	82x	92x
	3x	13x	23x	33x	43x	53x	63x	73x	83x	93x
	4x	14x	24x	34x	44x	54x	64x	74x	84x	94x
	5x	15x	25x	35x	45x	55x	65x	75x	85x	95x
	6x	16x	26x	36x	46x	56x	66x	76x	86x	96x
	7x	17x	27x	37x	47x	57x	67x	77x	87x	97x
	8x	18x	28x	38x	48x	58x	68x	78x	88x	98x
	9x	19x	29x	39x	49x	59x	69x	79x	89x	99x
	10x	20x	30x	40x	50x	60x	70x	80x	90x	100x

- Loop Count** - Defines how often the Chaser is being played.
- **Endless** - The Chaser will always run until you manually stop or pause it.
 - **1x** - The Chaser will run once and automatically stop at the end of the last Step.
 - **2x to 100x** - The Chaser will run multiple times as indicated by the loop number.



Autostart - Starts the Chaser automatically again when switching back to the Storage Place or Group Preset.

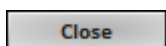
Activating A Step / Loading A Step

- **Left Mouse Double-Click** - Perform a double-click with your left mouse button directly on the **index number** of a Step [as shown in the column # of the Step list].
 - **Activating a Step** is possible at any time when the Chaser is running. Playback will automatically continue with the following Step.
 - **Loading a Step** and therefore loading its settings is recommended before updating the Step via **Set**. Stop or pause the Chaser first. Playback will stop at the end of the Step if the Chaser has been stopped or paused. Learn more [Set](#)

Resizing The Window

- You can resize the window according to your needs by dragging the window borders outwards or inwards.

Closing The Window



Close - Closes the window.

Fade Time And Animations

Overview

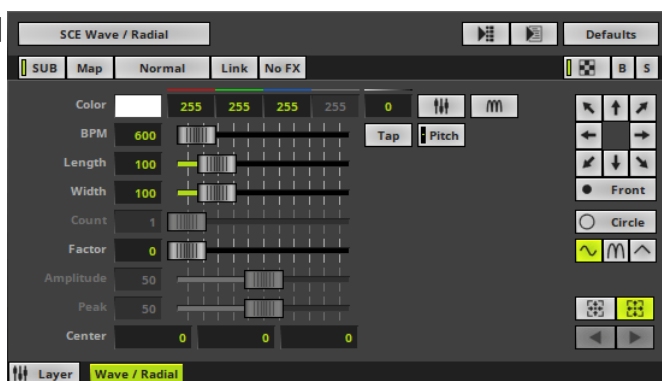
- When configuring Steps in the Step list, you can choose to set up a specific Fade Time and Fade Type.
 - When setting up a Fade Time that is higher than 0.0, MADRIX 5 will automatically create a transition from one Step to another Step [fade-in].
 - A transition/fade-in is specified by the Fade Time and the Fade Type.
 - When leaving the default value of 0.0 [or when manually setting up a Fade Time of 0.0], the Step will not be faded in.

- When possible a smooth transition is automatically created by gradually increasing or decreasing values for Parameters. In this way, you can create animations.
- Certain Parameters **can** be used for smooth transitions:
 - Horizontal sliders that allow you to set a specific range of possible values. Example: **SCE Ticker / Scrolling Text > BPM** or **Layer Opacity**
 - Input fields that allow you to enter a specific range of possible values. Example: **SCE Wave / Radial > Position X, Y, Z**
 - Certain colors. Example: **SCE Color > Color**
- Certain Parameters **cannot** be used for smooth transitions and will be selected once or switched on or off at the beginning of the Step:
 - Colors in Color Tables or Color Gradients. Example: **SCE Drops > Colors**
 - Any settings that can only be activated or deactivated. Example: **S2L EQ / Spectrum > Mirror**
 - Any settings or modes where only one selection is possible at a time. Example: **Direction, Look-At Type, Shape, Shape Alignment, Filter [FX]**, etc.
- Many **Effect Settings** can be used to create transitions/animations.
- Many **Map Settings** are very suitable to create transitions/animations.
- Such a procedure may be similar to a Key Frame Animation, where each Step in MADRIX 5 represents a key frame of the animation.

Animation Example

The following example shows a simple animation in 4 Steps by using an Effect Parameter Chaser and only changing the Effect Setting **Position** of SCE Wave / Radial [while all other Parameters remain unchanged with their default values].

Step 1]



Effect Settings - The animation starts in the upper left corner with **Position 0, 0, 0**

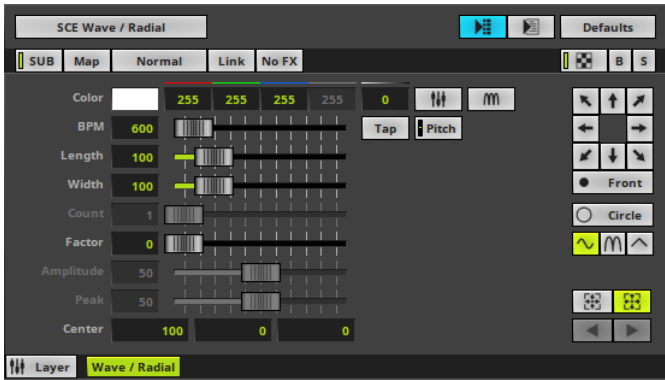


Effect Parameter Chaser - The **Fade Time** is set to **1.0** and the **Fade Type** is set to **Linear**. The **Wait Time** is set to **0.0**. This means that MADRIX 5 will automatically create a smooth animation, when possible. In this example, it is possible.



Preview

Step 2]



Effect Settings - The animation continues to the upper right corner with **Position 100, 0, 0**

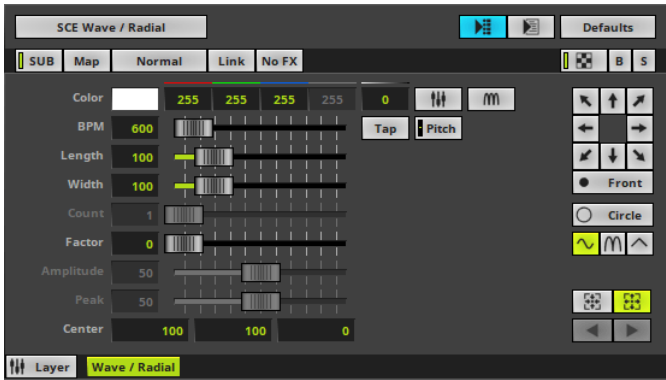


Effect Parameter Chaser - The **Fade Time** is set to **1.0** and the **Fade Type** is set to **Linear**. The **Wait Time** is set to **0.0**. MADRIX 5 will gradually increase the value of **Position**, until the values of Step 2 are reached. In this example, the center of the SCE Wave /Radial effect will be moved to the left. Two seconds have past.

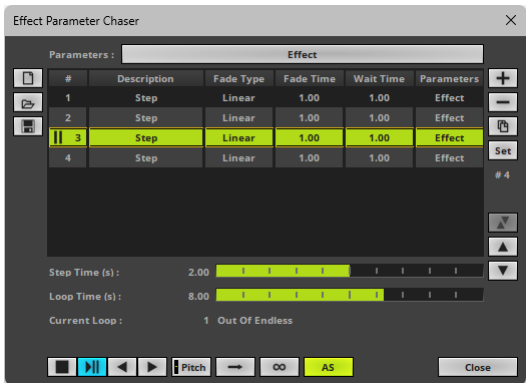


Preview

Step 3]



Effect Settings - The animation continues to the lower right corner with **Position 100, 100, 0**

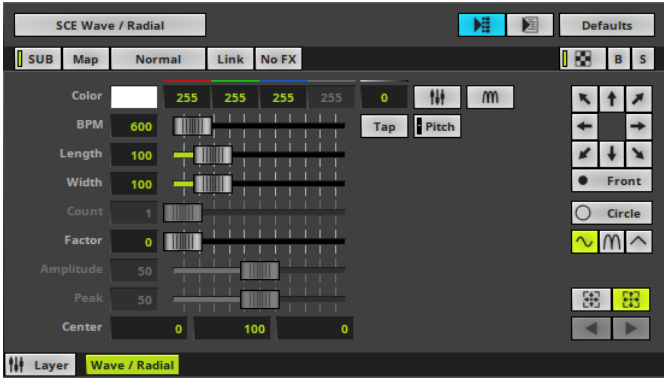


Effect Parameter Chaser - The **Fade Time** is set to **1.0** and the **Fade Type** is set to **Linear**. The **Wait Time** is set to **0.0**. MADRIX 5 will gradually increase the value of **Position**, until the values of Step 3 are reached. In this example, the center of the SCE Wave /Radial effect will be moved to the bottom. Three seconds have passed.



Preview

Step 4]



Effect Settings - The animation ends at the lower left corner with **Position 0, 100, 0**



Effect Parameter Chaser - The **Fade Time** is set to **1.0** and the **Fade Type** is set to **Linear**. The **Wait Time** is set to **0.0**. MADRIX 5 will gradually increase the value of **Position**, until the values of Step 3 are reached. In this example, the center of the SCE Wave /Radial effect will be moved to the left. Four seconds, which is the total **Loop Time**, have passed.


Preview



Endless Loop Since the **Loop Count** is set to **Endless**, MADRIX 5 will continue with Step 1 again. In this example, the center of the SCE Wave /Radial effect will be moved to the top. This means the animation runs smoothly and endlessly.

Starting And Pausing A Chaser

A] Using The User Interface

- **Left Mouse Click** - You can control the Chaser playback by performing a left mouse click on 



- Shows that the Chaser is currently running and being played.



- Shows that a Chaser has been set up, but it is currently paused.

B] Using The Context Menu


- Open the context menu and use the playback options of the context menu.
- Learn more [Context Menu](#)

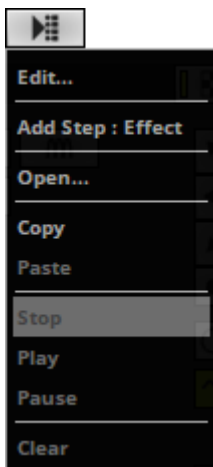
C] Using The Chaser Window

- Open the Chaser window and use the provided playback controls.
- Learn more [Controlling The Chaser Playback](#)

Context Menu

The main options are also available via a context menu.

- **Right Mouse Click** - You can call up the context menu by performing a right mouse click on 
- A small window will be shown.



You can use the following options:

- **Edit...** - Opens the Chaser window. Learn more [Creating A Chaser](#)
- **Add Step :** - Immediately adds a new Step to the Step list of the Chaser. The currently chosen Parameters that will be included in the Step are shown after the colon [e.g., **Add Step : Effect** shows that the **Effect Settings** are included for an Effect Parameter Chaser, for example].
- **Open...** - Loads a previously saved Chaser file.
 - Effect Parameter Chaser files of the file type *.mepcz or *.mepcx.
 - Storage Place Parameter Chaser files of the file type *.msppcz or *.msppcx.
 - Group Value Chaser files of the file type *.mgvcz or *.mgvcx.
 - A new window opens for you to select the file on your harddisk.
- **Copy** - Copies the current Chaser into the clipboard as a duplicate.
- **Paste** - Inserts a copy of a Chaser from the clipboard into the currently selected Chaser.
- **Stop** - Stops the Chaser.
- **Play** - Starts the Chaser.
 - Playback will start from the beginning if the Chaser has not been started before or if the playback has been stopped via **Stop**
 - Playback will continue from the current position if the Chaser has been paused via **Pause**
- **Pause** - Pauses the playback and remembers the current position.
- **Clear** - Removes any Steps and restores an empty, default Chaser.

Drag And Drop [Copy And Paste]

You can perform a Copy and Paste with the mouse:

- **Left Mouse Click And 2 Sec. Hold** - Use a left mouse click on an Effect Parameter Chaser button or Storage Place Parameter Chaser button and continue to hold for 2 seconds. A small + appears. Continue to hold and move your mouse to another Layer and Effect Parameter Chaser button or Storage Place and Storage Place Parameter Chaser button. Release the mouse button to paste a copy onto the new Chaser.
Use the keyboard button **Ctrl** in addition to remove the wait time to immediately perform the drag and drop.

More Information

The following information can be very important when working with a Chaser in general:

- A Chaser should contain at least 1 Step in the Step list.
- When setting up a Fade Time of 0.0 as well as a Wait Time of 0.0 for a Step, MADRIX 5 will **not** ignore such a Step in the Step list. Although, this configuration says that this Step should not be displayed, MADRIX 5 will use it as starting point for the transition to the next Step [if the next Step includes a Fade Time]. In this way, a Step with a total Step Time of 0.0 will influence the visual outcome of the transition.
- When a Chaser is playing, the user interface will be deactivated according to the Parameters selection of the Step.
 - For example, if the Step includes Map Settings, the Map button will be deactivated.
 - Any controls that are not deactivated, can be used in the normal way.
- Regarding the Loop Count and Current Loop, MADRIX 5 counts from the beginning again, if the playback had been stopped beforehand.
 - Only complete loops will be counted. Inverting the Speed Pitch during a loop, will not count towards the Loop Count.
 - The Current Loop will be reset when performing a Clear, New, or manually removing all Steps from the Step List.

The following information can be very important when working with the Effect Parameter Chaser:

- Should it be necessary to calculate random values, MADRIX 5 will generate random values once at the beginning of a Step.
- A Chaser should contain at least 1 Step in the Step list.
 - Including only 1 Step can be useful when chasing an Effect Setting that generates random values [such as

RND], for example. As explained above, MADRIX 5 will generate random values once at every beginning of a Step.

- Including 2 Steps or more is probably the usual case to chase Parameters.

- The following Layer Settings will still be available, even when an Effect Parameter Chaser is running. That also means that they cannot be chased with the Effect Parameter Chaser.

- **Step** - Stepped Rendering

- **Effect Macro Editor**

- **R** - Restore Default Layer Settings

- The following Parameters will still be available, even when an Effect Parameter Chaser with Effect Settings as Parameters selection is running. That also means that they cannot be chased with the Effect Parameter Chaser.

- SCE Capture

- **Open** [i.e. loaded streams]

- **SL**

- SCE Clouds

- **Generate**

- SCE Counter

- **Start**

- SCE Graph

- **X-Axis Registers** [**X1**, **X2**, **X3**]

- **Z-Axis Registers** [**Z1**, **Z2**, **Z3**]

- **Phase Registers** [**P1**, **P2**, **P3**]

- SCE Image

- **Open** [i.e. loaded images]

- **Images** [i.e. loaded images]

- SCE Noise

- **Generate**

- SCE Screen Capture

- **SL**

- **Screen Capture Configuration > Capture Frame Rate > FPS / R**

- SCE Video

- **Open** [i.e. loaded video files]

- **SL**

- **Position**

- **Skip To Start**

- **Step 1 Frame Back**

- **Skip 1 Frame**

- **Skip To End**

- MAS Script
 - **Load**
 - **MAS Effect Script Editor**
 - **Limit Script Execution**
 - **ASync**
- When chased, the following Effect Settings will cause the corresponding MADRIX Effect to start again from the beginning. Chasing these Effect Settings might therefore provide limited possibilities.
- SCE Fill Drops
 - **Direction**
 - **Size X [Width]**
 - **Size Y [Height]**
 - **Size Z [Depth]**
 - **Pitch 1**
 - **Pitch 2**
 - **Position Origin Type**
- SCE Fill Random
 - **Size X [Width]**
 - **Size Y [Height]**
 - **Size Z [Depth]**
 - **Pitch X**
 - **Pitch Y**
 - **Pitch Z**
 - **Position Origin Type**
- SCE Fill Snake
 - **Size X [Width]**
 - **Size Y [Height]**
 - **Size Z [Depth]**
 - **Pitch X**
 - **Pitch Y**
 - **Pitch Z**
 - **Position Origin Type**
 - **Start Corner**
 - **Orientation Mode**
 - **Circle Mode**
 - **Center Mode**
 - **Mirror Mode**

- An Effect Parameter Chaser is applied to the current Layer. The Chaser will still be there even when changing the MADRIX Effect for this Layer.
 - Please note: Depending on your configuration, the Chaser might then work or not work for the newly selected MADRIX Effect.
 - To avoid problems, select another Storage Place or clear the Effect Parameter Chaser first.
 - When changing the MADRIX Effect for this Layer, the Chaser will be stopped.
- In order to configure a Chaser, the associated Layer needs to be active on the MADRIX 5 user interface. If you change to another Layer or Storage Place, for example, the Effect Parameter Chaser window will be closed automatically.
- Even during Chaser playback, you will be able to control certain functionality of the Effect Parameter Chaser window [such as playback or managing the Step list].
- The Speed Masters do affect the Effect Parameter Chaser.
 - As a result, playback speed can be increased, decreased, and the Chaser can also be played backwards [when the Speed Master has a negative value].
 - A Speed Master with a negative value will let the Chaser play backwards, which means that the Steps will be played back in reversed order [and according to the Playback Mode].
 - A Speed Master with a negative value will not change a fade-in [as set via Fade Time].
 - Learn more »[Controls \[Deck A / Deck B\]](#)

The following information can be very important when working with the Storage Place Parameter Chaser:

- The Storage Place Parameter Chaser can chase Layer settings, but not MADRIX Effect settings.
[That means that you will be able to switch to another MADRIX Effect or change the MADRIX Effect settings, while a Storage Place Parameter Chaser is running.]
- The following Layer Settings will still be available, even when a Storage Place Parameter Chaser is running. That also means that they cannot be chased with the Effect Parameter Chaser.
 - **Step** - Stepped Rendering
 - **Effect Parameter Chaser**
 - **Effect Macro Editor**
 - **R** - Restore Default Layer Settings
- When playing a Storage Place Parameter Chaser, you are also able to run an Effect Parameter Chaser per Layer. In addition, you are able to override the Layer settings of the Storage Place Parameter Chaser with the Layer settings of an Effect Parameter Chaser.

- When deleting a Layer after a Storage Place Parameter Chaser has been created, the Parameters of this Layer will be removed from the Chaser.
- When adding a Layer after a Storage Place Parameter Chaser has been created, the Parameters of this Layer will always be set to the default values in each Step.
- When swapping the position of two Layers after a Storage Place Parameter Chaser has been created, the Parameters of these Layers will be kept and will be correctly applied to the Layers in their new order.
- A Storage Place Parameter Chaser is applied to the current Storage Place. The Chaser will still be there even when changing the Storage Place.
- In order to configure a Chaser, the associated Storage Place needs to be active on the MADRIX 5 user interface. If you change to another Storage Place, for example, the Storage Place Parameter Chaser window will be closed automatically.
- Even during Chaser playback, you will be able to control certain functionality of the Storage Place Parameter Chaser window [such as playback or managing the Step list].
- The Speed Masters do affect the Storage Place Parameter Chaser.
 - As a result, playback speed can be increased, decreased, and the Chaser can also be played backwards [when the Speed Master has a negative value].
 - A Speed Master with a negative value will let the Chaser play backwards, which means that the Steps will be played back in reversed order [and according to the Playback Mode].
 - A Speed Master with a negative value will not change a fade-in [as set via Fade Time].
 - Learn more »[Controls \[Deck A / Deck B\]](#)

4.10 Tools

This topic includes:

- [Introduction](#)
- [DMX Fader Tool](#)
- [Logfile](#)
- [Task Watcher](#)
- [DMX Watcher](#)
- [MIDI Watcher](#)

Introduction

MADRIX 5 provides several helpful tools for various tasks.

DMX Fader Tool

The DMX Fader Tool provides access to 24 different DMX channels, which you can choose individually. The DMX Fader Tool can be used to send output signals using these DMX channels. This feature can be very useful if you want to test single fixtures or DMX devices individually.

The DMX Fader Tool will overwrite any DMX data that is sent to your LEDs by MADRIX 5. The Main Output will be overwritten on the particular channels [LTP mode].

- Go to the menu **Tools > DMX Fader Tool...**
[Keyboard shortcut: **Ctrl+Alt+F**]



- **All** - Activates all 24 channels.
- **None** - Deactivates all 24 channels.
- **Defaults** - Restores the default values and resets all DMX values and faders back to 0.
- **On** - Activates the individual channel.
- **Universe** - Defines the DMX universe that will be used.
[The maximum available value is defined by **Preferences > Options... > Performance > Virtual DMX Universes > Output**
Learn more »[Performance](#)]
- **Channel** - Defines the DMX channel that will be used.
- **Fader** - Allows you to control the DMX values from 0 to 255.
- **Value** - Allows you to set up a specific DMX value.
- **Flash** - Sets the value of the channel instantly to 255, the maximum value. Release the Flash button to set the previous value again.
[In order to work, the value/fader must be set to a lower value than 255.]

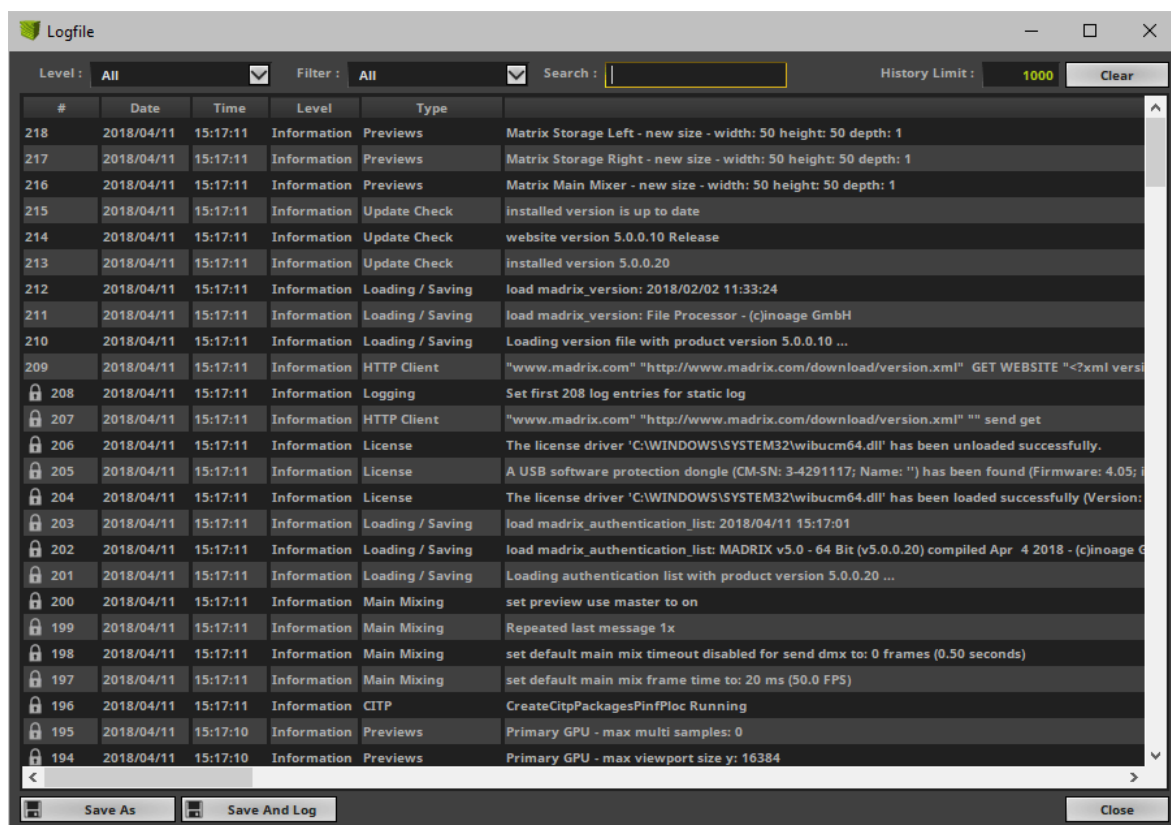
Logfile

The Logfile keeps track of all warnings and system information.

If you search for an error and are unable to locate the problem, please check the logfile first. This Logfile is also needed for every support request.

- Go to the menu **Tools > Logfile...**

[Keyboard shortcut: **F6**]



- Level** - Defines which kind of information is shown, including only information, warnings, and errors.
- Filter** - Allows you to only show specific messages for certain features and topics.

- **Search** - Allows you to enter keywords or text you are looking for.
- **History Limit** - Defines the maximum number of list items.
- **Clear** - Removes all entries from the list [except items that are locked].
- **Save As** - Saves the current list as an external file. All entries logged up to this point will be included.
- **Save And Log** - Creates a file and keeps track of messages until MADRIX 5 is closed. [The button will be shown in green when activated.]
- **Close** - Closes the window.

Task Watcher

The Task Watcher is an important monitoring tool that provides detailed technical information, mainly about the performance.

- Go to the menu **Tools > Task Watcher...**
[Keyboard shortcut: **F5**]

Task Watcher

Deck A	FPS	tAvg	tMin	tMax	tRender	tPost	tMap
Mixing	50.0	0.121	0.033	0.229	0.112	0.001	
Color	50.0 (50.0)	0.020	0.005	0.063	0.007	0.001	0.002

Deck B	FPS	tAvg	tMin	tMax	tRender	tPost	tMap
Mixing	50.0	0.113	0.030	0.268	0.109	0.000	
Color	50.0 (50.0)	0.022	0.005	0.063	0.008	0.000	0.002

Task	FPS	tAvg	tMin	tMax	tGroup
Core	50.0 (50.0)	0.392	0.174	0.830	
Main Mixing		0.239	0.089	0.404	0.001
Global Macro		0.002	0.000	0.005	
Data DMX		0.006	0.002	0.011	
Data DVI		0.005	0.001	0.009	
Data Preview		0.059	0.014	0.395	
Group Controller		0.003	0.001	0.005	
Audio Capturing	100.0 (100.0)				
DMX Controller Output	50.0	0.683	0.217	1.140	
DMX Controller Input	0.0	0.000	0.000	0.000	
DVI Controller Output	50.0	0.001	0.000	0.001	
Preview Controller	49.9 (50.0)	3.936	1.717	8.236	
Updating		0.017	0.004	0.035	
Culling And Drawing		3.919	1.712	8.205	

Memory (Available / Total)		17250	32507
GDI Object Count (Current / Maximum)		792	10000
Handle Count (Current / Maximum)		1367	16777216

Type	Device	FPS	State

- The Task Watcher is mainly divided into 3 parts.
- You can resize the window according to your needs by dragging the window borders outwards or inwards.
- The first part shows how fluently effects can be rendered:
 - **Deck A** - Shows which effects and Layers are active on Deck A [Effect Pipeline Deck A].
 - **Deck B** - Shows which effects and Layers are active on Deck B [Effect Pipeline Deck B].
 - **Task** - Shows various render tasks that MADRIX 5 manages in the background.
 - **FPS** - Shows the currently rendered frame rate [Frames Per Second] as well as the target frame rate [in brackets ()].
 - **t** - Shows the Milliseconds required to render each frame.
 - **Memory (Available / Total)** - Shows the the available memory of the computer's RAM as well as the total memory [in MiB].
 - **GDI Object Count (Current / Maximum)** - Shows the current number of graphical objects used for the MADRIX 5 user interface and Software as well as the maximum available number, which is set in the operating system.
 - **Handle Count (Current / Maximum)** - Shows the current number of handles used for the MADRIX 5 Software as well as the maximum available number, which is set in the operating system.
- The second part shows connected devices:
 - **Type** - Displays if the devices is a DMX-based or DVI-based device.
 - **Device** - Displays the name and description of the device.
 - **FPS** - Displays the currently rendered frame rate [Frames Per Second].
 - **t** - Shows the Milliseconds required to render each frame.
 - **State** - Displays if the device is working [**Sending** or **Receiving**] or not [?].
 - **Connected DMX Device Count (Active / All)** - Shows the number of connected DMX devices that are active and a total number.
- The third part shows active and occupied Storage Places:
 - **Description** - Displays the Storage Place Description.
 - **Storage** - Displays on which Storage the effect is stored.
 - **Place** - Displays on which Storage Place the effect is stored.

- **Storage Place Count** - Shows the total number of occupied and used Storage Places.

DMX Watcher

The DMX Watcher allows you to monitor your DMX output or DMX input in MADRIX 5.

- Go to **Tools > DMX Watcher...**

[Keyboard shortcut: **Ctrl+Alt+D**]



- **Virtual OUT** - Activates monitoring of data output, which is the data that is created by MADRIX 5 in order to be sent to your hardware.
 - It is the point in time before the data is actually delivered to the DMX hardware.

- **Input** - Activates monitoring of the current data input.
- **Universe** - Defines the DMX universe you are currently looking at. Adjust the number to your requirements!
- **DMX** - Displays data with the help of DMX values [0 to 255].
- **%** - Displays data with the help of percentage values [0 to 100].
- **HEX** - Displays data with the help of HEX values [0 to FF].
- **BAR** - Displays data with the help of graphical bars.
- **Blank** - Leaves the background blank [i.e., black].
- **Lines** - Shows cell borders of the data table.
- **Rows** - Displays a gray background for all rows for better identification.
- **COL** - Displays a gray background for all columns for better identification.
- **Chess** - Displays an alternating, gray background for rows and columns for better identification.
- **Freeze** - Stops refreshing of data. The last data sent or received will be shown.
- **1 Hz** - Defines the refresh rate of how fast data is shown.
- **10 Hz** - Defines the refresh rate of how fast data is shown.
- **50 Hz** - Defines the refresh rate of how fast data is shown. This is the fastest mode.
- New data, i.e. data that was just received or sent will be displayed in green. It fades to gray after a short while, when the data has not changed during that period of time.
- -- is shown when not data is sent or received.

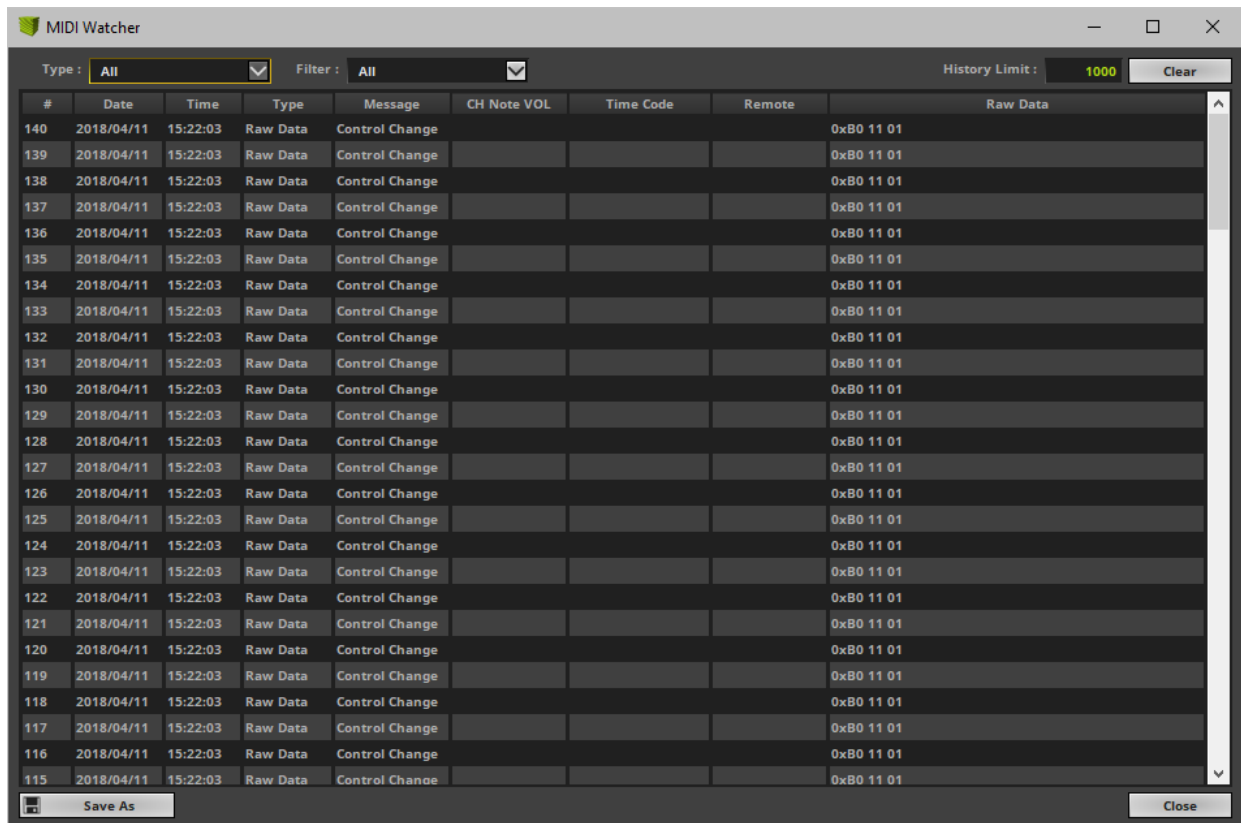
Per 512 DMX channels, 170 RGB fixtures can be controlled. That means, calculating 170 fixtures x 3 color channels results in 510 DMX channels. Therefore, channel 511 and 512 will be left empty, because they are simply not in use.

MIDI Watcher

The MIDI Watcher allows you to check your MIDI connection when you are using any MIDI device. The MIDI Watcher is a useful tool in order to start your search if problems occur with your MIDI connection.

- Go to the menu **Tools > MIDI Watcher...**

[Keyboard shortcut: **Ctrl+Alt+M**]



- Type** - Allows you to specify the type of messages shown.
- Filter** - Allows you to only show specific MIDI messages.
- History Limit** - Defines the maximum number of list items.
- Clear** - Removes all entries from the list.
- Save As** - Allows you to save the current list into an external file.
- Close** - Closes the window.

4.11 Backup System

This topic includes:

- [Introduction](#)
- [Advanced Details](#)
- [Overview](#)
- [Step-By-Step Instructions](#)

Introduction

The MADRIX 5 Backup System is a type of network communication between two or more computers in order to set up a backup solution.

- A backup solution should get involved as soon as possible after the main control solution fails.
- Regarding the MADRIX 5 Backup System, so-called keep-alive messages are sent by one MADRIX computer to other computers to check if the connection between the computers is working properly.
- If the Master fails, i.e. if the Master does not send keep-alive messages in a certain time interval [in seconds], the Slave is automatically activated and sends the output data to the LEDs.
- Similarly, the Slave is sending keep-alive messages.
- The MADRIX 5 Backup System works in combination with a Cue List in order to synchronize Master and Slave for backup purposes.

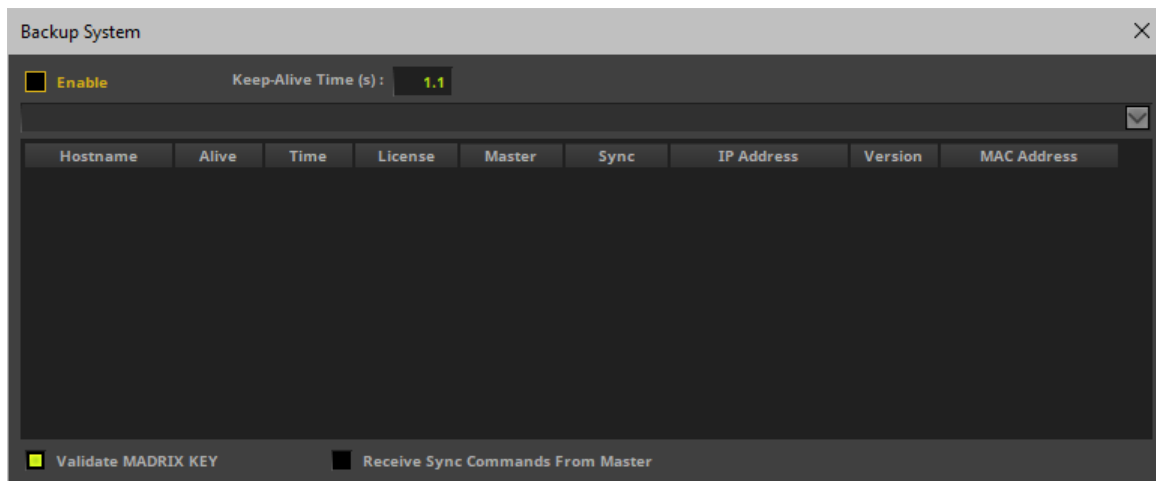
Advanced Details

- A Master is being defined by selecting it on a Slave system.
 - This mechanism ensures that it can be checked if the Master is available to the Slave.
- Multiple Masters and Slaves can be defined.
 - This also results in the following:
- Multiple, independent MADRIX 5 backup systems can be set up within a single network.

- A Master with a larger MADRIX 5 License [such as, 1x MADRIX 5 entry] can be backed up by several Slaves with smaller software licenses [such as, 4x MADRIX 5 start].
- A Slave can be a Master to another Slave, which means that Slaves that back up a Master, can be backed up by different Slaves in turn.

Overview

- Go to the menu **Preferences > Backup System...**
- A new window will open.



Step-By-Step Instructions

- 1] Make sure that all requirements are met.
- 2] Set up both computers and the network.
- 3] Configure the Master.
- 4] Configure the Slave.
- 5] Configure the MADRIX 5 Setup and Cue List.
- 6] Learn about additional hints and

7] Test if all systems are working correctly.

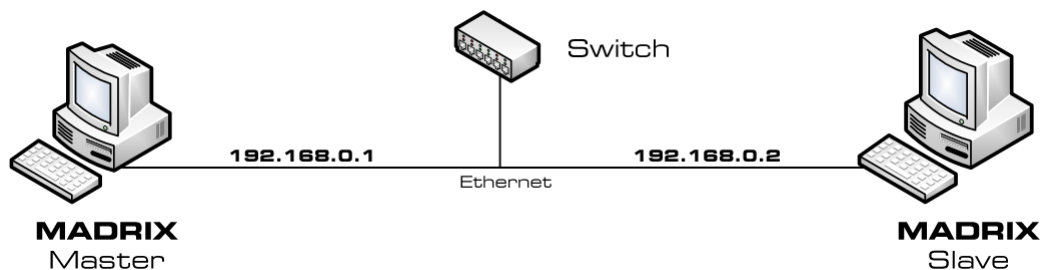
1] Requirements

- Make sure that all computers are equipped with a MADRIX KEY [i.e. a MADRIX 5 Software License].
- Make sure that all computers are using the same MADRIX 5 Software version.

2] Setup

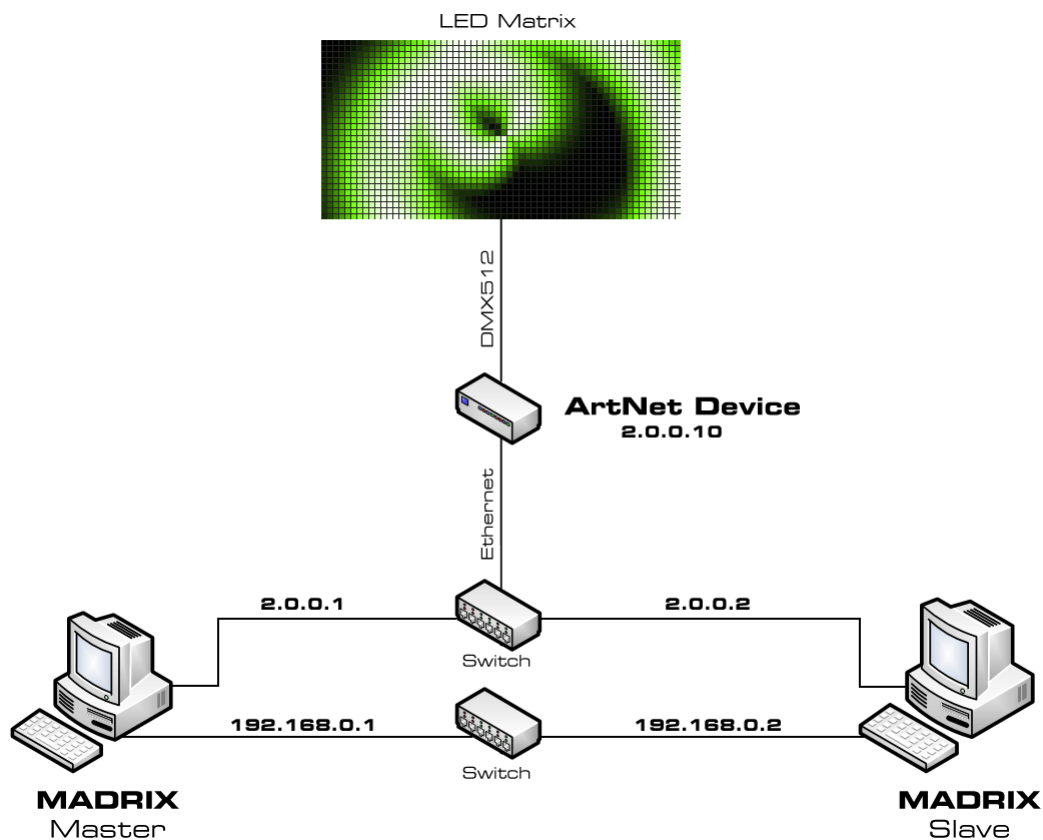
Set up both computers and the network according to the instructions below:

How To Connect Master And Slave



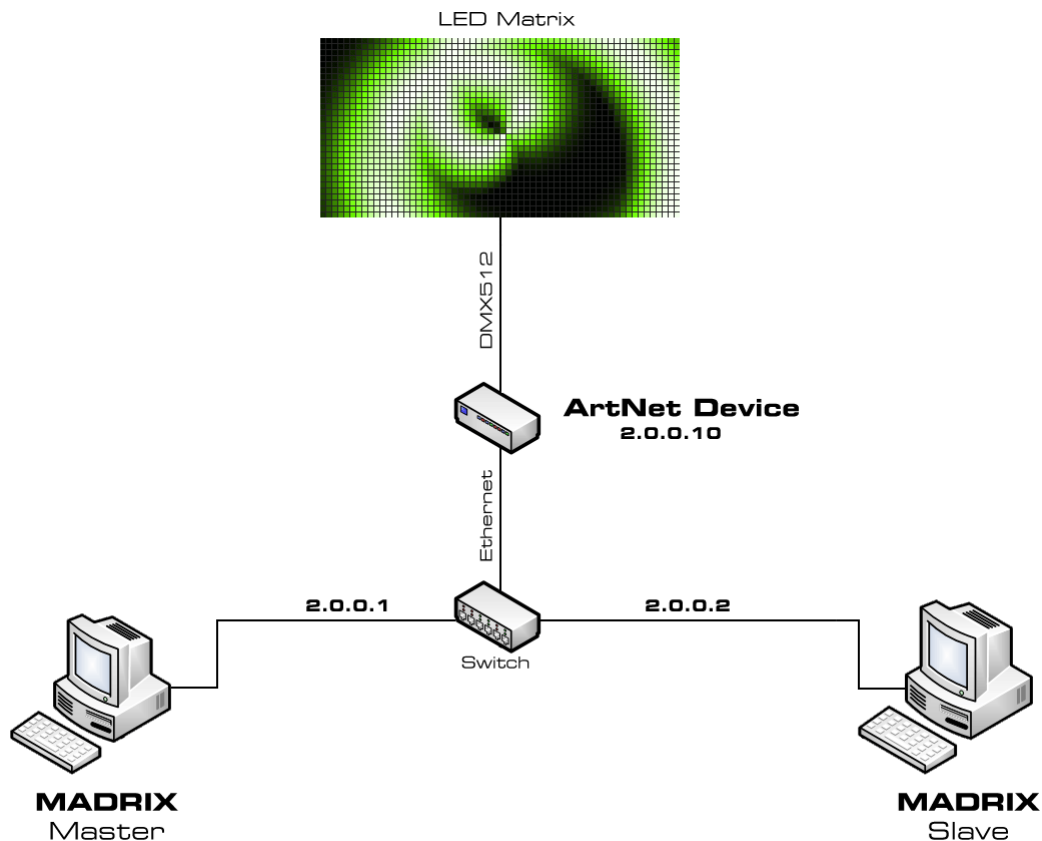
- You can utilize your network card with an Ethernet port to connect two or more computers using a network switch.
- Set up the IP addresses from the computers like in the picture above.
- Both computers have to be in the same network address area [e.g., 192.168.0.1 to 192.168.0.254].

Example 1: How To Use The Backup System And Art-Net



- It is recommended to always use two separate networks with two network cards if you want to sync Master and Slave and use Art-Net at the same time.
- Minimum requirements for this setup are:
 - 2 computers
 - 2 Ethernet switches
 - 1 or more Art-Net devices
 - Ethernet cables
 - DMX cables.
- Apart from that, both computers need to have two network cards installed. The setup for the first network is 192.168.0.X, for example, and the second is 2.0.0.X, for example.
 - The former will be used as the backup system, the latter is transferring Art-Net data.

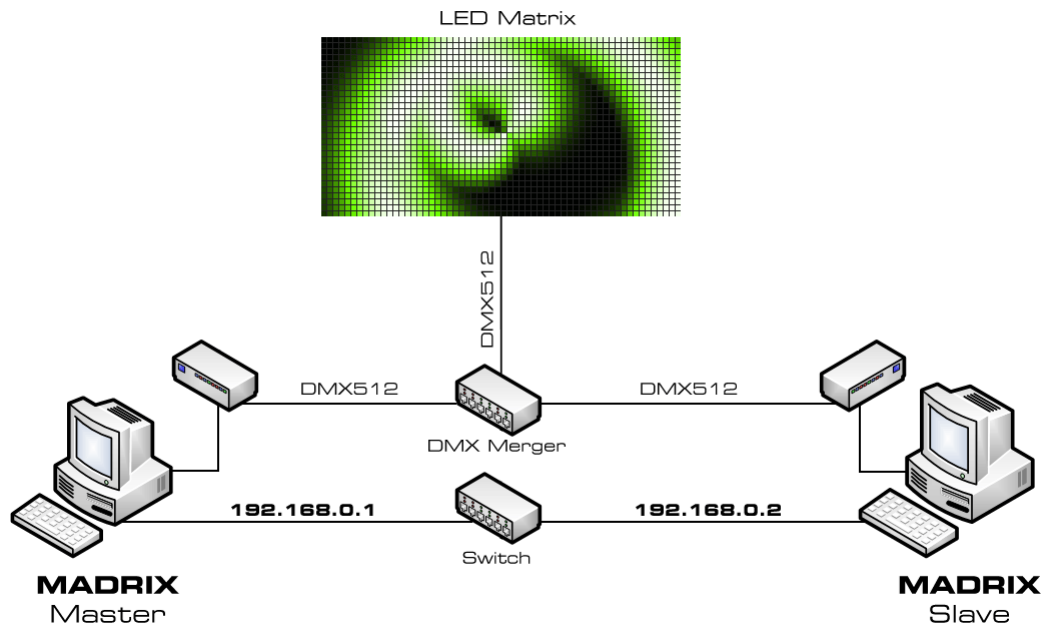
Example 2: How To Use The Backup System And Art-Net [Low-Budget Alternative]



- In addition, you may use a variation of the example above.
- Depending on your installation, it can be possible to do the setup without the second network. It is a smaller budget alternative and in this case only the Art-Net network will be used.
- At the same time this means that traffic from both Art-Net and the backup system will be transferred over this single network. In larger installations this might cause network problems due to high data traffic!
- Connecting this backup system to the internet is not recommended because problems with the internet connection are likely to occur [such as connection errors, dropouts, etc.]. WiFi-nodes are also not recommended. The Art-Net data will simply interfere with the internet data in the 2.0.0.X network.
- If your Art-Net interfaces support the 10.0.0.X network, you may establish an internet connection since the Art-Net data may be blocked by your router and does not interfere with the internet connection.

Such an installation is at your own risk.

Example 3: How To Use The Backup System And USB DMX512 Interfaces

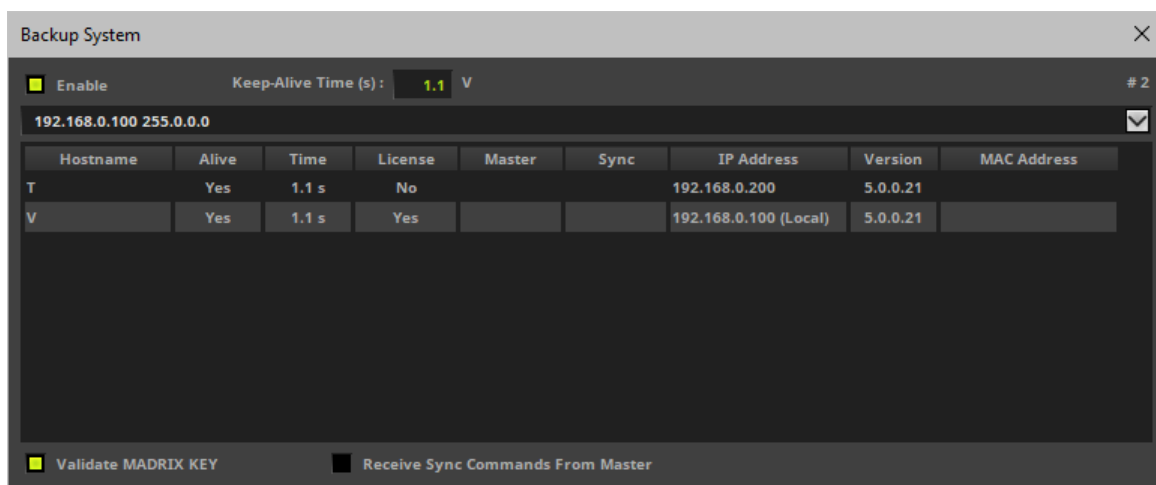



- If you are going to use an USB DMX512 interface, you can work with one network card to sync Master and Slave.
- Minimum requirements for this set-up are:
 - 2 computers
 - 1 Ethernet switch
 - 1 DMX merger
 - 2 DMX512 devices
 - Ethernet cables
 - DMX cables
- Apart from that, both computers need to have a network card installed. The set-up for this network is 192.168.0.X, for example. Only this card/network will be used for the backup system.

3] Configuration Of The Master

Configure the Master using the following options and settings:

- **Enable** - Activates the backup system.
- **Keep-Alive Time (s)** - Defines the time range between keep-alive messages [in seconds]. Valid values range from 0.1 to 25.6. The default and recommended value is 1.1.
[If the network connection is working correctly, you will see **Yes** in the column **Alive**. If the connection is lost, you will see **Timeout**.]
- **Drop-Down List** - Allows you to choose the correct network card if your computer or laptop is equipped with more than one network card.



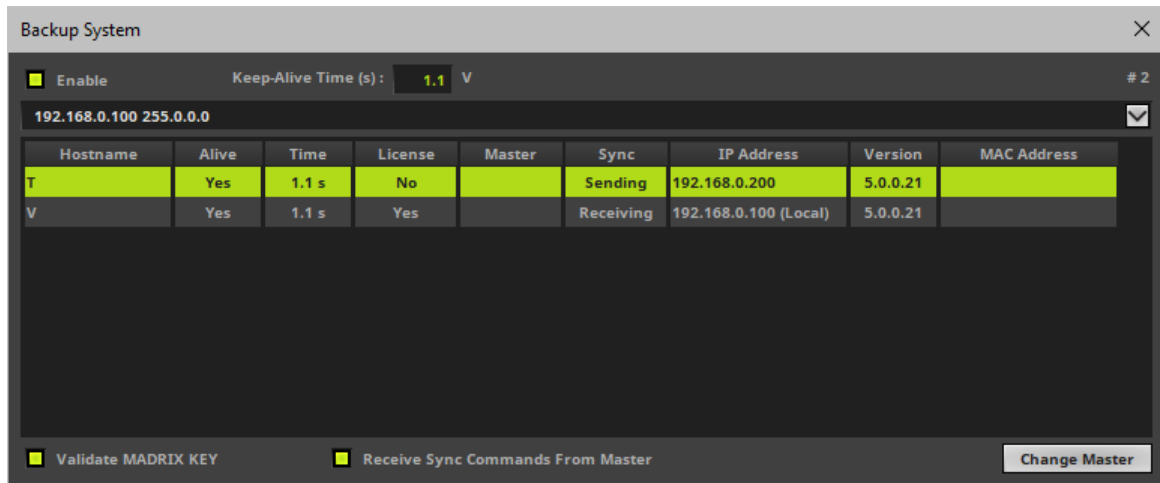
- **(Local)** - Specifies that this is your local computer on which you are currently working.
-  - Allows you to manually remove outdated list entries.


4] Configuration Of The Slave

Configure the Slave using the following options and settings:

- **Enable** - Activates the backup system.
- **Keep-Alive Time (s)** - Defines the time range between keep-alive messages [in seconds]. Valid values range from 0.1 to 25.6. The default and recommended value is 1.1.
[If the network connection is working correctly, you will see **Yes** in the column **Alive**. If the connection is lost, you will see **Timeout**.]

- **Drop-Down List** - Allows you to choose the correct network card if your computer or laptop is equipped with more than one network card.



- **(Local)** - Specifies that this is your local computer on which you are currently working.
- **Validate MADRIX KEY** - MADRIX 5 automatically monitors if the MADRIX KEY is plugged into the Master.
-  - Allows you to manually remove outdated list entries.

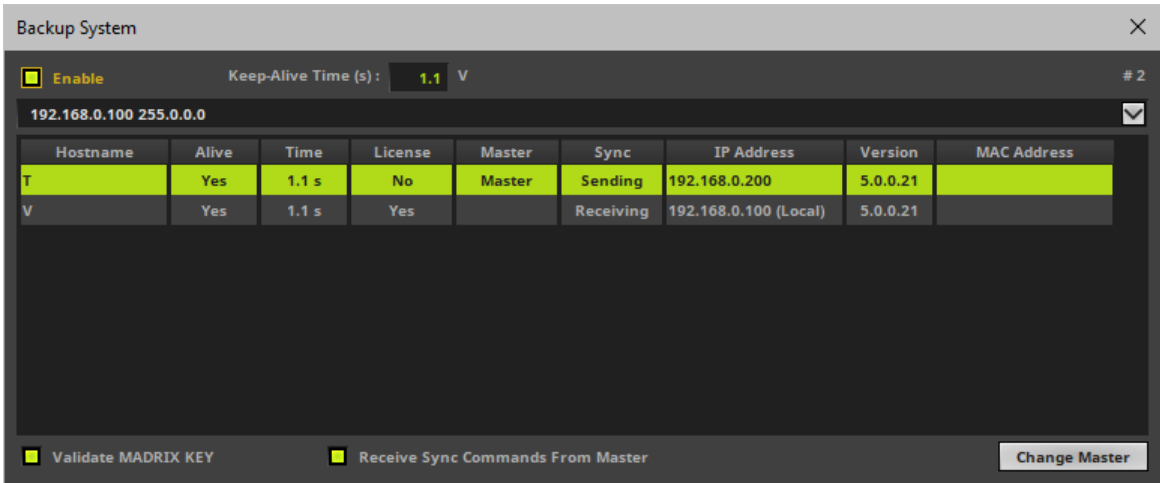
Please activate:

- **Receive Sync Commands From Master** - Activates that the computer receives synchronization signals from the Master.

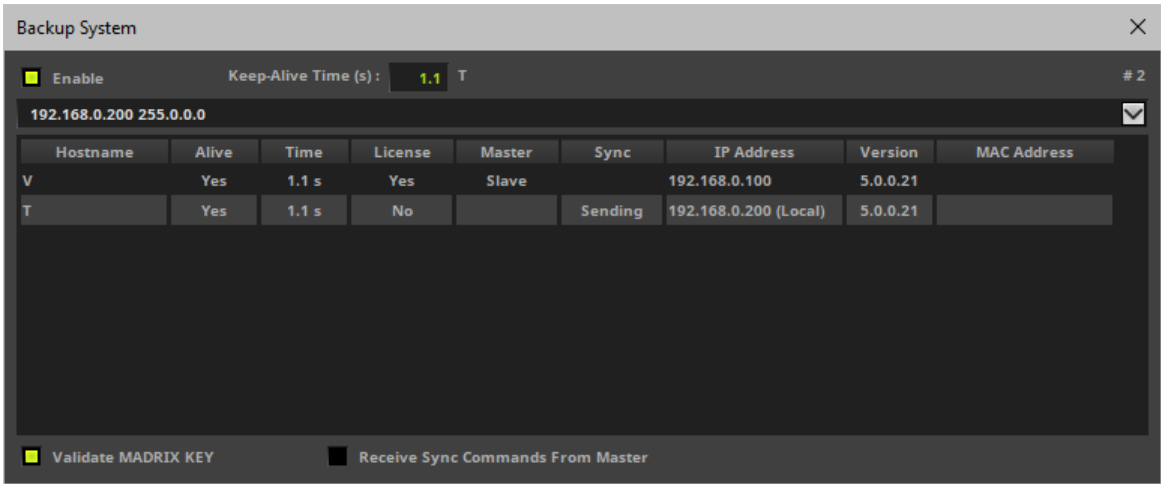
Now, select the Master in the list and click:

- **Change Master** - Allows you to select another computer in the list of found network computer and set this computer as the Master. You are not allowed to select your local computer as Master. You will have to choose a remote computer.

The Master will be activated as Master in the Backup System of the Slave:



The Slave will be activated as Slave in the Backup System of the Master:



Result:

- If the Backup System is activated, the Slave will not output any data as long as the Master is properly connected and alive in the network.
- If the Master is disconnected and receives a timeout, the Slave will start sending data when it receives the timeout message.

5] Setup And Cue List

- Finally, make sure that Master and Slave have the correct configuration of devices, Patch, and effects. Ideally, you can load the same MADRIX 5 Setup on both computers.
- Make sure that all computers are using the same Cue List.
[As a minimum requirement, the number of Cues needs to be identical.]
[If you have configured multiple Cue Lists, the software will sync List numbers as well as Cue numbers.]

6] Additional Information

- You can set up if the MADRIX 5 Software automatically tries to restart after any unexpected software shutdown or failure.
 - If enabled that could mean that your Master comes back up after a crash while the Slave already overtook, for example.
 - To disable or enable the behavior, go to the menu **Preferences > Options... > Startup > Enable Application Restart Manager**
- Due to this behavior, it might be advisable to further set up the MADRIX 5 Startup Options.
 - For example, go to the menu **Preferences > Options... > Startup > Open This Setup** and choose the correct MADRIX 5 Setup file via the button ...
 - Enable this option on both, Master and Slave, and choose the same Setup file in both cases.
 - This ensures that a Master which came back also already and automatically loads the correct Setup file.
- Check if any other Startup options may be relevant for your use case.
- Please note further that a Slave does not sync back its position when it overtook.
 - That could mean that your Master starts at a different cue than what your Slave was already using.
 - Using Time Code can soften this issue, but it may not be able to avoid it entirely.

7] Tests

Perform the following tests in order to ensure that all systems are working correctly:

- Test if the Master is controlling the LED installation correctly.
- Test if the Slave is controlling the LED installation correctly.
- Test if the Backup System is working correctly, if a Cue List is being synchronized between Master and Slave, and especially if the Slave is sending data in case the Master is disconnected and receives a timeout.

4.12 File Types

This topic includes:

- [Introduction](#)
- [MADRIX 5 File Types](#)
- [Images And Videos](#)

Introduction

You will come across several file types, while working with the MADRIX 5 Software. This chapter explains which file type belongs to which function or which part of the software.

MADRIX 5 File Types

*.msz	MADRIX 5 Setup
*.msx	MADRIX 5 Setup Uncompressed Your whole show will be saved. It stores relevant data in one single file; including but not limited to Patch, effects, settings, Cue Lists, Timelines, etc. » MADRIX 5 Setup [New / Open] Note: Images and videos will not be included in this file, for example.
*.msz.msbackup	Backup of a MADRIX 5 Setup Stores MADRIX 5 Setups automatically as backup files as set up in the file recovery options of the software. » General
*.mpz	MADRIX 5 Patch

*.mpx	MADRIX 5 Patch Uncompressed Stores your Patch. » Patch Editor
*.mflx	MADRIX 5 Fixture Library Stores the whole Fixture Library. » MADRIX 5 Fixture Editor Note: The madrix.mflx is being overwritten with an updated version every time a new MADRIX 5 version [software update] is installed.
*.mfix	MADRIX 5 Fixture Stores one single fixture. » MADRIX 5 Fixture Editor
*.mstz *.mstx	MADRIX 5 Storage MADRIX 5 Storage Uncompressed Stores a complete Storage including all of its Storage Places [i.e., effects]. » Storages
*.mspz *.mspx	MADRIX 5 Storage Place MADRIX 5 Storage Place Uncompressed Stores one single Storage Place, and thereby one effect you created. » Storage Places [256 x 256]
*.mdmxx	MADRIX 5 DMX Device Settings Stores all relevant settings for your [connected] DMX devices. » OUTPUT Settings
*.mdvix	MADRIX 5 DVI Device Settings Stores all relevant settings for your [connected] DVI devices. » OUTPUT Settings
*.mmrx	MADRIX 5 MIDI Remote Configuration Stores a MIDI Remote Configuration [MIDI map] for a MIDI controller for the MIDI Remote Editor. » MIDI-IN Configuration
*.mdrx	MADRIX 5 DMX Remote Configuration Stores a DMX Remote Configuration for DMX-IN for the DMX-IN Remote Editor. » DMX-IN / Art-Net Remote / sACN Input

*.mrec	MADRIX 5 Record Stores recorded effects. » Recording
*.dxd	MADRIX 5 DMX Data Stores DMX data for the MADRIX PLEXUS hardware interface. » Recording
*.mclx	MADRIX 5 Cue List Stores a Cue List and its entries as well as settings. » Cue Lists
*.csv	Comma-Separated Values A file format that can be used for the Cue List or the Fixture List Import of the Patch Editor. » Cue Lists / » Patch Editor
*.mgcz *.mgcx	MADRIX 5 Group Control MADRIX 5 Group Control Uncompressed Stores the Group Control including fade-in time, Group Presets, and current values. » Fixture Groups
*.mtlx	MADRIX 5 Timeline Stores a Timeline and its segments as well as settings. » Timeline Editor
*.mscx	MADRIX 5 Schedule Stores a Schedule including all of its triggers and actions. » Scheduling
*.mitz *.mitx	MADRIX 5 Image Table MADRIX 5 Image Table Uncompressed Stores an Image Table for the SCE Image effect. » SCE Image
*.mctx	MADRIX 5 Color Table Stores color information [Color Table, Gradient, M2L Color Table, etc.] for various MADRIX Effects. » [Global] Colors And Intensity
*.mckx	MADRIX 5 Color Kit

	Stores the entire setup of Global Color Lists and Global Colors. » [Global] Colors And Intensity
*.mstrtx	MADRIX 5 String Table Stores a String Table including its strings and characters for the SCE Counter effect. » SCE Counter
*.mshtx	MADRIX 5 Shape Table Stores a Shape Table for various MADRIX Effects. » Using Shapes [Shape Table] [Shape Table]
*.mepcz *.mepcx	MADRIX 5 Effect Parameter Chaser MADRIX 5 Effect Parameter Chaser Uncompressed Stores an Effect Parameter Chaser including its Step list for a Layer. » Chaser
*.msppcz *.msppcx	MADRIX 5 Storage Place Parameter Chaser MADRIX 5 Storage Place Parameter Chaser Uncompressed Stores an Effect Parameter Chaser including its Step list for a Layer. » Chaser
*.mgvcz *.mgvcx	MADRIX 5 Group Value Chaser MADRIX 5 Group Value Chaser Uncompressed Stores an Group Value Chaser including its Step list for the Group Control. » Fixture Groups [Group Control]
*.mmapx	MADRIX 5 Map Settings Stores all settings regarding a Layer's mapping, tiling, and rotation. » Mapping / Tiling / Rotation
*.mfelx	MADRIX 5 File Extension List Stores a File Extension List for the HTTP Remote Control web server. » Remote HTTP
*.log	Log File A logging file created with the MADRIX 5 Logfile tool or the MIDI Watcher. » Tools
*.mas	MADRIX 5 Script File

	A script for the MAS Script Effect. » MAS Script Effect
*.macs	MADRIX 5 Script Encrypted A compiled and encrypted script for the MAS Script Effect. » MAS Script Effect
*.mms	MADRIX 5 Effect Macro A Macro for an effect, a Storage Place Macro, or a Main Output Macro. » Macros And Scripts
*.mcm	MADRIX 5 Effect Macro Encrypted A compiled and encrypted Macro for an effect, a Storage Place Macro, or a Main Output Macro. » Macros And Scripts
*.WibuCmRaC	MADRIX KEY File Required if the MADRIX KEY should be upgraded or updated manually. » MADRIX KEY [Activation]
*.WibuCmRaU	MADRIX KEY Update File Required to upgrade or update the MADRIX KEY manually. » MADRIX KEY [Activation]

Images And Videos

Furthermore, MADRIX 5 supports every image and video type that is supported by your Windows PC. In most cases, a specific video codec needs to be installed on your computer in order to be able to load it.

- Images
 - Supported file formats includes: Bitmap (*.bmp), GIF (*.gif), JPEG (*.jpg, *.jpeg, *.jpe, *.jfif), PNG (*.png), TIFF (*.tif, *.tiff), MADRIX Image Table (*.mitz), MADRIX Image Table Uncompressed (*.mitx)
 - Learn more »[SCE Image](#)
- Videos
 - Examples for supported file formats: ASF (*.asf), AVI (*.avi), DivX (*.divx), Flash Video (*.flv), Matroska (*.mkv), MPEG (*.mpeg, *.mpg), MPEG-2 (*.m2v), MPEG-4 (*.mp4, *.mp4v), MOV (*.mov), OGG (*.ogg), Real Video (*.ram, *.rm, *.rmvb, *.rv), VOB (*.vob), WebM (*.webm), WMV (*.wmv), Xvid (*.xvid), 3GP (*.3gp),

MADRIX Record (*.mrec)

- Learn more »[SCE Video](#)

If you are encountering problems using image or video files, install the required video codec or image codec on your PC.

4.13 Recording

This topic includes:

- [Introduction](#)
- [Recording Overview](#)
- [Record Editing](#)
- [Usage](#)
- [DXD Conversion](#)

Introduction

MADRIX 5 includes recording features. The main areas of application are:

- **MADRIX AURA**

[Stand-alone playback of pre-recorded scenes from SD card. Available via direct network record or conversion of record files.]

For more information about the product in this user manual, see »[MADRIX AURA](#)

- **MADRIX PLEXUS**

[Discontinued product that is still supported by MADRIX 5.5. Stand-alone playback of pre-recorded scenes from SD card with up to 2 universes of output. Available via conversion of record files.]

For more information about the product in this user manual, see »[MADRIX PLEXUS](#)

- **SCE Video**

[Playback of pre-recorded scenes within the MADRIX 5 Software itself, which provides specific advantages. See »[MREC Conversion](#)]

For more information about this MADRIX Effect in this user manual, see »[SCE Video](#)

All required workflows will be explained in this chapter in the sections below.

Recording Overview

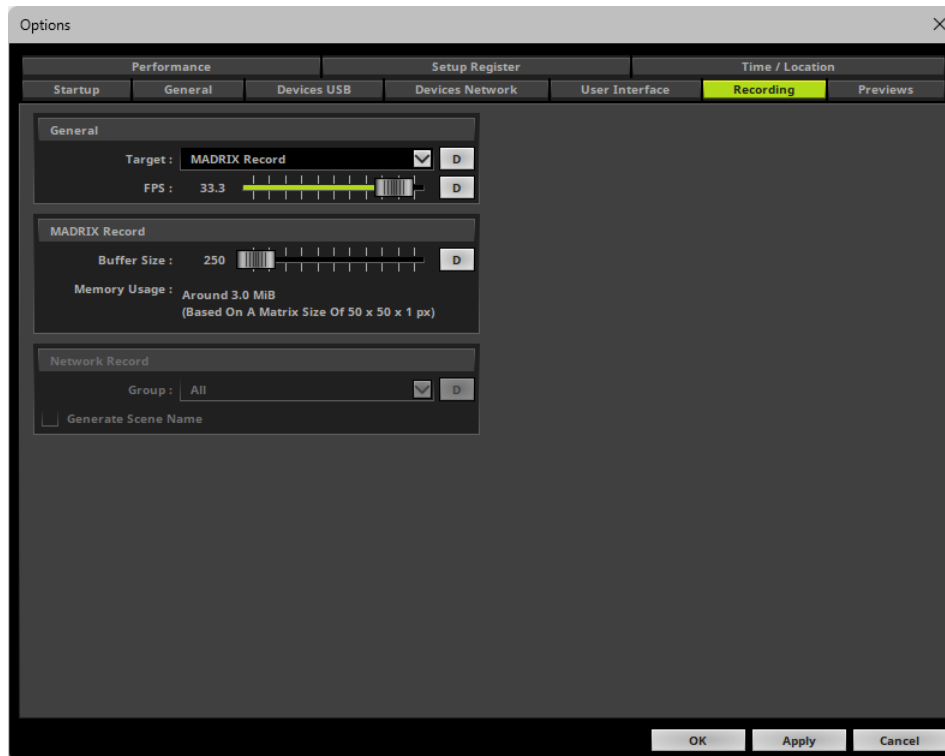
Initial Configuration

Target And Other Options

First, you need to decide what kind of record you wish to create:

- **Network Record**
 - Is only available for MADRIX AURA. By starting a **Network Record**, MADRIX AURA will automatically start the recording process, when you start recording in MADRIX 5.
 - **Make sure to send data to the device [Art-Net or Streaming ACN] before you start a recording process!**
- **MADRIX Record**
 - MADRIX 5 Record files [of the file type *.mrec] can be used for MADRIX AURA [further conversion required as explained below], MADRIX PLEXUS [further conversion required as explained below], and SCE Video [direct playback available; no conversion required].
- **1]** Go to the menu **Preferences > Options... > Recording**
[Keyboard shortcut: **Ctrl+Alt+O > Recording**]
- **2]** Choose the type of record under **General > Target**
- **3]** In addition, set up the required frequency [**FPS**]
 - This refers to the main mixer of MADRIX 5 and its recording processing thread.
 - If you are recording MADRIX Record *.mrec files, this is also the frame rate of the resulting file.
 - If you are creating Network Records, the output settings of the Device Manager set the recorded frame rate for each device for unicast connections.
 - If you are creating Network Records with broadcast connections, this is also the frame rate of the resulting file.
- **4]** Set up the **Buffer Size** for MADRIX Records.

- **5]** Set up **Group** if you have chosen Network Record. Depending on your **Group** settings, the record will be started for all connected MADRIX AURA or only for the devices in a specific sync group.
- For more information, see »[Recording](#)



Patching

Configure your virtual LED matrix with the help of the »[Matrix Generator](#) or »[Patch Editor](#) to define the correct patch for your record.

Recording Locations

In order to record, there are several locations in the MADRIX 5 Software where you can create records.

- [Main Output Recording](#)
- [Cue List Recording](#)
- [Timeline Recording](#)

Main Output Recording

Overview

You can find the Main Output Recording directly on the main user interface.

As the name implies, you will record everything from your Main Output. This will include any crossfades, effect changes, brightness changes, etc.



Important Note

- **Only the Main Output will be recorded. Make sure that your content is displayed on Preview Output before you start to record.**

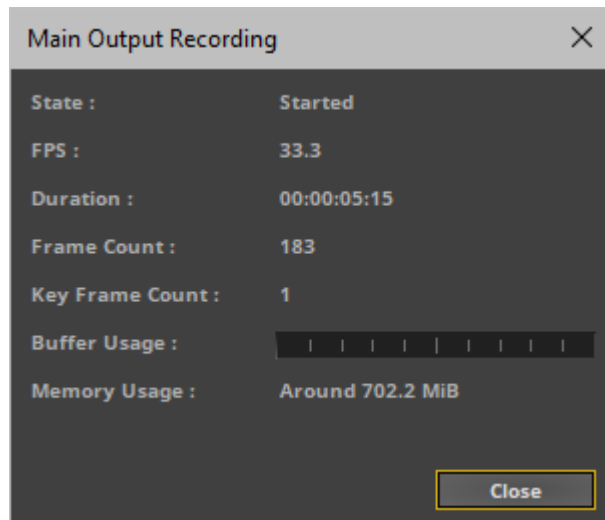
How To Record

- **Left Mouse Click** - Click **REC** in order to start the recording process.
 - The context menu allows for more options. Learn more below.



- The button will now pulsate in red and a new window will open to see more details.





- **State** - Shows the current status of the recording process [**Started**, **Stopped**].
- **FPS** - Shows the currently set recording frequency in Frames Per Second. Learn more »[Recording](#)
- **Duration** - Shows how long the record currently is in **HH:MM:SS:FF** [hours:minutes:seconds:frames].
- **Frame Count** - Shows the total number of single frames that has been recorded and created.
- **Key Frame Count** - Shows the total number of frames that differ from each other. The MADRIX 5 Software will automatically optimize the file size of records if recorded frames are identical. Hence, the total number of frames can be different to the number of recorded key frames. For example, a color change [without a fade] might use only two colors. In this case, the record may have 400 frames in total, but just 2 key frames.
- **Buffer Usage** - Shows the status of the temporary memory when creating a MADRIX Record. The higher the progress bar, the more memory is used. You can set the Buffer Size in the Options. Learn more »[Recording](#)
- **Memory Usage** - Shows the currently used main memory [RAM] when creating a MADRIX Record. You will receive a warning icon if the recording process is likely to use too much memory with the following tooltip: **The required memory has reached a critical amount in relation to the total physical memory (RAM)!** Learn more »[Recording](#)
- **Close** - Only closes the watcher window, but does not stop the recording process.

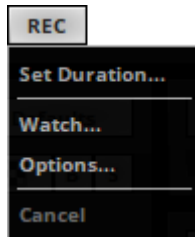
- **Left Mouse Click** - Click **REC** a second time in order to stop the recording process.
- If you have **Network Records** enabled in the Options, the software will wait 2 seconds after each record to allow devices to process the received data. The recording status then shortly switches to **Pending**.



- Please wait a few seconds to let the software process the data. You will be asked for the location to store the record file on your hard drive as well as a name for the file. Click **Save** in order to confirm.
- If needed, you can edit your records after the initial recording process. Learn more below.

Context Menu

- **Right Mouse Click** - Click **REC** in order to call up the context menu.



- **Set Duration...** - Allows you to set a specific time that the record should last [HH:MM:SS].
- **Watch...** - Calls up the **Main Output Recording** window again for more details.
- **Options...** - Calls up the **Recording Options**. Learn more »[Recording](#)
- **Cancel** - Aborts the recording process without asking you to save the file.

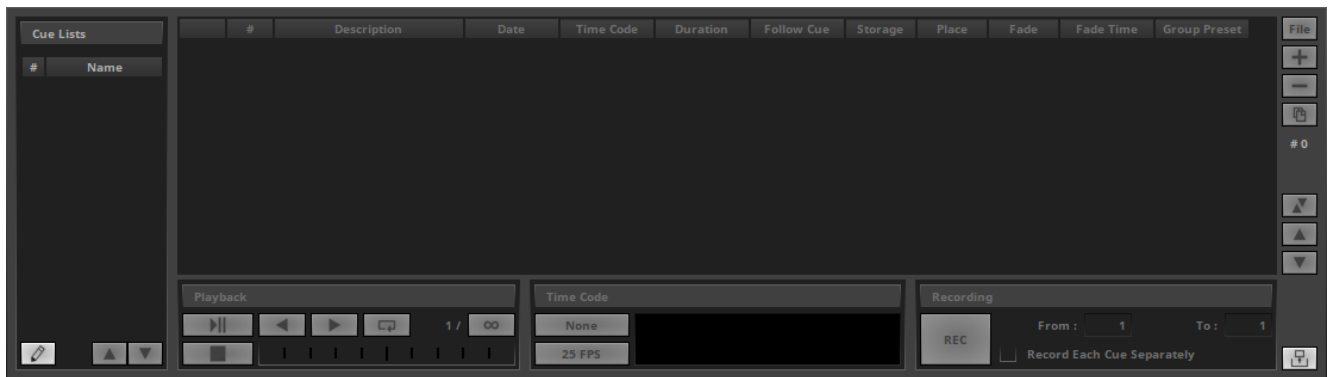
Cue List Recording

Overview

The Cue List Recording features are part of a Cue List.

You can open the Cue List Editor in 3 ways:

- Go to the menu **Tools > Cue Lists...**
- Or press **F7**
- Or click **Layers > Cue Lists** on the user interface.

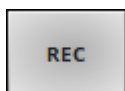


Important Notes

- **Make sure to create a Cue List first. Otherwise, Cue List Recording is not available.**
- **All cues need to have a Duration!**
- Learn more » [Cue List Editor](#)

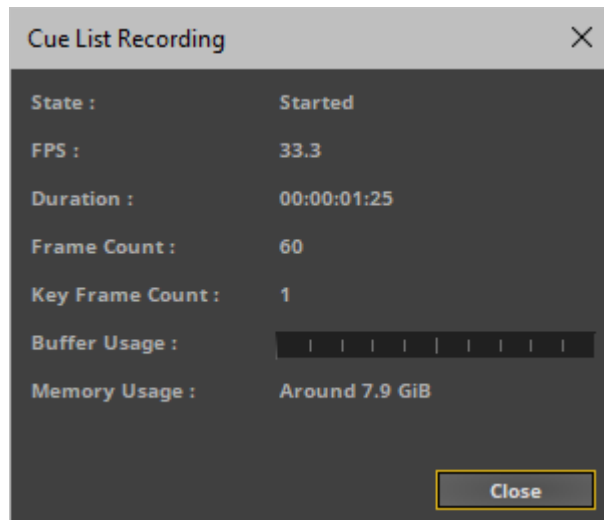
How To Record

- **From** - Defines the cue to start with. Enter the desired value. The default value is 1.
- **To** - Defines the last cue to record to, and thus creates a range from cue to cue. The default value is the last cue of the Cue List.
- **Record Each Cue Separately** - Activate this option if you want to create single records of each single cue; instead of creating a recording that includes the entire duration of the Cue List including all of the cues.
 - You will be asked to choose a folder first in which files will be created by the software [when using MADRIX Records as target].
 - Fades and Fade Times will be ignored and will not be part of the created records.
 - Files will be named **CueNumber_CueListName_CueDescription.***
- **Left Mouse Click** - Click **REC** in order to start the recording process.



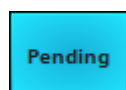
- The button will now pulsate in red and a new window will open to see more details.





- **State** - Shows the current status of the recording process [**Started**, **Stopped**].
- **FPS** - Shows the currently set recording frequency in Frames Per Second. Learn more »[Recording](#)
- **Duration** - Shows how long the record currently is in **HH:MM:SS:FF** [hours:minutes:seconds:frames].
- **Frame Count** - Shows the total number of single frames that has been recorded and created.
- **Key Frame Count** - Shows the total number of frames that differ from each other. The MADRIX 5 Software will automatically optimize the file size of records if recorded frames are identical. Hence, the total number of frames can be different to the number of recorded key frames. For example, a color change [without a fade] might use only two colors. In this case, the record may have 400 frames in total, but just 2 key frames.
- **Buffer Usage** - Shows the status of the temporary memory when creating a MADRIX Record. The higher the progress bar, the more memory is used. You can set the Buffer Size in the Options. Learn more »[Recording](#)
- **Memory Usage** - Shows the currently used main memory [RAM] when creating a MADRIX Record. You will receive a warning icon if the recording process is likely to use too much memory with the following tooltip: **The required memory has reached a critical amount in relation to the total physical memory (RAM)!**
Learn more »[Recording](#)

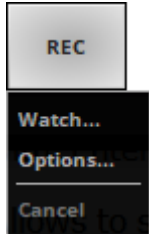
- If you have **Network Records** enabled in the Options, the software will wait 2 seconds after each record to allow devices to process the received data. The recording status then shortly switches to **Pending**.



- The software will automatically stop the recording process according to your settings.
- Please wait a few seconds to let the software process the data. You will be asked for the location to store the record file on your hard drive as well as a name for the file. Click **Save** in order to confirm.
- If needed, you can edit your records after the initial recording process. Learn more below.

Context Menu

- **Right Mouse Click** - Click **REC** in order to call up the context menu.



- **Watch...** - Calls up the **Cue List Recording** window again for more details.
- **Options...** - Calls up the **Recording Options**. Learn more » [Recording](#)
- **Cancel** - Aborts the recording process without asking you to save the file.

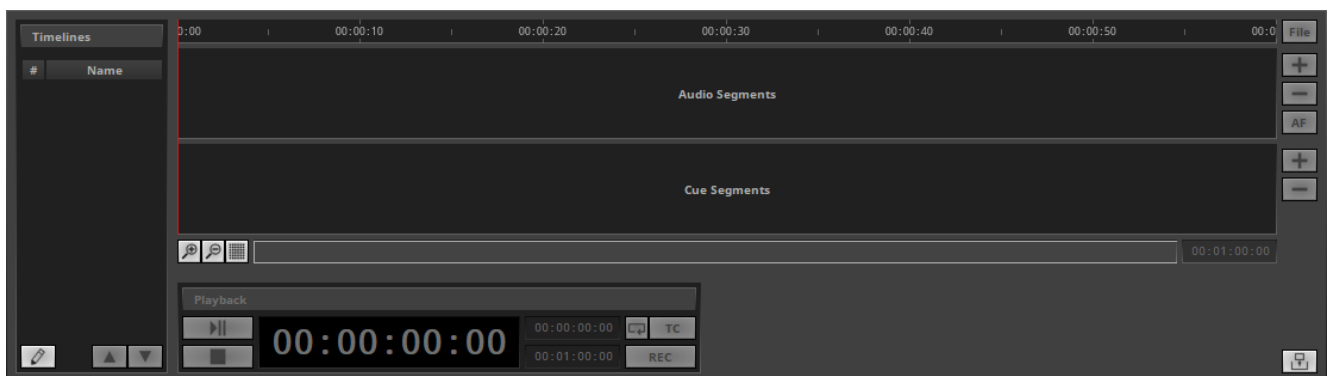
Timeline Recording

Overview

The Timeline Recording feature is part of the Timeline and Timeline Editor.

You can open the Timeline in 3 ways:

- Go to the menu **Tools > Timelines...**
- Or press **F10**
- Or click **Layers > Timelines** on the user interface.



Important Note

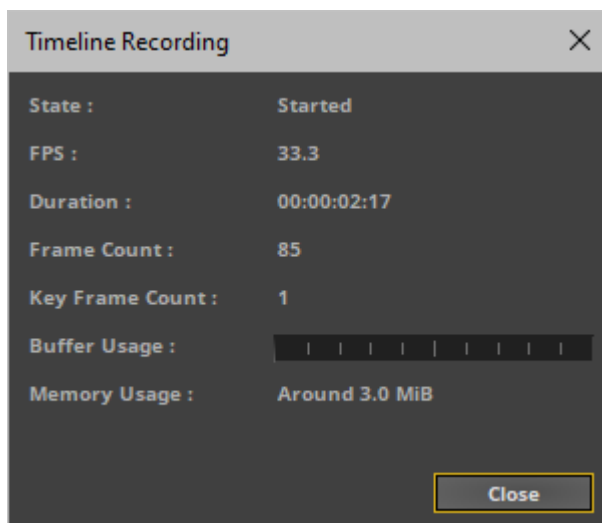
- **Make sure to create a Timeline first. Otherwise, Timeline Recording is not available to you.**
- Learn more » [Timeline Editor](#)

How To Record

- Set up **Playback > Start Time** and **Playback > End Time** to define the length of the record.
- **Left Mouse Click** - Click **REC** in order to start the recording process.
 - Playback of the Timeline will start automatically.
 - The context menu allows for more options. Learn more below.



- The button will now pulsate in red and a new window will open to see more details.



- **State** - Shows the current status of the recording process [**Started, Stopped**].
- **FPS** - Shows the currently set recording frequency in Frames Per Second. Learn more » [Recording](#)
- **Duration** - Shows how long the record currently is in **HH:MM:SS:FF** [hours:minutes:seconds:frames].
- **Frame Count** - Shows the total number of single frames that has been recorded and created.
- **Key Frame Count** - Shows the total number of frames that differ from each other. The MADRIX 5 Software will automatically optimize the file size of records if recorded frames are identical. Hence, the total number of frames can be different to the number of recorded key frames. For example, a color change [without a fade]

might use only two colors. In this case, the record may have 400 frames in total, but just 2 key frames.

- **Buffer Usage** - Shows the status of the temporary memory when creating a MADRIX Record. The higher the progress bar, the more memory is used. You can set the Buffer Size in the Options. Learn more »[Recording](#)
- **Memory Usage** - Shows the currently used main memory [RAM] when creating a MADRIX Record. You will receive a warning icon if the recording process is likely to use too much memory with the following tooltip: **The required memory has reached a critical amount in relation to the total physical memory (RAM)!** Learn more »[Recording](#)
- **Close** - Only closes the watcher window, but does not stop the recording process.

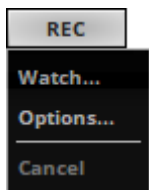
- **Left Mouse Click** - Click **REC** a second time in order to stop the recording process.
- If you have **Network Records** enabled in the Options, the software will wait 2 seconds after each record to allow devices to process the received data. The recording status then shortly switches to **Pending**.



- Please wait a few seconds to let the software process the data. You will be asked for the location to store the record file on your hard drive as well as a name for the file. Click **Save** in order to confirm.
- If needed, you can edit your records after the initial recording process. Learn more below.

Context Menu

- **Right Mouse Click** - Click **REC** in order to call up the context menu.



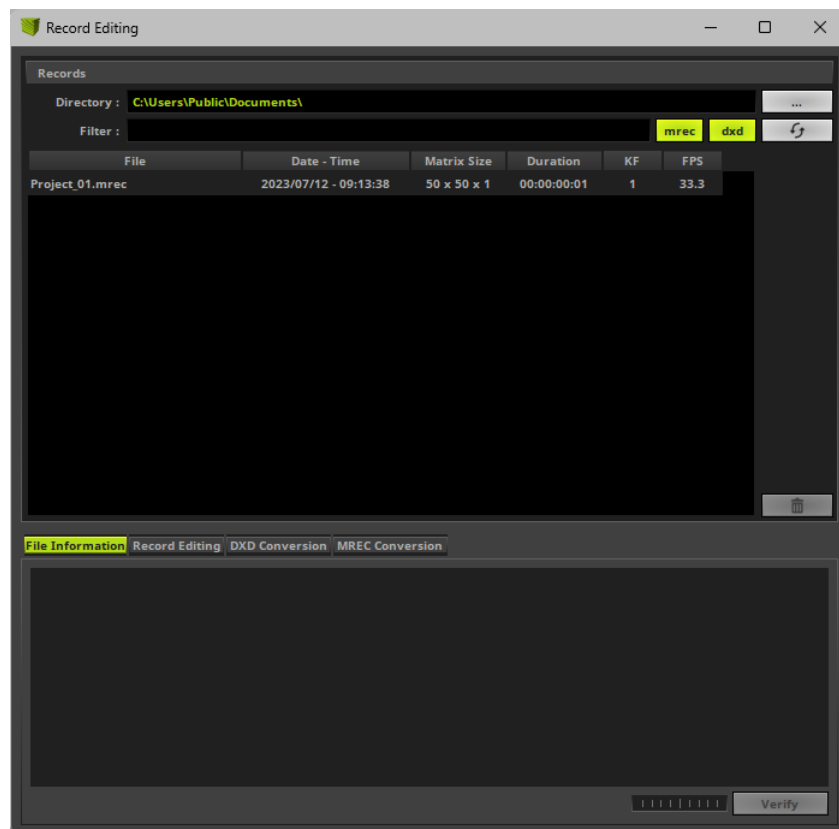
- **Watch...** - Calls up the **Timeline Recording** window again for more details.
- **Options...** - Calls up the **Recording Options**. Learn more »[Recording](#)
- **Cancel** - Aborts the recording process without asking you to save the file.

Record Editing

Overview

It is possible to edit MADRIX Record files for additional fine tuning.

- Go to the menu **Tools > Record Editing...**
[Keyboard shortcut: **Ctrl+Alt+R**]
- A new window will open.



Records

This section allows you to work with your record files.

Directory

- Defines a directory on your harddisk/computer. All record files will be saved in this folder. By default, a useful folder is automatically already chosen for you [For example C:\Users\USERNAME\Documents\MADRIX5\records].

- Use ... to choose a different folder.

Filter

- Simply enter a name/word and the filter will only show files that include these characters in their file name. Delete any input to show all files again.

List

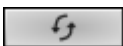
- Files, i.e. records, will be displayed in the large list of the Recording window. If you did not create any records yet, the list is empty [as shown above].



- Shows all MADRIX 5 Record files [of the file type *.mrec] in the list that could be found in the specified directory. When activated, the button is green. Disable the option to hide all Record files.



- Show all DMX Data files [of the file type *.dxd] in the list that could be found in the specified directory. When activated, the button is green. Disable the option to hide all DMX Data files.



- Refreshes the list of records. Please make sure to select your preferred records directory first.

File

- Shows the name of the record and its file type [of the file type *.mrec or *.dxd]. Double-click on the list entry to change the name of the file.

Date - Time

- Shows the time and date when the record was created.

Matrix Size

- Shows the size of the virtual matrix [Matrix Size] used for this record. Learn more »[Patch Editor](#)

Duration

- Shows the length of the record, i.e. how long it is. The format is HH:MM:SS:FF [Hours:Minutes:Seconds:Frames].

KF

- Stands for Key Frames. MADRIX 5 will automatically optimize the file size of records if recorded frames are identical. Hence, the total number of frames can be different to the number of recorded key frames. For example, a color change [without a fade] might use

only two colors. In this case, the record may have 400 frames in total, but just 2 key frames.

FPS

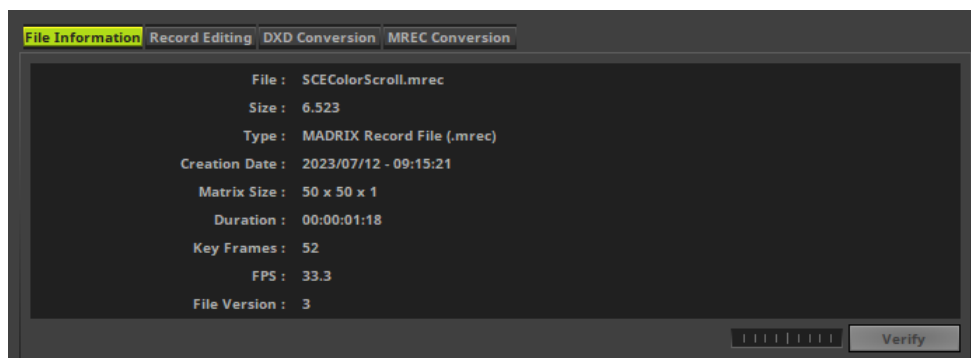
- Stands for Frames Per Second. Shows the number of frames recorded per second of the record file.



- Deletes selected files from your harddisk. You can also use the **Del** key on your keyboard.

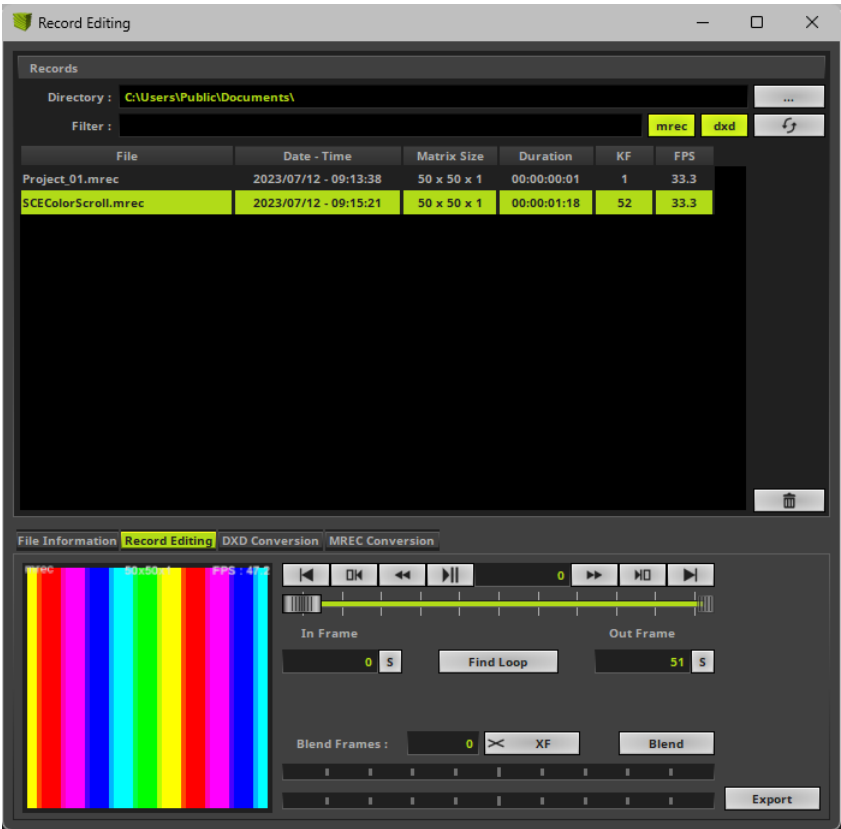
File Information

- Select a file in the list.
- Go to the tab **File Information** to show detailed information about the record file you have created.



Record-Editing Process

- **1]** Select your Record file in the list.
- **2]** Select the tab **Record Editing**



- A small preview window is provided in the lower left to inspect the record.
- **Please note:** If you see the message **!NO MADRIX 5 KEY!** in the preview window and a rotating cross, that means that you are using MADRIX 5 in demo mode. However, this is no problem. Your record will NOT include this text!
- **3]** Use the provided controls to edit your record:



- Use the slider to select a specific frame.
- Use the small, white triangles to manually set up the In Frame [start frame] and the Out Frame [end frame] for the record.
- This field displays the current frame that is also shown in the small preview window. Enter a number to jump directly to this frame.



- Start or stop the preview playback.



- Rewind or forward one frame per click.



- Skip directly to the In Frame or the Out Frame.



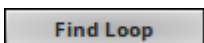
- Skip to the beginning or the end of the record.



- Enter a number or use the slider to select a specific frame. Then, use the **S** button to set the **In Frame** [start frame].



- Enter a number or use the slider to select a specific frame. Then, use the **S** button to set the **Out Frame** [end frame].



- MADRIX 5 will search the Record File in order to find a segment that is loopable. It will automatically set the In Frame and Out Frame afterwards. Use the button **Export** to export your loop. Before that, you can also insert Blend Frames.



- Insert **Blend Frames** into your record if you want to.
 - First, enter the number of frames you wish to use. This defines the length.
 - Second, choose the fade mode [**XF**: Cross-Fade, **WF**: White-Fade, **BF**: Black-Fade, Learn more »[Crossfader And Main Output](#)].
 - Third, click **Blend**.
 - Fourth, use **Play/Pause** to preview the edited record.
 - Fifth, use the button **Export** to export your loop.

Note: The beginning of your record will be cut by the defined frame number. This is indicated by a red line below the slider.

Example: If you enter **100** frames, MADRIX 5 will create the fade using the first 100 frames and the last 100 frames. Those frames will blend into each other. To have a smooth fade, the record is then cut by 100 frames and starts at frame 101.

A rectangular button with a light gray background and a thin black border. The word "Export" is centered in a dark gray, sans-serif font.

- Use this button to export the edited record. Choose a name in the second step.

Usage

Overview

Edited or unedited MADRIX Record files can be played back directly in SCE Video.

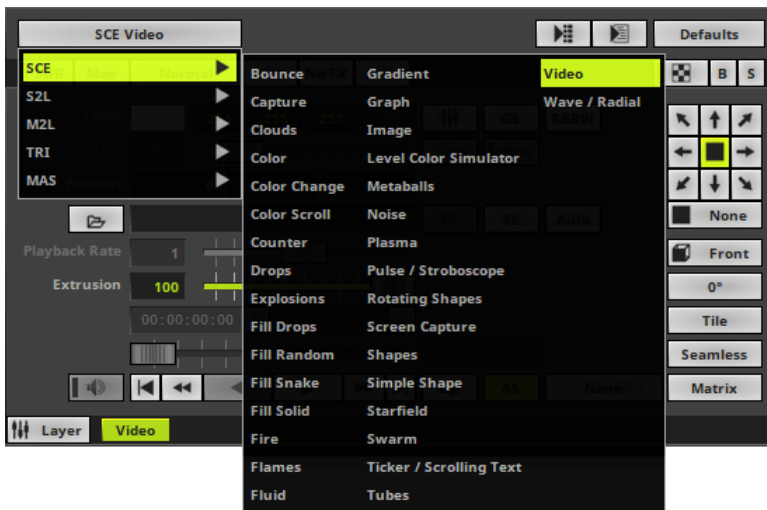
MADRIX AURA and MADRIX PLEXUS require additional conversion, as explained below.

- [SCE Video](#)
- [MADRIX AURA](#)
- [MADRIX PLEXUS](#)

SCE Video

Follow these steps to play back a record file in SCE Video:

1] Select the effect SCE Video.



2] The controls of the SCE Video effect become available as a result.

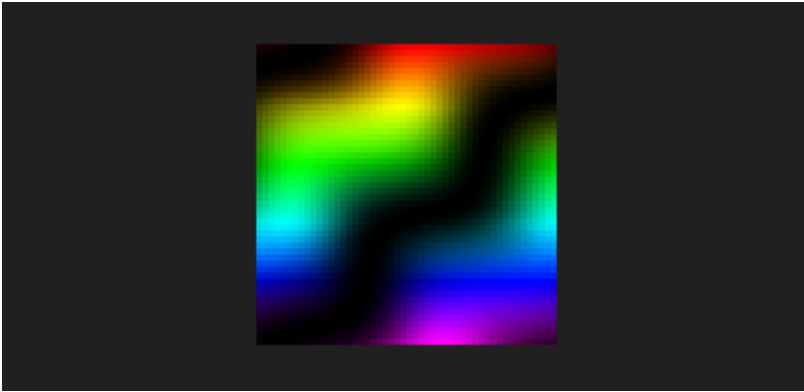


3] Load your MADRIX 5 Record file [of the file type *.mrec].



Use **Open** and select the file you wish to play.

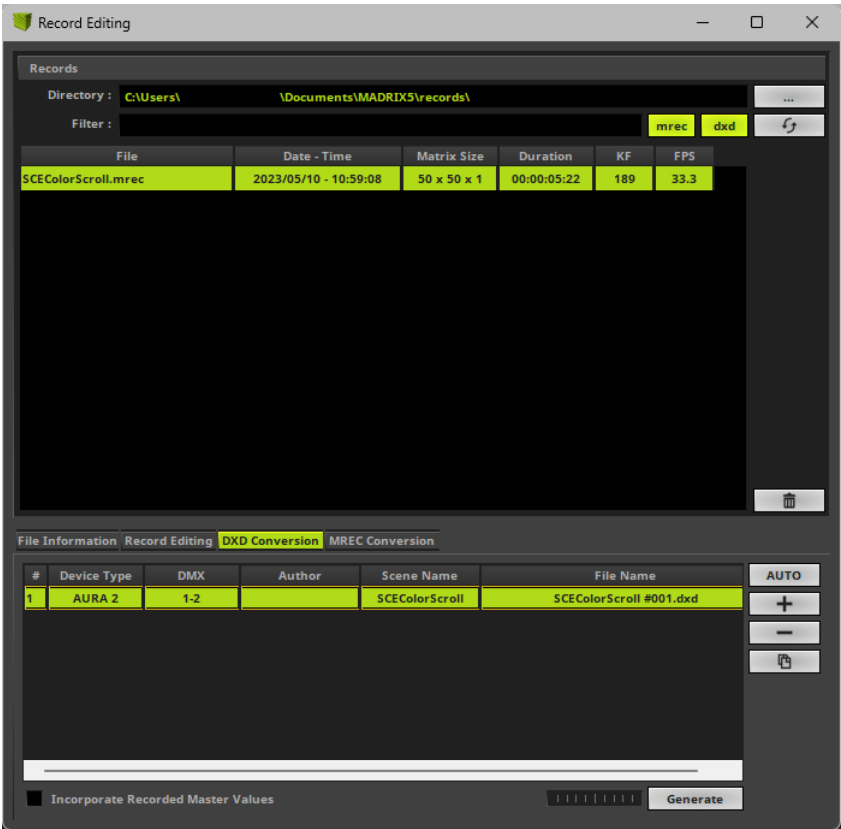
4] The SCE Video effect will play your Record file.



DXD Conversion

Overview

MADRIX Record files cannot be used with MADRIX AURA or MADRIX PLEXUS without converting them into DMX Data files [of the file type *.dxd] first.



Requirements

MADRIX 5 License

- **A MADRIX KEY with a valid MADRIX 5 License that unlocks the needed DMX channels is required in order to use this feature!**

Patching

Configure your virtual LED matrix with the help of the »[Matrix Generator](#) or »[Patch Editor](#) to define the correct patch for your record.

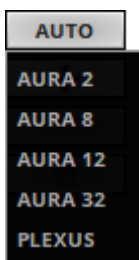
Note

- The DXD Conversion tab only factors in the settings of the Patch and not the settings of the Device Manager.

- If your live output via the Device Manager works and you have changed the assignment of DMX universes, please make sure to adjust the settings in the DXD Conversion tab as well!

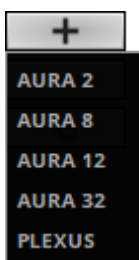
Step-By-Step Instructions

- **1]** Go to the menu **Tools > Record Editing... > DXD Conversion**
[Keyboard shortcut: **Ctrl+Alt+R**]
- **2]** First, select one *.mrec file from the list of Records at the top.
- **Only generate from one, single *.mrec file at a time. It is not possible to generate from multiple *.mrec files at the same time. Repeat the steps for each record file you wish to convert.**
- **3]** Add new items for the conversion in the following way:
Note: If you are using more than 1 device at the same time [for example, 3x MADRIX AURA 2 in Master-Slave Synchronization], make sure to create a list entry for each device.



AUTO - Automatically adds items to the list for the conversion. Choose the type of device first: **AURA 2, AURA 8, AURA 32, PLEXUS**

The number of entries will automatically be added according to the number of patched DMX universes in your Patch in the Patch Editor. The more universes are configured, the more entries will be added.



+ - Allows you to manually add items to the list for the conversion. Choose the type of device first: **AURA 2, AURA 8, AURA 32, PLEXUS**

Add as many entries as needed. For example if you want to convert one record file for different types of devices or if one record file should be played back simultaneously by several devices with different universe assignments each.



- - Removes an item from the list. Select an item in the list first.
[Keyboard shortcut: **Del**]



Duplicate - Creates copies of list items. Select one or several items in the list first. The File Name will automatically be adjusted.

- **4]** Edit the properties in the following way:

#	Index - References the number of items in the list.
Device Type	<p>Shows the device type that had been chosen before creating the list item.</p> <p>Left Mouse Double-Click - Allows you to edit the value. Choose a different device type if needed [AURA 2, AURA 8, AURA 32, PLEXUS].</p>
DMX	<p>Defines which DMX universes of your Patch (virtual LED matrix) will be used for the output ports of the chosen device type. Please assign the correct universes.</p> <p>At least one universe needs to be assigned. Universes that are not included in the Patch will be automatically removed.</p> <ul style="list-style-type: none">▪ AURA 2 - A maximum of 2 DMX universes can be assigned.▪ AURA 8 - A maximum of 8 DMX universes can be assigned.▪ AURA 32 - A maximum of 32 DMX universes can be assigned.▪ PLEXUS - A maximum of 2 DMX universes can be assigned. <p>Left Mouse Double-Click - Allows you to edit the value. Simply enter each number of the required universes you would like to assign. Separate multiple universes by entering a , [comma] in-between. Use Enter to apply the changes.</p> <ul style="list-style-type: none">- The software will automatically fill in default values according to the assigned DMX universes in your Patch in the Patch Editor.- Adding additional devices manually to the list will automatically increase the assigned DMX universes, starting with the next free number.- You can enter ranges of values. For example: '1-2' or '1-8' or '1-32' or '3-4' or '9-16' or '33-64'. Values can only be entered according to the assigned DMX universes in your Patch in the Patch Editor.

- You can enter multiple ranges. For example: '1-4, 9-12' or '24-27, 32-35'. [Make sure to separate ranges with a ,]. Values can only be entered according to the assigned DMX universes in your Patch in the Patch Editor.

Please note:

Consider the particular situation when recording with MADRIX 5 for MADRIX AURA: If the universes in your MADRIX 5 Patch aren't numbered one after the other but have gaps between them, for example if you only have patched fixtures in universe 1 and universe 5, then the converted DXD file will group the universes together again and remove those gaps. For example, the DXD file will include universe 1 on Playback Port 1 and universe 5 on Playback Port 2 then; as universe 5 has been moved to fill the gap. Then, you have the following options:

- 1) In MADRIX AURA, re-assign the Playback Ports to match your original Patch. For example, set Playback > Port 2 to Universe 5.
- 2) When your controllers receive Art-Net data in Broadcast Mode, change the received universes to match the adjusted assignment. For example, change from universe 5 to universe 2.
- 3) Add a single pixel to the empty universes in the MADRIX 5 Patch [by using fixture profile '!generic RGB light 1 pixel'] and make sure that they only receive black color values [DMX value = 0].

Author

Is automatically filled in by the software by using the name of your Windows account.

Left Mouse Double-Click - Allows you to edit the value. Simply enter a different name. Use **Enter** to apply the changes.

Scene Name

Is automatically filled in by the software by using the name of the record file.

Left Mouse Double-Click - Allows you to edit the value. Simply enter a different name. Use **Enter** to apply the changes.

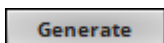
File Name

Is automatically filled in by the software by using the name of the record file and adding an index number.

Left Mouse Double-Click - Allows you to edit the value. Simply enter a different name. Make sure that the file name has the ending **.dxd**. Use **Enter** to apply the changes.

Incorporate Recorded Master Values Can be activated if you have used the Master during recording. Then, your converted record will include the brightness levels set by the Master during the recording. Leave the option unchanged if your did not use the Master or do not want to include it.

- **5]** Convert record files by generating the final DXD files:



Generate - Starts the conversion process to convert MADRIX Record files [*.mrec] into DMX Data files [*.dxd].

You will find the converted files in the Records list at the top of the Record Editing window.

- **Generate DMX Data files [*.dxd] for each of your recordings.**
- **You may create several, different DMX Data files [*.dxd] from a single MADRIX Record file [*.mrec]**
- **Your MADRIX Record file [*.mrec] will not be deleted when DMX Data files [*.dxd] are generated.**
- **You cannot generate different DMX Data files [*.dxd] from different MADRIX Record file [*.mrec] at the same time! Only generate DMX Data files [*.dxd] from one, single MADRIX Record file [*.mrec] every time.**
- **When using multiple devices at the same time in one installation, you will need multiple DMX Data files [*.dxd]. Usually, each device receives its own file or files with their specific universe assignments.**

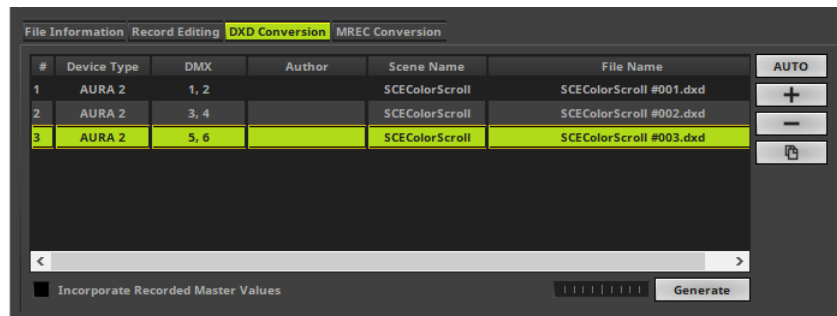


Progress Bar - Shows the progression of the current conversion with the help of a progress bar.

- **6]** Upload the DXD files to your devices and create a configuration [PLEXUS] or Cue List [AURA] according to your requirements.

- Example:

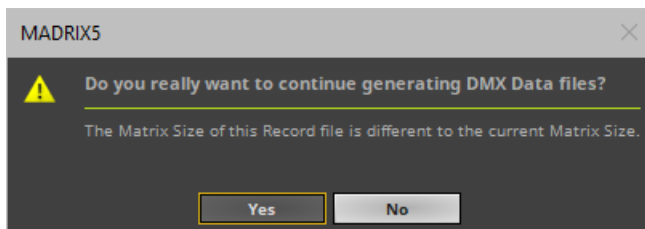
Creating DXD files from one record file for 3x MADRIX AURA 2 in Master-Slave Synchronization could look like this for example:



Warnings

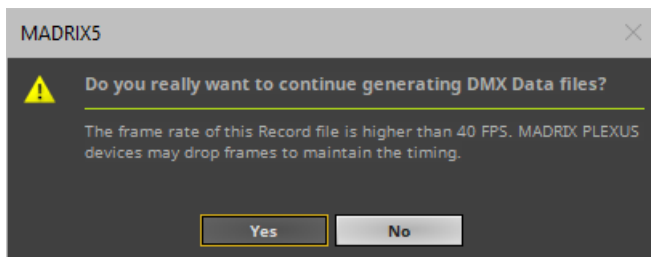
You might encounter certain warnings during your workflow.

Correct Patch



- As described above, you need to configure your virtual LED matrix (Patch including Matrix Size) correctly, before generating DMX Data files. This message box is a reminder to check if your Patch settings in the **Patch Editor** are configured correctly.
- Click **Yes** if you would like to proceed with your current settings.
- Click **No** if you would like to change your settings.

Frame Rate For MADRIX PLEXUS



- The maximum recommended frame rate for the MADRIX PLEXUS is 40 FPS (a frame time of 25ms). This message box is a reminder to check if your frame rate settings in the **Preferences > Options > Recording** are configured correctly.
- Click **Yes** if you would like to continue with your current settings.
- Click **No** if you would like to change your settings.

4.14 MREC Conversion

This topic includes:

- [Introduction](#)
- [Overview](#)
- [File Conversion](#)
- [Using SCE Video](#)

Introduction

You can use the Recording functionality to create MADRIX 5 Record files [of the file type *.mrec] as described in the previous chapter »[Recording](#)

One of the uses is that *.mrec files can be played just like a video using SCE Video.

In order to make use of the advantages of the *.mrec file format, you can convert video files into MREC files.

Overview

Some of the advantages are:

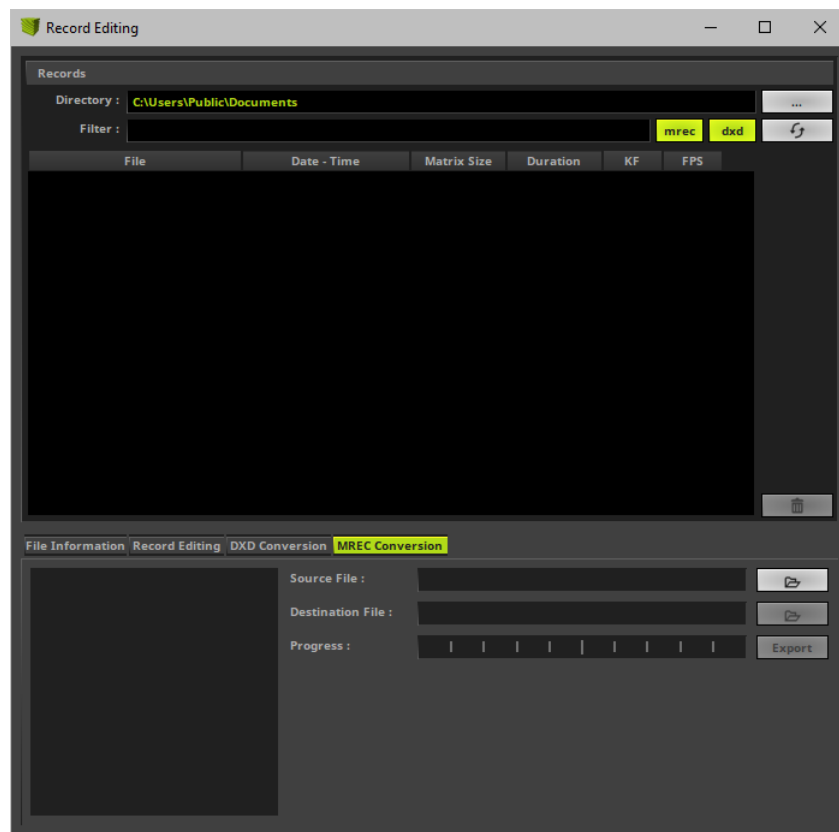
- Always full compatibility with the MADRIX 5 Software without the need for a separate video codec.
- Full compatibility with all playback modes **Once**, **Loop**, and **Bounce**
- Full compatibility with **Step 1 Frame Back** and **Skip 1 Frame**
- Full compatibility with single-frame scrubbing [frame by frame].

Learn more »[SCE Video](#)

File Conversion

Overview

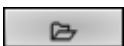
- Go to the menu **Tools > Record Editing...**
[Keyboard shortcut: **Ctrl+Alt+R**]
- A new window will open.
- Go to **MREC Conversion**



Step-By-Step Instructions

- 1] Load the video file.
- 2] Define the destination.
- 3] Start the export process.

1] Loading The Video File



Source File - Load the video input file. This is the file you want to convert.

- Please note: You can load any video that the Media Foundation decoder is able to load. A large variety of file formats and video codecs is supported, but compatibility with all formats/codecs cannot be guaranteed.

2] Defining The Destination File



Destination File - Define the output video file. This will be the final file.

- The software will automatically provide a default path and use name of the source file. You may change them any time.
- The following information is provided after loading a video successfully [to the left]:

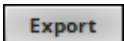
Resolution - The pixel resolution in X and Y of the video.

Duration - The length of the video in HH:MM:SS:FF [Hours:Minutes:Seconds:Frames].

FPS - The frames per second of the video.

Codec - The video codec the file is encoded with.

3] Exporting The MREC File



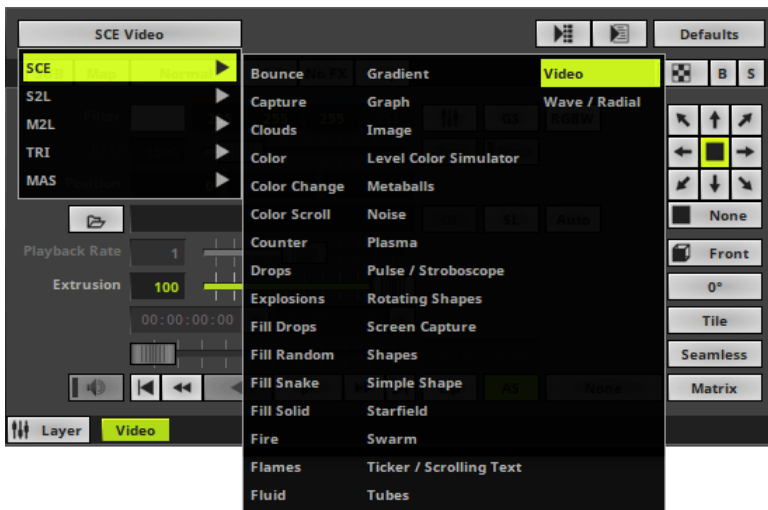
Export - Starts the export process.

- A **Progress** bar and information about the already **Converted Frames** is provided during the process.
- A message informs you **The conversion was successful!**

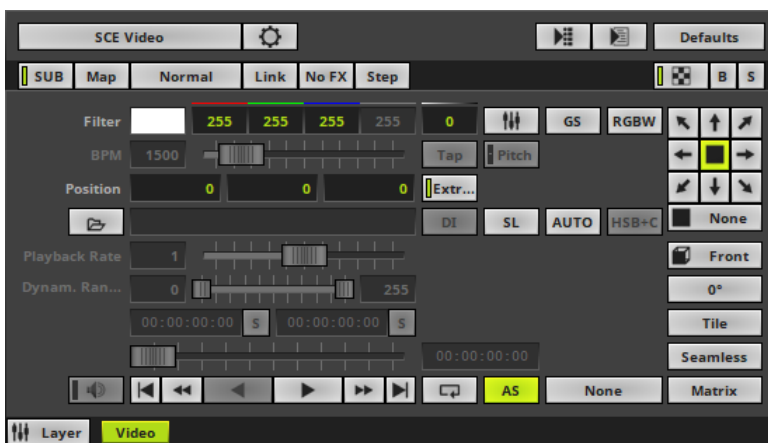
Using SCE Video

Follow these steps to finally play back the record file in SCE Video:

1] Select the effect SCE Video.



2] The controls of the SCE Video effect become available as a result.



3] Load your MADRIX 5 Record file [of the file type *.mrec].



Use **Open** and select the file you wish to play.

4] The SCE Video effect will play your file.



//PART 5

Options

5 Options

This topic includes:

- [Introduction](#)
- [Topics Of This Chapter](#)

Introduction

You can set up specific options for MADRIX 5.

To ensure optimal operation, we highly recommend to set up MADRIX 5 Options.

Topics Of This Chapter

MADRIX 5 Options include the following topics:

- » [Startup](#)
- » [General](#)
- » [Devices USB](#)
- » [Devices Network](#)
- » [User Interface](#)
- » [Recording](#)
- » [Previews](#)
- » [Performance](#)

5.1 Startup

This topic includes:

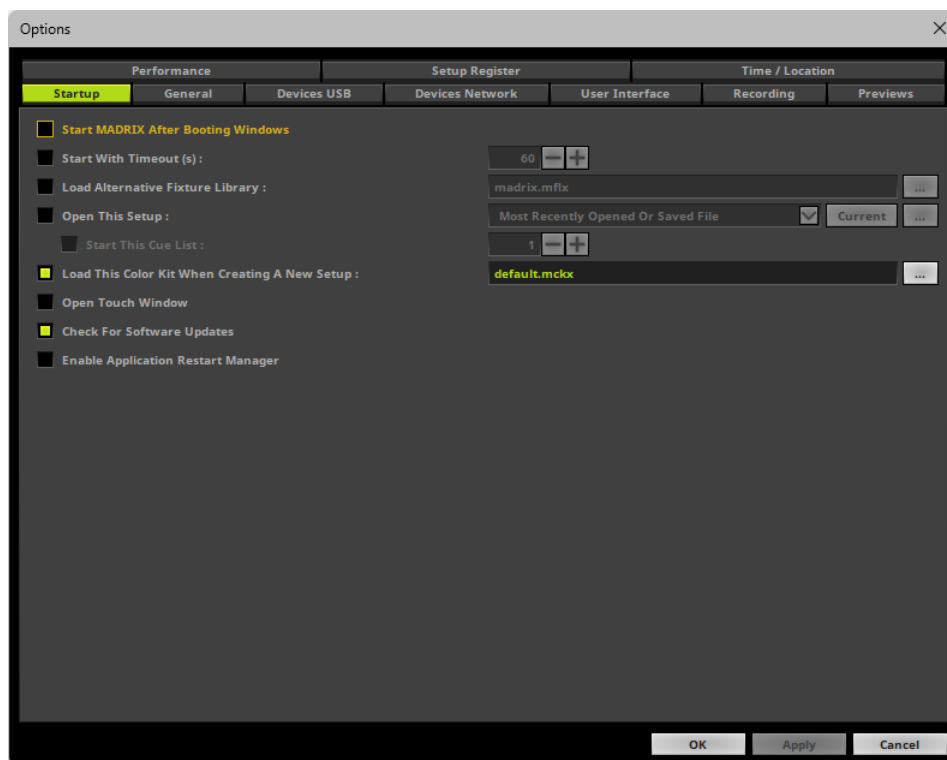
- [Overview](#)

- [Options](#)
- [Important Notes](#)

Overview

MADRIX 5 provides various settings to choose which features should be enabled when the software or your computer starts.

- Go to the menu **Preferences > Options... > Startup**
[Keyboard shortcut: **Ctrl+Alt+O > Startup**]



- Set up the options as explained below.

Options

- **Start MADRIX After Booting Windows** - Starts MADRIX 5 automatically once you log in into Windows.

- **Start With Timeout (s)** - Starts the software with a delay. You can define a time frame in seconds. MADRIX 5 will not fully start until the time has passed.

A new loading window will appear before the software starts. You can move and relocate the loading window with the help of your mouse. It shows a countdown and 2 options:

- **Start Now** - Start the software immediately.
- **Cancel Startup** - Cancels the startup and MADRIX 5 will not be launched.

This timeout is particularly useful when using network devices with MADRIX 5. Windows needs some time to initialize such devices first. But MADRIX 5 might be already loaded completely and as a result may not detect the devices. This option prevents that.

- **Load Alternative Fixture Library** - Automatically loads a separate MADRIX 5 Fixture Library and not the default library provided by MADRIX 5.
 - Choose the file via the button ...
 - Learn more » [Fixture Editor](#)
- **Open This Setup** - Automatically loads a specific MADRIX 5 Setup File.
 - **Most Recently Opened Or Saved File** - Choose this option if the software should automatically load the most recently used file, that has been opened or saved.
 - **Specify File** - Choose this option if you wish load load a particular MADRIX 5 Setup file. Then, choose the file from your system. Is the same functionality as ...
 - **Current** - Fills in and specifies the currently loaded MADRIX 5 Setup file to be used as the file that should be loaded on startup.
 - ... - Choose this option if you wish load load a particular MADRIX 5 Setup file. Then, choose the file from your system. Is the same functionality as **Specify File**

Start This Cue List - Is only available when Open This Setup is activated. Automatically starts the Cue List once your Setup File has been loaded [if a Cue List has been included by you in the Setup File]. Automatically disables Open Touch Window since the Touch Window cannot be opened when the Cue List is running. Choose which Cue List should be started by entering the Cue List number.

- **Load This Color Kit When Creating A New Setup** - Automatically loads a specific Color Kit, including Global Color Lists and Global Colors, when you create A new MADRIX 5 Setup.
 - Choose the file via the button ...
 - Learn more » [\[Global\] Colors And Intensity](#)
- **Open Touch Window** - Loads the Touch Screen interface when MADRIX 5 starts. Automatically disables Start Cue List After Loading The Start Setup since the Touch Window cannot be opened when a Cue List is running. Learn more » [Touch Screen](#)
- **Check For Software Updates** - Automatically searches for software updates. This requires an internet connection.

- **Enable Application Restart Manager** - Automatically restarts the software after an unexpected shutdown.
 - This might be useful, for example, when running a 24/7 installation with a Cue List and also activating **Start MADRIX After Booting Windows, Open This Setup** as well as **Start Cue List After Loading The Start Setup** in order to try to ensure continued LED control after an unwanted power loss, for example.

Important Notes

- All **Startup** options will be saved locally on your computer. These settings will not be saved in your **MADRIX 5 Setup** file.

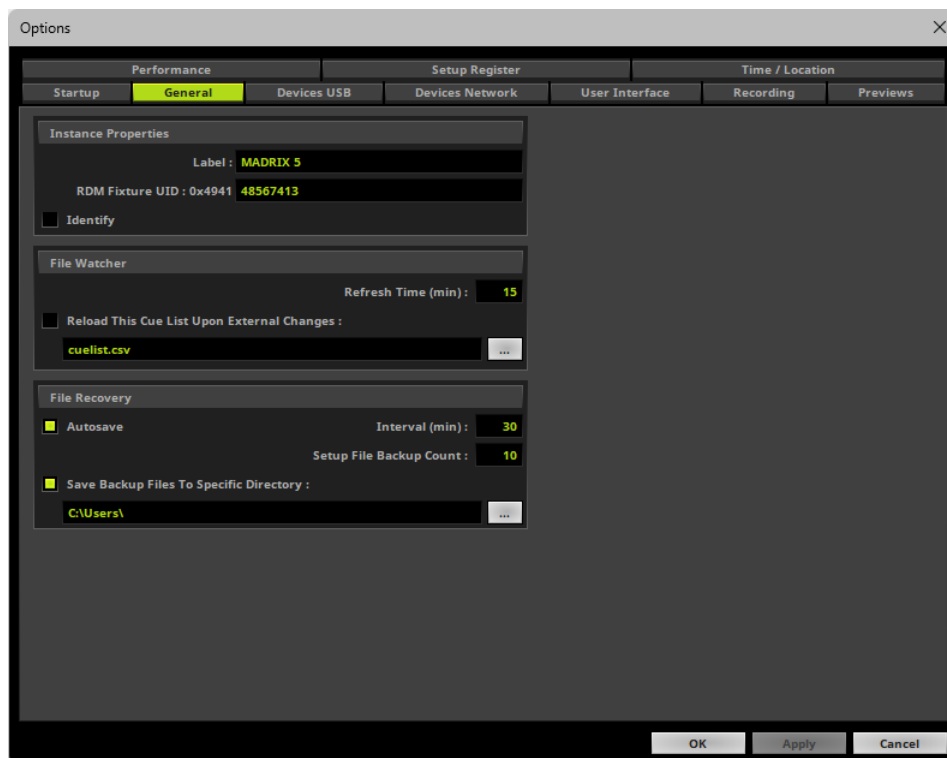
5.2 General

This topic includes:

- [Overview](#)
- [Instance Properties](#)
- [File Watcher](#)
- [File Recovery](#)
- [Important Notes](#)

Overview

- Go to the menu **Preferences > Options... > General**
[Keyboard shortcut: **Ctrl+Alt+O > General**]



- Set up the options as explained below.

Instance Properties

MADRIX 5 allows you to change information that is provided when receiving network requests [via RDM, Art-Net ArtAddress, or similar].

- **Label** - Allows you to change the device label of this MADRIX 5 instance. This is especially useful when running several MADRIX 5 applications at once within the same network. By default, **MADRIX 5** is used.
 - This refers to DEVICE_LABEL within RDM with a maximum of 32 characters.
 - This refers to LongName within Art-Net with a maximum of 64 characters.
- **RDM Fixture UID** - Defines the last 4 hexadecimal bytes of the RDM unique identifier [with a total of 8 characters]. The first two bytes are locked and represent the ESTA manufacturer ID for inoage [0x4941].
- **Identify** - Enables or disables the Identify Device command. It is deactivated by default.
 - This refers to IDENTIFY_DEVICE within RDM.
 - This refers to AC_LOCATE/AcLedLocate of ArtAddress within Art-Net.

Learn more »[RDM](#)

File Watcher

Overview

MADRIX 5 can automatically and regularly reload a Cue List within a pre-defined refresh time.

- Activate ***Reload This Cue List Upon External Changes***
- Select the Cue List file via the button ...
- Enter the ***Refresh Time (min)*** in minutes.

Usage

The File Watcher with its Automatic Cue List Reloading feature is very useful if you are using an external program that creates a Cue List in the *.csv file format.

- If this Cue List is changed, you are easily able to access the new Cue List without modifying settings within MADRIX 5.
- In order to work with this feature, simply create a new Cue List, save it using the *.csv file format and open the file with a text editor or other appropriate software.
- MADRIX 5 can save a Cue List also in *.csv file format.
- The time format is based on ms [Milliseconds]. In this way, any import can be recalculated to the used Time Code Format by the software.

Any time code or duration needs to be converted in your CSV file first. Frames need also to be converted.

Examples:

1 h = 3600000

1 m = 60000

1 s = 1000

00:36:05:00 [HH:MM:SS:MS] = 2165000

00:02:31:00 [HH:MM:SS:MS] = 151000

00:00:36:05 @ 30 FPS = 36166

[1000 ms per second / 30 FPS = 33.3 ms per frame and 5 frames x 33.3 ms per frame = 166 ms]

Here is an example with two Cue List entries:

```
MADRIX;CSV;CUELIST;FILE;;;;;;;;;;
VERSION;50593792;;;;;;;;;;
TIMECODE FORMAT;1;TIMECODE SOURCE;0;;;;;;;;;;
CUE;DESCRIPTION;DATE;TIMECODE;DURATION;FOLLOW CUE;STORAGE;PLACE;FADETYPE;FADETIME;R;G;B
1;"Color Scroll";"Daily";-1;180000;0;0;0;1;2.00;0;0;0;0;0;
2;"Red";"Daily";-1;266000;0;2;0;1;2.00;0;0;0;0;0;
```

Time Code Source	Setting	Time Code Format	Setting
0	None	0	24 FPS
1	System Time	1	25 FPS
2	MIDI	2	30 Drop
3	Art-Net	3	30 FPS
4	SMPTE		

Learn more »[Cue Lists](#)

File Recovery

- **Autosave** - Automatically saves the MADRIX 5 Setup file at the specified interval in Programmer mode.
 - **Interval (min)** - Defines the time interval for automatic saving in minutes. The default value is 30. The minimum value is 1. The maximum value is 120.
 - The time interval is being restarted once a Setup files has been created [**File > Save Setup As...**], a Setup file has been saved manually [**File > Save Setup**], another Setup file has been loaded [**File > Open Setup...**], or the Setup file has been automatically saved.

Automatic saving does not work:

- If Autosave is disabled,
- If no MADRIX 5 Setup file is open [Make sure to open a Setup file or save the Setup file after **File > New Setup...** first],
- If the Setup file has not been modified/changed since having been saved last,

- If Programmer Mode is not being used [Autosave does not work in Operator Mode]!

- **Setup File Backup Count** - MADRIX 5 can create backup copies of your current MADRIX 5 Setup file. That means, before the new Setup file is saved, the previous state will be stored as a backup. This works for Setup file that are saved automatically via Autosave as well as saved manually [Should the saving process fail, you can access your Setup file again in the state it was saved last.]

- MADRIX 5 creates separate copies to minimize the chance that a valid backup is overwritten by an invalid Setup file.

- Sets the maximum number of backup files that are created.

- The default value is 10. The minimum value is 0 [Off]. The maximum value is 100.

- MADRIX 5 will save a backup in the following way:

Filename_Year-Month-Day_Hours-Minutes-Seconds.ms.msbackup

In order to restore a Setup file, remove **.msbackup** from the file name. The restored Setup file should then have a name, such as **Filename_Year-Month-Day_Hours-Minutes-Seconds.ms**

- **Save Backup Files To Specific Directory** - Enable this option if you want to set up a specific directory where the backup files should be stored. This can be external drives. If this option is disabled, MADRIX 5 will save the backups in the same directory as the Setup files.

- Choose the directory via the button ...

- By default, MADRIX 5 automatically chooses the user directory for Setup files.

Important Notes

- **All General options will be saved locally on your computer. The settings described in this topic will not be saved in your MADRIX 5 Setup file.**

5.3 Devices USB

This topic includes:

- [Overview](#)
- [Supported MADRIX Devices](#)
- [Supported Third-Party Devices](#)
- [Further Configuration](#)

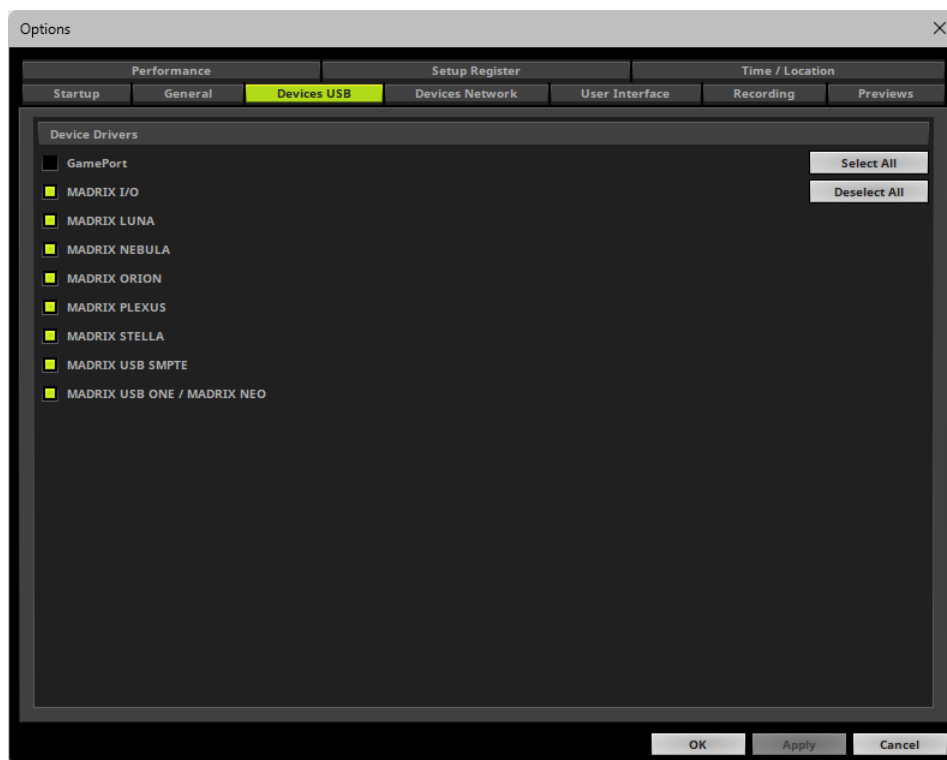
- **Important Information**

Overview

MADRIX 5 allows to activate or deactivate drivers for various hardware interfaces, such as MADRIX NEO and others.

- Go to the menu **Preferences > Options... > Devices USB**

[Keyboard shortcut: **Ctrl+Alt+O > Devices USB**]



- Activate the required drivers for your hardware interfaces.
- [When activated, MADRIX 5 automatically searches for supported devices at startup.]

Supported MADRIX Devices

- » [MADRIX USB ONE](#)
- » [MADRIX NEO](#)
- » [MADRIX PLEXUS](#)
- » [MADRIX LUNA](#)
- » [MADRIX NEBULA](#)
- » [MADRIX STELLA](#)
- » [MADRIX ORION](#)
- » [MADRIX I/O](#)
- » [MADRIX USB SMPTE](#)

Supported Third-Party Devices

MADRIX 5 also supports a number of 3rd-party interfaces.

Learn more » [GamePort](#)

Further Configuration

Further configuration is needed:

- Devices USB only activates the required drivers.
- Make sure to enable and configure your hardware interfaces also according to your requirements.

Learn more » [DMX512 \[DMX-OUT\]](#)

Important Information

- If you only activate drivers for devices which you are effectively going to use,
 - you can speed up the loading/starting time of MADRIX 5.
- All options of *Devices USB* will be saved locally on your computer. The settings described in this topic will not be saved in your MADRIX 5 Setup file.

5.4 Devices Network

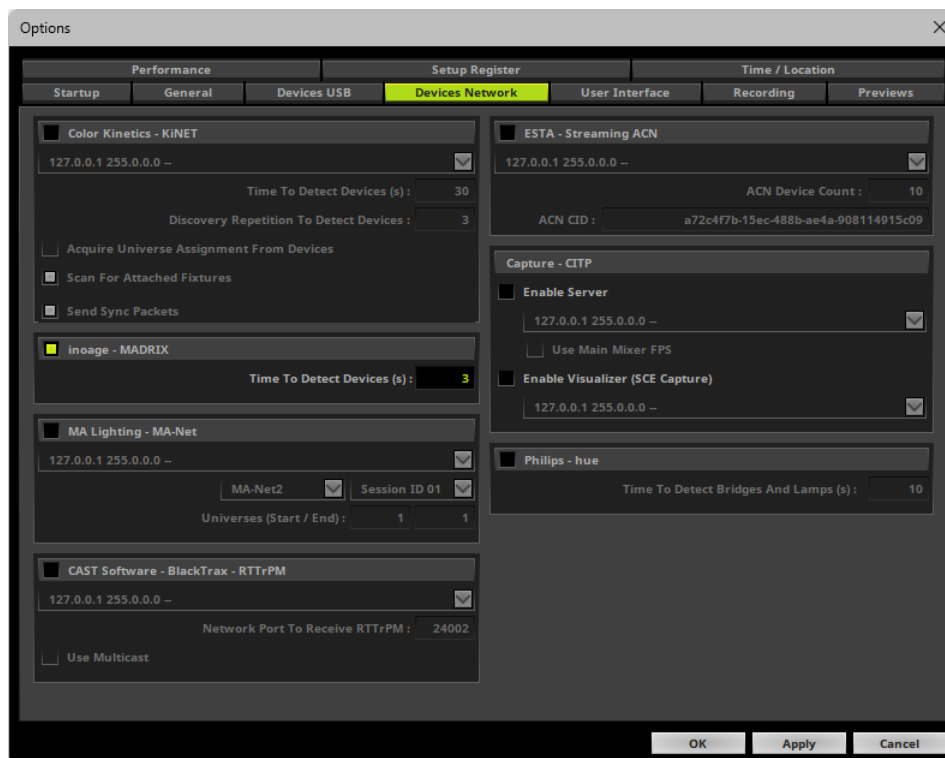
This topic includes:

- [Overview](#)
- [Further Configuration](#)
- [Important Notes](#)

Overview

MADRIX 5 allows to activate or deactivate drivers or network communication protocols for various products.

- Go to the menu ***Preferences > Options... > Devices Network***
[Keyboard shortcut: ***Ctrl+Alt+O > Devices Network***]



- Activate the required drivers.
- [When activated, MADRIX 5 automatically searches for supported devices at startup.]

You can enable the following network drivers here:

- **Color Kinetics - KiNET**
- **inoage - MADRIX**
[For MADRIX AURA, MADRIX LUNA, MADRIX NEBULA, MADRIX PLEXUS, MADRIX STELLA, and MADRIX ORION]
- **MA Lighting - MA-Net**
- **CAST Software - BlackTrax - RTTrPM**
- **ESTA - Streaming ACN**
- **Capture - CITP**
- **Philips - hue**

When activating a driver, please always make sure that you have selected the correct network card.

Further Configuration

Further configuration is needed:

- Devices Network only activates the required drivers and often the corresponding network card.
- Make sure to configure your hardware interfaces also according to your requirements.

Learn more

- » [Color Kinetics \[KiNET\]](#)
- » [MADRIX AURA](#)
- » [MADRIX LUNA](#)
- » [MADRIX NEBULA](#)
- » [MADRIX PLEXUS](#)
- » [MADRIX STELLA](#)
- » [MADRIX ORION](#)
- » [MA Lighting MA-Net](#)
- » [CAST Software BlackTrax](#)
- » [ESTA Streaming ACN \[sACN / E1.31\]](#)
- » [CITP](#)
- » [Philips hue](#)

Important Notes

- **Only activate the drivers you require. In this way, you can speed up the loading/starting time of MADRIX 5.**

- All options of *Devices Network* will be saved locally on your computer. The settings described in this topic will not be saved in your MADRIX 5 Setup file.

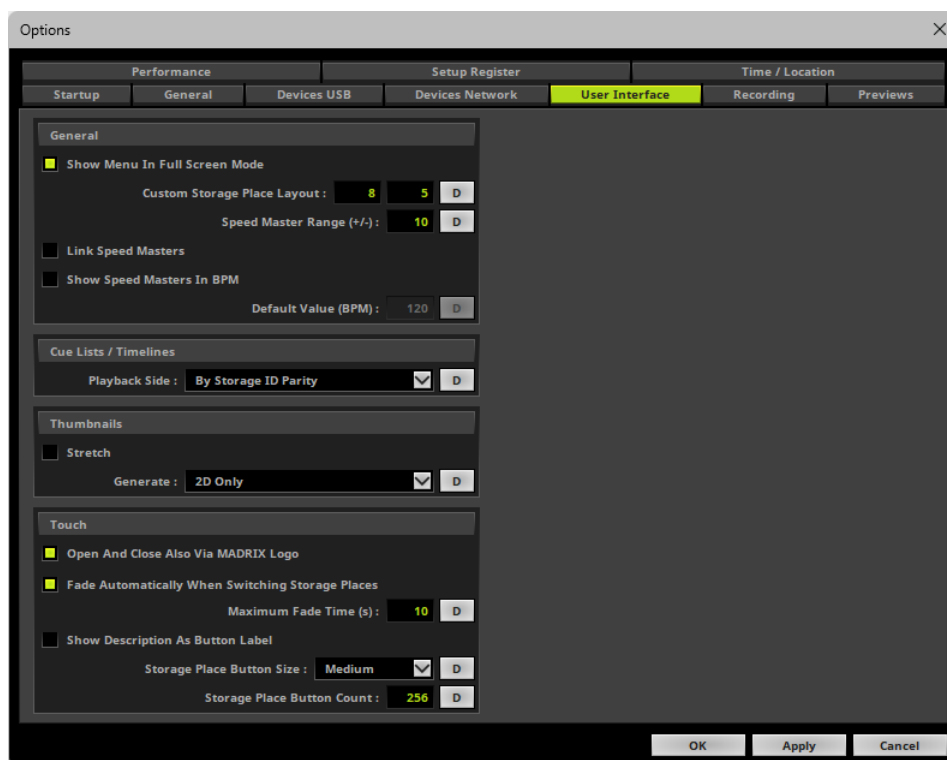
5.5 User Interface

This topic includes:

- [Overview](#)
- [General](#)
- [Cue Lists / Timelines](#)
- [Thumbnails](#)
- [Touch](#)
- [Important Notes](#)

Overview

- Go to the menu **Preferences > Options... > User Interface**
[Keyboard shortcut: **Ctrl+Alt+O > User Interface**]



- Set up the options as explained below.
- Click **Apply** to confirm.
- Click **OK** to close the window.

General

- **Show Menu In Full Screen Mode** - Allows you to display or hide the menu bar in full screen mode.
 - Learn more » [Full Screen Mode](#)
- **Custom Storage Place Layout** - Allows you to change the custom layout of Storage Places on the user interfaces.
 - Using a custom layout is especially useful when using MIDI controllers and adjusting the software's layout to the button layout of the controller.
 - Defines the layout in X and Y.
 - Minimum values are 1. Maximum values are 8.
 - **D** - Restores the default settings. The default values are 8 x 5.

Learn more » [Storages](#)
- **Speed Master Range (+/-)** - Defines the value range of Speed Master Deck A and Speed Master Deck B on the main user interface.
 - The default value is 10 [-10.00/+10.00].
 - The minimum value is 1 [-1.00/+1.00].
 - The maximum value is 20 [-20.00/+20.00].
 - Increments via mouse wheel and keyboard arrow keys are 0.01.
 - **D** - Restores the default settings.
- **Link Speed Masters** - Allows you to synchronize Speed Master Deck A and Speed Master Deck B. Any changes made to one Speed Master will then automatically be set for the other Speed Master as well. In this way, they are always set to the same speed if this option is enabled.
- **Show Speed Masters In BPM** - Instead of showing Speed Master values as a factor, this option shows the values in Beats Per Minute. Default Value (BPM) thereby sets the base level.
 - **Default Value (BPM)** - Defines the BPM value which corresponds to a speed-master value of 1.00.
 - **D** - Restores the default settings.

Cue Lists / Timelines

You can choose how MADRIX 5 manages the user interface when playing back a Cue List or a Timeline.

- **Playback Side** - Defines which sides are used during Cue List /Timeline playback. Choose from 2 modes:
 - Alternating** - MADRIX 5 automatically switches from side to side between Deck A and Deck B.
 - Example: The first cue or cue segment will be played on Deck A of the user interface, the second cue or cue segment on Deck B, the third cue or cue segment on Deck A again, and so on.
 - By Storage ID Parity** - MADRIX 5 will decide which side to use depending on the Storage ID.
 - Cues or cue segments that reference an odd Storage ID [e.g., Storage 1 or Storage 3] will be played back on Deck A only.
 - Cues or cue segments or that reference to an even Storage ID [e.g., Storage 2 or Storage 4] will be played back on Deck B only.
 - This also influences the behavior of the Slide and Wipe fade types of the crossfader. Instead of sliding in from the other side, they slide in only from one side [e.g. odd Storage IDs from the left and even Storage IDs from the right for Wipe X].
 - D** - Restores the default settings. The default value is By Storage ID Parity.

Learn more »[Cue List Editor](#)

Learn more »[Timeline Editor](#)

Thumbnails

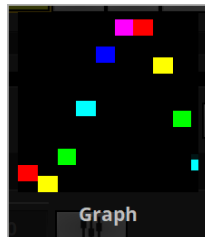
MADRIX 5 provides thumbnails to preview Storage Places and their included visuals on the main user interface »[Storage Places \[256 x 256\]](#) as well as on the touchscreen interface »[Touch Screen](#).

Please note: Your thumbnails need to be up to date before the any changes to the below options are applied. [They will be updated when switching to another Storage Place when set to **Right-Click > Thumbnail > Automatic.**]

- **Stretch** - Fully utilizes the entire size of the square thumbnail window by stretching the previewed image. Otherwise, it depends on the aspect ratio of your virtual matrix how much thumbnail space is used. When using a very rectangular matrix, the thumbnail is often shown very wide, but not very high, for example.

For example:

Stretch Activated



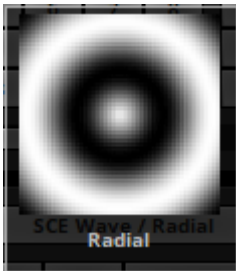
Stretch Deactivated



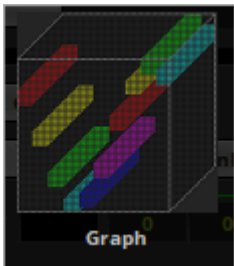
- **Generate** - Changes how thumbnails are generated.
 - 2D Or 3D** - Generates 2D-thumbnails for 2D virtual matrices or 3D-thumbnails for 3D virtual matrices. If the 3D-thumbnails turn out to be not very useful for your individual 3D patch or mixed 2D/3D patch, it is recommended to choose 2D Only instead.
 - 2D Only** - Only generates 2D-thumbnails for both, 2D virtual matrices as well as 3D virtual matrices. In case of a 3D virtual matrix, all Z-levels will be merged via HTP to generate a useful thumbnail that looks 2D but includes color information of all 3D levels.
 - D** - Restores the default settings. The default setting is 2D Only.

For example:

2D-Thumbnail



3D-Thumbnail



Touch

MADRIX 5 features a special Touch Screen window to control the software via a touch screen panel. You can set up certain options for this extra panel.

Learn more »[Touch Screen](#)



Important Notes

- All options of *User Interface* will be saved locally on your computer. The settings described in this topic will not be saved in your MADRIX 5 Setup file.

5.6 Recording

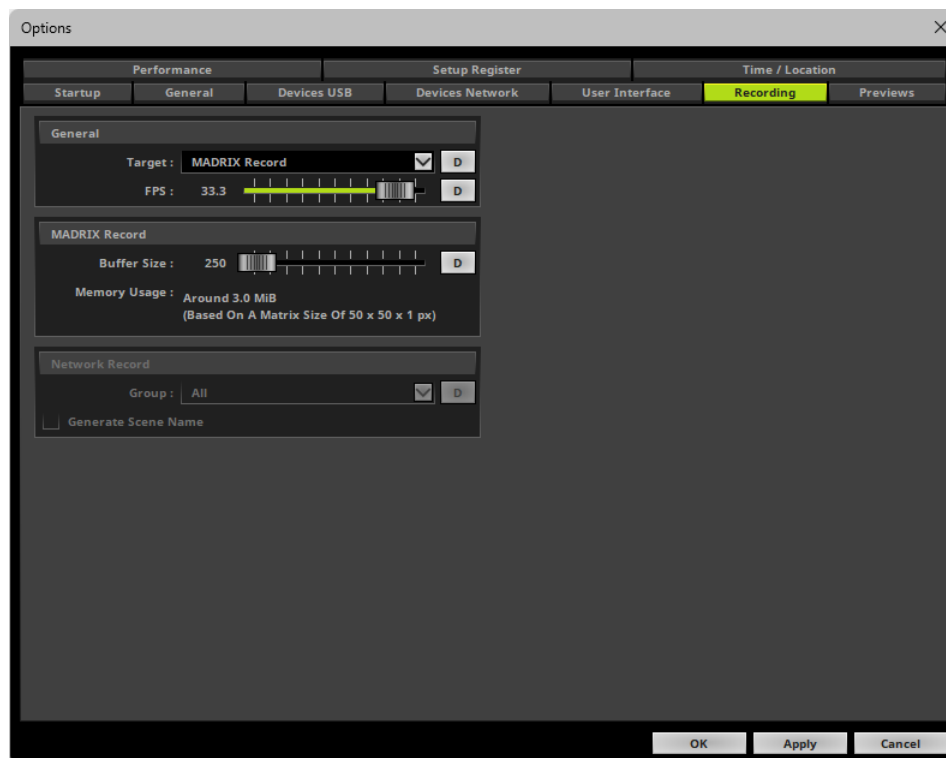
This topic includes:

- [Overview](#)
- [General](#)
- [MADRIX Record](#)
- [Network Record](#)
- [Important Notes](#)

Overview

MADRIX 5 provides settings for the different recording features [Main Output Recording, Cue List Recording, Timeline Recording, MADRIX AURA Recording].

- Go to the menu **Preferences > Options... > Recording**
[Keyboard shortcut: **Ctrl+Alt+O > Recording**]



- Set up the options as explained below.

General

- **Target** - Defines the type of recording to be used for different areas of application.
 - MADRIX Record** - Creates *.mrec files to be used via SCE Video or converted later for MADRIX AURA or MADRIX PLEXUS.
 - Network Record** - Starts a network recording process for MADRIX AURA [which records directly in the SD card of the device].
 - D** - Restores the default settings. The default value is MADRIX Record.
 Learn more » [Recording](#)
- **FPS** - Defines the frequency with which records are created [in Frames Per Second].
 - This refers to the main mixer of MADRIX 5 and its recording processing thread.
 - If you are recording MADRIX Record *.mrec files, this is also the frame rate of the resulting file.
 - If you are creating Network Records, the output settings of the Device Manager set the recorded frame rate for

each device for unicast connections.

- If you are creating Network Records with broadcast connections, this is also the frame rate of the resulting file.

D - Restores the default settings. The default value is 33.3 FPS.

MADRIX Record

- **Buffer Size** - Refers to creating a MADRIX Record as explained above. Defines the number of frames that will be reserved in temporary memory to prevent disruption of the recording process. Valid values range from 10 to 10000.

D - Restores the default settings. The default value is 250 frames.

- If no or only few frames are buffered, the harddisk/storage drive might not be fast enough to be able to write all recorded frames, since frames are might be recorded at a higher rate or at a higher data volume than the drive can write. If that is the case, a so-called buffer overflow usually occurs and the recording process aborts and fails.

- Holding frames in temporary memory, allows the harddisk/storage drive to write data at a slower pace than is actually recorded and unprocessed frames can still be written after the recording process has stopped.

- The higher the value, the more frames are held in temporary memory.

- The more frames are held in temporary memory, the more main memory [RAM] is required of the computer system.

- **Memory Usage** - Shows an estimate of how much main memory [RAM] is required based on the the currently set Matrix Size [in B, KiB, MiB, or GiB].

- If the memory usage exceeds the available main memory [RAM], you will receive a warning: ***Assuming the current settings of Buffer Size and Matrix Size, the required memory would be critical in relation to the total physical memory (RAM)! This may cause performance issues, such as frame drops, or operating-system instability.***

- If you receive a warning, it is recommended to decrease the Buffer Size again.

- Learn more »[Recording](#)

- Learn more »[SCE Video](#)

Network Record

Becomes available when Network Record is selected under General > Target.

- **Group** - Defines the Sync Group.
 - Setting up a Sync Group assigns your MADRIX AURA device to a specific group in which it operates. In this way you, may set up several different Master-Slave clusters in the same network. As a result, these will run independently and do not affect each other.
 - Make sure that Master and Slave devices that should communicate with each other are assigned to the same group!
 - As such, you can start the recording process only for a specific group [ranging from **1** to **256**] or to **All** groups.
- **D** - Restores the default settings. The default value is All.
- **Generate Scene Name** - Activate this option if the file recorded over network [on the SD card of MADRIX AURA] should be named automatically according to the Name of the Cue List, Name of the Timeline, or Description of the active Storage Place.
 - The software decides which Storage Place is active and chosen for the name in the following way: The position of the crossfader decides. If it is positioned more to one side, Deck A or Deck B will be chosen accordingly. If the crossfader is in its middle position, the currently active Storage Place on Deck A will be chosen.

Important Notes

- **All Recording options will be saved locally on your computer. These settings will not be saved in your MADRIX 5 Setup file.**

5.7 Previews

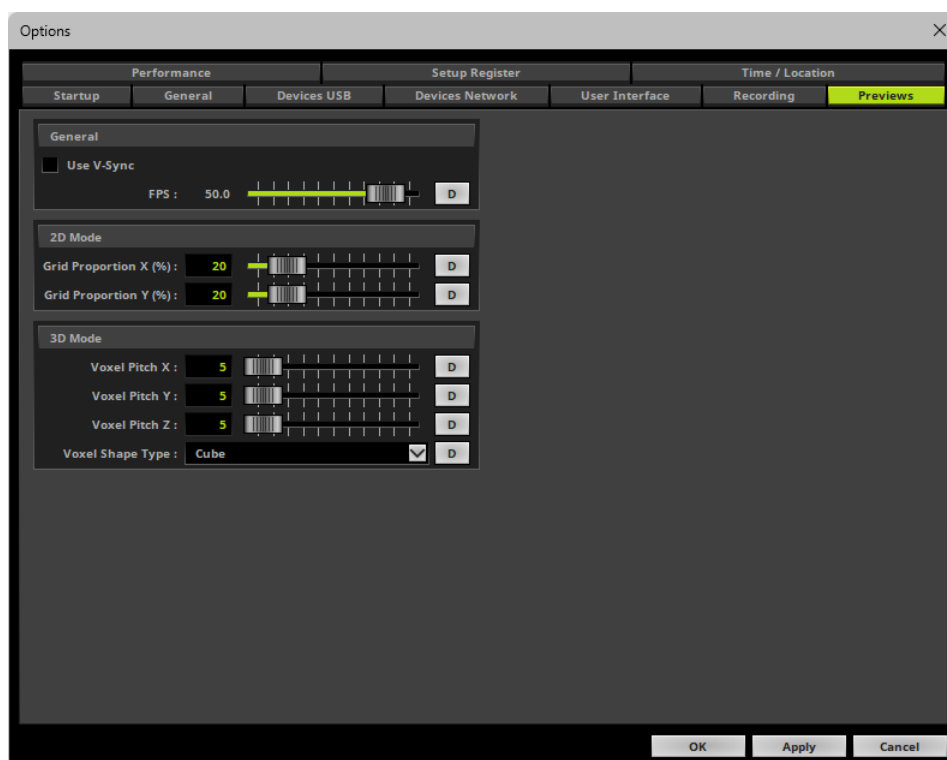
This topic includes:

- [Overview](#)
- [General](#)
- [2D Mode / DVI Map Mode](#)

- [3D Mode](#)
- [Important Notes](#)

Overview

- Go to the menu **Preferences > Options... > Previews**
[Keyboard shortcut: **Ctrl+Alt+O > Previews**]



- Set up the options as explained below.

General

- **Use V-Sync** - Activates the Vertical Synchronization function of your graphics card for your display monitor or output device. V-Sync is deactivated by default. This is mainly useful when screen-capturing a DVI output window.
- **FPS** - Allows you to manually set the frame rate of the 3 Previews and 2 External Previews [in Frames Per Second].
 - A higher number of frames generates smoother results, but requires much more computer performance.
 - This option can be set independently of V-Sync. But if V-Sync is activated, the maximum frame rate will be set by the highest possible V-Sync frame rate of your monitor or output device, even if you entered a higher number.
- **D** - Restores the default settings. The default value is 50.0 FPS.
 - The minimum value is 10 FPS.
 - The maximum value is 200 FPS.
 - **Please note:** If you want to output high frame rates, make sure to set Main Mixing FPS to the same value [It is set to 50 FPS by default. Otherwise, frames will be duplicated.] Learn more »[Performance](#)

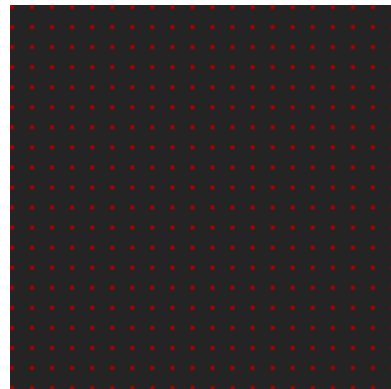
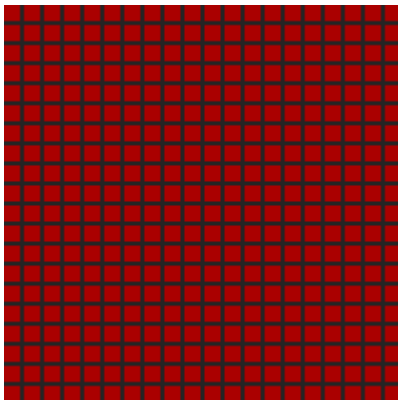
2D Mode / DVI Map Mode

You can influence how the Previews display your effects. By changing the grid proportions, you can influence the size of the displayed pixels.

- **Grid Proportion X (%)** - Defines the horizontal space between pixels in the Previews.
 - D** - Restores the default settings. The default value is 20%.
- **Grid Proportion Y (%)** - Defines the vertical space between pixels in the Previews.
 - D** - Restores the default settings. The default value is 20%.
- These settings only work for the Previews in 2D Mode [as well as DVI Map Mode for the External Previews].

20% Grid Proportion [Default]

99% Grid Proportion [Example]



3D Mode

The following settings only work for Previews in 3D Mode. Learn more » [3 Previews](#)

In this way, you can better adjust the display mode to the physical layout of your LED fixtures.

- **Voxel Pitch X** - Defines the horizontal spacing factor between voxels in the Previews [as multiple of the voxel size]. A value of 1 means that there is no spacing.
D - Restores the default settings. The default value is 5.
- **Voxel Pitch Y** - Defines the vertical spacing factor between voxels in the Previews [as multiple of the voxel size]. A value of 1 means that there is no spacing.
D - Restores the default settings. The default value is 5.
- **Voxel Pitch Z** - Defines the spacing factor between voxels in the Previews regarding the depth [as multiple of the voxel size]. A value of 1 means that there is no spacing.
D - Restores the default settings. The default value is 5.
- **Voxel Shape Type** - Changes how voxels are shown in the Previews. Choose from 4 different types [**Square**, **Circle**, **Cube**, **Sphere**].
 - Square and Circle are flat 2D shapes, while Cube and Sphere show voxels as actual 3D shapes.
 - The default value is Cube.

Important Notes

- All options of *Previews* will be saved locally on your computer. The settings described in this topic will not be saved in your MADRIX 5 Setup file.

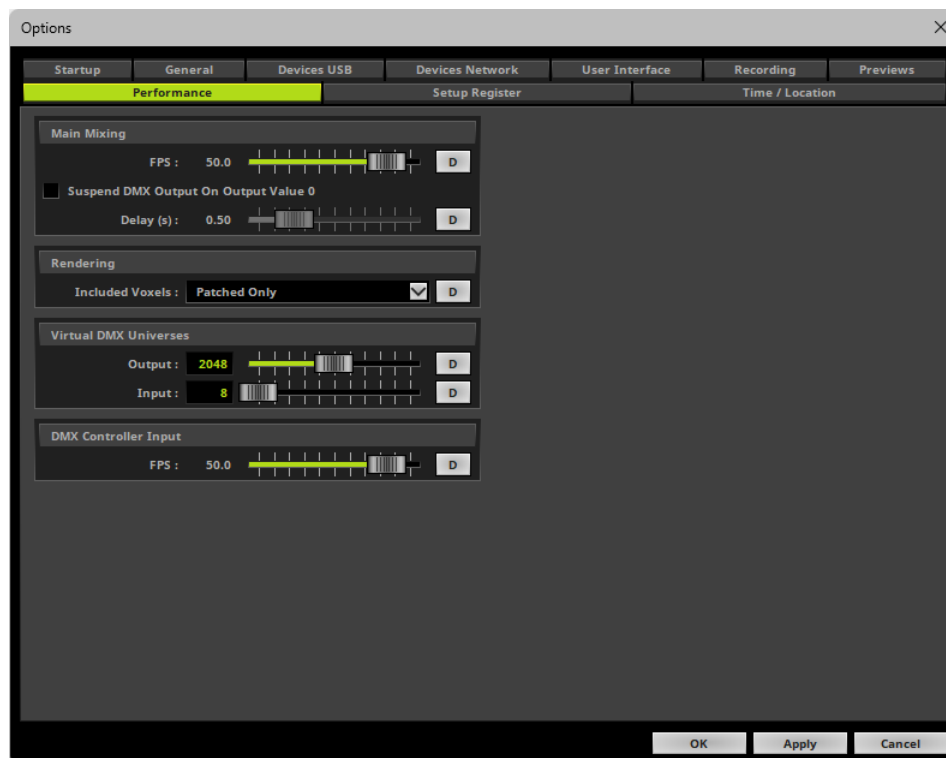
5.8 Performance

This topic includes:

- [Overview](#)
- [Main Mixing](#)
- [Rendering](#)
- [Virtual DMX Universes](#)
- [DMX Controller Input](#)
- [Important Notes](#)

Overview

- Go to the menu ***Preferences > Options... > Performance***
[Keyboard shortcut: ***Ctrl+Alt+O > Performance***]



- Set up the options as explained below.

Main Mixing

MADRIX 5 includes effect generators and graphics render engines. Rendering is done in FPS [Frames Per Second].

- **FPS** - Defines the frame rate of the Main Mixing, the high-level render process. Normally you do not need to change this setting.
 - The minimum value is 10 FPS.
 - The maximum value is 200 FPS.
- **D** - Restores the default settings. The default value is 50.0 FPS.
- **Only change this value if it is really necessary!**
- **Suspend DMX Output On Output Value 0** - Stops sending DMX data if the master is set to 0 or blackout is activated.

Delay (s) - Defines the remaining time in seconds that DMX data is sent based on the main mixing frame rate.

D - Restores the default settings. The default value is 0.5 s.

Rendering

This performance setting refers to the overall rendering process in MADRIX 5.

- **Included Voxels** - Defines which voxels of the virtual LED matrix will be included in the rendering process. You can choose from 2 modes:

All - Includes all voxels of the virtual LED matrix as defined by the Matrix Size in the Patch Editor. This includes all voxel positions with placed fixtures or without placed fixtures. Learn more »[Patch Editor](#)

Patched Only - Includes only voxels where fixtures are patched. Voxel positions where no fixtures are patched will be excluded from the rendering process. [This can improve the overall performance considerably.]

D - Restores the default settings. The default value is Patched Only.

Virtual DMX Universes

- **Output** - Defines the number of virtual universes which MADRIX 5 can address.
 - Change this value if you need to use more [or fewer] virtual universes than actual DMX universes in your Patch.
 - It is possible to use more virtual DMX universes than actual DMX universes by using less than 512 DMX channels per universe.
 - It is recommended to set up the value that you are actually using in order to save memory.
 - The minimum value is 16.
 - The maximum value is 4096.

D - Restores the default settings. The default value is 2048.

- Learn more »[Virtual DMX Universes](#)

- **Attention: Your MADRIX 5 License [on your MADRIX KEY] limits the number of actual DMX channels available for output!**

»[MADRIX KEY \[Software License\]](#)

- **Input** - Defines the number of universes which MADRIX 5 can use for input [**Preferences > Device Manager... > DMX Input**].
 - The minimum value is 1.
 - The maximum value is 2048.
 - D** - Restores the default settings. The default value is 8.
 - Learn more » [DMX-IN / Art-Net Remote / sACN Input](#)
-
- Please restart the MADRIX 5 Software if you have changed any settings.

DMX Controller Input

This performance setting refers to receiving DMX data.

- **FPS** - Defines the software's base frame rate for receiving DMX data. [You can set an individual frame rate for each device in the Device Manager.]
 - The minimum value is 10 FPS.
 - The maximum value is 200 FPS.
- D** - Restores the default settings. The default value is 50.0 FPS.

Important Notes

- **All options of Performance will be saved locally on your computer. The settings described in this topic will not be saved in your MADRIX 5 Setup file.**

5.9 Setup Register

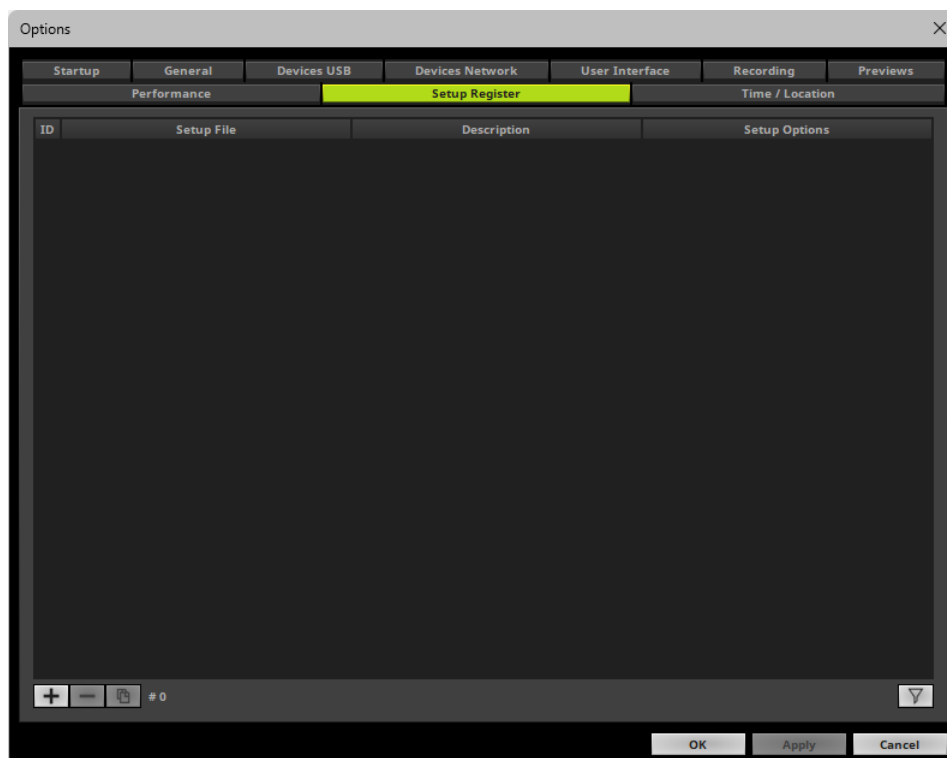
This topic includes:

- [Overview](#)
- [General](#)
- [Menu](#)
- [Remote Control](#)
- [Important Notes](#)

Overview

The Setup Register allows you to work with a pre-selected list of MADRIX 5 Setups in order to work with, access, and load each Setup file quickly via Remote Control or Script.

- Go to the menu **Preferences > Options... > Setup Register**
[Keyboard shortcut: **Ctrl+Alt+O > Setup Register**]



- Set up the options as explained below.

General



Add - Opens a new window to select one or more MADRIX 5 Setups you wish to add to the list.



Remove - Removes the currently selected MADRIX 5 Setups from the Setup Register. Select one or more MADRIX 5 Setup files in the list first.



Duplicate - Copies the currently selected MADRIX 5 Setups and adds them as a new item. Select one or more MADRIX 5 Setup files in the list first.



Count - Displays the total number of registered Setups in the Setup Register.



Filter - Activates the filter.

- Enter any text to filter out items that do not include this text. The button is shown in green if the filter is active.
- Terms can be case-insensitive. You don't have to use capital letters.
- Feel free to use terms that are incomplete. For example, **mad** will include results for **MADRIX**.
- You may specify certain columns by using a colon [:].
- For example: **Description:2** shows only lines where the number is included in the Description and not the Setup File, for example.
- Swap, Position Up, and Position Down are disabled while a filter is active.

Ctrl+F - Opens the filter.

Esc - Closes the filter.


Right Mouse Click - Resets the filter [and closes it again if it is still open].

Once a MADRIX 5 Setup has been added, it becomes an entry in the list:

ID **Identification Number** - Automatically assigns an individual number to the registered MADRIX 5 Setup.

- Ranges from 1 to 255. [Indexing starts with 1.]
- Is unique for each list entry, but not necessarily consecutive.
- New list entries are assigned the next free number based on the currently selected entry.
- Can be edited via **Left Mouse Double-Click**
- The entire list is sorted by ID.

Setup File Shows the complete file path to the added MADRIX 5 Setup.

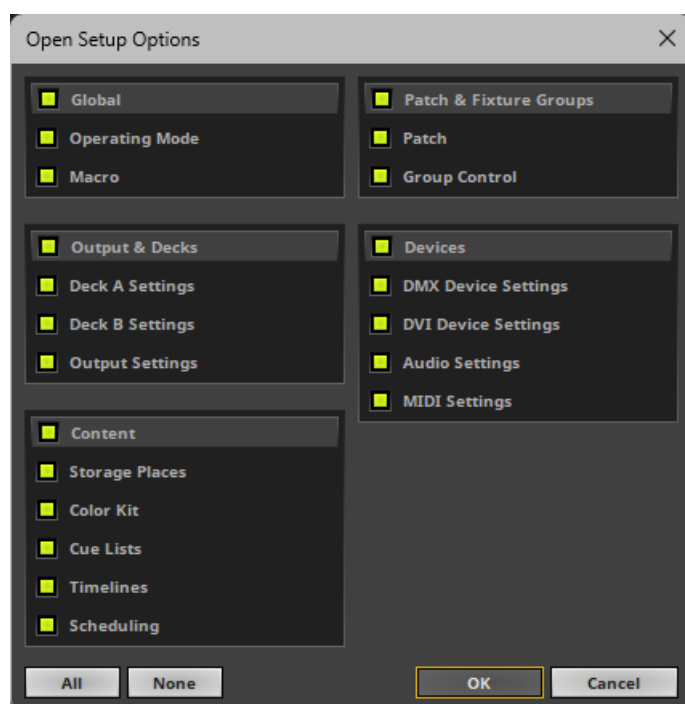
- Can be edited and another MADRIX 5 Setup can be selected via **Left Mouse Double-Click**
-  Shows a warning icon should the Setup file not exist anymore.

Description Automatically uses the file name as label.

- Can be edited via **Left Mouse Double-Click**

Setup Options Shows which Open Setup Options should be loaded from the registered Setup.

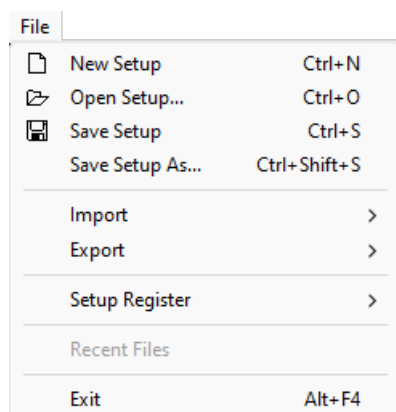
- Can be edited via **Left Mouse Double-Click**
- **All** - Shows that all available options are currently selected.
- **None** - Shows that no options are currently selected.



Menu

You can load registered MADRIX 5 Setups by using the menu.

- Go to the menu **File > Setup Register** and click on the wanted registered MADRIX 5 Setup.



Remote Control

Functions to work with the Setup Register are available in:

- [DMX-IN Remote Editor](#)
- [MIDI Remote Editor](#)
- [MADRIX 5 Script](#)

Important Notes

- All options of *Setup Register* will be saved locally on your computer. The settings described in this topic will not be saved in your MADRIX 5 Setup file.

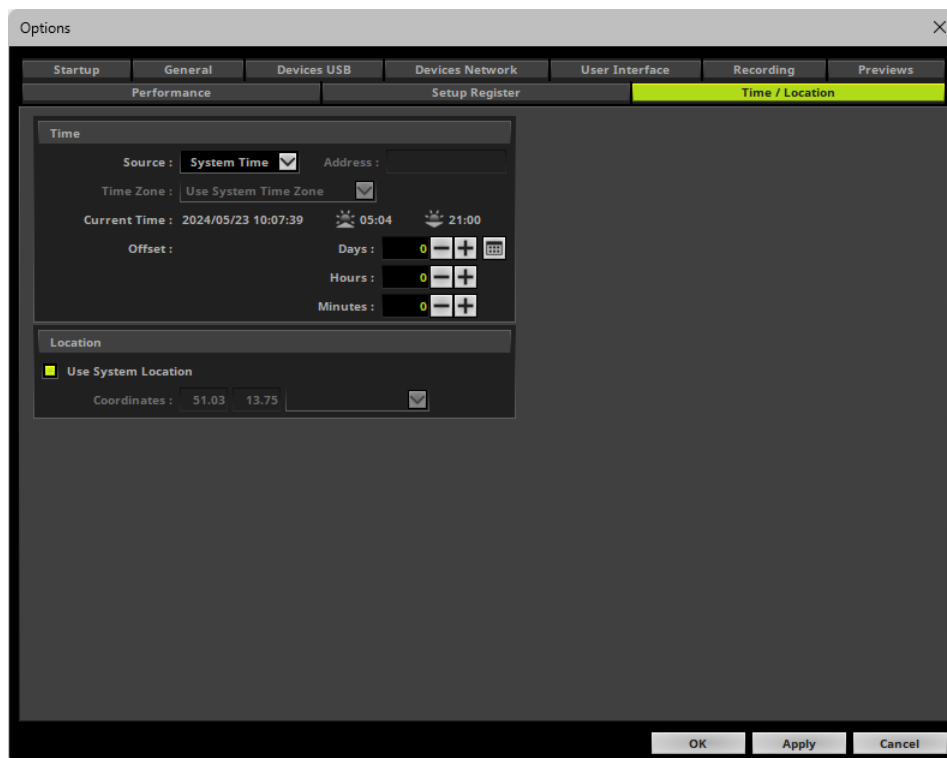
5.10 Time / Location

This topic includes:

- [Overview](#)
- [Time](#)
- [Location](#)
- [Important Notes](#)

Overview

- Go to the menu **Preferences > Options... > Time / Location**
[Keyboard shortcut: **Ctrl+Alt+O > Time / Location**]



- Set up the options as explained below.

Time

- **Source** - Defines the provider of the time and date that is being used throughout the software.
 - **System Time** - Uses the time and date set in and provided by the operating system.
 - **NTP Server** - Uses the time provided by an NTP server.
 - Address** - Enter the IP address of the NTP server [using 4 octets].

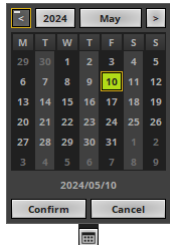
Make sure the connection to your NTP server is working. NTP server can be in your local network [recommended],

or it could be external, in which case the network gateway needs to work correctly [which might require a DNS].
- **Time Zone** - Allows you to choose the time zone that should be used.
 - **Use System Time Zone** - Uses the time zone set in and provided by the operating system.

- **Current Time** - Shows the date and time that is being provided and used as well as calculated sunrise and sunset times, based on the Location.
- **Offset** - Allows you to define an offset, which is particularly useful for testing.

Days - Defines an offset to the current time in days. Valid values range from 0 to 9999.

You can use the calendar widget to let the software calculate the days offset towards a certain date.



Hours - Defines an offset to the current time in hours. Valid values range from 0 to 23.

Minutes - Defines an offset to the current time in minutes. Valid values range from 0 to 59.

Location

- **Use System Location** - Uses the location set in and provided by the operating system.
 - You may have to allow location access. In the Windows operating system, go to 'Settings > Privacy & security > Location' to turn on location and grant this application permission to access location data.
 - If you disable Use System Location, you can manually choose the location by entering latitude and longitude coordinates or by choosing a city.

Important Notes

- **All options of Time / Location will be saved locally on your computer. The settings described in this topic will not be saved in your MADRIX 5 Setup file.**

//PART 6

Output

6 Output

This topic includes:

- [Topics Of This Chapter](#)
- [MADRIX Hardware Products](#)
- [Supported 3rd-Party Interfaces](#)
- [Restrictions Of Demo Mode](#)

Topics Of This Chapter

You need configure the output that MADRIX 5 should use.

There are several ways on how MADRIX 5 controls LEDs. Please collect information on how MADRIX 5 can communicate with your LED products. MADRIX 5 supports a lot of well-known industry standards. In the following chapters each output method will be explained.

- » [DVI](#)
- » [DMX512 \[DMX-OUT\]](#)
- » [Art-Net \[DMX over Ethernet\]](#)
- » [ESTA Streaming ACN \[sACN / E1.31\]](#)
- » [Color Kinetics \[KiNET\]](#)
- » [Philips Hue](#)
- » [Proprietary DVI Devices \[5A / A8 / T9\]](#)

MADRIX Hardware Products

The MADRIX range of products includes several hardware interfaces.

- » [MADRIX AURA](#)

- » [MADRIX LUNA](#)
- » [MADRIX NEBULA](#)
- » [MADRIX STELLA](#)
- » [MADRIX ORION](#)
- » [MADRIX USB ONE](#)
- » [MADRIX I/O](#)
- » [MADRIX NEO](#)
- » [MADRIX PLEXUS](#)

Supported 3rd-Party Interfaces

In addition to MADRIX hardware products, the MADRIX 5 Software supports 3rd-party interfaces.

Learn more » [Support DMX512 And Art-Net Interfaces](#)

Restrictions Of Demo Mode

MADRIX 5 can run in demo mode. For this reason, there are limitations to the available output.

Learn more » [MADRIX KEY \[Software License\]](#)

6.1 DVI

This topic includes:

- [Introduction](#)
- [Topics Of This Chapter](#)

Introduction

MADRIX 5 offers DVI output.

DVI output is useful when using a video beamer, a DVI wall, the software LED Studio, on-screen capturing, or when using it in similar fields of application.

The term DVI does not refer to DVI only.

DVI output in MADRIX 5 can also be used for VGA, HDMI, and other graphic card output ports.

Topics Of This Chapter

- » [DVI](#)
- » [DVI Examples](#)

6.1.1 DVI

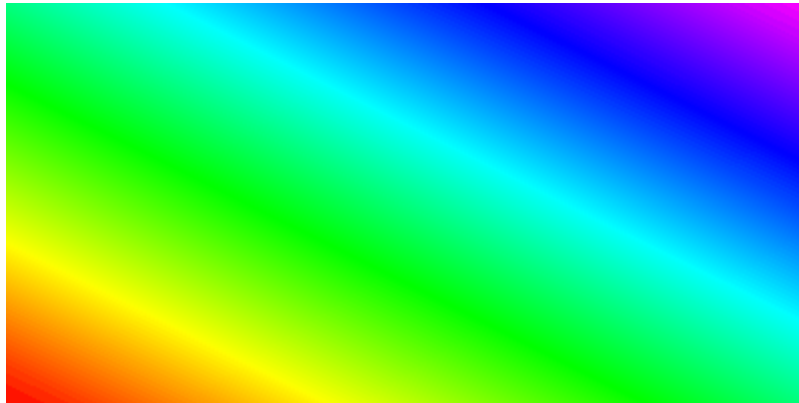
This topic includes:

- [Overview And Usage](#)
- [Restrictions Of Demo Mode](#)
- [Configuration Of Microsoft Windows](#)
- [Initial Setup](#)
- [DVI Outputs](#)
- [Step-By-Step Configuration](#)
- [Slice Alignment](#)
- [More Information](#)
- [Switching Screens In Full Screen Mode](#)
- [Scaling](#)
- [Further Configuration](#)
- [Important Information](#)

Overview And Usage

MADRIX 5 can control DVI-based LED products.

DVI output is particularly useful when using a video beamer [VGA or DVI, for example], a DVI video wall, the software LED Studio, on-screen capturing, or in similar fields of application.



The following MADRIX 5 software licenses support DVI output:

MADRIX 5 start

- Supports up to 16,384 native DVI voxels.
- Render resolution example: 128 x 128 pixels.

MADRIX 5 entry

- Supports up to 262,144 native DVI voxels.
- Render resolution example: 512 x 512 pixels.

MADRIX 5 basic

- Supports up to 1,048,576 native DVI voxels.
- Render resolution example: 1,024 x 1,024 pixels.

MADRIX 5 professional

- Supports up to 2,097,152 native DVI voxels.
- Render resolution example: 2,048 x 1,024 pixels.

MADRIX 5 ultimate

- Supports up to 2,097,152 native DVI voxels.
- Render resolution example: 2,048 x 1,024 pixels.

MADRIX 5 maximum

- Supports up to 2,097,152 native DVI voxels.
- Render resolution example: 2,048 x 1,024 pixels.

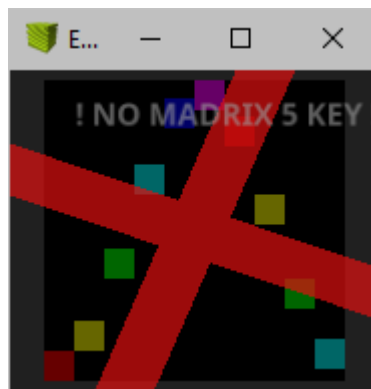
- Stretching and scaling to lower or higher resolutions is possible.

- Please pay attention to other restricting factors, such as hardware limitations.

Learn more » [System Requirements](#)

Restrictions Of Demo Mode

- If you do not connect a MADRIX KEY with a valid software license, the MADRIX 5 Software will run in demo mode.
- In demo mode, every single feature will be available to you. Only the data output is restricted:
 - DVI output is overlaid by a colorful, rotating grid/cross.
 - You can see 'NO MADRIX 5 KEY'.
 - Learn more » [MADRIX KEY \[Software License\]](#)



Configuration Of Microsoft Windows

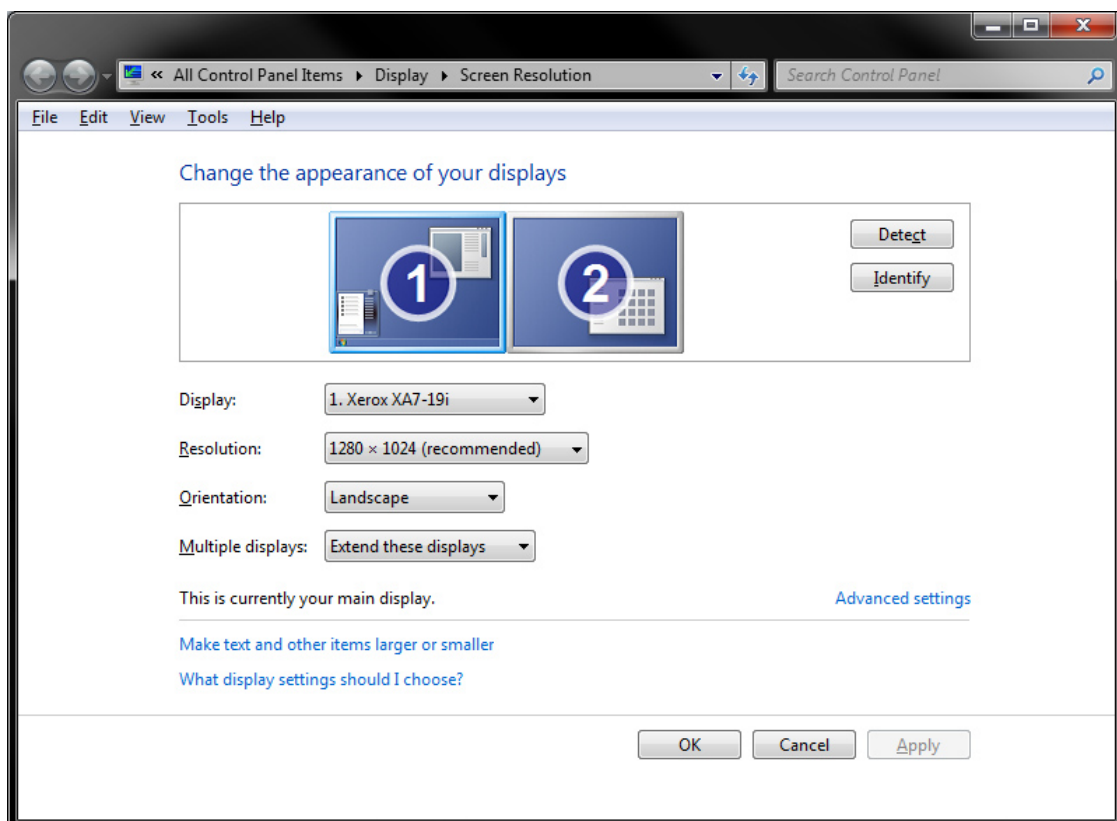
When using DVI output, make sure to configure the graphic card outputs in Windows first!

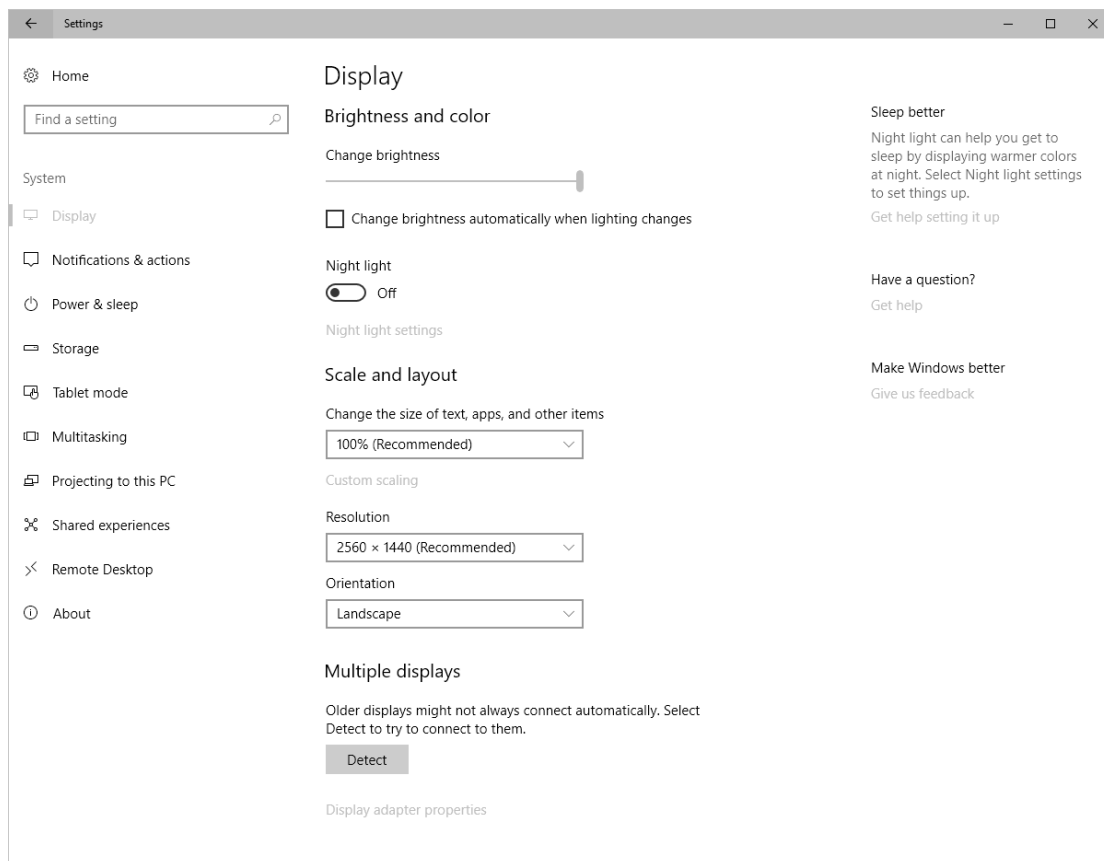
- In Windows 10/11, go to **Start > Settings > System > Display**
- Windows shows all detected graphic card output ports
 - Click **Detect** to search for undetected outputs.

- **Resolution** - Defines the pixel resolution of this output port.

[When working with DVI, it is often necessary to position the DVI output precisely and exactly where needed. The resolution is an important information that helps you set up your DVI output.]

- **Multiple displays** - Defines the display mode. The recommended setting is **Extend these displays**
- Confirm any changes with **Apply**
- Close the window with **OK**





Initial Setup

Make sure to configure your virtual LED matrix in MADRIX 5 before using DVI output.

Configuration of the virtual LED matrix is a requirement!

You can use the Matrix Generator or the more advanced Patch Editor for this task.

Learn more »[Matrix Generator](#) or »[Patch Editor](#)

DVI Outputs

MADRIX 5 features 2 DVI outputs.

- **External Preview 1**
- **External Preview 2**

Moreover, there are 3 modes available for DVI output:

- **DVI**
 - **Window**
 - **Full Screen**
-
- **DVI** - Activates a floating, borderless DVI window. This is the most important DVI output. It is especially useful when using on-screen capturing.
 - A well know example is the software LED Studio, which uses screen capturing.
 - By default, mode DVI will always be kept on top automatically, without the option to change it.
 - **Window** - Opens a floating window with a border. This might be a useful option if you choose to use DVI output as an additional preview window.
 - **Full Screen** - Enables a floating, borderless full screen window to fit the entire output device. This is particularly useful for output devices, such as projectors, beamers, monitors, and large TV screens.
-
- Often, 1 DVI output will be enough for your LED project. But in certain cases you might need 2 DVI outputs [for example when your DVI video processor needs 2 inputs to drive a large number of pixels].
 - If you do not need the second DVI output, you may simply use it as another preview window or not use it at all.

Step-By-Step Configuration

- 1] Activate DVI Output.
- 2] Configure DVI Options.
- 3] Configure External Window Settings.

1] Activating DVI Output

To activate DVI output:

- Go to the menu **Previews > External Preview 1 > DVI**
- Or choose **Previews > External Preview 1 > Window**
- Or choose **Previews > External Preview 1 > Full Screen**

To activate the second DVI output:

- Go to the menu **Previews > External Preview 2 > DVI**
- Or choose **Previews > External Preview 2 > Window**
- Or choose **Previews > External Preview 2 > Full Screen**

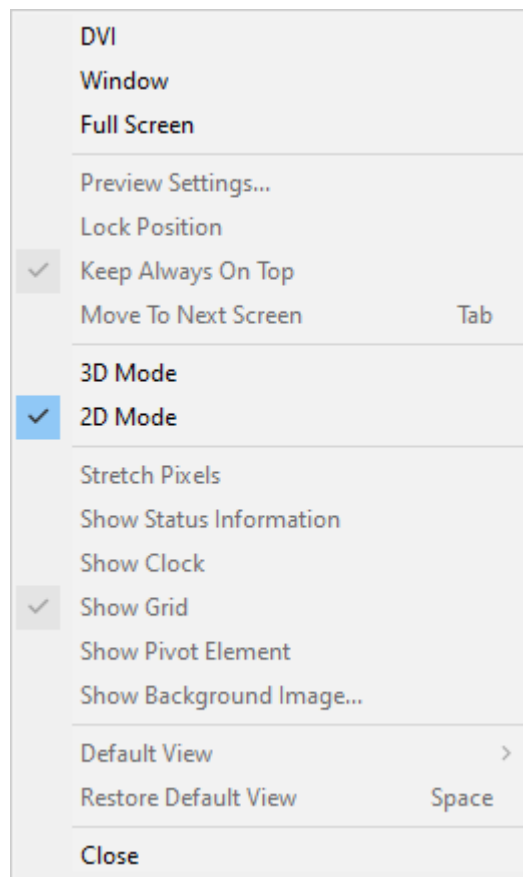
2] DVI Options

Each of the DVI outputs has a context menu.

This menu makes various options available to you for External Preview 1 and External Preview 2, respectively.

Note: Should an option be grayed out, it is not available at this moment or for this particular DVI output. It does not apply and cannot be changed.

- Go to the menu **Previews > External Preview 1**
[or **Right Mouse Click** on the DVI window]



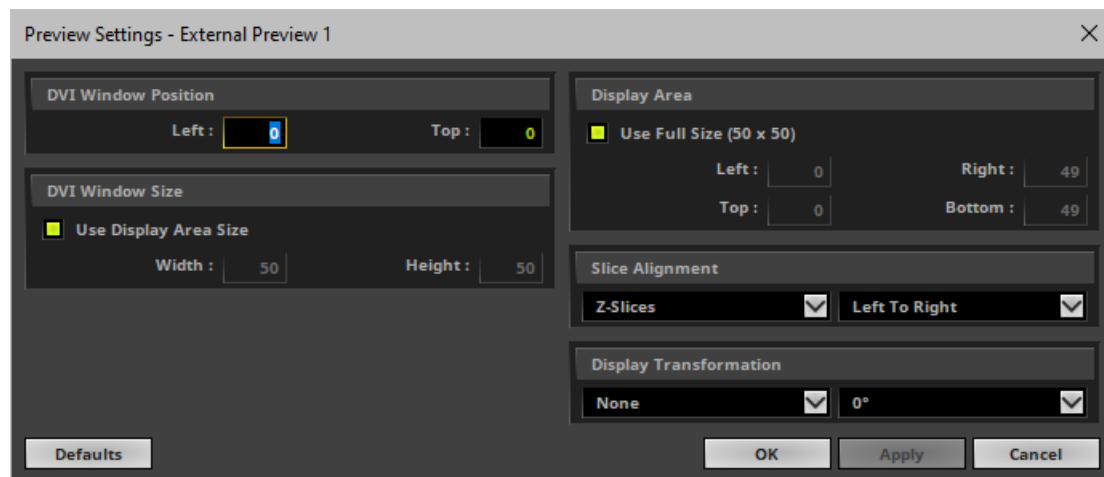
- **DVI** - Is explained above.
- **Window** - Is explained above.
- **Full Screen** - Is explained above.
- **Preview Settings...** - Opens a new window with very useful and important settings for DVI output. Learn more [Preview Settings](#)
- **Lock Position** - Locks the DVI output to the current position. It cannot be moved around with the mouse anymore. You can still change the position in the External Window Settings.
- **Keep Always On Top** - Brings the DVI output in front of all other windows at all times. No other window will overlap the DVI output. [By default, mode DVI will always be kept on top automatically, without the option to change it.]
- **Move To Next Screen** - Moves the output to the next monitor or graphics card output port. This option is only available for **Full Screen**. Learn more [Switching Screens In Full Screen Mode](#)
- **3D Mode** - Activates the 3D mode for the output. This option is only available for **Window** and **Full Screen**

- **2D Mode** - Activates the 2D mode for the output. This is the default mode.
- **Stretch Pixels** - Scales the content to the maximum size of your preview window. This option is only available for **Window** and **Full Screen**
- **Show Status Information** - Displays extra information of the DVI output, such as the size of the matrix or the frame rate. This option is only available for **Window** and **Full Screen**
- **Show Clock** - Shows the time on the DVI output. This option is only available for **Window** and **Full Screen**
- **Show Grid** - Overlays the DVI window with a grid to show the individual pixels. This option is only available for **Window** and **Full Screen**
- **Show Pivot Element** - Displays a helpful icon for visual guidance. Three arrows are always shown at position X=0, Y=0, Z=0 [not matter if the Preview is rotated]. The X-axis is red [horizontal; width], the Y-axis is green [vertical; height], and the Z-axis is blue [level; depth]. This option is only available for **Window** and **Full Screen**
- **Show Background Image...** - Allows you to use a picture instead of the gray background. This option is only available for **Window** and **Full Screen**
- **Default View** - Choose your point of view and the default view for this output. This option is only available for **3D Mode**
- **Restore Default View** - Resets the Preview to its Default View. This removes any changes, such as zoom or relocation.
- **Close** - Closes the DVI output.

3] Preview Settings

Preview Settings are an important part of the DVI output configuration!

- Go to the menu **Previews > External Preview 1 > Preview Settings...**
[or **Right Mouse Click** on the DVI window > **Preview Settings...**]
- Preview Settings cannot be change in **Operator** mode.



- **DVI Window Position** - Defines the exact position of the DVI output for **DVI**
 - The coordinate system used for this starts with 0,0 at the top left of the entire screen/monitor. In this way, **Left:** defines the X coordinate and **Top:** represents the Y coordinate.
 - Valid values range from -10,000 to 10,000.

- **DVI Window Size** - Determines the actual size of the DVI output for **DVI**
 - Activate **Use Display Area Size** to set the size of the window to the settings of **Display Area**, which determines what is shown of your matrix.
 - Using different values for **Width** and **Height** than the maximum size of the Display Area will stretch or compress the content [you can make the window size smaller or bigger, but the pixel resolution will stay the same resulting in an image that is stretched or compressed].
 - The pixel resolution is set using the »[Matrix Generator](#) or »[Patch Editor](#)].

- **Display Area** - Defines what is shown in the DVI output. This option is available for all 3 DVI output modes.
 - Activate **Use Full Size** and your complete LED matrix will be displayed. Or you can select a certain cut-out and specify which details of your matrix will be shown. You can choose the start coordinates and the end coordinates of this area.
 - **Left** and **Top** define the start coordinates in a coordinate system that starts with 0,0 in the top left corner. For example, for the default matrix with 50x50 pixels, Left and Top are 0 by default and Right and Bottom are 49, by default.
 - **Right** and **Bottom** define the end coordinates. The end coordinates cannot be higher than the full size of the matrix. For example, for the default matrix with 50x50 pixels, Left and Top are 0 by default and Right and Bottom are 49, by default.

- **Slice Alignment** - Is particularly relevant when using 3D and DVI-based LED fixtures that require a 2D input signal. This option is available for all 3 DVI output modes. Learn more [Slice Alignment](#)
- **Display Transformation** - Allows you to flip or rotate the DVI output. This option is available for all 3 DVI output modes.
 - **None** does not flip the output, **Flip H** flips it horizontally, **Flip V** flips it vertically, **Flip HV** flips it horizontally and vertically.
 - Rotate the output by **0°** degrees [no rotation], **90°** degrees, **180°** degrees, or **270°** degrees clock-wise. This rotation applies to the Display Area.
- Click **Apply** to confirm your changes. Click **OK** to close the window.
- **Defaults** - Restores the default settings. [These settings represent a standard 1:1 DVI window.]
 - If you have set up custom settings, MADRIX 5 will show a check mark in front of **External Window Settings...** in the menu.

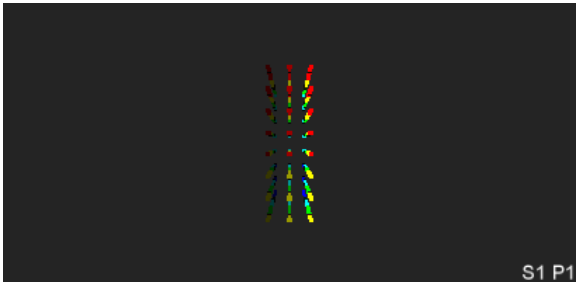
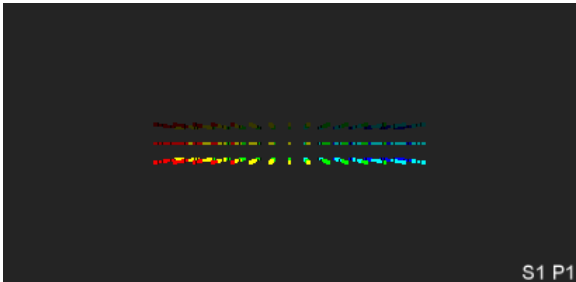
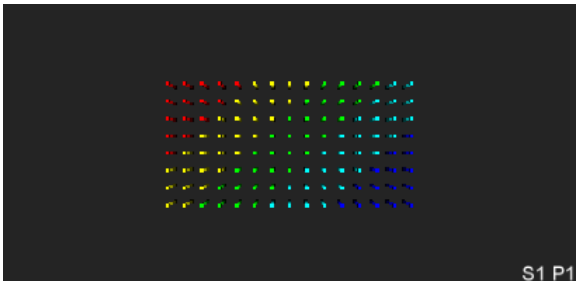
Slice Alignment

3D Mapping For DVI

- MADRIX 5 can control 2D projects as well as 3D projects.
Learn more »[2D Or 3D \[X, Y, Z\]](#)
- The chapters »[Patch Editor](#) and »[DVI Patch](#) already explained that DVI-based fixtures are often used in combination with a DVI controller. Such a DVI controller might require to receive the incoming signal in a specific way to receive the correct image on the LEDs. This is true for 2D and controlling a 3D project adds further complexity.
- DVI controllers usually do not accept any 3D input image. That is why, you will often need to send a 2D signal to the DVI controller, even though your project might be in 3D.
- MADRIX 5 can create **Slices** to produce such a 2D signal for 3D projects.
- By default, each Z-level is placed beside the previous Z-level from left to right.
- You can change the Slice Alignment for **DVI**, **Window**, and **Full Screen**.

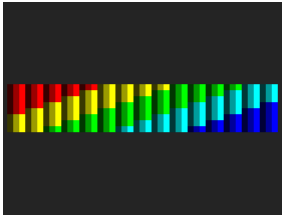
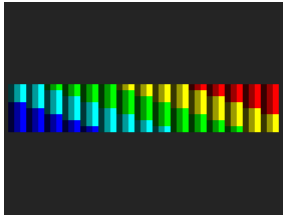
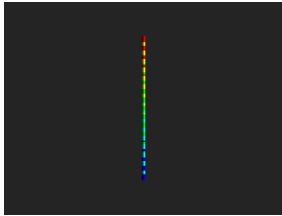
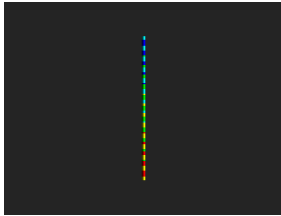
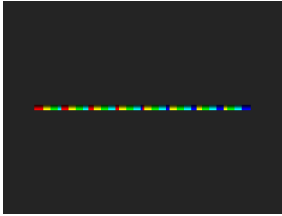
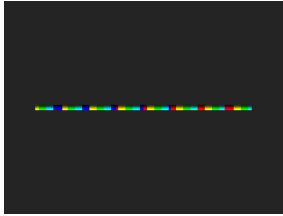
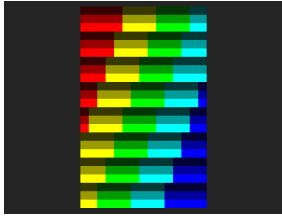
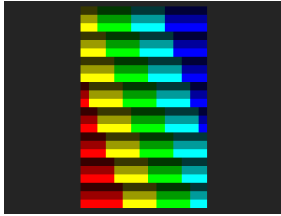
Example

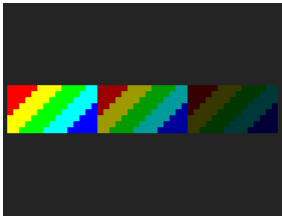
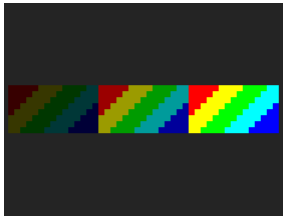
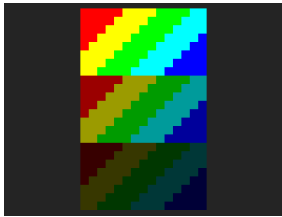
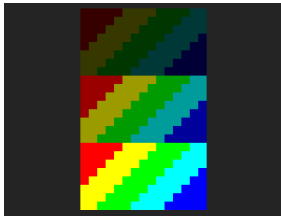
- The following example was chosen to explain Slice Alignment and 3D mapping for DVI.
- A virtual LED matrix of 15x8x3 is used.
- The first Z-level is the brightest, while the second and third Z-level have their Opacity increasingly reduced.
- A color gradient is applied as lighting effect.

View	3D Mode [Preview Deck A]
Default View: Left	 S1 P1
Default View: Top	 S1 P1
Default View: Front	 S1 P1

Slice Alignment Settings

- Go to the menu **Previews > External Preview 1 > Preview Settings... > Slice Alignment**
- You can set up the **Slice Type**. Choose from **X-Slices**, **Y-Slices**, or **Z-Slices**
- You can set up the **Slice Order**. Choose from **Left To Right**, **Right To Left**, **Top To Bottom**, or **Bottom To Top**
- X-Slices** - MADRIX 5 produces slices along the X-axis. Since X = 15 regarding the virtual LED matrix in the example above, 15 slices are produced below. Above, **Default View: Left** can be used to imagine the different slices from the front to the back.
- Y-Slices** - MADRIX 5 produces slices along the Y-axis. Since X = 8 regarding the virtual LED matrix in the example above, 8 slices are produced below. Above, **Default View: Top** can be used to imagine the different slices from the front to the back.
- Z-Slices** - MADRIX 5 produces slices along the Z-axis. Since X = 3 regarding the virtual LED matrix in the example above, 3 slices are produced below. Above, **Default View: Front** can be used to imagine the different slices from the front to the back.
- Z-Slices / Left To Right** is the default setting.

	Left To Right	Right To Left	Top To Bottom	Bottom To Top
X-Slices				
Y-Slices				

Z-Slices				
	[Default]			

- **Note:** You cannot switch to **Operator** mode if the Preview Settings for External Previews are still open.

More Information

- Each DVI Output is a Preview at the same time. That means you have various options to work with them as DVI output or Preview.
Learn more »[3 Previews](#)
- This manual includes additional examples on how to set up DVI output.
Learn more »[DVI Examples](#)

Switching Screens In Full Screen Mode

You may want to send your **Full Screen** DVI output to another screen that is not the one you are using MADRIX 5 on. This could be a second monitor or a projector, for example.

One Monitor

- Use the keyboard shortcut **Alt+Tab** to switch to the Full Screen Output.
- Use the **Alt+Tab** again to switch back to the MADRIX 5 user interface.

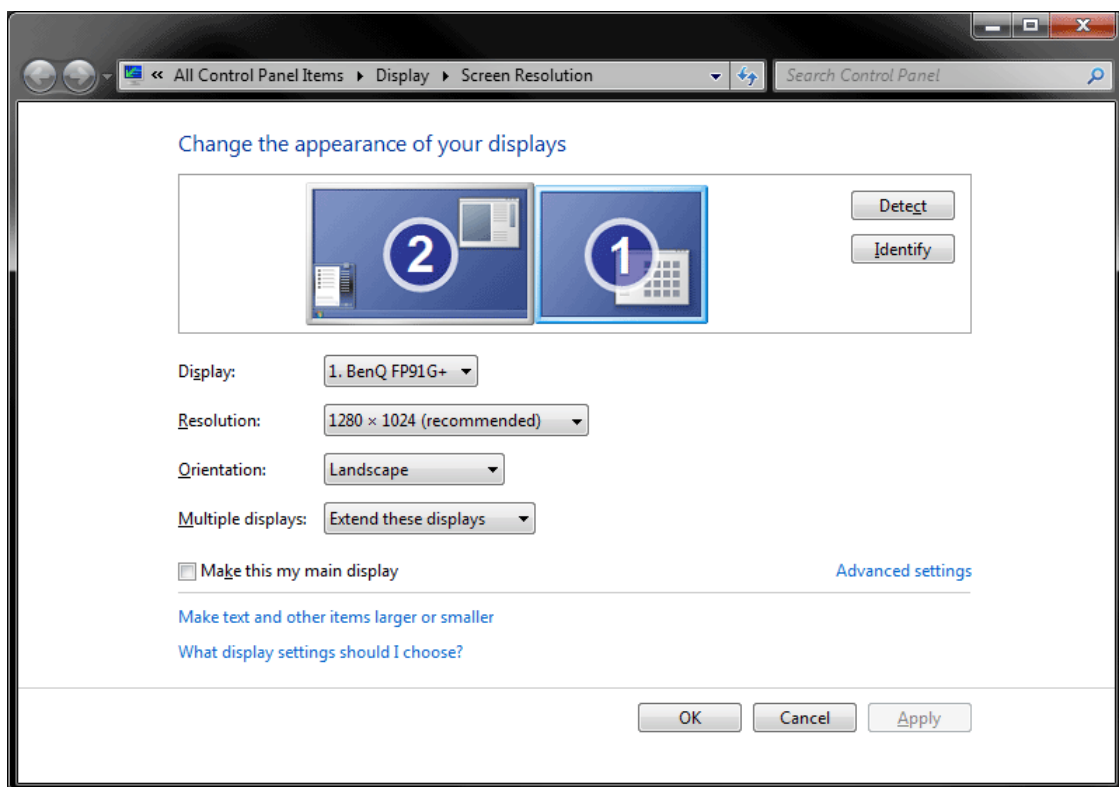
Several Monitors

- Make sure to select the full screen DVI output with your mouse [left mouse click].
- Press the **Tabulator key [Tab]** on your keyboard to simply move the full screen window to an additional monitor or beamer.



- Or choose **Right Mouse Click > Move To Next Screen**
- In this way, you can use the **Full Screen** mode to completely visualize effects on your second monitor or output device, while you are working with MADRIX 5 on your first screen.

You must install and configure your graphics card and monitors correctly in Windows first to use this feature!



Scaling

You can upscale or downscale the DVI Output.

That means you can increase or decrease its size without changing the native pixel render resolution [as defined in the Matrix Generator or Patch Editor].

- Activate a DVI output as described above.
 - For example, go to the menu **Previews > External Preview 1 > DVI**
- Go to the menu **Previews > External Preview 1 > Preview Settings...**
- Deactivate **Use Display Area Size** in the section **DVI Window Size**
- Set up **Width** as well as **Height** according to your requirements.
 - Use larger values to upscale the output.
 - Use smaller values to downscale the output.
- It is recommended to use multiples of the native pixel resolution [in order to not stretch the output].
 - Example: Your virtual LED matrix might have a pixel resolution of 50x50 pixels. Enter 25x25 or 100x100 to use multiples of that resolution.
- Upscaling requires less performance than using a native pixel resolution but negatively affects the image quality in most cases.

Further Configuration

Further settings are available in the MADRIX 5 Options.

Learn more »[Previews](#)

Important Information

- **Please make sure to save your MADRIX 5 Setup file after the configuration process.**

6.1.2 DVI Examples

This topic includes:

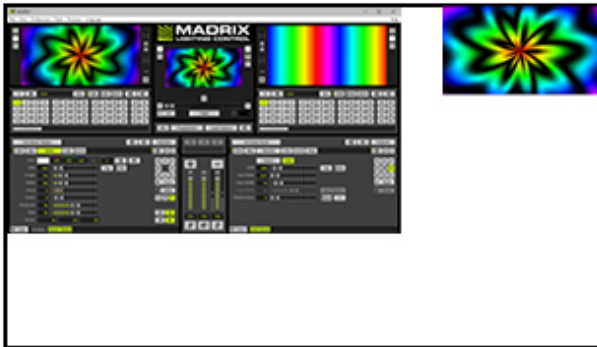
- [Overview](#)
- [Example: Screen-Capturing With 1 Monitor](#)
- [Example: Screen-Capturing With 2 Graphic Card Output Ports](#)
- [Example: Using Beamers/Projectors/TVs](#)

Overview

This topic presents various scenarios how DVI output can be used.

Example: Screen-Capturing With 1 Monitor

- You might only have 1 monitor [1 monitor output on the graphics card]. But you need to use MADRIX 5 and the DVI output at the same time.
- In this case, it is recommended to use the MADRIX 5 interface and the DVI output next to each other on your main monitor.
- Your main monitor has a certain pixel resolution [e.g., 1920 x 1080]. Learn more » [DVI](#)
- Position MADRIX 5 in the upper, left corner.
- Go to the menu **Previews > External Preview 1 > DVI** to activate the DVI output.
- Go to the menu **Previews > External Preview 1 > Preview Settings...**
- Set up **Left** and **Top** under **DVI Window Position** [e.g., 1300 and 0] .
 - The standard size of the MADRIX 5 user interface is 1280 x 768.
- Activate **Previews > External Preview 1 > Lock Position**
- **Keep Always On Top** is automatically applied/activated.



Graphics Card Output 1 [Monitor 1]

- MADRIX 5 GUI [Normal window size]
- **Previews > External Preview 1 > DVI**

Example: Screen-Capturing With 2 Graphic Card Output Ports

- When using screen-capturing, it is usually recommended to use a graphics card with 2 monitor outputs.
- In this case, you can use the complete monitor 1 for the MADRIX 5 user interface. The DVI output is simply positioned on the monitor output 2.
- Your main monitor has a certain pixel resolution [e.g., 1920 x 1080]. Learn more »[DVI](#)
- Position MADRIX 5 on your main monitor. Use the normal window size, maximize the window, or use Full Screen mode for MADRIX 5.
- Go to the menu **Previews > External Preview 1 > DVI** to activate the DVI output.
- Go to the menu **Previews > External Preview 1 > Preview Settings...**
- Set up **Left** and **Top** under **DVI Window Position**. Make sure to use values that are outside of Monitor 1; Monitor 1 starts at 0,0 instead of 1,1 [e.g., 1920 and 0].
- Activate **Previews > External Preview 1 > Lock Position**
- **Keep Always On Top** is automatically applied/activated.



Graphics Card Output 1 [Monitor 1]

- MADRIX 5 GUI [Maximized Window]



Graphics Card Output 2 [Monitor 2]

- **Previews > External Preview 1 > DVI**

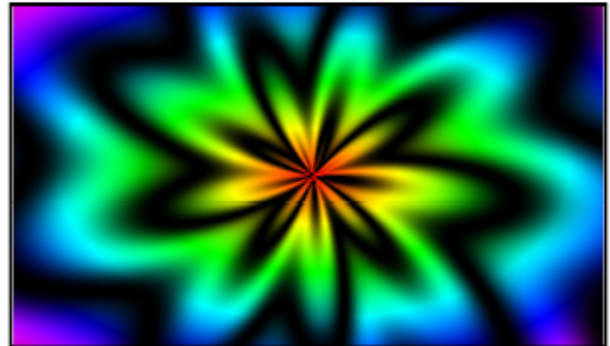
Example: Using Beamers/Projectors/TVs

- You might want to bring MADRIX Effects to external equipment, such as projectors, beamers, or large TVs.
- Often, the Full Screen DVI output is needed in this case.
- Also, projectors, beamers, and TVs often require a high pixel resolution.
 - The pixel resolution can be set up using the »[Matrix Generator](#) or »[Patch Editor](#)
 - The higher the pixel resolution, the more computer performance is required. Learn more »[System Requirements](#)
- Position MADRIX 5 on your main monitor. Use the normal window size, maximize the window, or use Full Screen mode for MADRIX 5.
- Go to the menu **Previews > External Preview 1 > Full Screen** to activate the DVI output.
- Click on the DVI output with your mouse to focus it. Now, perform a **Right Mouse Click > Move To Next Screen**
- Activate **Previews > External Preview 1 > Keep Always On Top**
- If required, activate **Previews > External Preview 1 > Stretch Pixels**
- Activate other options as required. Learn more »[DVI](#)



Graphics Card Output 1 [Monitor 1]

- MADRIX 5 GUI [Maximized Window]



Graphics Card Output 2

- *Previews > External Preview 1 > Full Screen*

- *Move To Next Screen*

6.2 DMX512 [DMX-OUT]

This topic includes:

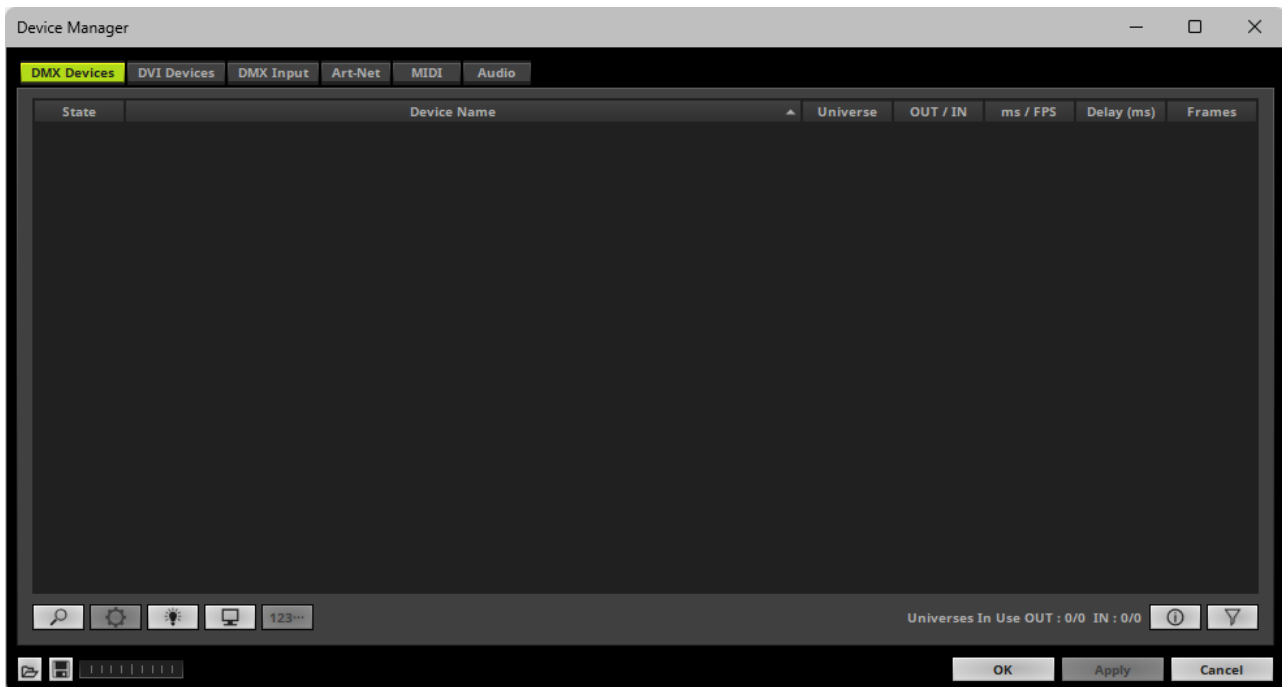
- [Overview](#)
- [Configuration Of Devices](#)
- [Step-By-Step Configuration](#)
- [Additional Functionality](#)
- [Important Information](#)

Overview

- Go to the menu **Preferences > Device Manager... > DMX Devices**
[Keyboard shortcut: **F4**]

MADRIX 5 supports various communication protocols and hardware interfaces.

The majority of these communication protocols is based on DMX512. That is why these interfaces will be listed here.



Configuration Of Devices

- Depending on your hardware interface further configuration may be required.
- Make sure to read the corresponding chapter of this user guide regarding the correct output settings.

Learn more » [OUTPUT Settings](#)

Step-By-Step Configuration

- 1] Enable drivers in MADRIX 5.
- 2] Activate your device.

- 3] Choose if you want to use Input or Output.
- 4] Set up the correct DMX universe.
- 5] Set up the Frame Time.
- 6] Choose to send optimized frames or full frames.

1] Enable Drivers In MADRIX 5

- First, make sure to activate the required USB or network drivers in MADRIX 5.

Learn more » [Devices USB](#)

Learn more » [Devices Network](#)

2] Activating Devices [State]

- Go to the menu **Preferences > Device Manager ...> DMX Devices**

[Keyboard shortcut: **F4**]

- The tab **DMX Devices** will be selected automatically.

- Click 

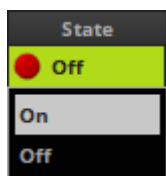
[Keyboard shortcut: **F5**]

- MADRIX 5 disconnects all DMX512, Art-Net, and other devices and starts to search for new or newly connected devices.

- Do not rescan for devices if all of your interfaces have been found correctly.

- Make sure that one or more devices are selected.
- **Right Mouse Click** on the column **State** to set from **Off** to **On** [indicated by green light].

[Alternatively, you can perform a **Left Mouse Double-Click**]

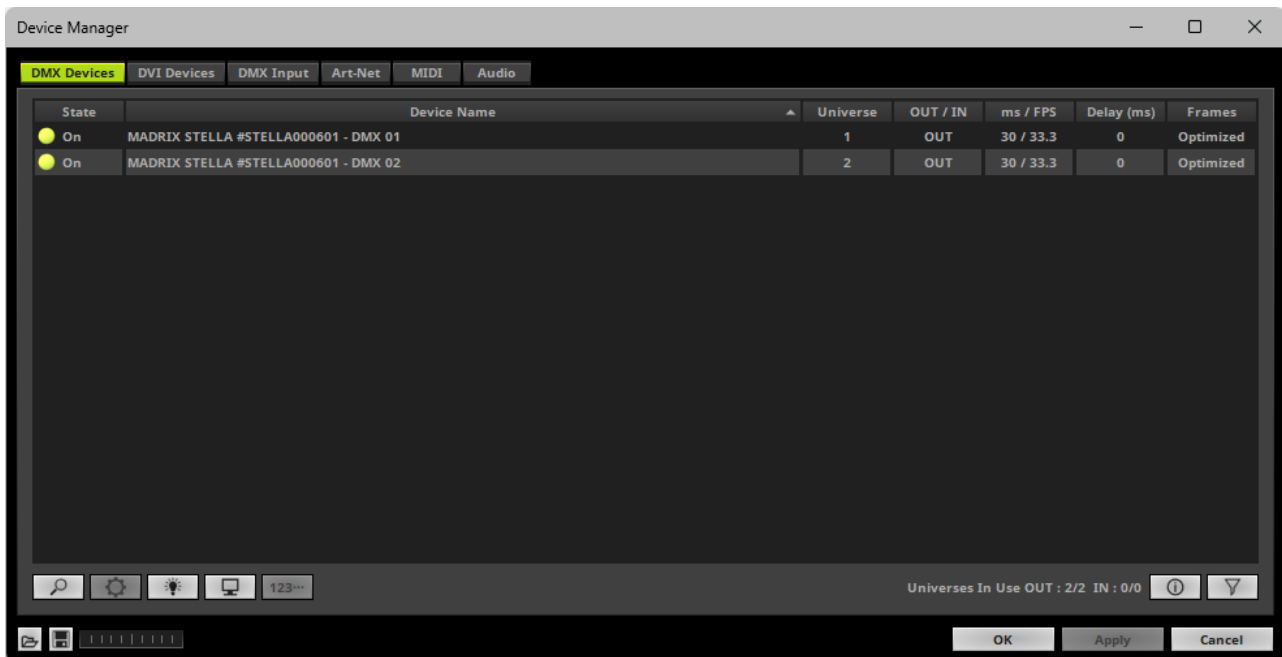


3] Output or Input [OUT / IN]

- Make sure that one or more devices are selected.

- **A] Right Mouse Click** on the column **OUT / IN** to set to **OUT** for data output.

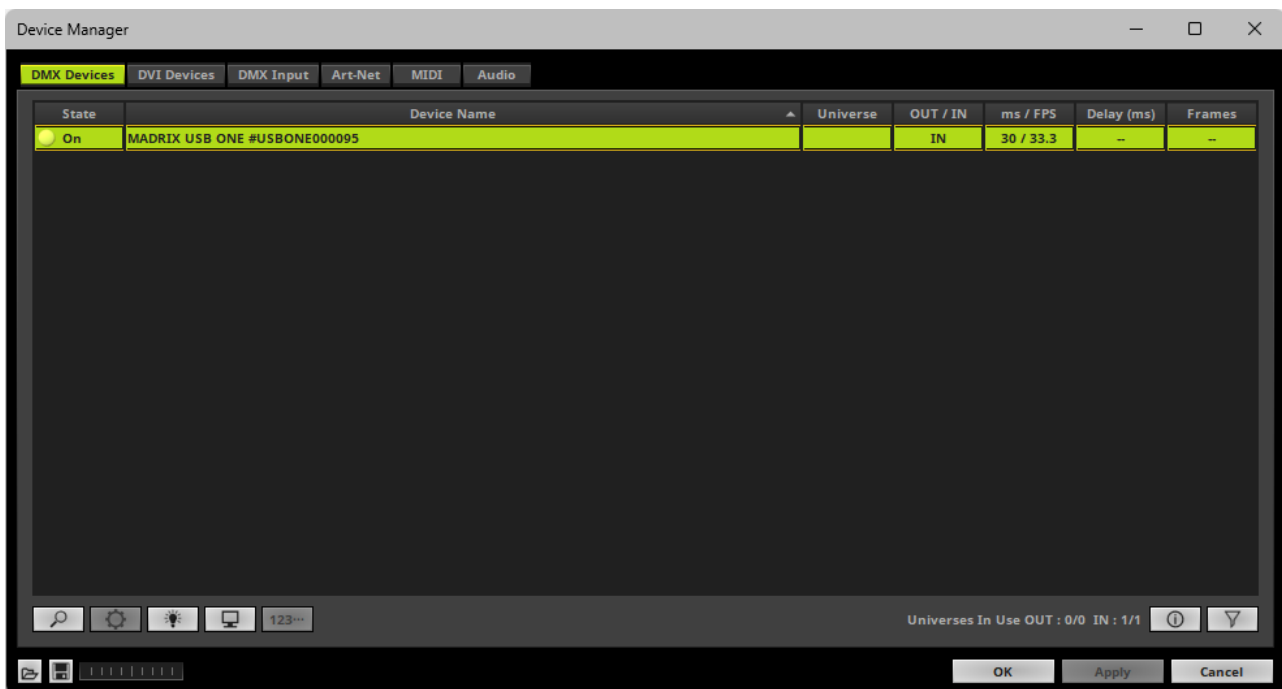
[Alternatively, you can perform a **Left Mouse Double-Click**]



- **B] Right Mouse Click** on the column **OUT / IN** to set to **IN** for data input if you wish to receive incoming data through this device.

[Alternatively, you can perform a **Left Mouse Double-Click**]

Learn more » [DMX-IN / Art-Net Remote / sACN Input](#)



4] DMX Universe [Universe]

- Make sure that one or more devices are selected.
- When using your device as an output device, set up **Universe**
 - **Right Mouse Click** or **Left Mouse Double-Click** on the column **Universe** and enter the required number.
- This setting assigns a specific DMX universe [of the Patch] to the device or the port of the device. Learn more »[Virtual DMX Universes](#)
- **Make sure to assign the correct universe according to your requirements.**
Learn more »[Glossary](#)

5] Frame Time [ms / FPS]

- Make sure that one or more devices are selected.
- Set up the frame time for your device.
 - **Right Mouse Click** or **Left Mouse Double-Click** on the column **ms / FPS** and enter the required number.
 - The frame time [in milliseconds; ms] affects the frame rate. The frame rate specifies how fast data is sent to the device or received from it [in Frames Per Second; FPS].

- Increase the frame time in order to decrease the frame rate [e.g., 40 ms = 25 FPS].
- Decrease the frame time in order to increase the frame rate [e.g., 20 ms = 50 FPS].
- The default value is 30 ms / 33.3 FPS.
- The minimum value that can be set is 1000 ms / 1 FPS
- The maximum value that can be set is 5 ms / 200 FPS.

[Support for this high frame rate depends on the used hardware product and connection. Due to the DMX512 standard, this high frame rate also means that only a limited amount of DMX channels can be sent per universe; as set up in the Patch Editor.]

Please note: If you want to output high frame rates, make sure to set Main Mixing FPS in the Options to the same value in order to render the same frame rate [It is set to 50 FPS by default. Otherwise, frames will be duplicated]. Learn more »[Performance](#)

Please note: If you want to input high frame rates, make sure to set DMX Controller Input FPS in the Options to the same value in order to process the same frame rate [It is set to 50 FPS by default. Otherwise, frames will be duplicated]. Learn more »[Performance](#)

- **Some LED fixtures might have problems with a low frame time / high frame rate. Then, it is recommended to increase the frame time / decrease the frame rate.**

6] Output Delay [Delay (ms)]

- Make sure that one or more devices are selected.
- Set up a delay in milliseconds if required.
 - **Right Mouse Click** or **Left Mouse Double-Click** on the column **Delay (ms)** and enter the required number.
 - Valid values range from 0 ms to 1000 ms.
 - The default value is 0 [meaning that there is no added delay].
 - Delay can only be set for output devices.
 - This is a highly specialized feature, where an output delay may be wanted to achieve certain visual results, such as creating a video backdrop for more realistic illumination in a video-production setting.

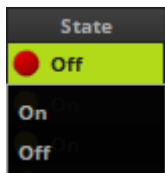
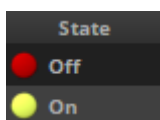
7] Optimized Frames Or Full Frames [Frames]

- Make sure that one or more devices are selected.
- Choose how to send data.
 - **Right Mouse Click** or **Left Mouse Double-Click** on the column **Frames** to choose between **Optimized** and **Full**

- Per DMX512 standard, MADRIX 5 only sends the number of DMX channels that is configured [optimized frames]. For example, if you are using 312 DMX channels on a DMX universe, only 312 DMX channels will be sent with every single frame on this universe.
- Activate Full Frames if devices should always send full frames on a particular universe, instead of optimized frames. Sending full frames means that always the full 512 DMX channels of a DMX universe will be sent with every frame [even when you are using less than 512 channels on the universe].
- **Activating Full Frames is recommended if problems with the data output of your devices occur.**

Additional Functionality

Direct Configuration In the List



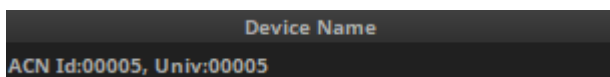
State

Single-Selection

- **Left Mouse Single-Click** - Selects a device in the list.
- **Left Mouse Double-Click** - Directly toggles the state of selected devices between **On** or **Off**
- **Right Mouse Single-Click** - Calls up a context menu to choose between **On** or **Off**

Multi-Selection

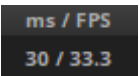
- **Right Mouse Single-Click** - Calls up a context menu to choose between **On** or **Off** for all selected devices.



Device Name

Single-Selection

- **Left Mouse Single-Click** - Selects a device in the list.



- **Left Mouse Double-Click** - Calls up the device configuration window [if available].
- **Right Mouse Single-Click** - Calls up the device configuration window [if available].

Multi-Selection

- **Right Mouse Single-Click** - Calls up the device configuration window for all selected devices [if available].

Universe

- **Left Mouse Single-Click** - Selects a device in the list.
- **Left Mouse Double-Click** - Allows you to change the assigned universe directly [if available].
- **Right Mouse Single-Click** - Allows you to change the assigned universe directly [if available].

OUT / IN

Single-Selection

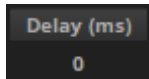
- **Left Mouse Single-Click** - Selects a device in the list.
- **Left Mouse Double-Click** - Directly toggles the mode of selected devices between **OUT** or **IN** [if available].
- **Right Mouse Single-Click** - Calls up a context menu to choose between **OUT** or **IN** [if available].

Multi-Selection

- **Right Mouse Single-Click** - Calls up a context menu to choose between **OUT** or **IN** for all selected devices.

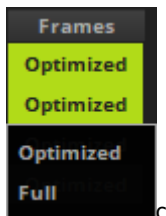
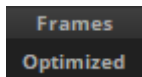
ms / FPS

- **Left Mouse Single-Click** - Selects a device in the list.
- **Left Mouse Double-Click** - Allows you to change the set up Frame Time directly [if available].
- **Right Mouse Single-Click** - Allows you to change the set up Frame Time directly [if available].



Delay (ms)

- **Left Mouse Single-Click** - Selects a device in the list.
- **Left Mouse Double-Click** - Allows you to change the Delay directly.
- **Right Mouse Single-Click** - Allows you to change the Delay directly.



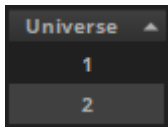
Frames

Single-Selection

- **Left Mouse Single-Click** - Selects a device in the list.
- **Left Mouse Double-Click** - Directly toggles the mode of selected devices between **Optimized Frames** or **Full Frames** [if available].
- **Right Mouse Single-Click** - Calls up a context menu to choose between **Optimized Frames** or **Full Frames** [if available].

Multi-Selection

- **Right Mouse Single-Click** - Calls up a context menu to choose between **Optimized Frames** or **Full Frames** for all selected devices.



Manual Sorting

- **Left Mouse Single-Click** - Perform a mouse click on a column header in order to manually sort the list.
 - **Up Arrow** - Indicates ascending ordering.
 - **Down Arrow** - Indicates descending ordering.

Search For Devices



Search For Devices - Performs a rescan by disconnecting all devices and starting to search for all currently connected devices, including old, new, or newly connected devices.

- **Do not search for devices if all of your interfaces have been found correctly.**

Configuration



Device Configuration - Calls up the device configuration window [if available].

Highlight Mode



Highlight Devices - Activates the highlight mode for the selected interface and universe under **Preferences > Device Manager... > DMX Devices**. Select one or more interfaces and click the button. The corresponding fixtures at the selected interfaces will flash for a better identification or tests. This makes it easier to see them on stage. It considerably speeds up the procedure of programming or testing the selected interfaces.

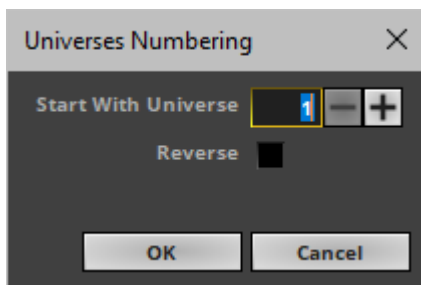
DMX Watcher



DMX Watcher - Opens the DMX Watcher to monitor your DMX output or input under **Preferences > Device Manager... > DMX Devices**

Learn more » [Tools](#)

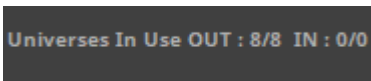
Universes Numbering



Number Devices - Opens the a new window that allows you to number all currently selected devices consecutively, starting with the universe number you enter in the window.

- First, select multiple devices in the list.
- **Reverse** - Changes the universes numbering from an ascending order to a descending order.
- Click **OK** to confirm. Abort the process with **Cancel**

Device Details

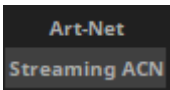


Universes In Use - Shows the number of universes [devices] that are currently enabled [including devices with State On] as well the total number [including devices with State On and State Off] for output devices [**OUT**] as well as input devices [**IN**].

Example: 8/16 means 8 enabled devices out of 16 total devices.



Device Details - Shows more information about the device in the column **Details**, such as the device type, version number, and more.



Device Type - Shows which kind of device is connected [including for example **Art-Net**, **KiNET**, **USB ONE / NEO**, **Streaming ACN**, **PLEXUS**, **LUNA**, **MADRIX I/O**, **GamePort**, **Philips hue**, **MA Lighting**, **NEBULA**, **STELLA**, **ORION**] and which kind of connection is made [**Ethernet Network**, **USB**, **GamePort**].

Filter



Filter - Activates the filter.

- Enter any text to filter out items that do not include this text. The button is shown in green if the filter is active.
- Terms can be case-insensitive. You don't have to use capital letters.
- Feel free to use terms that are incomplete. For example, **mad** will include results for **MADRIX**.
- You may specify certain columns by using a colon [:].
- For example: **Device Name:2** shows only lines where the number is included in the Device Name and not the Universe, for example.
- Swap, Position Up, and Position Down are disabled while a filter is active.

Ctrl+F - Opens the filter.

Esc - Closes the filter.

Right Mouse Click - Resets the filter [and closes it again if it is still open].

Resizing The Window

If wish to resize the window of the Device Manager to see more devices in the list, simply move your mouse pointer to the bottom of this window. Then, select the border and hold the left mouse button, while moving your mouse downwards.

Important Information

- Remember to configure your light matrix. Learn more » [Matrix Generator](#) or » [Patch Editor](#)
- Make sure to save your MADRIX 5 Setup file after the configuration process.
- Make sure to have the correct drivers enabled in the MADRIX 5 Options. Learn more » [Options](#)

6.3 Art-Net [DMX Over Ethernet]

This topic includes:

- [Introduction](#)
- [Network Equipment](#)
- [Step-By-Step Configuration](#)
- [Art-Net Device Settings](#)
- [Additional Functionality](#)
- [Important Information](#)
- [Troubleshooting](#)

Introduction



Art-Net is a communication protocol that allows to distribute DMX512 data over Ethernet network [DMX over Ethernet]. Art-Net has been invented by Artistic Licence and has now been published into the public domain. Often, so-called Art-Net nodes then act as Ethernet to DMX512 converters and hardware interfaces. Especially, long distances can be covered using Ethernet cabling.

MADRIX 5 is compatible with

- Art-Net I
 - Art-Net II
 - Art-Net 3
 - Art-Net 4
-
- MADRIX 5 supports all devices that are fully compatible with Art-Net.
 - You can use Art-Net nodes either as output or input devices.

Network Equipment

It is highly recommended to only use Gigabit Ethernet network components [such as network card, switches, network cabling, etc].

Step-By-Step Configuration

- 1] Set up the correct network settings in Windows.
- 2] Activate Art-Net in MADRIX 5.
- 3A] Add your Art-Net devices automatically.
- 3B] Add your Art-Net devices manually.
- 4] Edit the settings of your devices.
- 5] Activate your devices.
- 6] Assign the correct DMX universes.
- 7] Set up the Frame Time.
- 8] Choose to send optimized frames or full frames.

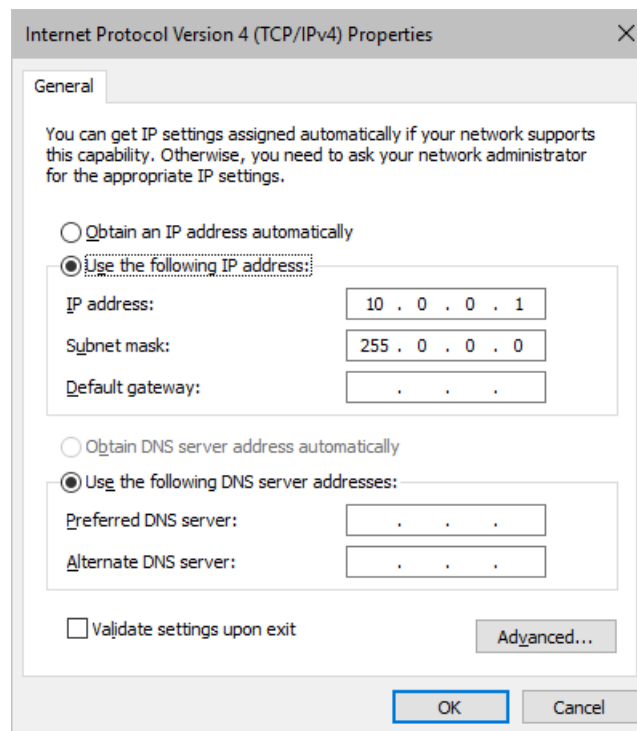
- Repeat steps 4] to 8] for each of your devices.

1] Windows Network Settings

Art-Net is a network-based protocol. MADRIX 5 will use the network card of your computer to send data.

- **It is required to set up the correct network settings in Windows, first.**
- **You must use these IP address and Subnet mask settings. Otherwise, Art-Net might not work!**
- **The IP addresses of your computer and your Art-Net devices need to be different.**
- Set up an individual **IP address** in the following IP address range:
 - **2.0.0.1 ... 2.255.255.254** or
 - **10.0.0.1 ... 10.255.255.254**
- Set up the corresponding **Subnet mask**
 - **255.0.0.0**
- **Restart MADRIX 5, if you have changed the network settings in Windows while MADRIX 5 was running.**
- **Check the settings of the Windows Firewall.** Learn more »[Tips \[Microsoft Windows / Networks / USB\]](#)

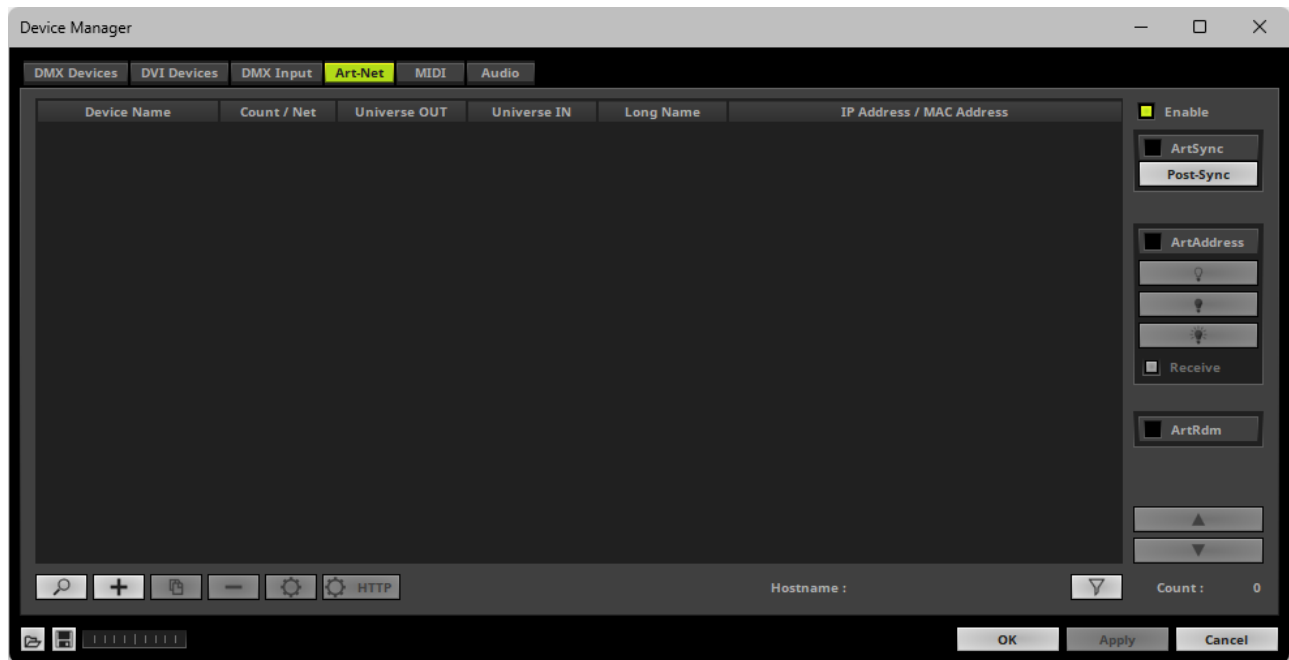
- Example for PCs that are running MADRIX 5:



- **Please remember to restart MADRIX 5, if you have changed the network settings in Windows while MADRIX 5 was running.**

2] Activating Art-Net In MADRIX 5

- Go to the menu **Preferences > Device Manager... > Art-Net**
[Keyboard shortcut: **F4 > Art-Net**]
- Activate the checkbox **Enable** [in the upper, right corner].



3A] Adding Devices Automatically

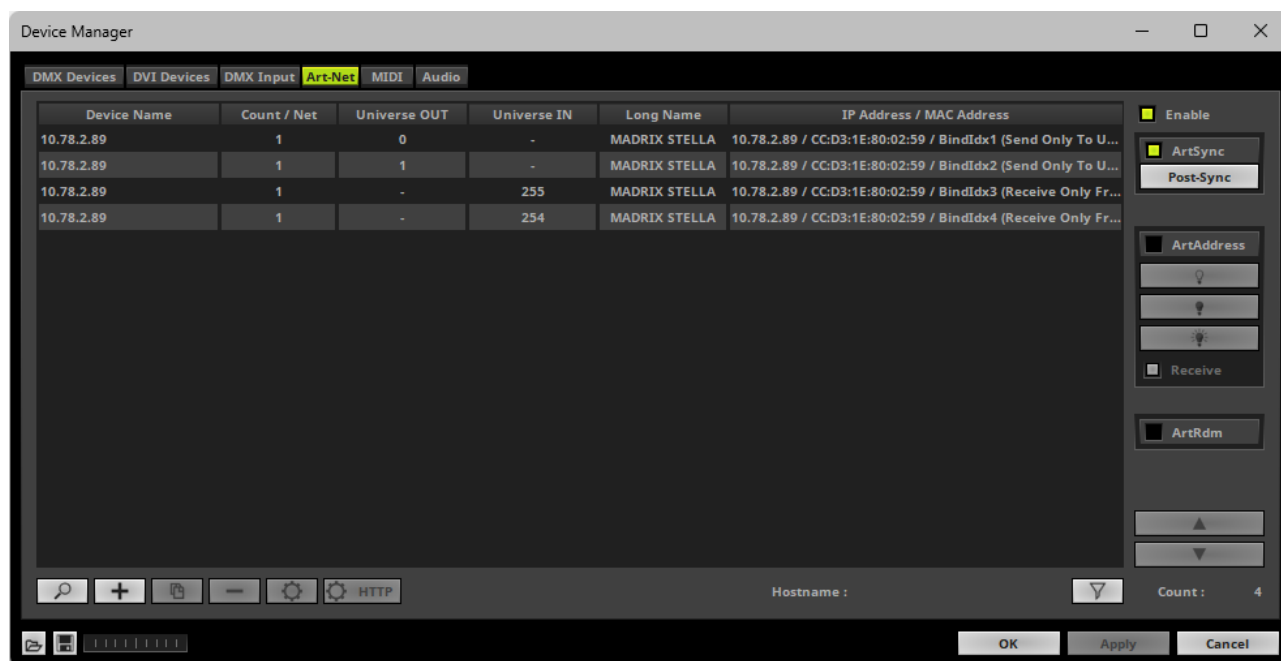
MADRIX 5 can automatically add devices using the ArtPoll Reply functionality if supported by the Art-Net device.

- Click 

[MADRIX 5 will automatically search the network for connected Art-Net devices. MADRIX 5 will scan even across multiple network cards. Devices that are found will appear in the list.]


[Please make sure that your devices also have the correct network settings.]

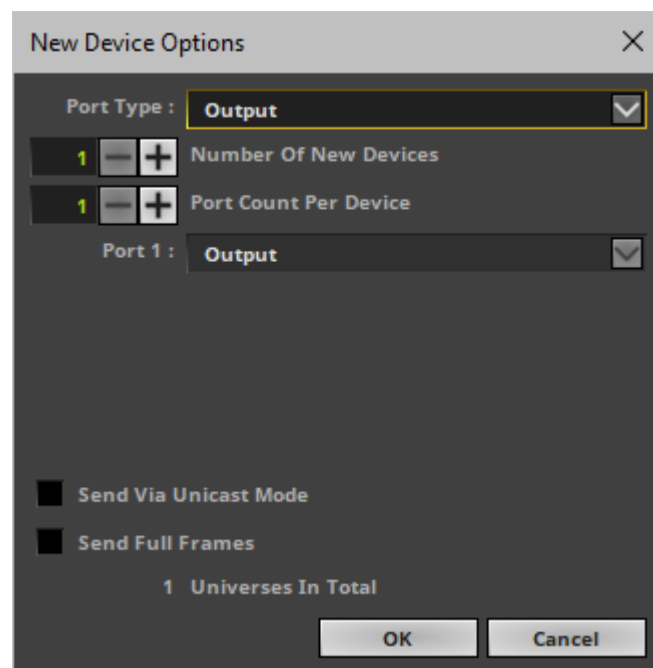
[Keyboard shortcut: **F5**]



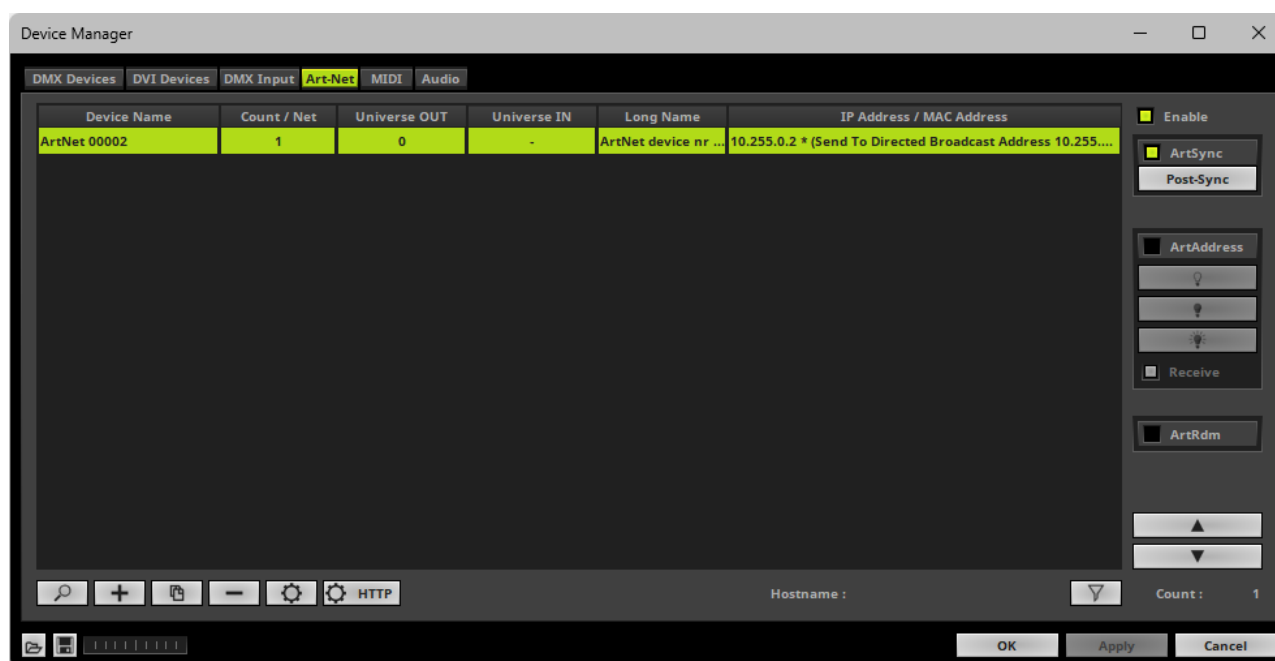
3B] Adding Devices Manually

Some interfaces might not support ArtPoll Reply in order to add them automatically. Then, you need to add your devices manually.


- Click 
- A new window will open.



- **Port Type** - Choose **Output**.
- **Number Of New Devices** - Enter the number of devices you wish to add.
- **Port Count Per Device** - Enter the number of ports each newly created device should have. Per device a maximum number of 4 ports is available.
 - **In order to create an 8-port node, set up 2 devices with 4 ports each. In most cases the same IP address should be entered then for both devices.**
- **Send Via Unicast Mode** - Activates Unicast Mode for all newly created output devices.
- **Send Full Frames** - Activate this option if output devices should always send a single data frame including a full number of 512 channels. If this option is disabled, MADRIX 5 will automatically send optimized frames that reduce network traffic. Learn more below.



4] Device Settings

- Select your device in the list.
- Click 
- A new window will open [**Art-Net Device Configuration**].

Art-Net Device Configuration

General

Manufacturer : Artistic Licence Engineering Ltd [Website](#)

Product : developer Firmware : v5.7

OEM Code : 0x00FF

ESTA : 0x4941 - inoage GmbH

Style Code : (0x00) node

UUID : d2e45e1e-8046-43e0-9c3e-9e3a6c50c263

Short Name : **ArtNet 00003** Manual ID : 3

Long Name : **ArtNet device nr 00003**

LED Status Indicators : ☐ Mute

Device Ports

Port Count : 4

State : ● Port 1 ● Port 2 ● Port 3 ● Port 4

Universe Port OUT : 0 1 2 3

0x0000 ArtNet 0x0001 ArtNet 0x0002 ArtNet 0x0003 ArtNet

Universe Port IN :

IP Configuration

Send Broadcast Mode : ☒ Send Data To Directed Broadcast Address 10.255.255.255

10.0.0.0 255.0.0.0 00:E0:4C:11:38:76 100 MBit/s Sync Mode Enabled

Send Unicast Mode : ☐ Send Data Only To IP Address


10 . 255 . 0 . 3 [MAC To IP](#)

Port Address : 6454 0x1936

OK Apply Cancel

Set up specific settings for your device. The following settings are available [this depends if the device was added automatically or manually]:

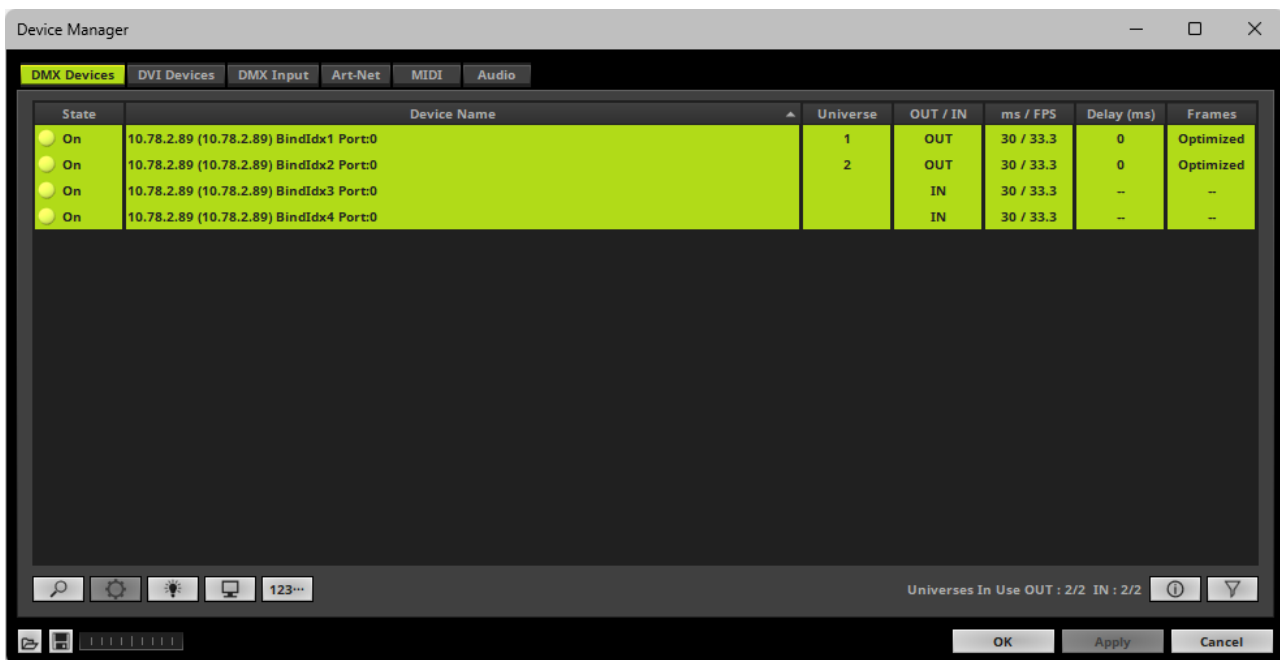
- **Short Name** - Represents a short description of your device [with a maximum of 18 characters].
By default, MADRIX 5 devices will show their IP address.
- **Long Name** - Represents a long description of your device [with a maximum of 64 characters].
By default, MADRIX 5 devices will show their product name. This can be changed on the built-in the web configuration page, for example.

- **LED Status Indicators** - Allows you to switch of all LED status indicators of a device if supported by the device via **Mute** [[ArtAddress](#) needs to be enabled first in MADRIX 5.]
- **Port Count** - Represents the number of ports for this particular device.
- **State** - Displays if the ports have been activated under **Preferences > Device Manager... > DMX Devices**. Learn more below.
- **Universe Port OUT** - Defines the general allocation of DMX universe and device port for output. E.g., the fourth DMX universe is sent to port 4.
 - When changing one value, you can quickly adjust all values linearly, increasing or decreasing them via the appearing buttons.
- **Send Broadcast Mode** - Activates Broadcast Mode. Learn more below.
Network - Defines the network that is used for Broadcast Mode. Learn more below.
- **Send Unicast Mode** - Activates Unicast Mode. Learn more below.
IP Address - Defines the IP address of the Art-Net device when data is sent via Unicast Mode.

5] Activating Devices

Each of your Art-Net devices need to be activated.

- Go to the menu **Preferences > Device Manager... > DMX Devices**
 [Keyboard shortcut: **F4**]
- Select your devices in the list.
- **Right Mouse Click** on the column **State** to set from **Off** to **On** [indicated by green light].
- **Right Mouse Click** on the column **OUT / IN** to set to **OUT** for data output [if not determined by the device itself].
 - **Right Mouse Click** on the column **OUT / IN** to set to **IN** for data input [if not determined by the device itself].



6] DMX Universe

- Make sure that your device is still selected under **Preferences > Device Manager... > DMX Devices**
- Set up **Universe**
 - **Right Mouse Click** or **Left Mouse Double-Click** on the column **Universe** and enter the required number.
- This setting assigns a specific DMX universe [of the Patch] to the device or the port of the device. Learn more »[Virtual DMX Universes](#)
- **Make sure to assign the correct universe according to your requirements.**
- Learn more »[Glossary](#)

7] Frame Time

- Make sure that your device is still selected under **Preferences > Device Manager... > DMX Devices**
- Set up the frame time for your device.
 - **Right Mouse Click** or **Left Mouse Double-Click** on the column **ms / FPS** and enter the required number.
 - The frame time [in milliseconds; ms] affects the frame rate. The frame rate specifies how fast data is sent to the device or received from it [in Frames Per Second; FPS].
 - Increase the frame time in order to decrease the frame rate [e.g., 40 ms = 25 FPS].

- Decrease the frame time in order to increase the frame rate [e.g., 20 ms = 50 FPS].
- The default value is 30 ms / 33.3 FPS.
- The minimum value is 1000 ms / 1 FPS.
- The maximum value is 5 ms / 200 FPS.

Please note: If you want to output high frame rates, make sure to set Main Mixing FPS in the Options to the same value in order to render the same frame rate [It is set to 50 FPS by default. Otherwise, frames will be duplicated]. Learn more »[Performance](#)

Please note: If you want to input high frame rates, make sure to set DMX Controller Input FPS in the Options to the same value in order to process the same frame rate [It is set to 50 FPS by default. Otherwise, frames will be duplicated]. Learn more »[Performance](#)

- **Some LED fixtures might have problems with a low frame time / high frame rate. Then, it is recommended to increase the frame time / decrease the frame rate.**

8] Output Delay [Delay (ms)]

- Make sure that one or more devices are selected.
- Set up a delay in milliseconds if required.
 - **Right Mouse Click** or **Left Mouse Double-Click** on the column **Delay (ms)** and enter the required number.
 - Valid values range from 0 ms to 1000 ms.
 - The default value is 0 [meaning that there is no added delay].
 - Delay can only be set for output devices.
 - This is a highly specialized feature, where an output delay may be wanted to achieve certain visual results, such as creating a video backdrop for more realistic illumination in a video-production setting.

9] Optimized Frames Or Full Frames

- Make sure that your device is still selected under **Preferences > Device Manager... > DMX Devices**
- Choose how to send data.
 - **Right Mouse Click** or **Left Mouse Double-Click** on the column **Frames** to choose between **Optimized** and **Full**
 - Per DMX512 standard, MADRIX 5 only sends the number of DMX channels that is configured [optimized frames]. For example, if you are using 312 DMX channels on a DMX universe, only 312 DMX channels will be sent with every single frame on this universe.
 - Activate Full Frames if devices should always send full frames on a particular universe, instead of optimized

frames. Sending full frames means that always the full 512 DMX channels of a DMX universe will be sent with every frame [even when you are using less than 512 channels on the universe].


- Activating *Full Frames* is recommended if problems with the data output of your devices occur.

Art-Net Device Settings

It is very important to set up the correct settings of your devices!

Broadcast Mode Or Unicast Mode

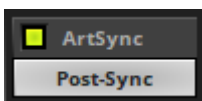
MADRIX 5 can send Art-Net data in 2 ways to your Art-Net devices:

- **Broadcast Mode** - Means that every packet sent from a single transmitter will be received by all recipients in the network. MADRIX 5 will send data to all devices in the network.
 - Advantage: The same data [e.g., DMX universe 1 and 2] can be made available at different points of your setup.
 - Disadvantage: A potentially huge number of data packages will be sent over the network. This can reduce the overall network performance and cause data issues or instability.
- **Unicast Mode** - Means that the specific data will only be sent to the specified recipient.
 - Advantage: Data traffic is reduced immensely, which means that a larger number of Art-Net devices can be used in one network. Reduced network traffic increases the performance and stability.
 - Disadvantage: The network settings of all devices need to be 100% correct.
- Go to the menu **Preferences > Device Manager... > Art-Net**
[Keyboard shortcut: **F4 > Art-Net**]
- Select your device in the list.
- Click 
- A new window will open.

- **A]** Choose **Send Unicast Mode** to activate Unicast Mode:
 - Make sure to enter the correct **IP Address** of your device that should receive the Art-Net data.
 - MADRIX 5 will send the corresponding data only to this device.
 - Please note: A loopback adapter is also available. Learn more »[Loopback Adapter \[127.0.0.1\]](#)
- **B]** Choose **Send Broadcast Mode** to activate Broadcast Mode:
 - Make sure to select the correct **Network** of your computer that should send the Art-Net data.
 - MADRIX 5 will send data to the whole Art-Net network.
 - Please note: A loopback adapter is also available. Learn more »[Loopback Adapter \[127.0.0.1\]](#)
- Click **Apply**

Unicast Mode is recommended in general.

Sync Mode



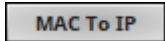
ArtSync - Allows you to activate or deactivate the usage of synchronization commands/packages for Art-Net.

- Your Art-Net devices need to support this feature in order for it to work correctly.
- All MADRIX hardware Art-Net nodes support ArtSync.
- Sync packages will be sent to all network cards for which corresponding Art-Net nodes are created in the MADRIX 5 Software.


In addition, you can choose between **Post-Sync** [default] and **Pre-Sync**. By default, the sync data is sent after the main DMX/Art-Net data. Pre-Sync would send it before the main DMX/Art-Net data.

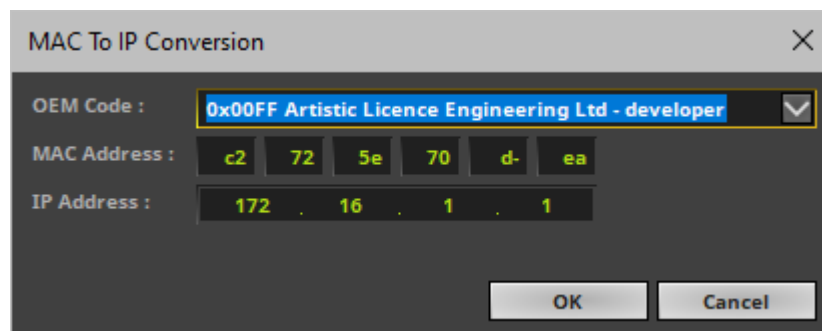
- **Before activating sync, make sure that all activated Art-Net devices are available in your network! Else, the frame rate of Art-Net might drop. If you are not sure, do not enable any sync mode.**
- **Disable ArtSync if you wish to HTP merge from two sources! ArtSync would then interfere with the merge and create unwanted results.**

MAC To IP Conversion



MAC To IP - Allows you to includes a tool to convert MAC addresses to IP addresses, and vice versa.

- Go to the menu **Preferences > Device Manager... > Art-Net >  > MAC To IP**
- A new window will open.
- **OEM Code** - Choose the manufacturer of the device. You can also it as search field. Enter a value or name to search for it.
- **A] MAC Address** - Enter the MAC address of the device and the tool automatically converts it into the correct IP address.
- **B] IP Address** - Enter the IP address of the device and the tool automatically converts it into the correct MAC address.



Additional Functionality

Managing Devices



Search For Devices - Re-scans for devices in the network; as explained above.



Add Devices - Manually adds new devices; as explained above.



Duplicate Devices - Duplicates the selected devices to quickly add new similar devices.



Remove Devices - Removes the selected devices from the list. [Keyboard shortcut: **Del / Delete**]



Device Configuration - Allows you to configure your devices by calling up the Art-Net Device Configuration window.

Web Configuration



HTTP Configuration - Allows you to configure your Art-Net device remotely with the help of a web browser if this feature is supported by your device. If this feature is available, a new browser window will be opened using the specified IP address. This offers you access to the configuration of your Art-Net device. If this is not possible, a message box will be displayed in MADRIX 5.

Filter



Filter - Activates the filter.

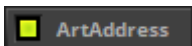
- Enter any text to filter out items that do not include this text. The button is shown in green if the filter is active.
- Terms can be case-insensitive. You don't have to use capital letters.
- Feel free to use terms that are incomplete. For example, **mad** will include results for **MADRIX**.
- You may specify certain columns by using a colon [:].
- For example: **Device Name:2** shows only lines where the number is included in the Device Name and not the Universe, for example.
- Swap, Position Up, and Position Down are disabled while a filter is active.

Ctrl+F - Opens the filter.

Esc - Closes the filter.

Right Mouse Click - Resets the filter [and closes it again if it is still open].

Status Indicators [ArtAddress]



In order to use these features, **Enable ArtAddress** first.

- Regarding sending ArtAddress commands to nodes, make sure that your nodes fully support this Art-Net feature. You will also get notified by a message box. Confirm the message with **OK** or abort via **Cancel**.
- MADRIX LUNA, MADRIX NEBULA, MADRIX PLEXUS, MADRIX STELLA, MADRIX ORION, and MADRIX AURA support ArtAddress.
- MADRIX 5 itself can receive ArtAddress commands.



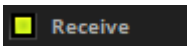
Mute Status Indicators - Switches off and disables all built-in status indicators of a device over Art-Net [ArtAddress > AcLedMute].



Operate Status Indicators Normally - Allows the built-in status indicators of a device to operate normally again, after having them switched off [ArtAddress > AcLedNormal].



Highlight Device - Activates the highlight mode [ArtAddress > AcLedLocate]. Select one or more interfaces and click the button. The corresponding status indicators of the selected interfaces will flash for a better identification or tests. This makes it easier to see them on site/stage. It considerably speeds up the procedure of programming or testing the selected interfaces.



In addition to sending out commands to nodes, MADRIX 5 itself can receive ArtAddress commands.

Receive - Activates that MADRIX 5 is able to receive ArtAddress commands. It is enabled by default.

- AcLedMute and AcLedNormal will disable the identification of MADRIX 5.
- AcLedLocate will enable the identification of MADRIX 5.
 - As long as Identify is enabled or set via protocol commands, the MADRIX 5 user interface [GUI] will repeatedly change every second from the currently selected theme to the opposite theme, either from dark to light or vice versa.
 - This visibly highlights the user interface for visual identification of this MADRIX 5 instance as a device within a network system.
 - Identify will also be deactivated when manually switching the theme, either via the menu [**View > Theme > Light/Dark**] or its keyboard shortcut [**Ctrl+T**].

You can further customize ArtAddress properties. Learn more »[Options](#)

DMX Devices

Learn more about setting up devices under **Preferences > Device Manager... > DMX Devices** here »[DMX512 \[DMX-OUT\]](#)

Important Information

- Remember to configure your light matrix. Learn more »[Matrix Generator](#) or »[Patch Editor](#)
- Make sure to save your MADRIX 5 Setup file after the configuration process.
- Keep in mind that network devices, if activated, cause network traffic!
- If you are using a network-based output protocol and if the Startup option *Start MADRIX After Booting Windows* is activated, it is highly recommended to also activate the Startup option *Start With Timeout (s)* with a value of 30.
- When activating Art-Net, MADRIX 5 will create a so-called shared socket and not an exclusive socket.
Therefore, other software on the computer has the chance access Art-Net using the same socket, when running MADRIX 5 and another software at the time.
- It is not recommended to operate Art-Net and access to the World Wide Web/Internet in the same network!
It is recommended to run it in a separate network without internet access.
- It is not recommend to use Art-Net over WiFi [wireless network]!
If you decide to run such a configuration on your own risk, make sure to deactivate ArtSync, as this will lead to problems.

Troubleshooting

If you are encountering problems, please work through the following checklist:

- Double-check the settings of your network card [IP address, Subnet mask].
- Make sure to set up the Windows Firewall correctly or deactivate the Windows Firewall if possible [only if no connection to the internet is available]. Learn more »[Tips \[Microsoft Windows / Networks / USB\]](#)
- If MADRIX 5 does not use the correct network card for Art-Net Remote, change the order of network adapters and set a higher priority for your preferred network. Learn more »[Tips \[Microsoft Windows / Networks / USB\]](#)
- Double-check the settings of the Art-Net devices in MADRIX 5.
- Use the DMX Watcher to monitor outgoing data. Learn more »[Tools](#)

- Use only GIGABIT [1Gbit/s or 1000 Mbit/s] network components [such as, switches and network cards].
- Use high-quality network components [cables, switches, cards, etc.].
- Remove any routers from the network.
- Check all other IP addresses and cabling. Having the same IP address in the network causes problems. Make sure that the network is not forming a ring, where the start point is also the end point, and that data is not sent back to the source [the computer].
- Use **Start With Timeout (s)** in the MADRIX 5 Options to make sure network is initialized correctly before MADRIX 5 starts. Learn more »[Startup](#)
- If output problems occur, decrease the output frame rate [FPS] in the Device Manager. Learn more »[DMX512 \[DMX-OUT\]](#)
- Make sure that Art-Net is set up as an individual network and separate from the Internet.

6.4 ESTA Streaming ACN [sACN / E1.31]

This topic includes:

- [Introduction](#)
- [Note](#)
- [Step-By-Step Configuration](#)
- [Terminating sACN Output](#)
- [Additional Functionality](#)
- [Important Notes](#)
- [Troubleshooting](#)
- [Further Configuration](#)

Introduction



Streaming ACN [sACN/E1.31] is a protocol that transfers DMX data over Ethernet. It is another network-based DMX protocol. It is a standard created by ESTA [Entertainment Services and Technology Association; web link »www.esta.org].

Note

There are several steps required to set up Streaming ACN products in MADRIX 5. This chapter is only part of the process. You need to set up other configurations as well [such as virtual LED matrix, DMX Devices, MADRIX Effects, Audio, etc.].

Step-By-Step Configuration

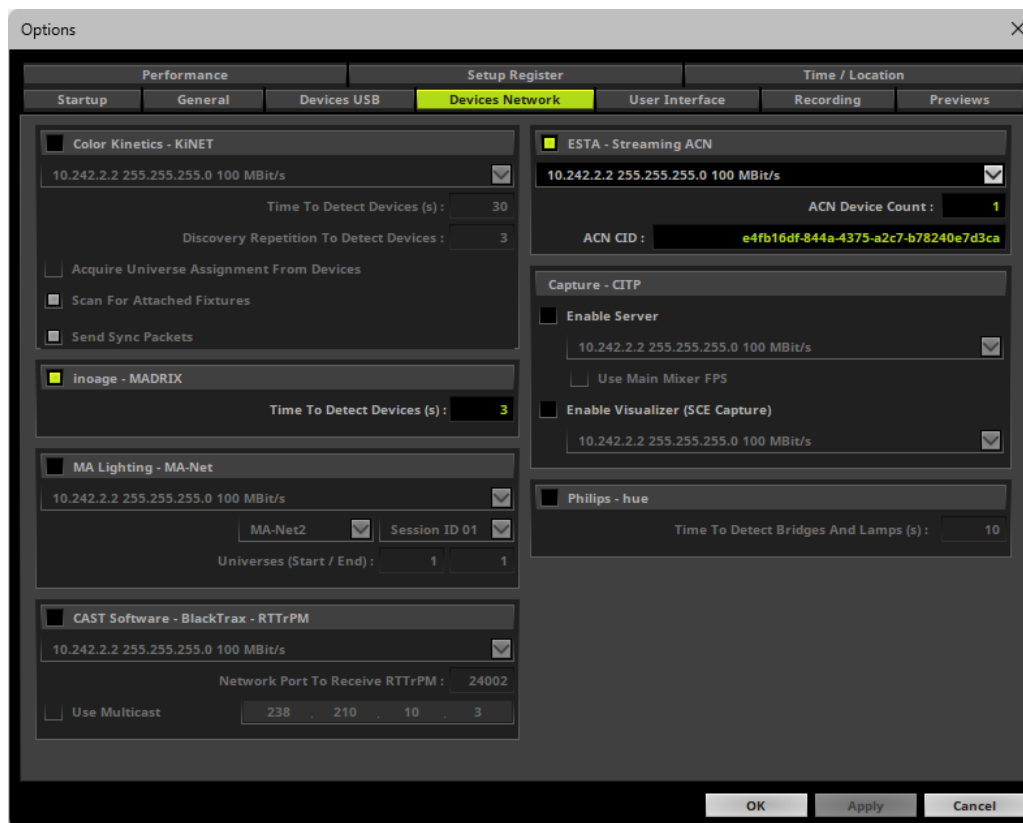
- 1]** Configure network settings in Windows.
- 2]** Activate Streaming ACN in MADRIX 5.
- 3A]** Configure single DMX devices.
- 3B]** Configure multiple DMX devices.
- 4]** Choose if you are going to use your devices as output or input interfaces.
- 5]** Set up the correct DMX universe.
- 6]** Set up the Frame Time.
- 7]** Choose to send optimized frames or full frames.

1] Windows Network Settings

- MADRIX 5 automatically sets up Streaming ACN network settings for you.
[MADRIX 5 supports multicast Streaming ACN. Data is automatically sent to all corresponding sACN devices in the network. Unicast ist also supported.]
- You only need a computer with a network card and a valid IP address.
- **You do not have to change the IP address settings in Windows for Streaming ACN!**
- **The IP address range for sACN devices is 239.255.X.X according to the Streaming ACN specifications.**
[Even if your sACN devices are set to a different IP address range, you may try the connection from MADRIX 5 to your devices.]
- **Make sure that your Firewall does not block data of the 239.255.X.X IP address range!**
- **Check the settings of the Windows Firewall.**
- Learn more »[Tips \[Microsoft Windows / Networks / USB\]](#)

2] Activating Streaming ACN

- Go to the menu **Preferences > Options... > Devices Network**
[Keyboard shortcut: **Ctrl+Alt+O > Devices Network**]
- Activate **ESTA - Streaming ACN**
- **Choose your network card** from the drop-down list. Make sure to select the correct network adapter that will be used for Streaming ACN!
[The IP address and Subnet mask label should help you select the correct adapter. It is not necessary to change any of these networks settings.]
[Please note: A loopback adapter is also available. Learn more »[Loopback Adapater \[127.0.0.1\]](#)]
- **ACN Device Count** - Set up how many you are going to use.
[This is the total amount of OUT and IN devices. Please set the exact number of devices you are using. If the count is higher, this creates unnecessary network traffic.]
- Click **Apply**



- **ACN CID** - Being a network protocol, Streaming ACN sends a so-called CIDs [Component Identifier].
 - Every single ACN device has such a unique ID.
 - When using Streaming ACN, your MADRIX 5 Software is one of those devices.
 - When you start MADRIX 5 for the first time, this ID will be generated automatically for you. From this point onwards it will be used on your PC.
 - With this ID your MADRIX 5 Software can be easily identified in the network. Interfaces can detect this unique ID and can be configured to receive data from this particular device. Please note that the ACN interface must support this feature.
 - **Do not change the ACN CID, unless you are an experienced user!**
- Click **OK** to close the window.

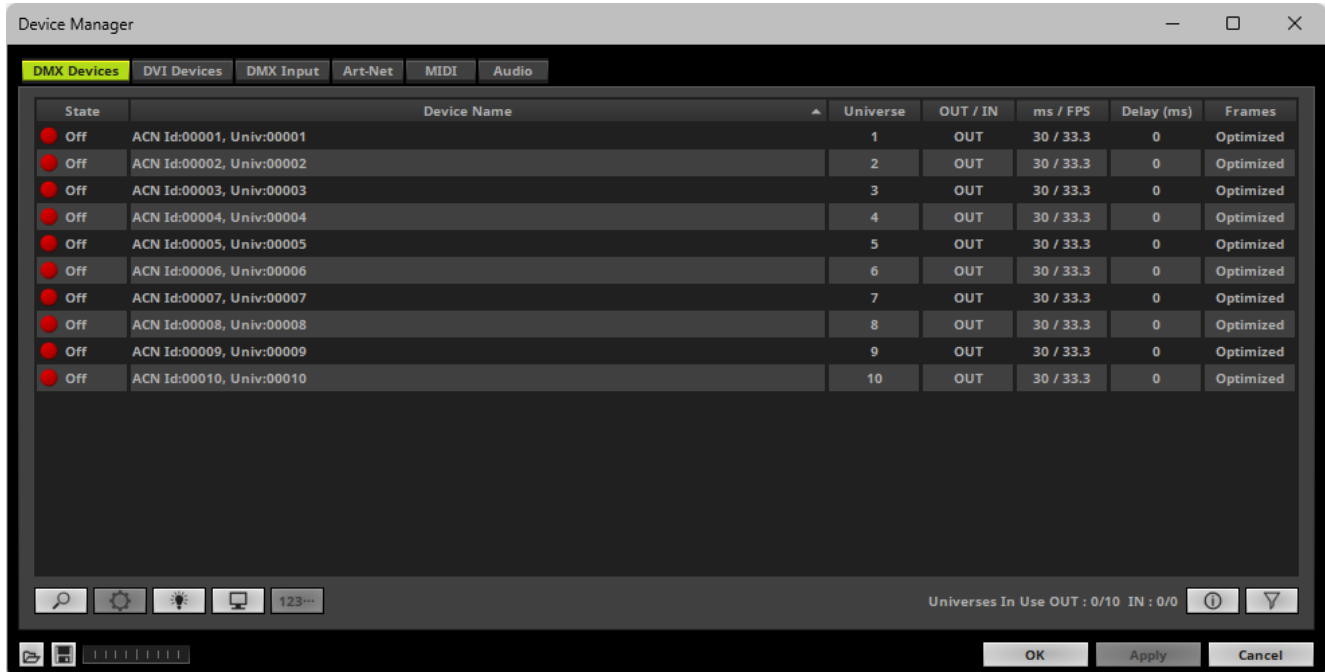
3A] Configuration Of Single Devices


- Go to the menu **Preferences > Device Manager... > DMX Devices**
[Keyboard shortcut: **F4**]

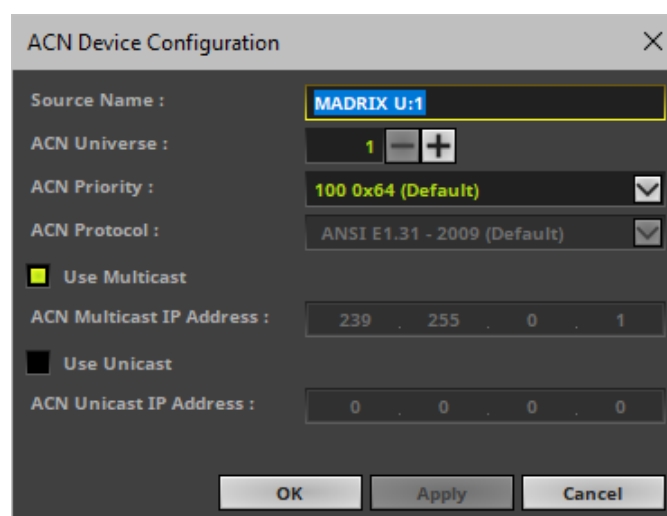
- MADRIX 5 automatically creates and adds the number of interfaces to the list.

[According to **ACN Device Count**]

[Devices are disabled upon creation.]




- Select a device in the list and click .
- A new window will open.

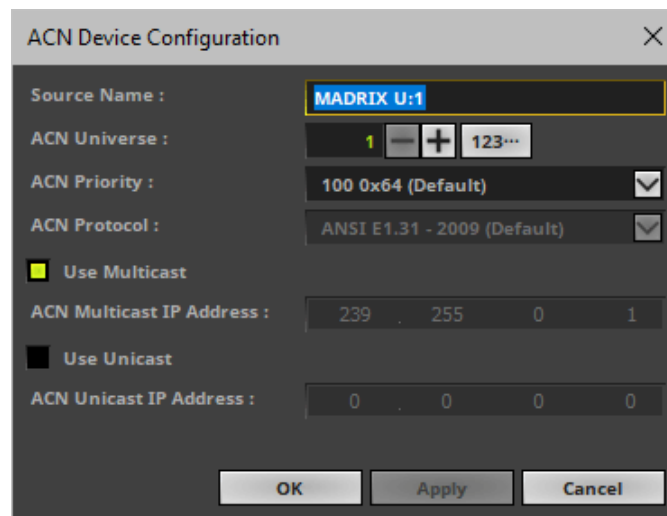


Set up the following settings for your devices:

- **Source Name** - Allows you to set up a specific name for the device. This name is send via network as well. Therefore, interfaces may be able to retrieve this name and can be configured to receive data from this source.
 - If you are using the default name **MADRIX U:X**, the universe will automatically be displayed in the name [represented by X: 1, 2, 3, etc.].
- **ACN Universe** - Defines the DMX universe of the device.
 - **Set up the same universe that is set up in your sACN device.**
 - According to the Streaming ACN specifications, MADRIX 5 will automatically change the ACN IP Address according to the ACN Universe.
- **ACN Priority** - Was implemented for backup solutions. Valid values range from 0 to 200, which is the highest priority.
 - For example, you may have set up two MADRIX PCs. One gets a priority of 100. The second PC gets a priority of 50. If the first PC fails and only if it malfunctions, data will be automatically received from PC #2.
 - Data will always be received from the device with the highest priority. Please note that the ACN device must support this feature.
 - You can also it as search field. Enter a value to search for it.
- **ACN Protocol** - Automatically selects the **ANSI 2009** standard.
- **Use Multicast**
 - ACN Multicast IP Address** - Displays the IP address of the device as automatically assigned by MADRIX 5 according to the Streaming ACN specifications. The last 2 digits match the assigned DMX universe.
- **Use Unicast**
 - ACN Unicast IP Address** - Uses a specific IP address to send data to.
- Click **Apply** to confirm your changes.
- Click **OK** to close the window.

3B] Configuration Of Multiple Devices

- You can configure **several interfaces** at the same time.
- Follow the steps of 3A, but select multiple devices and click 
- A new window will open.



- Set up the settings as described under 3A].
- For **ACN Universe**, you have now additional options for **Numbering**:

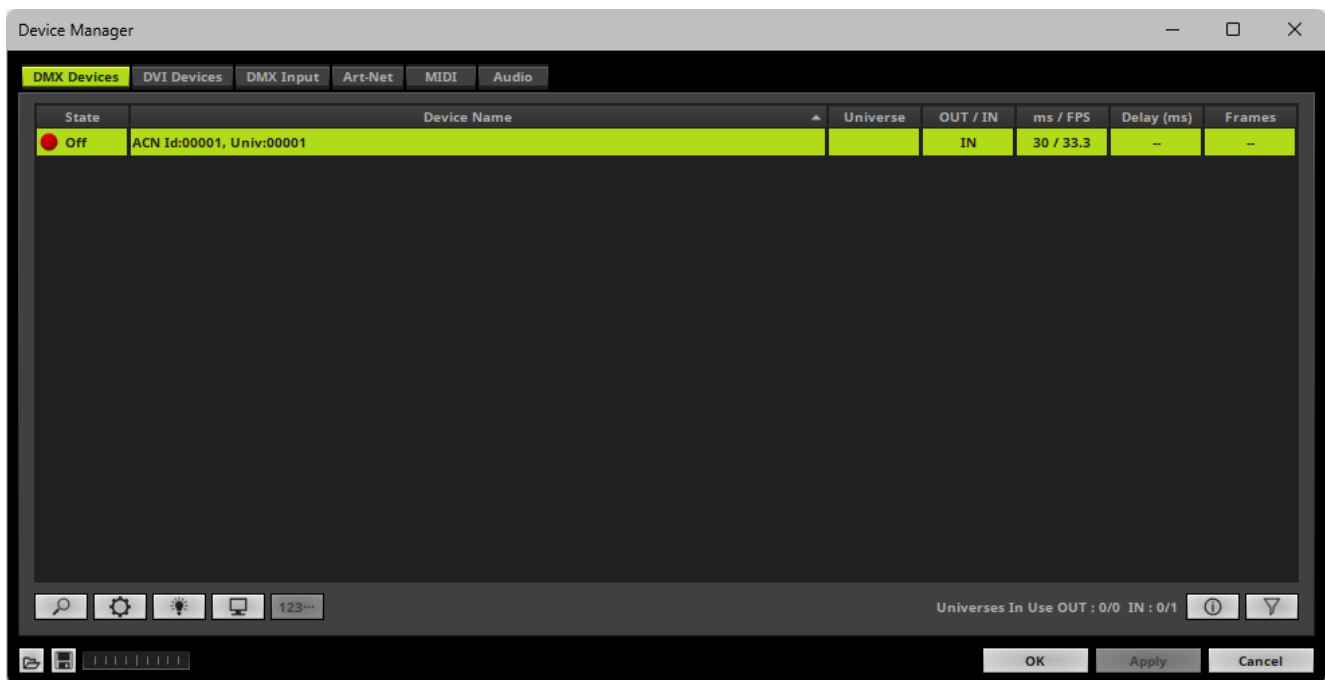


Click the button and MADRIX 5 will automatically increase the ACN Universe number for all the selected devices [which can be seen in the DMX Devices tab of the Device Manager], starting with the value you have entered.

- Click **Apply** and **OK** to confirm your changes.

4] Output or Input

- Make sure that your device is still selected under **Preferences > Device Manager... > DMX Devices**
- **A] Right Mouse Click** on the column **OUT / IN** to set to **OUT** for data output if you wish to send data to this device in order to put it out onto your LED fixtures.
- **B] Right Mouse Click** on the column **OUT / IN** to set to **IN** for data input if you wish to receive incoming data through this device.
- In input mode, you will not be able to select the ACN protocol. MADRIX 5 will automatically select the correct protocol version.
- Learn more » [DMX-IN / Art-Net Remote / sACN Input](#)

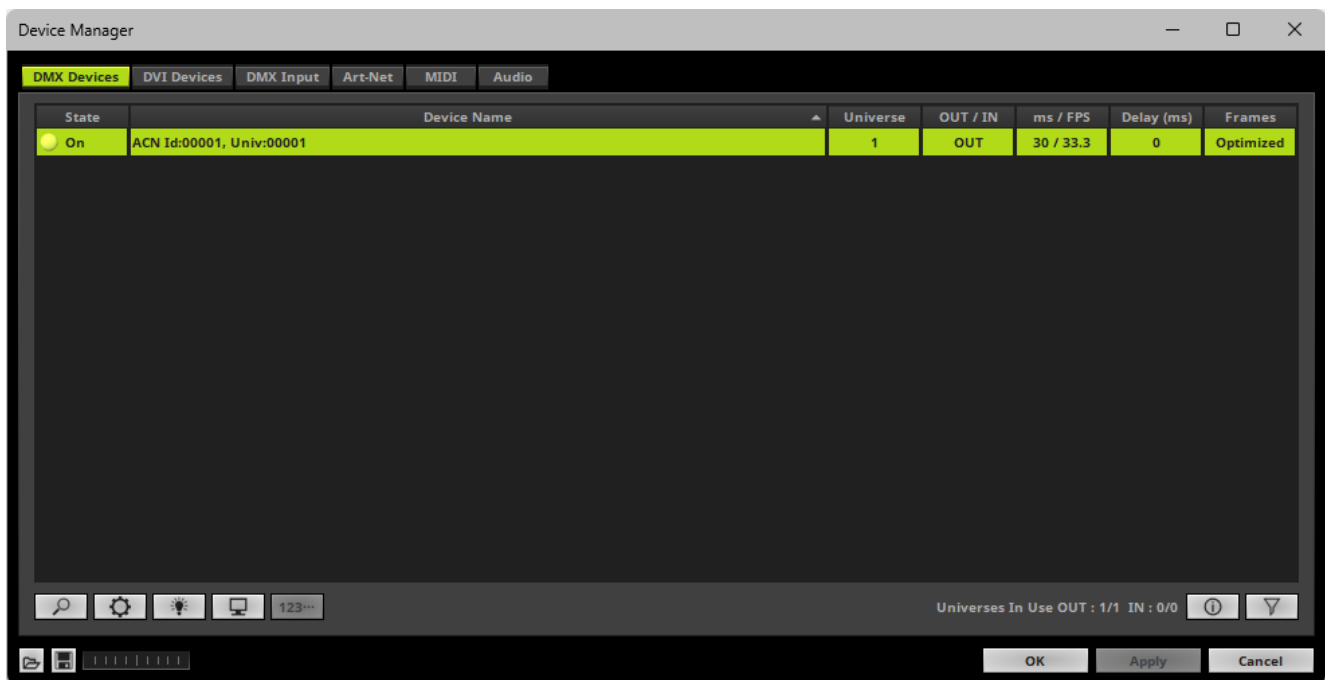


- **Note:** If you are loading a MADRIX 5 Setup, please check if the number of ACN devices in your setup corresponds with the number that is activated. The Setup stores the number of devices. But if you changed the amount and then loaded the Setup, the newly defined number will be activated.

5] Activating Devices

Devices need to be activated.

- Go to the menu **Preferences > Device Manager... > DMX Devices**
[Keyboard shortcut: **F4**]
- Select your devices in the list.
- **Right Mouse Click** on the column **State** to set from **Off** to **On** [indicated by green light].



6] DMX Universe

- Make sure that your device is still selected.
- When using your device as an output device, set up **Universe**
 - **Right Mouse Click** or **Left Mouse Double-Click** on the column **Universe** and enter the required number.
- This setting assigns a specific DMX universe [of the Patch] to the device or the port of the device. Learn more »[Virtual DMX Universes](#)
- **Make sure to assign the correct universe according to your requirements.**
- Learn more »[Glossary](#)

7] Frame Time

- Make sure that your device is still selected.
- Set up the frame time for your device.
 - **Right Mouse Click** or **Left Mouse Double-Click** on the column **ms / FPS** and enter the required number.
 - The frame time [in milliseconds; ms] affects the frame rate. The frame rate specifies how fast data is sent to

the device or received from it [in Frames Per Second; FPS].

- Increase the frame time in order to decrease the frame rate [e.g., 40 ms = 25 FPS].
- Decrease the frame time in order to increase the frame rate [e.g., 20 ms = 50 FPS].
- The default value is 30 ms / 33.3 FPS.
- The minimum value is 1000 ms / 1 FPS.
- The maximum value is 5 ms / 200 FPS.

Please note: If you want to output high frame rates, make sure to set Main Mixing FPS in the Options to the same value in order to render the same frame rate [It is set to 50 FPS by default. Otherwise, frames will be duplicated]. Learn more »[Performance](#)

Please note: If you want to input high frame rates, make sure to set DMX Controller Input FPS in the Options to the same value in order to process the same frame rate [It is set to 50 FPS by default. Otherwise, frames will be duplicated]. Learn more »[Performance](#)

- **Some LED fixtures might have problems with a low frame time / high frame rate. Then, it is recommended to increase the frame time / decrease the frame rate.**

8] Output Delay [Delay (ms)]

- Make sure that one or more devices are selected.
- Set up a delay in milliseconds if required.
 - **Right Mouse Click** or **Left Mouse Double-Click** on the column **Delay (ms)** and enter the required number.
 - Valid values range from 0 ms to 1000 ms.
 - The default value is 0 [meaning that there is no added delay].
 - Delay can only be set for output devices.
 - This is a highly specialized feature, where an output delay may be wanted to achieve certain visual results, such as creating a video backdrop for more realistic illumination in a video-production setting.

9] Optimized Frames Or Full Frames

- Make sure that your device is still selected under **Preferences > Device Manager... > DMX Devices**
- Choose how to send data.
 - **Right Mouse Click** or **Left Mouse Double-Click** on the column **Frames** to choose between **Optimized** and **Full**
 - Per DMX512 standard, MADRIX 5 only sends the number of DMX channels that is configured [optimized frames]. For example, if you are using 312 DMX channels on a DMX universe, only 312 DMX channels will be

sent with every single frame on this universe.

- Activate Full Frames if devices should always send full frames on a particular universe, instead of optimized frames. Sending full frames means that always the full 512 DMX channels of a DMX universe will be sent with every frame [even when you are using less than 512 channels on the universe].

- Activating *Full Frames* is recommended if problems with the data output of your devices occur.

Terminating sACN Output

In addition to sending the last frame as black frame, the software sends the STREAM_TERMINATED flag when terminating sACN output. This lets interfaces know about the termination and anticipates running into a timeout otherwise.

- sACN output is being terminated in case:
 - The software is closed.
 - Streaming ACN devices are being disabled in the Device Manager.
 - Streaming ACN is being deactivated in the Options.

Additional Functionality

DMX Devices

Learn more about setting up devices under **Preferences > Device Manager... > DMX Devices** here »[DMX512 \[DMX-OUT\]](#)

Important Notes

- **Please switch off your Firewall or configure your Firewall accordingly. sACN might not work with a Firewall!**
- **It is recommended to run sACN in a separate network without internet access. Else, the internet connection may not work properly.**
- **Keep in mind that network devices, if activated, cause network traffic!**
- **When using a network-based output protocol and when the startup option *Start MADRIX After Booting Windows* is used, it is highly recommended to also activate the Startup option *Start With Timeout (s)* with a value of 30 or higher.**

Troubleshooting

If you are encountering problems, please work through the following checklist:

- Make sure to set up the Windows Firewall correctly or deactivate the Windows Firewall if possible [only if no connection to the internet is available]. Learn more »[Tips \[Microsoft Windows / Networks / USB\]](#)
- Use **Start With Timeout (s)** in the MADRIX 5 Options to make sure network is initialized correctly before MADRIX 5 starts. Learn more »[Startup](#)
- If output problems occur, decrease the output frame rate [FPS] in the Device Manager.
- Make sure that sACN is set up as an individual network and separate from the Internet.
- Double-check if routers and switches in the network allow communication and IP address forwarding for the 239.255.X.X range of IP addresses.
- Double-check if your sACN devices support multicast Streaming ACN and are configured accordingly.

Further Configuration

Remember to configure your light matrix in the »[Matrix Generator](#) or »[Patch Editor](#)

Make sure to save your MADRIX 5 Setup after the configuration process.

6.5 Color Kinetics [KiNET]

Topics of this chapter:

- [Introduction](#)
- [Note](#)
- [Step-By-Step Configuration](#)
- [Additional Functionality](#)
- [Further Configuration](#)
- [Important Notes](#)
- [Troubleshooting](#)
- [Additional Information](#)

Introduction



MADRIX 5 natively supports Color Kinetics [KiNET]. The protocol is implemented in the software, which makes it easy to use Color Kinetics fixtures and Color Kinetics power/data supplies with MADRIX 5.

MADRIX 5 supports:

- KiNET V1
- KiNET V2
- KiNET V3

Note

There are several steps required to set up KiNET products in MADRIX 5. This chapter is only part of the process. You need to set up other configurations as well [such as virtual LED matrix, DMX Devices, MADRIX Effects, Audio, etc.].

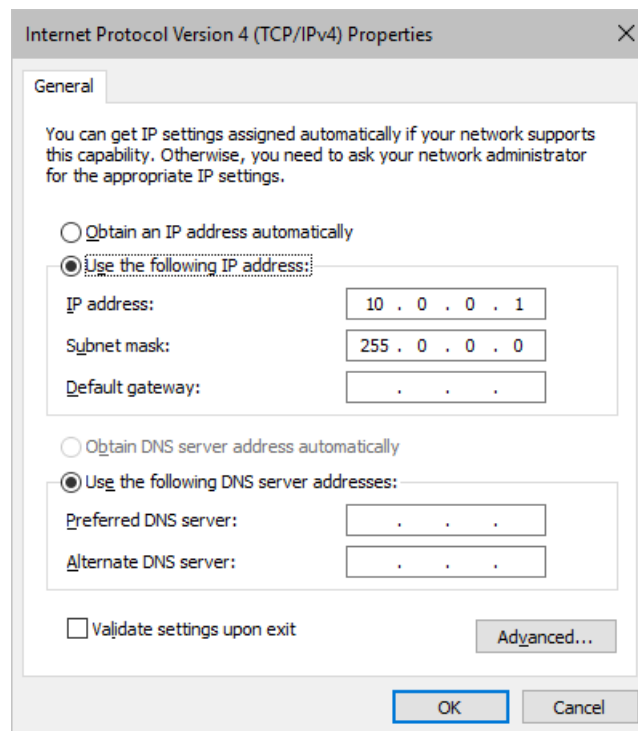
Step-By-Step Configuration

- 1] Set up the correct network settings in Windows.
- 2] Enable drivers in MADRIX 5.
- 3] Activate your devices.
- 4] Set up the DMX universe.
- 5] Set up the Frame Time.

1] Windows Network Settings

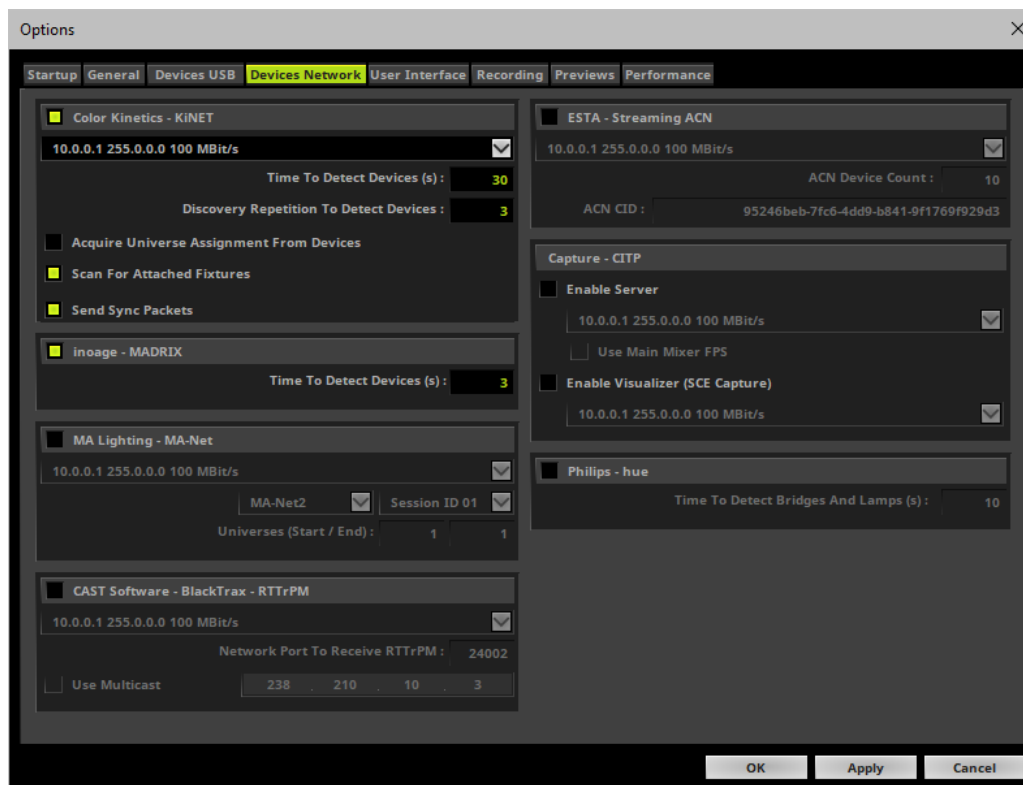
KiNET is a network-based protocol. MADRIX 5 will use the network card of your computer to send data.

- **It is required to set up the correct network settings in Windows, first.**
- **You must use these IP address and Subnet mask settings. Otherwise, KiNET might not work!**
- **The IP addresses of your computer and your KiNET devices need to be different.**
- Set up an individual **IP address** in the following IP address range:
 - **10.0.0.1 ... 10.255.255.254**
- Set up the corresponding **Subnet mask**
 - **255.0.0.0**
- **Restart MADRIX 5, if you have changed the network settings in Windows while MADRIX 5 was running.**
- **Check the settings of the Windows Firewall.**
- Learn more » [Tips \[Microsoft Windows / Networks / USB\]](#)
- Example for PCs that are running MADRIX 5:




2] Enabling Drivers In MADRIX 5

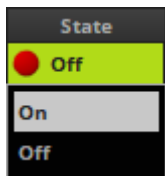
- Go to the menu **Preferences > Options... > Devices Network**
[Keyboard shortcut: **Ctrl+Alt+O > Devices Network**]
 - Activate **Color Kinetics - KiNET**
 - Choose the correct network/network card from the drop-down list.
 - **Always make sure that you have selected the correct network. Otherwise, the network device might still be found. But no data can be sent.**
 - Please note: A loopback adapter is also available. Learn more » [Loopback Adapter \[127.0.0.1\]](#)



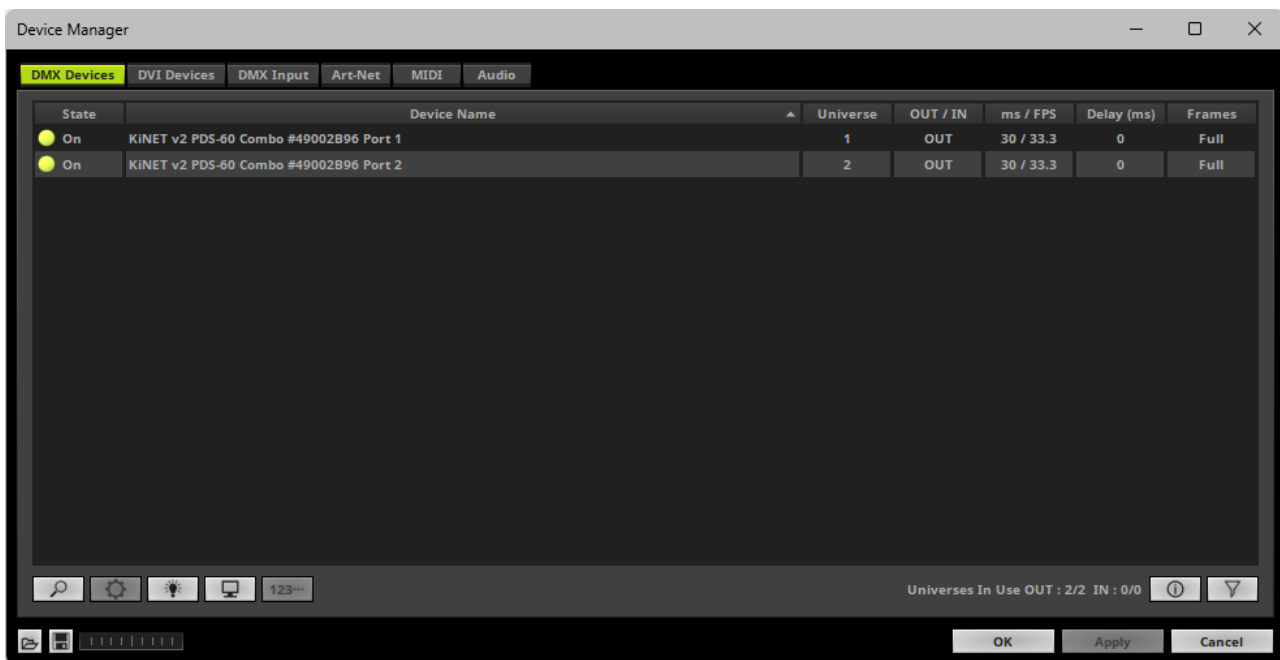
- **Time To Detect Devices (s)** - Defines how long MADRIX 5 searches the network for devices during startup.
Type in a value in seconds.
 - The default value is 30.
 - **We recommend to utilize at least a value of 30 to allow for a sufficient search. Higher values are recommended for larger installations.**
- **Discovery Repetition To Detect Devices** - Defines how often MADRIX 5 repeats to search for and discover devices in the network within the Time To Detect Devices (s).
 - The default value is 3.
- **Acquire Universe Assignment From Devices** - If activated and if KiNET devices have been fully configured, MADRIX 5 reads the assigned DMX universe from newly found devices and automatically sets it in the Device Manager for these devices.
- **Scan For Attached Fixtures** - Is enabled by default. If activated, searches for fixtures connected to the ports of power/data supplies [a so-called BlinkScan].
[If this flag is disabled, it cannot be guaranteed that undiscovered fixtures will work correctly.]
- **Send Sync Packets** - Is enabled by default. If activated, sends out synchronization packets together with data packets.

3] Activating Device

- Go to the menu **Preferences > Device Manager... > DMX Devices**
[Keyboard shortcut: **F4**]
- MADRIX 5 automatically adds network devices it has found during startup to the list.
- Click  if the devices have not been found.
 - MADRIX 5 disconnects all DMX512, Art-Net, and other devices and starts to search for new or newly connected devices.
 - **Do not rescan for devices if all of your interfaces have been found correctly.**
- Select your devices in the list.
- **Right Mouse Click** on the column **State** to set from **Off** to **On** [indicated by green light].
[Alternatively, you can perform a **Left Mouse Double-Click**]



- There is a difference between KiNET V1 and V2. KiNET V2 makes sure that the panels will receive the data at the same time. This is particularly useful for large installations.
Please see the Color Kinetics documentation to see which protocol is supported by your power/data supply.



4] DMX Universe

- Make sure that your device is still selected.
- Set up **Universe**
 - **Right Mouse Click** or **Left Mouse Double-Click** on the column **Universe** and enter the required number.
- This setting assigns a specific DMX universe [of the Patch] to the device or the port of the device. Learn more »[Virtual DMX Universes](#)
- **Make sure to assign the correct universe according to your requirements.**
Learn more »[Glossary](#)

5] Frame Time

- Make sure that your device is still selected.
- Set up the frame time for your device.
 - **Right Mouse Click** or **Left Mouse Double-Click** on the column **ms / FPS** and enter the required number.
 - The frame time [in milliseconds; ms] affects the frame rate. The frame rate specifies how fast data is sent to the device or received from it [in Frames Per Second; FPS].
 - Increase the frame time in order to decrease the frame rate [e.g., 40 ms = 25 FPS].

- Decrease the frame time in order to increase the frame rate [e.g., 20 ms = 50 FPS].
- The default value is 30 ms / 33.3 FPS.
- **Some LED fixtures might have problems with a low frame time / high frame rate. Then, it is recommended to increase the frame time / decrease the frame rate.**

6] Output Delay [Delay (ms)]

- Make sure that one or more devices are selected.
- Set up a delay in milliseconds if required.
 - **Right Mouse Click** or **Left Mouse Double-Click** on the column **Delay (ms)** and enter the required number.
 - Valid values range from 0 ms to 1000 ms.
 - The default value is 0 [meaning that there is no added delay].
 - Delay can only be set for output devices.
 - This is a highly specialized feature, where an output delay may be wanted to achieve certain visual results, such as creating a video backdrop for more realistic illumination in a video-production setting.

Additional Functionality

DMX Devices

Learn more about setting up devices under **Preferences > Device Manager... > DMX Devices** here »[DMX512 \[DMX-OUT\]](#)

Further Configuration

LED Fixtures	Comments
--------------	----------

Color Kinetics eW Flex SLX Color Kinetics iColor Flex SLX	If you are using a PDS-60ca with one or two strings per controller, a PDS-150, or sPDS-480ca, please select the correct fixture in the » Matrix Generator
--	---

Remember to configure your virtual LED matrix in the »[Matrix Generator](#) or »[Patch Editor](#)

Make sure to save your MADRIX 5 Setup after the configuration process.

Important Notes

- Keep in mind that network devices, if activated, cause network traffic!
- When using a network-based output protocol and when the Startup option *Start MADRIX After Booting Windows* is used, it is highly recommended to also activate the Startup option *Start With Timeout(s)* with a value of 30 or higher.
- It is not recommended to operate KiNET and access to the World Wide Web/Internet in the same network! It is recommended to run it in a separate network without internet access.

Troubleshooting

If you are encountering problems, please work through the following checklist:

- Check if all network cables are connected and if Gigabit network components are used.
- Check if your light matrix is configured correctly in the **Matrix Generator** or **Patch Editor**.
- Have all devices been found under **Preferences > Device Manager... > DMX Devices**?
If not,
 - 1] Check if the IP address and Subnet mask are configured correctly in Windows and your devices.
 - 2] Go to the menu **Preferences > Options > Devices Network**. Select **Color Kinetics - KiNET**.

- 3] Go to the menu **Preferences > Options > Devices Network**. Select the correct network card in the section **Color Kinetics - KiNET**.
 - 4] Go to the menu **Preferences > Options > Devices Network**. Increase the value for **Time To Detect Devices (s)** in the section **Color Kinetics - KiNET**.
 - 5] Click **Search For Devices** under **Preferences > Device Manager... > DMX Devices**.
 - 6] Try and deactivate your Firewall in Windows.
 - 7] Make sure that the network is not forming a ring, where the start point is also the end point, and that data is not sent back to the source [the computer].
- Are all devices activated under **Preferences > Device Manager... > DMX Devices**?
Check if devices are set to **On** and **OUT**
 - Check if all ports you are using on your device are configured correctly. Please check if ports, that are not used, are deactivated in MADRIX 5.
 - Check if the DMX addressing and DMX universes are assigned correctly. Also check the **Patch**.
 - Test if MADRIX 5 is connected to the devices. Use **Highlight Device** for each of your devices.
 - Go to **Tools > Task Watcher**. Check if the devices are sending data.
 - Go to **Tools > Logfile**. Check if any error or warnings occur regarding the network or KiNET.
 - Make sure all power/data supplies are working correctly.
 - Remove any routers from the network.

Additional Information

Addressing And Configuration

- Regarding the configuration and addressing of Color Kinetics lighting fixtures and power/data supplies, the company offers extensive information on the following website:
» <https://www.colorkinetics.com/global/support/documentation>
- In addition, there is a software tool called QuickPlay Pro for configuration and multiple addressing. Here is an excerpt from the website:

"With QuickPlay Pro, you can:

- Use serial numbers to program fixtures with light numbers or DMX addresses

- Assign base light numbers to power/data supplies, allowing automatic fixture configuration
- Test light numbers and DMX channels
- Demonstrate a lighting system using four built-in light shows: fixed color, color wash, rainbow, and streak"
- For example, the tool can be used to change the IP addresses of Color Kinetics lighting fixtures.
- **Please note: Working with such a tool is only recommended for advanced users because settings can easily be adjusted wrong!**
- You can download the tool on the website mentioned above or at
» <https://www.colorkinetics.com/global/support/qpp2>

Information About PDS-60ca Power/Data Supplies

The PDS-60ca is a well-known and often used power/data supply from Color Kinetics. Three different versions are offered:

- PDS-60ca PREPROGRAMMED
- PDS-60ca DMX
- PDS-60ca ETHERNET

You can identify your version of the device using the following item numbers written on the case of the PDS-60ca:

- 109-000016-00 [Pre-programmed]
 - 109-000016-01 [DMX]
 - 109-000016-02 [Ethernet]
-
- The PDS-60ca DMX supports DMX512 via an extra interface [controlled by MADRIX 5] or Color Kinetics DMX controllers.
The PDS-60ca ETHERNET uses KiNET and can be controlled via MADRIX 5 without an extra interface.
And the PDS-60ca PREPROGRAMMED does not support external data input.

Information Update

The official website now only lists two PDS-60ca. The second power/data supply now automatically switches between DMX and Ethernet mode.

- 109-000020-00 PDS-60ca 12V [Pre-programmed]
- 109-000020-03 PDS-60ca 12V [DMX / Ethernet]

6.6 Philips hue

Topics of this chapter:

- [Introduction](#)
- [Requirements](#)
- [Supported Fixtures](#)
- [Note](#)
- [Step-By-Step Configuration](#)
- [Additional Functionality](#)
- [Further Configuration](#)
- [Important Notes](#)
- [Additional Information](#)

Introduction

The MADRIX 5 Software natively supports Philips hue.

The protocol is implemented directly into the software, which makes it easy to use Philips hue bridges and lamps with MADRIX 5.

Requirements

The MADRIX 5 Software requires that hue bridges/products use at least API version 1.15.

Supported Fixtures

The following lamps are currently supported:

- **LCT**

LCT001
LCT002
LCT003
LCT007
LCT010
LCT011
LCT012
LCT014
LCT015
LCT016

- **LDD**

LDD001
LDD002

- **LDF**

LDF001
LDF002

- **LDT**

LDT001

- **LFF**

LFF001

- **LLC**

LLC005
LLC006

LLC007

LLC010

LLC011

LLC012

LLC013

LLC014

LLC020

▪ **LLM**

LLM001

LLM010

LLM011

LLM012

▪ **LST**

LST001

LST002

▪ **LTC**

LTC001

LTC002

LTC003

LTC004

LTC011

LTC012

▪ **LTD**

LTD001

LTD002

LTD003

▪ **LTF**

LTF001

LTF002

▪ **LTP**

LTP001

LTP002

LTP003

LTP004

LTP005

- **LTT**

- LTT001

- **LTW**

- LTW001

- LTW004

- LTW010

- LTW011

- LTW012

- LTW013

- LTW014

- LTW015

- **LWB**

- LWB004

- LWB006

- LWB007

- LWB010

- LWB014

- **MWM**

- MWM001

- **Multisource Luminaires - Using The Color Light Module (LLM001)**

- HBL001

- HBL002

- HBL003

- HEL001

- HEL002

- HIL001

- HIL002

- **Multisource Luminaires - Using The Color Temperature Module (LLM010/LLM011/LLM012)**

- HML001

- HML002

- HML003

- HML004

- HML005

- HML006

- HML007

The following gamuts are currently supported:

- COLOR_GAMUT_NONE
[Valid value for single-color white lamps, for example]
- COLOR_GAMUT_A
- COLOR_GAMUT_B
- COLOR_GAMUT_C
- COLOR_GAMUT_2200K_6500K

Note

There are several steps required to set up Philips hue products in MADRIX 5. This chapter is only part of the process. You need to set up other configurations as well [such as virtual LED matrix, DMX Devices, MADRIX Effects, Audio, etc.].

Step-By-Step Configuration

- 1]** Set up the correct network settings in Windows.
- 2]** Enable drivers in MADRIX 5.
- 3]** Authorize a bridge.
- 4]** Set up the DMX universe.
- 5]** Set up the Frame Time.

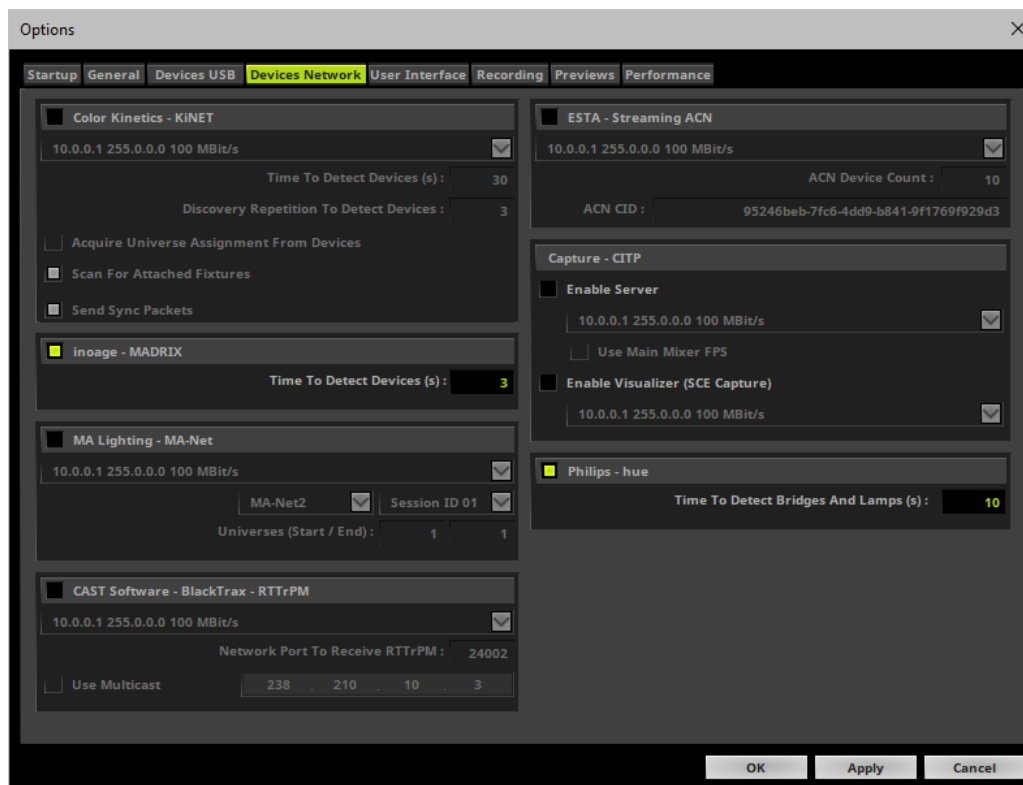
1] Network Settings

Philips hue is a network-based protocol. MADRIX 5 will use the network card of your computer to send data to the bridges.

- **Connect the computer that runs the MADRIX 5 Software and your Philips hue bridges with the same computer network.**
- **To use Philips hue, you need to have a separate DHCP server.**
 - This can be a software or hardware DHCP server, which handles and assigns the IP addresses to the hue bridges and to the MADRIX computer.
 - It is recommended that the DHCP server binds MAC addresses to IP addresses.


2] Enabling Drivers In MADRIX 5

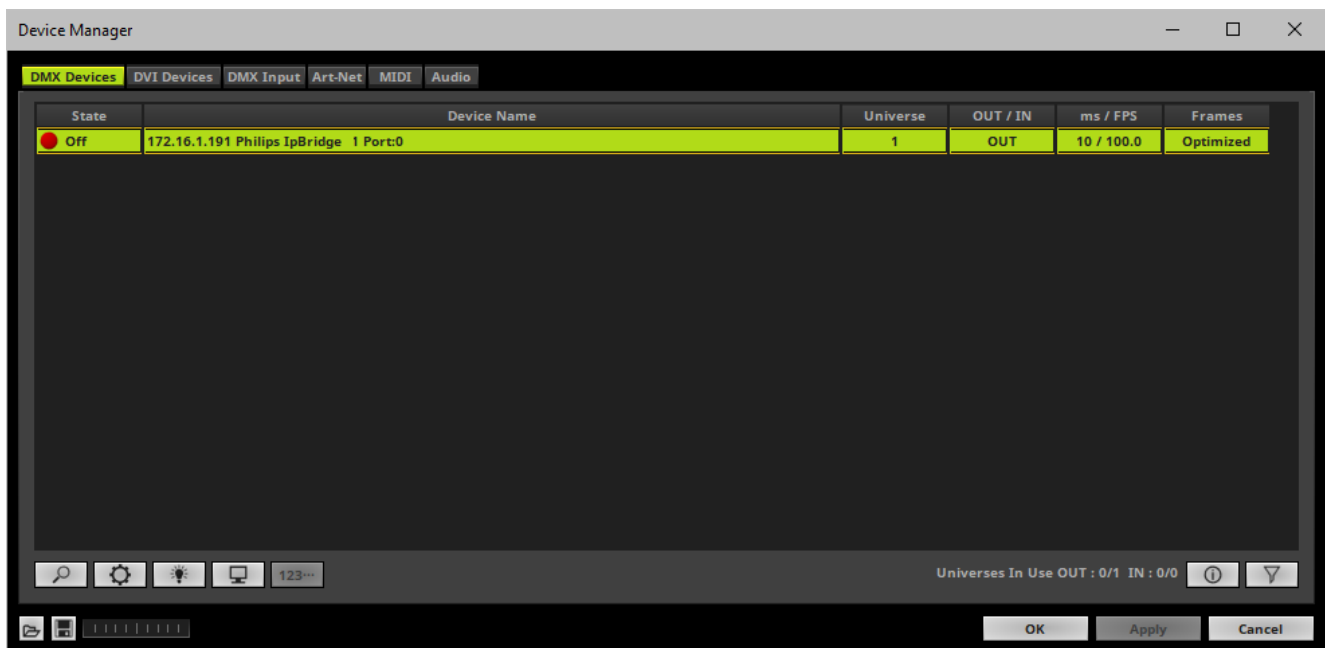
- Go to the menu **Preferences > Options... > Devices Network**
[Keyboard shortcut: **Ctrl+Alt+O > Devices Network**]
 - Activate **Philips - hue**



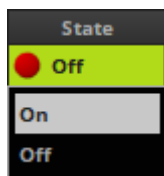
- **Time To Detect Bridges And Lamps (s)** - Defines how long MADRIX 5 searches the network for devices during startup. Type in a value in seconds.
 - The default value is 10.
 - **We recommend to utilize at least a value of 10 to allow for a sufficient search.**

3] Authorize A Bridge

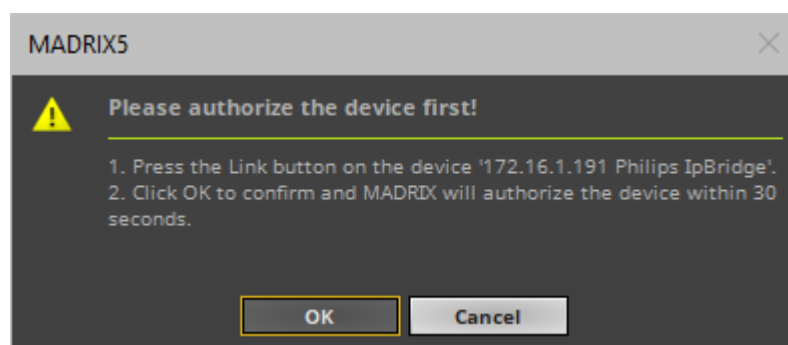
- Go to the menu **Preferences > Device Manager... > DMX Devices**
[Keyboard shortcut: **F4**]
- MADRIX 5 automatically adds network devices it has found during startup to the list.
- Click  if the devices have not been found.
 - MADRIX 5 disconnects all devices and starts to search for new or newly connected devices.
 - **Do not rescan for devices if all of your interfaces have been found correctly.**



- Select your device in the list.
- **Right Mouse Click** on the column **State** to set from **Off** to **On** [indicated by green light].
[Alternatively, you can perform a **Left Mouse Double-Click**]

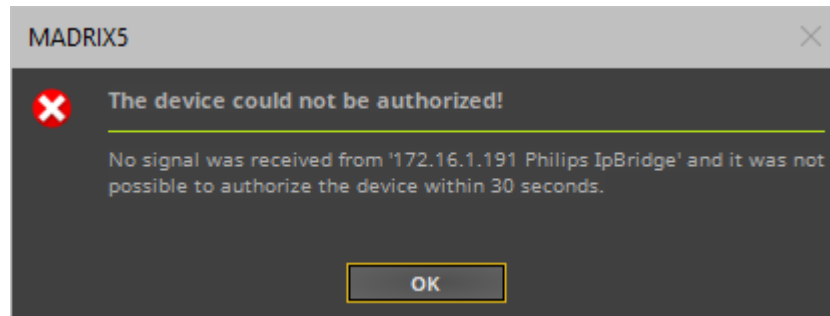


1] When connecting a hue bridge to MADRIX 5 for the first time, you need to authorize the bridge first. MADRIX 5 will ask you to authorize it:

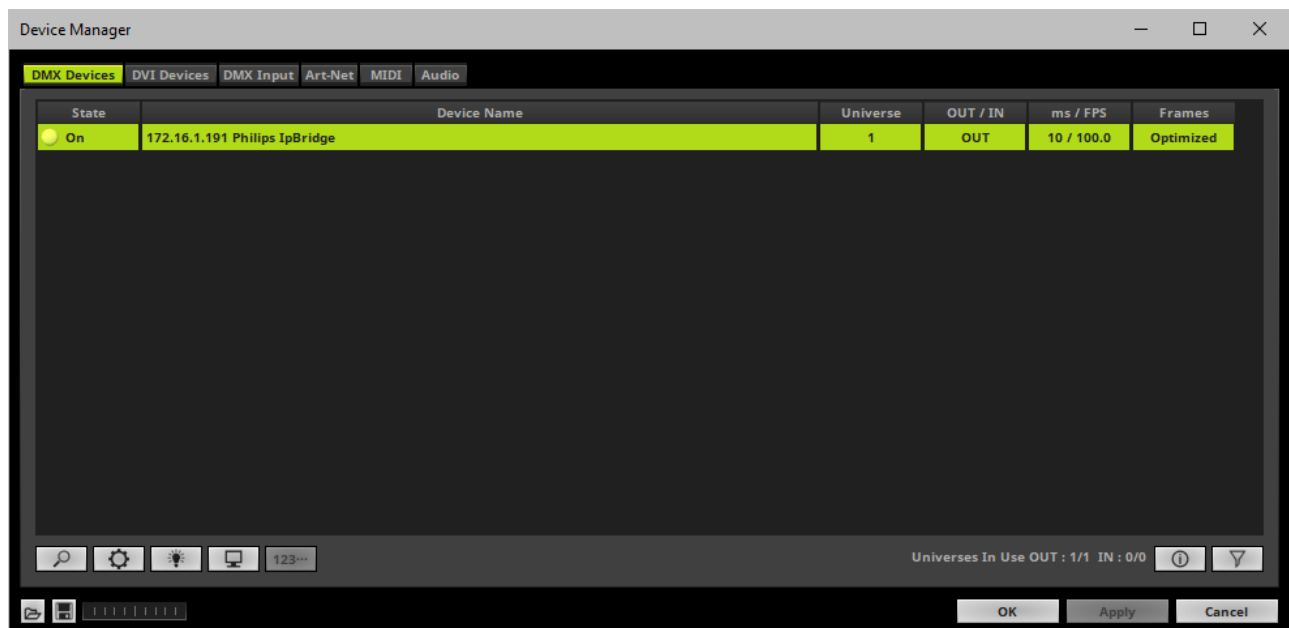


2] In order to authorize the bridge, press the large Link button on the bridge itself.

- 3]** Click **OK** in MADRIX 5 in order to confirm that you have pressed the button on the bridge.
- 4]** The authorization process starts. MADRIX 5 will wait up to 30 seconds for the device to respond.
- 5A]** When unsuccessful, MADRIX 5 will provide an error message that the authorization process failed. If that is the case, please try to authorize it again.



- 5B]** When successful, the bridge will be authorized and enabled in MADRIX 5.



- If you wish to deactivate a bridge, select it in the **Device Manager > DMX Devices** and set its **State** from **On** to **Off**

5] DMX Universe

- Make sure that your device is still selected.

- Set up **Universe**
 - **Right Mouse Click** or **Left Mouse Double-Click** on the column **Universe** and enter the required number.
- This setting assigns a specific DMX universe [of the Patch] to the device or the port of the device. Learn more »[Virtual DMX Universes](#)
- **Make sure to assign the correct universe according to your requirements.**

6] Frame Time

- Make sure that your device is still selected.
- Set up the frame time for your device.
 - **Right Mouse Click** or **Left Mouse Double-Click** on the column **ms / FPS** and enter the required number.
 - The frame time [in milliseconds; ms] affects the frame rate. The frame rate specifies how fast data is sent to the device or received from it [in Frames Per Second; FPS].
 - Increase the frame time in order to decrease the frame rate [e.g., 40 ms = 25 FPS].
 - Decrease the frame time in order to increase the frame rate [e.g., 20 ms = 50 FPS].
 - The default value is 30 ms / 33.3 FPS.
 - **Some LED fixtures might have problems with a low frame time / high frame rate. Then, it is recommended to increase the frame time / decrease the frame rate.**

Additional Functionality

DMX Devices

Learn more about setting up devices under **Preferences > Device Manager... > DMX Devices** here »[DMX512 \[DMX-OUT\]](#)

Further Configuration

Remember to configure your virtual LED matrix in the »[Matrix Generator](#) or »[Patch Editor](#)

Make sure to save your MADRIX 5 Setup after the configuration process.

Important Notes

- **Keep in mind that network devices, if activated, cause network traffic!**
- **When using a network-based output protocol and when the Startup option *Start MADRIX After Booting Windows* is used, it is highly recommended to also activate the Startup option *Start With Timeout(s)* with a value of 30 or higher.**

Additional Information

- A hue bridge often has several status LEDs. Please consult the hue manuals for more information. In general, they usually show these statuses:
 - Power LED Off: No power supplied.
 - Power LED Permanently On: Power supplied.
 - Network LED Off: No network connected.
 - Network LED Blinking: No IP address assigned.
 - Network LED Permanently On: IP address successfully acquired.
 - Internet LED Off: No network connected.
 - Internet LED Blinking: No internet access available.
 - Internet LED Permanently On: Internet connection successfully established.
- You can use the official Philips hue mobile App to update the firmware of your Philips hue bridges.
- MADRIX 5.4 adds compatibility for firmware version 1.40.

6.7 Proprietary DVI Devices [5A / A8 / T9]

This topic includes:

- [Introduction](#)
- [Initial Configuration](#)
- [Note](#)
- [Gigabit Network Card](#)
- [Step-By-Step Configuration](#)
- [Further Configuration](#)
- [Important Notes](#)
- [Troubleshooting](#)

Introduction

Certain DVI hardware is equipped with proprietary protocols. MADRIX 5 has implemented a range of products that are natively supported because of this.

MADRIX 5 currently supports the following DVI device types:

- Colorlight 5A
- Colorlight A8
- Colorlight T9
- EuroLite T9
- ColourSmart Link

Initial Configuration

Before you can use MADRIX 5, please make sure that you have configured your LED fixtures and hardware correctly.

Note

There are several steps required to set up proprietary DVI products in MADRIX 5. This chapter is only part of the process. You need to set up other configurations as well [such as virtual LED matrix, DMX Devices, MADRIX Effects, Audio, etc.].

Gigabit Network Card

- **Only use a GIGABIT network card [1 GBit/s or 1000 MBit/s]. 100 MBit/s network cards or lower will not work!**
- **It is only recommended to use a wired network connection. Using wireless transmission will not work!**

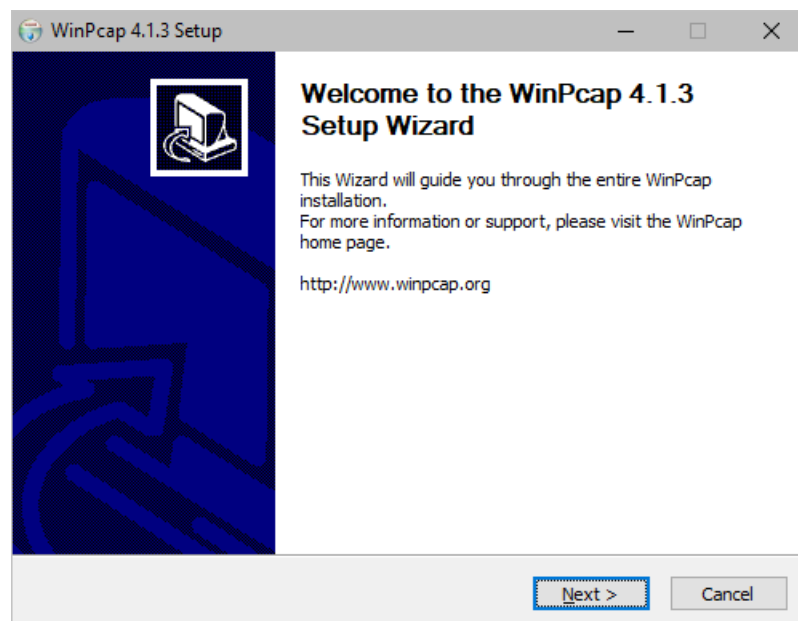
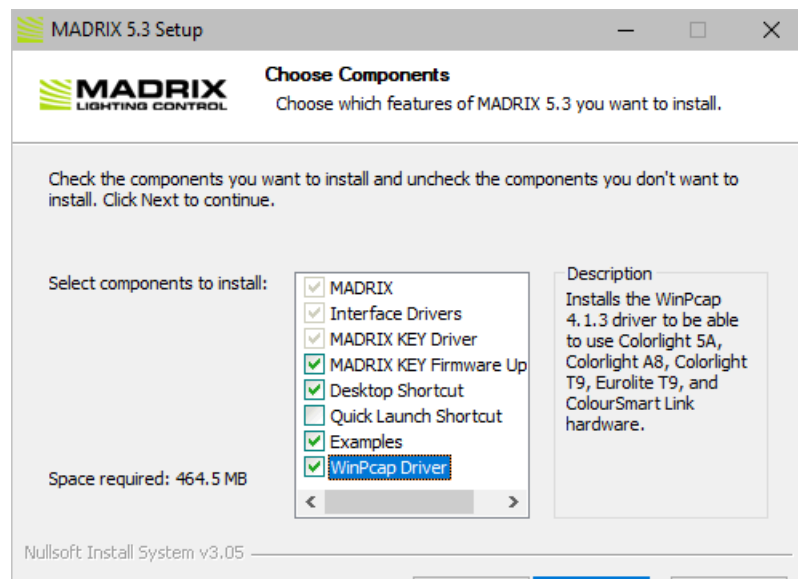
Step-By-Step Configuration

- 1]** Install the correct driver.
- 2]** Activate the DVI device in MADRIX 5.
- 3]** Configure various settings.

1] Installing The WinPcap Driver

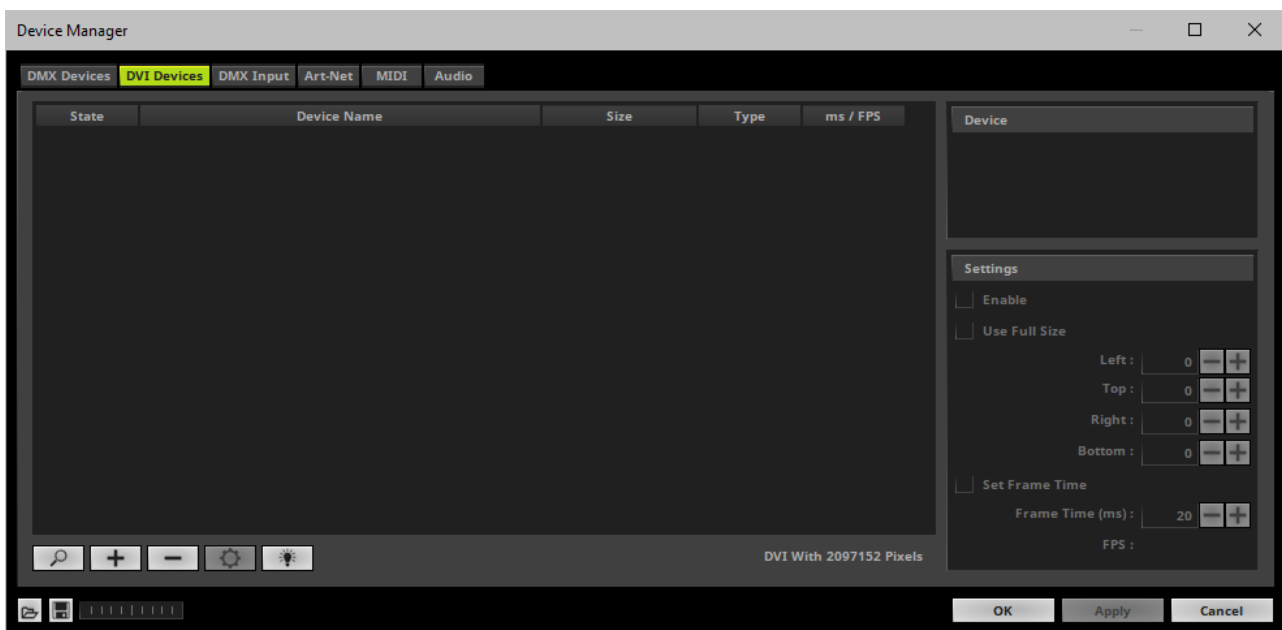
- To use DVI devices with MADRIX 5, you have to install the correct driver first.
- During the MADRIX 5 installation process, make sure to select the check box **WinPcap Driver**
- If you have already installed MADRIX 5 without this component, please re-install MADRIX 5.
- The WinPcap driver will be installed using a second installer. Confirm this setup wizard to install the driver.

- Learn more » [Installation Process](#)



2] Activating The DVI Device

- Go to the menu **Preferences > Device Manager... > DVI Devices**
[Keyboard shortcut: **F4 > DVI Devices**]



▪ **A]** Add devices automatically.

- Click 

[MADRIX 5 will automatically search for connected devices. It will also search across multiple networks if there is more than one network card is available.]

[Note: Automatic search will default to EuroLite T9 for all T9 devices found, incl. ColourSmart Link, EuroLite T9, and Colorlight T9.]

▪ **B]** Add devices manually.

- Click 

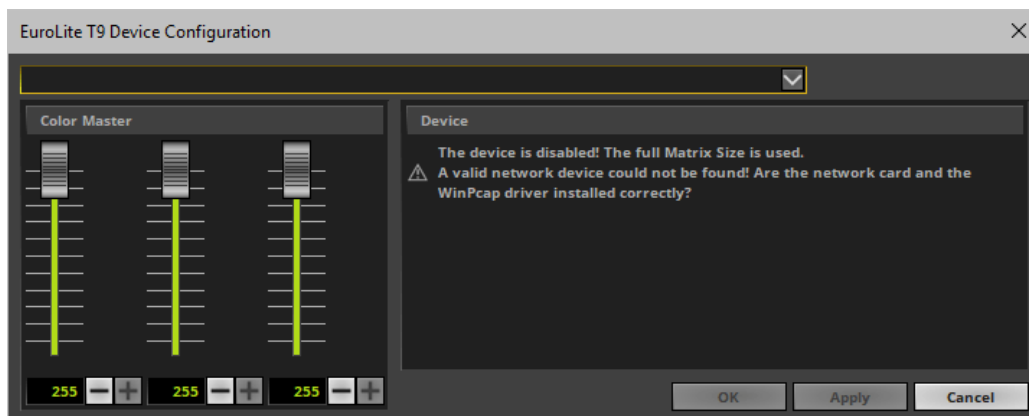
- A small selection list will be opened above the button.



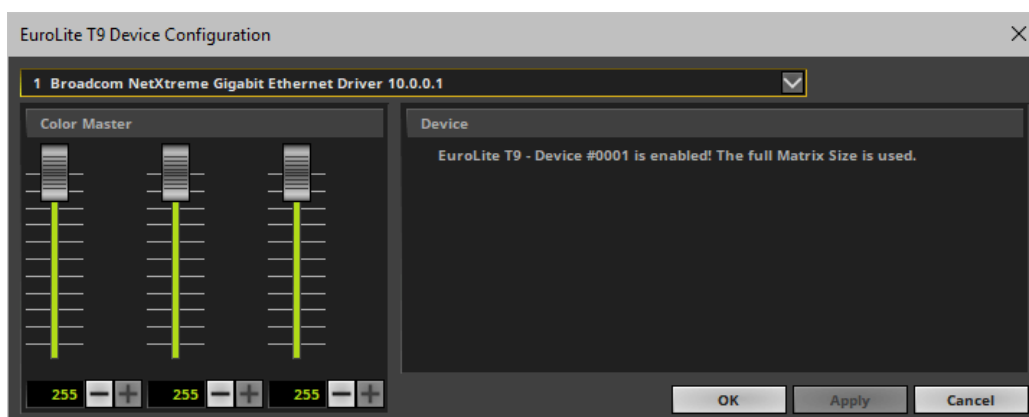
- Select your DVI device type now.

- A new window will open [**Device Configuration**].

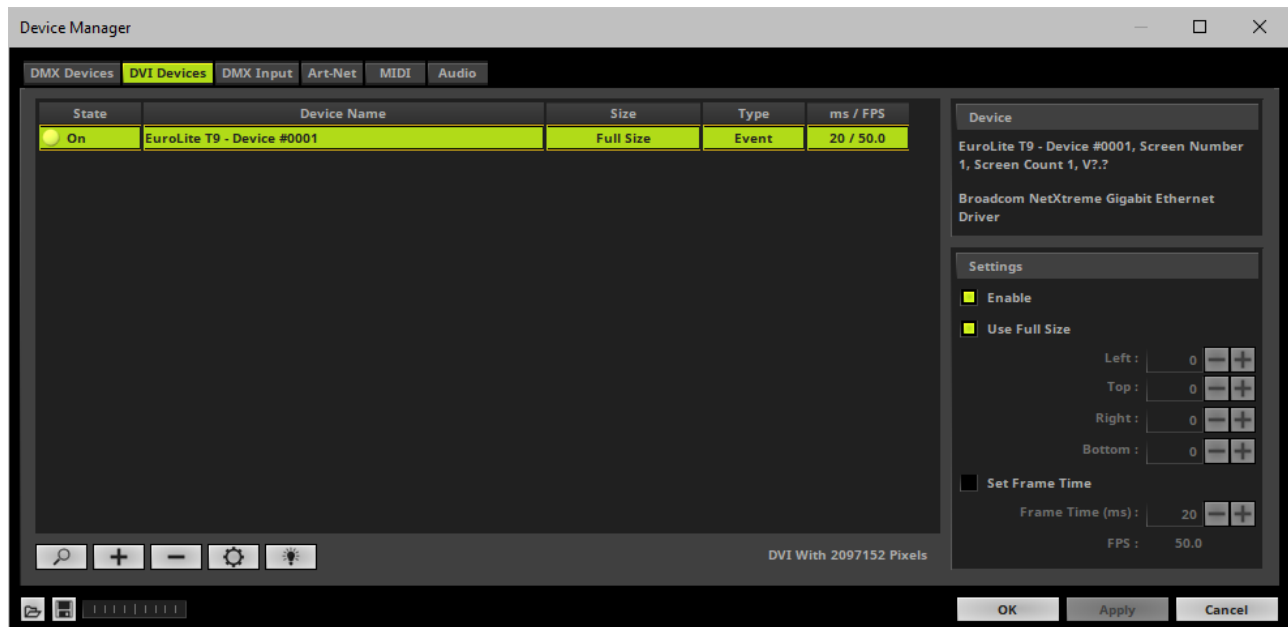
- 1]** If the drop-down list at the top of the Device Configuration window does not contain an entry, there is either no network card available or the WinPcap driver is not installed properly.
- If you are receiving this error message, please resolve these issues and run the MADRIX 5 installer again to install the required drivers [**WinPcap Driver**].



- 2]** If everything is installed properly, select the network device that communicates with your DVI fixture in the drop-down list at the top of the Device Configuration window.
- Do not change any other settings here [such as, **Color Master**] unless you are an experienced user.
 - Advanced users may adjust the color settings via the Color Master if the DVI device renders colors incorrectly.
 - When adding Colorlight 5A devices, you may choose an additional **Screen Number**. Set up the same index number as is configured in your 5A device. Leave the default setting if you are not sure.
 - Click **OK**



- The new DVI device will appear in the list after it has been added automatically or manually.






3] Settings

There are different Settings available for further configuration. By default, all settings should be set up correctly already.

- If you change a setting, always click **Apply** to confirm the changes.
- **Enable** - Activates or deactivates the currently selected DVI device. This is activated by default. It needs to be activated in order to work correctly.
- **Use Full Size** - Displays the full Matrix Size on the device. This is activated by default and the recommended setting.
 - Deactivate if you want to set up a certain cut-out and specify which details of your matrix will be shown. You can choose the start coordinates and the end coordinates of this area. **Left** and **Top** define the start coordinates in a coordinate system that starts with 0,0 in the top left corner. **Right** and **Bottom** define the end coordinates.

Scaling is not available.

Your virtual LED matrix will not be stretched or compressed in order to fit the DVI device or vice versa.

- **Set Frame Time** - Activate in order to set a different frame time in milliseconds. By default, the DVI device is set to be an **Event** type with the software's main mixing frame rate [50 FPS by default] .
 - If you manually set a new frame time, the output might judder.
 - It is not recommended to set a higher frame rate than 50 FPS. But if your hardware controller requires a different, adjust the value to these requirements. Then, the type of your device will be set to **Frame** in the list.
-  - Removes the currently selected DVI devices.
-  - Calls up the configuration window again.
-  - Makes your device flash and will set all pixels instantly to white for testing purposes.

Further Configuration

Remember to configure your light matrix in the »[Matrix Generator](#) or »[Patch Editor](#)

Make sure to save your MADRIX 5 Setup after the configuration process.

Important Notes

Device Type	Comments
All DVI Device Types	<p>1] Please do not use a network hub or switch. Please only use a direct network connection.</p> <p>2] Use only Gigabit network cards.</p>

	<p>3] Only connect via network cabling. A wireless connection [WiFi] will not work!</p> <p>4] A maximum of 75 m of network cabling is recommended. When covering higher distances, data issues can occur.</p> <p>5] Please note that the hardware controller needs to be configured correctly, before MADRIX 5 can be used.</p> <p>6] The configuration cannot be rotated. If you have rotated fixtures in your installation, please use the rotation features provided by each MADRIX Effect.</p> <p>7] Do not use different DVI device types on the same network! Always use a separate network for each proprietary DVI device type.</p>
EuroLite T9	<p>1] Before using MADRIX 5, please make sure that you have configured your EUROLITE LED fixture and hardware correctly. The configuration is described in the EUROLITE user manual. Repeat the steps if necessary.</p> <p>2] You can only create and use one single DVI device in MADRIX 5 per network card. This means that a maximum of 56 controllers connected in series can be used per one network card with a maximum of 128x128 pixels for each controller.</p> <p>3] Please note: Configure only one hardware controller at a time with the software EUROLITE LED Show T9. Please do not connect several controllers while setting the parameters.</p> <p>4] See web link »www.eurolite.de for the latest documentation.</p>

Troubleshooting

If you are encountering problems, please work through the following checklist:

- Check if all network cables are connected correctly. Please do not use a network hub or switch.
- Check if your hardware is working without MADRIX 5.
- Check if you have installed the **WinPcap Driver** during the installation of MADRIX 5.
- Check if your light matrix is configured correctly in the **Matrix Generator** or **Patch Editor**
- Go to the menu **Preferences > Device Manager... > DVI Devices**. Check if you have added a new DVI device.
- Check if **Enable** and **Use Full Size** are activated for your device under **Preferences > Device Manager... > DVI Devices**

- Configure your hardware controller again if this seems to be necessary.
- Always configure only one hardware controller. Do not connect two or more controllers while setting the parameters.
- When using LED Show T9:
 - 1] Repeat the steps described in the manual.
 - 2] Make sure to click **Send** two times in order to save the **parameter set** on your PC and on your controller.
 - 3] Download the configuration file again [for example, **Presets T9.DAT**] and use this default configuration file to configure your controller again.
 - 4] Uninstall the software and then install it again. Reconfigure all settings.

//PART 7

*Input, Interoperability,
And Remote Control*

7 Input, Interoperability, And Remote Control

This topic includes:

- [Introduction](#)
- [Topics Of This Chapter](#)

Introduction

You can receive data in MADRIX 5 through various ways. That means you can use another controller or device:

- to send data to the software and use this data.
- to send commands to the software for Remote Control.
- to route incoming data onto your output [also know as Mapping/Merging/DMX-Thru].

Topics Of This Chapter

There are several possibilities for input and remote control:

- » [DMX-IN](#)
Several protocols are implemented into MADRIX 5 for remote control over DMX-IN. Any DMX console or desk can easily be used then to gain full control over the software.
- » [Art-Net Remote](#)
The Art-Net protocol includes Art-Net Remote. In this way, you can use a console for example to access certain software features remotely.
- » [sACN Input](#)
Receive Streaming ACN [E1.31] data for remote control.
- » [MIDI-IN Configuration](#)
MIDI controllers are an accessible and popular way to trigger the software. Learn how to configure your MIDI device in this section.

- » [Blackmagic Design](#)
Use live signal capturing with the help of capture cards from this manufacturer.
- » [CAST BlackTrax](#)
Use the real-time, vision-based tracking system in combination with MADRIX 5.
- » [CITP](#)
MADRIX 5 supports CITP. This is a useful feature when controlling MADRIX 5 remotely, especially when using it in a combination with a lighting desk.
- » [GamePort](#)
The GamePort is a device port to connect 3rd-party controllers.
- » [Loopback Adapter \[127.0.0.1\]](#)
The loopback adapter is a virtual network card to send or receive network data on the same computer.
- » [MA Lighting MA-Net](#)
The MA-Net protocol is the direct connection to MA Lighting products that support MA-Net.
- » [NewTek NDI](#)
NewTek NDI allows you to send or receive video or output streams over network.
- » [OSC](#)
OSC is a widespread format to communicate between systems and used for remote control.
- » [Remote HTTP](#)
MADRIX 5 offers remote control with every internet browser. An internal web server is implemented in the software and can be started if required to gain external access.
- » [RDM \[Remote Device Management\]](#)
MADRIX 5 supports Remote Device Management as an RDM Responder.
- » [Spout](#)
Spout allows you to share videos and output streams among different tools on the same system.
- » [Time Code \[Art-Net / MIDI / SMPTE / System Time\]](#)
Various types of Time Code can be received with MADRIX 5 to synchronize equipment and devices with each other.

7.1 DMX-IN / Art-Net Remote / sACN Input

This topic includes:

- [Introduction](#)
- [Topics Of This Chapter](#)

Introduction

This chapter is about DMX-IN, Art-Net Remote, and sACN input.

Topics Of This Chapter

Please refer to the corresponding chapters below:

- »[DMX-IN Configuration](#)
- »[Art-Net Remote Configuration](#)
- »[sACN Input Configuration](#)
- »[DMX-IN \[Essential Protocol\]](#)
- »[DMX-IN \[Standard Protocol\]](#)
- »[DMX-IN \[User\]](#)
- »[DMX-IN Remote Editor](#)

7.1.1 DMX-IN / Art-Net Remote / sACN Input Configuration

This topic includes:

- [Overview](#)
- [DMX-IN](#)
- [Art-Net Remote](#)
- [Art-Net Remote Troubleshooting](#)
- [sACN Input](#)
- [Protocols \[Overview\]](#)
- [Important Notes](#)

Overview

MADRIX 5 can receive incoming data or can be controlled remotely [DMX Input].

That means you can use another controller or device:

- to send data to the software and use this data [e.g., for Scripts, Macros, or tests],
- to send commands to the software [Remote Control],
- to route incoming data onto your output [also known as Mapping/Merging/DMX-Thru],
- to trigger MADRIX 5 TRI Effects.

In general, 3 options are available to you:

- [DMX-IN](#)
[Receiving DMX input data.]
- [Art-Net Remote](#)
[Receiving Art-Net data.]
- [sACN Input](#)
[Receiving Streaming ACN data.]

DMX-IN

Step-By-Step Configuration

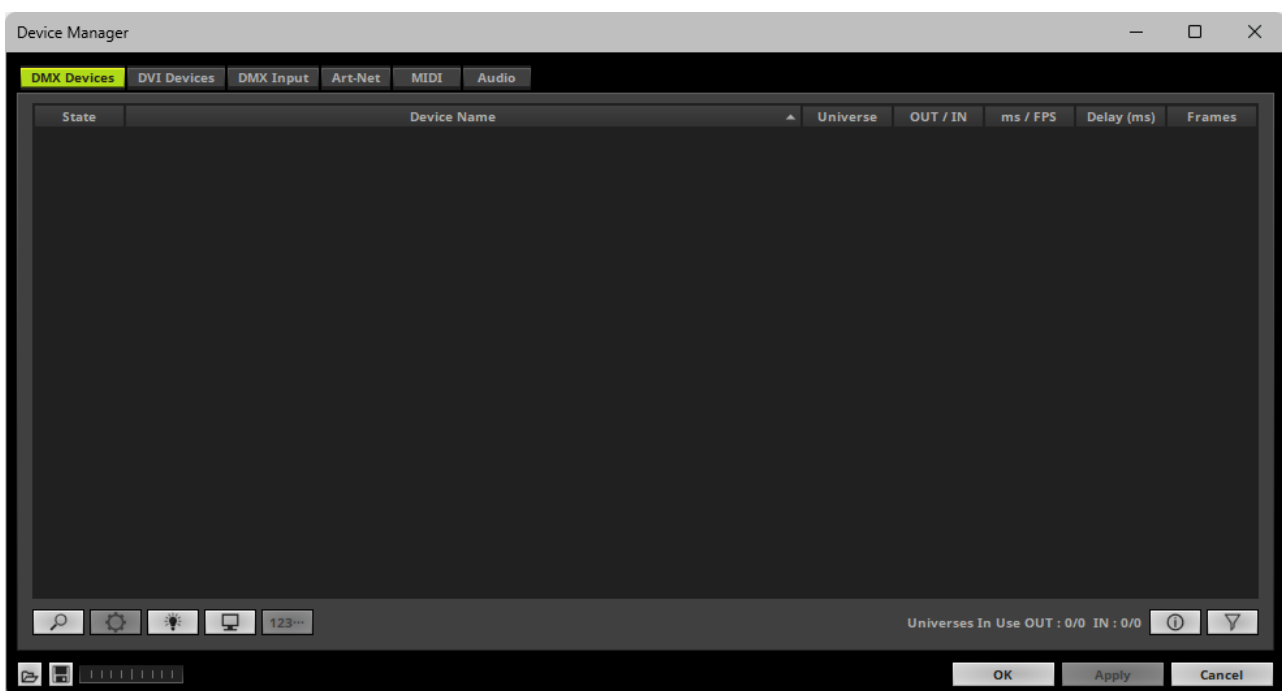
- 1]** Enable drivers for your MADRIX DMX device.
- 2]** Activate your DMX device.
- 3]** Enable DMX-IN.
- 4]** Choose how to use incoming signals.


1] Enable Drivers For Your DMX Device

- Go to the menu **Preferences > Options... > Devices USB**
[Keyboard shortcut: **Ctrl+Alt+O > Devices USB**]
- A new window will open.
- By default, the drivers for all MADRIX devices should be activated by default.
- If not, activate the appropriate driver. Learn more » [Devices USB](#)

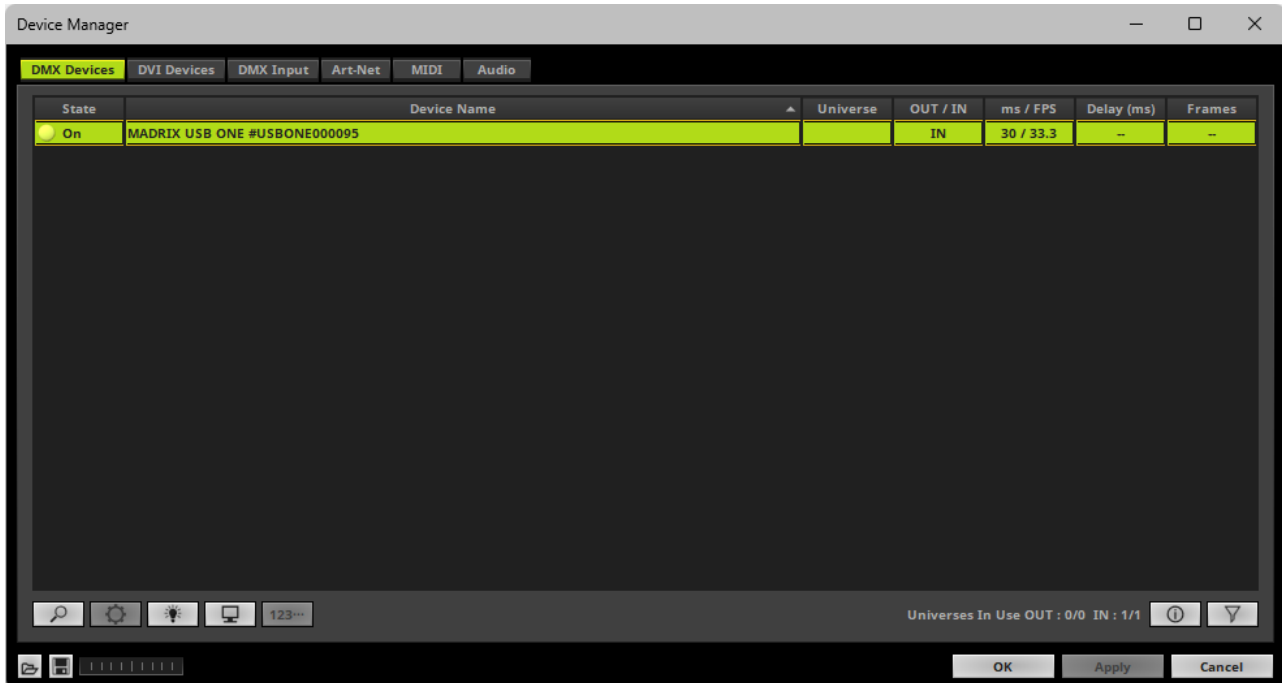
2] Activate Your DMX Device

- Go to the menu **Preferences > Device Manager... > DMX Devices**
[Keyboard shortcut: **F4**]
- A new window will open.



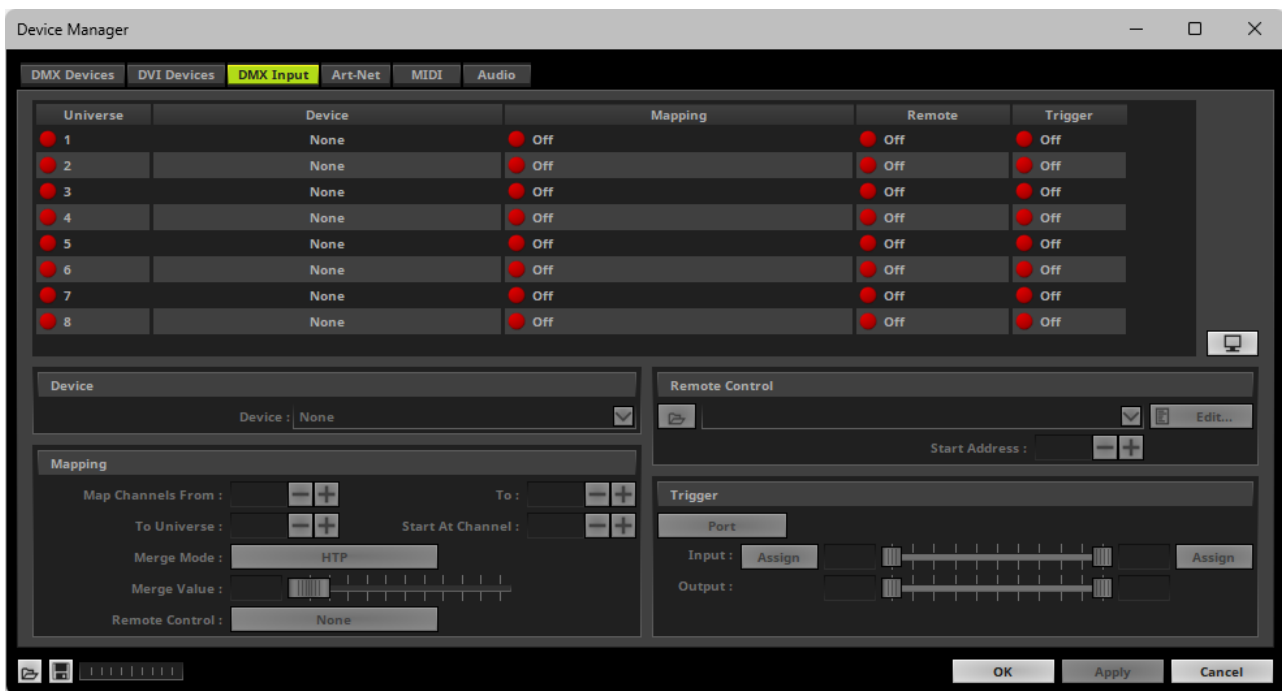
- MADRIX 5 may have already found your connected DMX devices. They will be shown in the list.
- Click  if your DMX devices are not shown in the list.
- Select your DMX device in the list.

- **Right Mouse Click** or **Left Mouse Double-Click** on the column **State** to set from **Off** to **On** [indicated by green light].
- **Right Mouse Click** or **Left Mouse Double-Click** on the column **OUT / IN** to set to **IN** for data input.

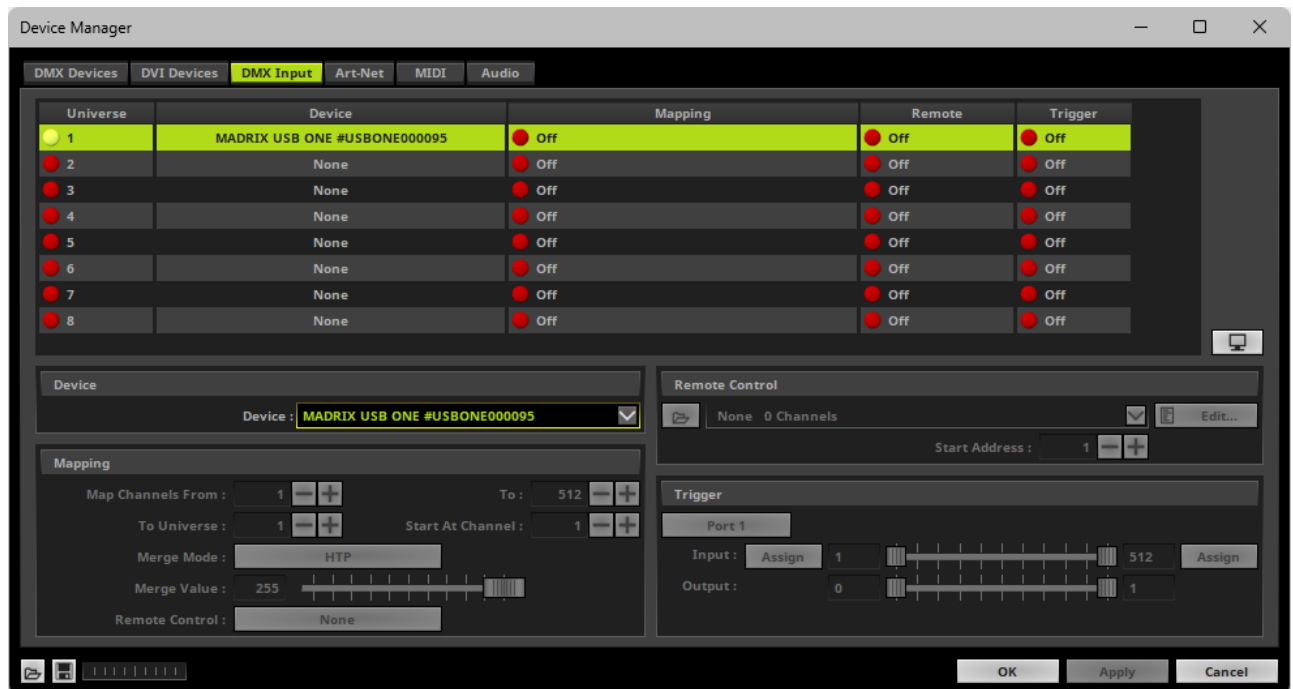


3] Enable DMX-IN

- Go to the menu **Preferences > Device Manager... > DMX Input**




- Select your preferred DMX **Universe** in the list.
[By default, universe 1 to 8 are listed. If you wish to increase the number of input universes, you can change the setting. Learn more » [Performance](#)]
- Choose your **Device** in the section **Device**
 - You can also use it as a search field. Enter a value or name to search for it.



- [If needed, you can disable DMX-IN by choosing **None** for your **Device** in the section **Device**]
- [If needed, you can choose one, single source to map them to multiple virtual DMX-input universes via **Mapping**]



4] Choose How To Use Incoming Signals

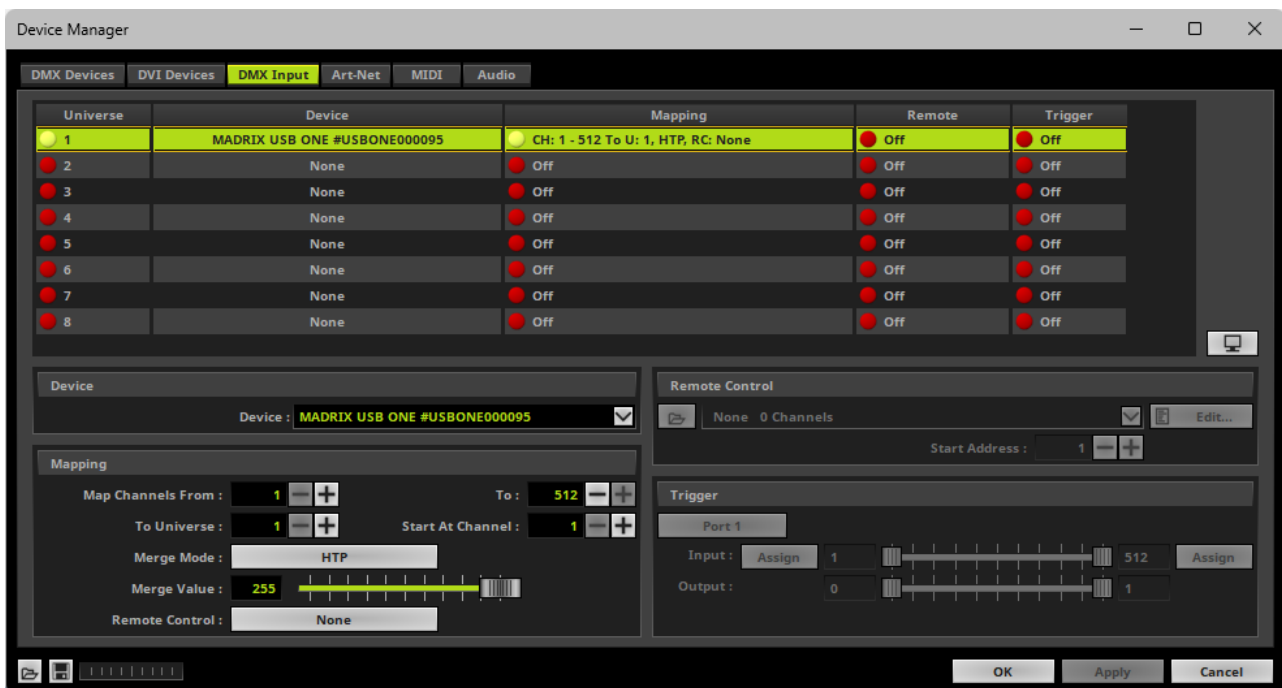
Data

- At this point, MADRIX 5 is already receiving any incoming data.
- You can now use this data, for example for Scripts and Macros. Learn more » [Macros And Scripts](#)
- If you want to monitor incoming signals, select your DMX universe/DMX device in the list and click  Learn more » [Tools](#)

Mapping

- Use Mapping, if you want to route incoming DMX signals through MADRIX 5 to your output [Mapping/Merging/DMX-Thru].
- First, select your device in the list.

- **Right Mouse Click** or **Left Mouse Double-Click** on the column **Mapping** to set from **Off** to **On** [indicated by green light  Off ].
- This feature maps incoming data to the specified DMX universe and channels.



- Configure the following settings in the section **Mapping**
 - **Map Channels From** - Defines which incoming channels are used. This is the start channel to specify the range of channels.
 - **To** - Defines which incoming channels are used. This is the end channel to specify the range of channels.
 - **To Universe** - Defines onto which DMX output universe the specified range of incoming channels should be mapped.

[When mapping several DMX Input Universes/input devices to the same Universe, data will be processed one universe after another and the second DMX Input Universe is being mapped onto the result of the first DMX Input Universe, and so on.]

- **Start At Channel** - Defines the first DMX channel of the DMX output universe that should be used.

- **Merge Mode** - You can map incoming data to a DMX address range that MADRIX 5 already controls. When merging data, the potential DMX output of MADRIX 5 is merged onto the incoming signal.

Merge Mode defines how that DMX output universe is merged onto the incoming data. Choose from the options below as the best choice depends on your usage scenario. The default setting is HTP.



[Merge Value, see below, defines how much data is merged. Merge Mode and Merge Value can be controlled via [Remote Control](#)]

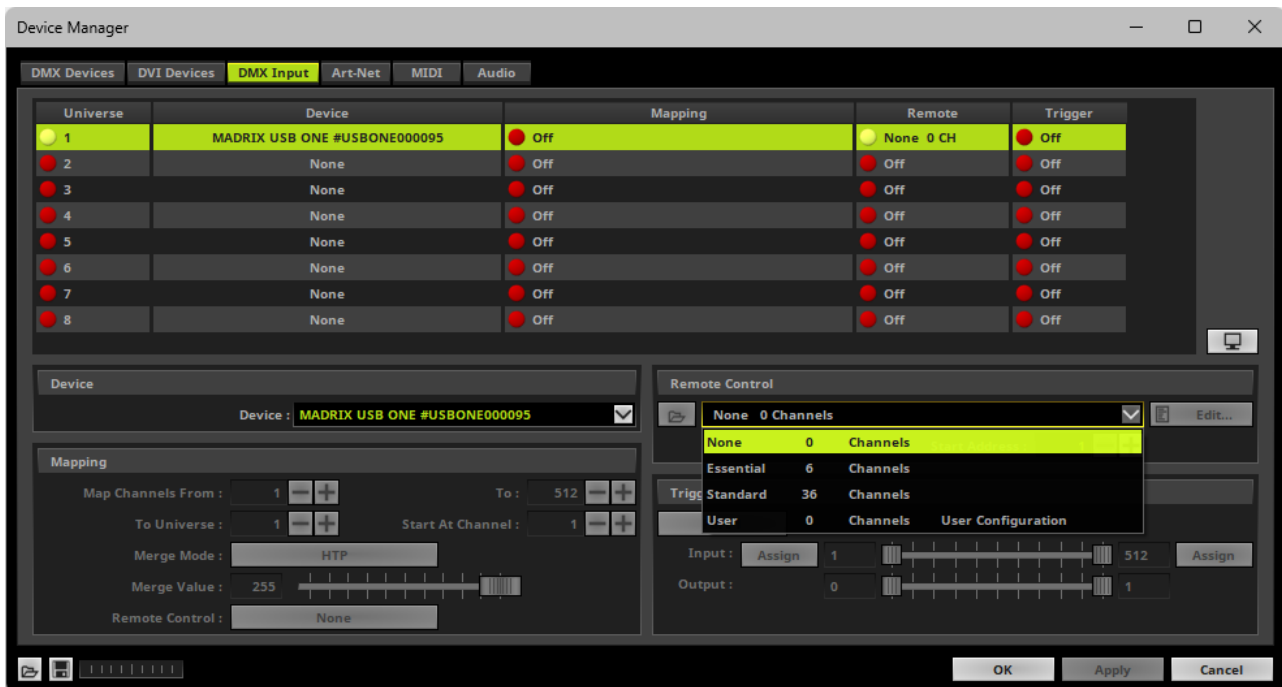
- **Input Only** - Disables the merging of data. Solely the incoming signal will be mapped onto the DMX output universe. Merge Value is thus not available for this mode.
- **HTP** - Is short for Highest Takes Precedence. MADRIX 5 will compare incoming values with the potential DMX output. As a result, only the highest of both values on a particular channel will be sent to the output.
- **LoTP** - Is short for Lowest Takes Precedence. Is the opposite of HTP. MADRIX 5 will compare incoming values with the potential DMX output. As a result, only the lowest of both values on a particular channel will be sent to the output.
- **Multiply** - Incoming values will be multiplied with the potential DMX output, and then sent to output. [Values are converted to always ensure a maximum value of 255.]
- **Multiply, Inverted** - Incoming values will be multiplied with the potential DMX output, but the result will be inverted [low results will become high results and vice versa] before being sent to output. [Values are converted to always ensure a maximum value of 255.]
- **Add** - Incoming values will be added to the potential DMX output, and then sent to output.
- **Subtract** - Incoming values will be subtracted from the potential DMX output, and then sent to output.
- **Subtract, Reversed** - The potential DMX output will be subtracted from the incoming values, and then sent to output.
- **XF** - Is short for Cross-Fade. See also »[Crossfader](#)
- **WF** - Is short for White-Fade. See also »[Crossfader](#)
- **MADRIX 5 Only** - Does not factor in any incoming values and only the potential DMX output is sent to output. Merge Value is thus not available for this mode.
- **Merge Value** - Defines how much of the potential DMX output is merged onto the incoming signal. A value of 0 means that no data from MADRIX 5 is merged onto the incoming signal, and thus only the incoming signal is mapped onto the universe. The default setting is 255. [Merge Mode and Merge Value can be controlled via [Remote Control](#)]
 - XF and WF will have the same result as a fade from the crossfader. At 255, only the MADRIX 5 data is sent to output. See also »[Crossfader](#)
 - All other Merge Modes behave like the Opacity value of a layer, whereas the upper layer is the MADRIX 5 data and the base layer is the incoming signal. See also »[Layers](#)
- **Remote Control** - Allows you to assign a port to the DMX Input Universe for [Remote Control](#)
 - Up to 8 ports can be assigned.
 - You can then assign a DMX remote-control channel to this port in the »[DMX-IN Remote Editor](#)
 - As such, you may assign a single port to a single DMX Input Universe/input device or you may assign the same port to several DMX Input Universes/input devices, thereby controlling several different input merges with a single DMX channel.
 - Each port remembers the settings for Merge Mode and Merge Value.
 - When assigning several DMX Input Universes/input devices to the same port, the settings for Merge Mode and

Merge Value will be synchronized across all of them.

- The default setting is **None**, which disables the option for remote control.

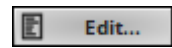
Remote Control

- Use Remote Control, if you want to control the MADRIX 5 Software remotely
- First, select your device in the list.
- **Right Mouse Click** or **Left Mouse Double-Click** on the column **Remote** to set from **Off** to **On** [indicated by green light  **Off** ].
- Select one of the built-in protocols in the section **Remote Control** as explained below or create your own remote configuration.



Open - Loads a previously saved MADRIX 5 DMX Remote Configuration file [of the file type *.mdrx].

None	0 Channels	
None	0 Channels	
Essential	6 Channels	
Standard	36 Channels	
User	0 Channels	User Configuration



Start Address : 1 - +

Protocols - Choose from a pre-configured protocol [configuration].



Learn more [Protocols \[Overview\]](#)

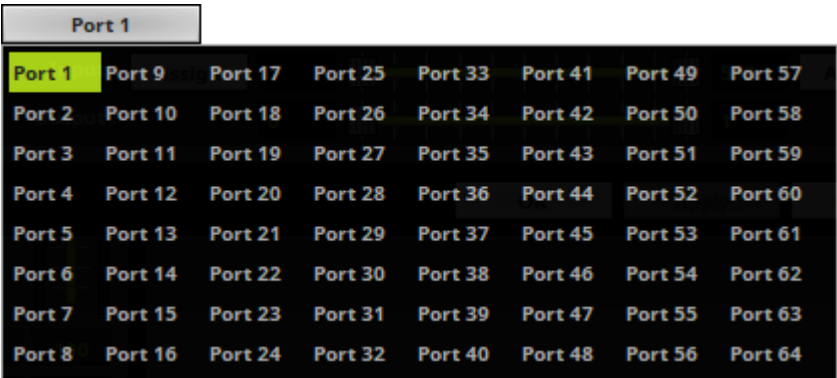
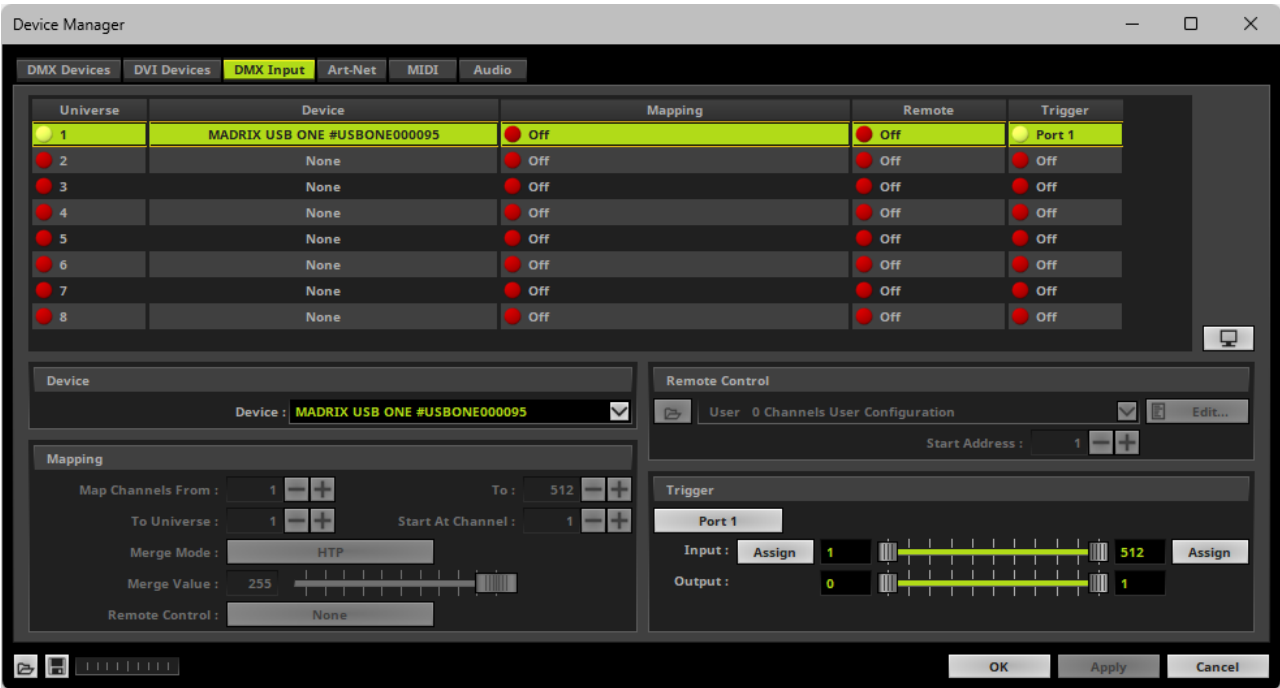
DMX-IN Remote Editor - Allows you to modify a configuration or create a new configuration.

Learn more »[DMX-IN Remote Editor](#)

Start Address - Defines on which particular DMX channel the protocol should start. The whole protocol will be mapped to this new address area.

Trigger

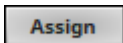
- Use Trigger, if you want to use incoming signals for the MADRIX 5 TRI Effects.
- First, select your device in the list.
- **Right Mouse Click** or **Left Mouse Double-Click** on the column **Trigger** to set from **Off** to **On** [indicated by green light  Off ].



Port - Assigns a trigger port [Port 1 - 64] to this DMX-IN Device. MADRIX 5 allows you to send trigger signals from up to 64 different devices [64 ports] and assign a MADRIX 5 TRI Effect to the corresponding port.

Input Value Range - Defines the DMX channels that are used for the trigger signal. [Incoming DMX values then usually determine the intensity of the effect.]

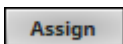
- The minimum and default value is 1.
- The maximum and default value is 512.



Assign Minimum Value -

Automatically assigns the minimum DMX channel when using the controller.

- Click **Assign** and use the control on your controller for the minimum value and the value will be set automatically in the MADRIX 5 Software.



Assign Maximum Value -

Automatically assigns the maximum DMX channel when using the controller.

- Click **Assign** and use the control on your controller for the maximum value and the value will be set automatically in the MADRIX 5 Software.



Output Value Range - Defines how the input is mapped to the MADRIX 5 Effect.

- Usually, the output range is the virtual LED matrix from left [0 %] to right [100%], but could also be the Color List from top [0%] to bottom [100%], for example.
- Changing the output range will allow you to assign the device solely to a certain output range, for example 0 % to 50 % of the virtual LED matrix. [And a second device from 51 % to 100 %, for example.]
- In this way, several input devices thus can be used to trigger one MADRIX 5 TRI Effect [i.e. via several Layers].
- The minimum and default value is 0.0 [i.e. 0 %].

- The maximum and default value is 1.0 [i.e. 100 %].

Learn more » [\[TRI\] Trigger Effects](#)

Art-Net Remote

Overview

An Art-Net device can be used for DMX input as well. This feature is called Art-Net Remote.

Step-By-Step Configuration

- 1] Set up network settings in Windows.
- 2] Activate Art-Net and create an input device.
- 3] Create an Art-Net input device.
- 4] Enable DMX-IN.
- 5] Choose how to use incoming signals.

1] Set Up Network Settings In Windows

Art-Net is used to send DMX512 data over Ethernet network. Because of this, you need to configure the settings of your network card in Windows first.

- Configure your network card in Windows.
- Use an **IP address** from the following address range:
2.0.0.1 ... 2.255.255.254

or

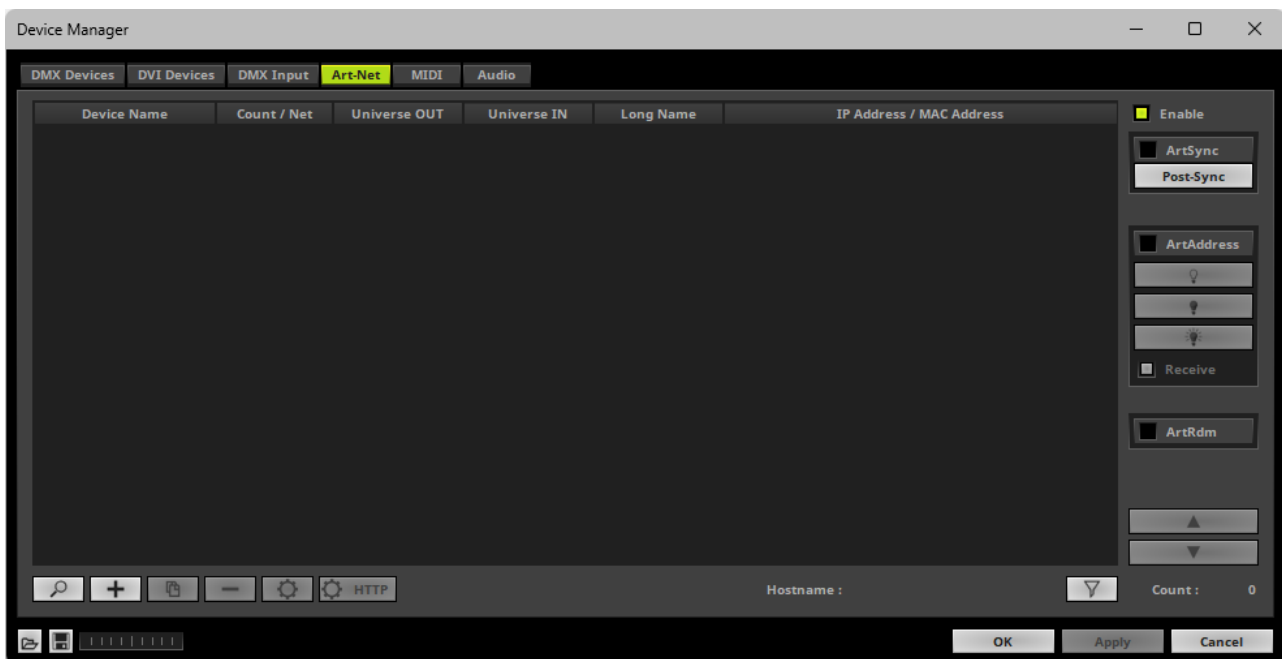
10.0.0.1 ... 10.255.255.254


- Use the following **Subnet mask**
255.0.0.0
- Learn more » [Tips \[Microsoft Windows / Networks / USB\]](#)

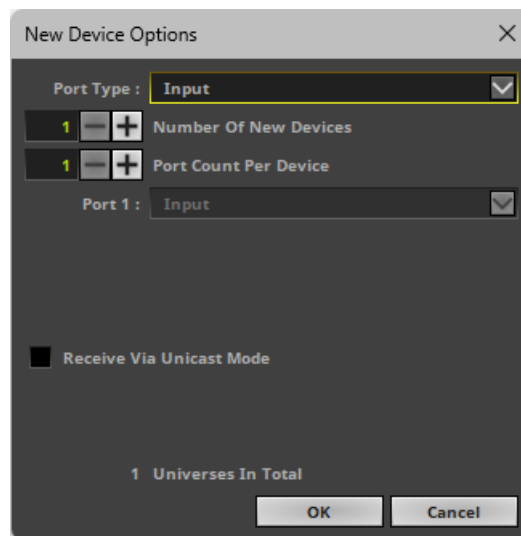
You must use this address area! Art-Net may not work otherwise.

2] Activate Art-Net And Create An Input Device

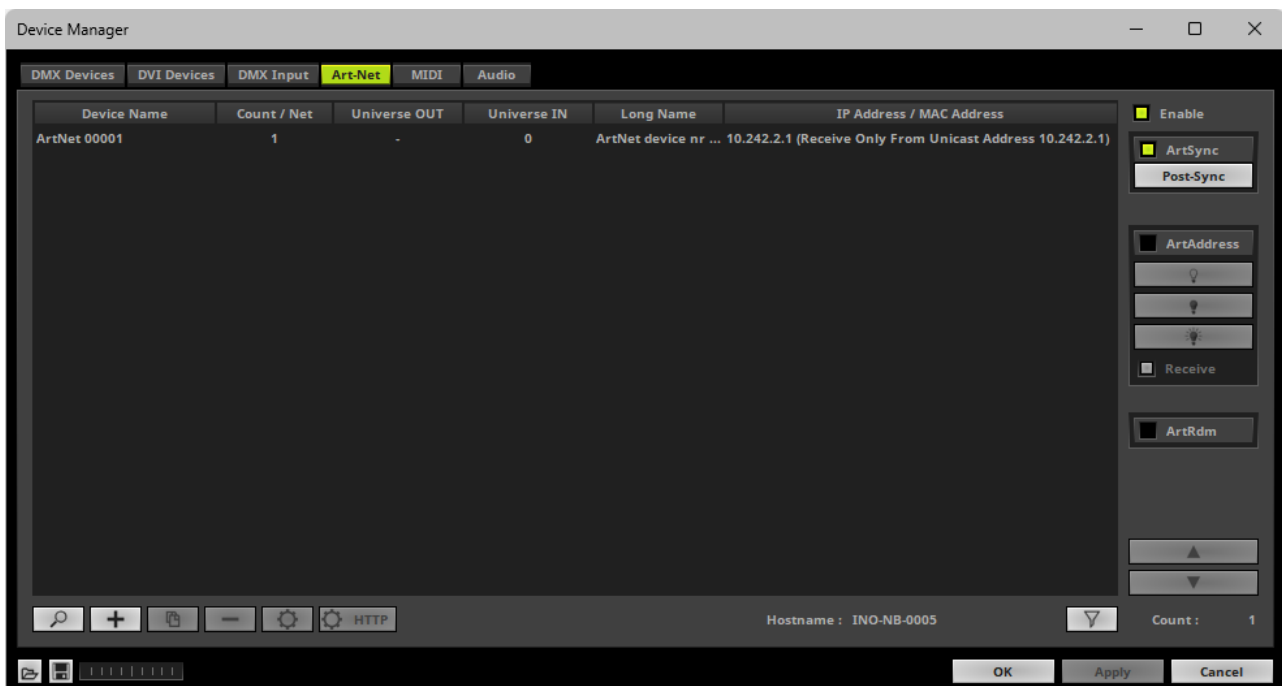
- Go to the menu **Preferences > Device Manager... > Art-Net**
[Keyboard shortcut: **F4 > Art-Net**]
- A new window will open.
- Activate the checkbox **Enable** [in the upper, right corner].



- Click 
- A new window will open.

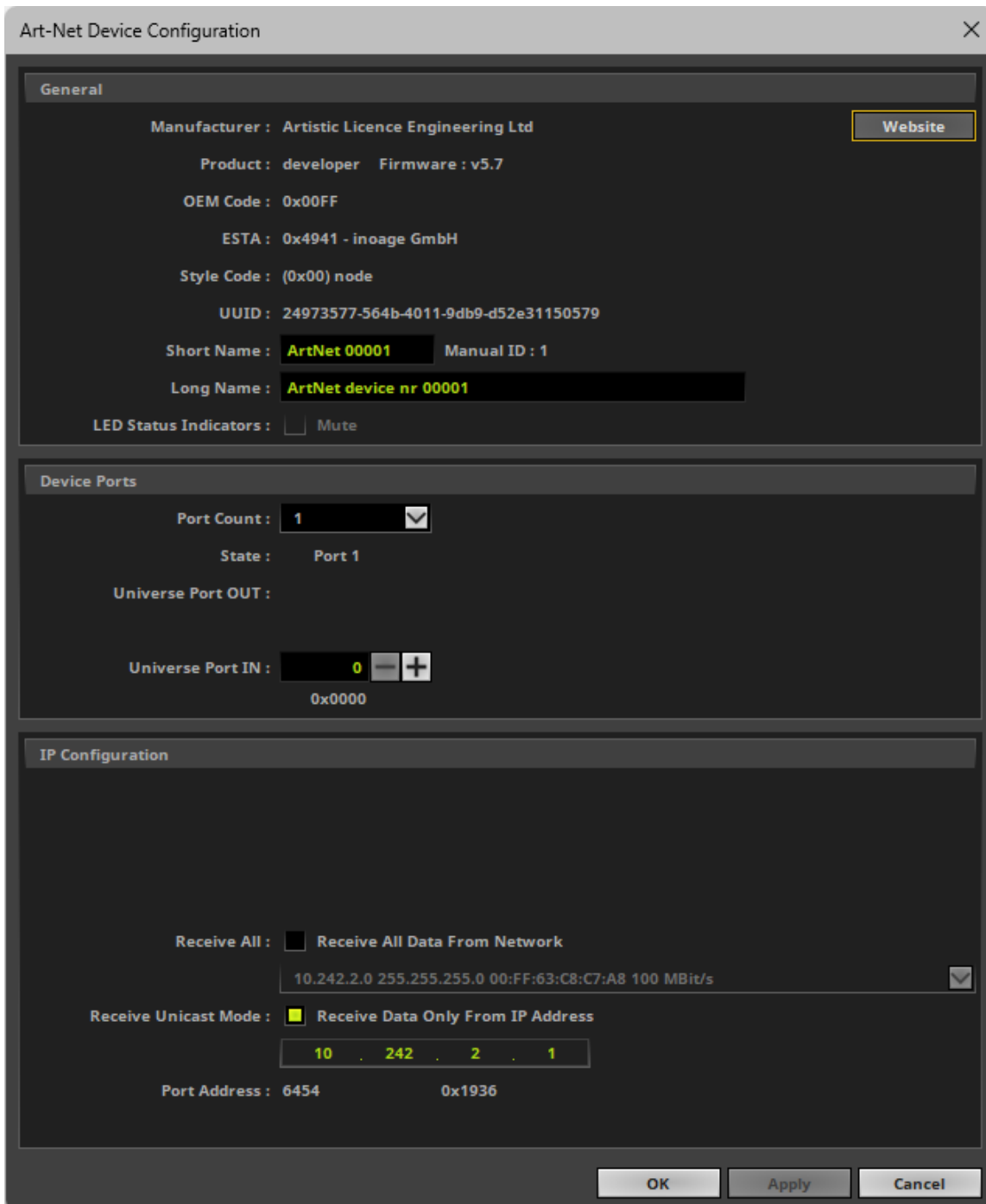


- **Port Type** - Choose **Input**
- **Number Of New Devices** - Enter the number of devices you wish to add. [**1** is often enough and thus recommended.]
- **Port Count Per Device** - Enter the number of ports each newly created device should have. Per device a maximum number of 4 ports is available. [**1** is often enough and thus recommended.]
- **Receive Via Unicast Mode** - Activates Unicast Mode for all newly created input devices.



- Select the input device in the list.

- Click 
- A new window will open.



The image shows the 'Art-Net Device Configuration' window, which is divided into three main sections: General, Device Ports, and IP Configuration.

General

- Manufacturer : Artistic Licence Engineering Ltd [Website](#)
- Product : developer Firmware : v5.7
- OEM Code : 0x00FF
- ESTA : 0x4941 - inoage GmbH
- Style Code : (0x00) node
- UUID : 24973577-564b-4011-9db9-d52e31150579
- Short Name : **ArtNet 00001** Manual ID : 1
- Long Name : **ArtNet device nr 00001**
- LED Status Indicators : ☐ Mute

Device Ports

- Port Count : 1
- State : Port 1
- Universe Port OUT :
- Universe Port IN : 0
0x0000

IP Configuration

- Receive All : ☐ Receive All Data From Network
10.242.2.0 255.255.255.0 00:FF:63:C8:C7:A8 100 MBit/s
- Receive Unicast Mode : ☒ Receive Data Only From IP Address
10 . 242 . 2 . 1
- Port Address : 6454 0x1936

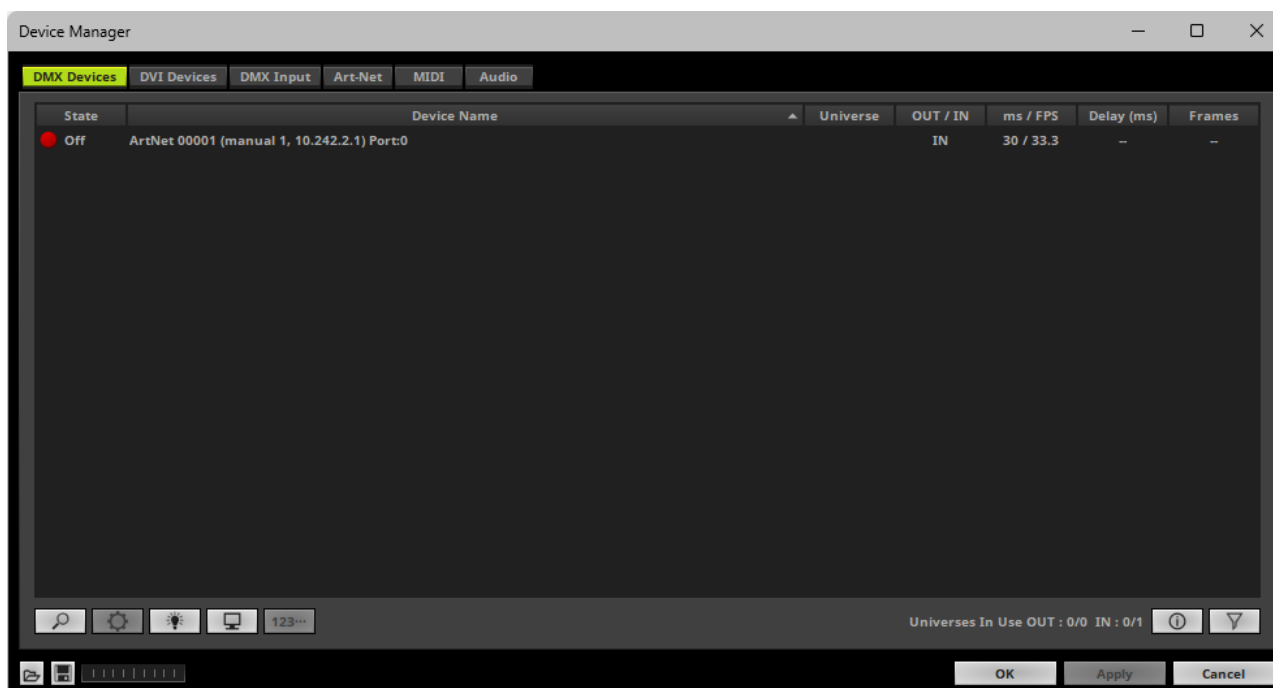
At the bottom right, there are three buttons: OK, Apply, and Cancel.

- Configure the following settings:

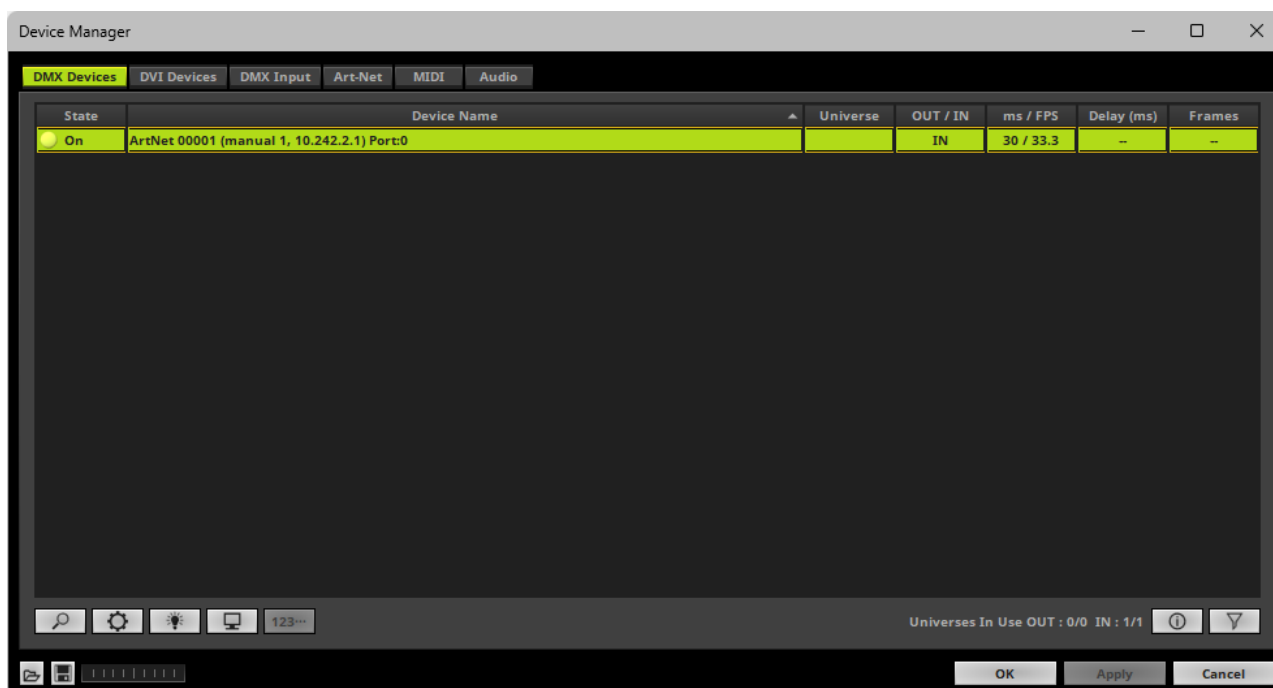
- **Port Count** - Defines how many DMX universes can be received by MADRIX 5. You can choose 1, 2, 3, or 4.
[MADRIX 5 can receive a maximum of 4 universes regarding Art-Net Remote.]
- **Universe Port IN** - Defines from which DMX universe MADRIX 5 receives the data.
 - Choose the universe on which your Art-Net device is sending the data!
- **Receive All** - If activated, MADRIX 5 can receive data from the selected network.
 - Any Art-Net device, such as an lighting desk, can send data to MADRIX 5.
 - Select the correct network first.
 - Receives limited broadcast, directed broadcast, and unicast.
- **Receive Unicast Mode** - If activated, MADRIX 5 will only receive data from the specified IP address. [This is the recommended setting.]
 - IP Address** - Needs to be set up if Unicast Mode is activated.
 - **Enter the IP address of the device that is sending data to MADRIX 5. Do not enter the IP address of the PC that is running the MADRIX 5 Software!**
- Click **Apply** to confirm.
- Click **OK** to close the window.

3] Activate The Art-Net Input Device

- Go to the menu **Preferences > Device Manager... > DMX Devices**
- Your **ArtNet** input device will be shown in the list.
[If the **Port Count** above is set to 2, 3, or 4, you will see up to 4 devices in the list.]

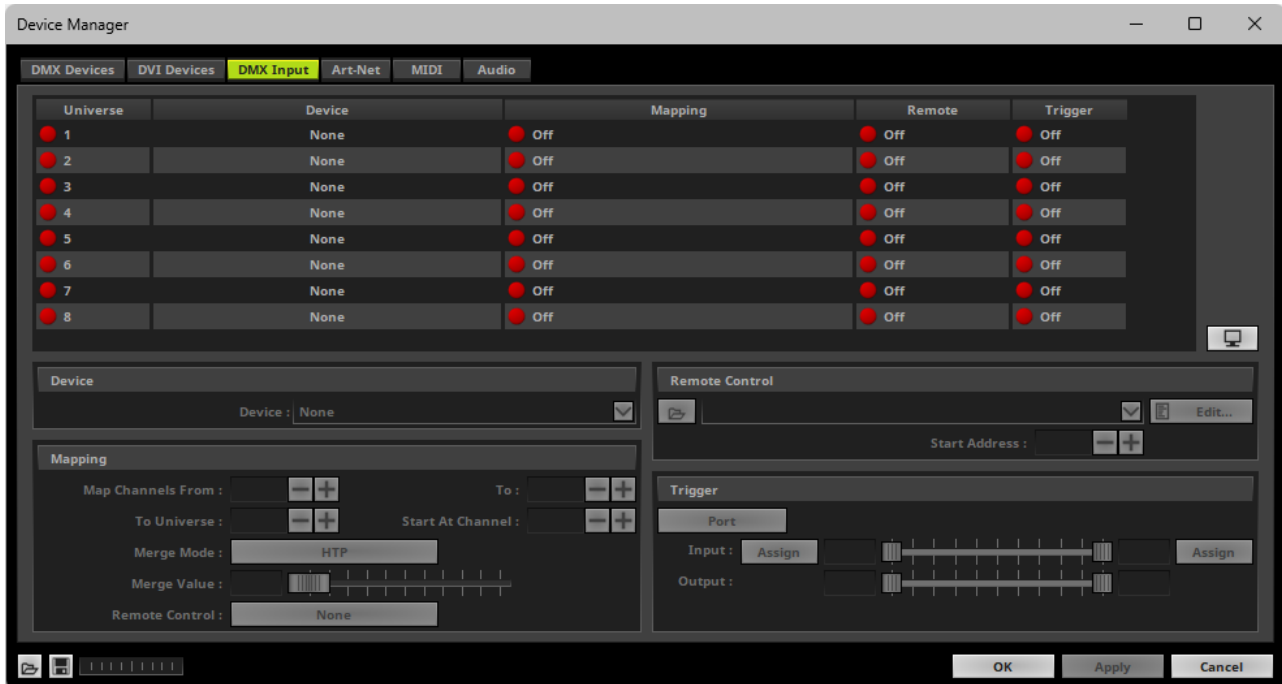


- Select your devices in the list.
- **Right Mouse Click** on the column **State** to set from **Off** to **On** [indicated by green light].
[IN is automatically activated.]
- If needed, adjust the frame time to increase or decrease the frame rate.
 - **Right Mouse Click** on the column **ms / FPS** and enter the required number.

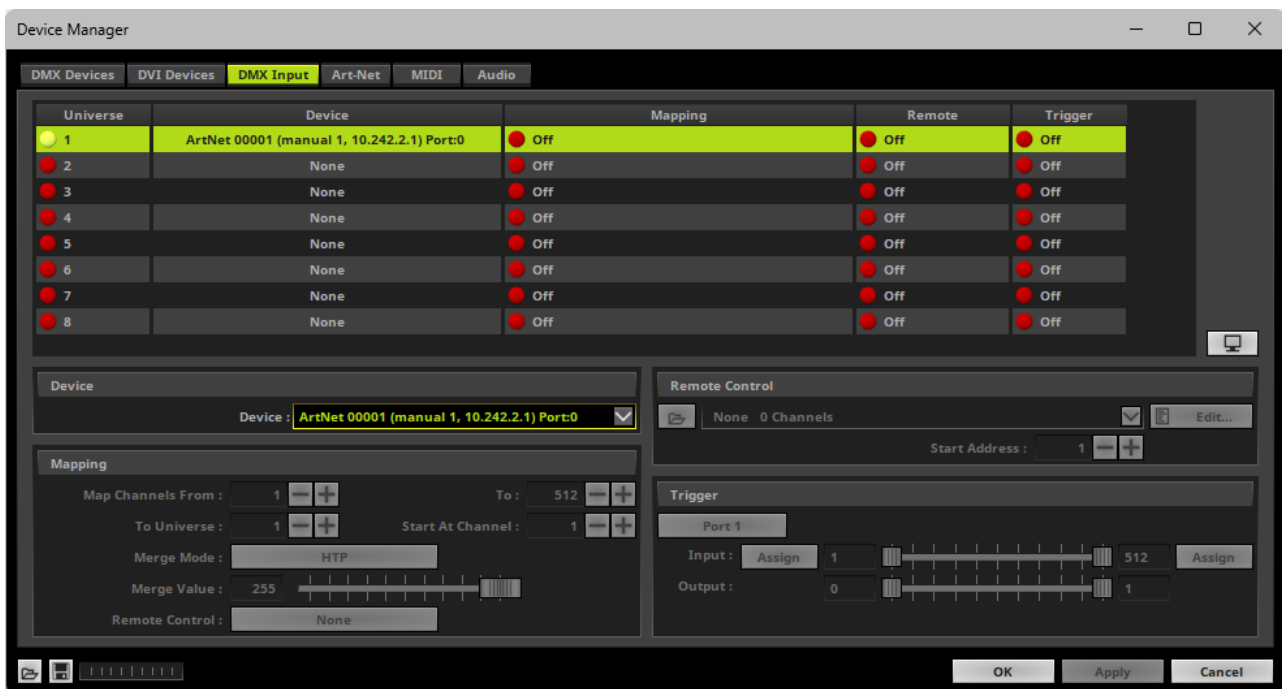


4] Enable DMX-IN

- Go to the menu **Preferences > Device Manager... > DMX Input**




- Select your preferred DMX **Universe** in the list.
[By default, universe 1 to 8 are listed. If you wish to increase the number of input universes, you can change the setting. Learn more » [Performance](#)]
- Choose your **Device** in the section **Device** by choosing the Art-Net input device via its IP address.
 - You can also use it as a search field. Enter a value or name to search for it.



- [If needed, you can disable DMX-IN by choosing **None** for your **Device** in the section **Device**]
- [If needed, you can choose one, single source to map them to multiple virtual DMX-input universes via **Mapping**]



5] Choose How To Use Incoming Signals

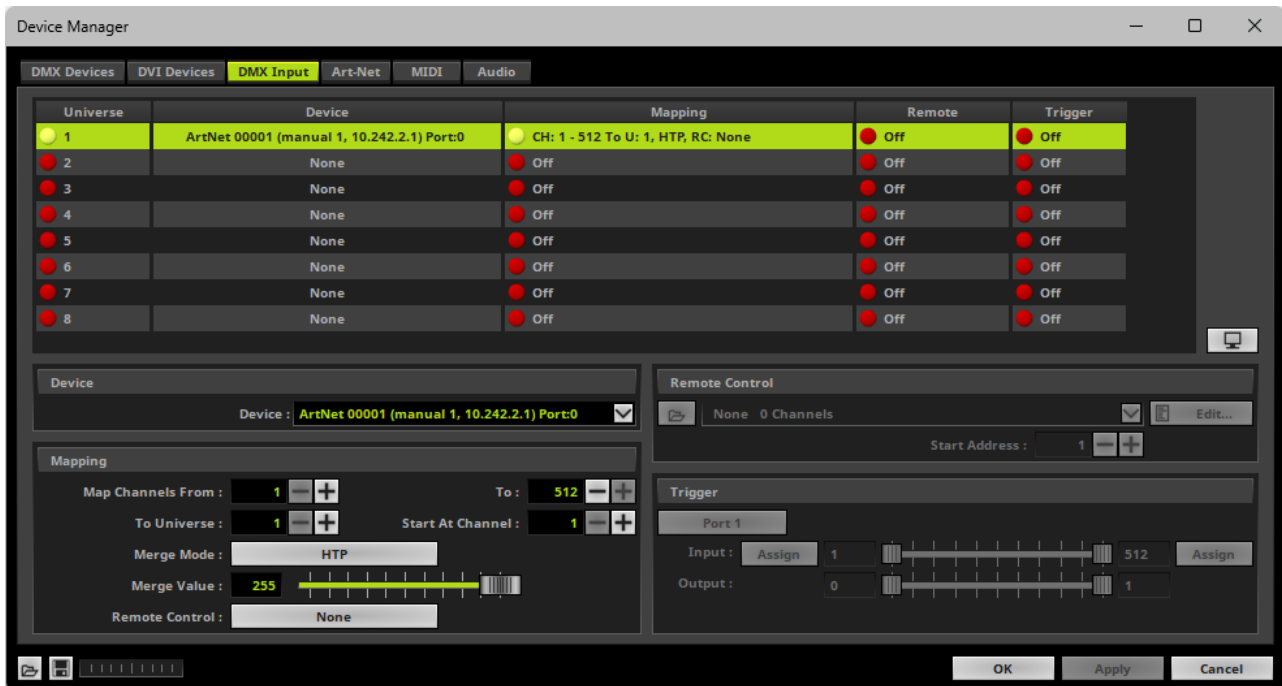
Data

- At this point, MADRIX 5 is now already receiving any incoming data.
- You can now use this data, for example for Scripts and Macros. Learn more » [Macros And Scripts](#)
- If you want to monitor incoming signals, select your DMX universe/DMX device in the list and click  Learn more » [Tools](#)

Mapping

- Use Mapping, if you want to route incoming DMX signals through MADRIX 5 to your output [Mapping/Merging/DMX-Thru].

- First, select your device in the list.
- **Right Mouse Click** or **Left Mouse Double-Click** on the column **Mapping** to set from **Off** to **On** [indicated by green light  Off ].
- This feature maps incoming data to the specified DMX universe and channels.



- Configure the following settings in the section **Mapping**
 - **Map Channels From** - Defines which incoming channels are used. This is the start channel to specify the range of channels.
 - **To** - Defines which incoming channels are used. This is the end channel to specify the range of channels.
 - **To Universe** - Defines onto which DMX output universe the specified range of incoming channels should be mapped.

[When mapping several DMX Input Universes/input devices to the same Universe, data will be processed one universe after another and the second DMX Input Universe is being mapped onto the result of the first DMX Input Universe, and so on.]



- **Start At Channel** - Defines the first DMX channel of the DMX output universe that should be used.
- **Merge Mode** - You can map incoming data to a DMX address range that MADRIX 5 already controls. When merging data, the potential DMX output of MADRIX 5 is merged onto the incoming signal. Merge Mode defines how that DMX output universe is merged onto the incoming data. Choose from the options below as the best choice depends on your usage scenario. The default setting is HTP.

[Merge Value, see below, defines how much data is merged. Merge Mode and Merge Value can be controlled via [Remote Control](#)]

- **Input Only** - Disables the merging of data. Solely the incoming signal will be mapped onto the DMX output universe. Merge Value is thus not available for this mode.
- **HTP** - Is short for Highest Takes Precedence. MADRIX 5 will compare incoming values with the potential DMX output. As a result, only the highest of both values on a particular channel will be sent to the output.
- **LoTP** - Is short for Lowest Takes Precedence. Is the opposite of HTP. MADRIX 5 will compare incoming values with the potential DMX output. As a result, only the lowest of both values on a particular channel will be sent to the output.
- **Multiply** - Incoming values will be multiplied with the potential DMX output, and then sent to output. [Values are converted to always ensure a maximum value of 255.]
- **Multiply, Inverted** - Incoming values will be multiplied with the potential DMX output, but the result will be inverted [low results will become high results and vice versa] before being sent to output. [Values are converted to always ensure a maximum value of 255.]
- **Add** - Incoming values will be added to the potential DMX output, and then sent to output.
- **Subtract** - Incoming values will be subtracted from the potential DMX output, and then sent to output.
- **Subtract, Reversed** - The potential DMX output will be subtracted from the incoming values, and then sent to output.
- **XF** - Is short for Cross-Fade. See also »[Crossfader](#)
- **WF** - Is short for White-Fade. See also »[Crossfader](#)
- **MADRIX 5 Only** - Does not factor in any incoming values and only the potential DMX output is sent to output. Merge Value is thus not available for this mode.
- **Merge Value** - Defines how much of the potential DMX output is merged onto the incoming signal. A value of 0 means that no data from MADRIX 5 is merged onto the incoming signal, and thus only the incoming signal is mapped onto the universe. The default setting is 255. [Merge Mode and Merge Value can be controlled via [Remote Control](#)]
- XF and WF will have the same result as a fade from the crossfader. At 255, only the MADRIX 5 data is sent to output. See also »[Crossfader](#)
- All other Merge Modes behave like the Opacity value of a layer, whereas the upper layer is the MADRIX 5 data and the base layer is the incoming signal. See also »[Layers](#)
- **Remote Control** - Allows you to assign a port to the DMX Input Universe for [Remote Control](#)
- Up to 8 ports can be assigned.
- You can then assign a DMX remote-control channel to this port in the »[DMX-IN Remote Editor](#)
- As such, you may assign a single port to a single DMX Input Universe/input device or you may assign the same port to several DMX Input Universes/input devices, thereby controlling several different input merges with a single DMX channel.
- Each port remembers the settings for Merge Mode and Merge Value.

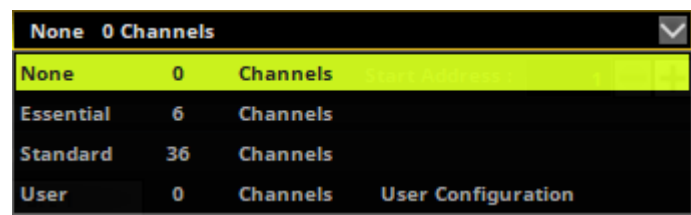
- When assigning several DMX Input Universes/input devices to the same port, the settings for Merge Mode and Merge Value will be synchronized across all of them.
- The default setting is **None**, which disables the option for remote control.

Remote Control

- Use Remote Control, if you want to control the MADRIX 5 Software remotely
- First, select your device in the list.
- **Right Mouse Click** or **Left Mouse Double-Click** on the column **Remote** to set from **Off** to **On** [indicated by green light  Off ].
- Select one of the built-in protocols in the section **Remote Control** as explained below or create your own remote configuration.

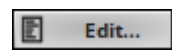


Open - Loads a previously saved MADRIX 5 DMX Remote Configuration file [of the file type *.mdrx].



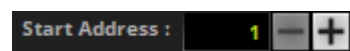
Protocols - Choose from a pre-configured protocol [configuration].

Learn more [Protocols \[Overview\]](#)



DMX-IN Remote Editor - Allows you to modify a configuration or create a new configuration.

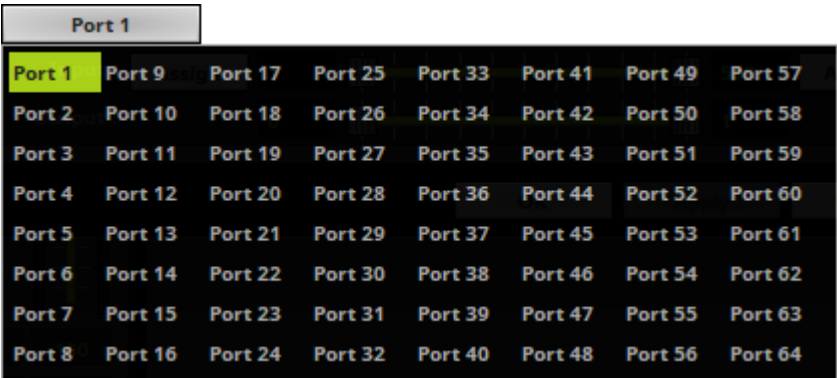
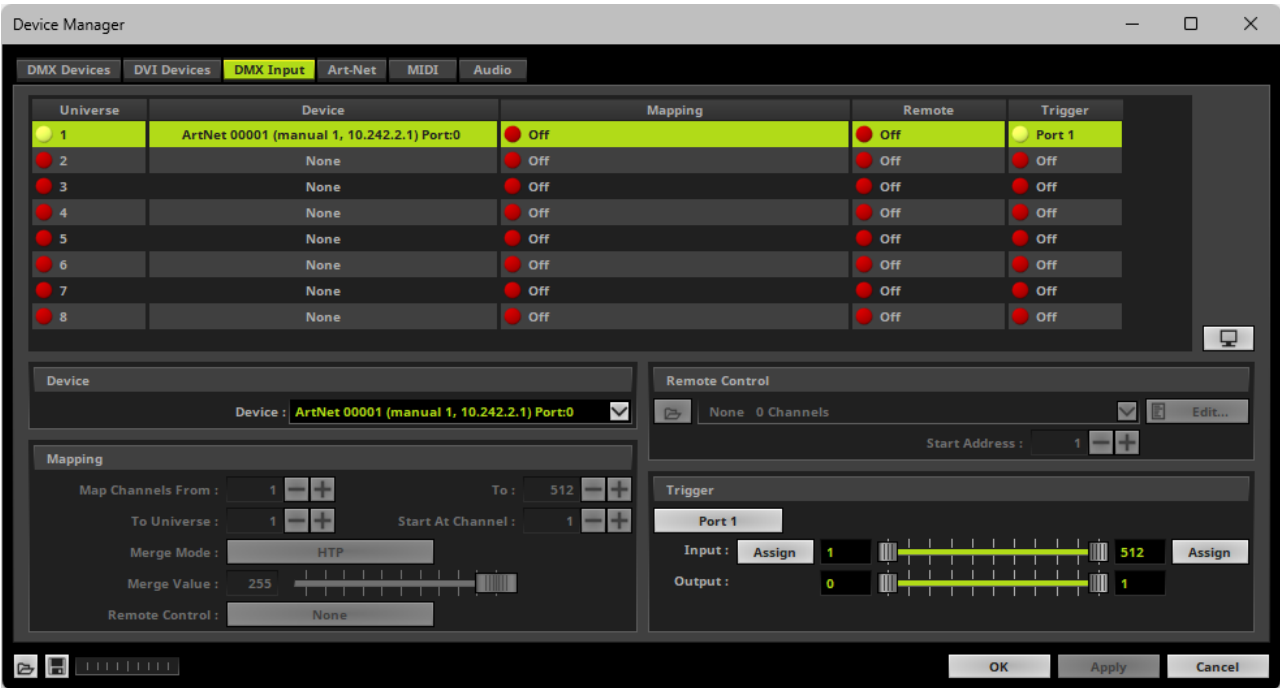
Learn more »[DMX-IN Remote Editor](#)



Start Address - Defines on which particular DMX channel the protocol should start. The whole protocol will be mapped to this new address area.

Trigger

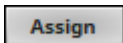
- Use Trigger, if you want to use incoming signals for the MADRIX 5 TRI Effects.
- First, select your device in the list.
- Activate **Trigger**



Port - Assigns a trigger port [Port 1 - 64] to this DMX-IN Device. MADRIX 5 allows you to send trigger signals from up to 64 different devices [64 ports] and assign a MADRIX 5 TRI Effect to the corresponding port.

Input Value Range - Defines the DMX channels that are used for the trigger signal. [Incoming DMX values then usually determine the intensity of the effect.]

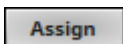
- The minimum and default value is 1.
- The maximum and default value is 512.



Assign Minimum Value -

Automatically assigns the minimum DMX channel when using the controller.

- Click **Assign** and use the control on your controller for the minimum value and the value will be set automatically in the MADRIX 5 Software.



Assign Maximum Value -

Automatically assigns the maximum DMX channel when using the controller.

- Click **Assign** and use the control on your controller for the maximum value and the value will be set automatically in the MADRIX 5 Software.



Output Value Range - Defines how the input is mapped to the MADRIX 5 Effect.

- Usually, the output range is the virtual LED matrix from left [0 %] to right [100%], but could also be the Color List from top [0%] to bottom [100%], for example.
- Changing the output range will allow you to assign the device solely to a certain output range, for example 0 % to 50 % of the virtual LED matrix. [And a second device from 51 % to 100 %, for example.]
- In this way, several input devices thus can be used to trigger one MADRIX 5 TRI Effect [i.e. via several Layers].
- The minimum and default value is 0.0 [i.e. 0 %].

- The maximum and default value is 1.0 [i.e. 100 %].

Learn more » [\[TRI\] Trigger Effects](#)

Art-Net Remote Troubleshooting

If you are encountering problems, please work through the following checklist:

- Double-check the settings of your network card.
- Make sure to set up the Windows Firewall correctly. Learn more » [Tips \[Microsoft Windows / Networks / USB\]](#)
- Double-check the settings of the ArtNet Remote device in MADRIX 5.
- Use the DMX Watcher to monitor incoming data.

sACN Input

Overview

Streaming ACN devices can be used for DMX input as well.

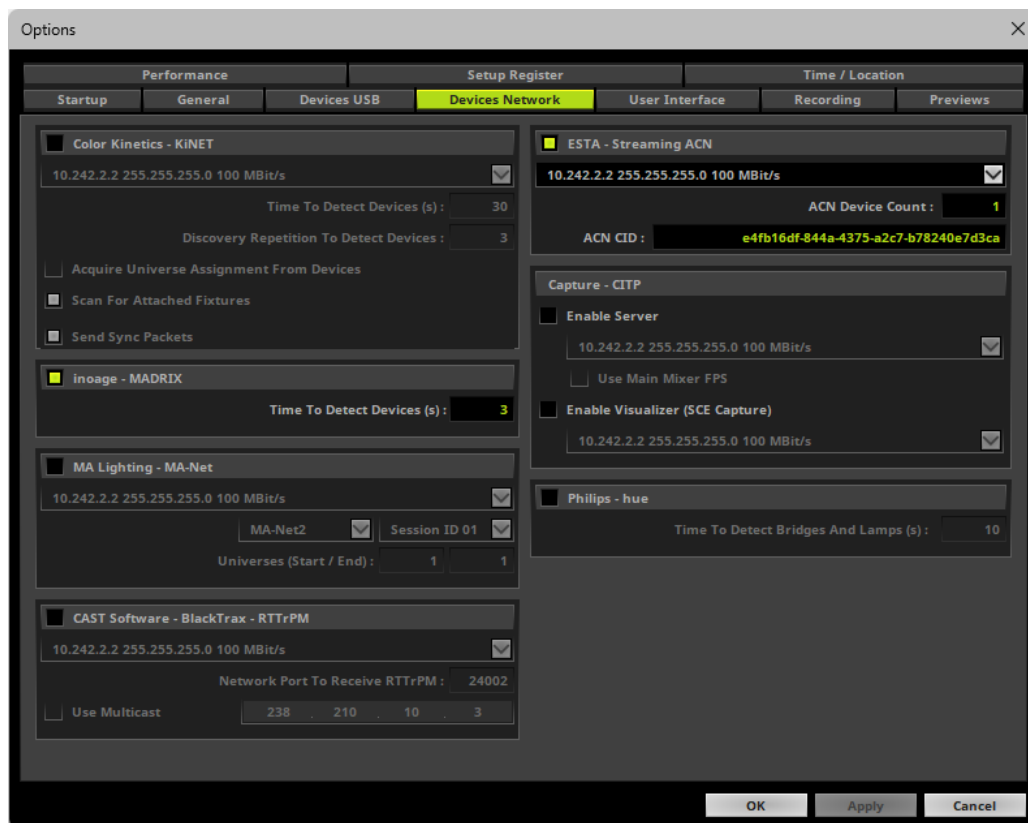
1] Windows Network Settings

- MADRIX 5 automatically sets up Streaming ACN network settings for you.
- You only need a computer with a network card and a valid IP address.

- **You do not have to change the IP address settings in Windows for Streaming ACN!**
- **The IP address range for sACN devices is 239.255.X.X according to the Streaming ACN specifications.**
[Even if your sACN devices are set to a different IP address range, you may try the connection from MADRIX 5 to your devices.]
- **Make sure that your Firewall does not block data of the 239.255.X.X IP address range!**
- **Check the settings of the Windows Firewall.**
- Learn more » [Tips \[Microsoft Windows / Networks / USB\]](#)

2] Activating Streaming ACN

- Go to the menu **Preferences > Options... > Devices Network**
[Keyboard shortcut: **Ctrl+Alt+O > Devices Network**]
- Activate **ESTA - Streaming ACN**
- **Choose your network card** from the drop-down list. Make sure to select the correct network adapter that will be used for Streaming ACN!
[The IP address and Subnet mask label should help you select the correct adapter. It is not necessary to change any of these networks settings.]
- **ACN Device Count** - Set up how many you are going to use.
[This is the total amount of OUT and IN devices. Please set the exact number of devices you are using. If the count is higher, this creates unnecessary network traffic.]
- Click **Apply**

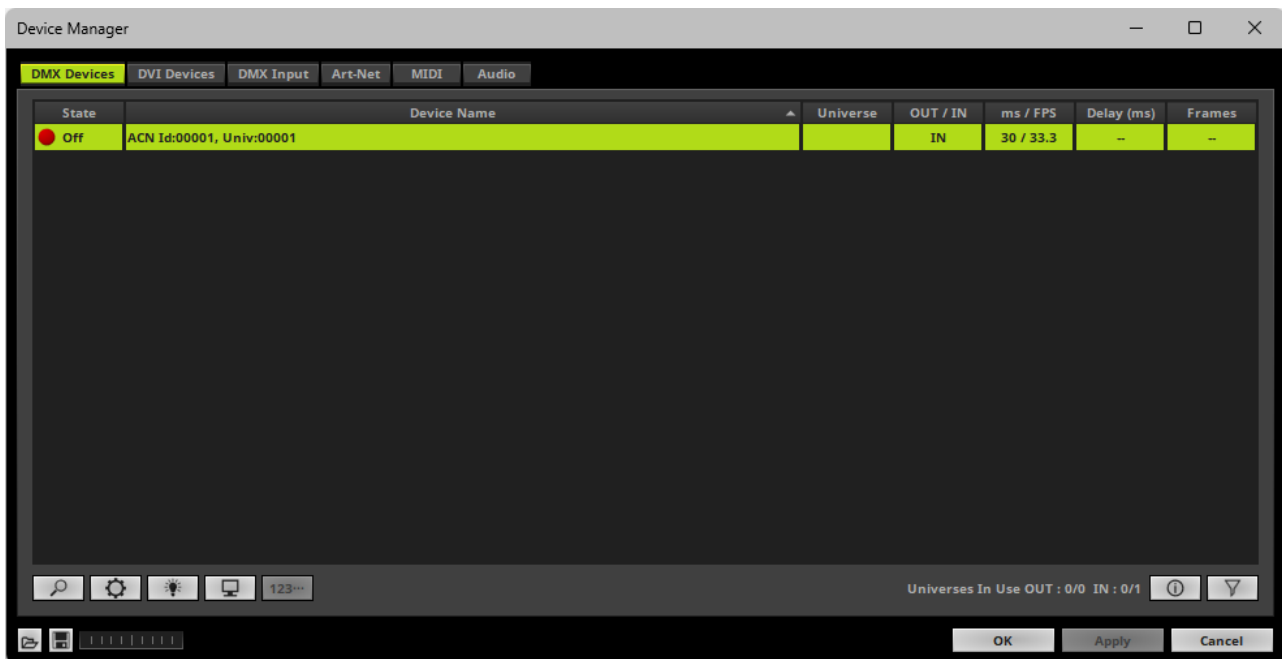


- **ACN CID** - Being a network protocol, Streaming ACN sends a so-called CIDs [Component Identifier].
 - Every single ACN device has such a unique ID.
 - When using Streaming ACN, your MADRIX 5 Software is one of those devices.
 - When you start MADRIX 5 for the first time, this ID will be generated automatically for you. From this point onwards it will be used on your PC.
 - With this ID your MADRIX 5 Software can be easily identified in the network. Interfaces can detect this unique ID and can be configured to receive data from this particular device. Please note that the ACN interface must support this feature.
 - **Do not change the ACN CID, unless you are an experienced user!**
- Click **OK** to close the window.

3] Enabling Input


- Go to **Preferences > Device Manager... > DMX Devices**
[Keyboard shortcut: **F4**]

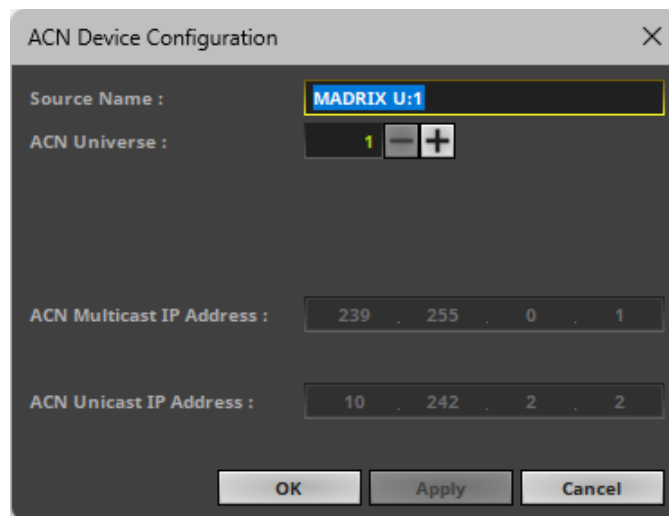
- MADRIX 5 automatically creates and adds the number of interfaces to the list.
[according to **ACN Device Count**]
- Select your device.
- Set to **OUT / IN** to **IN** if you wish to receive incoming data through this device.
- Set **State Off** to **State ON**
- Click **Apply**
- In DMX-IN mode, you will not be able to select the ACN protocol. MADRIX 5 will automatically select the correct protocol version.



- **Note:** If you are loading a MADRIX 5 Setup, please check if the number of ACN devices in your setup corresponds with the number that is activated. The Setup stores the number of devices. But if you changed the amount and then loaded the Setup, the newly defined number will be activated.

4] Configure Your Device

- Make sure that your device is still selected under **Preferences > Device Manager... > DMX Devices**
- Click 
- A new window will open.

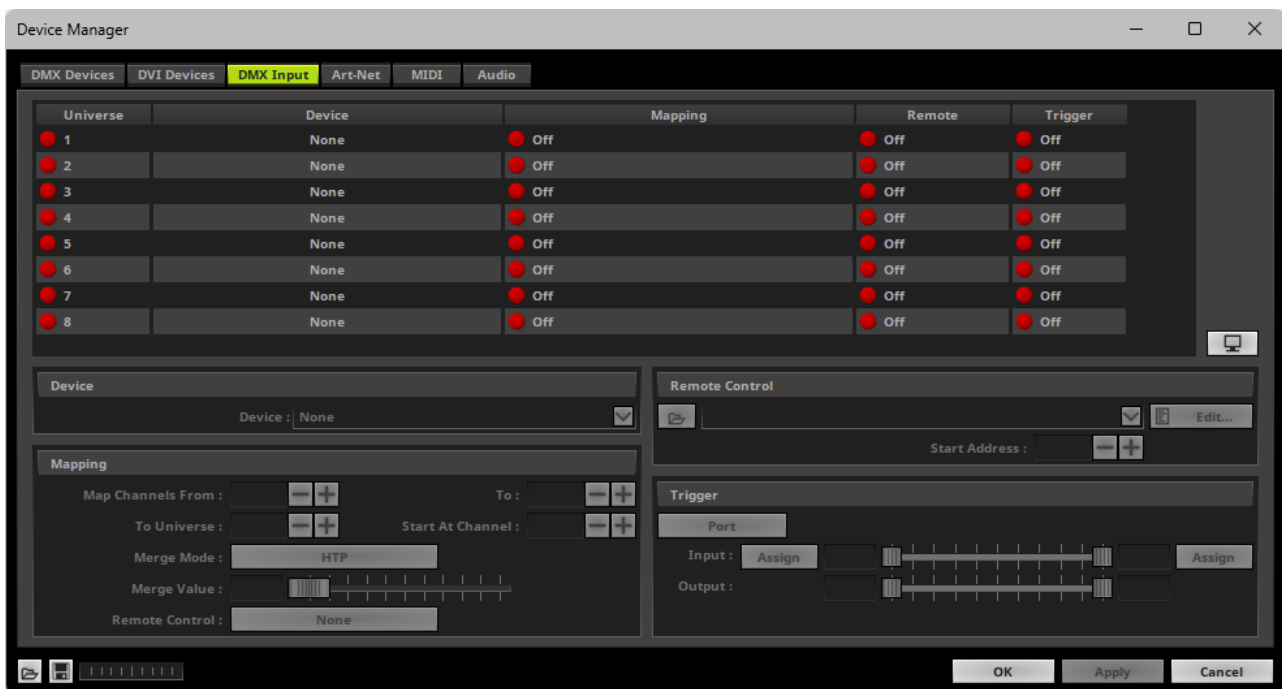


Set up the following settings for your devices:

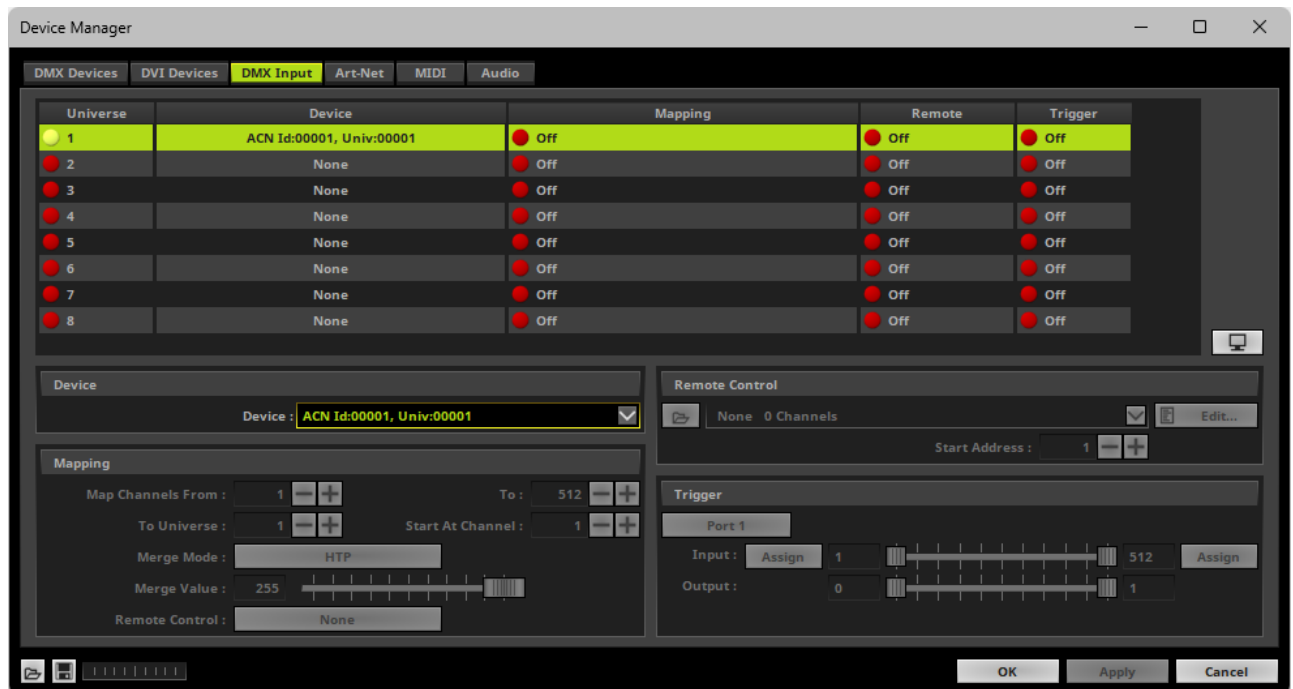
- **Source Name** - Allows you to set up a specific name for the device. This name is send via network as well. Therefore, interfaces may be able to retrieve this name and can be configured to receive data from this source.
 - If you are using the default name **MADRIX U:X**, the universe will automatically be displayed in the name [represented by X: 1, 2, 3, etc.].
- **ACN Universe** - Defines the DMX universe from which data is received.
 - **Set up the same universe that is set up in your sACN device.**
 - According to the Streaming ACN specifications, MADRIX 5 will automatically change the ACN IP Address according to the ACN Universe.
- Click **Apply** to confirm your changes.
- Click **OK** to close the window.

5] Enable DMX-IN

- Go to the menu **Preferences > Device Manager... > DMX Input**




- Select your preferred DMX **Universe** in the list.
[By default, universe 1 to 8 are listed. If you wish to increase the number of input universes, you can change the setting. Learn more » [Performance](#)]
- Choose your **Device** in the section **Device**
 - You can also use it as a search field. Enter a value or name to search for it.



- [If needed, you can disable DMX-IN by choosing **None** for your **DMX-IN Device** in the section **Device**]
- [If needed, you can choose one, single source to map them to multiple virtual DMX input universes via **Mapping**]



6] Choose How To Use Incoming Signals

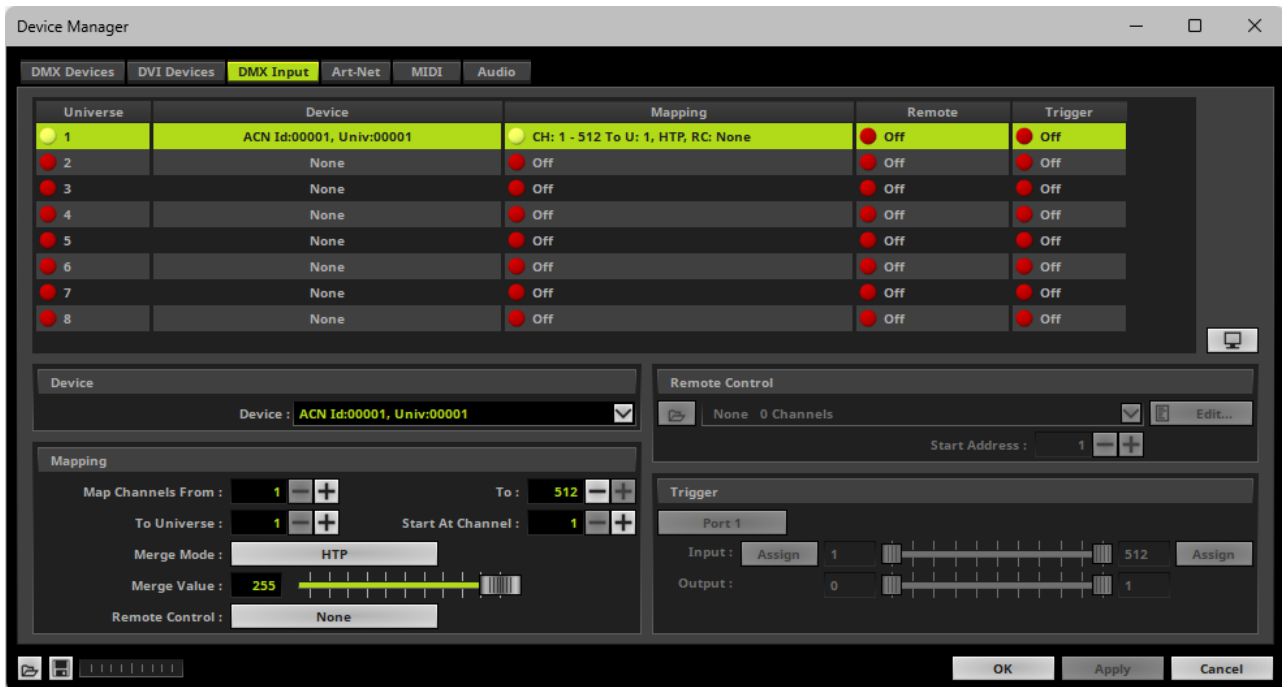
Data

- At this point, MADRIX 5 is now already receiving any incoming data.
- You can now use this data, for example for Scripts and Macros. Learn more » [Macros And Scripts](#)
- If you want to monitor incoming signals, select your DMX universe/DMX device in the list and click  Learn more » [Tools](#)

Mapping

- Use Mapping, if you want to route incoming DMX signals through MADRIX 5 to your output [Mapping/Merging/DMX-Thru].
- First, select your device in the list.

- **Right Mouse Click** or **Left Mouse Double-Click** on the column **Mapping** to set from **Off** to **On** [indicated by green light  Off ].
- This feature maps incoming data to the specified DMX universe and channels.



- Configure the following settings in the section **Mapping**
 - **Map Channels From** - Defines which incoming channels are used. This is the start channel to specify the range of channels.
 - **To** - Defines which incoming channels are used. This is the end channel to specify the range of channels.
 - **To Universe** - Defines onto which DMX output universe the specified range of incoming channels should be mapped.

[When mapping several DMX Input Universes/input devices to the same Universe, data will be processed one universe after another and the second DMX Input Universe is being mapped onto the result of the first DMX Input Universe, and so on.]

- **Start At Channel** - Defines the first DMX channel of the DMX output universe that should be used.

- **Merge Mode** - You can map incoming data to a DMX address range that MADRIX 5 already controls. When merging data, the potential DMX output of MADRIX 5 is merged onto the incoming signal.



Merge Mode defines how that DMX output universe is merged onto the incoming data. Choose from the options below as the best choice depends on your usage scenario. The default setting is HTP.

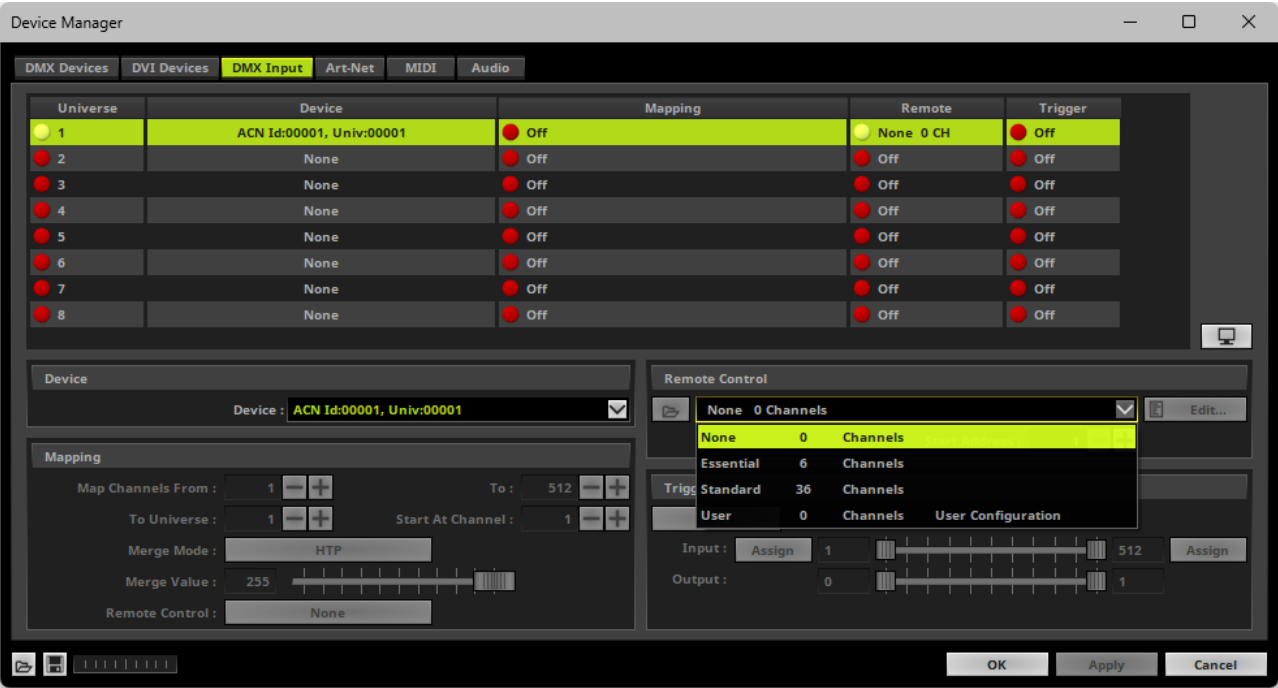
[Merge Value, see below, defines how much data is merged. Merge Mode and Merge Value can be controlled via [Remote Control](#)]

- **Input Only** - Disables the merging of data. Solely the incoming signal will be mapped onto the DMX output universe. Merge Value is thus not available for this mode.
- **HTP** - Is short for Highest Takes Precedence. MADRIX 5 will compare incoming values with the potential DMX output. As a result, only the highest of both values on a particular channel will be sent to the output.
- **LoTP** - Is short for Lowest Takes Precedence. Is the opposite of HTP. MADRIX 5 will compare incoming values with the potential DMX output. As a result, only the lowest of both values on a particular channel will be sent to the output.
- **Multiply** - Incoming values will be multiplied with the potential DMX output, and then sent to output. [Values are converted to always ensure a maximum value of 255.]
- **Multiply, Inverted** - Incoming values will be multiplied with the potential DMX output, but the result will be inverted [low results will become high results and vice versa] before being sent to output. [Values are converted to always ensure a maximum value of 255.]
- **Add** - Incoming values will be added to the potential DMX output, and then sent to output.
- **Subtract** - Incoming values will be subtracted from the potential DMX output, and then sent to output.
- **Subtract, Reversed** - The potential DMX output will be subtracted from the incoming values, and then sent to output.
- **XF** - Is short for Cross-Fade. See also »[Crossfader](#)
- **WF** - Is short for White-Fade. See also »[Crossfader](#)
- **MADRIX 5 Only** - Does not factor in any incoming values and only the potential DMX output is sent to output. Merge Value is thus not available for this mode.
- **Merge Value** - Defines how much of the potential DMX output is merged onto the incoming signal. A value of 0 means that no data from MADRIX 5 is merged onto the incoming signal, and thus only the incoming signal is mapped onto the universe. The default setting is 255. [Merge Mode and Merge Value can be controlled via [Remote Control](#)]
 - XF and WF will have the same result as a fade from the crossfader. At 255, only the MADRIX 5 data is sent to output. See also »[Crossfader](#)
 - All other Merge Modes behave like the Opacity value of a layer, whereas the upper layer is the MADRIX 5 data and the base layer is the incoming signal. See also »[Layers](#)
- **Remote Control** - Allows you to assign a port to the DMX Input Universe for [Remote Control](#)
 - Up to 8 ports can be assigned.
 - You can then assign a DMX remote-control channel to this port in the »[DMX-IN Remote Editor](#)
 - As such, you may assign a single port to a single DMX Input Universe/input device or you may assign the same port to several DMX Input Universes/input devices, thereby controlling several different input merges with a single DMX channel.
 - Each port remembers the settings for Merge Mode and Merge Value.
 - When assigning several DMX Input Universes/input devices to the same port, the settings for Merge Mode and

- Merge Value will be synchronized across all of them.
- The default setting is **None**, which disables the option for remote control.

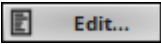
Remote Control

- Use Remote Control, if you want to control the MADRIX 5 Software remotely
- First, select your device in the list.
- **Right Mouse Click** or **Left Mouse Double-Click** on the column **Remote** to set from **Off** to **On** [indicated by green light  **Off** ].
- Select one of the built-in protocols in the section **Remote Control** as explained below or create your own remote configuration.



Open - Loads a previously saved MADRIX 5 DMX Remote Configuration file [of the file type *.mdrx].

None	0 Channels	
None	0 Channels	
Essential	6 Channels	
Standard	36 Channels	
User	0 Channels	User Configuration



Edit...

Start Address :

1

-

+

Protocols - Choose from a pre-configured protocol [configuration].



Learn more [Protocols \[Overview\]](#)

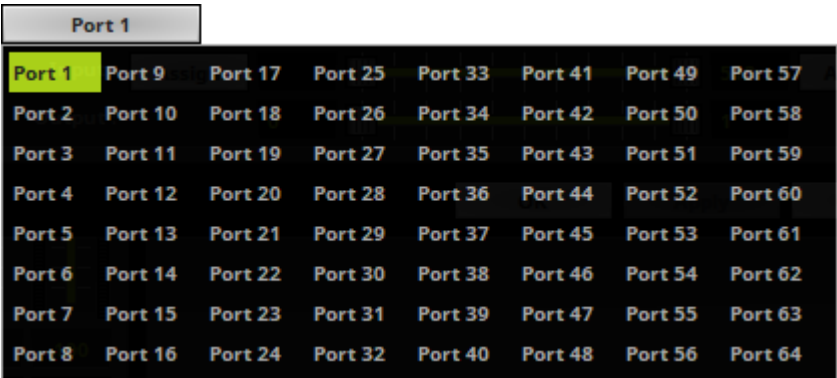
DMX-IN Remote Editor - Allows you to modify a configuration or create a new configuration.

Learn more »[DMX-IN Remote Editor](#)

Start Address - Defines on which particular DMX channel the protocol should start. The whole protocol will be mapped to this new address area.

Trigger

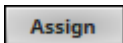
- Use Trigger, if you want to use incoming signals for the MADRIX 5 TRI Effects.
- First, select your device in the list.
- **Right Mouse Click** or **Left Mouse Double-Click** on the column **Trigger** to set from **Off** to **On** [indicated by green light  Off ].



Port - Assigns a trigger port [Port 1 - 64] to this DMX-IN Device. MADRIX 5 allows you to send trigger signals from up to 64 different devices [64 ports] and assign a MADRIX 5 TRI Effect to the corresponding port.

Input Value Range - Defines the DMX channels that are used for the trigger signal. [Incoming DMX values then usually determine the intensity of the effect.]

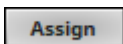
- The minimum and default value is 1.
- The maximum and default value is 512.



Assign Minimum Value -

Automatically assigns the minimum DMX channel when using the controller.

- Click **Assign** and use the control on your controller for the minimum value and the value will be set automatically in the MADRIX 5 Software.



Assign Maximum Value -

Automatically assigns the maximum DMX channel when using the controller.

- Click **Assign** and use the control on your controller for the maximum value and the value will be set automatically in the MADRIX 5 Software.



Output Value Range - Defines how the input is mapped to the MADRIX 5 Effect.

- Usually, the output range is the virtual LED matrix from left [0 %] to right [100%], but could also be the Color List from top [0%] to bottom [100%], for example.
- Changing the output range will allow you to assign the device solely to a certain output range, for example 0 % to 50 % of the virtual LED matrix. [And a second device from 51 % to 100 %, for example.]
- In this way, several input devices thus can be used to trigger one MADRIX 5 TRI Effect [i.e. via several Layers].
- The minimum and default value is 0.0 [i.e. 0 %].

- The maximum and default value is 1.0 [i.e. 100 %].

Learn more » [\[TRI\] Trigger Effects](#)

Protocols [Overview]

There are preprogrammed DMX protocols you can choose from:

- » [DMX-IN \[Essential Protocol\]](#)
- » [DMX-IN \[Standard Protocol\]](#)
- » [DMX-IN \[User\]](#)

Important Notes

- **Please make sure to save your MADRIX 5 Setup file after the configuration process.**

7.1.2 DMX-IN [Essential Protocol]

This topic includes:

- [Introduction](#)
- [Overview](#)
- [Other Protocols](#)

Introduction

The Essential Protocol is a pre-configured DMX protocol [or profile] you can use for Remote Control.

- Essential Protocol uses 6 DMX channels.
- Valid incoming DMX values are 0 - 255.

Overview

DMX Channel	Remote Control Function	DMX Values [Allowed Input]	DMX Values [Mapped]	DMX Values [Currently Used]	Functionality	Comment
01	Output Master	0 - 255	0 - 255	0 - 255	0 - 255	Control the overall intensity.
02	Deck A Storage ID	0 - 255	0 - 255	0 - 255	Storage, Deck A, 1 - 256	Choose Storage 1 to 256 on the left side.
03	Deck A Place ID + Fade	0 - 255	0 - 255	0 - 255	Storage Place, Deck A, 1 - 256	Choose your Storage Place in the selected Storage on the left side. A fade of the crossfader is applied automatically according to the Fade Time.
04	Fade In 1/10 Seconds	0 - 255	0 - 100	0 - 255	Fade Time, 0 - 10s 0 = 0s 50 = 5s 100 = 10s Steps of 1 = 0.1s	Set up the Fade Time of the crossfader in tenths of a second.

05	Fade Type	0 - 255	0 - 255	0 - 14	0 = XF 1 = WF 2 = BF 3 = Wipe X 4 = Wipe Y 5 = Wipe XC 6 = Wipe YC 7 = Slide X 8 = Slide Y 9 = Slide XC 10 = Slide YC 11 = Wipe Z 12 = Wipe ZC 13 = Slide Z 14 = Slide ZC	Set up the Fade Type of the crossfader.
06	Deck A Speed Master	0 - 255	0 - 255	0 - 255		Control the overall speed of Deck A.

Other Protocols

There are other preprogrammed DMX protocols you can choose from:

- »[DMX-IN \[Standard Protocol\]](#)
- »[DMX-IN \[User\]](#)

7.1.3 DMX-IN [Standard Protocol]

This topic includes:

- [Introduction](#)
- [Overview](#)
- [Other Protocols](#)

Introduction

The Standard Protocol is a pre-configured DMX protocol [or profile] you can use for Remote Control.

- Standard Protocol uses 36 DMX channels.
- Valid incoming DMX values are 0 - 255.

Overview

DMX Channel	Remote Control Function	DMX Values [Allowed Input]	DMX Values [Mapped]	DMX Values [Currently Used]	Functionality	Comment
01	Output Master	0 - 255	0 - 255	0 - 255	0 - 255	Control the overall intensity.
02	Deck A Storage ID	0 - 255	0 - 255	0 - 255	Storage, Deck A, 1 - 256	Choose Storage 1 to 256 on the left side.
03	Deck A Place ID + Fade	0 - 255	0 - 255	0 - 255	Storage Place, Deck A, 1 - 256	Choose your Storage Place in the selected Storage on the left side. A fade of the crossfader is applied automatically according to the Fade Time.
04	Fade In 1/10 Seconds	0 - 255	0 - 100	0 - 255	Fade Time, 0 - 10s 0 = 0s 127 = 5s	Set up the Fade Time of the crossfader in

					255 = 10s Steps of 2 or 3 = 0.1s	tenths of a second.
05	Fade Type	0 - 255	0 - 255	0 - 14	0 = XF 1 = WF 2 = BF 3 = Wipe X 4 = Wipe Y 5 = Wipe XC 6 = Wipe YC 7 = Slide X 8 = Slide Y 9 = Slide XC 10 = Slide YC 11 = Wipe Z 12 = Wipe ZC 13 = Slide Z 14 = Slide ZC	Set up the Fade Type of the crossfader.
06	Deck A Speed Master	0 - 255	0 - 255	0 - 255		Control the overall speed of Deck A.
07	Output Filter Color Mode	0 - 255	0 - 255	0 - 2	0 = Allow Through 1 = Filter Out 2 = Colorize	Choose the Color Mode of the Output Filter.
08	Output Filter Color Red	0 - 255	0 - 255	0 - 255		
09	Output Filter Color Green	0 - 255	0 - 255	0 - 255		
10	Output Filter Color Blue	0 - 255	0 - 255	0 - 255		
11	Output Filter Color White	0 - 255	0 - 255	0 - 255		
12	Output Filter	0 - 255	0 - 255	0 - 102	0 = No FX 1 = Blur	Choose the FX Filter of the

					2 = Blur B-Spline 3 = Blur Catmull Rom 4 = Blur Gauss 5 = Blur Mitchell 6 = Sharpen 7 = XYZ (Brightness Graph) 8 = XZY (Brightness Graph) 9 = YXZ (Brightness Graph) 10 = Brighten (Color Correction) 11 = Darken (Color Correction) 12 = Grayscale (Color Correction) 13 = Invert Color (Color Correction) 14 = BGR 15 = BRG 16 = GRB 17 = GBR 18 = RBG 19 = WBGR 20 = WBRG 21 = WGRB 22 = WGBR 23 = WRBG 24 = WRGB 25 = BWGR 26 = BWRG 27 = GWRB 28 = GWBR 29 = RWBG 30 = RWGB 31 = BGWR 32 = BRWG 33 = GRWB 34 = GBWR 35 = RBWG 36 = RGWB 37 = R 38 = G	Output.
--	--	--	--	--	--	---------

					39 = B 40 = W 41 = RG 42 = RB 43 = GB 44 = RW 45 = GW 46 = BW 47 = RGB 48 = RGW 49 = RBW 50 = GBW 51 = 6x (Kaleidoscope) 52 = 8x (Kaleidoscope) 53 = 12x (Kaleidoscope) 54 = Low (Quantization) 55 = Middle (Quantization) 56 = High (Quantization) 57 = Edges 58 = Edges Popup 59 = Emboss 60 = Emboss Popup 61 = Mirror H 62 = Mirror V 63 = Mirror D 64 = Mirror HV 65 = Mirror HD 66 = Mirror VD 67 = Mirror HVD 68 = Swap H 1x 69 = Swap H 2x 70 = Swap H 3x 71 = Swap H 4x 72 = Swap H 5x 73 = Swap V 1x 74 = Swap V 2x 75 = Swap V 3x 76 = Swap V 4x 77 = Swap V 5x 78 = Swap HV 1x 79 = Swap HV 2x	
--	--	--	--	--	--	--

					80 = Swap HV 3x 81 = Swap HV 4x 82 = Swap HV 5x 83 = Swap D 1x 84 = Swap D 2x 85 = Swap D 3x 86 = Swap D 4x 87 = Swap D 5x 88 = Swap HD 1x 89 = Swap HD 2x 90 = Swap HD 3x 91 = Swap HD 4x 92 = Swap HD 5x 93 = Swap VD 1x 94 = Swap VD 2x 95 = Swap VD 3x 96 = Swap VD 4x 97 = Swap VD 5x 98 = Swap HVD 1x 99 = Swap HVD 2x 100 = Swap HVD 3x 101 = Swap HVD 4x 102 = Swap HVD 5x	
13	Output Strobe	0 - 255	0 - 255	0 - 255		Ranging from slow to fast. 0 = Off.
14	Output Strobe Color Mode	0 - 255	0 - 255	0 - 255	0 = Output And Strobe Color 1 = Output And Black 2 = Black And Strobe Color	Choose the Color Mode of the Output Strobe.
15	Output Strobe Color Red	0 - 255	0 - 255	0 - 255		
16	Output Strobe Color Green	0 - 255	0 - 255	0 - 255		
17	Output Strobe Color Blue	0 - 255	0 - 255	0 - 255		

18	Output Strobe Color White	0 - 255	0 - 255	0 - 255		
19	Audio Output Level	0 - 255	0 - 255	0 - 255		
20	Audio Input Level	0 - 255	0 - 255	0 - 255		
21	Group Control Value Group 1	0 - 255	0 - 255	0 - 255		
22	Group Control Value Group 2	0 - 255	0 - 255	0 - 255		
23	Group Control Value Group 3	0 - 255	0 - 255	0 - 255		
24	Group Control Value Group 4	0 - 255	0 - 255	0 - 255		
25	Group Control Value Group 5	0 - 255	0 - 255	0 - 255		
26	Group Control Value Group 6	0 - 255	0 - 255	0 - 255		
27	Group Control Value Group 7	0 - 255	0 - 255	0 - 255		

28	Group Control Value Group 8	0 - 255	0 - 255	0 - 255		
29	Group Control Value Group 9	0 - 255	0 - 255	0 - 255		
30	Group Control Value Group 10	0 - 255	0 - 255	0 - 255		
31	Group Control Value Group 11	0 - 255	0 - 255	0 - 255		
32	Group Control Value Group 12	0 - 255	0 - 255	0 - 255		
33	Group Control Value Group 13	0 - 255	0 - 255	0 - 255		
34	Group Control Value Group 14	0 - 255	0 - 255	0 - 255		
35	Group Control Value Group 15	0 - 255	0 - 255	0 - 255		
36	Group Control Value Group 16	0 - 255	0 - 255	0 - 255		

Other Protocols

There are other preprogrammed DMX protocols you can choose from:

- » [DMX-IN \[Essential Protocol\]](#)
- » [DMX-IN \[User\]](#)

7.1.4 DMX-IN [User]

This topic includes:

- [Introduction](#)
- [Other Protocols](#)

Introduction

The protocol DMX-IN [User] describes individual configurations you can create as a user.

That means you can assign DMX-IN freely and create your own configuration. Set up your own configuration by using the DMX-IN Remote Editor.

Learn more » [DMX-IN Remote Editor](#)

Other Protocols

There are other preprogrammed DMX protocols you can choose from:

- » [DMX-IN \[Essential Protocol\]](#)

- » [DMX-IN \[Standard Protocol\]](#)
- » [DMX-IN \[User\]](#)

7.1.5 DMX-IN Remote Editor

This topic includes:

- [Introduction](#)
- [Initial Configuration](#)
- [Overview](#)
- [Keyboard Shortcuts](#)
- [Configuration](#)
- [Examples](#)

Introduction

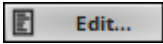
Any DMX input signal can be used to control MADRIX 5 remotely. While you can use preconfigured DMX protocols, you can also set up such a configuration according to your needs with the help of the **DMX-IN Remote Editor**. This topic describes how to use the DMX-IN Remote Editor.

Initial Configuration

- **Make sure to configure your DMX device first.**
[For example, DMX devices can be consoles, DMX desks, fader boards, other DMX interfaces, etc.]
- Set up DMX Input.
- Learn more » [DMX-IN / Art-Net Remote / sACN Input](#)

Overview

- Go to the menu **Preferences > Device Manager... > DMX Input**



- Click **Edit...** to open the **DMX-IN Remote Editor**
- A new window will open.
- If you are creating a new DMX protocol, the list will be empty.
- If you are modifying an existing DMX protocol map, the list will already contain all preconfigured settings.

DMX-IN Remote Editor - *							
New Open Save Save As Assign Test				Configuration Name : Standard			
#	Function	DMX Channel	Invert	MIN	MAX	Description	Execution
1	Output Master	CH01	No	0	255	Output Master	Always
2	Deck A Storage ID	CH02	No	0	255	Storage	Always
3	Deck A Place ID + Fade	CH03	No	0	255	Place +Autofade	Always
4	Fade in 1/10 seconds	CH04	No	0	100	Fade In 1/10 Seconds	Always
5	Fade Type	CH05	No	0	255	Fade Type	Always
6	Deck A Speed Master	CH06	No	0	255	Deck A Speed Master	Always
7	Output Filter Color Mode	CH07	No	0	255	Output Filter Color Mode	Always
8	Output Filter Color Red	CH08	No	0	255	Output Filter Color Red	Always
9	Output Filter Color Green	CH09	No	0	255	Output Filter Color Green	Always
10	Output Filter Color Blue	CH10	No	0	255	Output Filter Color Blue	Always
11	Output Filter Color White	CH11	No	0	255	Output Filter Color White	Always
12	Output Filter	CH12	No	0	255	Output Filter	Always
13	Output Strobe	CH13	No	0	255	Output Strobe	Always
14	Output Strobe Color Mode	CH14	No	0	255	Output Strobe Color Mode	Always
15	Output Strobe Color Red	CH15	No	0	255	Output Strobe Color Red	Always
16	Output Strobe Color Green	CH16	No	0	255	Output Strobe Color Green	Always
17	Output Strobe Color Blue	CH17	No	0	255	Output Strobe Color Blue	Always
18	Output Strobe Color White	CH18	No	0	255	Output Strobe Color White	Always
19	Audio Output Level	CH19	No	0	255	Audio Output Level	Always
20	Audio Input Level	CH20	No	0	255	Audio Input Level	Always
21	Group Control Value Group 1	CH21	No	0	255	Group Control Value Group 1	Always
22	Group Control Value Group 2	CH22	No	0	255	Group Control Value Group 2	Always
23	Group Control Value Group 3	CH23	No	0	255	Group Control Value Group 3	Always
24	Group Control Value Group 4	CH24	No	0	255	Group Control Value Group 4	Always
25	Group Control Value Group 5	CH25	No	0	255	Group Control Value Group 5	Always
26	Group Control Value Group 6	CH26	No	0	255	Group Control Value Group 6	Always
27	Group Control Value Group 7	CH27	No	0	255	Group Control Value Group 7	Always
28	Group Control Value Group 8	CH28	No	0	255	Group Control Value Group 8	Always
29	Group Control Value Group 9	CH29	No	0	255	Group Control Value Group 9	Always
30	Group Control Value Group 10	CH30	No	0	255	Group Control Value Group 10	Always



- Add** - Adds a new item to the list.
- Remove** - Removes the currently selected list items.

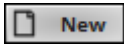


- Duplicate/Copy** - Copies and duplicates the currently selected list item. The new item will be added to the list right after the selected

item. You can change its settings afterwards.

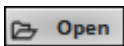


Navigation - Allows you to select the next or previous list item.



New - Creates a new configuration while deleting all previous list items with your permission.

- Allows you to create an empty DMX Remote Configuration [**Empty**] or load a preconfigured DMX protocol [**Essential, Standard**].

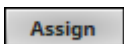


Open - Loads a previously saved DMX Remote Configuration file into the DMX-IN Remote Editor from an external file [of the file type *.mdrx].



Save - Saves the current DMX Remote Configuration to an external file [of the file type *.mdrx].

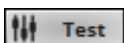
Save As - Save the current DMX Remote Configuration to another external file [of the file type *.mdrx]. Simply enter a name and click Save.



Assign - Allows you to assign a control of your DMX controller to a function in MADRIX 5.

- **1]** Activate **Assign**, select an list item you created and move the control of your DMX controller. You may also select multiple entries in the list.

- **2]** In most cases, MADRIX 5 will automatically recognize the identify the DMX Channel, Control Type, and Interaction for the control. Learn more [Configuration](#)



Test - Allows you to test single list items and their functionality on the MADRIX 5 user interface, while having the DMX-IN Remote Editor still opened.

- Activate Test, then use the control on your DMX controller. You can see if the control works as expected on the MADRIX 5 user interface.
- If Test is activated, MADRIX 5 will receive the signal directly and not the DMX-IN Remote Editor.
- Test is also useful for testing modifiers. Learn more [Modifiers](#)

Configuration Name : **Standard**

Configuration Name - Allows you to type in an individual description for your DMX Remote Configuration.

- Once saved, you will be able to select your DMX Remote Configuration under Preferences > Device Manager... > MIDI > Remote Control and MADRIX 5 will use this label.

Keyboard Shortcuts

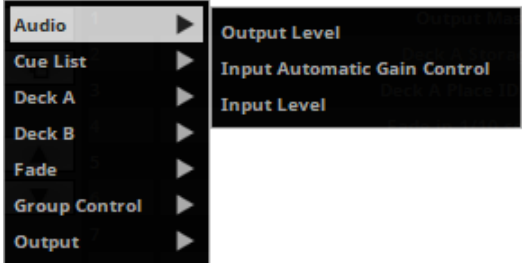
Ctrl + A	Selects all items in the list.
Ctrl + E [hold]	Activates Assign , while holding this shortcut.
Ctrl + N	Creates a new configuration.
Ctrl + O	Opens a configuration.
Ctrl + S	Saves a configuration.
Ctrl + T [hold]	Activates Test , while holding this shortcut.
Del	Removes selected items from the list.
Arrow Up	Navigates upwards in the list.

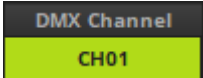
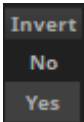
Arrow Down	Navigates downwards in the list.
Double-click on an item	Calls up the context menu for the column.
Double-click on a head row of the list	Sorts the list alphabetically according to the column [ascending or descending].

Configuration

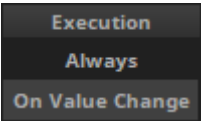
Overview

- Each list item represents 1 DMX remote functionality using 1 DMX control [i.e., button, fader, etc.].
- Configure each list item as required.
- Configure each column of an list item.
- Add or remove list items to add or remove the functionality you require.

Function		<p>1] Create a new item with + Or select a list item and perform a double-click with your mouse on the column Function.</p> <p>2] Select the general topic [e.g., Audio].</p> <p>3] Select the exact function you wish to configure [e.g., Volume].</p>
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DMX Channel		<p>A] Click Assign, select one or more list items and use a control on your DMX controller. In most cases, MADRIX 5 will automatically recognize the DMX Channel, Control Type, and Interaction.</p> <p>B] Or first select one or more list items and perform a double-click with your mouse on the column DMX Channel. Second, enter the correct DMX channel [e.g., CH01 for channel 01].</p> <ul style="list-style-type: none"> - You can also select multiple entries in the list and change their DMX Channel value at the same time.
Invert		<p>1] Select one or more list items and perform a double-click with your mouse on the column Invert.</p> <p>2] The items will change between No and Yes:</p> <ul style="list-style-type: none"> - If Yes is selected, all values of this control will be inverted. That means for example that 0 becomes 255 and 255 becomes 0. - No is the default value. No values will be inverted.

MIN, MAX, Description	<table><tr><th>MIN</th><th>MAX</th><th>Description</th></tr><tr><td>0</td><td>255</td><td>Audio Output Level</td></tr></table>	MIN	MAX	Description	0	255	Audio Output Level	<ul style="list-style-type: none">▪ Select one or more list items and perform a double-click with your mouse on the column MIN, MAX, or Description. Enter the desired value or text.▪ MIN - Defines a minimum value for this functionality. The default value is 0. MAX - Defines requires a maximum value for this functionality.<ul style="list-style-type: none">- For example, the Master Fader has a maximum value of 255, or you may want to set the maximum Fade Time to 10 seconds.▪ Description - Allows you to enter a text to describe the functionality.<ul style="list-style-type: none">- [By default, the name of the function will automatically be entered].
MIN	MAX	Description						
0	255	Audio Output Level						

<p>Execution</p>		<p>1] Select one or more list items and perform a double-click with your mouse on the column Execution.</p> <p>2] The items will change between Always and On Value Change:</p> <ul style="list-style-type: none"> - If Always is selected, the remote command will be permanently and continuously processed by the software. - If On Value Change is selected, the remote command will only be processed when the incoming value on this DMX channel has changed. <p>More Information:</p> <p>Although MIDI and DMX-IN can both be used for similar remote control, both standards function differently.</p> <p>Regarding MIDI:</p> <ul style="list-style-type: none"> - MIDI is an event-based standard, which only sends commands when a button is triggered, for example. If no control is used, no commands are sent. - As such, the software reacts when it receives data and the incoming values are changed. - Another event-based input, such as using the mouse on the GUI, could override the last received command. <p>Regarding DMX:</p> <ul style="list-style-type: none"> - DMX, in contrast, is a status-based standard. That means data is always sent. There is always and continuously incoming data. - As such, the currently received data represents the current status of the GUI [at least regarding any functions that are mapped in the Remote Editor]. - For example, a fader set to 127 and assigned to the Master will always set the Master to 127 in the software. - Another event-based input, such as mouse input, cannot override this current status.
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		<p>Regarding Default Values:</p> <ul style="list-style-type: none"> - You might notice that the default Execution value [Always or On Value Change] might be different for different functions. - Output > Master has the default Execution value Always, for example. - Cue List > Go has the default Execution value On Value Change, for example. - This is a special arrangement to make this status-based communication work with event-based actions in the software. - For example, if Cue List > Go would be set to Always when used with a fader, the Go command would permanently be triggered and it would continuously skip cues in the Cue List even though you would not actively trigger the fader anymore. - It is highly recommended to use the default settings for each function. - Please also see the section 'Special Functions' below.
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Special Functions

Please note: The following items are implemented in specific ways in order to achieve useful functionality.

Specific Functions

- **Deck A/B > Storage Place > Chaser Play / Pause / Stop**
 - Stop will be active for all values until 84 [0 - 84].
 - Pause will be active for all values from 85 to 169 [85 - 169].
 - Play will be active for all values from 170 to 255 [170 - 255].
 - **Execution** is set to **On Value Change** by default.
 - It should be left this way and **not** be set to Always!
 - If a Chaser should only be controlled via remote control, you should disable **AS** [Autostart] within the Chaser.

- **Deck A/B > Storage Place > Chaser Step**
 - **Execution** is set to **On Value Change** by default.
 - It should be left this way and **not** be set to Always!
 - If a Chaser should only be controlled via remote control, you should disable **AS** [Autostart] within the Chaser.
- **Cue List > Play / Pause / Stop**
 - Stop will be active for all values until 84 [0 - 84].
 - Pause will be active for all values from 85 to 169 [85 - 169].
 - Play will be active for all values from 170 to 255 [170 - 255].
- **Global Colors > Global ID**
 - Controls **Global Colors** [not **Global Color Lists**].
 - Allows you to choose up to 64 individual selectors.
 - Each selector can have an individual ID assigned to it.
 - Valid values range from 1 to 255. Value 0 means no selection.
 - That means you can control up to 64 different IDs.

[Selectors 1 - 64 do not necessarily control IDs 1 - 64. Instead you can choose the ID with this function.]
- **Global Colors > Global ID / Red / Green / Blue / White / Alpha**
 - Controls the corresponding color channels for the corresponding selector, which in turn has the Global Color selected via **Global ID**.
 - Valid values for the color channels range from 0 to 255.

Custom Default Values For MAX

The following functions have their default MAX values set according to the number of items their functionality provides. For example, Output Filter Color Mode has 3 modes and a MIN / MAX range of 0 / 2, which is a total of three:

- **Output > Filter Color > Mode**
 - Mode 1 [Allow Through] will be active for all values until 85 [≤ 85].
 - Mode 2 [Filter Out] will be active for all values from 86 to 170 [$86 \leq 170$].
 - Mode 3 [Colorize] will be active for all values from 171 to 255 [$171 \leq 255$].

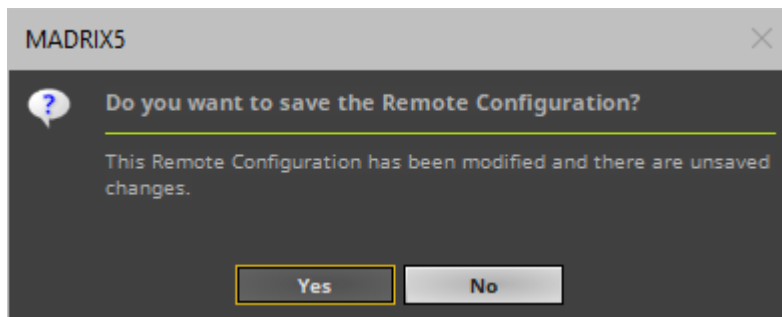
The following functions work similarly:

- **Deck A/B > Filter Color > Mode**
- **Deck A/B > Filter**
- **Deck A/B > Storage Place > Filter**
- **Deck A/B > Storage Place > Layer > Mix Mode > Layer 1 - 8**
- **Deck A/B > Storage Place > Layer > Filter > Layer 1 - 8**

- ***Fade > Type***
- ***Output > Filter Color > Mode***
- ***Output > Filter***
- ***Output > Strobe Color > Mode***

Saving Your Configuration

- Please save your configuration after you have configured all functions!
- If you are closing the DMX-IN Remote Editor and have not yet saved, the MADRIX 5 Software will remind you to save the file.
- If you do not save, your configuration will be discarded and is lost.



- The MADRIX 5 Setup file does not include the external DMX Remote Configuration file, but will store the directory and a reference link in order to reload it when the Setup is loaded again.

Examples

Example 1

- You wish to use single buttons of your DMX controller for each Storage Place.
- Use + to create a new function.
- Select ***Deck A > Place ID +Fade***
- Use ***Assign*** to match your button to this function. Disable ***Assign*** again when done.

- Set **MAX** to **0** in order to trigger Storage Deck A S1 P1 [Storage 1 Place 1].
- Repeat the steps and set up **MAX** for each Storage Place you wish to control.
 - **MAX** will always have a value that is -1 compared to the actual Storage Place index number [e.g., set MAX to 6 in order to control S1 P7].
- Use **Deck B > Place ID+Fade** and repeat the steps accordingly to control the Storage Places on the right side.

Example 2

- You wish to use single buttons of your DMX controller for each Cue List entry.
- Use + to create a new function.
- Select **Cue List > Goto**
- Use **Assign** to match your button to this function. Disable **Assign** again when done.
- Set **MAX** to **0** in order to trigger Cue 1.
- Repeat the steps and set up **MAX** for each Cue you wish to control.
 - **MAX** will always have a value that is -1 compared to the actual Cue List index number [e.g., set MAX to 6 in order to control Cue 7].

7.2 MIDI [IN / OUT]

This topic includes:

- [Introduction](#)
- [Topics Of This Chapter](#)

Introduction

This section is all about about MIDI.

Topics Of This Chapter

Please refer to the corresponding chapters below:

- » [MIDI Configuration](#)
- » [Akai Professional APC40 MKII](#)
- » [Akai Professional APCmini](#)
- » [KORG nanoKONTROL2](#)
- » [Novation Launchpad Mini](#)
- » [MIDI Remote Editor](#)

7.2.1 MIDI Configuration

This topic includes:

- [Introduction](#)
- [Interruption-Free Operation](#)
- [Step-By-Step Configuration](#)
- [MIDI Audio](#)
- [MIDI Remote Control](#)
- [MIDI Time Code](#)
- [MIDI Trigger](#)
- [MIDI Script](#)
- [MIDI Watcher](#)
- [Important Notes](#)

Introduction



MIDI [short for Musical Instrument Digital Interface] is a widely-known communication standard and digital interface.

In MADRIX 5, the main areas of application for MIDI are:

- Using MIDI devices for audio input via MIDI
- Using MIDI controllers for Remote Control
- Using MIDI Time Code
- Using MIDI controllers for MADRIX 5 TRI Effects

MIDI devices are often simply connected directly via USB or via a MIDI-to-USB interface to the computer.

Interruption-Free Operation

To ensure interruption-free operation of the software and devices, please make sure to check the power-saving settings of Windows.

Learn more » [PC Power Management](#)

Step-By-Step Configuration

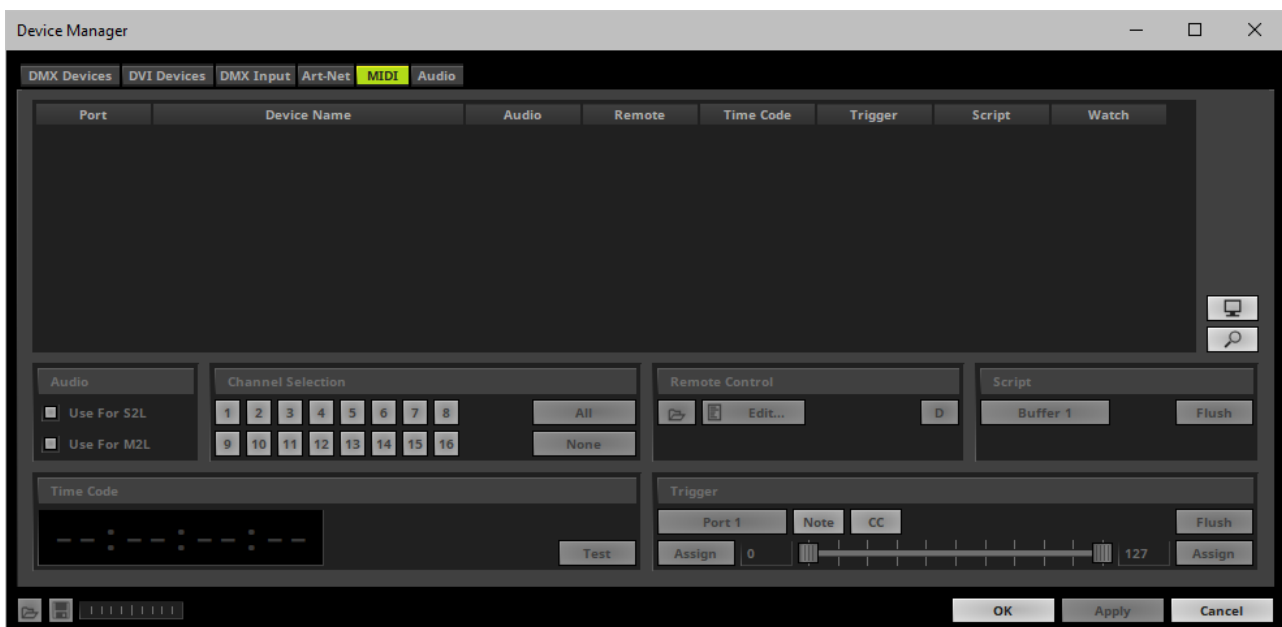
- 1] Connect your MIDI device.
- 2] Search for devices.
- 3] Choose how to use devices and incoming signals.


1] Connect Your MIDI Device

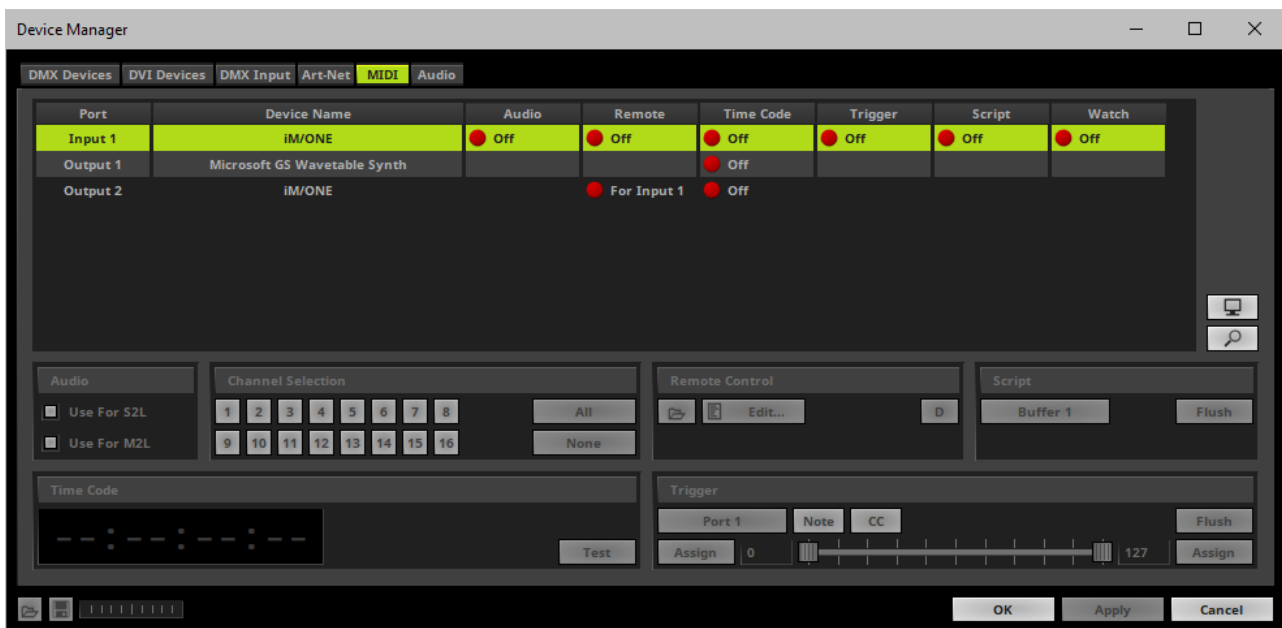
- Connect your MIDI device to the computer.
- Make sure that Windows recognizes the device and install drivers if necessary.

2] Search For Devices

- Go to the menu **Preferences > Remote Control > MIDI...**
or to **Preferences > Device Manager... > MIDI**
[Keyboard shortcut: **F4 > MIDI**]
- A new window will open.



- Click 
 - MADRIX 5 will search for connected devices.
 - Your MIDI devices will be shown in the list.



3] Choose How To Use MIDI

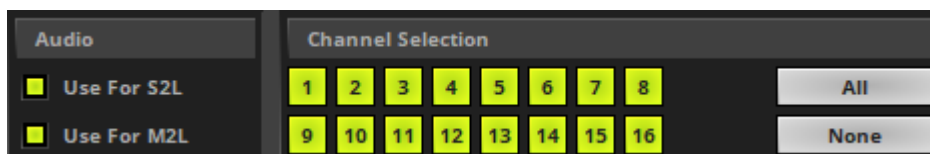
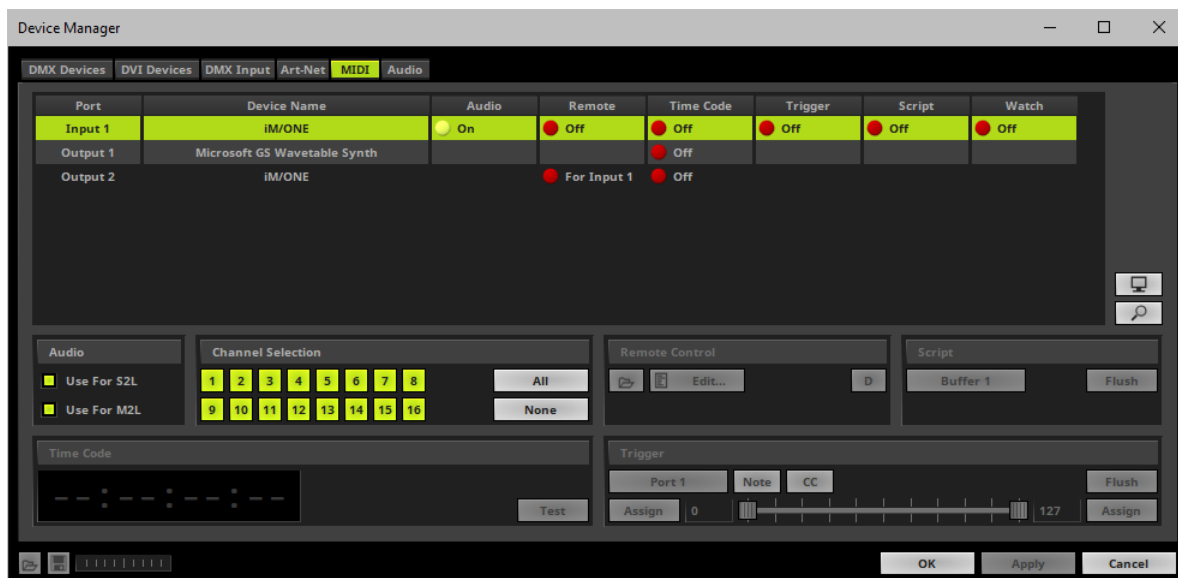
Now, several options are available to you:

- **Audio** - Activates your MIDI device to be used as audio source [a MIDI keyboard, for example].
Learn more [MIDI Audio](#)
- **Remote** - You can use your MIDI controller to control MADRIX 5 remotely.
Learn more [MIDI Remote Control](#)
- **Time Code** - You can use MADRIX 5 to receive external MIDI Time Code, or to send it.
Learn more [MIDI Time Code](#)
- **Trigger** - You can use your MIDI controller to trigger MADRIX 5 TRI Effects.
Learn more [MIDI Trigger](#)
- **Script** - You can use the input of your MIDI device for MADRIX scripting.
Learn more [MIDI Script](#)
- **Watch** - Launches the MIDI Watcher to monitor incoming signals or troubleshoot.
Learn more [MIDI Watcher](#)
- You can use several MIDI devices at the same time.

- You can use several options at the same time.

MIDI Audio

- Go to the menu **Preferences > Remote Control > MIDI...**
or to **Preferences > Device Manager... > MIDI**
[Keyboard shortcut: **F4 > MIDI**]
- If not already open, a new window will open.
- Select your device in the list.
 - Make sure it is an **Input** device.
 - Search for your connected device if it is not already in the list.
- **Left Mouse Double-Click / Right Mouse Click** - In the column **Audio**, set your device from **Off** to **On**
- The **Audio** section becomes active and available.



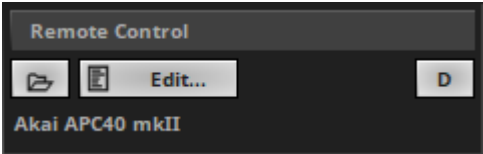
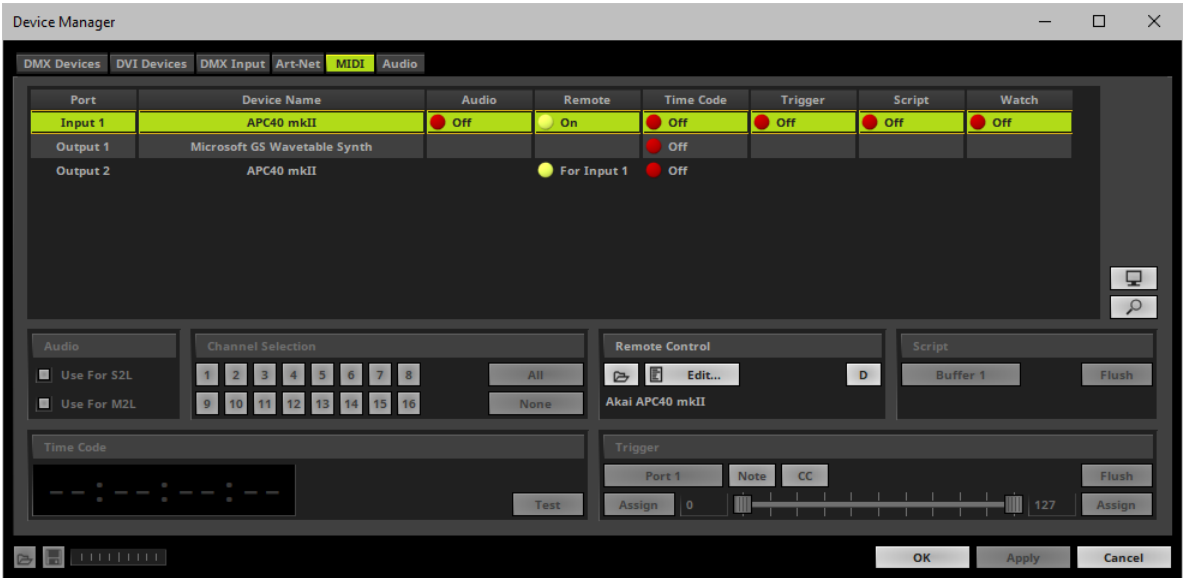
- **Use For S2L** - Activates the audio analysis of incoming MIDI signals for Sound2Light effects. This option is activated by default.
- **Use For M2L** - Activates the audio analysis of incoming MIDI signals for Music2Light effects. This option is activated by default.
- **Channel Selection** - Defines which MIDI channel will be scanned and used by MADRIX 5.
 - In general, MIDI offers 16 channels. You can configure each MIDI device to send on a particular channel. Make sure that this channel is also selected in this section here.
 - If you wish to filter a channel, deselect the according number [the button will change from green to gray]. As a result, the channel will not be used for MIDI-IN Configuration in combination with MADRIX 5.
 - By default, all 16 channels are activated and will be used by MADRIX 5.
 - **All** - Activates all 16 channels.
 - **None** - Deactivates all 16 channels.

MIDI Remote Control

Configuration

- Go to the menu **Preferences > Remote Control > MIDI...**
or to **Preferences > Device Manager... > MIDI**
[Keyboard shortcut: **F4 > MIDI**]
- If not already open, a new window will open.
- Select your device in the list.
 - Make sure it is an **Input** device.
 - Search for your connected device if it is not already in the list.
- **Left Mouse Double-Click / Right Mouse Click** - In the column **Remote**, set your device from **Off** to **On**

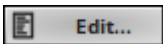
- The **Remote Control** section becomes active and available.



Akai APC40 mkII Controllers who are officially supported and have a pre-built MIDI map, will be automatically recognized and their name shown here.



Open - Loads a previously saved MADRIX 5 MIDI Remote Configuration file [of the file type *.mmrx].



MIDI Remote Editor - Allows you to modify a configuration or create a new MIDI map.
Learn more »[MIDI-IN Configuration Remote Editor](#)



Restore Default Settings - Restores the default MIDI map for the controller.

MIDI Commands

MADRIX 5 can receive the following MIDI command types:

- Control Change

- Note
- Pitch Bend
- Program Change

MIDI Maps [Overview]

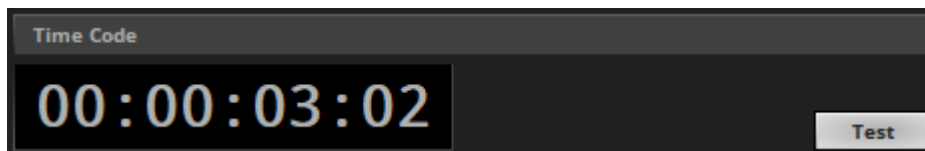
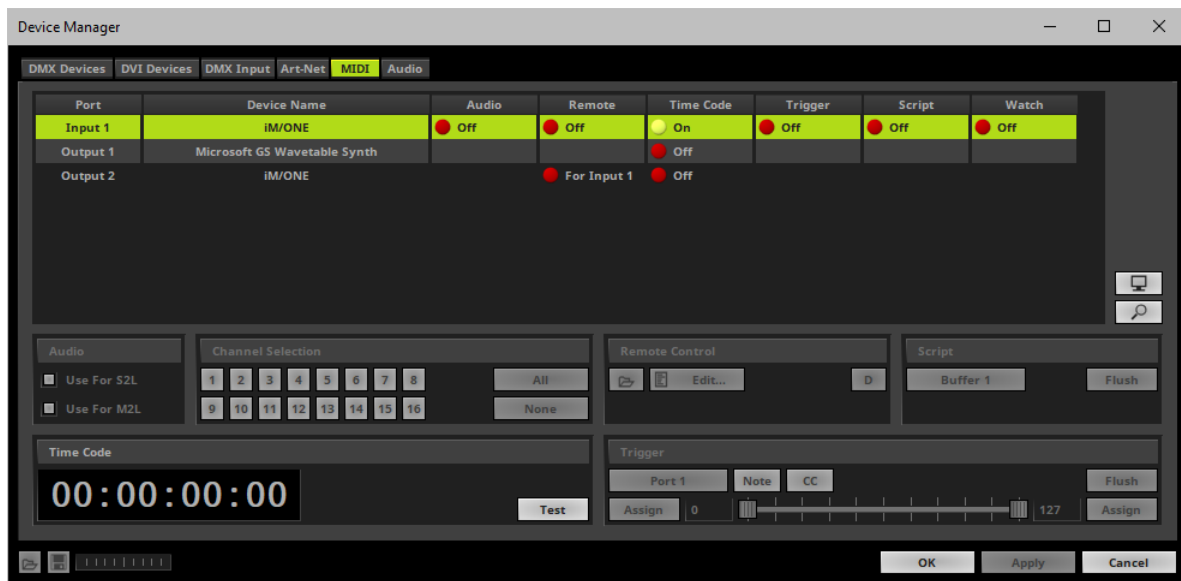
MADRIX 5 includes a number of preprogrammed MIDI maps. Learn more in the following chapters.

MIDI Time Code

Input / Receiving

- Go to the menu **Preferences > Remote Control > MIDI...**
or to **Preferences > Device Manager... > MIDI**
[Keyboard shortcut: **F4 > MIDI**]
- If not already open, a new window will open.
- Select your device in the list.
 - Make sure it is an **Input** device.
 - Search for your connected device if it is not already in the list.
- **Left Mouse Double-Click / Right Mouse Click** - In the column **Time Code**, set your device from **Off** to **On**

- The **Time Code** section becomes active and available.



- Time code that is received is shown in HH:MM:SS:FF.
- **Test** - Allows you to send a sample time code for testing with 25 FPS starting at 00:00:00:00. [Time code will still be generated if the Device Manager is being closed and the feature has not yet been deactivated.]
- If quarter-frame messages are received, 2 frames will be added to the signal when forwarded to the MADRIX 5 Software as is the recommendation of the MIDI specification.

- Now, you can receive MIDI Time Code via a Cue List.

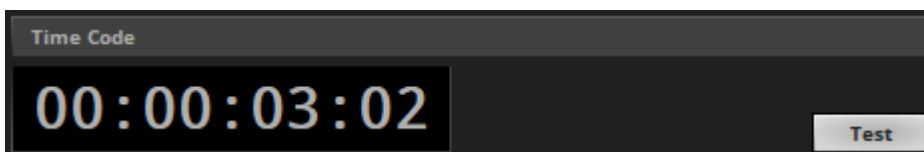
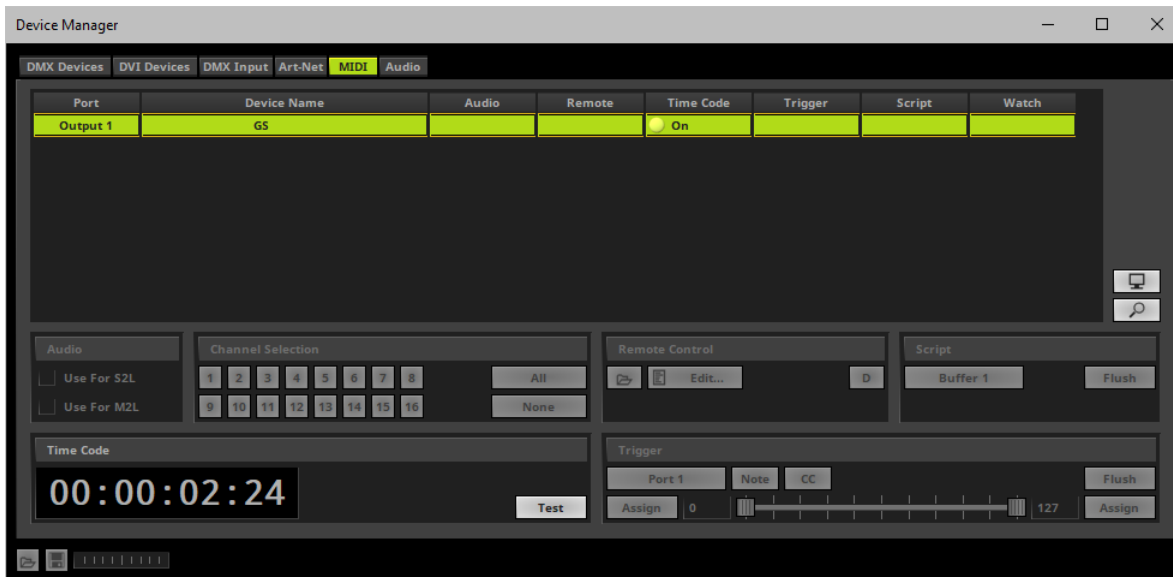
Learn more »[Cue List Editor](#)

Output / Sending

- Go to the menu **Preferences > Remote Control > MIDI...**
or to **Preferences > Device Manager... > MIDI**
[Keyboard shortcut: **F4 > MIDI**]
- If not already open, a new window will open.
- Select your device in the list.
 - Make sure it is an **Output** device.

- Search for your connected device if it is not already in the list.

- **Left Mouse Double-Click / Right Mouse Click** - In the column **Time Code**, set your device from **Off** to **On**
- The **Time Code** section becomes active and available.



- Time code that is sent is shown in HH:MM:SS:FF.
- **Test** - Allows you to send a sample time code for testing with 25 FPS starting at 00:00:00:00. [Time code will still be generated if the Device Manager is being closed and the feature has not yet been deactivated.]

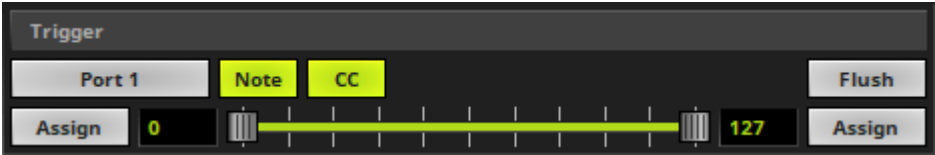
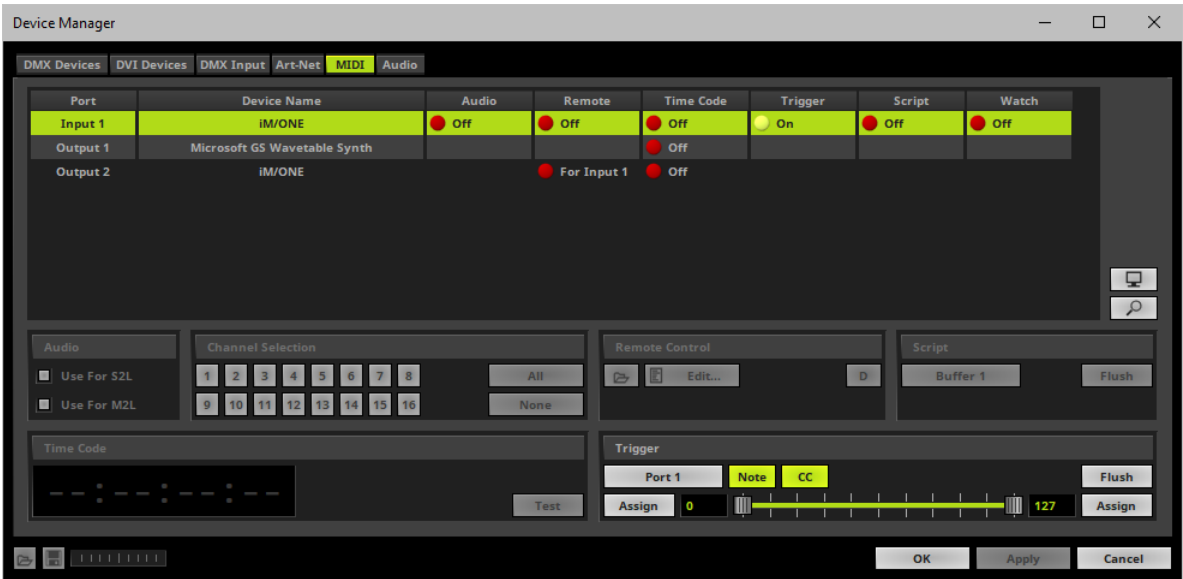
- Now, you can send MIDI Time Code via the Timeline Editor.

Learn more » [Timeline Editor](#)

MIDI Trigger

- Go to the menu **Preferences > Remote Control > MIDI...**
or to **Preferences > Device Manager... > MIDI**
[Keyboard shortcut: **F4 > MIDI**]

- If not already open, a new window will open.
- Select your device in the list.
 - Make sure it is an **Input** device.
 - Search for your connected device if it is not already in the list.
- **Left Mouse Double-Click / Right Mouse Click** - In the column **Trigger**, set your device from **Off** to **On**
- The **Time Code** section becomes active and available.



Port 1							
Port 1	Port 9	Port 17	Port 25	Port 33	Port 41	Port 49	Port 57
Port 2	Port 10	Port 18	Port 26	Port 34	Port 42	Port 50	Port 58
Port 3	Port 11	Port 19	Port 27	Port 35	Port 43	Port 51	Port 59
Port 4	Port 12	Port 20	Port 28	Port 36	Port 44	Port 52	Port 60
Port 5	Port 13	Port 21	Port 29	Port 37	Port 45	Port 53	Port 61
Port 6	Port 14	Port 22	Port 30	Port 38	Port 46	Port 54	Port 62
Port 7	Port 15	Port 23	Port 31	Port 39	Port 47	Port 55	Port 63
Port 8	Port 16	Port 24	Port 32	Port 40	Port 48	Port 56	Port 64

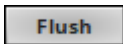
Port - Assigns a trigger port [Port 1 - 64] to this MIDI Device. MADRIX 5 allows you to send trigger signals from up to 64 different devices [64 ports] and assign a MADRIX 5 TRI Effect to the corresponding port.

Note

Note - Enables that MADRIX 5 can receive Note messages for trigger input.



CC - Enables that MADRIX 5 can receive Control Change messages for trigger input.

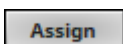


Flush - Clears any pending trigger events that may not have been processed yet, but should also not be processed anymore.



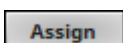
Input Value Range - Defines the incoming MIDI values that are used for the trigger signal.

- The minimum and default value is 1.
- The maximum and default value is 127.



Assign Minimum Value - Automatically assigns the minimum value when using the controller.

- Click **Assign** and use the control on your controller for the minimum value and the value will be set automatically in the MADRIX 5 Software.



Assign Maximum Value - Automatically assigns the maximum value when using the controller.

- Click **Assign** and use the control on your controller for the maximum value and the value will be set automatically in the MADRIX 5 Software.



Output Value Range - Defines how the input is mapped to the MADRIX 5 Effect.

- Usually, the output range is the virtual

LED matrix from left [0 %] to right [100%], but could also be the Color List from top [0%] to bottom [100%], for example.

- Changing the output range will allow you to assign the device solely to a certain output range, for example 0 % to 50 % of the virtual LED matrix. [And a second device from 51 % to 100 %, for example.]

- In this way, you can use several devices and assign them to a single Port. Several input devices thus can be used to trigger one MADRIX 5 TRI Effect [ie. Layer].

- The minimum and default value is 0.0 [i.e. 0 %].

- The maximum and default value is 1.0 [i.e. 100 %].

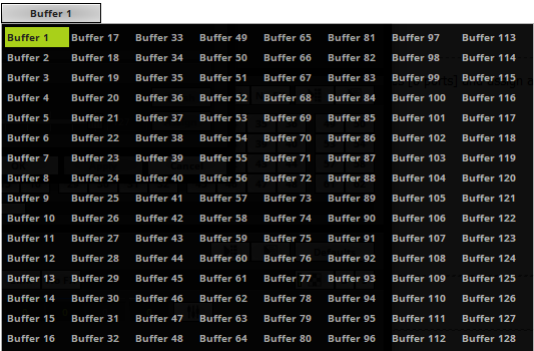
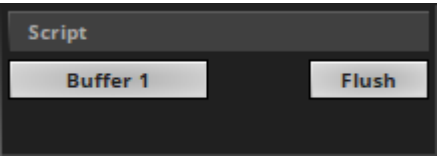
Learn more » [\[TRI\] Trigger Effects](#)

MIDI Script

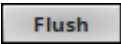
- Go to the menu **Preferences > Remote Control > MIDI...**
or to **Preferences > Device Manager... > MIDI**
[Keyboard shortcut: **F4 > MIDI**]
- If not already open, a new window will open.
- Select your device in the list.
 - Make sure it is an **Input** device.

- Search for your connected device if it is not already in the list.

- **Left Mouse Double-Click / Right Mouse Click** - In the column **Script**, set your device from **Off** to **On**
- The **Script** section becomes active and available.



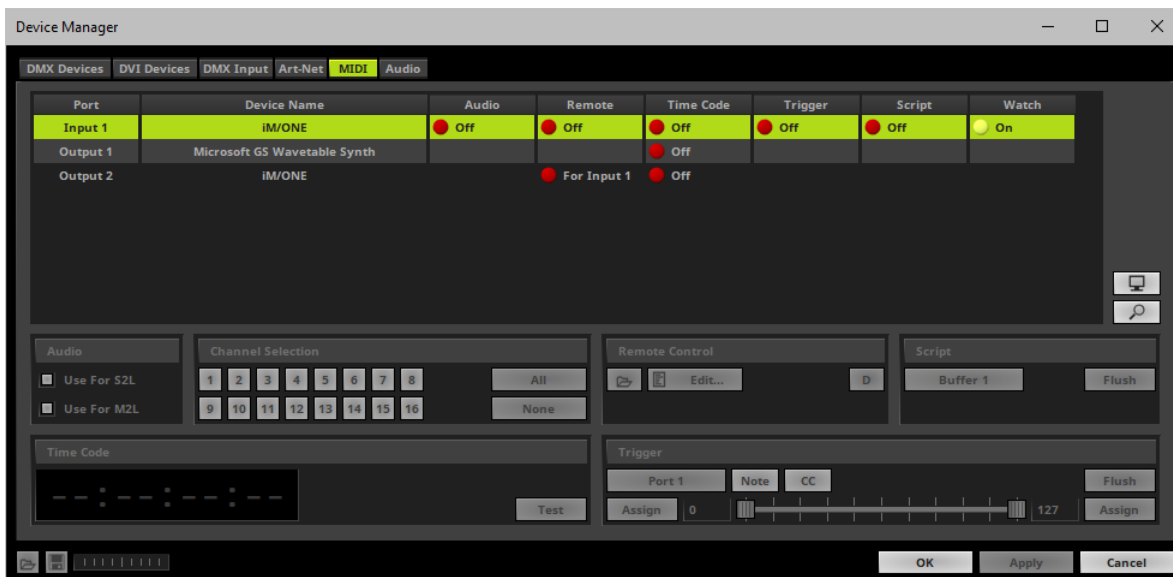
Buffer - Defines the script buffer [Buffer 1 - 128] that is assigned to this MIDI device. [In this way, you can use many different input devices to achieve different outcomes with scripts.]




Flush - Clears the MIDI input buffer.

MIDI Watcher

- Go to the menu **Preferences > Remote Control > MIDI...**
or to **Preferences > Device Manager... > MIDI**
[Keyboard shortcut: **F4 > MIDI**]
- If not already open, a new window will open.
- Select your device in the list.
 - Make sure it is an **Input** device.
 - Search for your connected device if it is not already in the list.
- **Left Mouse Double-Click / Right Mouse Click** - In the column **Watch**, set your device from **Off** to **On**



- It is now possible to monitor incoming MIDI signals.
- Click 
- A new window will open.
- You can now check incoming signals in the **MIDI Watcher**
Learn more » [Tools](#)

Important Notes

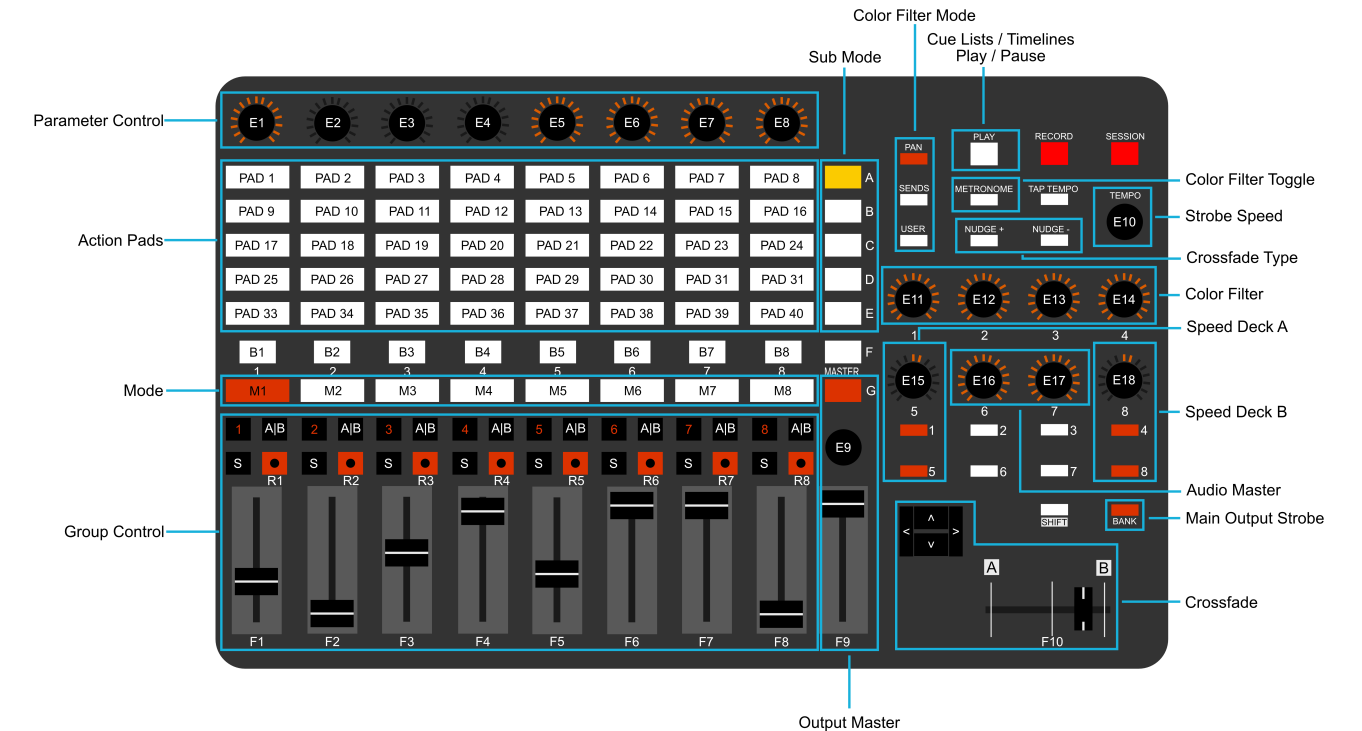
- Before using a MIDI device, make sure that your MIDI device is connected to your computer and that all necessary drivers are installed.
- Please also make sure to save your MADRIX 5 Setup after following configuration process.

7.2.2 Akai Professional APC40 mkII [MIDI Map]

This topic includes:

- [General Overview](#)
- [Detailed Description](#)
- [Storage Places Deck A](#)
- [Storages Deck A](#)
- [Storage Places Deck B](#)
- [Storages Deck B](#)
- [Group Control - Values](#)
- [Group Control - Presets](#)
- [Cue Lists - Cue Selection](#)
- [Cue Lists - Cue List Selection](#)
- [Timelines - Cue Segment Selection](#)
- [Timelines - Timeline Selection](#)




General Overview



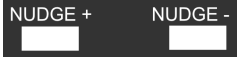





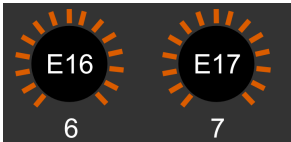

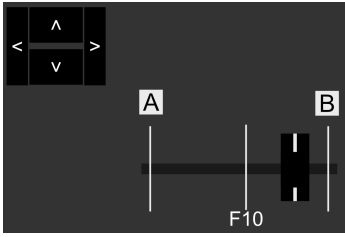
Mode	Active	Function
	M1	Deck A
	M2	Deck B
	M3	Group Control
	M4	Cue Lists
Sub-Mode	M5	Timelines
	A	Mode Deck A: Place 1 - 40 Mode Deck B: Place 1 - 40 Mode Group Control: Group Values 9-16 Mode Cue Lists: Cue 1 - 40 Mode Timelines: Cue Segment: 1 - 40
Sub-Mode	B	Mode Deck A: Place 41 - 80 Mode Deck B: Place 41 - 80 Mode Group Control: Group Value 17 - 24 Mode Cue Lists: Cue 41 - 80 Mode Timelines: Cue Segment 41 - 80

	C	Mode Deck A: Place 81 - 120 Mode Deck B: Place 81 - 120 Mode Group Control: Group Value 25 -32 Mode Cue Lists: Cue 81 - 120 Mode Timelines: Cue Segment 81 - 120
	D	Mode Deck A: Place 121 - 160 Mode Deck B: Place 121 - 160 Mode Group Control: Group Value 32 - 40 Mode Cue Lists: Cue 121 - 160 Mode Timelines: Cue Segment 121 - 160
	E	Mode Deck A: Storage 1 - 40 Mode Deck B: Storage 1 - 40 Mode Group Control: Group Preset 1 - 40 Mode Cue Lists: List 1 - 40 Mode Timelines: Timeline 1 - 40
Parameter Control	E1	Mode Deck A: Value Submaster Deck A Mode Deck B: Value Submaster Deck B Mode Group Control, Sub-Mode A: Value Fixture Group 9 Mode Group Control, Sub-Mode B: Value Fixture Group 17 Mode Group Control, Sub-Mode C: Value Fixture Group 25 Mode Group Control, Sub-Mode D: Value Fixture Group 33
	E2	Mode Group Control, Sub-Mode A: Value Fixture Group 10 Mode Group Control, Sub-Mode B: Value Fixture Group 18 Mode Group Control, Sub-Mode C: Value Fixture Group 26 Mode Group Control, Sub-Mode D: Value Fixture Group 34
	E3	Mode Group Control, Sub-Mode A: Value Fixture Group 11 Mode Group Control, Sub-Mode B: Value Fixture Group 19 Mode Group Control, Sub-Mode C: Value Fixture Group 27 Mode Group Control, Sub-Mode D: Value Fixture Group 35
	E4	Mode Group Control, Sub-Mode A: Value Fixture Group 12 Mode Group Control, Sub-Mode B: Value Fixture Group 20 Mode Group Control, Sub-Mode C: Value Fixture Group 28 Mode Group Control, Sub-Mode D: Value Fixture Group 36

	E5	Mode Deck A: Value Color Filter Red Deck A Mode Deck B: Value Color Filter Red Deck B Mode Group Control, Sub-Mode A: Value Fixture Group 13 Mode Group Control, Sub-Mode B: Value Fixture Group 21 Mode Group Control, Sub-Mode C: Value Fixture Group 29 Mode Group Control, Sub-Mode D: Value Fixture Group 37
	E6	Mode Deck A: Value Color Filter Green Deck A Mode Deck B: Value Color Filter Green Deck B Mode Group Control, Sub-Mode A: Value Fixture Group 14 Mode Group Control, Sub-Mode B: Value Fixture Group 22 Mode Group Control, Sub-Mode C: Value Fixture Group 30 Mode Group Control, Sub-Mode D: Value Fixture Group 38
	E7	Mode Deck A: Value Color Filter Blue Deck A Mode Deck B: Value Color Filter Blue Deck B Mode Group Control, Sub-Mode A: Value Fixture Group 15 Mode Group Control, Sub-Mode B: Value Fixture Group 23 Mode Group Control, Sub-Mode C: Value Fixture Group 31 Mode Group Control, Sub-Mode D: Value Fixture Group 39
	E8	Mode Deck A: Value Color Filter White Deck A [Available if Patch Color Depth = 4] Mode Deck B: Value Color Filter White Deck B [Available if Patch Color Depth = 4] Mode Group Control, Sub-Mode A: Value Fixture Group 16 Mode Group Control, Sub-Mode B: Value Fixture Group 24 Mode Group Control, Sub-Mode C: Value Fixture Group 32 Mode Group Control, Sub-Mode D: Value Fixture Group 40
Group Control	F1	Value Fixture Group 1
	R1	Fixture Group 1 Flash to 255
	F2	Value Fixture Group 2
	R2	Fixture Group 2 Flash to 255
	F3	Value Fixture Group 3
	R3	Fixture Group 3 Flash to 255

	F4	Value Fixture Group 4
	R4	Fixture Group 4 Flash to 255
	F5	Value Fixture Group 5
	R5	Fixture Group 5 Flash to 255
	F6	Value Fixture Group 6
	R6	Fixture Group 6 Flash to 255
	F7	Value Fixture Group 7
	R7	Fixture Group 7 Flash to 255
	F8	Value Fixture Group 8
	R8	Fixture Group 8 Flash to 255
Output Master 	G	Main Output Freeze
	E9	Fade Time In 1/100 s
	F9	Value Output Master
Color Filter Toggle 	METRONOME	Mode LED Off: Main Output Mode LED On: Main Output Strobe
Color Filter Mode 	PAN	Mode Main Output: Allow Through Mode Main Output Strobe: Output And Strobe Color
	SENDS	Mode Main Output: Filter Out Mode Main Output Strobe: Output And Black
	USER	Mode Main Output: Colorize Mode Main Output Strobe: Black And Strobe Color

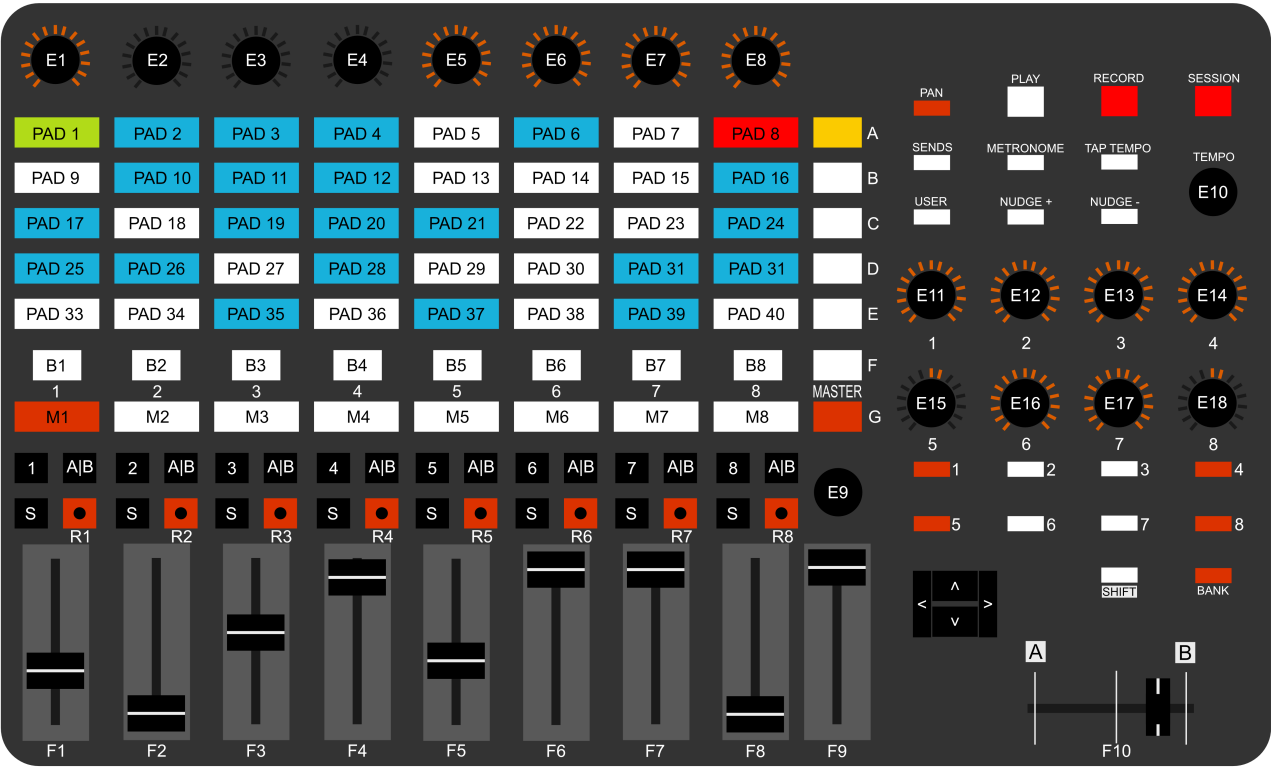
Color Filter 	E11	Mode Main Output: Value Color Filter Red Mode Main Output Strobe: Value Strobe Color Red
	E12	Mode Main Output: Value Color Filter Green Mode Main Output Strobe: Value Strobe Color Green
	E13	Mode Main Output: Value Color Filter Blue Mode Main Output Strobe: Value Strobe Color Blue
	E14	Mode Main Output : Value Color Filter White [Available if Patch Color Depth = 4] Mode Main Output Strobe: Value Strobe Color White [Available if Patch Color Depth = 4]
Play/Pause 	PLAY	Mode Cue Lists: Play/Pause Toggle Of Selected Cue List Mode Timelines: Play/Pause Of Selected Timeline
Crossfade Type 	NUDGE +	Crossfade Type Down
	NUDGE -	Crossfade Type Up
Strobe Speed 	E10	Value Strobe Speed
Speed Deck A 	E15	Value Speed Deck A
	1	Speed Deck A = 1.0
	5	Speed Deck A Pause
Speed Deck B 	E18	Value Speed Deck B
	4	Speed Deck B = 1.0
	8	Speed Deck B Pause
Audio Master	E16	Value Audio Output Master

	E17	Value Audio Input Master
Main Output Strobe 	BANK	Flash Main Output Strobe
Crossfade 	F10	Value Crossfader
	<	Fade To Left
	>	Fade To Right
	^	Fade To Middle
	v	Automatic Fade
Action Pads	Activates desired Place, Storage, Group Preset, Cue, sets the stored value for Groups or Main Output Parameters according to the following descriptions:	

Detailed Description





Storage Places Deck A

(Mode: 1)



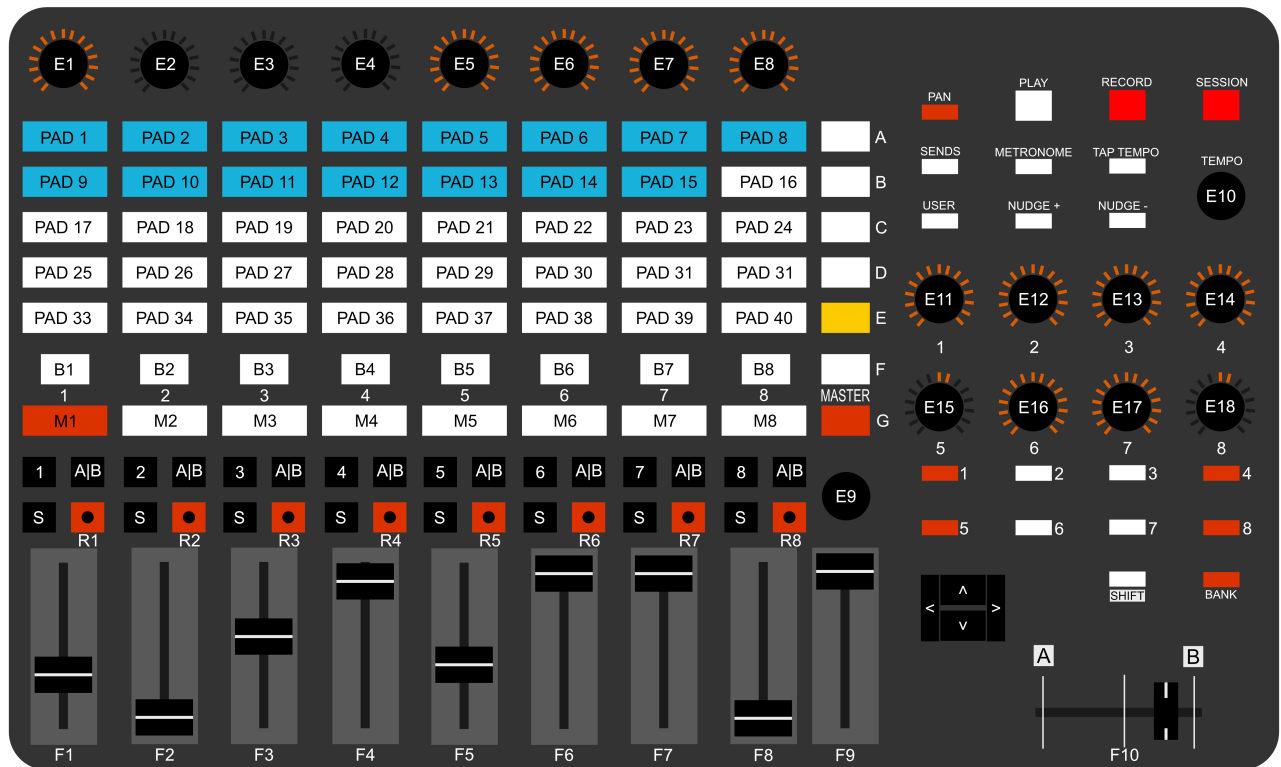
	Sub-Mode A	Sub-Mode B	Sub-Mode C	Sub-Mode D
Button	Function	Function	Function	Function
PAD 1 - PAD 40	Activate Storage Place 1 - 40 At Deck A	Activate Storage Place 41 - 80 At Deck A	Activate Storage Place 81 - 120 At Deck A	Activate Storage Place 121 - 160 At Deck A
E	Storage Control Deck A			
E1	Value Submaster Deck A			
E5	Value Color Filter Red Deck A			
E6	Value Color Filter Green Deck A			

E7	Value Color Filter Blue Deck A
E8	Color Filter White Deck A [Available if Patch Color Depth = 4]

PAD Color	Meaning
	Storage Place is activated.
	Content is saved at the Storage Place but it is not activated.
	No content is saved at the Storage Place and it is not activated.
	Storage Place is blocked.




Storages Deck A

(Mode: 1, Sub-Mode: E)



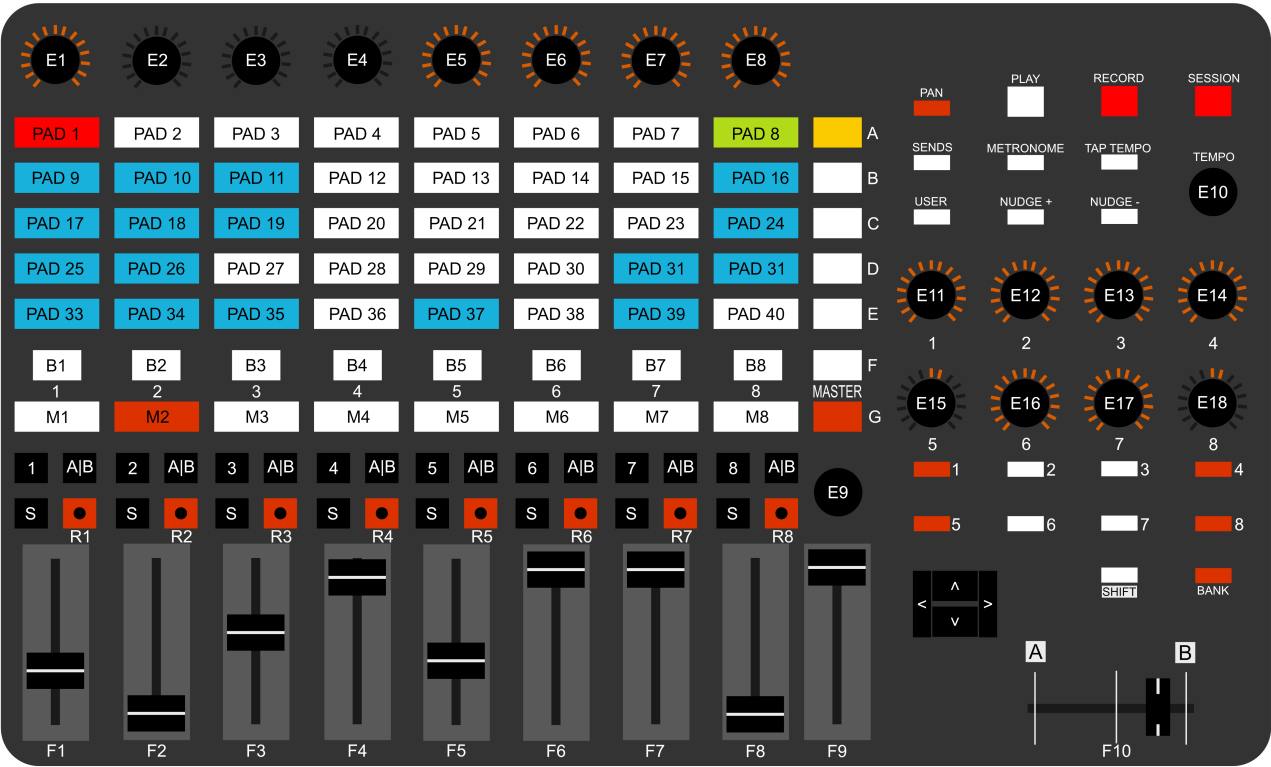
Button	Function
PAD 1 - PAD 40	Activate Storage At Deck A according to the PAD number.
A	Storage Place 1 - 40 At Deck A
B	Storage Place 41 - 80 At Deck A
C	Storage Place 81 - 120 At Deck A
D	Storage Place 121 - 160 At Deck A
E1	Value Submaster Deck A
E5	Value Color Filter Red Deck A
E6	Value Color Filter Green Deck A

E7	Value Color Filter Blue Deck A
E8	Color Filter White Deck A [Available if Patch Color Depth = 4]

PAD Color	Meaning
	Storage is activated.
	Storage Places with content are available at the Storage but it is not activated.
	No content is available at the Storage and it is not activated.





Storage Places Deck B

(Mode: 2)



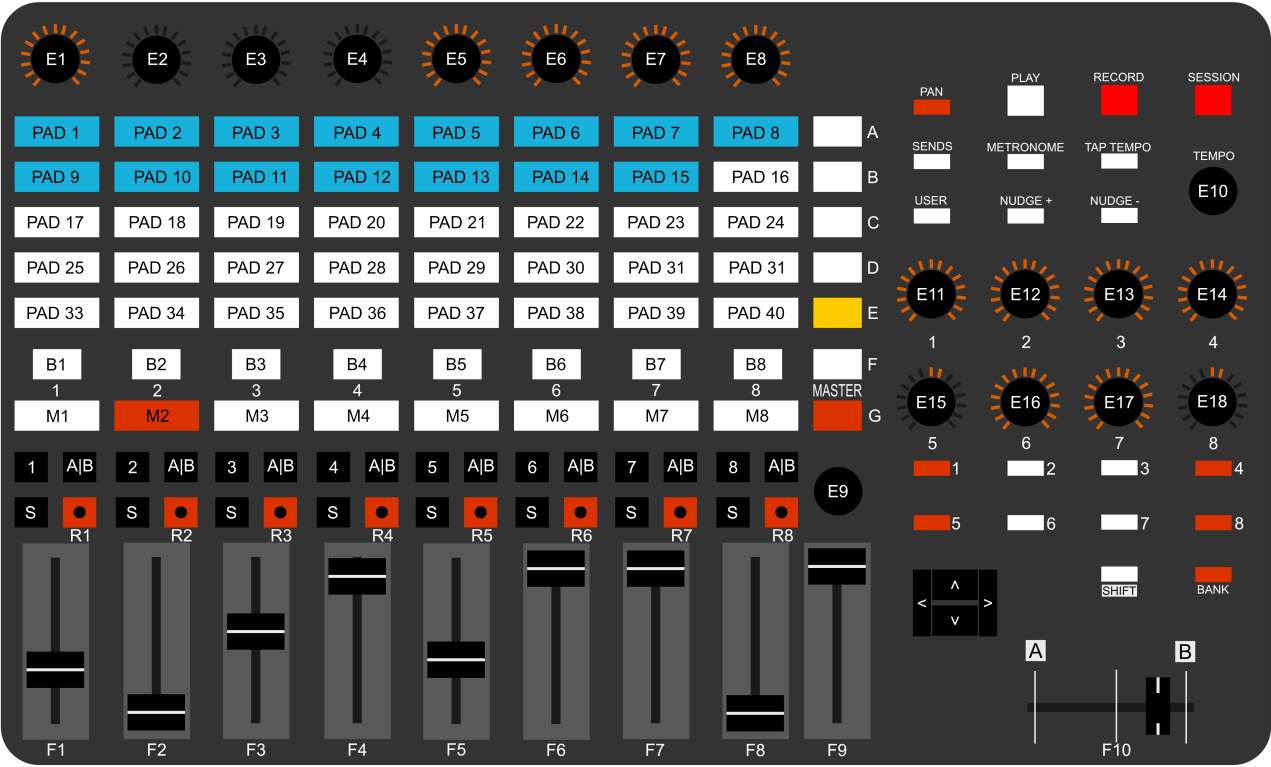
	Sub-Mode A	Sub-Mode B	Sub-Mode C	Sub-Mode D
Button	Function	Function	Function	Function
PAD 1 - PAD 40	Activate Storage Place 1 - 40 At Deck B	Activate Storage Place 41 - 80 At Deck B	Activate Storage Place 81 - 120 At Deck B	Activate Storage Place 121 - 160 At Deck B
E	Storage Control Deck B			
E1	Value Submaster Deck B			
E5	Value Color Filter Red Deck B			
E6	Value Color Filter Green Deck B			

E7	Value Color Filter Blue Deck B
E8	Color Filter White Deck B [Available if Patch Color Depth = 4]

PAD Color	Meaning
	Storage Place is activated.
	Content is saved at the Storage Place but it is not activated.
	No content is saved at the Storage Place and it is not activated.
	Storage Place is blocked.




Storages Deck B

(Mode: 2, Sub-Mode: E)



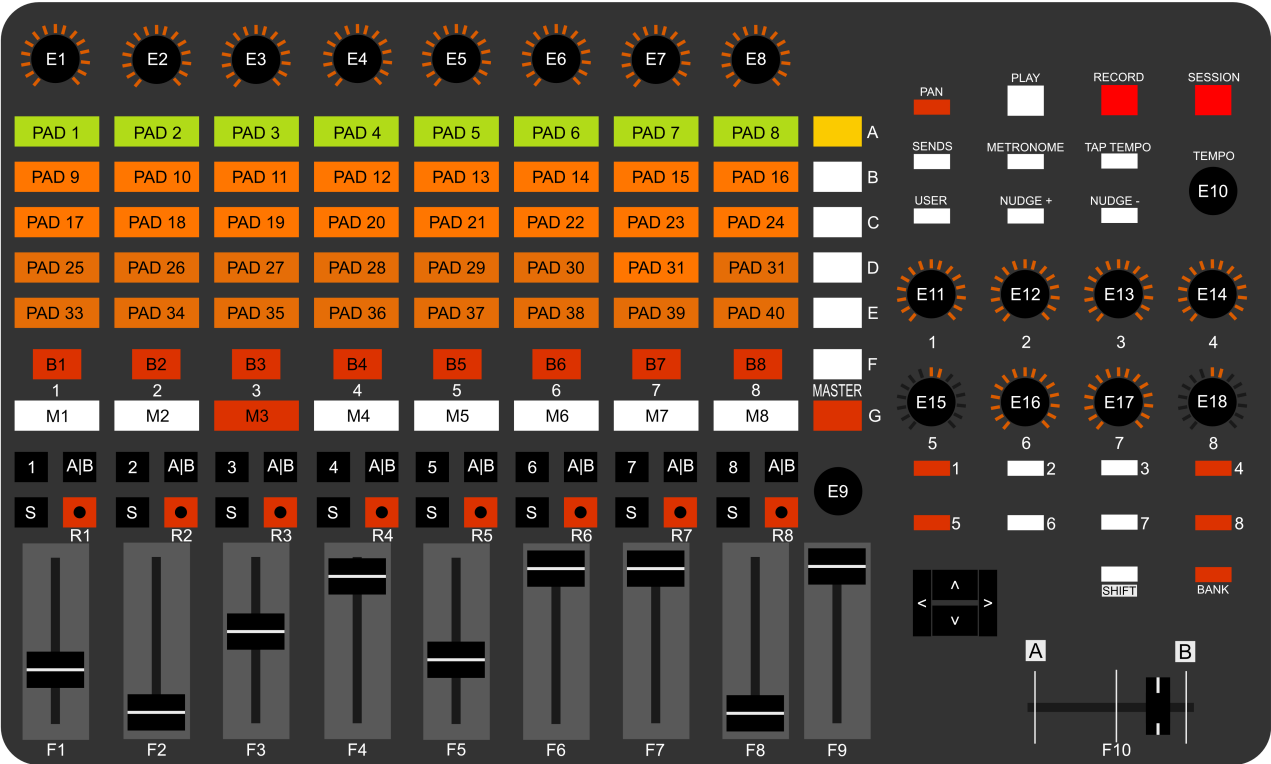
Button	Function
PAD 1 - PAD 40	Activate Storage at Deck B according to the PAD number.
A	Storage Place 1 - 40 At Deck B
B	Storage Place 41 - 80 At Deck B
C	Storage Place 81 - 120 At Deck B
D	Storage Place 121 - 160 At Deck B
E1	Value Submaster Deck B
E5	Value Color Filter Red Deck B
E6	Value Color Filter Green Deck B

E7	Value Color Filter Blue Deck B
E8	Color Filter White Deck B [Available if Patch Color Depth = 4]








PAD Color	Meaning
	Storage is activated.
	Storage Places with content are available at the Storage but it is not activated.
	No content is available at the Storage and it is not activated.




Group Control - Values


(Mode: 3)




















		Sub-Mode A	Sub-Mode B	Sub-Mode C	Sub-Mode D
		<div><div>A</div><div>B</div><div>C</div><div>D</div><div>E</div></div>	<div><div>A</div><div>B</div><div>C</div><div>D</div><div>E</div></div>	<div><div>A</div><div>B</div><div>C</div><div>D</div><div>E</div></div>	<div><div>A</div><div>B</div><div>C</div><div>D</div><div>E</div></div>
	Button	Function: Values Group 9 - 16	Function: Values Group 17 - 24	Function: Values Group 25 - 32	Function: Values Group 33 - 40
	E	Group Presets			
Group Values Stripe 1	E1	Value Group 9	Value Group 17	Value Group 25	Value Group 33

 E1  PAD 1  PAD 9  PAD 17  PAD 25  PAD 33  B1 1	PAD 1	Group 9 Value 255 (100%)	Group 17 Value 255 (100%)	Group 25 Value 255 (100%)	Group 33 Value 255 (100%)
	PAD 9	Group 9 Value 192 (75%)	Group 17 Value 192 (75%)	Group 25 Value 192 (75%)	Group 33 Value 192 (75%)
	PAD 17	Group 9 Value 127 (50%)	Group 17 Value 127 (50%)	Group 25 Value 127 (50%)	Group 33 Value 127 (50%)
	PAD 25	Group 9 Value 64 (25%)	Group 17 Value 64 (25%)	Group 25 Value 64 (25%)	Group 33 Value 64 (25%)
	PAD 33	Group 9 Value 0 (0%)	Group 17 Value 0 (0%)	Group 25 Value 0 (0%)	Group 33 Value 0 (0%)
	B1	Flash Group 9	Flash Group 17	Flash Group 25	Flash Group 33
Group Values Stripe 2  E2  PAD 2  PAD 10  PAD 18  PAD 26  PAD 34  B2 2	E2	Value Group 10	Value Group 18	Value Group 26	Value Group 34
	PAD 2	Group 10 Value 255 (100%)	Group 18 Value 255 (100%)	Group 26 Value 255 (100%)	Group 34 Value 255 (100%)
	PAD 10	Group 10 Value 192 (75%)	Group 18 Value 192 (75%)	Group 26 Value 192 (75%)	Group 34 Value 192 (75%)
	PAD 18	Group 10 Value 127 (50%)	Group 18 Value 127 (50%)	Group 26 Value 127 (50%)	Group 34 Value 127 (50%)
	PAD 26	Group 10 Value 64 (25%)	Group 18 Value 64 (25%)	Group 26 Value 64 (25%)	Group 34 Value 64 (25%)
	PAD 34	Group 10 Value 0 (0%)	Group 18 Value 0 (0%)	Group 26 Value 0 (0%)	Group 34 Value 0 (0%)
	B2	Flash Group 10	Flash Group 18	Flash Group 26	Flash Group 34
Group Values Stripe 3	E3	Value Group 11	Value Group 19	Value Group 27	Value Group 35

 E3  PAD 3  PAD 11  PAD 19  PAD 27  PAD 35  B3 3	PAD 3	Group 11 Value 255 (100%)	Group 19 Value 255 (100%)	Group 27 Value 255 (100%)	Group 35 Value 255 (100%)
	PAD 11	Group 11 Value 192 (75%)	Group 19 Value 192 (75%)	Group 27 Value 192 (75%)	Group 35 Value 192 (75%)
	PAD 19	Group 11 Value 127 (50%)	Group 19 Value 127 (50%)	Group 27 Value 127 (50%)	Group 35 Value 127 (50%)
	PAD 27	Group 11 Value 64 (25%)	Group 19 Value 64 (25%)	Group 27 Value 64 (25%)	Group 35 Value 64 (25%)
	PAD 35	Group 11 Value 0 (0%)	Group 19 Value 0 (0%)	Group 27 Value 0 (0%)	Group 35 Value 0 (0%)
	B3	Flash Group 11	Flash Group 19	Flash Group 27	Flash Group 35
Group Values Stripe 4  E4  PAD 4  PAD 12  PAD 20  PAD 28  PAD 36  B4 4	E4	Value Group 12	Value Group 20	Value Group 28	Value Group 36
	PAD 4	Group 12 Value 255 (100%)	Group 20 Value 255 (100%)	Group 28 Value 255 (100%)	Group 36 Value 255 (100%)
	PAD 12	Group 12 Value 192 (75%)	Group 20 Value 192 (75%)	Group 28 Value 192 (75%)	Group 36 Value 192 (75%)
	PAD 20	Group 12 Value 127 (50%)	Group 20 Value 127 (50%)	Group 28 Value 127 (50%)	Group 36 Value 127 (50%)
	PAD 28	Group 12 Value 64 (25%)	Group 20 Value 64 (25%)	Group 28 Value 64 (25%)	Group 36 Value 64 (25%)
	PAD 36	Group 12 Value 0 (0%)	Group 20 Value 0 (0%)	Group 28 Value 0 (0%)	Group 36 Value 0 (0%)
	B4	Flash Group 12	Flash Group 20	Flash Group 28	Flash Group 36
Group Values Stripe 5	E5	Value Group 13	Value Group 21	Value Group 29	Value Group 37

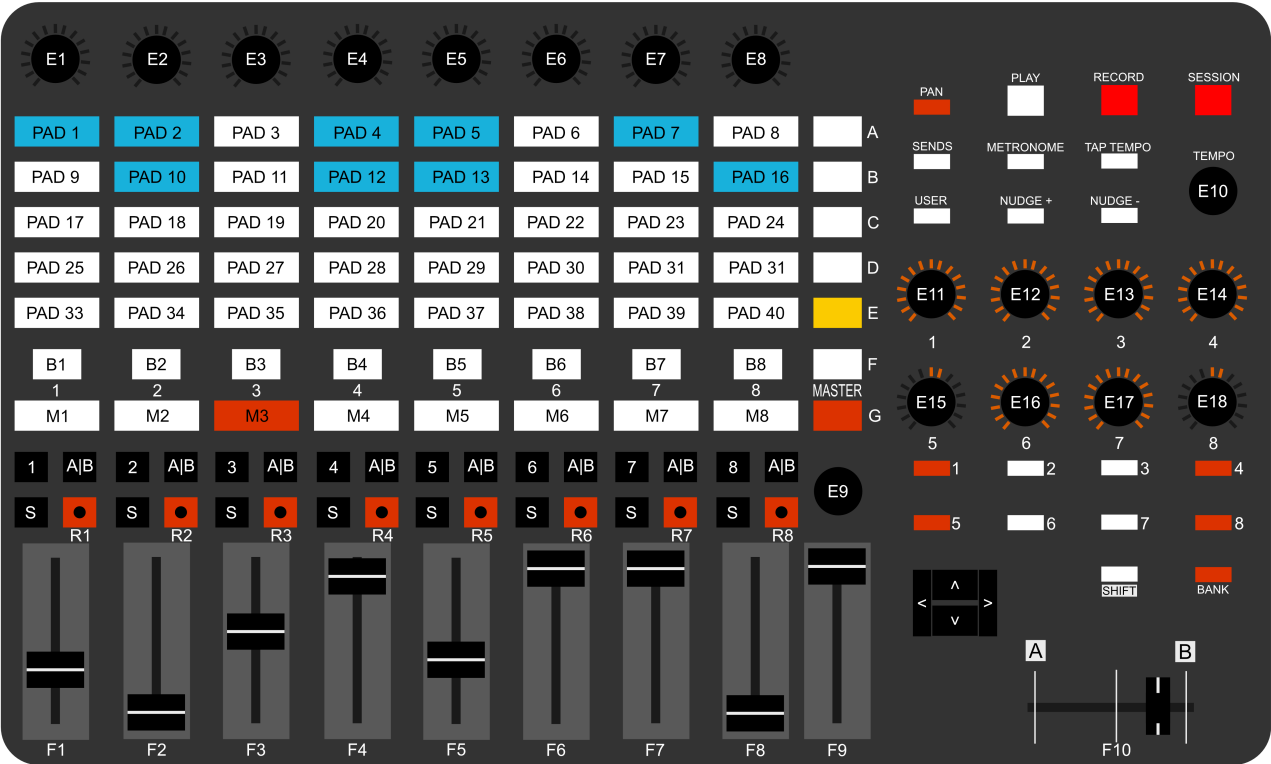
      	PAD 5	Group 13 Value 255 (100%)	Group 21 Value 255 (100%)	Group 29 Value 255 (100%)	Group 37 Value 255 (100%)
	PAD 13	Group 13 Value 192 (75%)	Group 21 Value 192 (75%)	Group 29 Value 192 (75%)	Group 37 Value 192 (75%)
	PAD 21	Group 13 Value 127 (50%)	Group 21 Value 127 (50%)	Group 29 Value 127 (50%)	Group 37 Value 127 (50%)
	PAD 29	Group 13 Value 64 (25%)	Group 21 Value 64 (25%)	Group 29 Value 64 (25%)	Group 37 Value 64 (25%)
	PAD 37	Group 13 Value 0 (0%)	Group 21 Value 0 (0%)	Group 29 Value 0 (0%)	Group 37 Value 0 (0%)
	B5	Flash Group 13	Flash Group 21	Flash Group 29	Flash Group 37
Group Values Stripe 6       	E6	Value Group 14	Value Group 22	Value Group 30	Value Group 38
	PAD 6	Group 14 Value 255 (100%)	Group 22 Value 255 (100%)	Group 30 Value 255 (100%)	Group 38 Value 255 (100%)
	PAD 14	Group 14 Value 192 (75%)	Group 22 Value 192 (75%)	Group 30 Value 192 (75%)	Group 38 Value 192 (75%)
	PAD 22	Group 14 Value 127 (50%)	Group 22 Value 127 (50%)	Group 30 Value 127 (50%)	Group 38 Value 127 (50%)
	PAD 30	Group 14 Value 64 (25%)	Group 22 Value 64 (25%)	Group 30 Value 64 (25%)	Group 38 Value 64 (25%)
	PAD 38	Group 14 Value 0 (0%)	Group 22 Value 0 (0%)	Group 30 Value 0 (0%)	Group 38 Value 0 (0%)
	B6	Flash Group 14	Flash Group 22	Flash Group 30	Flash Group 38
Group Values Stripe 7	E7	Value Group 15	Value Group 23	Value Group 31	Value Group 39

      	PAD 7	Group 15 Value 255 (100%)	Group 23 Value 255 (100%)	Group 31 Value 255 (100%)	Group 39 Value 255 (100%)
	PAD 15	Group 15 Value 192 (75%)	Group 23 Value 192 (75%)	Group 31 Value 192 (75%)	Group 39 Value 192 (75%)
	PAD 23	Group 15 Value 127 (50%)	Group 23 Value 127 (50%)	Group 31 Value 127 (50%)	Group 39 Value 127 (50%)
	PAD 31	Group 15 Value 64 (25%)	Group 23 Value 64 (25%)	Group 31 Value 64 (25%)	Group 39 Value 64 (25%)
	PAD 39	Group 15 Value 0 (0%)	Group 23 Value 0 (0%)	Group 31 Value 0 (0%)	Group 39 Value 0 (0%)
	B7	Flash Group 15	Flash Group 23	Flash Group 31	Flash Group 39
Group Values Stripe 8       	E8	Value Group 16	Value Group 24	Value Group 32	Value Group 40
	PAD 8	Group 16 Value 255 (100%)	Group 24 Value 255 (100%)	Group 32 Value 255 (100%)	Group 40 Value 255 (100%)
	PAD 16	Group 16 Value 192 (75%)	Group 24 Value 192 (75%)	Group 32 Value 192 (75%)	Group 40 Value 192 (75%)
	PAD 24	Group 16 Value 127 (50%)	Group 24 Value 127 (50%)	Group 32 Value 127 (50%)	Group 40 Value 127 (50%)
	PAD 31	Group 16 Value 64 (25%)	Group 24 Value 64 (25%)	Group 32 Value 64 (25%)	Group 40 Value 64 (25%)
	PAD 40	Group 16 Value 0 (0%)	Group 24 Value 0 (0%)	Group 32 Value 0 (0%)	Group 40 Value 0 (0%)
	B8	Flash Group 16	Flash Group 24	Flash Group 32	Flash Group 40

PAD Color	Meaning
	Group Value activate.
	Group Value not activate.
	Not in use.

Group Control - Presets

(Mode: 3, Sub-Mode: E)



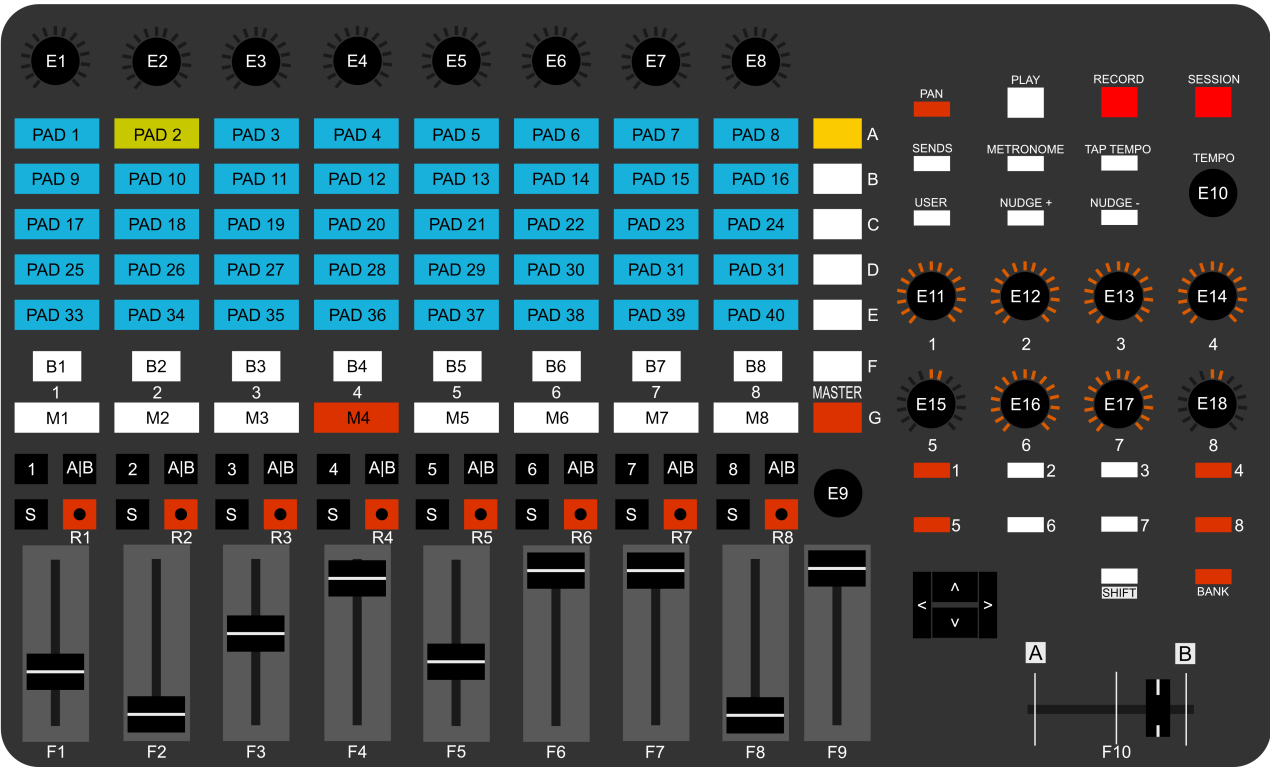
Button	Function
PAD 1 - PAD 40	Activate Group Preset according to the PAD number.
A	Values Group 9 - 16
B	Values Group 17 - 24
C	Values Group 25 - 32
D	Values Group 33 - 40

PAD Color	Meaning
<div>PAD 1</div>	Group Preset saved.

<div>PAD 1</div>	Empty Group Preset
------------------	--------------------




Cue Lists - Cue Selection

(Mode: 4)



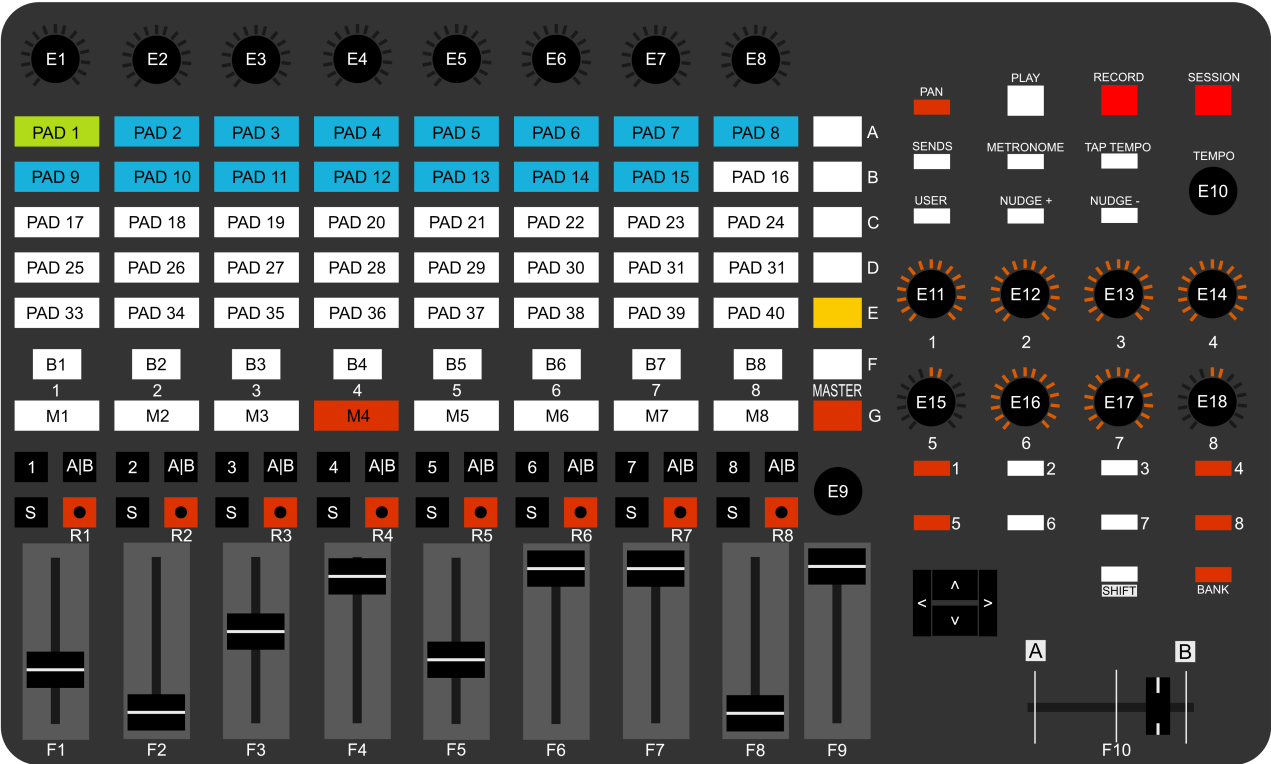
	<div>Sub-Mode A</div> <div><div>A</div><div>B</div><div>C</div><div>D</div><div>E</div></div>	<div>Sub-Mode B</div> <div><div>A</div><div>B</div><div>C</div><div>D</div><div>E</div></div>	<div>Sub-Mode C</div> <div><div>A</div><div>B</div><div>C</div><div>D</div><div>E</div></div>	<div>Sub-Mode D</div> <div><div>A</div><div>B</div><div>C</div><div>D</div><div>E</div></div>
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Button	Function	Function	Function	Function
PAD 1 - PAD 40	Activate Cue 1 - 40	Activate Cue 41 - 80	Activate Cue 81 - 120	Activate Cue 121 - 160
E	Activate Cue List			

PAD Color	Meaning
	Cue playing.
	Cue available.
	Empty

Cue Lists - Cue List Selection

(Mode: 4, Sub-Mode: E)



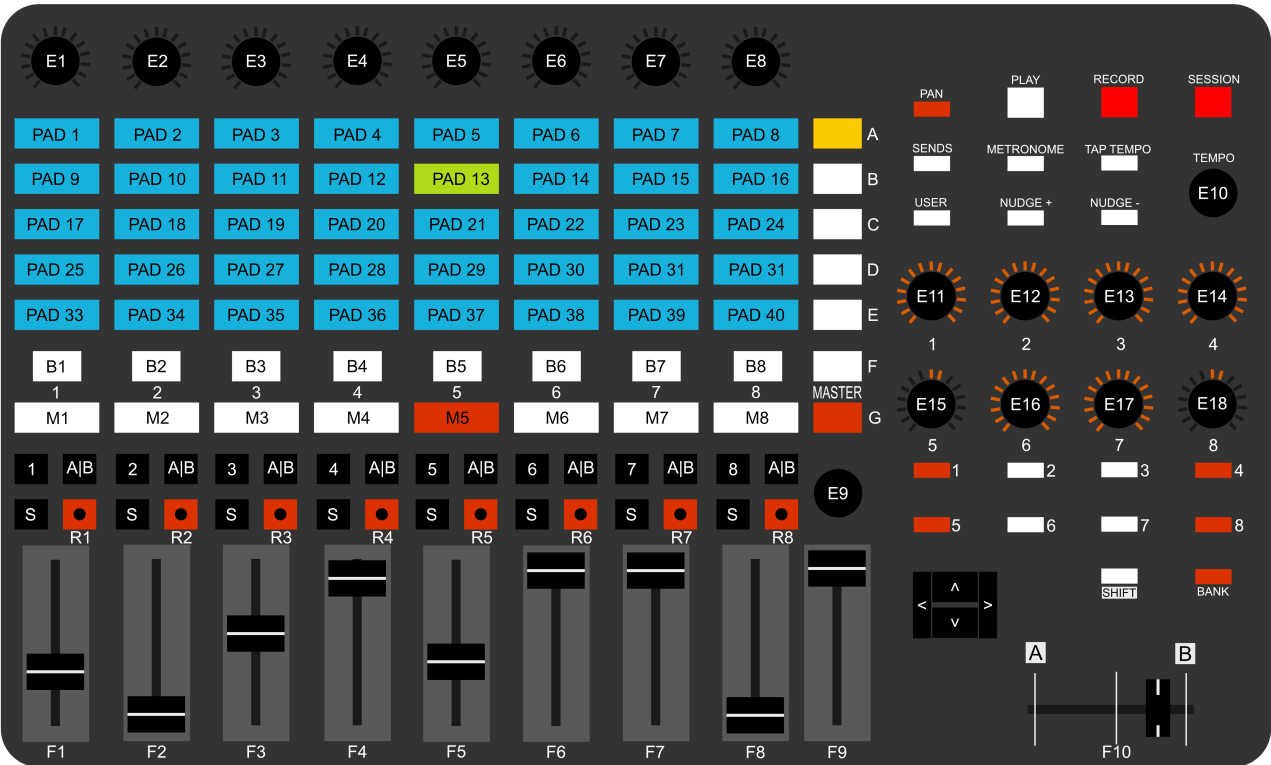
Button	Function
PAD 1 - PAD 40	Activate Cue List according to the PAD number.
A	Cue 1 - 40 At Activated Cue List
B	Cue 41 - 80 At Activated Cue List
C	Cue 81 - 120 At Activated Cue List
D	Cue 121 - 160 At Activated Cue List

PAD Color	Meaning
<div>PAD 1</div>	Cue List is activated.
<div>PAD 1</div>	Cue List is available but it is not activated.

<div>PAD 1</div>	No Cue List is available.
------------------	---------------------------




Timelines - Cue Segment Selection

(Mode: 5)



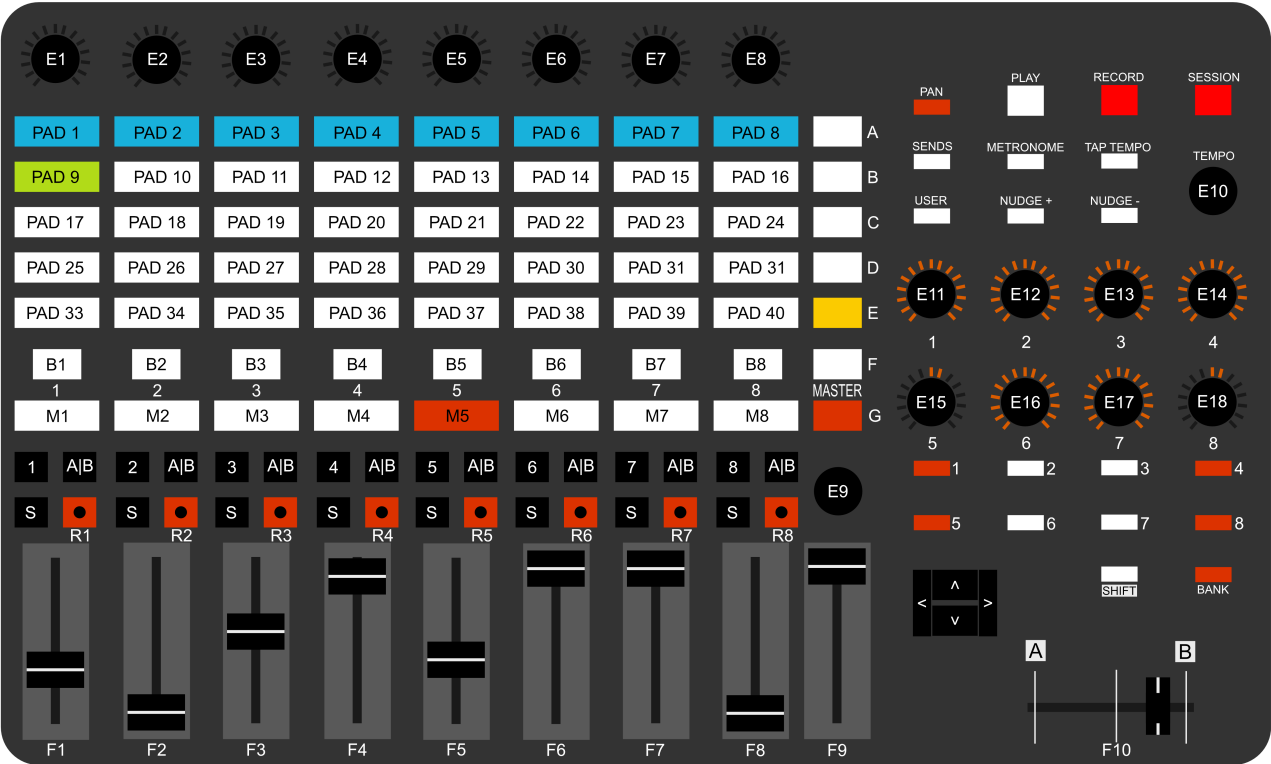
	<div>Sub-Mode A</div> <div><div>A</div><div>B</div><div>C</div><div>D</div><div>E</div></div>	<div>Sub-Mode B</div> <div><div>A</div><div>B</div><div>C</div><div>D</div><div>E</div></div>	<div>Sub-Mode C</div> <div><div>A</div><div>B</div><div>C</div><div>D</div><div>E</div></div>	<div>Sub-Mode D</div> <div><div>A</div><div>B</div><div>C</div><div>D</div><div>E</div></div>
--	---	---	---	---

Button	Function	Function	Function	Function
PAD 1 - PAD 40	Activate Cue Segment 1 - 40	Activate Cue Segment 41 - 80	Activate Cue Segment 81 - 120	Activate Cue Segment 121 - 160
E	Activate Timeline			

PAD Color	Meaning
	Cue Segment playing.
	Cue Segment available.
	Empty

Timelines - Timeline Selection

(Mode: 5, Sub-Mode: E)



Button	Function
PAD 1 - PAD 40	Activate Timeline according to the PAD number.
A	Cue Segment 1 - 40 At Activated Timeline
B	Cue Segment 41 - 80 At Activated Timeline
C	Cue Segment 81 - 120 At Activated Timeline
D	Cue Segment 121 - 160 At Activated Timeline

PAD Color	Meaning
<div>PAD 1</div>	Timeline is activated.

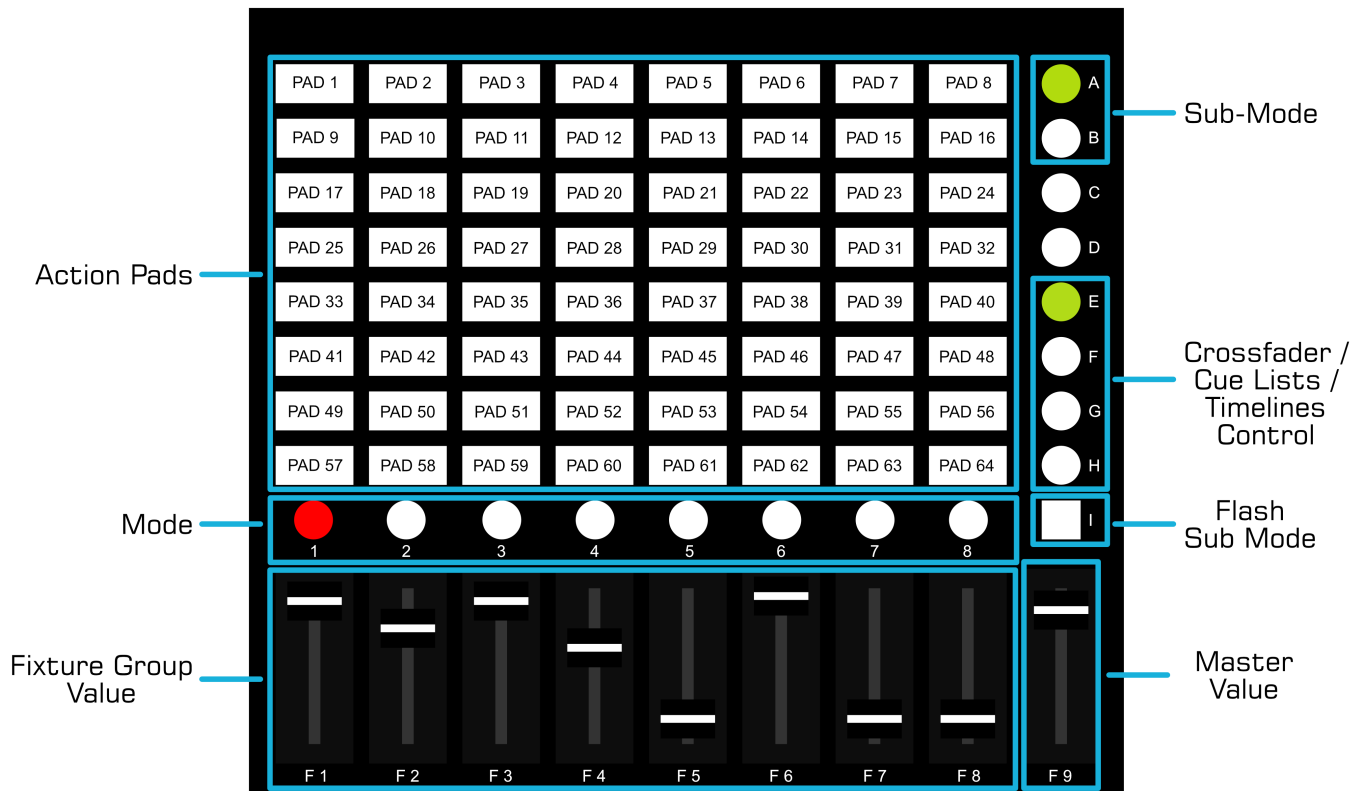
<div>PAD 1</div>	Timeline is available but it is not activated.
<div>PAD 1</div>	No Timeline is available.

7.2.3 Akai Professional APC mini [MIDI Map]

This topic includes:

- [General Overview](#)
- [Detailed Description](#)
- [Storage Places Deck A](#)
- [Storages Deck A](#)
- [Storage Places Deck B](#)
- [Storages Deck B](#)
- [Group Control - Values](#)
- [Group Control - Presets](#)
- [Cue Lists - Cue Selection](#)
- [Cue Lists - Cue List Selection](#)
- [Timelines - Cue Segment Selection](#)
- [Timelines - Timeline Selection](#)
- [Master - Main Parameter](#)
- [Master - Color Filter](#)

General Overview



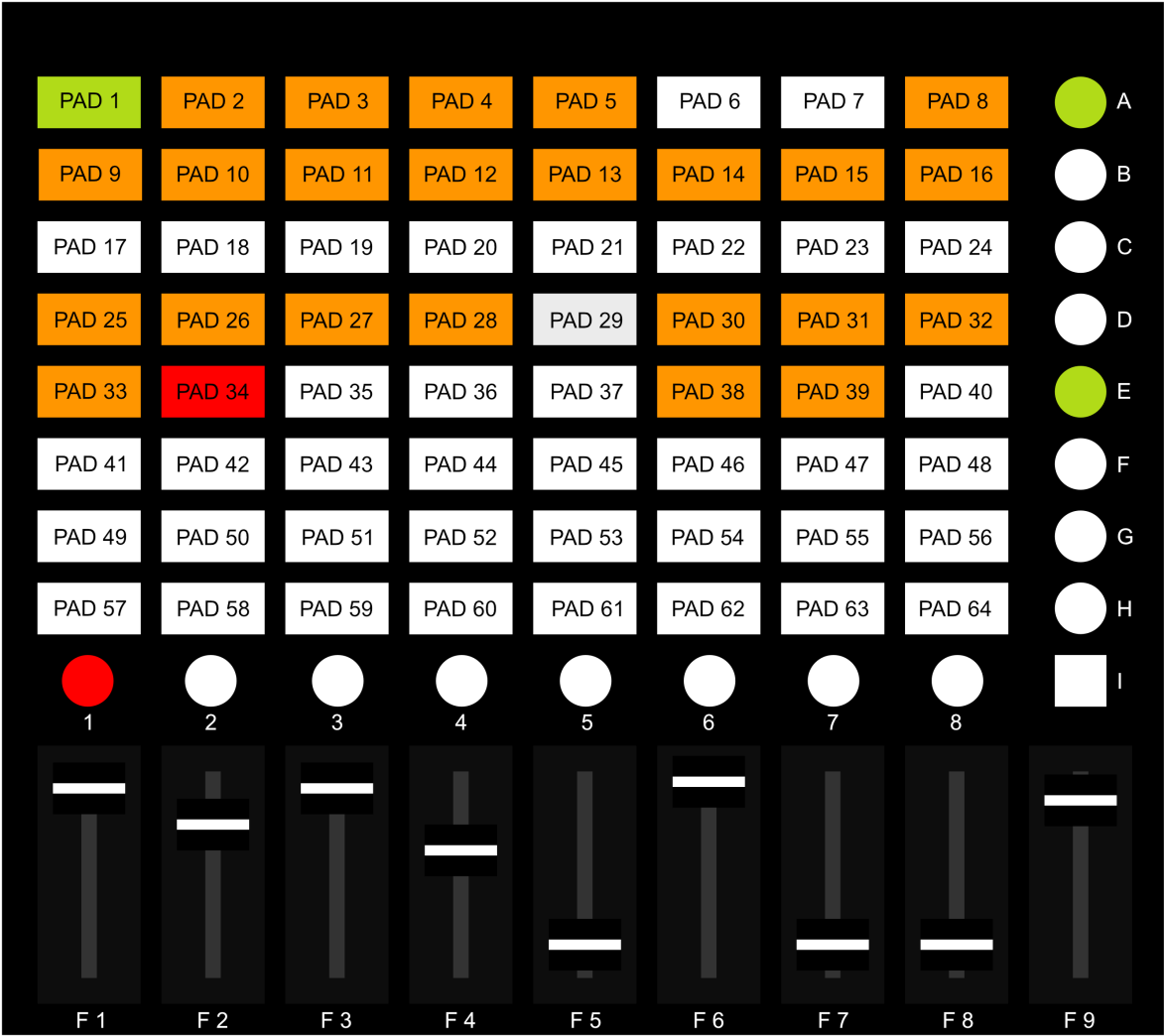
Mode	Active	Function
	1	Deck A
	2	Deck B
	3	Group Control
	4	Cue List
	5	Timelines
	8	Master
Sub-Mode	A	Mode Deck A: Place Mode Deck B: Place Mode Group Control: Group Value Mode Cue List: Cue

	B	Mode Deck A: Storage Mode Deck B: Storage Mode Group Control: Group Preset
Crossfader / Cue List Control	E	Mode Deck A: Fade To Left Mode Deck B: Fade To Left Mode Group Control: Fade To Left
	F	Mode Deck A: Fade To Middle Mode Deck B: Fade To Middle Mode Group Control: Fade To Middle Mode Cue List: Cue List Back
	G	Mode Deck A: Fade To Right Mode Deck B: Fade To Right Mode Group Control: Fade To Right Mode Cue List: Cue List Go
	H	Mode Deck A: Auto Fade Mode Deck B: Auto Fade Mode Deck Group Control: Auto Fade Mode Cue List: Cue List Play Pause Toggle
Flash Sub-Mode	I	As long as the button is pressed the Sub-Mode will be swapped.
Fixture Group Value	F1	Value Fixture Group 1
	F2	Value Fixture Group 2
	F3	Value Fixture Group 3
	F4	Value Fixture Group 4
	F5	Value Fixture Group 5
	F6	Value Fixture Group 6
	F7	Value Fixture Group 7
	F8	Value Fixture Group 8
Master Value	F9	Value Output Master
Action Pads	Activates desired Place, Storage, Group Preset, Cue, sets the stored value for Groups or Main Output Parameters according to the following descriptions:	

Detailed Description





Storage Places Deck A

(Mode: 1, Sub-Mode: A)



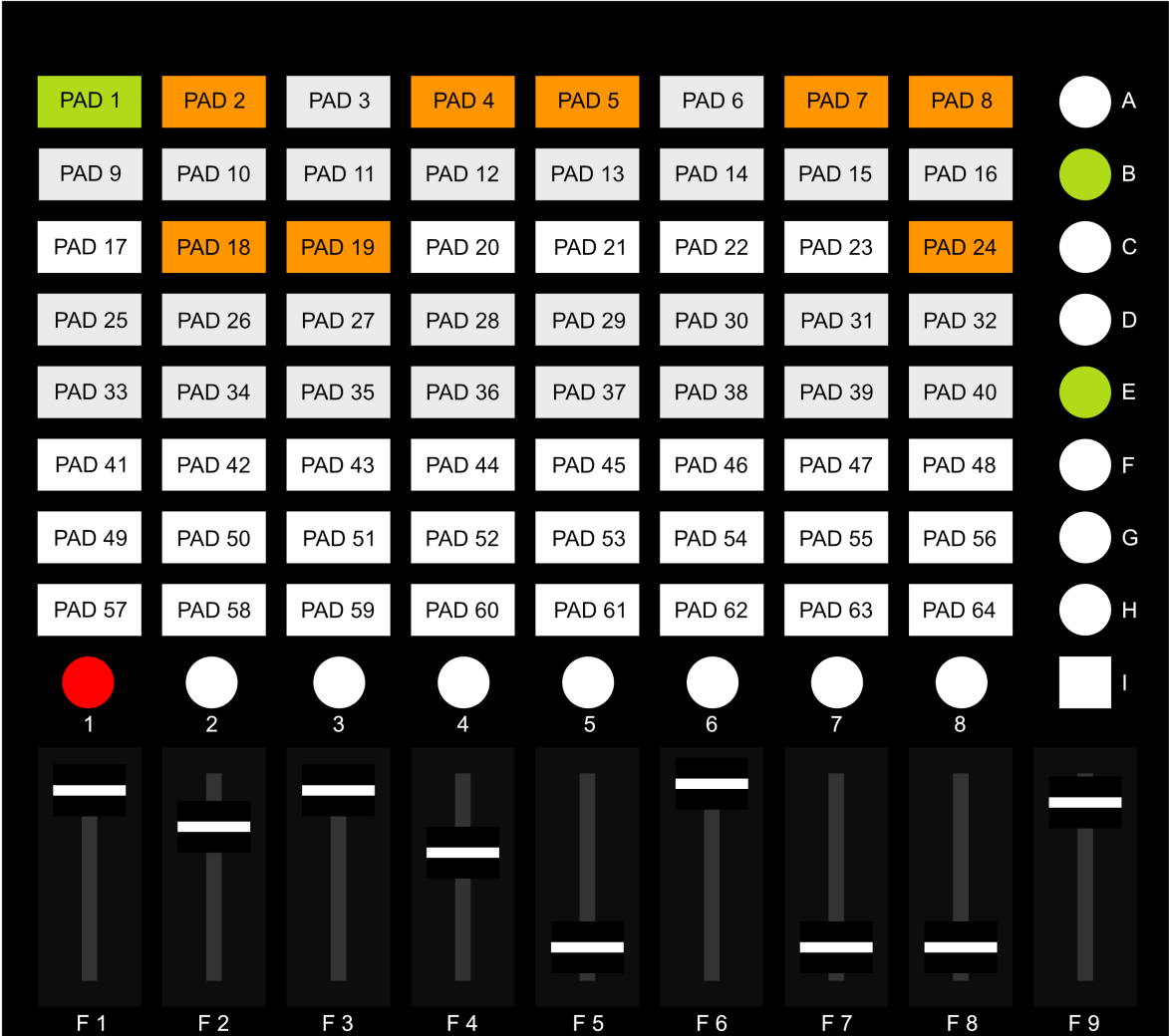
Button	Function
PAD 1 - PAD 64	Activate Storage Place at Deck A according to the PAD number.
B	Storage Control Deck A
E	Fade To Left

F	Fade To Middle
G	Fade To Right
H	Automatic Fade




PAD Color	Meaning
	Storage Place is activated.
	Content is saved at the Storage Place but it is not activated.
	No content is saved at the Storage Place and it is not activated.
	Storage Place is blocked.

Storages Deck A

(Mode: 1, Sub-Mode: B)

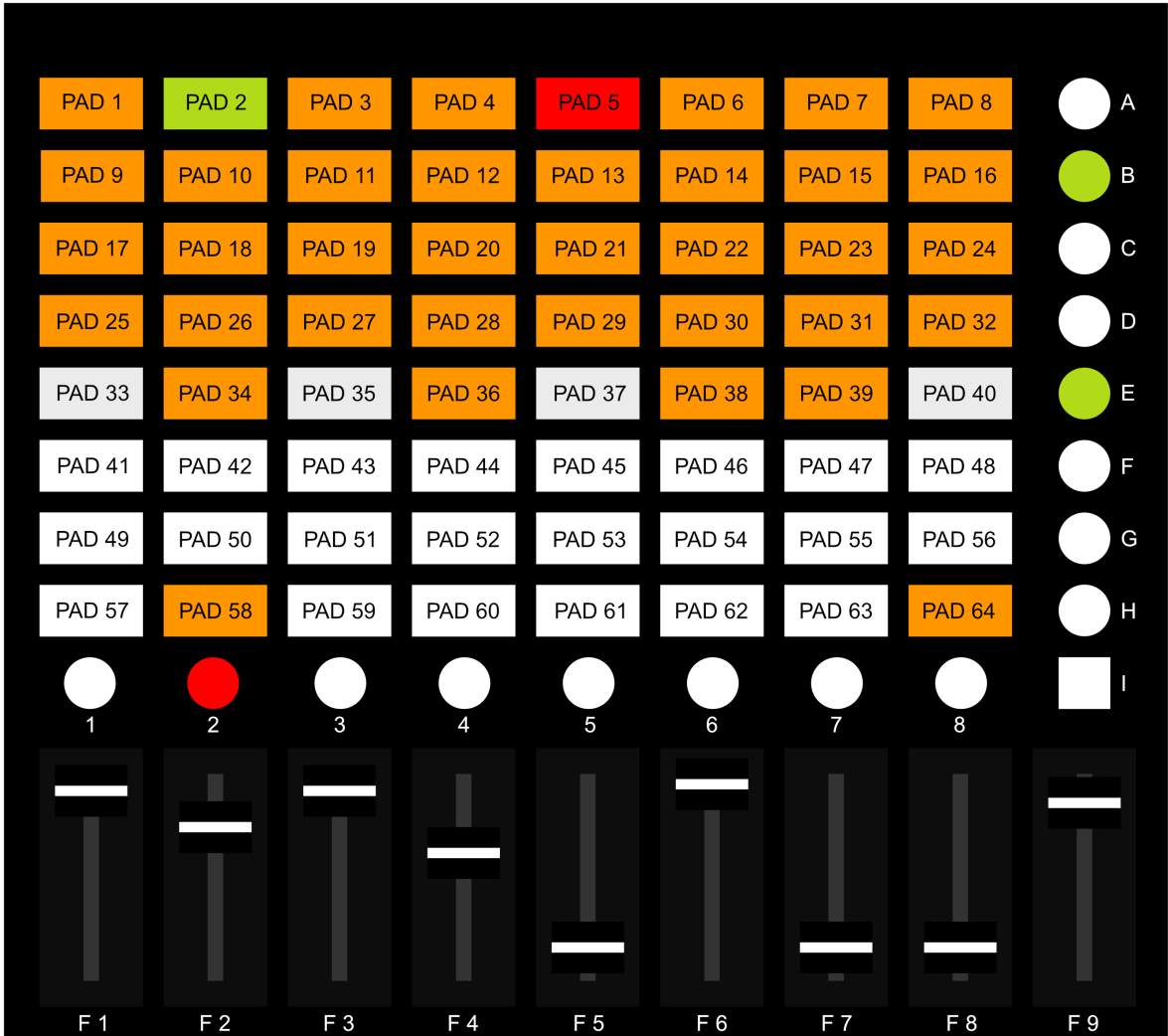


Button	Function
PAD 1 - PAD 64	Activate Storage at Deck A according to the PAD number.
A	Storage Place Control Deck A
E	Fade To Left
F	Fade To Middle
G	Fade To Right
H	Automatic Fade





PAD Color	Meaning
	Storage is activated.
	Storage Places with content are available at the Storage but it is not activated.
	No content is available at the Storage and it is not activated.

Storage Places Deck B

(Mode: 2, Sub-Mode: A)

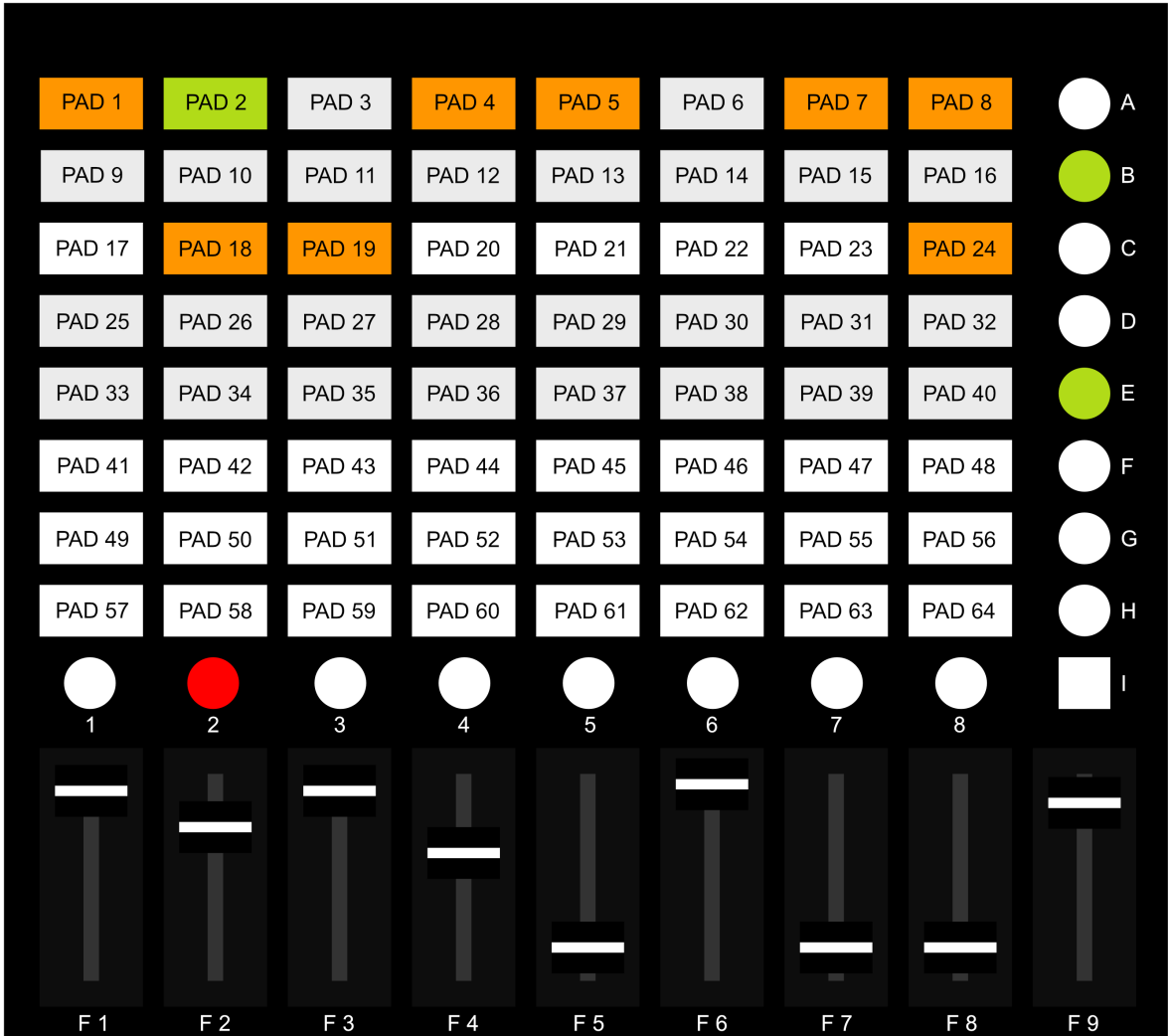


Button	Function
PAD 1 - PAD 64	Activate Storage Place at Deck B according to the PAD number.
B	Storage Control Deck B
E	Fade To Left
F	Fade To Middle
G	Fade To Right
H	Automatic Fade




PAD Color	Meaning
	Storage Place is activated.
	Content is saved at the Storage Place but it is not activated.
	No content is saved at the Storage Place and it is not activated.
	Storage Place is blocked.

Storages Deck B

(Mode: 2, Sub-Mode: B)

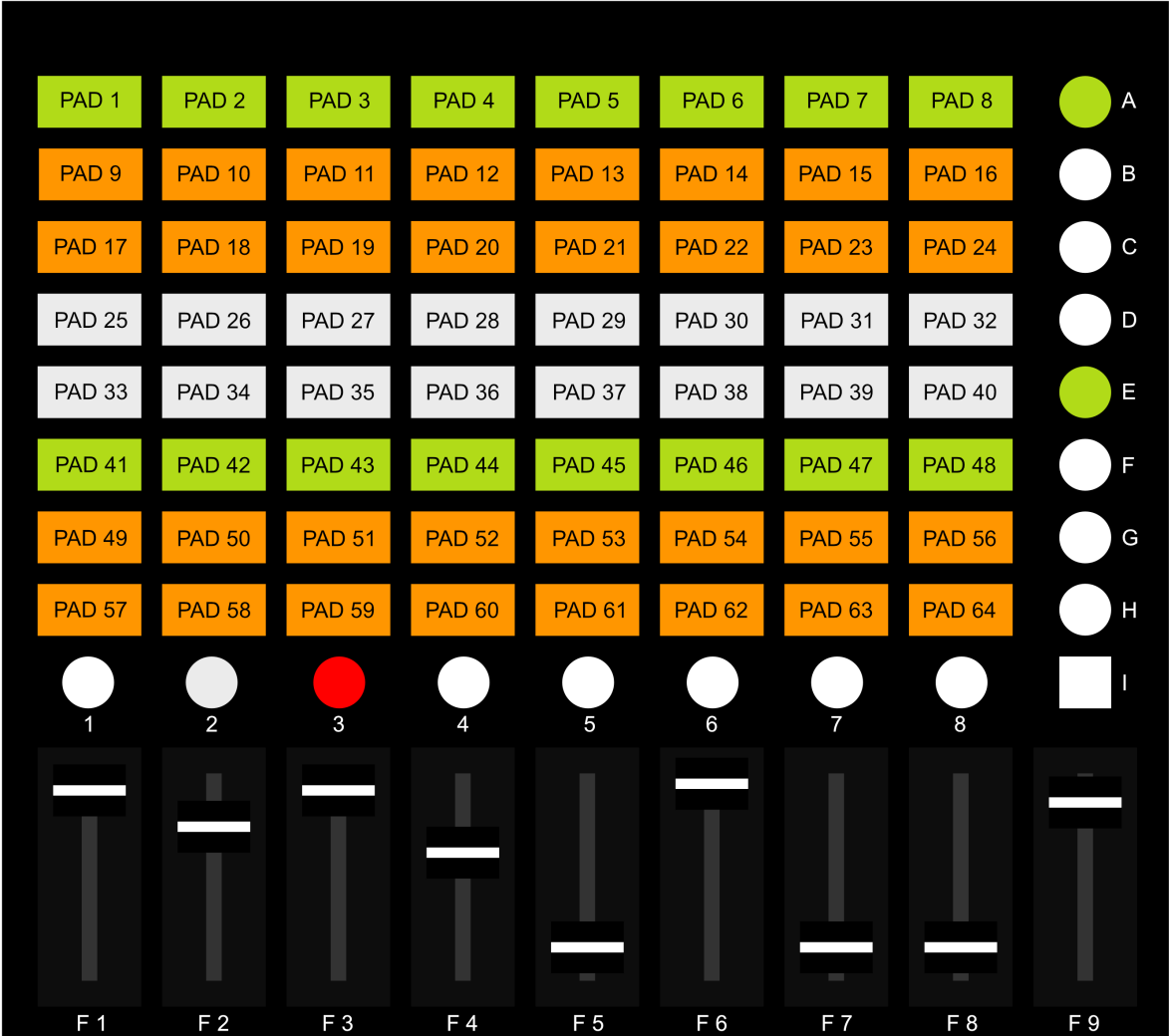


Button	Function
PAD 1 - PAD 64	Activate Storage at Deck B according to the PAD number.
A	Storage Place Control Deck B
E	Fade To Left
F	Fade To Middle
G	Fade To Right
H	Automatic Fade

PAD Color	Meaning
	Storage is activated.
	Storage Places with content are available at the Storage but it is not activated.
	No content is available at the Storage and it is not activated.




Group Control - Values

(Mode: 3, Sub-Mode: A)



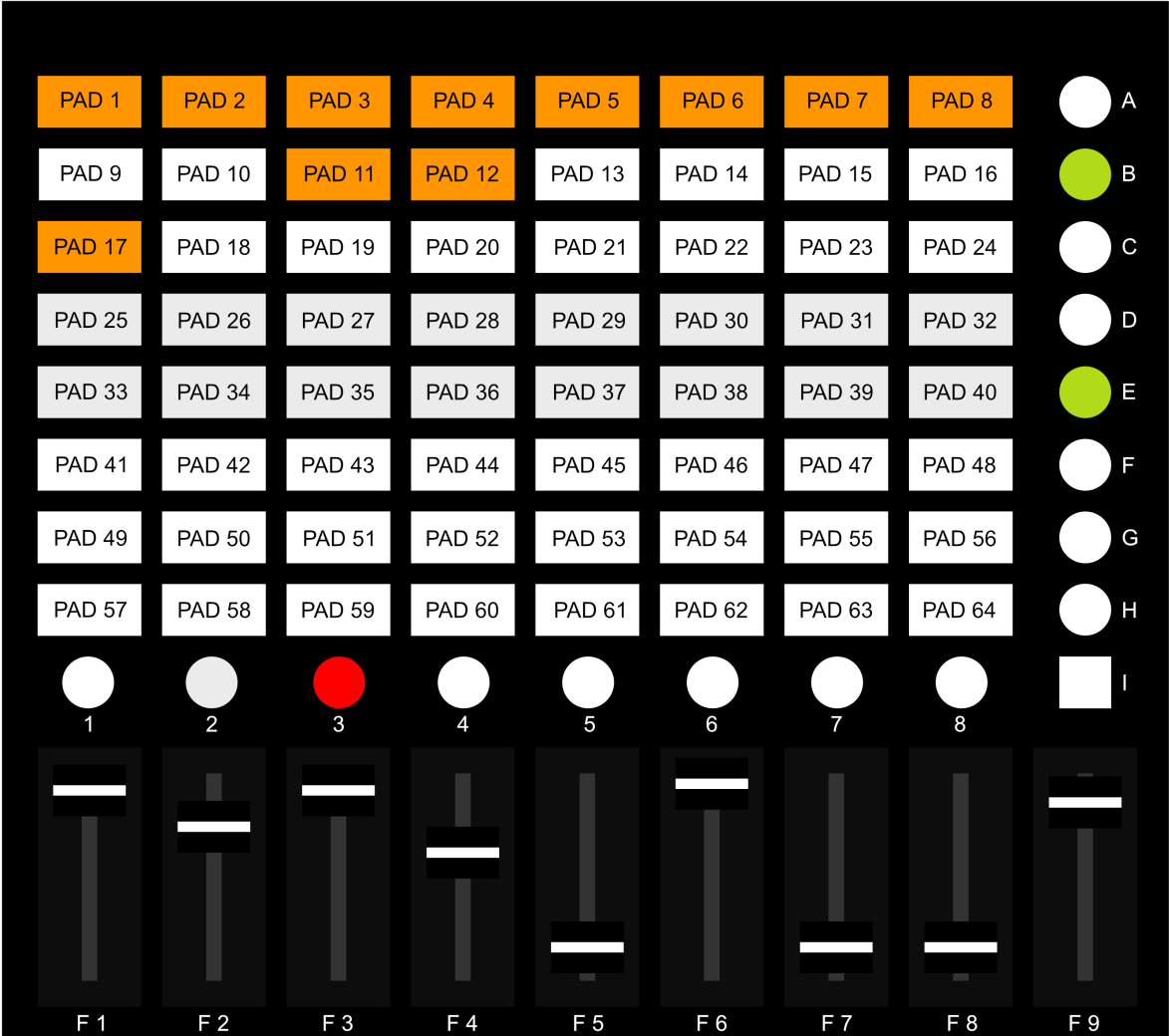
Button	Function
PAD 1 - PAD 8	Group 1 to Group 8 - Value 255
PAD 9 - PAD 16	Group 1 to Group 8 - Value 0
PAD 17 - PAD 24	Group 1 to Group 8 - Flash To Value 255
PAD 25 - PAD 40	Not in use.
PAD 41 - PAD 48	Group 9 to Group 16 - Value 255
PAD 49 - PAD 56	Group 9 to Group 16 - Value 0

PAD 57 - PAD 64	Group 9 to Group 16 - Flash To Value 255
B	Group Control - Presets
E	Fade To Left
F	Fade To Middle
G	Fade To Right
H	Automatic Fade

PAD Color	Meaning
	Group Value activate.
	Group Value not activate.
	Not in use.

Group Control - Presets

(Mode: 3, Sub-Mode: B)

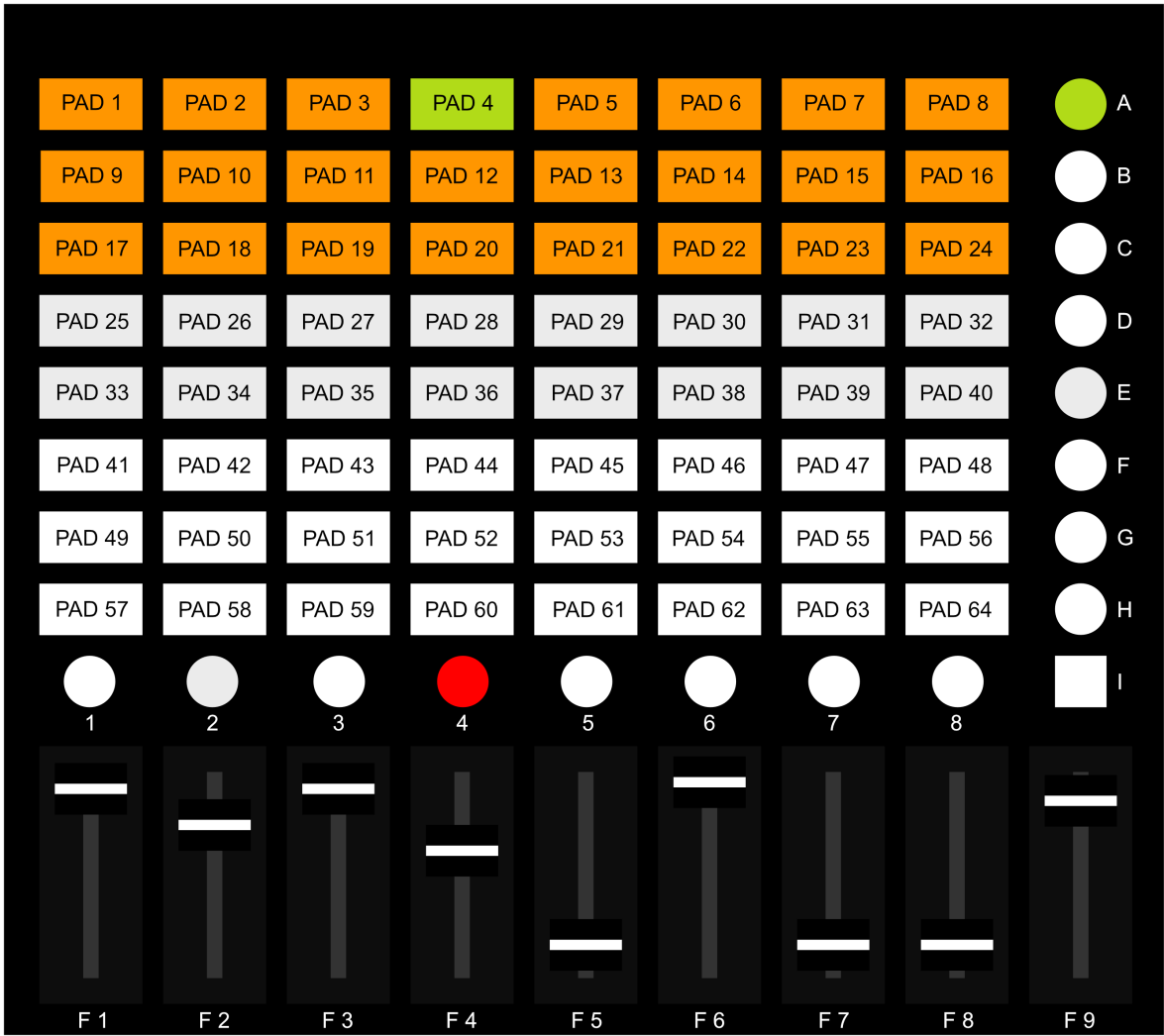


Button	Function
PAD 1 - PAD 64	Activate Group Preset according to the PAD number.
A	Group Value
E	Fade To Left
F	Fade To Middle
G	Fade To Right
H	Automatic Fade

PAD Color	Meaning
<div>PAD 1</div>	Group Preset saved.
<div>PAD 1</div>	Empty Group Preset.



Cue Lists - Cue Selection

(Mode: 4, Sub-Mode: A)



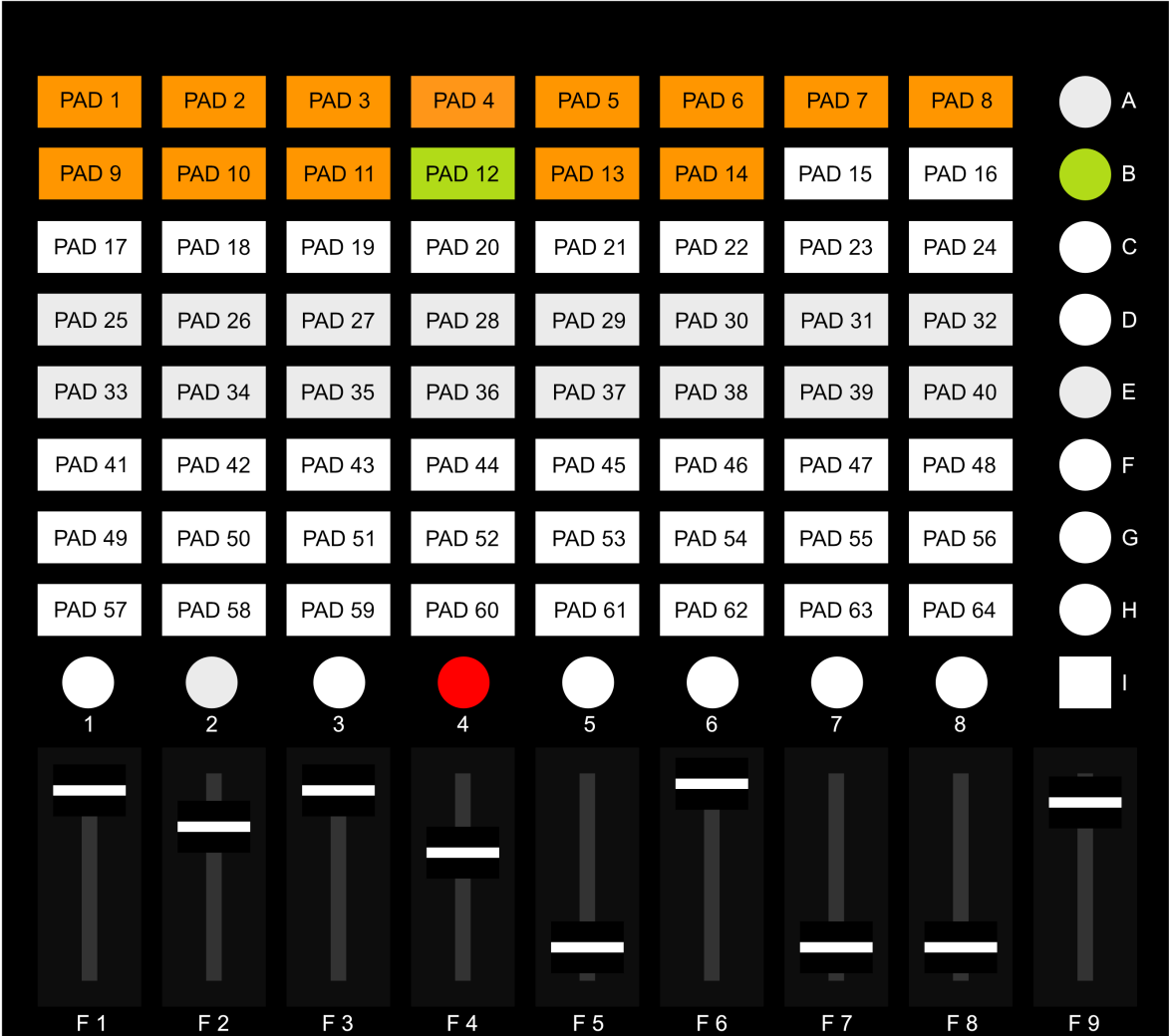
Button	Function
--------	----------

PAD 1 - PAD 64	Activate Cue according to the PAD number.
B	Cue List Selection
F	Back
G	Go
H	Play / Pause Toggle




PAD Color	Meaning
	Cue Playing.
	Cue Available.
	Empty

Cue Lists - Cue List Selection

(Mode: 4, Sub-Mode: B)

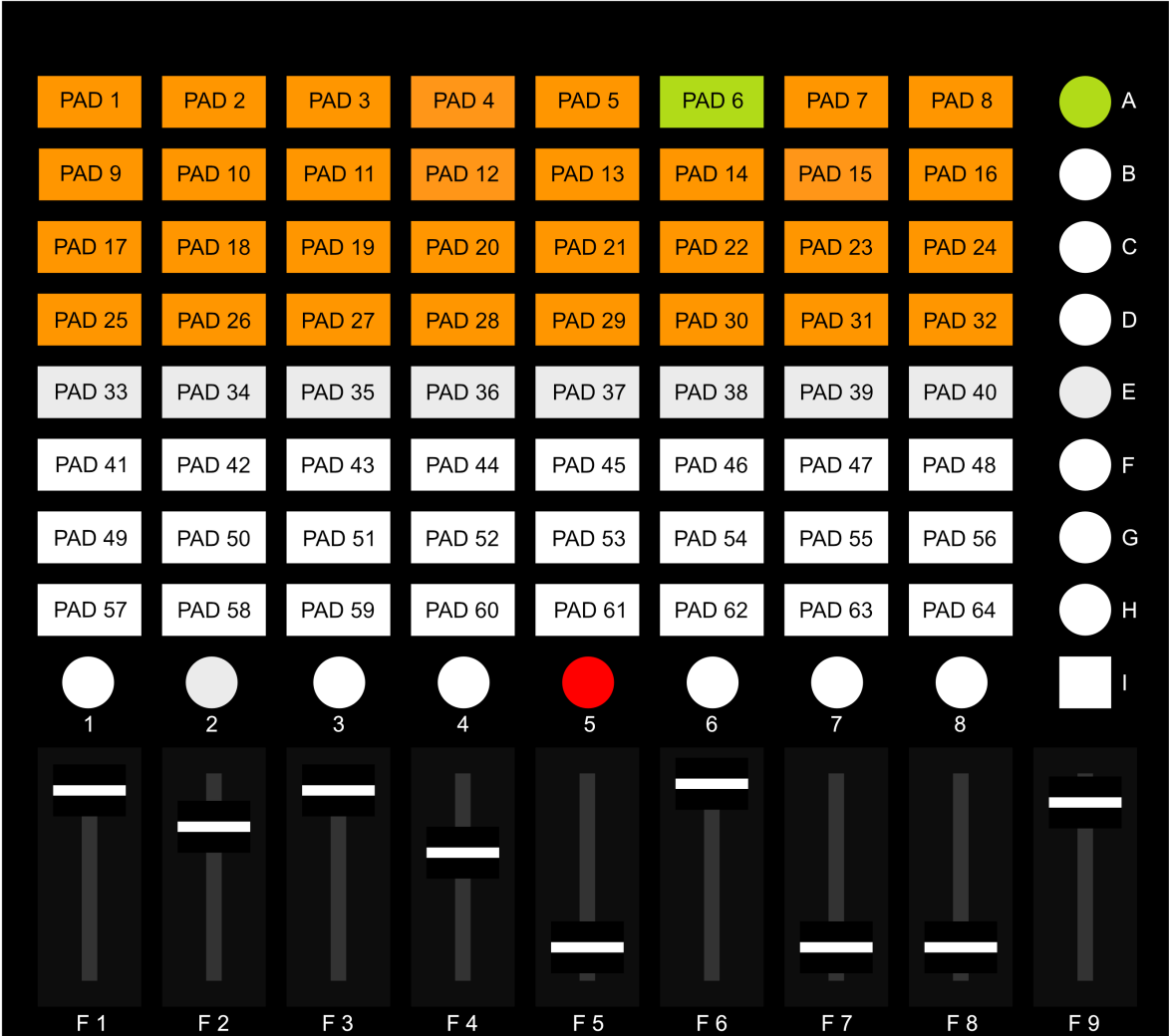


Button	Function
PAD 1 - PAD 64	Activate a Cue List according to the PAD number.
A	Cue Selection
F	Back
G	Go
H	Play / Pause Toggle

PAD Color	Meaning
	Cue List activated.
	Cue List available.
	Empty

Timelines - Cue Segment Selection

(Mode: 5, Sub-Mode: A)



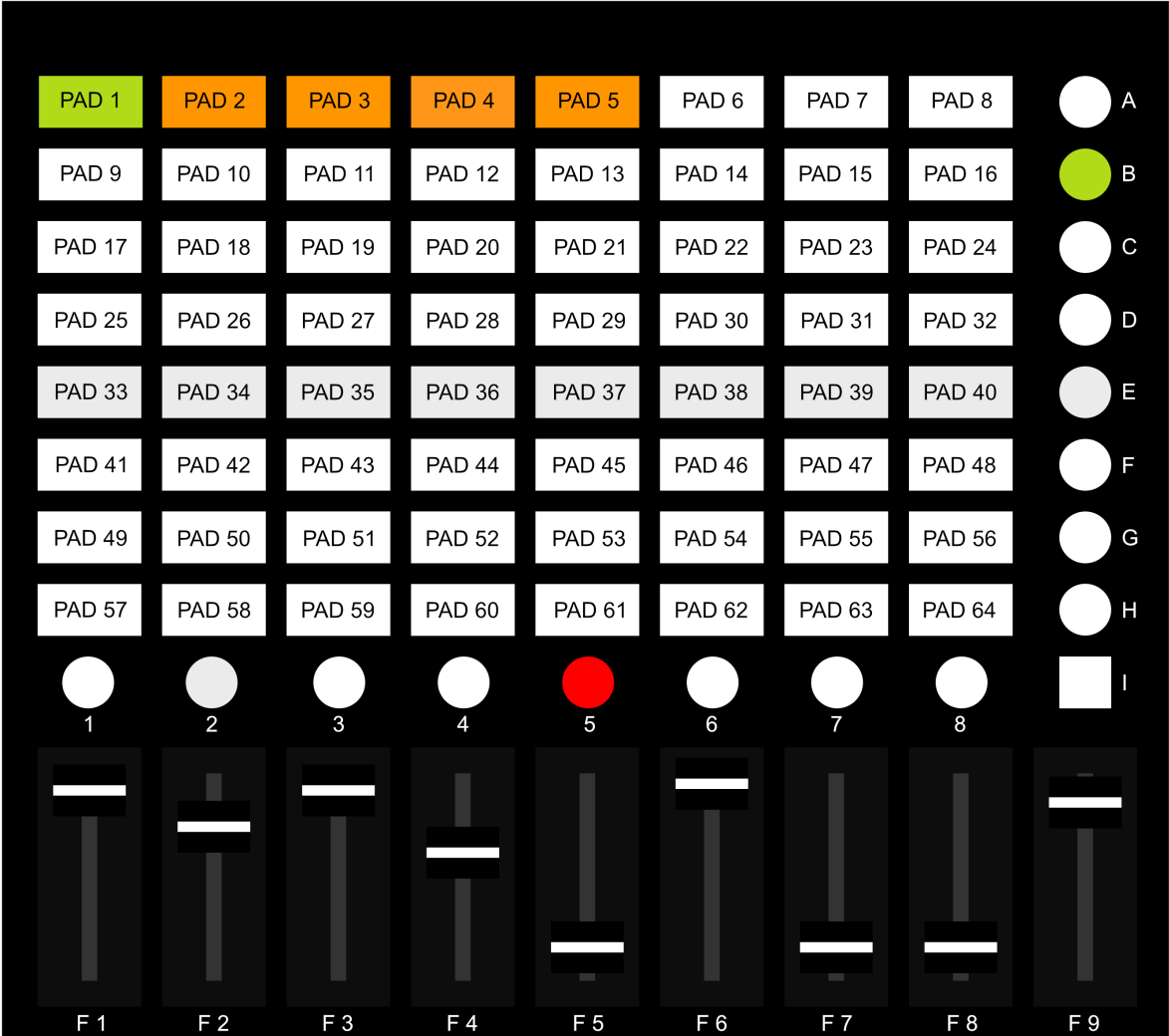
Button	Function
PAD 1 - PAD 64	Activate Cue Segment according to the PAD number.
B	Timeline Selection
G	Stop
H	Play / Pause Toggle

PAD Color	Meaning
-----------	---------

<div>PAD 1</div>	Cue Segment playing.
<div>PAD 1</div>	Cue Segment available.
<div>PAD 1</div>	Empty

Timelines - Timeline Selection

(Mode: 5, Sub-Mode: B)



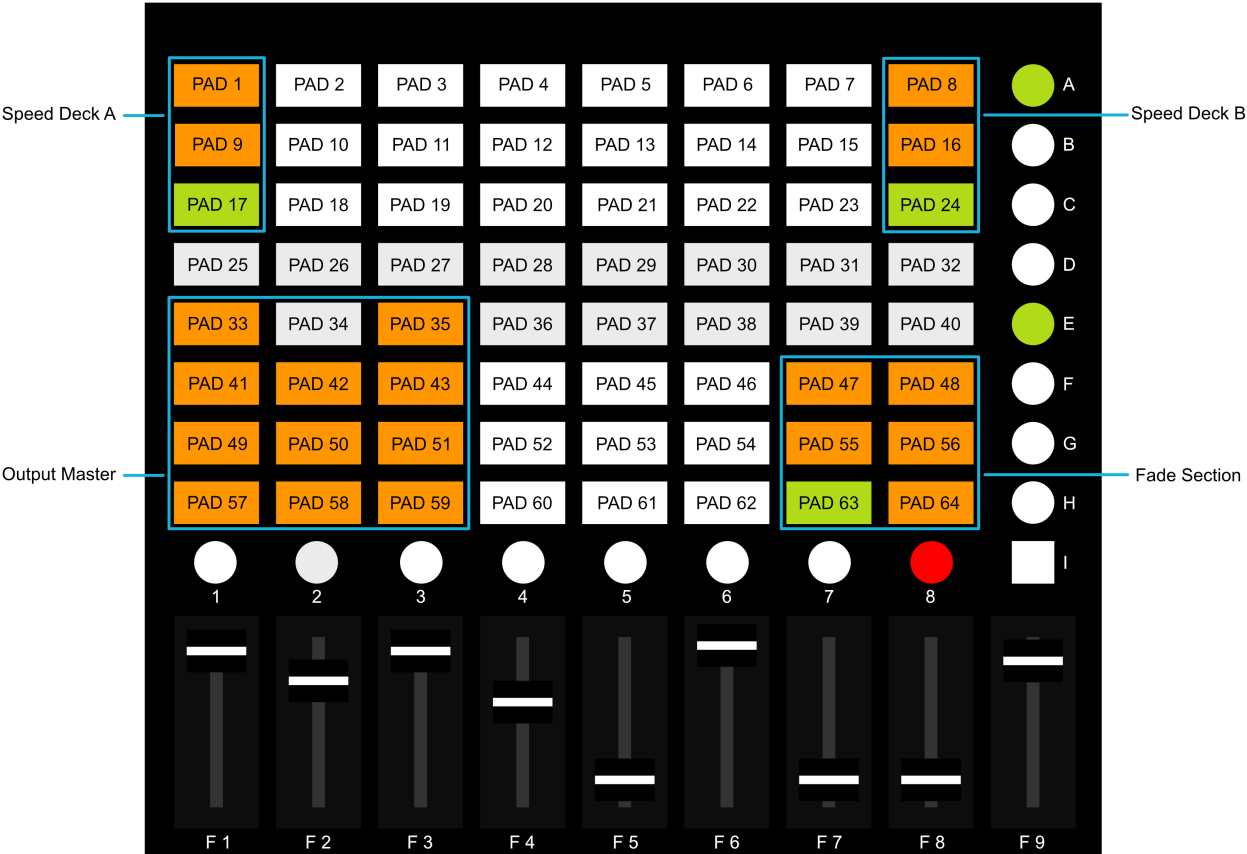
Button	Function
PAD 1 - PAD 64	Activate a Timeline according to the PAD number.
A	Cue Segment Selection
G	Stop
H	Play / Pause Toggle

PAD Color	Meaning
-----------	---------

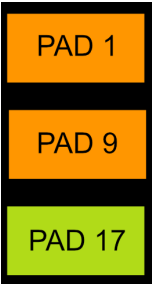


<div>PAD 1</div>	Timeline activated.
<div>PAD 1</div>	Timeline available.
<div>PAD 1</div>	Empty

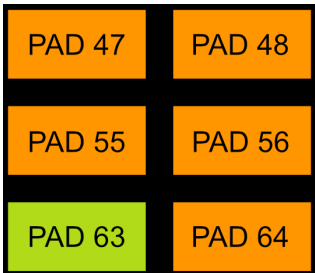
Master - Main Parameter





(Mode: 8, Sub-Mode: A)



	Button	Function
Speed Deck A	PAD 1	Deck A - Speed Up

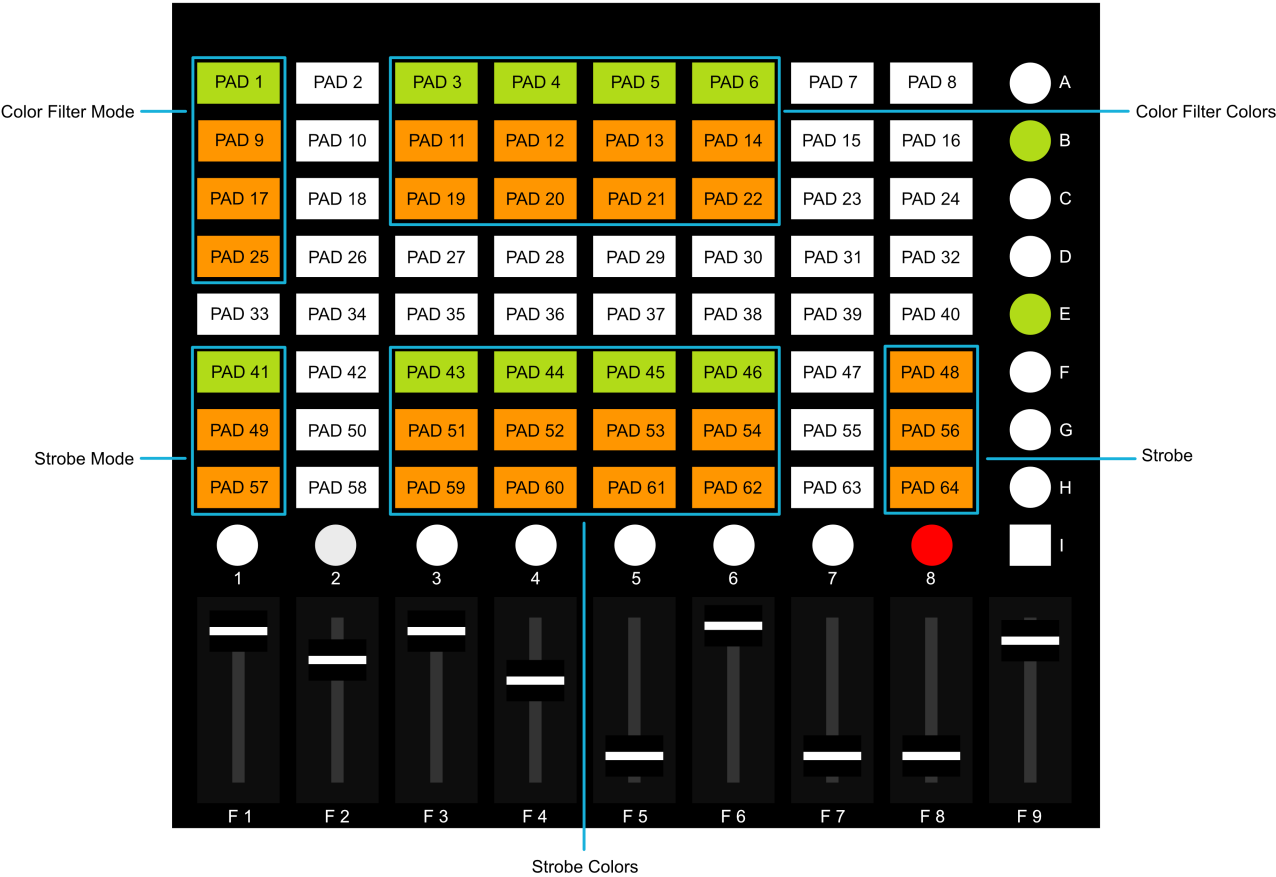
	PAD 9	Deck A - Speed Down
	PAD 17	Deck A - Speed = 1.0
Speed Deck B 	PAD 9	Deck B - Speed Up
	PAD 16	Deck B - Speed Down
	PAD 24	Deck B - Speed = 1.0
Output Master 	PAD 33	Main Output Freeze
	PAD 41	Main Output - Value Up
	PAD 49	Main Output - Value Down
	PAD 57	Main Output - Blackout
	PAD 42	Audio Output - Value Up
	PAD 50	Audio Output - Value Down
	PAD 58	Audio Output - Mute
	PAD 35	Auto Gain Control - On/Off
	PAD 43	Audio Input - Value Up
	PAD 51	Audio Input Value Down
	PAD 59	Audio Input Mute
Fade Section	PAD 47	Fade Type - Up

	PAD 55	Fade Type - Down
	PAD 63	Fade Type - Crossfade
	PAD 48	Fade Time - Plus 0.5 Seconds
	PAD 56	Fade Time - Minus 0.5 Seconds
	PAD 64	Fade Time - 0.0 Seconds
	B	Color Filter
	E	Fade To Left
	F	Fade To Middle
	G	Fade To Right
	H	Automatic Fade

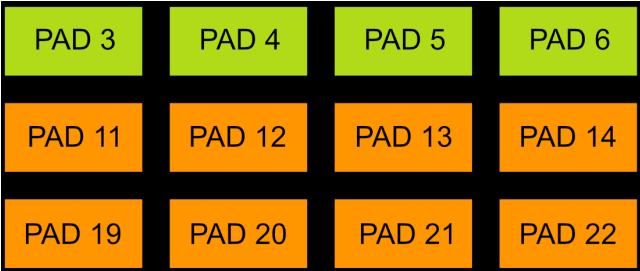
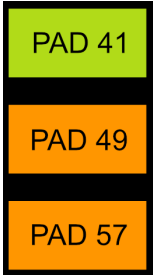
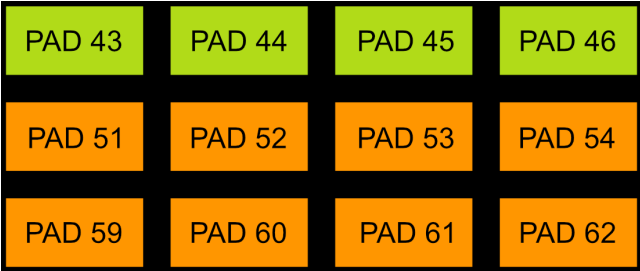
PAD Color	Meaning
	Default Value, AGC, or Output Freeze is activated.
	Value Up or Down, Default Value, AGC, or Output Freeze is available.
	Blackout / Mute is activated.
	Not used.

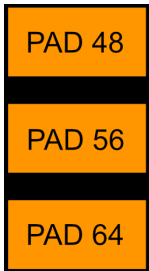
Master - Color Filter




(Mode: 8, Sub-Mode: B)



	Button	Function
<div>Color Filter Mode</div> <div><div>PAD 1</div><div>PAD 9</div><div>PAD 17</div><div>PAD 25</div></div>	PAD 1	Color Filter Mode - Allow Through
	PAD 9	Color Filter Mode - Filter Out
	PAD 17	Color Filter Mode - Colorize
	PAD 25	Color Filter Mode - Ignore

<p>Color Filter Colors</p> 	PAD 3	Filter Color Red - Value 255
	PAD 11	Filter Color Red - Value 127
	PAD 19	Filter Color Red - Value 0
	PAD 4	Filter Color Green - Value 255
	PAD 12	Filter Color Green - Value 127
	PAD 20	Filter Color Green - Value 0
	PAD 5	Filter Color Blue - Value 255
	PAD 13	Filter Color Blue - Value 127
	PAD 21	Filter Color Blue - Value 0
	PAD 6	Filter Color White - Value 255 (available if Patch Color Depth = 4)
	PAD 14	Filter Color White - Value 127 (available if Patch Color Depth = 4)
	PAD 22	Filter Color White - Value 0 (available if Patch Color Depth = 4)
<p>Strobe Mode</p> 	PAD 41	Strobe Mode - Output And Strobe Color
	PAD 49	Strobe Mode - Output And Black
	PAD 57	Strobe Mode - Black And Strobe Color
<p>Strobe Colors</p> 	PAD 43	Strobe Color Red - Value 255
	PAD 51	Strobe Color Red - Value 127
	PAD 59	Strobe Color Red - Value 0
	PAD 44	Strobe Color Green - Value 255
	PAD 52	Strobe Color Green - Value 127
	PAD 60	Strobe Color Green - Value 0

	PAD 45	Strobe Color Blue - Value 255
	PAD 53	Strobe Color Blue - Value 127
	PAD 61	Strobe Color Blue - Value 0
	PAD 46	Strobe Color White - Value 255 (available if Patch Color Depth = 4)
	PAD 54	Strobe Color White - Value 127 (available if Patch Color Depth = 4)
	PAD 62	Strobe Color White - Value 0 (available if Patch Color Depth = 4)
Strobe 	PAD 48	Strobe Speed - Up
	PAD 56	Strobe Speed - Down
	PAD 64	Strobe
	A	Main Parameter
	E	Fade To Left
	F	Fade To Middle
	G	Fade To Right
	H	Automatic Fade

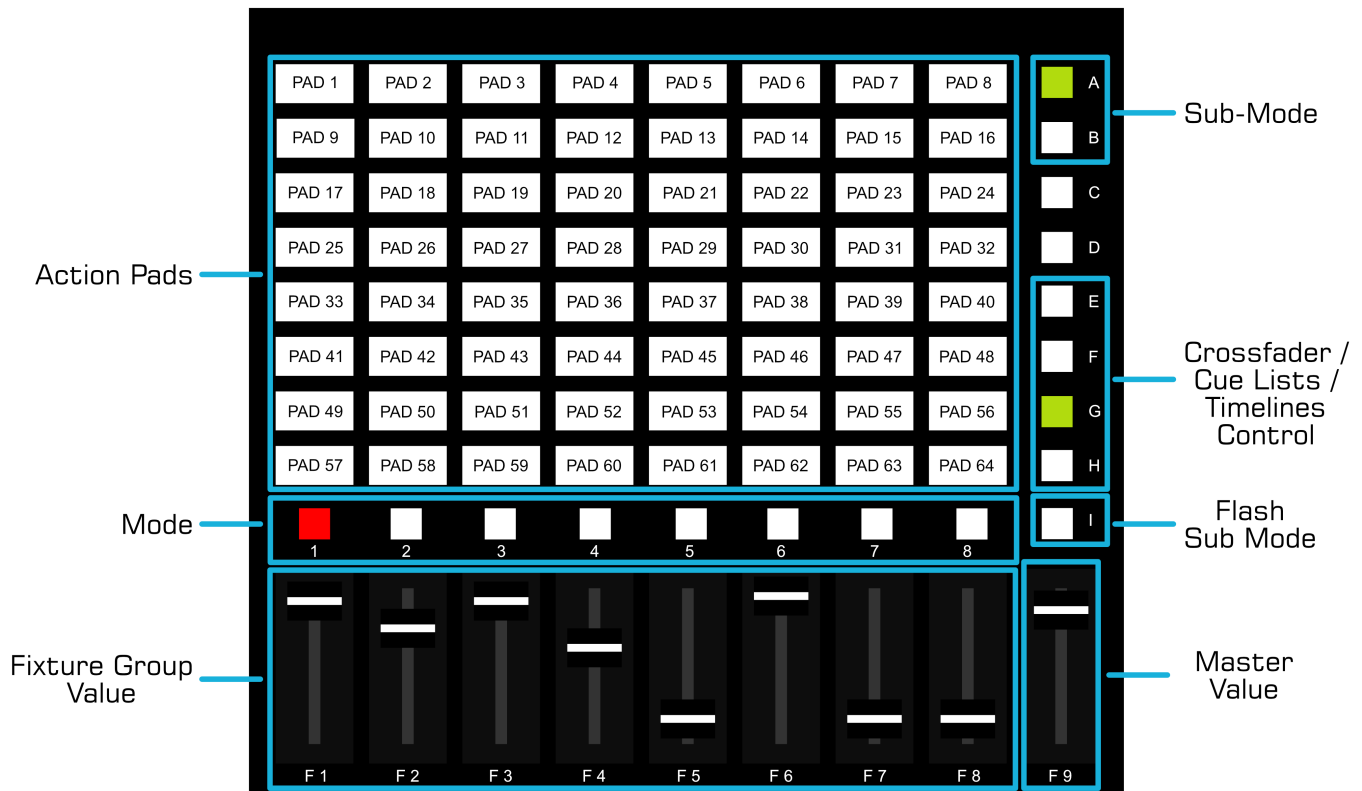
PAD Color	Meaning
	Activated.
	Value available.
	Not used.

7.2.4 Akai Professional APC mini mk2 [MIDI Map]

This topic includes:

- [General Overview](#)
- [Detailed Description](#)
- [Storage Places Deck A](#)
- [Storages Deck A](#)
- [Storage Places Deck B](#)
- [Storages Deck B](#)
- [Group Control - Values](#)
- [Group Control - Presets](#)
- [Cue Lists - Cue Selection](#)
- [Cue Lists - Cue List Selection](#)
- [Timelines - Cue Segment Selection](#)
- [Timelines - Timeline Selection](#)
- [Master - Main Parameter](#)
- [Master - Color Filter](#)

General Overview



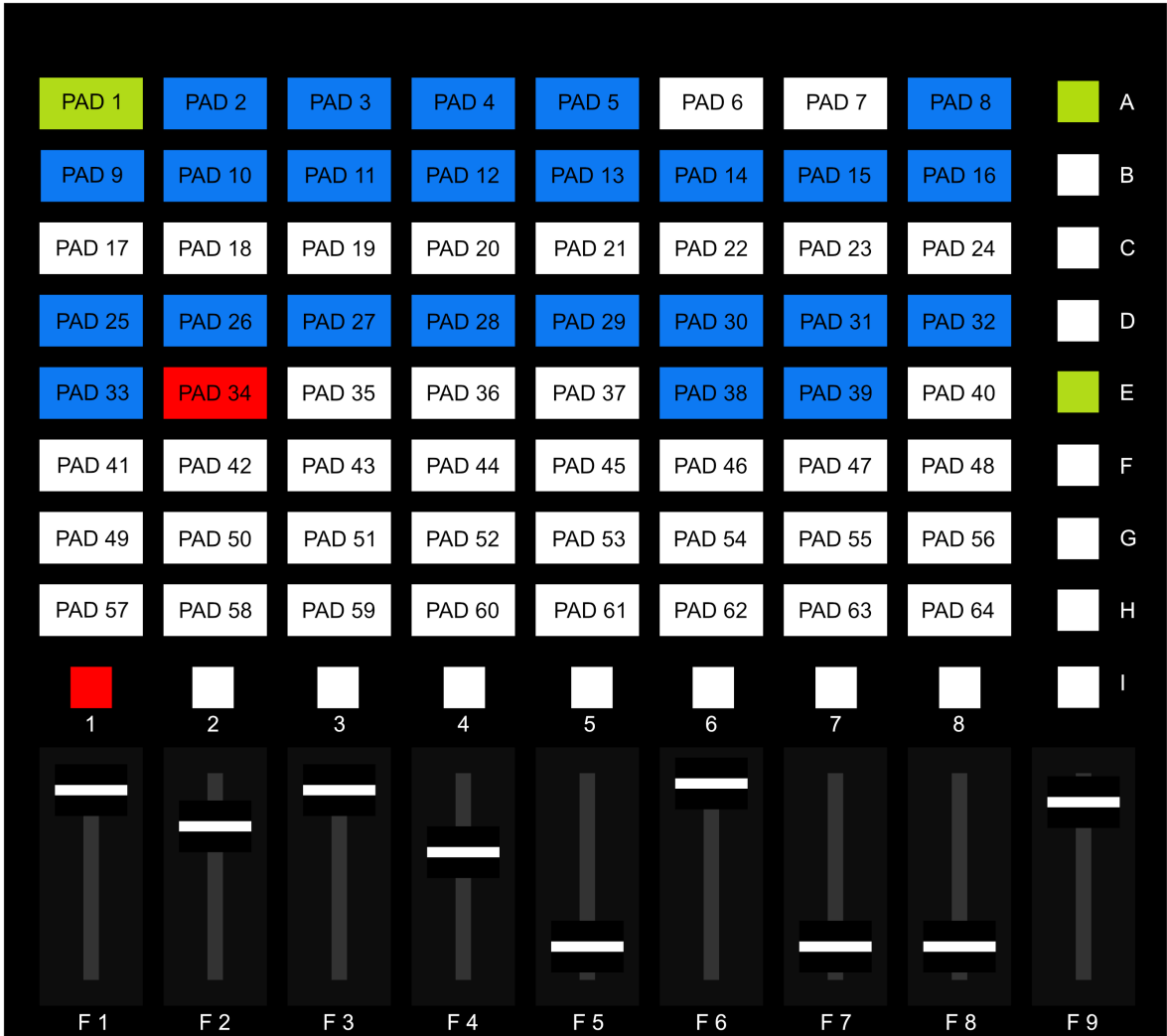
Mode	Active	Function
	1	Deck A
	2	Deck B
	3	Group Control
	4	Cue List
	8	Master
Sub-Mode	A	Mode Deck A: Place Mode Deck B: Place Mode Group Control: Group Value Mode Cue List: Cue
	B	Mode Deck A: Storage Mode Deck B: Storage

		Mode Group Control: Group Preset
Crossfader / Cue List Control	E	Mode Deck A: Fade To Left Mode Deck B: Fade To Left Mode Group Control: Fade To Left
	F	Mode Deck A: Fade To Middle Mode Deck B: Fade To Middle Mode Group Control: Fade To Middle Mode Cue List: Cue List Back
	G	Mode Deck A: Fade To Right Mode Deck B: Fade To Right Mode Group Control: Fade To Right Mode Cue List: Cue List Go
	H	Mode Deck A: Auto Fade Mode Deck B: Auto Fade Mode Deck Group Control: Auto Fade Mode Cue List: Cue List Play Pause Toggle
Flash Sub-Mode	I	As long as the button is pressed the Sub-Mode will be swapped.
Fixture Group Value	F1	Value Fixture Group 1
	F2	Value Fixture Group 2
	F3	Value Fixture Group 3
	F4	Value Fixture Group 4
	F5	Value Fixture Group 5
	F6	Value Fixture Group 6
	F7	Value Fixture Group 7
	F8	Value Fixture Group 8
Master Value	F9	Value Output Master
Action Pads	Activates desired Place, Storage, Group Preset, Cue, sets the stored value for Groups or Main Output Parameters according to the following descriptions:	

Detailed Description





Storage Places Deck A

(Mode: 1, Sub-Mode: A)



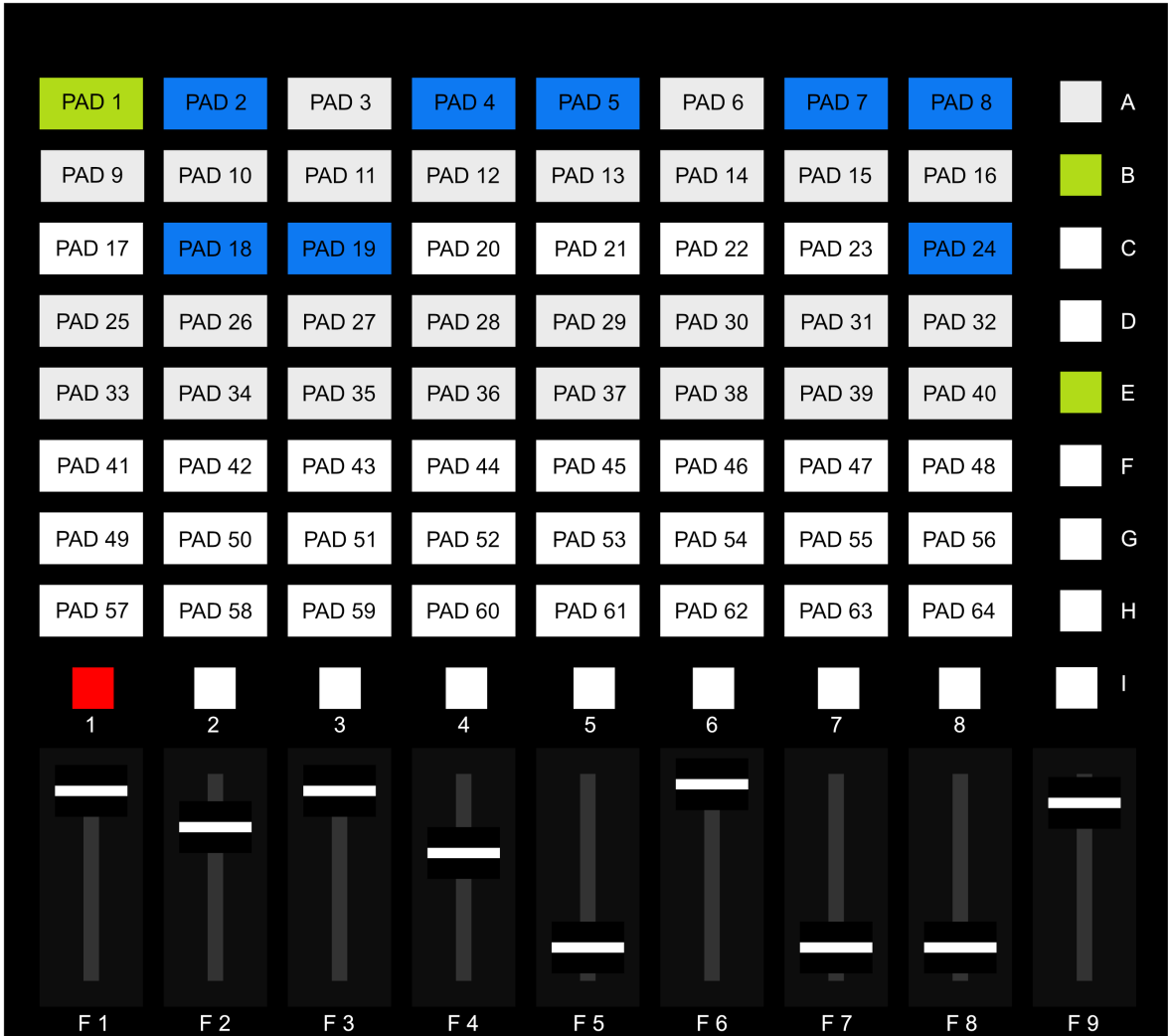
Button	Function
PAD 1 - PAD 64	Activate Storage Place at Deck A according to the PAD number.
B	Storage Control Deck A
E	Fade To Left
F	Fade To Middle

G	Fade To Right
H	Automatic Fade




PAD Color	Meaning
	Storage Place is activated.
	Content is saved at the Storage Place but it is not activated.
	No content is saved at the Storage Place and it is not activated.
	Storage Place is blocked.

Storages Deck A

(Mode: 1, Sub-Mode: B)

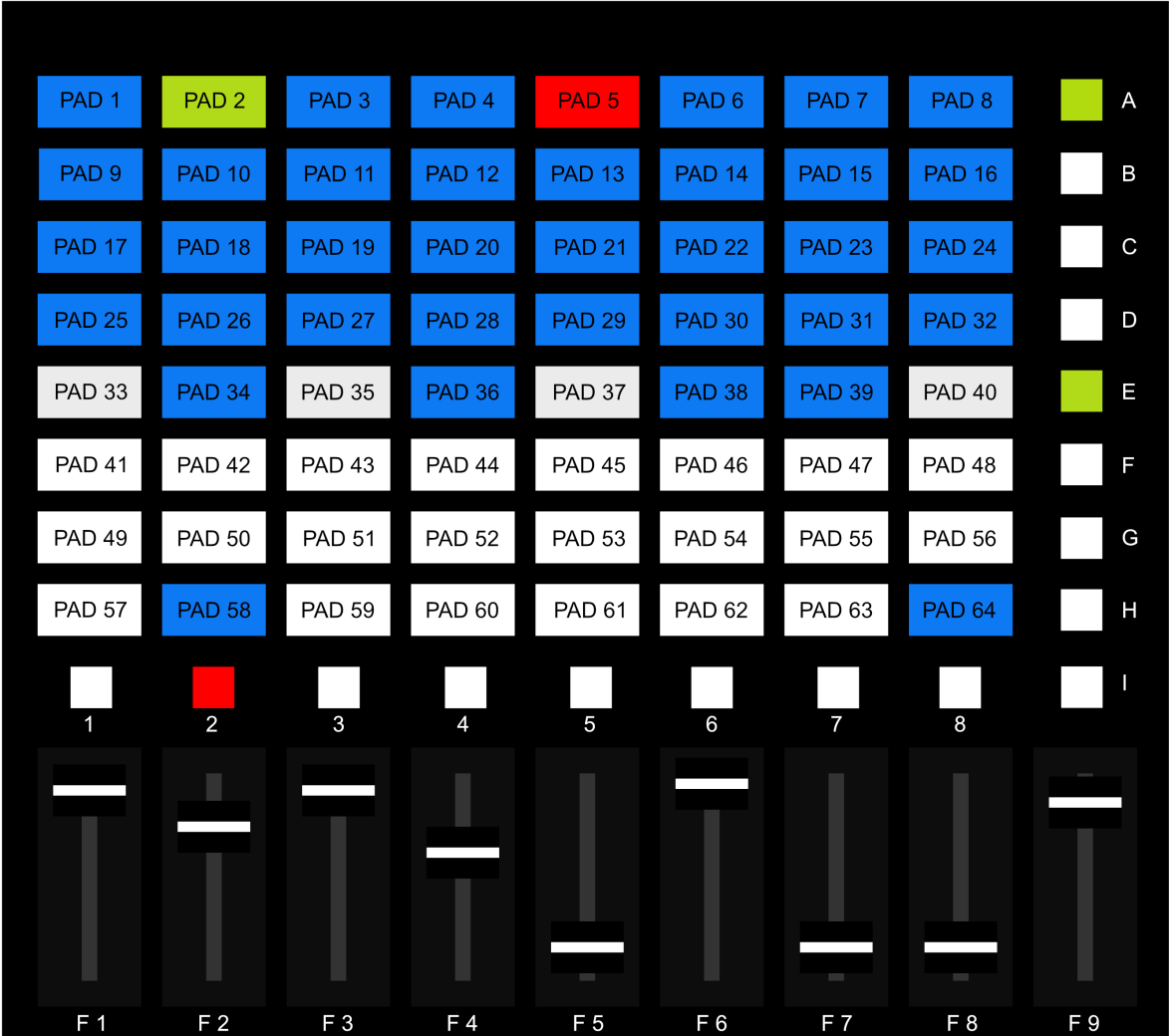


Button	Function
PAD 1 - PAD 64	Activate Storage at Deck A according to the PAD number.
A	Storage Place Control Deck A
E	Fade To Left
F	Fade To Middle
G	Fade To Right
H	Automatic Fade





PAD Color	Meaning
	Storage is activated.
	Storage Places with content are available at the Storage but it is not activated.
	No content is available at the Storage and it is not activated.

Storage Places Deck B

(Mode: 2, Sub-Mode: A)

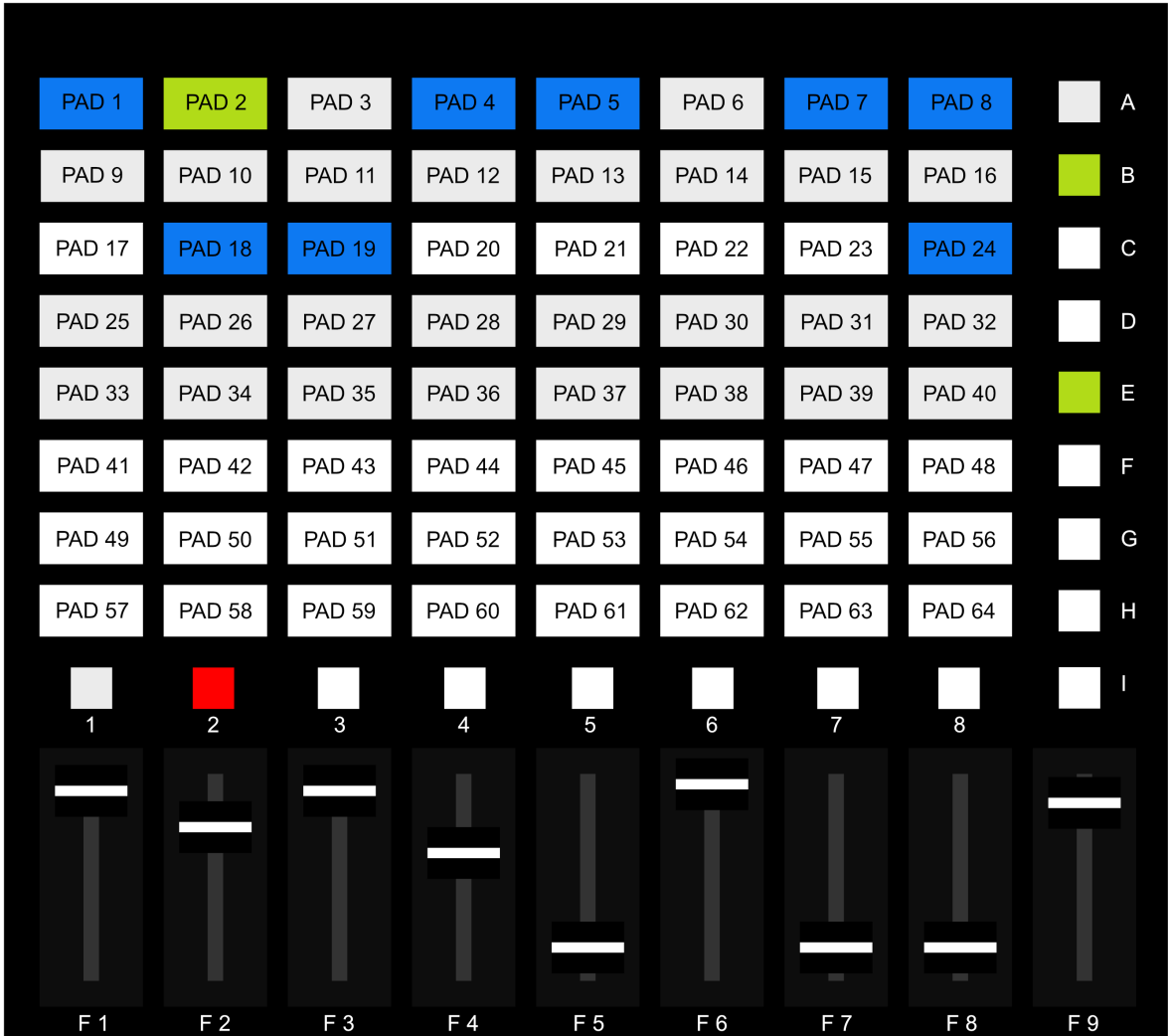


Button	Function
PAD 1 - PAD 64	Activate Storage Place at Deck B according to the PAD number.
B	Storage Control Deck B
E	Fade To Left
F	Fade To Middle
G	Fade To Right
H	Automatic Fade




PAD Color	Meaning
	Storage Place is activated.
	Content is saved at the Storage Place but it is not activated.
	No content is saved at the Storage Place and it is not activated.
	Storage Place is blocked.

Storages Deck B

(Mode: 2, Sub-Mode: B)

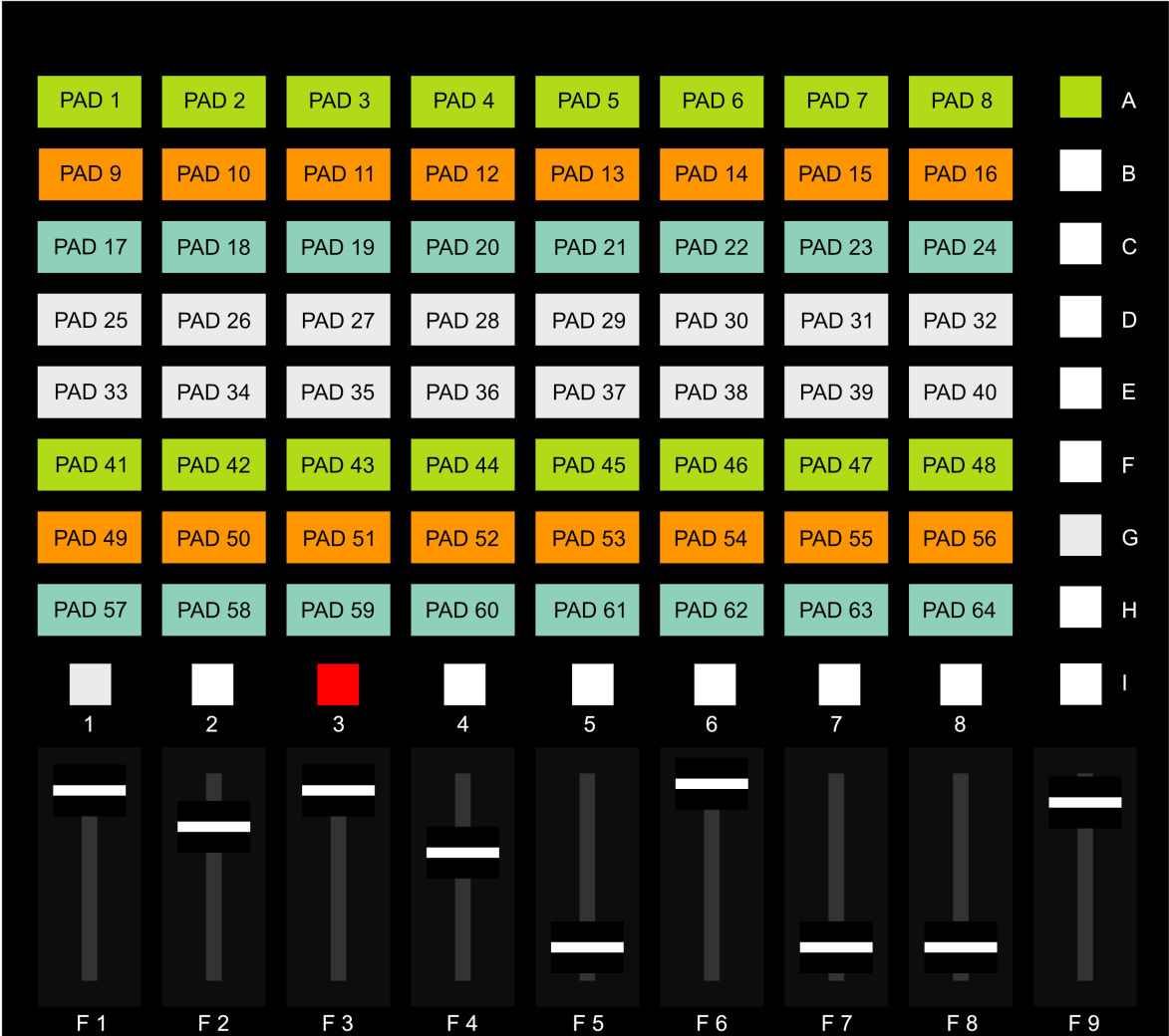


Button	Function
PAD 1 - PAD 64	Activate Storage at Deck B according to the PAD number.
A	Storage Place Control Deck B
E	Fade To Left
F	Fade To Middle
G	Fade To Right
H	Automatic Fade

PAD Color	Meaning
	Storage is activated.
	Storage Places with content are available at the Storage but it is not activated.
	No content is available at the Storage and it is not activated.





Group Control - Values

(Mode: 3, Sub-Mode: A)



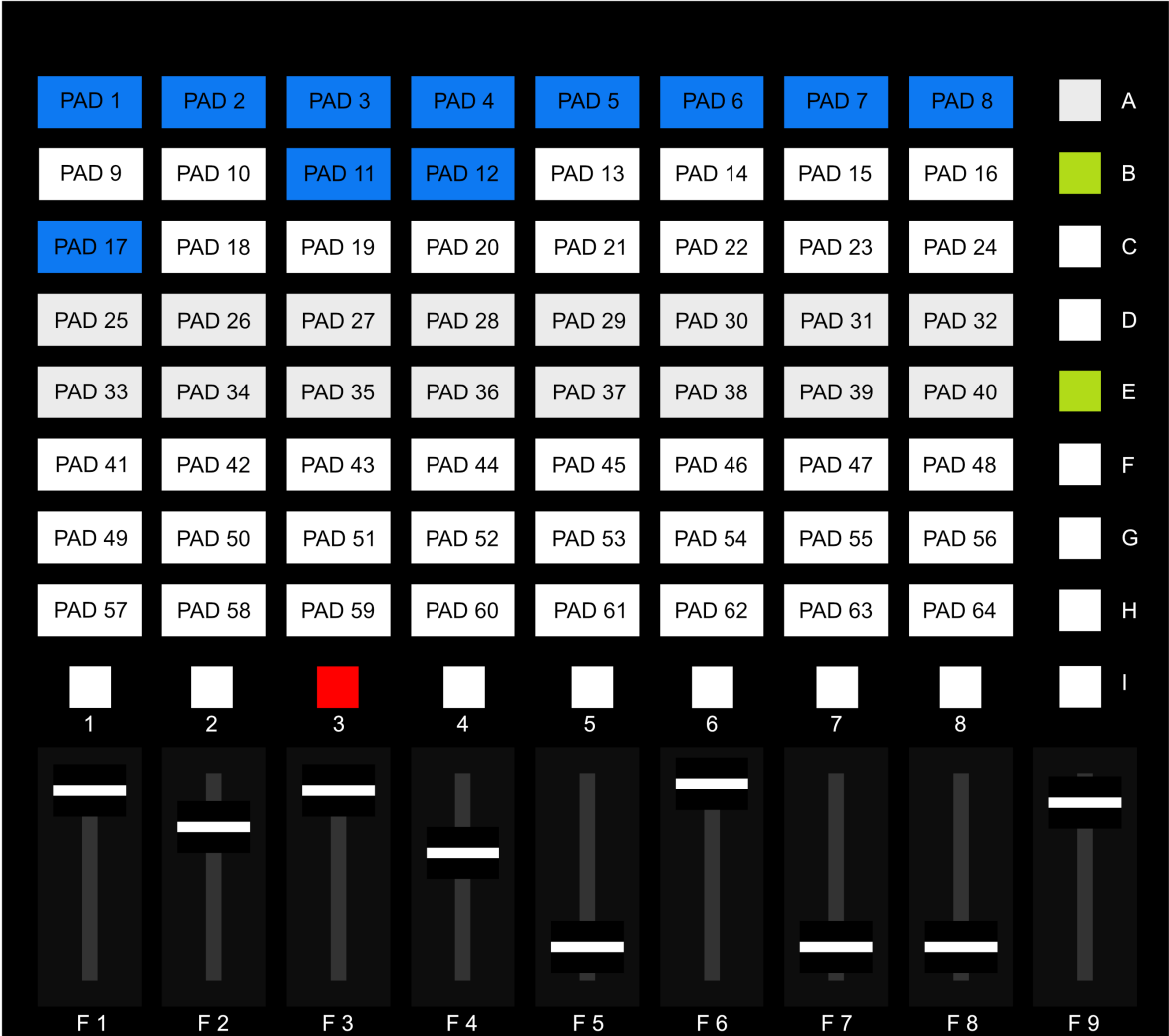
Button	Function
PAD 1 - PAD 8	Group 1 to Group 8 - Value 255
PAD 9 - PAD 16	Group 1 to Group 8 - Value 0
PAD 17 - PAD 24	Group 1 to Group 8 - Flash To Value 255
PAD 25 - PAD 40	Not in use.
PAD 41 - PAD 48	Group 9 to Group 16 - Value 255
PAD 49 - PAD 56	Group 9 to Group 16 - Value 0

PAD 57 - PAD 64	Group 9 to Group 16 - Flash To Value 255
B	Group Control - Presets
E	Fade To Left
F	Fade To Middle
G	Fade To Right
H	Automatic Fade

PAD Color	Meaning
	Group Value activate.
	Group Value not activate.
	Flash the Group.
	Not in use.

Group Control - Presets

(Mode: 3, Sub-Mode: B)



Button	Function
PAD 1 - PAD 64	Activate Group Preset according to the PAD number.
A	Group Value
E	Fade To Left
F	Fade To Middle
G	Fade To Right
H	Automatic Fade

PAD Color	Meaning
<div>PAD 1</div>	Group Preset saved.
<div>PAD 1</div>	Empty Group Preset.

Cue Lists - Cue Selection

(Mode: 4, Sub-Mode: A)

PAD 1

PAD 2

PAD 3

PAD 4

PAD 5

PAD 6

PAD 7

PAD 8

PAD 9

PAD 10

PAD 11

PAD 12

PAD 13

PAD 14

PAD 15

PAD 16

PAD 17

PAD 18

PAD 19

PAD 20

PAD 21

PAD 22

PAD 23

PAD 24

PAD 25

PAD 26

PAD 27

PAD 28

PAD 29

PAD 30

PAD 31

PAD 32

PAD 33

PAD 34

PAD 35

PAD 36

PAD 37

PAD 38

PAD 39

PAD 40

PAD 41

PAD 42

PAD 43

PAD 44

PAD 45

PAD 46

PAD 47

PAD 48

PAD 49

PAD 50

PAD 51

PAD 52

PAD 53

PAD 54

PAD 55

PAD 56

PAD 57

PAD 58

PAD 59

PAD 60

PAD 61

PAD 62

PAD 63

PAD 64

1

2

3

4

5

6

7

8

F 1

F 2

F 3

F 4

F 5

F 6



F 7

F 8

F 9

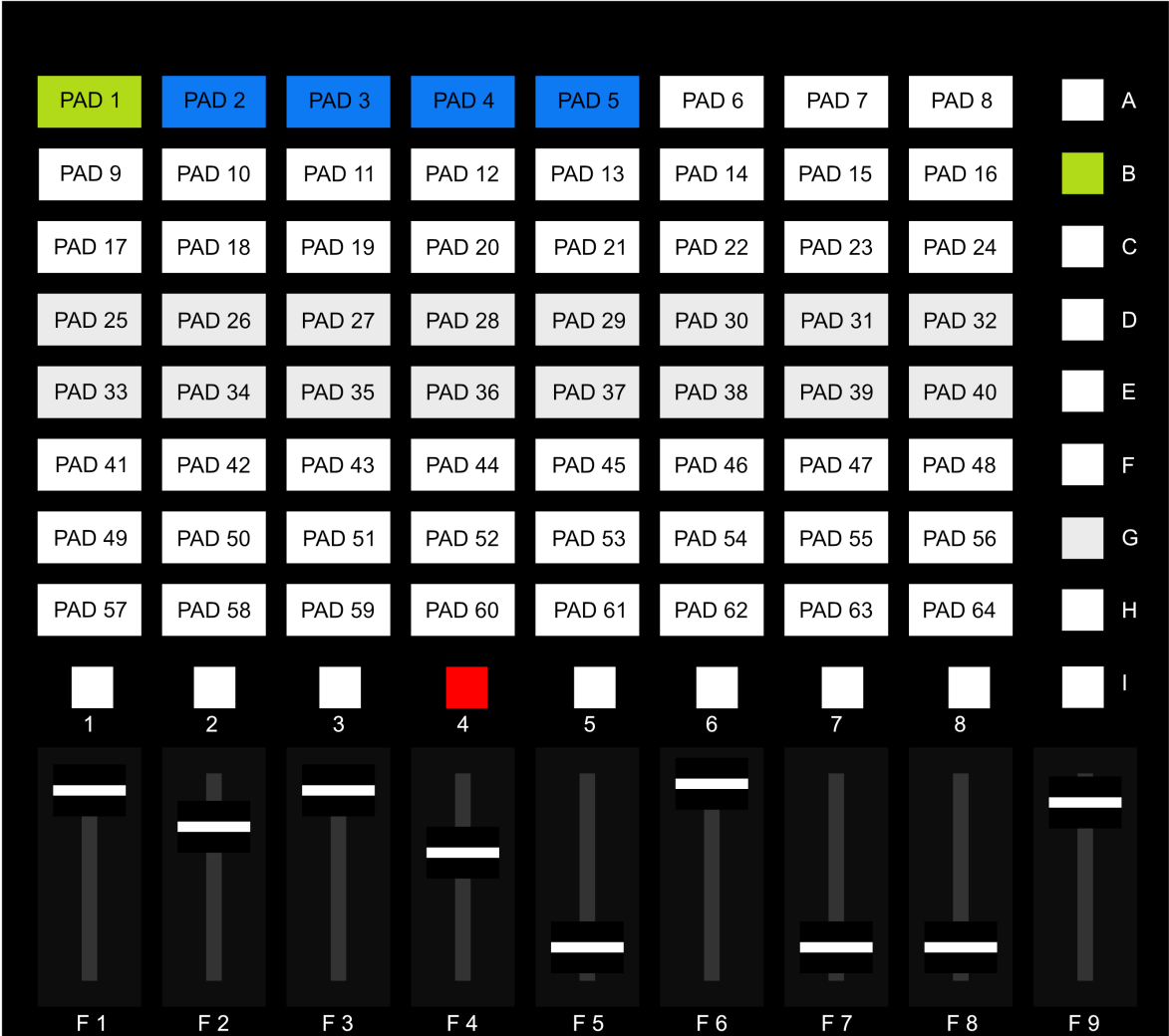
Button	Function
--------	----------

PAD 1 - PAD 64	Activate Cue according to the PAD number.
B	Cue List Selection
F	Back
G	Go
H	Play / Pause Toggle




PAD Color	Meaning
	Cue Playing.
	Cue Available.
	Empty

Cue Lists - Cue List Selection

(Mode: 4, Sub-Mode: B)

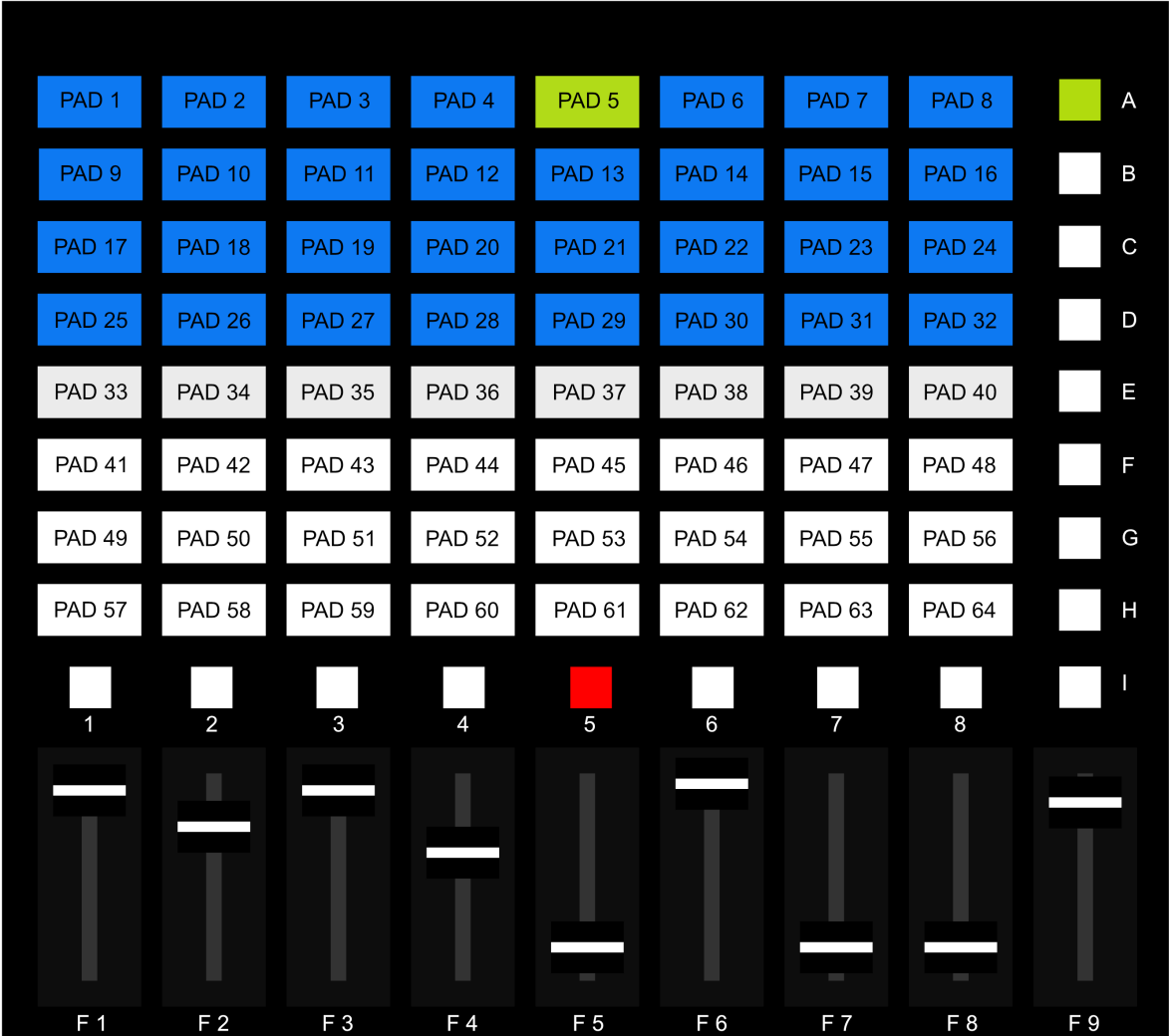


Button	Function
PAD 1 - PAD 64	Activate a Cue List according to the PAD number.
A	Cue Selection
F	Back
G	Go
H	Play / Pause Toggle

PAD Color	Meaning
	Cue List activated.
	Cue List available.
	Empty

Timelines - Cue Segment Selection

(Mode: 5, Sub-Mode: A)



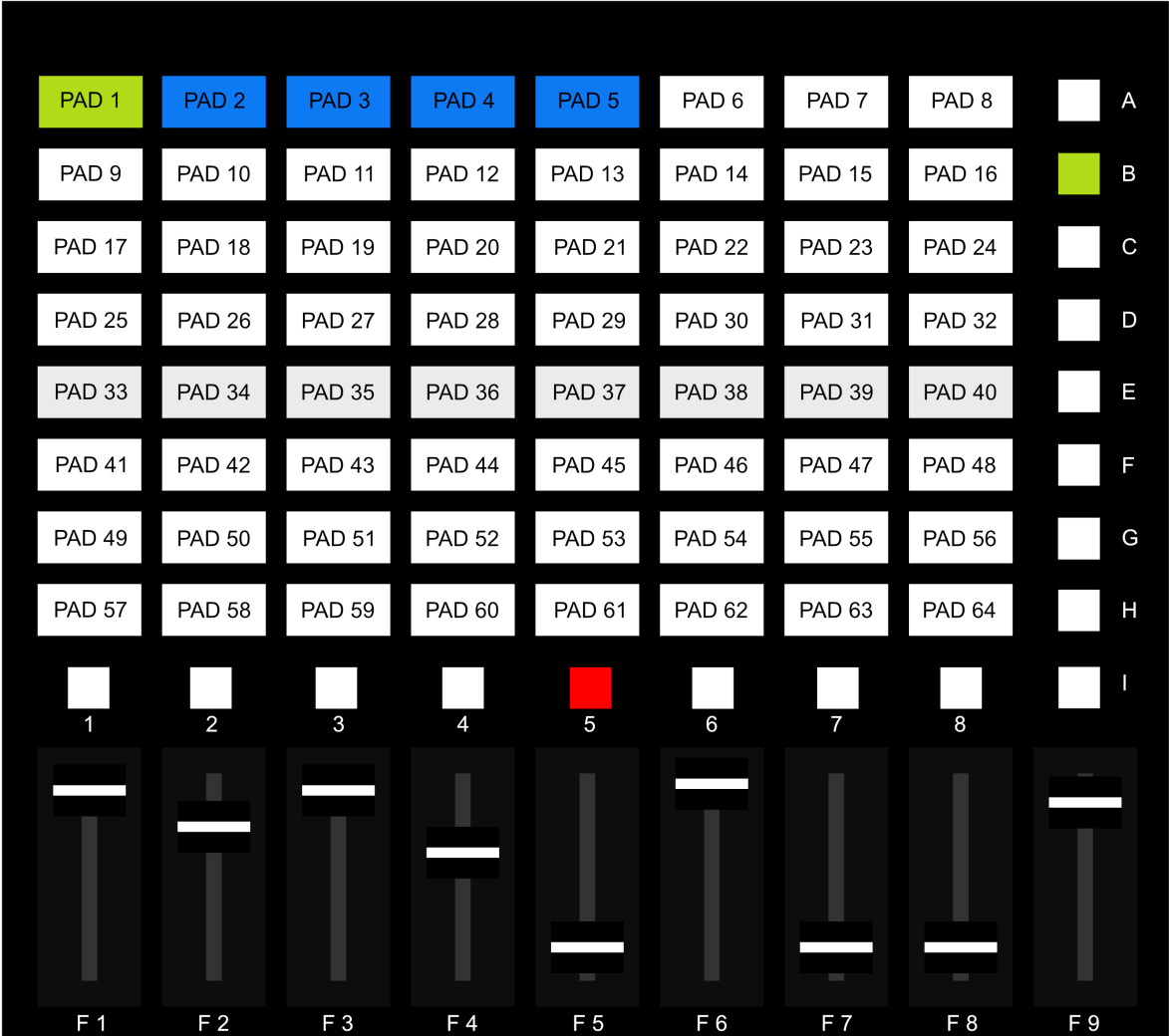
Button	Function
PAD 1 - PAD 64	Activate Cue Segment according to the PAD number.
B	Timeline Selection
G	Stop
H	Play / Pause Toggle

PAD Color	Meaning
-----------	---------

<div>PAD 1</div>	Cue Segment playing.
<div>PAD 1</div>	Cue Segment available.
<div>PAD 1</div>	Empty

Timelines - Timeline Selection

(Mode: 5, Sub-Mode: B)



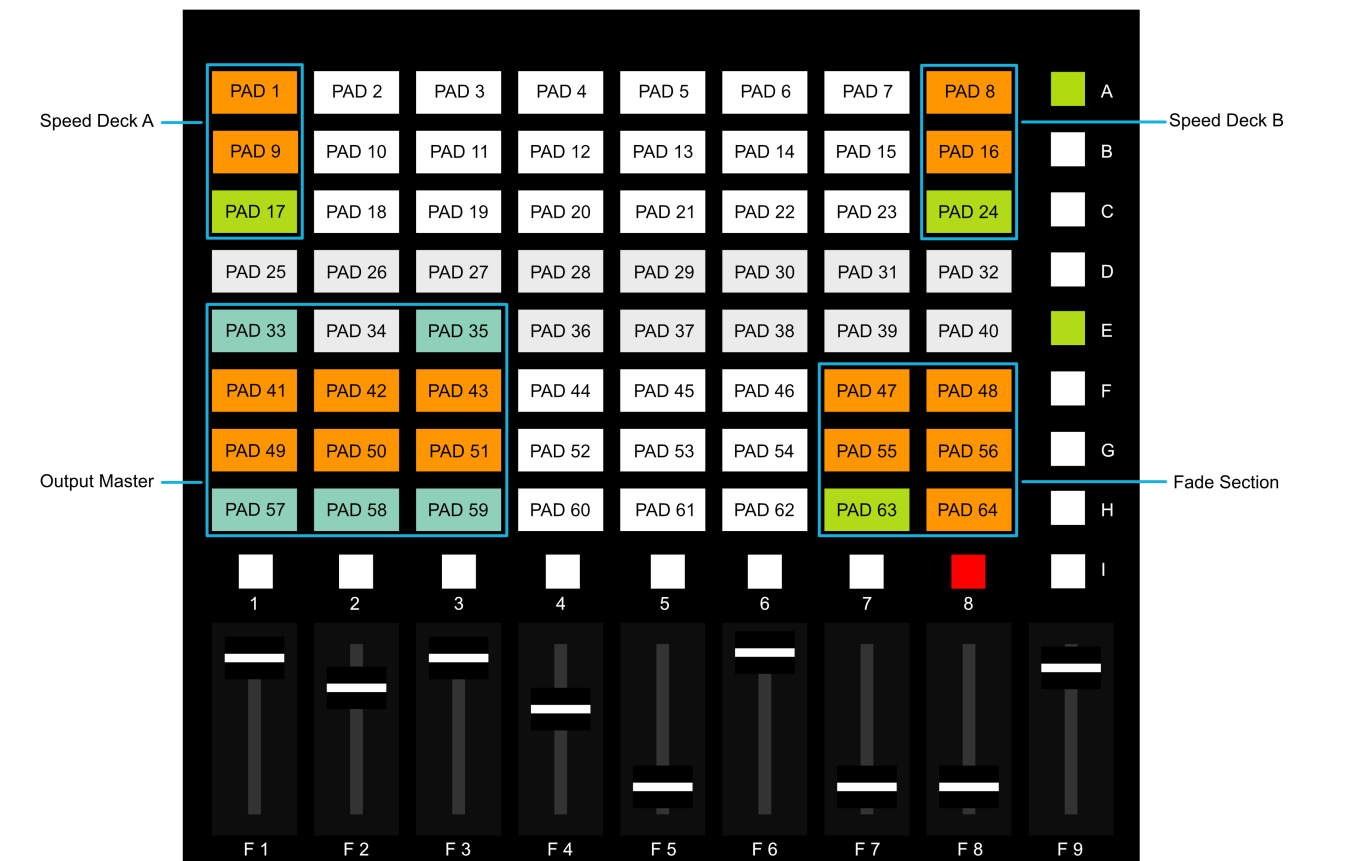
Button	Function
PAD 1 - PAD 64	Activate a Timeline according to the PAD number.
A	Cue Segment Selection
G	Stop
H	Play / Pause Toggle

PAD Color	Meaning
-----------	---------



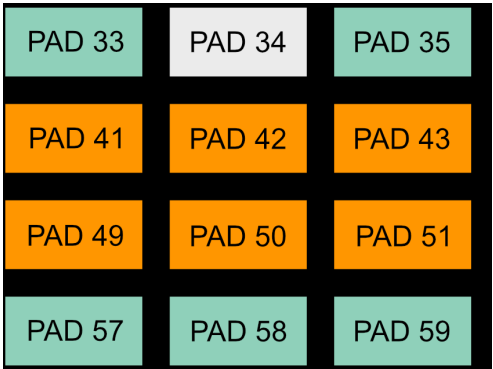
<div>PAD 1</div>	Timeline activated.
<div>PAD 1</div>	Timeline available.
<div>PAD 1</div>	Empty

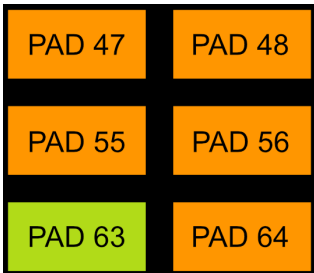
Master - Main Parameter






(Mode: 8, Sub-Mode: A)



	Button	Function
Speed Deck A	PAD 1	Deck A - Speed Up

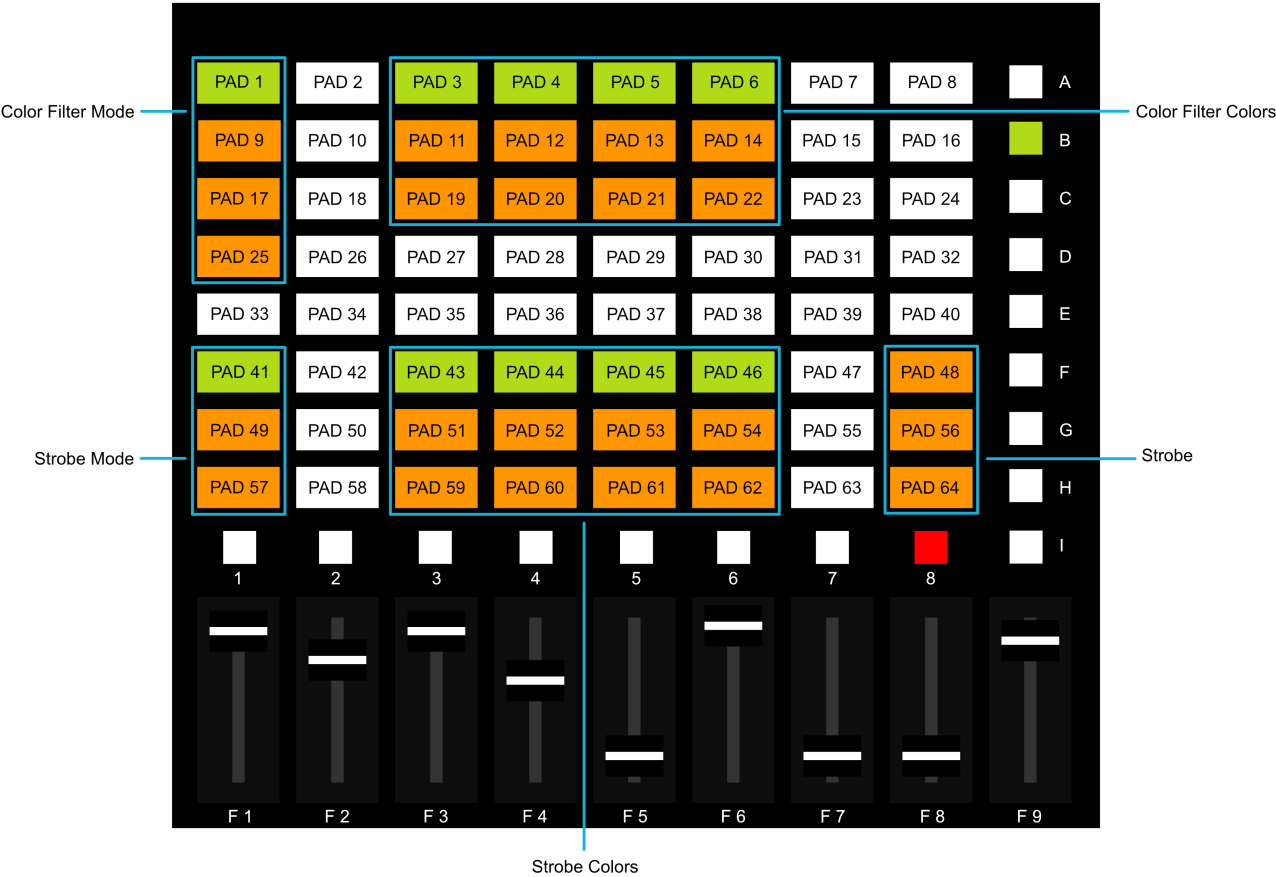
	PAD 9	Deck A - Speed Down
	PAD 17	Deck A - Speed = 1.0
Speed Deck B 	PAD 9	Deck B - Speed Up
	PAD 16	Deck B - Speed Down
	PAD 24	Deck B - Speed = 1.0
Output Master 	PAD 33	Main Output Freeze
	PAD 41	Main Output - Value Up
	PAD 49	Main Output - Value Down
	PAD 57	Main Output - Blackout
	PAD 42	Audio Output - Value Up
	PAD 50	Audio Output - Value Down
	PAD 58	Audio Output - Mute
	PAD 35	Auto Gain Control - On/Off
	PAD 43	Audio Input - Value Up
	PAD 51	Audio Input Value Down
	PAD 59	Audio Input Mute
Fade Section	PAD 47	Fade Type - Up

	PAD 55	Fade Type - Down
	PAD 63	Fade Type - Crossfade
	PAD 48	Fade Time - Plus 0.5 Seconds
	PAD 56	Fade Time - Minus 0.5 Seconds
	PAD 64	Fade Time - 0.0 Seconds
	B	Color Filter
	E	Fade To Left
	F	Fade To Middle
	G	Fade To Right
	H	Automatic Fade

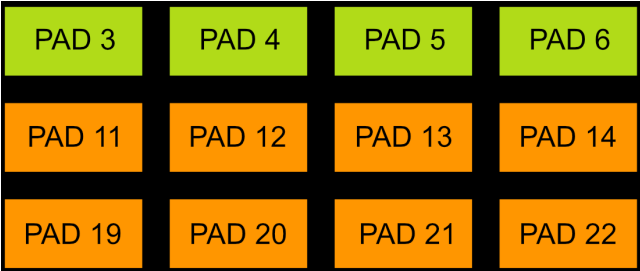
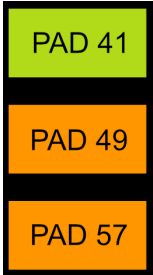
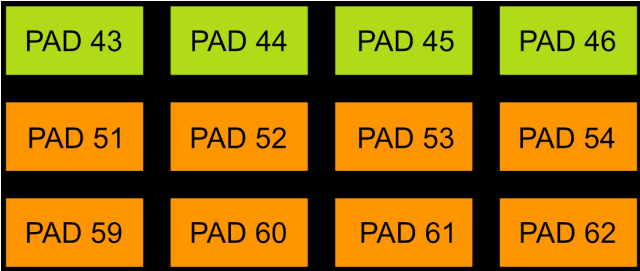
PAD Color	Meaning
	Default Value, AGC, or Output Freeze is activated.
	Value Up or Down, Default Value.
	AGC, Mute, Blackout, or Output Freeze is available.
	Blackout / Mute is activated.
	Not used.

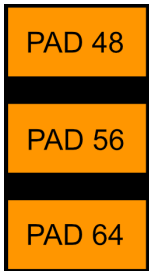
Master - Color Filter

(Mode: 8, Sub-Mode: B)



	Button	Function
<div>Color Filter Mode</div> <div><div>PAD 1</div><div>PAD 9</div><div>PAD 17</div><div>PAD 25</div></div>	PAD 1	Color Filter Mode - Allow Through
	PAD 9	Color Filter Mode - Filter Out
	PAD 17	Color Filter Mode - Colorize

<p>Color Filter Colors</p> 	PAD 3	Filter Color Red - Value 255
	PAD 11	Filter Color Red - Value 127
	PAD 19	Filter Color Red - Value 0
	PAD 4	Filter Color Green - Value 255
	PAD 12	Filter Color Green - Value 127
	PAD 20	Filter Color Green - Value 0
	PAD 5	Filter Color Blue - Value 255
	PAD 13	Filter Color Blue - Value 127
	PAD 21	Filter Color Blue - Value 0
	PAD 6	Filter Color White - Value 255 (available if Patch Color Depth = 4)
	PAD 14	Filter Color White - Value 127 (available if Patch Color Depth = 4)
	PAD 22	Filter Color White - Value 0 (available if Patch Color Depth = 4)
<p>Strobe Mode</p> 	PAD 41	Strobe Mode - Output And Strobe Color
	PAD 49	Strobe Mode - Output And Black
	PAD 57	Strobe Mode - Black And Strobe Color
<p>Strobe Colors</p> 	PAD 43	Strobe Color Red - Value 255
	PAD 51	Strobe Color Red - Value 127
	PAD 59	Strobe Color Red - Value 0
	PAD 44	Strobe Color Green - Value 255
	PAD 52	Strobe Color Green - Value 127
	PAD 60	Strobe Color Green - Value 0

	PAD 45	Strobe Color Blue - Value 255
	PAD 53	Strobe Color Blue - Value 127
	PAD 61	Strobe Color Blue - Value 0
	PAD 46	Strobe Color White - Value 255 (available if Patch Color Depth = 4)
	PAD 54	Strobe Color White - Value 127 (available if Patch Color Depth = 4)
	PAD 62	Strobe Color White - Value 0 (available if Patch Color Depth = 4)
Strobe 	PAD 48	Strobe Speed - Up
	PAD 56	Strobe Speed - Down
	PAD 64	Strobe
	A	Main Parameter
	E	Fade To Left
	F	Fade To Middle
	G	Fade To Right
	H	Automatic Fade

PAD Color	Meaning
	Activated.
	Value available.
	Not used.

7.2.5 KORG nanoKONTROL2 [MIDI Map]

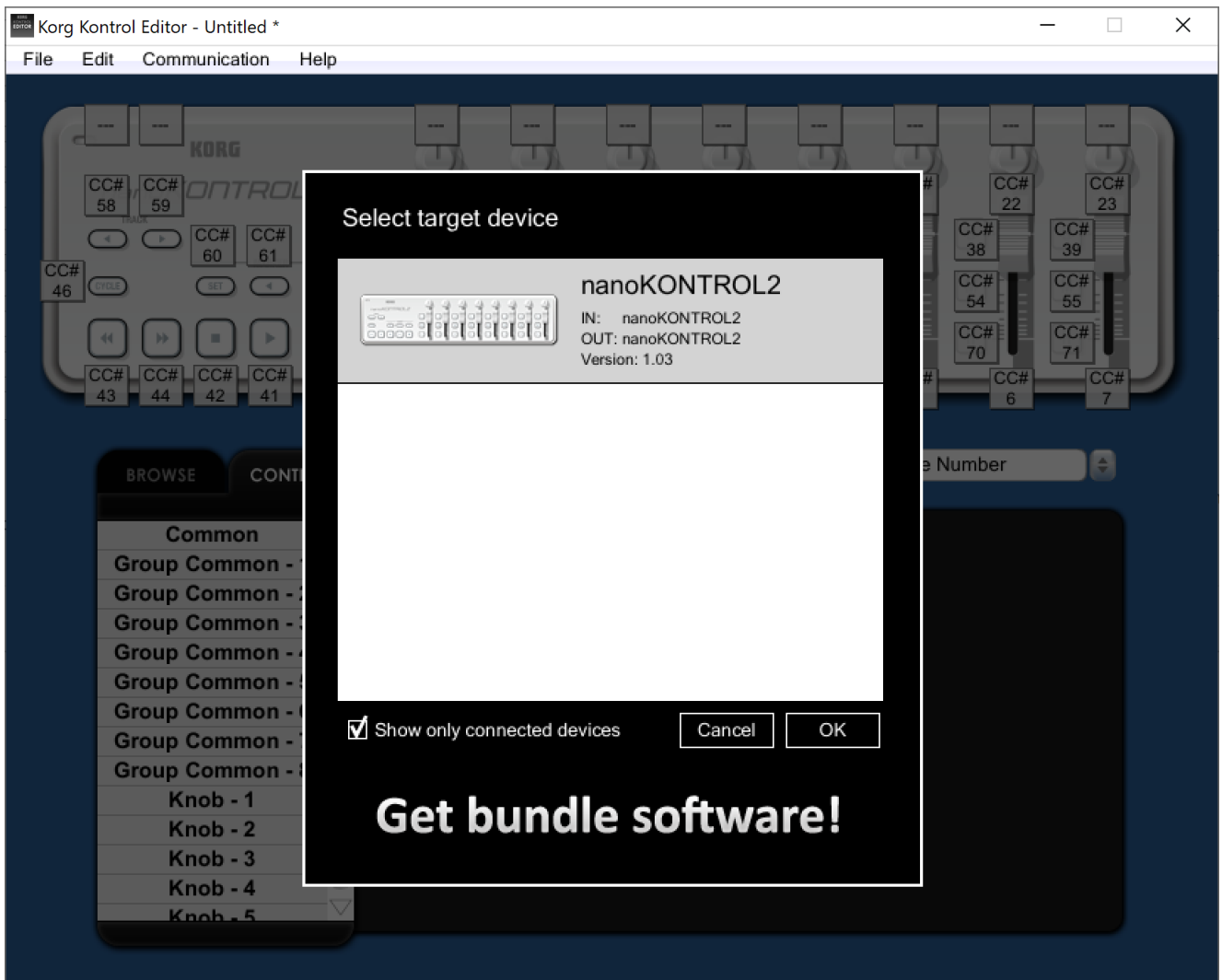
This topic includes:

- [Initial Configuration](#)
- [MIDI Map](#)

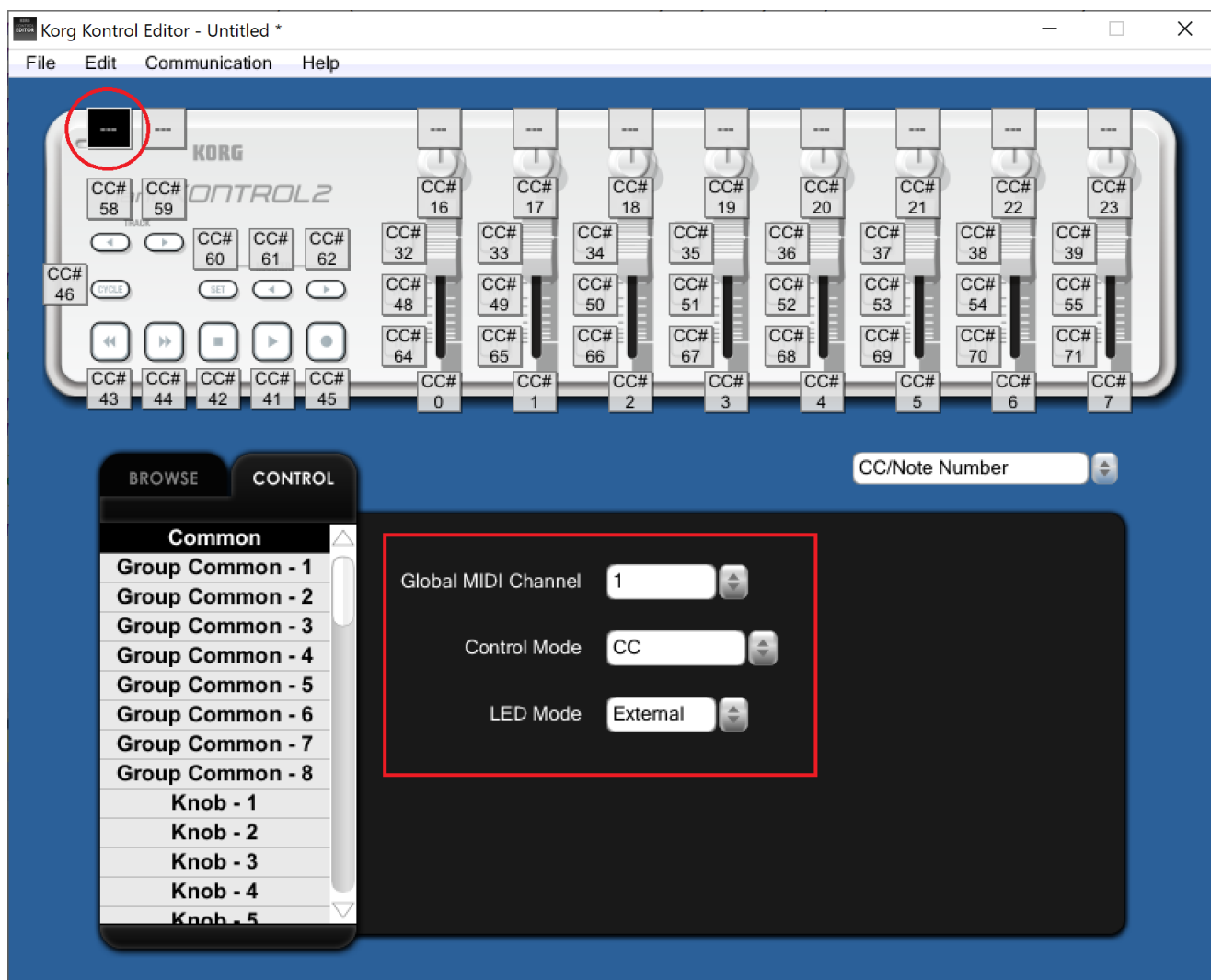
Initial Configuration

KORG nanoKONTROL2 can be configured in different ways. Depending on the mode that is set, it works differently. Before using the KORG nanoKONTROL2, make sure to configure the settings in the following way:

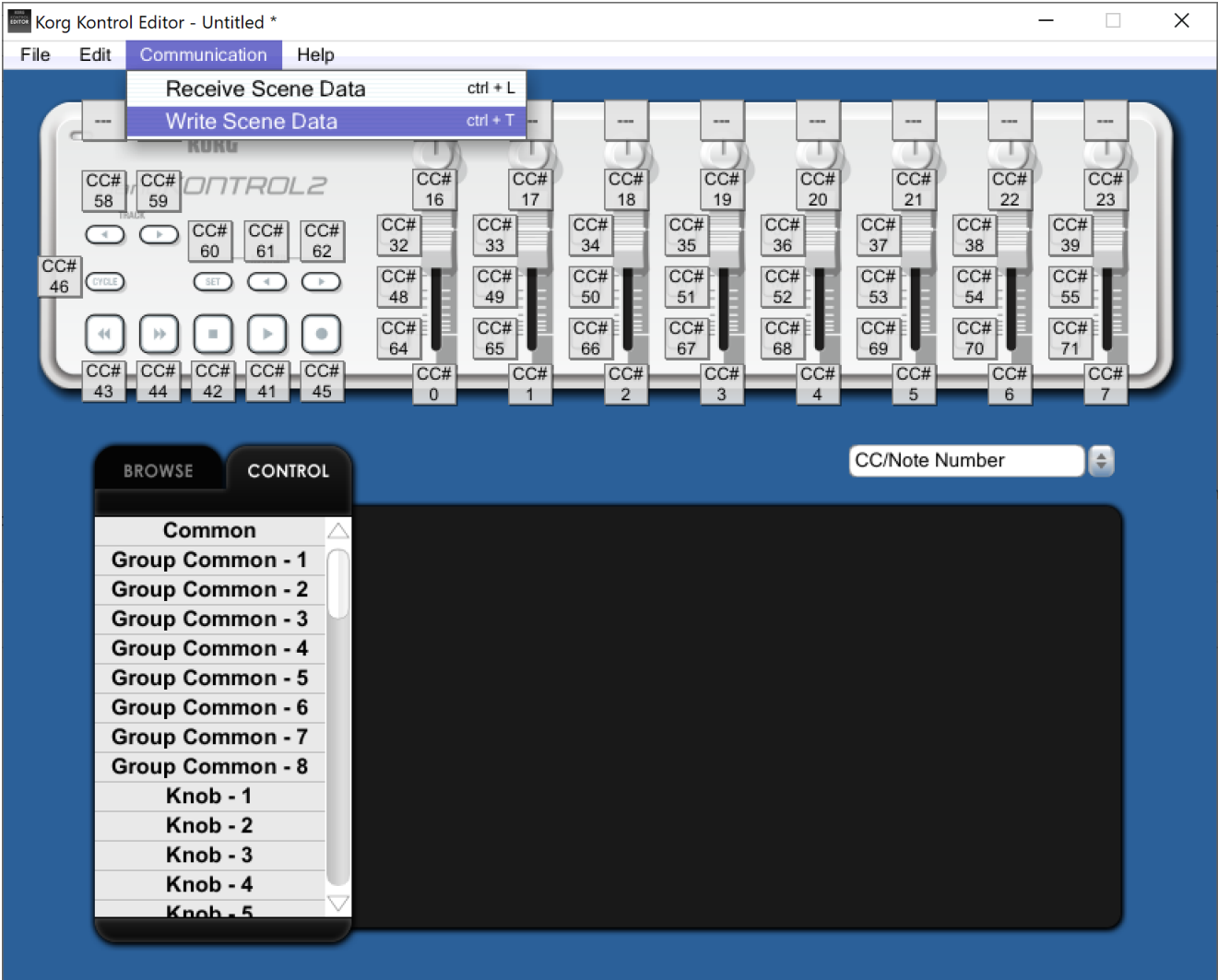
- **1]** Download and install the KORG KONTROL Editor.
- **2]** Connect KORG nanoKONTROL2 to a free USB port of your computer.
- **3]** Launch KORG KONTROL Editor and select KORG **nanoKONTROL2** as **target device**. Confirm with **OK**



- **4]** Click on ... on the device in the top left corner.
 - Set **Global MIDI Channel** to **1**
 - Set **Control Mode** to **CC**
 - Set **LED Mode** to **External**

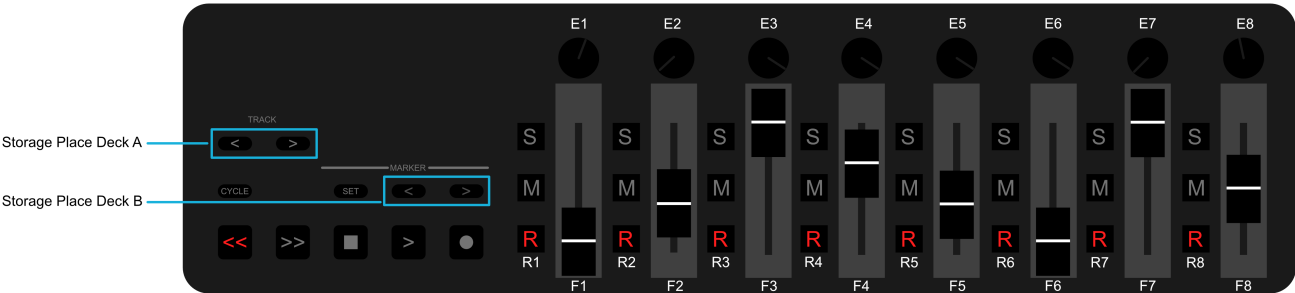


- **5]** Save the configuration on the device.
 - Go to the menu **Communication > Write Scene Data**
 - [Keyboard shortcut: **Ctrl+T**]



- **6]** Close KORG KONTROL Editor.

MIDI Map



Control	Function
Track <	Storage Place at Deck A Down
Track >	Storage Place at Deck A Up
Master <	Storage Place at Deck B Down
Master >	Storage Place at Deck B Up
<<	Automatic Fade
E1	Speed Deck A
E3	Color Filter Red
E4	Color Filter Green
E5	Color Filter Blue
E6	Color Filter White [Available if Patch Color Depth = 4]
E8	Speed Deck B
F1	Value Fixture Group 1
R1	Fixture Group 1 Flash To Value 255
F2	Value Fixture Group 2
R2	Fixture Group 2 Flash To Value 255
F3	Value Fixture Group 3
R3	Fixture Group 3 Flash To Value 255
F4	Value Fixture Group 4
R4	Fixture Group 4 Flash To Value 255
F5	Value Fixture Group 5
R5	Fixture Group 5 Flash To Value 255
F6	Value Fixture Group 6
R6	Fixture Group 6 Flash To Value 255
F7	Value Fixture Group 7

R7	Fixture Group 7 Flash To Value 255
F8	Value Fixture Group 8
R8	Fixture Group 8 Flash To Value 255

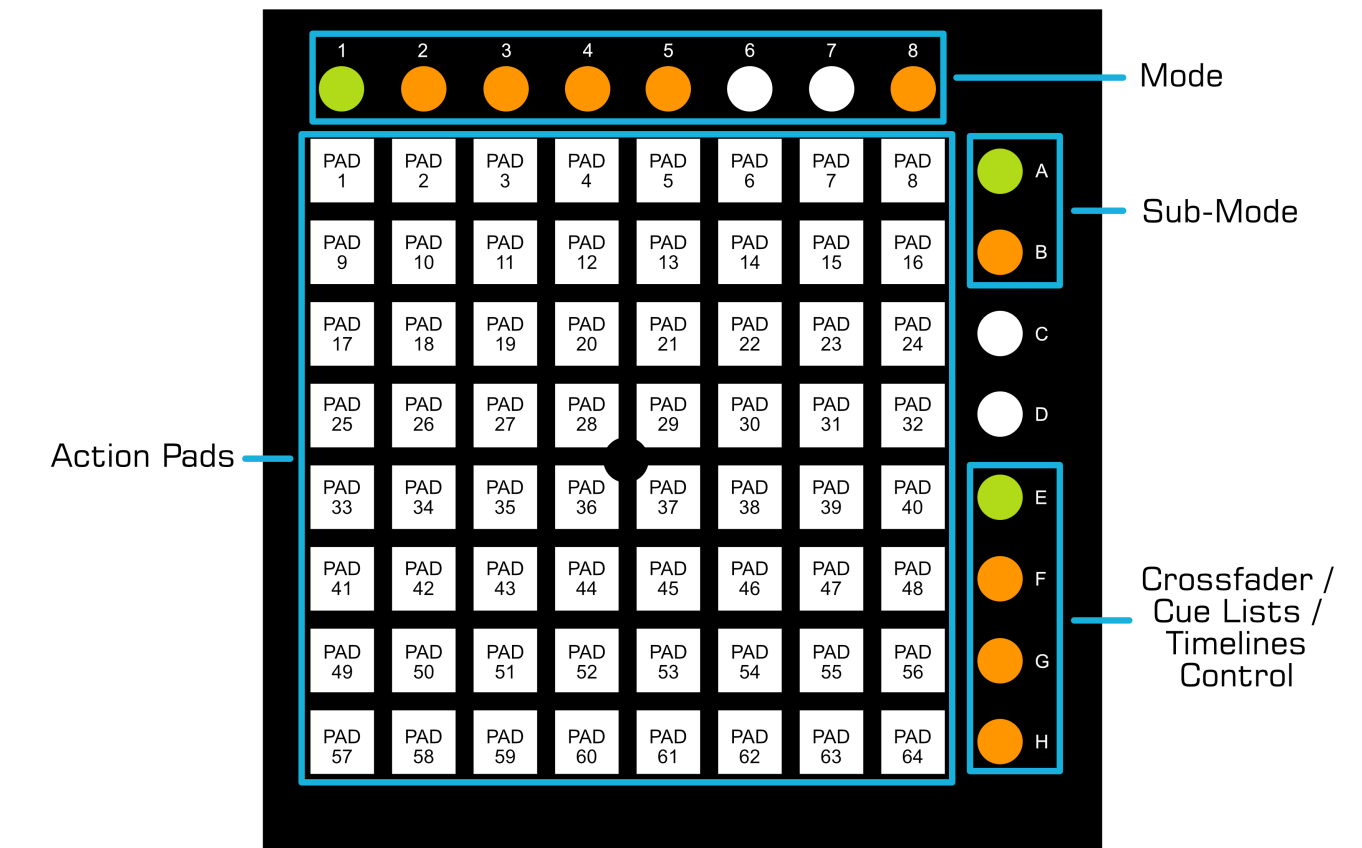
7.2.6 Novation Launchpad Mini [MIDI Map]

This topic includes:

- [General Overview](#)
- [Detailed Description](#)
- [Storage Places Deck A](#)
- [Storages Deck A](#)
- [Storage Places Deck B](#)
- [Storages Deck B](#)
- [Group Control - Values](#)
- [Group Control - Presets](#)
- [Cue Lists - Cue Selection](#)
- [Cue Lists - Cue List Selection](#)
- [Timelines - Cue Segment Control](#)
- [Timelines - Timeline Selection](#)
- [Master - Main Parameter](#)
- [Master - Color Filter](#)

General Overview

The configuration is valid for the MKI, MKII, and S versions of this controller.



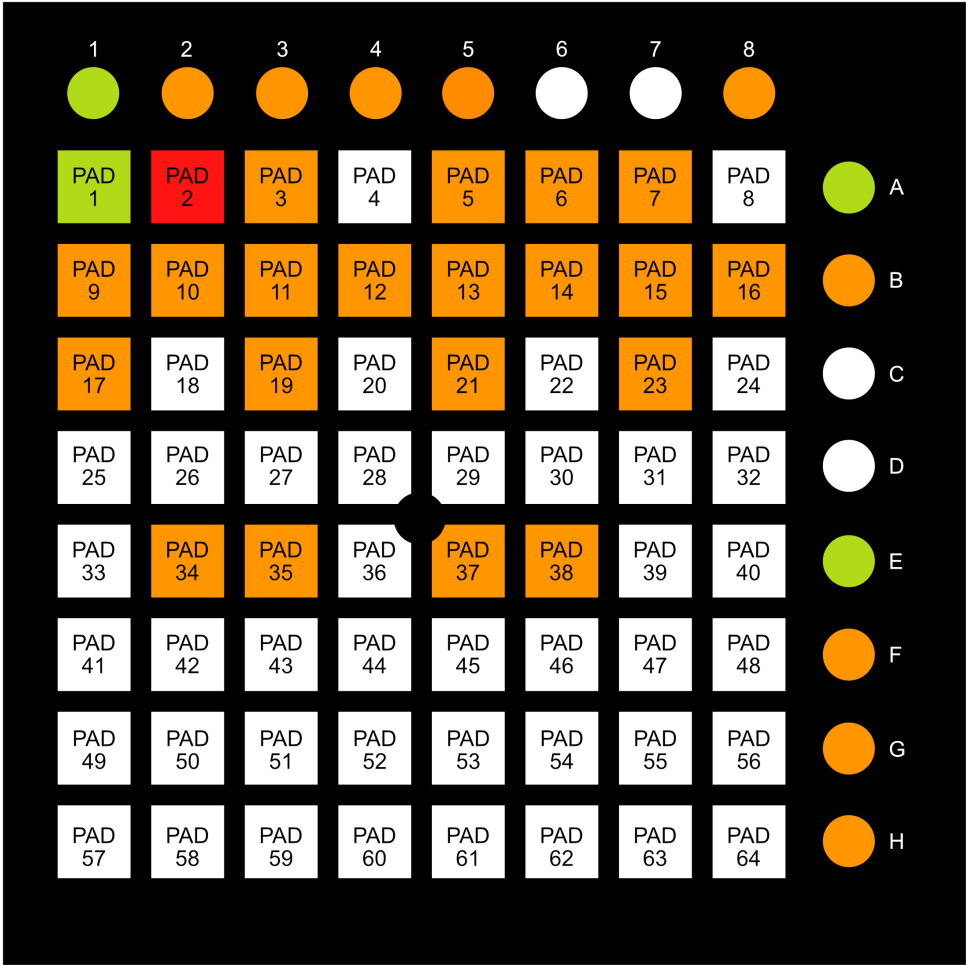
Mode	Active	Function
	1	Deck A
	2	Deck B
	3	Group Control
	4	Cue List
	5	Timelines
	8	Master
Sub-Mode	A	Mode Deck A: Place Mode Deck B: Place Mode Group Control: Group Value Mode Cue List: Cue
	B	Mode Deck A: Storage

		Mode Deck B: Storage Mode Group Control: Group Preset
Crossfader / Cue List Control	E	Mode Deck A: Fade To Left Mode Deck B: Fade To Left Mode Group Control: Fade To Left
	F	Mode Deck A: Fade To Middle Mode Deck B: Fade To Middle Mode Group Control: Fade To Middle Mode Cue List: Cue List Back
	G	Mode Deck A: Fade To Right Mode Deck B: Fade To Right Mode Group Control: Fade To Right Mode Cue List: Cue List Go
	H	Mode Deck A: Auto Fade Mode Deck B: Auto Fade Mode Group Control: Auto Fade Mode Cue List: Cue List Play Pause Toggle
Action Pads	Activates desired Place, Storage, Group Preset, Cue, sets the stored value for Groups or Main Output Parameters according to the following descriptions:	

Detailed Description





Storage Places Deck A

(Mode: 1, Sub-Mode: A)



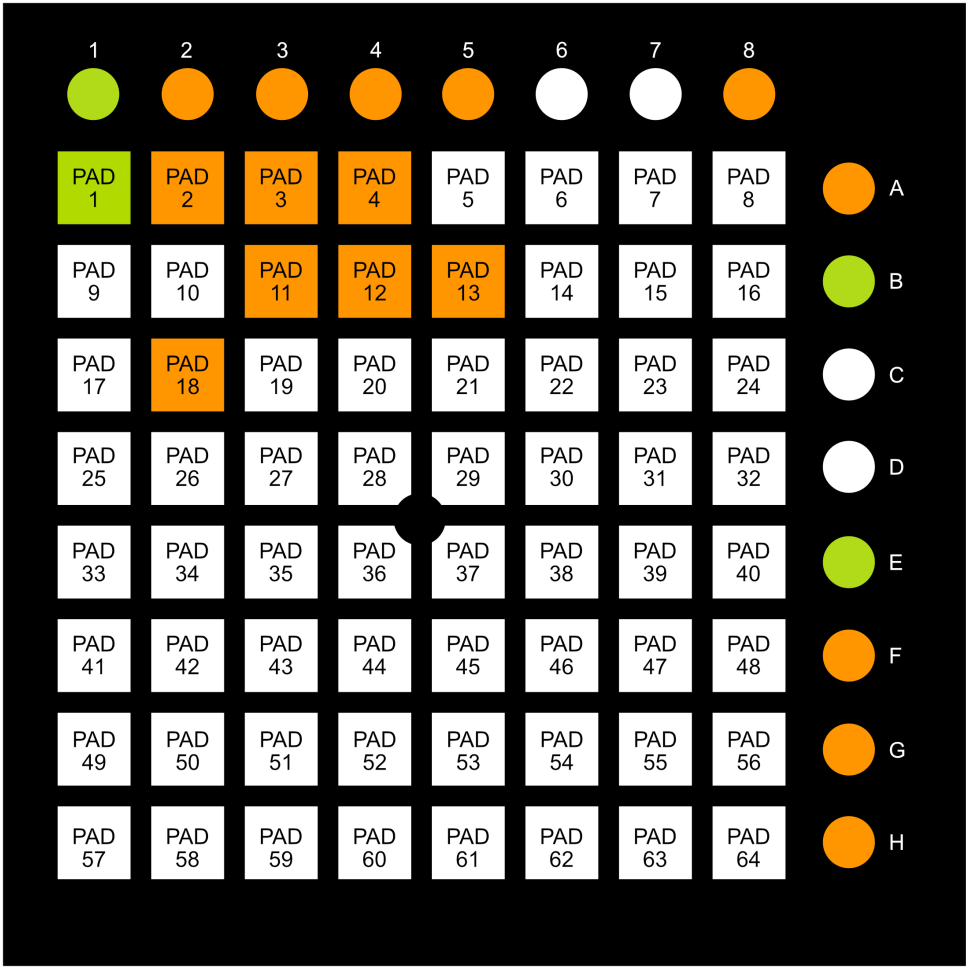
Button	Function
PAD 1 - PAD 64	Activate Storage Place at Deck A according to the PAD number.
B	Storage Control Deck A
E	Fade To Left
F	Fade To Middle

G	Fade To Right
H	Automatic Fade

PAD Color	Meaning
	Storage Place is activated.
	Content is saved at the Storage Place but it is not activated.
	No content is saved at the Storage Place and it is not activated.
	Storage Place is blocked.




Storages Deck A

(Mode: 1, Sub-Mode: B)



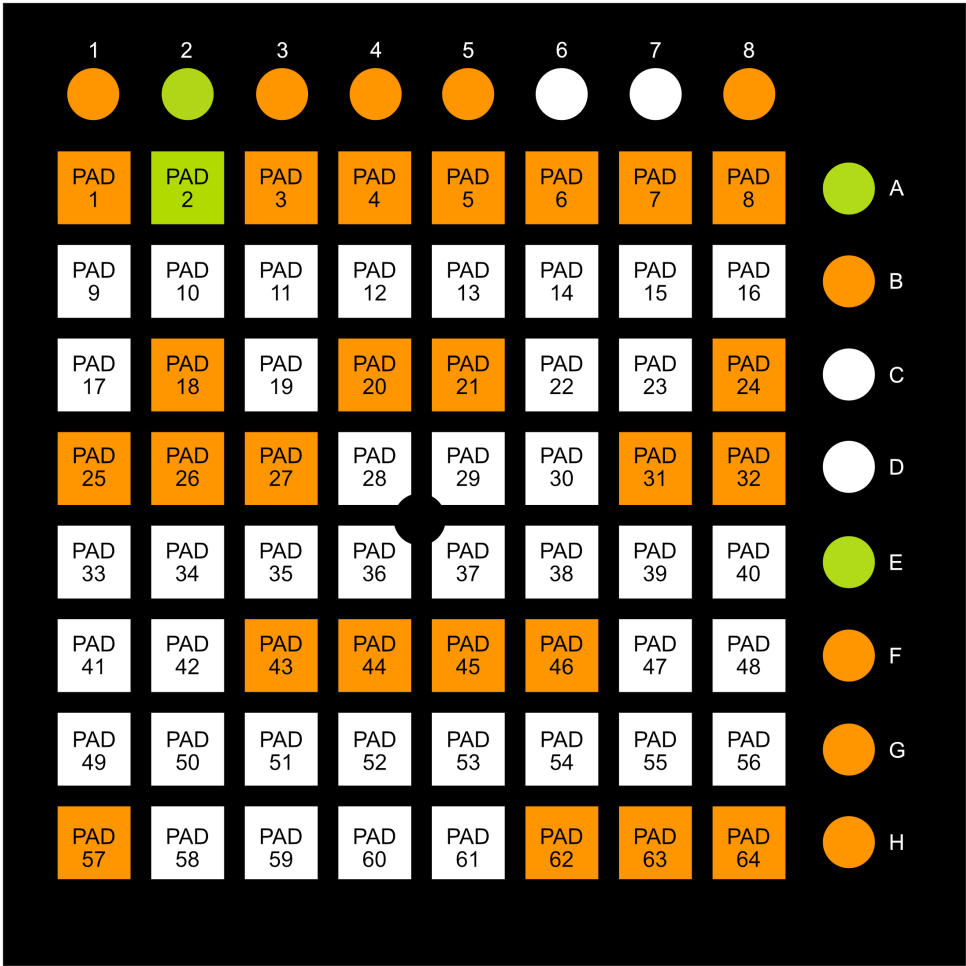
Button	Function
PAD 1 - PAD 64	Activate Storage at Deck A according to the PAD number.
A	Storage Place Control Deck A
E	Fade To Left
F	Fade To Middle
G	Fade To Right
H	Automatic Fade

PAD Color	Meaning
-----------	---------





	Storage is activated.
	Storage Places with content are available at the Storage but it is not activated.
	No content is available at the Storage and it is not activated.

Storage Places Deck B

(Mode: 2, Sub-Mode: A)

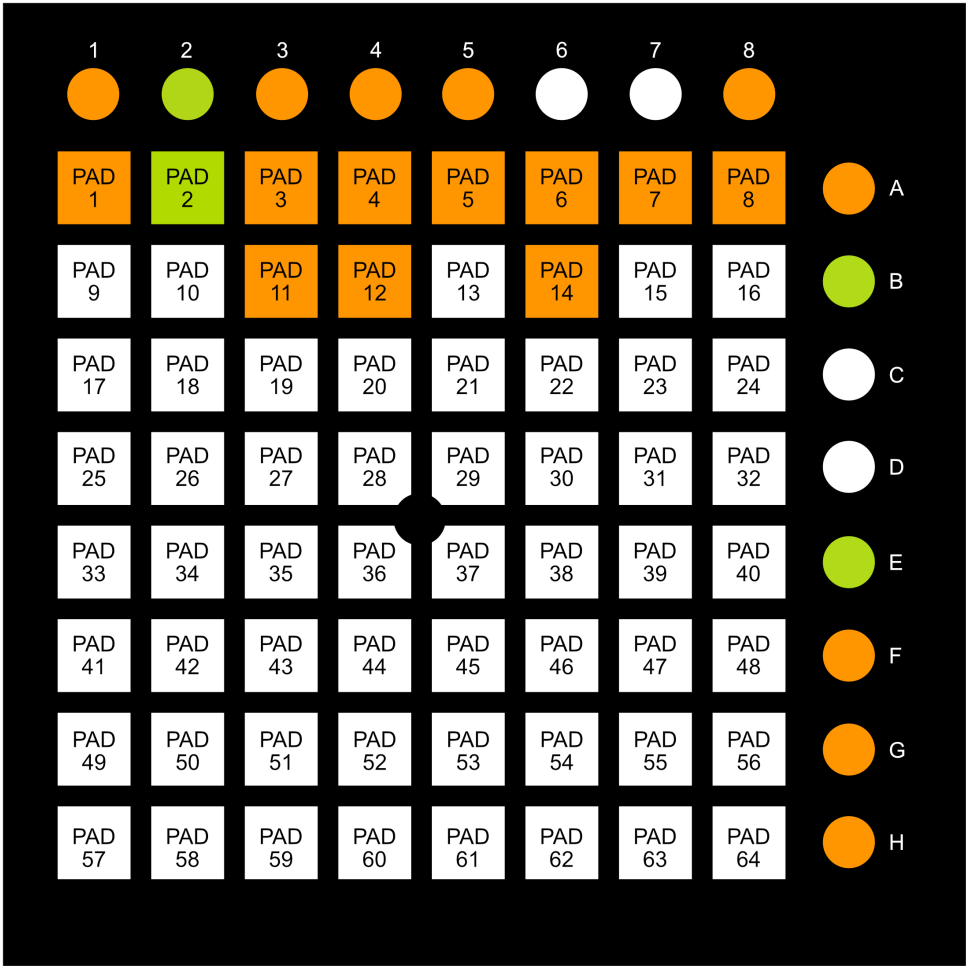


Button	Function
PAD 1 - PAD 64	Activate Storage Place at Deck B according to the PAD number.
B	Storage Control Deck B
E	Fade To Left
F	Fade To Middle
G	Fade To Right
H	Automatic Fade




PAD Color	Meaning
	Storage Place is activated.
	Content is saved at the Storage Place but it is not activated.
	No content is saved at the Storage Place and it is not activated.
	Storage Place is blocked.

Storages Deck B

(Mode: 2, Sub-Mode: B)

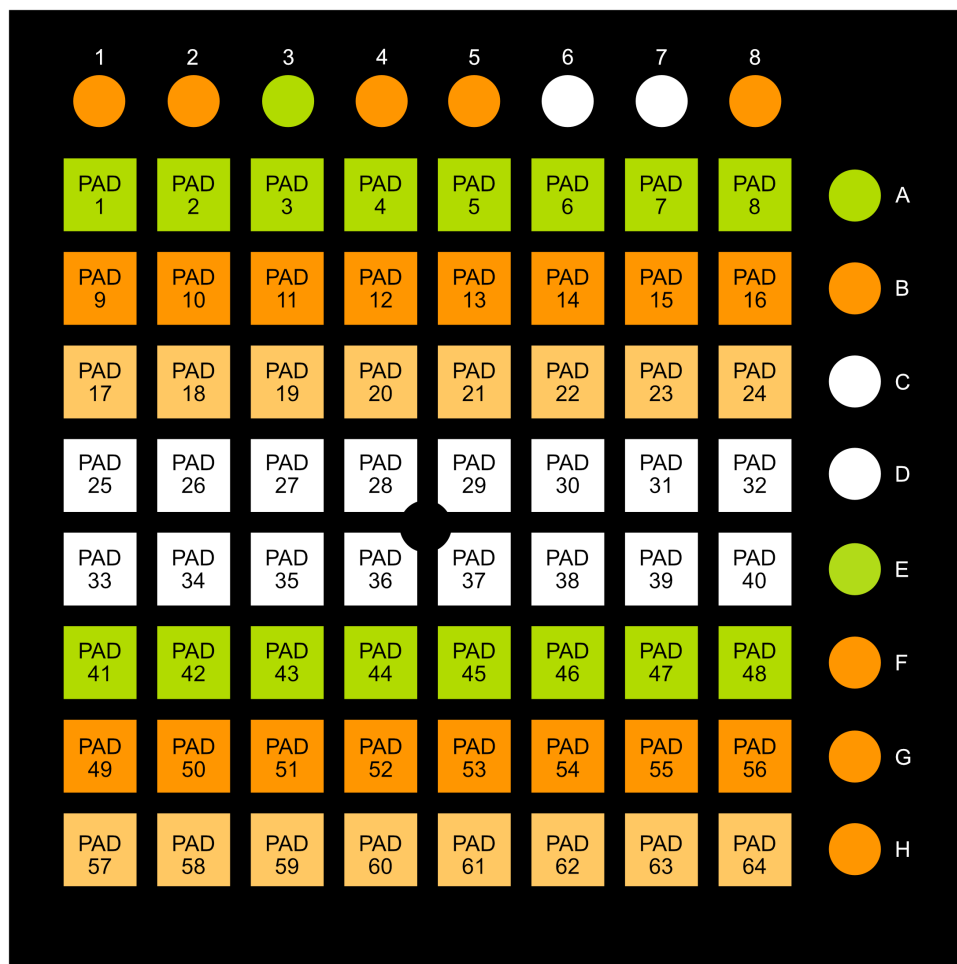


Button	Function
PAD 1 - PAD 64	Activate Storage at Deck B according to the PAD number.
A	Storage Place Control Deck B
E	Fade To Left
F	Fade To Middle
G	Fade To Right
H	Automatic Fade

PAD Color	Meaning
	Storage is activated.
	Storage Places with content are available at the Storage but it is not activated.
	No content is available at the Storage and it is not activated.





Group Control - Values

(Mode: 3, Sub-Mode: A)



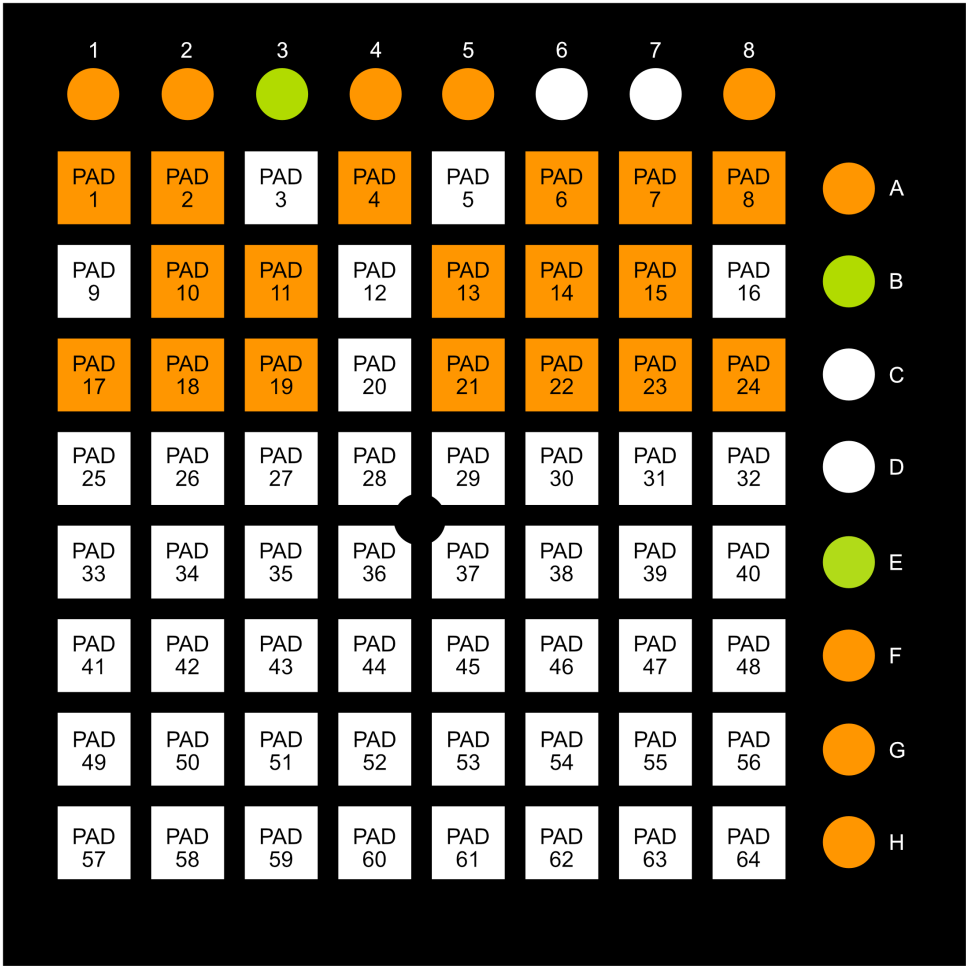
Button	Function
PAD 1 - PAD 8	Group 1 to Group 8 - Value 255
PAD 9 - PAD 16	Group 1 to Group 8 - Value 0
PAD 17 - PAD 24	Group 1 to Group 8 - Flash To Value 255
PAD 25 - PAD 40	Not in use
PAD 41 - PAD 48	Group 9 to Group 16 - Value 255
PAD 49 - PAD 56	Group 9 to Group 16 - Value 0
PAD 57 - PAD 64	Group 9 to Group 16 - Flash To Value 255

B	Group Control - Presets
E	Fade To Left
F	Fade To Middle
G	Fade To Right
H	Automatic Fade

PAD Color	Meaning
	Group Value activate.
	Group Value not activate.
	Not in use.
	Flash Group Value.

Group Control - Presets

(Mode: 3, Sub-Mode: B)

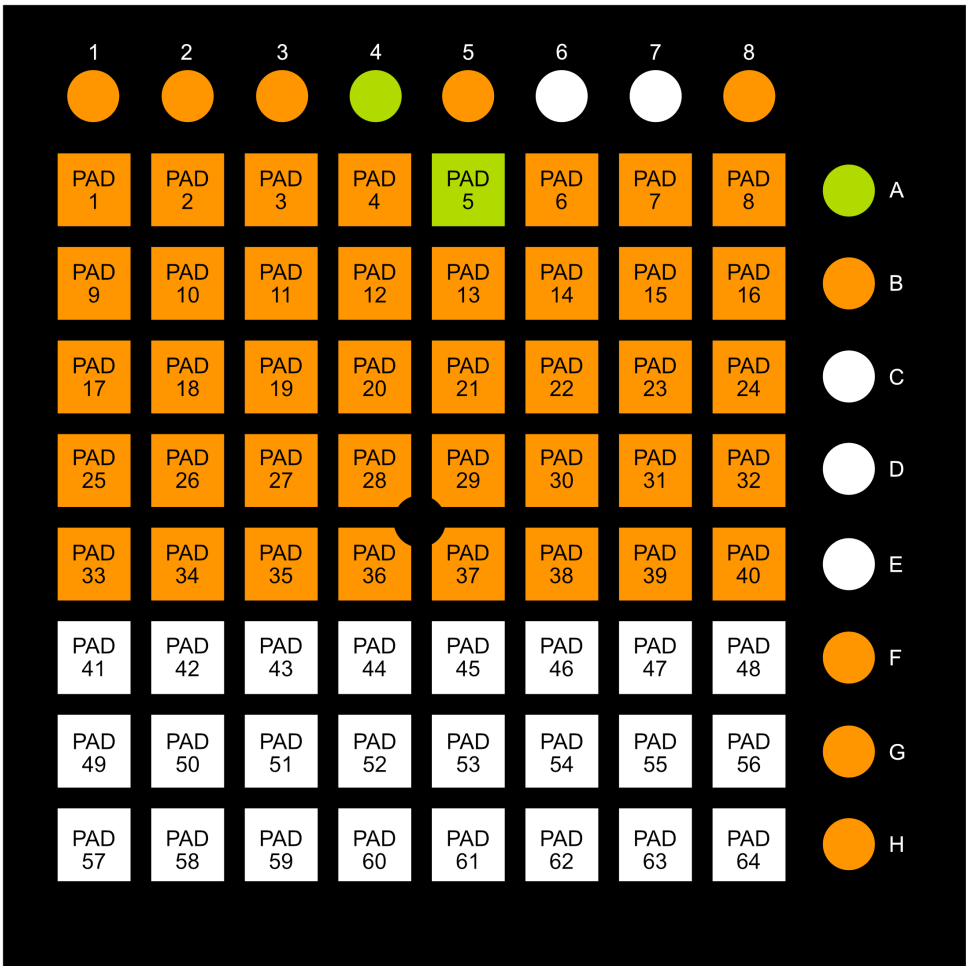


Button	Function
PAD 1 - PAD 64	Activate Group Preset according to the PAD number.
A	Group Value
E	Fade To Left
F	Fade To Middle
G	Fade To Right
H	Automatic Fade

PAD Color	Meaning
<div><div>PAD 1</div></div>	Group Preset saved.
<div><div>PAD 1</div></div>	Empty Group Preset.




Cue Lists - Cue Selection

(Mode:4, Sub-Mode: A)



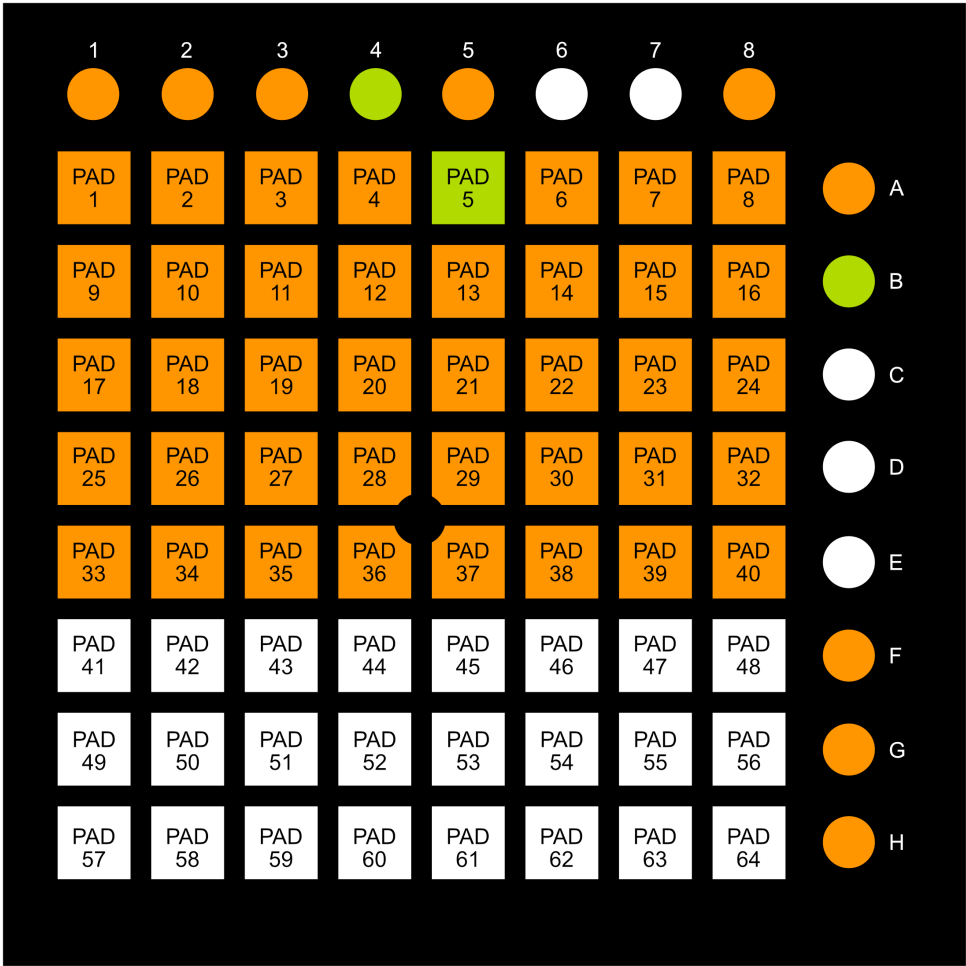
Button	Function
--------	----------

PAD 1 - PAD 64	Activate Cues according to the PAD number.
B	Cue List Selection
F	Back
G	Go
H	Play / Pause Toggle

PAD Color	Meaning
	Cue playing.
	Cue available.
	Empty

Cue Lists - Cue List Selection

(Mode:4, Sub-Mode: B)



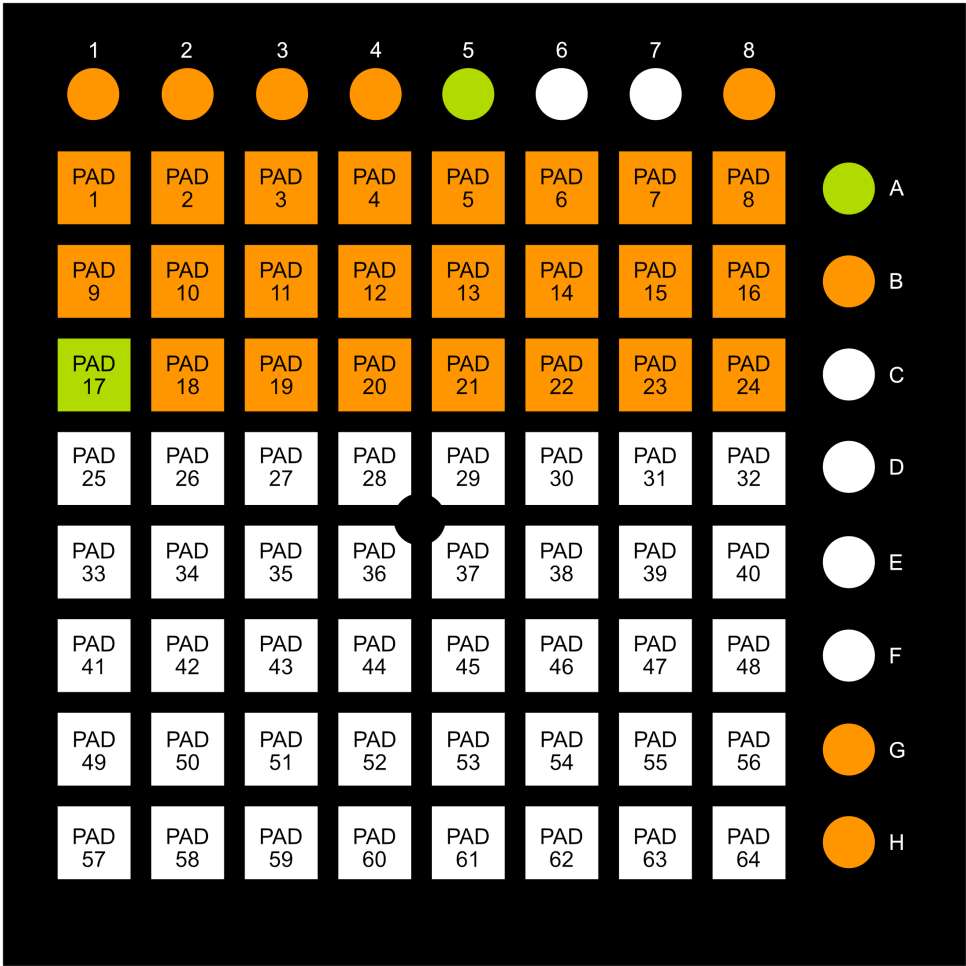
Button	Function
PAD 1 - PAD 64	Activate Cue List according to the PAD number.
A	Cue Selection
F	Back
G	Go
H	Play / Pause Toggle

PAD Color	Meaning
-----------	---------

<div>PAD 1</div>	Cue List activated.
<div>PAD 1</div>	Cue List available.
<div>PAD 1</div>	Empty

Timelines - Cue Segment Control

(Mode: 5, Sub-Mode: A)



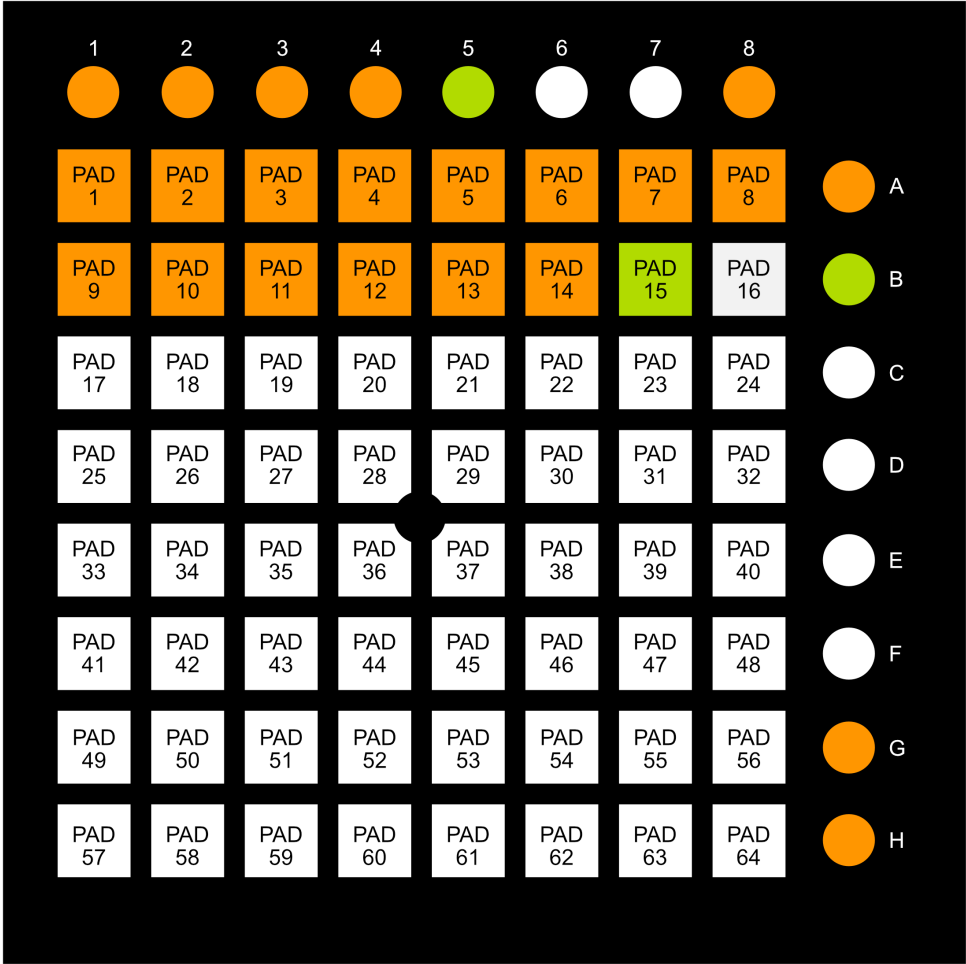
Button	Function
PAD 1 - PAD 64	Activate Cue Segment according to the PAD number.
B	Timeline Selection
G	Stop
H	Play / Pause Toggle

PAD Color	Meaning
-----------	---------

<div>PAD 1</div>	Cue Segment playing.
<div>PAD 1</div>	Cue Segment available.
<div>PAD 1</div>	Empty

Timelines - Timeline Selection

(Mode: 5, Sub-Mode: B)



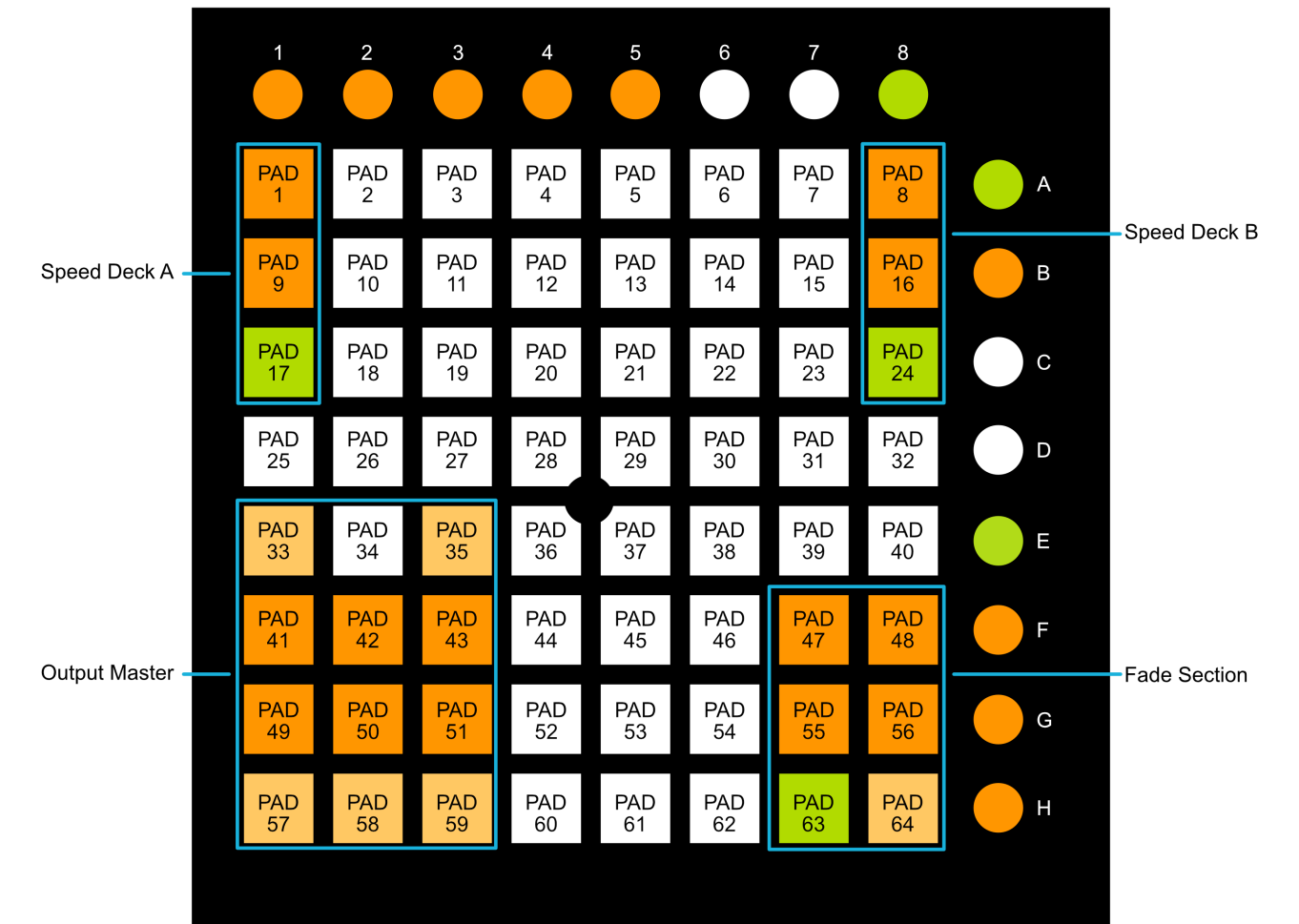
Button	Function
PAD 1 - PAD 64	Activate Timeline according to the PAD number.
A	Cue Segment Selection
G	Stop
H	Play / Pause Toggle


PAD Color	Meaning
-----------	---------


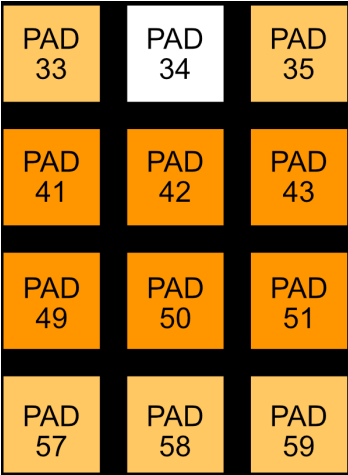
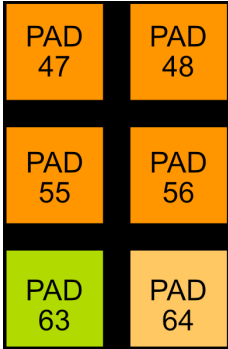
<div>PAD 1</div>	Timeline activated.
<div>PAD 1</div>	Timeline available.
<div>PAD 1</div>	Empty

Master - Main Parameter






(Mode: 8, Sub-Mode: A)



	Button	Function
Speed Deck A 	PAD 1	Deck A - Speed Up
	PAD 9	Deck A - Speed Down
	PAD 17	Deck A - Speed = 1.0

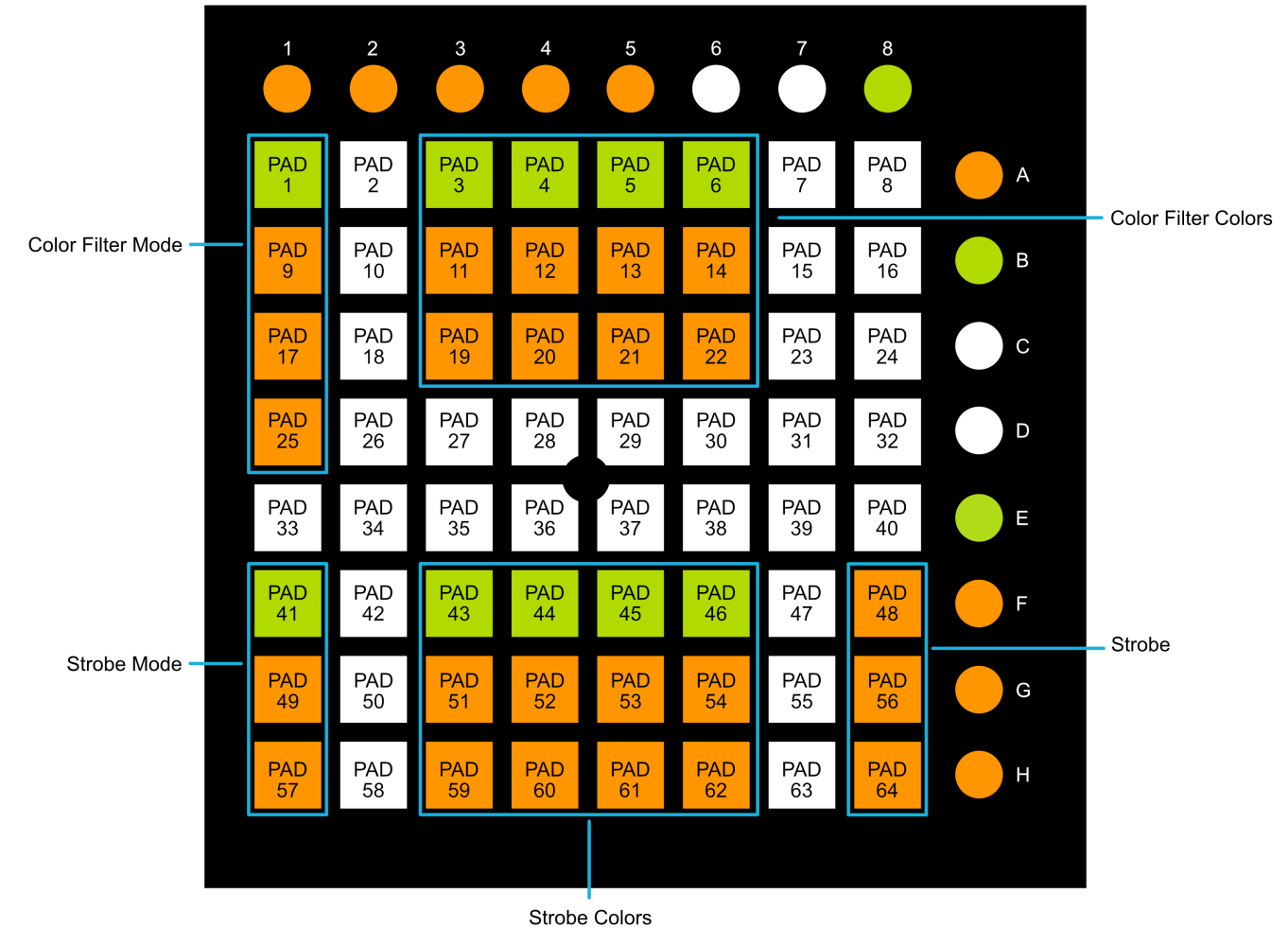
Speed Deck B 	PAD 9	Deck B - Speed Up
	PAD 16	Deck B - Speed Down
	PAD 24	Deck B - Speed = 1.0
Output Master 	PAD 33	Main Output Freeze
	PAD 41	Main Output - Value Up
	PAD 49	Main Output - Value Down
	PAD 57	Main Output - Blackout
	PAD 42	Audio Output - Value Up
	PAD 50	Audio Output - Value Down
	PAD 58	Audio Output - Mute
	PAD 35	Auto Gain Control - On/Off
	PAD 43	Audio Input - Value Up
	PAD 51	Audio Input Value Down
Fade Section 	PAD 59	Audio Input Mute
	PAD 47	Fade Type - Up
	PAD 55	Fade Type - Down
	PAD 63	Fade Type - Crossfade
	PAD 48	Fade Time - Plus 0.5 Seconds
	PAD 56	Fade Time - Minus 0.5 Seconds
	PAD 64	Fade Time - 0.0 Seconds
	B	Color Filter

	E	Fade To Left
	F	Fade To Middle
	G	Fade To Right
	H	Automatic Fade



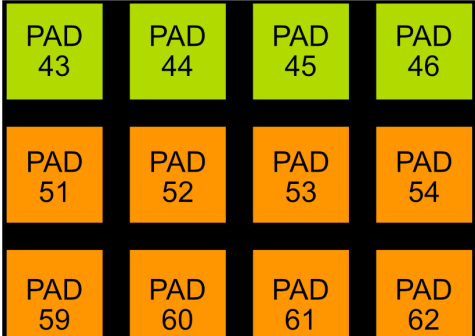
PAD Color	Meaning
	Default Value, AGC, or Output Freeze is activated.
	Default Value, AGC, or Output Freeze is available.
	Value Up or Down.
	Blackout / Mute is activated.
	Not used.


Master - Color Filter



(Mode: 8, Sub-Mode: B)



	Button	Function
<div>Color Filter Mode</div> <div><div>PAD 1</div><div>PAD 9</div><div>PAD 17</div><div>PAD 25</div></div>	PAD 1	Color Filter Mode - Allow Through
	PAD 9	Color Filter Mode - Filter Out
	PAD 17	Color Filter Mode - Colorize
	PAD 25	Color Filter Mode - Ignore
Color Filter Colors	PAD 3	Filter Color Red - Value 255

	PAD 11	Filter Color Red - Value 127
	PAD 19	Filter Color Red - Value 0
	PAD 4	Filter Color Green - Value 255
	PAD 12	Filter Color Green - Value 127
	PAD 20	Filter Color Green - Value 0
	PAD 5	Filter Color Blue - Value 255
	PAD 13	Filter Color Blue - Value 127
	PAD 21	Filter Color Blue - Value 0
	PAD 6	Filter Color White - Value 255 (Available if Patch Color Depth = 4)
	PAD 14	Filter Color White - Value 127 (Available if Patch Color Depth = 4)
<p>Strobe Mode</p> 	PAD 41	Strobe Mode - Output And Strobe Color
	PAD 49	Strobe Mode - Output And Black
	PAD 57	Strobe Mode - Black And Strobe Color
<p>Strobe Colors</p> 	PAD 43	Strobe Color Red - Value 255
	PAD 51	Strobe Color Red - Value 127
	PAD 59	Strobe Color Red - Value 0
	PAD 44	Strobe Color Green - Value 255
	PAD 52	Strobe Color Green - Value 127
	PAD 60	Strobe Color Green - Value 0

	PAD 45	Strobe Color Blue - Value 255
	PAD 53	Strobe Color Blue - Value 127
	PAD 61	Strobe Color Blue - Value 0
	PAD 46	Strobe Color White - Value 255 (Available if Patch Color Depth = 4)
	PAD 54	Strobe Color White - Value 127 (Available if Patch Color Depth = 4)
	PAD 62	Strobe Color White - Value 0 (Available if Patch Color Depth = 4)
Strobe 	PAD 48	Strobe Speed - Up
	PAD 56	Strobe Speed - Down
	PAD 64	Strobe
	A	Main Parameter
	E	Fade To Left
	F	Fade To Middle
	G	Fade To Right
	H	Automatic Fade

PAD Color	Meaning
	Activated.
	Value available.

<div>PAD 1</div>	Not used.
----------------------	-----------

7.2.7 MIDI Remote Editor

This topic includes:

- [Introduction](#)
- [Initial Configuration](#)
- [Overview](#)
- [Keyboard Shortcuts](#)
- [Configuration](#)
- [Examples](#)

Introduction

MIDI controllers are often used to control MADRIX 5 remotely.

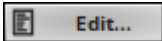
While you can use pre-configured MIDI maps [i.e., a MIDI Remote Configuration], you can also set up your own MIDI map according to your needs with the help of the MIDI Remote Editor.

Initial Configuration

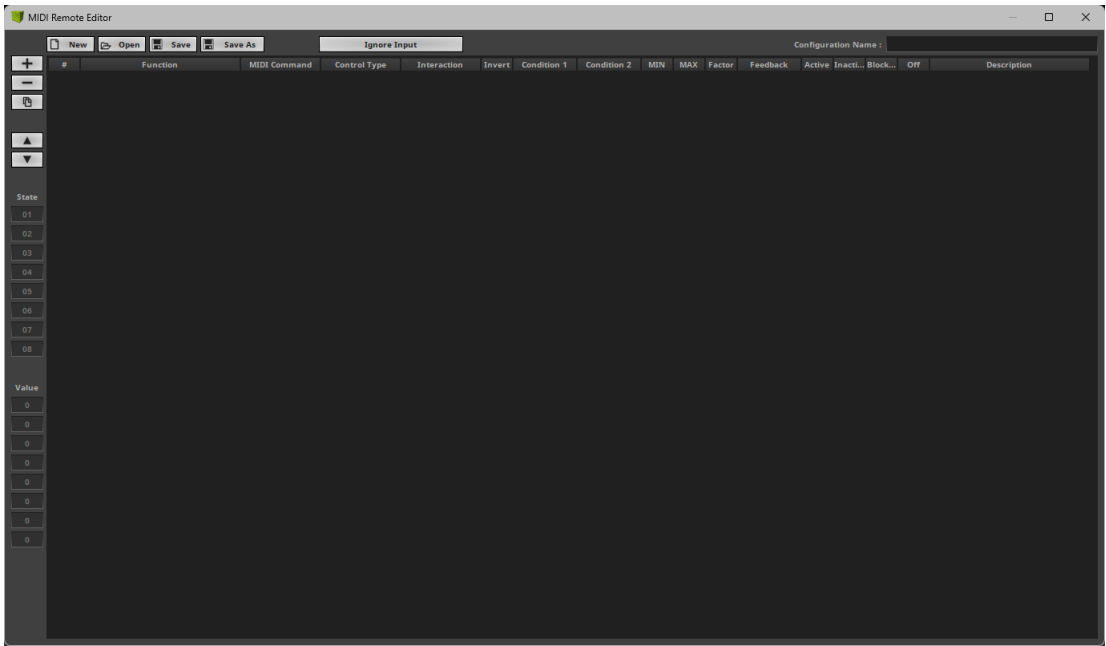
- **Make sure to configure your MIDI controller first.**
- Set up MIDI Remote Control.
- Learn more » [MIDI Configuration](#)

Overview

- Go to the menu **Preferences > Remote Control > MIDI...**
or to **Preferences > Device Manager... > MIDI**
[Keyboard shortcut: **F4 > MIDI**]



- Click **Edit...** to open the **MIDI Remote Editor**
- A new window will open.
- If you are creating a new MIDI map, the list will be empty.
- If you are modifying an existing MIDI map, the list will already contain all preconfigured settings.



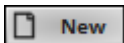
- **Add** - Adds a new item to the list.
- **Remove** - Removes the currently selected list items.



- **Duplicate** - Copies and duplicates the currently selected list item. The new item will be added to the list right after the selected item. You can change its settings afterwards.

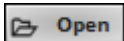


- **Navigation** - Allows you to select the next or previous list item.



New - Creates a new MIDI Remote Configuration while deleting all previous list items with your permission.

- Allows you to create an empty MIDI map [**Empty**] or load a preconfigured MIDI map.

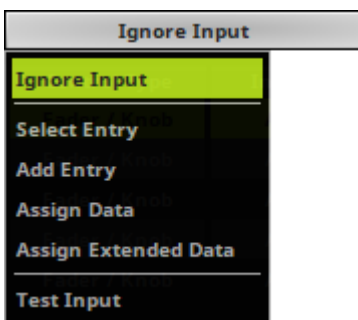


Open - Loads a MIDI Remote Configuration into the MIDI Remote Editor from an external file [of the file type *.mmrx].



Save - Saves the current MIDI Remote Configuration to an external file [of the file type *.mmrx].

Save As - Save the current MIDI Remote Configuration to another external file [of the file type *.mmrx]. Simply enter a name and click Save.



Ignore Input - Is the default option. No incoming data is processed.

Select Entry - Selects the item in the list if a list entry has already been added for the incoming data.

Add Entry - Adds a new list entry at the end of the list if there is not already a list entry for the incoming data.

Assign Data - Assigns the incoming data to the currently selected list entry, and then selects the next list item.

Assign Extended Data - Assigns the incoming data to the currently selected list entry, and automatically tries to recognize the MIDI Command, Control Type, and Interaction. Then, selects the next list item.

Test Input - Processes incoming data for testing purposes.

- Allows you to test single list items and their functionality on the MADRIX 5 user interface, while having the MIDI Remote Editor still opened.

- Choose Test Input, then use the control on your MIDI controller. You can see if the control works as expected on the MADRIX 5 user

interface.

- If Test Input is activated, MADRIX 5 will receive the signal directly and not the MIDI Remote Editor.

Note: Incoming data means that you are moving a fader or pressing a button on your MIDI controller to send data to the software.

Configuration Name : **Universal**

Configuration Name - Allows you to type in an individual description for your MIDI configuration.

- Once saved, you will be able to select your MIDI configuration under Preferences > Device Manager... > MIDI > Remote Control and MADRIX 5 will use this label.

Keyboard Shortcuts

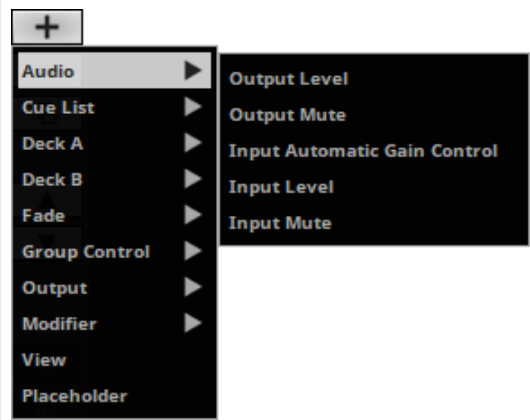
Ctrl + A	Selects all items in the list.
Ctrl + N	Creates a new MIDI map.
Ctrl + O	Opens a MIDI map.
Ctrl + S	Saves a MIDI map.
Del	Removes selected items from the list.
Arrow Up	Navigates upwards in the list.
Arrow Down	Navigates downwards in the list.
Left Mouse Double-Click / Right Mouse Click On An Item	Calls up the context menu for the column.

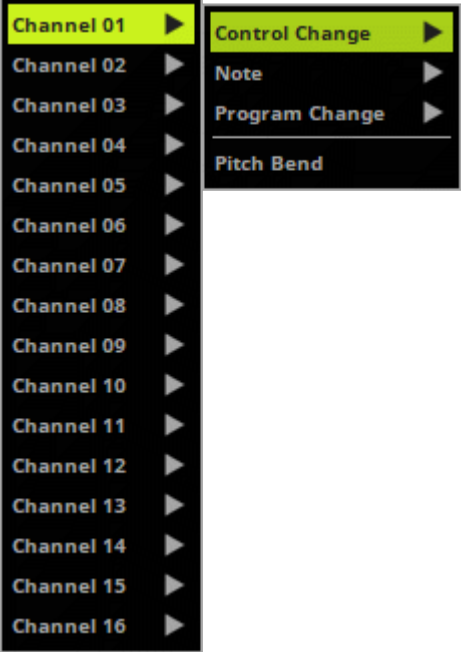

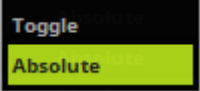
Left Mouse Double-Click On A Head Row Of The List	Sorts the list alphabetically according to the column [ascending or descending].
--	--

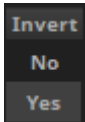
Configuration


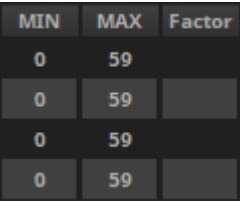
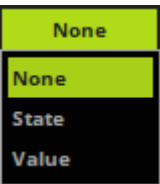
Overview

- Each list item represents 1 MIDI-remote functionality using 1 MIDI control [i.e., button, fader, note, etc.].
- Configure each list item as required.
- Configure each column of an list item.
- Add or remove list items to add or remove functionality as you require it.
- **Left Mouse Double-Click / Right Mouse Click On An Item** - Allows you to edit an item.


Function		<p>1] Create a new item with + Or select a list item and perform a double-click with your mouse on the column Function</p> <p>2] Select the general topic [e.g., Audio]</p> <p>3] Select the exact function you wish to configure [e.g., Output Level]</p>
-----------------	---	--

MIDI Comm and		<p>Defines the MIDI channel [e.g., Channel 01], MIDI type [e.g., Control Change], and the value [e.g., 011]</p> <p>In general, MIDI offers 16 channels. You can configure each MIDI device to send on a particular channel. Make sure that this Channel is also selected here.</p> <p>MADRIX 5 can receive the following MIDI command types:</p> <ul style="list-style-type: none"> ▪ Control Change ▪ Note ▪ Program Change ▪ Pitch Bend
Control Type		<p>Defines the type of the control of your MIDI controller [e.g., Button].</p> <ul style="list-style-type: none"> ▪ Fader / Knob - Defines a fader or knob control that has a wide range of available values with starting point and end point. ▪ Encoder / Jogwheel - Defines a knob or wheel control that has a wide range of available values that functions endlessly without a starting point or endpoint. ▪ Button - Defines a button control that has two states [On or Off]; often as switch, push button, or button.
Interaction		<p>- If you have several list items with different control types selected, the software will show all possible interaction types, but you can only choose from the types that are available for all selected list items.</p> <ul style="list-style-type: none"> ▪ Toggle - Defines that the Control Type only has two states [On or Off]. Is usually used for Button.

		<ul style="list-style-type: none"> ▪ Relative Signed - Is a mode how encoders / jogwheels can work. Use Assign to automatically detect the mode or consult the manual of the MIDI controller. ▪ Relative Signed 2 - Is a mode how encoders / jogwheels can work. Use Assign to automatically detect the mode or consult the manual of the MIDI controller. ▪ Relative Binary Offset - Is a mode how encoders / jogwheels can work. Use Assign to automatically detect the mode or consult the manual of the MIDI controller. ▪ Relative Signed 2's Complement - Is a mode how encoders / jogwheels can work. Use Assign to automatically detect the mode or consult the manual of the MIDI controller. ▪ Absolute - Defines that the Control Type uses all available values [e.g., 0 to 255]. Is usually used for Fader / Knob.
Invert		<p>Defines if incoming values will be inverted.</p> <ul style="list-style-type: none"> ▪ Choose between No and Yes <ul style="list-style-type: none"> - If Yes is selected, all values of this control will be inverted. That means for example that 0 becomes 255 and 255 becomes 0. - No is the default value. No values will be inverted in this case.

Condition		<p>Defines if there is condition required to be met before the functionality is executed.</p> <ul style="list-style-type: none"> - None is the default value. - If you select a State, click Yes or No - If you select a Value, select the according number <p>Learn more Modifiers</p>															
MIN, MAX, Factor	 <table border="1"> <thead> <tr> <th>MIN</th> <th>MAX</th> <th>Factor</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>59</td> <td></td> </tr> <tr> <td>0</td> <td>59</td> <td></td> </tr> <tr> <td>0</td> <td>59</td> <td></td> </tr> <tr> <td>0</td> <td>59</td> <td></td> </tr> </tbody> </table>	MIN	MAX	Factor	0	59		0	59		0	59		0	59		<ul style="list-style-type: none"> ▪ MIN - Defines a minimum value for this functionality. The default value is 0. ▪ MAX - Defines a maximum value for this functionality. <ul style="list-style-type: none"> - For example, the Master has a maximum value of 255, or you may want to set the maximum Fade Time to 10 seconds. ▪ Factor - Valid values range from -127 and +127. 0 is the default value. Use this factor to slow down [-127 to -1] or speed up [+1 to +127] controls of your MIDI controller. <ul style="list-style-type: none"> - For example, a jog wheel might be too fast to select mix modes of MADRIX 5. Slow it down by entering a negative value.
MIN	MAX	Factor															
0	59																
0	59																
0	59																
0	59																
Feedback		<p>Defines if the function should enable MIDI Feedback.</p> <ul style="list-style-type: none"> - Support of this feature depends on each MIDI controller, and might be supported or not. - Not every function of the MIDI Remote Editor supports 															

		<p>Feedback, since it might simply be not applicable.</p> <p>- The following four columns need to be edited accordingly [Active, Inactive, Blocked, Off]</p> <ul style="list-style-type: none">▪ None is the default value.▪ State defines if the control is On or Off. [Usually refers to a button lighting up or not.]▪ Value defines if the control can reflect a specific value as MIDI feedback. [Usually refers to a fader function, such as Master, mapped to a physical control, such fader or rotary fader, which can show its position via an LED scale.]								
<p>Active , Inactive, Blocked, Off</p>	<table><tr><td>Active</td><td>Inactive</td><td>Blocked</td><td>Off</td></tr><tr><td>127</td><td>0</td><td>0</td><td>0</td></tr></table>	Active	Inactive	Blocked	Off	127	0	0	0	<ul style="list-style-type: none">▪ Active - Defines the MIDI value that is sent to the MIDI controller when the button or control in the software is active and this state should be represented by the controller. Valid values range from 0 to 127.▪ Inactive - Defines the MIDI value that is sent to the MIDI controller when the button or control in the software is inactive and this state should be represented by the controller. Valid values range from 0 to 127.▪ Blocked - Defines the MIDI value that is sent to the MIDI controller when the button or control in the software is blocked and this state should be represented by the controller, such as currently blocked Storage Places [which is the main use case]. Valid values range from 0 to 127.▪ Off - Defines the MIDI value that is sent to the MIDI controller when the button or control in the software is completely off and this state should be represented by the controller, such as empty Storages or Storage Places [which are the main use cases]. Valid values range from 0 to 127.
Active	Inactive	Blocked	Off							
127	0	0	0							

Description		<ul style="list-style-type: none"> ▪ Description - Allows you to enter a text to describe the functionality. - [By default, the name of the function will automatically be entered].
--------------------	---	---

Specific Functions

▪ **Global Colors > Global ID**

- Controls **Global Colors** [not **Global Color Lists**].
- Allows you to choose up to 64 individual selectors.
- Each selector can have an individual ID assigned to it.
- Valid values range from 1 to 255. Value 0 means no selection.
- That means you can control up to 64 different IDs.

[Selectors 1 - 64 do not necessarily control IDs 1 - 64. Instead you can choose the ID with this function.]

▪ **Global Colors > Global ID / Red / Green / Blue / White / Alpha**

- Controls the corresponding color channels for the corresponding selector, which in turn has the Global Color selected via **Global ID**.
- Valid values for the color channels range from 0 to 255.

Custom Default Values For MAX

The following functions have their default MAX values set according to the number of items their functionality provides. For example, Output Filter Color Mode has 3 modes and a MIN / MAX range of 0 / 2, which is a total of three:

▪ **Output > Filter Color > Mode**

- Mode 1 [Allow Through] will be active for all values until 85 [≤ 85].
- Mode 2 [Filter Out] will be active for all values from 86 to 170 [$86 \leq 170$].
- Mode 3 [Colorize] will be active for all values from 171 to 255 [$171 \leq 255$].

The following functions work similarly:

- **Cue List > Play / Pause / Stop**
- **Deck A/B > Filter Color > Mode**
- **Deck A/B > Filter**

- **Deck A/B > Storage Place > Filter**
- **Deck A/B > Storage Place > Layer > Mix Mode > Current Layer / Layer 1 - 8**
- **Deck A/B > Storage Place > Layer > Filter > Current Layer / Layer 1 - 8**
- **Fade > Type**
- **Output > Filter Color > Mode**
- **Output > Filter**
- **Output > Strobe Color > Mode**

Modifiers

Overview

The MIDI Remote Editor allows you to create advanced MIDI configurations.

- Modifiers allow you to set certain conditions.
 - In general, these are the steps to follow:
 - 1] Create a new item with + or select a list item and perform a double-click with your mouse on the column **Function**
 - 2] Select **Modifier**
 - 3] Select a **State** or **Value**
 - 4] Create a new list item and configure its **Function** or use an existing list item
 - 5] Assign the condition to this function.
- Learn more [Condition](#)

State

- **State** - Creates a requirement/condition that is required before the function will work.
- You can define up to 8 States.
- Valid values are Yes [Value = 1] or No [Value = 0].
- Normally, you should set up MIN = 0 and MAX = 1 for the corresponding State.
- Example:
 - List item 1 defines a button as a **Modifier, State 1** to be toggled. When pressed, **MAX** defines that a value of 1 is send to MADRIX 5. When not pressed, **MIN** defines that value 0 is sent to MADRIX 5.
 - List item 2 is a function to control the Master [**Global Master**]. A **Condition** was set up for this functionality.

If MADRIX 5 receives value 1 [Yes] from **State 1**, the function can be used.

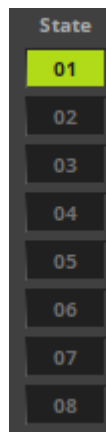
- Because of the Condition, the Master Fader can only be used when the button is pressed at the same time:

#	Function	MIDI Command	Control Type	Interaction	Invert	Condition	MIN	MAX	Factor	Description
1	Modifier State State 1	CH01.Note.012	Button	Toggle	No		0	255		Modifier State State 1
2	Output Master	CH01.CC.010	Fader / Knob	Absolute	No	State 1 = Yes	0	255		Output Master

- If no condition is assigned, the fader can be moved and the Master will always respond accordingly:

#	Function	MIDI Command	Control Type	Interaction	Invert	Condition	MIN	MAX	Factor	Description
1	Output Master	CH01.CC.010	Fader / Knob	Absolute	No		0	255		Output Master

- When **Test** is activated, MADRIX 5 shows the status of a State in the MIDI Remote Editor. A green button indicates status Yes, a gray button indicates status No.



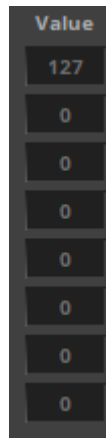
Value

- **Value** - Allows to add several functions to one or more controls of the MIDI controller by combining it with other available controls.
- You can define up to 8 Values.
- Valid values range from 0 to 127.
- Example:
 - Your MIDI controller may only have 1 fader and a number of buttons.
 - But you would want to control the Master, the Speed Master Deck A, and the Speed Master Deck B with this one fader.
 - In this example, we have configured 3 buttons that activate three different configurations for the fader.
 - If button 1 is pressed one time, the fader will act as the Master.
 - If button 2 is pressed one time, the fader will act as Speed Master Deck A.

- If button 3 is pressed one time, the fader will act as Speed Master Deck B.
- Depending on which button is pressed, the modifier value changes between 1, 2, or 3. MADRIX 5 checks this value and allows the fader to control the corresponding function on the MADRIX 5 user interface.
- **Note:** Always assign the correct values to modifier and function.
 - For example if your modifier is assigned to Value 1 and Max. value 2, the function needs to have Value 1=002 as a Condition. In this case, Value 2=002 will not work!

#	Function	MIDI Command	Control Type	Interaction	Invert	Condition	MIN	MAX	Factor	Description
1	Modifier Value Value 1	CH01.Note.012	Button	Toggle	No		0	1		Modifier Value Value 1
2	Modifier Value Value 1	CH01.Note.014	Button	Toggle	No		0	2		Modifier Value Value 1
3	Modifier Value Value 1	CH01.Note.016	Button	Toggle	No		0	3		Modifier Value Value 1
4	Output Master	CH01.CC.010	Fader / Knob	Absolute	No	Value 1 = 001	0	255		Output Master
5	Deck A Speed Master	CH01.CC.010	Fader / Knob	Absolute	No	Value 1 = 002	0	255		Deck A Speed Master
6	Deck B Speed Master	CH01.CC.010	Fader / Knob	Absolute	No	Value 1 = 003	0	255		Deck B Speed Master

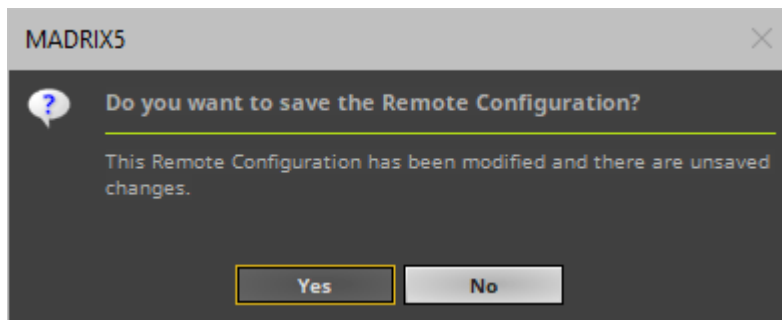
- When **Test** is activated, MADRIX 5 shows the status of a Value in the MIDI Remote Editor.



Saving Your Configuration

- Please save your configuration after you have configured all functions!
- If you are closing the MIDI Remote Editor and have not yet saved, the MADRIX 5 Software will remind you to save the file.

- If you do not save, your configuration will be discarded and is lost.



- The MADRIX 5 Setup file does not include the external MIDI Remote Configuration file, but will store the directory and a reference link in order to reload it when the Setup is loaded again.

Examples

Example 1

- You wish to use single buttons of your MIDI controller for each Storage Place.
- Click the + button to add a new function.
- Select **Deck A > Place ID +Fade**
- Use **Assign** to match your button to this function. Disable Assign again when done.
- Set **MAX** to **0** in order to trigger Storage Deck A S1 P1 [Storage 1 Place 1].
- Repeat the steps and set up **MAX** for each Storage Place you wish to control.
 - **MAX** will always have a value that is -1 compared to the actual Storage Place index number [e.g., set MAX to 6 in order to control S1 P7].
- Use **Deck B > Place ID +Fade** and repeat the steps accordingly to control the Storage Places on the right side.

Example 2

- You wish to use single buttons of your MIDI controller for each Cue List entry.

- Use **+** to create a new function.
 - Select **Cue List > Goto > Goto**
 - Use **Assign** to match your button to this function. Disable **Assign** again when done.
 - Set **MAX** to **0** in order to trigger Cue 1.
 - Repeat the steps and set up **MAX** for each Cue you wish to control.
- **MAX** will always have a value that is -1 compared to the actual Cue List index number [e.g., set MAX to 6 in order to control Cue 7].

7.3 Blackmagic Design

This topic includes:

- [Introduction](#)
- [Live Signal Capturing](#)
- [Troubleshooting](#)

Introduction

It is easily possible to use capture cards from the professional equipment manufacturer Blackmagic Design, such as DeckLink and Intensity, for live signal capturing.



According to Blackmagic Design, devices from the following product lines and products are supported:

- **DeckLink**
- **Intensity**
- **UltraStudio**

- **Teranex**
- Cintel Scanner
- Cinema Camera
- Hyperdeck Studio products

Live Signal Capturing

In order to receive live signals from a capture card, you need to use the MADRIX Effect **SCE Capture**

Step-By-Step Configuration

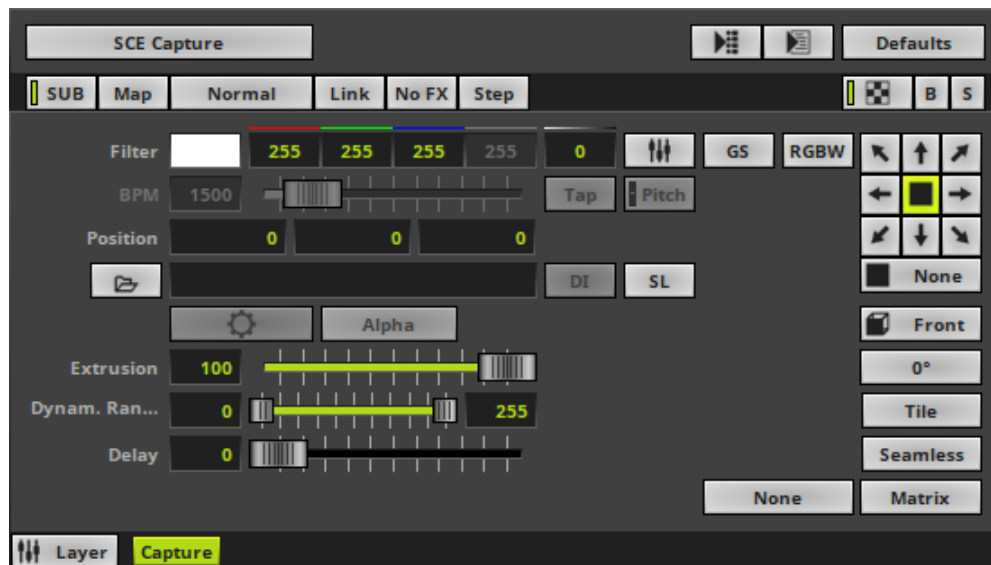
- 1] Prerequisites.
- 2] Using SCE Capture.


1] Prerequisites

- Make sure that all connections are established and that you are receiving the correct signal.
- Make sure your capture card is configured correctly.

2] Using SCE Capture

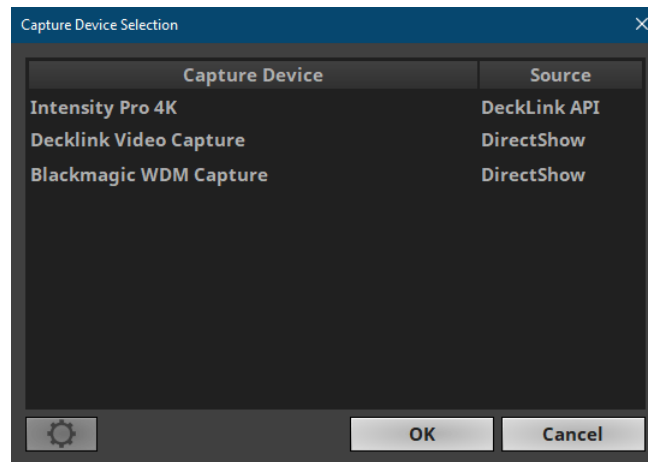
- Select **SCE Capture** from the library of effects.
Learn more » [Effects \[Visuals\]](#)



-  - **Open** a device.
- Select your capture device from the list.
 - Up to three devices may be shown for a single capture card.
 - If the **Source** is **DirectShow**, the Windows native connection is used.
 - If the **Source** is **DeckLink API**, the native connection provided by the official Blackmagic Design API is used.

This is the recommended device.

[The term 'DeckLink' is used as a generic term to refer to all supported products.]



- MADRIX 5 will now capture and receive the live signal.



- Learn more »[SCE Capture](#)

Troubleshooting

- Make sure that all connections are established and that you are receiving the correct signal.
- Make sure your capture card is configured correctly.

7.4 CAST Software BlackTrax

This topic includes:

- [Introduction](#)
- [Options](#)
- [Troubleshooting](#)
- [MADRIX 5 Script](#)

Introduction

BlackTrax by CAST Software is a real-time, vision-based tracking system. The data it provides can be used in MADRIX 5.

BLACKTRAX

Currently, you need to use MADRIX 5 Script in order to let both systems, MADRIX 5 and BlackTrax, work together. MADRIX 5 is using the real-time tracking protocol for the integration in order to receive positional data (RTTrPM).

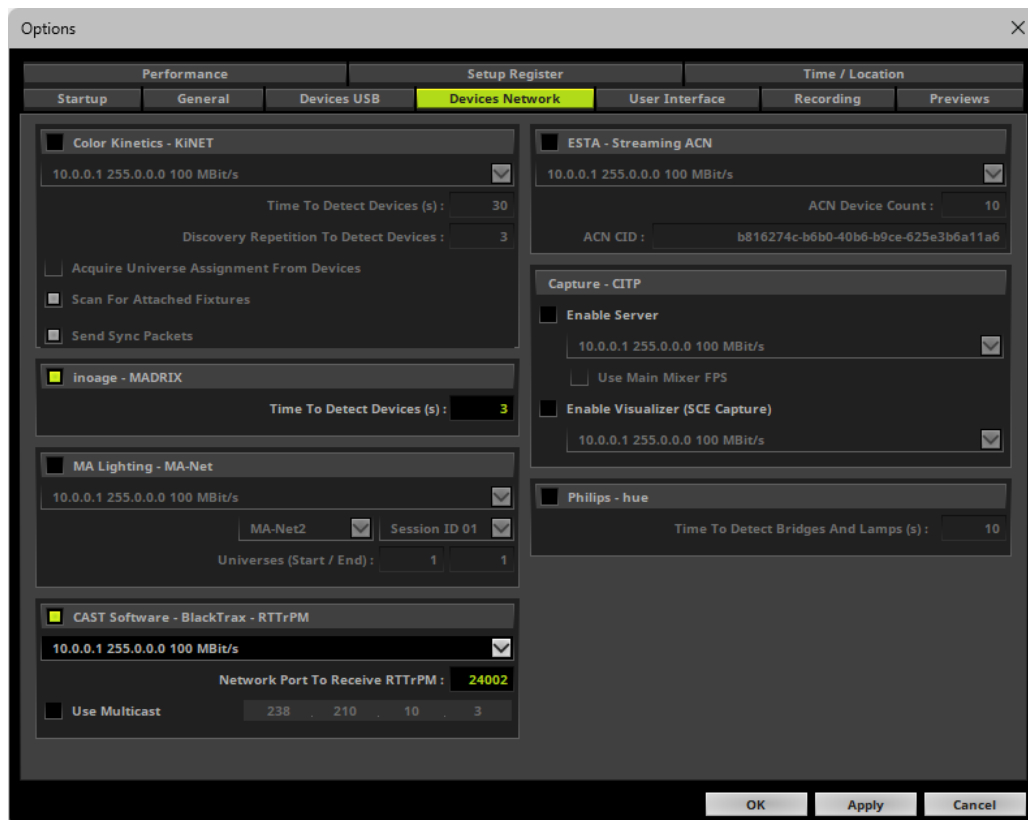
BlackTrax requires a corresponding hardware system, which needs to be configured and fully operational. Alternatively, a software simulator is available.

Link » <https://blacktrax.cast-soft.com/>

Options

In order to receive data from BlackTrax, you need to set the correct network settings.

- Go to the menu **Preferences > Options... > Devices Network**
[Keyboard shortcut: **Ctrl+Alt+O > Devices Network**]



- Activate **CAST Software - BlackTrax - RTTrPM**
[The checkbox will change from gray to green.]
- Choose the correct **network/network card** from the drop-down list.
- **Always make sure that you have selected the correct network. Otherwise, no data can be received.**
[The IP address and Subnet mask label should help you select the correct adapter.]
[It is recommended to use a closed network to avoid any interference or performance issues.]
[Please note: A loopback adapter is also available. Learn more »[Loopback Adapter \[127.0.0.1\]](#)]
- Network Port To Receive RTTrPM** - Set up the network port that should be used for BlackTrax.
- The default setting is **24002**

- **Use Multicast** - Allows you to receive data in multicast mode by using the specified multicast IP address.
 - **Make sure to set up the correct multicast IP address.** [The default IP address is 238.210.10.3]
 - **Beware that sACN is also using Multicast networks by default. Make sure to avoid any conflicts [by choosing a different network adapter or setting a different multicast IP address]!**

Troubleshooting

- The recommended minimum version is 2.4.2.
- Please use the **BigEndian** setting when using BlackTrax in version 2.4.2 or lower.
- When you think that the X-axis and the Y-axis are reversed, you may choose which coordinate system to use in your tracking adapter:
 - **Stage** (left-hand coordinate system) or
 - **Screen** (right-hand coordinate system) [which is recommended].
- BlackTrax currently supports up to 85 beacons or 255 tracking points.

MADRIX 5 Script

MADRIX 5 has a range of script functions implemented in order to process the positional data of BlackTrax.

For more information, please see the **MADRIX 5 Script User Manual**

It is automatically installed together with the MADRIX 5 Software or you can access it online or download it from
»help.madrix.com

7.5 CITP

This topic includes:

- [Introduction](#)
- [Usage](#)
- [Network Settings](#)
- [Configuration Of MADRIX 5 As Server](#)

- [Configuration Of MADRIX 5 As Visualizer](#)
- [Configuration Of Other Devices](#)

Introduction

CITP [abbr., Controller Interface Transport Protocol] is a communication protocol often used between media servers, lighting consoles, and visualizers.

The main reasons for using CITP are:

- SDMX
- Browsing
- Streaming media between devices
- To display preview images [Thumbnails]

Usage

Overview

MADRIX 5 supports

- CITP version 1.0 with **MSEX 1.0** and **MSEX 1.1**
[Features of higher versions are not supported.]

As a media server, MADRIX 5 is sending CITP data and making information available to other devices. For example, MADRIX 5 will not show Thumbnails from other devices.

CITP is used between **at least two devices** [or possibly more].

If you want to use CITP, you need a second device [hardware or software] to actually see the result. You will usually not see the result in MADRIX 5, but mainly on the other device [e.g., a lighting console or visualizer].

Your second device needs to support CITP. Otherwise, the connection will not work.

Moreover, not every product might support all of the features the CITP protocol has to offer. Please refer to the user manual of your other devices to learn more about the features available to you.

In MADRIX 5, you can use CITP

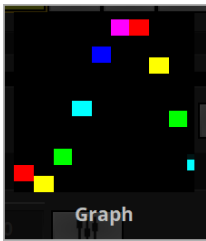
- to show preview images [**Thumbnails**]
- to stream media [**Streaming**]
- to use it as visualizer to show a stream from another CITP server [**Stream Visualizer**]

Supported File Formats

- Supported file formats for Thumbnails are: **RGB8, JPEG**
- Supported file formats for Streaming are: **RGB8, JPEG**
- [In case of MSEX 1.0, the RGB8 format of thumbnails and streams is delivered in BGR byte order as specified by the CITP specifications.]

Thumbnails

Showing Thumbnails is a useful feature, when you are using a lighting desk to control MADRIX 5 remotely [for example via »[Art-Net Remote](#)]. You may not have direct access to the PC that runs the MADRIX 5 Software and thus would like to preview the effects and visuals that you preconfigured.



MADRIX 5 generates Thumbnails for every Storage Place [Learn more »[Storages](#)]. On the graphical user interface of MADRIX 5, you have access to a total of 256 x 256 Storage Places. When you hover over a Storage Place with your mouse cursor, you will see the preview image [Thumbnail].

- You can use CIP to display those preview images [Thumbnails] directly on your lighting desk.
- Please make sure that MADRIX 5 has created these Thumbnails. Thumbnails are created when leaving [or re-selecting] a Storage Place. If no preview image has been generated for a Storage Place, you will only see a black image for this Storage Place on your console when using CIP.
- **Important Note: When using CIP 1.0 with MSEX version 1.0 or MSEX version 1.1, you will only be able to use up to 255 Storages and up to 255 Storage Places due to a restriction in the MSEX 1.0 and MSEX 1.1 specifications.**

Streaming

Overview

While Thumbnails provide a static preview of MADRIX Effects, you may use Streaming to directly preview the Main Output [Preview Output]. MADRIX 5 features three live preview windows to show your effects. The Main Output [Preview Output] will show the visuals that are sent to your LEDs. Learn more »[3 Previews](#)

You can use CIP to stream, i.e. display, the Main Output [Preview Output] directly on your lighting desk. It will not look like a static image, but like a fluent video.

Behavior

MADRIX 5 acts as a CIP server in this case. A CIP server is not expected to deliver different sizes [pixel resolutions], but may provide different formats of the same stream in different MSEX versions.

Based on the current size of the virtual LED matrix of MADRIX 5, the requested resolution will be delivered:

- Is a client [or multiple clients] requesting an edge length that is larger than the current Matrix Size, the content will be upscaled by MADRIX 5 and delivered over CIP in this way.
- Are the requested edge lengths smaller than the current Matrix Size, the current size is kept and delivered.
- When receiving requests from multiple CIP clients, the largest requested edge length will be delivered. [The CIP protocol specifications expect clients to be able to downscale content.]

Limitations

- Not every product may support this feature.
- Regarding the supported RGB8 file format, a maximum of 21,823 pixels can be streamed.
- Regarding the supported JPEG file format, there is a maximum of pixels that can be streamed, but it cannot be defined exactly as it depends on the compression rate and thus the image contents.
- The maximum frame rate for Streaming via CIP in MADRIX 5 is 10 FPS by default.
[The default frame rate is sufficient for operators and usage in combination with consoles.]
[If you want to capture Streaming with a higher frame rate, you can adjust this frame rate to the Main Mix FPS as described below.]

Visualizer

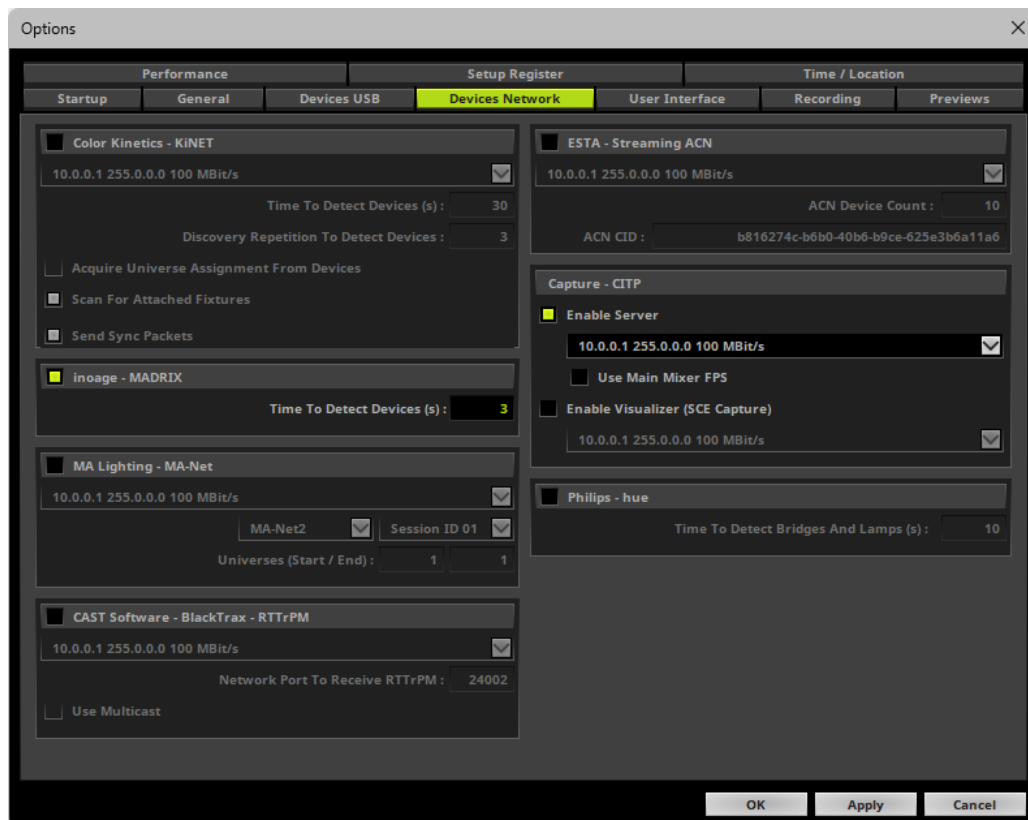
In addition, you can use MADRIX 5 as a visualizer to show the media stream of another CIP server. Instead of streaming the Main Output of MADRIX 5 to another CIP device, MADRIX 5 can receive a stream from another CIP server and show it in MADRIX 5 using the SCE Capture effect.

Network Settings

- Devices, that should communicate with each other via CIP, should be configured to be in the same network!
Learn more » [Tips \[Microsoft Windows / Networks / USB\]](#)
- The network protocol of CIP does not have any special restrictions.

Configuration Of MADRIX 5 As Server

- Go to the menu **Preferences > Options... > Devices Network**
[Keyboard shortcut: **Ctrl+Alt+0 > Devices Network**]



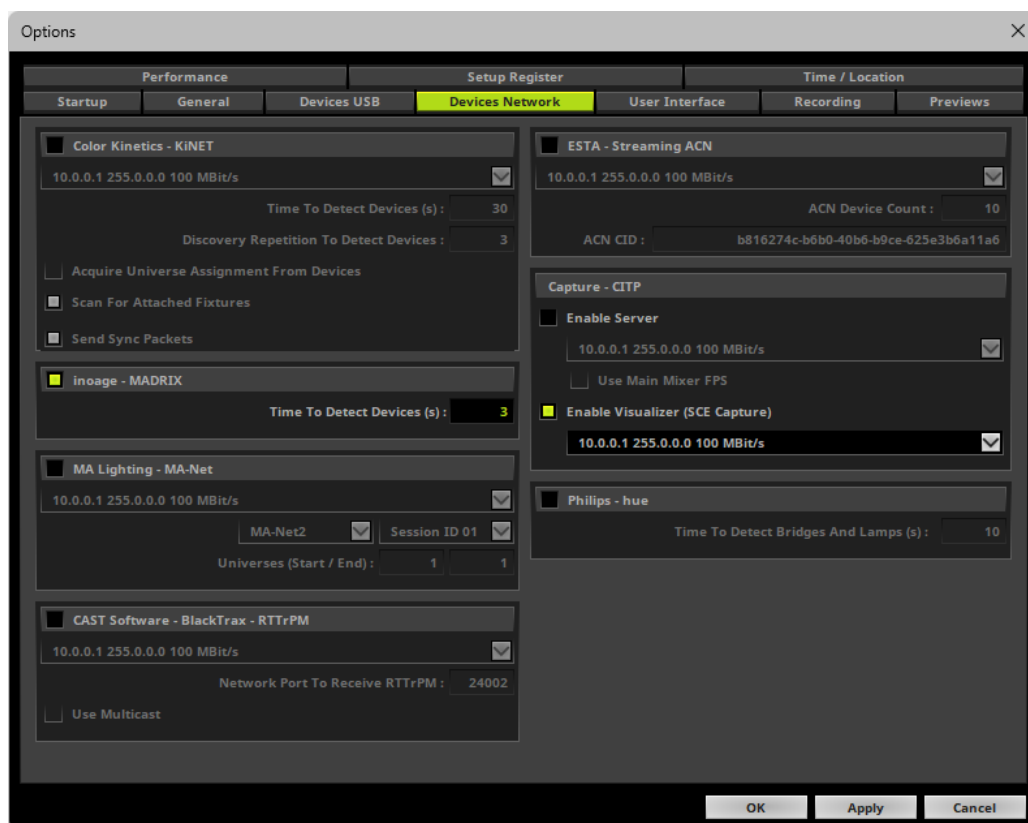
- Activate **Enable Server** in the section **Capture - CITP**
[The checkbox will change from gray to green.]
- Choose your network card** from the drop-down list. Make sure to select the correct network adapter that will be used for CITP!
[The IP address and Subnet mask label should help you select the correct adapter. It is not necessary to change any of these networks settings.]
[Please note: A loopback adapter is also available. Learn more » [Loopback Adapter \[127.0.0.1\]](#)]
- No further steps are required to configure MADRIX 5 as CITP server.

- **Use Main Mixer FPS** - Removes the 10 FPS limit for Streaming and couples the frame rate to the frame rate of the Main Mixer of MADRIX 5. The Main Mixing FPS is 50 FPS by default.

Learn more » [Performance](#)

Configuration Of MADRIX 5 As Visualizer


- Go to the menu **Preferences > Options... > Devices Network**
[Keyboard shortcut: **Ctrl+Alt+O > Devices Network**]



- Activate **Enable Visualizer (SCE Capture)** in the section **Capture - CIP**
[The checkbox will change from gray to green.]
- **Choose your network card** from the drop-down list. Make sure to select the correct network adapter that will be used for CIP!
[The IP address and Subnet mask label should help you select the correct adapter. It is not necessary to change

any of these networks settings.]

[Please note: A loopback adapter is also available. Learn more »[Loopback Adapter \[127.0.0.1\]](#)]

- Click **OK** to close the window.
- Now, choose an empty Storage Place on the user interface of MADRIX 5 and set it up as effect **SCE Capture**
- In **SCE Capture**, make sure to connect the CITP server via 

Configuration Of Other Devices

- Once CITP is enabled in MADRIX 5, your lighting console [or any other second device] should be able to find MADRIX 5 in the network.
- In order to enable CITP for the device that you want to connect to MADRIX 5, please consult the user manual of the other device.

7.6 GamePort

This topic includes:

- [Introduction](#)
- [Overview](#)
- [Step-By-Step Configuration](#)
- [Monitoring Incoming DMX Data](#)
- [Example 1](#)
- [Example 2](#)

Introduction

MADRIX 5 supports the GamePort.

The GamePort is a device port to connect 3rd-party controllers [such as Joysticks or GamePads] to computers. It used to be a physical, serial connector [often found on sound cards]. Nowadays, it is mainly implemented in Microsoft Windows as software interface to connect such game controllers simply via USB.

Overview

- The GamePort supports up to 32 individual buttons and up to 6 axes.
- A maximum of 16 GamePorts can be used at the same time as per DirectX.
- Using buttons directly translates to DMX data in MADRIX 5 [button off = DMX value 0; button on = DMX value 255].
- Using an axis directly translates to DMX data in MADRIX 5 [axis center = DMX value 127; axis one direction = DMX value 0; axis opposite direction = DMX value 255].

Step-By-Step Configuration

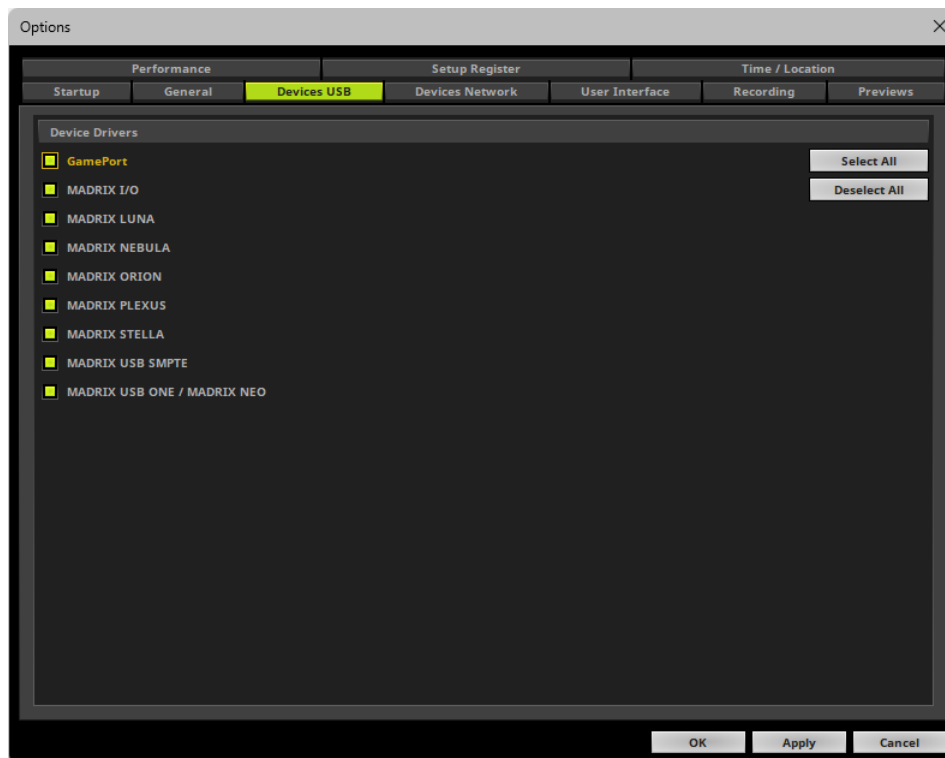
- 1]** Connect your controller.
- 2]** Enable drivers in MADRIX 5.
- 3]** Enable your device.
- 4]** Set up DMX Input.
- 5]** Choose how to use incoming data.

1] Connect Your Controller


- Connect your controller to the serial GamePort of your computer or to a free USB port.
- Make sure that Windows recognizes the device and install drivers if necessary.
- Calibrate your controller. This will ensure that all buttons and axes work properly. It is important to have calibrated and centered axes.

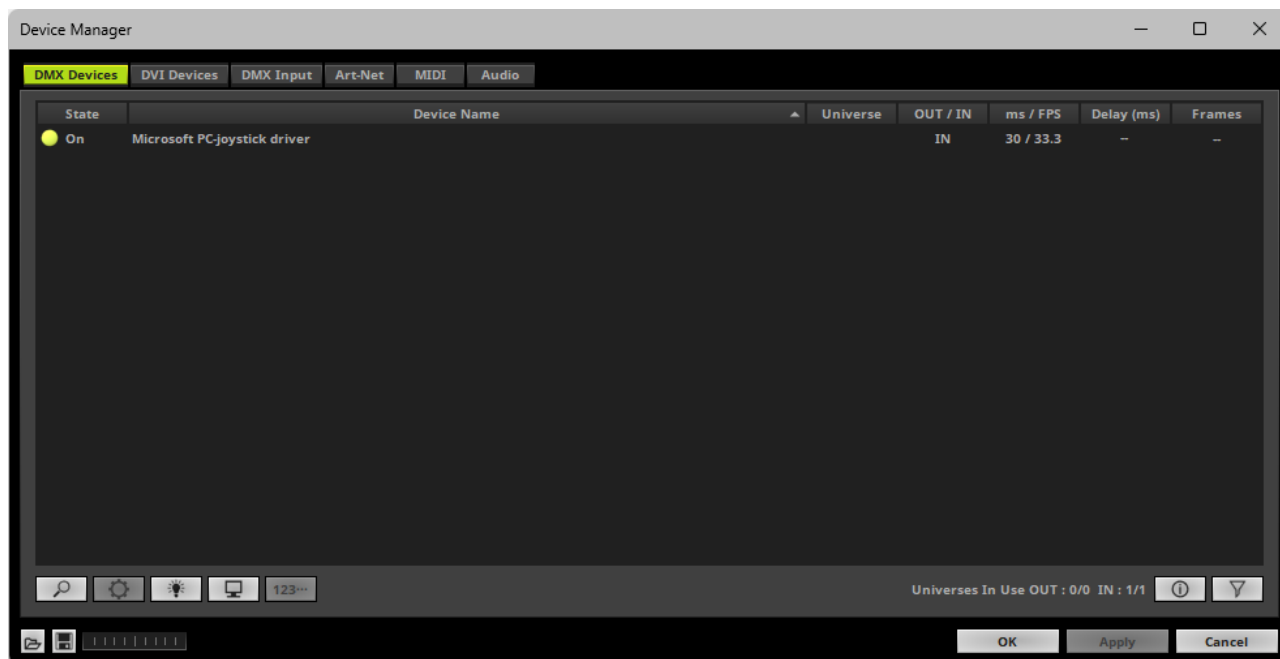
2] Enable Drivers In MADRIX 5

- Go to the menu **Preferences > Options... > Devices USB**
- Enable **GamePort**
- Click **Apply** and **OK**



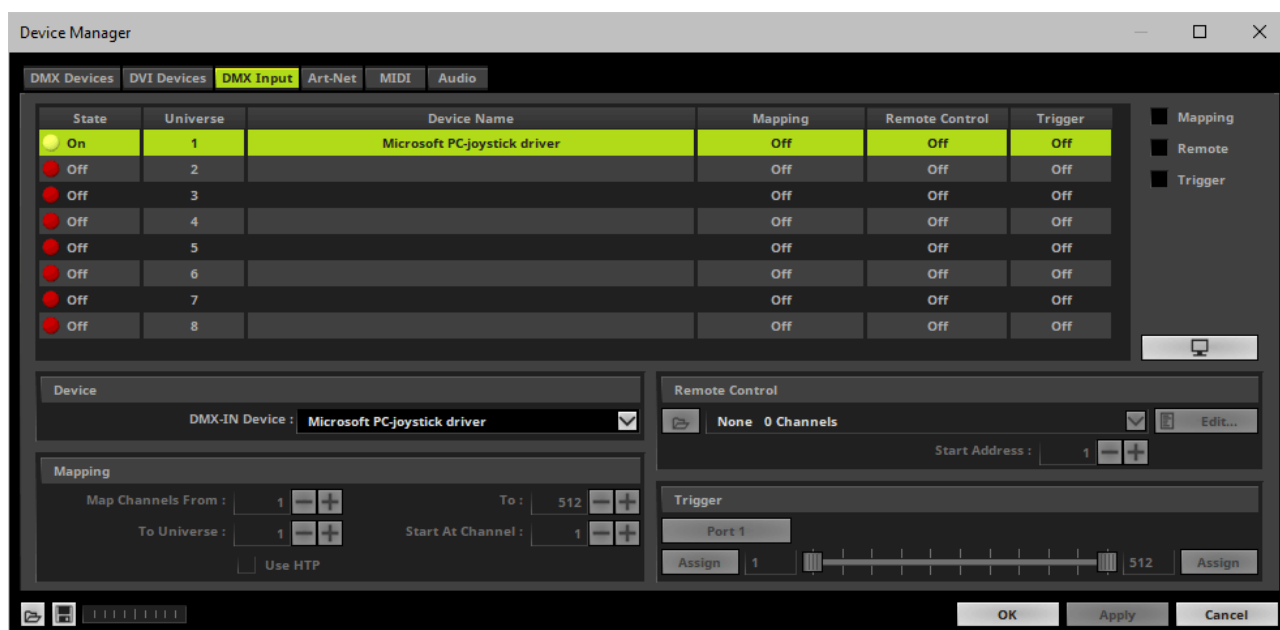
3] Enable Your Device

- Go to the menu **Preferences > Device Manager... > DMX Devices**
- Click  if your device is not shown in the list.
- Select your device in the list [usually shown as **Microsoft PC-Joystick driver**].
- **Right Mouse Click** on the column **State** to set it from **Off** to **On** [indicated by green light].




4] Set Up DMX Input

- Go to the menu **Preferences > Device Manager... > DMX Input**
- Select one entry in the list [e.g., **Universe 1**] and go to the section **Device**. Choose your device [e.g., **Microsoft PC-Joystick Driver**] under **DMX-IN Device**
- MADRIX 5 will now receive commands as DMX data via your controller.



5] Choose How To Use Incoming Data

Now you have several options to choose from:

- A]** You can activate **Remote** and choose a protocol in the section **Remote Control**. This will allow you to control MADRIX 5 remotely using your controller. Learn more » [DMX-IN / Art-Net Remote / sACN Input](#)
- B]** You can use incoming data in a Script or Macro. Learn more » [Macros And Scripts](#)
- C]** You can activate **Mapping** and route incoming DMX signals through MADRIX 5 to your output [DMX-Thru]. Learn more » [DMX-IN / Art-Net Remote / sACN Input](#)
- D]** You can monitor incoming DMX data in the DMX Watcher. Select your device in the list and click  Learn more below.

Close the Device Manager with **OK**

Monitoring Incoming DMX Data

To effectively work with incoming DMX data from your controller, you can use the DMX Watcher to monitor incoming signals. Learn how to read the data in the tables below.

- Open the DMX Watcher as explained above or go to the menu **Tools > DMX Watcher...**
- Select **Input**
- Set up the correct **Universe**
 - This is the same number as you have chosen in the list under **Preferences > Device Manager... > DMX Input** [e.g., **Universe 1**].



- **Channels 1 to 32** will display incoming DMX data for up to 32 buttons of your controller [DMX value 0 = Off or 255 = On].
- **Channels 33 to 44** will display incoming data for up to 6 axes.
Each axis is divided into two directions on two DMX channels. This shows the deviation of the axis towards the center position [e.g., channel 33: left to center and channel 34: center to right].
A DMX value of 0 shows that the axis is located at the center. A DMX value of 255 shows that the axis is fully moved in the one direction.
- **Channels 49 to 60** will display incoming data for up to 6 axes.
Incoming DMX data is separated into two DMX channels, the main value and a decimal place. Because of this, both channels can be seen as one value.
A value of 127.0 [e.g., Channel 49 and Channel 50] shows that the axis is located at the center. A DMX value of 0.0 shows that the axis is fully moved in one direction [e.g., left], while a DMX value of 255.255 shows that the axis is fully moved to the opposite direction [e.g., right].

The following chart shows which function is assigned to which DMX channel, starting with DMX channel 1.

CH 1 - 16	Button 1	Button 2	Button 3	Button 4	Button 5	Button 6	Button 7	Button 8	Button 9	Button 10	Button 11	Button 12	Button 13	Button 14	Button 15	Button 16
--------------	-------------	-------------	-------------	-------------	-------------	-------------	-------------	-------------	-------------	--------------	--------------	--------------	--------------	--------------	--------------	--------------

	Valid values are 0 or 255.	Valid values are 0 or 255.	Valid values are 0 or 255.	Valid values are 0 or 255.	Valid values are 0 or 255.	Valid values are 0 or 255.	Valid values are 0 or 255.	Valid values are 0 or 255.	Valid values are 0 or 255.	Valid values are 0 or 255.	Valid values are 0 or 255.	Valid values are 0 or 255.	Valid values are 0 or 255.	Valid values are 0 or 255.	Valid values are 0 or 255.	Valid values are 0 or 255.
CH 17 - 32	Button 17	Button 18	Button 19	Button 20	Button 21	Button 22	Button 23	Button 24	Button 25	Button 26	Button 27	Button 28	Button 29	Button 30	Button 31	Button 32
	Valid values are 0 or 255.	Valid values are 0 or 255.	Valid values are 0 or 255.	Valid values are 0 or 255.	Valid values are 0 or 255.	Valid values are 0 or 255.	Valid values are 0 or 255.	Valid values are 0 or 255.	Valid values are 0 or 255.	Valid values are 0 or 255.	Valid values are 0 or 255.	Valid values are 0 or 255.	Valid values are 0 or 255.	Valid values are 0 or 255.	Valid values are 0 or 255.	Valid values are 0 or 255.
CH 33 - 48	Axis 1	Axis 1	Axis 2	Axis 2	Axis 3	Axis 3	Axis 4	Axis 4	Axis 5	Axis 5	Axis 6	Axis 6	-	-	-	-
	rection 1	rection 2	rection 1	rection 2	rection 1	rection 2	rection 1	rection 2	rection 1	rection 2	rection 1	rection 2				
	rows the viatio	rows the viatio	rows the viatio	rows the viatio	rows the viatio	rows the viatio	rows the viatio	rows the viatio	rows the viatio	rows the viatio	rows the viatio	rows the viatio				
	n of this ectio	n of this ectio	n of this ectio	n of this ectio	n of this ectio	n of this ectio	n of this ectio	n of this ectio	n of this ectio	n of this ectio	n of this ectio	n of this ectio				
	n wards the enter	n wards the enter	n wards the enter	n wards the enter	n wards the enter	n wards the enter	n wards the enter	n wards the enter	n wards the enter	n wards the enter	n wards the enter	n wards the enter				
	sition. The rther way	sition. The rther way	sition. The rther way	sition. The rther way	sition. The rther way	sition. The rther way	sition. The rther way	sition. The rther way	sition. The rther way	sition. The rther way	sition. The rther way	sition. The rther way				
	rom the nter, the gher ill be the	rom the nter, the gher ill be the	rom the nter, the gher ill be the	rom the nter, the gher ill be the	rom the nter, the gher ill be the	rom the nter, the gher ill be the	rom the nter, the gher ill be the	rom the nter, the gher ill be the	rom the nter, the gher ill be the	rom the nter, the gher ill be the	rom the nter, the gher ill be the	rom the nter, the gher ill be the				
	MX alue.	MX alue.	MX alue.	MX alue.	MX alue.	MX alue.	MX alue.	MX alue.	MX alue.	MX alue.	MX alue.	MX alue.				
	Valid values range from 0 to 255.	Valid values range from 0 to 255.	Valid values range from 0 to 255.	Valid values range from 0 to 255.	Valid values range from 0 to 255.	Valid values range from 0 to 255.	Valid values range from 0 to 255.	Valid values range from 0 to 255.	Valid values range from 0 to 255.	Valid values range from 0 to 255.	Valid values range from 0 to 255.	Valid values range from 0 to 255.				
CH 49 - 64	Axis 1	Axis 1	Axis 2	Axis 2	Axis 3	Axis 3	Axis 4	Axis 4	Axis 5	Axis 5	Axis 6	Axis 6	-	-	-	-

	main value	decimal place	main value	decimal place	main value	decimal place	main value	decimal place	main value	decimal place	main value	decimal place				
	Valid values range from 0 to 255.	Valid values range from 0 to 255.	Valid values range from 0 to 255.	Valid values range from 0 to 255.	Valid values range from 0 to 255.	Valid values range from 0 to 255.	Valid values range from 0 to 255.	Valid values range from 0 to 255.	Valid values range from 0 to 255.	Valid values range from 0 to 255.	Valid values range from 0 to 255.	Valid values range from 0 to 255.				

- Channels 33 to 44 divide each axis into two DMX channels.
- Channels 49, 51, 53, 55, 57, 59 will show the main value of an axis and thus represent each axis as one value.
- Regarding axes, some joysticks may only use the decimal place due to technical reasons. Then, the main value might not be useful to you and you should use channel 50, 52, 54, 56, 58, and 60 instead.
- If you are using more than 1 controller, channel 65 to 124 will be used for the second controller, etc.

Example 1



- Buttons 1 to 6 are not pressed [0].
- Button 7 is pressed [255].
- Buttons 8 to 32 are not pressed [0].
- Axis 1 is fully moved to one direction [255 / 0].
- Axis 2 is fully moved to one direction [255 / 0].
- Axis 3 is fully moved to the opposite direction [0 / 255].
- Axis 4 is fully moved to the opposite direction [0 / 255].
- Axis 5 is fully moved to the opposite direction [0 / 255].
- Axis 6 is fully moved to one direction [255 / 0].
- Axis 1 is fully moved to one direction [0.0].
- Axis 2 is fully moved to one direction [0.0].
- Axis 3 is fully moved to the opposite direction [255.255].
- Axis 4 is fully moved to the opposite direction [255.255].
- Axis 5 is fully moved to the opposite direction [255.255].
- Axis 6 is fully moved to one direction [0.0].

Example 2

When monitoring an axis, there are 4 main modes that can be seen:

Fully moved in one direction [e.g., left]		Fully moved in the opposite direction [e.g., right]		Centered		Not available	
Channel 33 255	Channel 34 0	Channel 33 0	Channel 34 255	Channel 33 0	Channel 34 0	Channel 33 0	Channel 34 0
Channel 49 0	Channel 50 0	Channel 49 255	Channel 50 255	Channel 49 127	Channel 50 0	Channel 49 0	Channel 50 0

7.7 Loopback Adapter [127.0.0.1]

This topic includes:

- [Introduction](#)
- [Overview](#)

Introduction

MADRIX 5 features a loopback adapter [by default, with the IP address 127.0.0.1].

MADRIX 5 supports a variety of Ethernet-based network protocols. As such, an active and functioning network connection is required for the communication between tools and equipment, and in order to use these standards. However, a network connection might not always be available or possible. Still, you may want to work with different tools on the same computer [sending data from MADRIX 5 to a visualizer, for example]. This is where the loopback adapter can be useful.

As such, the loopback adapter makes it possible to send and receive network data on the local computer.

Overview

The loopback adapter can be used for the following network protocols:

- [Art-Net](#)
- [CAST Software BlackTrax](#)
- [CITP Server](#)
- [CITP Visualizer](#)
- [Color Kinetics \[KiNET\]](#)
- [MA Lighting MA-Net](#)
- [Streaming ACN \[sACN\]](#)
- [Remote HTTP](#)

The following points summarize the device:

- The loopback adapter is a virtual device that emulates a network adapter.
- As such, all normal functionality is provided [including all of its advantages and drawbacks].
- Network data that is sent to the loopback adapter does not leave the local computer.
- By default, the IP address is 127.0.0.1. If you are seeing a different IP address, this could be due to corresponding changes that were made in the operating system.

7.8 MA Lighting MA-Net

This topic includes:

- [Introduction](#)
- [Step-By-Step Configuration](#)
- [Protocols \[Overview\]](#)
- [Important Notes](#)
- [Troubleshooting](#)

Introduction

MA-Net from MA Lighting is a proprietary Ethernet network protocol. MADRIX 5 supports it natively.

MADRIX 5 supports:

- MA-Net 1
- MA-Net 2

Step-By-Step Configuration

- 1]** Set up networking for your MA product.
- 2]** Set up the correct network settings in Windows.
- 3]** Enable drivers in MADRIX 5.
- 4]** Activate the devices.
- 5]** Set up remote control.

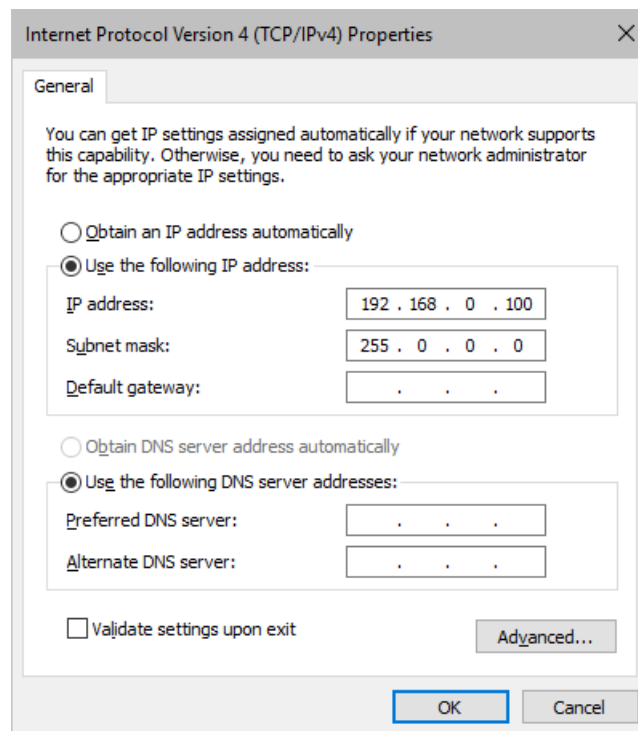
1] Setting Up MA Networking

- Make sure to connect your MA devices and the MADRIX computer in the same Ethernet network over network cabling [and possibly a network switch]!
[For example, use the **Ethernet 1** port for products of the grandMA 2 series and the network card of the computer that runs the MADRIX 5 Software.]
- Consult the user manual of your MA product to set up the correct settings for MA-Net for your MA product.
- Start Networking for your MA product.
[For example, go to **Setup > Network** to start or join a session for products of the grandMA 2 series.]

2] Windows Network Settings

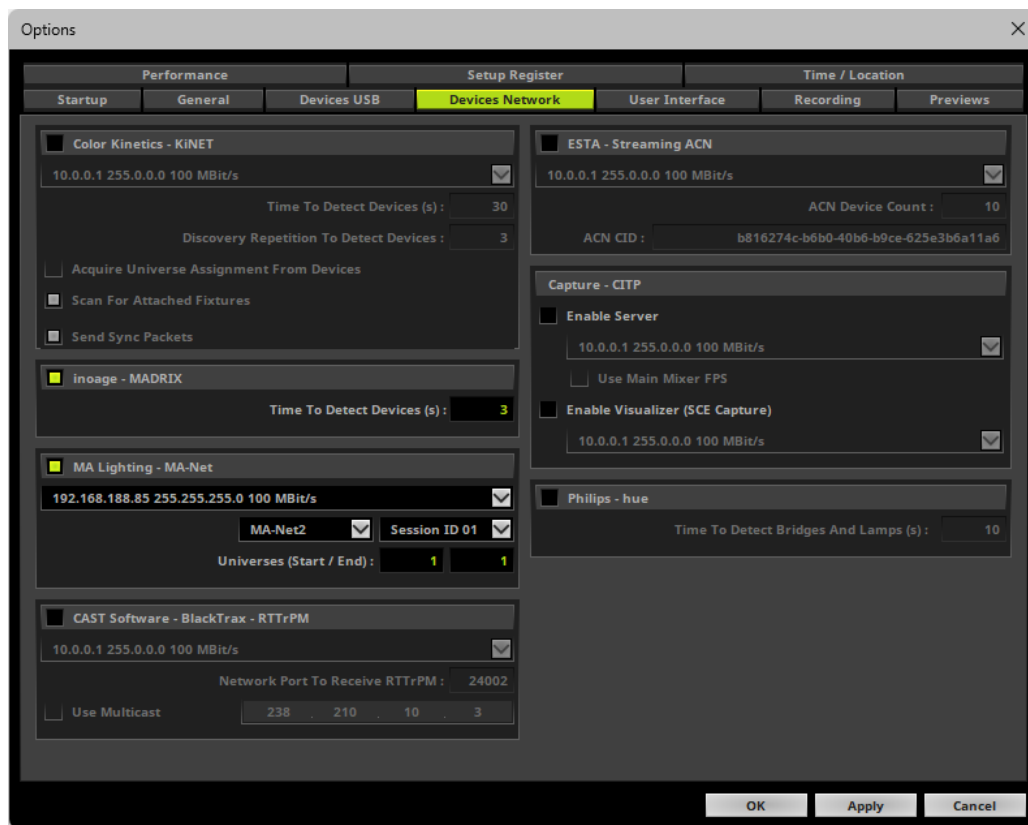
MA-Net is a network-based protocol. MADRIX 5 will use the network card of your computer to receive data.

- **It is required to set up the correct network settings in Windows, first.**
- **You must use the correct IP address and Subnet mask settings. Otherwise, MA-Net might not work!**
- **The IP addresses of your computer and your MA-Net devices need to be different.**
- Set up an individual **IP address** according to the IP address range of your MA product.
 - Make sure that the first, second, and third part of the IP address are the same. The fourth part must be different from your MA product.
 - A general recommendation is:
 - **192.168.X.1 ... 192.168.X.254**
- Set up the corresponding **Subnet mask**
 - **255.0.0.0**
- **Restart MADRIX 5, if you have changed the network settings in Windows while MADRIX 5 was running.**
- **Check the settings of the Windows Firewall.**
- Learn more » [Tips \[Microsoft Windows / Networks / USB\]](#)
- Example for PCs that are running MADRIX 5:



3] Enabling Drivers In MADRIX 5

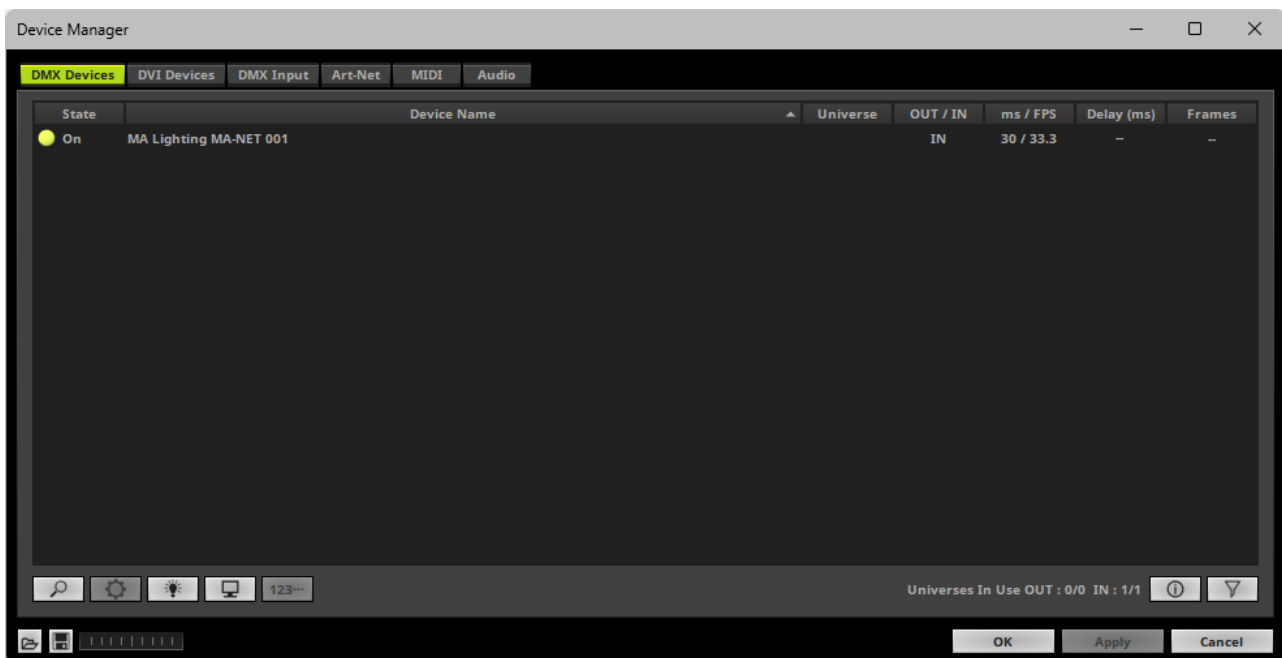
- Go to the menu **Preferences > Options... > Devices Network**
[Keyboard shortcut: **Ctrl+Alt+O > Devices Network**]
- Activate **MA Lighting - MA-Net**



- Choose the correct **network/network card** from the drop-down list.
 - **Always make sure that you have selected the correct network. Otherwise, no data can be received.**
 - Please note: A loopback adapter is also available. Learn more » [Loopback Adapter \[127.0.0.1\]](#)
- **MA-Net2** ☒ - Defines the protocol version.
 - Choose the correct MA-Net here [**MA-Net 1** or **MA-Net 2**].
 - MA-Net 1 is used by the grandMA1 series.
 - MA-Net 2 is used by the grandMA2 series.
- **Session ID** - Defines the session you want to work in. Choose the session you have set up in your MA product also here.
- **Universes (Start / End)** - Defines the universe or universe you wish to receive.
 - The default **Start Universe** is **1** and the default **End Universe** is **1**, which means that one DMX universe will be received.

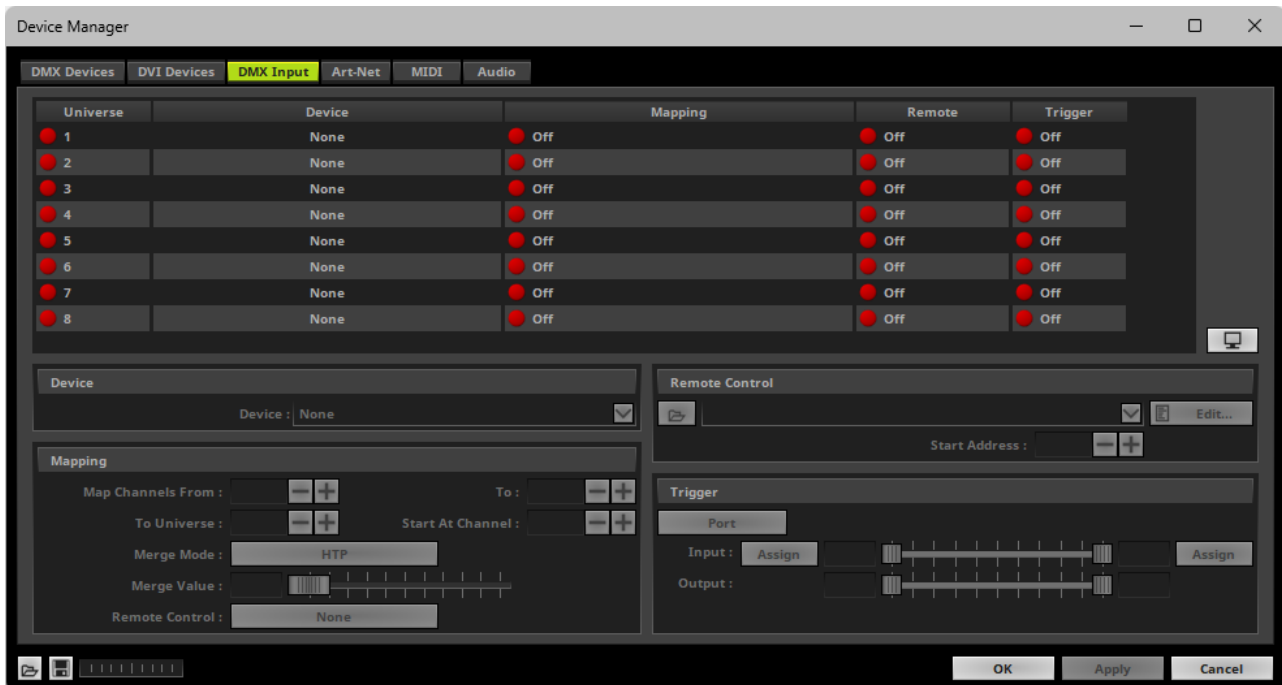
4] Activating Devices

- Go to the menu **Preferences > Device Manager... > DMX Devices**
[Keyboard shortcut: **F4**]
- MADRIX 5 automatically adds the number of MA-Net universes/devices according to your settings for **Start Universe** and **End Universe**
- Your devices are automatically activated.
- If it is no activated, select your devices in the list.
- **Right Mouse Click** on the column **State** to set it from **Off** to **On** [indicated by green light].
- **IN** is automatically activated.
- Since MADRIX 5 will receive data, the frame time and frame rate [**ms / FPS**] are managed automatically by MADRIX 5.
[Please note when checking incoming data via the Task Watcher: A maximum frame rate of 30 FPS will be sent by your MA product over MA-Net.]

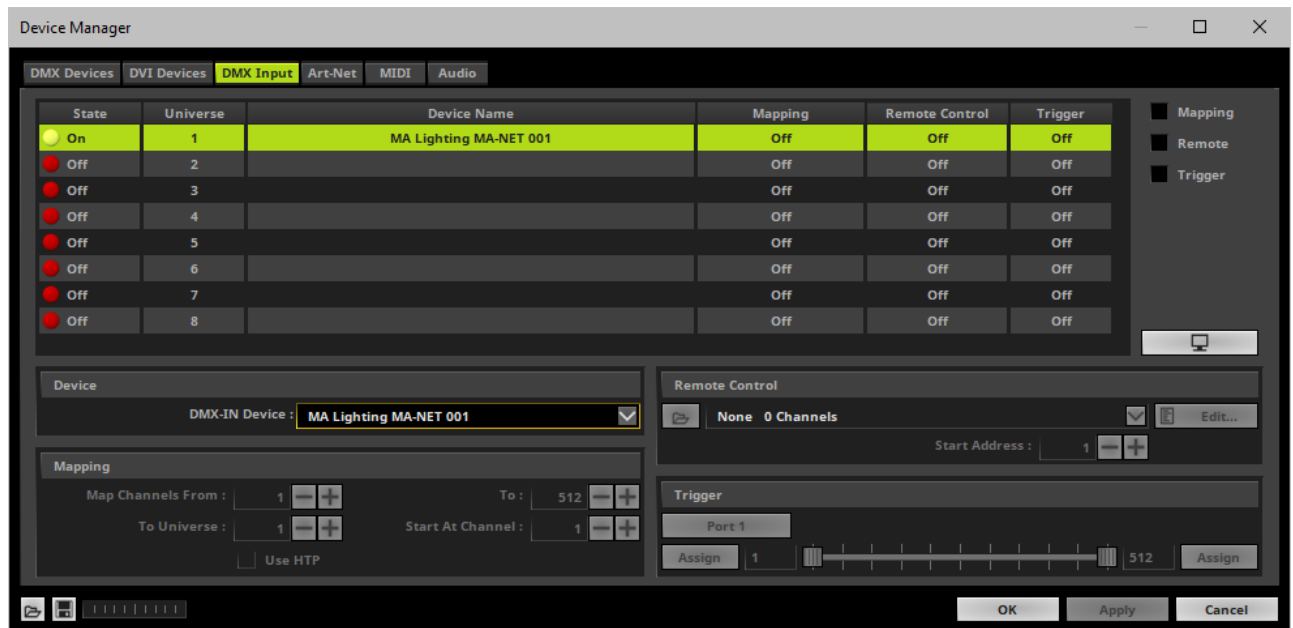


5] Setting Up Remote Control

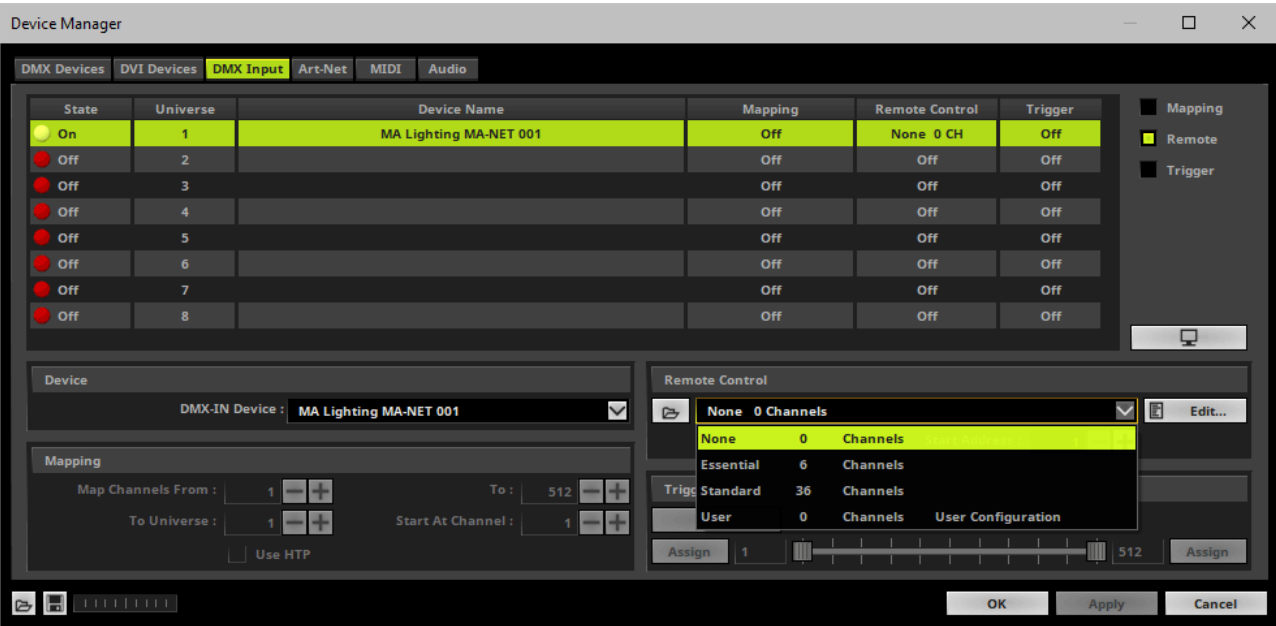
- Go to the menu **Preferences > Device Manager... > DMX Input**



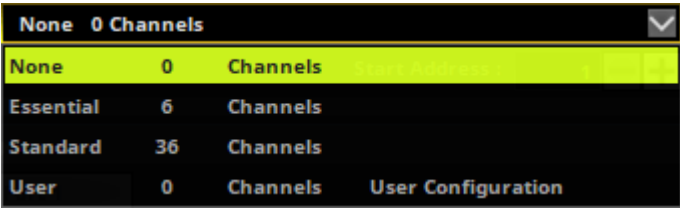
- Select your preferred DMX **Universe** in the list.
[By default, DMX universe 1 to 8 are listed. If you wish to increase the number of DMX-IN universes, you can change the setting. Learn more »[Performance](#)]
- Select your **DMX-IN Device** in the section **Device** by choosing the **MA Lighting MA-Net** device.



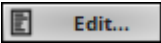
- [If needed, you can disable DMX-IN by deselecting the device under **DMX-IN Device** and choose the list entry that is empty or disable the interface under **Device Manager... > DMX Devices**.]
- Make sure that your device is still selected in the list.
- Activate **Remote**
- Select one of the built-in protocols in the section **Remote Control** [as explained below] or create your own remote configuration. Learn more » [DMX-IN Remote Editor](#)



Open - Loads a previously saved MADRIX 5 DMX Remote Configuration file [of the file type *.mdrx].



Protocols - Choose from a pre-configured protocol [configuration].
Learn more [Protocols \[Overview\]](#)



DMX-IN Remote Editor - Allows you to modify a configuration or create a new configuration.
Learn more »[DMX-IN Remote Editor](#)



Start Address - Defines on which particular DMX channel the protocol should start. The whole protocol will be mapped to this new address area.



DMX Watcher - Opens the DMX Watcher to monitor your DMX output or input.

Learn more » [Tools](#)

Mapping is not available for MA-Net and cannot be enabled.

Protocols [Overview]

There are preprogrammed DMX protocols you can choose from:

- » [DMX-IN \[Essential Protocol\]](#)
- » [DMX-IN \[Standard Protocol\]](#)
- » [DMX-IN \[User\]](#)

Important Notes

- Always make sure to have a valid network card active or selected! Otherwise, MADRIX 5 cannot receive MA-Net.
- Always make sure to have a valid license for your MA product to send out Ethernet data or use a console.
[MA on PC requires an MA 2Port Node or MA onPC command wing, for example.]
- Please make sure to save your MADRIX 5 Setup file after the configuration process.

Troubleshooting

If you are encountering problems, please work through the following checklist:

- Double-check the settings of your network card.
- Make sure to set up the Windows Firewall correctly. Learn more »[Tips \[Microsoft Windows / Networks / USB\]](#)
- Double-check the settings of the MA-Net devices in MADRIX 5.
- Double-check the configuration of your MA product.
- Check if your MA product has a valid license to send out Ethernet data.
- Use the DMX Watcher to monitor incoming data.

7.9 NewTek NDI

This topic includes:

- [Introduction](#)
- [Overview](#)
- [Sending NDI](#)
- [Receiving NDI](#)
- [Troubleshooting](#)

Introduction

Based on the widely available IP technology, NDI [abbr., Network Device Interface] by NewTek makes streaming video over standard network easily possible.

The logo for NewTek NDI, featuring the letters "NDI" in a bold, sans-serif font, with a registered trademark symbol (®) to the upper right of the "I".

Overview

- With MADRIX 5, you can send or receive video or the software's output stream over NDI.
- The features are directly built into the software without the need for any additional drivers.
- NDI is usually used between two or more separate devices.
- NDI version 6.0.0 is currently supported.

- **Any other sender or receiver also needs to support NDI. Otherwise, the connection will not work.**
- **Make sure that all senders and receivers of NDI are connected to the same Ethernet computer network.**

- [Sending NDI](#)
- [Receiving NDI](#)

Sending NDI

Step-By-Step Configuration

- 1] Prerequisites.
- 2] Patching DVI fixtures.
- 3] Adding an NDI DVI Device.
- 4] Important information.

1] Prerequisites

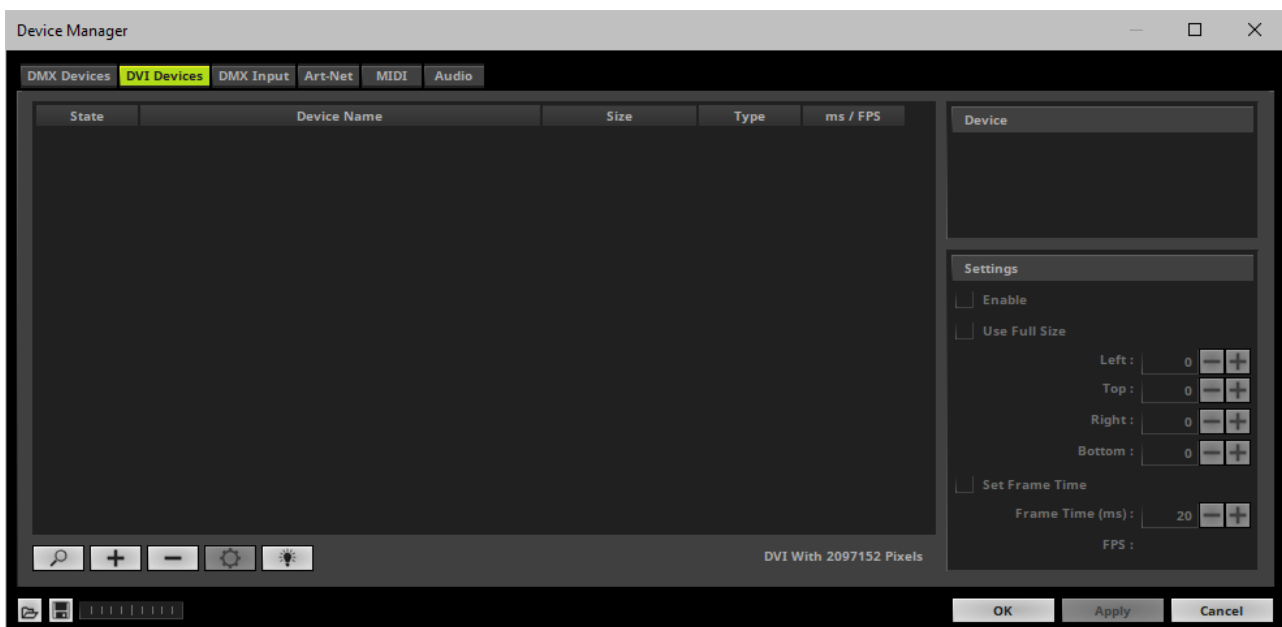
- The NDI network settings are automatically set up for you.
- You only need a computer with a network card and a valid IP address.
- **You do not have to change the IP address settings in Windows for NDI!**
- **You need to patch DVI fixtures [see below].**


2] Patching DVI Fixtures

- Configure your LED matrix first.
- You need to add DVI fixtures [**Fixture Protocol > DVI**]. Otherwise, it will not work and no output is sent.
- Learn more »[Matrix Generator](#) or »[Patch Editor](#)

3] Activating The DVI Device

- Go to the menu **Preferences > Device Manager... > DVI Devices**
[Keyboard shortcut: **F4 > DVI Devices**]

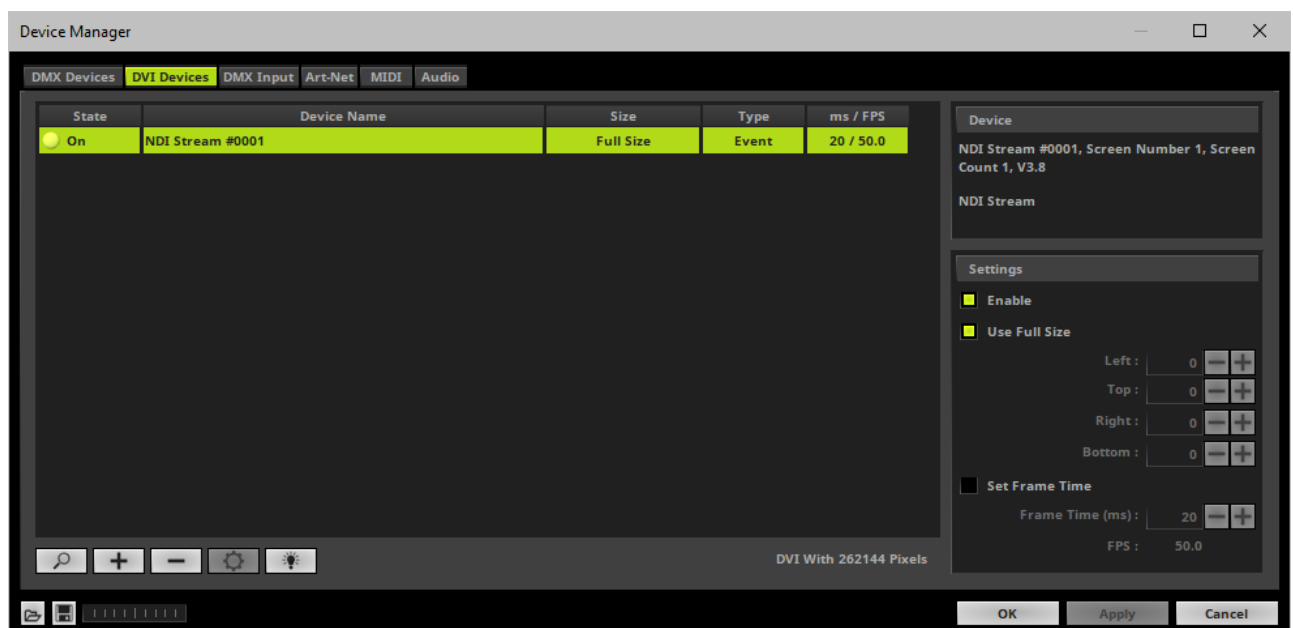


- Add devices manually.
 - Click 
 - A small selection list will be opened above the button.



- Select **NDI**

- The new DVI device will appear in the list after it has been added.





There are different Settings available for further configuration. By default, all settings should be set up correctly already.

- If you change a setting, always click **Apply** to confirm the changes.
- **Enable** - Activates or deactivates the currently selected DVI device. This is activated by default. It needs to be activated in order to work correctly.
- **Use Full Size** - Displays the full Matrix Size on the device. This is activated by default and the recommended setting.
 - Deactivate if you want to set up a certain cut-out and specify which details of your matrix will be shown. You

can choose the start coordinates and the end coordinates of this area. **Left** and **Top** define the start coordinates in a coordinate system that starts with 0,0 in the top left corner. **Right** and **Bottom** define the end coordinates.

Scaling is not available.

Your virtual LED matrix will not be stretched or compressed in order to fit the DVI device or vice versa.

- **Set Frame Time** - Activate in order to set a different frame time in milliseconds. By default, the DVI device is set to be an **Event** type with the software's main mixing frame rate [50 FPS by default] .
 - If you manually set a new frame time, the output might flicker.
 - It is not recommended to set a higher frame rate than 50 FPS. But if your hardware controller requires a different, adjust the value to these requirements. Then, the type of your device will be set to **Frame** in the list.
-  - Removes the currently selected DVI devices.
-  - Makes your device flash and will set all pixels instantly to white for testing purposes.

4] Important Information

- **The MADRIX 5 Software does not send an Alpha channel.**
- **The MADRIX 5 Software does not send or receive audio over NDI.**
- **NDI uses video compression in order to manage the amount of video data that is sent over Ethernet network.**
 - **Beware that this might result in distorted colors or visual artifacts when sending MADRIX Effects.**
 - **This is usually not immediately visible for Full HD video content and the softer image content of videos.**
 - **However, you may see it when sending pixel-perfect and color-perfect MADRIX Effects, since they often use precise and thus hard edges with high color contrasts.**
 - **Any receiver might thus receive interpolated image data.**

Receiving NDI

In order to receive NDI, you need to use the MADRIX Effect ***SCE Capture***

Step-By-Step Configuration

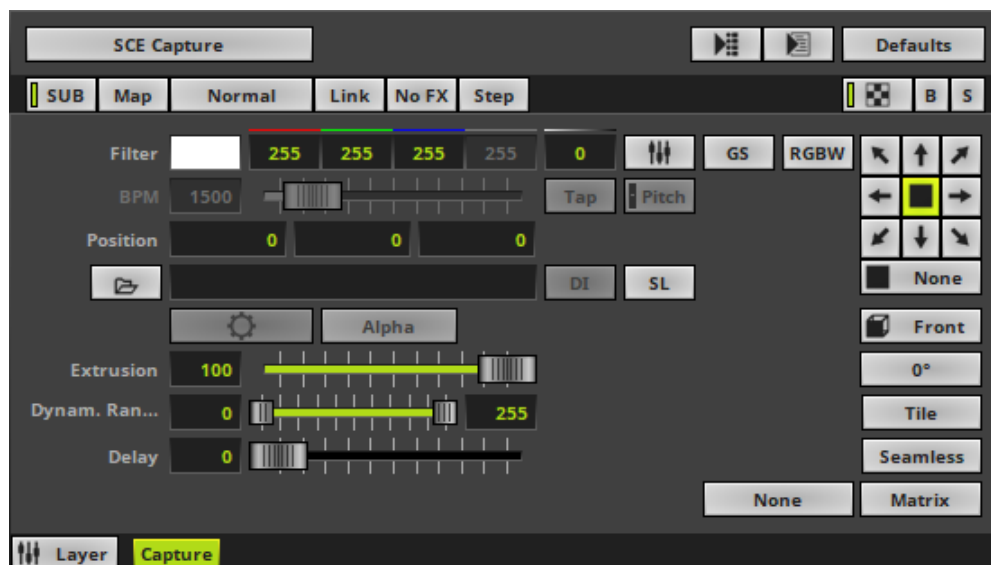
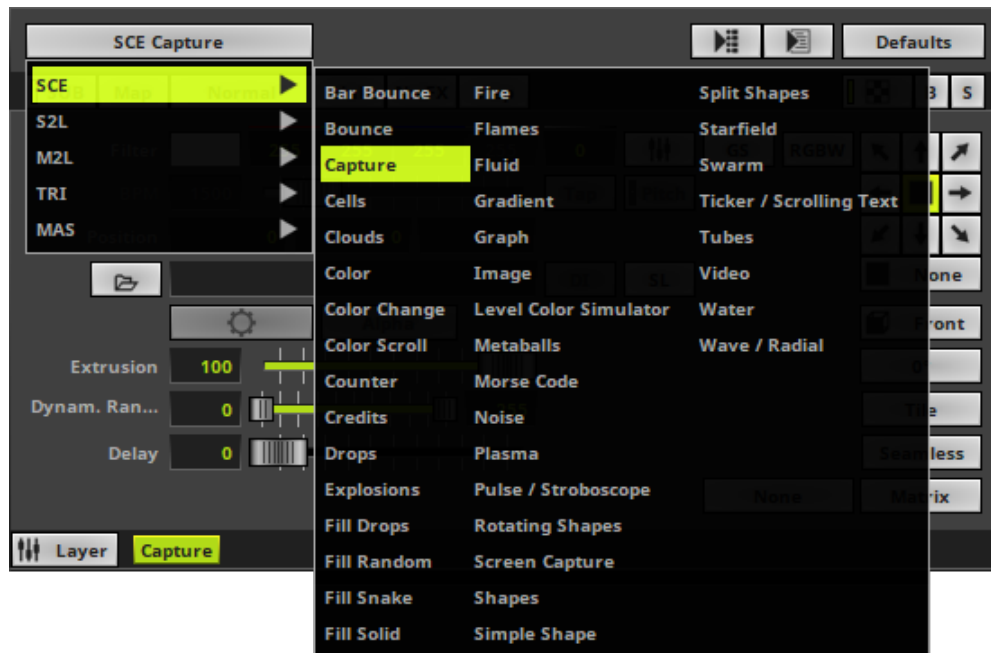
- 1]** Prerequisites.
- 2]** Using SCE Capture.


1] Prerequisites

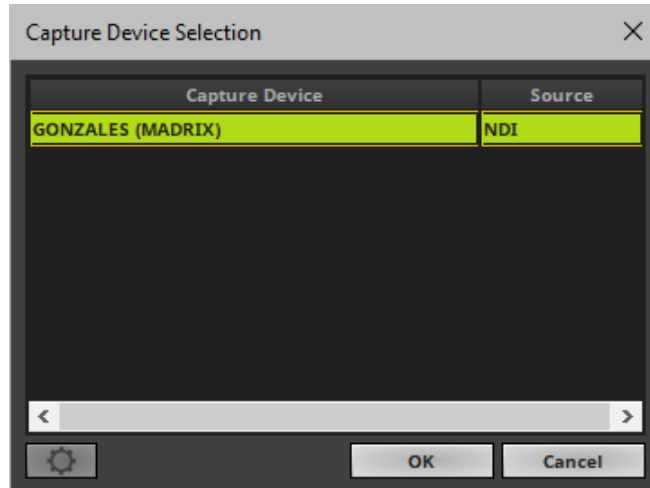
- Make sure that you are sending NDI over network.
- The NDI network settings are automatically set up for you.
- You only need a computer with a network card and a valid IP address.
- **You do not have to change the IP address settings in Windows for NDI!**

2] Using SCE Capture

- Select ***SCE Capture*** from the library of effects.
Learn more » [Effects \[Visuals\]](#)



-  - **Open** a device.
 - **Please allow the software to search for devices in the network for at least 5 seconds.**
 - **Only after this short period of time, devices will appear in the list!**
- Select your NDI sender from the list.
 - The **Source** is **NDI**



- MADRIX 5 will now receive NDI over Network.
- Use can use the Dynam. Range setting to improve visual color distortion caused by the video compression.



- Learn more »[SCE Capture](#)

Troubleshooting

Newtek provides the following information:

- "npcap loopback adapter has been found to interfere with NDI operation and performance. This driver is not required or used by modern versions of Wireshark. If you find this is installed on your system, then is installed recommend that you go to your network settings and use the context menu on the adapter to disable it."
- "NDI now uses predictable port numbers in all cases so that fire-wall rules can be properly built."
 - "Each connection uses TCP ports 5960 and up."
 - "Each mTCP or UDP receiver use port 6960 and up."
 - "Each mTCP or UDP sender use port 7960 and up."

7.10 OSC

This topic includes:

- [Introduction](#)
- [Configuration](#)
- [Sample](#)
- [Address Space & Available Commands](#)
- [Troubleshooting](#)

Introduction

OSC stands for OpenSoundControl.

OSC is a widespread format to communicate between systems, and used for remote control of MADRIX 5.

There are many software applications or hardware controllers available, which offer support for OSC.

The remote sender controlling MADRIX 5 is called client.

MADRIX 5 is the receiver and called server.

Configuration

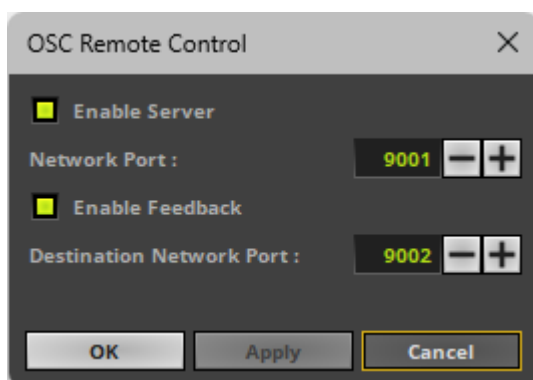
General

Make sure to start MADRIX 5 first, and then the third-party controller.

In MADRIX 5

In order to use remote control over OSC, you need to set the correct settings.

- Go to the menu **Preferences > Remote Control > OSC**
- A new window will open.



- **Enable Server** - Activates reception of OSC messages and input. Is required for the main functionality of remote controlling MADRIX 5.
 - **Network Port** - Defines the network port on which the OSC server is listening for messages. The default value is 9001.
- **Enable Feedback** - Activates sending out OSC messages and output.
 - It sends states and data from the MADRIX 5 Software back to the remote controller, such as the value of the Master.
 - Controller and MADRIX 5 can therefore automatically be in sync.

- This also means, that even changes to MADRIX 5 via another remote-control instance, such as MIDI, will be synced with OSC.
- **Destination Network Port** - Defines the network port to which the OSC server is sending messages. The default value is 9002.

Your settings will be saved in the MADRIX 5 Setup file.

In Third-Party Controllers

Make sure to configure your remote controller [client]!

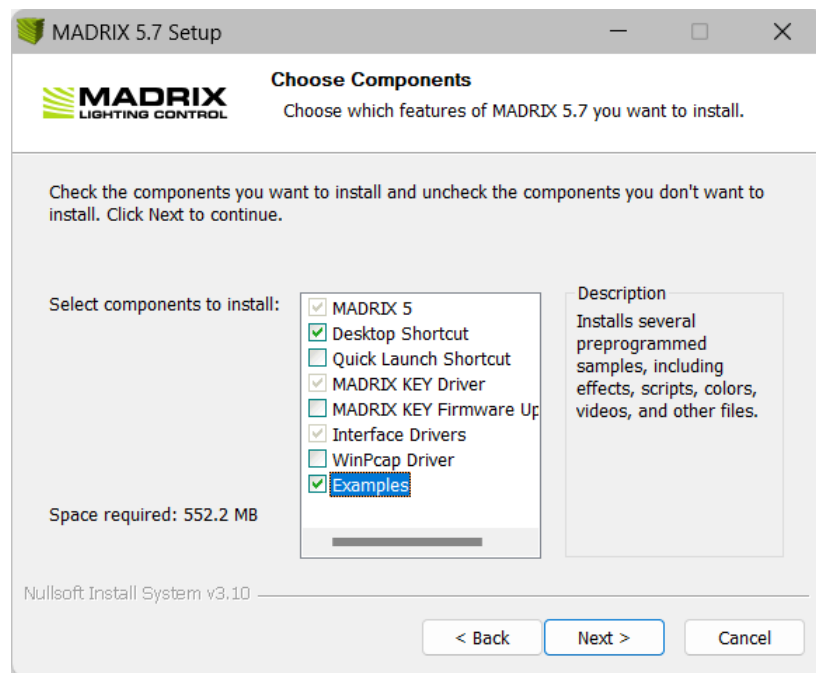
For example, in **TouchOSC**:

- Go to the menu **Edit > Connections > OSC**
- Set up
 - **Connection 1: UDP**
 - **Host: 127.0.0.1** [127.0.0.1 is the local host, meaning the same computer if you are running MADRIX 5 and TouchOSC on the same computer. Enter the correct host address of the computer running MADRIX 5 if both applications are on different computers.]
 - **Send Port: 9001** [Use the same Server Network Port as set up in MADRIX 5, as explained above.]
 - **Receive Port: 9002** [Use the same Feedback Network Port as set up in MADRIX 5, as explained above.]
 - **Zeroconf: Default**
- Confirm with **Done**

Sample

The MADRIX 5 Installer includes a sample file, which you can load in TouchOSC.

1] During the setup of MADRIX 5, choose **Examples** from the list of components.



2] After the installation, you can find the example on your hard disk.

- Navigate to **C:\Users\Public\Documents\MADRIX5 Samples\remote\osc\madrix.tosc**

3] Load the sample in TouchOSC via menu **File > Open...**

4] This is what the sample user interface looks like:



Address Space & Available Commands

Since OSC is a very open protocol, there are many feasible possibilities, and implementations are often based on best practices.

In order for you to control MADRIX 5 remotely, you need to know the available address space and list of commands. You will find the complete list and more details below.

Details

- Support: MADRIX 5 supports OSC clients, whose address space can be freely configured, since it is a custom address space defined by MADRIX 5.
- Case Sensitivity: The address space is case-sensitive. [Make sure to correctly use capital and small letters.]
- Data Types: OSC offers usage of several data types. MADRIX 5 is using values of the types **integer** [i, int, INT, INT32] and **float** [f, float, FLOAT, FLOAT32].
 - All other OSC data types are currently not used.
 - **See the following examples to identify which data type is required** as listed in the address space

below.

- Examples for integer values: 0, 55, 255, -10
- Examples for float values: 0.0, 1.84, 20.0, -2.72
- Address Patterns: Each OSC address starts with **/** and separates items also via **/**
 - The last item of an address pattern is called the **Method**, which is the function or functionality.
 - All items before the Method are **Containers**, basically grouping items together.
- Values To Pass: Methods often require one or more **Arguments**, which is the exact values that should be used.
 - In the table below, arguments are listed as single arguments [...] or multiple arguments [...] [...] [...], which would be three arguments in this case.
- Arguments: **x** means a value you can define individually.
- Arguments: **N** means the last index number that is available, which depends on how you are using the software; for example, as to how many Cue Lists you have created.
- Arguments: **N-1** means that the function works with an index, and this index starts with 0.
 - You will have to calculate the regular number minus one to get the last available index number.
 - For example, you may have two Cue Lists, which are normally written as 1 and 2. Since it is a zero-based index, they are 0 and 1 instead.
- Address Space: The table below includes Containers, Methods, Arguments and additional comments for more information, which are indicated with **//**
- Feedback: In general, building OSC user interfaces without expecting and including Feedback from MADRIX 5 is easier than building them with Feedback from MADRIX 5.

Example

- Address: **/Output/Master**
Valid Range Of Integer Arguments: (From) **0** (To) **255**

Address Space

/Audio	/Input	/Agc [0 or 1]
		/Level [0 ... 100]
		/Level/Offset [-x ... +x]
		/Mute [0 or 1]
	/Output	/Level [0 ... 100]
		/Level/Offset [-x ... +x]

				/Mute [0 or 1]				
/DeckA or /DeckB				/Pause [0 or 1]				
				/SpeedMaster [-20.0 ... 20.0]				
				/SpeedMaster/Offset [-x ... +x]				
				/Submaster [0 ... 255]				
				/Submaster/Offset [-x ... +x]				
				/Filter [0 ... 102] //UI Values: None ... SwapHVD5				
				/Filter/Up				
				/Filter/Down				
				/FilterColor	/Mode [0 ... 3] //UI Values: Thru ... Ignore			
					/Mode/Up			
					/Mode/Down			
					/GlobalId [1 ... N]			
					/GlobalId/Up			
					/GlobalId/Down			
					/Red [0 ... 255]			
					/Red/Offset [-x ... +x]			
					/Green [0 ... 255]			
					/Green/Offset [-x ... +x]			
					/Blue [0 ... 255]			
					/Blue/Offset [-x ... +x]			
					/White [0 ... 255]			
					/White/Offset [-x ... +x]			
					/Rgb [0 ... 255] [0 ... 255] [0 ... 255]			
					/Storages	/Index [0 ... 255]		
				/Index/Up				
				/Index/Down				
				/Places	/Index [0 ... 255]			
					/Index/Up			
					/Index/Down			
				/StoragePlace	/SpeedPitch [-10.0 ... 10.0]			
					/SpeedPitch/Offset [-x ... +x]			
					/Submaster [0 ... 255]			
					/Submaster/Offset [-x ... +x]			
					/Filter [0 ... 102] //UI Values: None ... SwapHVD5			
					/Filter/Up			
					/Filter/Down			
					/Chaser	/PlaybackState [0 ... 2] //UI Values: Stopped, Paused, Playing		
						/SpeedPitch [-10.0 ... 10.0]		
						/SpeedPitch/Offset [-x ... +x]		
						/Steps	/Index [0 ... N-1]	
							/Index/Up	
							/Index/Down	
					/Layers	/[0 ... N-1]		
						/Submaster [0 ... 255]		
						/Submaster/Offset [-x ... +x]		

				/Opacity [0 ... 255] /Opacity/Offset [-x ... +x] /Blind [0 or 1] /Solo [0 or 1] /Filter [0 ... 102] //UI Values: None ... SwapHVD5 /Filter/Up /Filter/Down /MixMode [0 ... 21] //UI Values: Normal ... NegativeMask /MixMode/Up /MixMode/Down /Chaser	/PlaybackState [0 ... 2] //UI Values: Stopped, Paused, Playing /SpeedPitch [-10.0 ... 10.0] /SpeedPitch/Offset [-x ... +x] /Steps	/Index [0 ... N-1] /Index/Up /Index/Down
/Output	/Freeze [0 or 1]					
	/Master [0 ... 255]					
	/Master/Offset [-x ... +x]					
	/Blackout [0 or 1]					
	/Filter [0 ... 102] //UI Values: None ... SwapHVD5					
	/Filter/Up					
	/Filter/Down					
	/FilterColor	/Mode [0 ... 3] //UI Values Thru ... Ignore				
		/Mode/Up				
		/Mode/Down				
		/GlobalId [1 ... N]				
		/GlobalId/Up				
		/GlobalId/Down				
		/Red [0 ... 255]				
		/Red/Offset [-x ... +x]				
		/Green [0 ... 255]				
		/Green/Offset [-x ... +x]				
		/Blue [0 ... 255]				
		/Blue/Offset [-x ... +x]				
		/White [0 ... 255]				
		/White/Offset [-x ... +x]				
		/Rgb [0 ... 255] [0 ... 255] [0 ... 255]				
	/StrobeColor	/Mode [0 ... 2] //UI Values: OutputAndColor ... BlackAndColor				
		/Mode/Up //Scroll direction correlates visually to direction on the user interface, but as such contrary to other remote-control options, like DMX-IN or MIDI				

				/Mode/Down //Scroll direction correlates visually to direction on the user interface, but as such contrary to other remote-control options, like DMX-IN or MIDI
				/GlobalId [1 ... N]
				/GlobalId/Up
				/GlobalId/Down
				/Red [0 ... 255]
				/Red/Offset [-x ... +x]
				/Green [0 ... 255]
				/Green/Offset [-x ... +x]
				/Blue [0 ... 255]
				/Blue/Offset [-x ... +x]
				/White [0 ... 255]
				/White/Offset [-x ... +x]
				/Rgb [0 ... 255] [0 ... 255] [0 ... 255]
	/Strobe [0 ... 9] //UI Values: Off, Every Tenth Frame ... Every Second Frame			
	/Strobe/Offset [-x ... +x]			
/Fade	/Time [0.0 ... 3600.0] //In Seconds			
	/Time/Offset [-x ... +x]			
	/Type [0 ... 14] //UI Values: CrossFade ... ZCrossSlide			
	/Type/Up			
	/Type/Down			
	/Value [0 ... 255]			
	/Value/Offset [-x ... +x]			
	/Automatic			
	/ToLeft			
/ToRight				
/ToCenter				
/ColorKit	/GlobalColors	/[1 ... N]	/Red [0 ... 255]	
			/Red/Offset [-x ... +x]	
			/Green [0 ... 255]	
			/Green/Offset [-x ... +x]	
			/Blue [0 ... 255]	
			/Blue/Offset [-x ... +x]	
			/White [0 ... 255]	
			/White/Offset [-x ... +x]	
			/Alpha [0 ... 255]	
			/Alpha/Offset [-x ... +x]	
			/Rgb [0 ... 255] [0 ... 255] [0 ... 255]	
/GroupControl	/Defaults			
	/Groups	/[0 ... N-1]	/Value [0 ... 255]	
			/Value/Offset [-x ... +x]	
			/Flash [0 or 1]	
	/Chaser	/PlaybackState [0 ... 2] //UI Values: Stopped, Paused, Playing		
		/SpeedPitch [-10.0 ... 10.0]		
		/SpeedPitch/Offset [-x ... +x]		
		/Steps	/Index [0 ... N-1]	

			/Index/Up
			/Index/Down
			/FadeTime [0.0 ... 3600.0] //In Seconds
			/FadeTime/Offset [-x ... +x]
			/Presets /Index [0 ... 255] //No Feedback Wanted
			/Index/Up
			/Index/Down
			/DmxFaderTo /Faders /[0 ... 23] /State [0 or 1]
			/Value [0 ... 255]
			/Value/Offset [-x ... +x]
/CueLists			/Index [0 ... N-1]
			/Index/Up
			/Index/Down
			/PlaybackState [0 ... 2] //UI Values: Stopped, Paused, Playing
			/PlaybackMode [0 or 1] //UI Values: Loop, Shuffle
			/TimeCodeSource [0 ... 4] //UI Values: None ... SMPTE
			/TimeCodeSource/Up
			/TimeCodeSource/Down
			/Cues /Index [0 ... N-1]
			/Index/Up
			/Index/Down
/Timelines			/Index [0 ... N-1]
			/Index/Up
			/Index/Down
			/PlaybackState [0 ... 2] //UI Values: Stopped, Paused, Playing
			/AudioSegments /Index [0 ... N-1]
			/Index/Up
			/Index/Down
			/CueSegments /Index [0 ... N-1]
			/Index/Up
			/Index/Down
			/Markers /Id [1 ... N]
			/Id/Up
			/Id/Down
/SetupRegisters			/Id [1 ... N]
			/Id/Up
			/Id/Down
/Trigger	/Ports	/[0 ... 63]	/PositionAndValue [0.0 ... 1.0] [0.0 ... 1.0] [0 ... +x = 0] //The Three Arguments Are: Position, Value, Number Of Segments
/Main			/View [0...5] //UI Values: Layers ... Scheduling
			/View/Up //Scroll direction correlates visually to direction on the user interface, but as such contrary to other remote-control options, like DMX-IN or MIDI
			/View/Down //Scroll direction correlates visually to direction on the user interface, but as such contrary to other remote-control options, like DMX-IN or MIDI

/FeedbackAll

Notes

- **FeedbackAll** - Is a single command to initially sync all available functions with the client once in order to update the values of the client with the current values of the MADRIX 5 server. It is an initialization.
 - Is sent automatically by MADRIX 5 once if the connection, including Feedback, has been established successfully.
- [TouchOSC supports this message, since it is useful and important to start MADRIX 5 first, and then TouchOSC, since this will ensure that the connection and sync work successfully right away.]
- Otherwise, Feedback usually works after a value has been changed on the MADRIX 5 user interface in order to send out data at least once.

TouchOSC Examples

Crossfader > Fade To Left

Button

Shape

RECTANGLE

Type

Momentary

Press

☒

Release

☒

Value Position

Values

x

Locked

☐

Type

Float

Default

0

Current

0

Default Pull

0

touch

Messages (1)

OSC /Fade/ToLeft: x

Enabled

☒

Send

☒

Receive

☒

Feedback

☒

Connections

oo

1

2

3

4

5

Trigger

x

ANY

Address

/Fade/ToLeft

Arguments

x

Scale

0

1

Conversion

INTEGER

Master

Fader

Cursor

☒ ALWAYS

Bar

☒ ALWAYS

Centered

☐

Response

ABSOLUTE

Grid

☒ 13

Grid Color

Values

x

Locked

☐

Type

Float

Default

0

Current

1

Default Pull

0

touch

Messages (1)

OSC /Output/Master: x

Enabled

☒

Send

☒

Receive

☒

Feedback

☒

Connections

oo

1

2

3

4

5

Trigger

x

ANY

Address

/Output/Master

Arguments

x

Scale

0

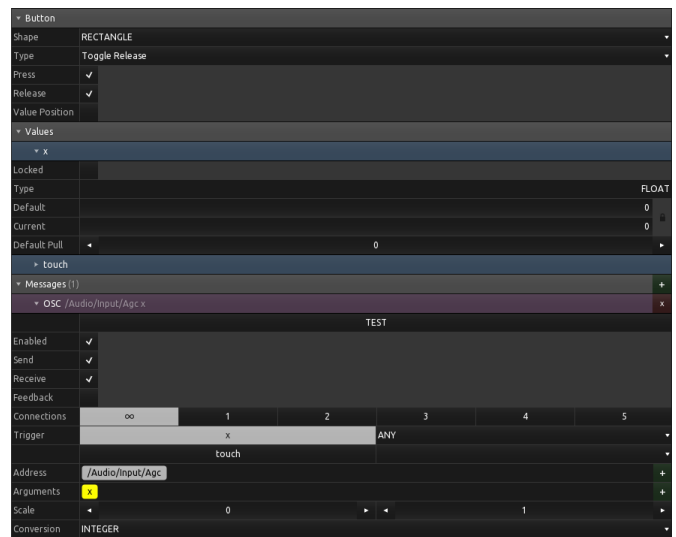
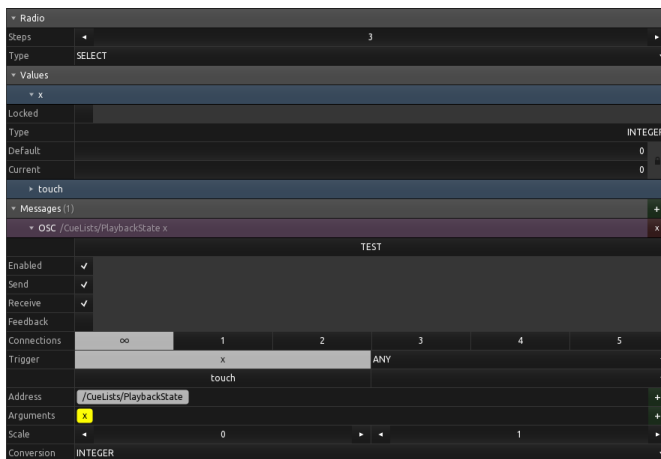
255

Conversion

INTEGER

Cue List > Play/Pause/Stop

Audio Input Level > AGC



Notes:

- In TouchOSC, do not activate **Messages > OSC > Feedback**, but only **Receive**. Otherwise, you could create an endless feedback loop!
- While TouchOSC is opened, you will probably not be able to find MIDI devices in MADRIX 5, due to a restricted or exclusive access from TouchOSC.

Troubleshooting

- You can use the Logfile for troubleshooting as it will include many messages regarding OSC.
 - Learn more »[Tools](#)
- One such message in the Logfile is: 'The OSC sender has subscribed to this session and will get feedback.' It confirms that the client has successfully connected and registered this session with the server to receive feedback.

7.11 Remote HTTP

This topic includes:

- [Introduction](#)
- [Network Settings](#)

- [Web Server Configuration](#)
- [Testing The MADRIX 5 Web Server](#)
- [Connecting To The MADRIX 5 Web Server](#)
- [Creating Your Individual HTML Page](#)
- [Help And Available Commands](#)
- [Where To Find](#)
- [Troubleshooting](#)

Introduction

MADRIX 5 can be controlled remotely using Remote HTTP and the integrated web server.

Connect MADRIX 5 to a TCP/IP network and you can control MADRIX 5 remotely [from a remote location] using a device with internet or network access [such as computer, tablet, smartphone] via the **HTTP Remote Control** function.

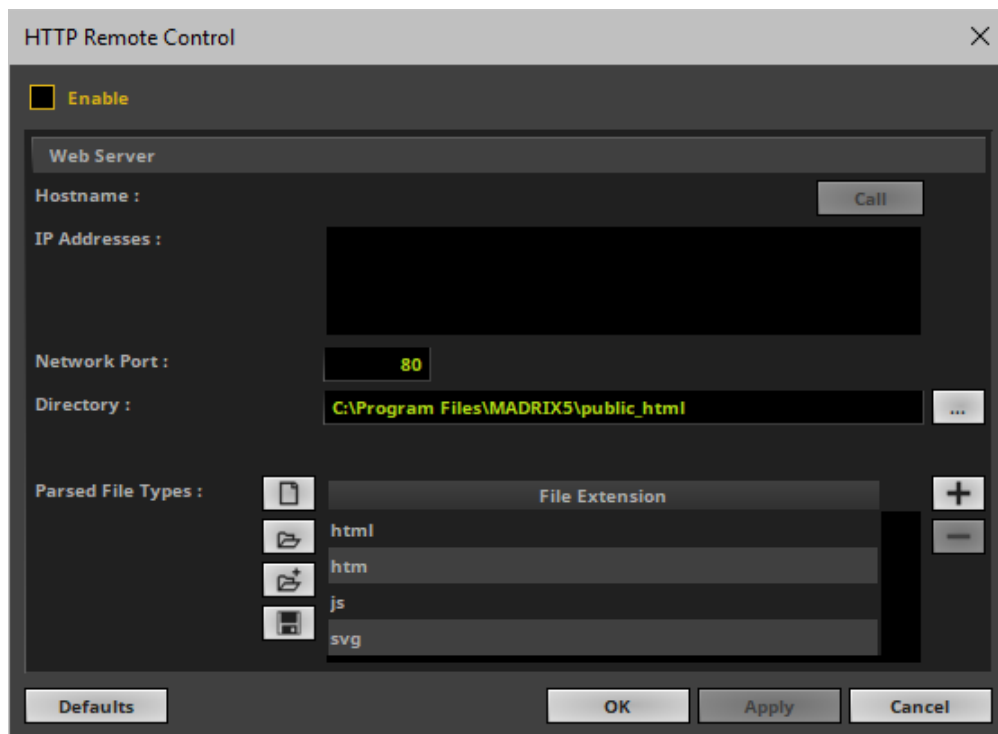
Network Settings

- Devices, that should communicate with each other via HTTP, should be configured to be in the same network!
- Learn more »[Tips \[Microsoft Windows / Networks / USB\]](#)
- When you wish to access the HTTP remote control via WiFi, make sure that both, the computer that runs the MADRIX 5 Software as well as the remote control device, are connected to the same WiFi network [by using a WiFi router, for example].

Web Server Configuration

- Go to the menu **Preferences > Remote Control > HTTP...**
[Keyboard shortcut: **Ctrl+Alt+H**]

- A new window will open.



- **Enable** - Activates the web server.
 - The web server is needed for remote control via HTTP.
- **Hostname** - Shows the name of the computer / the name of the host of the web server. [Usually, this will be your computer's name.]
 - Call - Allows you to test the configuration. Learn more [below](#)
- **IP Addresses** - Shows the IP address of the web server.
 - Since the web server is started in MADRIX 5 and MADRIX 5 runs on your computer, your computer's IP address will be shown.
 - When multiple networks are available on your computer, multiple IP addresses will be shown in the list. [Usually, only one network will be used for Remote HTTP.]
 - Please note: A loopback adapter is also available. Learn more » [Loopback Adapter \[127.0.0.1\]](#)
- **Network Port** - Defines the protocol port on which the web server will be running.
 - Always click **Apply** to confirm any changes.

- **Note:** Other software [e.g., SKYPE or similar clients with the same principle] might block the port you have selected. To solve the problem, please use the alternative ports suggested below or close other software.

Recommended Ports	Alternative Ports
80 3128 8080 8081	If you are encountering problems, please enter any port higher than 1024.

- **Directory** - Defines the location of the HTML start pages.
 - These HTML pages will be provided by the web server and can be accessed as a website through connected remote control devices.
 - By default, select the folder **public_html** in your MADRIX 5 installation folder.
[E.g., C:\Program Files\MADRIX5\public_html]
 - If you have created individual HTML pages and have saved them in a different location, use the button ... to locate the directory where the files are saved.
 - Always click **Apply** to confirm any changes.
- **Parsed File Types** - Allows you to define how file types will be processed by the web server.
 - By default, file types with the following file extension will be parsed:
 - *.html
 - *.htm
 - *.js
 - *.svg
 - Files that are not parsed will still be provided by the web server. But these files will not be analyzed for remote control commands.
 - Files that are parsed will be processed and analyzed for remote control commands to be able to trigger MADRIX 5 remotely via HTTP.
 - Not parsing files can save performance and memory usage.



- Removes all file types from the list.



- Loads a previously saved File Extension List from an external file [of the file type *.mfelx or *.csv]. A new window opens for you to select the file on your harddisk.



- Loads a previously saved File Extension List from an external file [of the file type *.mfelx or *.csv] and

adds it to the current list.



- Saves a File Extension List in an external file [of the file type *.mfelx or *.csv].



- Adds a new file type / file extension to the list.



- Removes currently selected items from the list.

- Always click **Apply** to confirm any changes.

- **Defaults** - Restores the default settings.
- **OK** - Applies any changes and closes the window.
- **Apply** - Applies any changes without closing the window.
- **Cancel** - Disregards any changes and closes the window.

Testing The MADRIX 5 Web Server

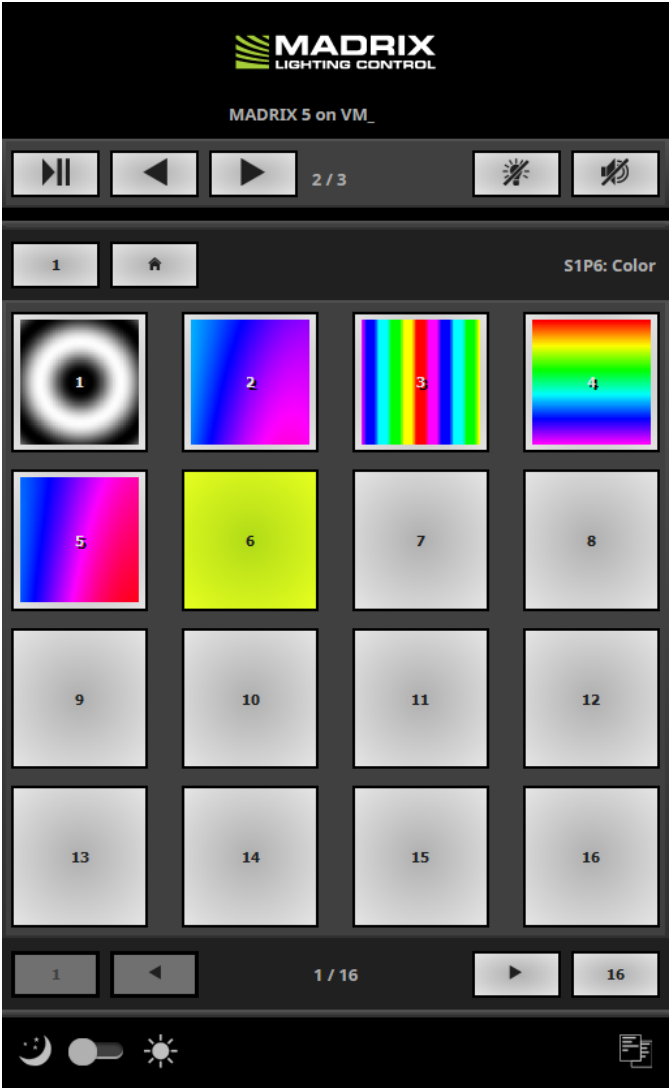
1] First, make sure that you have configured the web server correctly as explained above!

2] Select one or more **IP Addresses** and click **Call**

- Your default web browser will open.
- MADRIX 5 will open a new tab for each IP Address separately.

3] Choose the HTML interface:

- The web server will now access the **Directory** and the web browser will display the HTML files included in this directory.
- By default, the web browser will display the default web user interface as shown below.
- MADRIX 5 already offers this interface that can be used with Remote HTTP. **Note: JavaScript is required to use the provided website!**
- When creating a custom HTML website instead of using the default configuration, MADRIX 5 will now show your custom website.
- In this way, you can test and use the web server locally using the web browser on your computer.



MADRIX 5 on VM_

Host Label [MADRIX 5 Instance] **on Host Name** [computer]






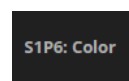
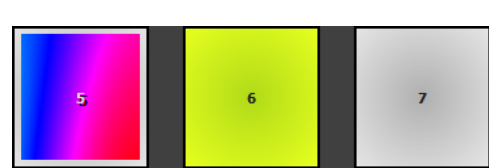





Cue List Play/Pause



Cue List Back

Cue List Go

	Current Cue / Total Number Of Cues
	Blackout
	Mute Audio Output
	Storage Selection
	Home
	Currently Selected Storage Place: Storage Place Description
	Storage Places [Occupied, Currently Selected, Empty] Note: Changing the Storage Place on the main user interface, via a Cue List, or a Timeline is not necessarily reflected here. This website is used for triggering.
	Pages [Skip To First Page, Previous Pages, Current Page / Total Number Of Pages, Next Page, Skip To Last Page]
	Dark Theme or Light Theme
	Documentation

Connecting To The MADRIX 5 Web Server

- Make sure that devices, which should communicate with each other via HTTP, are connected in the same network!

- Connect to the web server using the remote control device.
 - Often, this will mean that you will use a web browser on the remote control device.
 - Open the web browser and type in the IP Address that shown in the web server configuration [[Web Server Configuration](#)].
 - Make sure to use the correct IP Address, since it is possible that multiple networks are available on the computer that runs the MADRIX 5 Software. Usually, only one network will be used for HTTP remote control.

Creating Your Individual HTML Page

MADRIX 5 already provides an interface for HTTP remote control. This HTML example works and at the same time it is demonstration to show what is possible.

You can modify or create your own HTML files to integrate them in your own setups. [An example is the integration with the DJ Software »[ULTRAMIXER](#).]

- Create your own HTML websites using the available set of commands.
 - Learn more [Help And Available Commands](#)
- Learn from the provided interface and use the HTML site as starting point or template.
 - Learn more [Where To Find](#)

Please note: You should name your individually created HTML start page 'index.html'.

Help And Available Commands

A full range of commands is available for remote control. To create a custom layout and remote control interface, information about all available commands is needed. MADRIX 5 provides this information in the following way:

1] Call the MADRIX 5 web server as explained above.

- [Testing The MADRIX 5 Web Server](#)

2] Click on



- A full list and documentation of remote commands [remote members] is shown.

Alternatively, you can access all available remote commands under

- » help.madrix.com/m5/httpremote/HttpRemoteControl.html

Where To Find

The original HTML files including all provided interfaces can be found in the MADRIX 5 installation directory:

- C:\Program Files\MADRIX5\public_html

Troubleshooting

- If the internet browser is opening [and closing] with no visible result, please change the port.
- Make sure to use / type in the correct IP Address of the web server. When multiple IP addresses are shown, use the network that the devices are connected to [including web server and device accessing the web server].
- Note that other software [e.g., SKYPE or similar clients with the same principle] might block the port you have selected. To solve the problem, please use the alternative ports suggested above or close other software.
- Make sure that the **Directory** points to the right location on your harddisk or the medium where your HTML files are stored.
- Click **Apply** to confirm any changes you have made.
- When using **MADRIX Remote Members** and individual communication [via a 3rd-party HTTP sender] or custom layouts, please note that commands are case-sensitive! You need to pay attention to the use of capital or small letters. [That does not apply to any parameters you want to pass. They are used as strings and will be passed as written.]
- To connect to the MADRIX 5 Remote HTTP functionality via a 3rd-party device, make sure that both are connected to the same TCP/IP network. Make also sure that no required port is blocked and that devices are able to find each other in the network.
- You can check the Logfile for errors [go to **Tools > Logfile...**].

7.12 RDM [Remote Device Management]

This topic includes:

- **Introduction**
- **Sensor Data**
- **Identify Device**
- **Options**

Introduction

RDM stands for Remote Device Management, which describes it very well. It is about changing the settings, organizing, monitoring, and working with devices from afar.

Lighting fixtures can be RDM devices, but not all RDM devices are necessarily lighting fixtures. There are many more types of RDM devices.

MADRIX 5 supports RDM in a specific RDM role:

- Acts on commands and replies to requests with data via ArtRdm [RDM Responder].
 - In this way, MADRIX can act as an RDM device.
 - RDM is supported over Art-Net [ArtRdm].

Sensor Data

Overview

MADRIX 5 mainly provides the current frequencies for:

- **Core**
- **DMX Controller Output**
- **DVI Controller Output**
- **Preview Controller**

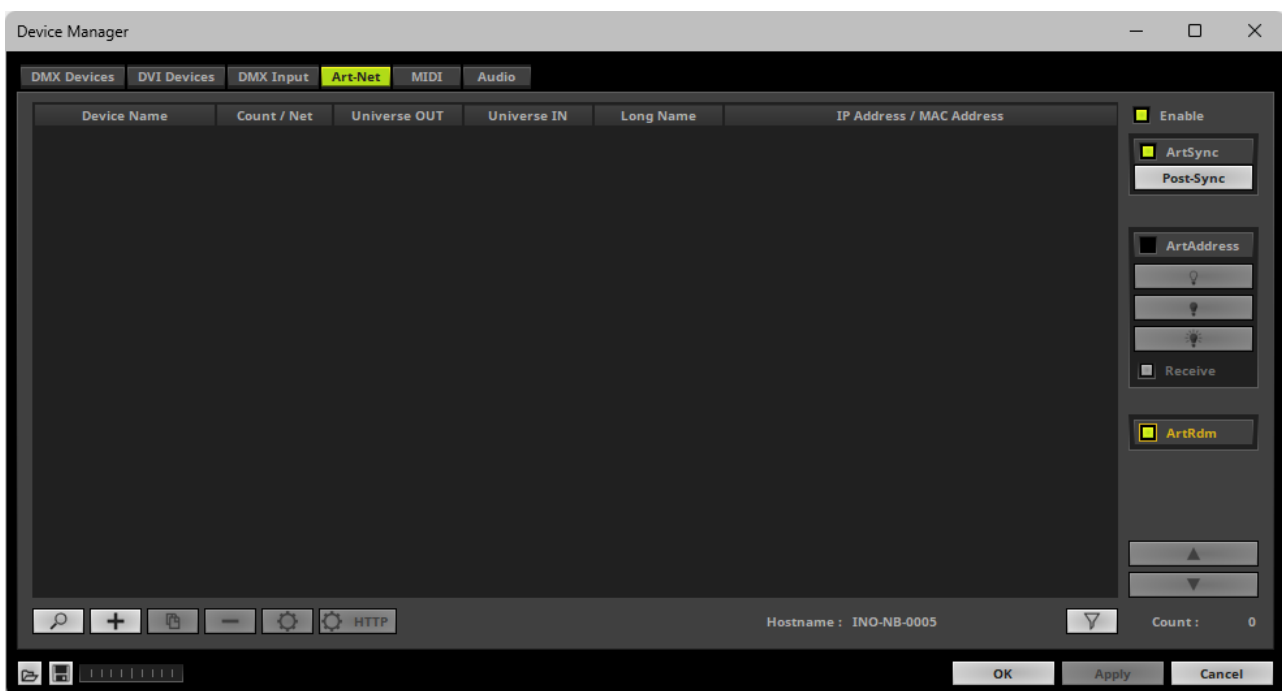
You can check the same performance indicators using the »[Task Watcher](#)

In addition, general information is also provided, such as name and software version.

Configuration

1] Set up the correct network settings in Windows and activate Art-Net in MADRIX 5. Learn more »[Art-Net \[DMX over Ethernet\]](#)

2] In the menu **Preferences > Device Manager... > Art-Net**, activate the checkbox **ArtRdm**
MADRIX 5 is now ready to receive and sent RDM over Art-Net.



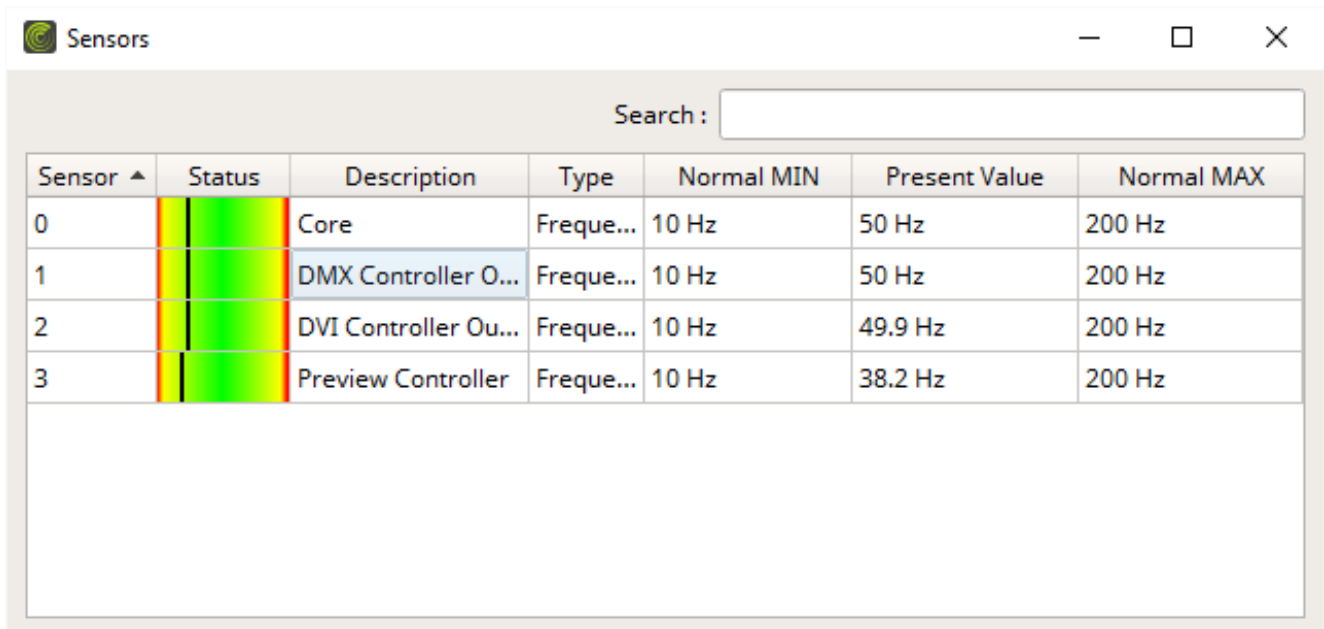
MADRIX RADAR

The main area of application could be using MADRIX RADAR as RDM manager and its great features.

For example, you can visually show the sensor data and receive notifications if the performance decreases below normal values.

Important Information:

- MADRIX 5 and MADRIX RADAR need to run on two separate computer systems! Otherwise, no communication is possible.
- MADRIX 5 and MADRIX RADAR communicate directly over Art-Net with each other [ArtRdm] without requiring an RDM controller or a DMX connection.
- MADRIX RADAR automatically validates and unlocks a MADRIX 5 Software instance within the license system without requiring a MADRIX RADAR fusion License or MADRIX RDM node, such as MADRIX STELLA.
- Make sure to search to Discover Devices first in order to add MADRIX 5 to the list of monitored device in MADRIX RADAR.



Sensor ▲	Status	Description	Type	Normal MIN	Present Value	Normal MAX
0		Core	Freque...	10 Hz	50 Hz	200 Hz
1		DMX Controller O...	Freque...	10 Hz	50 Hz	200 Hz
2		DVI Controller Ou...	Freque...	10 Hz	49.9 Hz	200 Hz
3		Preview Controller	Freque...	10 Hz	38.2 Hz	200 Hz

Identify Device

MADRIX 5 also support the Identify Device functionality of certain network protocols.

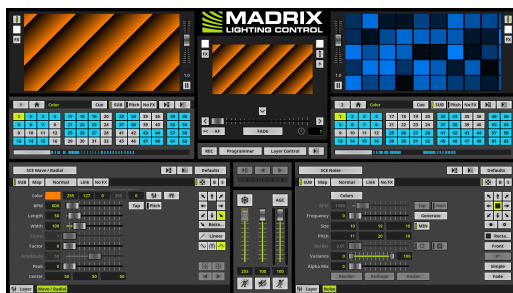
- This refers to IDENTIFY_DEVICE within RDM.
- This refers to AC_LOCATE/AcLedLocate of ArtAddress within Art-Net.

As long as Identify is enabled or set via protocol commands, the MADRIX 5 user interface [GUI] will repeatedly change every second from the currently selected theme to the opposite theme, either from dark to light or vice versa.

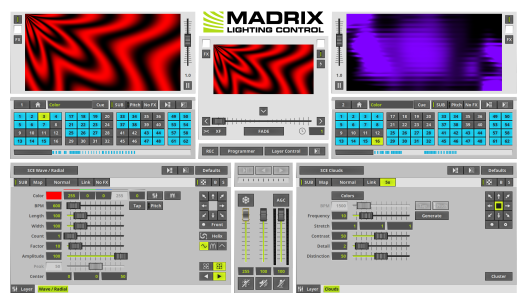
This visibly highlights the user interface for visual identification of this MADRIX 5 instance as a device within a network system.

Identify will also be deactivated when manually switching the theme, either via the menu [**View > Theme > Light/Dark**] or its keyboard shortcut [**Ctrl+T**].

Dark Theme



Light Theme



MADRIX RADAR

In MADRIX RADAR for example, you can send the command by changing the Identify parameter from [0x00] No to [0x01] Yes.

MADRIX 5

You can manually disable Identify in MADRIX 5 [or enable it again if needed].

- Go to the menu **Tools > Identify**
[Keyboard shortcut: **Ctrl + Alt + I**]

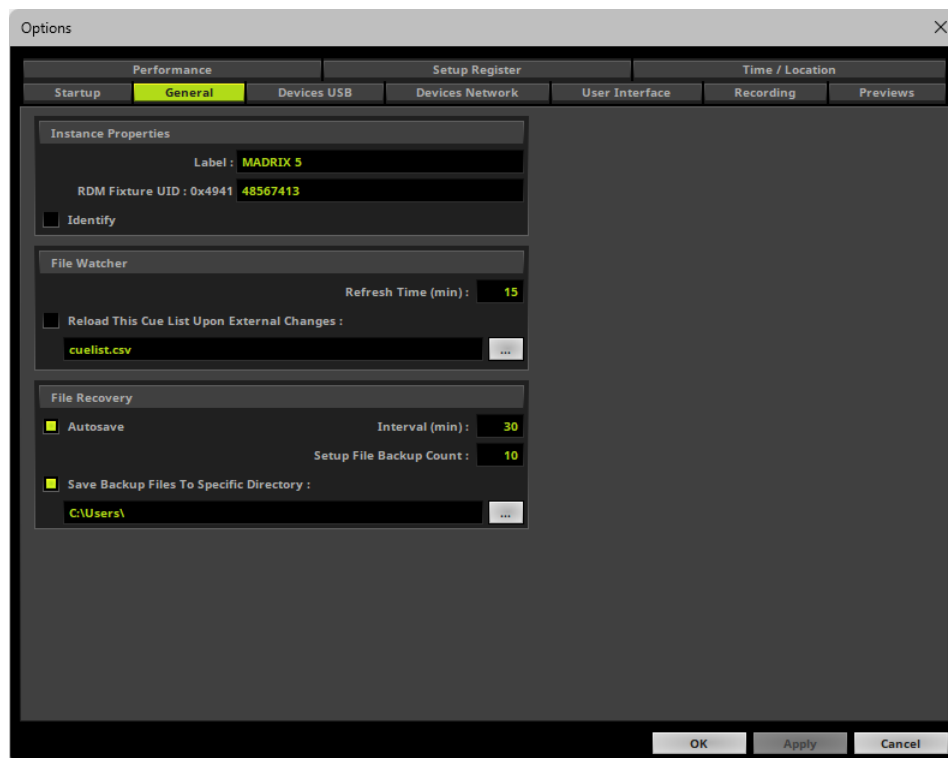
Tools	
Colors...	Ctrl+Alt+C
Groups...	F9
Cue Lists...	F7
Timelines...	F10
Scheduling...	
DMX Fader Tool...	Ctrl+Alt+F
<hr/>	
Logfile...	F6
Task Watcher...	F5
DMX Watcher...	Ctrl+Alt+D
MIDI Watcher...	Ctrl+Alt+M
<hr/>	
Record Editing...	Ctrl+Alt+R
<hr/>	
Identify	Ctrl+Alt+I

Options

MADRIX 5 allows you to change information that is provided when receiving network requests [via RDM, Art-Net ArtAddress, or similar].

- Go to the menu **Preferences > Options... > General**

[Keyboard shortcut: **Ctrl+Alt+O > General**]



- **Label** - Allows you to changed the device label of this MADRIX 5 instance. This is especially useful when running several MADRIX 5 applications at once within the same network. By default, **MADRIX 5** is used.
 - This refers to DEVICE_LABEL within RDM with a maximum of 32 characters.
 - This refers to LongName within Art-Net with a maximum of 64 characters.

[This setting is saved locally in the Windows Registry and not in the MADRIX Setup file since it is a property of this specific host computer.]
- **RDM Fixture UID** - Defines the last 4 hexadecimal bytes of the RDM unique identifier [with a total of 8 characters]. The first two bytes are locked and represent the ESTA manufacturer ID for inoage [0x4941].

[This setting is saved locally in the Windows Registry and not in the MADRIX Setup file since it is a property of this specific host computer.]
- **Identify** - Enables or disables the Identify Device command; as described above. It is deactivated by default.
 - This refers to IDENTIFY_DEVICE within RDM.
 - This refers to AC_LOCATE/AcLedLocate of ArtAddress within Art-Net.

7.13 Spout

This topic includes:

- [Introduction](#)
- [Overview](#)
- [Sending Spout](#)
- [Receiving Spout](#)
- [Troubleshooting](#)

Introduction

Sharing videos and output streams among different tools on the same system is easily possible with Spout.



Overview

- With MADRIX 5, you can send or receive video or the software's output stream over Spout.
- The features are directly built into the software without the need for any additional drivers.
- Spout is used between two or more applications on the same system.
- **Any other sender or receiver also needs to support Spout. Otherwise, the connection will not work.**
- [Sending Spout](#)
- [Receiving Spout](#)

Sending Spout

Step-By-Step Configuration

- 1] Prerequisites.
- 2] Patching DVI fixtures.
- 3] Adding a Spout DVI Device.
- 4] Important information.

1] Prerequisites

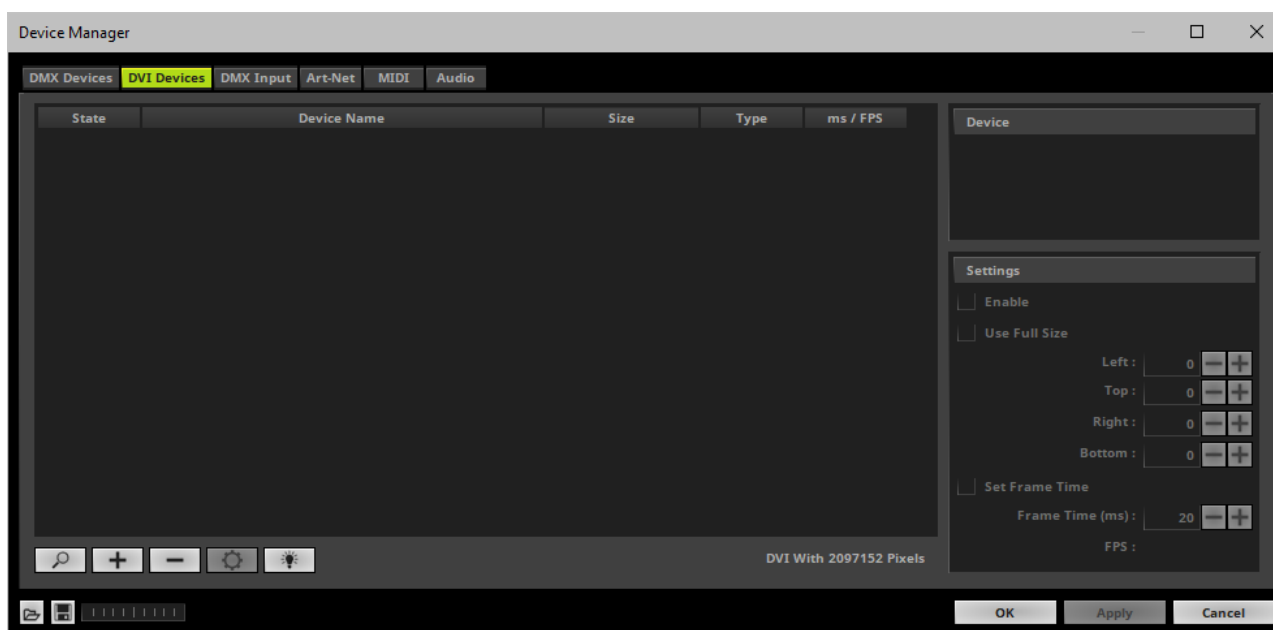
- You need to patch DVI fixtures [see below].

2] Patching DVI Fixtures

- Configure your LED matrix first.
- You need to add DVI fixtures [**Fixture Protocol > DVI**]. Otherwise, it will not work and no output is sent.
- Learn more »[Matrix Generator](#) or »[Patch Editor](#)

3] Activating The DVI Device

- Go to the menu **Preferences > Device Manager... > DVI Devices**
[Keyboard shortcut: **F4 > DVI Devices**]



- Add devices manually.

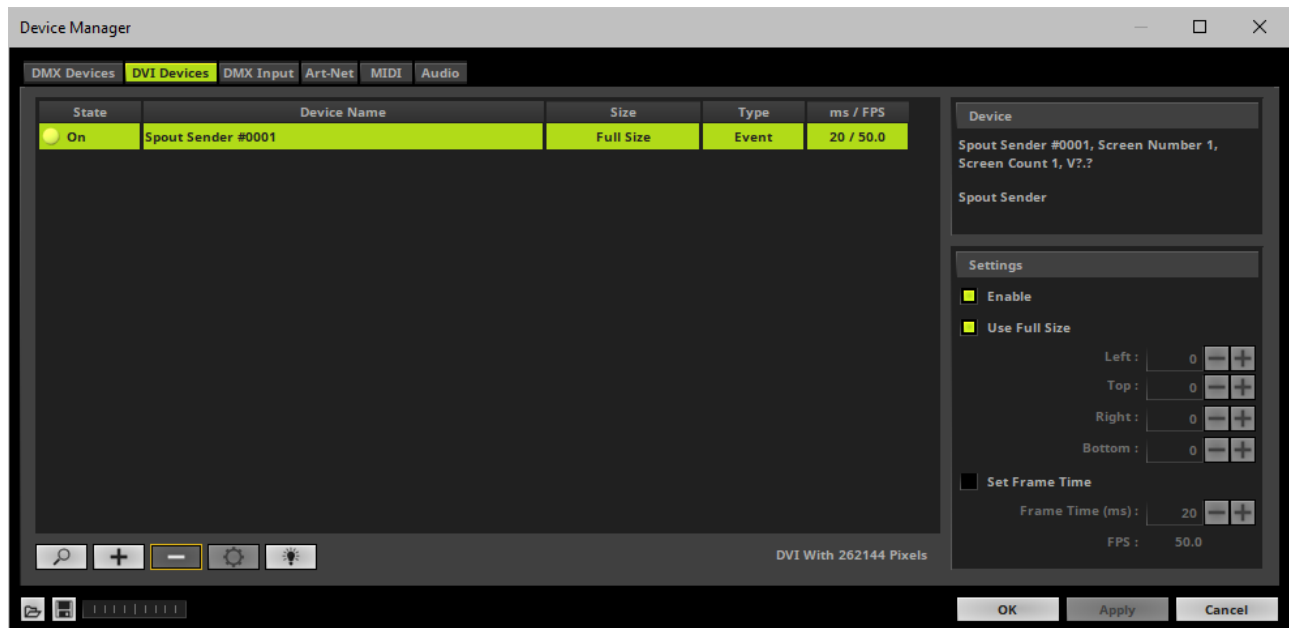
- Click 

- A small selection list will be opened above the button.



- Select **Spout**

- The new DVI device will appear in the list after it has been added.



There are different Settings available for further configuration. By default, all settings should be set up correctly already.



- If you change a setting, always click **Apply** to confirm the changes.
- **Enable** - Activates or deactivates the currently selected DVI device. This is activated by default. It needs to be activated in order to work correctly.
- **Use Full Size** - Displays the full Matrix Size on the device. This is activated by default and the recommended setting.
 - Deactivate if you want to set up a certain cut-out and specify which details of your matrix will be shown. You can choose the start coordinates and the end coordinates of this area. **Left** and **Top** define the start coordinates in a coordinate system that starts with 0,0 in the top left corner. **Right** and **Bottom** define the end coordinates.

Scaling is not available.

Your virtual LED matrix will not be stretched or compressed in order to fit the DVI device or vice versa.

- **Set Frame Time** - Activate in order to set a different frame time in milliseconds. By default, the DVI device is set to be an **Event** type with the software's main mixing frame rate [50 FPS by default] .
 - If you manually set a new frame time, the output might judder.

- It is not recommended to set a higher frame rate than 50 FPS. But if your hardware controller requires a different, adjust the value to these requirements. Then, the type of your device will be set to **Frame** in the list.

-  - Removes the currently selected DVI devices.
-  - Makes your device flash and will set all pixels instantly to white for testing purposes.

4] Important Information

- **The MADRIX 5 Software does not send the Alpha channel.**
- **Sending or receiving audio is not possible with Spout.**

Receiving Spout

In order to receive Spout, you need to use the MADRIX Effect **SCE Capture**

Step-By-Step Configuration

- 1] Prerequisites.
- 2] Using SCE Capture.

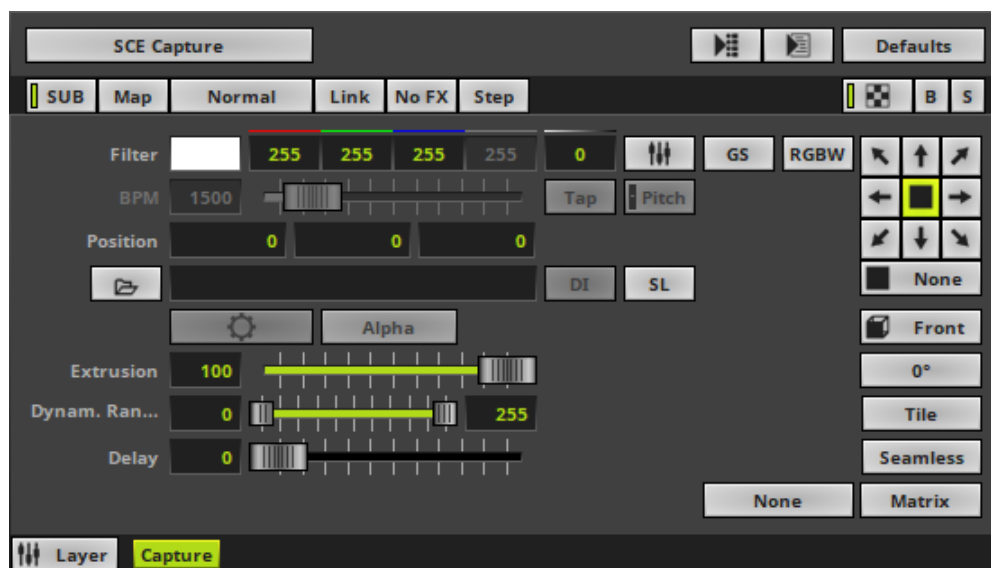
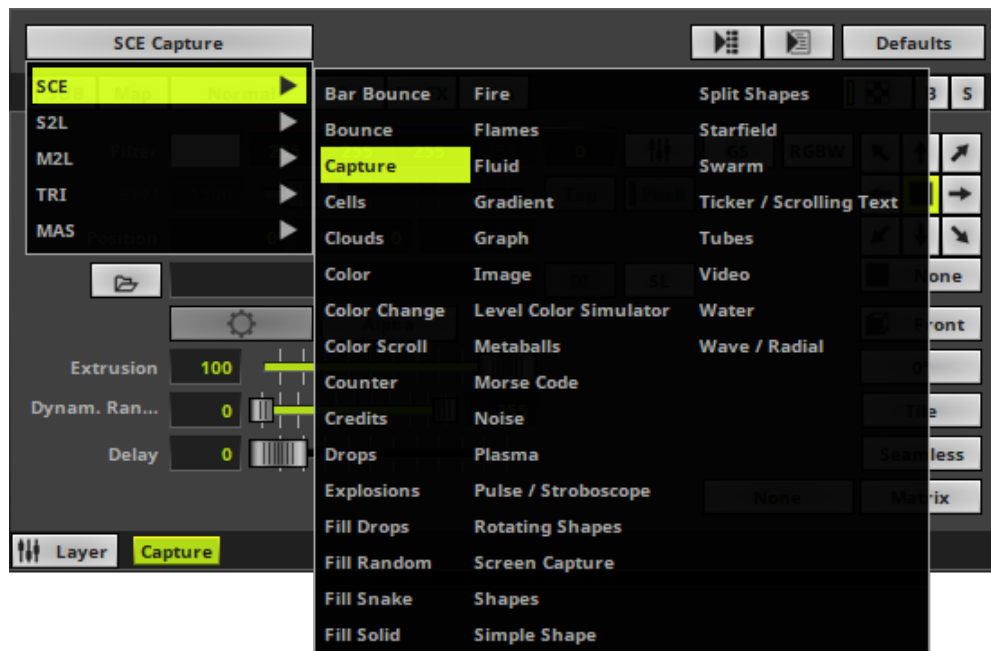
1] Prerequisites

- Make sure your are sending Spout.

2] Using SCE Capture

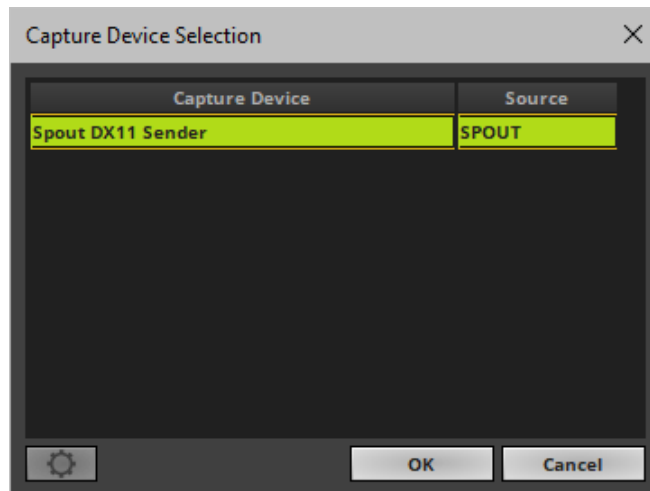
- Select **SCE Capture** from the library of effects.

Learn more » [Effects \[Visuals\]](#)



-  - **Open** a device.

- Select your Spout sender from the list.
 - The **Source** is **Spout**



- MADRIX 5 will now receive Spout.



- Learn more »[SCE Capture](#)

Troubleshooting

- Receiving Spout: In rare cases, you might only receive frames that are 100% transparent. In this case, please deactivate **Alpha**
- Sending Spout: If you do not see the MADRIX 5 Spout Sender in your receiver, again make sure to have patched DVI fixtures.

7.14 Time Code [Art-Net / MIDI / SMPTE / System Time]

This topic includes:

- [Introduction](#)
- [Sending Time Code](#)
- [Receiving Time Code](#)
- [Cue Lists](#)

Introduction

Time code is a useful way to integrate time synchronization across devices and systems in order to synchronize the equipment and output with each other.

Small messages will be sent in regular intervals and every device thereby knows the overall time of the system.

Sending Time Code

See »[Timeline Editor](#) if you wish to send out time code.

Receiving Time Code

Overview

MADRIX 5 can receive

- [MIDI Time Code \[MTC\]](#)
 - [Art-Net Time Code](#)
 - [SMPTE Time Code](#)
 - [System Time](#)
-
- If such a time code is sent in the network, directly through MADRIX USB SMPTE, or through other interfaces, they will be received by MADRIX 5 if the feature is activated as explained below.
 - Received time code can be used in a Cue List as explained below.

Time Code can be received as:

- **24 FPS**
- **25 FPS**
- **30 Drop** [30/1.001 FPS]
- **30 FPS**

MIDI Time Code [MTC]

MIDI Time Code can be received through MIDI devices.

Learn more » [MIDI Configuration](#)

Software Sending MTC

- You might want to work with another software that sends MIDI Time Code.
- Often, that also means that you want to run MADRIX 5 and the other software on one computer.
- Various 3rd-party programs are available to create virtual MIDI devices and use them to connect MADRIX 5 and the other software.
- To receive the time code, configure MADRIX 5 as explained here » [MIDI Configuration](#)

Art-Net Time Code

- To send Art-Net Time Code, it is recommended to use the MADRIX 5 Time Code Sender, separate tool that is automatically installed together with MADRIX 5.
Learn more » [MADRIX 5 Time Code Sender](#)
- To receive Art-Net Time Code, you need to activate Art-Net first.
Learn more » [Art-Net \[DMX Over Ethernet\]](#)

MADRIX USB SMPTE

- The MADRIX USB SMPTE hardware interface allows you to receive SMPTE time code with MADRIX 5.
Learn more » [MADRIX I/O](#)

System Time

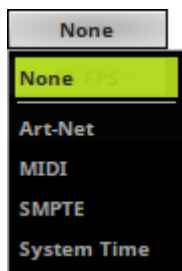
- You can use the clock of your computer to generate Time Code.
Learn more [below](#)

Cue Lists

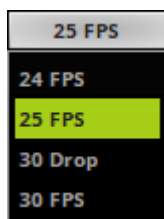
You can use time code in a Cue List.

- Configure your time-code sender first and set up MADRIX 5 to receive time code as explained [above](#)
- Go to the menu **Tools > Cue Lists...**
- Press **F7**
- Or click **Layers > Cue Lists...** on the user interface

- Select the **Time-Code Source**



- Select the **Time-Code Format**

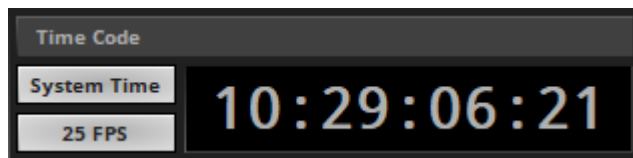


- MADRIX 5 will automatically start receiving external Time Code.
- The Time Code format is **HH:MM:SS:FF** [hours:minutes:seconds:frames]

Example:

- 10 o'clock and 20 minutes, 30 seconds, and 10 frames will be shown as

10:20:30:10



- Configure the column **Time Code** for your Cue List entries.
- Add or edit more entries according to your requirements.
- Learn more »[Cue Lists](#)

//PART 8

MADRIX Effects

8 MADRIX Effects

This topic includes:

- [Introduction](#)
- [Topics Of This Chapter](#)

Introduction

MADRIX 5 offers a large variety of effects. All MADRIX Effects are arranged into 5 distinct categories with various features [**SCE**, **S2L**, **M2L**, **TRI**, **MAS**] .

Topics Of This Chapter

- »[\[SCE\] Static Color Effects](#)
Static Color Effects produce a multitude of creative lighting patterns and visuals. No extra input or content is necessary. In addition, they provide the tools to load images or video files.
- »[\[S2L\] Sound2Light Effects](#)
Sound2Light Effects require an audio input signal. As a result, amazing light effects that are synchronized to the music will be generated!
- »[\[M2L\] Music2Light Effects](#)
Music2Light Effects require an audio input signal. M2L Effects go one step further than S2L Effects and analyse music theoretical parameters to create truly unique representations of the music.
- »[\[TRI\] Trigger Effects](#)
TRI Effects are based on existing MADRIX Effects. On top, you can trigger them manually using DMX-IN or MIDI. This adds a whole new level of interaction.
- »[\[MAS\] MADRIX Script Effect](#)
The powerful Script Editor, which is included in the software, allows you to program your own effects. The script language allows you to easily realize ideas for effects of your own.
- »[Using BPM Control](#)
Many MADRIX Effects use the BPM Effect Setting to control the speed.

- » [Using Directions](#)

Many MADRIX Effects allow you to choose a specific movement direction.

- » [Using Effect Options](#)

Many MADRIX Effects allow you to further define the effect's behavior with additional options.

- » [Using Shapes \[Shape Table\]](#)

Certain effects make use of the Shape Table.

- » [Using Strings \[String Table\]](#)

Certain text effects make use of the String Table.

- » [Macros And Scripts](#)

You can control and manipulate running effects using the script language.

8.1 [SCE] Static Color Effects

This topic includes:

- [Introduction](#)
- [Topics Of This Chapter](#)

Introduction

Static Color Effects [SCE] produce a multitude of creative lighting patterns and visuals. No extra input or content is necessary.

In addition, they provide the tools to load images or video files.

Topics Of This Chapter

MADRIX 5 includes the following Static Color Effects:

- » [SCE Bar Bounce](#)
- » [SCE Bounce](#)

- »[SCE Capture](#)
- »[SCE Cells](#)
- »[SCE Clouds](#)
- »[SCE Color](#)
- »[SCE Color Change](#)
- »[SCE Color Scroll](#)
- »[SCE Counter](#)
- »[SCE Credits](#)
- »[SCE Drops](#)
- »[SCE Explosions](#)
- »[SCE Fill Drops](#)
- »[SCE Fill Random](#)
- »[SCE Fill Snake](#)
- »[SCE Fill Solid](#)
- »[SCE Fire](#)
- »[SCE Flames](#)
- »[SCE Fluid](#)
- »[SCE Gradient](#)
- »[SCE Graph](#)
- »[SCE Image](#)
- »[SCE Level Color Simulator](#)
- »[SCE Metaballs](#)
- »[SCE Morse Code](#)
- »[SCE Noise](#)
- »[SCE Plasma](#)
- »[SCE Pulse / Stroboscope](#)
- »[SCE Rotating Shapes](#)
- »[SCE Screen Capture](#)
- »[SCE Shapes](#)
- »[SCE Simple Shape](#)
- »[SCE Split Shapes](#)

- » [SCE Starfield](#)
- » [SCE Swarm](#)
- » [SCE Ticker / Scrolling Text](#)
- » [SCE Tubes](#)
- » [SCE Video](#)
- » [SCE Water](#)
- » [SCE Wave / Radial](#)

8.1.1 SCE Bar Bounce

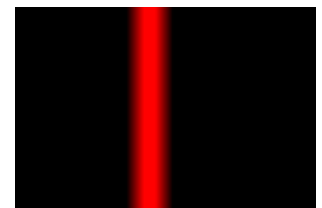
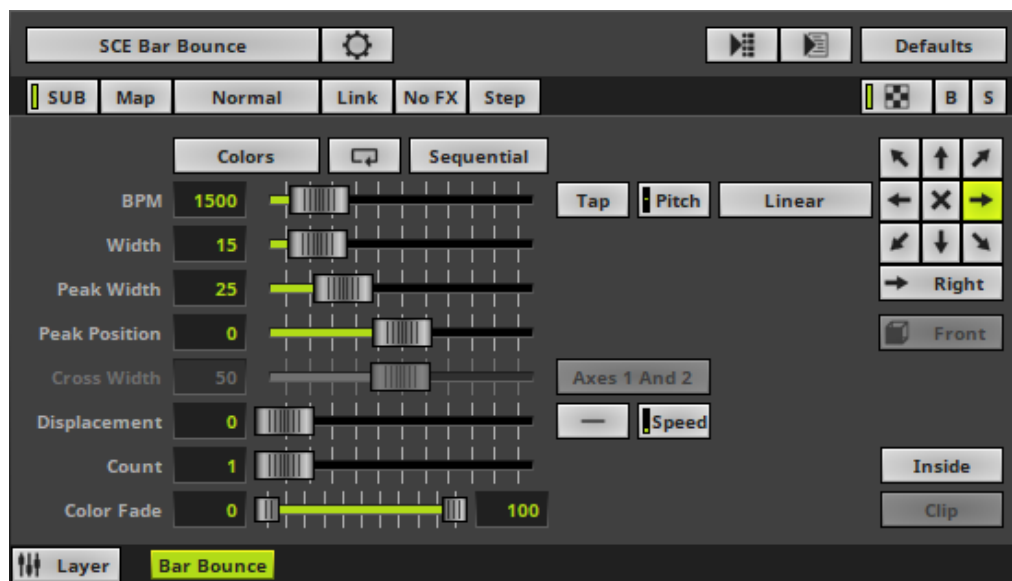
This topic includes:

- [Introduction](#)
- [Overview](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

Introduction

SCE Bar Bounce displays moving bars that bounce of the LED-matrix boundaries.

Overview



Default Settings



Customized Example

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX Effect uses the following, individual controls:

- Colors** - Opens the Color Table to specify the colors. The default colors are Red, Yellow, Green, Cyan, Blue, Magenta.
- Color Mode** - Defines how colors of the Color Table are applied to objects. Choose from **Sequential** [Default] [colors of objects are changed in sequence of the Color Table when bouncing off], **Permanent** [each object retains its color, also throughout bounces], or **Separate** [all objects get assigned a different color from the

Color Table, which then changes when bouncing off].

Learn more » [\[Global\] Colors And Intensity](#)

- **BPM** - Defines the speed. The default value is 1500. Valid values range from 0 to 9999.

Learn more » [Using BPM Control](#)

- **Width** - Defines the width of objects [in % of the LED-matrix size]. It is only available for certain Shapes. The default value is 15. Valid values range from 0.01 to 100.
- **Peak Width** - Defines the extent of the peak, i.e. highest color value, [in % of the Width]. The default value is 25. Valid values range from 0 to 100.
- **Peak Position** - Defines the position of the peak [in %, whereas 0 is the middle of the Width]. The default value is 0. Valid values range from -100 to +100.
- **Cross Width** - Is only available for Cross Mode [[»Using Directions](#)]. Defines the size of crossed colors [in %]. The default value is 50. Valid values range from 1 to 100.
- **Displacement** - Defines the amount of distortion. The default value is 0. Valid values range from 0 to 100.
- **Count** - Defines the number of bouncing objects. The default value is 1. Valid values range from 1 to 20.
- **Color Fade** - Defines the time frame in which the color is shown completely, without fading from or to the next color.
 - The left value defines the fade-in, that is how long colors are faded after bouncing off a boundary.
 - The right value defines the fade-out, that is how long colors are faded before bouncing off a boundary.
 - The default values are 0 and 100. Valid values range from 0 to 100.

Axes 1 And 2

Cross Mode Axes - Is only available for Cross Mode. Allows you to choose to which axis Cross Mode applies [**Axes 1 And 2**, **Axis 1**, or **Axis 2**]. The default setting is Axes 1 And 2.



Displacement Distribution - Is only available for Displacement. Is applied in dependence of the direction that is chosen. Allows you to choose the area the distortion is applied to [**Uniform**, **Linear Increasing**, **Linear Decreasing**, **Triangle**]. The default setting is Uniform.



Displacement Speed - Is only available for Displacement. Allows you to choose to speed in which the distortion affects the visuals. The default setting is 10.0.



Direction/Mode - Allows you to choose the direction of the movement, including Cross Mode. This includes all directions for 2D and 3D mode. This heavily influences the visual outcome of the effect. The default setting is Right. Learn more »[Using Directions](#)



Look-At Type - Allows you to choose from which side you want to look at the effect. This is mainly relevant for 3D. The default setting is Front. Learn more »[Using Directions](#)

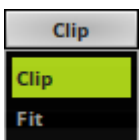


Bounce Mode - Defines the moment when objects bounce off. The default setting is Inside.

Inside - Objects bounce off as soon as their outer edges reach a boundary.

Peak - Objects bounce off as soon as their peaks reach a boundary.

Outside - Objects bounce off as soon as their inner edges reach a boundary.

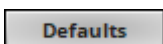


Display Mode - Is only available for 2D and 3D modes/shapes. Defines the boundaries for the effect. The default setting is Clip.

Clip - Uses the boundary of the LED matrix, which is away the farthest.

Fit - Uses the boundary of the LED matrix, which is the nearest.

Restoring The Default Settings



Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.1.2 SCE Bounce

This topic includes:

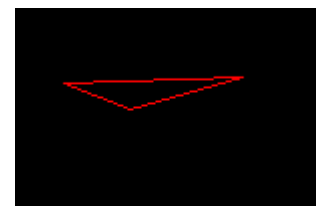
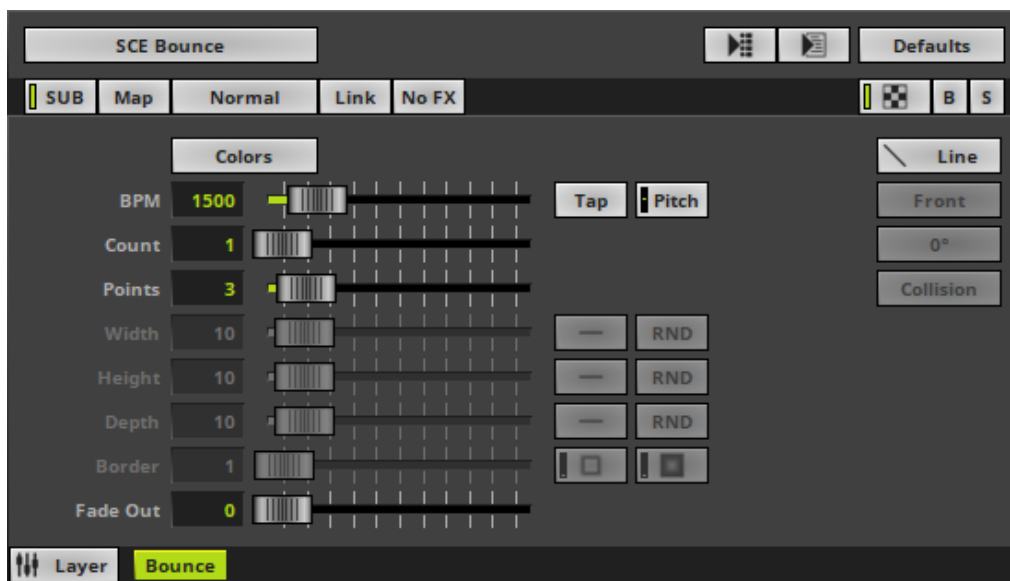
- [Introduction](#)
- [Overview](#)

- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

Introduction

SCE Bounce displays flying objects that bounce off of the outer boundaries or each other.

Overview



Default Settings



Customized Example

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX Effect uses the following, individual controls:

- **Colors** - Opens the Color Table to specify the colors. The default colors are Red, Yellow, Green, Cyan, Blue, Magenta.
Learn more » [\[Global\] Colors And Intensity](#)
- **BPM** - Defines the speed. The default value is 1500. Valid values range from 0 to 9999.
Learn more » [Using BPM Control](#)
- **Count** - Defines the number of bouncing objects. The default value is 1. Valid values range from 1 to 100.
- **Points** - Defines the number of edges [points] an object is made of. The default value is 3. Valid values range from 1 to 20.
- **Width** - Defines the width of objects [in %]. It is only available for certain Shapes. The default value is 10. Valid values range from 0.01 to 100.
- **Height** - Defines the width of objects [in %]. It is only available for certain Shapes. The default value is 10. Valid values range from 0.01 to 100.
- **Depth** - Defines the depth of objects [in %]. This is mainly relevant for 3D. It is only available for certain Shapes. The default value is 10. Valid values range from 0.01 to 100.
- **Border** - Is only available for 2D outlined shapes or 3D unfilled shapes. Defines how thick the outer line [border] of objects is. The default value is 1. Valid values range from 0.01 to 100.
- **Fade Out** - Adds a visual tail to objects and fades them out slowly. The default value is 0. Valid values range from 0 to 1000.



Distribution - Allows you to choose a certain Distribution Mode for the specific parameter. Often, you can then define a minimum value and a maximum value.

Uniform - Each object has the same size.

Linear - A linear distribution is used to increase the size regularly.

Quadratic - The majority of objects will be smaller than the rest.

SQRT - Using a square root function the majority of objects will be larger.

Cubic - Uses a cubic distribution with mixed sizes.

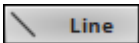
Random - Sizes will be generated randomly.



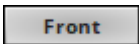
RND - Generates random object sizes each time. This automatically activates Random Distribution Mode.



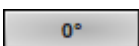
Outer Glow / Inner Glow - Is only available for specific Shapes. Defines the outer shimmer or inner gleam of objects. The default values are 0.00. Valid values range from 0.01 to 100.



Shape - Allows you to choose a specific shape as bouncing objects. The default setting is Line.



Shape Alignment - Allows you to choose to which side objects are aligned to. This is mainly relevant for 3D. The default setting is Front.



Shape Rotation Type - Is only available for specific Shapes. Defines the angle in which objects are rotated [**0°**, **90°**, **180°**, **270°**, **Random**].



Collision - Is not available for Shape Line or Curve. Activates or deactivates if objects collide and bounce off of each other. The default setting is Off.

Restoring The Default Settings

Defaults

Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.1.3 SCE Capture

This topic includes:

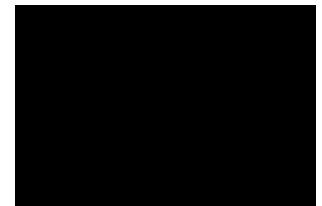
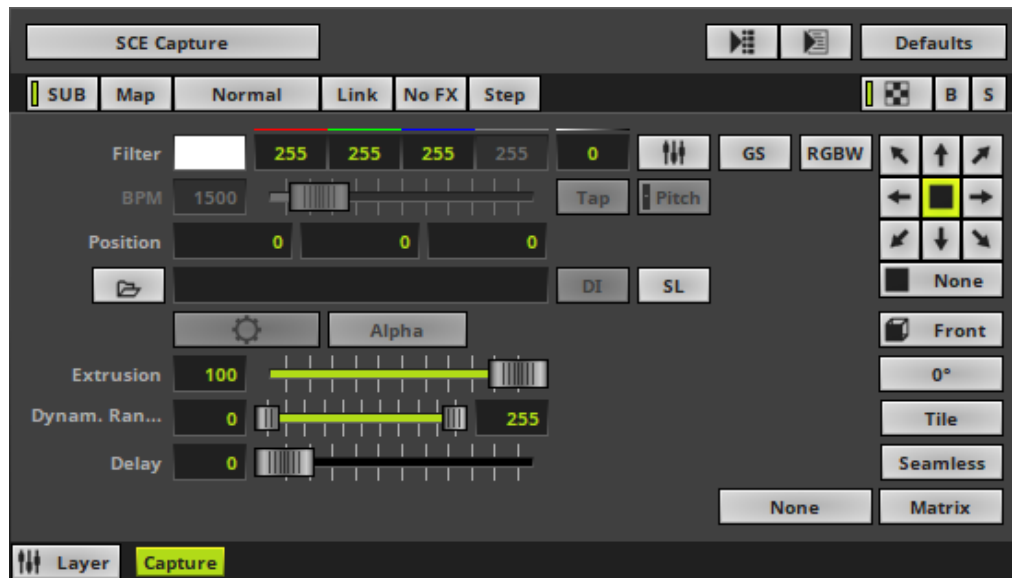
- [Introduction](#)
- [Overview](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)
- [Slices](#)

Introduction

SCE Capture allows you to use any video signal of capture devices in MADRIX 5 for live video feeds, such as installed webcams or TV-cards. Such devices need to provide the required Windows driver.

- Several capture devices can be used at the same time. For every single Layer a different capture device or the same capture device can be utilized.
- If your device offers the correct drivers and is recognized in Windows as a capture device, MADRIX 5 will also have access to the device.

Overview



Default Settings



Customized Example

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX Effect uses the following, individual controls:

- Filter** - Defines a filter color. The default color is White.
 - GS** - Activates grayscale mode to show the input only in gray shades. The Filter is independent of this mode.
 - RGBW** - Converts the input into RGBW. This is useful when using RGBW fixtures to convert from the standard RGB color values of the input. If the option is disabled when using RGBW fixtures, the input will appear darker

since the White channel is not used. The W color channel of the Filter only works if RGBW is activated.

Learn more » [\[Global\] Colors And Intensity](#)

- **BPM** - Defines the speed [when using a direction/movement]. The default value is 1500. Valid values range from 0 to 9999.

Learn more » [Using BPM Control](#)

- **Position** - Defines the position of the object in **X**, **Y**, and **Z** [in %]. The default values are 0, 0, 0. Valid values range from -1000 to 1000.
- **Extrusion** - Adds depth to the input; i.e. duplicates the input image [in % of the Matrix Size]. This is mainly relevant for 3D. The default value is 100. Valid values range from 0.01 to 100.
- **Dynam. Range** - Defines the dynamic range of the output. Valid values range from 0 to 255.
 - The default value range is 0 to 255, which means that all available color values of the input will be displayed.
 - Adjusting the left value cuts off lower color values and defines a new black level; therefore eliminating unwanted [gray] noise and achieving a uniform black.
[Setting the left value to 255 will render the input completely black.]
 - Lowering the right value highlights the colors; therefore achieving purer color values.
[Setting the right value to 0 will render black/gray values completely white.]
- **Delay** - Adds an output delay to the captured input [in milliseconds]. The default value is 0. Valid values range from 0 to 1000.



Open - Allows you to connect a capture device. A new window opens for you to select your device. First, select the device. Second, click OK.



Deinterlace Mode - Allows you to choose from several Deinterlace Modes. [Is available when a capture device has been opened and connected.]

Often digital cameras, digital broadcasting, or digital filming is done via interlacing. In order to get 25 frames per seconds, 50 pictures are shot and merged/mixed with one another. You receive 25 odd frames [frame set 1] and 25 even frames [frame set 2] that contain different picture information [alternating pixel lines]. In order to get an undisturbed picture, proper deinterlacing is necessary.

None - Deactivates deinterlacing.

Bob - Uses one set of 25 frames [even or odd] and copies missing information from the pictures provided. Pixel lines are copied to create a full image. Activate **Top Field First** in order to choose odd frames to be processed.

Bob Linear - This is the recommended deinterlace mode. It uses one set of 25 frames, but builds an average for the missing pixel lines. Activate **Top Field First** in order to choose odd frames to be processed.

Blend - Renders an average image from frame set 1 and frame set 2.

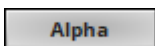
Discard - Simply dismisses missing information. Thereby, pixel lines are excluded. This results in half of the original resolution for the final image. Activate **Top Field First** in order to choose odd frames to be processed.



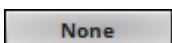
Slices - Is a way to bring 2D content to 3D LED matrices by slicing the content into different parts and applying each slice to X-levels, Y-levels, or Z-levels as required. Learn more [Slices](#)



Configuration - Allows you to configure the connected device further if such configuration is provided by the device and its driver. [Is available when a capture device has been opened and connected.]



Alpha - Allows you to activate the reception of the Alpha channel of streams or to deactivate it. This is especially helpful in combination with NDI and Spout.



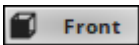
Filtering - Defines how input is processed and displayed. Mainly affects the visual outcome when the input is scaled up or down [e.g., when choosing a different mode for Stretching / Aspect Ratio]. Choose from 2 different modes. The default setting is None.

- **None** - Prioritizes processing speed over image quality.

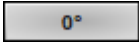
- **Linear** - Prioritizes image quality over processing speed. This mode may affect performance.



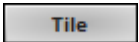
Direction - Allows you to choose the direction. This includes all directions for 2D and 3D mode. The default setting is None.



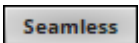
Look-At Type - Allows you to choose from which side you want to look at the effect. This is mainly relevant for 3D. The default setting is Front. Learn more »[Using Directions](#)



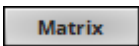
Rotation - Allows you to rotate the input [**0°**, **90°**, **180°**, **270°**]. The default setting is 0°.



Tile - Allows you to tile and duplicate the input and thereby generating patterns.



Seamless - Activates or deactivates a continuous stream of the input image. MADRIX 5 will automatically display the input image again to create a continuous display.



Stretching / Aspect Ratio - Allows you to choose the aspect ratio of the input. The default setting is Matrix.

None - Disables stretching.

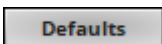
Matrix - Stretches to the current aspect ratio of the virtual LED matrix.

Original - Stretches to the original aspect ratio of the source.

4:3 - Applies a 4:3 aspect ratio.

16:9 - Applies a 16:9 aspect ratio.

Restoring The Default Settings

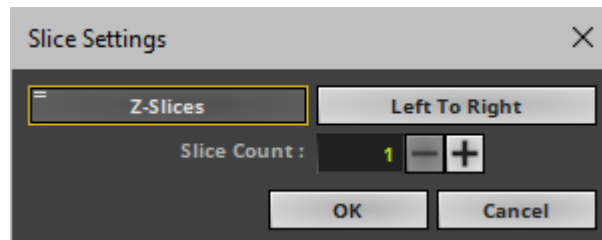


Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

Slices

SL - Calls up **Slice Settings**



- **Slice Settings** - Is a way to bring 2D content to 3D LED matrices by slicing the content into different parts and applying each slice to X-levels, Y-levels, or Z-levels as required. [You will get the most benefit out of this feature when using content that are made up of different parts and are especially created for this area of application.]

Example: Your virtual LED matrix is 10 x 8 x 4. Now, you have prepared a video feed and want to display it not only on the first Z-level or use Extrude, but on all 4 Z-levels. Then, you would let MADRIX 5 create 4 slices.

- **Slice Type** - Defines the 3D orientation of how slices are applied to your LED matrix.
 - **X-Slices** - Uses slices to fill the LED matrix; always starting from left to right.
 - **Y-Slices** - Uses slices to fill the LED matrix; always starting from top to bottom.
 - **Z-Slices** - Uses slices to fill the LED matrix; always starting from front to back.
- **Slice Order** - Defines how your source content is processed.
 - **Left To Right** - MADRIX 5 slices the content starting left.
[The first, left slice will then be applied to the left for X-Slices, to the top for Y-Slices, and to the front for Z-Slices.]
 - **Right To Left** - MADRIX 5 slices the content starting right.
[The first, right slice will then be applied to the left for X-Slices, to the top for Y-Slices, and to the front for Z-Slices.]
 - **Top To Bottom** - MADRIX 5 slices the content starting top.
[The first, top slice will then be applied to the left for X-Slices, to the top for Y-Slices, and to the front for Z-Slices.]
 - **Bottom To Top** - MADRIX 5 slices the content starting bottom.
[The first, bottom slice will then be applied to the left for X-Slices, to the top for Y-Slices, and to the front for Z-

Slices.]

- **Slice Count** - Defines in how many slices the content is divided. A value of 1 means that no slices are created and that the video feed is used as one. [A value of 4, for example, will create 4 slices that each make up 25% of the source content.]
- The settings with the highest performance are **Z-Slices** and **Top To Bottom**
- Confirm with **OK**, reset to default settings via **Default**, or abort the process using **Cancel**
- Learn more »[SCE Image](#)

8.1.4 SCE Clouds

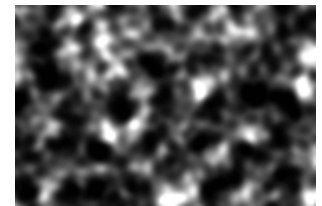
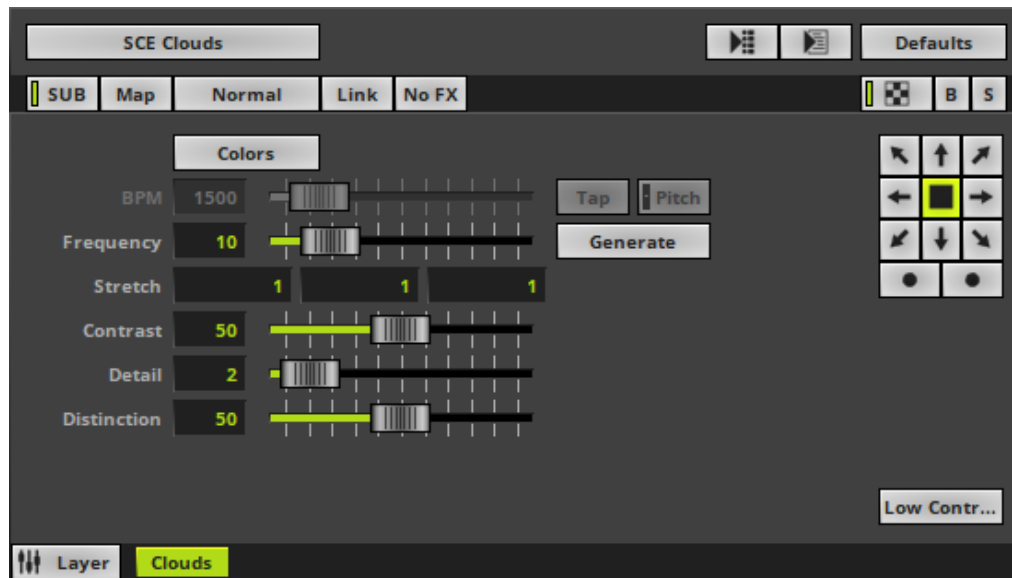
This topic includes:

- [Introduction](#)
- [Overview](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

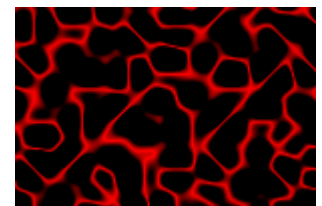
Introduction

SCE Clouds creates random, organic visuals that are reminiscent of clouds.

Overview



Default Settings



Customized Example

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

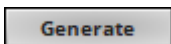
Effect Settings

This MADRIX Effect uses the following, individual controls:

- Colors** - Opens the Color Gradient to specify the colors. The default color is White, Black.

Learn more » [\[Global\] Colors And Intensity](#)

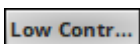
- **BPM** - Defines the speed [when using a direction/movement]. The default value is 1500. Valid values range from 0 to 9999.
Learn more »[Using BPM Control](#)
- **Frequency** - Defines the rate at which new, organic visuals are created [in Hz]. The default value is 10. Valid values range from 0 to 50.
- **Stretch** - Defines the stretch or compression factor at which the visuals are displayed [X, Y, Z]. The default values are 1, 1, 1. Valid values range from 0.01 to 1000.
- **Contrast** - Defines the visual differentiation of colors and shapes [in %]. The default value is 50. Valid values range from 1 to 1000.
- **Detail** - Defines the sharpness [in %]. The higher the Detail, the more computer performance is required. The default value is 2. Valid values range from 1 to 10.
- **Distinction** - Defines the cohesiveness of the effect [in %]. The default value is 50. Valid values range from 1 to 100.



Generate - Creates the effect anew to produce different visuals. [This is mainly useful when setting a Frequency of 0.]



Direction - Allows you to choose the direction. This includes all directions for 2D and 3D mode. The default setting is None. Learn more »[Using Directions](#)



Display Mode - Allows you to choose how the effect mainly looks [**Low Contrast**, **Medium Contrast**, **High Contrast**, **Outline**, **Cluster**]. The default setting is Low Contrast.

Restoring The Default Settings

Defaults

Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.1.5 SCE Cells

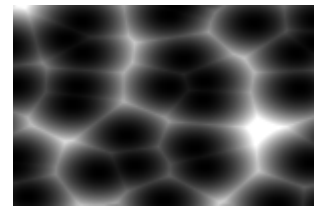
This topic includes:

- [Introduction](#)
- [Overview](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

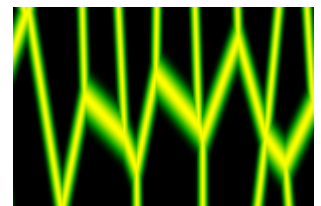
Introduction

SCE Cells mainly creates organic, cellular visuals.

Overview



Default Settings



Customized Example

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX Effect uses the following, individual controls:

- Colors** - Opens the Color Gradient to specify the colors. The default color is Black [Alpha], White.

Learn more » [\[Global\] Colors And Intensity](#)

- **BPM** - Defines the speed [when using a direction/movement]. The default value is 600. Valid values range from 0 to 9999.

Learn more »[Using BPM Control](#)

- **Count X** - Defines the number of objects horizontally. The default value is 5. Valid values range from 1 to 1000.
- **Count Y** - Defines the number of objects vertically. The default value is 5. Valid values range from 1 to 1000.
- **Count Z** - Defines the number of objects in the depth. The default value is 5. Valid values range from 1 to 1000.
- **Size** - Is only available for the rendering modes Blobby and Outlined. Defines the size of objects [in % of the Matrix Size]. The default value is 5. Valid values range from 0 to 100.
- **Outer Glow** - Is only available for the rendering modes Blobby and Outlined. Defines the outer shimmer of objects. The default value is 5. Valid values range from 0 to 100.

Linear

Cell Distribution - Defines how color values are displayed across the objects and effect [**Linear, Ease In Bounce, Ease Out Bounce, Ease In Out Bounce, Ease In Circular, Ease Out Circular, Ease In Out Circular, Ease In Cubic, Ease Out Cubic, Ease In Out Cubic, Ease In Sine, Ease Out Sine, Ease In Out Sine, Ease In Exponential, Ease Out Exponential, Ease In Out Exponential**]. The default value is Linear.

—

Cell Distribution - Defines how the objects are distributed across the parameter and effect [**Uniform, Sine Top, Sine In, Sine Out, Sine InOut, Quadratic, Square Root, Cubic**]. The default value is Uniform.

Blobby

Rendering Mode - Defines how objects are rendered and thus in which way they are displayed [**Blobby, Filled, Organic, Outlined**]. The default value is Organic.

Restoring The Default Settings

Defaults

Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.1.6 SCE Color

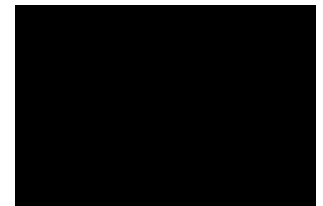
This topic includes:

- [Introduction](#)
- [Overview](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

Introduction

SCE Color displays a simple, plain color.

Overview



Default Settings



Customized Example

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX Effect uses the following, individual controls:

- **Color** - Defines the color. The default color is Black.

Learn more » [\[Global\] Colors And Intensity](#)

Restoring The Default Settings

Defaults

Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.1.7 SCE Color Change

This topic includes:

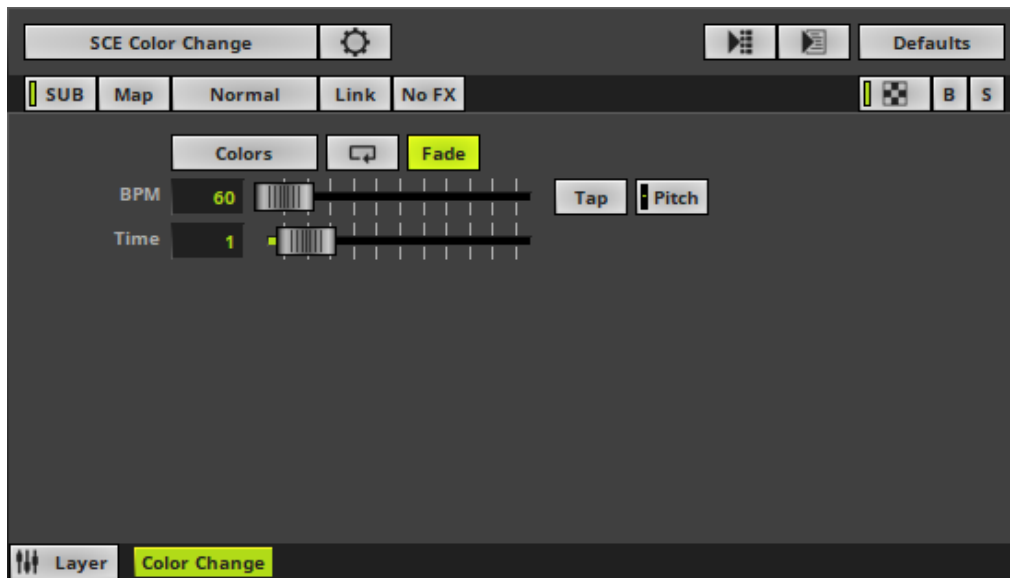
- [Introduction](#)
- [Overview](#)
- [Effect Options](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

Introduction

SCE Color Change automatically changes colors.

This MADRIX Effect creates a completely seamless loop.

Overview



Default Settings



Customized Example

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.

Learn more » [Effect Options](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX Effect uses the following, individual controls:

- **Colors** - Opens the Color Table to specify the colors. The default colors are Red, Yellow, Green, Cyan, Blue, Magenta.

Learn more » [\[Global\] Colors And Intensity](#)

- **BPM** - Defines the speed. You can either use BPM or Time. The default value is 60. Valid values range from 0 to 9999.

Learn more » [Using BPM Control](#)

- **Time** - Defines the time interval a color is displayed [in s]. You can either use BPM or Time Slot. The default value is 1. Valid values range from 0.01 to 9999.

Restoring The Default Settings

Defaults

Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.1.8 SCE Color Scroll

This topic includes:

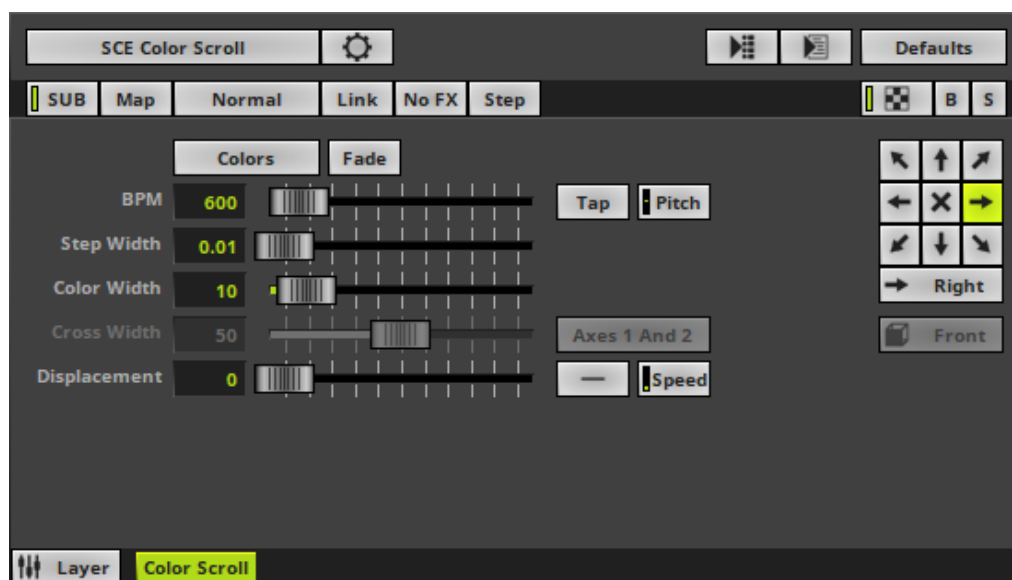
- [Introduction](#)
- [Overview](#)
- [Effect Options](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

Introduction

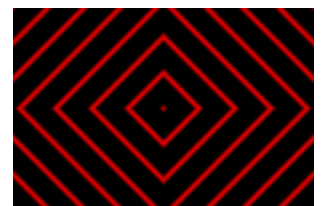
SCE Color Scroll displays various, moving colors. This MADRIX Effect is extremely versatile.

This MADRIX Effect creates a completely seamless loop.

Overview



Default Settings



Customized Example

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.

Learn more » [Effect Options](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX Effect uses the following, individual controls:

- **Colors** - Opens the Color Table to specify the colors. The default colors are Red, Yellow, Green, Cyan, Blue, Magenta.

Learn more » [\[Global\] Colors And Intensity](#)

- **BPM** - Defines the speed. The default value is 600. Valid values range from 0 to 9999.

Learn more » [Using BPM Control](#)

- **Step Width** - Defines the number of pixels the effect should scroll/skip in the direction per frame [in % of the Matrix Size]. The default value is 0.01. Valid values range from 0.01 to 100.
- **Color Width** - Defines the width of a single color [in % of the Matrix Size]. The default value is 10. Valid values range from 0.01 to 100.
- **Cross Width** - Is only available for Cross Mode [[»Using Directions](#)]. Defines the size of crossing colors [in %]. The default value is 50. Valid values range from 0.01 to 100.
- **Displacement** - Defines the amount of distortion. The default value is 0. Valid values range from 0 to 100.

Axes 1 And 2

Cross Mode Axes - Is only available for Cross Mode. Allows you to choose to which axis Cross Mode applies [**Axes 1 And 2**, **Axis 1**, or **Axis 2**]. The default setting is Axes 1 And 2.



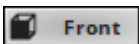
Displacement Distribution - Is only available for Displacement. Is applied in dependence of the direction that is chosen. Allows you to choose the area the distortion is applied to [**Uniform, Linear Increasing, Linear Decreasing, Triangle**]. The default setting is Uniform.



Displacement Speed - Is only available for Displacement. Allows you to choose to speed in which the distortion affects the visuals. The default setting is 10.0.

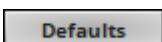


Direction/Mode - Allows you to choose the direction of the movement, including Cross Mode. This includes all directions for 2D and 3D mode. This heavily influences the visual outcome of the effect. The default setting is Right. Learn more »[Using Directions](#)



Look-At Type - Allows you to choose from which side you want to look at the effect. This is mainly relevant for 3D. The default setting is Front. Learn more »[Using Directions](#)

Restoring The Default Settings



Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.1.9 SCE Counter

This topic includes:

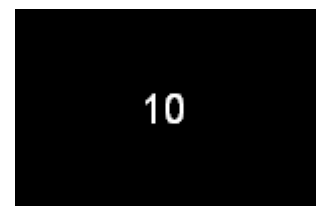
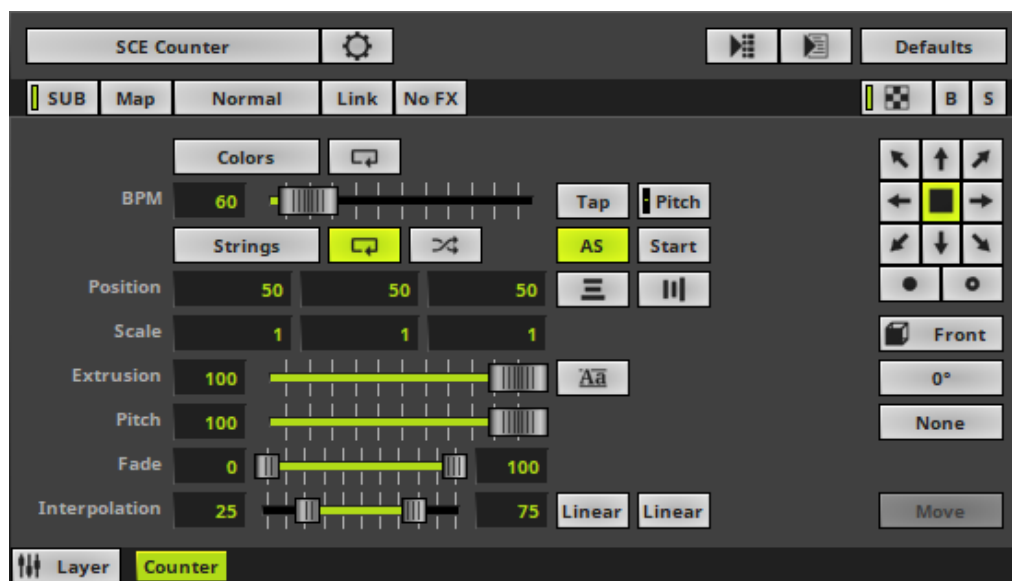
- [Introduction](#)
- [Overview](#)
- [Effect Options](#)

- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)
- [Important Details](#)

Introduction

SCE Counter shows any characters/text in sequence [strings]. One of its main uses is the countdown.

Overview



Default Settings



Customized Example

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.

Learn more » [Effect Options](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX Effect uses the following, individual controls:

- **Colors** - Opens the Color Table to specify the colors. The default color is White.
Learn more » [\[Global\] Colors And Intensity](#)
- **BPM** - Defines the speed, i.e. how long strings are displayed. The default value is 60. Valid values range from 0 to 600. [60 BPM represent 1 second, while 600 BPM represent a tenth of a second.]
Learn more » [Using BPM Control](#)
- **Strings** - Opens the String Table to specify the text.
Learn more » [Using Strings \[String Table\]](#)
- **Position** - Defines the position of the strings in **X**, **Y**, and **Z** [in % of the Matrix Size]. The default values are 50, 50, 50. Valid values range from 0 to 100. [Make sure to set up Vertical Alignment and Horizontal Alignment as well.]
- **Scale** - Defines a scale factor that determines if strings are scaled in **X**, **Y**, and **Z**. In this way, you can add an animation to characters of the String Table and upscale or downscale the individuals strings. Scaling mainly references the font size set up via Aa [Font]. It also influenced references how long characters are displayed as set up via BPM and for the animation the Interpolation and the two Interpolation Types. The default values are 1,

1, 1. Valid values range from 0.01 to 9999. [Values lower than 1 decrease the size, while values higher than 1 increase the size. If you change the value for Scale Z to a value higher than 1, make sure to reduce the Extrude value as well.]

- **Extrusion** - Adds depth to the characters [in % of the Matrix Size]. This is mainly relevant for 3D. The default value is 100. Valid values range from 0.01 to 100.
- **Pitch** - Defines the distance between strings of the String Table. The smaller the Pitch, the more strings will be displayed at the same time. Pitch affects how long strings are displayed within the time set up via BPM. The default value is 100. Valid values range from 0.01 to 999.
- **Fade** - Defines if a Fade In and Fade Out is added to the characters. Fade references how long characters are displayed as set up via BPM. The bottom fader defines how long the Fade In takes. The upper fader defines how long the Fade Out takes. The default values are 0, 100. Valid values range from 0 to 100.

[A Fade of 0, 100 means that no Fade In and no Fade Out is added and strings are fully visible at 100% of the set up time. A Fade of 50, 50 means that the Fade In takes 50% of the set up time and that the Fade Out also takes 50% of the set up time. A Fade of 0, 50 means that strings are immediately visible, stay visible for 50% of the set up time and fade out 50% of the set up time. A Fade of 50, 100 means that strings are faded in and it takes 50% of the set up time and they stay fully visible for the rest of the time.]

- **Interpolation** - Affects Scale and the movement set up via Direction. In this way, it determines how these animations look like. It basically divides the animations into three parts. The bottom fader defines the first phase, which is the start phase. The second phase is the phase inbetween the bottom and the upper fader. The upper fader defines the third phase, which is the end phase. Interpolation references how long characters are displayed as set up via BPM. It is also directly affected by Interpolation Type 1 for the start phase and Interpolation Type 2 for the end phase. The default values are 25, 75. Valid values range from 0 to 100.

[An Interpolation of 25, 75 means that the start phase and the end phase take 25% of the set up time, while 50% of the time no animation is displayed. An Interpolation of 50, 50 means that the animation start phase is directly followed by the animation end phase. An Interpolation of 0, 50 means that there is no animation at first and that the animation end phase starts at 50% of the set up time. An Interpolation of 0, 100 means that there is no animation displayed at all.]

AS

Autostart - If activated, the effect will automatically start when the corresponding Storage Place is selected. It is activated by default.

Start

Start - Force-starts the effect to start again from the beginning.



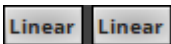
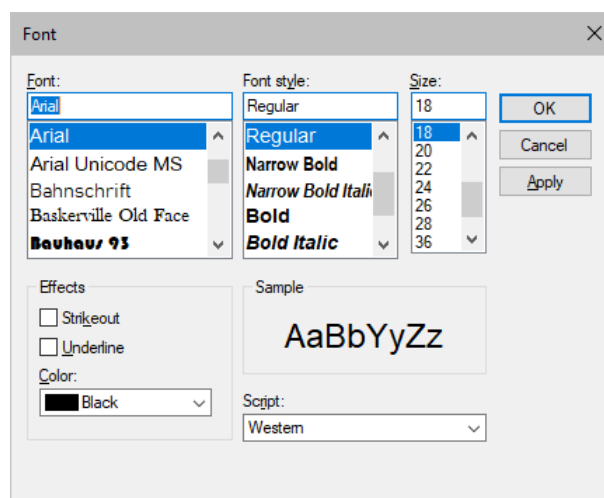
Horizontal Alignment - Defines the horizontal alignment of characters [**Left**, **Middle**, **Right**] in relation to the Position. The default setting is Middle.



Vertical Alignment - Defines the vertical alignment of characters [**Top**, **Middle**, **Bottom**] in relation to the Position. The default setting is Middle.



Font - Opens a new window and allows you to choose a specific font, font size, and other font settings. [Any color set up in this window will be ignored. Use the MADRIX 5 color controls instead.]



Interpolation Type 1 / Interpolation Type 2 - Determine how the animation of Scale and the movement via Direction look like [**Linear**, **Ease In Bounce**, **Ease Out Bounce**, **Ease In Out Bounce**, **Ease In Circular**, **Ease Out Circular**, **Ease In Out Circular**, **Ease In Cubic**, **Ease Out Cubic**, **Ease In Out Cubic**, **Ease In Sinusoidal**, **Ease Out Sinusoidal**, **Ease In Out Sinusoidal**, **Ease In Exponential**, **Ease Out Exponential**, **Ease In Out Exponential**]. You can set them up individually. The default setting is Linear.



Last-String Mode - Is only available when Loop Mode of the String Table is disabled. Defines what happens to the last string of the String Table once it has been displayed. The default setting is Move.

Move - Moves the last string in the same way the previous strings have been displayed and moved.

Stay - Leaves the last string on display.

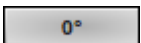
Clear - Makes the last string disappear without an animation.



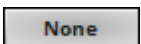
Direction - Allows you to choose the direction. This includes all directions for 2D and 3D mode. The default setting is None. Learn more »[Using Directions](#)



Look-At Type - Allows you to choose from which side you want to look at the effect. This is mainly relevant for 3D. The default setting is Front. Learn more »[Using Directions](#)



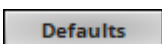
Rotation - Allows you to rotate the strings [**0°**, **90°**, **180°**, **270°**]. The default setting is 0°.



Filtering - Defines how input is processed and displayed. Mainly affects the visual outcome when the input is scaled up or down [e.g., when choosing a different mode for Stretching / Aspect Ratio]. Choose from 2 different modes. The default setting is None.

- **None** - Prioritizes processing speed over image quality.
- **Linear** - Prioritizes image quality over processing speed. This mode may affect performance.

Restoring The Default Settings



Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

Important Details

Typefaces

Typefaces can be grouped into two main categories:

- Serif [Such fonts contain small features at the end of strokes within letters]
- Sans-serif [Such fonts have a clearer, simple appearance]

Serif Font

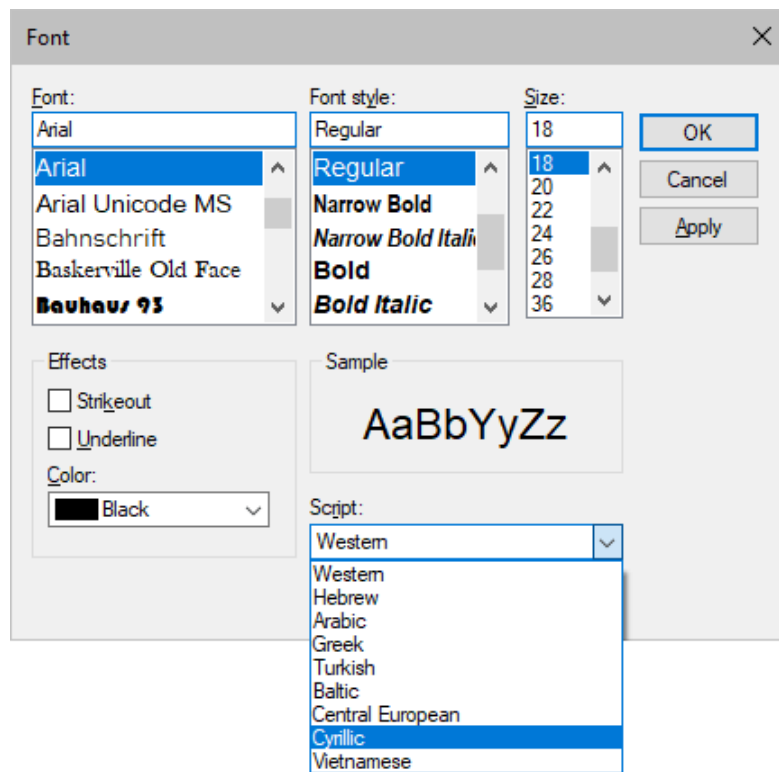
AaBbCc

Sans-Serif Font

AaBbCc

How To Use Other Languages [Such As Russian Or Chinese]

- In Windows 10, go to **Start > Windows System > Control Panel > Language**
- In Windows 11, go to **Start > Settings > Time & language**
- Add the language you want to use [Russian, Chinese, etc.].
- In MADRIX 5, select **SCE Counter**
- Click **Aa** to open the Font window.
- Choose a universal, extensive font, such as **Arial**
- Choose **Cyrillic** [or Chinese, etc.] under **Script**
- Close the Font window.
- Put any strings into the **String Table**



8.1.10 SCE Credits

This topic includes:

- [Introduction](#)
- [Overview](#)
- [Effect Options](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)
- [Important Details](#)

Introduction

SCE Credits shows any text [strings] by flipping through a number of random characters first for show effect.

This MADRIX Effect creates a completely seamless loop.; mainly when Loop Mode is enabled for the String Table.

Overview



MADRIX
Lighting
Contr4

Default Settings

*Pixel Mapping in
creative 2D
or real 3D.*

Customized Example

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.

Learn more » [Effect Options](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX Effect uses the following, individual controls:

- **Colors** - Opens the Color Table to specify the colors. The default color is White.
Learn more » [\[Global\] Colors And Intensity](#)
- **BPM** - Defines the overall speed, i.e. how fast the effect shuffles through characters. The default value is 600. Valid values range from 0 to 9999. [60 BPM represent 1 character per 1 second, while 120 BPM represent 1 character per 2 seconds.]
Learn more » [Using BPM Control](#)
- **Strings** - Opens the String Table to specify the text.
Learn more » [Using Strings \[String Table\]](#)
- **Position** - Defines the position of the strings in **X**, **Y**, and **Z** [in % of the Matrix Size]. The default values are 50, 50, 50. Valid values range from 0 to 100. [Make sure to set up Vertical Alignment and Horizontal Alignment as well.]
- **Size** - Defines the size of the displayed text [in % of the Matrix Size][Width, Height, Depth]. The default values are 100, 100, 100. Valid values range from 1 to 1000.
- **Shuffle** - Defines the how long a character is shuffled [in % of the time that is needed to fully shuffle and display a single character; until the next character is shown]. The default value is 100. Valid values range from 0 to 1000.
- **Line Break** - Defines the how long it takes until the next lines is started and displayed [in s]. The default value is 1. Valid values range from 0 to 9999.
- **Page Break** - Defines the how long it takes until the next page is started and displayed [in s]. The default value is 1. Valid values range from 0 to 9999.
- **Page Fade** - Defines the how long it takes until the effect fades to the next page [in s] [as a crossfade over black]. The default value is 0. Valid values range from 0 to 9999.

AS

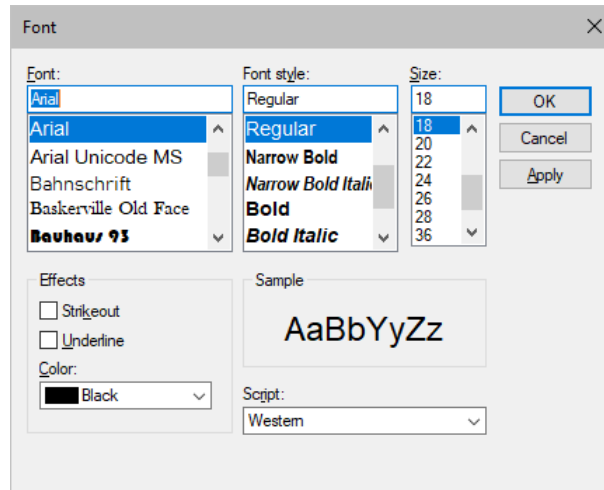
Autostart - If activated, the effect will automatically start when the corresponding Storage Place is selected. It is activated by default.



Start - Force-starts the effect to start again from the beginning.



Font - Opens a new window and allows you to choose a specific font, font size, and other font settings. [Any color set up in this window will be ignored. Use the MADRIX 5 color controls instead.]




Horizontal Alignment - Defines the horizontal alignment of characters [**Left**, **Middle**, **Right**] in relation to the Position. The default setting is Middle.



Vertical Alignment - Defines the vertical alignment of characters [**Top**, **Middle**, **Bottom**] in relation to the Position. The default setting is Middle.



Count - Defines the number of shuffles per letter. Valid values range from 1 to 100. The default value is 10.



Look-At Type - Allows you to choose from which side you want to look at the effect. This is mainly relevant for 3D. The default setting is Front. Learn more »[Using Directions](#)



Rotation - Allows you to rotate the strings [**0°**, **90°**, **180°**, **270°**]. The default setting is 0°.



Filtering - Defines how input is processed and displayed. Mainly affects the visual outcome when the input is scaled up or down [e.g., when choosing a different mode for Stretching /

Aspect Ratio]. Choose from 2 different modes. The default setting is None.

- **None** - Prioritizes processing speed over image quality.
- **Linear** - Prioritizes image quality over processing speed. This mode may affect performance.

A rectangular button with a light gray background and a thin black border. The word "Stay" is centered in a dark gray, sans-serif font.

Last-String Mode - Is only available when Loop Mode of the String Table is disabled. Defines what happens to the text once all characters have been shuffled. The default setting is Stay.

Stay - Leaves the strings on display.

Clear - Makes the strings disappear.

Restoring The Default Settings

A rectangular button with a light gray background and a thin black border. The word "Defaults" is centered in a dark gray, sans-serif font.

Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

Important Details

Typefaces

Typefaces can be grouped into two main categories:

- Serif [Such fonts contain small features at the end of strokes within letters]

- Sans-serif [Such fonts have a clearer, simple appearance]

Serif Font

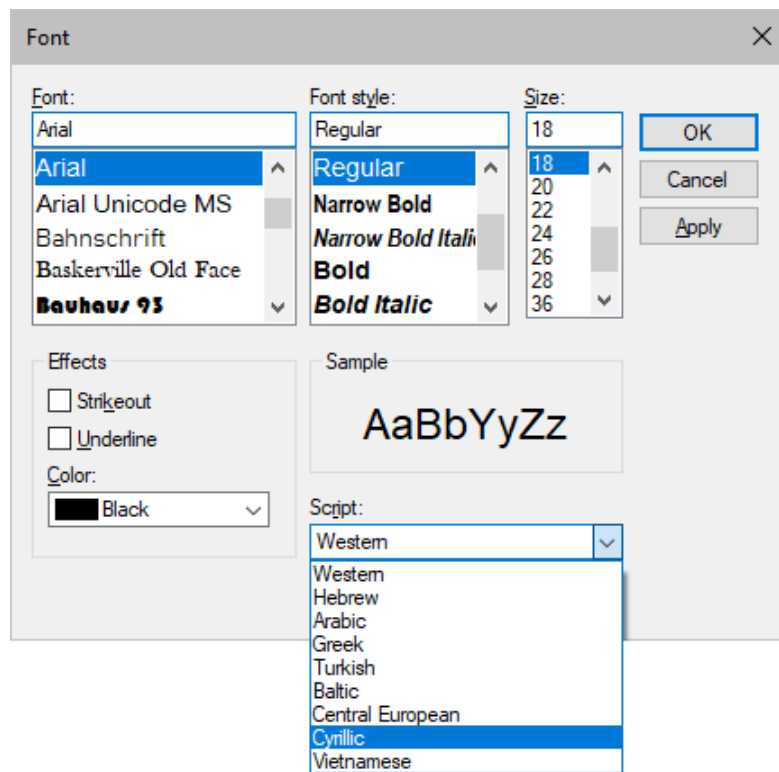
AaBbCc

Sans-Serif Font

AaBbCc

How To Use Other Languages [Such As Russian Or Chinese]

- In Windows 10, go to **Start > Windows System > Control Panel > Language**
 - In Windows 11, go to **Start > Settings > Time & language**
- Add the language you want to use [Russian, Chinese, etc.].
- In MADRIX 5, select **SCE Credits**
- Click **Aa** to open the Font window.
- Choose a universal, extensive font, such as **Arial**
- Choose **Cyrillic** [or Chinese, etc.] under **Script**
- Close the Font window.
- Put any strings into the **String Table**



8.1.11 SCE Drops

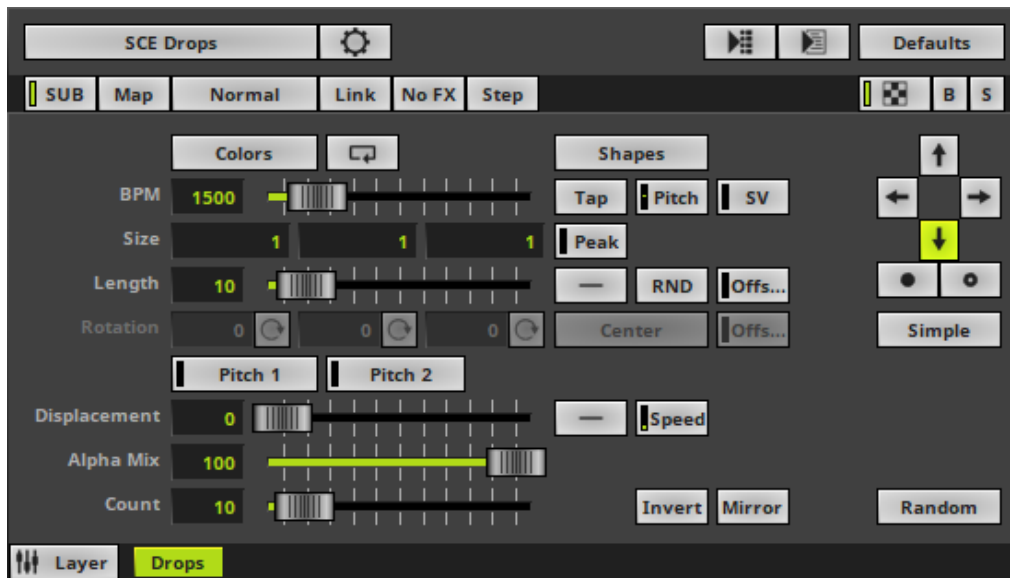
This topic includes:

- [Introduction](#)
- [Overview](#)
- [Effect Options](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

Introduction

SCE Drops displays [falling] drops.

Overview



Default Settings



Customized Example

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.

Learn more » [Effect Options](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX Effect uses the following, individual controls:

- **Colors** - Opens the Color Table to specify the colors. The default color is White.
Learn more » [\[Global\] Colors And Intensity](#)
- **Shapes** - Opens the Shape Table to specify the shapes. The default color is Rectangle Filled.
Learn more » [Using Shapes \[Shape Table\]](#)
- **BPM** - Defines the speed. The default value is 1500. Valid values range from 0 to 9999.
Learn more » [Using BPM Control](#)
- **Size** - Defines the size of objects [Width, Height, Depth]. The default values are 1, 1, 1. Valid values range from 0.1 to 1000.
- **Length** - Defines how long the trace of a drop is [in % of the Matrix Size]. The default value is 10. Valid values range from 0 to 100.
- **Rotation** - Is only available in Rendering Mode Extended. Defines the rotation of objects in **X**, **Y**, and **Z** [in °]. The default values are 0, 0, 0. Valid values range from -180 to 180.
- **Displacement** - Defines the amount of movement distortion. The default value is 0. Valid values range from 0 to 100.
- **Alpha Mix** - Defines the upper limit of how much alpha is added to each drop [in %]. Alpha Mix will be visible when using additional Layers. The default value is 100. Valid values range from 0 to 100.
- **Count** - Defines the number of objects displayed at once. The default value is 10. Valid values range from 1 to 100.



Peak - Defines the position of the peak of the drop. The default value is 0.00. Valid values range from 0.00 to 100.00.



Distribution - Allows you to choose a certain Distribution Mode for the specific parameter. Often, you can then define a minimum value and a maximum value.

Uniform - Each object has the same size.

Random - Sizes will be generated randomly.



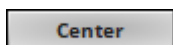
RND - Generates random object sizes each time. This automatically activates Random Distribution Mode.



Length Offset - Defines if an offset is added to the trace of a drop [in % of the Matrix Size]. The default setting is 0. Valid values range from 0 to 100.



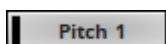
Continuous Rotation - Animates the shapes and rotates them around the corresponding axis permanently.



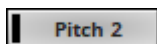
Rotation Origin Type - Defines the point of origin of the applied rotation.



Rotation Offset - Defines if an offset is added to the rotation of a drop [in % of the Matrix Size]. The default setting is 0. Valid values range from 0 to 100.



Pitch 1 - Defines the first distance between objects depending on the direction [in % of the Matrix Size]. The default setting is 0. Valid values range from 0 to 100.



Pitch 2 - Defines the second distance between objects depending on the direction [in % of the Matrix Size]. The default setting is 0. Valid values range from 0 to 100.



Displacement Distribution - Is only available for Displacement. Is applied in dependence of the direction that is chosen. Allows you to choose the area the distortion is applied to [**Uniform**, **Linear Increasing**, **Linear Decreasing**, **Triangle**]. The default setting is Uniform.



Displacement Speed - Is only available for Displacement. Allows you to choose to speed in which the distortion affects the visuals. The default setting is 10.0.



Invert - Inverts the position of objects.



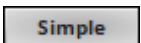
Mirror - Mirrors objects by creating duplicates on the opposite position.



Direction - Allows you to choose the direction of the movement. The default setting is Down. Learn more »[Using Directions](#)



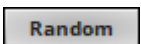
Direction - Allows you to choose the direction of the movement [**To The Front** or **To The Back**]. This is mainly relevant for 3D. The default setting is Down. Learn more »[Using Directions](#)



Rendering Mode - Defines how objects are rendered. Each mode may enable additional settings [such as additional Shapes]. Choose from 2 different modes. The default setting is Simple.

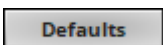
Simple - Prioritizes processing speed over rendering possibilities.

Extended - Prioritizes rendering possibilities over over processing speed. This mode may require more performance.



Mode - Allows you to choose the mode in which way objects are generated [**Random**, **Linear**, or **Ping Pong**]. The default setting is Random.

Restoring The Default Settings



Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.1.12 SCE Explosions

This topic includes:

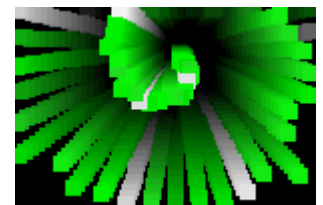
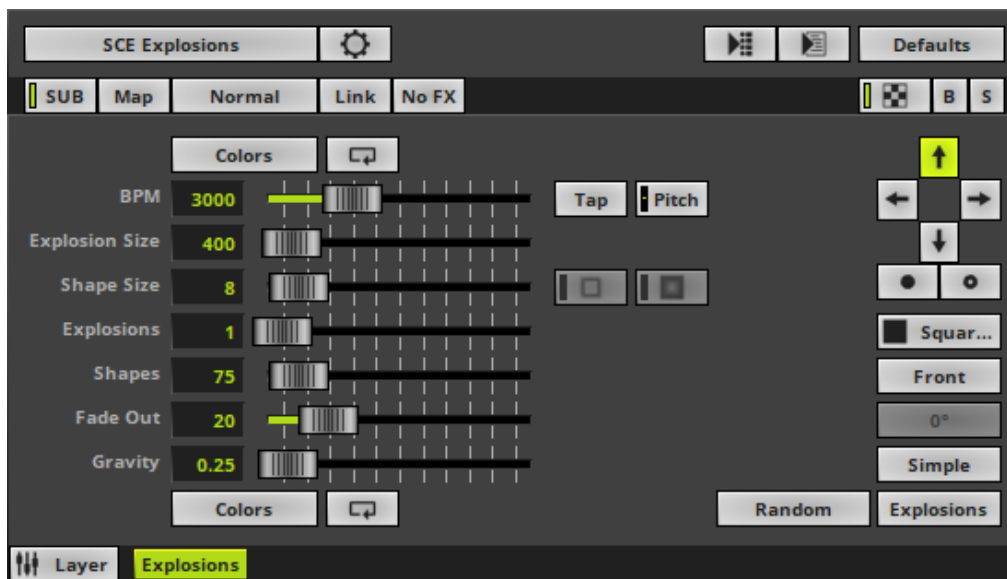
- [Introduction](#)

- [Overview](#)
- [Effect Options](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

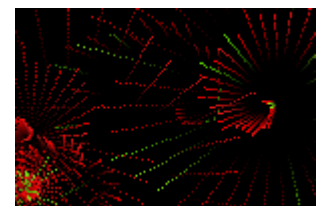
Introduction

SCE Explosions displays all kinds of explosions as well as fireworks.

Overview



Default Settings



Customized Example

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.

Learn more » [Effect Options](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

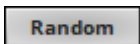
This MADRIX Effect uses the following, individual controls:

- **Colors** - Opens the Color Table. The default colors are Red, Yellow, Green, Cyan, Blue, Magenta.
Learn more » [\[Global\] Colors And Intensity](#)
- **BPM** - Defines the speed. The default value is 3000. Valid values range from 0 to 9999.
Learn more » [Using BPM Control](#)
- **Explosion Size** - Defines the magnitude of each explosion. The default value is 400. Valid values range from 1 to 9999.
- **Shape Size** - Defines the size of each object within an explosion. The default value is 8. Valid values range from 1 to 100.
- **Explosions** - Defines how many explosions are displayed at the same time. The default value is 1. Valid values range from 1 to 100.
- **Shapes** - Defines the number of single objects a single explosion includes. The default value is 75. Valid values range from 1 to 1000.
- **Fade Out** - Defines how fast MADRIX 5 displays objects. The default value is 20. Valid values range from 0 to 1000.

- **Gravity** - Defines how strong objects are pulled to the bottom depending on the direction [in %]. The default value is 0.25. Valid values range from 0 to 100.
- **Colors** - Opens a second Color Table to define the second colors of each explosion. The default color is White. Learn more » [\[Global\] Colors And Intensity](#)



Outer Glow / Inner Glow - Is only available for specific Shapes. Defines the outer shimmer or inner gleam of objects. The default settings are 0.00. Valid values range from 0.01 to 100.



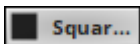
Explosion Shape - Allows you to choose a specific shape for explosions [**Sphere**, **Sphere Glow**, **Spiral**, **Radial**, **Diamond**, **Star**, **Random**]. The default setting is Random.



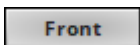
Direction - Allows you to choose the direction of the movement. The default setting is Up. Learn more » [Using Directions](#)



Direction - Allows you to choose the direction of the movement [**To The Front** or **To The Back**]. This is mainly relevant for 3D. The default setting is Up. Learn more » [Using Directions](#)



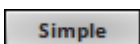
Shape - Allows you to choose a specific shape for objects. A certain Size is required before a shape becomes visible. The default setting is Square Filled.



Look-At Type - Allows you to choose from which side you want to look at the effect. This is mainly relevant for 3D. The default setting is Front. Learn more » [Using Directions](#)



Shape Rotation Type - Is only available for specific Shapes. Defines the angle in which objects are rotated [**0°**, **90°**, **180°**, **270°**, **Random**].



Rendering Mode - Defines how objects are rendered. Each mode may enable additional settings [such as additional Shapes]. Choose from 2 different modes. The default setting is Simple.

- **Simple** - Prioritizes processing speed over rendering possibilities.

- **Extended** - Prioritizes rendering possibilities over over processing speed. This mode may require more performance.

Explosions

Mode - Allows you to choose the mode [**Explosions** or **Fireworks**]. The default setting is Explosions.

Restoring The Default Settings

Defaults

Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.1.13 SCE Fill Drops

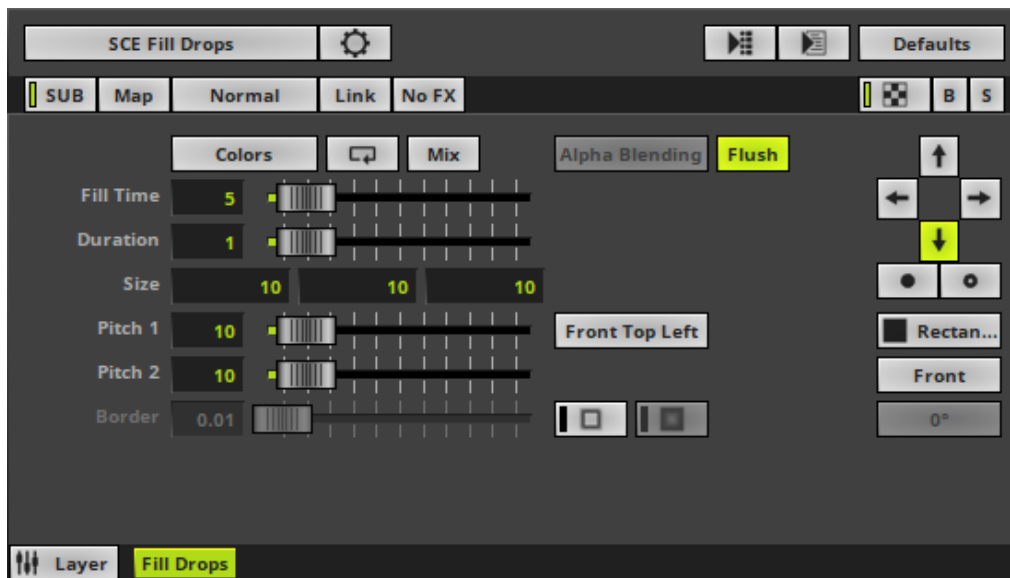
This topic includes:

- [Introduction](#)
- [Overview](#)
- [Effect Options](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

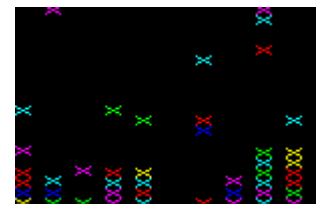
Introduction

SCE Fill Drops creates randomly falling objects.

Overview



Default Settings



Customized Example

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.

Learn more » [Effect Options](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX Effect uses the following, individual controls:

- **Colors** - Opens the Color Table to specify the colors. The default colors are Red, Yellow, Green, Cyan, Blue, Magenta.
Learn more » [\[Global\] Colors And Intensity](#)
- **Fill Time** - Defines the time how long it takes to fill the complete LED matrix with shapes [in s]. The default value is 5. Valid values range from 0.01 to 3600.
- **Duration** - Defines the time the complete matrix is shown in solid color until the next round of objects begins to fill the matrix [in s]. The default value is 1. Valid values range from 0 to 3600.
- **Size** - Defines the size of objects [in % of the Matrix Size][Width, Height, Depth]. The default values are 10, 10, 10. Valid values range from 0.01 to 1000.
- **Pitch 1** - Defines the first distance between objects depending on the direction [in % of the Matrix Size]. The default value is 0. Valid values range from 10 to 100.
- **Pitch 2** - Defines the second distance between objects depending on the direction [in % of the Matrix Size]. The default value is 0. Valid values range from 10 to 100.
- **Border** - Is only available for 2D outlined shapes or 3D unfilled shapes. Defines how thick the outer line [border] of objects is. The default value is 0.01. Valid values range from 0.01 to 100.

Alpha Blending

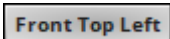
Blending Mode - Is only available when colors are defined with an alpha value in the Color Table. Defines how shapes and colors are blended [**Alpha Blending**, **Substitution**].

Alpha Blending uses the alpha channel to blend overlapping shapes with each other [i.e. if the Pitch is smaller than the Size].

Substitution replaces colors, and when using alpha this is especially visible when using two or more Layers.]

Flush

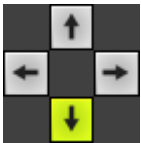
Flush - Clears the matrix with the last used color before starting a new cycle. Is activated by default. Is visible for shapes other than Rectangle.



Position Origin Type - Defines the point of origin of Shapes [and hence their relative position].



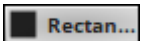
Outer Glow / Inner Glow - Is only available for specific Shapes. Defines the outer shimmer or inner gleam of objects. The default settings are 0.00. Valid values range from 0.01 to 100.



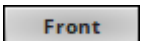
Direction - Allows you to choose the direction of the movement. The default setting is Down. Learn more »[Using Directions](#)



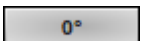
Direction - Allows you to choose the direction of the movement [**To The Front** or **To The Back**]. This is mainly relevant for 3D. The default setting is Down. Learn more »[Using Directions](#)



Shape - Allows you to choose a specific shape for objects. A certain Size is required before a shape becomes visible. The default setting is Rectangle Filled.

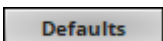


Shape Alignment - Allows you to choose to which side objects are aligned to. This is mainly relevant for 3D. The default setting is Front.



Shape Rotation Type - Is only available for specific Shapes. Defines the angle in which objects are rotated [**0°**, **90°**, **180°**, **270°**, **Random**]. The default setting is 0°.

Restoring The Default Settings



Restore Default Layer Settings - Restores the default settings of the Layer.
- All Layer Settings and Effect Settings will be restored to their default values.

- This does not include the MADRIX Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.1.14 SCE Fill Random

This topic includes:

- [Introduction](#)
- [Overview](#)
- [Effect Options](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

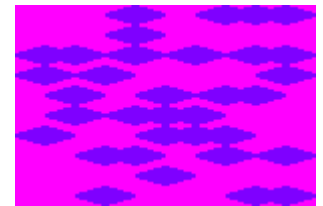
Introduction

SCE Fill Random continuously adds new objects until the whole LED matrix is filled.

Overview



Default Settings



Customized Example

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.

Learn more » [Effect Options](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX Effect uses the following, individual controls:

- **Colors** - Opens the Color Table to specify the colors. The default colors are Red, Yellow, Green, Cyan, Blue, Magenta.
Learn more » [\[Global\] Colors And Intensity](#)
- **Fill Time** - Defines the time how long it takes to fill the complete LED matrix with shapes [in s]. The default value is 5. Valid values range from 0.01 to 3600.
- **Duration** - Defines the time the complete matrix is shown in solid color until the next round of objects begins to fill the matrix [in s]. The default value is 1. Valid values range from 0 to 3600.
- **Size** - Defines the size of objects [Width, Height, Depth]. The default values are 10, 10, 10. Valid values range from 0.01 to 1000.
- **Pitch** - Defines the distance between objects for all 3 axes. The default values are 10, 10, 10. Valid values range from 0 to 100.
- **Border** - Is only available for 2D outlined shapes or 3D unfilled shapes. Defines how thick the outer line [border] of objects is. The default value is 0.01. Valid values range from 0.01 to 100.

Alpha Blending

Blending Mode - Is only available when colors are defined with an alpha value in the Color Table. Defines how shapes and colors are blended [**Alpha Blending, Substitution**].

Alpha Blending uses the alpha channel to blend overlapping shapes with each other [i.e. if the Pitch is smaller than the Size].

Substitution replaces colors, and when using alpha this is especially visible when using two or more Layers.]

Flush

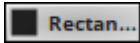
Flush - Clears the matrix with the last used color before starting a new cycle. Is activated by default. Is visible for shapes other than Rectangle.

Front Top Left

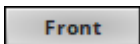
Position Origin Type - Defines the point of origin of Shapes [and hence their relative position].



Outer Glow / Inner Glow - Is only available for specific Shapes. Defines the outer shimmer or inner gleam of objects. The default settings are 0.00. Valid values range from 0.01 to 100.



Shape - Allows you to choose a specific shape for objects. A certain Size is required before a shape becomes visible. The default setting is Rectangle Filled.

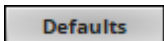


Shape Alignment - Allows you to choose to which side objects are aligned to. This is mainly relevant for 3D. The default setting is Front.



Shape Rotation Type - Is only available for specific Shapes. Defines the angle in which objects are rotated [**0°**, **90°**, **180°**, **270°**, **Random**]. The default setting is 0°.

Restoring The Default Settings



Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.1.15 SCE Fill Snake

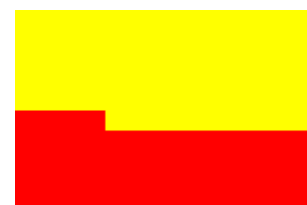
This topic includes:

- [Introduction](#)
- [Overview](#)
- [Effect Options](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

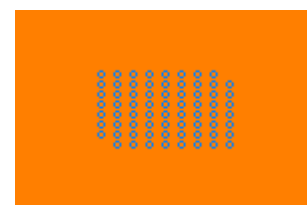
Introduction

SCE Fill Snake fills the matrix in a snake-like mode.

Overview



Default Settings



Customized Example

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.

Learn more » [Effect Options](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX Effect uses the following, individual controls:

- **Colors** - Opens the Color Table to specify the colors. The default colors are Red, Yellow, Green, Cyan, Blue, Magenta.
Learn more » [\[Global\] Colors And Intensity](#)
- **Fill Time** - Defines the time how long it takes to fill the complete LED matrix with shapes [in s]. The default value is 5. Valid values range from 0.01 to 3600.
- **Duration** - Defines the time the complete matrix is shown in solid color until the next round of objects begins to fill the matrix [in s]. The default value is 1. Valid values range from 0 to 3600.
- **Size** - Defines the size of objects [Width, Height, Depth]. The default values are 10, 10, 10. Valid values range from 0.01 to 1000.
- **Pitch** - Defines the distance between objects for all 3 axes [in % of the Matrix Size]. The default values are 10, 10, 10. Valid values range from 0 to 100.
- **Border** - Is only available for 2D outlined shapes or 3D unfilled shapes. Defines how thick the outer line [border] of objects is. The default value is 0.01. Valid values range from 0.01 to 100.

Alpha Blending

Blending Mode - Is only available when colors are defined with an alpha value in the Color Table. Defines how shapes and colors are blended [**Alpha Blending**, **Substitution**].

Alpha Blending uses the alpha channel to blend overlapping shapes with each other [i.e. if the Pitch is smaller than the Size].

Substitution replaces colors, and when using alpha this is especially visible when using two or more Layers.]



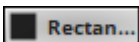
Flush - Clears the matrix with the last used color before starting a new cycle. Is activated by default. Is visible for shapes other than Rectangle.



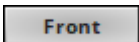
Position Origin Type - Defines the point of origin of Shapes [and hence their relative position]. The default setting is Front Top Left.



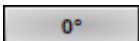
Outer Glow / Inner Glow - Is only available for specific Shapes. Defines the outer shimmer or inner gleam of objects. The default settings are 0.00. Valid values range from 0.01 to 100.



Shape - Allows you to choose a specific shape for objects. A certain Size is required before a shape becomes visible. The default setting is Rectangle Filled.



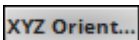
Shape Alignment - Allows you to choose to which side objects are aligned to. This is mainly relevant for 3D. The default setting is Front.



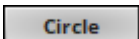
Shape Rotation Type - Is only available for specific Shapes. Defines the angle in which objects are rotated [**0°**, **90°**, **180°**, **270°**, **Random**]. The default setting is 0°.



Start Corner - Defines where the snake movements starts [**Front Top Left**, **Front Top Right**, **Front Bottom Left**, **Front Bottom Right**, **Back Top Left**, **Back Top Right**, **Back Bottom Left**, **Back Bottom Right**]. This setting is available for 2D, but only in 3D all options are viable. The default setting is Front Top Left.



Orientation Mode - Defines the general movement direction [**XYZ Orientation**, **XZY Orientation**, **YXZ Orientation**, **YZX Orientation**, **ZYX Orientation**, **ZXY Orientation**]. This setting is available for 2D, but only in 3D all options are viable. The default setting is XYZ Orientation.



Circle Mode - Activates a circular snake movement.

Center

Center Mode - Starts movement from the center instead of the outer edge.

Mirror

Mirror Mode - Duplicates the effect by mirroring it.

Restoring The Default Settings

Defaults

Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.1.16 SCE Fill Solid

This topic includes:

- [Introduction](#)
- [Overview](#)
- [Effect Options](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

Introduction

SCE Fill Solid constantly fills the matrix with a new color.

Overview



Default Settings



Customized Example

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.

Learn more » [Effect Options](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX Effect uses the following, individual controls:

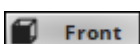
- **Colors** - Opens the Color Table to specify the colors. The default colors are Red, Yellow, Green, Cyan, Blue, Magenta.
Learn more » [\[Global\] Colors And Intensity](#)
- **Fill Time** - Defines the time how long it takes to fill the complete LED matrix with shapes [in s]. The default value is 5. Valid values range from 0.01 to 3600.
- **Duration** - Defines the time the complete matrix is shown in solid color until the next round of objects begins to fill the matrix [in s]. The default value is 1. Valid values range from 0 to 3600.
- **Step Width** - Defines the number of pixels the effect should scroll in the direction per frame [in %]. The default value is 0.01. Valid values range from 0.01 to 100.
- **Color Width** - Is only available for Color Mix Mode [» [\[Global\] Colors And Intensity](#)]. Defines the width of a single color [in %]. The default value is 10. Valid values range from 0.01 to 100.
- **Cross Width** - Is only available for Cross Mode [» [Using Directions](#)]. Defines the size of crossing colors [in %]. The default value is 50. Valid values range from 0.01 to 100.

Axes 1 And 2

Cross Mode Axes- Is only available for Cross Mode. Allows you to choose to which axis Cross Mode applies [**Axes 1 And 2**, **Axis 1**, or **Axis 2**]. The default setting is Axes 1 And 2.



Direction/Mode - Allows you to choose the direction of the movement, including Cross Mode. This includes all directions for 2D and 3D mode. This heavily influences the visual outcome of the effect. The default setting is Right. Learn more » [Using Directions](#)



Look-At Type - Allows you to choose from which side you want to look at the effect. This is mainly relevant for 3D. The default setting is Front. Learn more » [Using Directions](#)

Restoring The Default Settings

Defaults

Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.1.17 SCE Fire

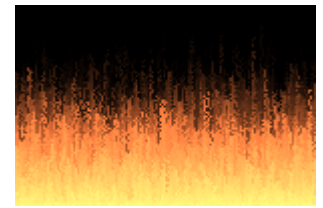
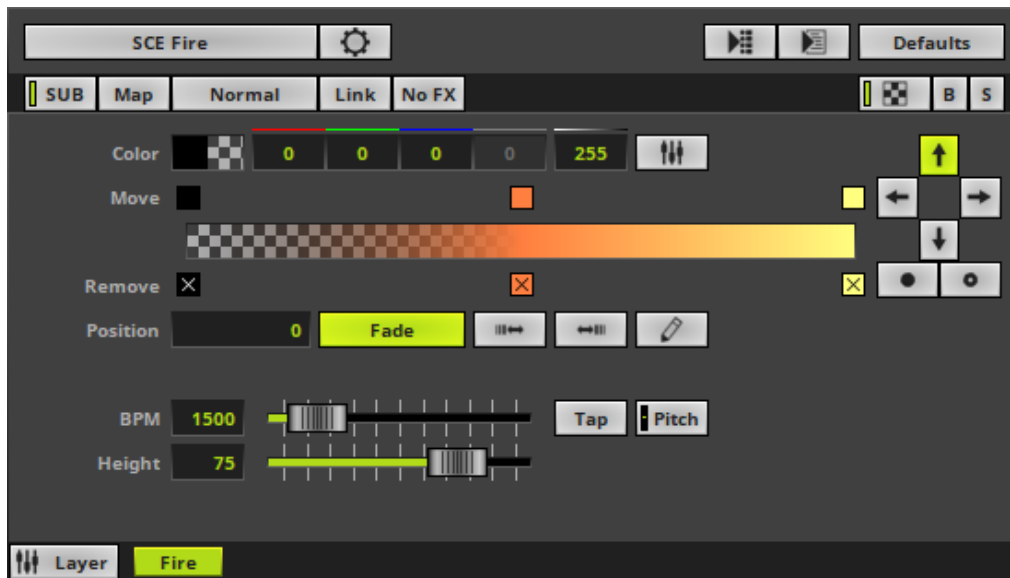
This topic includes:

- [Introduction](#)
- [Overview](#)
- [Effect Options](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

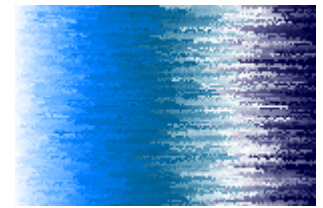
Introduction

SCE Fire is one of two fire effects.

Overview



Default Settings



Customized Example

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.

Learn more » [Effect Options](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX Effect uses the following, individual controls:

- **Color** - Defines the color via a Color Gradient and various options.
Learn more » [\[Global\] Colors And Intensity](#)
- **BPM** - Defines the speed. The default value is 1500. Valid values range from 0 to 9999.
Learn more » [Using BPM Control](#)
- **Height** - Defines the height of the flames [in %]. The default value is 75. Valid values range from 1 to 1000.



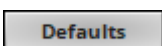
Direction - Allows you to choose the direction of the movement. The default setting is Up.

Learn more » [Using Directions](#)



Direction - Allows you to choose the direction of the movement [**To The Front** or **To The Back**]. This is mainly relevant for 3D. The default setting is Up. Learn more » [Using Directions](#)

Restoring The Default Settings



Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.1.18 SCE Flames

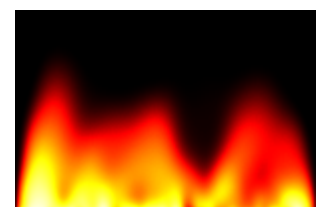
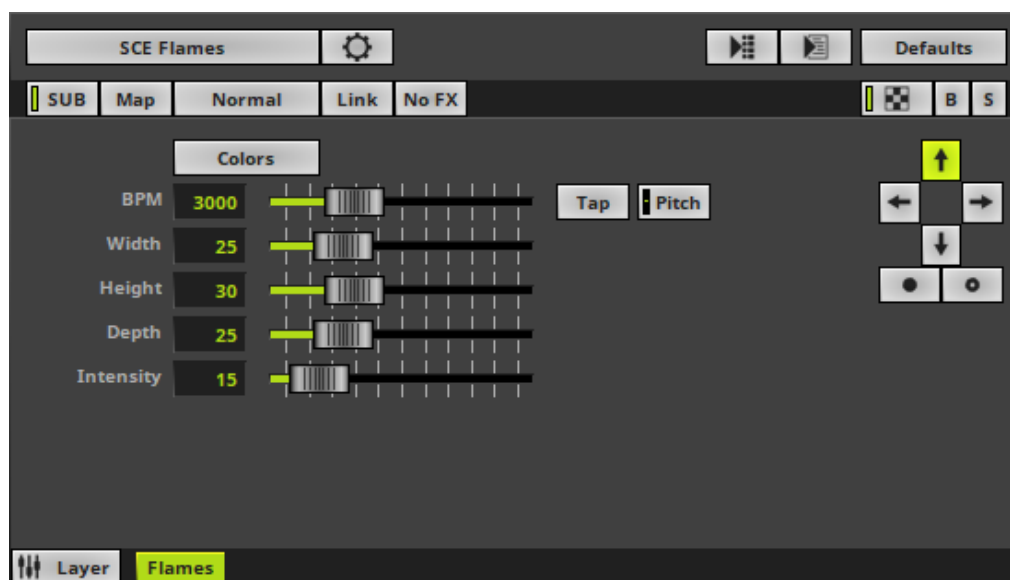
This topic includes:

- [Introduction](#)
- [Overview](#)
- [Effect Options](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

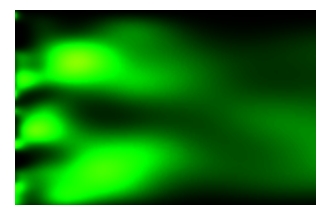
Introduction

SCE Flames is one of two fire effects.

Overview



Default Settings



Customized Example

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.

Learn more » [Effect Options](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX Effect uses the following, individual controls:

- **Colors** - Opens the Color Gradient to specify the colors. The default color is Black, Red, Yellow, White.
Learn more » [\[Global\] Colors And Intensity](#)
- **BPM** - Defines the speed. The default value is 3000. Valid values range from 0 to 9999.
Learn more » [Using BPM Control](#)
- **Width** - Defines the size of the flames [in %]. The default value is 25. Valid values range from 0 to 100.
- **Height** - Defines the height of the flames [in %]. The default value is 30. Valid values range from 0 to 100.
- **Depth** - Defines the depth of the flames [in %]. This is mainly relevant for 3D. The default value is 25. Valid values range from 0 to 100.
- **Intensity** - Defines the thickness of flames [in %]. The default value is 15. Valid values range from 0 to 100.



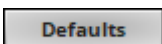
Direction - Allows you to choose the direction of the movement. The default setting is Up.

Learn more » [Using Directions](#)



Direction - Allows you to choose the direction of the movement [**To The Front** or **To The Back**]. This is mainly relevant for 3D. The default setting is Up. Learn more » [Using Directions](#)

Restoring The Default Settings



Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.1.19 SCE Fluid

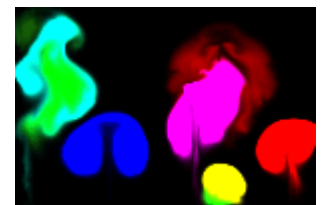
This topic includes:

- [Introduction](#)
- [Overview](#)
- [Effect Options](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

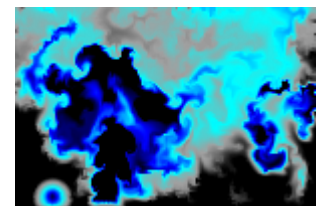
Introduction

SCE Fluid simulates gas or liquids.

Overview



Default Settings



Customized Example

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.

Learn more » [Effect Options](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX Effect uses the following, individual controls:

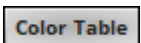
- **Colors** - Opens the Color Table or Color Gradient depending on the Color Mode. The default colors are Red, Yellow, Green, Cyan, Blue, Magenta.
Learn more » [\[Global\] Colors And Intensity](#)
- **BPM** - Defines the speed. The default value is 3000. Valid values range from 0 to 9999.
Learn more » [Using BPM Control](#)
- **Radius** - Defines the size of impulses [in %]. The default value is 10. Valid values range from 0 to 100.
- **Vorticity** - Defines how much impulses can swirl in the gas [in %]. The default value is 12. Valid values range from 0 to 100.
- **Duration** - Defines how long impulses can move through the gas [in %]. The default value is 64. Valid values range from 0 to 100.
- **Density** - Defines the thickness of the gas [in %]. The default value is 10. Valid values range from 0 to 100.
- **Velocity** - Defines how fast impulses can move through the gas [in %]. The default value is 10. Valid values range from 0 to 100.
- **Fade** - Defines how quickly impulses evaporate [in %]. The default value is 5. Valid values range from 0 to 100.
- **Deceleration** - Slows down the movement of impulses [in %]. The default value is 0. Valid values range from 0 to 100.



Direction - Allows you to choose the direction of the movement. The default setting is Up. Learn more »[Using Directions](#)

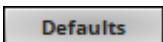


Direction - Allows you to choose the direction of the movement [**To The Front** or **To The Back**]. This is mainly relevant for 3D. The default setting is Up. Learn more »[Using Directions](#)



Color Mode - Allows you to choose the color mode [**Color Table** or **Color Gradient**]. The default setting is Color Table.

Restoring The Default Settings



Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.1.20 SCE Gradient

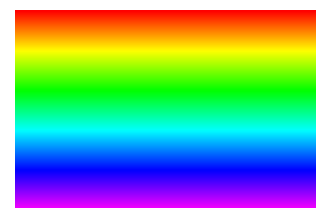
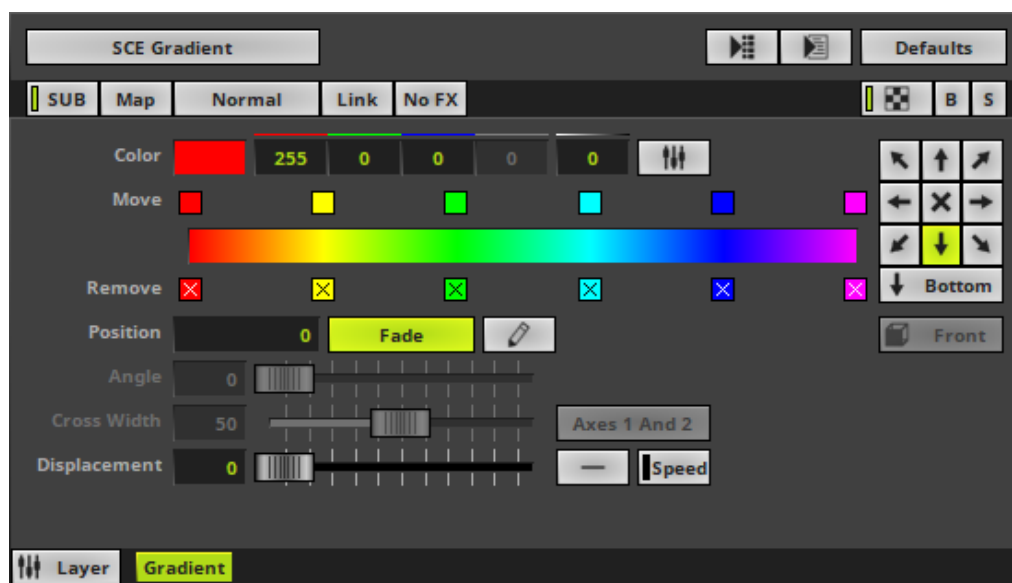
This topic includes:

- [Introduction](#)
- [Overview](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

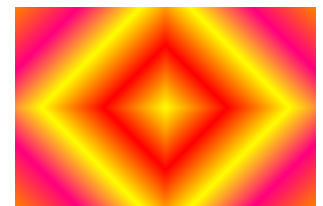
Introduction

SCE Gradient is all about creating various color gradients.

Overview



Default Settings



Customized Example

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX Effect / Layer.

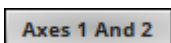
Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX Effect uses the following, individual controls:

- **Color** - Defines the color via a Color Gradient and various options.
Learn more » [\[Global\] Colors And Intensity](#)
- **Angle** - Allows you to change the angle in which the effect is displayed [in °]. Is only available for Mode Radial.
The default value is 0. Valid values range from 0 to 359.
- **Cross Width** - Is only available for Cross Mode [[»Using Directions](#)]. Defines the size of crossing colors [in %]. The default value is 50. Valid values range from 0.01 to 100.
- **Displacement** - Defines the amount of distortion. The default value is 0. Valid values range from 0 to 100.



Cross Mode Axes - Is only available for Cross Mode. Allows you to choose to which axis Cross Mode applies [**Axes 1 And 2**, **Axis 1**, or **Axis 2**]. The default setting is Axes 1 And 2.



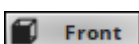
Displacement Distribution - Is only available for Displacement. Is applied in dependence of the direction that is chosen. Allows you to choose the area the distortion is applied to [**Uniform**, **Linear Increasing**, **Linear Decreasing**, **Triangle**]. The default setting is Uniform.



Displacement Speed - Is only available for Displacement. Allows you to choose to speed in which the distortion affects the visuals. The default setting is 0.0.



Direction/Mode - Allows you to choose the direction, including Cross Mode. This includes all directions for 2D and 3D mode. This heavily influences the visual outcome of the effect. The default setting is Bottom. Learn more » [Using Directions](#)



Look-At Type - Allows you to choose from which side you want to look at the effect. This is mainly relevant for 3D. The default setting is Front. Learn more » [Using Directions](#)

Restoring The Default Settings

Defaults

Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.1.21 SCE Graph

This topic includes:

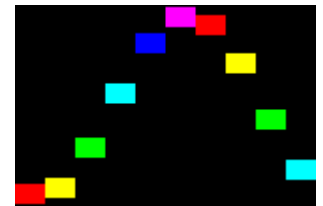
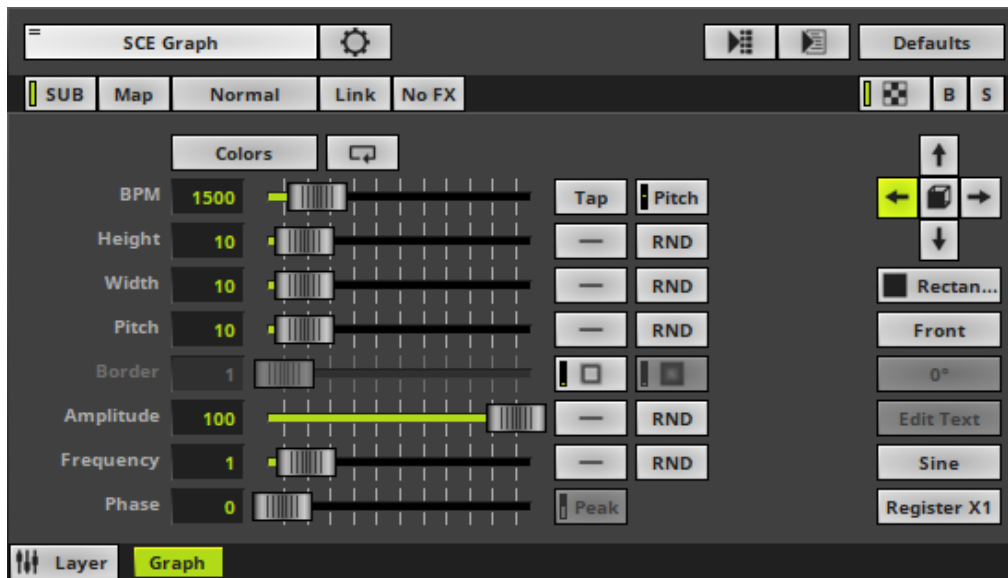
- [Introduction](#)
- [Overview](#)
- [Effect Options](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)
- [Edit Text](#)

Introduction

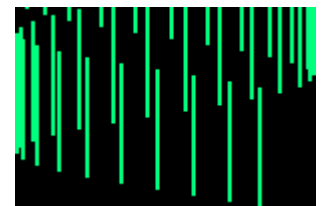
SCE Graph effect creates trigonometric graphs. This MADRIX Effect is extremely versatile.

This MADRIX Effect creates a completely seamless loop.

Overview



Default Settings



Customized Example

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.

Learn more » [Effect Options](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX Effect uses the following, individual controls:

- **Colors** - Opens the Color Table. The default colors are Red, Yellow, Green, Cyan, Blue, Magenta.
Learn more » [\[Global\] Colors And Intensity](#)
- **BPM** - Defines the speed. The default value is 1500. Valid values range from 0 to 9999.
Learn more » [Using BPM Control](#)
- **Height** - Defines the height of elements depending on the direction [in % of the Matrix Size]. The default value is 10. Valid values range from 0.01 to 100.
- **Width** - Defines the width of elements depending on the direction [in % of the Matrix Size]. When Register Z1, Z2, or Z3 is selected, you are controlling a different width. If you are The default value is 10. Valid values range from 0.01 to 100.
- **Pitch** - Defines the distance between elements depending on the direction [in % of the Matrix Size]. When Register Z1, Z2, or Z3 is selected, you are controlling a different pitch. The default value is 10. Valid values range from 0.01 to 100.
- **Border** - Is only available for 2D outlined shapes or 3D unfilled shapes. Defines how thick the outer line [border] of objects is. The default value is 1. Valid values range from 1 to 100.
- **Frequency** - Defines the rate. A value of 1 means that the complete wave is shown. The default value is 1. Valid values range from 0 to 100.
- **Amplitude** - Defines the maximum oscillation of the elements in relation to the baseline. The default value is 100. Valid values range from -1000 to 1000.
- **Phase** - Defines an offset that allows you to shift the waves compared to each other when combining at least 2 graphs in order to avoid overlapping [in % of the wave length]. The default value is 0. Valid values range from 0 to 100.



Distribution - Allows you to choose a certain Distribution Mode for the specific parameter. Often, you can then define a minimum value and a maximum value.

Uniform - Each object has the same size.

Linear - A linear distribution is used to increase the size regularly.

Quadratic - The majority of objects will be smaller than the rest.

SQRT - Using a square root function the majority of objects will be larger.

Cubic - Uses a cubic distribution with mixed sizes.

Random - Sizes will be generated randomly.



RND - Generates random object sizes each time. This automatically activates Random Distribution Mode.



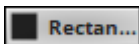
Outer Glow / Inner Glow - Is only available for specific Shapes. Defines the outer shimmer or inner gleam of objects. The default settings are 1. Valid values range from 0.01 to 100.



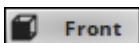
Peak - Defines the peak of the wave [in % of the wavelength]. It is only available for Draw Mode Triangle and Square. The default setting is 50. Valid values range from 0 to 100.



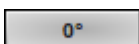
Direction/Mode - Allows you to choose the direction, including Look-At Type. This includes all directions for 2D and 3D mode. The default setting is Left. Learn more »[Using Directions](#)



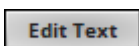
Shape - Allows you to choose a specific shape for objects. A certain Size is required before a shape becomes visible. This heavily influences the visual outcome of the effect. The default setting is Rectangle Filled.



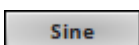
Look-At Type - Allows you to choose from which side you want to look at the effect. This is mainly relevant for 3D. The default setting is Front. Learn more »[Using Directions](#)



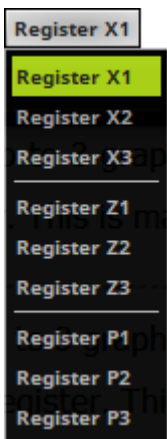
Shape Rotation Type - Is only available for specific Shapes. Defines the angle in which objects are rotated [**0°**, **90°**, **180°**, **270°**, **Random**]. The default setting is 0°.



Edit Text - Allows you to freely enter any text to display when Shape Text is selected first. A new window opens. Learn more [Edit Text](#)



Draw Mode - Allows you to change the graph form, which influences how the effect is drawn [**Sine**, **Absolute Sine**, **Cosine**, **Triangle**, **Square**]. The default setting is Sine.



X-Axis Registers X1, X2, X3 - Allow you to combine up to 3 graphs with each other regarding the X-Axis. Each Register influences the visual outcome. Simply set up the **Amplitude**. More settings will be available then for this Register.

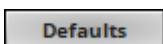
Z-Axis Registers Z1, Z2, Z3 - Allow you to combine up to 3 graphs with each other regarding the Z-Axis. Each Register influences the visual outcome. Simply set up the **Amplitude**. More settings will be available then for this Register. This is mainly relevant for 3D.

Phase Registers P1, P2, P3 - Allow you to combine up to 3 graphs with each other regarding the extruded phase. Each Register influences the visual outcome. Simply set up the **Amplitude**. More settings will be available then for this Register. This is mainly relevant for 3D.

Right Mouse Click > Clear restores the default settings of a Register.



Restoring The Default Settings



Restore Default Layer Settings - Restores the default settings of the Layer.

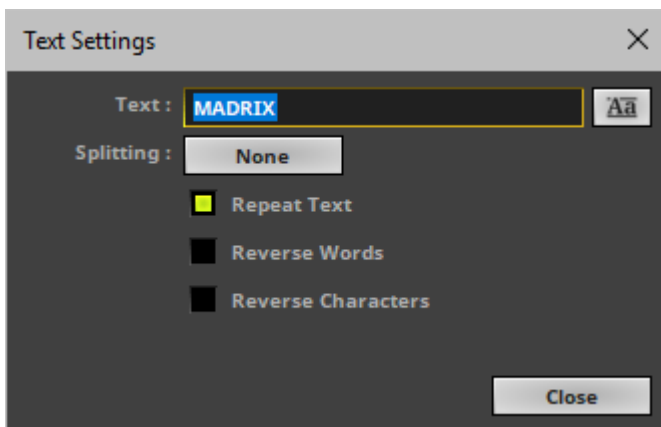
- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

Edit Text

- Choose Draw Mode **Text** in order to use text as elements of the graph.
- Click **Edit Text** to change the text settings.

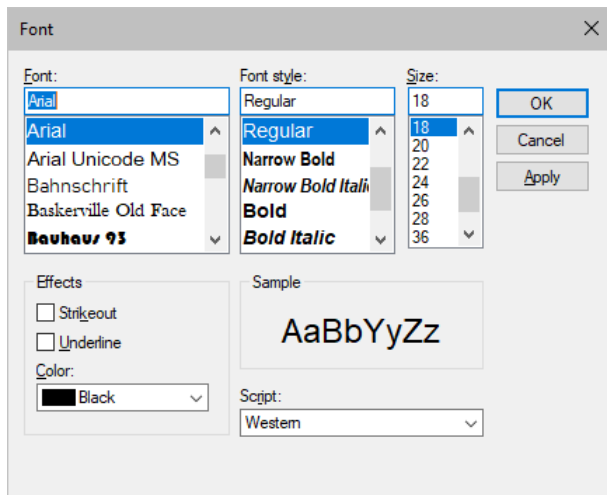


- A new window opens.



Change the following settings as required:

- **Text** - Allows you to enter any text. Simply write something via your keyboard.
- **Aa** - Opens a new window and allows you to choose a specific font, font size, and other font settings.



- **Splitting** - Allows you to split your text.
 - None** - Is the default setting and does not apply any splitting.
 - Words** - Splits your text using each word, adds line breaks, and displays each word below the other.
 - Characters** - Splits your text using each character [letter], adds line breaks, and displays each character below the other.
- **Repeat Text** - Uses your text continuously for each element of the graph.
- **Reverse Words** - Displays the words of your text in reverse order.
- **Reverse Characters** - Displays your complete text in reverse order, character by character.

8.1.22 SCE Image

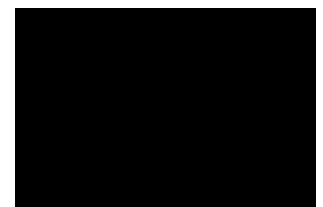
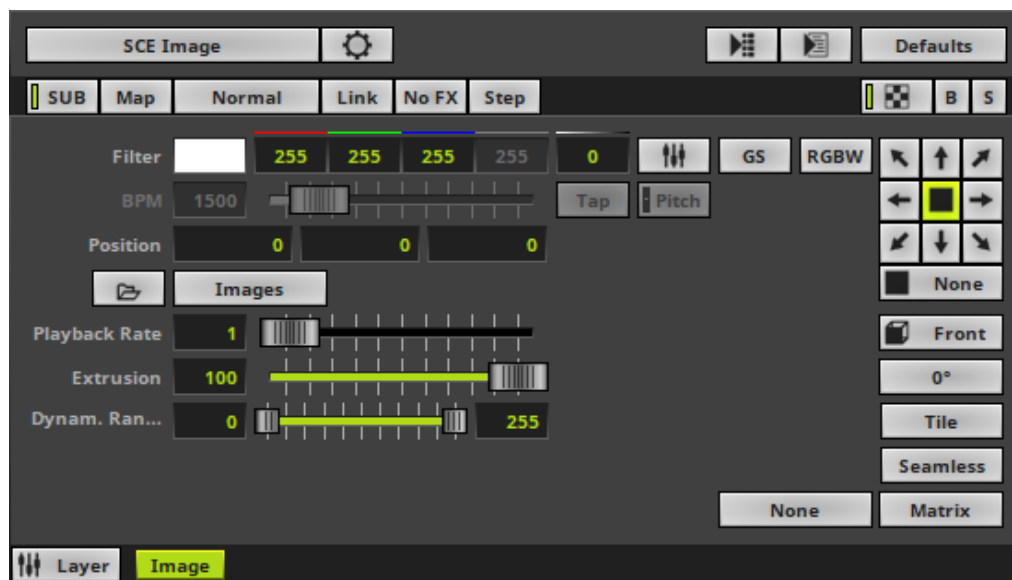
This topic includes:

- [Introduction](#)
- [Overview](#)
- [Effect Options](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)
- [Supported File Types](#)
- [Image Table](#)
- [Image Import Settings](#)
- [Using Images In Your MADRIX 5 Setup \[Referenced Files\]](#)
- [Loading A MADRIX 3 Setup File](#)
- [Important Notes](#)

Introduction

SCE Image allows you to load and display one or several images, pictures, logos, etc. on your LEDs. And you can add certain animations to them.

Overview



Default Settings



Customized Example

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.

Learn more » [Effect Options](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX Effect uses the following, individual controls:

- **Filter** - Applies a multiplicative color filter to the image. The default value is White.
 - **GS** - Activates grayscale mode to show the input only in gray shades. The Filter is independent of this mode.
 - **RGBW** - Converts the input into RGBW. This is useful when using RGBW fixtures to convert from the standard RGB color values of the input. If the option is disabled when using RGBW fixtures, the input will appear darker since the White channel is not used. The W color channel of the Filter only works if RGBW is activated.

Learn more » [\[Global\] Colors And Intensity](#)
- **BPM** - Defines the speed [when using a direction/movement]. The default value is 1500. Valid values range from 0 to 9999.

Learn more » [Using BPM Control](#)
- **Position** - Defines the position of the image in **X**, **Y**, and **Z** [in %]. The default values are 0, 0, 0. Valid values range from -1000 to 1000.
- **Playback Rate** - Defines the speed of the Image Table and how fast images are changed. Valid values range from 0 to 50.
 - The default value is 1, which means that the Duration of the Image Table for each image is used. A rate of 2 doubles the speed and cuts the Duration in half, for example.
- **Extrusion** - Adds depth to the input; i.e. duplicates the input image [in % of the virtual LED matrix]. This is mainly relevant for 3D. The default value is 100. Valid values range from 0.01 to 100.
- **Dynam. Range** - Defines the dynamic range of the output. Valid values range from 0 to 255.
 - The default value range is 0 to 255, which means that all available color values of the input will be displayed.
 - Adjusting the left value cuts off lower color values and defines a new black level; therefore eliminating unwanted [gray] noise and achieving a uniform black.

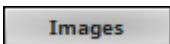
[Setting the left value to 255 will render the input completely black.]

- Lowering the right value highlights the colors; therefore achieving purer color values.

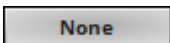
[Setting the right value to 0 will render black/gray values completely white.]



Open - Allows you to load an image into MADRIX 5. Select the file on your computer or another source. Continue with [Image Import Settings](#)



Open Image Table - Opens the Image Table, a window to organize multiple images. Learn more [Image Table](#)



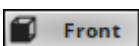
Filtering - Defines how input is processed and displayed. Mainly affects the visual outcome when the input is scaled up or down [e.g., when choosing a different mode for Stretching / Aspect Ratio]. Choose from 2 different modes. The default setting is None.

- **None** - Prioritizes processing speed over image quality.

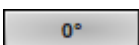
- **Linear** - Prioritizes image quality over processing speed. This mode may affect performance.



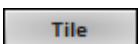
Direction - Allows you to choose the direction. This includes all directions for 2D and 3D mode. The default setting is None. Learn more »[Using Directions](#)



Look-At Type - Allows you to choose from which side you want to look at the effect. This is mainly relevant for 3D. The default setting is Front. Learn more »[Using Directions](#)



Rotation - Rotates the image [**0°**, **90°**, **180°**, **270°**]. The default setting is 0°.



Tile - Tiles and duplicates the input and thereby generating patterns.



Seamless - Activates or deactivates a continuous stream of the input image. MADRIX 5 will automatically display the input image again to create a continuous display.

Matrix

Stretching / Aspect Ratio - Defines the aspect ratio of the image. The default setting is Matrix.

None - Disables stretching.

Matrix - Stretches to the current aspect ratio of the virtual LED matrix.

Original - Stretches to the original aspect ratio of the source.

4:3 - Applies a 4:3 aspect ratio.

16:9 - Applies a 16:9 aspect ratio.

Restoring The Default Settings

Defaults

Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

Supported File Types

SCE Image supports the following file types:

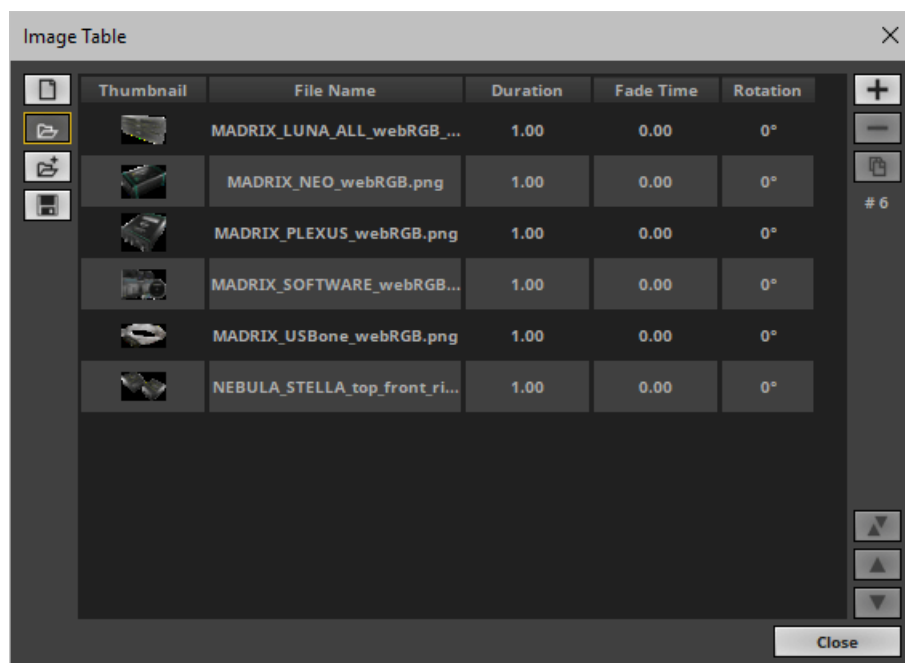
- Bitmap [of the file type *.bmp]
- GIF and Animated GIF [of the file type *.gif]
- JPG [of the file types *.jpg, *.jpeg, *.jpe, *.jfif]
- PNG [of the file type *.png]
- TIFF [of the file types *.tif, *.tiff]

- MADRIX 5 Image Table [of the file type *.mitz]
- MADRIX 5 Image Table Uncompressed [of the file type *.mitx]

Image Table

Overview

SCE Image allows you to load one image or multiple images at a time. Use the Image Table to manage multiple images as described below.



- **Left Mouse Click** - Selects an image in the Image Table.
- **Double-Click Left Mouse Button** - Immediately chooses and activates the selected image and displays it on the LEDs. In this way, you can define which image to show next. MADRIX 5 will automatically continue in the list then, beginning with this image.
- **Ctrl + Left Mouse Click** - Allows you to select several images in the Image Table at different positions.

- **Shift + Left Mouse Click** - Allows you to select several images by selecting 1] the first image, 2] the last image, 3] and all images in-between will be selected automatically.
- **Automatic Loop** - When the last image of the Image List is shown, MADRIX 5 will automatically loop back to the first image and start from the beginning again.

Thumbnail

- Displays a small preview of the loaded or currently selected image.

File Name

- Shows the file name of the image.

Duration

- Defines how long an image is displayed [in s]. Select one or multiple images to adjust the value.

Fade Time

- Defines how long it takes to fade from one image to the next [in s]. Select one or multiple images and then adjust the value.

Rotation

- Rotates the image [**0°**, **90°**, **180°**, **270°**]. The default setting is 0°.



New - Immediately removes all items from the list.



Open - Loads a previously saved MADRIX 5 Image Table from an external file [of the file type *.mitz or *.mitx].



Open And Attach - Loads a previously saved MADRIX 5 Image Table from an external file [of the file type *.mitz or *.mitx] and adds the new images to the images that are already loaded.



Save - Saves the Image Table to an external file [of the file type *.mitz or *.mitx].



Add Images - Adds and appends one or several images to the Image Table. Choose the files from your harddisk or another storage location. Continue with [Image Import Settings](#)



Remove Images - Removes one or several images from the Image Table. First, select the images in the list.



Duplicate Images - Copies the currently selected entries and adds them as new items to the Image Table.

#5

- Shows the total number of images in the Image Table. An empty list shows **# 0**



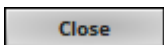
Swap Position - Swaps the position of images in the Image Table when several images are selected first.



Position Up - Changes the order, and positions currently selected images one step higher up in the list.



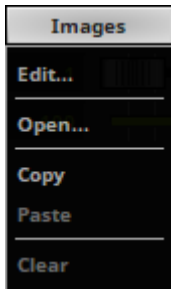
Position Down - Changes the order, and positions currently selected images one step lower down in the list.



Close - Closes the Image Table window.

Context Menu

- **Right Mouse Click** - You can call up the context menu by performing a right mouse click on **Images**
- A small window will be shown.



You can quickly perform the following actions:

- **Edit...** - Opens the Image Table [in the same way you can open the window by clicking on **Images** with the left mouse button].
- **Open...** - Loads images or a previously saved Image Table from an external file [of the file type *.mitz or *.mitx].
A new window opens for you to select the file on your harddisk.
- **Copy** - Copies the current images into the clipboard as a duplicate.
- **Paste** - Applies all images from the clipboard to the currently focused Image Table [**Images**].
- **Clear** - Removes all images from the Image Table.

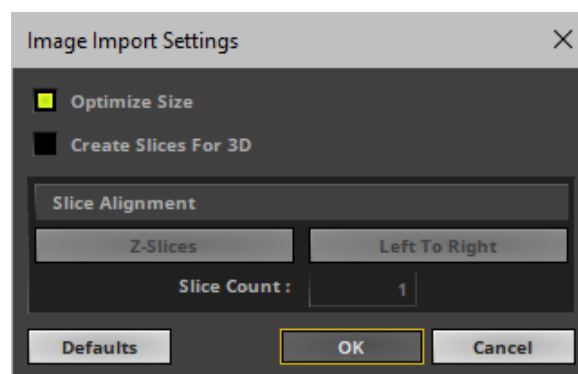
Drag And Drop [Copy And Paste]

- **Left Mouse Click And Hold** - You can perform a Copy and Paste with the mouse.
Click with the left mouse button on the **Images** button and hold for 3 seconds. A small + appears. Now, continue to hold and drag the mouse to another image control [of a different layer] and release the mouse to instantly apply the images.
Use the keyboard button **Ctrl** in addition to remove the wait time to immediately perform the drag and drop.
- **File Drag And Drop** - You can select a MADRIX 5 Image Table file [of the file type *.mitz or *.mitx] in Windows and drag it to a color control of your choice in MADRIX 5 in order to load it in MADRIX 5.

Image Import Settings

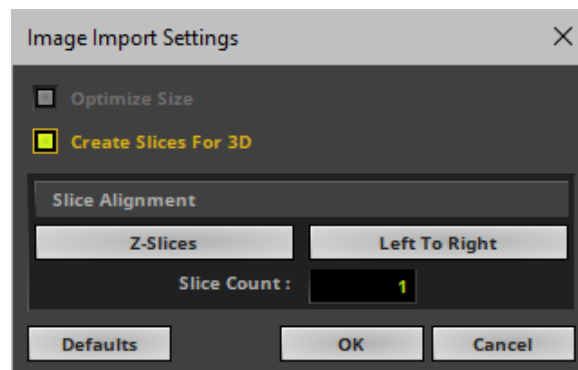
After opening an image or loading it into the Image Table, please use the following options to finally import your images into MADRIX 5. [When importing an image, a copy will be created and used within MADRIX 5. Your original content will not be changed.]

Optimize Size



- **Optimize Size** - When activated, MADRIX 5 automatically optimizes the file size of images loaded into MADRIX 5. If the image has a larger pixel resolution than your virtual LED matrix in MADRIX 5, the software automatically reduces the pixel resolution of the image to fit the virtual LED matrix. Thereby the file size is reduced, which in turn reduces the required space in the local memory of your computer [RAM]. This increases performance and stability of the software and computer. It is recommended to activate Optimize. Learn more [Important Notes](#)
- Confirm with **OK**, restore the default settings via **Defaults**, or abort the process using **Cancel**

Create Slices For 3D



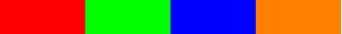
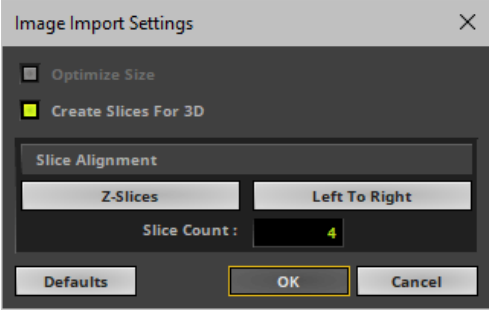
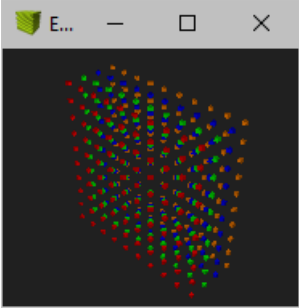

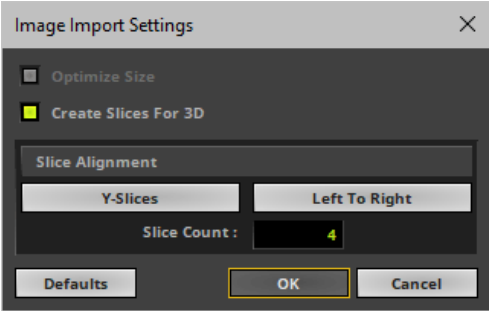
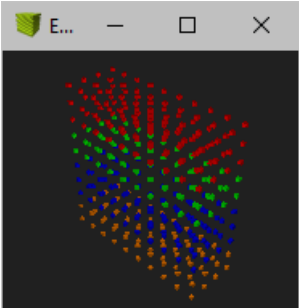
- **Create Slices For 3D** - Is a way to bring 2D content to 3D LED matrices by slicing the image into different parts and applying each slice to X-levels, Y-levels, or Z-levels as required. [You will get the most benefit out of this feature when using images that are made up of different parts and are especially created for this area of application.]


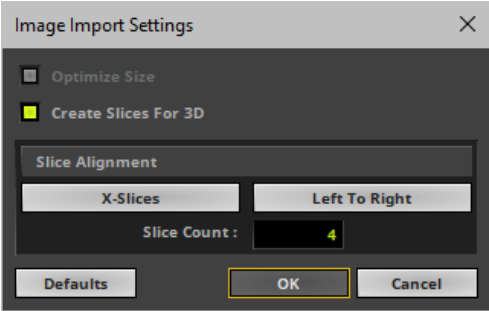
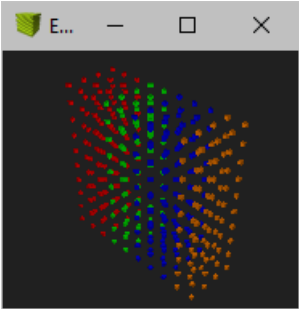

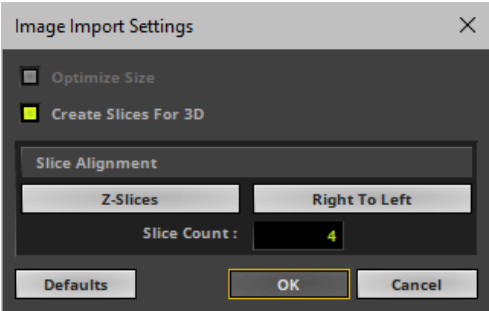
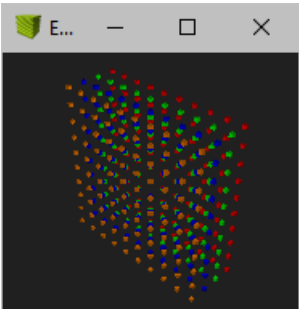

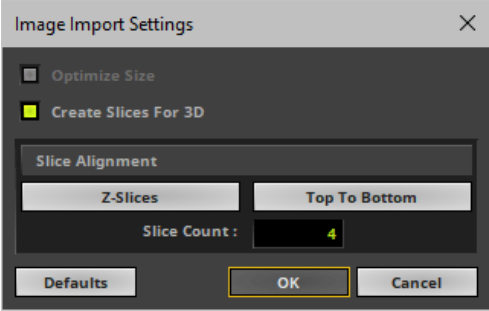
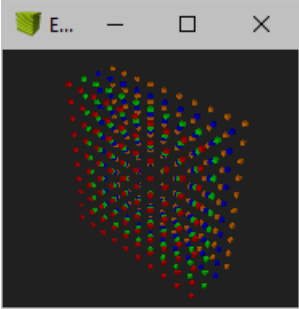
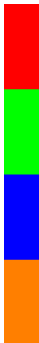
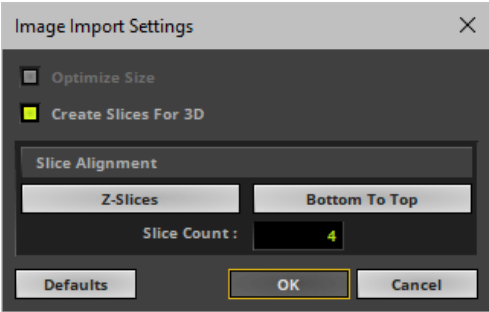
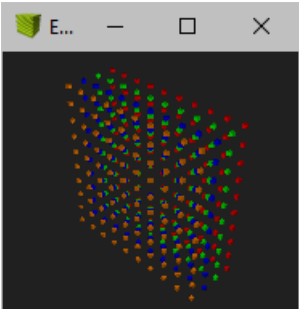
Example: Your virtual LED matrix is 10 x 8 x 4. Now, you have prepared an image and want to display it not only on the first Z-level or use Extrude, but on all 4 Z-levels. Then, you would let MADRIX 5 create 4 slices.

- **Slice Type** - Defines the 3D orientation of how slices are applied to your LED matrix.
 - **X-Slices** - Uses slices to fill the LED matrix; always starting from left to right.
 - **Y-Slices** - Uses slices to fill the LED matrix; always starting from top to bottom.
 - **Z-Slices** - Uses slices to fill the LED matrix; always starting from front to back.
- **Slice Order** - Defines how your source image is processed.
 - **Left To Right** - MADRIX 5 slices the image starting left.
[The first, left slice will then be applied to the left for X-Slices, to the top for Y-Slices, and to the front for Z-Slices.]
 - **Right To Left** - MADRIX 5 slices the image starting right.
[The first, right slice will then be applied to the left for X-Slices, to the top for Y-Slices, and to the front for Z-Slices.]
 - **Top To Bottom** - MADRIX 5 slices the image starting top.
[The first, top slice will then be applied to the left for X-Slices, to the top for Y-Slices, and to the front for Z-Slices.]
 - **Bottom To Top** - MADRIX 5 slices the image starting bottom.
[The first, bottom slice will then be applied to the left for X-Slices, to the top for Y-Slices, and to the front for Z-

Slices.]

- **Slice Count** - Defines in how many slices an image is divided. A value of 1 means that no slices are created and that the image is used as one. [A value of 4, for example, will create 4 slices that each make up 25% of the source image.]
- The settings with the highest performance are **Z-Slices** and **Top To Bottom**
- Confirm with **OK**, restore the default settings via **Defaults**, or abort the process using **Cancel**

Original 2D Image	Image Import Settings	MADRIX 5 3D Output
	<div></div> <p>Z-Slices - Left To Right</p>	
	<div></div> <p>Y-Slices - Left To Right</p>	

	<div></div> <p>X-Slices - Left To Right</p>	
	<div></div> <p>Z-Slices - Right To Left</p>	
	<div></div> <p>Z-Slices - Top To Bottom</p>	
	<div></div> <p>Z-Slices - Bottom To Top</p>	

Using Images In Your MADRIX 5 Setup [Referenced Files]

- When you load images into MADRIX 5, the software will reference these files on your harddisk/storage system.

- **MADRIX 5 will not save or store the images in your MADRIX 5 Setup File!**

- In order to access the files, MADRIX 5 reads the images from the storage system when needed by using the original folder location [the directory the images were located at the time when they were loaded into the software].
- In order to play the Setup File on a different computer, you will need to copy your images, too. Make sure that they are placed in the same folder location!

Loading A MADRIX 3 Setup File

Please see the following chapter to learn more about using images when loading a MADRIX 3 Setup File: [»Update From MADRIX 2 Or 3 To MADRIX 5](#)

Important Notes

- **Please do use pictures with a pixel resolution according to the size of your LED matrix!**
- **It is not useful to use a resolution of 3000x2000 pixels if your LED matrix has a size of 192x128, for example. Please resize your pictures before using them in MADRIX 5. Please do also use 72 DPI. Both means will improve performance considerably. At the same time, you will avoid that the RAM of your computer will overload.**
- **Optimize Size - When activated, MADRIX 5 automatically optimizes the file size of images loaded into MADRIX 5. If the image has a larger pixel resolution than your virtual LED matrix in MADRIX 5, the software automatically reduces the pixel resolution of the image to fit the virtual LED matrix. Thereby the file size is reduced, which in turn reduces the required space in the local**

memory of your computer [RAM]. This increases performance and stability of the software and computer.

8.1.23 SCE Level Color Simulator

This topic includes:

- [Introduction](#)
- [Overview](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

Introduction

SCE Level Color Simulator simulates audio input and displays the loudness of the input with the help of color. The more input, the brighter the effect.

Overview



Default Settings



Customized Example

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

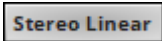
Effect Settings

This MADRIX Effect uses the following, individual controls:

- Colors** - Opens the Color Gradient to specify the colors. The default color is White, Black.

Learn more » [\[Global\] Colors And Intensity](#)

- Fade Out / In** - Defines how fast MADRIX 5 displays color. You can specify the fade-in speed as well as the fade-out speed. The default values are 120 and 120. Valid values range from 1 to 3000.

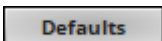
A rectangular button with a light gray background and a thin black border. The text "Stereo Linear" is centered in a dark gray font.

Mode - Allows you to choose the mode [***Mono***, ***Stereo Linear***, ***Stereo Radial***]. This heavily influences the visual outcome of the effect.



Direction - Allows you to choose the direction. This includes all directions for 2D and 3D mode. The default setting is Right. Learn more »[Using Directions](#)

Restoring The Default Settings

A rectangular button with a light gray background and a thin black border. The text "Defaults" is centered in a dark gray font.

Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.1.24 SCE Metaballs

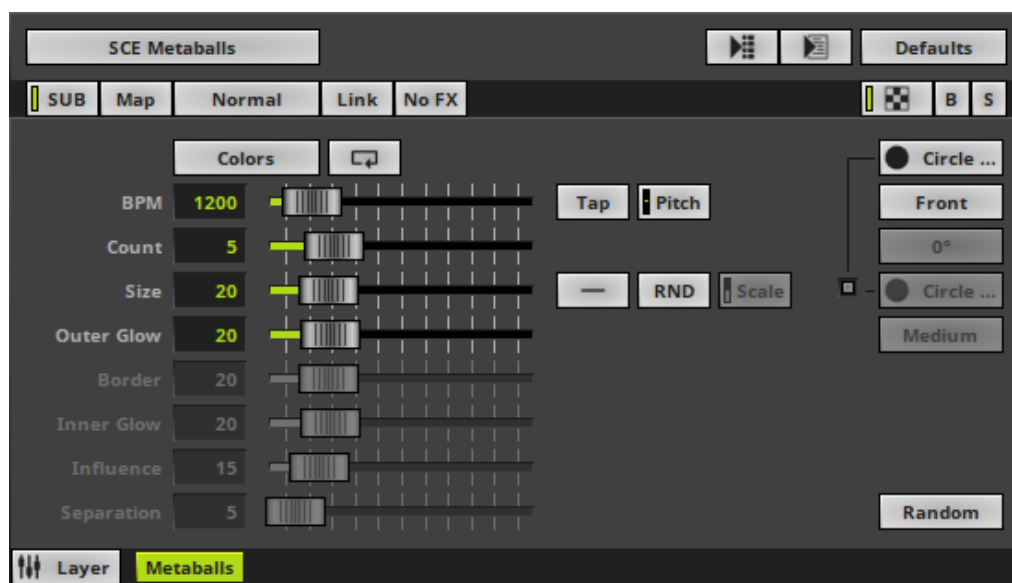
This topic includes:

- [Introduction](#)
- [Overview](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

Introduction

SCE Metaballs creates objects that morph into each other creating a fluent animation.

Overview



Default Settings



Customized Example

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX Effect uses the following, individual controls:

- **Colors** - Opens the Color Table to specify the colors. The default color is White.
Learn more » [\[Global\] Colors And Intensity](#)
- **BPM** - Defines the speed. The default value is 1200. Valid values range from 0 to 9999.
Learn more » [Using BPM Control](#)
- **Count** - Defines the number of objects. The default value is 5. Valid values range from 1 to 20.
- **Size** - Defines the size of objects [in %]. The default value is 20. Valid values range from 1 to 100.
- **Outer Glow** - Defines the outer shimmer of objects. The default value is 20. Valid values range from 1 to 100.
- **Inner Glow** - Defines the inner gleam of objects which are not filled. The default value is 20. Valid values range from 1 to 100.
- **Border** - Is only available for 2D outlined shapes or 3D unfilled shapes. Defines how thick the outer line [border] of objects is. The default value is 20. Valid values range from 1 to 100.
- **Influence** - Is only available for Motion Type **Swarm**. Defines a radius in which objects influence other objects [in %]. The higher the value, the more visible the swarm behavior. The default value is 15. Valid values range from 0 to 100.
- **Separation** - Is only available for Motion Type **Swarm**. Defines how close objects can be to each other [in %]. The higher the value, the more space will be between objects. The default value is 5. Valid values range from 0 to 100.



Distribution - Allows you to choose a certain Distribution Mode for the specific parameter. Often, you can then define a minimum value and a maximum value.

Uniform - Each object has the same size. This is the default setting.

Linear - A linear distribution is used to increase the size regularly.

Quadratic - The majority of objects will be smaller than the rest.

SQRT - Using a square root function the majority of objects will be larger.

Cubic - Uses a cubic distribution with mixed sizes.

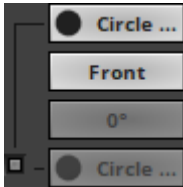
Random - Sizes will be generated randomly.





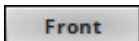
RND - Generates random object sizes each time. This automatically activates Random Distribution Mode.

Scale - Is only available for Random Distribution Mode. It allows you to generally increase or decrease the size of objects.

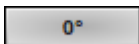


Shape - Allows you to choose a specific shape for objects. A certain Size is required before a shape becomes visible. The default setting is Circle Filled.

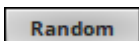
- Set up at least **2 colors** if you want to define a second shape. Both shapes and both colors will then be morphed together. By default, the second shape equals the first shape.
- Deselect **Auto Adjustment [Color Mixing Link]** to set up a different, second shape.
- When using at least 2 colors or using the Color Table Random Mode [RND], you can set up the **Color Mixing Sharpness**. It allows you to choose how intensely the colors are mixed [**Very Blurry, Blurry, Slightly Blurry, Medium, Slightly Clear, Clear, or Very Clear**]. The default setting is Medium.



Shape Alignment - Allows you to choose to which side objects are aligned to. This is mainly relevant for 3D. The default setting is Front.



Shape Rotation Type - Is only available for specific Shapes. Defines the angle in which objects are rotated [**0°, 90°, 180°, 270°, Random**].



Motion Type - Choose how objects move and behave. The default setting is Random.

Random - Objects move randomly and independently of each other.

Swarm - Objects react according to a swarm intelligence and thus imitate their movement behavior.

Restoring The Default Settings

Defaults

Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.1.25 SCE Morse Code

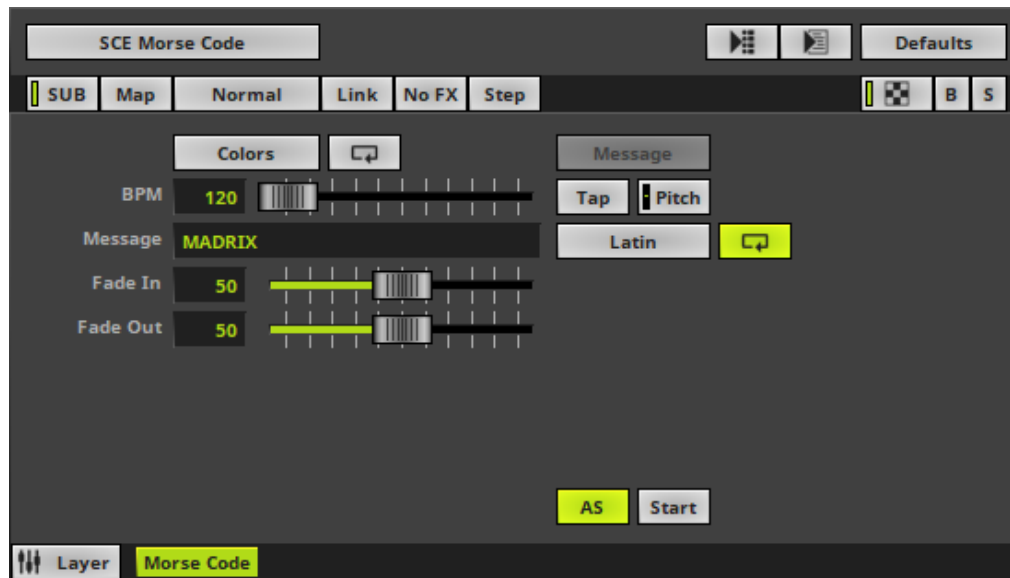
This topic includes:

- [Introduction](#)
- [Overview](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

Introduction

SCE Morse Code displays words and characters in visual signals with the help of the morse-code alphabet.

Overview



Default Settings



Customized Example

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX 5 Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX 5 Effect uses the following, individual controls:

- Colors** - Opens the Color Table to specify the colors. The default color is White.
Learn more » [\[Global\] Colors And Intensity](#)
- BPM** - Defines the speed. The default value is 120. Valid values range from 0 to 9999.
- Every signal is displayed a certain number of beats.

- Short: 1 Beat / Long: 2 Beats / Pause Between Characters: 1 Beat / Pause Between Words: 3 Beats
- 1 Beat At 60 BPM = 1 Second / 1 Beat At 120 BPM = 1/2 Second / Etc.
- Learn more »[Using BPM Control](#)

- **Message** - Enter any text that should be displayed as morse code. The default value is MADRIX.
- **Fade In** - Defines if the color is immediately displayed or faded in [in %]. The default value is 50. Valid values range from 0 to 100.
- **Fade Out** - Defines if the color is immediately cleared or faded out [in %]. The default value is 50. Valid values range from 0 to 100.

Message

Color-Change Indicator - Is only available when having set up multiple colors in the Color Table.

Defines the indicator after which the color is changed when having set up multiple colors in the Color Table. Choose from **None**, **Signal** [a character often consist of several signals], **Character** [individual characters make up entire words or are single symbols], **Word** [a message may consist of several words], **Message** [after the text has been fully displayed once]. The default value is Message.

Latin

Morse-Code Alphabet - Defines in which morse-code alphabet the message should be displayed. Choose from: **Arabic**, **Chinese**, **Cyrillic**, **Greek**, **Hebrew**, **Latin**, **Persian**. The default value is Latin.



Loop - Repeats the message endlessly, i.e. the effect is restarted once the end of the message has been reached. It is activated by default.



Autostart - If activated, the effect will automatically start when the corresponding Storage Place is selected. It is activated by default.

Start

Start - Force-starts the effect to start again from the beginning.

Restoring The Default Settings

Defaults

Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX 5 Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.1.26 SCE Noise

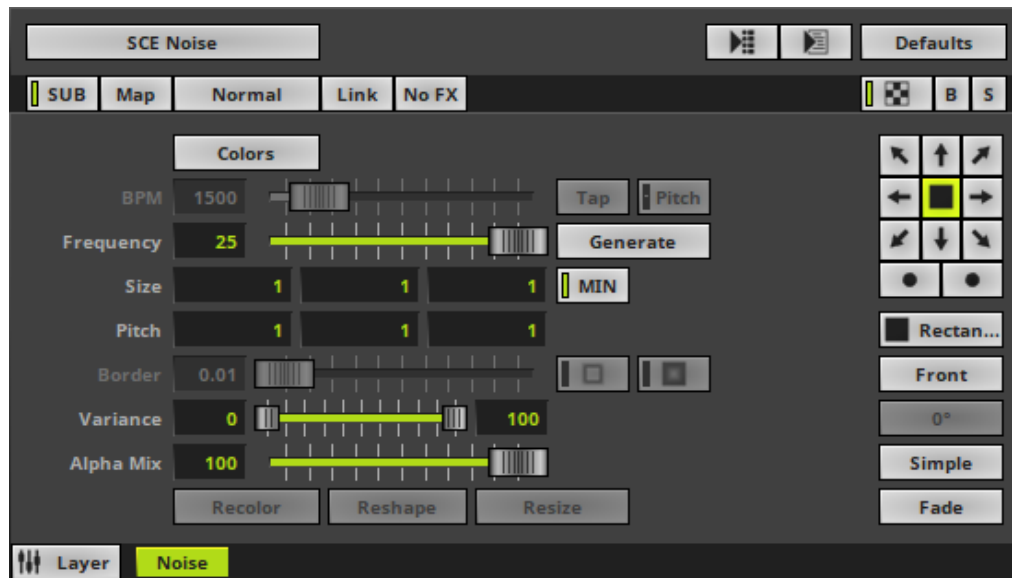
This topic includes:

- [Introduction](#)
- [Overview](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

Introduction

SCE Noise displays by default objects with different shades to create an effect that is often referred to as visual noise.

Overview



Default Settings



Customized Example

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX 5 Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX 5 Effect uses the following, individual controls:

- Colors** - Opens the Color Table to specify the colors. The default color is White.

Learn more » [\[Global\] Colors And Intensity](#)

- **BPM** - Defines the speed [when using a direction/movement]. The default value is 1500. Valid values range from 0 to 9999.
Learn more »[Using BPM Control](#)
- **Frequency** - Defines the rate at which new visuals are created [in Hz]. The default value is 25. Valid values range from 0 to 50.
- **Size** - Defines the size of objects [Width, Height, Depth] [in % of the Matrix Size]. The default values are 1, 1, 1. Valid values range from 0.01 to 1000.
- **Pitch** - Defines the distance between objects for all 3 axes [in % of the Matrix Size]. The default values are 1, 1, 1. Valid values range from 0.01 to 100.
- **Border** - Is only available for 2D outlined shapes or 3D unfilled shapes. Defines how thick the outer line [border] of objects is. The default value is 0.01. Valid values range from 0.01 to 100.
- **Variance** - Refers to the colors that are specified in the Color Table. Defines the minimum and maximum color variability of colors and objects, i.e. shades [in %]. The default values are 0 and 100. Valid values range from 0 to 100.
- **Alpha Mix** - Defines the upper limit of how much alpha is added to each object [in %]. Alpha Mix will be visible when using additional Layers. The default value is 100. Valid values range from 0 to 100.

Recolor

Recolor - Is only available when setting up at least 2 colors in the Color Table. Assigns a new color to an object every time the effect is generated anew; either automatically via the Frequency or manually via Generate.

Reshape

Reshape - Is only available when using the Shape **Random** or Shape Rotation Type **Random** in combination with asymmetrical shapes. Assigns a new, random Shape to objects every time the effect is generated anew; either automatically via the Frequency or manually via Generate.

Resize

Resize - Is only available when setting up a Minimum Size that is lower than 100 [0 to 99]. Assigns a new, random Size to objects every time the effect is generated anew; either automatically via the Frequency or manually via Generate.

Generate

Generate - Creates the effect anew to produce different visuals. [This is mainly useful when setting a Frequency of 0.]



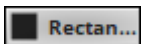
Minimum Size - Refers to Size. Defines the minimum size of objects [in %]. The default setting is 100. Valid values range from 1 to 100.



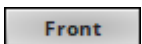
Outer Glow / Inner Glow - Is only available for specific Shapes. Defines the outer shimmer or inner gleam of objects. The default settings are 0.00. Valid values range from 0.01 to 100.



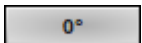
Direction - Allows you to choose the direction. This includes all directions for 2D and 3D mode. The default setting is None. Learn more »[Using Directions](#)



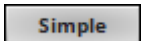
Shape - Allows you to choose a specific shape for objects. A certain Size is required before a shape becomes visible. The default setting is Rectangle Filled.



Shape Alignment - Allows you to choose to which side objects are aligned to. This is mainly relevant for 3D. The default setting is Front.



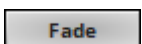
Shape Rotation Type - Is only available for specific Shapes. Defines the angle in which objects are rotated [**0°**, **90°**, **180°**, **270°**, **Random**].



Rendering Mode - Defines how objects are rendered. Each mode may enable additional settings [such as additional Shapes]. Choose from 2 different modes. The default setting is Simple.

- **Simple** - Prioritizes processing speed over rendering possibilities.

- **Extended** - Prioritizes rendering possibilities over over processing speed. This mode may require more performance.



Fade - Activates or deactivates fading between colors.

Restoring The Default Settings

Defaults

Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX 5 Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.1.27 SCE Plasma

This topic includes:

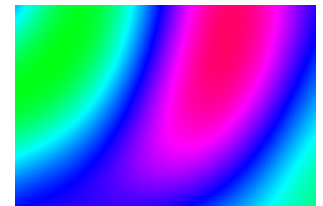
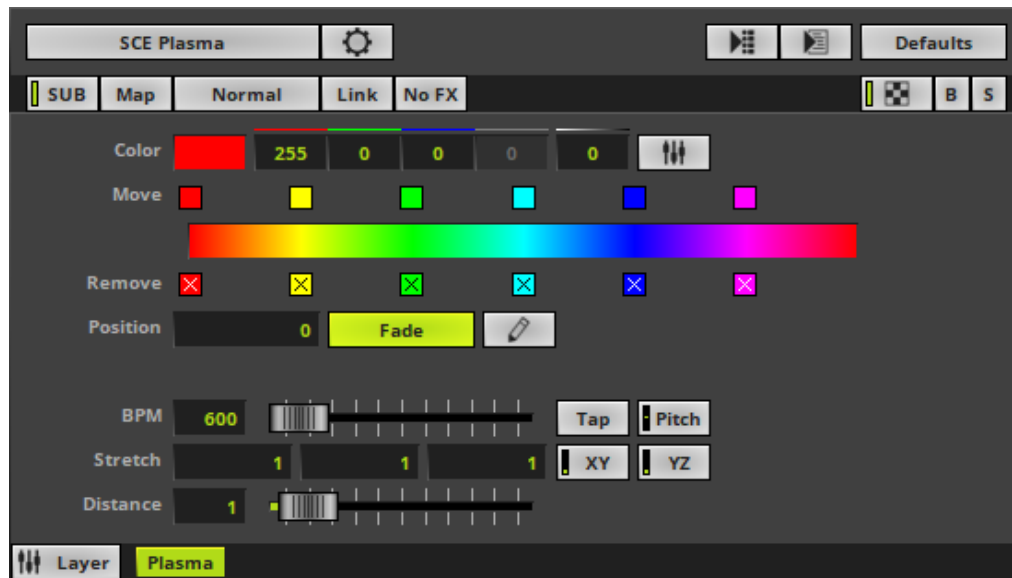
- [Introduction](#)
- [Overview](#)
- [Effect Options](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

Introduction

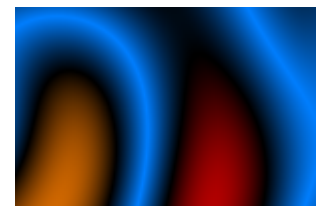
SCE Plasma creates a liquid and moving color gradient.

This MADRIX Effect creates a completely seamless loop.

Overview



Default Settings



Customized Example

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.

Learn more » [Effect Options](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX 5 Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX 5 Effect uses the following, individual controls:

- **Color** - Defines the color via a Color Gradient and various options.
Learn more » [\[Global\] Colors And Intensity](#)
- **BPM** - Defines the speed. The default value is 600. Valid values range from 0 to 9999.
Learn more » [Using BPM Control](#)
- **Stretch** - Defines the stretch or compression factor at which the visuals are displayed [X, Y, Z, XY, YZ]. The default values are 1, 1, 1, 1.00, 1.00. Valid values range from 0.01 to 10.
- **Distance** - Defines how much of the visuals are displayed; like a zoom level. The default value is 1. Valid values range from 0.01 to 10.

Restoring The Default Settings

Defaults

Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX 5 Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.1.28 SCE Pulse / Stroboscope

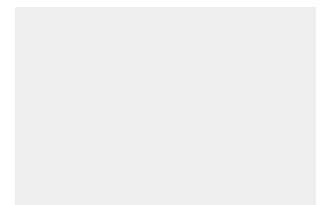
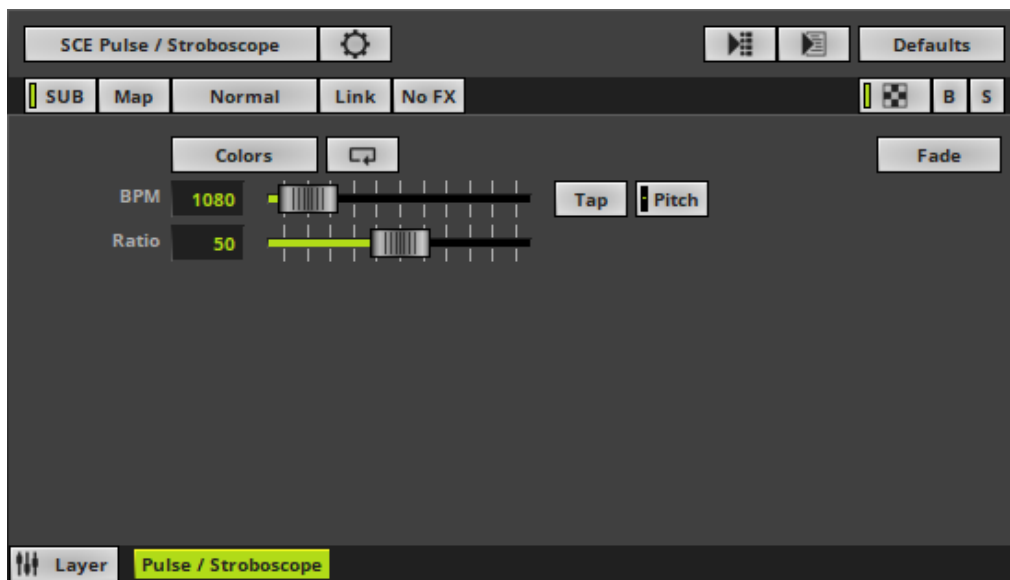
This topic includes:

- [Introduction](#)
- [Overview](#)
- [Effect Options](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

Introduction

SCE Pulse / Stroboscope produces a stroboscope or pulsating effect.

Overview



Default Settings



Customized Example

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.

Learn more » [Effect Options](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX 5 Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX 5 Effect uses the following, individual controls:

- **Colors** - Opens the Color Table to specify the colors. The default color is White.
Learn more » [\[Global\] Colors And Intensity](#)
- **BPM** - Defines the speed. The default value is 1080. Valid values range from 0 to 9999.
Learn more » [Using BPM Control](#)
- **Ratio** - Defines the ratio and relation between Fade In and Fade Out [in %]. The default value is 50. Valid values range from 0 to 100.
 - A Ratio of 50 means that Fade In and Fade Out have the same duration.
 - A Ratio of 0 means that there is a Fade In, but no Fade Out.
 - A Ratio of 100 means that there is no Fade In, but a Fade Out.



Fade - Activates or deactivates fading between colors.

- When activated, the effect pulses.
- When deactivated, the effect strobos.

Restoring The Default Settings

Defaults

Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX 5 Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.1.29 SCE Rotating Shapes

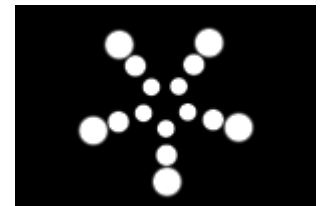
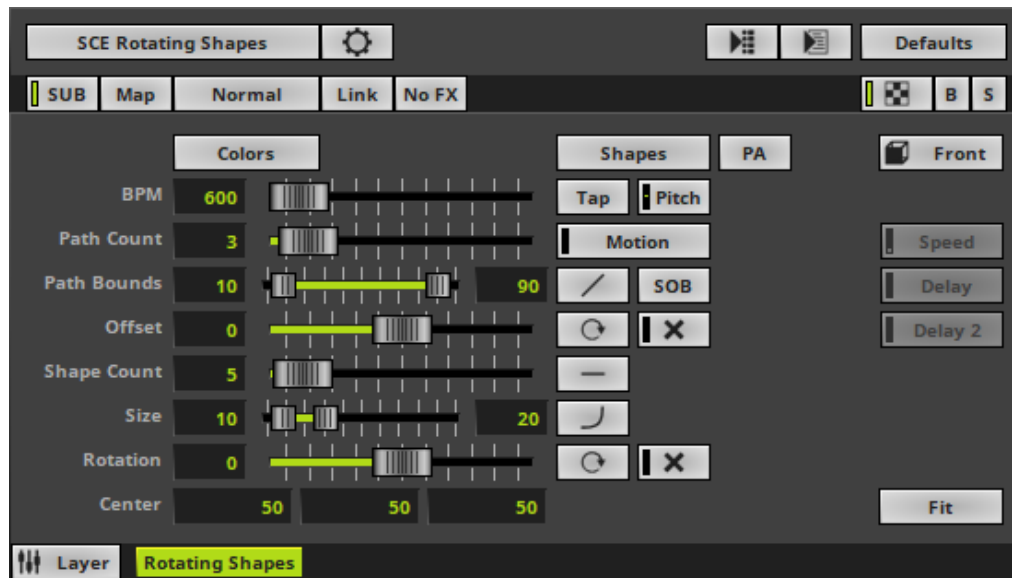
This topic includes:

- [Introduction](#)
- [Overview](#)
- [Effect Options](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

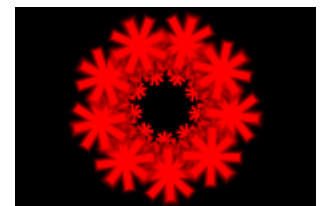
Introduction

SCE Rotating Shapes displays various shapes that circle around a centric point.

Overview



Default Settings



Customized Example

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.

Learn more » [Effect Options](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX 5 Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

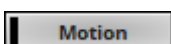
Effect Settings

This MADRIX 5 Effect uses the following, individual controls:

- **Colors** - Opens the Color Table to specify the colors. The default color is White.
Learn more » [\[Global\] Colors And Intensity](#)
- **Shapes** - Opens the Shape Table to specify the shapes. The default color is Circle Filled.
Learn more » [Using Shapes \[Shape Table\]](#)
- **BPM** - Defines the speed. The default value is 600. Valid values range from 0 to 9999.
Learn more » [Using BPM Control](#)
- **Path Count** - Defines the number of concentric paths on which shapes circle around the center. The default value is 3. Valid values range from 1 to 20.
- **Path Bounds** - Defines the inner and outer limits of where paths can run along on the virtual LED matrix. The default values are 10 and 90. Valid values range from 0 to 10000.
- **Offset** - Defines a location deviation of shapes across different paths. The default value is 0. Valid values range from -10000 to 10000.
- **Shape Count** - Defines the number of shapes [multiplied by the Patch Count]. The default value is 1. Valid values range from 1 to 50.
- **Size** - Defines the minimum and maximum size of shapes. Outer shapes are large than inner shapes. The default values are 10 and 20. Valid values range from 0 to 1000.
- **Rotation** - Defines the number of path on which shapes circle around the center. The default value is 0. Valid values range from -3600 to 3600.
- **Center** - Defines the position of the center in **X**, **Y**, and **Z** [in %]. The default values are 50, 50, 50. Valid values range from -1000 to 1000.



Path Alignment - Lets shapes rotate along the path instead of the rotation against the horizon.



Motion - Activates movement across the different paths defined by the Path Count. The default setting is 0. Valid values range from -100 to 100.



Distribution - Allows you to choose a certain Distribution Mode for the specific parameter. Often, you can then define a minimum value and a maximum value.

Linear - A linear distribution is used to increase the size regularly.

Quadratic - The majority of objects will be smaller than the rest.

SQRT - Using a square root function the majority of objects will be larger.

Cubic - Uses a cubic distribution with mixed sizes.



Shape On Bounds - Locats shapes on each Patch Bound instead of placing them towards the Paths Bounds.



Offset Animation - Animates the shapes and rotates them additionally with the offset against each path.



Path Cross Width - Lets shapes move against each other on the different paths. The default setting is 0. Valid values range from 0 to 20.



Distribution - Allows you to choose a certain Distribution Mode for the specific parameter. Often, you can then define a minimum value and a maximum value.

Uniform - Each path has the same distribution.

Linear - A linear distribution is used to increase the parameter regularly starting from the inside.

Quadratic - The parameter is more prominent on the outer paths.

SQRT - Using a square root function the parameter is more prominent on the outer paths.

Cubic - Uses a cubic distribution with a mixed distribution.

Inverted Linear - A linear distribution is used to decrease the parameter regularly starting from the inside.

Triangle - The majority of objects will be on the middle paths.

Inverted Quadratic - The parameter is more prominent on the inner paths.

Inverted SQRT - Using a square root function the majority of objects will be on the inner paths.

Inverted Cubic - Uses a cubic distribution with a mixed distribution.



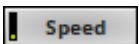
Rotation Animation - Animates the shapes and rotates them individually and permanently.



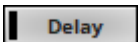
Rotation Cross Width - Lets shapes rotate against each other on the different paths. The default setting is 0. Valid values range from 0 to 20.



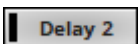
Look-At Type - Allows you to choose from which side you want to look at the effect. This is mainly relevant for 3D. The default setting is Front. Learn more »[Using Directions](#)



Speed - Is only available for specific shapes [Implode, Explode, Pulse]. Defines how fast the shapes implode, explode, or pulse. The default setting is 1. Valid values range from 0 to 10.



Delay - Is only available for specific shapes [Implode, Explode, Pulse]. Adds a delay to the shapes and lets them implode, explode, or pulse across the different paths. The default setting is 0. Valid values range from -100 to 100.



Delay 2 - Is only available for specific shapes [Implode, Explode, Pulse]. Adds a delay to the shapes and lets them implode, explode, or pulse along each path. The default setting is 0. Valid values range from -100 to 100.



Display Mode - Defines how the effect is shown. The default setting is Fit.

Clip - The maximum size of the effect is determined by the largest side of the virtual LED matrix.

Fit - The maximum size of the effect is determined by the smallest side of the virtual LED matrix.

Stretch - The effect is stretched to be fully shown on the virtual LED matrix.

Restoring The Default Settings

Defaults

Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX 5 Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.1.30 SCE Screen Capture

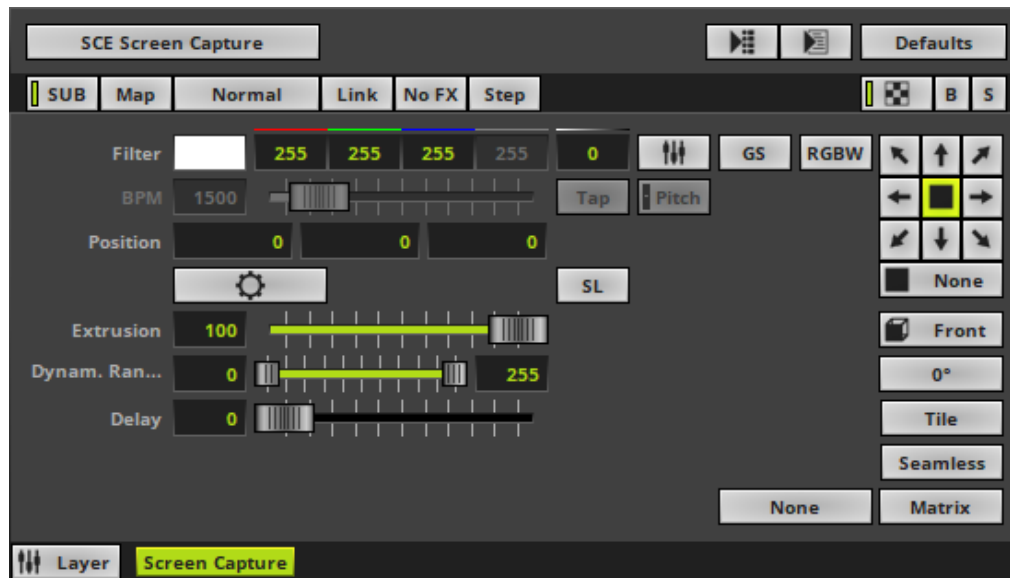
This topic includes:

- [Introduction](#)
- [Overview](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)
- [Configuration](#)
- [Slices](#)

Introduction

SCE Screen Capture allows you to use any area of your Windows Desktop / Monitor / Screen and capture its content in order to directly bring it into MADRIX 5. In this way, you can integrate any other software and their output into MADRIX 5 [such as visualizers, presentations, and more]. Basically anything that you can show on your monitor can also be brought into MADRIX 5.

Overview



Default Settings



Customized Example

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX 5 Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX 5 Effect uses the following, individual controls:

- Filter** - Defines a filter color. The default color is White.
 - GS** - Activates grayscale mode to show the input only in gray shades. The Filter is independent of this mode.
 - RGBW** - Converts the input into RGBW. This is useful when using RGBW fixtures to convert from the standard RGB color values of the input. If the option is disabled when using RGBW fixtures, the input will appear darker

since the White channel is not used. The W color channel of the Filter only works if RGBW is activated.

Learn more » [\[Global\] Colors And Intensity](#)

- **BPM** - Defines the speed [when using a direction/movement]. The default value is 1500. Valid values range from 0 to 9999.

Learn more » [Using BPM Control](#)

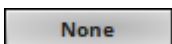
- **Position** - Defines the position of the object in **X**, **Y**, and **Z** [in %]. The default values are 0, 0, 0. Valid values range from -1000 to 1000.
- **Extrusion** - Adds depth to the input; i.e. duplicates the input image [in % of the Matrix Size]. This is mainly relevant for 3D. The default value is 100. Valid values range from 0.01 to 100.
- **Dynam. Range** - Defines the dynamic range of the output. Valid values range from 0 to 255.
 - The default value range is 0 to 255, which means that all available color values of the input will be displayed.
 - Adjusting the left value cuts off lower color values and defines a new black level; therefore eliminating unwanted [gray] noise and achieving a uniform black.
[Setting the left value to 255 will render the input completely black.]
 - Lowering the right value highlights the colors; therefore achieving purer color values.
[Setting the right value to 0 will render black/gray values completely white.]
- **Delay** - Adds an output delay to the captured input [in milliseconds]. The default value is 0. Valid values range from 0 to 1000.



Configuration - Allows you to configure the effect. It is highly recommended to adjust the settings. Learn more [Configuration](#)



Slices - Is a way to bring 2D content to 3D LED matrices by slicing the content into different parts and applying each slice to X-levels, Y-levels, or Z-levels as required. Learn more [Slices](#)

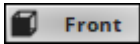


Filtering - Defines how input is processed and displayed. Mainly affects the visual outcome when the input is scaled up or down [e.g., when choosing a different mode for Stretching / Aspect Ratio]. Choose from 2 different modes. The default setting is None.

- **None** - Prioritizes processing speed over image quality.
- **Linear** - Prioritizes image quality over processing speed. This mode may affect performance.



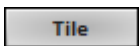
Direction - Allows you to choose the direction. This includes all directions for 2D and 3D mode. The default setting is None.



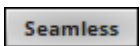
Look-At Type - Allows you to choose from which side you want to look at the effect. This is mainly relevant for 3D. The default setting is Front. Learn more »[Using Directions](#)



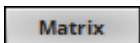
Rotation - Allows you to rotate the input [**0°**, **90°**, **180°**, **270°**]. The default setting is 0°.



Tile - Allows you to tile and duplicate the input and thereby generating patterns.



Seamless - Activates or deactivates a continuous stream of the input image. MADRIX 5 will automatically display the input image again to create a continuous display.



Stretching / Aspect Ratio - Allows you to choose the aspect ratio of the input. The default setting is Matrix.

None - Disables stretching.

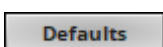
Matrix - Stretches to the current aspect ratio of the virtual LED matrix.

Original - Stretches to the original aspect ratio of the source.

4:3 - Applies a 4:3 aspect ratio.

16:9 - Applies a 16:9 aspect ratio.

Restoring The Default Settings



Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.

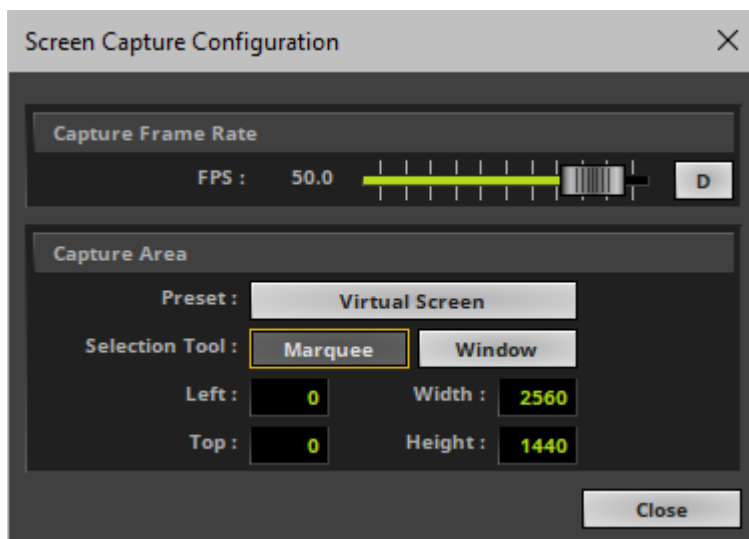
- This does not include the MADRIX 5 Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

Configuration

Overview



- In order to use this MADRIX 5 Effect, click **Configuration** first.
- A new window opens.



- Configure the **Screen Capture Configuration** as required and as explained below.

Capture Frame Rate

- **FPS** - Defines the frame rate with which MADRIX 5 captures the content.
- **D** - Restores the default settings. The default value is 50.0 FPS.

Capture Area

These settings define the screen area that is used for the screen capturing.

Preset

- Allows you to choose a preset for your capture area:

Custom Size - Defines a custom area as the capture area.

- Is automatically selected if you use a **Selection Tool** or define a **Custom Area**.

Monitor - Defines a complete output of one monitor as the capture area. The available selection choices depend on the configuration of monitors in Windows [e.g., if one or more monitors are installed].

Virtual Screen - Defines the complete screen output of Windows as the capture area. This often includes all monitors, for example.

Selection Tool

- Allows you to define a Custom Area using one of two tools:



Marquee - Allows you to define a capture area via your mouse and keyboard.

- Click Marquee and an overlay will be shown.
- You can freely move the overlay around in order to position it correctly.
- To do so, use the mouse [left mouse click and hold and drag the overlay window].
- Or use the arrow keys on your keyboard [Left, Right, Up, Down].
- You can freely change the size of this overlay in order to set up the correct size.
- To do so, use the mouse and drag the edges of the overlay.
- Or use the following keyboard shortcuts:
- Shift + Arrow Up / Arrow Down - Reduces the Height.

- Ctrl + Arrow Up / Arrow Down - Increases the Height.
- Shift + Arrow Left / Arrow Right - Reduces the Width.
- Ctrl + Arrow Left / Arrow Right - Increases the Width.
- The upper left coordinates of the overlay [Left, Top] are always displayed in the upper left corner.
- The lower right coordinates of the overlay [Right, Bottom] are always displayed in the lower right corner.
- The Width and the Height of the overlay are always displayed in the center.
- **Escape / Enter / Left Mouse Double-Click** - Confirms your selection.

Window - Allows you to quickly choose a specific window to use as capture area.

- Click Window and an overlay will be shown that covers complete windows.
- You can freely choose which window should be used as screen capture area.
- Move the mouse to select the window via the overlay.
- Use Ctrl + left mouse click in order to select specific parts of a window [e.g., to select only a specific area of an application].

- **Escape / Enter / Left Mouse Double-Click** - Confirms your selection.

Custom Area

- Define an individual screen capture area by using the four input fields.

Left and **Top** - Define the start coordinates in a coordinate system that starts with 0,0 in the top left corner.

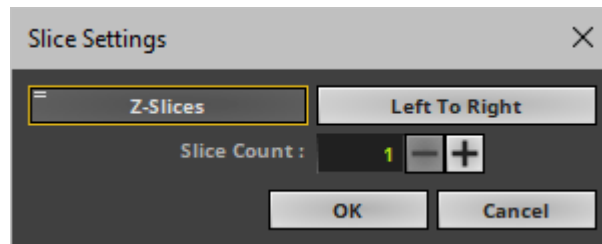
Width - Defines the total horizontal size of the screen capture area in X.

Height - Defines the total vertical size of the screen capture area in Y.

Slices



SL - Calls up **Slice Settings**



- **Slice Settings** - Is a way to bring 2D content to 3D LED matrices by slicing the content into different parts and applying each slice to X-levels, Y-levels, or Z-levels as required. [You will get the most benefit out of this feature when using content that are made up of different parts and are especially created for this area of application.]

Example: Your virtual LED matrix is 10 x 8 x 4. Now, you have prepared a video feed and want to display it not only on the first Z-level or use Extrude, but on all 4 Z-levels. Then, you would let MADRIX 5 create 4 slices.

- **Slice Type** - Defines the 3D orientation of how slices are applied to your LED matrix.
 - **X-Slices** - Uses slices to fill the LED matrix; always starting from left to right.
 - **Y-Slices** - Uses slices to fill the LED matrix; always starting from top to bottom.
 - **Z-Slices** - Uses slices to fill the LED matrix; always starting from front to back.
- **Slice Order** - Defines how your source content is processed.
 - **Left To Right** - MADRIX 5 slices the content starting left.
[The first, left slice will then be applied to the left for X-Slices, to the top for Y-Slices, and to the front for Z-Slices.]
 - **Right To Left** - MADRIX 5 slices the content starting right.
[The first, right slice will then be applied to the left for X-Slices, to the top for Y-Slices, and to the front for Z-Slices.]
 - **Top To Bottom** - MADRIX 5 slices the content starting top.
[The first, top slice will then be applied to the left for X-Slices, to the top for Y-Slices, and to the front for Z-Slices.]
 - **Bottom To Top** - MADRIX 5 slices the content starting bottom.
[The first, bottom slice will then be applied to the left for X-Slices, to the top for Y-Slices, and to the front for Z-Slices.]
- **Slice Count** - Defines in how many slices the content is divided. A value of 1 means that no slices are created and that the video feed is used as one. [A value of 4, for example, will create 4 slices that each make up 25% of the source content.]

- The settings with the highest performance are ***Z-Slices*** and ***Top To Bottom***
- Confirm with ***OK***, restore the default settings via ***Defaults***, or abort the process using ***Cancel***
- Learn more »[SCE Image](#)

8.1.31 SCE Shapes

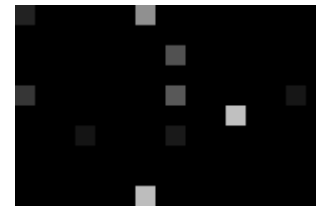
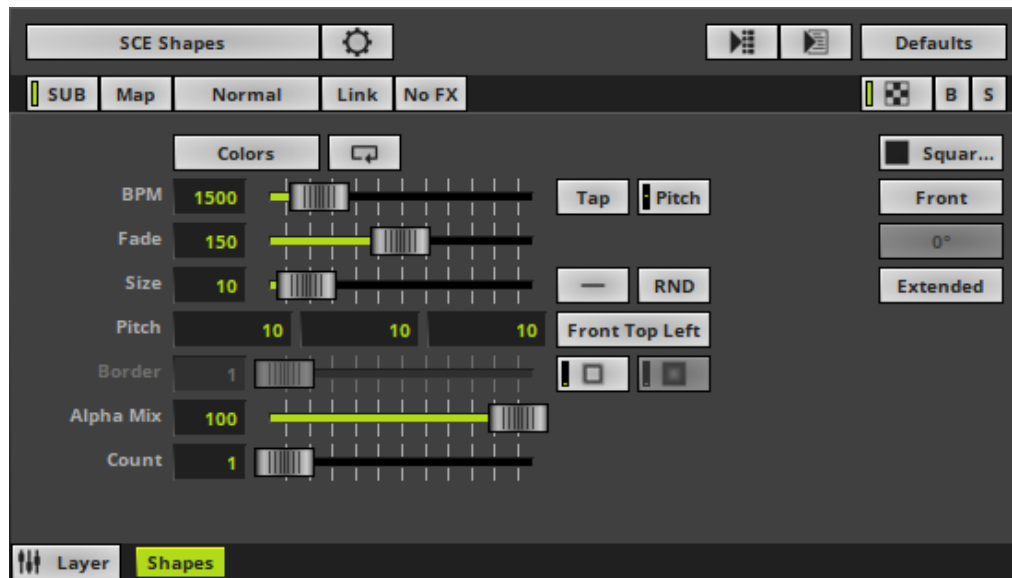
This topic includes:

- [Introduction](#)
- [Overview](#)
- [Effect Options](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

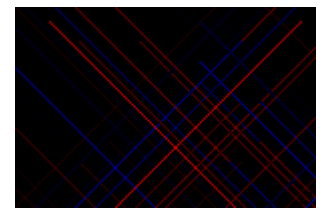
Introduction

SCE Shapes creates various objects at random positions.

Overview



Default Settings



Customized Example

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.

Learn more » [Effect Options](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX 5 Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX 5 Effect uses the following, individual controls:

- **Colors** - Opens the Color Table to specify the colors. The default color is White.
Learn more » [\[Global\] Colors And Intensity](#)
- **BPM** - Defines the speed. The default value is 1500. Valid values range from 0 to 9999.
Learn more » [Using BPM Control](#)
- **Fade** - Defines how fast objects disappear. The default value is 150. Valid values range from 1 to 3000.
- **Size** - Defines the size of the objects [in % of the Matrix Size, depending on the Shape Alignment]. The default value is 10. Valid values range from 0.01 to 1000.
- **Pitch** - Defines the distance between objects for all 3 axes [in % of the Matrix Size]. The default values are 10, 10, 10. Valid values range from 0.01 to 100.
- **Border** - Defines the size of an object's border [in % of the shape size]. The default value is 1. Valid values range from 0.01 to 100.
- **Alpha Mix** - Defines the upper limit of how much alpha is added to each object [in %]. Alpha Mix will be visible when using additional Layers. The default value is 100. Valid values range from 0 to 100.
- **Count** - Defines the number of objects created at once. The default value is 1. Valid values range from 1 to 100.



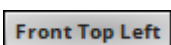
Distribution - Allows you to choose a certain Distribution Mode for the specific parameter. Often, you can then define a minimum value and a maximum value.

Uniform - Each object has the same size.

Random - Sizes will be generated randomly.



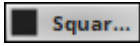
RND - Generates random object sizes each time. This automatically activates Random Distribution Mode.



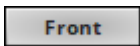
Position Origin Type - Defines the point of origin of Shapes [and hence their relative position].



Outer Glow / Inner Glow - Is only available for specific Shapes. Defines the outer shimmer or inner gleam of objects [in %]. The default settings are 1.00. Valid values range from 0.01 to 100.00.



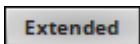
Shape - Allows you to choose a specific shape for objects. A certain Size is required before a shape becomes visible. The default setting is Square Filled.



Shape Alignment - Allows you to choose to which side objects are aligned to. This is mainly relevant for 3D. The default setting is Front.



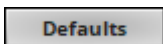
Shape Rotation Type - Is only available for specific Shapes. Defines the angle in which objects are rotated [**0°**, **90°**, **180°**, **270°**, **Random**]. The default setting is 0°.



Rendering Mode - Defines how objects are rendered. Each mode may enable additional settings [such as additional Shapes]. Choose from 2 different modes. The default setting is Extended.

- **Simple** - Prioritizes processing speed over rendering possibilities.
- **Extended** - Prioritizes rendering possibilities over over processing speed. This mode may require more performance.

Restoring The Default Settings



Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX 5 Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.1.32 SCE Simple Shape

This topic includes:

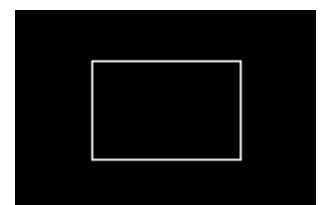
- [Introduction](#)
- [Overview](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

Introduction

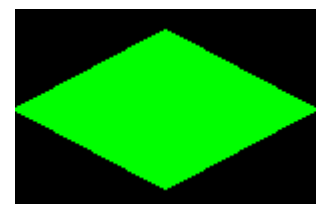
SCE Simple Shape displays very basic objects.

This effect is particularly useful for 3D or in combination with other Layers and Mix Modes.

Overview



Default Settings



Customized Example

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX 5 Effect / Layer.
Learn more » [Effect Areas \[Deck A / Deck B\]](#)
Learn more » [Layers](#)

Effect Settings

This MADRIX 5 Effect uses the following, individual controls:

- **Color** - Defines the color. The default color is White.
Learn more » [\[Global\] Colors And Intensity](#)
- **Position** - Defines the position of the object in **X**, **Y**, and **Z** [in %]. The default values are 25, 25, 25. Valid values range from -1000 to 1000.
- **Size** - Defines the size of objects [Width, Height, Depth] [in %]. The default values are 50, 50, 50. Valid values range from 0.01 to 1000.
- **Rotation** - Defines the rotation of objects in **X**, **Y**, and **Z** [in °]. The default values are 0, 0, 0. Valid values range from -180 to 180.
- **Outer Glow** - Defines the outer shimmer of objects. The default value is 25. Valid values range from 1 to 100.
- **Border** - Is only available for 2D outlined shapes or 3D unfilled shapes. Defines how thick the outer line [border] of objects is. The default value is 25. Valid values range from 0.01 to 100.
- **Inner Glow** - Defines the inner gleam of objects which are not filled. The default value is 25. Valid values range from 1 to 100.
- **Proportion** - Is only available for the Cross, Cross Straight, and Star Shapes. Defines the size of arms in relation to the overall size of the Shape. The default value is 37.5. Valid values range from 0.01 to 100.
- **Diagonals** - Is only available for the Cross Shape and the Star Shape. Defines the length of the diagonal arms in relation to the overall size of the Shape. The default value is 70.7. Valid values range from 0.01 to 100.

Front Top Left

Position Origin Type - Defines the point of origin of the Shape [and hence its relative position]. The default setting is Front Top Left.

Center

Rotation Origin Type - Defines the point of origin of the applied rotation. The default setting is Center.

Linear

Interpolation Type - Defines how the Outer Glow will look like [**Linear, Ease In Bounce, Ease Out Bounce, Ease In Out Bounce, Ease In Circular, Ease Out Circular, Ease In Out Circular, Ease In Cubic, Ease Out Cubic, Ease In Out Cubic, Ease In Sinusoidal, Ease Out Sinusoidal, Ease In Out Sinusoidal, Ease In Exponential, Ease Out Exponential, Ease In Out Exponential**]. The default setting is Linear.

Linear

Interpolation Type - Defines how the Inner Glow will look like [**Linear, Ease In Bounce, Ease Out Bounce, Ease In Out Bounce, Ease In Circular, Ease Out Circular, Ease In Out Circular, Ease In Cubic, Ease Out Cubic, Ease In Out Cubic, Ease In Sinusoidal, Ease Out Sinusoidal, Ease In Out Sinusoidal, Ease In Exponential, Ease Out Exponential, Ease In Out Exponential**]. The default setting is Linear.

Rectan...

Shape - Allows you to choose a specific shape for objects. A certain Size is required before a shape becomes visible. The default setting is Rectangle Outlined.

Front

Shape Alignment - Allows you to choose to which side objects are aligned to. This is mainly relevant for 3D. The default setting is Front.

0°

Shape Rotation Type - Is only available for specific Shapes. Defines the angle in which objects are rotated [**0°, 90°, 180°, 270°**]. The default setting is 0°.

Extended

Rendering Mode - Defines how objects are rendered. Each mode may enable additional settings [such as additional Shapes]. Choose from 2 different modes. The default setting is Extended.

- **Simple** - Prioritizes processing speed over rendering possibilities.

- **Extended** - Prioritizes rendering possibilities over over processing speed. This mode may require more performance.

Restoring The Default Settings

Defaults

Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX 5 Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.1.33 SCE Split Shapes

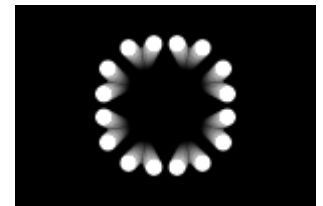
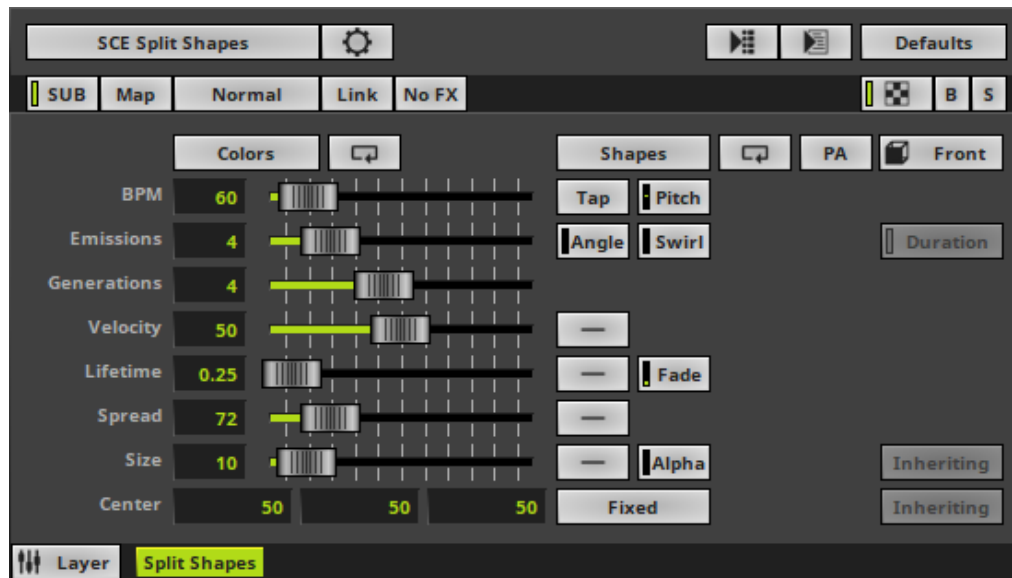
This topic includes:

- [Introduction](#)
- [Overview](#)
- [Effect Options](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

Introduction

SCE Split Shapes displays recurring objects that can split into even more objects.

Overview



Default Settings



Customized Example

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.

Learn more » [Effect Options](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX 5 Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX 5 Effect uses the following, individual controls:

- **Colors** - Opens the Color Table to specify the colors. The default color is White.
Learn more » [\[Global\] Colors And Intensity](#)
- **Shapes** - Opens the Shape Table to specify the shapes. The default color is Circle Filled.
Learn more » [Using Shapes \[Shape Table\]](#)
- **BPM** - Defines the speed. The default value is 600. Valid values range from 0 to 9999.
Learn more » [Using BPM Control](#)
- **Emissions** - Defines the number of initial objects that are sent out from the center. The default value is 4. Valid values range from 1 to 16.
- **Generations** - Defines how often objects are split [plus the initial generation]. The default value is 4. Valid values range from 1 to 8.
- **Velocity** - Defines how fast objects can move [in %]. The default value is 50. Valid values range from 0.1 to 1000.
- **Lifetime** - Defines how long objects move before being split [in s]. The default value is 0.25. Valid values range from 0.001 to 100.
- **Spread** - Defines the angle in which objects are split. The default value is 72. Valid values range from 0 to 360.
- **Size** - Defines the size of objects [in % of the Matrix Size]. The default value is 10. Valid values range from -1 to 1000.
- **Center** - Defines the position of the center in **X**, **Y**, and **Z** [in %]. The default values are 50, 50, 50. Valid values range from 0 to 100.



Path Alignment - Lets shapes rotate along the path instead of the rotation against the horizon.



Angle - Defines in which angle the first objects are emitted [as an offset]. The default setting is 0. Valid values range from -180 to 180.



Swirl - Defines an additional rotation of object paths around the center.



Distribution - Allows you to choose a certain Distribution Mode for the specific parameter. Often, you can then define a minimum value and a maximum value.

Uniform - Each path has the same distribution.

Linear - A linear distribution is used to increase the parameter regularly starting from the inside.

Quadratic - The parameter is more prominent on the outer paths.

SQRT - Using a square root function the parameter is more prominent on the outer paths.

Cubic - Uses a cubic distribution with a mixed distribution.

Inverted Linear - A linear distribution is used to decrease the parameter regularly starting from the inside.

Triangle - The majority of objects will be on the middle paths.

Inverted Quadratic - The parameter is more prominent on the inner paths.

Inverted SQRT - Using a square root function the majority of objects will be on the inner paths.

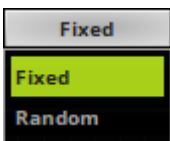
Inverted Cubic - Uses a cubic distribution with a mixed distribution.



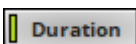
Fade Out - Defines how long objects are faded out [in s]. The default value is 10.00. Valid values range from 0.00 to 100.00.



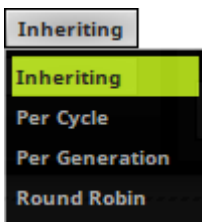
Alpha Mix - Defines the upper limit of how much alpha is added to each object [in %]. The default value is 0.00. Valid values range from 0.00 to 100.00.



Center Mode - Allows you to choose if the center of emissions is **Fixed** or **Random**. The default mode is Fixed.



Duration - Is only available for specific shapes [Implode, Explode, Pulse]. Defines how much of a shapes' lifetime is animated via implode, explode, or pulse [in % of the Lifetime]. The default setting is 100.00. Valid values range from 0.00 to 100.00.



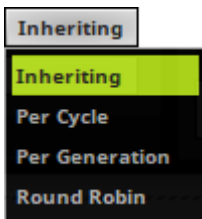
Color Mode - Is only available when having set up multiple colors in the Color Table.

Inheriting - Objects that resulted from a split will have the same color as the original shape.

Per Cycle - A single color is applied only to an entire cycle.

Per Generation - Each generation of shapes receives a new color.

Round Robin - The colors change within emissions as well as generations.



Shape Mode - Is only available when having set up multiple shapes in the Shape Table.

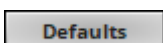
Inheriting - Objects that resulted from a split will have the same shape as the original shape.

Per Cycle - A single shape is applied only to an entire cycle.

Per Generation - Each generation of shapes receives a new shape.

Round Robin - The shapes change within emissions as well as generations.

Restoring The Default Settings



Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX 5 Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.1.34 SCE Starfield

This topic includes:

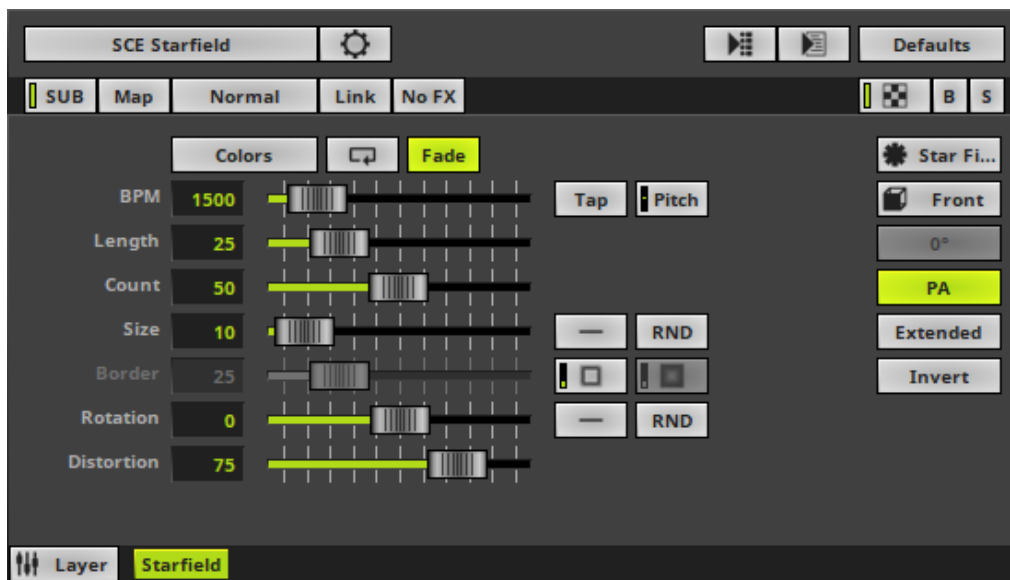
- [Introduction](#)
- [Overview](#)

- [Effect Options](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

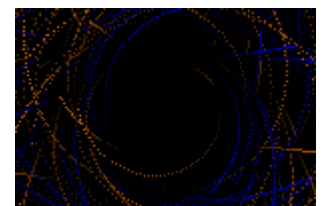
Introduction

SCE Starfield mainly simulates a field of stars streaming towards the viewer from the center. This creates a depth effect.

Overview



Default Settings



Customized Example

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.

Learn more » [Effect Options](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX 5 Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX 5 Effect uses the following, individual controls:

- **Color** - Defines the color. The default color is White.
Learn more » [\[Global\] Colors And Intensity](#)
- **BPM** - Defines the speed. The default value is 1500. Valid values range from 0 to 9999.
Learn more » [Using BPM Control](#)
- **Length** - Defines the length of objects' trace. The default value is 25. Valid values range from 1 to 1000.
- **Count** - Defines the number of displayed objects. The default value is 50. Valid values range from 1 to 1000.
- **Size** - Defines the size of objects [in % of the Matrix Size]. The default value is 10. Valid values range from 0.01 to 1000.
- **Border** - Is only available for 2D outlined shapes or 3D unfilled shapes. Defines how thick the outer line [border] of objects is. The default value is 25. Valid values range from 1 to 100.
- **Rotation** - Defines if the objects rotate around the center [in °]. The default value is 0. Valid values range from -3600 to 3600.
- **Distortion** - Defines the distortion towards the center creating the depth effect [in %]. The default value is 75. Valid values range from 1 to 100.



Distribution - Allows you to choose a certain Distribution Mode for the specific parameter. Often, you can then define a minimum value and a maximum value.

Uniform - Each object has the same size.

Random - Sizes will be generated randomly.



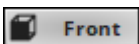
RND - Generates random object sizes each time. This automatically activates Random Distribution Mode.



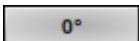
Outer Glow / Inner Glow - Is only available for specific Shapes. Defines the outer shimmer or inner gleam of objects. The default settings are 25. Valid values range from 0.01 to 100.



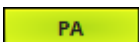
Shape - Allows you to choose a specific shape for objects. A certain Size is required before a shape becomes visible. The default setting is Star.



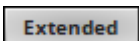
Look-At Type - Allows you to choose from which side you want to look at the effect. This is mainly relevant for 3D. The default setting is Front. Learn more »[Using Directions](#)



Shape Rotation Type - Is only available for specific Shapes. Defines the angle in which objects are rotated [**0°**, **90°**, **180°**, **270°**, **Random**].



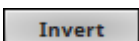
Path Alignment - Lets shapes rotate along the path instead of the general direction.



Rendering Mode - Defines how objects are rendered. Each mode may enable additional settings [such as additional Shapes]. Choose from 2 different modes. The default setting is Extended.

Simple - Prioritizes processing speed over rendering possibilities.

Extended - Prioritizes rendering possibilities over over processing speed. This mode may require more performance.



Invert - Inverts the direction of the effect [from outwards to inwards/from near to far].

Restoring The Default Settings

Defaults

Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX 5 Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.1.35 SCE Swarm

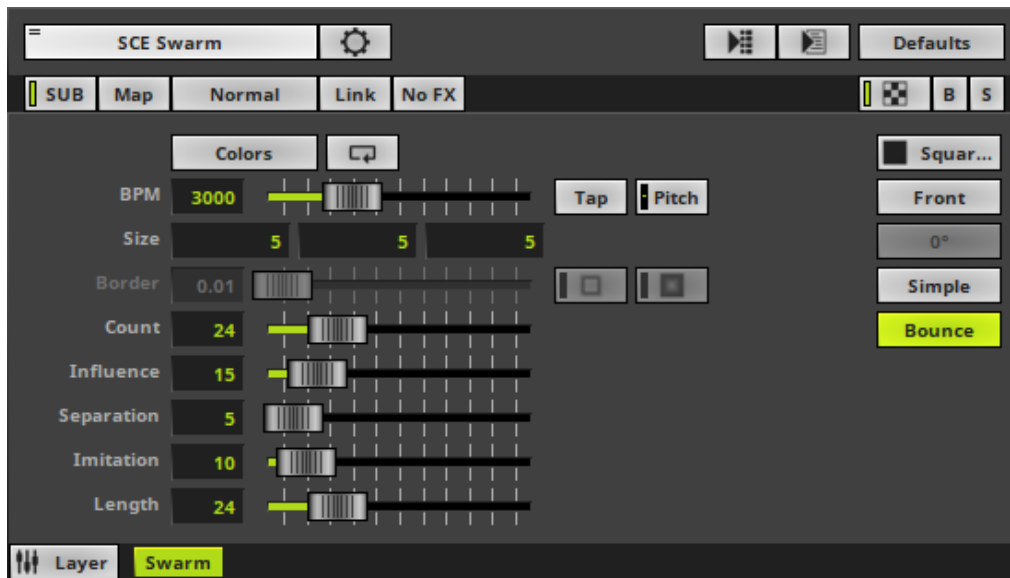
This topic includes:

- [Introduction](#)
- [Overview](#)
- [Effect Options](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

Introduction

SCE Swarm creates moving objects that react according to a swarm intelligence and thus imitate movement behavior.

Overview



Default Settings



Customized Example

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.

Learn more » [Effect Options](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX 5 Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

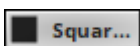
Effect Settings

This MADRIX 5 Effect uses the following, individual controls:

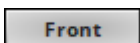
- **Colors** - Opens the Color Table to specify the colors. The default color is White.
Learn more » [\[Global\] Colors And Intensity](#)
- **Size** - Defines the size of objects [Width, Height, Depth]. The default values are 5, 5, 5. Valid values range from 0.1 to 100.
- **Border** - Is only available for 2D outlined shapes or 3D unfilled shapes. Defines how thick the outer line [border] of objects is. The default value is 1. Valid values range from 0.01 to 100.
- **Count** - Defines the number of objects. The default value is 24. Valid values range from 1 to 100.
- **Influence** - Defines a radius in which objects influence other objects [in %]. The higher the value, the more visible the swarm behavior. The default value is 15. Valid values range from 0 to 100.
- **Separation** - Defines how close objects can be to each other [in %]. The higher the value, the more space will be between objects. The default value is 5. Valid values range from 0 to 100.
- **Imitation** - Defines how closely objects imitate the movement of other objects [in %]. The default value is 10. Valid values range from 0 to 100.
- **Length** - Defines the length of objects and their tail [in %]. The default value is 30. Valid values range from 0 to 100.



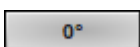
Outer Glow / Inner Glow - Is only available for specific Shapes. Defines the outer shimmer or inner gleam of objects. The default settings are 0.00. Valid values range from 0.01 to 100.



Shape - Allows you to choose a specific shape for objects. A certain Size is required before a shape becomes visible. The default setting is Square Filled.



Shape Alignment - Allows you to choose to which side objects are aligned to. This is mainly relevant for 3D. The default setting is Front.



Shape Rotation Type - Is only available for specific Shapes. Defines the angle in which objects are rotated [**0°**, **90°**, **180°**, **270°**, **Random**].

Simple

Rendering Mode - Defines how objects are rendered. Each mode may enable additional settings [such as additional Shapes]. Choose from 3 different modes. The default setting is Simple.

- **Simple** - Prioritizes processing speed over rendering possibilities.
- **Extended** - Prioritizes rendering possibilities over over processing speed. This mode may require more performance.
- **Blobby** - Prioritizes rendering possibilities over over processing speed and produces blobby objects. This mode may require more performance.

Bounce

Bounce - When activated, objects will bounce of the boundaries of the virtual LED matrix. Deactivate it and objects will appear on the opposite side when crossing a boundary. It is activated by default.

Restoring The Default Settings

Defaults

Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX 5 Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.1.36 SCE Ticker / Scrolling Text

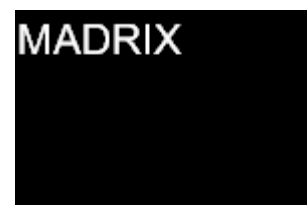
This topic includes:

- [Introduction](#)
- [Overview](#)
- [Effect Options](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)
- [Important Details](#)

Introduction

SCE Ticker / Scrolling Text allows you to bring any text message to your LEDs.

Overview



Default Settings



Customized Example

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.

Learn more » [Effect Options](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX 5 Effect / Layer.
Learn more » [Effect Areas \[Deck A / Deck B\]](#)
Learn more » [Layers](#)

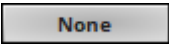
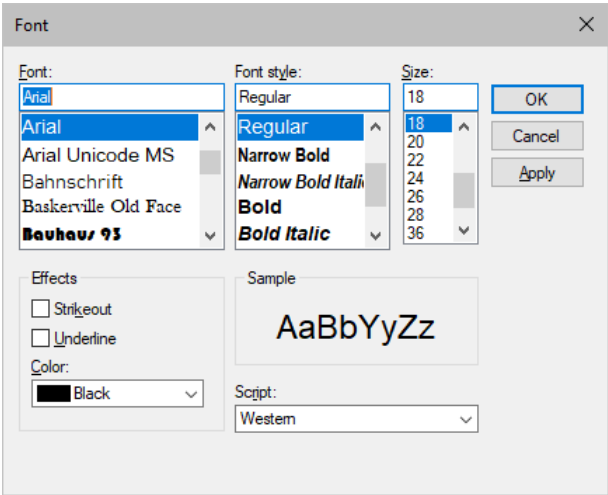
Effect Settings

This MADRIX 5 Effect uses the following, individual controls:

- **Color** - Defines the color. The default color is White.
Learn more » [\[Global\] Colors And Intensity](#)
- **BPM** - Defines the speed [when using a direction/movement]. The default value is 600. Valid values range from 0 to 9999.
Learn more » [Using BPM Control](#)
- **Position** - Defines the position of the text in **X**, **Y**, and **Z** [in %]. The default values are 0, 0, 0. Valid values range from -1000 to 1000.
- **Extrusion** - Adds depth to the text [in % of the Matrix Size]. This is mainly relevant for 3D. The default value is 100. Valid values range from 0.01 to 100.
- **Text** - Allows you to enter any text. Simply write something via your keyboard. The default text is MADRIX 5.
- **Splitting** - Allows you to split your text.
 - None** - Is the default value and does not apply any splitting.
 - Words** - Splits your text using each word, adds line breaks, and displays each word below the other.
 - Characters** - Splits your text using each character [letter], adds line breaks, and displays each character below the other.
- **Reverse Words** - Displays the words of your text in reverse order.
- **Reverse Characters** - Displays your complete text in reverse order, character by character.



Font - Opens a new window and allows you to choose a specific font, font size, and other font settings. [Any color set up in this window will be ignored. Use the MADRIX 5 color controls instead.]

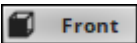


Filtering - Defines how input is processed and displayed. Mainly affects the visual outcome when the input is scaled up or down [e.g., when choosing a different mode for Stretching / Aspect Ratio]. Choose from 2 different modes. The default setting is None.

- **None** - Prioritizes processing speed over image quality.
- **Linear** - Prioritizes image quality over processing speed. This mode may affect performance.



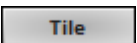
Direction - Allows you to choose the direction. This includes all directions for 2D and 3D mode. The default setting is Left. Learn more »[Using Directions](#)



Look-At Type - Allows you to choose from which side you want to look at the effect. This is mainly relevant for 3D. The default setting is Front. Learn more »[Using Directions](#)



Rotation - Allows you to rotate the text [**0°**, **90°**, **180°**, **270°**]. The default setting is 0.



Tile - Allows you to tile and duplicate the text and thereby generating patterns.

Seamless

Seamless - Activates or deactivates a continuous stream of text. MADRIX 5 will automatically display the text again, when the main text has ended. Otherwise, MADRIX 5 will display the complete text first, before displaying it again.

None

Stretching / Aspect Ratio - Allows you to choose the aspect ratio of the text. The default setting is None.

None - Disables stretching.

Matrix - Stretches to the current aspect ratio of the virtual LED matrix.

Original - Stretches to the original aspect ratio of the source.

4:3 - Applies a 4:3 aspect ratio.

16:9 - Applies a 16:9 aspect ratio.

Restoring The Default Settings

Defaults

Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX 5 Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

Important Details

How To Create Smoother Text Movements

Depending on your LEDs, the pixel pitch, and other factors, you might have the impression that text is not moving as fluently and smoothly as it should.

Follow these steps to create a better perceived image quality.

In general, stuttering effects are perceived to be less,

- the smaller the pixel pitch of your LED products is,
- the faster the text is scrolling [**BPM**],
- and the wider and larger the text is.

1] Choose a BPM value that makes the SCE Ticker Effect look good. Some recommended speeds are: 300 BPM, 350 BPM, 600 BPM, 750 BPM, 1500 BPM, and 3000 BPM.

2] Choose a font that is bold. Please avoid fine fonts or italics.

3] Try to choose a font that automatically has Anti-Aliasing applied to it. Not every font family automatically supports Anti-Aliasing. Anti-Aliasing reduces hard edges and makes the font smoother.

4] Reduce the overall tonal contrast of the Effect and image output. For example, white text on black background creates one of the highest contrasts. The higher the contrast, the more the text seems to be flickering.

Typefaces

Typefaces can be grouped into two main categories:

- Serif [Such fonts contain small features at the end of strokes within letters]
- Sans-serif [Such fonts have a clearer, simple appearance]

Serif Font

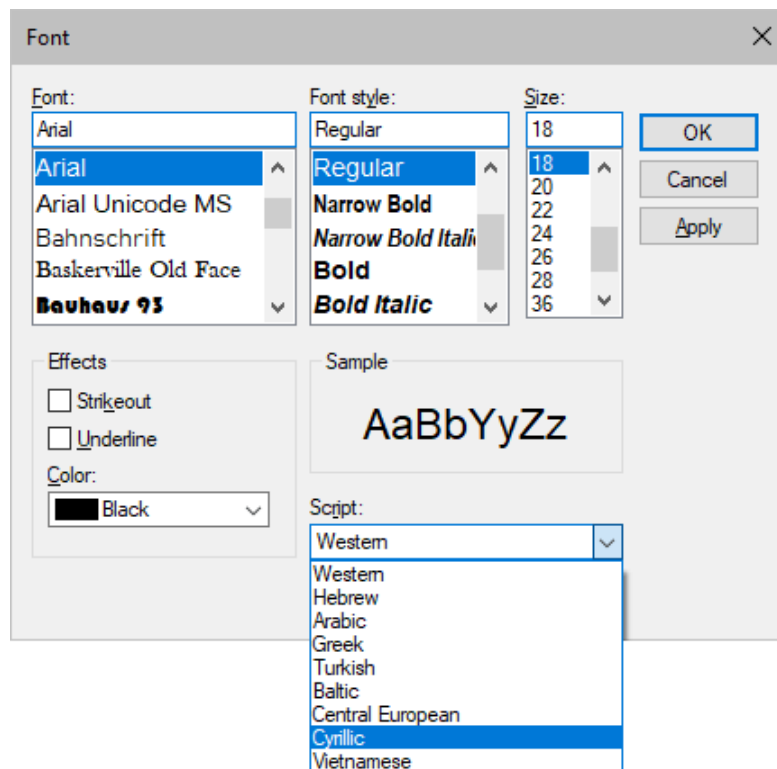
AaBbCc

Sans-Serif Font

AaBbCc

How To Use Other Languages [Such As Russian Or Chinese]

- In Windows 10, go to **Start > Windows System > Control Panel > Language**
- In Windows 11, go to **Start > Settings > Time & language**
- Add the language you want to use [Russian, Chinese, etc.].
- In MADRIX 5, select **SCE Counter**
- Click **Aa** to open the Font window.
- Choose a universal, extensive font, such as **Arial**
- Choose **Cyrillic** [or Chinese, etc.] under **Script**
- Close the Font window.
- Input any elements into the **String Table**



8.1.37 SCE Tubes

This topic includes:

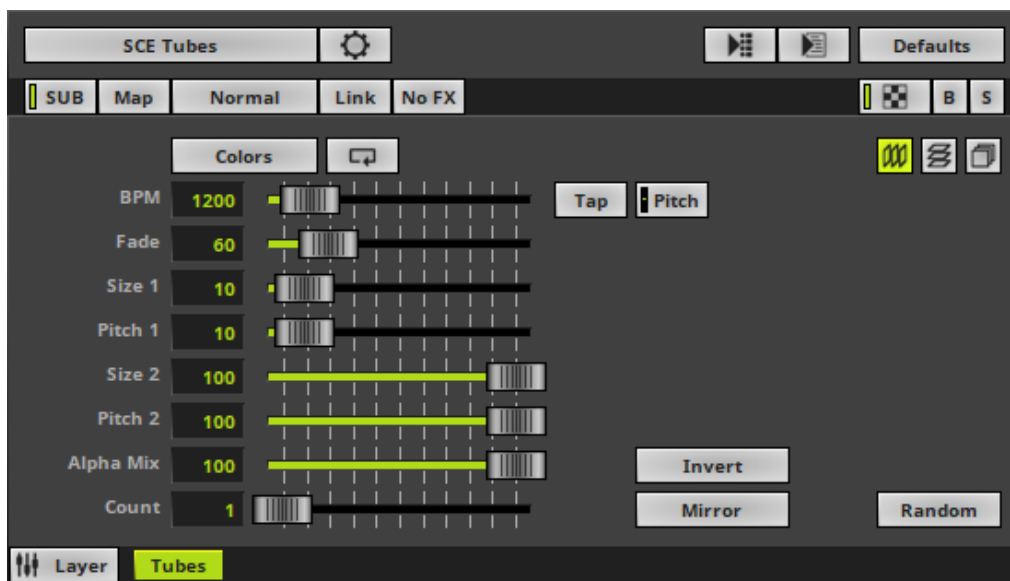
- [Introduction](#)
- [Overview](#)
- [Effect Options](#)

- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

Introduction

SCE Tubes displays various kinds of tubes at various positions.

Overview



Default Settings



Customized Example

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.

Learn more » [Effect Options](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX 5 Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX 5 Effect uses the following, individual controls:

- **Colors** - Opens the Color Table to specify the colors. The default color is White.
Learn more » [\[Global\] Colors And Intensity](#)
- **BPM** - Defines the speed. The default value is 1200. Valid values range from 0 to 9999.
Learn more » [Using BPM Control](#)
- **Fade** - Defines how fast MADRIX 5 displays the effect [in %]. The default value is 60. Valid values range from 1 to 3000.
- **Size 1** - Defines the first size of tubes depending on the direction [in % of the Matrix Size]. The default value is 10. Valid values range from 0.01 to 100.
- **Pitch 1** - Defines the first distance between tubes depending on the direction [in % of the Matrix Size]. The default value is 10. Valid values range from 0.01 to 100.
- **Size 2** - Defines the second size of tubes depending on the direction [in % of the Matrix Size]. The default value is 100. Valid values range from 0.01 to 100.
- **Pitch 2** - Defines the first distance between objects depending on the direction [in % of the Matrix Size]. The default value is 100. Valid values range from 0.01 to 100.
- **Alpha Mix** - Defines the upper limit of how much alpha is added to each object. Alpha Mix will be visible when using additional Layers. The default value is 100. Valid values range from 0 to 100.
- **Count** - Defines the number of objects. The default value is 1. Valid values range from 1 to 9999.

Invert

Invert - Inverts the position of objects.

Mirror

Mirror - Mirrors objects by creating duplicates on the opposite position.



Vertical Mode - Activates or deactivates the use of vertical objects. All 3 modes can be used at the same time. It is activated by default.



Horizontal Mode - Activates or deactivates the use of horizontal objects. All 3 modes can be used at the same time.



Depth Mode - Activates or deactivates the use of objects in the depth. All 3 modes can be used at the same time.

Random

Mode - Allows you to choose the mode in which way objects are generated [***Random***, ***Linear***, or ***Ping Pong***]. The default setting is Random.

Restoring The Default Settings

Defaults

Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX 5 Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.1.38 SCE Video

This topic includes:

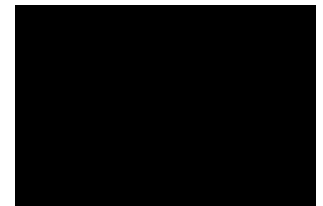
- [Introduction](#)

- [Overview](#)
- [Effect Options](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)
- [Slices](#)
- [HSB+C](#)
- [Audio Tracks / Sound Playback](#)
- [Important Notes](#)
- [Video Codecs](#)
- [Using Videos In Your MADRIX 5 Setup](#)
- [MADRIX 5 Record Files](#)

Introduction

SCE Video allows you to load a video file into MADRIX 5 and display it on your LEDs.

Overview



Default Settings



Customized Example

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.

Learn more » [Effect Options](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX 5 Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX 5 Effect uses the following, individual controls:

- **Filter** - Applies a multiplicative color filter to the image. The default value is White.
 - **GS** - Activates grayscale mode to show the input only in gray shades. The Filter is independent of this mode.
 - **RGBW** - Converts the input into RGBW. This is useful when using RGBW fixtures to convert from the standard RGB color values of the input. If the option is disabled when using RGBW fixtures, the input will appear darker since the White channel is not used. The W color channel of the Filter only works if RGBW is activated.

Learn more » [\[Global\] Colors And Intensity](#)
- **BPM** - Defines the speed [when using a direction/movement]. The default value is 1500. Valid values range from 0 to 9999.

Learn more » [Using BPM Control](#)
- **Position** - Defines the position of the image in **X**, **Y**, and **Z** [in %]. The default values are 0, 0, 0. Valid values range from -1000 to 1000.
- **Playback Rate** - Defines the speed of the video.
 - The default value is 1, which is the regular playback speed. A rate of 2 doubles the speed and cuts the Duration in half, for example.
 - Is only available for compatible video codecs [such as, QuickTime].
- **Dynam. Range** - Defines the dynamic range of the output. Valid values range from 0 to 255.
 - The default value range is 0 to 255, which means that all available color values of the input will be displayed.
 - Adjusting the left value cuts of lower color values and defines a new black level; therefore eliminating unwanted [gray] noise and achieving a uniform black.

[Setting the left value to 255 will render the input completely black.]

 - Lowering the right value highlights the colors; therefore achieving purer color values.

[Setting the right value to 0 will render black/gray values completely white.]



Extrusion - Adds depth to the input; i.e. duplicates the input image [in %]. This is mainly relevant for 3D. The default value is 100. Valid values range from 0.01 to 100.



Open - Allows you to load a video into MADRIX 5. Select the file on your computer or another source.



Volume - Is only available for videos with an audio track/sound. Allows you to define the audio output level for the loaded video. Valid values range from 0 to 100. The default setting is 0 [Off].

- Make sure to correctly set up audio output in order to play back sound. Learn more »[Audio And Sound](#)

Start Time - Displays the Start Time of the video. The time format is hours:minutes:seconds [HH:MM:SS].

- When loading a video file, MADRIX 5 automatically displays the Start Time, which is normally **00:00:00**

- Also allows you to enter an individual Start Time to begin the video at a different position.

- It is not possible to set the same time for both Start Time and End time.

Left Mouse Click And Hold + Move Mouse Up/Down - Move the mouse up or down within the edit field to increase or decrease the value.

Spacebar - Resets to the default value.



Set Start Time - Allows you to define an individual Start Time to begin the video at a different position. First, please enter a different Start Time.

End Time - Displays the End Time of the video. The time format is hours:minutes:seconds [HH:MM:SS].

- When loading a video file, MADRIX 5 automatically displays the End Time for the loaded video file.

- Also allows you to enter an individual End Time to let the video end/stop at a different position.

- It is not possible to set the same time for both Start Time and End time.

Left Mouse Click And Hold + Move Mouse Up/Down - Move the mouse up or down within the edit field to increase or decrease the value.

Spacebar - Resets to the default value.

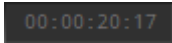


Set End Time - Allows you to define an individual End Time to let the video end/stop at a different position. First, please enter a different End Time.



Playback Position Slider - This slider shows the current position of the video.

- You can use the slider to set a different position.
- You can use the small handles to define a different Start Time and End Time.



Current Playback Position - Displays the current position of the video. The time format is hours:minutes:seconds [**HH:MM:SS**].



Skip To Start - Instantly skips to the Start Time of the video.

Step 1 Frame Back - Allows you to go 1 frame backward. Is only available for compatible video codecs.

Play Backwards - Allows you to play the video backwards. Is only available for compatible video codecs.



Play - Starts the video playback.

Skip 1 Frame - Allows you to go 1 frame forward. Is only available for compatible video codecs.

Skip To End - Instantly skips to the End Time of the video.



Pause - Allows you to pause video playback. The video stops at the current position.



Playback Mode - Allows you to define the playback behavior.

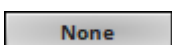
Once - Plays back the video normally, one time, from start to end. The Position will remain at the End Time.

Loop [Default] - Activates forward [or backwards] looping. The video file will be played back repeatedly in a loop.

Bounce - Is only available for compatible video codecs. Activates changing the playback direction when reaching the video End Time or Start Time.



Autostart - Automatically starts the video after it has been loaded into MADRIX 5 or after changing a Storage Place. It is activated by default.



Filtering - Defines how input is processed and displayed. Mainly affects the visual outcome when the input is scaled up or down [e.g., when choosing a different mode for Stretching /

Aspect Ratio]. Choose from 2 different modes. The default setting is None.

None - Prioritizes processing speed over image quality.

Linear - Prioritizes image quality over processing speed. This mode may affect performance.

DI

Deinterlace Mode - Allows you to choose from several Deinterlace Modes.

Often digital cameras, digital broadcasting, or digital filming is done via interlacing. In order to get 25 frames per seconds, 50 pictures are shot and merged/mixed with one another. You receive 25 odd frames [frame set 1] and 25 even frames [frame set 2] that contain different picture information [alternating pixel lines]. In order to get an undisturbed picture, proper deinterlacing is necessary.

None - Deactivates deinterlacing.

Bob - Uses one set of 25 frames [even or odd] and copies missing information from the pictures provided. Pixel lines are copied to create a full image. Activate **Top Field First** in order to process the frame set with the first pixel line first.

Bob Linear - This is the recommended deinterlace mode. It uses one set of 25 frames, but builds an average for the missing pixel lines. Activate **Top Field First** in order to process the frame set with the first pixel line first.

Blend - Renders an average image from frame set 1 and frame set 2.

Discard - Simply dismisses missing information. Thereby, pixel lines are excluded. This results in half of the original resolution for the final image. Activate **Top Field First** in order to process the frame set with the first pixel line first.

SL

Slices - Is a way to bring 2D content to 3D LED matrices by slicing the content into different parts and applying each slice to X-levels, Y-levels, or Z-levels as required. Learn more [Slices](#)



Decoder - Allows you to choose from two decoders.

When playing back video files, MADRIX 5 accesses certain decoders to convert the data back into imagery.

Automatic - Automatically decides which decoder to use based on the video file.

- However, this automatic selection might not be able to always choose the correct decoder.

- If you are experiencing issues with your video, please make sure:

- to install the correct video codec and

- to manually select a different decoder.

Media Foundation - Uses the Media Foundation video decoder.

Direct Show - Uses the Direct Show video decoder.

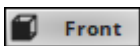


HSB+C - Opens the fader box to control s, Saturation, and Brightness, as well as Contrast.

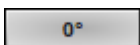
Learn more [HSB+C](#)



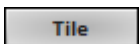
Direction - Allows you to choose the direction. This includes all directions for 2D and 3D mode. The default setting is None.



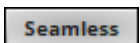
Look-At Type - Allows you to choose from which side you want to look at the effect. This is mainly relevant for 3D. The default setting is Front. Learn more »[Using Directions](#)



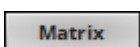
Rotation - Allows you to rotate the input [**0°**, **90°**, **180°**, **270°**]. The default setting is 0°.



Tile - Allows you to tile and duplicate the input and thereby generating patterns.



Seamless - Activates or deactivates a continuous stream of the video image. MADRIX 5 will automatically display the video image again to create a continuous display.



Stretching / Aspect Ratio - Allows you to choose the aspect ratio of the video. The default setting is Matrix.

None - Disables stretching.

Matrix - Stretches to the current aspect ratio of the virtual LED matrix.

Original - Stretches to the original aspect ratio of the source.

4:3 - Applies a 4:3 aspect ratio.

16:9 - Applies a 16:9 aspect ratio.

Restoring The Default Settings

Defaults

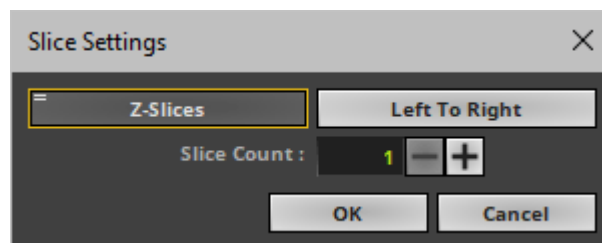
Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX 5 Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

Slices

SL

SL - Calls up **Slice Settings**



- **Slice Settings** - Is a way to bring 2D content to 3D LED matrices by slicing the content into different parts and applying each slice to X-levels, Y-levels, or Z-levels as required. [You will get the most benefit out of this feature when using content that are made up of different parts and are especially created for this area of application.]

Example: Your virtual LED matrix is 10 x 8 x 4. Now, you have prepared a video and want to display it not only on the first Z-level or use Extrude, but on all 4 Z-levels. Then, you would let MADRIX 5 create 4 slices.

- **Slice Type** - Defines the 3D orientation of how slices are applied to your LED matrix.
 - **X-Slices** - Uses slices to fill the LED matrix; always starting from left to right.
 - **Y-Slices** - Uses slices to fill the LED matrix; always starting from top to bottom.
 - **Z-Slices** - Uses slices to fill the LED matrix; always starting from front to back.

- **Slice Order** - Defines how your source content is processed.
 - **Left To Right** - MADRIX 5 slices the content starting left.
[The first, left slice will then be applied to the left for X-Slices, to the top for Y-Slices, and to the front for Z-Slices.]
 - **Right To Left** - MADRIX 5 slices the content starting right.
[The first, right slice will then be applied to the left for X-Slices, to the top for Y-Slices, and to the front for Z-Slices.]
 - **Top To Bottom** - MADRIX 5 slices the content starting top.
[The first, top slice will then be applied to the left for X-Slices, to the top for Y-Slices, and to the front for Z-Slices.]
 - **Bottom To Top** - MADRIX 5 slices the content starting bottom.
[The first, bottom slice will then be applied to the left for X-Slices, to the top for Y-Slices, and to the front for Z-Slices.]

- **Slice Count** - Defines in how many slices the content is divided. A value of 1 means that no slices are created and that the video is used as one. [A value of 4, for example, will create 4 slices that each make up 25% of the source content.]

- The settings with the highest performance are **Z-Slices** and **Top To Bottom**

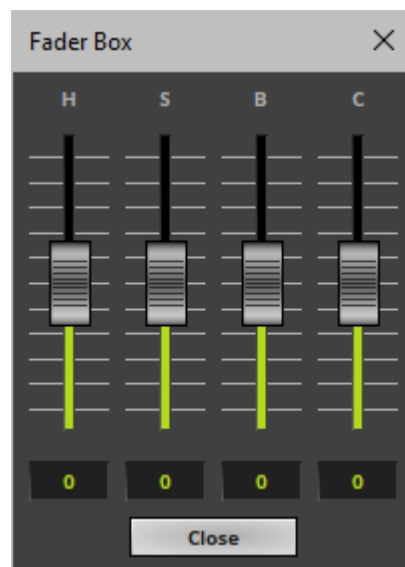
- Confirm with **OK**, restore the default settings via **Defaults**, or abort the process using **Cancel**
- Learn more »[SCE Image](#)

HSB+C



HSB+C - Calls up the Fader Box for Hue, Saturation, and Brightness, as well as Contrast.

Note: This feature is not available for MADRIX 5 Record files [of the file type *.mrec] and might not be available for unofficially supported video file formats.



- **H** - Controls the hue, and thus influences the overall tint of the colors of the video.
Valid values range from -1.00 to 1.00. The default value is 0.
Hue will be deactivated and not available, if **GS** [Grayscale mode] is enabled.
- **S** - Controls the saturation, and thus influences the richness of the colors of the video.
Valid values range from -1.00 to 1.00. The default value is 0.
Saturation will be deactivated and not available, if **GS** [Grayscale mode] is enabled.
- **B** - Controls the brightness, and thus influences the overall intensity of colors of the video [from very dark and black to very light and white].
Valid values range from -1.00 to 1.00. The default value is 0.
- **C** - Controls the contrast, and thus influences the difference between colors of the video and black.
Valid values range from -1.00 to 1.00. The default value is 0.

Audio Tracks / Sound Playback

MADRIX 5 can play back the audio track / sound of a video file.

- Make sure to configure audio output first.
Learn more » [Audio And Sound](#)
- Make sure to set up the audio volume for the video.
Learn more [Volume](#)

Important Notes

- **If you are experiencing issues with your video, please make sure:**
 - **to install the correct video codec and**
 - **to manually select a different decoder as explained above.**
- **To play back video, a video codec is required. Each video file format requires a special video codec.**
- **Windows already provides a number of codecs, but often additional codecs are necessary.**
- **If some features described above are not available, the video codec might simply not support this feature.**
- **Learn more below.**

Video Codecs

Overview

- All video codecs that are installed on your computer are automatically supported by MADRIX 5.
- If you are experiencing problems, read below.

Solving Codec Problems

- If MADRIX 5 is not able to play back a video file, make sure to install the appropriate video codec on your computer.
- Collections of video codecs are available in so-called video codec packs.
- If you install a new codec pack, make sure to uninstall a previously installed codec pack first. Often, it also makes no sense to install multiple codec packs since similar codecs may not work correctly anymore.
- The following codec packs can be recommended for download:
 - Web Link: »[K-Lite Codec Pack](#)
 - Web Link: »[LAV Filters](#)

Codecs That Are Not Supported

- MADRIX 5 does not support the following video codecs:
 - **Apple ProRes**

Using Videos In Your MADRIX 5 Setup

- When using video files, MADRIX 5 will automatically locate these files on your harddisk. It also saves the folder location internally to access the video file.
- But MADRIX 5 will not save the videos in your MADRIX 5 Setup File!
- In order to play the setup on a different computer, you will need to copy your videos, too. Make sure that they are placed in the same folder location.

MADRIX 5 Record Files

- The SCE Video effect is also able to play back MADRIX 5 Record Files [of the file type *.mrec].

Learn more » [Recording](#)

8.1.39 SCE Water

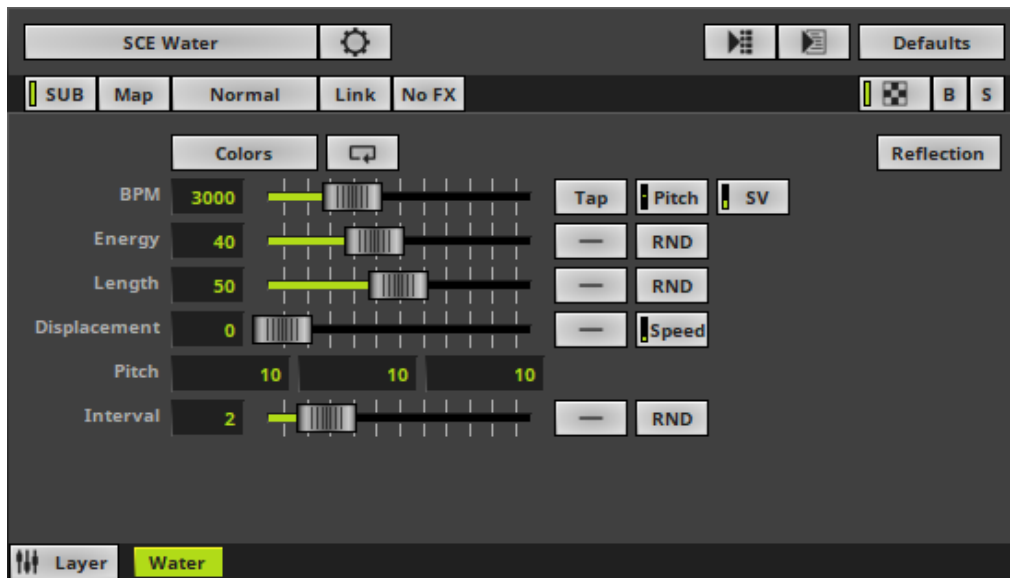
This topic includes:

- [Introduction](#)
- [Overview](#)
- [Effect Options](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

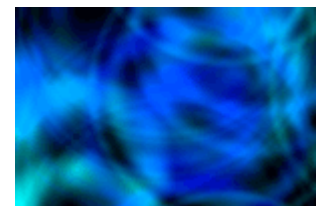
Introduction

SCE Water displays the rising waves when droplets drop into water.

Overview



Default Settings



Customized Example

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.

Learn more » [Effect Options](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX 5 Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX 5 Effect uses the following, individual controls:

- **Colors** - Opens the Color Table to specify the colors. The default color is White.
Learn more » [\[Global\] Colors And Intensity](#)
- **BPM** - Defines the speed. The default value is 3000. Valid values range from 0 to 9999.
Learn more » [Using BPM Control](#)
- **Energy** - Defines how strong the resulting waves are [in %]. The default value is 40. Valid values range from 1 to 20.
- **Length** - Defines the size the waves [in % of the Matrix Size]. The default value is 50. Valid values range from 1 to 200.
- **Displacement** - Defines the amount of distortion. The default value is 0. Valid values range from 0 to 100.
- **Pitch** - Defines the distance between objects for all 3 axes. The default values are 10, 10, 10. Valid values range from 0.01 to 100.
- **Interval** - Defines the time between droplets [in s]. The default value is 2. Valid values range from 0.01 to 60.



Distribution - Allows you to choose a certain Distribution Mode for the specific parameter. Often, you can then define a minimum value and a maximum value.

Uniform - Each object has the same size.

Random - Sizes will be generated randomly.



RND - Generates random object sizes each time. This automatically activates Random Distribution Mode.



Displacement Distribution - Is only available for Displacement. Is applied in dependence of the direction that is chosen. Allows you to choose the area the distortion is applied to [**Uniform**, **Linear Increasing**, **Linear Decreasing**, **Triangle**]. The default setting is Uniform.



Displacement Speed - Is only available for Displacement. Allows you to choose to speed in which the distortion affects the visuals. The default setting is 10.0.

Reflection

Reflection - Lets waves rebound off the four edges.

Restoring The Default Settings

Defaults

Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX 5 Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.1.40 SCE Wave / Radial

This topic includes:

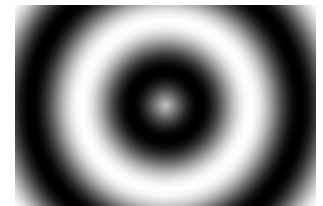
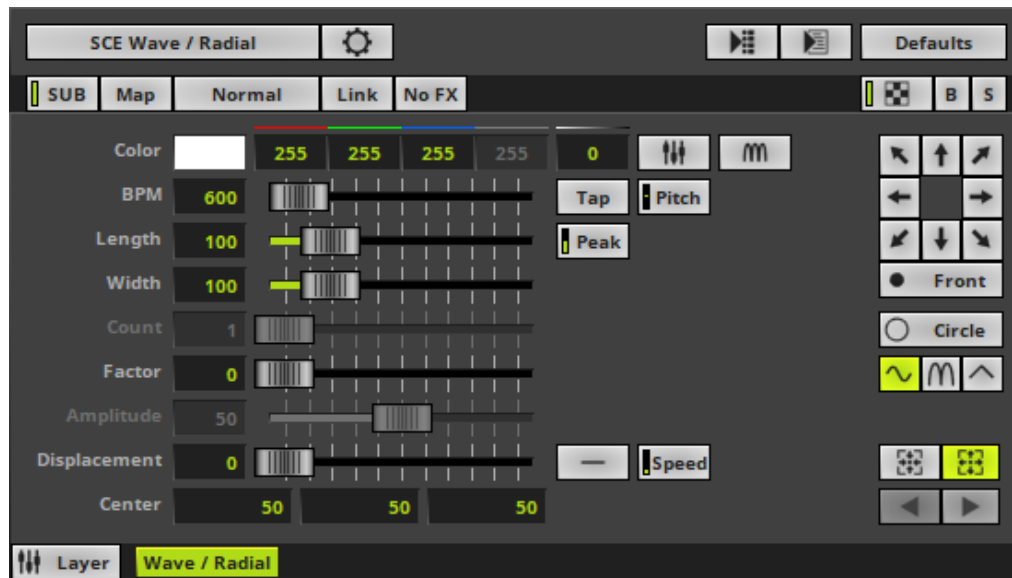
- [Introduction](#)
- [Overview](#)
- [Effect Options](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

Introduction

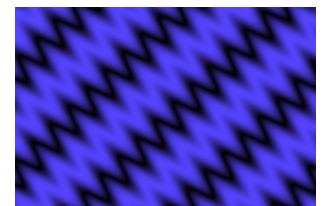
SCE Wave / Radial displays various linear or circular waves.

This MADRIX Effect creates a completely seamless loop.

Overview



Default Settings



Customized Example

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.

Learn more » [Effect Options](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX 5 Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX 5 Effect uses the following, individual controls:

- **Color** - Defines the color. The default color is White.
Learn more » [\[Global\] Colors And Intensity](#)
- **BPM** - Defines the speed. The default value is 600. Valid values range from 0 to 9999.
Learn more » [Using BPM Control](#)
- **Length** - Defines the length of the wave. The default value is 100. Valid values range from 1 to 500.
- **Width** - Defines the width of the wave. The default value is 100. Valid values range from 1 to 500.
- **Count** - Defines the number of extensions for mode **Radar** and **Helix**. The default value is 1. Valid values range from 1 to 50.
- **Factor** - Influences how the wave is drawn and bends the wave [in %]. The default value is 0. Valid values range from 0 to 100.
- **Amplitude** - Defines the intensity of **Factor**. The default value is 50. Valid values range from 0 to 100. Factor needs to be higher than 0 to use Amplitude.
- **Displacement** - Defines the amount of distortion. The default value is 0. Valid values range from 0 to 100.
- **Center** - Defines the position of the center in **X**, **Y**, and **Z** [in %]. The default values are 50, 50, 50. Valid values range from -1000 to 1000.



Peak - Defines the position of the peak of the wave. The default value is 50.00. Valid values range from 0.00 to 100.00.



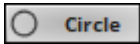
Displacement Distribution - Is only available for Displacement. Is applied in dependence of the direction that is chosen. Allows you to choose the area the distortion is applied to [**Uniform**, **Linear Increasing**, **Linear Decreasing**, **Triangle**]. The default setting is Uniform.



Displacement Speed - Is only available for Displacement. Allows you to choose to speed in which the distortion affects the visuals. The default setting is 10.0.



Direction - Allows you to choose the direction of the movement. This includes all directions for 2D and 3D mode. The default setting is Front. Learn more »[Using Directions](#)



Mode - Allows you to choose the main mode. This heavily influences the visual outcome of the effect [*Linear, Circle, Square, Diamond, Radar, Helix, 3D Sphere, 3D Cube, 3D Octahedron*]. The default setting is Circle.

- Make sure to adjust the Direction as required [especially for Mode Linear]!



Draw Mode - Allows you to change the wave form, which influences how the effect is drawn [*Sine, Absolute Sine, or Triangle*]. The default setting is Sine.

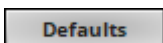


Movement - Allows you to choose the movement direction [*Inwards* or *Outwards*]. The default setting is Outwards.



Rotation - Is only available for specific shapes. Allows you to choose the rotation direction [*Clockwise* or *Counter-clockwise*]. The default setting is Clockwise.

Restoring The Default Settings



Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX 5 Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.2 [S2L] Sound2Light Effects

This topic includes:

- [Introduction](#)
- [Performance Adjustments](#)
- [Topics Of This Chapter](#)

Introduction

Sound2Light Effects [S2L] require an audio input signal. As a result, amazing light effects that are synchronized to the music will be generated!

Performance Adjustments

You are able to adjust parameters for the audio analysis and influence how S2L Effects work.

Learn more » [Audio And Sound](#)

Topics Of This Chapter

MADRIX 5 includes the following Sound2Light Effects:

- » [S2L Drops](#)
- » [S2L EQ / Spectrum](#)
- » [S2L Frequency Flash](#)
- » [S2L Level Color](#)
- » [S2L Level Color Scroll](#)

- » [S2L Level Meter](#)
- » [S2L Level Shape](#)
- » [S2L Shapes](#)
- » [S2L Tubes](#)
- » [S2L Waveform](#)
- » [S2L Wavegraph](#)

8.2.1 S2L Drops

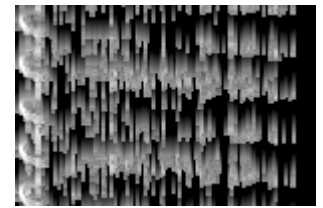
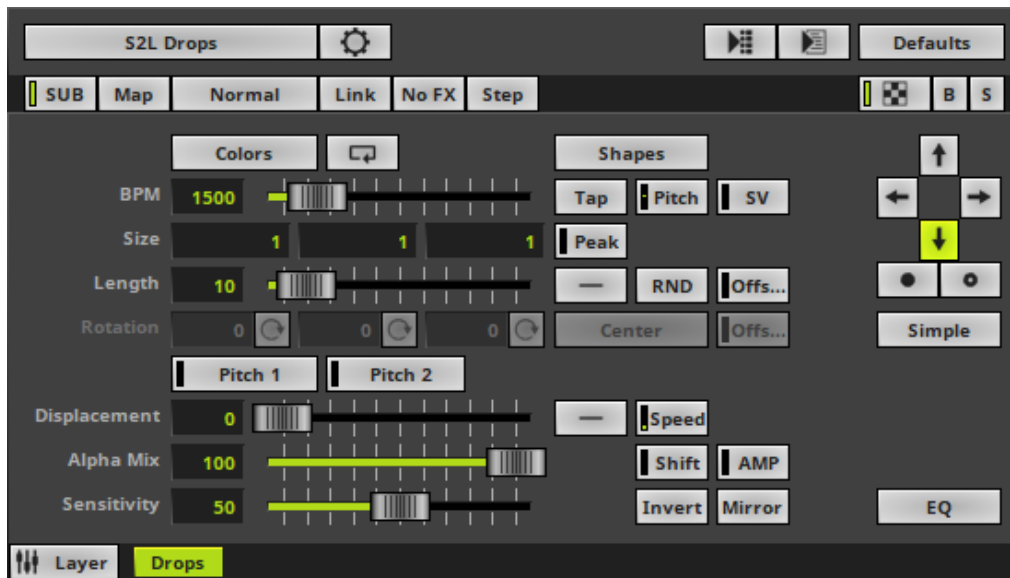
This topic includes:

- [Introduction](#)
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- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

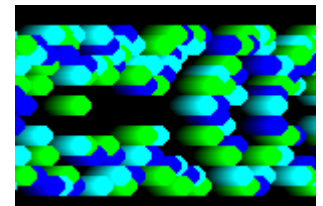
Introduction

S2L Drops displays drops according to the audio input.

Overview



Default Settings



Customized Example

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.

Learn more » [Effect Options](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX 5 Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX 5 Effect uses the following, individual controls:

- **Colors** - Opens the Color Table to specify the colors. The default color is White.
Learn more » [\[Global\] Colors And Intensity](#)
- **Shapes** - Opens the Shape Table to specify the shapes. The default color is Rectangle Filled.
Learn more » [Using Shapes \[Shape Table\]](#)
- **BPM** - Defines the speed. The default speed is 1500. Valid values range from 0 to 9999.
Learn more » [Using BPM Control](#)
- **Size** - Defines the size of objects [Width, Height, Depth]. The default values are 1, 1, 1. Valid values range from 0.01 to 1000.
- **Length** - Defines how long the trace of a drop is [in % of the Matrix Size, depending on the direction]. The default value is 10. Valid values range from 0 to 100.
- **Rotation** - Is only available in Rendering Mode Extended. Defines the rotation of objects in **X**, **Y**, and **Z** [in °]. The default values are 0, 0, 0. Valid values range from -180 to 180.
- **Displacement** - Defines the amount of movement distortion. The default value is 0. Valid values range from 0 to 100.
- **Alpha Mix** - Defines the upper limit of how much alpha is added to each drop [in %]. Alpha Mix will be visible when using additional Layers. The default value is 100. Valid values range from 0 to 100.
- **Sensitivity** - Defines how quickly and accurately MADRIX 5 reacts when such frequencies occur [in %]. The default value is 50. Valid values range from 0 to 100.



Peak - Defines the position of the peak of the drop. The default value is 0.00. Valid values range from 0.00 to 100.00.



Distribution - Allows you to choose a certain Distribution Mode for the specific parameter. Often, you can then define a minimum value and a maximum value.

Uniform - Each object has the same size.

Random - Sizes will be generated randomly.



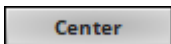
RND - Generates random object sizes each time. This automatically activates Random Distribution Mode.



Length Offset - Defines if an offset is added to the trace of a drop [in % of the Matrix Size]. The default setting is 0. Valid values range from 0 to 100.



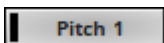
Continuous Rotation - Animates the shapes and rotates them around the corresponding axis permanently.



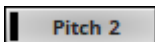
Rotation Origin Type - Defines the point of origin of the applied rotation.



Rotation Offset - Defines if an offset is added to the rotation of a drop [in % of the Matrix Size]. The default setting is 0. Valid values range from 0 to 100.



Pitch 1 - Defines the first distance between objects depending on the direction [in % of the Matrix Size]. The default setting is 0. Valid values range from 0 to 100.



Pitch 2 - Defines the second distance between objects depending on the direction [in % of the Matrix Size]. The default setting is 0. Valid values range from 0 to 100.



Displacement Distribution - Is only available for Displacement. Is applied in dependence of the direction that is chosen. Allows you to choose the area the distortion is applied to [**Uniform**, **Linear Increasing**, **Linear Decreasing**, **Triangle**]. The default setting is Uniform.



Displacement Speed - Is only available for Displacement. Allows you to choose to speed in which the distortion affects the visuals. The default setting is 10.0.



Shift - Shifts the position of equalizer bands [in %]. By default, lower frequencies are shown to the left and high frequencies are shown to the right. The default setting is 0. Valid values range from 0 to 100.



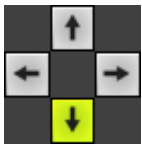
Amplification - Amplifies the audio input and as a result increases the visual intensity [in %]. The default setting is 0. Valid values range from 0 to 100.



Invert - Inverts the position of objects.



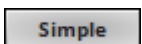
Mirror - Mirrors objects by creating duplicates on the opposite position.



Direction - Allows you to choose the direction. The default setting is Down. Learn more »[Using Directions](#)

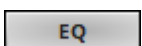


Direction - Allows you to choose the direction of the movement [**To The Front** or **To The Back**]. This is mainly relevant for 3D. The default setting is Down. Learn more »[Using Directions](#)



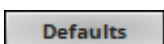
Rendering Mode - Defines how objects are rendered. Each mode may enable additional settings [such as additional Shapes]. Choose from 2 different modes. The default setting is Simple.

- **Simple** - Prioritizes processing speed over rendering possibilities.
- **Extended** - Prioritizes rendering possibilities over over processing speed. This mode may require more performance.



Mode - Allows you to choose the mode in which way objects are generated [**EQ**, **Level Mono**, or **Level Stereo**]. The default setting is EQ.

Restoring The Default Settings



Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.

- This does not include the MADRIX 5 Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.2.2 S2L EQ / Spectrum

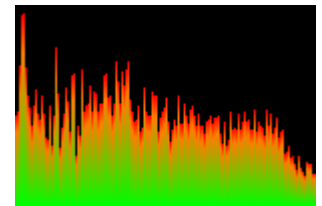
This topic includes:

- [Introduction](#)
- [Overview](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

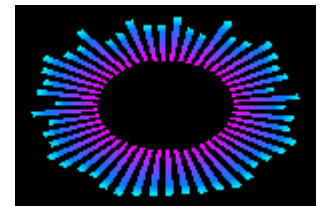
Introduction

S2L EQ / Spectrum displays a real-time equalization and visualization of the audio signal [i.e., audio spectrum].

Overview



Default Settings



Customized Example

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX 5 Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX 5 Effect uses the following, individual controls:

- Colors** - Opens the Color Gradient to specify the colors. The default color is Red, Orange, Green.
Learn more » [\[Global\] Colors And Intensity](#)
- Drop** - Defines how quickly spectrum bars are not displayed any more and drop out of the matrix [in %]. The default value is 50. Valid values range from 1 to 100.

- **Fade** - Defines how fast MADRIX 5 displays the effect. This value represents Beats Per Minute [BPM]. The default value is 3000. Valid values range from 1 to 3000.
 - **Width 1** - Defines the first size of spectrum bars depending on the direction [in % of the Matrix Size]. The default value is 0.1. Valid values range from 0.01 to 100.
 - **Pitch 1** - Defines the first distance between spectrum bars depending on the direction [in % of the Matrix Size]. The default value is 0.1. Valid values range from 0.01 to 100.
 - **Width 2** - Defines the second size of spectrum bars depending on the direction [in % of the Matrix Size]. The default value is 100. Valid values range from 0.01 to 100.
 - **Pitch 2** - Defines the first distance between spectrum bars depending on the direction [in % of the Matrix Size]. The default value is 100. Valid values range from 0.01 to 100.
 - **Display Range** - Defines the extend of the effect across the matrix, creating empty space when adjusting the minimum and maximum accordingly. For radial directions, it defines the inner and outer radius. For non-radial directions, it defines the start and end of the bars. The size ratios are kept and the effect is not simply cut off but displayed contracted. The default values are 0 and 100. Valid values range from 0 to 100.
- Note:** Color Mode Matrix is applied to the Display Range and not the entire matrix. In this way, the color gradient always fully stretches across the displayed effect and is not cut off.
- **Freq. Range** - Defines the Frequency Range. Allows you to limit the displayed range of frequencies. For example if the audio input does not cover lower or higher frequency ranges, you can make sure that the effect still covers the full matrix by cutting those lower and upper frequencies off, i.e. the defined range is rendered across the entire matrix. The default values are 0 and 100. Valid values range from 0 to 100.

 Invert

Invert - Inverts the position of objects.

 Mirror

Mirror - Mirrors objects by creating duplicates on the opposite position.



Border - Is only available for specific Shapes. Defines the size of an object's border [in % of the shape size]. The default setting is 1.00. Valid values range from 0.01 to 100.00.



Outer Glow - Is only available for specific Shapes. Defines the outer shimmer of objects [in %]. The default setting is 0.00. Valid values range from 0.01 to 100.00.



Inner Glow - Is only available for specific Shapes. Defines the inner gleam of objects [in %]. The default setting is 0.00. Valid values range from 0.01 to 100.00.



Shift - Shifts the position of equalizer bands [in %]. By default, lower frequencies are shown to the left and high frequencies are shown to the right. The default setting is 0. Valid values range from 0 to 100.



Amplification - Amplifies the audio input and as a result increases the visual intensity [in %]. The default setting is 0. Valid values range from 0 to 100.



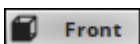
Logarithmic - Displays the spectrum in a logarithmic way.



Dynamic Range Control - Visually amplifies and balances frequencies to get a more interesting spectrum.



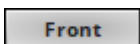
Direction/Mode - Allows you to choose the direction, including Cross Mode. This includes all directions for 2D and 3D mode. This heavily influences the visual outcome of the effect. The default setting is Top. Learn more »[Using Directions](#)



Look-At Type - Allows you to choose from which side you want to look at the effect. This is mainly relevant for 3D. The default setting is Front. Learn more »[Using Directions](#)



Shape - Allows you to choose a specific shape for objects. A certain Size is required before a shape becomes visible. The default setting is Filled.



Shape Alignment - Allows you to choose to which side objects are aligned to. This is mainly relevant for 3D. The default setting is Front.

Note: S2L EQ / Spectrum will interpolate frequency bands if the number of bands exceeds the set frequency range for an improved visual result [instead of duplicating available bands].

Restoring The Default Settings

Defaults

Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX 5 Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.2.3 S2L Frequency Flash

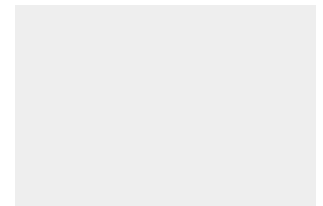
This topic includes:

- [Introduction](#)
- [Overview](#)
- [Effect Options](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

Introduction

S2L Frequency Flash analyzes the audio input for certain frequencies and flashes the LED matrix when such frequencies occur in the audio input.

Overview



Default Settings



Customized Example

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.

Learn more » [Effect Options](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX 5 Effect / Layer.

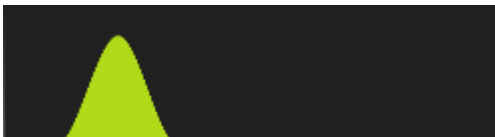
Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX 5 Effect uses the following, individual controls:

- **Color** - Defines the color. The default color is White.
Learn more » [\[Global\] Colors And Intensity](#)
- **Fade Out / In** - Defines how fast MADRIX 5 flashes. You can specify the fade-in speed as well as the fade-out speed. This value represents Beats Per Minute [BPM]. The default values are 120 and 3000. Valid values range from 1 to 3000.
- **Threshold** - Defines a minimum level of the frequency that must occur before the effect is triggered [in %]. The default value is 80. Valid values range from 1 to 100.
- **Frequency** - Defines the frequency at which the effect is triggered [in Hz]. The default value is 96. Valid values range from 5 to 13007.
- **Bandwidth** - Defines the lower and upper limits of the analyzed frequency spectrum with Frequency at the center of the curve [in %]. The default value is 22. Valid values range from 1 to 100.



- Shows the current settings as a graph. Can also be edited via the mouse.
 - Threshold is represented by the height of the graph.
 - Frequency is represented by the peak position of the graph. [The position is scaled logarithmically due to the logarithmic nature of human hearing.]
 - Bandwidth is represented by the width of the curve.
- **Left Mouse Click And Hold + Drag** - Allows you to directly change the Frequency and Threshold.
- **Shift + Left Mouse Click And Hold On Green Graph + Drag** - Allows you to directly change the Threshold.
- **Shift + Left Mouse Click And Hold On Black Background + Drag** - Allows you to directly change the Frequency.
- **Mouse Wheel** - Allows you to directly change the Bandwidth.
- **Right Mouse Click** - Reset to default settings.

Restoring The Default Settings

Defaults

Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX 5 Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.2.4 S2L Level Color

This topic includes:

- [Introduction](#)
- [Overview](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

Introduction

S2L Level Color displays the loudness of the audio input with the help of color. The louder the input, the brighter the effect.

Overview



Default Settings



Customized Example

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX 5 Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

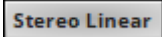
This MADRIX 5 Effect uses the following, individual controls:

- Colors** - Opens the Color Gradient to specify the colors. The default color is White, Black.

Learn more » [\[Global\] Colors And Intensity](#)

- Fade Out / In** - Defines how fast MADRIX 5 displays color. You can specify the fade-in speed as well as the fade-out speed. The default values are 120 and 120. Valid values range from 1 to 3000.

- **Amplification** - Amplifies the audio input and as a result increases the visual intensity [in %]. The default value is 0. Valid values range from 0 to 100.

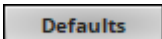


Mode - Allows you to choose the mode [**Mono**, **Stereo Linear**, **Stereo Radial**]. This heavily influences the visual outcome of the effect.



Direction - Allows you to choose the direction. This includes all directions for 2D and 3D mode. The default setting is Right. Learn more »[Using Directions](#)

Restoring The Default Settings



Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX 5 Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.2.5 S2L Level Color Scroll

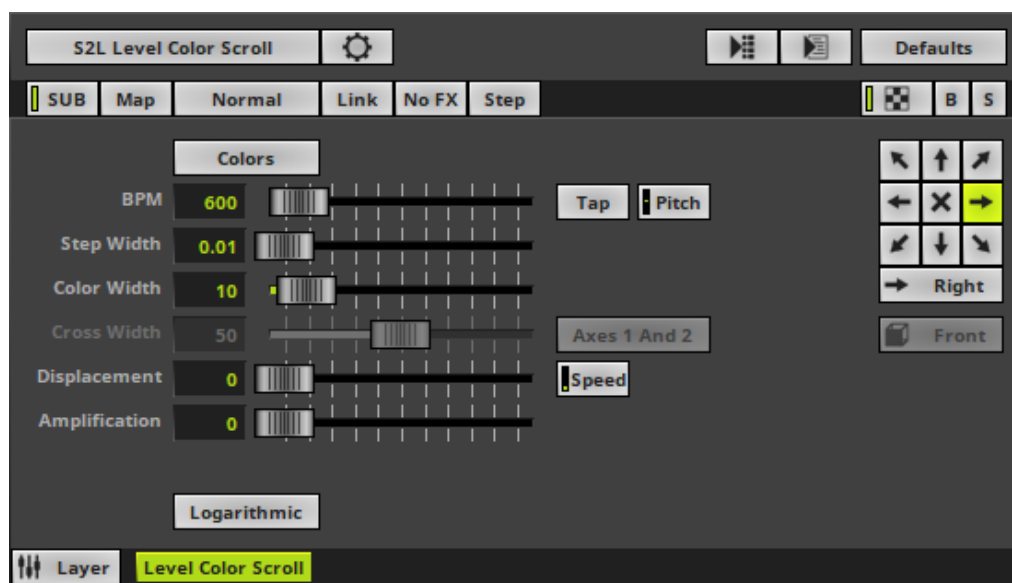
This topic includes:

- [Introduction](#)
- [Overview](#)
- [Effect Options](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

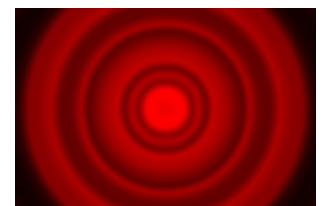
Introduction

S2L Color Scroll displays moving colors based on incoming audio.

Overview



Default Settings



Customized Example

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.

Learn more » [Effect Options](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX 5 Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX 5 Effect uses the following, individual controls:

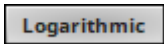
- **Colors** - Opens the Color Table to specify the colors. The default colors are White, Black.
Learn more » [\[Global\] Colors And Intensity](#)
- **BPM** - Defines the speed. The default value is 600. Valid values range from 0 to 9999.
Learn more » [Using BPM Control](#)
- **Step Width** - Defines the number of pixels the effect should scroll in the direction per frame [in %]. The default value is 0.01. Valid values range from 0.01 to 100.
- **Color Width** - Defines the width of a single color [in %]. The default value is 10. Valid values range from 0.01 to 100.
- **Cross Width** - Is only available for Cross Mode [[»Using Directions](#)]. Defines the size of crossing colors [in %]. The default value is 50. Valid values range from 0.01 to 100.
- **Displacement** - Defines the amount of distortion. The default value is 0. Valid values range from 0 to 100.
- **Amplification** - Amplifies the audio input and as a result increases the visual intensity [in %]. The default value is 0. Valid values range from 0 to 100.

Axes 1 And 2

Cross Mode Axes- Is only available for Cross Mode. Allows you to choose to which axis Cross Mode applies [**Axes 1 And 2**, **Axis 1**, or **Axis 2**]. The default setting is Axes 1 And 2.



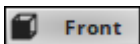
Displacement Speed - Is only available for Displacement. Allows you to choose to speed in which the distortion affects the visuals. The default setting is 10.0.



Logarithmic - Displays the effect in a logarithmic way.

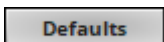


Direction/Mode - Allows you to choose the direction of the movement, including Cross Mode. This includes all directions for 2D and 3D mode. This heavily influences the visual outcome of the effect. The default setting is Right. Learn more »[Using Directions](#)



Look-At Type - Allows you to choose from which side you want to look at the effect. This is mainly relevant for 3D. The default setting is Front. Learn more »[Using Directions](#)

Restoring The Default Settings



Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX 5 Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.2.6 S2L Level Meter

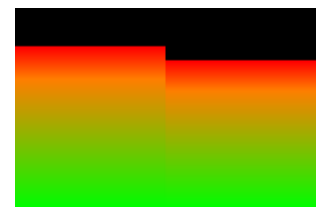
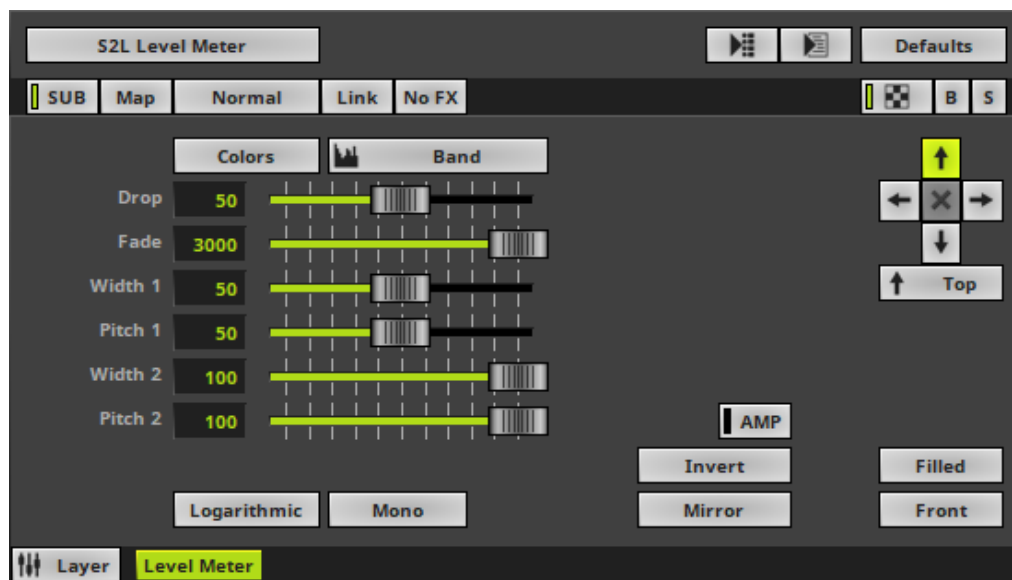
This topic includes:

- [Introduction](#)
- [Overview](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

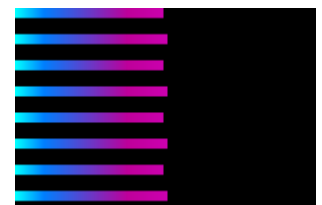
Introduction

S2L Level Meter displays the audio input level. By default, the left audio channel and the right audio channel are shown.

Overview



Default Settings



Customized Example

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX 5 Effect / Layer.
Learn more » [Effect Areas \[Deck A / Deck B\]](#)
Learn more » [Layers](#)

Effect Settings

This MADRIX 5 Effect uses the following, individual controls:

- **Color** - Opens the Color Gradient to specify the colors. The default color is White, Black.
Learn more » [\[Global\] Colors And Intensity](#)
- **Drop** - Defines how quickly the effect is shown. The default value is 50. Valid values range from 1 to 100.
- **Fade** - Defines how fast MADRIX 5 displays the effect. The default value is 3000. Valid values range from 1 to 3000.
- **Width 1** - Defines the first size of spectrum bars depending on the direction [in % of the Matrix Size]. The default value is 50. Valid values range from 0.01 to 100.
- **Pitch 1** - Defines the first distance between objects depending on the direction [in % of the Matrix Size]. The default value is 50. Valid values range from 0.01 to 100.
- **Width 2** - Defines the second size of spectrum bars depending on the direction [in % of the Matrix Size]. The default value is 100. Valid values range from 0.01 to 100.
- **Pitch 2** - Defines the first distance between objects depending on the direction [in % of the Matrix Size]. The default value is 100. Valid values range from 0.01 to 100.

Logarithmic

View Logarithmic - Displays the effect in a logarithmic way.

Mono

Mono - Deactivates Stereo and only uses 1 audio channel.

AMP

Amplification - Amplifies the audio input and as a result increases the visual intensity [in %]. The default setting is 0. Valid values range from 0 to 100.

Invert

Invert - Inverts the position of objects.

Mirror

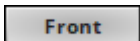
Mirror - Mirrors objects by creating duplicates on the opposite position.



Direction/Mode - Allows you to choose the direction, including Cross Mode. This includes all directions for 2D and 3D mode. This heavily influences the visual outcome of the effect. The default setting is Top. Learn more »[Using Directions](#)

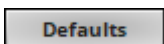


Shape - Allows you to choose a specific shape for objects. The default setting is Filled.



Shape Alignment - Allows you to choose to which side objects are aligned to. This is mainly relevant for 3D. The default setting is Front.

Restoring The Default Settings



Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX 5 Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.2.7 S2L Level Shape

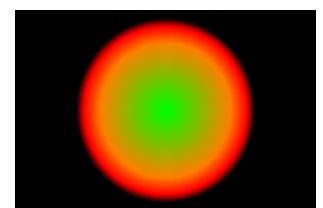
This topic includes:

- [Introduction](#)
- [Overview](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

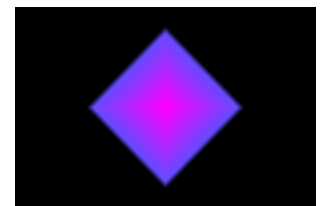
Introduction

S2L Level Shape represents the incoming audio level.

Overview



Default Settings



Customized Example

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX 5 Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX 5 Effect uses the following, individual controls:

- **Colors** - Opens the Color Table to specify the colors. The default colors are Red, Yellow, Green, Cyan, Blue, Magenta.
Learn more » [\[Global\] Colors And Intensity](#)
- **Drop** - Defines how quickly the effect is shown. The default value is 50. Valid values range from 1 to 100.
- **Amplification** - Amplifies the audio input and as a result increases the visual intensity [in %]. The default value is 0. Valid values range from 0 to 100.
- **Limit** - Acts as a compressor and defines the minimum and maximum level [size] of the effect depending on the actual audio input. The default values are 0 and 100. Valid values range from 0 to 10000.
- **Outer Glow** - Defines the outer shimmer of objects. The default value is 10. Valid values range from 1 to 100.
- **Border** - Is only available for 2D outlined shapes or 3D unfilled shapes. Defines the border size of outlined or unfilled objects. The default value is 25. Valid values range from 1 to 100.
- **Inner Glow** - Is only available for 2D outlined shapes or 3D unfilled shapes. Defines the inner gleam of objects which are not filled. The default value is 10. Valid values range from 1 to 100.
- **Proportion** - Is only available for certain Cross, Cross Straight, and Star Shapes. Defines the size of arms in relation to the overall size of the Shape. The default value is 37.5. Valid values range from 0.01 to 100.
- **Diagonals** - Is only available for certain Cross and Star Shapes. Defines the length of the diagonal arms in relation to the overall size of the Shape. The default value is 70.7. Valid values range from 0.01 to 100.

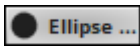


Interpolation Type - Defines how the Outer Glow will look like [**Linear**, **Ease In Bounce**, **Ease Out Bounce**, **Ease In Out Bounce**, **Ease In Circular**, **Ease Out Circular**, **Ease In Out Circular**, **Ease In Cubic**, **Ease Out Cubic**, **Ease In Out Cubic**, **Ease In Sinusoidal**, **Ease Out Sinusoidal**, **Ease In Out Sinusoidal**, **Ease In Exponential**, **Ease Out Exponential**, **Ease In Out Exponential**]. The default setting is Linear.

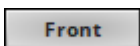


Interpolation Type - Defines how the Inner Glow will look like [**Linear**, **Ease In Bounce**, **Ease Out Bounce**, **Ease In Out Bounce**, **Ease In Circular**, **Ease Out Circular**, **Ease In Out Circular**, **Ease In Cubic**, **Ease Out Cubic**, **Ease In Out Cubic**,

Ease In Sinusoidal, Ease Out Sinusoidal, Ease In Out Sinusoidal, Ease In Exponential, Ease Out Exponential, Ease In Out Exponential]. The default setting is Linear.



Shape - Allows you to choose a specific shape for objects. The default setting is Ellipse Filled.



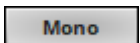
Shape Alignment - Allows you to choose to which side objects are aligned to. This is mainly relevant for 3D. The default setting is Front.



Shape Rotation Type - Is only available for specific Shapes. Defines the angle in which objects are rotated [**0°**, **90°**, **180°**, **270°**]. The default setting is 0°.



Logarithmic - Displays the effect in a logarithmic way.



Mono - Deactivates Stereo and only uses 1 audio channel.



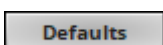
Display Mode - Defines how the effect is shown. The default setting is Fit.

Clip - The maximum size of the effect is determined by the largest side of the virtual LED matrix.

Fit - The maximum size of the effect is determined by the smallest side of the virtual LED matrix.

Stretch - The effect is stretched to be fully shown on the virtual LED matrix.

Restoring The Default Settings



Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.

- This does not include the MADRIX 5 Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.2.8 S2L Shapes

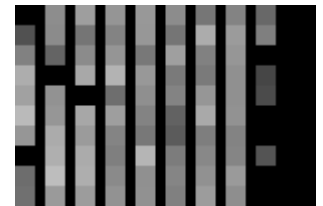
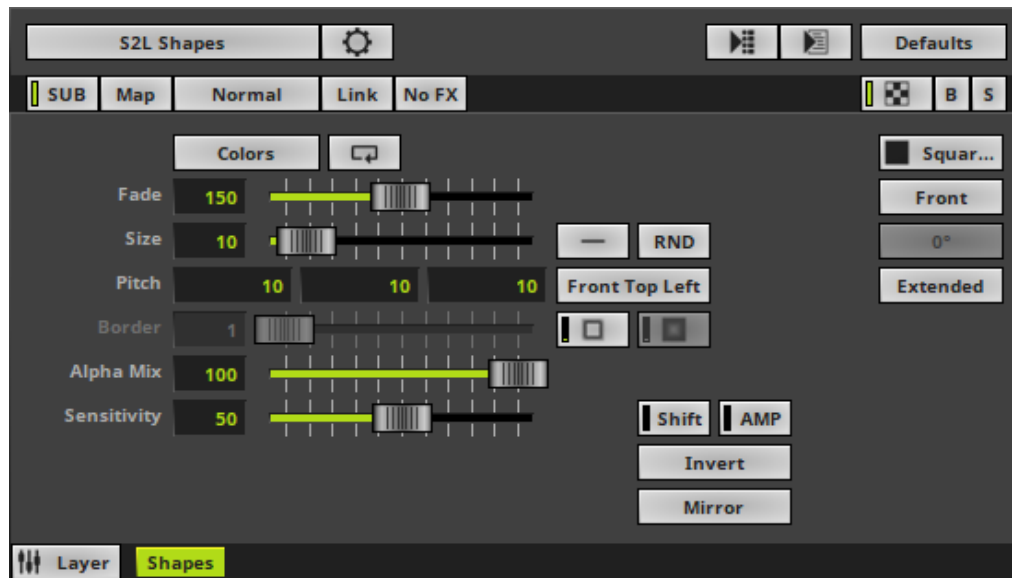
This topic includes:

- [Introduction](#)
- [Overview](#)
- [Effect Options](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

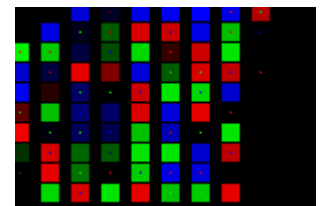
Introduction

S2L Shapes are a real-time equalization of the audio signal using a variation of shapes to display the audio input. By default low frequencies will be displayed at the bottom of the matrix and high tones at the top.

Overview



Default Settings



Customized Example

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.

Learn more » [Effect Options](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX 5 Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX 5 Effect uses the following, individual controls:

- **Colors** - Opens the Color Table to specify the colors. The default color is White.
Learn more » [\[Global\] Colors And Intensity](#)
- **Fade** - Defines how fast objects disappear. This value represents Beats Per Minute [BPM]. The default value is 150. Valid values range from 1 to 3000.
- **Size** - Defines the size of the objects [in % of the Matrix Size]. The default value is 10. Valid values range from 0.01 to 100.
- **Pitch** - Defines the distance between objects for all 3 axes [in % of the Matrix Size]. The default values are 10, 10, 10. Valid values range from 0.01 to 100.
- **Border** - Defines the size of an object's border [in % of the shape size]. The default value is 1. Valid values range from 0.01 to 100.
- **Alpha Mix** - Defines the upper limit of how much alpha is added to each object [in %]. Alpha Mix will be visible when using additional Layers. The default value is 100. Valid values range from 0 to 100.
- **Sensitivity** - Defines how quickly and accurately MADRIX 5 reacts to the music [in %]. The default value is 50. Valid values range from 0 to 100.



Distribution - Allows you to choose a certain Distribution Mode for the specific parameter. Often, you can then define a minimum value and a maximum value.

Uniform - Each object has the same size.

Random - Sizes will be generated randomly.



RND - Generates random object sizes each time. This automatically activates Random Distribution Mode.



Position Origin Type - Defines the point of origin of Shapes [and hence their relative position].



Outer Glow / Inner Glow - Is only available for specific Shapes. Defines the outer shimmer or inner gleam of objects. The default settings are 1.00. Valid values range from

0.01 to 100.



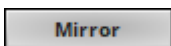
Shift - Shifts the position of equalizer bands [in %]. By default, lower frequencies are shown to the left and high frequencies are shown to the right. The default setting is 0. Valid values range from 0 to 100.



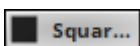
Amplification - Amplifies the audio input and as a result increases the visual intensity [in %]. The default setting is 0. Valid values range from 0 to 100.



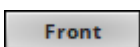
Invert - Inverts the position of objects.



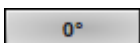
Mirror - Mirrors objects by creating duplicates on the opposite position.



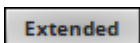
Shape - Allows you to choose a specific shape for objects. A certain Size is required before a shape becomes visible. The default setting is Square Filled.



Shape Alignment - Allows you to choose to which side objects are aligned to. This is mainly relevant for 3D. The default setting is Front.



Shape Rotation Type - Is only available for specific Shapes. Defines the angle in which objects are rotated [**0°**, **90°**, **180°**, **270°**, **Random**].



Rendering Mode - Defines how objects are rendered. Each mode may enable additional settings [such as additional Shapes]. Choose from 2 different modes. The default setting is Extended.

- **Simple** - Prioritizes processing speed over rendering possibilities.

- **Extended** - Prioritizes rendering possibilities over over processing speed. This mode may require more performance.

Restoring The Default Settings

Defaults

Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX 5 Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.2.9 S2L Tubes

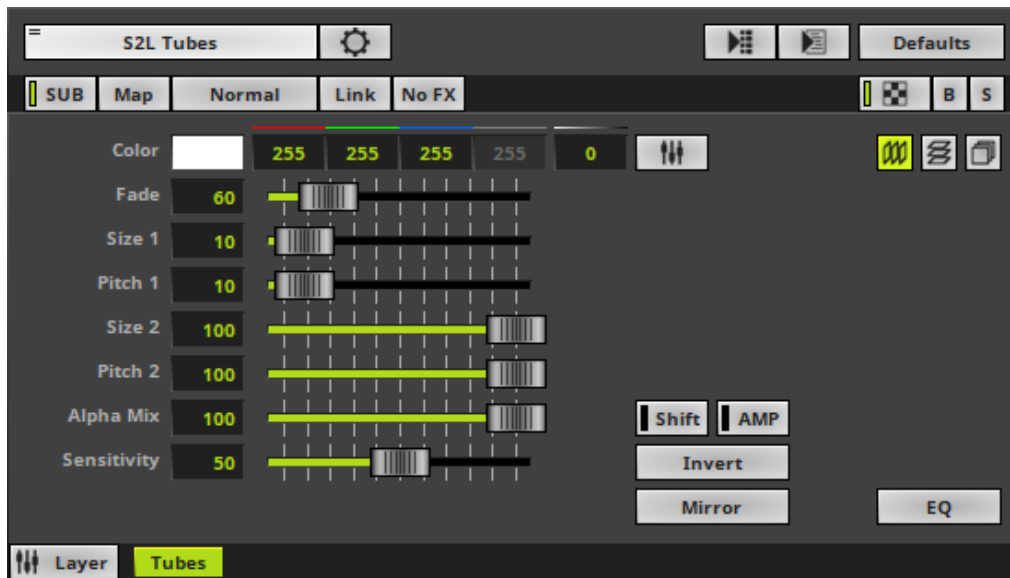
This topic includes:

- [Introduction](#)
- [Overview](#)
- [Effect Options](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

Introduction

S2L Tubes display the frequencies of the audio signal in form of various tubes.

Overview



Default Settings



Customized Example

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.

Learn more » [Effect Options](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX 5 Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX 5 Effect uses the following, individual controls:

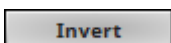
- **Color** - Defines the color. The default color is White.
Learn more » [\[Global\] Colors And Intensity](#)
- **Fade** - Defines how fast MADRIX 5 displays the effect. The default value is 60. Valid values range from 1 to 3000.
- **Size 1** - Defines the first size of tubes depending on the direction [in % of the Matrix Size]. The default value is 10. Valid values range from 0.01 to 100.
- **Pitch 1** - Defines the first distance between tubes depending on the direction [in % of the Matrix Size]. The default value is 10. Valid values range from 0.01 to 100.
- **Size 2** - Defines the second size of tubes depending on the direction [in % of the Matrix Size]. The default value is 100. Valid values range from 0.01 to 100.
- **Pitch 2** - Defines the second distance between objects depending on the direction [in % of the Matrix Size]. The default value is 100. Valid values range from 0.01 to 100.
- **Alpha Mix** - Defines the upper limit of how much alpha is added to each object [in %]. Alpha Mix will be visible when using additional Layers. The default value is 100. Valid values range from 0 to 100.
- **Sensitivity** - Defines how quickly and accurately MADRIX 5 reacts to the audio input [in %]. The default value is 50. Valid values range from 0 to 100.



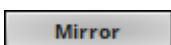
Shift - Shifts the position of equalizer bands [in %]. By default, lower frequencies are shown to the left and high frequencies are shown to the right. The default setting is 0. Valid values range from 0 to 100.



Amplification - Amplifies the audio input and as a result increases the visual intensity [in %]. The default setting is 0. Valid values range from 0 to 100.



Invert - Inverts the position of objects.



Mirror - Mirrors objects by creating duplicates on the opposite position.



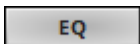
Vertical Mode - Activates or deactivates the use of vertical objects. All 3 modes can be used at the same time.



Horizontal Mode - Activates or deactivates the use of horizontal objects. All 3 modes can be used at the same time.

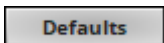


Depth Mode - Activates or deactivates the use of objects in the depth. All 3 modes can be used at the same time.



Mode - Allows you to choose the mode in which way objects are generated [**EQ**, **Level Mono**, or **Level Stereo**]. The default setting is EQ.

Restoring The Default Settings



Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX 5 Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.2.10 S2L Waveform

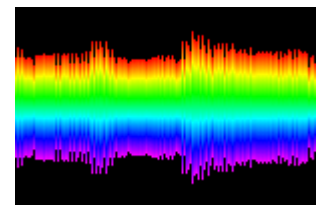
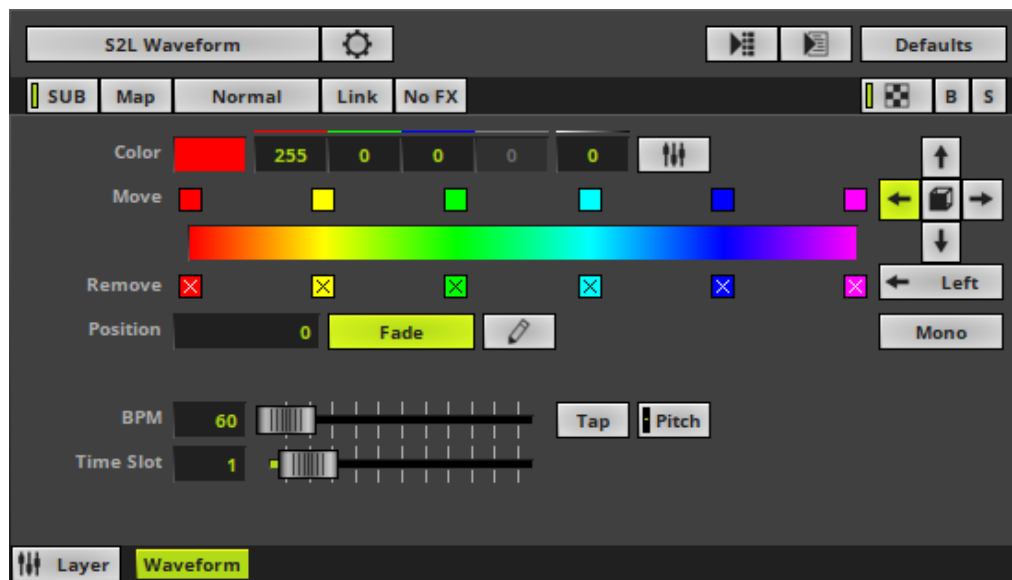
This topic includes:

- [Introduction](#)
- [Overview](#)
- [Effect Options](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

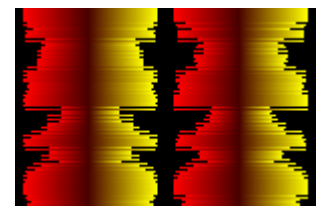
Introduction

S2L Waveform displays the audio input graphically. It is a timeline representation.

Overview



Default Settings



Customized Example

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.

Learn more » [Effect Options](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX 5 Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX 5 Effect uses the following, individual controls:

- **Color** - Defines the color using a Color Gradient control. The default color is Red, Yellow, Green, Cyan, Blue, Magenta.

Learn more » [\[Global\] Colors And Intensity](#)

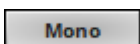
- **BPM** - Defines the speed. The default speed is 60. You can either use BPM or Time Slot. Valid values range from 0 to 9999.

Learn more » [Using BPM Control](#)

- **Time Slot** - Defines the time interval [in s]. The default value is 1. You can either use BPM or Time Slot. Valid values range from 0.01 to 9999.



Direction/Mode - Allows you to choose the direction, including Look-At Type. This includes all directions for 2D and 3D mode. This heavily influences the visual outcome of the effect. The default setting is Left. Learn more » [Using Directions](#)



Channel - Allows you to choose the displayed audio channels [**Stereo**, **Mono**, **Left**, **Right**]. The default setting is Mono.

Restoring The Default Settings

Defaults

Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX 5 Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.2.11 S2L Wavegraph

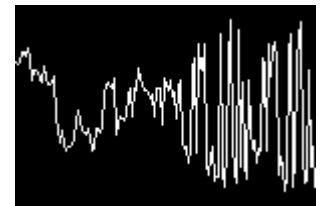
This topic includes:

- [Introduction](#)
- [Overview](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

Introduction

S2L Waveform displays the audio input as a graph.

Overview



Default Settings



Customized Example

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX 5 Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX 5 Effect uses the following, individual controls:

- Color** - Defines the color. The default color is White.

Learn more » [\[Global\] Colors And Intensity](#)

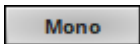
- **BPM** - Defines the speed. The default speed is 6000. You can either use BPM or Time Slot. Valid values range from 0 to 9999.

Learn more »[Using BPM Control](#)

- **Time Slot** - Defines the time interval [in s]. The default value is 0.01. You can either use BPM or Time Slot. Valid values range from 0.01 to 9999.

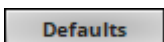


Direction/Mode - Allows you to choose the direction, including Look-At Type. This includes all directions for 2D and 3D mode. This heavily influences the visual outcome of the effect. The default setting is Left. Learn more »[Using Directions](#)



Channel - Allows you to choose the displayed audio channels [**Stereo**, **Mono**, **Left**, **Right**]. The default setting is Mono.

Restoring The Default Settings



Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX 5 Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.3 [M2L] Music2Light Effects

This topic includes:

- [Introduction](#)
- [Performance Adjustments](#)
- [Topics Of This Chapter](#)

Introduction

Music2Light Effects [M2L] require an audio input signal. M2L Effects go one step further than S2L Effects and analyse music theoretical parameters to create truly unique representations of the music.

Performance Adjustments

You are able to adjust parameters for the audio analysis and influence how M2L Effects work.

Learn more » [Audio And Sound](#)

Topics Of This Chapter

MADRIX 5 includes the following Music2Light Effects:

- » [M2L Color Change](#)
- » [M2L Color Scroll](#)
- » [M2L Drops](#)
- » [M2L Note Flash](#)
- » [M2L Shapes](#)
- » [M2L Single Tone Spectrum](#)
- » [M2L Tubes](#)

8.3.1 M2L Color Change

This topic includes:

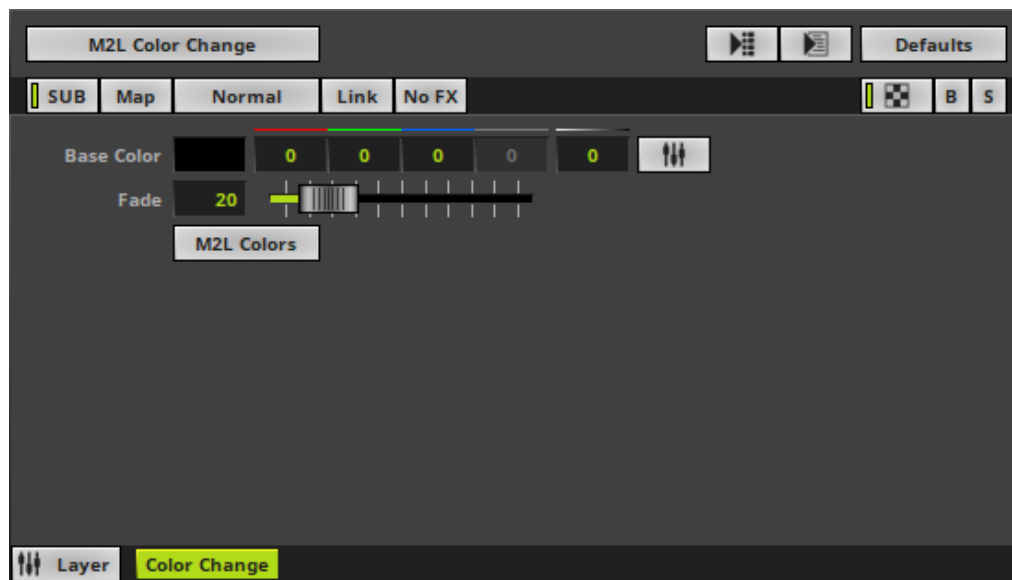
- [Introduction](#)

- [Overview](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

Introduction

M2L Color Change automatically changes the color according to the music. This effect analyzes the key of the music and shows different colors for different keys in the music [i.e., the mood].

Overview



Default Settings



Customized Example

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX 5 Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX 5 Effect uses the following, individual controls:

- **Base Color** - Defines the background color of the effect. If no audio input or music is available, this color is shown. The default color is Black.

Learn more » [\[Global\] Colors And Intensity](#)

- **Fade** - Defines how fast MADRIX 5 changes colors [in %]. The higher the value, the slower MADRIX 5 fades from one color to the next color. The default value is 20. Valid values range from 1 to 100.

- **M2L Colors** - Opens the M2L Color Table to specify which color is shown for which key.

Learn more » [\[Global\] Colors And Intensity](#)

Restoring The Default Settings

Defaults

Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX 5 Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.

Learn more » [Effect Options](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX 5 Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

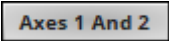
Learn more » [Layers](#)

Effect Settings

This MADRIX 5 Effect uses the following, individual controls:

- **Base Color** - Defines the background color of the effect. If no audio input or music is available, this color is shown. The default color is Black.
Learn more » [\[Global\] Colors And Intensity](#)
- **BPM** - Defines the speed. The default value is 600. Valid values range from 0 to 9999.
Learn more » [Using BPM Control](#)
- **Step Width** - Defines the number of pixels the effect should scroll in the direction per frame [in %]. The default value is 0.01. Valid values range from 0.01 to 100.
- **Color Width** - Defines the minimum width of a single color [in %]. The default value is 10. Valid values range from 0.01 to 100.
- **Cross Width** - Is only available for Cross Mode [[»Using Directions](#)]. Defines the size of crossing colors [in %]. The default value is 50. Valid values range from 0.01 to 100.

- **Sensitivity** - Defines how accurately MADRIX 5 reacts when notes occur [in %] or if notes are filtered out. The default value is 80. Valid values range from 0 to 100.
- **Displacement** - Defines the amount of distortion. The default value is 0. Valid values range from 0 to 100.


 Axes 1 And 2

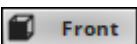
Cross Mode Axes - Is only available for Cross Mode. Allows you to choose to which axis Cross Mode applies [**Axes 1 And 2**, **Axis 1**, or **Axis 2**]. The default setting is Axes 1 And 2.


 Speed

Displacement Speed - Is only available for Displacement. Allows you to choose to speed in which the distortion affects the visuals. The default setting is 10.0.



Direction/Mode - Allows you to choose the direction of the movement, including Cross Mode. This includes all directions for 2D and 3D mode. This heavily influences the visual outcome of the effect. The default setting is Right. Learn more »[Using Directions](#)


 Front

Look-At Type - Allows you to choose from which side you want to look at the effect. This is mainly relevant for 3D. The default setting is Front. Learn more »[Using Directions](#)

Restoring The Default Settings


 Defaults

Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX 5 Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.3.3 M2L Drops

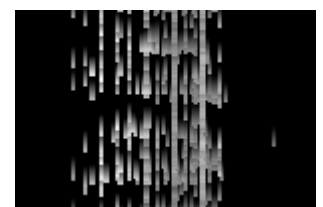
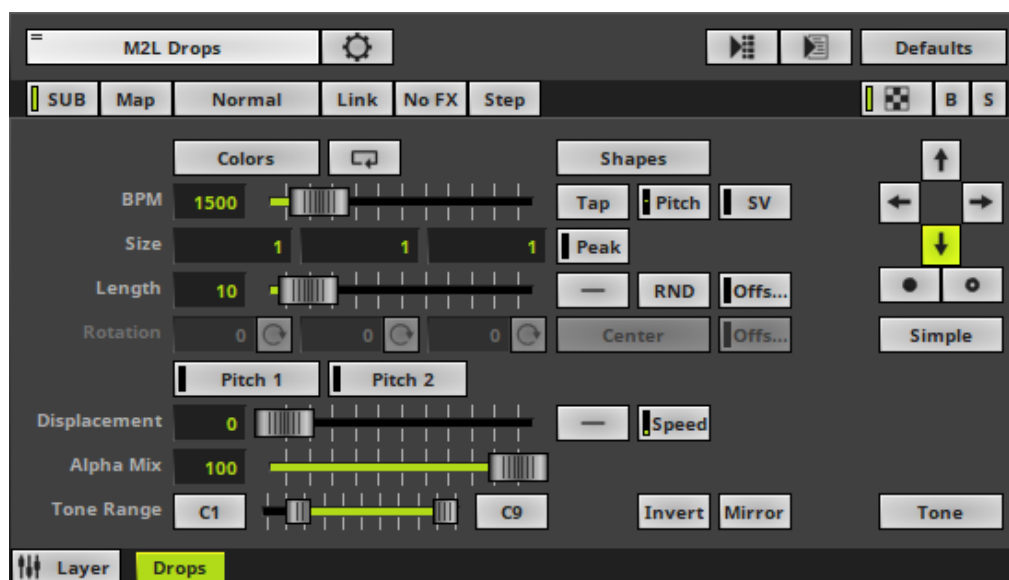
This topic includes:

- [Introduction](#)
- [Overview](#)
- [Effect Options](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

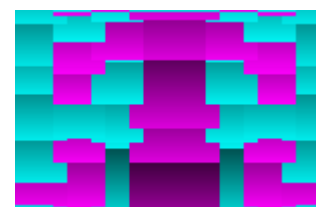
Introduction

M2L Drops analyzes the intervals of the music and displays in form of moving drops.

Overview



Default Settings



Customized Example

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.

Learn more » [Effect Options](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX 5 Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX 5 Effect uses the following, individual controls:

- **Colors** - Opens the Color Table to specify the colors. The default color is White.
Learn more » [\[Global\] Colors And Intensity](#)
- **Shapes** - Opens the Shape Table to specify the shapes. The default color is Rectangle Filled.
Learn more » [Using Shapes \[Shape Table\]](#)
- **BPM** - Defines the speed. The default speed is 1500. Valid values range from 0 to 9999.
Learn more » [Using BPM Control](#)
- **Size** - Defines the width, height, and depth of the drops. The default values are 1, 1, 1. Valid values range from 0.01 to 1000.
- **Length** - Defines how long the tail of a drop is [in %]. The default value is 10. Valid values range from 0 to 100.
- **Rotation** - Is only available in Rendering Mode Extended. Defines the rotation of objects in **X**, **Y**, and **Z** [in °].
The default values are 0, 0, 0. Valid values range from -180 to 180.

- **Displacement** - Defines the amount of movement distortion. The default value is 0. Valid values range from 0 to 100.
- **Alpha Mix** - Defines the upper limit of how much alpha is added to each drop [in %]. Alpha Mix will be visible when using additional Layers. The default value is 100. Valid values range from 0 to 100.
- **Tone Range** - Defines the range of tones analyzed and used by setting a minimum and a maximum value. Narrow the range if your audio signal does not include a wide range of tones to avoid a lot of empty space where no objects are shown. The default values are C1 and C9. Valid values range from C-1 to G9.



Peak - Defines the position of the peak of the drop. The default value is 0.00. Valid values range from 0.00 to 100.00.



Distribution - Allows you to choose a certain Distribution Mode for the specific parameter. Often, you can then define a minimum value and a maximum value.

Uniform - Each object has the same size.

Random - Sizes will be generated randomly.



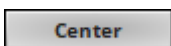
RND - Generates random object sizes each time. This automatically activates Random Distribution Mode.



Length Offset - Defines if an offset is added to the trace of a drop [in % of the Matrix Size]. The default setting is 0. Valid values range from 0 to 100.



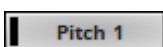
Continuous Rotation - Animates the shapes and rotates them around the corresponding axis permanently.



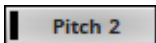
Rotation Origin Type - Defines the point of origin of the applied rotation.



Rotation Offset - Defines if an offset is added to the rotation of a drop [in % of the Matrix Size]. The default setting is 0. Valid values range from 0 to 100.



Pitch 1 - Defines the first distance between objects depending on the direction [in % of the Matrix Size]. The default setting is 0. Valid values range from 0 to 100.



Pitch 2 - Defines the second distance between objects depending on the direction [in % of the Matrix Size]. The default setting is 0. Valid values range from 0 to 100.



Displacement Distribution - Is only available for Displacement. Is applied in dependence of the direction that is chosen. Allows you to choose the area the distortion is applied to [**Uniform**, **Linear Increasing**, **Linear Decreasing**, **Triangle**]. The default setting is Uniform.



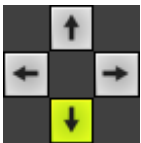
Displacement Speed - Is only available for Displacement. Allows you to choose to speed in which the distortion affects the visuals. The default setting is 10.0.



Invert - Inverts the position of objects.



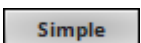
Mirror - Mirrors objects by creating duplicates on the opposite position.



Direction - Allows you to choose the direction. This includes all directions for 2D and 3D mode. The default setting is Down. Learn more »[Using Directions](#)

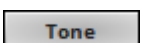


Direction - Allows you to choose the direction of the movement [**To The Front** or **To The Back**]. This is mainly relevant for 3D. The default setting is Down. Learn more »[Using Directions](#)



Rendering Mode - Defines how objects are rendered. Each mode may enable additional settings [such as additional Shapes]. Choose from 2 different modes. The default setting is Simple.

- **Simple** - Prioritizes processing speed over rendering possibilities.
- **Extended** - Prioritizes rendering possibilities over over processing speed. This mode may require more performance.



Mode - Allows you to choose which musical parameter is used [**Tone**, **Interval**, **Base Type**].

Restoring The Default Settings

Defaults

Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX 5 Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.3.4 M2L Note Flash

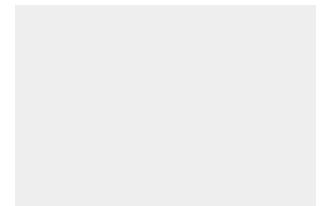
This topic includes:

- [Introduction](#)
- [Overview](#)
- [Effect Options](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

Introduction

M2L Note Flash analyzes the music for certain notes and flashes the LED matrix when such notes occur in the music.

Overview



Default Settings



Customized Example

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.

Learn more » [Effect Options](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX 5 Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX 5 Effect uses the following, individual controls:

- **Color** - Defines the color. The default color is White.
Learn more » [\[Global\] Colors And Intensity](#)
- **Fade Out / In** - Defines how fast MADRIX 5 flashes [in %]. You can specify the fade-in speed as well as the fade-out speed. The default values are 120 and 3000. Valid values range from 1 to 300.
- **Threshold** - Defines a minimum level of the note that must occur before the effect is triggered [in %]. The default value is 50. Valid values range from 1 to 100.
- **Tone** - Defines the note at which the effect is triggered. The default value is B1. Valid values range from C-1 to G9.
- **Bandwidth** - Defines the lower and upper limits of the analyzed frequency spectrum with Note at the center of the curve [in %]. The default value is 22. Valid values range from 1 to 100.



- Shows the current settings as a graph. Can also be edited via the mouse.
 - Threshold is represented by the height of the graph.
 - Tone is represented by the peak position of the graph. [The position is scaled logarithmically due to the logarithmic nature of human hearing.]
 - Bandwidth is represented by the width of the curve.
- **Left Mouse Click And Hold + Drag** - Allows you to directly change the Tone and Threshold.
- **Shift + Left Mouse Click And Hold On Green Graph + Drag** - Allows you to directly change the Threshold.
- **Shift + Left Mouse Click And Hold On Black Background + Drag** - Allows you to directly change the Tone.
- **Mouse Wheel** - Allows you to directly change the Bandwidth.
- **Right Mouse Click** - Reset to default settings.

Restoring The Default Settings

Defaults

Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX 5 Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.3.5 M2L Shapes

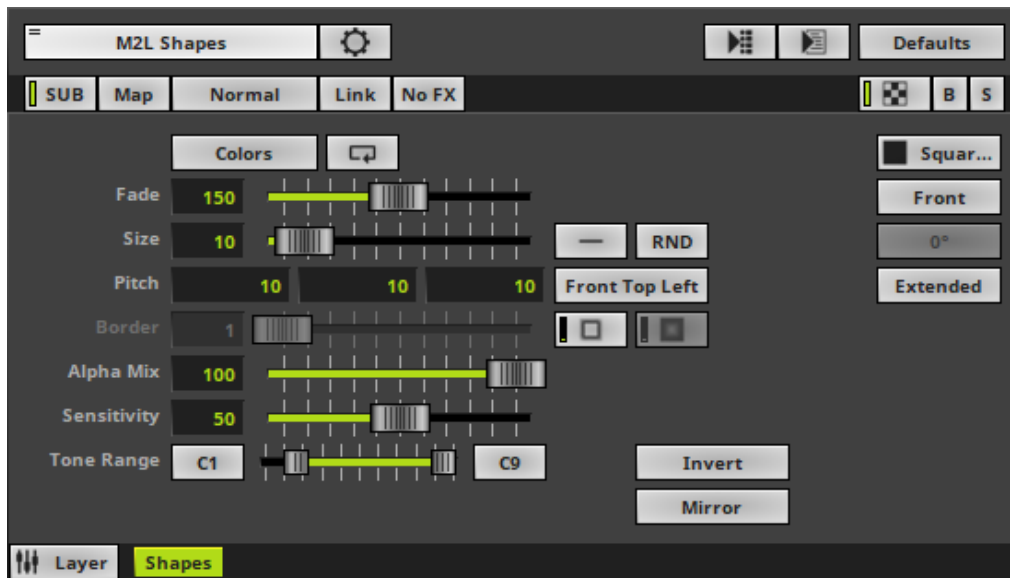
This topic includes:

- [Introduction](#)
- [Overview](#)
- [Effect Options](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

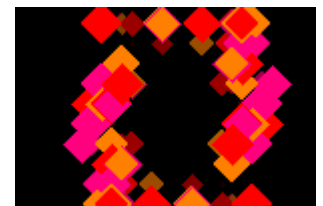
Introduction

M2L Shapes displays various objects available in different shapes according to the music.

Overview



Default Settings



Customized Example

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.

Learn more » [Effect Options](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX 5 Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX 5 Effect uses the following, individual controls:

- **Colors** - Opens the Color Table to specify the colors. The default color is White.
Learn more » [\[Global\] Colors And Intensity](#)
- **Fade** - Defines how fast MADRIX 5 displays objects [in %]. The default value is 150. Valid values range from 1 to 3000.
- **Size** - Defines the size of the objects [in %]. The default value is 10. Valid values range from 0.01 to 100.
- **Pitch** - Defines the distance between objects for all 3 axes [in %]. The default value is 10, 10, 10. Valid values range from 0.01 to 100.
- **Border** - Defines the size of an object's border [in %]. The default value is 1. Valid values range from 0.01 to 100.
- **Alpha Mix** - Defines the upper limit of how much alpha is added to each object. Alpha Mix will be visible when using additional Layers. The default value is 100. Valid values range from 0 to 100.
- **Sensitivity** - Defines how quickly and accurately MADRIX 5 reacts to the music. The default value is 50. Valid values range from 0 to 100.
- **Tone Range** - Defines the range of tones analyzed and used by setting a minimum and a maximum value. Narrow the range if your audio signal does not include a wide range of tones to avoid a lot of empty space where no objects are shown. The default values are C1 and C9. Valid values range from C-1 to G9.



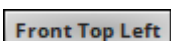
Distribution - Allows you to choose a certain Distribution Mode for the specific parameter. Often, you can then define a minimum value and a maximum value.

Uniform - Each object has the same size.

Random - Sizes will be generated randomly.



RND - Generates random object sizes each time. This automatically activates Random Distribution Mode.



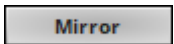
Position Origin Type - Defines the point of origin of Shapes [and hence their relative position].



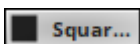
Outer Glow / Inner Glow - Is only available for specific Shapes. Defines the outer shimmer or inner gleam of objects. The default settings are 0.00. Valid values range from 0.01 to 100.



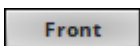
Invert - Inverts the position of objects.



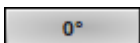
Mirror - Mirrors objects by creating duplicates on the opposite position.



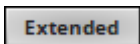
Shape - Allows you to choose a specific shape for objects. A certain Size is required before a shape becomes visible. The default setting is Square Filled.



Shape Alignment - Allows you to choose to which side objects are aligned to. This is mainly relevant for 3D. The default setting is Front.



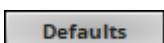
Shape Rotation Type - Is only available for specific Shapes. Defines the angle in which objects are rotated [**0°**, **90°**, **180°**, **270°**, **Random**].



Rendering Mode - Defines how objects are rendered. Each mode may enable additional settings [such as additional Shapes]. Choose from 2 different modes. The default setting is Extended.

- **Simple** - Prioritizes processing speed over rendering possibilities.
- **Extended** - Prioritizes rendering possibilities over over processing speed. This mode may require more performance.

Restoring The Default Settings



Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.

- This does not include the MADRIX 5 Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.3.6 M2L Single Tone Spectrum

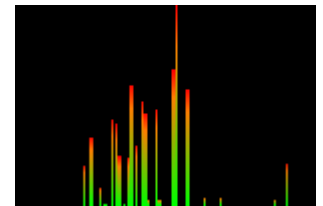
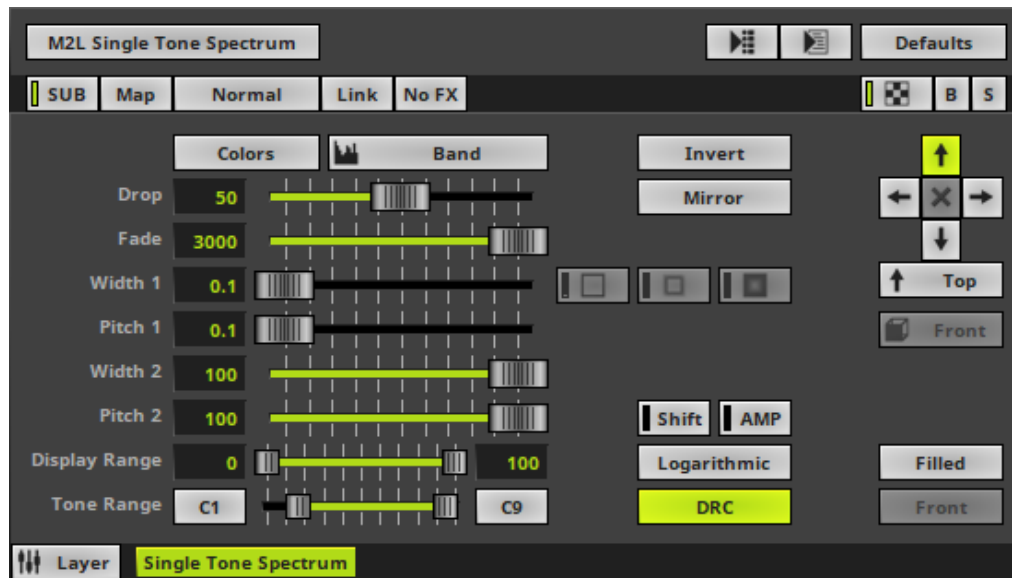
This topic includes:

- [Introduction](#)
- [Overview](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

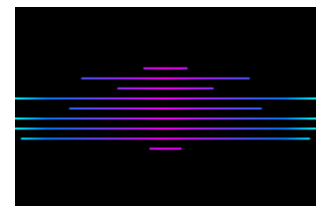
Introduction

M2L Single Tone Spectrum displays all notes based on the A440 pitch standard if they occur in the music.

Overview



Default Settings



Customized Example

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX 5 Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

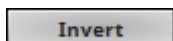
Learn more » [Layers](#)

Effect Settings

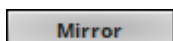
This MADRIX 5 Effect uses the following, individual controls:

- Colors** - Opens the Color Gradient to specify the colors. The default color is Red, Orange, Green.
Learn more » [\[Global\] Colors And Intensity](#)
- Drop** - Defines how quickly spectrum bars are not displayed any more and drop out of the matrix. The default value is 50. Valid values range from 1 to 100.

- **Fade** - Defines how fast MADRIX 5 displays the effect [in %]. The default value is 3000. Valid values range from 1 to 3000.
- **Width 1** - Defines the first size of spectrum bars depending on the direction [in %]. The default value is 0.1. Valid values range from 0.01 to 100.
- **Pitch 1** - Defines the first distance between objects depending on the direction [in %]. The default value is 0.1. Valid values range from 0.01 to 100.
- **Width 2** - Defines the second size of spectrum bars depending on the direction [in %]. The default value is 100. Valid values range from 0.01 to 100.
- **Pitch 2** - Defines the first distance between objects depending on the direction [in %]. The default value is 100. Valid values range from 0.01 to 100.
- **Display Range** - Defines the extend of the effect across the matrix, creating empty space when adjusting the minimum and maximum accordingly. For radial directions, it defines the inner and outer radius. For non-radial directions, it defines the start and end of the bars. The size ratios are kept and the effect is not simply cut off but displayed contracted. The default values are 0 and 100. Valid values range from 0 to 100.
Note: Color Mode Matrix is applied to the Display Range and not the entire matrix. In this way, the color gradient always fully stretches across the displayed effect and is not cut off.
- **Tone Range** - Defines the range of tones analyzed and used by setting a minimum and a maximum value. Narrow the range if your audio signal does not include a wide range of tones to avoid a lot of empty space where no objects are shown. The default values are C1 and C9. Valid values range from C-1 to G9.



Invert - Inverts the position of objects.



Mirror - Mirrors objects by creating duplicates on the opposite position.



Border - Is only available for specific Shapes. Defines the size of an object's border [in % of the shape size]. The default setting is 1.00. Valid values range from 0.01 to 100.00.



Outer Glow - Is only available for specific Shapes. Defines the outer shimmer of objects [in %]. The default setting is 0.00. Valid values range from 0.01 to 100.00.



Inner Glow - Is only available for specific Shapes. Defines the inner gleam of objects [in %]. The default setting is 0.00. Valid values range from 0.01 to 100.00.



Shift - Shifts the position of equalizer bands [in %]. By default, lower frequencies are shown to the left and high frequencies are shown to the right. The default setting is 0. Valid values range from 0 to 100.



Amplification - Amplifies the audio input and as a result increases the visual intensity [in %]. The default setting is 0. Valid values range from 0 to 100.



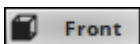
Logarithmic - Displays the spectrum in a logarithmic way.



Dynamic Range Control - Visually amplifies and balances frequencies to get a more interesting spectrum.



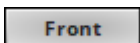
Direction/Mode - Allows you to choose the direction, including Cross Mode. This includes all directions for 2D and 3D mode. This heavily influences the visual outcome of the effect. The default setting is Top. Learn more »[Using Directions](#)



Look-At Type - Allows you to choose from which side you want to look at the effect. This is mainly relevant for 3D. The default setting is Front. Learn more »[Using Directions](#)



Shape - Allows you to choose a specific shape for objects. A certain Size is required before a shape becomes visible. The default setting is Filled.



Shape Alignment - Allows you to choose to which side objects are aligned to. This is mainly relevant for 3D. The default setting is Front.

Restoring The Default Settings

Defaults

Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX 5 Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.3.7 M2L Tubes

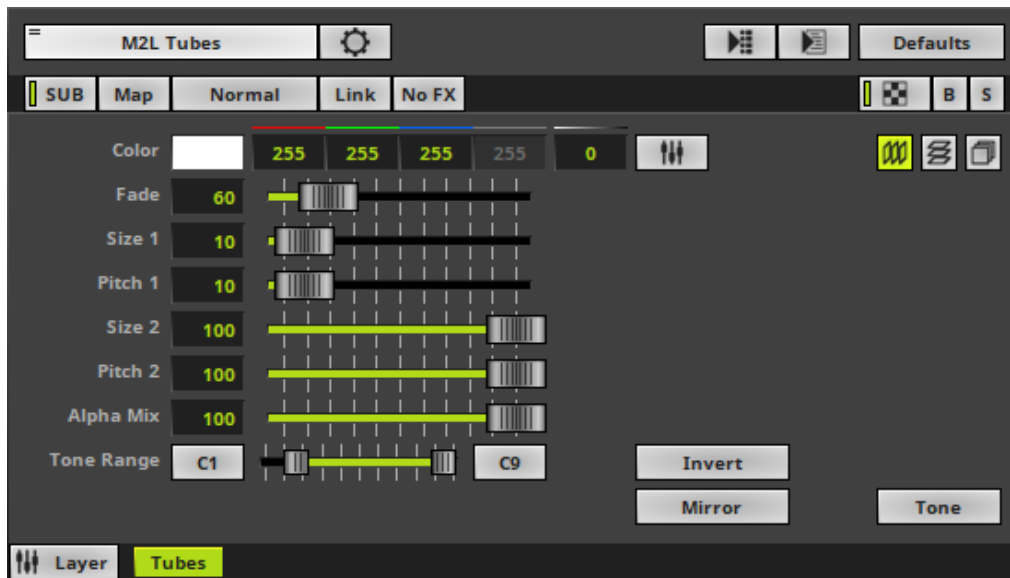
This topic includes:

- [Introduction](#)
- [Overview](#)
- [Effect Options](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

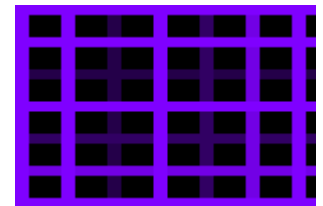
Introduction

M2L Tubes displays the music in form of tubes.

Overview



Default Settings



Customized Example

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.

Learn more » [Effect Options](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX 5 Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX 5 Effect uses the following, individual controls:

- **Color** - Defines the color. The default color is White.
Learn more » [\[Global\] Colors And Intensity](#)
- **Fade** - Defines how fast MADRIX 5 displays the effect [in %]. The default value is 60. Valid values range from 1 to 3000.
- **Size 1** - Defines the first size of tubes depending on the direction [in %]. The default value is 10. Valid values range from 0.01 to 100.
- **Pitch 1** - Defines the first distance between tubes depending on the direction [in %]. The default value is 10. Valid values range from 0.01 to 100.
- **Size 2** - Defines the second size of tubes depending on the direction [in %]. The default value is 100. Valid values range from 0.01 to 100.
- **Pitch 2** - Defines the first distance between objects depending on the direction [in %]. The default value is 100. Valid values range from 0.01 to 100.
- **Alpha Mix** - Defines the upper limit of how much alpha is added to each object [in %] . Alpha Mix will be visible when using additional Layers. The default value is 100. Valid values range from 0 to 100.
- **Tone Range** - Defines the range of tones analyzed and used by setting a minimum and a maximum value. Narrow the range if your audio signal does not include a wide range of tones to avoid a lot of empty space where no objects are shown. The default values are C1 and C9. Valid values range from C-1 to G9.

Invert

Invert - Inverts the position of objects.

Mirror

Mirror - Mirrors objects by creating duplicates on the opposite position.



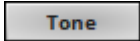
Vertical Mode - Activates or deactivates the use of vertical objects. All 3 modes can be used at the same time.



Horizontal Mode - Activates or deactivates the use of horizontal objects. All 3 modes can be used at the same time.

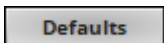


Depth Mode - Activates or deactivates the use of objects in the depth. All 3 modes can be used at the same time.



Mode - Allows you to choose which musical parameter is used [**Tone**, **Interval**, **Base Type**].

Restoring The Default Settings



Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX 5 Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.4 [TRI] Trigger Effects

This topic includes:

- [Introduction](#)
- [Topics Of This Chapter](#)

Introduction

Trigger Effects [TRI] are based on existing MADRIX 5 Effects. On top, you can trigger them manually using DMX-IN or MIDI. This adds a whole new level of interaction.

Topics Of This Chapter

MADRIX 5 includes the following Trigger Effects:

- » [Configuration Of TRI](#)
- » [TRI Color Change](#)
- » [TRI Drops](#)
- » [TRI Explosions](#)
- » [TRI Flash](#)
- » [TRI Fluid](#)
- » [TRI Shapes](#)
- » [TRI Split Shapes](#)
- » [TRI Tubes](#)
- » [TRI Water](#)

8.4.1 Configuration Of TRI

This topic includes:

- [Introduction](#)
- [Overview](#)
- [DMX-IN](#)
- [MIDI](#)

Introduction

You need to set up the correct configuration first before you can use MADRIX 5 TRI Effects.

Overview

TRI Effects can be triggered in 2 ways:

- [DMX-IN](#)
[Including DMX512, Art-Net, Streaming ACN]
- [MIDI](#)

DMX-IN

If you wish to use DMX512, Art-Net, or Streaming ACN as trigger input source, make sure to set them up correctly:

- » [DMX-IN](#)
- » [Art-Net Remote](#)
- » [sACN Input](#)

MIDI

If you wish to use MIDI as trigger input source, make sure to set it up correctly:

- » [MIDI-IN Configuration](#)

8.4.2 TRI Color Change

This topic includes:

- [Introduction](#)
- [Overview](#)
- [Effect Options](#)
- [Port Settings](#)
- [Layer Settings](#)
- [Effect Settings](#)

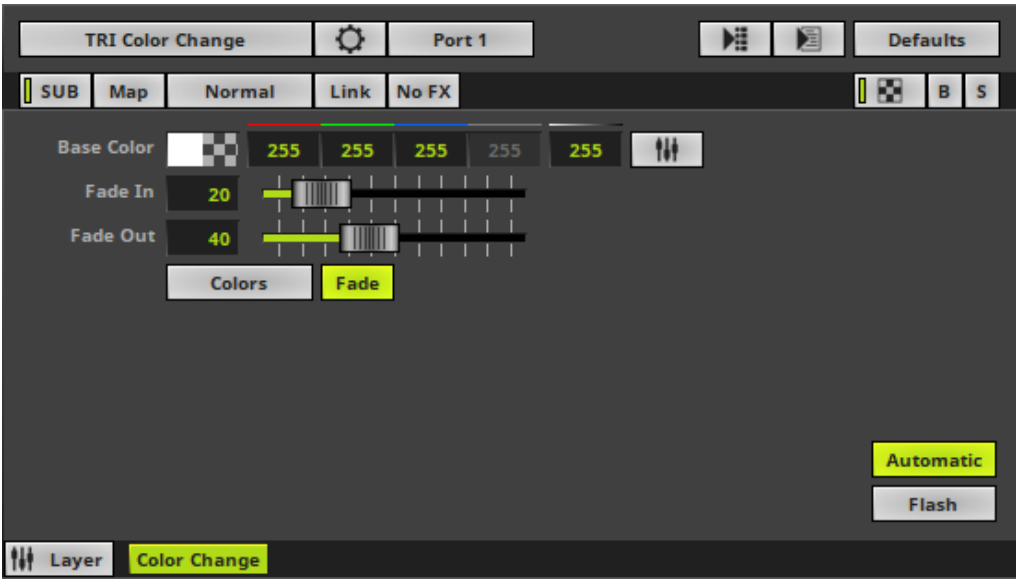
▪ Restoring The Default Settings

Introduction

TRI Color Change automatically changes colors when triggered by you.

The lowest input triggers the first color in the Color Table. The highest input triggers the last color in the Color Table. In-between trigger inputs are assigned to the in-between colors of the Color Table.

Overview



Default Settings



Customized Example

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.
- Learn more »[Effect Options](#)

Port Settings

Port 1							
Port 1	Port 9	Port 17	Port 25	Port 33	Port 41	Port 49	Port 57
Port 2	Port 10	Port 18	Port 26	Port 34	Port 42	Port 50	Port 58
Port 3	Port 11	Port 19	Port 27	Port 35	Port 43	Port 51	Port 59
Port 4	Port 12	Port 20	Port 28	Port 36	Port 44	Port 52	Port 60
Port 5	Port 13	Port 21	Port 29	Port 37	Port 45	Port 53	Port 61
Port 6	Port 14	Port 22	Port 30	Port 38	Port 46	Port 54	Port 62
Port 7	Port 15	Port 23	Port 31	Port 39	Port 47	Port 55	Port 63
Port 8	Port 16	Port 24	Port 32	Port 40	Port 48	Port 56	Port 64

- Port** - Selects the Trigger Port [1 - 64].
- Make sure to select the correct port first.
 - This setting should correspond to the settings you have made in the Device Manager. Learn more »[Configuration Of TRI](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX 5 Effect / Layer.
- Learn more »[Effect Areas \[Deck A / Deck B\]](#)
- Learn more »[Layers](#)

Effect Settings

This MADRIX 5 Effect uses the following, individual controls:

- **Base Color** - Is only available when using the mode **Flash**. Defines the standard color that is shown. The default color is White with Alpha.
Learn more » [\[Global\] Colors And Intensity](#)
- **Fade In** - Defines how long a color needs to be fully visible [in s]. The default value is 20. Valid values range from 1 to 100.
- **Fade Out** - Defines how long a color needs to disappear again [in s]. The default value is 40. Valid values range from 1 to 100.

Colors

Colors - Opens the Color Table to specify the colors. The default colors are Red, Yellow, Green, Cyan, Blue, Magenta.

Learn more » [\[Global\] Colors And Intensity](#)

Fade

Fade - Creates a smooth transition between colors of the Color Table. It is activated by default.

Automatic

Automatic - Automatically sustains the trigger port input even if you may already released the control/button in order to fully execute the fade. It is activated by default. If deactivated, the fade will be executed as long as the effect is triggered by pressing the control/button.

Flash

Trigger Mode - Selects the trigger mode.

- **Flash** - Lets colors appear when triggered.
- **Latch** - Changes colors when triggered, but always shows the last color.

Restoring The Default Settings

Defaults

Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX 5 Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.4.3 TRI Drops

This topic includes:

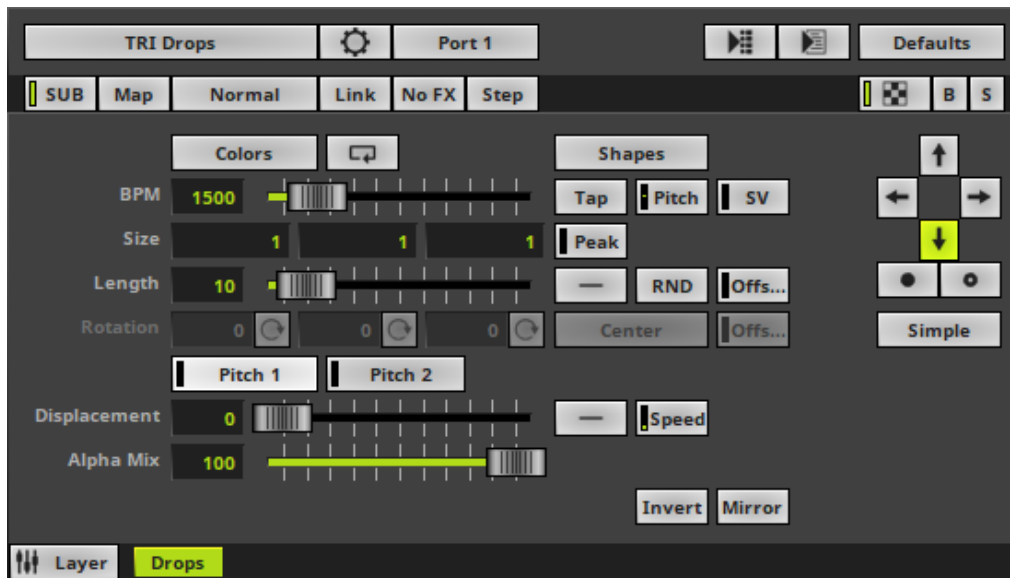
- [Introduction](#)
- [Overview](#)
- [Effect Options](#)
- [Port Settings](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

Introduction

TRI Drops displays [falling] drops when triggered by you.

The lowest input triggers a drop to the far left by default. The highest input triggers a drop to the far right by default. In-between triggers are assigned to in-between positions.

Overview



Default Settings



Customized Example

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.

Learn more » [Effect Options](#)

Port Settings

Port 1							
Port 1	Port 9	Port 17	Port 25	Port 33	Port 41	Port 49	Port 57
Port 2	Port 10	Port 18	Port 26	Port 34	Port 42	Port 50	Port 58
Port 3	Port 11	Port 19	Port 27	Port 35	Port 43	Port 51	Port 59
Port 4	Port 12	Port 20	Port 28	Port 36	Port 44	Port 52	Port 60
Port 5	Port 13	Port 21	Port 29	Port 37	Port 45	Port 53	Port 61
Port 6	Port 14	Port 22	Port 30	Port 38	Port 46	Port 54	Port 62
Port 7	Port 15	Port 23	Port 31	Port 39	Port 47	Port 55	Port 63
Port 8	Port 16	Port 24	Port 32	Port 40	Port 48	Port 56	Port 64

Port - Selects the Trigger Port [1 - 64].

- Make sure to select the correct port first.

- This setting should correspond to the settings you have made in the Device Manager. Learn more »[Configuration Of TRI](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX 5 Effect / Layer.

Learn more »[Effect Areas \[Deck A / Deck B\]](#)

Learn more »[Layers](#)

Effect Settings

This MADRIX 5 Effect uses the following, individual controls:

- Colors** - Opens the Color Table to specify the colors. The default color is White.
Learn more »[\[Global\] Colors And Intensity](#)
- Shapes** - Opens the Shape Table to specify the shapes. The default color is Rectangle Filled.
Learn more »[Using Shapes \[Shape Table\]](#)
- BPM** - Defines the speed. The default value is 1500. Valid values range from 0 to 9999.
Learn more »[Using BPM Control](#)

- **Size** - Defines the size of objects [Width, Height, Depth]. The default values are 1, 1, 1. Valid values range from 0.1 to 1000.
- **Length** - Defines the minimum length of a drop. The overall length depends on how long you trigger the effect. The default value is 10. Valid values range from 0 to 100.
- **Rotation** - Defines the rotation of objects in **X**, **Y**, and **Z** [in °]. The default values are 0, 0, 0. Valid values range from -180 to 180.
- **Displacement** - Defines the amount of movement distortion. The default value is 0. Valid values range from 0 to 100.
- **Alpha Mix** - Defines the upper limit of how much alpha is added to each drop [in %]. Alpha Mix will be visible when using additional Layers. The default value is 100. Valid values range from 0 to 100.



Peak - Defines the position of the peak of the drop. The default value is 0.00. Valid values range from 0.00 to 100.00.



Distribution - Allows you to choose a certain Distribution Mode for the specific parameter. Often, you can then define a minimum value and a maximum value.

Uniform - Each object has the same size.

Random - Sizes will be generated randomly.



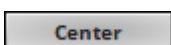
RND - Generates random object sizes each time. This automatically activates Random Distribution Mode.



Length Offset - Defines if an offset is added to the trace of a drop [in % of the Matrix Size]. The default setting is 0. Valid values range from 0 to 100.



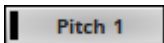
Continuous Rotation - Animates the shapes and rotates them around the corresponding axis permanently.



Rotation Origin Type - Defines the point of origin of the applied rotation.



Rotation Offset - Defines if an offset is added to the rotation of a drop [in % of the Matrix Size]. The default setting is 0. Valid values range from 0 to 100.



Pitch 1 - Defines the first distance between objects depending on the direction [in % of the Matrix Size]. The default setting is 0. Valid values range from 0 to 100.



Pitch 2 - Defines the second distance between objects depending on the direction [in % of the Matrix Size]. The default setting is 0. Valid values range from 0 to 100.



Displacement Distribution - Is only available for Displacement. Is applied in dependence of the direction that is chosen. Allows you to choose the area the distortion is applied to [**Uniform**, **Linear Increasing**, **Linear Decreasing**, **Triangle**]. The default setting is Uniform.



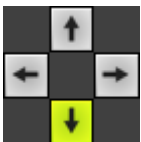
Displacement Speed - Is only available for Displacement. Allows you to choose to speed in which the distortion affects the visuals. The default setting is 10.0.



Invert - Inverts the position of objects.



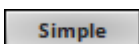
Mirror - Mirrors objects by creating duplicates on the opposite position.



Direction - Allows you to choose the direction of the movement. The default setting is Down. Learn more »[Using Directions](#)



Direction - Allows you to choose the direction of the movement [**To The Front** or **To The Back**]. This is mainly relevant for 3D. The default setting is Down. Learn more »[Using Directions](#)



Rendering Mode - Defines how objects are rendered. Each mode may enable additional settings [such as additional Shapes]. Choose from 2 different modes. The default setting is Simple.

- **Simple** - Prioritizes processing speed over rendering possibilities.

- **Extended** - Prioritizes rendering possibilities over over processing speed. This mode may require more performance.

Restoring The Default Settings

Defaults

Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX 5 Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.4.4 TRI Explosions

This topic includes:

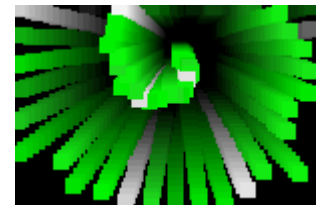
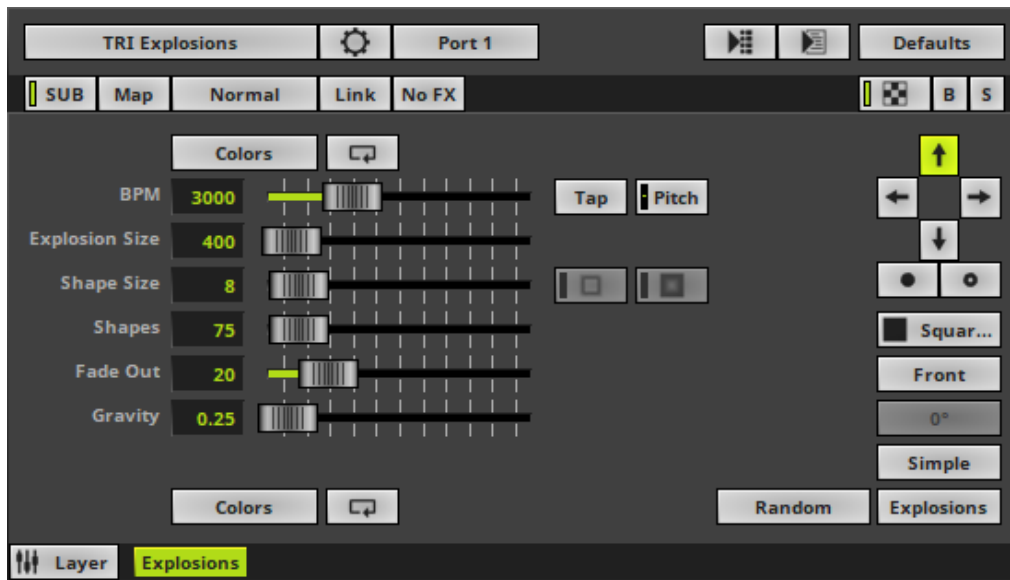
- [Introduction](#)
- [Overview](#)
- [Effect Options](#)
- [Port Settings](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

Introduction

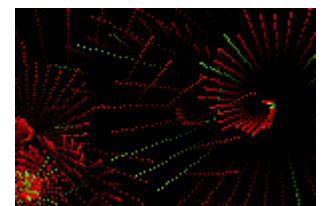
TRI Explosions displays all kinds of explosions as well as fireworks when triggered by you.

The lowest input triggers an explosion to the far left by default. The highest input triggers an explosion to the far right by default. In-between triggers are assigned to in-between positions. Each consecutive explosion uses the next color in the Color Table.

Overview



Default Settings



Customized Example

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.

Learn more » [Effect Options](#)

Port Settings

Port 1							
Port 1	Port 9	Port 17	Port 25	Port 33	Port 41	Port 49	Port 57
Port 2	Port 10	Port 18	Port 26	Port 34	Port 42	Port 50	Port 58
Port 3	Port 11	Port 19	Port 27	Port 35	Port 43	Port 51	Port 59
Port 4	Port 12	Port 20	Port 28	Port 36	Port 44	Port 52	Port 60
Port 5	Port 13	Port 21	Port 29	Port 37	Port 45	Port 53	Port 61
Port 6	Port 14	Port 22	Port 30	Port 38	Port 46	Port 54	Port 62
Port 7	Port 15	Port 23	Port 31	Port 39	Port 47	Port 55	Port 63
Port 8	Port 16	Port 24	Port 32	Port 40	Port 48	Port 56	Port 64

Port - Selects the Trigger Port [1 - 64].

- Make sure to select the correct port first.

- This setting should correspond to the settings you have made in the Device Manager. Learn more »[Configuration Of TRI](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX 5 Effect / Layer.

Learn more »[Effect Areas \[Deck A / Deck B\]](#)

Learn more »[Layers](#)

Effect Settings

This MADRIX 5 Effect uses the following, individual controls:

- Colors** - Opens the Color Table. The default colors are Red, Yellow, Green, Cyan, Blue, Magenta.

Learn more »[\[Global\] Colors And Intensity](#)

- BPM** - Defines the speed. The default value is 3000. Valid values range from 0 to 9999.

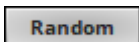
Learn more »[Using BPM Control](#)

- Explosion Size** - Defines the magnitude of each explosion. The default value is 400. Valid values range from 1 to 9999.

- **Shape Size** - Defines the size of each object within an explosion. The default value is 8. Valid values range from 1 to 100.
- **Shapes** - Defines the number of single objects a single explosion includes. The default value is 75. Valid values range from 1 to 1000.
- **Fade Out** - Defines how fast MADRIX 5 displays objects. The default value is 20. Valid values range from 0 to 1000.
- **Gravity** - Defines how strong objects are pulled to the bottom depending on the direction [in %]. The default value is 0.25. Valid values range from 0 to 100.
- **Colors** - Opens a second Color Table to define the second colors of each explosion. The default color is White. Learn more » [\[Global\] Colors And Intensity](#)



Outer Glow / Inner Glow - Is only available for specific Shapes. Defines the outer shimmer or inner gleam of objects. The default settings are 0.00. Valid values range from 0.01 to 100.



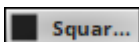
Explosion Shape - Allows you to choose a specific shape for explosions [**Sphere, Sphere Glow, Spiral, Radial, Diamond, Star, Random**]. The default setting is Random.



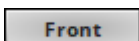
Direction - Allows you to choose the direction of the movement. The default setting is Up. Learn more » [Using Directions](#)



Direction - Allows you to choose the direction of the movement [**To The Front** or **To The Back**]. This is mainly relevant for 3D. The default setting is Up. Learn more » [Using Directions](#)



Shape - Allows you to choose a specific shape for objects. A certain Size is required before a shape becomes visible. The default setting is Square Filled.



Look-At Type - Allows you to choose from which side you want to look at the effect. This is mainly relevant for 3D. The default setting is Front. Learn more » [Using Directions](#)

0°

Shape Rotation Type - Is only available for specific Shapes. Defines the angle in which objects are rotated [**0°**, **90°**, **180°**, **270°**, **Random**]. The default setting is 0°.

Simple

Rendering Mode - Defines how objects are rendered. Each mode may enable additional settings [such as additional Shapes]. Choose from 2 different modes. The default setting is Simple.

- **Simple** - Prioritizes processing speed over rendering possibilities.
- **Extended** - Prioritizes rendering possibilities over over processing speed. This mode may require more performance.

Explosions

Mode - Allows you to choose the mode [**Explosions** or **Fireworks**]. The default setting is Explosions.

Restoring The Default Settings

Defaults

Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX 5 Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.4.5 TRI Flash

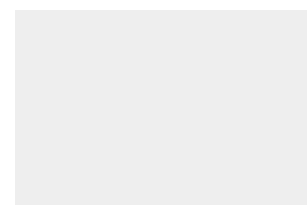
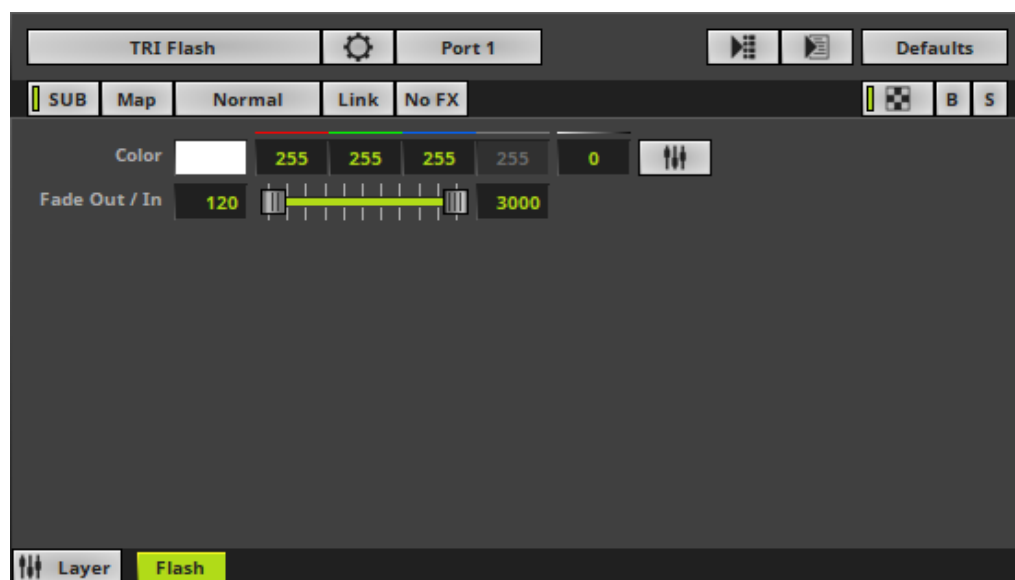
This topic includes:

- [Introduction](#)
- [Overview](#)
- [Effect Options](#)
- [Port Settings](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

Introduction

TRI Flash flashes the LED matrix when triggered by you.

Overview



Default Settings



Customized Example

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.

Learn more » [Effect Options](#)

Port Settings

Port 1							
Port 1	Port 9	Port 17	Port 25	Port 33	Port 41	Port 49	Port 57
Port 2	Port 10	Port 18	Port 26	Port 34	Port 42	Port 50	Port 58
Port 3	Port 11	Port 19	Port 27	Port 35	Port 43	Port 51	Port 59
Port 4	Port 12	Port 20	Port 28	Port 36	Port 44	Port 52	Port 60
Port 5	Port 13	Port 21	Port 29	Port 37	Port 45	Port 53	Port 61
Port 6	Port 14	Port 22	Port 30	Port 38	Port 46	Port 54	Port 62
Port 7	Port 15	Port 23	Port 31	Port 39	Port 47	Port 55	Port 63
Port 8	Port 16	Port 24	Port 32	Port 40	Port 48	Port 56	Port 64

Port - Selects the Trigger Port [1 - 64].

- Make sure to select the correct port first.

- This setting should correspond to the settings you have made in the Device Manager. Learn more » [Configuration Of TRI](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX 5 Effect / Layer.

Learn more » [Effect Areas \[Deck A / Deck B\]](#)

Learn more » [Layers](#)

Effect Settings

This MADRIX 5 Effect uses the following, individual controls:

- Color** - Defines the color. The default color is White.

Learn more » [\[Global\] Colors And Intensity](#)

- Fade Out / In** - Defines the fade-in speed as well as the fade-out speed. The default values are 120 and 3000. Valid values range from 1 to 3000.

Restoring The Default Settings

Defaults

Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX 5 Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.4.6 TRI Fluid

This topic includes:

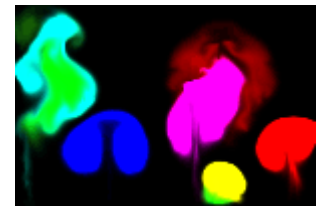
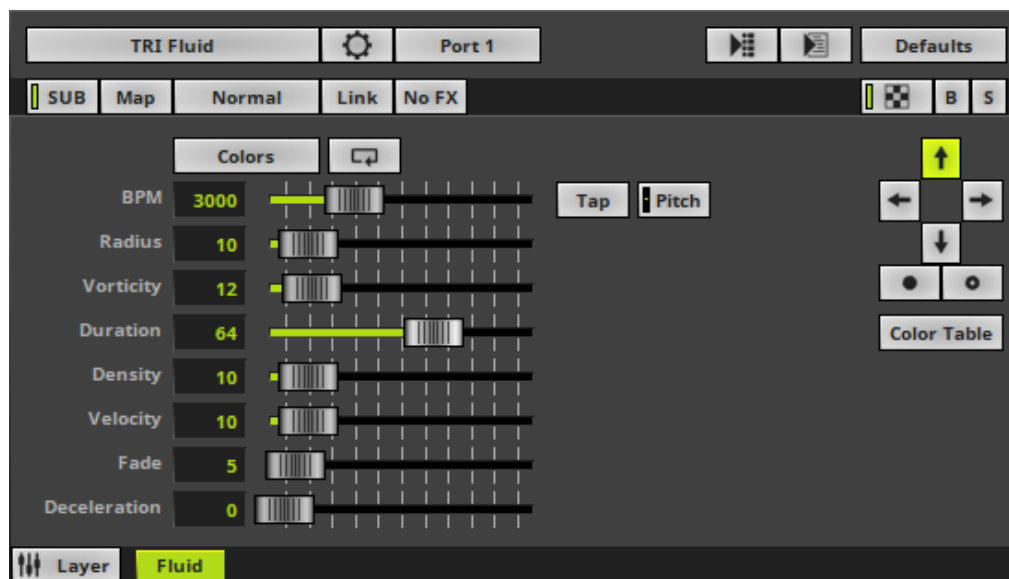
- [Introduction](#)
- [Overview](#)
- [Effect Options](#)
- [Port Settings](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

Introduction

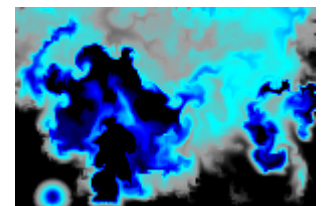
TRI Fluid simulates gas or liquids when triggered by you.

The lowest input triggers an explosion to the far left by default. The highest input triggers an explosion to the far right by default. In-between triggers are assigned to in-between positions. Each consecutive explosion uses the next color in the Color Table.

Overview



Default Settings



Customized Example

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.

Learn more » [Effect Options](#)

Port Settings

Port 1							
Port 1	Port 9	Port 17	Port 25	Port 33	Port 41	Port 49	Port 57
Port 2	Port 10	Port 18	Port 26	Port 34	Port 42	Port 50	Port 58
Port 3	Port 11	Port 19	Port 27	Port 35	Port 43	Port 51	Port 59
Port 4	Port 12	Port 20	Port 28	Port 36	Port 44	Port 52	Port 60
Port 5	Port 13	Port 21	Port 29	Port 37	Port 45	Port 53	Port 61
Port 6	Port 14	Port 22	Port 30	Port 38	Port 46	Port 54	Port 62
Port 7	Port 15	Port 23	Port 31	Port 39	Port 47	Port 55	Port 63
Port 8	Port 16	Port 24	Port 32	Port 40	Port 48	Port 56	Port 64

Port - Selects the Trigger Port [1 - 64].

- Make sure to select the correct port first.

- This setting should correspond to the settings you have made in the Device Manager. Learn more »[Configuration Of TRI](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX 5 Effect / Layer.

Learn more »[Effect Areas \[Deck A / Deck B\]](#)

Learn more »[Layers](#)

Effect Settings

This MADRIX 5 Effect uses the following, individual controls:

- Colors** - Opens the Color Table or Color Gradient depending on the Color Mode. The default colors are Red, Yellow, Green, Cyan, Blue, Magenta.

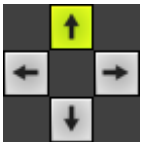
Learn more »[\[Global\] Colors And Intensity](#)

- BPM** - Defines the speed. The default value is 3000. Valid values range from 0 to 9999.

Learn more »[Using BPM Control](#)

- Radius** - Defines the size of impulses [in %]. The default value is 10. Valid values range from 0 to 100.

- **Vorticity** - Defines how much impulses can swirl in the gas [in %]. The default value is 12. Valid values range from 0 to 100.
- **Duration** - Defines how long impulses can move through the gas [in %]. The default value is 64. Valid values range from 0 to 100.
- **Density** - Defines the thickness of the gas [in %]. The default value is 10. Valid values range from 0 to 100.
- **Velocity** - Defines how fast impulses can move through the gas [in %]. The default value is 10. Valid values range from 0 to 100.
- **Fade** - Defines how quickly impulses evaporate [in %]. The default value is 5. Valid values range from 0 to 100.
- **Deceleration** - Slows down the movement of impulses [in %]. The default value is 0. Valid values range from 0 to 100.

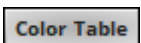


Direction - Allows you to choose the direction of the movement. The default setting is Up.

Learn more » [Using Directions](#)

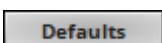


Direction - Allows you to choose the direction of the movement [**To The Front** or **To The Back**]. This is mainly relevant for 3D. The default setting is Up. Learn more » [Using Directions](#)



Color Mode - Allows you to choose the color mode [**Color Table** or **Color Gradient**]. The default setting is Color Table.

Restoring The Default Settings



Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX 5 Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.4.7 TRI Shapes

This topic includes:

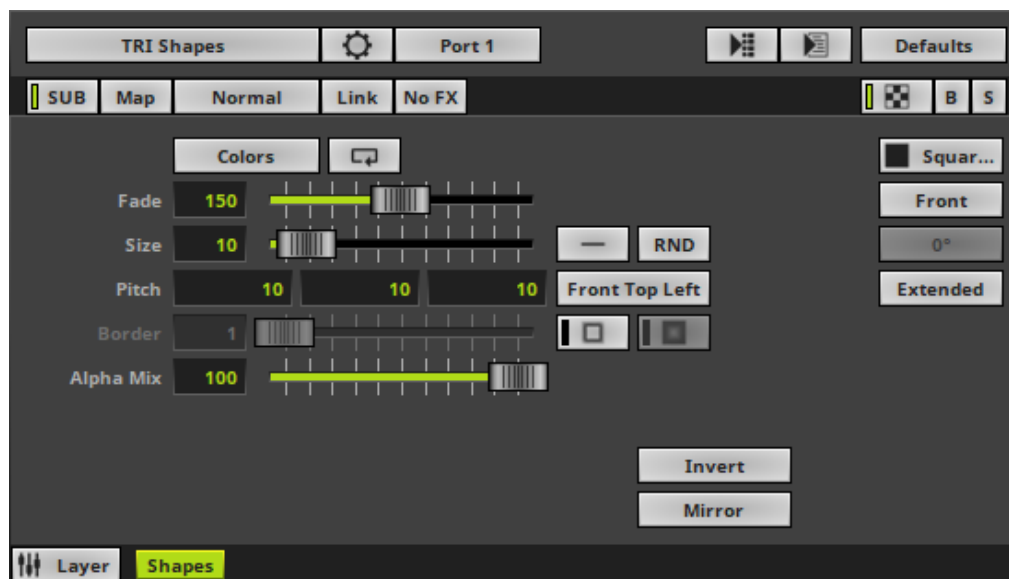
- [Introduction](#)
- [Overview](#)
- [Effect Options](#)
- [Port Settings](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

Introduction

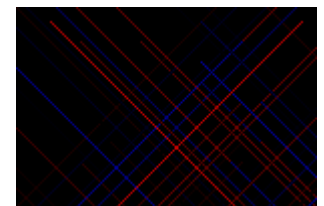
TRI Shapes creates various objects at random positions when triggered by you.

The lowest input triggers a shape to the far left by default. The highest input triggers a shape to the far right by default. In-between triggers are assigned to in-between positions.

Overview



Default Settings



Customized Example

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.

Learn more » [Effect Options](#)

Port Settings

Port 1							
Port 1	Port 9	Port 17	Port 25	Port 33	Port 41	Port 49	Port 57
Port 2	Port 10	Port 18	Port 26	Port 34	Port 42	Port 50	Port 58
Port 3	Port 11	Port 19	Port 27	Port 35	Port 43	Port 51	Port 59
Port 4	Port 12	Port 20	Port 28	Port 36	Port 44	Port 52	Port 60
Port 5	Port 13	Port 21	Port 29	Port 37	Port 45	Port 53	Port 61
Port 6	Port 14	Port 22	Port 30	Port 38	Port 46	Port 54	Port 62
Port 7	Port 15	Port 23	Port 31	Port 39	Port 47	Port 55	Port 63
Port 8	Port 16	Port 24	Port 32	Port 40	Port 48	Port 56	Port 64

Port - Selects the Trigger Port [1 - 64].

- Make sure to select the correct port first.

- This setting should correspond to the settings you have made in the Device Manager. Learn more »[Configuration Of TRI](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX 5 Effect / Layer.

Learn more »[Effect Areas \[Deck A / Deck B\]](#)

Learn more »[Layers](#)

Effect Settings

This MADRIX 5 Effect uses the following, individual controls:

- Colors** - Opens the Color Table to specify the colors. The default color is White.
Learn more »[\[Global\] Colors And Intensity](#)
- Fade** - Defines how fast objects disappear. The default value is 150. Valid values range from 1 to 3000.
- Size** - Defines the size of the objects [in % of the Matrix Size, depending on the Shape Alignment]. The default value is 10. Valid values range from 0.01 to 1000.
- Pitch** - Defines the distance between objects for all 3 axes [in % of the Matrix Size]. The default values are 10, 10, 10. Valid values range from 0.01 to 100.

- **Border** - Defines the size of an object's border [in % of the shape size]. The default value is 1. Valid values range from 0.01 to 100.
- **Alpha Mix** - Defines the upper limit of how much alpha is added to each object [in %]. Alpha Mix will be visible when using additional Layers. The default value is 100. Valid values range from 0 to 100.



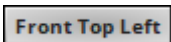
Distribution - Allows you to choose a certain Distribution Mode for the specific parameter. Often, you can then define a minimum value and a maximum value.

Uniform - Each object has the same size.

Random - Sizes will be generated randomly.



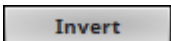
RND - Generates random object sizes each time. This automatically activates Random Distribution Mode.



Position Origin Type - Defines the point of origin of Shapes [and hence their relative position].



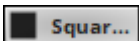
Outer Glow / Inner Glow - Is only available for specific Shapes. Defines the outer shimmer or inner gleam of objects. The default settings are 0.00. Valid values range from 0.01 to 100.



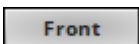
Invert - Inverts the position of objects.



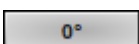
Mirror - Mirrors objects by creating duplicates on the opposite position.



Shape - Allows you to choose a specific shape for objects. A certain Size is required before a shape becomes visible. The default setting is Square Filled.



Shape Alignment - Allows you to choose to which side objects are aligned to. This is mainly relevant for 3D. The default setting is Front.



Shape Rotation Type - Is only available for specific Shapes. Defines the angle in which objects are rotated [**0°**, **90°**, **180°**, **270°**, **Random**]. The default setting is 0°.

Extended

Rendering Mode - Defines how objects are rendered. Each mode may enable additional settings [such as additional Shapes]. Choose from 2 different modes. The default setting is Extended.

- **Simple** - Prioritizes processing speed over rendering possibilities.
- **Extended** - Prioritizes rendering possibilities over over processing speed. This mode may require more performance.

Restoring The Default Settings

Defaults

Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX 5 Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.4.8 TRI Split Shapes

This topic includes:

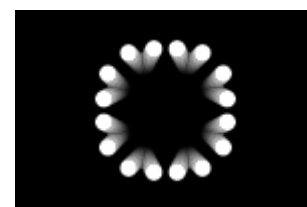
- [Introduction](#)
- [Overview](#)
- [Port Settings](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

Introduction

TRI Split Shapes displays recurring objects that can split into even more objects when triggered by you.

The lowest input triggers a shape to the far left by default. The highest input triggers a shape to the far right by default. In-between triggers are assigned to in-between positions.

Overview



Default Settings



Customized Example

Port Settings

Port 1							
Port 1	Port 9	Port 17	Port 25	Port 33	Port 41	Port 49	Port 57
Port 2	Port 10	Port 18	Port 26	Port 34	Port 42	Port 50	Port 58
Port 3	Port 11	Port 19	Port 27	Port 35	Port 43	Port 51	Port 59
Port 4	Port 12	Port 20	Port 28	Port 36	Port 44	Port 52	Port 60
Port 5	Port 13	Port 21	Port 29	Port 37	Port 45	Port 53	Port 61
Port 6	Port 14	Port 22	Port 30	Port 38	Port 46	Port 54	Port 62
Port 7	Port 15	Port 23	Port 31	Port 39	Port 47	Port 55	Port 63
Port 8	Port 16	Port 24	Port 32	Port 40	Port 48	Port 56	Port 64

Port - Selects the Trigger Port [1 - 64].

- Make sure to select the correct port first.

- This setting should correspond to the settings you have made in the Device Manager. Learn more »[Configuration Of TRI](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX 5 Effect / Layer.

Learn more »[Effect Areas \[Deck A / Deck B\]](#)

Learn more »[Layers](#)

Effect Settings

This MADRIX 5 Effect uses the following, individual controls:

- Colors** - Opens the Color Table to specify the colors. The default color is White.
Learn more »[\[Global\] Colors And Intensity](#)
- Shapes** - Opens the Shape Table to specify the shapes. The default color is Circle Filled.
Learn more »[Using Shapes \[Shape Table\]](#)
- BPM** - Defines the speed. The default value is 600. Valid values range from 0 to 9999.
Learn more »[Using BPM Control](#)

- **Emissions** - Defines the number of initial objects that are sent out from the center. The default value is 4. Valid values range from 1 to 16.
- **Generations** - Defines how often objects are split [plus the initial generation]. The default value is 4. Valid values range from 1 to 8.
- **Velocity** - Defines how fast objects can move [in %]. The default value is 50. Valid values range from 0.1 to 1000.
- **Lifetime** - Defines how long objects move before being split [in s]. The default value is 0.25. Valid values range from 0.001 to 100.
- **Spread** - Defines the angle in which objects are split. The default value is 72. Valid values range from 0 to 360.
- **Size** - Defines the size of objects [in % of the Matrix Size]. The default value is 10. Valid values range from -1 to 1000.



Path Alignment - Lets shapes rotate along the path instead of the rotation against the horizon.



Angle - Defines in which angle the first objects are emitted [as an offset]. The default setting is 0. Valid values range from -180 to 180.



Swirl - Defines an additional rotation of object paths around the center.



Distribution - Allows you to choose a certain Distribution Mode for the specific parameter. Often, you can then define a minimum value and a maximum value.

Uniform - Each path has the same distribution.

Linear - A linear distribution is used to increase the parameter regularly starting from the inside.

Quadratic - The parameter is more prominent on the outer paths.

SQRT - Using a square root function the parameter is more prominent on the outer paths.

Cubic - Uses a cubic distribution with a mixed distribution.

Inverted Linear - A linear distribution is used to decrease the parameter regularly starting from the inside.

Triangle - The majority of objects will be on the middle paths.

Inverted Quadratic - The parameter is more prominent on the inner paths.

Inverted SQRT - Using a square root function the majority of objects will be on the inner paths.

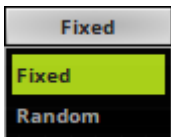
Inverted Cubic - Uses a cubic distribution with a mixed distribution.



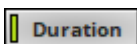
Fade Out - Defines how long objects are faded out [in s]. The default value is 10.00. Valid values range from 0.00 to 100.00.



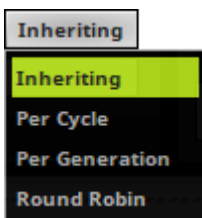
Alpha Mix - Defines the upper limit of how much alpha is added to each object [in %]. The default value is 0.00. Valid values range from 0.00 to 100.00.



Center Mode - Allows you to choose if the center of emissions is **Fixed** or **Random**. The default mode is Fixed.



Duration - Is only available for specific shapes [Implode, Explode, Pulse]. Defines how fast the shapes implode, explode, or pulse. The default setting is 100.00. Valid values range from 0.00 to 100.00.



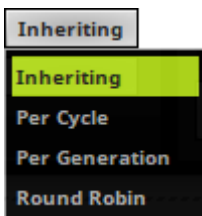
Color Mode - Is only available when having set up multiple colors in the Color Table.

Inheriting - Objects that resulted from a split will have the same color as the original shape.

Per Cycle - A single color is applied only to an entire cycle.

Per Generation - Each generation of shapes receives a new color.

Round Robin - The colors change within emissions as well as generations.



Shape Mode - Is only available when having set up multiple shapes in the Shape Table.

Inheriting - Objects that resulted from a split will have the same shape as the original shape.

Per Cycle - A single shape is applied only to an entire cycle.

Per Generation - Each generation of shapes receives a new shape.

Round Robin - The shapes change within emissions as well as generations.

Restoring The Default Settings

Defaults

Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX 5 Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.4.9 TRI Tubes

This topic includes:

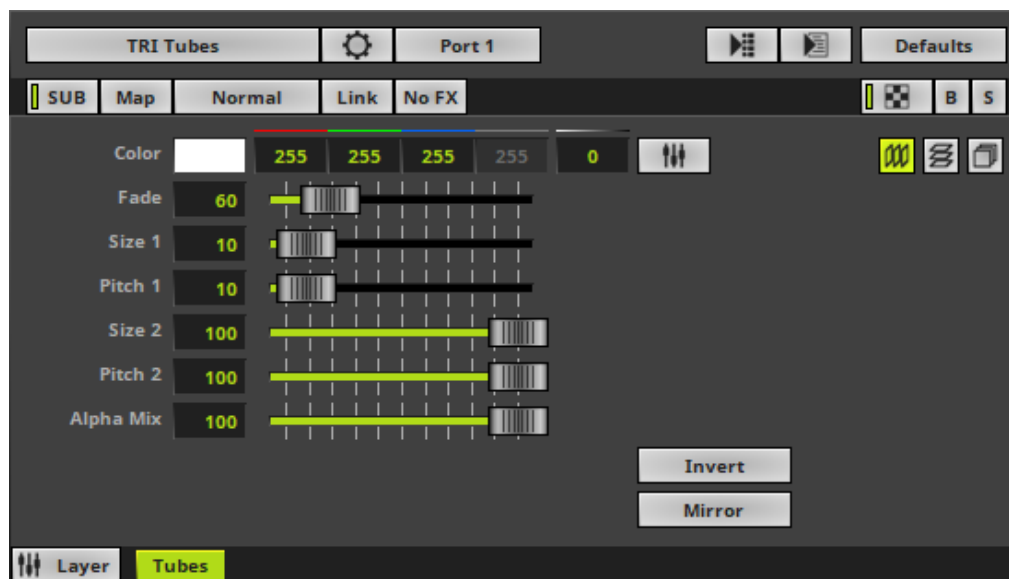
- [Introduction](#)
- [Overview](#)
- [Effect Options](#)
- [Port Settings](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

Introduction

TRI Tubes displays various kinds of tubes when triggered by you.

The lowest input triggers a tube to the far left by default. The highest input triggers a tube to the far right by default. In-between triggers are assigned to in-between positions.

Overview



Default Settings



Customized Example

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.

Learn more » [Effect Options](#)

Port Settings

Port 1							
Port 1	Port 9	Port 17	Port 25	Port 33	Port 41	Port 49	Port 57
Port 2	Port 10	Port 18	Port 26	Port 34	Port 42	Port 50	Port 58
Port 3	Port 11	Port 19	Port 27	Port 35	Port 43	Port 51	Port 59
Port 4	Port 12	Port 20	Port 28	Port 36	Port 44	Port 52	Port 60
Port 5	Port 13	Port 21	Port 29	Port 37	Port 45	Port 53	Port 61
Port 6	Port 14	Port 22	Port 30	Port 38	Port 46	Port 54	Port 62
Port 7	Port 15	Port 23	Port 31	Port 39	Port 47	Port 55	Port 63
Port 8	Port 16	Port 24	Port 32	Port 40	Port 48	Port 56	Port 64

Port - Selects the Trigger Port [1 - 64].

- Make sure to select the correct port first.

- This setting should correspond to the settings you have made in the Device Manager. Learn more »[Configuration Of TRI](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX 5 Effect / Layer.

Learn more »[Effect Areas \[Deck A / Deck B\]](#)

Learn more »[Layers](#)

Effect Settings

This MADRIX 5 Effect uses the following, individual controls:

- Colors** - Opens the Color Table to specify the colors. The default color is White.
Learn more »[\[Global\] Colors And Intensity](#)
- Fade** - Defines how fast MADRIX 5 displays the effect [in %]. The default value is 60. Valid values range from 1 to 3000.
- Size 1** - Defines the first size of tubes depending on the direction [in % of the Matrix Size]. The default value is 10. Valid values range from 0.01 to 100.

- **Pitch 1** - Defines the first distance between tubes depending on the direction [in % of the Matrix Size]. The default value is 10. Valid values range from 0.01 to 100.
- **Size 2** - Defines the second size of tubes depending on the direction [in % of the Matrix Size]. The default value is 100. Valid values range from 0.01 to 100.
- **Pitch 2** - Defines the first distance between objects depending on the direction [in % of the Matrix Size]. The default value is 100. Valid values range from 0.01 to 100.
- **Alpha Mix** - Defines the upper limit of how much alpha is added to each object. Alpha Mix will be visible when using additional Layers. The default value is 100. Valid values range from 0 to 100.

Invert

Invert - Inverts the position of objects.

Mirror

Mirror - Mirrors objects by creating duplicates on the opposite position.



Vertical Mode - Activates or deactivates the use of vertical objects. All 3 modes can be used at the same time. It is activated by default.



Horizontal Mode - Activates or deactivates the use of horizontal objects. All 3 modes can be used at the same time.



Depth Mode - Activates or deactivates the use of objects in the depth. All 3 modes can be used at the same time.

Restoring The Default Settings

Defaults

Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.
- This does not include the MADRIX 5 Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.4.10 TRI Water

This topic includes:

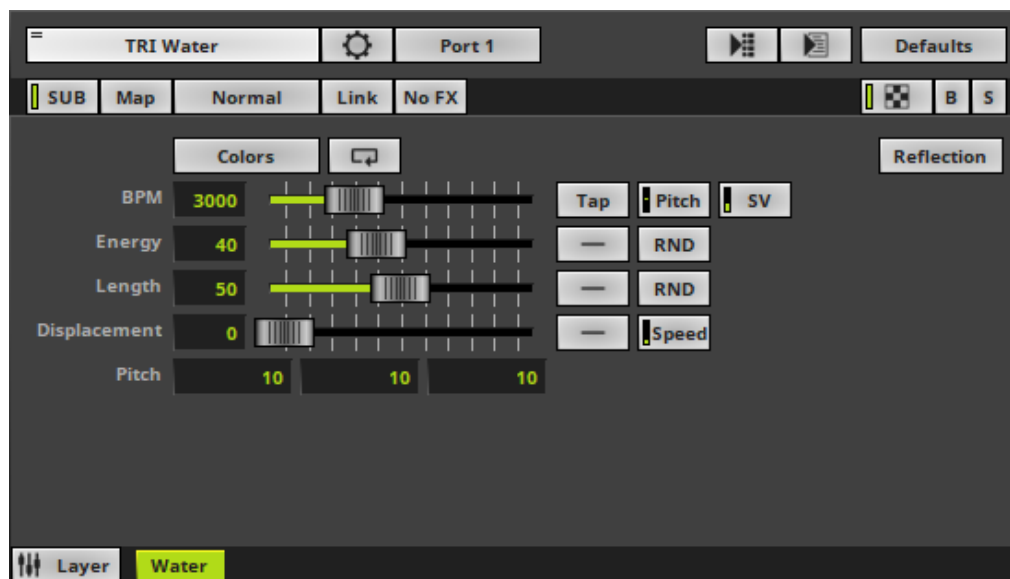
- [Introduction](#)
- [Overview](#)
- [Effect Options](#)
- [Port Settings](#)
- [Layer Settings](#)
- [Effect Settings](#)
- [Restoring The Default Settings](#)

Introduction

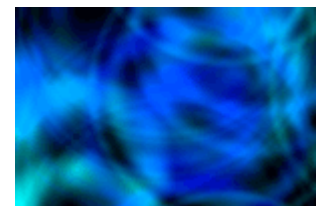
SCE Water displays the rising waves as droplets drop into water when triggered by you.

The lowest input triggers an object to the far left by default. The highest input triggers an object to the far right by default. In-between triggers are assigned to in-between positions.

Overview



Default Settings



Customized Example

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.

Learn more » [Effect Options](#)

Port Settings

Port 1							
Port 1	Port 9	Port 17	Port 25	Port 33	Port 41	Port 49	Port 57
Port 2	Port 10	Port 18	Port 26	Port 34	Port 42	Port 50	Port 58
Port 3	Port 11	Port 19	Port 27	Port 35	Port 43	Port 51	Port 59
Port 4	Port 12	Port 20	Port 28	Port 36	Port 44	Port 52	Port 60
Port 5	Port 13	Port 21	Port 29	Port 37	Port 45	Port 53	Port 61
Port 6	Port 14	Port 22	Port 30	Port 38	Port 46	Port 54	Port 62
Port 7	Port 15	Port 23	Port 31	Port 39	Port 47	Port 55	Port 63
Port 8	Port 16	Port 24	Port 32	Port 40	Port 48	Port 56	Port 64

Port - Selects the Trigger Port [1 - 64].

- Make sure to select the correct port first.

- This setting should correspond to the settings you have made in the Device Manager. Learn more »[Configuration Of TRI](#)

Layer Settings

- Various buttons and controls have universal functions. They are available for each MADRIX 5 Effect / Layer.

Learn more »[Effect Areas \[Deck A / Deck B\]](#)

Learn more »[Layers](#)

Effect Settings

This MADRIX 5 Effect uses the following, individual controls:

- Colors** - Opens the Color Table to specify the colors. The default color is White.
Learn more »[\[Global\] Colors And Intensity](#)
- BPM** - Defines the speed. The default value is 3000. Valid values range from 0 to 9999.
Learn more »[Using BPM Control](#)
- Energy** - Defines how strong the resulting waves are [in %]. The default value is 40. Valid values range from 1 to 20.

- **Length** - Defines the size the waves [in % of the Matrix Size]. The default value is 50. Valid values range from 1 to 200.
- **Displacement** - Defines the amount of distortion. The default value is 0. Valid values range from 0 to 100.
- **Pitch** - Defines the distance between objects for all 3 axes. The default values are 10, 10, 10. Valid values range from 0.01 to 100.



Distribution - Allows you to choose a certain Distribution Mode for the specific parameter. Often, you can then define a minimum value and a maximum value.

Uniform - Each object has the same size.

Random - Sizes will be generated randomly.



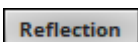
RND - Generates random object sizes each time. This automatically activates Random Distribution Mode.



Displacement Distribution - Is only available for Displacement. Is applied in dependence of the direction that is chosen. Allows you to choose the area the distortion is applied to [**Uniform**, **Linear Increasing**, **Linear Decreasing**, **Triangle**]. The default setting is Uniform.

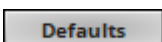


Displacement Speed - Is only available for Displacement. Allows you to choose to speed in which the distortion affects the visuals. The default setting is 10.0.



Reflection - Lets waves rebound off the four edges.

Restoring The Default Settings



Restore Default Layer Settings - Restores the default settings of the Layer.

- All Layer Settings and Effect Settings will be restored to their default values.

- This does not include the MADRIX 5 Effect selection, the Effect Parameter Chaser [which will be paused], or the Layer Macro [which will be stopped].

8.5 [MAS] MADRIX Script Effect

This topic includes:

- [Introduction](#)
- [Topics Of This Chapter](#)

Introduction

MADRIX Script [MAS] makes use of the integrated scripting language for very advanced use of the software.

Topics Of This Chapter

MADRIX 5 includes the following MAS Effect:

- » [MAS Script](#)

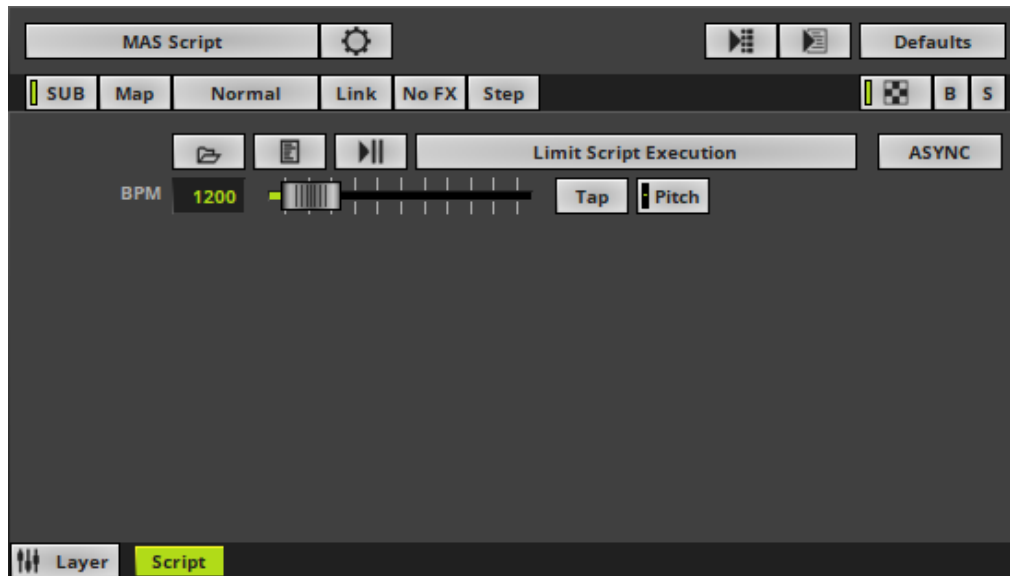
8.5.1 MAS Script

This topic includes:

- [Introduction](#)
- [Controls](#)
- [More Information](#)

Introduction

MADRIX 5 offers numerous effects to create a stunning light show. MAS Script is an addition to that. It allows you to program your own effects.



The MADRIX Scripting language is an advanced topic, but allows you to realize very unique and customized effects.

The Script Help [user manual] is for all those who want to develop light effects with MADRIX Script. However, this does not require much knowledge of programming. The different parts of this language will be explained with various examples. We recommend for your first steps into this area to work through these examples. In a second step you might want to try to alter the settings of those examples. In this way you will get a feeling for the programming language and the syntax.

Effect Options

- This MADRIX Effects supports Effect Options for advanced workflows.

Learn more » [Effect Options](#)

Controls



Load - Allows you to open a previously saved script from an external file [of the file type *.mas or *.macs].



MAS Effect Script Editor - Opens the Script Editor to edit any MAS Script.



Play/Pause - Starts or pauses the execution of a script.

Limit Script Execution

Limit Script Execution - Can be a helpful option if you run a script with a very long execution time. MADRIX 5 will stop the execution of a script and runs it from the beginning if it takes up too much processing time or is stuck in a loop. This option ensures the stability and performance of MADRIX 5.

BPM

- Defines the speed. The default value is 1200. Learn more » [Using BPM Control](#)

ASYNC

Asynchronous Rendering - Allows you to choose the Synchronization Mode.

- Activate **ASYNC** to control the render frequency using BPM.
- Deactivate **ASYNC** to synchronize the render frequency with the Main Mixer [50 FPS by default].

More Information

The complete MADRIX Script Language is described in the MADRIX 5 Script Help.

- In Windows 10/11, go to **Start > MADRIX 5 > MADRIX 5 Documentation > User_Manual_MADRIX_5_Script**

8.6 Using BPM Control

This topic includes:

- [Introduction](#)
- [Overview](#)

Introduction

The BPM control for MADRIX 5 Effects is the main control to increase or decrease the speed of effects.

Overview



- Represent the standard controls to control the speed. Use the controls in the following way:

Slider - Move the slider to increase or decrease the speed.

Input Field - Enter the BPM speed directly.

- Valid values range from 0 to 9999.
- 60 BPM = 1 second.



Tap - Allows you to set the speed manually. Use it to get synchronous movements of effects to the beat of the music. Click this button at least four times in a row according to the beat of the music [1/4 notes]. MADRIX 5 will calculate the BPM value automatically.



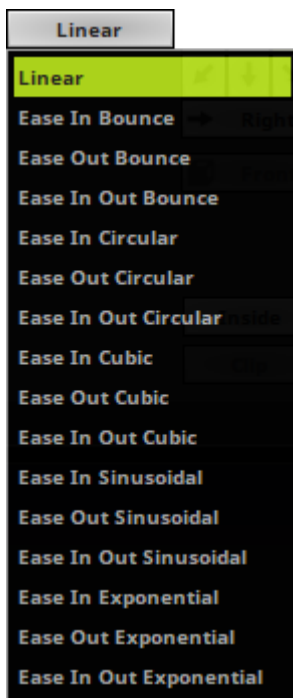
Speed Pitch - Allows you to change the speed further. It works as a multiplier/a factor.

- Example: A Speed Master of 2.0 will double the current speed.
- Move the fader upwards to increase the speed.
- Move the fader downwards to decrease the speed.
- The default value is 1.0 [which is normal speed].
- A value of 0.0 will stop the effects.
- The highest value is +10.
- The lowest value is -10.
- Negative values will reverse the direction of effects [if possible].
- Right-click on the Pitch button to reset to the value of 1.0
- The tooltip shows the currently set value.



Speed Variance - Adds variety to the speed of each individual object.

- If activated, each object will have a different speed.
- The higher the value, the larger the differences in speed between objects.
- Valid values range from 0 to 300 or 500.
- The default value is 0.
- Right-click on the SV button to reset to the value of 0.



Interpolation - Adds variety to the movement.

- Start [Ease In], middle, and end phases [Ease Out] of the movement are run through at different speeds, creating certain movement patterns.

8.7 Using Directions

This topic includes:

- [Introduction](#)
- [Overview](#)

Introduction

MADRIX 5 Effects have various controls to set up the preferred direction of effects.

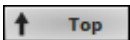
- Directions include all options, including 2D and 3D directions.
- 3D directions can be selected even when you are working in 2D Mode. But they only work correctly in 3D Mode.
- Especially for 3D a multiple of choices is available. That includes so-called Look-At Types.

Overview



Direction - Simply choose a direction by selecting it. The arrows will point towards the direction the effect will take.

- In the example to the left, the effect will move from up to down.



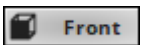
Advanced Direction - In addition to the general directions [such as Top, Right, Bottom, Left] specific MADRIX Effects features a large variety of directions. Choose any advanced direction here.



Front / Back - Allows you to choose the direction as well. This is mainly relevant for 3D.

To The Front - The effect will start in the back and move to the front.

To The Back - The effect will start in the front and move to the back.



Look-At Type - Allows you to choose from which side you want to look at the effect. This is mainly relevant for 3D.



Front - Positions the effect to see it mainly from the front.

Back - Positions the effect to see it mainly from the back.

Left - Positions the effect to see it mainly from the left.

Right - Positions the effect to see it mainly from the right.

Top - Positions the effect to see it mainly from the top.

Bottom - Positions the effect to see it mainly from the bottom.



Cross Mode - Activates Cross Mode. Certain MADRIX 5 Effects can display the effect in two or more directions at the same time. [In addition, the **Cross Width** defines how much space each direction takes up].

- Example 1: SCE Color Scroll with Cross Mode and a Cross Width of 50% will display 2 color scrolls moving in opposite directions.
- Example 2: SCE Color Scroll with Cross Mode and a Cross Width of 20% will display 5 color scrolls moving in opposite directions.



None - Stops any movement.

8.8 Using Effect Options

This topic includes:

- [Introduction](#)
- [Overview](#)

Introduction

Effect Options make additional creative workflows possible.

However, they are not applicable to every MADRIX Effect.

Remember that in Operator mode, changes made to the Storage Place will be discarded once you switch away from the Storage Place.

With or without Operator mode, you can effectively use the Effect Options to create your individual effect behaviors.

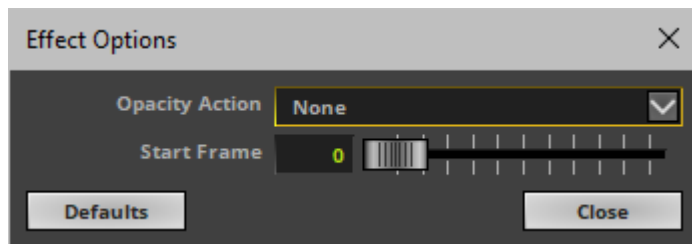
Overview

Effect Options



- Click to open the **Effect Options**

A new window will open.



Opacity Action Defines the effect behavior when the Layer opacity is being set from 0 to a higher value. This requires it to be set to 0 first.

None - The Layer opacity can be used normally, without any additional behavior.

First Start - The MADRIX Effect will be started when the opacity is set from 0 to a higher value. Once this action is executed, the Layer opacity behaves completely normal, without any additional behavior.

Continuation - Once the Layer opacity is set to 0, the effect will be paused and suspended. If the Layer opacity is set to a value higher than 0 again, the effect will resume normally. It will continue from the moment the opacity was set to 0.

Restart - The MADRIX Effect starts from the beginning again.

Only MADRIX Effects that do not start with random object positions or function randomly in general can offer this feature.

Start Frame Defines the first frame the effect starts with.

Only MADRIX Effects that are rendered in a seamless loop, and therefore have a defined frame count, can offer this feature.

MADRIX Effects Featuring Opacity Action

MADRIX 5 features a wide variety of MADRIX Effects, that each produces specific visual results. The nature of each effect determines if the visual outcome is precisely defined or if the visuals are randomly generated or based on specific input, for example.

That is why specific MADRIX Effects support Effect Options and certain effects do not support it.

The following MADRIX Effect currently support Opacity Action:

- | | | | |
|---------------------------|---------------------------------|---------------------------------------|-------------------------------|
| ▪ SCE Bar Bounce | ▪ S2L Drops | ▪ M2L Color Change | ▪ TRI Color Change |
| ▪ SCE Bounce | ▪ S2L EQ / Spectrum | ▪ M2L Color Scroll | ▪ TRI Drops |
| ▪ SCE Capture | ▪ S2L Frequency Flash | ▪ M2L Drops | ▪ TRI Explosions |
| ▪ SCE Clouds | | ▪ M2L Note Flash | ▪ TRI Flash |
| ▪ SCE Cells | ▪ S2L Level Color | ▪ M2L Shapes | ▪ TRI Fluid |
| ▪ SCE Color | ▪ S2L Level Color Scroll | ▪ M2L Single Tone Spectrum | ▪ TRI Shapes |
| ▪ SCE Color Change | ▪ S2L Level Meter | ▪ M2L Tubes | ▪ TRI Split Shapes |
| ▪ SCE Color Scroll | ▪ S2L Level Shape | | ▪ TRI Tubes |
| ▪ SCE Counter | ▪ S2L Shapes | | ▪ TRI Water |
| ▪ SCE Credits | ▪ S2L Tubes | | |
| ▪ SCE Drops | ▪ S2L Waveform | | |
| ▪ SCE Explosions | ▪ S2L Wavegraph | | |
| ▪ SCE Fill Drops | | | |
| ▪ SCE Fill Random | | | |
| ▪ SCE Fill Snake | | | |
| ▪ SCE Fill Solid | | | |
| ▪ SCE Fire | | | |
| ▪ SCE Flames | | | |
| ▪ SCE Fluid | | | |
| ▪ SCE Gradient | | | |
| ▪ SCE Graph | | | |
| ▪ SCE Image | | | |

- SCE Level Color Simulator
- SCE Metaballs
- SCE Morse Code
- SCE Noise
- **SCE Plasma**
- **SCE Pulse / Stroboscope**
- **SCE Rotating Shapes**
- SCE Screen Capture
- **SCE Shapes**
- SCE Simple Shape
- **SCE Split Shapes**
- **SCE Starfield**
- **SCE Swarm**
- **SCE Ticker / Scrolling Text**
- **SCE Tubes**
- **SCE Video**
- **SCE Water**
- **SCE Wave / Radial**

MADRIX Effects Featuring Start Frame

MADRIX 5 features a wide variety of MADRIX Effects, that each produces specific visual results. The nature of each effect determines if the visual outcome is precisely defined or if the visuals are randomly generated or based on specific input, for example.

That is why specific MADRIX Effects support Effect Options and certain effects do not support it.

The following MADRIX Effect currently support Start Frame:

- **SCE Bar Bounce**

[Valid values depend on the number of colors in the Color Table.]

- SCE Bounce

- SCE Capture

- SCE Cells

- SCE Clouds

- SCE Color

- **SCE Color Change**

[Valid values range from 1 to the 'number of colors in the Color Table'.]

- **SCE Color Scroll**

[Valid values depend on the Effect Settings, such as number of colors in the Color Table, Step Width, and Color Width.]

- SCE Counter

- **SCE Credits**

[Valid values depend on the Effect Settings.]

- SCE Drops

- SCE Explosions

- SCE Fill Drops

- SCE Fill Random

- SCE Fill Snake

- SCE Fill Solid

- S2L Drops

- S2L EQ / Spectrum

- S2L Frequency Flash

- S2L Level Color

- S2L Level Color Scroll

- S2L Level Meter

- S2L Level Shape

- S2L Shapes

- S2L Tubes

- S2L Waveform

- S2L Wavegraph

- M2L Color Change

- M2L Color Scroll

- M2L Drops

- M2L Note Flash

- M2L Shapes

- M2L Single Tone Spectrum

- M2L Tubes

- TRI Color Change

- TRI Drops

- TRI Explosions

- TRI Flash

- TRI Fluid

- TRI Shapes

- TRI Split Shapes

- TRI Tubes

- TRI Water

- SCE-Fire
- SCE-Flames
- SCE-Fluid
- SCE-Gradient
- **SCE Graph**
[Valid values range
from 1 to 50.]
- SCE-Image
- SCE-Level-Color
Simulator
- SCE-Metaballs
- SCE-Morse-Code
- SCE-Noise
- **SCE Plasma**
[Valid values range
from 1 to 1000.]
- SCE-Pulse-/
Stroboscope
- **SCE Rotating
Shapes**
[Valid values range
from 1 to 50.]
- SCE-Screen-Capture
- SCE-Shapes
- SCE-Simple-Shape
- SCE-Split-Shapes
- SCE-Starfield
- SCE-Swarm
- SCE-Ticker- / Scrolling
Text
- SCE-Tubes
- SCE-Video

- SCE-Water
- **SCE Wave / Radial**

[Valid values range
from 1 to 50.]

8.9 Using Shapes [Shape Table]

This topic includes:

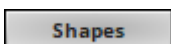
- [Introduction](#)
- [Shape Table](#)

Introduction

Certain MADRIX 5 Effects allow you to work with one or multiple shapes at a time. Use the Shape Table to manage the shape objects as described below.

Shape Table

Overview

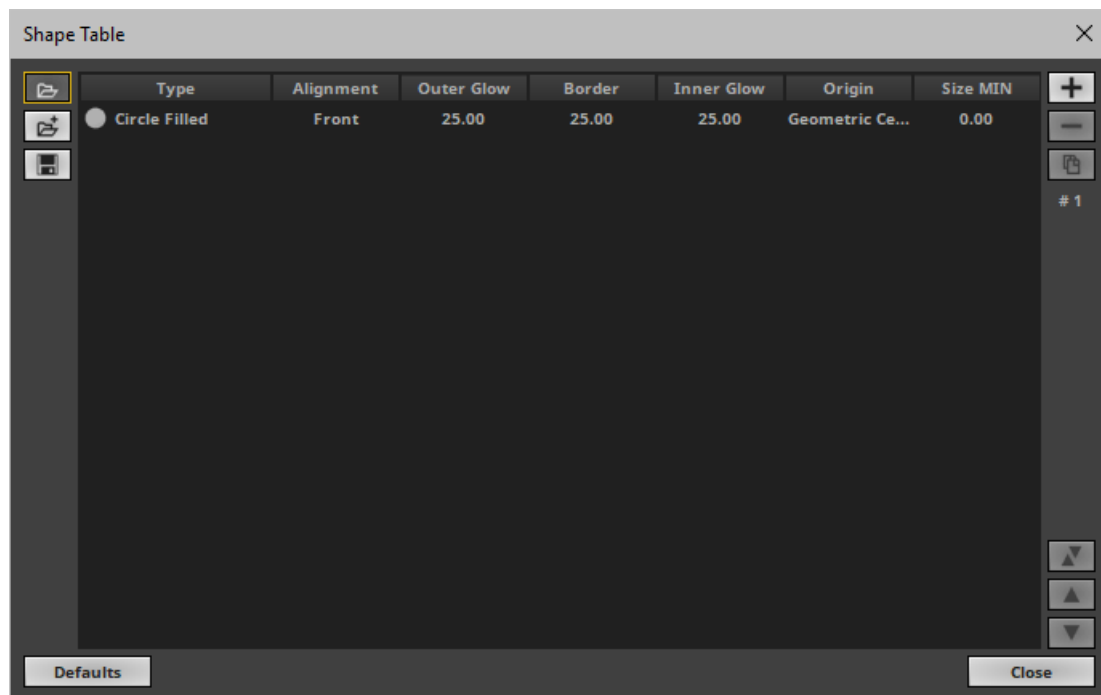


Open Shape Table - Opens the Shape Table, a window that includes all shapes you wish to display.



Loop Mode - All objects of the Shape Table will be looped, that means the content of the Shape Table will constantly be repeated. It is activated by default.

Shuffle Mode - Creates an internal list that orders strings randomly to show next. Deactivate and activate again to create a new random list.



- **Left Mouse Click** - Selects a shape entry in the Shape Table.
- **Double-Click Left Mouse Button** - Allows you to change the settings for each column.
- **Ctrl + Left Mouse Click** - Allows you to select several entries in the Shape Table at different positions.
- **Shift + Left Mouse Click** - Allows you to select several entries by selecting 1] the first entry, 2] the last entry, 3] and all entries in-between will be selected automatically.

Type

- Defines the shape for this entry. Depending on the MADRIX 5 Effect you may choose from different types [**2D**, **3D**, **Filled**, **Unfilled**, **Implode**, **Explode**, **Pulse**, etc.].

Alignment

- Defines which side objects are aligned to. This is mainly relevant for 3D.

Outer Glow

- Defines the outer shimmer of objects.

Border

- Defines how thick the outer line of objects is.

Inner Glow

- Defines the inner gleam of objects.

Origin

- Defines the point of origin of Shapes [and hence their relative position].

Size MIN

- Defines the minimum size of Shapes [in % in relation to the size that is set in the MADRIX 5 Effect]. This is relevant for the **Implode**, **Explode**, **Pulse** shape types.



Open - Loads a previously saved MADRIX 5 Shape Table from an external file [of the file type *.mshtx].



Open And Attach - Loads a previously saved MADRIX 5 Shape Table from an external file [of the file type *.mshtx] and adds the shapes to the shapes that are already loaded.



Save - Saves the Shape Table to an external file [of the file type *.mshtx].



Add Shapes - Adds and appends one or several shapes to the Shape Table.



Remove Shapes - Removes one or several shapes from the Image Table. First, select the entries in the list.



Duplicate Shapes - Copies the currently selected shapes and adds them as new items to the Shape Table.

#5

- Shows the total number of shapes in the Shape Table. An empty list shows **# 0**



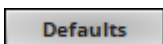
Swap Position - Swaps the position of shapes in the Shape Table when several entries are selected first.



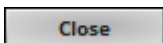
Position Up - Changes the order, and positions currently selected shapes one step higher up in the list. [**Keyboard shortcut: W or A**]



Position Down - Changes the order, and positions currently selected shapes one step lower down in the list. [**Keyboard shortcut: S or D**]



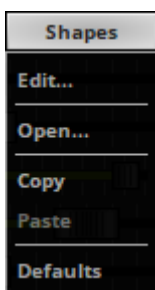
Defaults - Restores all default settings.



Close - Closes the Shape Table window.

Context Menu

- **Right Mouse Click** - You can call up the context menu by performing a right mouse click on **Shapes**
- A small window will be shown.



You can quickly perform the following actions:

- **Edit...** - Opens the Shape Table [in the same way you can open the window by clicking on **Shapes** with the left mouse button].
- **Open...** - Loads a previously saved Shape Table from an external file [of the file type *.mshtx].
A new window opens for you to select the file on your harddisk.
- **Copy** - Copies the current shapes into the clipboard as a duplicate.

- **Paste** - Applies all shapes from the clipboard to the currently focused Shape Table [**Shapes**].
- **Clear** - Removes all entries from the Shape Table.

Drag And Drop [Copy And Paste]

- **Left Mouse Click And Hold** - You can perform a Copy and Paste with the mouse.
Click with the left mouse button on the **Shapes** button and hold for 3 seconds. A small + appears. Now, continue to hold and drag the mouse to another Shape Table control [of a different layer] and release the mouse to instantly apply the shapes.
- **File Drag And Drop** - You can select a MADRIX 5 Shape Table file [of the file type *.mshtx] in Windows and drag it to a Shape Table control in MADRIX 5 in order to load it in MADRIX 5.

Additional Information

- SCE Drops, S2L Drops, M2L Drops, TRI Drops:
 - It is possible to set the Rendering Mode to Extended, add extended-rendered shapes in the Shape Table, and switch back to Rendering Mode Simple. In this case, Shapes that can only be rendered in Rendering Mode Extended will remain entries in the Shape Table, but will be displayed as the default shape in Simple mode instead, which is Rectangle Filled. Additionally, a warning will be shown in the Preview Output.

8.10 Using Strings [String Table]

This topic includes:

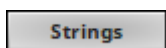
- [Introduction](#)
- [String Table](#)

Introduction

Certain MADRIX 5 Effects allow you to work with different texts. Use the String Table to manage the strings as described below.

String Table

Overview



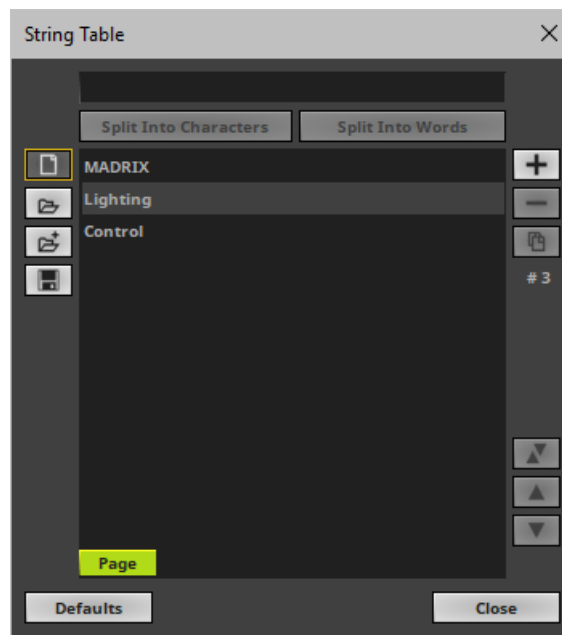
Open String Table - Opens the String Table, a window that includes all characters [i.e., letters, words, symbols, numbers, etc.] you wish to display.



Loop Mode - All strings of the String Table will be looped, that means the content of the String Table will constantly be repeated. It is activated by default. Can be used together with Shuffle Mode.



Shuffle Mode - Creates an internal list that orders strings randomly to show next. Deactivate and activate again to create a new random list. Can be used together with Loop Mode.



- **Left Mouse Click** - Selects an item in the list.
- **Ctrl + Left Mouse Click** - Allows you to select several strings in the String Table at different positions.
- **Shift + Left Mouse Click** - Allows you to select several strings by selecting 1] the first string, 2] the last string, 3] and all strings in-between will be selected automatically.

10 **String** - Allows you to change a string or enter a new one. To change a string, select it first. To add a new string, use Add String first.

Split Into Characters

Split Into Characters - Is an automatism that helps you to split the string you have just added or changed into separate strings. Select a string in the list first and it will be split into several list entries [incl. word spaces], each with a single character instead of the complete word.

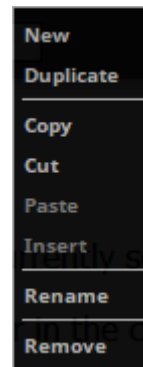
Split Into Words

Split Into Words - Is an automatism that helps you to split the string you have just added or changed into separate words. Select a string in the list first and it will be split into several list entries, each with a single word instead of the complete sentence. Word spaces will be ignored, except if you enter two word spaces in a row.

Page

Page - Is only available when supported by the MADRIX 5 Effect. Allows you to manage the pages within the String Table.

- **Right Mouse Click** opens the context menu.



- **Page > New** - Creates a new page.
- **Page > Duplicate** - Creates an exact copy of the currently selected page.
- **Page > Copy** - Copies the page into the clipboard of the computer.
- **Page > Cut** - Copies the page into the clipboard and removes the page.
- **Page > Paste** - Applies all settings of the page in the clipboard to the currently selected page.
- **Page > Insert** - Creates a new page and applies all settings of the page in the clipboard to the currently selected page.
- **Page > Rename** - Allows you to change the label of the page.
- **Page > Remove** - Removes the currently selected page entirely.
- Page Order
 - **Left Mouse Click And Hold And Move** - Changes the order of Pages via Drag and Drop.



New - Removes all strings from the list.



Open - Loads a previously saved MADRIX 5 String Table from an external file [of the file type *.mstrtx].



Open And Attach - Loads a previously saved MADRIX 5 String Table from an external file [of the file type *.mstrtx] and adds the new strings to the strings that are already included.



Save - Saves the String Table to an external file [of the file type *.mstrtx].



Add String - Allows you to add a new string to the String Table. Make sure to enter the correct characters for the string first.



Remove String - Allows you to remove one or several strings from the String Table. First, select the strings in the list.



Duplicate Strings - Copies the currently selected strings and adds them as new items to the String Table.

11

▪ Shows the total number of strings in the String Table. An empty list shows **# 0**



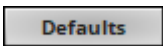
Swap Position - Swaps the position of strings in the list when several strings are selected first.



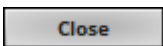
Position Up - Changes the order, and positions currently selected strings one step higher up in the list. [**Keyboard shortcut: W or A**]



Position Down - Changes the order, and positions currently selected strings one step lower down in the list. [**Keyboard shortcut: S or D**]



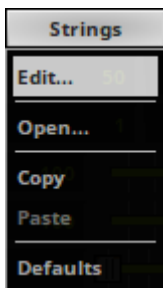
Defaults - Restores the default strings of the String Table.



Close - Closes the String Table window.

Context Menu

- **Right Mouse Click** - You can call up the context menu by performing a right mouse click on **Strings**
- A small window will be shown.



You can quickly perform the following actions:

- **Edit...** - Opens the String Table [in the same way you can open the window by clicking on **Strings** with the left mouse button].
- **Open...** - Loads a previously saved String Table from an external file [of the file type *.mstrtx].
A new window opens for you to select the file on your harddisk.
- **Copy** - Copies the current strings into the clipboard as a duplicate.
- **Paste** - Applies all strings from the clipboard to the currently focused String Table [**Strings**].
- **Defaults** - Restores all default strings of the String Table.

8.11 Macros And Scripts

This topic includes:

- [Introduction](#)
- [Usage](#)
- [How To Use](#)
- [More Information](#)

Introduction

MADRIX 5 features its own scripting language. With this programming language you can create scripts or macros for MADRIX 5.

- You can use it to create your own light effects, as was described in the previous chapter.
- In addition, it may be used to control and manipulate running effects.

Usage



Editor - Controls the corresponding Macro Editor.

There are 4 possibilities to use Macros in MADRIX 5:

- **MAS Script Effect**

The first option to create a new effect from scratch.

- **Macros for Effects**

The second option involves modifying the settings of an MADRIX 5 Effect. This includes all SCE, S2L, M2L, TRI, and MAS effects.

- **Storage Place Macro**

Fourth, you can use storage place macros to control every single storage place individually

- **Global Macro**

The third possibility controls the main output and global features directly.

- On the one hand, macros can be used to manipulate the outcome of an effect.
Examples include rendering parts of effects transparent or changing the color via a gray filter.
- On the other hand, macros can be used to change settings of an effect.
A macro can set the text of the SCE Ticker effect to current time, for example.
- Each effect is equipped with a **Macro** button that opens the Macro Editor. Use the window to write, load, and edit existing macros.
- Each Storage Area has one macro button.
- The Fade Area includes the button to the Main Output Macro.
- The MAS Script Effect does have one button for scripts and a standard button for a macro.

How To Use



Macro - Allows you to configure and manage a Macro. At the same time this means that no Macro is running or included.



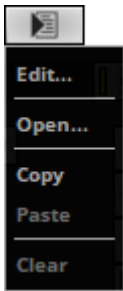
Deactivated [Macro Included] - A macro is included/inserted in the Macro Editor, but the macro is currently not running.

Left Mouse Click - Click once to activate the Macro.



Activated - A macro has been compiled and is currently running.

Left Mouse Click - Click once to deactivate the Macro.



Right Mouse Click - Opens the context menu.

Edit... - Opens the Macro Editor to write, edit, include, and compile Macros.

Open... - Loads a Macro from an external file [of the file type *.mms or *.mcm]. Once loaded, the Macro will automatically be activated.

Copy - Copies the Macro to the clipboard of the computer.

Paste - Pastes the Macro from the clipboard into the currently selected Macro Editor.

- If the copied Macro is running, the new Macro will be automatically activated as well.
- If the copied Macro is deactivated, the new Macro will be automatically deactivated as well.

Clear - Removes all content from the Macro Editor and thereby deactivates and erases any Macro. The default content will be restored.

More Information

The complete MADRIX Script Language is described in the MADRIX 5 Script Help. In the Windows Start Menu, go to:

- In Windows 10/11, go to **Start > MADRIX 5 > MADRIX 5 Documentation > User_Manual_MADRIX_5_Script**

//PART 9

*Automation And
Automated Playback
[Cues, Timelines,
Schedules]*

9 Automation And Automated Playback [Cues, Timelines, Schedules]

This topic includes:

- [Introduction](#)
- [Topics Of This Chapter](#)

Introduction

Overview

MADRIX 5 offers various tools and features for scheduled, automated operation.

Cue Lists

A Cue List is an automated playlist and scheduler. It offers the possibility to precisely manage the automatic playback of effects.

Timelines

Timelines and the Timeline Editor offer unprecedented possibilities to create a light show that syncs to music.

Based on time code, you can trigger cue segments at exactly the right time and synchronize your lighting to audio, which is shown in waveforms.

In this case, MADRIX 5 itself can become the time-code sender.

This feature is also known as sequencing.

Scheduling

Advanced schedules, including calendar functions, are easily available to you.

While Schedules do incorporate advanced workflows, one of their main areas of application is the [time] management of several Cue Lists and/or Timelines.

Topics Of This Chapter

- »[Cue List Editor](#)
- »[Timeline Editor](#)
- »[Scheduling](#)

9.1 Cue List Editor

This topic includes:

- [Introduction](#)
- [Basic Controls](#)
- [Overview](#)
- [1\] Creating A New Cue List](#)
- [2\] Setting Up Cues](#)
- [3\] Playback](#)
- [Time Code](#)
- [Important Notes](#)
- [Recording](#)
- [Playback Side](#)
- [Live Control](#)
- [File Watcher \[Automatic Cue List Reloading\]](#)

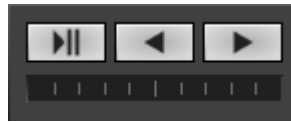
Introduction

A Cue List is an automated playlist.

It offers the possibility to precisely manage the automatic playback of effects. Once a Cue List is started, MADRIX 5 will automatically play back your visuals according to your settings and schedule. That means MADRIX 5 switches from Storage Place to Storage Place [i.e. from effect to effect].

Basic Controls

The main user interface of MADRIX 5 offers three control buttons for a Cue List.



Go - Skips to the next Cue.



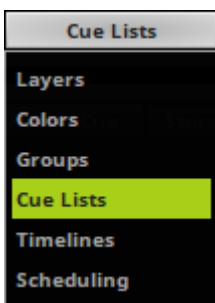
Back - Returns to the previous Cue.



Play/Pause - Starts or holds playback of the currently selected Cue List.



Progress - Shows you the relative time progression of the current cue in a progress bar.



Layers > Cue Lists - Opens the window of the Cue List Editor. Use it to set up your Cue Lists.

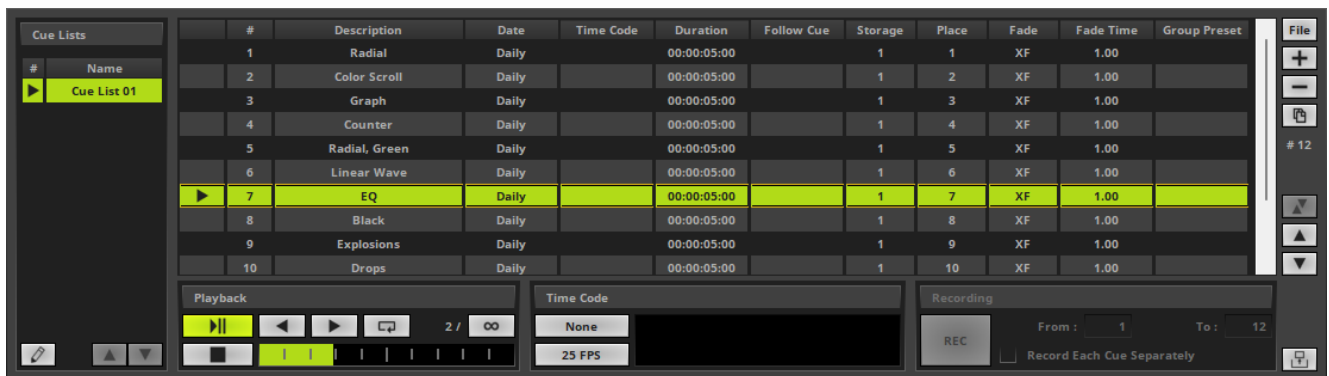
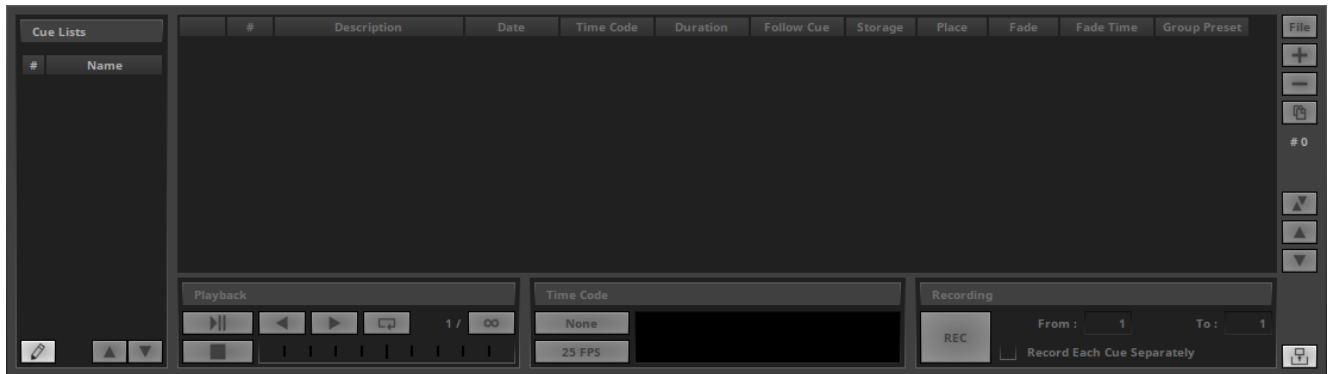
Overview

You can open the Cue List Editor in 3 ways:

- Go to the menu **Tools > Cue Lists...**
- Or press **F7**
- Or click **Layers > Cue Lists** on the user interface.

To close the Cue List again and change back to the original MADRIX 5 user interface:

- Go to the menu **Tools > Cue Lists...**
- Or press **F7**
- Or click **Cue Lists > Layers** on the user interface.



Undock - Creates a separate window to freely use the Editor window detached from the main user interface.



Dock - Brings the separate, detached window back again into the main user interface.

It is highly recommended to set up your Storage Places [incl. MADRIX Effects, Layers, Chasers, etc.] before using the Cue Lists feature.

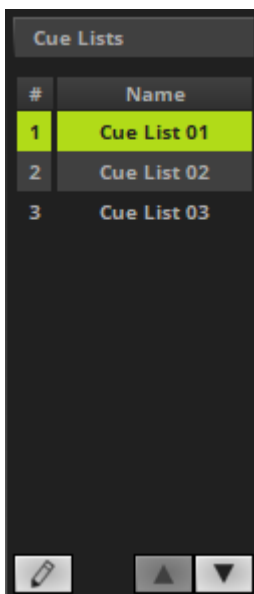
1] Creating A New Cue List

Cue Lists

The Cue List Editor is empty when opening it for the first time.

- You need to create a new Cue List first.

[Navigate the left side of the window.]



Add - Creates a new Cue List.

- You can add more than one Cue List.

Remove - Removes the currently selected Cue List.

Duplicate - Copies the currently selected Cue List and adds it as a new item.



Position Up - Changes the order, and moves the currently selected Cue List one item higher up in the list.



Position Down - Changes the order, and moves the currently selected Cue List one item lower down in the list.

#

Index - References the different Cue Lists with a continuous index number.



Left Mouse Double-Click - Allows you to edit the index. Enter a number and confirm with **Enter** on your keyboard to change the order of Cue Lists.



Play - If playback of a Cue List has been started, the index number changes into the play symbol.

Pause - If playback of a Cue List has been paused, the index number changes into the pause symbol.

Name Shows the label of the Cue List. The software names new Cue Lists **Cue List** by default.

Left Mouse Double-Click - Allows you to edit the name. Enter any name and confirm with **Enter** on your keyboard.

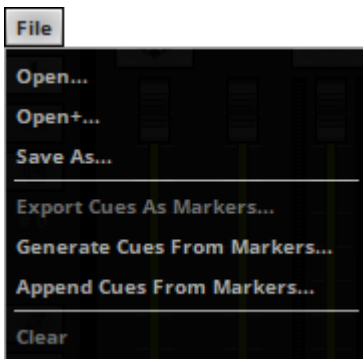
- **Note: Only one Cue List can be selected and active at once.**

File

Overview

After creating a Cue List, the following file management options become available:

[Navigate to the right side of the window.]



Left Mouse Click - Opens the context menu.

Open... - Loads a previously saved Cue List file [of the file type *.mclx or *.csv], or Timeline file [of the file type *.mtlx]. Choose the file from your system. Learn more [below](#).

Open+... - Loads an already existing Cue List [of the file type *.mclx or *.csv] or Timeline [of the file type *.mtlx], and adds it to the current Cue List by attaching it to the end. Learn more [below](#).

Save As... - Stores your Cue List in an external file. You can choose to save in standard *.mclx file format; or to save in *.csv file format in order to easily edit the file with a text editor, for example.

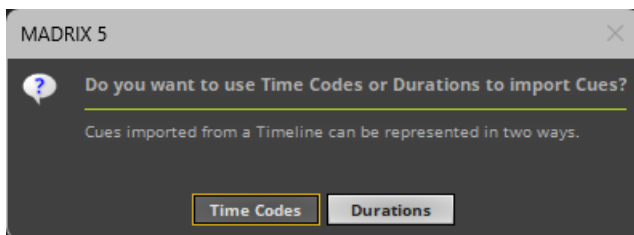
Export Cues As Markers... - See [below](#).

Generate Cues From Markers... - See [below](#).

Append Cues From Markers... - See [below](#).

Clear - Clears the current Cue List and removes all cues and associated settings.

Importing A MADRIX 5 Timeline



When importing a Timeline into the Cue List Editor [by opening the Timeline file in the Cue List Editor under File > Open/Open+; as explained above], you can choose how cues are created:

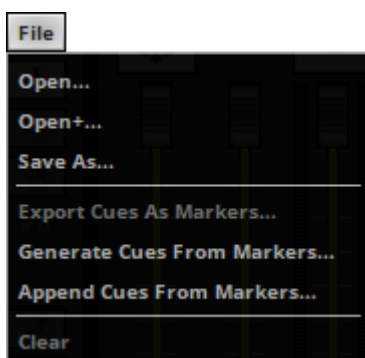
Time Codes - Imports from the Timeline and creates cues by using the included time codes.

Durations - Imports from the Timeline and creates cues by calculating the durations for each cue based on the time codes of the Timeline.

Generating Cues From External Markers

In order to exchange timestamps between software applications and equipment, use the File menu to export cues to Markers or generate cues from Markers.

This workflow was mainly implemented to be able to import from the audio-production software REAPER.



Left Mouse Click - Opens the context menu.

Export Cues As Markers... - Saves configured Cues as an external file in a general file format for exchange between software applications [of the file type *.csv]. Choose the location on your system where to save.

Generate Cues From Markers... - Loads Markers from an external file [of the file type *.csv] and creates cues from them. Attention: Any existing cues will be removed in the process.

Append Cues From Markers... - Loads Markers from an external file [of the file type *.csv] and adds them as cues to the current Cue List by attaching them to the end [of the file type *.mtlx].

File Format:

MADRIX 5 supports a very general file format for this purpose. CSV files are usually text files with tabularly structured data.

The supported file format looks like this in general:

```
#,Name,Start
M1,,00:00:02:26
M2,,00:00:06:12
M3,,00:00:11:15
```

Attention: You need to meet the following prerequisites to be able to import from REAPER!

- The supported time format of MADRIX 5 is Hours:Minutes:Seconds:Frames [HH:MM:SS:FF].
REAPER uses its currently set time format during the export process. Make sure to set it to HH:MM:SS:FF before the export.
- The frame rate of REAPER should match the frame rate of the MADRIX 5 Cue List Editor. [Otherwise, imported timestamps will not match the final Markers in the Cue List. The exported CSV does not include the exported frame rate.]
- Regions are exported from REAPER and can be included in the export but will simply be ignored by the import process.

Controls



Cue All

Cue Deck A

Cue Deck B

Add - Adds a new cue to the Cue List.

- When a Time Code is received, MADRIX 5 will also automatically add the currently received Time Code to the cue [by filling in the column Time Code].
- Automatically sets Storage and Place to the most recently selected Storage Place on the user interface.



Right Mouse Click > Cue All - Adds new Cue-List entries for all Storage Places that have a MADRIX 5 Effect customized and stored.

Right Mouse Click > Cue Deck A - Adds new Cue-List entries for the Storage Places that have a MADRIX 5 Effect customized and stored on the currently selected Deck A.

Right Mouse Click > Cue Deck B - Adds new Cue-List entries for the Storage Places that have a MADRIX 5 Effect customized and stored on the currently selected Deck B.

Remove - Removes all currently selected cues from the list.

Duplicate - Copies the currently selected cues and adds them as new cues to the list.

3 - Displays the total number of cues in the Cue List.



Swap Position - Swaps the position of cues in the list when several cues are selected first.

Position Up - Changes the order and moves currently selected cues one item higher up in the list.

Position Down - Changes the order and moves currently selected cues one item lower down in the list.

2] Setting Up Cues

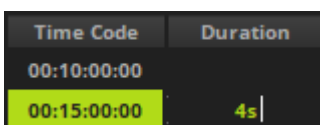
1] Add new cues to the Cue List by using

- A] **Cue** on the user interface,
- B] **+** in the Cue List window, or
- C] **Cue All** in the Cue List window.

2] Change each cue as explained in the list below.

- You can even edit the Cue List while it is playing.

- Make sure to change the settings for each cue according to your requirements!



Double-Click / Right Mouse Click - Perform a double-click or right click with the mouse onto an entry into the specific column and you will be able to enter and change the values.

Multiple Selection - The list allows you to select and modify more than one entry at a time. Select several entries by using **Shift + Left Mouse** or **Ctrl + Left Mouse** or **Shift + Arrow Keys**. Then, right click into the column you want to change.

Spacebar or value of **-1** - Removes all values or restores the default values.



Double-Click - Perform a double-click on the very first column of the Cue List in order to start playing from this cue [thus performing a **Goto**]. Make sure to only double-click in the first column. You can even jump to specific cues during Cue List playback in this way.

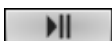
	<ul style="list-style-type: none"> The first column shows the current playback state [Playing, Pause] and can also be used to perform a Goto with the mouse. Perform a double-click on the column in order to start playing from this cue. You can even jump to specific cues during Cue List playback in this way.
#	<ul style="list-style-type: none"> MADRIX 5 automatically numbers each cue consecutively with an index number, beginning with 1. - Note: Change this index number in order to quickly change the order of cues. MADRIX 5 will automatically rearrange the list.
Description	<ul style="list-style-type: none"> Automatically fills in a label. This label is based on the Description field of the Storage Place on the user interface. You can change the label if you wish.
Date	<ul style="list-style-type: none"> Defines if the entry will be played at a specific date. You can enter 3 different types: <ul style="list-style-type: none"> Daily - This is the default value. Enter 0, d, or D and the cue will be considered every single day. A weekday - Enter m or M for Monday, t for Tuesday, w or W for Wednesday, T for Thursday,

	<p>f or F for Friday, s for Saturday, S for Sunday.</p> <ul style="list-style-type: none"> A specific date - Use one of the following formats: [Year Month Day] 2013/12/31 2013:12:31 2013;12;31 2013-12-31 13-12-31 <p>[Specific Day of Current Month of Current Year] [(Current Year) (Current Month) Day] 01 - This year, this month, first day 02 - This year, this month, second day etc.</p> <p>- Only applies when creating the cue. This does not create monthly/yearly events. The month and year will not be automatically updated in the future. Thus, recurring events each month/year cannot be created in this way.</p> <p>[Specific Day of Specific Month of Current Year] [(Current Year) Month Day] 01-01 - This year, first month, first day 01-02 - This year, first month, second day 03-05 - This year, third month, fifth day etc.</p> <p>- Only applies when creating the cue. This does not create monthly/yearly events. The month and year will not be automatically updated in the future. Thus, recurring events each month/year cannot be created in this way.</p>
Time Code	<ul style="list-style-type: none"> Defines a specific time the cue should be played. Use the hours:minutes:seconds:frames format to enter the time: HH:MM:SS:FF You need to confirm new values via Enter

	<p>Example</p> <ul style="list-style-type: none"> - 10 o'clock and 20 minutes, 30 seconds, and 10 frames - Use one of the following formats: <p>10203010</p> <p>10:20:30:10</p> <p>10,20,30,10</p> <p>10.20.30.10</p> <p>10/20/30/10</p> <p>10h20m30s10f</p> <p>[Short versions for single items]</p> <p>10h</p> <p>20m</p> <p>30s</p> <p>10f</p> <ul style="list-style-type: none"> ▪ Offset <ul style="list-style-type: none"> - Works for single or multiple cues. - Enter + followed by a number to add an Offset. [Otherwise you are entering the Time Code anew.] - Enter - followed by a number to subtract an Offset. [Otherwise you are entering the Time Code anew.] ▪ Automatic Completion <ul style="list-style-type: none"> - MADRIX 5 will automatically fill in the Time Code when adding a new cue [if a Time Code is received at the time].
Duration	<ul style="list-style-type: none"> ▪ Defines how long an effect is going to be played. The Fade Time is calculated as part of the Duration [and is thus a fade in]. ▪ Leave the Duration empty if the effect should be active as long as you do not control the Cue List manually [via Go, Back, Play/Pause, or Goto]. ▪ Use the hours:minutes:seconds:frames format to enter the time: HH:MM:SS:FF as explained under Time Code ▪ You need to confirm new values via Enter
Follow Cue	<ul style="list-style-type: none"> ▪ You can assign a certain cue to be played after another. As such, a Follow cue assigns the next cue the Cue List should play right after this cue. Follow cues allow you to define a certain order in which

	cues should be played by the Cue List. Simply enter the number of the cue that should follow. Leave empty if not required.
Storage	▪ Defines in which Storage the effect is located. Enter a number between 1 and 256
Place	▪ Defines the exact Storage Place, where the effect is located. Enter a number between 1 and 256
Fade	▪ Defines the Fade Type for the crossfader when the Cue List automatically fades from one effect to another. All Fade Types of the crossfader are available here. Learn more » Crossfader
Fade Time	▪ Defines the length of the automatic fade for the crossfader and thus creates a fade in. Enter a value in seconds:milliseconds format: SS:MM . Learn more » Crossfader
Group Preset	▪ Defines which Group Preset is triggered together with this cue. [The Fade Time of the Cue List will automatically be used as the Fade-In Time of the Group Control.] Enter a number between 1 and 256 . Leave empty if not required. Learn more » Fixture Groups [Group Control]

3] Playback



Play/Pause - Starts or holds playback of the currently selected Cue List.



Stop - Cancels playback of the currently selected Cue List. When starting playback again, it will start with the next cue.



Back - Returns to the previous cue.



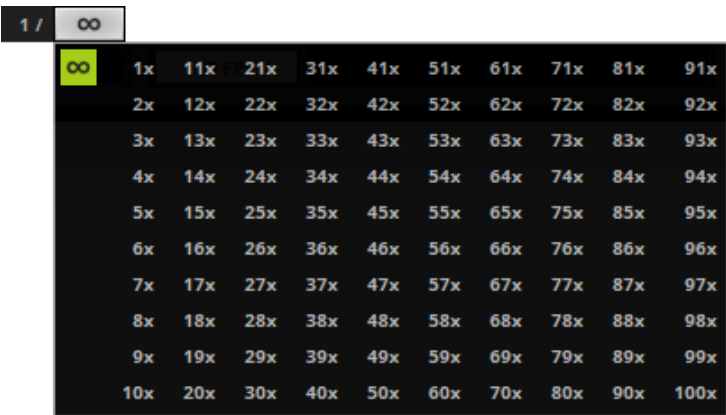
Go - Skips to the next cue.



Loop Mode - All cues will be played back in their respective order [from top to down].

Shuffle Mode - All cues will be played back in one of the following ways:

- All cues have a Duration, but no Time Code or Follow Cue: Cues will be played back without a specific order. Once all cues have been played, the order will be shuffled again. [All cues will be played the same number of times and the same cue will not be shown twice in succession.]
- There is at least one cue with a Time Code or Follow Cue: There is no more guarantee that all cues will be played the same number of times.



Loop Count - Defines how often the Cue List is being played back. Once the specified loop count has been reached, the Cue List stops its playback.

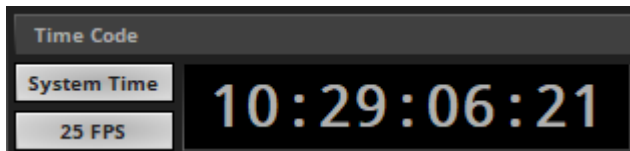
- Choose from **1x** to **100x**, or **endlessly** [which is the default setting].
- **1 /** - Shows how often the Cue List has already been played back.



Progress - Shows you the relative time progression of the current cue in a progress bar.

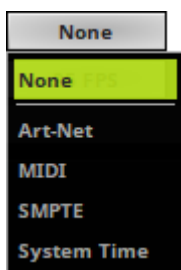
Time Code

Overview

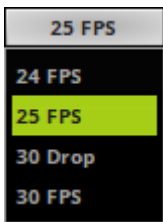


Time Code is a useful option to trigger effects at certain times of the day or at certain points in time. For example, you might want to trigger Storage Place S1 P1 at 10:00 a.m. or when 3 minutes have passed after the start. Time Code is a convenient way to synchronize independent equipment of your LED installation with each other. This could be external audio equipment, other MADRIX 5 computers, or even the same computer. You might want to set up a time-controlled show in sync with timelines of lighting effects of MADRIX 5 and sound.

Settings



- **Time Code Source** - Select from which source Time Code should be received.
 - **None** - Deactivates the usage of Time Code.
 - **Art-Net** - Receives Art-Net Time Code from an Art-Net source [for example, a console, another software, the »[MADRIX 5 Time Code Sender](#), etc.]. You need to activate Art-Net first. Learn more »[Art-Net \[DMX Over Ethernet\]](#)
 - **MIDI** - Receives MIDI Time Code from a MIDI source. You need to activate MIDI first. Learn more »[MIDI-IN Configuration](#)
 - **SMPTE** - Receives SMPTE Time Code from the MADRIX USB SMPTE hardware interface. Learn more »[MADRIX I/O](#)
 - **System Time** - Uses the time as set up in the Options to generate the Time Code, including Offsets. Learn more »[Time / Location](#)



- **Time Code Format** - Allows you choose between different Time Code formats. When receiving Time Code from an external source, use the format sent by the external source. You can choose from:

- **24 FPS**
- **25 FPS**
- **30 Drop** [30/1.001 FPS]
- **30 FPS**

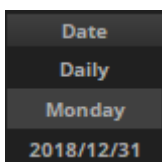
- **00:00:00:00** Displays the currently used Time Code. The hours:minutes:seconds:frames format is used:
HH:MM:SS:FF

Learn more » [Time Code \[MIDI / Art-Net / SMPTE / System Time\]](#)

Important Notes

- **Do not forget to save your Cue Lists or the complete MADRIX 5 Setup file.**
- **When you are using Date, Time Code, and/or Duration, logical routines are implemented to determine which cue should be currently active. These routines are explained in more detail below.**

Date



If you are setting up a Date for a cue, 3 options are available to you:

- Daily,
- A specific weekday,

- Or an explicit date.

If you are using a mixture of those three options, a cue will be favored and activated according to the following hierarchy if applicable:

An explicit date overrides a weekday entry. And a weekday entry overrides a daily entry.

For example, daily will activate a cue every single day. But on Mondays, another cue should be activated and it will be. But 2010/04/19 is also a Monday and this cue will be activated this day instead of the daily cue and instead of the Monday cue.

Time Code Without Duration

- If you are using the column Time Code without the column Duration, a cue will only be activated if the Time Code passes this predefined time.
- If the Time Code of a cue [without Duration] has already passed that deadline, the cue will not be activated.

Time Code With Duration

A] If you are using the column Time Code and the column Duration, a cue will be activated when the current Time Code falls into this time window.

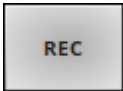
- A cue using Time Code and Duration will be activated if it falls into the time window.
- In addition, the logical routine will check if the Date needs to be considered according to the information above [Date].

For example, if your daily cue should start at 8 o'clock for 8 hours and the current Time Code says 10 o'clock, the cue will be activated.

B] When using Time Code and Duration, you should be aware of what should happen when the Duration is over. A cue with a Time Code and Duration will expire eventually.

- When a cue with Time Code and Duration is over or has expired, MADRIX 5 will automatically select the next cue; regardless of what the next cue is.
- MADRIX 5 will not check if the next cue is valid or logic. If you do not want MADRIX 5 to select the next cue, use Follow cues for example or make sure the next cue is set up correctly!

Recording



Starts or stops the Cue List Recording. See »[Recording](#)

Playback Side

You can choose how MADRIX 5 manages the user interface when playing back a Cue List.

Learn more »[User Interface](#)

Live Control

The majority of controls in MADRIX 5 is disabled while a Cue List is running. The following control controls are available to you even during Cue List playback:

- Cue List and Cue List controls
- Submaster Deck A / Deck B
- Color Filter Deck A / Deck B
- Filter Deck A / Deck B
- Speed Masters Deck A / Deck B, including Pause

Learn more » [Controls \[Deck A / Deck B\]](#)

- Crossfader
- Main Output Color Filter
- Main Output Filter
- Main Output Strobe

Learn more » [Crossfader](#)

- Master, including Freeze and Blackout
- Audio Output Level, including Mute
- Audio Input Level, including AGC and Mute

Learn more » [Main Output / Master / Audio Levels](#)

- Group Control

Learn more » [Fixture Groups \[Group Control\]](#)

File Watcher [Automatic Cue List Reloading]

MADRIX 5 can automatically reload a Cue List within a predefined refresh time.

Learn more » [General](#)

9.2 Timeline Editor

This topic includes:

- [Overview](#)
- [1\] Creating A New Timeline](#)
- [2\] Adding Audio Files](#)
- [3\] Creating Cue Segments](#)
- [4\] Editing](#)
- [5\] Playback](#)

Overview

Based on time code, you can trigger cue segments at exactly the right time and synchronize your lighting to audio shown in waveforms by creating a Timeline.

In this case, MADRIX 5 itself can become the time-code sender.

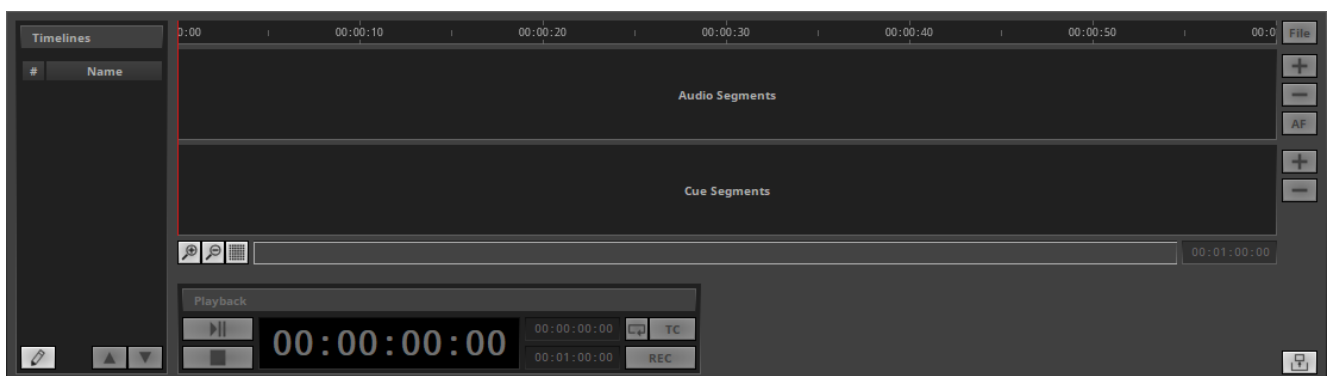
This feature is also known as sequencing.

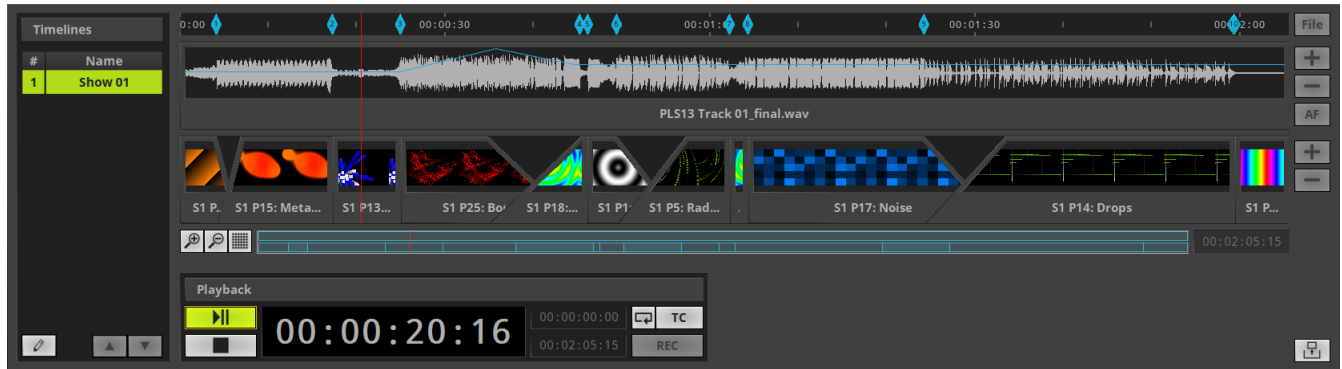
You can open the Timeline Editor in 3 ways:

- Go to the menu **Tools > Timelines...**
- Or press **F10**
- Or click **Layers > Timelines** on the user interface.

To close the Timeline Editor again and change back to the original MADRIX 5 user interface:

- Go to the menu **Tools > Timelines...**
- Or press **F10**
- Or click **Timelines > Layers** on the user interface.





Undock - Creates a separate window to freely use the Editor window detached from the main user interface. The separated window can be enlarged in size and shown on multiple monitors.



Dock - Brings the separate, detached window back again into the main user interface.

It is highly recommended to set up your Storage Places [incl. MADRIX Effects, Layers, Chasers, etc.] before using the Timelines feature.

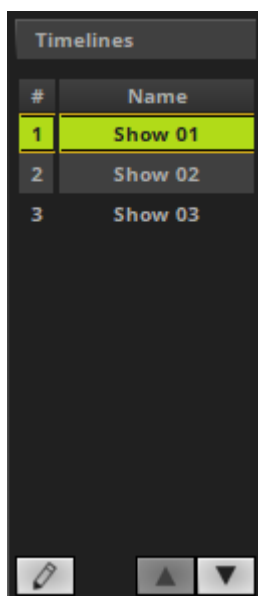
No matter if audio files are added to a Timeline or not, a functioning audio-output device is required for Timeline playback!

1] Creating A New Timeline

Timelines

The Timeline Editor is empty when opening it for the first time.

- You need to create a new Timeline first.
[Navigate the left side of the window.]



Add - Creates a new Timeline.

- You can add more than one Timeline.

Remove - Removes the currently selected Timeline. Timelines that currently playing or are paused cannot be removed. Stop the playback first.

Duplicate - Copies the currently selected Timeline and adds it as a new item.



Position Up - Changes the order, and moves the currently selected Timeline one item higher up in the list.



Position Down - Changes the order, and moves the currently selected Timeline one item lower down in the list.

#

Index - References the different Timelines with a continuous index number.



Left Mouse Double-Click - Allows you to edit the index. Enter a number and confirm with **Enter** on your keyboard to change the order of Timelines.



Play - If playback of a Timeline has been started, the index number changes into the play symbol.

Pause - If playback of a Timeline has been paused, the index number changes into the pause symbol.

Name

Shows the label of the Timeline. The software names new Timelines **Timeline** by default.

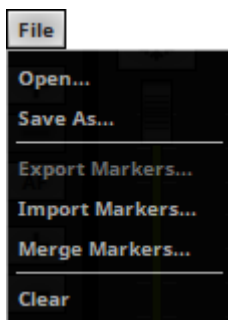
Left Mouse Double-Click - Allows you to edit the name. Enter any name and confirm with **Enter** on your keyboard.

- **Note: Only one Timeline can be selected and active at once.**

File

After creating a Timeline, the following file-management options become available:

[Navigate to the right side of the window.]



Left Mouse Click - Opens the context menu.

Open... - Loads a previously saved file, which can be a MADRIX Timeline or MADRIX Cue List [of the file type *.mtlx or *.mclx]. Choose the file from your system.

Save As... - Stores your current Timeline in an external file as MADRIX Timeline [of the file type *.mtlx].

Export Markers... - Saves configured Timeline Markers as an external file in a general file format for exchange between software applications [of the file type *.csv]. Choose the location on your system where to save. Learn more [below](#).

Import Markers... - Loads Timeline Markers from an external file [of the file type *.csv]. Attention: Any existing Markers will be removed in the process. Learn more [below](#).

Merge Markers... - Loads Timeline Markers from an external file and adds them to Markers that are already existing [of the file type *.mtlx]. Learn more [below](#).

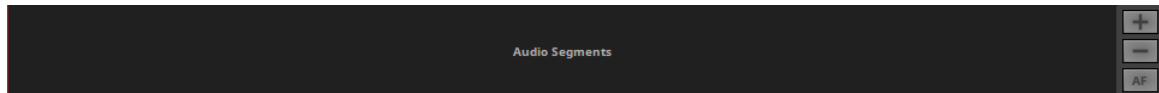
Clear - Resets the current Timeline and removes all content, such as audio segments, cues, and other settings.

2] Adding Audio Files

- **Note: It is not required to add audio files to a Timeline.**

[Skip to '3] Creating Cue Segments' if you don't want to add audio files.]

- By default, a new Timeline does not yet include any audio segments.



Add - Adds a new audio segment at the current cursor position. This defines the time code at which the audio segment is inserted.

- Navigate to the desired time code first and confirm with a **Left Mouse Click**
- Select an audio file from your computer first.
- Supported file formats include: *.3ga, *.aac, *.adts, *.asf, *.m4a, *.mp3, *.wav, *.wma
- Unsupported formats: *.mp3 with a variable bitrate [VBR]

- You can add more than one audio file/segment.

Duplicate

- Select one or more segments and hold down **Ctrl** on your keyboard.
[**Shift+Ctrl** suppresses snapping for the current action.]
- Then, continue to hold Ctrl and the **left mouse button** and drag your mouse.
- A copy of the segments will be created.
- Simply release the mouse at the segments's new position.

Drag And Drop Audio Files

- **Left Mouse Click And Hold + Drag** - You can select and drag and drop audio files directly into the Timeline Editor.
- **Audio files are only referenced by the Timeline Editor. Make sure the source files are always available!**



Remove - Removes the currently selected audio segments. Select one or more audio segment first.

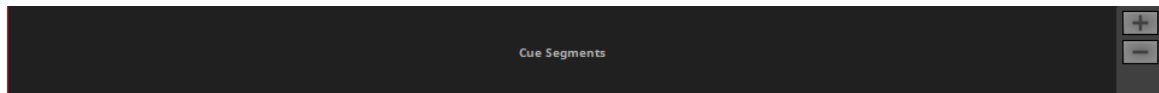


Automatic Audio-Volume Fade - If enabled, creates automatic mixes [crossfades] between overlapping audio segments.

- **Note:** You can further edit these audio segments, as explained [below](#).

3] Creating Cue Segments

- **Note:** If no cue segments are added to a Timeline, the currently selected Storage Places will be displayed continuously.
- By default, a new Timeline does not yet include any cue segments.



Add - Adds a new cue segment at the current cursor position. This defines the time code at which the cue segment is inserted.

[Keyboard shortcut: **Ins**]


- Cue segments reference Storage Places [just like a Cue List].
- It is highly recommended to set up your Storage Places [incl. MADRIX Effects, Layers, Chasers, etc.] before using the Timeline feature.
- Navigate to the desired time code first and confirm with a **Left Mouse Click**
- The newly created cue segment will automatically reference the most recently selected Storage Place by default.

- You can add more than one cue segment.
- Cue segments can only be used back to back. If cue segments have been added, it is not possible to not reference a Storage Place at a time.
 - If you do not wish to output anything at certain times, use the Opacity or add a Storage Place with SCE Color in Black.

Duplicate

- Select one segment and hold down **Ctrl** on your keyboard.
[**Shift+Ctrl** disables snapping for the current action.]
- Then, continue to hold Ctrl and the **left mouse button** and drag your mouse.
- A copy of the segment will be created.
- Simply release the mouse at the segments's new position.

Drag And Drop Storage Places

- 
- **Left Mouse Click And 2 Sec. Hold** - You can perform a Copy and Paste with the mouse.
 - Use a left mouse click on a Storage Place and continue to hold for 2 seconds. A small **+** appears.
 - Continue to hold and move your mouse to the Timeline Editor.
 - A blue guide indicates the start time code.
 - Release the mouse button to paste a copy onto a cue segment or create a new cue segment.



Remove - Removes the currently selected cue segments. Select one or more cue segments first.

[Keyboard shortcut: **Del**]

- **Note:** You can further edit these cue segments, as explained [below](#).

4] Editing

Navigation And Selection

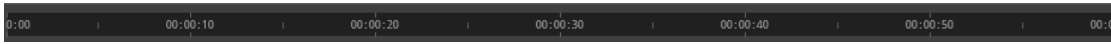
Timeline

Timeline Overview

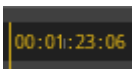
The Timeline itself is shown at the top of the Timeline Editor.

- The time is shown in HH:MM:SS:FF [hours:minutes:seconds:frames].
 - The level of detail depends on the zoom level.

- The default Timeline is 00:01:00:00 long.
- The Timeline expands when new audio files are added that exceed the current Timeline duration.
- You can define the total duration; as explained below.
- You can set the current cursor position; as explained below.



Timeline Cursor



- A yellow line shows the current cursor position.

Left Mouse Click - Puts the cursor on a different position of the Timeline.

- The time of the current position is shown next to the cursor in HH:MM:SS:FF.

[It is also shown in the time-code field of the **Playback** section]

- The cursor snaps to start positions and end positions of segments, markers, and single frames.

- Scrubbing: During paused playback associated Storage Places are immediately selected when changing the cursor position and thereby selecting a cue segment.

Left / Right - These keyboard shortcuts let the cursors snap to segments and markers.

Home/Pos1 - This keyboard shortcut jumps to the beginning of the Timeline.

End - This keyboard shortcut jumps to the end of the Timeline.

1-9 - These keyboard shortcuts jump to markers 1 through 9.



- A red line shows the current playback position.

Timeline Context Menu



Right Mouse Click - Perform a right click with your mouse on the Timeline to call up the context menu.

Set Cursor Position As Playback Start - Sets the playback start time to the time stamp of the cursor.

Set Cursor Position As Playback End - Sets the playback end time to the time stamp of the cursor.

Add Marker At Cursor Position - Sets a new marker at the current cursor position. [Keyboard shortcut: **M**]

Edit Markers... - Calls up the window to edit markers; as explained below.

Clear Markers - Removes all markers from the Timeline.

Timeline Markers

Markers allow you to tag and recall specific positions on the Timeline, i.e. timestamps.

This is especially useful for positioning audio segments as well as cue segments.

[For example, you might play back the Timeline to hear the audio and set new markers via the keyboard each time you hear a striking change in music.]

Adding Markers Manually:



Right Mouse Click > Add Marker At Cursor Position - Sets a new marker on the Timeline at the current cursor position.

[Keyboard shortcut: **M** or **Ctrl+1-9** to set markers 1 through 9]

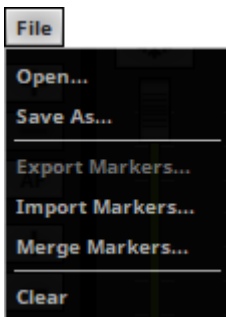
[Keyboard shortcut: **1-9** to jump to markers 1 through 9.]

- Up to 1000 markers can be set [1 - 1000].

Exporting Or Importing Markers [CSV Files]:

In order to exchange timestamps between software applications and equipment, use the File menu to export, import, or merge Markers.

This workflow was mainly implemented to be able to export from the audio-production software REAPER.



Left Mouse Click - Opens the context menu.

Export Markers... - Saves configured Timeline Markers as an external file in a general file format for exchange between software applications [of the file type *.csv]. Choose the location on your system where to save.

Import Markers... - Loads Timeline Markers from an external file [of the file type *.csv]. Attention: Any existing Markers will be removed in the process.

Merge Markers... - Loads Timeline Markers from an external file and adds them to Markers that are already existing [of the file type *.mtlx].

File Format:

MADRIX 5 supports a very general file format for this purpose. CSV files are usually text files with tabularly structured data.

The supported file format looks like this in general:

```
#,Name,Start
M1,,00:00:02:26
M2,,00:00:06:12
M3,,00:00:11:15
```

Attention: You need to meet the following prerequisites to be able to import Cue Points from REAPER!

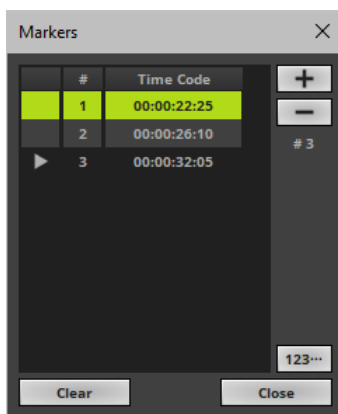
- The supported time format of MADRIX 5 is Hours:Minutes:Seconds:Frames [HH:MM:SS:FF].

REAPER uses its currently set time format during the export process. Make sure to set it to

HH:MM:SS:FF before the export.

- The frame rate of REAPER should match the frame rate of the MADRIX 5 Timeline Editor. [Otherwise, imported timestamps will not match the final Markers in the Timeline. The exported CSV does not include the exported frame rate.]
- Regions are exported from REAPER and can be included in the export but will simply be ignored by the import process.
- Exported Timestamps that lay outside of the Timeline duration of the MADRIX 5 Timeline Editor will be ignored during the import process.

Managing Markers:



Right Mouse Click > Edit Markers... - Perform a right click with your mouse on the Timeline to call up the context menu and choose **Edit Markers...**

> - Shows that the cursor position is at the indicated marker, or at a position between this marker and the next marker.

Left Mouse Double-Click - Perform a double-click with the mouse on the first column of a list item and the Timeline cursor will jump to that exact position.

- #**
- Shows the number of this marker.
- Left Mouse Double-Click** - Allows you to edit the number in order to rearrange the order of markers. Confirm with **Enter** on your keyboard.

- Time Code**
- Shows the time stamp of the marker in HH:MM:SS:FF.

Left Mouse Double-Click - Allows you to edit the time stamp. Confirm with **Enter** on your keyboard.

Left Mouse Click And Hold + Move Mouse Up/Down - Allows you to change the value.



Add - Adds a new marker at the current cursor position.

Remove - Removes the currently selected markers.

Count - Shows the total number of markers in the list.



- Renumbers all markers anew based on their current, chronological order on the Timeline.

[You might have set a marker between two previous markers. This feature allows you to order them chronologically again.]

Clear

- Removes all markers from the list.

Close

- Closes the window.

Audio Segments / Cue Segments



Left Mouse Click - Selects a segment.

Left Mouse Double-Click - Brings the selected segment fully into view and focus.

Tab / Shift+Tab - These keyboard shortcuts select the previous/next segment.



Ctrl + Left Mouse Click - Allows you to select several segments at the same time by holding Ctrl on your keyboard while selected several segments with your mouse.

Shift + Left Mouse Click - Allows you to select several segments at the same time by holding Shift on your keyboard while selecting the first segment and the last segment with your mouse, and every segment in-between will also be selected as a result.

Ctrl+A - This keyboard shortcut selects all audio segments or all cue segments, depending on which kind of segment is currently selected.

Scroll Bar

The scroll bar provides a visual overview over all segments of the Timeline.



Zoom Level

Zoom In - Determines the level of detail. Zoom in to see a smaller portion of the timeline and thereby increased detail. Zoom in to the highest zoom level to see single frames on the Timeline.

[Keyboard shortcut: **Ctrl+Plus**]

Zoom Out - Determines the level of detail and allows you to see more of the entire Timeline.

[Keyboard shortcut: **Ctrl+Minus**]

Focus All - Automatically adjusts the zoom level to show all segments of the Timeline in a single overview.

[Keyboard shortcut: **Ctrl+0**]

Mouse Scroll Wheel - Zoom in/out.

Shift + Mouse Scroll Wheel - Scroll left/right.



Upper Row - Shows the audio segments.

Bottom Row - Shows the cue segments.

Green - Shows the currently selected segment.

Blue - Shows added segments.

Red Line - Shows the current cursor position or playback position [during playback].



Viewport - A translucent, white overlay shows the current viewport, which defines the portion of the Timeline that is currently shown.

Left Mouse Click - Click to the left or the right of the viewport to change the viewport to this position.

Left Mouse Click And Hold + Drag - Allows you to reposition the viewport and thereby change which segments can be seen.

Left Mouse Click And Hold + Drag - Navigate to the start or end of the viewport overlay and wait for the mouse to change to a double arrow in order to change the size of the viewport overlay and thereby the zoom level.

Left Mouse Click And Hold + Move Mouse Up/Down - Allows you to change the zoom level of the viewport.

Page Down - This keyboard shortcut scrolls to the left.

Page Up - This keyboard shortcut scrolls to the right.

Press the **Spacebar** on your keyboard [and continue to hold it] and **left-click** in order to drag the viewport for easy navigation.

00:03:27:04

Duration - Shows and defines the current total duration of the Timeline in [HH:MM:SS:FF]. The default value is 00:01:00:00. The maximum value is 24h minus 1 frame.

Left Mouse Click - Allows you to edit the duration. Confirm with **Enter** on your keyboard.

Left Mouse Click And Hold + Move Mouse Up/Down - Allows you to change the value.

Spacebar - This keyboard shortcut resets to the default value.

Editing Audio Segments

Position

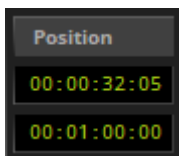
You can change the position of audio segments.

▪ A] Repositioning Via Mouse

- **Left Mouse Click And Hold + Drag** - Make sure to select the audio segment by clicking on the label. The mouse cursor changes to a quadruple arrow. Continue to hold and move the mouse to change the position.
- Blue guides indicate the start time code and the end time code.
- Audio segments snap to other audio segments, cue segments, markers, the cursor, and single frames.



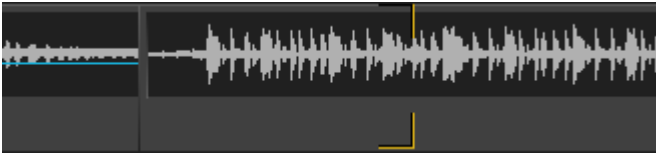
▪ B] Repositioning Via Settings



- Make sure to select the audio segment first.
- The **Position** settings become available [at the bottom of the Timeline Editor].
- **Start Time Code** - Allows you to set the time code of the beginning of the audio segment. The end time code will then automatically be set according to the length of the audio segment. Valid values range from 00:00:00:00 to the duration of the Timeline minus one frame, because of the minimum length of a segment.
- **End Time Code** - Allows you to set the time code of the ending of the audio segment. The start time code will then automatically be set according to the length of the audio segment. Valid values range from 00:00:00:00 to the duration of the Timeline.
- **Left Mouse Click And Hold + Move Mouse Up/Down** - Move the mouse up or down within the edit field to increase or decrease the value.
- **Spacebar** - This keyboard shortcut resets to the default value.

Overlapping

Audio segments can overlap.

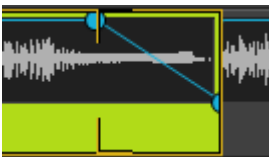


- Overlapping is shown with the help of orange lines.
- Make sure to use it intentionally and not unintentionally.
- The software can create automatic volume crossfades:



Automatic Audio-Volume Fade - If enabled, creates automatic mixes [crossfades] between overlapping audio segments.

- AF example for the left audio segment:



- AF example for the right audio segment:



Length

You can edit the length of audio segments, that is reduce the original length of the audio file to make it shorter.

- Select an audio segment.
- **A] Editing Via Mouse**



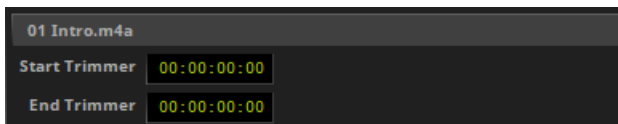
- Navigate to the start position of an audio segment [left edge]. The mouse cursor changes to a double arrow.

Left Mouse Click And Hold + Drag - Allows you to trim the beginning of the audio segment by moving the mouse to the right.

- Navigate to the end position of an audio segment [right edge]. The mouse cursor changes to a double arrow.

Left Mouse Click And Hold + Drag - Allows you to trim the ending of the audio segment by moving the mouse to the left.

▪ B] Editing Via Settings



- Make sure to select the audio segment first.

- The **Trim Settings** become available [at the bottom of the Timeline Editor].

- **Start Trimmer** - Allows you to trim the beginning of the audio segment.

Valid values range from 00:00:00:00 to the length of the audio file minus one frame, which is the minimum length. The default value is 00:00:00:00.

- **End Trimmer** - Allows you to trim the ending of the audio segment.

Valid values range from 00:00:00:00 to the length of the audio file minus one frame, which is the minimum length. The default value is 00:00:00:00.

- **Left Mouse Click And Hold + Move Mouse Up/Down** - Move the mouse up or down within the edit field to increase or decrease the value.

- **Spacebar** - This keyboard shortcut resets to the default value.

Volume

You can edit the volume of an audio segment. You can do so down to each frame.

▪ **Right Mouse Click > Edit Volume** - Perform a right click with your mouse on an audio segment to call up the context menu and choose **Edit Volume**



- **Left Mouse Click - Then**, click with your mouse on the preview image of the audio segment to add a new volume point.
- Add more points by clicking on the blue line.

Green - Shows the currently selected volume point.

Blue - Shows added volume points.

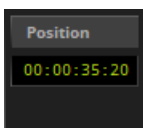


- Select the volume point you wish to edit.
Select multiple points via **Ctrl/Shift + Left Mouse Click**
- The **Volume** settings become available [at the bottom of the Timeline Editor].



Volume-Point Value - Allows you to change the exact value. Valid values range from 0.00 to 100 [in percent]. The default value is 100.

- **Left Mouse Click And Hold + Move Mouse Up/Down** - Move the mouse up or down within the edit field to increase or decrease the value.
- **Spacebar** - This keyboard shortcut resets to the default value.
- **Left Mouse Click And Hold + Move Mouse Up/Down** - Alternatively, you can select the volume point and move your mouse up or down to change the volume value.



Volume-Point Position - Allows you to precisely set the position of the volume point on the Timeline in HH:MM:SS:FF.

Del

- Select one or more volume points and use Delete on your keyboard to remove the points.

Close

- Closes this window.

- The preview image of the audio segment will show the volume adjustments with the help of gray line graphs after the editing process.



Context Menu – Audio Segments



Right Mouse Click - Perform a right click with your mouse on an audio segment to call up the context menu.

Shift Segments To The Left - Sends the currently selected segments one position to the left and allows you to quickly reposition them in this way.

- The start position of the selected group is being sent to the start position of the left segment.
- The end position of the left segment is being sent to the end position of the selected group.

Shift Segments To The Right - Sends the currently selected segments one position to the right and allows you to quickly reposition them in this way.

- The end position of the selected group is being sent to the end position of the right segment.
- The start position of the right segment is being sent to the start position of the selected group.

Swap Segments - Switches the positions of the currently selected segments. Select two or more segments first.

- Only the start positions will be used as reference.
- If more than two segments are selected, the positions of the entire group will be inverted.

Edit Layer Opacity - Allows you to edit the volume of an audio segment; as explained above.

Editing Cue Segments

Position

You can change the position of cue segments.

▪ A] Repositioning Via Mouse

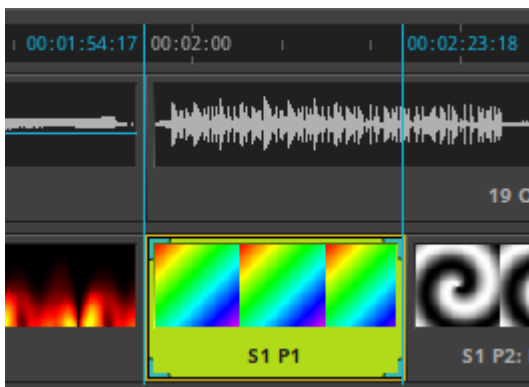
- **Left Mouse Click And Hold + Drag** - Make sure to select the cue segment by clicking on the label. The mouse cursor changes to a quadruple arrow. Continue to hold and move the mouse to change the position.

- Blue guides indicate the start time code and the end time code.

- Cue segments snap to other cue segments, audio segments, markers, the cursor, and single frames.

[When moved, they automatically change the size of neighboring cue segments. Since cue segments can only be used back to back, you will see other cue segments change in length accordingly.]

- **Note:** When moving the first cue segment or the last cue segment, you cannot freely reposition them. The start time code of the first cue segment needs to remain at the beginning of the Timeline. The end time code of the last cue segment needs to remain at the end of the Timeline. When trying to move them, you will change their length by making the cue segment shorter.



▪ B] Repositioning Via Settings



- Make sure to select the cue segment first.

- The **Position** settings become available [at the bottom of the Timeline Editor].

- **Start Time Code**- Allows you to set the time code of the beginning of the cue segment.

Note: The end time code will not be automatically adjusted accordingly. Instead, you will change the length of the cue segment.

[Since cue segments can only be used back to back, you will also see other cue segments change in length accordingly.]

- **End Time Code** - Allows you to set the time code of the ending of the cue segment.

Note: The start time code will not be automatically adjusted accordingly. Instead, you will change the length of the cue segment.

[Since cue segments can only be used back to back, you will also see other cue segments change in length accordingly.]

- **Left Mouse Click And Hold + Move Mouse Up/Down** - Move the mouse up or down within the edit field to increase or decrease the value.

- **Spacebar** - This keyboard shortcut resets to the default value.

Length

You can edit the length of cue segments.

[Depending where you add new cue segments, they initially take on certain lengths automatically.]

- Select a cue segment.

- **A] Editing Via Mouse**



- Navigate to the start position of a cue segment [the middle of the left edge]. The mouse cursor changes to a double arrow.

- Left Mouse Click And Hold + Drag** - Allows you to change the beginning of the cue segment by moving the mouse to the right.

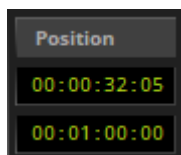
- [Since cue segments can only be used back to back, you will also see other cue segments change in length accordingly.]

- Navigate to the end position of a cue segment [the middle of the right edge]. The mouse cursor changes to a double arrow.

- Left Mouse Click And Hold + Drag** - Allows you to change the ending of the cue segment by moving the mouse to the left.

- [Since cue segments can only be used back to back, you will also see other cue segments change in length accordingly.]

- **B] Editing Via Settings**



- Make sure to select the cue segment first.
- The **Position** settings become available [at the bottom of the Timeline Editor].
- **Start Time Code**- Allows you to set the time code of the beginning of the cue segment.

Note: The end time code will not automatically be adjusted accordingly. Instead, you will change the length of the cue segment.

[Since cue segments can only be used back to back, you will also see other cue segments change in length accordingly.]

- **End Time Code** - Allows you to set the time code of the ending of the cue segment.

Note: The start time code will not automatically be adjusted accordingly. Instead, you will change the length of the cue segment.

[Since cue segments can only be used back to back, you will also see other cue segments change in length accordingly.]

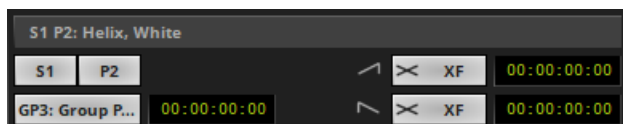
- **Left Mouse Click And Hold + Move Mouse Up/Down** - Move the mouse up or down within the edit field to increase or decrease the value.

- **Spacebar** - This keyboard shortcut resets to the default value.

Settings

There are various settings for cue segments that you can and should edit.

- Make sure to select the cue segment first.
- The **Cue Segment Settings** become available [at the bottom of the Timeline Editor].



Storage Place:

The title of this section shows which Storage Place is selected for the cue segment and its Description.

Description

S1

Storage - Defines the Storage Place. This is the selection of the Storage.

P2

Place - Defines the Storage Place. This is the selection of the Place.

GP3: Group P...

00:00:00:00

Group Preset - Defines which Group Preset is triggered together with this cue segment. Choose the preset from the list. The default value is **None**, which does not trigger any preset.

Fade-In Time - Defines the duration of the automatic fade between fader positions in HH:MM:SS:FF, when triggering a Group Preset. The default value is 00:00:00:00. The maximum value is 24h minus 1 frame.

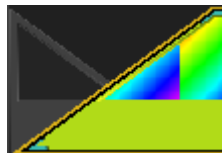


XF

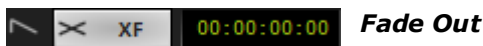
00:00:00:00

Fade In

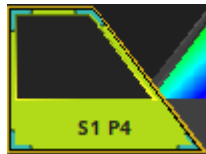
- **Fade Type** - Defines how the fade will look like. The default value is XF. Learn more » [Fade Types](#)
- **Fade-In Time** - Defines the duration of the fade in HH:MM:SS:FF. The default value is 00:00:00:00. The maximum value is the length of the cue segment.
 - **Left Mouse Click And Hold + Move Mouse Up/Down** - Move the mouse up or down within the edit field to increase or decrease the value.
 - **Spacebar** - This keyboard shortcut resets to the default value.
- **Left Mouse Click And Hold + Drag** - Alternatively, you can select the left blue corners of a cue segment and change the Fade In.
 - Fades snap to audio segments and markers.
 - The upper corner makes the Fade In begin from the current start time code.
 - The lower corner makes the Fade In end with the current start time code, thereby changing the Start Time Code of the segment.



- **Note:** The Fade In of the current cue segment has the same fade time as the Fade Out of the previous cue segment next to it on the left.



- **Fade Type** - Defines how the fade will look like. The default value is XF. Learn more » [Fade Types](#)
- **Fade-Out Time** - Defines the duration of the fade in HH:MM:SS:FF. The default value is 00:00:00:00. The maximum value is the length of the cue segment.
 - **Left Mouse Click And Hold + Move Mouse Up/Down** - Move the mouse up or down within the edit field to increase or decrease the value.
 - **Spacebar** - This keyboard shortcut resets to the default value.
- **Left Mouse Click And Hold + Drag** - Alternatively, you can select the right blue corner of a cue segment and change the Fade Out.
 - Fades snap to audio segments and markers.
 - The upper corner makes the Fade Out end with the current end time code.
 - The lower corner makes the Fade Out begin from the current end time code, thereby changing the End Time Code of the segment.



- **Note:** The Fade Out of the current cue segment has the same fade time as the Fade In of the next cue segment next to it on the right.

Context Menu – Cue Segments



Right Mouse Click - Perform a right click with your mouse on a cue segment to call up the context menu.

Shift Segments To The Left - Sends the currently selected segments one position to the left and allows you to quickly reposition them in this way.

- The start position of the selected group is being sent to the

start position of the left segment.

- The end position of the left segment is being sent to the end position of the selected group.

- [Keyboard shortcut: **Ctrl+Left**]

Shift Segments To The Right - Sends the currently selected segments one position to the right and allows you to quickly reposition them in this way.

- The end position of the selected group is being sent to the end position of the right segment.

- The start position of the right segment is being sent to the start position of the selected group.

- [Keyboard shortcut: **Ctrl+Right**]

Swap Segments - Switches the positions of the currently selected segments. Select two or more segments first.

- Only the start positions will be used as reference.

- If more than two segments are selected, the positions of the entire group will be inverted.

Shift Segment Contents To The Left - Sends the contents of the cue segment to the next segments to the left.

- Content includes Storage, Place, Group Preset and its Fade Time, Fade In and its Duration, Fade Out and its Duration.

- Content does not include the start position and end position.

- [Keyboard shortcut: **Alt+Left**]

Shift Segment Contents To The Right - Sends the contents of the cue segment to the next segments to the right.

- Content includes Storage, Place, Group Preset and its Fade Time, Fade In and its Duration, Fade Out and its Duration.

- Content does not include the start position and end position.

- [Keyboard shortcut: **Alt+Right**]

Swap Segment Contents - Switches the contents of the currently selected segments. Select two or more segments first.

- Content includes Storage, Place, Group Preset and its Fade Time, Fade In and its Duration, Fade Out and its Duration.

- Content does not include the start position and end position.

- If more than two segments are selected, the contents of the entire group will be inverted.

Edit Layer Opacity - Allows you to edit the opacity of the different layers of the cue segment; as explained below.

Opacity

You can edit the opacity of a cue segment. You can do so down to each frame. Since a Storage Place can contain several layers, you can do so for each layer.

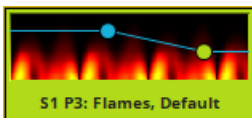
- **Right Mouse Click > Edit Layer Opacity** - Perform a right click with your mouse on a cue segment to call up the context menu and choose **Edit Layer Opacity**



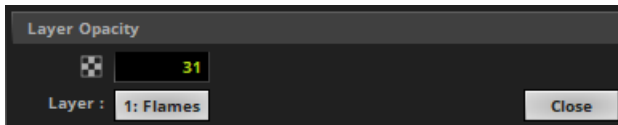
- **Left Mouse Click** - Click with your mouse on the preview image of the cue segment to add a new opacity point.
 - Add more points by clicking on the blue line.

Green - Shows the currently selected opacity point.

Blue - Shows added opacity points.

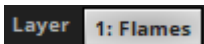


- Select the opacity point you wish to edit.
Select multiple points via **Ctrl/Shift + Left Mouse Click**
- The **Layer Opacity Settings** become available [at the bottom of the Timeline Editor].



Opacity Value - Allows you to change the exact value. Valid values range from 0 to 255. The default value is 255.

- **Left Mouse Click And Hold + Move Mouse Up/Down** - Move the mouse up or down within the edit field to increase or decrease the value.
- **Spacebar** - This keyboard shortcut resets to the default value.
- **Left Mouse Click And Hold + Move Mouse Up/Down** - Alternatively, you can select the opacity point and move your mouse up or down to change the opacity value.



Layer Selection - Allows you to choose for which layer you would like to edit the opacity.

Del

- Select one or more opacity points and use Delete on your keyboard to remove the points.w.

Close

- Closes this window.

- The preview image of the cue segment will show the opacity with help of gray line graphs after the editing process.

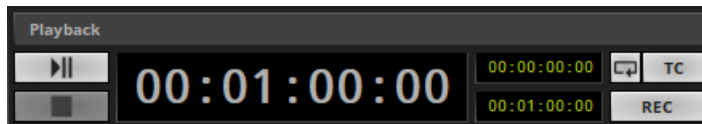


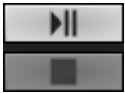
Note: The Layer Opacity can not only be changed by the Timeline Editor, but also via the regular Layer Settings, Chasers, Macros, Remote Control, etc. They influence each other and do not override. They work in LTP mode (Latest Takes Precedence)!

5] Playback

Overview

After setting up your Timeline, you can operate its playback.

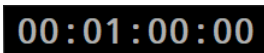




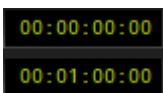
Play/Pause - Starts or holds playback.

Stop - Ends the current playback. The playback position will jump to the start time again.

No matter if audio files are added to a Timeline or not, a functioning audio-output device is required for Timeline playback!



Time Code - Shows the current cursor position or playback position [during playback] in HH:MM:SS:FF.



Start Time Code - Defines the time code at which playback starts. [It can be different from 00:00:00:00 and the Timeline and any of its segments.]

- The default value is 00:00:00:00.

- **Spacebar** - This keyboard shortcut resets to the default value.

End Time Code - Defines the time code at which playback starts. [It can be different from the duration of the Timeline and the end time of any of its segments.]

- The default value is 00:01:00:00. The maximum value is 24h minus 1 frame.

- **Spacebar** - This keyboard shortcut resets to the default value.

- The duration of a Timeline needs to be at least 1 second long [the difference between start time code and end time code].



Loop - Loops the playback and starts to play back the Timeline from the beginning again if the end has been reached.

Playback Side

You can choose how MADRIX 5 manages the user interface when playing back a Timeline.

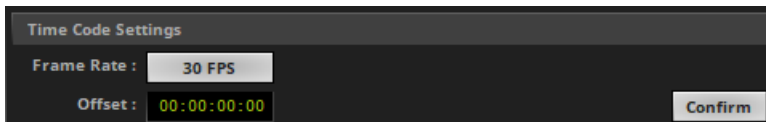
Learn more » [User Interface](#)

Sending Time Code

Time Code Settings



TC - Opens the Time Code Settings [to the right of the button].



Frame Rate

- Allows you choose between different time-code formats. You can choose from:
 - **24 FPS**
 - **25 FPS**
 - **30 Drop** [30/1.001 FPS]
 - **30 FPS**
- The default value is 30 FPS.
- **The structure of the Timeline is based on this setting!**
 - **Segments snap to single frames as the smallest unit.**
 - **Depending on this setting, one second of the Timeline includes 24, 25, 30/1.001, or 30 frames.**

Offset

- Defines an additional offset that is added to the time code of the Timeline playback for output.
 - The default value is 00:00:00:00 [no offset].
 - **Spacebar** - This keyboard shortcut resets to the default value.

Confirm

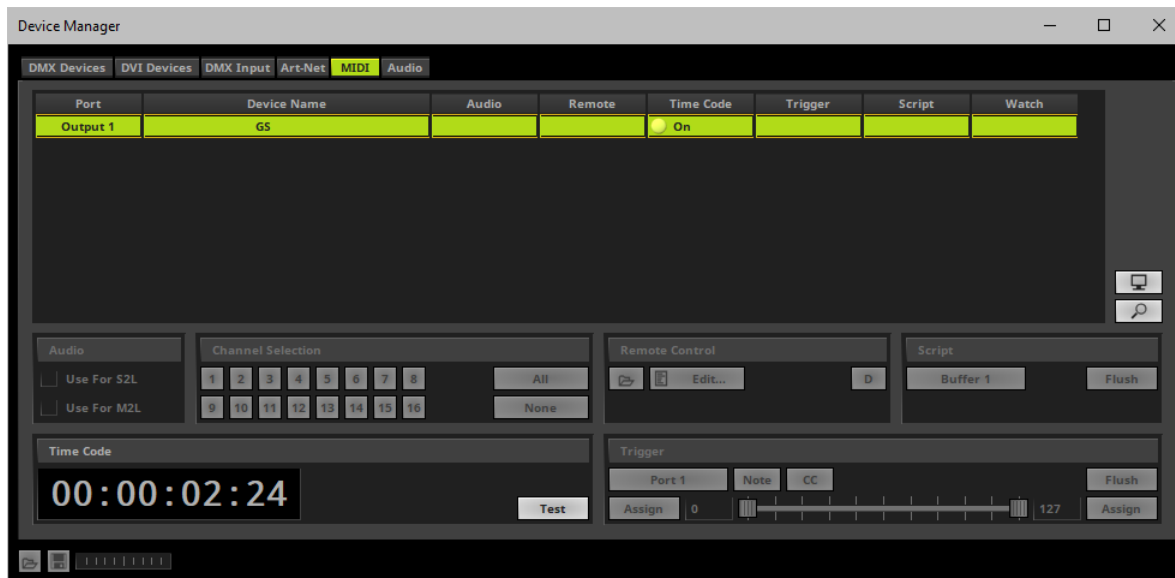
- Applies all settings and closes this window.

Sending Time Code

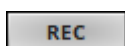
Having set up the Time Code Settings, as described above, does not yet mean that time code is already sent out. You need to set up an output device in the Device Manager first.

- Go to the menu **Preferences > Device Manager... > MIDI**
[Keyboard shortcut: **F4 > MIDI**]

- A new window will open.
- Select your **output** device in the list.
- **Left Mouse Double-Click Or Right Mouse Click** - Perform a double-click or right-click with the mouse on the column **Time Code** in order to enable sending of time code for this output device.
- When playing back a Timeline, you will see the corresponding Time Code here in the Device Manager in the **Time Code** section.



Recording



Starts or stops the Timeline Recording. See »[Recording](#)

9.3 Scheduling

This topic includes:

- [Overview](#)
- [Creating A New Schedule](#)
- [Adding And Managing Events](#)
- [Editing Events](#)

Overview

Advanced schedules, including calendar functions, are easily available to you.

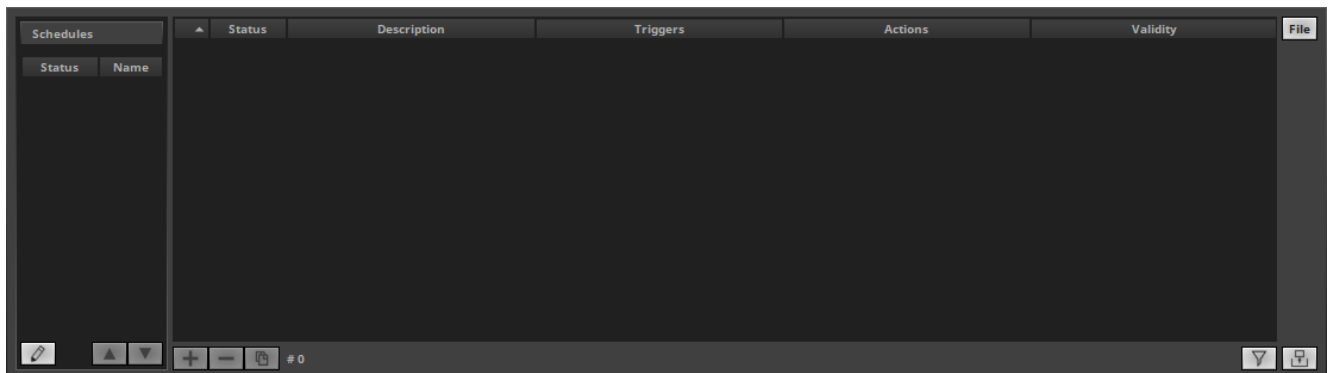
While Schedules do incorporate advanced workflows, one of their main areas of application is the [time] management of several Cue Lists and/or Timelines.

You can open the Schedules in 2 ways:

- Go to the menu **Tools > Scheduling...**
- Or click **Layers > Scheduling** on the user interface.

To close the Schedules again and change back to the original MADRIX 5 user interface:

- Go to the menu **Tools > Scheduling...**
- Or click **Scheduling > Layers** on the user interface.



Schedules		Status	Description	Triggers	Actions	Validity	File
Status	Name	● Active	On	Timer (10:00:00, Daily)	Master > Set, Storage Place > Call	Include : Always	
● Active	Mon - Fri	● Active	Shift 01	Timer (11:00:00, Daily)	Cue List > Play (#1, Goto 1)	Include : Always	
● Active	Sat - Sun	● Active	Shift 02	Timer (14:00:00, Daily)	Cue List > Play (#2, Goto 1)	Include : Always	
● Inactive	Holidays	● Active	Off	Timer (17:00:00, Daily)	Master > Set (0, 10 s)	Include : Always	



Undock - Creates a separate window to freely use the Scheduling window detached from the main user interface. The separated window can be enlarged in size and shown on multiple monitors.

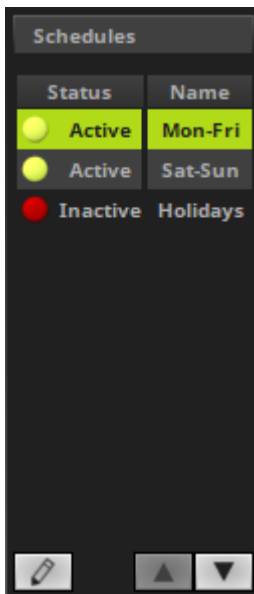


Dock - Brings the separate, detached window back again into the main user interface.

Creating A New Schedule

Schedules

- You need to create a new Schedule first.
[Navigate the left side of the window.]



Add - Creates a new Schedule, which has no Events added to it yet, but is set as Active.

- You can add more than one Schedule.
- Creating multiple Schedules is a tool to organize yourself.

Multiple Schedules can be active and are active at the same time!

Remove - Removes the currently selected Schedules, including all Events.

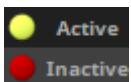
Duplicate - Copies the currently selected Schedules and adds it as a new item.



Position Up - Changes the order, and moves the currently selected Schedules one item higher up in the list.



Position Down - Changes the order, and moves the currently selected Schedules one item lower down in the list.



Left Mouse Double-Click / Right Mouse Click - Allows you to enable or disable the currently selected Schedules.

Active - Enables a Schedule.

Inactive - Disables a Schedule. Included Events will not be triggered.

Name Shows the label of the Schedule. The software names new Schedules **Schedule #** by default and indexes them.

Left Mouse Double-Click - Allows you to edit the name. Enter any name and confirm with **Enter** on your keyboard.

Multiple Schedules

Schedule	Status
Schedule #1	● Active
Schedule #1	● Active
Schedule #1	● Active
Schedule #1	● Active
Schedule #2	● Active
Schedule #1	
Schedule #2	

If you have selected several Schedules, all included Events will be shown [on the right hand side] and a new column is shown.

Left Mouse Double-Click / Right Mouse Click - Allows you to re-assign Events to other Schedules for better organization.

File

The following options for file management are available:
[Navigate to the right side of the window.]



Left Mouse Click - Opens the context menu.

Open... - Loads a previously saved Schedule file [of the file type *.mscx]. Choose the file from your system.

Open+... - Loads a previously saved Schedule file [of the file type *.mscx] and appends it to the current items. Choose the file from your system.

Save As... - Stores all of your Schedules in an external file as MADRIX Schedule [of the file type *.mscx].

Clear - Removes all Schedules and their included Events.

Adding And Managing Events

- By default, a new Schedule does not yet include any Events.
- Make sure to select a Schedule first and only select one Schedule.
- You can sort Events in ascending or descending order by clicking on the corresponding column headers, such as Status, Description, Triggers, Actions, Validity.



Add - Adds a new Event, which has no Triggers or Actions defined yet, but is set as Active.



Remove - Removes the currently selected Events. Select one or more Events first.



Duplicate - Copies the currently selected Events and adds them as a new item at the end of the list.



Count - Displays the total number of Events in the Schedule.



Filter - Activates the filter.

- Enter any text to filter out items that do not include this text. The button is shown in green if the filter is active.

- Terms can be case-insensitive. You don't have to use capital letters.

- Feel free to use terms that are incomplete. For example, **mad** will include results for **MADRIX**.
- You may specify certain columns by using a colon [:].
- For example: **Description:2** shows only lines where the number is included in the Description, for example.
- Add, Remove, and Duplicate are disabled while a filter is active.

Ctrl+F - Opens the filter.

Esc - Closes the filter.

Right Mouse Click - Resets the filter [and closes it again if it is still open].

Editing Events

(Manual) Triggering

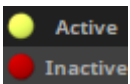


A play icon is being flashed when an Event has been triggered automatically.



Left Mouse Double-Click / Right Mouse Click - Allows you to trigger an Event manually.

Status



Left Mouse Double-Click / Right Mouse Click - Allows you to enable or disable an Event.

Active - Enables an Event.

Inactive - Disables an Event. The Event will not be triggered automatically.

Description

This column allows you to add a label to the Event.

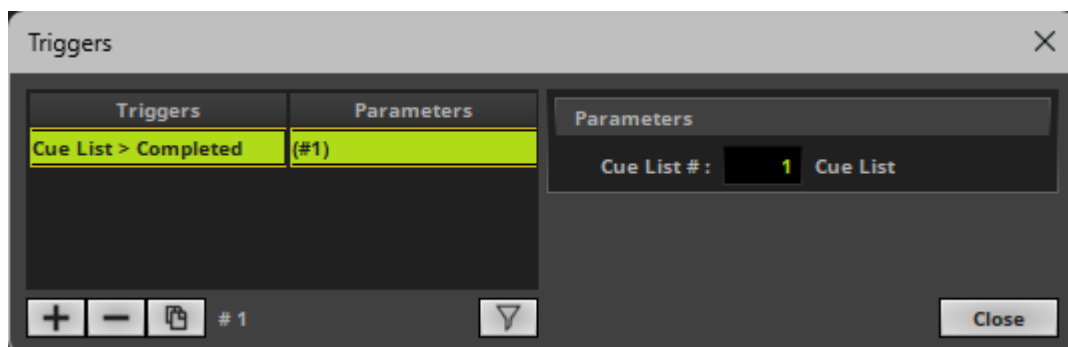
Left Mouse Double-Click / Right Mouse Click - Allows you to edit the Description. Enter any text and confirm with **Enter** on your keyboard.

Triggers

- **Left Mouse Double-Click / Right Mouse Click** - Allows you to edit the Triggers.
- **Note: Several Triggers can be configured per Event.**

The following Triggers are available:


Cue List
>
Completed



The configured Action of the Event will be triggered once the specified Cue List has been completed.
[This does not apply in case playback has been manually aborted and canceled or if the Cue List plays in a loop.]

Parameters:

Cue List # - Defines which Cue List needs to be completed [since you can create several Cue Lists].

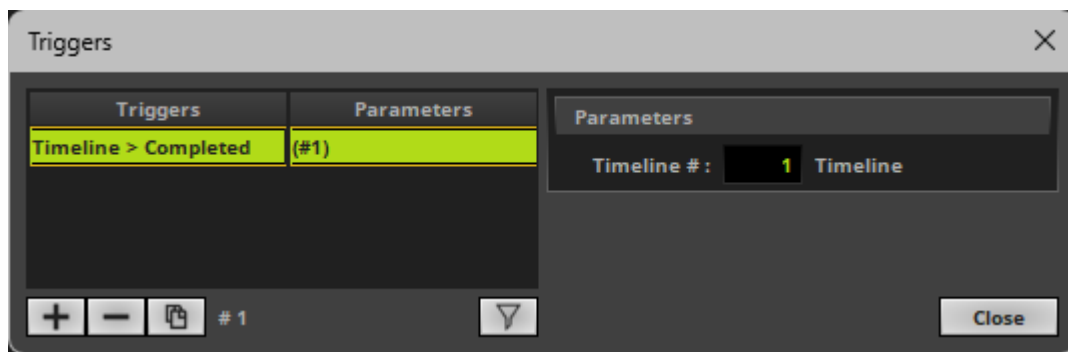
 - You will be warned if no Cue List [with the corresponding index] has been created yet.

Timeline

>

Completed


d



The configured Action of the Event will be triggered once the specified Timeline has been completed.
[This does not apply in case playback has been manually aborted and canceled or if the Timeline plays in a loop.]

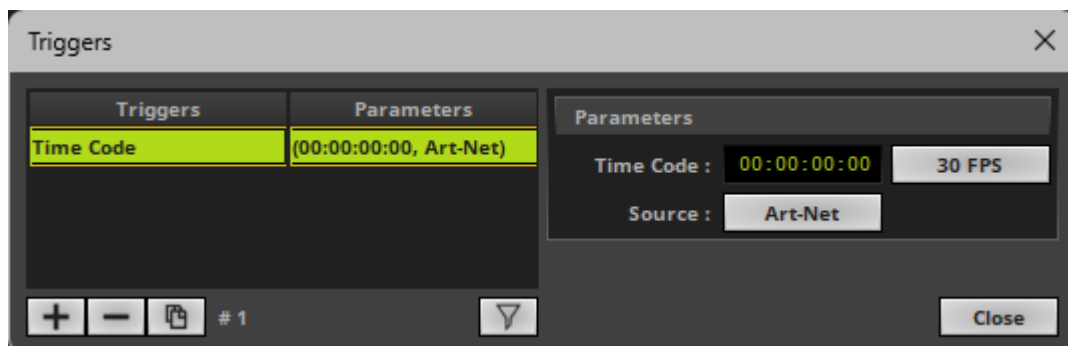
Parameters:

Timeline # - Defines which Timeline needs to be completed [since you can create several Timelines].

 - You will be warned if no Timeline [with the corresponding index] has been created yet.

Time

Code



The configured Action of the Event will be triggered once the specified Time Code has been received and reached.

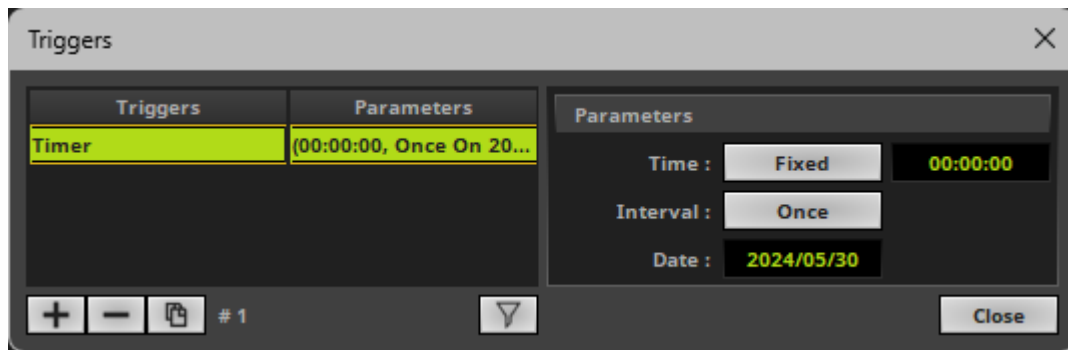
[Time code may even run backwards.]

Parameters:

Time Code - Defines the time code in **HH:MM:SS:FF** [Hours:Minutes:Seconds:Frames].

Time-Code Format - Allows you to choose from **24 FPS**, **25 FPS**, **30 Drop**, and **30 FPS**. [This refers to the way time code is shown, but not how it is processed.]

Source - Allows you to choose from where to receive the time code. Choose from **Art-Net**, **MIDI**, **SMPTE**.

Timer

The configured Action of the Event will be triggered once the specified Time has been reached.

Parameters:

Time - Defines the type of timer. Choose from **Fixed**, **Sunrise**, or **Sunset**. Enter the time or offset in **+/-HH:MM:SS** [Hours:Minutes:Seconds].

- Offsets can be used in addition to the automatically calculated sunrise or sunset times.

- Sunrise and sunset are calculated from the set time and location in the options of the software. Learn more »[Time / Location](#)

Interval - Allows you to choose from:

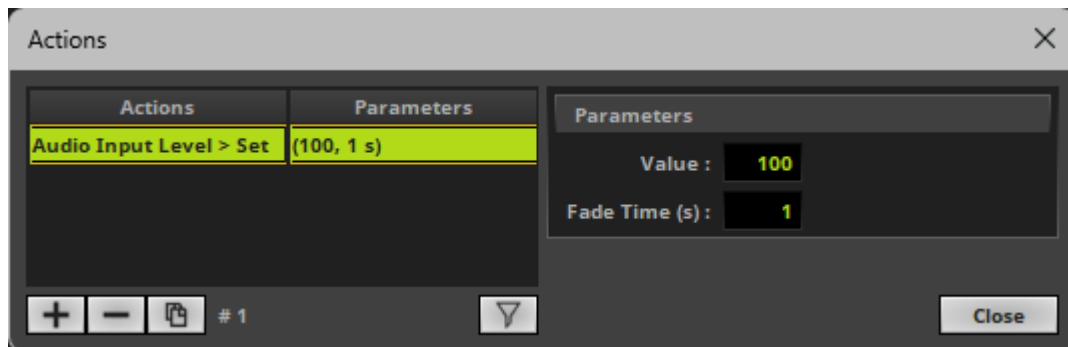
- **Once**. Then, enter a specific **Date** in **YYYY/MM/DD** [Year/Month/Day]. [Triggers only once.]
- **Daily**. [Triggers every day.]
- **Weekly**. Then, choose the weekday [**Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday**]. [Triggers every week on the specified weekday.]
- **Monthly**. Then, choose the **Day** of the month. [Triggers every month on the specified day.]
- **Yearly**. Then, choose the **Day** of the year as **MM/DD** [Month/Day]. [Triggers every year on the specified day and month.]
- **Custom**. Then, choose the interval as **HH:MM:SS** [Hours:Minutes:Seconds], up to 23:59:59. [Triggers every day in the specified interval.]

Actions

- **Left Mouse Double-Click / Right Mouse Click** - Allows you to edit the Actions.
- **Note: Several Actions can be configured per Event.**

The following Actions are available:

**Audio
Input
Level
Set** >



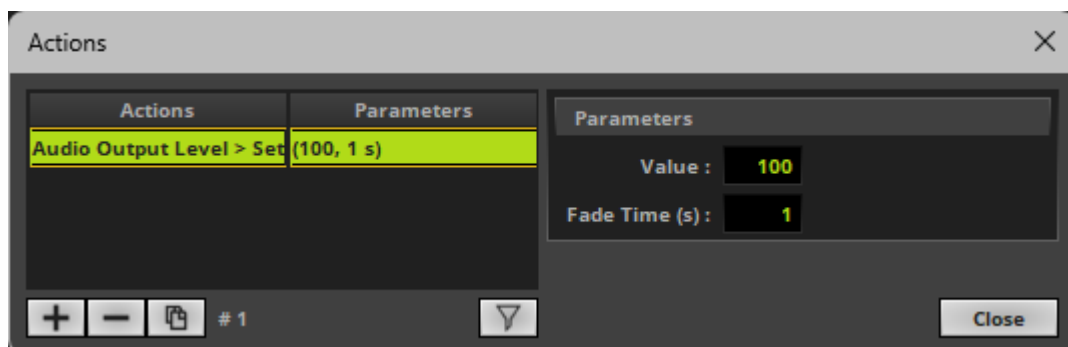
Changes the level of the Audio Input.

Parameters:

Value - Specifies the level [in %]. Valid values range from 0 to 100.

Fade Time (s) - Specifies the time it takes to linearly fade to the specified setting from the current setting [in seconds]. Valid values range from 0 to 3600.

**Audio
Output
Level
Set** >



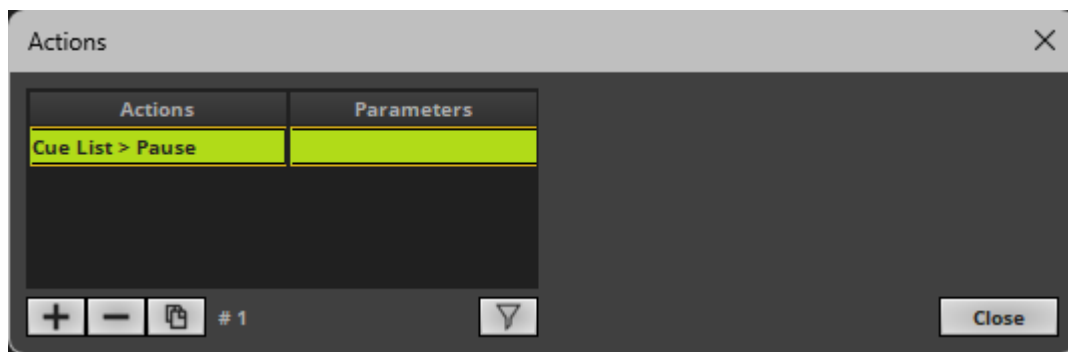
Changes the level of the Audio Output.

Parameters:

Value - Specifies the level [in %]. Valid values range from 0 to 100.

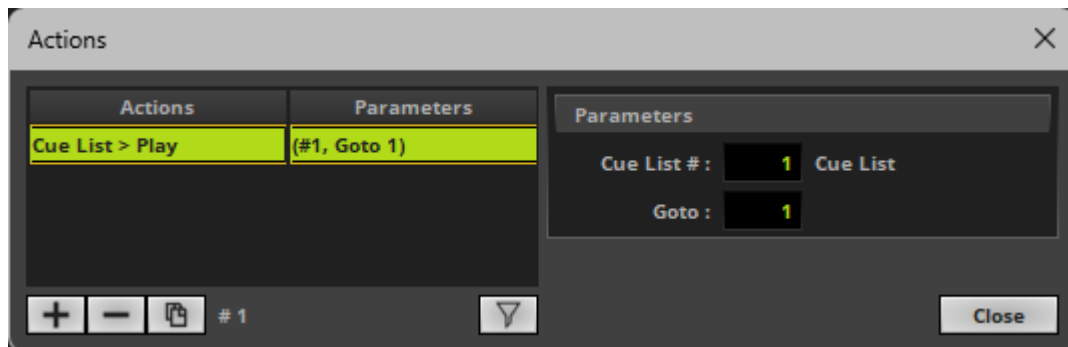
Fade Time (s) - Specifies the time it takes to linearly fade to the specified setting from the current setting [in seconds]. Valid values range from 0 to 3600.

Cue List
> Pause



Pauses playback of the currently playing Cue List.

Cue List
> Play



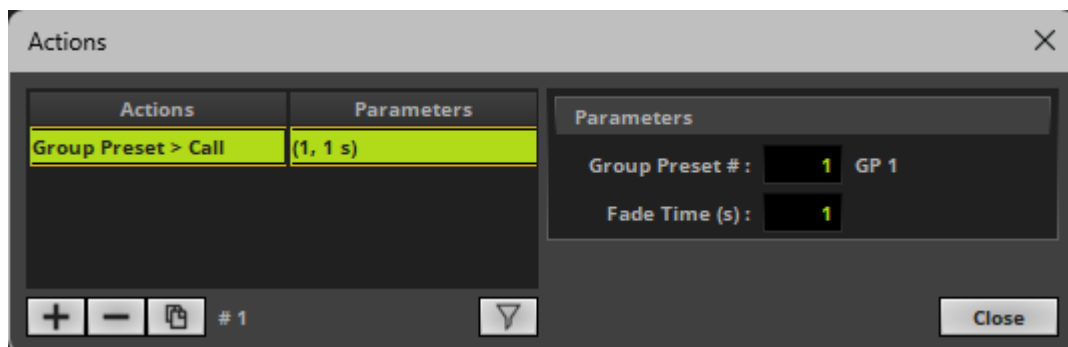
Starts playback of the specified Cue List.

Parameters:

Cue List # - Specifies the index of the Cue List. The name of the Cue List will be shown. ⚠ - You will be warned if no Cue List [with the corresponding index] has been created yet.


Goto - Specifies to which Cue the software jumps when starting playback. ⚠ - You will be warned if no Cue [with the corresponding index] has been created yet.

Group
Preset >
Call



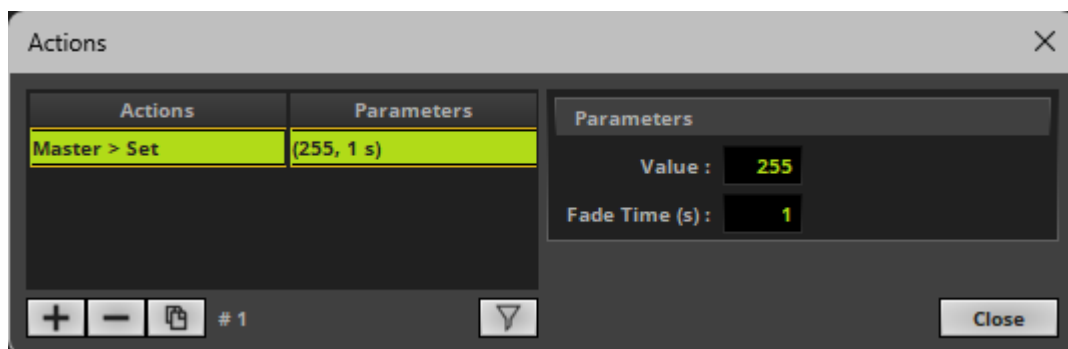
Activates the specified Group Preset.

Parameters:

Group Preset # - Specifies the index of the Group Preset. The name of the Group Preset will be shown.  - You will be warned if no Group Preset [with the corresponding index] has been created yet.

Fade Time (s) - Specifies the time it takes to linearly fade to the specified preset from the current preset [in seconds]. Valid values range from 0 to 3600.

**Master >
Set**



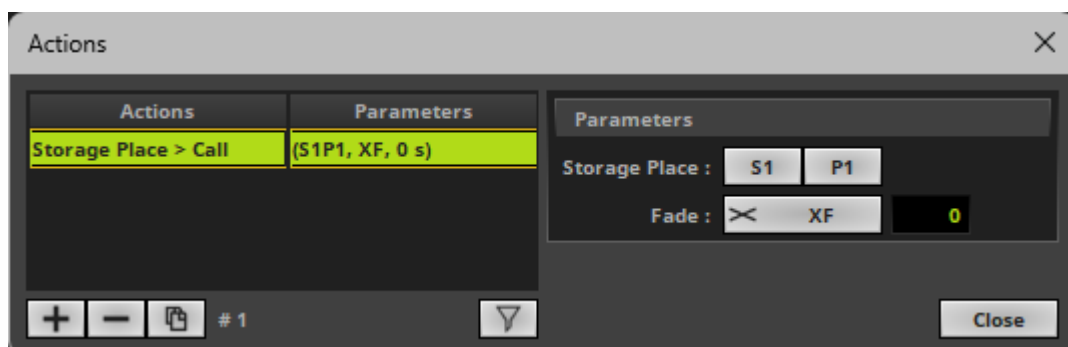
Changes the level of the Master.

Parameters:

Value - Specifies the level [in DMX values]. Valid values range from 0 to 255.

Fade Time (s) - Specifies the time it takes to linearly fade to the specified setting from the current setting [in seconds]. Valid values range from 0 to 3600.

**Storage
Place >
Call**



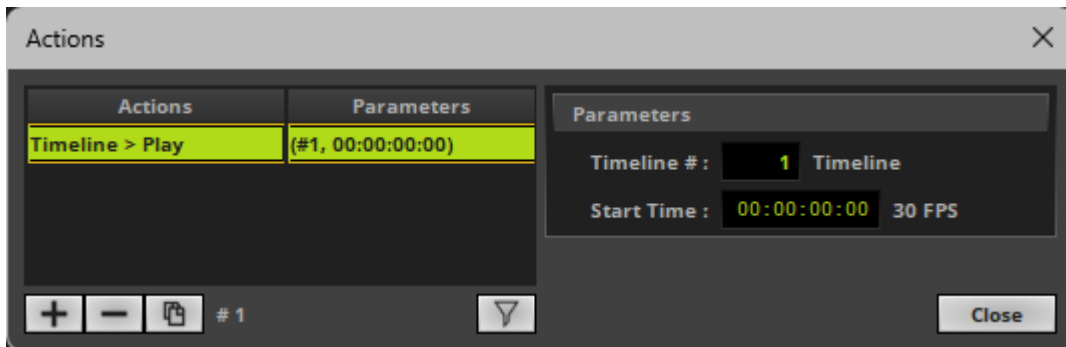
Activates the specified Storage Place.

Parameters:

Storage Place - Specifies the storage via **S**. Specifies the place via **P**.

Fade - Specifies the **Fade Type** as well as the **Fade Time** [in seconds]. Valid values for Fade Time range from 0 to 3600.

Timeline > Play



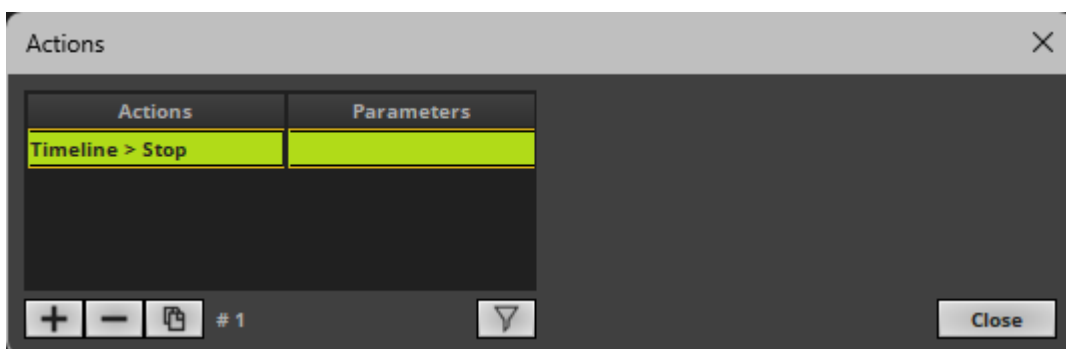
Starts playback of the specified Timeline.

Parameters:

Timeline # - Specifies the index of the Timeline. The name of the Timeline will be shown. ⚠ - You will be warned if no Timeline [with the corresponding index] has been created yet.

Start Time - Enter the start time code in **HH:MM:SS:FF** [Hours:Minutes:Seconds:Frames]. The used time-code format will be shown.

Timeline > Stop



Stops playback of the currently playing Timeline.

Validity

- **Left Mouse Double-Click / Right Mouse Click** - Allows you to edit the Validity.
- **Note: Several time frames can be configured per Event.**

Validity

Allows you to specify time slots in which the Event is valid.

If no specific time frame is chosen, **Include : Always** will be shown and used.

Parameters:

Make sure to enter valid time slots.

Date - Specifies the start date and end date of the time slot [both inclusively].

- Enter the specific dates as **YYYY/MM/DD** [Year/Month/Day] or use the calendar widget to choose the date.

- This input field supports wildcards, such as YYYY/12/31, 2024/MM/01, or 2024/06/DD.

- **Mouse Wheel Or Arrow Up/Down** - Once a date has been entered, you can scroll through the values via your mouse or keyboard. Changes the day.

[**Ctrl + Mouse Wheel Or Arrow Up/ Down** - Changes the month. **Shift + Ctrl + Mouse Wheel Or Arrow Up/ Down** - Changes the year.]

Time - Specifies the start time and end time [both inclusively].

- Enter the times in **HH:MM:SS** [Hours:Minutes:Seconds].

- Use one of the following formats:

102030

10:20:30

10h20m30s

[Short versions for single items]

10h

20m

30s

- **Mouse Wheel Or Arrow Up/Down** - Once a time has been entered, you can scroll through the values via your mouse or keyboard. Changes the seconds.

[**Ctrl + Mouse Wheel Or Arrow Up/ Down** - Changes the minutes. **Shift + Ctrl + Mouse Wheel Or Arrow Up/ Down** - Changes the hour.]

Weekdays - Specifies specific days of the week.

- **M - Monday, T - Tuesday, W - Wednesday, T - Thursday, F - Friday, S - Saturday, S - Sunday**

- All weekdays will be applied if no days are selected.

- Type Include will show selected weekdays in green.

- Type Exclude will show selected weekdays in red.

Type - Choose whether only the specified time slot should be factored in [**Include**], or if all other time frames should be factored in; making it the exception and thus excluding it [**Exclude**].

Events are inactive in the following two cases:

- There is at least one time slot of the Type Exclude and the current point in time falls into this time window.

- There are several time slots of the Type include, but not one of them applies to the current point in time.

//PART 10

Extra Tools

10 Extra Tools

This topic includes:

- [Introduction](#)
- [Topics Of This Chapter](#)

Introduction

A number of separate tools [programs] are automatically installed together with MADRIX 5. They serve different purposes and are very useful when working with MADRIX 5.

Topics Of This Chapter

Learn more about separate tools:

- » [MADRIX 5 Fixture Editor](#)
- » [MADRIX 5 KEY Firmware Updater](#)
- » [MADRIX 5 Quick Support](#)
- » [MADRIX 5 Restore](#)
- » [MADRIX 5 Time Code Sender](#)

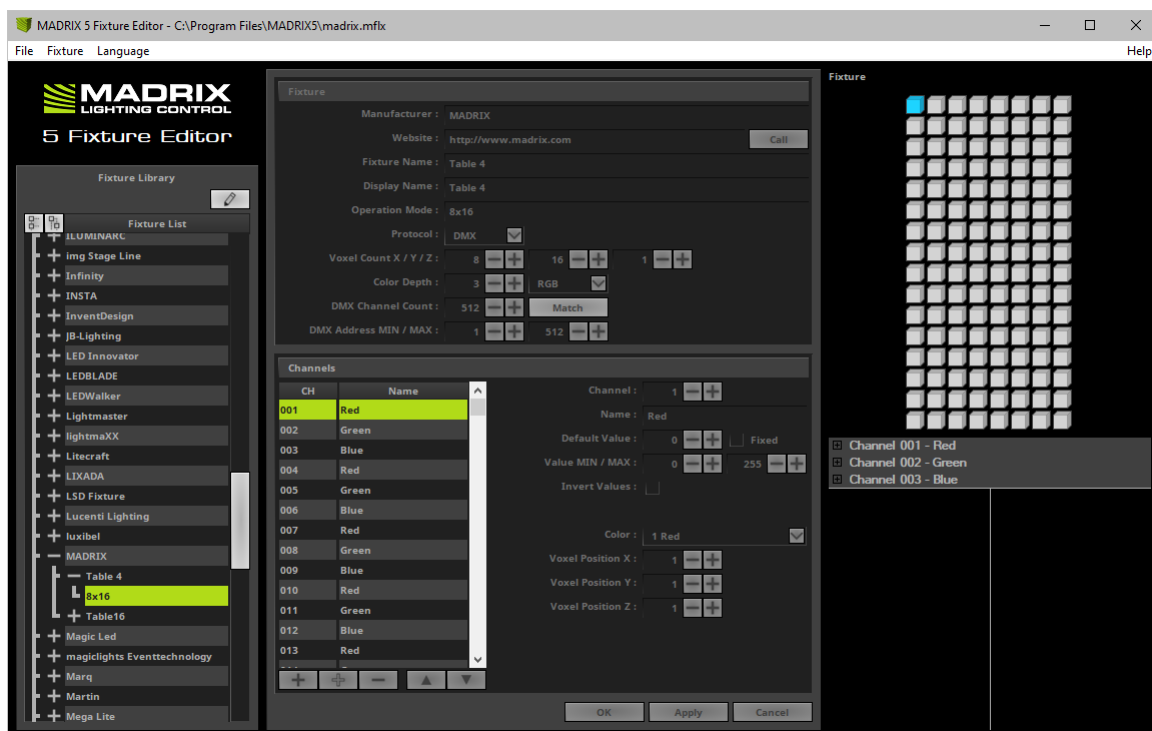
10.1 MADRIX 5 Fixture Editor

This topic includes:

- [Introduction](#)
- [Usage](#)
- [Where To Find](#)
- [Important Notes](#)
- [More Information](#)

Introduction

LED fixtures are implemented using the MADRIX 5 Fixture Editor. The fixtures are stored in the MADRIX 5 Fixture Library [madrix.mflx].



Usage

With the help of the MADRIX 5 Fixture Editor, you can

- see how fixtures are integrated in MADRIX 5,
- see how many and which fixtures are already included,
- adjust settings to your requirements,

- implement and add fixtures to the library yourself.

Where To Find

MADRIX 5 Fixture Editor is included in the MADRIX 5 Installer. After installing MADRIX 5, you can find the link to the tool in the Windows Start menu:

- In Windows 10/11, go to **Start > MADRIX 5 > MADRIX 5 Fixture Editor**

The original, executable program can be found in the MADRIX 5 installation directory:

- C:\Program Files\MADRIX5

Important Notes

- **Always make a backup of the madrix.mflx before and after applying any changes.**
- **When updating your MADRIX 5 Software, the Setup [Auto Installer] will automatically create a "madrix.mflx.bak". This file is a backup of your old MADRIX 5 Fixture Library. Moreover, the Setup will overwrite the current madrix.mflx completely to update the library.**
- **Please quit MADRIX 5 before using the Fixture Editor and making any changes to the MADRIX 5 Fixture Library.**

More Information

- You can learn more in the separate user guide for the MADRIX 5 Fixture Editor.

10.2 MADRIX KEY Firmware Update

This topic includes:

- [Introduction](#)
- [MADRIX KEY Firmware Update](#)

Introduction

The MADRIX KEY itself is a technologically advanced device. That is why it also comes with its own firmware. In order to function correctly, the MADRIX 5 Software requires a minimum firmware version for the MADRIX KEY.

MADRIX KEY Firmware Update

Overview

Make sure that your MADRIX KEY uses the required firmware. If not, you can update the MADRIX KEY firmware in different ways.

- [MADRIX 5 Software Installation](#)
- [Windows Start Menu](#)
- [First Software Start](#)
- [Help Menu](#)

Your MADRIX 5 Software will not be able to recognize a MADRIX KEY that uses a firmware that is older than the required firmware version. A firmware update is required.

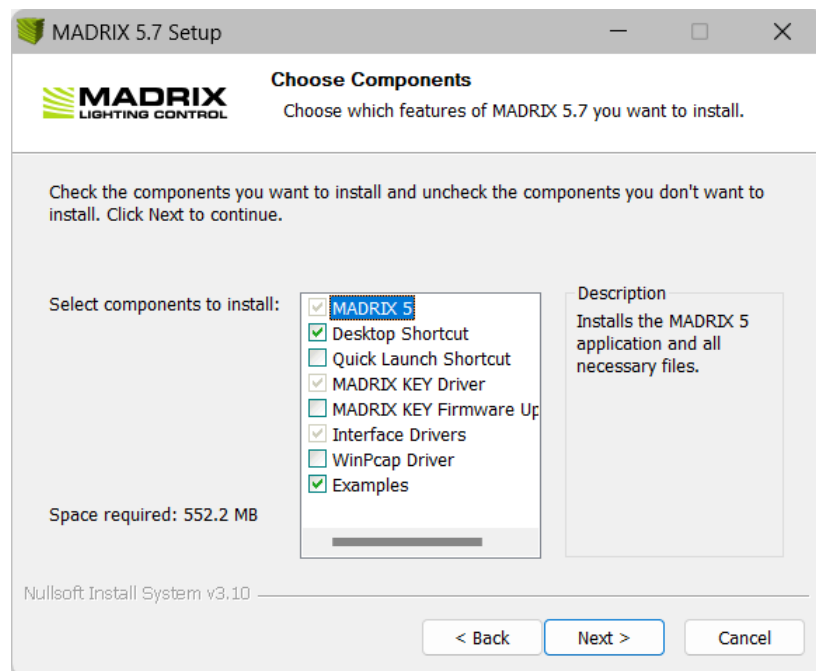
The installer and software will attempt to check online if a newer firmware version is available and use it accordingly for the update.

If the online check fails, the update will be done offline using the minimum or current firmware version provided by the installer or software.

MADRIX 5 Software Installation

During the MADRIX 5 Software setup and installation, you can choose to automatically update all connected MADRIX KEYS.

- Only connect MADRIX KEYS that should be updated. [It is still recommended to unplug any similar security dongles that should not be updated, for example from other software applications.]
- Do not unplug any dongles during the update process.
- The PC needs to have an active online connection to retrieve the latest firmware version. If no online connection is available, a minimum version will be updated offline.
- The option is deselected by default. Select and check **MADRIX KEY Firmware Update**
- Proceed with the installation via **Next >**



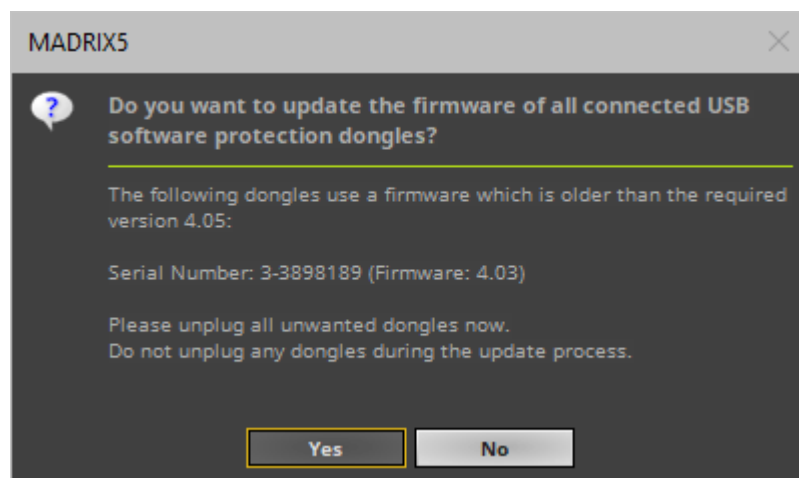
Windows Start Menu

You can find the link to the MADRIX 5 KEY Firmware Updater in the Windows Start menu:

- Only connect MADRIX KEYS that should be updated. [It is still recommended to unplug any similar security dongles that should not be updated, for example from other software applications.]
- Do not unplug any dongles during the update process.
- The PC needs to have an active online connection to retrieve the latest firmware version.
- In Windows 10/11, go to **Start > MADRIX 5 > MADRIX 5 Tools > MADRIX KEY Firmware Updater**

First Software Start

When starting a new MADRIX 5 Software version for the first time, the MADRIX 5 Software will automatically check if the connected MADRIX KEY uses an older firmware version.



- Click **Yes** in order to continue and update all connected MADRIX KEYS.
 - Only connect MADRIX KEYS that should be updated. [It is still recommended to unplug any similar security dongles that should not be updated, for example from other software applications.]
 - Do not unplug any dongles during the update process.
 - The PC needs to have an active online connection to retrieve the latest firmware version. If no online connection is available, a minimum version will be updated offline.
- Click **No** if you do not wish to continue to update the connected USB software protection dongles at this point.

Help Menu

You can also find the link to the MADRIX 5 KEY Firmware Updater in the MADRIX 5 Software:

- Only connect MADRIX KEYS that should be updated. [It is still recommended to unplug any similar security dongles that should not be updated, for example from other software applications.]
- Do not unplug any dongles during the update process.
- The PC needs to have an active online connection to retrieve the latest firmware version. If no online connection is available, a minimum version will be updated offline.
- Go to the menu **Help > MADRIX KEY > Update MADRIX KEY Firm ware...**

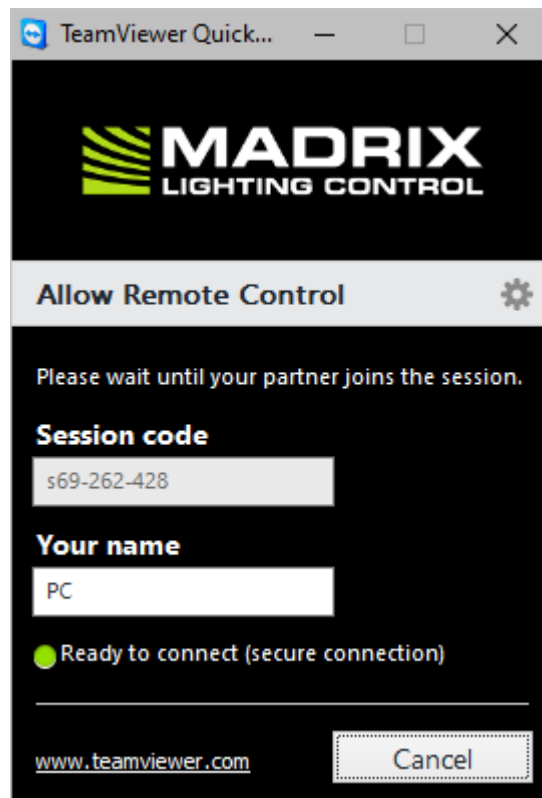
10.3 MADRIX 5 Quick Support

This topic includes:

- [Introduction](#)
- [Instructions](#)
- [Where To Find](#)

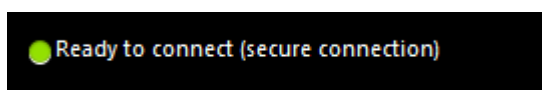
Introduction

Along with the MADRIX 5 Software another separate tool is provided. It is called **MADRIX 5 Quick Support**



Instructions

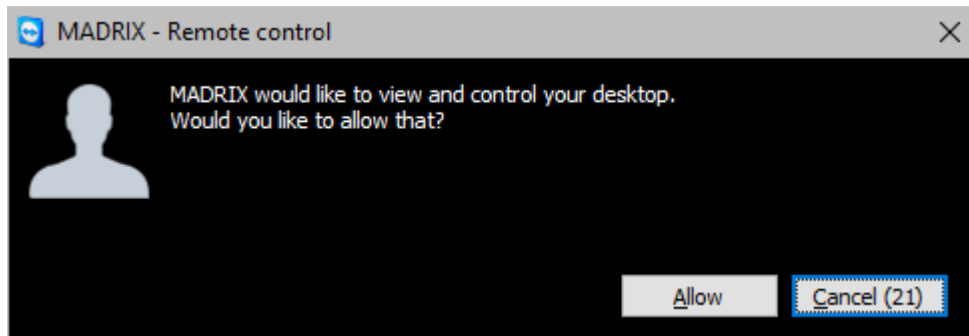
- When contacting the MADRIX Support Team, you may be asked by them to use the MADRIX 5 Quick Support tool for technical support assistance on your computer.
- Click on the shortcut in order to launch it [see below where to find it].
- After the tool has been launched, wait until **Ready to connect (secure connection)** is shown.



- The MADRIX Support Team will then be able to connect to your computer.

- A new message window opens that reads: '**MADRIX would like to view and control your desktop. Would you like to allow that?**'

Please confirm by clicking **Allow**



- The MADRIX Support Team will now be connected.

Where To Find

MADRIX 5 Quick Support is included in the MADRIX 5 Installer. After installing MADRIX 5, you can find the link to MADRIX 5 Quick Support in the Windows Start menu:

- In Windows 10/11, go to **Start > MADRIX 5 > MADRIX 5 Quick Support**

The original, executable program can be found in the MADRIX 5 installation directory:

- C:\Program Files\MADRIX5

10.4 MADRIX 5 Restore

This topic includes:

- [Introduction](#)
- [Usage](#)
- [Where To Find](#)

Introduction

Along with MADRIX 5 another separate tool is provided. It is called **MADRIX 5 Restore**



Usage

MADRIX 5 Restore should mainly be used, when it is impossible for you to start the MADRIX 5 Software for any reason.

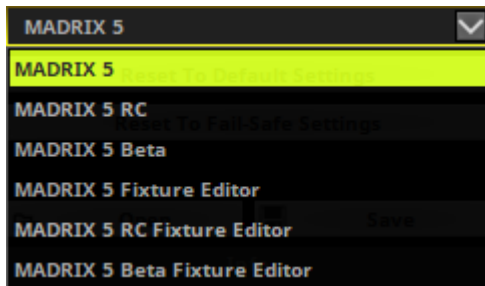
MADRIX 5 Restore is a tool including advanced options and should not be used without reason!

- MADRIX 5 Restore is used for all settings that are locally stored on your computer and written into the Windows Registry.

Often, such settings can be configured in the Options. Learn more »[Options](#)

- MADRIX 5 Restore is not a tool to manage your MADRIX 5 files, whichever files that may be [e.g., MADRIX 5 Setup files].

MADRIX 5 Restore can be used for several, specific tasks.



Version - Allows you to select the kind of software version you are using. The default version is MADRIX5.

- **MADRIX 5** - Includes any final release version of MADRIX 5.
- **MADRIX 5 RC** - Includes any version of MADRIX 5 that is labeled as Release Candidate test version.
- **MADRIX 5 Beta** - Includes any version of MADRIX 5 that is labeled as Beta test version.
- **MADRIX 5 Fixture Editor** - Includes the MADRIX 5 Fixture Editor.
- **MADRIX 5 RC Fixture Editor** - Includes the MADRIX 5 Fixture Editor that is included in a MADRIX 5 Release Candidate test version.
- **MADRIX 5 Beta Fixture Editor** - Includes the MADRIX 5 Fixture Editor that is included in a MADRIX 5 Beta test version.

Reset To Default Settings

Reset To Default Settings - Resets all settings of MADRIX 5, just like installing MADRIX 5 on a computer for the first time.

Reset To Fail-Safe Settings

Reset To Fail-Safe Settings - Resets all settings of MADRIX 5 and at the same time deactivates any settings that might prevent MADRIX 5 to start fully.

Open

Open - Loads settings from an external file. [In this way you can open a backup of your settings or transfer settings from one computer to another computer].

Save

Save - Saves MADRIX 5 settings to an external file in order to store them. [In this way you can create a backup of your settings or transfer settings from one computer to another computer].

Where To Find

MADRIX 5 Restore is included in the MADRIX 5 Installer. After installing MADRIX 5, you can find the link to MADRIX 5 Restore in the Windows Start menu:

- In Windows 10/11, go to **Start > MADRIX 5 > MADRIX 5 Tools > MADRIX 5 Restore**

The original, executable program can be found in the MADRIX 5 installation directory:

- C:\Program Files\MADRIX5

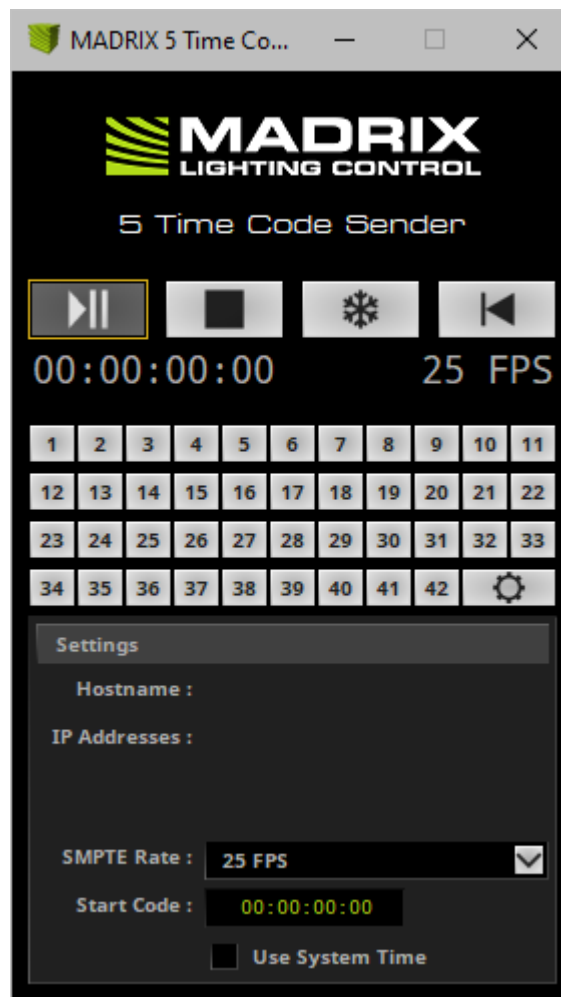
10.5 MADRIX 5 Time Code Sender

This topic includes:

- [Introduction](#)
- [Usage](#)
- [Step-By-Step Instructions](#)
- [Configuration](#)
- [Where To Find](#)

Introduction

MADRIX 5 Time Code Sender is a separate tool.



The small application sends out Time Code. This is particularly useful in combination with a Cue List.

- Time Code is a convenient way to synchronize independent equipment with each other.
 - This could be external audio equipment, other MADRIX computers, or even the same computer.
 - You might want to set up a time-controlled show in sync with timelines of sound and lighting effects of MADRIX 5.
- Cue Lists are the automated playlist feature of MADRIX 5.
 - When using a Cue List, you can use Time Code to trigger effects at certain times of the day or at certain points in time.
 - For example, you might want to trigger Storage Place S1 P1 at 10:00 a.m. or when 3 minutes have passed after the start, for example.
- In the Cue List Editor, you can choose to receive Time Code [**None**, **Art-Net**, **MIDI**, **SMPTE**, **System Time**].
- Receiving Time Code is possible with all MADRIX 5 Licenses.

- You can use the MADRIX 5 Time Code Sender to generate such Time Code.

Learn more »[Cue Lists](#)

Usage

You can use MADRIX 5 Time Code Sender to produce Time Code [i.e. Art-Net Time Code] and send it to devices in an Ethernet network. The data will be sent via Broadcast to all receivers in the network. As explained above, MADRIX 5 can be such a recipient.

Example 1

- You are using two MADRIX computers to control two independent areas of LED products. [Although you could control both areas with one MADRIX computer, it makes sense to use two computers because of the distance between the areas.] At night, both LED areas should show similar effects and you wish to synchronize the Cue Lists of both computers.
- You can use the MADRIX 5 Time Code Sender to synchronize the Cue Lists of both computers.

Example 2

- You wish to create a time-controlled show on one computer that starts at 00:00 and runs for 10 minutes. Using the System Time would not help you in this case, but the MADRIX 5 Time Code Sender will be useful.

Step-By-Step Instructions

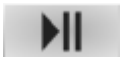
- 1]** Configure the MADRIX 5 Software according to your needs [including all Effects, etc.].
- 2]** Activate »[Art-Net \[DMX Over Ethernet\]](#): In MADRIX 5, go to the menu **Preferences > Device Manager...** > **Art-Net**. Activate the checkbox **Enable** [in the upper, right corner]. Close the window afterwards.
- 3]** Create a »[Cue List](#) [including Time Code and/or Duration].
 - If you want to synchronize multiple MADRIX computers, set up a Cue List for each MADRIX 5 Software.

- 4] Choose the **Time Code Format** in the Time Code section of the Cue List Editor [**24 FPS, 25 FPS, 30 Drop, 30 FPS**].
- 5] Start sending Time Code with the help of the MADRIX 5 Time Code Sender. Learn more [Configuration](#)

It is not important if you open MADRIX 5 or the MADRIX 5 Time Code Sender first, and then the other program.

Configuration

Please set up the MADRIX 5 Time Code Sender according to the following parameters:



Play/Pause - Starts or pauses sending Time Code.



Stop - Fully stops sending Time Code. And automatically resets the Time Code to zero [00:00:00:00] or to the corresponding Start Code.



Freeze - Freezes the Time Code generation and the display, but the Time Code will still be generated in the background. Deactivate the button to see and send the current Time Code again. You can also stop generating new Time Code when Freeze is active.



Rewind - Rewinds the Time Code back to zero [00:00:00:00] or to the corresponding Start Code; even if Time Code is running.



Time Code - The generated Time Code is displayed in the following format: **HH:MM:SS:FF** [00:00:00:00], meaning **hours : minutes : seconds : frames**.

1	2	3	4	5	6	7	8	9	10	11
12	13	14	15	16	17	18	19	20	21	22
23	24	25	26	27	28	29	30	31	32	33
34	35	36	37	38	39	40	41	42		

Presets - You can use 42 presets to quickly set up and utilize individual Start Codes.

Preset Configuration - Use the configuration button to set up the Start Code presets.

Host Name

- Displays the name of the computer.

IP Addresses

- Displays the IP address of the computer. Several addresses are shown when the computer has multiple network cards.

SMPTE Rate

- Provides four modes on how the Time Code is generated.

24 FPS [Standard frame rate for films]

25 FPS [Standard frame rate for PAL video]

30 Drop [30/1.001 FPS drop-frame time code for color NTSC video]

30 FPS [Monochrome NTSC video]

Start Code

- You can define a start time, when the Time Code counter should start. By default it starts at 00:00:00:00.

Left Mouse Click And Hold + Move Mouse Up/Down - Move the mouse up or down within the edit field to increase or decrease the value.

Spacebar - Resets to the default value.

Use System Time

- You can use the local clock of your computer to generate Time Code. The computer time will be used.

Where To Find

MADRIX 5 Time Code Sender is included in the MADRIX 5 Installer. After installing MADRIX 5, you can find a link to the tool in the Windows Start menu:

- In Windows 10/11, go to **Start > MADRIX 5 > MADRIX 5 Tools > MADRIX 5 Time Code Sender**

The original, executable program can be found in the MADRIX 5 installation directory:

- C:\Program Files\MADRIX5

//PART 11

MADRIX Hardware

11 MADRIX Hardware

This topic includes:

- [Introduction](#)
- [Topics Of This Chapter](#)

Introduction

Combined with neat hardware products, the MADRIX system is a proven and innovative LED control solution. MADRIX hardware reliably transfers the lighting data to your LEDs and controllers.

Any small or large LED installation benefits from prime build quality and outstanding features, such as the built-in synchronization mode that ensures an optimal image on your LEDs without visual interruption.

Topics Of This Chapter

Learn more about the MADRIX hardware interfaces:

- » [MADRIX AURA](#)
- » [MADRIX LUNA](#)
- » [MADRIX NEBULA](#)
- » [MADRIX STELLA](#)
- » [MADRIX ORION](#)
- » [MADRIX USB ONE](#)
- » [MADRIX I/O](#)
- » [MADRIX NEO](#)
- » [MADRIX PLEXUS](#)

11.1 MADRIX AURA

This topic includes:

- [Overview](#)
- [Stand-Alone Playback & Central Hub](#)
- [Using A 3rd-Party Controller](#)
- [More Information](#)

Overview



The advanced lighting-control recorder and stand-alone playback unit.

The MADRIX AURA is the central stand-alone controller for simple recording and large-scale pixel mapping. It redefines what is possible in a compact control unit with exceptional performance.

3 versions are available:

- MADRIX AURA 2
- MADRIX AURA 8

- MADRIX AURA 32

Stand-Alone Playback & Central Hub

Independently run the most sophisticated light shows from this energy-efficient playback unit via Art-Net or Streaming ACN. Easily control up to 2, 8, or 32 universes per device.

Simply connect compatible MADRIX hardware interfaces or third-party nodes to provide the correct output for your lighting fixtures.

Using A 3rd-Party Controller

MADRIX AURA is a standard network node for Art-Net or Streaming ACN. You can use the device with any compatible application, console, or controller.

MADRIX AURA works great with MADRIX 5.

More Information

MADRIX AURA offers a lot features. Because of this, a separate, complete guide is available. You can find the majority of information about the MADRIX AURA in the

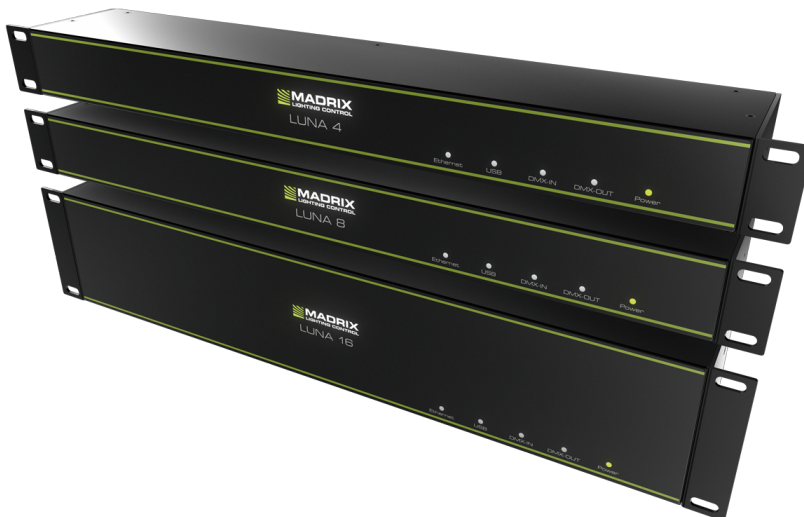
- **MADRIX AURA Technical Manual & Quick Start Guide**
Download it from »help.madrix.com
- **MADRIX AURA User Manual**
Download it from »help.madrix.com

11.2 MADRIX LUNA

This topic includes:

- [Overview](#)
- [Using A 3rd-Party Controller](#)
- [More Information](#)

Overview



MADRIX LUNA is an easy-to-use and reliable network node.

The MADRIX LUNA reliably distributes DMX512 data over long or short distances using Ethernet network or USB. Its sync mode makes sure that lighting effects look their best on the LEDs.

3 versions are available:

- MADRIX LUNA 4

- MADRIX LUNA 8
- MADRIX LUNA 16

Using A 3rd-Party Controller

MADRIX LUNA is a standard node for Art-Net or Streaming ACN [sACN]. Because of this, you can use the device with applications, consoles, desks, or controllers that are compatible with Art-Net or Streaming ACN to distribute data via Ethernet network.

MADRIX LUNA works great with MADRIX 5.

More Information

MADRIX LUNA offers a lot features. Because of this, a separate, complete guide is available. You can find the majority of information about the MADRIX LUNA in the

- **MADRIX LUNA Technical Manual & Quick Start Guide**

Download it from »help.madrix.com

- **MADRIX LUNA User Manual**

Download it from »help.madrix.com

11.3 MADRIX NEBULA

This topic includes:

- [Overview](#)
- [Using A 3rd-Party Controller](#)
- [More Information](#)

Overview



MADRIX NEBULA is a versatile interface to directly control a wide range of digital LEDs.

The MADRIX NEBULA directly connects to your LED pixels. This advanced SPI decoder receives control data over Ethernet network or USB and is built to provide excellent image quality.

Using A 3rd-Party Controller

MADRIX NEBULA is a standard network node. Because of this, you can use the device with applications, consoles, desks, or controllers that are compatible with Art-Net or Streaming ACN [sACN] to distribute data via Ethernet network.

MADRIX NEBULA works great with MADRIX 5.

More Information

MADRIX NEBULA offers a lot features. Because of this, a separate, complete guide is available. You can find the majority of information about the MADRIX NEBULA in the

- **MADRIX NEBULA Technical Manual & Quick Start Guide**

Download it from »help.madrix.com

- **MADRIX NEBULA User Manual**

Download it from »help.madrix.com

11.4 MADRIX STELLA

This topic includes:

- [Overview](#)
- [Using A 3rd-Party Controller](#)
- [More Information](#)

Overview



MADRIX STELLA is a 2-port network node with RDM support for solid-state projects.

The MADRIX STELLA is a dedicated control interface for DMX512 and Art-Net or Streaming ACN that is designed for high quality and practicability in permanent LED installations.

Using A 3rd-Party Controller

MADRIX STELLA is a standard network node. Because of this, you can use the device with applications, consoles, desks, or controllers that are compatible with Art-Net or Streaming ACN [sACN] to distribute network data via Ethernet network.

MADRIX STELLA works great with MADRIX 5.

More Information

MADRIX STELLA offers a lot features. Because of this, a separate, complete guide is available. You can find the majority of information about the MADRIX STELLA in the

- **MADRIX STELLA Technical Manual & Quick Start Guide**

Download it from »help.madrix.com

- **MADRIX STELLA User Manual**

Download it from »help.madrix.com

11.5 MADRIX ORION

This topic includes:

- [Overview](#)
- [Using A 3rd-Party Controller](#)
- [More Information](#)

Overview



MADRIX ORION adds a whole new level of interaction and control to your project.

The MADRIX ORION is specifically designed as a general-purpose input device for analog input and Ethernet-based output for remote control and interactivity.

Using A 3rd-Party Controller

MADRIX ORION is a standard network node for Art-Net or Streaming ACN. Because of this, you can use the device with applications, consoles, desks, or controllers that are compatible with Art-Net or Streaming ACN to receive data via Ethernet network.

MADRIX ORION works great with MADRIX 5.

More Information

MADRIX ORION offers a lot features. Because of this, a separate, complete guide is available. You can find the majority of information about the MADRIX ORION in the

- **MADRIX ORION Technical Manual & Quick Start Guide**

Download it from »help.madrix.com

- **MADRIX ORION User Manual**

Download it from »help.madrix.com

11.6 MADRIX USB ONE

This topic includes:

- **Overview**
- **MADRIX 5 Software License**
- **Loading The Drivers**
- **Using DMX Output Or DMX Input**
- **Further Configuration**
- **Interruption-Free Operation**

Overview



MADRIX USB ONE is a USB 2.0 DMX512 interface. It can be used for input [DMX-IN] or output [DMX-OUT]. The MADRIX USB ONE allows you to control 512 DMX channels in combination with the MADRIX 5 Software.

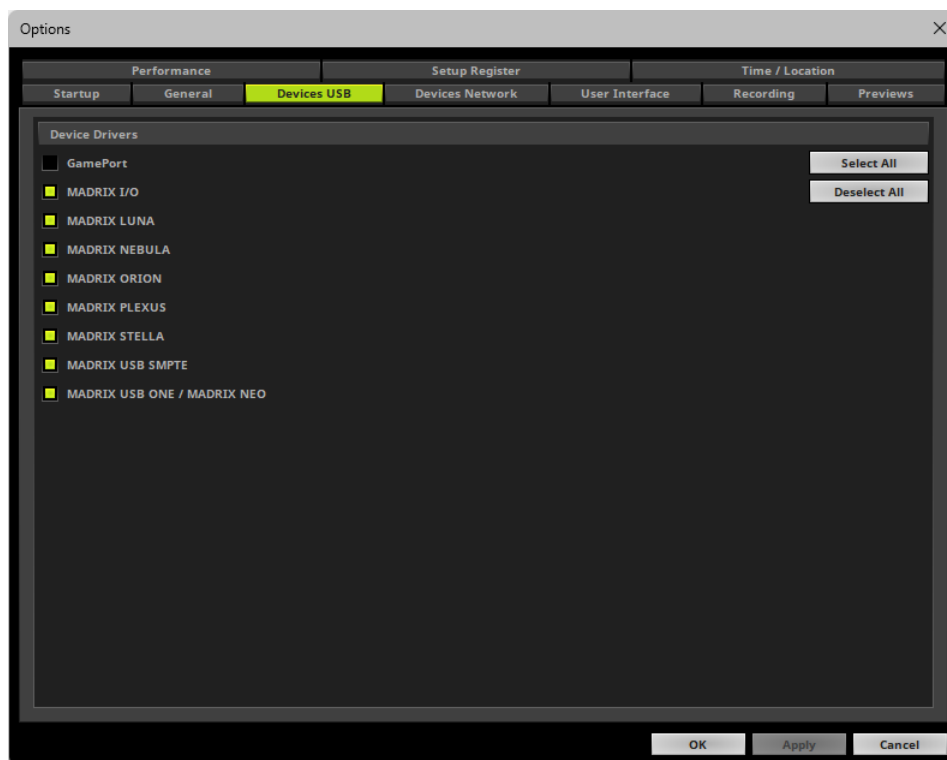
MADRIX 5 Software License

- The MADRIX 5 Software license is not included and sold separately. A MADRIX 5 KEY is necessary if you want to use DMX output [DMX-OUT].

- No separate license is required for DMX input [DMX-IN].

Loading The Drivers

- Go to the menu **Preferences > Options... > Devices USB**



- Activate **MADRIX USB ONE / MADRIX NEO**
[The option is activated by default.]
- Click **Apply** to confirm.
- Click **OK** to close the window.

Using DMX Output Or DMX Input

The MADRIX USB ONE allows you to send [DMX-OUT] or receive [DMX-IN] data via MADRIX 5 using 512 DMX channels.

- The MADRIX USB ONE features a 5-pin, female XLR connector.
- If you want to use DMX-IN, please use a 5-pin XLR male to 5-pin XLR male gender changer.

Learn more » [DMX512 \[DMX-OUT\]](#)

Learn more » [DMX-IN / Art-Net Remote / sACN Input](#)

Further Configuration

Remember to configure your light matrix in the » [Matrix Generator](#) or » [Patch Editor](#)

Make sure to save your MADRIX 5 Setup after the configuration process.

Interruption-Free Operation

To ensure interruption-free operation of the software and devices, please make sure to check the power-saving settings of Windows.

Learn more » [PC Power Management](#)

11.7 MADRIX I/O

This topic includes:

- [Introduction](#)
- [MADRIX USB contact closure, MADRIX USB temperature, MADRIX USB light sensor](#)

- [MADRIX USB SMPTE](#)
- [Interruption-Free Operation](#)

Introduction

MADRIX I/O is a product category for supplementary input and output devices.

External equipment, such as sensors, brings additional automation processes and interaction to any LED project using the MADRIX 5 Software.

The following accessories are included in this category:

- [MADRIX USB contact closure](#)
- [MADRIX USB light sensor](#)
- [MADRIX USB temperature](#)
- [MADRIX USB SMPTE](#)

MADRIX USB contact closure, MADRIX USB temperature, MADRIX USB light sensor

MADRIX USB contact closure



- Registers if its internal circuit is either open or closed.
- Can be used as connector for a digital switch or button, for example.
- Is an input device.
- Can simply be connected to any USB 2.0 port.
- The recommended frame time **ms / FPS** is 500 / 2.
- Incoming data directly translates into DMX data in MADRIX 5 .
- Data is sent to **DMX channel 1 - DMX channel 2** on your selected DMX universe.
- **Incoming DMX values on DMX channel 1** are 0 or 255 [Off or On].
- **Inverted incoming DMX values on DMX channel 2** are 255 or 0 [On or Off].

MADRIX USB light sensor



- Can be used to measure the ambient light level.
- Is an input device.
- Can simply be connected to any USB 2.0 port.
- The recommended frame time **ms / FPS** is 500 / 2.
- Incoming data directly translates into DMX data in the MADRIX 5 Software.
- Data is sent to **DMX channel 1 - DMX channel 8** on your selected DMX universe.
- **DMX channel 1** represents the light level in percent. Valid values range from 0% to 100%.
- **DMX channel 2** represents the decimal place in percent. Valid values range from .0% to .99%.
- **DMX channel 3** represents the light level in DMX values. Valid values range from 0 to 255.
- **DMX channel 4** represents the decimal place in DMX values. Valid values range from 0 to 255.
- **DMX channel 5** represents the inverted light level in percent. Valid values range from 0% to 100%.
- **DMX channel 6** represents the inverted decimal place in percent. Valid values range from .0% to .99%.
- **DMX channel 7** represents the inverted light level in DMX values. Valid values range from 0 to 255.
- **DMX channel 8** represents the inverted decimal place in DMX values. Valid values range from 0 to 255.

MADRIX USB temperature



- Can be used as temperature sensor.
- Is an input device.
- Can simply be connected to any USB 2.0 port.
- The recommended frame time **ms / FPS** is 1000 / 1.
- Incoming data directly translates into DMX data in MADRIX 5 .
- Data is sent to **DMX channel 1 - DMX channel 10** on your selected DMX universe.
- **DMX channel 1** represents the temperature in degree Celsius. Valid values range from -20 °C to +80 °C.
- **DMX channel 2** represents the decimal place of degree Celsius. Valid values range from .0 to .99.
- **DMX channel 3** shows if the temperature values shown on DMX channel 1 are above zero [0] or below zero [255].
- DMX channel 4 is not used.
- **DMX channel 5** represents the temperature in degree Fahrenheit. Valid values range from -4 °F to +176 °F.
- **DMX channel 6** represents the temperature decimal place of degree Fahrenheit. Valid values range from .0 to .99.
- **DMX channel 7** shows if the temperature values shown on DMX channel 5 are above zero [0] or below zero [255].
- DMX channel 8 is not used.

- **DMX channel 9** represents the temperature in DMX values. Valid values range from 0 to 255.
- **DMX channel 10** represents the decimal place of DMX values. Valid values range from 0 to 255.

Step-By-Step Configuration

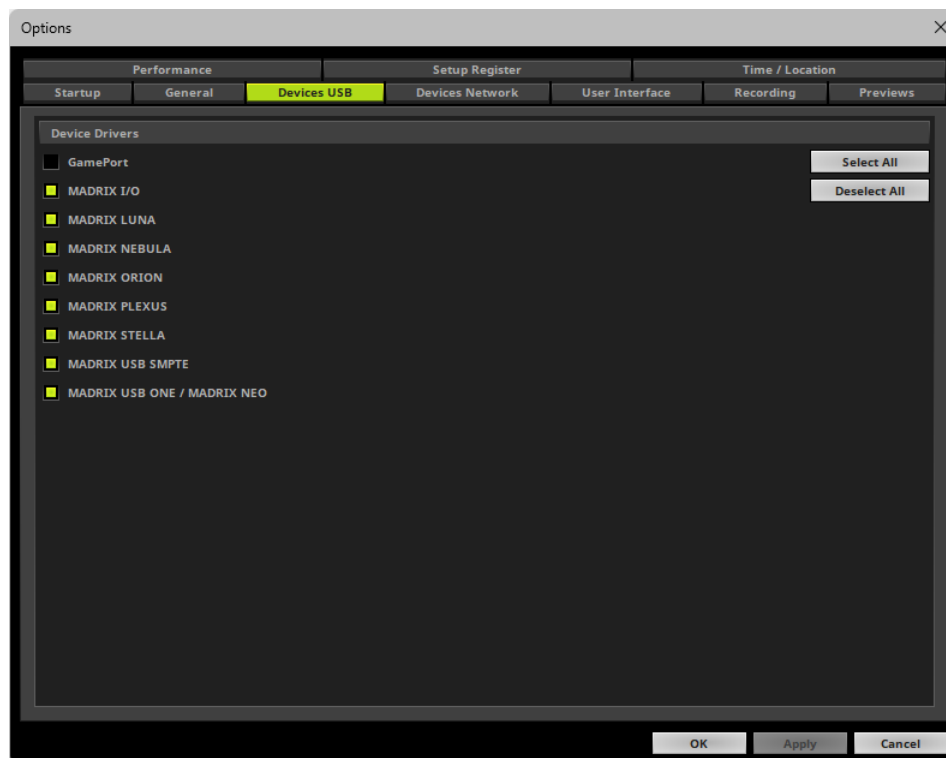
- 1]** Connect your device.
- 2]** Enable drivers in the MADRIX 5 Software.
- 3]** Enable your device.
- 4]** Set up DMX Input.
- 5]** Choose how to use incoming data.

1] Connect Your Device


- Connect your MADRIX I/O device to a free USB 2.0 port of your computer.
- Make sure that Windows recognizes the device. Windows will automatically install the drivers for the device.

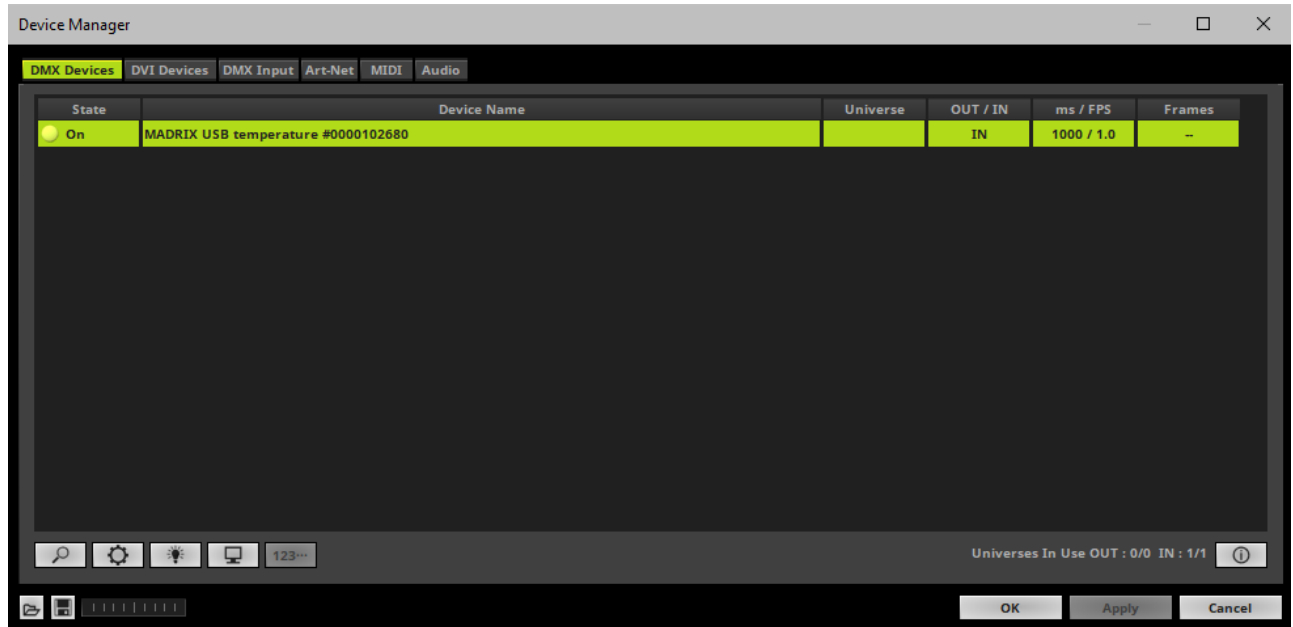
2] Enable Drivers In The MADRIX 5 Software

- Go to the menu **Preferences > Options... > Devices USB**
- Activate **MADRIX I/O**
[The option is activated by default.]
- Click **Apply** and **OK**



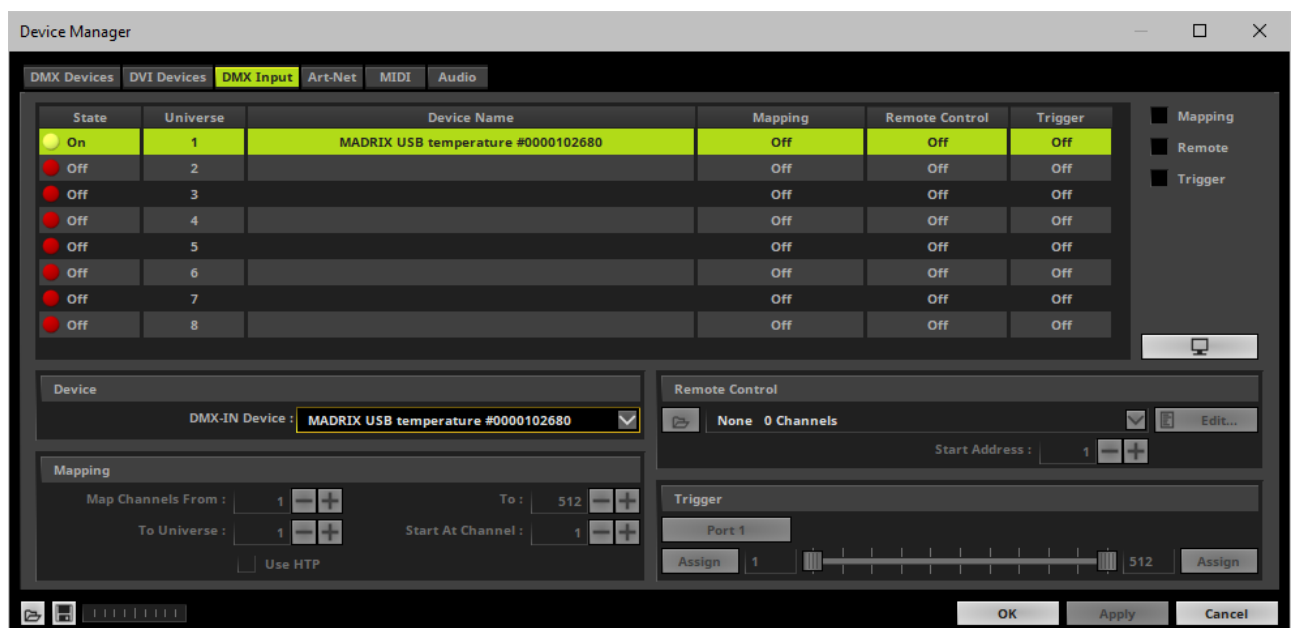
3] Enable Your Device

- Go to the menu **Preferences > Device Manager... > DMX Devices**
- Click  if your device is not shown in the list.
- Select your device in the list. Right Mouse Click on the column **State** to set it from **Off** to **On**
- It is not recommended to change the frame time **ms / FPS** of your device. Instead, it is highly recommended to use the default settings. [Recommended settings are provided above.]



4] Set Up DMX Input

- Go to the menu **Preferences > Device Manager... > DMX Input**
- Select one entry in the list [e.g., **Universe 1**] and go to the section **Device**. Choose your device under **DMX-IN Device**
- The MADRIX 5 Software now receives data from your device.




5] Choose How To Use Incoming Data

Now, you have several options to choose from:

A] You can activate **Remote** and choose a protocol in the section **Remote Control**. This will allow you to control the MADRIX 5 Software remotely using your controller. Learn more » [DMX-IN / Art-Net Remote / sACN Input](#)

B] You can use incoming data in a Script or Macro. Learn more » [Macros And Scripts](#)

C] You can activate **Trigger** and choose the trigger functionality in the section **Trigger**.

D] You can monitor incoming DMX data in the DMX Watcher. Select your device in the list and click  Learn more below.

Close the Device Manager with **OK**

Monitoring Incoming DMX Data

To effectively work with incoming DMX data from your device, you can use the DMX Watcher to monitor incoming signals.

- Open the DMX Watcher as explained above or go to the menu **Tools > DMX Watcher...**
- Select **Input**
- Set up the correct **Universe**
 - This is the same number as you have chosen in the list under **Preferences > Device Manager... > DMX Input** [e.g., **Universe 1**].



MADRIX USB SMPTE

Overview



- This input device allows you to effortlessly use SMPTE time code for time synchronization across devices.
- Data is received via the 3-pin, female XLR connector.
- The device can simply be connected to any USB 2.0 port.

Step-By-Step Configuration

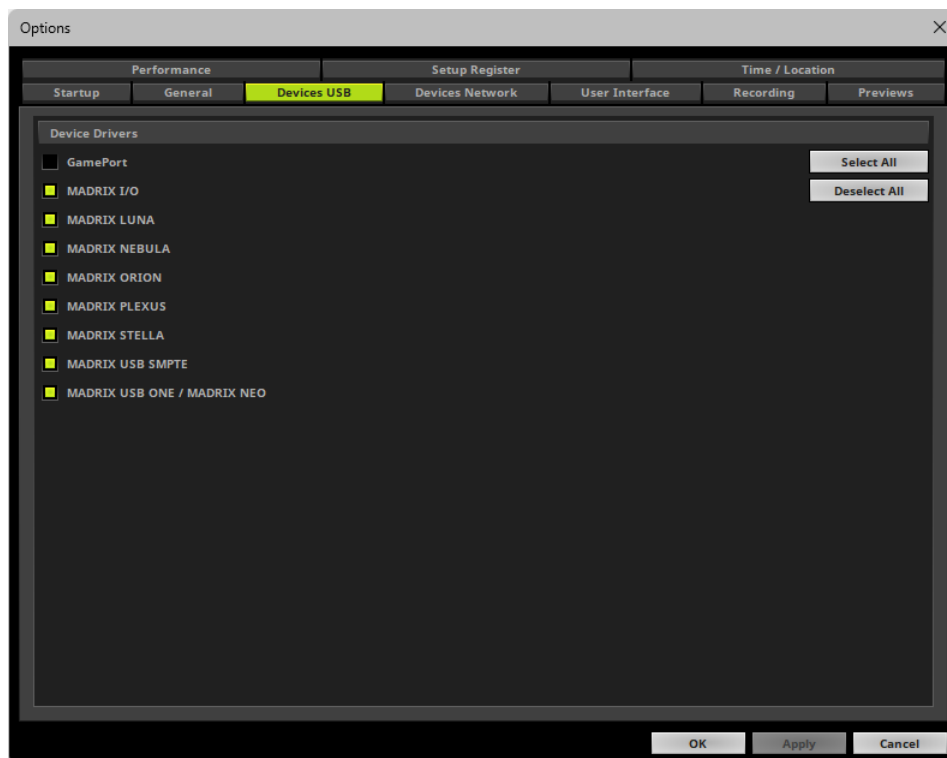
- 1] Connect your device.
- 2] Enable drivers in the MADRIX 5 Software.
- 3] Use a Cue List.

1] Connect Your Device

- Connect your SMPTE time code source to the 3-pin, female XLR connector of MADRIX USB SMPTE.
- Make sure that your SMPTE time code source is sending data.
- Connect your MADRIX USB SMPTE to a free USB 2.0 port of your computer.
- Make sure that Windows recognizes the device. Windows will automatically install the drivers for the device.

2] Enable Drivers In The MADRIX 5 Software

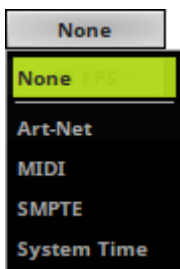
- Go to the menu to **Preferences >Options... > Devices USB**
- Activate **MADRIX USB SMPTE**
[The option is activated by default.]
- Click **Apply** and **OK**



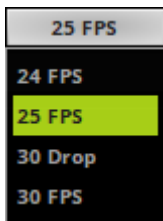
3] Use A Cue List

Cue Lists are the feature in the MADRIX 5 Software to receive Time Code.

- Go to the menu **Tools > Cue Lists...**
- Or press **F7**
- Or click **Layers > Cue Lists** on the user interface.
- Select the Time Code source **SMPTE**



- Select the required **Time Code Format**

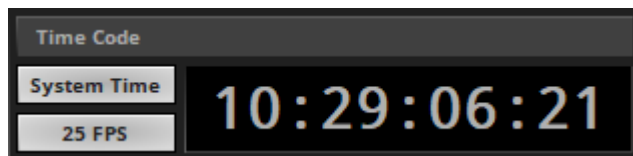


- The MADRIX 5 Software will automatically start receiving external Time Code.
- The Time Code format is **HH:MM:SS:FF** [hours:minutes:seconds:frames]

Example:

- 10 o'clock and 20 minutes, 30 seconds, and 10 frames will be shown as

10:20:30:10



- Configure the column **Time Code** for your Cue List entries.
- Add or edit more entries according to your requirements.
- Learn more »[Cue List Editor](#)

Interruption-Free Operation

To ensure interruption-free operation of the software and devices, please make sure to check the power-saving settings of Windows.

Learn more »[PC Power Management](#)

11.8 MADRIX NEO

This topic includes:

- [Overview](#)
- [Important Note](#)
- [MADRIX 5 Software License](#)
- [Loading The Drivers](#)
- [Using DMX Output or DMX Input](#)
- [Further Configuration](#)
- [Interruption-Free Operation](#)

Overview



[Discontinued Product]

MADRIX NEO is a USB 2.0 DMX512 interface. It can be used for input [DMX-IN] or output [DMX-OUT]. The MADRIX NEO allows you to control 512 DMX channels in combination with the MADRIX 5 Software.

Important Note

- **Make sure to read the provided MADRIX NEO Technical Manual & Quick Start Guide first!**

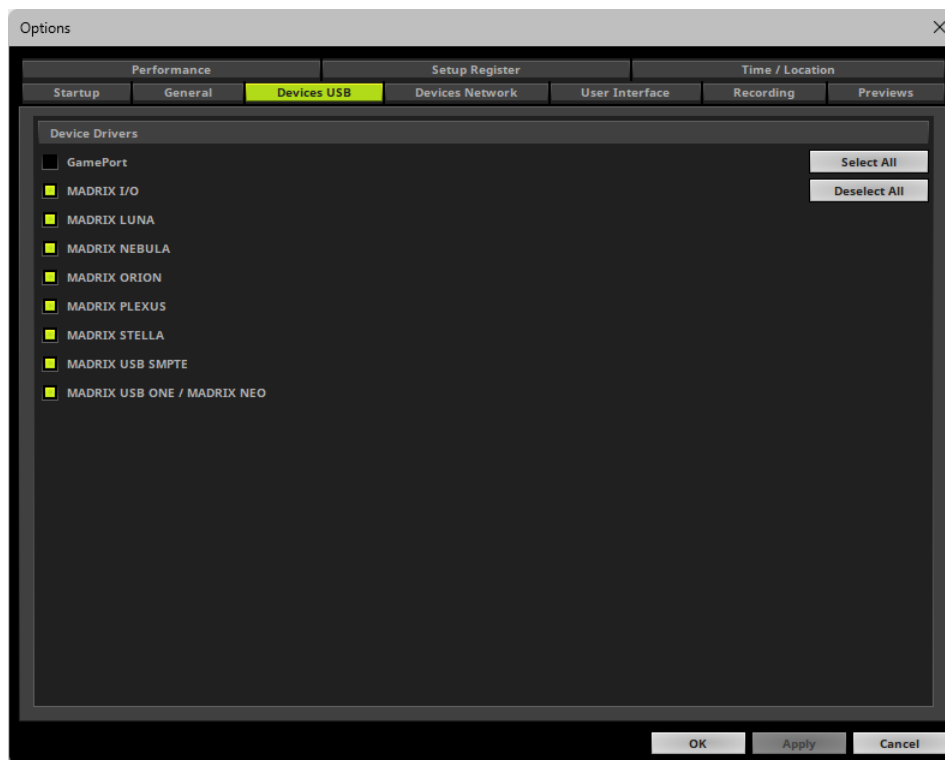
Find it in your product box or download it from »help.madrix.com

MADRIX 5 Software License

- The MADRIX 5 Software license is not included and sold separately. A MADRIX 5 KEY is necessary if you want to use DMX output [DMX-OUT].
- No separate license is required for DMX input [DMX-IN].

Loading The Drivers

- Go to the menu ***Preferences > Options... > Devices USB***
[Keyboard shortcut: ***Ctrl+Alt+O > Devices USB***]



- Activate **MADRIX USB ONE / MADRIX NEO**
[The option is activated by default.]
- Click **Apply** to confirm.
- Click **OK** to close the window.

Using DMX Output Or DMX Input

The MADRIX NEO allows you to send [DMX-OUT] or receive [DMX-IN] data via MADRIX 5 using 512 DMX channels.

- The MADRIX NEO features a 5-pin, female XLR connector.
- If you want to use DMX-IN, please use a 5-pin XLR male to 5-pin XLR male gender changer.

Learn more » [DMX512 \[DMX-OUT\]](#)

Learn more » [DMX-IN / Art-Net Remote / sACN Input](#)

Further Configuration

Remember to configure your light matrix in the » [Matrix Generator](#) or » [Patch Editor](#)

Make sure to save your MADRIX 5 Setup after the configuration process.

Interruption-Free Operation

To ensure interruption-free operation of the software and devices, please make sure to check the power-saving settings of Windows.

Learn more » [PC Power Management](#)

11.9 MADRIX PLEXUS

This topic includes:

- [Overview](#)
- [MADRIX 5 Software License](#)
- [More Information](#)

Overview



[Discontinued Product]

MADRIX PLEXUS is a USB 2.0 DMX512 interface or Art-Net node.

The device can be used as a live controller [Live Mode] or stand-alone interface [Stand-Alone Mode].

MADRIX 5 Software License

- The MADRIX 5 Software license is not included and sold separately. A MADRIX 5 KEY is necessary if you want to use DMX output [DMX-OUT] or Art-Net output.
- No separate license is required for DMX Input [DMX-IN].

More Information

MADRIX PLEXUS offers a lot features. Because of this, a separate, complete guide is available. You can find the majority of information about the MADRIX PLEXUS in the

- **MADRIX PLEXUS Technical Manual & Quick Start Guide**

Download it from »help.madrix.com

- **MADRIX PLEXUS User Manual**

Download it from »help.madrix.com

//PART 12

Appendix

12 Appendix

This topic includes:

- [Introduction](#)
- [Topics Of This Chapter](#)

Introduction

The appendix includes various information-dense topics, such as lists of useful keyboard shortcuts.

Topics Of This Chapter

- » [Keyboard Shortcuts \[MADRIX 5\]](#)
- » [Keyboard Shortcuts \[Patch Editor\]](#)

12.1 Keyboard Shortcuts [MADRIX 5]

This topic includes:

- [Overview](#)

Overview

You can use various shortcuts on the computer keyboard, while working with MADRIX 5.

Specific Functionality:

File	
New Setup	Ctrl+N
Open Setup...	Ctrl+O
Save Setup	Ctrl+S
Save Setup As...	Ctrl+Shift+S
Exit	Alt+F4
View	
Touch Screen [open and close]	F8
Move Touch To Next Screen [also DVI Full Screen]	Tab [Tabulator]
Switch To Next Theme	Ctrl+T
Full Screen Mode [open and close]	F11
Preferences	
Matrix Generator... [open and close]	F2
Patch Editor... [open and close]	F3
Device Manager... [open and close]	F4
Audio Performance...	Ctrl+Alt+A
Remote Control > HTTP...	Ctrl+Alt+H
Backup System...	Ctrl+Alt+B
Options...	Ctrl+Alt+O
Tools	
Colors... [open and close]	Ctrl+Alt+C
Groups... [open and close]	F9
Cue Lists... [open and close]	F7
Timelines... [open and close]	F10
DMX Fader Tool...	Ctrl+Alt+F
Logfile... [open and close]	F6
Task Watcher... [open and close]	F5
DMX Watcher...	Ctrl+Alt+D
MIDI Watcher...	Ctrl+Alt+M
Record Editing...	Ctrl+Alt+R
Identify	Ctrl+Alt+I
Previews	

File	
Restore Default View	Spacebar
Move To Next Screen	Tab [Tabulator]

General Functionality:

Help And Manual [User Guide]	F1
Various functions [e.g., Restore Default Value, Color value 0 or 255, Selection, etc.]	Spacebar
Select all characters of a number, word, etc. / Select all items of a list	Ctrl+A
Confirm your selection	Enter
Remove items from list	Backspace, Del [Delete]
Move items in list [Up, Left, Down, Right]	W, A, S, D [QWERTY] Z, Q, S, D [French AZERTY]
Cancel	Esc [Escape]
Close a window [e.g., Cue List Editor, Fader Box, Macro Editor, etc.]	Alt+F4

Functionality For Layers And Layer Tabs:

Scrolling	Mouse Wheel
Scrolling	Arrow Left/Up, Arrow Right/Down
Changing selection/focus	Arrow Left/Up, Arrow Right/Down
Context menu	Right Mouse Click, Context Menu Key, Shift+F10
Moving/Reordering the currently selected layer	Ctrl+Arrow Left, Ctrl+Arrow Right

Functionality For the Gradient Control:

Scrolling through colors / Changing selection/focus	Arrow Left/Up, Arrow Right/Down
Moving/reordering the currently selected color	Ctrl+Arrow Left, Ctrl+Arrow Right
Selecting a focused color	Spacebar

Selecting the first color	Pos1 / Home
Selecting the last color	End
Adding a new color [with interpolated color values]	Ins [Insert]
Removing the color [selected or hovered selection]	Del [Delete]

12.2 Keyboard Shortcuts [Patch Editor]

This topic includes:

- [Overview](#)

Overview

You can use various shortcuts on the computer keyboard, while working with the MADRIX 5 Patch Editor.

File	
New Patch	Ctrl+N
Open Patch...	Ctrl+O
Save Patch	Ctrl+S
Save Patch As...	Ctrl+Shift+S
Print Fixture List...	Ctrl+P
Open / Close	F3
Edit	
Undo	Ctrl+Z
Redo	Ctrl+Y
Matrix Settings	Ctrl+Alt+M
Add Fixtures...	Ins
Remove Selected Fixture	Del
Replace Selected Fixtures	Ctrl+Alt+R
Restore DVI Mapping Defaults For Selection	Ctrl+R
Move Map Area To Matrix Origin	Ctrl+Home
Flip Selection Horizontally	Ctrl+Page Down

Flip Selection Vertically	Ctrl+Page Up
Flip Selection Horizontally And Vertically	Ctrl+End
Rotate Selection By 90°	Page Down
Rotate Selection By 180°	End
Rotate Selection By 270°	Page Up
Lock Selected Fixtures	Ctrl+K
Unlock Selected Fixtures	Ctrl+Shift+K
View	
Voxel Map	F5
DVI Map	F6
DMX Map	F7
Zoom In	Ctrl+Plus
Zoom Out	Ctrl+Minus
Focus All	Ctrl+0
Focus Selection	Ctrl+F
Zoom In / Out	Mouse Wheel
Panning / Hand Tool / Relocate Viewport	Spacebar + Left Mouse Click Hold & Drag
Reposition Selected Fixtures	Arrow Keys
Preferences	
Highlight Selected Fixtures	Ctrl+H
Link DVI Mapping And Voxel Mapping	Ctrl+L
Options...	Ctrl+Alt+O
Fixture Groups	
Create Fixture Group From Selected Fixtures	Ctrl+G
Select	
Select All	Ctrl+A
Deselect All	Ctrl+D
Invert Selection	Ctrl+I
Select All From Selected Fixture Groups	Ctrl+Alt+D
Deselect All From Selected Fixture Groups	Ctrl+Alt+D

12.3 Keyboard Shortcuts [Timelines]

This topic includes:

- [Overview](#)

Overview

You can use various shortcuts on the computer keyboard, while working with the MADRIX 5 Timeline Editor.

Editor	
Open/Close Editor	F10
Viewport	
Zoom In	Ctrl+Plus
Zoom Out	Ctrl+Minus
Focus All	Ctrl+0
Zoom In/Out	Mouse Scroll Wheel
Scroll Left	Page Down
Scroll Right	Page Up
Scroll Left/Right	Shift+Mouse Scroll Wheel
Reposition Viewport	Spacebar + Left Mouse Click + Drag
Cursor	
Jump To Timeline Start	Home/Pos1
Jump To Timeline End	End
Snap Cursor To Segments/Markers; Select Next User-Interface Element	Left / Right
Move Cursor By 1 Pixel/1 Frame	Ctrl+Left/Right
Suppress Snapping	Ctrl+Shift
Markers	
Add Marker At Cursor Position	M
Add Markers 1-9 At Cursor Position	Ctrl+1-9

Jump To Markers 1- 9	1-9 [incl. Num block]
Segments/Audio Volume/Layer Opacity	
Add New Cue Segment	Ins
Focus On Segment	Left Mouse Double-Click
Select All Audio/Cue Segments	Ctrl+A
Select Previous Segment	Shift+Tab
Select Next Segment	Tab
Select Multiple Segments/Points	Ctrl+Left Mouse Click
Select All Segments Between Two Segments/Points	Shift+Left Mouse Click On First Segment+Left Mouse Click On Second Segment
Remove Selected Audio/Cue Segments/Points	Del
Shift Segments To The Left	Ctrl+Left
Shift Segments To The Right	Ctrl+Right
Shift Segment Contents To The Left	Alt+Left
Shift Segment Contents To The Right	Alt+Right
Editing Values	
Confirm Values	Enter
Reset To Default Values	Spacebar
Increase Value	Up
Decrease Value	Down

//PART 13

Legal

13 Legal

This topic includes:

- [Introduction](#)
- [Topics Of This Chapter](#)

Introduction

Legal includes all legal documents and information, including copyright and more.

Topics Of This Chapter

- » [End-User License Agreement \[EULA\]](#)
- » [NewTek NDI \[Legal Information\]](#)
- » [OSG \[Legal Information\]](#)
- » [Qt \[Legal Information\]](#)
- » [Spout \[Legal Information\]](#)
- » [Imprint And Copyright](#)

13.1 End-User License Agreement [EULA]

This topic includes:

- [Copy Of License](#)

Copy Of License

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MADRIX Software License Agreement

MADRIX 5 Software

Last Update: 07/2024

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E-mail: info@madrix.com

Web: <https://www.madrix.com>

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- [Legal Information](#)

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- osg80-osgFX.dll
- osg80-osgGA.dll
- osg80-osgQt.dll
- osg80-osgText.dll
- osg80-osgUtil.dll
- osg80-osgViewer.dll
- ot12-OpenThreads.dll

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- Qt5Svg.dll
- Qt5Widgets.dll
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- Qt5Xml.dll

- qgenericbearer.dll [Qt Plugin DLL] [.../bearer]

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