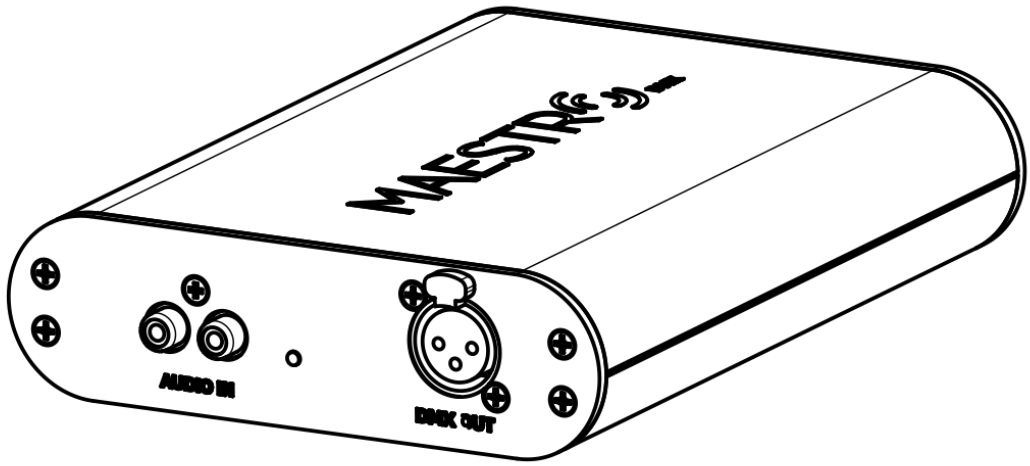
MaestroDMX User Manual

Software V1.3.2 (July 2024)



Introduction

MaestroDMX is an easy-to-use autonomous lighting designer-in-a-box that listens to music and makes decisions like a professional lighting designer. A game-changing technology for DJs, musicians, streamers, and music venues.

MaestroDMX is for the busy performer who wants to “set it and forget it” and for the expert who wants to dive in deeper, complimenting their skills with an innovative tool.

Contents

Guide Overview

The MaestroDMX User Manual provides comprehensive instructions and information for users. It covers the following topics:

- Physical Setup of MaestroDMX Lighting Controller:
    - Learn how to properly install and set up the MaestroDMX lighting controller to ensure efficient and safe operation.
- Software Updates for MaestroDMX:
    - Discover the process for upgrading the MaestroDMX software to access the latest features and enhancements.
- Navigating and Using the MaestroDMX Web App:
    - Gain insights into how to effectively navigate and utilize the MaestroDMX Web App to control and manage your DMX lighting stage.
- Use a 3rd Party MIDI Controller to control MaestroDMX.
- Basic Troubleshooting:
    - Find solutions to common issues and challenges that may arise during the use of the MaestroDMX system.
- Safety, Certifications, and Hardware Specifications:
    - Understand essential safety precautions, certifications, and detailed hardware specifications to ensure the secure and compliant operation of your MaestroDMX lighting control system.

This manual is your comprehensive guide to maximizing the functionality and safety of your MaestroDMX lighting controller.

Questions?

Additional support for MaestroDMX is available at https://maestrodmx.com/pages/support or contact support@maestrodmx.com

Getting Started

Join The Community

Connecting with the MaestroDMX community is a great way to get feedback, support, and inspiration with your lighting setup. We highly recommend that you join and participate:

- The 'MaestroDMX Users Helping Users' Facebook Group.
- The MaestroDMX Youtube Channel.
- The MaestroDMX users Discord Server.
- The MaestroDMX Forum Forum

What's In The Box

- MaestroDMX hardware unit
- Attached WiFi dongle
- Informational insert + sticker
- 2m USB-A to USB-C cable

Core Features

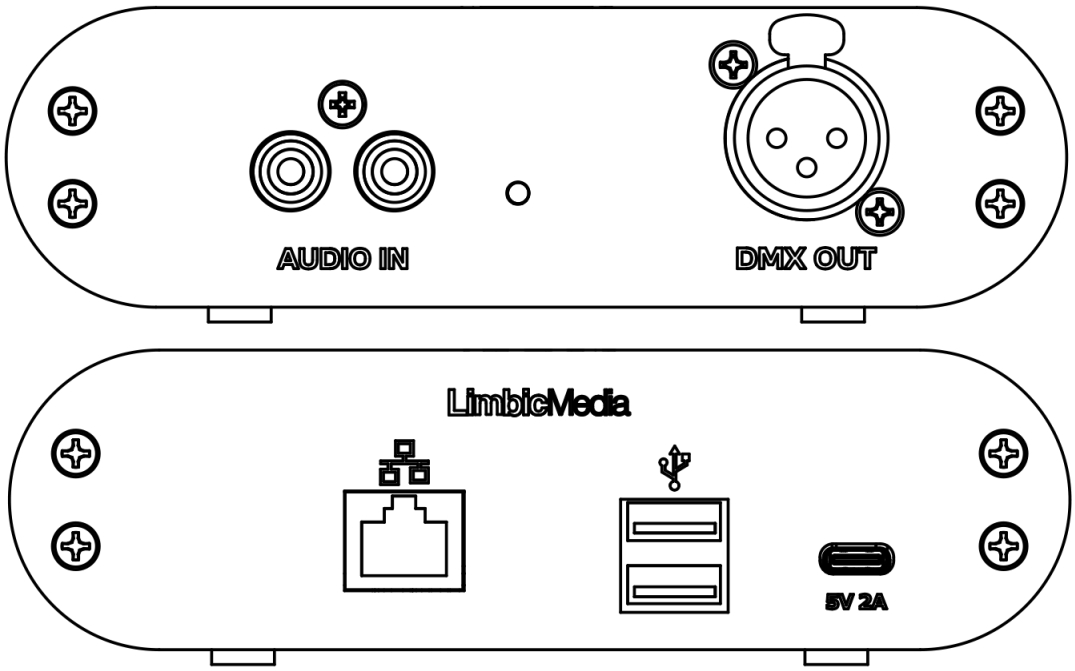
MaestroDMX is an incredibly powerful platform with all the features required to run amazing light shows with no lighting programming needed.

- Real-time, autonomous, music-driven lighting control
- Low latency performance with advanced audio analysis
- Hands-off autonomous decision-making network
- Intelligent control of RGBWAmUV color, Pan/Tilt, and Dimmer channels, Color Wheels, Gobos, Lazers, and most DMX effects.
- Harness FINE 16-bit control
- Manual control of Fog/Haze, FX Trigger, Strobe, Blackout, Blinder, & Global Brightness
- One universe of DMX control
- Direct RCA stereo audio inputs or connect any USB audio interface
- Built-in DMX fixture library plus the ability to create, save, and share fixtures
- MIDI and OSC* control (*coming soon in a future software update)
- Choose from a variety of parameterized lighting patterns/color palettes based on mood and energy level
- Dial in combinations of patterns, palettes, and parameters to build cues
- Add cues to a show playlist
- Define and trigger static scenes/looks
- Use fixture groups for more control (ex: wash only fixtures)
- Connect and control MaestroDMX from any web browser over Wi-Fi or Ethernet
- Build, save, and share any number of Stages, Shows, and Fixture Profiles
- Define Pan/Tilt center positions and limit ranges
- Layout fixtures linearly or in a 2D grid for mapped effects
- Enable/disable solo fixtures
- Set static values for any fixture's channels on a stage

Hardware Connectivity

MaestroDMX is a plug-and-play autonomous lighting controller that can be set up and functioning within minutes.

Connector Interface



1. Power connector

   5V USB-C power port. 2 A max input current. Provides power to the MaestroDMX and attached USB devices.

   NOTE: if you power MaestroDMX on the same device as your audio output e.g. a laptop, it can cause a "ground loop" that will introduce noise and affect the performance of the system. You can avoid this by powering MaestroDMX from a different device or power source or by using an inline ground loop isolator.

2. USB 2.0 Type A connectors (500mA max per port)

   Two USB-A ports are available for a Wi-Fi dongle, MIDI, an external audio interface, and software updates via a USB flash drive.
   NOTE: Do not use the USB-A ports for anything other than the above-mentioned uses.

3. Ethernet connector

   The ethernet connector provides a hardwire connection from your computer/tablet to the MaestroDMX. An alternative to connecting over Wi-Fi.

4. Line in / RCA audio connector

   The Audio connector allows MaestroDMX to receive audio from your source. MaestroDMX expects a stereo consumer line-level input signal (-10dBV max).

5. DMX OUT

   DMX OUT connects your fixtures via a DMX cable directly to the MaestroDMX (1x Universe, 512 channels).

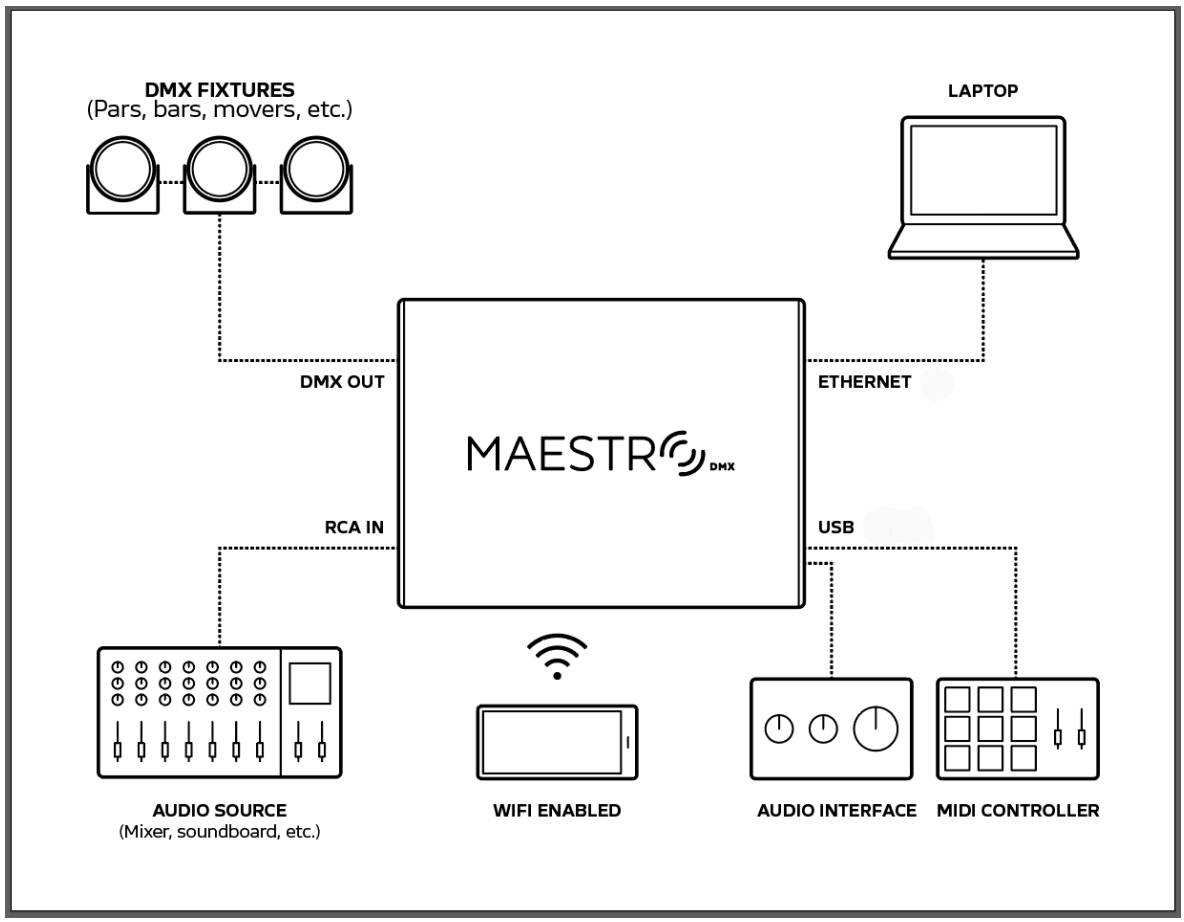
6. Indicator Light

The indicator light on your device serves as a visual guide to its status. Different colors and blinking patterns convey important information:

- Red: The device is powered on, and the Maestro is in the process of booting up.
- Blue: The Maestro is running, but there is either no audio present or the audio is too quiet.
- Green: There is an audio signal, and it is at a sufficient level.
- Amber: The audio is approaching clipping levels but still within acceptable ranges.
- Red: The audio has reached clipping levels, and distortion may occur. Adjust the input volume accordingly.
- Blinking White: During software updates, the indicator light will blink white. Please wait for the light to turn either blue (indicating the Maestro is running) or green (if there is audio present).

Example System Setup

MaestroDMX offers seamless lighting control, providing flexibility in its placement as long as it remains connected to a power source, audio input, and your DMX fixtures.



Required Materials:

To get started, ensure you have the following materials on hand:

- Power source 5VDC USB-C (2W minimum)
- RCA Audio cable
- Ethernet cable (optional, for internet connectivity while using MaestroDMX)
- DMX cable
- DMX lights
- PC, Tablet, or Smartphone to connect to the MaestroDMX Web App
- Music player device (mixer, laptop etc)

Installation Steps:

Follow these steps to set up your MaestroDMX:

- Power Connection:
  - Plug your MaestroDMX into its power source to provide it with electrical power (USB-C).
- Audio Cable Connection:
  - Connect an audio cable to the MaestroDMX, ensuring a secure connection and a sufficient distance from any potential noise sources.
- DMX Cable Connection:
  - Plug your DMX cable into the MaestroDMX to establish communication with your DMX lights.
- PC/Tablet/Phone Connectivity:
  - Connect your PC/tablet or phone to MaestroDMX either through an Ethernet cable or a Wi-Fi connection, depending on your preference and requirements. Ethernet is recommended for a more reliable/mission-critical connection.
- USB: Optional external audio interface and /or MIDI controller

Updating MaestroDMX Software

To ensure your MaestroDMX stays up to date and takes advantage of the latest features and improvements, follow these steps to update the software:

1. Download Software:
   - Visit maestrodmx.com/pages/support from a computer to download the most current software package for MaestroDMX.
   - Save the downloaded software package to a USB stick for easy transfer.
   - **IMPORTANT**: The USB stick must be formatted to FAT32.
2. Insert USB Stick:
   - Insert the USB stick containing the software bundle into an available USB port on your MaestroDMX device.
   - **IMPORTANT:** The USB WiFi dongle must be plugged in during the software update process to ensure MaestroDMX enables the USB WiFi dongle
3. Restart MaestroDMX:
   - Turn off the MaestroDMX unit by unplugging it from power and wait 5-10 seconds.
   - Power up the MaestroDMX unit by plugging the power back in.
   - Allow a few minutes for the software to load. During this time, observe the indicator light on your MaestroDMX.

- First the light will turn RED then a WHITE blinking light indicates that the software is loading.
- **WARNING: DO NOT UNPLUG THE POWER DURING AN THE UPDATE**

4. Successful Update:
   - Once the indicator light turns BLUE (or GREEN if it is receiving audio), it signifies that the software update is complete and successful.
5. Remove USB:
   - Unplug the USB stick from the MaestroDMX unit.
6. Verify:
   - Open the MaestroDMX Web App in a new browser window and verify that the software did update. Check via the 'System' -> 'System Info' page.

NOTE: Please open the MaestroDMX Web App in a new browser window after updating the software to avoid caching issues.

Now, you can enjoy your MaestroDMX with the latest software update, benefiting from improved functionality and features.

Terminology

Fixture Profile Database/Library
Where the fixture profiles are stored.

Fixture Profile
The template of a specific fixture's DMX channel profile mode(s). For example:

- Channel 1: Dimmer
- Channel 2: Pan
- Channel 3: Tilt
- Etc…..

Mode
A specific template of control for a given fixture. Typically fixtures have several templates or modes that provide different levels of control of the fixture; for example, a moving-head light could have:

- Mode 1: 9 channels. Mode 2: 16 channels, and Mode 3: 32 channels.

Increasing channels allows for a greater level of control over the fixture. These templates are also known as personalities.

Fixture Attribute
Controllable parameter types of a fixture. For example:

- PAN, TILT, RGBW, Dimmer, Colour Wheel etc.

Attribute Properties
Beyond the standard attribute defined in the DMX specification, MaestroDMX has additional controls

- Output Range, Invert, and Smoothing across all channels
- Offset and Width for PAN and TILT channels

Fixture
The real-world physical manifestation of a DMX controllable piece of hardware. For example:

- A moving head DMX light or flood light, LED pixels, etc
- A DMX controllable laser, haze machine, or flame effect

A live show typically has many fixtures on a given stage.

Stage
A MaestroDMX stage contains the Patcher, Layout, and Control pages.

Patcher
This is where the fixtures are placed into the DMX universe based on their base addresses and assigned to fixture groups.

Layout
Set the mapping (linear or grid) for the fixtures in each fixture group.

Controls
Set default values for DMX channels in each fixture.

Fixture Group
A group of fixtures. This can be useful to control parameters of many fixtures at once, such as brightness, color palettes, pattern, parameters, pixel mapping, etc.

FX Palette

A stored set of attribute values that map to a specific set of fixtures.
For example,

- A color wheel palette may be set for 4 moving head lights, setting them all to the color red.

When this color wheel palette is recalled, the specific fixtures will show the color red.

Another example:

- An FX palette collection setting all moving heads to point to the wedding cake.

When this palette is recalled, all the moving heads will modulate their pan/tilt attributes to point at the wedding cake.

NOTE: FX Palettes will be released in a future software update

Show Control
A Show is a ‘playlist’ of cues with a specified run length. You can play, pause, stop, go back, and go forward on the sequence.

Live Control
Live Mode gives the user the ability to modify patterns, palettes, parameters, etc., in real-time. At any time, a snapshot of Live Control Mode can be saved as a cue for Show Control Mode.

Trigger Buttons
On the Show page there are global effects buttons that can be controlled via the WebApp or Midi input: Strobe, Blackout, Blinder, Fog, and Effect.

Color Palettes
These are the built-in palettes that control the color channel types, such as RGBWAUV, of fixtures on the stage.
Individual Palettes define a single color palette of either a color gradient or a single color.
Example:

- 'Royal': mix of amber, purple, etc.
- 'Hawaii': blues and greens

While **Grouped Palettes** define any number of individual color palettes.

Patterns
These are the lighting patterns and effects at the core of the MaestroDMX system. There are Core patterns and Maestro patterns.

Parameters
Depending on the specific lighting pattern, each cue has a variety of parameters that can be modified to customize the lighting output.

Cue
A cue controls the fixtures on the stage for each fixture group for a specified duration. A Cue has the following properties that can be configured by the user:

- Which Patterns are playing along with Parameters to control how the pattern behaves
- Colour Palettes (individual or grouped)
- Blackout on/off
- Length of cue in mins & seconds (or infinite)
- Fade time to next cue
- FX Palette*

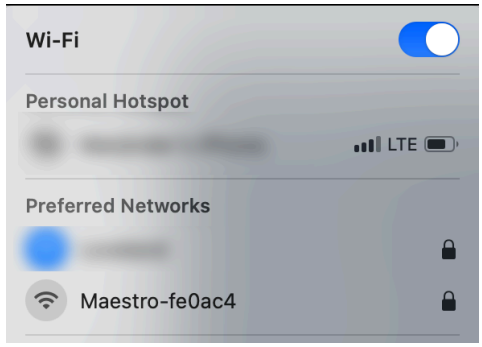
*coming in a future release

Connecting MaestroDMX To Your Device (PC, Tablet, Smartphone)

You can connect to the MaestroDMX Web App either over its dedicated WiFi network or via a hardwired ethernet connection.

Wireless Connection

After the MaestroDMX is powered on it will serve up its own network with the SSID: Maestro-XXXXXX. Your MaestroDMX unit will have a unique string of 6 characters to replace the XXXXXX.



SSID: Maestro-XXXXXX

Network password: 'mymaestro'

Known WiFi Connection Issues

IMPORTANT: **It is not recommended to rely on a direct WiFi connection to the MaestroDMX unit for performances where a persistent connection to the unit is required. Noise in the RF environment may cause disconnections. For a more reliable connection use:**

- Hardwire Ethernet Connection (preferred)
- Connect MaestroDMX & your device (laptop, tablet etc) over WiFi to the network of a 3rd party router with a strong signal. See 'Wifi' and 'Network' pages under 'Settings' on the Web-App.

Hardwire Ethernet Connection

A hardwire connection can be established via ethernet by entering the following settings into your LAN port:

- IPv4 Manual Connection
- IP: (XX can be anything EXCEPT .200 and .1, for example, 10.0.0.61 is fine)
- Subnet Mask: 255.255.255.0

Note: the process to do this will differ depending on operating system type and version. Please consult your operating system's relevant documentation.

Your MaestroDMX is now prepared and ready for configuration using the MaestroDMX Web-App.

Running The Web App

Once you have established a connection to the MaestroDMX, whether through a wired or wireless connection, follow these steps to access the MaestroDMX Web App:

- Open your device's web browser (PC, tablet or smartphone).
- In the browser's address bar, enter the following URL: http://maestro.local or scan the QR code below:

- Alternatively, if you encounter connection issues, enter http://192.168.37.1 into the browser for a wireless connection to the web app or http://10.0.0.200 for a hardwired Ethernet connection to the Web App.

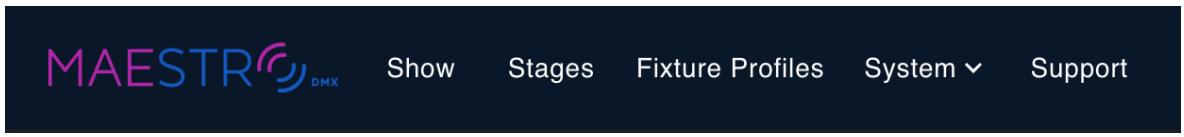
- After entering the URL, you will be directed to the MaestroDMX Web App interface.

The MaestroDMX Web App is divided into four main pages, each serving a specific purpose::

- System
- Fixture Profiles
- Stages
- Show

Menu Banner

The top banner of the Web App shows the various pages for navigation of the application and also indicates the audio input level status and detected kick drum trigger.



System Settings

Configuring Audio

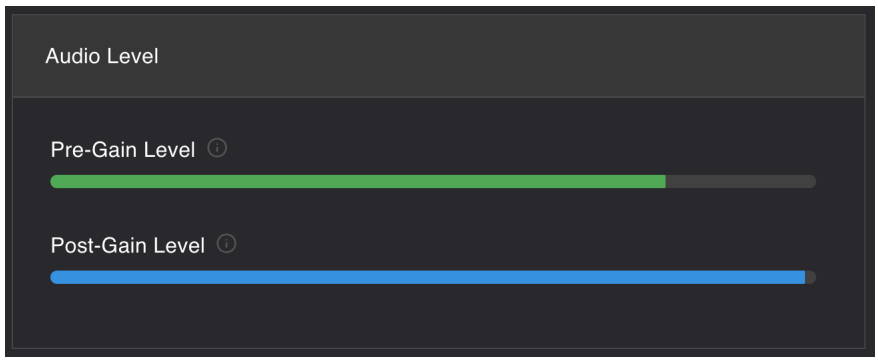
Correct calibration of audio is critical to the functioning of MaestroDMX. Take the time to understand and learn how to use this section.

Pre-Gain Level

The Pre-Gain level displays your original audio input level. The display meter has three color states:

- **Blue**: either there is no audio input or it is too low in volume
- **Green**: audio input is within an acceptable range
- **Yellow**: audio input is in the upper end of the acceptable range
- **Red**: audio input is too loud and needs to be reduced

IMPORTANT: Ensure that your incoming audio feed turns the panel LED on the MaestroDMX unit or the Pre-Gain level in the Web App green.



Post-Gain Level

Post-Gain refers to the auto-gain applied to the audio input. In general, this level should be near the top of the range when music is playing.

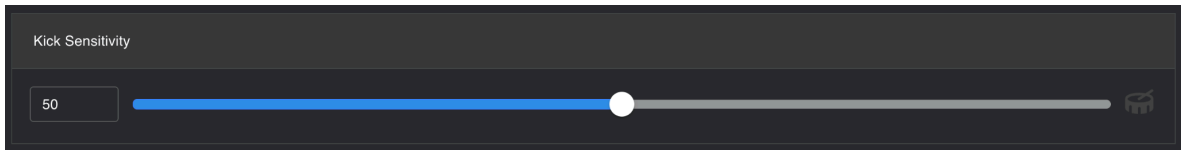
Kick Sensitivity (Default: 50)

IMPORTANT: MaestroDMX's algorithms require a reliable presence and/or detection of the kick drum from the musical input.

The Kick Sensitivity control is used to calibrate the detection of kick drum-based triggers depending on different styles of music. Here are some ranges:

- Electronic dance music: 0 - 50
- Rock, Metal, Etc (music with real drumkits): 50 - 75
- Live Music (depending on the mix): 50 - 100

NOTE: If the Kick Sensitivity is too low, you risk missing kick drums, and conversely if the level is too high you risk getting false positives (incorrect triggers from other bass sounds). **In general, it is better practice to get false positives than to miss kick drums altogether**. Keep an eye on the detected triggers throughout your event.



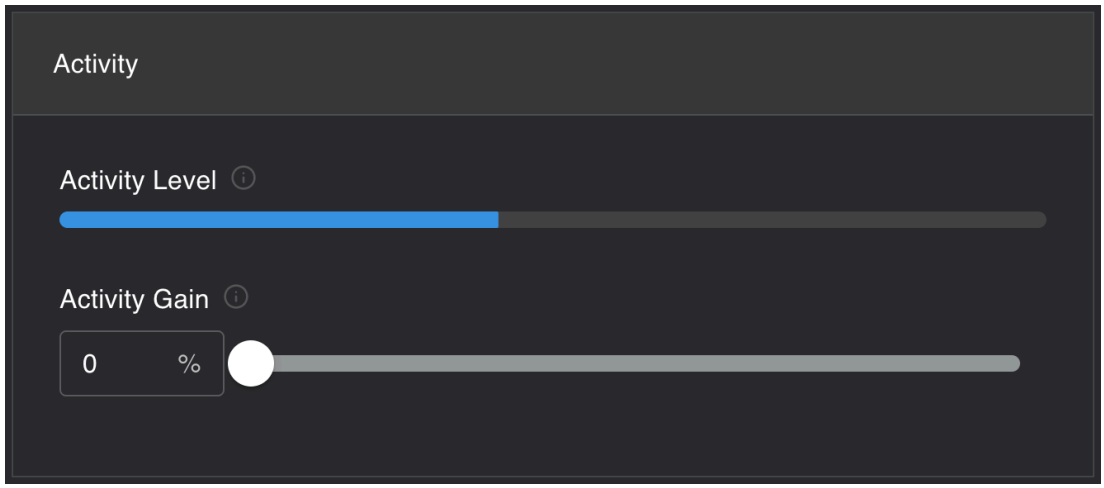
Activity Level

Activity Level tracks how exciting the music is at any given moment. MaestroDMX's algorithms and AI use the Activity Level to determine how exciting the lighting output should be.

Activity Gain (Default: 0)

Adjusting Activity Gain allows you to calibrate the Activity Level for different music environments. For pre-recorded, produced music Activity Gain is best set to 0. However, for live music, you may need to increase the Activity Gain, since live music does not have the same quality of production as canned music.

To be clear, the Activity Level is not the same as the audio input level. This is a measure of the excitement of the music rather than the volume of the music, however, they are related.



IMPORTANT: To calibrate the Activity Level, play the most intense section of music (ie loud metal, rock, or chainsaw dubstep) Adjust the Activity Gain and make sure that the Activity Level reaches close to full scale. For more relaxed music the Activity Level should be lower.

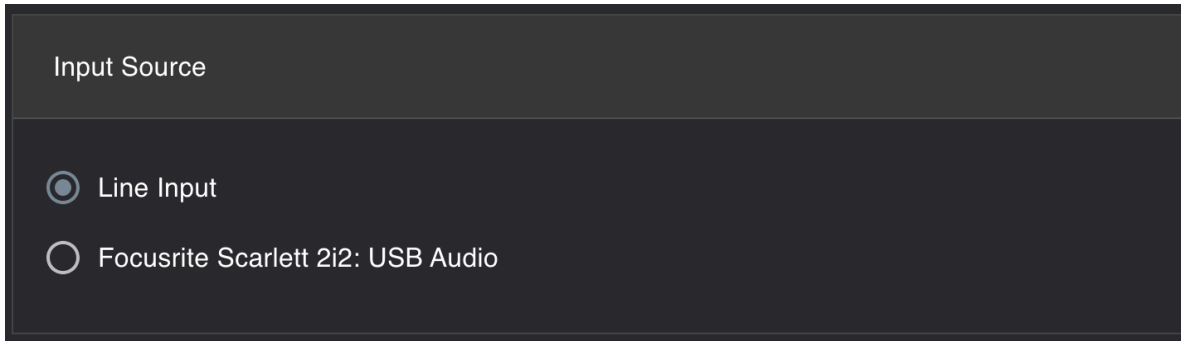
Input Source

Select the audio input source. By default, MaestroDMX only has a single line-level input source that comes in via the RCA connector on the front panel.

External Audio Interface

You can also connect an external USB audio interface to MaestroDMX. This can be useful when you need to send a balanced signal or directly connect microphones. To activate the external audio input, be sure to select it on the Web App.

NOTE: Only inputs 1 & 2 of the USB interface will be used by MaestroDMX.



Troubleshooting Audio Input

There are some common issues that can cause trouble when trying to connect your music to MaestroDMX. Here are some things to try.

Issue: No audio is coming into MaestroDMX

- Check that your audio source is playing (mixer, laptop etc)
- Try a different RCA cable
- Confirm that your audio input on the Audio page is running in the green zone

Issue: I am not playing music, however MaestroDMX registers a non zero audio input level

- Check that your cable is plugged into MaestroDMX AND your audio source on the other side. A 'hanging' cable will produce noise.
- Avoid a groundloop issue by running audio from a different source than the power for MaestroDMX. For instance running audio and power from your laptop can cause noise issues

Issue: I am having noise on the input still

- Check that your audio source is not producing a noisy signal
- Contact www.maestrodmx.com/support

WIFI

On the WiFi settings page, users have the option to customize their MaestroDMX's wireless configurations, providing various choices for connecting wirelessly.

WiFi Settings

Within the WiFi Settings, users have the option to switch between two distinct modes: "Create a WiFi Network" and "Connect to an Existing WiFi Network".

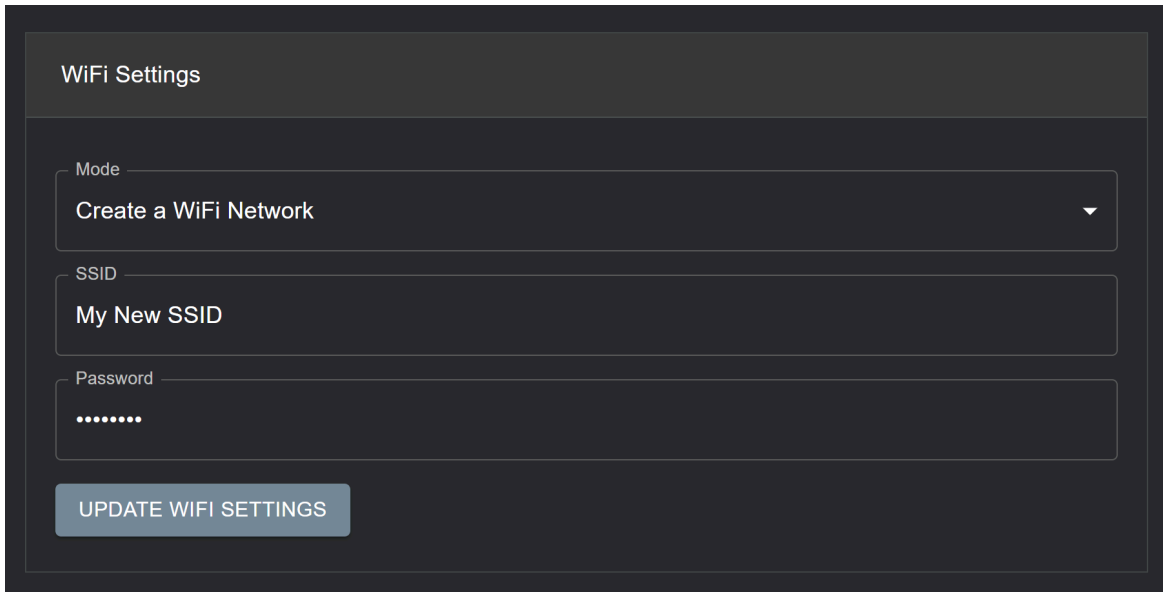
Note: Please be aware that modifying WiFi settings may require a few minutes, during which you may experience a temporary disconnection from the web app.

Create a WiFi Network

By default, Maestro serves up its own network with a unique SSID labeled as "Maestro-XXXXXX." In this mode, users have the flexibility to personalize the SSID and modify the password for the Maestro network. To achieve this:

1. Switch into "Create a WiFi Network" mode.
2. Input a preferred SSID of your choice.
3. Specify a password that grants access to your Maestro network.
4. Click "Update WiFi Settings" to apply the changes

5. Connect your device to the new MaestroDMX WiFi network.
6. Close the MaestroDMX app and re-open it in a new browser window



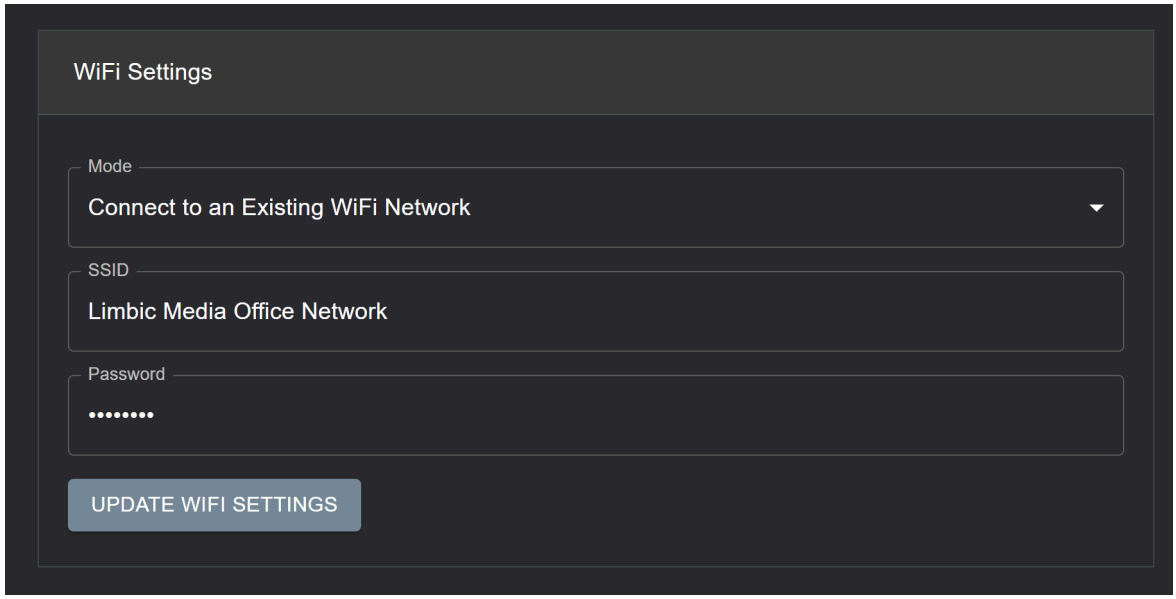
Warning: In the event of a forgotten password, the only means of connecting to the Maestro will be through an Ethernet connection or by installing a network reset package available on the Software Updates page. This will reset the password to 'mymaestro'.

Note: Users have the flexibility to modify SSIDs and passwords as often as needed.

Connect to an Existing WiFi Network

This mode provides a straightforward connection between MaestroDMX and personal devices by connecting Maestro to an existing local network that your device is also connected to, such as your home wifi network for exanple. To achieve this:

1. Switch into 'Connect to an Existing WiFi Network' mode.
2. Enter the SSID of the desired network.
3. Input the network password.
4. Click 'Update WiFi Settings' to finalize the configuration.
5. Connect your device to the local WiFi network.
6. Close the MaestroDMX app and re-open it in a new browser window

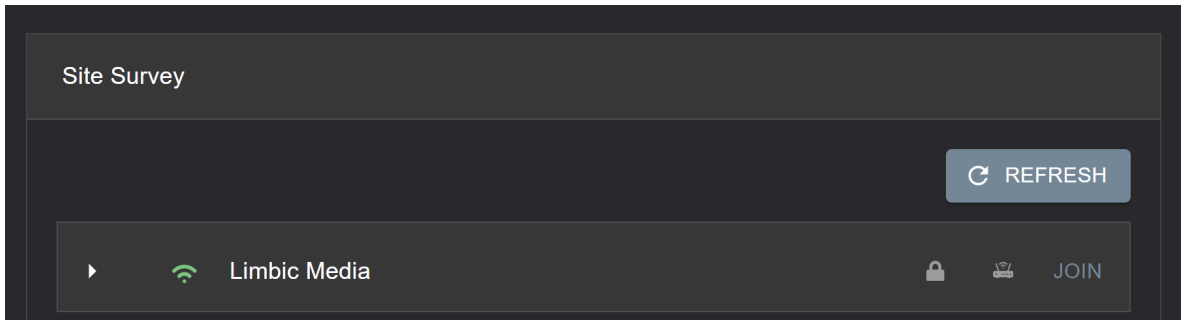


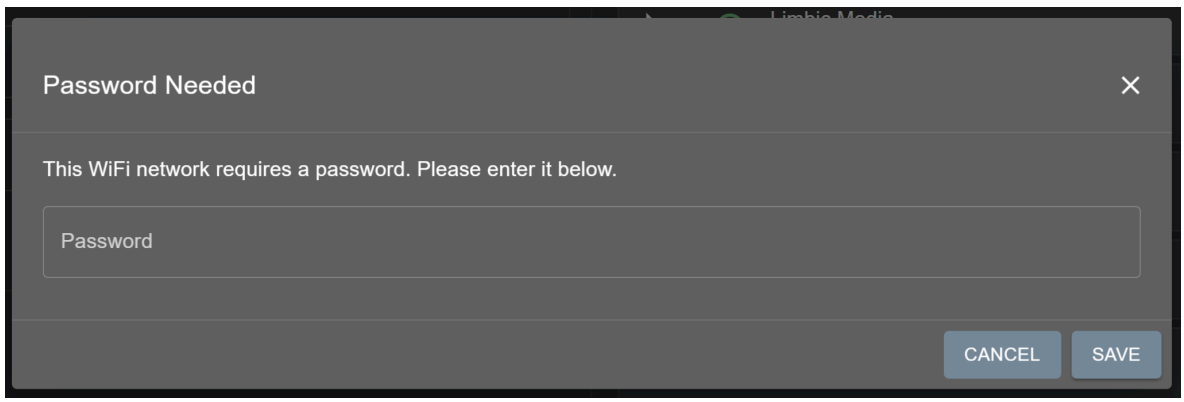
Warning: In the event of a forgotten password or if the incorrect password is entered, the only means of connecting to the Maestro will be through an Ethernet connection or by installing a network reset package available on the Software Updates page. This will reset the password to 'mymaestro' and restore MaestroDMX to 'Create A Wifi Network Mode'.

Site Survey

The site survey provides a list of networks in the vicinity, along with pertinent details and signal strength information. It also offers an alternative method to connect Maestro to an existing network. Simply choose the "Connect to an Existing Network" mode, then click "Join" next to the desired network.

NOTE: Be sure to close the MaestroDMX app and re-open it in a new browser window.





Network

The Network page allows users to manage both wireless and hardwired network settings and offers the flexibility to customize the Maestro's hostname.

Note: Please be aware that modifying Network and Hostname settings may require a few minutes, during which you may experience a temporary disconnection from the web app.

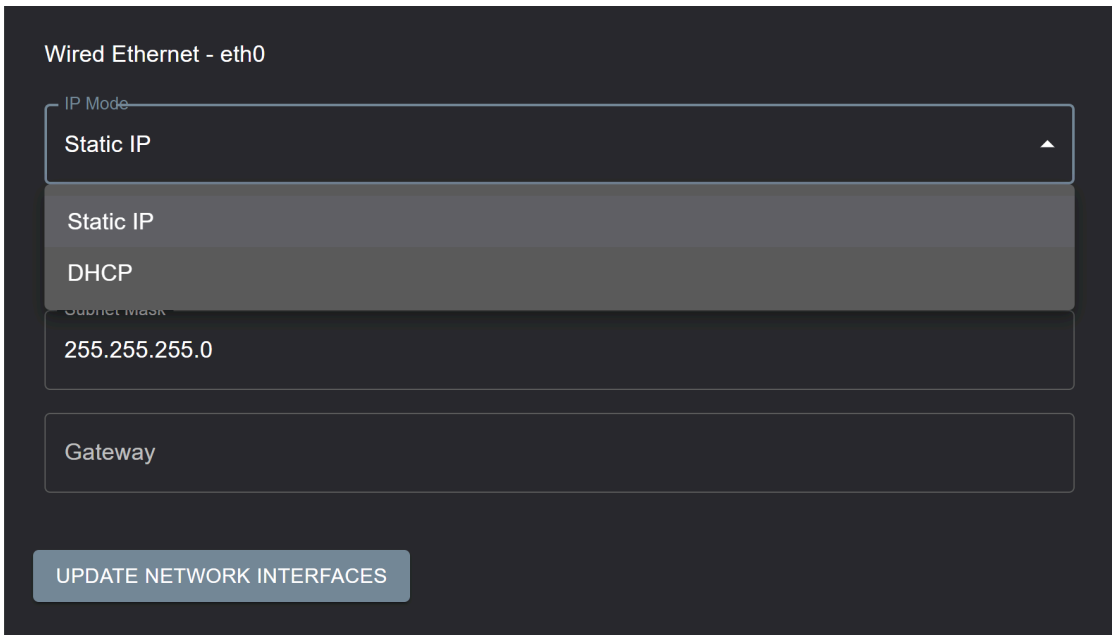
Network Interfaces

The network interface displays settings for both Wired Ethernet and Wi-Fi connections. Please note that the wireless network interface will only appear if you are in the "Connect to an Existing Wi-Fi Network" mode on the Wi-Fi page.

Warning: Please note that unexpected behavior may occur if both WiFi and Ethernet are configured with the same subnet ranges . For example both WiFi and Ethernet cannot both have a 10.0.0.XXX IP address. If your wifi network uses 10.0.0.x range, select something different for your ethernet range.

Wired Ethernet

The Maestro offers two IP modes for Ethernet connections: Static IP and DHCP.



DHCP Mode:

1. Connect an Ethernet cable from the Maestro to a router.
2. Switch the IP Mode to DHCP.
3. Click "Update Network Interfaces."

In DHCP mode, the IP address, subnet mask, and gateway will be automatically assigned. You can access the Maestro web app by entering the generated IP address into your browser. Ensure your device is either wirelessly connected or hardwired to the same network the Maestro is connected to.

Static IP Mode:

1. Switch to Static IP mode.
2. Enter an available IP address.

3. Click "Update Network Interfaces."

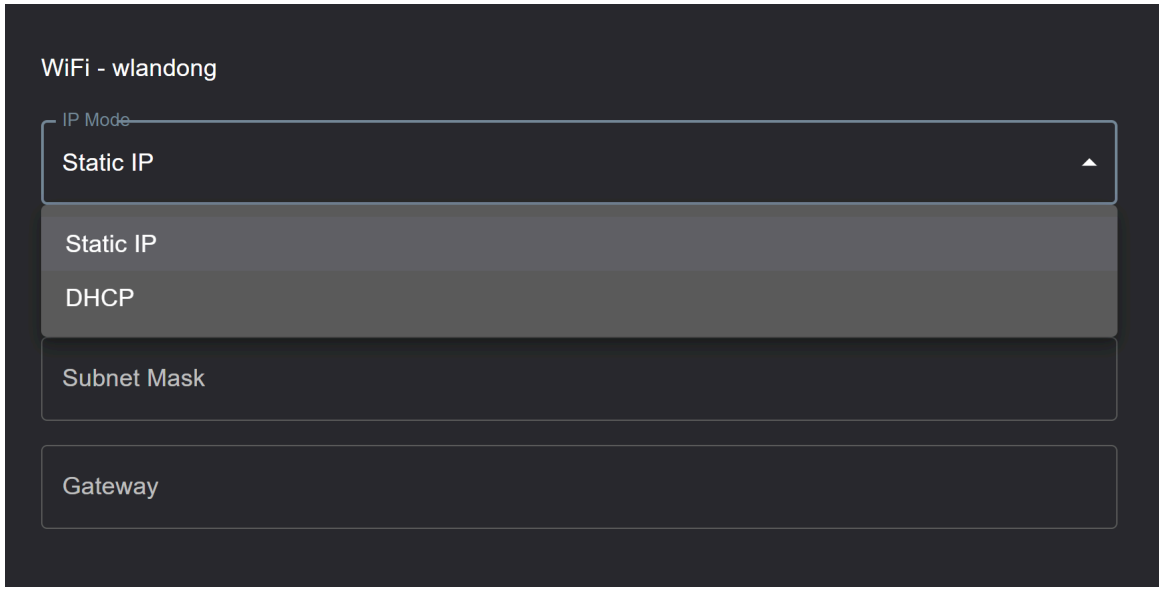
In Static IP mode, users can manually assign an IP address to the Maestro. By default, the Maestro is set to 10.0.0.200. Users can change the IP address to any available 10.0.0.XXX IP, where XXX can be any value up to 255. Note: Some IP addresses may already be reserved for other devices.

When in Static IP mode, connect to the Maestro by attaching an Ethernet cable from the Maestro to a personal device. Ensure you have properly configured the ethernet settings on your device. Access the web app by typing your chosen IP address into the browser.

WiFi

For wireless connections, MaestroDMX offers two IP modes: Static IP and DHCP. Before configuring, ensure you switch to "Connect to an Existing Network" mode in the Wi-Fi settings page.

NOTE: The WiFi interface will only show up if MaestroDMX is connected to a local network



DHCP Mode:

1. In DHCP mode, the Maestro is automatically assigned an IP address, subnet mask, and gateway.
2. Devices on the same network as the Maestro can connect to the web app by entering the assigned IP address into the browser.

Static IP Mode:

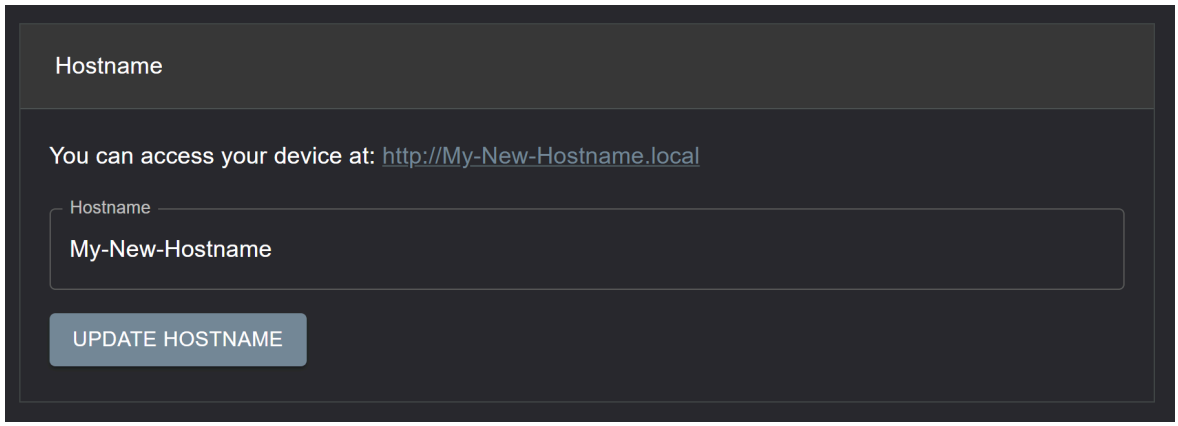
1. Switch to Static IP mode.
2. Enter a static IP address within a valid range of your network, ensuring it doesn't conflict with other devices.
3. Enter a subnet mask associated with your network.
4. Provide the gateway IP of your router.
5. Devices on the same network as the Maestro can connect to the web app by typing the manually set IP address into the browser.

Note: In addition to configured IP addresses, the web app can always be accessed by typing http://yourHostname.local into the browser.

Hostname

The hostname serves as Maestro's name and is the identifier in the URL used to access the web app. To update the hostname:

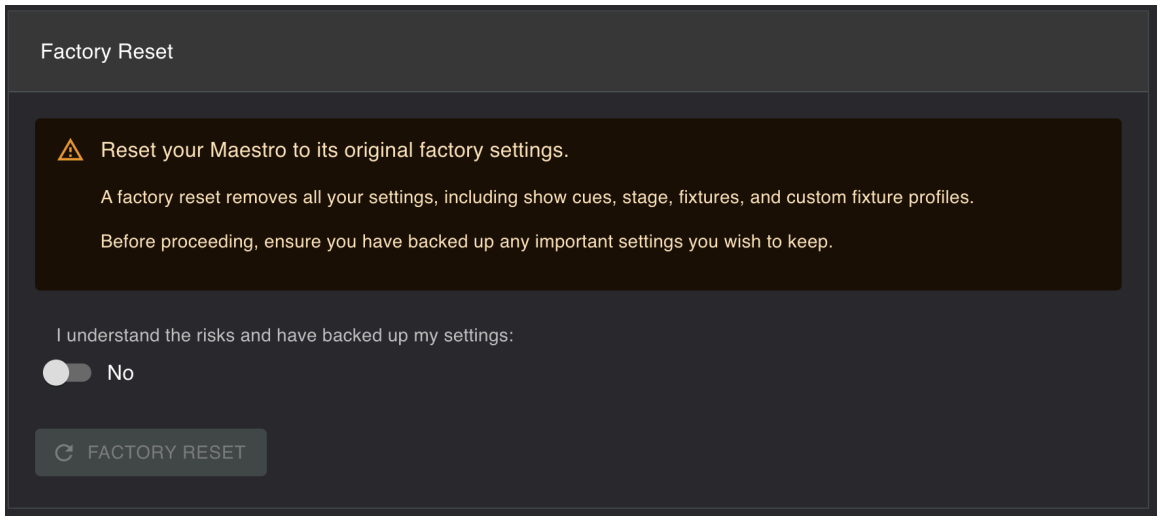
1. Enter a new hostname.
2. Click 'Update Hostname' to apply the changes.



System Information/Factory Reset

The System Information section allows users to review essential details about their MaestroDMX system. Additionally, if necessary, you can initiate a Factory Reset from this section.

IMPORTANT: Factory Reset will erase any Stages, or User Fixture Profiles, or Show Cues that you have created. Be sure to download them if you need to.



Fixture Profiles and DMX Control

Fixture Profiles Overview

The Fixture Profiles page on the MaestroDMX Web-App stores a built-in fixture library as well as provides an interface for users to create or upload their fixture profiles.

Clicking on the Fixture Profile search bar will display a list of current fixtures and allow users to search for their desired fixture, including fixtures that you have created. You can search by manufacturer or fixture name.

If the fixture profiles you need are not in the built-in library please visit the MaestroDMX Fixture Profile Webpage.

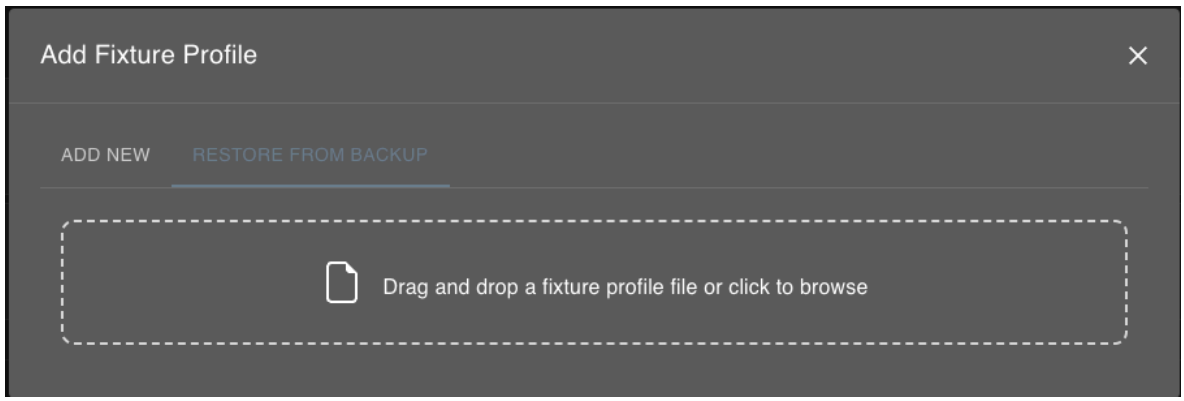
Help! My Fixture Profile Is Not In The Library

If the fixture profiles you need are not in the built-in library please visit the MaestroDMX Fixture Profile Webpage. Here you can search and download the desired fixtures. The fixture profiles will download in a JSON format which can then be uploaded to MaestroDMX's fixture profile library.

If your fixture is unavailable on the webpage, you can create the profile yourself or contact support for help.

Uploading Fixture Profiles To The Library

If you have a JSON formatted fixture profile file you can upload it or restore it to the fixture profile library. In the top right corner of the Fixture Profile page is a 3-dot menu "ADD" button. Click here and navigate to "+ Add Profile". In the pop-up dialog select "Restore From Backup" to upload the JSON file.



NOTE: For each fixture profile you will need to repeat this process.

Any fixture profiles that have been added will now be available in your fixture profile library and can be added to the stage.

Understanding Attributes In MaestroDMX

As you may know, DMX fixture channels have many attribute types. For example, pan, tilt, color wheel, gobo, etc. It is important to understand that MaestroDMX classifies attribute types into either Dynamic or Static. Dynamic attributes are controlled in an autonomous fashion by MaestroDMX's intelligent algorithms while Static attributes are set to an editable single value for the lifetime of the Stage.

NOTE: As MaestroDMX develops, the following list will evolve and more attributes will come under the control of MaestroDMX.

List of Dynamic Attributes
The following attributes are autonomously controlled by MaestroDMX:

LED Color Control

- RED, GREEN, BLUE, COOL WHITE*, WARM WHITE*, AMBER, UV
- CYAN, MAGENTA, YELLOW, KEY
- HUE, SATURATION, VALUE

Other

- DIMMER, PAN, TILT, ZOOM, ACTIVITY, COLOR WHEEL**, GOBO**, PRISM**

*COOL WHITE and WARM WHITE are currently the same attribute

**All dynamic attributes have FINE channels except for these.

Description Of Dynamic Attributes

The LED color control attributes such as RED, GREEN, BLUE etc, map the internal colorspace of MaestroDMX to the given LED-based light fixture. Most LED fixtures will operate in RGB(WUVA) while some will operate in CMYK or HSV.

DMX channels set to the ACTIVITY attribute will simply scale the Activity Level to a range of 0-255 unless otherwise scaled. Activity is a great way to express the 'excitement' of the music into specific DMX channels.

Any DMX channels connected to the ZOOM attribute will oscillate sinusoidally between 0-255 at a rate proportional to the excitement level of the music. You can also scale or invert the 0-255 range if desired.

Static Attributes

The following attributes are set to a single static value for a given stage:

- MASTER DIMMER, STATIC VALUE, LASER, STROBE, ROTATION, SPEED, ZOOM, SHUTTER

Static attribute values can be set either at the Fixture Profile level or on the Stage on a per-fixture basis (via Patcher or Controls).

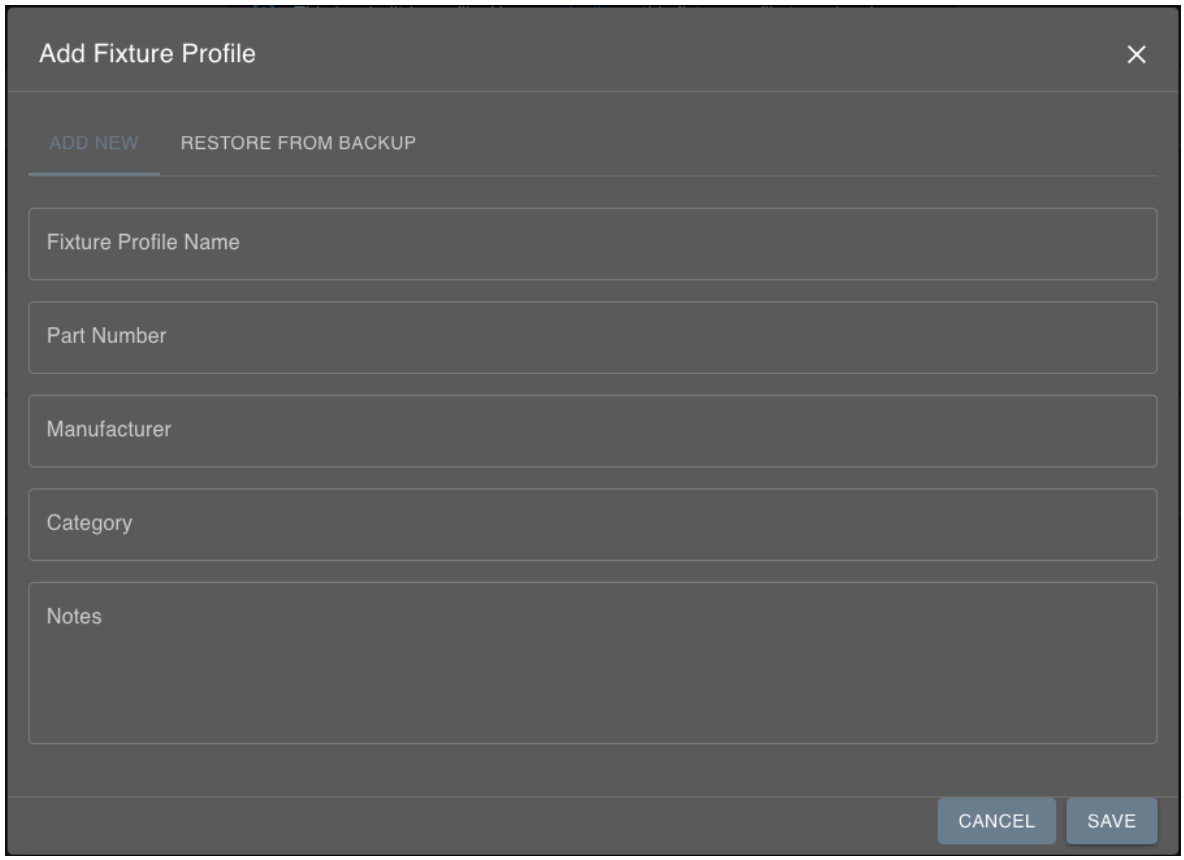
Effect Attributes

- FOG ON/OFF, FOG VOLUME, FOG SPEED, BLINDER, EFFECT

The 'Blinder' and 'Effects' attributes can be controlled in real-time via the corresponding Trigger Button parameters on the Show page.

Creating Fixture Profiles

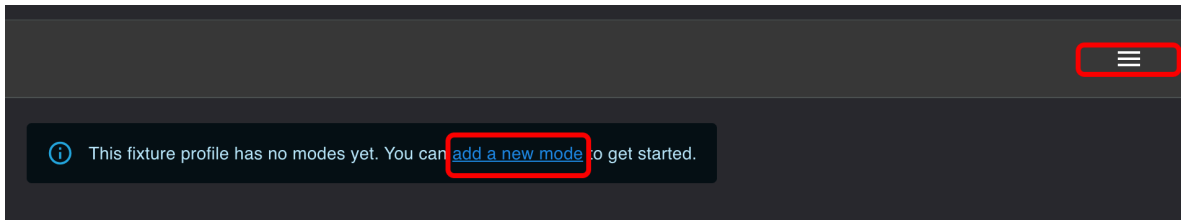
In the top right corner of the Fixture Profile page is a 3-dot menu button. Click here and navigate to "+ Add Profile".



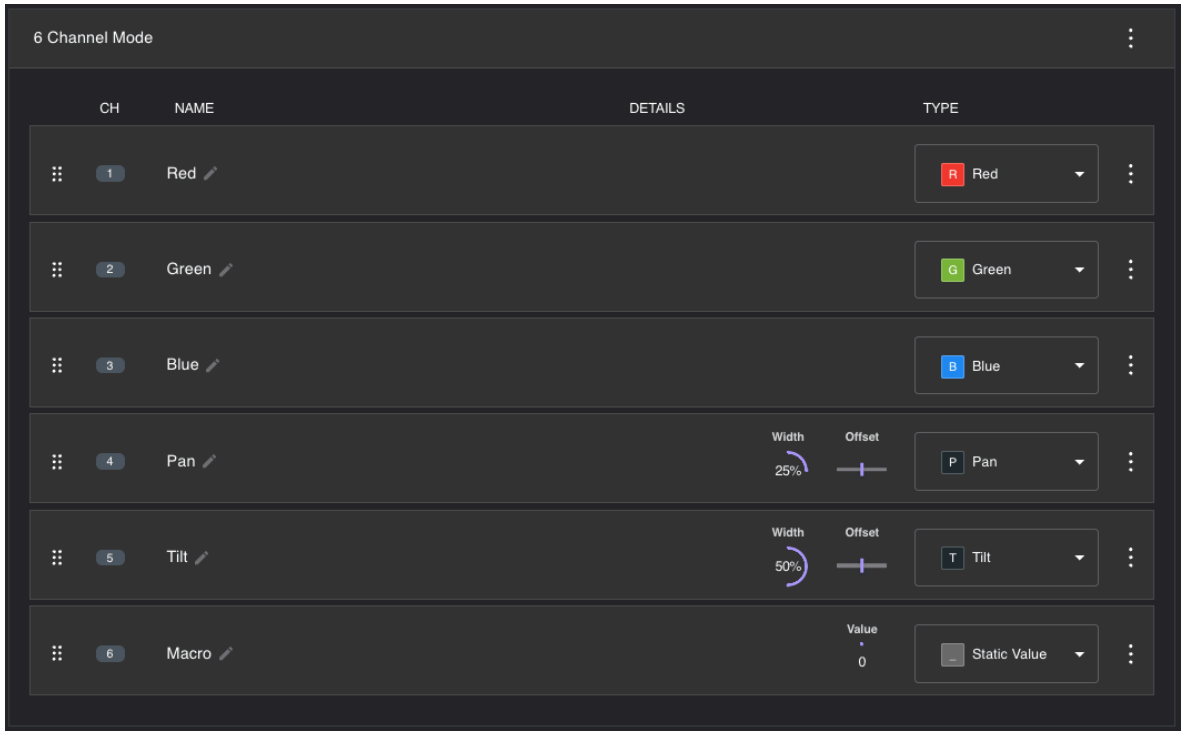
1. Add your fixture profile, enter relevant information, and save.

Note: The Restore from Backup tab allows users to upload previously created fixture profiles. This feature is useful if users want to share profiles.

2. Click the menu button or 'add a new mode' text to add a new mode and enter the number of channels then save.



3. Each channel in your newly added mode can be re-ordered, assigned a name and attribute type. The Details section shows specific channel settings, which can be edited by clicking the 3-dot menu. Refer to your fixture's DMX specification for necessary information.



4. Click the channels 3-dot menu button to, then edit the channel. Depending on the type of Attribute assigned to the channel different Attribute Properties will be displayed.

For **Static** channel types (STATIC, MASTER DIMMER, SHUTTER etc) you can define the static:

- **Value**

For all **Dynamic** types: PAN, TILT, ZOOM, ACTIVITY, LED Color Control etc you can define the following Attribute Properties:

- **Smoothing:** This will add smoothing to the channel, which will, for example, make the lights change color more slowly and fade from one color to the next if it is a color channel.
- **Output Range**: Limits the range in which this channel can operate.
- **Invert Value:** This will invert the channel data eg 1-255 will be 255-1
    - Note: Maestro will add mirroring and symmetry automatically, you likely will not need to invert at the attribute level (such as pan/tilts on movers).

Uniquely to PAN and TILT types you can define the following Attribute Properties:

- **Offset:** Only available for PAN and TILT channel types, the offset defines the pan or tilt center point
- **Width:** Only available for PAN and TILT channel types, the width defines the pan or tilt range

For Effect button control types:

- **ON:** Only available for FOG and EFFECT channel types. When triggered via the SHOW page's Trigger Button, the ON value will be set
- **OFF:** Only available for FOG and EFFECT channel types. When triggered via the SHOW page's Trigger Button, the OFF value will be set

5. Click “Save Channel”

Repeat steps 3-5 for each channel and repeat steps 2-5 to create more modes.

Using MASTER DIMMER vs DIMMER Types

When looking at the built-in fixture profile you will see that both MASTER DIMMER and DIMMER attribute types are used. The MASTER DIMMER type is used and set to ‘255’ when a fixture mode has a dimmer channel along with LED colour channels such as RGBW etc. In this case, MaestroDMX takes care of the dimming via the levels of the colour channels; the MASTER DIMMER just needs to be set to an intensity level.

However, if you are using a fixture profile with a dimmer channel AND it uses a colour wheel and does NOT have any LED colour control (RGBW etc), then the DIMMER attribute type is used. The DIMMER type is intelligently controlled by MaestroDMX and will pulse the dimmer on the fixture in sync with the music.

Using GOBO and PRISM Types

MaestroDMX allows autonomous control of GOBO and PRISM attribute types. Before a GOBO or PRISM channel can be controlled by MaestroDMX, the GOBO and/or PRISM channels of your fixture profile must have steps defined. The specific ranges can be found in the fixture profile’s DMX specification available from the manufacturer.

A step has the following properties:

- The name of the specific gobo or prism effect at a specific DMX channel value.
- A range of DMX values that correlates to the effect.
- Enabled toggle status.

Use ‘ADD STEP’ to add a new step and click the garbage icon to remove the step. **Be sure to SAVE once you have made changes.** The image below shows an example of the GOBO channel, however, the setting up of a PRISM channel is the same.

NOTE: Use ‘ENABLE/DISABLE ALL’ to toggle the gobo steps as needed.

Once your GOBO and/or PRISM channels are configured, MaestroDMX will autonomously trigger the steps based on changes in the music.

Using COLOR WHEEL Types

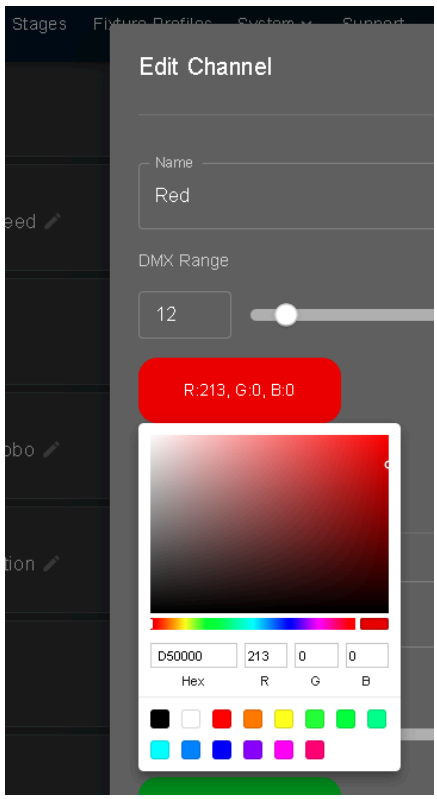
As of software v1.1 MaestroDMX allows autonomous synchronization of a fixture's COLOUR WHEEL attribute to the internal RGB colour space. Before a COLOR WHEEL channel can be

controlled by MaestroDMX, the COLOR WHEEL channel of your fixture profile must have color wheel steps defined. To define a colour, you must set the DMX range and choose a close representation of the colour from the colour picker. The specific colours for each step can be found in the fixture profile's DMX specification available from the manufacturer.

NOTE: As of software V1.2 the COLOR WHEEL attribute is being used for any channels that have color's specified such as: Color Wheels, Derbys, and Lasers.

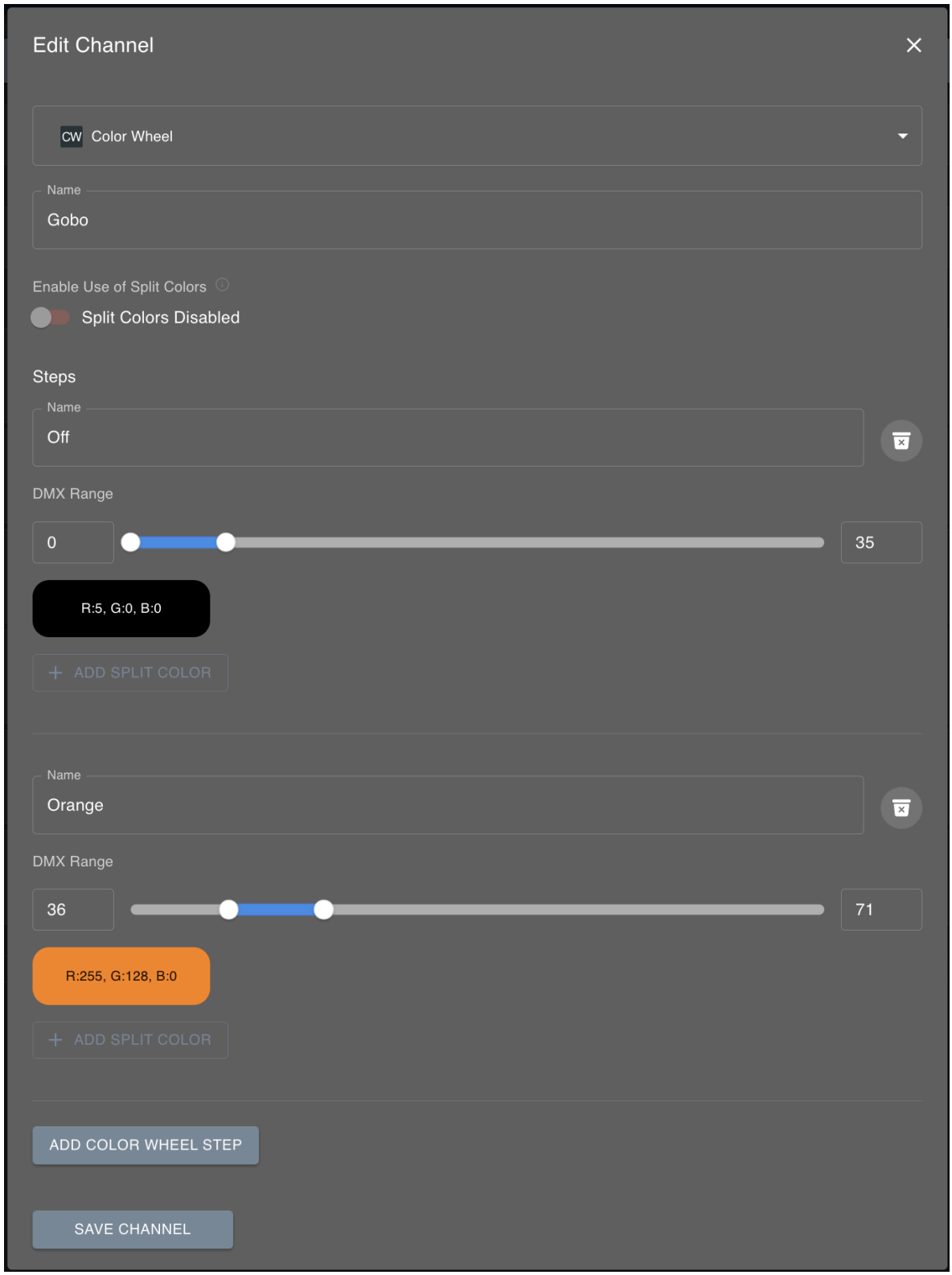
A step has the following properties:

- The name of the specific colour at a specific DMX channel range.
- A range of DMX values that correlates to the colour.
- A colour picker along with easily selectable common colours, and HEX and RGB input fields
- Ability to add Split Colours for channel ranges with multiple colours defined



Use 'ADD STEP' to add a new step and click the garbage icon to remove the step. **Be sure to SAVE once you have made changes.**

Once your colour steps are defined, MaestroDMX will autonomously synchronize the colours on your COLOR WHEEL channel with the internal colour palettes.



Dealing With Undefined Colours

Some fixture manufacturers do not define the colour at each step, ie the manual may say ‘colour 1, colour 2, colour 3….etc’. In this case, you will have to visually discover the colours by temporarily setting the colour wheel channel on your fixture to a STATIC type and moving through it via the slider on the ‘Controls’ page. This way you can visually verify and take note of the colours at each step. You can constrain the range on each step to a single value rather than a range of values.

Using the ACTIVITY Attribute Type

The musical Activity Level, as viewed on the Audio page, is directly connected to the ACTIVITY attribute type. This gives you the ability to connect a measure of how exciting the music is to any DMX channel. For example you could set ACTIVITY to:

- The rotation speed of a fixture(s) to have it speed up and slow down with the music.
- The dimmer levels of a group of fixtures to have them get brighter or darker with the music.
- The intensity or movement of a laser effect.

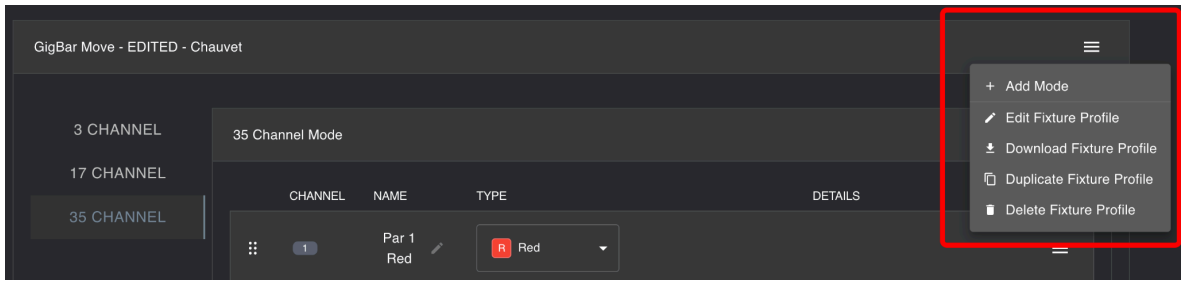
Modifying Existing Fixture Profiles

Both built-in and user-created fixture profiles can be modified. Modifying a built-in fixture can be useful for creating templates that are more specific to your setup.

To modify a built-in fixture, search for the desired fixture and click “duplicate fixture profile,” then follow the below steps.

Adding Modes

Locate and click the top-level menu button beside the fixture name and manufacturer. Click add mode and follow the steps laid out under ‘Creating Fixture Profiles’.



Changing a fixture's name and manufacturer

In the same menu click “Edit Fixture Profile”. In the pop-up window, you can change your fixture profile’s name and manufacturer.

Downloading a Fixture Profile

The top-level menu button beside the fixture name and manufacturer also provides the functionality to download a fixture. Downloading a fixture can be useful if you want to share a fixture you created on your device or have a backup in case of a Factory Reset or a system malfunction.

Duplicate Fixture Profile

The same menu button also allows users to duplicate their fixtures. This feature is used to duplicate and modify fixtures other than the fixtures found in the built-in library.

Deleting Fixture Profiles

The final section of the menu button allows users to delete their fixtures. Once a fixture is deleted it cannot be restored.

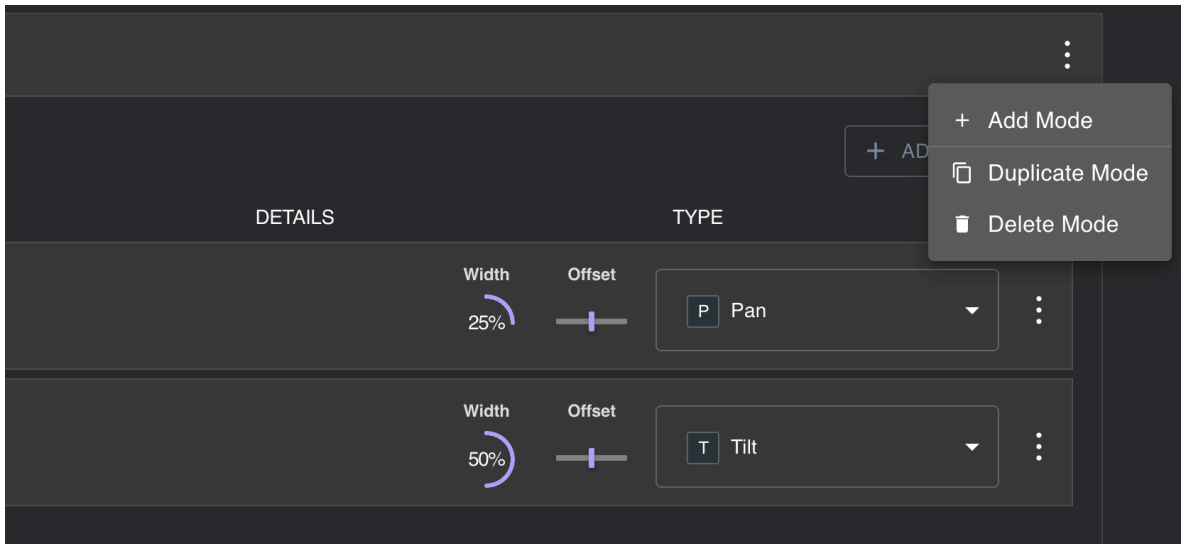
Adding Channels to Modes and Deleting Modes

Click on a mode. In the menu button located beside the “# Channel Mode,” users can:

- Add mode

- Duplicate mode
- Delete Mode

Once a mode is deleted it cannot be restored.



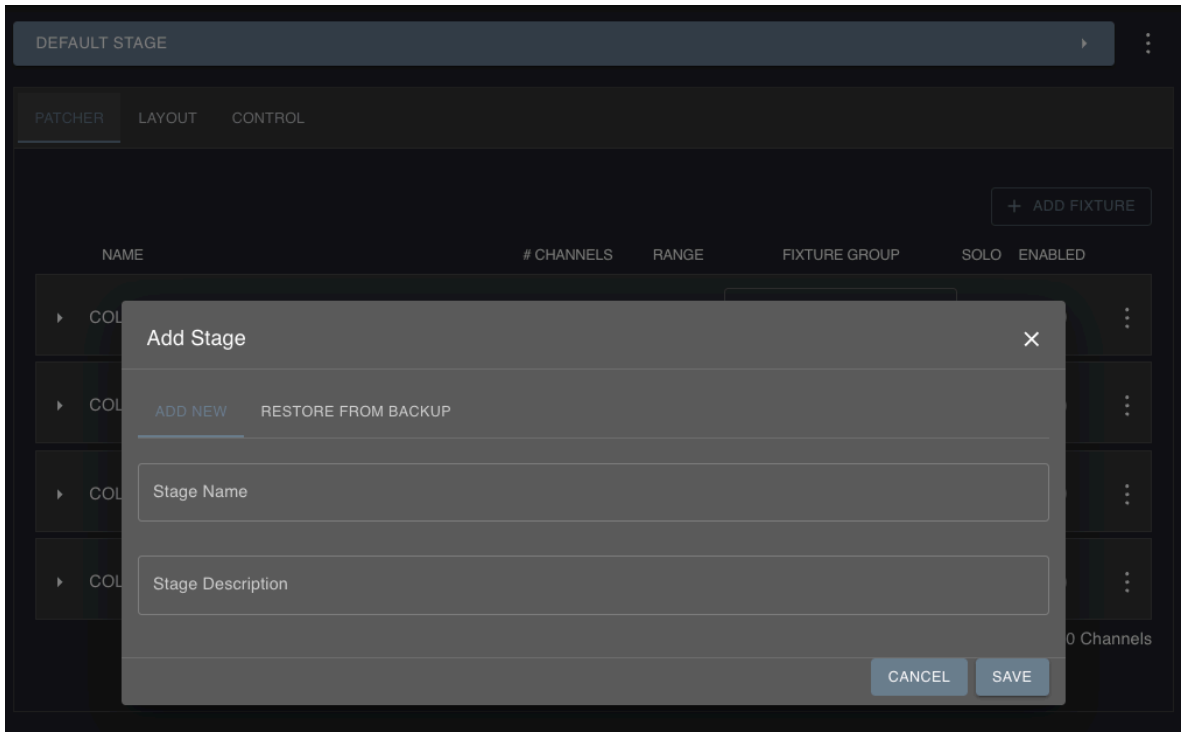
Changing channel Name and Type, Duplicating Channels, and Deleting Channels

In the menu button located on each channel, users have the ability to change channel type, name, and static value settings by clicking “edit channel”. Similarly, channels can be duplicated and deleted with the same menu button. Once a channel is deleted it cannot be restored.

Stages

Creating a Stage

Click the 3-dot menu in the top right corner and select '+Add Stage'. A dialogue will pop up where you can name the stage or upload a stage using the "Restore from Backup" tab.



Using this 3-got menu you can also:

- 'Edit Stage' - Change the name and description of the stage
- Duplicate, Delete, and Download the stage

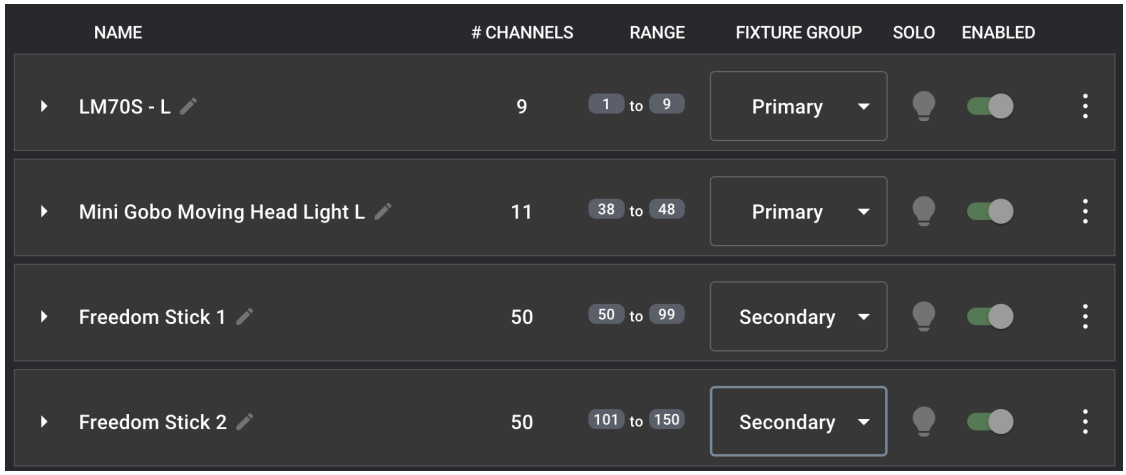
NOTE: It is recommended to download your stages and save them in a safe place.

Patcher: Adding Fixtures to a Stage

Setting up the Patcher correctly is critical to the success of your light show and is typically the first step in getting your stage prepared.

The Patcher allows you to do the following:

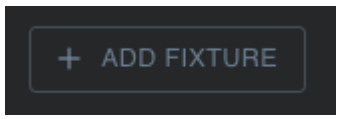
- Add fixture modes from the fixture profile library to the stage
- Specify the address of each fixture
- View a list of fixtures on the stage and the address ranges in the DMX universe that each fixture occupies
- Drill down into any channels of your fixture to make edits or set static values
- Duplicate/delete fixtures from your stage
- Enable/disable and solo any fixture(s)
- Set the fixture group of each fixture



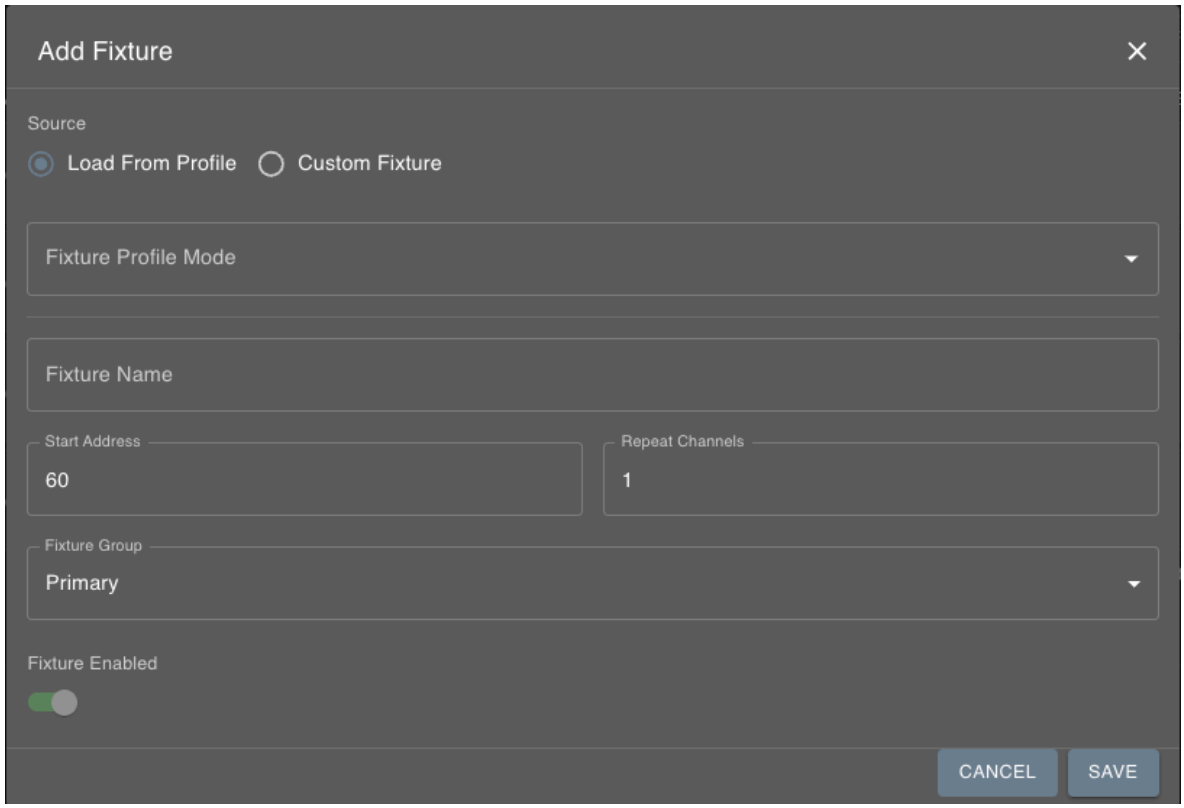
Adding Fixtures To A Stage

NOTE: Before adding fixtures go over to 'Live Control' on the 'Show' page and select the Maestro - Still pattern with a solid color palette such as Orange. This will ensure your fixtures light up when they get added to the stage.

Click '+ ADD FIXTURE' to add a fixture to the stage.



1. Choose "Load from Profile" (a fixture from the profile library) or "Custom Stage Fixture" (on-the-spot creation of a fixture)
2. Assign your fixture to a fixture group.
3. Set the starting address of the fixture
4. Specify any repeats
5. Click 'Save'

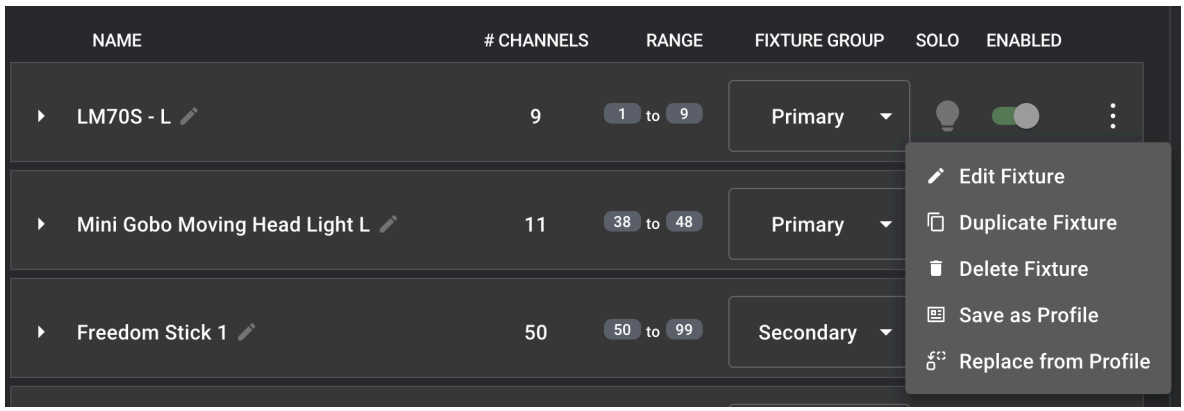


NOTE: “Repeat Fixture Channels” allows you to add multiples of the same fixture to the patcher. This can be useful if for example, you have 10 of the same mover fixture and you want them all to have the same offset and width or static values on a particular channel. Keep in mind that any fixtures in the repeated set will not be able to be placed individually in the layout; they will all be treated as a single fixture.

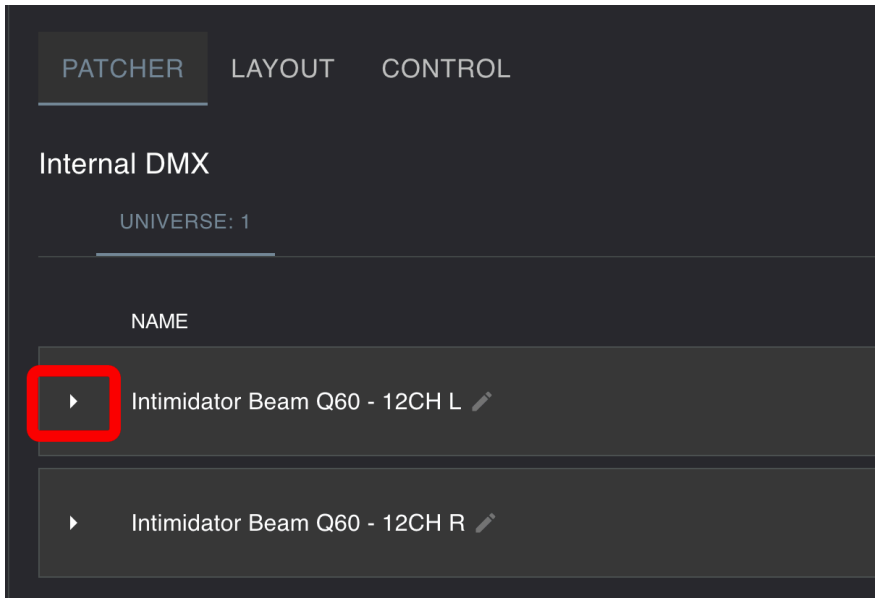
Editing Individual Fixtures In The Patcher

Clicking on the 3-dot menu on any individual fixture provides various options:

- Edit Fixture: name, address, fixture group, enable/disable
- Duplicate/Delete fixture
- Save as Profile & Replace from Profile

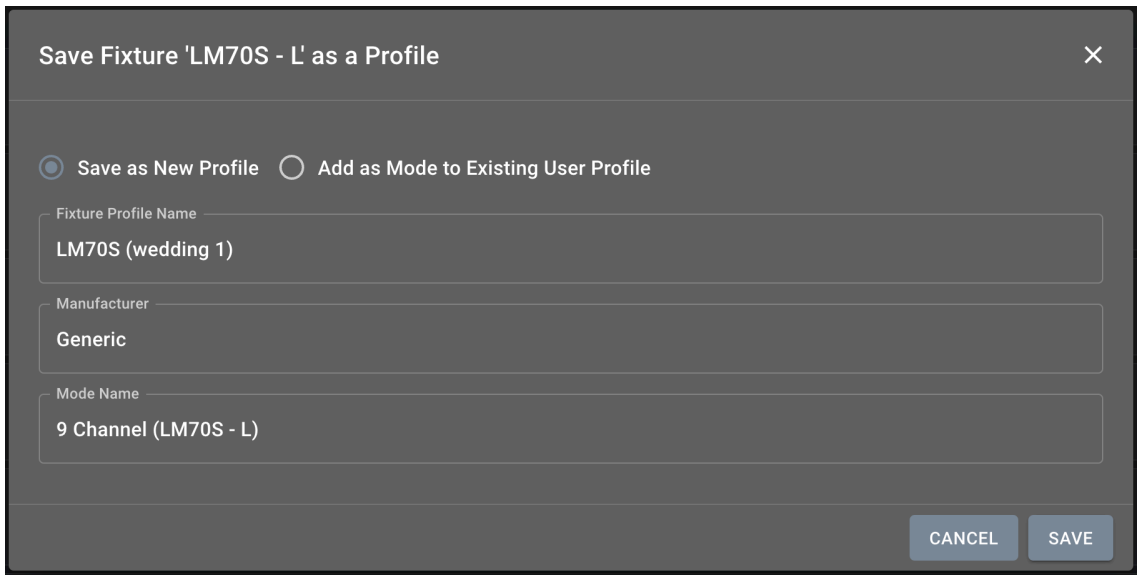


Clicking on the arrow located on the fixture's left side allows users to edit the fixture in the same way as the fixture profile page, allowing the specific fixture to deviate from the fixture profile if so desired.

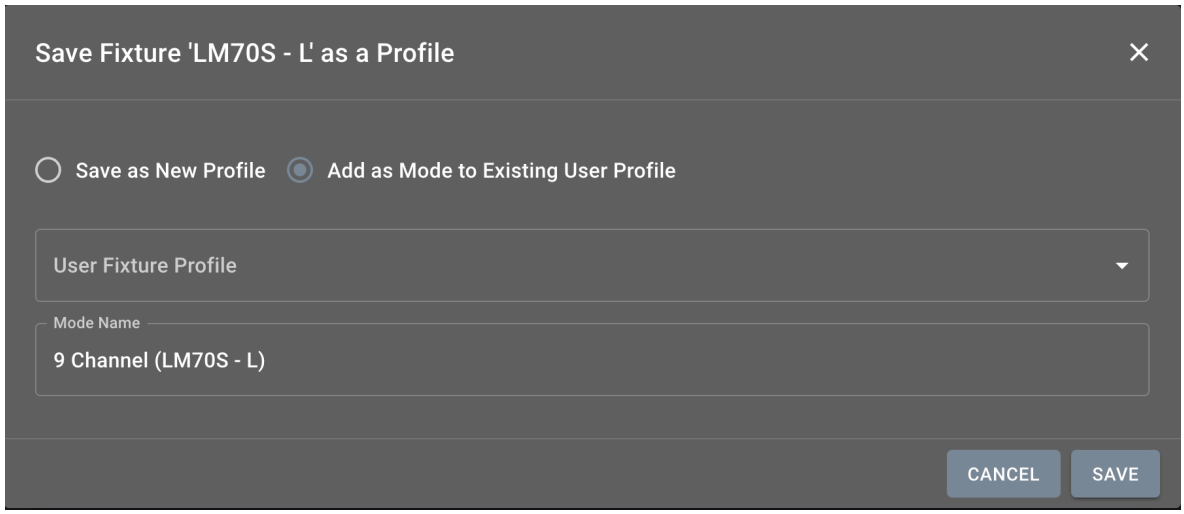


Save as Profile & Replace from Profile

'Save as Profile' allows you to make any edits to the fixture within the patcher and save those in a profile in your fixture profile library.



You have the option to save the specific fixture in the patcher either to a new profile or add it as a new channel mode to an existing profile.



Layout: Fixture Groups and Mapping

The Layout page allows you to do the following:

- Position the fixtures in each fixture group on the stage (either linearly or in a 2D grid)
- View the pixel and mover counts in each fixture group
- Enable/disable fixture groups
- Enable/disable and Solo individual fixtures
- Edit/delete fixtures from the stage (any changes are updated in the Patcher and Controls page)

Fixture Groups

Fixture Groups are super cool, giving you the ability to set different lighting effects, and mappings to different sets of fixtures. Harnessing the power of Fixture Groups correctly can really step up your light show.

Use Cases For Fixture Groups

Here are some ideas on how to use Fixture Groups:

- Setup a static 'wash' Cue that is only applied to a specific set of fixtures on your stage. Then trigger that Cue during your show on demand.
- Apply different colour palettes to different sets of fixtures to create 'blocky' type effects
- Use 'Allow Blackout' to have groups of fixtures turn off in sync with the music to create more dynamic effects

MaestroDMX provides plenty of flexibility with 4 Fixture Groups.

Renaming Fixture Groups

You can rename your fixture groups by clicking the pencil icon on the right side of the 'Layout' tab on the 'Stage' page. Select the group you to rename, click the pencil icon and fill out the name in the pop-up dialog.

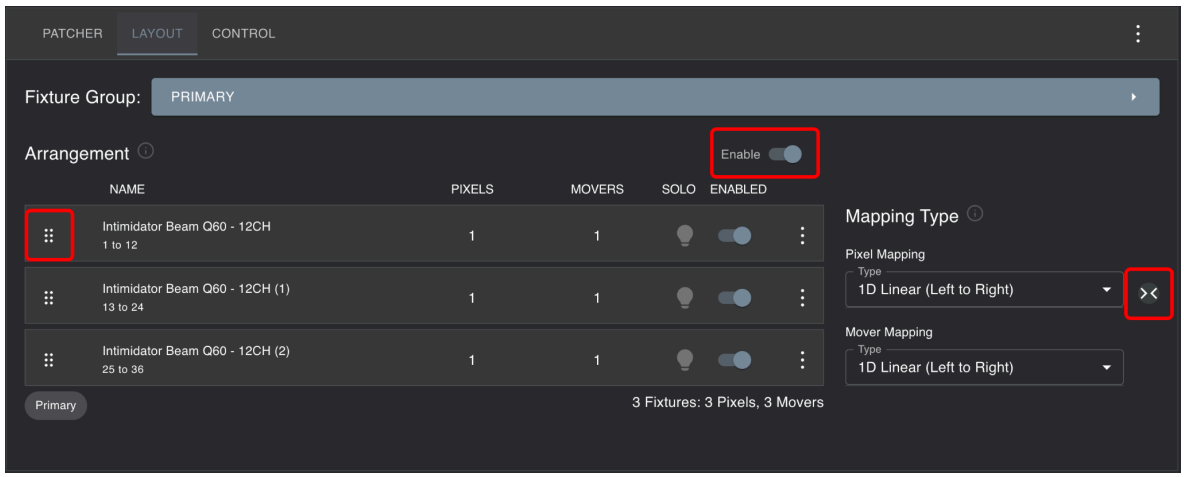
Pixel and Mover Mapping

Each Fixture Group provides the ability to map the fixtures within the group to the real world. Doing this well will greatly enhance your light show since MaestroDMX's Lighting Patterns use 1D and 2D mapped effects. Pixel-based fixtures (i.e., fixtures using a DIMMER type, or color type such as RGBWUV, etc) will be mapped as pixels separate from movers (i.e., using Pan/Tilt types).

NOTE: Once you have mapped your stage (see below) you can use the Mapping Test Pattern, accessible via the Show page to check if the mapping is correct.

Mapping in 1D

By default, fixtures are placed in a 1-dimensional line. You can change the position by dragging each fixture in the Layout tab.

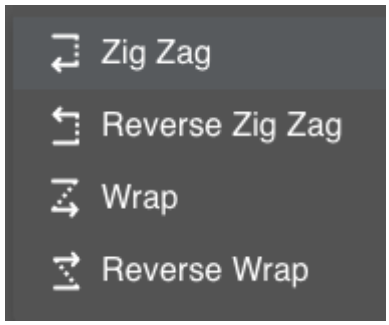


Mapping in 2D

MaestroDMX provides a limited way to map fixtures onto 2D grids. To access the mapping controls expand the opposing arrow on the far right side of the layout page.

NOTE: 2D grid mapping assumes that you have fixtures in a grid with the same number of fixtures (pixels or movers) for each column and row. More precise 2D-pixel mapping support is part of our roadmap and will be supported in a future software release.

There are 4 types of 2D Grid mapping:



Zig Zag

Zig Zag will take the linear order specified in your Layout and ‘snake’ it back and forth to create the grid, starting from the top left and moving down.

Reverse Zig Zag

Reverse Zig Zag will take the linear order specified in your Layout and ‘snake’ it back and forth to create the grid, starting from the bottom left and moving up.

Wrap

Wrap will take the linear order specified in your Layout and add it to the grid sequentially by starting at the beginning of each row, starting from the top left and moving down.

Reverse Wrap

Reverse Wrap will take the linear order specified in your Layout and add it to the grid sequentially by starting at the beginning of each row, starting from the bottom left and moving up.

Pixel Mapping Segment Length

The “Pixel Mapping Segment Length” refers to the number of columns in your grid. Another way to understand this would be to figure out how many fixtures you have in a row along the horizontal from left to right. MaestroDMX will then automatically calculate how many rows you need and create a 2D Grid mapping.

Control: Centering Moving Heads And More

The Control tab provides real-time control over any fixture’s static channels.

As well as other controls, this is where you can dial in your moving head’s center point and range using ‘offset’ and ‘width’. As you change the offset you can see your fixture re-centering in real-time. Any channel values set here will remain for the duration of the stage.

Use the opposing arrows on the far right-hand side to access the Output Range and Smoothing controls for any given channel. Also, use the light bulb icon to solo the current fixture.

Use the lightbulb icon to solo the current fixture, to hone in on each fixture one by one.

Running A Show

Show Overview

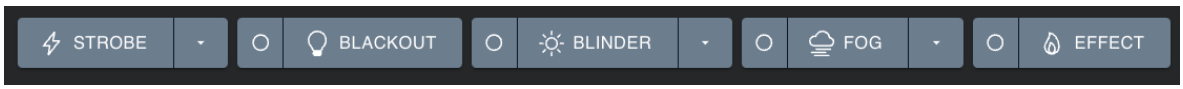
The Show page is the not unlike ‘The Bridge’ in Star Trek. This is where the magic happens. The Show page allows you to perform the following:

- Control the global brightness of the stage
- Trigger buttons to control: BLACKOUT, BLINDER, STROBE, FOG (or Haze), & EFFECT
- Define Patterns, Colour Palettes, FX Palettes*, and Parameters to control the light show for each fixture group
- Perform ‘Live’ or build Cues that can then be sequenced in a Show
- Trigger the Cues in the Show via a MIDI controller (See MIDI Specification).

*coming in a future release.

Trigger Buttons

The trigger buttons enable you to trigger common effects on your dmx fixtures. The following are available:



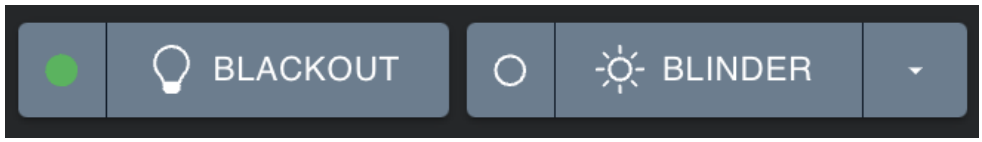
- BLACKOUT: All lights turn off.
- BLINDER: All LED fixtures turn full white. Color wheel-based fixtures will go to a white wheel if specified. Also, Any channel type that is set to BLINDER will get set to the ON level and return to the OFF level when the button is released. Can be used for Binder-based fixtures that you only want to turn on when the button is pressed.
- STROBE: All lights will strobe.
- FOG: Any DMX channel type that is set to FOG ON/OFF will get set to the ON level and return to the OFF level when the button is released.
- EFFECT: Any channel type that is set to EFFECT will get set to the ON level and return to the OFF level when the button is released. Can be used for flame effects etc.

You can set the ON and OFF levels for FOG and EFFECT at the fixture level via the Patcher or Control page, or via the profile on the Fixture Profile page.

Trigger Button Controls

Momentary vs Latched Modes

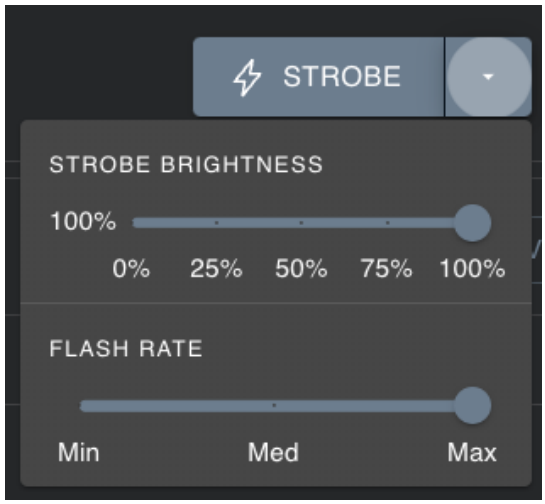
BLACKOUT, BLINDER, FOG, and EFFECT trigger buttons can be set to **momentary** or **latched** mode by clicking the circle next to the button. Green indicates latched while clear indicates momentary. In momentary mode, you have to keep the button pressed to realize the effect. In latched mode, once the button is clicked, the effect will run until the button is pressed again to turn the effect off.



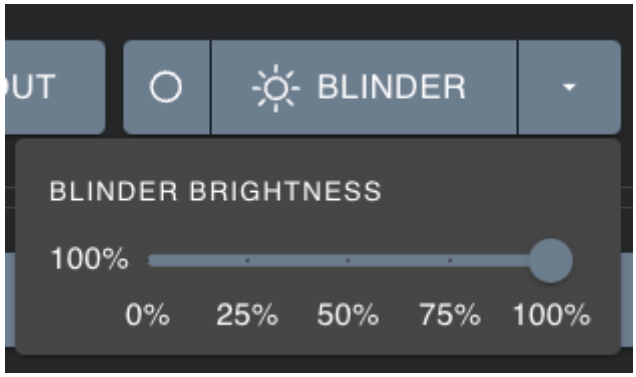
NOTE: MIDI messages for the Trigger Buttons (Blackout, Blinder, Stobe etc) only function as momentary. Meaning that they will not respect the latching mode that is selected on the MaestroDMX Web App. Please use the latching/momentary controls of you specific MIDI controller to achieve this function.

Specific Trigger Controls

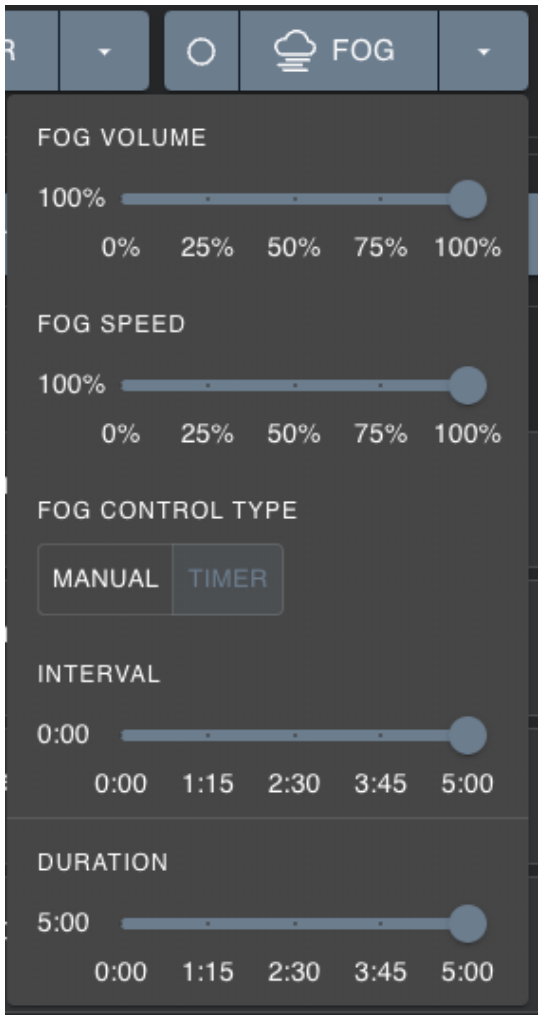
Click the arrow drop down next to the STROBE trigger button to access the 'Strobe Brightness' and 'Flash Rate'.



Click the arrow drop down next to the BLINDER trigger button to access 'Blinder Brightness'



Click the arrow drop down next to the FOG trigger button to access the FOG settings.



FOG VOLUME controls the level, from 0-255, of the Fog Volume attribute type. Whichever DMX channels are set to use the Fog Volume attribute type will react to the FOG VOLUME slider. Make sure to have your fog or haze machine's DMX channel that pertains to volume connected to this attribute.

FOG SPEED controls the level, from 0-255, of the Fog Speed attribute type. Whichever DMX channels are set to use the Fog Speed attribute type will react to the FOG SPEED slider. Make sure to have your fog or haze machine's DMX channel that pertains to speed connected to this attribute.

NOTE: Not all haze fog machines have a volume control. In this case, FOG VOLUME will not have any function.

FOG CONTROL TYPE specifies how the FOG effect will function while the FOG button is engaged. In **MANUAL** mode, while the FOG button is pressed any DMX channels that have the FOG ON/OFF attribute specified will be turned to the ON value.

In **TIMER** mode, while the FOG button is pressed any DMX channels that have the FOG ON/OFF attribute specified will be cycled on and off based on the **INTERVAL** and **DURATION** sliders. The DURATION specifies how long the FOG burst will be turned ON, while the INTERVAL specifies how long the FOG will be turned OFF for in between the FOG ON bursts. Calibrate these settings to your match desired needs.

Live Control

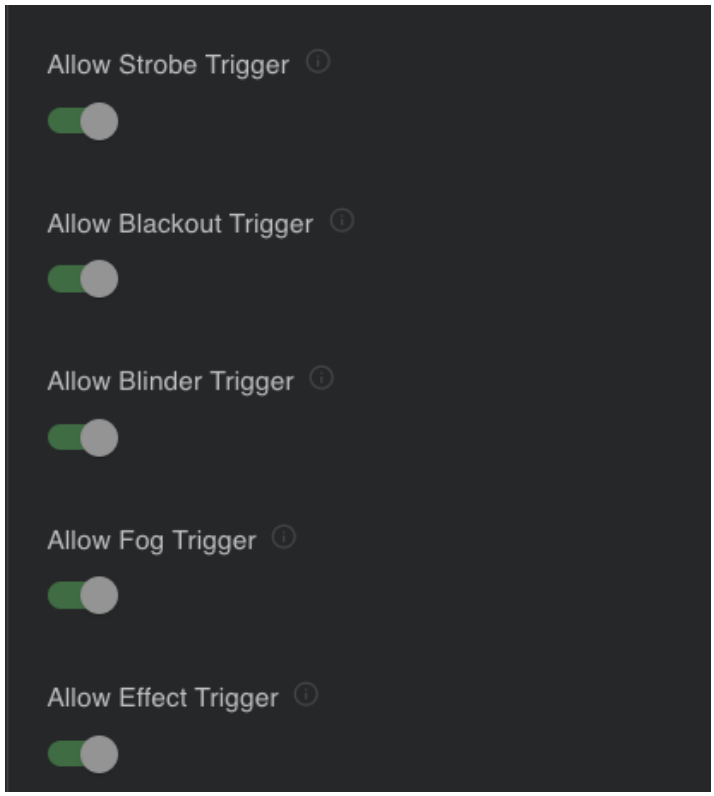
Live Control enables you to define Patterns, Colour Palettes, FX Palettes (*coming soon), Parameters, and Trigger Toggles to control the light show in real-time. See the Patterns, Parameters, and Color Palettes section for more details.

NOTE: Each fixture group has its own set of Patterns, Colour Palettes, FX Palettes, Parameters, and Trigger Toggles that can be set.

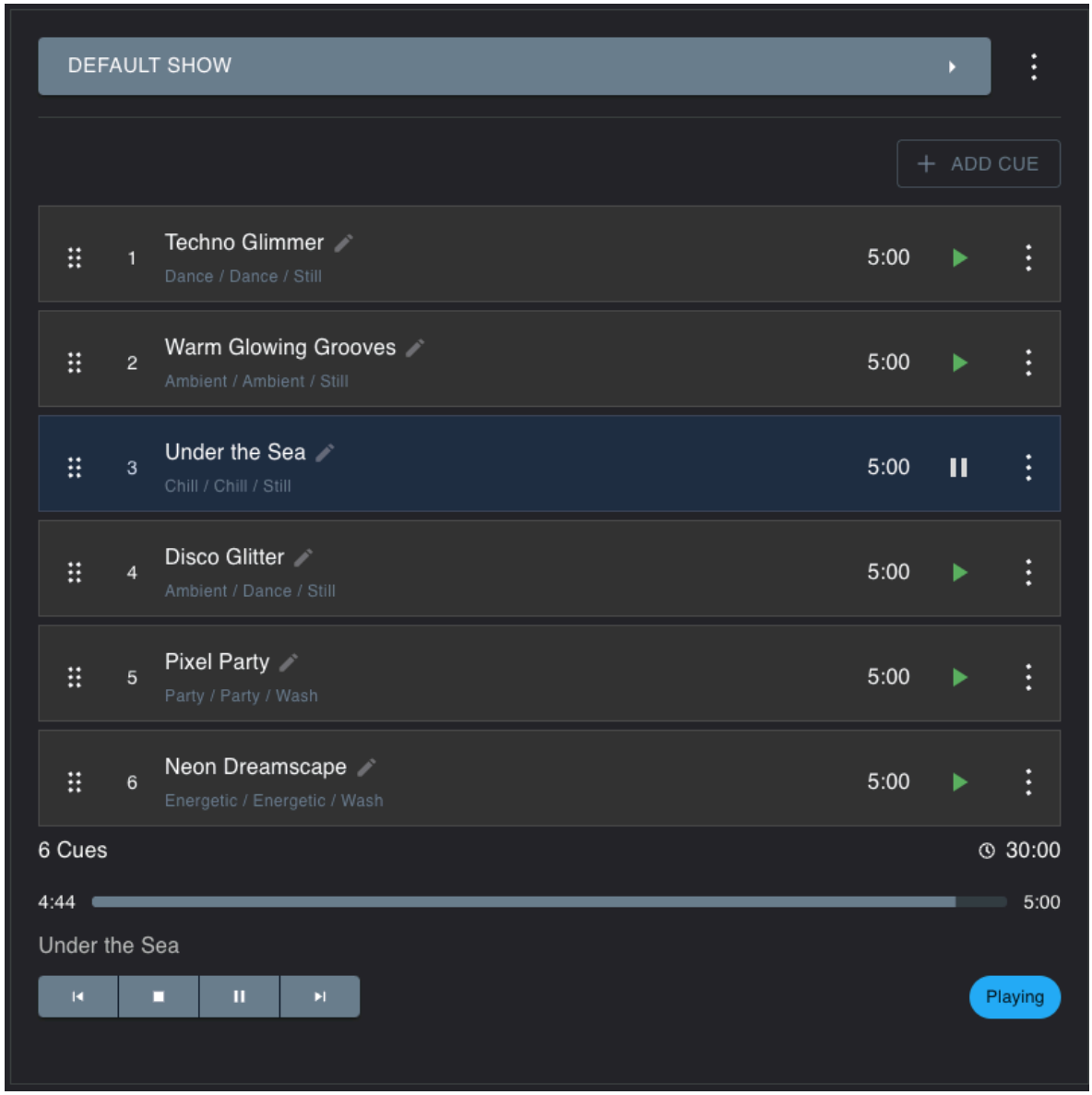
Enabling/Disabling Trigger Buttons

MaestroDMX gives you the ability to enable or disable the Trigger Button effects for each Fixture Group. Example use cases:

- If you only want one fixture group to flash when the STROBE trigger button is engaged for a specific cue and then have all fixture groups strobe on another cue.
- If you have a unique effect connected to the EFFECT button and you only want it to trigger on a specific cue.
- You only want your front washes on a specific fixture group to 'blind' the crowd.



Show Control



This section functions like a “playlist” of cues. As well as Pattern, Colour Palette, Parameters etc, each Cue is given a Name, Duration, and a position in the Show sequence.

NOTE: Use a 3rd party MIDI controller to trigger the cues for your show. See the MIDI section for more information.

Show Control has the following features:

- Add, edit, duplicate, delete, and download/upload shows
- View the name of Cues
- View patterns that are embedded in the Cues across all fixture groups
- Drag Cues to re-order them
- Play/pause control for individual Cues
- Individual Cue editing, duplicate, and delete control via menu

- View the duration of Cues
- View the total time of the Show
- View the name of the current Cue that is playing
- Transport Controls (play, pause, stop, previous, next)
- View the state of Show via the Status Badge
- View the progress of the current Cue via the progress bar

Switching Between Live and Show Control

When MaestroDMX is in Show Control Mode the Status Badge will indicate the state: 'Stopped', 'Playing', or 'Paused'. At any moment, you can switch over to Live Control by modifying any of the parameters in the Live Control section. The Status Badge will then indicate 'Live'. When in Live Control Mode, the Show is no longer running. To get back to the Show, you can either press the Play button on the Transport Controls or press the Play button on any of the Cues.

Creating Cues

Cues can be created in two ways. Either by pressing 'Save As New Cue' in Live Control or '+ Add Cue' in Show Control. Going the route of '+ Add Cue ' will pop up a dialog similar to Live Control.

Editing Cues

To edit an existing Cue, click the 3-dot menu to the right side of the Cue and select 'Edit Cue'. A dialog showing all the Cue settings will pop up.

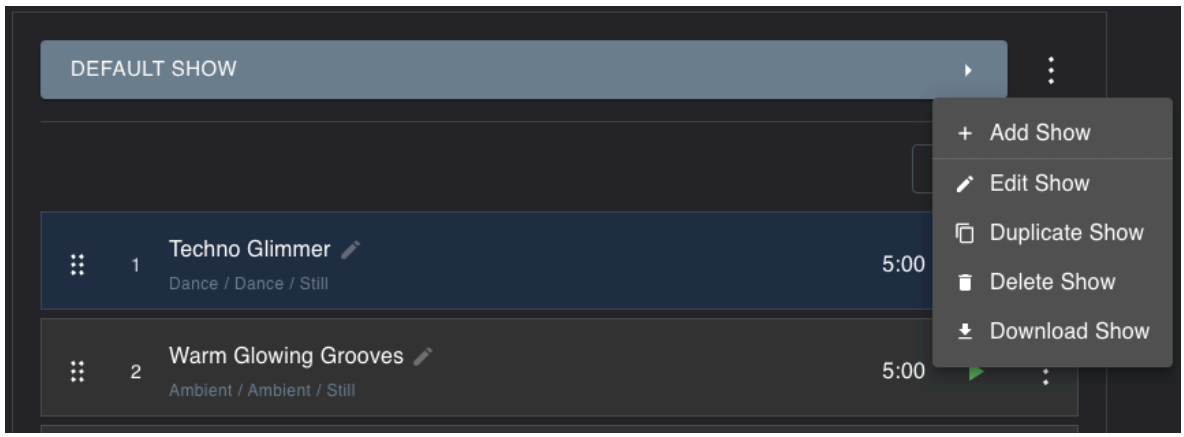
Preview

At the bottom of the dialog to edit or create a new cue is the Preview toggle. When enabled, you will see your changes immediately in the lights. If not enabled you will only see the changes once you save the edits and play the respective Cue.

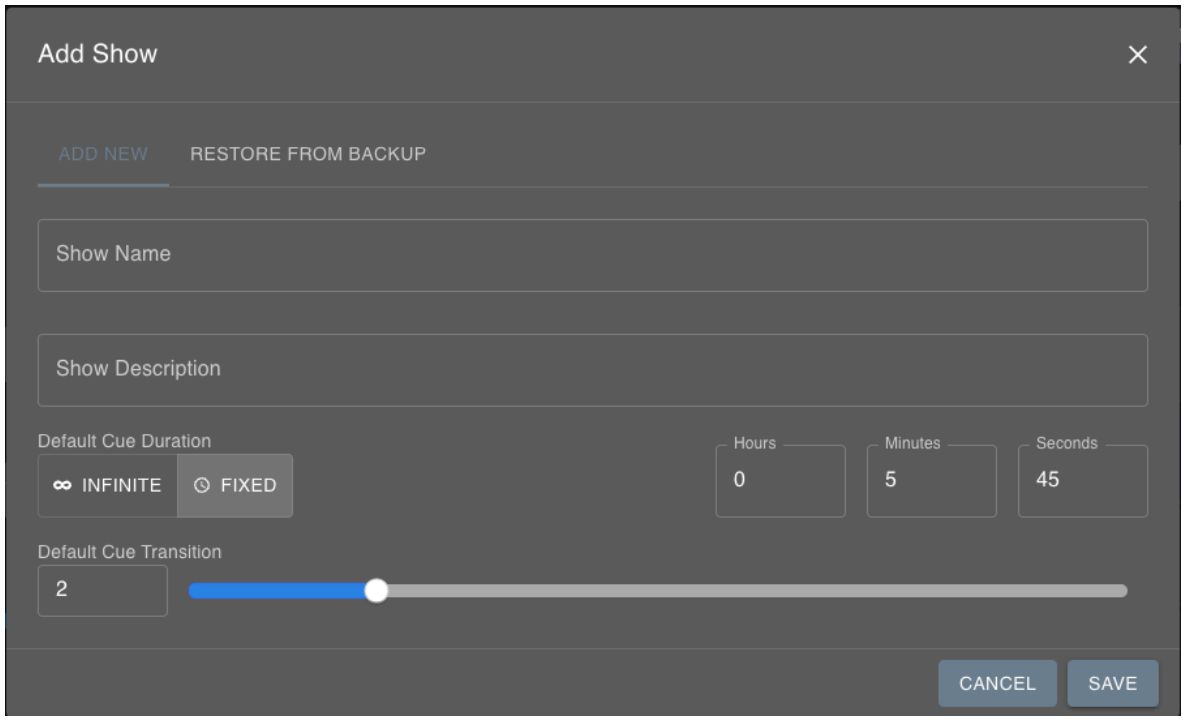
Managing Multiple Shows

MaestroDMX can add, edit, duplicate, delete, and download/upload multiple Shows.

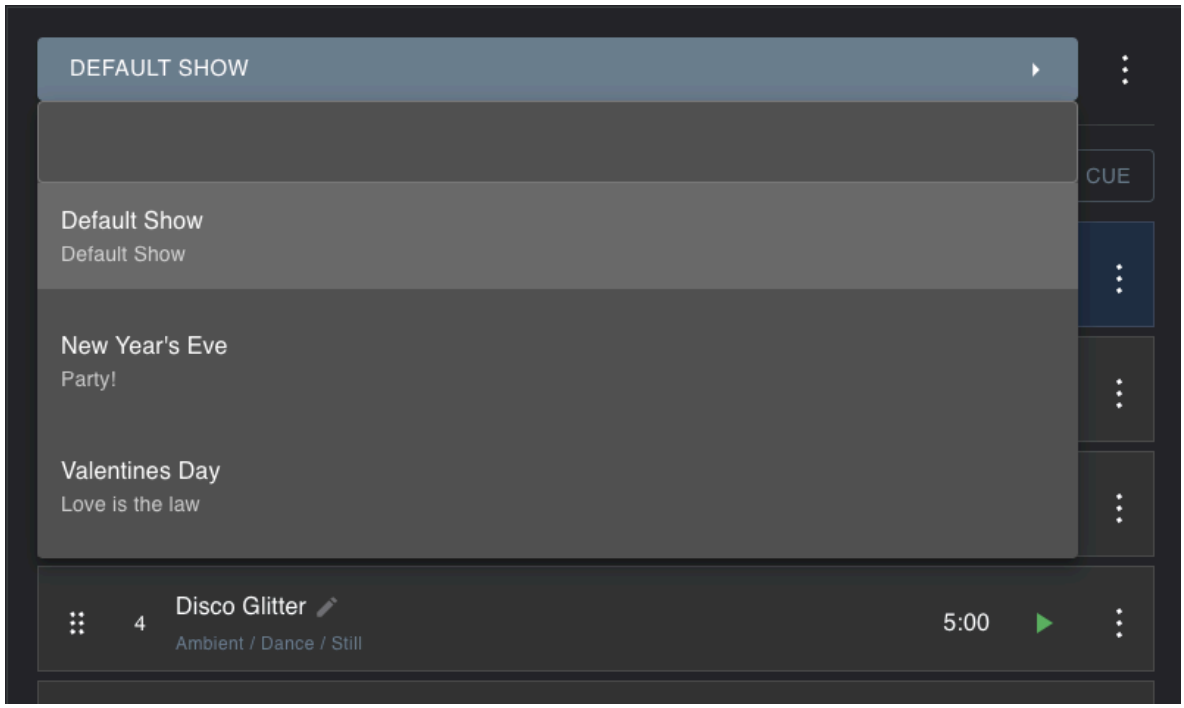
Navigate to the menu to modify the Show list:



To add a new show click on '+ Add Show' and fill out the pop-up dialog to create a new Show or use 'Restore from backup' to load a saved show.



Click on the Show drop down to select a show:



Patterns, Parameters, and Color Palettes

Patterns Overview

Patterns are at the heart of MaestroDMX. There are 2 types of patterns: Maestro Patterns, and Core Patterns.

- Maestro Patterns: Autonomous, music-driven, decision-making lighting patterns that change colors, energy, and effects synchronized to the music. These include: ***Party***, ***Dance***, ***Energetic***, ***Chill***, ***Ambient***, and ***Still***.
- Core Patterns: Patterns that have 'one' look and can be used with or without audio input. They are great for setting static looks that are stationary or have a bit of movement. These include **Solid Color, All Black, Spectrum**, **Wash, Flash Bang,** and **Mapping Test**. Mapping Test is used to verify that your pixel mapping is correct.

NOTE: Core Patterns do not have any pan/tilt motion associated with them. This will come in a future release.

Core Pattern Descriptions

Solid Color:

- Non-audio reactive only
- Provides a solid color to the lights.
- Use the 'Energy' parameter to select the color if using a gradient color palette
- Give the pattern some movement with 'Speed', 'Variance' (amount of fade), and 'Decay' (direction)

All Black:

- 'nuff said

Spectrum:

- Audio and Non-Audio reactive modes
- Interesting movement based on music or not
- Use 'Energy' to adjust brightness and position in color gradient
- Use 'Variance' for background level
- Use 'Speed', 'Decay', and 'Attack' to control movement

Wash:

- Audio and Non-Audio reactive modes
- Change colors within a single color gradient palette
- Use 'Speed' to change on a multiple of the beat or with unsynced timing depending on Audio Reactivity
- Control fade time of color change with 'Decay'

Flash Bang:

- Controllable 'strobe' style pattern
- Audio and Non-Audio reactive modes
- Audio reactive:
    - When kickdrums are present then kicks trigger the flashes, conversely if they are not present, musical onsets trigger the flashes
    - 'Speed': trigger threshold (lower = more sensitive)

    - ‘Energy’: intensity of the flash
    - ‘Variance’: control the background light level
    - ‘Decay’: control the fade of the effect
- Non-audio reactive:
    - ‘Speed’: rate of flashes
    - ‘Energy’: intensity of the flash
    - ‘Variance’: control the background light level
    - ‘Decay’: control the fade of the effect

Mapping Test:

- Once your fixture groups are mapped, use this pattern to verify your mapping
- The lights should move along the X axis sequentially for 1D mappings and along both X and Y sequentially for 2D grid mappings.
- Use ‘Speed’ and ‘Decay’ to dial in the look

Patterns have parameters. The pattern parameters are a powerful tool providing you with precise control over your lighting effects, allowing you to craft the perfect atmosphere for your performance.

Depending on if you are using a Maestro Pattern or a Core Pattern, you will get a different set of Parameters.

Maestro Pattern Parameters

You can control Maestro Patterns via the following parameters:

Brightness (default = 100%)

Here, you can tailor the brightness for a specific fixture group and cue. This combines (multiplies) with the global brightness.

Excitement (default = 50%)

This allows you to modulate the overall excitement of a given Maestro pattern. Increased Excitement will make the effect faster, flashier, and more sudden changes. Decreased Excitement will be slower, smoother, and more chill. Note that the energy of the music also modulates the Excitement behind the scenes.

Background (default = 50%)

This allows you to raise and lower the background brightness level. With the background parameter pulled up, the lights will never go black. Higher background levels will make the lights seem less flashy, and conversely, lower background levels will give more contrast to the lighting.

Mover Range (default = 100%)

Mover Range controls the amount of movement (PAN or TILT) of your moving head fixtures, with full motion allowing the fixture’s full range to be defined by your fixture’s PAN or TILT channel ‘width’ value. A value of zero for Motion will cause the fixture to stay still at the location defined by your fixture’s PAN or TILT channel ‘offset’ value. The ’offset’ and ‘width’ values can be set on a specific fixture in the Control or Patcher tab.

Mover Speed (default = 50%)

Mover Speed controls, you guessed it, the speed of the moving head fixtures with channels that use PAN and TILT attribute types. Note that the energy of the music also modulates the speed behind the scenes.

Allow Music-Based Blackouts (default = OFF)

Based on musical changes and sections, MaestroDMX has the ability to turn all fixtures in a given Fixture Group completely off for a period of time. Using this feature correctly can greatly enhance the dynamic of your light show.

Typically you would toggle 'Allow Music-Based Blackouts' on when running multiple fixture groups so that at least one Fixture Group is running at any given time.

If you have all of your DMX fixtures only on one Fixture Group, then it is recommended to set 'Allow Music-Based Blackouts' to off. If you have fixtures running on multiple Fixture Groups, then allowing blackout gives MaestroDMX permission to turn off groups of fixtures.

Blackout On Silence (default = OFF)

Toggle this on for a fixture group to turn all fixtures off when the audio input goes silent. This can be a great way to create some dynamics in the flow of your show.

Advanced Parameters

If you dare, Maestro Patterns can be further modified by expanding (click on the opposing arrows to the right of the Live Control parameters) the Advanced Parameters in Live Control. These parameters provide fine-grained control over the lighting output of the autonomous Maestro patterns. For instance, if you increase the 'Intensity' parameter but notice that some of the effects are running moving too fast you could lower the 'Speed' under Advanced Parameters to balance out the pattern.

The Advanced Parameters are the same set of parameters as the Core Pattern Parameters, except for 'Variance', which is taken care of by 'Background'. Please refer to the Core Pattern Parameter section for an explanation.

Core Pattern Parameters

Core Patterns are simpler lighting effects that can run with or without an audio input. These are great for building static or low-dynamic looks for your event.

A Core Pattern provides control via any number of the following parameters depending on its implementation:

Speed (default = 50%)

The speed of the lighting pattern.

Energy (default = 50%)

Depending on the pattern, Energy modifies the brightness and color if a gradient is being used.

Variance (default = 50%)

Similar to Background but inverted. (ie, 0% Variance is all lights on)

Attack (default = 50%)

The time for the effects to onset.

Decay (default = 50%)

The time for the effects to fade out.

Audio reactivity (default = ON)

The Audio Reactivity Toggles provide users with the ability to control how Core Patterns respond to audio input. When Audio Reactivity is turned off, the Core Pattern will function independently of any incoming audio. Conversely, with Audio Reactivity enabled, Core Patterns will synchronize and modulate in response to the audio input.

NOTE: Core Patterns do not require audio input to function, however, Maestro Patterns do.

Understanding Color Palettes

MaestroDMX provides you with a variety of color palette options that support RGBWAUV. There are two types of palettes: **Grouped Palettes** and **Individual Palettes** (single color and gradients).

Individual vs. Grouped Palettes

Individual Palettes can be comprised of either a single color or a color gradient made up of multiple color stops. The Individual Palettes that support Amber, White, and UV are specified with the letters Am, W, and UV. For example the 'Halloween UV' and 'Amber Sparkle W' palettes.

Grouped Palettes are comprised of several Individual Palettes. Maestro patterns intelligently move through the color palettes within the chosen palette group based on the music.

Using Colour Palettes

Maestro Patterns function best with Grouped Palettes since the Maestro Pattern will make the decision to switch to different Individual Palettes (contained within the Grouped Palette) based on the music. If you just select an Individual Palette for a Maestro Pattern, the pattern will still function, the effects with changes, etc, however, the pattern will use the same Individual Palette for the duration of its runtime.

Core Patterns only use a single individual palette and do not have the intelligence to switch to a different one. If you select a Grouped Palette when running a Core Pattern, one of the individual palettes within the group will be chosen at random for the entire runtime of the Core Pattern.

NOTE: In a future release, users will be given the ability to create customized Grouped Palettes from Individual Palettes.

Control MaestroDMX with MIDI

MIDI Input Specification

Connect any MIDI device via USB to control MaestroDMX's Show Control Mode.

NOTE: MaestroDMX is a USB host similar to a PC. Therefore if you want to send MIDI from another host, such as a **PC running Ableton Live or Logic**, you will need to connect 2 USB to MIDI dongles together. In the following configuration:

PC → USB → Dongle 1:MIDI OUT--(female to female midi coupler)-- Dongle 2:MIDI IN → USB → MaestroDMX

Purchase on Amazon: 2 X Midi Dongle and 1 X Midi Coupler

For a regular MIDI device such as a keyboard or control pad, simply connect it to MaestroDMX with a USB cable.

NOTE: MIDI messages for the Trigger Buttons (Blackout, Blinder, Stobe etc) function either as momentary or latching. Meaning that they will not respect the latching mode that is selected on the MaestroDMX Web App. Please use the appropriate latching or momentary version of the trigger MIDI message as needed

Action (On NOTE_ON)	Key Number	Hex Value	Note*	Channel
Blackout (Toggle)	13	0x0D	C#-3 to C#-1*	16
Blinder (Toggle)	14	0x0E	D-2 to D0*	16
Fog (Toggle)	15	0x0F	D#-2 to D#0*	16
Effect (Toggle)	16	0x10	E-2 to E0*	16
Load Previous SHOW	17	0x11	F-2 to F0*	16
Load Next SHOW	18	0x12	F#-2 to F#0*	16
Blackout (Momentary)	19	0x13	G-2 to G0*	16
Blinder (Momentary)	20	0x14	G#-2 to G#0*	16
Strobe (Momentary)	21	0x15	A-2 to A0*	16
Fog (Momentary)	22	0x16	A#-2 to A#0*	16
Effect (Momentary)	23	0x17	B-2 to B0*	16
Prev	24	0x18	C-1 to C1*	16
Next	25	0x19	C#-1 to C#1*	16
Play	26	0x1A	D-1 to D1*	16
Pause	27	0x1B	D#-1 to D#1*	16
Stop	28	0x1C	E-1 to E1*	16
Select Cue 1 - 98	29 - 127	0x1D - 0x7F	F-1 to F1	16

***NOTE**: Exact MIDI note-ons will differ depending on the platform. You may need to transpose your midi controller to trigger the correct octave.

Action (on CONTROL_CHANGE)	CC Number	Hex Value	Channel
Global Brightness	14	0x0E	16
Trigger: Strobe Rate	15	0x0F	16
Trigger: Strobe Brightness	16	0x10	16
Trigger: Blinder Brightness	17	0x11	16
Trigger: Fog Volume	18	0x12	16
Trigger: Fog Duration	19	0x13	16
Trigger: Fog Interval	20	0x14	16
Group 1: Brightness	30	0x1E	16
Group 1: Excitement	31	0x1F	16
Group 1: Background	32	0x20	16
Group 1: Mover Range	33	0x21	16
Group 1: Mover Speed	34	0x22	16
Group 2: Brightness	40	0x28	16
Group 2: Excitement	41	0x29	16
Group 2: Background	42	0x2A	16
Group 2: Mover Range	43	0x2B	16
Group 2: Mover Speed	44	0x2C	16
Group 3: Brightness	50	0x32	16
Group 3: Excitement	51	0x33	16
Group 3: Background	52	0x34	16
Group 3: Mover Range	53	0x35	16
Group 3: Mover Speed	54	0x36	16
Group 4: Brightness	60	0x3C	16
Group 4: Excitement	61	0x3D	16
Group 4: Background	62	0x3E	16
Group 4: Mover Range	63	0x3F	16
Group 4: Mover Speed	64	0x40	16

Choosing and Testing A MIDI Controller

When sourcing a MIDI controller for MaestroDMX make sure that it can be configurable via software. This will allow you to assign the various NOTE ON and Control Change (CC) messages in the MIDI specification to the desired knobs, buttons, and sliders on a given MIDI controller.

Here is a list of MIDI controllers (for hands and feet) that we know work with MaestroDMX and can be configured. This list is by no means exhaustive but can be a good starting point. Likely, other MIDI controllers from the below manufacturers will also work well with MaestroDMX.

Hand Controllers

- Beat Maker Machine
- Korg Nano Kontrol
- Donner Starry Pad
- Akai LPD8
- Akai APC Midi
- Novation Launch Control XL
- Novation Launch Key Series
- M-Audio Trigger Finger
- M-Audio Oxygen Series
- M-VAVE Smk25

Foot Controllers

- Behringer FC81010
- Behringer X-Touch Mini
- Paint Audio MIDI Captain
- Xsonic Airstep
- Harley Benton MP-500
- Soleman MIDI Foot Controller
- Morning Star MC6 PRO
- Line 6 Helix Pedal

Software Options

- MIDI Designer
- TouchOSC
- On Song App

Testing Your MIDI Controller

Connect the controller to a PC and install MidiView.

Launch the software and choose your MIDI device from the list. Then press/move each control to capture the midi data your device is sending and confirm it matches what MaestroDMX is expecting.

Troubleshooting

Troubleshooting Guide

Issue: What is the default password for the Maestro WiFi Network?

- Solution 1: **'mymaestro'**

Issue: Unable to Find MaestroDMX's WiFi Network

- Solution 1: Ensure your dongle is securely plugged in. Never remove your dongle while in use.
- Solution 2: Try rebooting your device.
- Solution 3: Consider connecting via Ethernet.
- Solution 4: Try a factory reset (see System Page)
- Solution 5: If problems persist, reflash the firmware using a network reset software update package from the support website.

Issue: Connected to MaestroDMX WiFi Network but Can't Access the Web App

- Solution 1: Try a new browser window or try a different web browser.
- Solution 2: Ensure firewalls on your device are disabled.
- Solution 3: Use the IP address 192.168.37.1 instead of "maestro.local" to connect.
- Solution 4: If the problem persists, reflash the firmware with a network reset software update package from the support website.

Issue: Connected to MaestroDMX via Ethernet but Can't Access the Web App

- Solution 1: Ensure that you have set your computer's ethernet port to the correct static IP address and settings. See Ethernet Connection Page.
- Solution 2: Try a new browser window or try a different web browser.
- Solution 3: Ensure firewalls on your device are disabled.
- Solution 4: Use the IP address 10.0.0.200 instead of "maestro.local".
- Solution 5: If the problem persists, contact maestrodmx.com/support

Issue: Unable to Find A Fixture Profile In The Fixture Profile Library

- Please visit www.fixtures.maestrodmx.com to search and download your profiles
- You can also create your own profiles.

Issue: Lights Added to Stage, but They Aren't Turning On

- Solution 1: Make sure the 'Solid Colour' pattern is playing with a single colour palette.
- Solution 2: Check all connections and power sources for your lights.
- Solution 3: Verify the address and mode settings of your lights.
- Solution 4: Ensure that the address in the patcher corresponds to your DMX fixture's address.
- Solution 5: Review the fixture profile and ensure it matches your lighting equipment.
- Solution 6: Visit the Control page and adjust static values. Some fixtures require specific channels such as shutters and strobe to be set to turn the fixture on.

- Solution 7: Check dimmer or color attribute types, as they might be set incorrectly.
- Solution 8: Confirm the brightness level is turned up on the show page both globally and at the cue level.
- Solution 9: Verify that a show is playing by pressing the play button.

Issue: No Audio or Unresponsive Patterns

- Solution 1: Navigate to the audio page in the app.
- Solution 2: Ensure the audio level is sufficient to trigger the "green" signal level.
- Solution 3: If the audio is still not working, double-check your cabling. Consider connecting headphones or speakers to verify audio output from your device.

Issue: Maestro Patterns Do Not Seem To Be Working Properly

- Solution 1: Ensure audio is getting into MaestroDMX with sufficient input gain (via LED on the unit or via Audio Page) and you have the correct audio input selected.
- Solution 2: On the Audio page ensure Kickdrums are being detected correctly, if not adjust the Kick Sensitivity.

Issue: All the lights turn off sometimes during the show

- Solution 1: If you have fixtures assigned only to the Primary Fixture Group make sure the ‘Allow Music-Based Blackouts’ is disabled.

Issue: The software update did not work

- Solution 1: Ensure that the USB wifi dongle in plugged in when you perform the update.
- Solution 2: Check that the .mae software file is at the root directory of the USB drive.
- Solution 3: Ensure that you only have a single .mae file on the USB drive at the root directory.
- Solution 4: Try another USB drive from another manufacturer.
- Solution 5: Ensure that your USB drive is formatted to FAT32.

For further assistance or persistent issues, please contact our customer support team.
Additional support for MaestroDMX is available at https://maestrodmx.com/support.

Safety

Safety Hazards Identification and Warnings:

The following identification system indicates hazard severity associated with MaestroDMX Model mDMX in accordance with ANSI Z535.4-2002:

DANGER

An imminently hazardous situation which will result in death or serious injury if not avoided.

WARNING

A potentially hazardous situation which could result in death or serious injury if not avoided.

CAUTION

A potentially hazardous situation which could result in minor or moderate injury or property damage if not avoided. Also alerts against unsafe practices. Ignoring a hazard voids any warranty.

Maestro DMX Safety Hazards

WARNING

MaestroDMX model mDMX must be installed and used in accordance with relevant local electrical codes.

WARNING

MaestroDMX model mDMX is for indoor use only.

WARNING

Read and fully understand installation instructions and safety labels for MaestroDMX model mDMX before installing the system.

WARNING

Ensure USB power cable is not damaged before connecting MaestroDMX model mDMX to power.

WARNING

MaestroDMX model mDMX is certified to FCC, CE (EU) and UKCA Class A standards. It may cause electromagnetic interference (EMI) in domestic (residential) environments. End users are required to take adequate measures in such a case.

CAUTION

Ensure that MaestroDMX model mDMX is mounted so that excessive vibrations are minimized.

CAUTION

Do not hot swap fixtures. Ensure MaestroDMX model mDMX is disconnected from power before connecting or disconnecting fixtures.

CAUTION

Do not open, modify, or alter MaestroDMX model mDMX in any way.

NOTE:

The instructions and precautions set forth in this user manual are not fully inclusive, or pertinent to all installations as Limbic Media cannot anticipate all possible situations.

Owner/User Responsibilities

It is the responsibility of the contractor, installer, purchaser, owner, and user to install, maintain, and operate MaestroDMX model mDMX in compliance with all state and local laws, ordinances, and regulations.

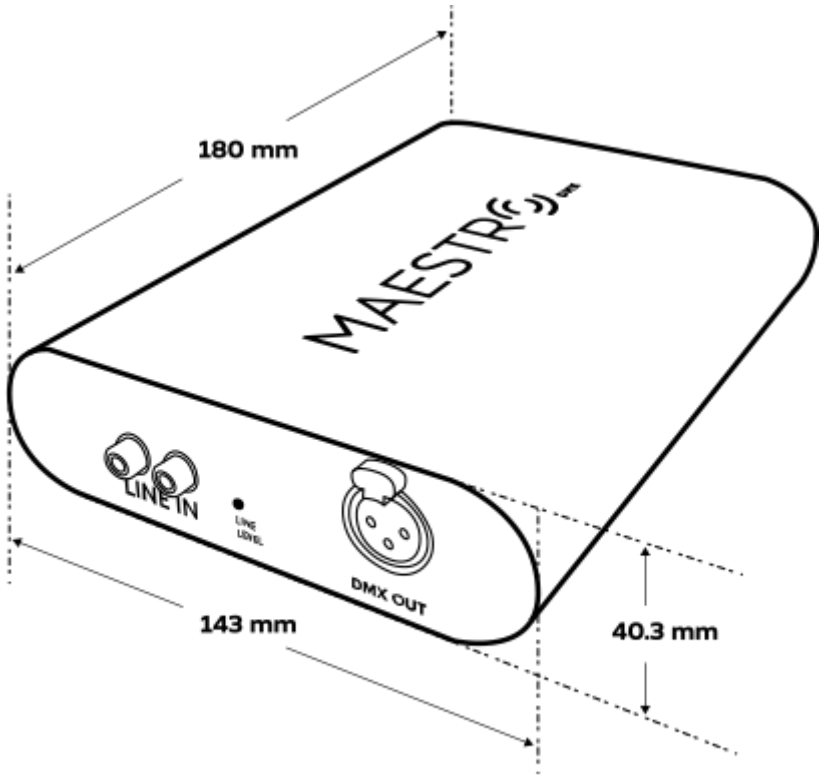
Certifications

Certification : FCC, CE, UKCA

Environnemental : Indoor/dry location

Hardware

Dimensions:



180 mm × 143 mm × 40.3 mm (7.09" × 5.63" × 1.59")

Electrical:

Power Input:
USB-C Connector, 5V DC, 2 Amps maximum input current

NOTE:

MaestroDMX requires a 5V DC power source supplying at least 2W (400mA), inclusive of the USB WiFi dongle. Ensure that you allocate sufficient power for MaestroDMX and account for any extra power needs of other USB devices connected to the bottom USB 2.0 port (MIDI or USB Audio devices).

USB Ports:
2x USB 2.0 Type A Connectors (500mA maximum per port)

Ethernet Port:
10/100/1000M

Audio Input:
RCA stereo consumer line level (-10dBV) input

Mechanical:

Weight:
0.94 kgs (2.07 lbs)

Housing:
Aluminum enclosure

Environmental:

Operating Temperature:
0° - 40°C (32° - 104°F)

Humidity:
10~90% RH, non-condensing

Wireless:

Wireless Standard:
IEEE 802.11b/g/n

Frequency:
2.4GHz

Wireless Security:
WEP, WPA/WPA2, WPA-PSK/ WPA2-PSK

Modulation Technology:
DBPSK, DQPSK, CCK, OFDM, 16-QAM, 64-QAM

WiFi USB Dongle

The MaestroDMX serves up its own network facilitated by the WiFi dongle. Please refrain from removing the WiFi dongle, as it is essential for the MaestroDMX to create and maintain its own WiFi network.

Wireless Range

Maximum wireless signal rates are the physical rates derived from IEEE Standard 802.11 specifications. Actual wireless data throughput and wireless coverage and quantity of connected devices are not guaranteed and will vary as a result of network conditions, AP limitations, and environmental factors, including building materials, obstacles, volume and density of traffic, and AP location.

TP-Link TL-WN725N USB WiFi Dongle Regulatory Declarations of Conformity

FCC STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/ TV technician for help.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1) This device may not cause harmful interference.

2) This device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications

could void the user's authority to operate the equipment.

FCC RF Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. This equipment has been SAR- evaluated for use in hand. SAR measurements are based on a 5mm spacing from the body and that compliance is achieved at that distance.

CE Mark Warning

This is a class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

OPERATING FREQUENCY(the maximum transmitted power)

2412MHz—2472MHz (20dBm)

EU declaration of conformity

TP-Link hereby declares that the device is in compliance with the essential requirements and other relevant provisions of directives 2014/53/EU and 2011/65/EU.

The original EU declaration of conformity may be found at *http://www.tp-link.com/en/ce*.

RF Exposure Information

This device meets the EU requirements (2014/53/EU Article 3.1a) on the limitation of exposure of the general public to electromagnetic fields by way of health protection.

This device has been tested and meets the ICNIRP exposure guidelines and the European Standard EN 62209-2. SAR is measured with this device at a separation of
0.5 cm to the body, while transmitting at the highest certified output power level in all frequency bands of this device. Carry this device at least 0.5 cm away from your body to ensure exposure levels remain at or below the as-tested levels.

Canadian Compliance Statement

This device complies with Industry Canada license-exempt RSSs. Operation is subject to the following two conditions:

1) This device may not cause interference, and

2) This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

1) l'appareil ne doit pas produire de brouillage;

2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, meme si le brouillage est susceptible d'en compromettre le fonctionnement.

Radiation Exposure Statement:

This EUT is compliance with SAR for general population/uncontrolled exposure limits in RSS-102 and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528 and IEC 62209. This equipment should be installed and operated with minimum distance 1.0 cm between the radiator and your body. This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

Déclaration d'exposition aux radiations:

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.

Industry Canada Statement

CAN ICES-3 (B)/NMB-3(B)

Korea Warning Statements

당해 무선설비는 운용중 전파혼신 가능성이 있음.

NCC Notice

注意!

依據 低功率電波輻射性電機管理辦法

第十二條 經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性或功能。

第十四條 低功率射頻電機之使用不得影響飛航安全及干擾合法通行；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前項合法通信，指依電信規定作業之無線電信。低功率射頻電機需忍受合法通信或工業、科學以及醫療用電波輻射性電機設備之干擾。

BSMI Notice

安全諮詢及注意事項

- 請使用原裝電源供應器或只能按照本產品注明的電源類型使用本產品。
- 清潔本產品之前請先拔掉電源線。請勿使用液體、噴霧清潔劑或濕布進行清潔。
- 注意防潮，請勿將水或其他液體潑灑到本產品上。
- 插槽與開口供通風使用，以確保本產品的操作可靠並防止過熱，請勿堵塞或覆蓋開口。
- 請勿將本產品置放於靠近熱源的地方。除非有正常的通風，否則不可放在密閉位置中。
- 請不要私自打開機殼，不要嘗試自行維修本產品，請由授權的專業人士進行此項工作。

限用物質含有情況標示聲明書

產品元件名稱	限用物質及其化學符號					
	鉛 Pb	鎘 Cd	汞 Hg	六價鉻 CrVI	多溴聯苯 PBB	多溴二苯醚 PBDE
PCB	○	○	○	○	○	○
外殼	○	○	○	○	○	○

備考1.“超出0.1wt％”及“超出0.01wt％”系指限用物質之百分比含量超出百分比含量基準值。
備考2. “○”系指該項限用物質之百分比含量未超出百分比含量基準值。

Продукт сертифіковано згідно с правилами системи УкрСЕПРО на відповідність вимогам нормативних документів та вимогам, що передбачені чинними законодавчими актами України.

Safety Information

- Keep the device away from water, fire, humidity or hot environments.
- Do not attempt to disassemble, repair, or modify the device.
- Do not use damaged charger or USB cable to charge the device.
- Do not use any other chargers than those recommended.
- Do not use the device where wireless devices are not allowed.
- This USB Adapter can be powered only by computers that comply with Limited Power Source(LPS).

Please read and follow the above safety information when operating the device. We cannot guarantee that no accidents or damage will occur due to improper use of the device. Please use this product with care and operate at your own risk.

Explanation of the symbols on the product label

Symbol	Explanation
	RECYCLING This product bears the selective sorting symbol for Waste electrical and electronic equipment (WEEE). This means that this product must be handled pursuant to European directive 2012/19/EU in order to be recycled or dismantled to minimize its impact on the environment. User has the choice to give his product to a competent recycling organization or to the retailer when he buys a new electrical or electronic equipment.