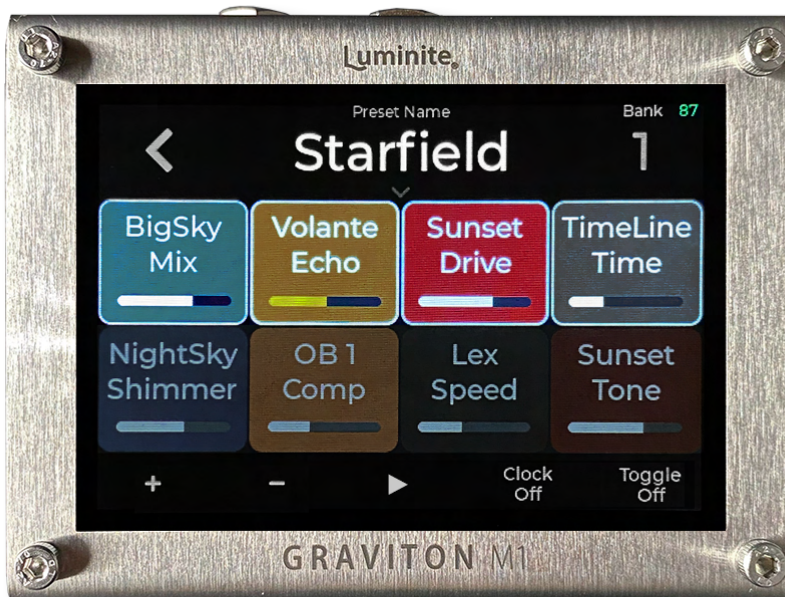


Luminite®  
**GRAVITON M1**  
— midi controller —

# User Manual

*For use with Graviton M1 Software 3.2.0*

[www.luminitefx.com](http://www.luminitefx.com)



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# Manual



# Basic

## Introduction

Graviton M1 is the next-generation MIDI controller pedal designed for guitarists and bassists who want to incorporate the full power of MIDI into their live or studio rigs with total wireless freedom, effortless usability, compatibility and expandability in an ultra compact package.

- **Total Wireless Freedom:** Graviton M1 is remote-controlled by the included XY Controller, which can be attached to your instrument. The controller features two 5-way directional switches (10 switches in total), and each switch is fully programmable for sending MIDI, switching banks, and more. Its intuitive design enables easy and eyes-free operation, similar to using a pickup selector switch. This eliminates the need for tap dancing and allows you to move freely on stage while performing.
- **Effortless Usability:** Graviton M1 comes with a large 3.5-inch touchscreen LCD, which makes MIDI programming a breeze and eliminates the need for a PC editor. Its user-friendly interface allows for quick and easy changes both on and off stage, as all changes made on screen are automatically saved. It also supports a wide range of MIDI messages and useful software features.
- **Compatibility / Expandability:** Send MIDI to six devices at once over four different MIDI interfaces. Works with almost any external footswitch / expression pedal. Connect up to 2 footswitch / expression pedals over TRS Jacks, 10 Luminite wireless footswitch pedals and 10 XY Controllers, all can work together at the same time. Also controllable by MIDI messages from other devices.

- **Ultra Compact Footprint:** Graviton M1 is smaller than an overdrive pedal, with the full control of a large 10-switch MIDI controller, saving pedalboards space and weight. Or use Graviton M1 to turn compact multi-effects pedals / amp modelers / computers / iPhones / iPads into portable and powerful gigging machines.

## Features

- Designed for both pro-pedalboards and recording studios.
- Fast and easy MIDI programming on the large 3.5 inches touchscreen LCD. No PC editor needed.
- Remote controlled by XY Controller with 10 fully programmable switches (sending MIDI, switching banks, songs and many more).
- XY Controller features: 650ft (200m) range, strong encrypted signal, 6 months battery life.
- Connect up to 2 footswitch / expression pedals over TRS Jacks, 10 Luminite wireless footswitch pedals and 10 XY Controllers, all can work together at the same time.
- Preset Mode and Setlist Mode.6
- 120 Presets / 12 Banks.
- 120 Songs / 120 Setlists.
- 120 SysEx Messages.
- 10 Expression Presets.
- 10 Backups (120 Banks / 1200 Presets / Songs / Setlists / SysEx, 100 Expression Presets in total).
- 16 x MIDI Messages per Preset / Expression Preset. Unlimited Presets chaining.

- Send Program Change, Control Change, Note On / Off, Scrolling PC / CC, SysEx, MIDI Clock / Start / Stop / Continue, Tap Tempo, Expression CC / PC / Clock BPM, Expression Toe / Heel Down triggered Preset, Preset triggered Expression etc.
- Build in SysEx Library / Editor.
- Build in User Manual.
- Controllable by other MIDI Controllers.
- MIDI In / Out / Through / Clock routing.
- Standard 5-pin MIDI In and Out.
- 2 x 1/4 inch MIDI over TRS. (4 modes: Type A, Type B, Tip Active, Ring Active)
- 1/8 inch MIDI over TRS (4 modes: Type A, Type B, Tip Active, Ring Active)
- USB MIDI (Bus Powered).
- USB Host MIDI (can power other devices).
- Bluetooth LE MIDI.
- Import / Export user data over WiFi.
- Over-The-Air Software Update over WiFi.

## The Hardware: **XY Controller**

Every XY Controller has two 5-way directional switches, each of which can be pushed up, down, left, right, and center, for a total of 10 switches. Switching with your fingertips is easy and intuitive, similar to using a pickup selector switch.



XY Controllers can be attached to any instrument using its nano pads on the bottom. These pads work like geckos' feet without any chemical adhesives. They can be attached and removed multiple times and are safe for most guitar finishes.

Experiment with different positions to see what works best for you. You may want to move the controller closer to your picking hand for quicker switching or further away for more room while strumming. Here are some good starting points:



## Pairing

A Graviton pedal can pair with up to 10 XY Controllers, and each controller can be individually configured. This is useful when you have multiple instruments, as each

instrument can have its own dedicated XY Controller. Alternatively, you can also mount multiple XY Controllers to a single instrument.

To pair a XY Controller to a Graviton Pedal, navigate to Settings > Wireless > XY Controllers > Tap on an empty slot > Hold your controller with the XY logo as shown, then push both switches to the up position together until the XY Controller name is in the selected slot.

In very rare cases, if you have issues with the XY Controllers signal being intermittent (strong interference from the surrounding environment), you can try changing to another wireless channel. (Setting > Wireless > Change Channel). All paired XY Controllers need to be paired again every time you do so.

## Power and battery level

There are no physical ON/OFF switches—the intelligent circuit activates when in use and deactivates when idle. This prevents users from unintentionally draining the battery by forgetting to turn it off before storing the controller in their guitar case.

The battery level is shown as a green percentage number in the top-right corner of the screen. If there are multiple XY Controllers or Wireless Footswitch Pedals paired, the battery level of the last activated controller is displayed.

## Features:

- **Low-profile design:** Minimizes changes to the instrument's look and playability (compatible with whammy bars).
- **Simple operation:** With no power button to worry about, it always works like a pickup selector switch.
- **Fully programmable:** With 10 switches that can be assigned to send MIDI, switch banks or songs, and more.

- **Advanced wireless:** 650ft (200m) range; encrypted signal; strong interference resistance.
- **Ultra-long battery life:** 6 months per charge.
- **Tactile, silent, and reliable switches:** Rated for 100,000 clicks, many times more than most footswitches.

## Specifications:

- Wireless Range: 650ft (200m).
- Wireless Frequency: 2.4Ghz
- Switches lifetime: 100,000 clicks.
- Latency: 60ms.
- Power Input: USB Type-C.
- Charging Time: 1 hour.
- Battery Life: 6 months.
- Width x Depth x Height: 2" x 0.88" x 0.51" (53mm x 22.4mm x 13mm).
- Weight: 0.38oz (11g).

# The Hardware: **Graviton M1**



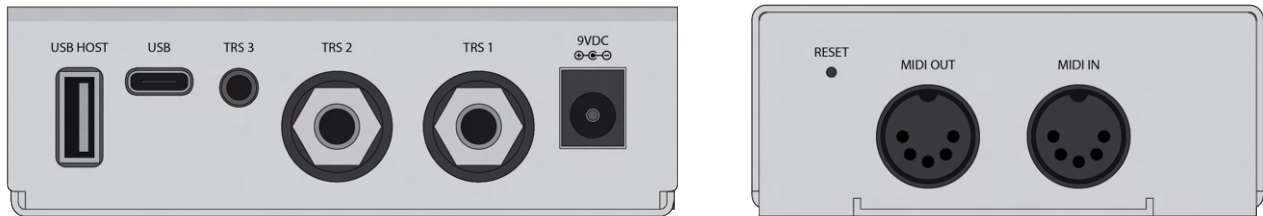
## **Graviton M1 MIDI Interfaces**

**Graviton M1** can send MIDI to six devices at once over four different MIDI interfaces:

- **1 x Standard MIDI**
- **3 x MIDI over TRS** (2 x 1/4" and 1 x 1/8" jacks): each configurable with four output modes, compatible with all TRS MIDI devices. (see Settings > TRS).
- **1 x USB MIDI:** switchable between Device and Host mode, compatible with all USB Class Compliant devices. (see Settings > USB).
- **1 x Bluetooth LE MIDI:** compatible with all BLE MIDI devices like Apple iPhones, iPads or Macbooks.

MIDI Input can be used for MIDI Through or controlling **Graviton M1** with **MIDI Messages** from other devices.

## Graviton M1 input / output jacks:



- **9VDC:** Power Adapter in (9V center-negative, 250mA minimum).
- **TRS 1 and TRS 2:** MIDI out or Footswitch / Expression Pedals in with 1/4-inch (6.35mm) stereo cables
- **TRS 3:** MIDI out with 1/8-inch (3.5mm) stereo cable.
- **USB:** MIDI communication with computers using Type-C cable (can be USB bus powered).
- **USB Host:** MIDI communication with other USB MIDI devices (can power other devices with up to 500mA, or charge **XY Controller**).
- **MIDI In:** With standard MIDI cable.
- **MIDI Out:** With standard MIDI cable.
- **Reset:** To perform a factory reset, insert a pin into the hole. Push and hold the button while powering on the device until the logo shows up, then release. This will reset the device to its factory settings.

*\*Either the USB MIDI or USB Host MIDI port can be used at one time, not both.*

## Graviton M1 Specifications:

- LCD Size: 3.5 inches.
- LCD Type: IPS Panel, Wide Viewing Angle, Sunlight Readable.
- LCD Touch Panel: Capacitive Touch.



- Power Input: 9VDC center negative / USB Type C.
- Power Consumption: 9V@250mA (9VDC Input) or 5V@350mA (USB Bus Powered)
- Power other devices via USB Host: 5V@500mA max.
- Premium Brushed Stainless Steel Finish.
- Width x Depth x Height: 3.74" x 3" x 1.38" (95mm x 76mm x 35mm).
- Weight: 9oz (250g).

## The Software: Overview



Graviton M1's User Interface has a "Select a Screen" page at the top, which organizes multiple **Screens** into three groups: **Preset Mode**, **Setlist Mode**, and **Settings**. The basic difference is:

- **Preset Mode:** Run **Presets** directly from the **Preset Library**.
- **Setlist Mode:** Group **Presets** into **Songs**, and group **Songs** into **Setlists**, and scroll through them while playing (next / last **Preset**, next / last **Song** etc)

**Screens** display information in different ways *while you are playing*. For examples in **Preset Mode**:

- **MIDI Editor Screen:** Displays all outgoing **MIDI Messages**.
- **Preset Library Screen:** Displays all **Presets** in the current **Bank**, and highlights which one is currently active.
- **XY Controllers Screen:** Displays the XY Controller layout and the assigned **Preset / Action** for each switch.
- **Footswitch Pedals Screen:** Displays the Footswitch Pedal layout and the assigned **Preset / Action** for each footswitch.
- **Expression Pedals Screen:** Displays the **Expression Preset** assigned to the connected **Expression Pedal / outgoing Expression MIDI Messages**.
- **Live Screen:** Displays the current **active Preset**, features large, clear text with minimal distractions, ideal for live performances.

And similarly in **Setlist Mode**. Each Screen serves a unique purpose to suit your needs.

## The Software: **Glossary**

- **XY Switch:** A switch on the **XY Controller**.
- **Action:** What happens when you hit an **XY Switch** or a footswitch, such as playing a preset or switching between banks, songs, etc.
- **Preset:** A group of up to 16 **MIDI Messages**.

- **Bank:** A group of 10 **Presets**.
- **Song:** A collection of up to 10 **Presets**, picked from **Preset Library**.
- **Setlist:** A collection of up to 10 **Songs**, picked from **Song Library**.
- **Playing Mode:** Can be Preset Mode or Setlist Mode.
- **Toggle MIDI Off Messages:** Are PC and CC messages in the **active Preset**, but with their **Value** changed to 0. Useful for using Graviton M1 to control DAW like Ableton Live.
- **Expression Message:** A special type of **MIDI Message** which can be controlled by Expression Pedals.
- **Expression Preset:** A group of up to 6 **Expression Messages**.
- **TRS:** Tip, Ring, and Sleeve. A TRS Jack is a stereo jack, which can be either ¼" or ⅛" type.

#### List of **Actions**:

- **Preset Mode:**
  - **Bank Preset:** Run the **Preset** in the designated position (1st to 10th) in the current **Bank**. This **Preset** will change accordingly when switching to another **Bank**.
  - **Global Preset:** Run the specific **Preset** of a specific **Bank**. This **Preset** will not change when switching to another **Bank**.
  - **Bank + / -:** Jump to the next / previous **Bank**.
  - **Bank Jump:** Jump to a designated **Bank**.
  - **Editor Screen:** Toggle between **MIDI Editor Screen** and the current Screen.
- **Setlist Mode:**

- <, >, ^, v: Scroll left, right, up, down while in **Song Screen**.
- **Song Preset**: Run the **Preset** in the designated position (1st to 10th) in the playing **Song**. This **Preset** will change accordingly when switching to another **Song**.
- **Song + / -**: Switch to the next / previous **Song** in the playing **Setlist**.

#### List of **MIDI Messages**:

- **Control Change (CC)**
- **Program Change (PC)**
- **Scrolling CC**: Send a **CC Message** with its Value increased / decreased by a number (**Step**), or updated to a new set value the next time it is sent again. Multiple **Scrolling CC** messages with the same **CC Number** can control the same parameter, with different **Steps** for different scrolling speeds.
  - **Scrolling CC + / -**: increase / decrease the CC Value.
  - **Scrolling CC Jump**: update the Scrolling CC Value.
- **Toggling CC**: Same as **Control Change (CC)** Message, but only be sent when the **Toggling On** or **Momentary On** setting is enabled, and the Preset is in “Toggled Off” state (when the Preset name turns gray). This is useful to switch between two different CC values within the same Preset.

If the Preset has **Toggling On** or **Momentary On** enabled, but no **Toggling CC/PC** messages were added, a copy of all CC/PC messages in the Preset, with their values/numbers changed to 0, will be sent instead.

- **Scrolling PC**: Same as Scrolling CC messages, but with the PC Number.
  - **Scrolling PC + / -**: increase the PC Number.
  - **Scrolling PC Jump**: update the Scrolling PC Number.

- **Toggling PC:** Same as Toggling CC, but with Program Change messages instead.
- **Note:** Note On / Note Off / All Note Off.
- **SysEx:** Send a System Exclusive MIDI message from the **SysEx Library**. Graviton M1 supports up to 64 bytes long SysEx messages. See Preset Mode > MIDI > SysEx Library for more details.
- **Clock:**
  - **Clock:** Start sending MIDI Beat Clock message stream with the fixed BPM (Beat Per Minute). (Settings > MIDI > Clock option needs to be On for the Graviton M1 to output MIDI Beat Clock).
  - **Start:** Send the MIDI Clock Start message. Not to be confused with the MIDI Beat Clock messages which are sent continuously.
  - **Stop:** Same as above.
  - **Continue:** Same as above.
  - **Tap Tempo:** Change the MIDI Beat Clock BPM. Assign a **Preset** containing this message to an **XY Switch** or a footswitch to turn it into a tap tempo switch.
- **Song:**
  - **Song Select:** Send MIDI Song Select message. Not to be confused with the **Songs** in **Setlists Mode**.
  - **Song Position Pointer:** Send MIDI SPP message.
- **MIDI Preset:** Run a designated **Preset**. You can chain multiple **Presets** with this method, useful if you want to send more than 16 **MIDI Messages** at once.

List of **Expression Messages:**

- **Expression Preset:** Assign an **Expression Pedal** to an **Expression Preset**.

- **Expression MIDI:**

- **Expression CC:** Start sending **Control Change MIDI** messages with the CC Value continuously controlled by the **Expression Pedal** position (and stop sending when the pedal stops moving). The range is adjustable from 0 - 127.
- **Expression Clock:** Start sending **MIDI Beat Clock** message stream with the BPM continuously controlled by the **Expression Pedal** position. The range is adjustable from 40 - 300.

- **Toe / Heel:**

- **Toe Down / Heel Down CC:** Send a CC message when the **Expression Pedal** is fully pressed toe down / heel down.
- **Toe Down / Heel Down PC:** Send a PC message when the **Expression Pedal** is fully pressed toe down / heel down.
- **Toe Down / Heel Down Preset:** Run a **Preset** when the **Expression Pedal** is fully pressed toe down / heel down.



# Preset Mode

## Getting Started

When you are in any **Screen** within **Preset Mode**:

- Hitting a switch on your **XY Controller** will run its assigned **Preset / Action** as shown in the **XY Controllers Screen**.
- Stomping a footswitch on a connected **Footswitch Pedal** will run its assigned **Preset / Action** as shown in the **Footswitch Pedals Screen**.
- Moving an connected **Expression Pedal** will run its assigned **Expression Preset** as shown in **Expression Pedals Screen**.
- Sending a **MIDI message** to the Graviton M1 over MIDI In Jack will run its assigned **Preset / Action** as shown in the **MIDI In Screen**.

See **Glossary** section for the list of available **Actions**.

## MIDI Editor Screen

This screen shows the active **Preset** and its **MIDI Messages** (max 16 per Preset). The **MIDI Editor Screen** has two Layout modes: **Block** and **List**, customizable in 'Settings > Editor'.



## > Block Layout

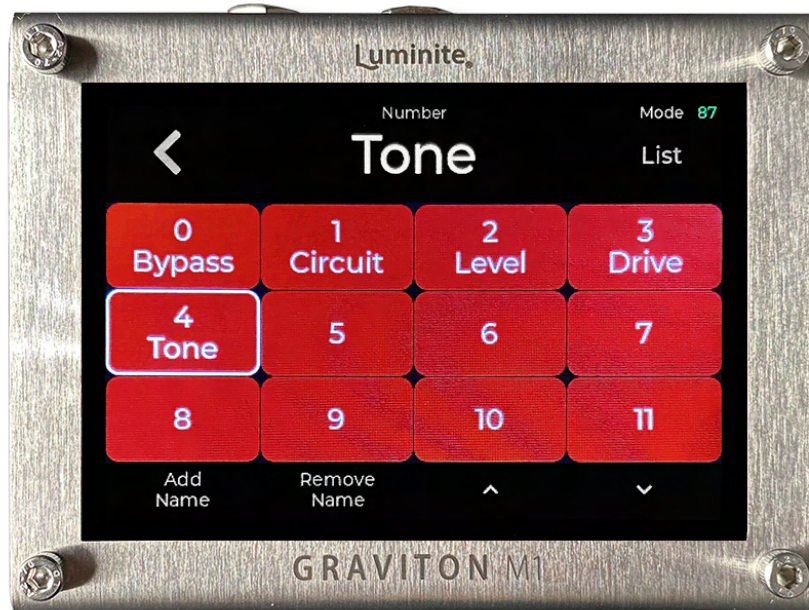


From the top:

- **Preset Name:** Shows the **active Preset** name. Tap to rename.
- **Bank:** Shows current **Bank** number. Tap to switch to another **Bank**.
- **MIDI Blocks x 8:** Each block displays a **MIDI Message** and its parameters. **MIDI Messages** in the currently **active Preset** have white borders, while semi-transparent blocks are **Last Sent Blocks**.
  - **Single Tap:** Edit selected **MIDI Message**.
  - **Long Tap:** Move Left / Disable / Delete / Send selected **MIDI Message**.
- **Editing MIDI Block (zoomed in):** Shows all selected **MIDI Block** parameters. From the top:



- **Channel Name:** Tap to rename the current **MIDI Channel**.
- **Channel:** Tap to change to another **MIDI Channel** (1 to 16). In the same screen, tap on the “...” button for 2 more options: **Rename MIDI Channel** (same as above) or **Change MIDI Channel Color**.
- **Type:** Tap to change the **MIDI Message** type.
- **Number / Note / BPM / Name** (depending on the selected **Type**) : Tap to input a number by keypad. If the type is **CC / PC / Scroll or Note**, you can switch to the “**List**” view (top right corner), where you can view the list of all **MIDI Numbers** and Add / Remove Name to them. (Up to 255 names available).



- **Value / Velocity:** Tap to input a value number by keypad. If the values are **CC / PC / Scroll** or **CC / Clock Expression** values, their colors will be yellow (changing values) instead of white (fixed values).
- **Slider:** If the Type is **CC**, a slider control will be shown, allowing you to drag and change the value by touch.
- **▶** : Send this **MIDI Message**.
- **Last Sent Blocks:** If you enable **Last Sent**, (Settings > Editor > Last Sent) when switching from one **Preset** to another, previously sent **MIDI Messages** are displayed as semi-transparent blocks. This feature is useful for maintaining an updated status of all your pedals / channels. **Expression MIDI Messages** in the active **Expression Preset** will be displayed here as well and have their values updated when the expression pedals are moving. The rules are:

- If multiple **MIDI Messages** of the same **Type** are sent to the same **MIDI Channel**, only the last message is shown for that **MIDI Channel** (e.g., patch changes).
- If multiple **CC / Scroll** messages are sent to the same **MIDI Channel**, the last message for each **CC Number** is shown for that **MIDI Channel** (e.g., parameter changes).
- Blocks are shifted towards the right side after being sent, ensuring that the most recent messages are always displayed on the left side.
- **Long Tap** to clear selected or all **Last Sent Blocks**.

On the bottom control bar:

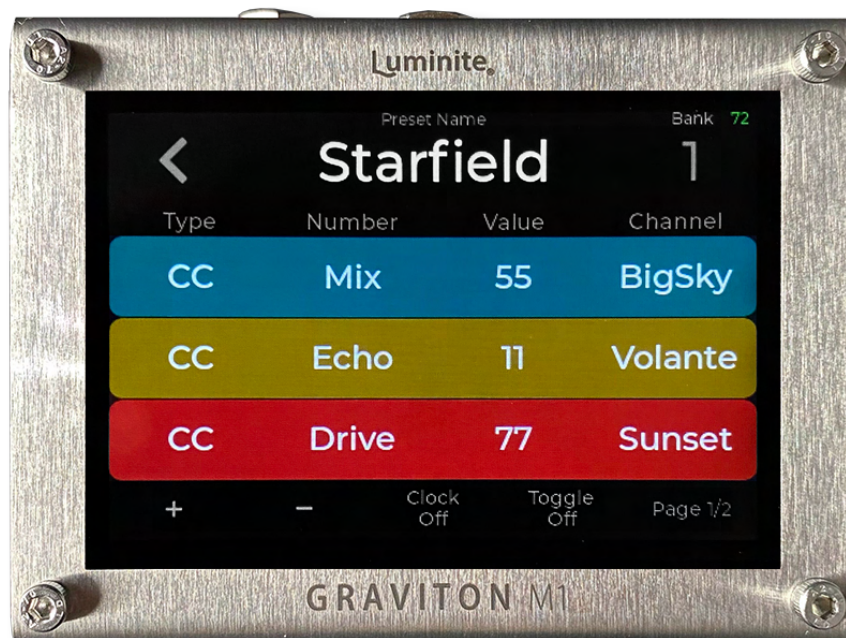
- **“+”**: Add a MIDI message.
- **“-”**: Remove the last added MIDI message.
- **▶**: Send this **Preset**.
- **Clock Off / BPM**: Shows running MIDI Clock BPM (beat-per-minute). Tap to set a new BPM. Set BPM to 0 to stop MIDI Clock.
- **Toggling Off / On / Momentary On**: when to send **Toggling CC / PC** message (see Glossary) for this Preset.
  - **Toggling Off** : Do not send **Toggling CC / PC** messages.
  - **Toggling On**: Send normal MIDI Messages when in “Toggled On” state (white text). And send **Toggling CC / PC** messages when the Preset is in “Toggled Off” state (gray text). Useful for switching between two sets of values within the same Preset.
  - **Momentary On**: Send **Toggling CC / PC** messages when the **XY Switch** is released and the preset is in “Toggled Off” state (gray text).



If the Preset has **Toggle On** or **Momentary On** enabled, but no **Toggle CC/PC** messages were added, a copy of all CC/PC messages in the Preset, with their values/numbers changed to 0, will be sent instead.

- **Page 1/2:** When you have added more than 8 **MIDI Messages**, this button will show up for navigating between pages.

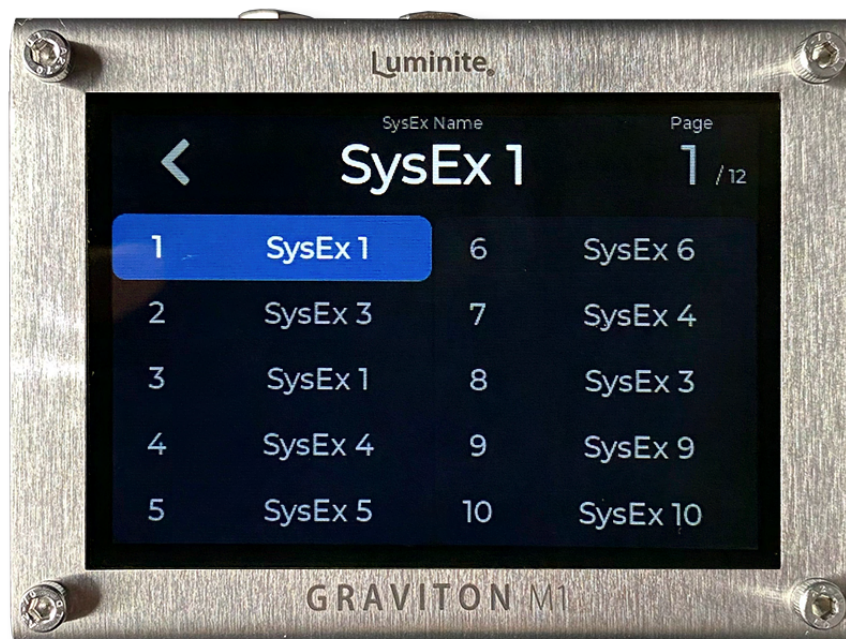
## > List Layout



Everything is the same as with **Block Layout**, except:

- Each **MIDI Message** is displayed as a line, allowing up to 3 **MIDI Messages** per page.
- The parameters are displayed as columns of **Type / Number / Value / Channel**. Tap to change each value respectively.
- **Last Sent** and **Sliders** are not available in this layout.

## > SysEx Messages Screen



When adding **SysEx Messages** to a **Preset** in **MIDI Editor Screen**, tapping on its SysEx Message / Value button will display this Screen for the selection of 120 **SysEx Messages** available to choose from, organized across 12 **Pages**. From the top:

- **SysEx Name:** Shows the selected **SysEx Messages**. Tap to rename.
- **Page:** Shows the current SysEx Page. Tap to switch to another one.
- **SysEx 1 - 120:**
  - **Single Tap:** Select the **SysEx Message** as the one to add to the current editing **Preset**.
  - **Double Tap:** Edit the selected **SysEx Message**: the format is Hexadecimal. The maximum length is 64 bytes. A longer than 64-byte message can be sent by splitting them into shorter messages (with the first message starting with F0

and the last message ends with F7) and adding them into a **Preset** in the same order.



- **Long Tap:** open the context menu for **Edit / Rename / Copy / Swap / Delete** the selected **SysEx Message**.

# Preset Library Screen



This screen is for managing the collective pool of 120 **Presets** (grouped into 12 **Banks**), shared between **Preset Mode** and **Setlist Mode**.

You can assign **XY Controllers**, **Footswitch Pedals**, and **MIDI In** to run these **Presets** from their respective screens.

Each Preset has a customizable background color, and the active Preset is highlighted. From the top:

- **Preset Name:** Shows the **active Preset** name. Tap to rename.
- **Bank:** Shows current **Bank** number. Tap to switch to another **Bank**.
- **Preset Blocks:** Show the **Preset** numbers and names:
  - **Single Tap:** Run the **Preset**.



- **Double Tap:** Edit the **Preset** in **MIDI Editor Screen**.
- **Long Tap:** Open the context menu for Edit / Rename / Move / Copy / Swap Preset / Change Preset Color.



- **Block / List:** Show the current display layout. Tap to switch between **Block** and **List** layout.

# XY Controllers Screen



This Screen is for mapping the **XY Controllers** switches to the designated **Presets / Actions**. The last activated switch is highlighted.

As up to 10 **XY Controllers** can be mapped individually, the menu button (on the bottom) shows which controller is the current one. To select another controller for mapping, you can either:

- Hit a switch on that controller and the screen will switch to it automatically.
- Tap on the menu button to select one manually.

From the top:

- **Preset Name:** Shows the **active Preset** name. Tap to rename.
- **Bank:** Shows current **Bank** number. Tap to switch to another **Bank**.

- **XY Switch Blocks:** Show the assigned **Preset / Action** for each switch:
  - **Single Tap:** Run the assigned **Preset / Action** (same as hitting the physical switch on your controller).
  - **Double Tap:** Edit the assigned **Preset** in **MIDI Editor Screen** (if the switch is assigned to one).
  - **Long Tap:** Open context menu for **Edit Preset / Assign Action / Reset All** to default settings (See **Glossary** section for the list of available **Actions**).
  
- **XY : 1 - 10** (menu): Shows the current **XY Controller**. Tap to open the menu:
  - **XY Controller:** Tap to select the **XY Controller** you want to map. You can also map an empty controller slot first (None) and pair a controller to that slot later. Unpairing won't delete what was mapped.
  - **Layout:** Select the display layout: **XY** (Default), **Block** or **List**.
  - **Arrows:** Display the switch directional arrows (in **Block** and **List** layout only).
  - **Invert Up / Down:** swaps the functionality of the up and down buttons, making it so that X up becomes X down and Y up becomes Y down. This is helpful for players who prefer the up/down switching orientation to mirror the screen instead of following it.

# Footswitch Pedals Screen



This Screen is for mapping the **Footswitch Pedals** to the designated **Presets / Actions**. The last tapped footswitch is highlighted. If a **Lumnite F** Series Footswitch is used, the **Block** layout will match with their physical layout automatically.

As up to 2 wired and 10 wireless **Footswitch Pedals** can be mapped individually, the menu button (on the bottom) shows which pedal is the current one. To select another pedal for mapping, you can either:

- Tap a footswitch on that pedal and the screen will switch to it automatically.
- Tap on the menu button to select one manually.

Please refer to the "**Setup Wired Footswitch Pedals**" / "**Setup Wireless Footswitch Pedals**" section first for instructions on how **Footswitch Pedals** work and how to set up one.

From the top:

- **Preset Name:** Shows the **active Preset** name. Tap to rename.
- **Bank:** Shows current **Bank** number. Tap to switch to another **Bank**.
- **Footswitch Blocks:** Show the assigned **Preset / Actions** for each footswitch:
  - **Single Tap:** Run the assigned **Preset / Action** (same as stomping on that physical footswitch on your pedal).
  - **Double Tap:** Edit the assigned **Preset** in **MIDI Editor Screen** (if the footswitch is assigned to one).
  - **Long Tap:** Open context menu for **Edit Preset / Assign Action / Learn** this footswitch (**Universal Footswitch** only) / **Reset All** to default settings (See **Glossary** section for the list of available **Actions**).
- **TRS / WL (menu) :** Shows the current **Footswitch Pedals**. Tap to open the menu:
  - **Footswitch Type:** Tap to select between **Wired** (TRS) or **Wireless (Luminite F10W or F6W)**.
  - **TRS / Wireless:** Tap to select the pedal you want to map. You can map an empty pedal slot first (None) and connect a pedal later. Changing a **TRS Jack** function / unpairing a wireless pedal won't delete what was mapped.
  - **Layout:** Select the display layout: **Block** or **List**.



# Expression Pedals Screen



This Screen is for:

- Managing / programming the collective pool of 10 **Expression Presets** (shared by all expression pedals, in both **Preset Mode** and **Setlist Mode**).
- Assigning the selected **Expression Preset** to the current **Expression Pedal** (the assigned preset is highlighted).

As up to 2 **Expression Pedals** can be assigned individually, the menu button (on the bottom) shows which pedal is the current one. To select another pedal for assignment, you can either:

- Move that pedal and the screen will switch to it automatically.
- Tap on the menu button to select one manually.

Please refer to the "**Setup Expression Pedals**" section first for instructions on how **Expression Pedals** work (per Preset and Globally) and how to calibrate one.

From the top:

- **Name:** Shows the assigned **Expression Preset** name. Tap to rename.
- **Expression Preset Blocks:** Shows the **Expression Preset** numbers and name:
  - **Single Tap:** Assign the selected preset to the current **Expression Pedal**.
  - **Double Tap:** Edit the selected preset in **Expression MIDI Editor Screen**.
  - **Long Tap:** Open the context menu for **Edit / Rename / Copy / Swap / Delete Preset**.
- **TRS 1 / 2 (menu):** Shows the current **Expression Pedals**. Tap to open the menu:
  - **TRS 1 / 2:** Tap to select the pedal you want to assign. You can assign an empty pedal slot first (None) and connect a pedal later. Changing a TRS Jack function won't delete what was assigned.
  - **Layout:** Select the display layout: **Block** or **List**.

## > Expression MIDI Editor Screen



This screen shows the selected **Expression Preset** and its **Expression Messages** (see **Glossary** for the complete list).

Editing **Expression Presets** is exactly the same as with **Presets**. If you enable **Last Sent** (Settings > Editor > Last Sent), **MIDI Messages** in active **Preset** will be displayed as semi-transparent blocks here as well.

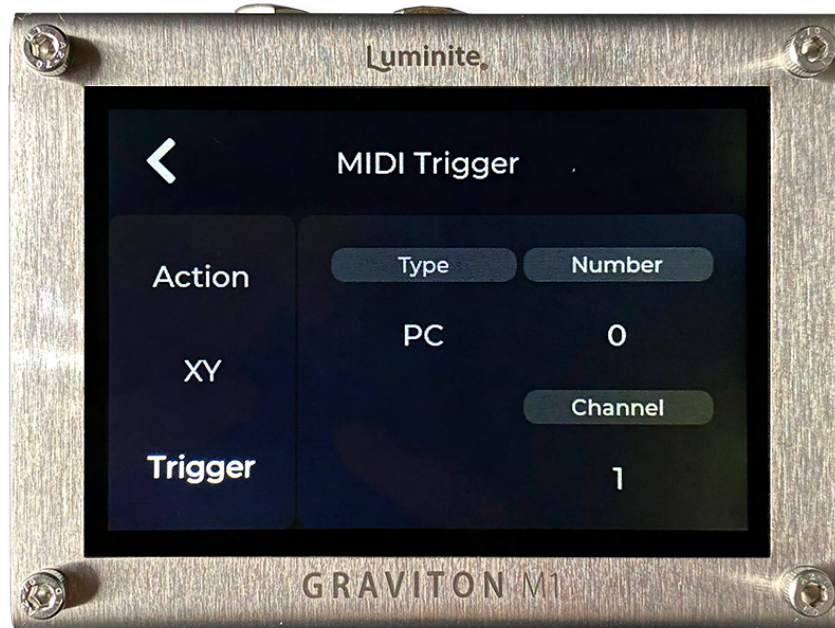
## MIDI In Screen

This screen shows a list of 10 **Presets / Actions** that can be triggered by sending the corresponding **MIDI Messages** through the **MIDI In** jack. For each block:

- **Single Tap**: Run the assigned **Preset / Action**.



- **Double Tap:** Edit the assigned **Preset** in **MIDI Editor Screen** (if the footswitch is assigned to one).
- **Long Tap:** Open context menu for **Edit Preset / Assign Action / Trigger:** program the **MIDI Message** that will activate the assigned **Preset / Action** (accepted types are PC and CC messages).



- **Layout:** Select the display layout: **Block** or **List**.

# Live Screen



Live screen is optimized for live performance with the super-sized **Preset** name that can be read across the stage. All touch screen buttons are disabled except the < (back) button to prevent accidental changes while performing.

# Control Surfaces Screen

Updating...

# Setlist Mode

## Getting Started

- **Setlist Mode** is useful when you want to organize up to 10 **Presets** (picked from the **Preset Library**) into a **Song**, and up to 10 **Songs** (picked from the **Song Library**) into a **Setlist** (there are 120 **Setlists** in total), and scroll through them while playing.
- **Setlist Mode** enables a single **Preset** to be used in multiple **Songs**, and likewise, one **Song** can be included in multiple **Setlists**. For example, a “Solo” **Preset** can be used for several **Songs** / **Setlists**. Changes to that **Preset** will automatically update in all **Songs** and **Setlists** where it's used. Similarly, changes to a **Song** will be reflected in all **Setlists** where it's included in.
- In **Setlist Mode**, you can scroll through **Presets** within a **Song** with the additional **Actions**: move up, down, left, and right.
- **Setlist Library > Setlist > Song** or **Song Library > Song** should be the main Screen for playing in **Setlist Mode**, where you can see all the **Presets** of a **Song** in the intended order and scroll through them.
- **XY Controllers, Footswitch Pedals, Expression Pedals, and MIDI In** are configured separately between **Preset** and **Setlist Modes**.

# Setlist Library Screen



This Screen allows you to:

- Manage and program the list of 120 **Setlists**, organized into 12 **Pages**.
- Pick a **Setlist** to start performing in **Setlist Mode**.

From the top:

- **Setlist Name:** Show the selected **Setlist** name, tap to rename.
- **Page:** Shows the current **Setlist Library** page. Tap to switch to another one.
- **Setlist 1 - 120:**
  - **Single Tap:** Select the **Setlist**.
  - **Double Tap:** Open the **Setlist** (in **Setlist Screen**)

- **Long Tap:** Open context menu for **Open / Rename / Copy / Swap / Delete** the selected **Setlist**.

## > Setlist Screen



This screen shows the **playing Setlist** and a list of its 10 **Songs** (added from the **Song Library**).

From the top:

- **Playing Setlist:** Shows the **playing Setlist** name. Tap to rename.
- **Song 1 - 10:**
  - **Single Tap:** Select the **Song**.
  - **Double Tap:** Open the **Song** (in **Song Screen**)



- **Long Tap:** Open context menu for **Add / Change / Remove Song** (from **Song Library Screen**).

## > Song Screen



This screen shows the **playing Song** and a list of its 10 **Song Presets** (added from the **Preset Library**), with the **active Preset** highlighted. From the top:

- **Playing Song:** Shows the playing **Song** name. Tap to rename.
- **Song Preset 1 - 10:**
  - **Single Tap:** Run the selected **Song Preset**.
  - **Double Tap:** Edit the selected **Song Preset** in **MIDI Editor Screen**
  - **Long Tap:** Open context menu for **Add / Change / Remove Preset** (from **Preset Library Screen**).

# Song Library Screen



This Screen shows a list of all 120 **Songs** available, organized into 12 **Pages**. This Screen is for:

- Manage and program all your **Songs** here and add them to your **Setlists** in the **Setlist Library Screen** later.
- If you don't want to set up **Setlists**, you can just pick a **Song** here, double tap to open and start editing / performing in **Setlist Mode**.

From the top:

- **Song Name:** Show the selected **Song** name, tap to rename.
- **Page:** Shows the current **Song Library** page. Tap to switch to another one.
- **Song 1 - 120:**
  - **Single Tap:** Select a **Song**.

- **Double Tap:** Open the **Song** for editing.
- **Long Tap:** Open the context menu for **Edit / Rename / Copy / Swap / Delete** selected **Song**.

## XY Controllers Screen



**Setlist Mode**, you can scroll through **Presets** within a **Song** with the additional **Actions**: move up, down, left, and right. (see [Glossary](#))

## Footswitch Pedals Screen

The same as with **Preset Mode**, but with the **Actions** available for **Setlist Mode** (see [Glossary](#))



# Expression Pedals Screen

The same as with **Preset Mode**, but with the **Actions** available for **Setlist Mode** (see [Glossary](#))

# MIDI In Screen

The same as with **Preset Mode**, but with the **Actions** available for **Setlist Mode** (see [Glossary](#))

# Live Screen

Same as with Live Screen in Preset Mode, except the playing **Song** and the current active **Preset** in that **Song** are displayed.

# External Pedals

## Setup Wired Footswitch Pedals

**Graviton M1** works with any type of **Footswitch Pedal** (momentary / latch / resistor ladder etc) over **TRS Jacks** with its "**Learn**" function (or just plug and play with **Luminite F Series Pedal**). Up to two pedals can be connected (over **TRS 1** and **2 Jack**), with support up to 10 switches per pedal.

To connect a **Footswitch Pedal**:

- Plug into **TRS 1** or **2 Jack** using a ¼ inch cable.
- Go to **Settings > TRS**, tap on the **TRS Jack** you just plugged into.
- In **Mode >** select **Footswitch**.
- In **Type**, select either:
  - **Universal**: For any 3rd party footswitch pedals. Performing "**Learn**" is needed.
  - **Luminite F10 / F6**: Plug and play. If you have a **Luminite F10W** or **F6W** pedal, but want to use them in **Wired Mode**, then select **Luminite F10** or **F6** accordingly.

**Learn (Universal Footswitches only)**: This process allows you to assign a physical footswitch to a **Preset / Action** in the **Footswitch Pedals Screen**. Once set, tapping the footswitch will execute the assigned **Preset / Action**.

# Setup Wireless Footswitch Pedals

**Luminite F10W** and **F6W** Footswitch Pedals can be paired with **Graviton M1** wirelessly, just like with **XY Controllers**. They can also work in **Wired Mode** when connecting over **TRS Jacks** using a ¼ inch cable , just like with the **Luminite F10** and **F6** pedals (see **Wired Mode** above).

To pair a **Luminite F10W / F6W**:

- Go to Settings > Wireless.
- Select Wireless Footswitches.
- Tap on an empty slot > follow the on-screen instructions.

# Setup Expression Pedals

**Graviton M1** can auto-detect and work with any **Expression Pedal** (any potentiometer values / hot tip / hot ring etc) with its "**Calibrate**" function, requiring no further manual configuration.

Up to two **Expression Pedals** can be connected and with each pedal can control multiple MIDI parameters at once (see **Glossary** for a complete list).

An **Expression Pedal** can work in two ways:

- **Per Preset**: By adding **Expression Messages** to a **Preset** (in **MIDI Editor Screen**). Only when that **Preset** is active, these **Expression Messages** can be controlled by any **Expression Pedal** plugged into **TRS 1** or **2 Jack** (doesn't matter which).
- **Globally**: By assigning this pedal to an **Expression Preset** (in **Expression Pedals Screen**). The assigned preset will remain active and can be controller this pedal, until:
  - Another **Expression Preset** is manually assigned to that **Expression Pedal**.

- A **Preset** contains an **Expression Preset Message** is active, which specifies which **Expression Preset** is assigned to which **Expression Pedal**.

**Expression Pedals** require calibration before using. Calibration data won't be reset when switching that **TRS Jack** to another mode:

- Plug in an **Expression Pedal** to **TRS 1** or **2** Jack.
- Go to Settings > TRS, tap on the **TRS Jack** you just plugged into.
- Set that TRS Jack to **Expression Mode** by tapping on **Mode > Expression**
- Tap **Calibrate**.
- Move the pedal all the way up and down.
- Tap < to finish.

# Settings



## Display

- **Display Brightness:** Adjust LCD display brightness (from 1 to 10). Default: 8
- **Touch Calibration:** If you are experiencing issues with the accuracy of the touch screen, you can easily recalibrate it by tapping on the two red squares a few times until they turn white.

# Editor

MIDI Editor Layout:

- **Block Layout:** Displays all **MIDI Messages** as blocks, with up to 8 blocks per page. Extra options: **Last Sent** and **Sliders**. (default)
- **List Layout:** Displays all **MIDI Messages** as a list, with 4 parameter columns. Up to 3 per page.

Settings:

- **Sliders:** (Block Layout only) displays sliders instead of numbers for CC Values in the main **MIDI / Expression MIDI Editor Screen**. Default: On
- **Colors:** Enable **MIDI Channels** colors. Default: On
- **Last Sent:** (Block Layout only) Enable the **Last Sent** feature, maintaining an updated status of all your pedals / channels (see **MIDI Editor Screen** for more information on how it works). Default: On

Choose **Block Layout** for more on-screen information and features, or **List Layout** for simplicity.

# MIDI

Customize **MIDI Messages** routing options which go through:

- **MIDI:** Over **MIDI Out** jack and all **TRS Jacks** that are configured to MIDI Out mode.
- **USB MIDI:** Over **USB** and **USB Host** port.
- **BLE MIDI:** MIDI over Bluetooth Low Energy (wirelessly). BLE MIDI is on and discoverable by default. To turn it off, simply switch off all of its routing options.

Routing options:

- **Out:** Outgoing MIDI messages. Default: On
- **In:** Incoming MIDI messages. Default: On
- **Through:** Repeat any incoming MIDI messages. Default: Off
- **Clock:** MIDI Beat Clock message. Default: Off

## TRS

Configure the TRS 1, 2, 3 Jack function:

- **TRS Jacks:** Select the TRS Jack you want to configure.
- **Mode:** There are 3 modes available:
  - **MIDI Out:** send MIDI messages to other MIDI devices. There are 4 **Types** (Try each one if you don't know what type works)
    - **Type A:** Tip: Signal, Ring: Power. (MIDI Standard)
    - **Type B:** Ring: Signal, Tip: Power.
    - **Tip Active:** Tip: Signal, Ring: Floating.
    - **Ring Active:** Ring: Signal, Tip: Floating.
  - **Footswitch:** For connecting a **Footswitch Pedal**. There are 3 **Types**:
    - **Universal Footswitch:** For use with any **Footswitch Pedal**, using the “**Learn**” function. (See [Setup Footswitch Pedals](#) section)
    - **Luminite F10 Footswitch:** For use with the Luminite F10 or F10W in Wired Mode over a ¼ inch cable (plug n play, no “**Learn**” needed).

- **Luminite F6 Footswitch:** For use with the Luminite F6 or F6W in Wired Mode over a ¼ inch cable (plug n play, no “**Learn**” needed).
  - **Sensitivity:** Adjusts the debounce time for footswitch pedals. Increase the value if the footswitches are responding inconsistently or glitchy (Default 5).
- **Expression: Expression Pedals** require calibration before using. You only need to do this once for each **TRS Jack**, unless you switch to a different pedal with a different pot value / polarity, or reset all data. Tap on the Settings button for:
  - **Calibrate:** Graviton M1 will detect what kind of **Expression Pedal** (potentiometer value / hot tip / hot ring etc) is plugged in and configure automatically.
  - **Sensitivity:** The **Expression Pedal** is more responsive at lower values but is more prone to noise, thus can send MIDI signals when it is not moving. Conversely, at higher values, it is less responsive but produces less noise. The default value is 5.
  - **Toe / Heel Position:** Reverse the pedal moving direction. Default: Off
  - **Response Curve:** The **Linear** option (Default) is good most of the time. Try **Log** if you want to simulate a volume pedal response curve with a normal linear Expression pedal. Try **Anti-Log** if you want to use a volume pedal as an expression pedal and want to flatten the response curve.

## USB

Graviton M1 can act as either one of these two USB MIDI modes:



- **Device (to Computers):** When connected to a computer using the **USB MIDI** port (USB Type-C). (Default)
- **Host (to MIDI Devices):** When connected to other MIDI devices using the **USB Host MIDI** port (USB Type-A).

USB MIDI does not work with both **USB MIDI** and **USB Host MIDI** port plugged in. Make sure to only have one port connected at a time and set the USB MIDI mode accordingly.

## Clock

When switching **Presets**:

- **Keep MIDI Clock Running:** Unless the **active Preset** has a Clock stop message. (Default)
- **Stop MIDI Clock:** Stops immediately when switching to another **Preset**.

## Bank

This setting specifies what happens when you switch to another **Bank** while in **Preset Mode**.

- **Do Nothing:** (Default)
- **Play Its First Preset:** Run the first **Preset** of that **Bank**.
- **Play Its Last Active Preset:** Recalls the last **active Preset** of that **Bank**.
- **Play Its Parallel Preset:** Parallel **Presets** are in different **Banks** but assigned to the same **XY Switch** (X1 - Y5)

# Wireless

- Pairing > **XY Controllers**: A Graviton M1 can pair with up to 10 XY Controllers. This is useful if you have more than one instrument, each can have their own XY Controller attached.
- Pairing > **Wireless Footswitch**: A Graviton M1 can pair with up to 10 Luminite Wireless Pedals.



- **Change Channel**: In some rare cases, if you have issues with XY signal being intermittent (strong interference from surrounding environment), you can try changing to another wireless channel. All paired **XY Controllers** need to be paired again every time you do so.

# Data

All of your **Presets, Songs, Setlists, Settings** etc data in Graviton M1 can be saved into a **Backup**. You can have up to 10 **Backups** (useful if you have different setups / rigs) and switch between them.

- **Backup:** Shows the Backup screen with 10 backup file slots, where you can:
  - **Save:** Back up all your data into a backup file.
  - **Load:** Restore data from a backup file.
  - **Rename:** Rename the selected backup file.
  - **Delete:** Delete the selected backup file.
  - **Import / Export Backup:** Send or receive a backup file from your computer / smartphone using WiFi.
- **Reset:** This will reset all user data. Updated **System Software, Backups**, paired **XY Controllers** and **Touch Calibration** are not affected. (Performing a **Factory Reset** will revert the **System Software** and all data to the original factory state. See Basic > The Hardware: Graviton M1 for more information).

# Update

- **Update Software:** Check and perform the Over-The-Air software update if available (require a WiFi network with internet). No computer needed.

# Manual



Graviton M1 has a built-in manual in Settings > Manual, conveniently accessible anytime and always up-to-date with the current software version.