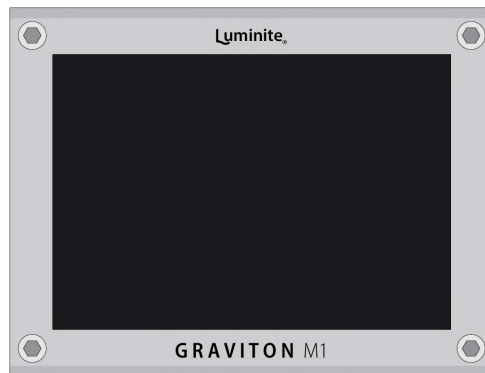


Luminite®

GRAVITON M1 / M2

— midi controller —

User Manual



For use with Graviton M1/M2 Software 4.4.x

www.luminitefx.com

Contents

Basic

[Introduction](#)

[The Hardware: Graviton M1](#)

[The Hardware: Graviton M2](#)

[The Hardware: Wireless Controllers](#)

[The Software: Basic Programming](#)

[The Software: Basic Navigation](#)

[Glossary: Common Terms](#)

[Glossary: Actions](#)

[Glossary: Messages](#)

Home

[Preset Mode](#)

[Setlist Mode](#)

[MIDI Editor Screen](#)

[Preset Library Screen](#)

[MIDI Tracking Screen](#)

[Live Screen](#)

[Setlist Library Screen](#)

[Song Library Screen](#)

Devices

[What are Actions ?](#)

[XY Controllers Screen](#)

[EC Controllers Screen](#)

[Footswitch Pedals Screen](#)

[Expression Pedals Screen](#)

[MIDI In Screen](#)

Setup External Pedals

[Setup Wired Footswitch Pedals](#)

[Setup Wireless Footswitch Pedals](#)

[Setup Expression Pedals](#)

[Setup Relay Ports](#)

[Setup Control Voltage Ports](#)

Settings

[Display](#)

[Editor](#)

[MIDI](#)

[TRS](#)

[USB](#)

[Clock](#)

[Bank](#)

[Wireless](#)

[Data](#)

[Update](#)

Manual

Basic

Introduction

Graviton M1/M2 are the next-generation MIDI controller pedals 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/M2 can be remote-controlled by guitar mounted XY/EC Controllers, which can be attached to your instrument. Each XY controller features two 5-way directional switches (10 buttons in total), each EC has two rotary encoder knobs with push buttons. Each 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/M2 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 6 (M1) and 8 (M2) devices at once over 4 different MIDI interfaces. Works with almost any external footswitch / expression pedal. Connect up to 2 (M1) or 4 (M2) x Footswitch / Expression Pedals over TRS Jacks, 10 x F10W or F6W Wireless Footswitch pedals and 10 x XY/EC 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/M2 to turn compact multi-effects pedals / amp modelers / computers / iPhones / iPads into portable and powerful gigging machines.

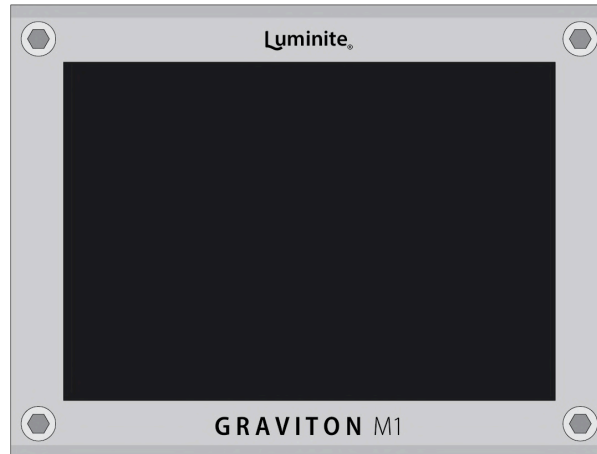
Features

- 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/EC Controller with 10 fully programmable switches (sending MIDI, switching banks, songs and many more).
- XY/EC Controller features: 650ft (200m) range, strong encrypted signal, 1 month (XY) or 7 days (EC) battery life.
- Built-in 6 x Soft Touch Footswitches (M2 only): Smooth and silent operation.
- Connect up to 2 x (M1) and 4 x (M2) Footswitch / Expression Pedals over TRS Jacks, 10 x F10W or F6W Wireless Footswitch Pedals and 10 x XY/EC Controllers, all can work together at the same time.
- Relay Port (M2 Only): Control up to 2 x Amp Channels Switching / Pedal's Footswitch Inputs
- Control Voltage Port (M2 Only): Control up to 2 x CV Analog Voltage / Expression Inputs.
- Preset Mode and Setlist Mode.
- 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 Messages per Preset / Expression Preset. Unlimited Presets chaining.
- Send Program Change, Control Change, Note On / Off, Counter 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 (M1) and 4 x (M2) 1/4 inch MIDI over TRS. (4 modes: Type A, Type B, Tip Active, Ring Active)
- 1/8 inch (3.5mm) MIDI over TRS (4 modes: Type A, Type B, Tip Active, Ring Active)
- 1/8 inch (3.5mm) MIDI In (M2 Only)
- USB MIDI (Bus Powered).
- USB Host MIDI (can power other devices).
- Bluetooth LE MIDI.
- Import / Export user data over WiFi.

- Effortless Over-The-Air Software Update over WiFi.

The Hardware: **Graviton M1**



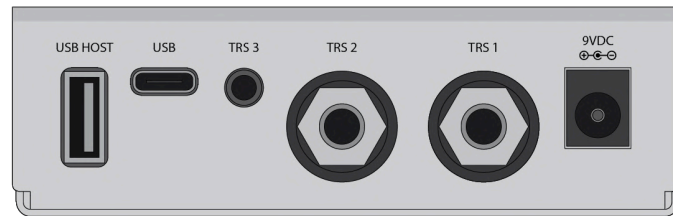
Graviton M1 MIDI Interfaces

Graviton M1 can send MIDI to 6 devices at once over 4 different MIDI interfaces:

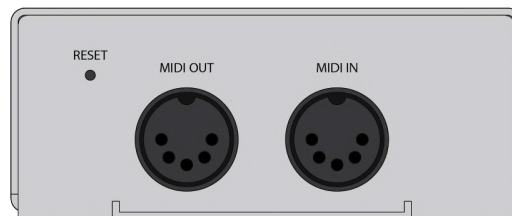
- **1 x Standard MIDI (5-pin)**
- **3 x MIDI over TRS** (2 x 1/4" and 1 x 1/8" jacks): each configurable with 4 output modes, compatible with all TRS MIDI devices. (see Settings > TRS).
- **1 x USB MIDI:** switchable between Device and Host mode, compatible with all USB Class Compliant devices. (see 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 (4 modes) / Footswitch / Expression Pedals in with 1/4-inch (6.35mm) stereo cables.
- **TRS 3:** MIDI out with a 1/8-inch (3.5mm) stereo cable.
- **USB:** MIDI communication with computers using a 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/EC Controllers / Wireless Footswitches**).



- **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 Hardware: **Graviton M2**



Graviton M2 Footswitches:

- **6 x Soft Touch Footswitches:** Smooth and silent operation.
- **Staggered Footswitch Height:** Taller at the back and lower at the front for easy access.

Graviton M2 MIDI Interfaces:

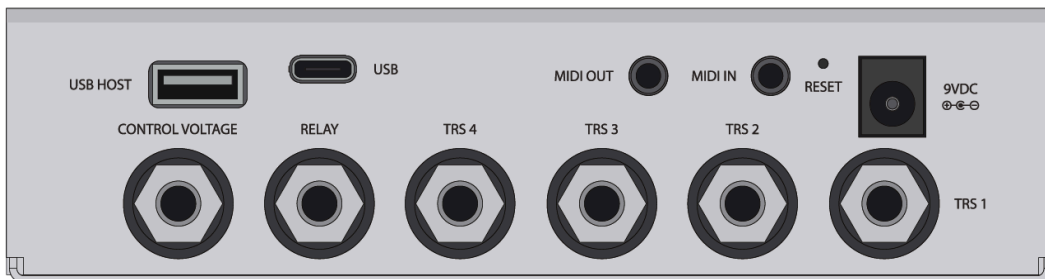
Graviton M2 can send MIDI to 8 devices at once over 4 different MIDI interfaces:

- **1 x Standard MIDI (5-pin)**
- **5 x MIDI over TRS** (4 x 1/4" and 1 x 1/8" jacks): each configurable with 4 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 M2** with **MIDI Messages** from other devices.

Graviton M2 input / output jacks:



- **9VDC:** Power Adapter in (9V center-negative, 250mA minimum).
- **TRS 1 to TRS 4:** MIDI Out (4 modes) / Footswitch / Expression Pedals in with 1/4-inch (6.35mm) stereo cables.
- **MIDI Out:** (4 modes) with a 1/8-inch (3.5mm) stereo cable.
- **MIDI In:** (Type A only) with a 1/8-inch (3.5mm) stereo cable.
- **Relay:** Remote Amp Channels / Pedals Footswitch Inputs Switching with a 1/4-inch (6.35mm) stereo cable.
- **Control Voltage:** For sending voltage to CV Inputs / driving the Expression Inputs of other Synth / Pedals with a 1/4-inch (6.35mm) stereo cable.
- **USB:** MIDI communication with computers using a 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/EC Controllers / Wireless Footswitches**).

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

- **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.



- **MIDI In:** with standard 5-pin MIDI cable.
- **MIDI Out:** with standard 5-pin MIDI cable.

**Either the 1/8-inch (3.5mm) MIDI In or 5-pin MIDI In port can be used at one time, not both.*

Graviton M2 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: 5.9 x 4.52 x 2.4 inches (150 x 115 x 63mm).
- Weight: 22.5oz (640g).

The Hardware: **Wireless Controllers**

XY and EC Controllers:

- XY and EC 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 modern poly / nitro finishes, with the exception of vintage / raw / oil finish. Switching with your fingertips is easy and intuitive, similar to using a pickup selector switch.
- Each 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 buttons. Each EC Controller has two rotary encoders, each can be pushed down as a button.



- 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:



- If you prefer not to alter the appearance of your guitars, good places to attach your controllers are behind the headstock or on the side of the body facing upwards.



F10W and F6W Footswitches:

- The F10W and F6W are dual-mode footswitch pedals. In wireless mode, they function similarly to the XY and EC controllers, offering the same long range but with significantly extended battery life.
- They can be placed anywhere, either on the pedalboard or away from it, offering versatility. For instance, you could have the M1/M2 mounted on a mic stand or on a desk for easier programming, while the F10W and F6W can be kept on the floor for playing.
- Plug the F10W or F6W into an M1/M2 TRS jack set to 'Footswitch In' mode, and they will automatically switch to Wired Mode, disconnecting the battery.
- To activate low latency mode in wireless mode, connect a small external battery to the charging port.

Operation

- All Luminite wireless controllers feature advanced wireless technology with significantly longer range and stronger interference resistance compared to Bluetooth.
- They are also much easier to use compared to Bluetooth-based controllers—there's no need to turn them on, wait for a connection, or turn them off after finishing playing. Once paired, they always work the instant a button is pressed.
- They maintain their pairing status indefinitely, even after the battery runs out. Once recharged, you can start using them immediately without pairing them again.
- When storing XY or EC controllers in a guitar case or gig bag, ensure that the buttons are not being pressed, as this would keep the controllers awake and drain the battery.

Pairing

- A Graviton M1/M2 can pair with up to 20 wireless controllers (10 XY or EC and 10 F10W or F6W). Each controller can be individually configured with its own settings.
- To pair a wireless controller to a Graviton M1/M2, navigate to Settings > Wireless > XY/EC Controllers or Wireless Footswitches > Tap on an empty slot > Select the controller type you want to pair > Follow the on-screen instructions.
- If you have multiple instruments, each instrument can have its own dedicated XY/EC Controller. Alternatively, you can also mount multiple XY/EC Controllers to a single instrument.
- In very rare cases, if you have issues with the wireless controller's signal being intermittent (strong interference from the surrounding environment), you can try changing to another wireless channel. (Setting > Wireless > Change Channel). All paired controllers need to be paired again every time you do so.

Power and charging

- There are no physical ON/OFF switches on all wireless controllers—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.
- The battery level is shown as a green percentage number in the top-right corner of the M1/M2 screen. If there are multiple wireless controllers paired, the battery level of the last activated controller is displayed.
- A full charge from an empty battery typically takes an hour. The orange LED on the controllers lights up and will turn off once the battery is full.
- The battery level is reported accurately only when unplugged. If it is a quick or partial charge, the battery level will be reported correctly only after a few minutes of settling down.

Features:

- **Low-profile design (XY and EC):** 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.
- **Fully programmable:** With switches / knobs 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 (F10W, F6W) 1 month (XY) 7 days (EC)
- **Tactile, silent, and reliable switches:** Rated for 100,000 taps.

Specifications:

- Wireless Range: 650ft (200m).
- Wireless Frequency: 2.4Ghz
- Latency: 60ms for the 1st click after waking up, 4-5ms for clicks within one second after the last one.
- Power Input: USB Type-C.
- Charging Time: 1 hour.
- Battery Life: 6 months (F10W, F6W) 1 month (XY) 7 days (EC)
- Width x Depth x Height:
 - XY: 2 x 0.88 x 0.51 inches (53mm x 22.4mm x 13mm).
 - EC: 2.36 x 0.88 x 0.82 inches (60mm x 22.4mm x 21mm).

- F10W: 11 x 3.3 x 1.77 inches (280 x 85 x 45 mm)
- F6W: 5.9 x 3.3 x 1.77 inches (150 x 85 x 45 mm)
- Weight:
 - XY/EC: 0.38oz (11g)
 - F10W: 1.4 lb (650g)
 - F6W: 1 lb (450g)

The Software: **Basic Programming**

- The Graviton M1/M2 units serve as the central units, where all programming takes place, and they transmit all MIDI and other message types through their multiple interfaces and jacks.
- Each Graviton M1/M2 contains a total of 120 Presets accessible via the Home > Preset Library menu. Each preset has the capacity to store up to 16 Messages, which can include MIDI, Keystroke, Control Voltage, Relay commands, and more. There are also 10 Expression Presets dedicated to Expression Pedals.
- Each Graviton M1/M2 unit can be simultaneously controlled by multiple controllers, such as XY/EC Controllers, built-in or external Footswitches, or Expression Pedals, etc.
- Each button on these controllers can be assigned with Actions via the Devices menu. Actions are what happens when the button is clicked, double-clicked, held, or released. These Actions can include sending a Preset, switching Banks, and more. Each Expression Pedal is assigned to an Expression Presets.

- Please note that the 120 Presets (and 10 Expression Presets) are shared among all controllers. Additionally, a 'Send a Preset' Action does not contain the Preset itself; rather, it simply points to a Preset in the Preset Library.
- Overall, programming involves two main steps: programming the Presets (determining which Messages you want to send) and programming the Actions (determining what happens when controller buttons are triggered, including sending the Presets you programmed).

The Software: **Basic Navigation**

- Graviton M1 and M2 share the same software platform and user interface (except where noted); all pictures show the M1 display for illustration purposes.
- The User Interface has a "Select a Screen" page at the top, which organizes multiple Screens into three groups:
 - **Home:** For managing (Preset Library) and programming Presets (MIDI Editor), tracking MIDI parameters (MIDI Tracking), and large display mode (Live). Also for managing Songs and Setlists (Setlist and Song Library) in Setlist Mode only.
 - **Devices:** For managing and programming connected controllers that are used to control the Graviton M1/M2 (XY/EC Controllers, Footswitch Pedals, Expression Pedals etc)
 - **Settings:** For configuring the system operation and settings.
- On the top right corner, you can switch in between two Playing Modes:
 - **Preset Mode:** Send 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)

- There is no separate Edit/Play mode. Instead, each screen can be used for programming and displaying information in various ways while you play, serving unique purposes to suit your needs.
- Programmed parameters are automatically saved after 3 seconds, no manual saving needed.
- There are two types of touchscreen interactions: single touch (similar to a left mouse click) and long touch (touch and hold), which display additional menus (similar to a mouse right-click).

Glossary: Common Terms

- **Controllers:** These are devices that can control the Graviton M1/M2, such as XY/EC Controllers, Footswitch Pedals (including M2 built-in footswitches, or the F10/W, F6/W, etc.), or the MIDI In port, which can trigger actions based on incoming MIDI CC/PC commands.
- **Buttons:** Physical switches on the controllers mentioned above, or commands received through the MIDI In port. Each button can be assigned multiple actions such as 1st Tap, 2nd Tap, 3rd Tap, Hold, Double Tap, and Release.
- **Actions:** The response triggered by pressing a button. Common actions include sending a preset from the Preset Library, but actions can also switch between banks, songs, etc. Actions are configured in the Devices section.
- **Presets:** A collection of up to 16 messages, organized into 12 banks of 10 presets each (1-12). Presets can be managed in Home > Preset Library, and they are shared between all controllers.

- **Messages:** These include MIDI, keystroke, control voltage, relay commands, and more that can be added into presets via Home > MIDI Editor. Messages are sent out when their presets are sent.
- **Current Preset:** The last preset that was activated or sent.
- **Toggling:** A setting that allows sending alternative messages within the same preset.
- **Bank:** A group of 10 presets.
- **Song:** A collection of up to 10 presets, selected from the Preset Library.
- **Song Preset:** A preset that is part of a song.
- **Setlist:** A collection of up to 10 songs, selected from the Song Library.
- **Playing Mode:** This can be either Preset Mode or Setlist Mode.
- **Expression Message:** A special type of message controllable by expression pedals.
- **Expression Preset:** A group of up to 6 expression messages.
- **TRS (Tip, Ring, Sleeve):** A TRS Jack is a stereo jack available in either ¼" or ⅛" types.

Glossary: Actions

- **Preset Mode:**
 - **Bank Preset:** Send the **Preset** in the designated position (1st to 10th) in the current **Bank**. This **Preset** will change accordingly when switching to another **Bank**.

- **Fixed Preset:** Send the specific **Preset** of a specific **Bank** (1 to 120). This assigned **Preset** will not change when switching to another **Bank**.
- **Preset +/- :** Scroll to the next / previous **Preset**.
- **Bank +/- :** Jump to the next / previous **Bank**.
- **Bank Jump:** Jump to a designated **Bank**.
- **Bank Toggle:** Jump between the current bank and a Bank of your choice.
- **Bank A/B:** Jump between two **Banks** of your choice.
- **Encoder Click:** Simulating a click of the rotary encoders on EC controllers, must be used in conjunction with **Encoder Message**.
- **Shortcut:** Toggle between **MIDI Editor / Preset Library / MIDI Tracking / Live** and the last screen.
- **Change Brightness:** Set the LCD screen brightness (1-10)
- **Setlist Mode:**
 - <, >, ^, v: Scroll left, right, up, down while in **Song Screen**.
 - **Song Preset:** Send 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**.

Glossary: Messages

- **CC:** Send a MIDI Control Change Message.

- **Toggling On:** Alternates the same CC message with a value of 0 upon other button presses. (LED off)
- **Momentary On:** Send the same CC message with a value of 0 button upon button releases. (LED off)
- **PC:** Send a MIDI Program Change Message.
- **Toggling CC/PC:** Add alternative CC/PC messages to your presets, alongside the normal messages. You can switch between these two sets of messages with:
 - **Toggling On:** Alternate sending the toggling CC/PC messages with the normal messages on button presses. (LED off)
 - **Momentary On:** Send the toggling CC/PC messages on button releases. (LED off)
 - **Toggling Off:** Ignore the toggling CC/PC messages.
- **Counter CC/PC:** These are designed to always remember their last CC values or PC numbers even when you switch presets. They achieve this through their own internal counters, ensuring continuity across changes.

Example: Adjusting the value of a 'CC Counter 32, Channel 1' message to 100 will simultaneously update the value to 100 for every occurrence of 'CC Counter 32, Channel 1' across all Presets.

- **Counter +/-:** Increase/decrease the CC Value/PC Number by an adjustable step and send the result.
- **Counter Update:** Update the CC Value/PC Number, then send the result.
- **Counter Send:** Send the current CC Value/PC Number.
- **Note:** Note On / Note Off / All Note Off.

- **SysEx**: Send a System Exclusive MIDI message from the **SysEx Library**. Graviton M1/M2 supports up to 64 bytes long SysEx messages. See Preset Mode > MIDI > SysEx Library for more details.
- **Clock > Set 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/M2 to output MIDI Beat Clock).
- **Clock > Clock +/-**: nudge the Global BPM up and down by a set amount.
- **Clock > Start**: Send the MIDI Clock Start message. Not to be confused with the MIDI Beat Clock messages which are sent continuously.
- **Clock > Stop**: Same as above.
- **Clock > Continue**: Same as above.
- **Clock > Tap Tempo**: Change the MIDI Beat Clock BPM. Assign a **Preset** containing this message to a button 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 > Song Position Pointer**: Send MIDI SPP message.
- **Preset > Chain Preset**: Send a designated **Preset**. You can chain multiple **Presets** with this method, useful if you want to send more than 16 **Messages** at once.
- **Preset > Set Toggle**: Set the On/Off state of a target **Preset**. (if it has Toggling On enabled)
- **Special > Keystroke**: Send keyboard keys messages. Requires USB Keyboard mode enabled.
- **Special > Pause**: Add a small delay between messages. This is useful if the messages are being sent too quickly for the target devices to process effectively.

- **Switch/Relay:** Send switching commands (Open, Close, Momentary Pulse, etc.) to the M2's native Relay Port, TRS Jacks (directly) or through the Relay + CV adapter.

The TRS jack must be set to 'Switch/Relay Adapter Out' mode (Settings > TRS) when used directly or through a Relay + CV adapter.

Sending switching commands directly over the TRS jacks is intended for low-voltage pedals (5V or less). This includes most digital effects from brands like Strymon, Boss, Chase Bliss, Eventide, etc. Please note that there is a possibility of noise from ground loops occurring.

Analog pedals and amp channel switching jacks often have higher voltage (more than 5V) on their inputs which might damage the TRS Jacks. It's best to use a Relay + CV adapter, which can switch any voltage and completely eliminate ground loops.

- **Toggle On:** Send the reversed switching commands alternatively on button presses.
 - Open > Close
 - Close > Open
 - Open Close Open > Close Open Close
 - Close Open Close > Open Close Open
- **Momentary On:** same as above, but on button releases.

- **Control Voltage:** Send Control Voltage commands to the CV Port (M2's CV Port or the Relay + CV adapter).

Control Voltage is great for controlling expression inputs of other pedals. When used in conjunction with Encoder messages, the knob on the EC Controller can function as a virtual expression pedal.

- **Expression > 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 > 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 BPM.
- **Expression > Expression CV:** Start sending **Control Voltage** messages with the Output (%) continuously controlled by the **Expression Pedal** position (and stop sending when the pedal stops moving). The range is adjustable from 0 - 100%.
- **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:** Send a **Preset** when the **Expression Pedal** is fully pressed toe down / heel down.
- **Assign Expression:** Assign an **Expression Pedal** to an **Expression Preset**.
- **Encoder:** A special type of message, that can only be triggered by:
 - Turning a knob on an **EC Controller** (which is always assigned to the **Encoder Click Action**)
 - Pressing a button assigned to the **Encoder Click Action**.

Encoder Messages can only be triggered by **Encoder Click Action** with matching **Encoder Channel**, similar to how **MIDI Channels** work.

The triggering can occur either within the **Current Preset** or within a **Fixed Preset** (as programmed Encoder Click Action menu).

Each triggered **Encoder** message in turn, modifies the value of the following message block **immediately after it** and sends them out:

- CC and PC.
- All Counter CC and PC (+ / - / Update / Send)

Note: The Increase / Decrease setting (Action menu) will override the Counter +/- adjustment direction.

- Control Voltage.
- Set Clock (BPM)

Home

Preset Mode

- **Preset Mode** is for sending **Presets** directly from the **Preset Library**.
- Hitting a button on your **XY/EC Controller** will send its assigned **Preset / Action** as shown in the **XY/EC Controllers Screen**.
- Stomping on a footswitch will send its assigned **Preset / Action** as shown in the **Footswitch Pedals Screen**.
- Moving an connected **Expression Pedal** will send its assigned **Expression Preset** as shown in **Expression Pedals Screen**.
- Sending a **MIDI message** to the Graviton M1/M2 over MIDI In Jack will trigger its assigned **Preset / Action** as shown in the **MIDI In Screen**.

Setlist Mode

- **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 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.

- **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.
- **XY/EC Controllers, Footswitch Pedals, Expression Pedals, and MIDI In** are configured separately between **Preset Mode** and **Setlist Mode**.

MIDI Editor Screen

This screen is for programming the current Preset and its **Messages** (up to 16 per Preset).



From the top:

- **Preset Name:** Shows the **Current Preset** name. Tap to rename.
- **Toggle LED:** Shows the Preset On/Off state if Toggling On or Momentary On is enabled.
- **Bank:** Shows current **Bank** number. Tap to switch to another **Bank**.
- **Message Blocks:** Each block displays a **Message** and its parameters.
 - **Single Touch:** Edit selected **Message**.
 - **Long Touch:** Move Left / Disable / Delete / Send selected **Message**.
- **Editing Block (zoomed in):** Shows all selected message 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 **Message** type.
- **Number / Note / BPM / Name** (depending on the selected **Type**) : Tap to input a number by keypad. If the type is **CC/PC/Counter CC/PC 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/Counter CC/PC** 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 control.
- **▶** : Send this **Message**.

On the bottom control bar:

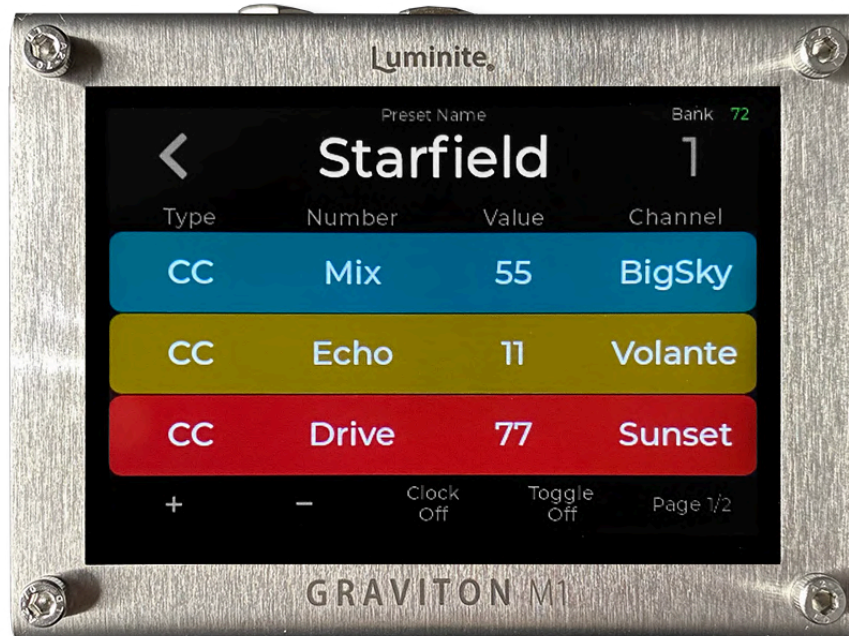
- **“+”**: Add a **Message**.
- **“-”**: Remove the last added **Message**.
- **▶**: Send this **Preset**.
- **Clock Off / BPM**: Shows running MIDI Clock BPM (beat-per-minute). Tap to set a new BPM. Set BPM to 0 to stop MIDI Clock.

- **Silent Off / On:** When enabled, this Preset will be sent in the background without updating the screen (MIDI Editor / Live).
- **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 **Messages** when in On state (LED On). And send **Toggling CC/PC** messages when the Preset is in Off state (LED Off). Useful for switching between two sets of values within the same Preset.
 - **Momentary On:** Send **Toggling CC/PC** messages on button releases.

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.

- "...": Access additional menu buttons:
- **Block/List Layout:** Display the messages in block or list format. Block Layout shows more on-screen information and value sliders, while List Layout is simpler and faster to edit.
- **Show Value:** Display the CC/CV numeric value, instead of using sliders (Block Layout only).
- **Grayscale:** Display the messages background color in grayscale instead of colors.
- **Page Up and Down:** Navigating pages if there are more messages.

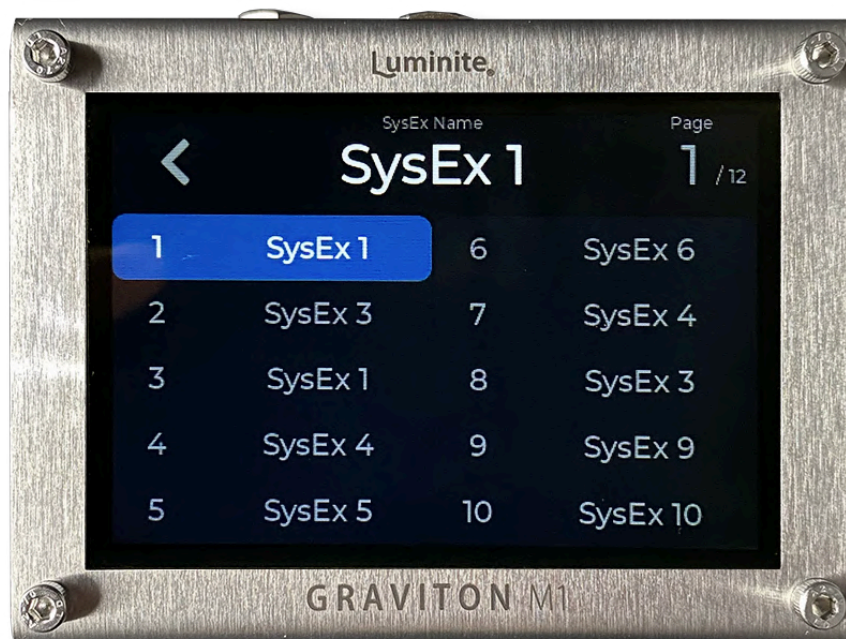
> List Layout



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

- Each **Message** is displayed as a line, allowing up to 3 **Messages** per page.
- The parameters are displayed as columns of **Type / Number / Value / Channel**. Tap to change each value respectively.
- **Value 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 Touch:** Select the **SysEx Message** as the one to add to the current editing **Preset**.
 - **Double Touch:** 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 Touch:** 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 all controllers, for both **Preset Mode** and **Setlist Mode**.

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

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

- **Preset Name:** Shows the **Current 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 Touch:** Send the **Preset**.
- **Double Touch:** Edit the **Preset** in **MIDI Editor Screen**.
- **Long Touch:** Open the context menu for Edit / Rename / Move / Copy / Swap Preset / Change Preset Color.
- **Toggle LED:** Shows the Preset On/Off state if Toggling On or Momentary On is enabled.



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

MIDI Tracking Screen

This screen is useful for keeping track and updates the status of **MIDI Messages** going in and out between **Graviton M1/M2** and other connected **MIDI devices**. You can program up to 10 x **Tracking Presets**, similar to programming **Presets**.

- The selected **Tracking Presets** monitors all outgoing **MIDI Messages** from the Graviton M1/M2, compare them with the **MIDI Messages** it was programmed with (check if their **Channel** and **Type** match, and for **Control Change Messages**, the **CC Number** as well), and if they do, updates their latest values on-screen.
- When other devices send their statuses back to the **Graviton M1/M2** (example: when the M1/M2 sends a **Program Change** (PC) to a pedal for a patch change, the pedals send **Control Change** (CC) messages back to the M1/M2 to report their current parameters). In turn, the selected **Tracking Preset** will also update these on-screen parameters in real time. (2-way synchronization)
- You can adjust any on-screen parameter by touch, acting like a virtual set of knobs for the connected pedals. This feature is particularly useful for controlling hidden parameters without physical knobs or switches.
- Tap on the Number (n / 10) on the screen top right to access the list of 10 Tracking Presets.

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 (<) and settings button (⋮) to prevent accidental changes while performing.
- You can customize what to display on each part of the screen (Center, Top Center, Top Right) by tapping on the settings button (⋮) (Preset, Bank, BPM, Song, Setlist)
- Also the EC/EXP Slider setting is for displaying the value slider of the parameter being controlled by an EC or Expression Pedal.

Setlist Library Screen (Setlist Mode Only)



This Screen allows you to:

- Open (Double Touch) a **Setlist** to open and add **Songs** into it.
- Manage (Rename / Copy / Swap / Delete) the list of 120 **Setlists**, organized into 12 **Pages**.

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 Touch:** Select the **Setlist**.
 - **Double Touch:** Open the **Setlist** (in **Setlist Screen**)

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

> Setlist Screen



This screen shows up after opening a **Setlist** from the **Setlist Library** above. This Screen allows you to:

- Open (Double Touch) a **Song** to open and add **Presets** into it.
- Select up to 10 **Songs** from the **Song Library** to add to this **Setlist**.

From the top:

- **Playing Setlist:** Shows the **playing Setlist** name. Tap to rename.
- **Song 1 - 10:**
 - **Single Touch:** Select the **Song**.

- **Double Touch:** Open the **Song** (in **Song Screen**)
- **Long Touch:** Open context menu for **Open / Change / Remove Song** (from **Song Library Screen**).

> Song Screen



This is the main Screen while performing in **Setlist Mode**, where you can see all the **Presets** of the current **Song** in the intended order and scroll through them.

This screen shows up after opening a **Song** from the **Setlist** above. This Screen allows you to:

- Select up to 10 **Presets** from the **Preset Library** to add to this **Song**.
- Start performing by scrolling through the **Presets** added, or jump to the next / last **Song**.
- If you reach the 10th Preset, scrolling to the next Preset will automatically jump to the 1st Preset of the next Song, same with the scrolling back.

- If you reach the 10th Song of a Selist, scrolling to the next Song will automatically jump to the 1st Song of the next Setlist, same with the scrolling back.

From the top:

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

Song Library Screen (Setlist Mode Only)



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

Devices

What are Actions ?

- The **Devices** menu shows the controllers you can use to control your Graviton M1/M2. They are XY/EC Controllers, Footswitch Pedals, Expression Pedals, MIDI In etc

- Every physical button (plus the MIDI In messages) on these controllers has its own set of **Actions**.
- An **Action** is what happens when you hit a physical switch/button (or send a MIDI In message to the M1/M2). An **Action** can send a **Preset**, but can also do many other things like switching between **Banks**, **Songs**, etc.
- To assign **Actions** to a button, press and hold the corresponding on-screen button block to access the 'Assign Action' menu.
- Please note that an **Action** does not contain a **Preset** inside itself; it simply points to one of the 120 Presets within the **Preset Library**. The **Preset Library** is shared among all controllers.
- Each button can be assigned with six types of actions: **1st Tap**, **2nd Tap**, **3rd Tap**, **Hold Tap**, **Double Tap**, and **Release**. Each type can be individually assigned or together in any combination.
- **1st Tap, 2nd Tap, and 3rd Tap Action**: are triggered in rotation as you tap on the button.
- **Hold Tap Action**: is triggered when you hold a button for more than 1 second (default) and will keep repeating if you continue holding it.
- **Double Tap Action**: is triggered when you tap a button two times in quick succession. Note: when a **Double Tap Action** is enabled, a **Single Tap** on that button will have a slight delayed reaction, as the Graviton has to wait to ensure that the tap is not part of a double-click before triggering the action.
- **Release Action**: is triggered when you release a button.
- **Expression Pedals**: don't require **Actions** to be assigned, they send expression messages directly in either **Expression Presets** (global function) or in the current Preset (per-preset function).

- **EC Controllers:** The rotary encoders don't require **Actions** to be assigned, as they directly trigger Encoder Messages. However, the push buttons do require assigning **Actions**, similar to other buttons.

XY Controllers Screen



This Screen is for assigning the **XY Controllers** buttons to the designated **Presets / Actions**. The last activated button is highlighted.

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

- Hit on a button on the controller and the screen will switch to it automatically.

- Tap on the 'XY: 1' menu button to select another one manually.

From the top to bottom:

- **Preset Name:** Shows the **Current Preset** name. Tap to rename.
- **Bank:** Shows current **Bank** number. Tap to switch to another **Bank**.
- **XY Button Blocks:** Show the assigned **Preset / Action** for each button:
 - **Single Touch:** Send the assigned **Preset / Action** (same as hitting the physical button on your controller).
 - **Double Touch:** Edit the assigned **Preset** in **MIDI Editor Screen** (if the button is assigned to one).
 - **Long Touch:** Open context menu for **Edit Preset / Assign Action**.
 - **Toggle LED:** Shows the Preset On/Off state if Toggling On or Momentary On is enabled.
- **XY : 1 - 10** (menu): Shows the current **Controller**. Tap to open the menu:
 - **Controller:** Tap to select the **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:** Displays the switch directional arrows (in **Block** and **List** layout only).
 - **Invert Up / Down:** Swaps the functionality of the up and down switches. This is helpful for players who prefer the up/down switching orientation to mirror the screen instead of following it.

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



EC Controllers Screen

Getting Started

- Go to Home > MIDI Editor.
- Tap + to add a new MIDI Message.
- Tap on the message's **Type**, change it to **Encoder**.
- Adjust the **Min / Max** (range), **Step** (change per click) / **Encoder Channel** (will be explained below) to suit your needs. Leave the **Encoder Channel** on **All Channel** for now.

- Add a **CC**, **PC** or **CV**, or **Clock Message** block after the **Encoder Message** above. As you rotate the knobs, you'll see their value change.

How does it work ?

- Each **EC Controller** is equipped with two **Rotary Encoder Knobs**, each of which has three functions: turning clockwise (CW >), turning counterclockwise (CCW <), and push button (+). The push buttons can be programmed as any **XY buttons** or footswitches.
- Each **Rotary Encoder Knob** is assigned with an **Encoder Channel** (0 to 16, with 0 equals All Channel), which can be set in the **EC Controllers Screen**.
- Each **Encoder Message** also has an **Encoder Channel** setting, which can be set in the **MIDI Editor Screen**.
- When a **Rotary Encoder Knob** is rotated, it triggers the **Encoder Messages** with matching **Encoder Channel**, similar to how **MIDI Channels** work. This setup provides flexibility in fine-tuning the function of each **Rotary Encoder Knob**. For example, you can control multiple parameters with a single **Rotary Encoder Knob** or have multiple **Rotary Encoder Knobs** control one parameter, each with different speed / min / max settings.
- The triggering can occur either within the **Current Preset** or within a **Fixed Preset** assigned to this **Rotary Encoder Knob**. This setting can be configured in the **EC Controllers Screen**.
- Each triggered **Encoder Message** in turn, changes the value of the CC/PC / CV message block **immediately following it** and sends them out.
- The **Min / Max** (range), **Wrap Around** (back to min value when maxed) and **Step** (change per click) settings within each **Encoder Message** determine the following CC/PC / CV message output value.

- The values of the following messages can be changed by placing an **Encoder Message** in front of them.

- CC and PC.
- All Counter CC and PC (+ / - / Update / Send)

Note: The Increase / Decrease setting (Action menu) will override the Counter +/- adjustment direction.

- Control Voltage.
- Set Clock (BPM)

EC Controllers Screen

This screen shows the current EC Controller, with 3 function blocks (>, +, <) for each left and right **Rotary Encoder Knob**.

- **Long Touch on the CW (>) or CCW (<) Blocks:**

- **Assign Action > Encoder Channel:** (0 to 16, with 0 equals All Channel)

Each **Rotary Encoder Knob** can be assigned to a specific **Encoder Channel**, allowing it to control only **Encoder Messages** with the matching channel, similar to how **MIDI Channels** work.

The default channel is “**All**”, which means this **Rotary Encoder Knob** can control all **Encoder Messages**, regardless of their channel.

If an **Encoder Message** has its channel set to “**All**”, it will also be controlled by any **Rotary Encoder Knob**, regardless of its channel setting.

- **Assign Action > Current Preset:** only trigger the **Encoder Messages** in the **Current Preset**. This allows the **Rotary Encoder Knobs** to work on a

per-preset basis. For example, in Preset 1, the encoder can be used to adjust Reverb Mix, and in Preset 2, it can be used to adjust Gain.

- **Assign Action > Fixed Preset:** only trigger the **Encoder Messages** in a specific **Preset**. This feature is useful for using the **Rotary Encoder Knobs** as a fixed-function knob, such as for master volume, gain, effect level, etc., independently of the **Current Preset**.
- **Assign Action > Sync:** (For CCW Block only) With this default **Action**, the **CCW Block** shares the same **Action** as the **CW Block**, but for decreasing adjustments, unless you assign it to a different **Action**.
- **Long Touch on the Push Button Blocks (+):** assign **Actions** like normal buttons.

Footswitch Pedals Screen



This Screen is for assigning all **Footswitches** (on the Graviton M2 or external Footswitch Pedals) to their **Actions / Presets**. The last tapped footswitch is highlighted. If a **Graviton M2 / F10/W / F6/W** Footswitch is tapped, the **Block** layout will match with their physical layout automatically.

As multiple wired and 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 bottom 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 **Current 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 Touch:** Send the assigned **Preset / Action** (same as stomping on that physical footswitch on your pedal).
 - **Double Touch:** Edit the assigned **Preset** in **MIDI Editor Screen** (if the footswitch is assigned to one).
 - **Long Touch:** Open context menu for **Edit Preset / Assign Action / Learn** this footswitch (**Universal Footswitch** only).
 - **Toggle LED:** Shows the Preset On/Off state if Toggling On or Momentary On is enabled.

- **M2 / Wired / WL** (menu) : Shows the current **Footswitch Pedals**. Tap to open the menu:
 - **Footswitch Type**: Tap to select between **M2** (built-in, M2 only), **Wired** (TRS) or **Wireless** (Luminite F10W or F6W).
 - **Wired / 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

> Expression MIDI Editor Screen



This screen is for:

- Programming the currently active **Expression Preset**.
- Tracking parameters change in real time as the expression pedals move.

Programming is identical to using the MIDI Editor, except that only Expression Messages can be added.

Tapping the top right corner of the screen (Number x/10) will open the Expression Presets Library.

> Expression Presets Library



This Screen is for:

- Managing 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) by single touch

- Double touch on an **Expression Preset** to start programming.

As up to 2 x (**M1**) or 4 x (**M2**) **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.

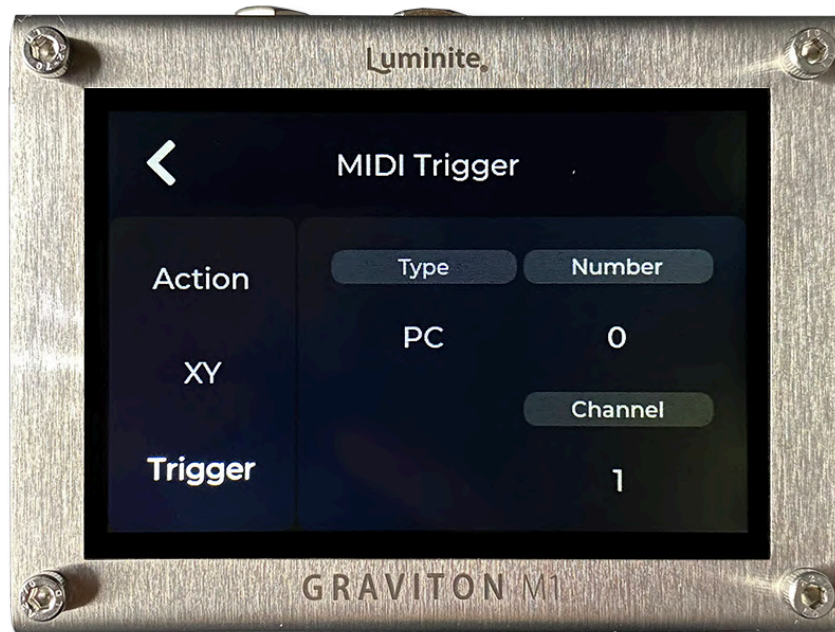
From the top:

- **Name:** Shows the assigned **Expression Preset** name. Tap to rename.
- **Expression Preset Blocks:** Shows the **Expression Preset** numbers and name:
 - **Single Touch:** Assign the selected preset to the current **Expression Pedal**.
 - **Double Touch:** Edit the selected preset in **Expression MIDI Editor Screen**.
 - **Long Touch:** Open the context menu for **Edit / Rename / Copy / Swap / Delete** Preset.
- **TRS 1 - 2 (M1) or 4 (M2)** (menu): Shows the current **Expression Pedals**. Tap to open the menu:
 - **TRS 1 - 2 (M1) or 4 (M2):** 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**.

MIDI In Screen

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

- **Single Touch:** Send the assigned **Preset / Action**.
- **Double Touch:** Edit the assigned **Preset** in **MIDI Editor Screen**.
- **Long Touch:** 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**.

Setup External Pedals

Setup Wired Footswitch Pedals

Graviton M1/M2 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 2 x (**M1**) or 4 x (**M2**) pedals can be connected, with support for up to 10 buttons per pedal.

To connect a **Footswitch Pedal**:

- Plug into a **TRS 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/W / F6/W**: Plug and play. If you have a **Luminite F10W** or **F6W** pedal, but want to use them in **Wired Mode**, then select **Luminite F10/W** or **F6/W** 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/M2** wirelessly, just like with **XY/EC 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/M2 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 2 x (**M1**) or 4 x (**M2**) **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 a **TRS 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 a **TRS 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 on **Settings > Calibrate > Start**.
- Move the pedal all the way up and down.
- Tap < to finish.

Setup Relay Ports

Graviton M1/M2 can control external Amp Channels / Pedal Footswitch inputs with its built-in **Relay Port (M2 Only)**, or **Relay + CV** adapter (can be used with both **M1** and **M2**).

- Each **Relay Port / Relay + CV** adapter Stereo Output (Tip / Ring) and can control up to 2 x Amp Channels / Pedal Footswitch Inputs using a 1/4-inch Stereo Cable.
- You can use a 1/4-inch Stereo TRS to 2 x Mono TS adapter to split the Tip and Ring outputs, allowing you to control two devices simultaneously.
- Each **Relay + CV** adapter's Relay Input can be connected to any Graviton M1/M2 **TRS Jack** with a 1/4-inch Stereo Cable. After that, make sure the **Mode** is changed to **Switch/Relay Adapter Out** in **Settings > TRS**.

- Start using relay switching by adding a **Switch/Relay Messages** to **Presets**, with the **Jack, Pin** and **State** you want.
- If **Toggle On** or **Momentary On** is enabled, the switched state during the 'Off' state will be the opposite of the 'On' state.

Setup Control Voltage Ports (CV)

Graviton M1/M2 can control the CV Inputs / Expression Inputs of other Synth / Pedals with its built-in **Control Voltage Port (M2 Only)**, or Relay + CV adapter (can be used with both **M1** and **M2**).

- Each **CV Port / Relay + CV** adapter stereo output (Tip / Ring) and can control up to 2 x CV / Expression Inputs using a 1/4-inch Stereo Cable.
- You can use a 1/4-inch Stereo TRS to 2 x Mono TS adapter to split the **Tip** and **Ring** outputs, allowing you to control two devices simultaneously.
- Each **Relay + CV** adapter's CV Input can be connected to any Graviton M1/M2 **TRS Jack** with a 1/4-inch Stereo Cable. After that, make sure the **Mode** is changed to **CV Adapter** in **Settings > TRS**.
- Start using CV by adding a **CV Messages** to **Presets**, with the **Jack, Pin / Range** and **Output (%)** you want.
- You can control the **CV Output %** with **Expression Pedals** connected to the M1/M2 **TRS Jacks** (see **Setting Up Expression Pedals** section above) and **Expression CV Messages**.
- To drive the Expression Input (as a virtual Expression Pedal) of another pedal, ensure that the **Range** matches the maximum voltage allowed for that pedal (0-3.3V, 0-5V, or 0-9V).

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.

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).

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: On

TRS

Configure the TRS Jack function:

- **TRS Jacks:** Select the TRS Jack you want to configure.
- **Mode:** There are 5 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 In:** 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/W:** For use with the Luminite F10 or F10W in Wired Mode over a ¼ inch cable (plug n play, no “**Learn**” needed).
 - **Luminite F6/W:** 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).
 - **Rapid Tapping:** Prioritize faster footswitch reading with a slightly slower display update speed. Default: Off. This setting is useful in some instances when you need to execute very fast tapping sequences.
- **Expression In: 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/M2 will detect what kind of **Expression Pedal** (potentiometer value / hot tip / hot ring etc) is plugged in and configured 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.
- **Switch/Relay Adapter Out:** For connecting to a **Relay + CV** adapter's Relay Input Jack.
- **CV Adapter Out:** For connecting to a **Relay + CV** adapter's CV Input Jack.

USB

Graviton M1/M2 can act as either one of these two USB MIDI modes:

- **Device:** When connected to a Computer or MIDI Host using the **USB MIDI** port (USB Type-C). (Default)
- **Host:** 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.

- **Keyboard On/Off:** (For Device Mode only) Transform your Graviton M1/M2 into a USB keyboard. Use it in conjunction with Keystroke messages to control DAWs, computers, and iOS devices.
- **Custom USB Device Name** (Device mode only): Change the USB Device name as displayed on the host computer. Useful for multiple Graviton M1/M2 setup connecting over an USB Hub.

Bluetooth

- **Advertising On/Off:** This setting controls the visibility of the Graviton M1/M2 to other new Bluetooth devices for pairing. It does not affect already paired devices. Turn this off if you want to prevent accidental connections from other devices.
- **Custom Name:** Change the Bluetooth Device name.

Clock

When switching **Presets:**

- **Keep MIDI Clock Running:** Unless the **Current 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)
- **Switch to Its First Preset:** Send the first **Preset** of that **Bank**.
- **Switch to Its Last Current Preset:** Recalls the last **Current Preset** of that **Bank**.
- **Switch to Its Parallel Preset:** Switch to the Preset in the same position (1st to 10th)

Wireless

- Pairing > **XY/EC Controllers**: A Graviton M1/M2 can pair with up to 10 XY/EC Controllers. This is useful if you have more than one instrument, each can have their own XY/EC Controller attached.
- Pairing > **Wireless Footswitch**: A Graviton M1/M2 can pair with up to 10 x F10W or F6W Wireless Pedals.



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

Data

All of your **Presets, Songs, Setlists, Settings** etc data in Graviton M1/M2 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 Settings**: Reset all Settings to default, everything else will be preserved.
- **Reset All**: Reset all settings and user data, only saved **Backups** will be preserved.

Performing a **Factory Reset** (with a pin) will revert the **System Software** to the original version and delete all saved **Backups**. See Basic > The Hardware: Graviton M1/M2 section on how to perform a **Factory Reset**.

Update

- **Update / Rollback**: Check and perform the Over-The-Air software update if available (require a WiFi network with internet). No computer needed.
 - **Update to Latest Beta**: Explore the newest software features.

- **Update/Rollback to Latest Stable:** Tested and reliable software version.
- You can switch between Beta and the last Stable Release any time without losing programmed data.
- It's recommended to stay on the Stable Release for gigging.

Manual



Graviton M1/M2 has a built-in manual in Settings > Manual, conveniently accessible anytime and always up-to-date with the current software version.