Luminite®

GRAVITON

midi controller

User Manual

For use with Graviton M1/M2 Software 5.5.x

www.luminitefx.com

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Chapter A: Introduction

Graviton M1/M2 are next-generation MIDI controller pedals designed for guitarists and bassists who want to bring 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.

Highlights

Total Wireless Freedom

The **Graviton M1/M2** can be fully remote-controlled using **guitar-mounted XY/EC Controllers**, each programmable for sending MIDI commands, switching banks, and more. Their intuitive design allows **eyes-free operation**, much like using a pickup selector switch—eliminating the need for "tap dancing" and letting you move freely on stage.

F6W or **F10W wireless footswitches** can be placed anywhere—on stage or in the studio—for maximum flexibility. Built-in **Bluetooth MIDI** adds wireless connectivity to a wide range of MIDI devices.

Effortless Usability

The Graviton M1/M2 have a large **3.5-inch touchscreen LCD**, making MIDI programming fast and intuitive—**no PC editor required**. Prefer a bigger screen? Open the built-in wireless **Web Editor** from any phone, tablet, or computer browser—no app or drivers to install. The user-friendly interface supports quick adjustments both on and off stage, and **automatically saves** every on-screen change. A wide range of MIDI commands and a suite of practical software features streamline your workflow.

Compatibility & Expandability

Control all types of gear—simultaneously—using **5-pin MIDI**, **TRS MIDI**, **USB MIDI**, and **Bluetooth MIDI**. Control amps and effects with **Relay switching**, send **Control Voltage** to synths, and sync everything to tempo with **MIDI Clock** or **Analog Clock**. Pair up to **10 XY/EC Controllers** (the 10 slots are shared between XY and EC) plus **10 wireless footswitches** (F6W/F10W), and connect virtually **any third-party footswitch or expression pedal** via the TRS jacks—**all working together seamlessly**. The **M1/M2** can also be **remotely controlled by incoming MIDI messages**, giving you **maximum flexibility** for any setup.

Ultra-Compact Footprint

The **Graviton M1** and **M2** are very compact, saving pedalboard space and weight. Use the M1/M2 to turn compact multi-effects pedals, amp modelers, computers, or iOS devices into **portable and powerful gigging machines**.

For the full feature list and hardware specs, see Chapter E: Features & Specifications.

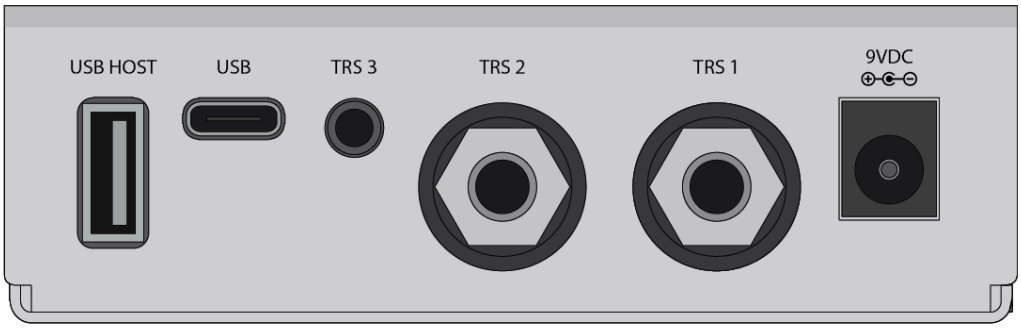
Graviton M1

Front



- **Display:** 3.5-inch touchscreen LCD.

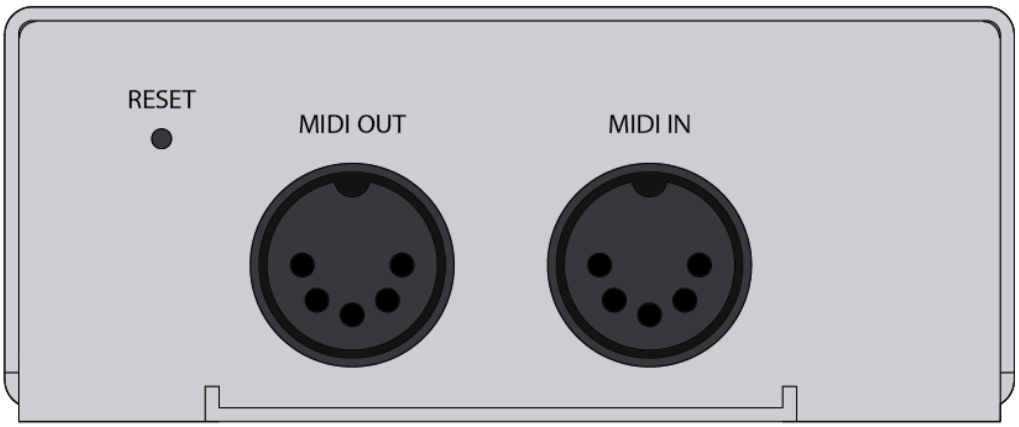
Back



- **9VDC:** Power adapter input (9V center-negative, 500mA minimum).
- **TRS 1 and TRS 2:** MIDI Out (4 modes), or footswitch / expression pedal input, with 1/4-inch (6.35mm) stereo cables.
- **TRS 3 (3.5mm Out): MIDI Out Only** — 3.5mm stereo MIDI out (Type A / Type B / Tip Active / Ring Active). No footswitch or expression pedal on this jack.
- **USB:** MIDI to and from a computer over a Type-C cable (the M1 can be USB bus powered).
- **USB Host:** MIDI to and from other USB MIDI devices. It can also power other devices, or charge **XY/EC Controllers** and **F6W/F10W** footswitches.

> ⚠️ ***Note:* Use** either **USB MIDI** or* *USB Host MIDI — not both at the same time.*

Side



- **MIDI In:** Standard 5-pin MIDI cable.
- **MIDI Out:** Standard 5-pin MIDI cable.
- **Factory Reset:** Insert a pin into the hole, then press and hold the button while powering on until the logo appears, then release. The device returns to its factory settings.

> ⚠️ **Note:** A normal reset (**Settings** → **General** → **Reset** → **All**) is enough in most cases, and keeps your Backups. A factory reset also erases Backups — use it only if a normal reset doesn't fix the issue.

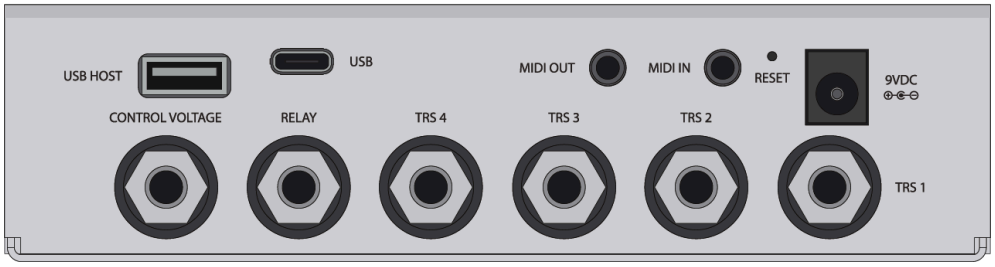
Graviton M2

Front



- **Display:** 3.5-inch touchscreen LCD.
- **6 × soft-touch footswitches:** Smooth and silent operation.
- **Staggered footswitch height:** Taller at the back and lower at the front for easy access.

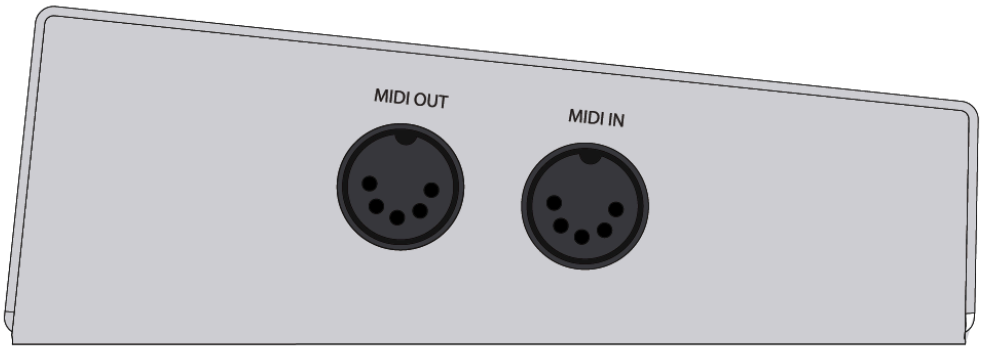
Back



- **9VDC:** Power adapter input (9V center-negative, 500mA minimum).
- **TRS 1 to TRS 4:** MIDI Out (4 modes), or footswitch / expression pedal input, with 1/4-inch (6.35mm) stereo cables.
- **TRS 5 (3.5mm Out): MIDI Out Only** — 3.5mm stereo MIDI out (Type A / Type B / Tip Active / Ring Active). No footswitch or expression pedal on this jack.
- **MIDI In (3.5mm):** 3.5mm stereo MIDI in, Type A only.
- **Relay:** Switch amp channels or pedal footswitch inputs remotely, with a 1/4-inch (6.35mm) stereo cable.
- **Control Voltage:** Send control voltage to CV inputs, or drive the expression inputs of synths and pedals, with a 1/4-inch (6.35mm) stereo cable.
- **USB:** MIDI to and from a computer over a Type-C cable (the M2 can be USB bus powered).
- **USB Host:** MIDI to and from other USB MIDI devices. It can also power other devices, or charge **XY/EC Controllers** and **F6W/F10W** footswitches.

> ⚠️ ***Note:* Use** either **USB MIDI** or* *USB Host MIDI — not both at the same time.*

Side



- **MIDI In:** Standard 5-pin MIDI cable.
- **MIDI Out:** Standard 5-pin MIDI cable.
- **Factory Reset:** Insert a pin into the hole, then press and hold the button while powering on until the logo appears, then release. The device returns to its factory settings.

> ⚠️ ***Note:* Use** either **the 3.5mm MIDI In** or* *the 5-pin MIDI In — not both at the same time.*
>
> ⚠️ **Note:** A normal reset (**Settings** → **General** → **Reset** → **All**) is enough in most cases, and keeps your Backups. A factory reset also erases Backups — use it only if a normal reset doesn't fix the issue.

Chapter B: Basic Workflow

The workflow can be summarized in 4 steps:

Step 1. Connect & Pair: Pair your F10W, XY, or EC, plug in an Expression Pedal, and connect cables to your other MIDI devices (amp, modeler, etc.).

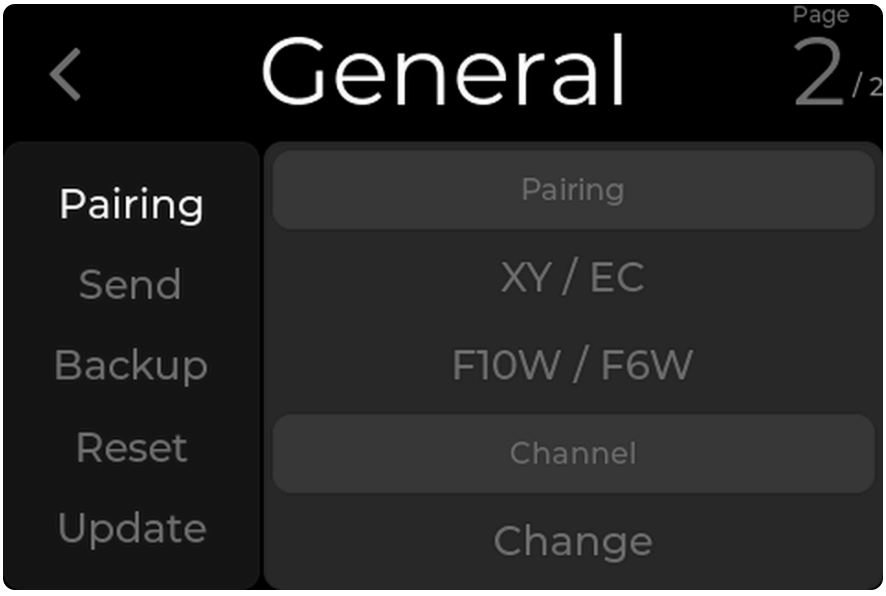
Step 2. Programming Buttons: What does this button do?

Step 3. Programming Presets: What MIDI messages are sent?

Step 4. Programming Expression / EC Controllers: What happens when you sweep the pedal or rotate this knob?

Step 1: Connect & Pair

Pairing a wireless controller, and plugging in TRS footswitches or an Expression Pedal, is all done under **Settings** → **General**. See the **Settings** chapter for details.



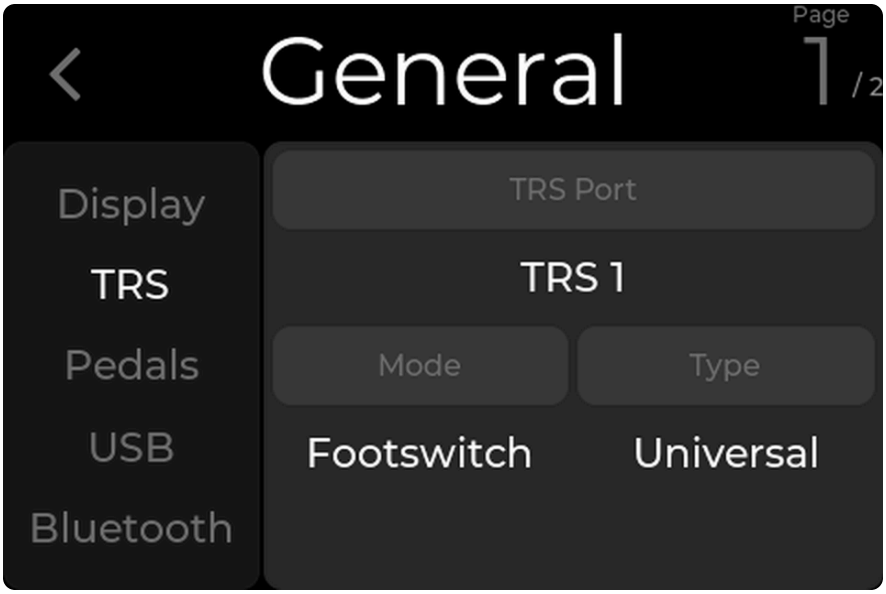
XY and EC Controllers

To pair: **General › Pairing** → **XY / EC** → tap an empty slot and follow the on-screen instructions.

Wireless Footswitch Pedals

To pair: **General › Pairing** → **F10W / F6W** → tap an empty slot and follow the on-screen instructions.

Wired Footswitch Pedals



1. Plug into a **TRS** jack with a ¼" cable.
2. **General › TRS** → that jack → **Mode** → **Footswitch**. - **Type**: → **1/2/3-button**, **F10/W** / **F6/W** (Wired Mode)
    - Or **Universal** (custom / odd ladders — use **Learn**, below).

Debounce and calibration live under **General › Pedals**

Universal Footswitch Learn

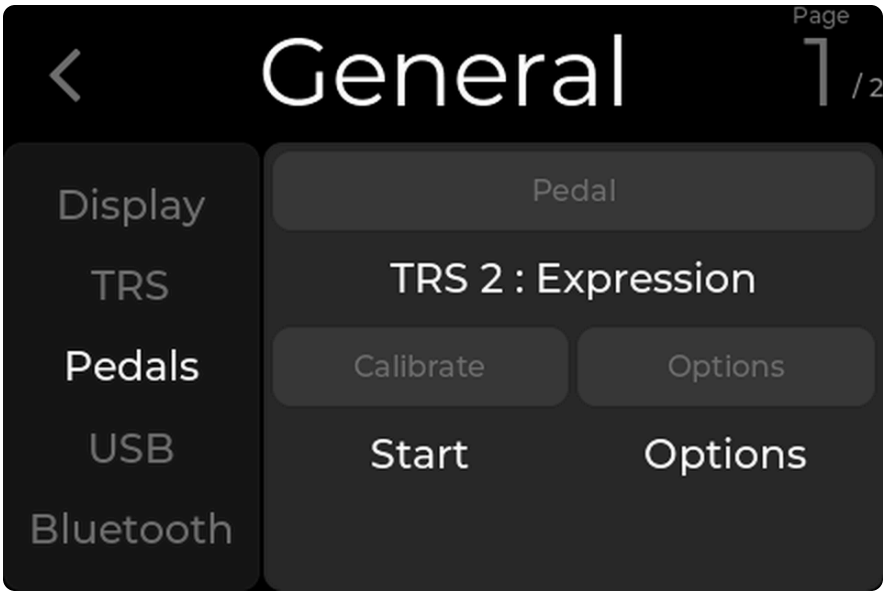


For **Universal** (UFS) only:

1. **Control › Footswitch Pedal** → selector pill (**TRS X: …**) →

pick the jack until the pill shows **TRS X: UFS**. 2. Long-touch a block → **Learn** → repeat for each switch.

Expression Pedals



Must be calibrated before use (calibration survives a TRS mode change).

1. Plug into a TRS jack.
2. **General › TRS** → that jack → **Mode › Expression**.

3. Calibrate it, and set **Noise Filter** / **Toe–Heel** / **Response

Curve **if needed, from** General › Pedals**.

RV Adapters

1. Connect a stereo cable from a TRS jack to the RV's **Relay In** or

CV In. 2. **General › TRS** → that jack → **Mode**: **Relay Out (via RV)** or

CV Out (via RV). 3. Connect a mono / stereo cable from the RV's **Relay Out** / **CV

Out** to the amp or effect.

> ⚠️ **Note:** The RV's **9VDC** input is only needed when sending CV.

Connecting MIDI Out

Interface	Connect	Set in **Settings** → **General**
5-pin MIDI	Standard 5-pin MIDI cable, **MIDI Out** port → receiving device	—
TRS Jack	Stereo TRS cable, jack → receiving device	**TRS** → that jack → **Mode: MIDI Out**, **Type** to match
USB	USB-C cable, **USB-C** port → computer / iOS device (also powers Graviton)	**USB** → **Device**
USB Host	USB-A cable, **USB-A** port → device (Graviton needs its own 9V DC power)	**USB** → **Host**
Bluetooth	Wireless, no cable	**Bluetooth** → pair

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

Step 2: Programming Buttons



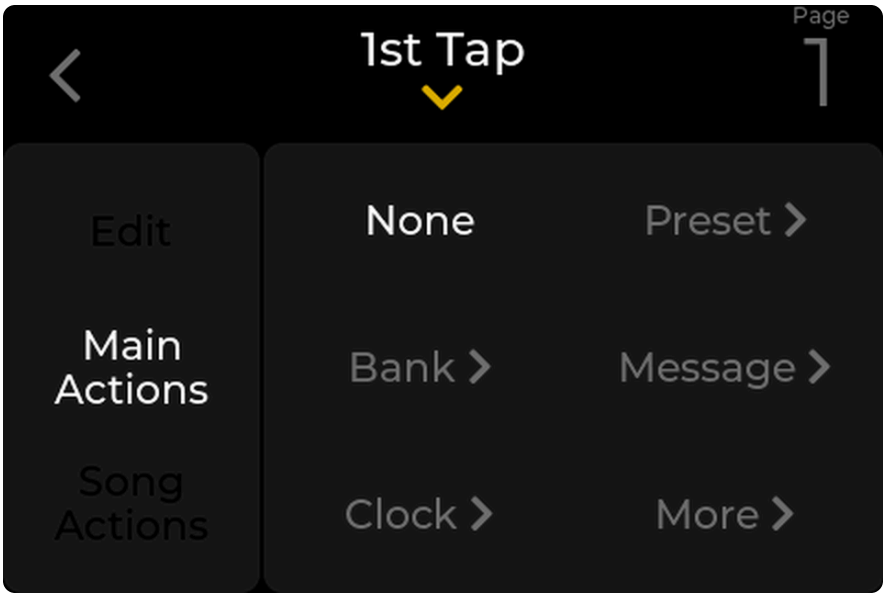
The **Control** views are where you can program buttons.

Most buttons start out as **Bank Preset**: button 1 recalls Preset 1, button 2 recalls Preset 2, and so on — the usual MIDI-controller layout.

That means your footswitches are already mapped 1:1 to the **Preset Library** Presets by default. Just tap any tile to open its Preset and add a few PC/CC messages, and you have a solid starting point.

Prefer to send a **PC**, **CC**, **Note**, **Switch**, **Clock**, or **LFO** message straight from a button without creating a Preset? You can assign messages directly to any button — or add Actions like **Bank +** or **Bank −** to reach Presets in other Banks. Here's how:

Choose Button Actions



- Go to **Control**, then select the controller type — **XY Controller**, **Footswitch Pedal**, or **EC Controller**.
- If you have more than one controller of the same type, tap the **selector** at the bottom to pick which one — or just press a physical button and the screen switches to it automatically, highlighting the button you pressed.
- **Long-touch** a button block, then pick an Action from **Main Actions** / **Song Actions**.

Commonly Used Actions

- **Bank Preset** (**1st**–**10th**): Recalls the Preset at that slot in the current Bank. Example: **1st** → Preset 1 in Bank 1, Preset 11 in Bank 2, Preset 21 in Bank 3. Default for most buttons.
- **Global Preset** (1–120): Always the same library Preset, regardless of Bank — e.g. a boost you want in every song, without copying it into all twelve Banks.
- **Bank +** / **Bank −**: Next / previous Bank.
- **Song Preset** scrolling (**Song Mode**): **1st**–**10th** recalls that slot in the current Song; ← → ↑ ↓ scroll through Song Presets in order (verse → chorus → solo).
- **Direct Messages** (**Message**, **Clock**, **More** → **LFO**): Send a **CC**, **PC**, **Note**, **SysEx**, **Keystroke**, **Switch**, **Clock**, or **LFO** command straight from a button (or EC knob) without creating a Preset first — great for dedicated utility switches like tuner, tap tempo, or amp channel toggle.

Every other Action is listed in **Glossary › Button Actions**.

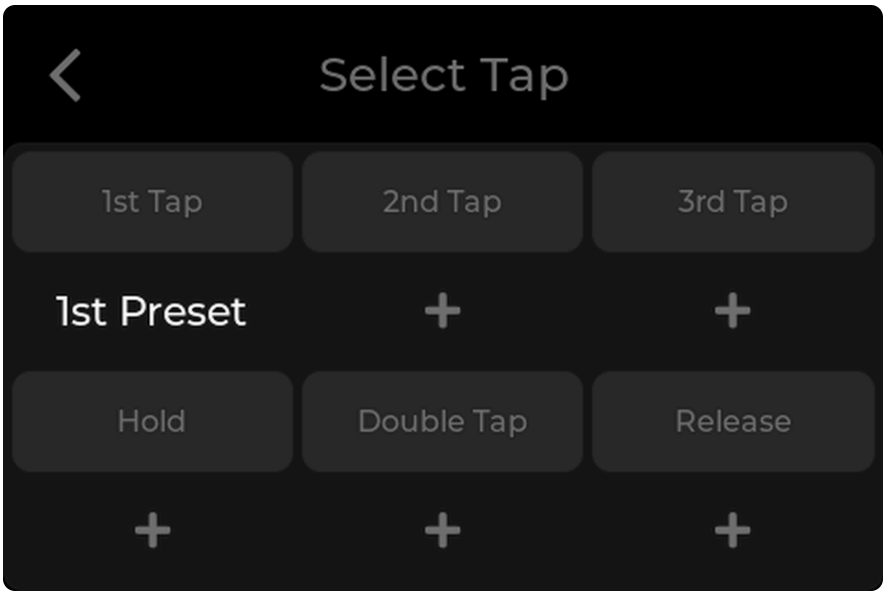
Multi-Tap (1st Tap, 2nd Tap, 3rd Tap, Hold, Double Tap, Release)

A button can trigger a different action depending on how it's pressed:

- **1st Tap / 2nd Tap / 3rd Tap** — trigger in sequence on repeated presses.
- **Hold** — trigger by pressing and holding.
- **Double Tap** — trigger on a quick double-press.
- **Release** — trigger when the button is let go.

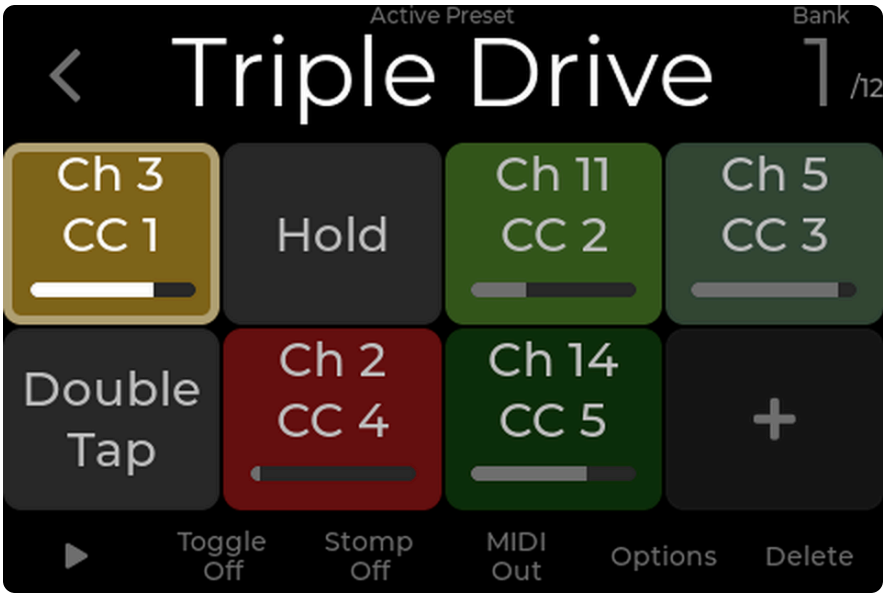
There are two ways to do this:

Global



Tap the **Yellow Down Arrow** to open its Multi-Tap options. This is global — the same behavior applies to that button no matter where you are.

Per-Preset



You can also program Multi-Tap inside a Preset by using the **Tap Marker**, and assign it to a button's 1st Tap. This gives each Preset its own set of Multi-Tap actions, instead of the one global setup used above.

Example: a Preset contains: CC 1 → **Hold** → CC 2, CC 3 → **Double Tap** → CC 4, CC 5

Then, for that Preset's button:

- Normal press sends CC 1.
- Hold sends CC 2 and CC 3.
- Double Tap sends CC 4 and CC 5.

Multi-Tap Badge (`1 2 3 H D R`)

Whenever a button has more than a **1st Tap** layer (from either Global Multi-Tap or Per-Preset Tap Markers), a small badge appears in the bottom-right corner of its tile on **Control** screens:

- `1` / `2` / `3` — **1st**, **2nd**, **3rd Tap**
- `H` — **Hold**
- `D` — **Double Tap**
- `R` — **Release**

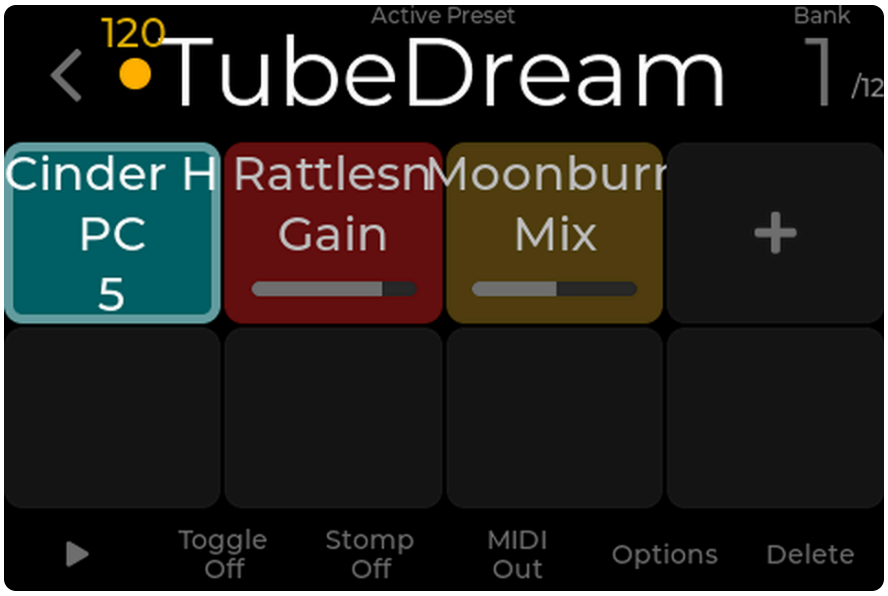
Only the layers assigned to that button are shown (for example, `1 H`, `1 D`, or `1 2 3`, up to `1 2 3 H D R`). The currently active layer is highlighted in **light blue**, while the other assigned layers stay dimmed. Long-touching a tile opens **Action Settings** directly on its currently active tap layer. Buttons with only a **1st Tap** show no badge. On **Preset Library** and **Playing Song** tiles, Presets with Per-Preset Tap Markers show a single light-blue character for their current tap.

📝 *Note: Fine-tune Double Tap and Hold timing in Settings › Gestures.*

How this differs from other MIDI controllers

- On most MIDI controllers, each button has a fixed job: button 1 = preset 1, button 2 = preset 2, and so on.
- On Graviton, you decide which button recalls which Preset from the **Preset Library** — in any order you like.
- Because Graviton supports several footswitch pedals, XY, and EC controllers at once, they can all work together as one rig.
- Example: **Footswitch Pedal 1** covers Banks 1–2, **XY** covers Bank 3-4, **EC** covers Bank 5-6. Or they can map to the same Bank if you want.

Step 3: Programming Presets



A Preset is the list of MIDI messages sent when it's recalled. Build and edit Presets in **Home** → **Preset Editor** — see Home › Preset Editor for the full walkthrough.

Step 4: Programming Expression / EC Controllers

Set what an Expression Pedal sweep or an EC knob turn sends:

- **Expression Pedals** — see Control › Expression Pedal.
- **EC Controllers** — see Control › EC Controller.

Chapter C: Interface Walkthrough

Touch User Interface

There's no separate Edit mode and Play mode — almost every screen lets you program and play at the same time, and changes are saved automatically. There's also no single "right" way, so pick whichever workflow suits you best.

Touch Gestures

- **Single touch** — select, send, or open an editor (like a left click). By default in **Settings › Gestures**, a single touch on a Preset tile in **Preset Library** or on **Control** screens opens **Preset Editor** directly; switch either one to **Send** if you want single touch to trigger/send instead.
- **Double touch** — opens **Preset Editor** when single touch is set to **Send** (and always opens **Preset Editor** on **Songs › Playing Song** tiles, or the hex editor when picking a SysEx slot from **Preset Editor**).
- **Long touch** — extra options (like a right click): assign, rename, copy, swap, reset, change color, and more.

📝 *Note: M1 and M2 share the same software, except M2 has more configuration for the extra ports.*

Select a View

Tab	What it's for
Home	Build, organize, and play your Presets, SysEx, Expression Presets, Clock, and Live view.
Songs	Build Songs and Setlists, and play through them live.
Control	Program and play with buttons, pedals, knobs, MIDI In, and Kemper Link.
Utilities	Global LFO engines, MIDI Tracking, live MIDI Monitor, and the wireless Web Editor.
Settings	Set up the whole unit — hardware, MIDI routing and filters, touch/tap Gestures, and Song Mode.

Bank Mode / Song Mode

Graviton has two ways to play your Presets. Pick the one that fits the gig — you can switch any time.

Bank Mode

Play Presets straight from the **Preset Library**, one Bank at a time.

- **Bank +** / **Bank –** or **Bank Jump** — move between Banks.
- **Bank Preset** — recall a Preset in the current Bank.
- **Global Preset** — recall a Preset that stays available in every Bank (e.g. a **Solo Boost**).

Best for quick, hands-on access when you don't need a fixed order.

Song Mode

Play Presets in a set order, organized by Song.

- A **Song** holds up to **10 Presets** from the **Preset Library**.
- A **Setlist** holds up to **10 Songs** from the **Song Library**.
- You can store up to **120 Songs** and **120 Setlists**.

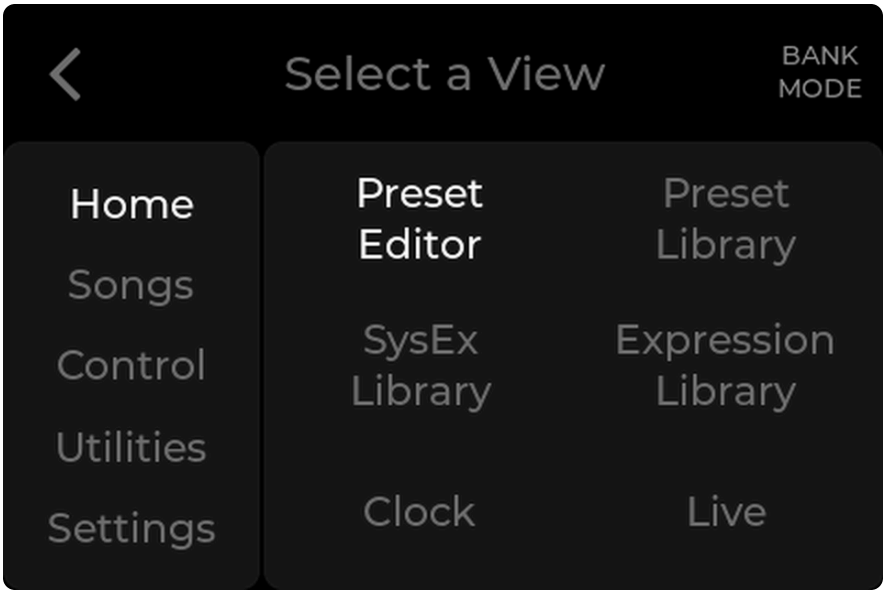
Two ways to play:

- **Setlist Library** → **Setlist** → **Song** — for gigs with a fixed song order.
- **Song Library** → **Song** — pick any Song directly, no Setlist needed. Good for rehearsals or looser sets.

Presets and Songs are shared, not copied: the same Preset can appear in many Songs, and the same Song in many Setlists. Edit one, and every place it's used updates.

📝 *Note: Controller settings are stored separately for Bank Mode and Song Mode*, so each mode can be set up its own way.

Home Views



The **Home** tab is where your Presets, libraries, tempo, and stage display live.

View	Shows	Use it to…
Preset Editor	The MIDI messages in the current Preset	Build and edit a Preset
Preset Library	All 120 Presets (12 Banks × 10)	Send, copy, swap, and organize Presets
SysEx Library	Stored SysEx messages (up to 64 bytes each)	Capture, edit, and organize SysEx dumps
Expression Library	All 10 Expression Presets	Build and organize expression pedal sweeps
Clock	One global BPM, extra large	Set tempo, or follow another device's clock
Live	The current Preset name, extra large	Play on stage without accidental touches

📝 *Note: The Preset Library is the one shared pool of Presets. Every controller and every Song recalls Presets from here, so an edit in Preset Editor shows up everywhere that Preset is used.*

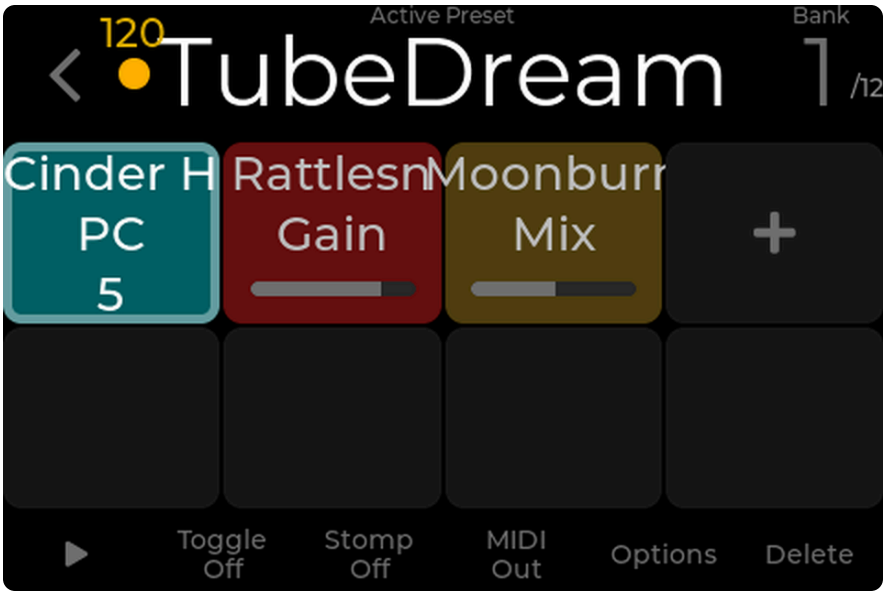
Home › Preset Editor

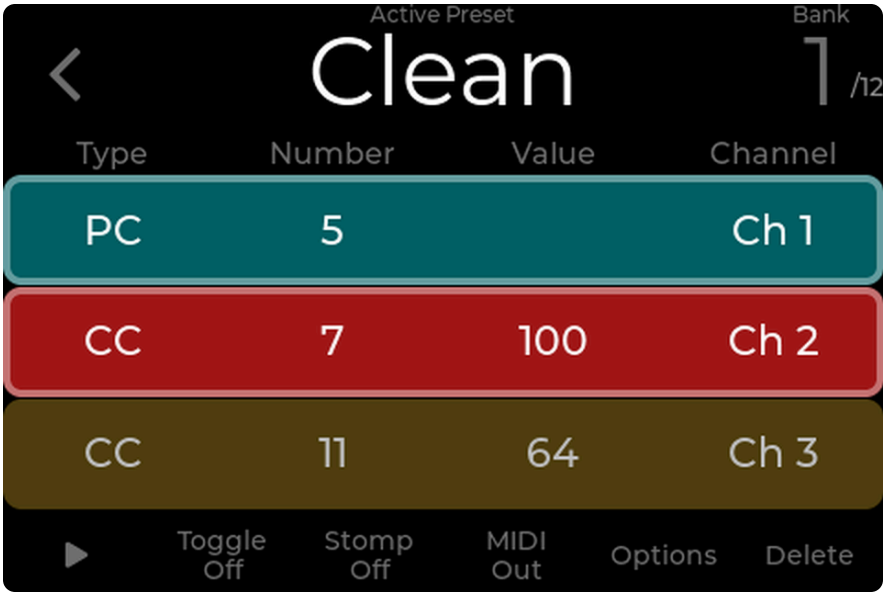
Where you build a Preset: the MIDI messages it sends and how it behaves when you press it.

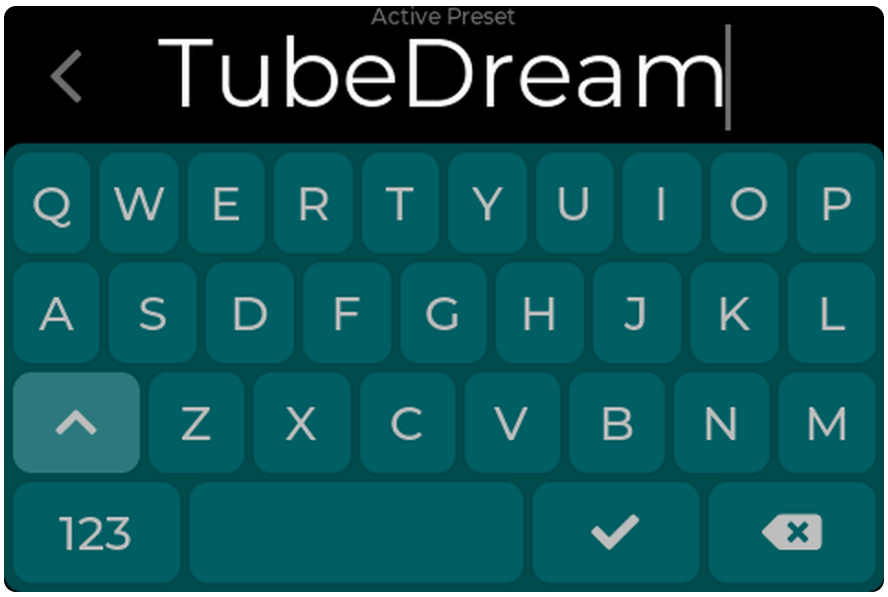
Quick Start

Programming a preset is very simple

- Go to **Home** → **Preset Editor**.
- Tap **"+"** to add a **Message** (up to **16** per Preset).
- When the Preset is triggered by an Action, all messages are sent **in sequence**.







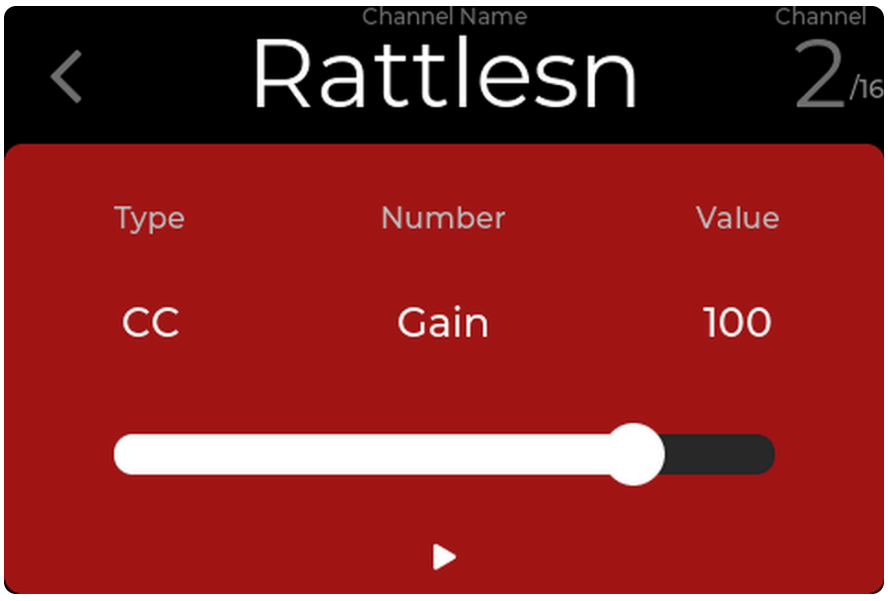
From the top

- **Preset Name:** Tap to rename.
- **Clock LED / BPM**: Blinks in sync with the BPM when Clock is running.
- **Bank**: Tap to switch Banks.

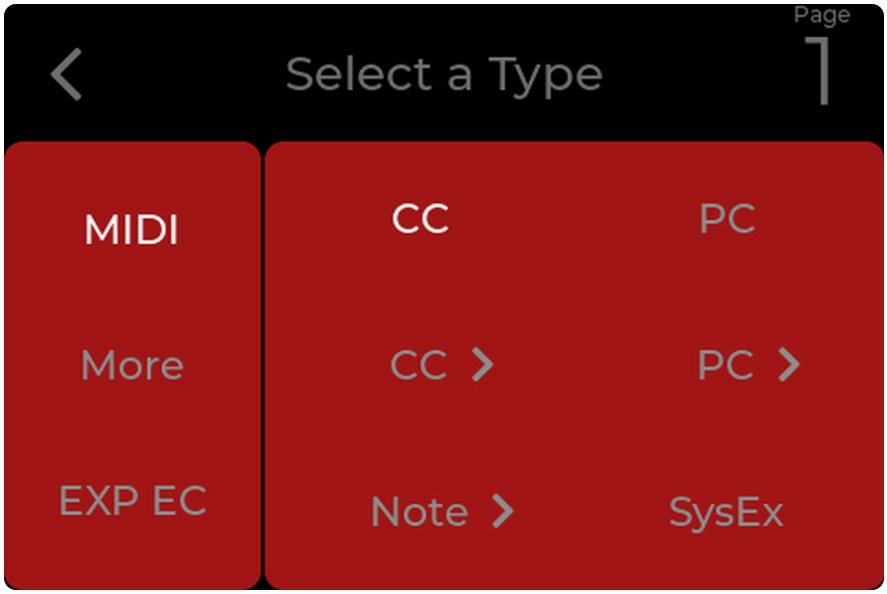
Messages grid

- **Message Blocks**:
- **Single Touch**: Edit the **Message**.
- **Long Touch**: Message menu (move, swap, insert, disable, delete, send).

Opening a message for editing

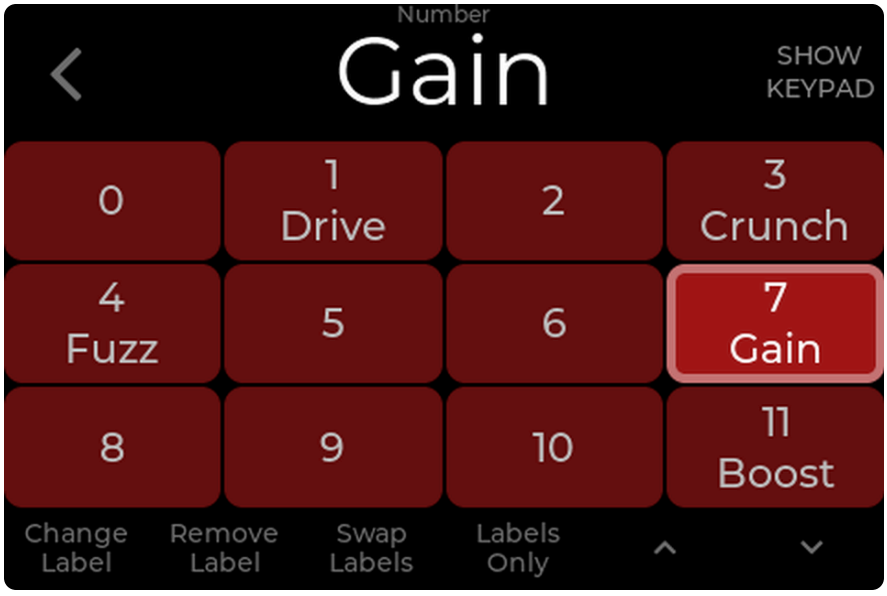


- **Type**: Tap to change the **Message** type.



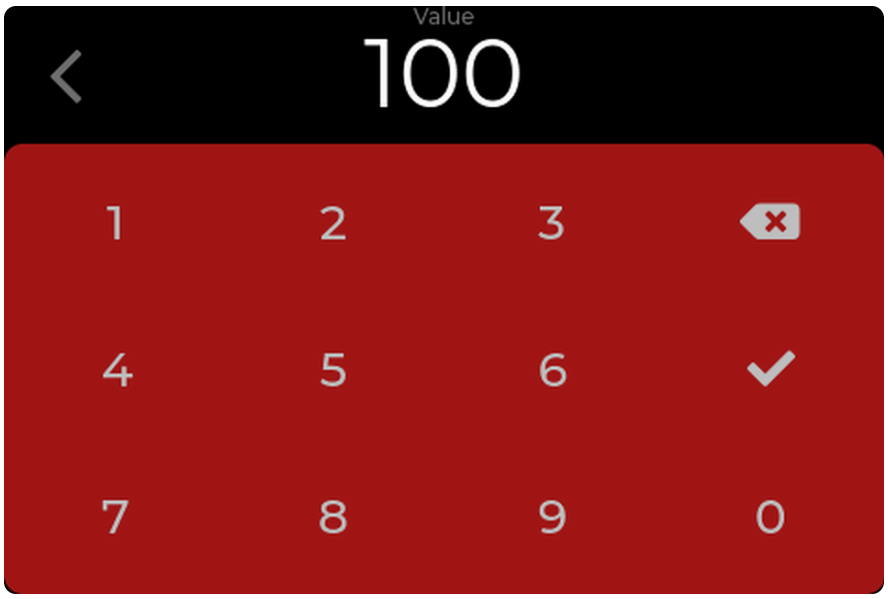
- **Number / Note / BPM / Name** (depending on the selected **Type**) : Tap to input a number by keypad.
- If the type is **CC/PC/Counter CC/PC

or Note**, you can switch to the "**List" **picker (top right corner), where you can view the list with attached** Labels **(Up to 255). -** Add / Change / Remove Label **-** Swap Labels **— copy/swap *all* labels from the current MIDI channel to another channel (**Swap all Labels: Channel N › Channel: → **confirm) -** Labels Only** — show only numbered entries that already have names



- **Value / Velocity**: Tap to input a value number by keypad.
- **Slider**: If the Type is **CC, Counter CC, CV or Pitch Bend** a slider control will be shown, allowing you to drag and change the value by touch.

- If the values are **Counter CC/PC** or **CC/Clock Expression** values, their colors will be yellow (changing values) instead of white (fixed values).



- **Channel**: Tap to change to another **MIDI Channel** (1 to 16). In the same screen, tap **CHANNEL OPTIONS** in the title bar for **Rename** or **Change Color** (when channel colors are enabled in **Editor Options**).
- **Channel Name**: Tap to rename the current **MIDI Channel**.



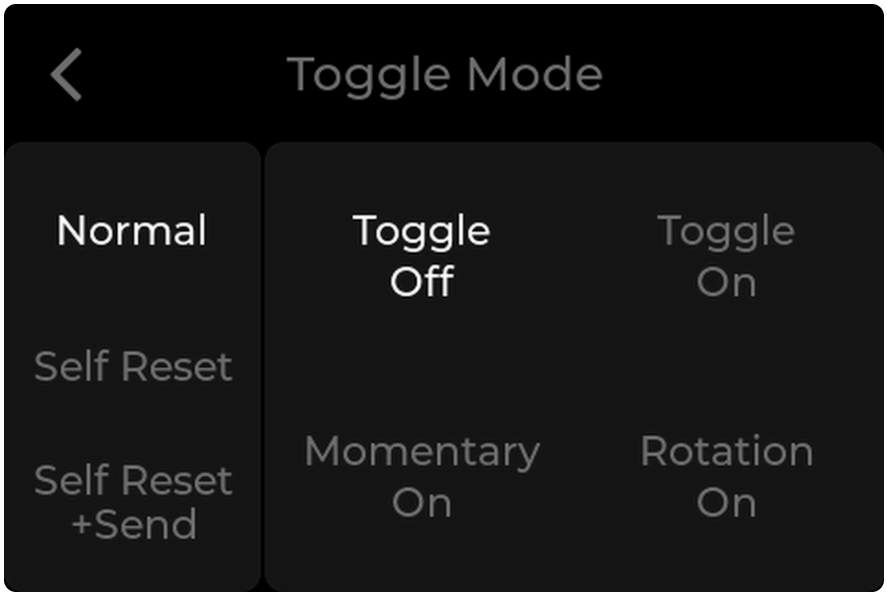
- ► : Send this **Message**.

Bottom menu bar

- **Toggle Mode** — per-Preset **Toggle** / **Momentary** / **Rotation** status. See **Toggle Mode** below.

- **Stomp On/Off** toggle for this Preset (sends without becoming the main Current Preset). See **Stomp Mode**.
- ► — send / play this **Preset**.
- **MIDI Out** — per-Preset port mask. See **MIDI Out (per Preset)** below.
- **Options** — opens **Editor Options**:
- **Layout** — **Grid** | **List**
- **Value Sliders** — **On** / **Off** (change Values with touch instead of keypad)
- **Monochrome** — **On** / **Off** (On = grayscale message backgrounds instead of channel colors)
- **Delete** — remove the last message.

Toggle Mode



Toggle Mode changes what a Preset does on repeated presses.

Normal

Choice	What each press does	Good for
Toggle Off *(default)*	Sends the Preset the same way every time	Scenes, patch changes
Toggle On	Alternates between **On** and **Off**	Delay on/off, boost in/out
Momentary On	Sends **On** when pressed, **Off** when released	Hold-to-use effects, talkback, mute
Rotation On	Sends the next step (A → B → C → A…)	Three delay times, three amp channels

What gets sent as **Off** — two ways:

- **Auto Off** — program only the **On** messages. Graviton works out the **Off** messages for you:
- **CC** → same CC with value **0**
- **Note** → same Note with velocity **0**

- **Switch / Relay** → the opposite state (Open ↔ Close)
- **A/B** — insert an **A/B** message as a divider. Messages **before** it are sent as **On**, messages **after** it as **Off**. Use this when On and Off need completely different messages.

Self Reset

When you move to a **different** Preset, this Preset quietly goes back to a starting state (nothing is sent):

- **(Toggle On) Self Reset To On** / **To Off** — returns to **On** or **Off**.
- **(Rotation On) Self Reset To A** — returns to the first step.

Self Reset + Send

Same as **Self Reset**, but the starting state is also **sent** — handy for keeping an external multi-effects unit in sync:

- **(Toggle On) Self Reset To On + Send** / **To Off + Send**
- **(Rotation On) Self Reset To A + Send**

Stomp On/Off

A Preset with **Stomp On** (shown with a **lightning** mark) still sends all of its messages, but it does **not** become the current Preset. Use it for background actions — delay on/off, a boost, tap tempo — without leaving the Preset you're playing.

> Example: you're on "Verse Clean". A **Stomp On** Preset on another button turns the delay on. **Live** still shows "Verse Clean" — only the delay changed.

⚠️ *Tip: Combine Stomp On with Toggle On so the same button turns the effect on and off, without changing the current Preset.*

MIDI Out (per Preset)



Choose which ports *this* Preset is sent to, instead of all of them.

> Example: your delay is on TRS 1 and your amp is on USB. For a delay Preset, leave only **TRS 1** on. For an amp Preset, leave only **USB** on.

⚠️ *Tip: This is different from Channel Filter, which limits MIDI channels (1–16). To turn a port off for all Presets, use Settings → MIDI → Port Routing (Out).*

Relay and Control Voltage

Use **Relay** when the amp or pedal only has a *footswitch jack*, not MIDI — channel switch, FX loop, analog boost. **M2** has a Relay port; **RV Adapters** add more on M1 or M2.

Example: Preset "Lead" sends PC to the modeler *and* a Relay **Close** on Tip so the real amp jumps to lead channel.

Use **CV** when a synth / modular wants voltage, not MIDI notes.

Relay Port

- A Relay Port is available on the Graviton M2, and more ports can be added to any M1 or M2 with **RV Adapters.**
- **Relay Ports** function as **Virtual Footswitch Pedals,** which can send **Switching messages** to devices with **Footswitch Inputs**, such as amps or effects, for changing amp channels / switching effects on and off, and more.
- Each **Relay Port** has a **Tip** and **Ring** output, which can control two Footswitch Inputs separately.

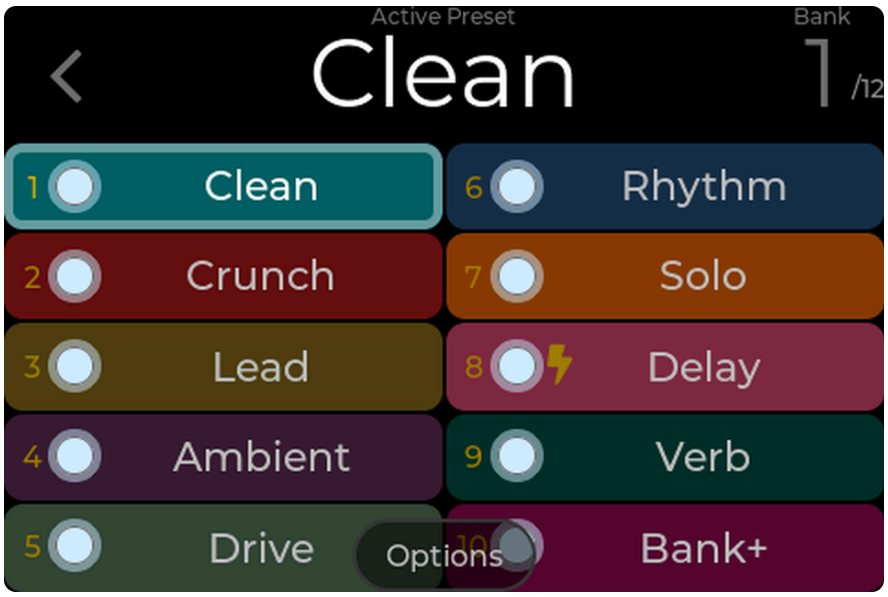
- For single device use, a mono cable can be used (**Tip** only). You can also use a stereo to dual mono splitter cable for **Tip** and **Ring** outputs, allowing you to control two devices at the same time.
- Add **Switch** messages in **Preset Editor**: choose **Jack** (TRS / Relay), **Pin** (**Tip** / **Ring**), and **State** (**Close** / **Open**, etc.).
- If **Toggle** or **Momentary** is enabled, the switched state during the 'Off' state will be the reverse of the 'On' state.

Control Voltage Port

- A **CV Port (CV)** is available on the Graviton M2, with more can be added to any M1 or M2 with **RV Adapters.**
- **CV Ports** can send **CV messages** to devices with **CV interfaces**, such as synthesizers and pedals. They can also function as **Virtual Expression Pedals**, allowing control of devices with expression pedal input jacks.
- Each **CV Out** has a **Tip** and **Ring** output, each controllable separately
- For single device use, a mono cable can be used (**Tip** only). You can also use a stereo to dual mono splitter cable for **Tip** and **Ring** outputs, allowing you to control two devices at the same time.
- Start using CV by adding CV **messages** to the **Preset Editor**, with the **Jack, Pin / Range** and **Output** (%) you want (static output).
- You can also control the **CV messages Output** % dynamically with external **Expression Pedals** connected to the M1/M2 **TRS Jacks** or with the **EC Controllers,** in the same way with **CC 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).

Home › Preset Library

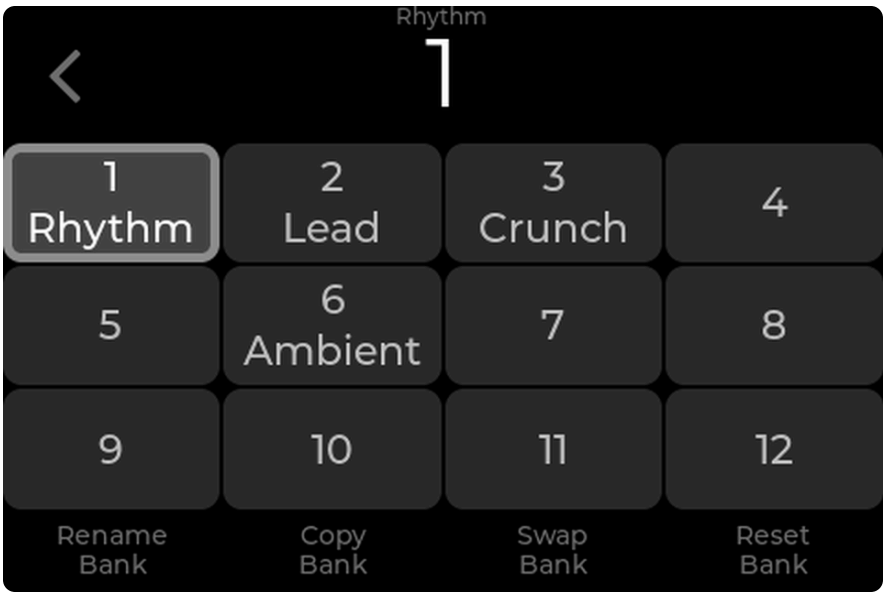




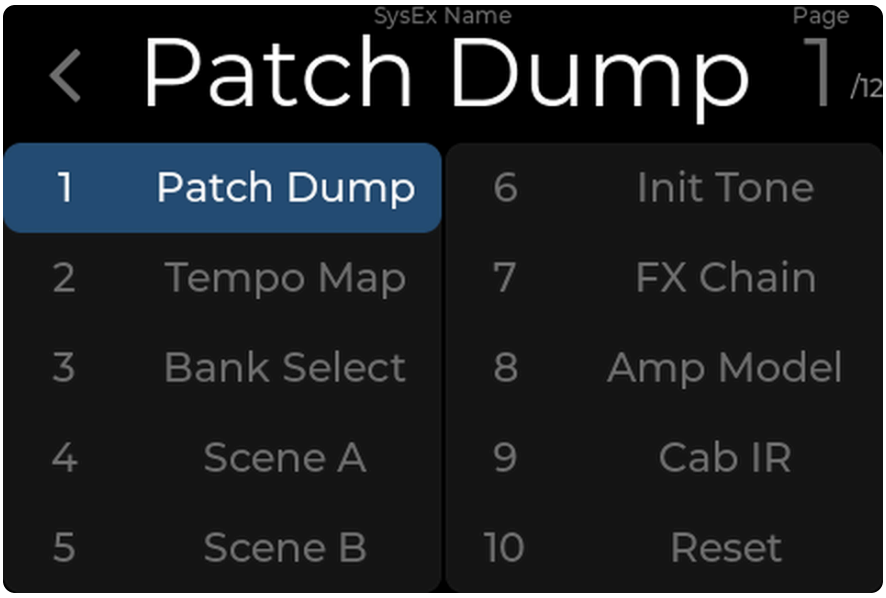
The Preset Library holds all **120 Presets** (12 Banks × 10). It's one shared pool: every controller (XY, EC, footswitch pedals, **MIDI In**) recalls Presets from here, in both **Bank Mode** and **Song Mode**.

- **Preset Name** — tap to rename.
- **Bank** — tap to switch Banks, or long-touch a bank number (or use the bottom bar in the bank picker) to **Rename Bank**, **Copy Bank**, **Swap Bank**, or **Reset Bank**.
- **Preset blocks** (configurable in Settings › Gestures):
- **Single touch** — opens the Preset in **Home** → **Preset Editor** (default), or sends the Preset when **Preset Library** touch is set to **Send**.
- **Double touch** — opens the Preset in **Home** → **Preset Editor** when **Single touch** is set to **Send**.
- **Long touch** — Preset menu (edit, rename, copy, swap, reset, change color).
- **Toggle LED** — shows **On** / **Off** for **Toggle On** and **Momentary On** Presets, or the current step for **Rotation On**.

> Example: to start Bank 2 with the same clean tone as Bank 1, long-touch Preset 1 → **Copy Preset** → Preset 11, then adjust only what's different.



Home › SysEx Library



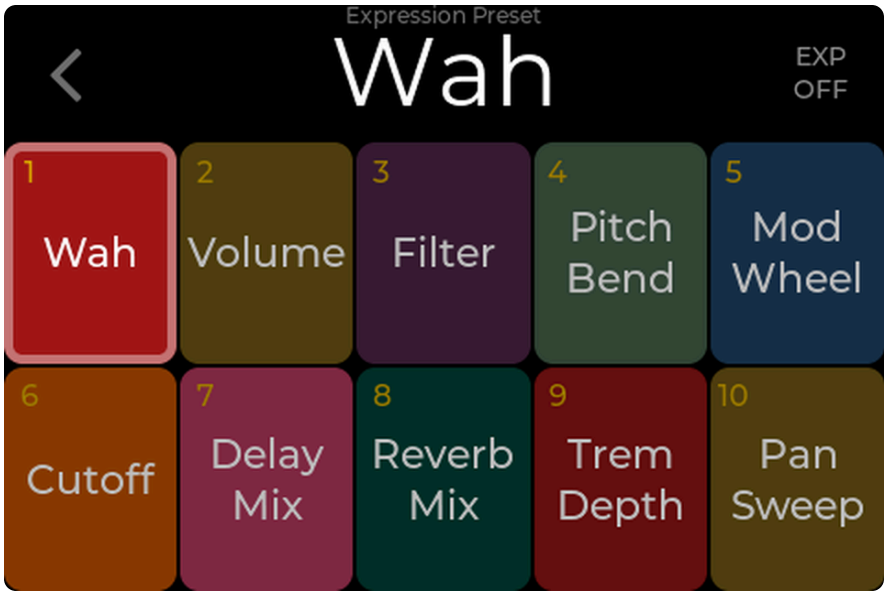


Stores up to **120 SysEx messages** across **12 Pages**. You can open it directly from **Home** → **SysEx Library**, or from a **SysEx** message in **Preset Editor** by tapping its Message / Value field.

From the top:

- **SysEx Name** — tap to rename.
- **Page** — tap to switch Pages.
- **SysEx 1–120**:
- **From Home** → **SysEx Library**: **Single touch** opens the hex editor directly (up to **64 bytes**).
- **From Preset Editor**: **Single touch** picks that SysEx message for the Preset you're editing; **Double touch** opens the hex editor.
- **Long touch** — edit, rename, copy, swap, or delete.

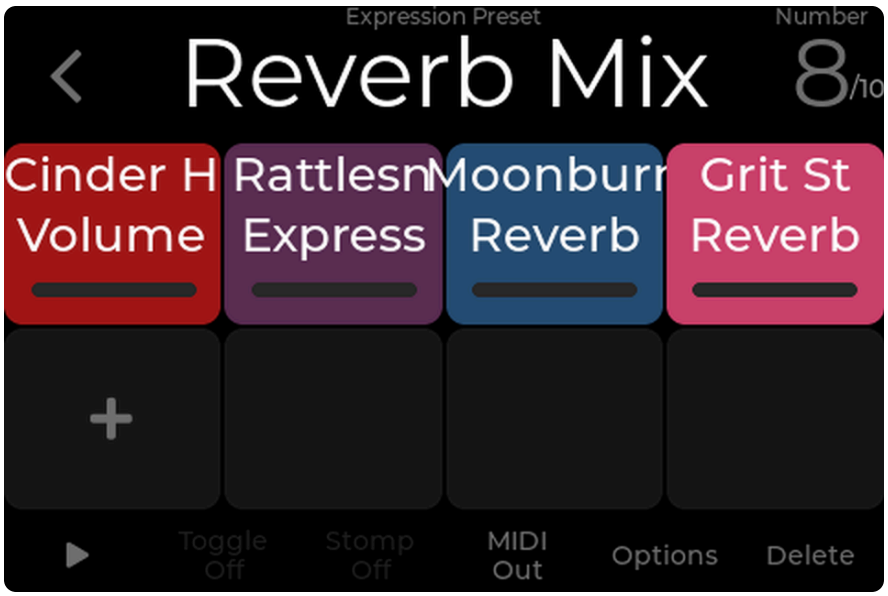
📝 *Note: For messages longer than 64 bytes, split them into several SysEx entries — the first starting with F0, the last ending with F7 — and add them to the Preset in order.*



Stores **10 Expression Presets** — shared across all expression pedals in both **Bank Mode** and **Song Mode** — for reusable pedal sweeps that stay the same no matter which Preset is active.

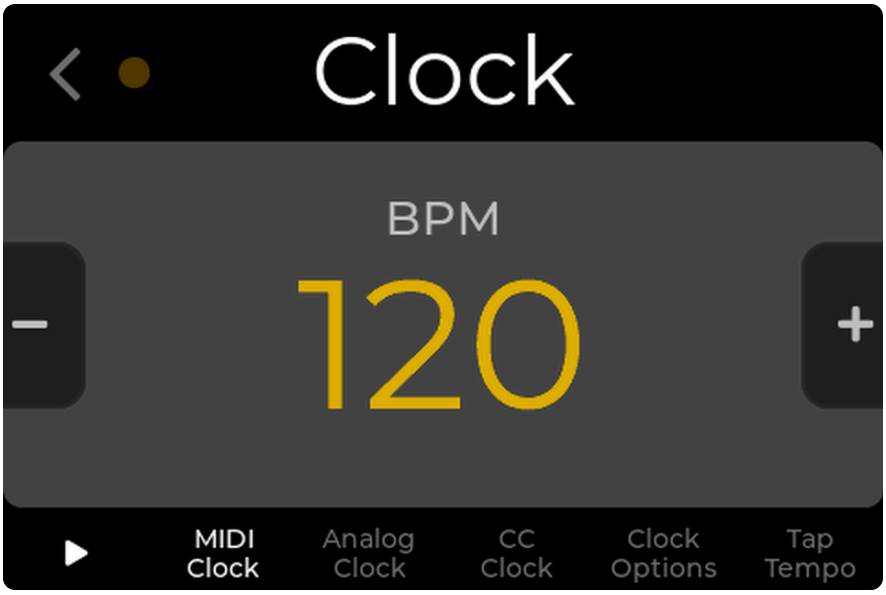
- **Expression Presets 1–10**:
- **Single touch** — opens that Expression Preset in the **Expression Preset Editor** (and assigns it to the current pedal if you came from **Control** → **Expression Pedal**).
- **Long touch** — Expression Preset menu (edit, rename, copy, swap, **Reset Preset** to clear it, change color).

Expression Preset Editor



Works like the **Preset Editor**, but only holds Expression messages. Tap **x / 10** at the top right to jump back to the **Expression Library**. See Control › Expression Pedal for assigning Expression Presets to TRS jacks.

Home › Clock



Keep your delays, loopers, and drum machines locked to one tempo — either with Graviton leading the rig (**Master**) or following an external clock (**Slave** / **Sync**).

The large number in the center is the **global BPM**:

- **Tap the number** to type an exact BPM on the keypad.
- **−** / **+** on the left and right edges nudge the BPM by 1.
- The color tells you who is in charge: **yellow** = **Master** (Graviton sets the tempo), **blue** = **Slave** (following an external tempo), **red** = **Sync** (locked to an external beat), **gray** = clocks stopped.

Three ways to send tempo

Type	Sends tempo as…	Where to configure
MIDI Clock	Standard MIDI Clock over 5-pin, TRS MIDI, USB, and Bluetooth	Choose output ports in **Settings** → **MIDI** → **Port Routing** (**Clock** row)
Analog Clock	Tap-tempo pulses for pedals with a tap input	TRS Tip/Ring (**M2** also Relay Tip/Ring). Set the jack to **Switch Out** in **Settings** → **General** → **TRS** first
CC Clock	A CC pulse on the beat for pedals that take tempo via CC	Set Channel, CC Number, Value, Rate, and Ports in **Clock Options** → **CC Clock**

Bottom bar

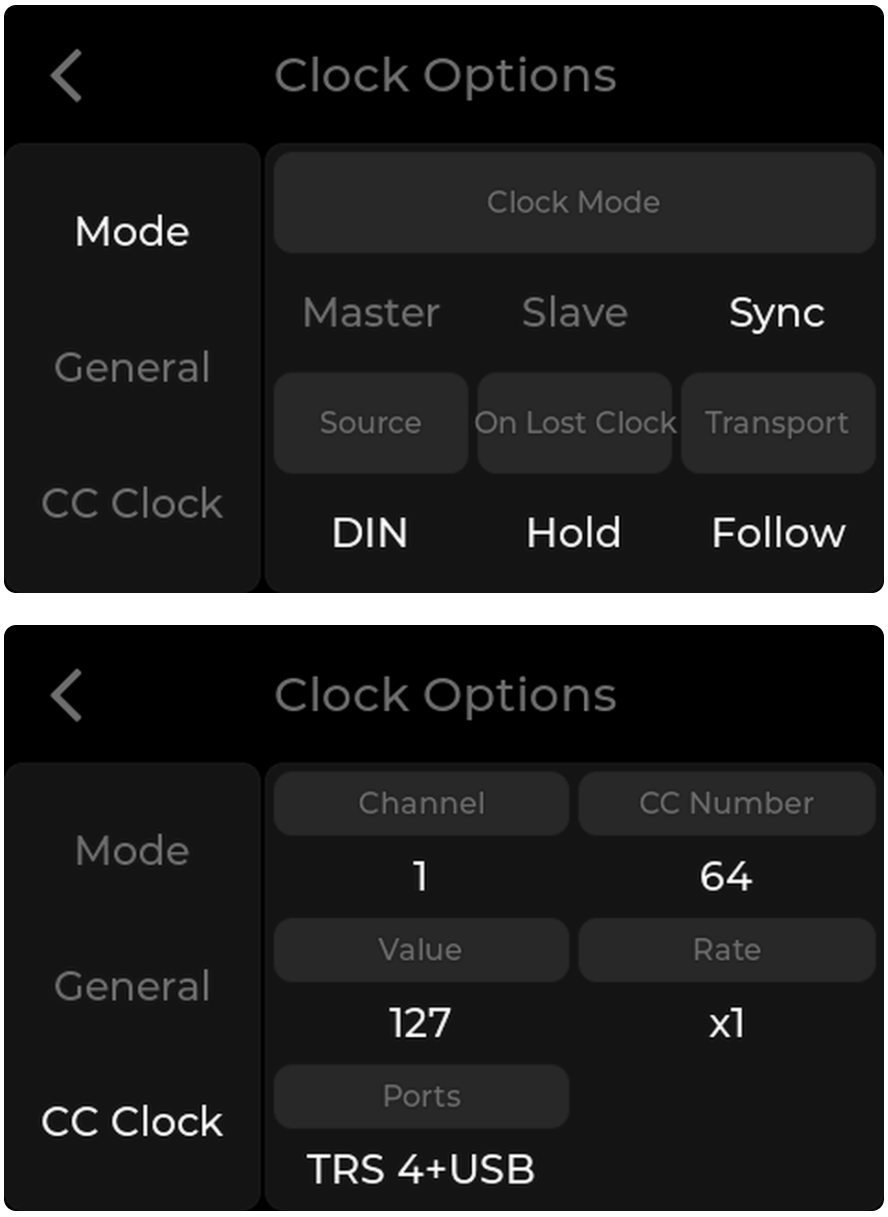
Button	What it does
▶	Pause or resume all active clocks (lit while running)
MIDI Clock	Turn MIDI Clock output on or off
Analog Clock	Pick which jacks send Analog Clock pulses (M1: TRS 1–2 Tip/Ring; M2: TRS 1–4 Tip/Ring + Relay Tip/Ring)
CC Clock	Turn CC Clock output on or off
Clock Options	Open **Mode**, **General**, and **CC Clock** settings
Tap Tempo	Tap two or more times to set the BPM by hand (turns MIDI Clock on)



- Enter **40–300** to set the BPM and start **MIDI Clock**.
- Enter **0** to stop all clocks.
- Use **.00** / **.25** / **.50** / **.75** on the bottom row for quarter-BPM precision.

⚠️ *Tip: Want a specific Preset to jump to its own tempo? Add a MIDI Clock or Analog Clock message inside that Preset — recalling it overrides the global BPM.*

Clock Options



- **General:**
- **While Switching Presets** — **Keep Running** or **Stop All**.
- **Analog Tap Clock Cycle** — send **4 Taps** per tempo change, or pulse **Continuously**.
- **CC Clock:**
- **Channel** and **CC Number** — which CC carries the pulse.
- **Value** — the CC value sent on each pulse.
- **Rate** — **/2**, **x1**, **x2**, or **x4** pulses per beat (**x1** = once per beat).
- **Ports** — toggle each output port **On** or **Off**.
- **Mode** (leading vs. following another device):
- **Master** — Graviton sets the tempo and sends the clock.

- **Slave** — Graviton measures incoming MIDI Clock from the **Source** you choose (**DIN**, **USB**, or **BLE**) and generates its own clean clock at that tempo. Make sure **In** is enabled for that port in MIDI Routing.
- **Sync** — like **Slave**, and also locks Graviton's beat phase to the incoming clock so delays and LFOs stay on the exact downbeat.

While following (**Slave** or **Sync**):

- **On Lost Clock** chooses what happens if the incoming clock stops: **Hold** the last tempo, or **Stop**.
- **Transport** chooses whether incoming MIDI Start/Stop messages are followed (**Follow**) or ignored (**Ignore**).
- Manual tempo controls (**Tap Tempo**, **−** / **+**, and the keypad) are disabled while following an external source.
- The status line above the BPM shows the link state (**WAITING**, **FOLLOWING**, **PHASE**, or **LOST**) and the active source (**DIN**, **USB**, or **BLE**).

Using Slave / Sync with Through

Through in **MIDI Routing** forwards incoming clock directly to other ports. For each output port, what downstream pedals receive depends on two settings:

Port setting	Downstream device receives
Through on, and Clock allowed in **Thru Filter**	The incoming external clock, passed straight through
Through off (or Clock blocked in **Thru Filter**), **Clock** on	Graviton's own clock, following the external tempo (**Slave**) or beat (**Sync**)
Through off, **Clock** off	No clock

Graviton never echoes clock back to the source port it is following, and never sends duplicate clocks on a port that has both **Through** and **Clock** turned on.

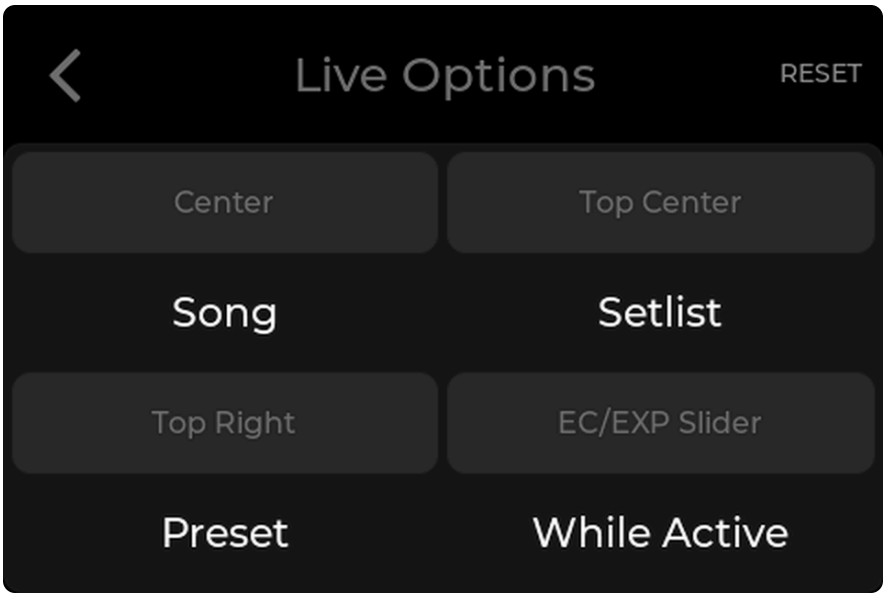
> Example: a laptop on USB sends clock and PCs to your rig. You want your delay on TRS 3 to follow Graviton's phase-locked **Sync** clock instead of raw USB Thru. In **Thru Filter**, block **Clock** on TRS 3, leave **Notes CC/PC** on, and enable **Clock** on TRS 3 in **Port Routing**.



A performance view with the Preset name shown extra large. Touch controls are locked (except **Back** (**<**) and **Options**) so you can't change anything by accident.

- **Toggle On** / **Momentary On** Presets show an **On** / **Off** LED.
- **Rotation On** Presets show the current step (**A**, **B**, **C**, ...).

Live Options



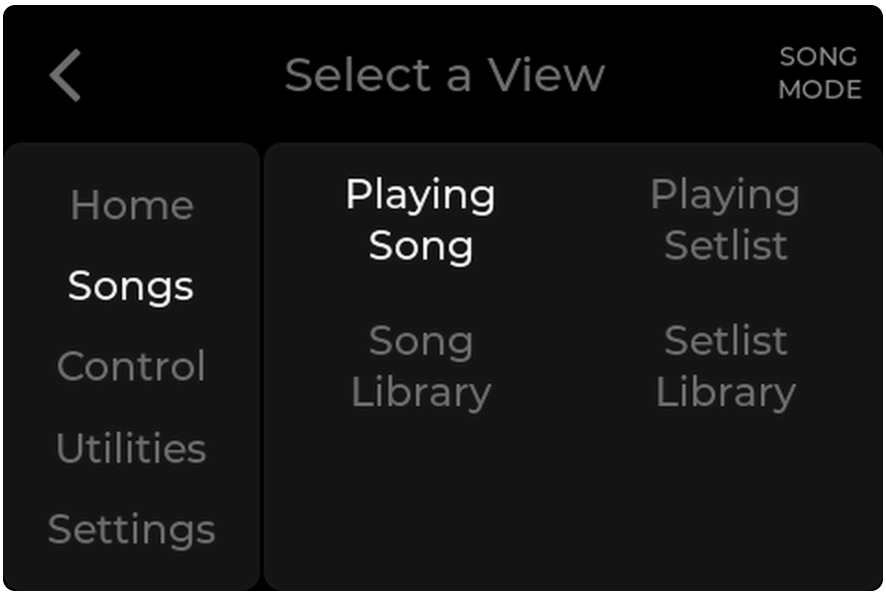
Tap **Options** to choose what each area of the screen shows:

Area	Choices
Center	**Preset**, **Bank**, **BPM**, **Stomp Preset** (+ **Song**, **Setlist** in **Song Mode**)
Top Center	Same as **Center**
Top Right	Same as **Center**
EC/EXP Slider	**While Active** (only while the EC knob or Expression Pedal moves) or **Always On**

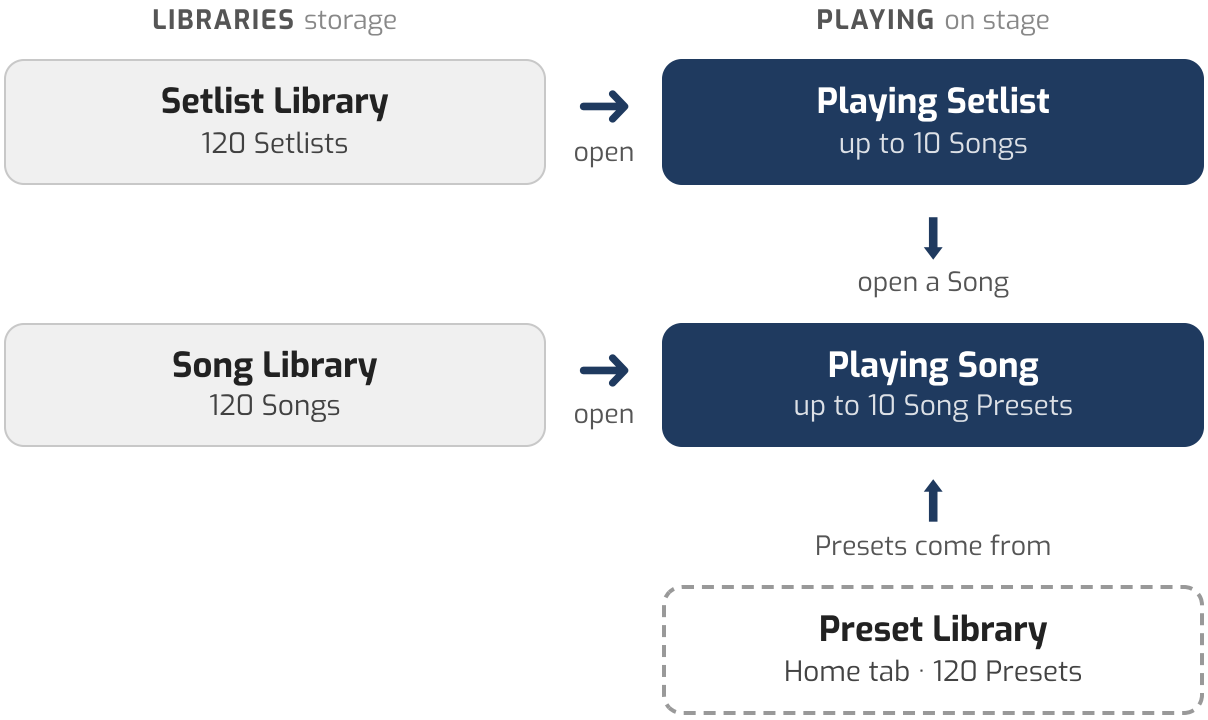
Tap **RESET** to go back to the defaults. **Bank Mode** and **Song Mode** each keep their own Live Options.

> Example: in **Song Mode**, show **Preset** in the center, **Song** at the top, and **BPM** at the top right.

Songs Views



The **Songs** tab has four views: two **libraries** where everything is stored, and two **playing** views for what you're using right now.



View	Holds	Single touch opens	Use it to...
Setlist Library	Up to 120 Setlists	**Playing Setlist**	Store and organize your Setlists
Playing Setlist	Up to 10 Songs, in order	**Playing Song**	Pick the next Song during the set
Song Library	Up to 120 Songs	**Playing Song**	Store Songs, or play one without a Setlist
Playing Song	Up to 10 Song Presets	— (sends the Preset)	Play the Song's Presets

Two ways into **Playing Song**:

- **With a Setlist: Setlist Library** → **Playing Setlist** → **Playing Song** — for gigs with a fixed order.
- **Without a Setlist: Song Library** → **Playing Song** — for rehearsals or looser sets.

📝 *Note: Nothing is copied. A Setlist points to Songs in the Song Library, and a Song points to Presets in the Preset Library — edit one and every Setlist or Song using it updates.*

⚠️ *Tip: Need more than 10 Songs in a set? Split it across Setlists stored next to each other in the Setlist Library — e.g. Friday 1/3, Friday 2/3, Friday 3/3 — then set Settings → Songs → At Setlist Ends to Next Setlist. When the last Song of 1/3 ends, Graviton moves straight on to 2/3.*

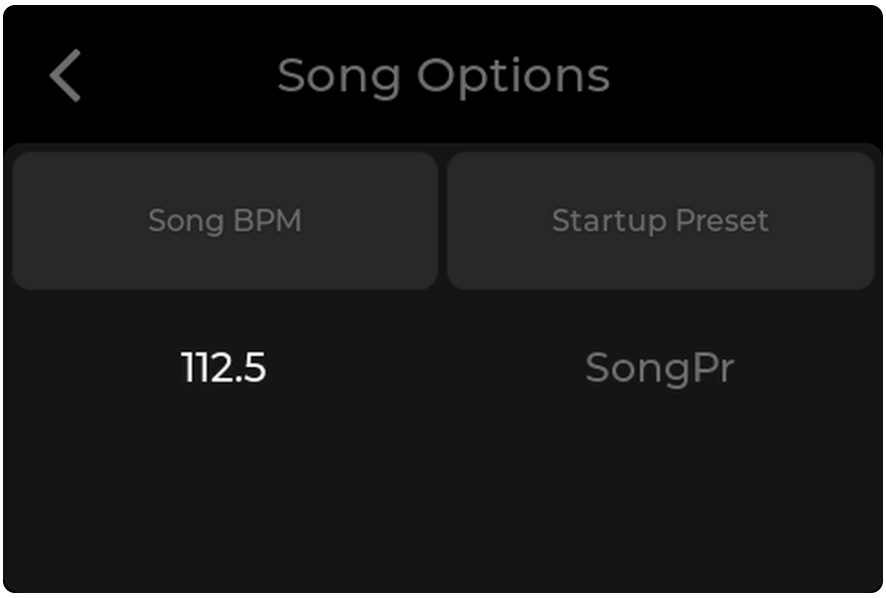
Songs › Playing Song



The main view while performing in **Song Mode**: the current Song's Presets, in the order you'll use them (intro → verse → chorus → solo).

- **Song Name** — tap to rename.
- **Song Presets 1–10**:
- **Single touch** — send the Song Preset.
- **Double touch** — open it in **Preset Editor**.
- **Long touch** — Song Preset menu (edit, rename, change, swap, remove). On an empty slot, this adds a Preset.
- **Toggle LED** — shows **On** / **Off** for **Toggle On** and **Momentary On** Presets, or the current step for **Rotation On**.
- A **Stomp On** Preset doesn't move the highlight — stomping a delay on top leaves the Song Preset you're on selected.
- **Bottom bar** — shows your current position (**Song N / T** in a Setlist, skipping empty slots, or song number out of **120** in Song Library mode) with touch **<** / **>** controls for previous / next Song.

Song Options

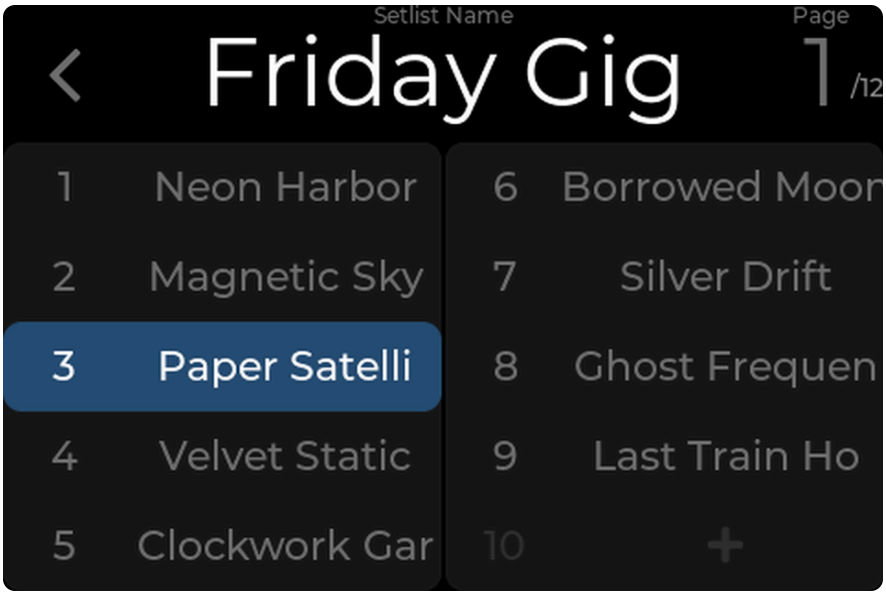


Settings for **this Song only**:

- **Song BPM** — the tempo set when the Song loads. **Off** stops the clock instead of keeping the previous Song's tempo. Quarter-BPM steps are supported.
- **Startup Preset** — a Preset sent automatically when the Song loads:
- **None**
- **Song Preset** — **1st**–**10th** from this Song.
- **Global Preset** — any of the 120 Presets in the **Preset Library**.

📝 *Note: Settings that apply to all Songs — At Song Ends, At Setlist Ends, Presets Self Reset on Song Change, and Layout — are in Settings → Songs.*

Songs › Playing Setlist



The current Setlist, with its Songs in running order. Tap a Song to open it in **Playing Song**.

- **Setlist Name** — tap to rename.
- **Songs 1–10**:
- **Single touch** — open and play the Song in **Playing Song**.
- **Long touch** — Song menu (open, rename, change, swap, remove).

> Example: the encore isn't on the Setlist. Long-touch the last slot → **Change Song** and pick it from the **Song Library**.

Performance tips

- Assign **Song Library ±**, **Setlist Library ±**, **Song Jump**, or **Navigate** Actions to footswitches to move through the set hands-free.
- Use **View Jump** / **View Toggle** to get to **Playing Setlist** or **Playing Song** quickly.
- What happens at the end of a Song or Setlist is set in **Settings** → **Songs** (**At Song Ends**, **At Setlist Ends**).

Songs › Song Library



Where all your Songs are stored, across **12 Pages**.

- **Song Name** — tap to rename.
- **Page** — tap to switch Pages.
- **Songs 1–120**:
- **Single touch** — open and play the Song in **Playing Song**.
- **Long touch** — Song menu (open, rename, copy, swap, delete).

📝 *Note: To add a Song to a Setlist, open the Setlist in Playing Setlist and long-touch a slot.*

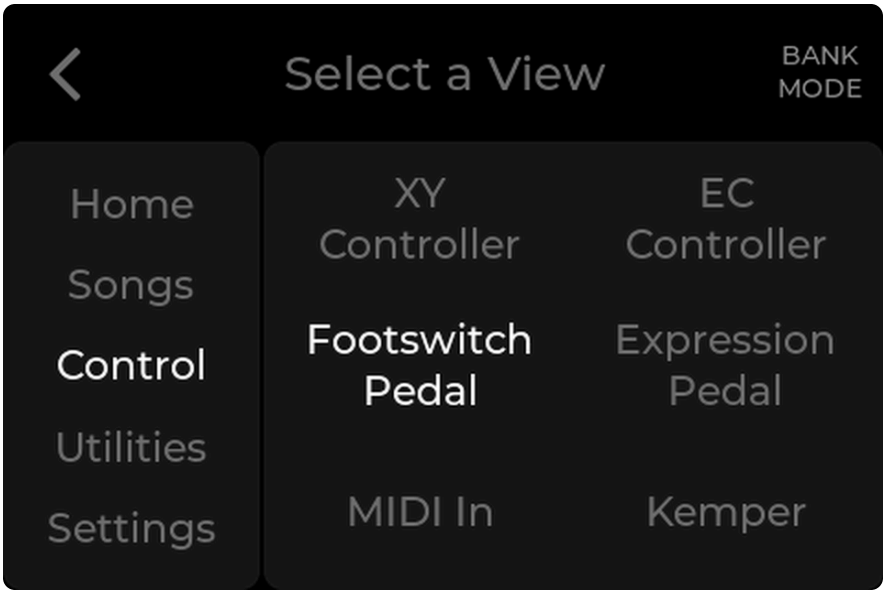
Songs › Setlist Library



Where all your Setlists are stored, across **12 Pages** — e.g. one for a club gig, one for a festival, one for an acoustic set.

- **Setlist Name** — tap to rename.
- **Page** — tap to switch Pages.
- **Setlists 1–120**:
- **Single touch** — open the Setlist in **Playing Setlist**.
- **Long touch** — Setlist menu (open, rename, copy, swap, delete).

Control Views



The **Control** tab is where you program and play each connected controller. Every control is one of three types:

View	**Buttons** → Actions	**Knobs** → Actions or Encoder messages	**Pedals** → Expression messages
XY Controller	✓		
Footswitch Pedal	✓		
MIDI In	✓ (triggered by incoming MIDI, not a press)		
EC Controller	✓ (push a knob)	✓	
Expression Pedal			✓

- **Actions** — Presets, direct MIDI messages, Bank ±, Tap Tempo, … (see Step 2: Programming Buttons).
- **Knobs** — assign Actions or messages directly (Easy mode), or drive **Encoder** messages inside a Preset (Advanced mode). Pushing a knob works like a button and sends an Action.
- **Expression messages** — sent as you sweep a pedal.

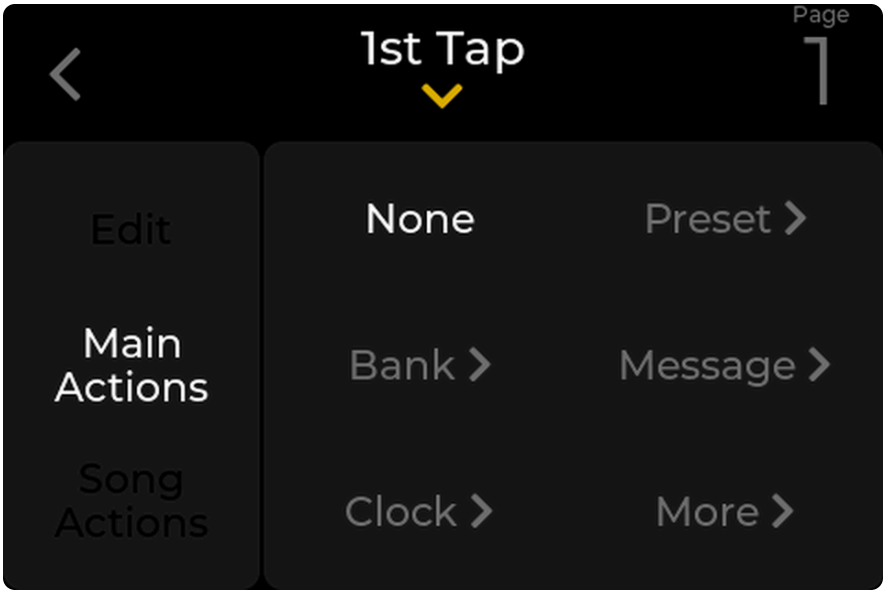
Kemper on the same tab is a dedicated two-way home screen for a Kemper Profiler or Kemper Player — see Control › Kemper.

📝 *Note: Buttons work the same in every view — the same Actions, Multi-Tap, and settings. See Control › Button Settings below; learn them once, use them everywhere.*

Control › Button Settings

Every button-based controller — **XY**, **Footswitch**, **EC** push-buttons, and **MIDI In** — uses the same per-button Action settings and per-controller Bank and Focus options.

Per Button



Long-touch any button block (or single-touch an empty + block) to open this menu.

- **Single touch** on a Preset tile opens that Preset in **Preset Editor** by default (or sends it when **Control Screens** in Settings › Gestures is set to **Send**, in which case **Double touch** opens **Preset Editor**).
- **Single touch** on a non-preset Action tile triggers that Action.
- **Long touch** on any tile opens **Action Settings** below.
- **Multi-tap badge (`1 2 3 H D R`)** in the bottom-right corner shows which tap layers are assigned to that button, with the active layer highlighted in **light blue** (see Multi-Tap).

Tab	What it does
Edit	Jump to **Preset Editor** for whatever Preset this tap recalls (gray if the tap isn't a Preset).
Main Actions	Pick what this tap *does* — recall a scene, step banks, open a screen, and so on.
Song Actions	Pick what this tap *does* — Song Presets, setlists, song jumps. Only available in **Song Mode**
Focus	Choose whether pressing this controller moves the **display** to that Control view, stays put, or needs a second press.
Navigate	Assign "menu cursor" moves for **Playing Song** / **Playing Setlist** (scroll and confirm without a switch per line).
Learn / **Trigger**	**Learn** teaches an unknown Universal footswitch step. **Trigger** (MIDI In only) sets which incoming message fires this virtual button.

Direct Messages (No Preset Needed)

You don't have to use one of your 120 Preset slots just to send a single message. On any button's **1st Tap** or **Hold** (and on EC knobs), open **Main Actions** and pick directly from:

- **Message** — **CC** (or **Counter CC + / − / Jump**), **PC** (or **Counter PC + / − / Jump**), **Note On / Off / All Notes Off**, **SysEx**, **Keystroke**, **Switch** (Relay), **Assign Expression**, or **Song Position**.
- **Clock** — **Tap Tempo**, **MIDI Clock**, **BPM + / −**, **Transport** (**Start / Stop / Continue**), or **Analog Clock**.
- **More** → **LFO** — start, stop, toggle, hold, reset, or nudge any LFO engine.

After picking the message type, Graviton opens the message editor so you can set its channel, number, value, and options just like a step in **Preset Editor**.

> **When to use a Direct Message vs. a Preset:** Use a **Direct Message** for a quick one-off utility switch (e.g. a dedicated tuner CC, DAW spacebar keystroke, or amp channel relay). Use a **Preset** when a button needs multiple messages, **Toggle / Rotation / Momentary** state, **Stomp** behavior, or per-Preset **MIDI Out** routing.

Per Controller



Setting	What it does
Global Bank	Shares one bank with other controllers set to **On**, or keeps a separate bank when **Off**.
Bank Min / Bank Max	Sets the range of Banks this controller can reach.
Bank Wrap	Decides whether going past **Bank Max** / **Bank Min** jumps to the other end or stops.
Focus	Decides whether the screen jumps to this controller's view when you press one of its buttons.
Self Reset Tap	Decides whether a button waiting on its **2nd** / **3rd Tap** goes back to **1st Tap** when you press another button.

Global Bank

- **On** — this controller shares one bank with every other controller set to **On**. Changing the bank on any of them (**Bank +**, **Bank −**, **Bank Jump**) changes it on all of them.
- **Off** — this controller has its own bank. Changing it doesn't affect any other controller.

> Example: set both footswitch pedals to **Off** so pedal 1 stays on Banks 1–6 while pedal 2 stays on Banks 7–12.

Bank Min / Bank Max

Set the range of Banks this controller can reach — **Bank +**, **Bank −**, and **Bank Jump** all stay inside it.

Bank Wrap

This decides what happens when you go past the end of the range:

- **On** — **Bank +** on **Bank Max** jumps to **Bank Min**, and **Bank −** on **Bank Min** jumps to **Bank Max**.
- **Off** — the bank stops at **Bank Min** / **Bank Max**.

> Example: **Bank Min** 1, **Bank Max** 4. On Bank 4, **Bank +** goes to Bank 1 with **Bank Wrap On**, and stays on Bank 4 with it **Off**.

Focus

Focus decides whether the screen jumps to a controller's view when you press one of its buttons.

Choice	Does the screen jump to this controller?	Does the Action fire?
Same View *(default)*	Only if you're already on that type of Control view (ex: F10W > M2, 1st XY > 2nd XY)	Yes
Press Once	Yes, on the first press	Not on the first press; yes after that
Always	Yes, on every press	Yes
Off	No — the screen stays where you are	Yes

One setting for the whole controller, or one per button

- From the controller's bottom menu, **Focus**:
- **All buttons** — pick one choice for every button on this controller (the M2's built-in switches, one F10W, one XY, ...).
- **Per button** → **On** — each button uses its own Focus setting.
- From a button's Action popup (long-touch a block), **Focus**:
- **This button** — pick a choice for just this button.
- **All buttons** → **On** — this button follows the controller-wide setting again.

Self Reset Tap

Say a button is waiting on its **2nd Tap** or **3rd Tap**, and you press a different button. **Self Reset Tap** decides what happens to the first button:

Choice	The first button...
Off *(default)*	Stays where it was — its next press is still the **2nd** / **3rd Tap**
On	Goes back to **1st Tap**, silently
On + Send	Goes back to **1st Tap** and sends its **1st Tap** Action

> Example: button 1 steps through three delay times (**1st** / **2nd** / **3rd Tap**). With **On**, after pressing another button, button 1 starts over at the first delay time on its next press. With **On + Send**, the first delay time is sent right away.

Set separately for each controller (the popup title is **Self Reset 2/3rd Tap**).

Control › XY Controller



The buttons of your paired **XY Controllers** — up to **10** (shared with **EC Controllers**), each with its own view.

From the bottom menu:

- **Controller** — switch between paired XY Controllers.
- **Layout** — **XY** (arranged like the controller itself), **Grid**, or **List**.

Buttons are programmed and set up like everywhere else — see Control › Button Settings.

Control › Footswitch Pedal



Everything on the floor: the M2's built-in footswitches, paired **F6W** / **F10W** pedals, and third-party pedals plugged into the TRS jacks.

From the bottom menu:

- **Pedal** — switch between footswitch pedals (e.g. **M2**, **TRS 1 : 3-button**, **F10W : 1**).
- **Layout** — depends on the pedal:
- 10- and 6-button pedals: **Grid** or **List**.
- **Universal** (resistor-ladder) pedals: pick any grid shape (5x2, 3x2, 2x2, …) to match the pedal.
- **2-button** TRS pedals: **Swap L/R** to flip the left and right switches.
- **3-button** TRS pedals: **Wiring** lets you pick from six button-order maps (**Tip/Both/Ring**, **Ring/Both/Tip**, **Tip/Ring/Both**, **Both/Tip/Ring**, **Both/Ring/Tip**, **Ring/Tip/Both**). Each name lists left / middle / right — switch maps if your pedal's switches land on the wrong tiles.

Buttons are programmed and set up like everywhere else — see Control › Button Settings. Universal pedals are taught with **Learn** (see **Universal Footswitch Learn**).

Example: Custom layout with Universal Footswitch

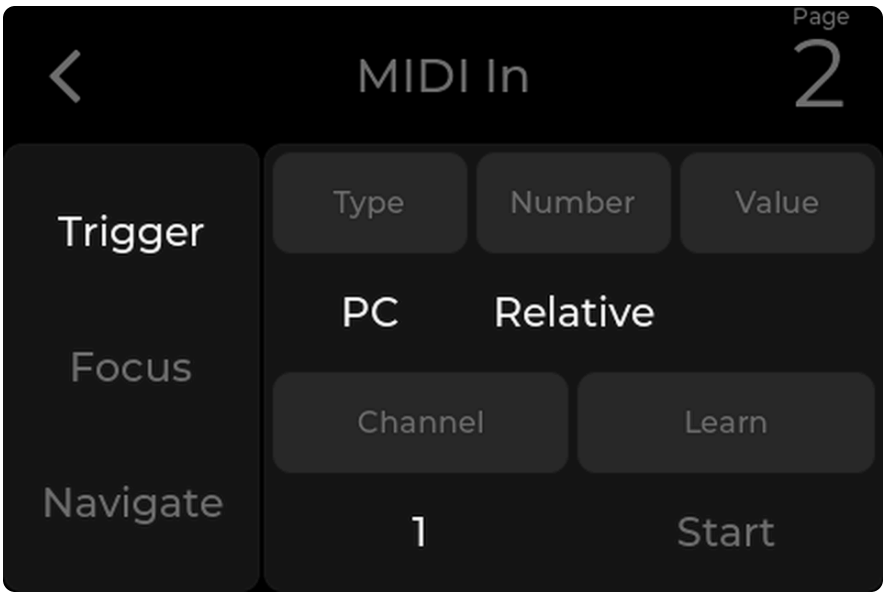


Control › MIDI In



Virtual buttons fired by **incoming MIDI Trigger** (5-pin, USB, or Bluetooth) instead of a physical press: **12 Pages × 10 buttons** = **120**. Use it when another device is in charge — a DAW, a lighting desk, or another MIDI controller — and you want its PC / CC messages to run Graviton Actions.

> Example: your keyboard sends PC **N** → Graviton recalls Preset **N**.



Each virtual button runs the same **Actions** as any other button — see Control › Button Settings.

From the bottom menu:

- **Layout** — **Grid** or **List**.
- **Apply To** — whether the controller settings (**Global Bank**, **Focus**, …) apply to **This Page** or **All Pages**.

Differences from physical buttons:

- Incoming MIDI has no "let go", so **Hold**, **Double Tap**, and **Release** aren't available.
- Receiving the same message again still steps through **2nd Tap** / **3rd Tap** (e.g. PC 1 again = **2nd Tap**).

Absolute Trigger

Fires on **one exact message** — a set Channel, Number, and Value (where they apply).

Relative Trigger

Set **Number** to **Relative**. Any message on the matching Channel / Value fires the Action, and the **number received** picks the target:

Action	Received number X means
Global Preset	Recall Preset X
Bank Preset	Recall the X-th Preset in the current Bank
Song Preset	Recall the X-th Preset in the current Song
Bank Jump	Go to Bank X
Song Jump	Go to Song X
Setlist Jump	Go to Setlist X

Use **Offset** to fix off-by-one numbering between devices — e.g. if receiving 10 recalls Preset 11, set **Offset** to **−1**.

Control › Kemper



Control a **Kemper Profiler** (Head, Rack, or Stage) or **Kemper Player** with live two-way feedback — rig names, effect names, bypass LEDs, tuner, and Morph right on Graviton's screen.

Before you start

1. Put your Kemper in **Performance** mode (Graviton does not read Browse

mode; Performance up/down buttons step the rig list if Browse is on). 2. Connect MIDI **both ways** on the port you want to use (**USB**,

DIN, or **BLE**) and make sure both **In** and **Out** are enabled for that port in MIDI Routing. 3. Tap **Options** → turn **Link On**, and match **Port**,

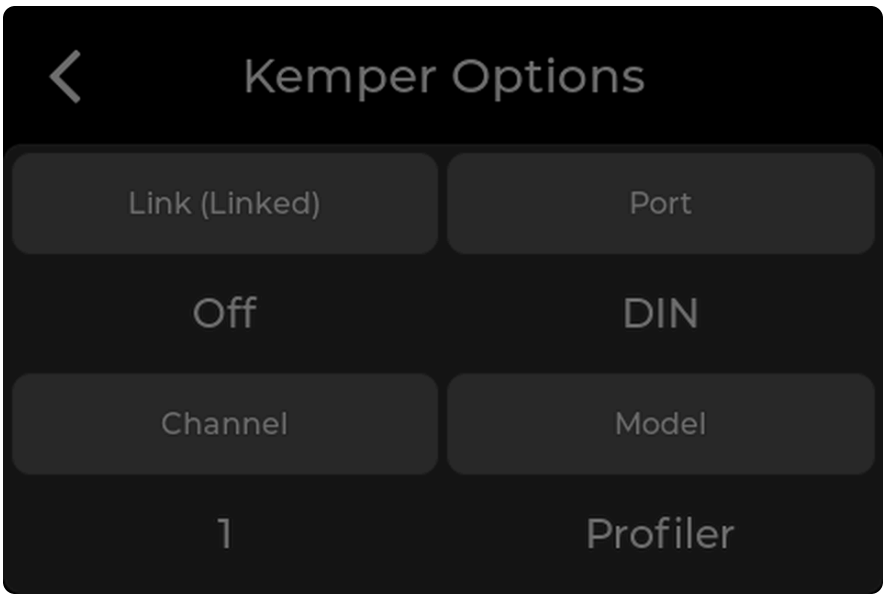
Channel, and **Model** (**Profiler** or **Player**).

What you see on screen

- **Top bar:** The current **Rig** name in white, with the **Performance** number and name in yellow above it. Tap the rig name to jump straight to any Performance (**1–125**). **Slot** at the top right shows which slot (**1–5**) is active inside that Performance.
- **Effect tiles (10 blocks):** Top row = **Effect 1–4** plus **Amp**; bottom row = **Effect 5–8** plus **Cab**. Once linked, each tile shows the actual effect name from the Kemper (e.g. **Wah Wah**, **Comp**, **Single Delay**) or **Empty** if unused. Tap any tile to toggle that block on or off — the tile LED stays in sync with the Kemper.

Bottom bar

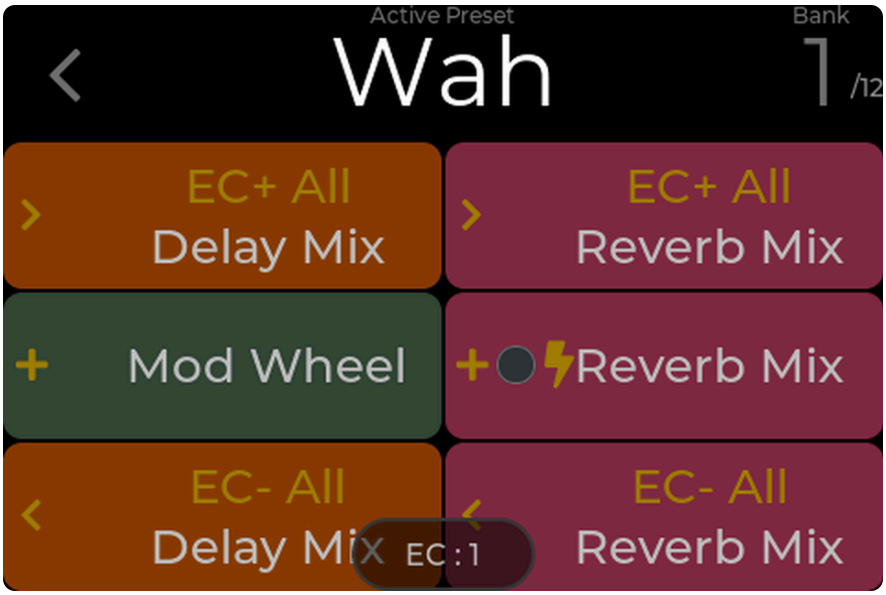
Button	What it does
< / >	Previous / next Performance
Tuner	Open the Kemper tuner on screen. The note sits in the center; **<** = flat, **>** = sharp. Tap Back to close and exit tuner mode on the Kemper
Morph	Toggle between the rig's two Morph states. The rig name turns blue while morphed
Options	Open **Kemper Options** (**Link**, **Port**, **Channel**, **Model**)





📝 *Note: Link shows (Linked) when Graviton is talking to the Kemper or (Offline) if no response is heard. Changing Port, Channel, or Model restarts the link automatically.*

Control › EC Controller



Turn a knob to sweep a parameter smoothly — delay mix, reverb level, gain, BPM — or step through Banks, Presets, Songs, and Setlists. Each **EC Controller** has **2 knobs**: turn them (clockwise / counterclockwise), or push them down to use them as **2 buttons**.

> Example: left knob = delay mix, using a **Counter CC** so the mix doesn't jump when you change Presets. Push the knob to bypass the delay.

Two ways to program

Pick whichever fits your rig in **Control** → **EC Controller** (long-touch a **<** or **>** tile):

1. Easy — Assign Messages Directly

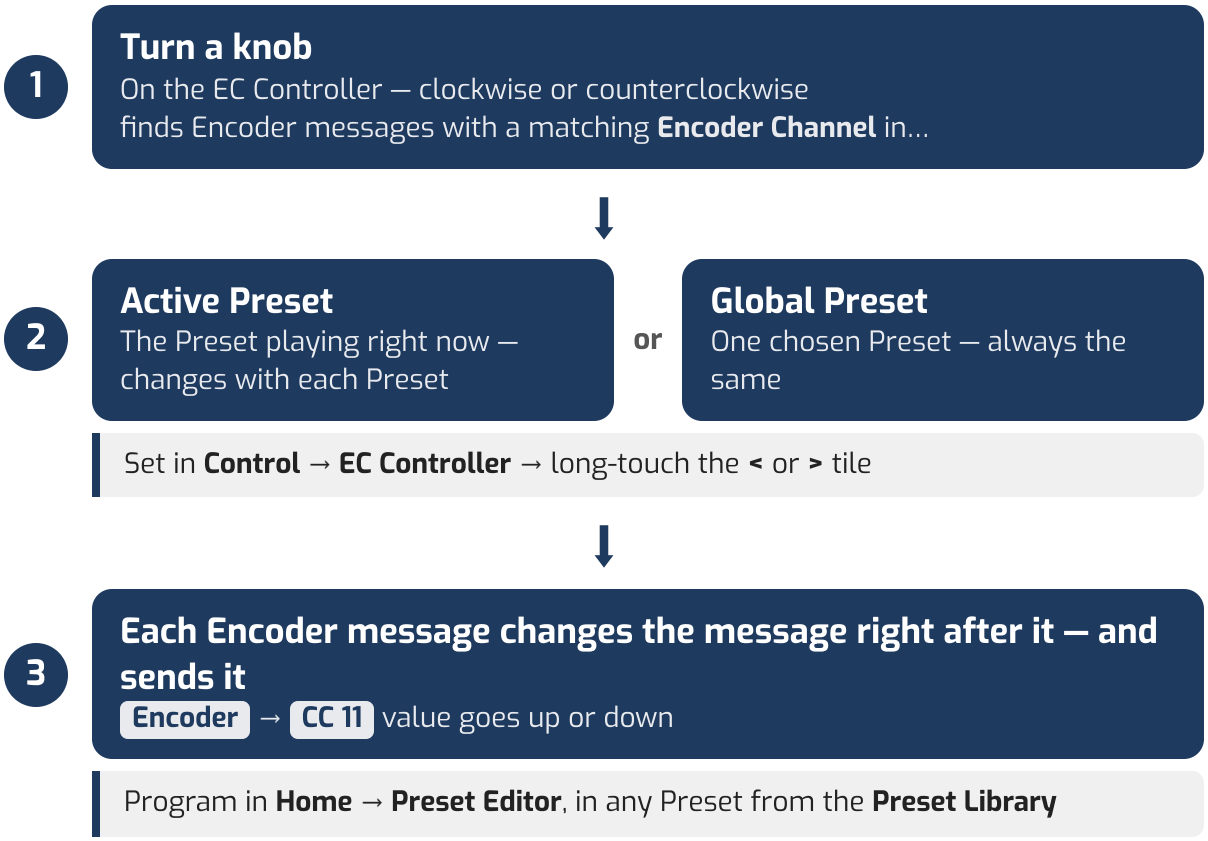
Skip Presets completely and assign a message or Action straight to **<** (counterclockwise) and **>** (clockwise).

> **Example — Delay Mix with Counter CC:** Long-touch **<** → **Main Actions** → **Message** → **Counter CC −** (e.g. Ch 1, CC 11). Long-touch **>** → **Main Actions** → **Message** → **Counter CC +** (same channel and CC). Turning the knob smoothly steps delay mix down or up from anywhere — no Preset needed.

You can use the same direct approach for **Counter PC ±**, **Bank / Preset ±**, **BPM ±**, **LFO** nudges, or **Song / Setlist / menu** scrolling.

2. Advanced — Encoder Mode (Inside a Preset)

Keep the knob on the **Encoder** tab (default) so it drives **Encoder** messages inside a Preset. Use this when you want the same knob to control different parameters per Preset, or when you need per-message **Min / Max**, **Step**, **Wrap Around**, or multiple stacked messages on one turn:





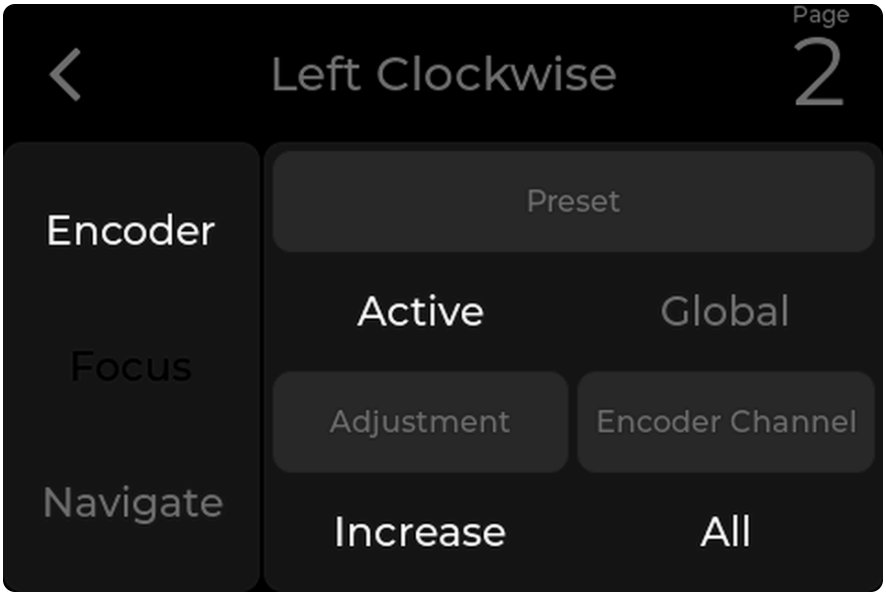
An **Encoder** message can control the message right after it:

- **CC** and **PC**
- **Counter CC** / **Counter PC** (+ / − / Update / Send)
- **Control Voltage**
- **Clock** (BPM)
- **Pitch Bend**
- **Preset Chain** (scroll target preset/bank; runs the chain each detent)
- **SysEx**, **Keystroke**, **Switch** (scroll library slot/page, key, or relay state/jack; sends are rate-limited when you turn fast)
- **Action** (Bank/Preset ±, jumps, Song Preset select, setlist/song/live navigation)
- **LFO** — responds to **Rate Nudge** and **Param Nudge**; each click moves the value by this Encoder's **Step** (other LFO operations are ignored on turn). See Utilities › LFO.

Quick Start (Encoder Mode):

1. Go to **Home** → **Preset Editor** and tap **+** to add a message.
2. Change its **Type** to **Encoder**. Leave **Encoder Channel** on **All** for now.
3. Tap **+** again and add a **CC** message right after it.
4. Turn a knob — the CC value changes on screen and is sent.

EC knobs settings



Each knob has three blocks: **<** (turn counterclockwise), **+** (push), and **>** (turn clockwise).

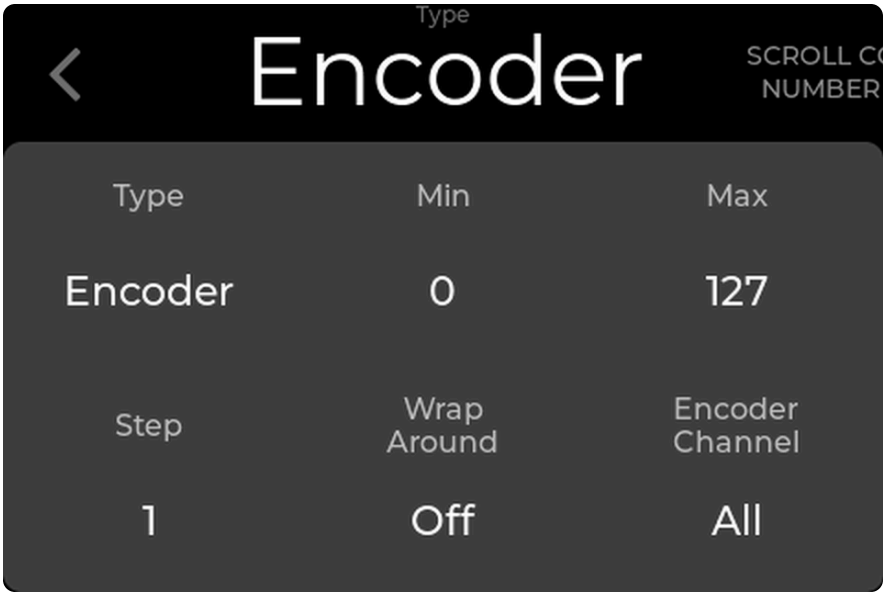
Long-touch < or > to set up that knob:

- **Adjustment** — **Increase** or **Decrease**.
- **Encoder Channel** — **All** (default) or **1–20**.
- **Run the Encoder messages in the:**
- **Active Preset** — the knob controls whatever the current Preset contains. E.g. reverb mix in Preset 1, gain in Preset 2.
- **Global Preset** — the knob always controls one chosen Preset, whatever Preset is active. Good for fixed jobs like master volume.
- **Sync** tab (**<** only) — by default **<** mirrors **>** in the opposite direction. You can assign it a different Action instead.

Long-touch + to assign an Action, like any other button — see Control › Button Settings.

To switch between ECs, press any button on the EC you want, or use **Controller** in the bottom menu.

Encoder message settings



Setting	What it does
Min / **Max**	The range of values the knob can reach
Step	How much the value changes per click of the knob
Wrap Around	**On**: going past **Max** jumps back to **Min** (and vice versa). **Off**: stops at the end
Encoder Channel	Which knob(s) control this message — **All**, or **1–20**

Encoder Channels work like MIDI channels. Each knob has an Encoder Channel, and each Encoder message has one too. Turning a knob only runs Encoder messages with the **same** channel. **All** on either side matches everything.

Advanced

Encoder + Counter CC / PC. Put an Encoder message in front of a **Counter CC** or **Counter PC** to get **Min**, **Max**, and **Wrap Around**, which a Counter doesn't have on its own. The Encoder's direction and **Step** replace the Counter's. The value is kept across Preset changes — ideal for global parameters.

⚠️ *Note: The knob's Adjustment (Increase / Decrease) overrides the Counter's + / − direction.*

Stacking. Several Encoder messages in front of one message all control it. Give each a different **Min** / **Max** / **Step** — e.g. one knob for coarse and one for fine adjustment.

Scroll CC Number. When enabled on an Encoder message, the knob changes the **CC number** instead of the value, and **Min** / **Max** / **Step** / **Wrap Around** apply to the number. The same option steps **bank** (Preset Chain), **SysEx page**, or **Switch jack** when the follower is one of those types. Stack it with a second Encoder to pick a parameter with one knob and adjust it with the other.

Fast turns (SysEx / Keystroke / Switch). The message still updates every click, but outputs are capped to about **Send Delay** (minimum 40 ms) so USB, MIDI, relays, and keystrokes are not flooded.

Buttons as knob clicks. Any button — a footswitch, an XY, or a **MIDI In** trigger — can act like one click of an EC knob. Assign it the **Encoder Click** Action (**Assign Action** → **Main Actions**, on **1st Tap** or **Hold** only). Then set the same options as an EC knob: **Adjustment**, **Encoder Channel**, and **Active Preset** / **Global Preset**. Use it to step a value up or down with your feet, e.g. one footswitch for **Increase** and another for **Decrease**.

Control › Expression Pedal



Sweep an Expression Pedal to change a value continuously — volume, wah, delay mix. There are two ways to set it up:

Method	Where you program it	What the pedal controls
Per Preset	**Expression** messages inside a normal Preset (**Home** → **Preset Editor**), mixed with other messages	Whatever the **current Preset** contains — changes with the Preset. Any pedal on any TRS jack controls it
Global	An **Expression Preset** (**Control** → **Expression Pedal**) — Expression messages only	The same Expression Preset, whatever Preset is active — assigned to **one** jack

⚠️ *Note: If a jack has a Global Expression Preset and the current Preset has Expression messages, the pedal controls both. Stick to one method per jack, or switch deliberately with Assign Expression (below).*

Assigning an Expression Preset

Control → Expression Pedal shows one tile per TRS jack set to **Expression**. There are two ways to assign an Expression Preset to a jack — use whichever you prefer:

- **From the Editor:** tap the jack's tile to open its current Expression Preset in the **Expression Preset Editor**, then tap the number at the top right to open the **Expression Library** and pick a different one.
- **Directly:** long-touch the jack's tile → **Change Preset** to go straight to the **Expression Library** and pick one. (**Edit Preset** in the same menu does the same as tapping the tile.)

To change it automatically, add an **Assign Expression** message to a normal Preset. Pick the **TRS jack** (1–2 on M1, 1–4 on M2) and the Expression Preset. When that Preset is sent, the jack switches to the new Expression Preset.

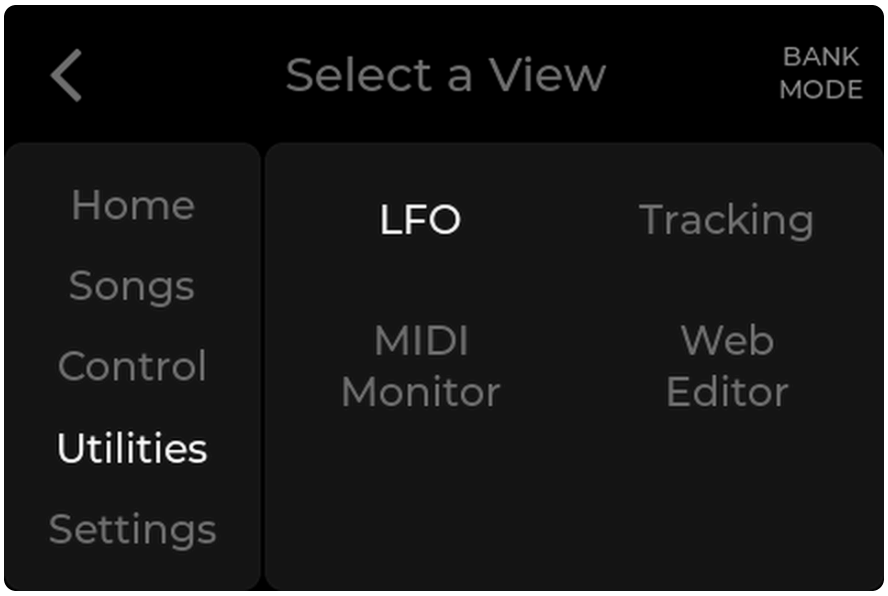
To edit or organize all 10 Expression Presets directly, see Home › Expression Library.

📝 *Note: When opened from Control → Expression Pedal, the Editor and Library work on the pedal you opened them from. Moving a different pedal makes it the current one, and the screen follows. To pick a pedal on purpose, go back to Control → Expression Pedal and tap its tile.*

Good to know:

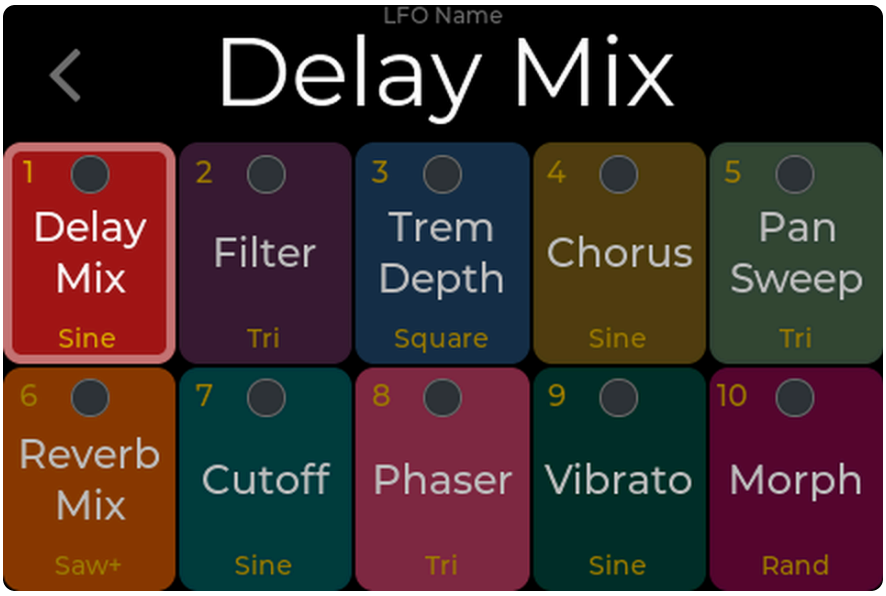
- You can assign an Expression Preset to an empty jack and plug the pedal in later.
- Changing a TRS jack's function doesn't delete its Expression Preset.
- When you load a Preset that has its own **Expression** messages, or that contains **Assign Expression**, the pedal's current position is sent automatically so the new sound starts where your foot already is. A Global Expression Preset is otherwise sent only when you move the pedal.

Utilities Views



The **Utilities** tab holds tools that run alongside your Presets and controllers:

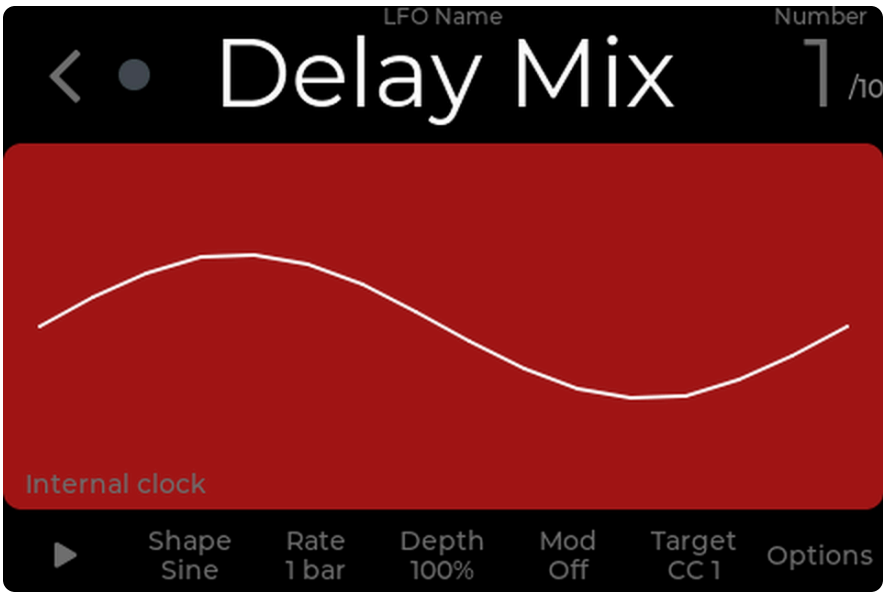
View	Shows	Use it to…
LFO	Ten global LFO engines	Sweep a CC, CC14, NRPN, or PC automatically
Tracking	Live PC and CC values of your gear	Watch where your gear is set and tweak it on screen
MIDI Monitor	Live log of incoming MIDI	Troubleshoot connections and verify messages
Web Editor	Wi-Fi connection setup for browser editing	Program Graviton wirelessly from a phone, tablet, or computer



Want a filter sweep, tremolo, or delay-mix swell that keeps breathing even when you change Presets or Songs? Graviton gives you **ten global LFO engines** (**LFO 1**–**LFO 10**) that run independently of your Presets. After a power cycle, each engine returns exactly as you left it — including whether it was running.

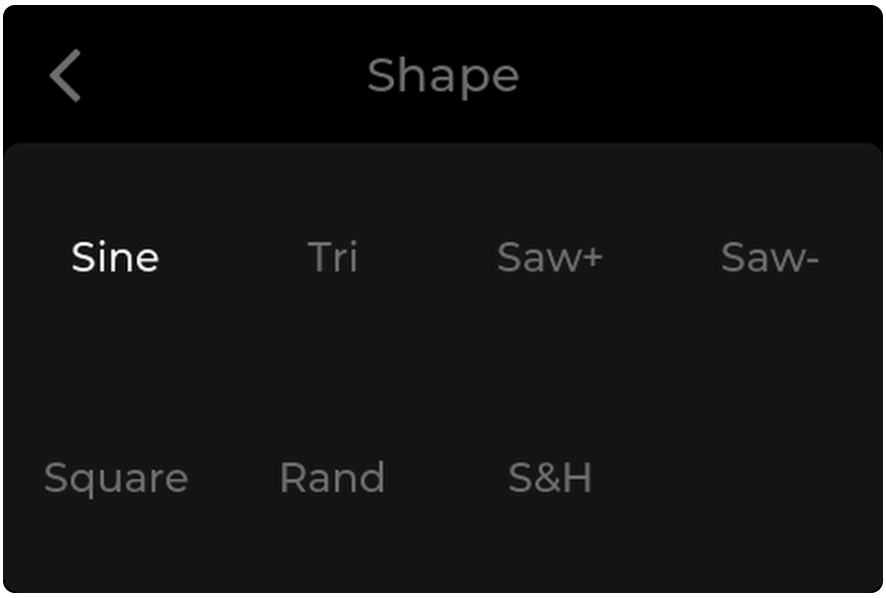
In the LFO library, each tile shows the engine's name and its current waveform (**Sine**, **Tri**, etc.) in yellow along the bottom. Tap a tile to open its editor, or long-touch for **Edit LFO**, **Rename LFO**, **Copy LFO**, **Swap LFO**, **Reset LFO**, and **Change Color**.

The LFO editor



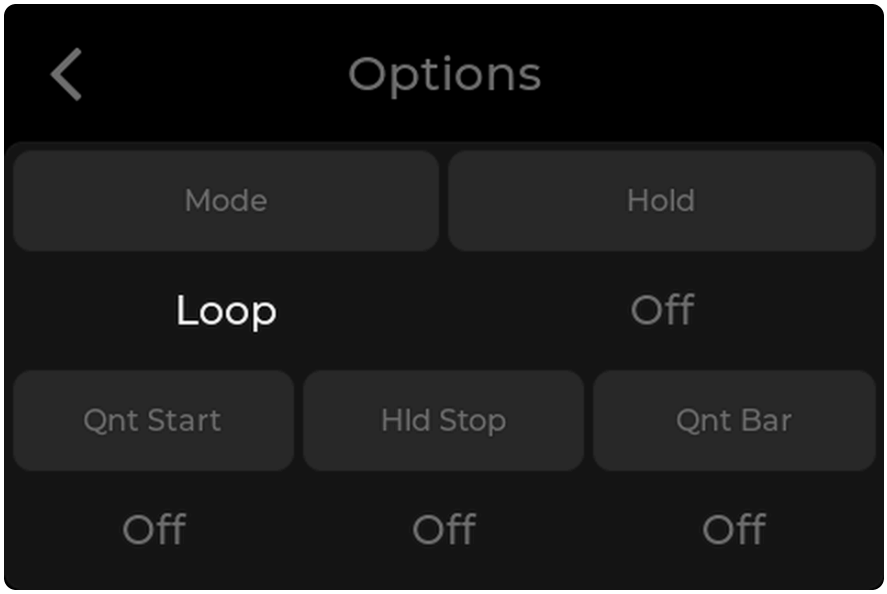
The center shows a live animated waveform that scrolls as the engine runs and updates immediately as you tweak parameters. The blue LED at the top left — and any connected footswitch LEDs — can **Flash** on the beat, **Follow** the output level, or be turned **Off** (configurable via an **LFO** step's **LED Mode**). The status line below the wave tells you how the engine is timed (**Free-run (Hz)**, **Internal clock**, **Synced to external clock**, **Following external tempo**, **Waiting for external clock**, **Source lost**, **Held**, **Stopped - waiting for Start**, or **Off**).

Bottom button	What it does
▶	Start or stop this LFO engine
Shape	**Sine**, **Tri**, **Saw+**, **Saw-**, **Square**, **Rand**, or **S&H**
Rate	Set speed — tap title-right to switch between **HZ MODE** and **SYNC MODE**
Depth	Sweep amount (**0–100**). At **100**, the wave spans each target's full **Min** to **Max**
Mod	Let another LFO modulate this one's Rate, Depth, Skew, Offset, or Pulse Width
Target	Choose what MIDI messages this engine drives (up to **8** targets)
Options	**Mode**, **Hold**, and clock-quantize behavior

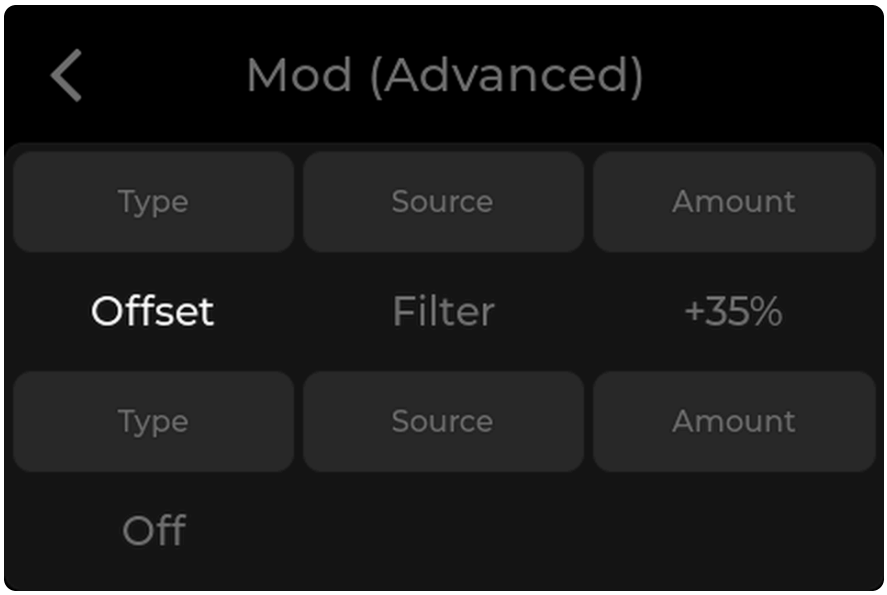


- **HZ MODE (free-running):** Type any speed from **0.01** to **20.00 Hz** (use **.** for decimals). Try around **0.10 Hz** for a slow ambient swell, or **5 Hz** for a brisk tremolo.
- **SYNC MODE (clock-locked):** Pick a musical division from **1/64** up to **32 bars**, then **Straight**, **Dotted**, or **Triplet** on the bottom bar. Follows Graviton's Clock (Master, Slave, or Sync).
- **Options:**
- **Mode** — **Loop** repeats continuously; **Once** and **Env** run a single cycle and stop.
- **Hold** — freeze the waveform at its current value (**On** / **Off**).
- **Qnt Start** — wait for the next beat before starting.
- **Qnt Bar** — wait for the next bar before starting.

- **Hld Stop** — freeze the waveform when MIDI Stop arrives instead of stopping cold.



- **Mod (Advanced):** Each engine has two modulation slots. Pick a **Type** (**Off**, **Rate**, **Depth**, **Skew**, **Offset**, or **PW**), a **Source** (another LFO), and an **Amount** (**−100** to **+100 %**). If an engine is modulating another LFO, those links are shown beneath the waveform.



Targets (what the LFO controls)



Tap **Target** to open the **8 target slots** for this engine. Tap an existing slot to edit it, or tap **+** to add a new one.

Field	What you set
Output	Which MIDI ports receive this target (**Off** mutes it; tap ports to toggle)
Type	**CC**, **CC14**, **NRPN**, or **PC**
Channel	MIDI channel **1–16**
Number	CC **0–127**, CC14 **0–31**, NRPN **0–16383** (**PC** shows **–**, since the wave itself sets the program number)
Min / **Max**	Sweep range (**0–127** for CC/PC; **0–16383** for CC14/NRPN). Invert them to sweep backward

To delete a target, tap **REMOVE** at the top right, then tap **CONFIRM** (tapping anywhere else cancels).

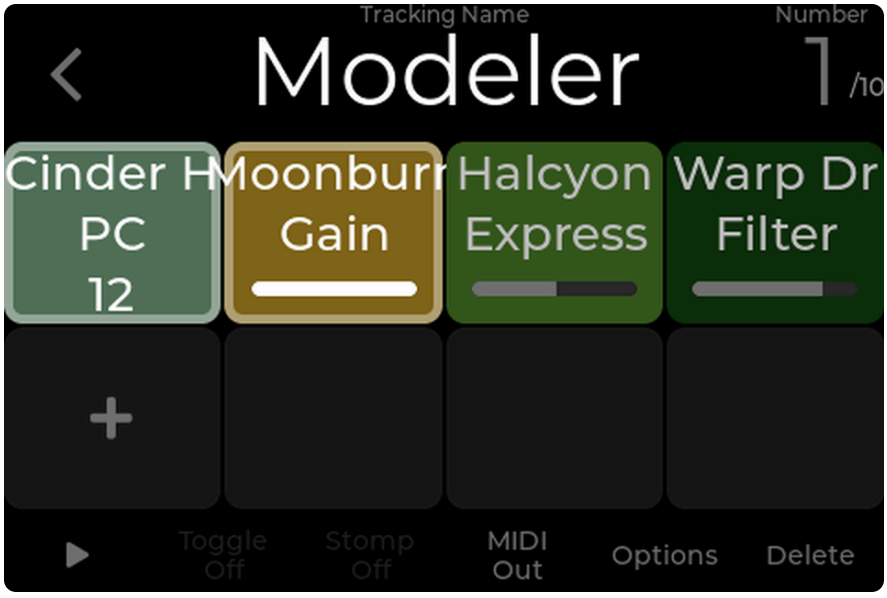
New targets default to the **DIN** port. **MIDI Routing** and **Channel Filter** still apply, while the active Preset's per-Preset **MIDI Out** does not restrict LFOs.

> Example: set **LFO 1** to **Sine**, **SYNC MODE** at **1/2**, **Depth 100**, and add one **CC** target on your delay's channel and mix CC (**Min 0**, **Max 80**). Turn LFO 1 on and your delay mix swells in time with the song — and keeps going even when you switch Presets.

Controlling LFOs live (buttons, Presets, expression, knobs)

- **Footswitch or XY button:** Long-touch a button → **Main Actions** → **More** → **LFO** (available on **1st Tap** and **Hold**). Choose the engine (**1–10**, or all) and an **Operation**:
- **Play** (**Off** / **On** / **Toggle**)
- **Hold** (**Release** / **Hold** / **Toggle**)
- **Reset Phase** (jump back to the start of the wave)
- **Shape**, **Mode**, or **Sync** (**Hz** / **Sync** / **Toggle**)
- **Division** or **Rate Hz** (set speed directly)
- **Rate Nudge** (step the division or Hz rate up/down)
- **Param** / **Param Nudge** (set or nudge **Depth**, **Offset**, **Pulse Width**, **Skew**, or **Slew**)
- **Flag** (**Quantize Start**, **Quantize Bar**, or **Hold on MIDI Stop** — **Off** / **On** / **Toggle**)
- **Inside a Preset:** In **Preset Editor**, **Select a Type** → **More** → **Special** → **LFO** (same operations). Great for starting a chorus LFO automatically when you recall a clean Preset.
- **Expression pedal: Select a Type** → **EXP EC** → **Expression** → **Expression LFO**. Pick the engine and **Parameter** (**Rate Hz**, **Rate Div**, **Depth**, **Offset**, **PW**, or **Skew**), then set **Heel** and **Toe** (reverse them to invert). On a Bank Preset, also pick which **TRS** jack owns the sweep; on an Expression Preset, the assigned jack is used automatically. **Rate Hz** applies in **HZ MODE**; **Rate Div** steps through clock divisions in **SYNC MODE** (with optional dotted/triplet steps). The pedal acts as a live overlay without overwriting your saved LFO — it clears automatically when you change Preset or assign another Expression Preset.
- **EC knob:** Put an **Encoder** message in a Preset followed by an **LFO** message set to **Rate Nudge** or **Param Nudge**. Each knob click moves by the Encoder's **Step** (**Min**, **Max**, and **Wrap Around** are ignored; other LFO operations do nothing on turn).

Utilities › Tracking



Tracking shows the **real, current** state of your other MIDI gear on Graviton's screen — patch number, effect on/off, delay mix — no matter whether the change came from Graviton or from the device itself.

> Example: you turn the delay mix knob on your modeler. Tracking updates CC 11 on screen, so you always know where it's set.

⚠️ *Note: For changes made on the device to show up, the device has to send MIDI back to Graviton. USB and Bluetooth MIDI work both ways on one connection. 5-pin and TRS MIDI only go one way, so you need a second cable from the device's MIDI Out to Graviton's MIDI In.*

How it works

Open **Select a View** → **Utilities** → **Tracking**.

1. **Set up a Tracking Preset.** Add the PC and CC messages you want to

watch — just like programming a normal Preset. You can have up to **10 Tracking Presets**; tap the number at the top right (e.g. **1 / 10**) to switch between them. 2. **Graviton watches all MIDI traffic in both directions:** - **Outgoing** — anything Graviton sends, from any source (an XY or FxW button, an EC knob, a Preset, ...). - **Incoming** — anything the device sends back, whether you pressed something on the device or it sends automatic status updates (often called **MIDI Feedback** or **Status Updates** in the device's manual). 3. **When a message matches, the screen updates:** - **PC** — same channel → the PC **number** is shown. - **CC** — same channel **and** CC number → the CC **value** is shown.

Each PC and CC in a Tracking Preset is also a **control**: touch it to change the value and send it straight to the device.

Example

Your device changes patch on **PC**, turns **FX1 / FX2 / FX3** on and off with **CC 1 / 2 / 3** (value 127 = on, 0 = off), and sends updates back when you change something on it.

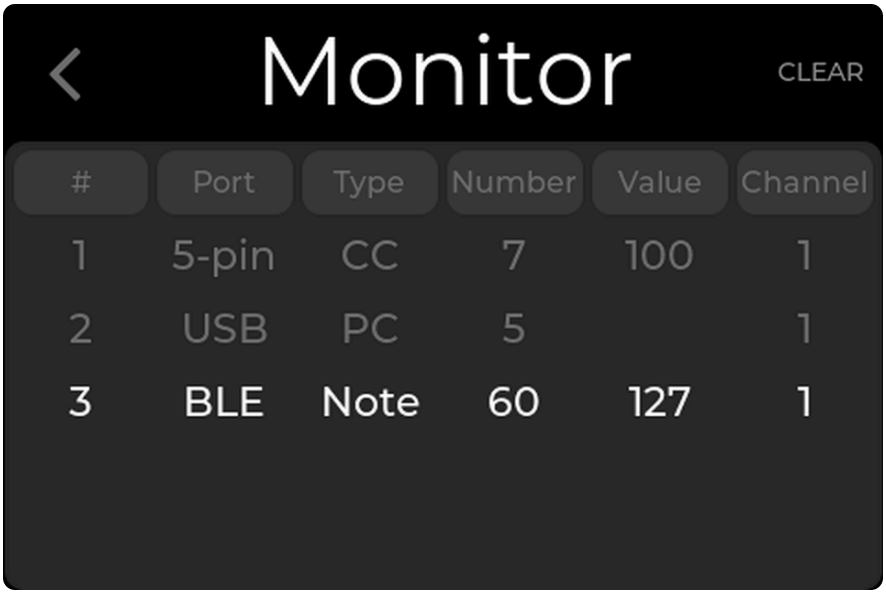
To watch the patch number and all three effects, add these to a Tracking Preset (any value):

- **PC** — patch
- **CC 1** — FX1
- **CC 2** — FX2
- **CC 3** — FX3

What you'll see:

You do this	MIDI sent	Tracking shows
Switch to Patch 1 from Graviton	Graviton → device: PC 1	**PC 1**
Switch to Patch 2 on the device	Device → Graviton: PC 2	**PC 2**
Turn FX1 on from Graviton	Graviton → device: CC 1 = 127	**CC 1 = 127** (on)
Turn FX1 off on the device	Device → Graviton: CC 1 = 0	**CC 1 = 0** (off)

Utilities › MIDI Monitor



MIDI Monitor is the "is anything even arriving?" screen for troubleshooting connections and verifying incoming MIDI from active interfaces (**5-pin**, **USB**, **BLE**), including a live incoming **Clock BPM** readout. Tap **CLEAR** at the top right to wipe the list.

Supported Message Types

- Note On / Off
- Control Change (CC)
- Program Change (PC)
- Pitch Bend
- SysEx (System Exclusive)

⚠️ **Real-time** messages (Active Sensing, individual MIDI Clock ticks, …) are hidden from the message list to keep it readable. When incoming **MIDI Clock** is present, a live **Clock BPM** row appears at the top (and hides automatically when no clock is arriving).

SysEx shows a short hex preview in **Value** — tap it for the full message.

Utilities › Web Editor



Program your Graviton wirelessly from a phone, tablet, or computer using any web browser — no app or drivers to install. The Web Editor mirrors the on-device interface 1:1, so Presets, Songs, Setlists, Control screens, Clock, LFO, and SysEx all work the same way you already know.

Two ways to connect

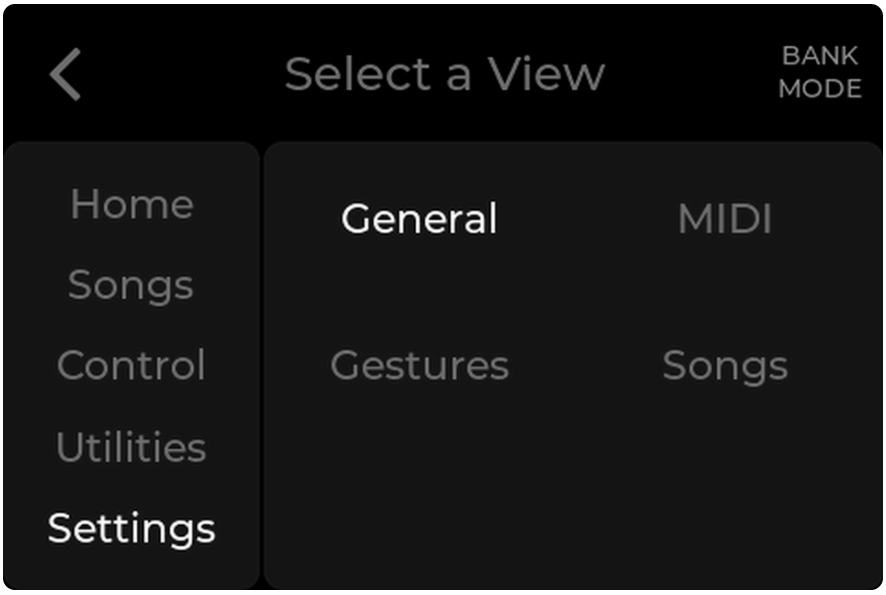
When you launch **Web Editor**, Graviton reboots into Web Editor mode using your last connection choice. Tap **ROUTER WI-FI** or **DIRECT WI-FI** at the top right at any time to switch between the two:

Mode	Best for	How you connect
Router Wi-Fi	Home or studio	Graviton joins your Wi-Fi router (uses your saved Wi-Fi, or lets you pick one). On a phone or computer on the same Wi-Fi, open the IP address shown on screen (or `http://graviton.local/`).
Direct Wi-Fi	Rehearsal or gigs (no router)	Graviton creates its own Wi-Fi network (SSID and password shown on screen). Join it from your phone or laptop, then open `http://graviton.local/` (or `http://192.168.4.1/`).

Exiting Web Editor

Changes save automatically as you edit. When you are done, tap the **Back** (**<**) arrow on Graviton's screen — the unit restarts back into normal playing mode and reopens **Select a View** → **Utilities**.

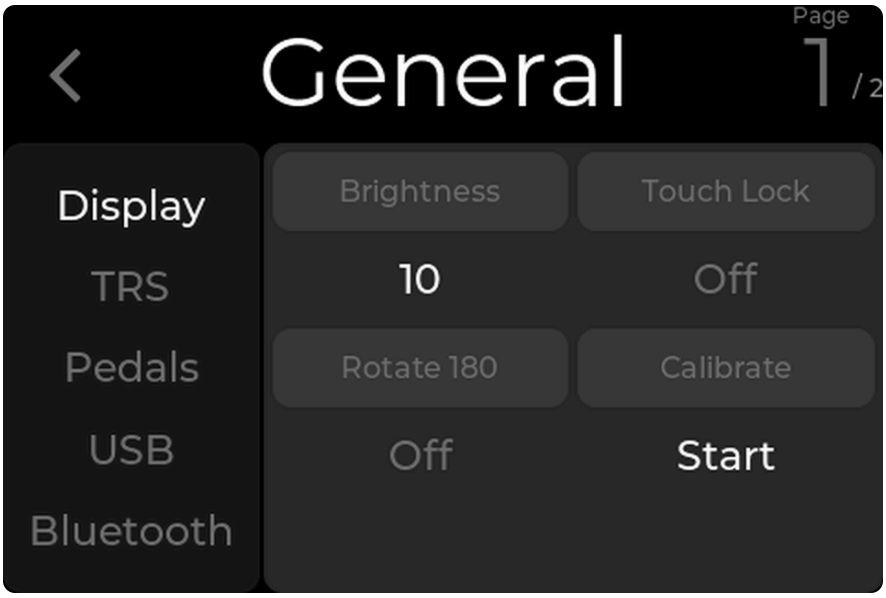
Settings



System-wide configuration for hardware ports, wireless pairing, MIDI routing and filters, touch and tap gestures, and Song Mode behavior.

Screen	What it covers
General	**Display**, **TRS**, **Pedals**, **USB**, **Bluetooth** (page 1); **Pairing**, **Send**, **Backup**, **Reset**, **Update** (page 2)
MIDI	Page 1: **Port Routing** (**Out** / **In** / **Through** / **Clock**). Page 2: **Thru Filter**. Page 3: **Channel Filter**
Gestures	**Touch** (library/control tap mode), **Double** (double-tap timing, delayed 1st tap, hide tile), and **Hold** (hold/repeat timing, hide tile)
Songs	Song Mode behavior at the end of a Song or Setlist, Preset self-reset on Song change, and Grid/List layout

General



Display

- **Brightness:** LCD brightness, from **1** to **10**.
- **Touch Lock:** After **5** / **10** / **30** seconds of no touch (or **Off**), the screen locks so a stray touch cannot change anything. Footswitches, XY/EC, and other controllers keep working. When locked, the back button turns **red** — **double-tap** it to unlock.
- **Rotate 180:** Flip the display **180** degrees (upside down).
- **Calibrate:** Use **Start** if touch accuracy drifts.

TRS

Choose what each TRS jack does.

Mode:

- **MIDI Out**: Send MIDI to other gear. Pick the **Type** that matches the device's TRS wiring (if you're unsure, try each type).
- **Footswitch**: A wired footswitch pedal.
- **Expression**: A standard expression pedal.
- **Relay Out (via RV)**: Connect to an **RV Adapter**'s **Relay In** (switching through the adapter).
- **CV Out (via RV)**: Connect to an **RV Adapter**'s **CV In** (control voltage through the adapter).
- **Switch Out**: Connect directly to another pedal's AUX, tap-tempo, or channel-switch jack.

MIDI Out Type:

- **Type A**: Tip: Signal, Ring: Power (the MIDI standard).
- **Type B**: Ring: Signal, Tip: Power.
- **Tip Active**: Tip: Signal, Ring: Floating.

- **Ring Active**: Ring: Signal, Tip: Floating.

Footswitch Type:

- **F10/W**: Luminite **F10** or **F10W** in wired mode.
- **F6/W**: Luminite **F6** or **F6W** in wired mode.
- **1-button** / **2-button** / **3-button**: Common TRS footswitches; the layout is chosen automatically.
- **Universal**: A generic resistor-ladder pedal — use **Learn** (see Universal Footswitch Learning).

Calibration, debounce, and expression curves are in **General › Pedals**, once **TRS** has set the **Mode** / **Type**.

> ⚠️ **Switch Out** (switching directly over a TRS jack) is meant for low-voltage pedals (5V or less), which includes most digital effects from brands like Strymon, Boss, Chase Bliss, and Eventide. It may pick up **noise from ground loops**.
>
> Analog pedals and amp channel-switching jacks often carry more than 5V, which can damage the TRS jacks. Use the M2 Relay port or an RV Adapter instead — they switch **any** voltage and eliminate ground loops.

Pedals

Fine-tune each footswitch and expression pedal — the M2's built-in footswitches and any TRS jack set to **Footswitch** or **Expression** in **TRS**.

Footswitches (M2 built-in, **F10/W**, **F6/W**):

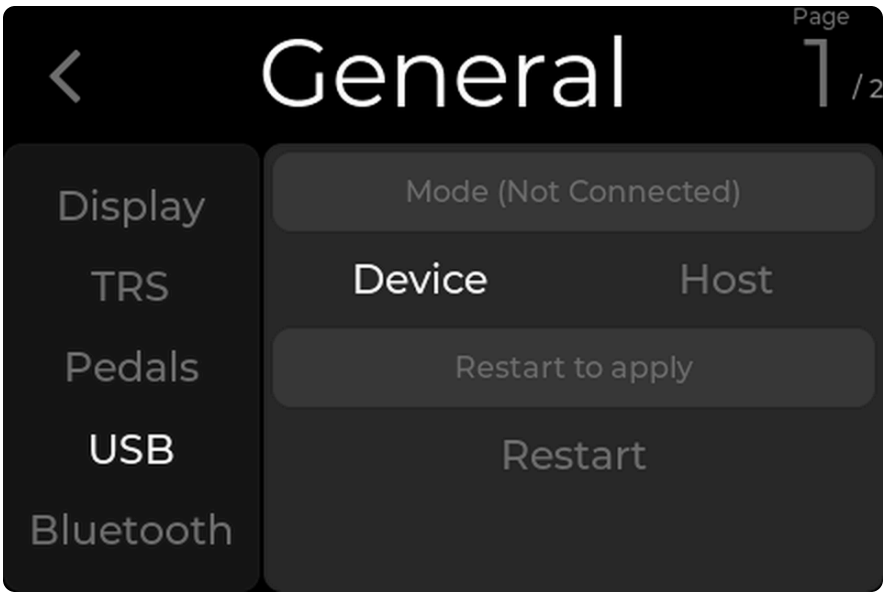
- **Calibrate** → **Start**: Fixes misaligned footswitches (e.g. pressing button 2 triggers action 3).
- **Debounce**: Raise it (roughly **1–8**) if presses feel glitchy or double-fire. Higher filters more, but registers presses slightly slower.

> Digital footswitches (**1/2/3-button**) have nothing to calibrate.

Expression pedals:

- **Calibrate** → **Start**: Detects the plugged-in pedal type (potentiometer value, hot tip, or hot ring) and sets it up. Sweep the pedal fully when prompted.
- **Options**:
- **Noise Filter**: Reduces value jitter while the pedal is still. Higher values reduce jitter more but can feel less smooth.
- **Toe / Heel**: **Normal** or **Reversed** — flips which end of the sweep sends the higher value.
- **Response Curve**: **Linear** (default), **Log** (simulate a volume pedal's curve on a linear pedal), or **Anti-Log** (flatten a volume pedal's curve so it behaves more linearly).

USB



The Graviton M1/M2 can act as either a USB Device or a USB Host. (A USB Device can only connect to a USB Host, and vice versa.)

- **Device** (USB Type-C port): Connect the M1/M2 to a computer, phone, or tablet (these are always USB Hosts), or any other device with a USB Host port.

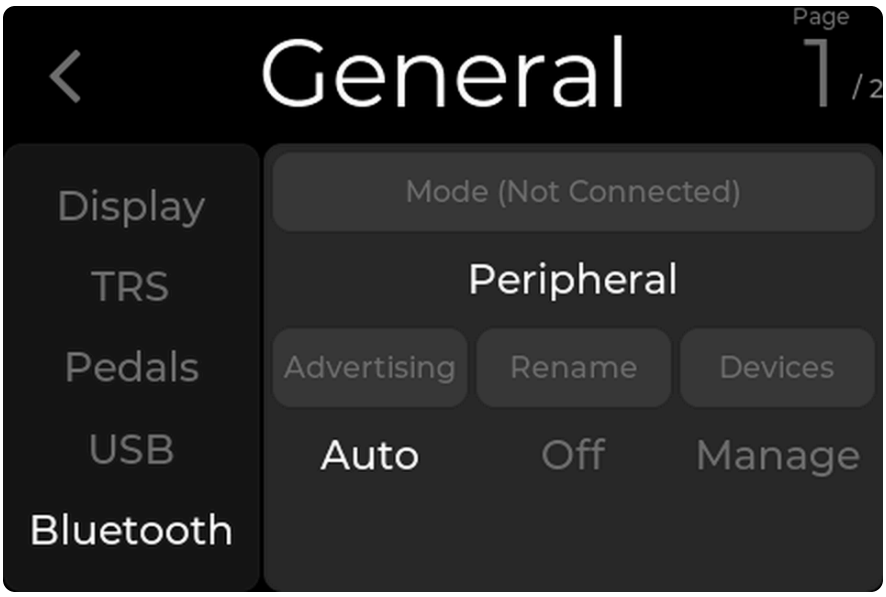
> In this mode the M1/M2 can be powered and connected with a single USB cable (bus-powered). Make sure the host port can supply enough power (1A or more).

- **Keyboard On/Off**: Turns the Graviton M1/M2 into a virtual USB keyboard. Use it with **Keystroke** messages to control DAWs, computers, and iOS devices — especially DAWs with lots of keyboard shortcuts, such as Ableton Live.
- **Rename** (**Off** / **On**): Tap **Rename** when **Off** to type a custom USB device name (the unit restarts). When **On**, tap **Rename** again to turn custom naming off and restore the default name. Useful when several Graviton M1/M2 units connect through a USB hub.
- **Host** (USB Type-A port): Connect other USB MIDI devices (e.g. pedals, MIDI controllers).

> Host mode needs the M1/M2 powered from 9V. It can also power the connected device through its USB-A port, so make sure the 9V adapter can supply enough current for both.

⚠️ *Note: USB MIDI doesn't work with both the USB (Type-C) and USB Host (Type-A) ports plugged in. Connect only one at a time and set the USB mode to match.*

Bluetooth



The Graviton M1/M2 can take either the Bluetooth **Peripheral** or **Central** role. (A Peripheral can only connect to a Central, and vice versa.) A Peripheral broadcasts its presence (advertising); a Central scans for advertising Peripherals and starts the connection (pairing).

The M1/M2 reconnects automatically after a power cycle in both roles, as long as the other device supports it too.

- **Mode**: **Off** / **Peripheral** / **Central**. **Off** disables BLE (**Restart to take effect ?**).
- **Peripheral:** Connect to computers, phones, tablets, or Bluetooth MIDI devices in the Central role.
- **Advertising:** Whether the Graviton M1/M2 is visible to unpaired Bluetooth devices when they scan.
    - **Off**: Not visible to other Bluetooth scanners.
    - **Auto** (default): For connecting to a **single** Central device. Advertising stops after a successful connection and resumes if disconnected.
    - **Always**: For connecting to **multiple** Central devices. Switch back to **Off** afterward to avoid unwanted connections from unpaired devices.
- **Rename** (**Off** / **On**): Tap **Rename** when **Off** to type a custom advertising name (the unit restarts). When **On**, tap **Rename** again to turn custom naming off and restore the default name.
- **Devices › Manage:** Lists bonded hosts (iPhone, iPad, Mac, and similar) by name. Tap one to **Forget** it — for example a stale iPhone link that keeps stalling on "Connecting…". Also choose **Forget This Device** on the iPad or Mac when needed.

> In Peripheral mode the M1/M2 can pair with up to 3 Central devices. Pair from each Central device separately.

- **Central:** Connect to other Bluetooth MIDI devices that are advertising (in the Peripheral role).

- **Search › Start**: Scan for nearby advertising Bluetooth MIDI devices, then tap a name in the scanned list to connect.
- **Devices › Manage:** Lists paired peripherals (up to 3). Tap one to **Connect** or **Disconnect** temporarily, or **Unpair** it. See PIN code below when a device needs a pairing PIN.

Bluetooth PIN code

Some devices (e.g. Eventide **H90**) show a PIN on their own screen when pairing. If so, the **PIN Code** keypad pops up while **Connecting...** — enter the 6 digits shown on the device. You only need it once; after that the device reconnects on its own.

If that device later forgets the pairing, its row under **Devices** shows a yellow **PIN**. Tap it → **Enter PIN** to pair again.

> The M1/M2 remembers the devices in this list and reconnects to them after a power cycle.

Connection guide:

- **CME WIDI:**
- Option 1: Set the M1/M2 to **Peripheral** mode and unpair the CME device from anything it was paired with before. They connect automatically.
- Option 2: Set the M1/M2 to **Central** mode and unpair the CME device from anything it was paired with before. Then **Search** → **Start** → tap the device name in the list to connect.

> ⚠️ ***Note:* For*** 1-to-1 MIDI connections***, you can use*** either option***. For*** CME WIDI Groups***, use*** Option 1***. For*** other brands or custom MIDI groups***, try*** either option* *and see which works best for your setup.*

- **macOS:**
- Set the M1/M2 to **Peripheral** mode.
- On your Mac, open **Audio MIDI Setup** → **Window** → **Show MIDI Studio**, click the button with the **Bluetooth** logo → select **Graviton M1/M2 BLE** → **Connect**.
- Then select **Graviton M1/M2 BLE** as the MIDI input/output in your DAW or app.

> ⚠️ ***Note****: The M1/M2 won't appear in the system Bluetooth settings like regular devices such as headphones or speakers.*

- **iOS / Android:**
- Set the M1/M2 to **Peripheral** mode.
- On the phone or tablet, scan and connect from the Bluetooth or settings page of the **app you're using**.

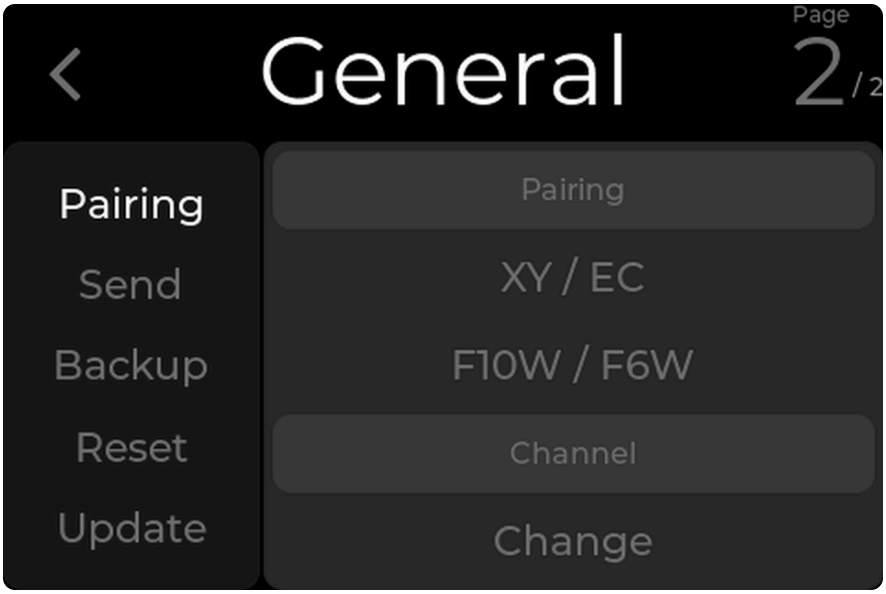
> ⚠️ ***Note**: The M1/M2 won't appear in the iOS or Android system Bluetooth settings like regular devices such as headphones or speakers.*

- **Windows:**
- Set the M1/M2 to **Peripheral** mode.
- Windows 10: **Devices** → change **Devices discovery** to **Advanced** → **Add Device** → **Graviton M1/M2 BLE**.
- Windows 11: **Settings** → **Bluetooth & devices** → **Add Device** → **Show more** → **Graviton M1/M2 BLE**.
- Once paired, you need a UWP app from the Microsoft Store to connect and route MIDI to your software, for example:
  - **MIDIberry BLE** — connects to BLE MIDI devices.
  - **BLE MIDI Tester** — for testing the connection.

> ⚠️ ***Note*:** **BLE MIDI devices like** Graviton M1/M2 **will appear as** "Not connected" **or** "Disconnected" **in** Windows Bluetooth Settings **if no UWP (Universal Windows Platform) app is actively using them. This is** normal behavior **— the BLE MIDI connection is** app-driven**, not system-level like classic Bluetooth audio or HID.*

- **Other Bluetooth MIDI devices** (advertising):
- Set the M1/M2 to **Central** mode.
- **General › Bluetooth › Search** → **Start** → tap the device name in the list to connect.

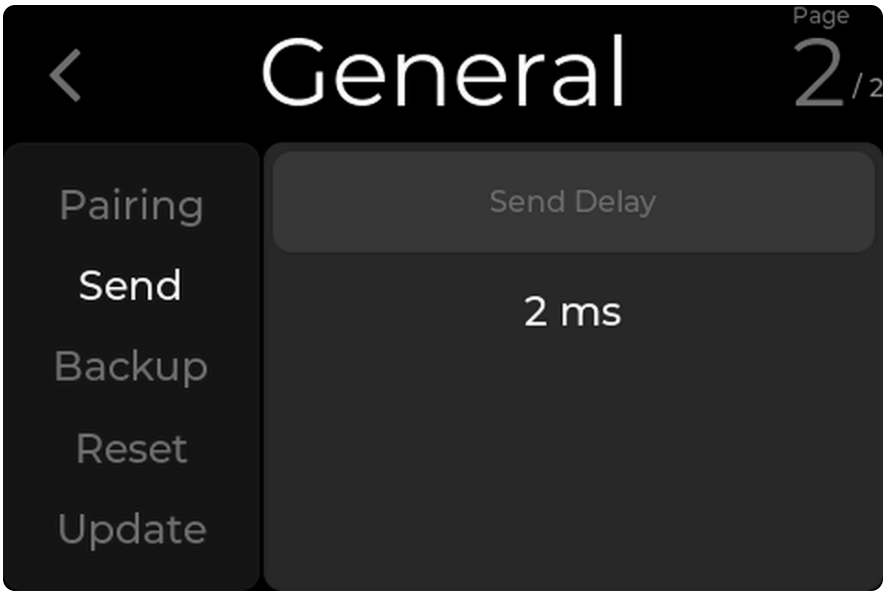
Pairing



Pair Luminite wireless controllers here (Bluetooth MIDI pairing is under **Bluetooth**). Tap **XY / EC** or **F10W / F6W**, tap an empty slot, choose the type if asked, and follow the on-screen steps.

- **XY / EC**: Up to 10 XY/EC Controllers — handy if you play several instruments, each with its own controller.
- **F10W / F6W**: Up to 10 wireless footswitches. Tap an empty slot → **Pair a new Wireless Footswitch** → choose **F6W Footswitch** or **F10W Footswitch** → hold the leftmost top and bottom switches as prompted → **Paired Successfully**.
- **Channel › Change**: If interference causes wireless dropouts, try another channel (**Change Pairing Channel**). **All** paired XY/EC Controllers and wireless footswitches must be re-paired after a channel change.

Send

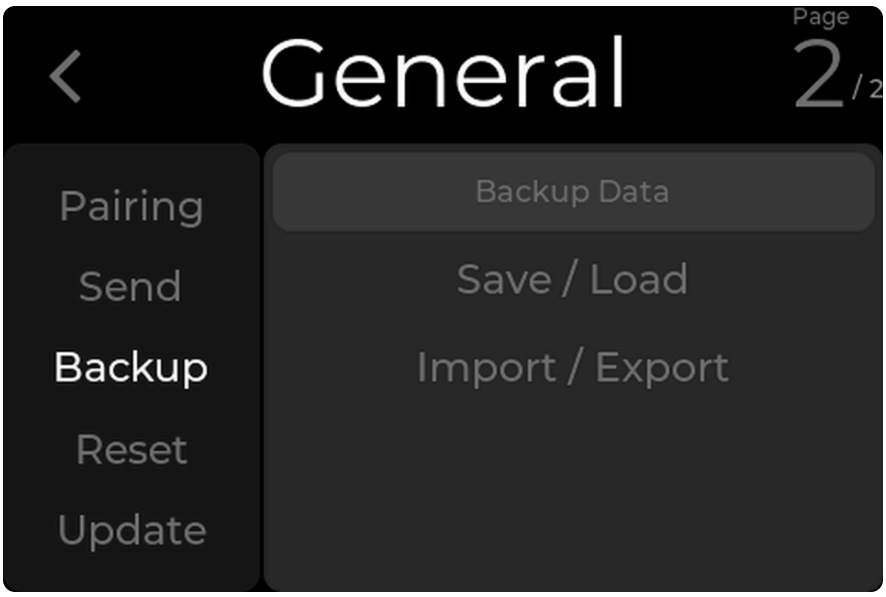


- **Send Delay:** The short gap (in milliseconds) between messages whenever Graviton sends a sequence (e.g. a Preset, or an expression sweep) — in effect, a global sending rate.

> Increase **Send Delay** if the receiving device misses messages because they arrive too fast.
>
> ⚠️ *Note: If the value is high and a Preset with many messages is sent, the M1/M2 may seem to freeze briefly — it finishes sending before doing anything else.*

Double-tap, Hold, and touch settings are in Settings › Gestures. Footswitch debounce and calibration are in **General › Pedals**.

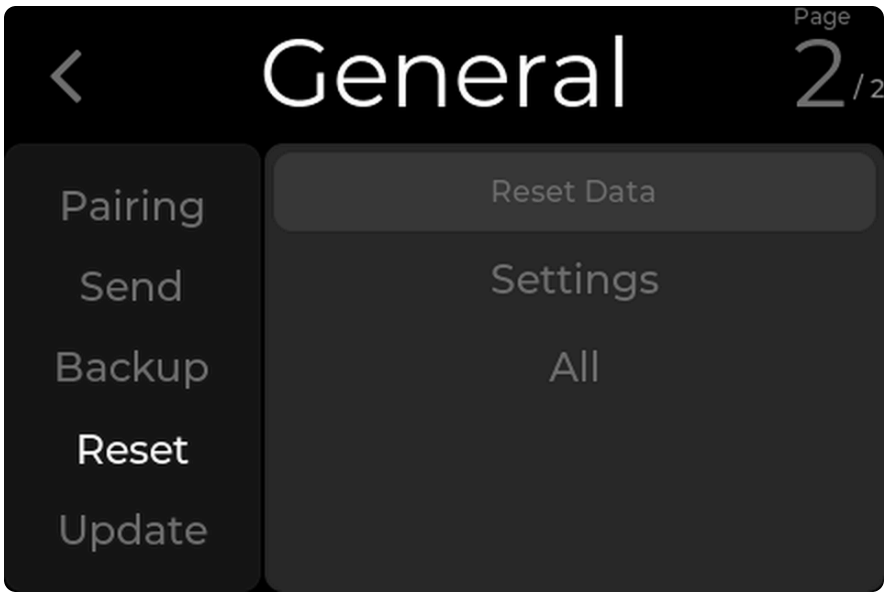
Backup



Save all your data — **Presets**, **Songs**, **Setlists**, **Settings**, and more — into a **Backup**. You can keep up to 10 **Backups** (e.g. one per rig) and switch between them.

- **Save / Load**: Opens the Backup screen with 10 slots:
- **Tap** a slot to select it (highlight).
- **Long-touch** a slot that already has data: a gray info line shows **Device** (e.g. **Graviton M2**), **Software Version**, and **Size**, then **Save**, **Load**, **Rename**, and **Delete**. In **Import Export** mode (Safe Boot), long-touch may offer only **Import / Export** on an empty slot; when the slot has data you still get the same info line plus **Import / Export**.
- **Save** / **Load**: Save everything into a slot, or load a slot back — switch between rigs in seconds. Loading from another Graviton model (e.g. M1 onto M2) asks for an extra confirm; **all Graviton M2 units count as the same device** for backups.
- **Import / Export**: Copy a slot to or from another device over Wi-Fi — move a rig to a second unit, or keep a copy on your computer.

Reset



Choice	Confirm text (summary)	What's kept
Settings	Reset Settings to Default — everything else preserved	Presets, Songs, Setlists, Actions, Backups, and footswitch / expression calibration
All	Reset All — Backups will be preserved	**Backups only** — everything else is erased

- **Hardware factory reset** (pin hole on the unit): Restores the factory firmware and **erases Backups** too. Use it only as a last resort — **Reset All** is enough in most cases. See Graviton M1 / Graviton M2.

Update



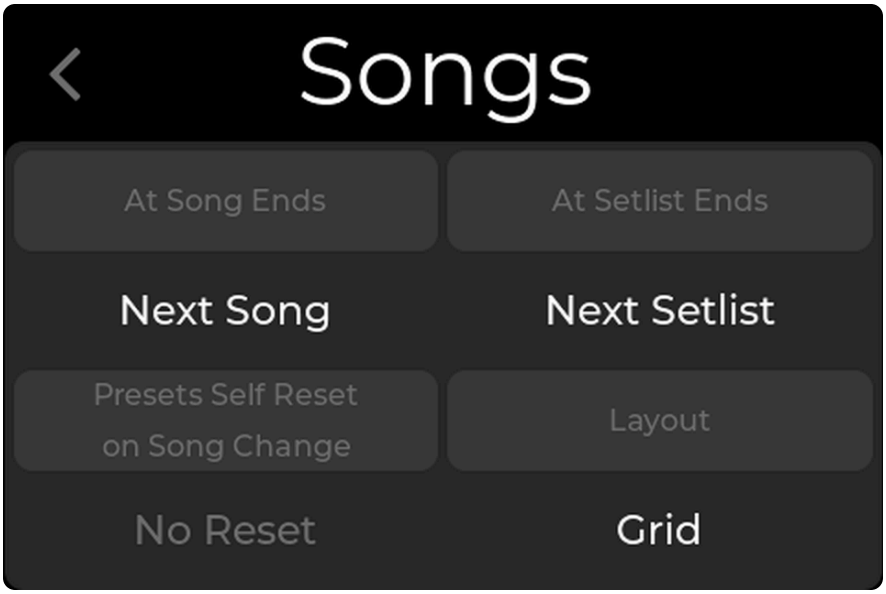
- **Update / Rollback**: Check for and install an over-the-air software update over Wi-Fi (needs internet access). No computer needed.
- **Latest Beta**: Try the newest features before their official release.
- **Latest Stable**: Tested and recommended for regular use.
- **Previous Stable**: Go back to this if the latest **Stable** introduced a bug.
- You can switch between **Beta** and **Stable** at any time without losing your data.
- For gigging, stay on **Stable**.

If an update fails — possible causes and fixes:

- **Weak Wi-Fi signal**: Move the M1/M2 closer to the router and try again.
- **No access to the router**: Connect the M1/M2 to your phone's hotspot instead.
- **Weak or noisy power supply**: A poor 9V/USB adapter can affect Wi-Fi reception. Try a different power source.
- **Interference nearby**: Try updating somewhere else if possible.

> ⚠️ **Note:** If you're updating from pre-4.6.5 and the update gets stuck in a crash loop, try turning off any connected Bluetooth devices. This was fixed in 4.6.5 and later.

Song Mode



These settings only apply in **Song Mode**, not **Bank Mode**.

- **At Song Ends** — what happens when you scroll past the end (or beginning) of the current Song:
- **Off**: Nothing.
- **Wrap Back**: Jump to the first (or last) Song Preset.
- **Next Song**: Jump to the next (or previous) Song.
- **At Setlist Ends** — what happens when you scroll past the end (or beginning) of the current Setlist:

- **Off**: Nothing.
- **Wrap Back**: Jump to the first (or last) Song.
- **Next Setlist**: Jump to the next (or previous) Setlist.
- **Presets Self Reset on Song Change** — what happens to Preset **Toggle** / **Rotation** states when you load another Song:
- **No Reset:** States stay as they are.
- **Self Reset to On:** All Presets in the Song reset to **On**.
- **Self Reset to Off:** All Presets in the Song reset to **Off**.
- **Self Reset to On+Send:** Reset to **On** and send the On messages.
- **Self Reset to Off+Send:** Reset to **Off** and send the Off messages.
- **Layout: Grid** or **List** for **Playing Song**.

Each Song's own **Song BPM** and **Startup Preset** are set on Songs › Playing Song → **Song Options**.

MIDI Routing



Columns match Channel Filter and **MIDI Out (per Preset)** — one column per filter port, left to right:

Model	Columns
M1	**TRS 1**, **TRS 2**, **TRS 3 / DIN**, **USB**, **BLE**
M2	**TRS 1, 2 / DIN / 3.5mm**, **TRS 3**, **TRS 4**, **USB**, **BLE**

On the **M2**, TRS 1, TRS 2, the 5-pin jack, and the 3.5mm jack share one column because they share the same wired output path.

Each cell is **On** or **Off** for that port and direction:

- **Out** (enabled by default): Graviton **sends its own** messages on that port (Presets, Actions, Expression, Tracking, etc.). Disable it to mute that jack without changing any Presets. Per-Preset **MIDI Out** can narrow further while a Preset is active.
- **In** (enabled by default): Graviton **accepts** MIDI on that port (MIDI In Actions, Tracking feedback, SysEx capture, etc.). Incoming MIDI must arrive on a port with **In** enabled before anything else can act on it — including **Through**. **In** appears only on the **DIN** column (5-pin and, on **M2**, 3.5 mm MIDI In), **USB**, and **BLE** — TRS jacks used as MIDI Out do not receive MIDI; those columns show **—** instead of an **In** toggle.
- **Through** (disabled by default): passes incoming MIDI on to your other ports. See Through below.
- **Clock** (enabled by default): Graviton may **send** MIDI Clock on that port. The BPM comes from the **Clock** screen or a Preset's **MIDI Clock** message; **Clock Options** → **General** decides whether clocks keep running when you switch Presets. An external clock is forwarded by **Through**, not by this button — real-time ticks pass through whenever **Through** is enabled on that port.

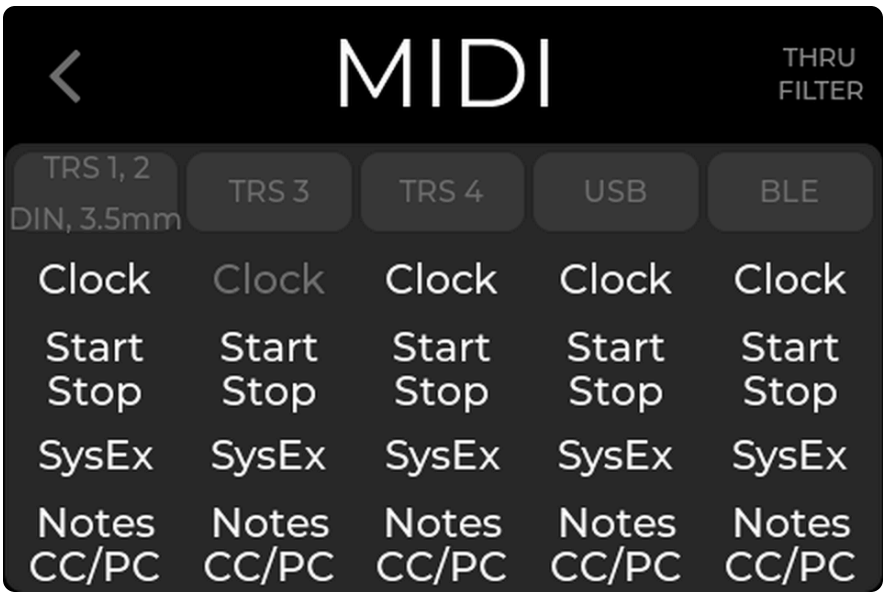
The title stays **MIDI** across all three pages. Tap the page label at the top right (**PORT ROUTING**, **THRU FILTER**, or **CHANNEL FILTER**) to jump between them. Opening **MIDI** from **Select a View** always starts on page 1 (**Port Routing**).

Through

Through passes along MIDI that comes in from outside.

- **Wired In → wired Out.** With **In** and **Through** enabled on the ports that should carry MIDI, anything arriving on a wired In is copied out the matching Out jacks (for example 5-pin In toward 5-pin / TRS Out), like a normal MIDI thru.
- **USB and BLE don't echo.** A message is never sent back to the same USB port or Bluetooth device it came from, so a computer or iPad does not get its own clock and notes echoed back. It can still be passed on to your other ports.
- **Watch for loops:** only enable **Through** on the paths that should carry MIDI onward, away from Graviton. Don't plug the output of a device that also has thru on back into Graviton's 5-pin In, or messages can chase around the circle.
- **Source and destination can differ.** Example: a PC arrives on **USB** (**In** enabled). If **Through** is enabled on the wired columns you use, it's forwarded out those MIDI Out jacks. If **BLE › Through** is also enabled, it's forwarded over BLE too.
- **Graviton's own messages don't use Through** — they always go out through **Out**. **Through** only forwards what arrives from outside.
- **Typical use:** Graviton sits mid-chain. Example: a laptop on **USB** sends clock and PCs → Graviton → delay and amp on 5-pin. Enable **USB › In** and **Through** on the wired Out ports the pedals use so they still hear the laptop. Graviton's own Presets still go out through **Out**.
- To limit which MIDI channels are sent by **Out** / **Through** on each port, use Channel Filter (below).

Thru Filter



Page 2 of **MIDI** lets you filter which *types* of incoming MIDI **Through** may forward to each output port. Everything passes by default, so existing rigs work unchanged until you block something.

Each column is an output port (same order as **Port Routing**). The four rows are **Clock**, **Start Stop**, **SysEx**, and **Notes CC/PC**. A highlighted cell allows that message type through on that port; tap it to block it.

> Example: a laptop on USB sends both MIDI Clock and Program Changes. You want your amp on TRS 3 to receive the PCs, but follow Graviton's own tempo instead of the laptop's clock. Block **Clock** in the TRS 3 column here, keep **Notes CC/PC** highlighted, and enable **Clock** on TRS 3 on page 1 (**Port Routing**). See Using Slave / Sync with Through.

Channel Filter



Page 3 of **MIDI** (title-right **Channel Filter**). Choose which **MIDI channels (1–16)** each port may send (**Out**) and forward (**Thru** — the same as **Through** on MIDI Routing).

> Example: your amp on TRS 1 listens on channel 1 and your delay on TRS 2 on channel 2. Allow only channel 1 on TRS 1 and only channel 2 on TRS 2, so each Program Change reaches only the device it's meant for.

Each column is a port, or a group of jacks that share one filter, listed left to right:

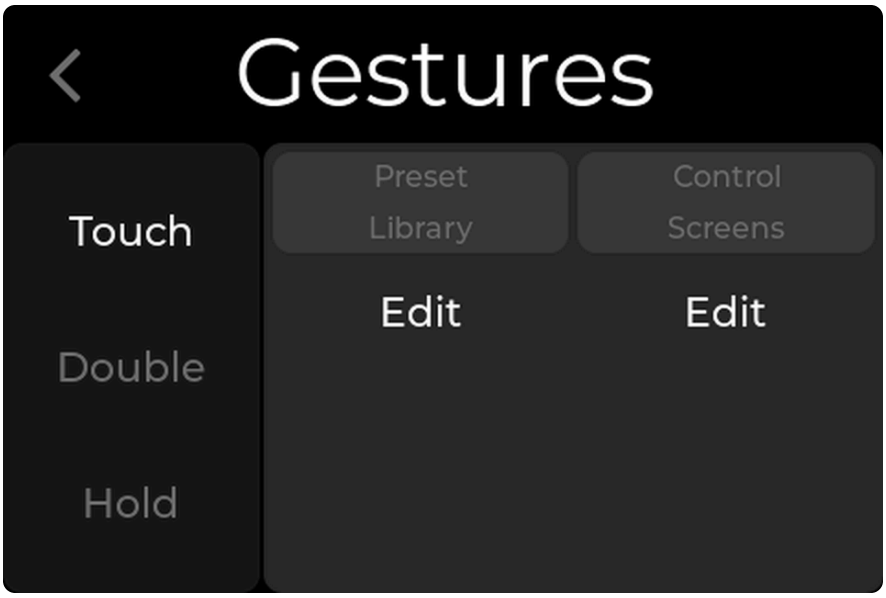
Model	Columns
M1	**TRS 1**, **TRS 2**, **TRS 3 / DIN**, **USB**, **BLE**
M2	**TRS 1, 2 / DIN / 3.5mm**, **TRS 3**, **TRS 4**, **USB**, **BLE**

On the **M2**, TRS 1, TRS 2, the 5-pin jack, and the 3.5mm jack share one filter.

Tap **Out** or **Thru** on a port, then tap channel numbers (**1–16**) to allow or block them. **ALL** (top-right) allows every channel.

In isn't set here — incoming MIDI is controlled from **MIDI Routing**.

Gestures



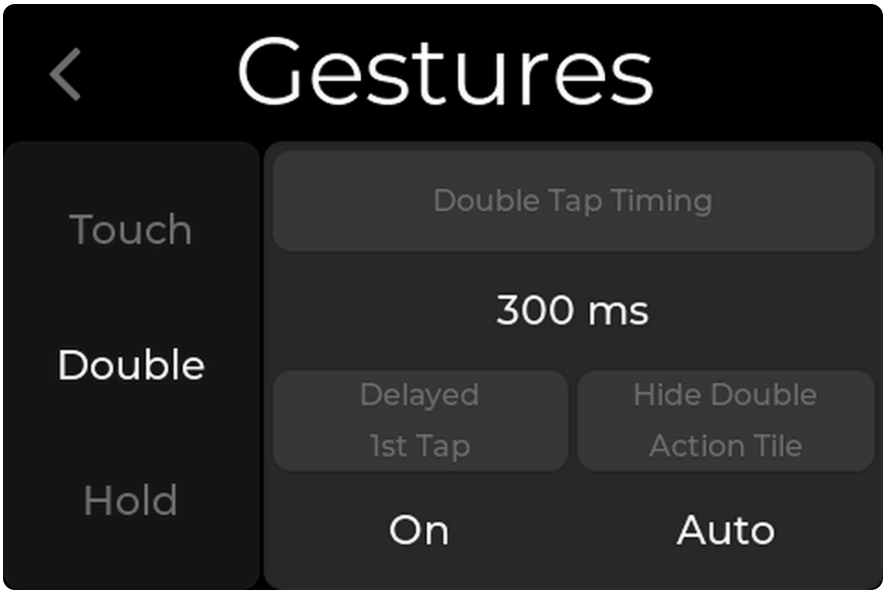
Fine-tune how touchscreen taps, double-taps, and button holds feel across your rig. Three tabs sit along the left side:

Touch

Choose what a single tap on the touchscreen does on library and control grids:

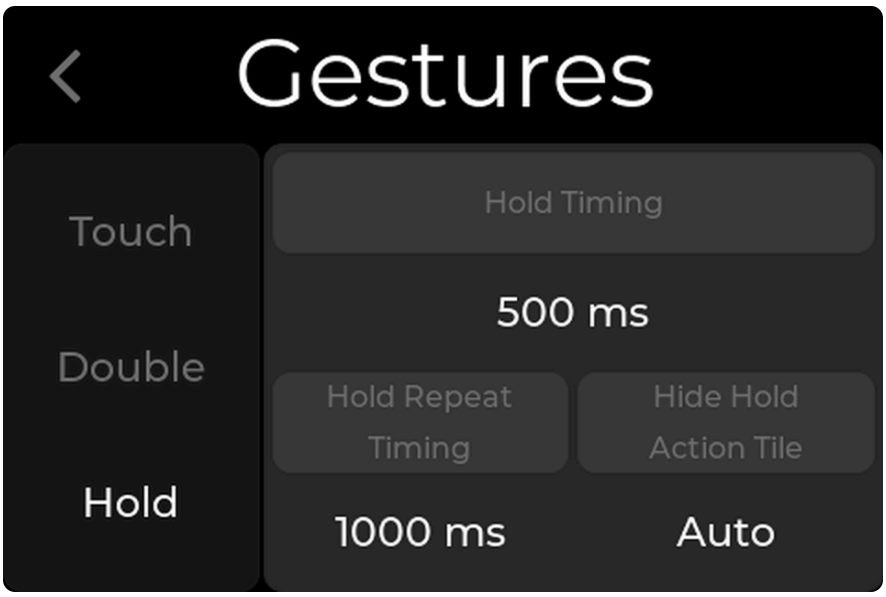
- **Preset Library:**
- **Single Touch = Edit** — tapping a Preset tile opens it straight in **Preset Editor** (fast when programming).
- **Single Touch = Send / Double Touch = Edit** — tapping a tile sends the Preset; double-tapping opens **Preset Editor** (handy for auditioning sounds live).
- **Control Screens:** Same two choices for controller grids (**FS**, **XY**, **EC**, **MIDI In**).

Double



- **Double Tap Timing:** The maximum gap between two presses that still counts as a **Double Tap** (**150–500 ms**, default **300 ms**).
- **Delayed 1st Tap:**
- **On (Double skips 1st Tap)** *(default)* — waits for the double-tap window before firing **1st Tap**, so a **Double Tap** runs cleanly without firing **1st Tap** first.
- **Off (Double fires 1st Tap too)** — fires **1st Tap** immediately on the first release for zero latency; a second press still fires **Double Tap**.
- **Hide Double Action Tile:** After a **Double Tap**, controls whether the on-screen tile snaps back to showing the **1st Tap** label:
- **Auto (Hide Non-Preset)** *(default)* — snaps back for utility actions (like Bank + / Tap Tempo), but stays on the Double Tap label when it recalled a Preset.
- **Always** — always snaps back to the **1st Tap** label.
- **Off** — stays on the **Double Tap** label.

Hold



- **Hold Timing:** How long a button must be held to fire its **Hold** action (**300–2000 ms**, default **500 ms**).
- **Hold Repeat Timing:** While a button stays held, how often its action repeats (**300–2000 ms**, default **1000 ms**, or **Off** for no repeat).
- **Hide Hold Action Tile:** Same three choices as **Hide Double Action Tile** (**Auto (Hide Non-Preset)**, **Always**, **Off**) for what the tile displays after a **Hold** action fires.

Safe Mode / Boot Issue

If the unit keeps crashing and restarting on its own (a crash loop), the next startup shows a **Boot Issue** screen instead of the normal Home view.

- **Continue**: Starts the unit in **Safe Mode** — Bluetooth off, USB Host off — so you can still use it and get your data out. Export a backup **before** turning Bluetooth or USB Host back on, in case they're what's causing the crash.
- **More Options**:
- **Import Export**: Send a backup off the unit over Wi-Fi (same as **General › Backup › Import / Export**).
- **Reset Settings**: Restores default settings only. Presets, Songs, Setlists, Actions, and Backups are kept (same as **General › Reset › Settings**).
- **Reset All**: Full user-data wipe. **Backup** slots are kept (same as **General › Reset › All**).

Use **Continue** first and export a backup while you still can. Only use **Reset Settings** or **Reset All** if a normal boot keeps failing and Safe Mode doesn't fix it.

Chapter D: Glossary

Common Terms

- **Controllers**: Devices that control the Graviton M1/M2 — the **XY/EC Controller**, a **Footswitch Pedal** (the M2's built-in footswitches, an **F10/W**, an **F6/W**, etc.), or the **MIDI In** port, which triggers Actions from incoming MIDI CC/PC messages.
- **Buttons**: Physical switches on the controllers above, or MIDI messages received through **MIDI In**. Each button can be assigned multiple Actions — **1st Tap**, **2nd Tap**, **3rd Tap**, **Hold**, **Double Tap**, and **Release**.
- **Preset messages**: The messages programmed inside a Preset (see **Home** → **Preset Editor**). Can be MIDI (**CC**, **PC**, **Note**, **SysEx**, etc.) or non-MIDI (**CV**, **Relay**, etc.).
- **Button actions**: Messages assigned to a button under **Control** (**XY** / **EC** / **Footswitch** / **Expression** / **MIDI In**). Can be **Bank Preset/Global Preset**, **Bank +/−**, **Song +/−**, etc.
- **Presets**: A collection of up to 16 Preset messages, organized into 12 Banks of 10 Presets each — see **Home** → **Preset Library**. Presets are shared between all controllers.
- **Current Preset**: The Preset most recently sent (recalled).
- **Toggle**: Latching On/Off (or Rotation) behavior on a Preset, so one button sends a different message each time depending on its current state.
- **Bank**: A group of 10 Presets.
- **Song**: A collection of up to 10 Presets, picked from the Preset Library.
- **Song Preset**: A Preset that's part of a Song.
- **Setlist**: A collection of up to 10 Songs, picked from the Song Library.
- **Playing Mode**: **Bank Mode** or **Song Mode**. Switch it from **Select a View** (top-right **BANK MODE** / **SONG MODE** → popup **Playing Mode**). Button Actions are stored separately for each mode.
- **LFO**: One of ten global engines that sweep MIDI on their own. See Utilities › LFO.
- **Thru Filter**: Page 2 of **Settings › MIDI**. Blocks Clock, Start/Stop, SysEx, or Notes/CC/PC from passing **Through**, per port.
- **Web Editor**: Built-in wireless browser editor (**Utilities › Web Editor**) that mirrors the Graviton UI 1:1 over Router Wi-Fi or Direct Wi-Fi.
- **Expression Message**: A message type whose value tracks an expression pedal's position continuously, rather than a fixed value.
- **Expression Preset**: A group of up to 6 Expression Messages.
- **TRS (Tip, Ring, Sleeve)**: A stereo jack, available in either ¼" or ⅛" sizes.

Preset Messages

Tap **Type** in **Preset Editor** → **Select a Type**. Use **Page 1** / **2** in the title bar.

Page	Tab	Choices on that tab
1	**MIDI**	**CC**, **PC**, **CC** (category), **PC** (category), **Note** (category), **SysEx**
1	**More**	**Clock** (category), **Song** (category), **Preset Chain** (category), **Special** (category), **Switch**, **Control Voltage**
1	**EXP EC**	**Expression** (category), **Toe/Heel** (category), **Assign Expression**, **Encoder**
2	**Bank**	**Bank** + / **−**, **Preset** + / **−**, **Bank Jump**
2	**Song**	**Song Preset** (category), **Setlist Library** (category), **Song Library** (category), **Song Jump**
2	**Tap Marker View**	**Tap Marker**, **View Jump**

Page 1 — MIDI, More, EXP EC

- **MIDI** (tab) →
- **CC**: Send a **Control Change**.
- **PC**: Send a **Program Change**.
- **Counter CC and PC with + / - / Jump:** A normal **CC** / **PC** always sends the exact value you stored. **Counter CC** and **Counter PC** work differently, in two ways:
    - **They remember their last value.** Each **+**, **−**, or **Jump** message moves a running counter instead of sending a fixed number, so the value keeps climbing (or jumps) every time you trigger it—it doesn't reset back to where it started.
    - **They sync across Presets.** Think of every **Counter CC** (or **PC**) message with the same Channel/Number as **copies of one shared message**, mirrored across however many **Presets** use it—nudge the value from any one of them, and every copy updates together. **Counter CC** applies this to a CC value. **Example**: give the delay-mix **Counter CC** to several **Presets** (verse, chorus, solo)—the current value is retained and synced between them, so bumping the mix up on one carries over no matter which of those **Presets** you switch to next. Pair it with an **EC** encoder or **Expression** to sweep a global level like reverb, delay, or gain. **Counter PC** applies the same idea to program numbers. **Example:** use the same **Counter PC** as a patch scroller in different **Presets**—the current patch number is always displayed correctly.
    - Each **Counter CC** / **Counter PC** message does one of three things:
    - **+**: Step the counter up by **Step**, then send.
    - **−**: Step the counter down by **Step**, then send.
    - **Jump**: Tap **Mode** to choose:

        - **Jump+Send**: Set the counter to the **Jump** target, then send.
        - **Jump**: Set the counter to the **Jump** target, don't send.
        - **Send (Current Value / Current Number)**: Send the current counter, don't change it.
- **Note** (category, **MIDI Note Type**) →
    - **Note On** / **Note Off**: MIDI note with velocity.
    - **All Note Off**: All notes off on the channel.
    - **Pitch Bend**: Pitch-bend message.
    - **Poly Aftertouch** / **Channel Aftertouch**: Aftertouch messages.
- **SysEx**: **SysEx Library** entry (up to **64** bytes; split longer data as ordered messages **F0** … **F7**).
- **More** (tab) →
- **Clock** (category, **MIDI Clock Type**) →
    - **MIDI Clock**: Start or set Clock at a BPM (**Settings › MIDI › Port Routing › Clock**); overrides **global BPM** when this Preset runs.
    - **BPM** +: Nudge **global BPM** up by the configured step.
    - **BPM** −: Nudge **global BPM** down.
    - **Start Stop Continue**: MIDI transport Start / Stop / Continue (not the continuous MIDI Clock tick stream).
    - **Tap Tempo**: Set **global BPM** from taps; **Clock Duration Continuous** or **1–11** s.
    - **Analog Clock**: Tap-tempo pulses at a BPM (**General › TRS** → **Switch Out**; **Analog Tap Clock Cycle** in **Clock Options** → **General**).
- **Song** (category, **MIDI Song Type**) →
    - **Song Select**: Standard MIDI Song Select (not Graviton **Songs**).
    - **Song Position Pointer**: Standard MIDI SPP.
- **Preset Chain** (category) →
    - **Preset Chain**: Run another library Preset when this message plays. **Mode**: | Mode | Behavior | | ---------- | ---------- | | **Trigger Preset** | Run the chained Preset (with Toggle on, also flips state and sends) | | **Send On State** / **Send Off State** | Send that state's messages | | **Send Current State** | Send the target's current On/Off state | | **Toggle On/Off** | Flip On/Off **without** sending | | **Turn On** / **Turn Off** | Set state **without** sending |
    - **Set Toggle**: **On**, **Off**, or **Flip** another Preset's toggle state (no messages sent).
- **Special** (category) →
    - **Keystroke**: Send a USB keyboard key press (**Settings › General › USB › Keyboard On**).
    - **Pause**: Wait **0–382 ms** before the next line (default **30**).
    - **A/B**: Messages before **A/B** = **On**; after = **Off** (**Toggle Mode** / **Momentary**).
    - **LFO**: Start, stop, or edit a global LFO engine from this Preset. Same operations as a button **LFO** action. See Utilities › LFO.
- **Switch**: Set relay / TRS switch state (**M2** or **RV Adapter**).
- **Control Voltage**: Output a CV level (**M2** CV or **RV Adapter**).
- **EXP EC** (tab) →
- **Expression** (category, **Expression Type**) →
    - **Expression CC**: CC follows pedal position while moving.

    - **Expression Clock**: **MIDI Clock** BPM follows pedal position.
    - **Expression CV**: CV output follows pedal position.
    - **Expression Pitch Bend**: Pitch bend follows pedal position.
    - **Expression LFO**: Heel-to-toe sweeps one LFO parameter (**Rate Hz**, **Rate Div**, **Depth**, **Offset**, **PW**, or **Skew**) without saving over the engine. See Utilities › LFO.
- **Toe/Heel** (category, **Toe / Heel Type**) →
    - **Toe Down CC** / **Heel Down CC**: One-shot CC at full toe or heel.
    - **Toe Down PC** / **Heel Down PC**: One-shot PC at full toe or heel.
    - **Toe Down Preset** / **Heel Down Preset**: Fire a **Preset** at full toe or heel.
- **Assign Expression**: Attach an **Expression Preset** to a **TRS** expression jack.
- **Encoder**: Used internally for **EC** encoder input (see **Encoder**).

Page 2 — Bank, Song, Tap Marker View

- **Bank** (tab) →
- **Bank** +: Go to the next bank.
- **Bank** −: Go to the previous bank.
- **Preset** +: Go to the next Preset in the bank.
- **Preset** −: Go to the previous Preset in the bank.
- **Bank Jump**: Jump to a chosen bank (1–12).
- **Song** (tab) →
- **Song Preset** (category) →
    - ← → ↑ ↓: Move the active Song Preset slot on **Playing Song**.
    - **Position**: Pick the active slot (**Position** picker).
    - **1st**–**10th**, **Default** (**Select a Song Preset**): Jump to that slot in the current **Song**.
- **Setlist Library** (category) →
    - **Song(S)** +: Next song in the **Playing Setlist**.
    - **Song(S)** −: Previous song in the **Playing Setlist**.
    - **Setlist** +: Next **Setlist** in **Setlist Library**.
    - **Setlist** −: Previous **Setlist**.
    - **Setlist Jump**: Jump to a chosen **Setlist**.
- **Song Library** (category) →
    - **Song(L)** +: Next song in **Song Library**.
    - **Song(L)** −: Previous song in **Song Library**.
    - **Page** +: Next **Song Library** page.
    - **Page** −: Previous **Song Library** page.
- **Song Jump**: Jump to a chosen **Song** (setlist or library context).
- **Tap Marker View** (tab) →
- **Tap Marker**: Start sending from this line for the matching tap type (see **Programming Multi-Tap**).
- **View Jump**: Switch to a chosen screen when the Preset runs.

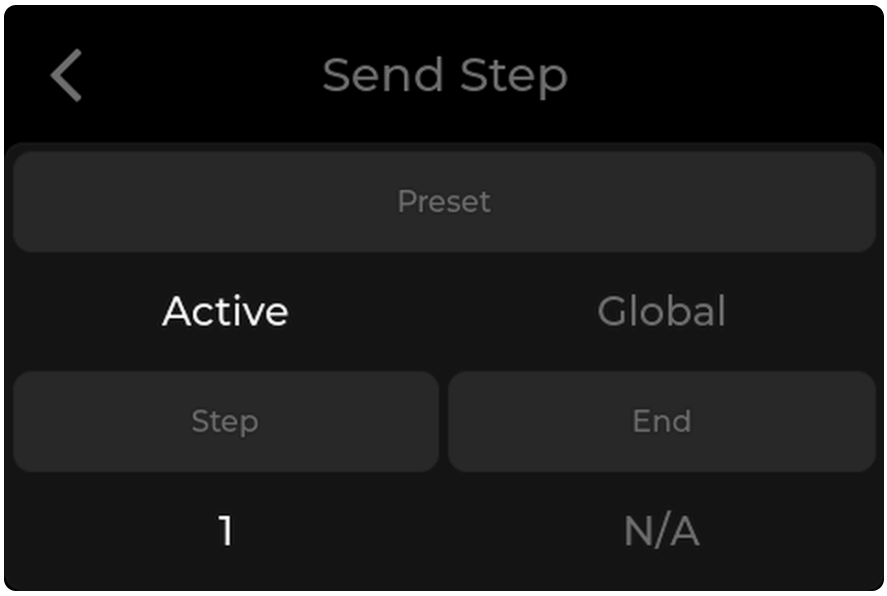
Button Actions

Assigned in **Control** → controller → **Assign Action**. Tabs: **Edit** | **Main Actions** | **Song Actions** (page 1); **Learn** (**Trigger** for MIDI In) | **Focus** | **Navigate** (page 2). **Song Actions** is disabled in **Bank Mode**.

Main Actions

- **None** — clears the slot.
- **Preset** (category) →
- **Bank Preset** → **Select a Bank Preset** (**1st**–**10th**, **Default**): slot in the current bank (button 1 → Preset 1 in bank 1, Preset 11 in bank 2, …).
- **Global Preset**: one library Preset (1–120), same in every bank.

- **Send Step** (1st Tap / Hold only): send a single message step or a step range (**Step** to **End**) inside the **Active** Preset or a chosen **Global** Preset.



- **Trigger Active** (1st Tap / Hold only): Send, Toggle, or change the state of the currently active Preset. - **Preset** − / **+**: previous / next Preset in the bank. - **Bank** (category) → - **Bank** − / **+**: previous / next bank. - **Bank Jump** → **Select a Bank** (1–12). - **Bank Toggle** → **Select a Bank**: jump there; press again to return. - **Bank A / B** (1st Tap / Hold only) → **Select Bank A and B**: flip between two banks. - **Message** (category, 1st Tap / Hold only) — assign MIDI and utility messages directly to any button or EC knob without needing a Preset: - **CC** → **CC**, **Counter CC +**, **Counter CC −**, **Counter CC Jump** - **PC** → **PC**, **Counter PC +**, **Counter PC −**, **Counter PC Jump** - **Note** → **Note On**, **Note Off**, **All Notes Off** - **SysEx** - **Keystroke** - **More** → **Switch**, **Assign Expression**, **Song Position** - **Clock** (category, 1st Tap / Hold only) → - **Tap Tempo**: set global BPM from taps. - **MIDI Clock**: start/stop or set BPM. - **BPM +** / **BPM −**: nudge global BPM up or down. - **Transport** → **Start**, **Stop**, **Continue**. - **Analog Clock**: toggle Analog Clock output. - **More** (category) → - **View** → - **View Jump** → jump to a chosen screen (**Preset Editor**, **Preset Library**, **Tracking**, **Live**, **Playing**

Song, **Playing Setlist**, **Song Library**, **Setlist Library**, **XY Controller**, **EC Controller**, **Footswitch Pedal**, **Expression Pedal**, **MIDI In**). - **View A/B** (1st Tap / Hold only) → **Select View A and B**. - **View Toggle**: open a chosen screen or return to the previous one. - **Encoder Click** (1st Tap / Hold only): EC push-button action; use with **Encoder** message(s) (**Active** / **Global** Preset scope, **Increase** / **Decrease**). - **LFO** (1st Tap / Hold only): start, stop, toggle, hold, reset, or adjust one or all LFO engines directly from a button.

Song Actions

Song Mode only (**Assign Action** tab **Song Actions**).

- **Song Preset** (category) →
- ← → ↑ ↓: Move the highlight on **Playing Song** (scroll slots without a fixed **1st**–**10th** assignment).
- **Position**: **Position** picker — choose which Song Preset slot is active (same role as directional scroll).
- **1st**–**10th**, **Default** (**Select a Song Preset**): Always fire that slot in the current **Song** (e.g. **3rd** = chorus on every **Song**).
- **Setlist Library** (category) →
- **Song(S)** − / **Song(S)** +: Previous / next **Song** in the **Playing Setlist**.
- **Setlist** − / **Setlist** +: Previous / next **Setlist** in **Setlist Library**.
- **Setlist Jump**: Jump to a chosen **Setlist** in **Setlist Library**.
- **Song Library** (category) →
- **Song(L)** − / **Song(L)** +: Previous / next **Song** in **Song Library** (all songs, not only the playing setlist).
- **Page** − / **Page** +: Previous / next **Song Library** page (not setlist pages).
- **Song Jump**: Jump to a chosen **Song** (setlist or library context when you assign it).

Navigate

(**Navigate** tab — focus on Song / Setlist performance screens.)

- **None**
- ↑ ↓ ← → — move the on-screen cursor.
- **Enter** — confirm selection.
- **Previous Screen** — back out of the current list (not the same as **View Toggle**).

Chapter E: Features & Specifications

Features

Graviton M1 / M2 is an all-in-one MIDI control system for professional pedalboards and recording studios.

Fast & Easy MIDI Programming

- Large **3.5-inch touchscreen LCD** for intuitive control
- **No PC editor required** — plus a built-in wireless **Web Editor** for any phone, tablet, or computer browser
- Built-in SysEx library / editor on the touchscreen

Wireless Remote Control

- Controlled by **XY / EC / F10W / F6W Controllers** with fully programmable switches
- Supports MIDI messages, bank/song switching, and more
- **650 ft (200 m)** wireless range, **encrypted signal**
- Battery life: 6 months (FxW), 1 month (XY) or 7 days (EC)

Footswitch & Expression Input

- **M2 Only:** 6 × soft-touch built-in footswitches (silent and smooth)
- TRS Input Ports:
- **M1:** 2 × Footswitch/Expression
- **M2:** 4 × Footswitch/Expression
- Wireless:
- Up to **10 F10W/F6W footswitches**
- Up to **10 XY/EC Controllers**
- **All can work together simultaneously**

Specialized I/O (Built-in for M2 or RV Adapter for M1)

- **Relay Port:** Control up to 2 amp channel switches or pedal footswitch inputs

- **Control Voltage Port:** Control up to 2 analog CV/expression inputs

Modes & Memory

- **Bank Mode** and **Song Mode** (on-screen **SONG MODE** toggle)
- **120 Presets** across **12 Banks**
- **120 Songs** and **120 Setlists**
- **120 SysEx messages**
- **10 Expression Presets**
- **10 Backups** (each stores full user data: 120 Presets, Songs, Setlists, SysEx, 10 Expression Presets, Actions, Settings, etc.)

Message Types & Features

- 16 messages per Preset / Expression Preset
- **Unlimited Preset chaining**
- Supports:
- Program Change, Control Change, Note On/Off
- Counter PC/CC, SysEx
- MIDI Clock (Start/Stop/Continue), Tap Tempo
- Expression CC/PC, Clock BPM
- Expression LFO (pedal sweeps an LFO parameter)
- Ten global LFO engines (CC, CC14, NRPN, PC), plus LFO steps on buttons, Presets, and encoders
- Kemper Link home screen (Performance, Slot, effect tiles, tuner, morph)
- Clock screen with CC Clock, and Master / Slave / Sync
- MIDI **Thru Filter** (block Clock, Start/Stop, SysEx, or Notes/CC/PC per port)
- Expression-triggered Presets (Toe/Heel Down)
- Preset-triggered Expressions
- And many more

MIDI Connectivity & Routing

- MIDI In / Out / Through (thru) / Clock routing
- Standard **5-pin MIDI In/Out**
- **1/4" TRS MIDI**:
- M1: 2 ports
- M2: 4 ports
- Supports Type A, Type B, Tip Active, Ring Active
- **3.5mm TRS MIDI Out** — M1 **TRS 3** and M2 **TRS 5** (**MIDI Out Only** jacks; same four MIDI Out types)
- **3.5mm TRS MIDI In** — M2 only (Type A); use **either** this **or** 5-pin DIN MIDI In, not both
- **USB MIDI** (Bus-powered)

- **USB Host MIDI** (can power external devices)
- **Bluetooth LE MIDI**

Connectivity & Updates

- **Wireless Web Editor** — program from any phone, tablet, or computer browser over Router Wi-Fi or Direct Wi-Fi (1:1 mirror of the on-device UI)
- **WiFi-based user data Import/Export**
- **Over-the-Air software updates** via WiFi

Specifications

	Graviton M1	Graviton M2
LCD	3.5-inch IPS, wide viewing angle, sunlight readable	3.5-inch IPS, wide viewing angle, sunlight readable
Touch panel	Capacitive	Capacitive
Built-in footswitches	—	6 soft-touch
Power input	9VDC center negative / USB Type-C	9VDC center negative / USB Type-C
Power consumption	9V 250mA (9VDC) or 5V 500mA (USB bus powered)	9V 250mA (9VDC) or 5V 500mA (USB bus powered)
Powering via USB Host	9VDC powers both the M1 and the connected device	9VDC powers both the M2 and the connected device
Finish	Premium brushed stainless steel	Premium brushed stainless steel
W × D × H	3.74 × 3 × 1.38 in (95 × 76 × 35 mm)	5.9 × 4.52 × 2.4 in (150 × 115 × 63 mm)
Weight	9 oz (250 g)	22.5 oz (640 g)