

Sensory Percussion 2 Manual

Windows | macOS

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https://www.sunhou.se/support

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Sensory Percussion 2

Welcome to Sensory Percussion 2. This manual is a living document and will be updated frequently. If you have suggestions on ways we can improve it, please let us know.

We recommend starting your journey by watching the setup video below. You can also head to the Quick Start section of the manual. These resources will help you get your hardware and software configured and ready to go. By the end of it, you'll be loading and playing preset kits.

> **Video:** Sensory Percussion Quick Start Guide

Getting Help

If you run into any issues, or just have questions or feedback for us, please head to this page and submit a ticket.

Submit a ticket

Quick Start

What's in the Box

When you open the box, you will find the following gear

- Sensory Percussion Software download card (1)
- EVANS Sensory Percussion Portal Audio Interface (1)
- Sensory Percussion Drum Sensors (3 with Sound System, 1 with Starter Kit)
- 12-foot 3.5mm TRS Sensor Cables (3)
- Drum Sensory Pickup Elements (12)
- Power Adapter for Portal (1)
- USB-c cable to connect Portal to your computer (1)
- Evans EMAD Bass Drumhead adapter (1)
- Pair of ProMark ActiveGrip Drumsticks (1)



Figure 1: A photo of what's in the box: sensors, portal, download card, cables, etc

What else you will need to get started



Figure 2: A photo of the sensors attached to a standard drum set, with the portal and a laptop on the stand next to the drums. The drums are greyed out, and what comes in the box (sensors, portal, and cables are in color.)

Drums. This may seem obvious, but you'll need drums to use Sensory Percussion. We designed the sensor to fit the standard western drum kit (sorry, it most likely will not fit on any hand drums). The sensor fits both snares, toms and kick drums. Well-tuned drums with healthy heads (mesh or standard) that don't have any rattling hardware or loose lugs will work best (in extreme cases, loose parts can cause false hits and confuse the software). An important aspect of this system to understand is that Sensory Percussion listens to your drums and inherits its range of control from their acoustic qualities. So, if you have a dead sounding drum covered in old gaffer's tape with dents in the head, you might not get as much timbral range from the software as you'd hope. We find that tighter drum heads provide more detailed control because they have more detailed control acoustically!

A computer. The Sensory Percussion software runs on macOS and Windows. Most newish computers will work fine, but a faster, multi-core processor with 8 or more GB of RAM is recommended.

Speakers or headphones. You'll need some way to hear what you're playing on Sensory Percussion. While laptop speakers might work in a pinch, you'll have the best experience with good headphones (for the lowest latency) or dedicated monitors. The Portal interface has a range of output options for connecting speakers and headphones. We also recommend good-old-fashioned wired headphones and speakers over wireless ones for the best latency experience.

Setting up Your gear

Video: Sensory Percussion Quick Start Guide

Drum Sensors

Applying the pickup element

Before you attach the sensor to a drum, you need to apply the pickup elements. The pickup element is what the sensor is sensing, so it's important to take the time to get this part right. Don't worry, you won't have to do this often. Only when you want to use Sensory Percussion on new drums or after changing drum heads.

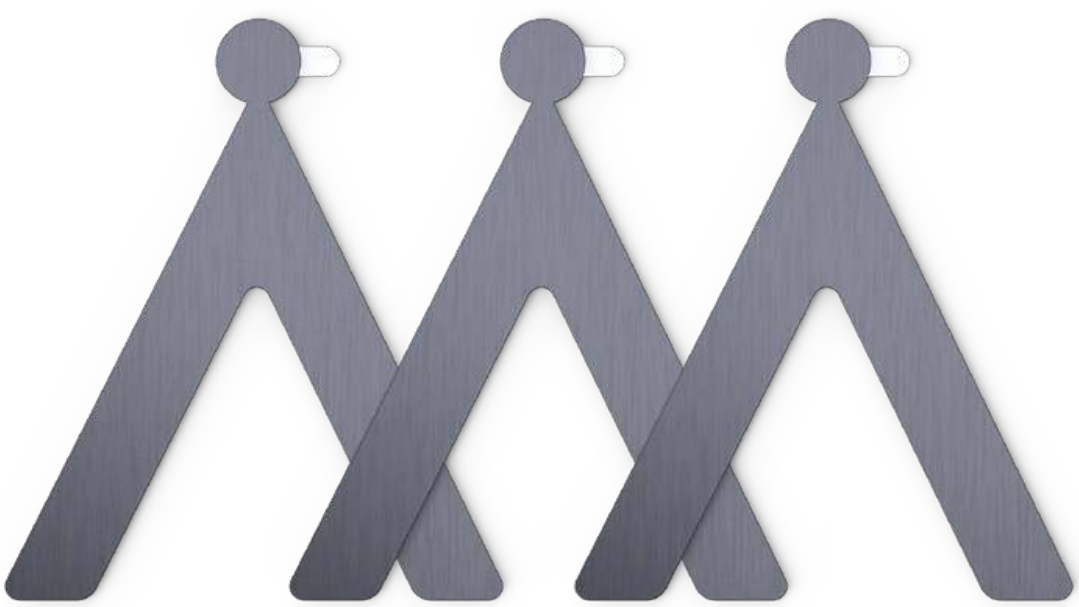


Figure 3: An image of 3 pickup elements

Tip:

You can place the pickup element anywhere you would like on the drumhead, but it must be between two lugs - and, if you are applying the pickup element to the snare drum, make sure you avoid the snare strainer or other levers that might block the sensor.

You can always “practice place” the sensor before placing the pickup element – that is, attach the sensor before placing the pickup element, just to make sure it’s in a good place on your drum (and not blocked) – then you can remove the sensor and follow the steps below to place the pickup element.

1. Peel the paper strip off of the pickup element, revealing the adhesive beneath.



Figure 4: An image of the pickup element being peeled

2. Line the legs of the disposable positioner up with the rim on your drum and drop it down so that the pickup element adheres to the head.

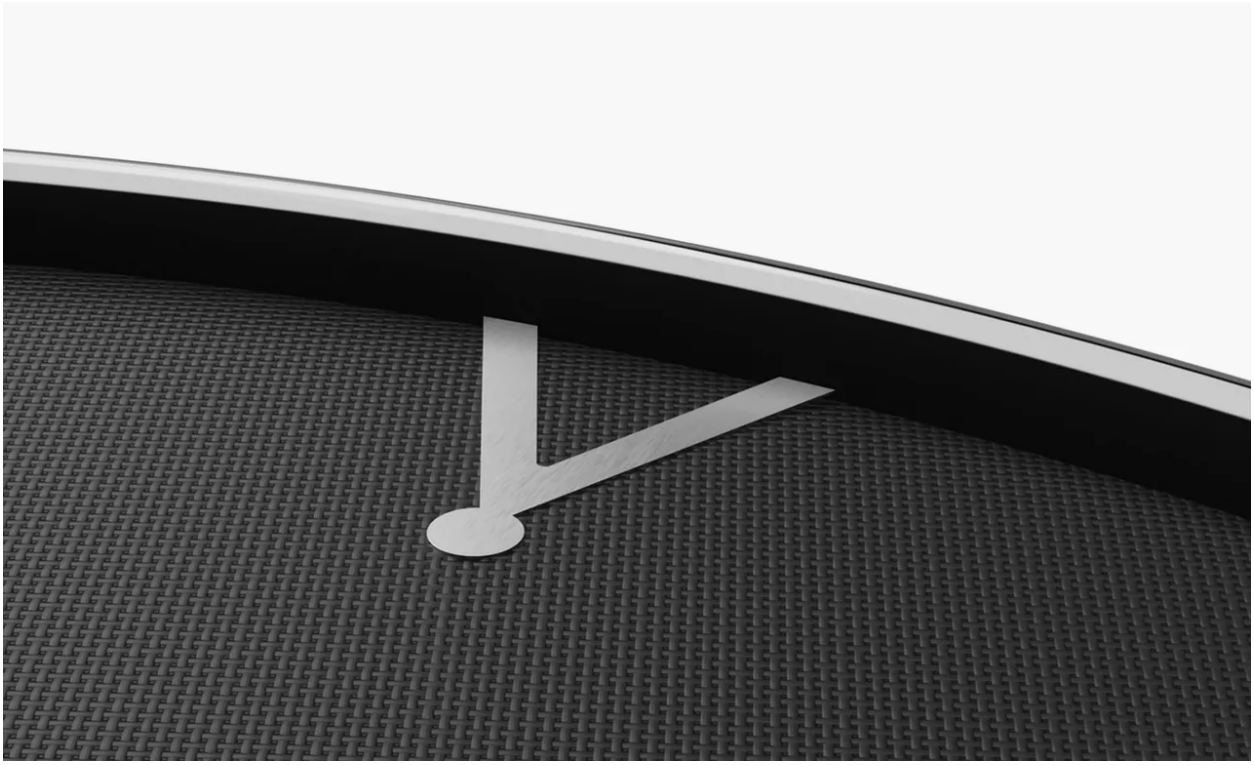


Figure 5: An image of the pickup element being positioned on the drum

3. Apply pressure to the pickup element with your thumb for a few seconds before lifting and snapping off the disposable positioner.

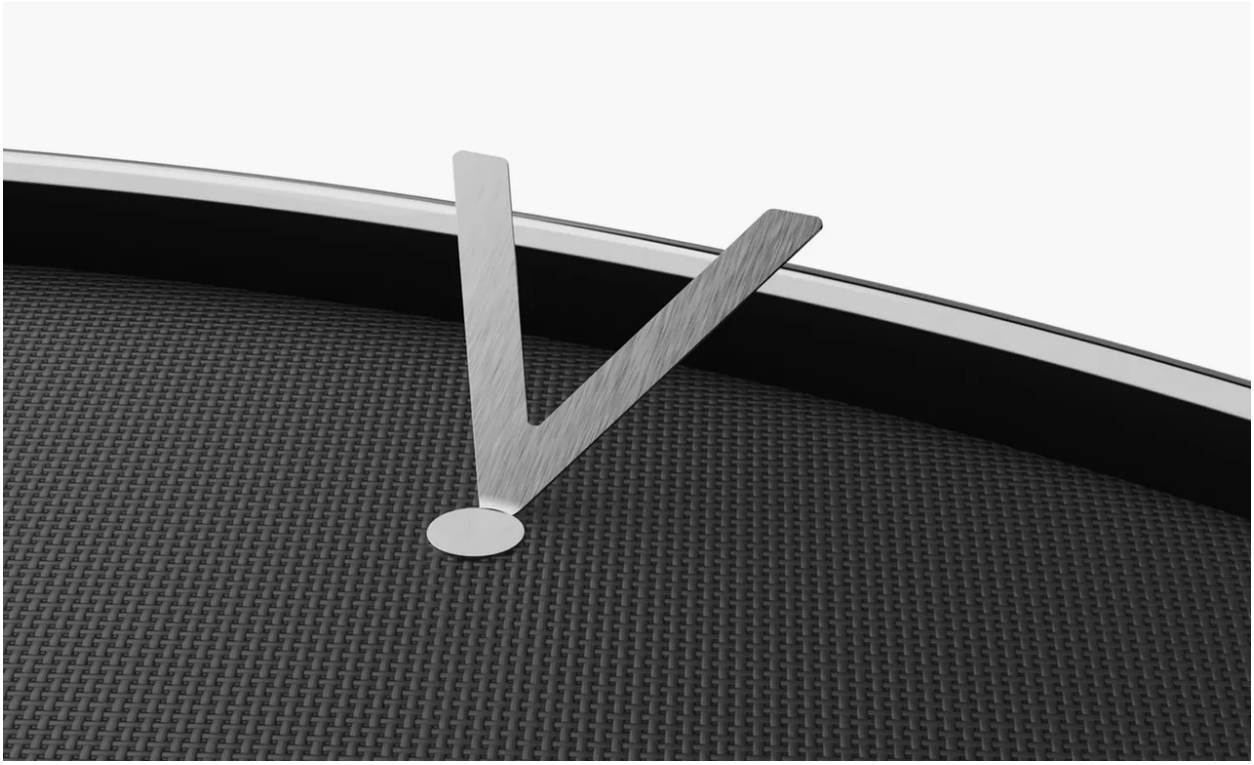


Figure 6: An image of the pickup element being pressed

4. Keep your finger on the pickup element, applying pressure for about ten seconds. It takes about 24-hours for the adhesive to fully cure, but it's generally fine to start playing right away.

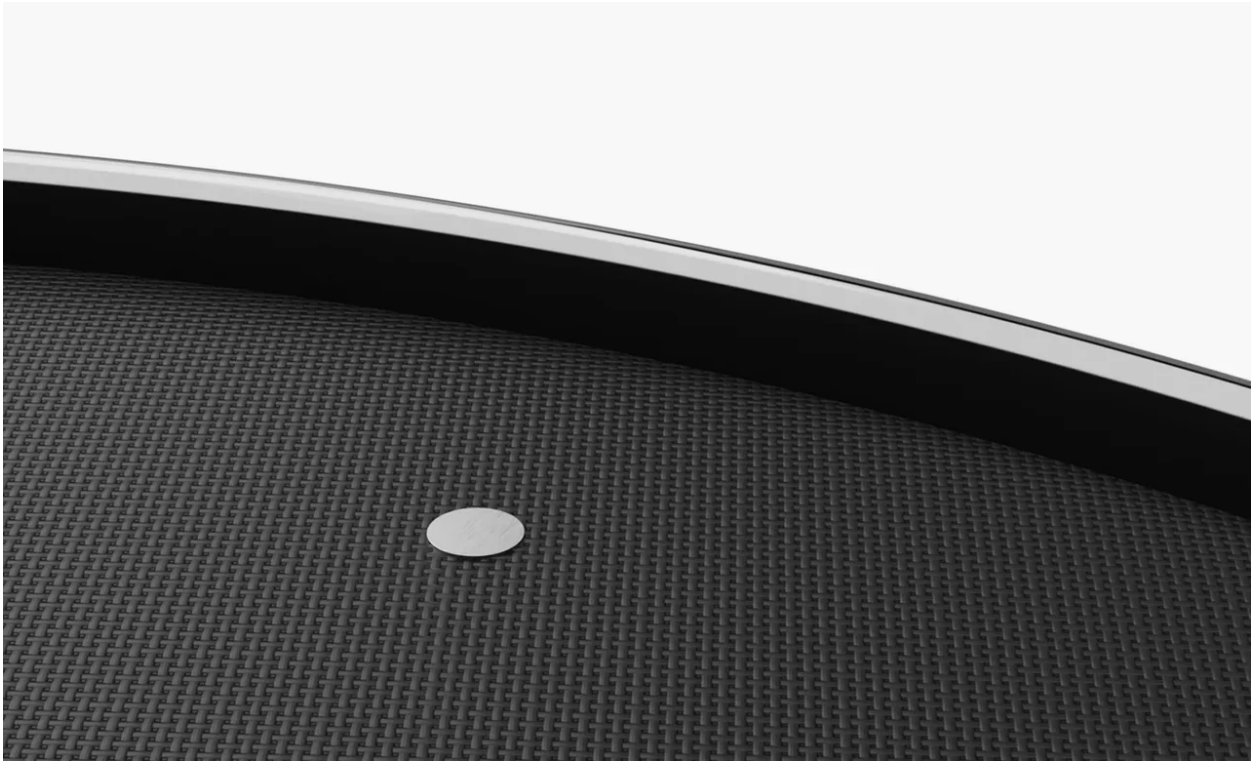


Figure 7: An image of the pickup element being pressed

> **Note:**
>
> Avoid reusing pickup elements. They're hard to clean once they've been used and generally don't stay on the drum as well the second time. They are cheap and disposable, so just use a new one.

Attaching the sensor to your drum

Attaching the sensor correctly is important in order to get the clearest signal from your drum into Sensory Percussion.

1. Twist the sensor thumbscrew counter-clockwise to open it enough to fit over the rim of your drum.
2. Firmly attach the sensor so that the head is directly over the pickup element. The LED indicator light should shine behind the pickup element (not on top of it).
3. Plug TRS Cable into the top of the sensor. Secure the cable by pressing it into the clip on the side.

The drum sensor fits both snares/toms with a variety of rim types as well kick drums with standard hoops. Here are some tips for attaching your sensors:

- Make sure the sensor is parallel to the head of the drum. If the sensor is leaning up or down, it will affect the quality of the signal you'll capture of your playing.
- On some kick drums with wide hoops, you might need to completely open the sensor by unscrewing it until the clamp disconnects. This will let you pull back the clamp to fit around the hoop.

Cymbal Sensors

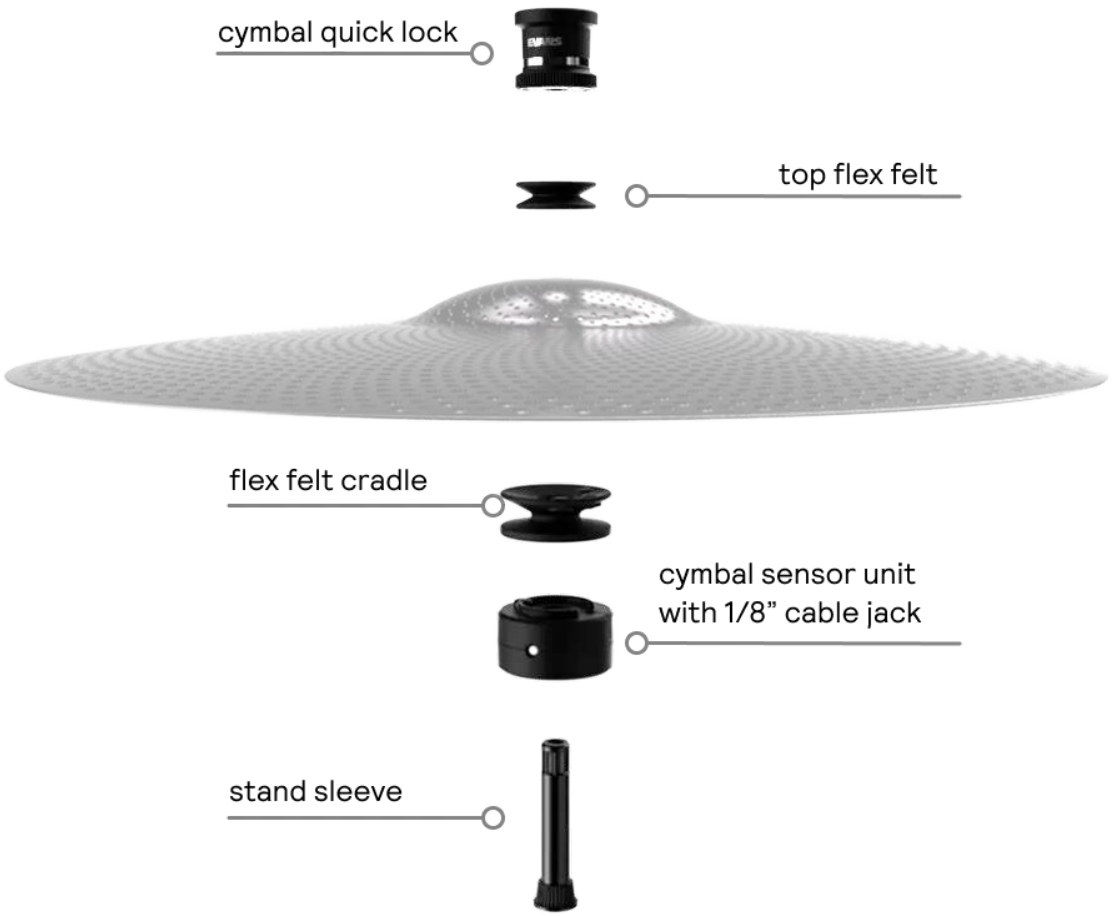


Figure 8: An overview of the Cymbal Sensor features

1. Remove any wingnuts or felts from the top of your cymbal stand. The metal threads of the stand should be fully exposed.
2. Thread the full EVANS Hybrid Cymbal stack onto the stand and tighten until it's secure.

   Tip:

   The indicator light on the cymbal sensor module should face towards. The unit can adjusted by lifting it off the base, rotating it, and then reseating it.

3. Remove the Cymbal Quck Lock by pressing the top with your thumb and pulling up.
4. Then remove the top Flex Felt.
5. Place your cymbal on top of the Flex Felt Cradle, then place the top flex felt on top of the cymbal.
6. Reinstall the Cymbal Quick Lock by holding it between you fingers like a syringe and pressing the top with your thumb. Push it down and release the top botton to lock it in place.
7. Tighten the assembly by rotating the nut at the bottom of the Quick Lock. Be careful lot to overtighten.

Hi-hat Sensors

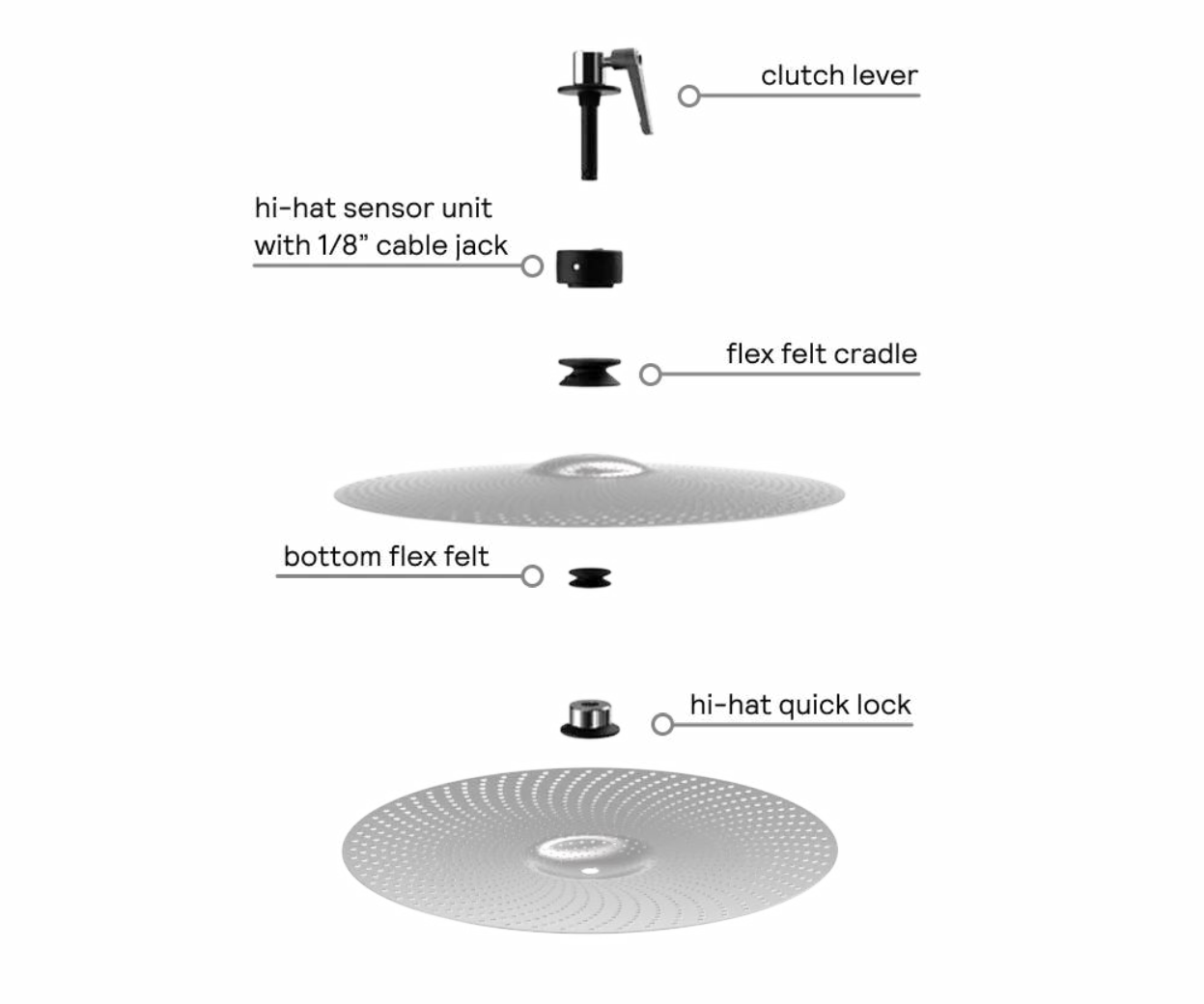


Figure 9: An overview of the Hi-hat Sensor features

1. Remove existing hi-hat clutch from the top of your hi-hat stand.
2. Hold the entire EVANS Hybrid Hi-hat assembly upside down and remove the quick lock by pressing the top with your thumb and pulling up.
3. Remove the smaller flex felt from the top of the assembly.
4. Place the top hi-hat cymbal on the flex felt cradle, then place the smaller flex felt on top of the cymbal.
5. Reinstall the hi-hat quick lock by holding it between your fingers like a syringe and pressing the top with your thumb. Push it down and release the top button to lock it in place.

6. Tighten it by rotating the nut at the bottom of the quick lock.
7. Install the entire Hi-hat sensor clutch onto the hi-hat stand's rod. Rotate it so that the indicator light faces the drum throne.
8. Tighten the clutch to your designed height.
9. Attach the gooseneck cable arm to the hi-hat stand with the included clamp, psotiiongin it away from your playing direction.
10. Connect the TRS cable to the hi-hat sensor and clip it to the end of the hi-hat arm leaving enough slack to prevent tension.

Connecting everything together



Figure 10: A photo of the portal with sensor cables plugged into sensor inputs 1-3 and the power cable and USB-C cable plugged into the back (back plugs not visible, but you can see the cables leading up to the portal.)

1. After you attach the sensors to your drums, cymbals, and hi-hat, plug the 3.5mm cables into the sensors. Then plug those into the **Sensor Inputs** on the EVANS Portal interface.
2. You'll want to connect speakers or headphones to the Portal as well – you can use the Headphones plugs in the front or the Main output plugs on the back for that.
3. Next, connect the Portal to your computer with the USB-C cable and connect the power plug.
4. Turn it on and open the software!

Activating the Software

You'll find a software activation card in the Sound System package. Grab the card and either scan the QR with your phone, or visit sunhou.se/register and enter the code on the card.

The registration page will ask you to create a Sunhouse downloads account (or log in if you already have one). With the account, you'll be able to access the Sensory Percussion software and sound packs.

Getting Started in the Software

The first time you open Sensory Percussion, you'll be asked to log-in to the software. Use the email & password you made when you registered the software in the last step. If you forgot your password, you can reset it here.

After you log in, a short guided setup walks you through four steps. You can leave it at any time with **Skip guided setup** and come back to any of these settings later.

1. Audio settings

Connect your EVANS Portal and switch it on. Sensory Percussion detects it automatically, picks recommended settings, and shows the **Portal Audio Settings** page. If your Portal isn't connected yet, the setup asks you to connect it first, or lets you choose a different audio device.

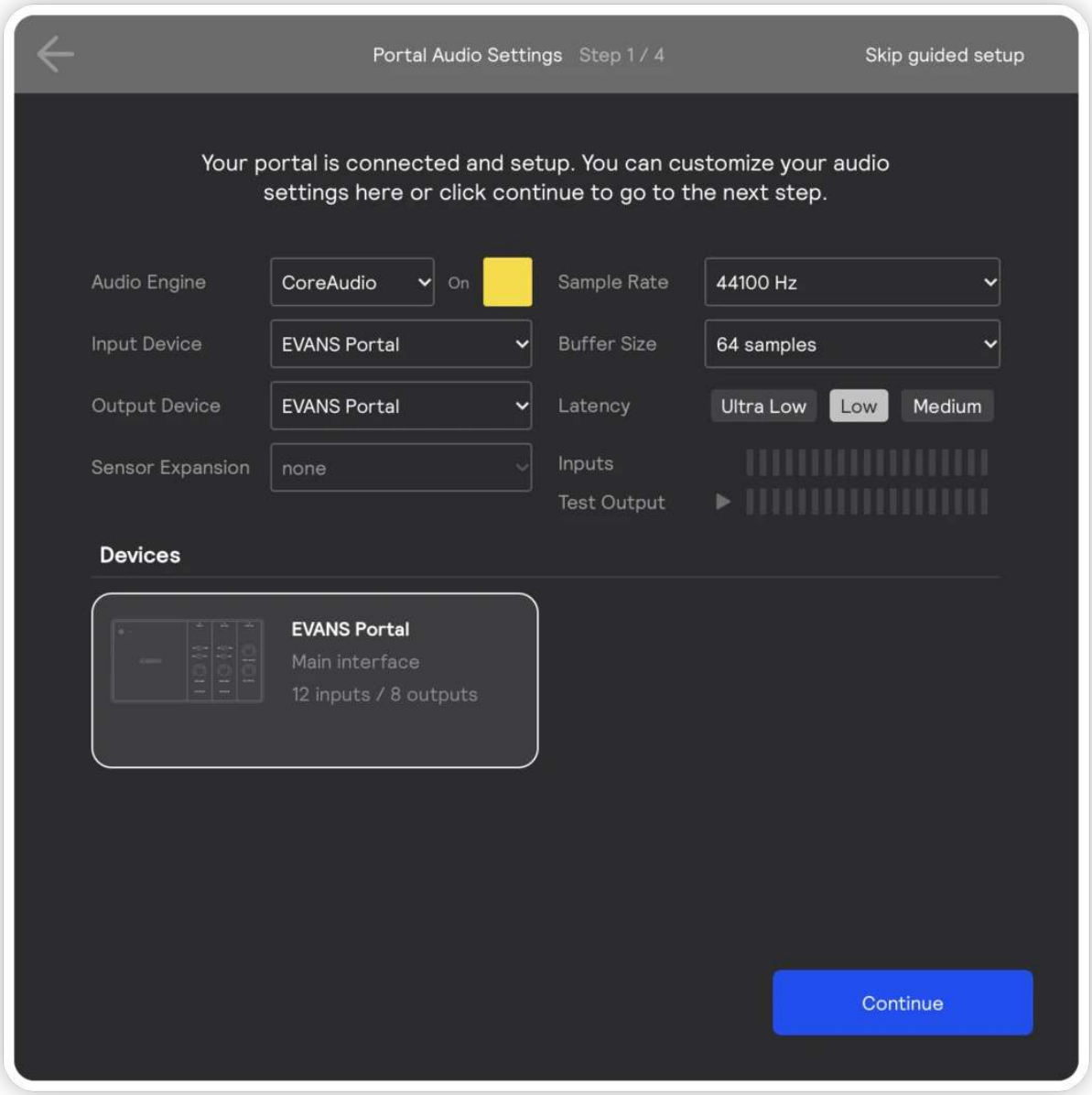


Figure 11: The Portal Audio Settings step of the guided setup: audio engine, input and output device, sample rate, buffer size, latency, and the EVANS Portal in the Devices area

The recommended settings work for most setups, so you can just click **Continue**. To change something, pick a different **Sample Rate**, **Buffer Size**, or **Latency**. The **Inputs** and **Test Output** meters show your signal levels. If you have a second Portal, you can use it as a sensor expansion for seven more sensor inputs.

You can change all of this later in Settings → Audio: click the gear icon at the bottom right of the window, or press ⌘ + ,. That's also where you can turn individual input and output channels on or

off.

2. Set up your hardware

Make sure your sensors are attached and everything is plugged in. Click **Show me how** for a reminder, or see Setting up Your Gear.

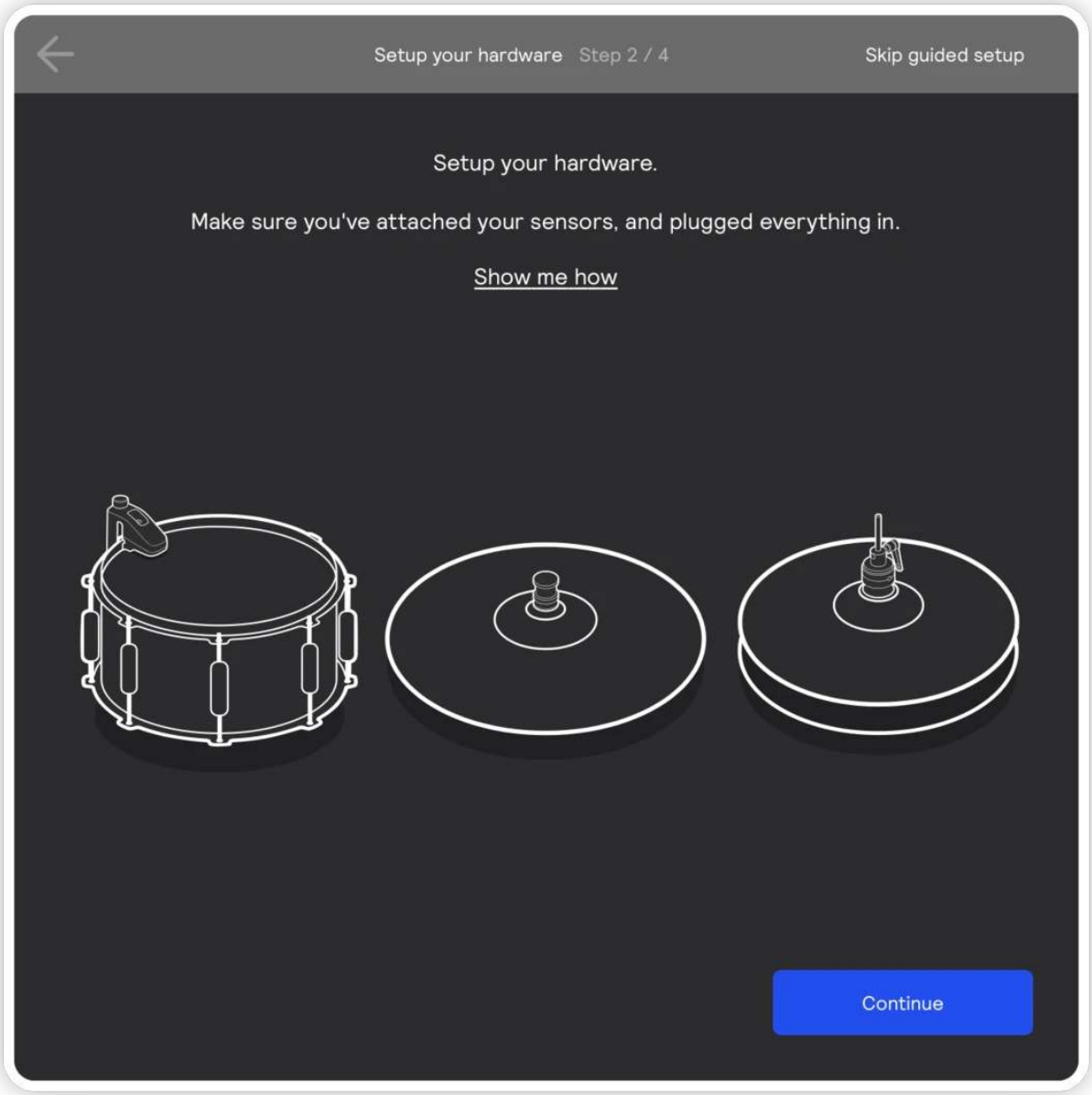


Figure 12: The Setup your hardware step: drum, cymbal, and hi-hat illustrations with a Show me how link

3. Set up your inputs

Add a hardware input for each piece of gear you'll play. These represent your physical setup.

- **Sensor inputs**: Snare, Rack Tom, Floor Tom, Kick, Ride, Crash, and Hi-hat. Click one, choose the Portal input it's plugged into, fill in a few details like its size and name, and click **Create**.
- **More inputs**: an eKit, a MIDI device, Grid Pads, an Analog Input like a vocal mic, or a Drum Trigger.

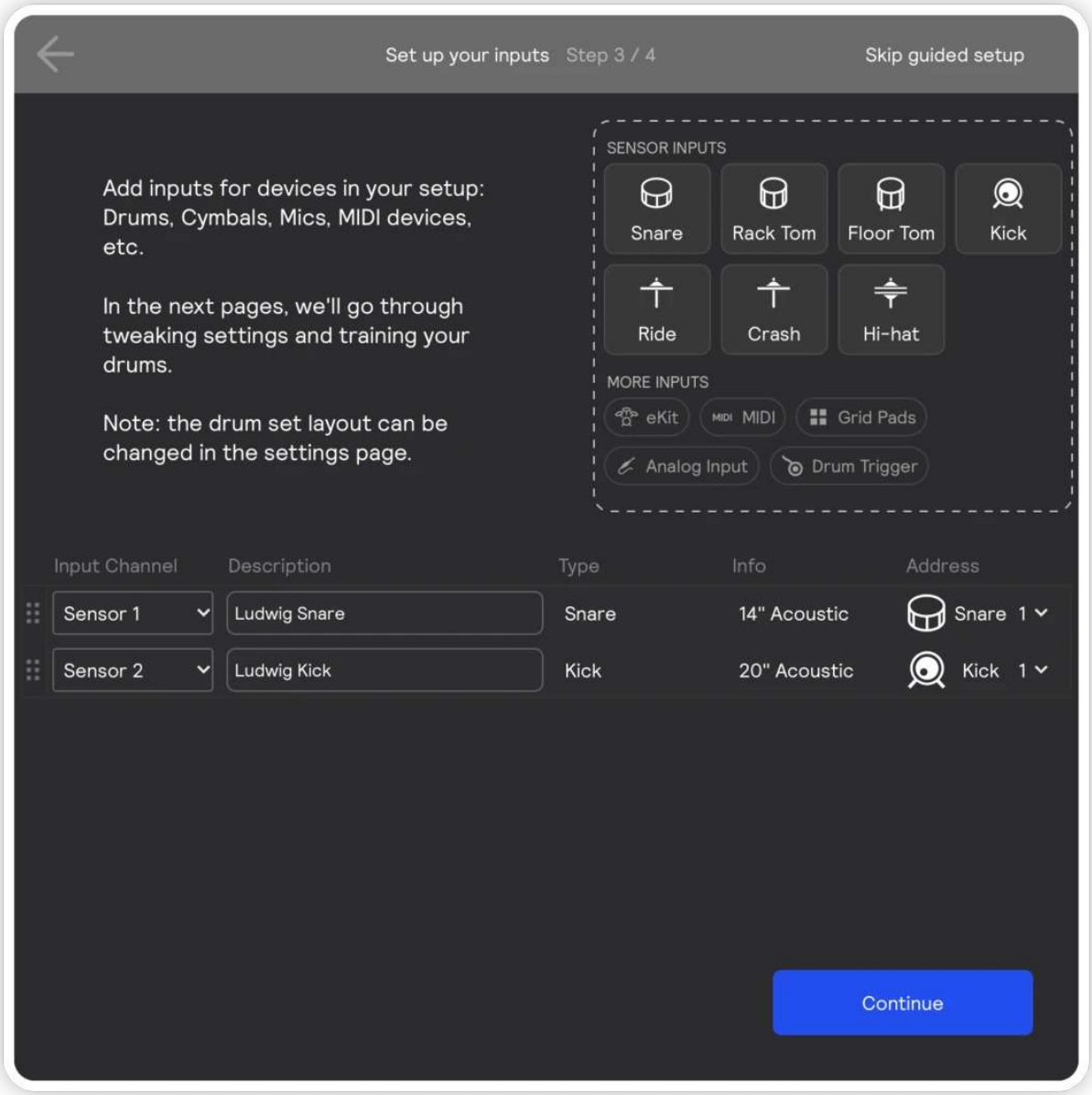


Figure 13: The Set up your inputs step, with the Sensor inputs and More inputs buttons and two inputs added: a snare on Sensor 1 and a kick on Sensor 2

You can add more inputs later from the hardware panel.

4. Train your drums

Next, you teach Sensory Percussion how your drums sound. A short tour shows you around the training page the first time you see it.

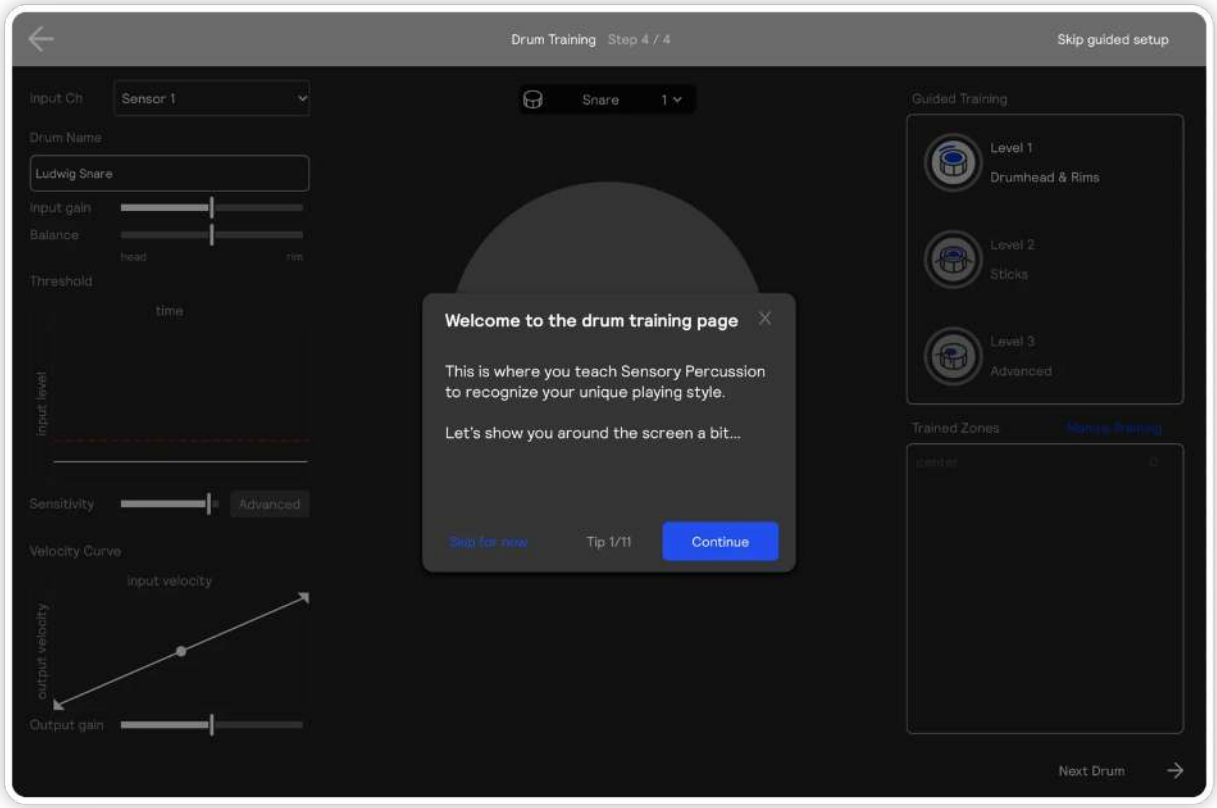


Figure 14: The Drum Training step with the tour's first tip: Welcome to the drum training page

Sound zones are grouped into three levels, from most common to least. Start with **Level 1** (drumhead and rims), and add Levels 2 and 3 later if you want more zones. Train only the zones you'll actually use. Click **Next Drum** to move on to your next drum.

Cymbals and hi-hats don't need training: they use a model that's already trained. See Drum Training for every setting and more tips, and How Sensory Percussion Works for why training matters.

Start playing

When you finish the guided setup for the first time, the Demo Session opens with several sets to get you started. Click the sets at the top of the window to switch sounds. Then build your own with Build Your First Set, or explore the Software Overview.



Figure 15: The Play view of the Demo Session's Acoustic Drums set, with the kit graphic, Input routing, Macros, and Main Mix

---

Build Your First Set

You can build a complete set without leaving the **Play** view: load a drumset, swap drums until it sounds right, and fill in anything that's missing, all while you play. This page walks through that. When you're ready to design sounds from the ground up, Going further points you to the Edit view.

1. Start a new set

Click **Add New** to the right of the sets. A new set starts **empty**: the drum kit graphic shows your drums, ghosted until they have a sound, and a **+** sits at the top right of the kit, ready for you to fill it.

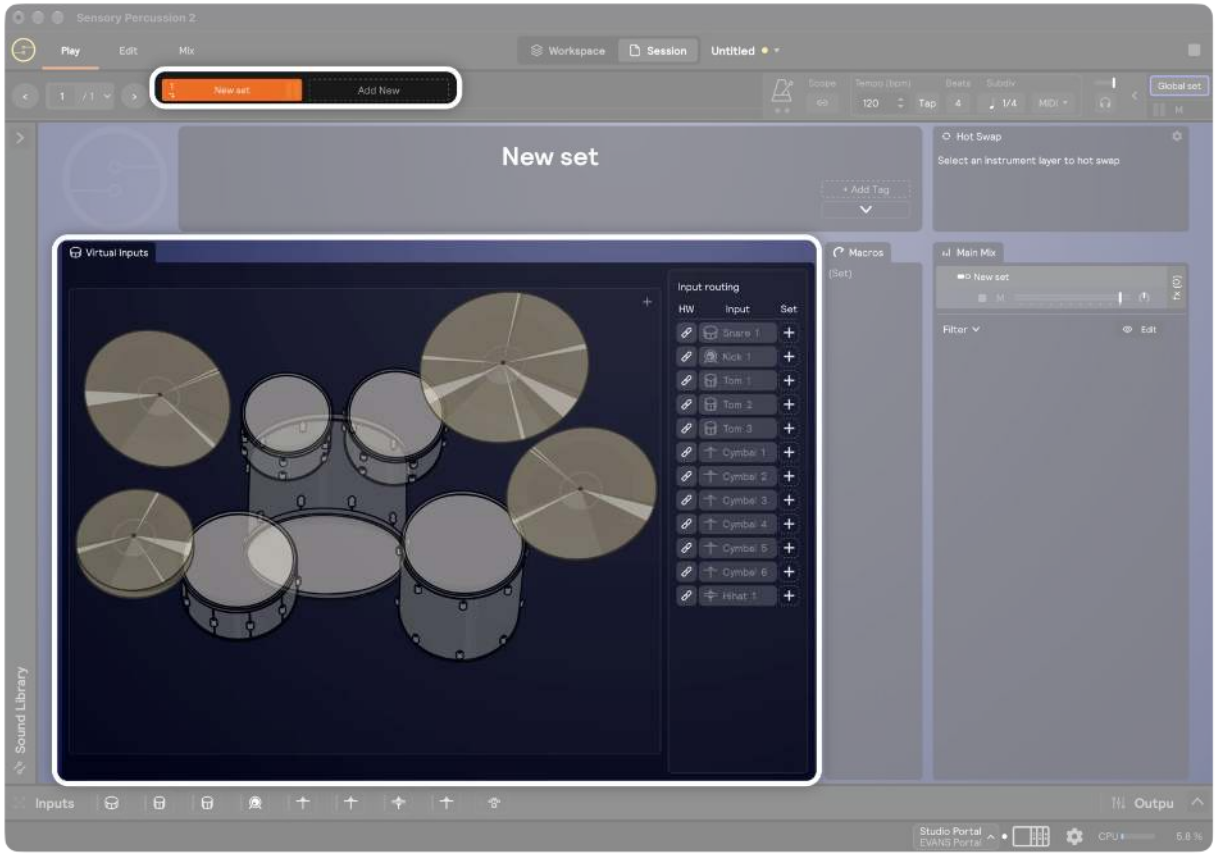


Figure 16: A new, empty set in the Play view: the New set tab and Add New button, and the ghosted kit graphic with Input routing beside it

2. Load a drumset

Click the **+** at the top right of the kit graphic. The **Add drum kit** menu lists every drumset instrument, grouped by library: the Core Library, then each sound pack you've installed.

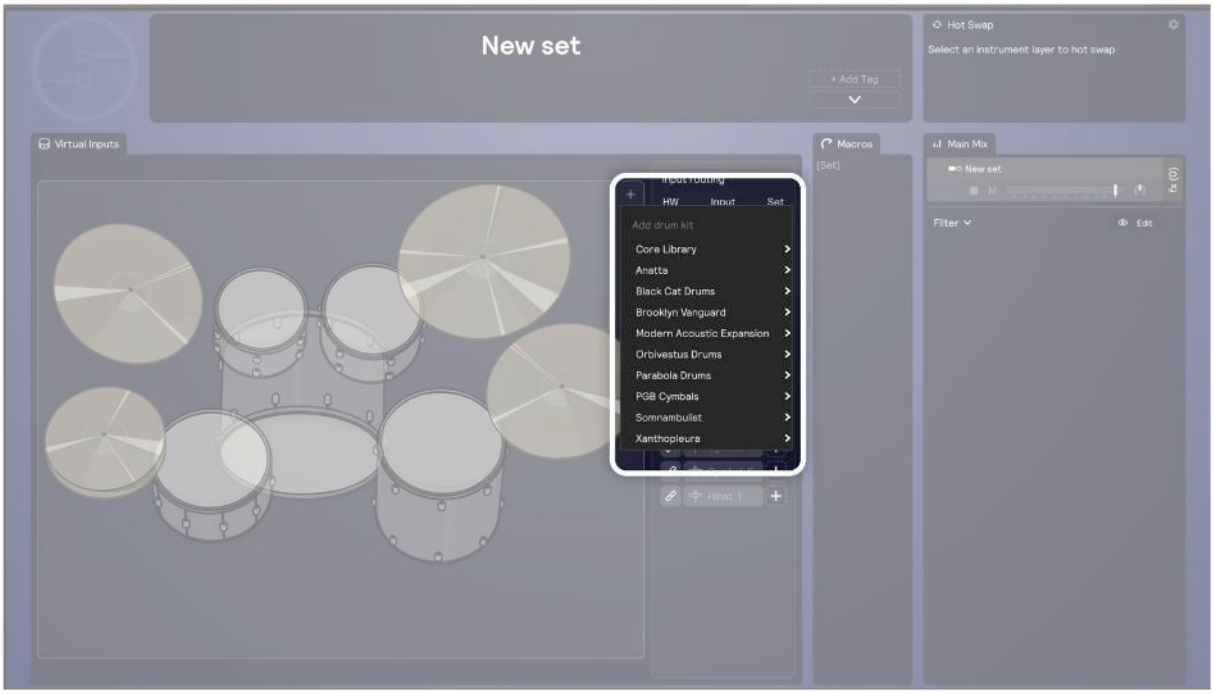


Figure 17: The Add drum kit menu open from the + at the top right of the kit graphic, listing the Core Library and installed sound packs

Pick one, and its drums are mapped across the drums your hardware is sending: its snare to your snare, its kick to your kick, and so on. Hit your drums: you're playing a full kit.

You can also drag a drumset from the library's **Instruments** tab onto the kit graphic.

3. Swap drums with Hot Swap

Like the kit, but want a different snare? Use Hot Swap:

1. Click the snare in the kit graphic. The **Main Mix** panel filters to that drum and selects its instrument, and the **Hot Swap** panel shows it.
2. Click the arrows to page through similar snares. The name next to the right arrow is the one that comes next. Or open the drop-down to see every match.
3. Keep playing while you swap. The new snare takes over the same drum, with no rewiring.



Figure 18: The snare selected in the kit graphic: Main Mix filtered to Snare 1 with Acedia Snare selected, and the Hot Swap panel showing Acedia Snare with 120 matches

Do the same for any drum. To swap the whole drumset at once, click its layer in **Main Mix** instead. To clear the filter, click the × at the right of the orange **Filter** bar.

4. Fill a blank drum

If one of your drums has no sound yet, for example a tom that the drumset doesn't cover, hover over it in the kit graphic. A + appears on its head (on a cymbal, on the bell). Click it for a menu titled with the input it fills:

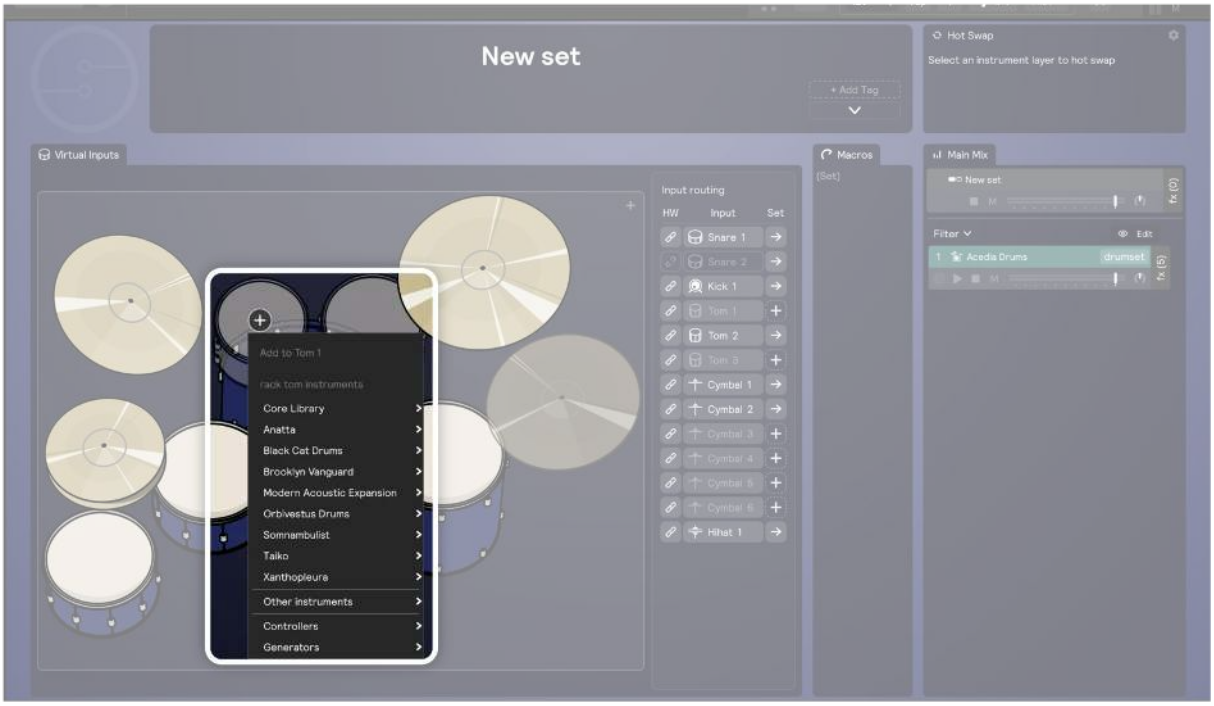


Figure 19: The + on an empty Tom 1 and its Add to Tom 1 menu: rack tom instruments by library, Other instruments, Controllers, and Generators

The instruments for that kind of drum come first, grouped by library, followed by **Other instruments** and blank **Controllers** and **Generators**. Whatever you pick is wired to that drum straight away. To layer a second sound on a drum that already has one, right-click the drum for the same menu.

For inputs that aren't drums, like a MIDI controller, a pad, or a mic, use the dashed **+** next to the input in the **Input routing** list. See Adding instruments to an input.

5. Make it yours

- **Mix it.** Use the faders in the **Main Mix** panel to balance the drums, and mute or solo them as you work.
- **Shape it.** Turn the knobs in the **Macros** panel. Each macro can change several settings at once, so they're a quick way to change a set's character.
- **Keep it.** Save the session (⌘ + S). To reuse a drum you've tweaked in other sets, save it as an instrument: open the preset menu in its header in the Edit view and choose **Instruments → Save current as instrument…**. See Instruments.

Going further

Everything above uses ready-made instruments. To design your own sounds, head to the **Edit view**, where every layer is laid out as a tree of modules. How Sensory Percussion Works explains how those pieces fit together.

A few ways to start:

- **Add a module.** On an empty layer, click **+ Add Module** and choose from **Generators**, **Controllers**, or **Instruments**.
- **Build from samples.** Add a Drum Pads controller from **+ Add Module → Controllers**, then drag samples from the library onto its pads, one zone per pad.
- **Use your own sounds.** Bookmark your own sample folders in the library: click the **+** next to **Folders**. You can then drag in your samples, and sets and layers you've saved there.
- **Organize what you build.** Select modules and use **Group into…** to wrap them in a controller. See Grouping modules into a controller.

For specific techniques, browse the How To section.

Video Tutorials

These video tutorials can also be found as a playlist on the Sunhouse YouTube channel.

Getting Set Up

Navigating the Software

Training & Input Settings

Play/Edit/Mix Views

Intro to Modules

The Sampler

The Sequencer

The Ableton Plugin

MIDI Out

Analog Audio Inputs

Recording

Pitch & Scale

Hardware Overview

Note:

Please click the link below to review important safety notices about the Evans Portal and Sensor devices.

Sensory Percussion Sound System Safety

EVANS Sensory Percussion Portal



Figure 20: A photo of the portal with every type of cable plug lined up with its corresponding input plug.

The EVANS Sensory Percussion Portal allows you to connect up to 7 Drum Sensors and a range of other devices to the Sensory Percussion software. It also includes many output options for monitoring your sound or sending it to a PA or mixing board.

Front Panel



Figure 21: A photo of the portal showing the front panel where you plug in the sensors and other inputs.

Sensor Inputs (1-7)

The EVANS Sensory Percussion Portal include 7 Sensor inputs - these inputs are “plug-and-play” with no gain adjustment or phantom power setting required. Use the included 3.5 mm TRS cables

to connect your Sensors to the EVANS Sensory Percussion Portal. When the cable is plugged into the Sensor Inputs, you will see the indicator light on the top of the EVANS Sensory Percussion Portal light up for that channel.

Combo XLR/Instrument inputs (A/B)

These two inputs are “Combo” input sockets and can be used to connect microphones, instruments (like guitars) or line-level signals. The input accepts standard XLR plugs and 1/4” jacks (TS or TRS). See Combo XLR/Line Input Controls for more information on configuring these inputs.

Built-in Microphone

The EVANS Sensory Percussion Portal comes with a built-in MONO Microphone. This Microphone is used by the software for advanced automatic cross-talk cancellation and can also be accessed as a microphone source in the software.

Headphone Outputs

Connect one or two pairs of stereo headphones to the 3.5 mm and 1/4” headphone inputs. The two jacks share the same output channels and are controlled together by the Headphone Volume knob on the top of the EVANS Sensory Percussion Portal.

Back Panel



Figure 22: A photo of the back panel showing where you plug in the main and aux outputs, as well as the line-inputs, ADAT output, MIDI outputs, and power switch and plug.

Main Outputs (L/R)

The EVANS Sensory Percussion Portal includes two balanced analogue line outputs on 1/4” jack sockets. The output jacks accept either TRS (for balanced) or TS (for unbalanced) plug types.

These are the outputs to drive the primary monitoring system (a house PA for example). The Main Outs can be controlled with the Main Outs Volume Knob on the top of the EVANS Sensory Percussion Portal.

Auxiliary Outputs (5-8)

These Line Outputs work just like the Main Outputs except they do not have a dedicated hardware volume knob. Use these for extra speakers, submixes, or whatever you like!

Line-level Inputs (C/D)

The EVANS Sensory Percussion Portal includes an additional 2 balanced line-level inputs. Use TRS cables for balanced or TS cables for unbalanced

ADAT Output (1-8)

The EVANS Sensory Percussion Portal includes a TOSLINK connector to send an additional 8 channels of digital audio in ADAT format to any device with a compatible ADAT Input. These additional output channels are configurable within the Sensory Percussion software.

MIDI-Out (5-pin)

Use the 5-Pin MIDI DIN sockets to send MIDI through the EVANS Sensory Percussion Portal to older devices that don't support USB.

Power

Use the included 12-volt DC, 2-amp AC adaptor (PSU) to power the EVANS Sensory Percussion Portal interface. *Note: The Portal cannot accept power via its USB-C port)*.

USB-C Port

USB 2.0 port - Type C Connector. Please use the supplied cable to connect your EVANS Sensory Percussion Portal to your computer. If your computer does not have a USB-C port, we strongly recommend using only USB-Certified Type A-to Type C cables or adapters. Using an uncertified cable can cause permanent damage to your EVANS Sensory Percussion Portal device and void your warranty.

Kensington Lock security slot

Use this slot to secure your EVANS Sensory Percussion Portal to whatever you like.

Top Panel



Figure 23: A photo of the portal from the top, showing the knobs and switches.

Sunhouse logo (link light)

The Sunhouse logo in the top-left corner lights up to show what Sensory Percussion is using the Portal for:

Logo	Meaning
Solid	The Portal is your main interface.
Pulsing (on for 1.5 seconds, off for half a second)	The Portal is a sensor expansion.
Off	Sensory Percussion isn't running, or isn't using this Portal.

On Windows, the logo doesn't pulse: every connected Portal's logo is solid while Sensory Percussion is using a Portal.

The logo goes dark shortly after you quit Sensory Percussion. The numbered lights above the **Sensor** jacks are separate: they come from the hardware itself and light whenever a sensor is plugged in.

Combo XLR/Line Input Controls

Each Combo Input Channel on the front panel comes with a line/instrument, 48v phantom power switch, and a gain knob. You will want to adjust these switches depending on your input source.

+48v Phantom Power When this switch is set to +48v the EVANS Sensory Percussion Portal will provide the standard 48v phantom power to any XLR input. Note that this setting does not apply when 1/4" jacks are plugged in. *Note: Do not connect anything other than a microphone to the XLR input – especially if phantom power is enabled – or you might seriously damage your gear and void your warranty.*

line/instrument Set this switch to **inst** when you would like to use hi-impedance instruments, like guitars. Set it to **line** for line-level sources. This switch only applies to devices using a 1/4" plug type.

Gain Use the Gain Knob to set the input gain on your microphone or device. Use the input meters within the Sensory Percussion software to monitor your gain level and to check if your input is peaking.

Example use cases

Input device	Input type	+48v	line/inst
Condenser microphone	XLR	+48v	–
Dynamic microphone	XLR or 1/4"	–	–
Guitar	1/4"	–	inst
Synth	1/4"	–	line

Note: Please always follow the manufacturer's instructions for your particular microphone or device

Headphone Volume Knob

This knob controls the volume of the two headphone jacks on the front panel. The two headphone ports are always at the same volume.

Main Output Volume Knob

This knob controls the volume of the two Main Outs (L/R) on the back panel.

EVANS Sensory Percussion Portal Channel List

Input Channel	PORTAL Name
1	Mic/Line A
2	Mic/Line B
3	Line-In C
4	Line-In D
5	Sensor 1
6	Sensor 2
7	Sensor 3
8	Sensor 4
9	Sensor 5
10	Sensor 6
11	Sensor 7
12	Built-in Mic

Output Channel	PORTAL Name
1	Main Out L
2	Main Out R
3	Headphone L
4	Headphone R
5	Aux Out 5
6	Aux Out 6
7	Aux Out 7
8	Aux Out 8
9	ADAT Out 1
10	ADAT Out 2
11	ADAT Out 3
12	ADAT Out 4
13	ADAT Out 5
14	ADAT Out 6
15	ADAT Out 7
16	ADAT Out 8

Sensory Percussion Drum Sensors



Figure 24: A photo of three SPV2 sensors arranged diagonally in a line

The Drum Sensors use contactless sensing technology to track your playing with maximal responsiveness. The sensors use a 3.5 mm TRS cable to connect to the EVANS Sensory Percussion Portal. When the sensor is correctly connected, you will see an indicator light turn on. Use the thumb screw on the top of the Sensor to lower the drum clamp to attach it to your drum.

The Sensor is designed to fit most standard snares and toms with metal or wood hoops and kick drums with wood hoops.

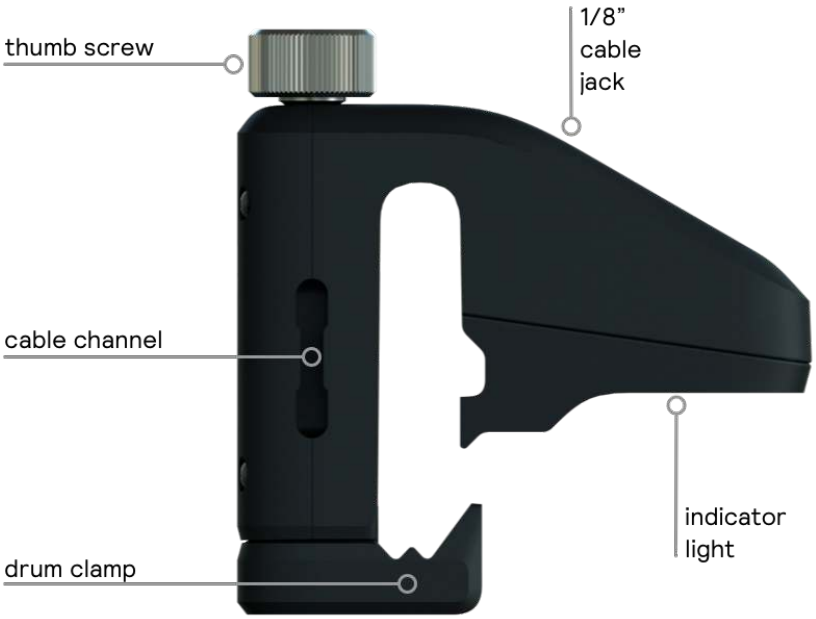


Figure 25: An overview of the Drum Sensor features

Sensory Percussion Cymbal Sensors



Figure 26: A photo of an Evans db One cymbal with the Sensory Percussion cymbal sensor attached

The Sensory Percussion Cymbal Sensors use the same contactless sensing technology as the drum sensors. Usable on any cymbal stand with nothing attached directly to the cymbal. The sensors use a 3.5 mm TRS cable to connect to the EVANS Sensory Percussion Portal. When the sensor is correctly connected, you will see an indicator light turn on.

The cymbal sensor is designed to work seamlessly with EVANS db One cymbals.

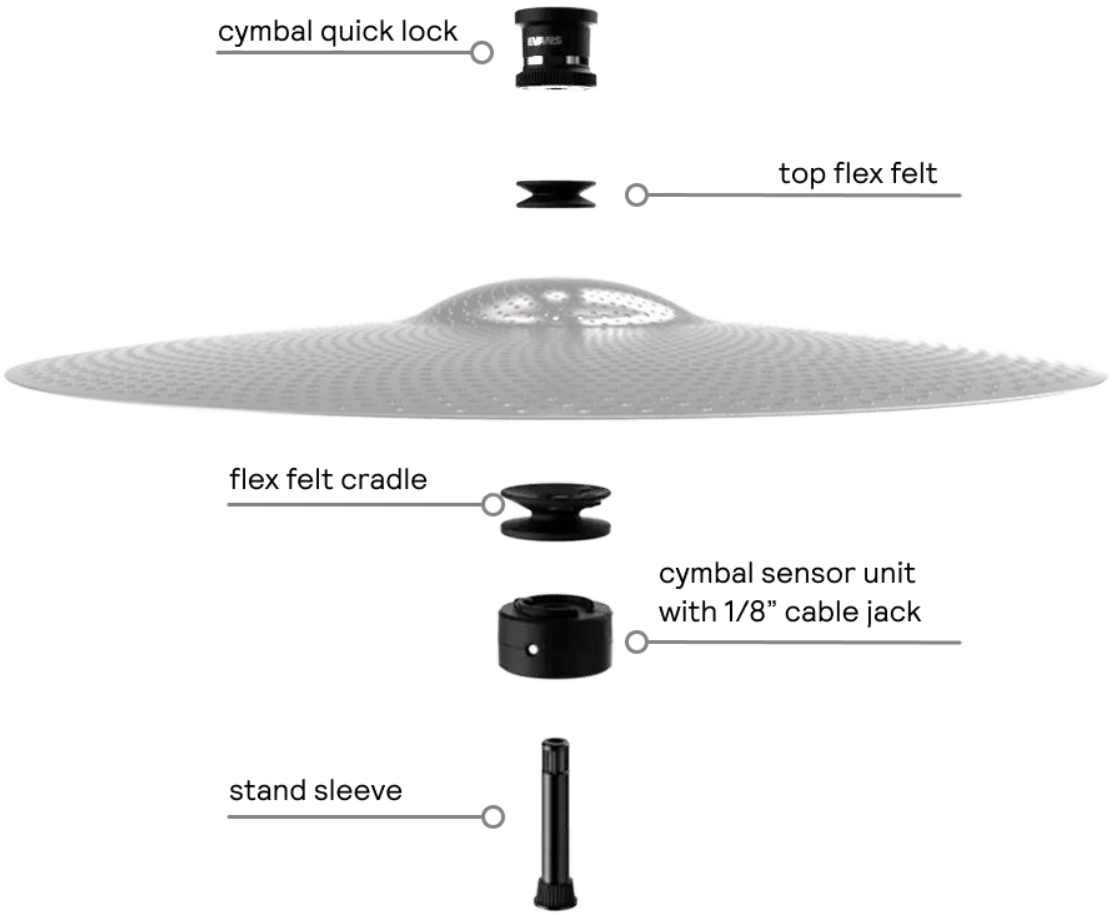


Figure 27: An overview of the Cymbal Sensor features

Sensory Percussion Hi-hat Sensors



Figure 28: A photo of an Evans db One hi-hat with the Sensory Percussion hi-hat sensor attached

The hi-hat sensor attaches to the top of the hi-hat stand, which is the part of the cymbal you actually hit. We've included a gooseneck cable arm that get the cable up and away from the cymbals.

The Sensory Percussion Hi-hat Sensors use the same contactless sensing technology as the

drum sensors. The sensors use a 3.5 mm TRS cable to connect to the EVANS Sensory Percussion Portal. When the sensor is correctly connected, you will see an indicator light turn on.

The cymbal sensor is designed to work seamlessly with EVANS db One cymbals.

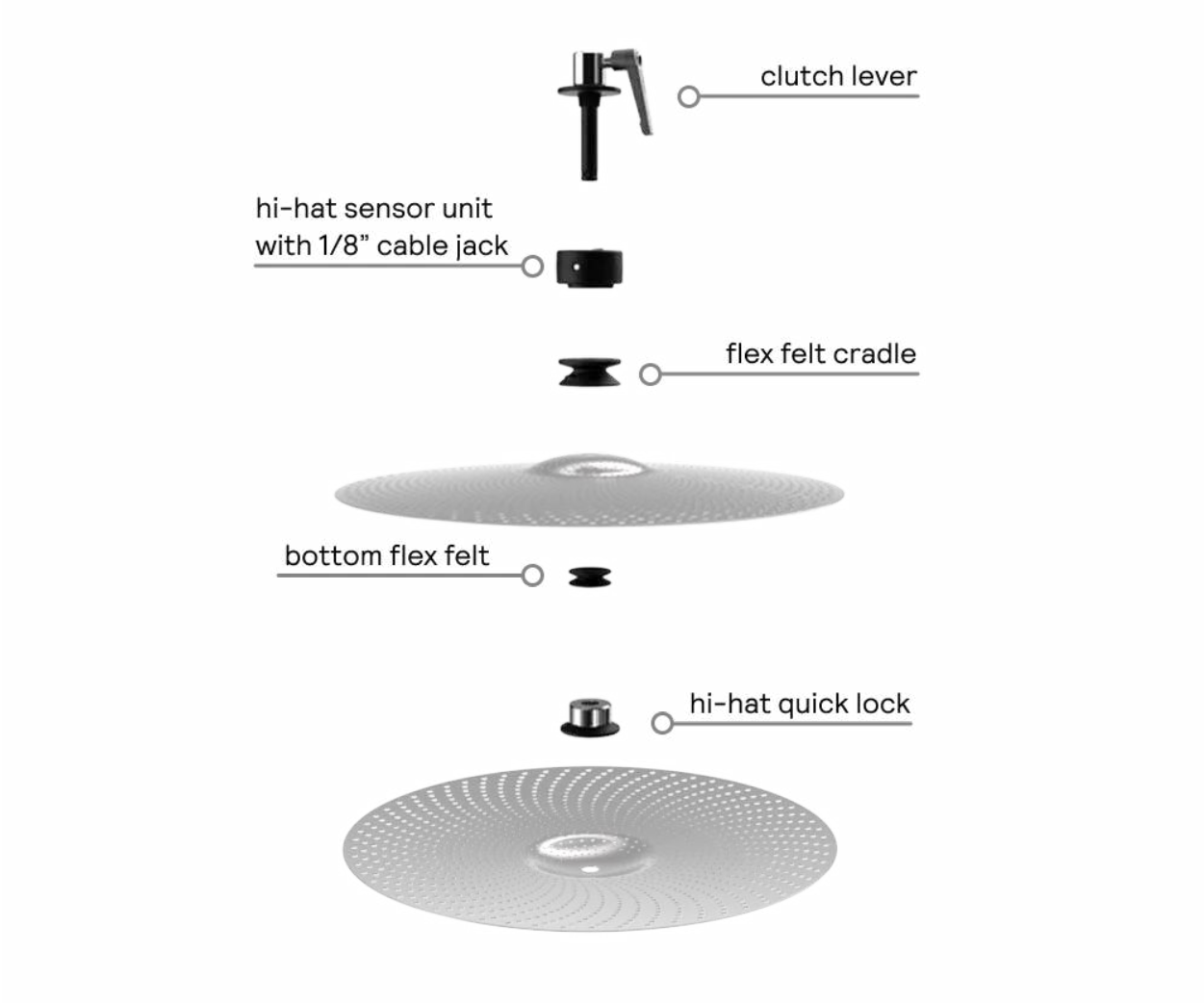


Figure 29: An overview of the Hi-hat Sensor features

EVANS EMAD Bass Drumhead Adapter

When using EVANS EMAD bass drumheads with Sensory Percussion, you will need to use the included adapter to allow the drum sensor to properly attach to the drum. Simply snap the adapter onto the sensor and you’re good to go.

Software Overview

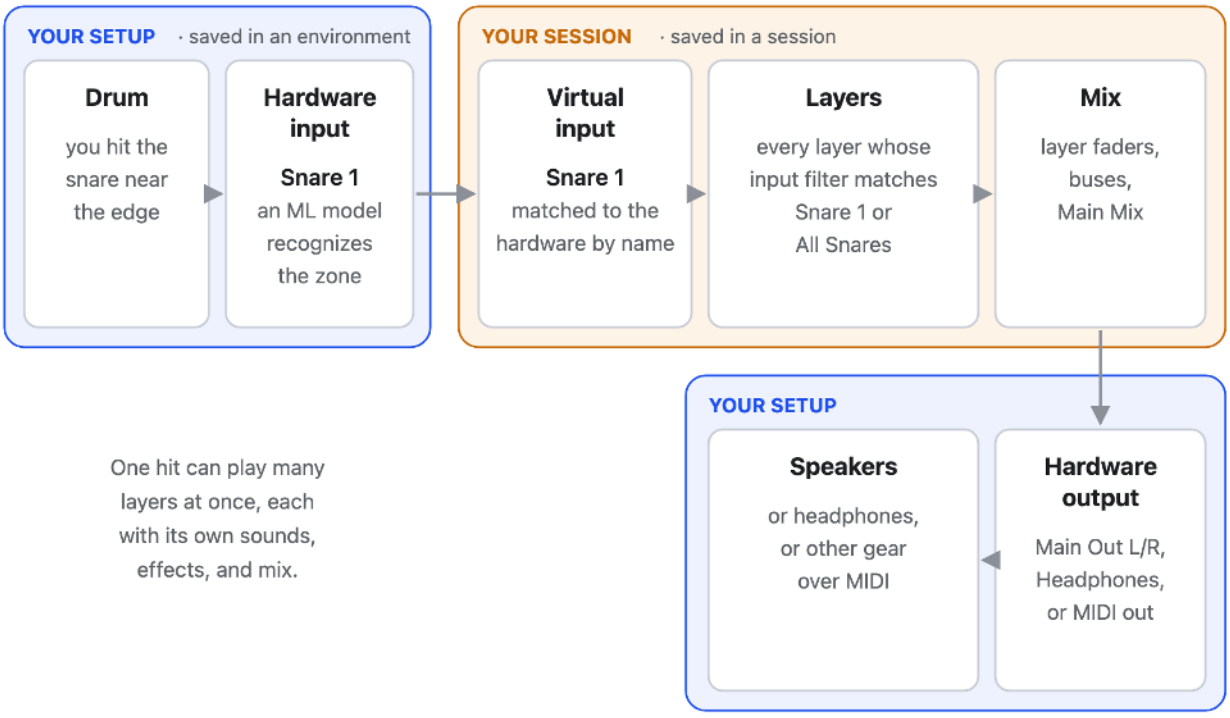
Video: Sensory Percussion 2 Drum School: Navigating the Software

Video: Sensory Percussion 2 Drum School: Play/Edit/Mix Views

How Sensory Percussion Works

This page is the map for the rest of the manual: how a hit becomes sound, and how the pieces fit together. To start playing first, see Software First Steps.

From hit to sound



Two things make this work:

- **Inputs are matched by name.** Your hardware input `Snare 1` feeds the virtual input `Snare 1`, and sets are written for virtual inputs, not for your particular drums. That's why a set from the library plays on your kit.
- **One hit can play many layers.** Every layer whose input filter matches, like `Snare 1` or `All Snares`, plays, each with its own sounds, effects, and fader.

What the sensor hears

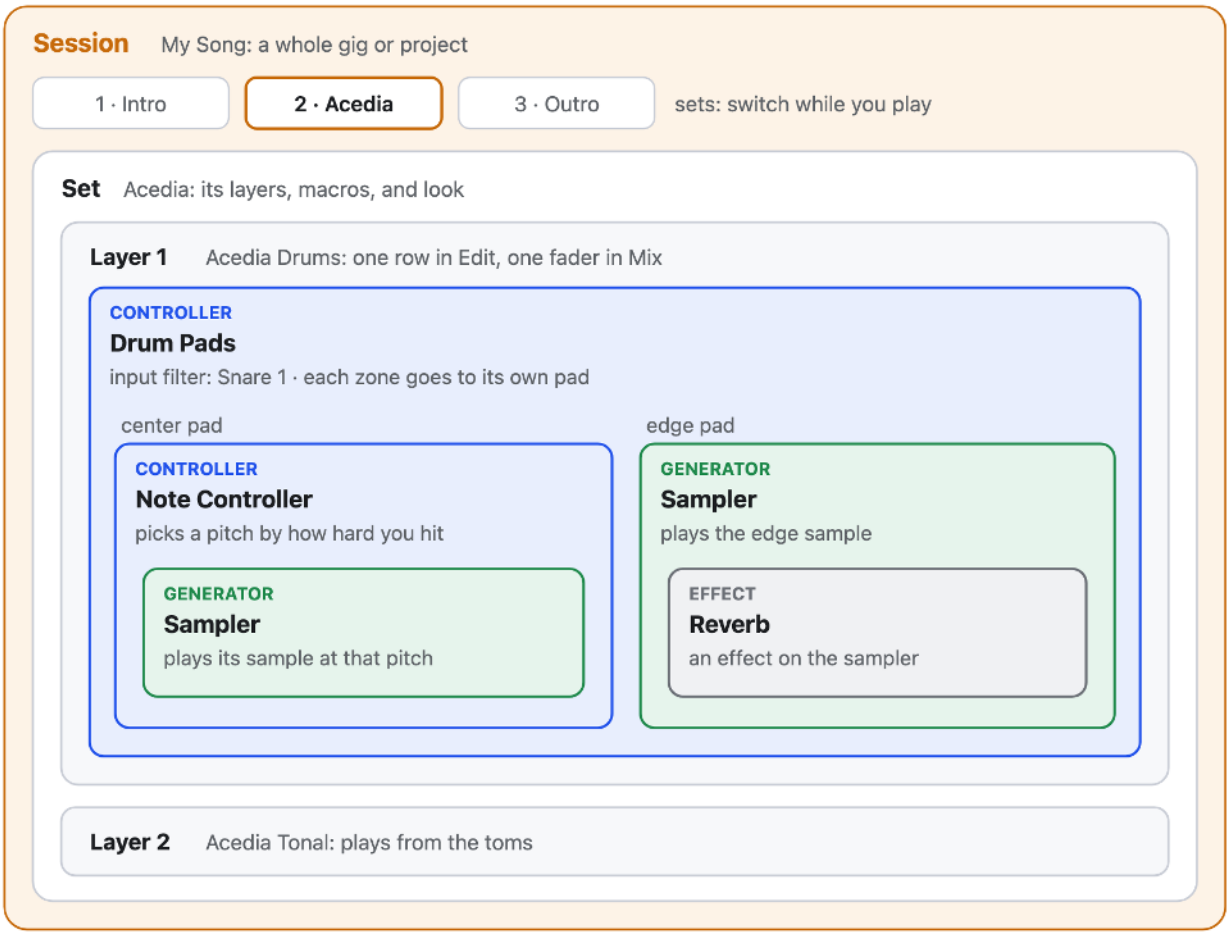
A conventional trigger tells the computer *when* you hit and *how hard*. The Sensory Percussion sensor also hears *where* and *how*: every hit carries its **zone**, which can be a place on the drum like the center or edge, or a gesture like a rimshot, a stickshot, or hitting the rim with the shoulder of the stick, its **velocity**, its **timbre** (a smooth scale between zones, like how far from center toward the edge), and its **speed** (how close together your hits are).

A machine-learning model listens to each hit and recognizes which zone it came from. On drums, the hits you play when you train teach the model your drum and your playing, so a few minutes of good training make everything else work better. Cymbals and hi-hats use a model that's fully pre-trained, so there's nothing to train.

Your setup and your music are separate

The diagram's colors mark the two halves. **Your setup** (your audio interface, hardware inputs and outputs, MIDI, and OSC) is the same whichever session is open, and is saved in an environment. **Your music** (sessions, sets, and sounds) is the same whichever setup you plug into, and is saved in a session. So a session built at home plays on stage, and you can switch setups without touching your sessions.

How a session is organized



| | What it is | |—|—| | **Session** | A file (`.sp2`) holding your sets, like a gig or a project. You work either in the always-saved **Workspace** or in a saved session. | | **Set** | One sound world, like a song: its layers, macros, and look. You switch sets while you play, and the Global Set is always playing alongside. | | **Layer** | One part, like the drums or the chords: a row in the Edit view and a fader in the Mix view. | | **Module** | The building blocks inside a layer. Modules can hold other modules. |

Modules

- **Generators** make sound or send messages: samplers, audio inserts, MIDI generators.
- **Controllers** decide which of the modules inside them plays, and how. Drum Pads sends each zone to its own module, a Sequencer steps through its modules, and a Note Controller picks a pitch.
- **Effects** process the sound of the module they sit on.

Controllers can hold any module, including other controllers, and this nesting is where most of the

power comes from. In the diagram, a center hit goes through Drum Pads to its center pad, where a Note Controller picks a pitch from how hard you hit and the Sampler inside it plays at that pitch. An edge hit goes to a different Sampler with a Reverb on it.

Making it respond to your playing

- **Input filters decide which hits reach a module.** Modules inside inherit their parent's filter unless they have their own. See Input Filtering.
- **Assignments let your playing move any control.** Right-click almost any knob to assign it to velocity, timbre, speed, the hi-hat pedal, an LFO, or a MIDI controller. Hitting harder can open a filter, or moving toward the edge can add reverb.

Where to go next

- The three main views: **Play**, **Edit**, and **Mix**.
- To get sounds without building anything, try the library, instruments, and Hot Swap.
- To build your own, start with Build Your First Set.

> **Note:** Coming from Sensory Percussion 1?
>
> In version 1, each sound belonged to one drum's channel. In version 2, sounds live in layers that any drum can play, and each layer is mixed on its own. Your setup is saved separately from your sessions.

Global Controls



These panels stay consistent across Play/Edit/Mix views, hence the name “global”.

The hardware panel

The hardware panel contains hardware inputs on the left and hardware outputs on the right. Here, you can see all the sensors or analog inputs (like vocal mics) you have connected, as well as your stereo output mixes. You can open and close this panel by clicking the arrow on the top-right of the panel, selecting “Show/hide hardware IO” from the “View” menu, or using the `option` + `⌘` + `I` shortcut.



Figure 30: A screenshot of the hardware input & output panel

The library panel

The library panel is where you can access saved sessions, Sunhouse library sets and samples, or building blocks for making your own sets like modules and effects. You can open the library by selecting “Show/hide library panel” from the “View” menu, or by using the `Option` + ⌘ + L shortcut.

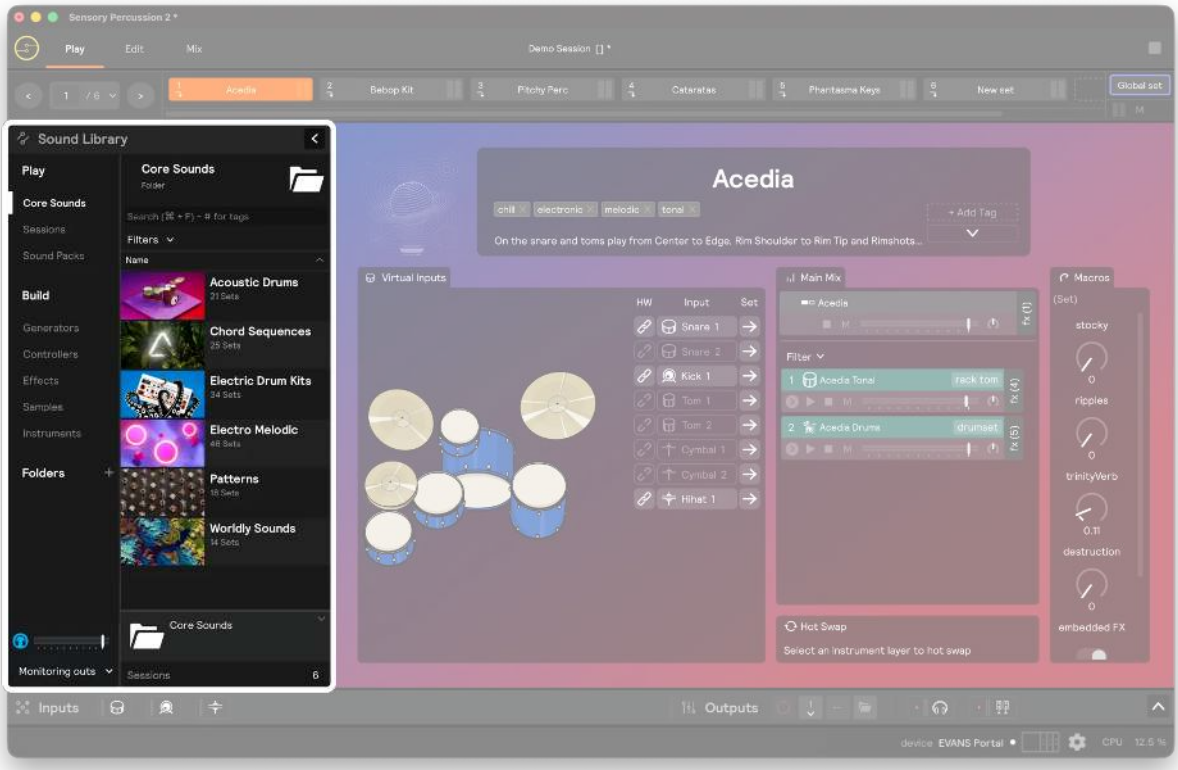


Figure 31: A screenshot of the library panel

Note:

Switching between `Play` and `Edit` view does not affect the `Library` and `Hardware Inputs` panels, meaning you can always have any combination of these two panels open or closed in either view:

Workspace / Session selector

At the very top of the window, the selector shows whether you're working in the always-saved workspace scratchpad or in a named, saved session, with the name of the parked session beside it. Click either side to switch; click the name tag for session actions like save and close.

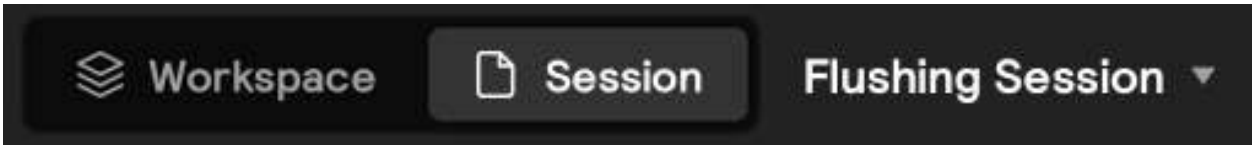


Figure 32: A screenshot of the workspace and session selector

See Workspace and Sessions for the full picture, including the name tag's states and how work moves from the workspace into a session.

Tempo bar

At the top of the window, the tempo bar holds the session's tempo controls: start/stop, the tempo itself with tap tempo, beats and subdivision, MIDI clock in and out, and the built-in metronome. By default every set shares one tempo, and the Scope button lets a single set have its own.

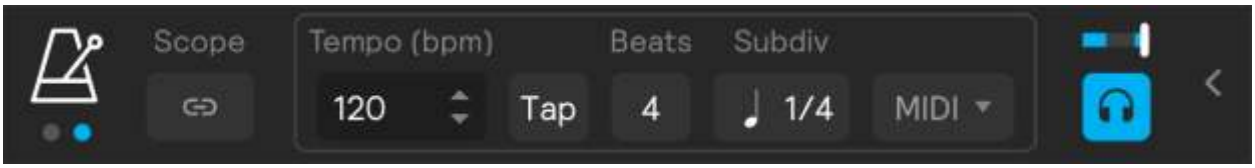


Figure 33: The tempo bar

See Tempo for every control, MIDI clock, and the metronome.

Set Manager

The set manager bar is at the top of the software in every view. It shows all of the sets that you currently have open. All of these sets together comprise your session. The left/right arrow on the left go to the previous/next set, and can be controlled via an assignment.



Figure 34: A screenshot of the set manager bar

The set manager also has a vertical dropdown view, which you can access by clicking the three dots on the far right of the set manager bar. This dropdown is handy for when you have more sets in your sessions than you can see at one time in the horizontal bar. It also has volume meters next to each set so you can see which set is currently outputting audio.

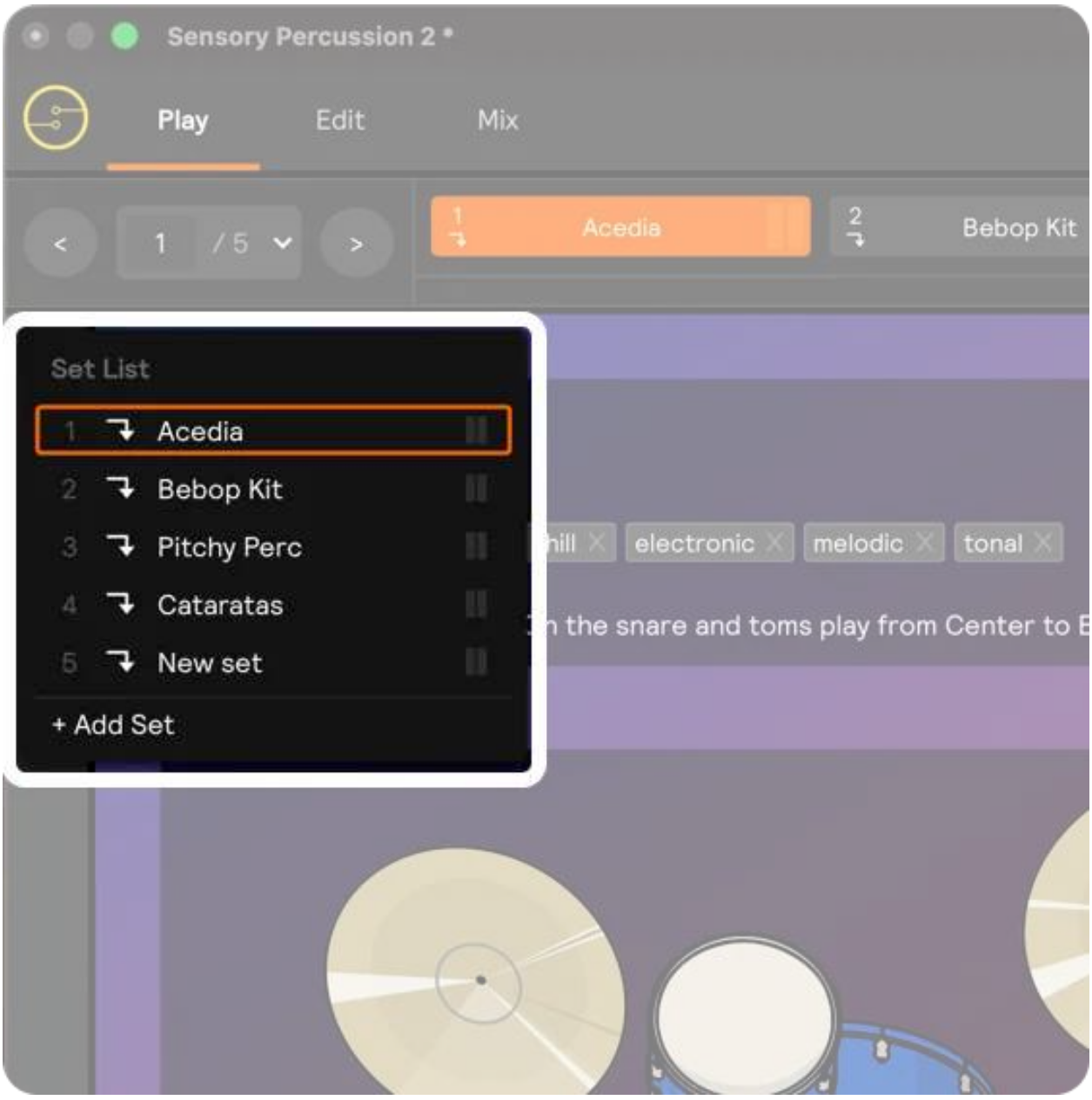


Figure 35: A screenshot of the set manager bar with the dropdown open

Set Cutoff Modes By default each set's cutoff mode is set to `Nothing Plays Thru`, which means that when you transition to the next set, all sounds produced by the original set will immediately be choked.

If you right-click on the set in the set manager, you can change its cutoff mode to either `Samples & Effects Play Thru`, or `Effects Only Play Thru`.

In `Effect Only Play Thru` mode, if you have an effect with a "tail" (like a reverb or delay)

active anywhere in the set, then those effects will continue to ring out into the next set.

In `Samples & Effects Play Thru` mode, samplers will also continue playing into the next set. Usually, this means that the tail of a playing sample will be allowed to ring out and eventually terminate as you switch to the next set. However, if you have an infinitely looping sampler, it *will* continue looping indefinitely within the next set.

Both of these `Play Thru` modes will only store playing audio for a few set transitions. This means, for example, if you have an indefinitely looping sampler triggered in a set that is in `Samples & Effects Play Thru` mode, it *will* continue looping as you switch to the next two sets. However, it will stop looping after you transition to the third set. If you need a sample to loop indefinitely as you change sets many times throughout your session, consider using the Global Set, which is designed for this – and similar – kinds of actions.

Restart clock on select The same right-click menu has a **Restart clock on select** option, just below **Cutoff Mode**. Normally the tempo clock keeps running through a set change, and Metros in the new set come in wherever the beat already is. Tick this option for a set that needs to start on a downbeat: selecting it restarts the clock from beat 1. See Tempo.

Global Stop

If you want to immediately stop all sound being produced by your Sensory Percussion sets, click the Global Stop button. It stops all audio, stops the tempo clock, and stops every Metro in the playing set and the metronome click, including Metros running on their own clock or on MIDI clock. It is an assignable parameter as well: right-click it and add an assignment to stop everything from a MIDI device or one of the zones of your drum.

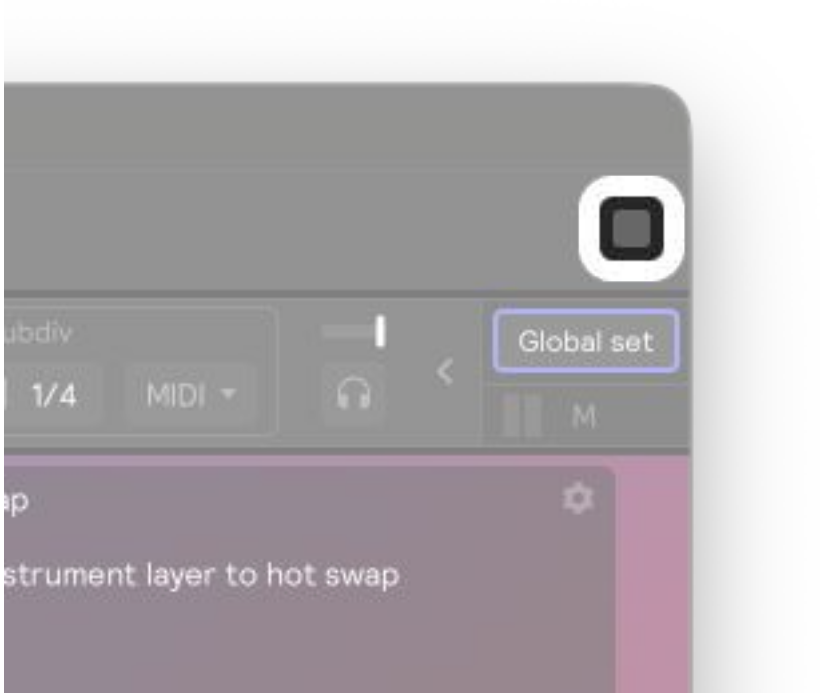


Figure 36: A screenshot of the global stop button

Note:

When the tempo is following an external MIDI clock, Global Stop doesn't stop that clock: the tempo keeps following the device. Metros still stop, and wait for the device's next start.

The footer

The strip along the bottom of the window has two rows. The upper row holds compact cards for your hardware inputs and outputs on the left, and the environment, audio settings, and CPU meter on the right. The lower row is the hint bar.

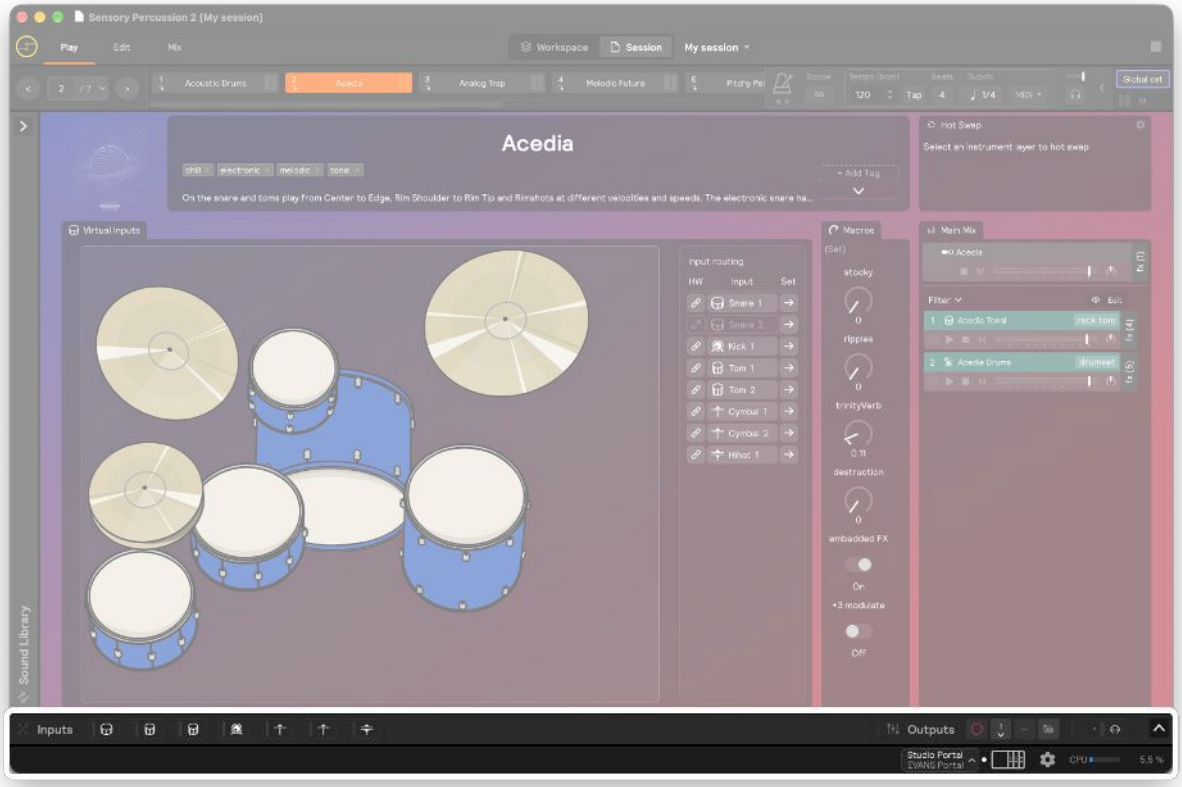


Figure 37: The footer: input and output mini cards, the environment button, the settings gear, and the CPU meter

Part	What it does
Inputs and **Outputs**	Compact cards for every hardware input and output, with the record panel next to the inputs. The arrow at the right opens the full hardware panel.
Environment	Shows the active environment (or **No environment**) above your audio devices: *input* → *output*, or one name when both are the same device. An orange dot means unsaved changes. A **+1** after the input means a sensor expansion is in use, orange if it isn't found. Click it to load or save an environment, or choose **Manage environments…**.
Settings (gear)	Opens the settings window.
CPU	How hard the audio engine is working. See below.

Part	What it does
Hint bar	Describes whatever control the mouse is over. Live readouts, like the CPU meter, add their current numbers.

CPU meter The CPU meter shows how much of the time available for each block of audio the engine is using.



Figure 38: The CPU meter in the footer

Element	What it shows
Bar and **percentage**	The load, smoothed over recent blocks.
Lighter bar	The single worst block since the last update, so a short spike shows even when the smoothed load barely moves.
Light blue line	The recent peak. It holds for two seconds, then falls back slowly.
Red dot	A dropout: one block took longer than it had, which you'd hear as a glitch. The dot lights fully, then fades over about twelve seconds, so you can still spot a recent dropout after the glitch itself is over.

Hover over the meter to see the current peak and the number of dropouts since it was last reset. Click it to reset the peak line and clear the dot.

If the meter sits high or dropouts keep appearing, raise the buffer size in Settings → Audio, or reduce what the session asks of the engine.

Tempo

Every session has a single tempo that everything tempo-based runs on: Metros, tempo-synced effects like the Stereo Delay and Modeled Delays, the built-in metronome, and the MIDI clock sent to other gear. You set it in the tempo bar at the top of the window.

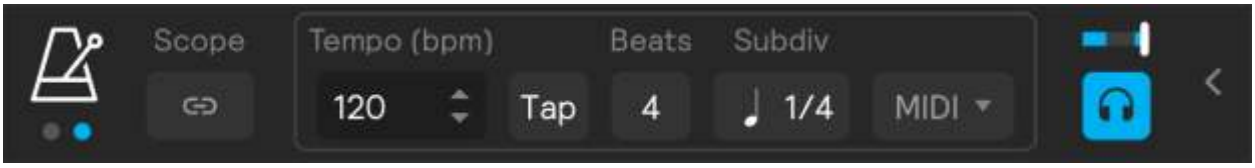


Figure 39: The tempo bar, following the global tempo with the metronome on

The tempo bar

Control	What it does
Start/Stop	The metronome icon at the left end. Starts and stops the tempo clock. The two dots below it blink on the beat. You can also press the space bar (the **Start/Stop Tempo Clock** shortcut, which you can change in Settings → Keyboard Shortcuts).
Scope	The link button. Grey with a joined link while the set follows the global tempo. Orange with a broken link once the set has its own tempo settings. See Giving one set its own tempo.
Tempo (bpm)	The tempo in beats per minute. Drag the value up or down, or click it to type.
Tap	Tap repeatedly to set the tempo by ear.
Beats	How many beats make a bar. This is what the accent on beat 1 counts.
Subdiv	The subdivision: the note value of one step of the grid, relative to the beat.
MIDI	Opens the MIDI clock routing. See MIDI clock.
Metronome	The headphone toggle and level slider at the right end. Turns the built-in click on and off. See Metronome.
Collapse	The small chevron at the right end. Folds the bar down to the Start/Stop button. Click it again to open the bar back up.

When the bar is collapsed, only the Start/Stop button, its beat dots, and the chevron to expand it are left:

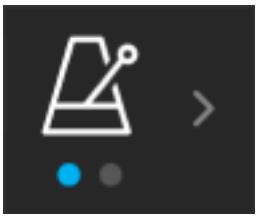


Figure 40: The tempo bar collapsed down to its Start/Stop button

The Tempo, Tap, Beats, Subdiv and MIDI controls sit inside a frame. The frame is grey while the set follows the global tempo, and turns orange, like the Scope button, once the set has its own.

One tempo for the whole session

Out of the box there is **one tempo for the whole session**. It doesn't matter which set you have on screen: changing the tempo, beats, subdivision, or either MIDI clock bus changes the global settings, and every set follows. Switching sets doesn't change the tempo.

Switching sets keeps the clock running

The clock keeps counting through a set change. When you switch sets, the Metros in the new set pick up the clock **where it already is** instead of jumping back to beat 1, so switching sets mid-bar doesn't restart the groove. A Metro that spans several bars keeps its place in the cycle too: switch during bar 2 of a 3-bar Metro and it comes in on bar 2.

Metros in the set you're leaving stop at the switch and stay stopped until you select that set again, whatever the set's cutoff mode.

> **Note:**
>
> A Metro whose **Clock Sync** scope is set to **start** only follows the global start and stop, not the global tempo. Since its beat isn't the global beat, it has nothing to line up with and restarts from beat 1. See Metro: Clock Sync.

Restart clock on select

If a set needs to come in on a downbeat, right-click it in the Set Manager and tick **Restart clock on select**, just below **Cutoff Mode**. Selecting that set then restarts the clock from beat 1.

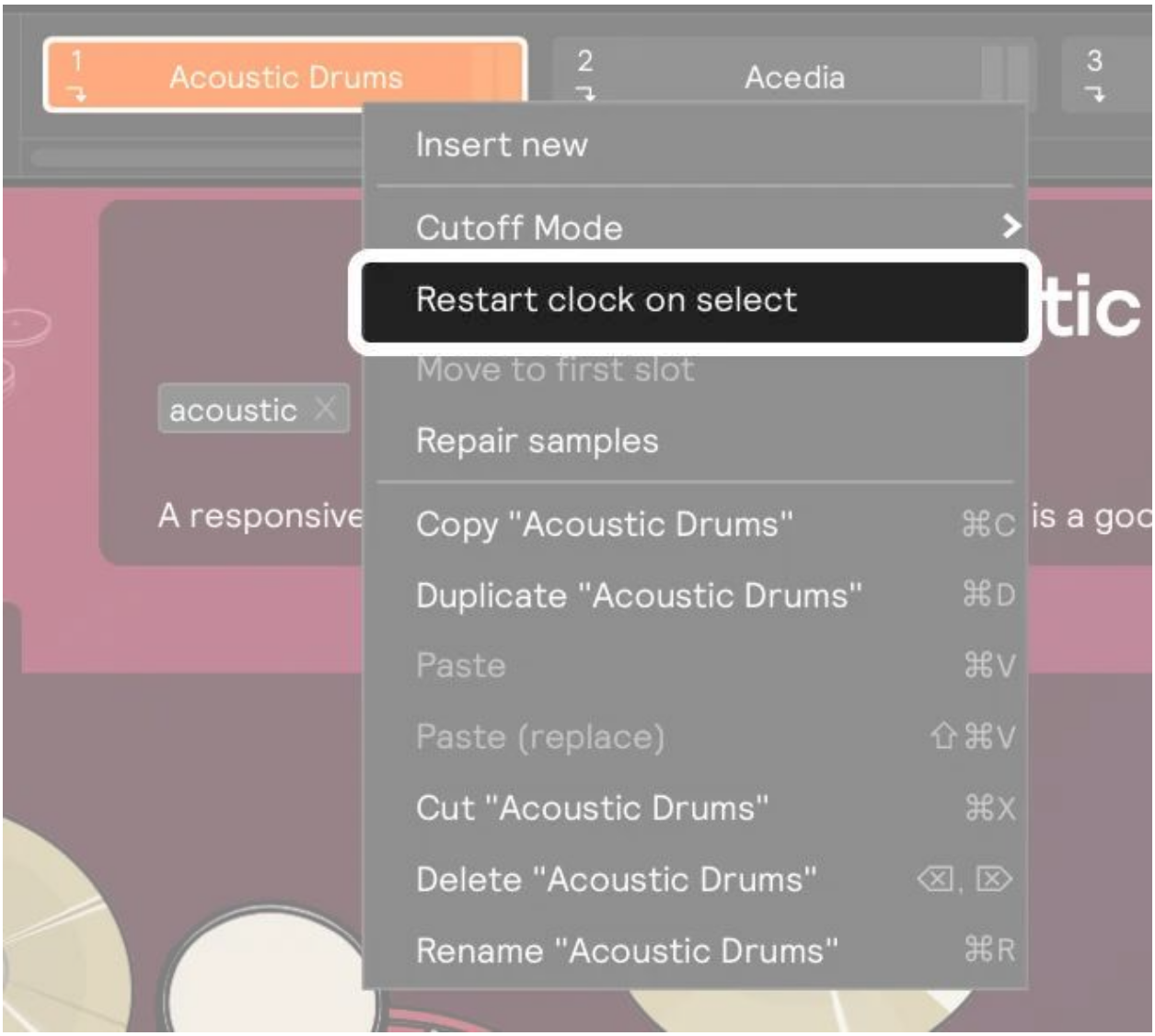


Figure 41: The set right-click menu, with Restart clock on select just below Cutoff Mode

This only applies to the internal clock. When the tempo is following MIDI clock, the external device decides where the downbeat falls and this setting has no effect.

Giving one set its own tempo

Click the **Scope** button so it turns orange, and the set you're looking at stops following the global settings. The tempo, beats, subdivision, and both MIDI clock buses now belong to that set alone. You can give it its own tempo or its own MIDI clock source without touching the rest of the session. Later changes to the global settings no longer reach it.

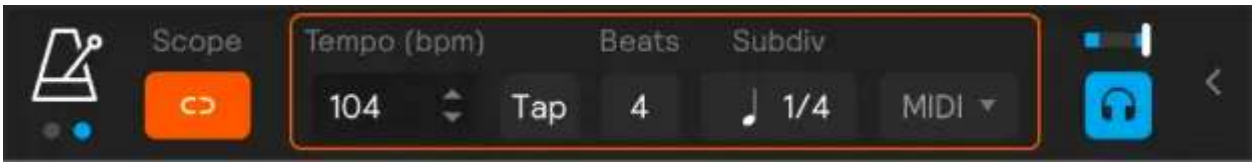


Figure 42: The tempo bar with Scope on: the set has its own tempo settings

Switching it on **copies the current settings onto the set first**, so nothing changes at the moment you click. The set carries on at exactly the tempo it was already playing, and you edit from there.

Click **Scope** again so it turns grey, and the set goes back to following the global tempo immediately.

The Scope button applies to the set you're looking at. With the Global Set on screen, it applies to the **currently playing set**, so the tempo bar always shows what you're actually hearing.

Tap tempo

Tap writes the tempo you tapped wherever the tempo is currently coming from: the playing set if it has its own tempo, otherwise the global tempo. A tap always changes the tempo you're hearing.

Tap is assignable, so you can tap the tempo from a footswitch, a pad, or a zone on your drum. Right-click it and add an assignment.

MIDI clock

Click **MIDI** to open the clock routing:

Control	What it does
Clock in	A MIDI bus whose clock drives the tempo instead of the internal clock. Its start, stop, and tempo drive the session. In the plugin, **host** follows your DAW instead; see Following your DAW.
Clock out	A MIDI bus the tempo sends its clock to, so other gear can follow Sensory Percussion. The MIDI hardware output on that bus needs its **sync** switch on, which it is by default.

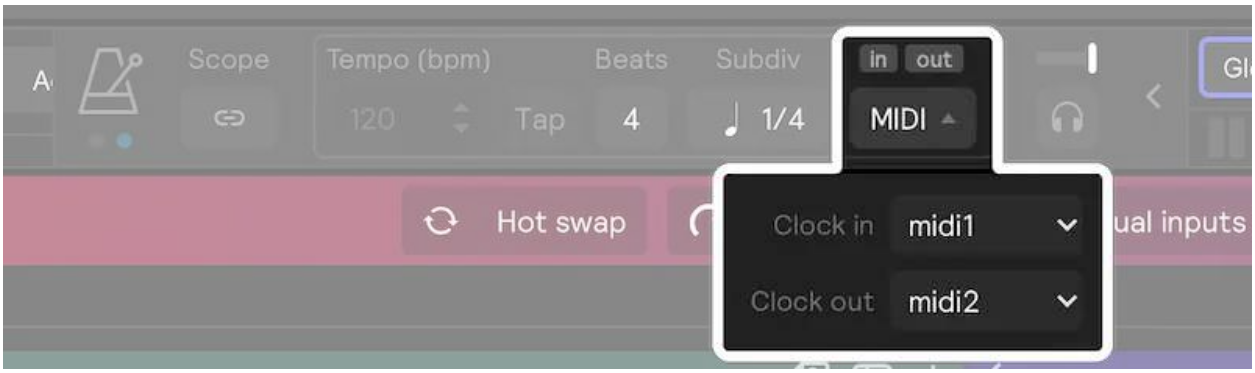


Figure 43: The MIDI clock routing, with Clock in and Clock out set. The external clock now owns Start/Stop, Tempo, and Tap

Small **in** and **out** tags above the **MIDI** button show which ones are set.

While a **Clock in** bus is set, the Start/Stop button, Tempo, and Tap grey out: the external clock owns them. Set **Clock in** back to **none** to return to the internal clock.

Like everything else on the bar, MIDI clock follows the Scope setting. A set with its own tempo can follow MIDI clock while the rest of the session runs on the internal clock, or the other way round.

> **Tip:**
>
> To send or receive MIDI clock, the MIDI device needs to be enabled in Settings → MIDI Devices first. To sync with a DAW on the same computer, use a virtual MIDI bus (the IAC Driver on macOS, or a virtual MIDI port on Windows). See How to set up MIDI routing.

Following your DAW (plugin)

In the Ableton plugin, **Clock in** also offers **host**, and a new session starts on it. The session's tempo then follows your DAW: pressing play in the DAW starts the clock, stop stops it, and the DAW's tempo drives it, including tempo changes while it plays.

If you start the DAW mid-bar, Metros come in on the right beat of that bar instead of treating the start as a downbeat, and when a loop wraps around they restart where the DAW's bar does. The DAW's beat is a quarter note, so set **Beats** to match the DAW's time signature.

> **Note:**
>
> DAWs don't send MIDI clock into a plugin, and a plugin can't send MIDI clock back to one. In the plugin, use **host** rather than a MIDI bus for **Clock in**. **Clock out** set to the plugin's MIDI output sends nothing your DAW can hear.



Figure 44: The tempo bar in the plugin, with Clock in set to host

Metronome

Every session has a built-in metronome click. Its controls sit at the right end of the tempo bar:

Control	What it does
Headphone toggle	Turns the click on and off. Off by default, and lights blue while on.
Level	The small slider above the toggle sets how loud the click is. Its meter shows the click playing.



Figure 45: The metronome controls: level slider above the headphone toggle

The click plays a higher accent on beat 1 of each bar and a lower tick on every other step of the grid. Set **Subdiv** to 1/8 and you get eight clicks per bar, with the accent still on beat 1. The click sound itself is fixed.

Where you hear it

The metronome only plays through your **monitoring outputs**: the same outputs you use to audition samples in the library, usually your headphones. It never reaches the main mix, any

other output, or a recording, so the click stays in your headphones and out of the audience's ears and your recorded files.

To make an output a monitoring output, open the hardware outputs panel and click the headphone icon next to that output's meter so it turns from grey to blue. This is the same setting used for auditioning samples. You can also tick outputs in the **Monitoring outs** dropdown at the bottom of the library panel's tab column.

> **Warning:**
>
> If no output is set as a monitoring output, there's nowhere for the click to go and you'll hear nothing. Turn on the headphone icon on at least one output first.

What it follows

The metronome follows the tempo bar completely: Start/Stop, **Tempo (bpm)**, **Beats**, and **Subdiv**, from the playing set if it has its own tempo and from the global settings otherwise.

The click has no start/stop of its own. It never plays by itself when a session opens; it starts only when you start the clock, and stopping the clock stops the click.

The on/off toggle is assignable like any other control, so you can turn the click on and off from a footswitch, a pad, or a control surface.

The metronome's on/off state and level are saved with the session. Older sessions get a metronome automatically when you open them.

> **Tip:** Want a custom click?
>
> The metronome's sound can't be changed. For a click with your own samples, accents, or patterns, use a Metro synced to the global tempo instead.

Stopping everything

The Global Stop button stops all audio, stops the tempo clock, and stops every Metro in the playing set and the metronome click, including Metros running on their own clock or on MIDI clock.

When the tempo is following MIDI clock, the tempo itself keeps following the external device, but the Metros still stop until the device sends its next start.

Session Folders and Checkpoints

A **session folder** keeps a session and everything it uses in one place: the `.sp2` session file, a `samples` folder, an `images` folder, and, once you create one, a `checkpoints` folder holding earlier versions of the session.

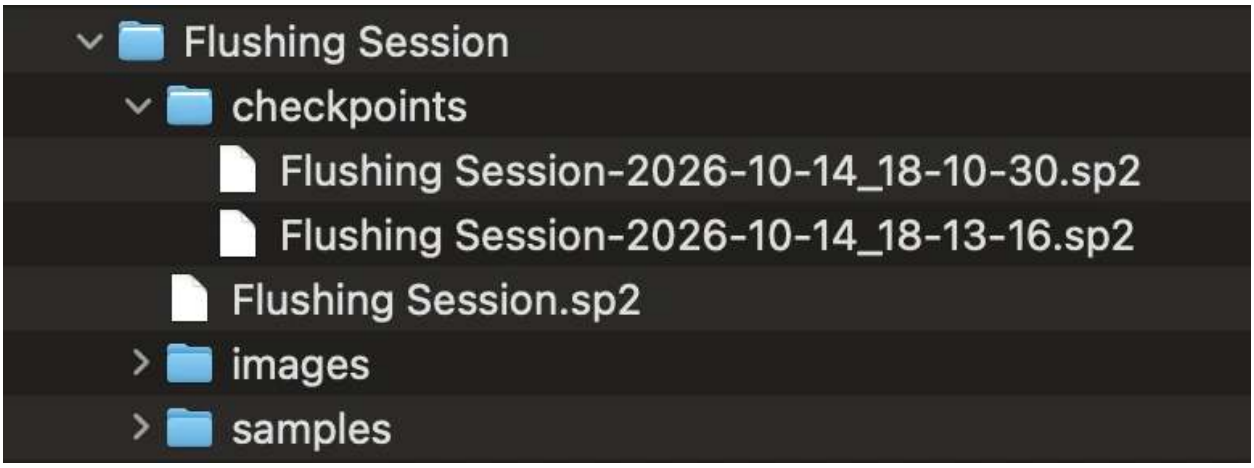


Figure 46: A session folder in Finder: the checkpoints, images and samples folders next to the session file

Because the session file records where its samples live relative to the folder, you can copy a session folder to another drive or another computer and it still opens with every sample in place.

Creating a session folder

Two commands in the File menu create one:

Command	What it does
Save as Session Folder	Wraps the session in a new folder without moving any samples. The folder gets the session file and empty `samples` and `images` folders; samples that live elsewhere on your drive keep pointing where they are. Use it to start keeping checkpoints straight away.
Collect Samples into Session Folder	The same, plus it copies every sample and image you added yourself into the folder and points the session at the copies. This makes the folder portable: use it before you hand a session to someone else or archive it. Core Library and sound pack samples aren't copied, so install those on the other computer too.

A session you've already saved is wrapped where it is: `My Song.sp2` becomes a `My Song` folder in the same place, holding `My Song.sp2`, with nothing to fill in. Only a session that has never been saved asks for a name and location.

Once a session lives in a session folder, **Save as Session Folder** is greyed out.

Note:

A session saved on its own, outside a folder, works exactly as before. It just can't hold checkpoints.

Checkpoints

A checkpoint is a dated copy of your session, kept in the folder's `checkpoints` folder. Create one before you try something you might want to back out of.

You'll find checkpoints in **File → Checkpoints**, or in the menu that opens when you click the session's name at the top of the window.

Item	What it does
Create Checkpoint (⌥ + ⌘ + S)	Saves the session, then files a copy of it under the current date and time. The session itself doesn't change and stays open, so you carry on working.
Return to Latest	Goes back to your current session, leaving the checkpoint behind. Greyed out unless you're looking at a checkpoint.
The checkpoint list	Every checkpoint in the folder, newest first. Choose one to load that version. The tick shows which one you're looking at.

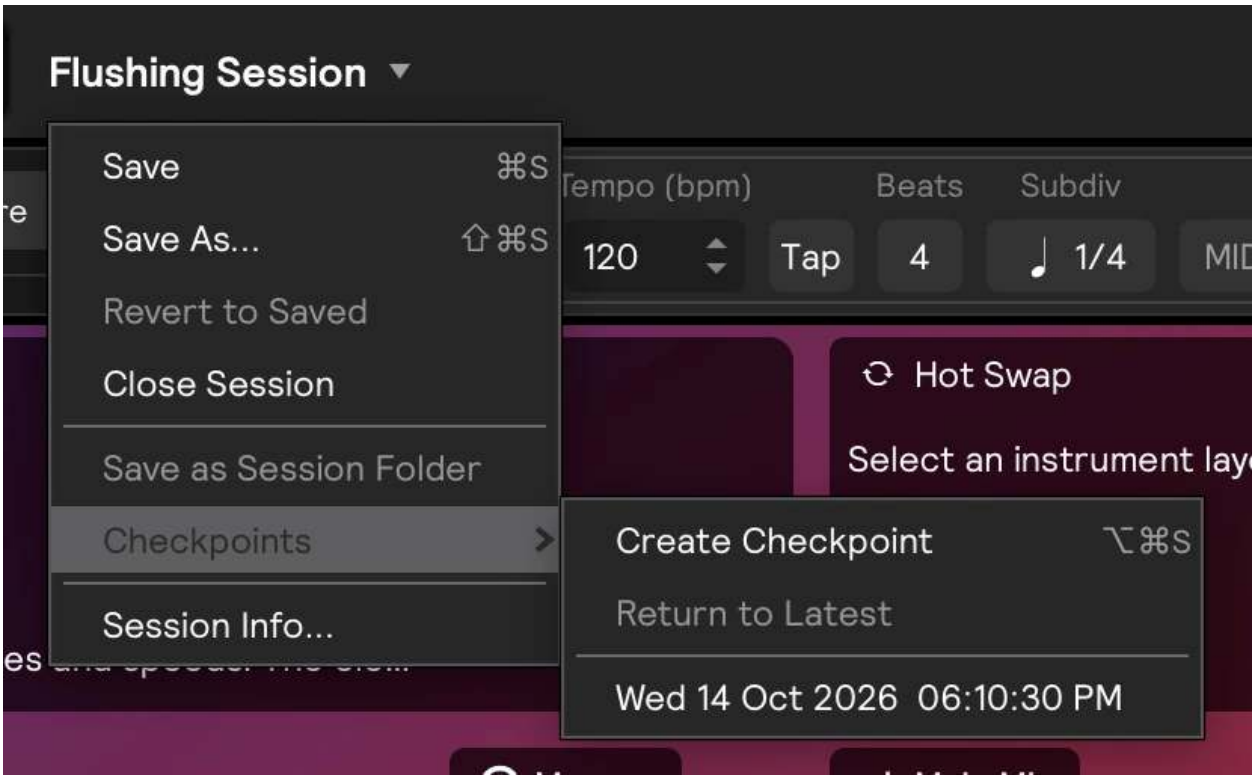


Figure 47: The Checkpoints menu for a session in a session folder, with one checkpoint

Checkpoint files are named after the session plus the date and time, for example `My Song-2026-10-14_18-10-30.sp2`.

If the session isn't in a session folder yet, the **Checkpoints** menu says so and offers **Save as Session Folder** instead:

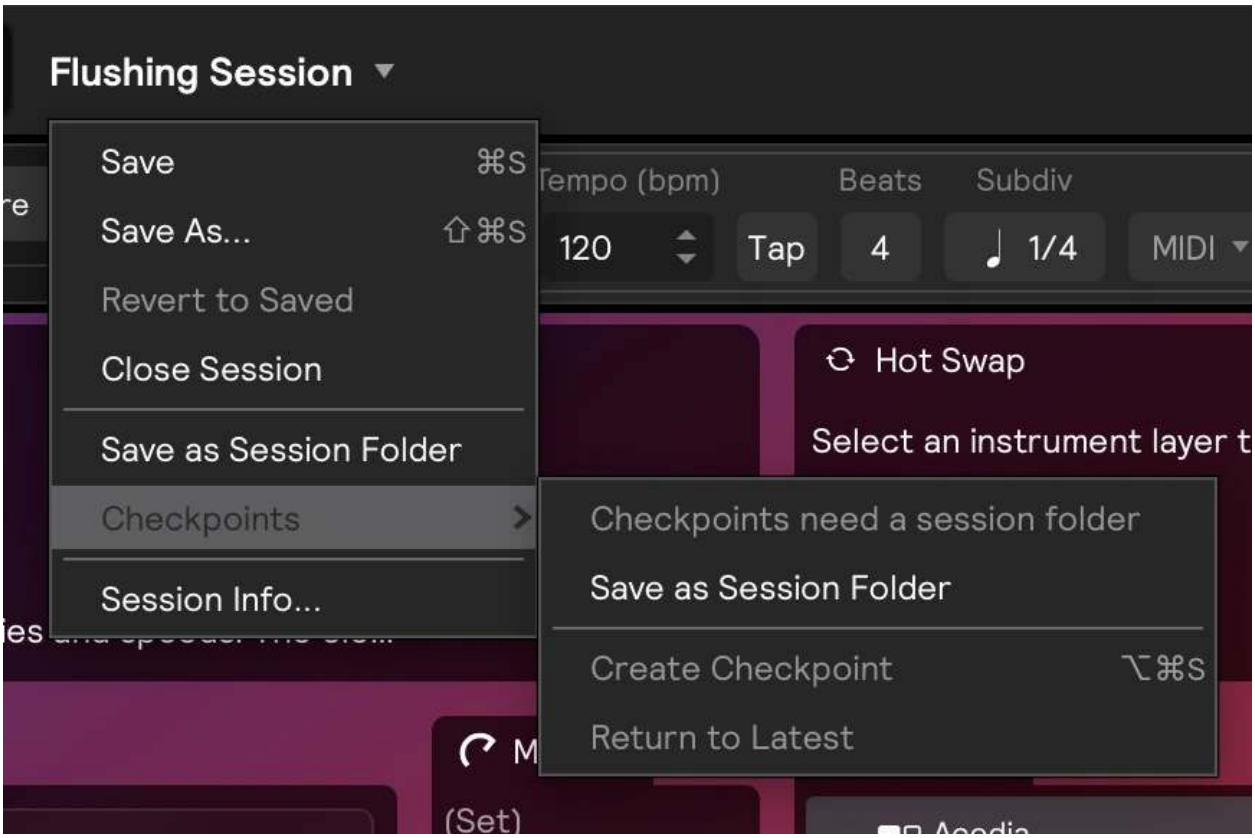


Figure 48: The Checkpoints menu for a session outside a session folder, offering Save as Session Folder

Looking at a checkpoint

While you're looking at a checkpoint, its date appears as an orange badge next to the session name, and **Return to Latest** becomes available.

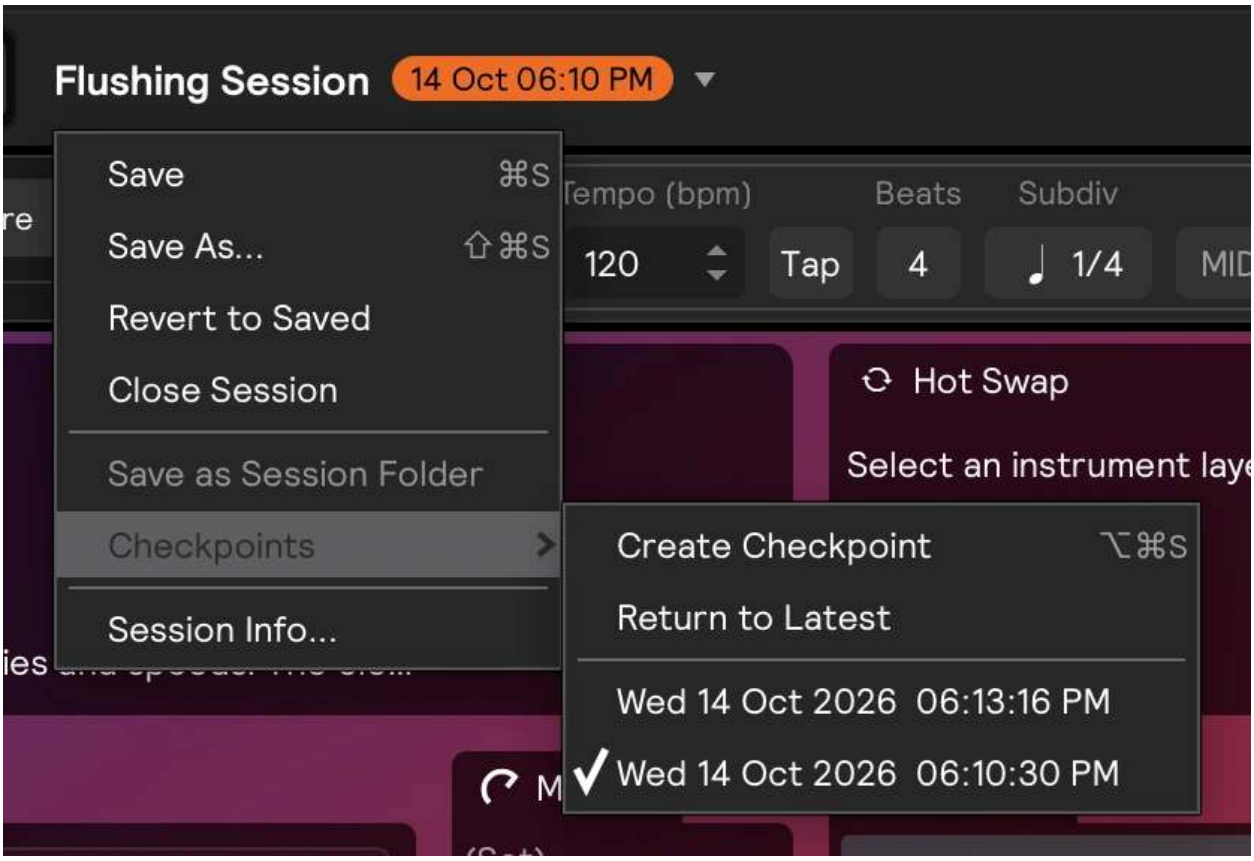


Figure 49: The Checkpoints menu while a checkpoint is loaded: the orange date badge next to the session name, the checkpoint ticked, and Return to Latest available

Loading a checkpoint never loses work. Before the older version appears, Sensory Percussion creates a checkpoint of where you were, including any unsaved changes. So **Return to Latest** always brings your work back, and that checkpoint stays in the list from then on.

Going back to an older version

Loading a checkpoint doesn't change which file **Save** writes to: the session still belongs to its own `.sp2` file and keeps its name. If you **Save** while you're looking at a checkpoint, that older version becomes your current session. That's how you commit to going back.

Everything you were doing before is already checkpointed, so nothing is lost either way.

> **Tip:**
>
> Make a habit of **Create Checkpoint** (⌥ + ⌘ + S) before big changes, like reworking a set's routing or swapping out a kit. If you don't like where it goes, pick the checkpoint and save.

Workspace and Sessions

Sensory Percussion keeps two places your work can live, and the selector at the top of the window shows which one you're in:

- The **workspace** is an always-saved scratchpad. There's no save and no unsaved state — whatever you do is kept, and it comes back exactly as you left it the next time you open the app. This is where you noodle.
- A **session** is a named file you deliberately created. It has a title, it can have unsaved changes, and you save, revert, or close it like a document. Session files have the extension `.sp2`.

Only one is active at a time. The other stays parked with its contents intact, so switching between them is free and never prompts you to save.

The selector



Figure 50: A screenshot of the workspace and session selector with the workspace active

`Workspace` switches to the scratchpad, and `Session` switches to the parked session — or opens one, if the session slot is empty. Beside them is the name tag, showing the name of whatever session is in the session slot.

The name tag reads `Untitled` for a new session you haven't named yet, and `Open...` when the session slot is empty. While you're in the workspace it's dimmed, showing that the session is parked rather than active.

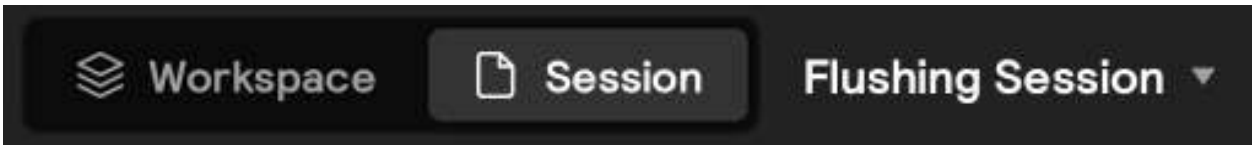


Figure 51: A screenshot of the selector with a session active

A yellow dot beside the name means the session has changes that aren't in its file yet. It appears as soon as you edit the session, and a brand-new `Untitled` session always carries one, since it has never been written anywhere. It clears when you `Save`, `Save As...`, `Revert to Saved`, or open a different file into the slot.

While you're looking at a checkpoint, an orange badge with the checkpoint's date takes the dot's place.

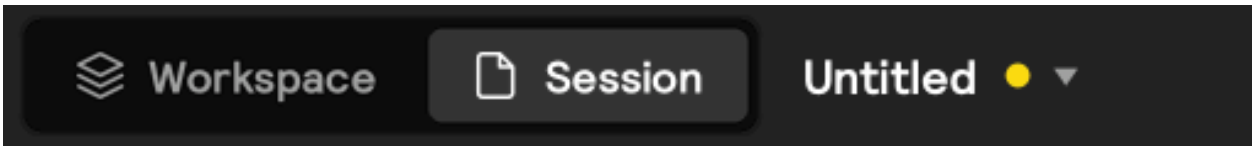


Figure 52: A screenshot of the selector with an untitled session carrying the unsaved-changes dot

The dot is remembered, so a session you leave unsaved still shows it when you come back — including after quitting and reopening the app.

It's only drawn while the session slot is active, though. In the workspace the name tag shows no dot even if the parked session does have unsaved changes, so switch to the session to see its real state.

> **Note:**
>
> Autosave doesn't clear the dot. While a session is active, autosave keeps your edits safe in a separate recovery file rather than writing to the session's own file — so nothing is lost in a crash, but the dot keeps reminding you that the saved file is still behind.

Clicking the name tag while the session is active opens a short menu with the session's own actions, in the same order as the File menu: `Save`, `Save As...`, `Revert to Saved`, `Close Session`, then `Save as Session Folder` and `Checkpoints`, then `Session Info...`. From the workspace, clicking the name tag jumps into the session instead.

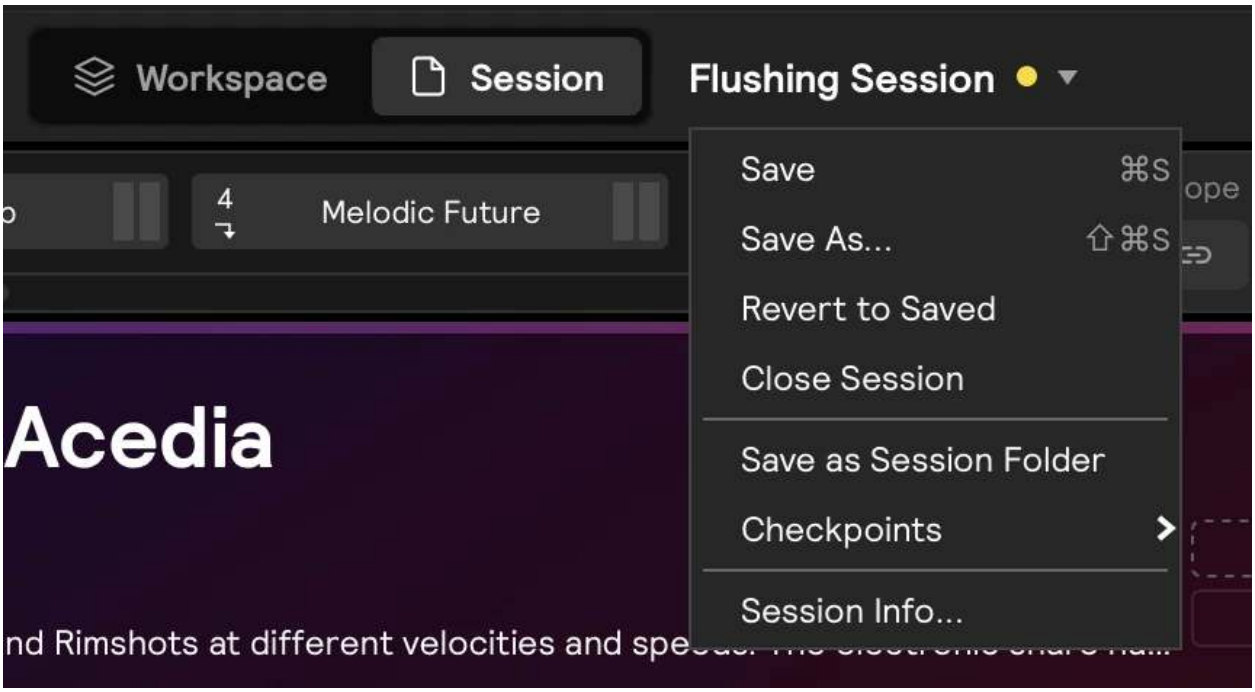


Figure 53: A screenshot of the session name tag menu

Moving work between them

The workspace and the session are two parked buffers, not two windows. The selector chooses which one you're editing; switching flushes what you were working on and loads the other, and nothing is lost either way.

The workspace is never dirty — it has no saved/unsaved distinction, which is why it carries no dot and offers no Save. `Save to session...` in the File menu is how work leaves the workspace and becomes a document: it promotes the workspace into a named session and leaves the scratchpad clean behind you. If you'd rather write the workspace out to a file without changing anything in the app, use `Save a copy...` instead — you stay in the workspace, and nothing becomes the active session.

`New session` is available from either side, and starts a fresh untitled session in the session slot rather than carrying your workspace across. Reach for it when you want to begin something new, and for `Save to session...` when you want to keep what you've been noodling on.

> **Note:**
>
> Promoting the workspace replaces whatever session is parked in the session slot. If that session has unsaved changes, Sensory Percussion asks whether to save it first.

Finding the workspace in the library

The workspace is also pinned to the top of the **Sessions** tab in the library, next to your saved sessions.

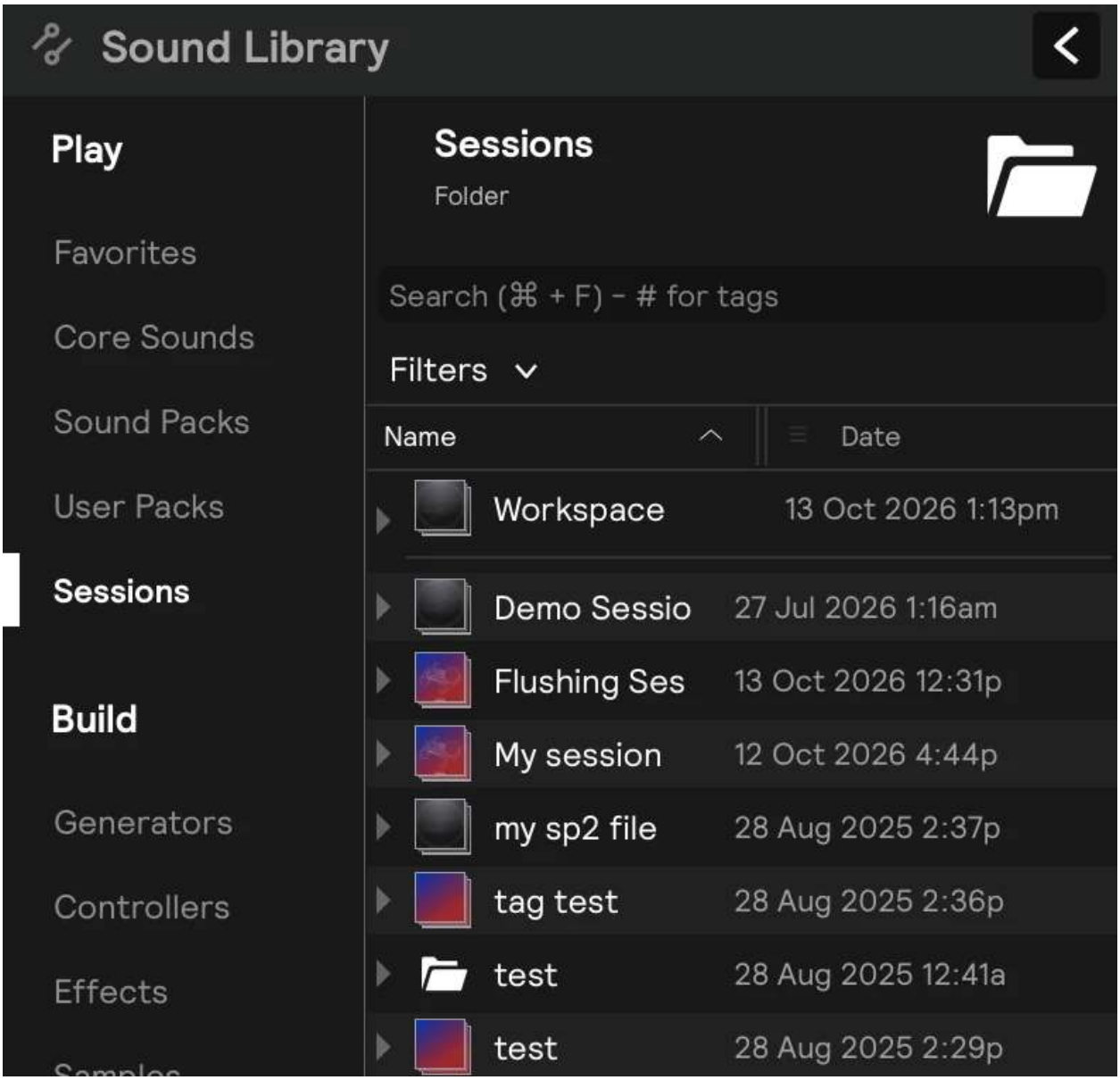


Figure 54: The Sessions tab in the library, with the Workspace pinned at the top

Keeping versions of a session

To keep a history of a session you can go back to, put it in a session folder and create checkpoints as you work.

Read-only sessions

Opening a factory session from the core library or a soundpack — or any file you don't have permission to write — gives you an editable untitled session rather than claiming the original file. A later save can never overwrite the protected source, because saving routes through `Save As...` instead.

Backups

Clearing the workspace, reverting a session, and discarding a session's unsaved edits all leave a recoverable backup behind first. Loading a checkpoint does the same: it checkpoints where you were before the older version appears.

Play View



Play view is the front page of Sensory Percussion. This view is great if you want to plug and play ASAP, but also want to be able to make quick adjustments on the fly. In this view, you can adjust macro knobs, make quick changes to your layer mixes, and quickly audition samples you have assigned to different drums.

Here's a rundown of the different sections of *Play* view and how they can be used:

Layers Mix This is where you can make quick adjustments to your layers. You have the option to mute/solo each layer individually, as well as adjust its volume and panning. By default, all layers in this panel are set to -6.0 dB.

Virtual Inputs In this section, you can click the different parts of the drums and cymbals to hear what samples they have assigned to them. Similarly, when you strike a particular zone on your drum, you will see that zone light up on the corresponding virtual input drum pad. You can also drag instruments or modules from the library directly onto these virtual inputs, or hover an empty drum and click **+** to pick an instrument for it. See Virtual Inputs.

Macros There are two types of macros available in this section: Layer Macros and Set Macros. Set Macros control parameters that affect your entire set, while Layer Macros affect only that individual layer. By default, you will see Set Macros when you first open a set. If you click on a layer in the Layer Mix panel, it will show that layer's macros. To get back to Set Macros after you click on a layer, simply click the "X" next to the name of the layer on the top of the Macros panel.

Hot swap The hot swap feature allows you to quickly swap out Instruments modules for another. This is a great way to quickly audition different drums. Read more about using the hot swap feature here.

Set Styling This area is where you can customize the look of your set. Right-click anywhere in your set outside of the other sections in this list and you will see a dropdown with options to change the background image, adjust color settings, change the blend type, and more. In Sensory Percussion V2, both the look and sound of your sets are fully customizable!

Edit View



`Edit` view allows you to look under the hood of your set and tweak things at a more granular level, allowing you to dive deep into all the sonic possibilities Sensory Percussion V2 has to offer.

Layers `Edit` view revolves around layers. Layers are made up of modules, which are the fundamental building blocks of Sensory Percussion V2, so this is the section you will be spending the most time in while building your sets. If you're starting with an empty layer, simply drag and drop any element from the library to create a new layer. From here, you can copy and paste layers and add different modules as you like. For more information on how layers work, check out the How Sensory Percussion Works page.

Breadcrumbs Bar This bar is a helpful way to navigate your set, especially if it has lots of long, complex chains of modules. It lists all of the modules that are currently visible in whatever layer you have selected, and when you right-click it, you can see a tree view of your entire set's structure! For more info on how to use the breadcrumbs bar to quickly navigate your set, check out the How to Navigate Complex Sets page.

Virtual Inputs In `Edit` view, you can create/delete virtual inputs, and also change the routing between virtual and hardware inputs by changing the number next to the virtual input drum type (from snare 1 to snare 2, etc). It is also a collapsible section in this view. So, if you don't want to deal with virtual inputs at the moment and would prefer more room for your layers, simply click the "Virtual Inputs" button in the top right corner of the window to collapse this section. For more information on how virtual inputs work, check out the Virtual Inputs page.

Macros Since your sonic layers take up most of the `Edit` view screen, there is no need to switch between set macros and layer macros like you do in `Play` view. In `Edit` view, all macros in this section apply to the whole set, while each individual module also has the ability to host macros. In the Macros section, you can create, delete, and assign macros. It's also a collapsible section in this view, so if you don't want to deal with set macros at the moment and would prefer more room for your layers, simply click the "Macros" button in the top right corner of the window to collapse this section.

Hot Swap The hot swap feature allows you to quickly swap out Instruments modules for another. This is a great way to quickly audition different drums. Read more about using the hot swap feature here.

That was a lot of information, so here's a table showing the different ways that each section works in the two views of Sensory Percussion V2:

	Play	Edit
Virtual Inputs • change routing	• audition limited zones by clicking on the drums	• audition all zones
Layers	• adjust layer volume/panning	

• mute/solo layers • drag in layer elements from the library | • create/delete layers • add elements to layers from the library • control routing, effects, macros, assignments, and more | | **Macros** | • adjust existing macro knobs • select a layer to switch from set macros to layer macros | • create/delete set macros • assign set macros to parameters within layers • adjust set macro knobs | | **Hot Swap** | • Hot swap instrument modules | • Filter hot swap options by character tags • Change the input type of the hot swap | | **Set Styling** | • right-click to change the set image and colors | • not available in Edit view |

Mix View



Mix view is another view of your set that allows you to focus solely on mixing. Unlike Play/Edit view, this view doesn't allow you to access Macros or Virtual Inputs. While you can create/delete layers in this view, the main purpose is to have fine control over the volume and panning of each layer, as well as the overall set mix.

You can access Set Effects at the bottom of the mix view window. Click the arrow next to the set effects to expand the Set Effects. This panel works just like the fx panel of a module, except these effects are applied to every sound in the entire set. By default, presets from the Sunhouse library come with some mastering effects in this panel.

Submixes

Another feature that is exclusive to Mix view is submixes. Submixes allow you to create different combinations of the layers in your set, which can then be routed to different hardware outputs. With submixes, you can send separate stems of each instrument group out to a DAW, or you can create a separate headphone vs. PA mix for live performance.

Submixes and the Global Set Mixes

All mixes in the session (both the main mix and any submixes) all flow through the mixes in the global set. This means that you can use the global set to control the overall volume of all sets in the session, and you can use the global set's effects to apply effects to the entire session. This is

useful for applying effects to all sets, such as reverb or delay, or for controlling the overall volume of the session.

How To Use Submixes

By default, Mix view will show you the main mix, which includes all of the layers in your set except for any layers with Monitor Mix enabled. This mix always exists, and deleting a layer from the main mix will delete it in Edit/Play view as well. So it's best to add/delete layers in your submixes rather than in the main mix. To create a submix, first click on the `Add Submix` button under one of the Mix Outs (1-16):



Once you do this, a new submix will be created, which is empty by default. None of the layers of your set are in a newly-created submix; they can instead be found under the `Inactive Layers` panel on the left:

To move a layer from the inactive layers into your submix, simply click the + button next to the layer's name. It will then appear in the main submix, and it will be sent out of the Mix Out channel (1-16) where you created it.

It's also possible to expand these layers to add layers one-level down to a submix. This is especially useful for `drumset` instruments, which have all the instruments grouped at the top level of the layer. You can expand a drumset instrument to add its individual instruments to a submix, which allows you to create a submix with just the snare and kick, for example.

> **Tip:**
>
> Submixes and the layers within them both have right-click options that can help speed up your workflow:
>
> - **A submix** can be copied in its entirety to a new mix out channel.
> - **An inactive layer** can be added to any submix you've created, or to all of them at once, or have its child sub-layers distributed across submixes.
> - **An active layer** can be added to or removed from all submixes, or revealed in Edit view.



Figure 55: An example of a submix for melodic layers

Above is an example of a melodic submix of the set Acedia. It includes the layers “selesta melody” and “synthDulcimer,” which are the only two layers of the set that include melodic sounds. It’s being sent out of Mix Out 1, while Drum sounds are being sent out of Mix Out 2 and Percussive sounds are being sent out of Mix Out 3.

Now, you have three different types of sounds being sent out of three separate channels. The last step is to choose which 3 hardware outputs you want to send these 3 submixes out of. This can be done in the `Source` dropdown on your hardware outputs:



Figure 56: 3 submixes routed to 3 separate hardware outputs

Now, you have 3 submixes (Mix Outs 1, 2, and 3) routed to 3 hardware outputs (Aux 5, 6, and 7).

This means you can record each instrument group as its own track by creating 3 audio tracks in your DAW and setting their inputs to Aux 5, 6, and 7!

The Library

The Library is where you find sounds and building blocks and drag them into your session: sets, layers, instruments, generators, controllers, effects, and samples. It has three sections: ***Play***, ***Build***, and ***Folders***.

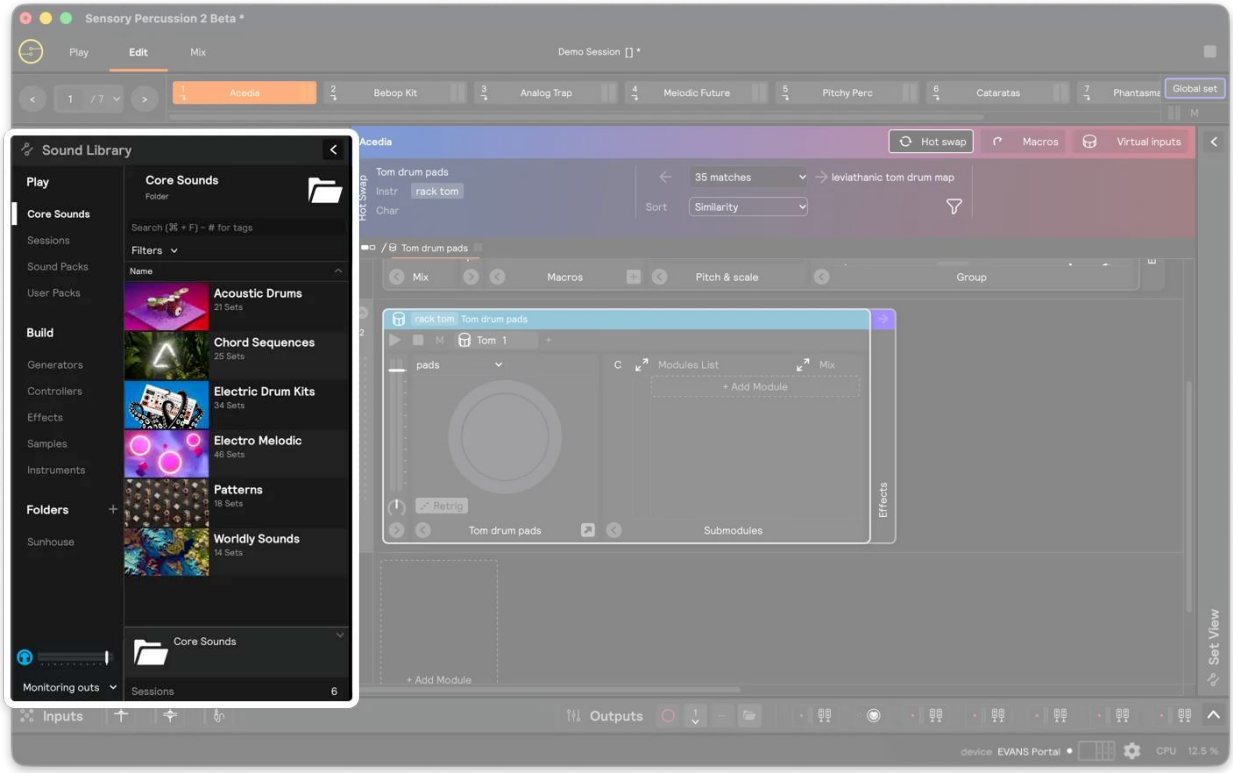


Figure 57: A screenshot highlighting the library panel

From the library, you can:

- drag & drop sets onto the set manager
- drill down into a session by double-clicking it to see the individual sets it contains
- drag & drop instruments, generators, controllers, samples, and effects into your working set
- open a session by selecting it and choosing **Load session**
- keep the things you use most in Favorites

Shortcut	What it does
⌘ + ⌥ + L	Show or hide the library
⌘ + F	Search the library. Start a search with # to search by tag.
⌘ + ⌥ + F	Search the set tree (Edit view)

Play

Play holds ready-to-play sets and sessions, in these tabs:

Tab	What's in it
Favorites	Everything you've marked as a favorite, from anywhere in the library. See Favorites.
Core Sounds	The Core Library sessions that come with Sensory Percussion.
Sound Packs	Sound packs you've installed with **File → Install Soundpack…**.
User Packs	Sound packs of your own.
Sessions	Your saved sessions. The **Workspace** is pinned at the top.

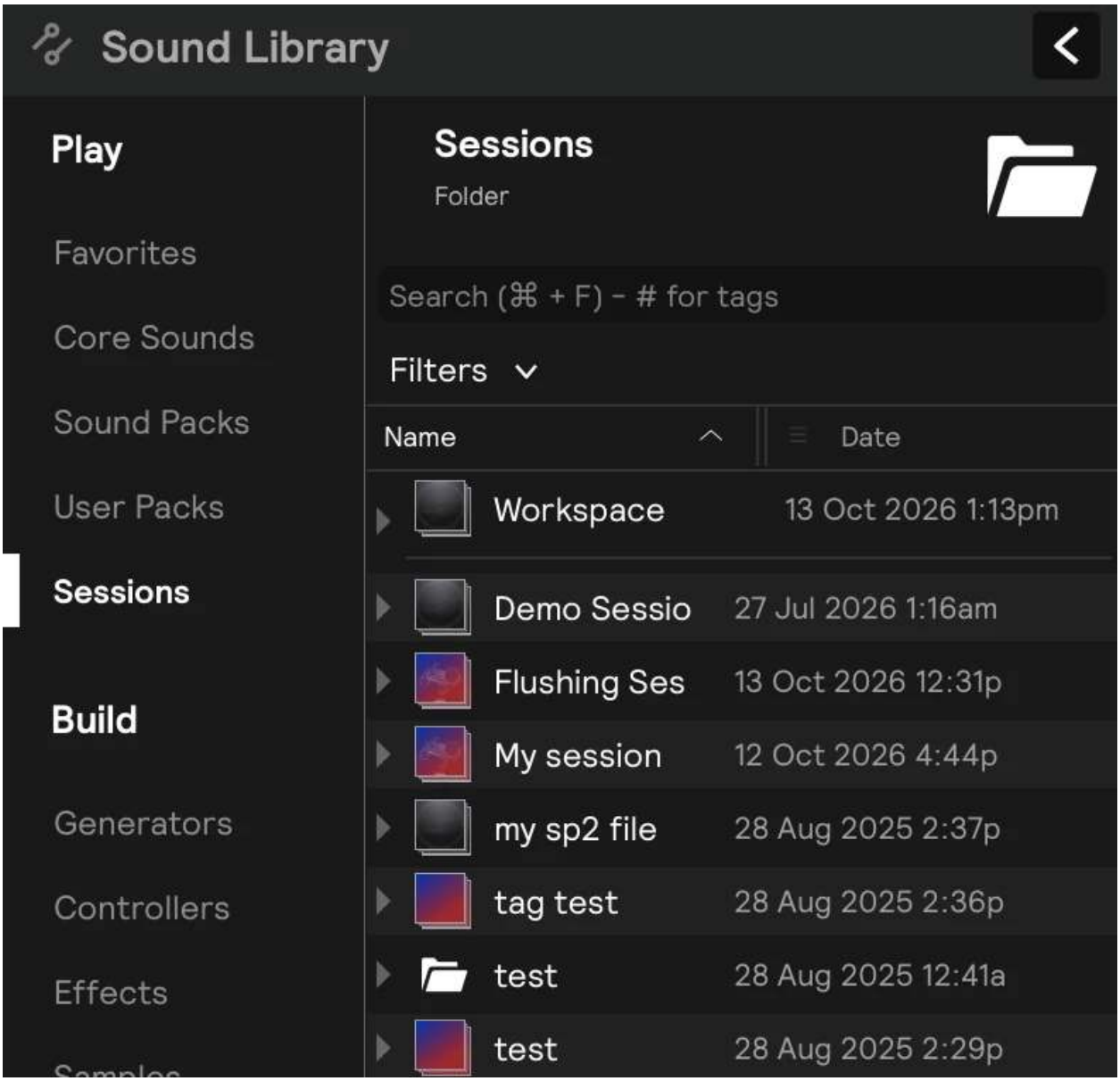


Figure 58: The Sessions tab, with the Workspace pinned above your saved sessions

Favorites

Favorites is the first tab in *Play*. It collects the sets, presets, sessions, samples, and folders you've marked, wherever they live in the library, so the things you reach for most are one click away.

To mark a favorite, click the heart at the right edge of its row, or right-click it and choose **Add to Favorites**. Select several items first to mark them all at once. On a favorite, the same menu item reads **Remove from Favorites**.

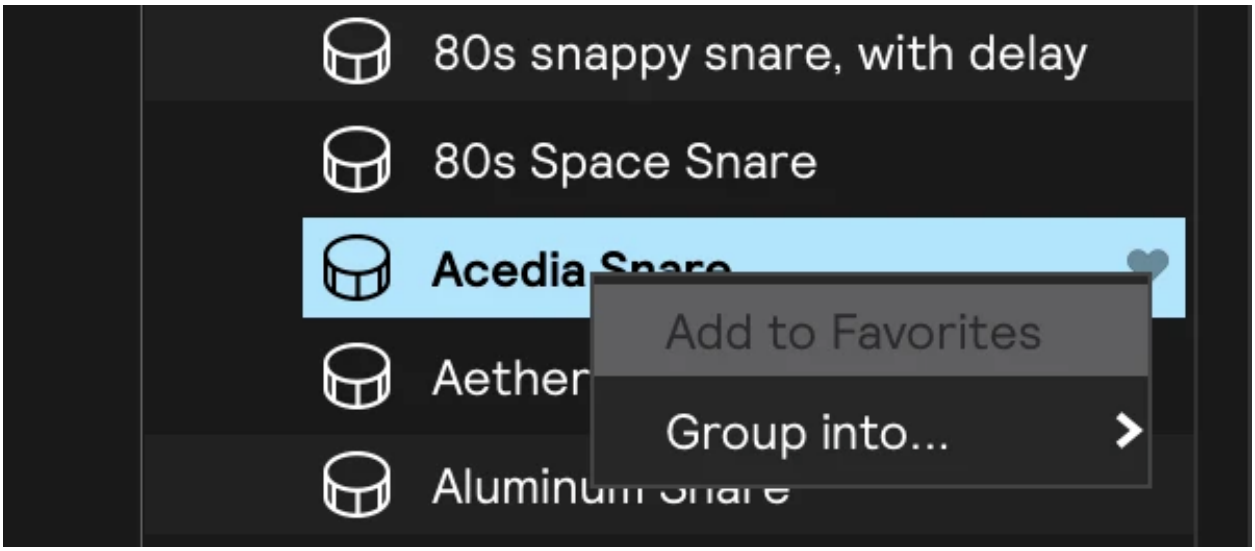


Figure 59: Right-clicking a snare instrument in the library and choosing Add to Favorites

You can favorite:

- **Sets** inside a session, from the Core Library, a sound pack, or one of your own sessions. Sets of the session you have open aren't offered, since they're already in front of you.
- **Presets**: instruments, effect presets, and module presets, whether factory, from a sound pack, or your own.
- **Sessions**: a whole `.sp2` from Core Sounds, Sessions, or a bookmarked folder. The pinned Workspace can't be a favorite.
- **Samples** from Samples, a sound pack, or a bookmarked folder.
- **Folders**: any folder inside a tab. The tabs themselves can't be favorites.

The Favorites tab groups them under **Sets**, **Sessions**, **Instruments**, **Effects**, **Modules**, **Samples**, and **Folders**. A group only shows up once it has something in it, and each row is labeled with the library it came from.

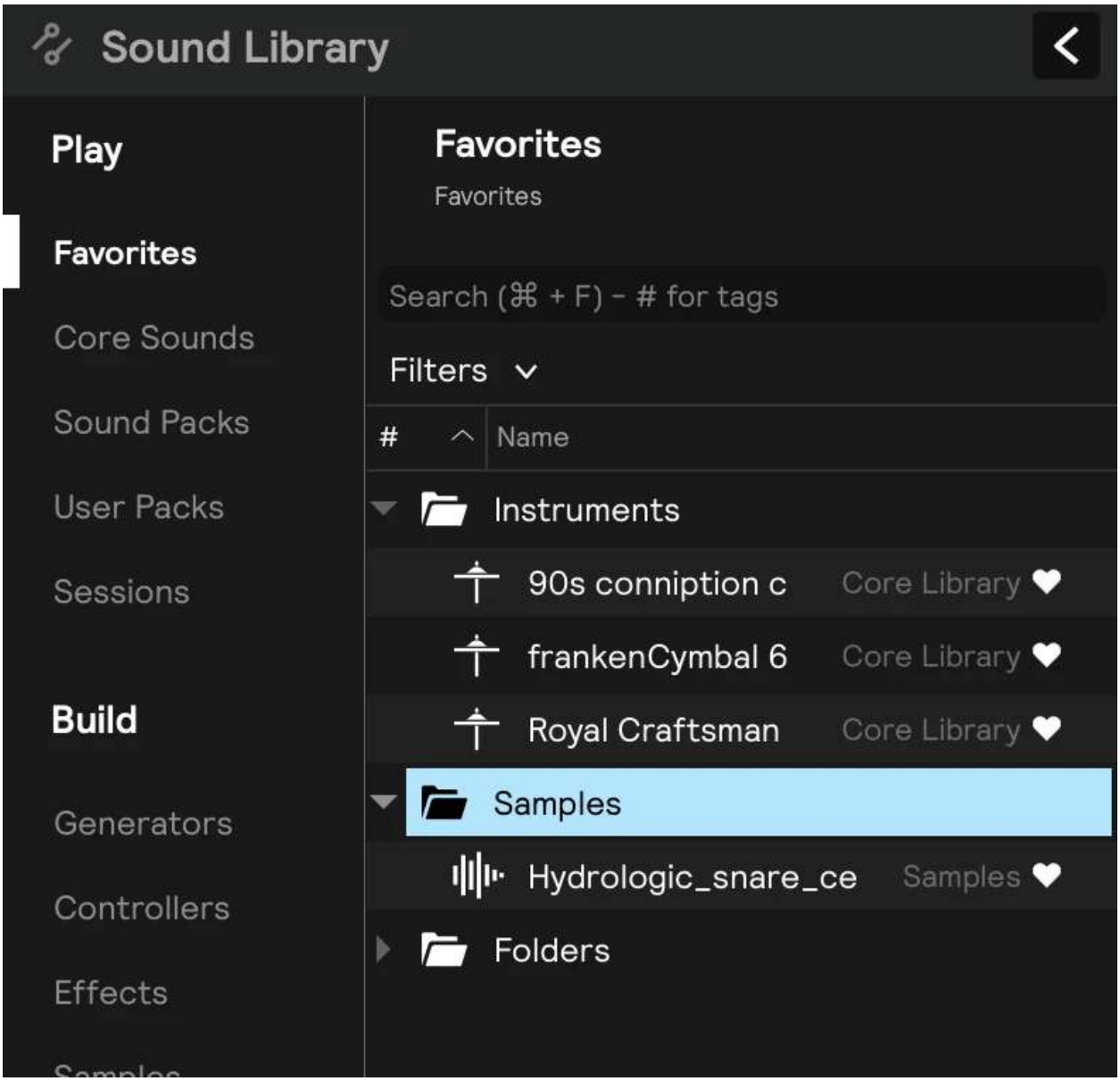


Figure 60: The Favorites tab with an Instruments group and a Samples group

Each favorite works exactly like the original. Drag a favorite instrument into your set, select a favorite set and click **Insert Set**, click a favorite sample to audition it, or open a favorite folder to browse it.

Favorites belong to you, not to the session. They're saved with your settings, so they follow you from session to session and survive sound pack updates. If a favorite's content goes missing (for example, you uninstall a sound pack), it drops out of the list until the content is back.

Core Sounds

The Core Library contains the six packs included when you install Sensory Percussion for the first time:



Figure 61: A screenshot of the Acoustic Drums sound pack tile in the library

Acoustic Drums This is a pack that includes sets with very detailed acoustic drum and percussion kits. Snares, toms, hi-hat, congas, dhol, udu, cymbals. Each drum often has a hundred or more samples mapped to it.



Figure 62: A screenshot of the Chord Sequences sound pack tile in the library

Chord Sequences This pack includes sets with velocity-thresholded chord kits, which means that you have to intentionally hit one or more of the drums at a high velocity to trigger a chord sequence. The chord sequence by default is usually controlled by Tom 2 and/or Tom 1.

These sets also include percussive elements (and sometimes melodic elements), but their defining feature is the chord sequence.

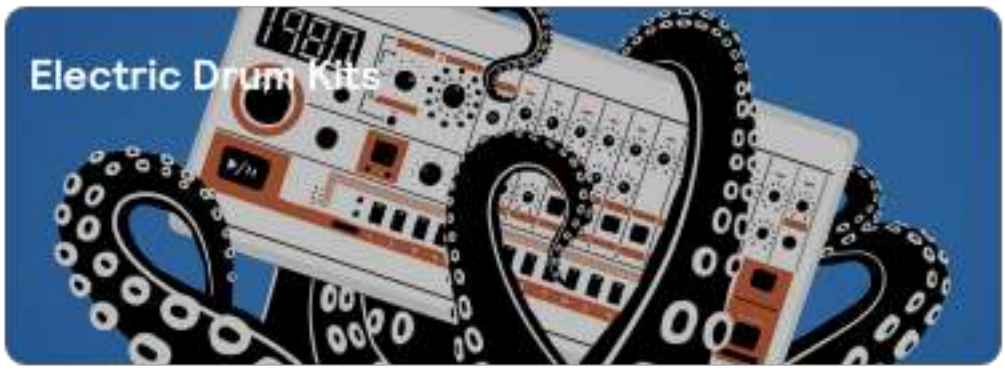


Figure 63: A screenshot of the Electric Drum Kits sound pack tile in the library

Electric Drum Kits What if E Drums were as responsive as acoustic drums? These Sensory Percussion sets consist of E Drum sounds that are as responsive to your playing as acoustic drums, thanks to a network of timbre and velocity assignments.



Figure 64: A screenshot of the Electro Melodic sound pack tile in the library

Electro Melodic These sets contain at least one melodic element. Sometimes they are entirely melodic, but many also contain percussive elements. The melodic elements are often controlled by Tom 1 and/or Tom 2.



Figure 65: A screenshot of the Patterns sound pack tile in the library

Patterns Sequences inside sequences inside sequences. These sets showcase the power sequencer module, and Tom 1 and/or Tom 2 has a sequence that is unlocked by repeatedly striking the zone/s with the embedded pattern.

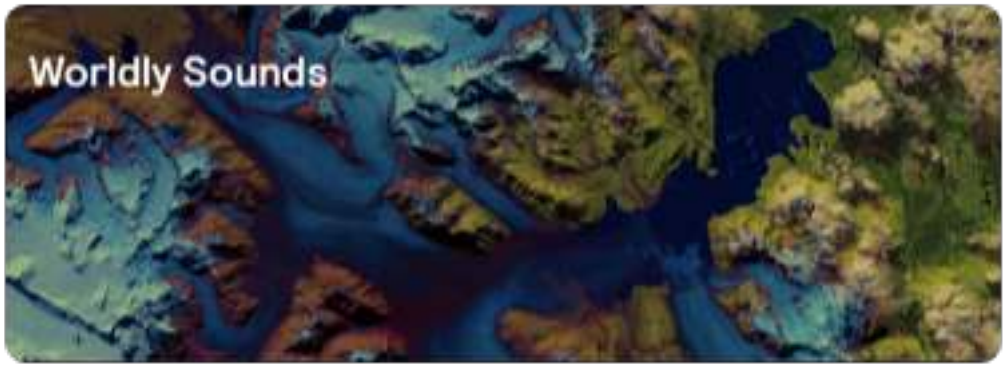


Figure 66: A screenshot of the Worldly Sounds sound pack tile in the library

Worldly Sounds This pack contains sets primarily made of sounds found on planet earth: dirt, sand, ice, you name it. Like the Electric Drum Kits core library pack, these sets are often as responsive to your playing as acoustic drums.

Build

Build holds the building blocks for creating sets: **Generators**, **Controllers**, **Effects**, **Samples**, and **Instruments**. Expanding a generator, controller, or effect reveals its presets, which can be dragged into your set just like the object itself.

Generators make sound or send a message: samplers, audio inserts, MIDI generators, and more. Apart from effects, most generators can't contain other modules.

Controllers help you organize, map, and route modules. They don't make sound themselves, but they contain generators and can even contain other controllers.

Effects can be dragged and dropped onto generators and controllers. When you drop an effect onto a module, that module's FX panel opens with the effect visible, so you can adjust it right away or add assignments by right-clicking.

Samples are audio files that can be dragged and dropped to create samplers, which can in turn be dragged and dropped into controllers. You can click on samples in the library to audition them.

Instruments

The **Instruments** tab holds every instrument you can drag into your set, in one folder per role: **drumset**, **snare**, **kick**, **rack tom**, **floor tom**, **hi-hat**, **crash**, **ride**, **hand drum**, and **MIDI kit**. When a role has instruments from more than one library, its folder splits by library: your own **User** instruments first, then **Core Library**, then one folder for each sound pack.

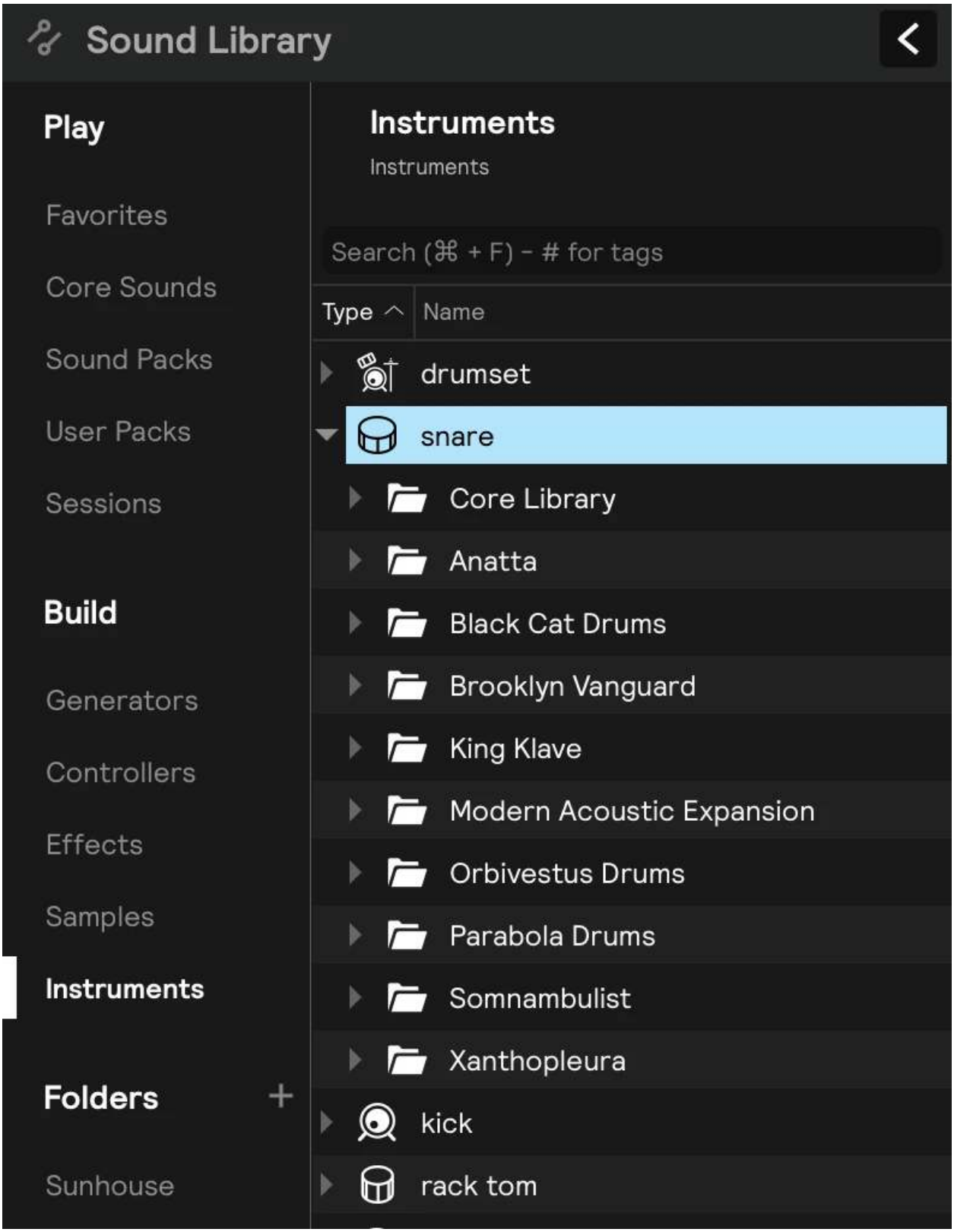


Figure 67: The Instruments tab with the snare folder open, split into Core Library and one folder per sound pack

Folders

You can bookmark any folder on your computer in order to drag and drop layers from previously saved sets, as well as drag and drop audio samples and preset files that you have saved inside that folder. Click **+** next to **Folders** to add a bookmark.

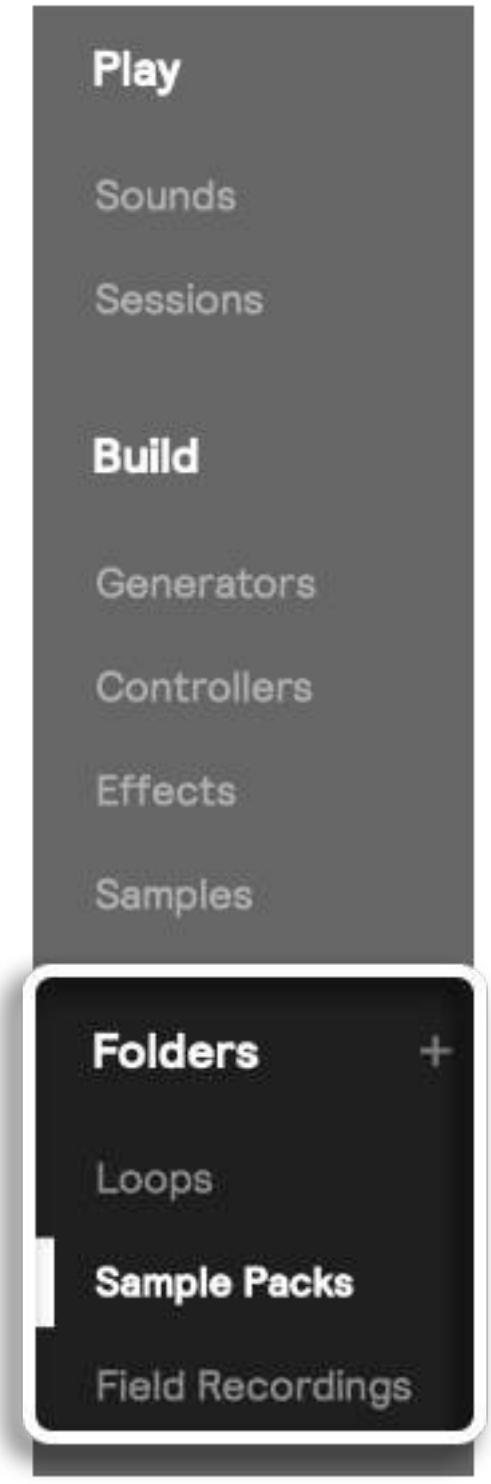
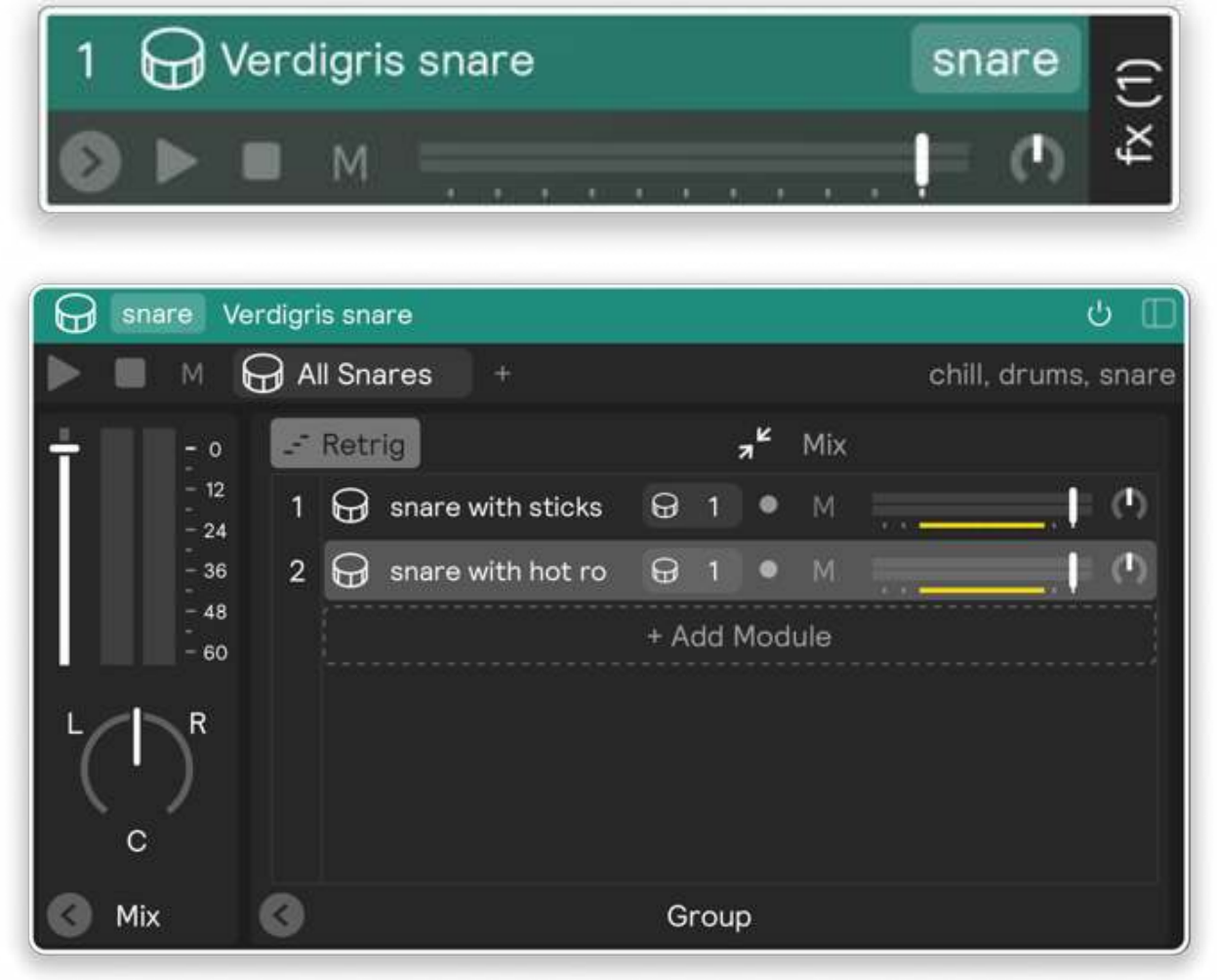


Figure 68: A screenshot highlighting the user folders section of the library

Instruments

An instrument is a whole playable object, like a snare, a kit, or a MIDI kit, saved so you can drop it into any set and swap it for another. Instruments are a powerful way to quickly build out your set with sounds from the Sunhouse library, from sound packs, or from your own saved instruments. For presets in general, see the Presets page.

Every instrument has a **role**: **drumset**, **snare**, **kick**, **rack tom**, **floor tom**, **hi-hat**, **crash**, **ride**, **hand drum**, or **MIDI kit**. You can tell a module is an instrument by its role tag in the header of the layer card, and by the instrument icon in place of the normal module icon.



So why use instruments instead of building your set from presets? Instruments are fully encapsulated and movable. They don't rely on send effects or cross-control assignments to get their sound, so they sound exactly the same wherever you drop them.

Adding instruments

There are several ways to get an instrument into your set:

- **Drag it from the library.** The Instruments tab has a folder per role. See Dragging and dropping below.
- **Click + on the Virtual Inputs panel.** Hover an empty drum in the kit graphic, or the kit itself, and click **+** to pick an instrument for it. See Adding instruments to an input.
- **Use + Add Module.** On an empty layer, **+ Add Module → Instruments** lists every role, with its instruments grouped by library.
- **Swap one in place** from a module's **Instruments** menu or with Hot Swap. Both keep the module's input wiring.

Dragging and dropping

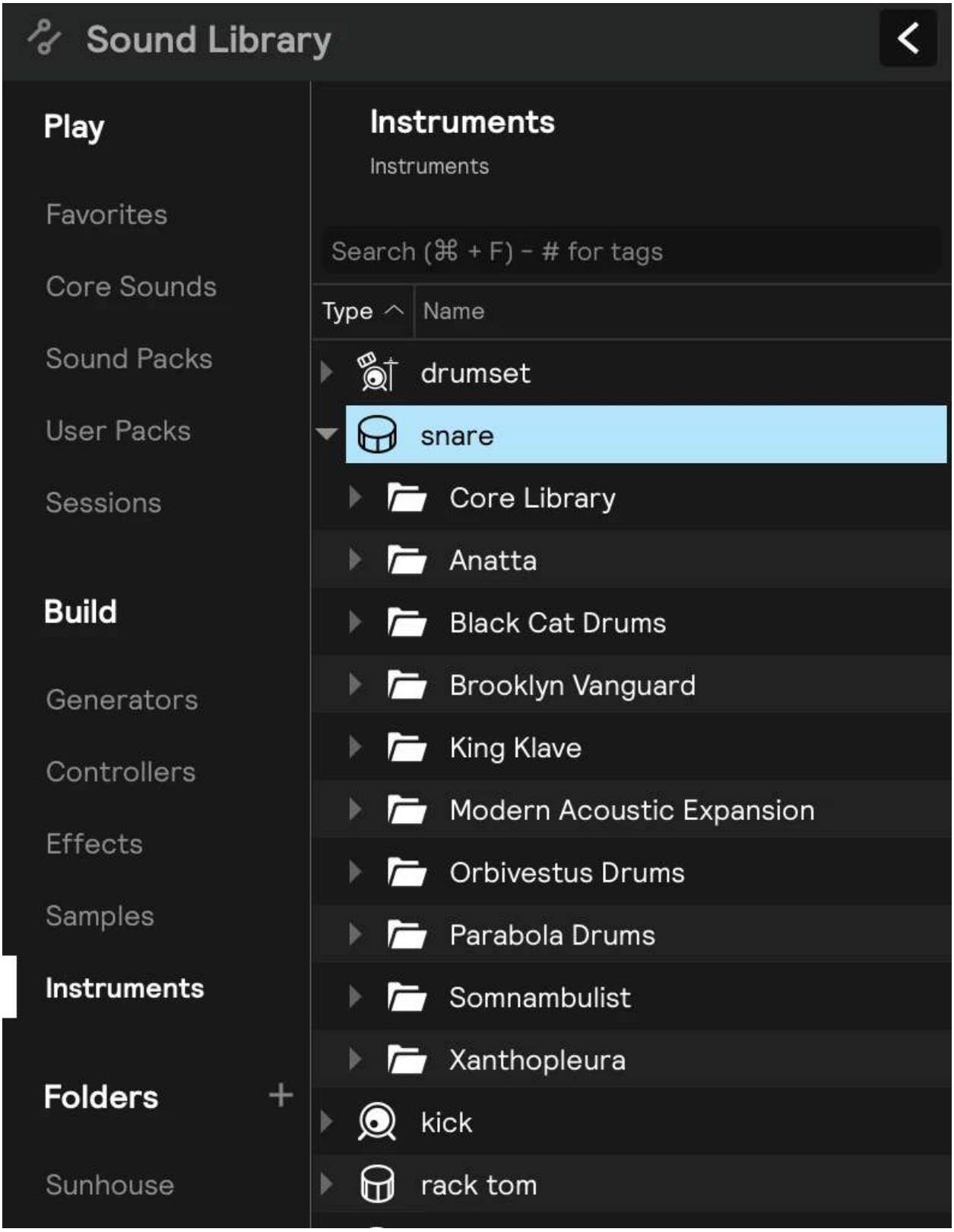


Figure 69: The Instruments tab with the snare folder open, split into Core Library and one folder per sound pack

You can drop an instrument directly onto your workspace in the Edit View, or onto your virtual inputs. These have two different results.

If you drag an instrument into the layer workspace, it's added as a layer with the default input filter for that instrument (see below). If you drag an instrument onto your virtual inputs, the input filter changes to match the virtual input. So, for example, if you drag a Rack Tom instrument onto your `Snare 1` virtual input, its input filter will be `Snare 1`, and the rack tom plays when you hit the drum connected to `Snare 1`.

> **Note:**
>
> By default, instruments dragged from the library will have the following input filters:
>
> - Kick - `All Kicks`
> - Snare - `All Snares`
> - Rack Tom - `Tom 1`
> - Floor Tom - `Tom 2`
> - Hi-Hat - `All Hi-Hats`
> - Ride - `Cymbal 1`
> - Crash - `Cymbal 2`
> - Hand drum - Varies by instrument

The Instruments menu

Every generator and controller has an **Instruments** menu, inside the preset menu in its header. Choosing an instrument from it **replaces the module** with that instrument but keeps its input wiring, so you can turn a snare into a different snare, or even into a tom, without rewiring anything.

A module that already has a role lists that role's instruments first. Every other role sits under **Other instruments**. Within a role, instruments are grouped by library: your own **User** instruments first, then **Core Library**, then one entry per installed sound pack.

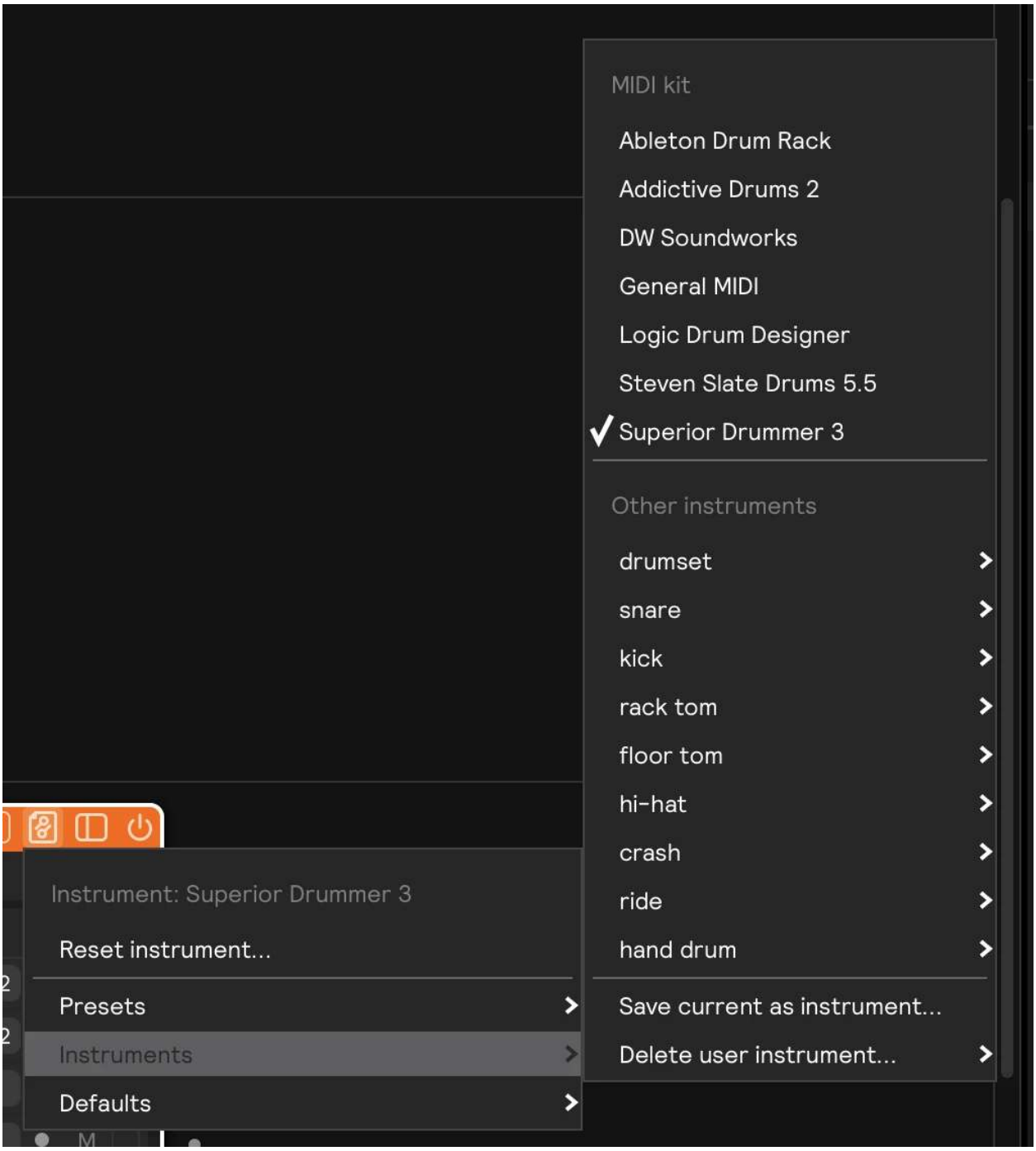


Figure 70: The Instruments submenu on a MIDI Kit: its own role's instruments listed first with the current one ticked, Other instruments by role, Save current as instrument, and Delete user instrument

Item	What it does
Save current as instrument…	Saves the module as your own instrument. See Saving your own instruments.
Delete user instrument…	Lists your saved instruments by role. Pick one to delete it after confirming. Core Library and sound pack instruments can't be deleted.
Reset instrument…	At the top of the preset menu. Puts the module back to the instrument as it's saved in the library, after confirming.

Saving your own instruments

Any generator or controller can become an instrument, whether it started as a library instrument, a preset, or something you built from scratch.

1. Open the module's preset menu and choose **Instruments → Save current as instrument…**.
2. Give it a name and pick its **Role**. The role starts on the module's own role, if it has one.
3. Click **Save**.

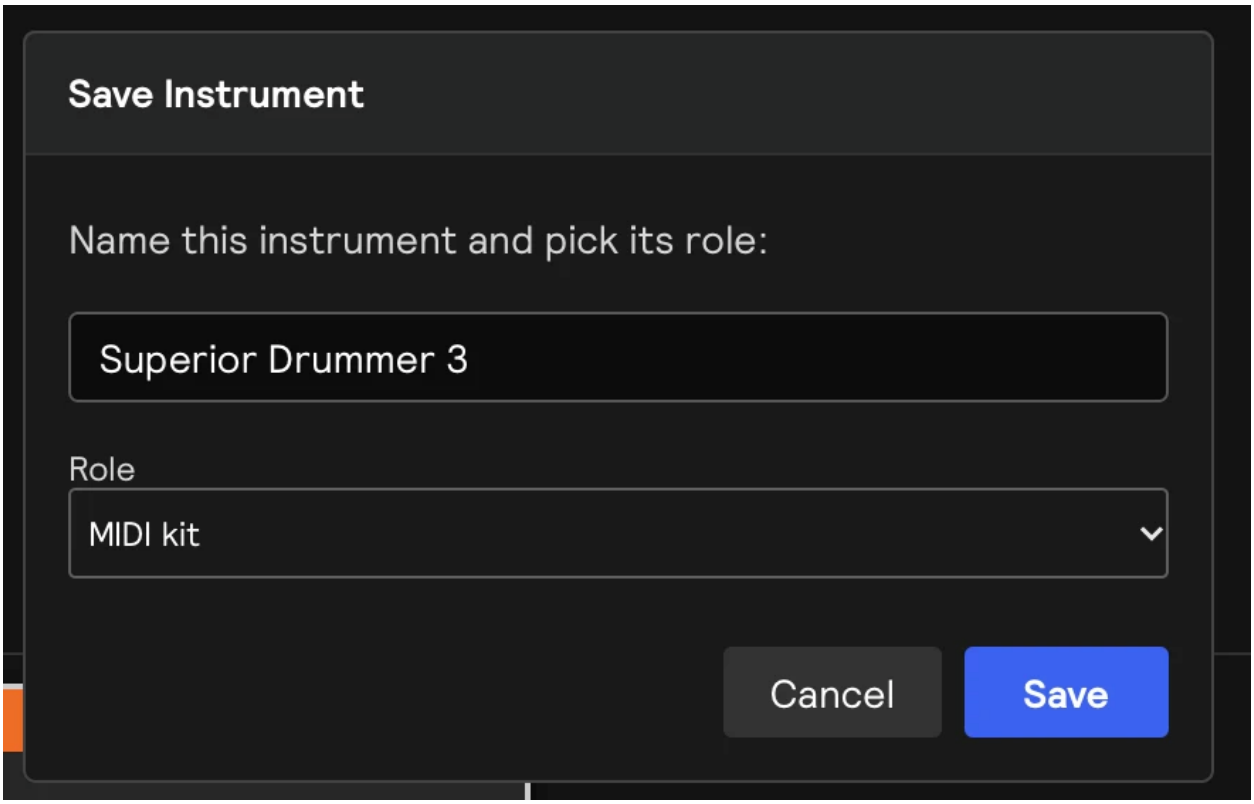


Figure 71: The Save Instrument dialog: a name field and a Role menu set to MIDI kit

Your instrument appears under **User** in the library's Instruments tab, in the Instruments menu of every module, and in **+ Add Module → Instruments**. User instruments are saved as `.spp` files in *Music/Sunhouse/Sensory Percussion 2/presets/instruments*, in a folder per role.

So that a saved instrument plays the same anywhere, assignments from inside it to anything outside it are left out. Assignments within the instrument are kept.

Hot swapping

The other way to work with instruments is to hot swap them in and out of your set. This is a great way to quickly audition different instruments from the library while you are playing or editing. You can hot swap from either the Play View or the Edit View. Check out our Hot Swap documentation for more details on how to do this.

Hotswap

Hot Swap is a feature that allows you to swap instruments in and out of your working set with a few simple clicks. Love the sound of the kick and toms of the set you have selected, but want to try some different snare options? Want to page through cymbals while playing to find the one that is just right? Then Hot Swap is for you!

> **Note:**
>
> Only layers that are Instruments can be hot swapped. You'll see these tags in the header of the layer card: `drumset`, `snare`, `rack tom`, `floor tom`, `kick`, `hi-hat`, `ride`, and `crash`. These layers will also have an icon of the instrument in the top left.

Hot Swapping from the Play View

Select a layer in the `Main Mix` panel in Play View. You can access the top two layers of the module tree from the Play View - this is usually enough to see the relevant instruments. Most drumset presets will have the drumset module as the top layer, and then the individual drum components as the second layer. If you have an instrument module that isn't organized this way, don't worry - you can still hot swap it!

Once you select an instrument layer, you'll see that the "Hot Swap" panel will activate with the options to hot swap that instrument. You can click "next" or "previous" to page through the instruments in the library that match the character tags of the instrument you are hot swapping. You can also click the drop-down to see a list of all the instruments you can hot swap to.

If you need more control over the hot swap, you can click the "gear" icon to hop over to the Edit View, where you can access more hot swap options, like filtering by character tags and sorting the drop-down by similarity or alphabetically. Check out the next section for more details on hot swapping from the Edit View.



Figure 72: A screenshot of the Main Mix and Hot Swap panel in the Play View

Hot Swapping from the Edit View

Open the “Hot Swap” panel by clicking the button named “Hot Swap” in the top right of the Edit View. Select an instrument or layer to begin hot swapping. Any `kick drum pad`, `snare drum`

`pad`, `tom drum pad`, `hi-hat pad`, or `cymbal pad`, or any module tagged as an instrument, can be hot swapped.

Exactly like in the Play View, you can hot swap with “next”, “previous”, or the drop-down. In the Edit View, the drop-down can be sorted either by “similarity” (based on character tags) or alphabetically.

If you click the funnel/filter icon, you can change the instrument you are hot swapping without changing the input. For example, if you have a snare layer selected but you want to hear how a rack tom will sound mapped to your snare virtual input, you can do that!

You can narrow your Hot Swap filter with character tags. Select the “Add Tag” button to hone in on an instrument that meets your needs.

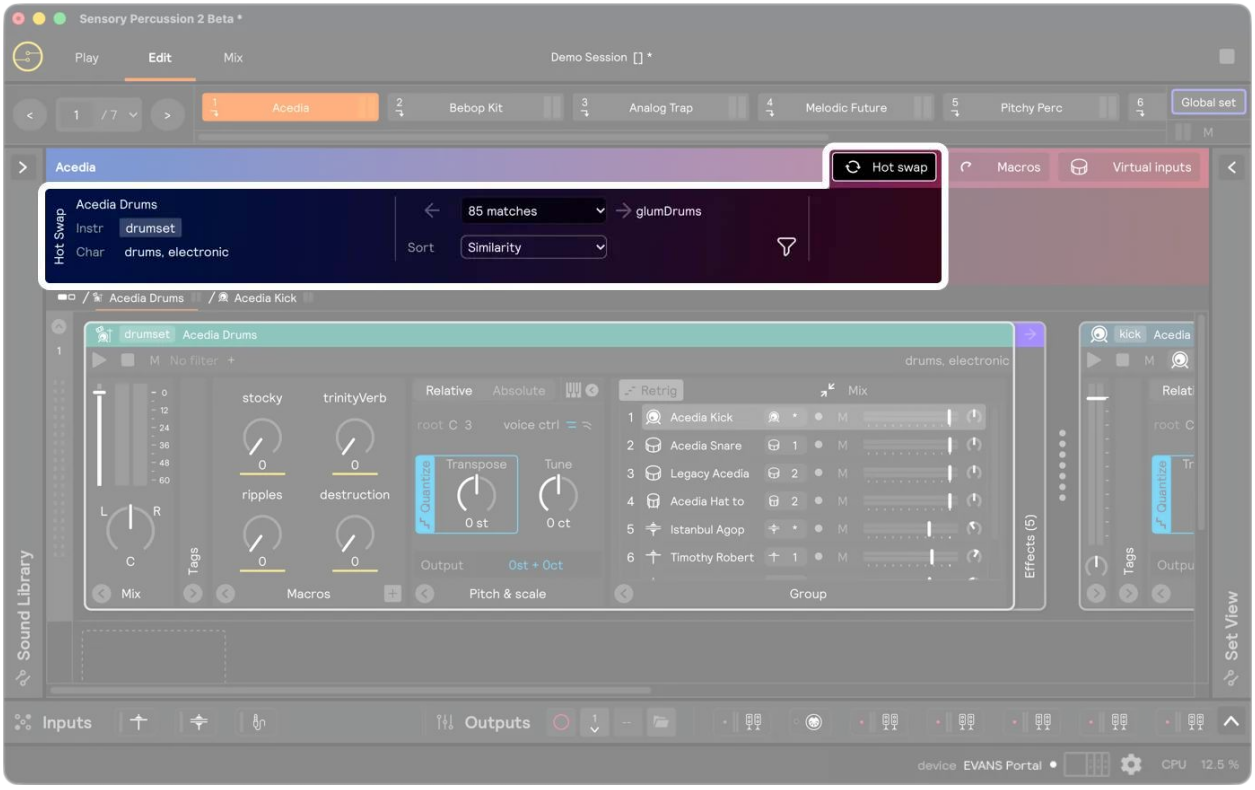


Figure 73: A screenshot of the Hot Swap panel in the Edit View

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Presets

Every module, generator, controller, and effect has a preset menu in its header. Presets store and recall the settings for that object’s type, so a reverb you’ve dialed in can be saved once and pulled back up on any other reverb, and the factory presets give you a starting point on everything.

Click the preset button in the object's header to open the menu.

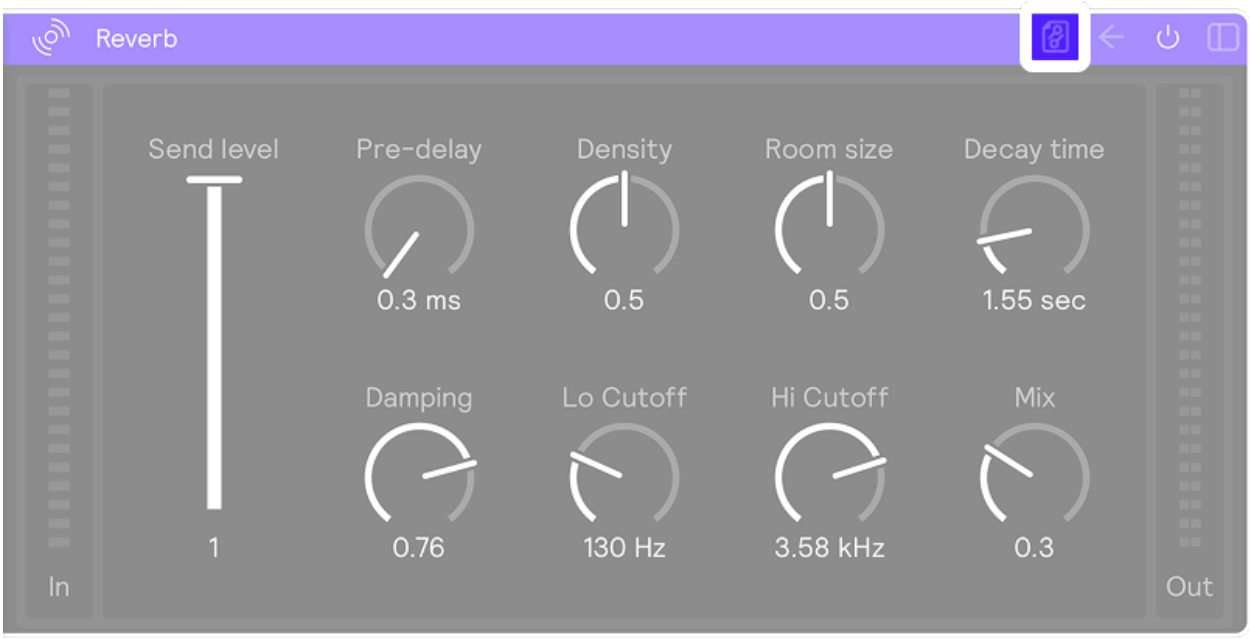


Figure 74: A screenshot of a Reverb effect with the preset button in its header highlighted

The preset menu

The top of the menu names what the object came from: `Preset: <name>`, `Instrument: <name>`, or `No preset` if its settings didn't come from either. Below that, the menu is grouped into submenus:

Item	What it does
Reset to preset… / Reset instrument…	Puts the object back to the preset or instrument it came from, as it's saved in the library, after confirming. Only shown when the object came from one.
Presets ▸	Browse, save, load, and delete presets for this object's type. See below.
Instruments ▸	Generators and controllers only. Swap the module for an instrument, or save it as one. See The Instruments menu.
Defaults ▸	Set what new blank objects of this type start from. See Defaults.

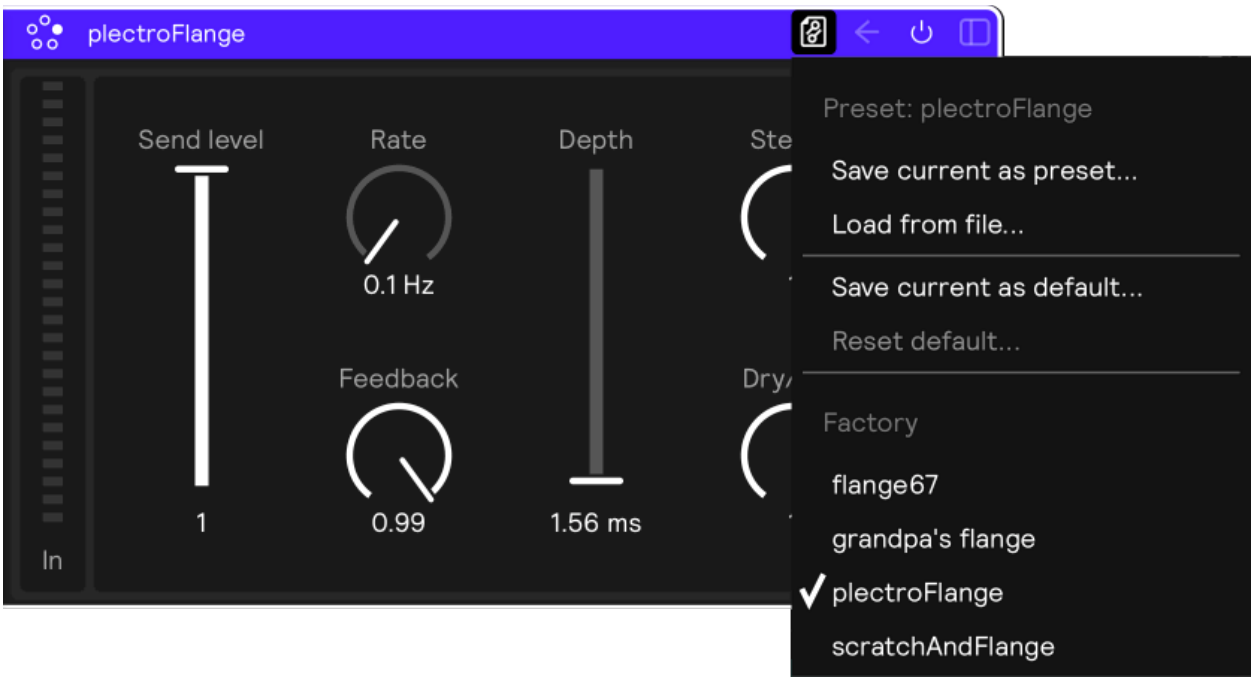


Figure 75: A screenshot of the preset menu open on a Flanger effect, with the applied factory preset ticked

Browsing and applying

The **Presets** submenu lists every preset whose type matches the object you opened it on, grouped under **Factory**, then one heading for each sound pack that has some, then your own **User** presets. The currently applied preset is ticked.

Choosing a preset applies its settings in place. The object keeps its identity and its input wiring; only its settings change. That means you can audition presets on a module that's already wired into your set without rebuilding anything around it.

Presets in the library

Presets also show up in the **Build** section of the library. Click the arrow next to a library object to reveal its presets as draggable entries, then drag one straight into your set. Unlike choosing from the menu, this creates a new object from the preset rather than changing an existing one.

Each preset row is labeled on the right with the library it came from: **Core Library**, the name of the sound pack that ships it, or **User** for your own. Right-click one of your own presets to delete it with **Delete user preset…**.

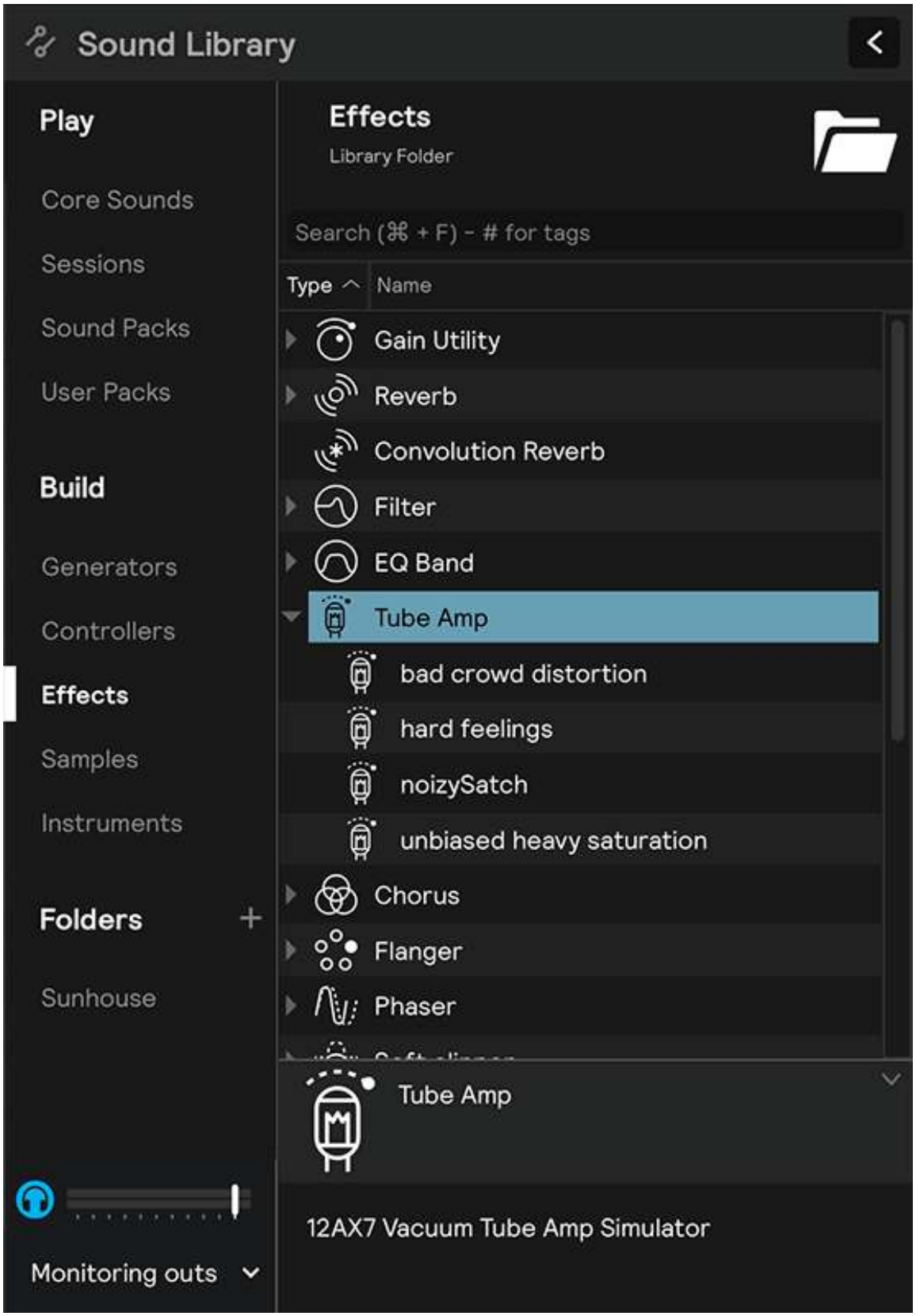


Figure 76: A screenshot of the library's Effects section with the Tube Amp expanded to show its presets

Loading from a file

Presets are stored as `.spp` files. **Presets → Load from file…** opens a file browser so you can pick a `.spp` file of the matching type from disk and apply it to the object, exactly as if you'd chosen it from the menu.

You can also drag a `.spp` file in from the Finder (or File Explorer), which creates the preset's object inside whatever you drop it on. A sampler preset becomes a new sampler, an effect preset a new effect, just like dragging a preset in from the Build library. Preset files inside a bookmarked folder appear in the library's Folders section too, and can be dragged in the same way.

A drop is only accepted where the preset's object type fits, so a module only lights up as a drop target for presets it can actually contain.

Saving presets

Presets → Save current as preset… names the object's current settings and stores them as a user preset for that type. It'll show up under **User** in the preset menu of every object of the same type from then on. If a user preset already has that name, the button reads **Save (override)**.

User presets are saved as `.spp` files in *Music/Sunhouse/Sensory Percussion 2/presets*, organized into a folder per object type, with the name you gave the preset as the filename. Since they're ordinary files, you can back them up or share them with someone else, who can load them with **Load from file…** or by dragging them in.

Presets → Delete user preset… lists your own presets for this type. Pick one to delete it after confirming. Factory and sound pack presets can't be deleted.

To save a whole module as something you can drop into any set and swap with others, save it as an instrument instead.

Defaults

Defaults → Save current as default… stores the object's current settings as the default for its type. From then on, a new blank object of that type dragged in from the Build library starts from those settings instead of the factory ones. That's handy if you always reach for the same reverb decay or the same sampler envelope.

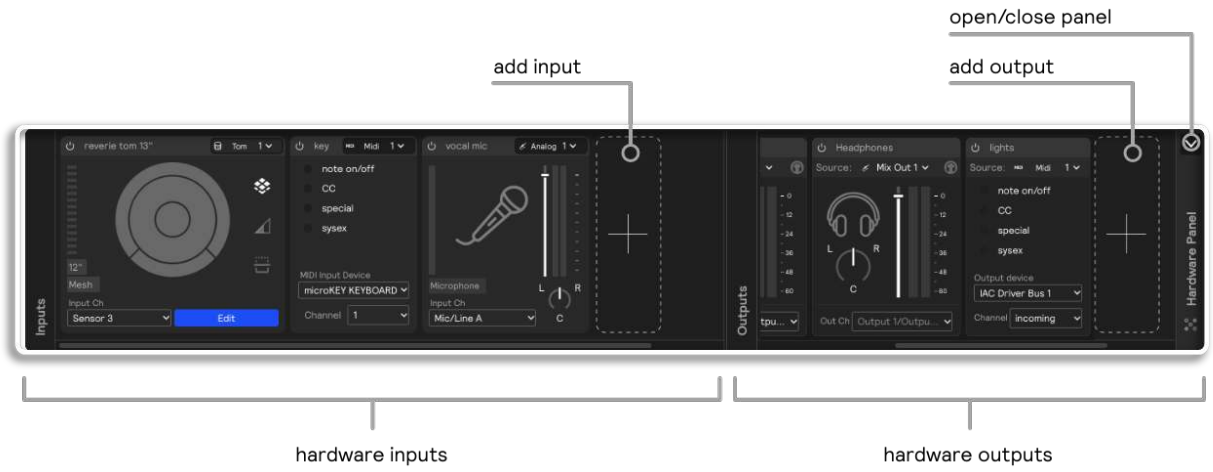
A default stores the object's own settings and its effects, but never the modules inside a controller. To save a controller with its contents, save it as a preset or an instrument. MIDI Notes Generators and MIDI Kits don't have defaults.

Defaults → Reset default… removes the saved default for that type after confirming, returning new objects to the factory settings.

Note:

A default only applies to a genuinely blank library template. Dragging in a preset, dropping an audio file, or pulling an object in from a saved set all bring their own settings, so the default is left out of it.

Hardware Input and Output Panel



The hardware in/out panel is where you can manage the settings for any physical gear that is connected to Sensory Percussion. This includes sensors, MIDI devices, microphones, speakers, headphones, guitars, synths, etc. Unlike the virtual inputs panel, this is a global panel, meaning your hardware stays the same regardless of what set you have open.

Adding Inputs/Outputs

Hardware inputs and outputs are both added by clicking the '+' button in the respective panel.

In Hardware Inputs, you'll have twelve choices: 7 Sensor types, Drum Trigger, eKit, Analog, Grid Pads, and MIDI. See Hardware Inputs for what each one is for.



Figure 77: A screenshot of the input types available

In Hardware Outputs, you'll have two choices: **Analog**, or **MIDI**.



Figure 78: A screenshot of the output types available

The most common hardware setup is Sensor Inputs –> Analog Outputs, but you can create any combination of input/output types.

You can always delete a hardware input/output by selecting it and hitting the `delete` key.

Your setup

Hardware inputs and outputs belong to your setup, not to a session. A few related pages:

- Environments save your inputs and outputs along with your audio, MIDI, and OSC settings, so you can switch between setups in one click.
- Sensor Expansion adds seven more sensor inputs with a second EVANS Portal.
- Hardware Remap moves your inputs and outputs to a new interface in one step.

Sensor Expansion (Second Portal)

Connect a second EVANS Portal to get seven more sensor inputs. The second Portal is used only for sensors: it has no audio outputs in Sensory Percussion, and your main interface keeps handling all audio.

Setting it up

1. Plug the second Portal into your computer over USB.
2. Open **Settings → Audio**. Under **Devices**, a second card appears next to your main interface, naming the unit it found, for example **EVANS Portal (2) · Detected**.
3. Click **Use as sensor expansion** on that card, or pick the unit from the **Sensor Expansion** dropdown under **Output Device**.

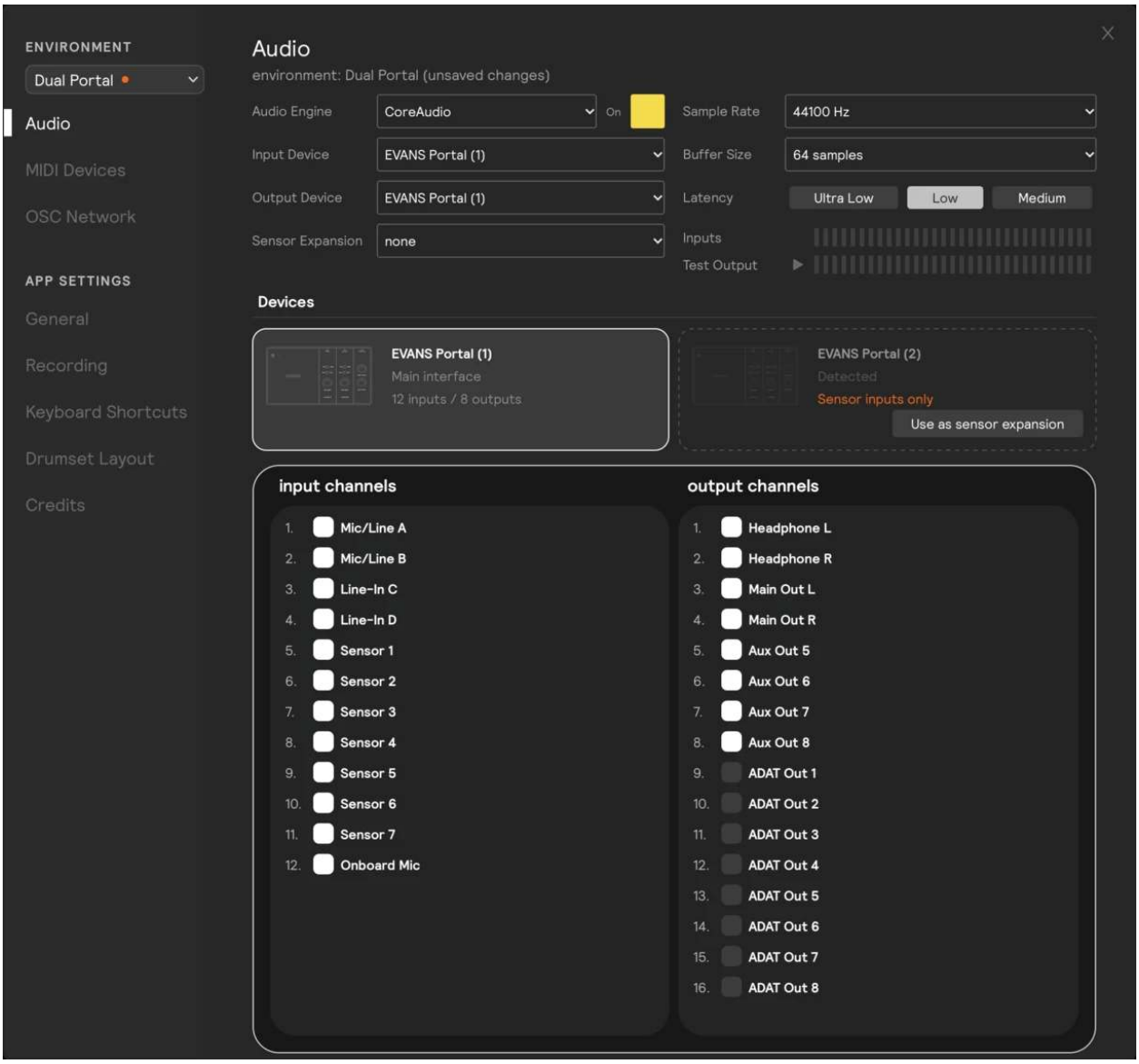


Figure 79: The Audio page Devices cards: EVANS Portal (1) as the main interface, and EVANS Portal (2) detected and offering Use as sensor expansion

Once it's on, the second card reads **Sensor expansion** and the **Sensor Expansion** dropdown shows the unit:

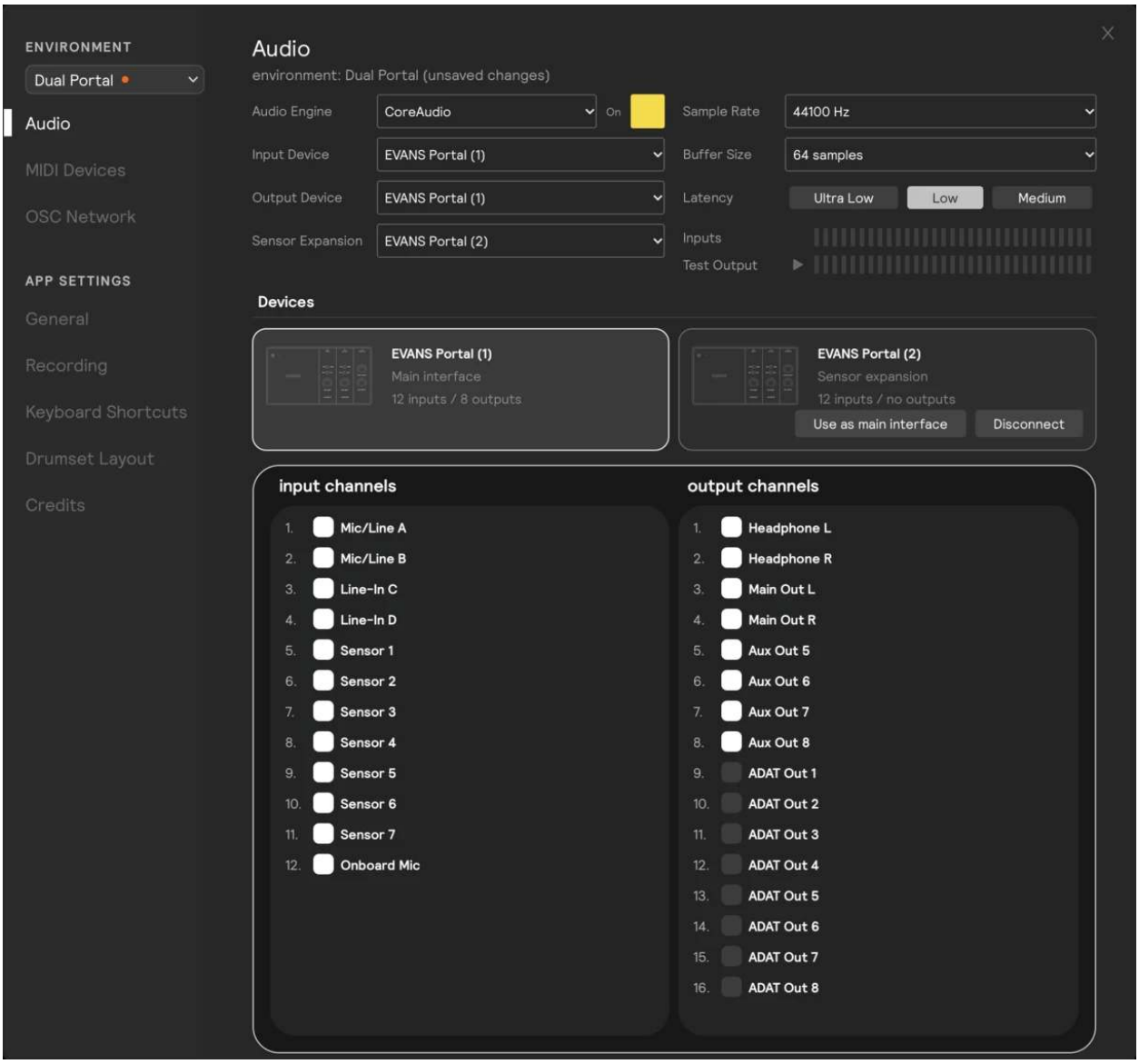


Figure 80: The expansion active: EVANS Portal (2) as Sensor expansion with Use as main interface and Disconnect, and the Sensor Expansion dropdown set to EVANS Portal (2)

The expansion runs at the same sample rate and buffer size as your main interface. There are no separate settings for it.

Using the extra inputs

In any sensor input's **Input Ch** menu, the second Portal's channels are listed under **Sensor Expansion**, starting with **P2:**. Assign, train, and route these inputs exactly like the ones on your main Portal.

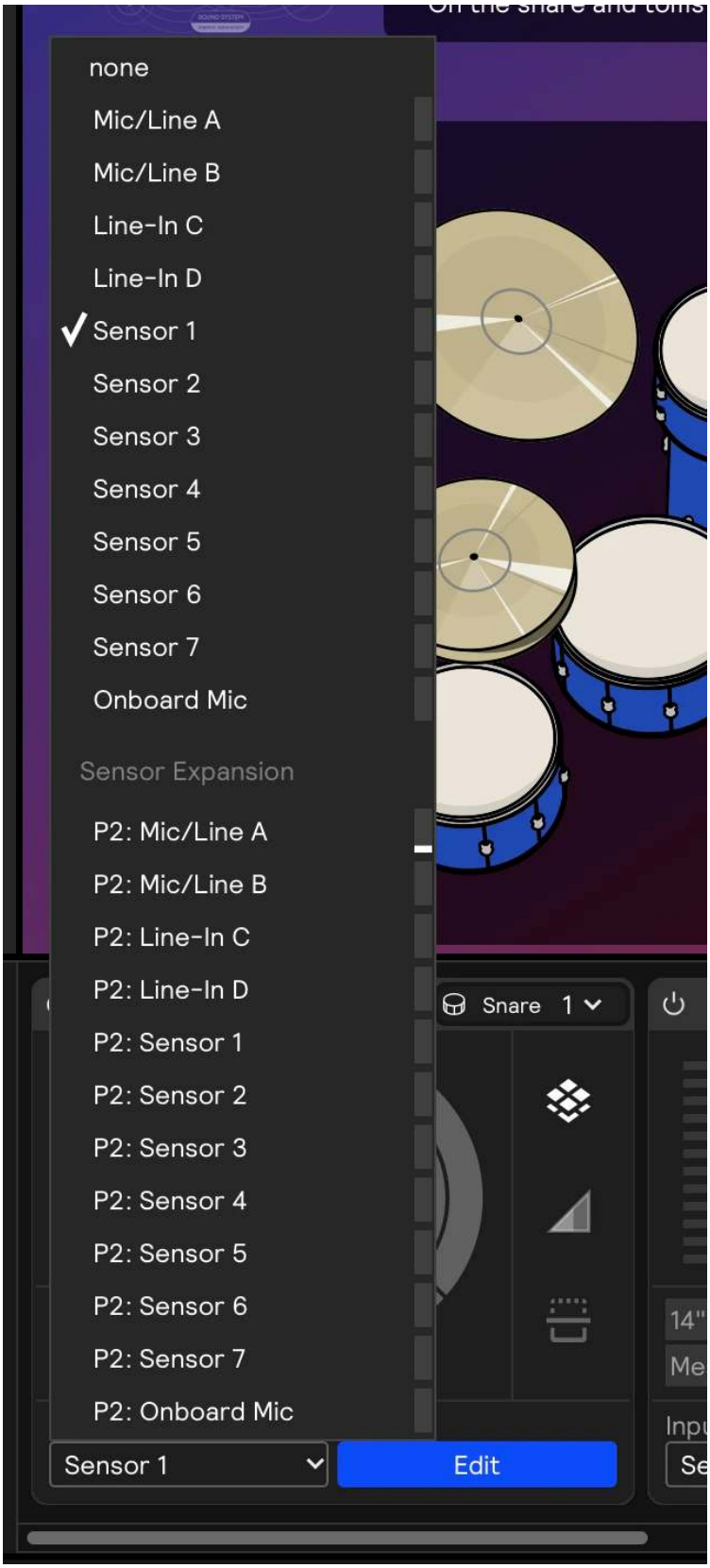


Figure 81: A sensor input's Input Ch menu, with the second Portal's channels under Sensor Expansion

Expansion channels are for sensor inputs only. Analog inputs can't use them.

The Devices cards

The **Devices** area always shows your main interface on the left. It shows a Portal picture for a Portal, and a generic interface picture for anything else (or when your input and output are different devices). Click a card to see that unit's channels in the list below: the main interface shows its input and output channels, and the expansion shows its inputs only.

The right card appears whenever a Portal could be a sensor expansion: a second Portal when your main interface is a Portal, or any connected Portal when your main interface is something else. So a single Portal can be the sensor expansion next to a third-party interface. When one Portal is connected and not in use yet, both cards offer it, the left card as main interface and the right as sensor expansion.

Button	Where	What it does
Use as sensor expansion	Right card	Starts using the detected Portal for sensor inputs.
Disconnect	Right card, while the expansion is active	Stops using the second Portal and clears it.
Use as main interface	Right card, while the expansion is plugged in	Makes the expansion Portal your main interface, after confirming. See Swapping Portals.
Forget	Right card, when the expansion isn't found	Clears the stored expansion.
Use Portal as main interface	Left card, when a Portal is connected but isn't your main interface	Switches your main interface to that Portal. If the only Portal is your expansion, you're asked to confirm the swap.

The Portal that's running as sensor expansion is greyed out in the **Input Device** and **Output Device** dropdowns. To use it for audio, swap it to main interface, or set **Sensor Expansion** to **none** first.

When the expansion is unplugged

If the second Portal is unplugged, its inputs go silent and are marked **disconnected**, but they keep their settings and training. They come back on their own when you plug it back in.

While it's unplugged, its card is drawn with a dashed outline and its status in orange, and it's greyed out in the **Sensor Expansion** dropdown. Click **Forget** if you don't plan to use it again.

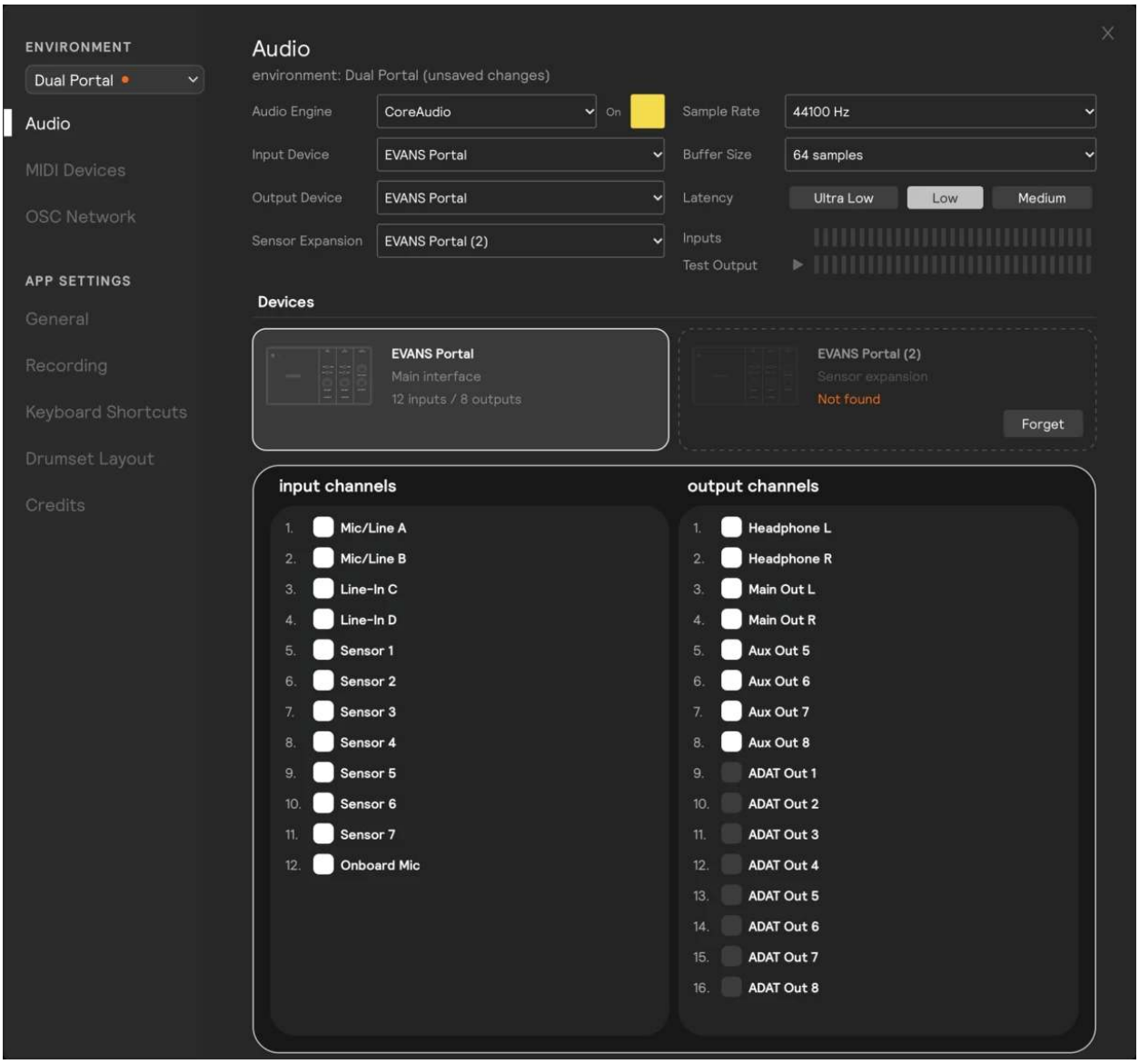


Figure 82: An unplugged expansion: the EVANS Portal (2) card dashed, with Not found in orange and a Forget button

Swapping Portals

Use **Use as main interface** when the output cables ended up on the wrong unit, or when your main Portal is unplugged and you want to carry on with the unit that was the expansion. You're asked to confirm first:

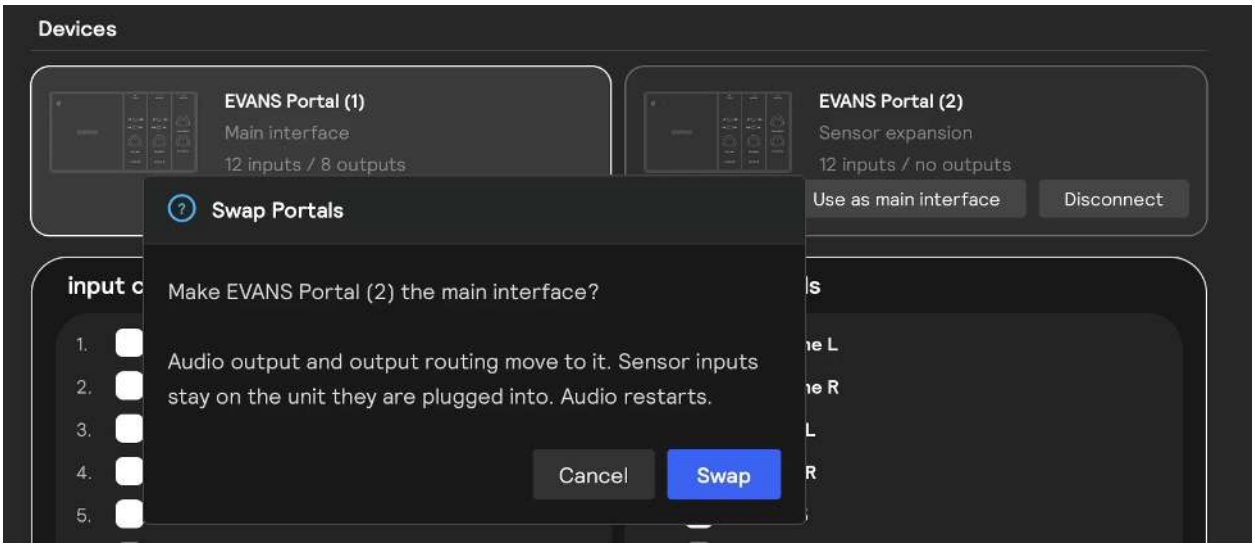


Figure 83: The Swap Portals prompt: Make EVANS Portal (2) the main interface? Audio output and output routing move to it. Sensor inputs stay on the unit they are plugged into. Audio restarts.

Audio output and your output routing move to the promoted Portal. Sensor inputs stay on the unit they're plugged into, so nothing needs re-training. Audio restarts briefly.

If the old main interface was a Portal, it becomes the expansion. If it's no longer connected, its card shows **Not found** until you plug it back in or click **Forget**. If the old main interface was another kind of device, it's simply released, and the expansion card disappears until another Portal is plugged in.

Telling the two Portals apart

The Sunhouse logo in the top-left corner of each Portal is its link light. It shows what Sensory Percussion is using that unit for:

Link light	Meaning
Solid	This unit is your main interface.
Pulsing (on for 1.5 seconds, off for half a second)	This unit is your sensor expansion.
Off	Sensory Percussion isn't using this unit.

So with both units on your desk, you can see at a glance which one to plug your outputs into. On Windows, both logos are solid while Sensory Percussion is using a Portal, so this only works on a Mac. The lights go out shortly after you quit Sensory Percussion. See Sunhouse logo (link light).

In the footer

Once a sensor expansion is set up, the device area at the bottom right of the main window shows one Portal icon per unit: the main Portal first, then the expansion. The icon lights while the unit is in use. Hover over the area to see both units by name. A unit that's been unplugged is marked **not found**.



Figure 84: The footer with two Portal icons and the tooltip Main: EVANS Portal (1) · Sensor expansion: EVANS Portal (2)

Hardware Remap

Hardware inputs and outputs remember the exact channel on the exact audio interface they were set up on. When you switch to another interface, replace a Portal, or open a hardware inputs file from another computer, those channels aren't there anymore. Instead of leaving every input and output silent until you pick each channel again, Sensory Percussion offers to move them all for you, to the same channel numbers on the interface you have now.

Nothing moves until you choose to. Each remap is a single step you can undo.

The remap bar

When some of your inputs or outputs aren't on the current interface, a bar appears above the footer saying so, with an **Options** menu on its right.



Figure 85: The remap bar: 7 inputs and 2 outputs are on another device, with a blue Options button

Each affected input or output card is marked **disconnected**:

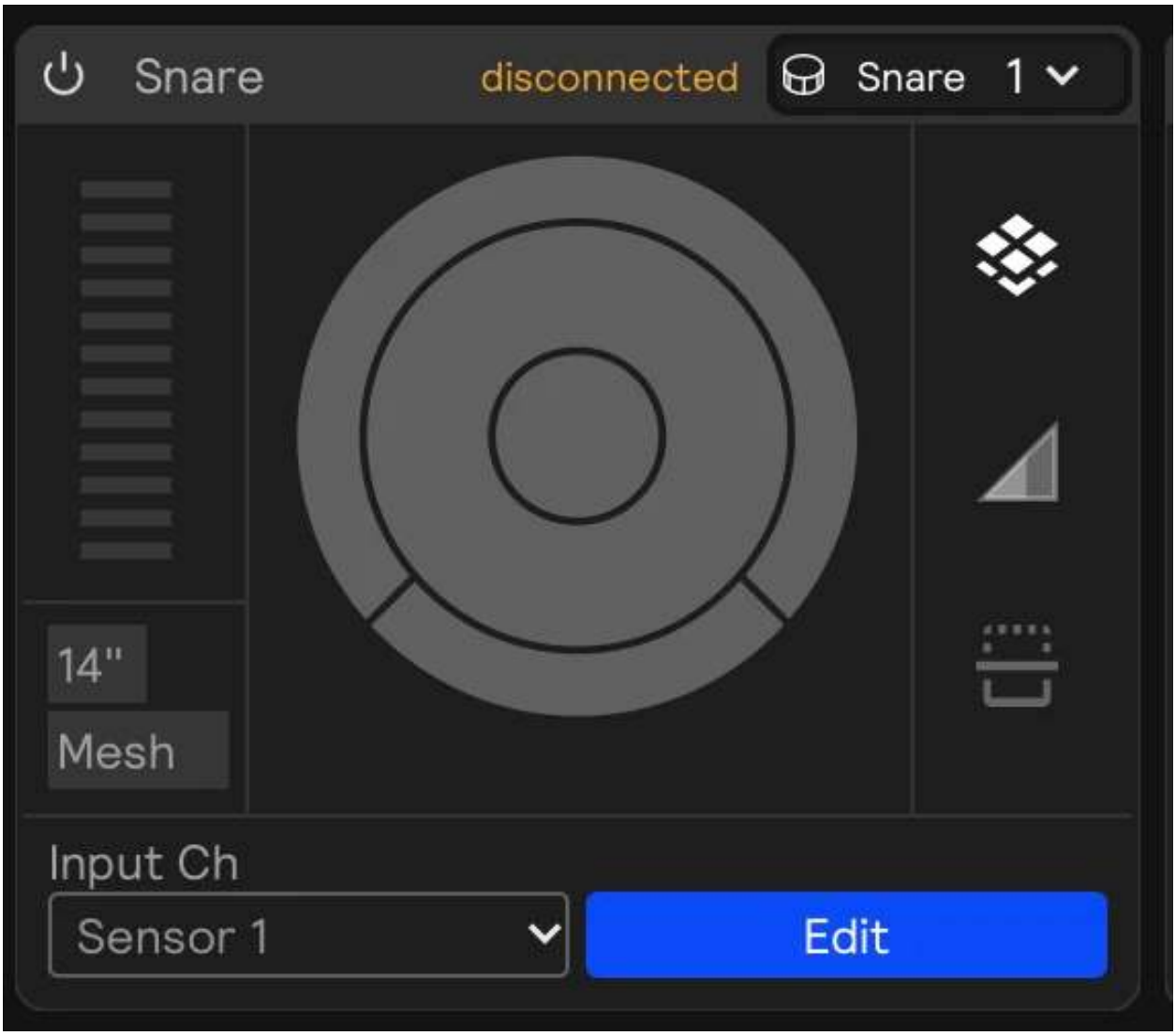


Figure 86: A Snare input card marked disconnected

The **Options** menu holds what you can do about it:

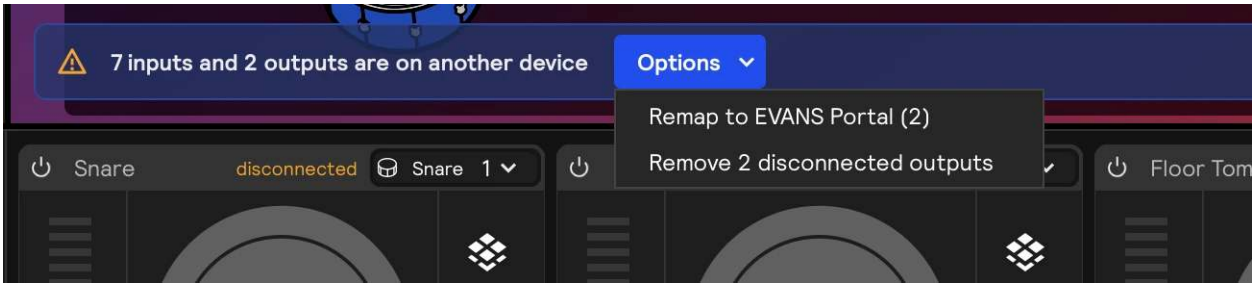


Figure 87: The Options menu with Remap to EVANS Portal (2) and Remove 2 disconnected outputs

Item	What it does
Remap to *device*	Moves every disconnected input and output to the **same channel number** on the current interface. Inputs follow the input device, outputs follow the output device, and sensor expansion inputs follow the expansion Portal.
Remap to *device* anyway	The same, offered when the bar thinks you'd rather reconnect the original interface. See below.
Remove *N* disconnected outputs	Deletes the outputs that aren't on the current interface, for cleaning up outputs from interfaces you no longer use.

The **Options** button is blue when a remap is the likely next step, and plain otherwise.

After a remap, the bar turns into a one-line summary with an **Undo** button. If anything else is still on offer, like removing disconnected outputs, it stays in **Options**.

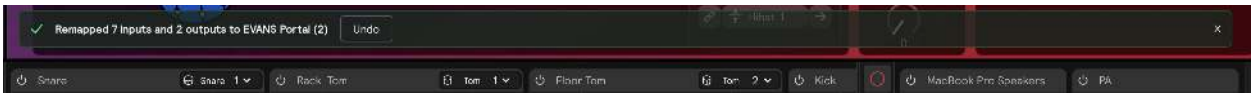


Figure 88: The summary after a remap: Remapped 7 inputs and 2 outputs to EVANS Portal (2), with Undo

- If a channel the remap needs is switched off in Settings → Audio, the remap switches it on, and the summary says how many it switched on. **Undo** restores the old channels but leaves those channels on.
- An input or output that can't move, because the new interface has no channel with that number, stays as it is. It's counted in the summary and stays marked **disconnected**. Switching back to its own interface brings it back untouched.
- When nothing that's disconnected can move to the current interface, the bar just says so and offers no remap.

About 15 seconds after it appears, the bar folds down to a warning icon at the left. Click the icon to open it again. It also reopens on its own whenever its message changes. Close it with the × on its right, and it stays hidden until its message changes.

When you change interface yourself

The bar appears when you pick a new input or output device in **Settings → Audio**, connect a Portal, choose a sensor expansion, or go through the guided setup. Choose **Remap to *device*** from **Options** to move everything over.

When you open a file from another computer

Loading a hardware inputs or outputs file (**File → Hardware Inputs → Load…**) never rewrites anything by itself. Instead, the bar tells you what it found:

- ***N* inputs need remapping to *device*** (*This file was made on another computer.*): the file was made on the same kind of interface you have open. Choose **Remap to *device*** from **Options** to bind everything to the same channel numbers.
- ***N* inputs were made for *device*** (*It is not connected.*): the file was made on a different kind of interface. Plug that interface in and pick it, or choose **Remap to *device* anyway** to use what's open now.



Figure 89: The bar after loading inputs made on another computer: 7 inputs need remapping to EVANS Portal (1)

When the environment's interface isn't connected

If you load an environment, or launch into one, while its interface is unplugged, its inputs and outputs show as disconnected but the bar doesn't suggest a remap. You most likely want to plug that interface back in, not rebind everything to whatever happens to be open. The bar names the interface the environment expects:



Figure 90: The bar reading Environment "Studio Portal" expects EVANS Portal: 7 inputs and 2 outputs are on it and come back when it is connected

Connect and pick that interface, and the bar goes away on its own. If you really do want to move everything, **Options** still offers **Remap to *device* anyway**, along with removing disconnected outputs.

> **Note:**
>
> Loading an environment, reconnecting an interface, renaming a Portal, and picking a device never remap anything on their own. Only **Options** does.

New output devices

When you switch to an output device that none of your outputs can use, even after a remap, Sensory Percussion creates one output for each stereo pair on it. They're created when you close **Settings**, so you can switch the device's channels on first. If no channel is on yet, it tries again the next time you close Settings.

Hardware Inputs

Hardware Inputs

There are 12 hardware input types. Click **+** in the hardware inputs panel to add one: sensors are listed under **Sensor inputs**, and everything else under **More inputs**.

- **7 sensor types**: Snare, Rack Tom, Floor Tom, Kick, Ride, Crash, and Hi-hat. Sensors are the heart of the Sensory Percussion experience, so these inputs come with special controls to train the software to respond to your unique style of playing.
- **Drum Trigger**: a conventional single- or dual-zone drum trigger, played as a drum with no training.
- **eKit**: an electronic drum kit connected over MIDI, with its pads mapped to drums and zones.
- **Analog**: an audio source, like a mic or an instrument.
- **2 MIDI types**: MIDI inputs for controlling parameters, and Pad inputs (**Grid Pads** in the menu) for triggering sounds from a pad controller.

Drum Trigger and eKit inputs play drums just like sensors do, so sets and instruments built for sensors work with them too. Analog and MIDI inputs are used in different ways throughout the software.



Figure 91: A screenshot showing the hardware inputs panel

Drum Sensor Inputs

After choosing a Snare, Kick, Rack tom, or Floor tom sensor type from the add menu in the hardware inputs panel, you'll see a small form to fill out with some information about the drum you want to add. Some of this info will help us set the right default settings for that drum type, and some of the info is just for you to keep your inputs organized.

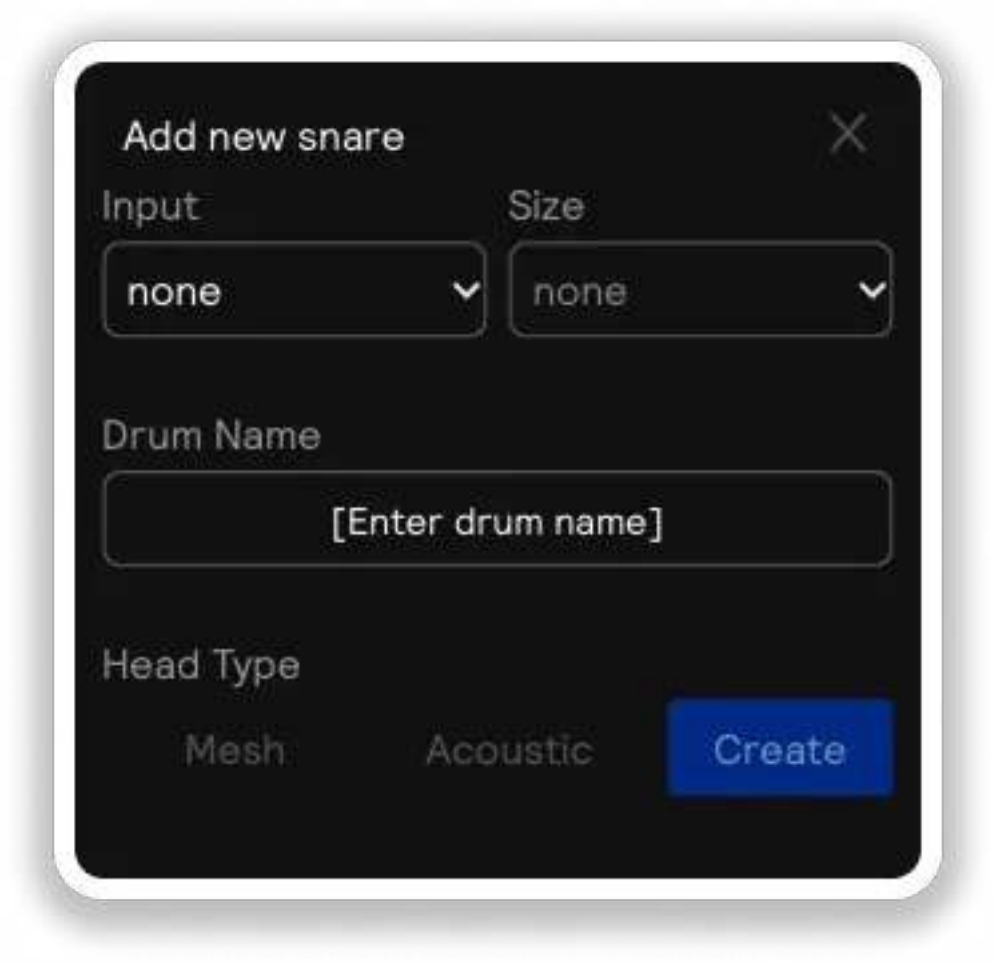
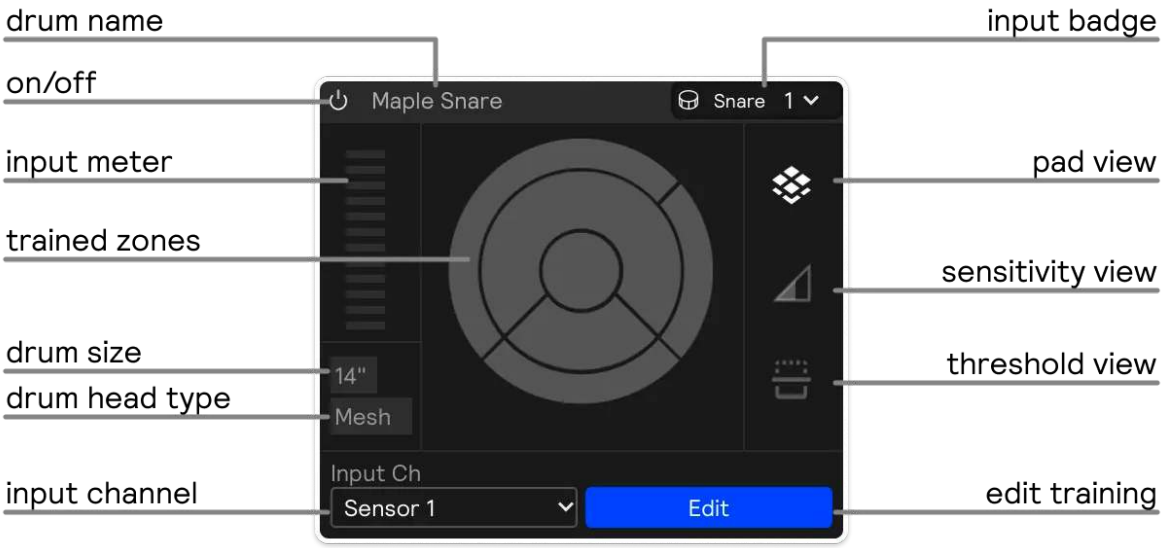


Figure 92: A screenshot of the create sensor input module, asking for information about the drum

Sensor Input Parameters



On the right side of the sensor input, you can toggle between Pads, Sensitivity, and Threshold views:

Pads

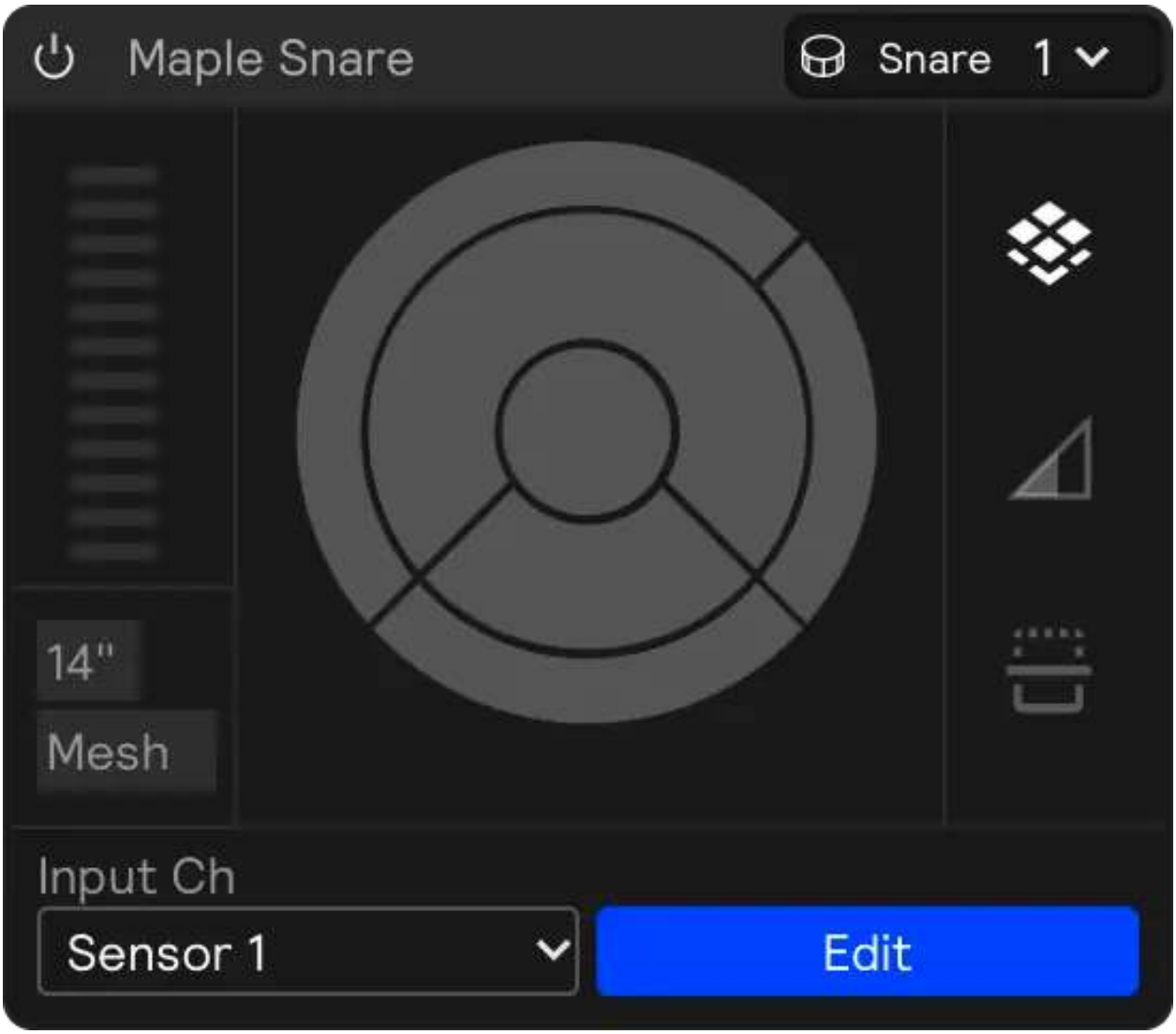


Figure 93: The Pads section of a sensor input

Sensitivity

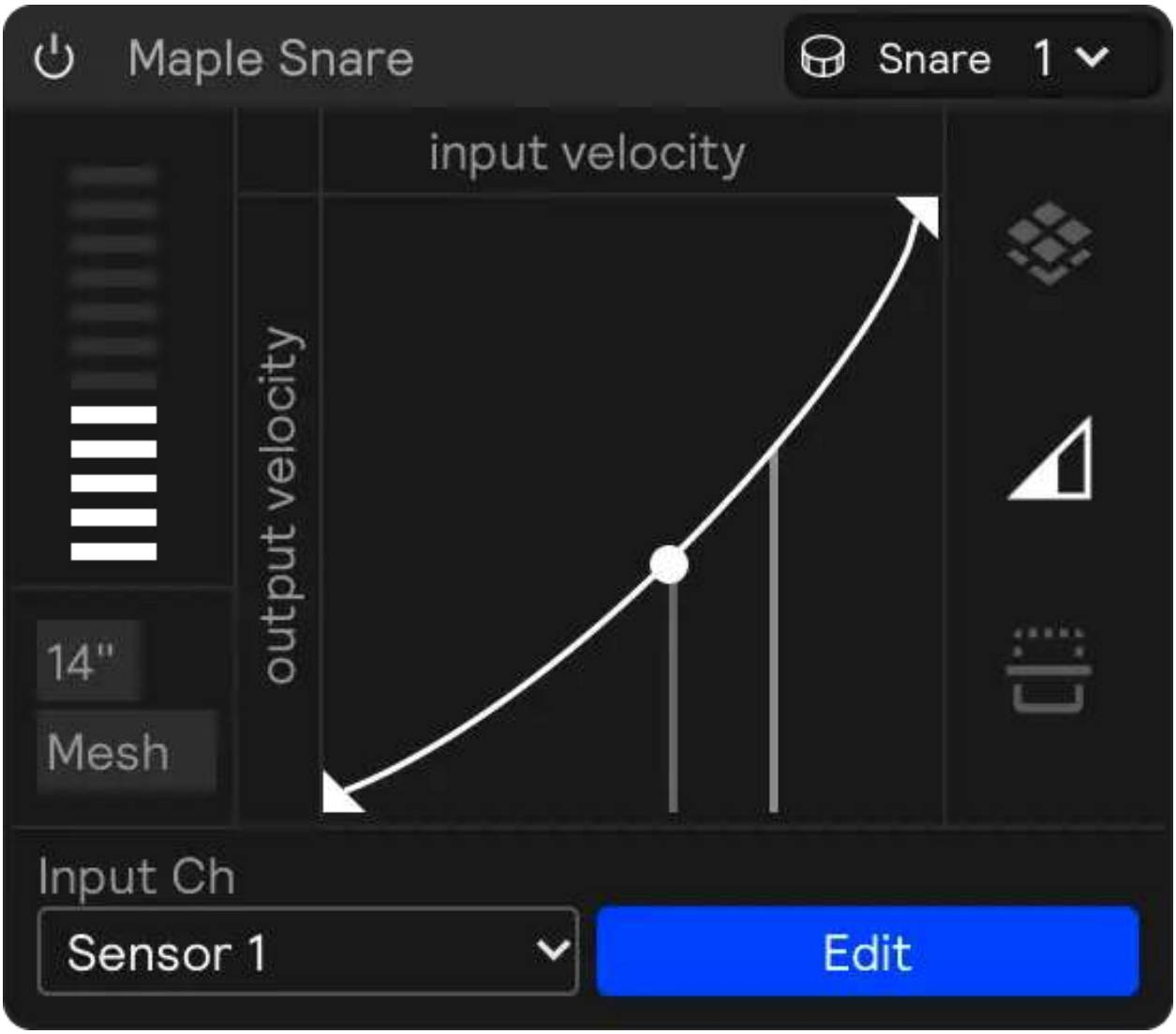


Figure 94: The Sensitivity section of a sensor input

Threshold

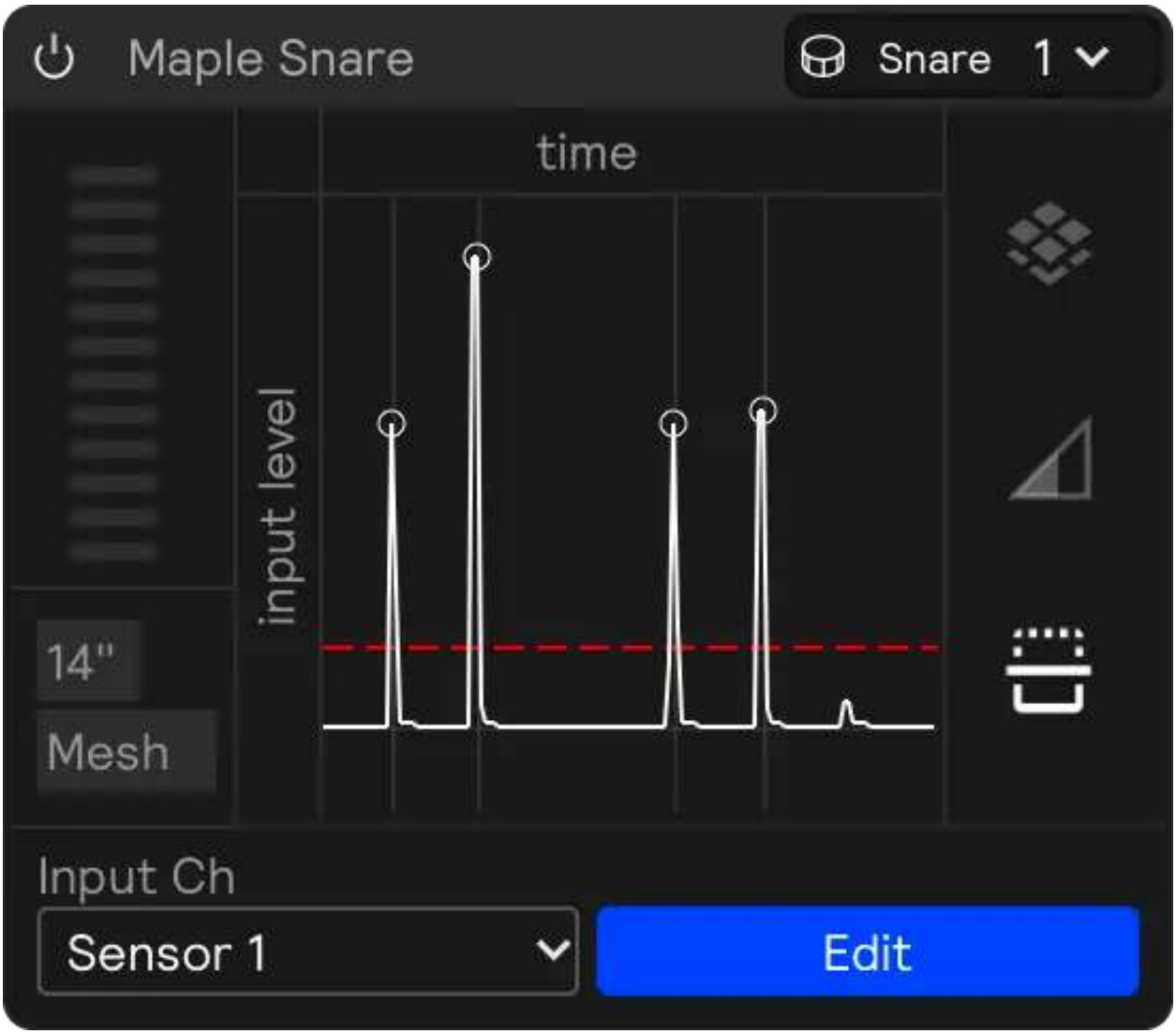


Figure 95: The Threshold section of a sensor input

Untrained

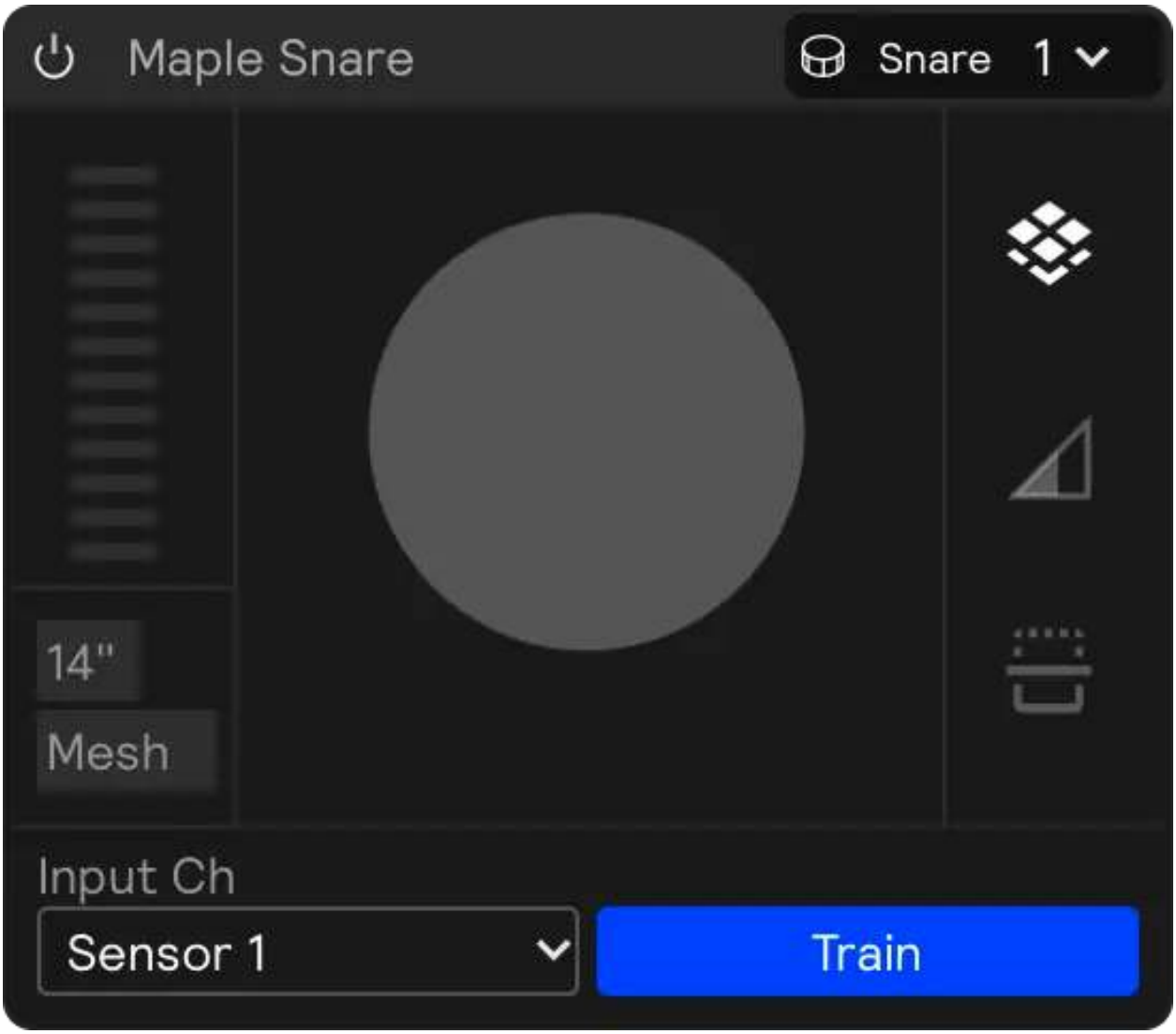


Figure 96: An untrained sensor input

Drum Training

Training a Sensor Input

If you didn't train your drums through the Guided Setup, you can do so at any time by clicking the `Edit` button on the bottom-right of each Drum Sensor Input. This process teaches Sensory Percussion to recognize your playing on that particular drum. You only have to do it once per drum and it's a pretty quick process!

First, make sure the Drum has the correct Input Channel selected – this will correspond to the input jack you are using on your interface.

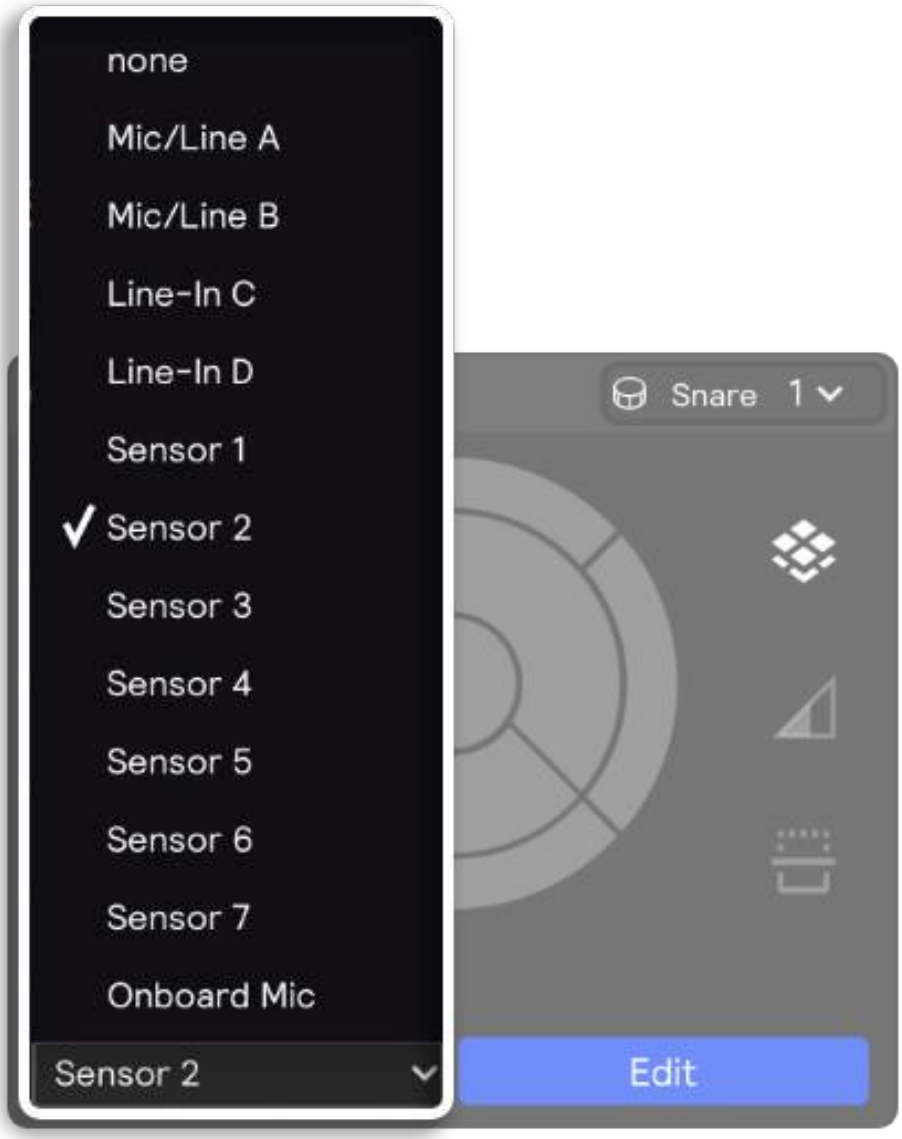
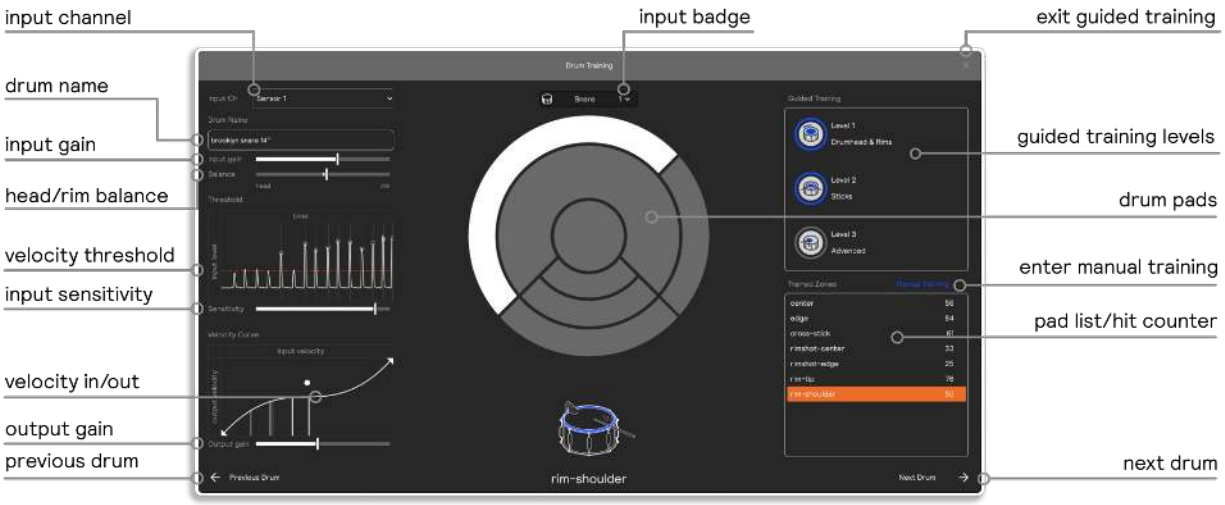


Figure 97: A sensor input module with the input channel dropdown open

Then, click the `Edit` button to open the training window.

Training Window



On the left side of the training page, you can manage various input parameters: channel, name, velocity i/o, threshold, and sensitivity.

On the right side, you can manage your trained zones using one of two different panels: Guided Training or Manual Training.

Guided Training

Once you enter the training window, start Guided Training by clicking the drum icon next to where it says “Level 1: Drumhead & Rims” in the top-right panel.

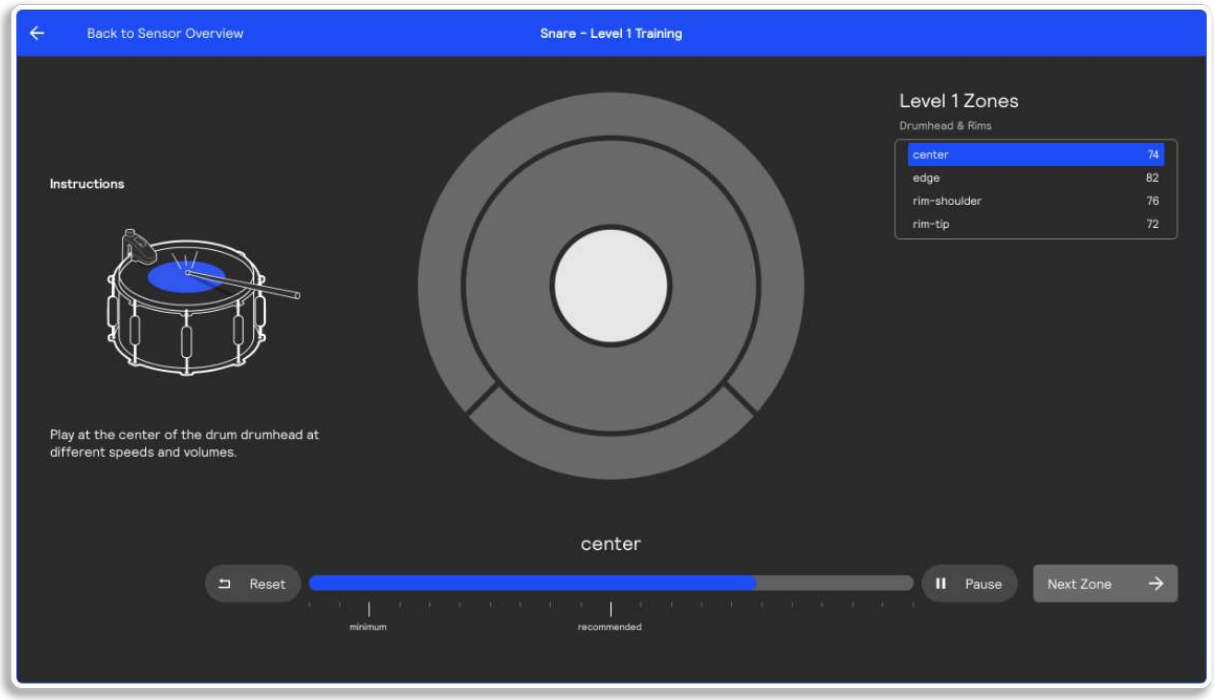


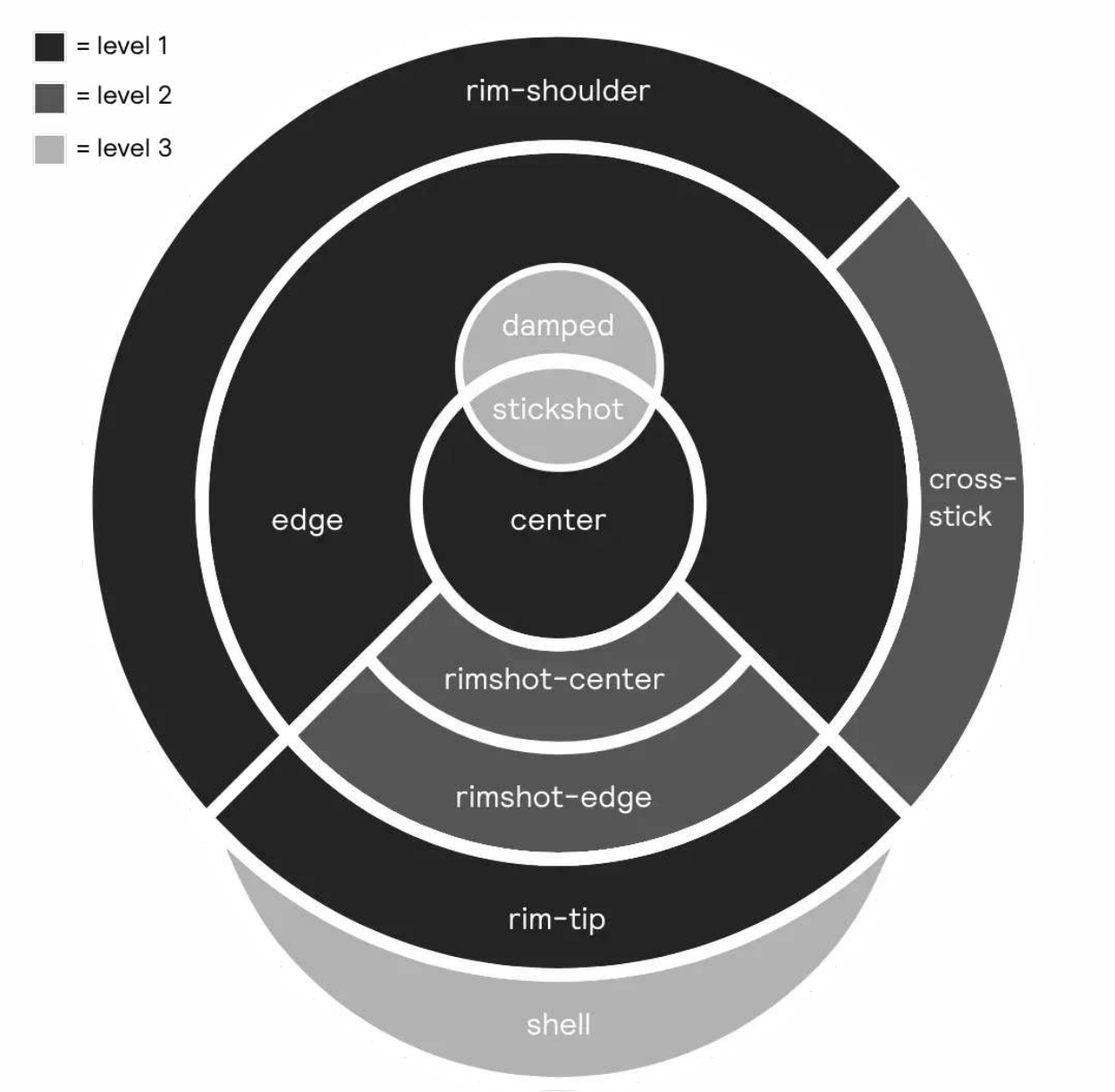
Figure 98: A screenshot of the guided training window

Guided Training is split into 3 different levels for the snare and two for the kick, in order from most to least commonly used zones. Following the on-screen prompts to train each zone in this order is the recommended way to most accurately train your drum.

As you train a given zone, the blue progress bar on the bottom will fill up with each trained hit. Each zone has an indicated minimum and recommended number of hits to be accurately trained. If you make a mistake while training, you can hit the `Reset` button to delete your training. You can also hit the `Pause` button to stop training and test how it sounds before moving on to the next zone.

Drum Zones by Level

Snare Zones



Level 1: Drumhead & Rims

These are the most basic zones and drum gestures that are required for the software to correctly recognize your playing:

- Center: hitting the drumhead in the center
- Edge: hitting the drumhead on the outer perimeter
- Rim-shoulder: hitting the rim with the shoulder of the stick
- Rim-tip: hitting the rim with the tip of the stick

Level 2: Sticks

The second level includes more advanced, but common, drumming gestures. These zones are optional. They include:

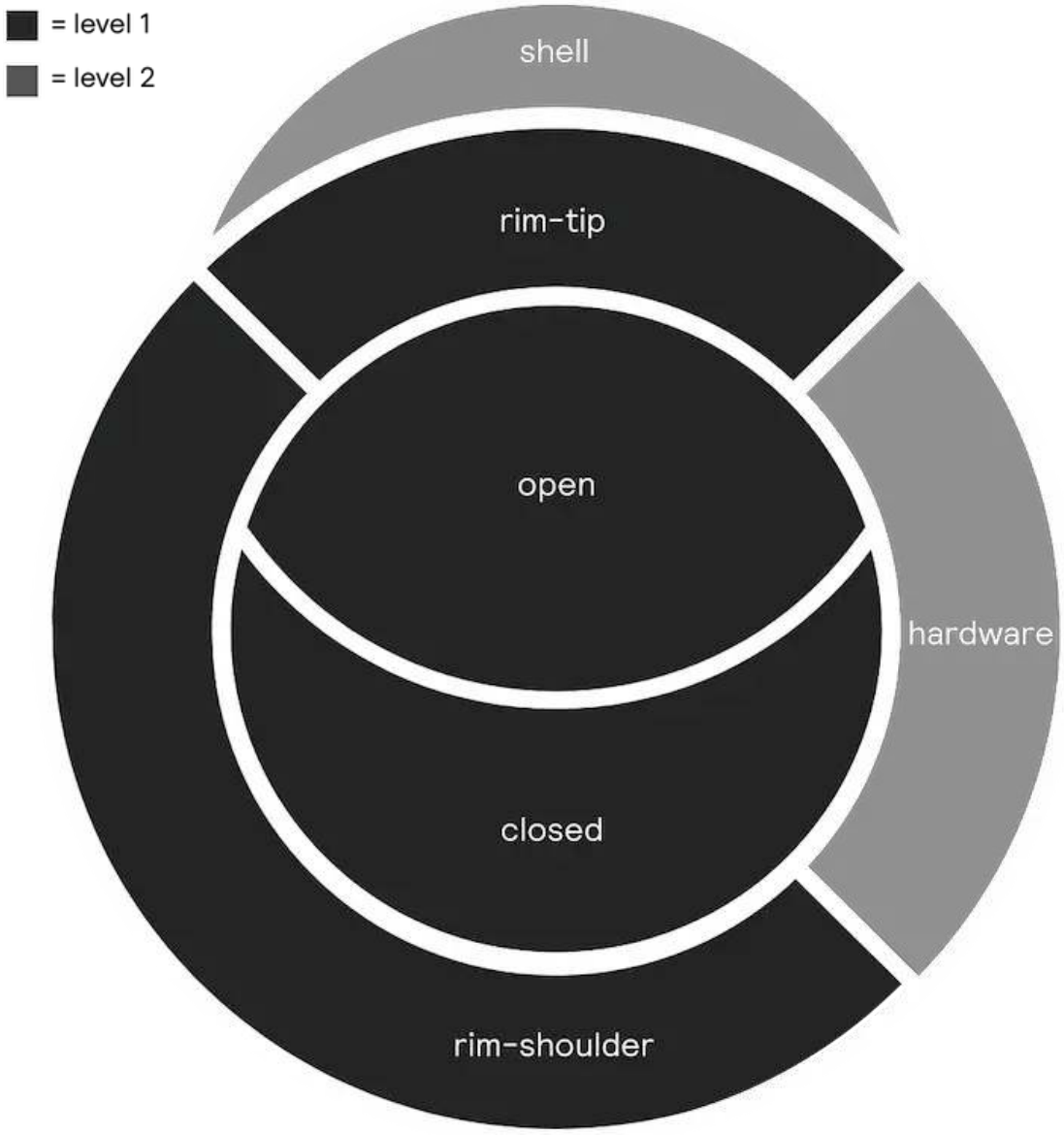
- Rimshot-center: a rimshot hitting the center of the drumhead
- Rimshot-edge: a rimshot hitting the outer perimeter of the drumhead
- Cross-stick: digging one end of the stick in the head while hitting the rim with the other.

Level 3: Advanced

Level 3 includes less common drumming gestures and are also optional. Unless you plan on actively using these gestures in your playing, we recommend leaving these zones untrained to improve overall accuracy.

- Damped: playing the drum head while dampening it with the other hand
- Stickshot: digging one stick into the head and hitting it with the other
- Shell: hitting the side of the drum

Kick Zones



Level 1: Basics

These are the most basic drum gestures for the kick and are required for the software to correctly recognize your playing:

- Open: mallet rebound off of the drumhead
- Closed: digging the mallet into the head
- Rim shoulder: hitting the hoop edge with the shoulder of the stick
- Rim Tip: hitting the hoop edge with the tip of the stick

Level 2: Extras

These zones are less common and are optional:

- Shell: hitting the kick drum above the hoop
- Hardware: hitting the drum hardware with your stick

Manual Training

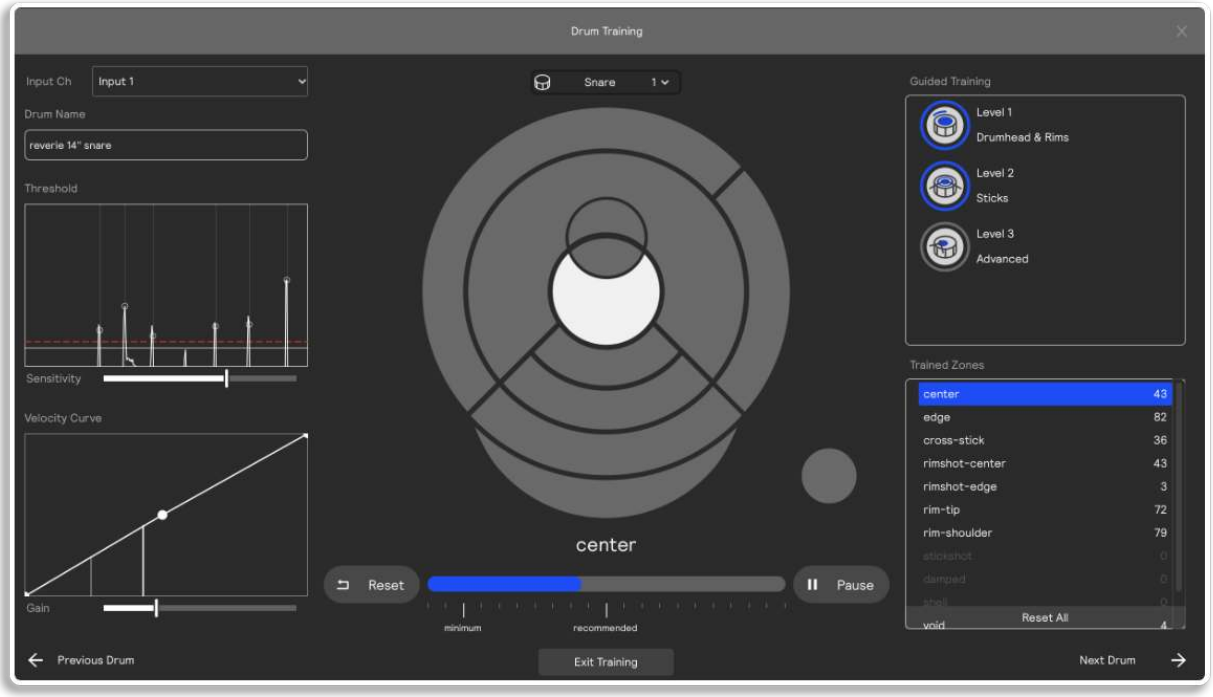


Figure 99: A screenshot of the manual training window

Unlike Guided Training, Manual Training allows you to train zones in whatever order you like. Just click `Manual Training` and select the zone you'd like to train, regardless of which of level it belongs to. Untrained zones will appear greyed out, while trained zones will be appear white.

Void

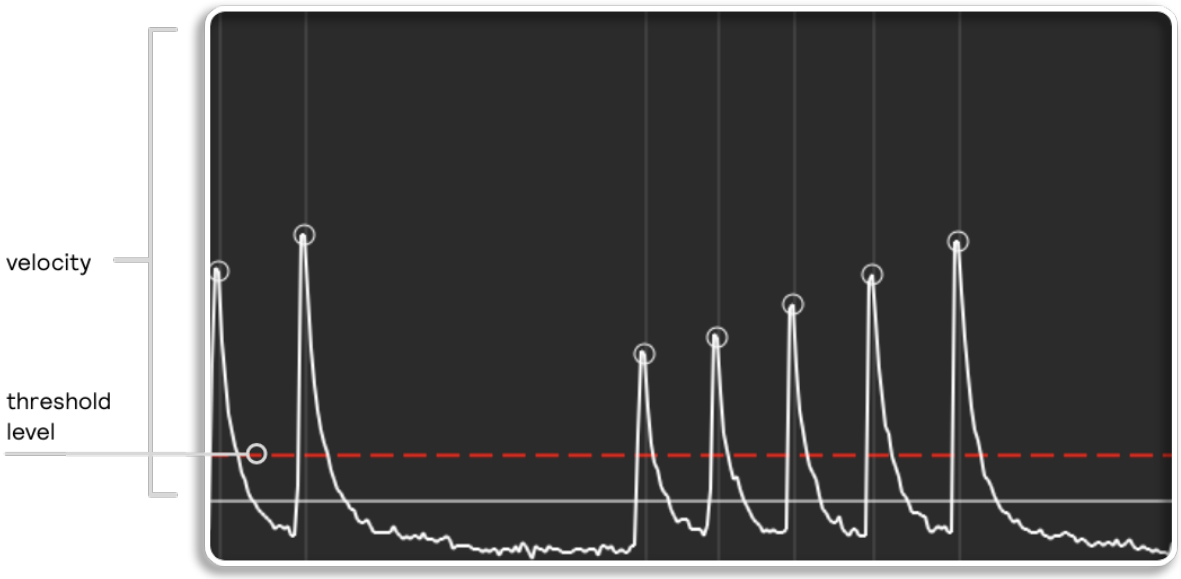


Figure 100: A screenshot of the void zone when it's selected

The Void zone is a bit different from the other zones in that it's not a physical part of the drum. Because of this, it doesn't belong to any of the 3 Levels listed above, and only exists in Manual Training.

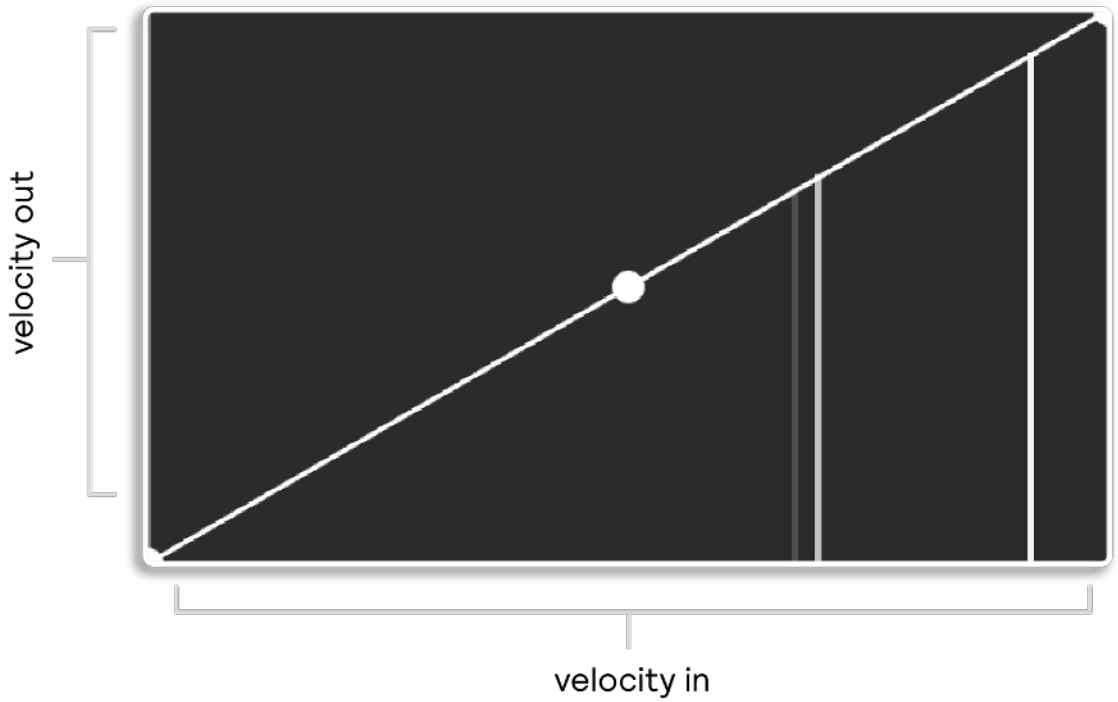
Void allows you to tell Sensory Percussion what to ignore. This is useful for dealing with unwanted cross-talk from a cymbal that's close to a sensor, for example. Select the Void zone and hit the cymbal to teach the software ignore it. But be careful not to overtrain the Void zone; a little goes a long way, and using it too much will result in reduced sensitivity on the other zones you have trained.

Velocity Threshold



The Velocity Threshold panel shows you the velocity of incoming hits. The red line represents the threshold; any hits that come in under this red line will not trigger any sounds inside the software. You can raise this line to ignore softer hits, or lower it to include them. Generally, you want to set the threshold as low as possible, while still filtering out any unwanted noise.

Velocity In/Out



The Velocity In/Out panel allows you to adjust both the incoming and outgoing velocity of a sensor input, with incoming velocity on the x-axis and outgoing on the y-axis. By default, there is a direct relationship between the two, as in the example above with a straight line going from the bottom-left to the top-right corner.

Dragging the bottom-left node to the right will increase the minimum incoming velocity, and dragging it upwards will increase the minimum outgoing velocity. The maximum in/out velocities can be adjusted in the same way by dragging the top-right node.

Check out the How To Use Thresholding page for some creative applications for both threshold and velocity i/o panels.

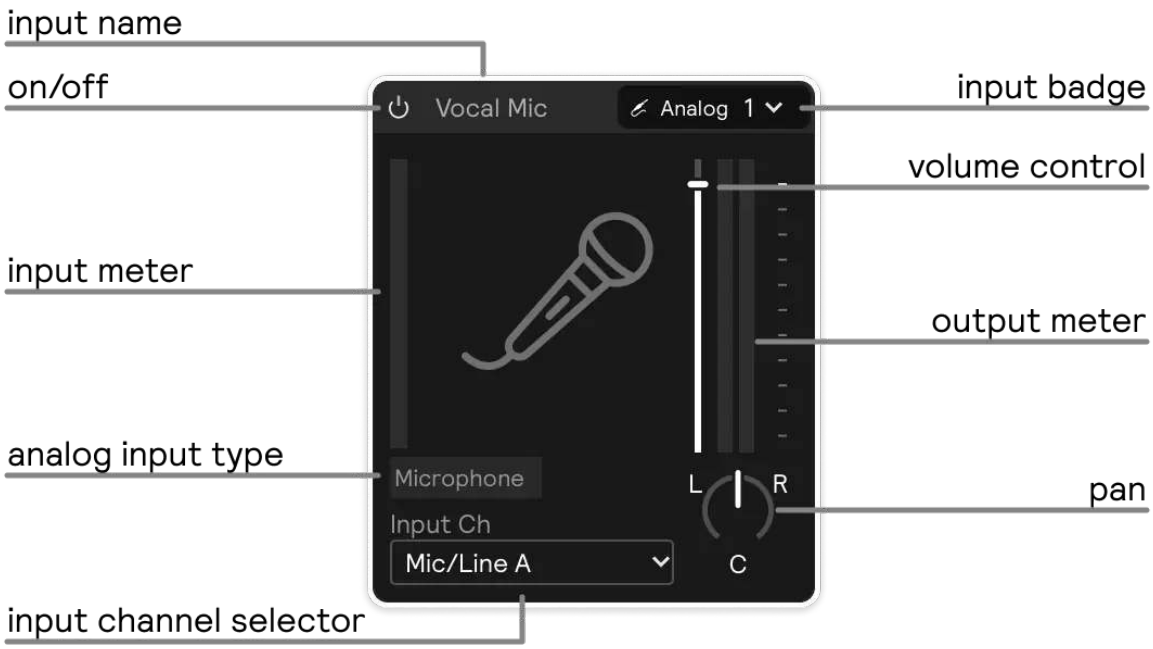
Sensitivity

Sensitivity adjusts the software's response to quick hits like buzz rolls. Since kick drums, for example, are not registering as many hits in quick succession, they can have lower sensitivity. If you have a very loose drum head and the sensor is registering more than one hit each time you strike the drum, decreasing the sensitivity will help.

Gain

This bar allows you to increase or decrease the outgoing velocity level of hits on a given drum without affecting the maximum/minimum values. If you're getting low signal across all the zones of a particular drum, you can increase the gain to match it to the level of your other drums.

Analog Inputs



Analog Inputs can refer to a variety of different instruments you might want to connect to Sensory Percussion. The example above is a vocal mic, but there are also options for Aux Inputs, Synths, Mixers, and Guitars. Essentially, any sound source that can connect to the inputs on the EVANS Portal can be used as an Analog Input.

With Analog Inputs, you can monitor a whole band through Sensory Percussion! Make each instrument its own layer and add effects from within Sensory Percussion to vocals, guitars, and other non-drum instruments, all while mixing them independently from each other.

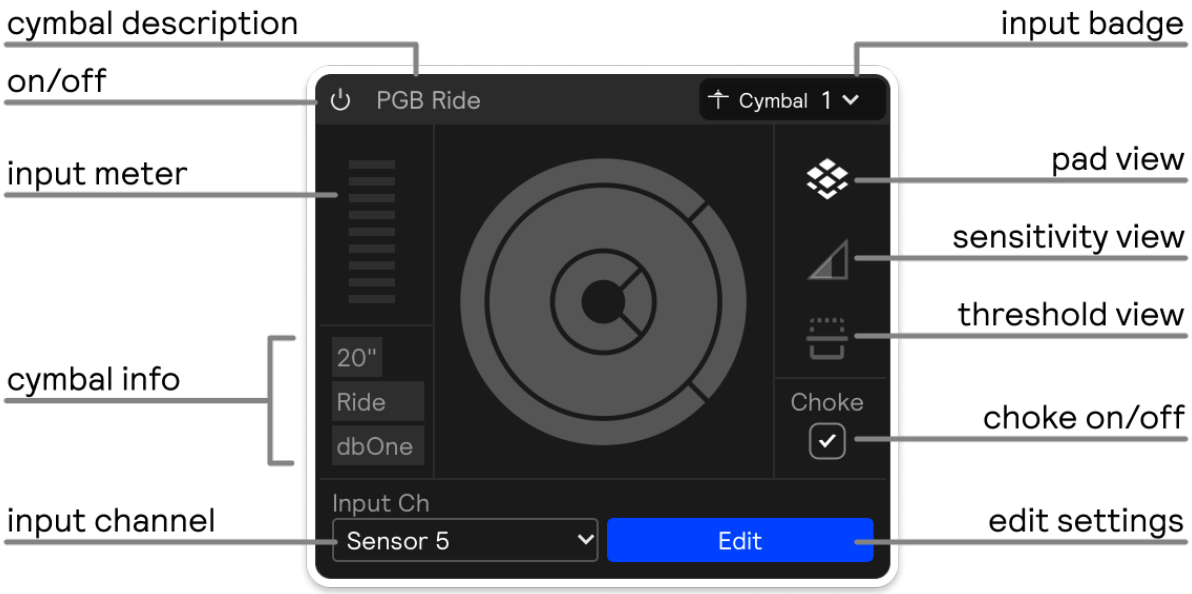
Cymbal Sensor Inputs

After choosing a Ride or Crash sensor type from the add menu in the hardware inputs panel, you'll see a small form to fill out with some information about the cymbal you want to add. Some of this info will help us set the right default settings for that cymbal type, and some of the info is just for you to keep your inputs organized.



Figure 101: A screenshot of the create sensor input module, asking for information about the drum

Sensor Input Parameters



On the right side of the sensor input, you can toggle between Pads, Sensitivity, and Threshold views:

Pads

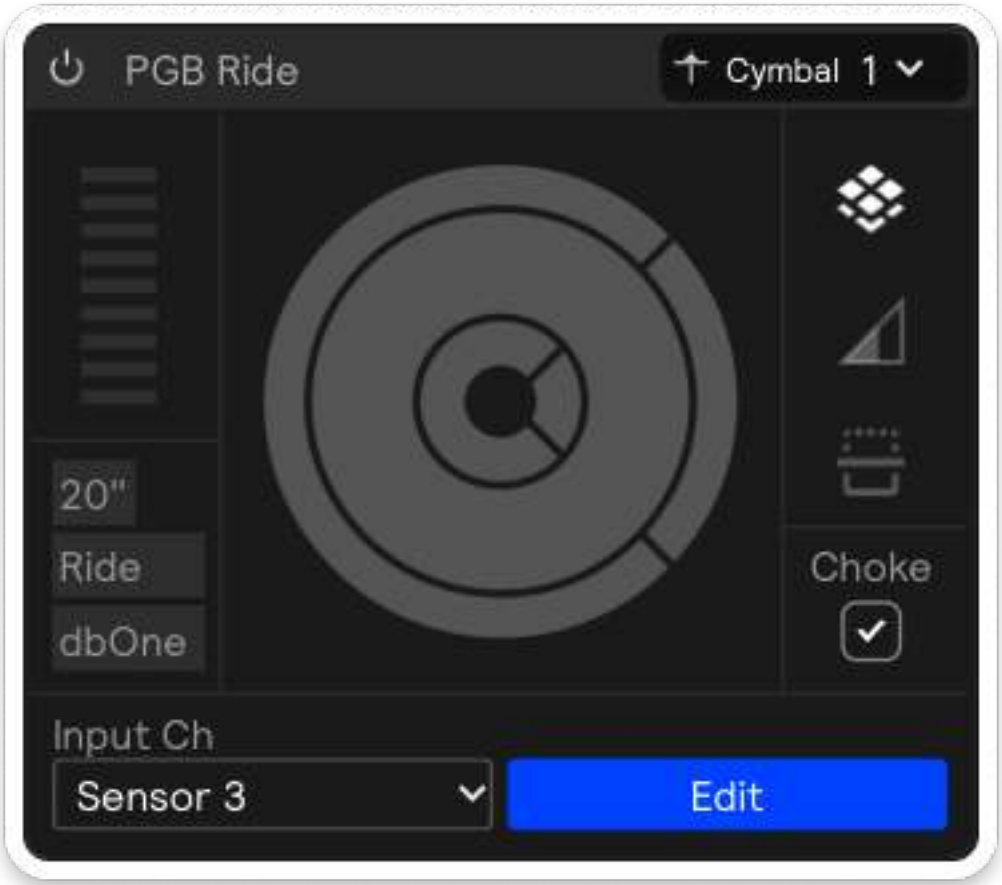


Figure 102: The Pads section of a sensor input

Sensitivity

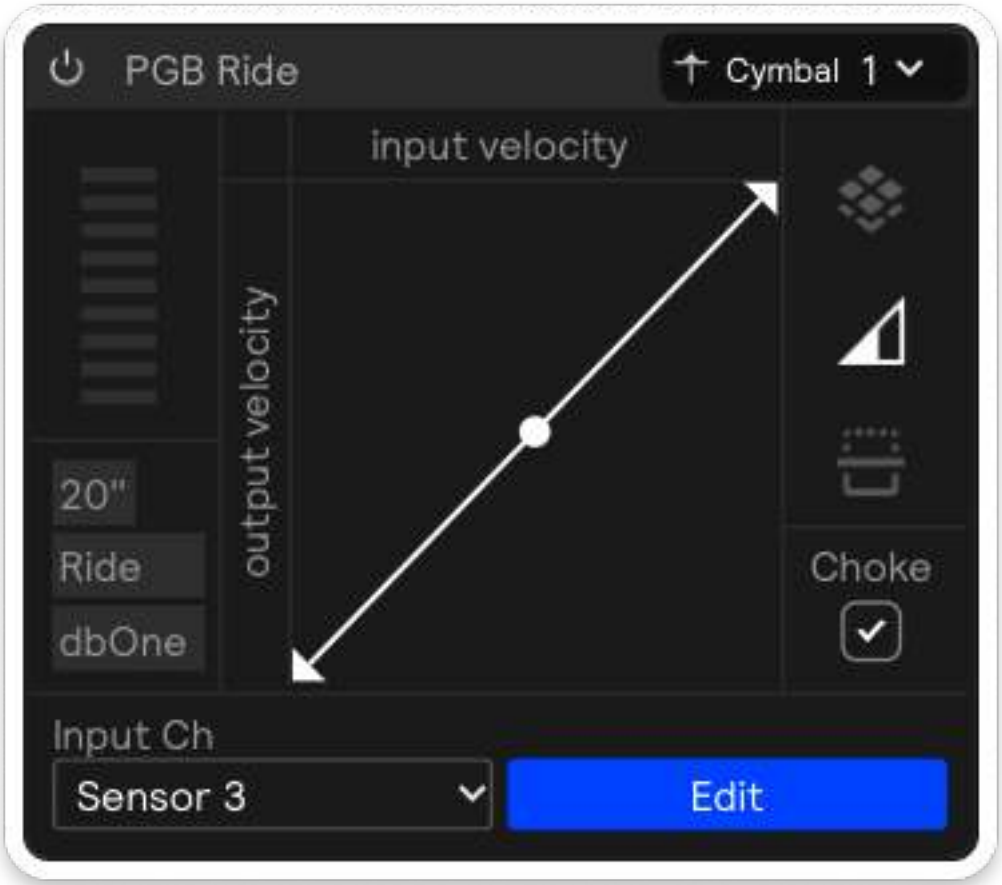


Figure 103: The Sensitivity section of a sensor input

Threshold

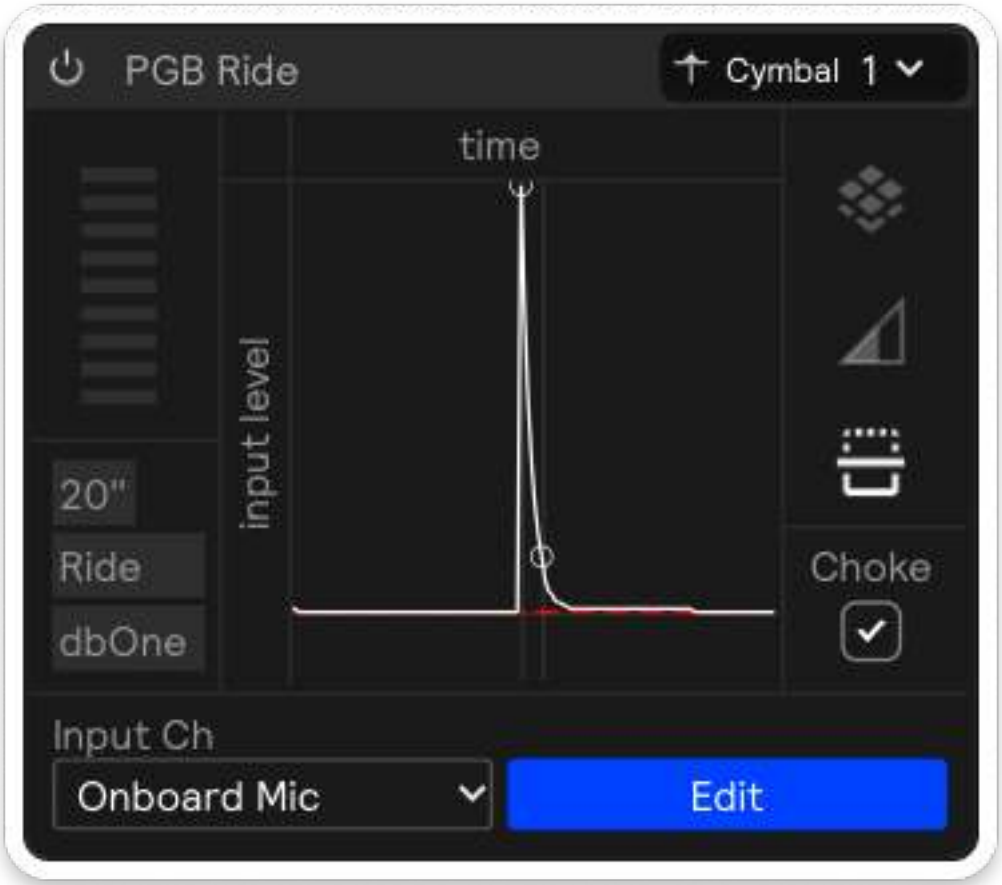


Figure 104: The Threshold section of a sensor input

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eKit Inputs

An **eKit input** connects an electronic drum kit (Roland, Alesis, Yamaha, and so on) to Sensory Percussion over MIDI. One eKit input stands for your whole kit. It maps the notes your kit sends to drums and their zones (snare center, snare rimshot, tom center, hi-hat bow, and so on), so the rest of the software sees your eKit exactly as if each drum had a sensor on it. Instruments, Drum Pads, and assignments all work the same way.

The hi-hat pedal comes through too. Your kit's pedal is turned into the same continuous pedal stream a hi-hat sensor produces, so open/closed blending and pedal-driven modulation work unchanged.

Tip: eKit input or Pad input?

Use an **eKit input** when you want to play your eKit like a drum kit: each pad becomes a drum with zones, and sets and instruments built for sensors just work. Use a Pad input when you want a grid of pads to trigger a Grid Pads controller.

Adding an eKit input

1. Enable your kit's MIDI port in Settings → MIDI Devices.
2. In the hardware inputs panel, click **+** and choose **eKit**.
3. Choose your kit under **MIDI Input**, give it an **eKit name**, and create it.

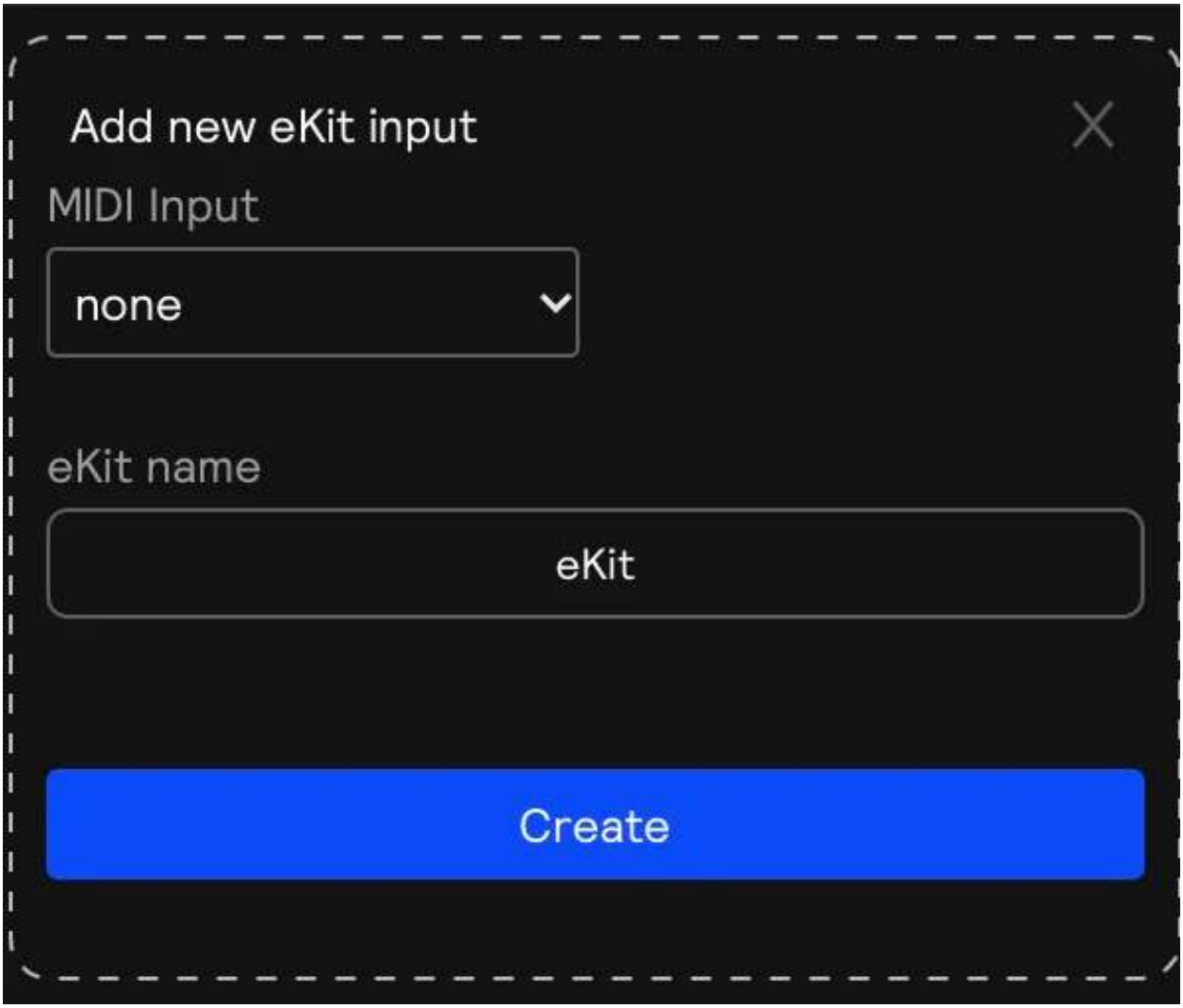


Figure 105: The Add new eKit input popout, with MIDI Input and eKit name fields

A new eKit input starts with a General MIDI drum map. Pick your kit's model from the **preset**

menu in the card's title bar to load its factory map. If your kit isn't listed, map it by hand with MIDI Learn and save it as a user preset for next time.

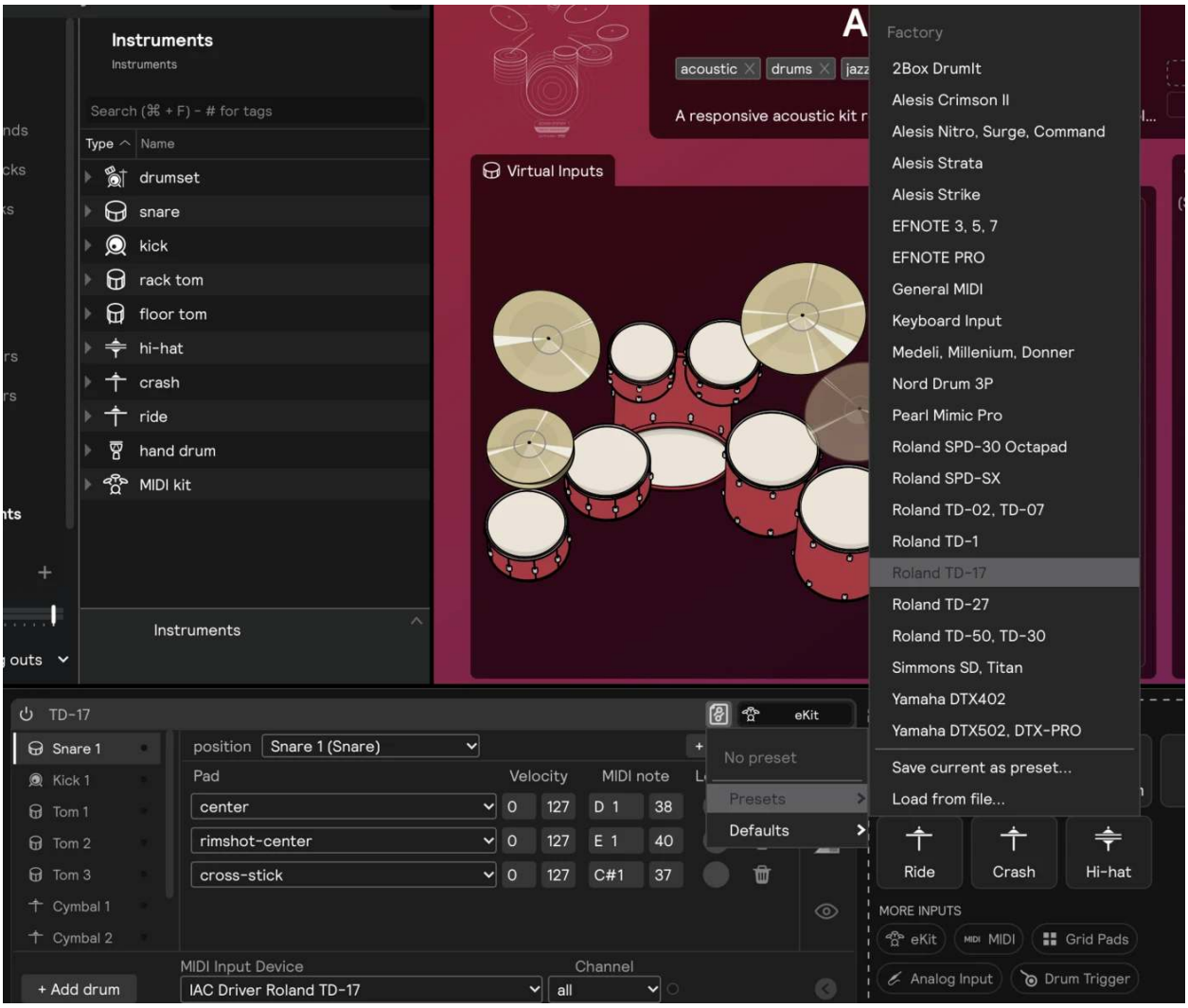


Figure 106: The eKit preset menu open from the card's title bar, listing the factory kit maps, with Roland TD-17 highlighted

Factory eKit presets

Brand	Presets
Roland	TD-1 · TD-02, TD-07 · TD-17 · TD-27 · TD-50, TD-30 · SPD-SX · SPD-30 Octapad
Alesis	Crimson II · Nitro, Surge, Command · Strata · Strike
Yamaha	DTX402 · DTX502, DTX-PRO

Brand	Presets
EFNOTE	EFNOTE 3, 5, 7 · EFNOTE PRO
Others	2Box DrumIt · Medeli, Millenium, Donner · Nord Drum 3P · Pearl Mimic Pro · Simmons SD, Titan
General	**General MIDI**, the standard GM drum map most kits and drum software understand · **Keyboard Input**, for playing from a MIDI keyboard, a DAW track, or a pad controller

Card controls

Control	What it does
Preset menu	In the card's title bar. Loads a factory or user kit map, and saves your own. Changing presets keeps your MIDI device and channel.
MIDI Input Device	The kit's MIDI port.
Channel	Receive on all channels, or on a single one. Most kits send on channel 10.
Power	Turns the input off. Incoming notes are ignored until you turn it back on.

The kit list

The left side of the card lists your kit's drums (Snare 1, Tom 2, and so on). Click a drum to show and edit its notes in the note map.

The dot next to each drum lights up when the kit sends one of its notes, so the list doubles as a live monitor of your kit.

+ Add drum, under the list, adds another drum of any type: snare, kick, tom, cymbal, or hi-hat. It gets the next free number.

The arrow under the view tabs collapses the card down to just the kit list, which is handy while playing. The collapsed card still lights up as you play. Click a view tab or the arrow to expand it again.

The note map

The note map shows the selected drum. The top row is the drum itself, and each row under it is a **pad**: one MIDI note mapped to one zone.

Control	What it does
position	On the drum's row. Picks which drum in the software this kit drum plays. Drums are shown with their drum-map position, for example **Cymbal 1 (Ride 1)** or **Tom 2 (Floor Tom 1)**.
+ Pad	Adds another pad to the drum.
Pad	The zone this pad plays: center, rimshot-center, bow, edge, pedal, and so on. On cymbal and hi-hat drums the list ends with **(choke)**; see Cymbal and hi-hat chokes.
Velocity	The velocity window (0–127) this pad responds to. Leave it at 0–127 for a normal pad, or use it to split one note across two zones.
Open	Hi-hat pads only. See Hi-hat open and closed notes.
MIDI note	The incoming note number. Type it in, or use **Learn**.
Learn	Arm it, then hit that pad on your kit to capture its note.
Trash	On a pad row, removes that pad. On the drum's row, removes the drum and all its pads.

Several pads can share one note (that's how velocity splits work), and several pads can play the same zone, which is useful when a kit sends different notes for the same zone.

Splitting one note by velocity

To make one note play two zones depending on how hard you hit, add a second pad with the same **MIDI note** and give the two pads adjacent **Velocity** windows. For example, a soft pad from 0–63 on one zone and a hard pad from 64–127 on another, so a light hit and a hard hit land on different zones.

Hi-hat pedal

Each hi-hat's drum row has a **pedal CC** box: the MIDI CC number your kit sends the pedal position on. Most kits use CC 4. Set it to -1 to ignore the pedal.

The pedal drives that hi-hat's open/closed blending, so if your kit has two hi-hats on different CCs, each one follows its own pedal. The foot chick (note 44 on most kits) plays the hi-hat's **pedal** zone.

Hi-hat open and closed notes

Some kits send separate notes for an open hi-hat and a closed hi-hat instead of (or as well as) a pedal CC. Set the **Open** value on those pads so the note also moves the pedal position: 0 is fully open, 127 is fully closed, and -1 (the default) leaves the pedal alone. The position stays where the note put it until another open/closed note or the pedal CC changes it.

Cymbal and hi-hat chokes

When you grab a cymbal pad, most kits send polyphonic aftertouch, and Sensory Percussion chokes the cymbal. Each cymbal's drum row has an **aftertouch choke** checkbox to turn this off for that cymbal alone, for example on a pad that sends stray pressure.

If your kit sends a dedicated choke note instead, add a pad on that note and set its **Pad** to **(choke)**. That note then mutes the cymbal (or stops the hi-hat) instead of playing a zone.

Views

The icon tabs on the right of the card switch between three views:

View	What it shows
Map	The note map for the selected drum.
Velocity	The kit's velocity response curve and thresholding.
MIDI log	The notes and CCs your kit is sending. Handy for finding out what your kit actually sends before you map it.



Figure 107: The MIDI log view on an eKit card, listing incoming note on, note off, and CC messages

Limitations

Positional sensing (the center-to-edge CC some kits send) isn't supported yet.

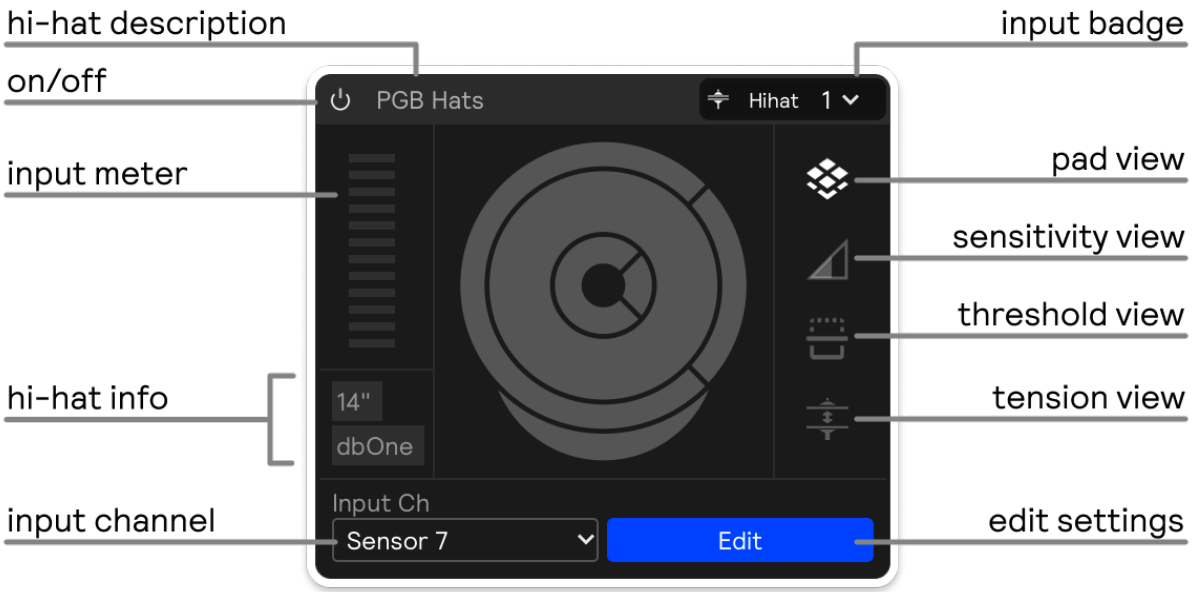
Hi-hat Sensor Inputs

After choosing a Hi-hat sensor type from the add menu in the hardware inputs panel, you'll see a small form to fill out with some information about the Hi-hat you want to add. Some of this info will help us set the right default settings for that cymbal type, and some of the info is just for you to keep your inputs organized.



Figure 108: A screenshot of the create hi-hat input module, asking for information about the hi-hat

Sensor Input Parameters



On the right side of the sensor input, you can toggle between Pads, Sensitivity, Threshold, and Tension views:

Pads

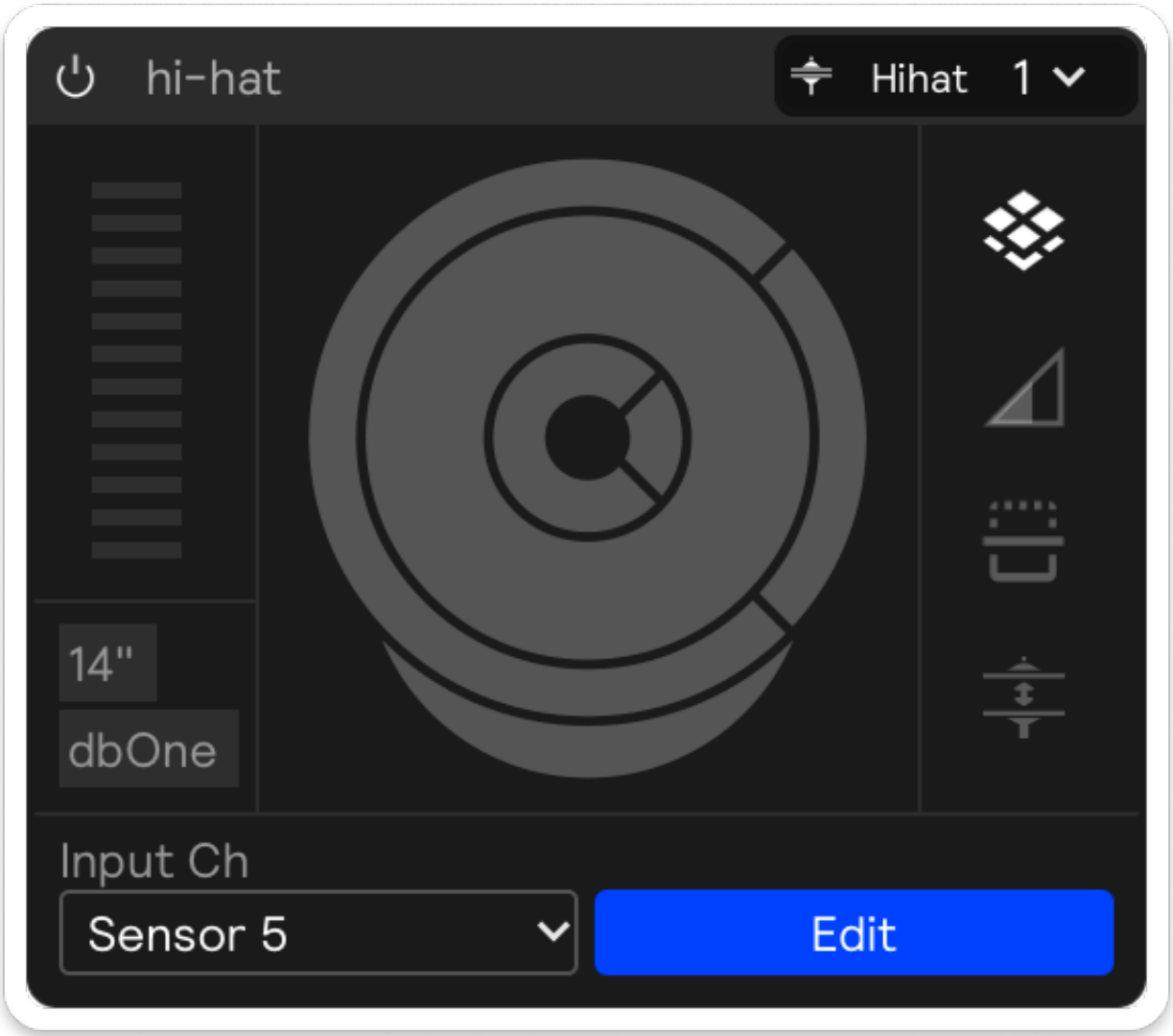


Figure 109: The Pads section of a sensor input

Sensitivity

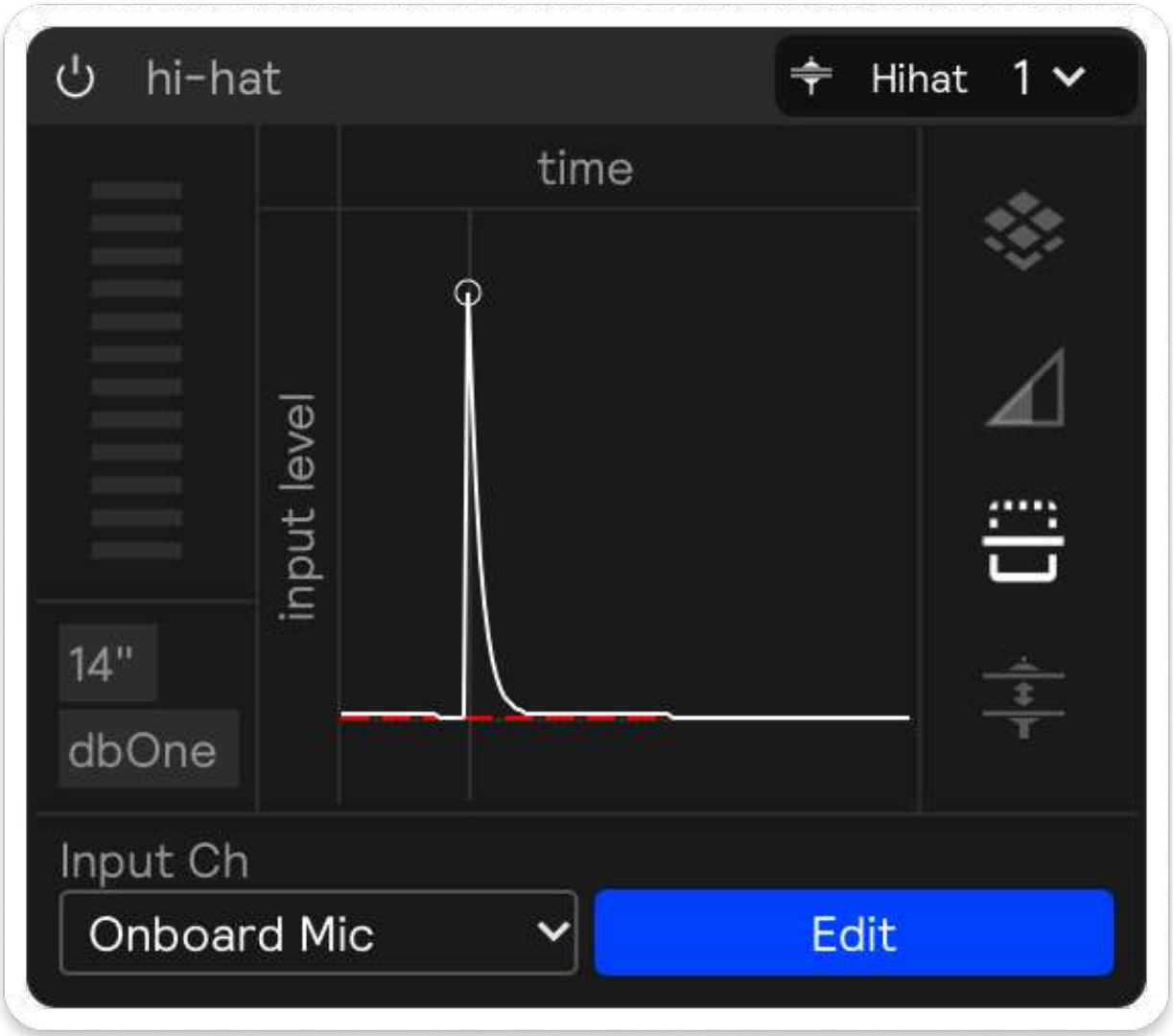


Figure 110: The Sensitivity section of a sensor input

Threshold

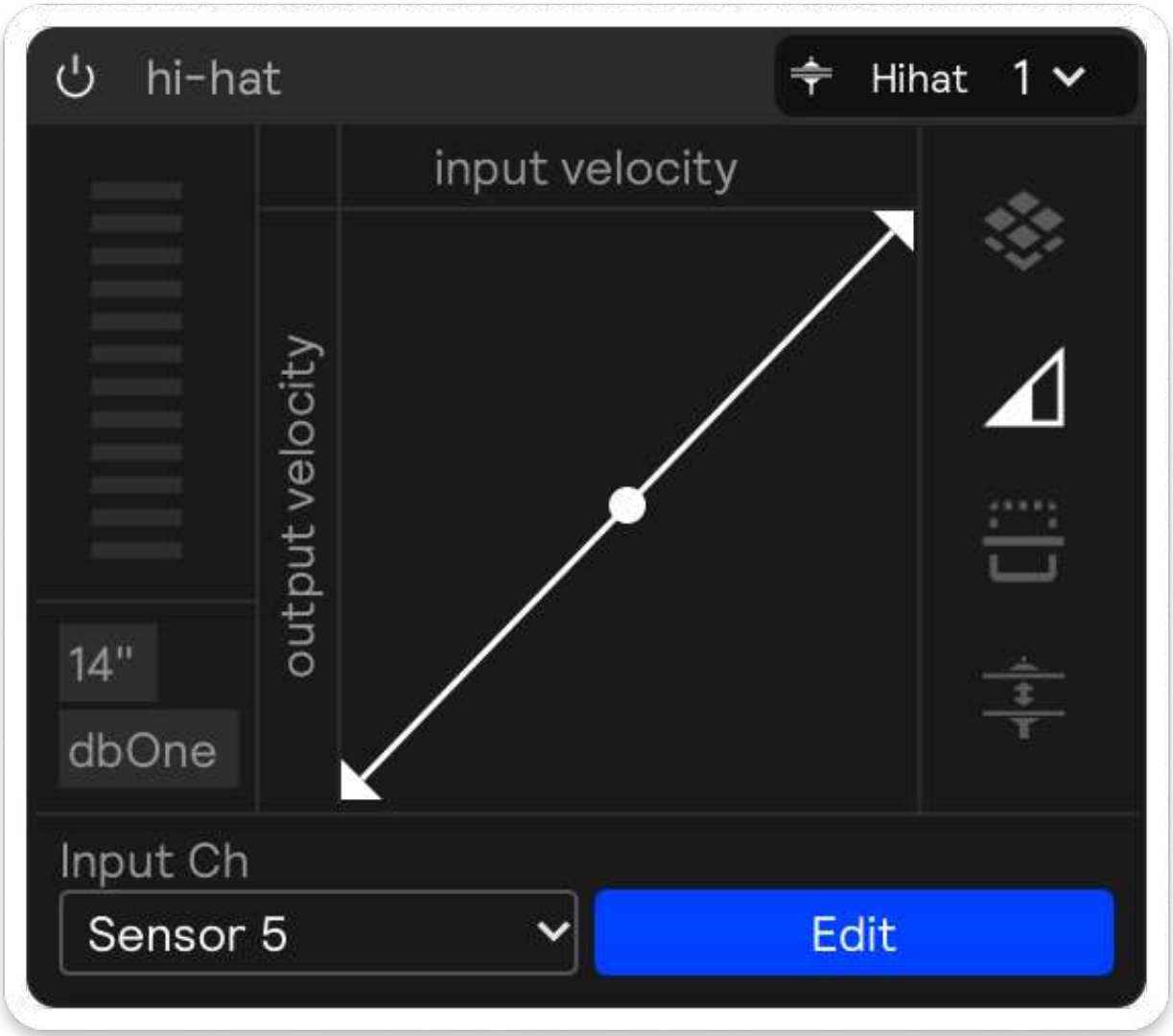


Figure 111: The Threshold section of a sensor input

Tension

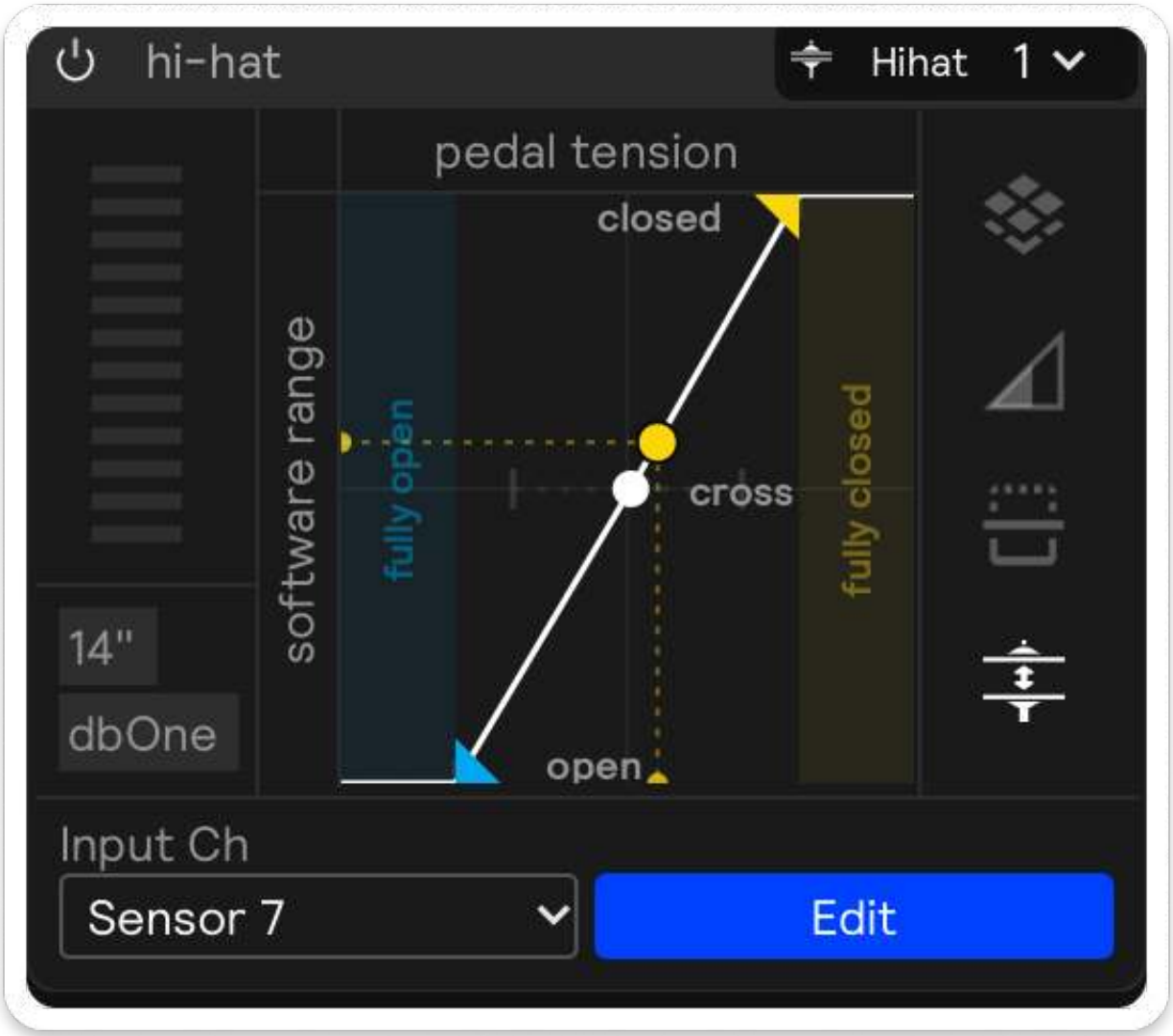


Figure 112: The Tension section of a sensor input

Pedal Tension Editor

The **pedal tension** editor maps how far your hi-hat is squeezed into the open/closed value the software plays with. Use this editor to align the physical feel of your hi-hat with the software's response. You can adjust the curve to make the hi-hat feel more or less sensitive to your pedal movements.

- The horizontal axis is **pedal tension** — the raw amount of squeeze coming from your hi-hat pedal, from fully released on the left to fully pressed on the right.
- The vertical axis is the **software range** — the value sent on to the rest of the app, from open at the bottom to closed at the top.

A live dot rides the curve to show the current incoming tension and where it lands in the software range. The same editor also appears as the **Hi-hat Tension** panel in the training window.

Handles

Three handles shape the curve. Each one drags left and right, with a 0–100 readout while you drag.

Handle	What it sets
open	The tension below which the hi-hat counts as fully open. Anything to its left snaps to open.
cross	The crossover: the tension that maps to the middle of the software range. Move it to make the first part of the squeeze more or less sensitive than the last part.
closed	The tension above which the hi-hat counts as fully closed. Anything to its right snaps to closed.

The handles stay in order: **open** moves within the lowest fifth of the tension range, **closed** within the highest fifth, and **cross** within the middle third.

Dead zones

The **open** and **closed** handles split the plot into three bands:

Band	What it means
fully open (left, blue)	Any tension here reads as fully open.
Active zone (middle)	Tension is scaled into the software range here, bending at the **cross** point.
fully closed (right, yellow)	Any tension here reads as fully closed.

Widen the dead zones to ignore slack at either end of your pedal's travel, or narrow them to use its full travel.

Tip:

- If the hi-hat never reaches fully closed, drag **closed** left until firm pressure reaches the top of the range.
- If light resting pressure already reads as partly closed, drag **open** right to push that slack into the open dead zone.

Drum Trigger Inputs

A **Drum Trigger input** connects a conventional drum trigger, like a piezo pad or an acoustic drum trigger, to Sensory Percussion through an audio input on your interface.

Unlike a drum sensor, a trigger doesn't analyze timbre and doesn't need training. On each hit, it measures the velocity and plays one zone. Skipping the timbre analysis also skips its delay, so trigger inputs respond a few milliseconds faster than sensor inputs.

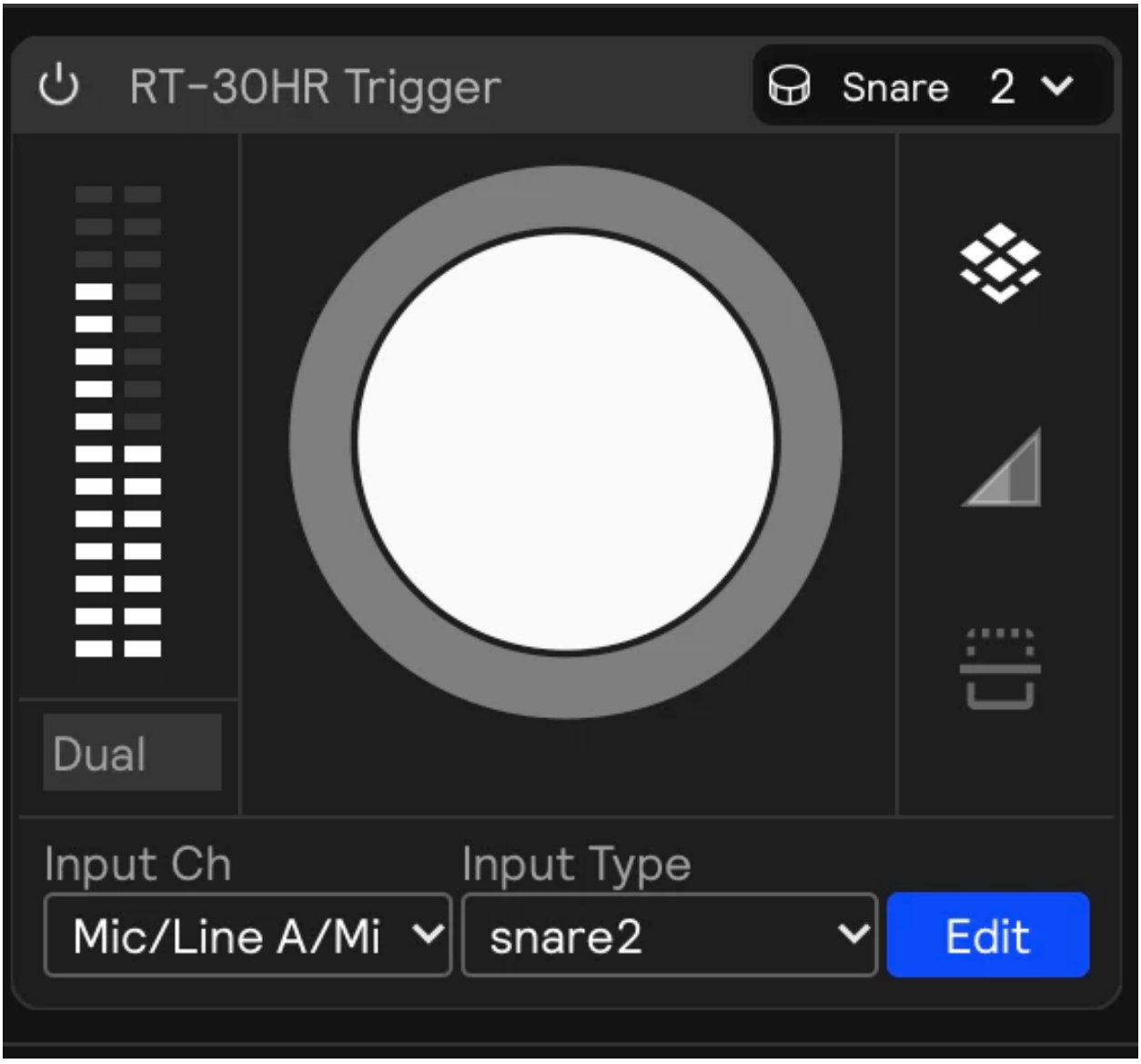


Figure 113: A dual-zone Drum Trigger input card, with the head zone lit from a hit

Adding a Drum Trigger input

In the hardware inputs panel, click **+** and choose **Drum Trigger**. Give it a **Trigger Name**, then choose its **Zones**:

Zones	Use it for
Single zone	A trigger on one input channel that plays one zone. This is the default.
Dual zone	A trigger on a stereo pair of input channels, such as a dual-zone trigger with its head and rim piezos on separate cables. The trigger works out which zone you hit and plays exactly one zone per stroke.

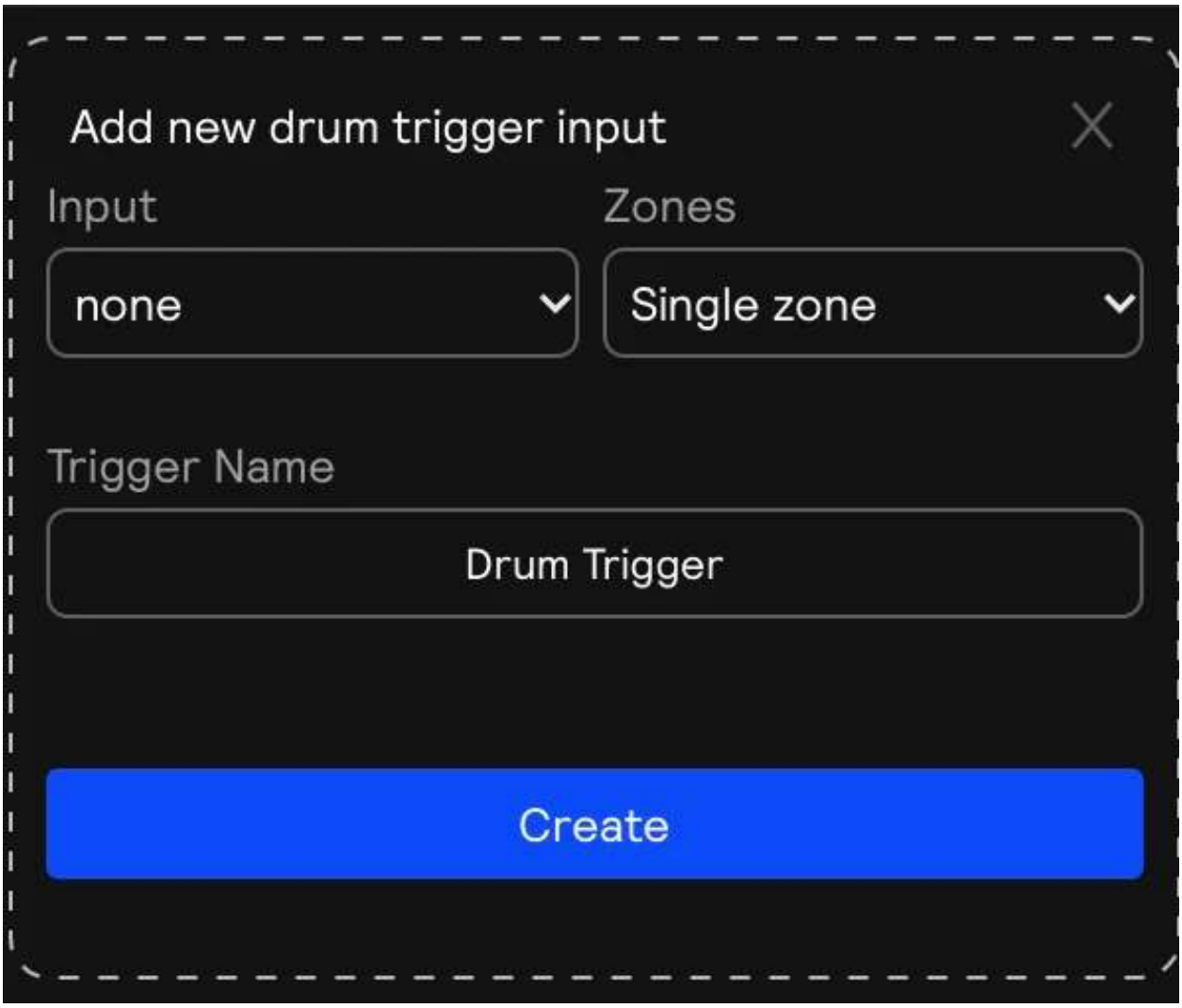


Figure 114: The Add new drum trigger input popout, with Input, Zones, and Trigger Name fields

Your choice decides what the **Input Ch** list offers: single channels for a single-zone trigger, stereo pairs for a dual-zone one.

The input card

The card works like a sensor input card: an input meter on the left, and three views on the right — the pads display (a hit lights up the zone it played), the velocity curve, and the threshold view showing the incoming signal.

Control	What it does
Input Ch	The channel the trigger is plugged into: a single channel for a single-zone trigger, a stereo pair for a dual-zone one.
Input Type	The drum this trigger plays. The menu lists the surface types (snare, tom, kick, cymbal, hi-hat); hover one to pick a specific drum, such as `kick3`.
Edit	Opens the trigger settings window.
Power	Turns the input off. While it's off, the trigger is virtually disconnected from the software.

You can change **Input Type** at any time. Point a trigger at `tom2` and it becomes that tom: everything assigned to Tom 2 now plays from this trigger. A trigger can also share a drum with a sensor input, so both play the same sounds. Sensor inputs are different: their drum is fixed when you create them.

Trigger settings

Edit opens the settings window. It's laid out like the sensor settings window: input, threshold, and velocity controls on the left, the pads display in the middle (a hit lights up the zone it played), and the **Zones** column on the right, with the dual-zone **Detection** controls at its top.

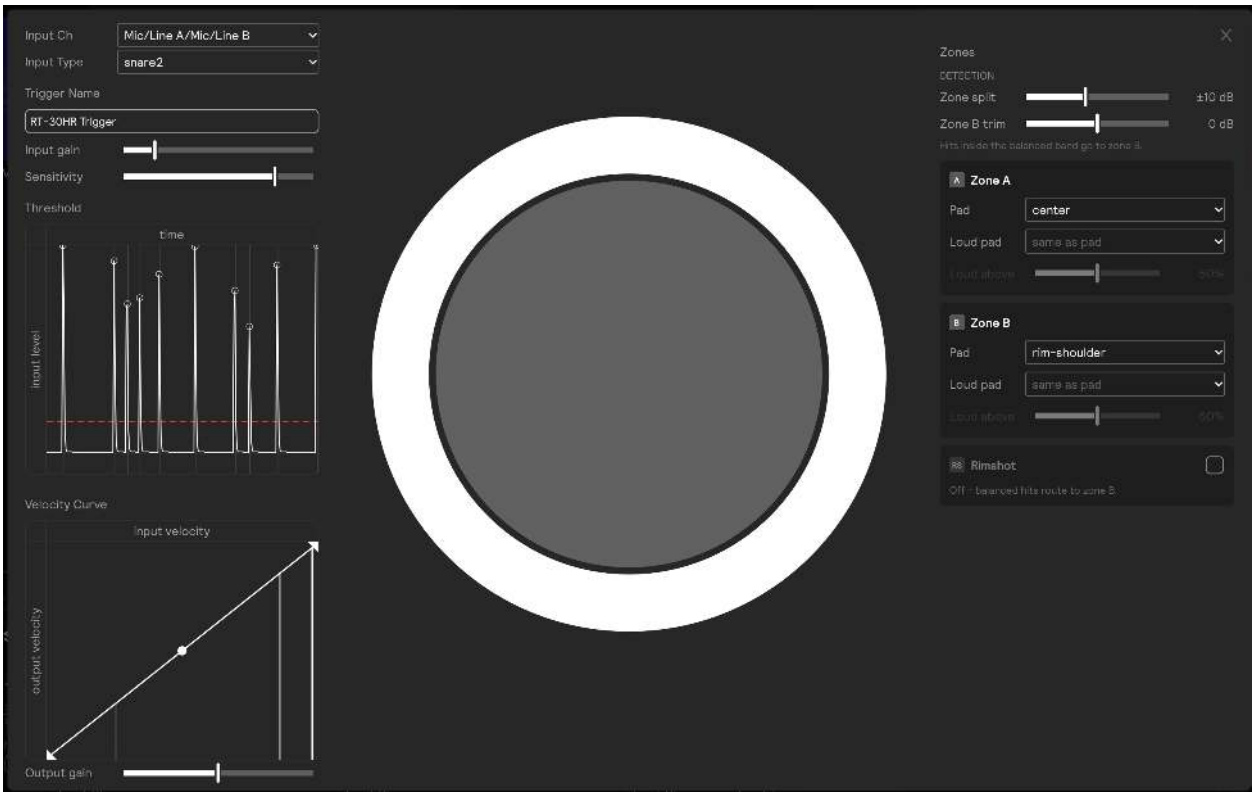


Figure 115: The settings window for a dual-zone trigger: input and velocity controls on the left, the pads display with the rim zone lit, and the Zones column with Detection, Zone A, Zone B, and Rimshot on the right

Input and velocity

Control	What it does
Input gain	The gain going into hit and velocity detection. Defaults to -16 dB, so solid hits don't max out the velocity.
Sensitivity	Playing sensitivity. Raise it to catch softer hits; lower it to reject crosstalk and noise.
Threshold	Shows the incoming signal. Drag the dashed line to set the level below which hits are ignored.
Velocity Curve	Maps input velocity to output velocity. Drag the curve to shape the response.
Output gain	Adjusts the final velocity of each hit. Defaults to 0 dB.
Input Type	The same as the card's **Input Type** selector.

Zones

A single-zone trigger shows one **Pad** card: the pad the trigger plays, an optional **Loud pad**, and its **Loud above** level. The other controls below only appear on dual-zone triggers.

Control	What it does
Pad	The pad each zone plays. **Zone A** (the first input channel) defaults to the drum's main pad, **Zone B** (the second channel) to its rim pad, and **Rimshot** to its rimshot pad where the drum has one. If you change a pad from its default, a ↺ button appears next to it; click it to reset.
Loud pad / **Loud above**	Any zone can split into two pads by velocity: hits at or above **Loud above** play the loud pad, softer hits play the zone's pad. The loud pad defaults to **same as pad**, which turns the split off.
Zone split	Dual zone only, under **Detection**. How much louder (in dB) one piezo has to be than the other to win. Zone A plays when the first channel beats the second by at least this much, Zone B when the second wins by the same margin. Hits in between are "balanced" and count as rim hits. Lower it if head hits land on the rim zone; raise it if rim hits land on the head zone.
Zone B trim	Dual zone only, under **Detection**. A level trim on Zone B's piezo, to balance piezos with different sensitivities.
Rimshot	Dual zone only. Detects a third zone: a balanced hit, with both piezos firing inside the **Zone split** margin, plays the Rimshot pad. When it's off, the Rimshot card collapses and balanced hits go to Zone B.

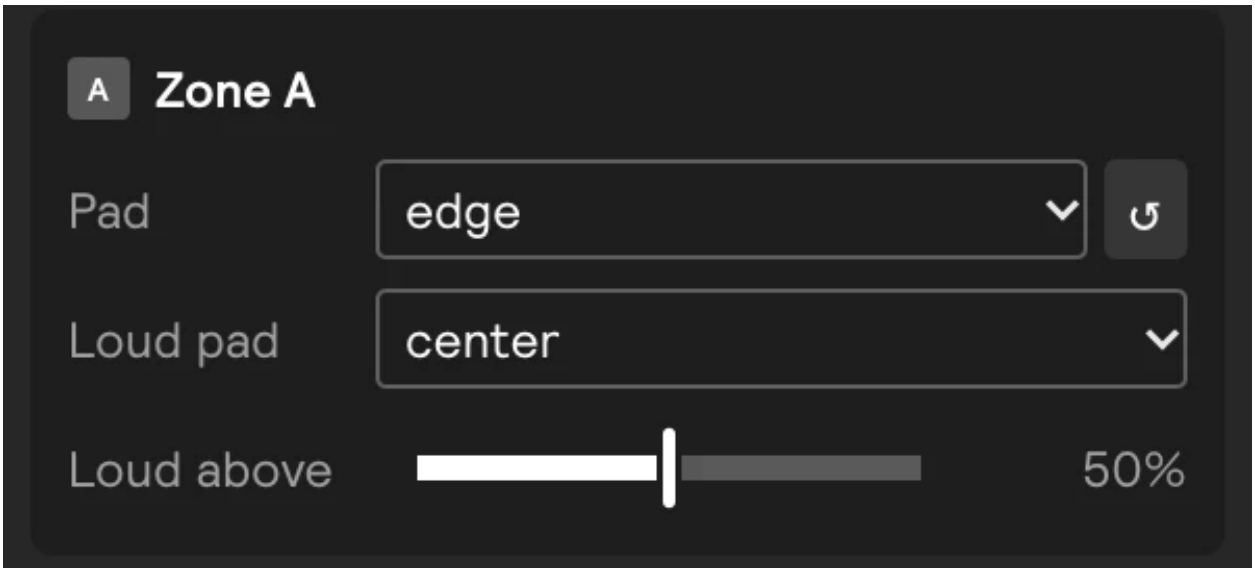


Figure 116: The Zone A card with pad edge and loud pad center, the Loud above slider at 50%, and the ↺ reset button next to the changed pad

How dual-zone detection works

Both piezos hear every stroke, so one physical hit always plays exactly one zone. On the first onset the trigger opens a short decision window, compares the two channels, and picks a winner. A clearly louder channel plays its own zone. Balanced hits play the Rimshot zone when **Rimshot** is on, and Zone B otherwise. That zone's velocity split then picks between its pad and its loud pad.

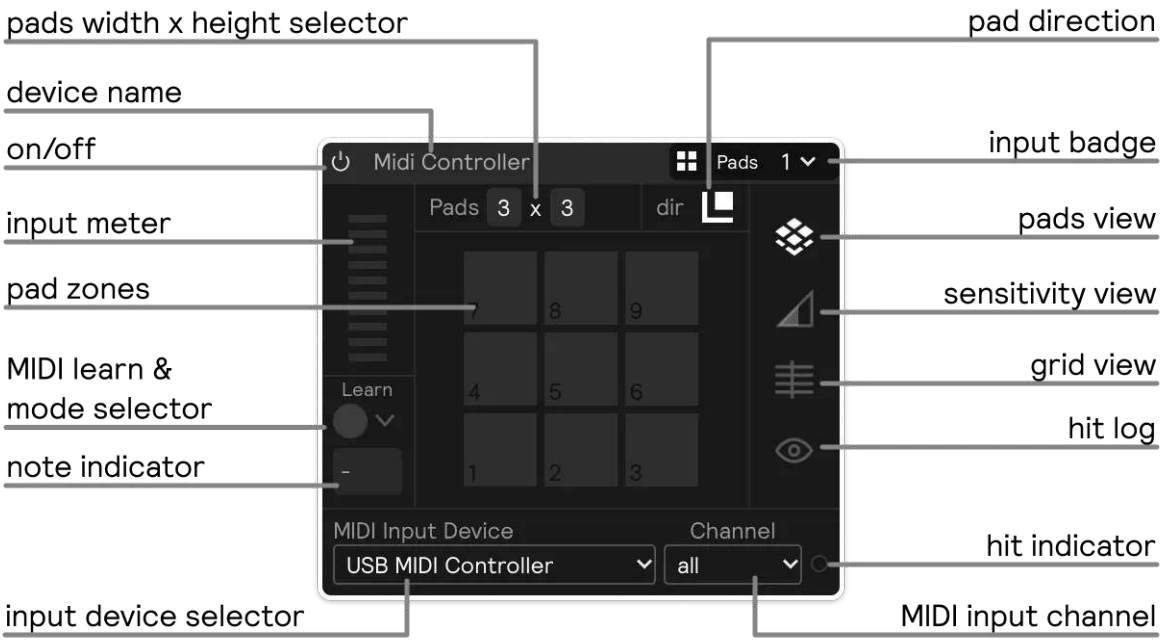
> **Tip:** Single rim piezo
>
> On a pad with a single rim piezo, a hard rim-only stroke looks electrically identical to a rimshot. Leave **Rimshot** off and set Zone B's **Loud pad** to `rimshot-center`, so how hard you hit the rim decides between a rim click and a rimshot.
>
> You can use the same idea on the head: Zone A with pad `edge` and loud pad `center` grades head hits by force.

Pad Inputs

Pad Inputs are designed for a more specific purpose than MIDI Inputs, they are for controlling layers and modules (especially the Grid Pads controller with a pad-based MIDI controller such as an SPD-SX). A good way to remember the difference between MIDI inputs and Pad inputs, is: if

you are wanting to use your MIDI device to control knobs, then you most likely want to set up a MIDI hardware input; if you want to use your MIDI device to trigger sounds, then you most likely want to set up a Pads Input.

> **Tip:** Using an electronic drum kit?
>
> To play an eKit like a drum kit, with each pad as a drum and its zones, use an eKit input instead. Pad inputs are best for grid-style pad controllers.



Initial Setup

Once you have created your Pads input, if you've already enabled your pads-based midi device in the settings panel, you can select it as the input for the Pads input.

The Pads Input defaults to a 3 x 3 grid, but you can customize the grid in accordance with your physical device (up to an 8 x 8 grid).

Learn

If your device has an *ascending* pad-to-midi-note layout (for example, `Pad 1` = 64, `Pad 2` = 65, `Pad 3` = 66, etc), then you can:

1. Select the `Auto-fill from first pad` option in the `Learn` drop down menu.
2. Select the `Learn` button
3. Strike the lowest pad on your device.

Then the Pads Input will automatically learn the rest of the pads in ascending order.

You can select `Manual` to learn the pads one-by-one, or `Manual and auto-advance` to learn a pad and advance to the next pad without clicking on it.

Connect

The Pads Input most sensibly connects to the Grid Pads controller, which can also be configured to mirror the grid you have set up in your Pads Input.

Just like any layer/module in the software, the Grid Pads can be filtered by the input badge of a Hardware input, so make sure your Grid Pads device filter either shows `All Pads`, or matches the badge number of the Pads Input device.

From there, you can drag and drop any module type onto any pad and begin building and controlling sounds with your pads-based device.

Pads



Figure 117: The Pads section of a pads input

Sensitivity

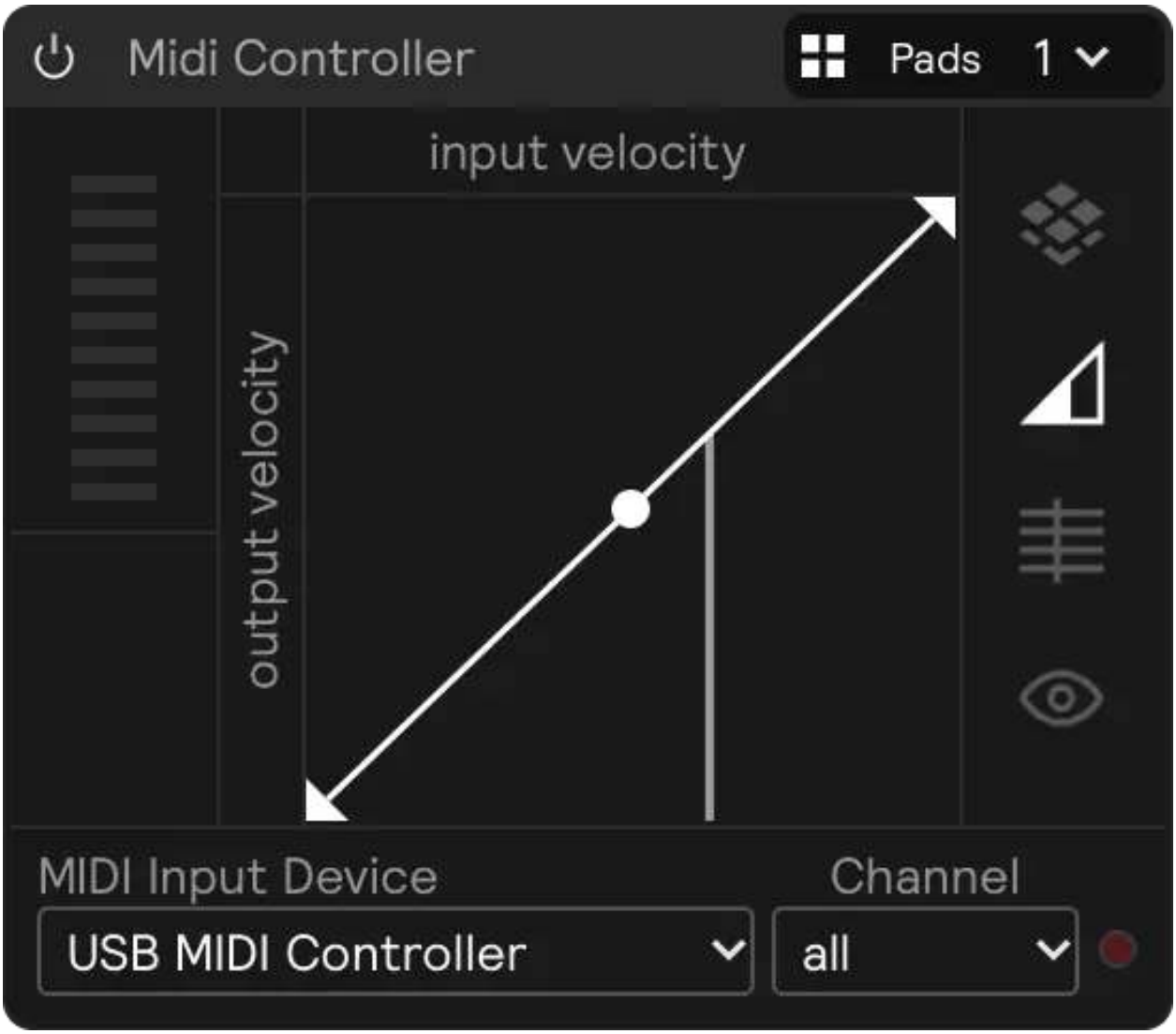


Figure 118: The velocity IO section of a pads input

Table

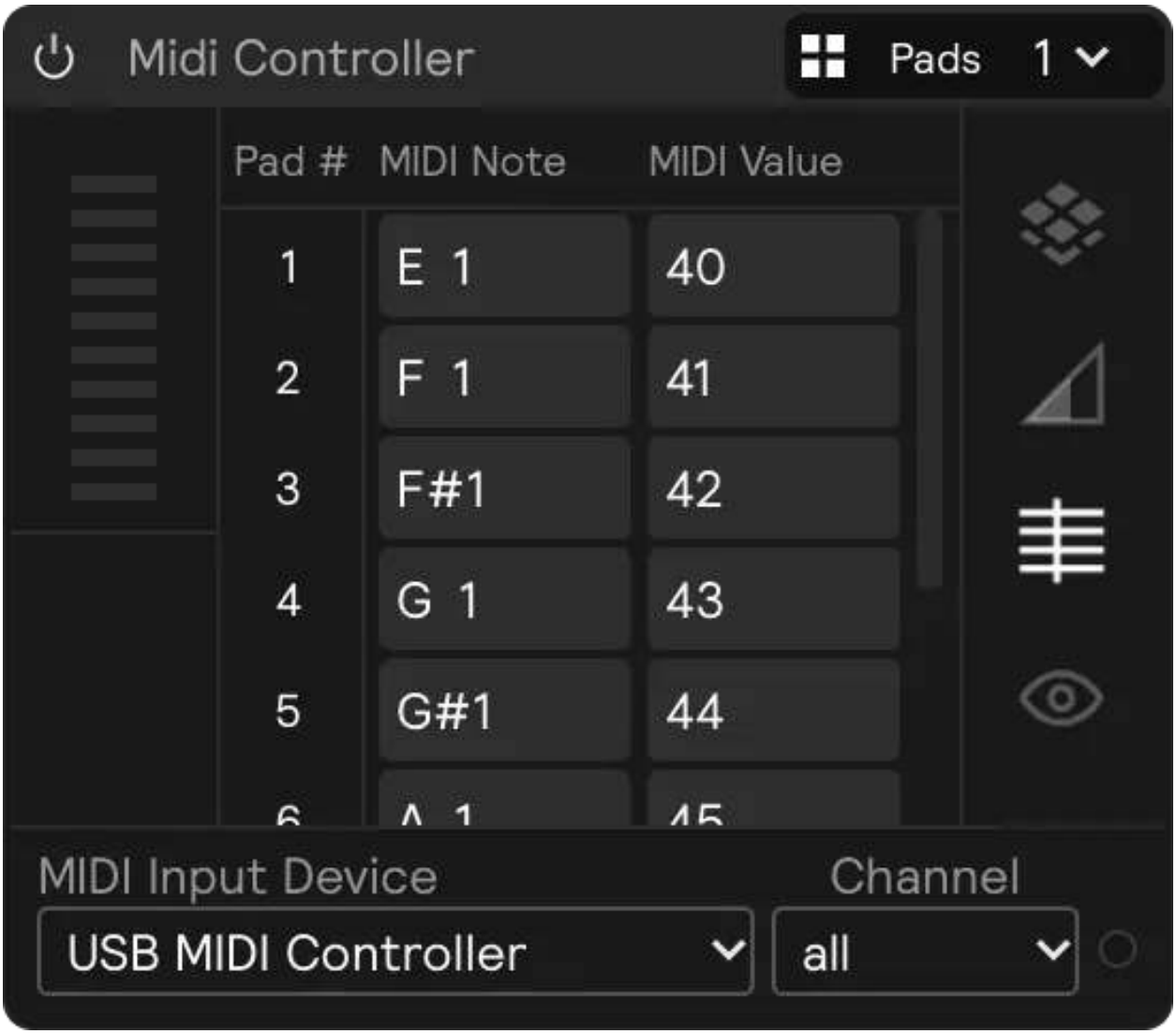


Figure 119: The table view section of a pads input

Log

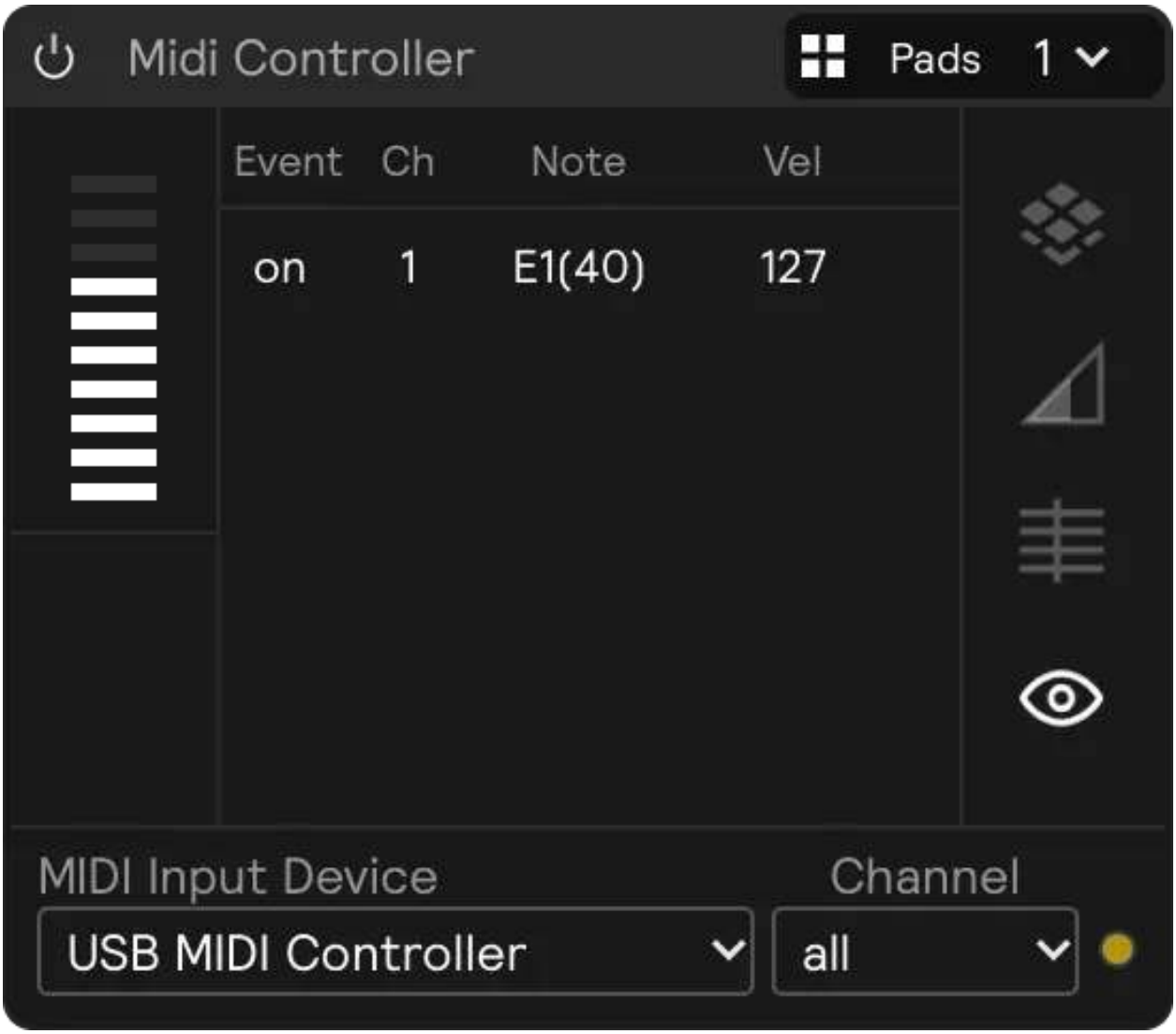
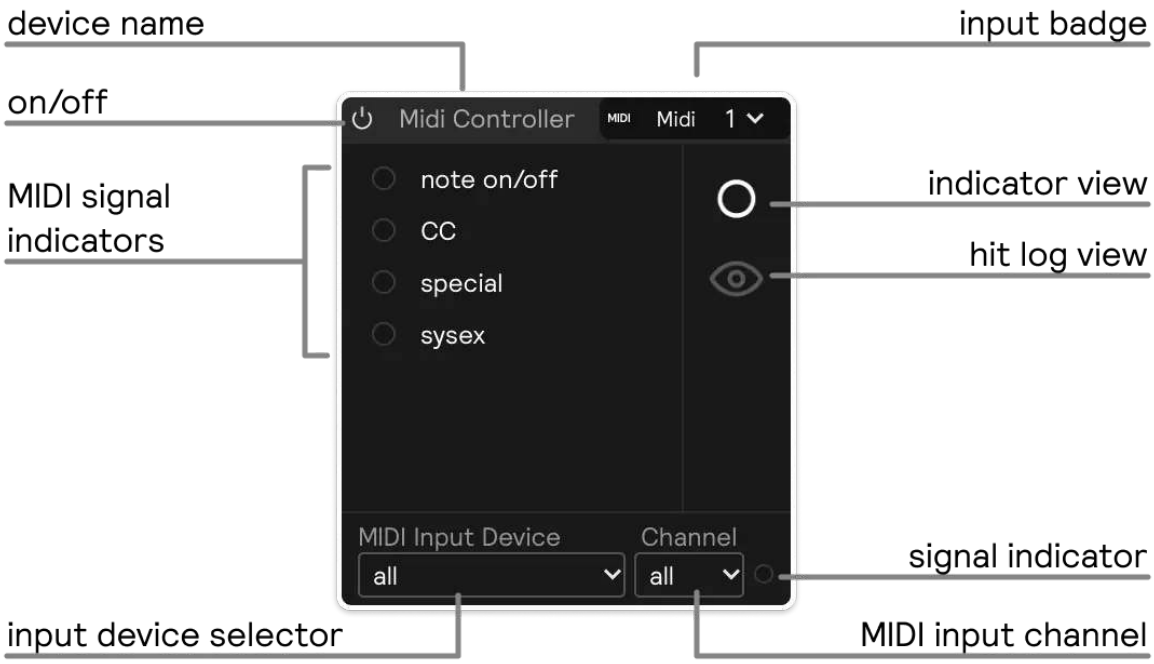


Figure 120: The log inspector section of a pads input

MIDI Inputs



MIDI inputs allow you to use external MIDI controllers or keyboards to control parameters within Sensory Percussion. Map the knob of your controller to the dry/wet of an effect, or bypass this effect with a key on your MIDI keyboard.

Once you have a MIDI hardware input connected to a MIDI virtual input, you can use your MIDI device to control things by creating a MIDI Control assignment on the parameter you want to control.

Hardware Outputs

Overview

The hardware outputs panel outputs panel has two kinds of outputs: **Analog** and **MIDI**. Analog outputs allow you to route Sensory Percussion's audio to any available physical outputs (stereo or mono) of your audio interface. For example, you can set up an output for your headphones and another for your PA system.

MIDI outputs route MIDI messages out of Sensory Percussion, allowing you to control anything outside of Sensory Percussion that can receive MIDI with your playing.

When you hover over the + button in the hardware outputs panel, you will have the option of choosing whether you want to create an Analog or a MIDI output. You can create as many as you'd like, sending audio and MIDI out to multiple channels at once, adjusting the mix/routing of each one independently.



Figure 121: A screenshot showing the hardware outputs panel

Recording



The hardware outputs panel is also where you can record directly to disk.

By default the **Main Mix** is ready to record (record enabled). If you want to record other Mixes, you can record-enable them from the Global Set Mix View, or by clicking the Mix dropdown under the Record button.

There's no limit to the length of recordings, and you can record up to 16 stereo mix out tracks.

You can access recording options from the Settings window.

Analog Outputs

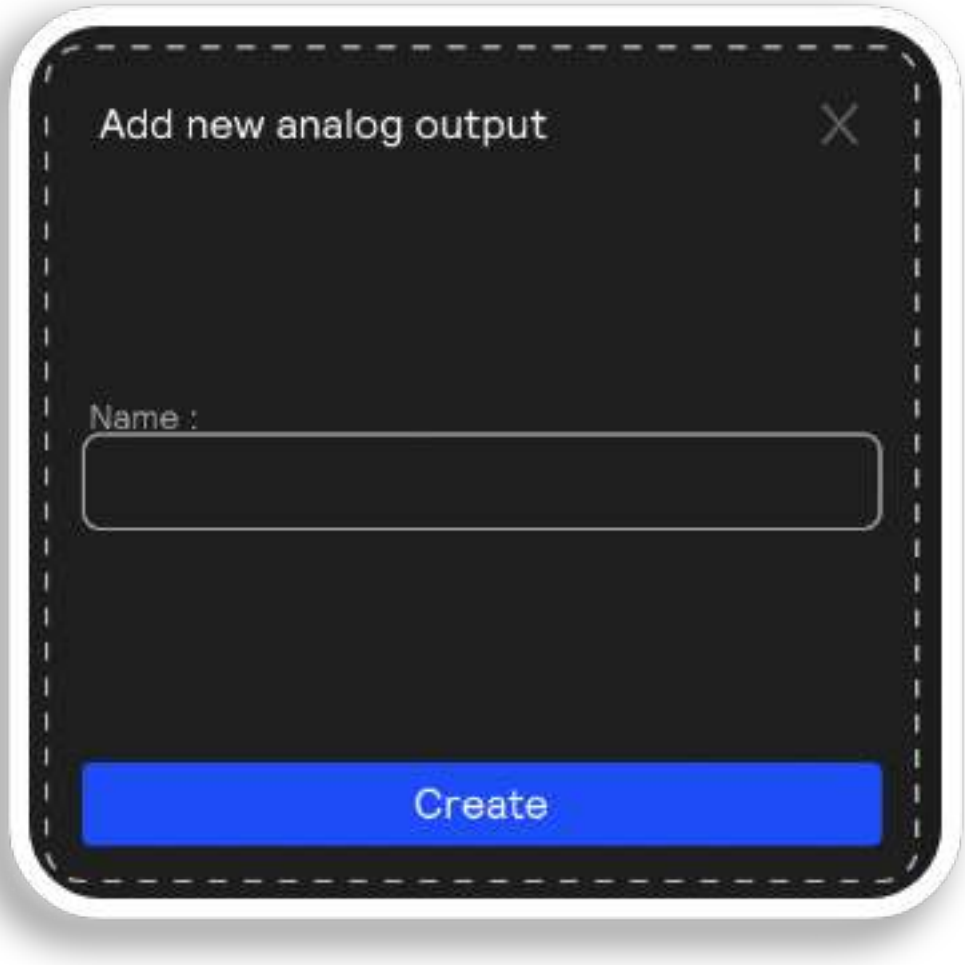
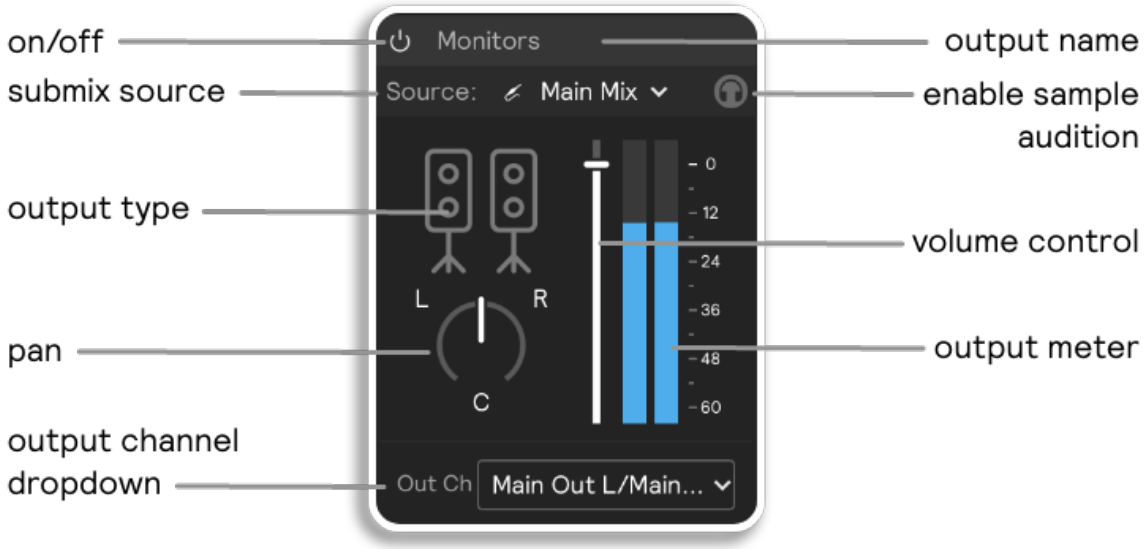


Figure 122: A screenshot of the create analog output module, asking you to name the output

For monitoring sound out of headphones or speakers, you'll want to select create an Analog Output. When you do, you'll be prompted to name the output.



Once you've named and created the new output, select the output channels from your interface you want to use from the dropdown. Now you are routing stereo or mono audio from Sensory Percussion to the physical outputs of your audio interface.

To make your outputs more easily distinguishable at a glance, you can change the icon of each one according to its type. Click on an output's icon to change it. There are six different types to choose from:

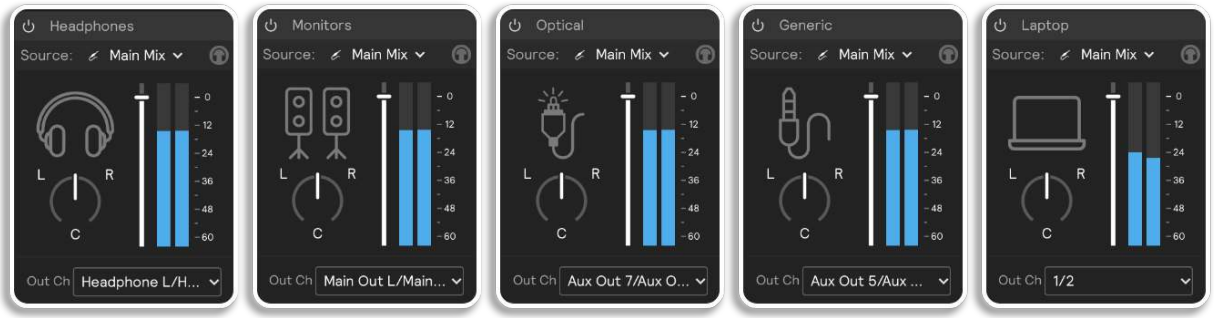


Figure 123: A screenshot showing six different analog hardware outputs, each with a different icon

You'll notice if you disconnect your device (or deselect it as an output device in the audio settings panel) that the output doesn't disappear, but its channel dropdown text becomes grey. This is because Sensory Percussion will remember your output routing for this device the next time you plug it in.

MIDI Outputs



Figure 124: A screenshot of the create midi output screen, asking to name the output and choose an output channel

To send MIDI signal out of Sensory Percussion, you'll want to choose a MIDI hardware output. Once you do, you'll be prompted to name the output and choose the MIDI output channel you want to send it to. Both of these can be changed later.

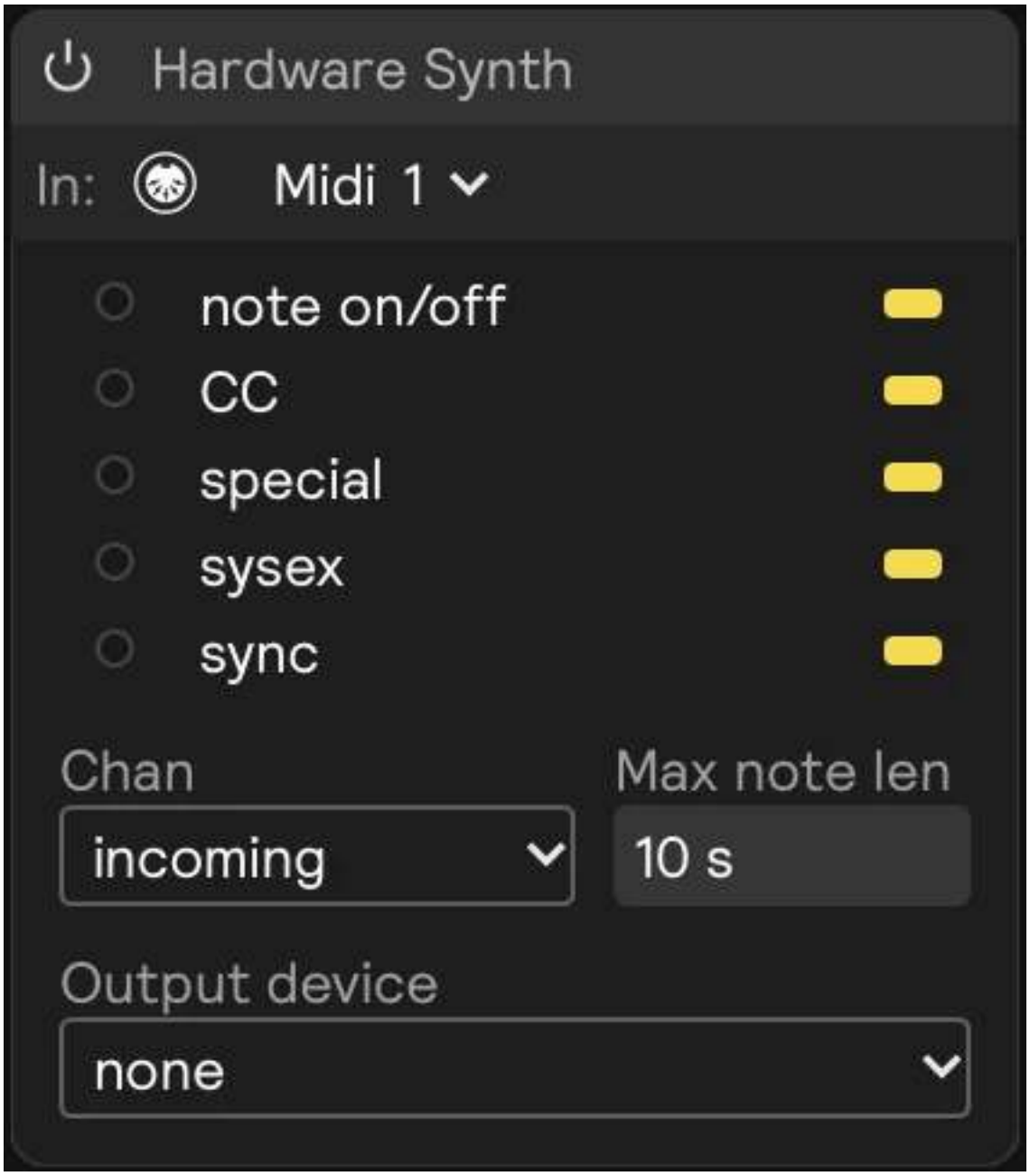


Figure 125: A MIDI output card named Hardware Synth: In set to Midi 1, the five message filter rows switched on, Chan set to incoming, Max note len at 10 s, and no Output device chosen yet

MIDI hardware outputs allow you to send different types of MIDI messages out of Sensory Percussion and into other programs that accept MIDI. The possibilities are pretty endless with MIDI; use it to control visuals from the drums, play back music you've created in other software, or control a host of other MIDI-mappable parameters across a variety of different programs from behind your drum set!

How a MIDI output gets its messages

A MIDI hardware output sends whatever arrives on one MIDI output badge to a real or virtual MIDI device. Modules send to a badge: a MIDI Router, a MIDI notes generator, or a MIDI Kit. The session's **Clock out** sends its clock to one too.

Control	What it does
In	The MIDI output badge this output listens to, like **Midi 1**. Set a module's **output** to the same badge to send it here.
Output device	The MIDI device the messages go to. A device has to be turned on in Settings → MIDI Devices first.
Chan	The channel messages go out on. `incoming` keeps the channel they arrived on.
Max note len	Ends any note that's held longer than this.

Message filters

The card's activity panel has one row for each kind of MIDI message. The switch at the end of a row decides whether that kind of message is sent to the device, and the light flashes only for messages that are sent.

Row	What the switch sends
note on/off	Notes. Turning it off also ends any notes that are still sounding, but stopping the session still reaches the device.
CC	Control change messages.
special	Pitch wheel, polyphonic aftertouch, and channel pressure.
sysex	SysEx messages.
sync	MIDI clock, and Start, Stop, and Continue.

Every row starts switched on, **sync** included, so the session's clock reaches the device unless you switch **sync** off here.

Modules

What is a Module?

Modules are the building blocks of Sensory Percussion, so it's important to understand how they work in order to build your own sounds. This section will go over the different parts of a module, but to better understand the overall modular structure of the software, check out the How Sensory Percussion Works page.

There are two kinds of modules used to build sounds in Sensory Percussion: **Controllers** and **Generators**

> **Video:** Sensory Percussion 2 Drum School: Intro to Modules

Controllers

Controller modules don't produce sound themselves; they just affect the relationship between other modules. There are six kinds of controllers, each of which performs a different action on all of the modules inside of it. Controllers can hold any other kind of module, whether it's a generator or another controller.

Generators

Generators, as you might guess from the name, generate sound. The most commonly found type of generator in our preset kits is the sampler. Unlike controllers, generators can't hold other modules, so they're always at the end of the modular chain.

Below is an example layer from the set *Acedia*. You can see how the leftmost controller (drum pads controller) contains another controller (note controller), which contains a generator (sampler). Since generators can't hold other modules, this sampler is the end of the chain:



Both controllers and generators can be found in the **Build** section of the library. You might also notice that this section includes Effects. Effects are not generators because they don't produce sound on their own, but they're also not controllers because they can't hold other modules. They're kindof in their own special category, which allows them to be placed on any module at any point in the chain. For more info on effects, check out the Effects page.

Tip:

If you find that you need to set the *same* value to the *same* parameter across multiple different modules, you can save time with `copy value to siblings`. See Parameters for this and the rest of what the right-click menu on a control can do.

Panels

Modules are made up of *panels*. These are smaller sections that provide different settings and functionality to each module. There are some panels that are common to all modules, for example the mix, macros, and velocity i/o panels.

You can show or hide various panels by clicking on the panel button on the top-right of the module. Some panels, like Info, are hidden until you tick them in this menu.



Figure 126: A screenshot displaying the panels dropdown of a Drum Pad controller

Each panel can also be expanded or collapsed by clicking on the “open/close” arrow button on the bottom-left of the panel.



Figure 127: A screenshot of a Drum Pad controller with most of its panels collapsed

For more information on the different panels, check out the Panels page.

Power and Mute

Every module's header has a **Power** button. Turning a module off makes it ignore every hit, including its own play button, and fades its audio out. Once it's silent, it stops processing entirely, so a powered-off module costs no CPU. You can still change its settings while it's off, and it comes back exactly as you left it.

Power is different from the mixer's **M** (Mute) button, which only silences a module's audio: a muted module still receives hits and fires its assignments.

To stop hits from reaching a module while keeping it otherwise running, use **Block all input** at the start of its input-filter row. See Block all input.

Monitor Mix

Modules at the top level of the layer have a button at in their header row that allows you to send the module to the Monitor Mix. This is useful, for example, for sending a click track or backing track to your headphones without sending it to the Main Mix.



Figure 128: A screenshot of the Monitor Mix button

Input Filtering

In Sensory Percussion V2, your hardware is decoupled from your virtual inputs, which allows you to work on the same session using entirely different setups (for example: your home studio setup and your stage setup). Additionally, there's an infinite world of connections between your virtual inputs and your modules.

To add an input filter to a module, simply click on the + sign and then select what type of filter you want to add.

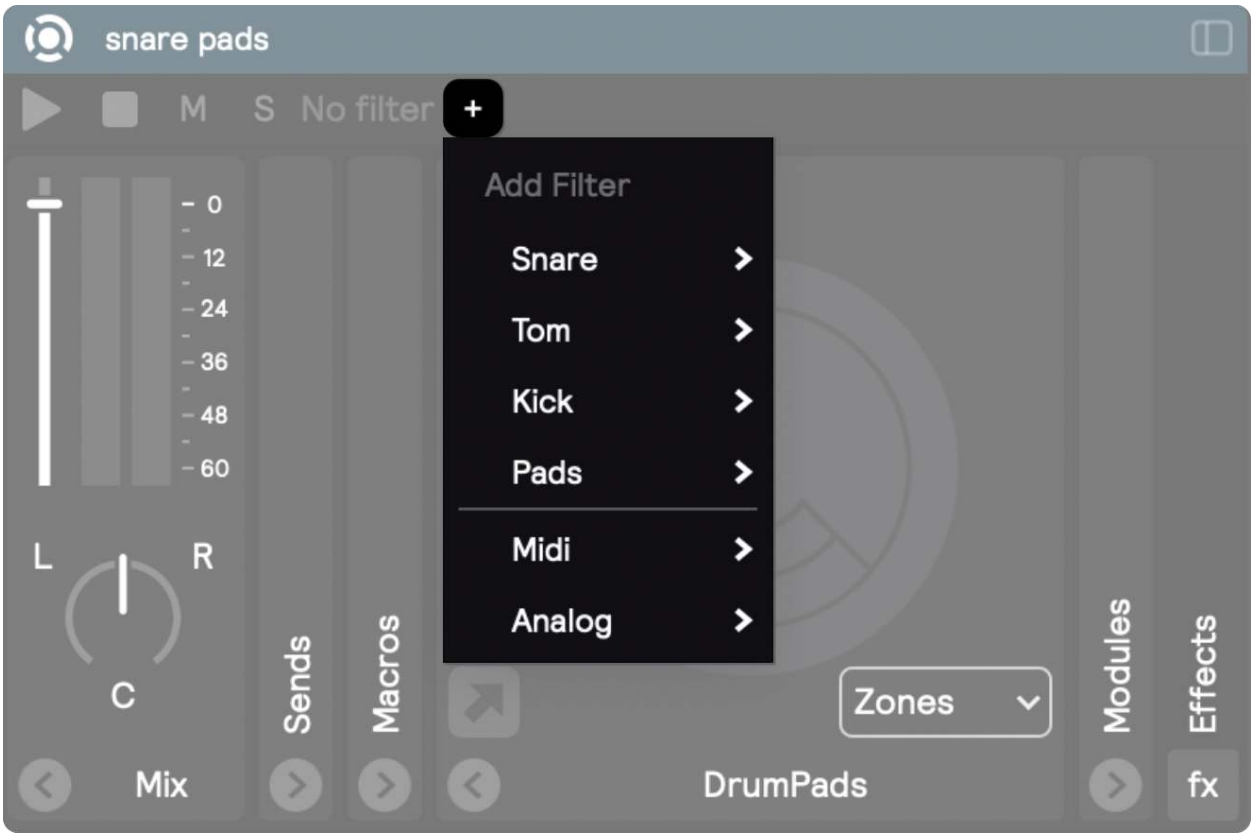


Figure 129: A screenshot of the add filter dropdown menu

If you then want to edit this existing filter, click on the filter itself to change it to another filter of that same type or remove it altogether.

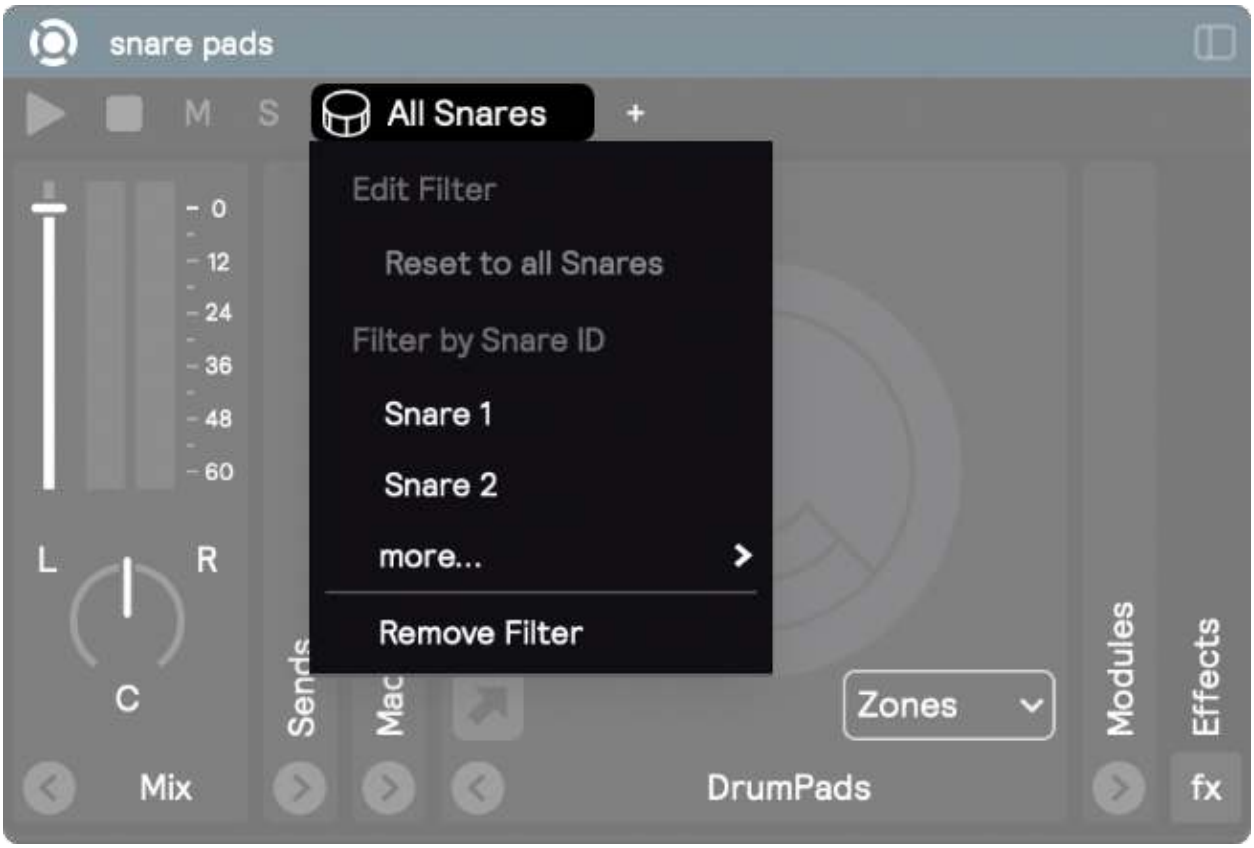


Figure 130: A screenshot of the edit filter dropdown menu

Sometimes, you might want a specific drum or specific type of drum to control the module. For example, you might want *any* virtual snare drum you have in your set to control the sounds on snare drum pads.



Figure 131: A screenshot highlighting an All Snares filter on a module

Other times you may have *two different virtual snares* routed to different pad mappings.



Figure 132: Two screenshots of modules with filters. One is filtering on Snare 1 the other on Snare 2.

In the image above, snare 1 is controlling the snare pads layer, while snare 2 is controlling the melodic sounds layer.

Input filtering allows you to distribute sounds across different drums without having to duplicate modules, saving you time, space, and CPU. For example, you might want both of your toms to share one sample in common, but also give each one its own additional layer of tom samples: one pitched up and one pitched down:

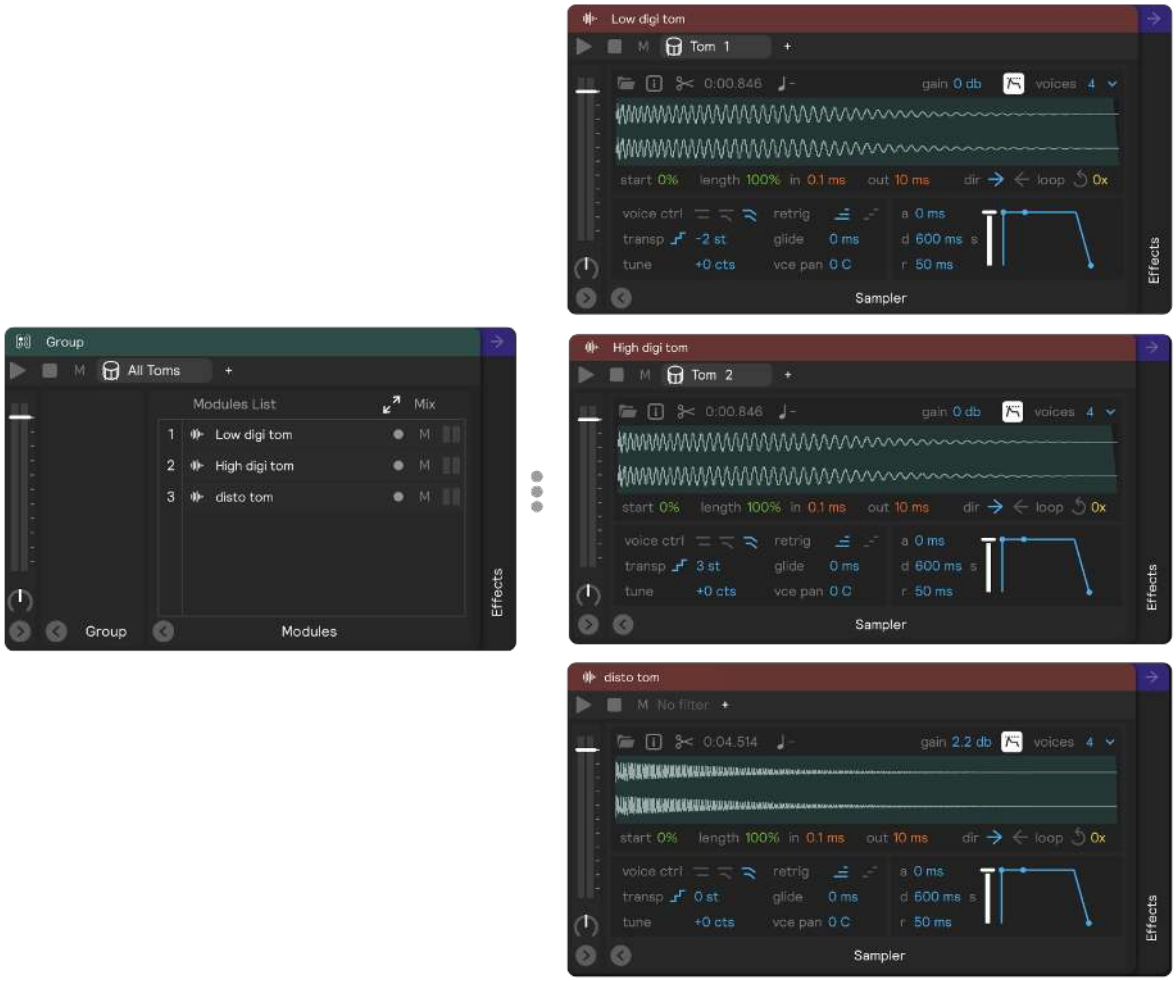


Figure 133: A screenshot showing a top level module filtering on All Toms, and its 3 submodules filtering on Tom 1, Tom 2, and no filter, respectively

The image above shows a group module and all 3 of the samplers it contains: “Low digi tom,” “High digi tom,” and “disto tom”. The first two samplers in the list have “Tom 1” and “Tom 2” input filters, respectively. But the third sampler has no input filter, which means it will inherit the “All Toms” input filter from the Group module it’s inside of. That means that hitting either tom will play the “disto tom” sample, but only Tom 1 will play the low tom sample and only Tom 1 will play the high tom sample. This filtering concept also applies to longer chains of modules, not just individual samplers.

Block all input

The arrow-into-a-bracket icon at the start of the input-filter row is **Block all input**. Click it to make the module ignore every hit from outside it: your drums, pads, and MIDI input, and hits forwarded by a parent controller or a Metro's clock. A blocked module doesn't trigger, doesn't fire its assignments or modulators from those hits, and doesn't pass them on to its submodules.

Off

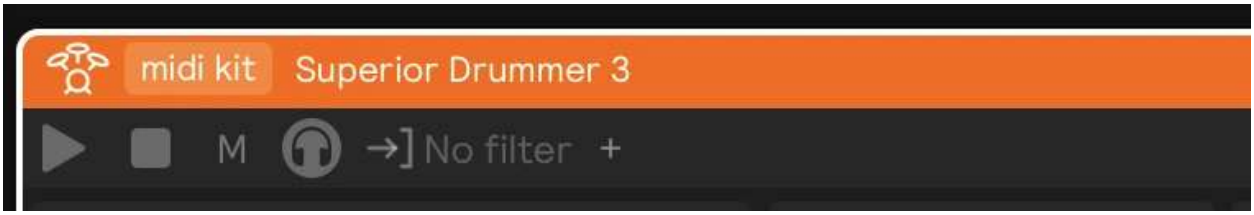


Figure 134: A module header with the Block all input icon at the start of the filter row

Blocked



Figure 135: The same module with input blocked: a red icon and the filter row in a hatched red tray marked Blocked

While input is blocked, the icon turns red and the filter row sits in a hatched red tray marked **Blocked**. The filters stay visible and editable, so you can fix a filter while the module is blocked. Click the icon again to unblock, and the filters take effect again.

The module's own controls keep working while it's blocked. Its play button still plays it (and fires its assignments and modulators), its stop button stops it, and parameter changes still apply. A stop is never blocked, wherever it comes from.

Inside a controller, you can block a submodule from the filter badge on its row in the modules list: click the badge and choose **Block all input**.

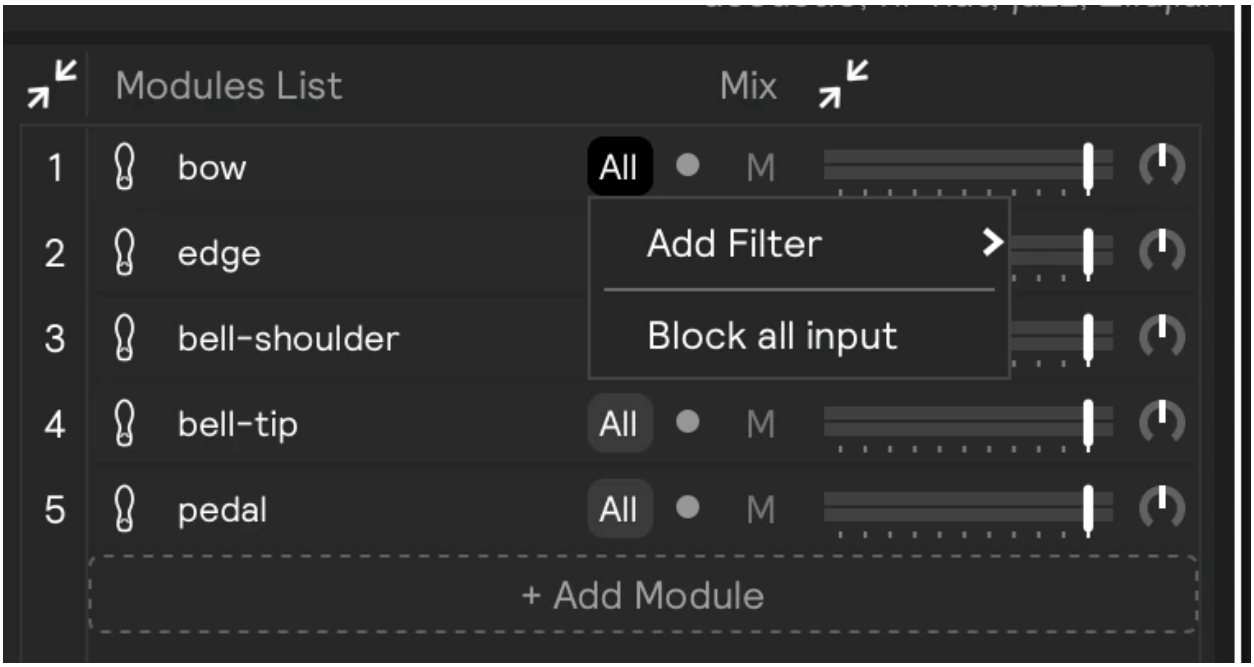


Figure 136: The filter badge menu on a submodule row, with Add Filter and Block all input

Like Power, **Block all input** can take an assignment, so a pedal, a pad, or any other source can block and unblock the module while you play.

Tip: Block all input, Power, or Mute?

- **Block all input** stops outside hits from reaching the module. Its own play button still works, and it keeps sounding until whatever is playing ends.
- **Power** turns the module off completely: it ignores every hit and its own play button, its audio fades out, and it stops using CPU. See Power and Mute.
- The mixer's **Mute** (**M**) only silences the audio. Hits still play the module, and its assignments still fire.

The Metro also has its own **Block hits** button, which stops hits from reaching its pads while still letting them drive its clock.

Panels

Effects

The Effects panel works slightly differently from other panels. The FX panel has a dedicated button ()to show/hide it rather than pinning/unpinning. This panel is where you will find all of your effects modules. To add an effect, simply drag an effect from the Effects library on the left and drop it anywhere on the layer, and it will automatically be added to the effects panel of the layer. Effects can be added to generators, controllers, or audio buses. For more information on how effects work, check out the How to Add Effects page.

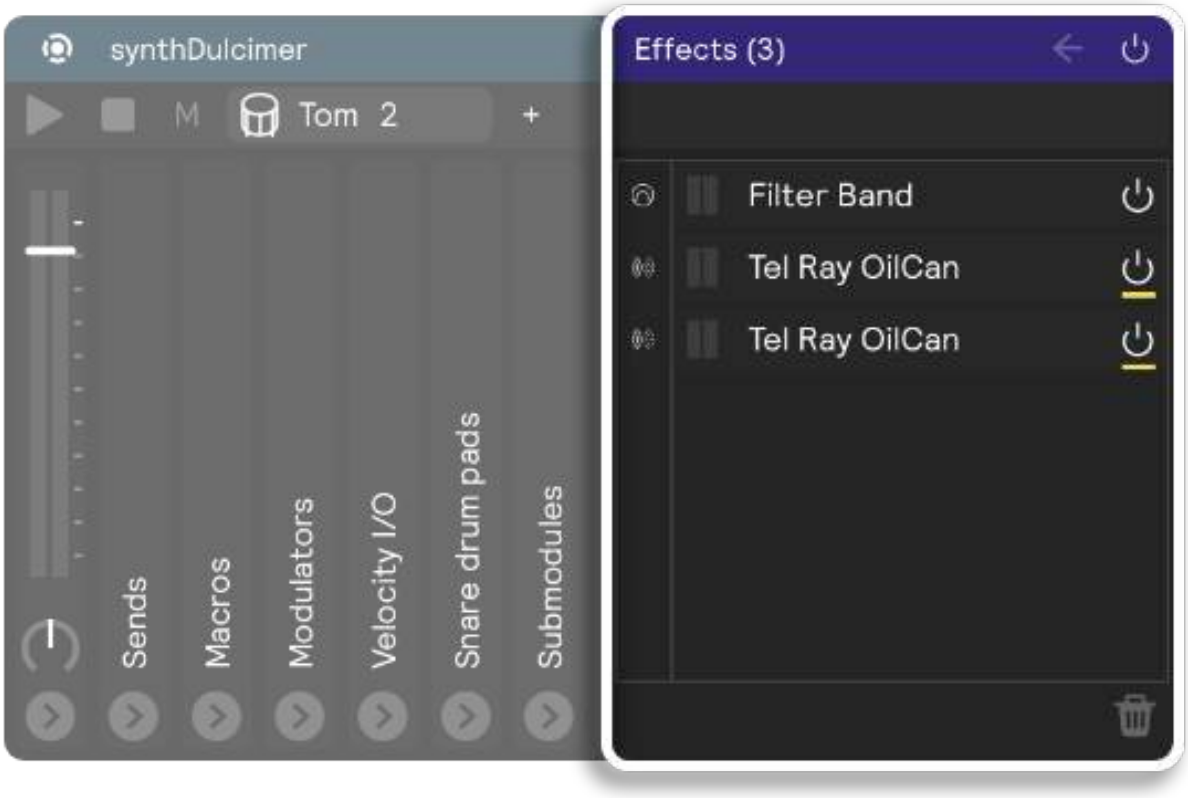


Figure 137: A screenshot of a controller with the effects panel highlighted.

Info

The **Info** panel gives a module a picture and a place for notes. It's available on every module (controllers, generators, and effects), and it's a handy spot for setup instructions, credits, or a reminder of what a module is for.

The panel is hidden by default. Open the panel menu in the module's header and tick **Info** to show it. Untick it to hide it again.

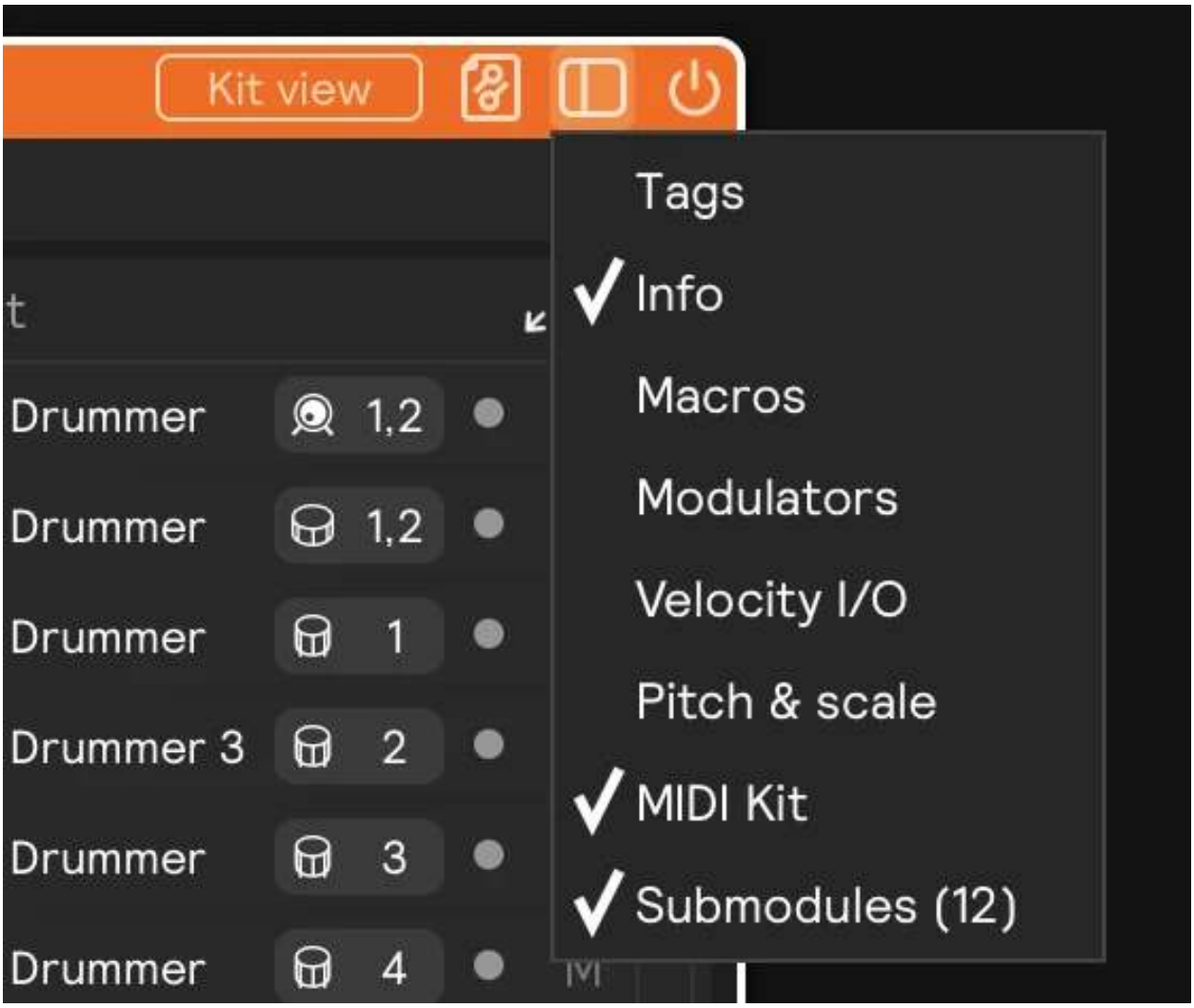


Figure 138: The panel menu of a MIDI Kit with Info ticked

Adding an image and notes

A freshly opened Info panel is narrow and shows two dashed buttons:

Button	What it does
+ image	Choose a picture for the module (PNG or JPG). It shows at the left of the panel. To change or remove it, hover over the picture and click **…** in its top-right corner, or right-click the picture.

Button	What it does
+ notes	Opens a text area for notes or a description. Clear the text and click away to close it again.

Empty

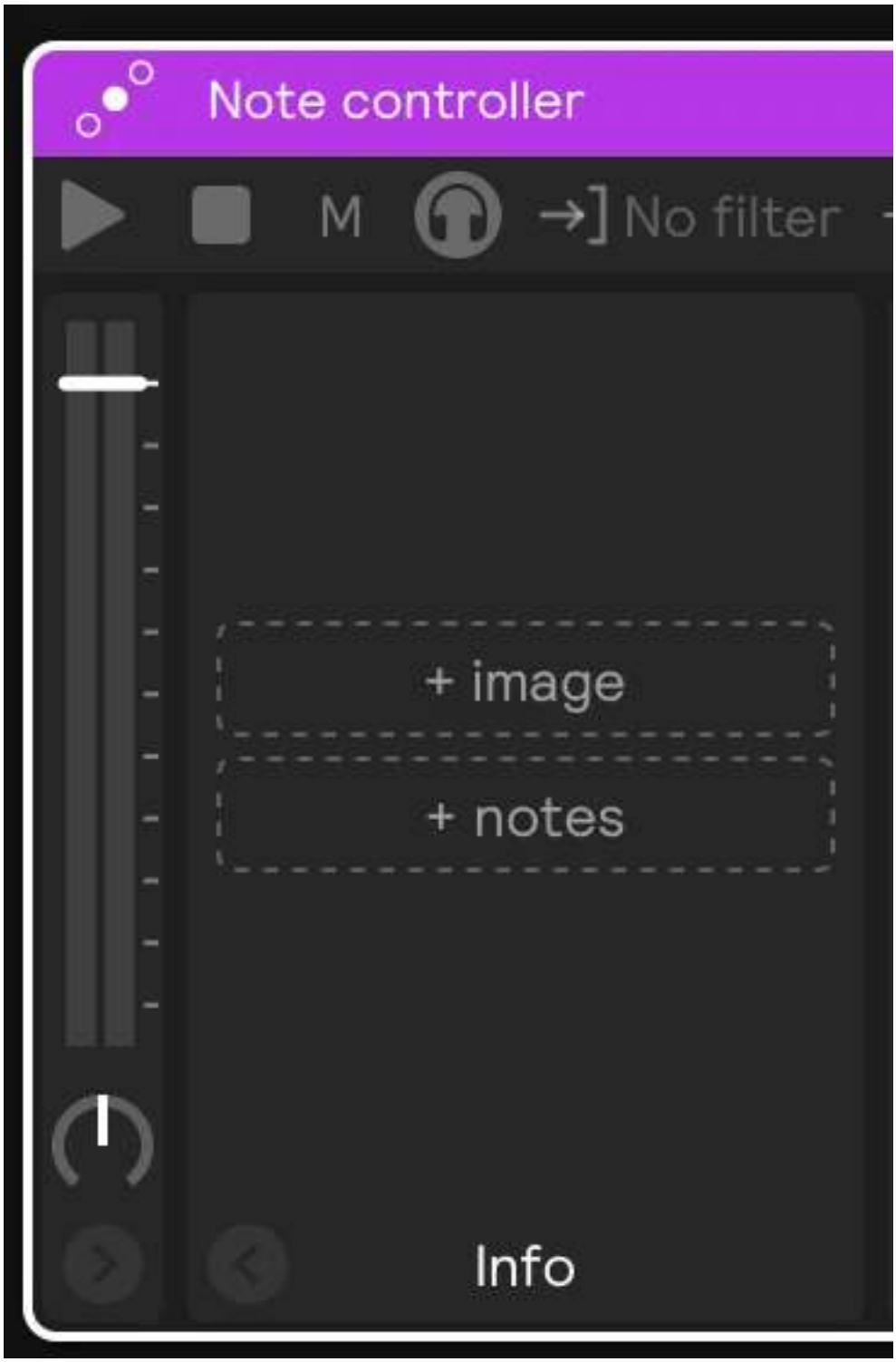


Figure 139: A freshly opened Info panel with the + image and + notes buttons

With notes

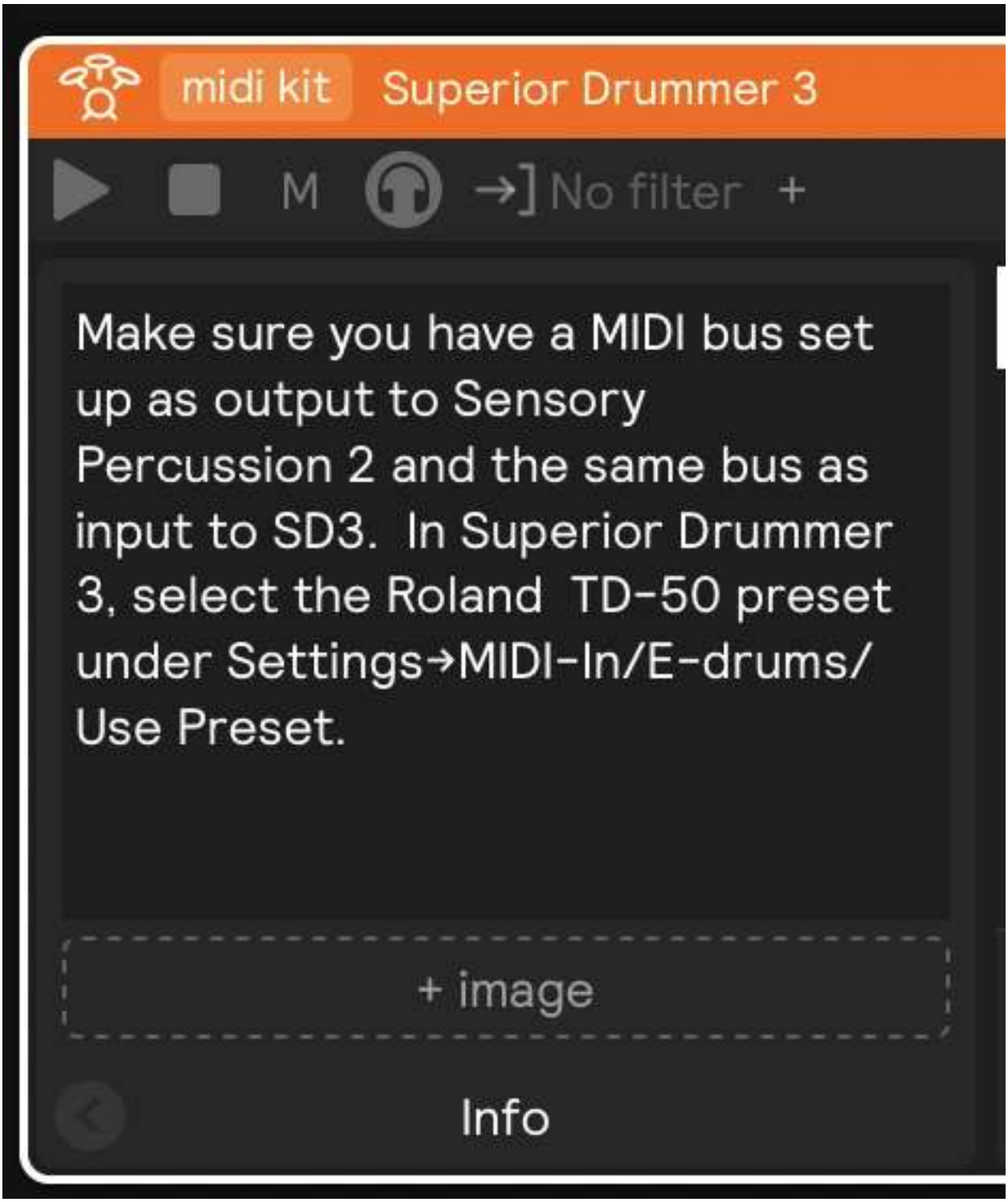


Figure 140: An Info panel on a Superior Drummer 3 MIDI Kit, with setup notes filled in

The image and notes are saved with the session, and travel with the module when you copy it.

Macros Panel

The Macros panel lets you add knobs, buttons, or sliders that can be assigned to almost any parameter further down the layer. To add a Macro, click the plus button in the Macros panel and feel free to name it.

Macros are themselves parameters, so they respond to the same gestures as any other control and carry the same right-click options, including the live-value items.



Figure 141: A screenshot of a controller with its macros panel highlighted.

There are four types of macros you can create: Knobs, Sliders, Toggles, and Triggers. A new Macro defaults to a knob, but you can easily change it by right-clicking the macro and choosing a new type from the **macro type** menu.



Figure 142: A screenshot of a macro panel which has examples of the various macro types.

Knob

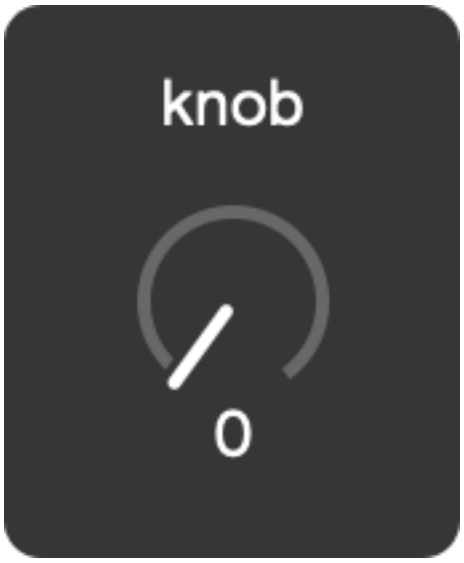


Figure 143: A screenshot of a macro knob.

Knobs are the default Macro type and are used for controlling continuous parameters.

Slider

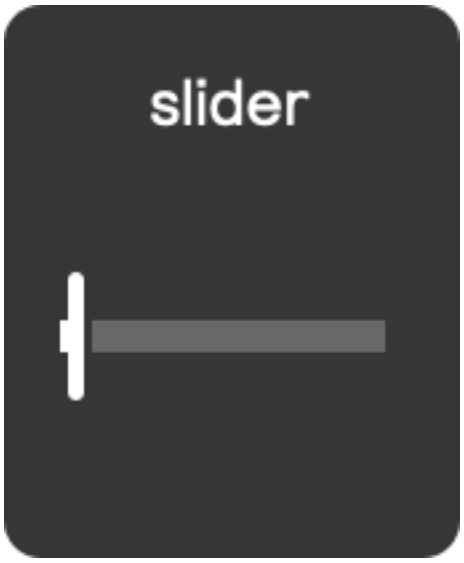


Figure 144: A screenshot of a macro slider

Sliders can also be used for controlling continuous parameters.

Toggle



Figure 145: A screenshot of a macro toggle

Toggle macros are button with two states. You can use them to turn a parameter on/off or to switch between two states. For example, to defined levels of a reverb parameter.

Trigger

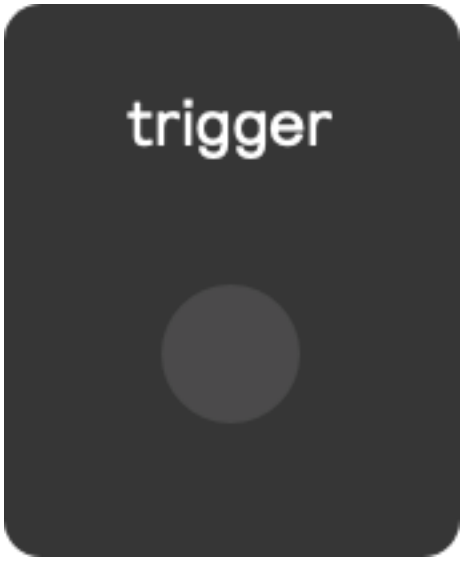


Figure 146: A screenshot of a macro trigger button

The trigger macro is like a button on a game controller. It sends a single trigger message that can be assigned to buttons like “next” on a sequencer or the stop button on a sampler.

Connecting Macros to parameters There are two ways to connect a Macro:

1. After creating the Macro, you can simply drag and drop it onto the parameter you want to connect it to. If the drag target it a bit far away, you can achieve the same effect by right-clicking the Macro and finding your target under the **assign** menu.
2. You can connect the Macro from your target. Simply right-click the parameter you want to control and find your Macro under the **assign -> macros** menu.

Mix Panel

This panel allows you to quickly adjust the volume and panning of the entire layer, meaning if you have multiple modules inside of this layer, they will all be affected. Some modules also have their own mix panels, so you can adjust them individually as well.



Figure 147: A screenshot of a controller with its mix panel highlighted.

Modulators Panel

This is where you can add any combination of six different modulators, or modes of controlling parameters within Sensory Percussion with your playing. The seven different kinds of modulators are: **Velocity**, **Timbre**, **Speed**, **Pedal**, **MIDI Control**, **Envelope**, and **LFO**. For an explanation of how each of these works, check out the Assignments/Modulators page.

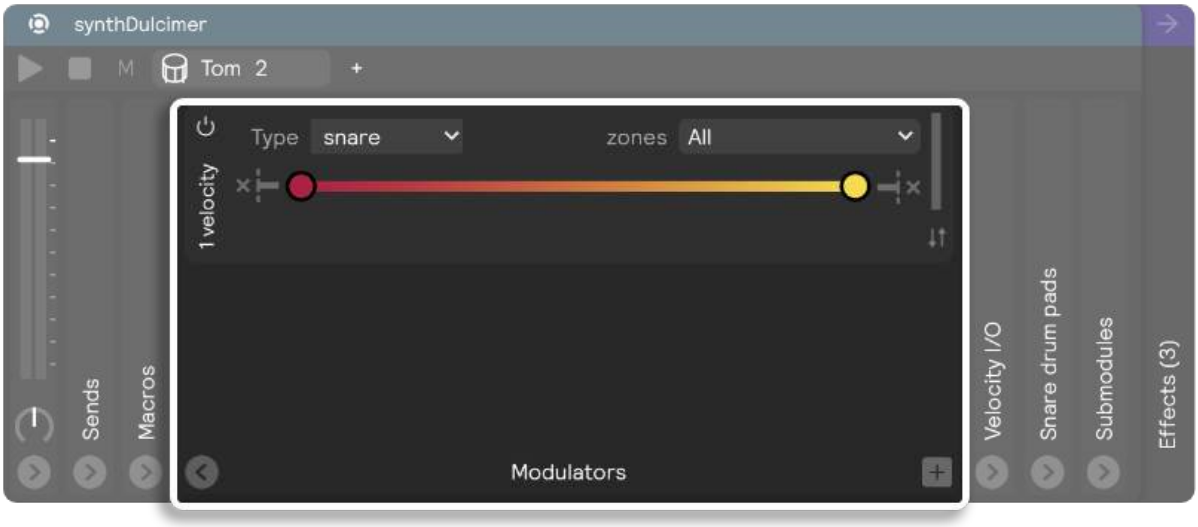


Figure 148: A screenshot of the modulators panel with a velocity modulator shown.

Pitch & Scale

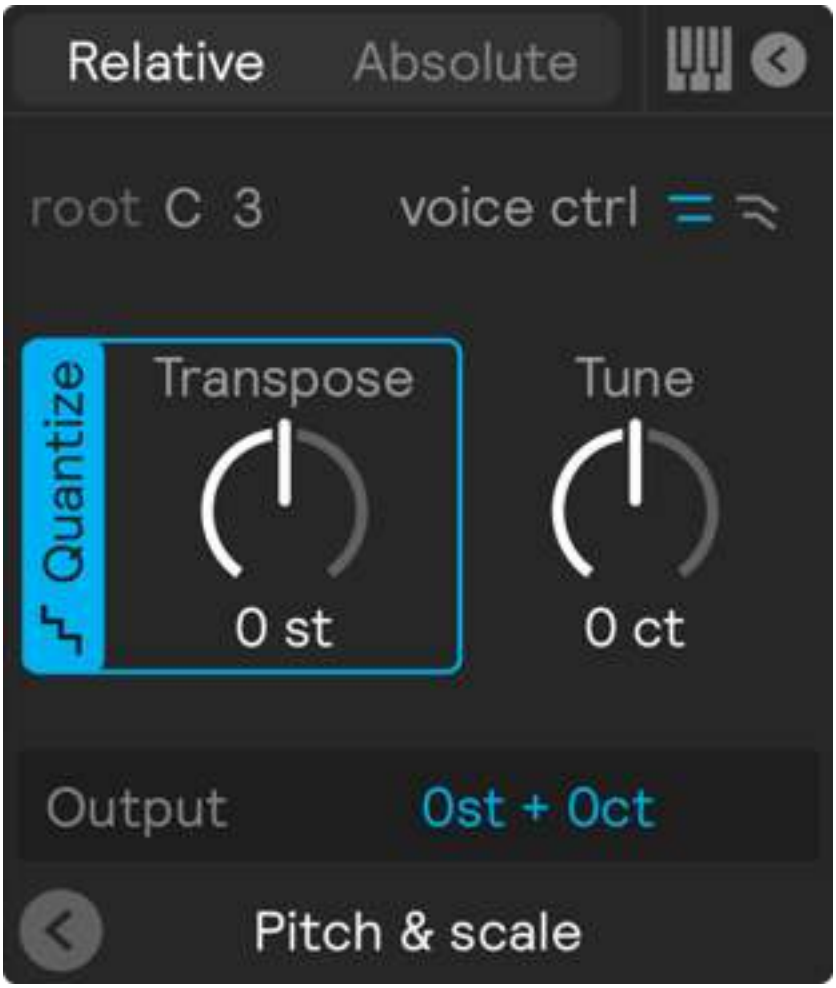


Figure 149: A screenshot of the Pitch & Scale panel

The **Pitch & Scale** panel is a powerful tool that allows you to control melody to your samplers and modules.

When the scale mode panel is closed, you can see the parameters: `Transpose`, `Quantize`,`Tune`, `Relative/Absolute`, `root`, `voice cntrl` and the `Output` meter.

The `Transpose` knob allows you to change the pitch of the entire module and all of its submodules. When `Quantize` is on, the `Transpose` knob will snap to the nearest halfstep or semitone (keeping to the chromatic scale). The `Tune` knob allows you to change the pitch in Cents, which are 1/100th of a semitone. This is useful for fine-tuning the pitch of a module or achieving non-western tunings with quartertones.

When in `Relative` mode, the `Output` meter will display the output of the module in steps + cents, and maintain note messages sent from Note Controllers or MIDI input.

When in Absolute mode, the root parameter is engaged and set to C3 automatically (this can be changed to reflect the actual notes of the audio files inside the samplers) . When in Absolute mode, the Output will now display the actual note being output by this module.

voice cntrl allows you to set the behavior of the tails of a repitched sampler. If set to “Next,” then no voices slide, if set to “All,” then all voices slide. This parameter is only relevant if you have an assignment on Transpose, Tune, or Note Control (more on Note Control below).

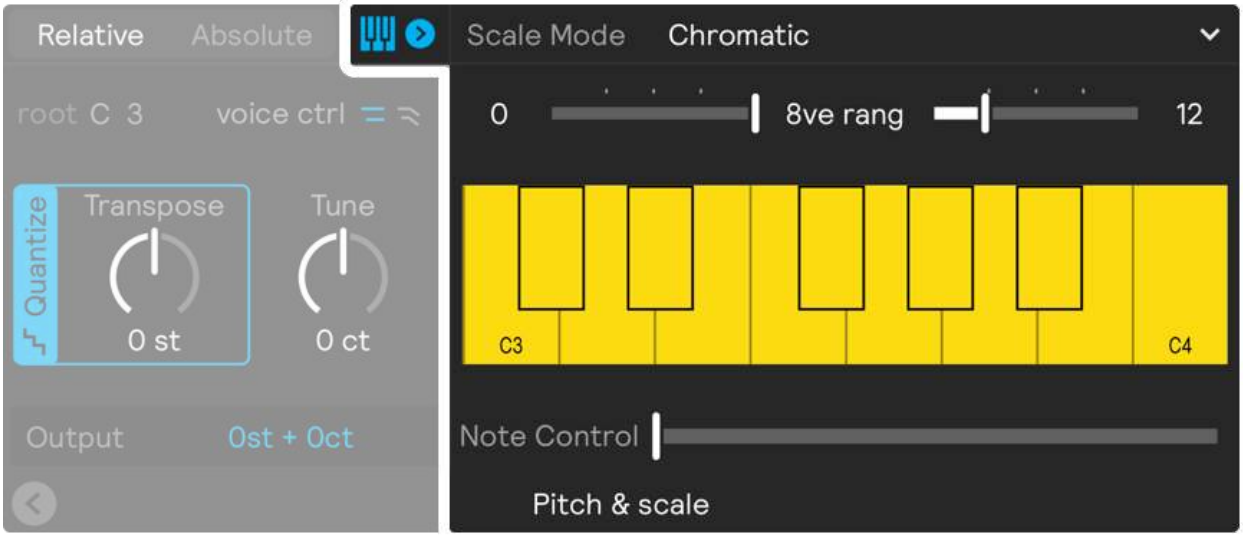


Figure 150: A screenshot of the Pitch & Scale panel with the scale panel open

When you open up the scale mode, a keyboard appears where you can select and deselect notes. You can also select a scale from the Scale Mode dropdown. The notes/scale selected really only come into play if you have an assignment or modulator mapped to Note Control.

The assignment or modulator you’ve mapped to Note Control will govern the melody of the module. For example, if you select the Hungarian Minor scale from the Scale Mode dropdown, and then map velocity to Note Control: your range of quiet to loud hits will trigger C, D, Eb, F#, G, Ab, B, C (assuming your samples are tuned to C and you have not altered the 8ve range).

You can set the top and bottom range of the scale’s quantization by adjusting the sliders to the left and right of 8ve range, by default they are set to 0 and 12, which means there is a one octave range selected by default.

Sends Panel

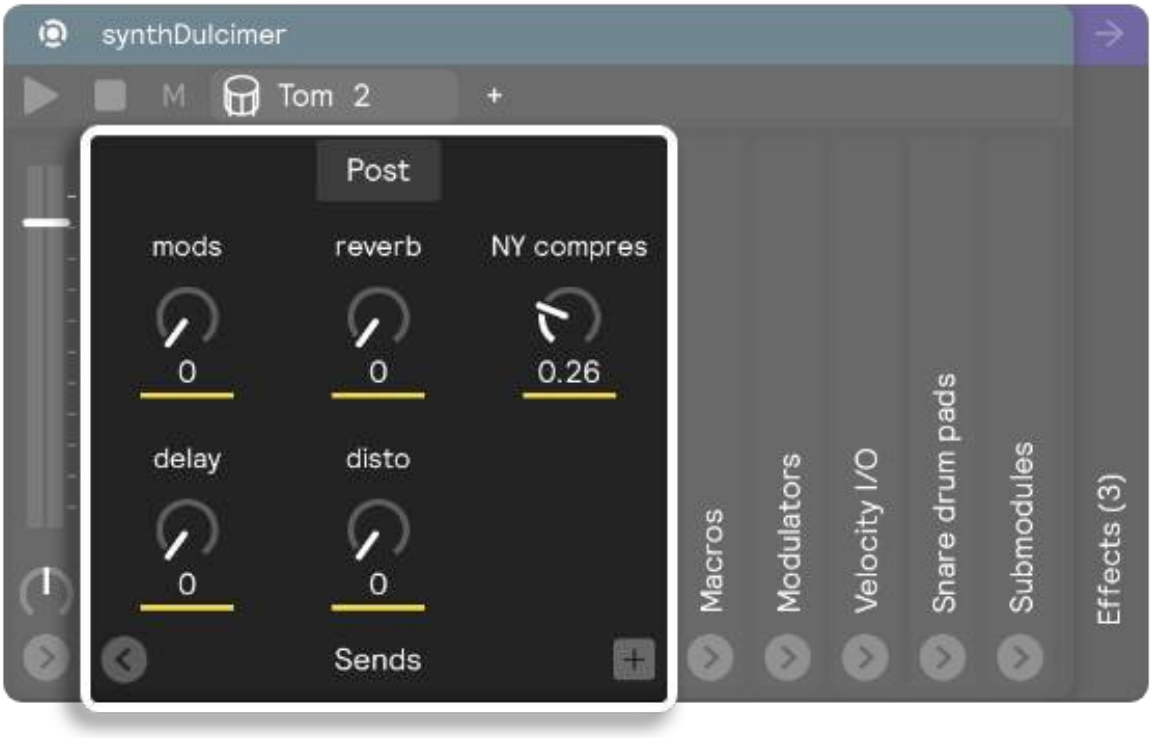


Figure 151: A screenshot of a controller with its sends panel highlighted.

Sends allow you to control how much of the audio from a selected module (and its submodules) is sent to an audio bus. Sends are a quick way to apply the same effect to multiple layers across your set. Creating a new send by clicking the '+' button will automatically create a corresponding audio bus layer.

Submodules

This is where you will see a list of all of the modules contained inside of the module you have selected. This panel is exclusive to controller modules, since generator modules can't hold other modules.

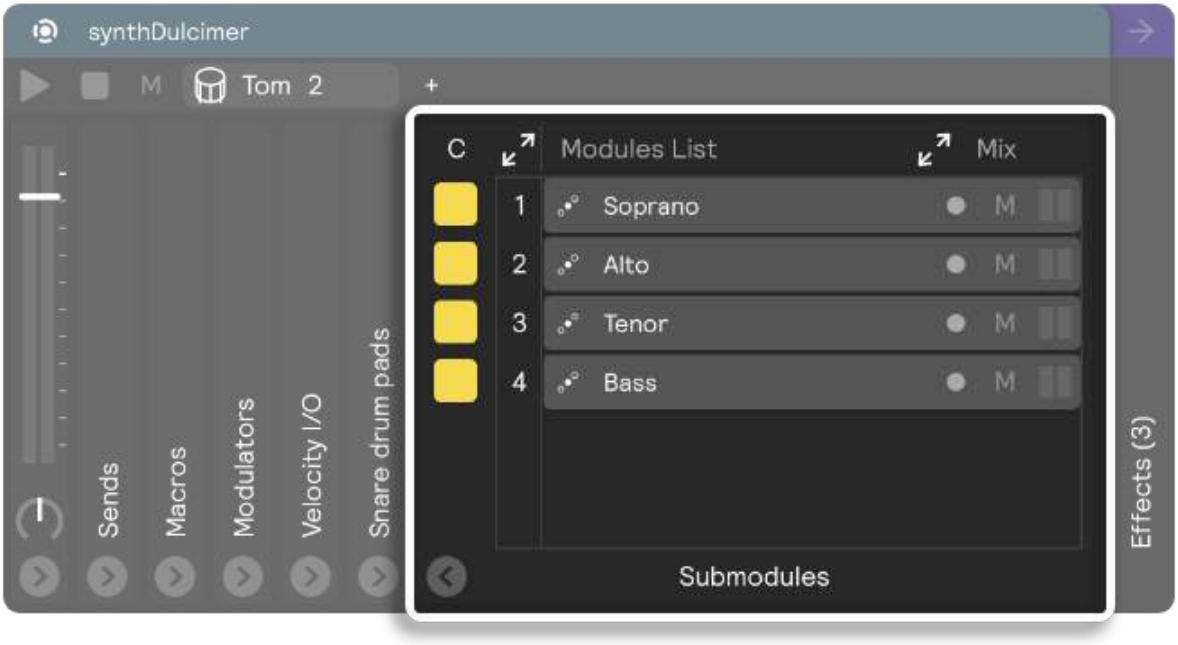


Figure 152: A screenshot of a controller with the submodules panel highlighted.

Tags

This panel allows you to add tags to your module. You can use tags for anything you like, but they are especially useful for organizing and filtering modules in the library panel.

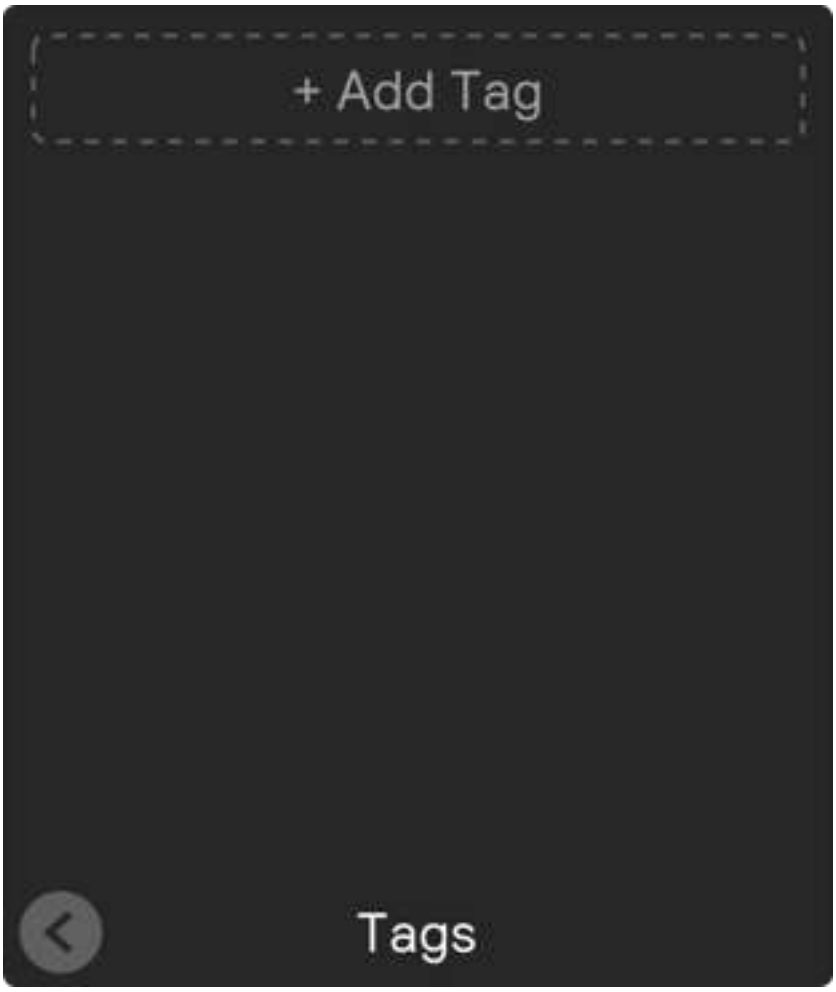


Figure 153: A screenshot of the Tags panel

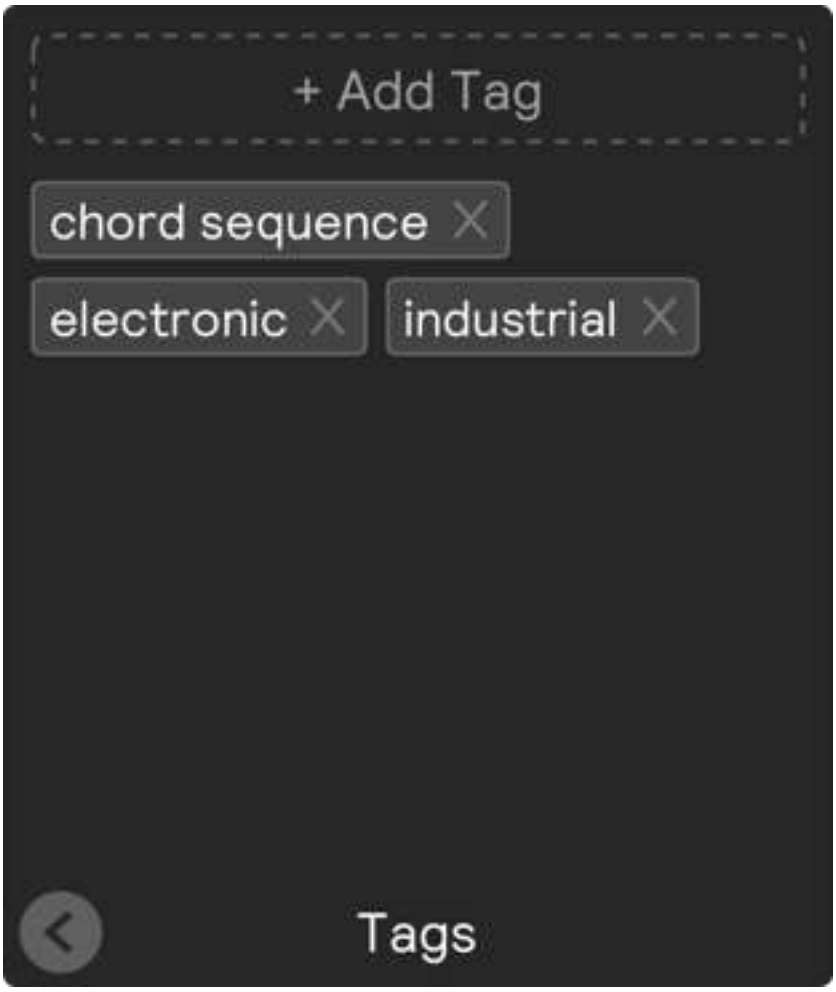


Figure 154: A screenshot of the Tags panel with example tags

Velocity Input/Output

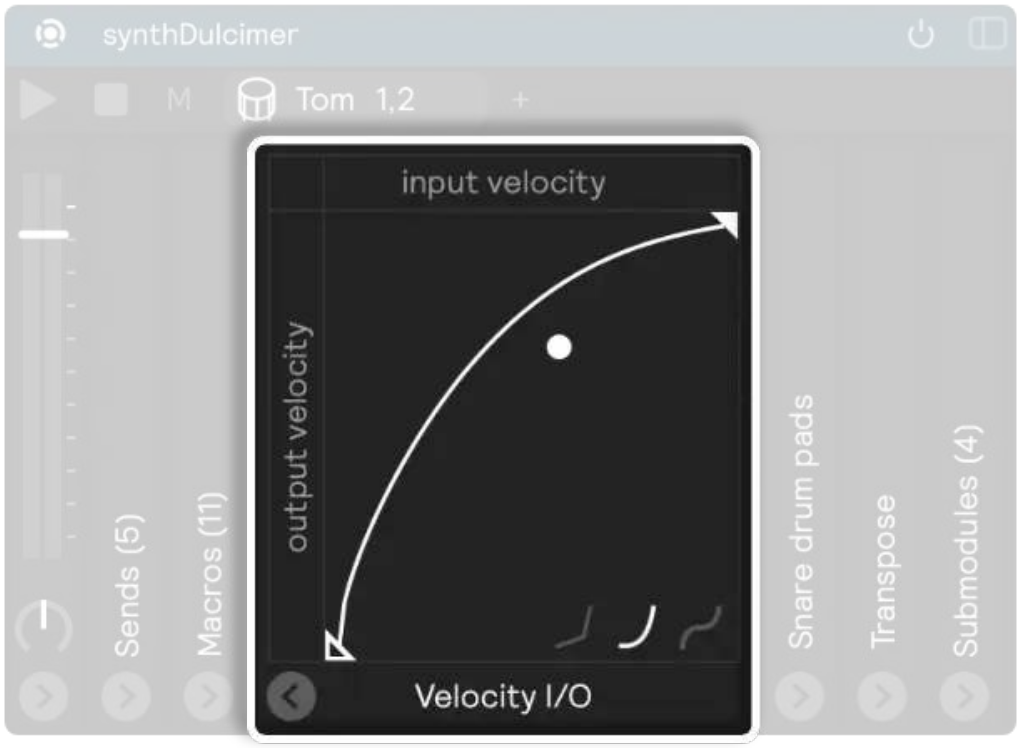


Figure 155: A screenshot of the Velocity I/O panel

Here is where you can where you can adjust how the entire layer responds to your playing.

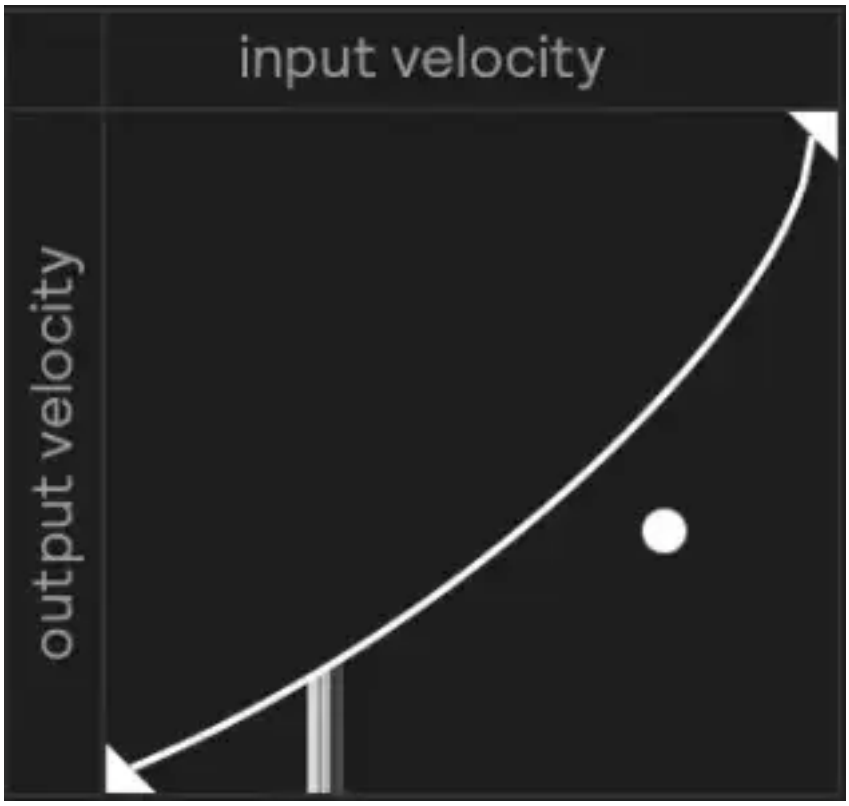


Figure 156: A screenshot of a linear velocity I/O panel setting

Want everything loud on pretty much every hit? Then drag the middle node up and to the left:

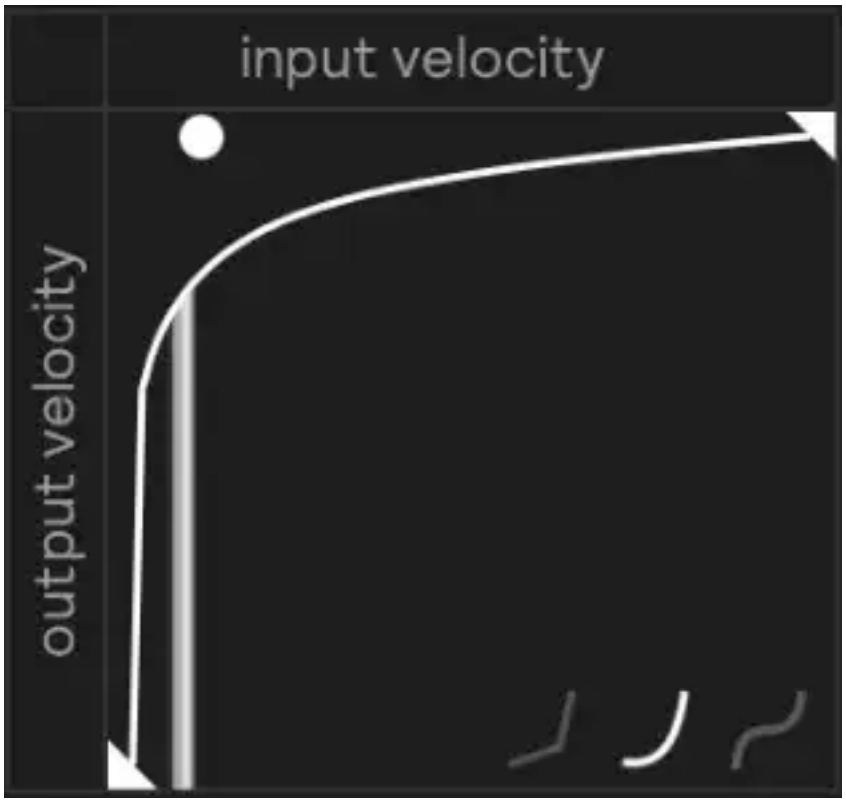


Figure 157: A screenshot of a loud velocity I/O panel setting.

Want this layer to completely ignore all of the quiet hits? Then drag the left-low node up and to the right:

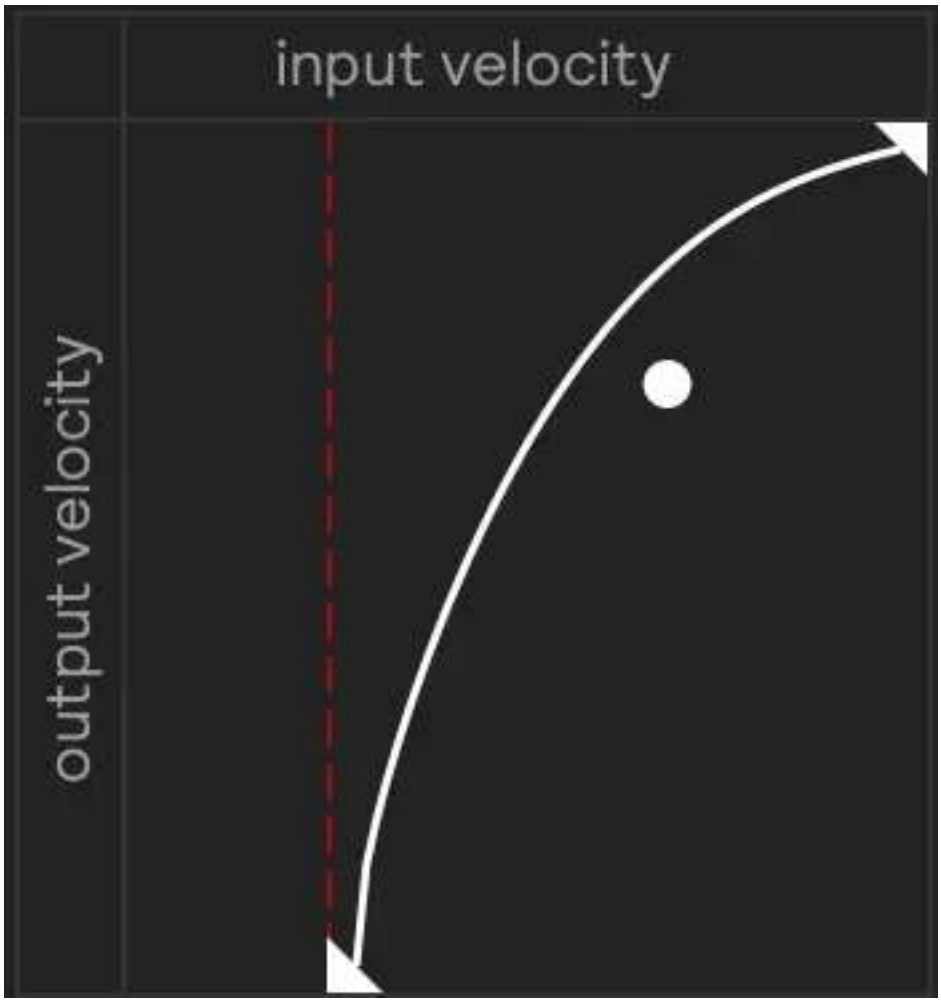


Figure 158: A screenshot of a velocity I/O setting to ignore quiet hits.

A velocity I/O panel exists on every Module and Controller, so it often would be overkill to use it all the way up here at the layer-level, but sometimes you *do* want the entire layer to respond in a certain way – you do you.

Controllers

Controllers are modules that perform some sort of action on their submodules. These actions include mapping, assigning, quantizing, routing, sequencing, and more. Unlike Generators, Controllers don't create sounds by themselves.

Controllers can be found in the **Build** section of the library.

There are kinds of controllers, each of which serves a different purpose:

Grouping modules into a controller

You can drag modules into a controller one at a time, but it's often quicker to select them first and wrap them in a controller in one step. In the Edit view, select one or more modules, then right-click them or use the **Edit** menu:

Command	Shortcut	What it does
Group	⌘ + G	Wraps the selected modules in a Group controller.
Group into…	⌥ + ⌘ + G	Wraps them in the controller you choose, like Drum Pads or a Sequencer.
Ungroup submodules	⇧ + ⌘ + G	The reverse: removes the selected controller and puts the modules inside it in its place.

For example, drag a handful of samples in from the library, select them, and choose **Group into… → Drum Pads** to spread them across the zones of a drum without opening the library again:

Grouping is also a good way to tidy a busy set. Grouped modules keep their input filters, so nothing changes about how they play. See How to Navigate Complex Sets.

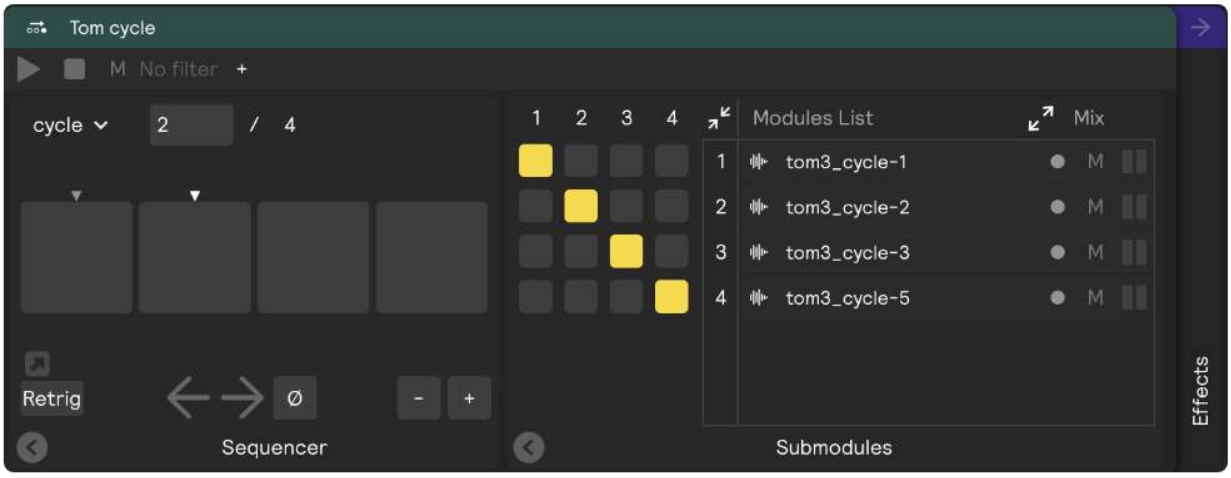
Advanced Mapping

The advanced mapping view exists in the Submodules panel of Drum Pads, Hit Controllers, and Sequencers. It can be opened by clicking the button to the left of the Modules List: 

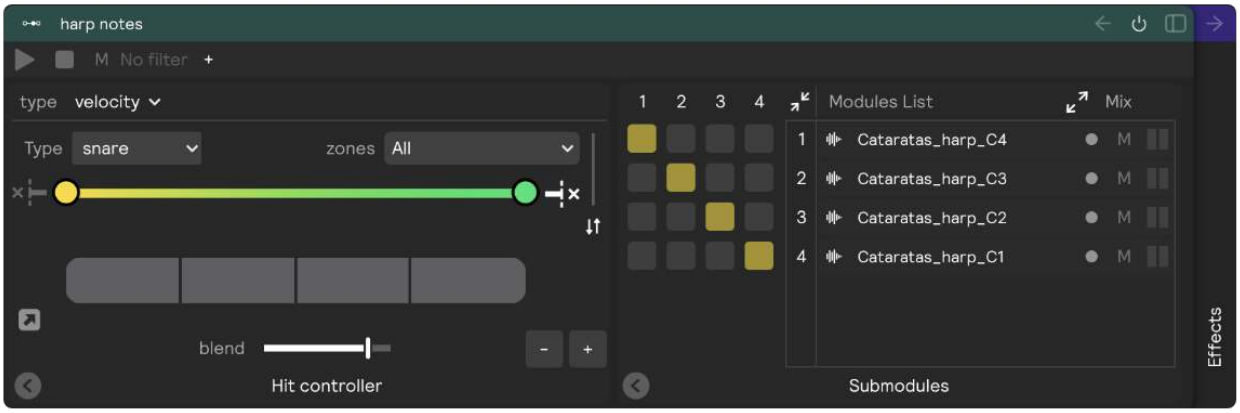
This will open up a matrix with a grid of squares that can be activated by clicking them. The vertical axis always represents the submodules listed to the right, while the horizontal axis is different for each controller type. Clicking an inactive grey square will activate it, assigning the corresponding submodule to the corresponding step of the horizontal axis.

Here are the different advanced mapping views of the 3 different controllers that have them:

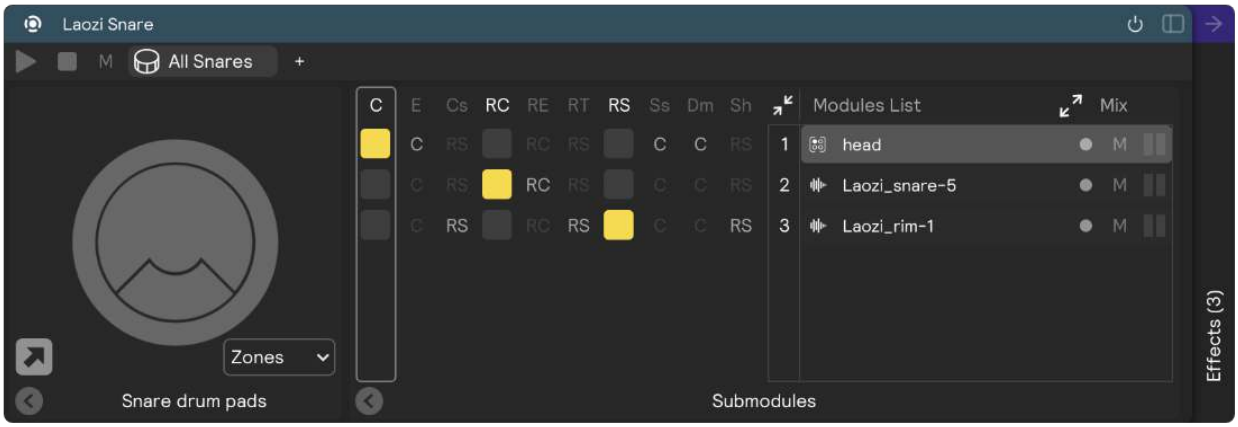
In **Sequencers**, modules can be assigned to different steps in a sequence:



In **Hit Controllers**, modules can be assigned to hit ranges, which go from low to high values of whatever mode you're using (velocity, speed, or timbre):



In **Drum Pads** controllers, modules can be assigned to different zones of the drum:



Drum Pads

Drum pads controllers allow you to distribute modules across the different pads (or zones) of the drum. If you're coming from Sensory Percussion V1, drum pads might look a bit familiar.



Figure 159: An image showing four examples of drum pads with different amounts of training

Hover over each section of the drum pad to see the zone it corresponds to. By default the Drum Pads controller includes 2 zones when you first drag it in. To add more zones to use, click the `Pads ▽` button and choose your zones.

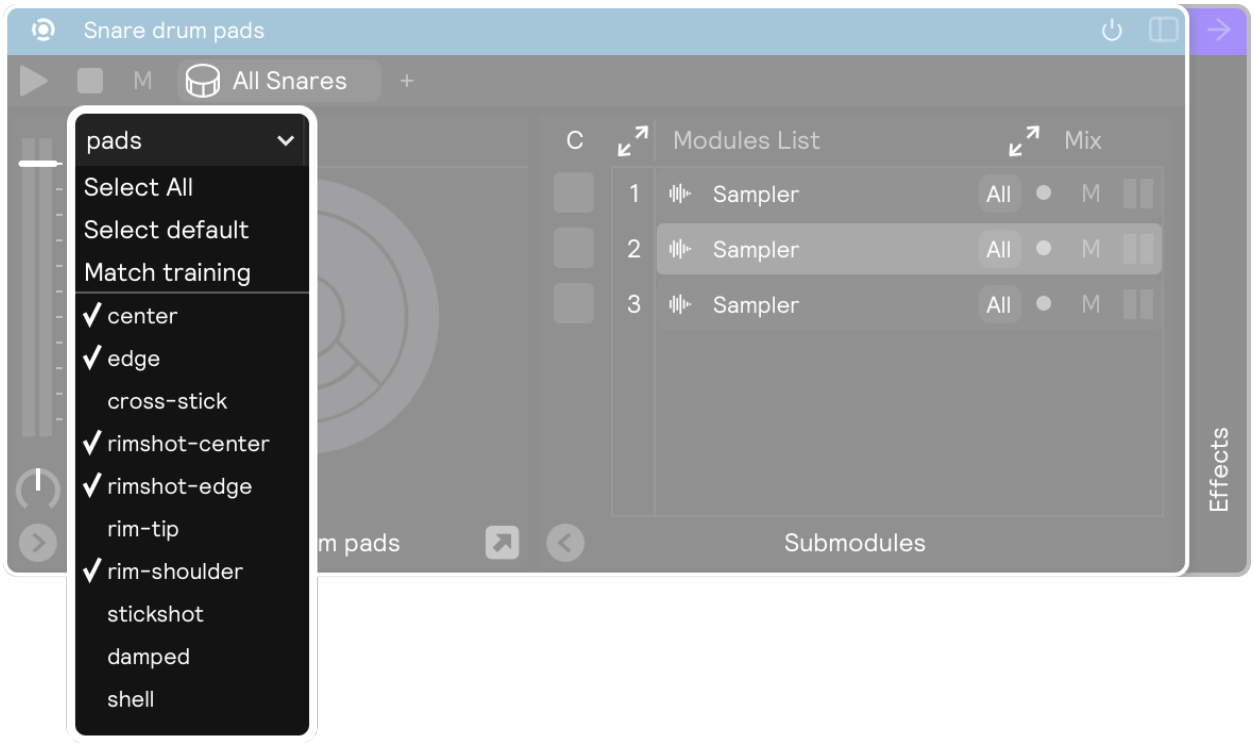


Figure 160: A screenshot showing the popout menu on the drum pads module that lets you select which zones to use

You can drag-and-drop controllers, modules, and samples from the Library onto these zones, or drag and drop your own samples from Finder/Explorer (or even 3rd party sampler apps!).

Advanced Mapping Matrix

For advanced and/or quick mapping, you can enter the advanced mapping matrix and assign modules to zones. Open the advanced mapping view by clicking the diagonal arrows icon above the module number column.

In the advanced mapping matrix, click on a pad abbreviation (C, E, Cs, RC, etc.) next to a module to assign that module to that pad.

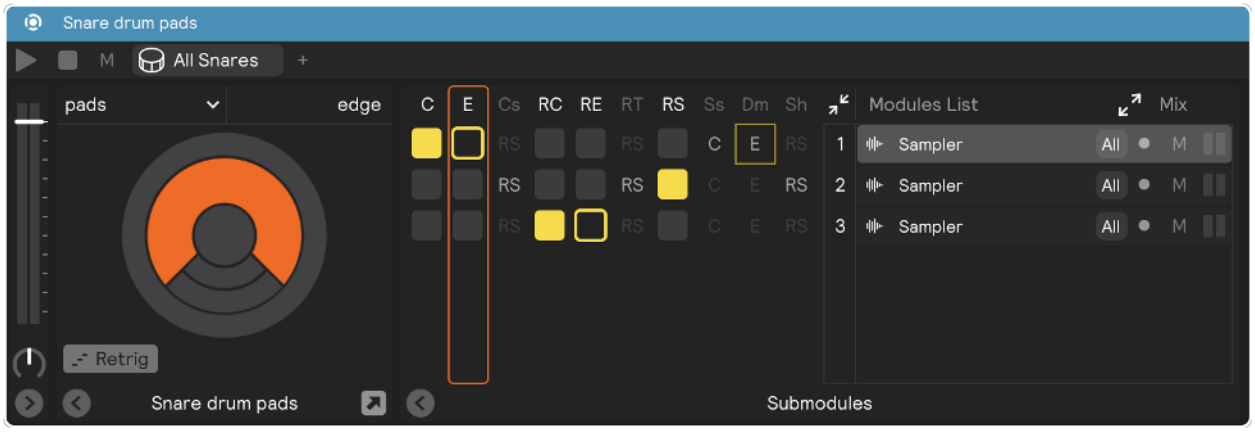


Figure 161: A screenshot showing the advanced mapping section of the drum pads module

Holding down `shift` and clicking on a square in the grid will blend the module with those pads. Blends are a unique feature of Sensory Percussion (and a favorite of Sensory Percussion V1). They enable the drum pads to play proportionally to how you've hit the drum. Enabling blends removes the boundary between zones and causes the zones to flow into one another (just like a drum behaves in the real world). Blended pads will appear outlined in yellow, rather than filled in, like non-blended pads.

> **Tip:**
>
> `shift-clicking` on a zone will trigger a hit. Useful for audition what's on it.

Automatic Assignments

Why is it that deactivated pads in the advanced mapping matrix show the abbreviations for other zones?

For example: if you activate Center (C), Rimshot Center (RC), and Rim Shoulder (RS), you'll notice in the advanced mapping matrix that:

1. The Edge, Stick Shot, and Damped zones have a light grey “C” icon in place of a clickable box, indicating that they are automatically assigned to the Center zone.
2. The Cross Stick, Rim Tip, and Shell have a light grey “RS” icon instead of a clickable box, indicating that they are automatically assigned to the Rim Shoulder zone.
3. The Rimshot Edge has a light grey “RC” icon instead of a clickable box, indicating that it is automatically assigned to the Rimshot Center zone.

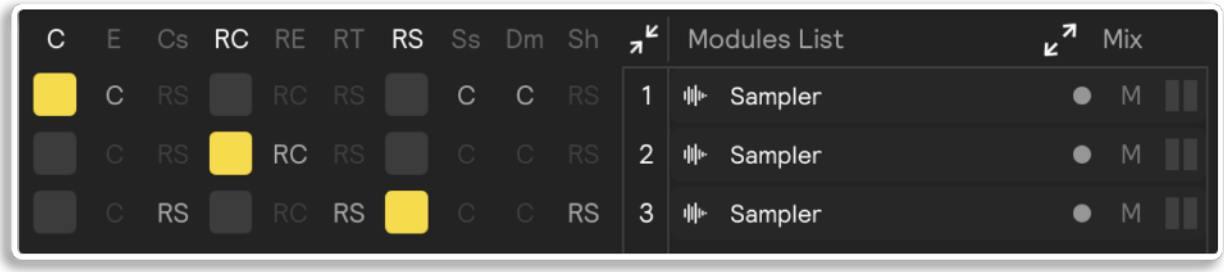


Figure 162: A screenshot of a drum pad module with automatic assignments on inactive pads

This automatic assignment feature of the Drum Pads is to help you avoid having to click many times to assign a module/s across multiple zones, *and/or* have empty (non-sounding) zones by default. The Drum Pads controller is “smart” in that way: it will automatically assign a deactivated zone to the most timbrally similar active zone.

But, if you actually *want* to have a blank (non-sounding) zone in your Drum Pads controller, simply activate it but don’t assign anything to it.



Figure 163: A screenshot of a drum pad module with automatic assignments on inactive pads and one active pad without any module assigned to it

Highlight Last Played Zone

What’s that little arrow button in the bottom left of the Drum Pads Controller?

That’s the “Highlight Last Played” button. When it’s turned on, it will highlight the last zone that was triggered. This can be helpful if you are sound designing while you are playing and you want to quickly see what is assigned to the last zone you struck.

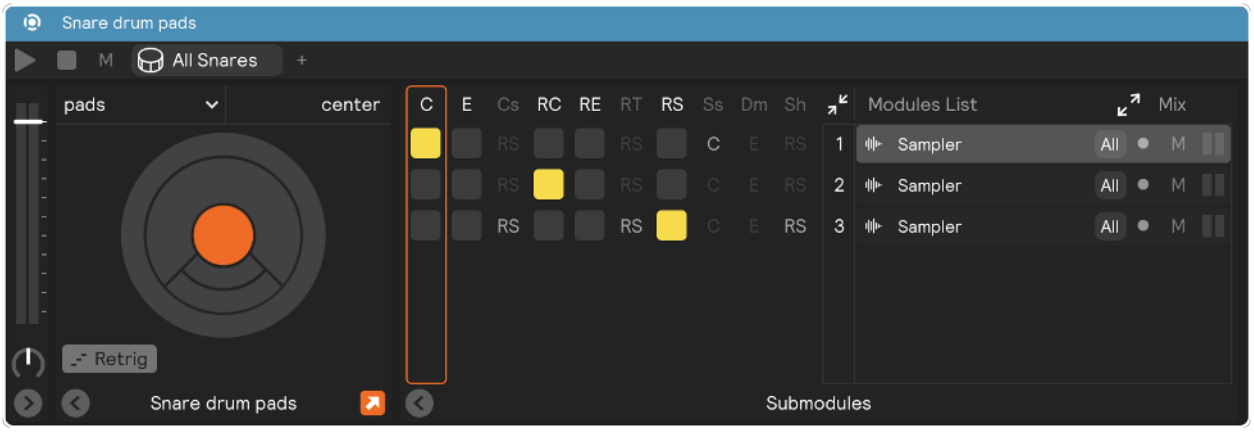


Figure 164: A screenshot of a drum pad module with the 'highlight last played' button enabled

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Grid Pads

Like Drum Pads, `Grid Pads` controllers allow you to distribute modules across different pads, but, in all likelihood, the `Grid Pads` will be receiving input from a Pads Input that you set up to be controlled by a pads-based MIDI device.

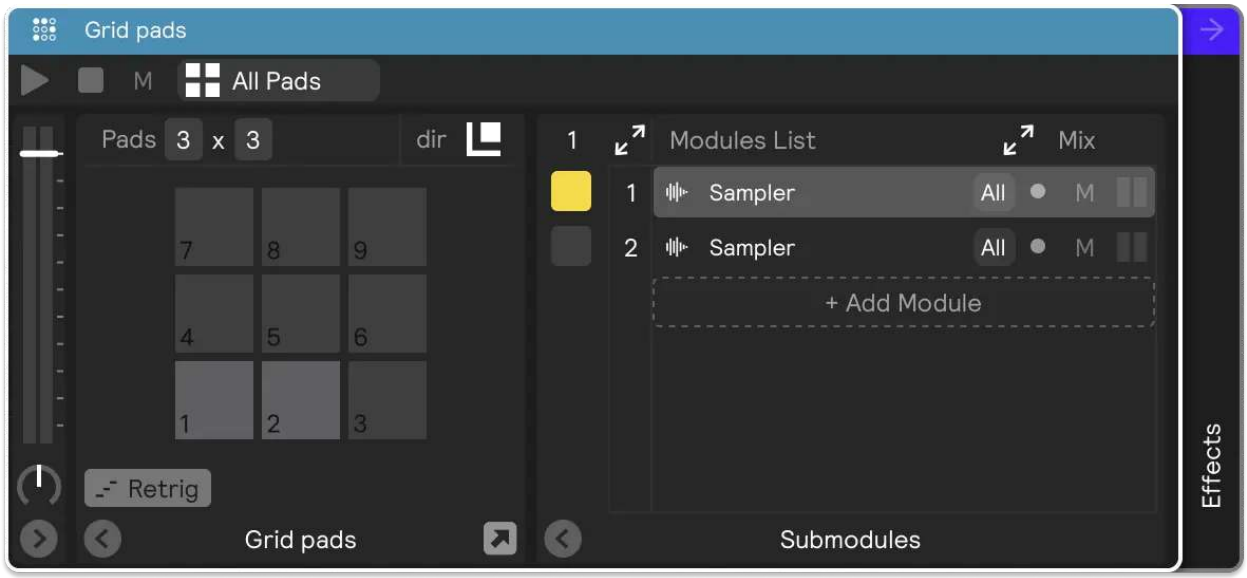


Figure 165: A screenshot of the grid pads controller module

But, just like Drum Pads, once you've added a `Grid Pads` controller to your set, you can drag and drop any other kind of generator or controller onto the pads and trigger and control them with

your device.

Cymbal Pads

`Cymbal Pads` is just like Drum Pads, but with zones configured for cymbal inputs. The available zones and their abbreviations in the matrix are: - bow (bo) - crash (cr) - bell shoulder (bs) - bell tip (bt) - ping (pi)

Hi-hat Pads

Like Cymbal Pads, **Hi-hat Pads** distributes modules across the zones of a hi-hat. Drag samples, samplers, controllers, effects, and more onto the zones, as on the other drum pads. Unlike the other pads modules, Hi-hat Pads also tracks your hi-hat pedal.



Figure 166: A Hi-hat Pads controller with five submodules mapped to bow, edge, bell-shoulder, bell-tip, and pedal, and the pedal slider between closed and open

The zones and their abbreviations in the matrix are:

- bow (B)
- edge (E)
- bell-shoulder (BS)
- bell-tip (BT)
- ping (P)
- pedal (Pd)

Pedal

The vertical **pedal** slider, between **closed** and **open**, shows the hi-hat pedal position. It follows your physical pedal as you play, and it defaults to closed.

It's also a real parameter. Drag it to set the pedal position by hand, for example when no pedal is connected, or right-click it to assign a modulator or macro to it.

The pedal position drives any Hi-hat Pedal Controller inside, which blends its layers from open to closed.

Control	What it does
pedal	The pedal position, from **closed** to **open**.
Retrig	On: a new hit cuts off the sounds started by the previous one, as on the other drum pads.

Hi-hat Pedal Controller

The **Hi-hat Pedal Controller** blends a row of hi-hat layers under the pedal. Put your sounds in from fully **open** on the left to fully **closed** on the right. Every layer plays on each hit, and the pedal position decides which ones you hear.

The Hi-hat Pedal Controller must be inside a Hi-hat Pads module, which gives it the pedal position.

Because every layer is already sounding, moving the pedal after a hit reveals the matching sound right away. Pedal slices, splash chicks, and a pedal reading that arrives a moment after the hit all come out right.

Open and closed

The yellow lines mark the crossover between open and closed. Layers to the left of it are the **open** side, and they're cut off automatically when the pedal closes after a hit. That way, opening the pedal again later can't bring back a loud open sound that should have died with the close.

The orange line shows where the blend actually sits. On every hit it jumps to the pedal position. With **sticky** turned up, it lags behind small pedal moves and catches up on big ones.

Controls

Control	What it does
Layers	One per submodule. Drag the borders between layers to change their share of the pedal range. The crossover stays put and the layers scale around it.
selector	The pedal position, from open (left) to closed (right). It follows the hi-hat pedal; drag it to test a position by hand.
spread	How wide the crossfade between neighboring layers is. Turn it down to only hear one layer at a time, or up for more overlap. For an acoustic hi-hat, some overlap usually sounds more natural.
sticky	How firmly the blend holds where the hit landed. Small pedal moves after a hit are ignored, a real close is followed, and a real open needs a bigger move. Turn it up if a hovering foot makes the sound flutter between open and closed, or down if pedal moves feel late.
audition	Plays every layer at full level and ignores the pedal, so you can check each sample while setting up.

Placing sounds

Put sounds that ring, and can be cut off, on the open side. Put short, damped sounds on the closed side. A closed-sounding sample left of the crossover gets cut off on the next close, and an open sound right of it keeps ringing after the pedal closes.

Sequencer

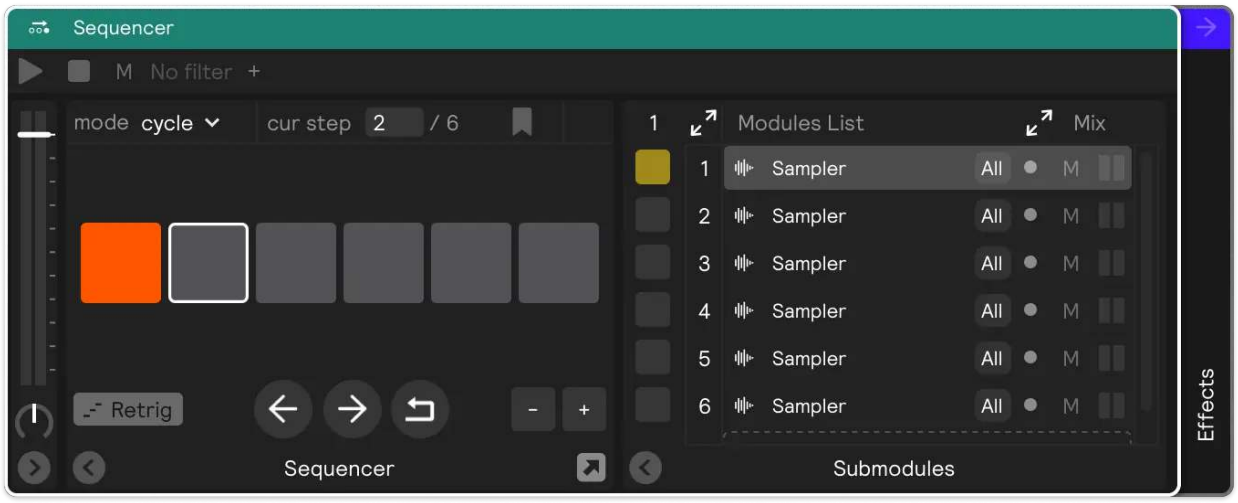


Figure 167: A screenshot of the sequencer module

The **Sequencer** plays the modules inside it one **step** at a time. Every incoming hit advances the sequence and fires whatever is assigned to the new step, so a single drum zone can walk through a phrase — a different sample per hit, a chord progression, a rotating set of synth voices — instead of repeating the same sound. You can even put a sequencer inside of a sequencer for extra variability!

Video: Sensory Percussion 2 Drum School: The Sequencer

Steps and modules

The child modules of the sequencer are the **rows** of its matrix, and the columns are **steps**. A lit cell means “this module sounds on this step.”

The number of steps is independent of the number of modules. You can have more steps than modules — steps that fire nothing, or that repeat a module you’ve already used — or more modules than steps, stacked together on shared steps. Use the + and - buttons to add or remove steps.

Matrix View

By default any time you add a new module to the sequencer it will add a new step to the end of the sequence and assign the new module to that step. But, if you want to change up the pattern: turn on `advanced mode` to open the matrix view, where each cell assigns a module (row) to a step (column). This is how you build a step that fires several modules at once for a layered hit, or

reuse one module across several steps. Outside of advanced mode the sequencer shows the compact strip, one module per step.

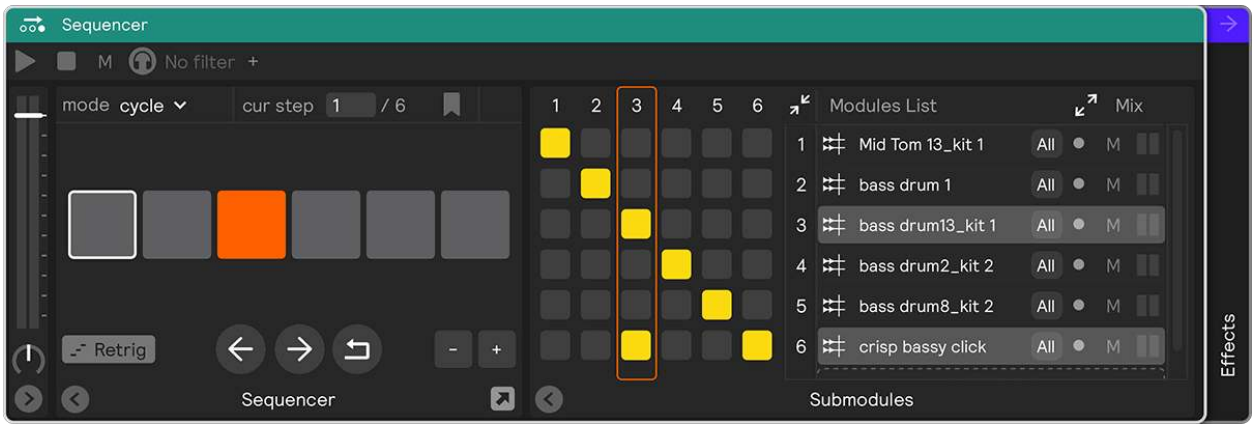


Figure 168: A sequencer with the matrix view open, showing step 3 firing two modules and module 6 reused on steps 3 and 6

Playback

The `current step` boxes show the step that will sound next, as `step / total`. Type in the left box to jump the sequence to a step, or in the right box to change the total number of steps.

The arrow buttons step the sequence backwards and forwards by hand without sounding anything, and the loop button resets the sequence to step 1.

A hit normally advances the sequence to the next step and *then* sounds it. The exception is the first hit after a reset, after a manual `prev`/`next`, or after a typed step: that hit sounds the step you're on rather than skipping past it, so a sequence always starts where you left it.

Reading the display

Two different steps are marked in the step strip, and they don't usually line up:

- The **white outlined** step is the current step, the one that will sound the next time the sequencer is triggered. It's always the step the `current step` boxes are showing.
- The **orange** step is the selected step, the one you're looking at or editing. In the matrix view, the selected step is the column drawn with an orange outline.

Modes

Cycle/reverse

When a sequencer is in `cycle` mode, every hit will trigger a new step in the sequence, wrapping back to the first step at the end. `reverse` will do the same thing, just in the opposite direction, wrapping to the last step.

Random

The three random flavors are grouped under a `random` submenu in the mode menu, and the parent entry shows whichever one is active:

- `random` picks a step at random on every hit. This is plain random, so the same step can repeat back to back.
- `rand hop` picks at random but never lands on the same step twice in a row. It's the default choice under the `random` menu.
- `shuffle` plays every step once in a random order before any step repeats, then reshuffles. The step that ends one pass is never the step that opens the next.

With two or fewer steps, `rand hop` and `shuffle` have nothing meaningful to avoid, so they behave as plain random.

For a fun, interesting effect, you can assign a module to multiple steps to increase the probability it will be triggered in random mode. For example, if you have *Sampler A* assigned to the first nine steps of a ten step sequence, and *Sampler B* only assigned to the tenth step, then there is a 90% chance each time you trigger this sequencer that *Sampler A* will be played.

Manual

When a sequencer is in `manual` mode the sequence never advances on its own; hits sound the current step, and you move it with `prev`, `next`, or the `current step` box. In practice this really is only useful if you have an assignment on the next/previous/reset buttons or the number box. But manual mode is extremely powerful and allows you to embed song structure into your set.

For example, you could assign three different note controllers to three different steps in a sequencer set to manual mode, and then assign the rim of a drum to the next button to advance the sequence: effectively creating a key-change switch embedded in your drums.

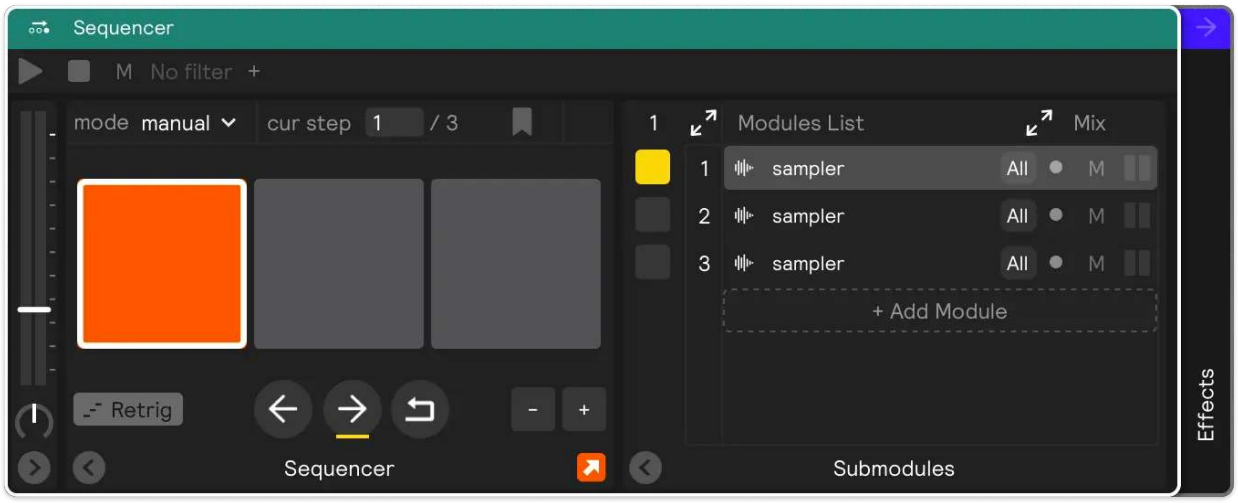


Figure 169: A sequencer set to manual mode containing 3 steps, each of which is a note controller set to a different scale

Retrigger

Turn on the `retrig` button if you want the sound*ing* module to cutoff the sound of the previously sound*ed* module. This is useful, for example, if you have a sequence of chords that should not overlap. Leave it off if you want the tails of the previously triggered module to play out even after you've triggered a new module.

Follow Triggered

As with the other controllers you can turn on the little arrow button in the bottom left of the Sequencer, above the `retrig` button, which will highlight the step that last sounded, so the display tracks the sequence as it runs. This can be helpful if you are sound designing while you are playing and want to see the last played module.

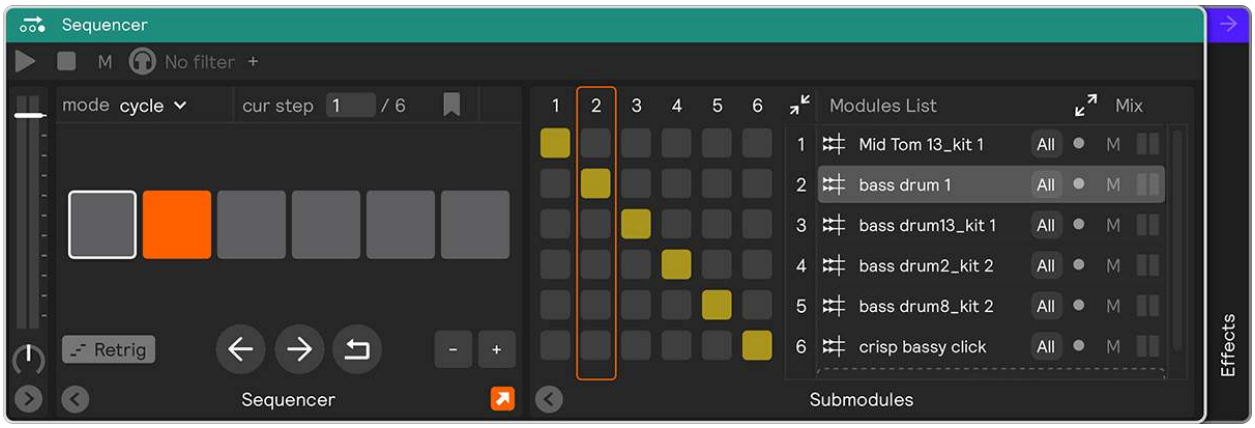


Figure 170: A sequencer with the 'follow triggered' button enabled, highlighting the step that last sounded

> **Note:**
>
> Keep in mind that this highlight and `current step` show two different things: the highlight is the step that last sounded, while `current step` is the step queued up to sound next. Hit parameters that arrive after a trigger — continuous, aftertouch-style control — are routed to the step that last sounded, not the one queued up.

Save Step

Turn on the `Save Step` parameter, if you want the sequencer to remember what step it's on when you toggle between sets, instead of returning to step 1. This is helpful, for example, if you have a `toggle macro` mapped to the number box of a sequencer in manual mode switching between a "snares on" or "snares off" sound, and you want to change sets in your session, but have the set "remember" if the snares are off/on when you come back to it. In that case you would want to turn on `Save Step`.

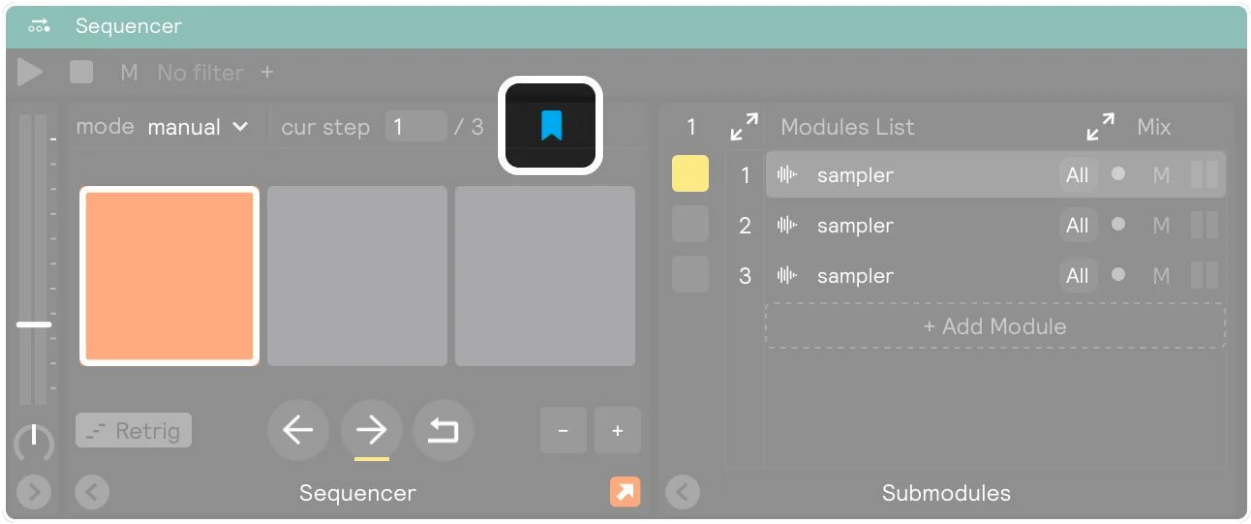


Figure 171: A sequencer with the ‘remmeber last step’ button enabled

Group

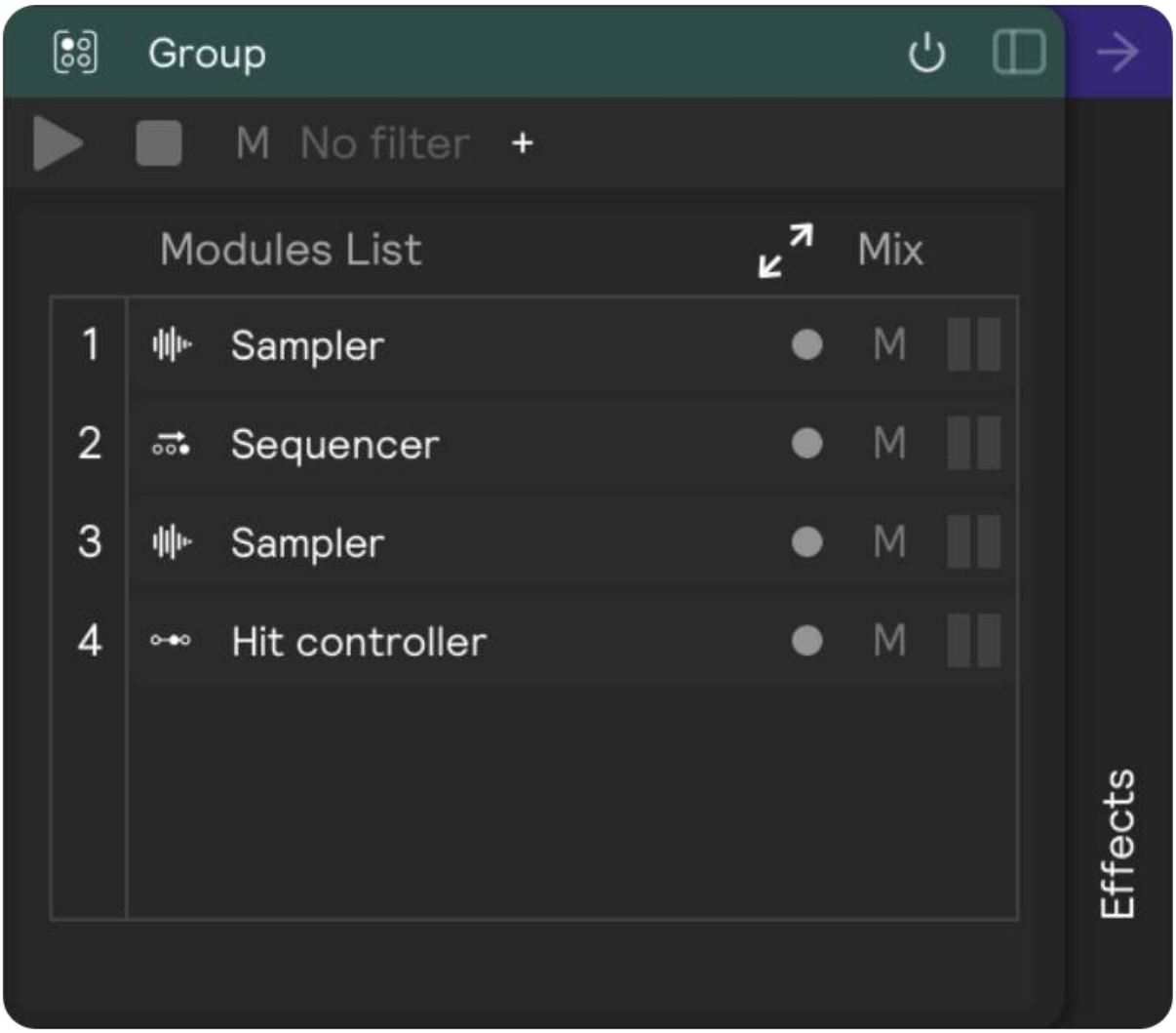


Figure 172: A screenshot of the group module

Group allows you to group modules together before inserting them into a different controller type. Say you have 30 samplers that you want triggered by the Center pad of a *Drum Map* and processed with reverb. You could drag and drop all 30 onto the Center pad, but that will create a long list of samplers and you'd have to copy and paste the same reverb effect into each one…not really fun or feasible. Instead you can drop the samplers into a *Group* on the Center pad and simply add a Reverb effect to that *Group*.

Hit Controller

The **Hit Controller** sends each hit to one of its submodules, called **steps**, chosen by a **control** value between 0 and 1. Play soft to fire the first step and hard to fire the last, blend between two sounds by timbre, or sweep through the steps with an LFO. Anything that can drive a modulator can pick the step.

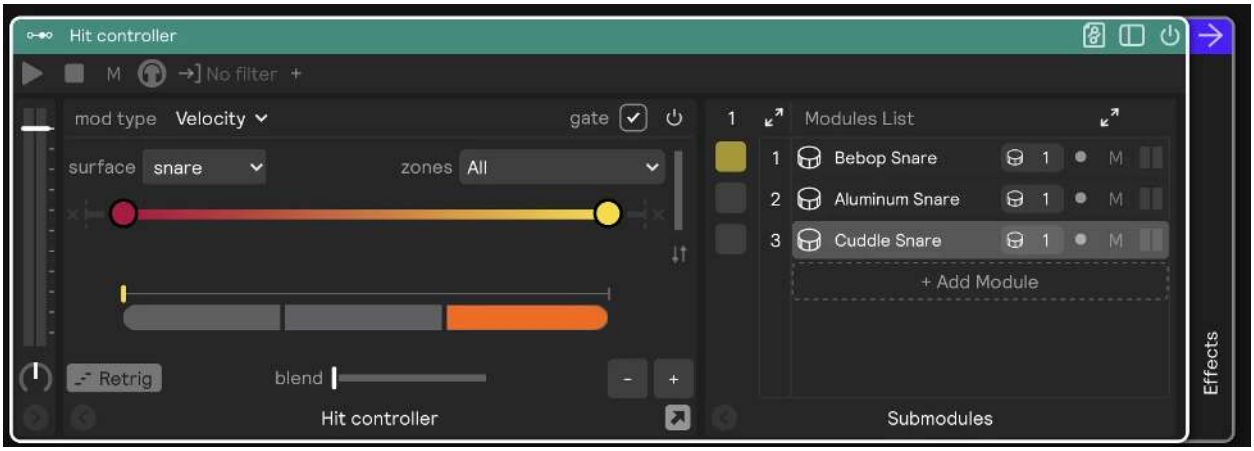


Figure 173: A Hit Controller driven by velocity, with three snare samplers as steps

Each submodule is one step. The 0–1 control range is split into one segment per step, and a hit fires the step whose segment holds the current control value.

Let's say you have two samplers and you want soft hits to play one and hard hits to play the other. Drag both into a Hit Controller set to **Velocity**, with the soft sampler in the first step and the hard one in the second. That's the Hit Controller in a nutshell.

You can also nest any other controller inside, including more Hit Controllers. For example, a **Timbre** Hit Controller across the center and edge of a Drum Pads head can hold three steps named "Center," "Off Center," and "Edge." If your training is good, that gives you a playable "Off Center" zone between the two. Or use a **Speed** Hit Controller to play different sounds only when you buzz roll.

Control input

The control value comes from the controller's built-in **control input**, set up on the top row.

Control	What it does
mod type	What drives the control value: **Velocity**, **Timbre**, **Speed**, **Envelope**, **LFO**, **Midi Control**, or **Rand | step**. When the controller listens to a hi-hat, **Pedal** is offered too.

Control	What it does
Mod type settings	Each mod type shows its own settings, such as the input range and which surface and zones to listen to for Velocity, the timbre pads for Timbre, or the rate and shape for an LFO. They work exactly like the same modulator in an assignment.
Reverse (⇅)	Flips the control range, so for example hard hits fire the first step.
gate	Shown for Velocity, Timbre, and Speed. On (the default), a hit the control input filters out fires no step: a pad outside its selection, or a value outside its range. Off, every hit fires a step, using the latest control value.
Power	Turns the control input off. The control slider then keeps its last value, and you can set it by hand or assign something else to it.

The small vertical meter next to the settings shows the control input's output.

Mod type menu

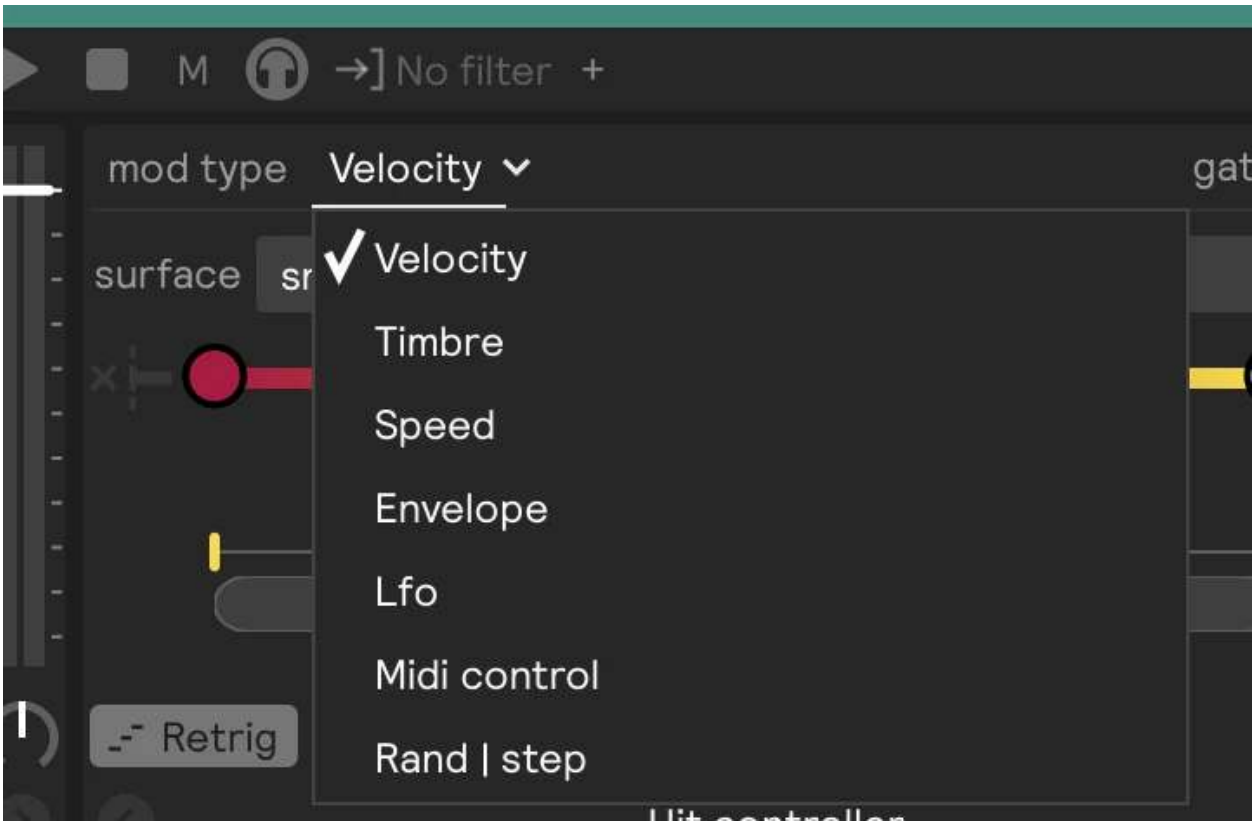


Figure 174: The mod type menu: Velocity, Timbre, Speed, Envelope, Lfo, Midi control, and Rand | step

Driven by an LFO



Figure 175: A Hit Controller with its mod type set to LFO, showing the rate, shape, scale, offset, phase, jitter, and smooth settings

Note:

A play that carries no hit information, like a Metro tick or a bare `play` message over OSC, has no velocity, timbre, or speed to read. It's never gated: it fires whichever step the control slider currently points at.

Control slider

The **control** slider sits just above the steps, so its marker points at the step it selects. It follows the control input while that's on. Drag it to set the value by hand, or right-click it to assign anything else in the session to it. It's an ordinary assignable parameter.

Steps

Control	What it does
Steps	One segment per step. Drag the borders between segments to change how much of the control range each step gets. Drop modules here to add steps.
– / **+**	Remove or add a step.
blend	Spreads each hit into the neighboring steps too, at a velocity that falls off the further a step is from the control value. With blend up high, soft hits play mostly the first steps and hard hits mostly the last, but every hit plays more than one.
Retrig	On: a new hit cuts off the sounds started by the previous one.

Highlight last played step

As with the other controllers, turn on the arrow button at the bottom right of the Hit Controller to highlight the last step that was triggered. It's helpful when you're sound designing while you play and want to see which module just fired.

Note Controller

The **Note Controller** pitches each hit to a note from a scale, chosen by a **control** value between 0 and 1. Play soft for the lowest note and hard for the highest, walk up a scale from the center of the drum to the edge, or let an LFO or a random modulator turn your playing into melodies.

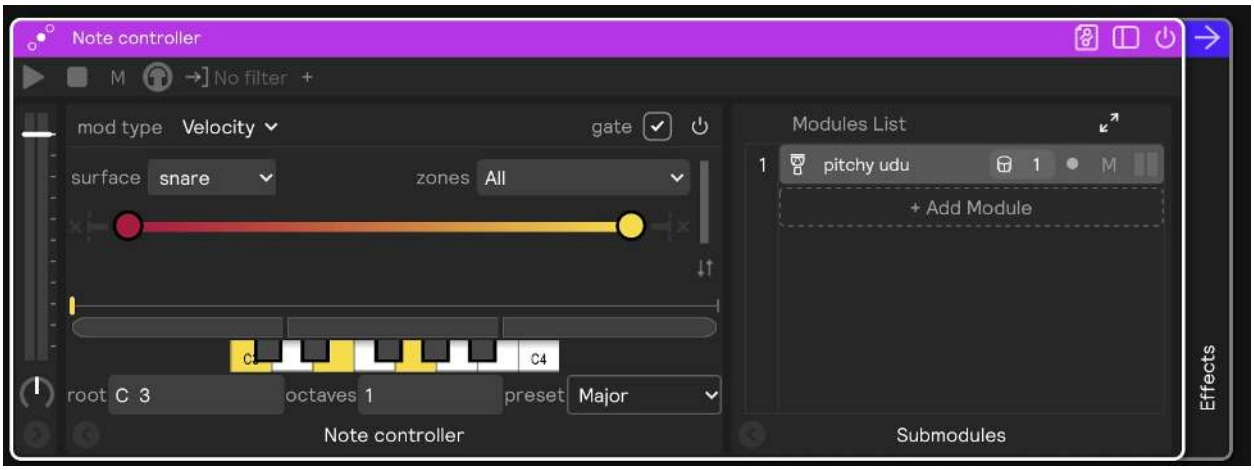


Figure 176: A Note Controller driven by velocity, playing a C major scale on a sampler

The notes you pick on the keyboard are spread evenly across the 0–1 control range. Each hit plays the note closest to the current control value, on every module inside the controller.

Setting up the Note Controller

1. Drag a Note Controller in from the library, and drag one or more samples or modules into its **Modules List**.
2. Pick what drives the notes with **mod type**, for example **Velocity**.
3. Click keys on the keyboard to choose the notes, or pick a scale from **preset**. Set the **root** note and how many **octaves** to cover.

Control input

The control value comes from the controller's built-in **control input**, set up on the top row. It works exactly like the Hit Controller's.

Control	What it does
mod type	What drives the control value: **Velocity**, **Timbre**, **Speed**, **Envelope**, **LFO**, **Midi Control**, or **Rand | step**. When the controller listens to a hi-hat, **Pedal** is offered too.
Mod type settings	Each mod type shows its own settings, such as the input range and which surface and zones to listen to for Velocity, or the timbre pads for Timbre. They work exactly like the same modulator in an assignment.

Control	What it does
Reverse (⇅)	Flips the control range, so for example hard hits play the lowest note.
gate	Shown for Velocity, Timbre, and Speed. On (the default), a hit the control input filters out plays nothing: a pad outside its selection, or a value outside its range. Off, every hit plays, using the latest control value.
Power	Turns the control input off. The control slider then keeps its last value, and you can set it by hand or assign something else to it.

Note:

A play that carries no hit information, like a Metro tick or a bare `play` message over OSC, has no velocity, timbre, or speed to read. It's never gated: it plays whichever note the control slider currently points at.

Control slider

The **control** slider sits just above the notes, so its marker points at the note it selects. It follows the control input while that's on. Drag it to set the value by hand, or right-click it to assign anything else in the session to it.

Notes

Control	What it does
Weights	One segment per active note, above the keyboard. Drag the borders to give a note a bigger share of the control range, so it plays more often.
Keyboard	Click keys to add or remove notes.
root	The tonal center. The keyboard starts here.
octaves	Repeats the chosen notes over the next 1–11 octaves.
preset	**Major** or **Minor** fills the keyboard with that scale. Editing the keyboard switches it to **Custom**.

Tip:

You can use the MIDI Notes Generator to send the notes of a Note Controller to a hardware MIDI Output (and then out of the software to play a synth).

Metro

The **Metro** is a controller that runs a tempo clock and fires its pads on a beat grid. Drop modules onto it and the metronome triggers them in time — as a click, a drum pattern, an arpeggiated pulse, or a fully hand-drawn sequence.

Each module you drop in is one **pad** and gets one **row** of the Metro's grid. The columns are **steps**: a lit cell means "fire this pad on this step". How the grid gets filled depends on the Output mode.

By default a new Metro follows the session's tempo, so it starts and stops with the tempo bar and plays at the global tempo. See Clock Sync to give it a clock of its own.

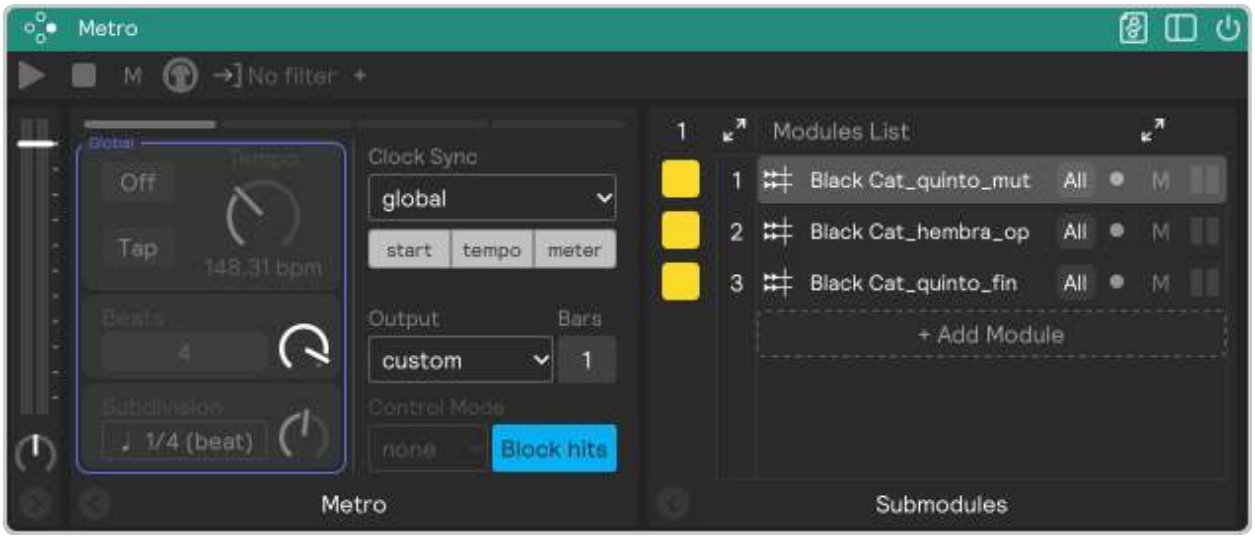


Figure 177: A screenshot of the metro module

Clock

On/Off

Starts and stops the Metro's clock. Starting always re-anchors to the downbeat (step 1 of bar 1). Greyed out while the Metro follows the global tempo or a MIDI clock, since that clock owns start and stop.

Tempo

The tempo of the Metro in beats per minute (BPM). It accepts any number from 30 to 3,000. You can drag the value or type a number in the field.

Tap

Tap repeatedly to set the tempo by ear.

Meter

Beats

Beats per bar (1–16) — the top number of a time signature.

Bars

How many bars the pattern spans (1–16). Raise it to write longer custom patterns.

Subdivision

The rate the grid ticks at, as a note value relative to the beat.

Subdivision values

Subdivision values, slowest to fastest:

Value	Meaning
`1/2.`	dotted half
`1/2`	half notes
`1/4.`	dotted quarter
`1/4`	quarter notes — one tick on each beat, no in-between steps (shown as **1/4 (beat)**; the default)
`1/8`	eighths (two ticks per beat)
`1/8T`	eighth-note triplets
`1/16`	sixteenths

Odd subdivisions (triplets, dotted values) need more than one bar to line back up with the beat. The Metro raises **Bars** automatically to the smallest span where the full cycle fits, so the pattern always repeats cleanly.

Velocity

The downbeat always fires at full velocity. The two knobs set the rest:

Pulse

Velocity of the beats after the downbeat (70% by default).

Subdivision

Velocity of the off-beat subdivision ticks. Greyed out when every tick lands on a beat (`1/4`, `1/2`, `1/2.`) — except in **Layers** mode, whose subdivision row always uses it.

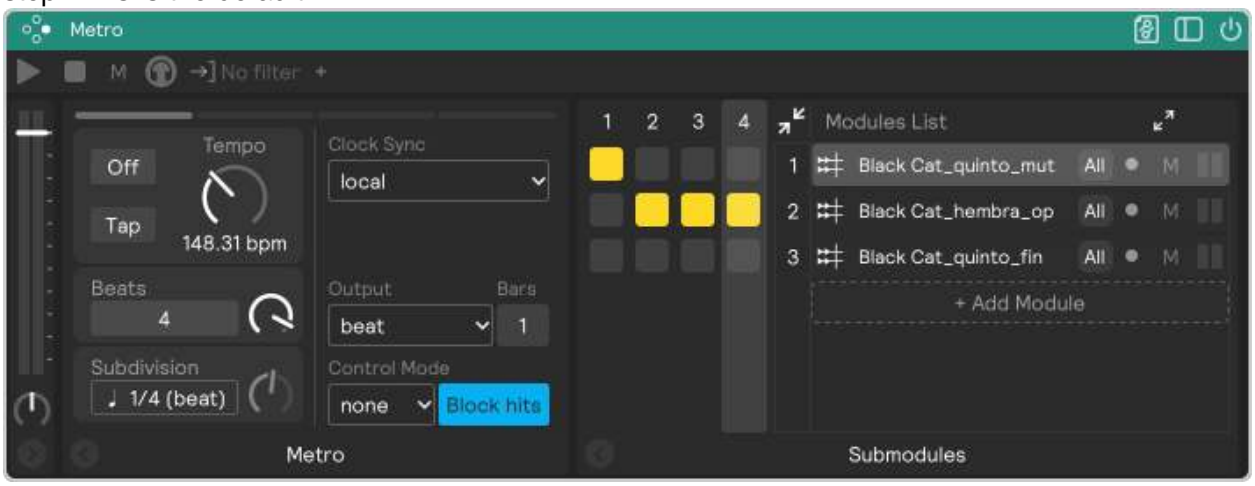
Each tick uses the strongest position it lands on: downbeat over beat, beat over subdivision. With `1/8`, the downbeat is full velocity, the other beats use **Pulse**, and the up-beats use **Subdivision**.

Output Mode

The **Output** selector sets how pads (rows) map onto the grid. Pads are numbered top to bottom.

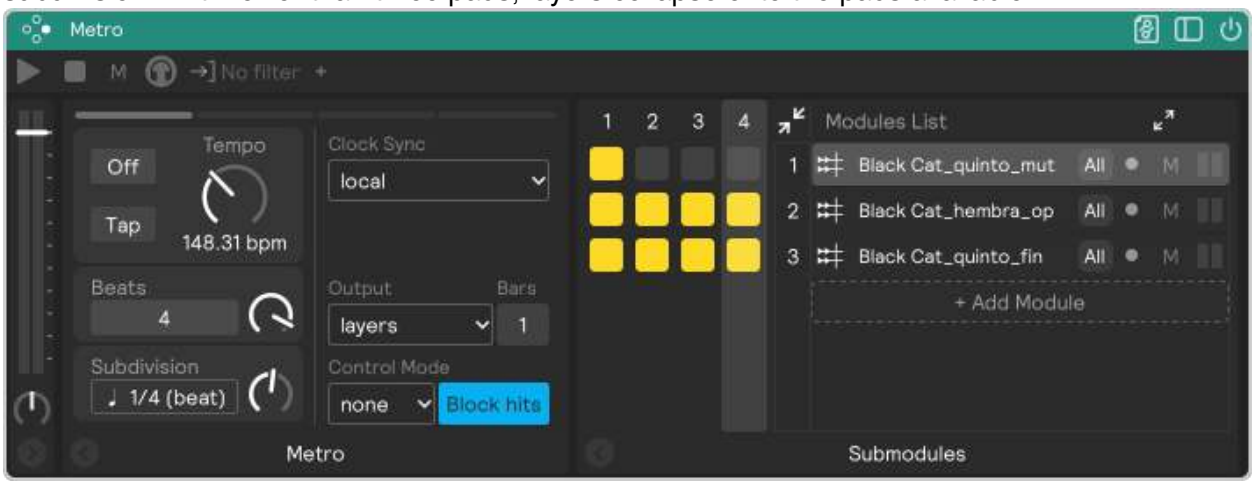
Beat

The downbeat fires pad 1, and every other tick fires pad 2. Exclusive — only one pad sounds per step. This is the default.



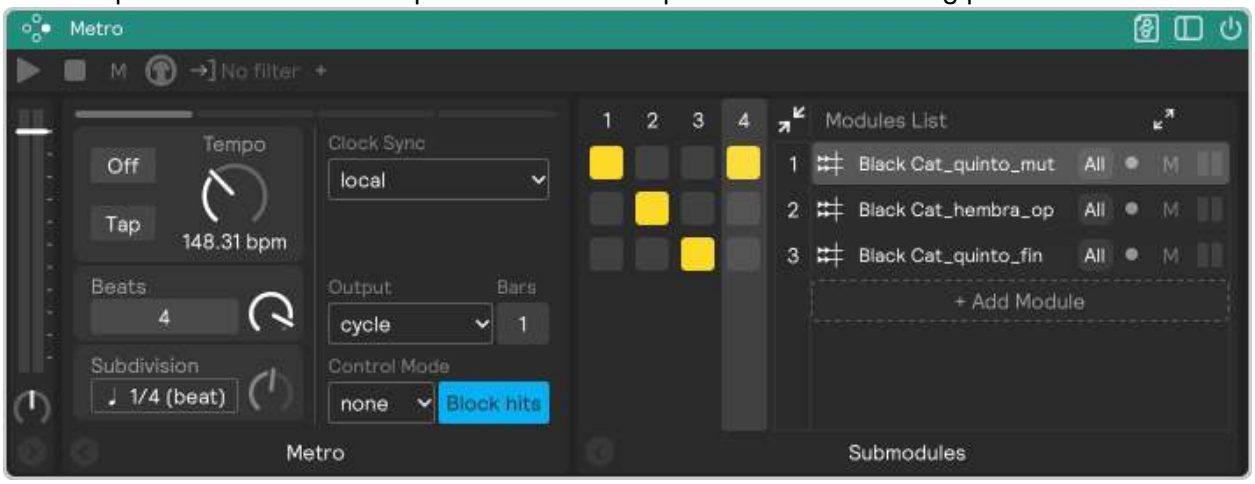
Layers

Pads fire independently and can overlap: pad 1 = downbeat, pad 2 = every beat, pad 3 = every subdivision. With fewer than three pads, layers collapse onto the pads available.



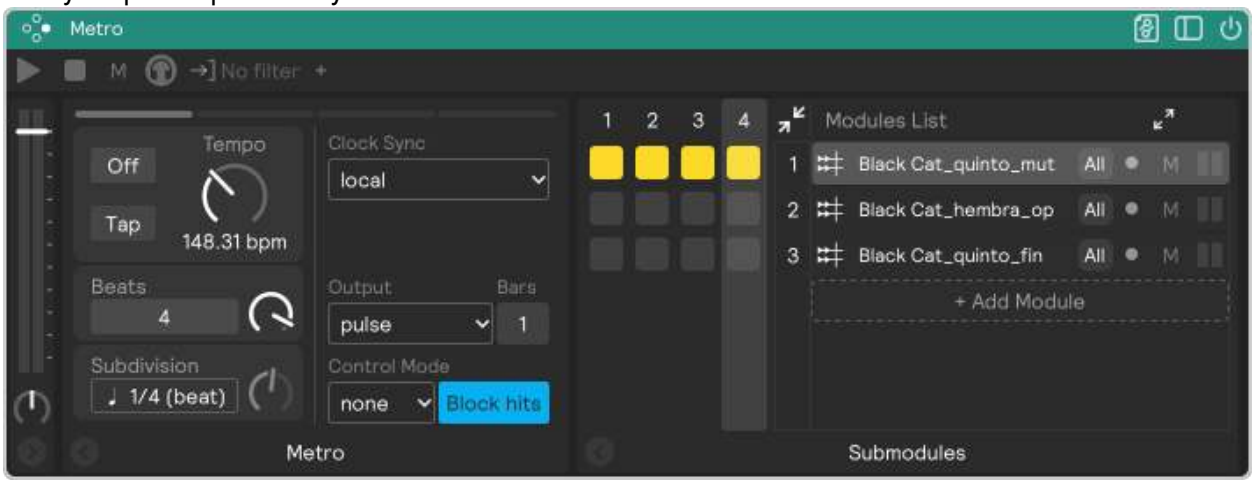
Cycle

Each step advances to the next pad in turn and wraps around — a rotating pulse.



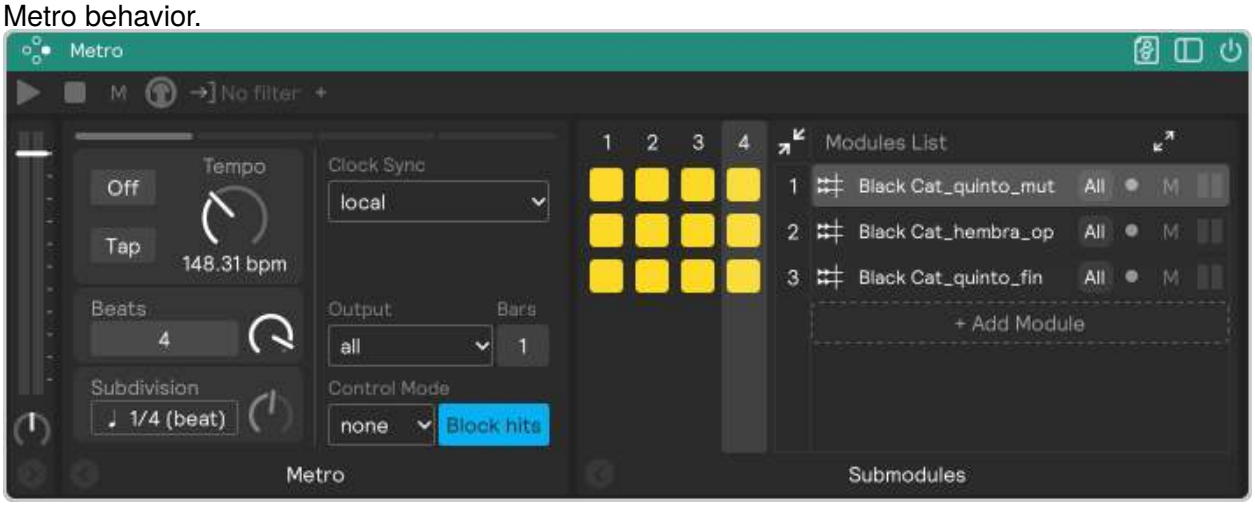
Pulse

Every step fires pad 1 only.



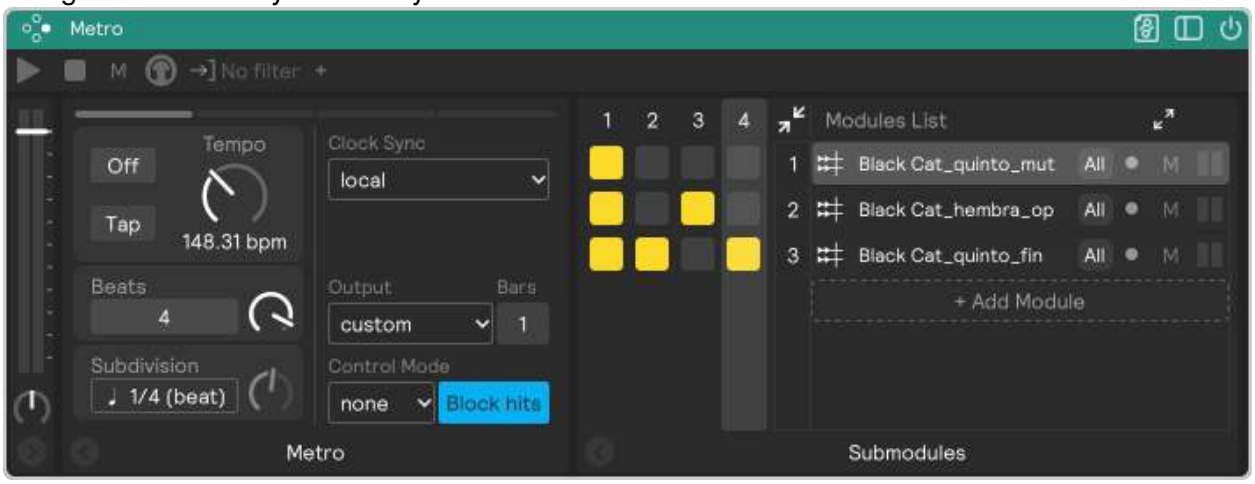
All

Every pad fires on every step (all pads sound together). This is the classic metronome / original Metro behavior.



Custom

The grid is whatever you drew by hand.



Custom is special: it is not regenerated. You switch to Custom by picking it from the menu, by **editing any cell** in the grid, or by **raising Bars** past what the current mode needs — the Metro switches to Custom automatically (undoable). Once in Custom, **adding, removing, or reordering pads keeps your drawn pattern aligned** to each pad; a newly added pad starts blank. In every other mode, changing the pads re-derives the grid for that mode without leaving the mode.

Clock Sync

The **Clock Sync** selector, in the settings panel above **Output**, sets where the Metro gets its clock:

Setting	Behavior
global	Follow the session's tempo. Three buttons under the selector choose how much to follow (see below).
local	Run the Metro's own clock at its own tempo, with no outside sync.
midi	Follow an external MIDI clock (start/stop and tempo). Choose the bus under **Bus**; **none** accepts clock from any MIDI bus. In the plugin, **Bus** also offers **host** to follow your DAW, and **none** accepts the DAW's clock too.

With **global**, the three buttons choose how much of the global tempo the Metro follows:

Button	Follows
start	Start/stop only. The Metro keeps its own tempo and meter.
tempo	Start/stop and the global tempo. The Metro keeps its own beats and subdivision.
meter	Start/stop, tempo, beats, and subdivision. This is the default.

The controls the clock owns are outlined and greyed out, with a tag naming the owner: a purple **Global** tag or a white **MIDI** tag. The outlined values still update live as the clock changes them. To edit them on the Metro itself, change **Clock Sync**.

global / start



Figure 178: A Metro on global / start: only On/Off is outlined

global / tempo



Figure 179: A Metro on global / tempo: On/Off, Tempo, and Tap are outlined

global / meter



Figure 180: A Metro on global / meter: the clock, Beats, and Subdivision are all outlined

midi



Figure 181: A Metro on midi: the clock is outlined with a white MIDI tag

Following the global tempo

- A **new Metro** starts on **global / meter**.
- **Metros in sessions and presets from before 2.8** open on **local** (or **midi**, if they followed a MIDI clock), so they keep playing the way they were built. Switch any of them to **global** to bring them under the session tempo.
- A Metro on **global** ignores its own saved On/Off state when a session loads or a set is selected. It comes up stopped and starts when you start the tempo bar.
- Switching **Clock Sync** to **global** or **midi** hands start and stop to that clock. A Metro that was running on its own stops, then comes in with the global tempo if it's running, or waits for the next MIDI start.
- **Picking a preset** follows the same rule. A preset on **global** or **midi** leaves alone whatever its clock owns, so choosing a new preset while the tempo is running neither stops the Metro nor pulls it off the global tempo.

Switching sets

Switching sets doesn't restart a Metro on **global / tempo** or **global / meter**. It lines up with the running clock and comes in where the beat already is, on the right bar of a multi-bar pattern. On **global / start** the Metro has its own tempo, so there's no shared beat to line up with and it restarts from beat 1. To make a set always start the clock from beat 1, use **Restart clock on select** — see Tempo.

When you switch away from a set, every Metro in it stops, whatever the set's cutoff mode. It stays silent until you select the set again: its own clock doesn't tick, and it ignores the global tempo and MIDI clock. The cutoff mode only decides what happens to the sounds the Metro was triggering.

Stopping

A stop — the Metro's own stop button, the Global Stop button, or a choke — halts the Metro's clock in every Control Mode and with every clock source, and passes the stop on to its pads. A Metro on **global** starts again with the tempo bar; one on **midi** waits for the next MIDI start.

Input (Control Mode & Block hits)

The Metro can also react to incoming hits, not just its own clock.

Control Mode — how an incoming hit affects the Metro's clock:

Mode	Behavior
None	Hits don't affect the clock.
Start	The first hit starts the clock; later hits pass through.
Restart	Every hit restarts the clock from the downbeat.
Toggle	Each hit toggles the clock on/off.

Block hits — the button to the right of **Control Mode**. It lights up blue when on, which is the default. Incoming hits still drive the clock (and any assignments and modulators), but they don't reach the pads. Turn it off to let your hits play the pads as well. The Metro's own clock always plays the pads either way.

While the Metro follows the global tempo or a MIDI clock, **Control Mode** is greyed out: that clock owns start and stop.

> **Note:**
>
> **Block hits** only applies to the Metro. Every module, the Metro included, also has a **Block all input** button in its header, which blocks hits from reaching the module at all. See Block all input.

> **Tip:** Need a click track?
>
> The quickest click is the built-in metronome on the tempo bar. It plays only to your monitoring outputs, with no setup.
>
> For a click with your own sounds or patterns, use a Metro. Start from the **Classic Click** preset, or drop in your own samples, then turn on the Monitor Mix button in the header row. This sends the Metro layer to any outputs with Monitor Mix enabled and keeps it out of the Main Mix.



Figure 182: A screenshot of the Monitor Mix button

If you're looking for a good sample to use as a click sound, check out the cross-stick from the Sol Seco kit. You can find it in the library under:

`Percussion Section > Detailed > Sol Seco > muted brass snare > cross stick > muted brass snare_cross-stick_v3-1`

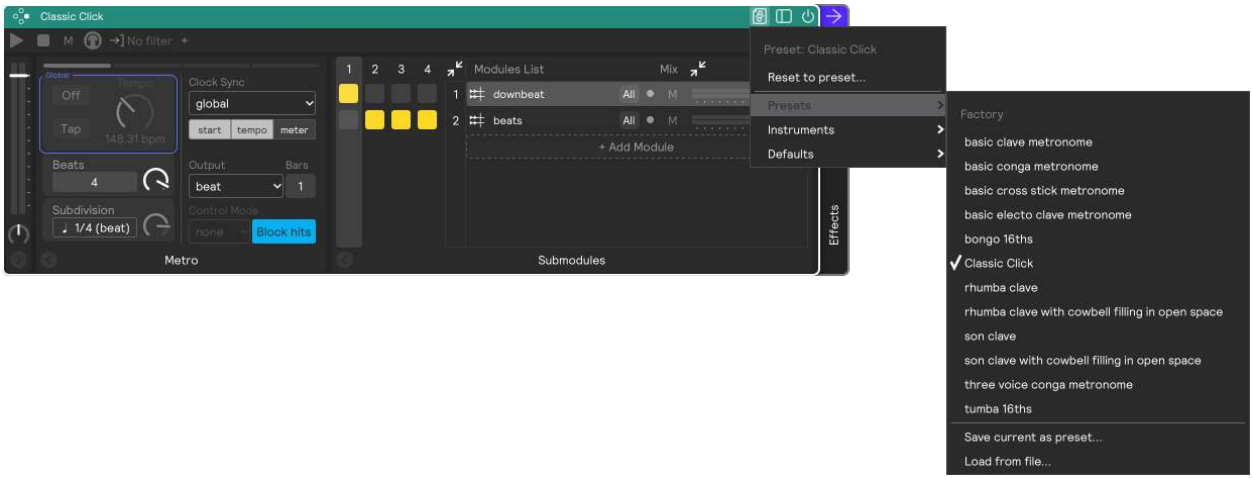


Figure 183: The Metro preset menu, with the Classic Click preset selected

Generators

Generators, as you might guess, are a type of module that actually generates a sound, as opposed to controllers, which can only affect the relationships between sounds. The most common generator you'll find in our library is the sampler, but they can also be analog inputs (mics, guitar, synth, etc.), or MIDI outputs.

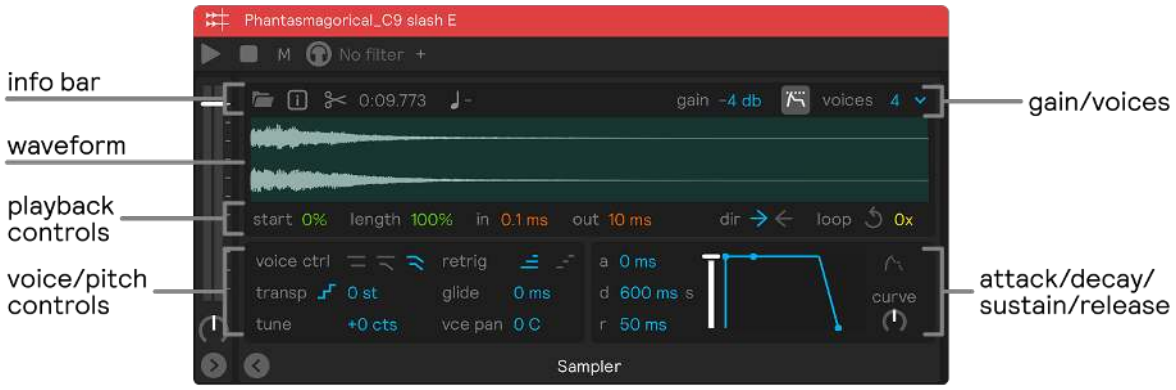
It's also important to note that unlike controllers, generators CANNOT hold other modules. So, when you see a generator (sampler, audio insert, or midi output), that's always the end of that chain of modules. The one exception is the MIDI Kit, which manages a MIDI notes generator for each drum inside it.

Sampler

Samplers contain assignable parameters for editing and controlling the sample contained within. Samplers receive trigger messages (and other messages) from the pads/controllers that contain them. If you drag an audio file onto a layer/controller, a sampler module will automatically be created with that audio file inside of it. Alternatively, you can drag in an empty sampler module and then drop an audio file into it.

> **Video:** Sensory Percussion 2 Drum School: The Sampler

The Sampler is a **generator**, which is a type of module that actually makes a sound, while a controller affects the relationships between sounds/inputs. Generators are essential; without some type of generator in your layer, you will not hear anything when you strike the drum.



The image above shows a sampler containing a chord sample from our library.

Sample Waveform



Figure 184: A screenshot showing the sample waveform

You can zoom in/out on the waveform by clicking and dragging up/down. The green highlight box in the waveform display will update as you make changes to the playback controls below it. Increase the start parameter and you will see the green box move to right, increase the fade in and you will see the left edge of the box move from vertical to horizontal, etc.

Info Bar



Figure 185: A screeshot showing the info bar of the sampler

This top bar is global information about the sample. These parameters are not intended to be used for creative sound design, but rather for correcting samples to work together with other samples in your set.

Sample Location

Clicking this folder icon will open Finder/Explorer and show you where on your computer the original sample file is located.

Sample information

Clicking this icon will open up a panel that tells you information about the original sample file. All of the information on the right-hand side (Duration, File Size, Sample Rate, Bits per Sample, Channels, and Formant Type) is describing the unaltered sample in its original state.

There are two parameters in this panel that can be altered: **Root Note** and **Detune**. These two parameters work a lot like the “transpose” and “tune” parameters of the sampler, except they’re only relevant if the sampler is inside of a Note Controller, or you’re playing it with an external MIDI keyboard. Otherwise, you won’t hear any difference in the playback pitch while adjusting these parameters. Drums don’t send notes; they send hit messages, so you won’t hear a difference.

Changing the root note in this panel allows you to use multiple samples that are different notes within the one Note Controller scale.

For example, say you have a note controller set to the major scale and two samplers inside of it: one synth sound that's a C3 and one bass sound that's a D3. These are going to sound dissonant played together with the same scale applied to both. But if you open up the Sample Information panel for the D3 bass sample and change the Root Note to D3, Sensory Percussion will now adjust the pitch relative to that root note, and the two samples will sound good together. Click "save to file" to remember this root note. (Note: This will save over the metadata of the original sample file on your computer, but it won't change the pitch of the audio sample).

Sample Trim

Clicking this scissors icon opens up a new waveform window, where you can trim the beginning and end of the sample by adjusting the yellow cursors left/right. This is helpful for dealing with samples that have dead space at the beginning or end. Once you close out of this window, you will see your changes reflected in the sampler waveform, and you will also see the time value (expressed in 00:00:00 format) change above the waveform.

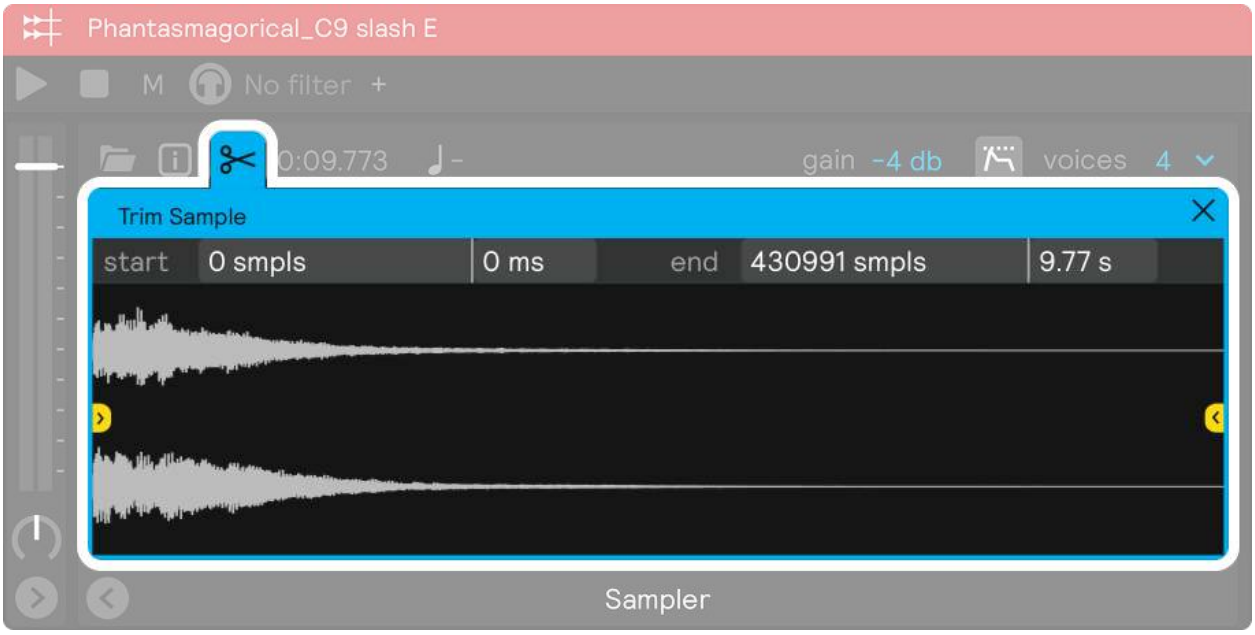


Figure 186: The sample trim window of the sampler

Gain/Voices



Figure 187: A screenshot showing the gain and voices section of the sampler

Voices

This number refers to the number of voices that the sampler will play before a new voice overtakes a currently sounding voice. By default, the number of voices is set to 4. If you want a more vintage feel (where voice stealing will occur with fewer hits) you can set the number lower.

Gain

This box allows you to adjust the gain of the recorded sample. This is distinct from the volume meter of the sampler, which allows you to adjust the playback volume. When you adjust it, you will see your changes reflected in the size of the waveform below.

Auto-Gain

By default, auto-gain is turned on, which sets the gain value to -4 dB. This normalizes the sample so that samples recorded at different volumes will respond evenly to your playing. If you adjust the gain manually, this auto-gain indicator will automatically turn off.

Playback Controls

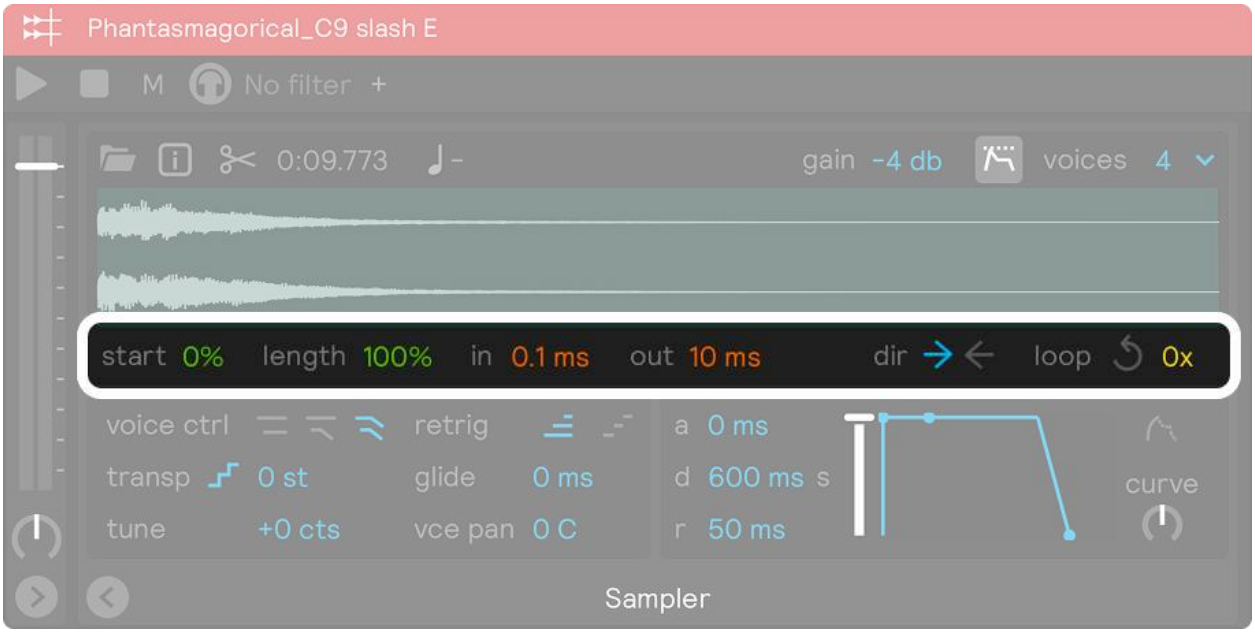


Figure 188: A screenshot showing the playback controls section of the sampler

Sample Start/Length

You can adjust the start and length of the sample by typing in or dragging these number boxes. You can also right-click them to create an assignment. (Note: “length” is not the same as “endpoint;” adjusting the start time will also adjust the endpoint of the sample if length is set to less than 100%)

Fade In/Out

You can control how long of a fade in or out you want on the sample by typing or dragging these number boxes. You can also right-click them to create an assignment. When you adjust these values from their defaults, you will see the slope of the beginning/end of the green box on the waveform adjust accordingly.

Direction

Sampler direction is set to forward by default, but clicking the back arrow will reverse the playback of the sample.

Loops

You can set a sampler's playback mode to "loop" by clicking the yellow arrow and then type or drag the number box next to it to set the number of times you want it to loop. By default, it's set to 0x, which will loop the sample infinitely (setting it to 1x is the same as having "Loop" off.) The sampler will loop the sample based off of the adjustable sample length (green box on the waveform).

Pitch/Voice Controls



Figure 189: A screenshot showing the pitch and voice controls of the sampler

Voice Control

These three modes of pitch control are only relevant when you have an assignment on the pitch parameter of a sampler. By default, samplers are set to Next mode, in which each re-pitched note tail layers over the previous note.

In Last mode, the last note tail played will slide to the new pitch, while the others will stay layered.

And finally, All mode slides all of the note tails to the new pitch, regardless of the order they were played. Keep in mind the interaction with the "retrig" parameter. For true layered behavior, you want the voice mode set to Multi and for slide behavior you want the voice mode set to Retrig. You can clearly hear the difference between these modes if you assign an LFO to the pitch parameter of a sampler and switch between them while triggering the sampler.

Retrigger

This allows you to switch between the two voice modes: Multi and Retrig. When voice mode is set to Multi, the sampler will layer a new voice for each new hit. If it is set to Retrig, then each new voice will choke the previous.

Think of Multi as behaving like a harp, where each new note played overlaps with the previous note ringing out, and Retrig like a human voice, where only one note can ring out at a time.

Transpose

Here, you can pitch the sample up or down in semitones by typing in or dragging the number box. You can also create a pitch assignment by right-clicking on the sampler.

When transpose is on, it's locked to intervals of half-steps. When it's turned off, it becomes smooth with intervals between whole numbers.

Glide

Sets the amount of time it will take a new note to transition from the previous note.

Tune

You can make minor adjustments to sample pitch with the "tune" parameter (in cents). This only applied to new notes, meaning when the sampler is inside of a note controller or there is something modulating the transpose/tune parameters.

Voice Panning

This parameter works a lot like the regular panning knob, but it acts on individual voices. So, if you have an assignment modulating this parameter and you play the sampler, it will sound like regular panning. But if you hit it again, the new voice will starting bouncing left to right, with the previous voice freezing wherever it was when the new hit occurred. Combining this parameter with the different voice modes and the transpose parameter can yield some very interesting results.

Attack, Decay, Sustain, Release



Figure 190: A screenshow showing the ADSR section of the sampler

Attack, Decay, Sustain, Release

The envelope of the sampler playback can be edited by typing/dragging the number boxes and/or by dragging the blue dots on the envelope. You can create an assignment on any of these parameters by right-clicking them. Sustain runs from −70 dB to 0 dB, with −20 dB at the middle of its slider so the useful range gets most of the travel.

Note that adjusting attack/release has a very similar effect to adjusting fade in/fade out in most cases. The main difference is that release only happens when the sample is choked, which can happen anywhere in the course of the playback of the sample. Fade out, on the other hand, is always going to happen at the same part of the sample that you originally set it to. Basically, fade in/out is simpler; it's good if you just want to remove a click or adjust a sound every time a sample plays. Attack/decay/sustain/release adjustments are more for shaping notes in an expressive way.

Envelope Curve

You can adjust the curve of the attack, decay, and release by adjusting the `curve` knob. Additionally, you can flip the direction of the attack curve, which can be useful for creating a more percussive sound.


Phantasmagorical_C9 slash E
M
No filter
0:09.773
gain -4 db
voices 4
start 0%
length 100%
in 0.1 ms
out 10 ms
dir
loop 0x
voice ctrl
retrig
transp 0 st
glide 0 ms
tune +0 cts
vce pan 0 C
a 1.49 s
d 60 s
s
r 50 ms
curve
Sampler

Audio Insert

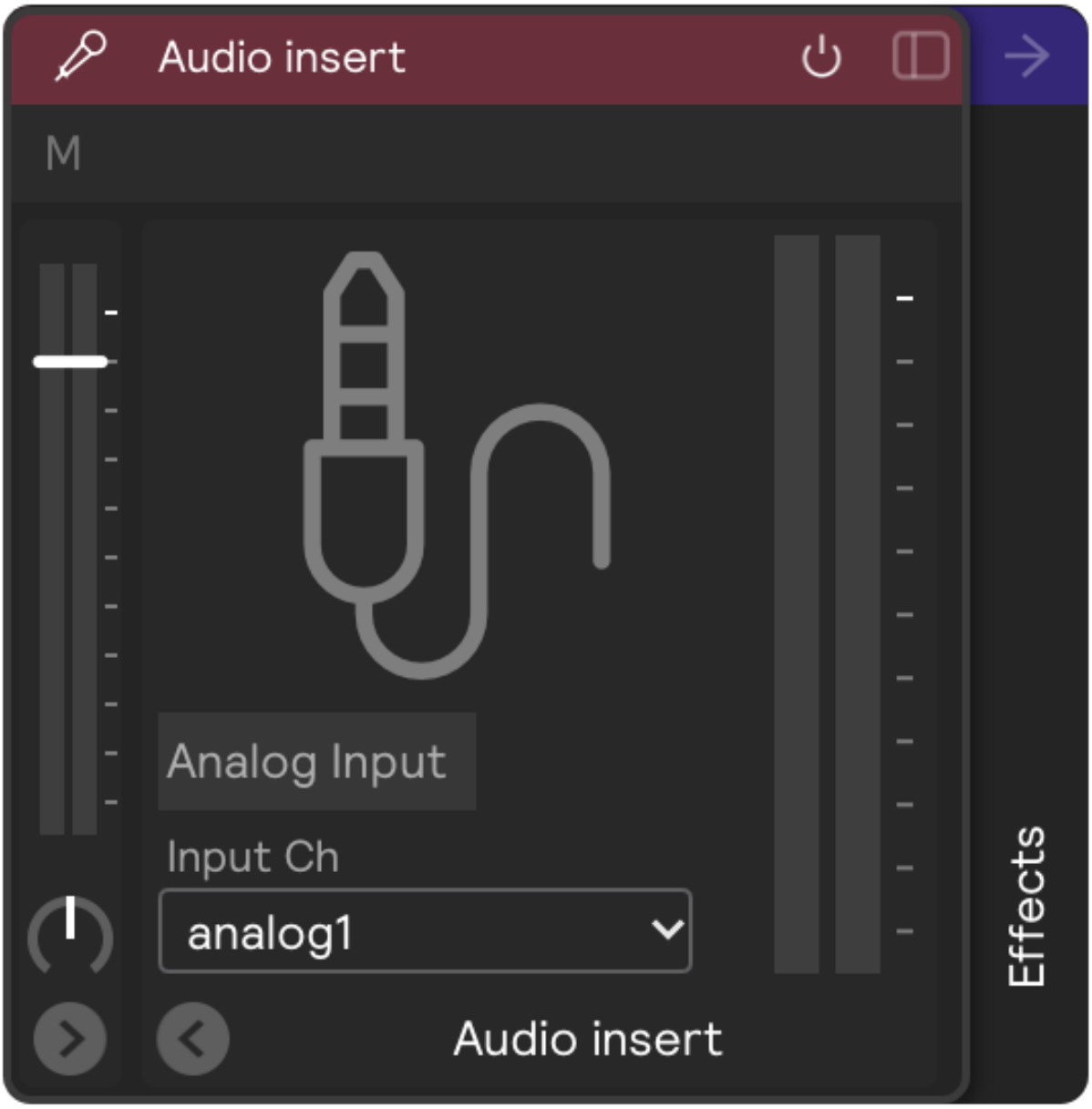


Figure 191: A screenshot of the Audio Insert module

An audio insert is a generator module that routes audio from an analog hardware input into your set.

When you drag an audio insert in from the library, its channel is set to “none” by defualt. From the dropdown select an input that corresponds to a hardware input.

You can adjust the volume, add FX, and do lots of interesting things with audio inserts. You could even add them to sequencers or hit controllers!

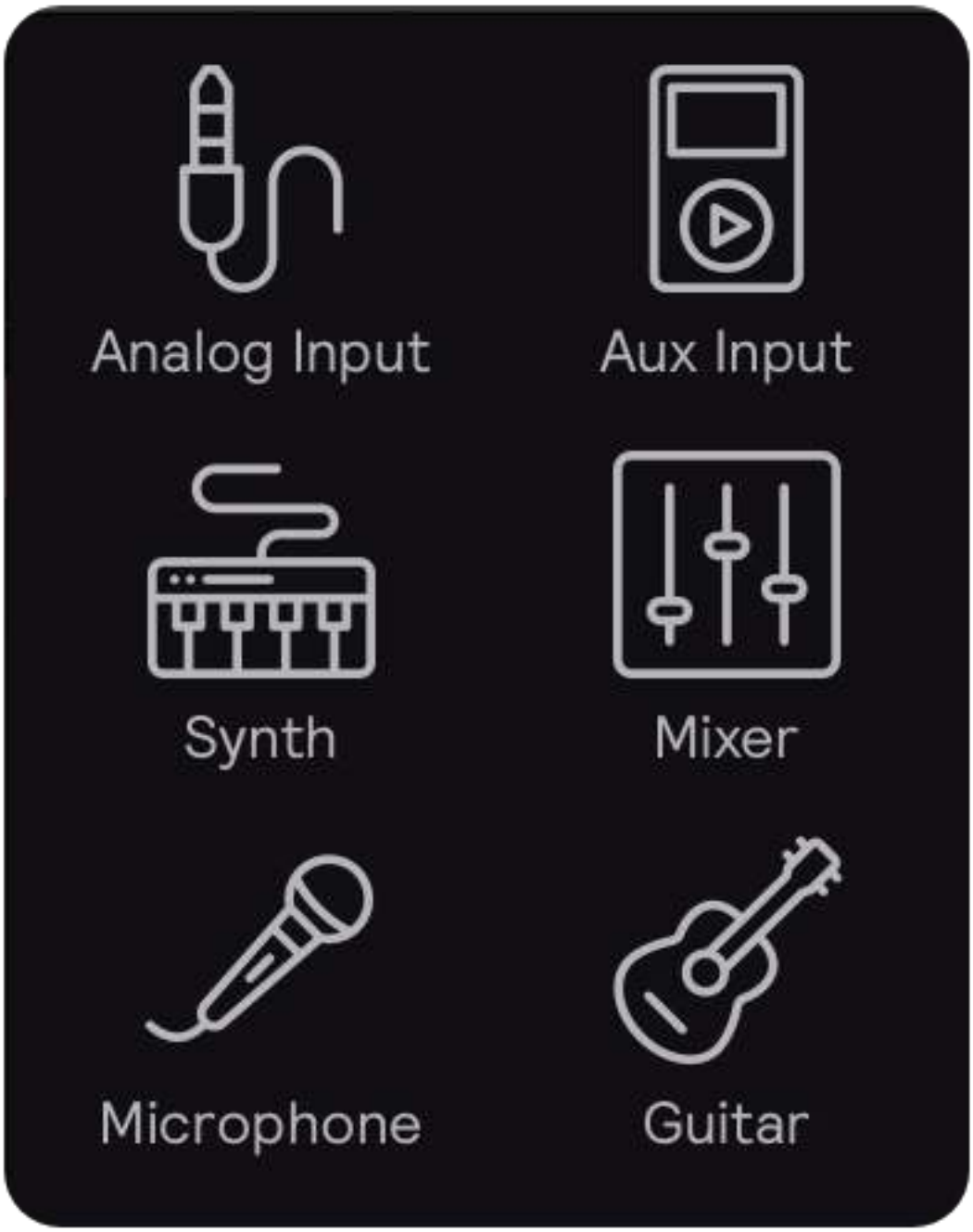


Figure 192: A screenshot of the different icons available to represent your audio insert: a cable jack, a MP3 players, a keyboard synth, a mixer, a microphone, and a guitar

You can also change the input type to match the physical device you're using: an aux input, synth, mixer, microphone, or guitar.

MIDI Kit

The **MIDI Kit** turns your whole kit into MIDI for drum software such as Superior Drummer 3, Addictive Drums, or Steven Slate Drums, or for external hardware. It holds one set of zone → note mappings per drum, all sending to the same MIDI output.



Figure 193: A Superior Drummer 3 MIDI Kit with the snare selected: the drum list on the left and the snare's pad-to-note rows on the right

> **Tip:** Using drum software?
>
> Start from a factory MIDI Kit and you'll be playing in a few minutes. See How to Play Drum Software with a MIDI Kit.

Adding a MIDI Kit

Click **+ Add Module** on an empty layer and choose **Instruments → MIDI kit** to start from a factory kit:



Figure 194: The + Add Module menu open to Instruments → MIDI kit, listing the factory kits

Factory MIDI kits
Ableton Drum Rack · Addictive Drums 2 · DW Soundworks · General MIDI · Logic Drum Designer · Steven Slate Drums 5.5 · Superior Drummer 3

You can also start from a blank MIDI Kit in **Generators**. A new MIDI Kit starts with one drum for each drum input in your session, each mapping the drum's main zones:

Drum	Default zones
Snare, toms	center, rim-shoulder
Kick	open, rim-shoulder
Cymbal	bow, crash
Hi-hat	bow, pedal

Other zones play through the nearest mapped zone until you give them rows of their own. See Zones without their own note.

Note:

Adding a MIDI Kit from **+ Add Module** creates a MIDI hardware output on MIDI 1 if your session doesn't have one yet. Set its **Output Device** to the port your drum software listens on.

Drums

The list on the left shows the kit's drums. The light next to a drum flashes when that drum is hit. Click a drum to edit it on the right, or use the up and down arrow keys to move through the list.

+ Add drum, under the list, adds a snare, kick, tom, cymbal, hi-hat, or grid pads. The new drum listens to the first input of that type the kit isn't already using, and its notes continue after the kit's highest note.

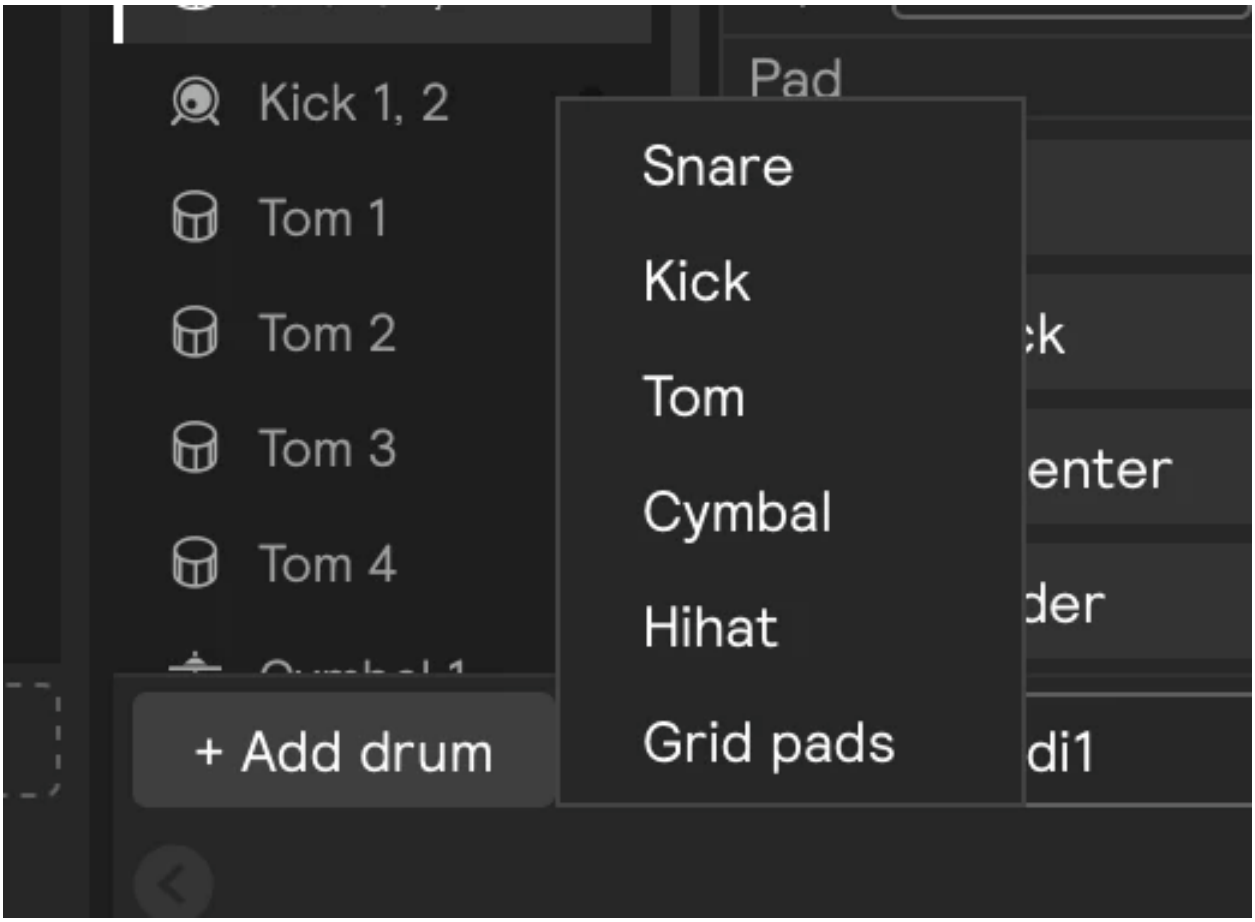


Figure 195: The + Add drum menu

Right-click a drum for more:

Item	What it does
Input	Tick which inputs of that type the drum listens to. Pick one or several.
Use own output	Sends this drum on its own output and channel instead of the kit's. Its output number then shows next to the drum.
Remove drum	Deletes the drum and its mappings. Delete or Backspace with the drum selected does the same.

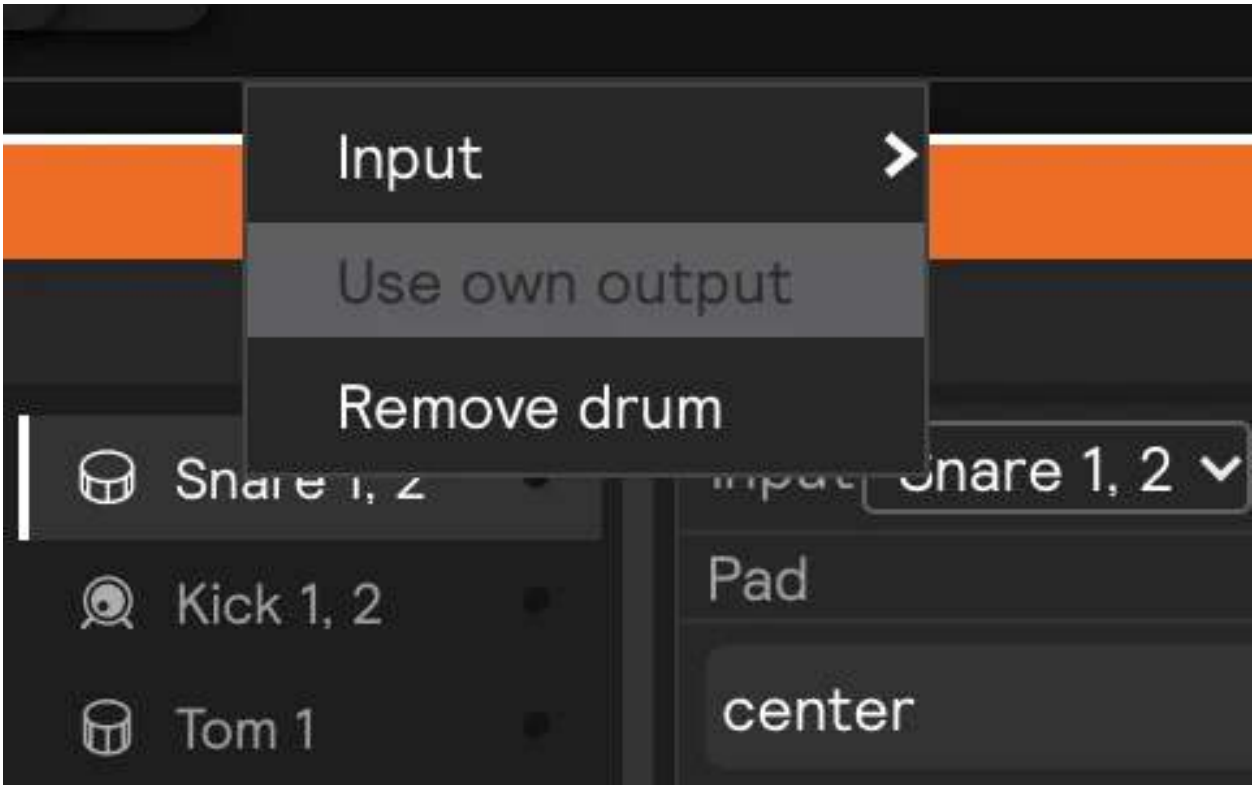


Figure 196: The right-click menu on a drum: Input, Use own output, and Remove drum

Editing a drum

The right side edits the selected drum. Its top row holds the drum's settings, and the pad → note rows below work just like a MIDI Notes Generator.

Control	What it does
input	Which inputs of that type the drum listens to. Click to tick or untick one. A drum can listen to several (Snare 1 and 2, for example) but always keeps at least one. Inputs another drum in the kit already uses are greyed out.
choke, **hold**, **split**, **cc**, **position cc**	The choke, hi-hat pedal, and snare position controls for that drum type. They work as on a MIDI Notes Generator: see Choke, Hi-hat timing, Open and closed notes, and Snare position.
+ Pad	Adds, removes, or resets the drum's pad → note rows.
Trash	Removes this drum and its mappings.

The **Notes / Velocity** switch at the bottom right flips between the drum's pad → note rows and its velocity curve, which shapes how hard each hit plays. Each drum has its own curve.

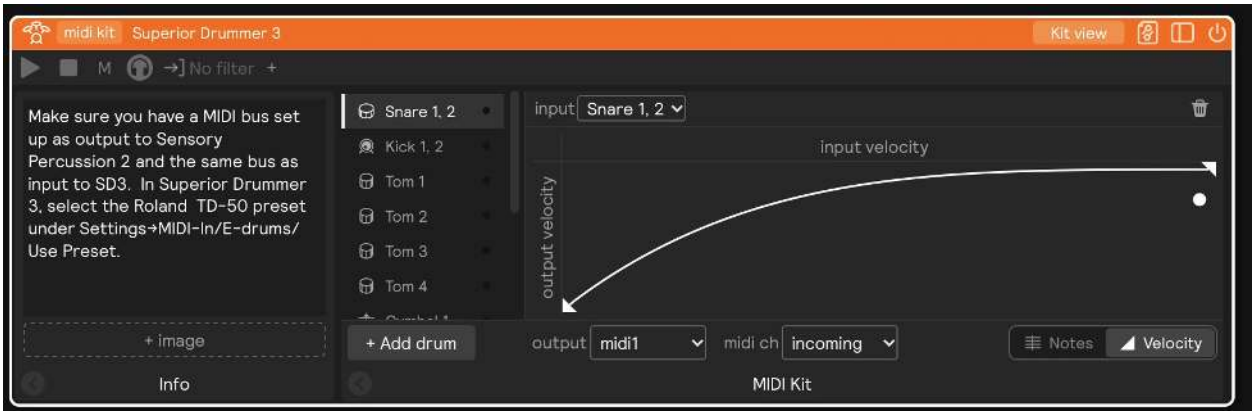


Figure 197: The Velocity view of a MIDI Kit, showing the snare's velocity curve

Zones without their own note

You only need rows for the zones you want to tell apart. A hit on a zone without a row plays the row of its nearest mapped zone: with only **center** and **rim-shoulder** mapped, edge hits play the center note and rim-tip hits play the rim-shoulder note. The **+ Pad** menu shows where each unmapped zone goes, for example `bell-tip → bow`.

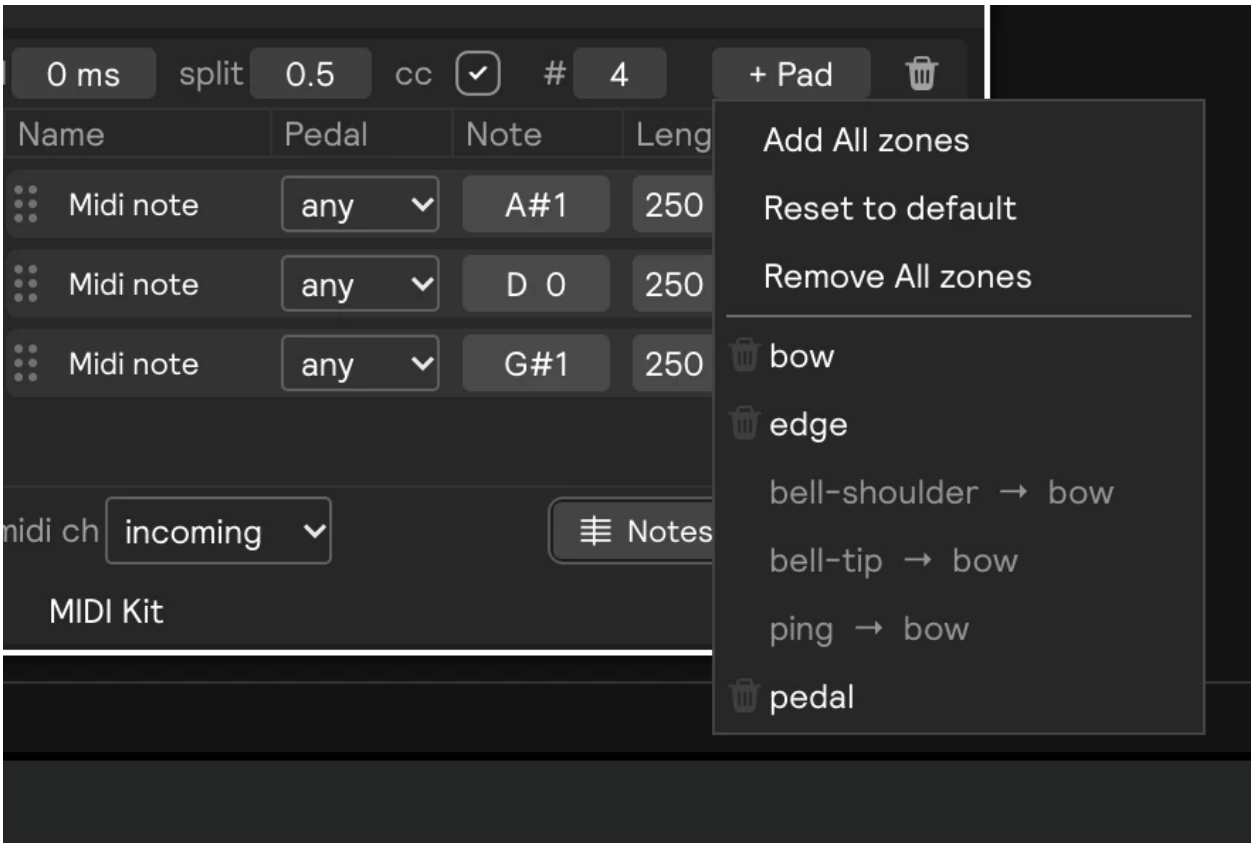


Figure 198: The + Pad menu on a hi-hat drum, showing which mapped zone each unmapped zone plays

See MIDI Notes Generator to silence a zone instead.

Kit view

Turn **Kit view** (in the kit's title bar) off to work on the drums as separate modules. The kit shrinks to its output controls, a **Submodules** list appears, and each drum opens as its own MIDI Notes Generator with all of its panels. The kit still sets the output and channel for every drum that doesn't use its own output.

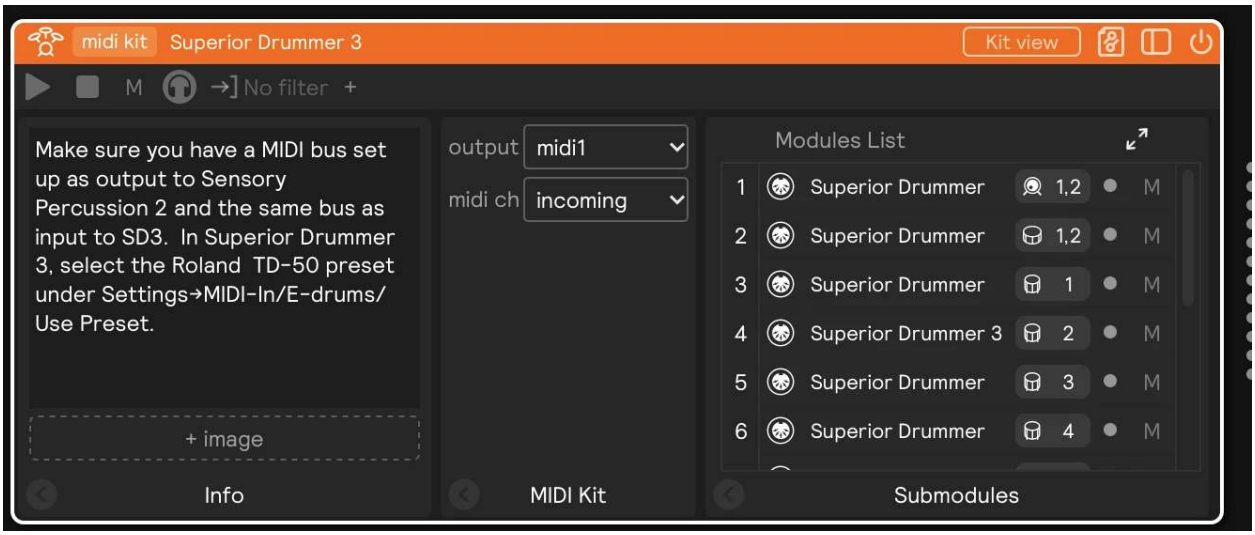


Figure 199: A MIDI Kit with Kit view off: the output controls and a Submodules list of its drums

Turn **Kit view** back on to return to the drum list. The button is greyed out while a drum listens to more than one type of input, to no input, or to something other than snare, kick, tom, cymbal, hi-hat, or grid pads inputs. Give each drum inputs of a single drum type first.

Inside a MIDI Kit, **+ Add Module** only offers MIDI Notes Generators.

Output

Every drum in the kit sends on the kit's output and channel, unless **Use own output** is ticked for it. To choose such a drum's output and channel, turn **Kit view** off and set them on the drum's own card.

Control	What it does
midi ch	The MIDI channel notes are sent on, or `incoming` to keep the channel of the triggering input.
output	The MIDI output number (1–16). A MIDI hardware output set to the same number forwards these messages to a real or virtual MIDI device.

The kit makes no audio, so it has no mixer fader, sends, or audio effects.

Saving your own MIDI kits

Open the kit's preset menu and choose **Instruments → Save current as instrument…** to save it as a **MIDI kit** instrument. Your kits appear under **+ Add Module → Instruments → MIDI kit** and at the top of any MIDI Kit's **Instruments** menu, where choosing one replaces the kit.

Older sessions

Sessions and presets from earlier versions that built a MIDI kit out of a group of MIDI Notes Generators open with that group turned into a MIDI Kit. The kit takes its output and channel from the group's first generator. Generators that sent somewhere else keep their routing through **Use own output**.

A group that also holds audio effects stays a group, because a MIDI Kit only sends MIDI and can't host them.

MIDI Output

You can organize MIDI output of Sensory Percussion using the MIDI notes generator, MIDI CCs generator, and MIDI router.

> **Tip:** Mapping a whole kit?
>
> To drive drum software like Superior Drummer 3 from your whole kit, use a MIDI Kit. It holds one MIDI notes generator per drum and lets you edit them side by side.

To use the different MIDI generators, you must have MIDI outputs added to your Hardware Outputs, one for each MIDI channel you want to send out of Sensory Percussion V2.

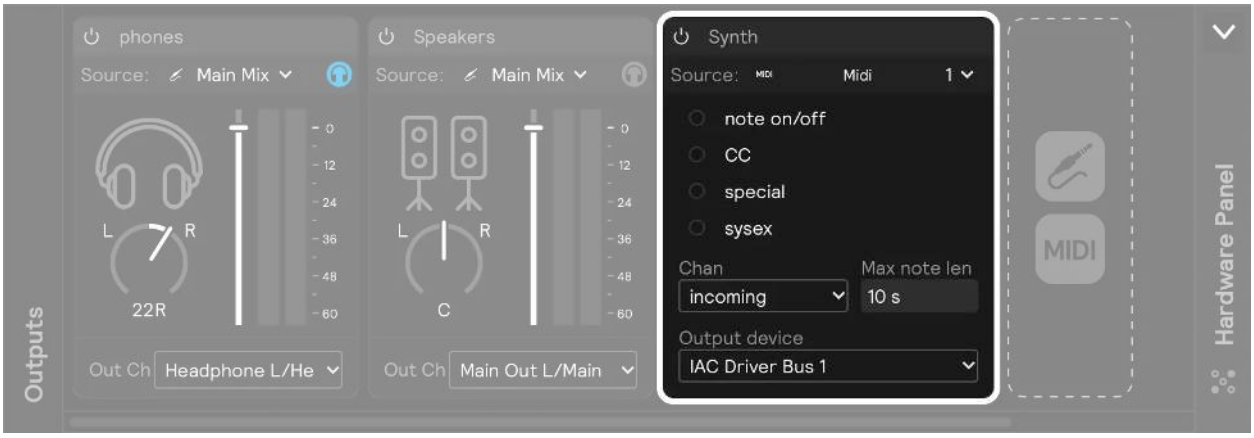


Figure 200: A screenshot showing a MIDI Output in the Hardware Outputs panel

Then drag either the MIDI notes generator or the MIDI CCs generator into your set and then select the corresponding output from the dropdown.

Each of the three generator types include `midi channel` and `output` options.

The `midi channel` option allows you to select the MIDI channel that the generator will send note messages on. However, if the Midi Channel is set to anything besides “incoming” on the Hardware Midi Output, that will take precendence. If both the Generator and Hardware Ouput are set to “incoming” the default MIDI channel is 1.

The `output` option allows you to select the MIDI Hardware Output badge number (1–16) that the generator will send note messages to. A Hardware Output whose source is set to the same badge forwards those messages on to a real or virtual MIDI device.

MIDI Notes Generator

The MIDI notes generator maps drum zones to MIDI notes and sends them to a MIDI hardware output. It’s the building block for driving third-party drum software (Superior Drummer, EZdrummer, and the like) or external hardware from your playing.

To get started, select an input filter from the dropdown. This will determine which pad zones are available to send MIDI notes.

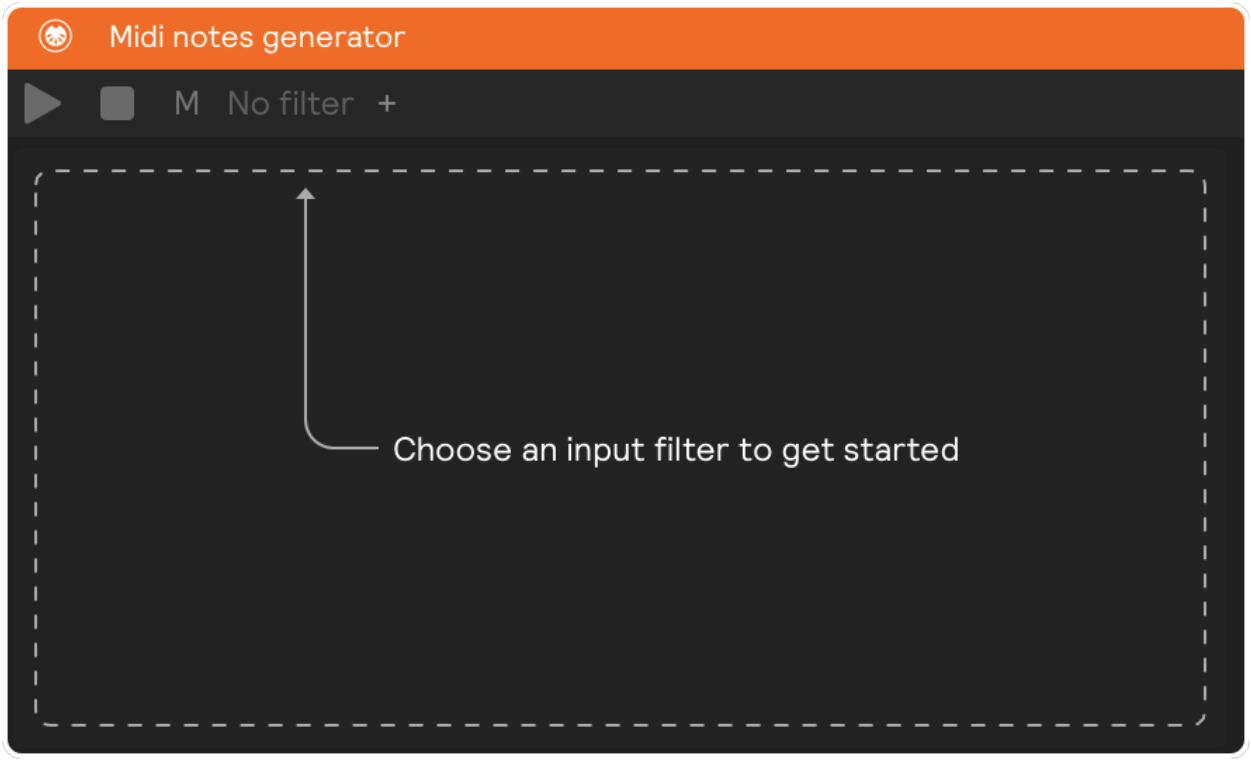


Figure 201: A screenshot of the MIDI notes generator module

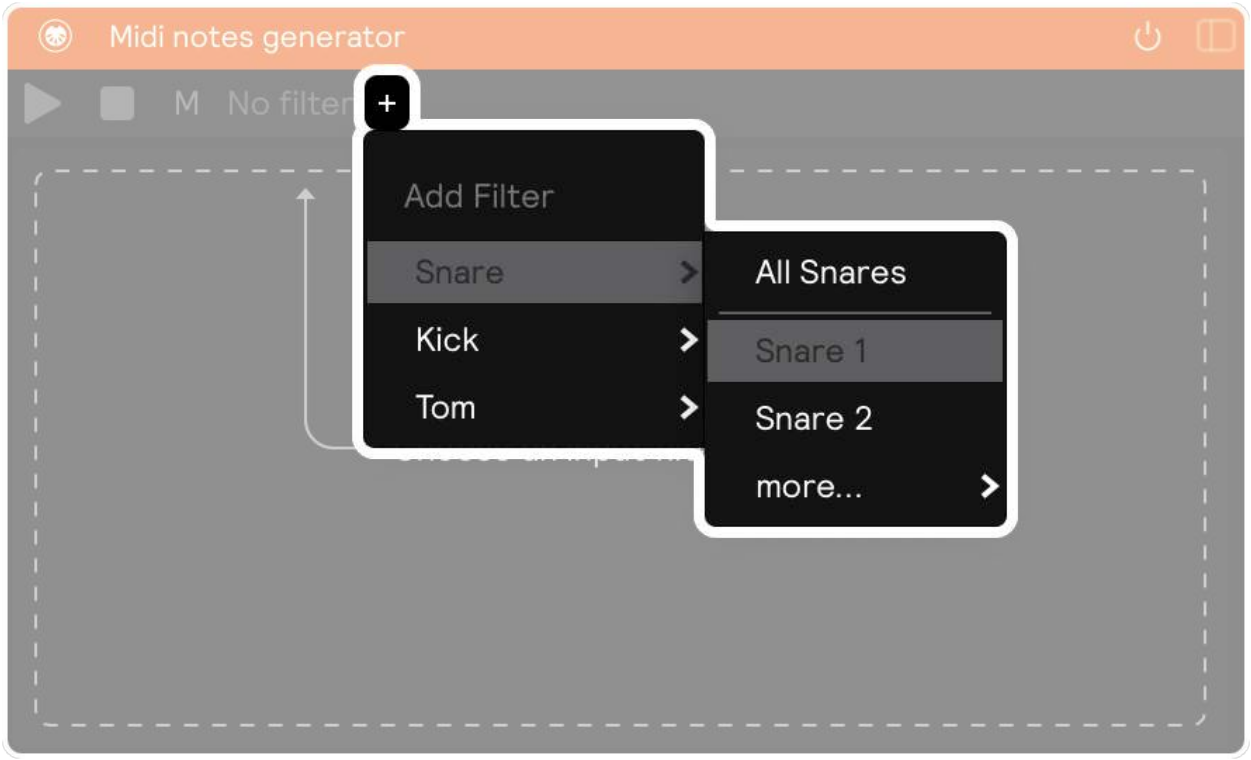


Figure 202: A screenshot of the MIDI notes generator module

Once you've selected a filter, you can choose the note values, set names for each note, and set the note length. Each row of the pad list is one zone → note mapping: pick the drum type and zone (snare center, cymbal bow, and so on) and the MIDI note it should send. Each pad can have multiple notes, which can be added with the + button. `Length` sets how long each note is held before the note-off is sent.

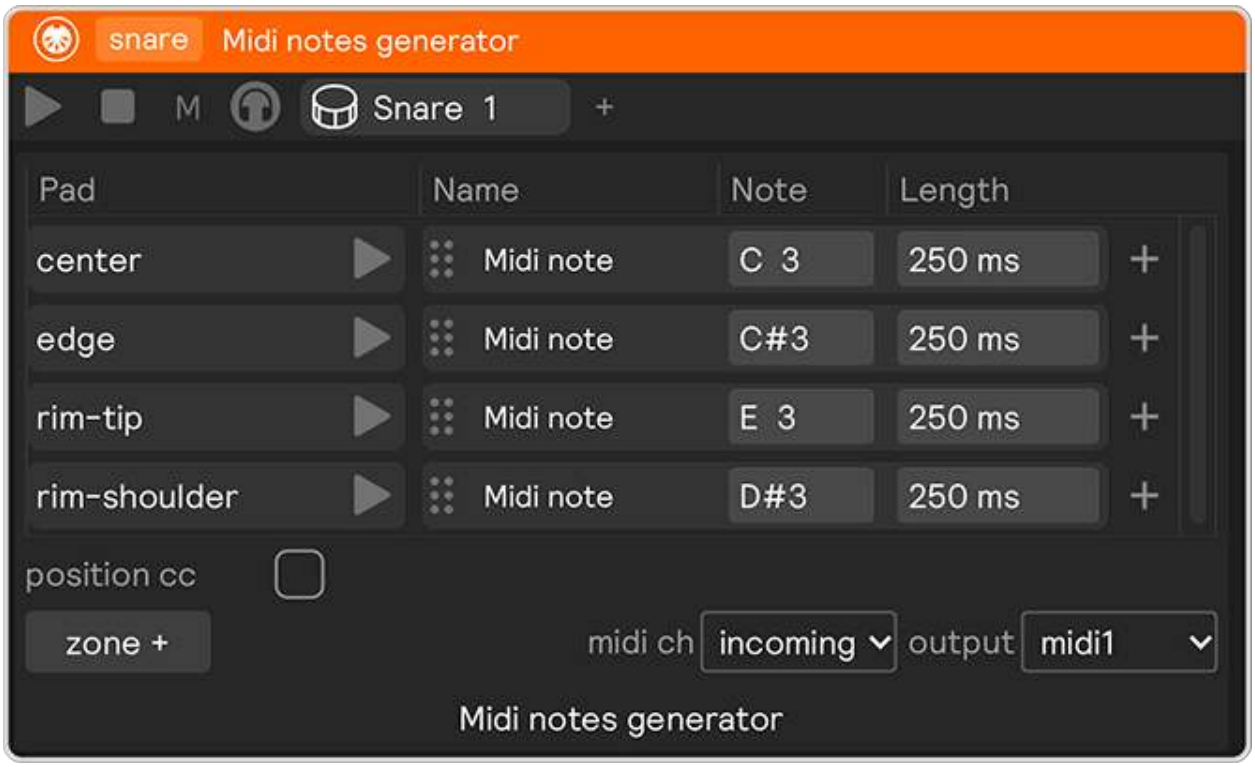


Figure 203: A screenshot of the MIDI notes generator module mapping the four zones of a snare

Zones without their own note

A new generator (and **Reset to default** in the + menu) maps the drum's main zones: center and rim-shoulder for snares and toms, open and rim-shoulder for kicks, bow and crash for cymbals, bow and pedal for hi-hats, and the trained pads for grid pads.

You only need rows for the zones you want to tell apart. A hit on a zone without a row plays the row of its nearest mapped zone, following the same fallbacks as the Drum Pads controllers. With only **center** and **rim-shoulder** mapped, edge hits play the center note and rim-tip hits play the rim-shoulder note. The + menu shows where each unmapped zone goes, for example `edge → center`.

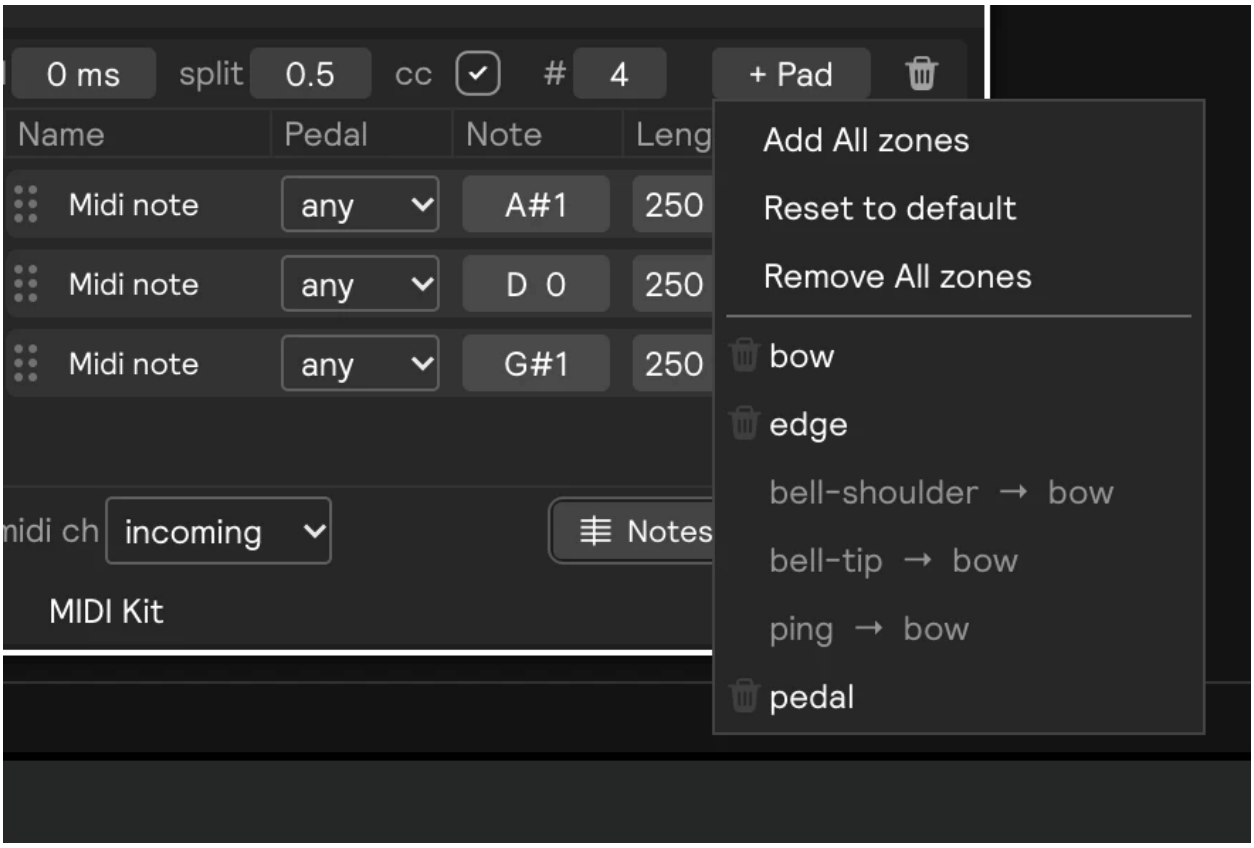


Figure 204: The + menu showing which mapped zone each unmapped zone plays

So a single row maps the whole drum to one note, which is handy for a drum machine or sampler with one sound per drum.

To make a zone play nothing, right-click its row and choose **Silence zone** (or delete its notes). The zone then sends no note and doesn't fall back to another zone. It shows as `(silent)` in the + menu. **Remove zone** in the same menu removes the row, so the zone goes back to playing its fallback.

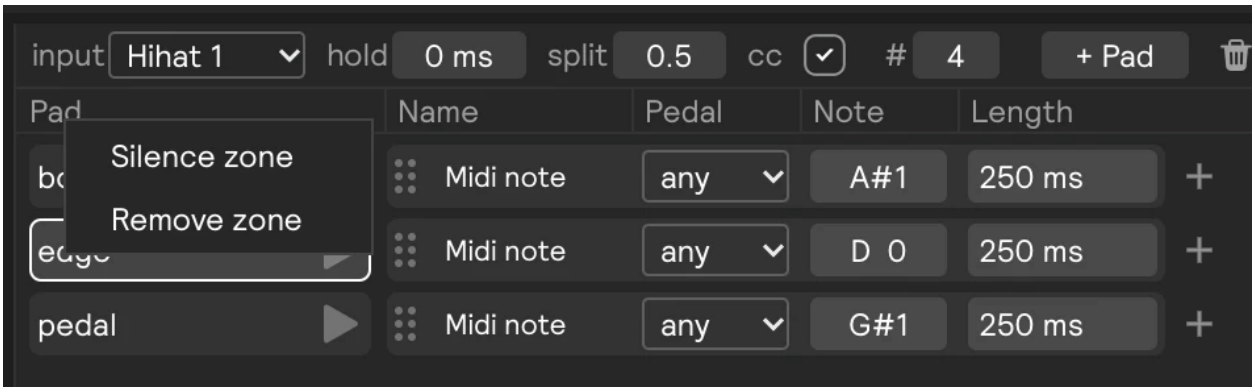


Figure 205: The right-click menu on a zone row: Silence zone and Remove zone

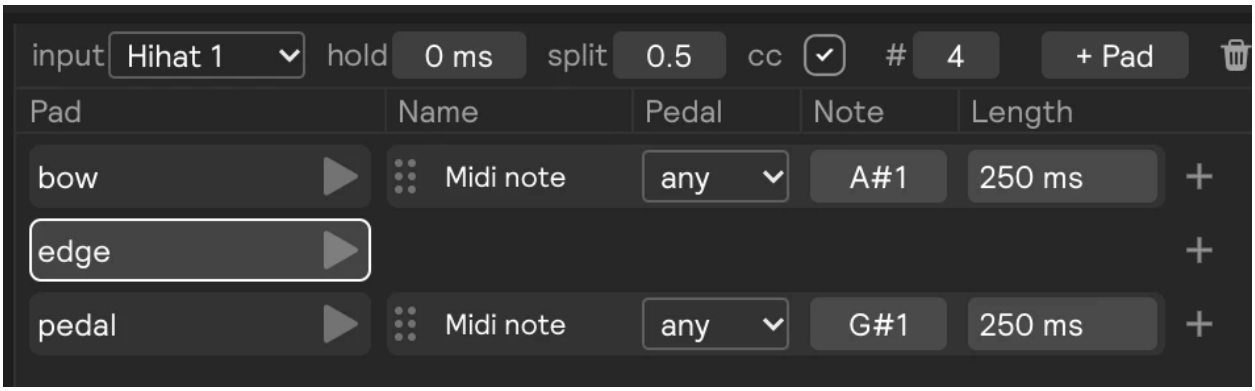


Figure 206: A hi-hat with its edge zone silenced: the edge row has no notes, between the bow and pedal rows

The generator also shows a handful of controls that depend on which kind of input you've filtered to — chokes for cymbals, pedal controls for hi-hats, and positional sensing for snares.

Choke

When a cymbal input detects a choke gesture (grabbing the cymbal), the generator can translate it into whatever your sound engine expects. These controls appear when the generator's input is a cymbal; on generators mapping kicks, snares, or toms the choke setting is inactive, since chokes only ever come from cymbal-type inputs.

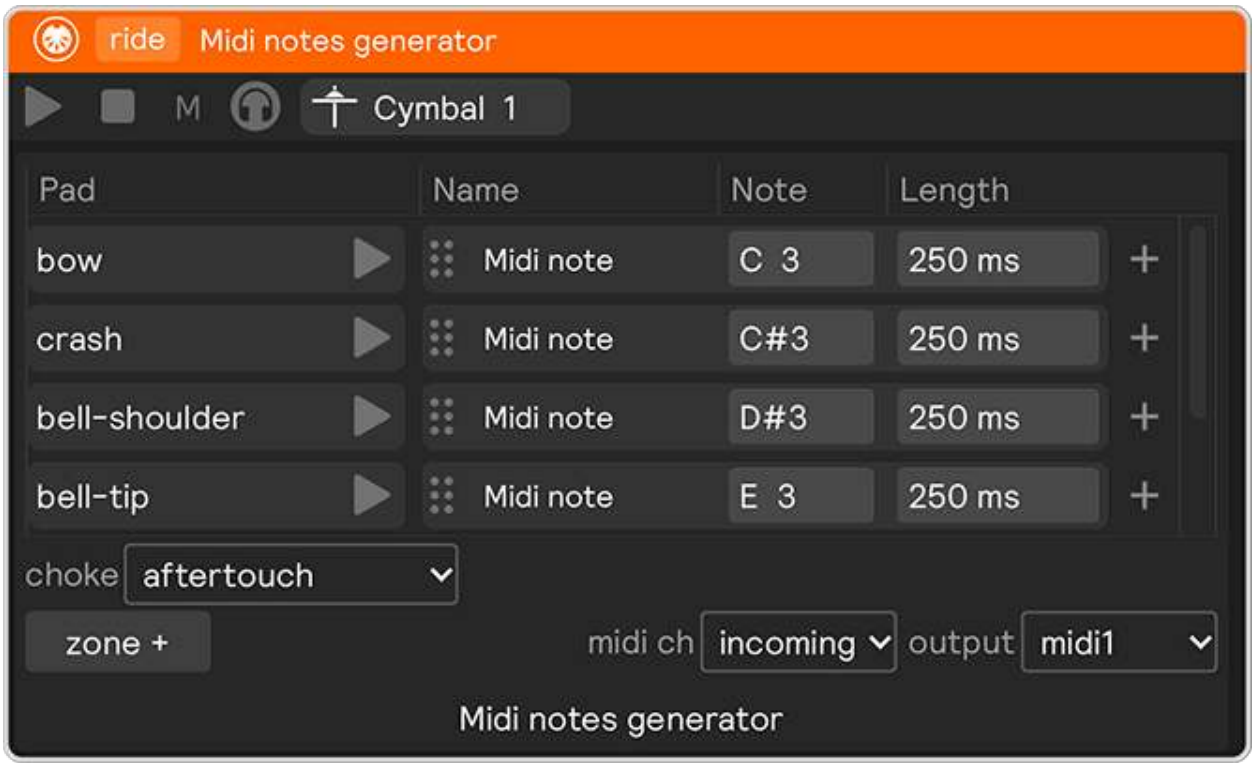


Figure 207: A screenshot of the MIDI notes generator filtered to a cymbal, showing the choke control

The `choke` dropdown sets how the choke is sent:

- `aftertouch` (the default) sends polyphonic aftertouch on every note this generator maps. This is what Superior Drummer 3 expects, so chokes work there with no configuration.
- `cc` sends a CC message, using the `choke cc` number and `value` controls.
- `note` plays a dedicated choke note, set by `choke note` — useful for engines with a choke articulation note.
- `off` ignores chokes entirely.

In `aftertouch` mode an aftertouch press is followed immediately by a release, so engines that treat sustained pressure as a held choke re-arm for the next hit.

Hi-hat timing

Some drum software picks the open/closed articulation at note-on time, based on the current pedal CC. That can guess wrong, because the hit fires before the pedal estimate has fully settled. Two controls, shown when the generator's input is a hi-hat, deal with this:

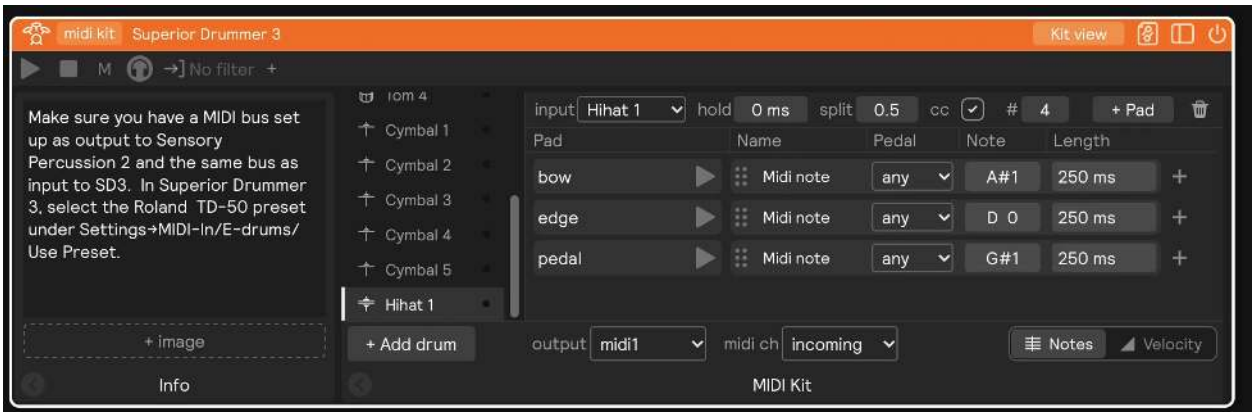


Figure 208: A hi-hat drum showing the hold, split, and pedal cc controls and the per-note Pedal column

- `pedal hold` delays hi-hat notes by up to 30 ms so the pedal position settles (and the pedal CC goes out) before the note. A few milliseconds is usually enough and is imperceptible — hardware e-drum modules do the same thing internally. Set it to 0 to turn it off.
- `pedal cc` streams the pedal position (0–127) as a MIDI CC alongside the notes, on the CC number set by `cc num`. This lets one hi-hat generator drive the drum software's pedal input without a separate MIDI CCs generator. Values are only sent when they change, and most drum software listens on CC 4.

  Tip:

  Superior Drummer 3 tracks the pedal CC continuously, even after a note has started, so `pedal hold` can stay at 0 for SD3. Raise it only for engines that pick the articulation once, at note-on time.

Open and closed notes

Drum machines, samplers, and drum racks often have no pedal input at all, just an open hi-hat sound on one note and a closed hi-hat sound on another. On a hi-hat generator, every note has a **Pedal** setting for this:

Control	What it does
Pedal (per note)	`any` sends the note on every hit. `open` sends it only while the pedal is open, and `closed` only while it's closed.
split	The pedal position that separates open from closed, from 0 (fully open) to 1 (fully closed). Notes set to `open` play below it; notes set to `closed` play at or above it.

The usual drum-machine setup is a single **bow** row holding two notes: the open sound set to `open`, and the closed sound set to `closed`. Every other stick zone falls back to the bow row. The default **pedal** row plays the foot chick: give it the engine's pedal hi-hat note, or silence it if there isn't one.

Rows can mix `open`, `closed`, and `any` notes. The pedal position is read when the note is actually sent, so `pedal hold` lets the pedal settle before the choice is made. Note-offs always reach every note, whatever the pedal does afterwards.

Snare position

Drum software with positional sensing can shift the snare sound continuously from center to edge based on a MIDI CC. Two controls, shown when the generator's input is a snare, stream the detected hit position:

- `position cc` sends the hit's center-to-edge position (0 = center, 127 = edge) as a MIDI CC just before each snare note, so the drum software plays the hit where it actually landed on the head.
- `cc num` sets the CC number the position is sent on. Roland-style positional sensing listens on CC 16.

> **Tip:**
>
> In Superior Drummer 3, set the E-drums preset to **Roland** to enable positional sensing on CC 16.

Inside a MIDI Kit

A MIDI Kit holds one MIDI notes generator per drum. Inside a kit, the `output` and `midi ch` controls belong to the kit and are shared by every drum. Tick **own output** on a generator (with Kit view off) to give that drum its own.

MIDI CCs Generator

The CC generator allows you to send MIDI control change messages from Sensory Percussion to a MIDI hardware output. This is done by making assignments on each CC knob, which will then transmit the assigned CC message to the selected MIDI hardware output.



Figure 209: A screenshot of the MIDI CCs generator module

MIDI Router

The `Midi Router` sends `Pitch & Scale` and `Note Controller` messages to a MIDI hardware output. This is a somewhat niche, but pretty useful, tool, in that it allows you to sequence notes or send scales out to anything that accepts MIDI. For example, if you wanted to send a C Major Triad arpeggio out a MIDI hardware output, you would:

Create a `sequencer`, and for step 1 place a `MIDI Router` with its transpose knob in the default `0` (or `C3`) position; for step 2 copy/paste or create another `Midi Router` and set its transpose knob to `4` (or `E3`); and for step 3 copy/paste or create another `Midi Router` and set its transpose knob to `7` (or `G3`).

You can also drag/drop any modulator onto the `Note Control` parameter of the `Midi router`'s

`Pitch & Scale` panel.

The router passes on whatever MIDI reaches it, whether that's notes from your hits or the messages from a MIDI input, to a MIDI output badge. A MIDI hardware output set to the same badge sends it on to a MIDI device.



Figure 210: The MIDI Router card: the activity monitor rows (note on/off, CC, special, sysex, sync) on the left, and midi ch, length, and output on the right

The card has two columns. On the right are the router's settings:

Control	What it does
midi ch	The channel messages go out on. `incoming` keeps the channel each message arrived on.
length	How long each note is held before the router sends its note-off. At 0 the router sends no note-off of its own. Notes are also cut off at the hardware output's **Max note len**.
output	The MIDI output badge (1–16) the messages go to.

On the left is an activity monitor with one row for each kind of MIDI message. The light at the start of a row flashes when that kind of message reaches the router, and the switch at the end of the row decides whether it's passed on:

Row	What the switch passes
note on/off	Notes. Turning it off stops new notes, but stopping the session still ends the notes the router already started.
CC	Control change messages.
special	Pitch wheel, polyphonic aftertouch, and channel pressure.
sysex	SysEx messages.
sync	MIDI clock, and Start, Stop, and Continue, from the router's input.

Every row except **sync** starts switched on.

Passing MIDI clock through

Turn on **sync** to use the router as a MIDI clock thru: the clock from the device on its input drives the device on its output. Don't also send the session's **Clock out** to the same badge, or that device receives two clocks.

Effects

Effects process the audio produced by the modules they're placed on. They don't make sound on their own — they shape sound that's already there — which is why they can be dropped onto almost anything: generators, controllers, and audio buses all have fx panels.

Adding effects

Drag an effect from the library, hover over the module you want to apply the effect to (it will become outlined in blue), and drop it. It's that easy! (Note that effects can't live on their own layer; they must be placed inside of a module on an existing layer.)

You can also add effects from any effect panel by clicking the `+ Add Effect` dropdown button.

Effects can also be added to submixes and the main mix in the Mix View.

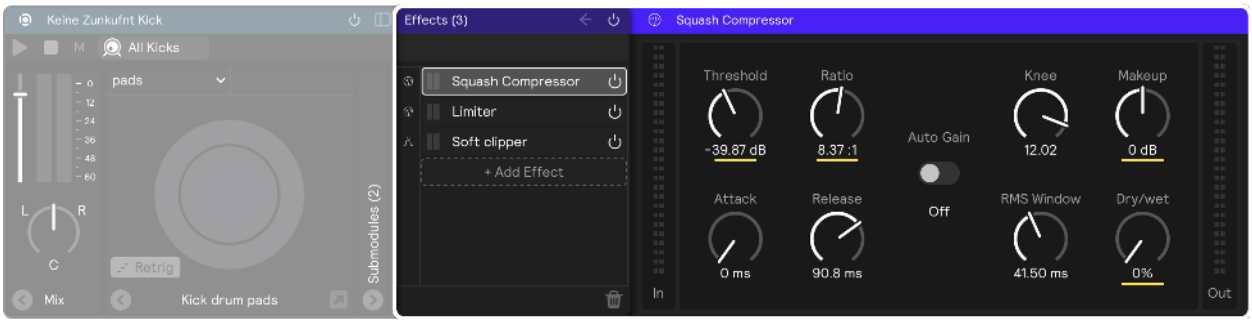


Figure 211: A screenshot of the FX panel of a layer showing two FX: a Limiter and a soft clipper

Common parameters

Many effects share the same handful of controls:

- **Send Level** reduces the gain of the audio input to the effect. Unlike adjusting Dry / Wet, modulating send level preserves any audio tails.
- **Dry / Wet** sets the balance between the unprocessed (dry) signal and the processed (wet) signal.
- **Stereo** widens the left–right panning range of the effect.
- **Feedback** governs the level of processed signal that is sent through the system again.
- **Rate** controls the speed of the modulation.

The effects

Compressor

The **Compressor** narrows the dynamic range of a signal by turning down anything that rises above a threshold, so the loud hits come closer to the quiet ones and the whole part sits more evenly in the mix. It's quick and easy to use — just add the effect, turn up the ratio and pull down the threshold to get the effect pumping.

It can also be driven by a signal other than its own input: the classic ducking setup where a pad gets pushed down every time the kick lands.

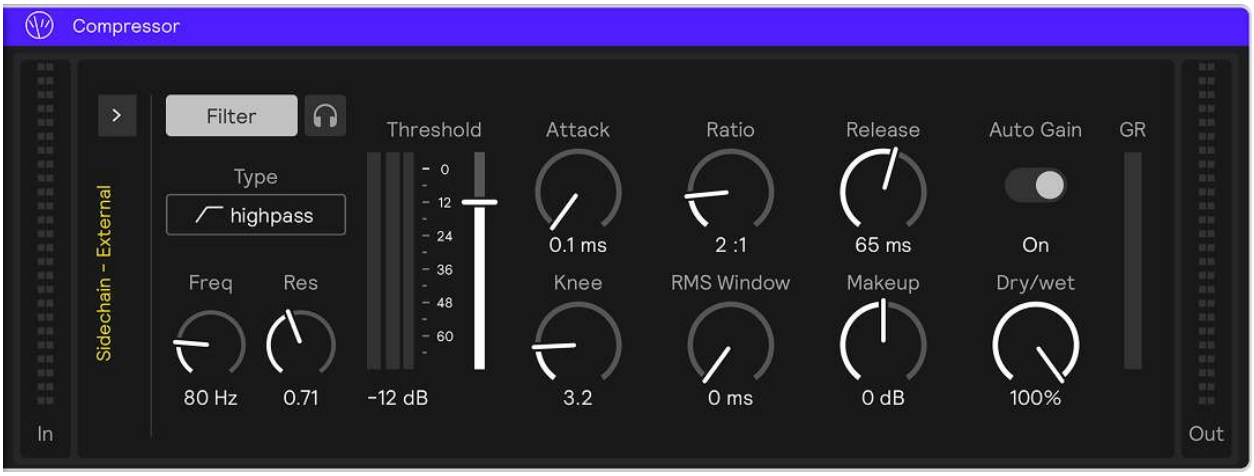


Figure 212: A screenshot of the Compressor effect

Parameters

Threshold

The level above which the compressor starts turning the signal down, from −72 to +6 dB. Peaks above it get squashed; anything below passes untouched.

Ratio

How hard the signal over the threshold is squashed, from 1:1 to 62:1. At 1:1 nothing happens; low ratios shape gently, and high ratios approach limiting.

Knee

How abruptly compression comes in around the threshold, up to 18 dB. At 0 the knee is hard and the compressor snaps on; higher values ease it in over a wider band for a softer response.

Attack

How quickly gain reduction is applied once the signal crosses the threshold, from 0.1 to 150 ms. A fast attack clamps transients; a slow attack lets the initial hit through before clamping.

Release

How quickly gain reduction backs off after the signal falls below the threshold, from 10 to 290 ms. A fast release breathes and pumps; a slow release rides more smoothly.

Auto Gain

Automatically makes up the level the compressor took away, so heavier compression doesn't just mean a quieter part. On by default.

Makeup

A manual output gain trim, from −32 to +32 dB, for boosting or cutting on top of what the compressor did.

RMS Window

The averaging time of the level detector, up to 100 ms. At 0 the detector follows peaks for a snappy response; higher values smooth it out for a steadier, less twitchy one.

Dry / Wet

Sets the balance between the uncompressed and compressed signal. Backing off from 100% gives you parallel compression, where the original transients stay alongside the squashed version.

> **Tip:**
>
> Small dots in the corner of the **Attack** and **Release** boxes light up while that stage of the envelope is actively shaping gain reduction, so you can dial the timing in by eye as well as by ear.

Sidechain

Switch on **External** in the sidechain panel to drive the compressor with a signal other than its own input. The panel provides the input and tap selectors along with the key gain and mix knobs, and is the same panel used by the Gate.



Figure 213: A screenshot of the Compressor effect with the sidechain panel open

The tap selector chooses where the sidechain is taken from the source module: before its effects, after its effects, or after its mixer fader.

Auto Gain is meaningless when an external signal drives the detector, since the compressor has no way to know how much it took off that signal, so it's dropped for as long as a sidechain source is connected.

Detector filter

A **Filter** (on by default, highpass at 80 Hz) and a headphone **Listen** button sit to the right of the sidechain panel and stay visible whether or not the panel is folded.

While sidechain is off, the filter keys on the compressor's own input, so you can have the detector respond to specific frequencies — ignoring sub-bass, say — without routing an external source. Turning sidechain on always drops that internal filtering: the compressor then keys off whatever's connected, filtered the same way once you choose a source, but hears nothing at all until you do.

Listen auditions whatever is driving the detector at any point along that chain.

Reading the meters

The wide meter to the left of the threshold slider shows the raw signal feeding the detector, and turns yellow when an external sidechain is driving it. The skinny bar beside it shows the detector level after the RMS window — that's the value actually compared against the threshold. The **GR** strip on the right shows how much gain reduction is being applied right now.

Limiter

The primary function of the **Limiter** is to prevent the audio signal from exceeding a certain threshold. It does this by reducing the gain of the signal whenever it goes over.

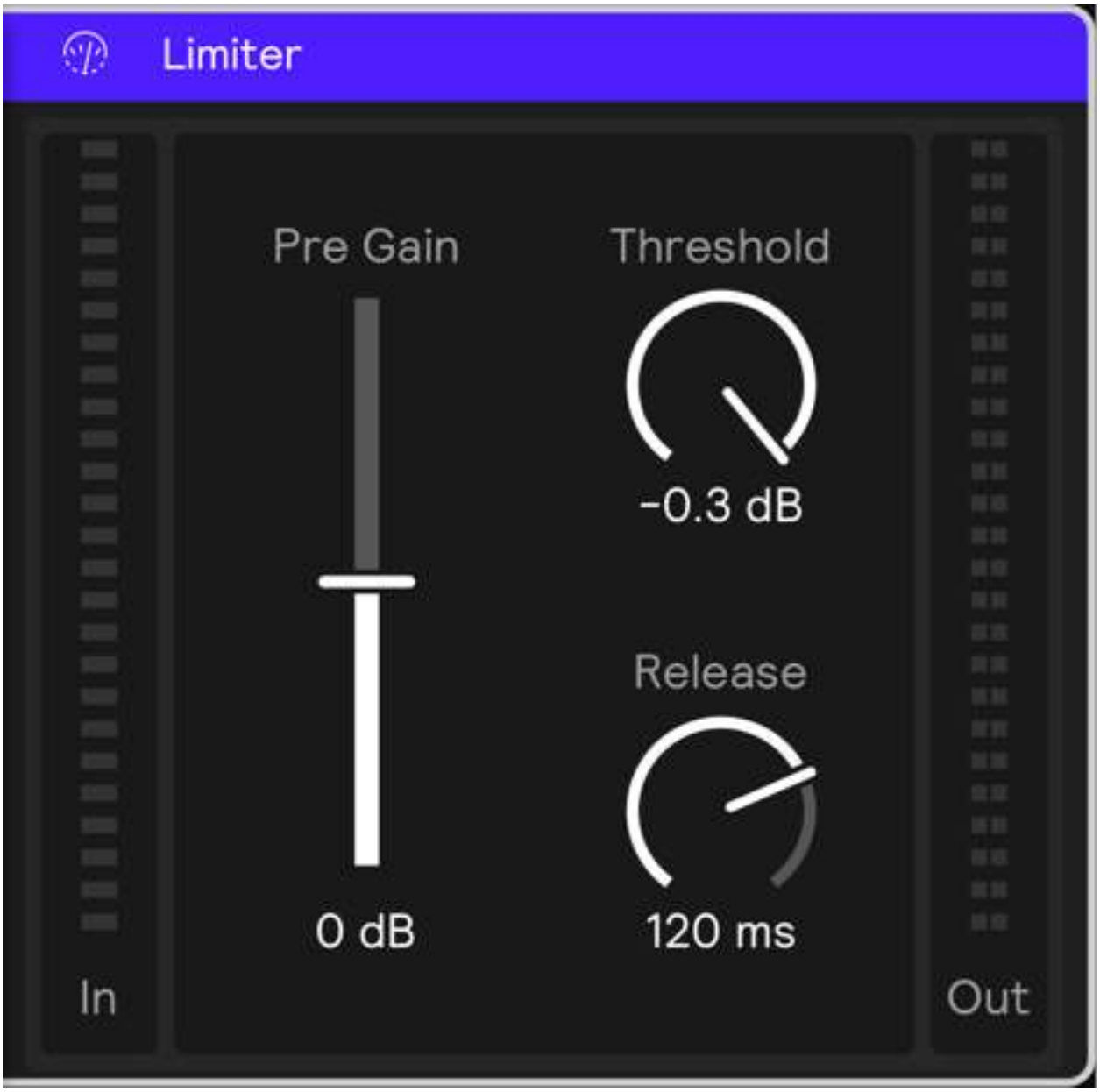


Figure 214: A screenshot of the Limiter.

Parameters

Send Level

Reduces the gain of the audio input to the effect. Unlike adjusting Dry / Wet, modulating send level preserves any audio tails.

Pre Gain

Sets the level of the signal before it hits the limiter. This is useful for boosting the level of a signal without clipping, or for preventing a signal from clipping when it is too loud.

Threshold

The ceiling, in dB, that the signal will not be allowed to exceed.

Release

The time it takes for the gain to return to normal after the signal falls below the threshold.

Gate

The **Gate** passes the signal while it's louder than a threshold and turns it down once it falls below, so quiet passages, bleed, and hum between hits get pushed down or silenced entirely. It can also be keyed by another signal instead of its own input — gating a pad with the kick so the pad only sounds on the beat, for instance.

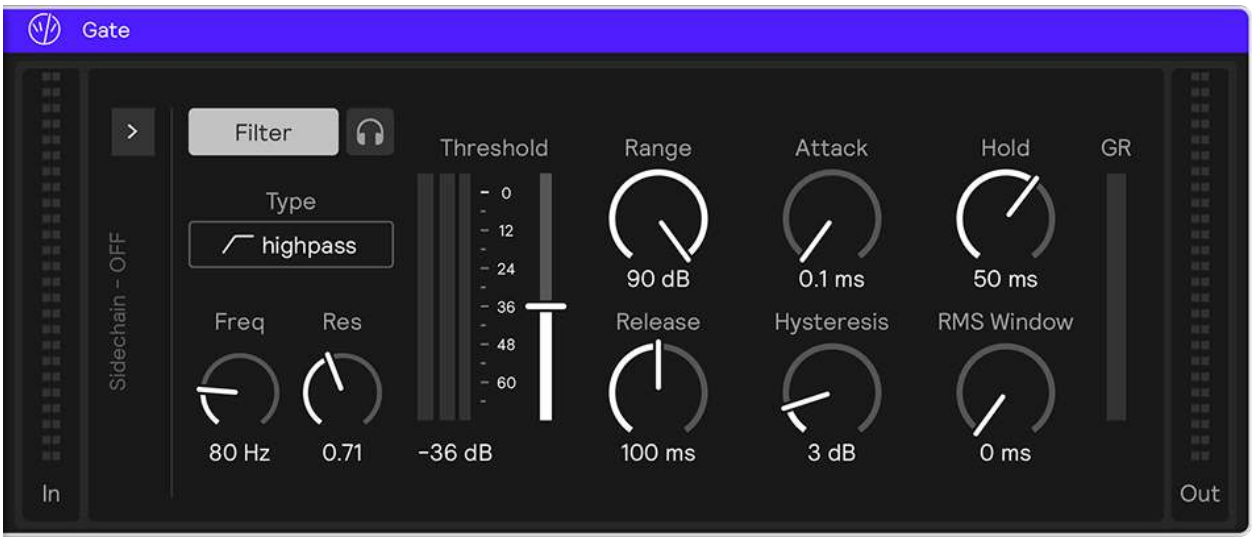


Figure 215: A screenshot of the Gate effect

Parameters

Threshold

The level the signal must rise above for the gate to open, from −72 to +6 dB. Above it the gate passes the signal; below it the gate closes.

Range

How far the signal is attenuated while the gate is closed, from 0 to 90 dB. At 0 dB the gate does nothing; higher values silence the gap more completely.

Attack

How quickly the gate opens once the signal crosses the threshold, from 0.1 to 150 ms. A fast attack preserves transients; a slow attack fades the attack in.

Hold

The minimum time the gate stays open after the signal drops below the close point, up to 500 ms. This prevents chatter on signals that hover near the threshold.

Release

How quickly the gate closes after the hold time elapses, from 10 to 1000 ms. A slow release lets tails ring out; a fast release clamps them.

Hysteresis

The gap between the open and close thresholds, up to 24 dB. The gate opens at **Threshold** but doesn't close until the signal falls this far below it, which stops rapid open/close flutter.

RMS Window

The averaging time of the level detector, up to 100 ms. At 0 the detector follows peaks for a snappy response; higher values smooth it out for a steadier, less twitchy one.

Sidechain

Switch on **External** in the sidechain panel to open the gate with a signal other than its own input. The panel provides the input and tap selectors along with the key gain and mix knobs, and is the same panel used by the Compressor.

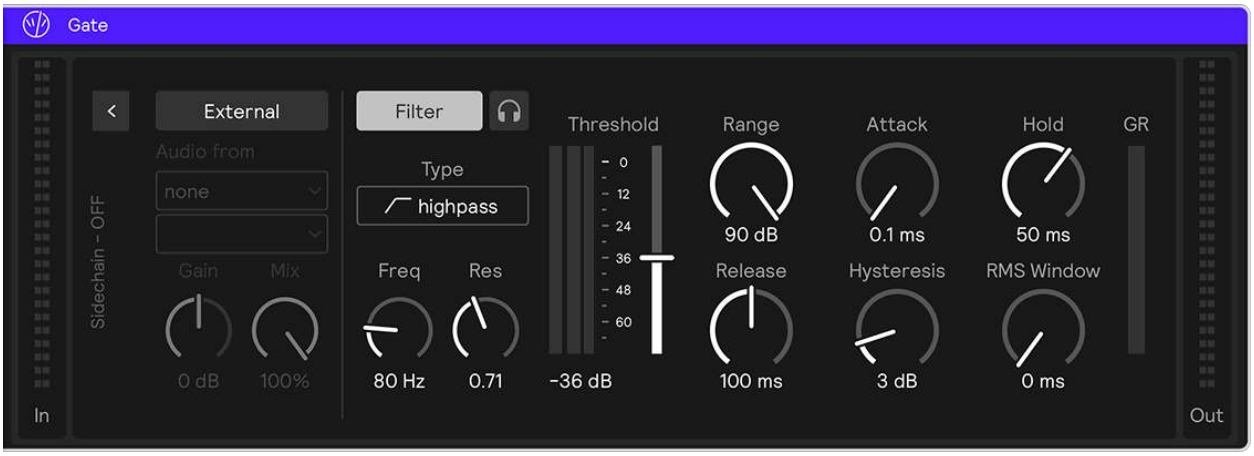


Figure 216: A screenshot of the Gate effect with the sidechain panel open

Detector filter

A **Filter** (on by default, highpass at 80 Hz) and a headphone **Listen** button sit to the right of the sidechain panel and stay visible whether or not the panel is folded.

While sidechain is off, the filter keys on the gate's own input, so you can have the detector respond to specific frequencies — ignoring sub-bass, say — without routing an external source. Turning sidechain on always drops that internal filtering: the gate then keys off whatever's connected, filtered the same way once you choose a source, but hears nothing at all until you do.

Listen auditions whatever is driving the detector at any point along that chain.

Reading the meters

The wide meter to the left of the threshold slider shows the raw signal feeding the detector, and turns yellow when an external sidechain is driving it. The skinny bar beside it shows the detector level after the RMS window — that's the value actually compared against the threshold.

Soft Clipper

The **Soft Clipper** sets a decibel ceiling and clips anything that goes above it, softening the waveform around the peak. The result is harmonic distortion rather than a digital clipping sound.



Figure 217: A screenshot of the Soft Clipper

Control	What it does
Ceiling	The level (−36 to +36 dB) above which the signal is clipped. Defaults to −0.5 dB.
Softness	How gradually the clipping sets in around the ceiling, from 0 (hard) to 1 (very soft). Defaults to 0.2. Sessions from before 2.8 keep the softness they were saved with.

Control	What it does
Makeup gain	Gain after clipping, −36 to +36 dB.
Dry/wet	The mix between the unprocessed and clipped signal.

Note:

The Clipper and Soft Clipper effects will be merged in a future update.

Tube Amp

The **Tube Amp** is an amp simulation effect that emulates the classic 12AX7 tube found in so many vintage amps.

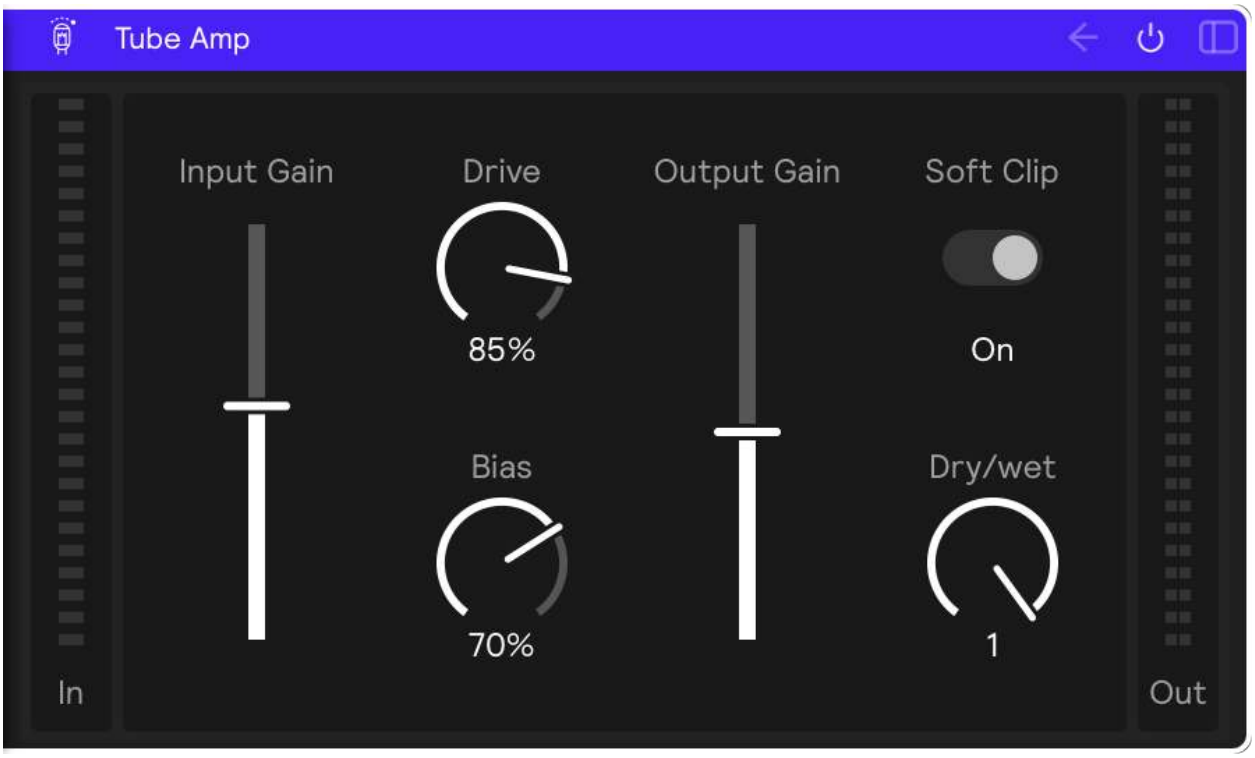


Figure 218: A screenshot of the Tube Amp effect

Bit Crush

The **Bit Crush** is a lo-fi effect that degrades the signal on purpose. It lowers the effective sample rate and bit depth to add digital grit, quantization noise, and aliasing — anything from a subtle vintage-sampler color to harsh, broken digital artifacts.

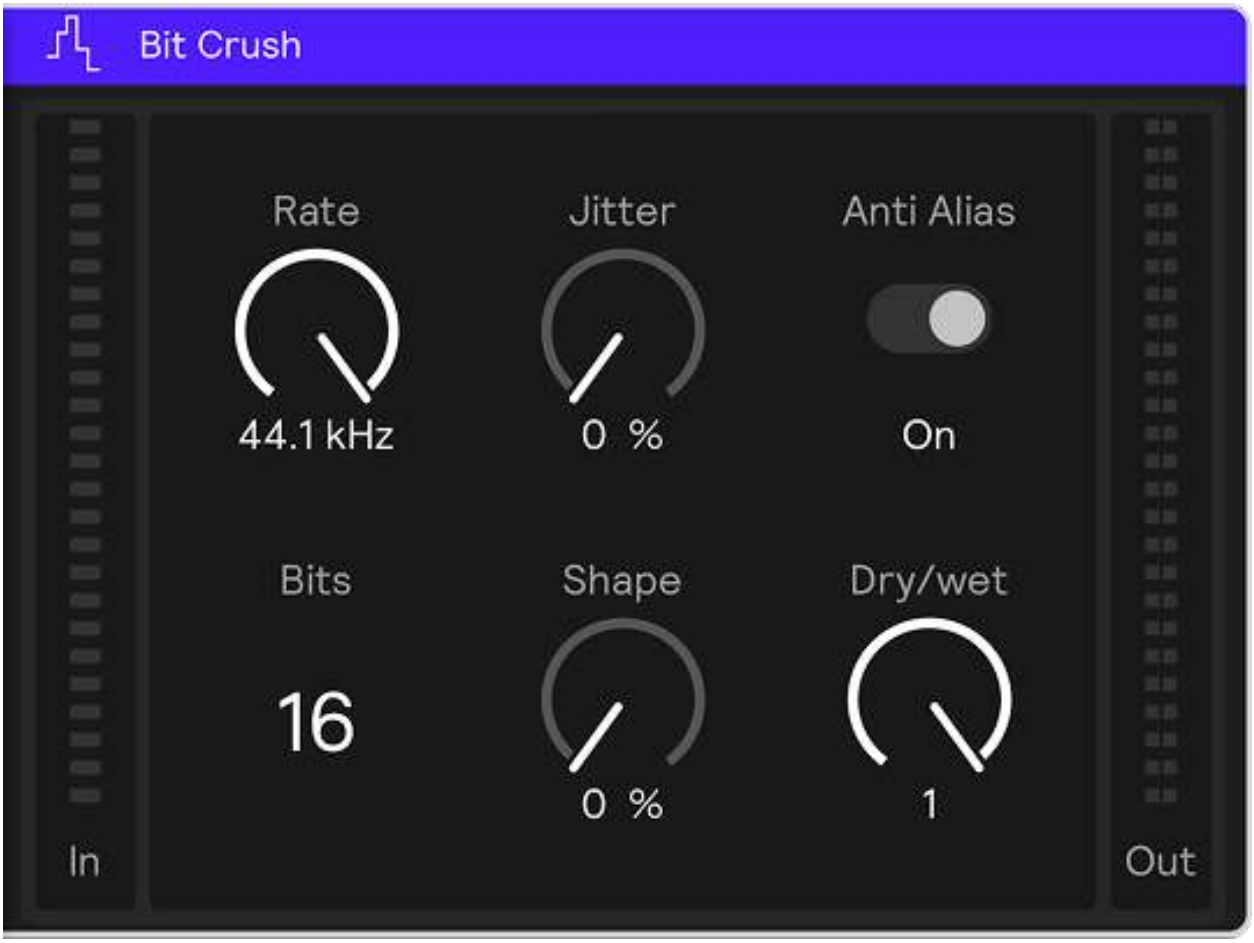


Figure 219: A screenshot of the Bit Crush effect

Parameters

Rate

Sets the sample rate the signal is decimated to, from 20 Hz to 40 kHz. Lower values hold each sample for longer, adding aliasing and a grittier, more downsampled sound.

Bits

Sets the bit depth the signal is quantized to, from 2 to 24 bits (snapped to musical steps). Fewer bits quantize more coarsely for a noisier, lo-fi sound.

Jitter

Randomizes the sample rate reduction, for a noisier and less pitched downsampling artifact.

Shape

Bends the quantizer curve. At 0 it's a plain linear quantizer; higher values give finer resolution to quiet passages and a more pronounced effect at low bit depths.

Anti Alias

Filters out aliasing introduced by the sample rate reduction. Turn it off for a harsher, more aliased sound. It only engages when Rate is well below the host sample rate, since there's nothing to alias near the top of the range.

Dry / Wet

Sets the balance between the unprocessed (dry) signal and the processed (wet) signal.

Filter

The **Filter** effect is a collection of resonant filters that will be a versatile tool for you in your musical endeavors with Sensory Percussion.

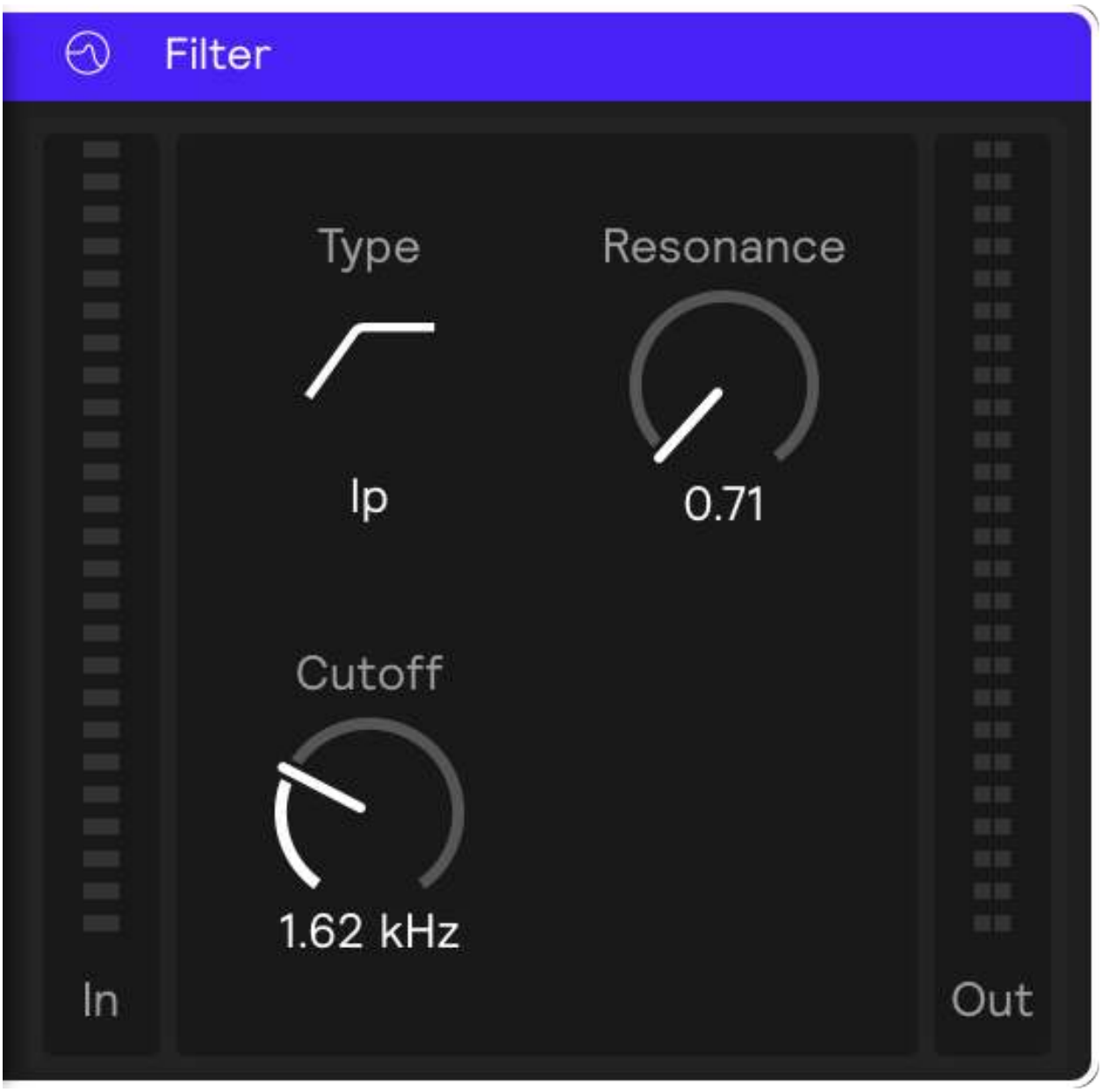


Figure 220: A screenshot of the Filter effect

Parameters

Cutoff

The frequency above and/or beneath which the signal will be filtered.

Resonance

The amount that the cutoff frequency will resonate.

Type

Choose from three different filter types:

- **Low Pass (lp)** — any frequency *above* the cutoff is filtered out of the sound completely.
- **High Pass (hp)** — any frequency *below* the cutoff is removed.
- **Band Pass (bp)** — a wide band of frequencies around the cutoff is allowed to pass through.

---

3 Band EQ

The **3 Band EQ** behaves the same way as the Filter effect, but it contains three filters: **Lo**, **Mid**, and **Hi**.

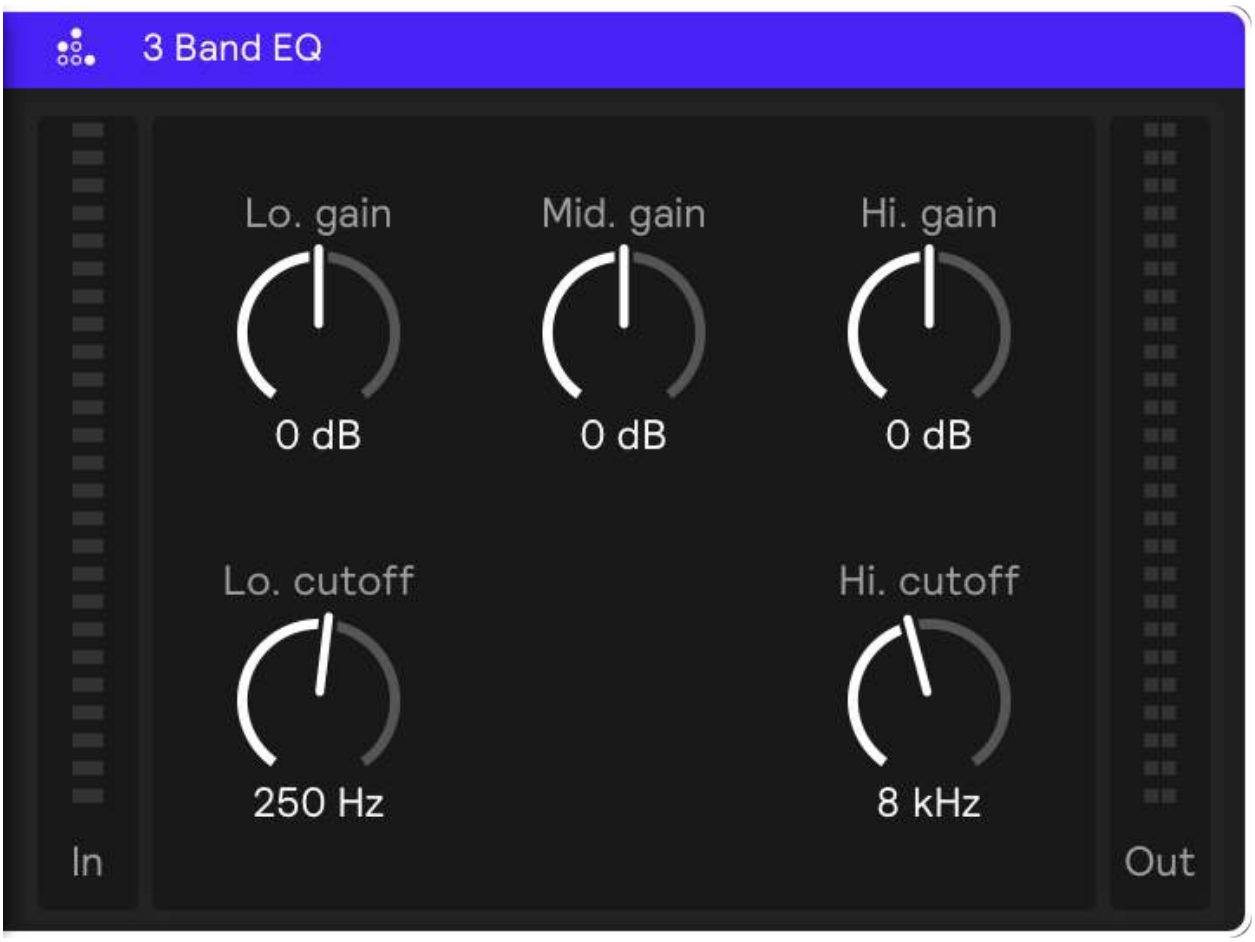


Figure 221: A screenshot of the 3 Band EQ effect

Parameters

Cutoff

Sets the cutoff frequency for the **Lo** and **Hi** bands.

Gain

Sets the gain for all three bands.

EQ Band

The **EQ Band** effect adds more filtering options than the Filter effect.

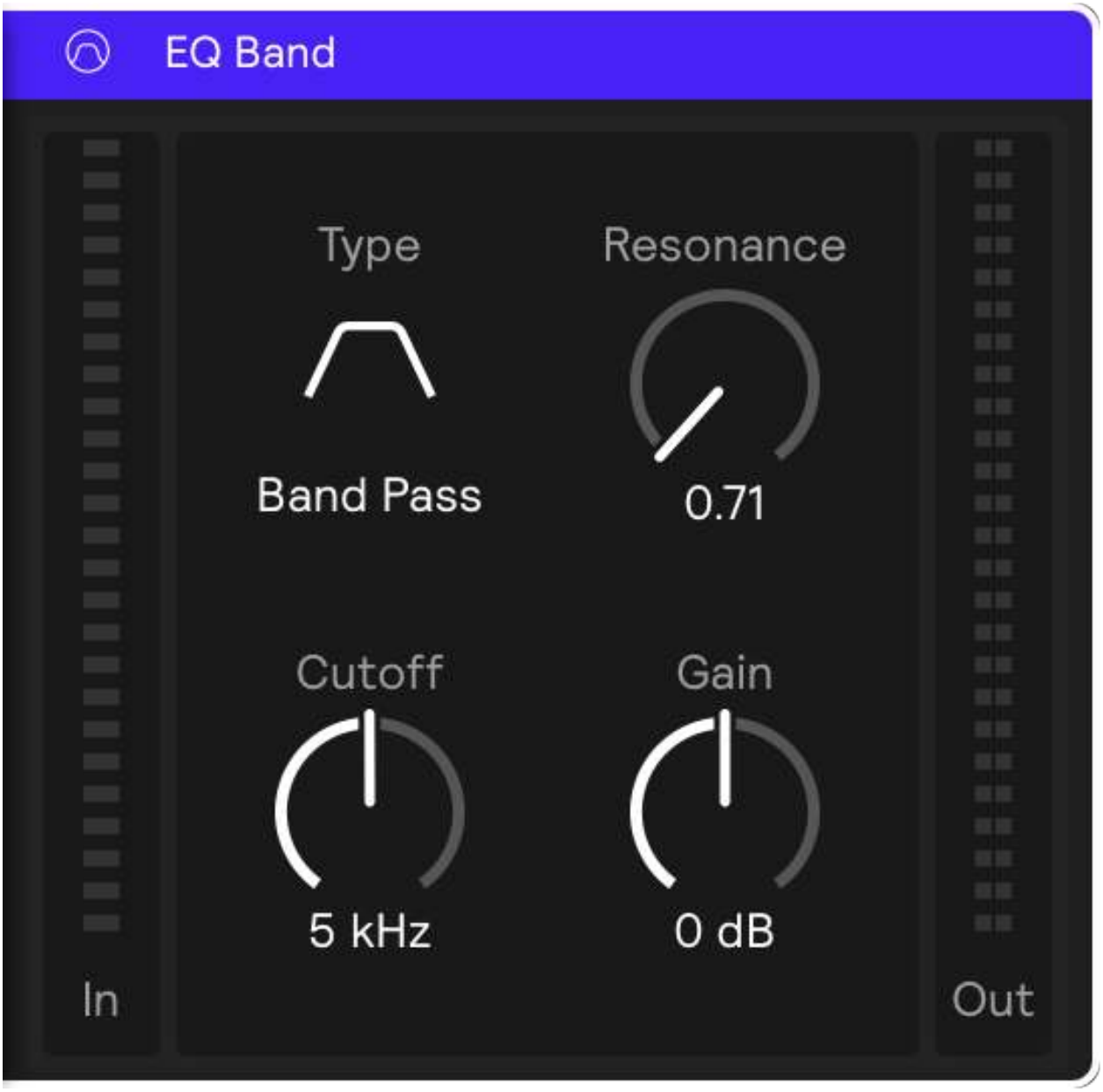


Figure 222: A screenshot of the EQ Band effect

Parameters

Cutoff

The frequency the selected filter shape is centered on.

Resonance

Increases the volume at the cutoff frequency.

Type

In addition to **Low Pass**, **High Pass**, and **Band Pass**, this effect also offers:

- **Notch** — removes only a small segment around the cutoff frequency.
- **High shelf** and **Low shelf** — not as extreme as HP/LP; these reduce frequencies below or above the cutoff.
- **Peak** — boosts a small segment around the cutoff while filtering everything else.

Multiband EQ

The **Multiband EQ** is a set of cascading EQ bands for more fine control, combined with a realtime frequency spectrum UI so you can see the sound sculpting in action.

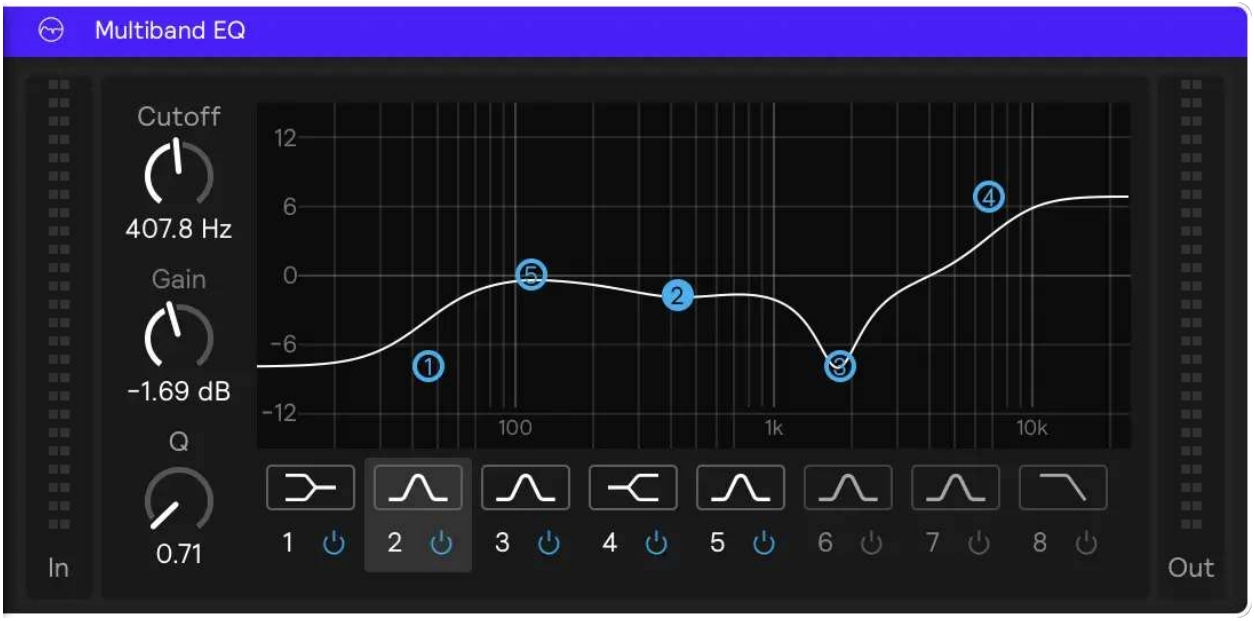


Figure 223: A screenshot of the Multi-band EQ effect

Parameters

The **Cutoff**, **Gain**, and **Q** knobs are contextual to the band you have selected. You can select a band either by clicking on the numbered blue handles on the spectrum UI, or the bell/filter band shapes below it.

Cutoff

The frequency the selected band is centered on.

Gain

How much the selected band boosts or cuts.

Q

How wide or narrow the selected band is.

Chorus

The **Chorus** thickens a signal by running it through a bank of modulated all-pass filters, producing a shimmering, detuned doubling of the source.

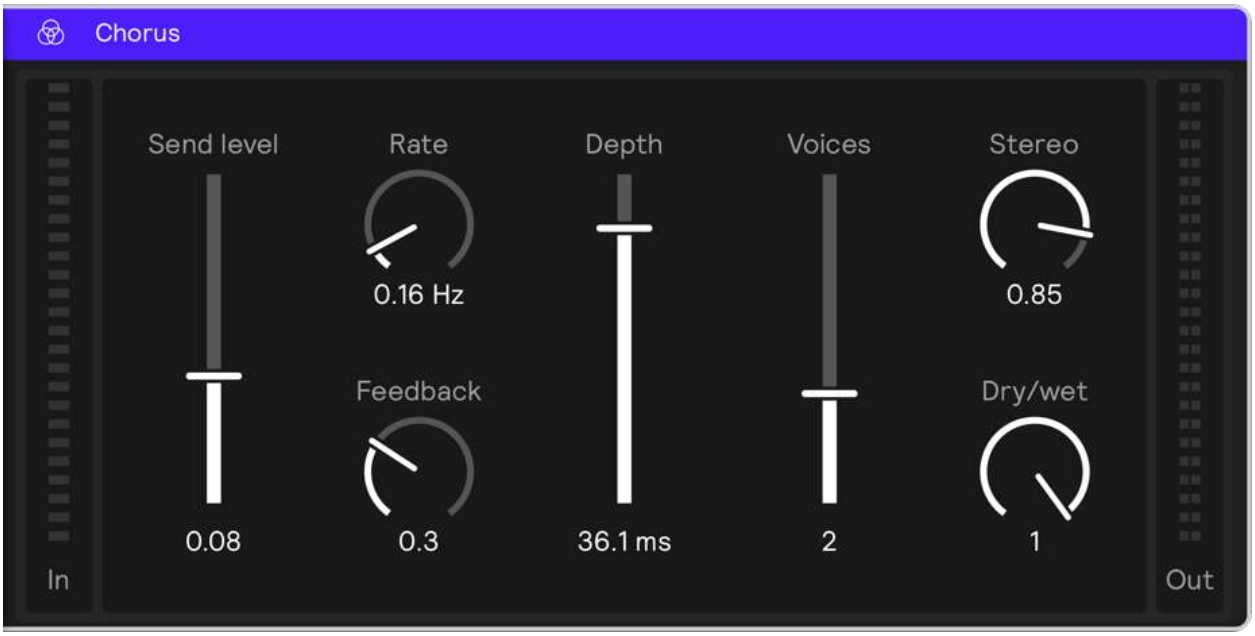


Figure 224: A screenshot of the Chorus effect

Parameters

Send Level

Reduces the gain of the audio input to the effect. Unlike adjusting Dry / Wet, modulating send level preserves any audio tails.

Voices

Increases or decreases the number of phasing filters.

Rate

Controls the speed of the modulation.

Feedback

Governs the level of modulated signal that is sent through the system again.

Stereo

Widens the left–right panning range of the effect.

Flanger

Flanging is created by duplicating the audio signal and delaying it by a minuscule amount, rather than applying all-pass filters like with chorusing and phasing modulations.

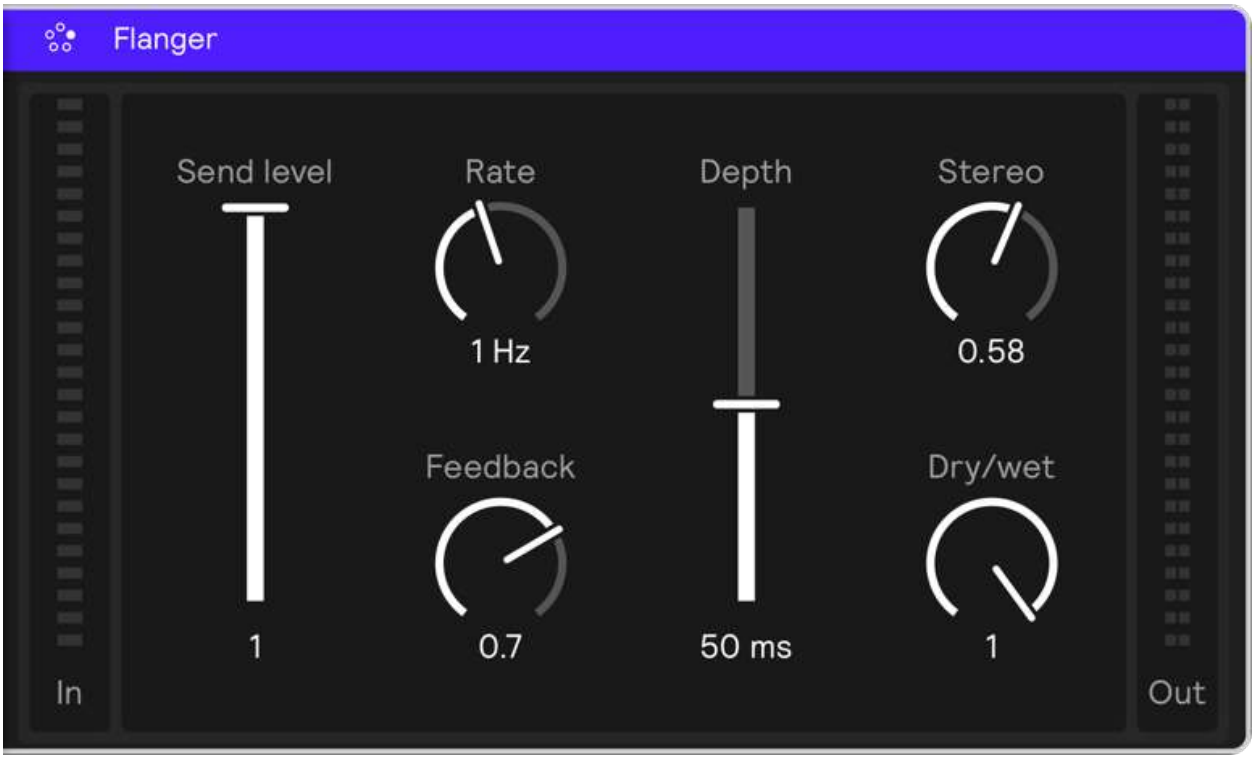


Figure 225: A screenshot of the Flanger effect

Parameters

Send Level

Reduces the gain of the audio input to the effect. Unlike adjusting Dry / Wet, modulating send level preserves any audio tails.

Depth

Controls the sweeping range of the effect.

Rate

Controls the speed of the modulation.

Feedback

Governs the level of modulated signal that is sent through the system again.

Stereo

Widens the left–right panning range of the effect.

Phaser

The **Phaser** sweeps a series of notches through the frequency spectrum using modulated all-pass filters, giving the signal a swirling, jet-like motion.

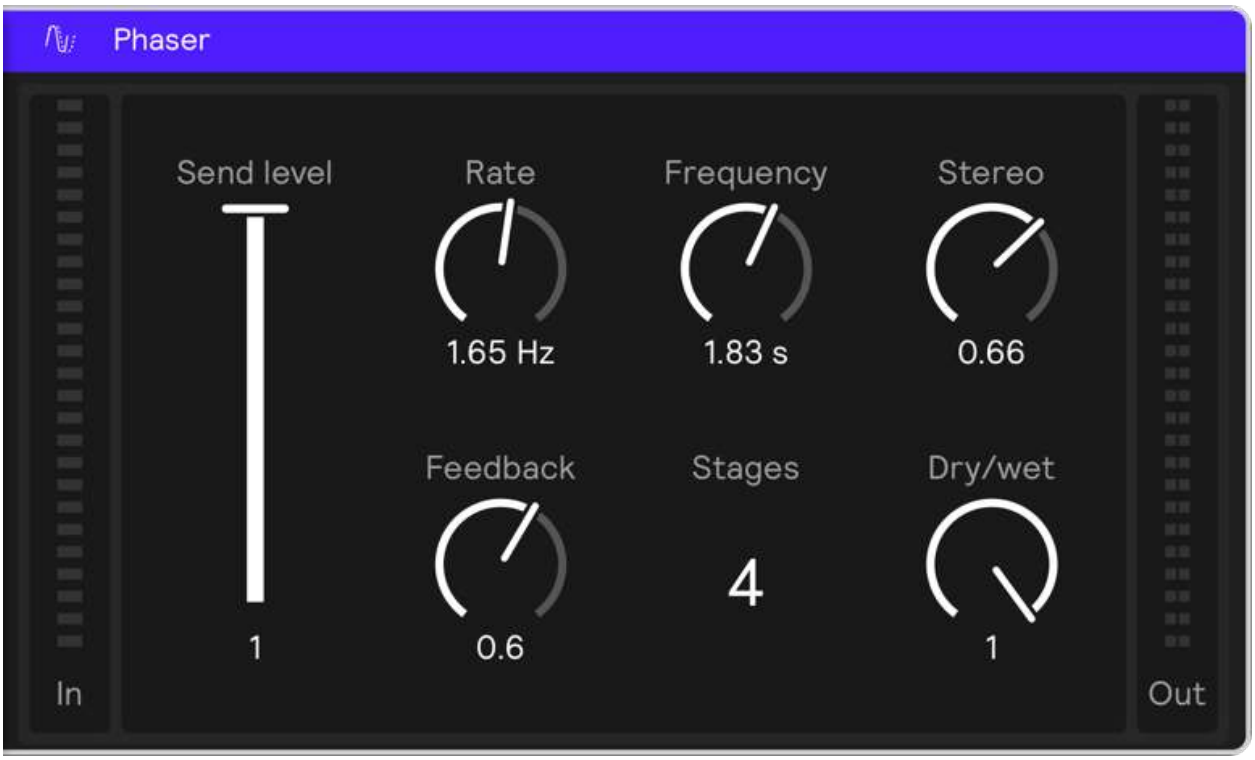


Figure 226: A screenshot of the Phaser effect

Parameters

Send Level

Reduces the gain of the audio input to the effect. Unlike adjusting Dry / Wet, modulating send level preserves any audio tails.

Voices

Increases or decreases the number of phasing filters.

Rate

Controls the speed of the modulation.

Feedback

Governs the level of modulated signal that is sent through the system again.

Stereo

Widens the left–right panning range of the effect.

Reverb

The **Reverb** unit in Sensory Percussion offers you a lot of control over the spatial environments you create for your kits.

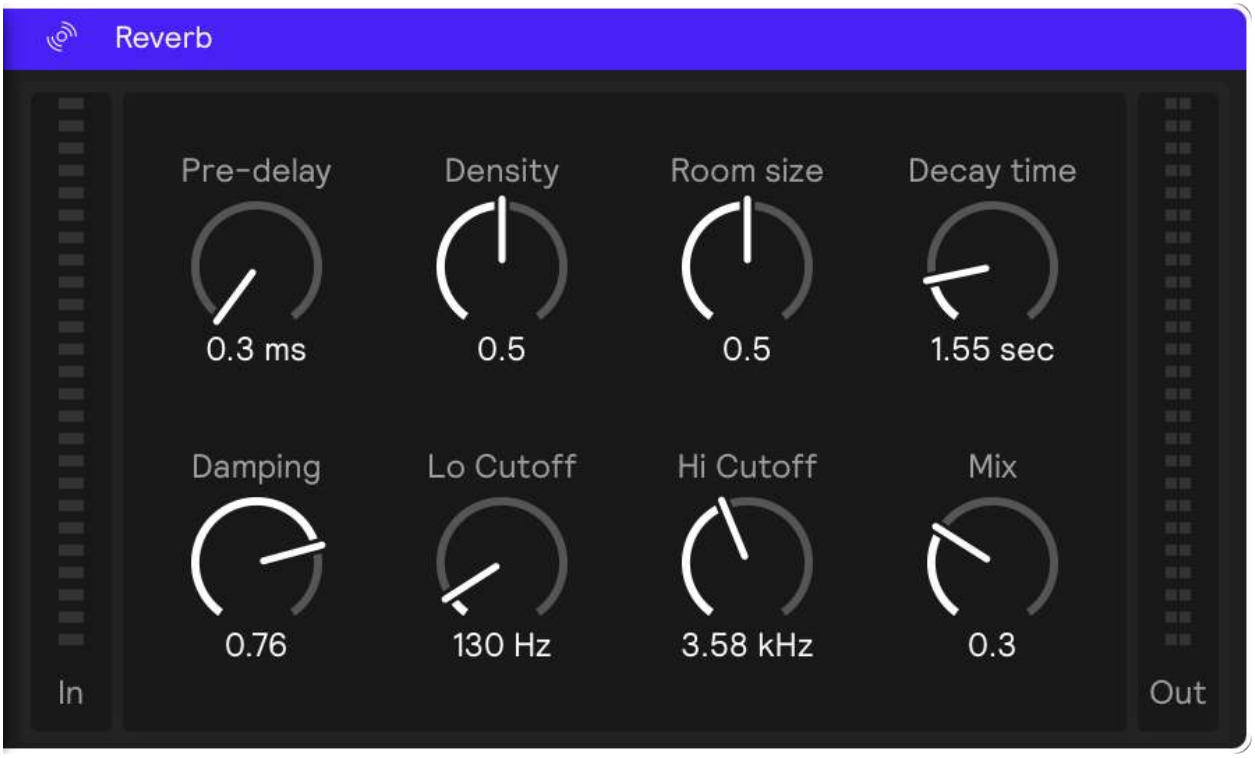


Figure 227: A screenshot of the reverb effect

Parameters

Pre-delay

Sets the onset time for the reverberation, in milliseconds. Set to zero, the reverb will kick in as soon as you strike the drum.

Room Size

Sets the size of the room, increasing or decreasing the space in between early reflections.

Damping

Adds a specialized lo-pass filter to the reverb in order to make the reverb sound muted, like there is padding on the environment's walls.

Convolution Reverb

The **Convolution Reverb** recreates the sound of a real acoustic space by running the incoming audio through an **impulse response (IR)** — a recording of how a room, hall, plate, or other space responds to a short burst of sound. The result is the natural reverb tail of that space applied to your signal.

It is a **send effect**: each source contributes to a shared reverb at its own send level, and the wet result is mixed back in.

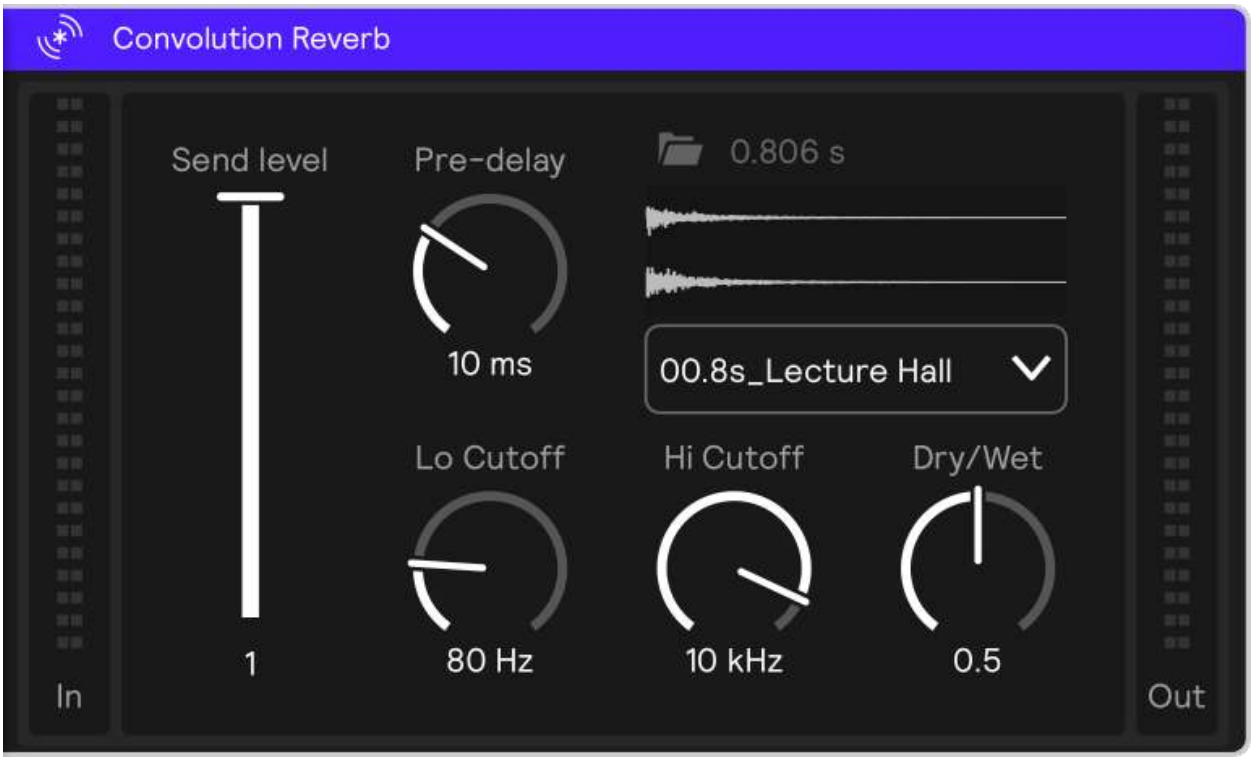


Figure 228: A screenshot of the Convolution Reverb effect

Parameters

Impulse Response (IR)

The IR is the heart of the effect — it defines the character and length of the reverb. You can load an IR three ways: pick one from the chooser, browse with **Open file**, or drag a `.wav` onto the effect.

Send Level

How much of the source is fed into the reverb (0–1).

Dry / Wet

Balance between the unprocessed (dry) signal and the reverb (wet), from fully dry to fully wet.

Pre-delay

The time between the source and the start of the reverb tail, in milliseconds.

Lo Cutoff

High-pass filter on the reverb (20 Hz–20 kHz). Raise it to thin out low-end rumble in the tail.

Hi Cutoff

Low-pass filter on the reverb (20 Hz–20 kHz). Lower it to darken and soften the tail.

The Lo Cutoff and Hi Cutoff filters shape the tone of the reverb tail only; together they set the band the reverb occupies.

Stereo Delay

A delay with separate left and right delay times. Set the times in milliseconds, or switch to **Tempo** mode to sync the repeats to the session tempo as note values. Click the chain icon (**Link**) to switch between stereo and mono.



Figure 229: A screenshot of the Stereo Delay effect

Parameters

Send Level

Reduces the gain of the audio input to the effect. Unlike adjusting Dry / Wet, modulating send level preserves any audio tails.

Delay L / Delay R

The left and right delay times, from 1 to 2,000 ms. In Tempo mode these are replaced by note values; see Tempo mode.

Link

Makes the right channel follow the left channel's settings, for a mono delay. While **Link** is on, the right channel's controls show the left channel's values, greyed out.

Feedback

How much of each repeat is fed back into the delay, from 0 to 99%. Higher values give more repeats.

Dry / Wet

Controls how much of the effect you hear. Turning it all the way to the left results in a completely dry, unprocessed signal. Turning it to the right results in a completely wet signal.

Tempo panel

The arrow at the left edge of the effect opens the tempo panel. The label beside the arrow shows the current state, for example **Tempo - Global**, or **Tempo - OFF** in Time mode, so you can leave the panel folded and still see how the delay is set.

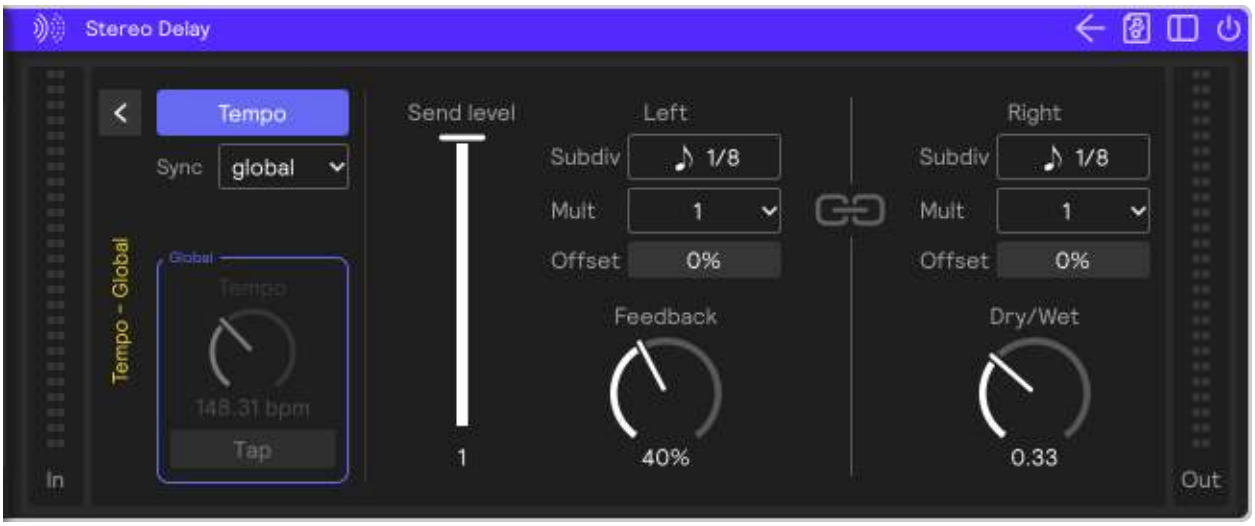


Figure 230: The Stereo Delay with the tempo panel open, in Tempo mode, synced to the global tempo

Control	What it does
Tempo	The button at the top of the panel. When it's lit, the delay is in Tempo mode (delay from a tempo and a note value); when it's off, it's in Time mode (delay in milliseconds) and the rest of the panel is greyed out.
Sync	Where the tempo comes from: **global** (the session tempo), **local** (the **Tempo** control below), or **midi** (an external MIDI clock, chosen under **Bus**; in the plugin, **host** follows your DAW).

Control	What it does
Tempo / **Tap**	The tempo (BPM) the delay times are based on. Tap to set it by ear. With **global** or **midi** sync, the clock sets the tempo, so these are greyed out and outlined and taps are ignored.

Tempo mode

In Tempo mode, each channel's delay time is replaced by three controls, in a **Left** and a **Right** column:

Control	What it does
Subdiv	The note value of one step of that channel's delay, e.g. 1/8 or 1/8 triplet.
Mult	How many of those steps make up the delay time. 2 × 1/8 is a quarter note.
Offset	Shortens or lengthens that channel's delay time by up to ±33%, for slightly pushed or dragged repeats, or a swung feel.



Figure 231: Tempo mode with different settings on each channel: 5 × 1/4 with a small negative offset on the left, 1/8 on the right

Tip:

For a wide stereo spread, turn **Link** off and set the two channels to different note values, like 1/8 on one side and 1/8 triplet or dotted 1/8 on the other. Use a small **Offset** on one channel to loosen up the repeats.

Modeled Delays

Sensory Percussion V2 has five modeled delay effects based on vintage tape, oil-can, and bucket-brigade echo units. They share the parameters below, and each one adds two character controls of its own (see The delays). The echo time is set either in milliseconds (**Time** mode) or synced to the session tempo as a note value (**Tempo** mode).

Common parameters

Delay

Sets the space between the echoes, from 5 to 2,000 ms. In Tempo mode this is replaced by note values; see Tempo mode.

Feedback

Controls how many times the echoes will repeat. A higher percentage means more echoes.

Echo

Controls the volume of each echo (but not the initial sound).

Balance

Sets the midpoint of the echoes. More to the left, and the echoes will center on the left side of the stereo image; more to the right and the effect will be centered on the right side.

St. Spread

Stereo spread: increase it to widen the left/right range of the echoes.

Vintage

Adds the filtering and character of the original analog hardware.

Dry / Wet

Controls how much of the effect you hear. Turning it all the way to the left will result in a completely dry, unprocessed signal. Turning it to the right will result in a completely wet signal.

Send Level

Sets the level of the signal sent into the echo.

Tempo panel

The arrow at the left edge of the effect opens the tempo panel. The label beside the arrow shows the current state, for example **Tempo - Global**, or **Tempo - OFF** in Time mode, so you can leave the panel folded and still see how the delay is set.



Figure 232: The Boss DM-2 with the tempo panel open, in Tempo mode, synced to the global tempo

Control	What it does
Tempo	The button at the top of the panel. When it's lit, the delay is in Tempo mode (delay from a tempo and a note value); when it's off, it's in Time mode (delay in milliseconds) and the rest of the panel is greyed out.
Sync	Where the tempo comes from: **global** (the session tempo), **local** (the **Tempo** control below), or **midi** (an external MIDI clock, chosen under **Bus**; in the plugin, **host** follows your DAW).

Control	What it does
Tempo / **Tap**	The tempo (BPM) the echo time is based on. Tap to set it by ear. With **global** or **midi** sync, the clock sets the tempo, so these are greyed out and outlined and taps are ignored.

Tempo mode

In Tempo mode, the **Delay** knob is replaced by three controls:

Control	What it does
Subdiv	The note value of one step of the echo, e.g. 1/8 or 1/8 triplet.
Mult	How many of those steps make up the echo time. 2 × 1/8 is a quarter note.
Offset	Shortens or lengthens the echo time by up to ±33%, for slightly pushed or dragged repeats, or a swung feel.

The delays

Each delay has two character controls of its own:

Delay	Controls
Boss DM-2	**bass** and **treble**: boost or cut the low and high frequencies of the echoes
Electro Harmonix Deluxe Memory Man	**rate** and **depth**: the speed and amount of modulation
Maestro EchoPlex EP-1	**wow/flut** (tape wow and flutter) and **drive** (overdrive)
Maestro EchoPlex EP-3 Solid-State	**bass** and **treble**: boost or cut the low and high frequencies of the echoes
Tel Ray OilCan	**tone** and **var** (variation)

Boss DM-2



Figure 233: A screenshot of the Boss DM-2 Delay effect

Electro Harmonix Deluxe Memory Man



Figure 234: A screenshot of the Electro Harmonix Memory Man Delay effect

Maestro EchoPlex EP-1



Figure 235: A screenshot of the Maestro EchcoPlex EP-1 delay effect

Maestro EchoPlex EP-3 Solid-State



Figure 236: A screenshot of the MaestroEchoPlex EP-3 delay effect

Tel Ray OilCan



Figure 237: A screenshot of the Tel Ray Oil Can delay effect

Gain Utility

The **Gain Utility** effect is a simple gain control that can be used to boost or cut signal volume and apply stereo processing.

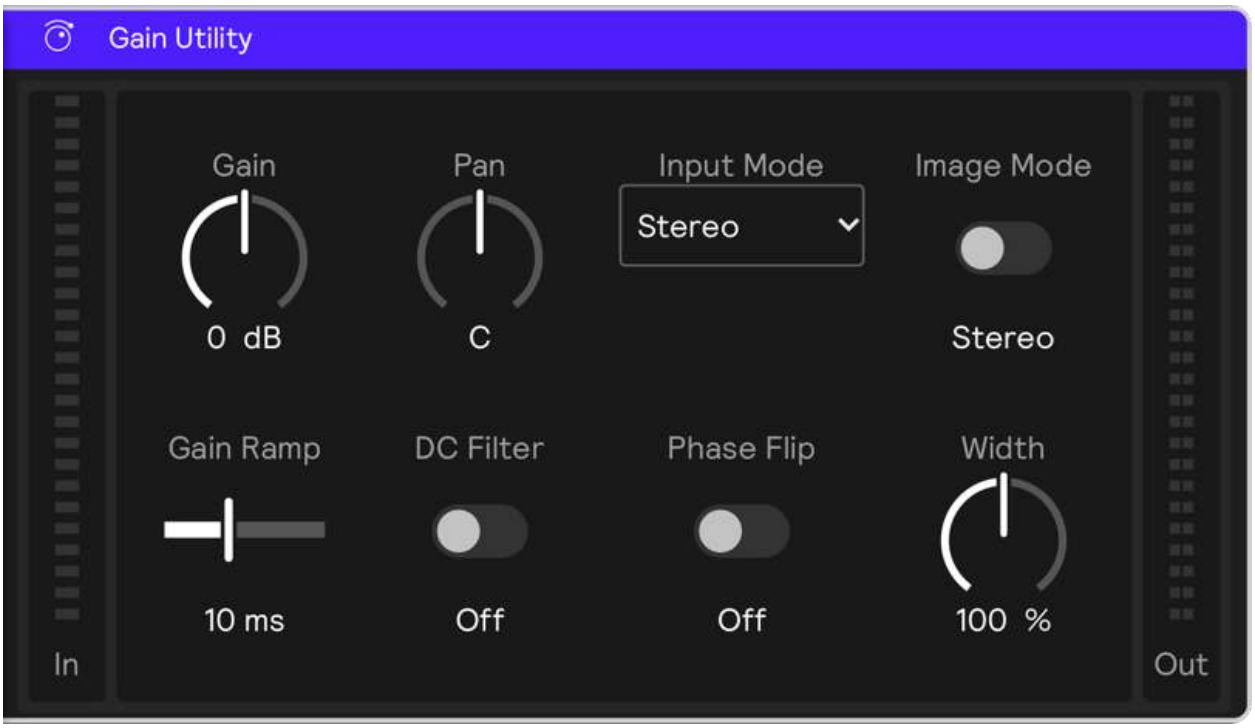


Figure 238: A screenshot of the Gain Utility effect in stereo mode

Parameters

Gain

Sets the amount the signal is boosted or cut in dB.

Pan

Sets the position of the signal in the stereo field.

Gain Ramp

Sets the amount of time it takes for the gain to reach the desired level.

DC Filter

When enabled, removes any DC offset from the signal.

Phase Flip

When enabled, flips the phase of the signal, which may aid phase cancellation. This will not be audible unless other nearly identical signals are sounding simultaneously.

Input Modes

Input Mode takes the stereo input channels and passes them in the following ways:

- **Stereo** mode is the default mode. This mode leaves left and right channels unchanged.
- **Flip** reverses the left and right channels.
- **Sum (mono)** sums the left and right channels to a mono signal.
- **L (mono)** takes only the left channel signal for use as a mono signal.
- **R (mono)** takes only the right channel signal for use as a mono signal.

Image Modes

When Input Mode is Stereo or Flip, Image Modes are available to manipulate the stereo image. Choose between Width and Mid/Side.

- **Width** allows you to increase or decrease the stereo image. 0% yields a mono signal and values above 100% widen the sound.
- **Mid/Side** allows you to crossfade between sum (center) and difference (side) of L and R.

Fx Chain

The **Fx Chain** is like a Group for your effects. If you have multiple effects, you can drag and drop them into one Fx Chain. Right now, the Fx Chain is mainly useful for organizing layers, but it will have more parameters in a future update.

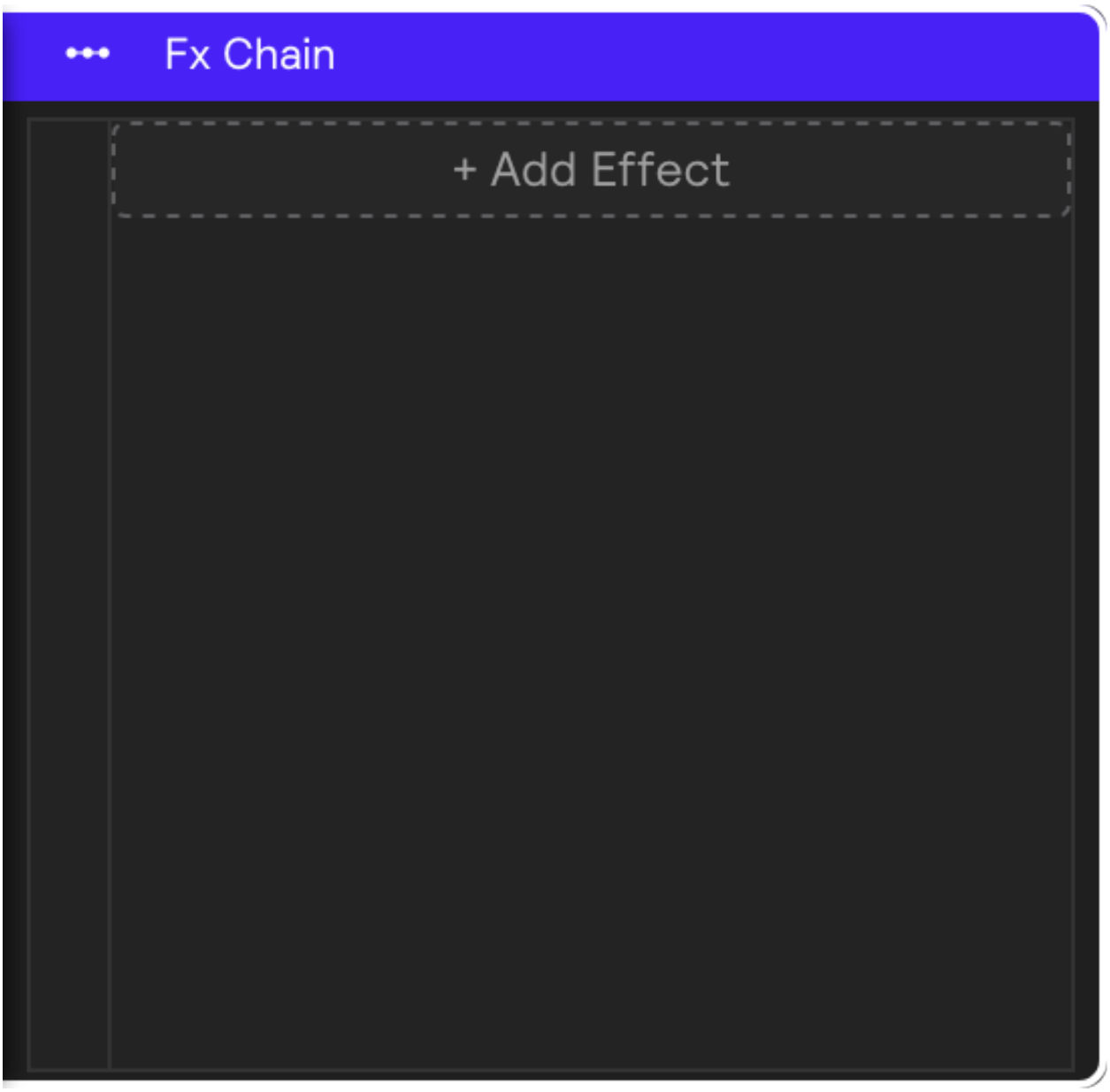


Figure 239: A screenshot of an FX chain housing a Compressor, Limiter, Soft Clipper, and 3 Band EQ

Virtual Inputs

What are Virtual Inputs?



Figure 240: The virtual inputs panel is highlighted

Virtual Inputs are the bridge between your hardware inputs and the sound worlds of Sensory Percussion V2. Here, you can quickly change the routing between your physical setup and the layers within Sensory Percussion sets.

So why are there two kinds of inputs in V2? Because separating hardware inputs from virtual inputs allows you to have more flexibility and functionality across different setups. Think of them like choosing instruments when you're orchestrating a piece. You might not have 4 kick drums in front of you, but you can still write for that by adding 4 kicks in the Virtual Instruments panel.

For example, if you have a set with a virtual keyboard input, but you don't have your keyboard handy at that moment, that's not a problem. You can keep that virtual input and control it using a drum sensor without changing anything you've already created. Another example might be controlling your 4-drum set with a small keyboard while you're on a plane.

Remember, Virtual Inputs are a per-set decision while Hardware Inputs stay the same across all your sets.

Adding a Virtual Input

Virtual inputs are automatically created based on your hardware inputs and/or the input filters that you have in your set. So, if you have four active hardware inputs and you create a new set, four virtual inputs will automatically be created. If you want to create a virtual input for a drum/MIDI device/analog audio source that you don't currently have connected, you can add an input filter for that input on any module in your set, and a matching virtual input will automatially be created.

Input routing

Next to the kit graphic, the **Input routing** card lists every input in the set, with three columns:

Column	What it shows
HW	Whether the input has a hardware source. Filled means your hardware is sending it; outlined means it isn't.
Input	The input's name.
Set	Whether anything in the set listens to the input. Filled means yes. Hold the pointer over a filled marker to see which layers and instruments listen to it. When nothing listens but the hardware is sending, the cell becomes a dashed **+** for adding an instrument.

An input your hardware sends but nothing in the set listens to is dimmed. Hover any cell, input, or column header to see what it means in the hint bar.

Input routing



Figure 241: The Input routing card: inputs with filled and outlined HW markers, dimmed inputs, and a dashed + in Cymbal 1's Set column

Set tooltip

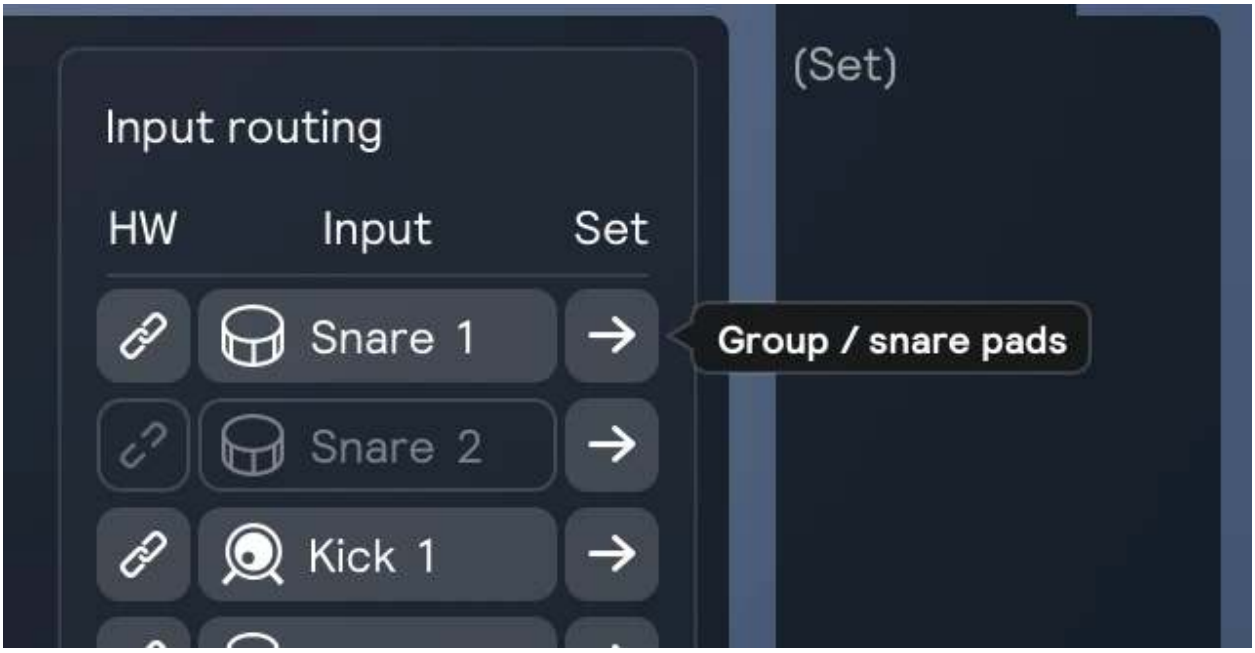


Figure 242: Holding the pointer over Snare 1's Set marker shows a tooltip naming what listens to it: Group / snare pads

Adding instruments to an input

You can fill an input straight from the Virtual Inputs panel, without opening the library.

On a drum. Hover a drum that your hardware feeds but that has no instrument yet, and a **+** appears on its head (on a cymbal, on the bell). Click it for a menu titled with the input it fills, such as **Add to Snare 1**:

- the instruments for that kind of drum (for a snare input, **Snare instruments**), one submenu per library: your own first, then the Core Library and each sound pack
- **Other instruments**: everything else, one submenu per role
- **Controllers** and **Generators**: blank objects from the Build library

Whatever you choose arrives already wired to that drum, as if you'd dragged it from the library onto the drum. The **+** never appears on a drum that already has an instrument, so it doesn't get in the way while you play. To stack a second instrument on a drum, right-click it for the same menu.

On the whole kit. The area behind the drums is the kit itself. Hover it and a **+** appears at its top right. When no drum in the set has an instrument yet, the **+** stays visible. It lists the **drum kits** in the library, grouped by library the same way. Choosing one maps its instruments across all the drums your hardware is sending, the same as dragging a kit onto the graphic. Right-click the kit area to stack a second kit.

From the Input routing list. The dashed **+** in an input's **Set** column opens the same menu for that input. This is how you fill inputs that aren't drums: MIDI and pad inputs offer instruments, controllers, and generators, and an analog input, which carries audio rather than hits, offers the **Audio Insert** that reads it.

+ on a drum



Figure 243: The + that appears when you hover an empty cymbal in the kit graphic

Add to … menu

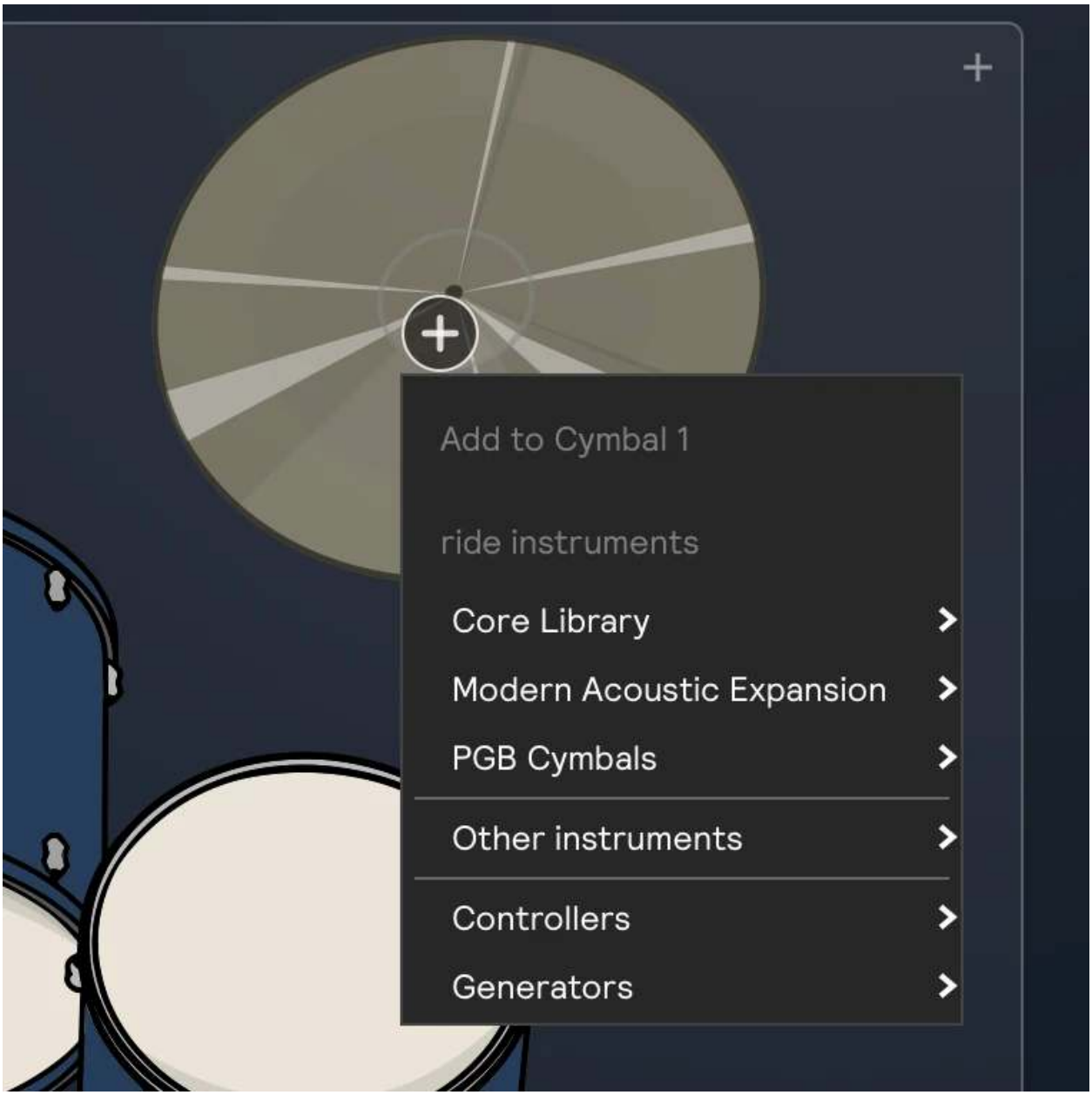


Figure 244: The Add to Cymbal 1 menu: ride instruments by library, Other instruments, Controllers, and Generators

+ on the kit



Figure 245: The Add drum kit menu from the + at the top right of the kit graphic, grouped by library

Types of virtual inputs

Here are all of the different types of virtual inputs:

Snare



Figure 246: A snare virtual input

Kick



Figure 247: A kick virtual input

(The kick looks slightly different because it has fewer relevant zones.)

Tom



Figure 248: A tom virtual input

Analog



Figure 249: An analog virtual input

Keyboard



Figure 250: A keyboard virtual input

For now, there are two types of routing options: One is the typical 1:1 relationship between virtual and hardware inputs (virtual kick 1 controlled by hardware kick 1, virtual snare 1 controlled by hardware snare 1, etc.) The second option is to have two or more hardware inputs controlling the same virtual input (2 tom hardware inputs set to tom 1 will both control virtual input tom 1). Eventually, you'll be able to have any hardware input connect to any (or multiple) virtual inputs, but most of the time, you'll want the typical 1:1 relationship between inputs.

Once you have your inputs connected and routed how you want them, you're ready to dive into edit view and create your own sounds!

Assignments and Modulators

Assignments are a great way to add expressivity to your sounds. Assigning an aspect of your playing to control a knob, button, or slider within your set allows the sounds to really respond to

the nuances of your playing. Create different combinations of assignments to make your set respond to *how hard*, *how fast*, and *where you play*–all in real-time and with fine-tuned control!

When using an assigment or modulator, there are three main things to consider:

1. Destination: What parameter do you want to control? Examples: reverb dry/wet, panning left/right, mute button on/off, transpose up/down, sample attack time

2. Source: What drum/device/input do you want to control it with? Examples: zone of snare drum, button of a MIDI controller, macro knob

3. Type: How do you want to control it? Examples: speed, velocity, external MIDI CC, LFO modulation

Assignments and modulators both allow you to change any of these three things at any point. The main difference is that assignments allow you start with the assignment's destination parameter (#1), while modulators allow you to start with the mode of control (#3). Which one you choose depends on your preferred workflow. To understand the difference, let's look at an example of each:

Assignments

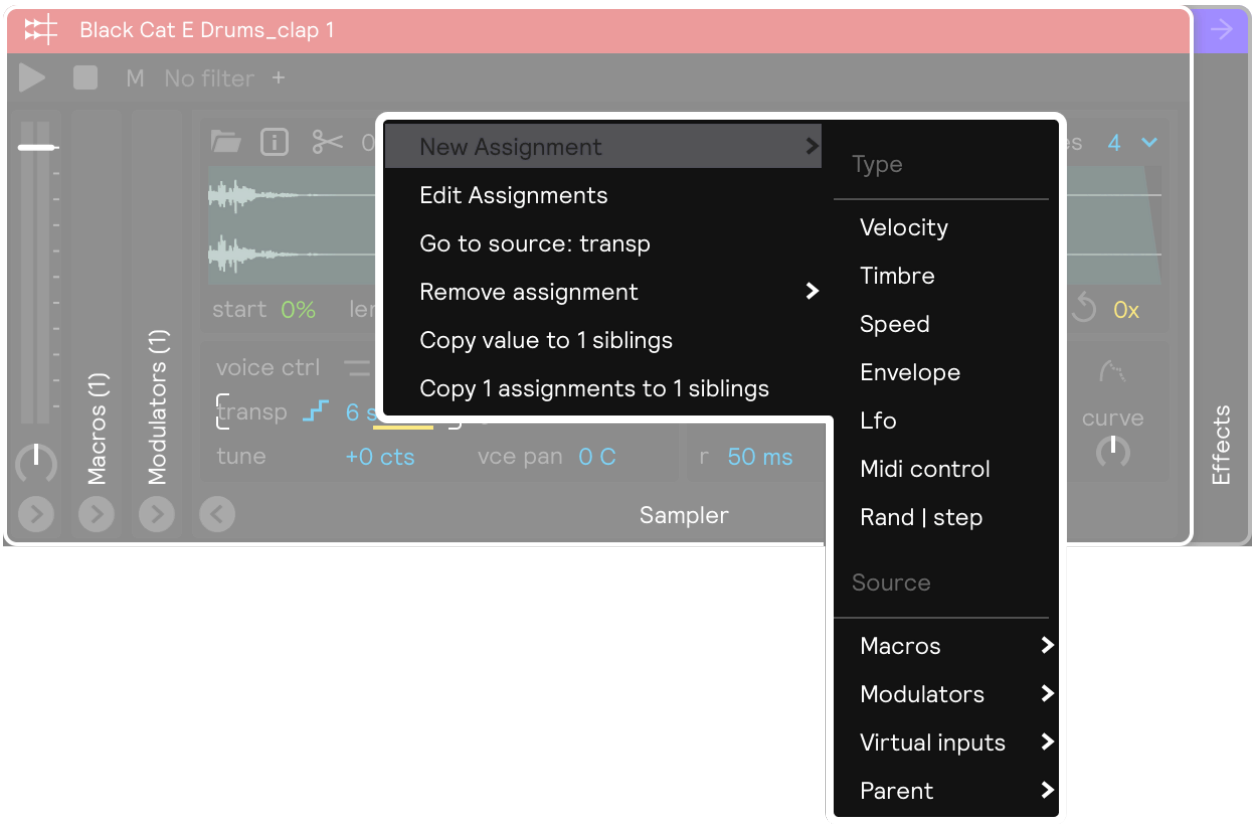


Figure 251: A screenshot of the right-click pop out menu to create a new assignment

The process of making an assignment starts with the parameter receiving the assignment. Right-click on the parameter in your set that you want to control and select *New Assignment*. In the example above, the sampler's 'transpose' parameter will be the destination of the assignment. (For the rest of that right-click menu, and for which parameters can take an assignment at all, see Parameters.)

Once you've chosen the destination, you can create an assignment based on the assignment's **source** or the assignment's **type** from this right-click menu.

Source: Selects the input that controls the assigned parameter.

Type: Selects how the input controls the assigned parameter.

Selecting any of the 'Type' options from this menu will create an assignment with its 'Type' set to that option (Velocity, Timbre, Speed, Envelope, LFO, MIDI Control, `Rand | step`) and its Source set to 'Default'.

Having a 'Default' source means that the assignment will inherit the input(s) from any input filters present on or above the assigned module in its respective layer. Set-level macros can receive assignments, but there is no 'Default' source option on these assignments because input filters don't apply to them.

> **Tip:**
>
> Selecting 'Default' as the source of an assignment on a module will allow you to move that module around to different layers without breaking the assignment links.
>
> For this reason, 'Default' is the recommended assignment source, with one notable exception being Cross-Control. If you want a module's parameter to be controlled by a different input than the input that is triggering the module, you must select the source input directly.

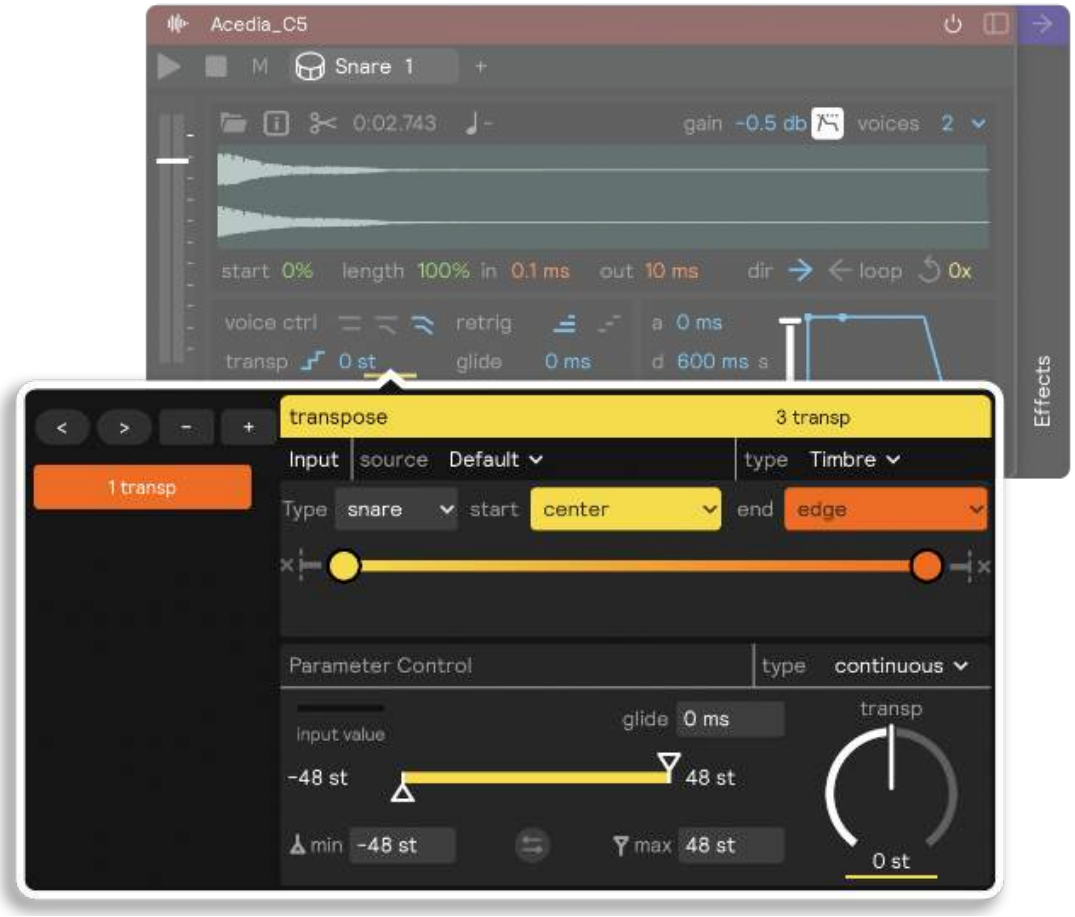


Figure 252: A screenshot of the pop-up assignment creation window

The screenshot above shows the result of choosing ‘Timbre’ from the quick create options. With this assignment, you can transpose the pitch of the sampler up/down by playing from center to edge on snare 1.

In addition to Source and Type, the assignment window allows you to adjust the sensitivity, parameter control range, parameter control type (continuous, momentary, toggle, target), and glide amount (the amount of time it takes to move from one output value to the next).

Modulators

Modulators work the same way as assignments, but while assignments start from the recipient of the assignment before choosing the mode of control, modulators start from the mode of control before choosing what will receive the modulation.

To access the Modulator panel of a module, click the panel icon in the top right corner of the module. From the dropdown, select “Modulators” to view the Modulator panel. Click the + button in the bottom right of the Modulator panel to add a modulator.

Once you've created your modulator, you need to grab its handle and drag it onto the parameter you want it to control:



Figure 253: A screenshot of a modulator being dragged on to a parameter

The example above shows a timbre modulator being dragged onto the transpose parameter of a sampler. This will result in the same assignment as the previous example: timbre from center to edge on snare 1 transposing the sample up/down.

It's often preferable to use a drag-and-drop modulator rather than a right-click assignment if you plan to use that same modulator type/source to control multiple destination parameters. In that case, rather than making identical assignments on each destination parameter, you can drag the same modulator onto each one. Then, any changes you make to that modulator will be applied to all of its destination parameters.

> **Tip:** Assignments from Any Source to Any Target
>
> Sensory Percussion 2 lets you create just about anything with almost no restrictions on where you can drag-and-drop modulators and macros to create assignments. You can, for example, drag a across layers to any depth. Or create a circular assignment chain of modulators – please don't do this, it's generally a bad idea.
>
> Keep in mind that if you use a lot of cross-control elements, it might be hard to reuse these elements in other sets as copy-pasting them into another set will break the assignment links. You can avoid this by grouping them into a selection from the cross-controlled layers to encapsulate them in a single layer.

Assignment/Modulator Types

Velocity



Figure 254: A screenshot of the velocity modulator type

Sets a range between soft and hard. For example, if you assign velocity to filter cutoff without adjusting the range, quiet hits will set the filter cutoff close to 20 Hz, while loud hits will open the cutoff to around 20,000 Hz.

Timbre

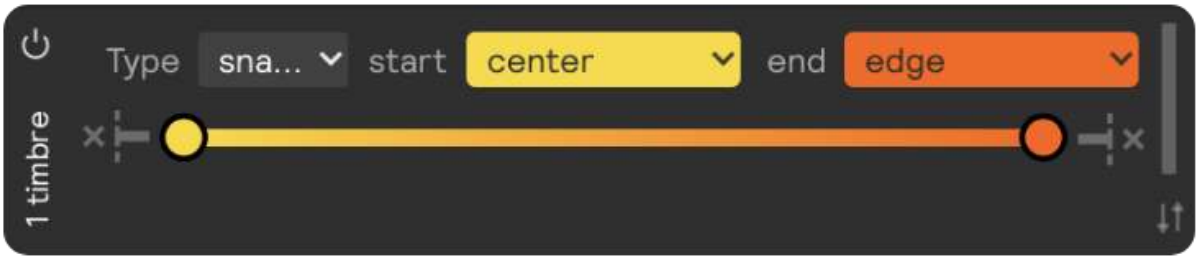


Figure 255: A screenshot of the timbre assignment type

Sets a range between two timbral zones, for example: center and edge. You could right-click on a Reverb mix knob, select *New Assignment*, and select *timbre: center to edge*. Now hits in the center will send the mix knob close to 0 (no reverb) and hits on the edge will send the mix knob to close to 100.

Speed



Figure 256: A screenshot of the speed modulator type

Sets a range between slow and fast. Playing fast (like buzz rolls) will set the parameter to its top value. As with all assignments you can adjust the sensitivity: maybe you want the parameter to be at its low value at medium fast playing, and move to its top level with brisk 16th notes, in that case you would drag both sides of the sensitivity range inwards.

Pedal



Figure 257: A screenshot of the pedal modulator type

This is a hi-hat-specific modulator type that uses the pressure values from the your hi-hat sensor to modulate any parameter. This can be super fun when assigned to pitch control of the entire set, or to crazy effects chains. It's a great way to get your left foot involved in the modulation fun of Sensory Percussion!

Envelope

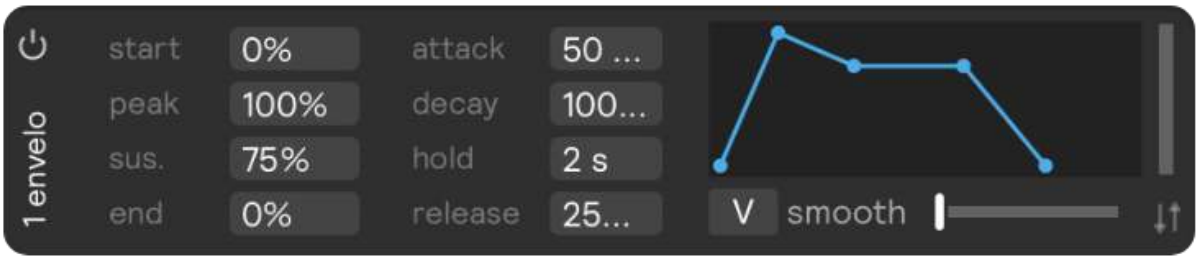


Figure 258: A screenshot of the envelope modulator type

Sends a shape (*attack*, *decay*, *sustain*, *release*) to a parameter range. And because Sensory Percussion is a drumming system (in most cases you won't be interfacing with envelopes using a piano keyboard) there are the additional parameters of* start*, *peak*, *hold*, *end*, and *use velocity* which simulates the pressing and holding of a key.

LFO (Low Frequency Oscillator)

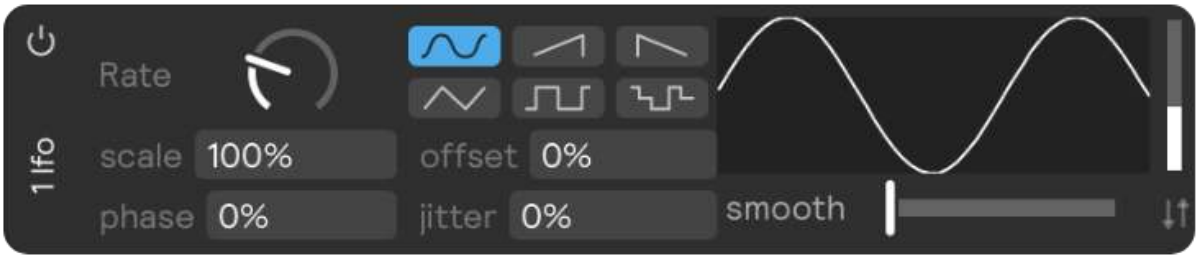
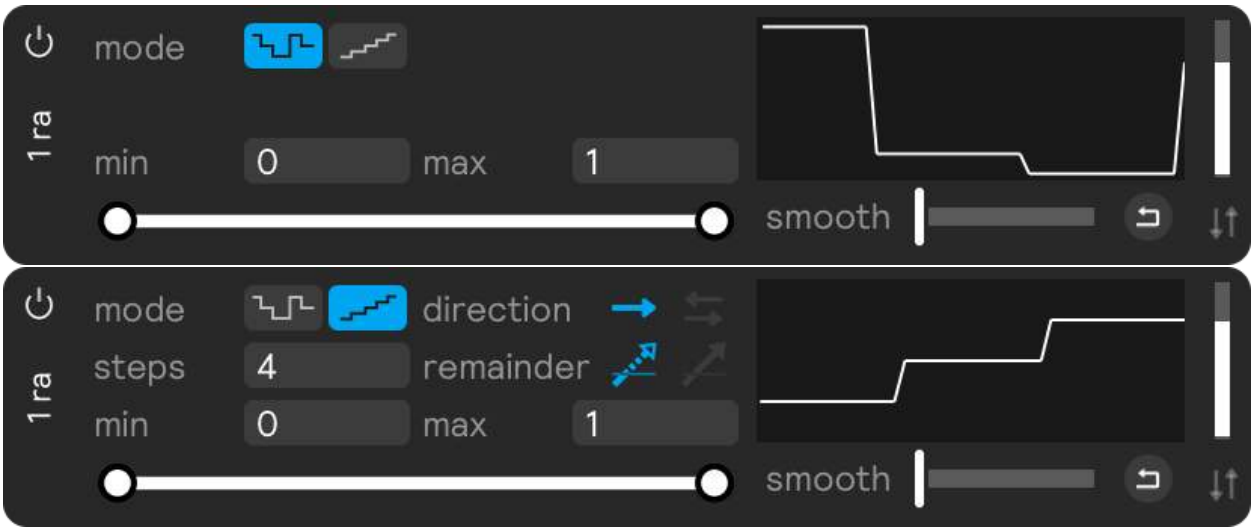


Figure 259: A screenshot of the oscillator modulator type

Sends an automated wave pattern to a parameter range. This is a nice way to control a parameter without actually playing a drum. Available shapes are *sine*, *triangle*, *sawtooth up*, *sawtooth down*, *square*, and *random*. You can scale the shape, add smoothing, adjust the phase, change the rate (0.01 Hz - 40,000 Hz), and add jitter.

Random | Step



Upon receiving a hit message, `rand | step` sends incremented or randomized steps to what it is assigned to. In `steps` mode, it will evenly divide the parameter range into the number of steps you have selected. If you add 100 steps to the modulator, it will increment what ever knob it is assigned to in this order: `.01`, `.02`, `.03`, etc. In `rand` mode, it will simply send a a randomized step within the `min max` boundary you have set.

In `steps` mode, the `direction` control allows you to set whether the steps increment forwards and reset to the lowest value after the top is reached, or if it stairsteps down in reverse. If you simply want the steps to start at the top and decrement, choose the `forward` direction, but invert the range by slecting the up/down arrow icon in the bottom right of the icon.

`Remainder` is an interesting parameter that enables beautiful patterns to emerge if it is in `carry over` mode and you have input a decimal point value into `steps`. For example, if you have the `rand | step` modulator assigned to a macro knob, and `2.06` set for `steps`, and `Remainder` left in its default `ignore remainder` position, then when the modulator receives hit messages, the macro knob will increment between just three values: `0`, `.49`, and `0.97`. But, if you set the `remainder` parameter to `carry over`, then it will create a more interesting, much longer pattern that begins like this: `0`, `.49`, `.97`, `.46`, `.94`, `.43`, `.91`, `.40`, `.88`, `.37`, and so on.

Video: Random | Steps Modulator

MIDI

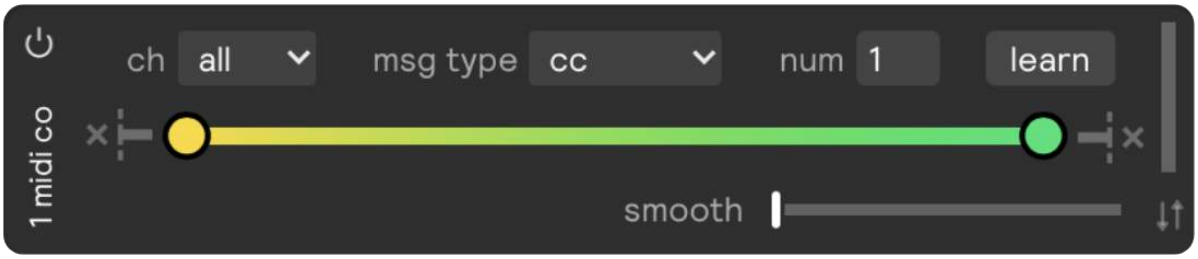


Figure 260: A screenshot of the MIDI control modulator type

To add a MIDI assignment, first make sure you have enabled your MIDI device in Sensory Percussion audio settings, and added a Hardware MIDI input.

Make sure you have a MIDI virtual input added to your set.

Now right-click on a parameter and select that virtual input as the assignment input. Select “learn” in the top right hand corner and press a button or key on your MIDI device. Now that button/key is the input to the assignment.

If you want a knob or fader to control a parameter, select a MIDI Control as the assignment/modulator input. Select “learn” and wiggle a knob to set the assignment input.

This “learn” button exists in the MIDI control assignment window as well as the MIDI control modulator:

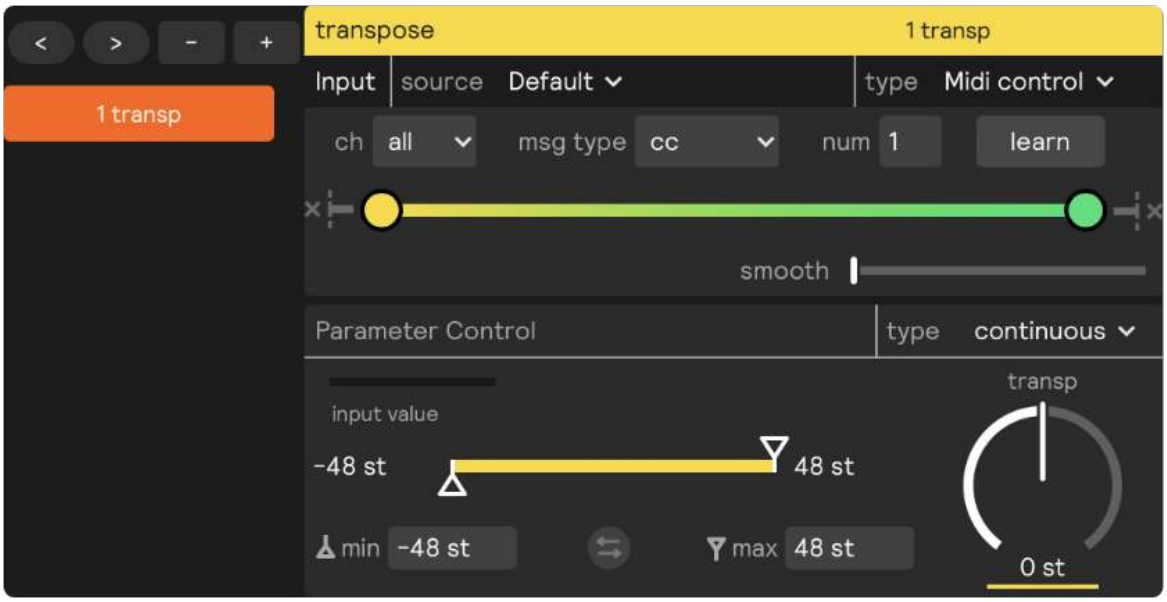


Figure 261: A screenshot of the MIDI control assignment type

Parameters

Almost every control in Sensory Percussion is a **parameter**: a single named value belonging to a module, an effect, a modulator, or a macro. They all behave the same way, so once you know the handful of gestures below, they work everywhere.

Types

A parameter's type decides what it can hold, and that in turn decides which control you see.

Type	Looks like	Holds
Continuous	Slider, knob, number box	A number over a range, often with units (ms, Hz, %, dB). The range can be linear or curved, so the middle of the travel isn't always the middle of the numbers.

Type	Looks like	Holds
Integer	Number box, stepped slider	A whole number, like a MIDI channel or a voice count.
Toggle	Switch, tick, lit button	On or off.
Trigger	Button, LED	Nothing at all — it fires an action, so there's no value to store.
List	Dropdown, radio row	One choice out of a fixed set.
Text	Text field	A name, a path, an OSC address.

Working with a control

Gesture	What it does
Drag	Change the value. Number boxes take a vertical drag; sliders and knobs follow their track.
Double-click	Reset to the parameter's default. Works on the controls with a range to return to: sliders, knobs, and number boxes.
Type	Start typing a number over a focused slider or number box and an edit field opens. `Enter` commits.
Arrow keys	Nudge a focused slider up or down by one step.
Mouse wheel	The same as a small drag, once the control has focus.
Right-click	Open the parameter menu: assignments, copy to siblings, and live values.

Number boxes also take precision modifiers. Hold `Shift` while dragging or scrolling for a fine adjustment, or ⌘ for a coarse one. The pointer disappears while you drag and reappears where it started, so you can keep dragging past the edge of the screen.

The parameter menu

Right-clicking a parameter is how you reach everything it can do.

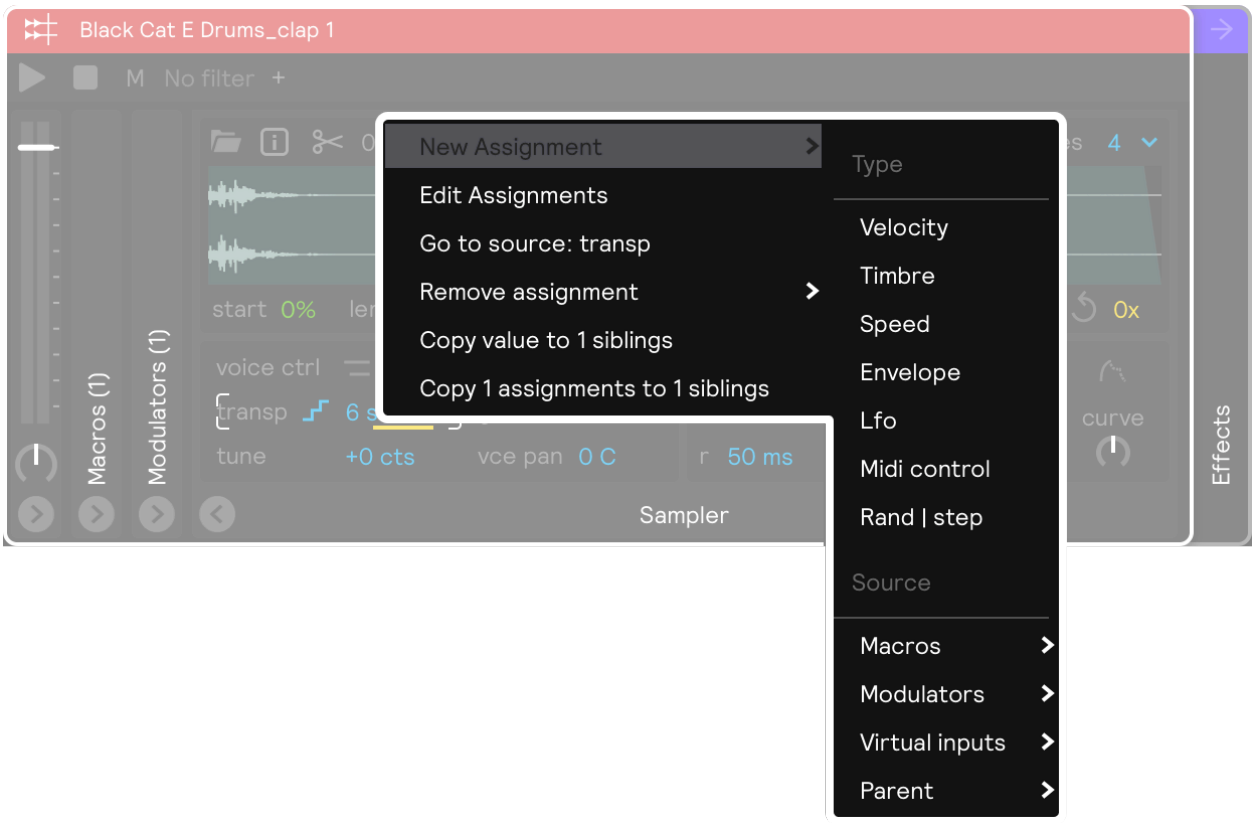


Figure 262: A screenshot of the right-click menu on a sampler's transpose parameter

Assignments

An assignment lets something else drive a parameter — your playing, a modulator, a macro, or incoming MIDI. A parameter with at least one assignment gets a **yellow underline** beneath its control.

Only parameters with something to move can be assigned: continuous values, integers, toggles, and triggers. Lists and text fields can't.

To create one, either drag a source onto the control — valid targets highlight as you drag — or right-click and use `New Assignment`, which asks for the **type** (how the source drives the value) and the **source** (which input, modulator, or macro it comes from). The Assignments and Modulators page covers the available types and what each one does.

The rest of the menu handles assignments that already exist:

Item	What it does
Edit Assignments	Opens the assignment editor for this parameter. Greyed out when there aren't any.

Item	What it does
Go to source	Jumps to the modulator or input driving the parameter.
Remove	Deletes an assignment, picked by name.

Some assignments are refused because they couldn't work: a parameter can't drive itself, the same source can't be connected twice, and any pair that would form a loop is rejected.

Copying to siblings

If you need to set the *same* value on the *same* parameter across several objects at the same level — the same control on every layer, say — the menu offers `Copy value to N siblings` and `Copy N assignments to N siblings`. Set it once on one of them, then spread it across the rest.

Live values

A parameter can hold two different numbers at once:

- The **saved value** is what's written into your session, and what comes back when you reload it.
- The **live value** is what the engine is actually using right now. Assignments driven by your playing, macros, and incoming OSC or MIDI all move parameters without touching the saved value.

Most of the time these agree. They come apart the moment something other than your own edit moves a control — and then the question is which of the two should survive into the file.

Two modes

Remember live changes is the default: the live value *is* the value. Saving writes whatever the engine is currently using, so a session comes back sounding exactly as you left it, including everything your playing moved.

Manual makes the saved value the value. Live movement is temporary, and is discarded on save unless you deliberately commit it. This is worth reaching for when you've dialed a session in by hand and don't want a performance quietly rewriting it.

The app-wide default is in Settings → General under `Remember live changes`.

The divergence dot

In manual mode, a small light blue dot appears on any control whose live value has drifted from its saved one. It shows up on number boxes, sliders, knobs, toggles, and decibel sliders.

The dot means: *what you are hearing is not what will be saved.*

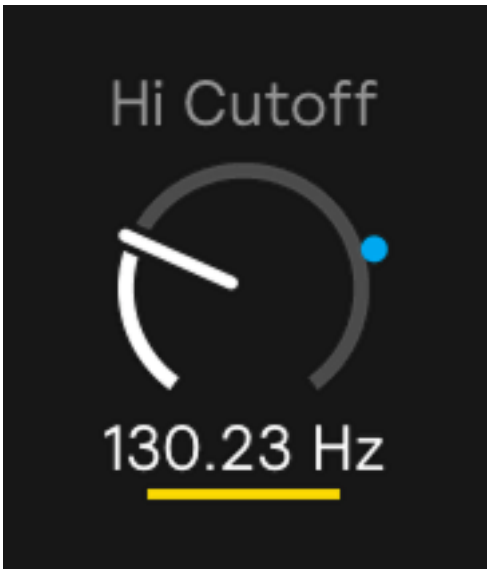


Figure 263: A screenshot of a Hi Cutoff knob showing the light blue divergence dot and the yellow assignment underline

There's no dot in **Remember live changes** mode, since there's nothing to reconcile — the live value is already the one headed for the file. It also hides while you're actively dragging a control, so it doesn't flicker under your own hand.

Deciding what to keep

Right-clicking a diverged control adds two more items to the parameter menu:

Item	What it does
Save live value to state	Commits the live value. It becomes the saved value and the dot clears.
Reset to saved state	Pushes the saved value back out to the engine, overwriting the live value and returning the sound to what's in the file.

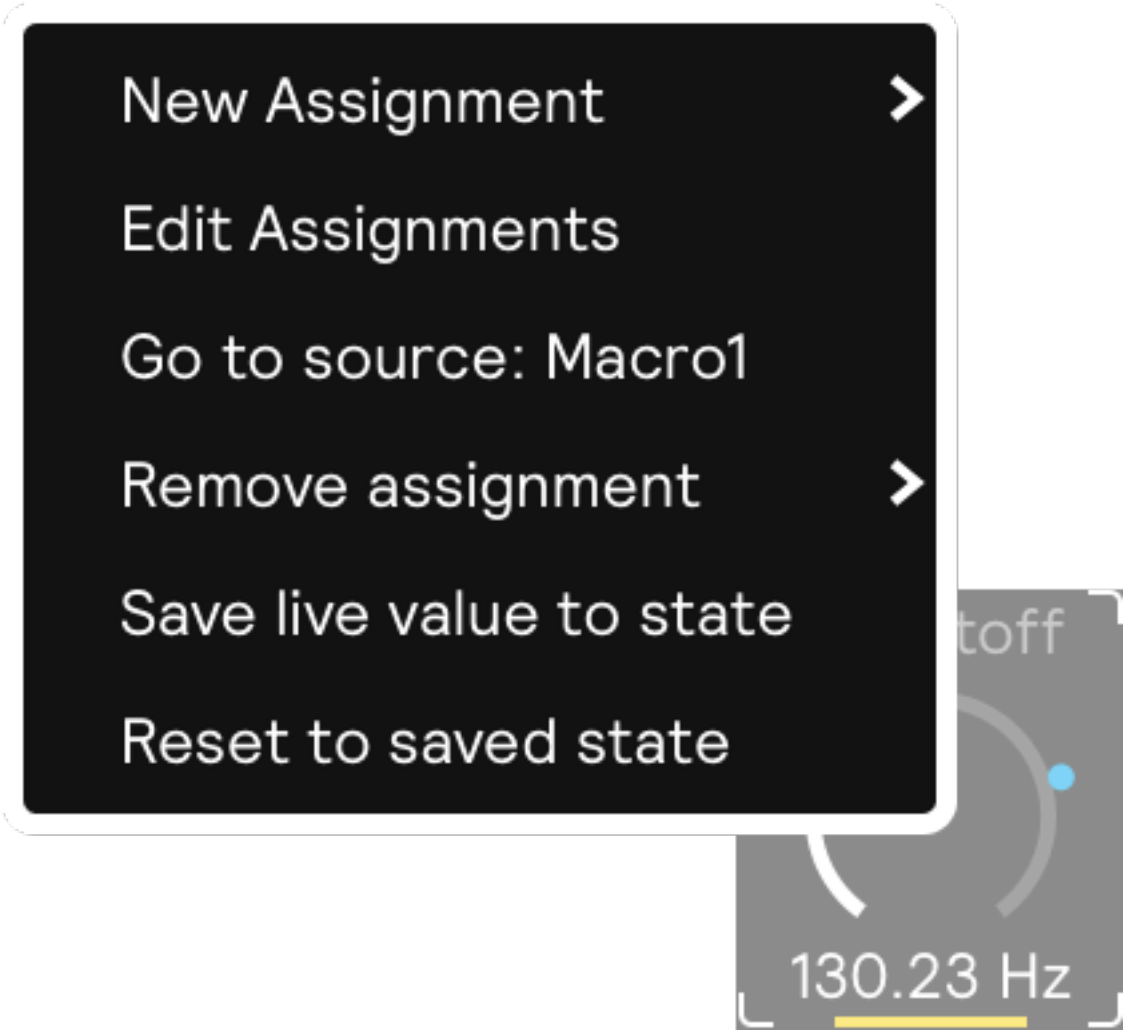


Figure 264: A screenshot of the parameter menu on a diverged control, showing the two live-value items at the bottom

Both are undoable, and both appear only in manual mode, on a parameter that has actually diverged. Macros carry the same pair.

Per-module override

Right-click a module or effect — anywhere that isn't a control — for a **Live values** section at the bottom of the menu. `Remember live changes` there pins that module to a mode of its own, overriding the app-wide setting.

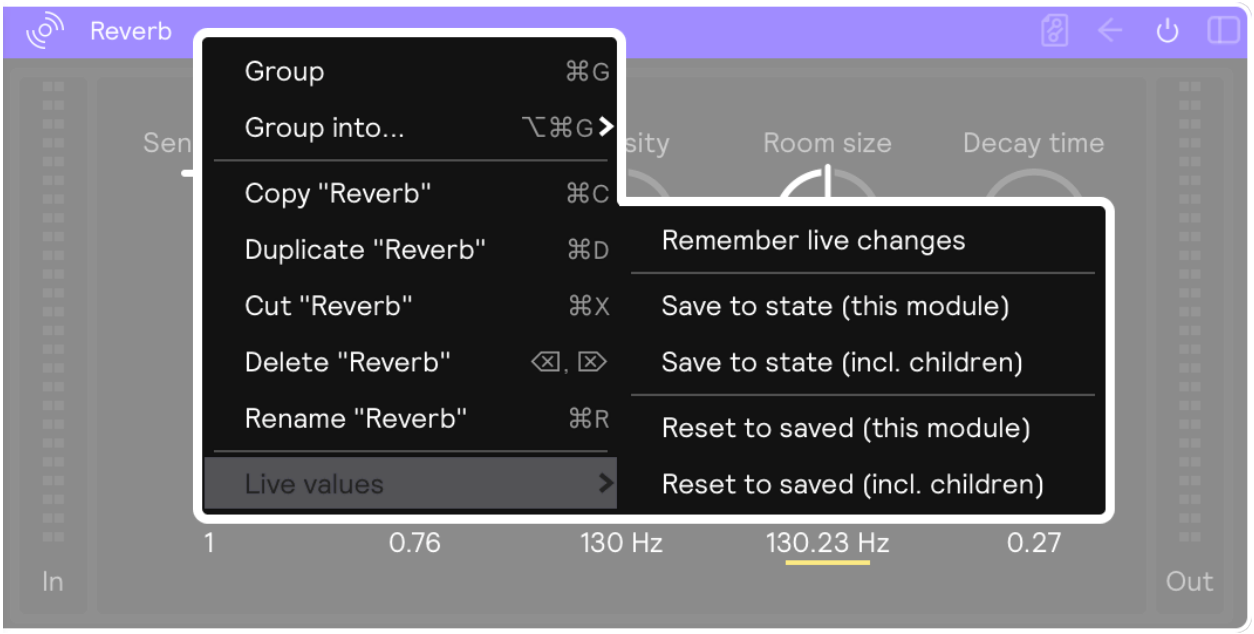


Figure 265: A screenshot of the right-click menu on a Reverb effect with the Live values submenu open

The override is inherited: it applies to everything inside the module, and a nested module can override it again for its own contents. A parameter with no override anywhere above it falls back to the app-wide setting.

In manual mode, once something below has diverged, the same section also offers `Save to state` and `Reset to saved`, each in a *this module* and an *incl. children* variant. The second reaches all the way down through child modules, effects, modulators, and macros.

Global Set

The global set is present in every session by default, whether it's a session you've loaded from the library or one that you've created yourself. It functions just like a regular set, except it's always active, regardless of whether or not you have it open.

You can access the global set by clicking the "Global Set" button in the top-right corner of the app. You can tell whether or not you're in the global set because it has a distinctive blue background, as opposed to the grey background of any non-global set.

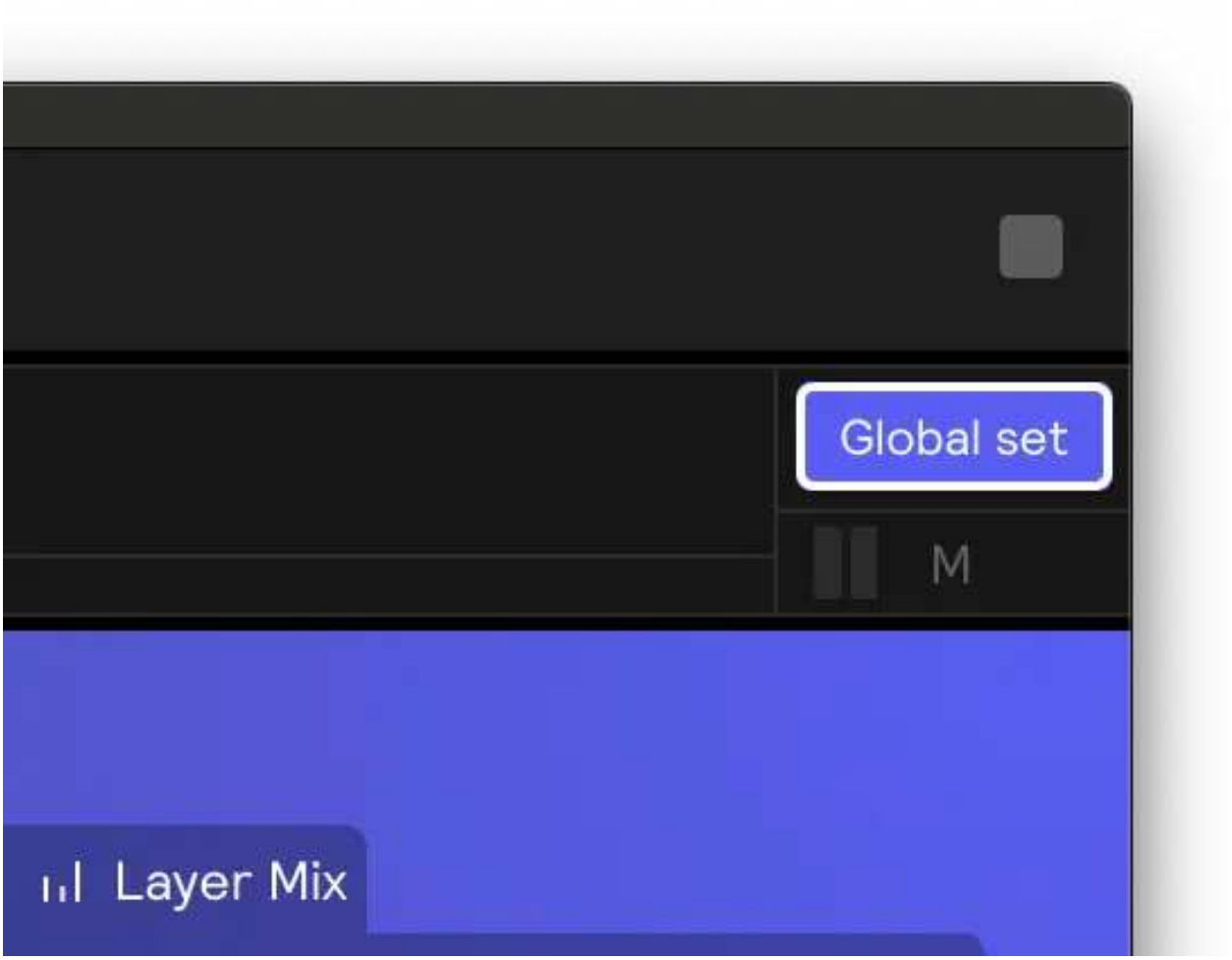


Figure 266: A screenshot of the Global Set button in the set list

When To Use the Global Set

The global set is useful for various live performance situations. For example, say you have a vocal mic connected to your EVANS Portal that you'll be using for your whole performance, but you have a bunch of different sets with different sounds controlled by the drums. Rather than copying and pasting the Audio Insert module for this vocal mic into every set in your session, you can simply add a single Audio Insert to the global set. Now, you can switch sets and add new ones to your session without having to worry about whether it includes an audio insert module with your vocal mic. This same principle applies to any module, from controllers to samplers to MIDI generators.

Global Set Mix View

In the mix view of the global set, there are 16 global submixes and one global main mix, which are automatically generated and always present. All sounds run through one or more of these mixes before being sent to a hardware output.

These global submixes are useful for adding effects that persist across your entire session. This can be a huge time-saver for sessions with lots of sets. Say you want to apply the same effect to all the sounds in your session. Rather than copying an instance of that effect to the mix bus of every set, you can simply add a single instance to the mix bus of your global set. Since all non-global sets automatically run through the global set, this effect will be applied to every set.

> **Tip:** Record-enable mixes
>
> You can record-enable mixes in the global set by clicking the R button on each mix. This will allow you to record the audio output of that mix to disk.

Main Mix

The Main Mix of the global set is where you can control the overall volume of your session. This is useful for making sure that the overall volume of your session is consistent, even as you switch between sets.

There are two views in the Main Mix. You can see the layers in your global set and mix those in the **Global Set Layers** view. This view is just like in all other sets.

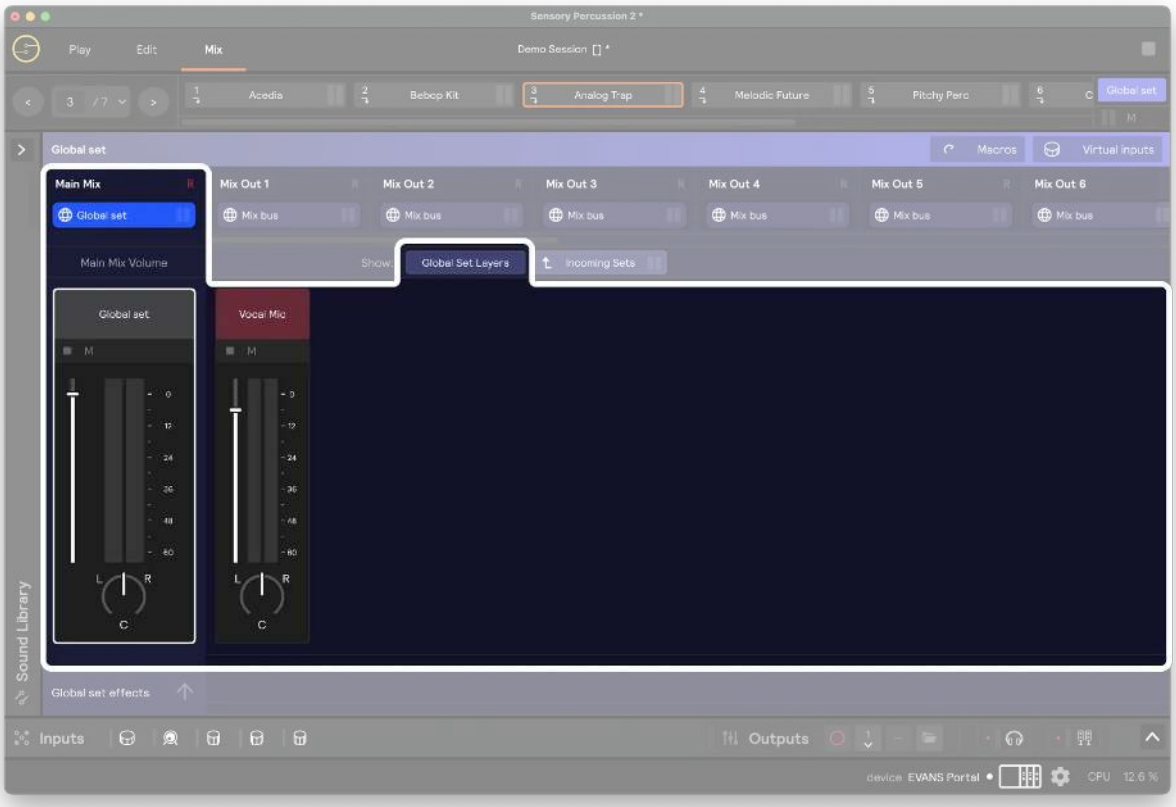


Figure 267: A screenshot of the Global Set Main Mix layers view

You can also see the incoming sets and mix those in the **“Incoming Sets”** view. This view is unique to the global set.

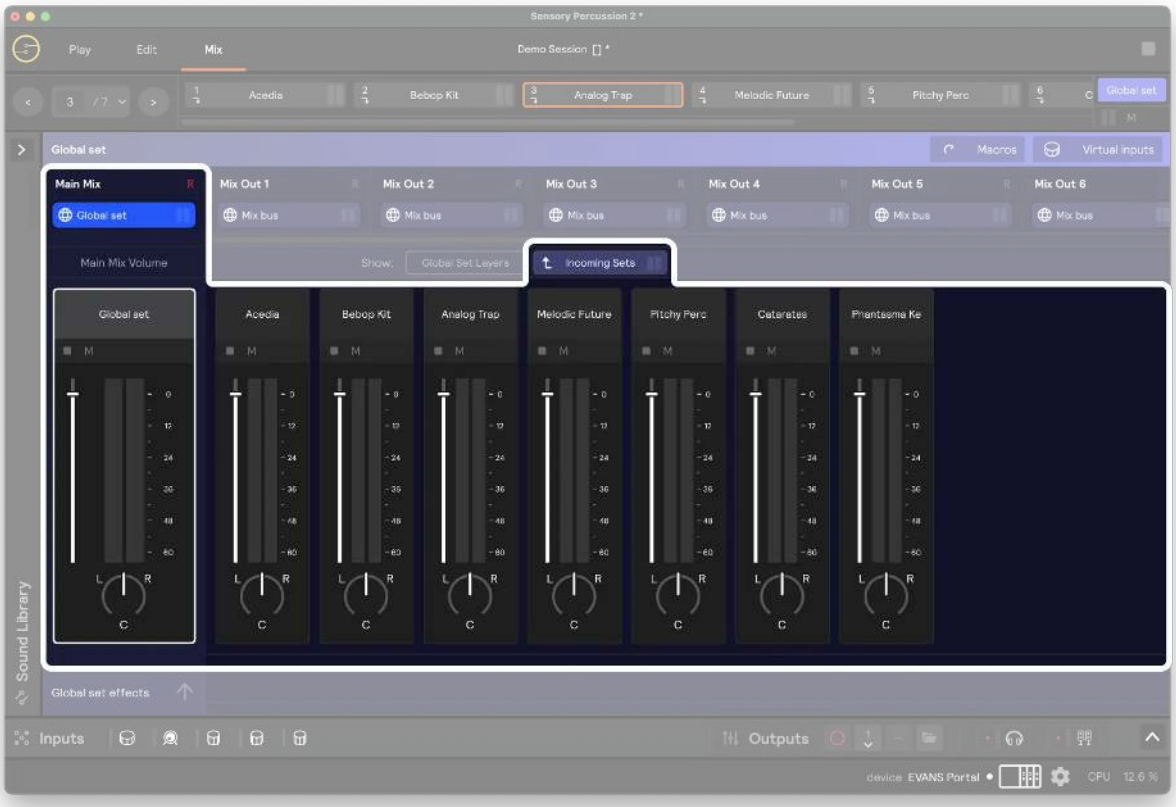


Figure 268: A screenshot of the Global Set incoming sets view

Every mix bus in the global set also has two views: “Submix Layers” where you can add layers to this submix from the Global Set.

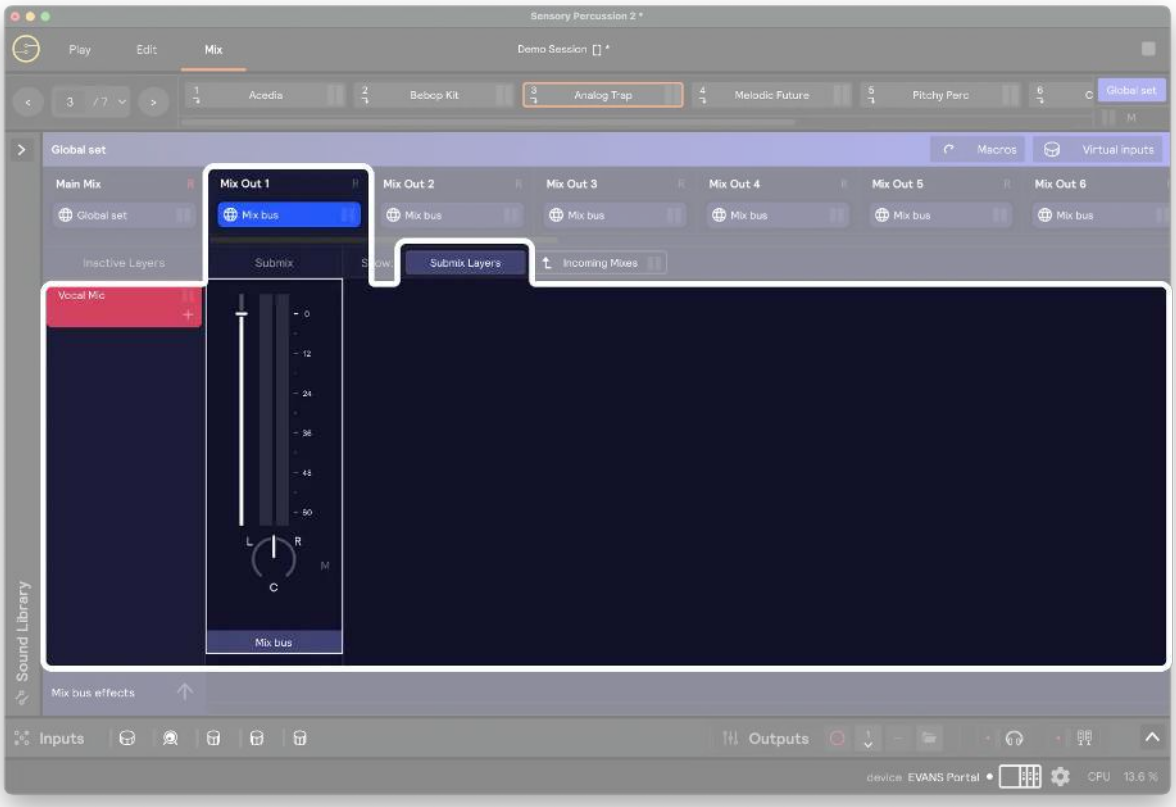


Figure 269: A screenshot of a Mix Bus Global Set Layers view

And **“Incoming Mixes”** where you can see the layers that are coming into this mix from the corresponding submix of non-global sets.

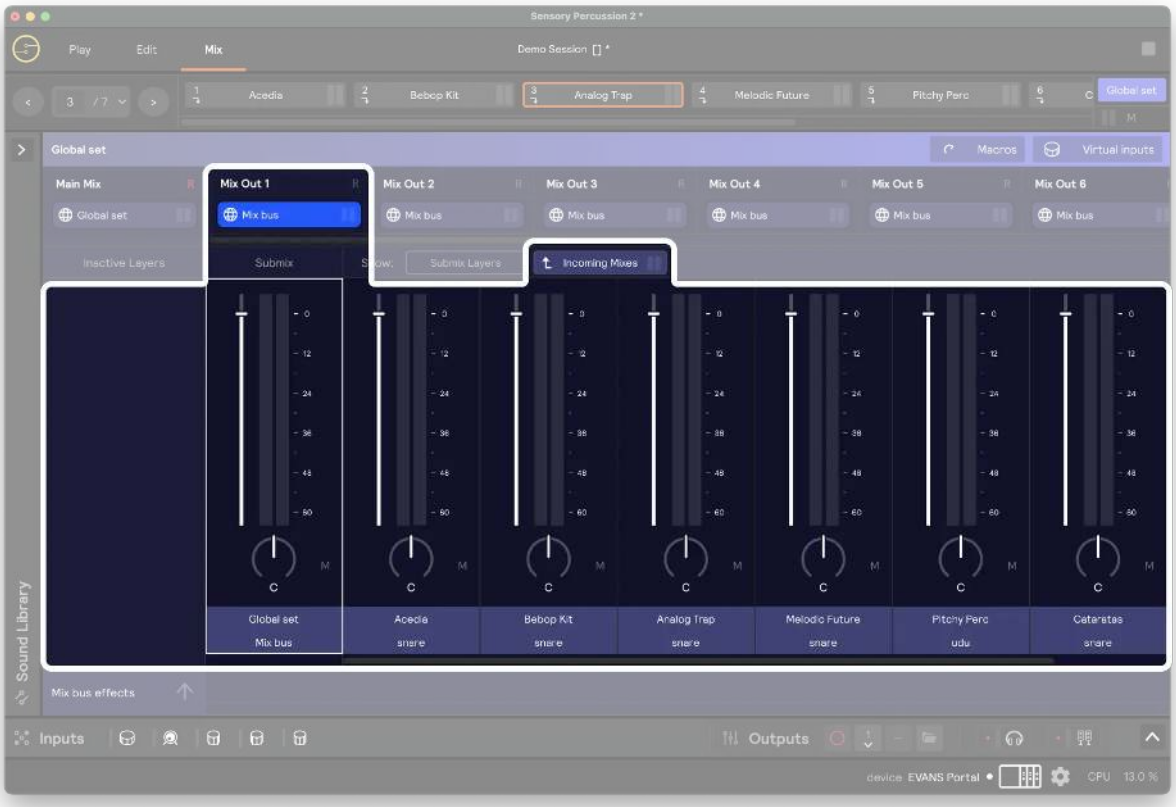


Figure 270: A screenshot of a Mix Bus incoming layers

File Menu

The File menu is in the menu bar at the top of the screen. It's where you open, save, and manage your sessions.

The menu has the same layout whether you're working in the workspace or in a session, so every item stays in the same place. What the current slot can't do is greyed out, and a few items change their wording because the same action means something different in each. An item ends in **…** when it's going to ask you for something first.

In a session

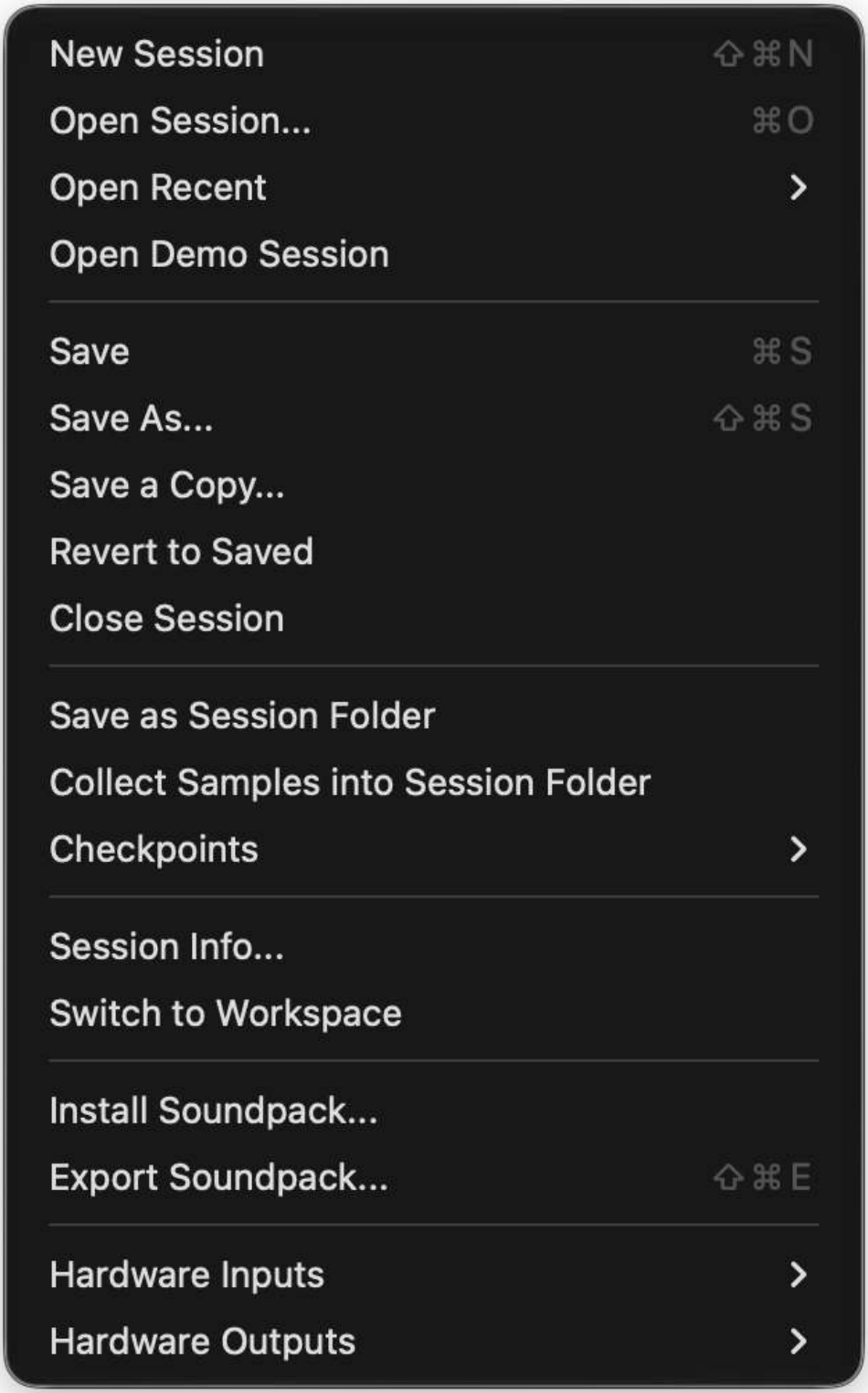


Figure 271: The File menu while a session is active

In the workspace

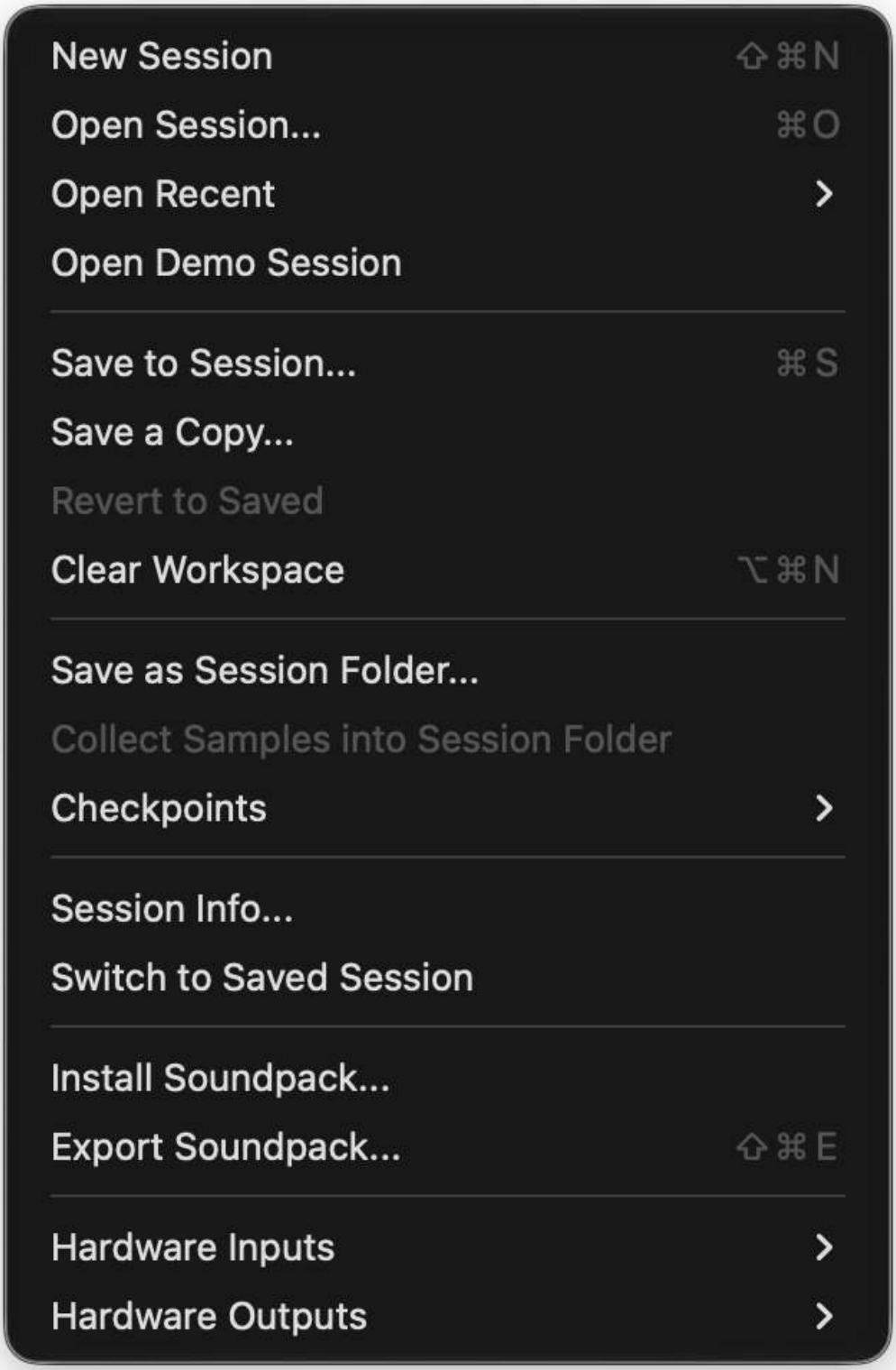


Figure 272: The File menu while the workspace is active

Opening

Item	What it does
New Session	Starts a fresh, untitled session in the session slot. Nothing is written to disk until you save, at which point you'll be asked for a name and a location.
Open Session…	Opens a session file (`.sp2`) from your computer. It becomes the active session.
Open Recent	The same, from a list of sessions you've opened recently.
Open Demo Session	Opens the demo session that comes with Sensory Percussion: a collection of sets that show off what it can do, from rich chordal kits to detailed acoustic drum mappings.

Saving

Item	What it does
Save	Saves your changes to the session's file. Reads **Save…** while the session is untitled, because it asks for a name first.
Save to Session…	In the workspace, in place of **Save**. Turns the workspace into a named, saved session and leaves the scratchpad clean behind you.
Save As…	In a session. Saves under a new name, and the new file becomes the active session.
Save a Copy…	Writes what's on screen to a file without changing anything in the app. You stay where you are, and the copy doesn't become the active session.
Revert to Saved	Discards your unsaved changes and reloads the session from its file. A backup of what you discarded is kept. Only available in a session with something to discard.
Close Session	In a session. Puts the session away and returns you to the workspace.
Clear Workspace	In the workspace, in place of **Close Session**. Blanks the scratchpad so you can start over. A backup is kept in case you need it back.

Session folder

These keep a session, its samples, and its checkpoints together. See Session Folders and Checkpoints for the details.

Item	What it does
Save as Session Folder	Wraps the session in a folder of its own, without moving any samples. Greyed out once the session lives in one.
Collect Samples into Session Folder	The same, and also copies every sample and image the session uses into the folder, so you can move it to another computer. Needs a session, so it's greyed out in the workspace.
Checkpoints	Create a dated checkpoint of the session, or go back to an earlier one. Available once the session lives in a session folder; until then it offers **Save as Session Folder**.

> **Note:**
>
> Samples from the Core Library and installed sound packs aren't copied into a session folder. Install them separately on each computer.

Session

Item	What it does
Session Info…	Edits the session's details: its name, description, credits, tags, and version number. Handy if you plan on exporting the session as a sound pack.
Switch to Workspace / **Switch to Saved Session**	Jumps to the other slot, leaving the current one parked exactly as it is. **Switch to Saved Session** is greyed out when the session slot is empty.

Sound packs and hardware

Item	What it does
Install Soundpack…	Installs a Sunhouse sound pack (`.spz` file) into your library.

Item	What it does
Export Soundpack…	Exports your session as a sound pack (`.spz`) file. You choose which presets and samples to include and edit the pack's name, description, credits, and version. Learn more.
Hardware Inputs ▸	**Load…**, **Open Recent**, and **Save As…** for a hardware input list (`.spi` file).
Hardware Outputs ▸	**Load…**, **Open Recent**, and **Save As…** for a hardware output list (`.spo` file).

Hardware inputs and outputs belong to the app, not to the session, so loading a session never changes them. Saving them to a file is useful for moving your setup to another computer.

> **Warning:**
>
> Loading an input or output list replaces the ones you have now. Use **Save As…** first if you want to keep them.

> **Tip:**
>
> To keep several setups and switch between them, like home and stage, use environments instead. An environment saves your hardware inputs and outputs together with your audio, MIDI, and OSC settings, and loads them all in one click. Loading a file from another computer may need a hardware remap.

Keyboard shortcuts

Shortcut	Item
⇧ + ⌘ + N	New Session
⌘ + O	Open Session…
⌘ + S	Save (or **Save to Session…** in the workspace)
⇧ + ⌘ + S	Save As…
⌥ + ⌘ + S	Create Checkpoint
⌥ + ⌘ + N	Clear Workspace
⇧ + ⌘ + E	Export Soundpack…

You can change any of these in Settings → Keyboard Shortcuts.

Audio Buses & Sends

Sends and audio buses are two sides of the same thing. Sends let you route audio from any module–at any level–to an audio bus, where you can host effects.

This provides some important benefits. It lets you avoid duplicating effects you might want to have on multiple layers. Instead of putting the same effect on each layer (and then having to go to each one when you want to tweak it), you can send each layer to the same Audio Bus and put the layer there. Not only is this a more efficient way to organize your set, it also saves a ton of CPU resources.

Adding an Audio Bus

To create an Audio Bus, first go to the module that you want to send to it. Look for the “Sends” panel on the module (you might need to reveal it if it’s hidden by clicking the icon in the top-right of the module).

1. Click the + button at the bottom of the panel.
2. In the menu that pops out - either create a new Audio Bus, or choose an existing one.
3. A new send knob will appear in the panel - adjust the amount you are sending as you like. Right-click the knob to add an assignment.



Figure 273: A screenshot of the Sends panel in a module

4. You can rename the new Audio Bus by scrolling down to the module at the bottom of the edit screen and double clicking its name in the title bar.

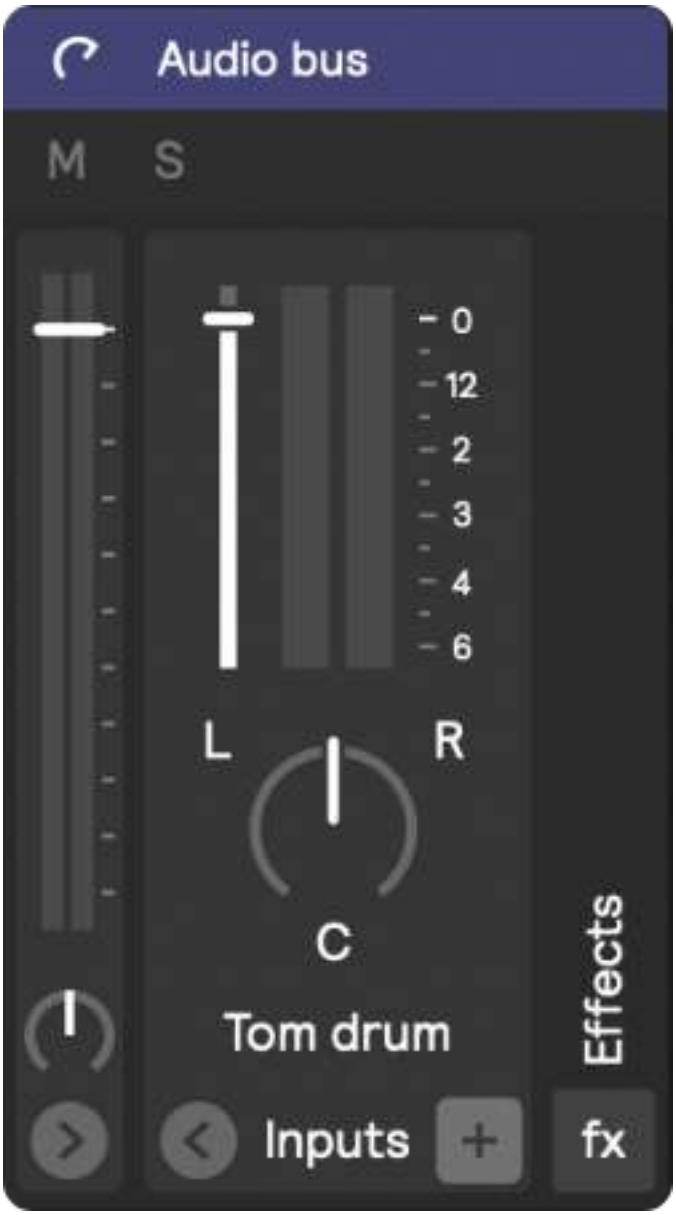


Figure 274: A screenshot of an audio bus module

Pre or Post Sends

There are two modes for each send: `Pre` or `Post`.

Choosing “Pre” will send audio from the module before it goes through any volume/mute/pan settings on the same module.

For example, if you have a module that you have panned hard left that is also sending to an audio bus in “Pre” mode, the audio bus will receive un-panned sound.

In “Post” mode, the audio would be sent panned. “Post” is the default mode for sends.

Parallel Effects Processing

Parallel effects processing allows for some really cool sound design techniques that are not possible without audio buses.

Simply put: sometimes you want an effect embedded in the sound, and sometimes you want to duplicate the sound and have a completely “dry” layer mixed with a completely “wet” layer.

It may seem like a subtle distinction (since you can always set the mix knob of the effect to 50%), but there actually is a major difference. For example: if you have a reverb as a layer effect, and you decide to stop the sound by muting the layer, then the reverb tail will also be sharply cut off.

But if you send the layer to an audio bus with a reverb effect, then when you mute the layer the reverb tail will still decay naturally.

Reverb is a great example for why parallel effects are useful, because of the way it behaves in the natural world. If you picture someone singing in a cave: the sound of the cave doesn’t happen until after she has already sung the notes. There is the direct sound of her voice, and then milliseconds later we hear her voice bouncing off the walls of the cave.

That’s why it sounds unnatural to put a reverb effect with the mix knob set to 100% directly on a sound: in the real world we almost never hear reverb without hearing at least some direct sound.

Another great Parallel FX technique is called Parallel Compression. It’s the secret to really BIG sounding studio quality drums: by sending your drums to a compression bus you get the big fat sound of compression, but the dry track allows the transients of your drum hits to not be squashed. It’s called New York Compression when you add an EQ to the compression channel that reduces the mids.

Environments

An **environment** is a named snapshot of the setup Sensory Percussion is plugged into:

- the audio device and its channels, including a sensor expansion
- your hardware inputs and outputs
- your MIDI devices
- your OSC network settings

Sessions never carry any of this. So with an environment for each setup, like the studio interface at home and the Portal on stage, you can switch setups in one click without touching your sessions.

Environments work a lot like sessions. Out of the box no environment is loaded, and Sensory Percussion simply keeps your settings as you leave them, with nothing to save. Save them as an environment to make a named copy. Loading an environment replaces your current settings with its copy. From then on, any change you make is an **unsaved change** to that environment until you save it back.

If you never use environments, nothing changes for you.

In the settings window

The **Environment** dropdown sits at the top of the settings window, above the pages it covers: **Audio**, **MIDI Devices**, and **OSC Network**. It reads **No environment** until you load one. An orange dot after the name means the environment has unsaved changes.

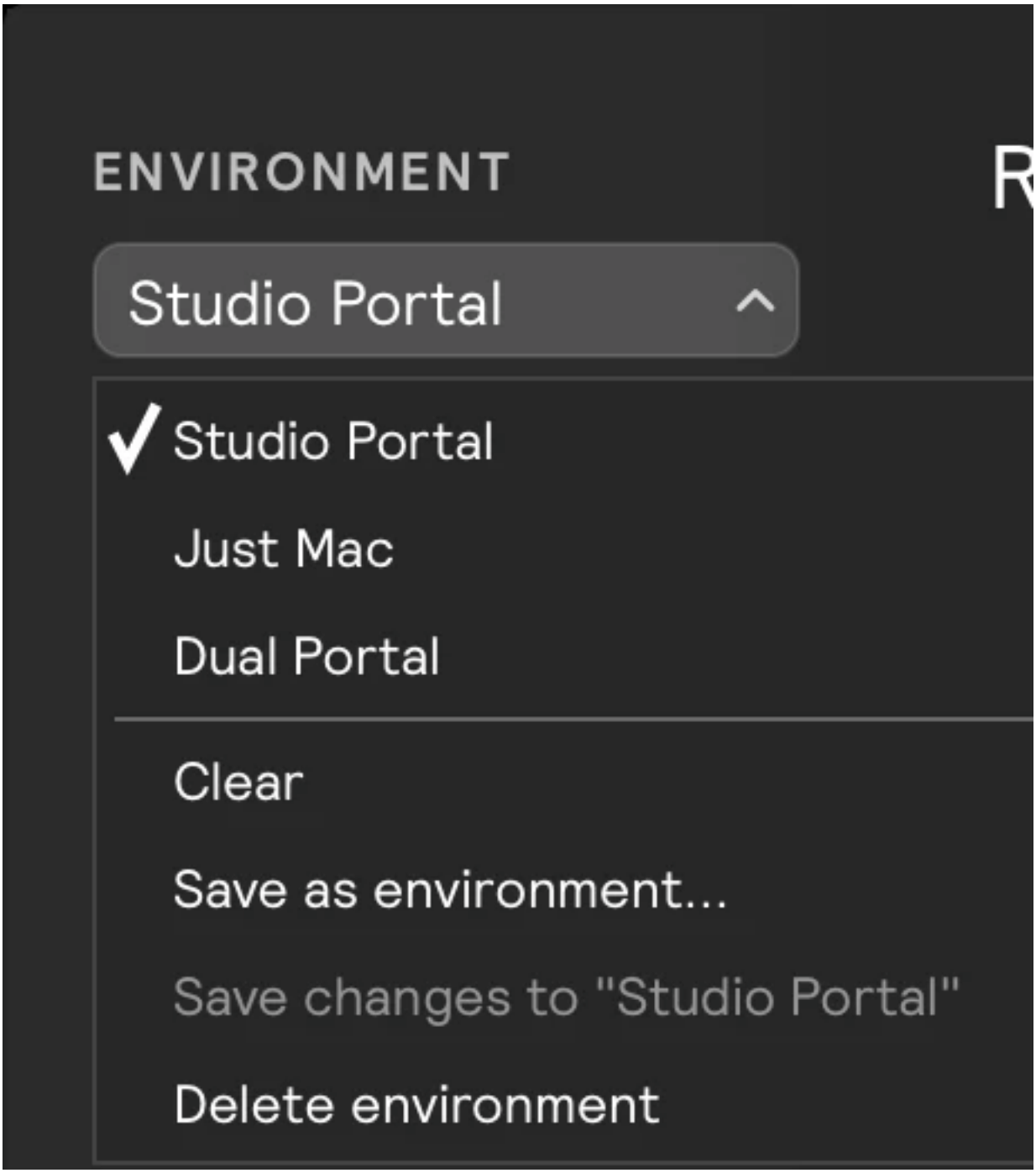


Figure 275: The Environment dropdown open in the settings window, listing three environments and the Clear, Save as environment, Save changes, and Delete environment items

Item	What it does
An environment's name	Load that environment. Its audio, hardware inputs and outputs, MIDI, and OSC settings replace your current ones. Choosing the active environment again reloads it as it was last saved.
Clear	Start from scratch, like a new session: all hardware inputs and outputs are removed and no environment is loaded. Your audio, MIDI, and OSC device settings stay as they are, so the audio keeps running. Always asks first.
Save as environment…	Saves your current settings and hardware inputs and outputs under a new name, and makes it the active environment. The environment you came from keeps its last saved state. If the name is taken, a number is added, like *Studio (1)*, so the existing one is left alone.
Save changes to "*name*"	Saves your current settings into the active environment. Only available when it has unsaved changes.
Delete environment ▸	Deletes an environment, after confirming. Only environments that aren't active are listed, so load another one or **Clear** first.

Each of these pages also says which environment you're working in, in a grey line under the page title: for example *environment: Studio Portal (unsaved changes)*. With none loaded it reads *no environment loaded: settings are kept automatically*.

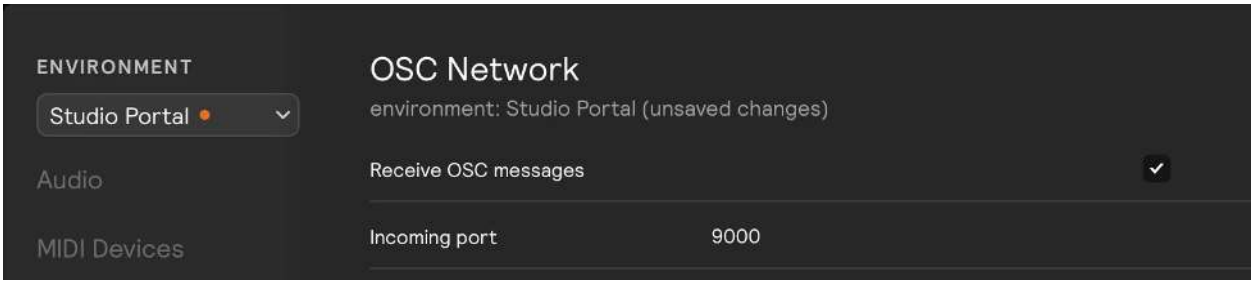


Figure 276: The grey environment line under the OSC Network page title

Unsaved changes

If the active environment has unsaved changes when you load another one, choose **Clear**, or reload it, you're asked what to do with them first:

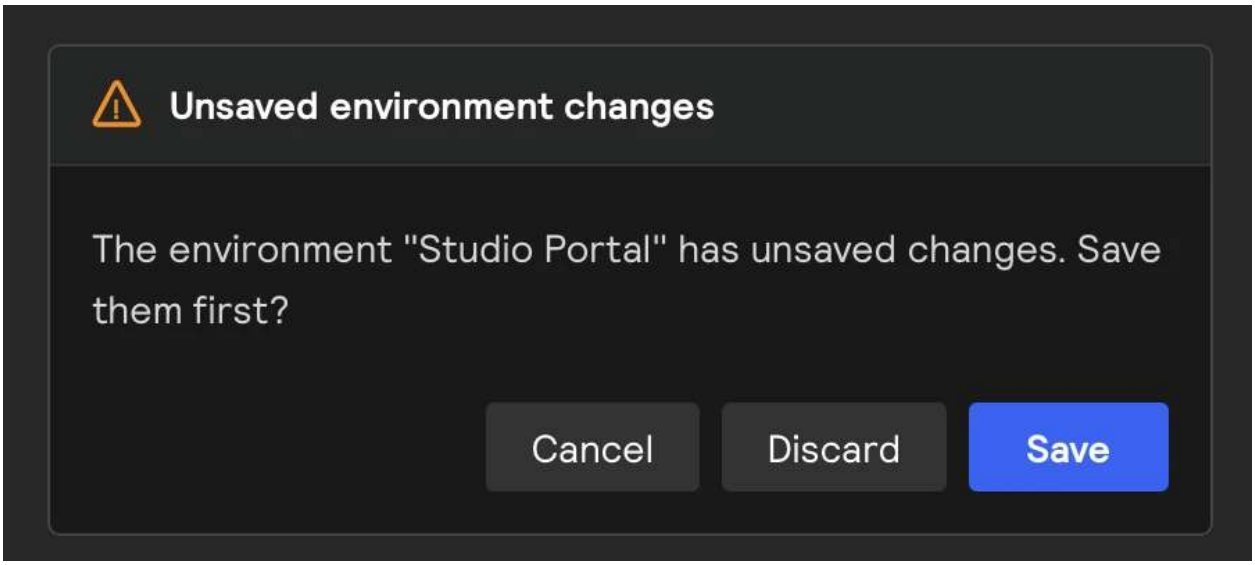


Figure 277: The Unsaved environment changes prompt with Cancel, Discard, and Save

- **Save** writes your changes to the environment, then carries on.
- **Discard** drops them and carries on.
- **Cancel** stays where you are.

Quitting never asks. Your current settings are kept exactly as they are, the environment file isn't touched, and next time you launch, the same environment is loaded with the same unsaved changes, just like a session.

In the footer

The environment button in the footer shows the environment's name (or **No environment**) above your audio devices. The orange dot means unsaved changes.

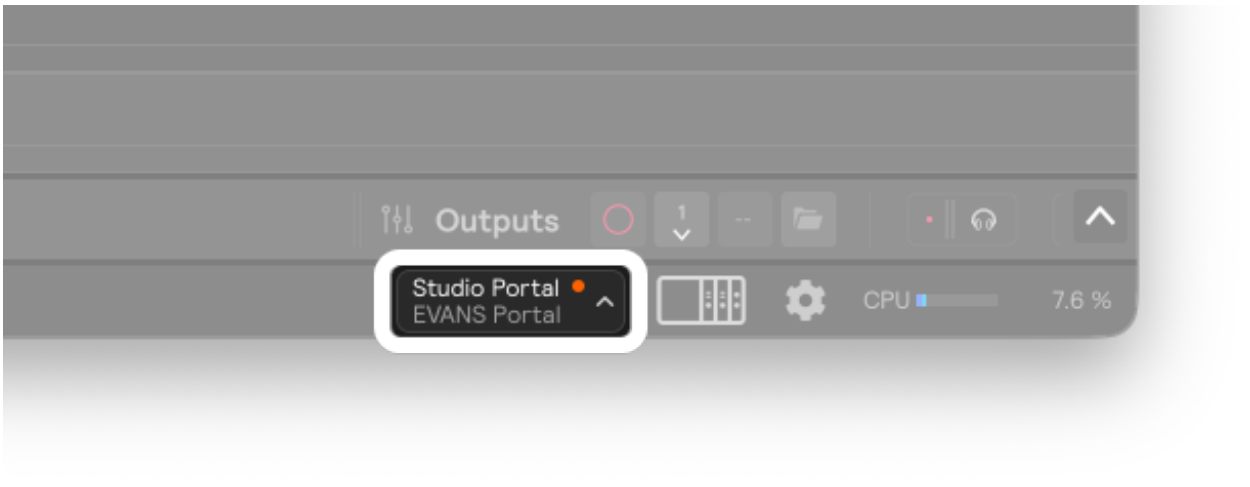


Figure 278: The footer environment button showing Studio Portal with an orange unsaved-changes dot, above EVANS Portal

Click it for a quick menu:

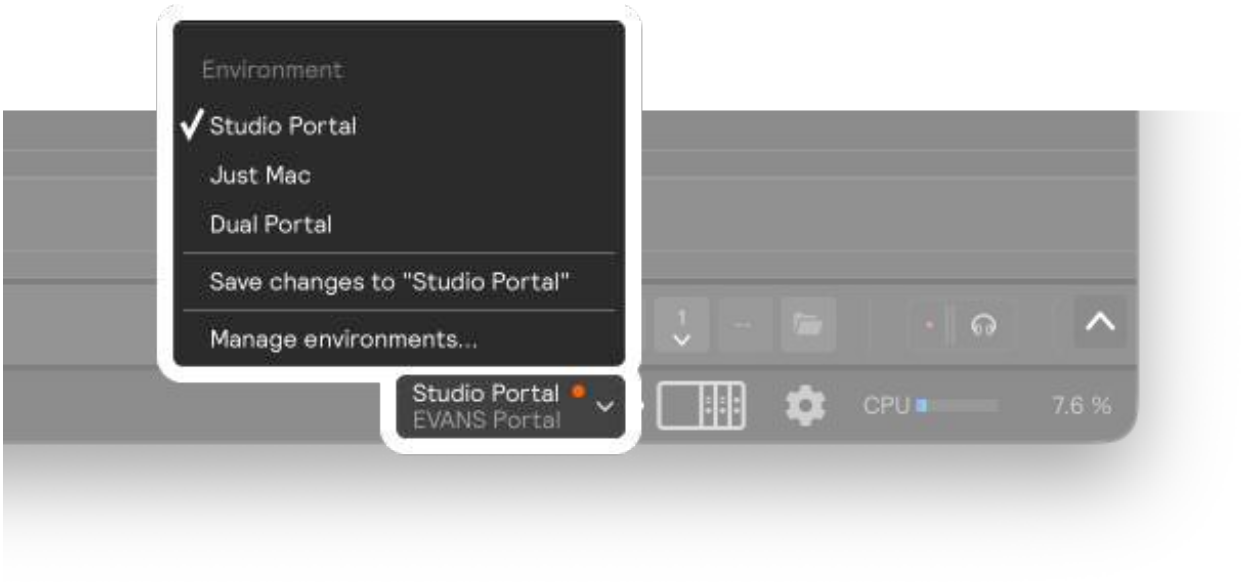


Figure 279: The footer environment menu: three environments, Save changes to “Studio Portal”, and Manage environments

Item	What it does
An environment’s name	Load that environment, asking about unsaved changes first.

Item	What it does
Save changes to "*name*"	Saves your current settings into the active environment. Only shown when it has unsaved changes.
Manage environments…	Opens the settings window, where you can create, clear, and delete environments.

When the interface isn't connected

If you load an environment, or launch into one, while its audio interface is unplugged, its inputs and outputs show as **disconnected**. Sensory Percussion doesn't offer to remap them, since you most likely want to plug the interface back in. Once you do, the bar goes away on its own. See Hardware Remap.

In the plugin

In the plugin, the audio, MIDI, and OSC come from your DAW, so the plugin always runs in the **Host** environment. The footer and the settings dropdown read **Host**, and environments are read-only: nothing the plugin does is saved back to them, and there's no **Clear**, **Save as environment…**, or **Delete environment**.

What the plugin can do is copy hardware inputs and outputs from the standalone app. Both dropdowns list them under **Load inputs & outputs from**:

Item	What it does
App's current inputs & outputs	Replaces the plugin's inputs and outputs with the ones the standalone app is using now.
An environment's name	Replaces the plugin's inputs and outputs with the ones saved in that environment.

Only inputs and outputs are copied: the DAW still decides the audio device, MIDI, and OSC. The copied inputs and outputs keep the audio channels they had in the standalone app, so check their channels afterwards. They're saved with your DAW project like the rest of the plugin's state.

The plugin's footer menu also has **Audio settings…**, which opens the settings window on its **Audio** page.

Settings Window

The settings window is where you can configure various aspects of your audio interface, MIDI connections, and other application-level parameters. You can reach this page by clicking the gear icon on the bottom right of the app or by selecting which settings window you'd like to open from the `Sensory Percussion` menu on Mac or `File` on Windows.

There are also some keyboard shortcuts you can use::

- Audio settings: ⌘/`ctrl` + `,`
- MIDI devices: ⌘/`ctrl` + `.`
- Keyboard shortcuts: ⌘/`ctrl` + K

Environment

The **Environment** dropdown at the top of the settings window saves and loads your whole setup: the **Audio**, **MIDI Devices**, and **OSC Network** pages below it, plus your hardware inputs and outputs. Each of those pages shows which environment you're in, in a grey line under its title. See Environments.

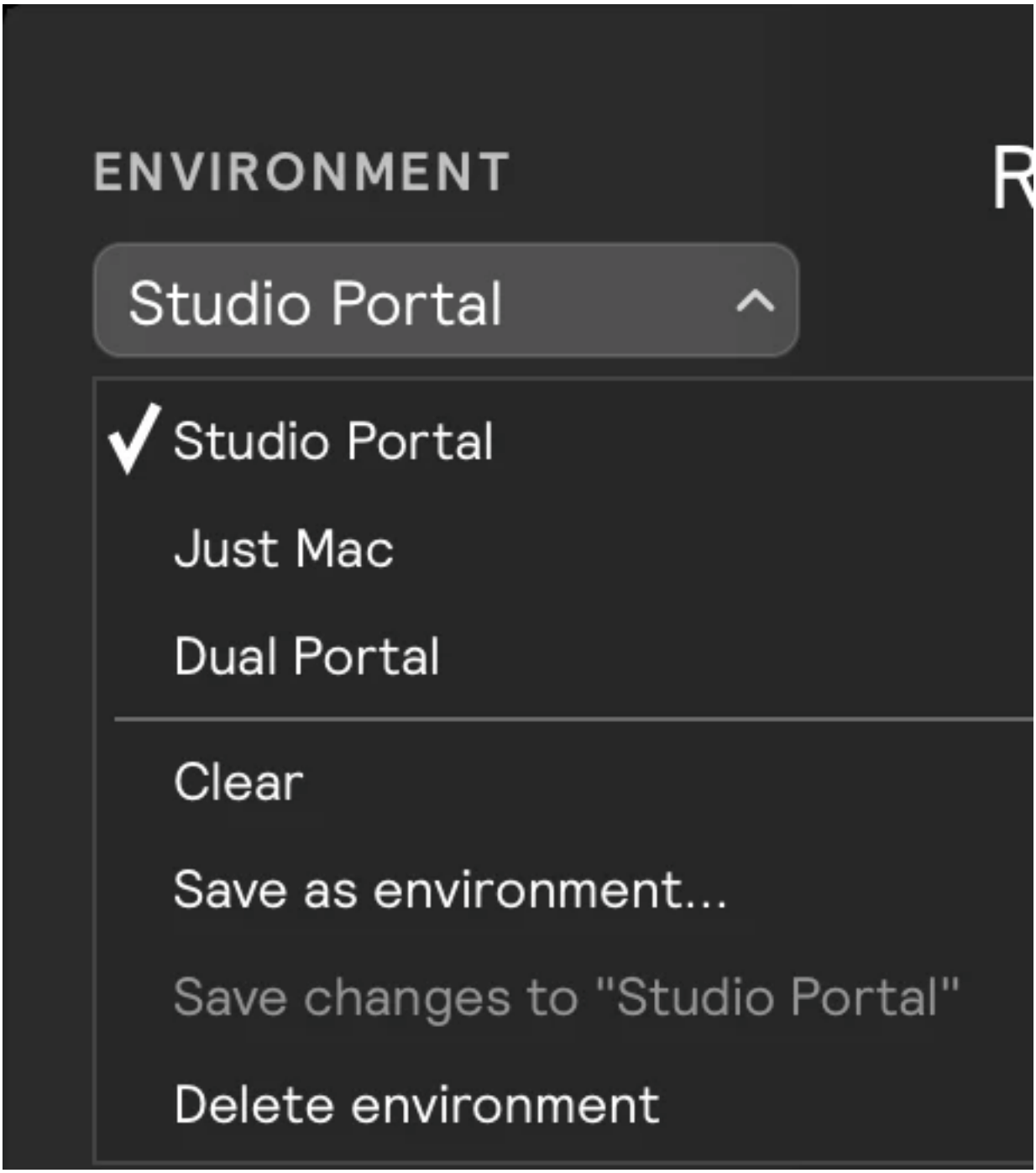


Figure 280: The Environment dropdown open in the settings window

Audio Settings

The Audio Settings page is where you configure your audio interface: the audio engine, input and output devices, sample rate, and buffer size. If your machine is fast enough, a buffer size of 64 samples gives lower latency than 128.

The **Inputs** and **Test Output** meters show your signal levels. Click the play button to the left of the output meter to play a test tone.

Under **Devices**, a card shows your main interface. Below it, the **input channels** and **output channels** lists show every channel on the device; click a channel to turn it on or off. With the EVANS Portal, that's 12 inputs and 16 outputs.

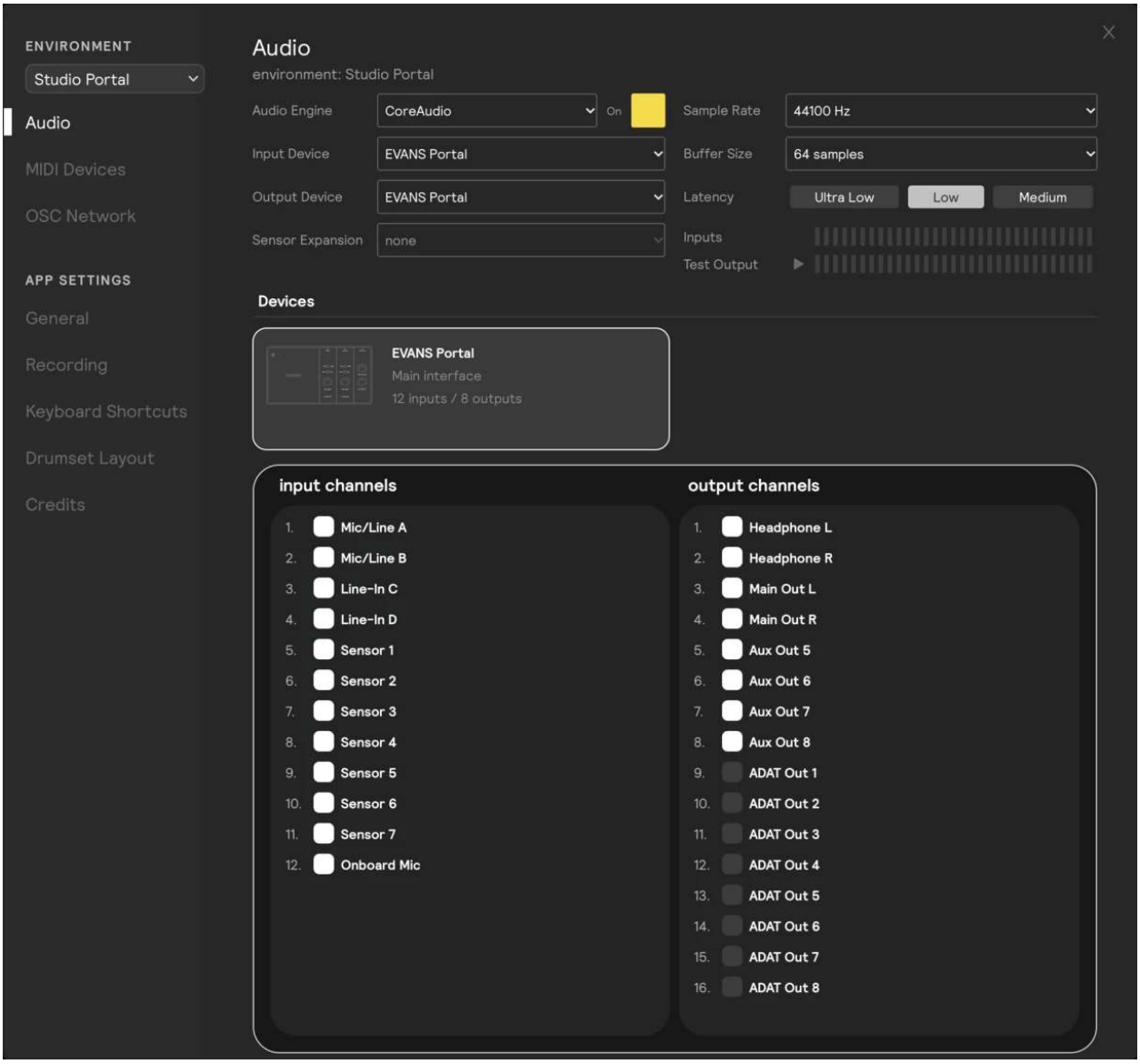


Figure 281: The Audio Settings page with an EVANS Portal as the main interface

With a second Portal connected, a second card appears next to your main interface, and the **Sensor Expansion** dropdown under **Output Device** lets you use it for seven more sensor inputs. See Sensor Expansion.

With any interface other than the EVANS Portal, the main card shows a generic interface picture and lists that device's channels. If a Portal is also connected, the card offers **Use Portal as main interface**, and the Portal can still be your sensor expansion:

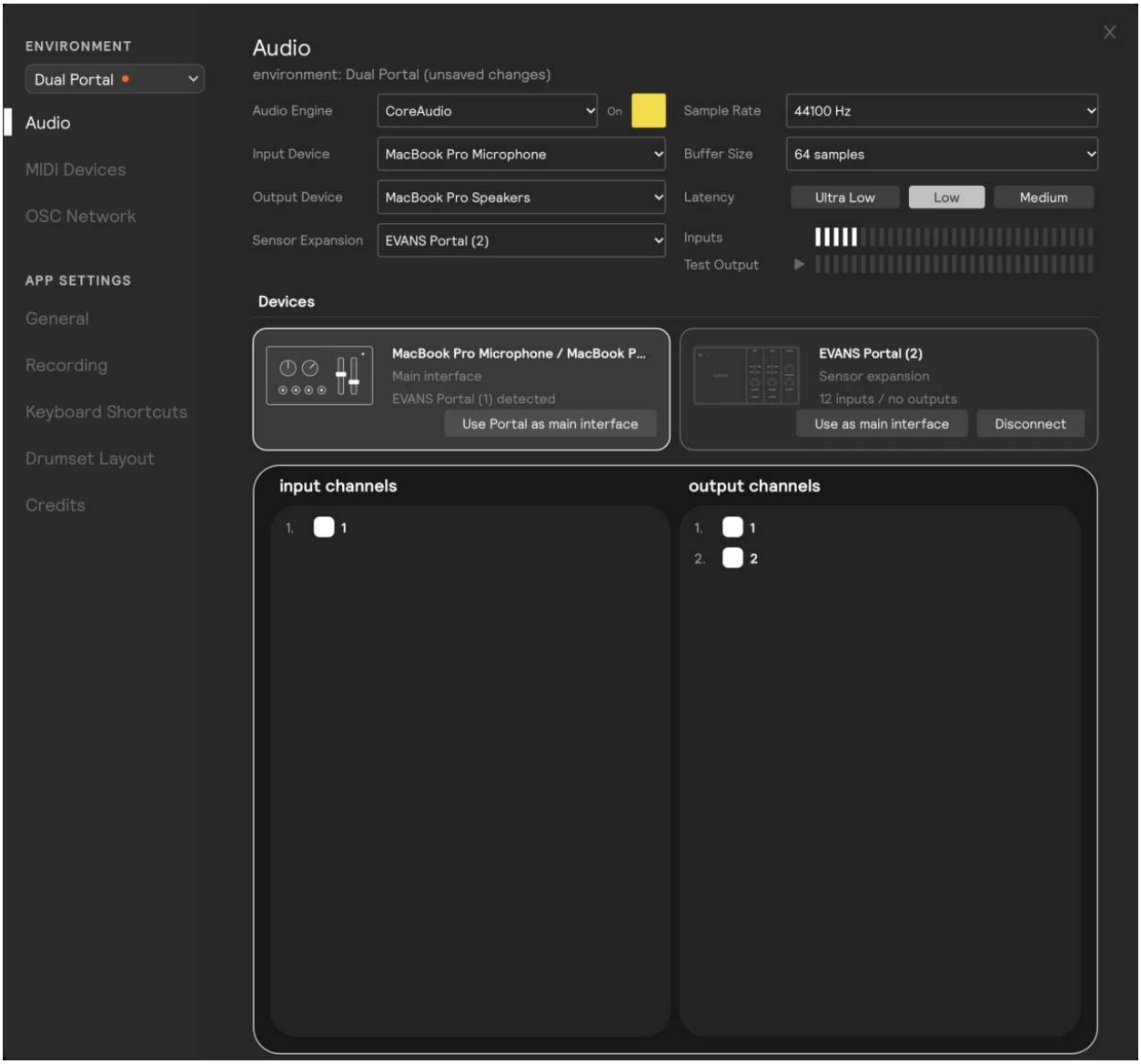


Figure 282: The Audio Settings page with MacBook Pro Microphone and Speakers as the main interface and an EVANS Portal as the sensor expansion

If you switch to a different interface, your hardware inputs and outputs can be moved to it in one step. See Hardware Remap.

General Settings

This page allows you to view the email your Sunhouse account is registered to and sign in/out of this account.

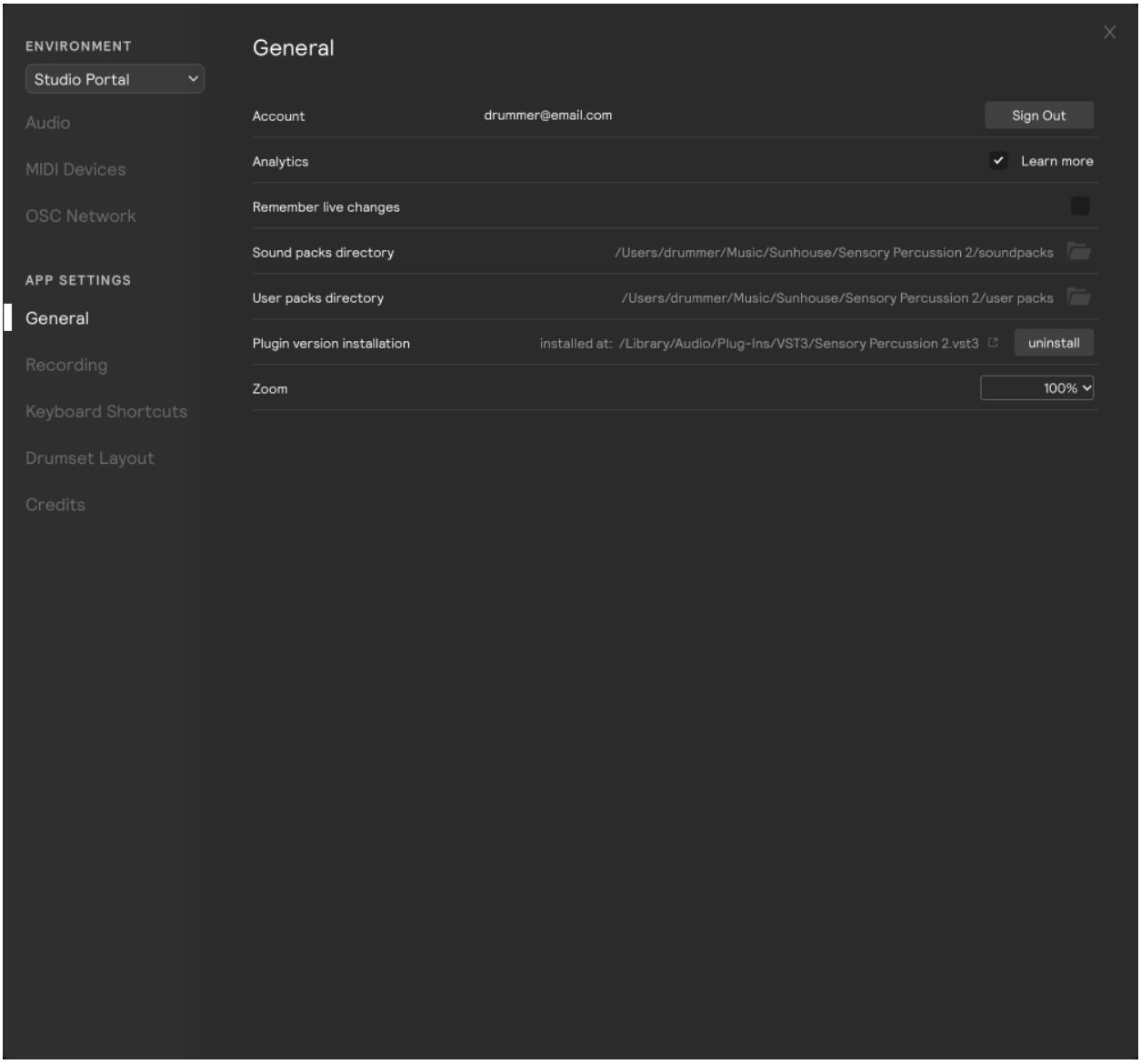


Figure 283: The EVANS Portal General Settings page

Account settings

See which email address your Sunhouse account is registered to and sign in/out of this account.

Analytics settings

You can also opt in/out of our anonymous analytics collections. This data helps us improve the Sensory Percussion software and make it more stable. We don't collect any personal information, just data about how the software is being used that can't be traced to any individual user. Read more about our data collection practices here.

Remember live changes

This sets what happens to values your playing moves. With it on — the default — the values the engine is currently using are written into your session when you save. With it off, only the values you set by hand are saved, and live movement is discarded unless you commit it deliberately.

Individual modules can override this setting for themselves. See Parameters for more information.

Sound packs directory

Choose which folder Sunhouse sound packs are stored in. This is useful if you have a custom folder structure for your sound packs or want to store them on an external drive.

User packs directory

Choose which folder your own packs are stored in. This defaults to *Music/Sunhouse/Sensory Percussion 2/user packs*, where exported sound packs are installed.

Plugin installation

Manage the installation of the Sensory Percussion 2 VST plugin here. If you're having trouble with the plugin, you can try reinstalling it from this page.

Zoom

You can adjust the zoom level of the Sensory Percussion app window here. This is useful if you're using a high-resolution display and the app is too small to see comfortably. You can scale from 50% to 200%.

Recording Settings

These settings allow you to configure the recording options for your session. You can choose the recording format (WAV, AIFF, or FLAC), the sample rate, and the bit depth. You can also choose the folder where your recordings are saved.

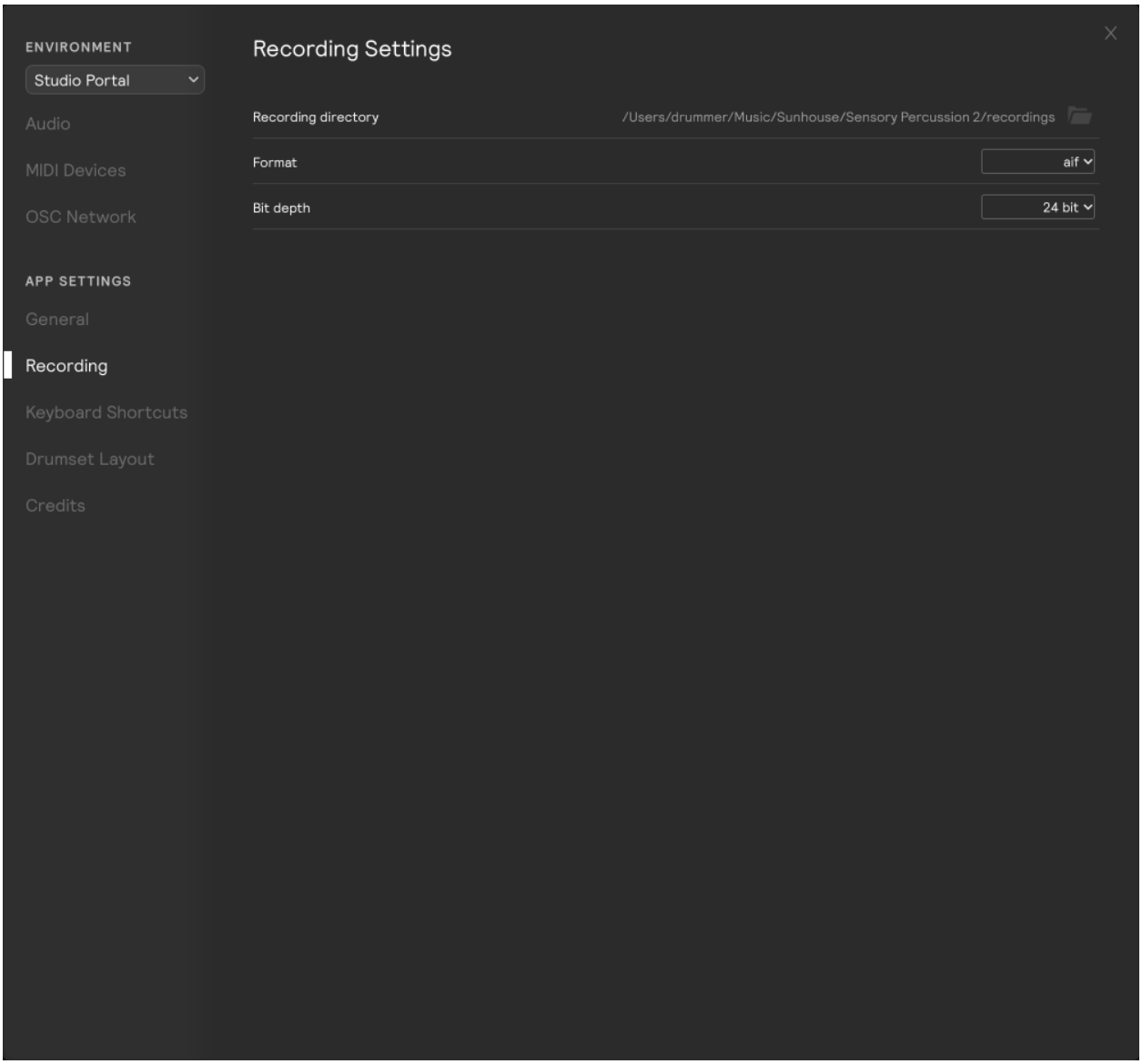


Figure 284: Recording settings

MIDI Devices

On this page, you can view and activate/deactivate MIDI inputs and outputs. If you're using an interface that has MIDI in/out, it will appear in these dropdowns, as well as any virtual MIDI ports that are active on your computer. For more information on using MIDI with Sensory Percussion, check out our how-to articles on receiving MIDI in and sending MIDI out.

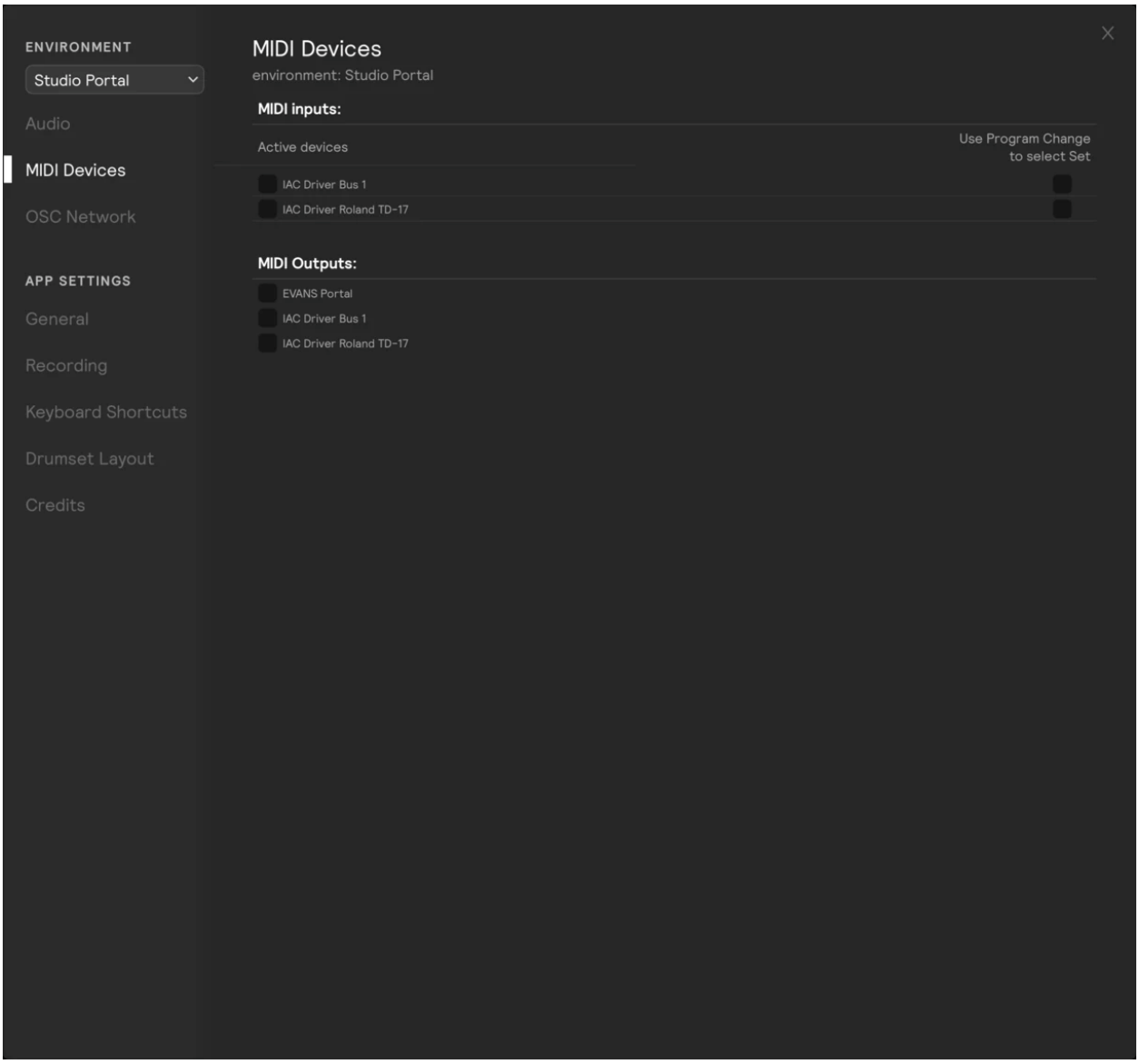


Figure 285: The MIDI Devices settings page

Keyboard Shortcuts

On this page, you can view and edit all keyboard shortcuts for the Sensory Percussion app. Click on any of the existing default shortcuts to change/remove them. You can also add shortcuts that don't exist by default.

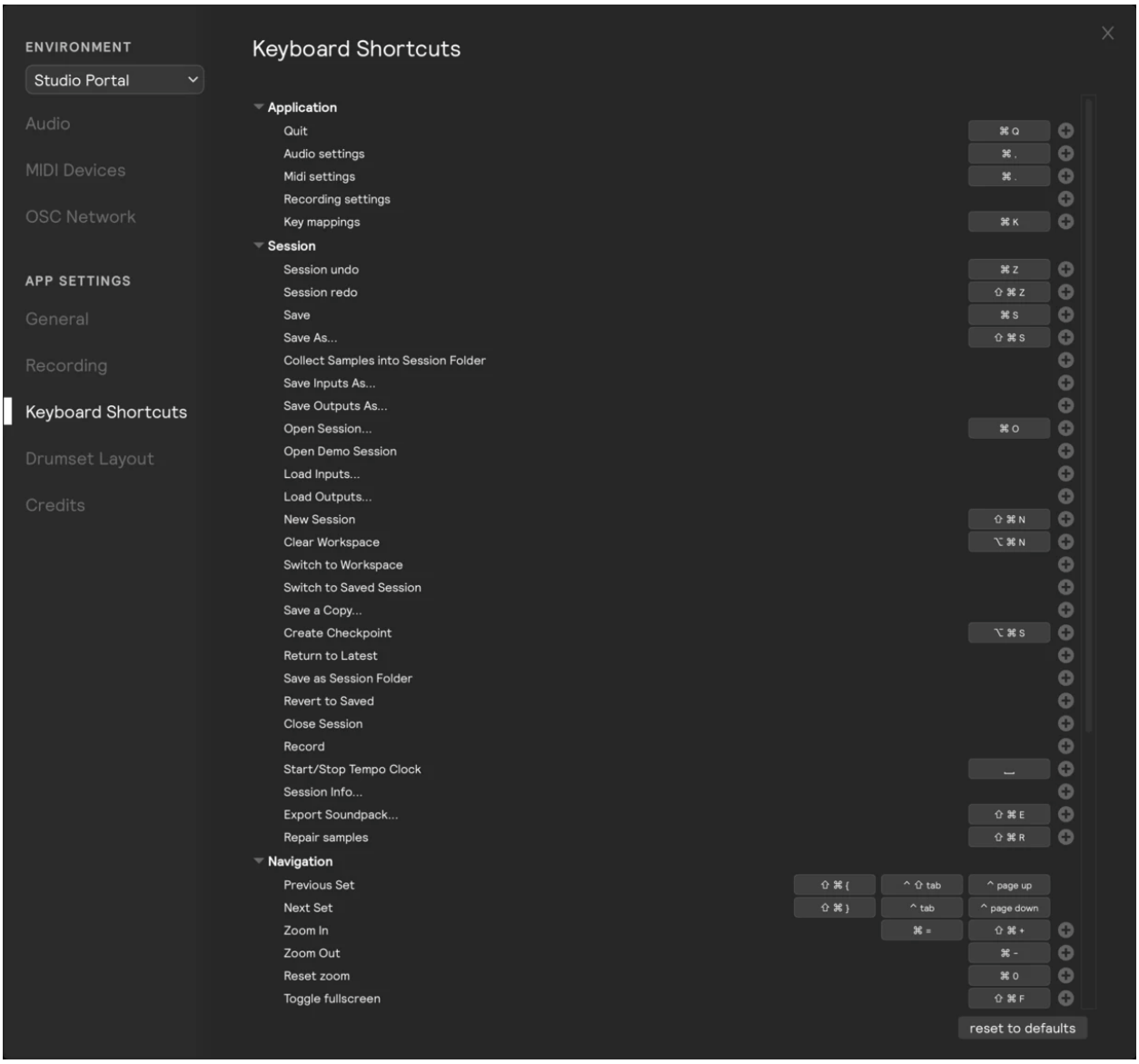


Figure 286: The Keyboard Shortcuts settings page

OSC Network

This page connects Sensory Percussion to other software over OSC. It can **receive** OSC, letting another app trigger and control it, and **send** OSC, broadcasting what it's doing so another app can follow along. The two directions are independent, so you can turn on either, both, or neither. Both are off by default.

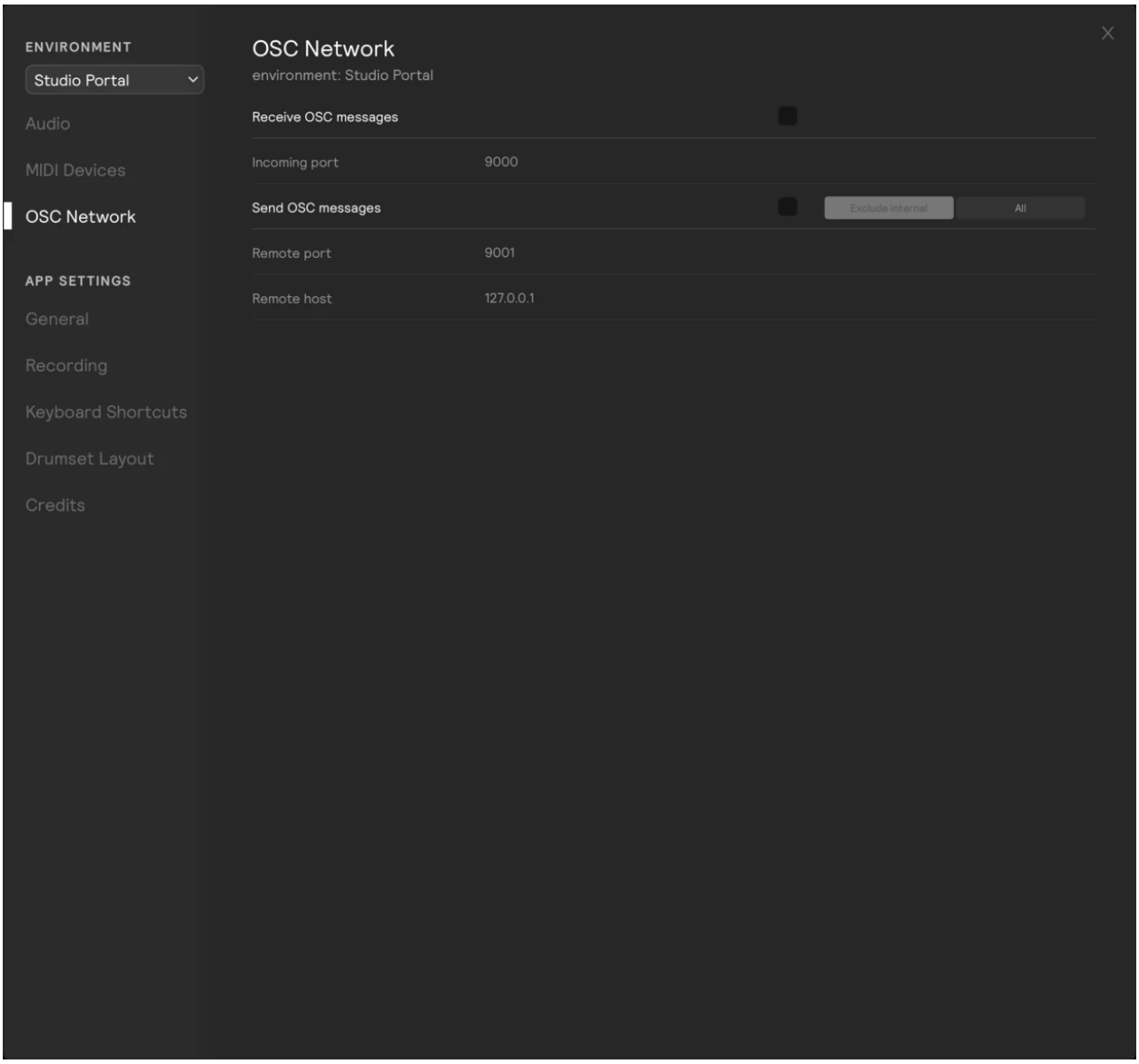


Figure 287: The OSC Network settings page

Receive

Turn on `Receive OSC messages` to listen for incoming OSC, and set `Incoming port` to the port to listen on. The port defaults to 9000 and has to be between 1 and 65535.

Send

Turn on `Send OSC messages` to broadcast out to another app or machine.

`Remote host` is where to send — an IP address or hostname, defaulting to `127.0.0.1`, which is this machine. `Remote port` is the port to send to, defaulting to 9001, with the same 1–65535 rule.

The filter beside the toggle sets how much traffic goes out:

- `Exclude internal` sends only your hardware and hit traffic — the hits and sensor data coming off your controller. This is the default, and it's what nearly everyone wants: it's the setting for driving another app from your playing.
- `All` also includes the app's internal parameter traffic, so every knob move and internal update goes out too. It's a firehose meant for debugging and deep integration.

Feedback protection

Sending and receiving on the same port on the same machine would make Sensory Percussion talk to itself in a loop. When your settings would do that, it switches one of the two toggles off for you and turns its label orange, with a **feedback detected** tooltip. The side you just changed is kept, and the other one is switched off.

This only happens for a real loop: the remote host has to be this machine (`127.0.0.1`, `0.0.0.0`, or one of your own network addresses) *and* the ports have to match. Sending to another machine on the same port number is fine.

Drumset Layout

Configure how you arrange your inputs in Sensory Percussion 2. This not only customizes how the drumset appears in the *Play* view, but also ensures compatibility with any library sets you play.

For example, if you are only using one tom, is it a floor tom or a rack tom? If you are using two cymbals, are they a ride and crash cymbal or two crashes? Establishing the role you intend for each input allows Sensory Percussion to remap the input filters of anything you pull from the library to match your physical setup.

Turn on **Left-hand layout** to mirror the whole kit left to right, so the hi-hat and snare sit on the right and the floor toms and ride on the left. It only changes how the kit is drawn, in the preview here and in the Play View, and it's remembered across launches. Your input mapping doesn't change.

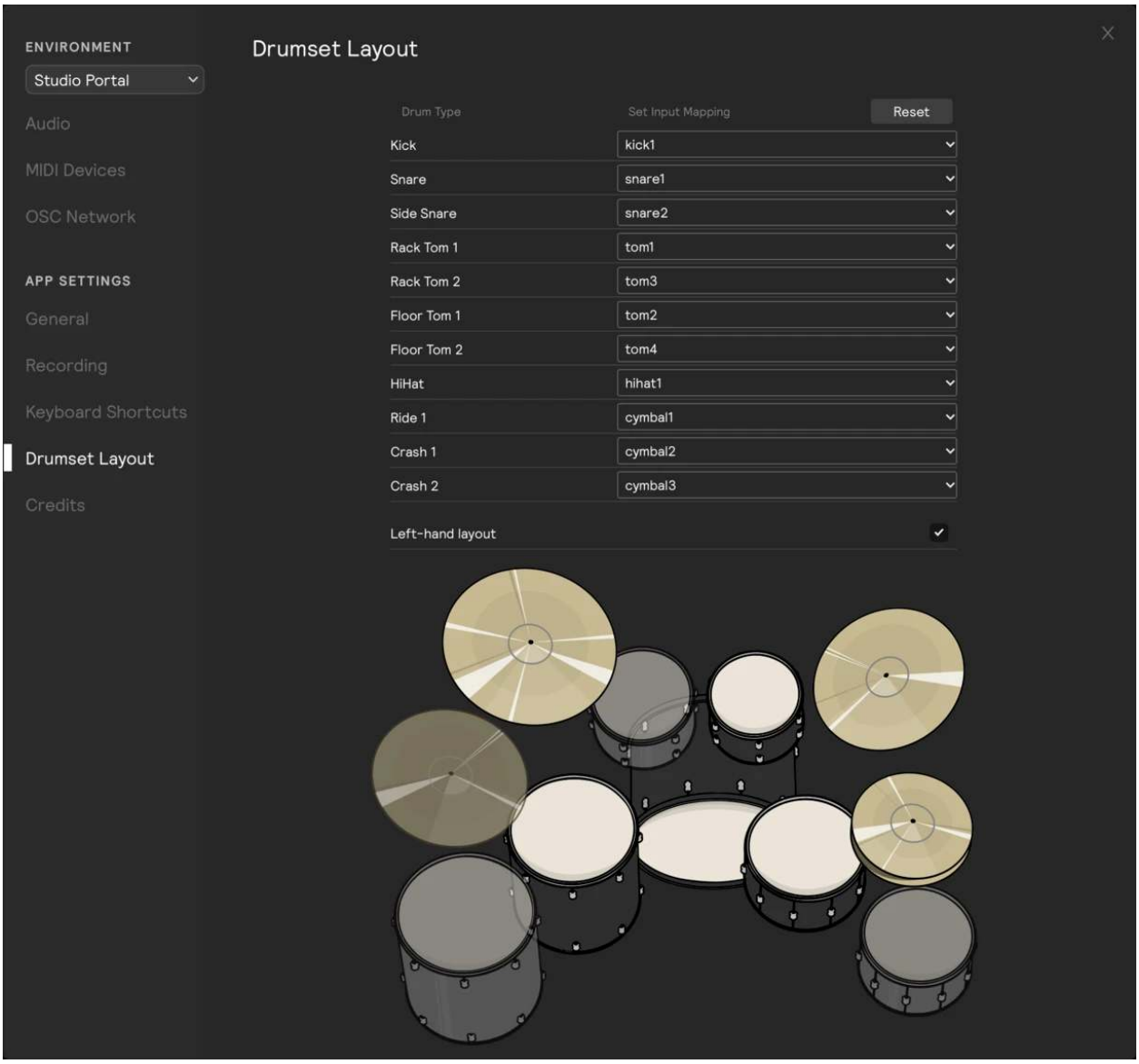


Figure 288: Drumset Layout settings with Left-hand layout turned on

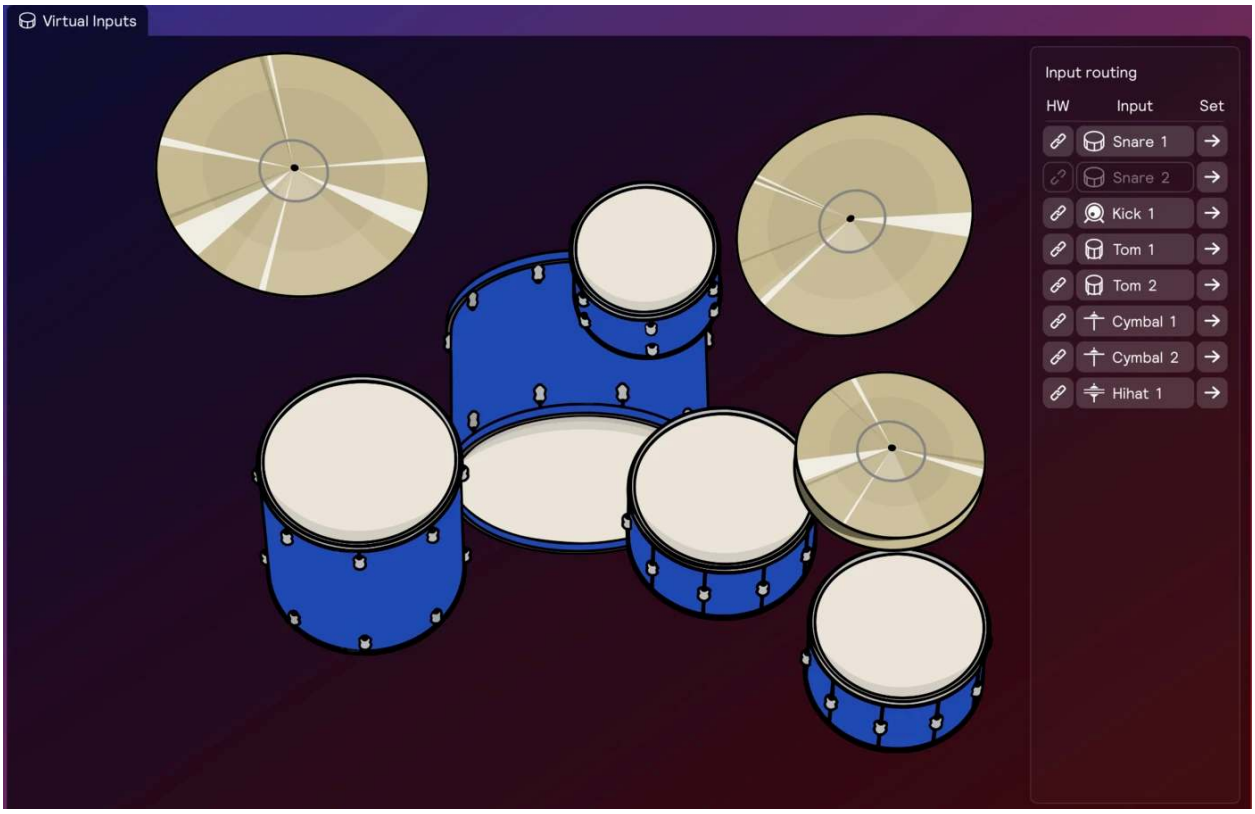


Figure 289: The Play View kit mirrored for a left-handed setup

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How to

Now that you know what all the features of Sensory Percussion V2 are, this section will show you how some of them are commonly used.

How To Use the Ableton Live Plugin



Figure 290: A screenshot of Ableton with the SP2 Plugin loaded

The Sensory Percussion 2 Ableton Plugin has all of the features of the standalone app, but it runs inside Ableton Live 11.3+. It will load inside other DAWs that support VSTs, but full usage of all seven sensor inputs is restricted by the DAW's ability to route multi-channel audio into VST effects. In our tests, Ableton is the only DAW that supports this. That being said, it might be possible to use the plugin in other DAWs with a limited number of inputs.

Video: The Ableton Plugin

Install the Sensory Percussion 2 VST3 Plugin

You can install the VST3 plugin by opening the Settings menu in the standalone app and clicking `install` button in the "General" tab. You'll be asked to enter your password because the default plug-in location is a system folder.

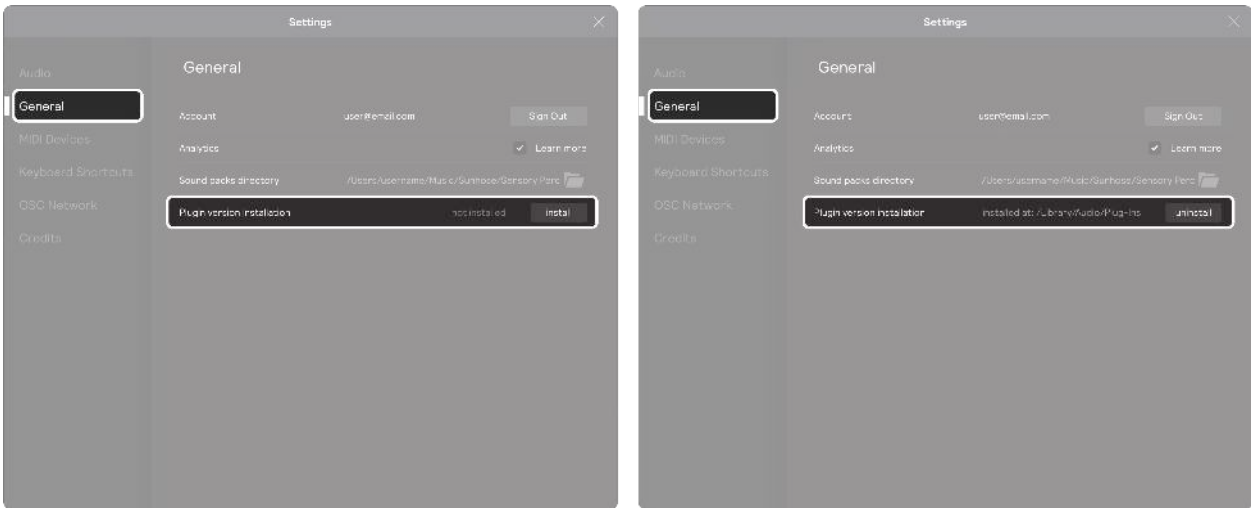


Figure 291: A screenshot of the Sensory Percussion 2 Settings window

Note:

You can find the plugin in the VST3 folder of your system. The default location for VSTs on Windows is `C:\Program Files\Common Files\VST3` and on Mac it is `/Library/Audio/Plug-Ins/VST`.

If you don't see the plugin in Ableton, you may need to rescan your plugins in the preferences menu.

How to rescan plugins

Click the "Rescan" button in the "Plug-ins" section of the Preferences window.

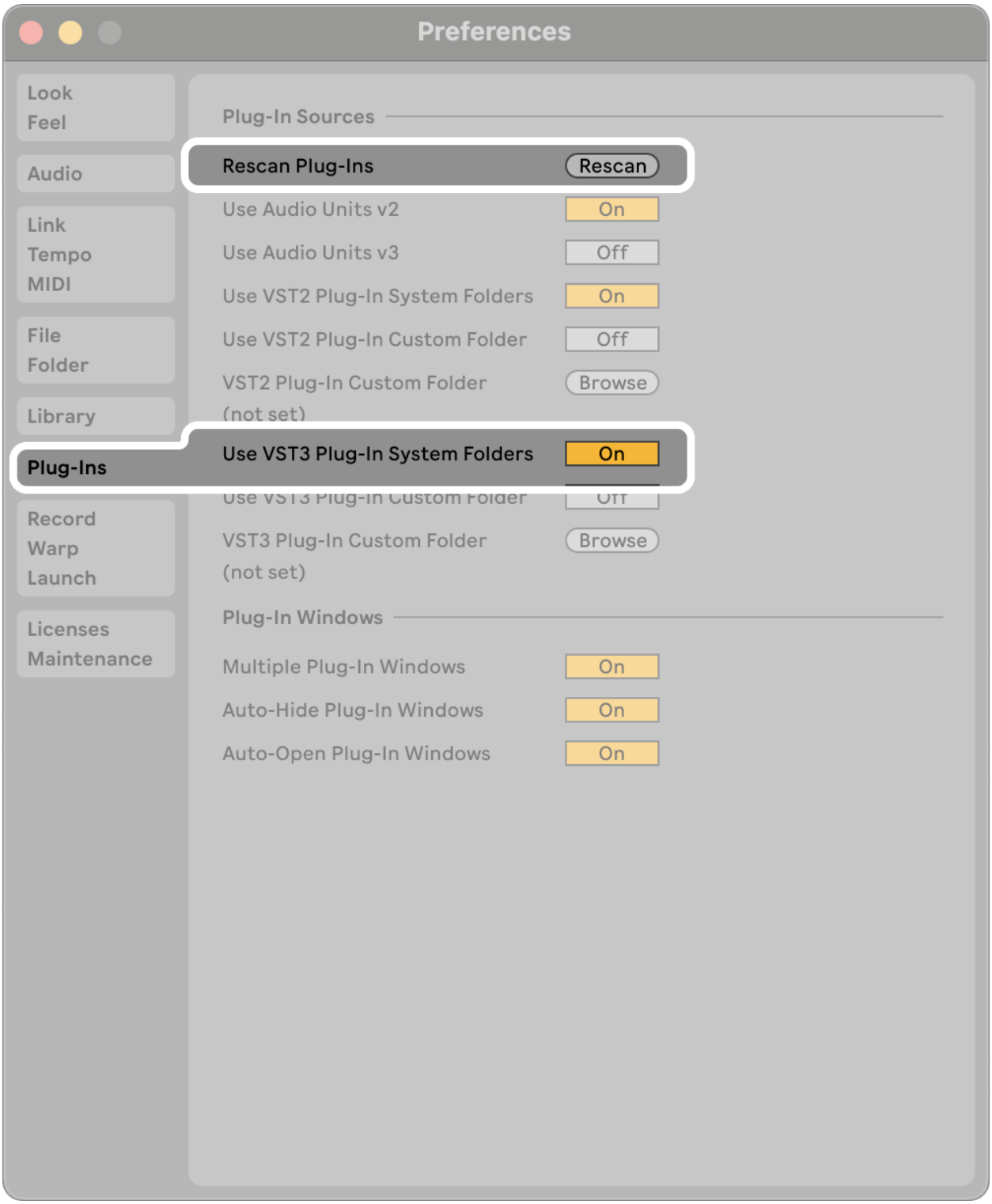


Figure 292: A screenshot of the Ableton Plug-ins Preferences window

Download the Ableton Template

The Ableton template includes all the routing and channels you need to get started with Sensory Percussion in Ableton. It's the fastest way to get started with the plugin. If you have any suggestions on ways to improve the template, please let us know!

Ableton 10

Ableton 11.3/12

> **Note:** Sensory Percussion 2 Beta Ableton Template
>
> If you are using the Sensory Percussion 2 Beta Plugin, you can download the beta template from the Beta Downloads Page

How it works

> **Tip:** Tip: Save to your Templates folder
>
> Double-click the `Sensory Percussion 2 Plugin Template.als` file to open it in Ableton. Then click `File > Save Live Set As Template` to save it to your Templates folder in the library.
>
> Then, whenever you want to create a new session, you can double-click the template in the Library to create a new Untitled session.

Ableton Live (unlike most other DAWs) allows you to route up to six stereo channels of audio into VST effects. These are called In Bus A through H. Because Sensory Percussion 2 inputs are mono, we are able to get up to 12 inputs into the plugin by panning the stereo inputs to the left and right channels of the In Buses.

The template takes a bit of a kitchen sink approach and includes all of the In Buses (7 sensor inputs & 5 analog inputs), even though you most likely will not need them all. Feel free to delete the ones you don't need and adapt the template to your needs.

1. **Select your interface as the I/O for Ableton:**



Figure 293: A screenshot of the Ableton Audio Preferences window

2. Enable your Inputs and Outputs

The first time you use your Portal interface with Ableton, you'll need to enable the inputs and outputs in the Audio Preferences.



Figure 294: A screenshot of the Ableton Audio Preferences window

You'll want to enable all the mono and stereo inputs and outputs that you plan to use.

`![A screenshot of the Input Config window](/home/runner/work/sunhouse-docs/sunhouse-docs/pandoc/img-cache/img__how-to__how_to_ableton_plugin_8.png)`

`![A screenshot of the Output Config window](/home/runner/work/sunhouse-docs/sunhouse-docs/pandoc/img-cache/img__how-to__how_to_ableton_plugin_7.png)`

3. Open the Sensory Percussion 2 Plugin

Click the track called `Sensory Percussion 2 VST`, then click the wrench icon to in the device title bar to open the plugin window.

4. Add your input devices

The template does not include any input devices by default since we won't know your drum types. You will need to add your input devices to the session.

If you have already setup and trained your drum inputs in the standalone app, you can export them to load them in the plugin. Open the standalone app and click `File > Save inputs as...` to save them to your computer. Then in the plugin, click `File > Load inputs` to load them into the plugin.

Otherwise, you can add inputs in the hardware IO panel. See the Sensor Inputs page for more info.

5. Select the input channel for your Sensor inputs

Because of the way routing works with the plugin, the input channel names in the plugin are a bit different than in the standalone app. Use the table below to route your inputs to the plugin.

Input Channel	PORTAL Name
In bus A-L	Sensor 1
In bus A-R	Sensor 2
In bus B-L	Sensor 3
In bus B-R	Sensor 4
In bus C-L	Sensor 5
In bus C-R	Sensor 6
In bus D-L	Sensor 7
In bus E-L	Mic/Line A
In bus E-R	Mic/Line B
In bus F	Line-In C & D

Input Channel	PORTAL Name
In bus G	Onboard Mic

6. Train your drum inputs

Just like in the standalone app, you'll need to train your drum inputs. Click the `Train` button on each input and follow the instructions.

(Note if you loaded your inputs from the standalone app, you won't need to train them again.)

7. Make some music

The template includes the Demo Set loaded by default. You can drag in other sets from the library or load another session from your computer.

9. Record

The template is setup to record the raw audio from the sensors and the Main Mix. You can record-enable other channels you might need in the session.

> **Tip:**
>
> In the template we have muted the playback of Sensory Percussion audio tracks group:

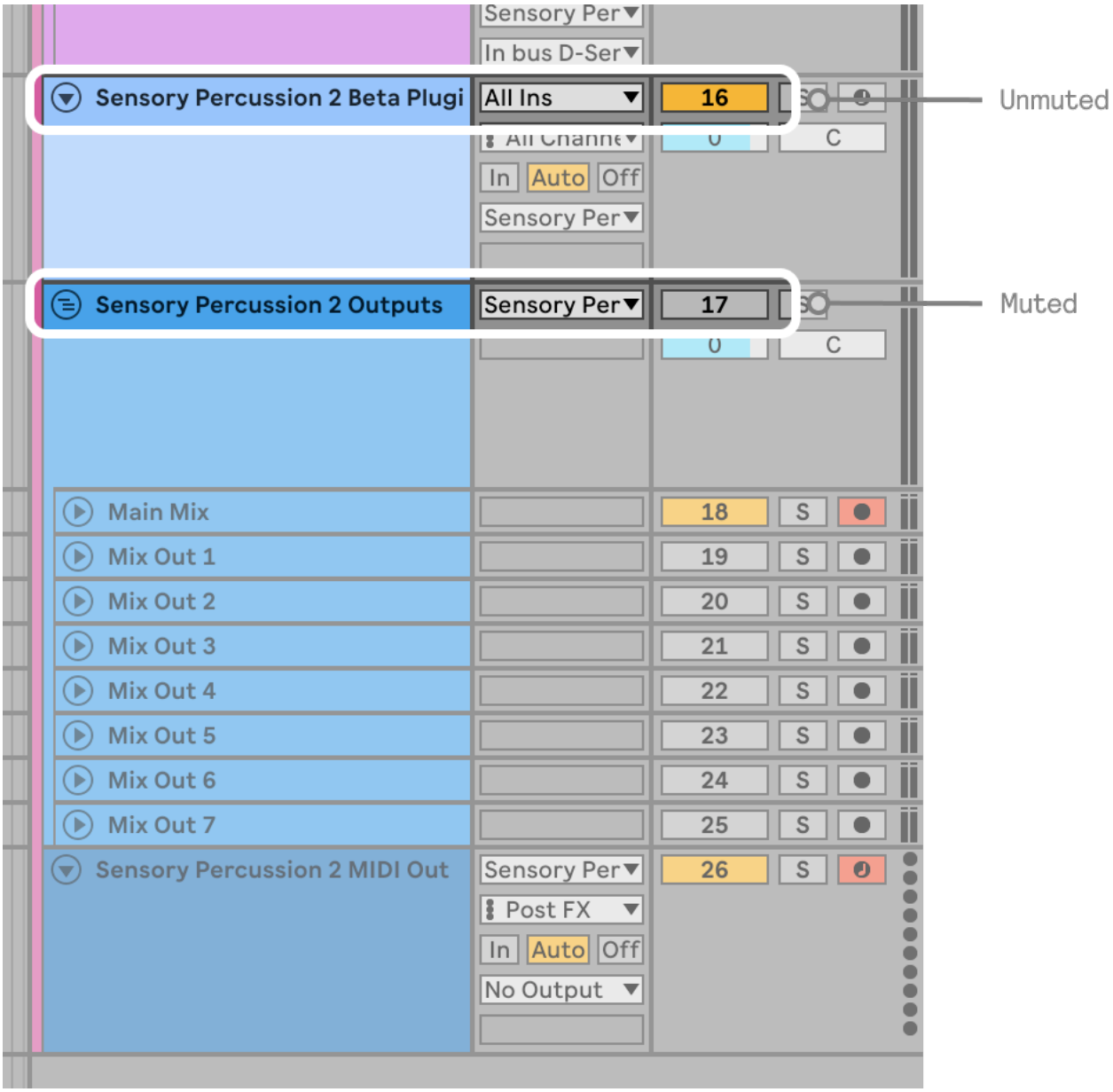


Figure 295: A screenshot of the SP Audio Tracks group in the Ableton template

That is because we are monitoring playback through the Sensory Percussion 2 VST. If you want to listen to the recorded audio tracks, you can unmute the Sensory Percussion 2 audio tracks group, and mute the Sensory Percussion 2 VST.

MIDI

Getting MIDI into the Sensory Percussion 2 Ableton Plugin

Just like in the standalone app, you can use a MIDI controller to control almost any parameter inside the Sensory Percussion Ableton plugin. An external MIDI controller can be a helpful device to **change kits**, control macros, and advance sequencers, along with many other things.

Here's a step-by-step guide for getting Ableton to recognize your external MIDI controller and then routing into the Sensory Percussion 2 plugin:

1. Enable your MIDI device In Ableton's MIDI preferences, select the MIDI device that you want to control Sensory Percussion with:



Figure 296: A screenshot of the Ableton MIDI Preferences window

If you don't see your device in the preferences menu, you'll most likely have to install a driver for your MIDI device.

The template comes with a MIDI channel called `Sensory Percussion 2 MIDI Inputs` and a MIDI input inside the plugin already wired together. You can use this as a starting point to route your MIDI device into the Sensory Percussion 2 plugin.

Next, you'll need to select your MIDI external device as the input type for the MIDI channel.

Then open the Sensory Percussion 2 plugin window and use the preconfigured MIDI Input device to make **assignments** on parameters. You can read the page on how to use MIDI In to learn more about this process.

Routing MIDI out of the Sensory Percussion 2 Plugin

The template comes with a MIDI Input Channel in the Ableton session and a MIDI Output in the SPv2 Session already wired up. All you need to do is configure what notes and/or CC messages you want to send out of the plugin.

To do this, you'll need to add **MIDI Notes Generator** or **MIDI CC Generator** modules to a layer. You can learn more about this process on the How to Send MIDI Out page.

Then you can assign MIDI effects, Ableton Instruments, and VSTs to the MIDI channel and control it with notes from Sensory Percussion.

> **Warning:**
>
> Ableton sums all of the MIDI data coming out of the Sensory Percussion Plugin into just one channel, i.e., if you trying to send MIDI out of Sensory Percussion on multiple MIDI channels, Ableton will force the data to be on just one channel.
>
> Additionally, MIDI CC messages from the plugin cannot directly control elements of Ableton's UI. In order to control knobs, buttons, and faders in Ableton from the Sensory Percussion 2 plugin, you either have to:
>
> 1. Send MIDI from the Sensory Percussion 2 Plugin out of an external bus, and then route the MIDI back into Ableton.
> 2. Use a Max for Live device like *Max Api CtrlMIDIcc.amxd* (availble in this pack)

How To Add Assignments

Assignments are, perhaps, the most powerful feature of Sensory Percussion. They allow you control pretty much any parameter with whatever gesture you want: velocity, timbre, speed,

envelope, LFOs, or MIDI. And you can use assignment ranges that are either very extreme, or *extremely* finely detailed: whatever your imagination desires!

There are a few methods of creating assignments and some best practices in keeping everything organized. Read below for how to create and organize assignments.

Right-click

A common method for adding assignments is the right-click method: right-click on the parameter you want to control and select *New Assignment*, and then navigate to the type of assignment you want to create.

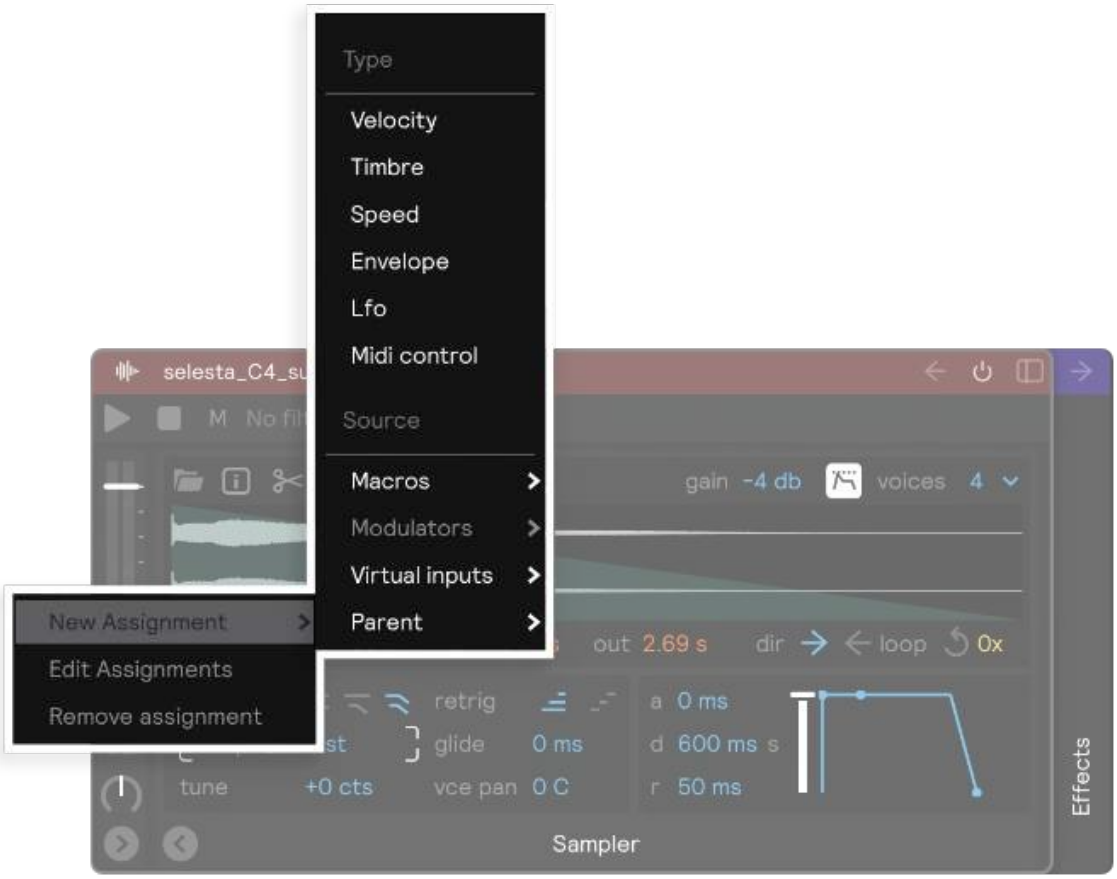


Figure 297: A screenshot of a sampler assignment dropdown menu highlighted that has been accessed by right-clicking a parameter.

Tip:

When you create an assignment it will be controlled by the module's input filter, which makes sense because you wouldn't want the assignment to have a different input

source by defualt. But if you ***do*** want one drum to control another, then check out the How To article on Cross Control.

This method is great if you just want to create **one** specific assignment on **one** specific parameter, and don't necessarily want to reuse the same assignment ranges on another parameter and don't particularly care about seeing this assignment prominantly on the edit page.

But, if you are wanting to repeat the same assignment type across multiple parameters, then this method can be a bit tedious.

Check out the following section for another method better suited for using the same assignment settings across multiple parameters.

Drag-and-drop

There are two types of objects that can be dragged/dropped to create assignments: Modulators and Macros. Drag these onto almost any parameter in the software to control that parameter with the input of your choice, whether it's the knob of a MIDI controller, the speed of your playing, or a random LFO.



Figure 298: A screenshot of a timbre modulator being dragged onto a sampler's pan knob.

Modulators To create a modulator, first make sure the modulators panel is visible by selecting the panels dropdown in the top right corner:



Figure 299: A screenshot of a Drum Pads controller with its panel view dropdown menu highlighted.

Then select the “+” button to add a modulator (Velocity, Timbre, Speed, Envelope, LFO, MIDI Control). You can drag/drop it onto parameters to create assignments. You can also access modulators by right-clicking the destination parameter and selecting “Modulators” from the dropdown. Any modulators that you’ve created on that layer will be listed here.

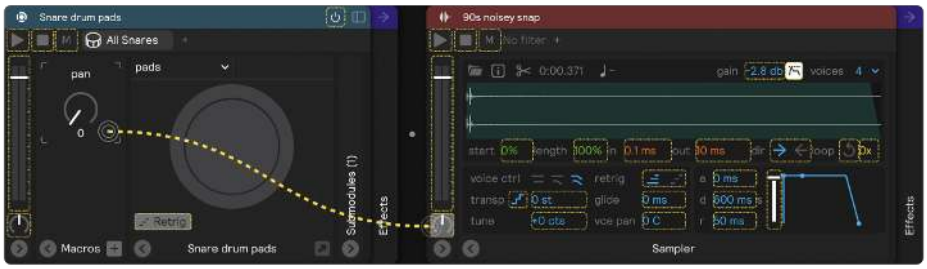


Figure 300: A screenshot of a macro named ‘pan’ being assigned to a sampler’s pan knob.

Macros Macros can also be dragged and dropped to multiple parameters. Show the macros panel in the same way you show the modulator panel (select the panels dropdown in the module’s top right corner and check “macros.”)

Click the “+” button to add a macro: you can rename it by double clicking the title and typing. You can then drag and drop that macro to as many parameters on as many modules in the layer that you like. If you want to use Velocity, Timbre, Speed, Envelope, or MIDI Control to control the macro, then you can right-click it and select one of those options in the assignment dropdown.

How To Add Effects

FX section of a layer

Each module inside of a layer includes an “fx” section, and it’s always the farthest right section of a given module. Clicking the “fx” icon will expand/collapse this section, revealing a list of effects applied to that module. When the icon is blue, that means this section is expanded. If you drop an effect onto a module with a collapsed “fx” section, this section will automatically expand to show you the parameters of the effect you just dropped.

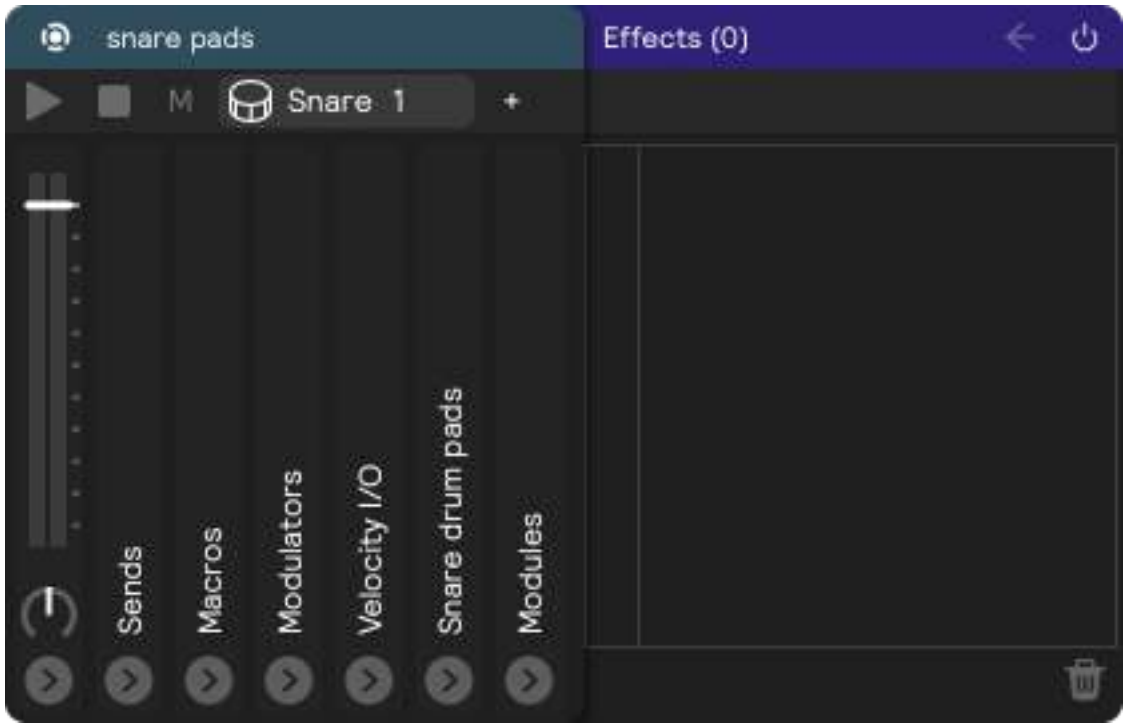


Figure 301: An image of a drum pads controller with an expanded effects panel, the effects panel is empty.

Effects Library

The effects library is on the left-hand side of the software, and this is where you will all of the effects available in Sensory Percussion 2. Check out the Effects page for a breakdown of what each effect does.

Drag and Drop

Effects are added by dragging from the library on the left and dropping them into any module inside of a layer. When you drag an effect and hover over a module, the target will be outlined in blue to show you where the effect will be dropped once you let go of it. Dropping an effect onto the first module in the chain (the leftmost module) will apply it to every other module in that chain. So, the farther to the right you drop the module, the more specific you're getting and the fewer elements of that layer will be affected.

Effect Combinations

You can apply as many effects as you want inside any given module, so the combinations are truly endless! Switching the order of your effects will also result in a different sound. For example, Overdrive –> Phaser –> Reverb will sound different than Phaser –> Reverb –> Overdrive. Experiment with different combinations to really dial in the sound you're looking for.

Add Microphone Input (or another another audio source)

You have a microphone or a synth or some other cool audio device that you want to route through Sensory?…Here's how to do it!

Check that the mic or audio source is plugged into an enabled input

The first thing to check when you are routing Microphone or other audio input into Sensory Percussion is your Audio Settings.

Make sure that the input channel/s you have plugged your mic or audio source into are enabled in the input channel list.

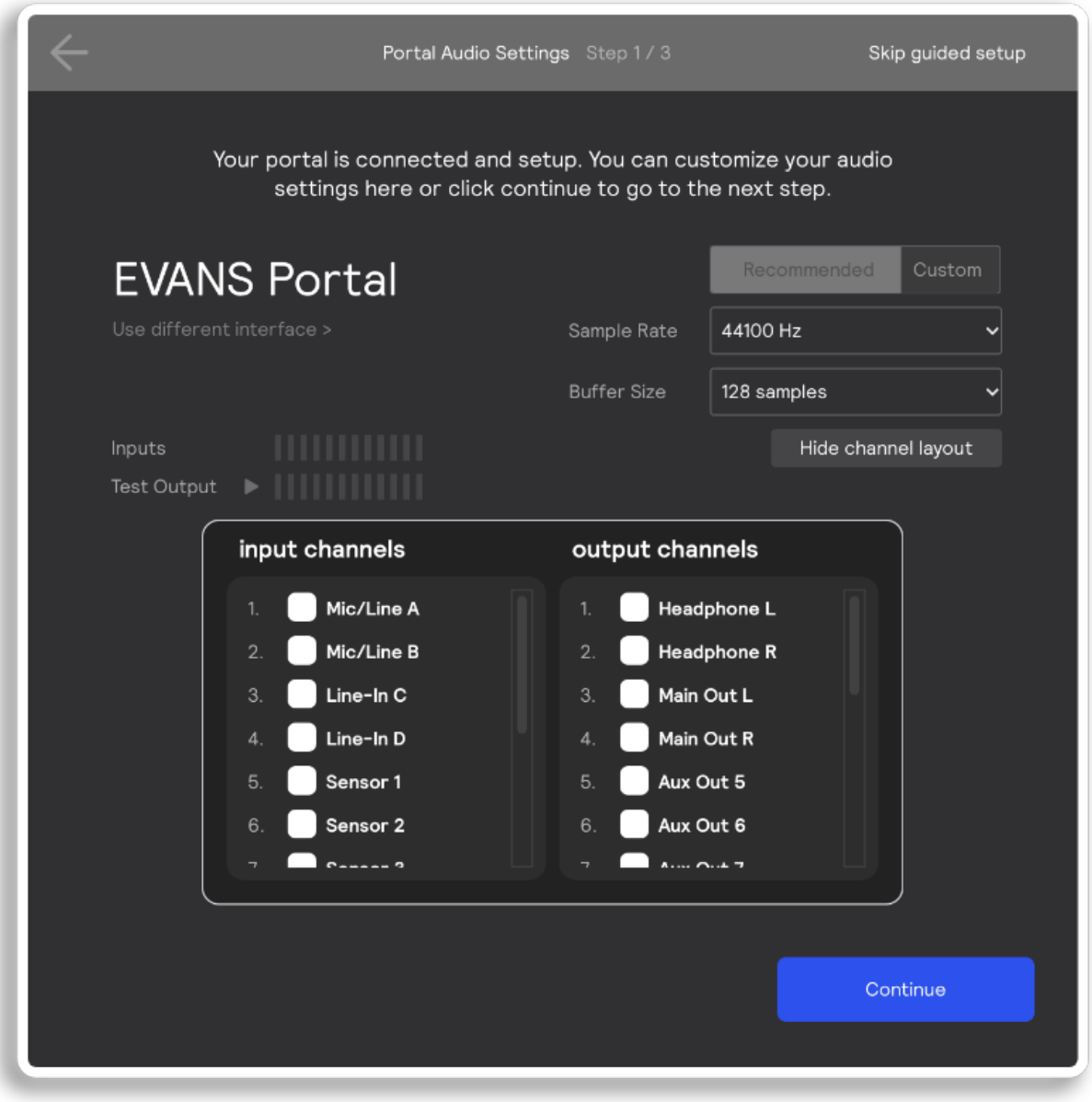


Figure 302: A screenshot of the input and output channels in the audio settings window

Create a hardware input and select its input channel

Next, create an analog hardware input by selecting the audio plug icon that appears when you hover over the “+” button to the right of your other hardware inputs.



Figure 303: A screenshot of the 3 different types of hardware inputs

If this is the first analog input you have created, its badge will say “Analog 1.”

From the input channel dropdown, select the channel that your audio source is plugged into. Test the mic or audio source and see if signal appears on the analog input’s meter.

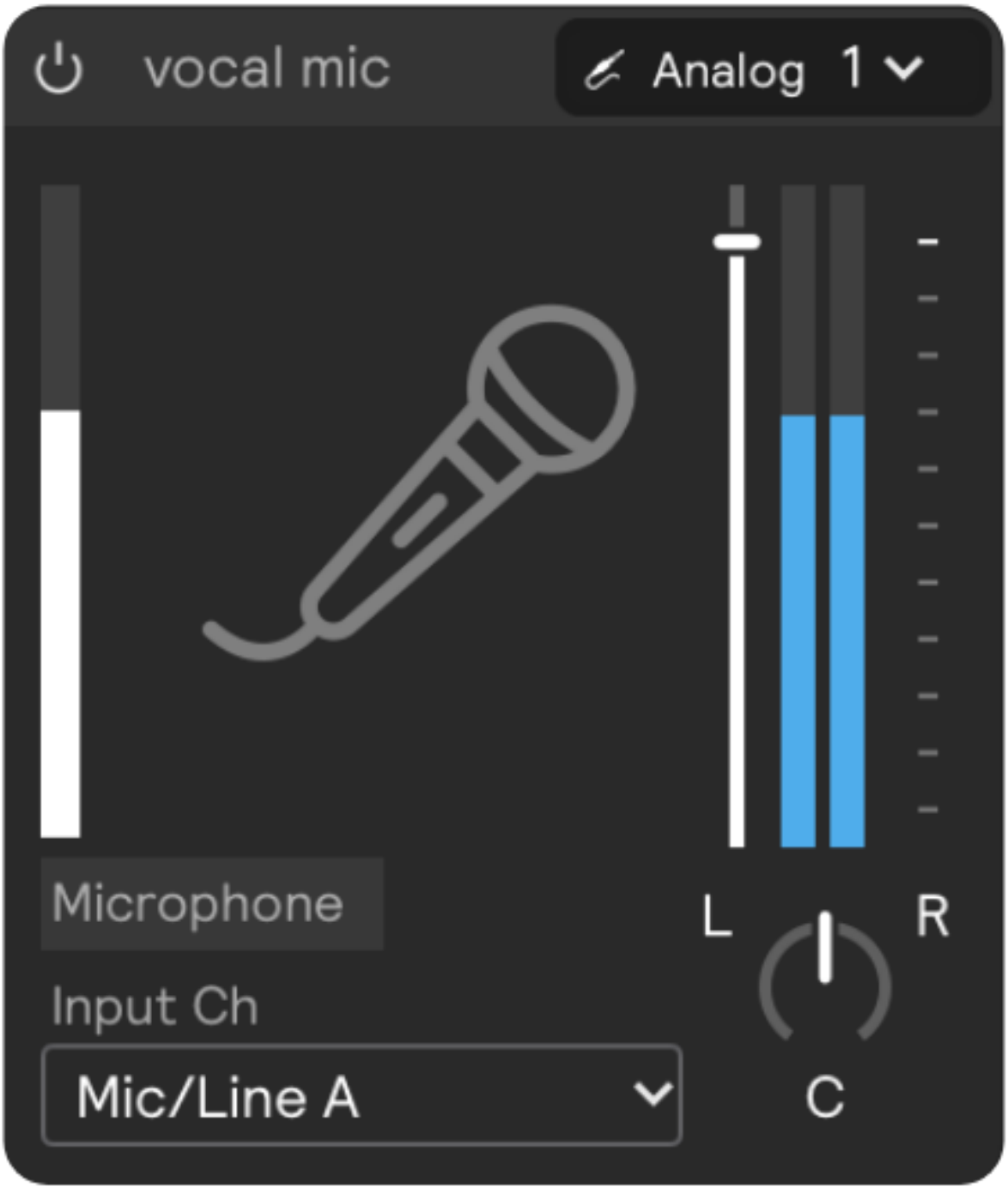


Figure 304: A screenshot of an analog input with the channel set to Mic/Line A

If you want, you can change the icon of the hardware input from an audio plug to a microphone, synth, or guitar, (and more), by selecting the button that says “Audio Insert.”

Route the analog input into your set

Once you have signal showing up in your hardware input, for it to produce sound, you'll need to route it into your set using the generator called audio insert

Drag it in from the generators section of the library and select "analog1" (or whatever corresponds to the hardware input).

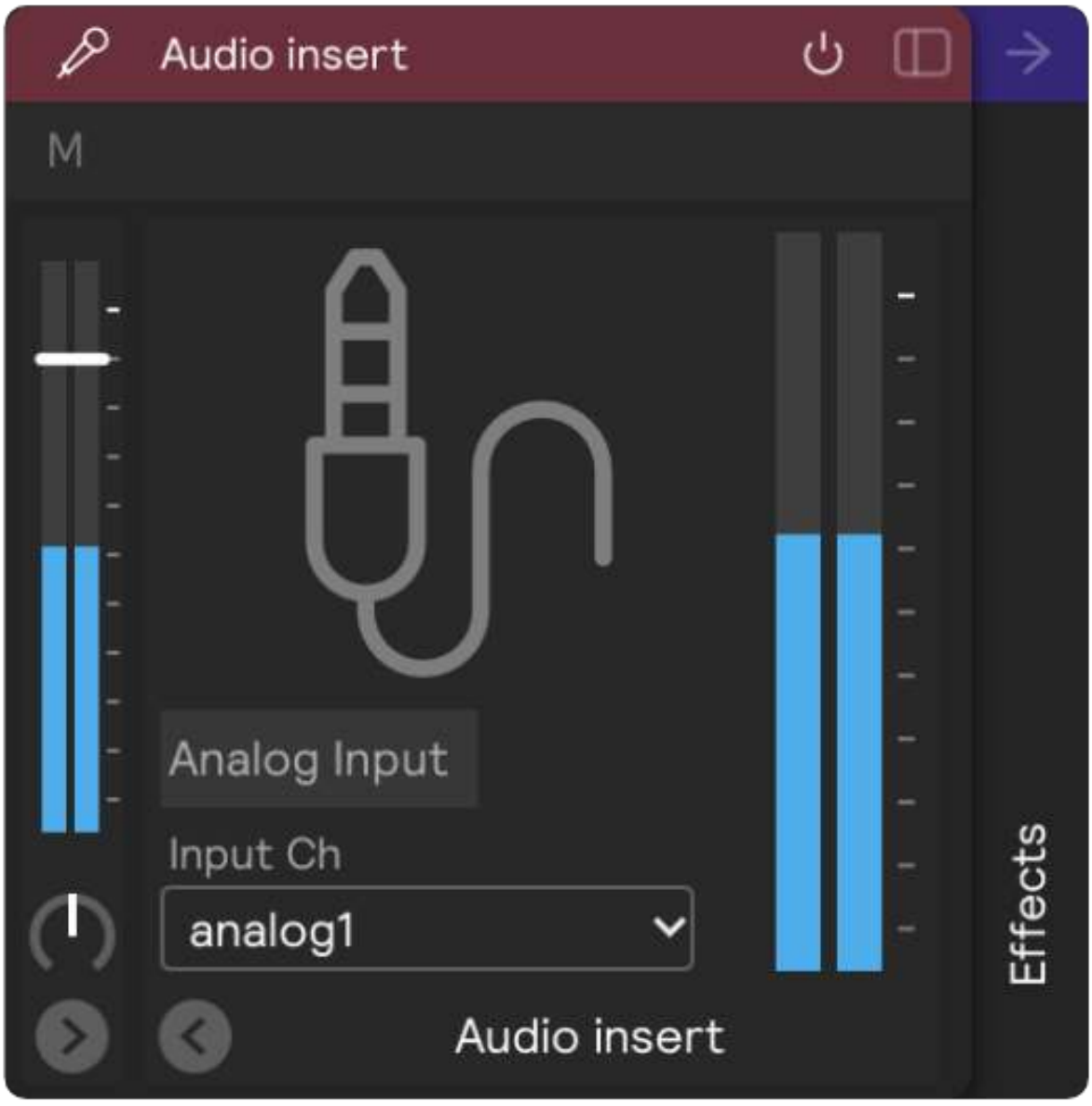


Figure 305: A screenshot of an audio insert generator with its input channel set to analog1

Bring up the fader and you are good to go! You can add FX, and copy and paste this audio insert

into your other sets if you want.

Change Sets with an Assignment

Changing up all the sounds by hitting a zone or pressing a button is a powerful technique in Sensory Percussion, and it's easy to set up!

It works just like adding any other assignment. Simply right-click either the next (right) or previous (left) arrow in the set manager bar. Then, select which hardware input you want to control the button.

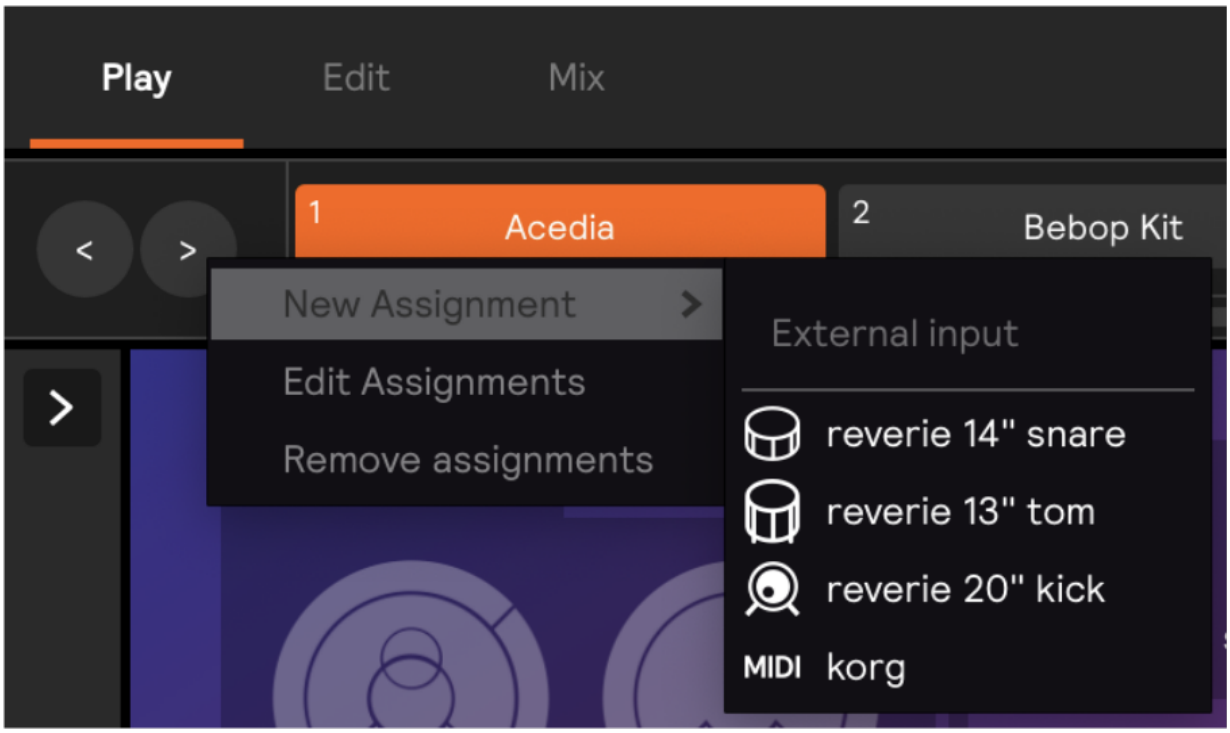


Figure 306: A screenshot showing the menu that appears when you right-click the next/previous button on the set manager

Then, you can select a zone or zones from the zones dropdown list in the assignments popup.

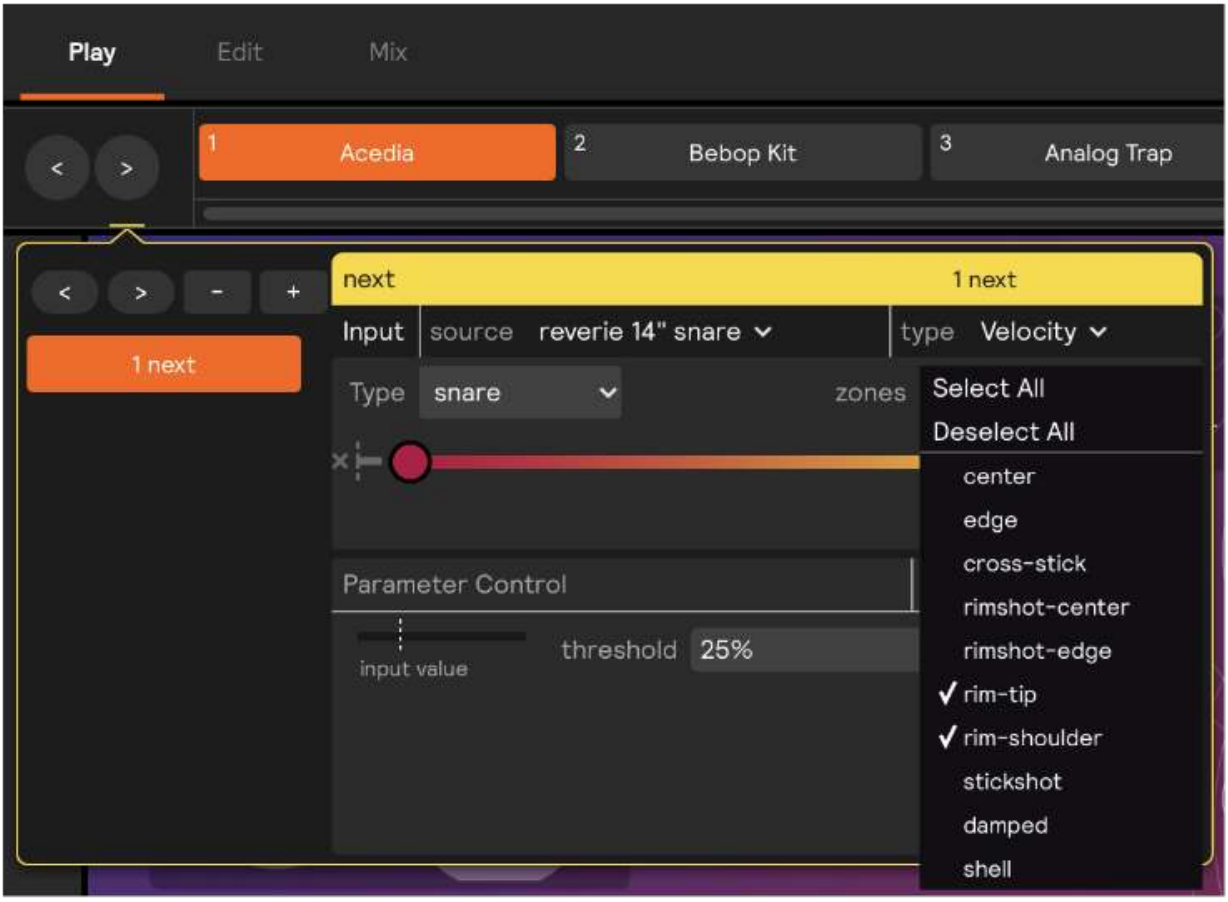


Figure 307: A screenshot showing an assignment on the next button with the zones set to rim-tip and rim-shoulder

In the example above, only the rim-tip and rim-shoulder of the snare will move to the next set.

Some tips

1. **Designate a zone that you don't often play to switch sets**. We've found the rim of the kick to be a great set switch.
2. **Set a high threshold**. If you are using a zone or drum to switch sets, it's good to set (and test) a fairly high threshold. You don't want a quiet, or unintentional hit to switch sets. Assignment thresholds set to 25% by default, so try increasing that to around 50% and see if that setting works for you.

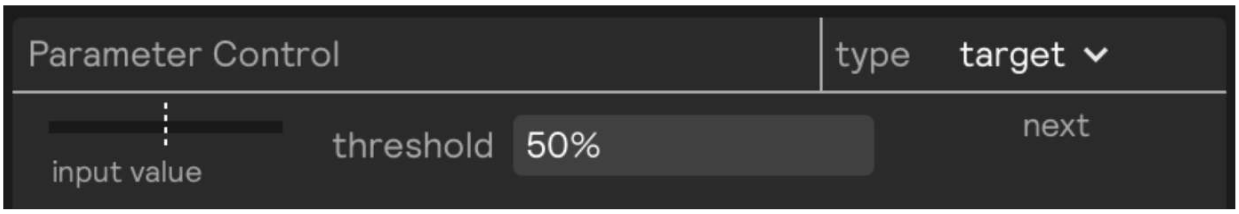


Figure 308: A screenshot showing the threshold of an assignment set to 50%

3. **Use sequencers inside of a set to switch sounds instead of adding an assignment to the set manager**. In some cases, it's better to handle switching to the next section inside of just one set. Because you can infinitely nest sequencers, and drag and drop anything into a sequencer (including fully mapped layers), you can keep everything inside a set.

To do that: drag/drop or Group into… any layers you want into a sequencer, and assign each to a specific step. **VERY IMPORTANT**: Set the sequencer to "manual" mode. This makes it so that the sequencer only moves to the next step when the next button is triggered via a specific assignment (like the next/previous set arrows). The default mode is "cycle," which moves to the next step anytime the module receives signal.

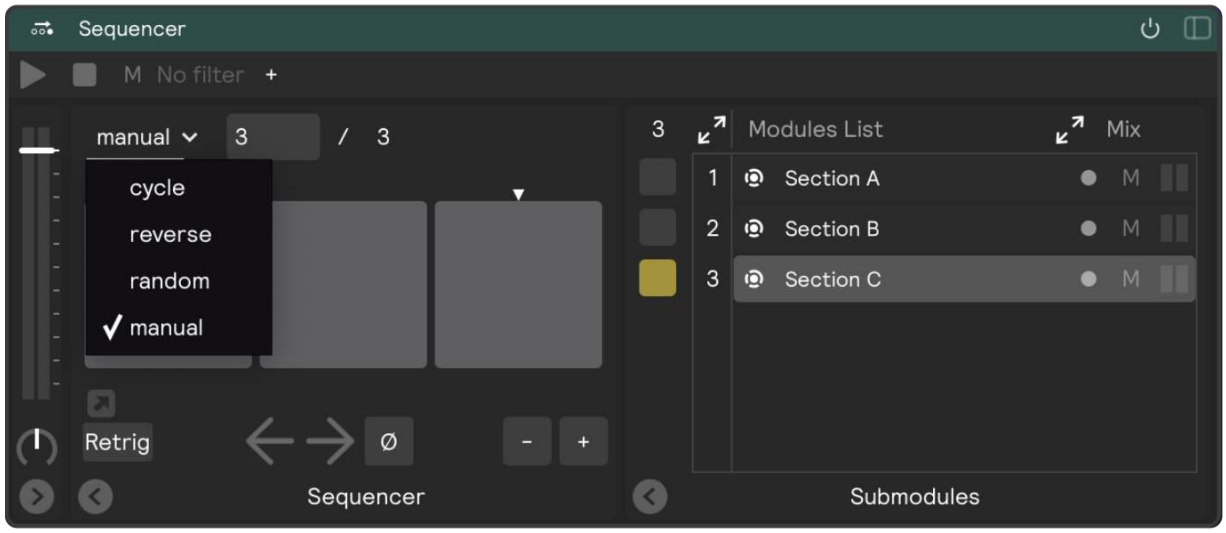


Figure 309: A screenshot showing a sequencer being set to manual mode

Then right-click on the "next" button to add an assignment. From there it's the same process as above: choose the assignment input and zone you want to power the assignment.

4. Use a MIDI controller to change sets. One of the coolest things about Sensory Percussion is that you can embed *virtual* button and knobs into the zones of your drumset. This can eliminate the need to have *physical* buttons and knobs around your set - but, sometimes a physical button/knob can be useful, and – in the case of set transitions – you may decide

you want to use a button. Do do that,it's simple: just right-click on the next or previous set button, select your MIDI hardware input from the dropdown and then select "learn" in the assignment panel and press the button you want to change sets.

How To Audition Samples in the Library

Here are the steps to audition samples:

1. Pop open the hardware outputs panel
2. Look for the analog output that you want to use to audition samples.
3. Click on the headphone icon next to the meter so that it turns from gray to blue.
4. Pop open the library panel and navigate to "Build/Samples," or to a folder that you have bookmarked under "Folders" (that has audio samples inside it).
5. Click on a sample. You should hear playback as the sample loops. You can click samples with your mouse or navigate with your arrow keys to quickly audition sounds.

How to Blend Samples Between Zones

Blends are a feature entirely unique to Sensory Percussion that allow you to mix the samples assigned to different pads based on how you play.

Without blends, there are distinct boundaries between all zones of the drum. Say you have a snare sample on the center zone and a hi-hat sample on the edge. As you move from the center to the edge, there will be a point where you go form hearing only snare to only hi-hat. But if you create a blend between center and edge, the boundary becomes gradual. This feels more like playing an acoustic drum, where the different timbres are heard proportionally to where/how you play the drum.

In Sensory Percussion 2, blends are exclusive to drum pads controllers, since these are the controllers that allow you to assign modules to different zones of the drum. To create a blend, first open the advanced mapping view by clicking the  button inside of the Submodules panel. You will now see a matrix with all of the zones of the drum on the horizontal axis and all of the submodules on the vertical axis. Below is a screenshot of a snare sample on the center and hi-hat on the edge without any blends:

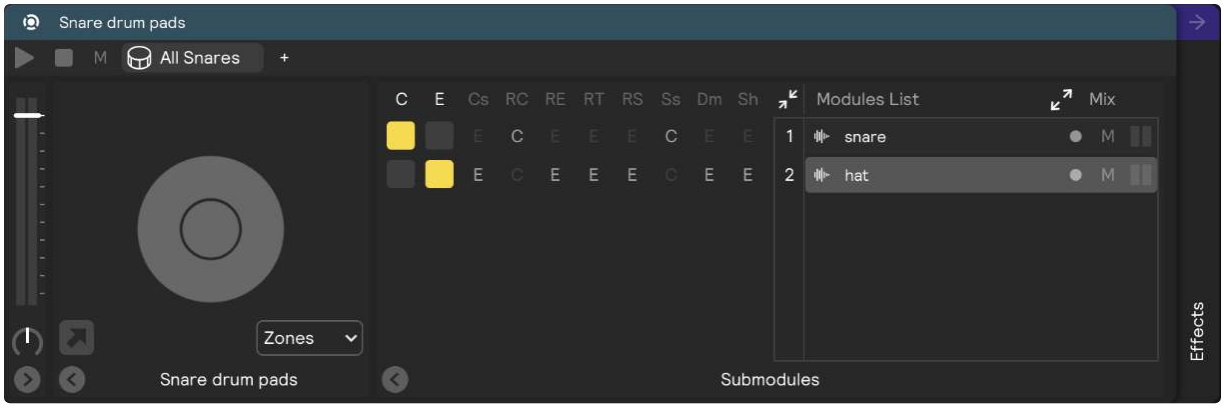


Figure 310: A screenshot of a Drum Pads controller with two active zones containing samplers that are not blended.

To blend between zones, simply shift-click on any of the active squares in this matrix view. It will now appear outlined in yellow. Below is a screenshot of the same module with both of the samples blended between center and edge.

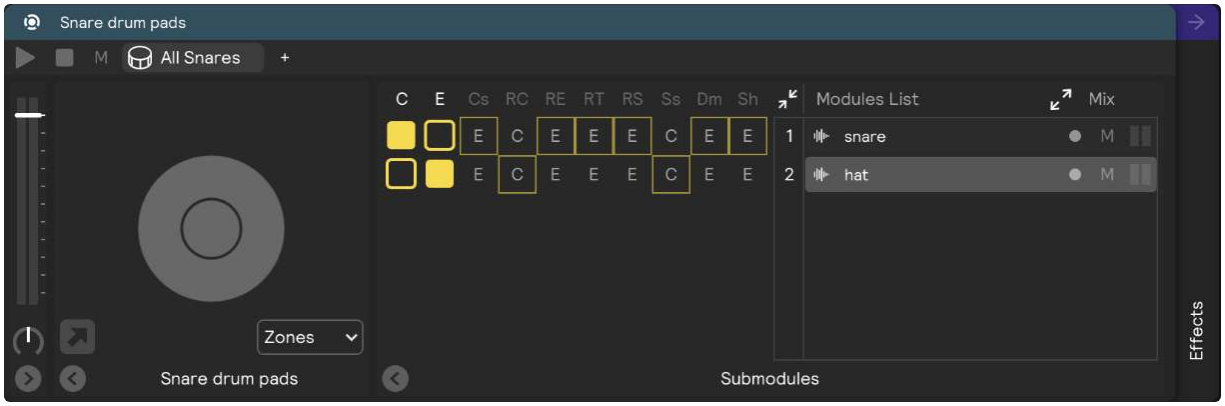


Figure 311: A screenshot of a Snare Drum pads controller with two active zones containing samplers that are blended.

You can experiment with different combinations of blended and unblended modules to get some nice variety and expressivity between zones!

How to Choke Sounds

Using the ‘Retrig’ button

The easiest and most common usecase is to just activate `Retrig` (Retrigger) on the module.

In the screenshot below, `Chord 1` and `Chord 2` modules are assigned to the drum head and drum rim, respectively, and since `Retrig` is turned on, they will naturally choke each other.

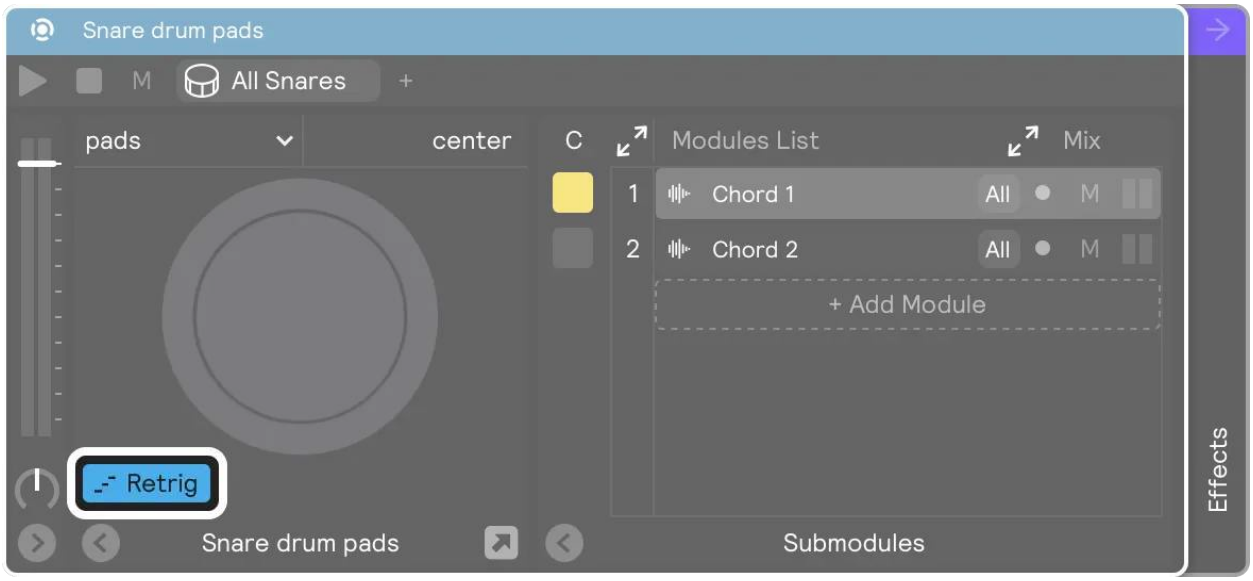


Figure 312: A screenshot of a module with the ‘Retrig’ button highlighted

Note:

This will work in any controller, not just Drum Pads, and it will even work if you don’t have generators producing sounds on some of the modules.

For example, in the screenshot above, the `Chord 2` sampler could be deleted and rim would still choke `Chord 1`.

But this will only work with child modules of the module set to `retrig`. Read further for choking sounds across different layers.

Using zone-specific velocity assignments on the stop button

Sometimes you might want to have a zone from a *different* drum choke the sound. In this case it might not work to use `retrig`, which only works within the same layer. So you could add a velocity assignment from a zone on one drum to the `stop` button of a layer filtered by another input.

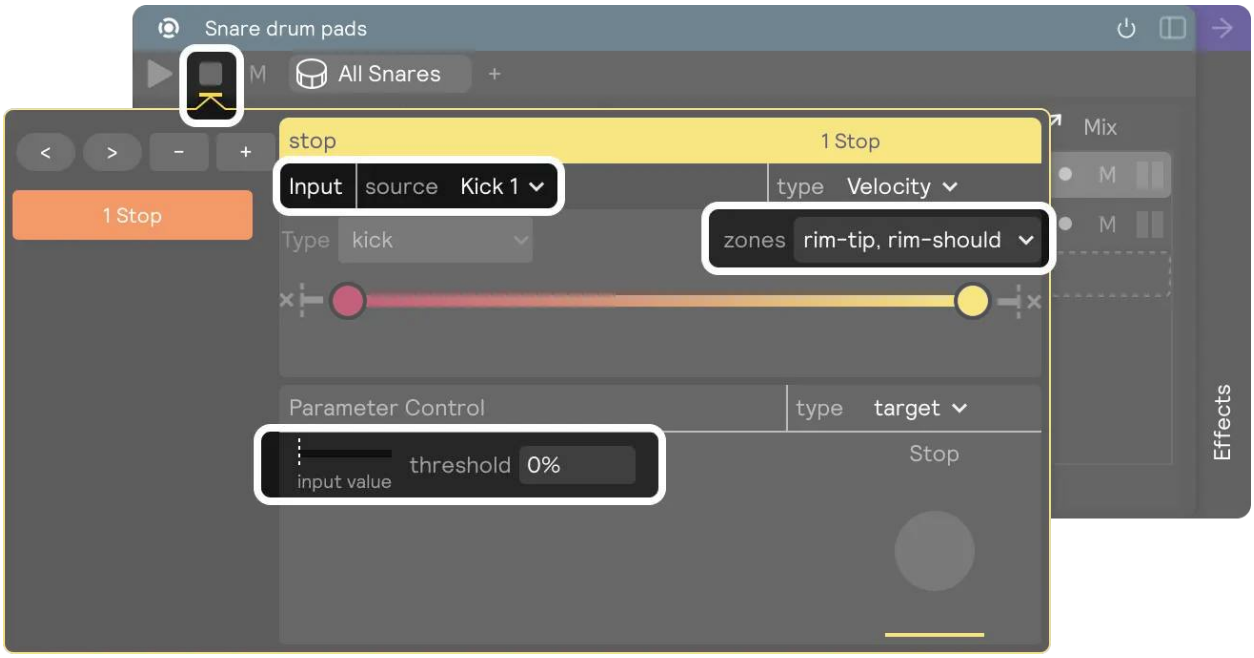


Figure 313: A screenshot showing an assignment on a stop button from the kick drum

Warning:

Adjust the threshold of the assignment to your taste – you may want 0%, which means that even tapping the zone accidentally could initiate the choke. Or you you may want 25% or higher, if you only want strong hits to engage the assignment.

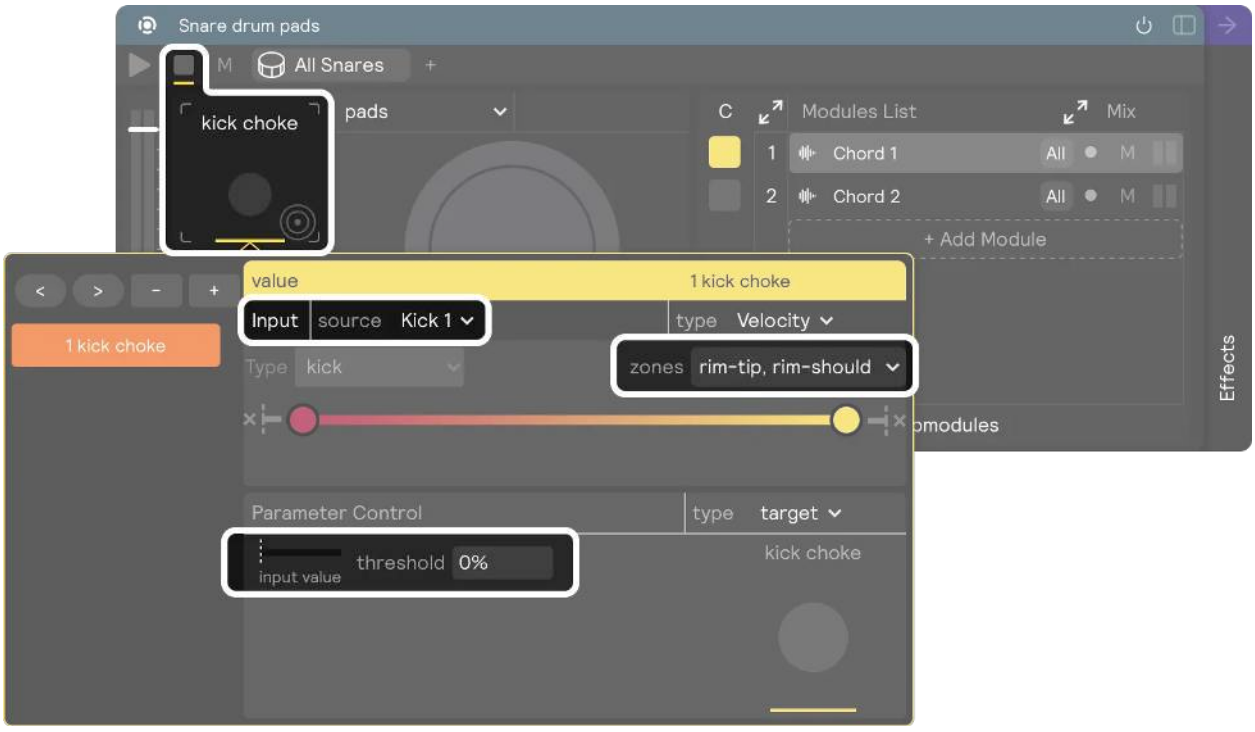


Figure 314: A screeshot showing an assignment on a macro, which is assigned to the stop button

> **Tip:**
>
> For more visual clarity, you can add the zone assingment to a labeled `target` macro, and – in turn – assign that target macro to the stop button. This could be a helpful reminder that there is a choke set, and which zone/s are involved.

Using the Global Choke Button

In the top right of Sensory Percussion 2's app frame, there is a Global Stop button. Just like above, you could use a zone-specific velocity assignment, or learn a button from a MIDI device to that button.

Only use this method to choke your sounds if you want a zone or MIDI controller to choke every sound in EVERY single set in your session. Otherwise, you should use one of the other methods outlined in this article.

Choke groups

With V2, the usecases for creating official choke groups are diminished – the methods described above are more efficient – but there are certainly some usecases.

To create a choke group, right-click on an module's stop button and create/select a choke group. Any module that is a member of a choke group will choke any other module in the same group.

For example, you might have a module buried inside a sequencer that you want to choke a module on a different layer – and you *only* want that specific module to activate the choke: *not* the zone/s you are using to trigger *that* module, the module *itself*.

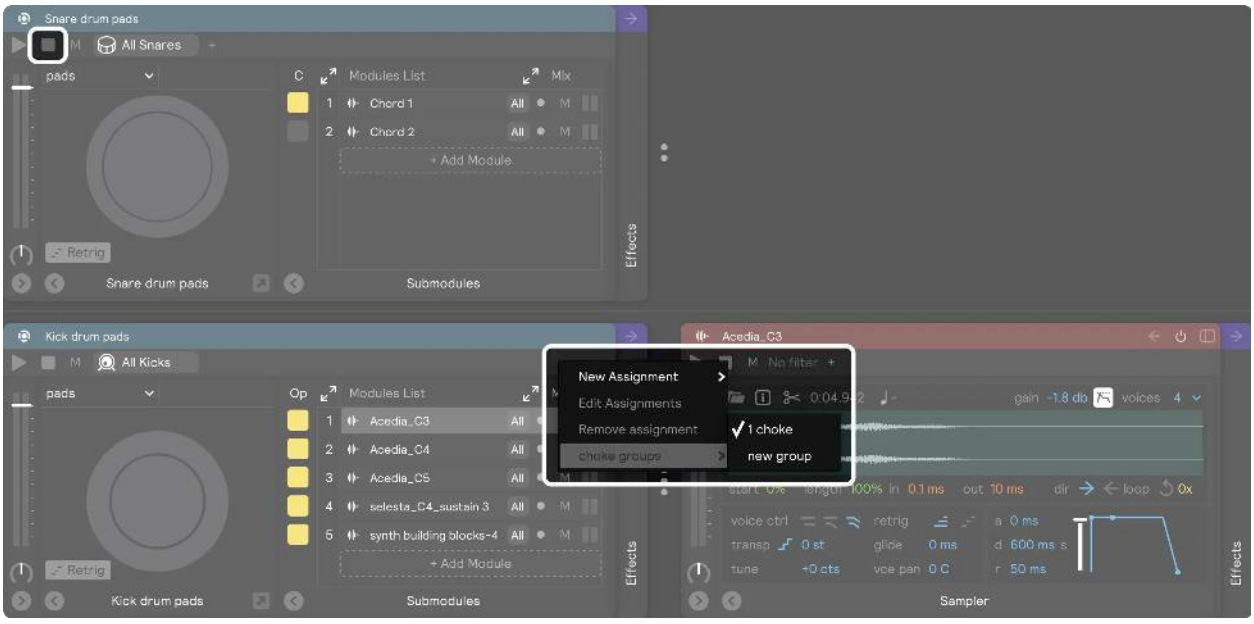


Figure 315: A screenshot of two layers showing the Choke assignment menu on the stop button

---

How To Control Parameters Across Drums

Cross-control refers to the ability of Sensory Percussion to control parameters on one drum by playing another. Assignments mapped to modules, by default, will receive input based on the input filter. So, for example, if you create a velocity assignment on the dry/wet knob of a reverb effect mapped to a controller with a “Snare 1” input filter, then – by default – only the velocity of “Snare 1” hardware input is going to drive that effect.

But, what if you want the velocity of your floor tom to control the mix level of that reverb mapped to your snare? Well, then you have to setup cross control.

You can setup cross control at two different points in the assignment creation process.

1. If you know right off the bat that you want cross control, then, when creating the assignment by right-clicking the parameter, select *New Assignment*›*Virtual Inputs* and then select whichever input you want to drive the parameter. In this case, it’s Tom 2.

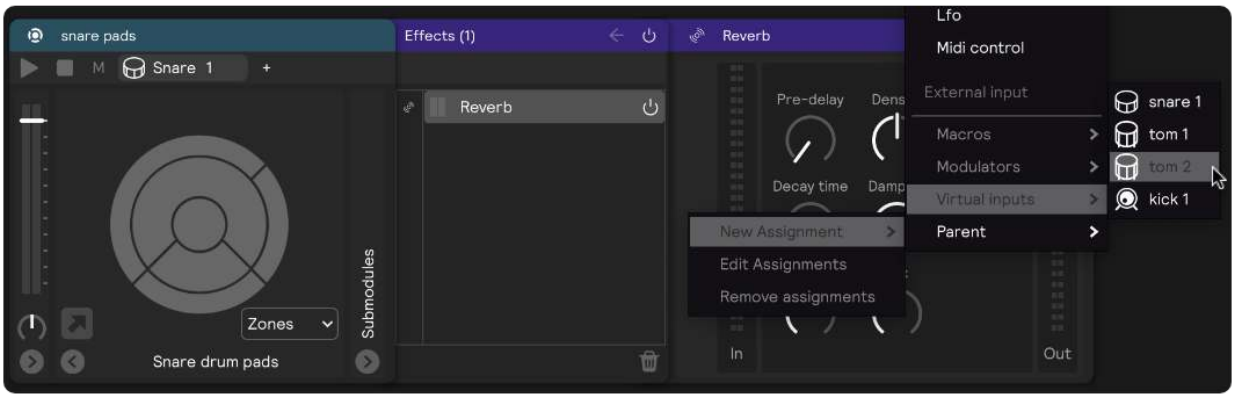


Figure 316: A screenshot showing a new assignment being made on the mix knob of a reverb with the input being set to Tom 2

2. If you've already selected a different option from the top of the list (Velocity, Timbre, Speed, Envelope, Lfo, MIDI control), never fear! You can right-click the parameter and choose *Edit Assignment*. From this menu, you can change the input from the `source` dropdown.

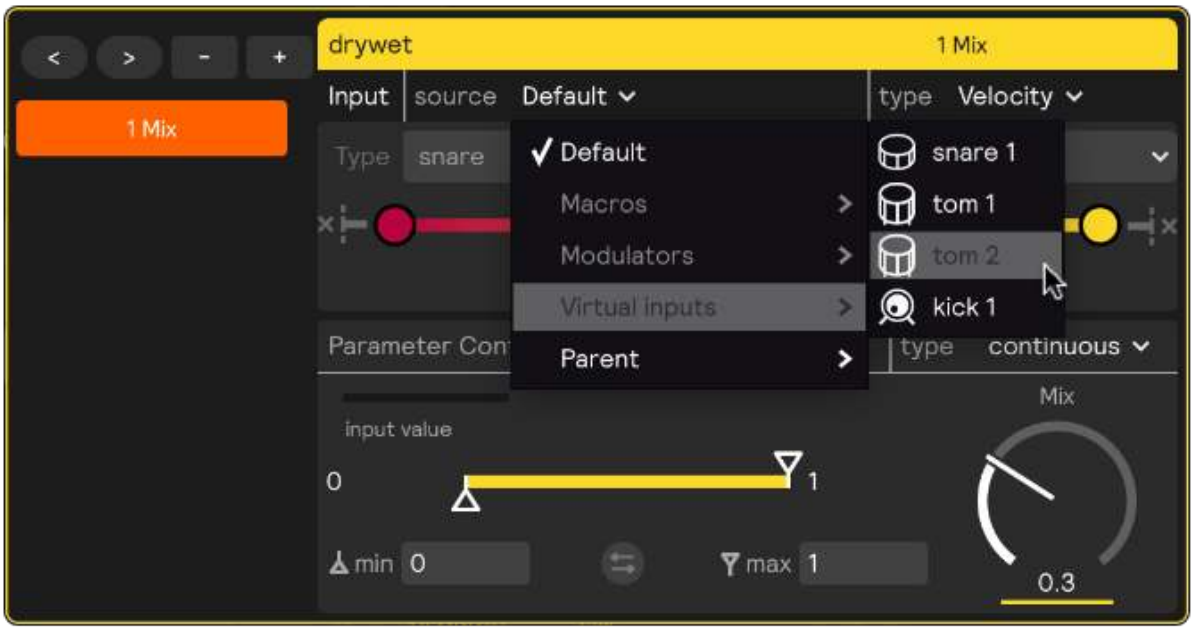


Figure 317: A screenshot showing an existing assignment on the mix knob of a reverb being edited to change the input to Tom 2

How To Drop Sounds onto the Drums

The quickest way to make a drum your own is to drag a sound onto it. You can drop samples from the library or straight from Finder or Explorer (WAV, AIFF, FLAC, and MP3 all work), and whole instruments and kits from the library.

> **Tip:** Listen first
>
> Click any sample in the library to hear it before you drop it. See How To Audition Samples in the Library.

In the Play view: onto a whole drum

In the Play view, drag a sample onto a drum in the kit graphic. The drum highlights while you're over it. Let go, and Sensory Percussion adds a new layer that plays your sample from that drum.

The sample goes on the drum's main zone: the **center** on a snare or tom, **open** on a kick, and the **bow** on a cymbal or hi-hat. Drop several samples at once and they all land on that zone, stacked into one sound.



Figure 318: A sample being dragged from the library onto the snare in the Play view's kit graphic, with the drop targets outlined

You can drop more than samples:

Drop this…	…and you get
A sample	A new layer playing that sample from the drum
An **instrument** (like a snare from **Build → Instruments**)	That instrument, wired to the drum
A controller or generator from **Build**	A new layer with that module, wired to the drum
A **drum kit**, onto the area behind the drums	The kit's instruments spread across all the drums your hardware is sending

The new layer sits on top of whatever the drum already plays, so you hear both. To hear only the new sound, mute the other layer in the **Main Mix**, or delete it.

Filling an empty drum

If a drum has no sound yet, hover it and click the **+** that appears on its head (on a cymbal, on the bell). The menu lists the instruments for that kind of drum, grouped by library. See Virtual Inputs.

In the Edit view: onto a single zone

To put different sounds on different parts of a drum, like one sample in the center and another on the rim, use a Drum Pads controller.

1. In the Edit view, open the layer you created above, or drag in **Drum Pads** from **Build → Controllers** (choose the kind for your drum: snare, tom, kick, cymbal, or hi-hat).
2. Click **Pads** ▽ and turn on the zones you want to use. New Drum Pads start with two: center and rim shoulder on a snare or tom.
3. Drag a sample onto a zone. It becomes a sampler that plays when you hit that zone.

Zones you haven't turned on borrow from the nearest active zone, so edge hits play the center sound and rim-tip hits play the rim-shoulder sound. That way, nothing you play falls silent by accident.

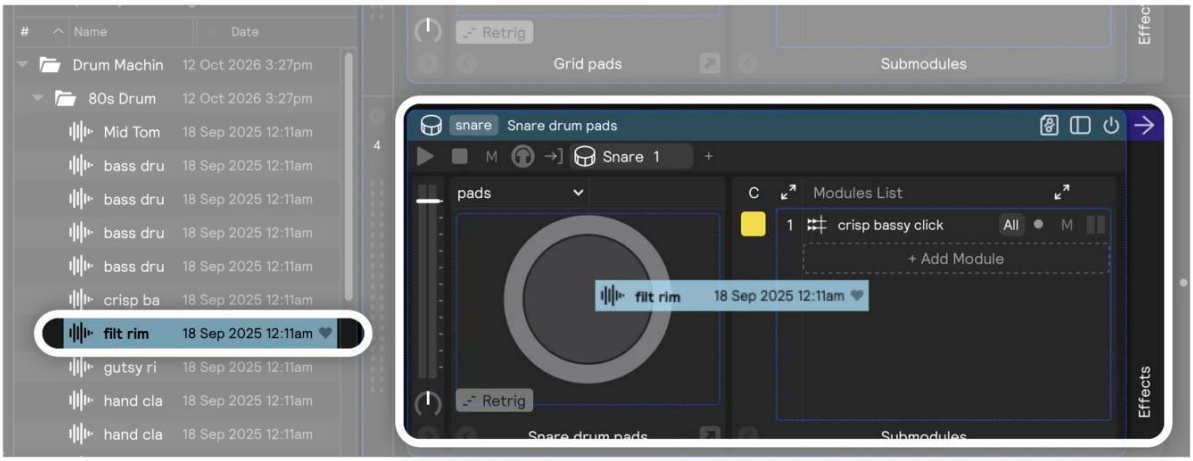


Figure 319: A sample being dropped on the rim shoulder ring of a snare Drum Pads controller, with the center zone already playing a sampler

> **Tip:** Blend between zones
>
> Hold `shift` and click a cell in the Drum Pads mapping matrix to blend a sound across zones, so it fades in as you move from center to edge instead of switching at a line. See How to Blend Samples Between Zones.

Swapping a sound

- **Replace a sample**: drop a new sample onto an existing sampler.
- **Try other instruments**: select an instrument layer and use Hot Swap to page through instruments that match it while you play.

Keeping what you made

Your new sounds are saved with the set, in your session. To reuse what you built in other sets, open the layer's preset menu and choose **Instruments → Save current as instrument…**. It then shows up under **User** in the library's **Instruments** tab, next to the factory ones. See Saving your own instruments.

How To Export a Sound Pack

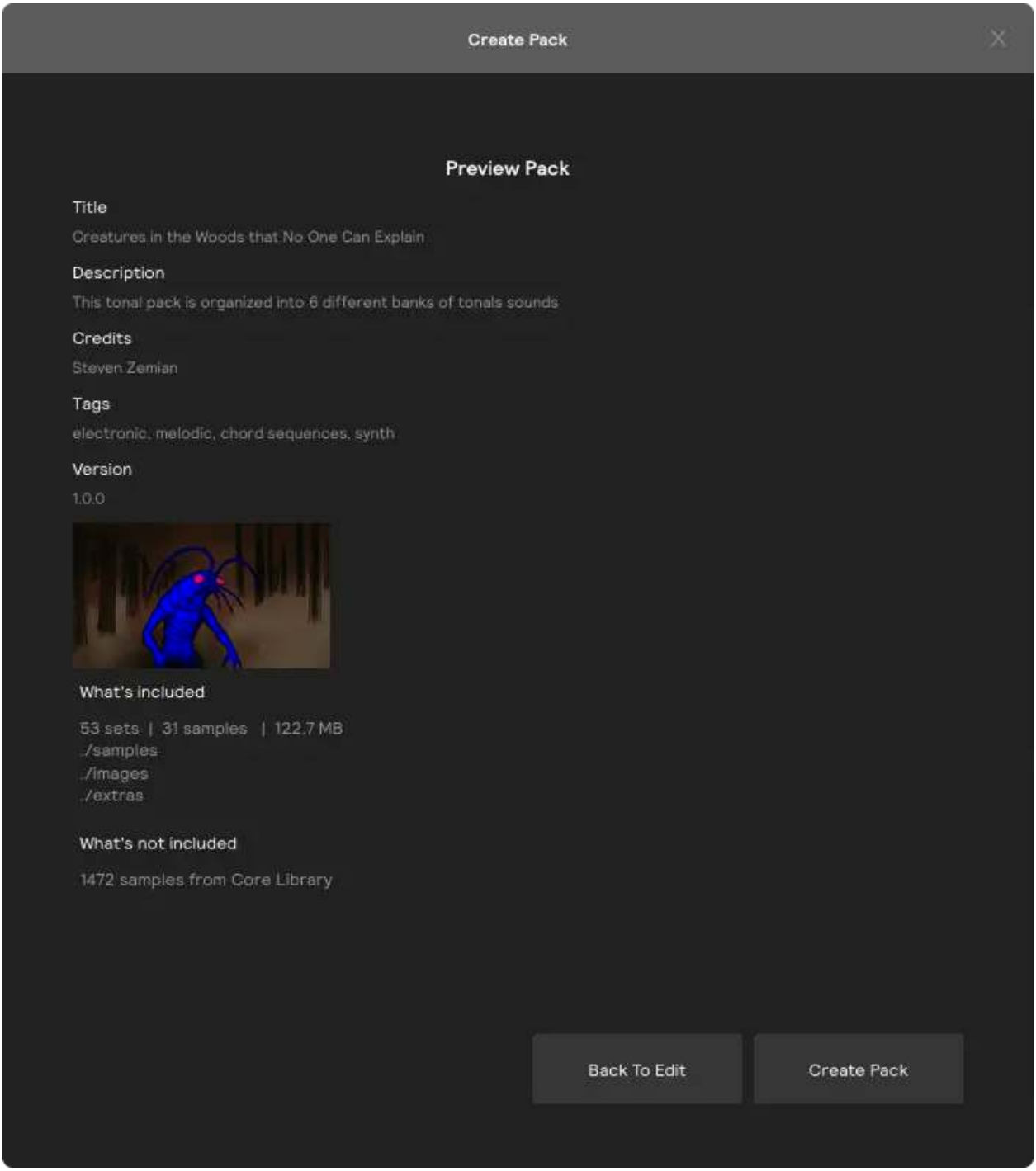


Figure 320: A screenshot of the pack creation wizard

Once you have created a sound pack that you would like to share with the community or a friend, you can easily export it from the file menu.

The Steps

1. Open the session file (`.sp2`) for the pack.
2. Select `Export sound pack` from the File menu.
3. Fill out the metadata for the pack (*Title*, *Description*, *Credits*, *Tags*, *Version*).
4. Select a pack image.
5. If you have a samples folder to include with the pack, you can select “Include all audio files in samples folder” to include even the unused audio files in the samples folder. If you don’t have a samples folder, *or* you only want to include the samples that are used in .sp2, you can leave this unchecked.
6. Select `Preview Pack`, and if everything looks good, select `Create Pack`.
7. Test the installer by double clicking the `.spz` you created, or by selecting `Install sound pack` from the File menu. The pack is saved to *Music/Sunhouse/Sensory Percussion 2/user packs* and will show up under `User Packs` in the library.
8. Send the .spz to your friends and upload it to the Sunhouse Forum to share it with the community.

Note:

If you use samples from the Core Library, or official Sunhouse sound packs, these will not be included in the pack installer.

This doesn’t matter for Core Library samples (since they are included with Sensory Percussion 2 and all users have these samples), but take note of any sample dependencies on Sunhouse sound packs, because the user will have to install them in order for the samples to link.

These dependencies will be listed in the pack creation wizard when you preview the pack.

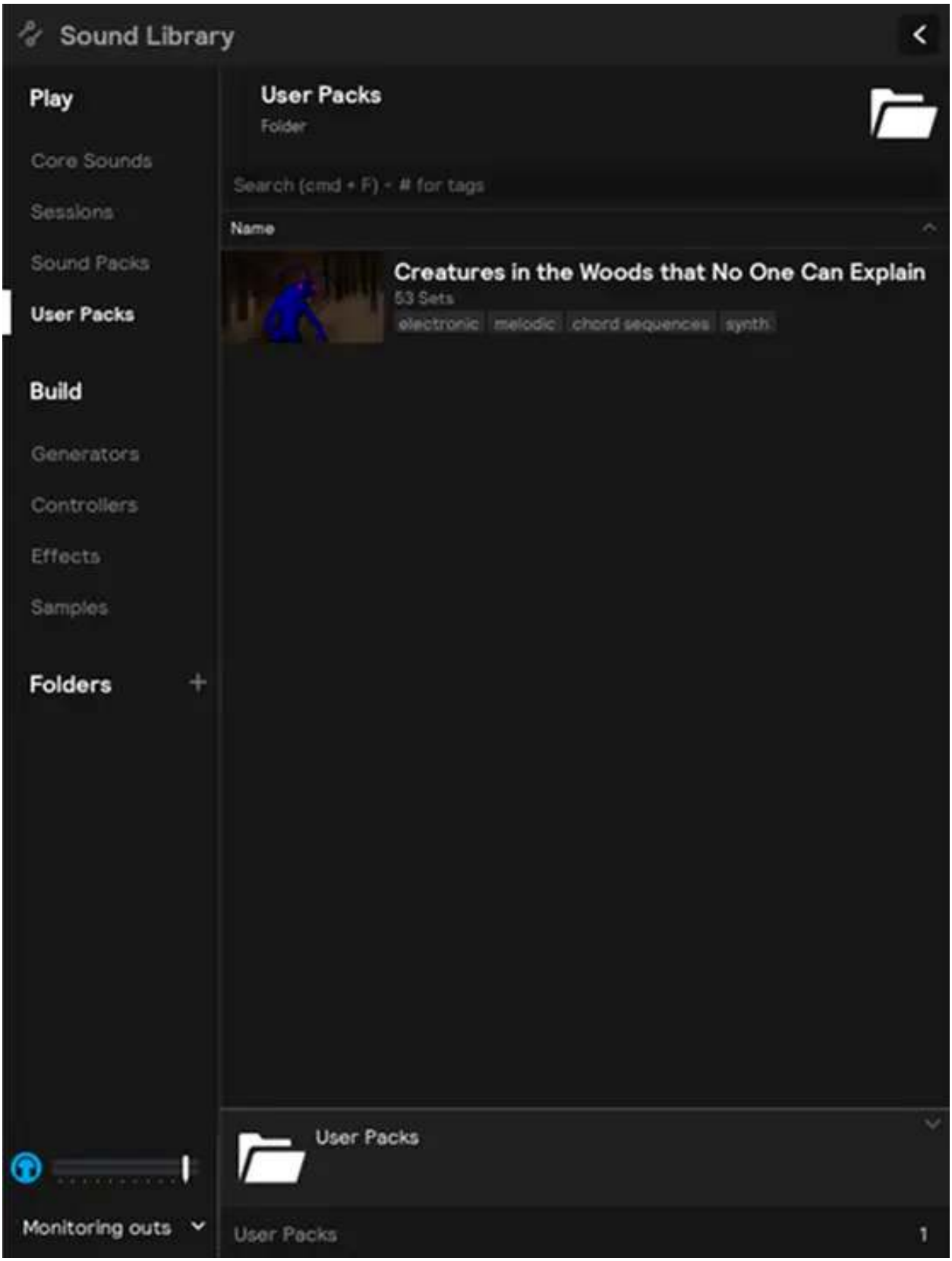


Figure 321: A screenshot of the pack installed in the library

Best Practices

Samples Folder

You might want to include extra samples in your pack that you didn't use in the session. You can do this by including a folder named `samples` next to the `.sp2` file before you export the pack.

If that folder exists, it will preserve the folder structure when exporting the pack. If that folder doesn't exist, the export gathers all of the linked audio files and puts them in a flat list in a newly created folder called `samples`, much like Collect Samples into Session Folder.

A session folder already has a `samples` folder next to the `.sp2` file, so it's a good place to start a pack.

> **Tip:**
>
> If you didn't use a nicely organized samples folder when you first started creating the pack, but want to add one later, here's a trick:
>
> 1. Move your .sp2 file somewhere else on your computer (which will break all of the links to your samplers in the session – that's good, that's what we want).
> 2. Organize a new sample folder nicely how you like it, name it `samples`, and put it next to your .sp2 file. Make sure to include all of the samples used in your session: don't leave any behind!
> 3. Repair the broken samples and select the nicely organized folder you made in the previous step.

Extras Folder

If you have extra stuff to send along with the pack (think *templates*, additional Sensory Percussion 2 sessions_, *videos*, *README.txt*, etc) you can include a folder named `extras` next to the .sp2 and the pack exporter will include it in the `.spz`, and you can access them in the library by selecting the pack and clicking the `extras` button in the bottom right corner.

How to Install Sound Packs

> **Warning:** Important
>
> You must be on Sensory Percussion version 2.1.4 or later to install Sound Packs

Sounds packs are a great way to expand your sound library. They are available for download from the Sunhouse Downloads page. Once you have downloaded the `.spz` file, you can install the pack in two ways:

Install from the File menu

Under `File` in the top menu bar of Sensory Percussion 2, select `Install Sound Pack...` and locate the the `.spz` file you downloaded.

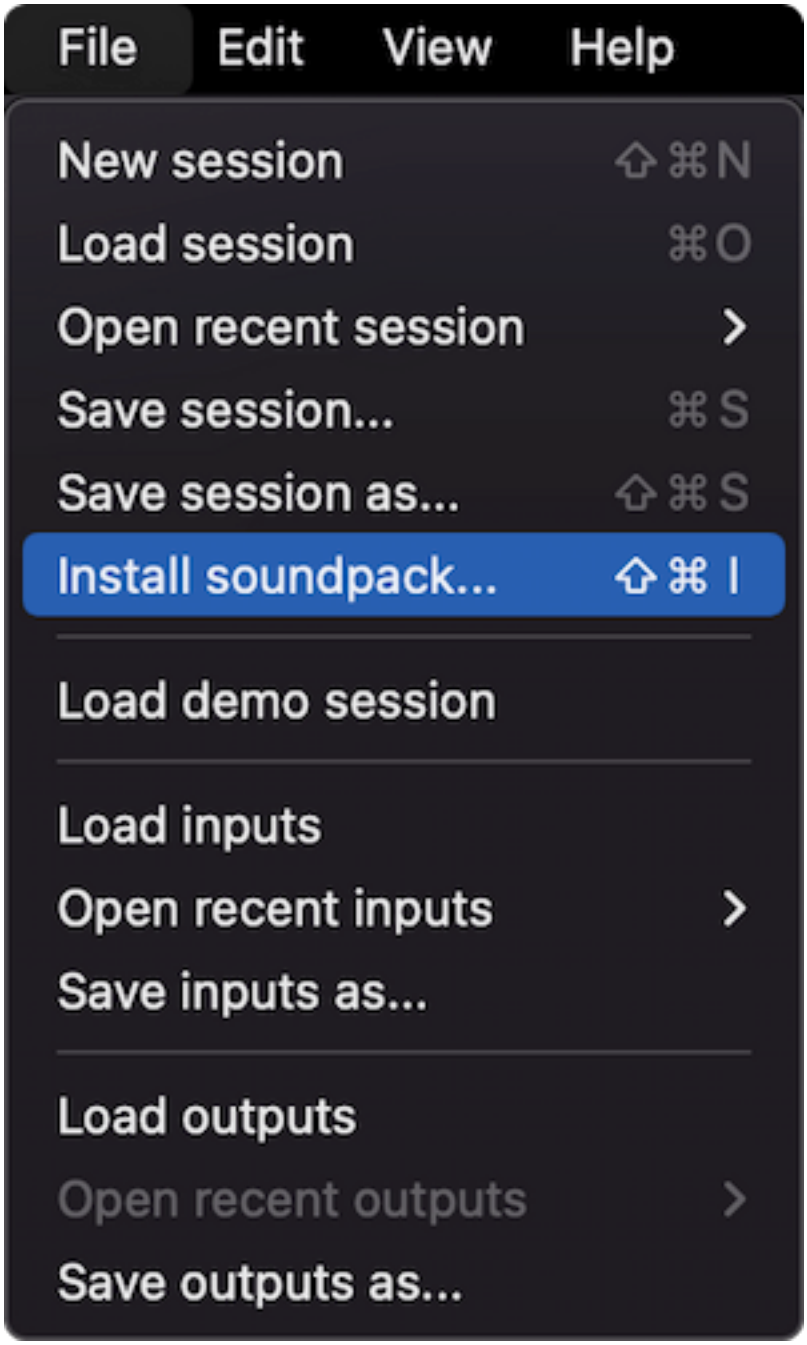


Figure 322: A screenshot of the File menu options

After opening the `.spz` file, you will be prompted to install the pack. Click `Install` to install the pack.

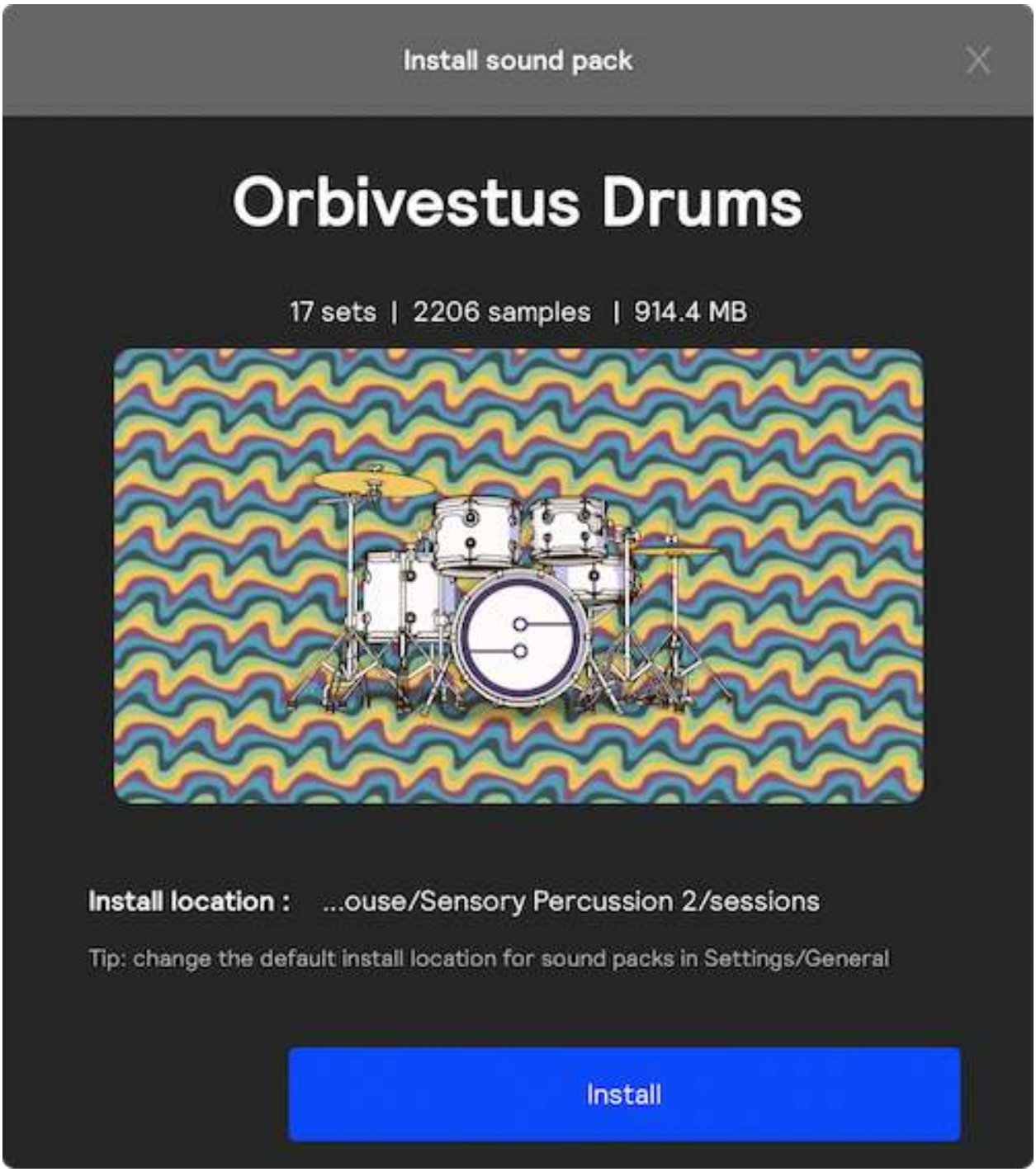


Figure 323: A screenshot of the Sound Pack installation flow

Once you've installed it, the new pack will now appear in the `Sound Packs` section of the `Library`.

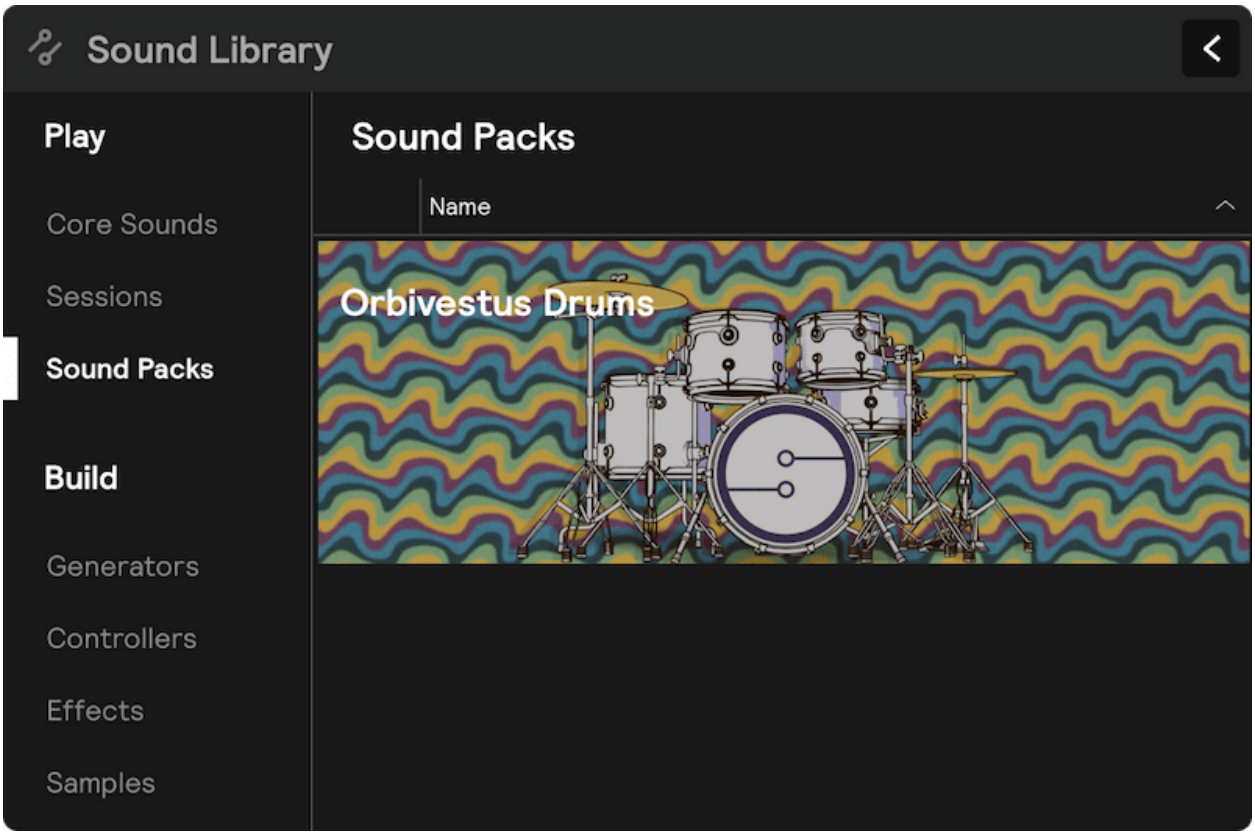


Figure 324: A screenshot of a Sound Pack installed in the Library

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How To Control Parameters with MIDI Input

So ya wanna map some button and knobs from your MIDI controller to stuff in Sensory Percussion? This guide is for you.

1. **You've plugged in your device, right?**

Okay, good, now make sure it's recognized by Sensory Percussion. Open the **Audio Settings** window (*Sensory Percussion/Audio Settings* in the top menu, or click on "device" in the bottom right of the app frame), navigate to MIDI Devices and make sure that your MIDI device is listed in "Active MIDI Inputs" and has a check next to it. If it isn't showing up there, check your operating system's MIDI device settings, and/or refer to the documentation of your MIDI device.

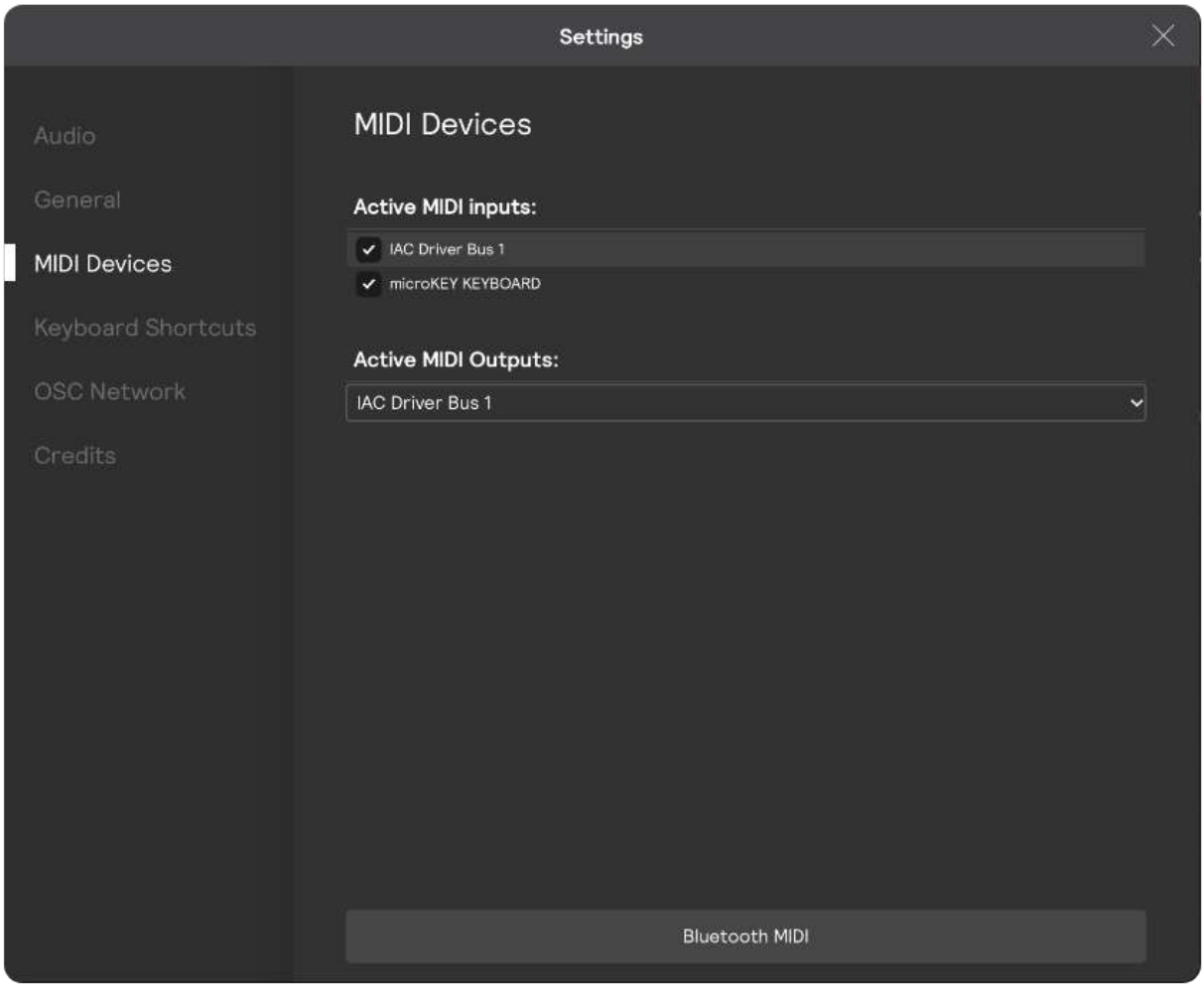


Figure 325: A screenshot of the MIDI settings panel with a midi device activated

2. **Add a MIDI Hardware Input.**

Open up the Hardware Inputs panel, hover over the “+” button and add a MIDI hardware input. Name it whatever you like, and then select your device from the dropdown. Mash on some buttons or wiggle some knobs on your device and see if your newly created MIDI Hardware Input lights up (it should).



Figure 326: A screenshot of a MIDI hardware input with note on/off signal coming through

3. **Add MIDI Virtual Inputs.**

Once your MIDI hardware input is sending, it shows up in the **Input routing** list of the Virtual Inputs panel in every set, dimmed until something in the set listens to it. To play something from it, click the dashed **+** in its **Set** column to add an instrument, controller, or generator that plays from it.

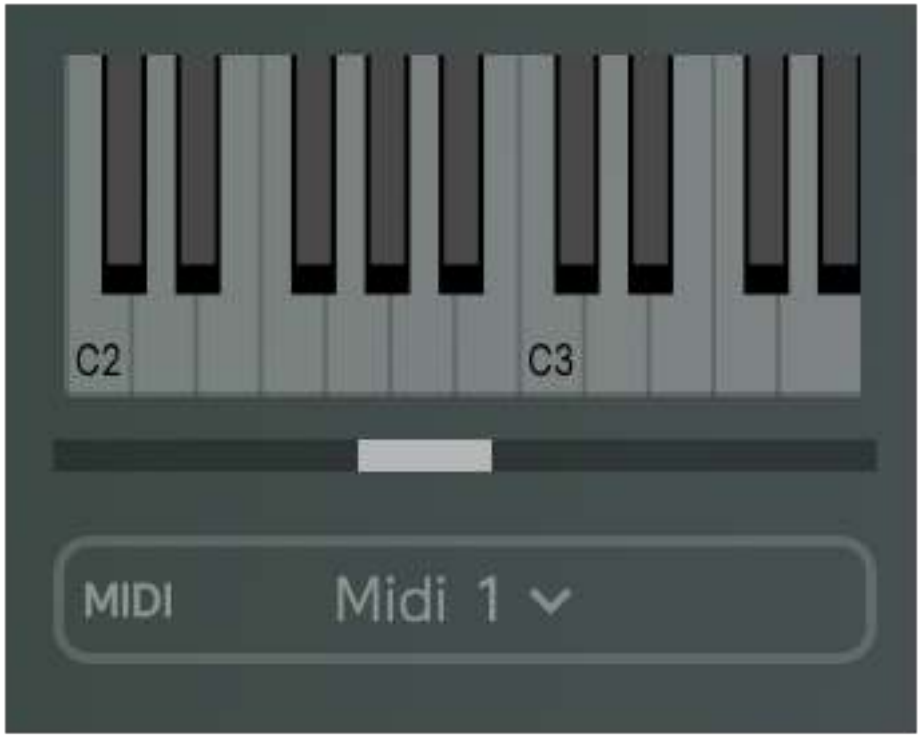


Figure 327: A screenshot of a MIDI virtual input

4. **Start Adding Assignments!**

Now your device is ready to be mapped to pretty much any parameter in Sensory Percussion, and the steps for doing so are basically the same as any other assignment:

`right-click` the parameter you want to control and choose your MIDI virtual input from the dropdown (under New Assignments > Virtual Inputs). In the pop-up window you can use the `learn` button to map a MIDI note. Press the learn button to enter MIDI Learn mode. The button will light up red. Then press the button you want to use on your MIDI device, then exit Learn mode by pressing the `learn` button again. To use a knob instead (MIDI CC) select MIDI Control from the “Type” dropdown and follow the same process as above.

How To Play Drum Software with a MIDI Kit

A MIDI Kit turns your whole kit into MIDI notes for drum software. Sensory Percussion comes with ready-made MIDI kits for popular drum software, so in most cases you only need to pick one and route the MIDI.

Factory MIDI kits are included for:

- Superior Drummer 3
- Addictive Drums 2
- Steven Slate Drums 5.5
- DW Soundworks
- Logic Drum Designer
- Ableton Drum Rack
- General MIDI (for anything that follows the standard GM drum map)

1. Set up a virtual MIDI port

If the drum software runs on the same computer, you need a virtual MIDI port to carry notes from Sensory Percussion to it. On a Mac, that's an **IAC Driver** bus; on Windows, a virtual port from a tool like loopMIDI. See How to Set Up MIDI Routing.

Then enable that port as an output in Settings → MIDI Devices.

2. Add a MIDI Kit

1. In the **Edit** view, click **+ Add Module** on an empty layer.
2. Choose **Instruments → MIDI kit** and pick the kit for your drum software.



Figure 328: The + Add Module menu open to Instruments → MIDI kit

The kit maps each of your drums to the notes your drum software expects. If your session doesn't have a MIDI output yet, adding the kit creates one on **MIDI 1** for you.

3. Route the MIDI

1. Open the hardware panel and find the MIDI output for the kit (MIDI 1, unless you changed the kit's **output**).
2. Set its **Output Device** to the virtual port from step 1.
3. In your drum software, choose the same port as its MIDI input.

That's it: hit a drum and the drum software should play.

Superior Drummer 3: one-time setup

The Superior Drummer 3 kit maps kick, snare, rack and floor toms, hi-hat, ride, and crashes. Cymbal chokes are sent as aftertouch, which SD3 understands with no extra setup, and the hi-hat sends the pedal position on **CC 4**, so openness follows your foot continuously.

In Superior Drummer 3:

1. Open **Settings → MIDI In/E-Drums**, and choose a **Roland** preset (for example TD-50), then **Use Preset**.
2. Make sure the hi-hat pedal CC is set to **4**.
3. Select your virtual MIDI port as SD3's MIDI input.

The Roland preset also turns on positional sensing on **CC 16**, which the snare uses to play hits where they actually landed on the head, from center to edge.

Making it your own

A factory kit is an ordinary MIDI Kit, so you can change any drum, note, choke, or pedal setting. See MIDI Kit for every control.

When it's set up the way you like, open the kit's preset menu and choose **Instruments → Save current as instrument…**. Your kit then shows up next to the factory ones in **+ Add Module → Instruments → MIDI kit**.

> **Tip:** Drum machines and samplers without a pedal input
>
> If your instrument has separate notes for open and closed hi-hat instead of a pedal input, set each hi-hat note's **Pedal** to `open` or `closed`. See Open and closed notes.

How To Send MIDI Out of Sensory Percussion

Sending MIDI information out of Sensory Percussion opens up a whole new world of possibilities: not only can you control sounds in other DAWs or physical devices, but you can also use it to control video in external MIDI-mappable software!

> **Tip:** Playing drum software?
>
> To drive Superior Drummer 3, Addictive Drums, or other drum software from your whole kit, use a ready-made MIDI Kit instead. See How to Play Drum Software with a MIDI Kit.

So let's go over how to set this up. Before you even open Sensory Percussion, you need to make sure you have a virtual MIDI bus available (assuming you're sending MIDI to another program. If you're sending out to a physical device, it should automatically show up as an available output when you connect it via USB). Check out the page on How to Set Up MIDI Routing to see how to set this up.

To send MIDI out of Sensory Percussion 2, there are two places you need to add MIDI objects: inside of your set and in your hardware outputs. It doesn't matter what order they're created, but they're both necessary.

You can refer to the MIDI hardware output and MIDI generator pages for more information on how to create these two MIDI objects.

Once you've created a MIDI generator inside of your set and a MIDI hardware output, you just need to make sure that they're connected by making their input/output tags match (midi1 –> midi1, midi2 –> midi2, etc.) Below is an example showing how one MIDi notes generator can be routed to different MIDI hardware outputs by selecting a different output from the dropdown within the generator module.

In the above example, only the center zone is activated, but you can activate anywhere from 1-10 zones, each send different MIDI note values (or the same values if you want). That means with just 4 drums, you can cover 40 notes of the scale!

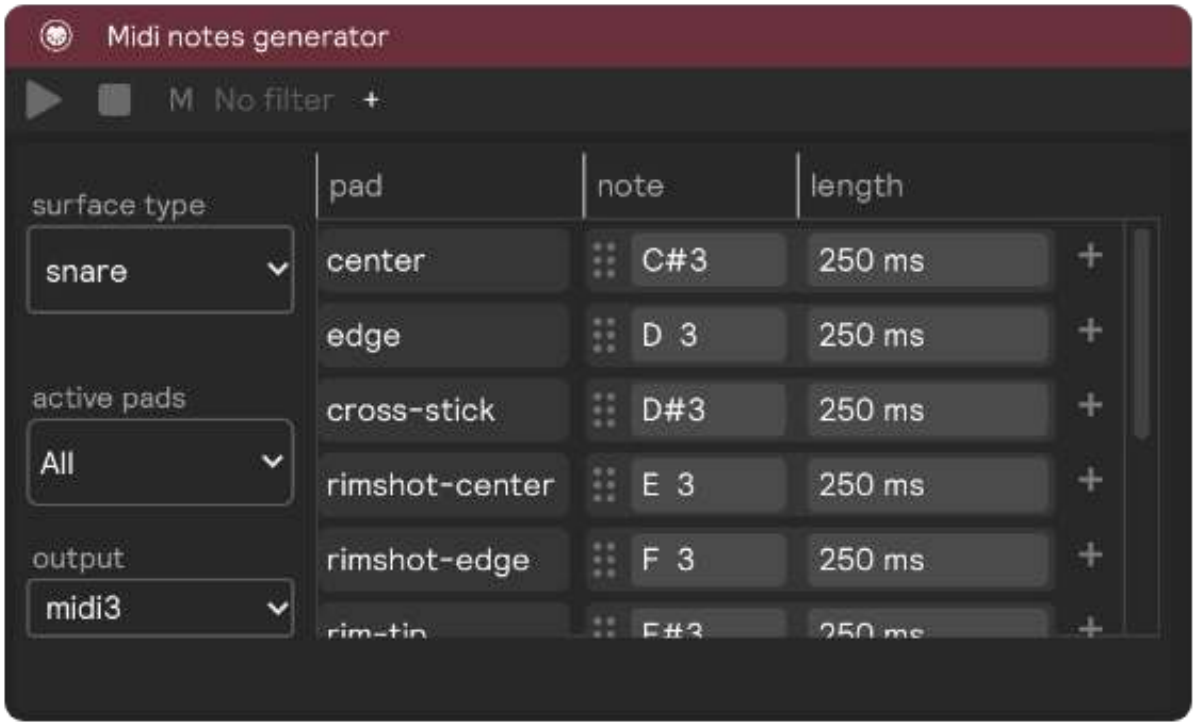


Figure 329: A MIDI notes generator module set to snare with all zones activated

So that covers how to turn different zones of your drum into midi devices that send individual note on/off messages, but what if you want to send a whole range of note values based on how you play (velocity, speed, timbre, etc.)? That's where MIDI CCs generator comes in!

The connections between this module and MIDI hardware outputs work the same as the method outlined above, but the module itself works a little differently. CC stands for "continuous control,"

which means it can move smoothly from one value to another, while also sending each value in between. Because of the nature of CCs, there is no play button on the module; it only sends MIDI to the hardware output after you've created an assignment on the value knob.

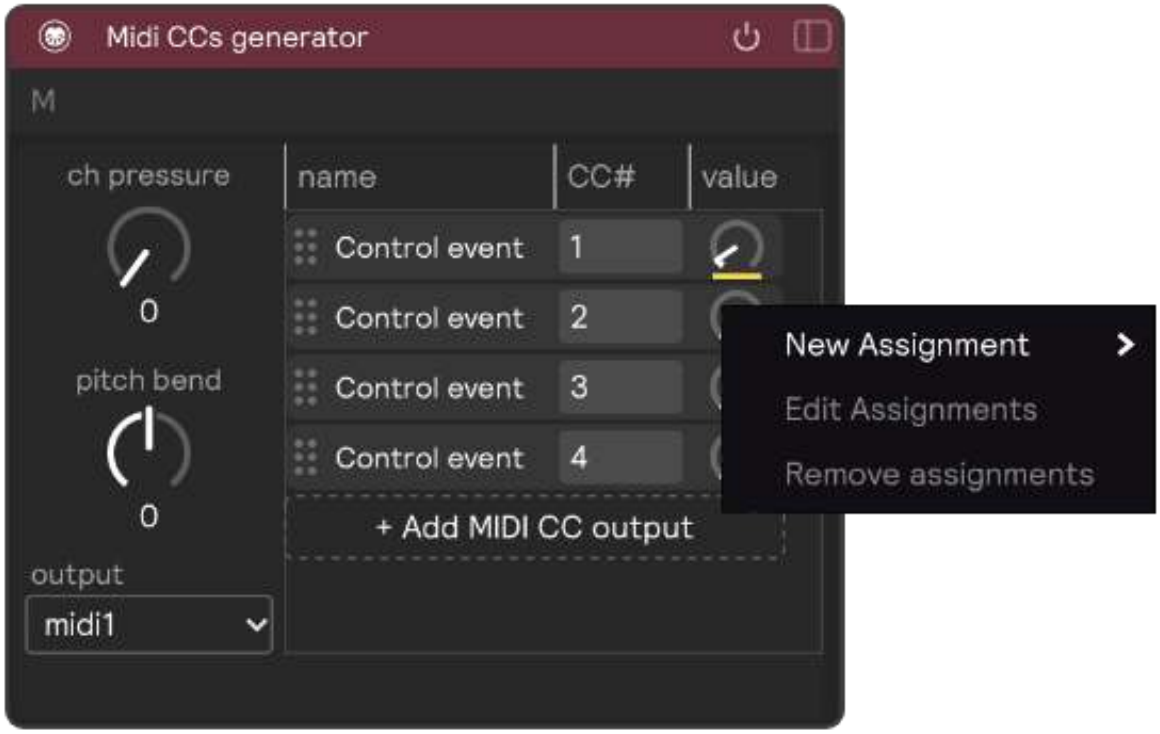


Figure 330: A MIDI CCs generator module set with an assignment on the value knob

Once you've created an assignment, you can control this value with your playing (or have it move on its own with an LFO), and you'll see the "CC" signal monitor on your MIDI hardware output light up green any time the knob moves.

And that's it! You're now sending MIDI out of Sensory Percussion. The way that you receive this MIDI information varies based on the software you're sending it to, but a lot of software has some version of a MIDI-mapping mode where it listens for any incoming MIDI signal. Simply enter this mapping mode and trigger your MIDI generator to create a connection!

How to Navigate Complex Sets

The modular structure of Sensory Percussion 2 allows you to create complex systems of interconnected modules. With the capacity for a single layer to hold hundreds of modules, each of which containing their own submodules, you can go as deep as you want! The problem is that

there is only so much space on the screen to show all of these modules. When you're working on a super complex set, it's easier to lose track of some modules. So here are a few tips to save you time when navigating a complex set in edit view:

Follow the Breadcrumbs

This bar is a helpful way to navigate your set, especially if it has lots of long, complex chains of modules. The bar lists all of the modules that are currently visible in whatever layer you have selected. If you change the name of a module, this will be reflected in the breadcrumbs bar.



Figure 331: A screenshot of a complex layer with its Breadcrumbs Bar highlighted

And If you right-click the name of a module in the breadcrumbs bar, you will then see a drop-down that gives you access to that module, all of its sibling modules, and all of the modules they contain. That means that when you right-click the top module in the breadcrumbs bar, you can see ALL of the modules in your entire set! This is a great way to navigate complicated sets. Because all of the modules in this dropdown have blue VU meters, you can easily identify which modules are sounding when you play. Hit the drum/zone you're trying to identify with this drop-down open and follow the blue VU meters!

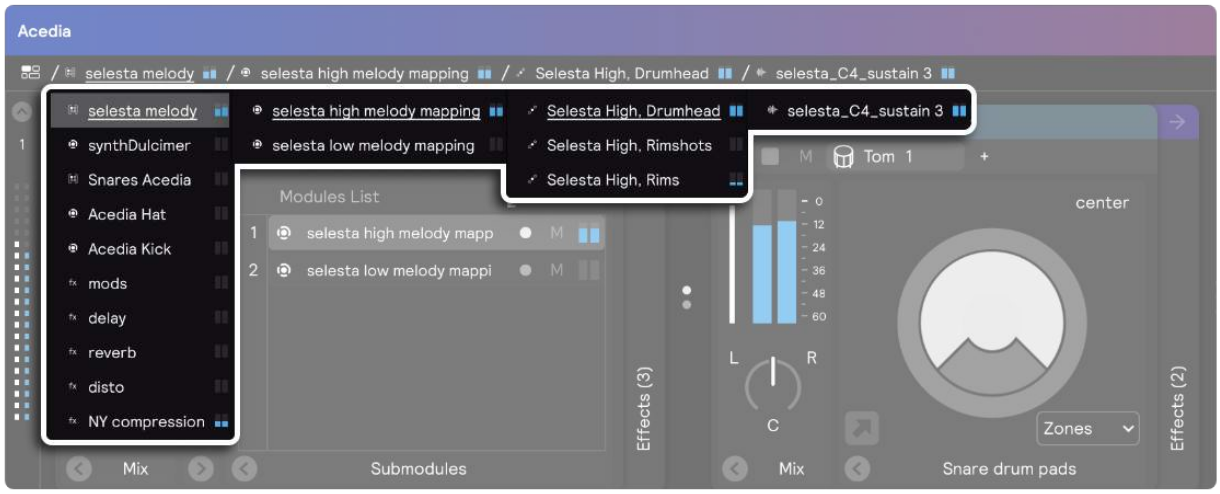


Figure 332: A screenshot of the Breadcrumb Bar's right-click menu.

Group Controller is Your Friend

While some controllers perform complex multi-step operations on their submodules, group controller it pretty straightforward: it groups things. But don't let its simplicity fool you; grouping modules/layers is a powerful organizational tool that can help you turn a visually overwhelming set into a nicely organized set that is easily manageable.

Below is an example of a set with lots of different layers that were created based on what kind of sounds they contain, much like the different parts of an orchestral score. As you can see, even with each layer collapsed vertically, there are too many layers to fit on the screen:

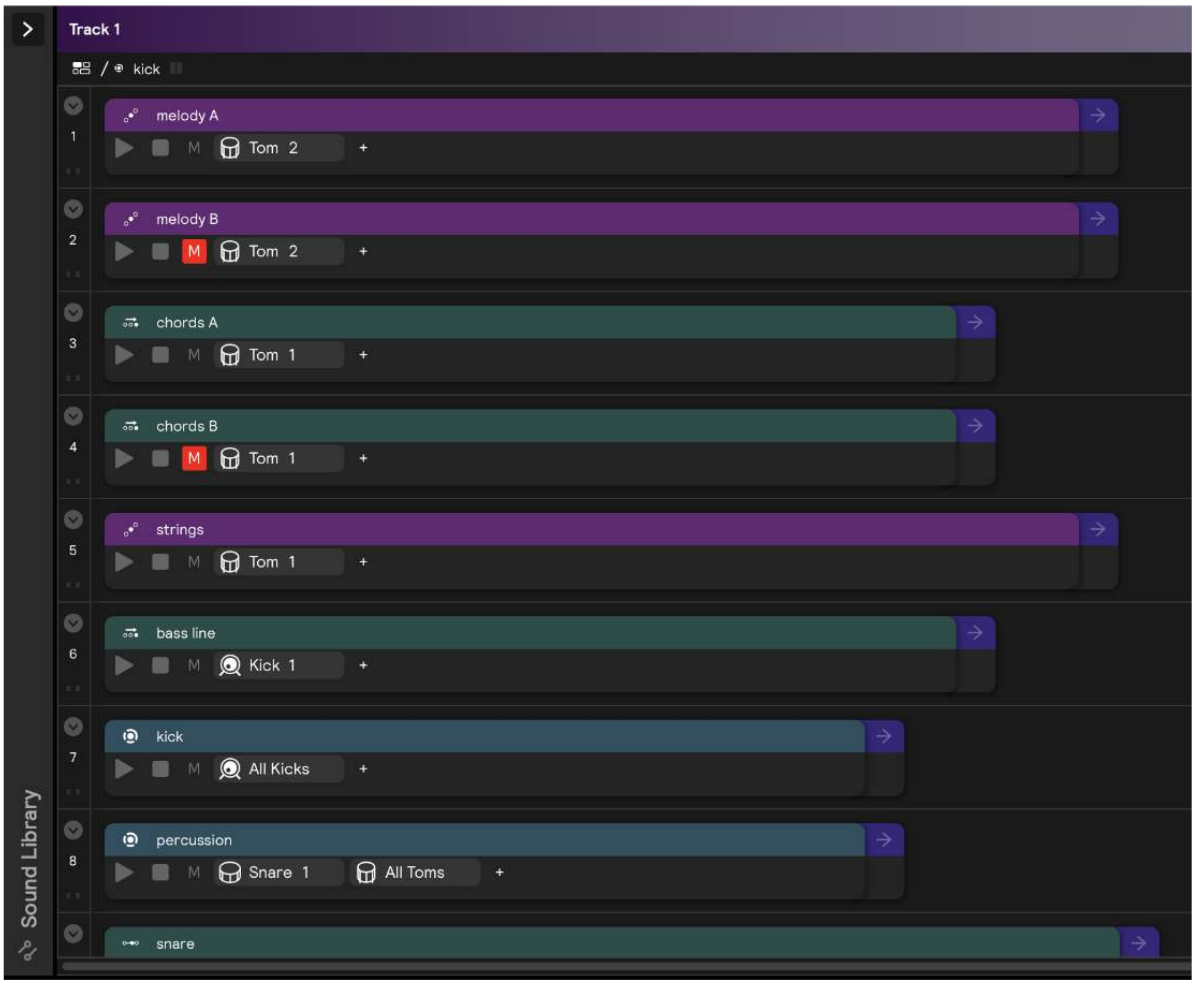


Figure 333: A screenshot of the edit page with many collapsed layers.

If you're just working on one particular sound inside one of these layers, you might not want to have to scroll through all of these the whole time. That's where grouping comes in handy.

To simplify this example, we selected all of the layers with melodic sounds (chords, bassline, melody, strings, etc.) and created a "melodic" group using *right-click* > *Group Into…* > *Group* (see Grouping modules into a controller). We then did the same thing with drum sounds and a third time for miscellaneous sound design layers. Now, the default view of the set is just 3 layers. All of the complex networks we created are still there, and they each retain the input filters that they had before, the only difference is that it's now easier to navigate visually.

How To Play to a Backing Track

There are three good ways to play Sensory Percussion along with a backing track. Pick the one that matches how you already work:

Option	Best for
Play the track inside Sensory Percussion	Live shows where the laptop runs everything, and you want to start each song from the drums or a footswitch
Bring in audio from another device	Playing along with your phone, a music app, or a playback rig at rehearsal
Run Sensory Percussion inside your DAW	Shows already built in Ableton Live, with tempo changes and automation

Option 1: Play the track inside Sensory Percussion

1. Put the track on its own layer

1. Open the Global Set. Anything in it keeps playing when you switch sets, so the track won't cut off when you change sounds mid-song.
2. Drag your backing track (a WAV, AIFF, FLAC, or MP3) into an empty lane in the Edit view. It becomes a sampler on a new layer.
3. On the sampler, make sure looping is **off**, and set **Voices** to 1 with **Retrig** on, so starting it again restarts it instead of playing a second copy on top.

2. Keep your drums from starting it

Click **Block all input** (the arrow-into-a-bracket icon at the start of the layer's filter row) so hits from your drums never reach the track. The layer's own play button still works. See Block all input.

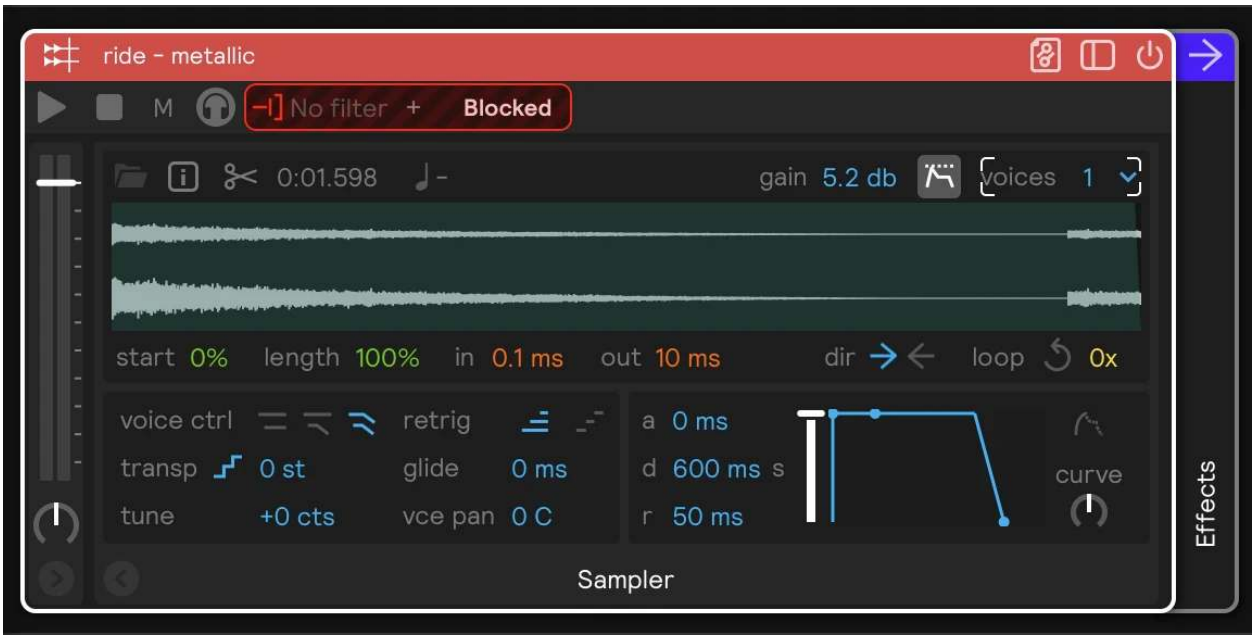


Figure 334: A sampler layer with Block all input on (the red icon and the hatched Blocked tray) and voices set to 1

3. Choose how to start and stop it

- **Click the layer's play button** to start the track and its stop button to stop it.
- **Use a footswitch or pad**: right-click the play button and add an assignment from a MIDI footswitch or a sample pad. Do the same on the stop button.
- **Use a zone**: assign a zone you don't otherwise play, like a cross-stick, to the play button. Raise the assignment's velocity threshold so only a deliberate hit starts the song.

4. Add a click that only you hear

If your backing track has a separate click stem, put it on a second layer the same way, and turn on that layer's **Monitor Mix** button. It then plays only through your monitoring outputs (usually your headphones) and stays out of the main mix. Assign both layers' play buttons to the same footswitch so they start together.

Or set the session tempo to the song's tempo and use the built-in metronome. See How To Play to a Click Track.

5. Send the track where it needs to go

The track plays through the main mix with your drums by default. To give the front-of-house engineer the track on its own channels, create a submix for the track's layer and route it to a separate output, like the Portal's **Aux Out 5/6**.

> **Tip:** One song per set
>
> If each song is a set, you can put each song's backing track in its own set instead of the Global Set. Change those sets' cutoff mode to **Samples & Effects Play Thru** if you want a track's tail to ring into the next set. See Set Cutoff Modes.

Option 2: Bring in audio from another device

Plug your phone, a music player, or a playback laptop into an input on your interface and play the track from there. It goes through Sensory Percussion, so you hear it in your headphones mixed with your drums, and you can set its level from the app.

1. Connect the device's headphone or line output to the Portal's **Line-In C/D** (or the **Mic/Line A/B** combo inputs, with the switch set to **line** and **+48v** off).
2. Add an Analog input in the hardware inputs panel and select those channels. Play the track and check that the input's meter moves.
3. Open the Global Set, so the track keeps playing as you switch sets. Drag an **Audio Insert** in from **Build → Generators** and set its channel to your analog input (for example `analog1`).

See How to Add a Microphone (or another audio source) for more detail.

> **Note:** Playing from an app on the same computer
>
> On a Mac, other apps can usually play through the Portal while Sensory Percussion is open: pick the Portal as your Mac's sound output, or as the output of your music app or DAW. Their audio goes straight to the Portal's outputs, so set the level in that app. On Windows, whether two apps can share the Portal depends on the audio driver, so if the other app can't play while Sensory Percussion is open, use one of the other options.

Option 3: Run Sensory Percussion inside your DAW

If your show already lives in Ableton Live, load the Sensory Percussion plugin on a track and keep the backing tracks on other tracks.

- In the plugin, set **Clock in** in the tempo bar to **host**. The session then follows Live: pressing play starts your Metros and tempo-synced delays in time with the song, including tempo changes. See Following your DAW.
- Switch sets in time with the song: assign the Set Manager's next-set arrow to a MIDI note (see Change Sets with an Assignment), then put that note in a MIDI clip on the track that feeds the plugin's MIDI input.
- Use Live's click (or a click track) on a cue output for your headphones.

The plugin can also load the inputs and outputs from your standalone app, so you don't have to set your sensors up again. See Environments: In the plugin.

How To Play to a Click Track

Sensory Percussion has a built-in metronome that plays only in your headphones, so the audience and your recordings never hear it. This page shows how to set it up, how to make a click of your own, and how to follow a click from a DAW or other gear.

The quick way: the built-in metronome

1. Choose where you'll hear the click

The metronome only plays through your **monitoring outputs**, usually your headphones. To make an output a monitoring output, open the hardware outputs panel and click the headphone icon next to that output's meter so it turns from grey to blue.

With the EVANS Portal, turn it on for the output that feeds your headphones (**Headphone L/R**). Leave it off on the output that goes to the PA (**Main Out L/R**).

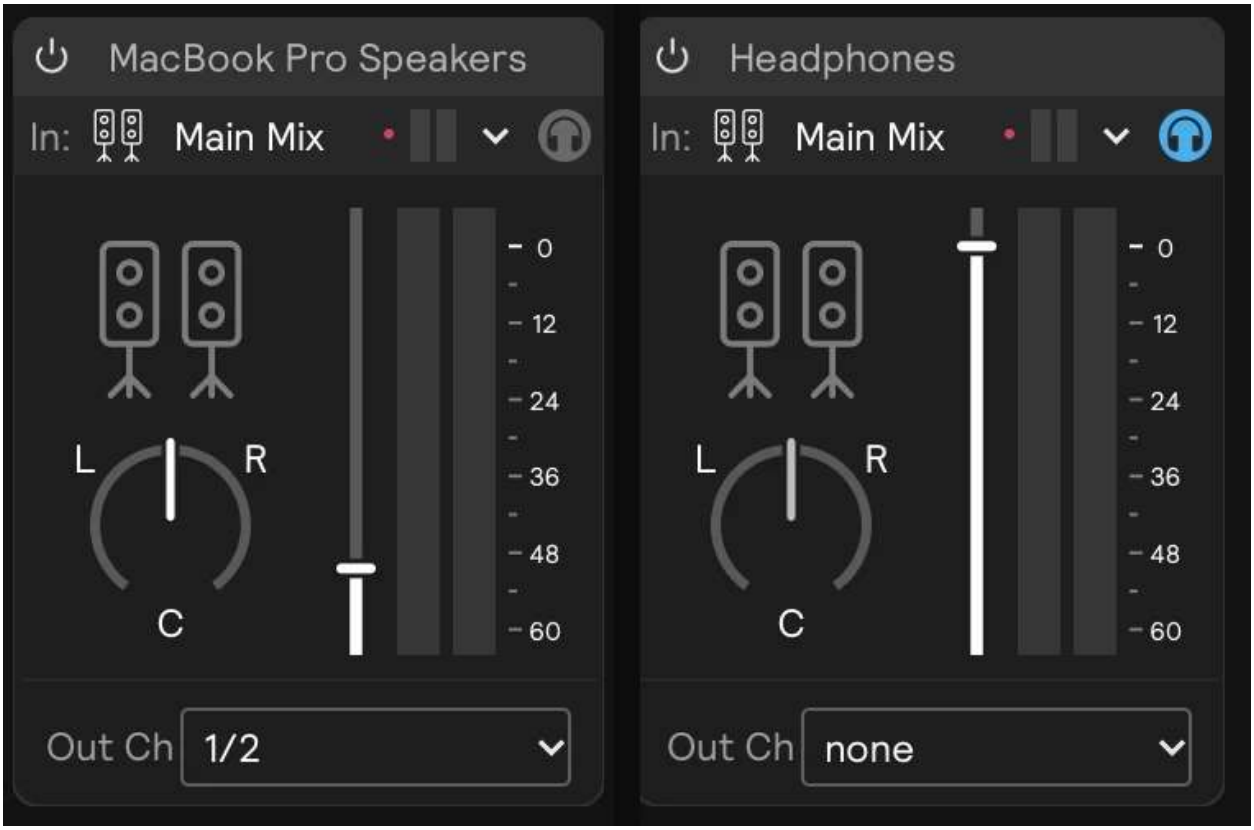


Figure 335: Two hardware outputs: the speakers with the headphone icon off (grey), and Headphones with it on (blue)

Warning:

If no output has its headphone icon turned on, the metronome has nowhere to play and you'll hear nothing.

2. Set the tempo and meter

In the tempo bar at the top of the window:

- **Tempo (bpm)**: drag the number or click it to type. Or tap **Tap** along with the song.
- **Beats**: how many beats in a bar. The click accents beat 1.
- **Subdiv**: what the click plays between the beats. `1/4` clicks on every beat, `1/8` adds the off-beats.

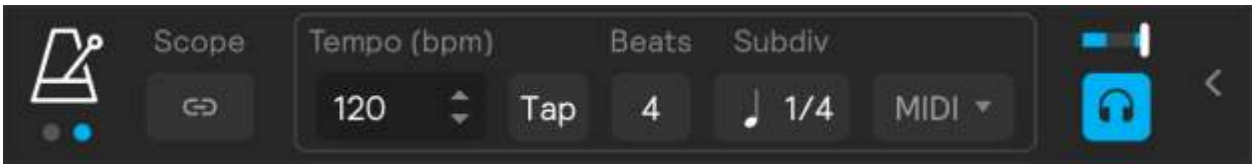


Figure 336: The tempo bar, following the global tempo with the metronome on

3. Turn the click on and start it

Click the headphone toggle at the right end of the tempo bar so it lights blue, and set its level with the small slider above it. Then press the Start/Stop button at the left end of the bar, or the space bar.



Figure 337: The metronome controls: level slider above the headphone toggle

The click follows the tempo bar exactly. Stopping the clock stops the click.

Tip: Hands-free

Tap, the metronome toggle, and the Global Stop button can all take assignments. Map them to a footswitch or a zone you don't otherwise play, and you can count off, start, and stop without touching the computer.

A different tempo for each song

Out of the box, every set in the session shares one tempo. If each song in your setlist is a set, give each one its own tempo:

1. Select the set.
2. Click the **Scope** (link) button in the tempo bar so it turns orange.
3. Set that set's tempo, beats, and subdivision.

Now selecting the set brings its tempo with it. To make the click start from beat 1 whenever you select a set, right-click the set in the Set Manager and tick **Restart clock on select**. See Tempo.

Making your own click

The built-in click sound can't be changed. For a click with your own sounds, accents, or patterns (a cowbell on 1, a shaker on the off-beats, a count-in), use a Metro:

1. Drag a **Metro** into a new layer from **Build → Controllers**, and choose the **Classic Click** preset from its preset menu. Or drop your own samples onto it: the first is the downbeat, the second plays the other beats.
2. Turn on the layer's **Monitor Mix** button in its header. The layer now plays to your monitoring outputs only, and stays out of the main mix.
3. Start the tempo bar. A new Metro follows the session tempo, so it starts, stops, and changes tempo with the tempo bar.

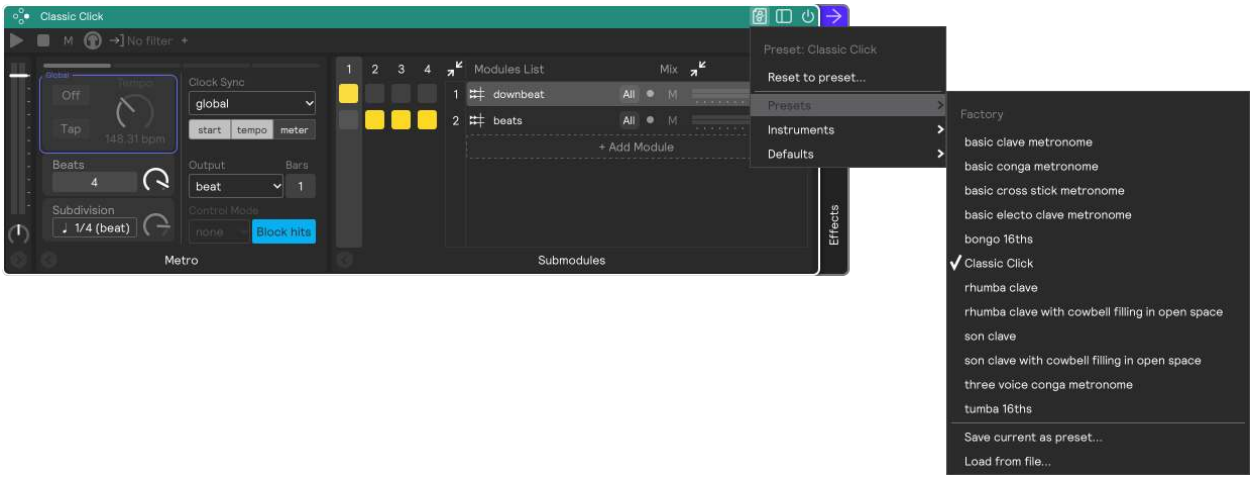


Figure 338: The Metro preset menu, with the Classic Click preset selected

To keep the same click in every set, put the Metro in the Global Set.

Following a click from a DAW or other gear

If the click comes from somewhere else, like a DAW running your show or a drum machine, have Sensory Percussion follow that device's tempo so your Metros and tempo-synced delays stay locked to it:

1. Send MIDI clock from the device to Sensory Percussion. For a DAW on the same computer, use a virtual MIDI port (see How to Set Up Virtual MIDI Routing).
2. Enable that MIDI port in Settings → MIDI Devices.
3. Click **MIDI** in the tempo bar and set **Clock in** to that port. The device now starts, stops, and sets the tempo.

In the Ableton plugin, set **Clock in** to **host** instead, and the session starts, stops, and changes tempo with your Live set. See Following your DAW.

To play along with a full backing track as well as a click, see How To Play to a Backing Track.

How to Record Your Performance

Built-in Recording

The easiest way to record your performance is to use the built-in recording feature launched with version `2.4.1`. You can record up to 16 stereo mixes, plus the main mix, directly to disk.

Ableton Live Plugin

If you need more advanced recording features or workflows and use Ableton Live, you can use the Ableton Live Sensory Percussion 2 VST3 Plugin. This plugin allows you to load Sensory Percussion directly inside of Live, and record your performance as raw sensor data (a MIDI-like workflow), audio, or both. You can find more information on the Ableton Live Sensory Percussion 2 Plugin page.

> **Warning:** Using other DAWs
>
> The plugin is a standards-compliant VST3 and will load in other DAWs. However, we've found that most DAWs limit the number of input channels to the plugin to stereo, which means you will only be able to access two sensors. However, it will work in systems like MAX/MSP

Other Recording Methods

If you need to record to a DAW or need more advanced recording features, you can use one of the methods below. The first one is treating the Portal like its own instrument and using cables to record the output into another recording device, whether that be another computer or external recorder. The second option uses software to route signals within your computer to capture your recording.

> **Note:**
>
> This tutorial goes over how to record stereo out of Sensory Percussion, meaning 2 channels: one left and one right. However, with our new submix feature, you can now create as many output channels as you want and distribute your sounds across them however you like. The recording process will be the same, you will just need an additional cable/virtual audio channel for each additional submix that you create.

Physically routing audio from the Portal to another recording device

This scenario requires a second recording device (audio interface, Zoom recorder, mixer, etc.) in addition to the EVANS Portal. You're essentially treating the Portal like you would a guitar pedal or synth, plugging 1/4" audio cables into the Portal's main outs and connecting them to the inputs of another recording device.

Zoom recorders and mixers with recording capabilities don't require a DAW; they simply record audio onto an SD card. So if you're using one of these, the Portal is the only device that needs to be connected to your computer via USB.

If you're using a 3rd party audio interface, this interface and the Portal both need to be connected via USB. They can be connected to the same computer or two different computers. In studio situations where there is a computer built into a desk, it would make sense to have the Portal connected to your laptop sending audio to the studio computer's interface. But in a home studio setup where you only have one computer, you can connect both interfaces to the same computer via USB. Here's a diagram of this situation:

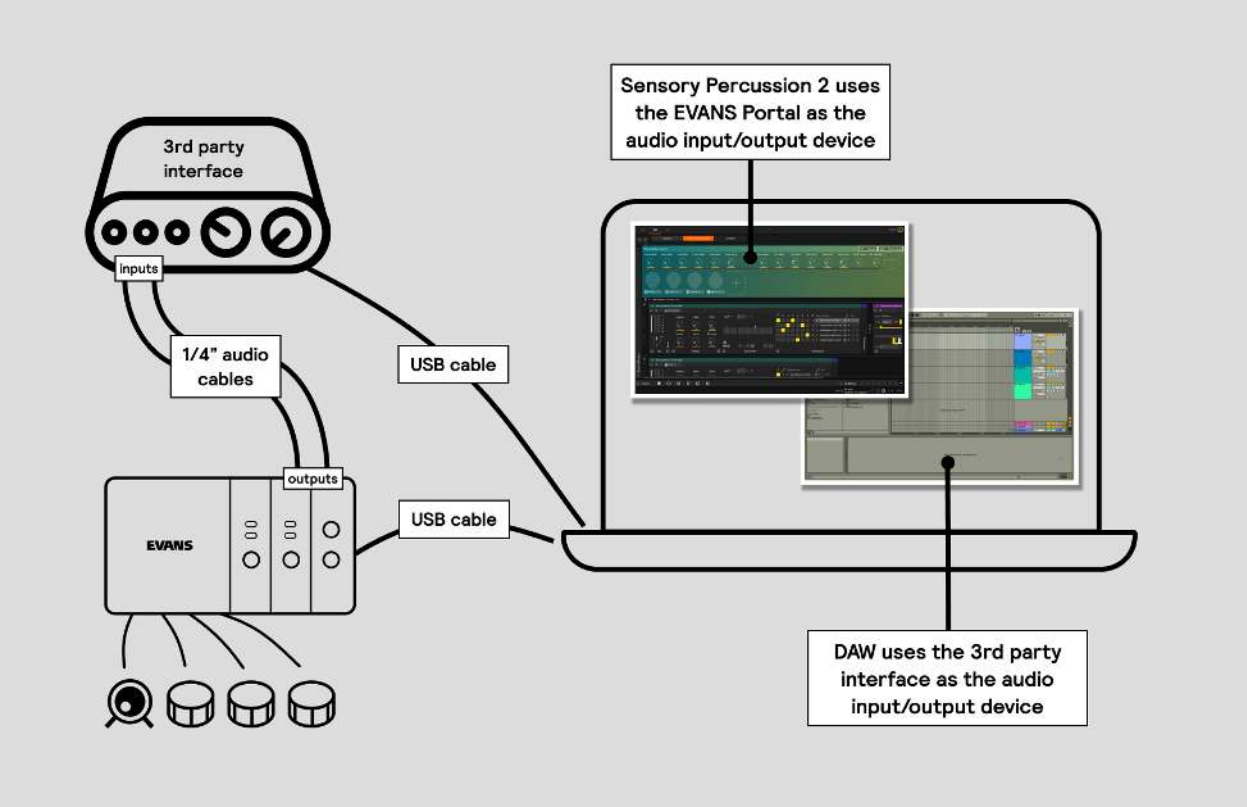


Figure 339: A diagram showing how to record the output the Portal into another audio interface

In this diagram, the signal flow goes from the sensors –> Portal –> 3rd party interface –> DAW

Using a virtual audio router to send audio to your DAW

You can use 3rd-party software to route the output from Sensory Percussion to a DAW like Ableton, Audacity, or Garageband. On macOS we recommend Loopback. There aren't as many options on Windows, but software like Voicemeeter should work.

This scenario doesn't require any additional cables or hardware, but it does require running 3 different pieces of software: Sensory Percussion, a virtual audio router, and your DAW. We'll go through a quick example of the common setup among our users: using Loopback on a Mac to send audio from Sensory Percussion into Ableton. This same process will also work with other operating systems/DAWs.

1. Open Loopback When you open Loopback, there will be a virtual device already created by default. It should look like the image below, with a "Pass-Thru" as a source connected to two output channels. This device will automatically be named "Loopback Audio," but you can change the name by clicking the pencil icon next to the device name in the main window.

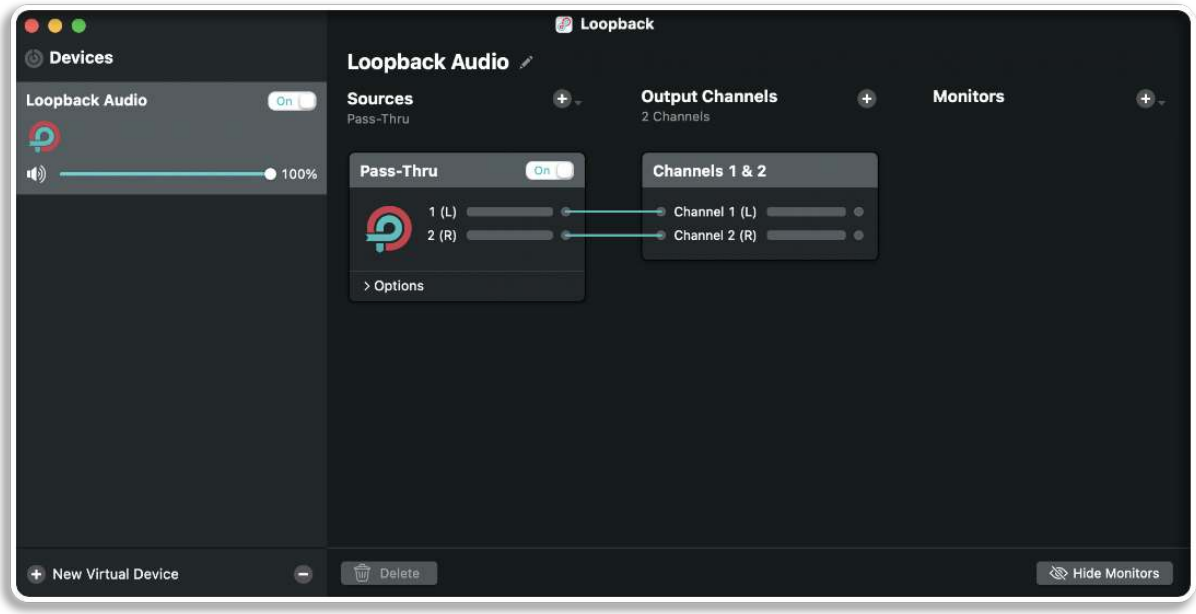


Figure 340: A screenshot of the audio routing in Loopback

2. Route the output of Sensory Percussion to the Loopback Audio device With Loopback still open, open Sensory Percussion and open the Audio Settings window with the shortcut ⌘ + ,. In this window, change the output device to the virtual audio device you just created in loopback.

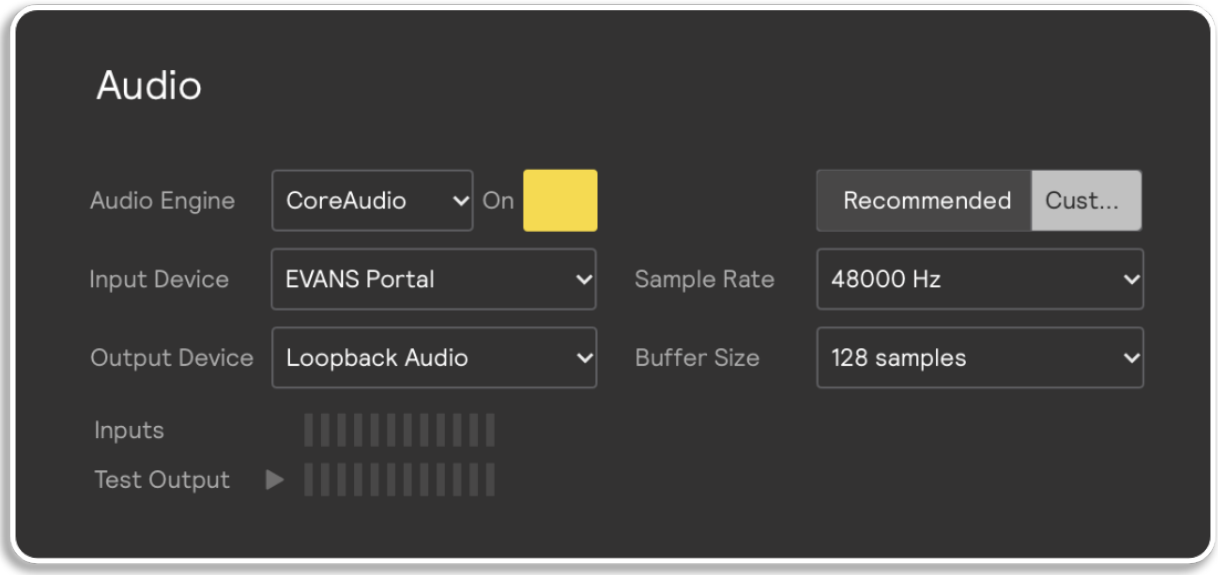


Figure 341: A screenshot of the audio settings in Sensory Percussion, with Loopback Audio selected as the output

In this case, the output device is named “Loopback Audio,” but if you changed the name of the device in Loopback, that will be reflected in the output device list in Sensory Percussion. Choosing the Loopback audio device as the output will automatically create a hardware output with the same name sending out of channels 1/2.

You should now see the blue VU meters moving in Loopback when you play the drums, indicating that it’s receiving audio from Sensory Percussion, but you won’t hear the audio until you complete step 3. It should look like the image below:



Figure 342: A screenshot of the audio routing in Loopback receiving signal

3. Set the Loopback Audio device the audio input in your DAW This is the final step in the process, and it’s essentially the inverse of of step 2. Open your DAW, then open the audio settings window (⌘ + , in most DAWs). Then, choose the Loopback Audio device as the audio input device.

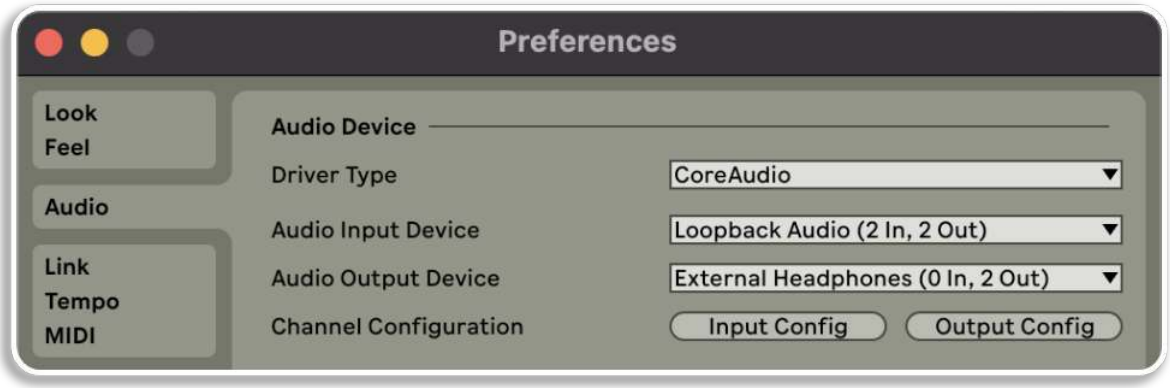


Figure 343: A screenshot of the audio settings in Ableton, with Loopback Audio as the input

You should now be receiving audio signal in your DAW. To test this, create an audio track with channel 1/2 as the input. You will see that it's receiving signal from Sensory Percussion when you play the drum. You can turn monitoring on in that track to hear the output and hit record to start recording your Sensory Percussion performance!

> **Note:**
>
> This is the most reliable Loopback routing setup if you're using the EVANS Portal, but there are other configurations that will also work. Yours may look slightly different depending on your computer's operating system, any configuration changes you might have made in your "Audio MIDI Setup," additional hardware you have connected, etc. For more information on internal audio routing, check out the Loopback user manual.

How To Fix Broken Samples Links

If samples in your session were moved, renamed, or deleted on disk, the samplers that use them can't find them anymore. The **Relink Samples** window finds those broken links and repairs them by searching a folder you choose.

1. Open Relink Samples

- To check the **whole session**, choose **Edit → Repair samples** (⌘ + ⇧ + R).
- To check **just some sets**, select them in the set switcher, right-click, and choose **Repair samples**.

The window checks for broken links as soon as it opens. The **Missing** tab lists every sample the session can't find, so you can see what needs fixing before you pick a folder. If nothing is broken, it says so and there's nothing to do.

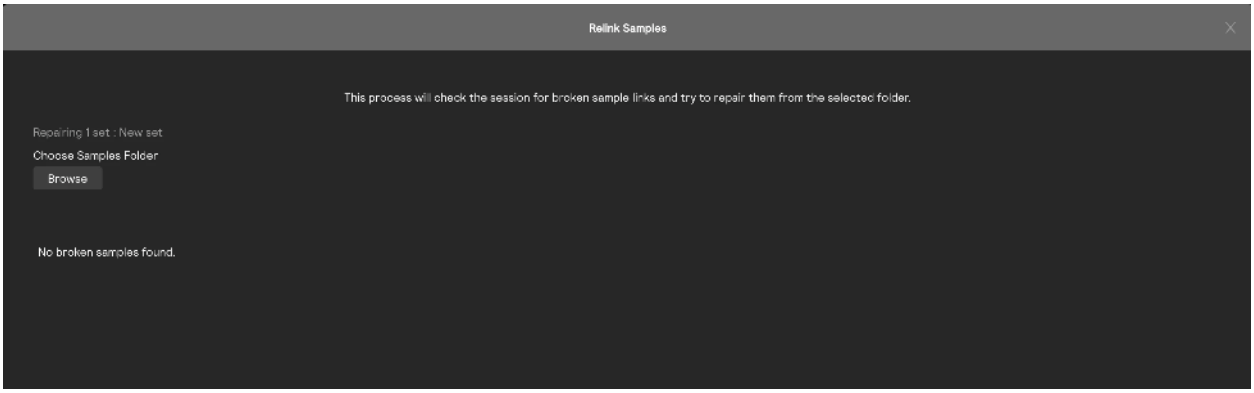


Figure 344: The Relink Samples window when no sample links are broken

2. Scan a folder

Click **Browse** and choose one or more folders where your samples are now. Sensory Percussion searches them, including their subfolders, for audio files whose names match the missing samples. Click **Cancel** to stop a scan that's taking too long.

The results are grouped into tabs:

Tab	What's in it
Matched	Missing samples that were found, with the folder each was found in. When several files match, the one whose path best matches the original location is used.
Not found	Missing samples with no match in the folders you scanned. Scan another folder: the results refresh with every scan.
Warnings	Files that matched by name but can't be used, because this computer can't play their format or Sensory Percussion isn't allowed to read them.
Hidden	Hidden folders that were skipped during the scan.

3. Apply

Click **Apply** to relink the matched samples. It only appears once at least one match was found. The window closes, and the new links are saved with the session the next time you save. You can

undo it like any other change.

> **Tip:**
>
> To keep a session's samples from going missing in the first place, keep them in a session folder: **File → Collect Samples into Session Folder** copies every sample the session uses next to it.

How To Sequence Chords, Chops, and Loops

The Sequencer plays the modules inside it one step at a time: every hit plays the next step. Put a chord on each step and a single drum walks through a progression. Put slices of a sample on each step and you can play a chopped-up phrase. Put loops on the steps and each hit moves to the next section of a song.

If you'd like to hear this before building it, the **Chord Sequences** and **Patterns** packs in the Core Library are built this way. Open one of their sets in the Edit view and look at Tom 1 or Tom 2.

Chords

1. Add a Sequencer to a drum

In the Play view, drag a **Sequencer** from **Build → Controllers** in the library onto the drum you want to play the chords from in the kit graphic. Sensory Percussion adds it as a new layer that plays from that drum. Floor toms and rack toms work well, since you usually play them less often than the snare. Then switch to the Edit view to fill it.

To play the chords from just one zone, like the rim, drop the Sequencer onto that zone of a Drum Pads controller in the Edit view instead.

2. Drop in your chords, in order

Drag your chord samples onto the Sequencer one at a time, in the order you want to play them. Each sample becomes a sampler on the next step. You can select several samples and drag them together.

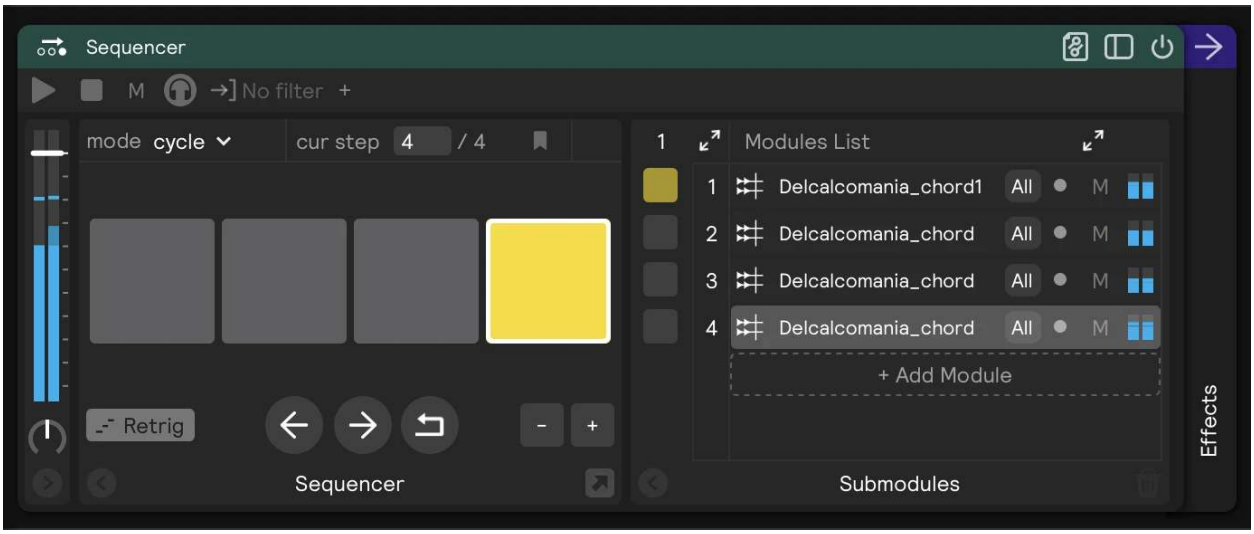


Figure 345: A Sequencer with four chord samplers, one per step, and the current step outlined

3. Choose how the chords end

- Turn on **retrig** so each new chord cuts off the one before it. This is what you want for most progressions.
- Leave **retrig** off to let chords ring into each other, for pads and washes.

4. Move through the song

You want to…	Do this
Start over from the first chord	Right-click the Sequencer's reset (loop) button and add an assignment from a zone you don't use much, or from a MIDI footswitch.
Change chords from a different zone than the one that plays them	Set the mode to `manual`, then assign a zone to the **next** button. The drum plays the current chord until you move it on.
Come back to the same chord after switching sets	Turn on **Save Step**.

To keep the progression from moving when you don't mean it to, see Velocity thresholding below.

Chops

A chop is a short slice of a longer sample: a word from a vocal, one hit from a drum break, a stab from a horn line. Each hit plays the next slice.

If your slices are already separate files

Drag them all onto a Sequencer at once. They're added one per step in the order they arrive, so name them in order (`chop_01`, `chop_02`…) before you drag.

Chopping one sample inside Sensory Percussion

1. Drag the sample onto the Sequencer. Then copy and paste the sampler until you have one per slice: eight copies for eight slices.
2. On each sampler, set **Start** and **Length** (both percentages of the whole sample) to frame one slice. For eight equal slices, every sampler gets a **Length** of 12.5%, and the starts are 0%, 12.5%, 25%, and so on. The green box on the waveform shows exactly what will play.
3. Turn on **retrig** on the Sequencer so each slice cuts off the one before it.

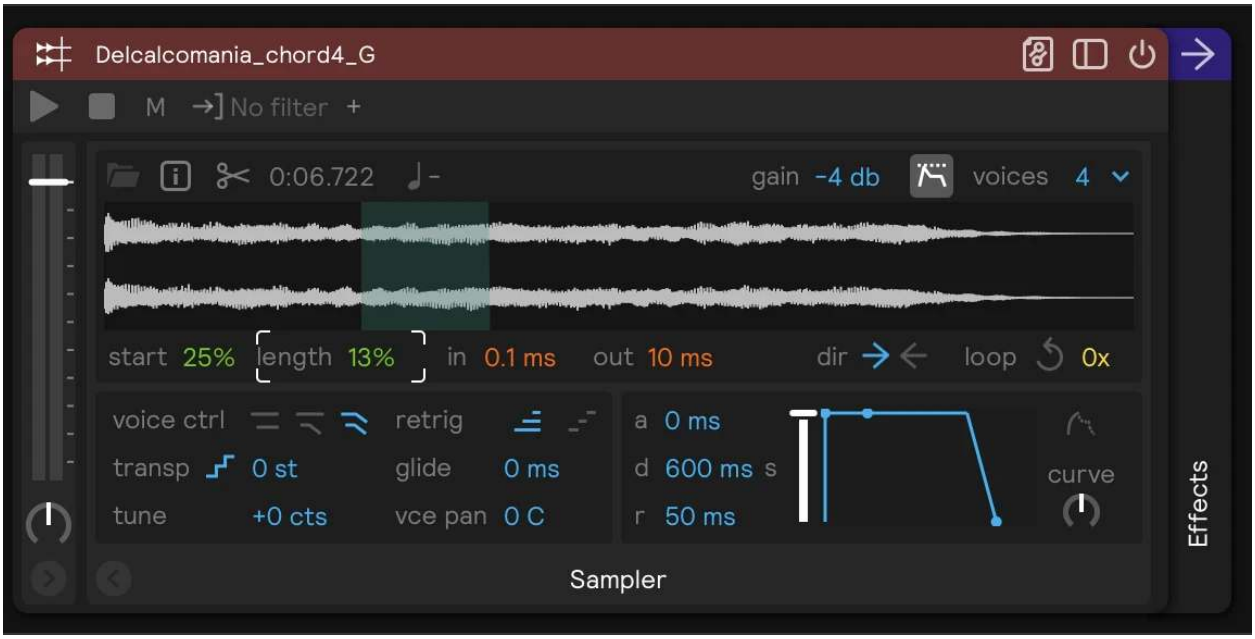


Figure 346: A sampler framing one slice: Start at 25% and Length at 12.5% (displayed rounded, as 13%), with the green box over that slice of the waveform

Chopping with an LFO

Instead of framing each slice by hand, let an LFO move the start point for you. Each hit plays a short piece of the sample from wherever the LFO is at that moment, so a single sampler gives you an endless supply of chops. You don't need a Sequencer for this.

1. Drop a longer sample, like a vocal phrase or a drum break, onto a drum or a zone.

2. Set the sampler's **Length** short. Length is a percentage of the whole sample, so how short depends on the sample: on an 8-second phrase, 3% is about a quarter of a second.
3. Right-click **Start** and choose **New Assignment → LFO**.
4. Pick the LFO's **Shape**:
    - `sawtooth` sweeps from the beginning of the sample to the end, so your hits move forward through the phrase. `rev. saw` moves backward.
    - `random` jumps to a new spot on every hit.
    - `sine` and `triangle` drift back and forth through the sample.
5. Set the **Rate**. It decides how far the start point moves between hits. At a slow rate (0.1 Hz takes ten seconds to cross the whole sample), hits close together play neighboring pieces of the phrase. At a fast rate, they land far apart.
6. Narrow the assignment's range so the start stops short of the very end of the sample, for example 0% to 95%. Otherwise the last chops run out of sample and come out shorter than the rest.
7. Set the sampler's voice mode to **Retrig**, so each chop cuts off the one before it.



Figure 347: A sampler with Length at 3% and an LFO assignment on Start: the sawtooth shape is selected and the range runs from 0% to 95%, so the short green slice sweeps through the sample

> **Tip:** One step per hit
>
> The LFO keeps moving between hits, so where each chop lands depends on your timing. For chops that step forward by exactly one slice per hit, use a **Rand | Step**

assignment on **Start** instead, in `steps` mode. With 8 steps, each hit moves the start along by an eighth of the sample. See Random | Step.

Make it less predictable

Try the Sequencer's random modes:

- `rand hop` picks a random slice but never the same one twice in a row.
- `shuffle` plays every slice once in a random order, then reshuffles.

Put a Sequencer inside a Sequencer for patterns that repeat but shift, or give a slice more than one step (in the matrix view, turn on `advanced mode`) to make it come up more often.

Loops

Make a sample loop

Click the yellow loop arrow on a sampler to turn looping on. The number next to it is how many times it plays: 0x loops forever, until something stops it.

Step through loops

Put one loop per step in a Sequencer with **retrig** on. Each hit stops the current loop and starts the next one, so you can move from verse to chorus from the drum.

Loops start the moment you hit, and the sampler plays them at the tempo they were recorded at. It doesn't stretch them to the session tempo, so if you also use the metronome or Metros, set the session tempo to match your loops.

Stop a loop

- Hit something with **retrig** on in the same controller.
- Assign a zone or a footswitch to the layer's stop button. See How to Choke Sounds.
- The Global Stop button stops everything.

Velocity thresholding

Chords, chops, and loops share one weak spot: anything that reaches them plays them. A ghost note, a light brush of the stick, or cross-talk from another drum can move a chord progression on, fire a chop, or switch a loop in the middle of a groove. Velocity thresholding fixes that, because only hits above a level you choose get through.

Set the threshold on the controller

Every module and controller has a Velocity I/O panel. Open it on the Sequencer (or on the sampler, if it's on its own) and drag the bottom-left node to the right. Hits softer than that point are ignored by that module and everything inside it. The rest of the drum keeps playing as usual, so your soft notes still play your drum sounds.

Set it on the Sequencer rather than on each sampler inside it. Then every step shares one threshold, and the sequence only advances on hits that actually play something.

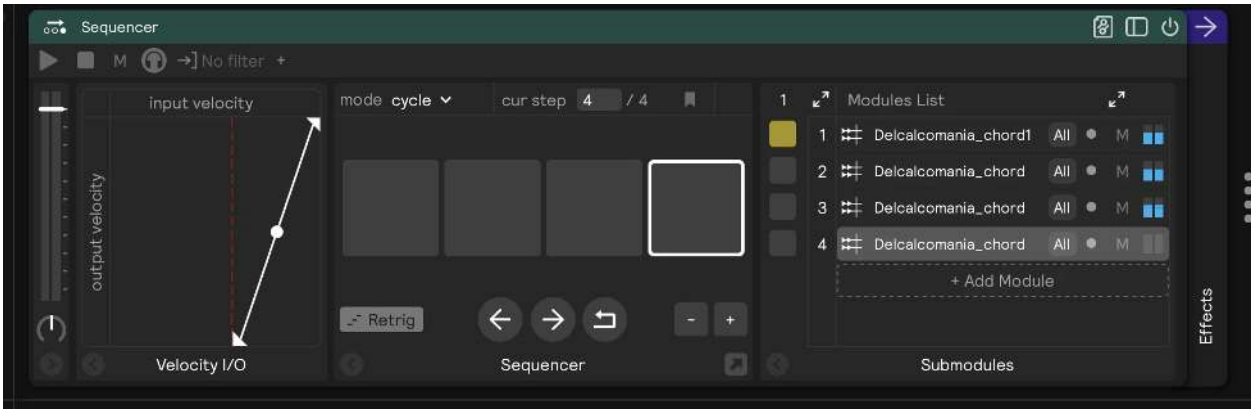


Figure 348: A Sequencer with its Velocity I/O panel showing: the bottom-left node dragged right to about 60%, with the dashed line marking the threshold below which hits are ignored

Keep the volume steady

A hit that only just clears the threshold plays quietly. If you want every chord, chop, or loop that gets through to play at a steady volume, drag the same bottom-left node up as well. That raises the softest output velocity, so the difference between a medium and a hard hit gets smaller.

> **Tip:** Thresholds on assignments
>
> The assignments that run the sequence, like a zone on the reset or **next** button, have their own velocity threshold. Raise it so only a firm hit resets or advances the sequence. See Use Thresholding for more ways to use thresholds.

How to Set Up Virtual MIDI Routing

> **Warning:** Mac Only

This page covers setting up virtual MIDI routing on Macs. If you are using a Windows computer, you will need to use a third-party application to create virtual MIDI ports. Here are a few common options: - loopMIDI (free) - loopBe1 (free) - loopBe30 (paid)

Sending MIDI between Sensory Percussion and another application on the same computer requires a few steps, since you'll be essentially running virtual MIDI cables between the two programs.

On a Mac you'll use the Audio MIDI Setup app:

1. Open **Audio MIDI Setup.app** (it's located in your *Applications/Utilities* folder)
2. Click *Show MIDI Studio* under *Window* in the top menu.

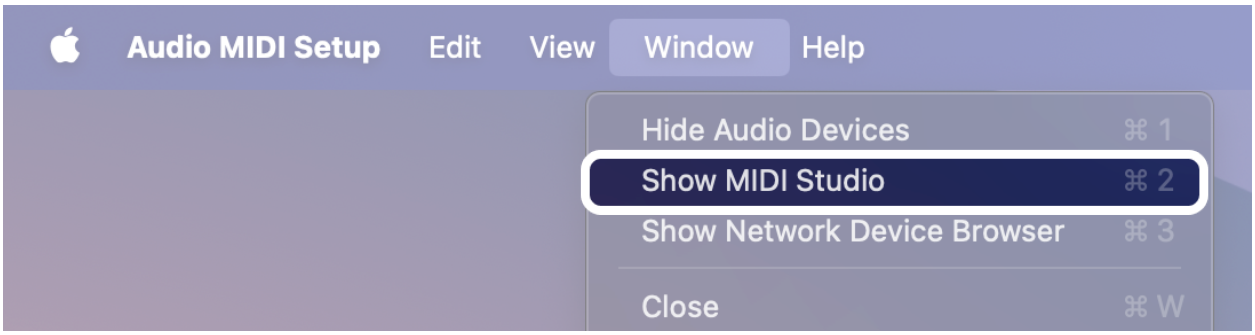


Figure 349: A screenshot of the Window menu dropdown

3. In the window that appears, double click on the IAC Driver Icon to reveal another window.
4. In that new window, click the "+" button to add ports.

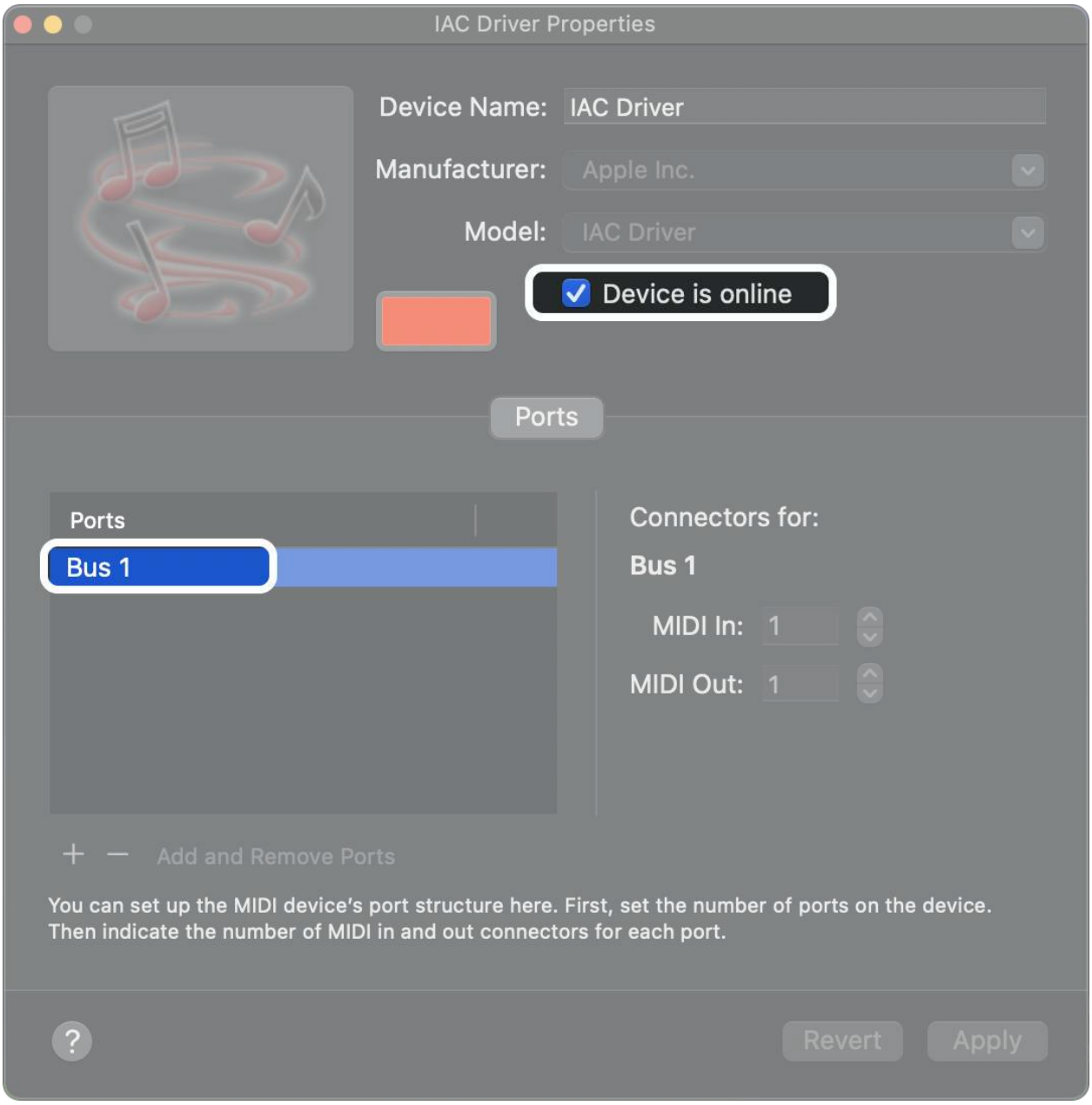


Figure 350: A screenshot of the IAC Driver Properties window

Warning:

If you would like to send **and** receive MIDI virtually in Sensory Percussion, you must use two IAC Buses. Otherwise, you will create a MIDI feedback loop.

In the IAC Driver Properties window, you can add as many ports as you need and name them however you like.

How To Use a Drum Trigger

Sensory Percussion can play from conventional drum triggers alongside your sensors: an acoustic drum trigger clipped to a hoop, a piezo trigger pad, or a practice pad with a trigger output. A trigger plays a drum just like a sensor does, so every set and instrument built for sensors works with it.

What you need

- A trigger with a 1/4” output.
- A free audio input on your interface. On the EVANS Portal, use the **Mic/Line A/B** combo inputs on the front or the **Line-In C/D** inputs on the back. The **Sensor** inputs are made for Sensory Percussion sensors, so keep triggers off them.
- For a **dual-zone** trigger (separate head and rim piezos), two inputs side by side, like A and B or C and D. Most dual-zone triggers put both zones on one TRS cable, so you’ll need a TRS-to-dual-TS splitter (often sold as an insert cable or Y-cable): the tip carries the head, the ring carries the rim.

  Tip: Using the Portal’s combo inputs

  For a piezo trigger plugged into **Mic/Line A** or **B**, switch **+48v** off, set the line/inst switch to **inst**, and start with the gain knob low. You’ll set the final level in the software in step 4.

1. Plug in and check the channel

Plug the trigger in, then open Settings → Audio (⌘ + ,). Make sure the input channel (or both channels, for a dual-zone trigger) is turned on in the **input channels** list.

Hit the trigger and watch the **Inputs** meter. If nothing moves, check the cable and the gain knob before going further.



Figure 351: Settings → Audio with Mic/Line A and Mic/Line B turned on in the input channels list, and the Inputs meter showing a hit

2. Add a Drum Trigger input

1. In the hardware inputs panel, click **+** and choose **Drum Trigger** under **More inputs**.
2. Choose **Zones**: **Single zone** for one piezo, **Dual zone** for a head-and-rim trigger. This decides what the **Input** list offers: single channels, or stereo pairs.
3. Choose the **Input** the trigger is plugged into.
4. Give it a **Trigger Name**, and create it.

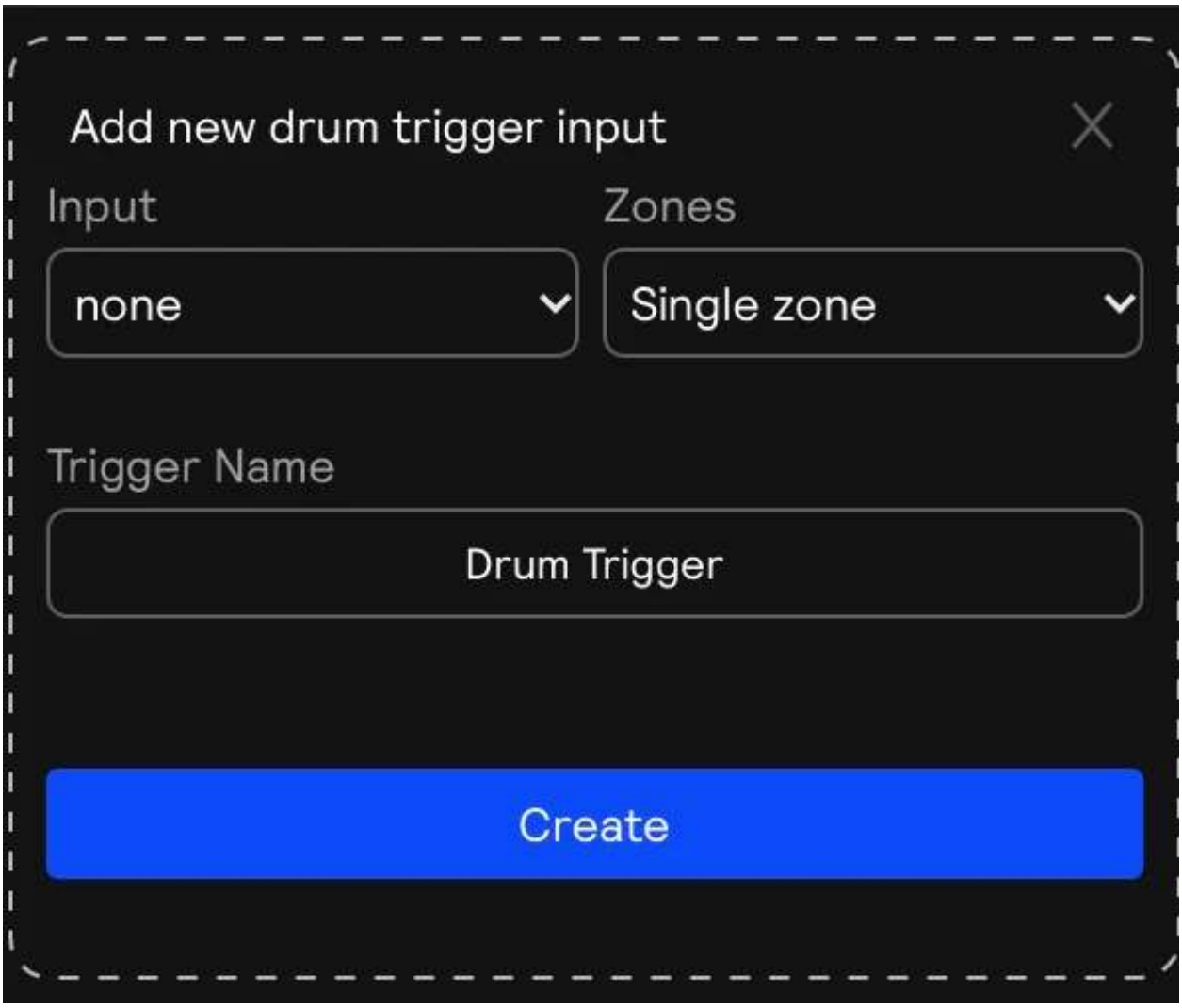


Figure 352: The Add new drum trigger input popout, with Input, Zones, and Trigger Name fields

Hit the trigger. The meter on the left of the card should move, and the pads display should light up the zone you played.

3. Choose which drum it plays

The card's **Input Type** decides which drum the trigger plays. Hover a surface type (snare, tom, kick, cymbal, hi-hat) and pick a specific drum.

- **To add a new drum to your kit**, pick a number nothing else uses, like `tom3`. Then give it a sound: in the Play view, hover the new drum in the kit graphic and click **+** (see Virtual Inputs).

- **To play the same sounds as a drum you already have**, pick that drum, like `kick1`. A trigger can share a drum with a sensor, so both play the same sounds. This is handy for a trigger pad you play with your hand while your foot plays the kick.

You can change **Input Type** at any time without touching your sets.

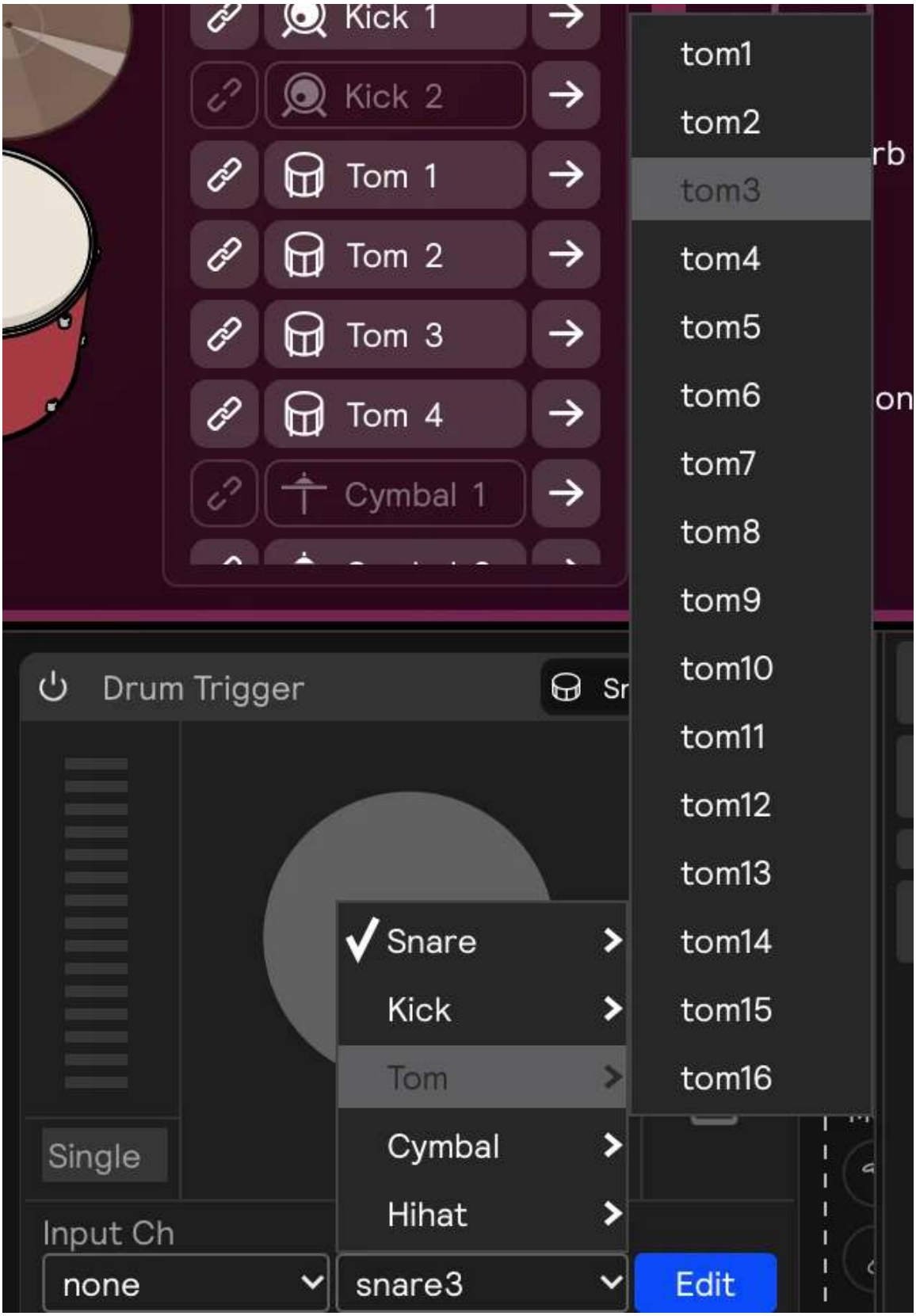


Figure 353: The Input Type menu on a Drum Trigger card, with the Tom submenu open and tom3 highlighted

4. Set the level

Click **Edit** on the card to open the trigger settings window. Play a few of the softest notes you want to hear, then a few of the hardest.

Control	What to do with it
Input gain	Starts at -16 dB. If your hardest hits reach the top of the velocity range, turn it down. If you have to hit hard to get any volume, turn it up.
Threshold	Drag the dashed line up until noise and bleed from other drums stop registering, but your softest notes still do.
Sensitivity	Lower it if one hit plays twice (common on loose or ringy pads). Raise it if fast, soft notes get missed.
Velocity Curve	Shape how your dynamics map to volume once the level is right.

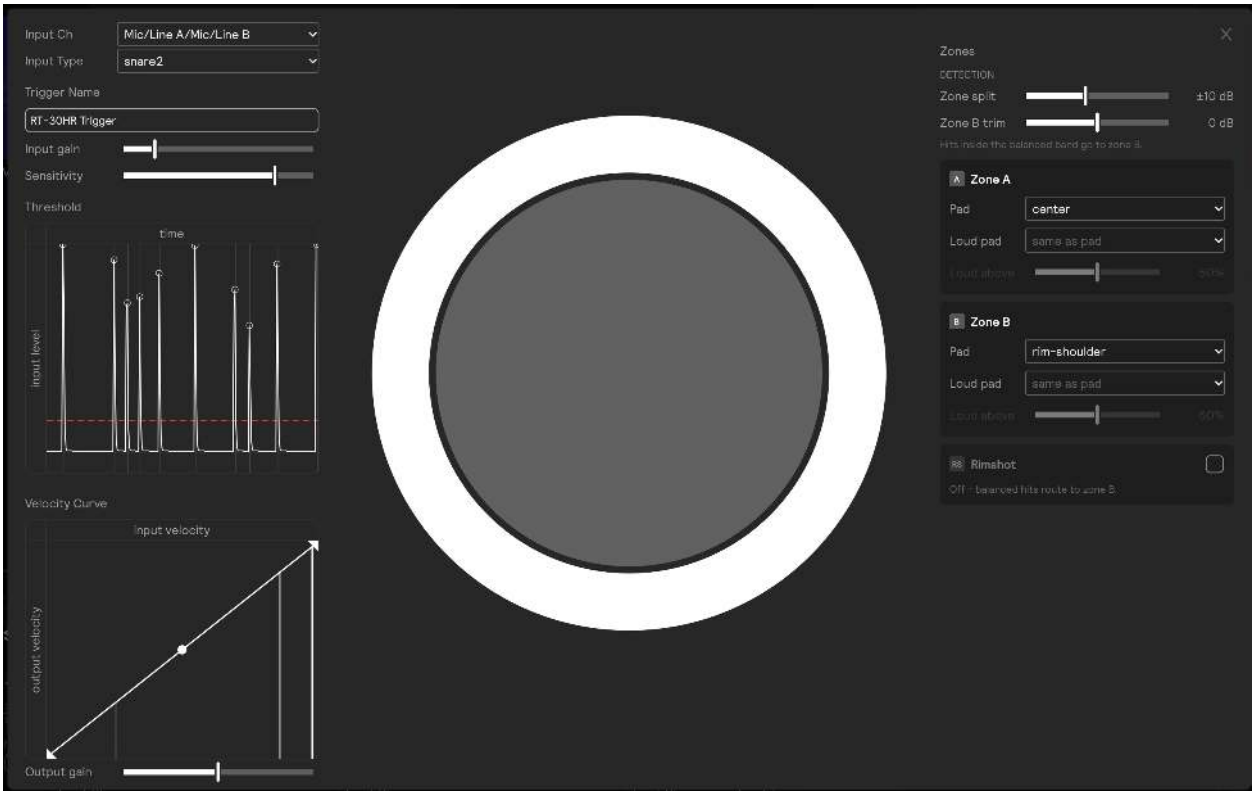


Figure 354: The settings window for a dual-zone trigger

See Drum Trigger Inputs for every control.

5. Dial in the zones (dual-zone triggers)

Play the head, then the rim, and watch which zone lights up in the pads display.

- **Head and rim are swapped?** Swap the two cables on your interface, or pick the pair the other way round.
- **Head hits land on the rim zone?** Lower **Zone split**.
- **Rim hits land on the head zone?** Raise **Zone split**.
- **One piezo is much hotter than the other?** Use **Zone B trim** to balance them.

Turn on **Rimshot** if you want a third zone for hits that land on the head and rim at once. Each zone's **Pad** decides which zone of the drum it plays, so you can, for example, send the rim to `rimshot-center` instead of the default rim pad.

> **Tip:** One trigger, two sounds
>
> Any zone can split into two pads by velocity. Set **Loud pad** to a second zone and **Loud above** to how hard you need to hit to reach it. With Zone A on `edge` and its loud pad on `center`, soft head hits play the edge sound and hard ones play the center sound.

6. Play

Load a set and play. Because the trigger is a drum, whatever the set has on that drum plays from the trigger. To build sounds for it, see How To Drop Sounds onto the Drums.

If you use the trigger in some setups and not others, save each setup as an environment so you can switch in one click.

How To Use a MIDI Sample Pad in Sensory Percussion

A sample pad (like a Roland SPD-SX or Octapad) or a pad controller (like an Akai MPD) makes a great partner for your kit: one-shots, loops, and chords under your hands, next to your drums. There are two ways to bring one into Sensory Percussion, and you can pick whichever fits how you want to play:

You want to…	Use	Set it up with
Give each pad its own sound, like a grid of one-shots, loops, or chords	A **Pad input** and a **Grid Pads** controller	The steps below

You want to…	Use	Set it up with
Play the pads as extra drums, using sets and instruments built for a drum kit	An **eKit input**	How To Use Your eKit. There are factory maps for the SPD-SX and SPD-30 Octapad.

You can also use the pads to control things rather than play sounds, like switching sets or starting a sequence. See How To Control Parameters with MIDI Input and Change Sets with an Assignment.

1. Connect the pad and turn on its MIDI port

Connect the pad to your computer with USB. Some sample pads have a USB mode setting; make sure it's set to send MIDI.

Then open Settings → MIDI Devices (⌘ + .) and tick the pad under **MIDI inputs**.

2. Add a Pad input

1. In the hardware inputs panel, click **+** and choose **Grid Pads** under **More inputs**.
2. Select your pad as the input device.
3. Set the grid to match your pad. It starts at 3 x 3 (the layout of an SPD-SX's nine pads) and goes up to 8 x 8. A 16-pad controller is 4 x 4.

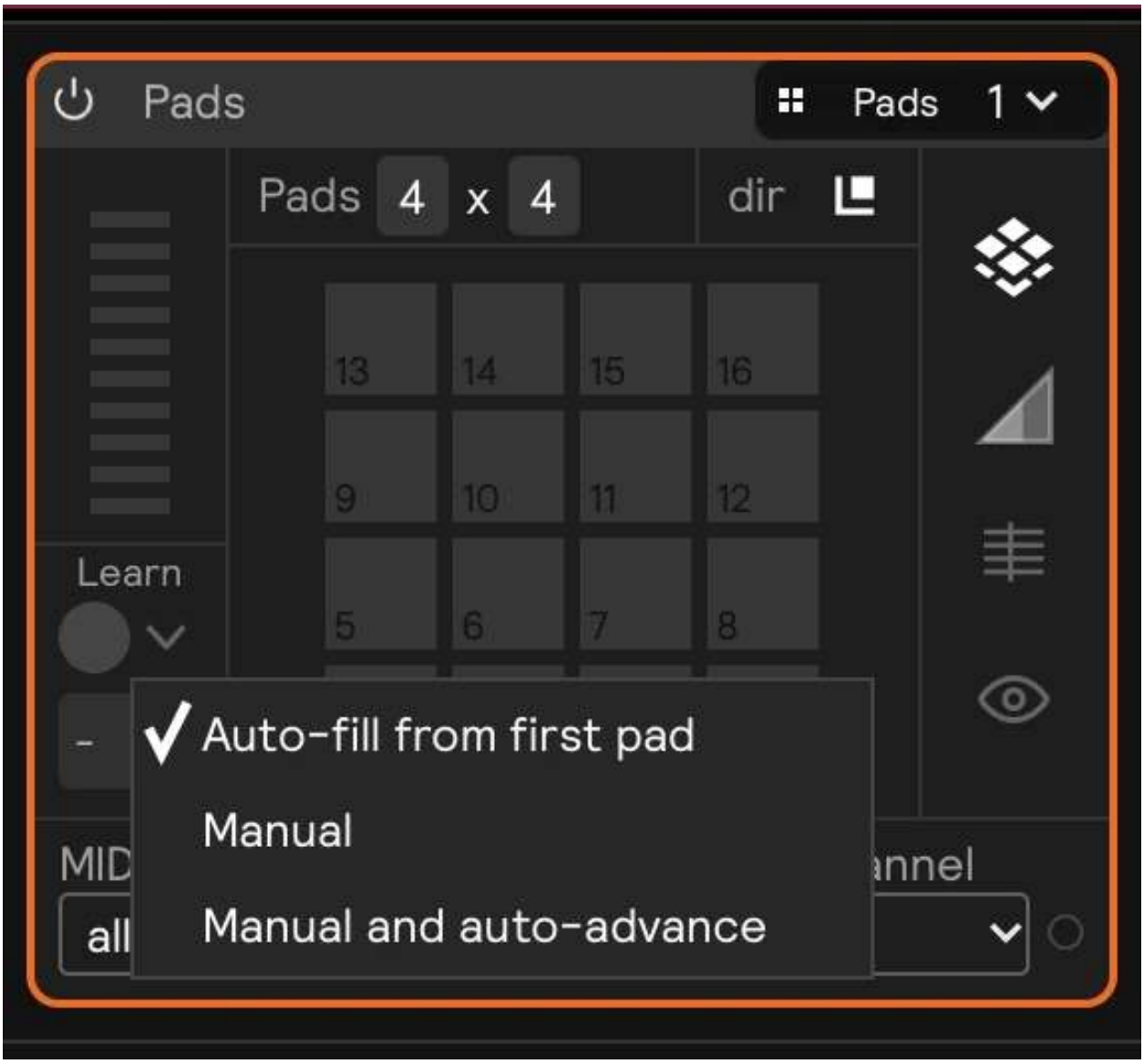


Figure 355: A Pad input card set to 4 x 4, with the Learn menu open: Auto-fill from first pad, Manual, and Manual and auto-advance

3. Learn your pads

The Pad input needs to know which note each pad sends. Choose a mode from the **Learn** menu:

- **Auto-fill from first pad**: if your pads send notes in ascending order (pad 1 is note 36, pad 2 is 37, and so on), click **Learn** and hit your lowest pad. Every other pad is filled in for you.
- **Manual and auto-advance**: click **Learn**, then hit each pad in turn. Each hit fills one grid cell and moves to the next.
- **Manual**: select a cell, click **Learn**, and hit one pad.

Hit each pad and check that the right cell lights up. The **Log** tab shows the notes coming in if something doesn't match.

4. Add a Grid Pads controller

In the Play view, find your Pad input in the **Input routing** list of the Virtual Inputs panel. Click the dashed **+** in its **Set** column and choose **Controllers → Grid Pads**.

You can also drag **Grid Pads** in from **Build → Controllers** in the library. If you do, check that its device filter shows **All Pads** or your Pad input's badge.

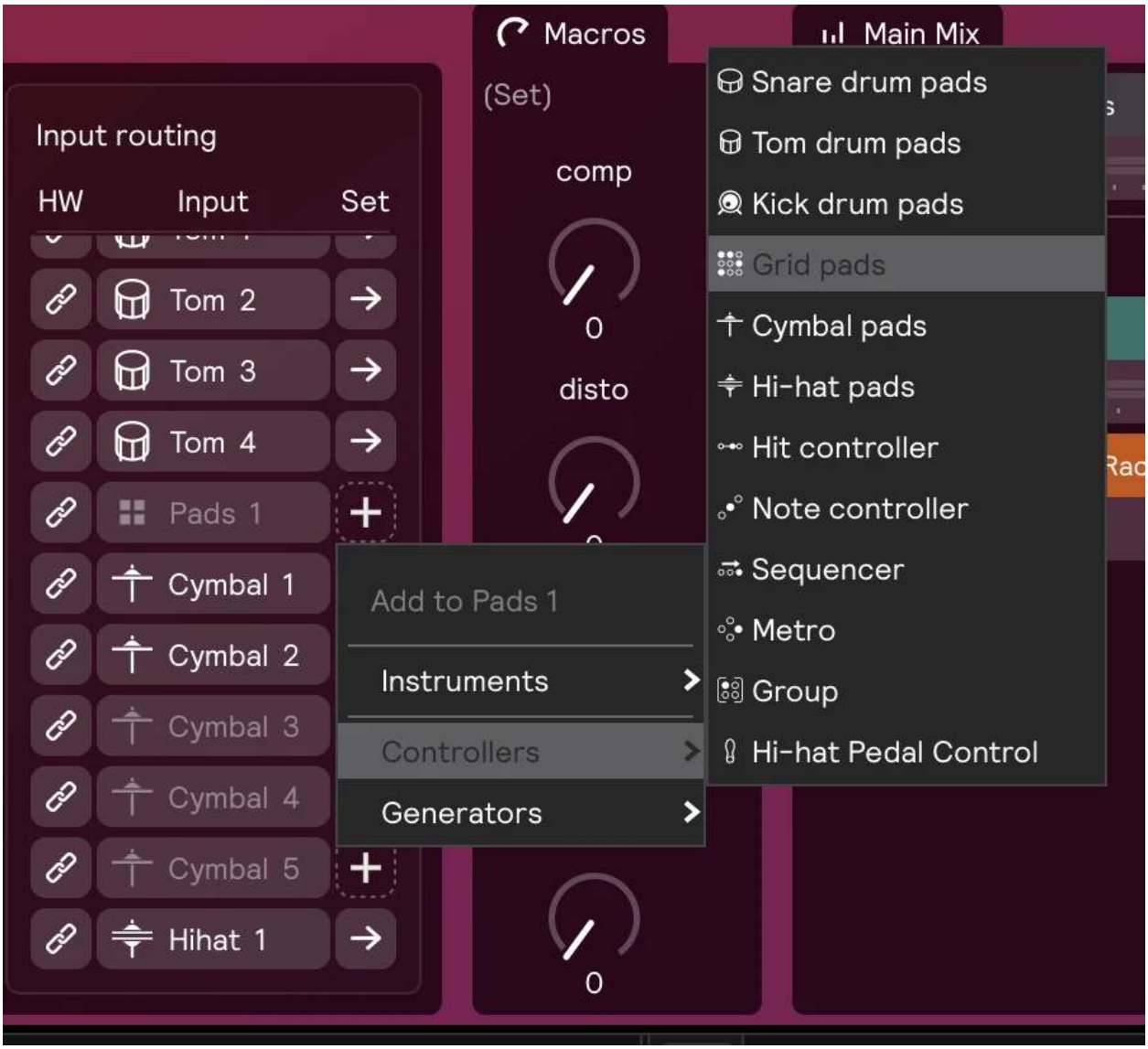


Figure 356: The Input routing list with the dashed + clicked on Pads 1, and its menu open on Controllers → Grid pads

5. Put sounds on the pads

Drag samples from the library (or from Finder or Explorer) onto the pads of the Grid Pads controller. Each sample becomes a sampler on that pad. You can drop any other module onto a pad too:

- a **Sequencer** full of chord samples, so each hit plays the next chord (see How To Sequence Chords, Chops, and Loops)
- a looping **Sampler** for a groove you start and stop by hand
- a **MIDI notes generator**, to play a synth or drum machine from your pads (see How To Send MIDI Out)



Figure 357: A hand clap sample being dragged from the library onto pad 3 of a Grid Pads controller

6. Adjust the feel

Open the Pad input's **Sensitivity** tab to shape the velocity response, so soft and hard hits sit where you want them. If you only want to hear Sensory Percussion, turn down the sample pad's own sounds.

How To Use Your eKit with Sensory Percussion

You can play Sensory Percussion from an electronic drum kit (Roland, Alesis, Yamaha, EFNOTE, and others). An eKit input turns the notes your kit sends into drums and zones: snare center, snare rimshot, tom center, hi-hat bow, and so on. To the rest of the software, your eKit looks just like a kit with sensors on it, so the Core Library, your sound packs, and your own sets all play from it with no changes. The hi-hat pedal comes through too.

You can also mix the two: sensors on your acoustic drums and eKit pads for cymbals, or an eKit at home and sensors on stage.

What you need

- Your kit's drum module connected to your computer with a USB cable. Most modern modules send MIDI over USB with no driver.
- If your module only has a 5-pin **MIDI Out**, a USB MIDI interface to plug it into. The EVANS Portal's MIDI port is an output only, so it can't receive from your kit.

1. Turn on your kit's MIDI port

Open Settings → MIDI Devices (⌘ + **.**) and tick your kit under **MIDI inputs**.

If your kit isn't listed, see No MIDI Input.

2. Add an eKit input

1. In the hardware inputs panel, click **+** and choose **eKit** under **More inputs**.
2. Choose your kit under **MIDI Input** and give it an **eKit name**.
3. Create it.

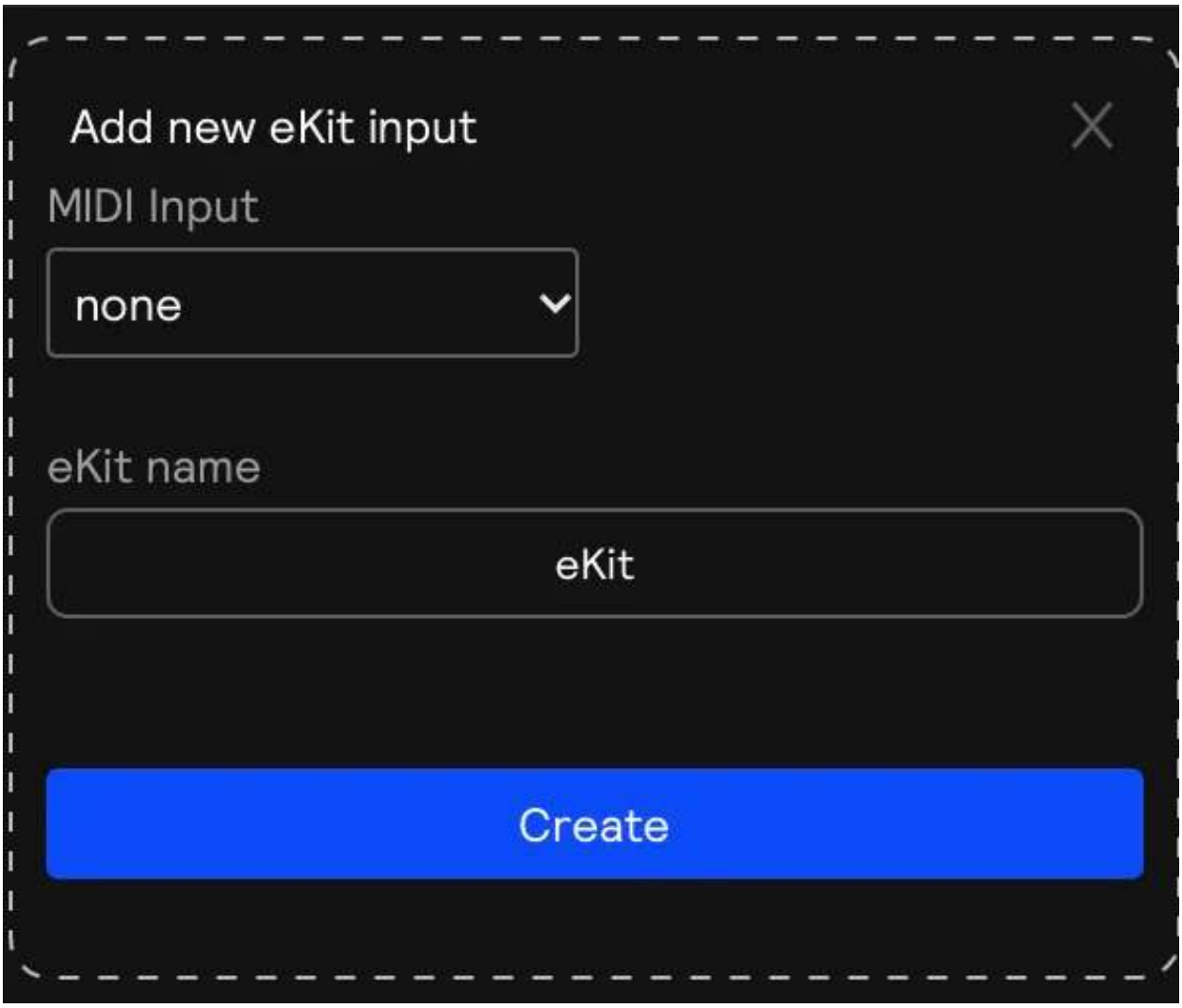


Figure 358: The Add new eKit input popout, with MIDI Input and eKit name fields

3. Load your kit's map

A new eKit input starts with a General MIDI drum map. Open the **preset menu** in the card's title bar and pick your kit's model. Factory maps are included for Roland TD and SPD models, Alesis, Yamaha DTX, EFNOTE, 2Box, Pearl, Simmons, Nord, and more. See the full list.

If your kit isn't listed, start from **General MIDI**: most kits follow it closely, and you'll fix the rest in the next step.

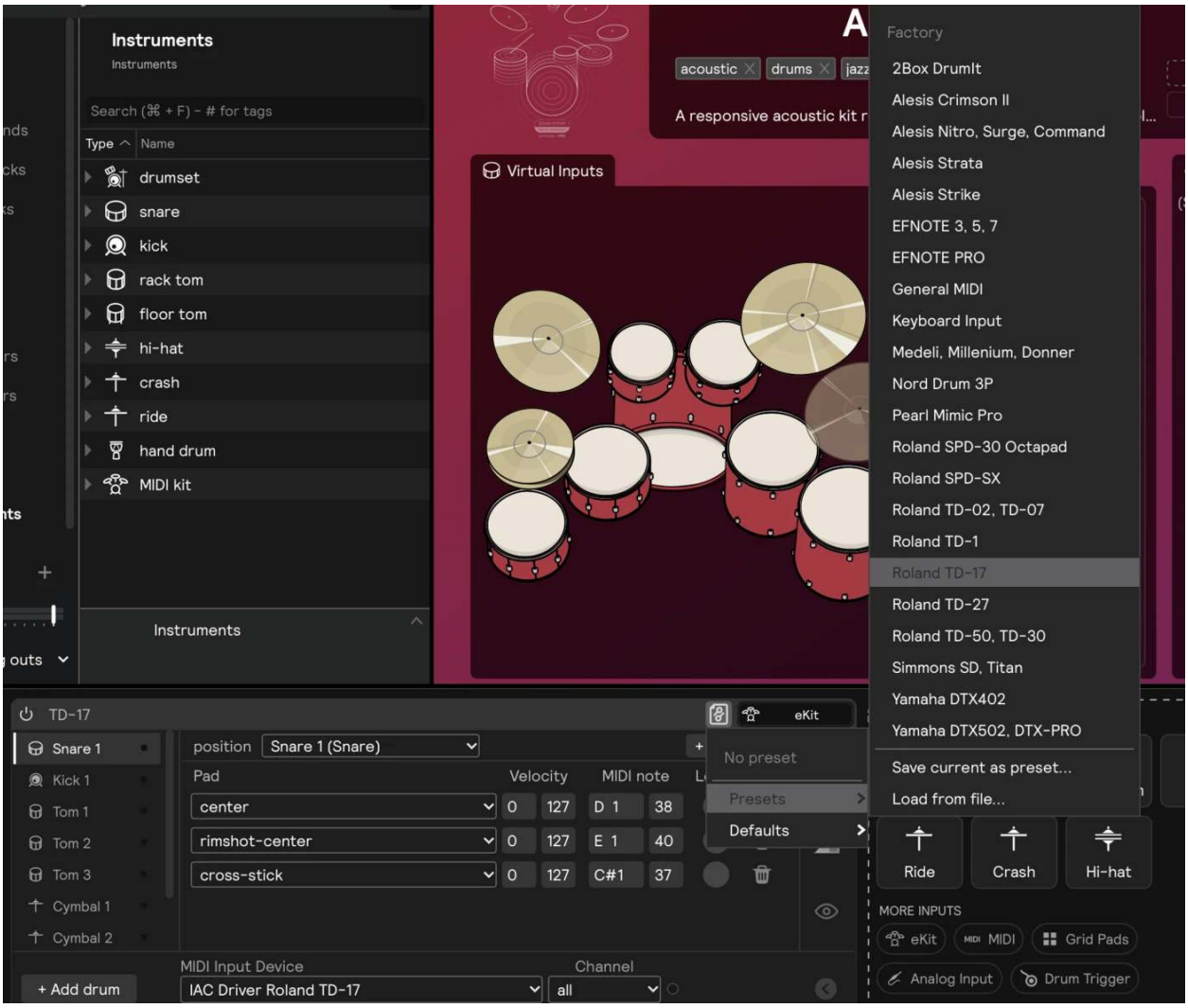


Figure 359: The eKit preset menu open from the card's title bar, with Roland TD-17 highlighted in the list of factory maps

4. Check every pad

Play every pad on your kit, including rims, bells, cymbal edges, and the hi-hat pedal. The dot next to each drum in the kit list lights up when the kit sends one of its notes.

If a pad doesn't light anything, or lights the wrong drum:

1. Switch the card to the **MIDI log** view and hit the pad to see which note it sends.
2. Click the drum it should play in the kit list.
3. Click **Learn** on the pad row for the right zone, hit the pad on your kit, and the note is captured. Use **+ Pad** to add a zone that isn't in the list yet.

Pads your kit has that aren't in the map yet (a second crash, an extra tom) can be added with **+ Add drum** under the kit list.



Figure 360: The MIDI log view on an eKit card

When everything plays the right zone, save the map from the preset menu as a user preset, so you never have to do it again.

5. Check the hi-hat

- **The pedal doesn't open and close the hi-hat?** Select the hi-hat in the kit list and check its **pedal CC**. Most kits send the pedal on CC 4.
- **Your kit sends separate notes for open and closed hi-hat?** Set the **Open** value on those pads: 0 is fully open, 127 fully closed.
- **Grabbing a cymbal should choke it?** Most kits send aftertouch when you grab a cymbal, and Sensory Percussion chokes it automatically. If your kit sends a choke note instead, add a pad on that note and set it to **(choke)**.

6. Decide where your eKit drums land

Each drum in your kit list has a **position** that picks which drum in the software it plays, like **Snare 1** or **Tom 2 (Floor Tom 1)**.

If you also have sensors, a pad set to the same drum as a sensor shares its sounds. That's what you want if, for example, an eKit snare stands in for your acoustic snare. If you want separate sounds, give the eKit drum a position nothing else uses, like **Snare 2**.

Check that Settings → Drumset Layout matches your kit (one rack tom or two? ride and crash, or two crashes?), so sets from the library land on the right drums.

7. Play

Load a set from the library and play. The kit graphic in the Play view lights up as you hit each pad.

- **Shape the feel** in the eKit card's **Velocity** view: the velocity curve and threshold apply to the whole kit.
- **Turn down your module's own sounds** (its master or kit volume) if you only want to hear Sensory Percussion. Or leave them up and layer the two.
- **Hear a delay between hit and sound?** Lower the buffer size in Settings → Audio.

  Note:

  Positional sensing (the center-to-edge data some kits send) isn't supported on the eKit Hardware input yet.

If you switch between your eKit and your sensors, save each setup as an environment.

How To Use Environments

If you play Sensory Percussion in more than one place, you've probably set up your inputs and outputs more than once: sensors on the Portal at home, an eKit at the rehearsal space, a different interface and in-ear outputs on stage. An environment saves one of those setups by name, so you can switch between them in one click. Your sessions don't change at all: every set plays on whichever setup you load.

An environment holds:

- your audio device, sample rate, buffer size, and channels (including a sensor expansion)
- your hardware inputs, with their training and settings, and your hardware outputs
- your MIDI devices
- your OSC settings

This page walks through a common example: a **Home** setup and a **Stage** setup.

1. Save the setup you have now

Get your current setup working the way you like it: inputs trained, outputs routed, MIDI devices on. Then:

1. Open the settings window (⌘ + ,).

2. Open the **Environment** dropdown at the top and choose **Save as environment…**.
3. Name it **Home**.

The footer now shows **Home** above your audio device.

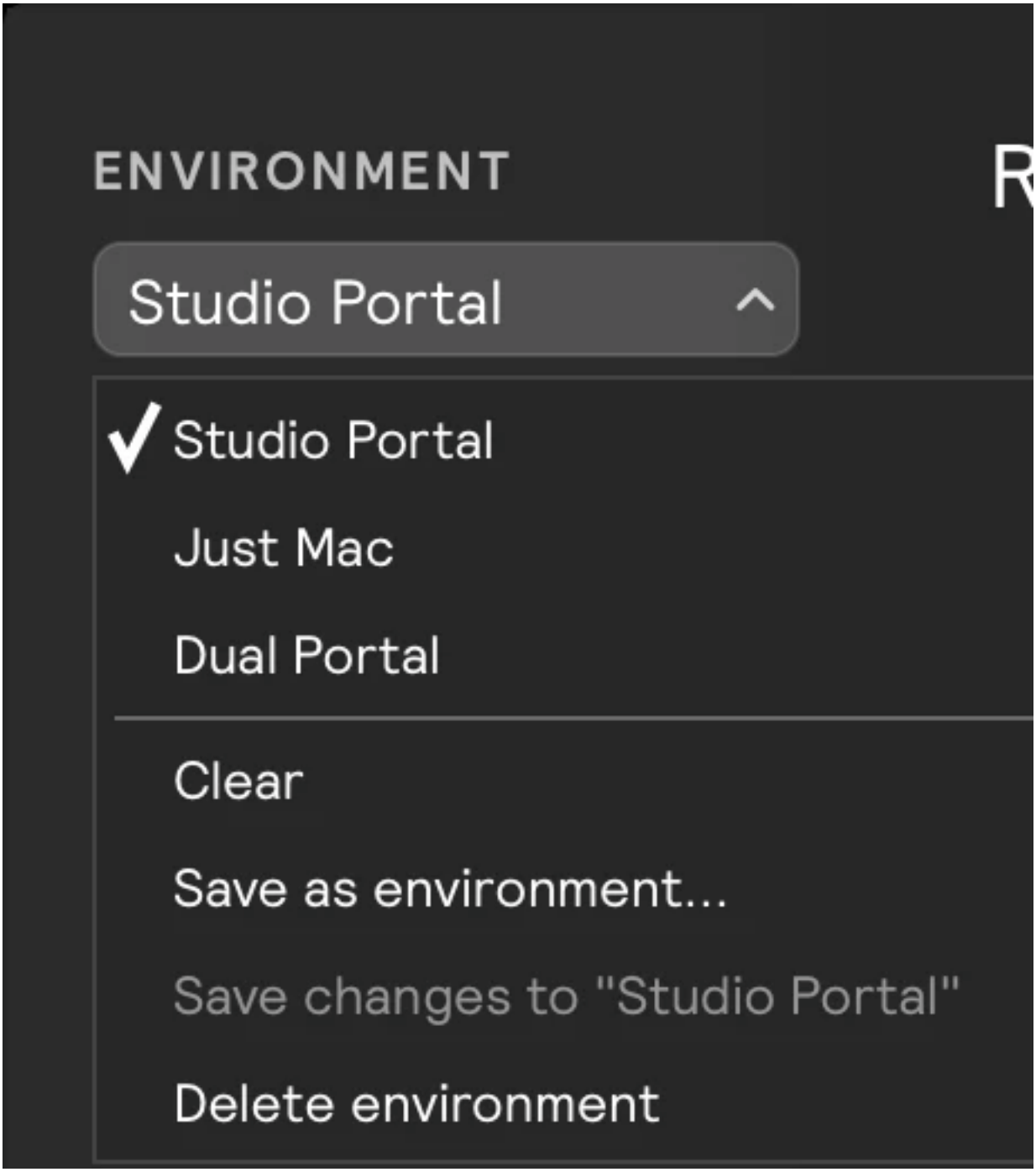


Figure 361: The Environment dropdown open in the settings window

2. Build your second setup

Now set up for the stage. You have two ways to start:

- **Start from Home** and change what's different, like switching the outputs to your in-ear channels or adding a trigger. This is the quickest way when most of the setup is the same.
- **Start from scratch** with **Clear** in the Environment dropdown. It removes all your hardware inputs and outputs (your audio and MIDI device settings stay as they are). Use this when the setups have little in common, like an eKit setup and a sensor setup.

As soon as you change anything, an orange dot appears next to **Home**. That's a reminder that what you have now no longer matches what's saved, and it's how you know Home itself is still safe.

When the stage setup is ready, choose **Save as environment…** again and name it **Stage**. Home keeps its last saved state.

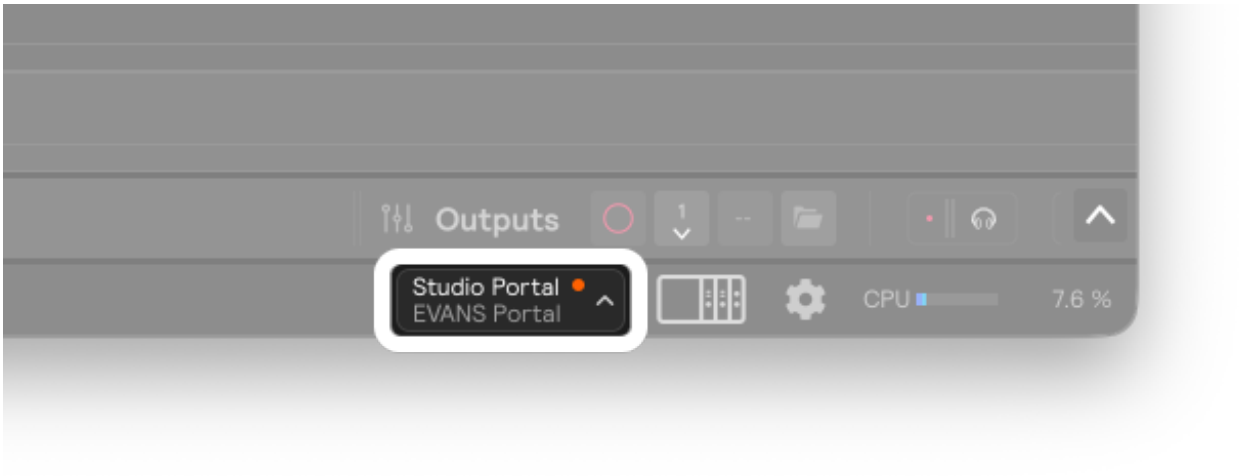


Figure 362: The footer environment button with an orange unsaved-changes dot next to the environment's name

3. Switch between them

Click the environment name in the footer and pick the one you want. Its audio device, inputs, outputs, MIDI, and OSC settings replace your current ones.

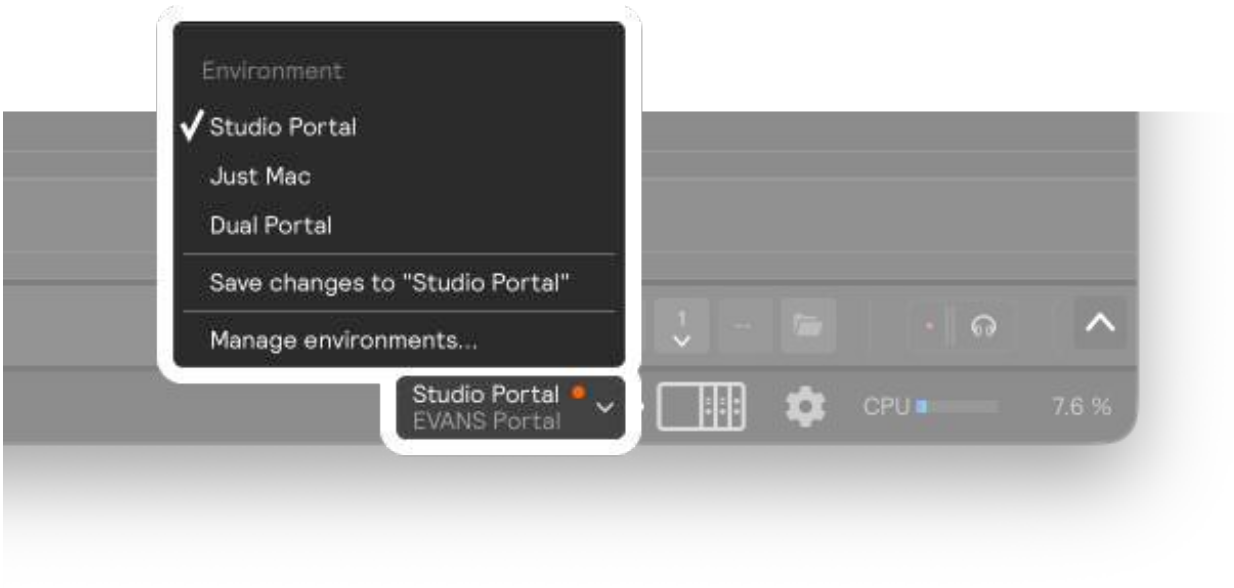


Figure 363: The footer environment menu

If the environment you're leaving has unsaved changes, you're asked first:

- **Save** writes them into that environment, then switches.
- **Discard** drops them, then switches.
- **Cancel** stays where you are.

4. Keep each environment up to date

Once an environment is loaded, every change you make (retraining a drum, adjusting a threshold, adding an output) is an unsaved change until you save it. When you're happy with a change, choose **Save changes to "*name*"** from the footer menu or the settings window.

Quitting never loses anything: your setup stays exactly as you left it, unsaved changes included, the next time you open Sensory Percussion.

> **Tip:** Retrain in each place
>
> Training lives with your inputs, so each environment keeps its own. If your stage kit has different drums or heads than your home kit, train them in the Stage environment and save it. Your Home training stays untouched.

When the interface isn't plugged in

If you load **Stage** at home, with the stage interface packed away, its inputs and outputs show as **disconnected** and a bar above the footer names the interface it expects. Nothing is changed or lost. Plug that interface in and select it, and everything reconnects.

If you've replaced an interface for good (a new Portal, say), open the bar's **Options** menu and choose **Remap to *device* anyway** to move every input and output to the same channels on the new one. Then save the environment. See Hardware Remap.

Using your environments in the plugin

The plugin gets its audio and MIDI from your DAW, so it always runs in the **Host** environment. But it can copy hardware inputs and outputs from any of your saved environments, so you don't have to set your sensors up and train them again inside your DAW. Open the footer menu in the plugin and choose an environment under **Load inputs & outputs from**, then check their channels. See Environments: In the plugin.

How to Use Melody and Harmony

It's a given that the depth of electronic control enabled by Sensory Percussion was bound to revolutionize the way drummers approach tonality.

The added dimensions of timbre control, along with velocity, speed, and LFOs allows for rich melodic and harmonic structures never before possible on the drum set. And with the modular framework of Sensory Percussion V2, building advanced tonal structure into your Sensory compositions is now more manageable than ever before.

Tonality on the drums is a completely new phenomenon and there are very few established standards for how to build tonal drums, but below are some tips and/or starting points for your designs.

The tools you will use when designing tonal drums

In Sensory Percussion the tools you have on hand to build tonality into your sets are your drum's natural playability, which is encapsulated in the Sensory Percussion's assignments & modulators and controllers.

And the cornerstone for many Sensory Percussion tonal adventures is the note controller, which sends note messages to modules contained within.

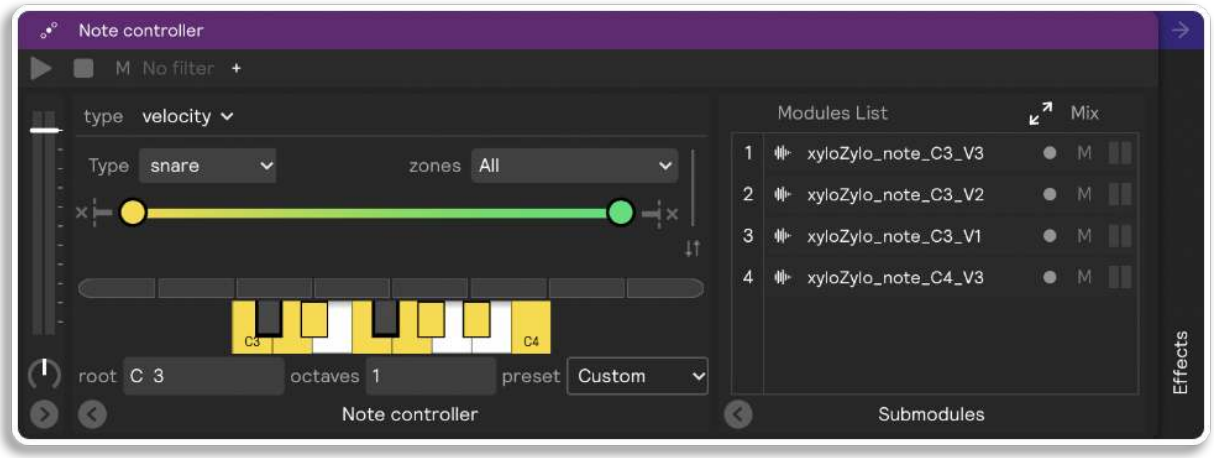


Figure 364: A screenshot of the note controller module

In the sections below we will explore different note controller schemas, and how you might design them to interact with other controllers. And we will also go over other methods of creating tonal drums that don't hinge upon the note controller, relying instead on the *sequencer controller* and the sampler's *transpose parameter*.

Building a Logical and Easily Playable Timbrally Sensitive Tonal Drum

Before we get into controlling melody with timbre, let's define what the word "timbre" means in Sensory Percussion terms. If you think about timbre change from the center to the edge of the drum, you might think timbre simply refers to where you hit the drum, but that doesn't quite cover it. Timbre in general refers to the quality of a musical sound as distinct from its pitch or volume (it's the difference between a trombone and a saxophone playing the same note at the same volume).

There are many ways to get different timbres out of an acoustic drum other than hitting different parts of the head. You could hit the same location of the rim with the shoulder of your stick, and then with the tip of your stick, and you would get two different timbres. So it's more about HOW you're hitting the drum, not just WHERE you're hitting it. The ability to recognize these timbral differences and translate them into parameter control is part of what sets Sensory Percussion apart from traditional drum triggers.

The primary timbral ranges of a snare or tom drum are: *Center-to-Edge*, *Rimshot Center-to-Rimshot Edge*, and *Rim Shoulder-to-Rim Tip*. Yes, there are many other ranges to be explored, but the aforementioned ranges paint a very detailed timbral picture of the drum and will provide your tonal drum a good amount of timbral sensitivity even to the other zones, since each unused zone has a relationship to one or more in the range (for example: Damped is closely related to Center and Edge).

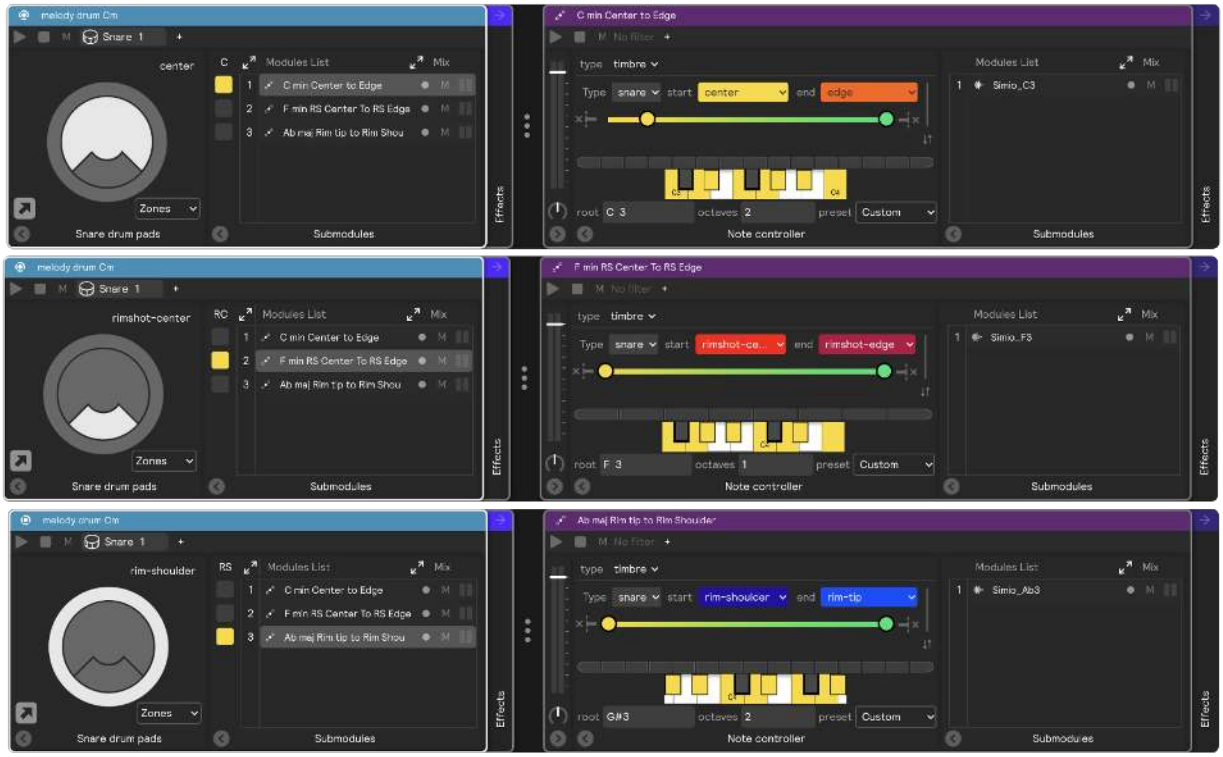


Figure 365: Three different note controllers set to timbre and mapped to 3 different zones of the same drum set to the same scale

In the screenshots above you can see there is a drum map with Center, Rimshot Center, and Rim Shoulder as active zones. Each of the active zones has a note controller with the notes of the C natural minor scale.

The Center-to-Edge range starts on C and ranges two octaves, and is extra sensitive to the tonic (take a look at sensitivity slider, and the bottom step which is expanded larger than the other steps). This is so it's easier to hit the tonic (*C*) by hitting close to the center of the drum. The other two octaves of the C minor scale are expanded out towards the edge of the drum head.

In the second screenshot you can see that the Rimshot Center-to-Rimshot Edge note controller contains one octave of the F melodic minor scale (or the C natural minor scale, but starting on *F*). And in the third screenshot you can see that the Rim Shoulder-to-Rim Tip ranged note controller contains an Ab Major scale (or the C Phrygian scale starting on *Ab*).

So here we have a C minor drum that responds naturally and predictably to your playing: hitting the center of the drum will play the tonic, and the C minor scale rings out as you play the drum out to the edge. Striking rimshots from the center to the edge will release the same scale, but centered around the 4th (or F). And playing the rim from the shoulder of your stick to the tip of the stick will sound an Ab Major scale (or C Phrygian starting on Ab).

Note:

We will return to and expand upon this timbre mapping in the “**Building A Four Voice Harmony Drum**” and “**Tips for Moving Through Tonal Structure**” sections of this article.

Using Velocity or Speed Instead of Timbre to Control Scales

You can substitute velocity or speed instead of timbre if that strikes your fancy. Simply select “velocity” or “speed” from the “type” dropdown of the Note Controller.

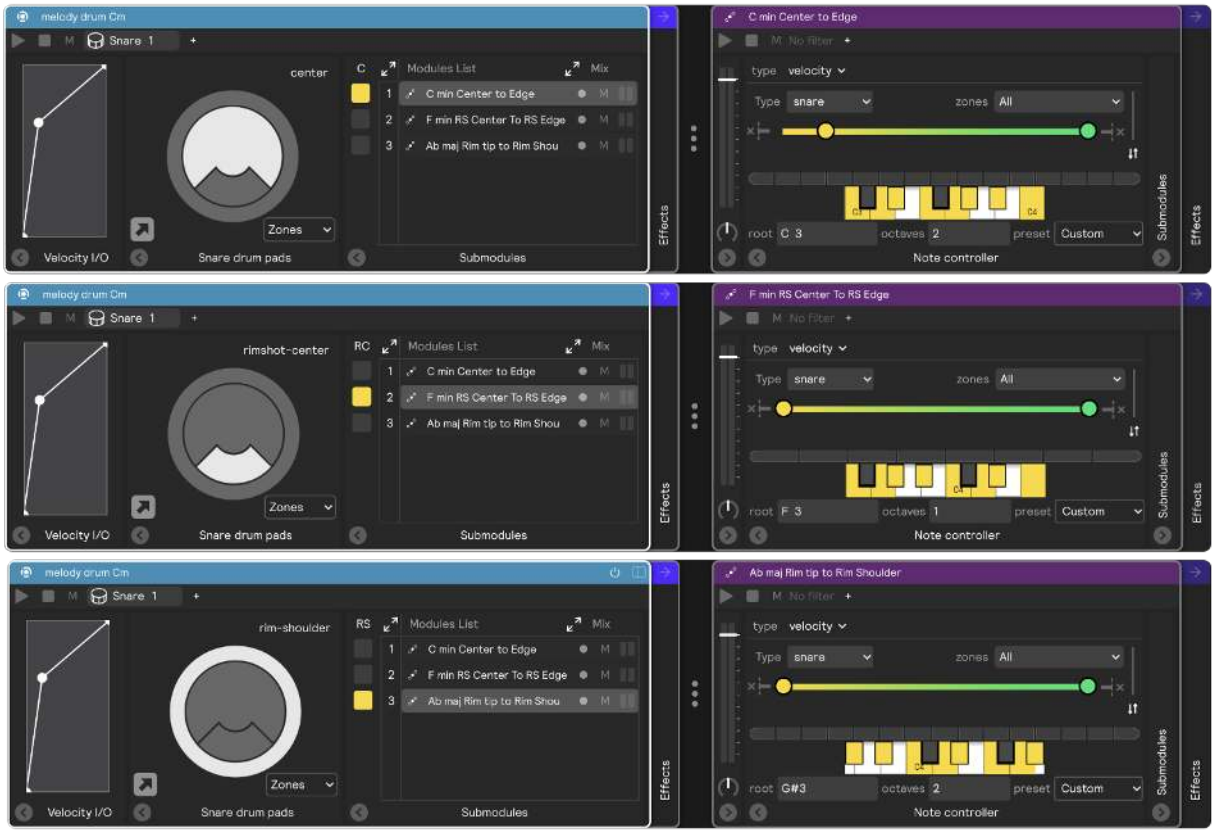


Figure 366: Three different note controllers set to velocity and mapped to 3 different zones of the same drum set to the same scale

Velocity If you have selected “velocity,” you can try engaging the “flip” parameter of the note controller. Sometimes it feels best to hit the low notes with quiet strokes, but other times it feels good engage the low notes when you hit hard.

It also is worth testing a velocity I/O curve setting like the one in the screenshots above in order to remove some velocity playback sensitivity and have *only* the pitches change with your hard/soft playing, but not the volume of the samplers.

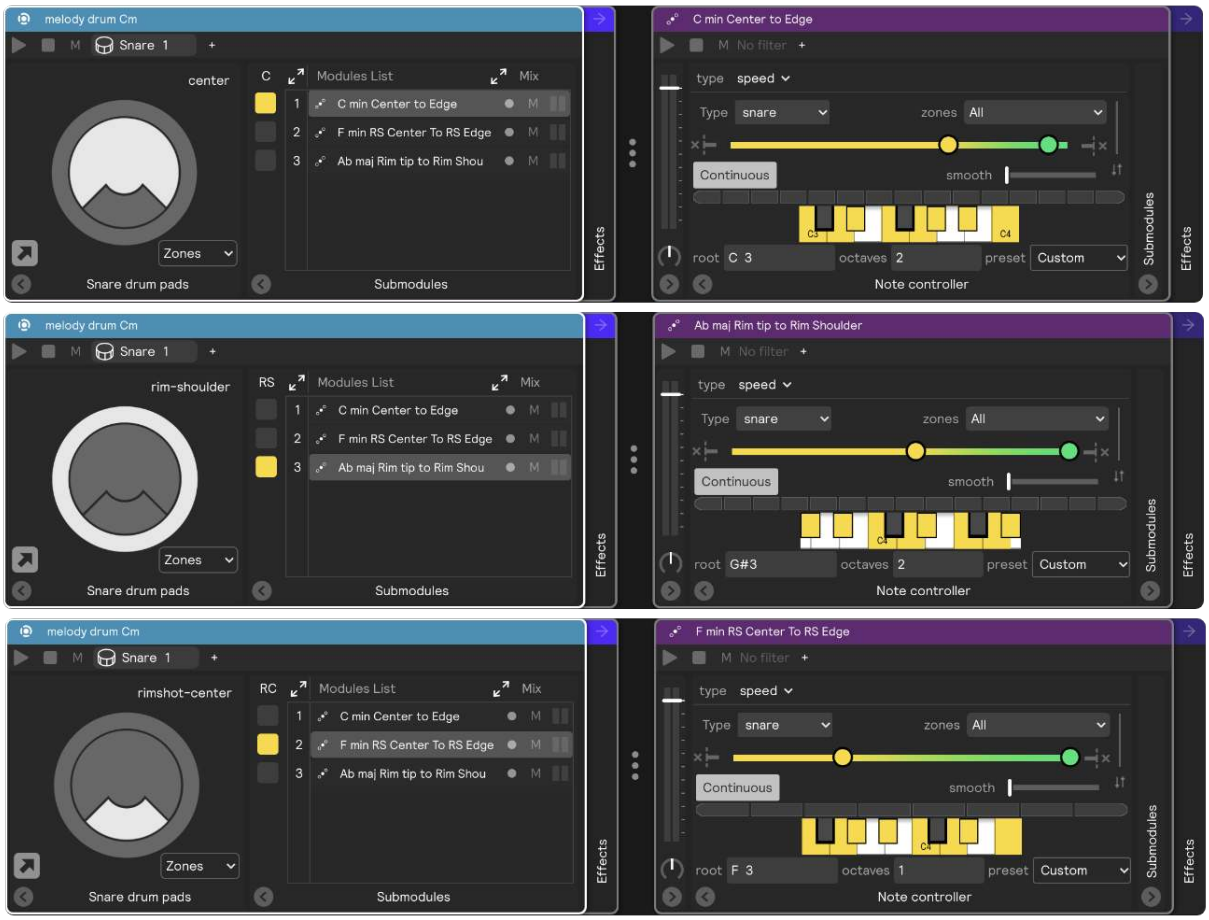


Figure 367: Three different note controllers set to speed and mapped to 3 different zones of the same drum set to the same scale

Speed If you have selected “speed” for the type of note controller, try setting a high sensitivity like in the screenshots above: especially for zones on the head or rims, where you can play faster rolls. For Rimshot speed controllers, you can try a lower sensitivity.

Using the Sequencer to Employ Arpeggios

The basic version The sequencer controller allows you to arpeggiate pitched samplers to create interesting melodies!

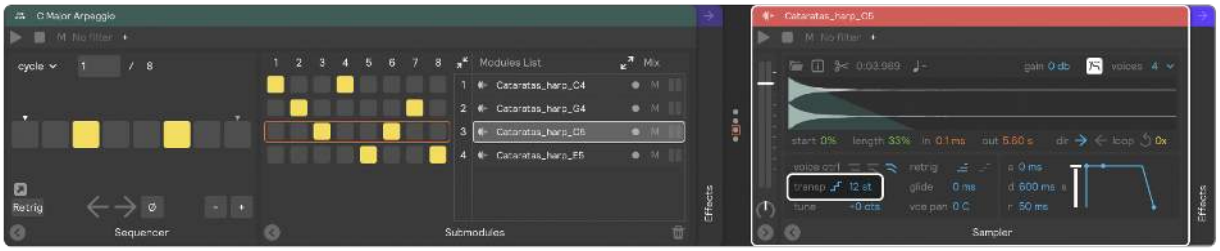


Figure 368: A sequencer with 8 steps, each one a different note of the C Major scale

Above, the Cataratas harp sampler has been duplicated four times, with each sampler repitched using the “transpose” sampler feature to a different partial of a C Major triad. Steps were added to the sequencer and a nice, eight-step rhythmic pattern composed.

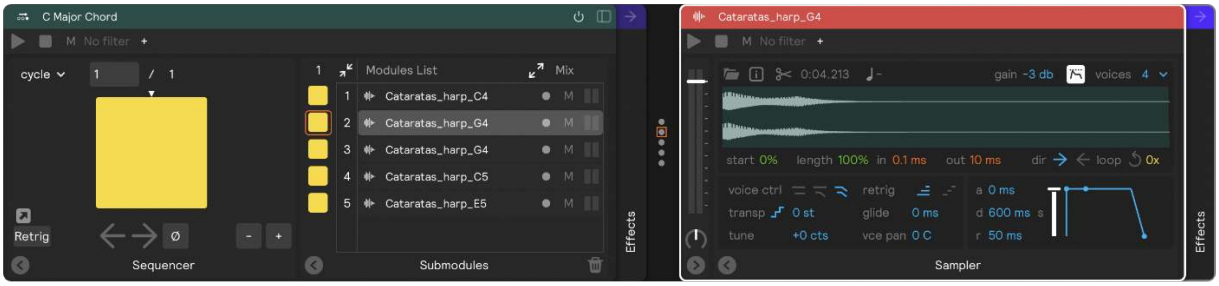


Figure 369: A sequencer with 1 step that contains 8 notes of the C Major scale

Static chord version You can experiment by removing all but one of the steps and assigning all of the repitched samplers to that one step, functionally turning this sequencer into a group controller.

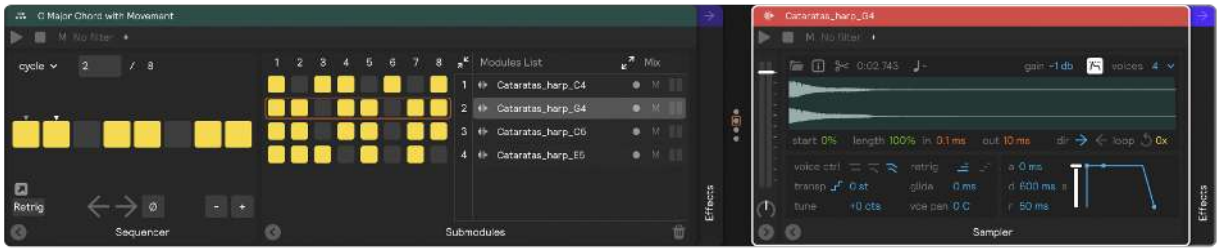


Figure 370: A sequencer with 8 steps containing different combinations of notes from the C Major scale

Chord with movement version Or you can create a denser sequence, like above, to retain the chordal nature of the drum, but give it a bit of arpeggiated movement with repeated hits to the sequencer.

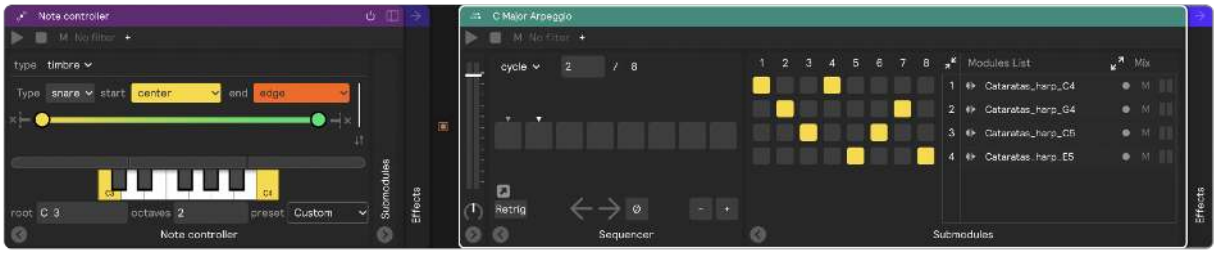


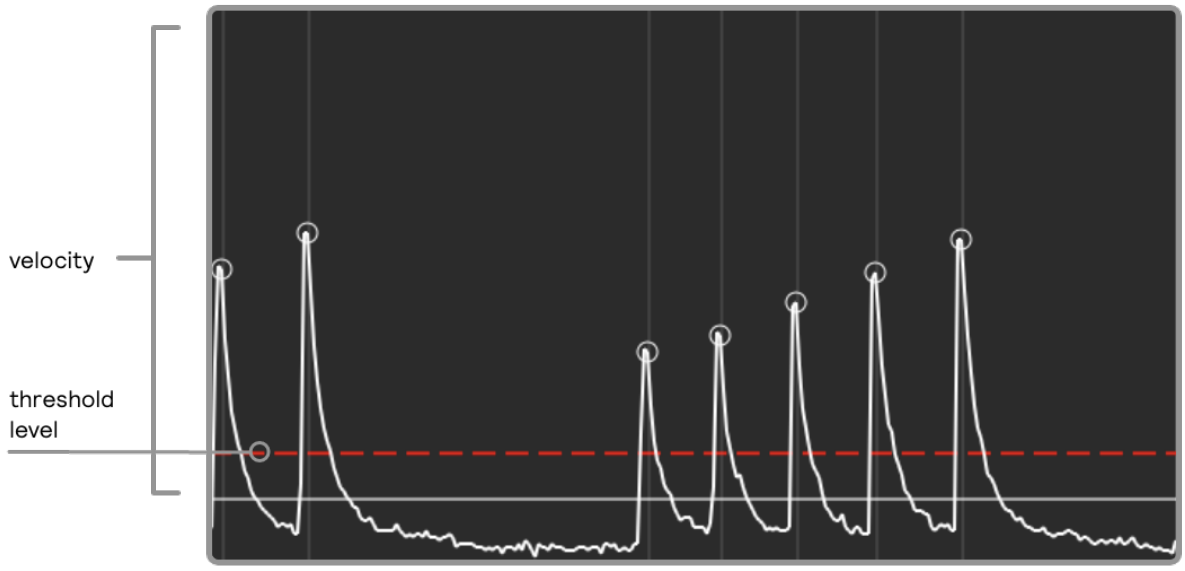
Figure 371: A sequencer with 8 steps containing different combinations of notes from the C Major scale inside of a note controller

Note Controller as an Octaver You can drag one of your sequenced melodic creations into a Note Controller: or even right-click on it to Group Into a note controller

Select the bottom and top keys of the keyboard to turn the note controller into an octaver. You can see in the screenshot above that the note controller's input type is "timbre" with a range of center-to-edge. You can also see that the number of octaves is set to "2." So this means that the arpeggiated sequence contained within will now be octaved over a two-octave range by playing center from center to edge.

> **Note:**
>
> Check back later for more! This page will be updated as new and interesting tonal Sensory techniques are developed.

Use Thresholding



What is thresholding, and when should you use it?

Thresholding is simply excluding hits below a certain volume level at *some point somewhere* in the software. There are two main levels of threhsolding in Sensory Percussion V2:

Hardware Input Threshold: This will affect any sound being controlled by that input anywhere in your session.

Module Threshold: This will affect only the sounds that the module contains.

Thresholding can be a helpful way to deal with cross talk from unwanted stage noise, or it can be a unique sound design tool, enabling you to do cool stuff like:

- Play quietly underneath chord sequences before intentionally striking the drum hard to play the next chord.
- Toggle on/off an overdrive effect when you hit the kick drum hard.
- Have different layers of melodic notes emerge when you play hard vs. soft, creating unique harmonies locked to the velocity of your playing.

Depending on how you use it, thresholding can be a simple, helpful tool to manage cross-talk, or a method of enabling some rich sound design techniques.

Dealing with cross-talk: using the threshold panel on the hardware inputs

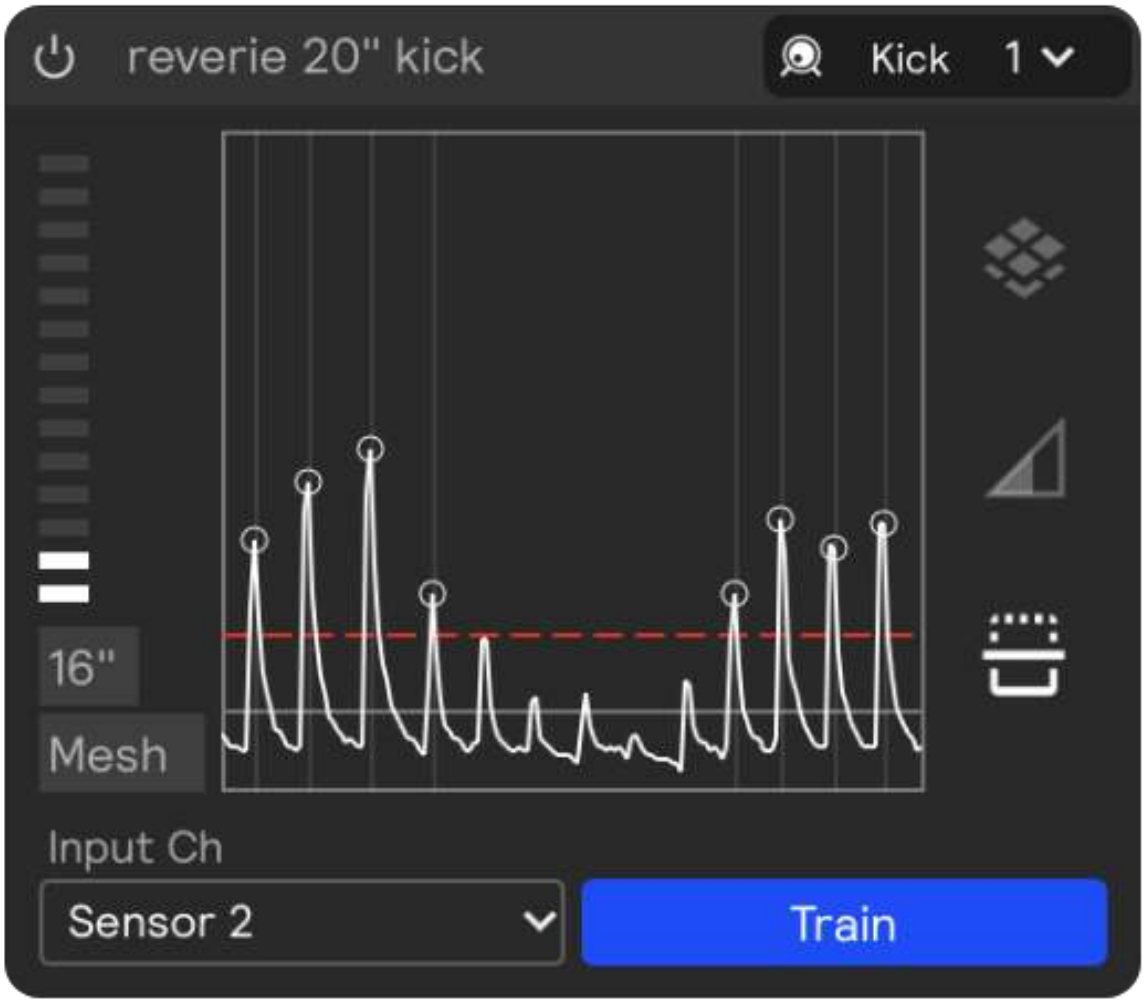


Figure 372: A screenshot showing the mini-view of a hardware input's threshold UI.

The red line in the image above represents the velocity threshold. All hits above this threshold have dots on their peaks and will be registered. All hits below the threshold will not have these dots and will be ignored.

Within hardware inputs, the threshold panel is accessed by clicking on the gain icon .

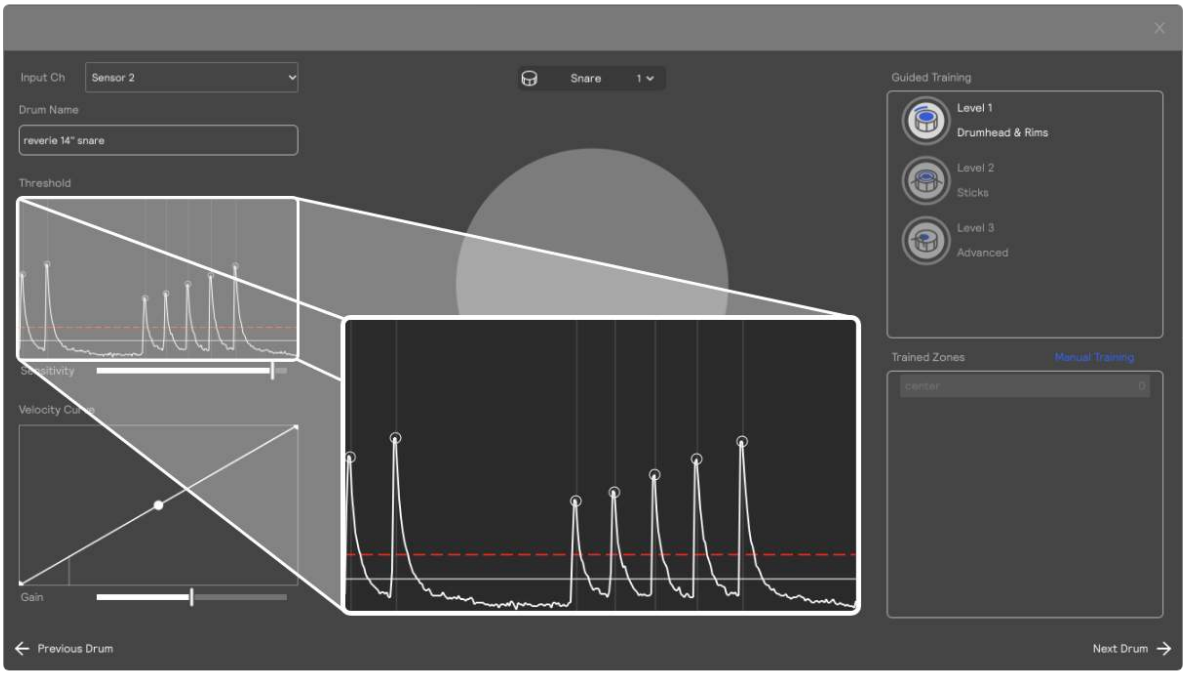


Figure 373: A screenshot of a hardware input's training page with the threshold panel highlighted.

This same threshold is also visible by default in the training panel, which can be accessed with the `Edit` button.

Depending on your playing style and the sounds in your session, the best way of dealing with cross talk is often with the threshold panel on the hardware inputs. But keep in mind that this setting will affect every set, so an aggressive setting will decrease responsiveness across your entire session. If you play a lot of ghost notes on your snare drum, for example, you might want a lower thresholding setting on your snare than on your toms.

There is a way to threshold sounds on a per-module basis, which is outlined in the next section, but if you are okay with losing some sensitivity across all of your sets, then you can just raise the threshold of the hardware input above the cross-talk.

Not all cross-talk is bad

Acoustic objects in nature vibrate sympathetically if they are nearby other objects producing sound: you've probably noticed your snare wires and cymbals vibrating when another instrumentalist (especially the bass guitarist) plays. This usually isn't a problem, but even if it is, it can often be managed by increasing the distance between your drums and the bass amp, or by strategically adding sound absorption to the room.

Because Sensory Percussion is extremely velocity-sensitive, if your drums are vibrating sympathetically, it can sometimes be detected as low velocity hits. If your velocity I/O settings are set somewhat linearly, then these sympathetic misfires are usually not a problem: it's really just the electronic sounds vibrating sympathetically with the acoustic object they are receiving input from.

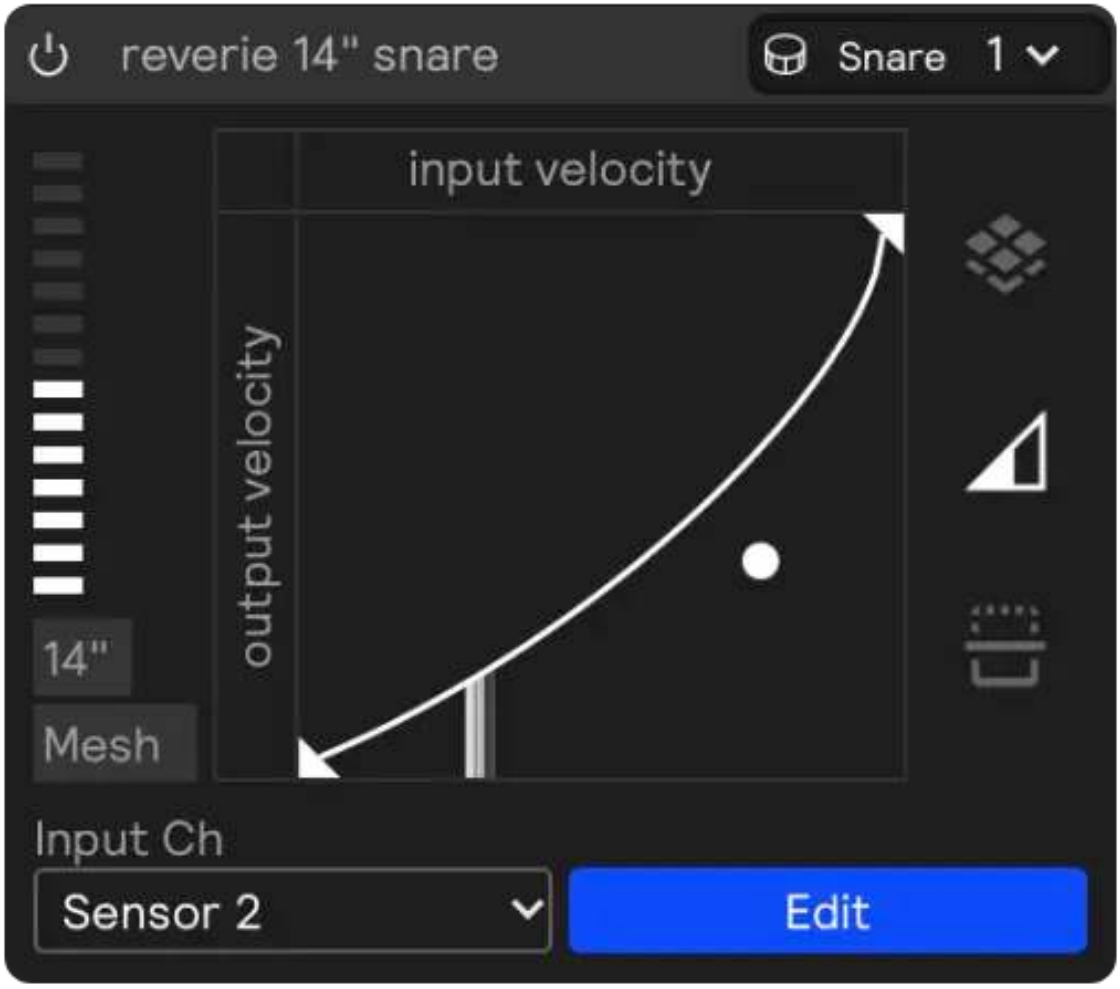


Figure 374: A screenshot of the mini-view of a Hardware Input's threshold panel with low velocity hits registering.

In the image above, low velocity hits are registered, but will be played back at a low volume.

Where this sympathetic vibration becomes a problem is:

1. If you have extreme velocity I/O settings.
2. If you have very intentional sound design elements like a chord sequencer that shouldn't be activated accidentally.

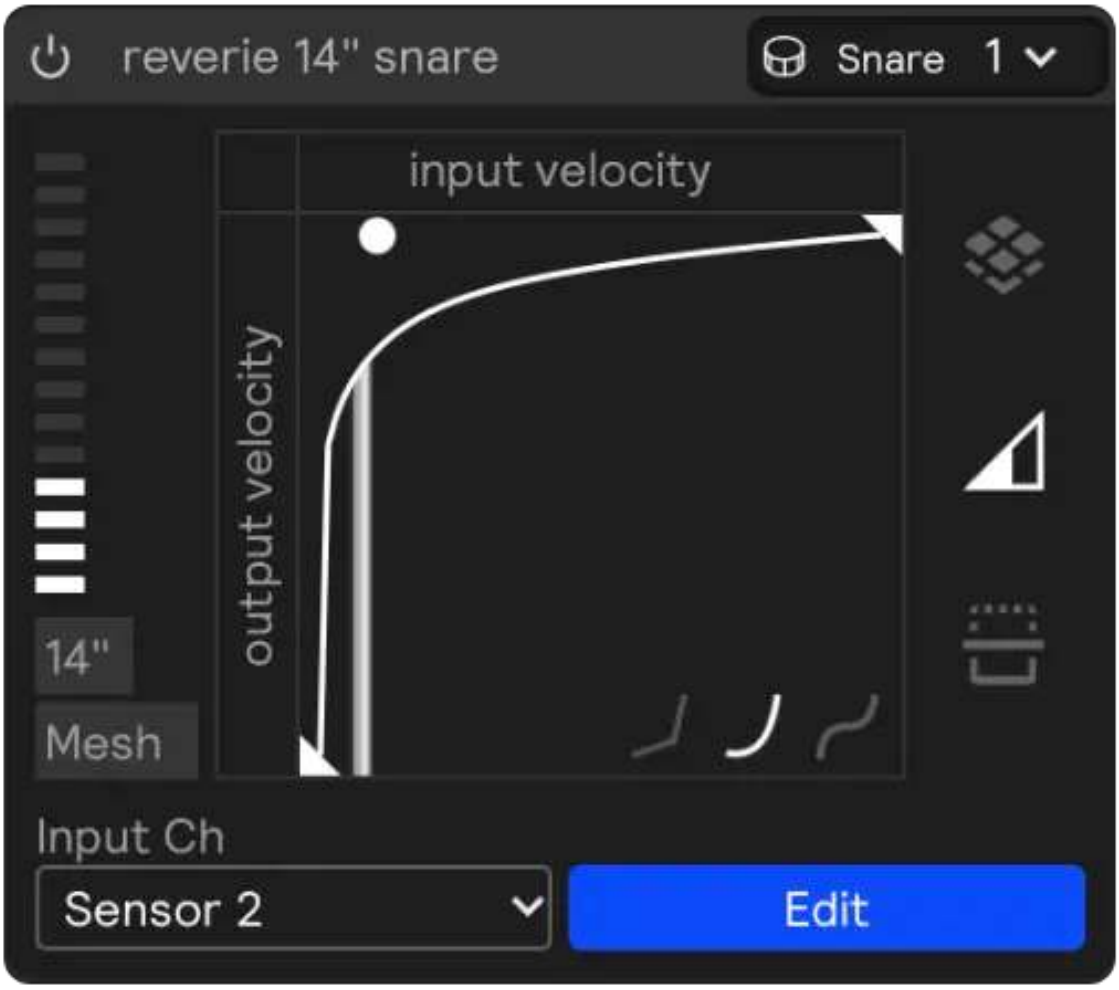


Figure 375: A screenshot of an extreme velocity I/O setting with low velocity hits registering at almost full scale.

In the image above, even quiet cross-talk will cause a full scale hit to be played through any

module receiving input from this hardware input. A setting like this should be avoided in almost all cases, since it's not likely you'll want every single sound in your set to not respond to velocity changes.



Figure 376: A screenshot of a velocity I/O panel (with a fairly loud setting) on a drum pads controller.

If you *do* want some elements in your set to not be velocity sensitive, you can use the velocity threshold panel at the module level.

Using velocity thresholding to add intentionality to your sets

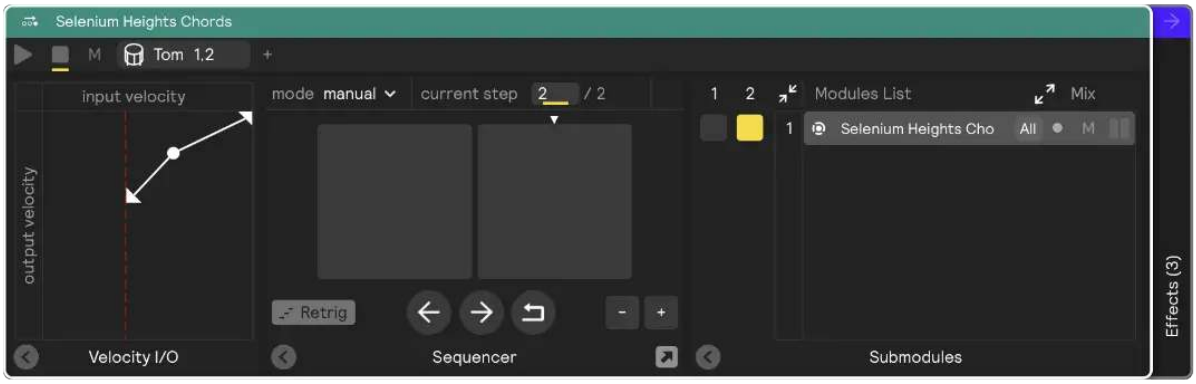


Figure 377: A screenshot of a velocity I/O panel set to ignore quiet hits on a sequencer module containing chord samples

Velocity-Thresholded Chord Sequences If you have a chord sequence or some other rich textural sound that you want to intentionally perform (and never have it fire off by accident), then velocity thresholding is a great solution.

Every generator and controller in Sensory Percussion has a velocity I/O panel. If you are creating a velocity-thresholded chord sequence, it's best to set a high threshold at the sequencer level, before the individual samplers, so they are all synced to the same velocity threshold.

Velocity-thresholded toggle assignments You can toggle FX on and off with velocity controllers assigned to FX mute buttons, which is a pretty cool sound design technique. To do this, simply right-click on the mute button and select "assign." When the assignment panel pops up, select "velocity" for the assignment input, and "toggle" for the assignment type.

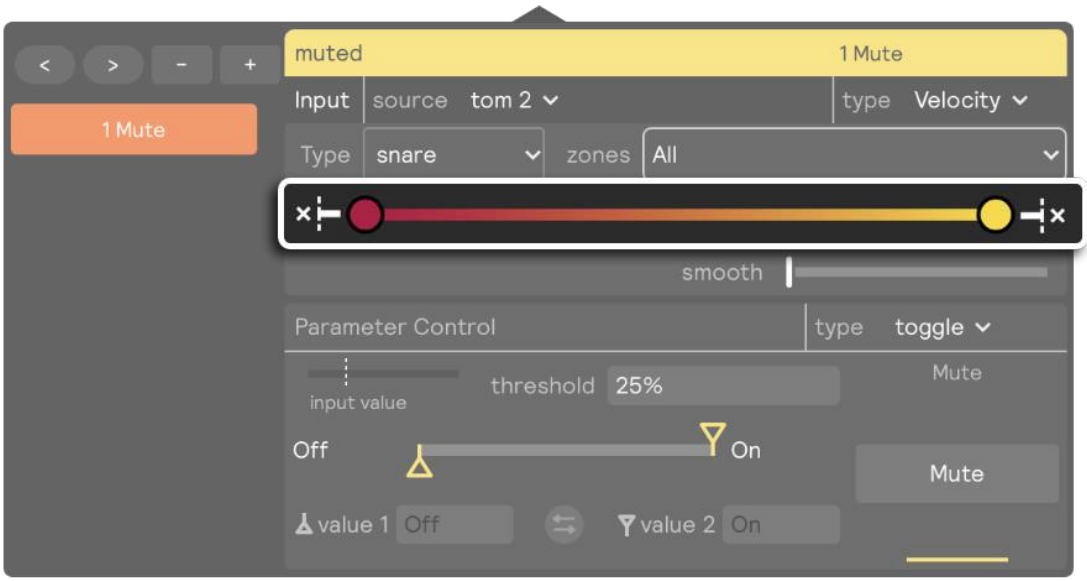


Figure 378: A screenshot of the assignment popup with the velocity threshold slider highlighted

You can then adjust the assignment's velocity threshold using the slider pictured above.

It's generally best to add at least a bit of velocity thresholding to the assignment, so that accidental hits don't switch the effect on/off. Dragging the leftmost slider handle to the right makes it so that you have to hit harder to activate the toggle. Now you have a thresholded toggle assignment used to turn on and off an effect with intentional hits!

Why am I not getting sound when I hit the drum?

There are a few possible reasons for not getting sound output. If you haven't already, check out our getting started video, which goes over the initial setup process. If you've followed that video and still aren't getting sound, read on:

Start here: is Sensory Percussion hearing your drums?

Before you look at outputs and mixes, find out whether your hits are reaching the software at all. Hit one drum at a time and check these three places, in order:

1. **The hardware inputs panel.** The meter on the left of each input card should move when you hit that drum, and on a sensor input, the pads display lights up the zone you hit. If you play an eKit or another MIDI device, its card lights up instead.
2. **Settings → Audio** (⌘ + ,). Check that your Portal (or your interface) is selected as the input device, that the channels your sensors are plugged into are turned on in the **input channels** list, and that the **Inputs** meter moves when you play.
3. **The Play view.** A small red mark flashes on the kit graphic where you hit, on the drum and zone that played. It's quick, so watch closely. In the **Input routing** list next to it, a filled **HW** marker means your hardware is sending that input, and a filled **Set** marker means something in this set plays from it.



Figure 379: A floor tom hit: its input card's meter jumps and the pads display lights the zone that was hit, while the Play view's Input routing list shows filled HW markers for the inputs the hardware is sending, Tom 2 among them

What you see tells you where to look next:

What you see	Where the problem is
Nothing moves anywhere, not even in **Settings → Audio**	The signal isn't reaching your computer. Check microphone permissions, your cables and Portal, and that the right input device is selected.
Settings → Audio moves, but the input card's meter doesn't	The input card is listening to the wrong channel. Check its **Input Ch**, or see whether your hardware inputs were deleted.
The input card moves, but the kit graphic doesn't light up	A drum sensor that hasn't been trained yet can't play zones. Train it, or check that the input's **Threshold** isn't set above your hits.
The kit graphic lights up, but the input is dimmed with a dashed **+** in its **Set** column	Your hardware is fine, but nothing in this set plays from that drum. Click the **+** to add an instrument, or load another set.
The kit graphic lights up and the **Set** marker is filled, but you hear nothing	Your inputs are fine. The problem is on the output side: work through Hardware Outputs, muted modules, and missing samples below.

If the input meters move but the levels are very low, see Low input gain on all sensors.

1. Microphone permissions on macOS

After installing Sensory Percussion and opening it for the first time, you'll be prompted to grant microphone permissions. If you don't grant microphone permissions, Sensory Percussion will not be able to access the audio from any channels on the Portal device.

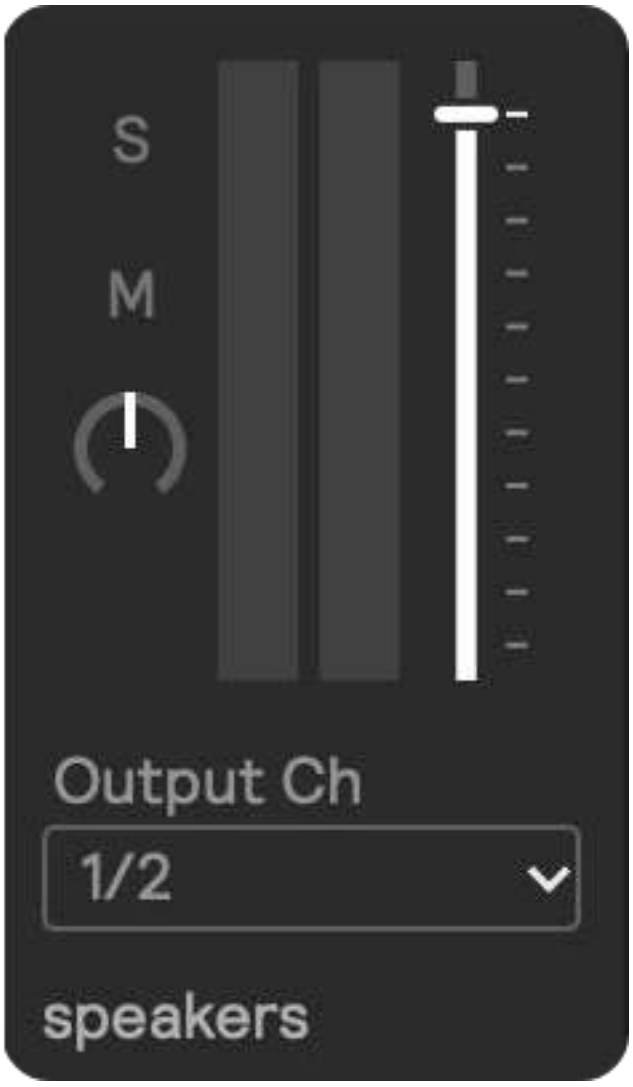
You can grant permissions by going to System Preferences > Security & Privacy > Microphone and checking **Sensory Percussion 2.app**.

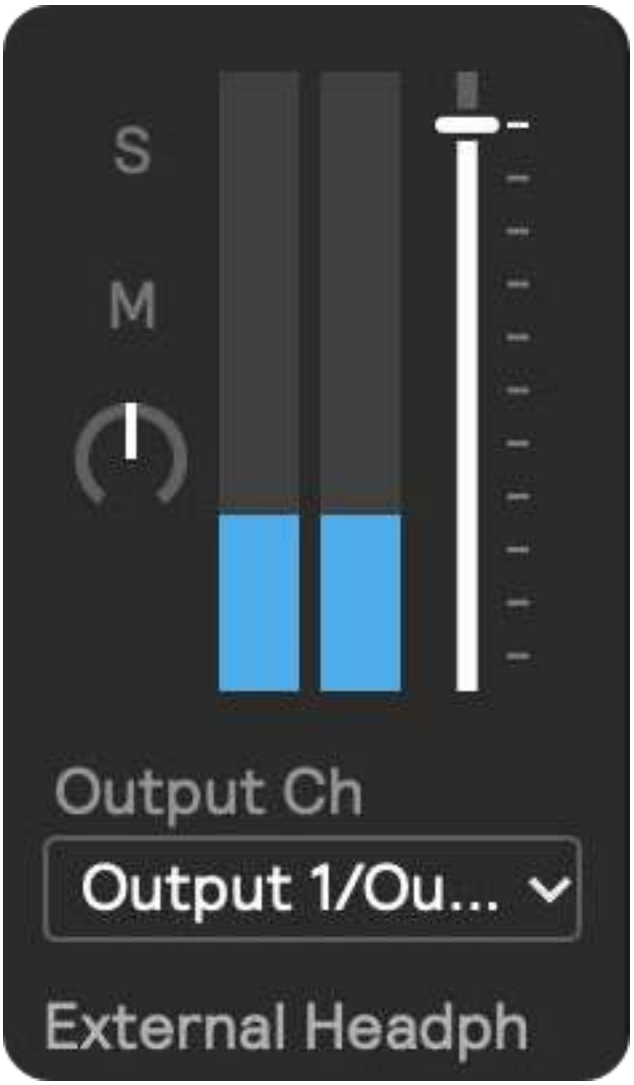


Figure 380: A screenshot showing the Microphone Access page of the Security & Privacy settings in macOS

2. Your Hardware Outputs are inactive

When you connect your Portal, it is set by default as both the input and the output device. Active hardware outputs are automatically created in the Hardware Outputs panel. So you shouldn't need to do anything in the "hardware outputs" section to get sound. But if, for example, you plug your headphones directly into your computer (rather than the portal) and switch your output device to "external headphones," the hardware outputs will be deactivated. The channel numbers will appear gray rather than white and you won't see anything in the volume meter bars when you play your drums (see below):


S
M
Output Ch
1/2
speakers



To reactivate, simply click on the output channel dropdown of your hardware output and choose the channel you want to use. You will then see blue volume indicator bars and hear your sounds!

3. Something in your hardware is physically disconnected/turned down

This one might seem obvious, but it doesn't hurt to double check that all of your sensors are physically connected to the interface, your headphones are plugged in and the volume knob is at a reasonable level, and that the portal is connected to your computer via the provided USB cable.

4. Something is muted inside of your set

It's possible that everything is connected correctly in your hardware, but your sounds are muted inside of the software. Check your layers and look for the red "M". Anything module with this "M" is muted and you can simply click it to unmute.

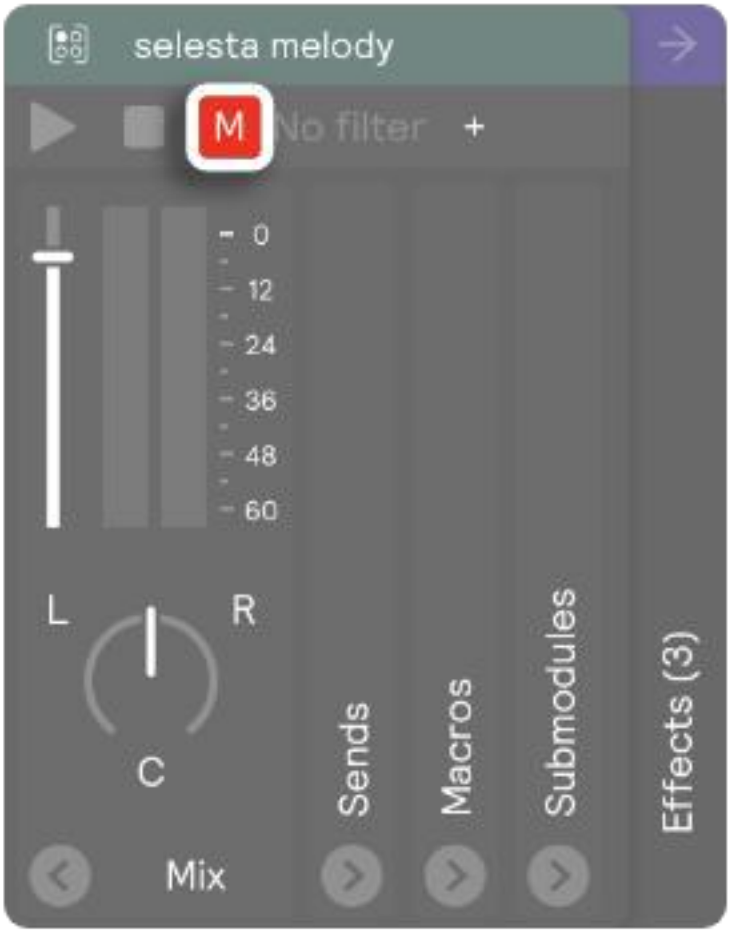
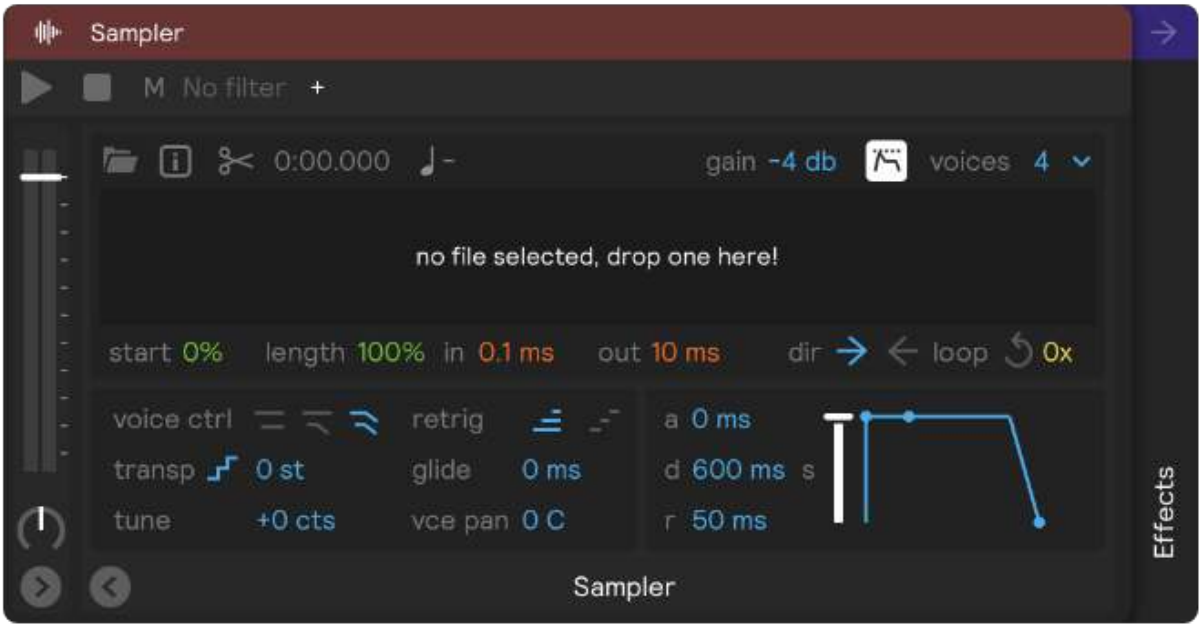


Figure 381: A screenshow showing a mute buton on a module

5. You're missing samples

When you download the demo set, you will automatically download all of the samples that go with it, so this won't be a problem until you start making your own kits. If you use samples from your hard drive and then open the set without your hard drive connected, you will get empty samplers that don't generate sound (see below):



Samplers are always the last object in the chain (meaning it's the farthest to the right on your screen). So just scroll all the way to the right and make sure that there are no empty samplers in your set.

If your samples were moved or missing and you have broken sample links in your set, you can use the Relink Samples feature to fix them.

6. You deleted your hardware inputs

If you followed along with the Quick Start guide, then you will have created hardware inputs. If at any point after that, you deleted them, you will not be getting sound, so make sure that they're still there and that they correspond correctly with your actual hardware.

Why is the input level low on all of my sensors?

When every sensor is quiet at once, it usually shows up as:

- having to hit hard to get any sound
- ghost notes and soft strokes going missing
- the input meters barely moving, even on solid hits
- nothing ever reaching full volume, however hard you play

When one drum is quiet, the cause is usually that drum. When **all** of them are, look for something they share: your computer's sound settings, the Portal, the channels, a setting copied to every input, or the same mistake made when attaching each sensor. Work through the checks below in order.

First, look at the signal

Open the hardware inputs panel and hit each drum at a normal playing volume. Watch the meter on the left of each sensor card, and switch the card to its **Threshold** view: every hit that will play gets a dot on its peak, above the threshold line.

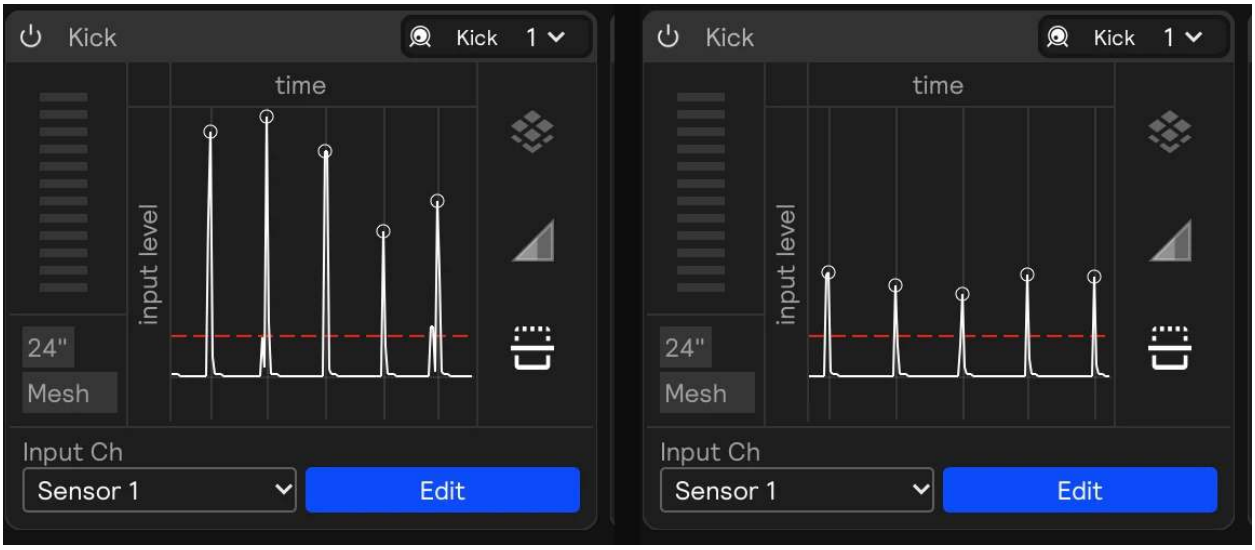


Figure 382: Two sensor cards in the Threshold view: on the left, healthy hits that rise well above the dashed threshold line; on the right, hits that barely clear it

Then open Settings → Audio (⌘ + ,) and watch the **Inputs** meter while you play. It shows the signal exactly as your computer hands it to Sensory Percussion, before any of the app's own settings. If it's low here too, the problem is before Sensory Percussion: in your computer's settings (check 1), the Portal (check 2), or the sensors themselves (check 5).

1. Your computer isn't turning the Portal's input down

This is one of the most common causes. Your operating system has its own input level and mute for every audio device, and they apply before Sensory Percussion ever sees the signal. Since they act on the whole Portal at once, every sensor gets quieter together. They can get turned down without you noticing: by another app, by a video-call app adjusting the level automatically, or by picking the Portal as your computer's microphone.

On a Mac

1. Open **Audio MIDI Setup** (in *Applications/Utilities*).
2. Select **EVANS Portal** in the list on the left, then click the **Input** tab.
3. If the **Volume** sliders can be moved, drag the main slider and every channel's slider all the way up, and make sure no **Mute** box is ticked. If they're greyed out, the level can't be changed here, and you can move on.

Also open **System Settings → Sound → Input**. If the Portal is selected there as your Mac's input, its **Input volume** slider sets the same level: drag it all the way up.

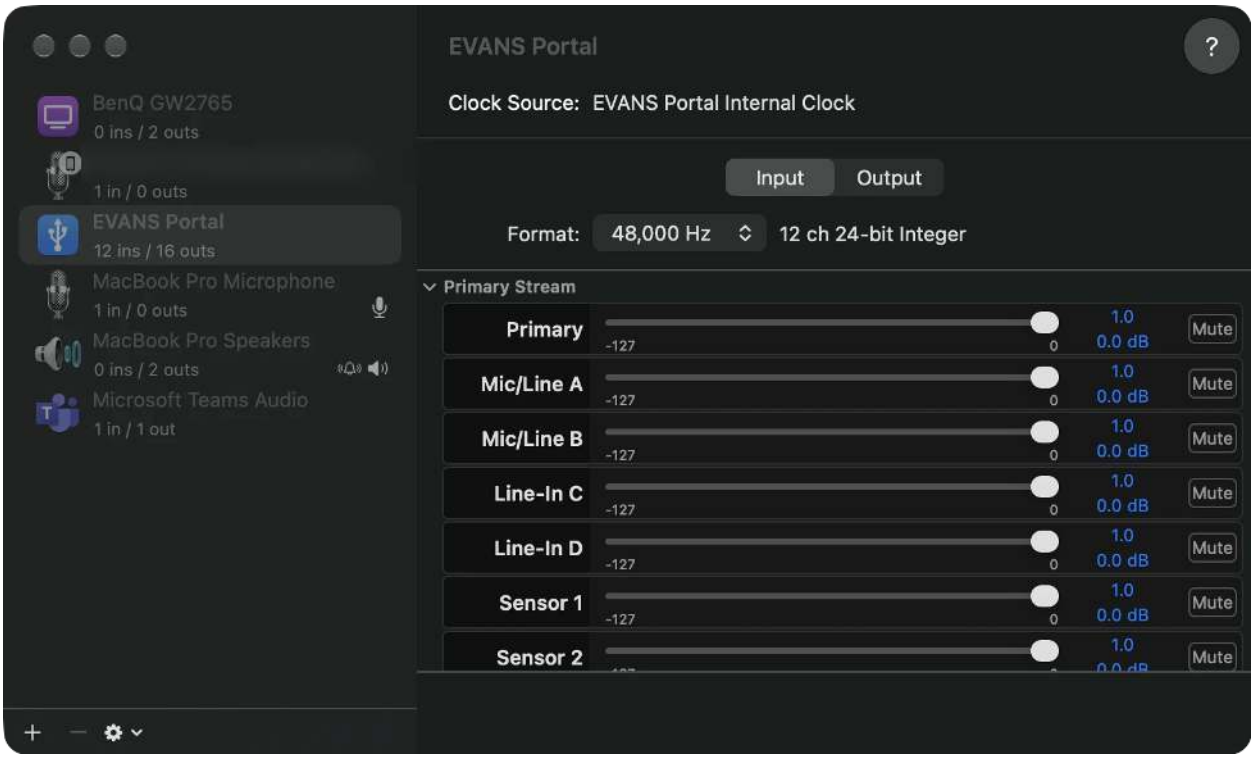


Figure 383: Audio MIDI Setup with the EVANS Portal selected on the Input tab: every input's slider at full (0.0 dB) and no Mute boxes ticked

On Windows

1. Open **Settings → System → Sound**, and under **Input**, select the Portal.
2. Set **Input volume** to 100.
3. For the full controls, click **More sound settings**, open the **Recording** tab, select the Portal, and click **Properties**. On the **Levels** tab, set the level to 100 and make sure the speaker button next to it doesn't show a mute symbol. If there's a **Balance** button, check that no channel is turned down.

Go back to **Settings → Audio** in Sensory Percussion and watch the **Inputs** meter again while you play.

2. The sensors are in the Sensor inputs, and the Portal is powered

- Sensors must be plugged into the **Sensor 1–7** inputs on the front of the EVANS Portal. The **Mic/Line** and **Line-In** inputs aren't made for sensors.
- When a sensor is connected properly, its indicator light turns on, and so does the number above its **Sensor** jack on the Portal. Those lights come from the hardware itself, so they work even when Sensory Percussion isn't running. If a light is off, try another cable.
- The Portal needs its own 12 V power supply plugged in and switched on. It can't run on USB power alone.

3. Each sensor input is listening to the right channel

Check the **Input Ch** on each sensor card. A sensor input set to the wrong channel, like **Mic/Line A** or the Portal's **Onboard Mic**, shows a low, noisy signal: it's hearing the room instead of the sensor.

This often happens after you:

- switch to a different audio interface, or use another interface as your main device with the Portal as a sensor expansion
- load hardware inputs made on another computer
- remap your inputs to a new device with Hardware Remap, which moves each input to the same channel number on the new device

If that's what happened, set each sensor input back to its **Sensor** channel, or switch back to the device it was set up on. If you use different setups, save each as an environment so this doesn't happen again.

4. Gains, thresholds, and curves are near their defaults

Click **Edit** on a sensor card to open its settings window. These settings are per input, but they're often changed on every input at once, or carried over from an old inputs file:

Setting	Default	If it's off
Input gain	0 dB	Turned down, every hit reads quieter. Bring it back toward 0 dB.

Setting	Default	If it's off
Output gain	0 dB	Turned down, every hit plays quieter, even when the input looks healthy.
Threshold	Low, just above the noise	Set high, soft notes are thrown away. Lower it until your quietest strokes get a dot.
Velocity Curve	A straight line	A curve that sags, or starts above the bottom left, makes everything quiet. Drag it back toward a straight line.

See Drum Training for more on each one.

> **Tip:**
>
> Fix the cause before you reach for **Input gain**. Turning the gain up on a sensor that's sitting badly, or on a Portal your computer has turned down, also turns up noise and cross-talk.

5. Each sensor is sitting right over its pickup element

The sensor reads the small pickup element stuck to the head. The further away it is, the weaker the signal. If every sensor was attached the same slightly-off way, every drum will be quiet. On each drum, check that:

- the pickup element is there and stuck down flat (it can come off with heavy playing, and should be replaced, not reused, when you change heads)
- the sensor's head is **directly over** the pickup element, with the indicator light shining just behind it, not on top of it
- the sensor sits **parallel** to the drumhead, not tilted up or down
- the thumbscrew is tight, so the sensor doesn't creep away from the head as you play

See Setting up Your Gear.

If you moved sensors or replaced pickup elements, retrain those drums afterwards so zone detection matches the new signal.

6. The input is fine, but the sound is quiet

If the meters and dots look healthy but you still don't hear much, the input isn't the problem. Your computer can turn the Portal's **output** down too, in the same places it turns the input down:

- **Mac**: in **Audio MIDI Setup**, select the Portal and check the **Output** tab the same way: sliders up, no **Mute** boxes ticked. If the Portal is also your Mac's sound output, the volume keys and **System Settings → Sound → Output** turn it down as well.
- **Windows**: open **Settings → System → Sound → Volume mixer**. Check the Portal's output volume, and the separate volume Windows keeps for **Sensory Percussion 2**. Either one can be turned down or muted on its own.

Then check the sound side inside Sensory Percussion:

- the layer faders in the **Main Mix** and the volume of each module
- the Global Set's main mix, which every set runs through
- a module's own Velocity I/O curve
- the Portal's **Main Outs** and **Headphone** volume knobs

See No sound for more.

Still low?

Send us a Diagnostic Report from **Help → Generate Diagnostic Report**, and record a few seconds of playing each drum, soft and loud. The recording captures the raw signal from every sensor, which lets the support team see exactly what the Portal is receiving.

Why are my drums playing when I don't hit them?

Sensors are very sensitive, which is what lets them hear ghost notes and the difference between the center and the edge of a head. The flip side is that they can also hear things you didn't mean them to. Misfires usually come in one of three kinds:

What you hear	What's happening
A drum plays when you hit a **different** drum or cymbal	**Cross-talk**: the vibration travels through the stands, the shell, or the air to another drum's sensor. The kick shaking a floor tom, or a crash ringing next to a rack tom, are the classic cases.
One hit plays **twice**	**Double triggering**: a loose or ringy head keeps moving after the stroke, and the sensor hears a second hit.
A hit plays the **wrong zone**, like a rim sound from a center hit	**Zone misfire**: the training for that drum doesn't match how you're playing it now.

Find the culprit

Hit one drum or cymbal at a time, at the volume you normally play it, and watch the rest of your kit:

- In the Play view, a small red mark flashes on the kit graphic where each hit landed, on the drum and zone it played.
- In the hardware inputs panel, switch each sensor card to its **Threshold** view. A hit gets a dot on its peak when it's loud enough to play.

When a drum lights up without being hit, note which drum or cymbal caused it and how loud the stray hits are compared to your real ones. That decides which fix to reach for.

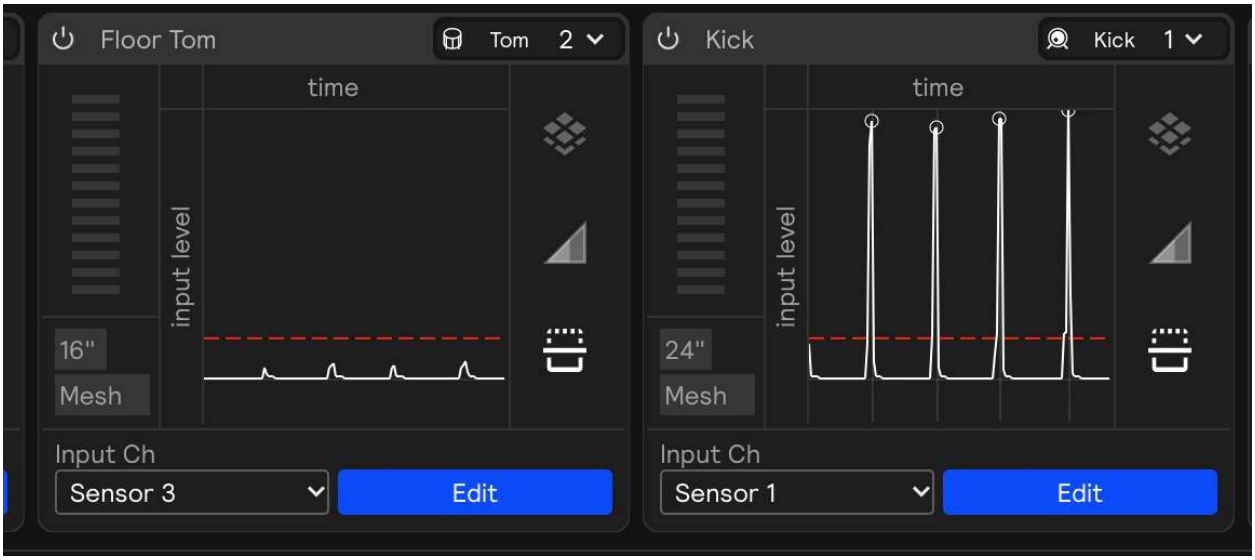


Figure 384: The floor tom and kick sensor cards in the Threshold view while only the kick is played. Each kick hit gets a dot on its peak. The floor tom picks up a small bump at the same moments, but it stays under the floor tom's threshold line, so it gets no dot and plays nothing

Fixing cross-talk

1. Raise the threshold, a little

Stray hits are usually much quieter than real ones. Click **Edit** on the sensor that's misfiring, and drag its **Threshold** line up until the stray hits stop getting dots, but your softest real strokes still do.

The threshold applies to everything that drum plays, in every set, so go gently. If you play ghost notes on the snare, you'll want its threshold lower than your toms'. See Use Thresholding.

2. Teach the sensor what to ignore

If the stray hits are as loud as your soft strokes, use the **Void** zone instead: open the drum's training window, switch to **Manual Training**, select **Void**, and hit the drum or cymbal that's causing the cross-talk. The sensor learns to ignore that sound.

A little goes a long way. A handful of Void hits is usually enough, and too many makes the drum less sensitive overall. See Void.

3. Protect the sounds that matter most

Some sounds should never fire by accident, like a chord progression or a set change. Rather than raising the threshold for the whole drum, raise it just for that module in its Velocity I/O panel, or raise the threshold on the assignment. See Velocity-thresholded chord sequences.

Also check that your velocity curves aren't extreme. A curve that turns quiet hits into loud ones makes faint cross-talk sound like a full hit.

4. Check the physical setup

- Make sure each sensor is tight on its hoop and its cable is pressed into the clip, so neither can rattle.
- Move a cymbal a little further from the drum beneath it.
- A rack tom mounted on the kick hears every kick stroke. A separate stand helps a lot.
- Sympathetic vibration from a bass amp or loud stage monitors can register as quiet hits. A bit of distance from the amp usually fixes it.

Fixing double triggers

1. Click **Edit** on the sensor and lower **Sensitivity** a little at a time, until one stroke plays once. Lower sensitivity also means fast, soft notes like buzz rolls are less likely to register, so stop as soon as the doubles go away.
2. Tune or dampen a very loose or ringy head.
3. Check that the sensor is tight and isn't moving when you hit.

Fixing wrong zones

1. **Retrain the drum.** Training is a snapshot of how the drum sounded at the time. Retrain after changing heads, retuning, moving the sensor, or replacing the pickup element.
2. **Train only the zones you use.** Every extra zone is one more thing a hit can be mistaken for. If you never play cross-stick or shell, leave them untrained. Level 1 alone is enough for most playing.

3. **Train the way you play.** Use the sticks and the dynamics you'll actually play with, and include soft and loud hits in each zone.

See Drum Training.

> **Note:** Triggers and eKits
>
> - On a Drum Trigger input, use **Threshold** and **Sensitivity** the same way. If head and rim are mixed up on a dual-zone trigger, adjust **Zone split**.
> - On an eKit input, cross-talk is handled by your drum module. Check your kit's own crosstalk settings first, then the eKit card's **Velocity** view.

Still misfiring?

Send us a Diagnostic Report from **Help → Generate Diagnostic Report**, and include a recording of you playing the drums that misfire, plus the drum or cymbal that sets them off. That shows the support team exactly what each sensor hears.

Why isn't Sensory Percussion responding to my MIDI device?

MIDI has to make it through a few steps before it plays a sound or moves a knob: your computer has to see the device, Sensory Percussion has to have it turned on, a hardware input has to be listening to it, and something in your set has to respond. Work through the checks below in order, and stop when your device starts working.

1. Your computer sees the device

- Check the cable, and that the device is switched on. Try a different USB port or cable, and connect directly rather than through a hub.
- If your device only has a 5-pin **MIDI Out**, you'll need a USB MIDI interface to plug it into. The EVANS Portal's MIDI port is an output only: it can send MIDI, but it can't receive it.
- **On a Mac**, open **Audio MIDI Setup** (in *Applications/Utilities*) and choose **Window → Show MIDI Studio**. Your device should be there, and not greyed out.
- **On Windows**, check that the device shows up in **Device Manager**. Some devices need a driver from the manufacturer.

2. It's turned on in Sensory Percussion

Open Settings → MIDI Devices (⌘ + .) and make sure your device is ticked under **MIDI inputs**.

A device you plug in while Sensory Percussion is open shows up in the list straight away, and ticking it works right away. If it doesn't appear, quit and reopen Sensory Percussion.

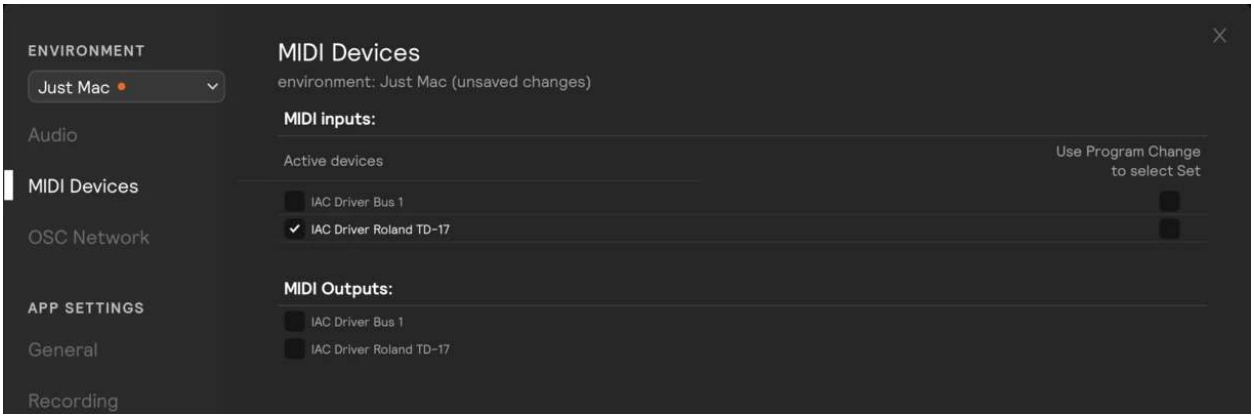


Figure 385: Settings → MIDI Devices with a Roland TD-17 ticked under MIDI inputs

> **Warning:** Windows: one app at a time
>
> On Windows, most MIDI devices can only be used by one app at a time. If your DAW, drum software, or the manufacturer's editor app is open, it may be holding the device. Close the other app, then quit and reopen Sensory Percussion.

3. A hardware input is listening to it

Ticking a device in Settings makes it available. A hardware input is what actually uses it. Which kind you need depends on what you want the device to do:

You want to…	Hardware input	Guide
Play your eKit like a drum kit	**eKit**	How To Use Your eKit
Trigger a grid of sounds from a pad controller	**Grid Pads**	How To Use a MIDI Sample Pad
Control knobs, buttons, and other parameters	**MIDI**	How To Control Parameters with MIDI Input

In the hardware inputs panel, check that:

- the input exists, and its device is set to your device
- if the input has a **Channel** setting, it matches the channel your device sends on, or is set to receive on all channels. Most eKits send on channel 10.

- on an eKit input, **Power** is on

Then play the device and watch the input light up. If it doesn't, open its log (**MIDI log** on an eKit input, **Log** on a Grid Pads input). If nothing appears there, go back to steps 1 and 2.



Figure 386: The MIDI log view on an eKit card

4. The notes are mapped

If the log shows notes arriving but nothing plays, the input doesn't know what those notes mean yet:

- **eKit input**: load your kit's preset from the card's title bar, then check the pads that don't light up. Click the drum, then **Learn** on the right pad and hit the pad on your kit.
- **Grid Pads input**: use **Learn** to match each cell to a pad on your device.
- **MIDI input**: there's nothing to map on the input itself. Map notes and knobs on the assignment instead (step 6).

5. Something in your set responds

Your hardware input can be working perfectly with nothing in the set listening to it. In the Play view, look at the **Input routing** list in the Virtual Inputs panel:

- A filled **HW** marker means your device is sending.
- An input that's dimmed, with a dashed **+** in its **Set** column, means nothing in this set listens to it. Click the **+** to add an instrument, controller, or generator for it.

If something does listen but still doesn't play, check that module's input filter, that **Block all input** isn't on (a red icon and a hatched red tray in the filter row), and that it isn't powered off or muted. See Input Filtering.

6. Your assignment matches what the device sends

For knobs, buttons, and footswitches mapped with assignments:

- Open the assignment and check its **Type**: a key or pad sends notes, a knob or fader sends **MIDI Control** (CC).
- Use **Learn** to capture exactly what the device sends, rather than typing it in.
- Check that the assignment uses the right MIDI virtual input, if you have more than one device.

Special cases

MIDI from another app on the same computer

To send MIDI from a DAW or another app into Sensory Percussion, you need a virtual MIDI port: an **IAC Driver** bus on a Mac, or a tool like loopMIDI on Windows. See How to Set Up Virtual MIDI Routing. If you send MIDI both ways, use two separate buses, or MIDI will loop back on itself.

In the plugin

In the plugin, MIDI comes from your DAW, not straight from the device. Enable the device in your DAW's MIDI preferences, set a MIDI track's input to it, and route that track into the Sensory Percussion plugin. See Getting MIDI into the plugin.

MIDI clock

If Sensory Percussion should follow another device's tempo, enable the device in **Settings → MIDI Devices**, then click **MIDI** in the tempo bar and set **Clock in** to it. See MIDI clock.

Still not working?

Send us a Diagnostic Report from **Help → Generate Diagnostic Report**, and tell us the make and model of your MIDI device and how it's connected.

Send a Diagnostic Report to the Support Team

If you're having difficulties with Sensory Percussion, you can always email us at support@sunhou.se or start a chat on our website and we'll be glad to help.

The support team might ask you to generate a **Diagnostic Report**, which provides some basic information about your system and the current state of Sensory Percussion.

Generating the Report

To create a Diagnostic Report, first make sure that your Portal is connected, your sensors are plugged in, and that your Portal is selected as the input and output device for Sensory Percussion.

Next, select the **Help** menu and then choose **Generate Diagnostic Report**. Fill out the sections of the form and record yourself hitting your drums. This captures a raw signal from the Portal, which is useful for diagnosing issues.

> **Tip:** Recording your sensors
>
> If you're having an issue with your sensors, you'll be asked to record 10 seconds of audio while playing the drums. Make sure you hit both the head and rim of each drum with loud and soft hits. This will capture the raw signal from each sensor, which is useful for diagnosing issues.

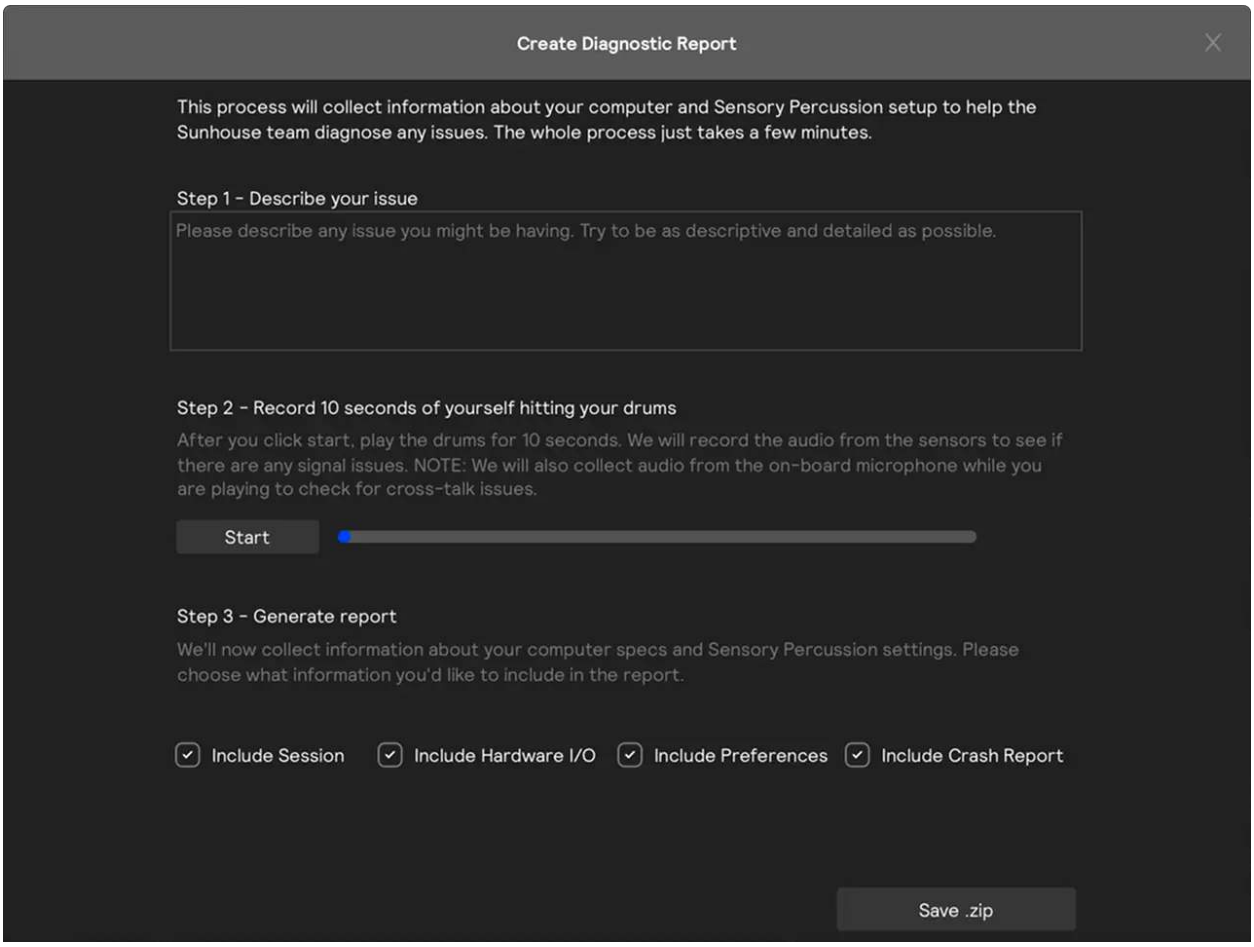


Figure 387: A screenshot of the Diagnostic Report window

The report will be saved to your computer as a `.zip` file. You can then attach this file to your email or chat with the support team.