



Sensory Percussion 2

User Manual

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- 4. Something is muted inside of your set
- 5. You're missing samples

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- Generating the Report

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.



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

An overview of the Sensory Percussion hardware

Setting up Your Gear

How to set up Sensory Percussion on your drums.

Software Activation

How to activate your Sensory Percussion license

Software First Steps

Getting started with the software

Making Stuff From Scratch

Getting started with the software

Video Tutorials

Learning Sensory Percussion 2

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)



What else you will need to get started



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

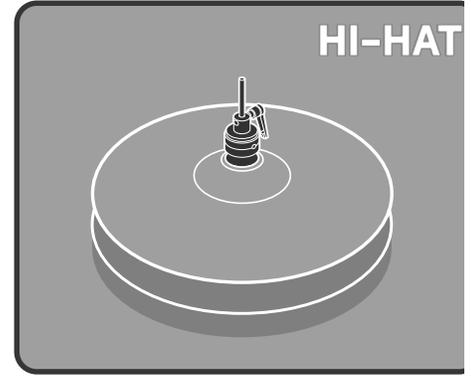
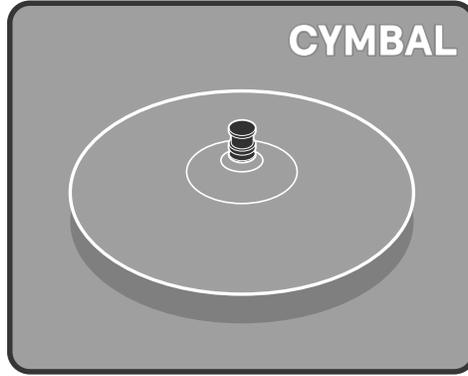
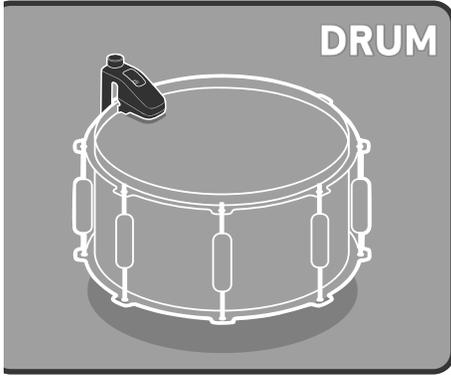
of this system to understand is that Sensory Percussion listens to your drums and inherits its range of control from their acoustic qualities. So, if you have a dead sounding drum covered in old gaffer's tape with dents in the head, you might not get as much timbral range from the software as you'd hope. 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

What are you setting up?



EVANS
HYBRID

**SENSORY
PERCUSSION**

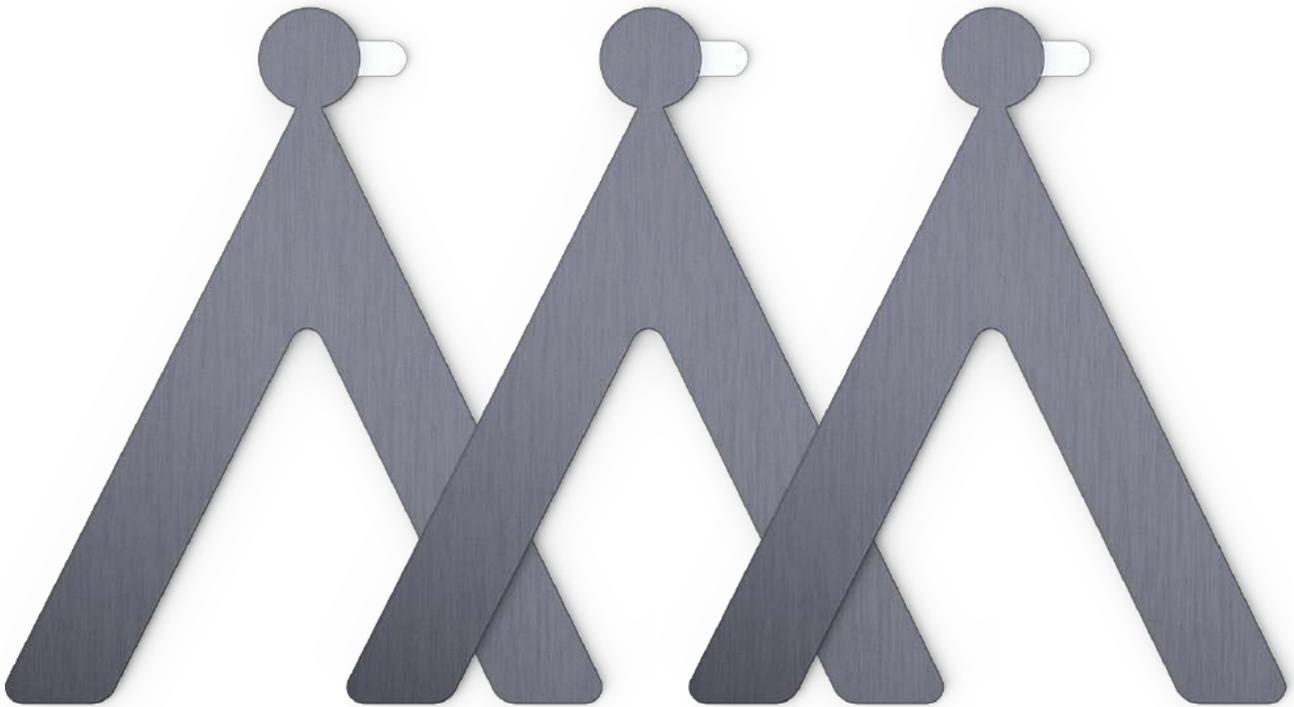
QUICK START GUIDE

Powered by sunhouse®

Drum Sensors

Applying the pickup element

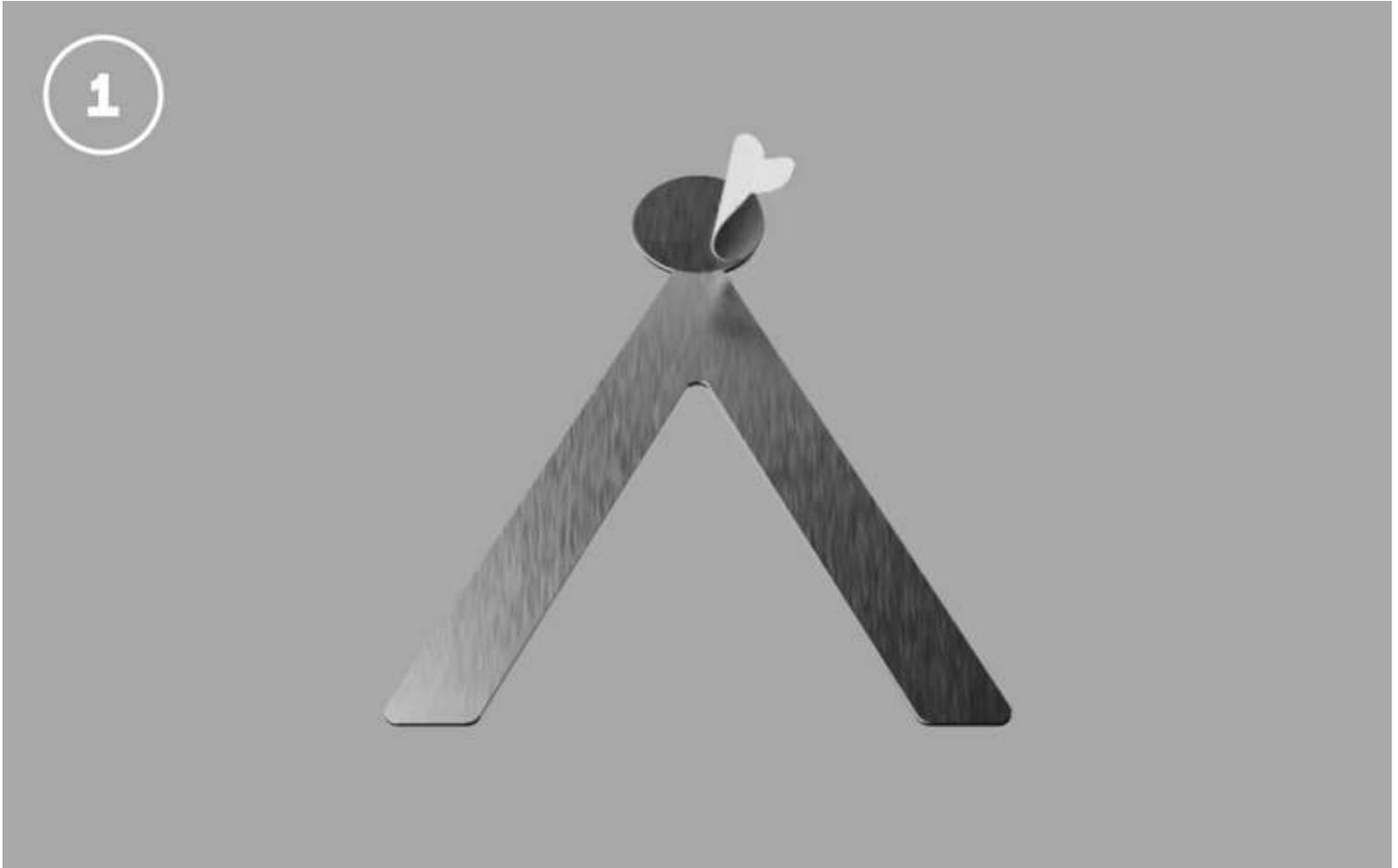
Before you attach the sensor to a drum, you need to apply the pickup elements. The pickup element is what the sensor is sensing, so it's important to take the time to get this part right. Don't worry, you won't have to do this often. Only when you want to use Sensory Percussion on new drums or after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



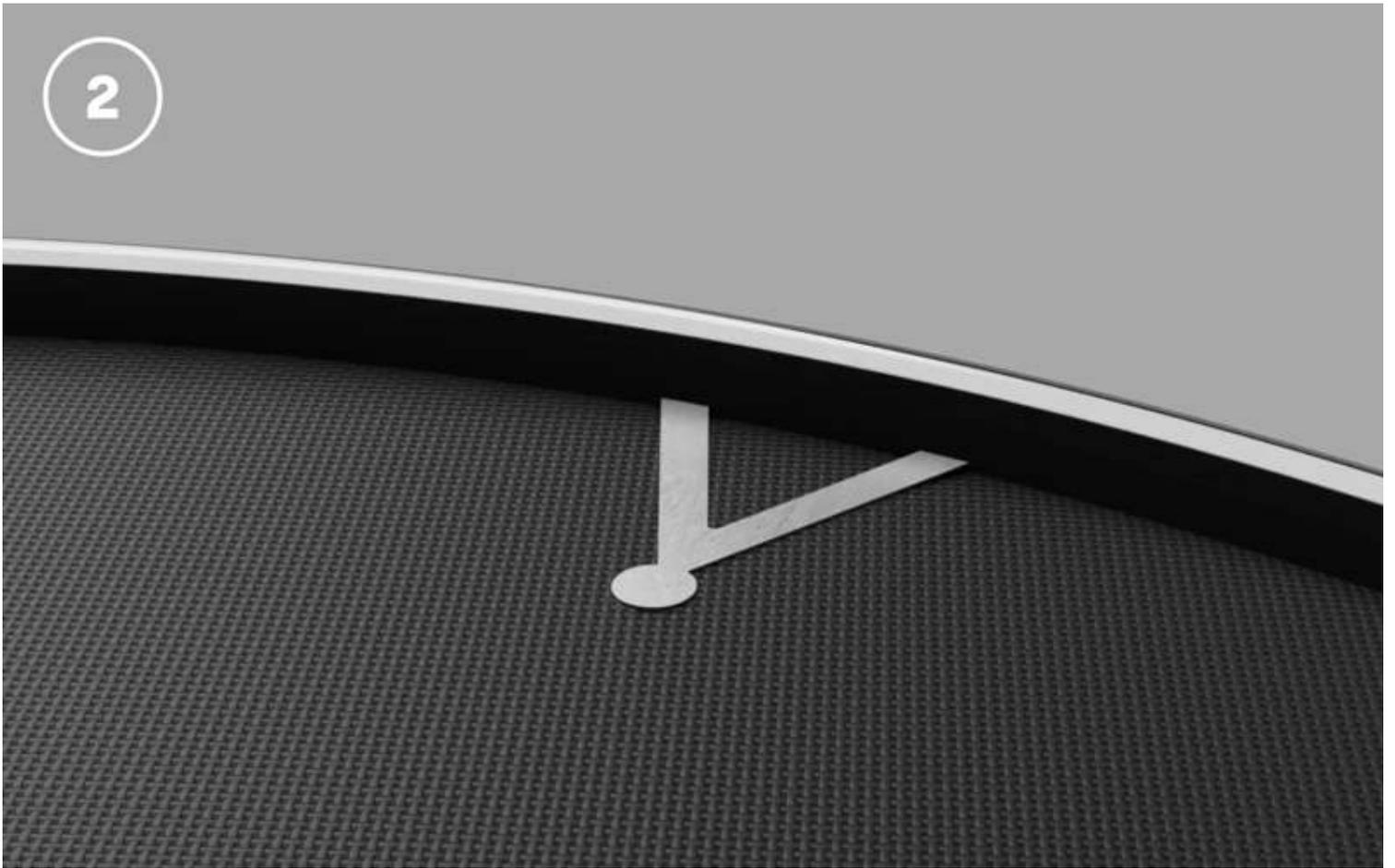
TIP

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.

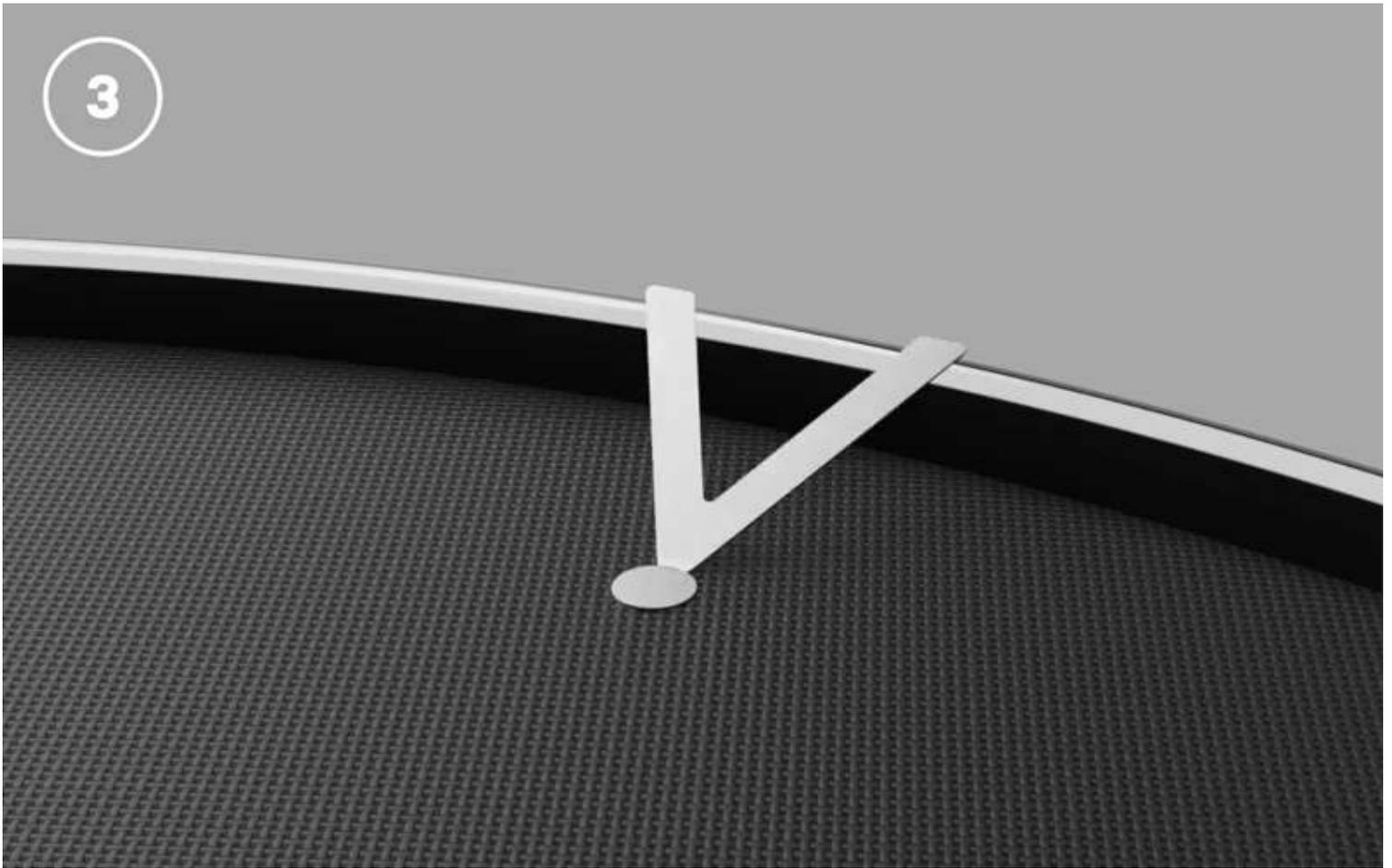
You can always "practice place" the sensor before placing the pickup element -- that is, attach the sensor before placing the pickup element, just to make sure it's in a good place on your drum (and not blocked) -- then you can remove the sensor and follow the steps below to place the pickup element.



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

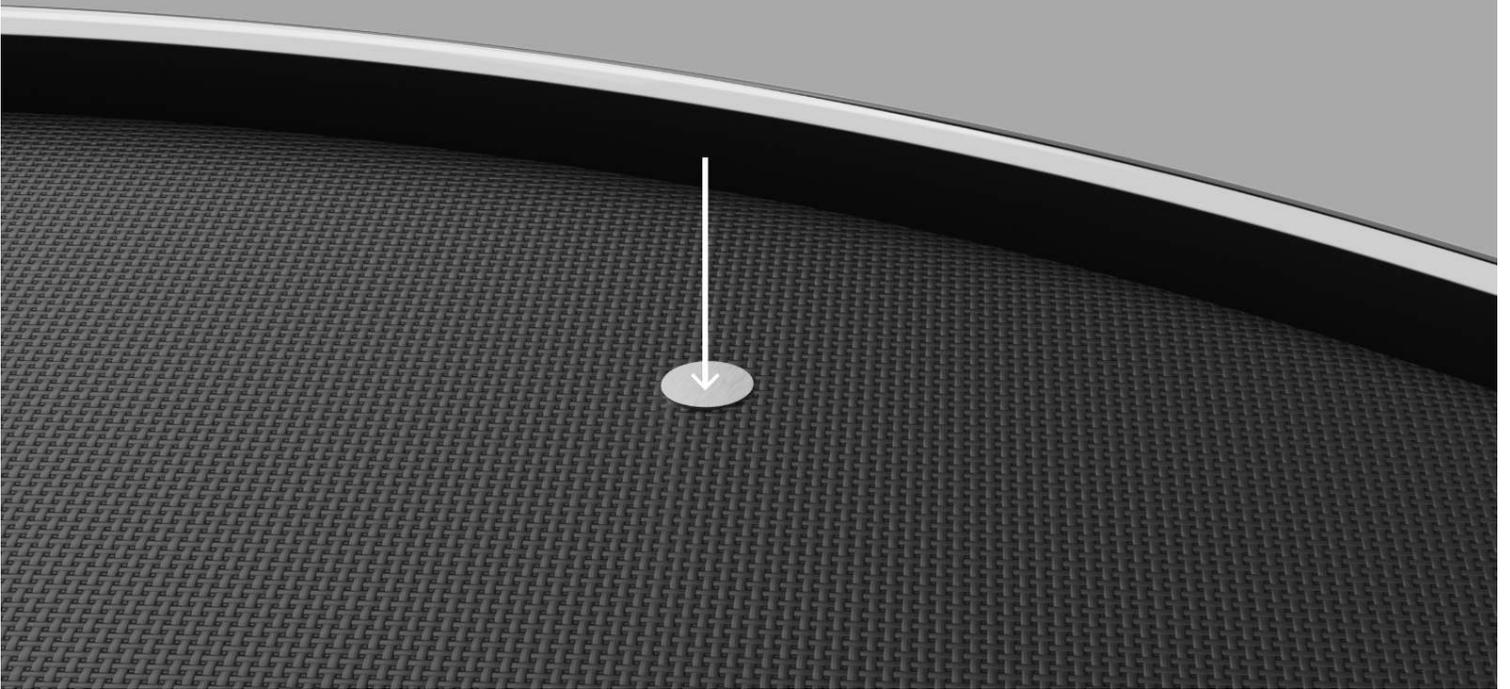


Line the legs of the disposable positioner up with the rim on your drum and drop it down so that the pickup element adheres to the head.



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

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.

! INFO

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.



Twist the sensor thumbscrew counter-clockwise to open it enough to fit over the rim of your drum.



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).

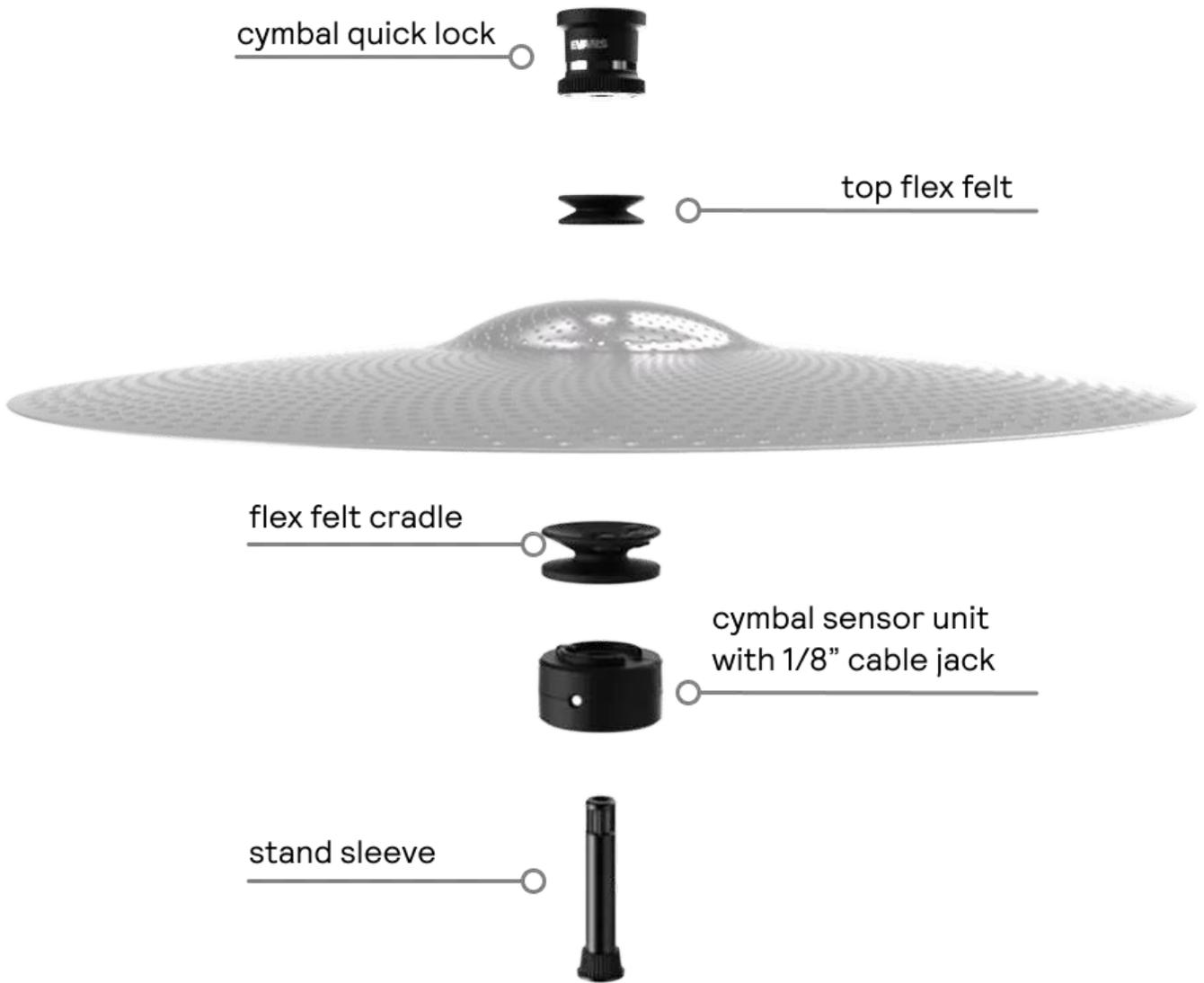


Plug TRS Cable into the top of the sensor. Secure the cable by pressing it into the clip on the side.

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



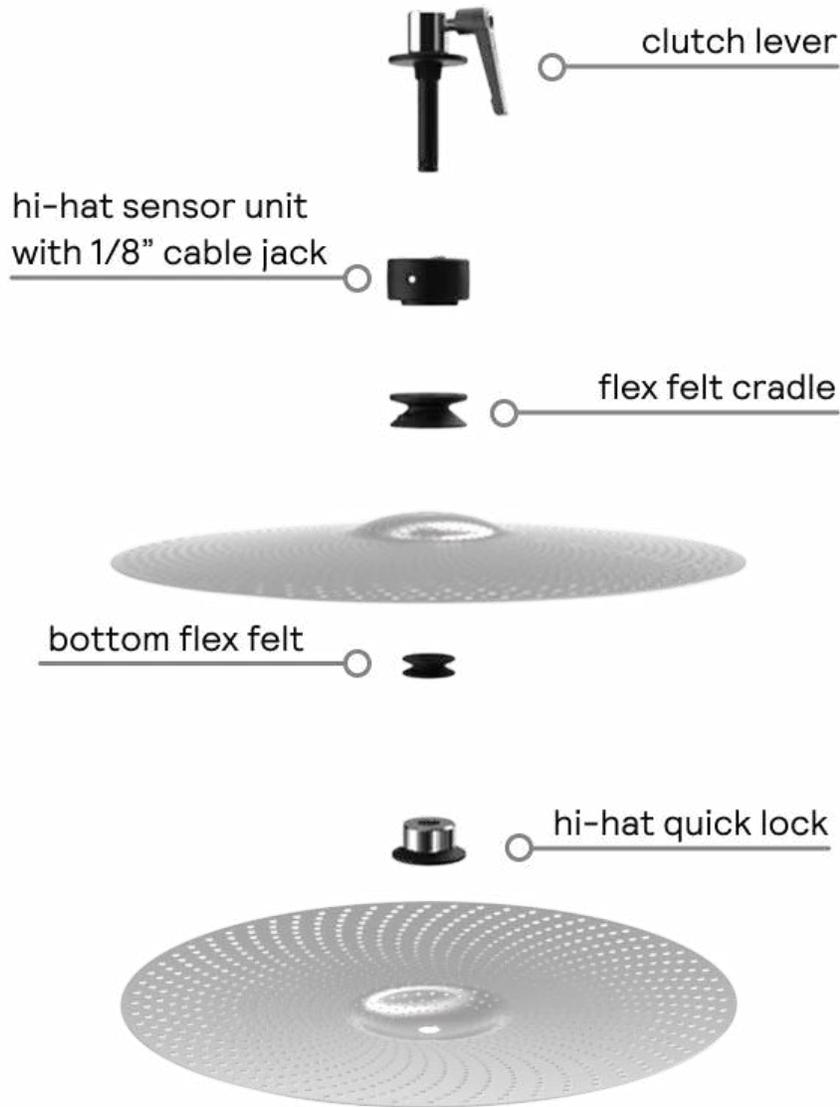
1. Remove any wingnuts or felts from the top of your cymbal stand. The metal threads of the stand should be fully exposed.
2. Thread the full EVANS Hybrid Cymbal stack onto the stand and tighten until it's secure.

 **TIP**

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

3. Remove the Cymbal Quick 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 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.
7. Tighten the assembly by rotating the nut at the bottom of the Quick Lock. Be careful not to overtighten.

Hi-hat Sensors



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, positioning 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



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.



Sensory Percussion

Let's create your account.

Email

john@example.com

Your name

John Doe

Choose a password

••••••••

Verify your password

•••••



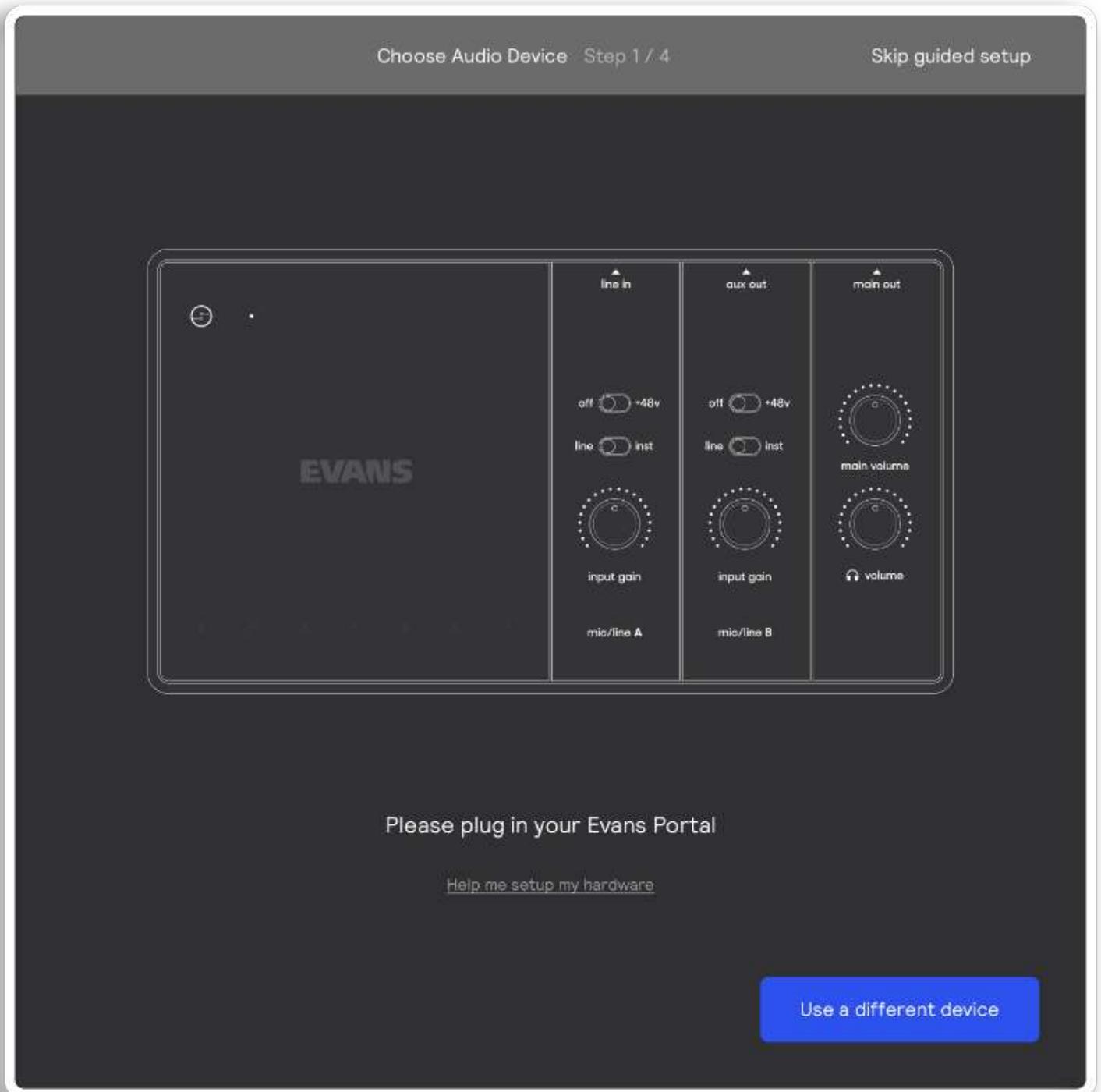
Next

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](#).

If you haven't already, connect your EVANS Portal Interface. The software will automatically detect it once it's connected and switched on. If you don't have your Portal with you, you can

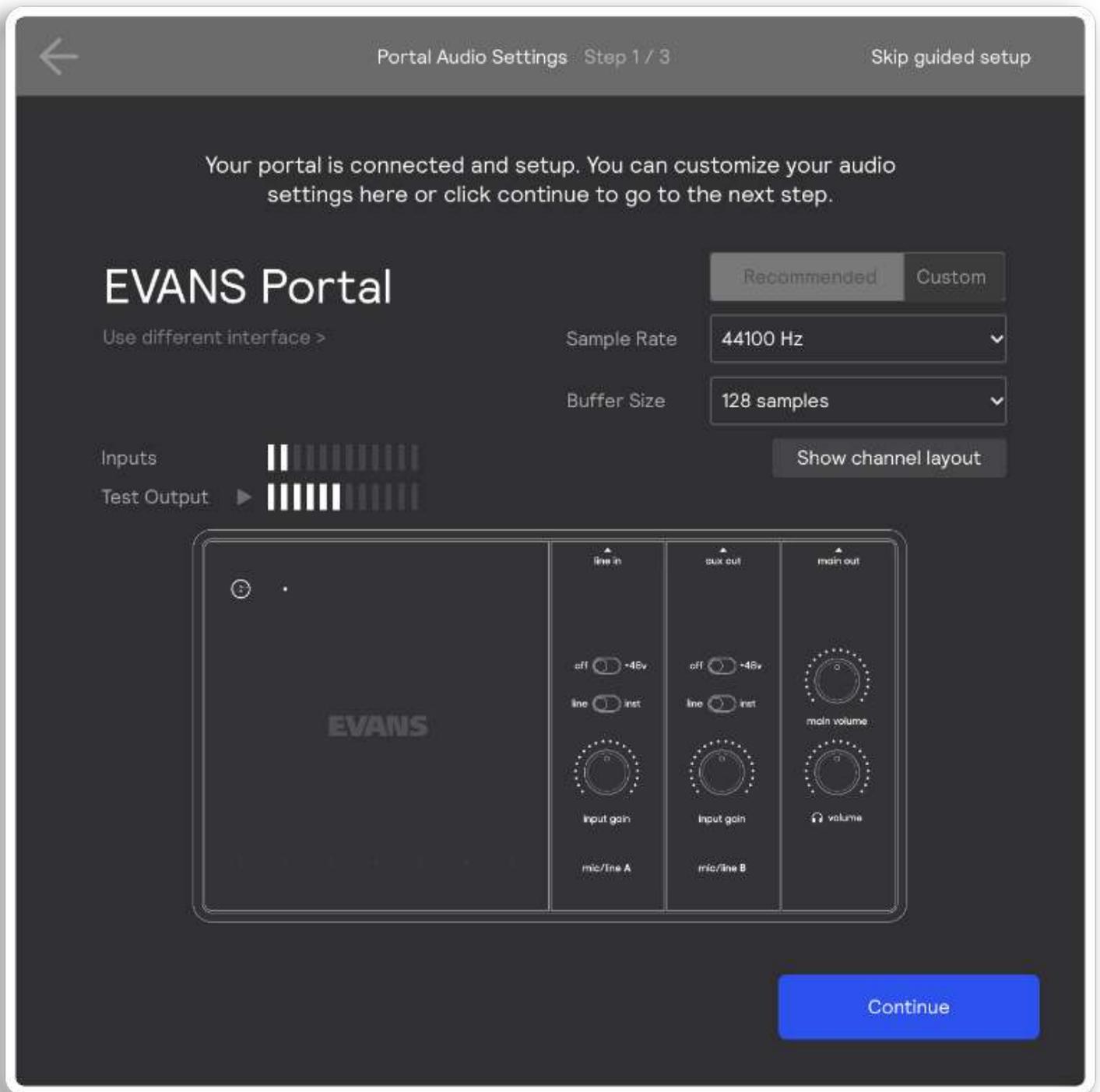
use "Use a different device" to select a different Input/Output device.



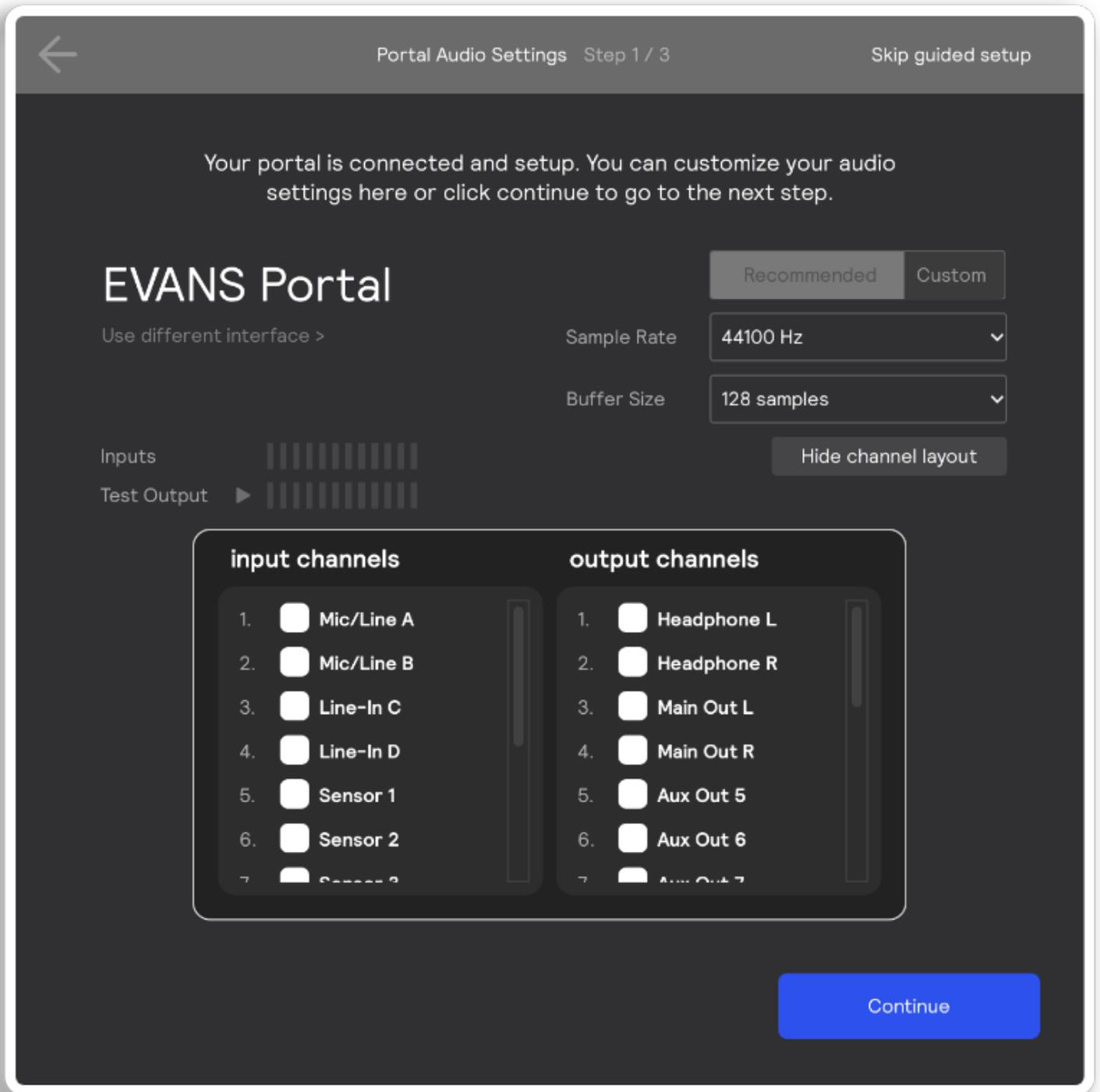
Audio Settings

Once it's connected, you'll see the Audio Settings page. Sensory Percussion has recommended settings for active channels, sample rate, and buffer size. If you'd like to customize these options, you can do so by choosing your Sample Rate and Buffer Size from the drop downs

clicking the **Show channel layout** button. The input and output VU meters are visual indicators of your signal levels.



The channel layout view lets you enable or disable different input and output channels.

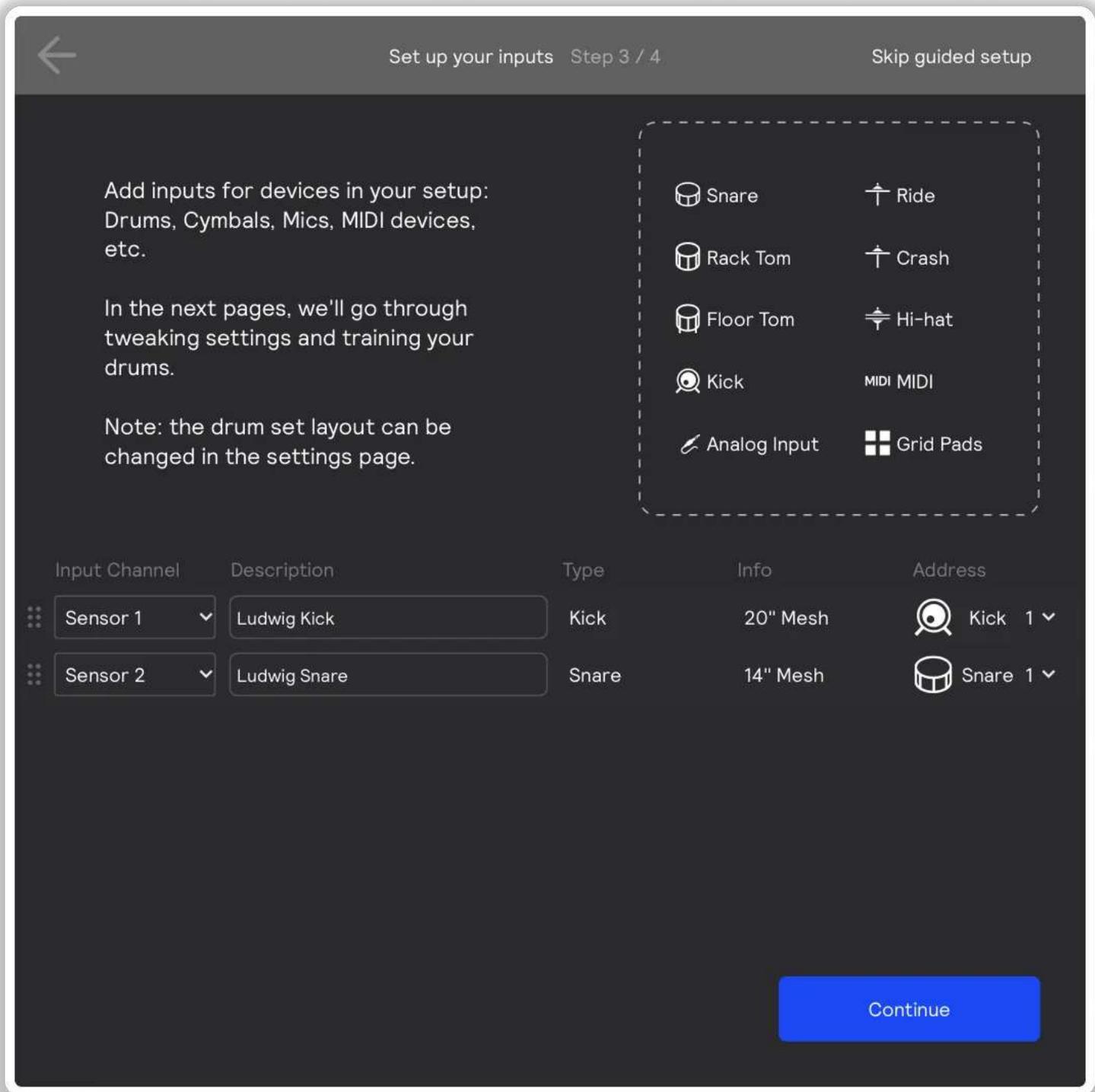


You can access these settings later by clicking the gear icon in the bottom-right corner of the software (or press  + ) to open the audio settings panel.

Hardware Inputs Setup

The next page will ask you to set up your hardware inputs. These represent your physical setup -- so you'll inputs for all your gear. You can add drums, cymbals, analog inputs like vocal mics,

midi devices, etc. You can always add more later from the [hardware in/out panel](#) after you finish the Guided Setup.



Training your drums

When you reach the drum training page, you'll get a brief tour of the different parts on the screen. Refer to the [Drum Training](#) page for a more in-depth look at how all these settings

work.



Sound zones on the drum are divided into 3 levels -- from most common to least. We recommend training the minimum number of zones you will use on each drum. It's great to start with the four zones in Level 1, and if you'd like more zones, add Zones 2 and 3 later. For other tips on training, visit [this page](#) on the V1 manual.

When you're done training, start playing! A Demo Session will be automatically loaded with several great sets to get started with. Click on the sets at the top of the software to change up the sounds. Then head over to the [Software Overview](#) section to learn more.

Sensory Percussion 2 Beta

Play Edit Mix Demo Session

Beta Feedback

1 / 7

1 Acedia 2 Bebop Kit 3 Analog Trap 4 Melodic Future 5 Pitchy Perc 6 Cataratas 7 Phantasma Keys

Acedia

chill electronic melodic tonal

On the snare and toms play from Center to Edge, Rim Shoulder to Rim Tip and Rimshots at different velocities and speeds. The electronic snare has traditional e-snare sounds layered w...

Virtual Inputs

HW Input Set

- Snare 1
- Snare 2
- Kick 1
- Tom 1
- Tom 2
- Cymbal 1
- Cymbal 2
- Cymbal 4
- Hihat 1
- Analog 1

i.i. Main Mix

Acedia

Filter

- 1 Acedia Drums drumset
- Acedia Kick kick
- Acedia Snare snare
- Legacy Acedia Snare snare
- Acedia Hat to Tom 2 Rim floor tom
- Istanbul Agop Hi-Hat_14 inch hi-hat
- Timothy Roberts Prism Ride_20 ride
- Zildjian Avedis Crash_18 inch crash
- 2 Tom drum pads rack tom

Hot Swap

Select an instrument layer to hot swap

Macros (Set)

- stocky
- ripples
- trinityVerb
- 0.11 destruction
- 0 embedded FX
- On +3 modulate
- Off

Inputs

Outputs

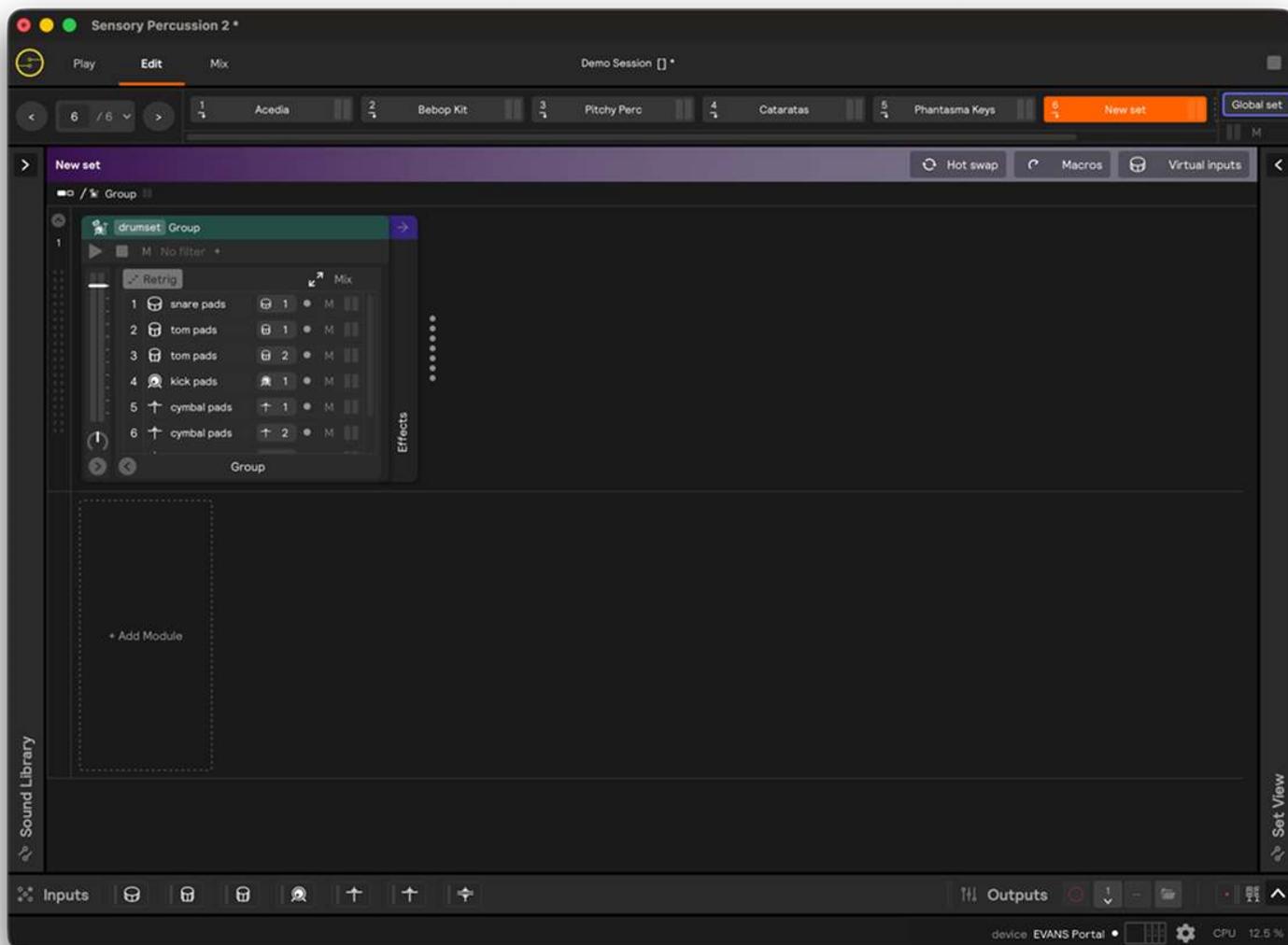
device: EVANS Portal CPU: 11.6%

Making stuff from scratch

Create a new set by clicking the **Add New** button to the right of the sets.



When you create a new set, Sensory Percussion auto-generates a Drumset Instrument module with **Drum Pad** modules based on your current **hardware inputs**. The active zones of these Pads modules will match the zones that you've trained on that input.



This default module lets you quickly drag and drop samples from the library to start building sounds. Or you can select the whole Drumset module and hot swap it for a complete drumset from the library.

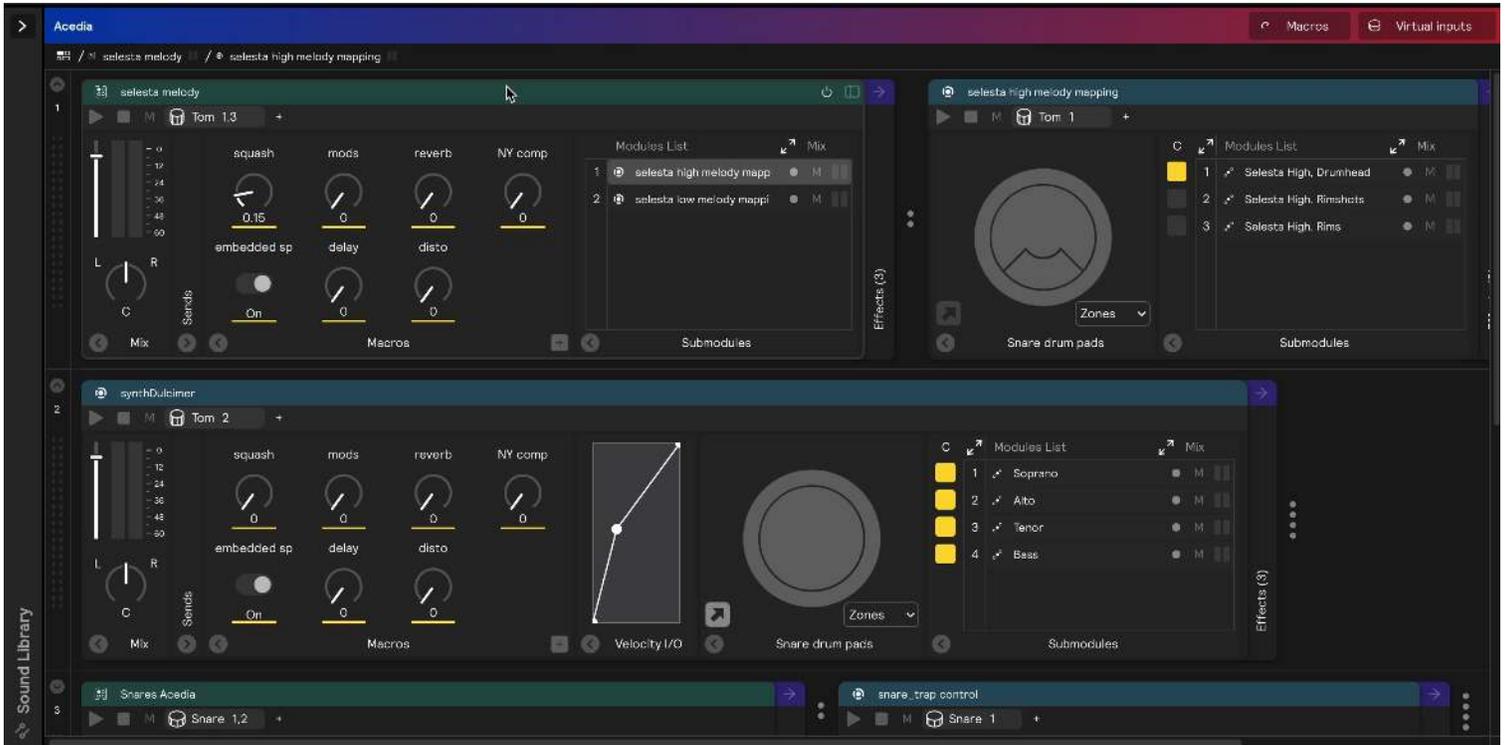
Add Your Own Sounds

You can add bookmarks to your own sample and set folders in the Library. Select the **+** button in the library under *Folders*. Now you can drag in samples (as well as sets and layers that you have previously stored in this folder) into your set.



"Group Into... Selection"

You can right-click on any module(s) and select "Group into..." and then choose the type of controller you want to generate. This will put whatever module(s) you have selected inside of the chosen controller. This is a really fast and unique way to work. You can, for example, drag a list of samples from the library and quickly put them all inside a Drum Pads (or any other controller) without opening up the Library panel!



! INFO

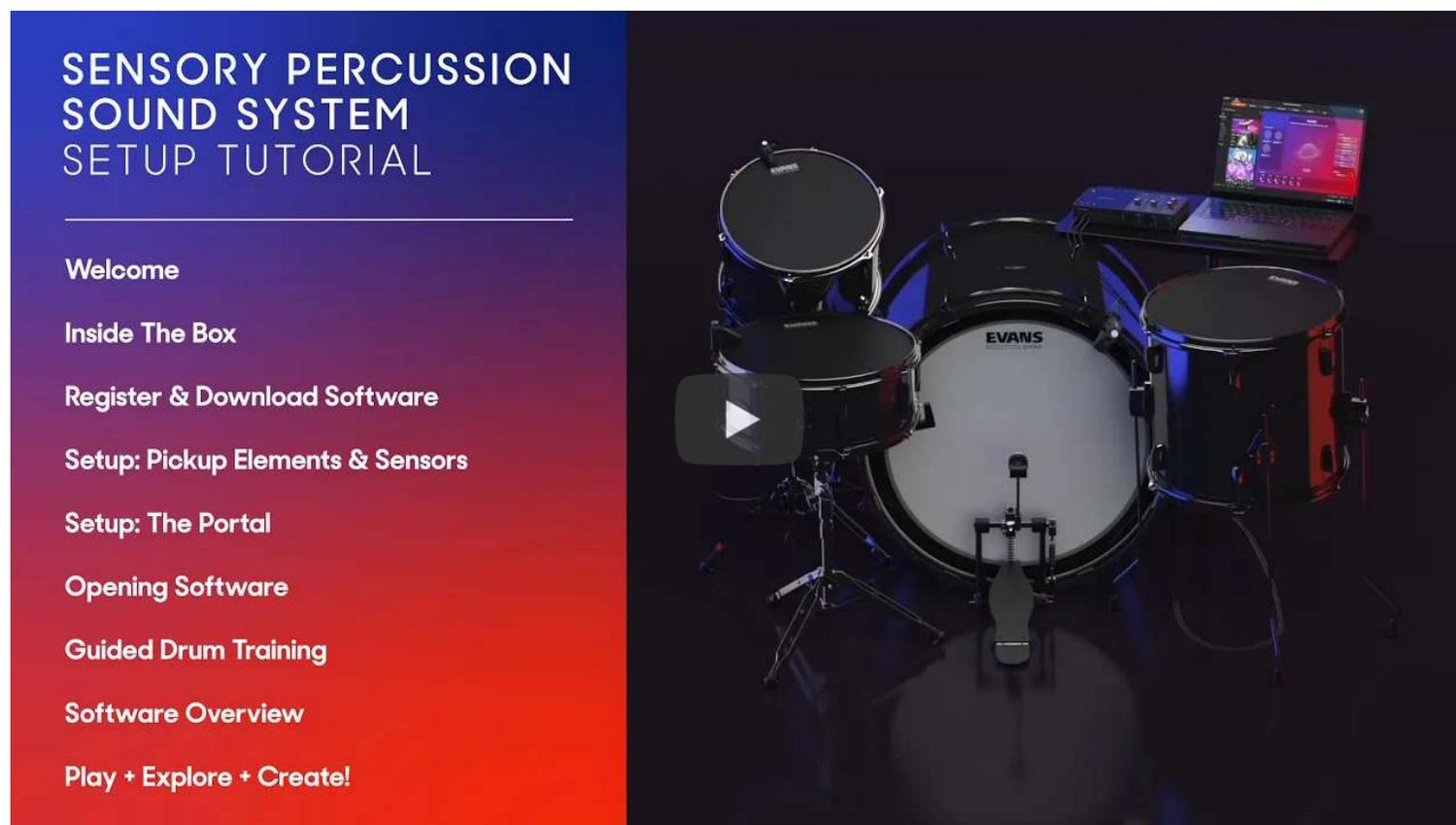
For more more information about the basic building blocks and how to make stuff in Sensory Percussion, be sure to check out: [Software Concepts](#), [generators](#), [controllers](#), [effects](#), [virtual inputs](#) and [input filtering](#).

Also, take a look at the [How To Section](#) to gain knowledge of specific Sensory Percussion techniques.

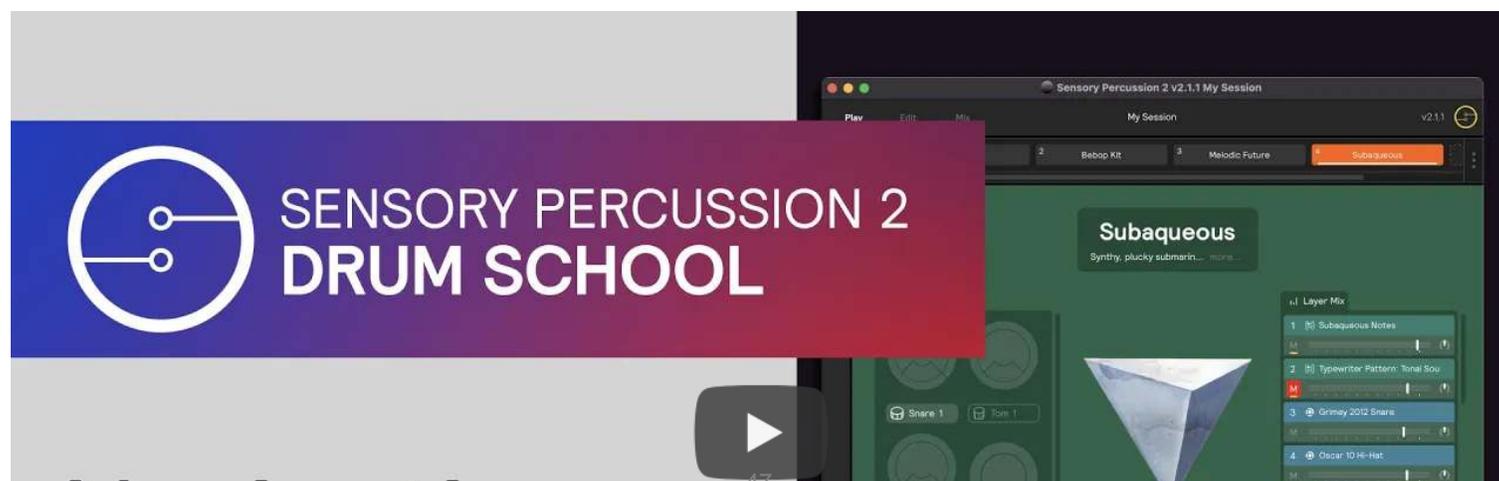
Video Tutorials

These video tutorials can also be found as a [playlist](#) on the Sunhouse YouTube channel.

Getting Set Up



Navigating the Software



Navigating the Software



Training & Input Settings

A composite image. On the left, a blue and red gradient banner contains the 'SENSORY PERCUSSION 2 DRUM SCHOOL' logo and text. Below the banner is a large play button icon and the word 'Training'. On the right, a screenshot of a software interface shows a 'Drum Train' visualization with a waveform and a 'Velocity Curve' graph. The graph plots 'input velocity' on the x-axis and 'output velocity' on the y-axis, showing a curve that rises and then levels off. The interface also includes a 'Sensitivity' slider and an 'Output gain' slider.

Play/Edit/Mix Views

A composite image. On the left, a blue and red gradient banner contains the 'SENSORY PERCUSSION 2 DRUM SCHOOL' logo and text. On the right, a screenshot of a software interface shows a 'Bebop Kit' with various audio processing controls. The interface includes a 'Virtual Inputs' section, a 'Bebop Kit' section with several knobs and sliders, and an 'Outputs' section. The status bar at the bottom shows 'Secondary Percussion 2 v2.L5*' and 'CPU: 13.1 %'.

Play, Edit & Mix Views



Intro to Modules



**SENSORY PERCUSSION 2
DRUM SCHOOL**

Intro to Modules

A screenshot of the Ableton Live software interface showing the 'Macro' view for a snare drum pad. The interface is dark-themed and features several knobs and sliders for adjusting parameters like reverb, NY comp, and distortion. A play button icon is visible on the left. The text 'snare_trap control' and 'snare 7' is visible at the top of the interface.

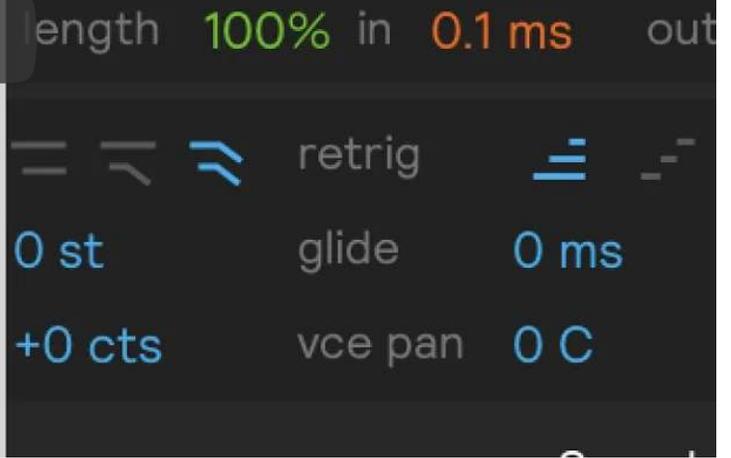
The Sampler





SENSORY PERCUSSION 2 DRUM SCHOOL

The Sampler Module



The Sequencer

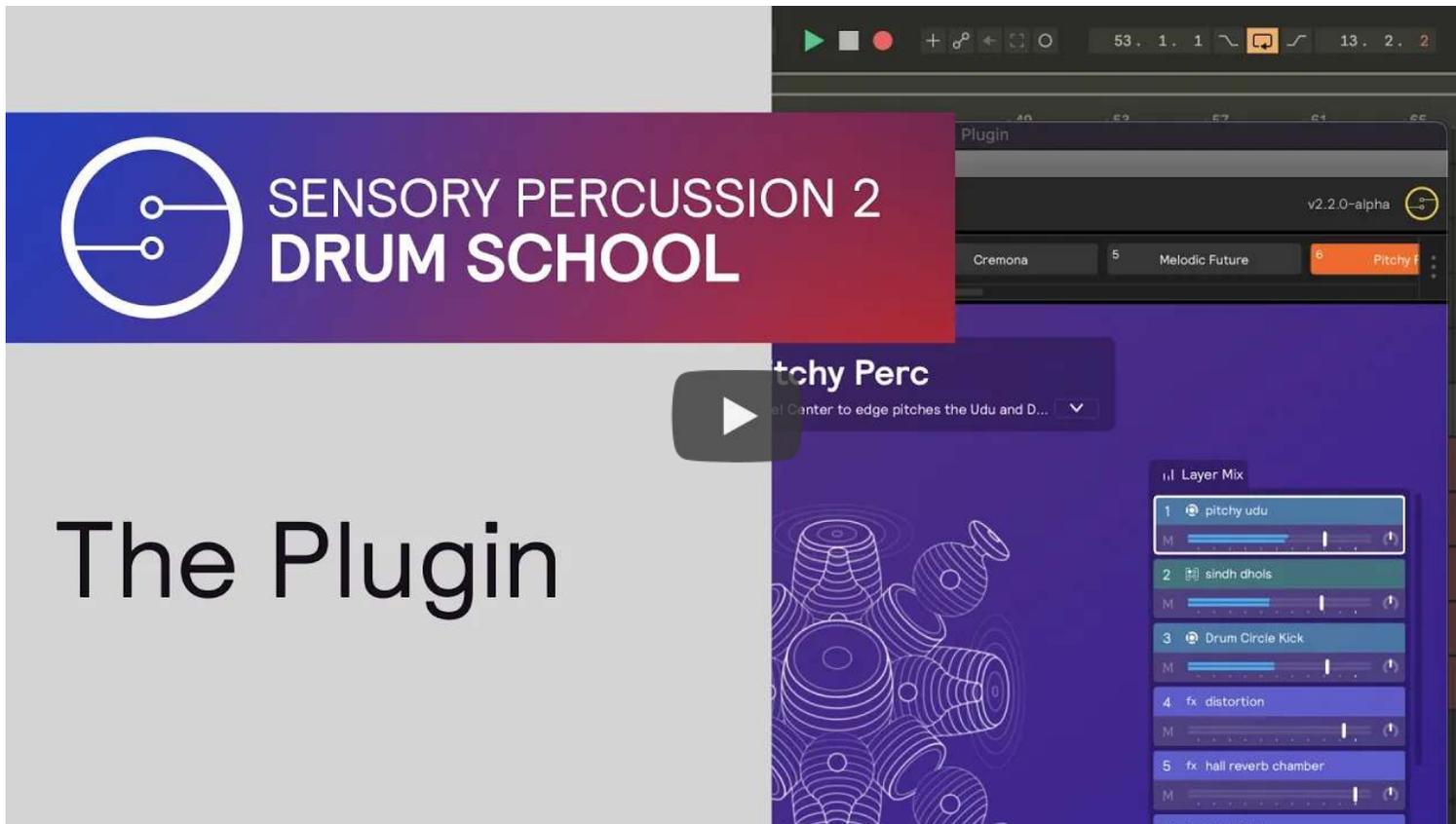


SENSORY PERCUSSION 2 DRUM SCHOOL

Sequencer



The Ableton Plugin



**SENSORY PERCUSSION 2
DRUM SCHOOL**

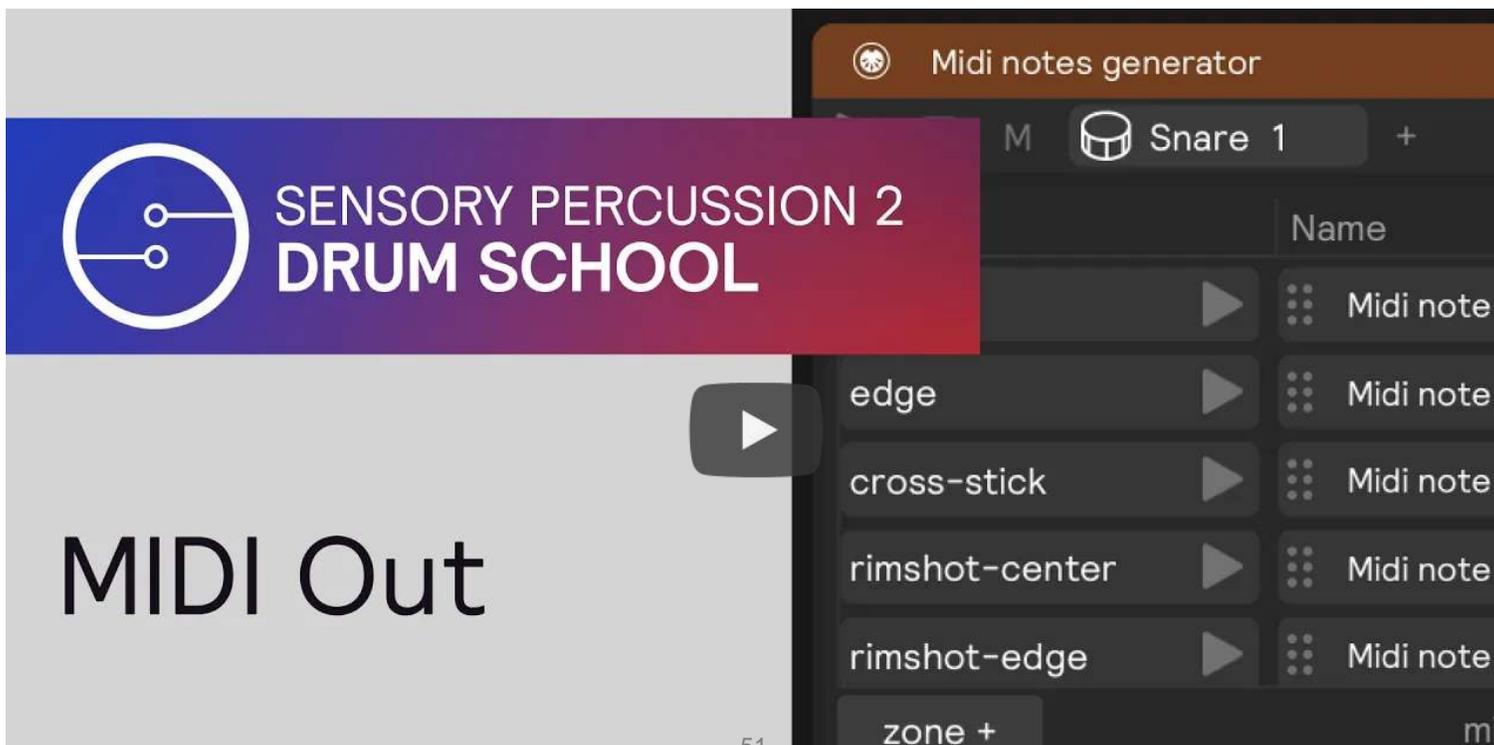
The Plugin

Pitchy Perc
el Center to edge pitches the Udu and D...

Layer Mix

- 1 pitchy udu
- 2 sindh dhols
- 3 Drum Circle Kick
- 4 fx distortion
- 5 fx hall reverb chamber

MIDI Out



**SENSORY PERCUSSION 2
DRUM SCHOOL**

MIDI Out

Midi notes generator

M Snare 1 +

Name	Midi note
edge	Midi note
cross-stick	Midi note
rimshot-center	Midi note
rimshot-edge	Midi note
zone +	mi

Analog Audio Inputs



SENSORY PERCUSSION 2
DRUM SCHOOL



Analog Inputs



Recording



SENSORY PERCUSSION 2
DRUM SCHOOL



EVANS Portal

Recording



Pitch & Scale

A screenshot of a DAW interface with a 'Pitch & Scale' plugin overlay. The overlay has a blue-to-purple gradient header with a logo of a circle containing two horizontal lines and dots, and the text 'SENSORY PERCUSSION 2 DRUM SCHOOL'. Below the header, there is a play button icon and a 'Scale Mode' dropdown set to 'Pentatonic Minor'. A '8ve rang' slider is set between -19 and 12. A piano keyboard visualization shows notes C3 and C4. At the bottom, there is a 'Note Control' slider and the text 'Pitch & scale'.

SENSORY PERCUSSION 2
DRUM SCHOOL

Scale Mode Pentatonic Minor

-19 8ve rang 12

Note Control

Pitch & scale

Hardware Overview

INFO

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

[Sensory Percussion Sound System Safety](#)

EVANS Portal Interface

An overview of the EVANS Sensory Percussion Portal Interface

Drum Sensor

An overview of the drum sensor

Cymbal Sensor

An overview of the cymbal sensor

Hi-hat Sensor

An overview of the hi-hat sensor

EMAD Bass Drumhead Adapter

EVANS Sensory Percussion Portal



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



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



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



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

Input Channel	PORTAL Name
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

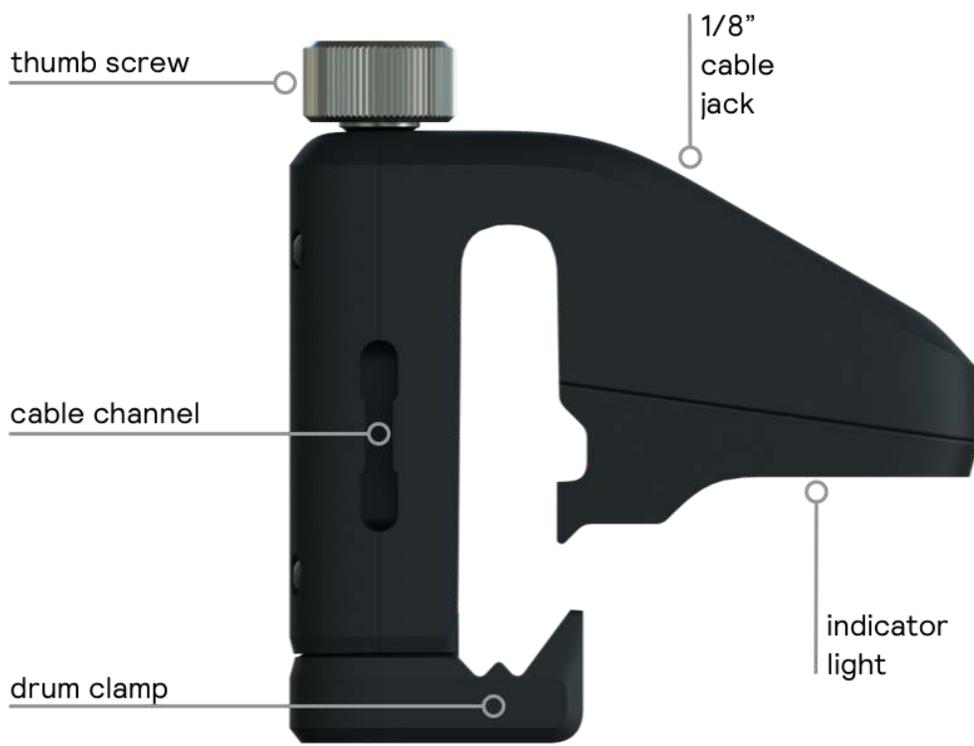
Output Channel	PORTAL Name
8	Aux Out 8
9	ADAT Out 1
10	ADAT Out 2
11	ADAT Out 3
12	ADAT Out 4
13	ADAT Out 5
14	ADAT Out 6
15	ADAT Out 7
16	ADAT Out 8

Sensory Percussion Drum Sensors



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.



Sensory Percussion Cymbal Sensors



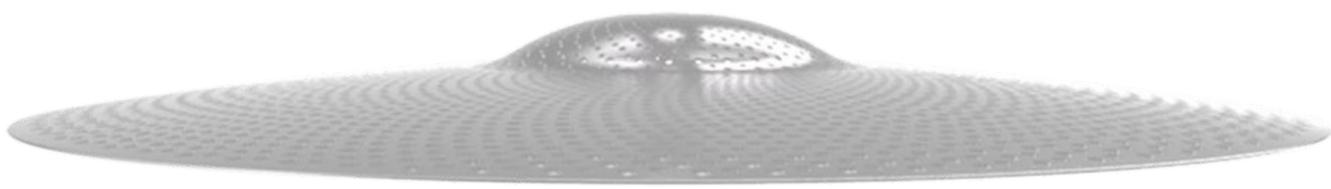
The Sensory Percussion Cymbal Sensors use the same contactless sensing technology as the drum sensors. Usable on any cymbal stand with nothing attached directly to the cymbal. The sensors use a 3.5 mm TRS cable to connect to the EVANS Sensory Percussion Portal. When the sensor is correctly connected,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

The cymbal sensor is designed to work seamlessly with [EVANS db One cymbals](#).

cymbal quick lock



top flex felt



flex felt cradle



cymbal sensor unit
with 1/8" cable jack



stand sleeve



Sensory Percussion Hi-hat Sensors

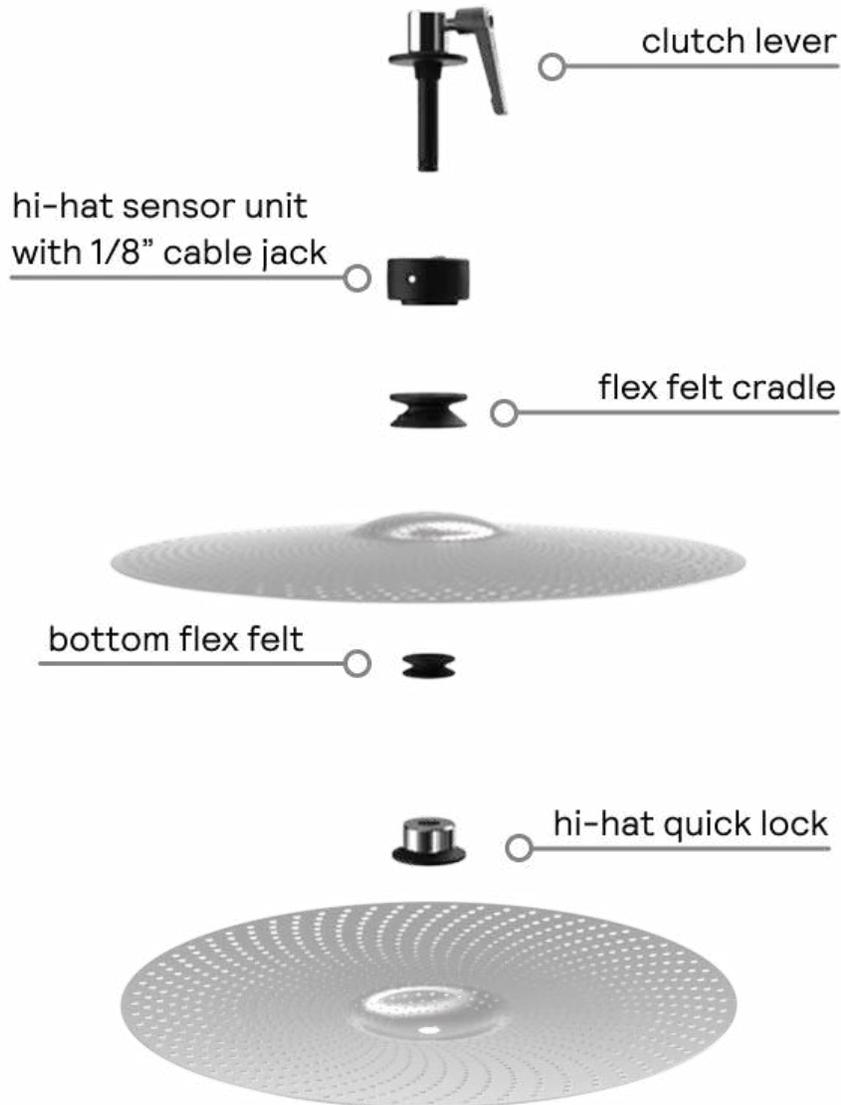


The hi-hat sensor attaches to the top of the hi-hat stand, which is the part of the cymbal you actually hit. We've included a gooseneck cable arm that get the cable up and away from the

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](#).



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



SENSORY PERCUSSION 2
DRUM SCHOOL

Navigating
the Software



SENSORY PERCUSSION 2
DRUM SCHOOL

Play, Edit &
Mix Views



Software Concepts

Motivation and General Design Concepts of Sensory Percussion 2

Global Controls

An explanation of the software's global controls

Play View

An explanation of Play view

Edit View

An explanation of Edit view

Mix View

An explanation of Mix view

The Library

Overview of the Sensory Percussion library

Instruments

An explanation of how instruments work

Hot swap

An explanation of how Hot Swap works

Hardware IO Panel

2 items

Modules

4 items

Effects

A description of the different effects modules

Virtual Inputs

Explanation of how virtual inputs work

Assignments & Modulators

An explanation of how assignments work

Global Set

An explanation of how the global set works

File Menu

A description of all the options available under the file menu

Audio Buses

A description of how to use Audio Buses in Sensory Percussion

Settings Window

Overview of the Sensory Percussion settings window

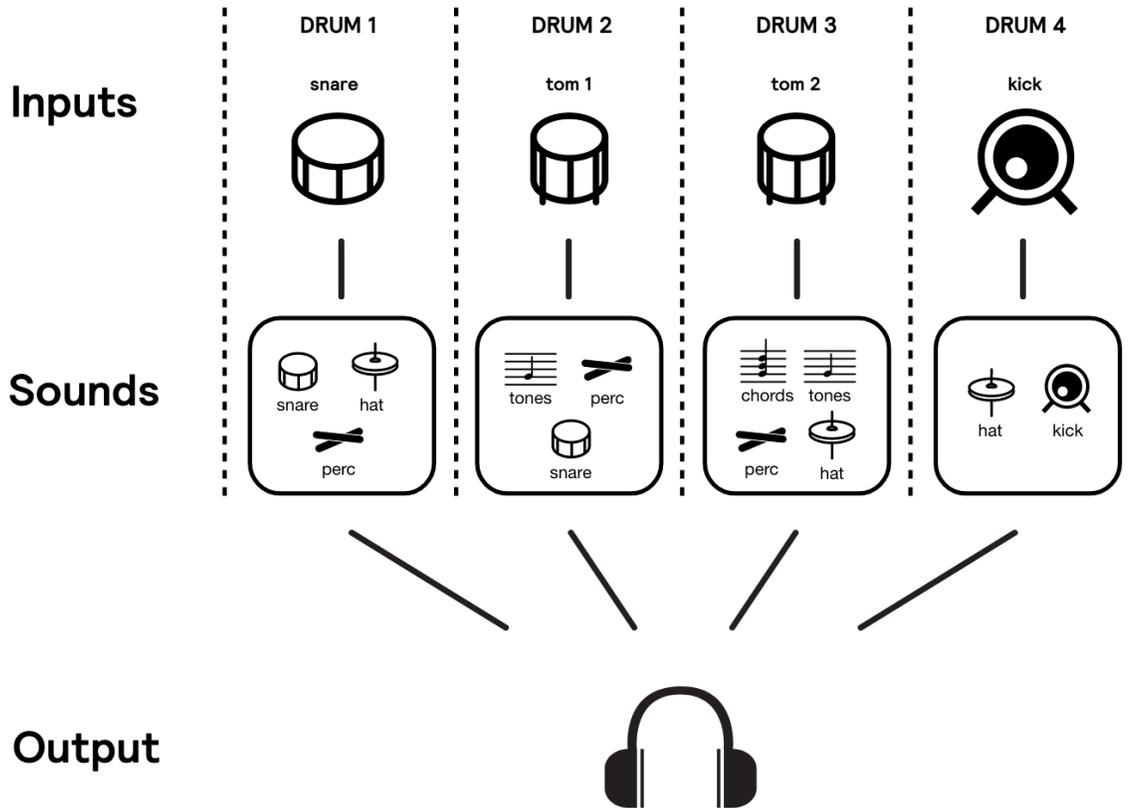
Software Concepts

Sensory Percussion v2 is a completely new piece of software. Our goal with this new version is to embrace a modular design that truly lets users design sets however they like. Want to make something super simple and just drag samples into our multi-zone pads? That's easier than ever. Want to create something complicated with nested sequencers and tons of controllers? That's now possible in a way that never was before.

Untethering Sounds from Inputs

One of the biggest changes from V1 to V2 has to do with the signal path from input --> sound -> output. Below is a diagram of the path in V1:

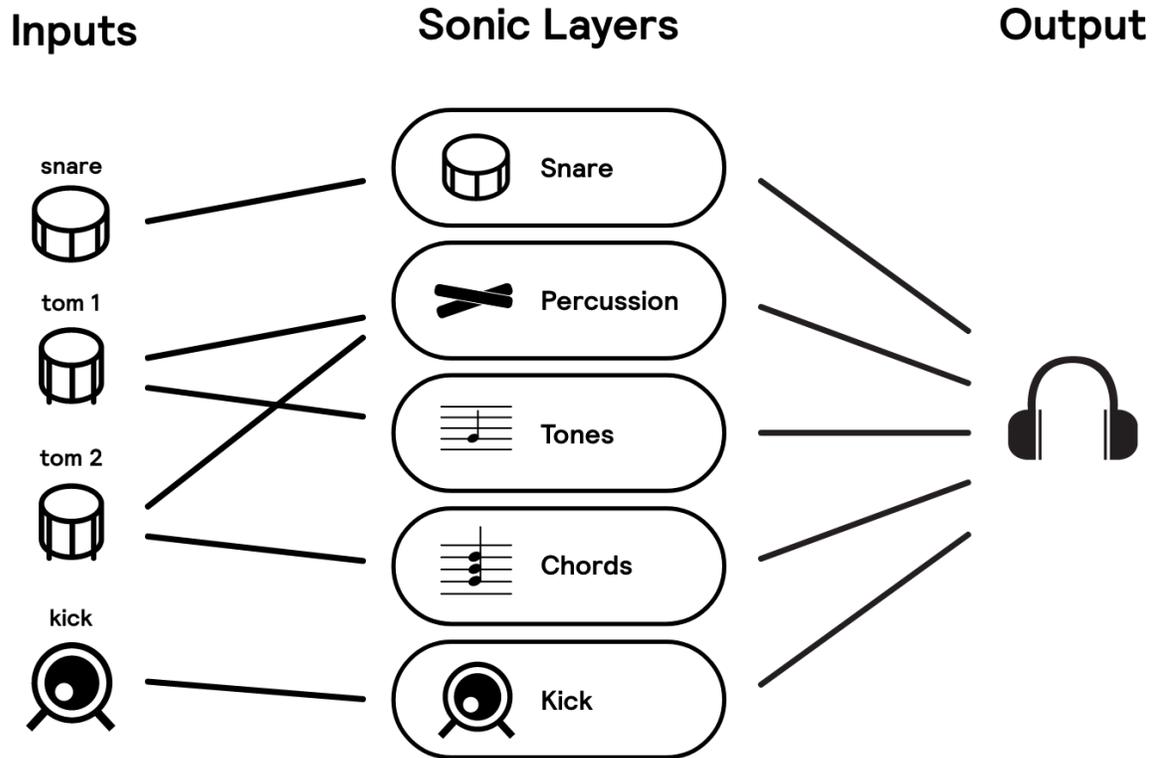
V1



In this model, you can't create sounds independently from the drum that's controlling them. Any sound you add to a kit is restricted to one of 4 input channels, and therefore can't be shared across more than one. So, if you want the same sounds on multiple drums, you'd have to copy/paste them, resulting in duplicate samples.

Additionally, even though one drum might contain many different kinds of sounds (chords, snare, percussion, etc.), they can't be mixed independently. So, any processing you do to one set of sounds will affect all of the sounds on that channel. Now, let's take a look at the new structure of V2:

V2



This new structure is centered around a concept we call *layers*. Layers are a way to organize your musical ideas. You're no longer forced to think in terms of mixer channels and how sounds will be routed to speakers. Instead, you can start building your musical idea first and then decide how you want to control it later.

In addition to a more flexible workflow, sonic layers also allow for more mixing options. Because you can now organize your sounds in the same way a composer would write for an orchestra, you can also mix this way. In the example above, tom 2 is controlling both chords and percussive layers. You can make mixing changes to the chords without affecting the percussive sounds, even if they're both assigned to the same zone of tom 2.

With this new structure, the musical idea is front and center, regardless of the physical setup!

Modular Structure

Modules are the building blocks of Sensory Percussion v2, so understanding how they interact is important for building your own sounds.

Essentially, anything you drag in from the library is a module--whether it's a generator that actually provides sound, a controller that affects the relationships between sounds, or an effect, which manipulates an existing sound. A basic example of how two modules interact would be taking a sampler module and putting it inside of a note controller module. Now, the sampler inside of the note controller is being pitched to the notes you choose based on velocity, speed, or timbre.

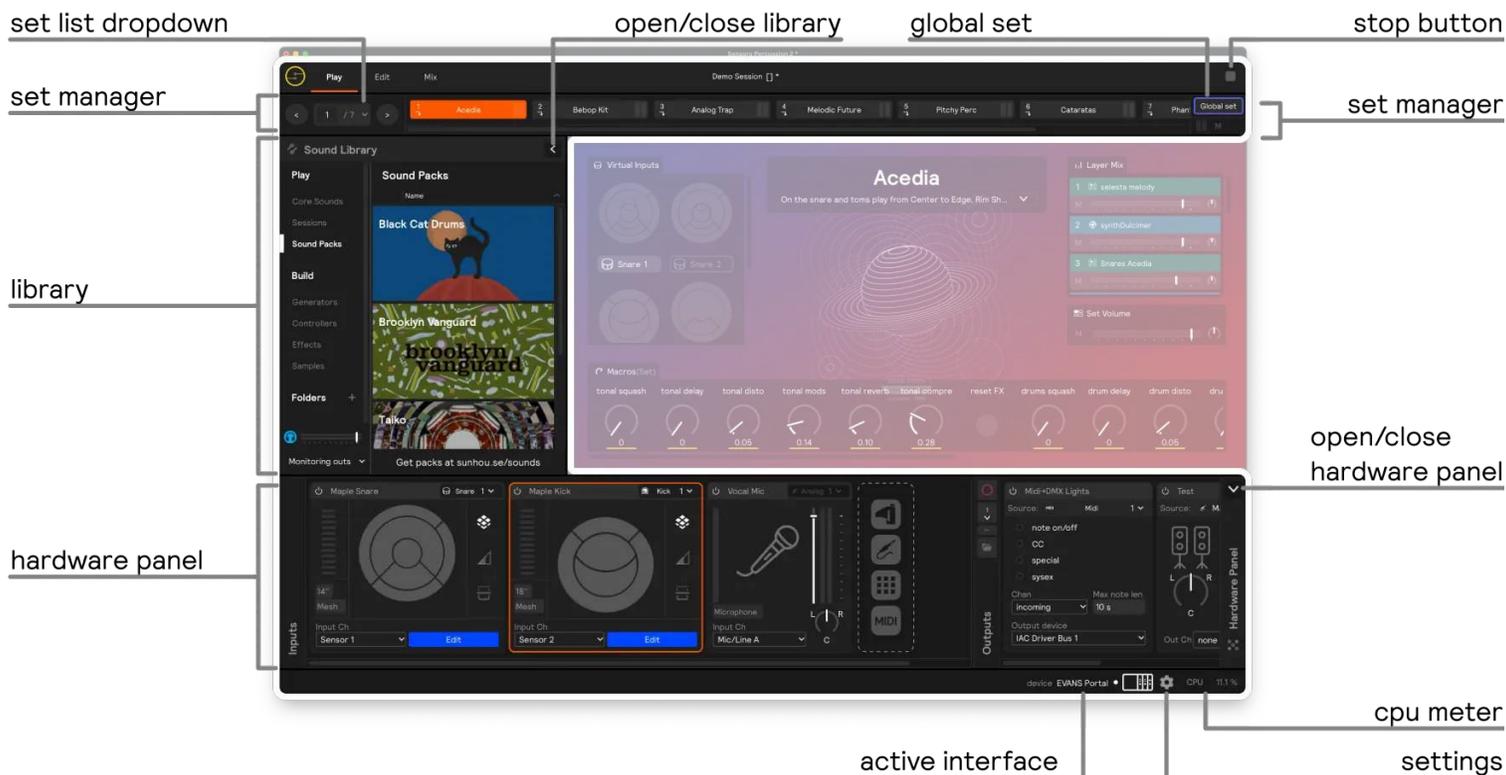
Next, this note controller module can go inside of another controller, such as a sequencer. Now, both of the previous modules are just one step of a sequence. The other steps can be individual samplers or other controllers. This structure allows for what is called "nesting," which is essentially when you put one controller inside of another. For example, you could put a sequencer inside of another sequencer or a group inside of a group, quickly creating a variety of complex combinations of sounds.

This structure is also useful for organizing complex sets into a format is visually easily digestible. You might have a complex system of modules and controllers all interacting with each other on multiple layers in your set, but you can always right-click the top module, select "Group into...," and put everything you want into a single module, such as a drum pads module, to distribute the sounds across the zones of a single drum.

Here is a list of the module categories:

- [Generator modules](#), which make sound or send a MIDI message, like samplers. Generator modules can't contain other modules.
- [Controller modules](#), which help you organize and route other modules in powerful ways. These modules let you create sequences, melodies, and chords. Controller modules can contain any other kind of module, for example, sequencers can contain other sequencers.
- And finally, there are [Effect Modules](#), like reverbs, delays, and the like. Every Generator or Controller module type has slots for effects.

Global Controls



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

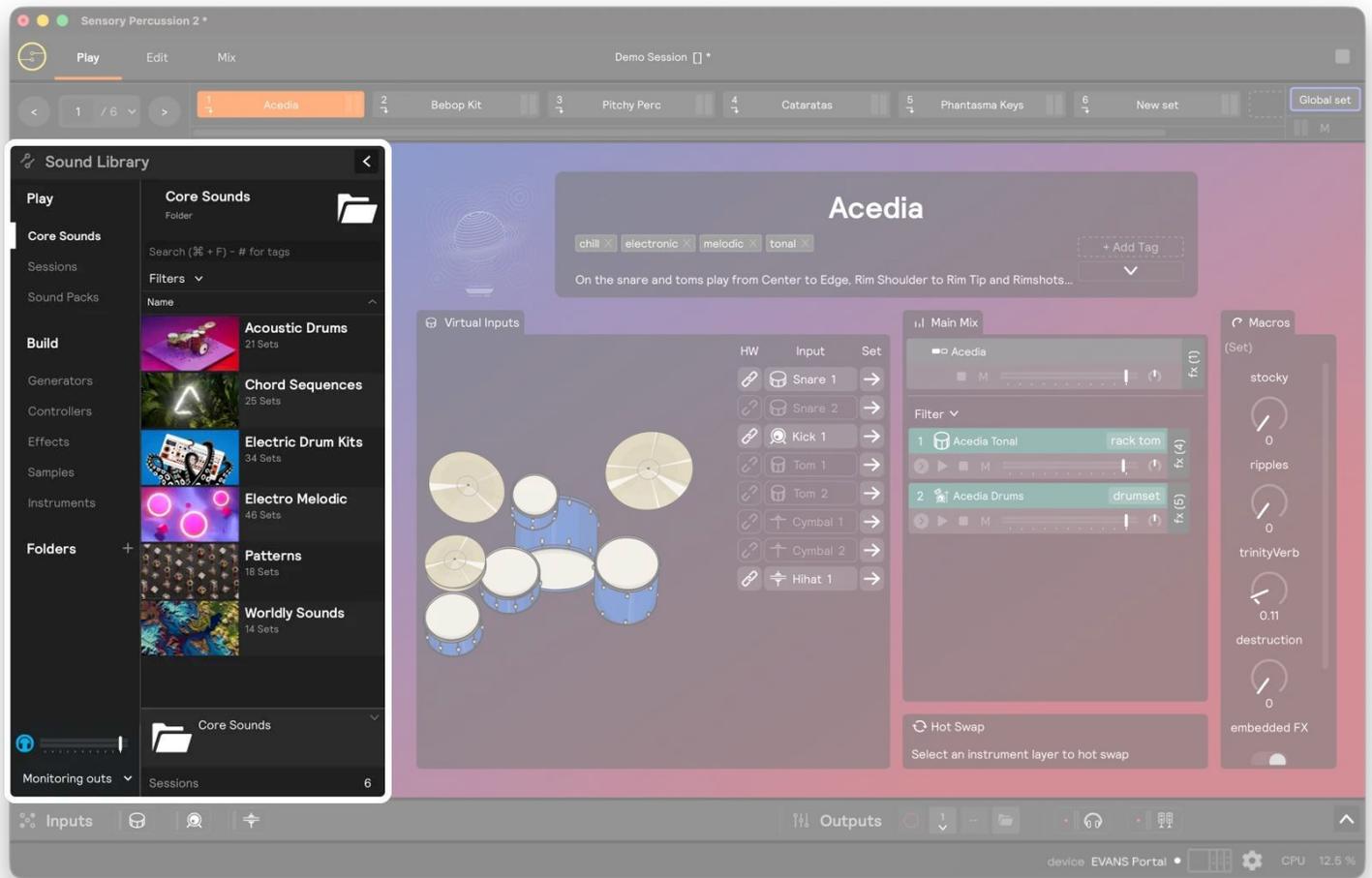
The hardware panel

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  +  +  shortcut.



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  +  +  shortcut.



! INFO

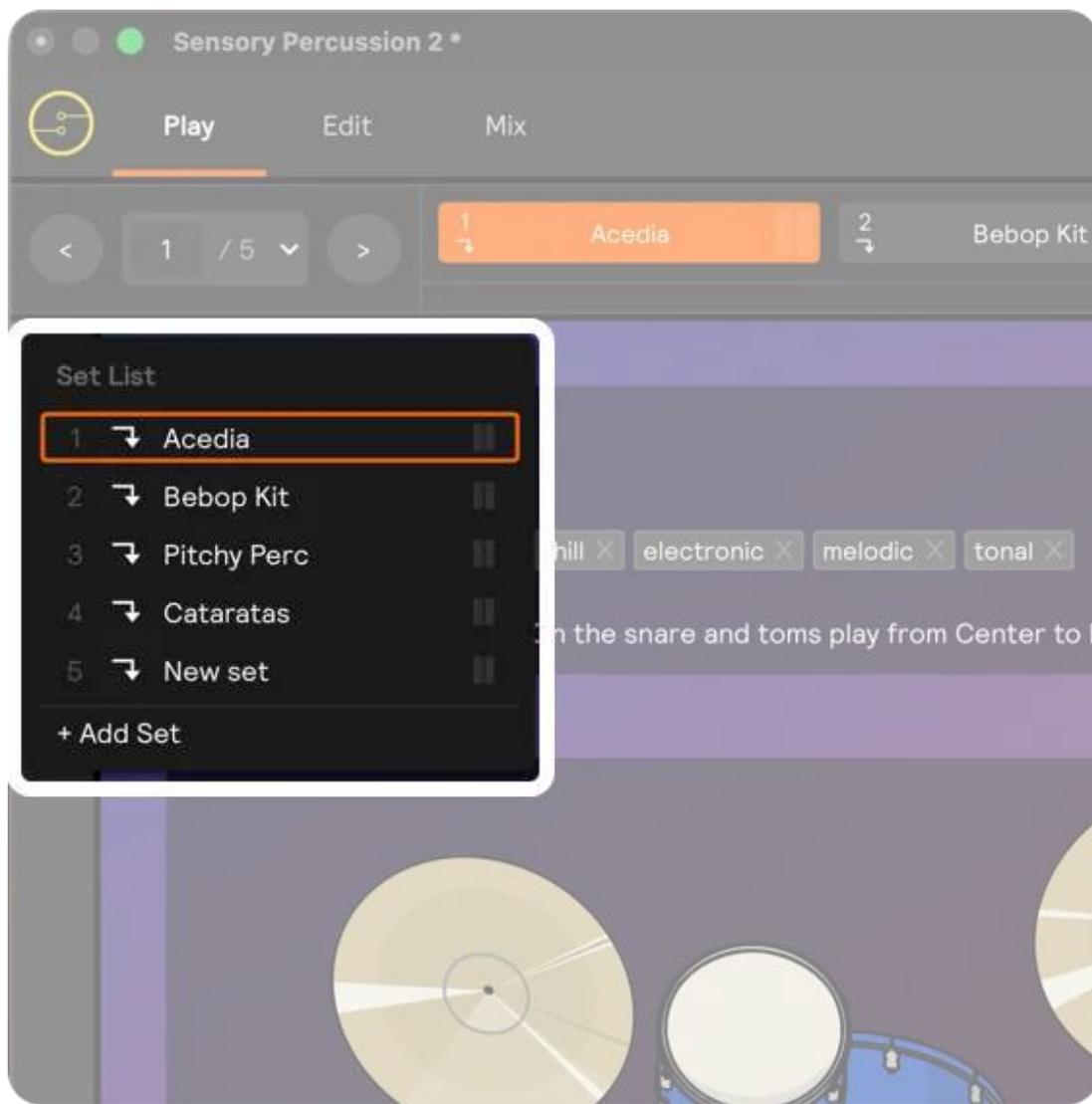
Switching between **Play** and **Edit** view does not affect the **Library** and **Hardware Inputs** panels, meaning you can always have any combination of these two panels open or closed in either view:

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.



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.



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**.

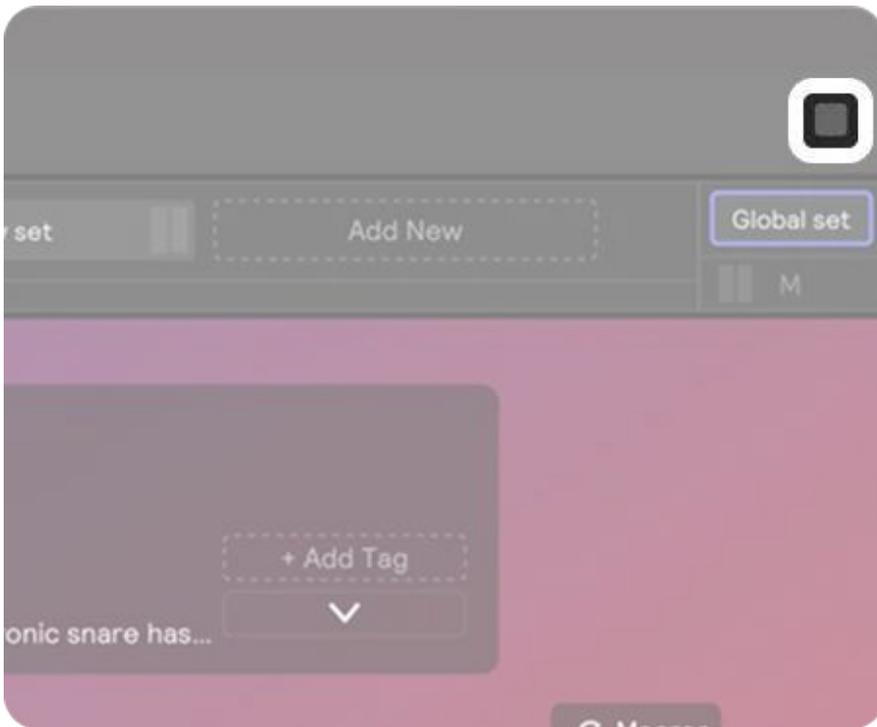
In **Effect Only Play Thru** mode, if you have an effect with a "tail" (like a reverb or delay) active anywhere in the set, then those effects will continue to ring out into the next set.

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.

Global Stop

If you want to immediately stop all sound being produced by your Sensory Percussion sets, you can click the Global Stop button. This button sends a stop messages to all modules in all sets. It is an assignable parameter, as well, simply-right-click it and [add an assignment](#) to choke all sounds with a MIDI device, or one of the zones of your drum.



⚠ WARNING

The global stop button stops all sound currently playing in the active set and global set, but it won't stop modules like metros or LFOs that might be running and could trigger new sounds.

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 FX 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.

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 [Software Concepts](#) 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	<ul style="list-style-type: none">• audition limited zones by clicking on the drums	<ul style="list-style-type: none">• audition all zones• change routing

	Play	Edit
Layers	<ul style="list-style-type: none"> • adjust layer volume/panning • mute/solo layers • drag in layer elements from the library 	<ul style="list-style-type: none"> • create/delete layers • add elements to layers from the library • control routing, effects, macros, assignments, and more
Macros	<ul style="list-style-type: none"> • adjust existing macro knobs • select a layer to switch from set macros to layer macros 	<ul style="list-style-type: none"> • create/delete set macros • assign set macros to parameters within layers • adjust set macro knobs
Hot Swap	<ul style="list-style-type: none"> • Hot swap instrument modules 	<ul style="list-style-type: none"> • Filter hot swap options by character tags • Change the input type of the hot swap
Set Styling	<ul style="list-style-type: none"> • right-click to change the set image and colors 	<ul style="list-style-type: none"> • 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.

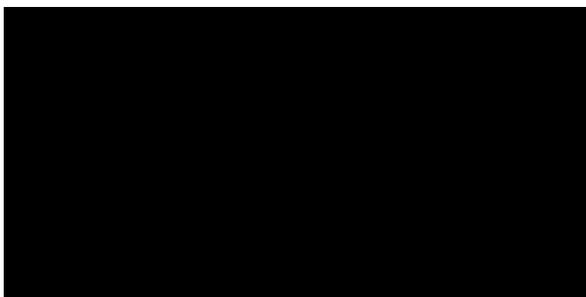
How To Use Submixes

By default, Mix view will show you the main mix, which includes all of the layers in your set. 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.



TIP

Submixes and the layers within them both have right-click options that can help speed up your workflow. Right-clicking a submix gives you the option to copy the entire submix to a new mix out channel. Right-clicking an inactive layer gives you the option to add it to any

submix you've created, or to all of them at once. And right-clicking an active layer gives you the option to add or remove it from all submixes, or reveal that layer in Edit view.



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.

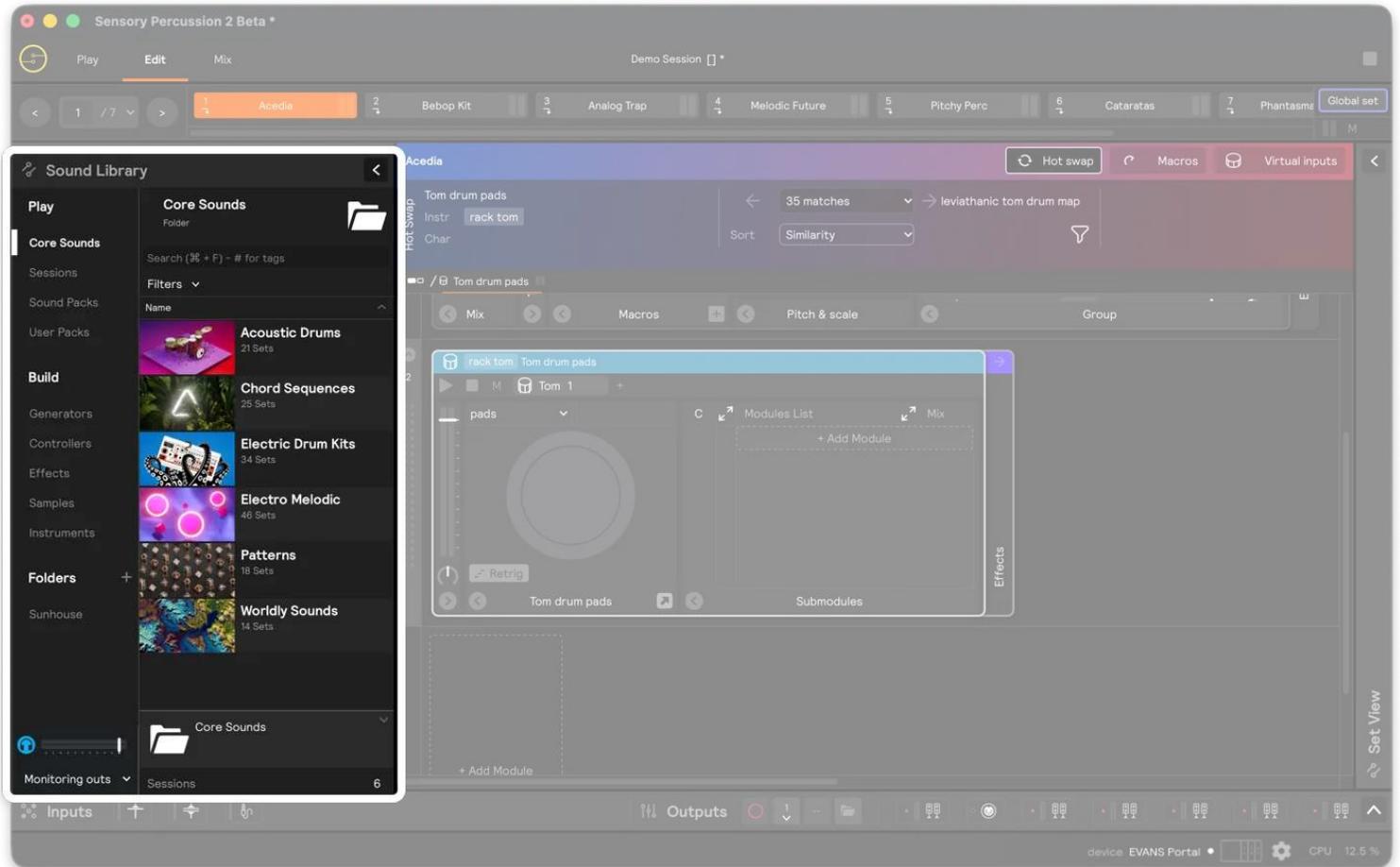
Now, you have three different types of sounds being sent out of three separate channels. The last step is to choose which 3 hardware outputs you want to send these 3 submixes out of. This can be done in the **Source** dropdown on your hardware outputs:



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 includes three sections: **Play**, **Build**, and **Folders**. You can collapse and uncollapse the library with the keyboard shortcut: `⌘ + Shift + L`. It's where you can drag & drop sets, layers, generators, controllers, effects, and samples into your session.



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 set lists by selecting them in the Library and select "load session"

Play

This section includes the Core Library sets that come with Sensory Percussion, and will soon include sets from other packs available on our website.

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

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.

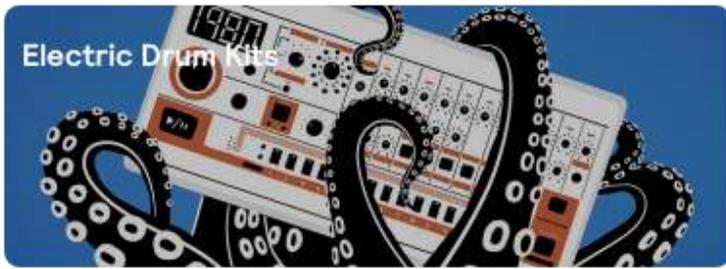
Chord Sequences



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.

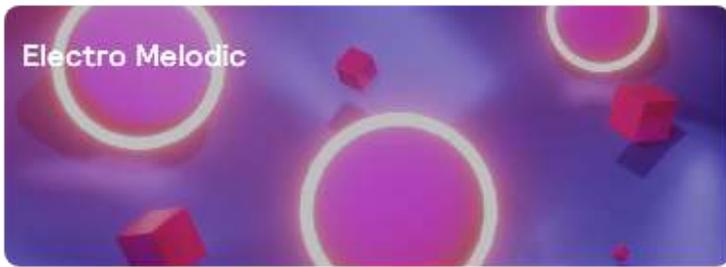
These sets also include percussive elements (and sometimes melodic elements), but their defining feature is the chord sequence.

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.

Electro Melodic



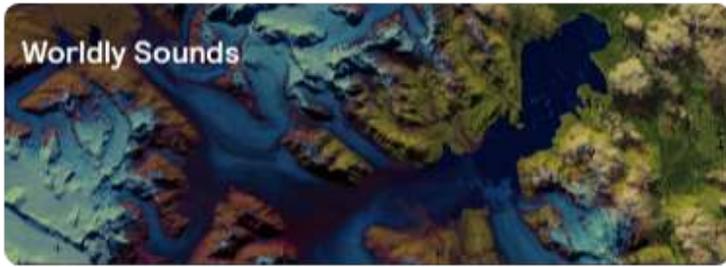
These sets contain at least one melodic element. Sometimes they are entirely melodic, but many also contain percussive elements. The melodic elements are often controlled by Tom 1 and/or Tom 2.

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.

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 includes *Generators*, *Controllers*, and *Effects*. These are the building blocks for creating sets in Sensory Percussion.

Generators make sound or send a message and cannot contain other modules besides effects. They are the atomic elements of Sensory Percussion: samplers, synths (coming soon), Mic Input, and MIDI modules (coming soon).

Controllers are modules which help you organize, map and route modules. Unlike *Generators*, *Controllers* don't create sounds by themselves, but they contain generator modules and can even contain other controller modules.

Effects can be dragged and dropped onto *Generators* and *Controllers*. When you drag and drop an effect onto a module, the FX panel for that module will automatically open with the effect's UI visible. Here you can adjust parameters by clicking the buttons and knobs, 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 are a special type of preset module that are designed to be fully encapsulated and moveable. This section is full of instruments ready to be dragged and dropped into your set.

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 that you have saved inside that folder.



Instruments

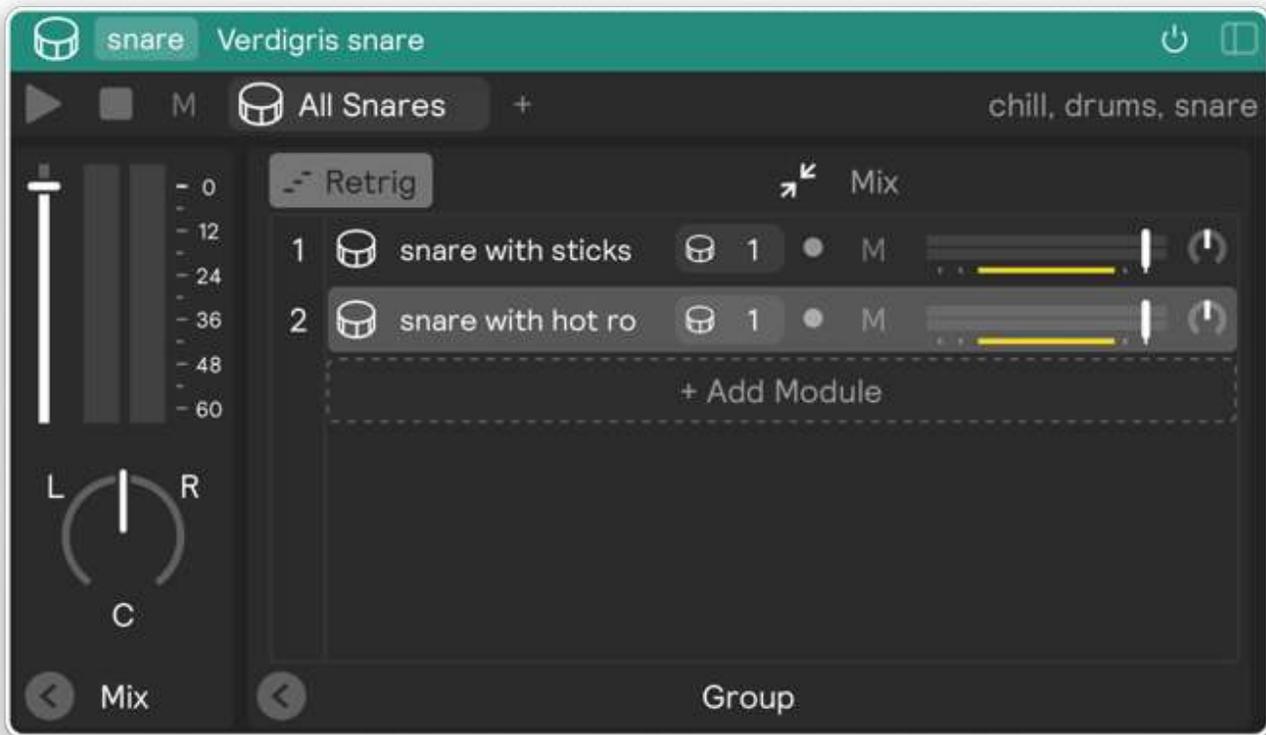
Instruments are Sunhouse presets encapsulated into drag-and-droppable and hot-swappable modules. They are a powerful way to quickly build out your working set with sounds from the Sunhouse Library.

For now, instruments are focused on the drumset and its components, but we have plans to expand to other types of instruments in the future.

! INFO

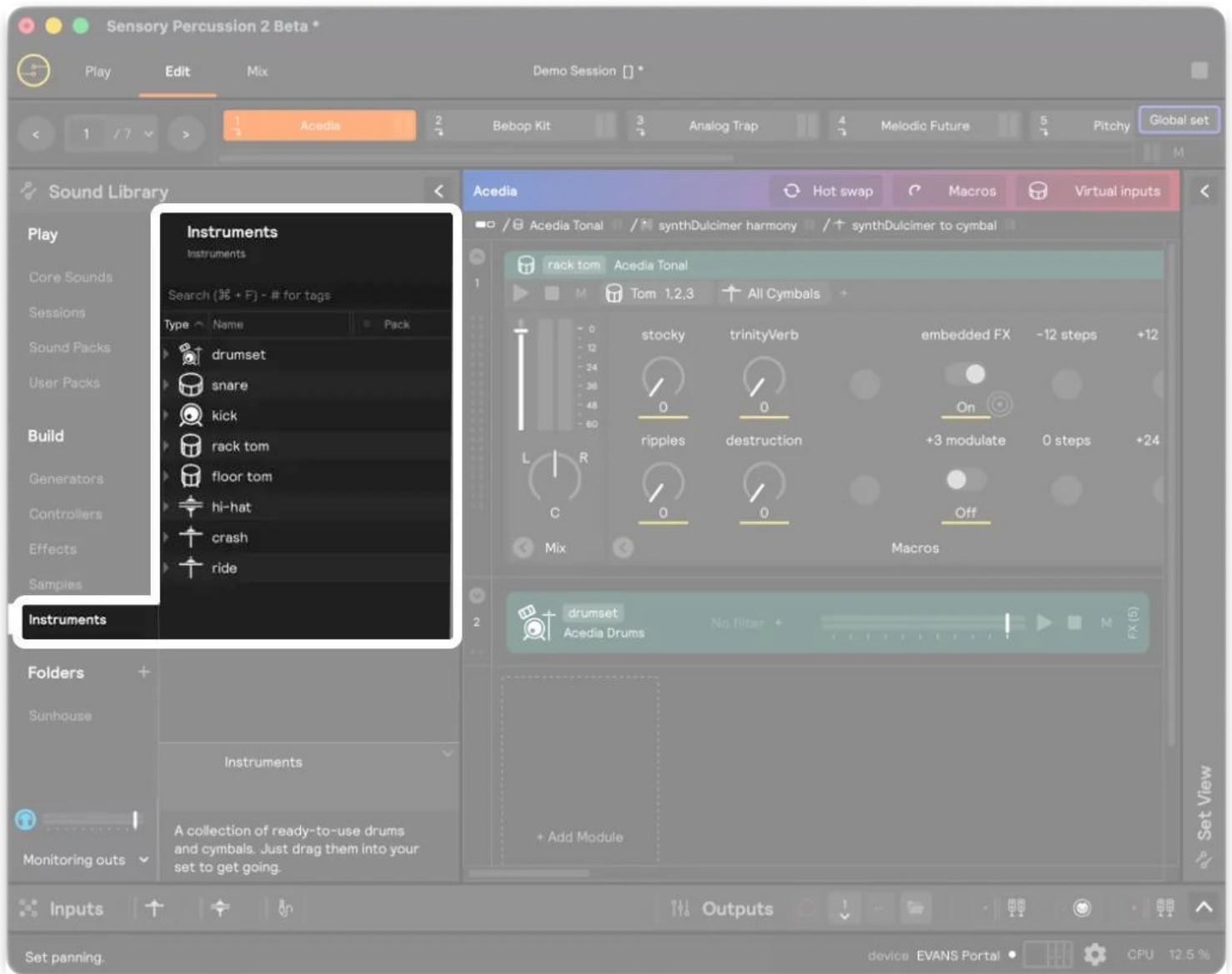
At this time only Sunhouse presets from the library can be instruments. We plan to let you create your own instruments in a future update, so stay tuned!

You can tell if a module is an instrument by the 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 instead of the normal module icon.



So what is the benefit of Instruments? Why not just build your set with presets like you always have? For one, Instruments are designed to be fully encapsulated and moveable. They don't rely on send effects or cross-control assignments to get their sound, so you can drag and drop them into your set and they will sound exactly like the preset in the library. This makes them a great way to quickly build out your set with presets from the library.

Dragging and Dropping Instruments



There are two ways to drag and drop Instruments into your set. You can drop the instrument directly onto your workspace in the Edit View, or you can drop it onto your virtual inputs. These have two different results.

If you drag an instrument into the layer workspace, it will be 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 will change to match the virtual input. So, for example, if you drag a Rack Tom Instrument onto your **Snare 1** virtual input, the input filter for the Rack Tom Instrument will be **Snare 1**, allowing that rack tom instrument to be played when you play the drum in your setup connected to **Snare 1**.

! INFO

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

Hot Swapping Instruments

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!

! INFO

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.



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.

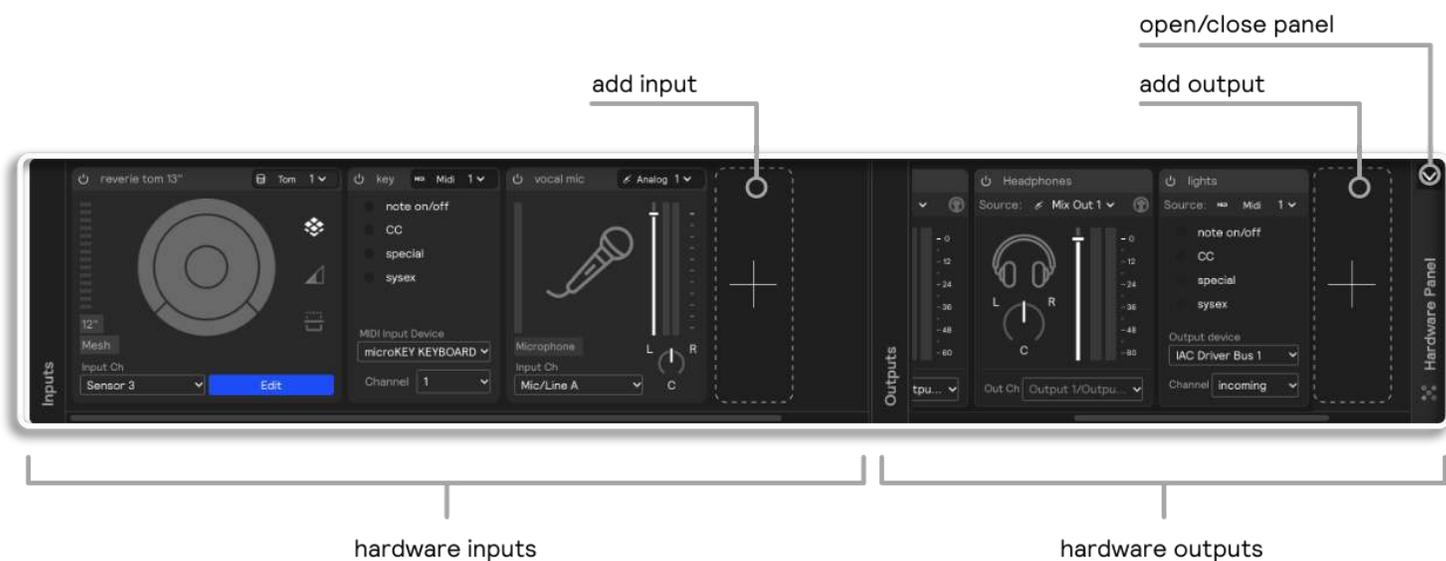
Exactly like in the Play View, you can hot swap with "next", "previous", or the drop-down. In the Edit View, the drop-down can be sorted either by "similarity" (based on character tags) or alphabetically.

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.



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 ten choices: 7 different [Sensor](#) types, [Analog](#), [Pads](#) or [MIDI](#).



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



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

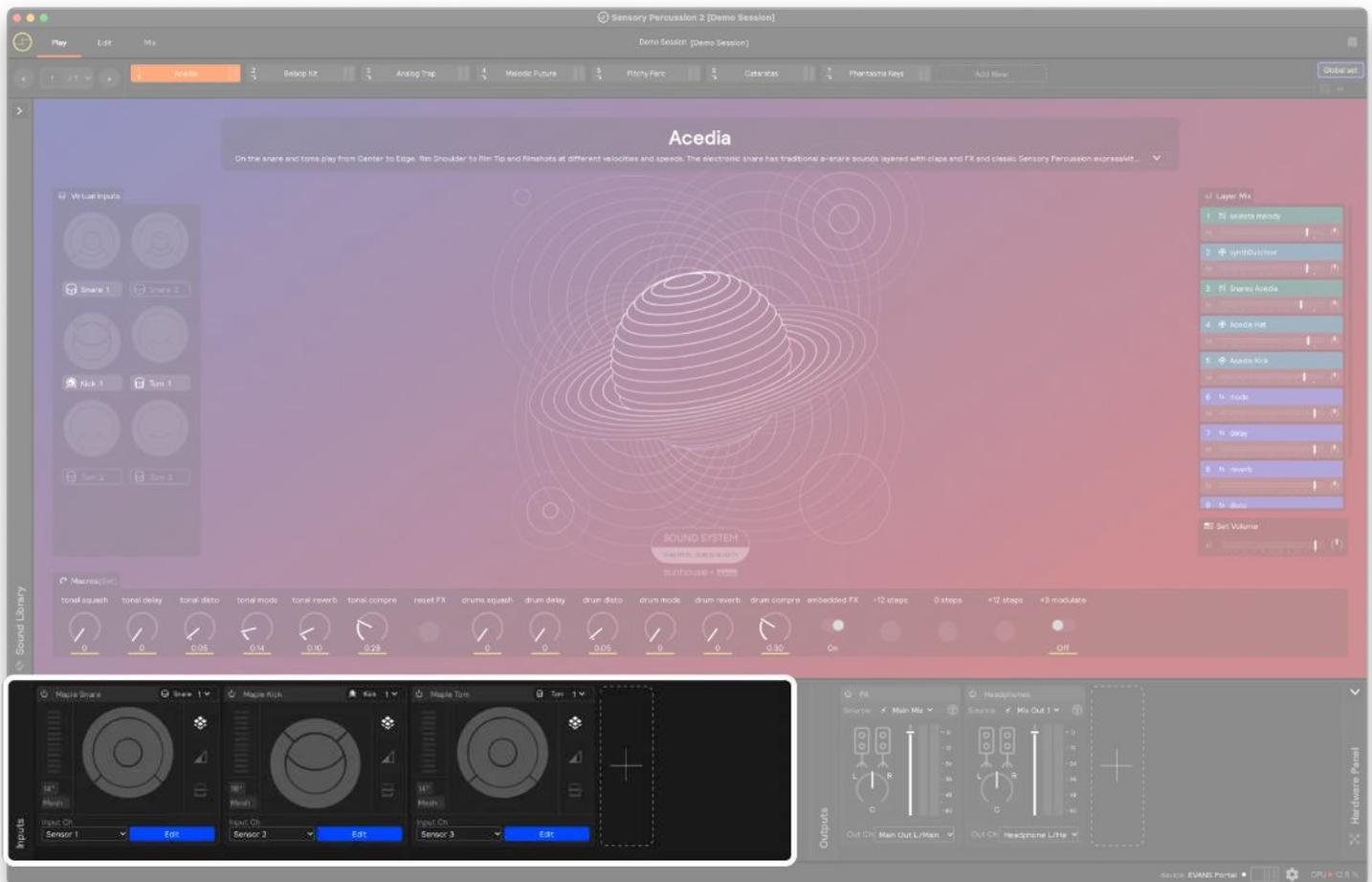
You can always delete a hardware input/output by selecting it and hitting the `delete` key.

Hardware Inputs

Hardware Inputs

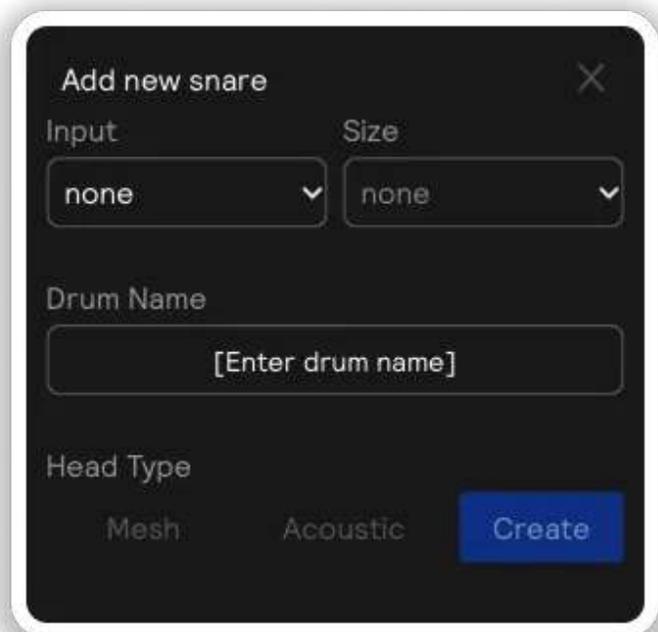
There are 10 hardware input types: 7 Sensor types, Analog, and 2 MIDI types. Sensors are the heart of the Sensory Percussion experience, so these inputs come with special controls to train the software to respond to your unique style of playing.

Analog inputs and MIDI inputs don't have these same features and are used in different ways throughout the software.



Drum Sensor Inputs

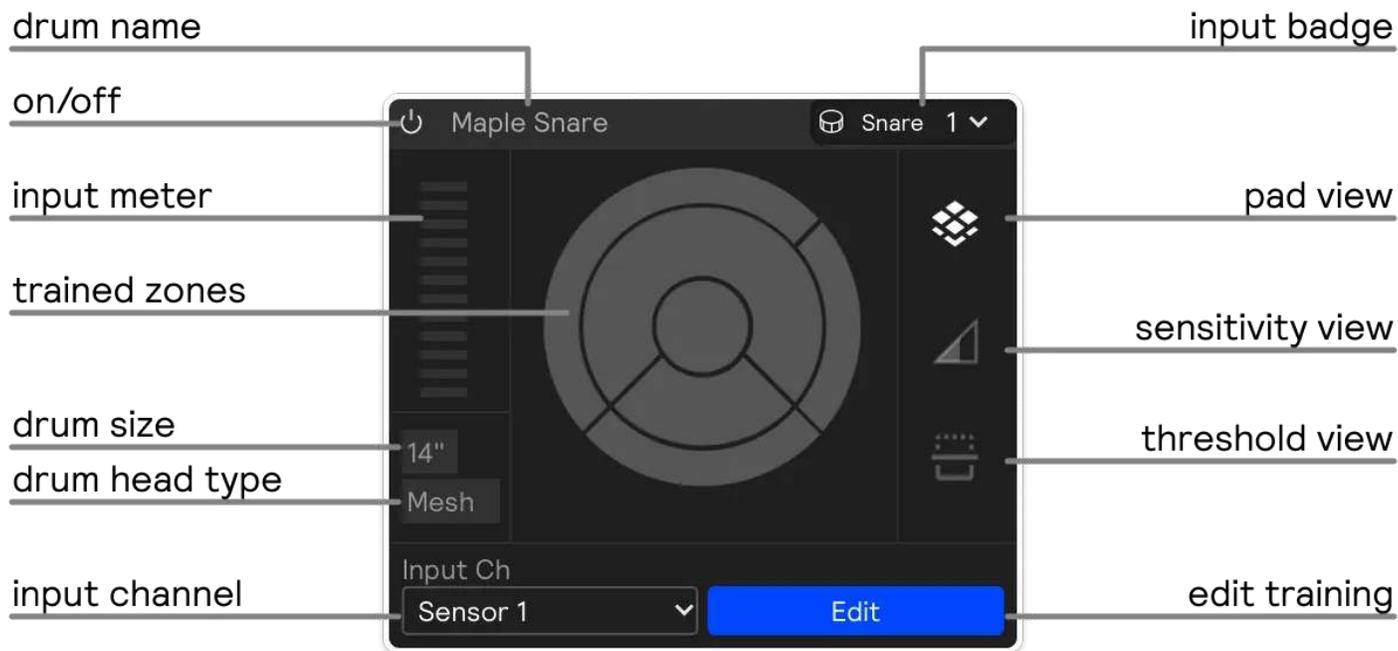
After choosing a Snare, Kick, Rack tom, or Floor tom sensor type from the add menu in the hardware inputs panel, you'll see a small form to fill out with some information about the drum you want to add. Some of this info will help us set the right default settings for that drum type, and some of the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



The image shows a dark-themed dialog box titled "Add new snare" with a close button (X) in the top right corner. The dialog contains the following fields and options:

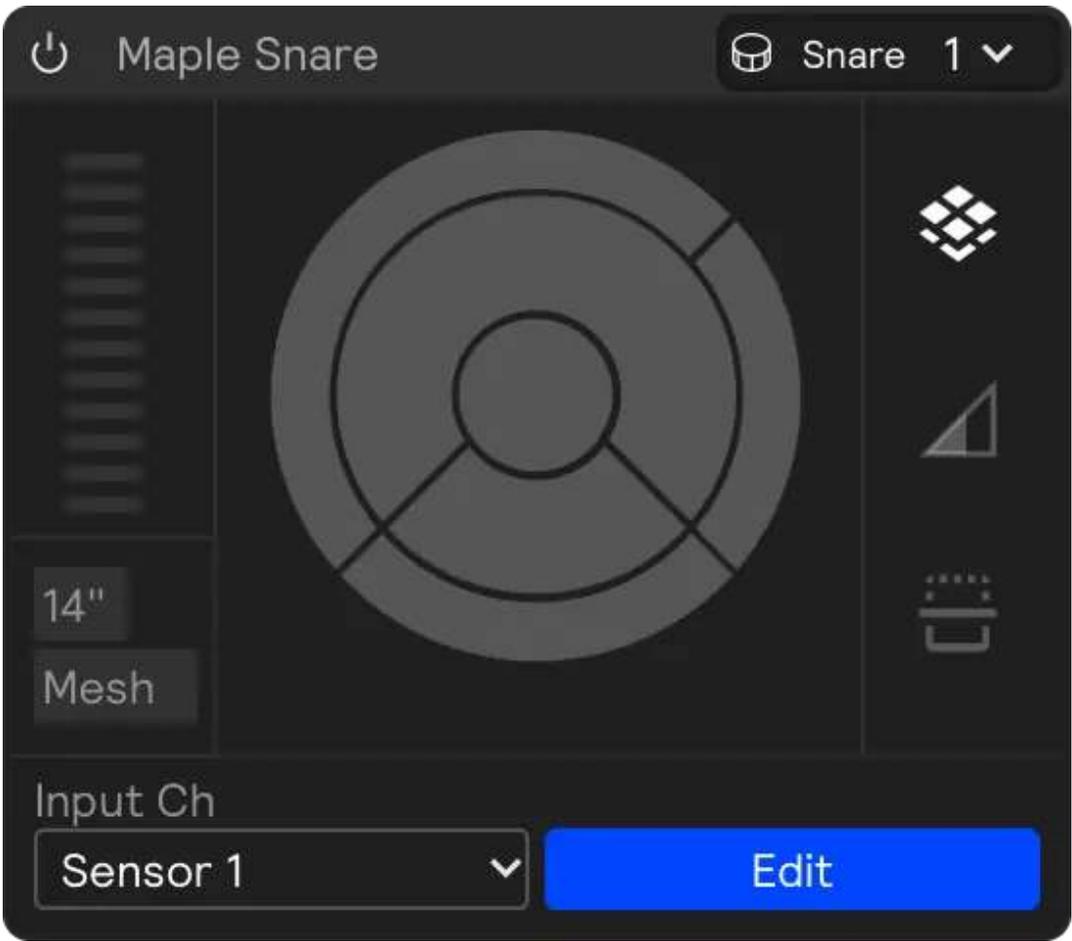
- Input:** A dropdown menu currently showing "none".
- Size:** A dropdown menu currently showing "none".
- Drum Name:** A text input field with the placeholder text "[Enter drum name]".
- Head Type:** Two radio button options: "Mesh" and "Acoustic".
- Create:** A blue button to confirm the creation of the drum sensor.

Sensor Input Parameters



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

Pads Sensitivity Threshold Untrained

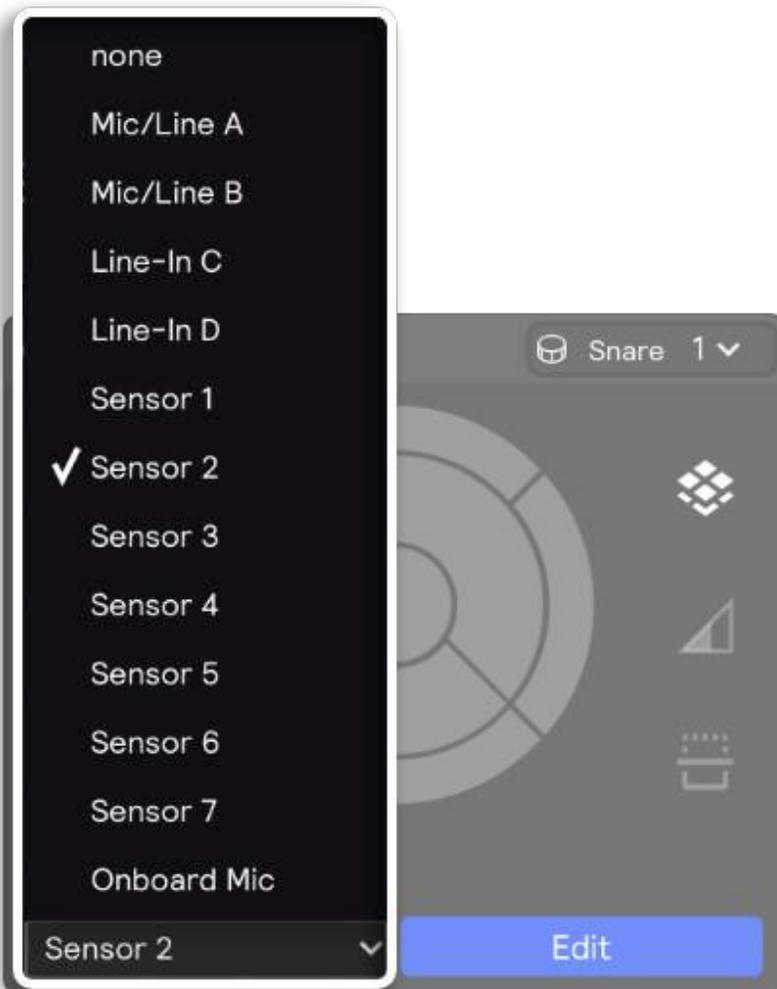


Drum Training

Training a Sensor Input

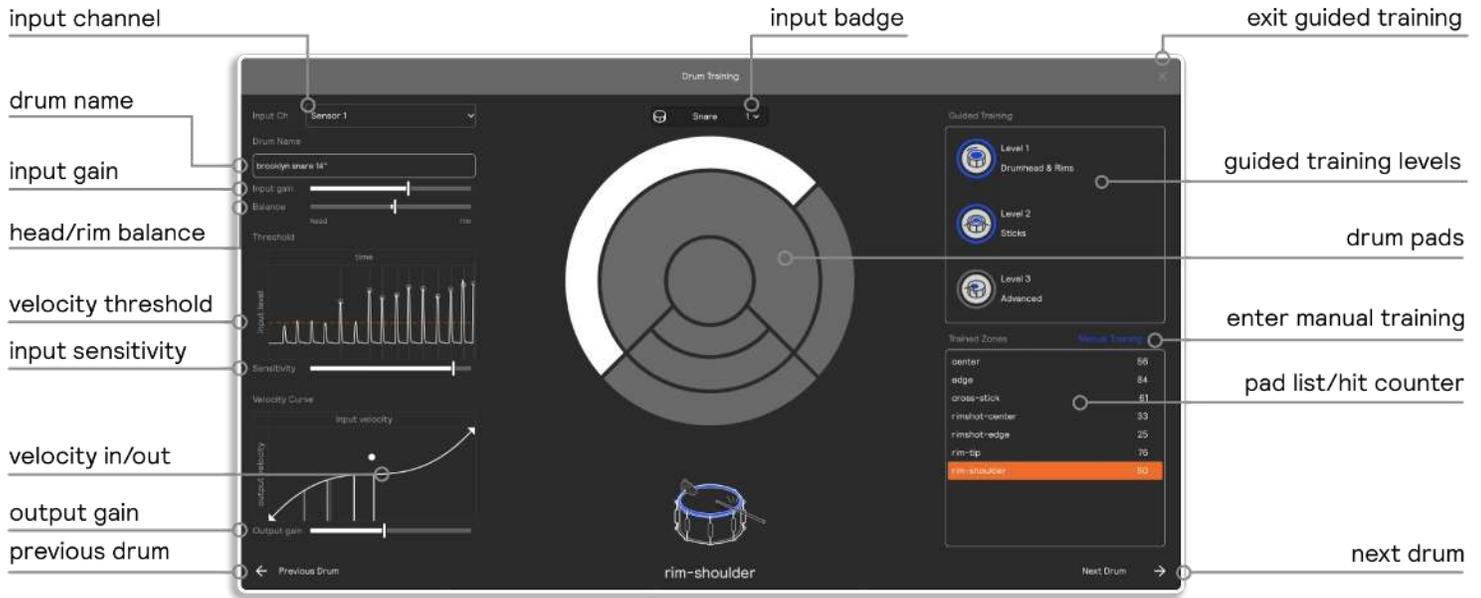
If you didn't train your drums through the Guided Setup, you can do so at any time by clicking the **Edit** button on the bottom-right of each Drum Sensor Input. This process teaches Sensory Percussion to recognize your playing on that particular drum. You only have to do it once per drum and it's a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



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

Training Window

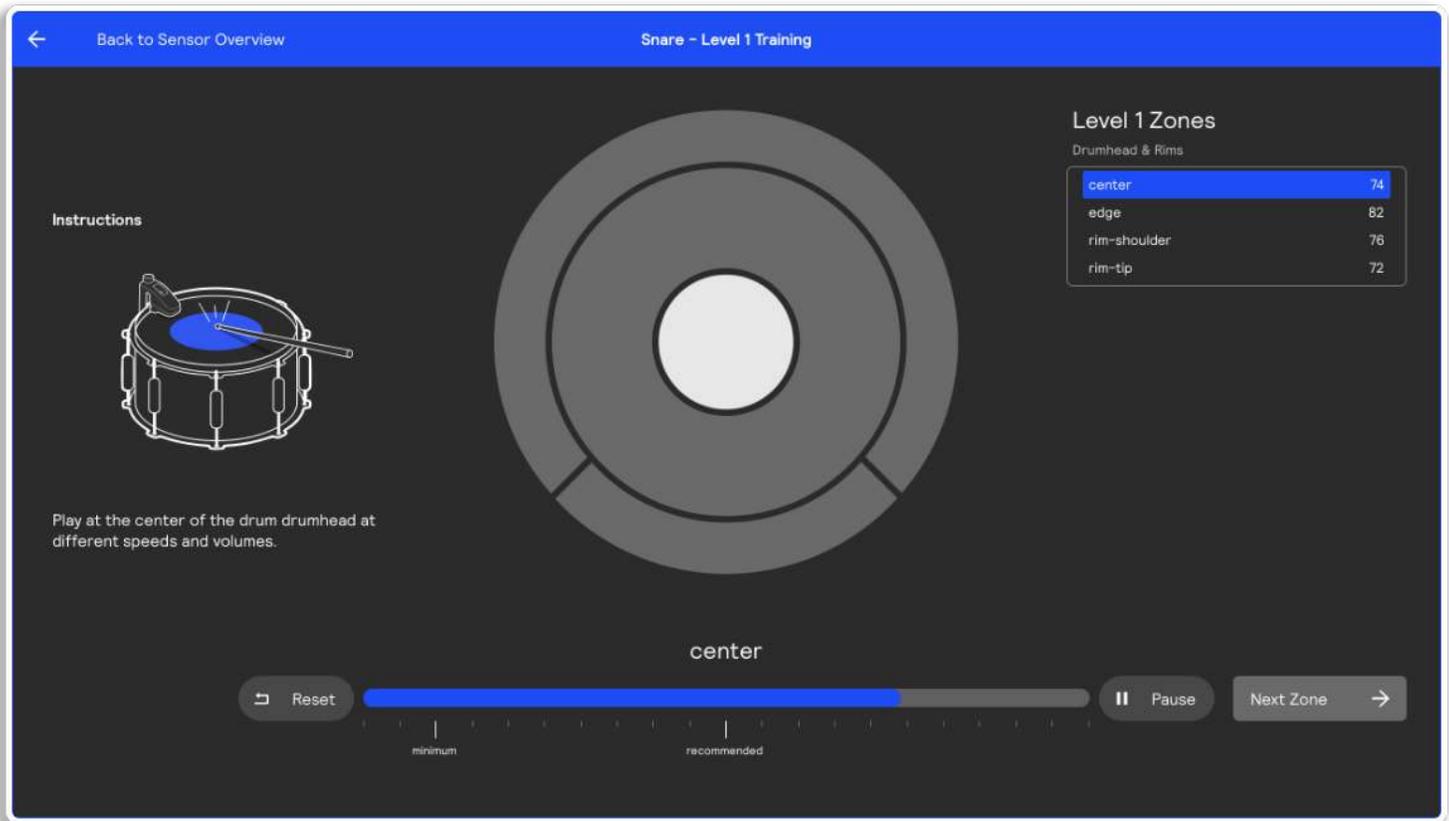


On the left side of the training page, you can manage various input parameters: channel, name, velocity i/o, threshold, and sensitivity.

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.



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.

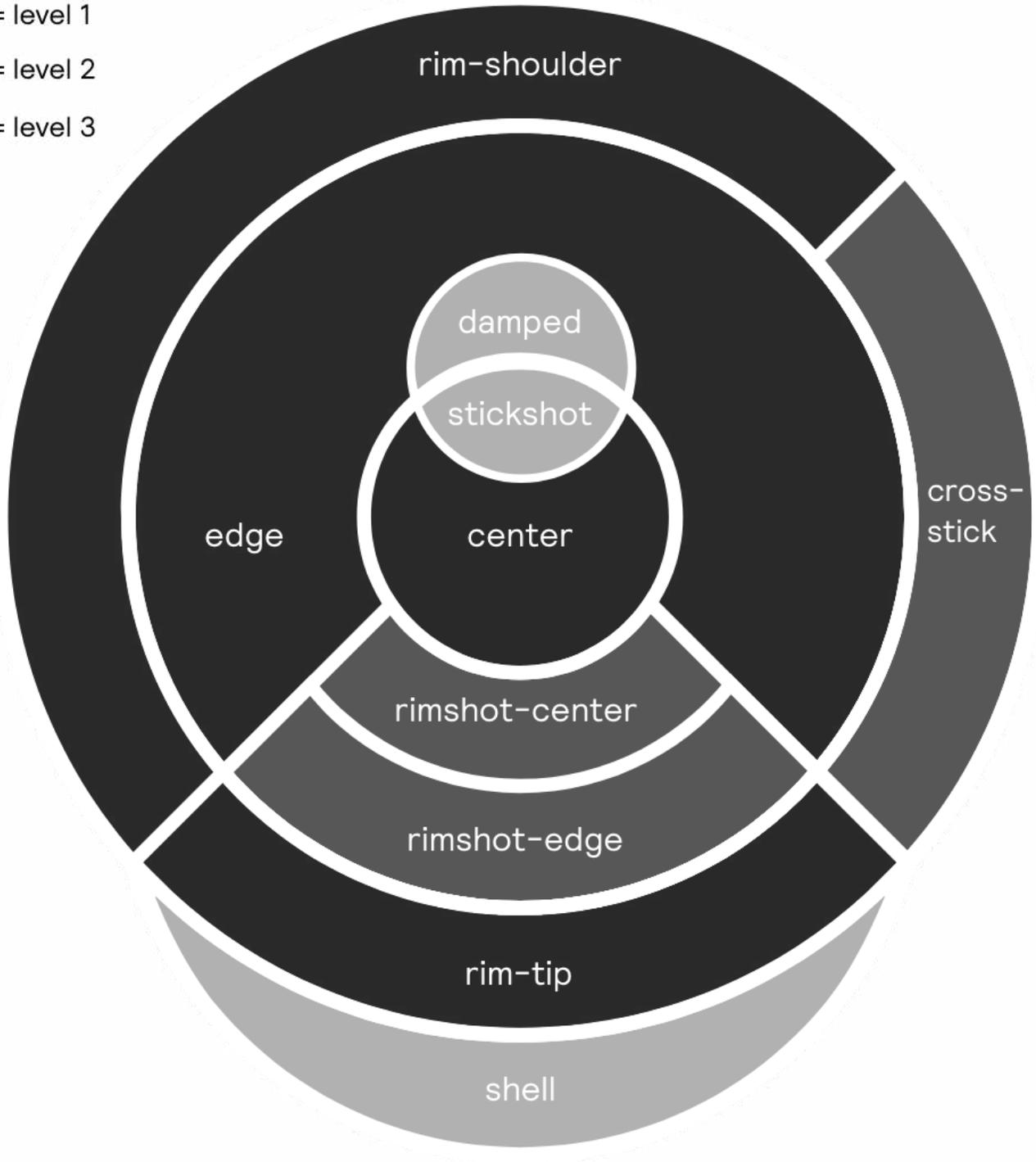
As you train a given zone, the blue progress bar on the bottom will fill up with each trained hit. Each zone has an indicated minimum and recommended number of hits to be accurately trained. If you make a mistake while training, you can hit the **Reset** button to delete your training. You can also hit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

Drum Zones by Level

Snare Zones

Kick Zones

- = level 1
- = level 2
- = level 3



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:

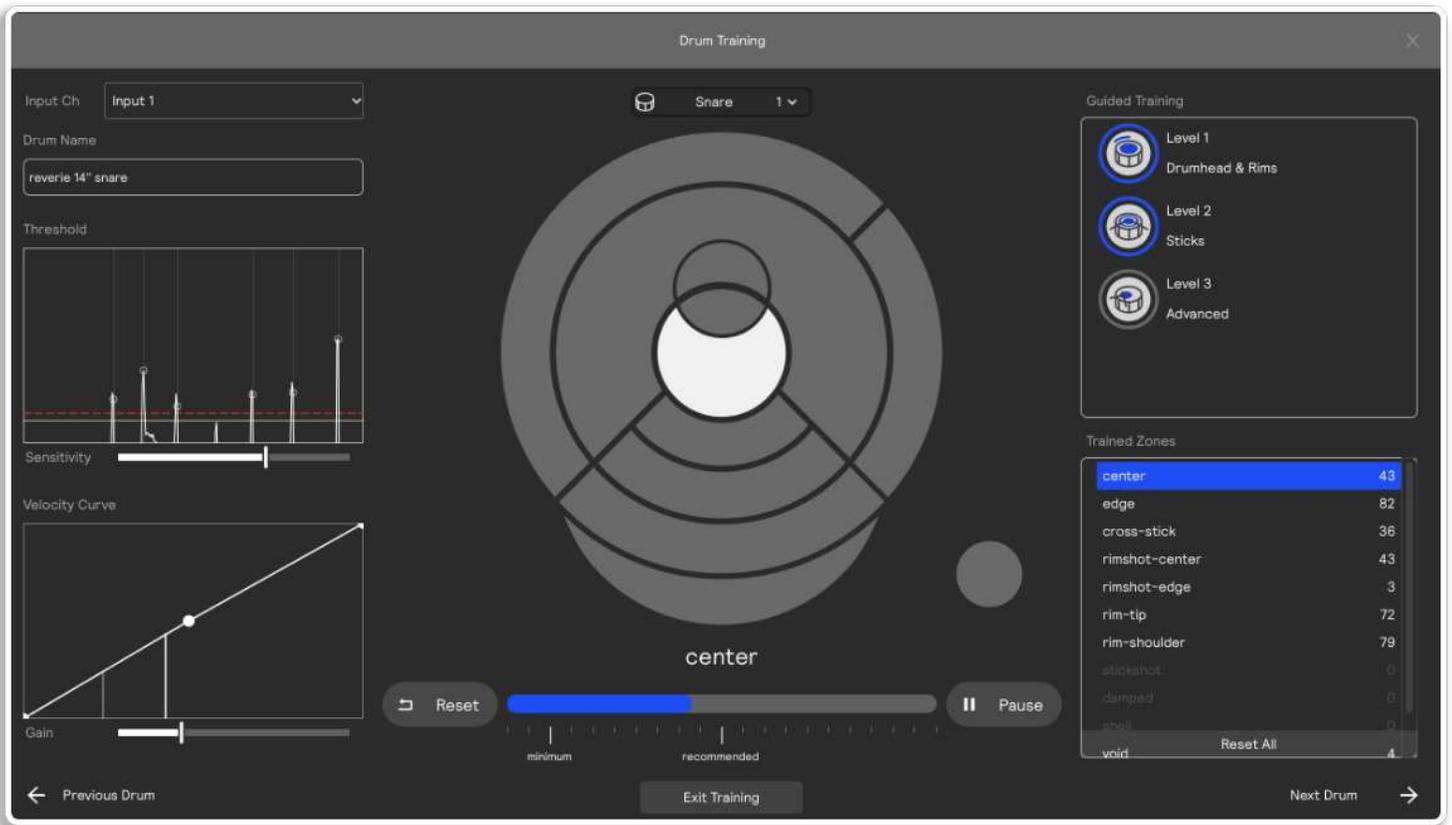
- Rimshot-center: a rimshot hitting the center of the drumhead
- Rimshot-edge: a rimshot hitting the outer perimeter of the drumhead
- Cross-stick: digging one end of the stick in the head while hitting the rim with the other.

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.

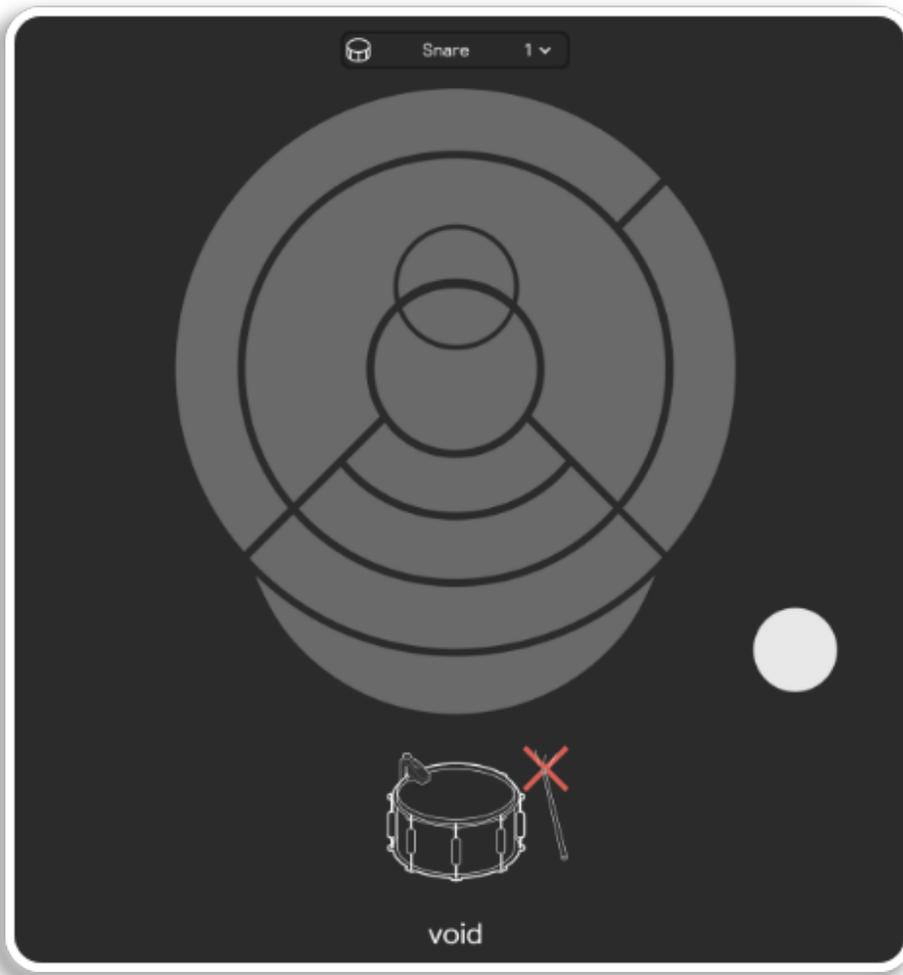
- Damped: playing the drum head while dampening it with the other hand
- Stickshot: digging one stick into the head and hitting it with the other
- Shell: hitting the side of the drum

Manual Training



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 appear white.

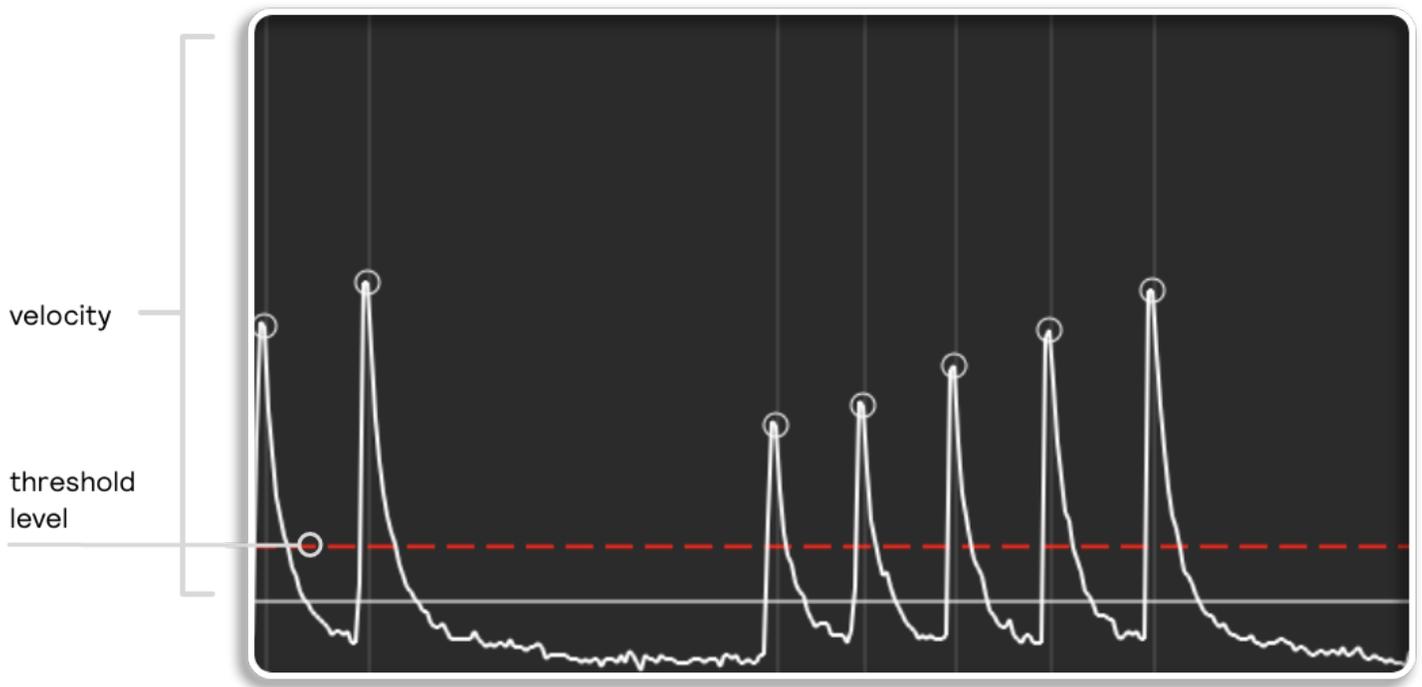
Void



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.

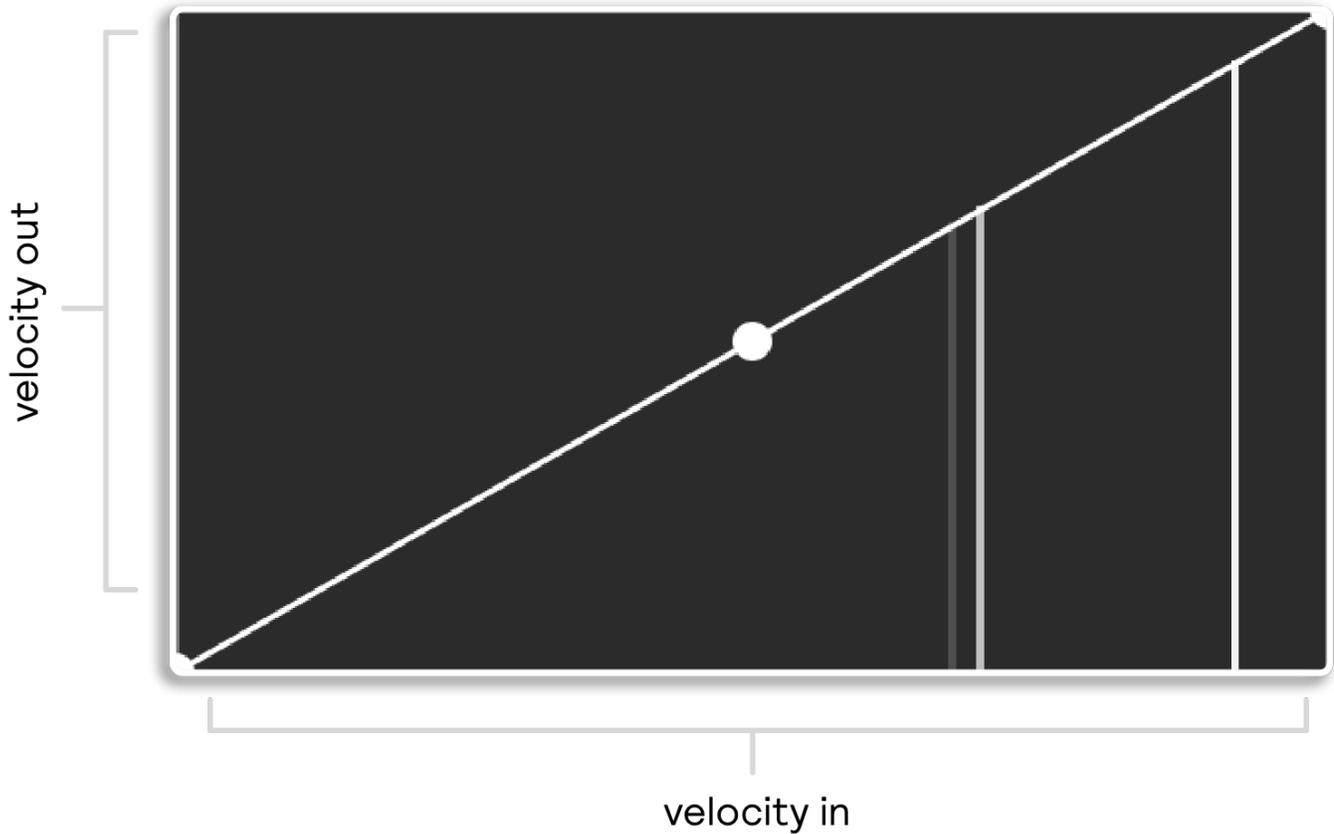
Void allows you to tell Sensory Percussion what to ignore. This is useful for dealing with unwanted cross-talk from a cymbal that's close to a sensor, for example. Select the Void zone and hit the cymbal to teach the software ignore it. But be careful not to overtrain the Void zone; a little goes a long 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.

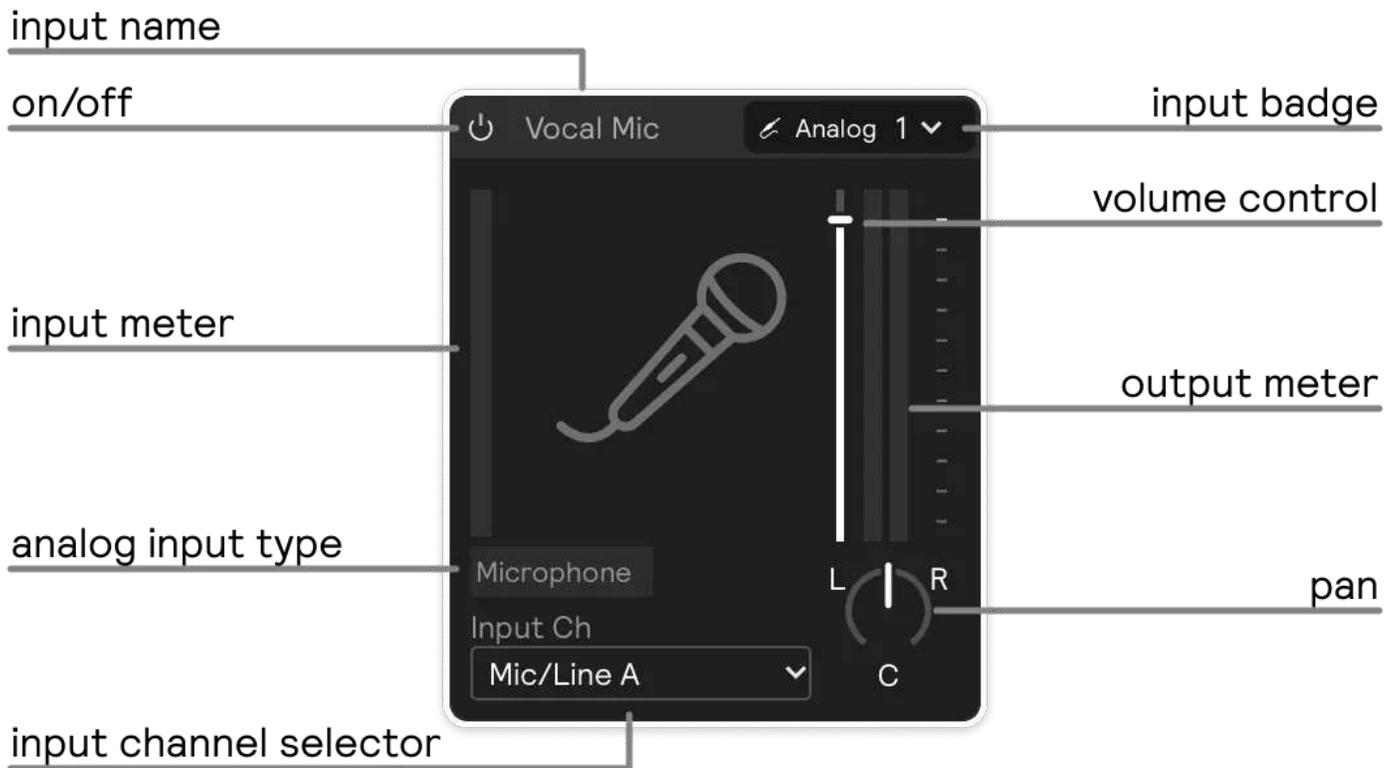
Sensitivity

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.

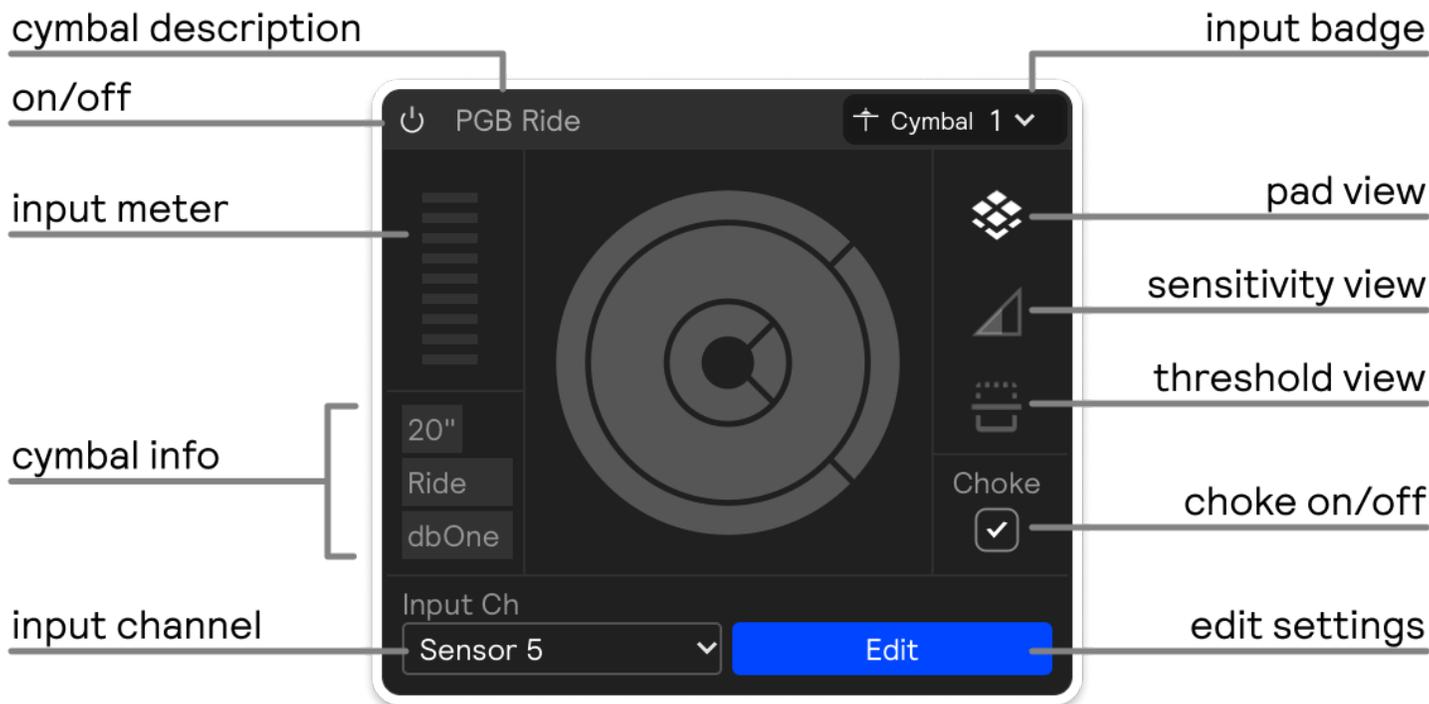
Cymbal Sensor Inputs

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.



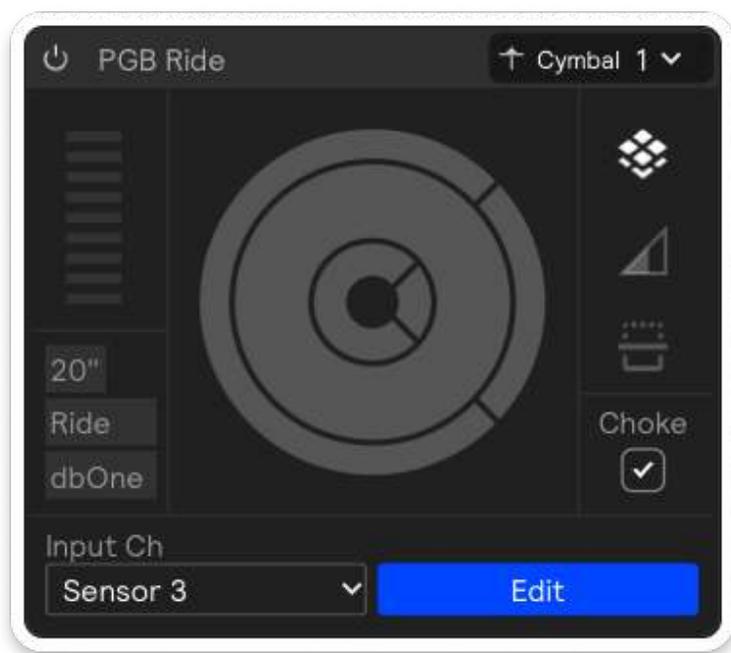
The image shows a dark-themed mobile form with a dashed white border. At the top, it says "Add new EVANS dB One Ride" with a close button (X) on the right. Below this are two dropdown menus: "Input" with "none" selected and "Type" with "20\"" selected. Underneath is a text input field labeled "Cymbal Name" containing the placeholder "[Enter cymbal name]". At the bottom is a blue button labeled "Create".

Sensor Input Parameters



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

Pads Sensitivity Threshold



Hi-hat Sensor Inputs

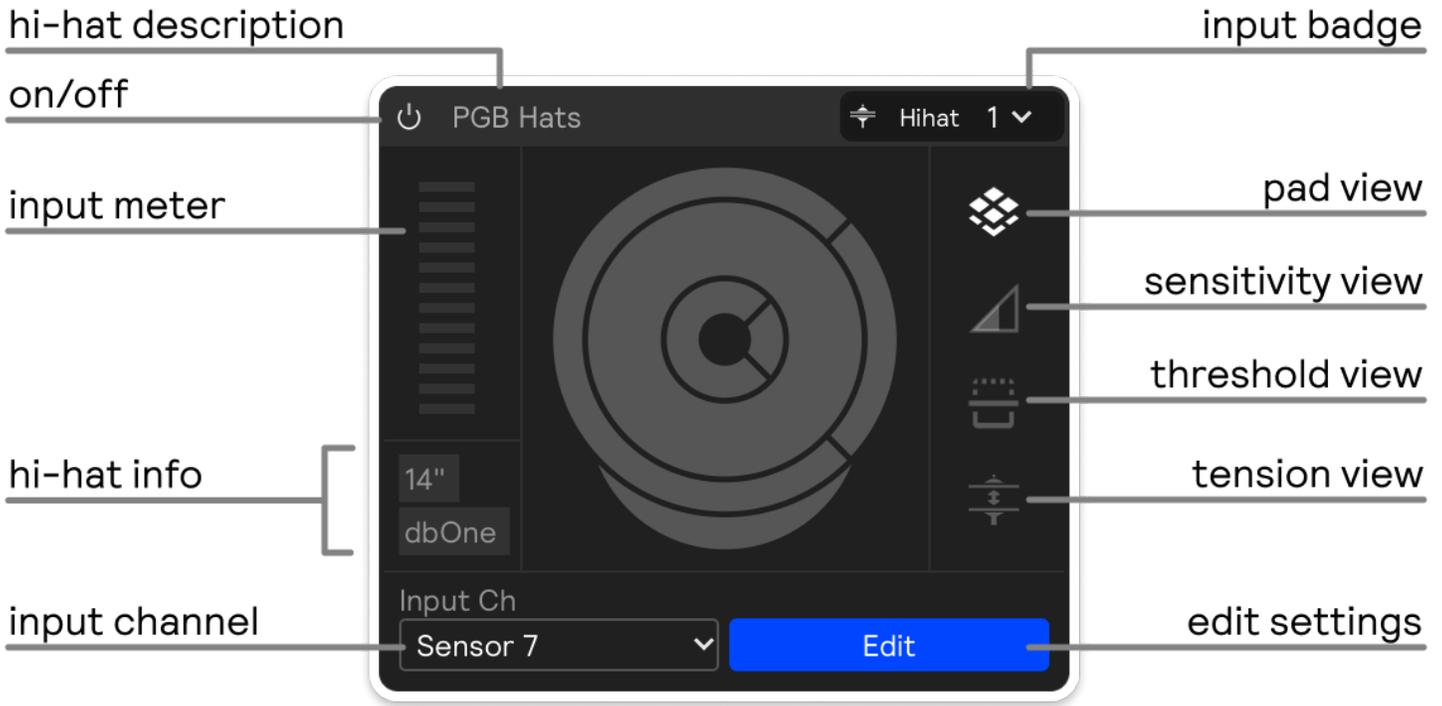
After choosing a Hi-hat sensor type from the add menu in the hardware inputs panel, you'll see a small form to fill out with some information about the Hi-hat you want to add. Some of this info will help us set the right default settings for that cymbal type, and some of the info is just for you to keep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



The image shows a dark-themed modal form titled "Add new EVANS dB One Hi-hat" with a close button (X) in the top right corner. The form contains the following fields:

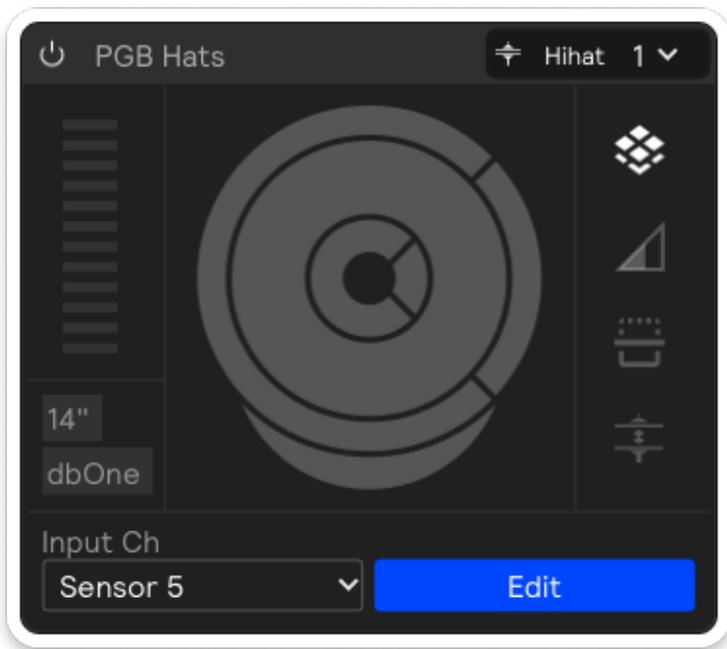
- Input:** A dropdown menu with "none" selected.
- Type:** A dropdown menu with "14\"" selected.
- Hi-hat Name:** A text input field with the placeholder text "[Enter hi-hats name]".
- Create:** A prominent blue button at the bottom of the form.

Sensor Input Parameters



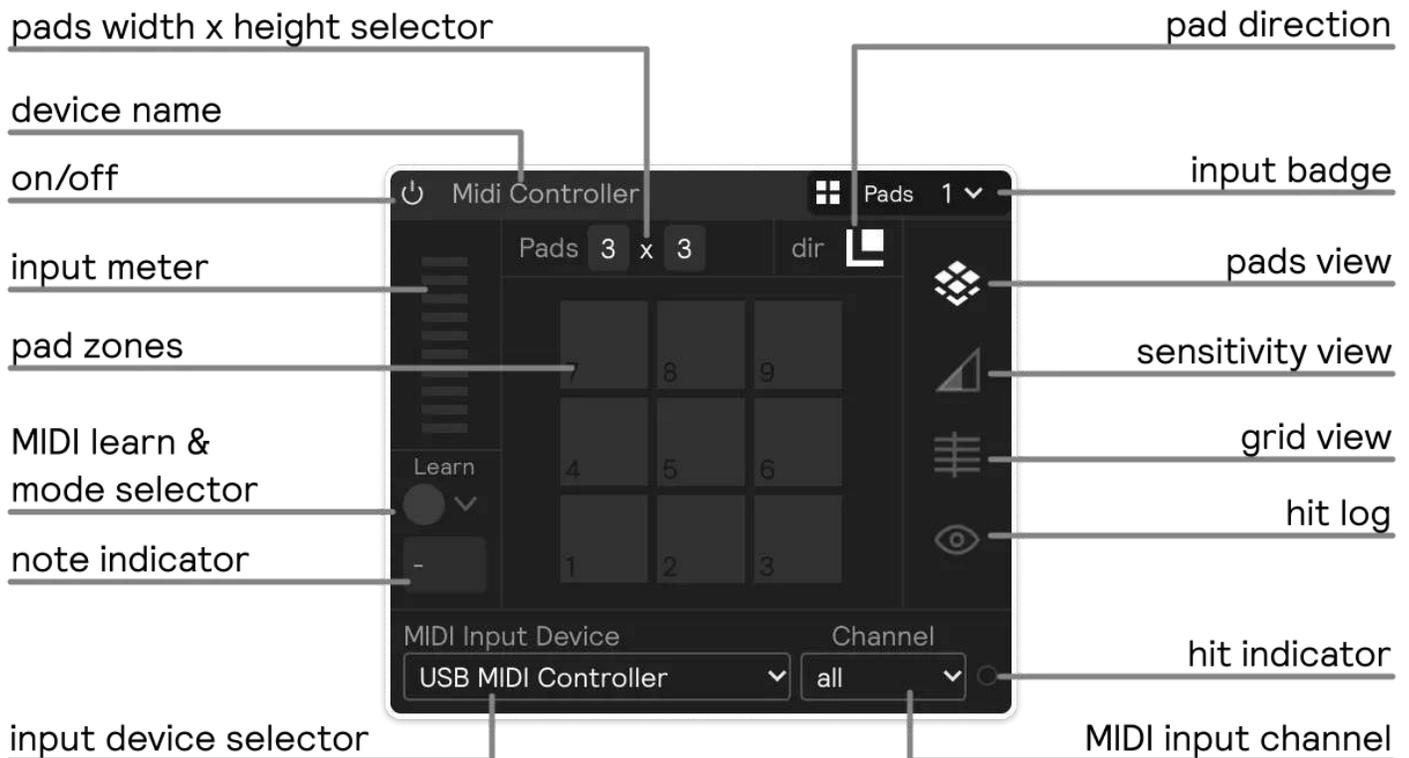
On the right side of the sensor input, you can toggle between Pads, Sensitivity, Threshold, and Tension views:

Pads Sensitivity Threshold Tension



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 SPDSX, or even an E-Kit). 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 Inputs.



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.

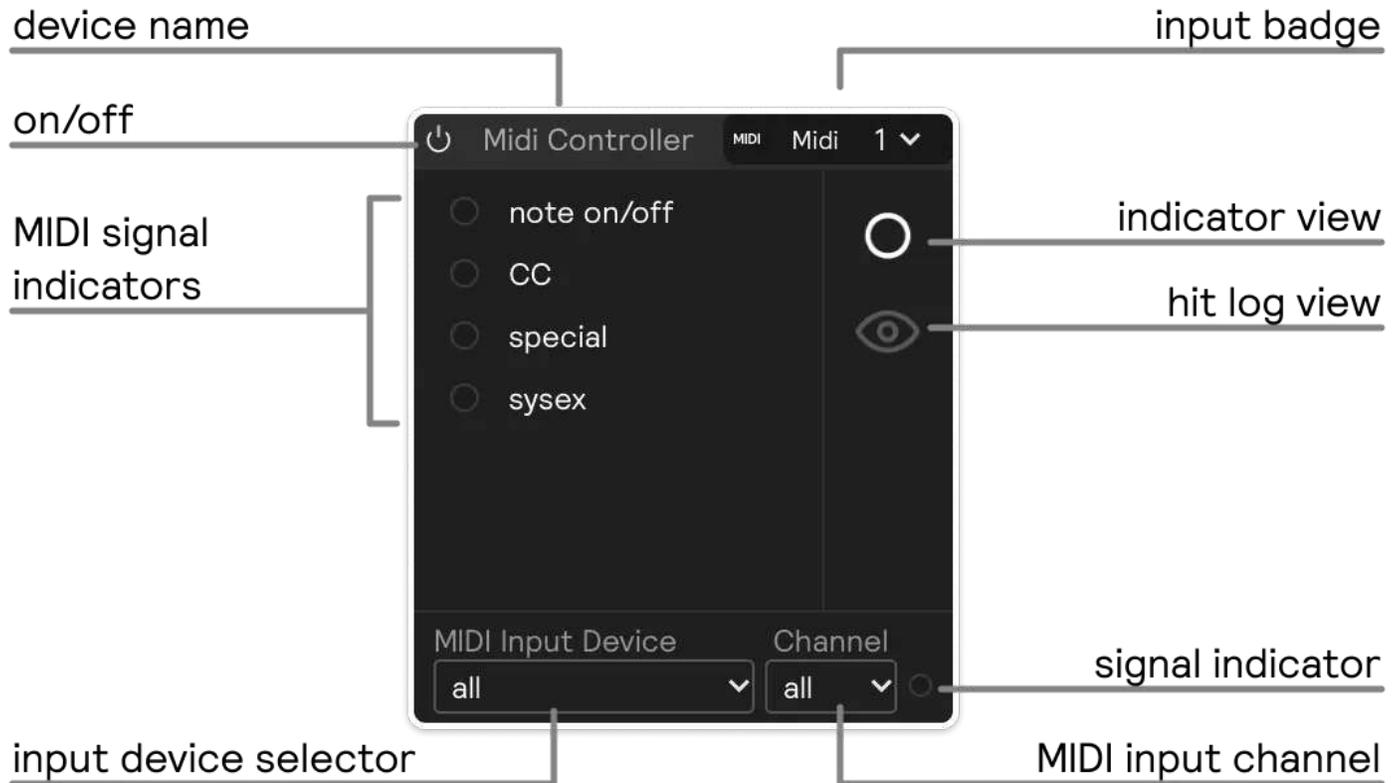
Just like any layer/module in the software, the Grid Pads can be filtered by the input badge of a Hardware input, so make sure your Grid Pads device filter either shows `All Pads`, or matches the badge number of the Pads Input device.

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 Sensitivity Table Log



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

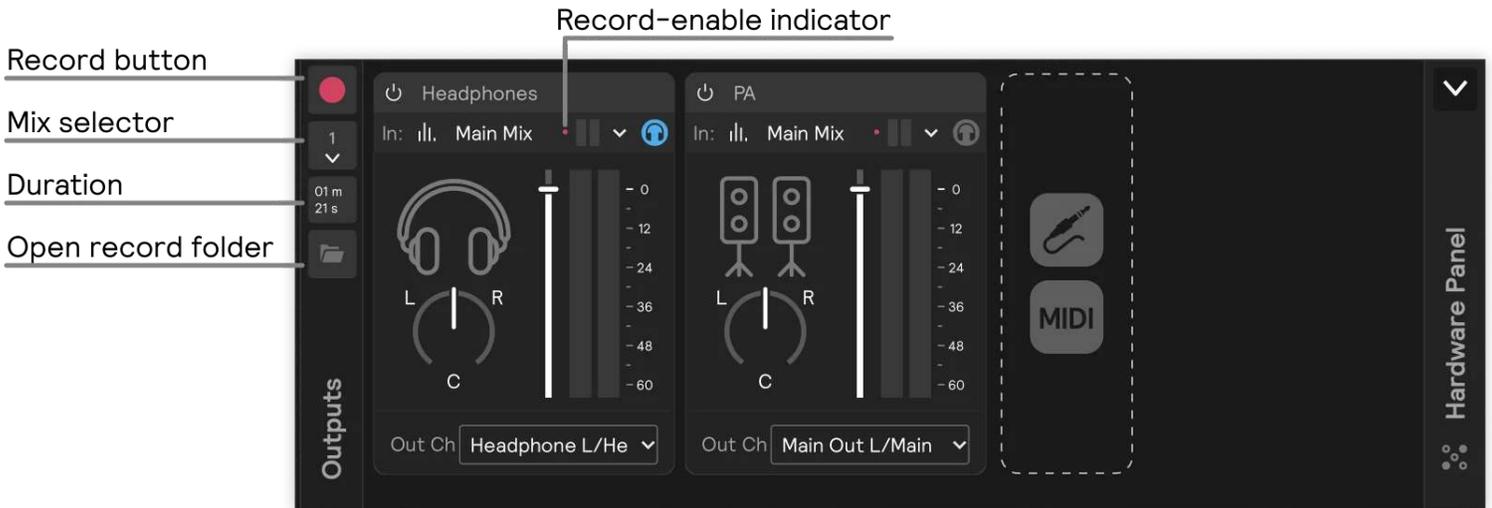
The hardware outputs panel outputs panel has two kinds of outputs: **Analog** and **MIDI**. Analog outputs allow you to route Sensory Percussion's audio to any available physical outputs (stereo or mono) of your audio interface. For example, you can set up an output for your headphones and another for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



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.

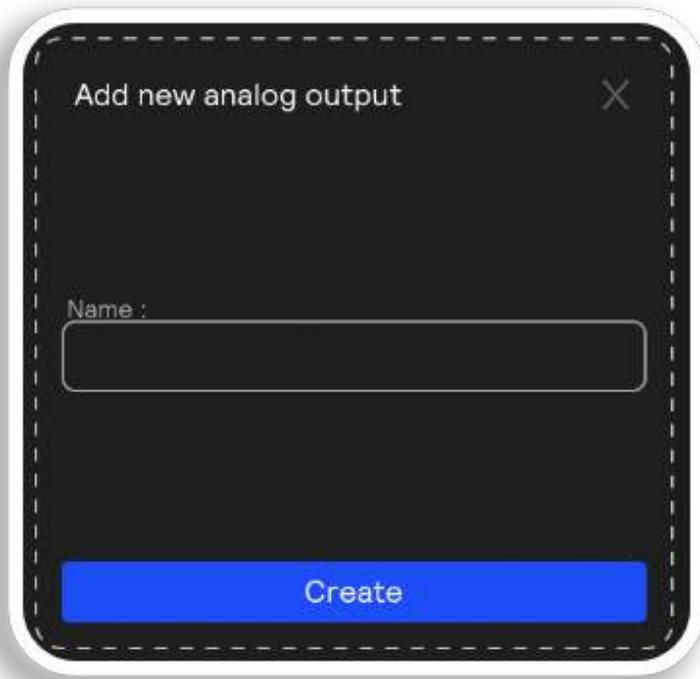
Analog Outputs

An overview of analog hardware outputs.

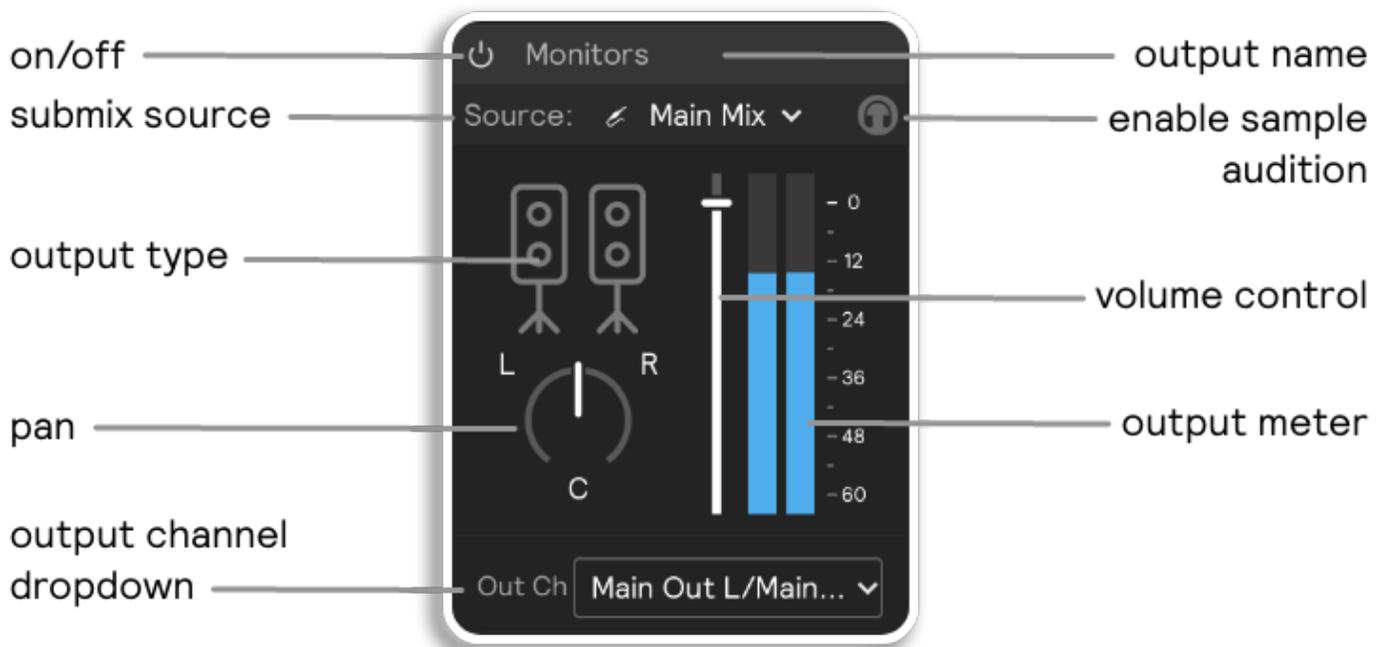
MIDI Outputs

An overview of MIDI hardware outputs.

Analog Outputs

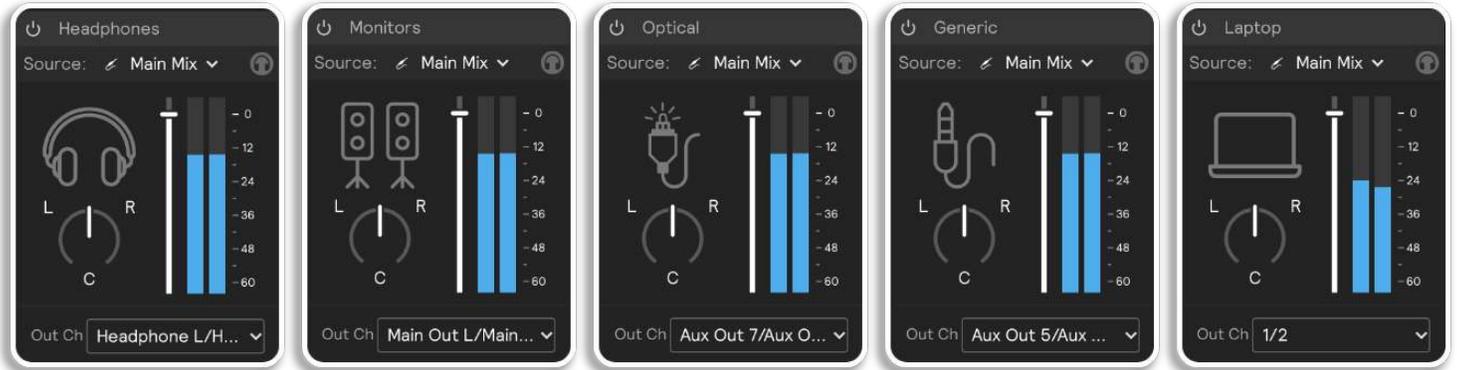


For monitoring sound out of headphones or speakers, you'll want to select create an Analog Output. When you do, you'll be prompted to name the output.



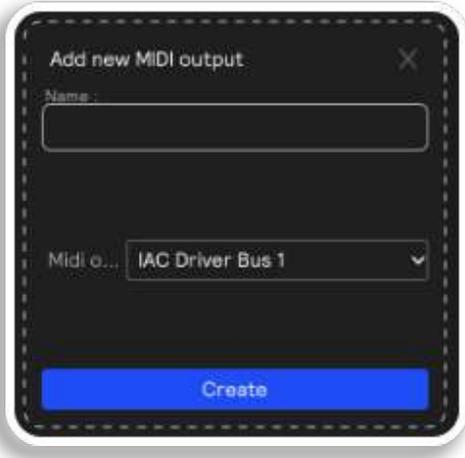
Once you've named and created the new output, select the output channels from your interface you want to use from the dropdown. Now you are routing stereo or mono audio from Sensory Percussion to the physical outputs of your audio interface.

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:



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



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.

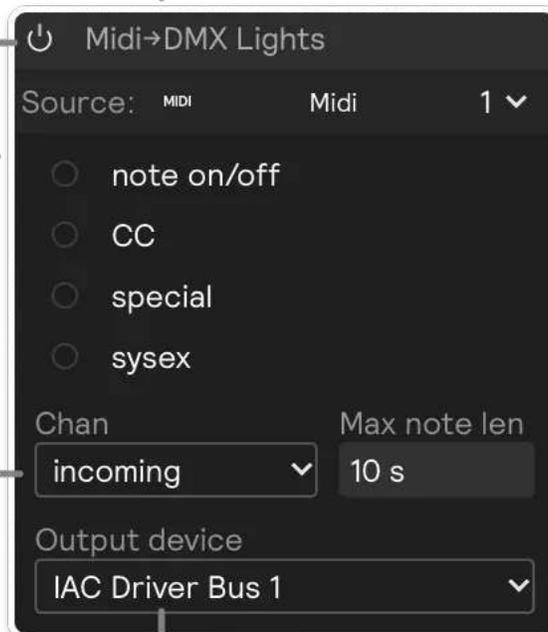
device name

on/off

MIDI signal indicators

output channel

output device selector



input source

max note length

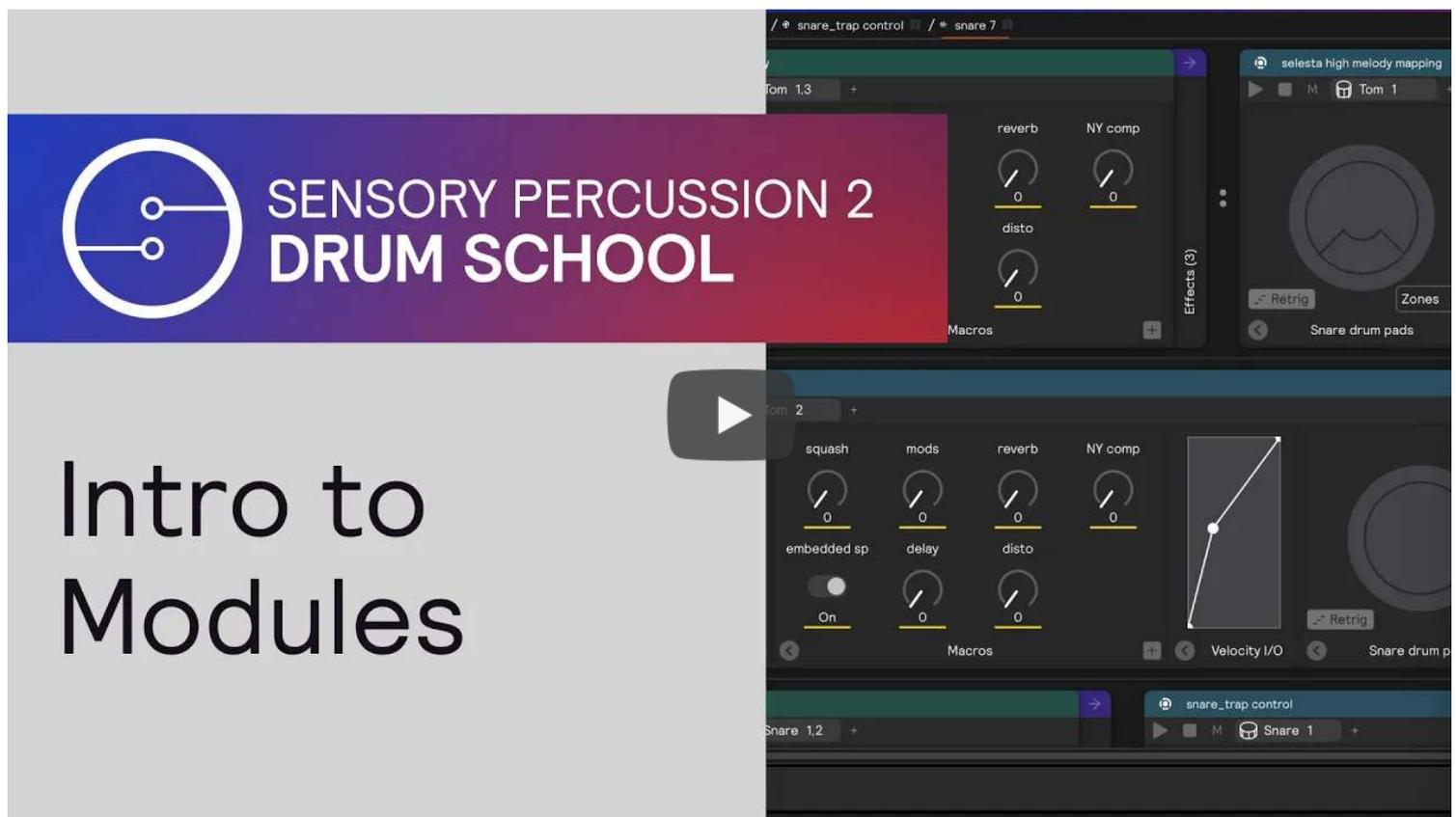
MIDI hardware outputs allow you to send different types of MIDI messages out of Sensory Percussion and into other programs that accept MIDI. The possibilities are pretty endless with MIDI; use it to control visuals from the drums, play back music you've created in other software, or control a host of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

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 [software concepts](#) section.

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



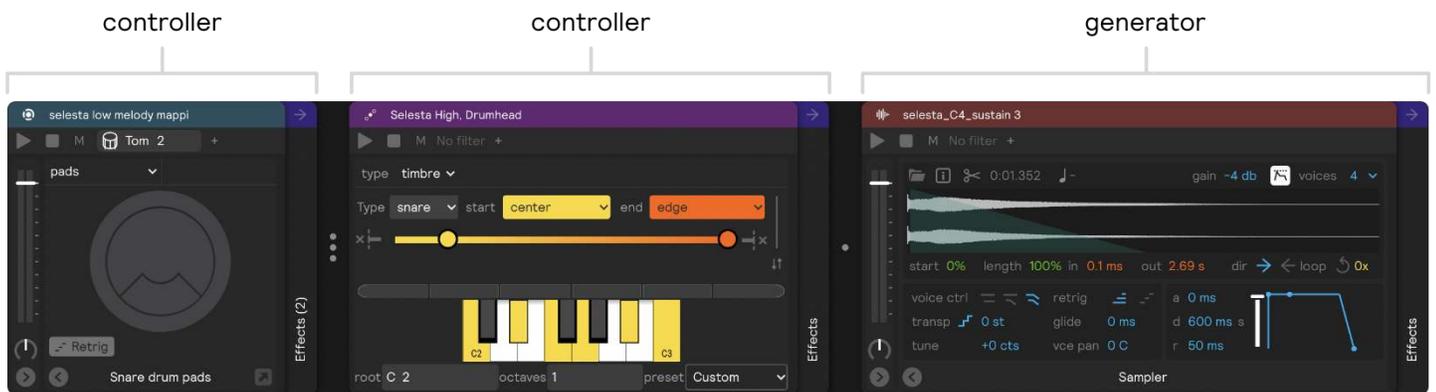
Controllers

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 kind of 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

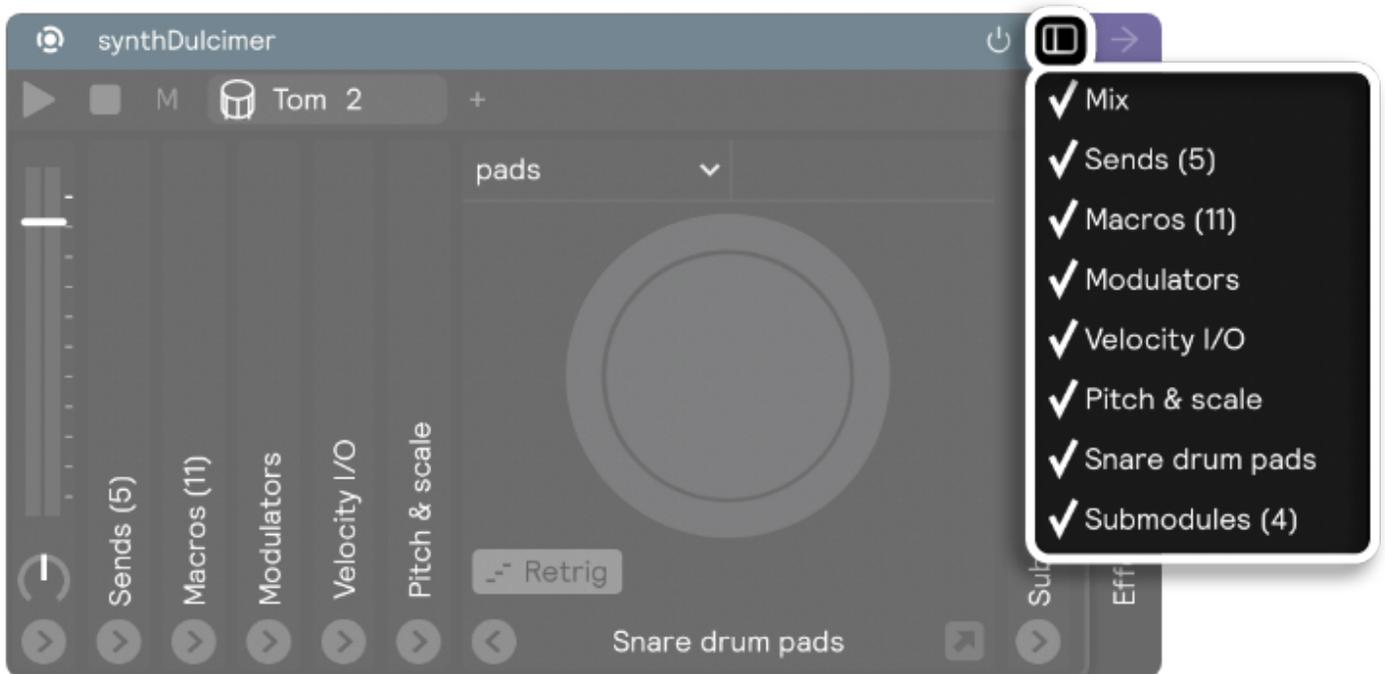
If you find that you need to set the *same* value to the *same* parameter across multiple different modules, you can save time with `copy value to siblings`. Set the parameter on one module, then right-click on the parameter and select `copy value to X siblings`. Then the value will be copied to all of the matching parameters within the same parent module.

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.



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



For more information on the different panels, check out the [Panels](#) page.

Input Filtering

An explanation of how input filtering works

Panels

9 items

Generators

3 items

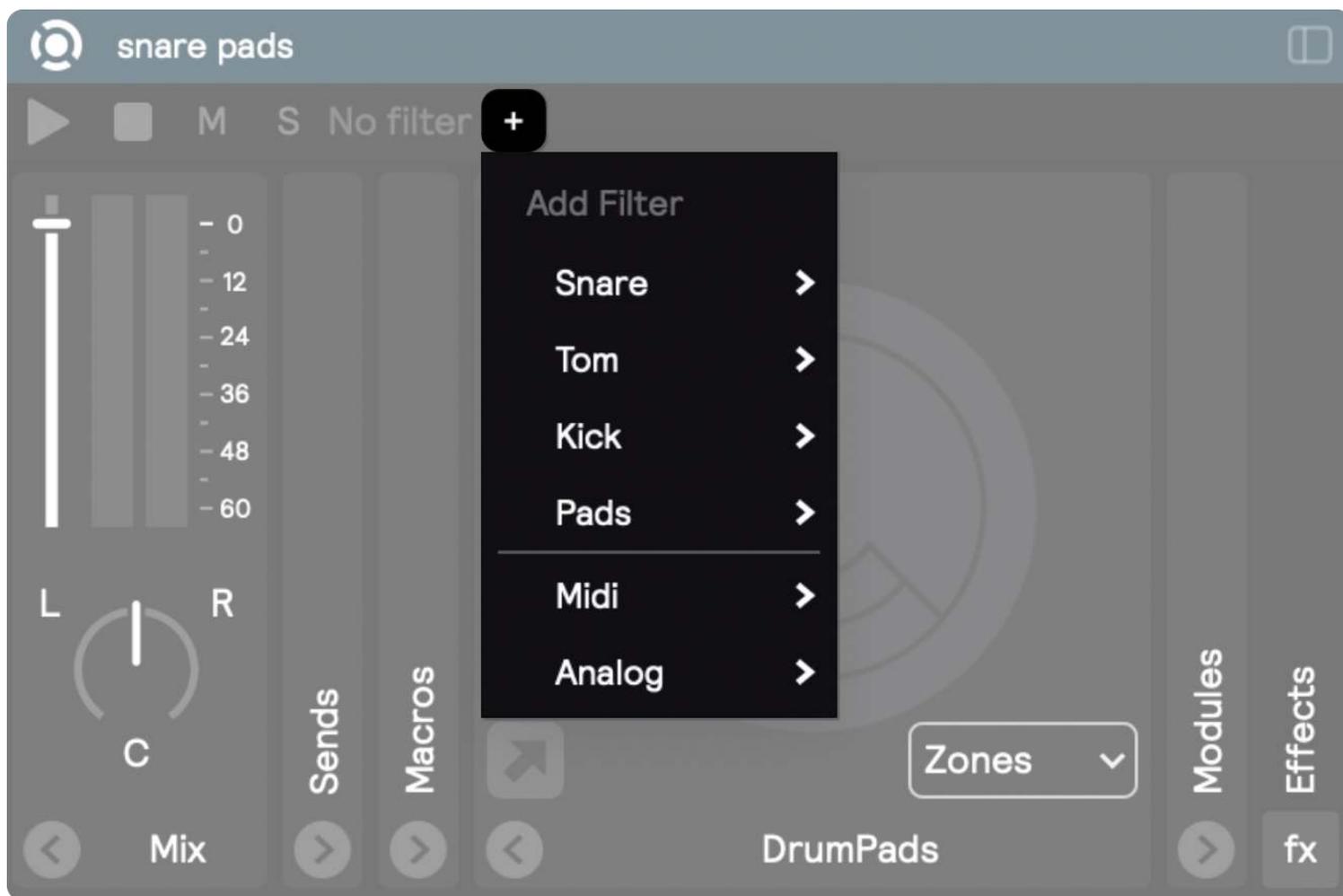
Controllers

10 items

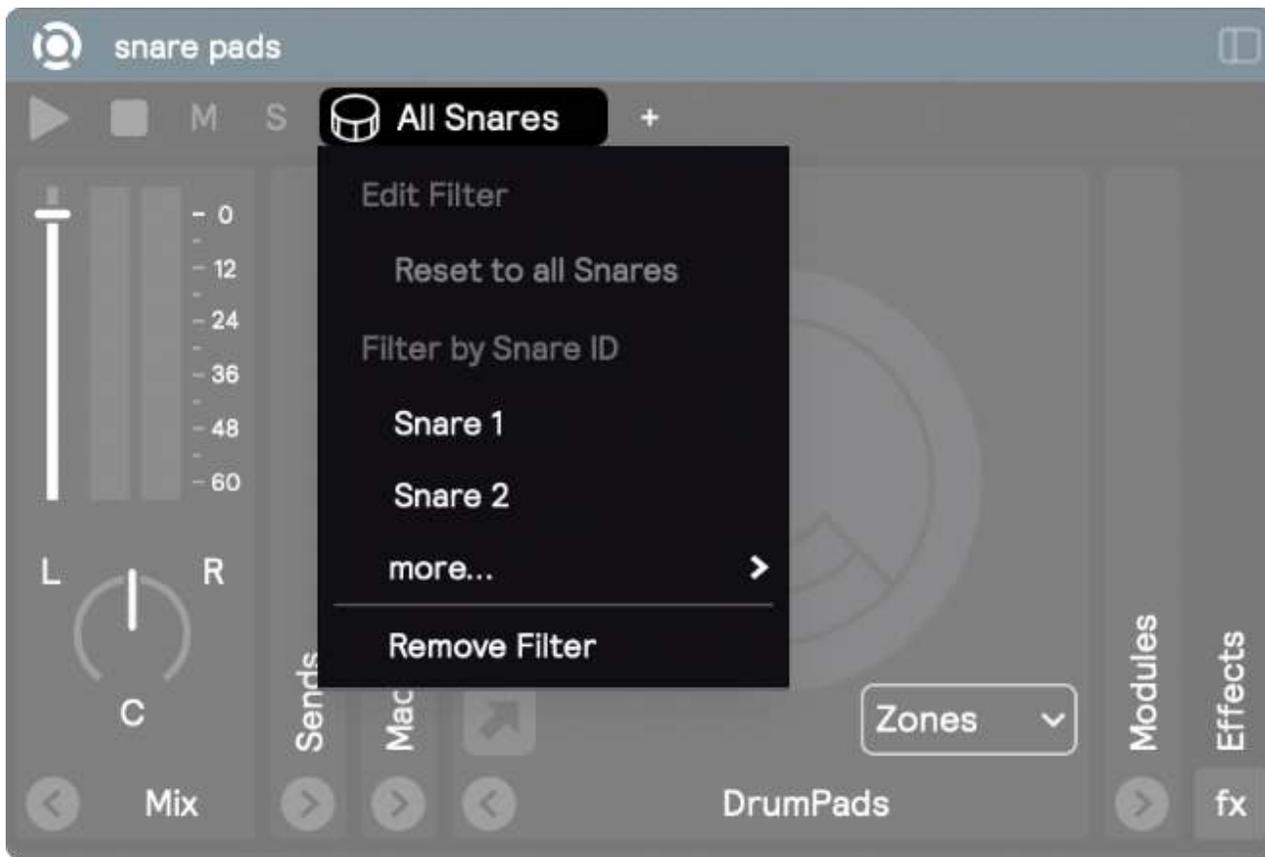
Input Filtering

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.

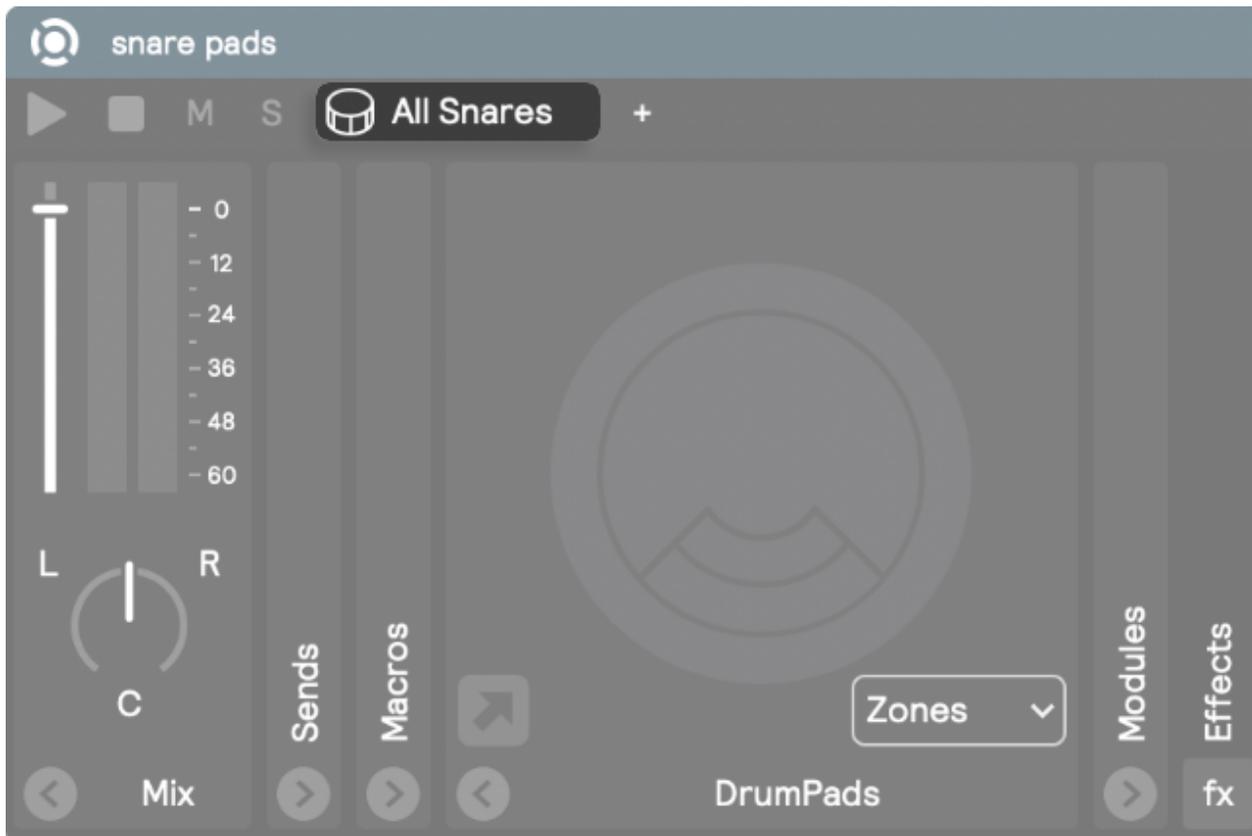
To add an input filter to a module, simply click on the sign and then select what type of filter you want to add.



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.



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.

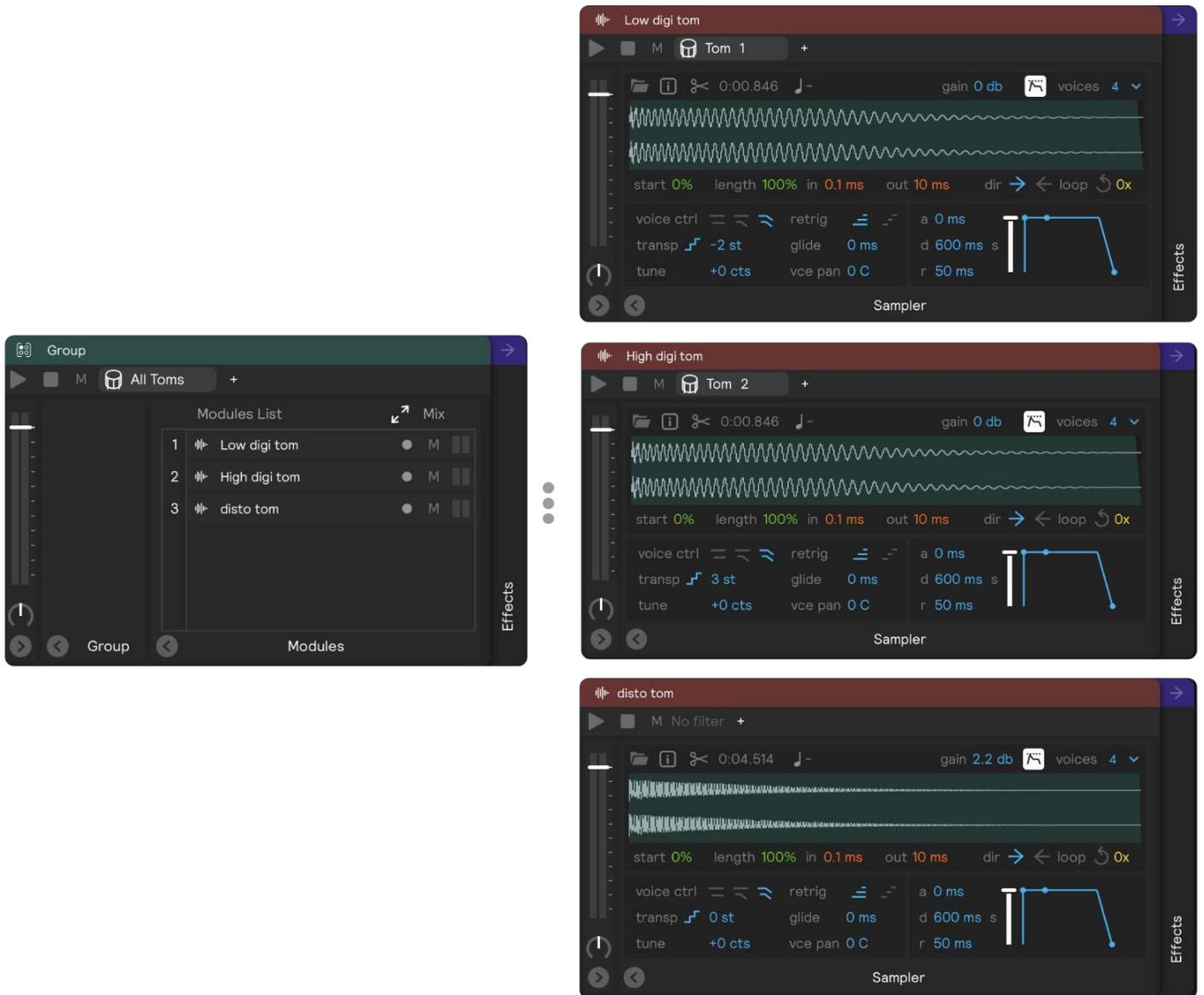


Other times you may have *two different virtual snares* routed to different pad mappings.



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:



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.

Panels

Effects

The Effects panel allows you to add effects to a module, and control their parameters.

Macros

The Macros panel allows you to add knobs, buttons, or sliders that can be assigned to almost any paramet...

Mix

The Mix panel allows you to adjust the volume and panning of the entire module and its submodules.

Modulators

The Modulators panel allows you to add any combination of six different modulators to control parameters ...

Pitch & Scale

The Pitch & Scale panel allows you to control melody to repitch and control melodies.

Sends

The Sends Panel allows you to control how much of the audio from a selected module (and its submodules)...

Submodules

The Submodules panel allows you to see all of the modules contained inside of the module you have select...

Tags

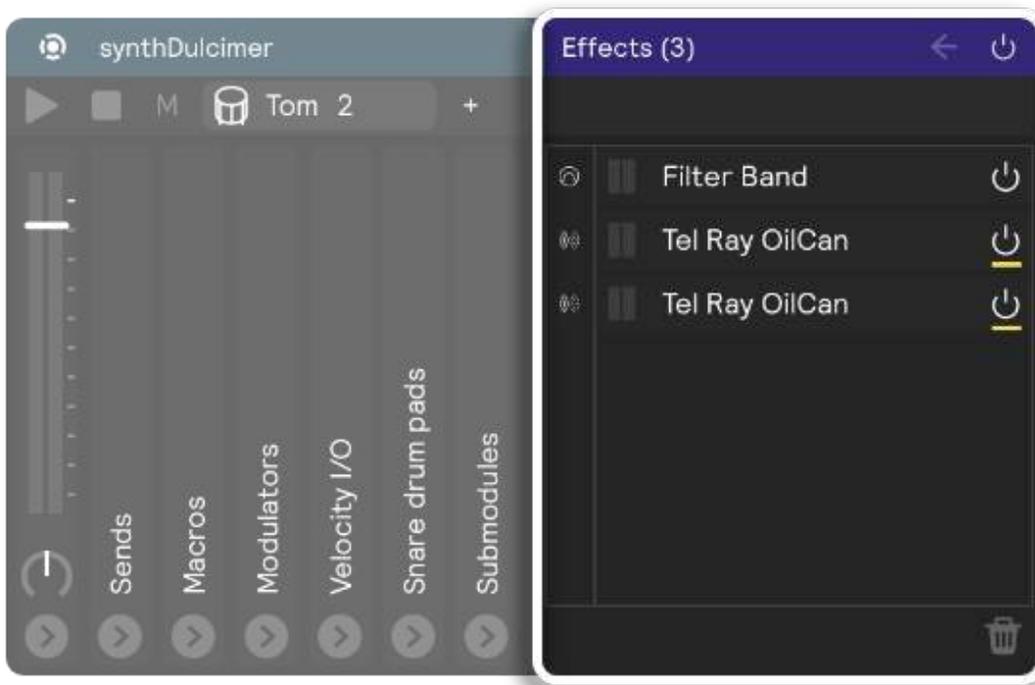
The Tags panel allows you to manage and organize tags for your modules.

Velocity I/O

The Velocity I/O panel allows you to adjust how the entire layer responds to your playing.

Effects

The Effects panel works slightly differently from other panels. The FX panel has a dedicated button (fx) 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.

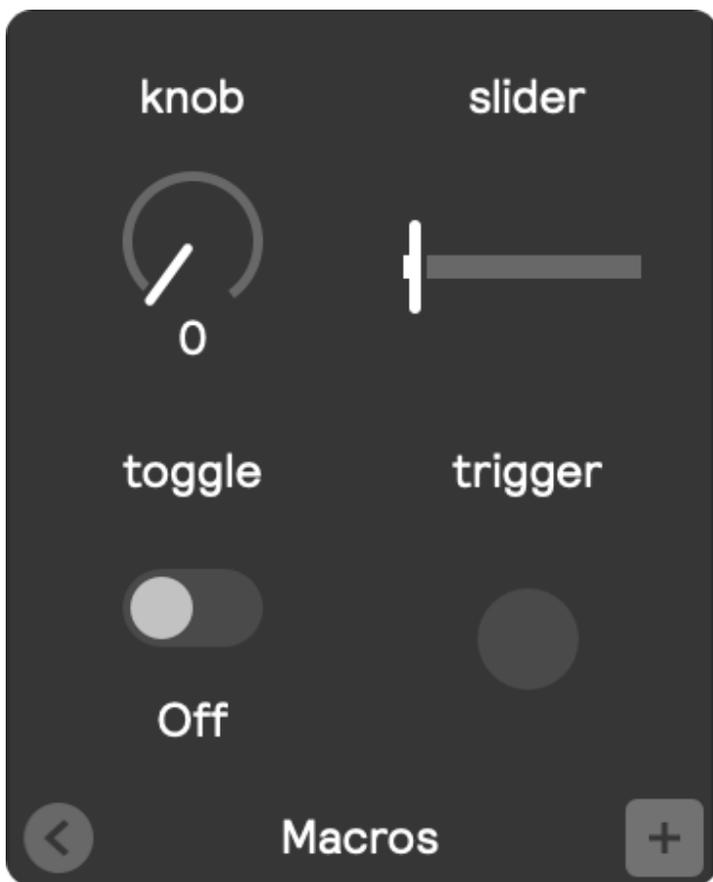


Macros Panel

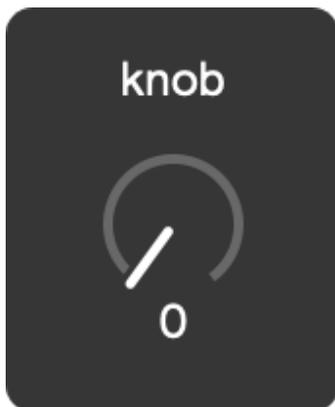
The Macros panel lets you add knobs, buttons, or sliders that can be assigned to almost any parameter further down the layer. To add a Macro, click the plus button in the Macros panel and feel free to name it.



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.



Knob **Slider** **Toggle** **Trigger**



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

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 is 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.

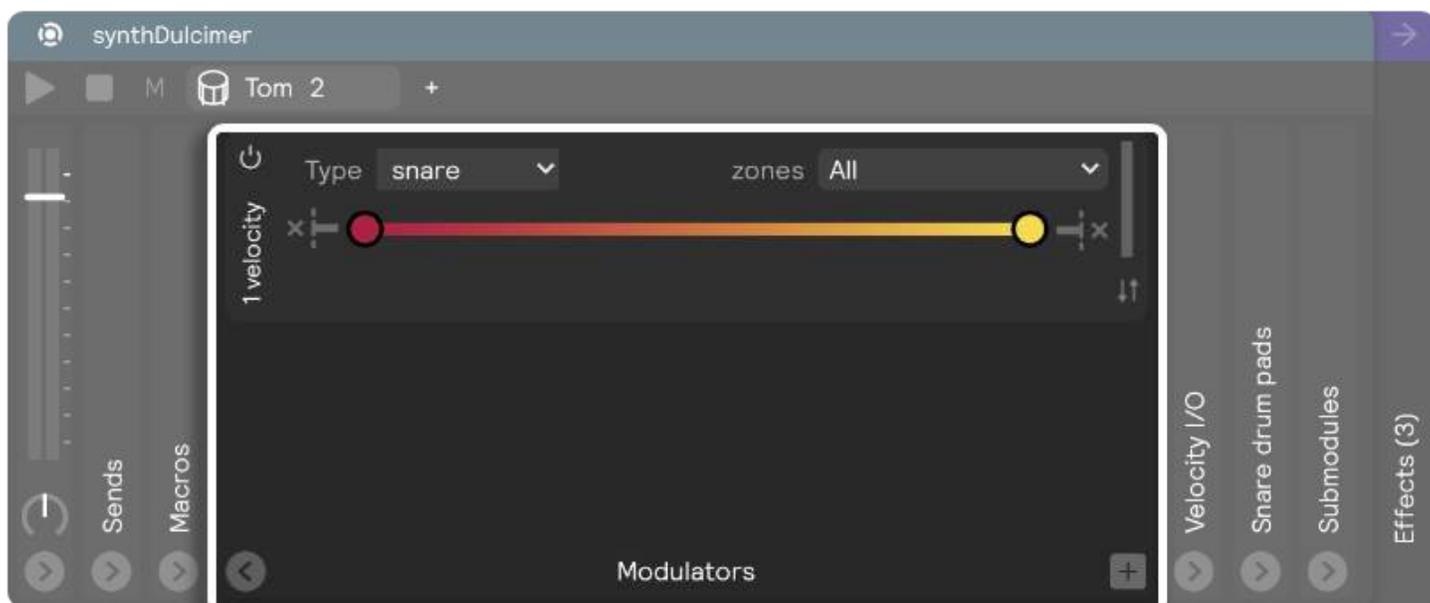
Mix Panel

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.

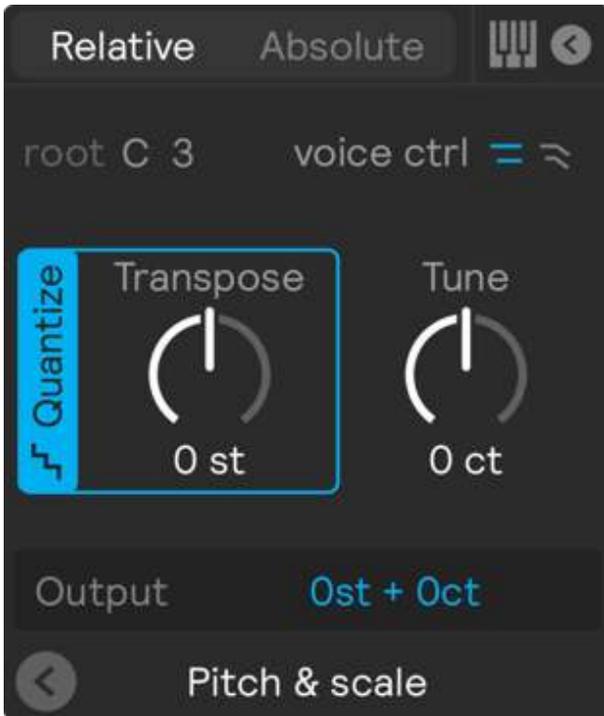


Modulators Panel

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.



Pitch & Scale



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.

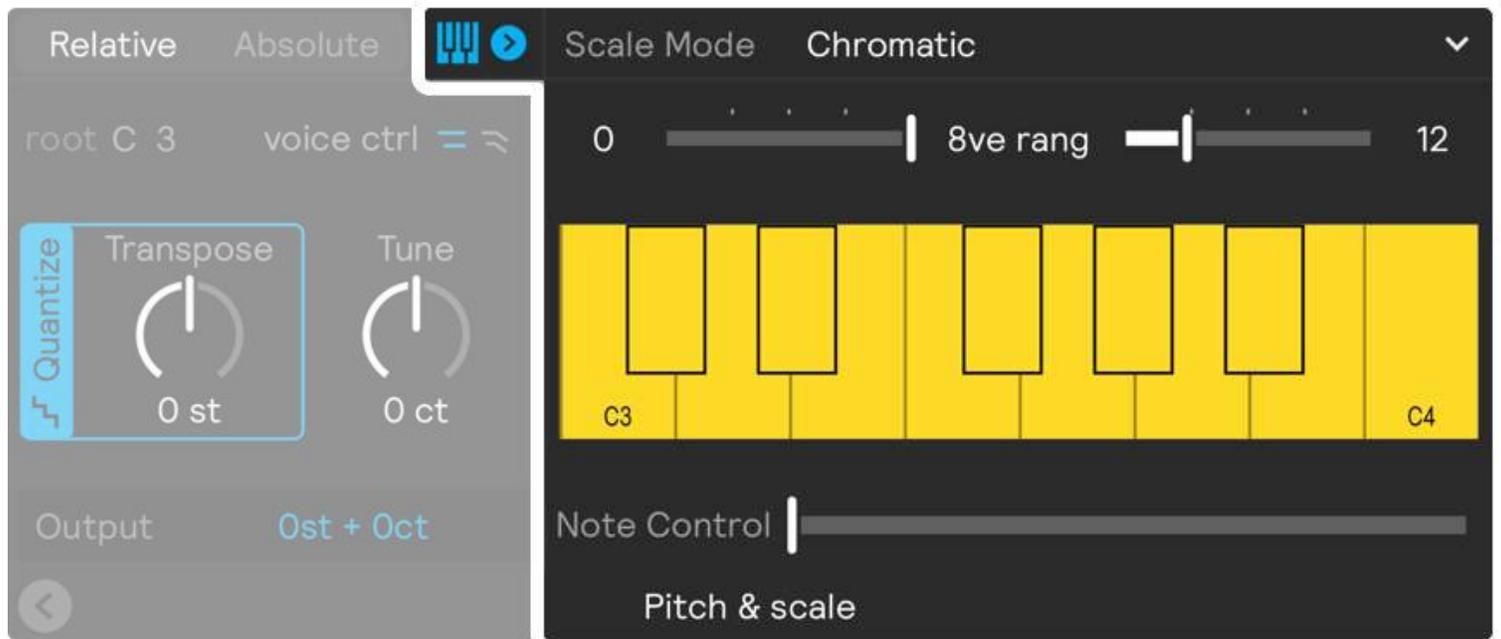
The `Transpose` knob allows you to change the pitch of the entire module and all of its submodules. When `Quantize` is on, the `Transpose` knob will snap to the nearest halfstep or semitone (keeping to the chromatic scale). The `Tune` knob allows you to change the pitch in Cents, which are 1/100th of 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).

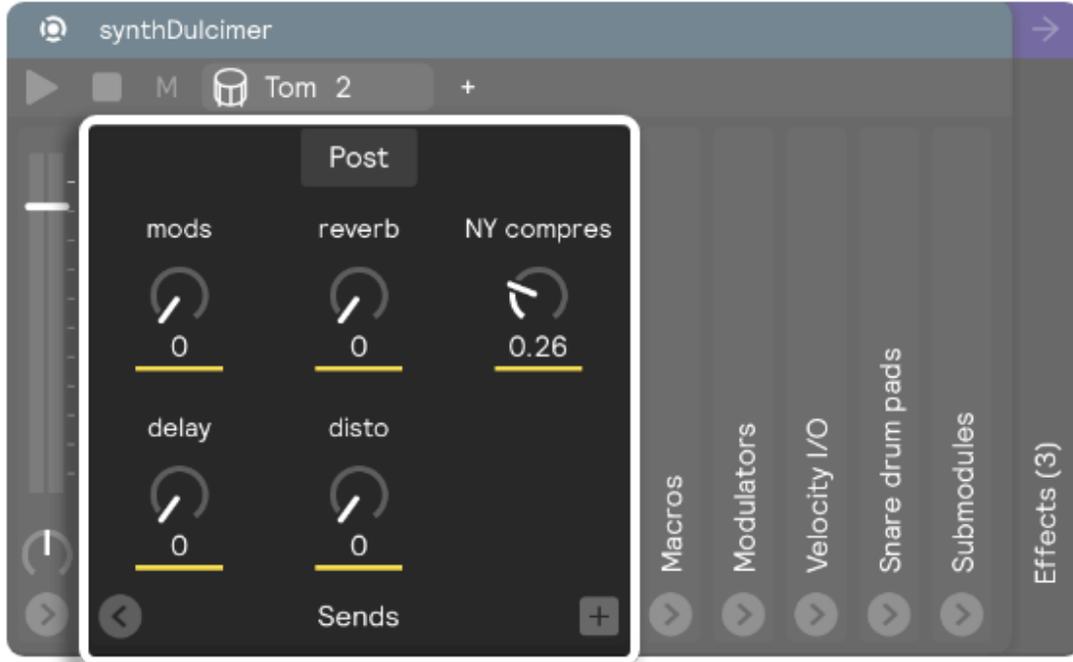


When you open up the scale mode, a keyboard appears where you can select and deselect notes. You can also select a scale from the `Scale Mode` dropdown. The notes/scale selected really only come into play if you have an assignment or modulator mapped to `Note Control`.

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.

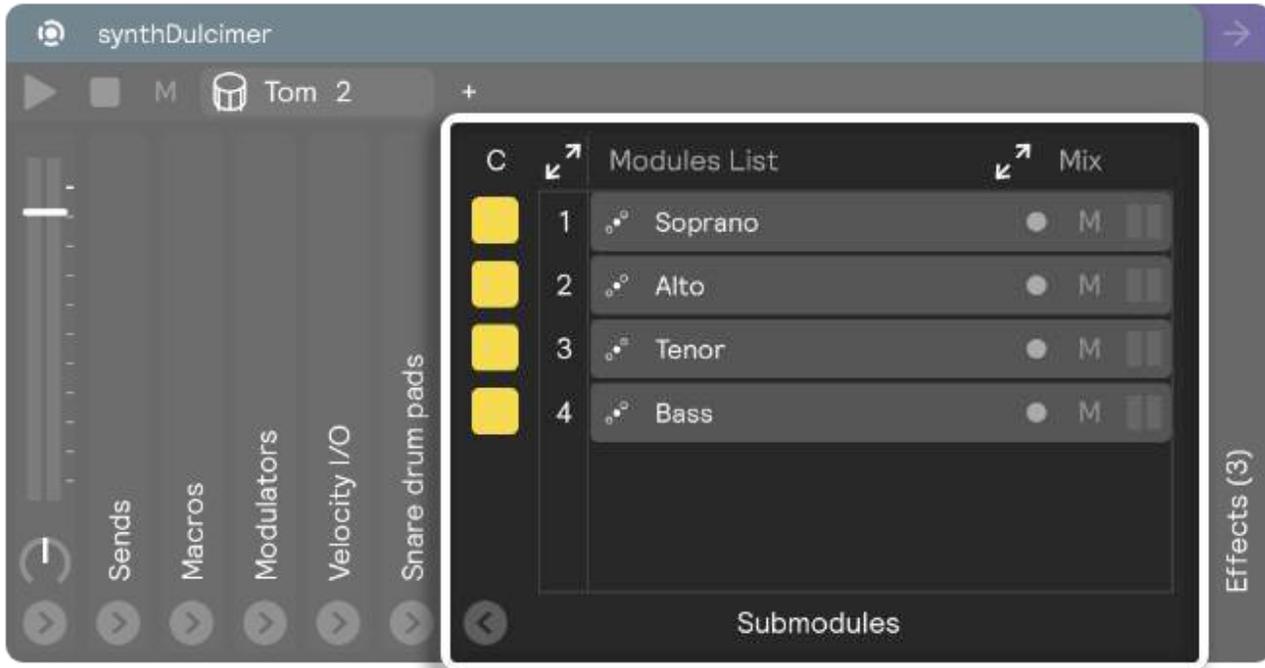
Sends Panel



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.

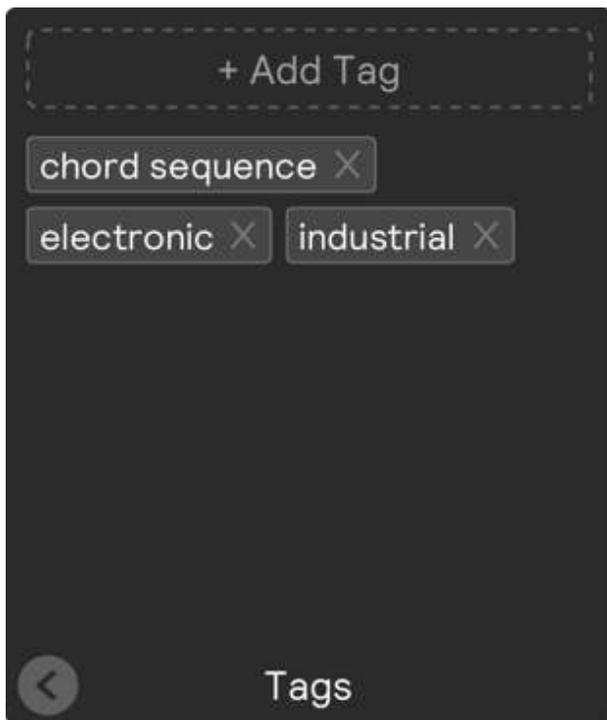
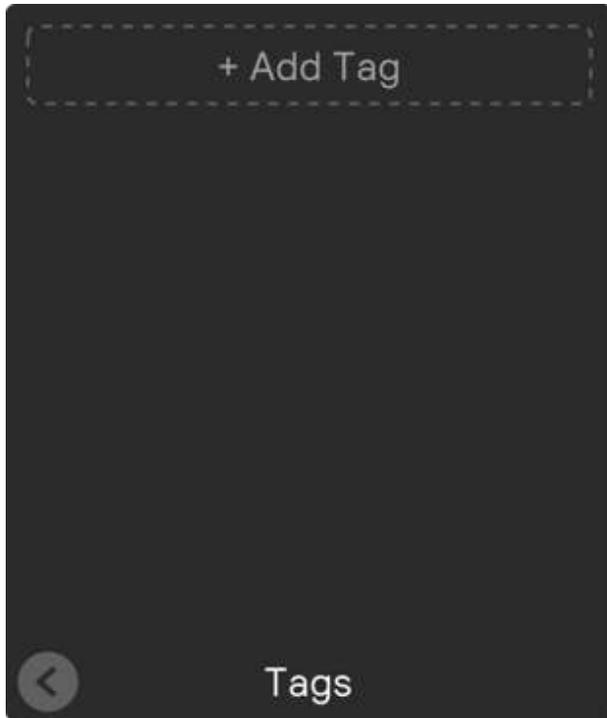
Submodules

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.

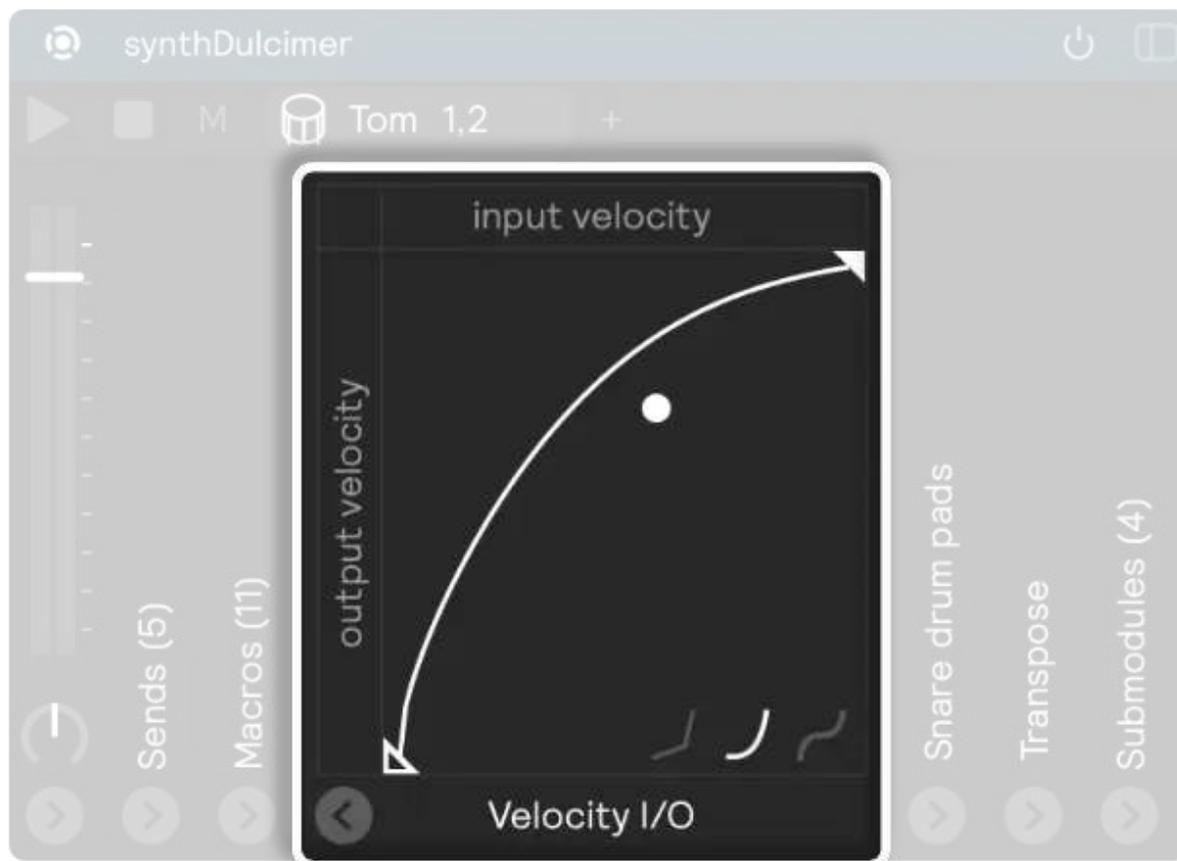


Tags

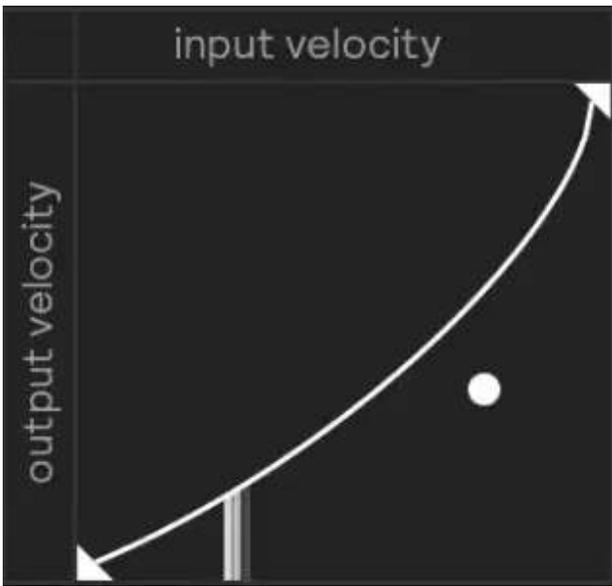
This panel allows you to add tags to your module. You can use tags for anything you like, but they are especially useful for organizing and filtering modules in the library panel.



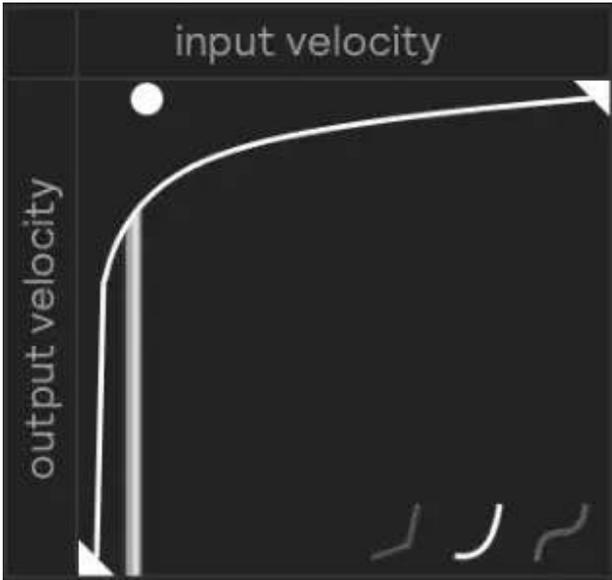
Velocity Input/Output



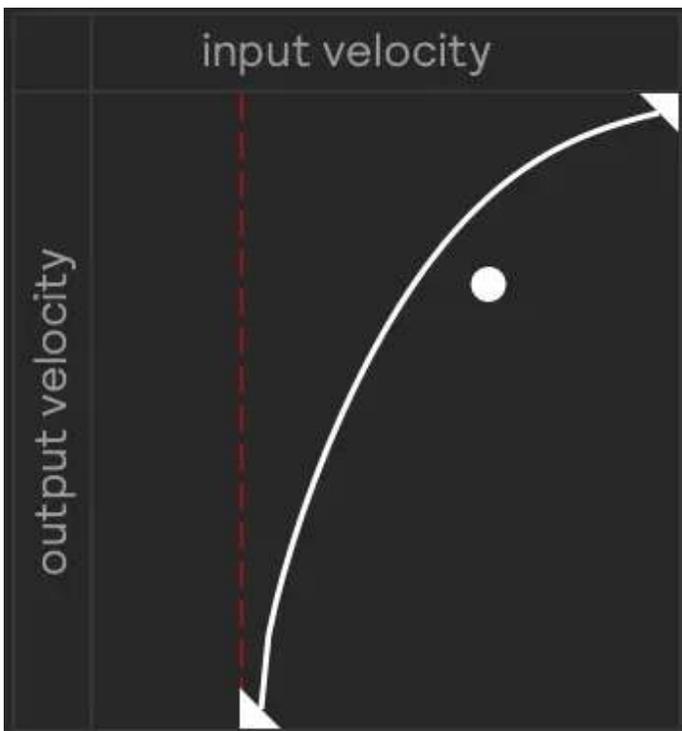
Here is where you can where you can adjust how the entire layer responds to your playing.



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



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



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.

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.

Sampler

Sampler features

Audio Insert

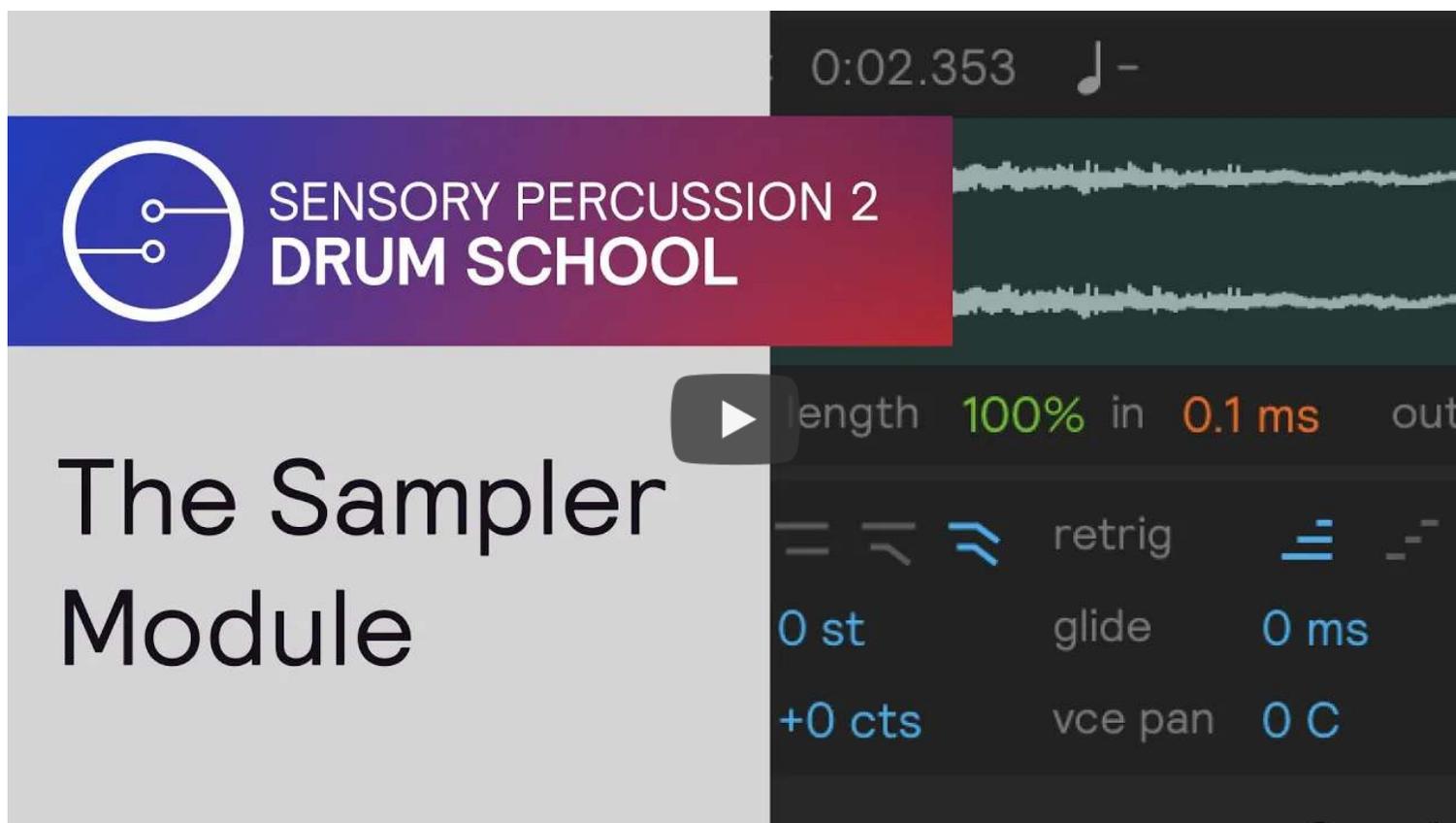
A screenshot of the Audio Insert module

MIDI Output

You can organize MIDI output of Sensory Percussion using the MIDI notes generator, MIDI CCs generator, a...

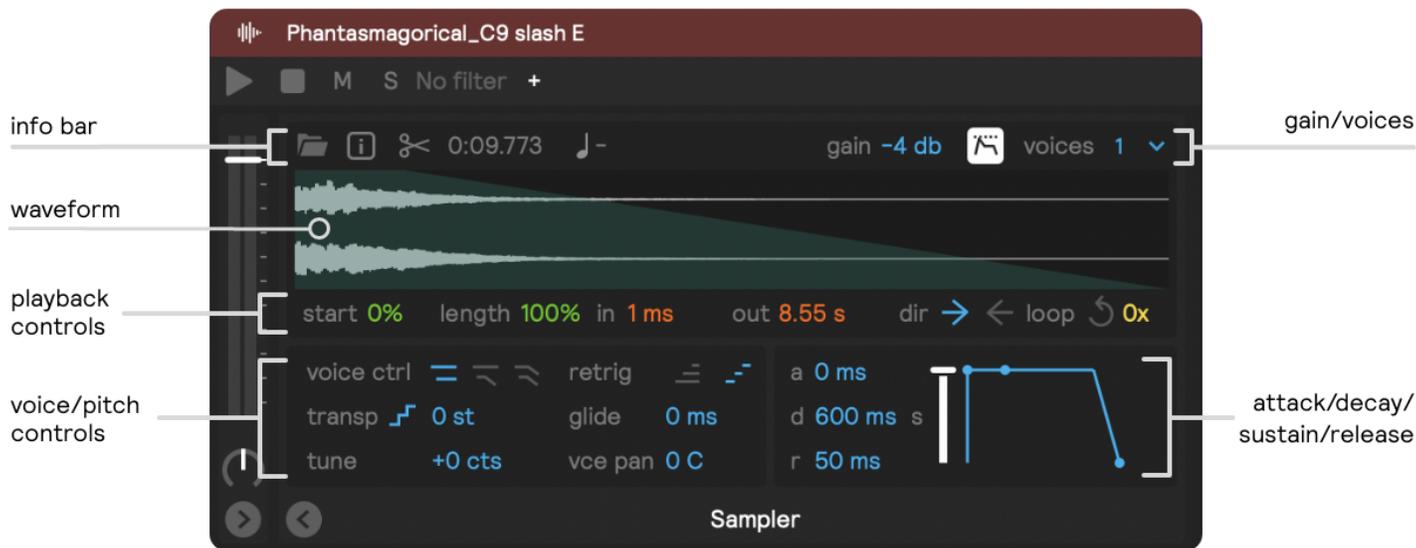
Sampler

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.



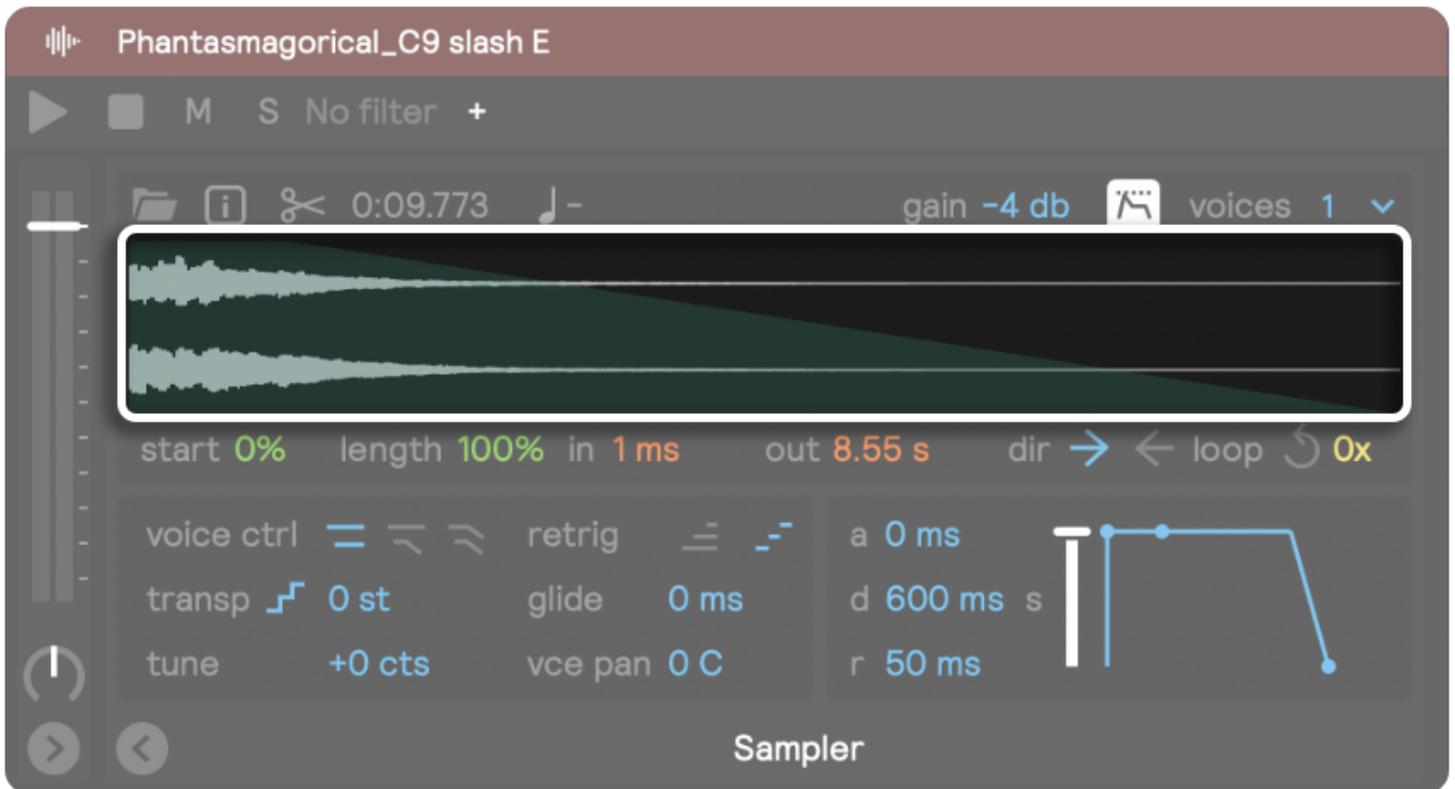
The image shows a screenshot of a software interface. On the left, there is a logo for "SENSORY PERCUSSION 2 DRUM SCHOOL" and the text "The Sampler Module". On the right, there is a dark interface with a play button and various parameters: "length 100% in 0.1 ms out", "retrig", "glide 0 ms", and "vce pan 0 C".

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.



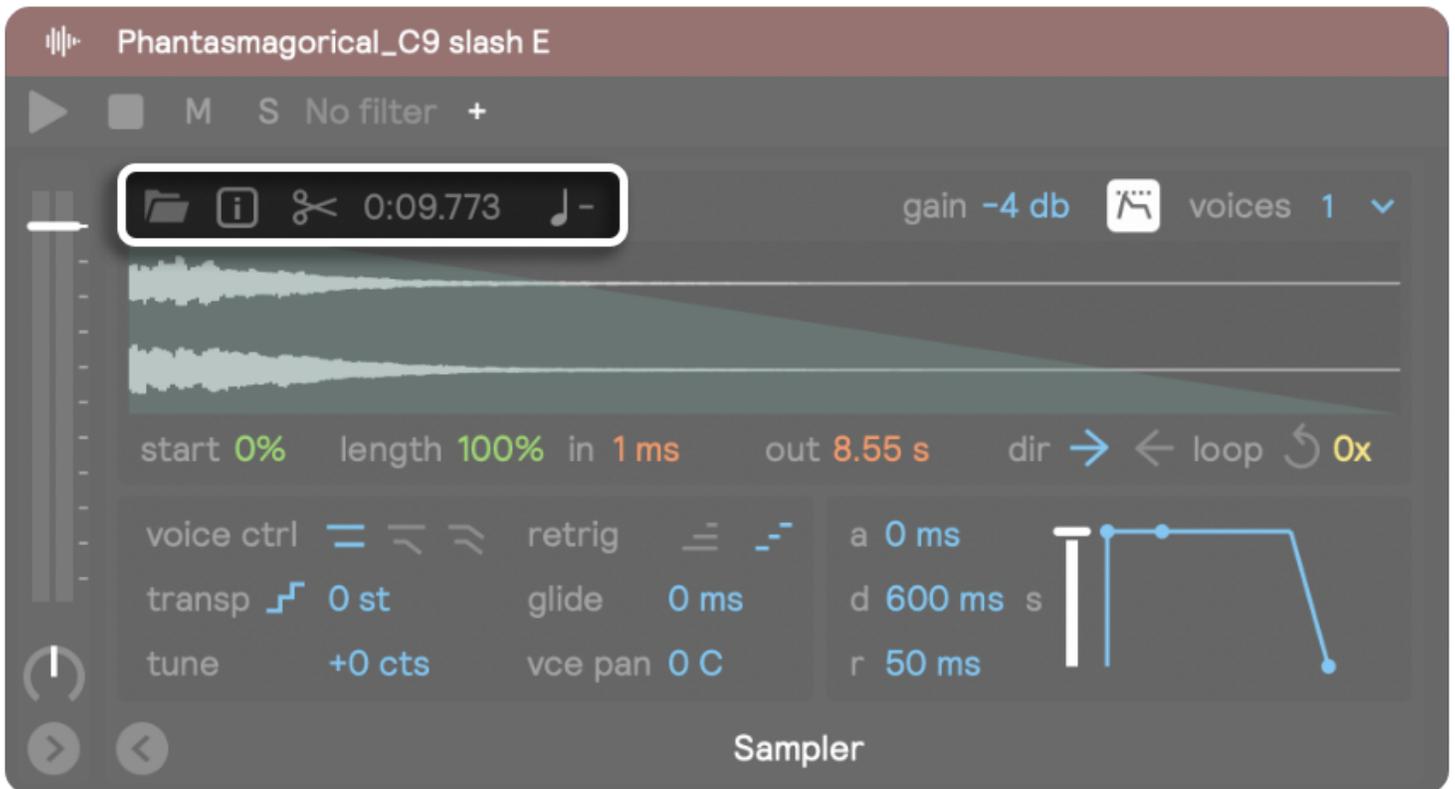
The image above shows a sampler containing a chord sample from our library.

Sample Waveform



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



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.

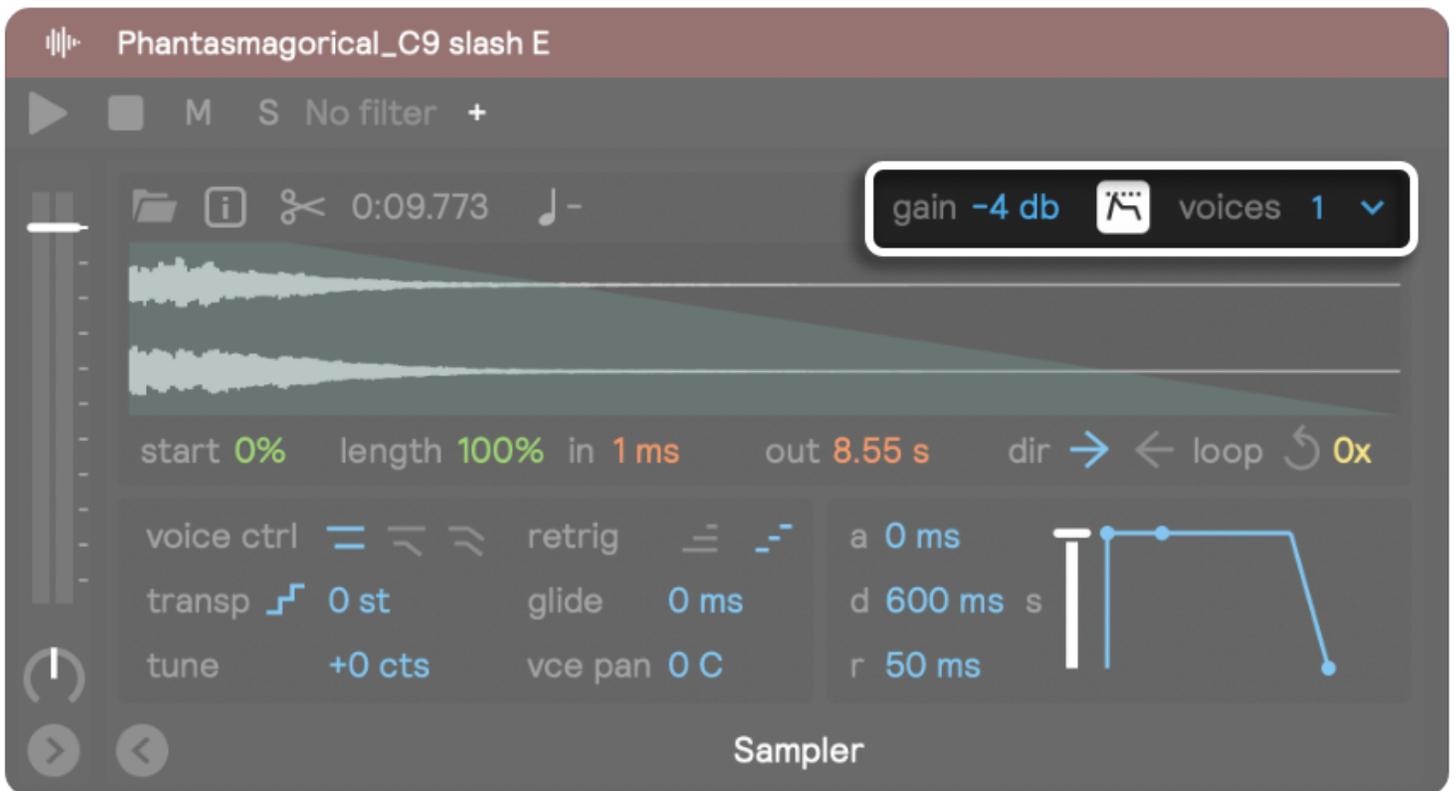
Changing the root note in this panel allows you to use multiple samples that are different notes within the one Note Controller scale.

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.

Gain/Voices



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.

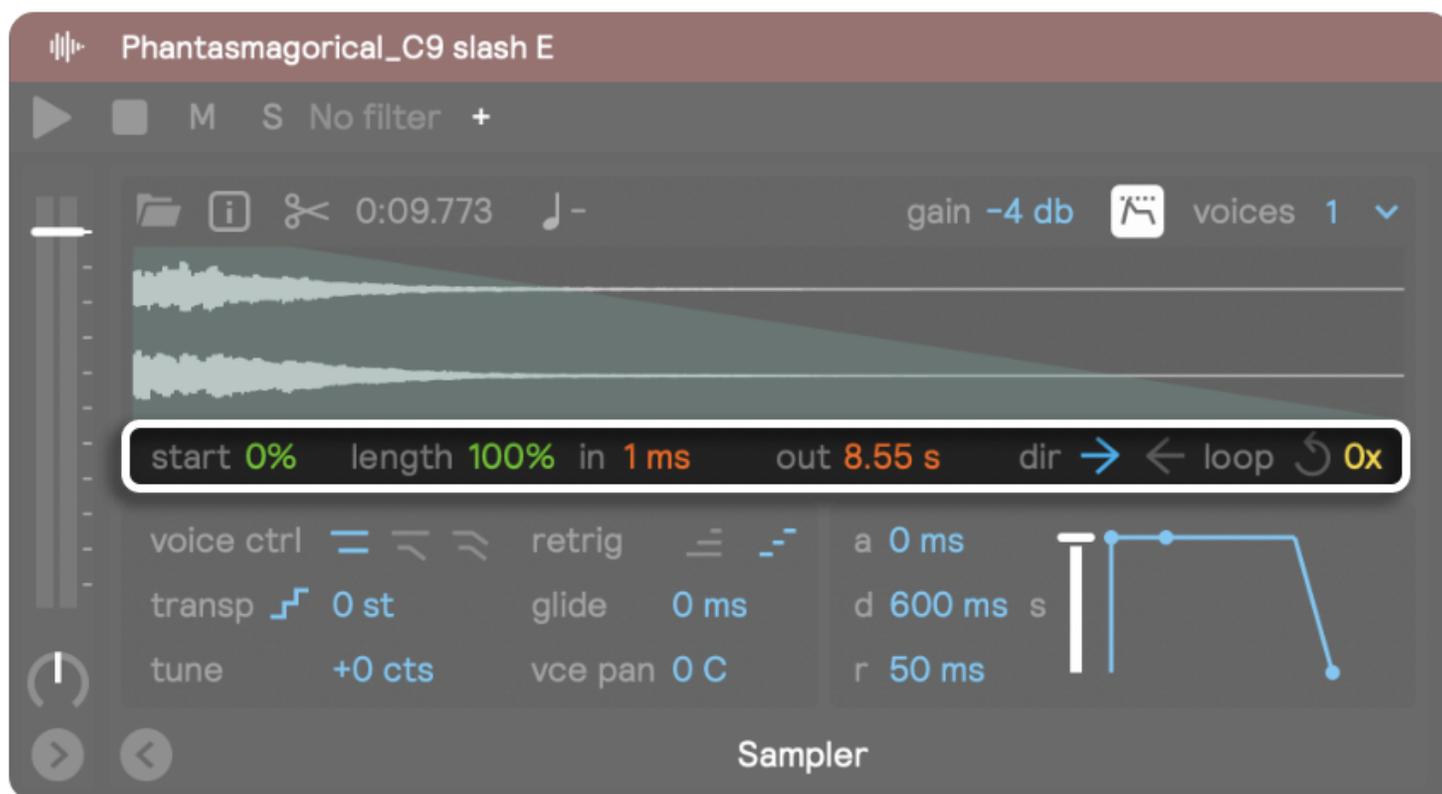
Gain

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



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.

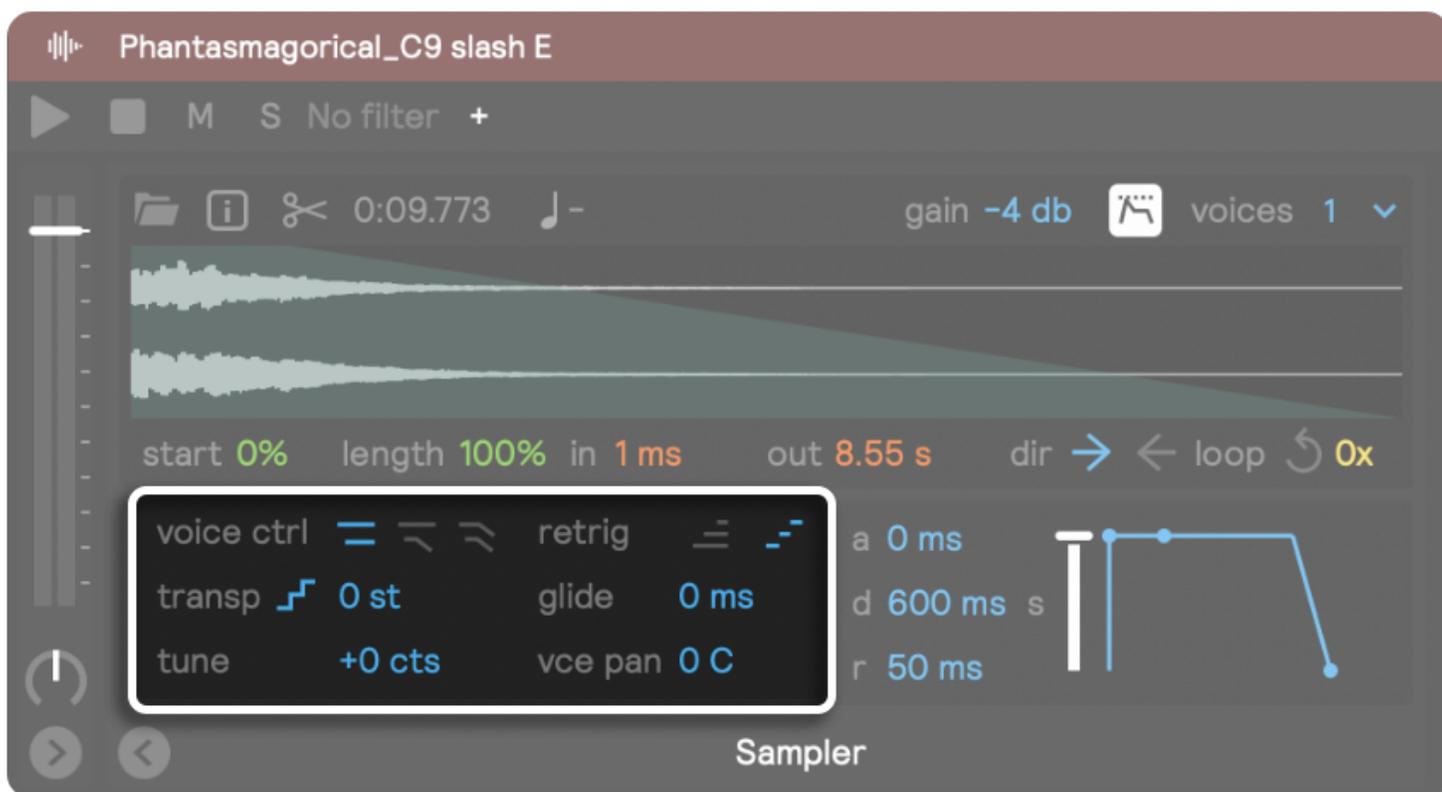
Direction

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



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.

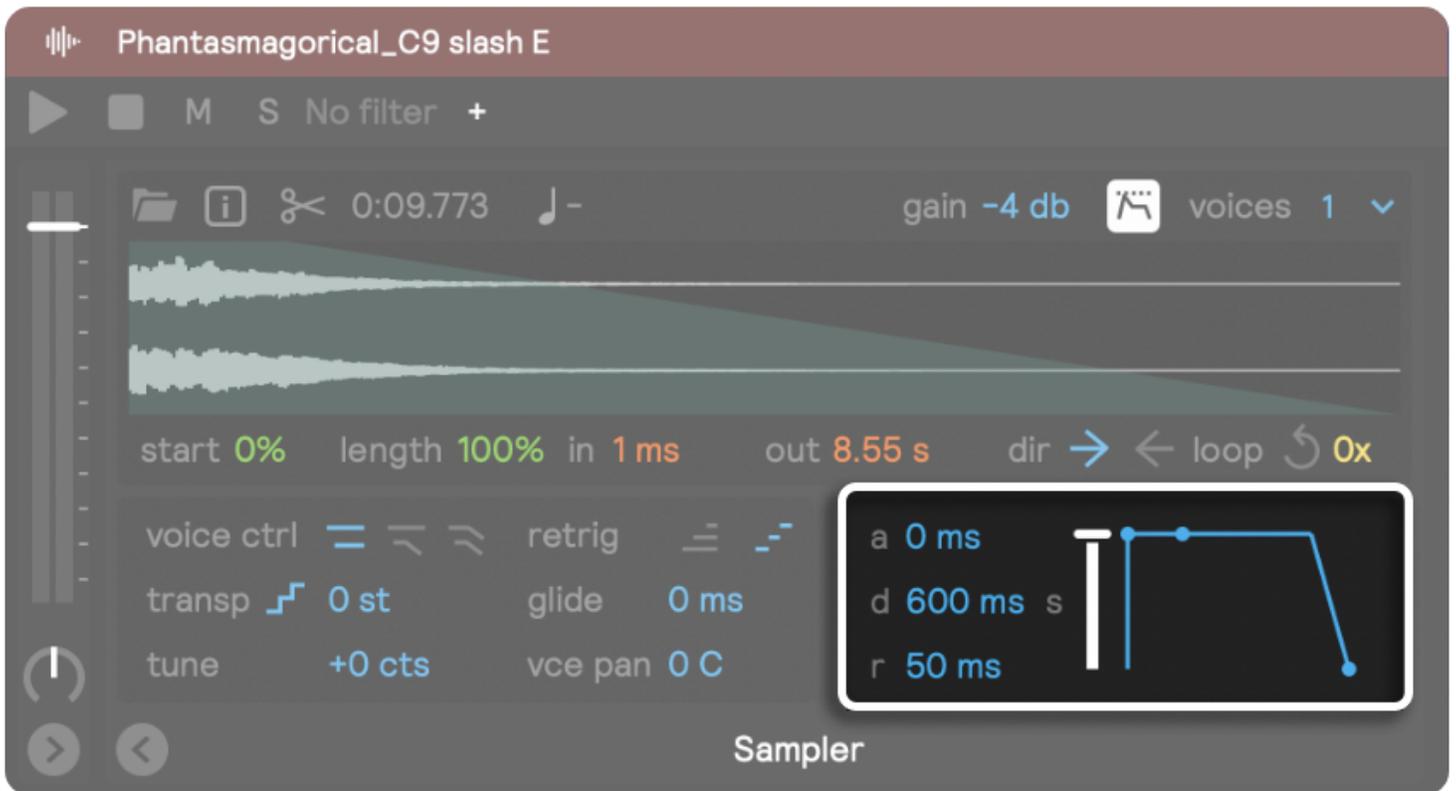
Tune

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 start 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



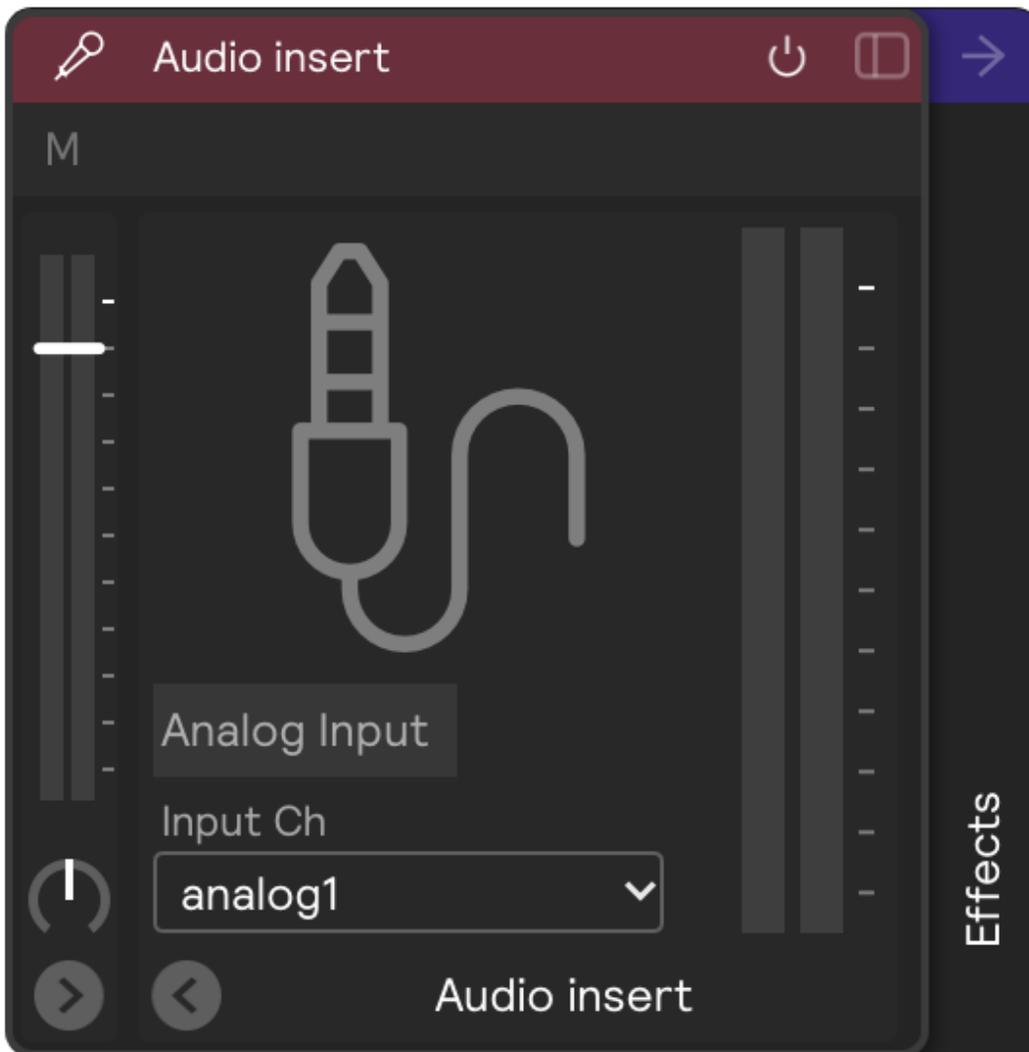
Attack, Decay, Sustain, Release

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.

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.

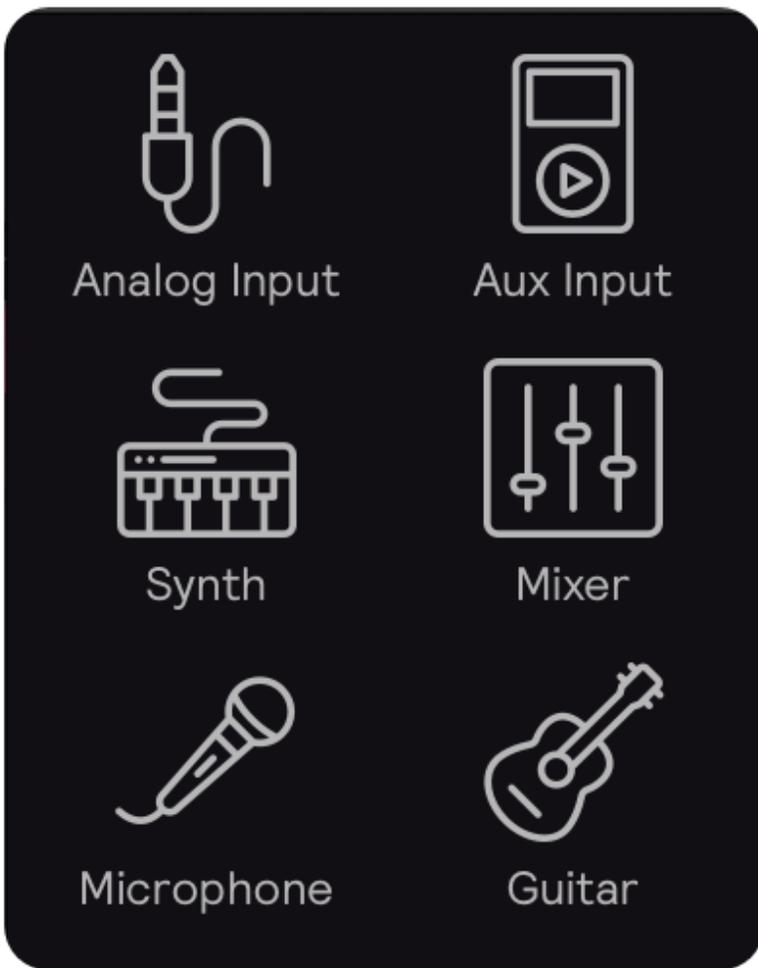
Audio Insert



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 default. 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!

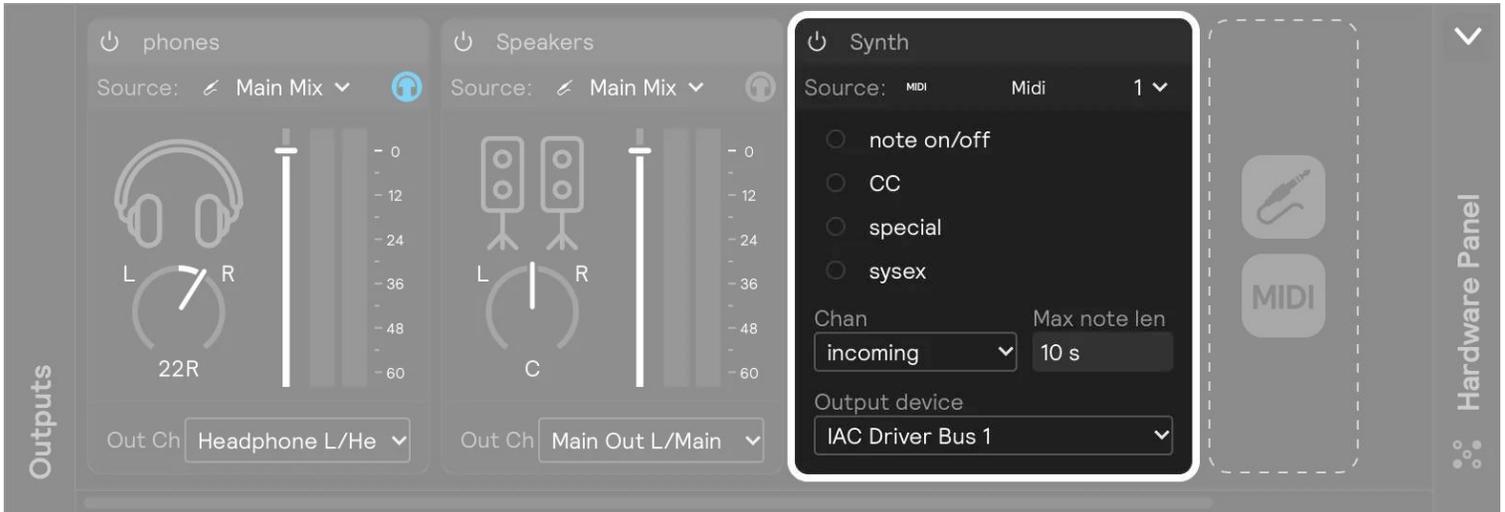


You can also change the input type to match the physical device you're using: an aux input, synth, mixer, microphone, or guitar.

MIDI Output

You can organize MIDI output of Sensory Percussion using the MIDI notes generator, MIDI CCs generator, and MIDI router.

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.



Then drag either the MIDI notes generator or the MIDI CCs generator into your set and then select the corresponding output from the dropdown.

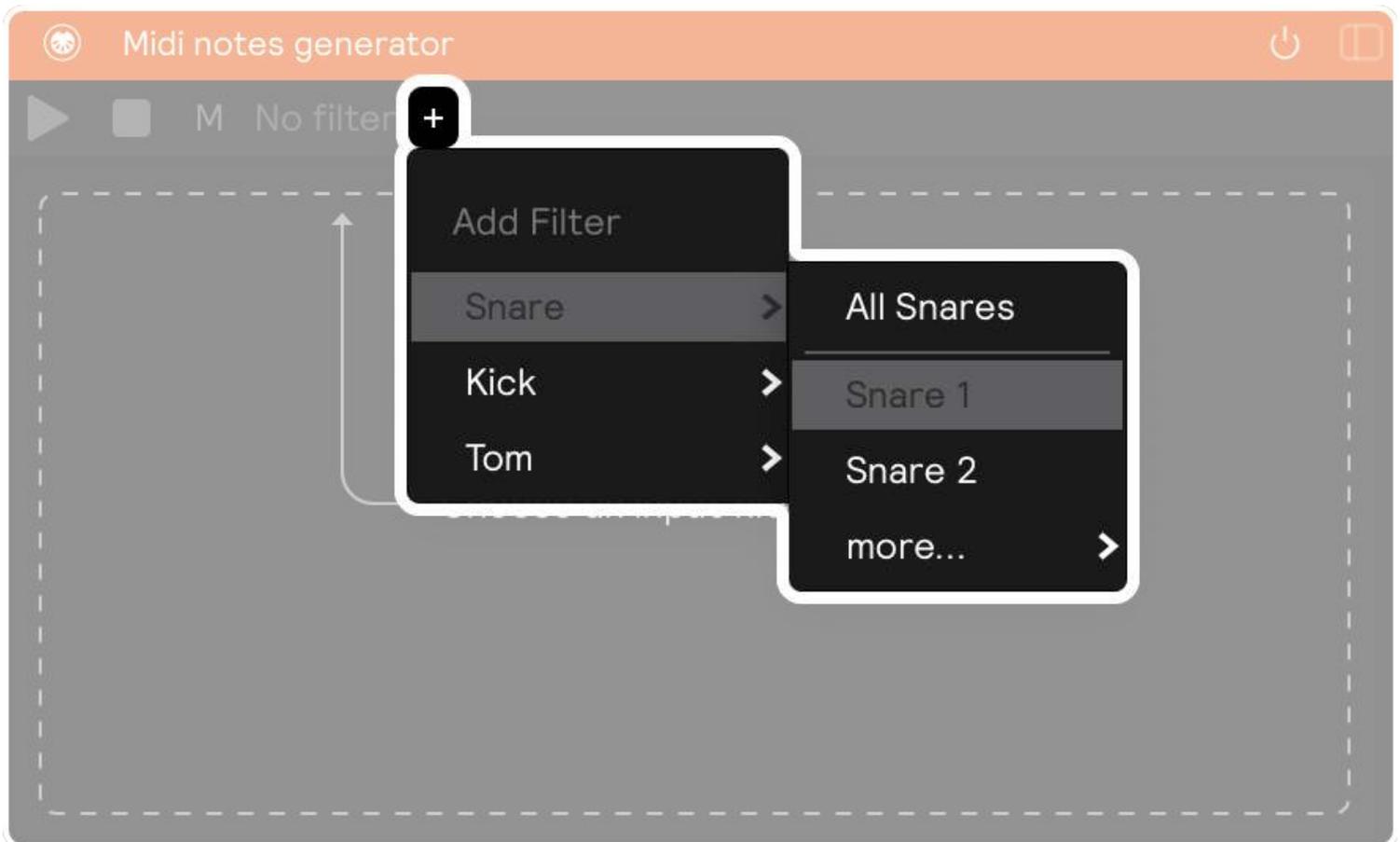
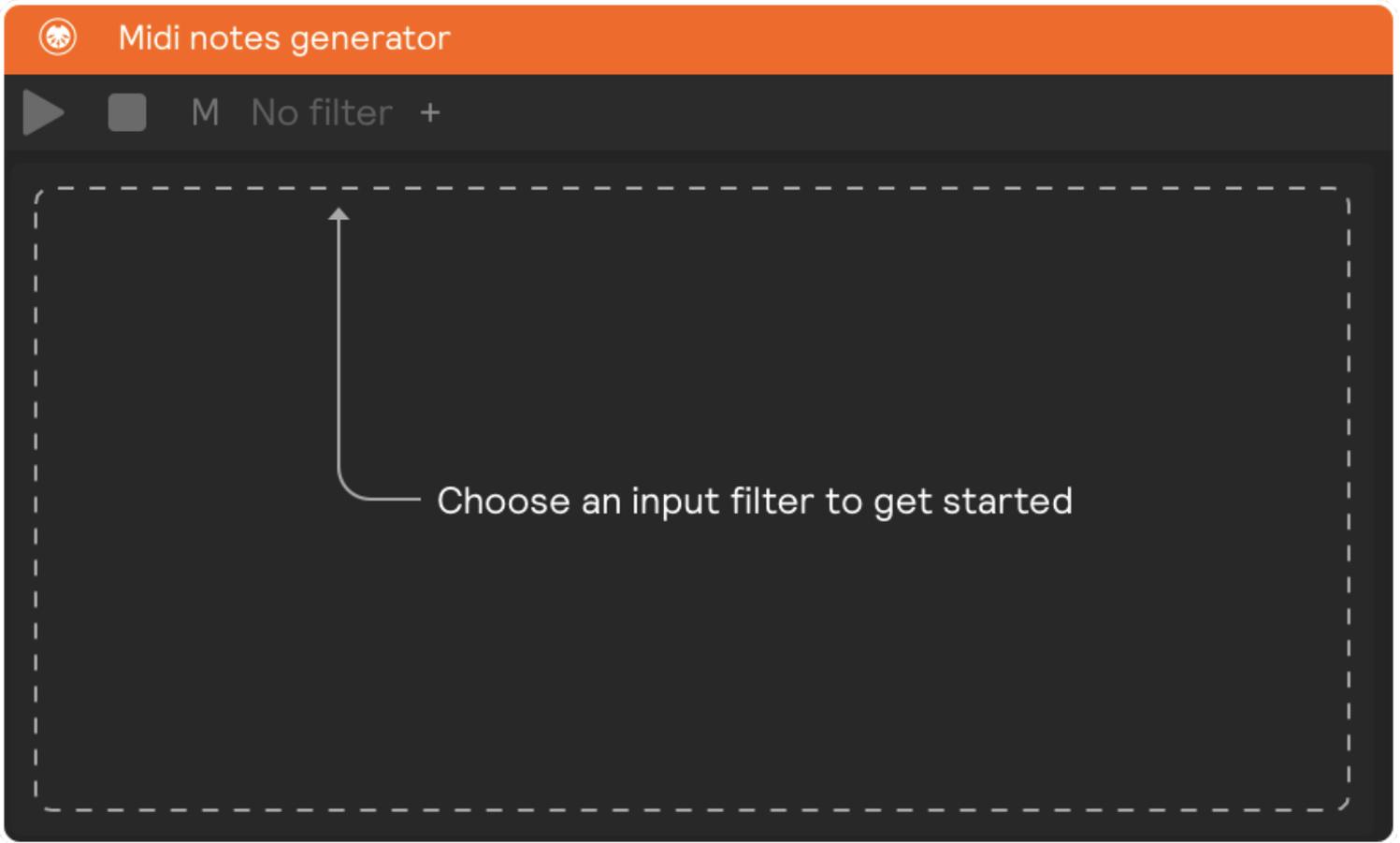
Each of the three generator types include `midi channel` and `output` options.

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 precedence. If both the Generator and Hardware Output are set to "incoming" the default MIDI channel is 1.

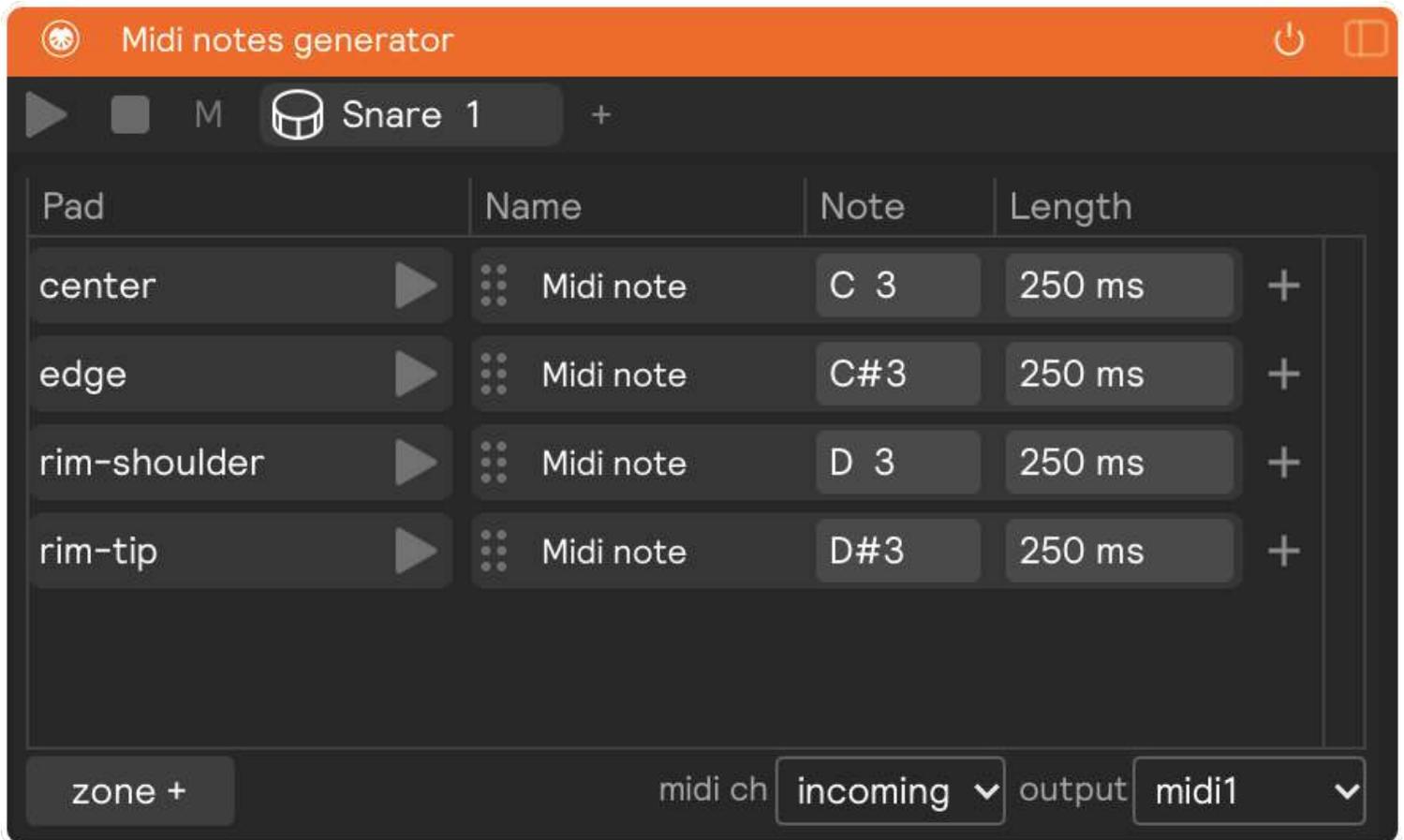
The `output` option allows you to select the MIDI Hardware Output that the generator will send note messages to.

MIDI Notes Generator

To get started with the MIDI notes generator, select an input filter from the dropdown. This will determine which pad zones are available to send MIDI notes.

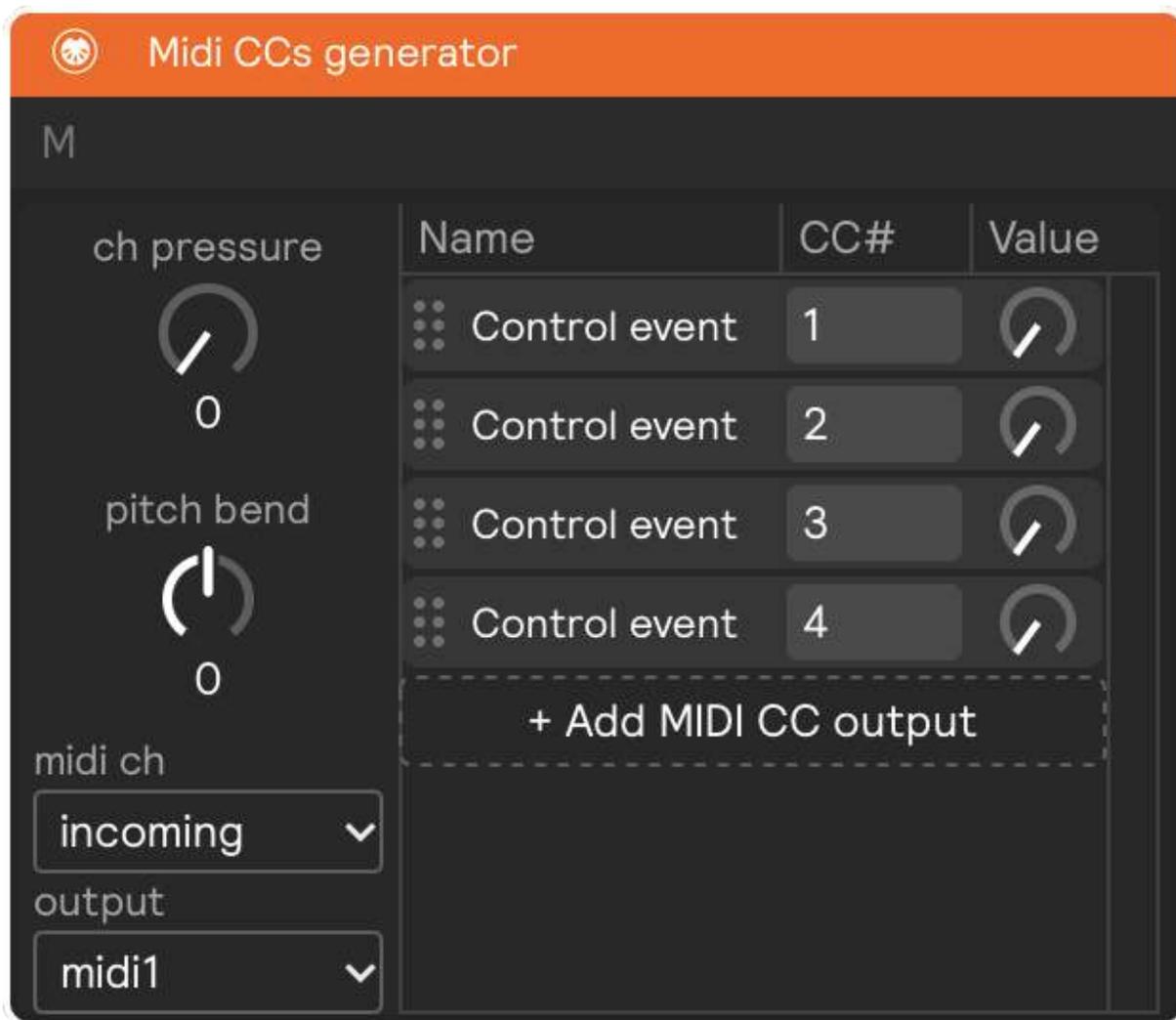


Once you've selected a filter, you can choose the note values, set names for each note, and set the note length. Each pad can have multiple notes, which can be added with the **+** button.



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.



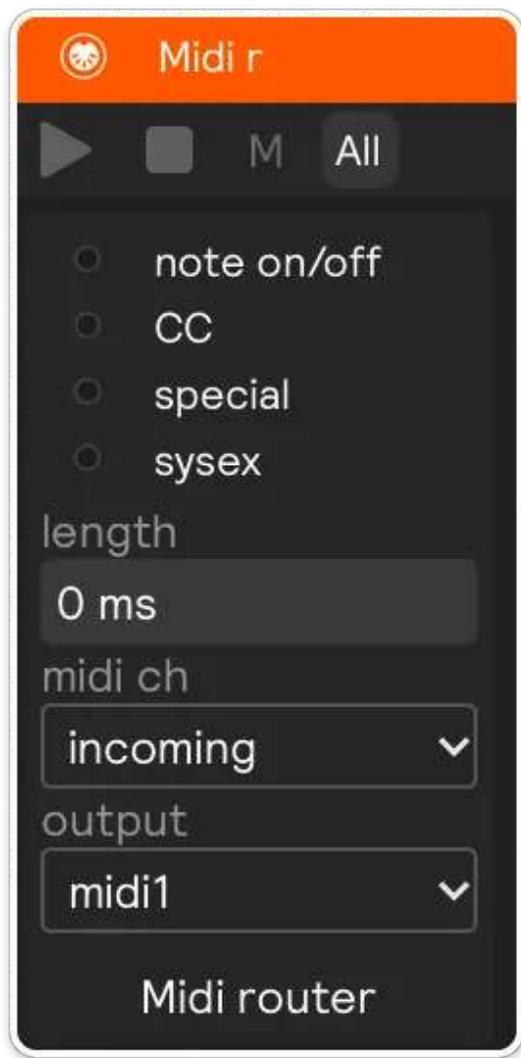
MIDI Router

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 `length` parameter allows you to set (or control) the note duration that will be sent to the MIDI Hardware Output. It will be clamped if it exceeds the `Max note length` set by the Hardware Output itself.



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:

Drum Pads

Map modules to different zones on the drum

Grid Pads

Assign modules to grid pads and trigger them with the Pads Input

Cymbal Pads

Assign modules to cymbal pads and trigger them with the Cymbal Input

Hi-hat Pads

Assign modules to hi-hat pads and trigger them with the Hi-hat Input

Hi-hat Pedal Controller

Use hi-hat pedal tension to determine which modules are played

Sequencer

Cycle, randomize, or manually control the order in which the modules within are played.

Group

Group modules together

Hit Controller

Filter timbre, speed, or velocity messages and send those to submodules

Note Controller

Convert timbre, speed, or velocity of your playing to notes in a scale.

Metro

A metronome module

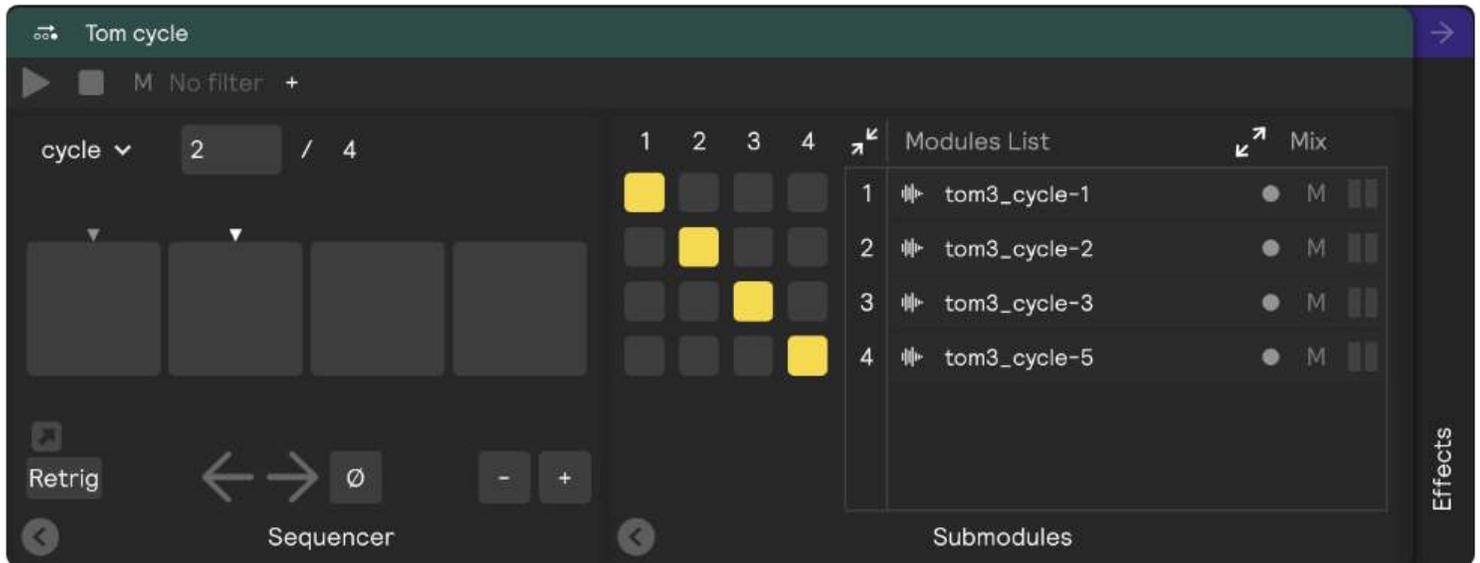
Advanced Mapping

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: 

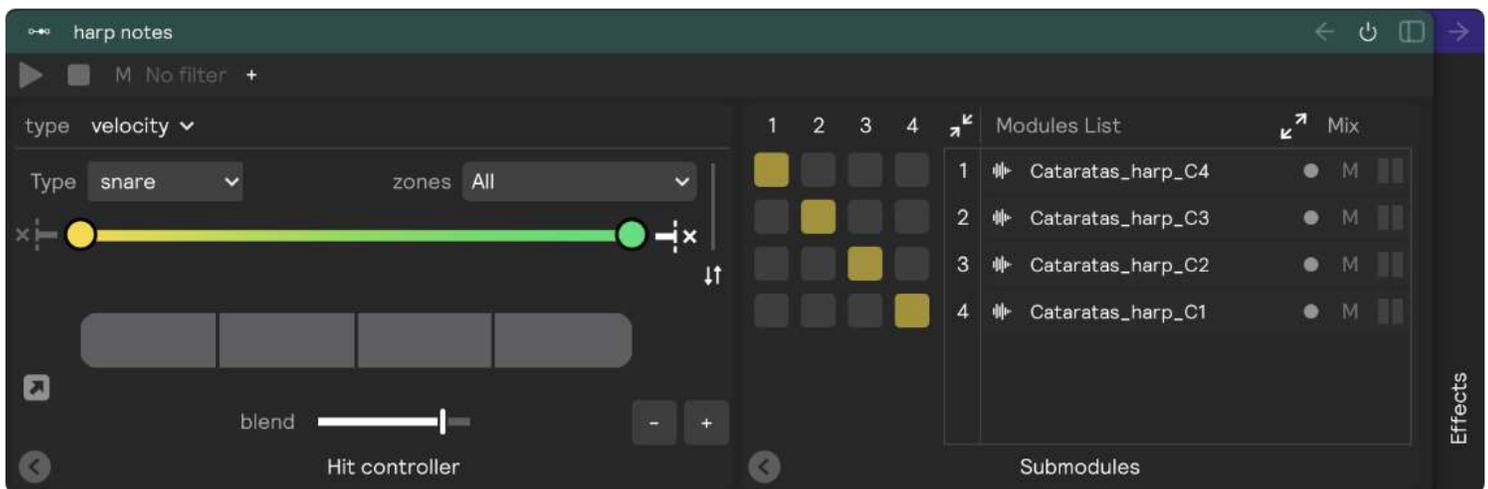
This will open up a matrix with a grid of squares that can be activated by clicking them. The vertical axis always represents the submodules listed to the right, while the horizontal axis is different for each controller type. Clicking an inactive grey square will activate it, assigning the corresponding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

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

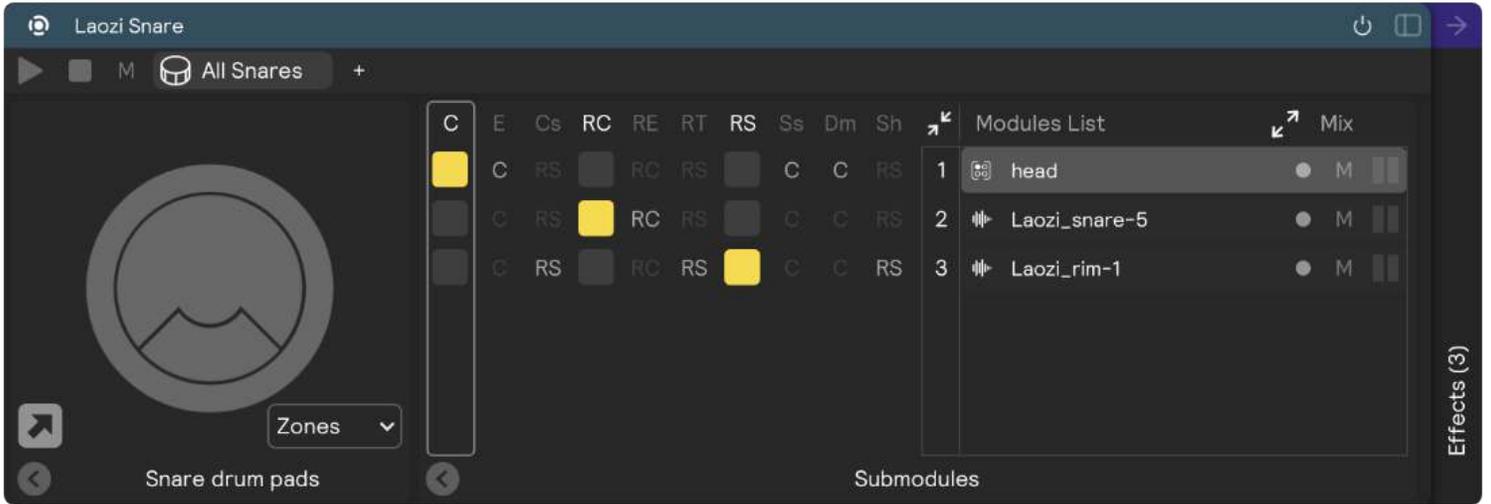
In **Sequencers**, modules can be assigned to different steps in a sequence:



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:

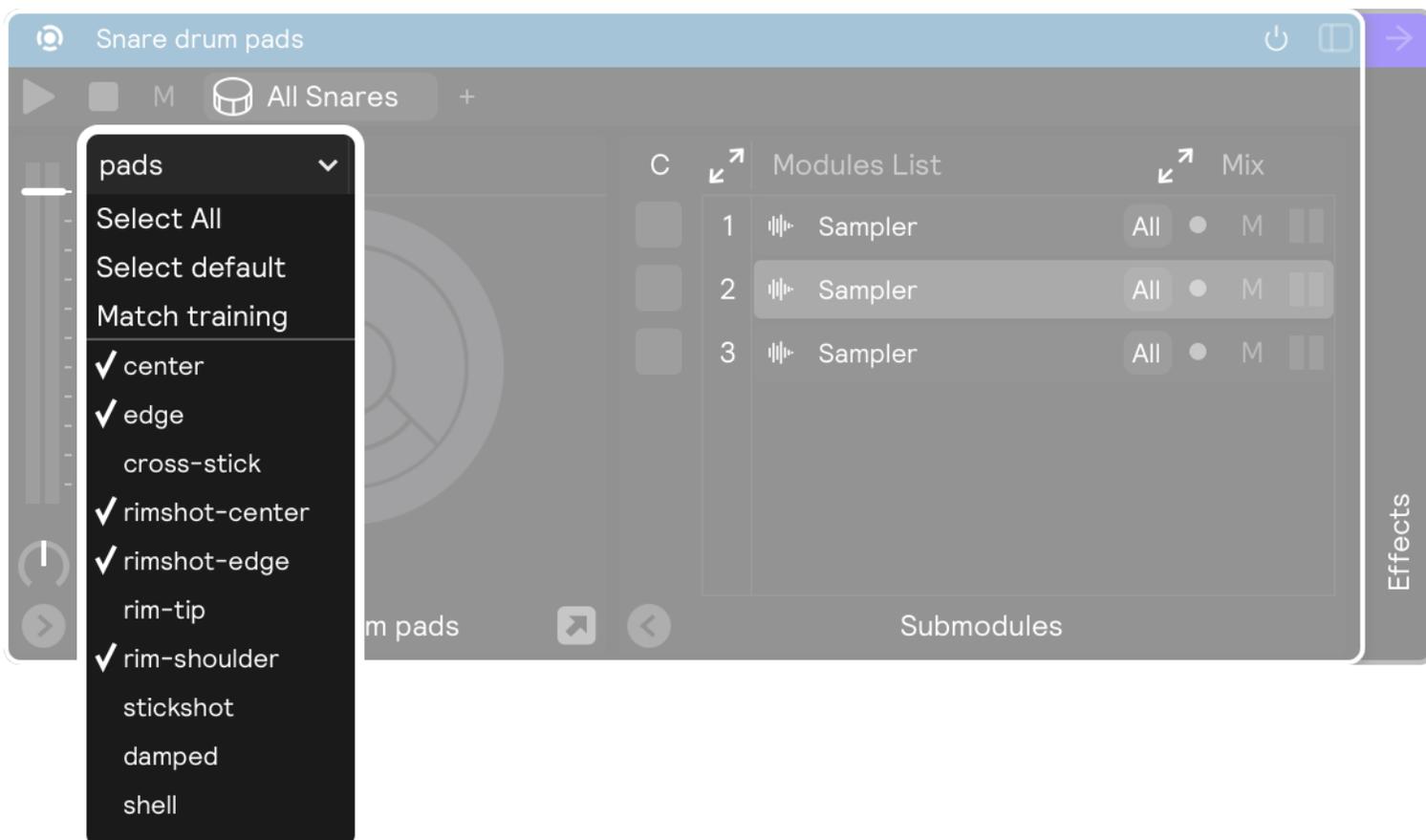


Drum Pads

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.



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.

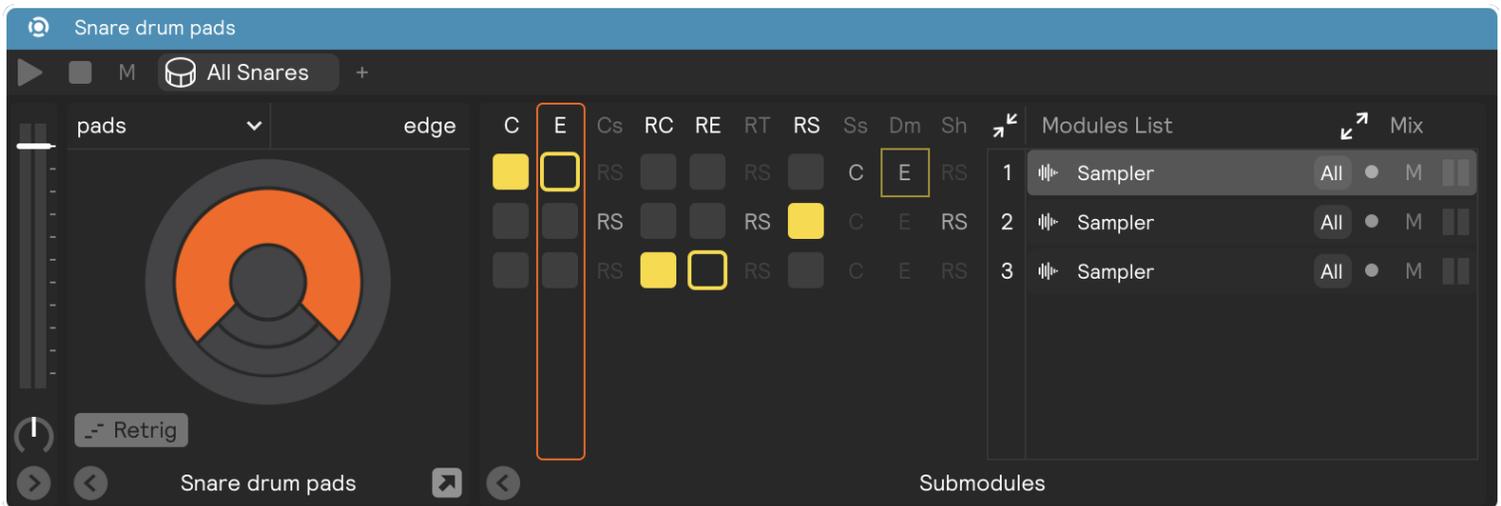


You can drag-and-drop controllers, modules, and samples from the Library onto these zones, or drag and drop your own samples from Finder/Explorer (or even 3rd party sampler apps!).

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.



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

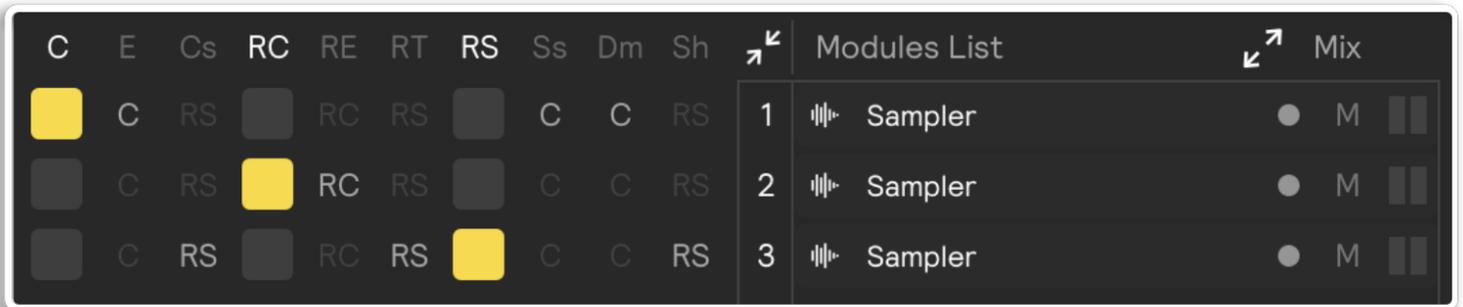
`shift-click`ing on a zone will trigger a hit. Useful for audition what's on it.

Automatic Assignments

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

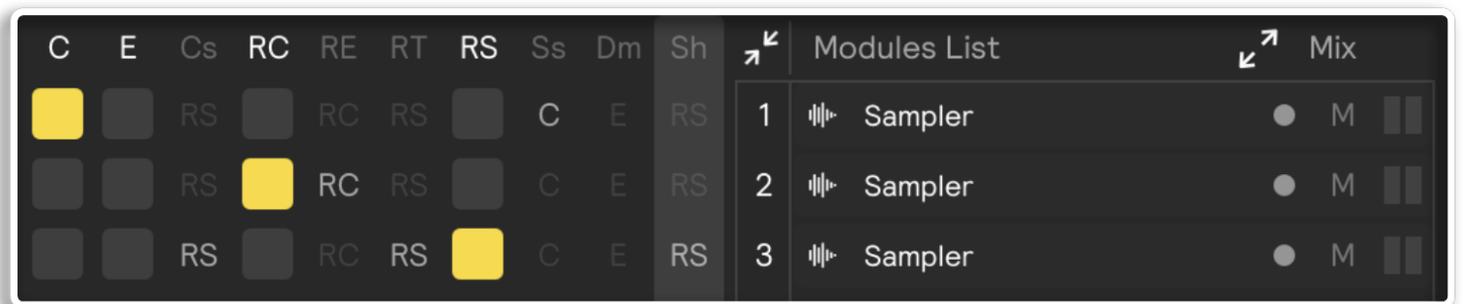
For example: if you activate Center (C), Rimshot Center (RC), and Rim Shoulder (RS), you'll notice in the advanced mapping matrix that:

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.



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.

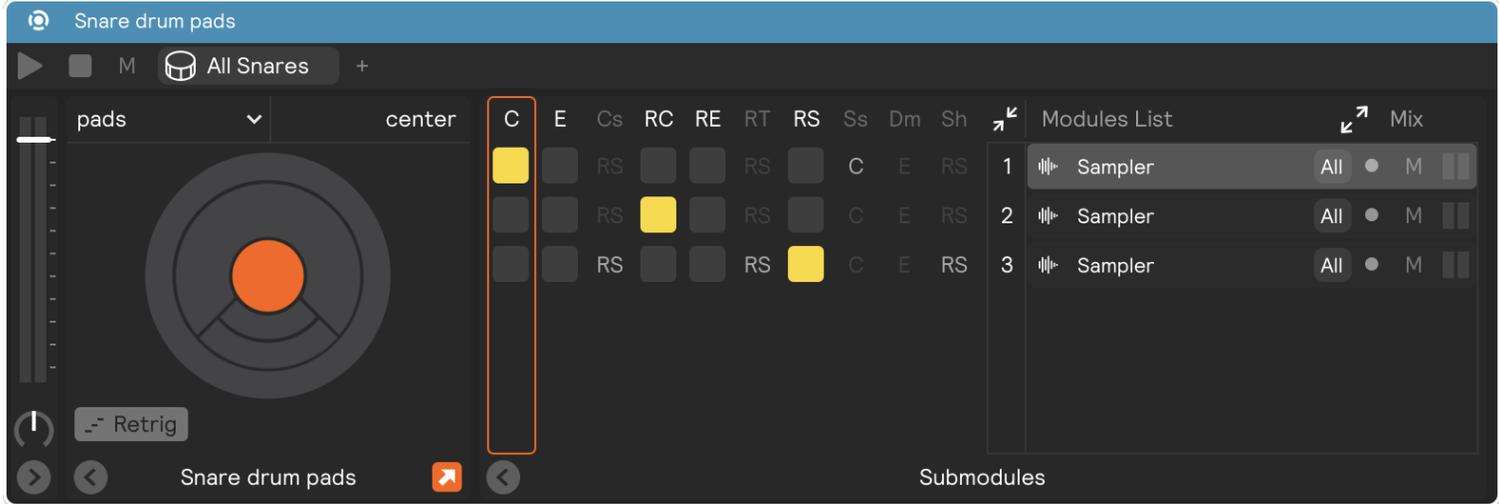
But, if you actually *want* to have a blank (non-sounding) zone in your Drum Pads controller, simply activate it but don't assign anything to it.



Highlight Last Played Zone

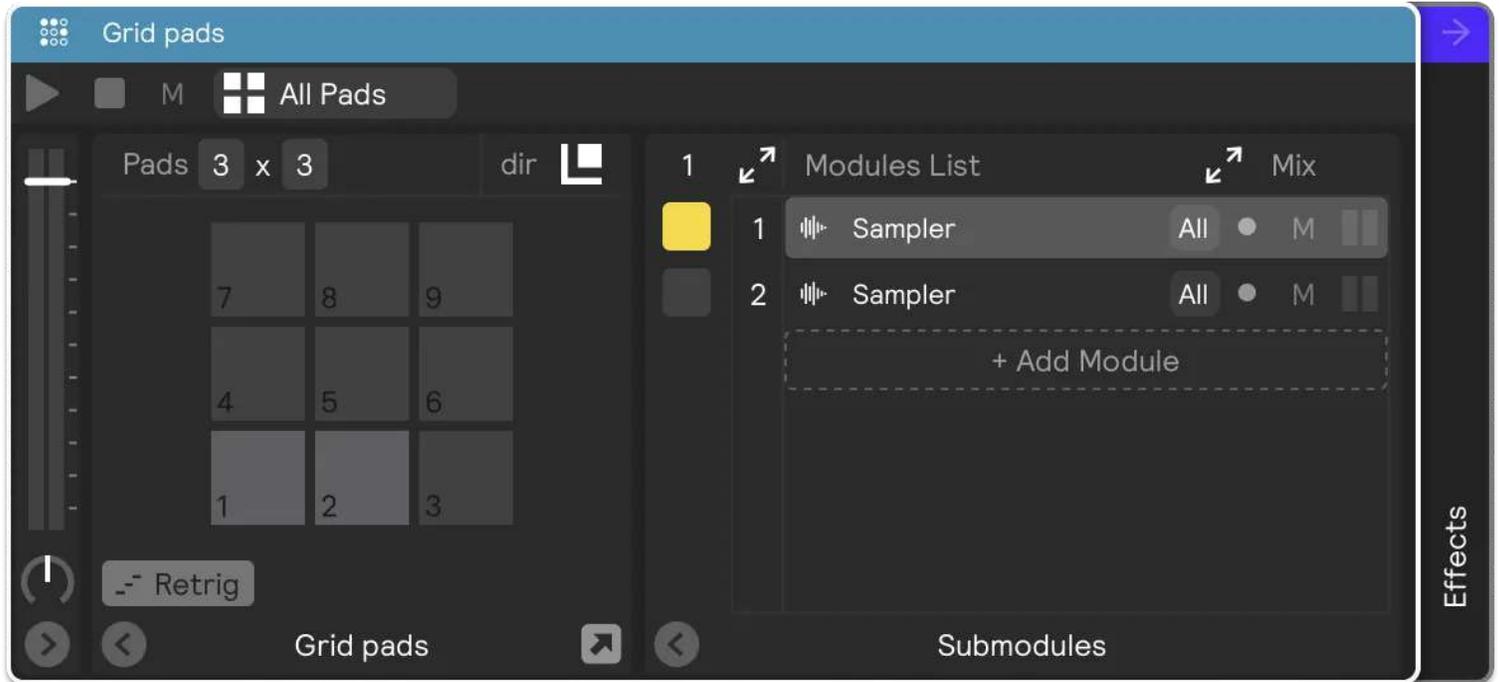
What's that little arrow button in the bottom left of the Drum Pads Controller?

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.



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.



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](#) enables distribution of modules across the different pads. Unlike other pads modules, [Hi-hat Pads](#) includes a meter for pedal tension. Next to the pedal tension meter is a center adjustment slider. The Hi-hat Input features the same control, but this local center adjustment can be helpful to tweak for module by module cases (like Velocity I/O panels). The resulting pedal tension is forwarded to any [Hi-hat Pedal Controller](#) submodules.

The available zones and their abbreviations in the matrix are:

- bow (bo)
- edge (E)
- bell shoulder (bs)
- bell tip (bt)
- ping (pi)
- pedal (pe)
- sizzle (si)

Hi-hat Pedal Controller

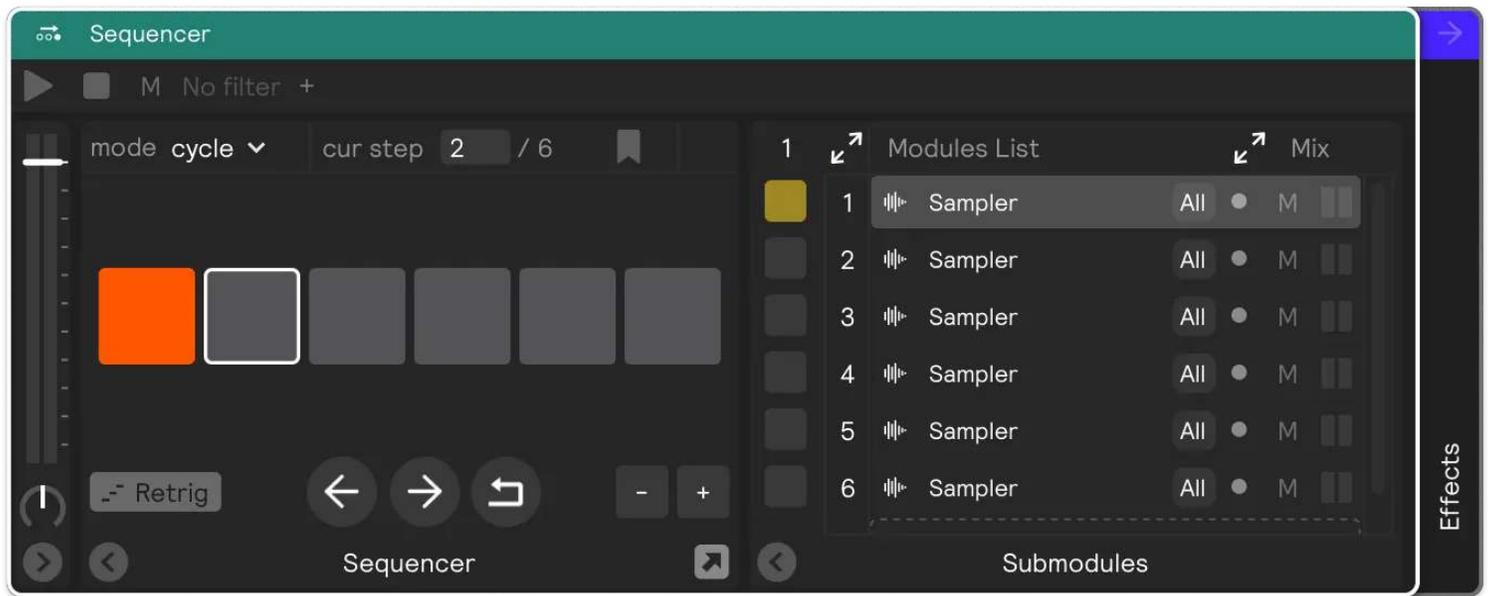
Hi-hat Pedal Controller receives pedal tension from [Hi-hat Pads](#) to determine which modules should be played. **Hi-hat Pedal Controller must be a submodule of a Hi-hat Pads module to receive pedal tension.**

Spread determines the width of selection of submodules. Turn this down to only ever hear one submodule at a time. Turning it up introduces blending or crossfading between submodules. For recreations of an acoustic hihat, some amount of blend usually sounds more natural.

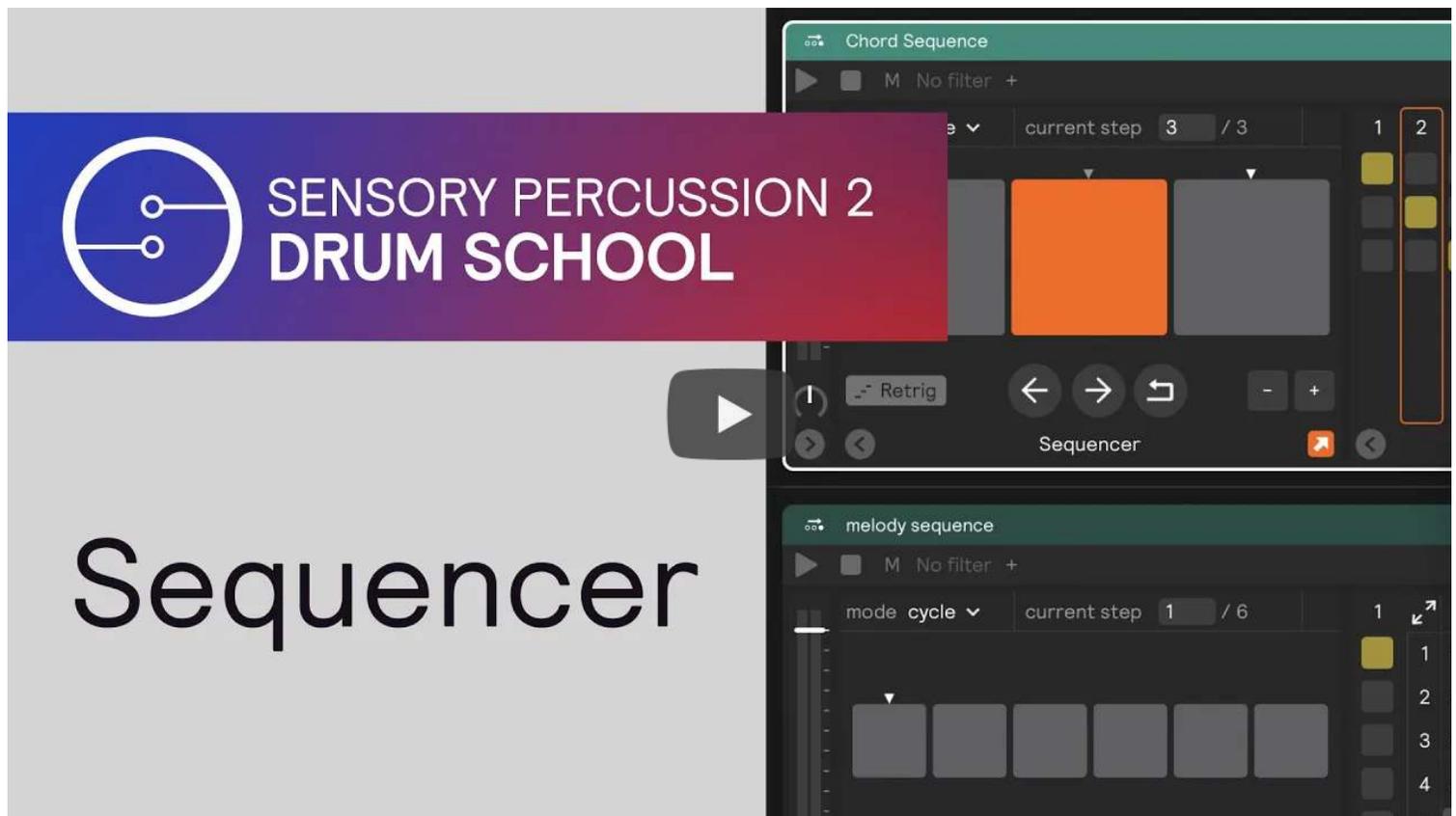
Audition disables pedal tension selection of submodules and bypasses *spread*. Enabling *audition* essentially turns [Hihat Pedal Control](#) into a [Group](#), which is mainly useful for clicking through submodules at full volume while setting things up or getting oriented.

Like [Hit Controller](#), [Hi-hat Pedal Controller](#) has a step control per submodule. A center point for pedal tension is overlaid on the steps. Use this as a reference point for where you cross over from *open* to *closed* sounds. If a step has a boundary within this midpoint, it acts as an anchor for adjustments elsewhere to keep *open* and *closed* sounds separately adjustable. There is nothing wrong with a step extending beyond this boundary; this might be a more logical workflow depending on your sound design approach and playing style.

Sequencer

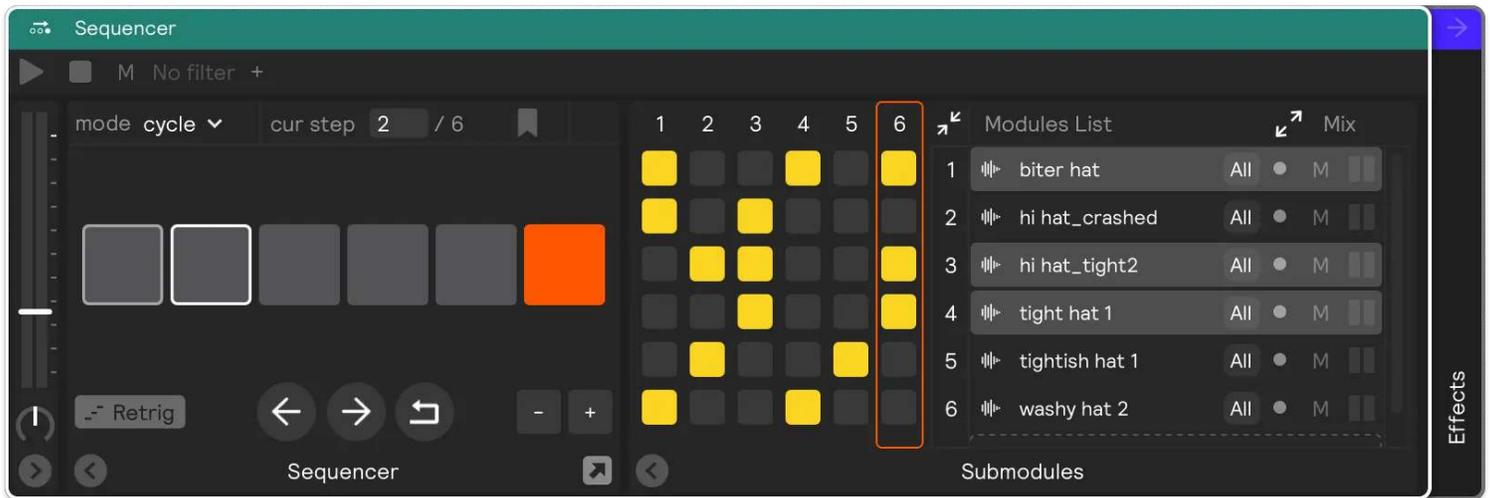


Sequencers allow you to cycle, randomize, or manually control the order in which the modules within are played. You can even put a sequencer inside of a sequencer for extra variability!



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: pop open the matrix view of the sequencer and you can change pattern of the sequence and even assign multiple modules to one step.



Modes (cycle/reverse, random, and manual)

Cycle/reverse

When a sequencer is in "cycle" mode, every hit will trigger a new step in the sequence. Reverse will do the same thing, just in the opposite direction.

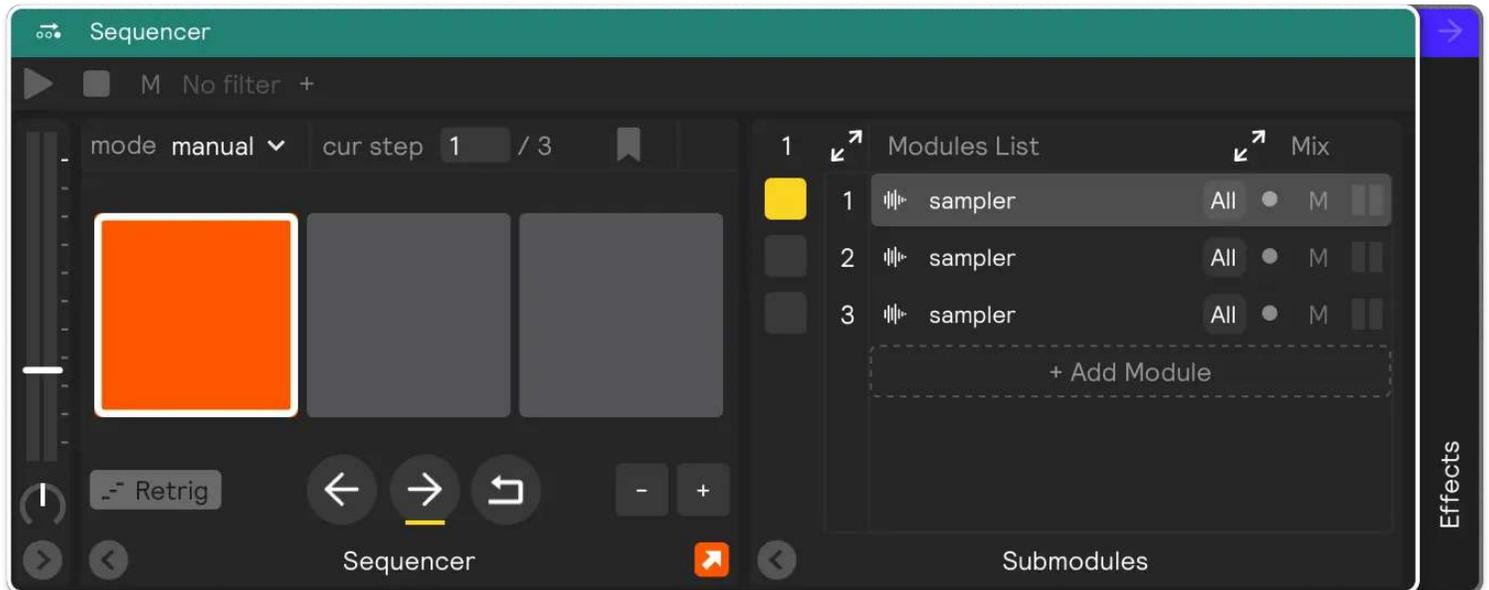
Random

When a sequencer is in "random" mode it will randomly choose a step to play back each time it receives a hit message. 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 steps will chosen only by the number box says. 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.

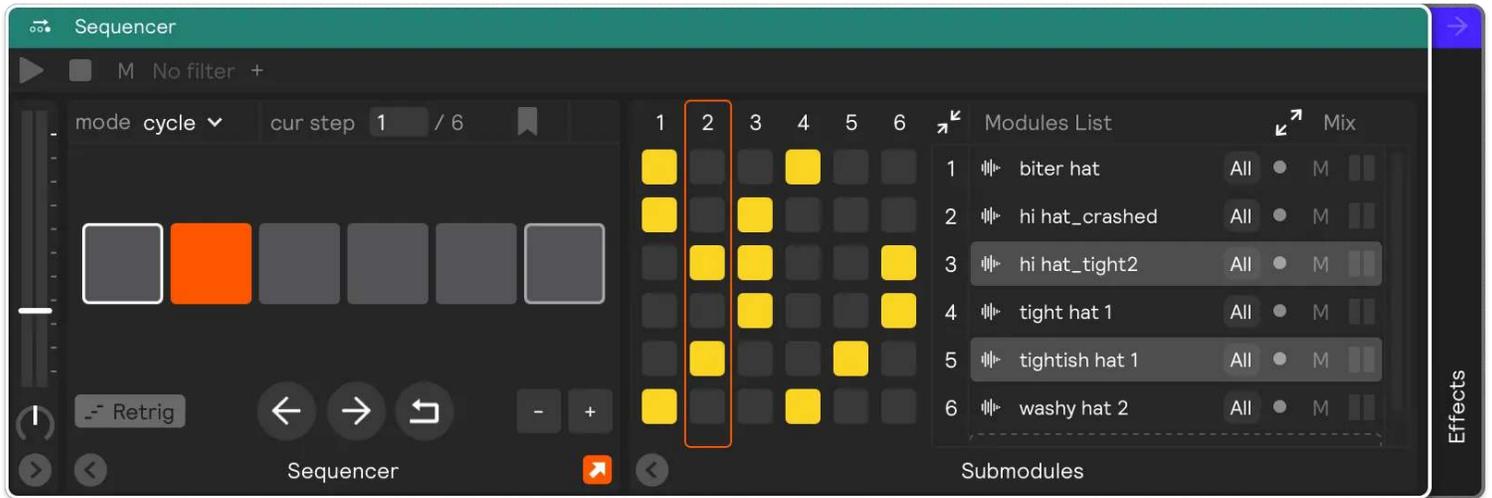


Retrigger

Turn on the `retrig` button if you want the *sounding* module to cutoff the sound of the previously *sounded* 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.

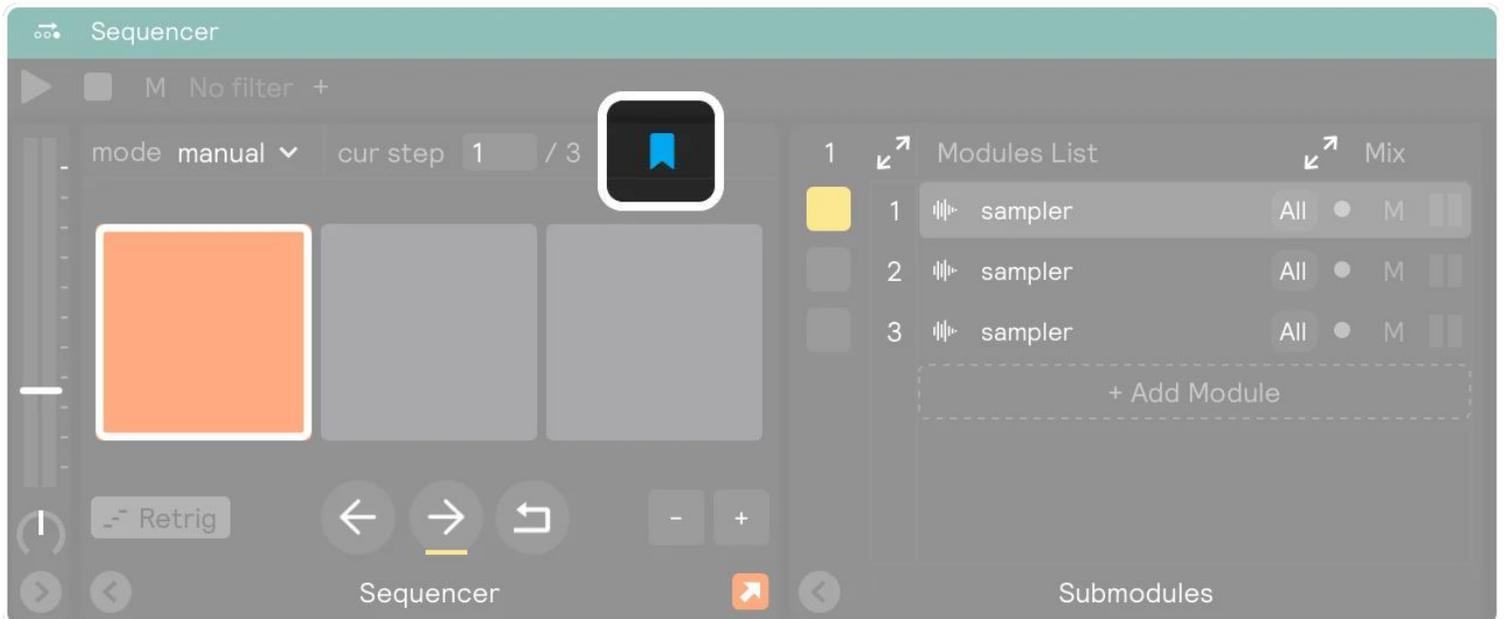
Highlight Last Played Step

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 last step that was triggered. This can be helpful if you are sound designing while you are playing and want to see the last played module.

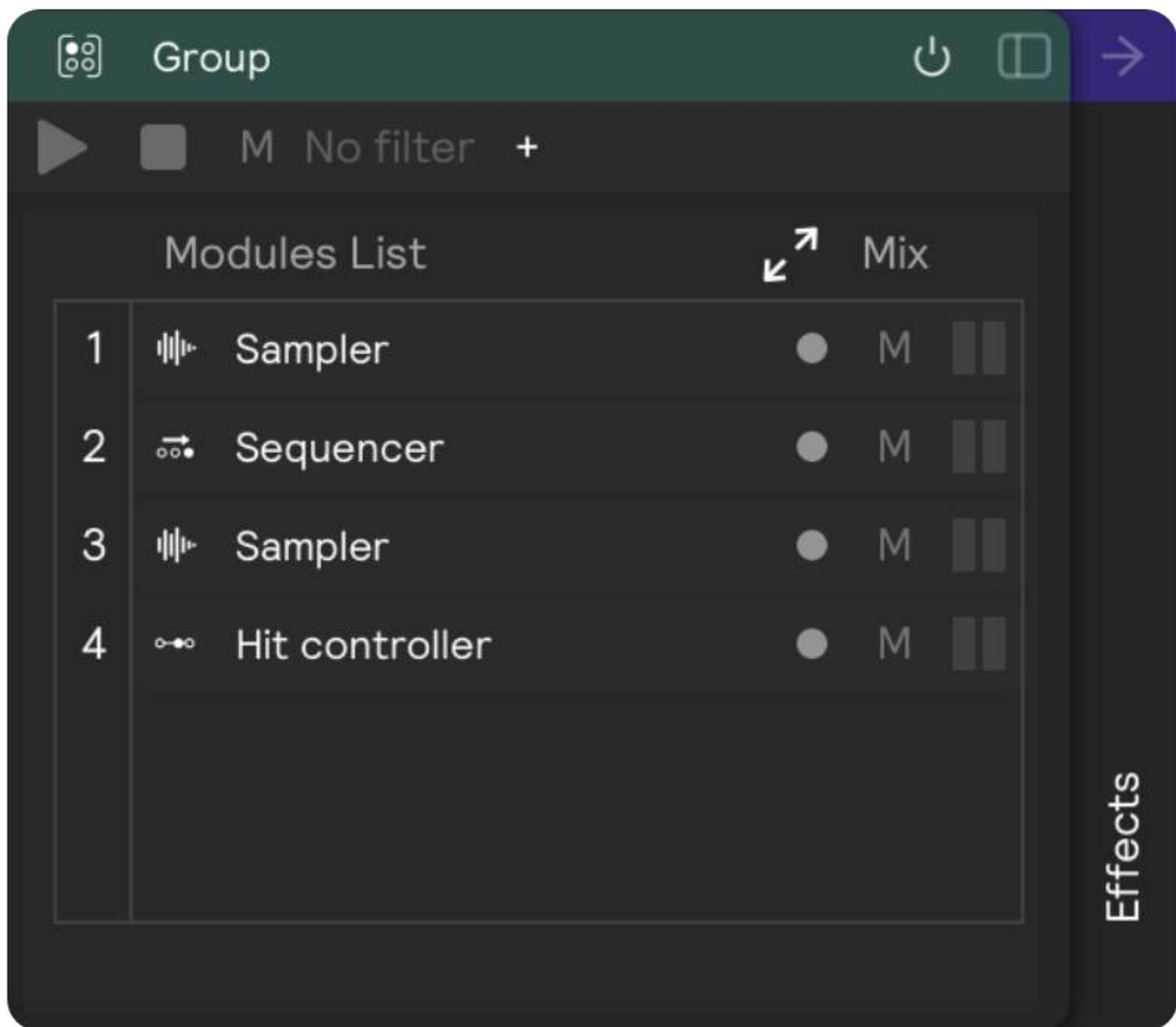


Save Step

Turn on the `Save Step` parameter, if you want the sequencer to remember what step it's on when you toggle between sets. 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 "snare on" or "snare off" sound, and you want to change sets in your session, but have the set "remember" if the snare are off/on when you come back to it. In that case you would want to turn on `Save Step`.

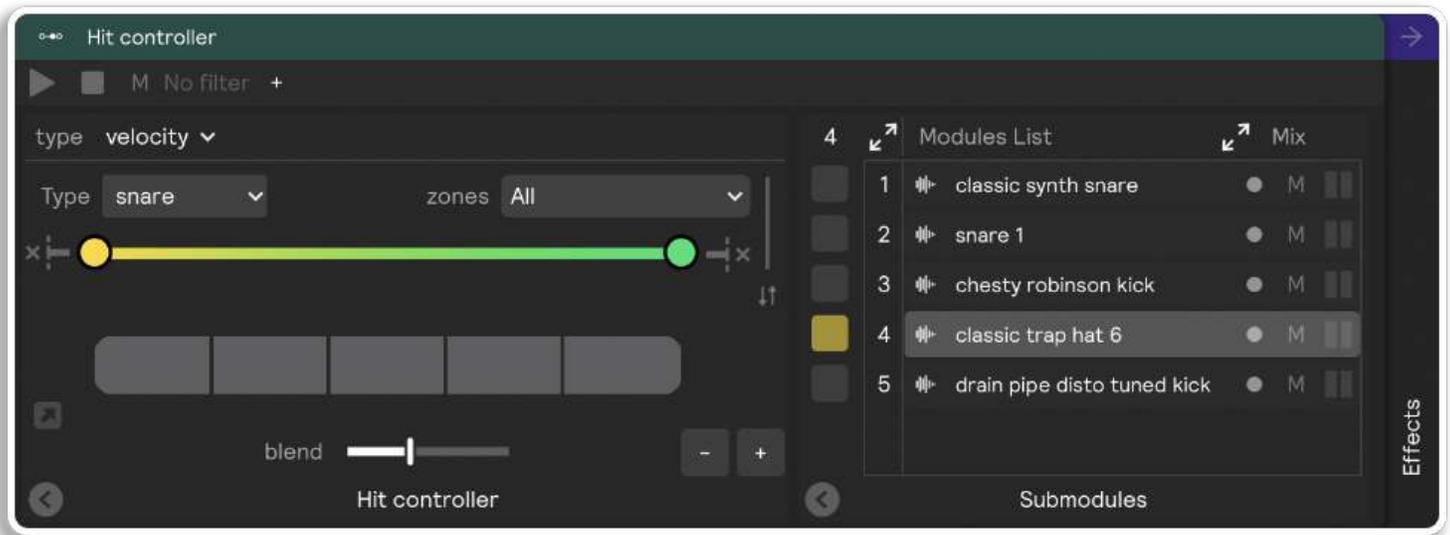


Group



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



Hit Controllers filter timbre, speed, or velocity messages and then pass those filtered hit messages to modules within.

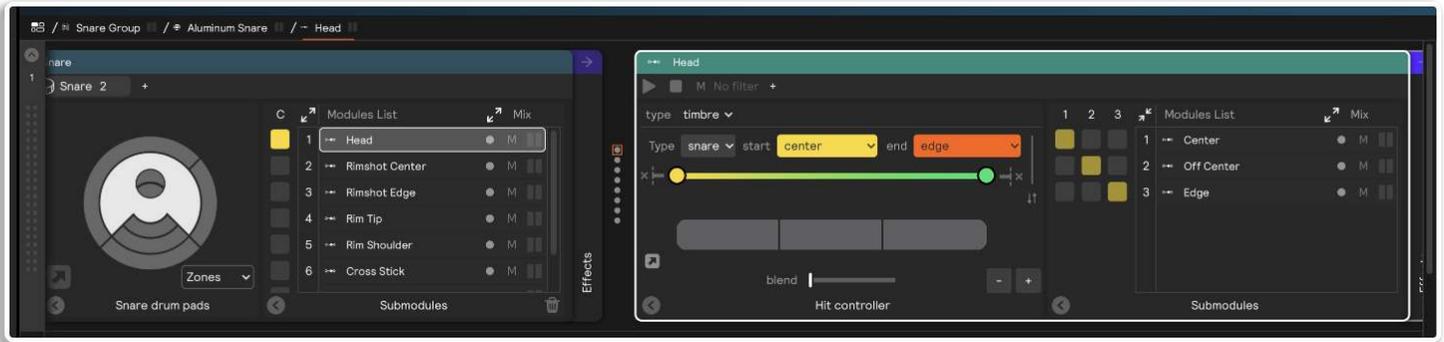
Let's say you have two samplers and you want soft hits to trigger one sampler, and hard hits to trigger the other sampler.

Simply drag both of those samplers into a *Hit Controller* set to velocity and arrange them so that the low velocity sampler is in the first step, and the high velocity is in the second step. That's essentially what the hit controller is for.

But wait! There's more!

Of course within the Hit Controller you can infinitely nest any other [controller](#) (including other hit controllers), allowing you to create some really intricate and cool sound design.

So -- for example -- you could have a timbre "center-to-edge" hit controller mapped to the head zones of a [Drum Pads controller](#) (Center and Edge), and then have three velocity hit controllers mapped to that range named "Center," "Off Center," and "Edge." In this way, if your [training](#) is good, then you can essentially enable a zone called "Off Center" (or whatever you want to call it) *between* the Center and Edge zones.

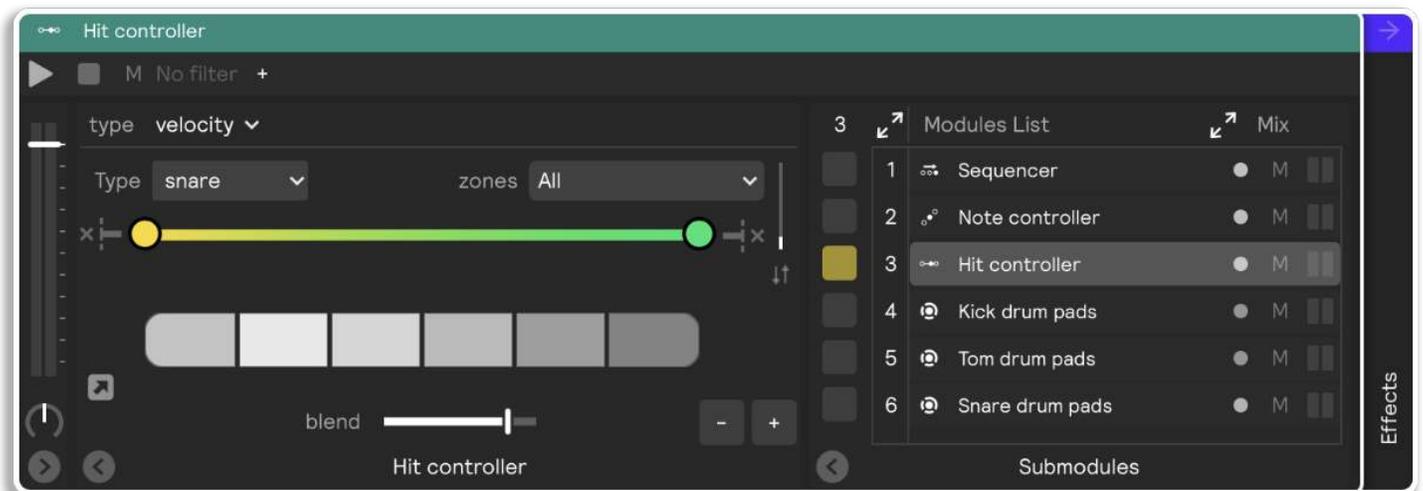


Additionally, you can use a speed hit controller to play different sounds only when you buzz roll. You could have one sampler in the center of the drum, but sequence 30 samplers on the very edge of the drum. The possibilities are truly limitless! Go nuts!

Blend and Step Size

By dragging the Blend slider, you can blend between the steps of the hit controller and they will play back the modules contained within at the same time, but proportionally to where/how hard you played the drum.

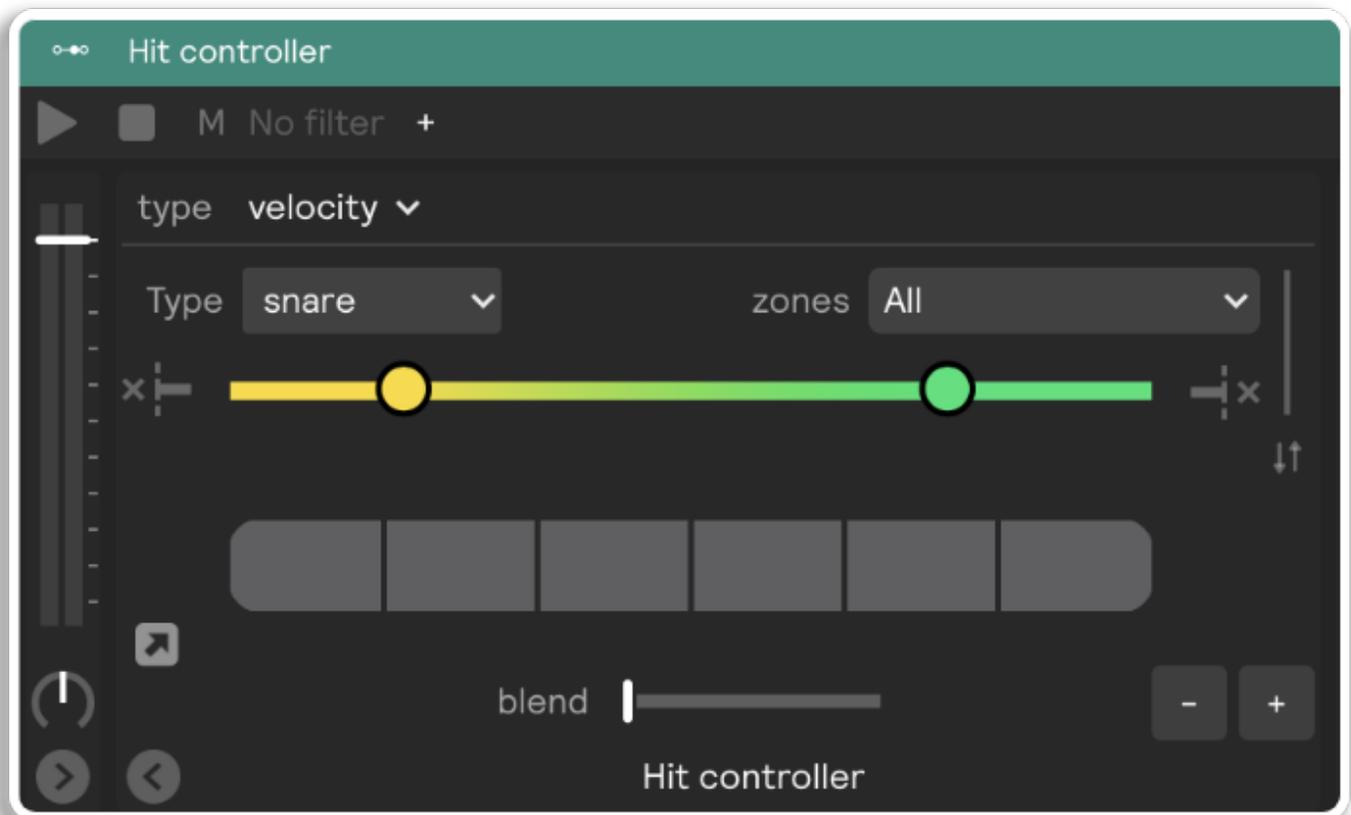
For example: in a velocity hit controller you can turn the blend up pretty high and you will find that on low velocity hits you will trigger the modules assigned to the bottom most steps, and on hard hits you will trigger the modules assigned to the top most steps. But on each hit you will trigger more than one step.



You can adjust the size of the hit controller steps in order to make one or more steps more or less likely to be triggered along the timbral, velocity, or speed range.

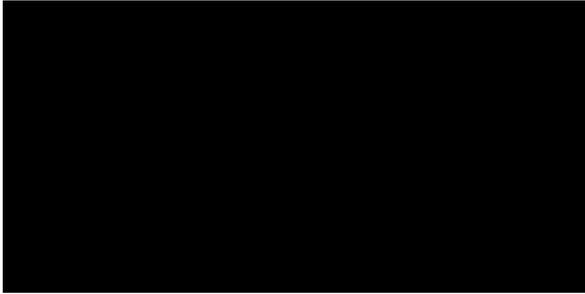
Sensitivity

You can make the Hit Controller more responsive to the top or bottom range of the selected steps by adjusting the double sided sensitivity slider at the top of the Hit Controller UI. Pulling the left circle to the right will make it more sensitive (and therefore more likely to trigger) to the lower steps, while pulling the right circle to the left will make the Note Controller more sensitive to the higher steps.



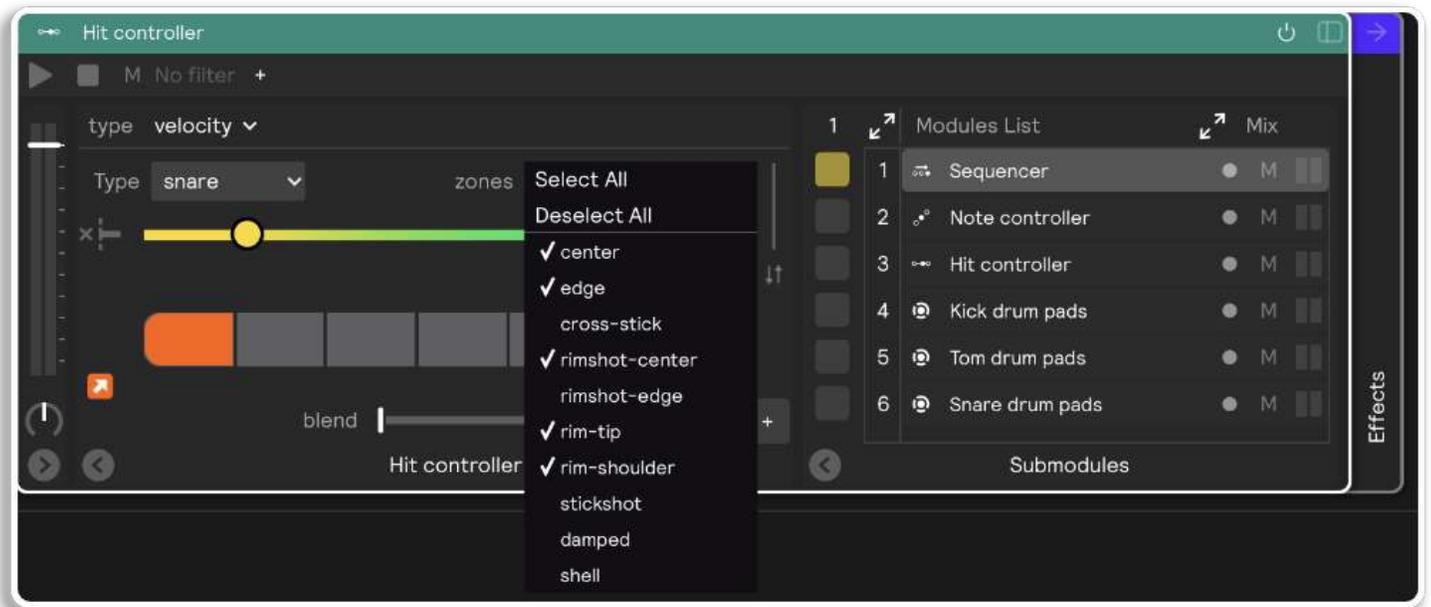
Highlight Last Played Step

As with the other controllers you can turn on the little arrow button in the bottom left of the Hit Controller, which will high light the last step that was triggered. This can be helpful if you are sound designing while you are playing and want to see the last played module.



Zone Filtering

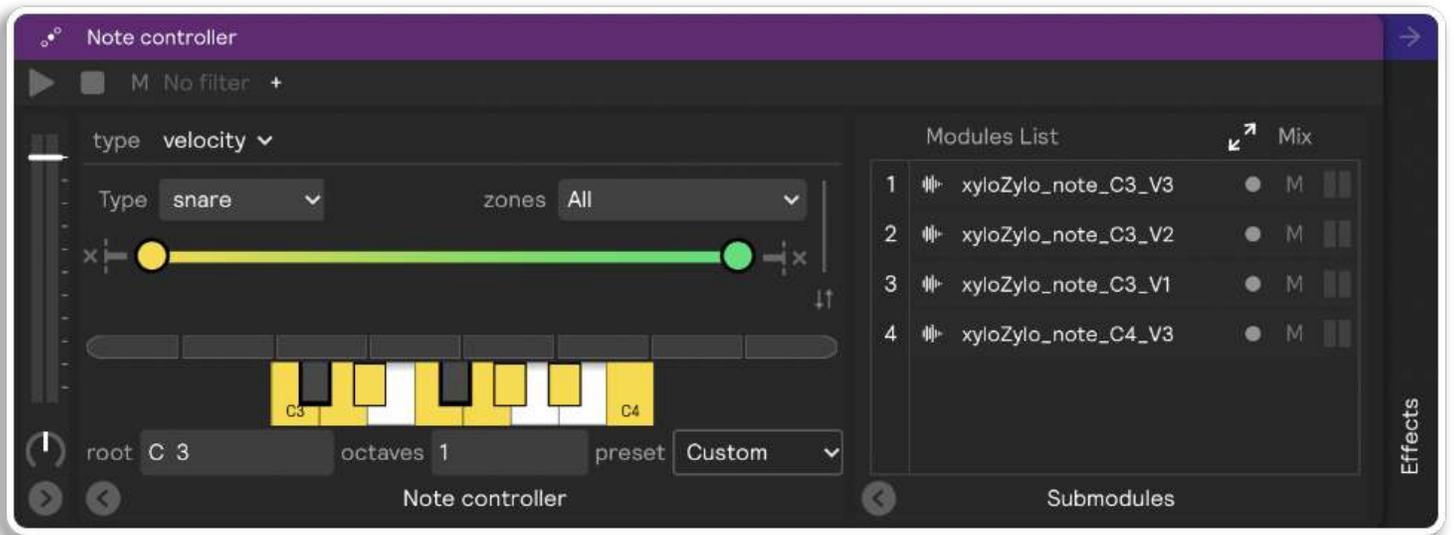
Say you only want your hit controller to respond to a specific zone/zones and not react to hit messages from other zones. You can do that by selecting/deselecting zones in the top right dropdown titled "zones."



! INFO

This "zones" dropdown is only available on Velocity and Speed Hit Controllers because Timbre Hit Controllers naturally include/exclude zones in their main UI.

Note Controller



The Note Controller converts the timbre, speed, or velocity of your playing to notes in a scale.

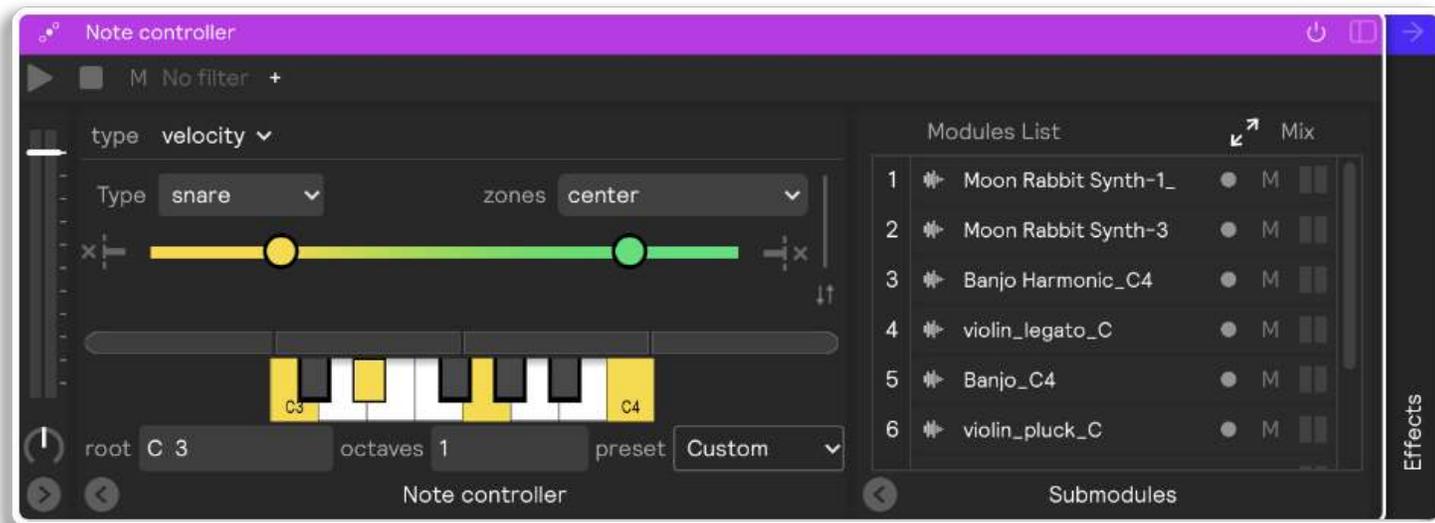
Want to play a scale with the low notes in the Center and higher notes out to the Edge? How about playing low notes by hitting softly and high notes by hitting hard? Low notes by playing slowly and high notes by playing fast? Note controller can do all of this and more!

Setting up the Note Controller

Drag the Note Controller from the library and drag a sample/s or module/s into its modules list. Click on notes on the piano keyboard UI to enable/disable those scale degrees. Select "velocity," "timbre," or "speed" from the *type* dropdown. Adjust the root note of the controller to pitch up/down the starting note of the Note Controller. Adjust the number of octaves you would like the controller's range to expand.

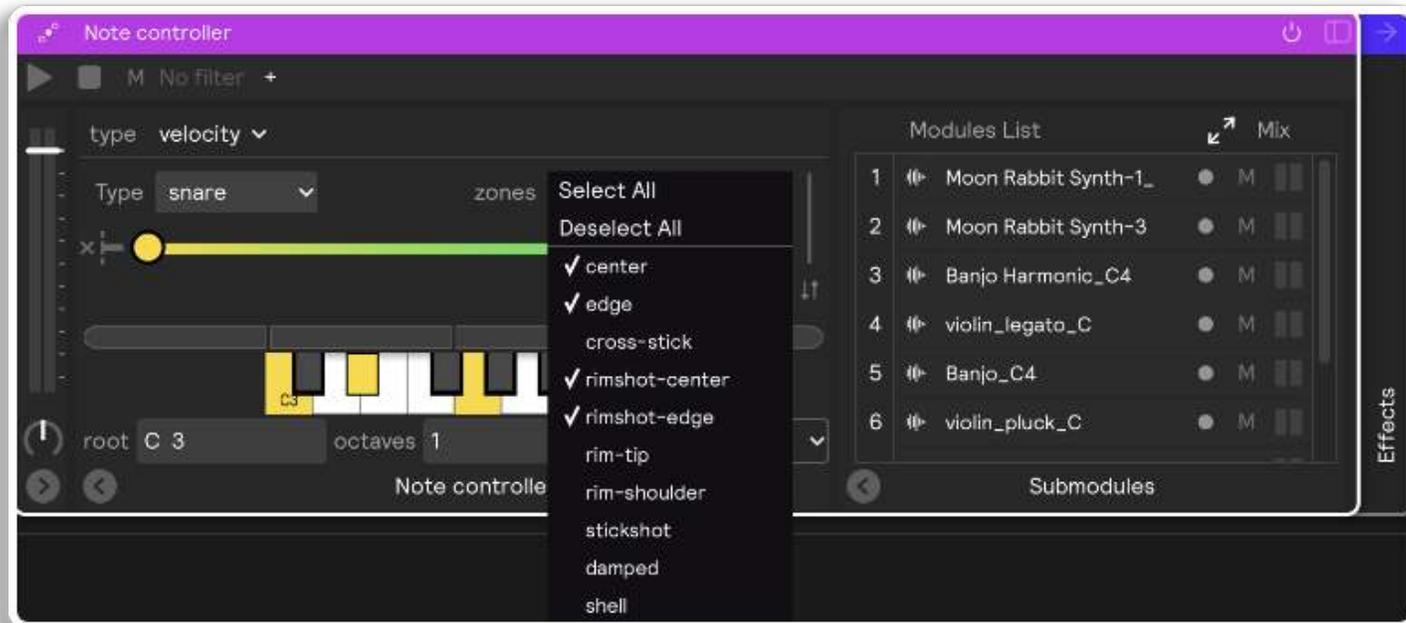
Sensitivity

You can make the Note Controller more responsive to the top or bottom range of the selected notes by adjusting the double sided sensitivity slider at the top of the Note Controller UI. Pulling the left circle to the right will make it more sensitive (and therefore more likely to trigger) to the lower notes, while pulling the right circle to the left will make the Note Controller more sensitive to the higher notes.



Zone Filtering

Say you only want your Note Controller to respond to a specific zone/zones and not react to hit messages from other zones. You can do that by selecting/deselecting zones in the top right dropdown titled "zones."



! INFO

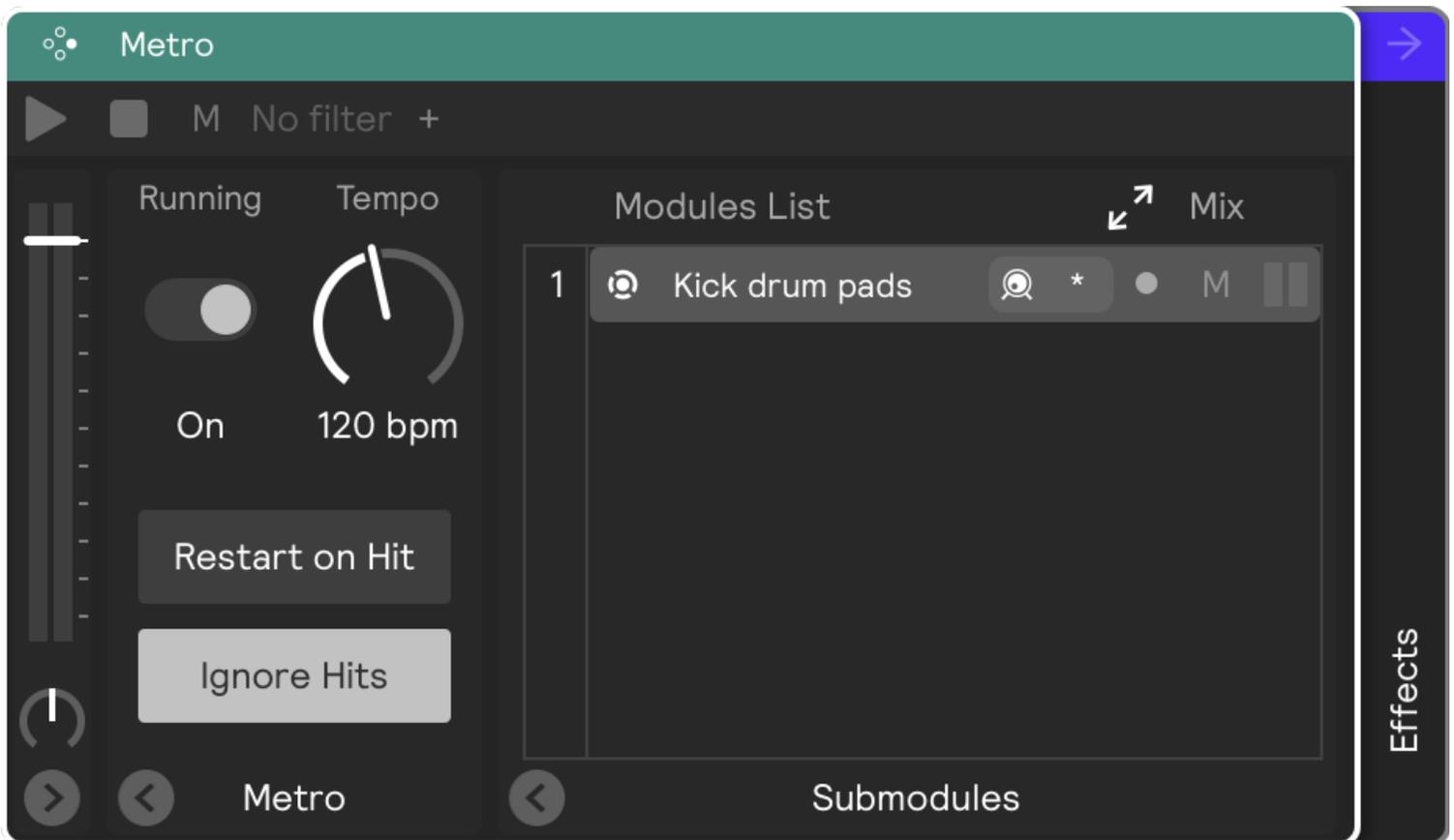
This "zones" dropdown is only available on Velocity and Speed Note Controllers because Timbre Note Controllers naturally include/exclude zones in their main UI.

 **TIP**

You can use the [MIDI router](#) generator to send the notes of a note controller to a hardware [MIDI Output](#) (and then [out of the software](#) to control some cool synth or something).

Metro

The metro controller is what it sounds like: a metronome!



Parameters

Running

This switch turns the metronome on and off. When it's turned back on, the metronome will restart with a hit.

Tempo

The tempo of the metronome in beats per minute (BPM). It accepts any number from 0 to 999. You can use the knob or type a number in the field.

Restart on Hit

This parameter only does anything if `Ignore Hits` is turned off. When it's on, the metronome will restart when it receives a hit. When it's off, the metronome will keep running even if it receives a hit. This is off by default.

Ignore Hits

When on, the Metro will ignore any hits it receives. This is useful if you want to use the Metro as a standalone click and is necessary because the Metro object has no hit filter by default meaning it would receive hits from all drum inputs. This is on by default.

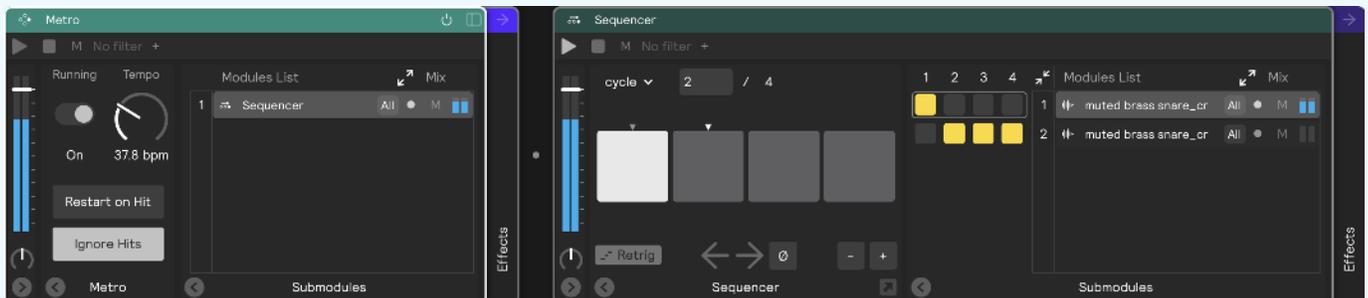
! INFO

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
```

▼ Idea: Create a four-count metronome

You can easily create a four-count click track using a sequencer in the Metro. This setup uses a sequencer with four steps. The first step is pitched up a bit.



⚠ WARNING

Keep in mind that there is no way to exclude a layer from the Main Mix in your outputs. So if you want to use the Metro as a click, you will likely want to use submixes and create a submix just for the click and a new submix with everything else as your new Main Mix.

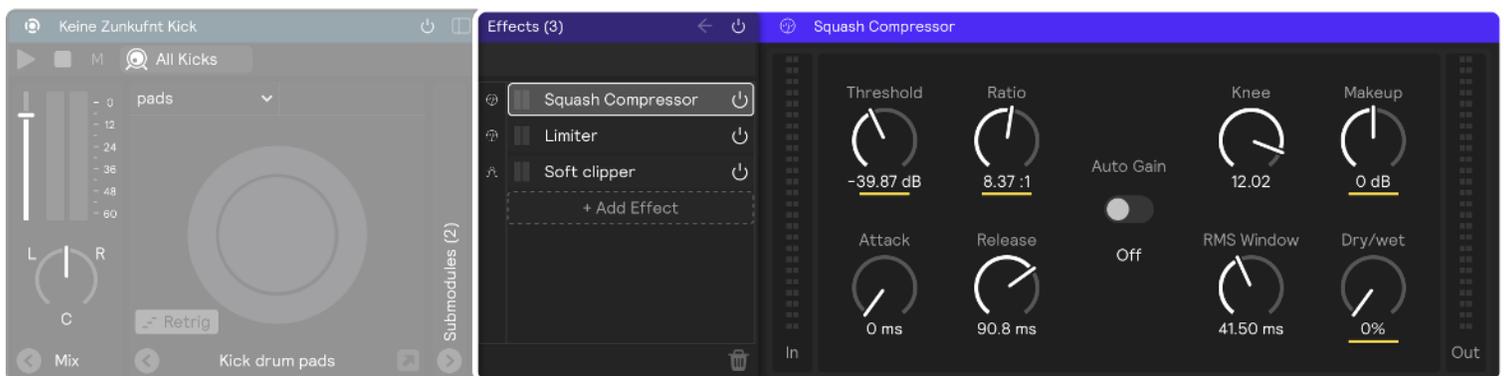
Effects

Adding effects

Effects can be added to almost anything in Sensory Percussion 2: generators, controllers, and audio buses all have fx panels. Simply 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](#).



Chorus

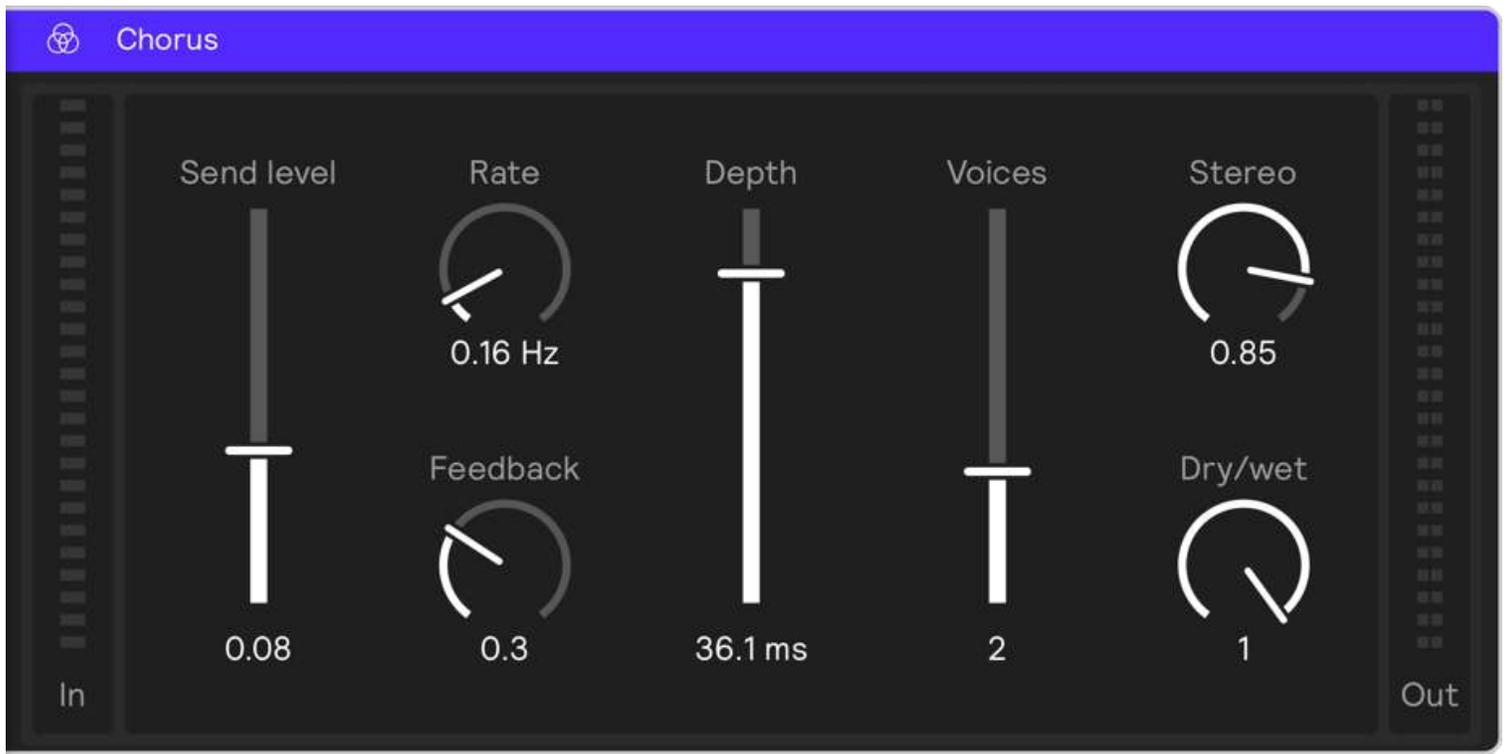
Send Level reduces the gain of audio input to the effect. Unlike adjusting Dry / Wet, modulating send level will preserve any audio tails.

The **Voices** input allows you to increase or decrease the number of phasing filters.

Rate controls the speed of the modulation.

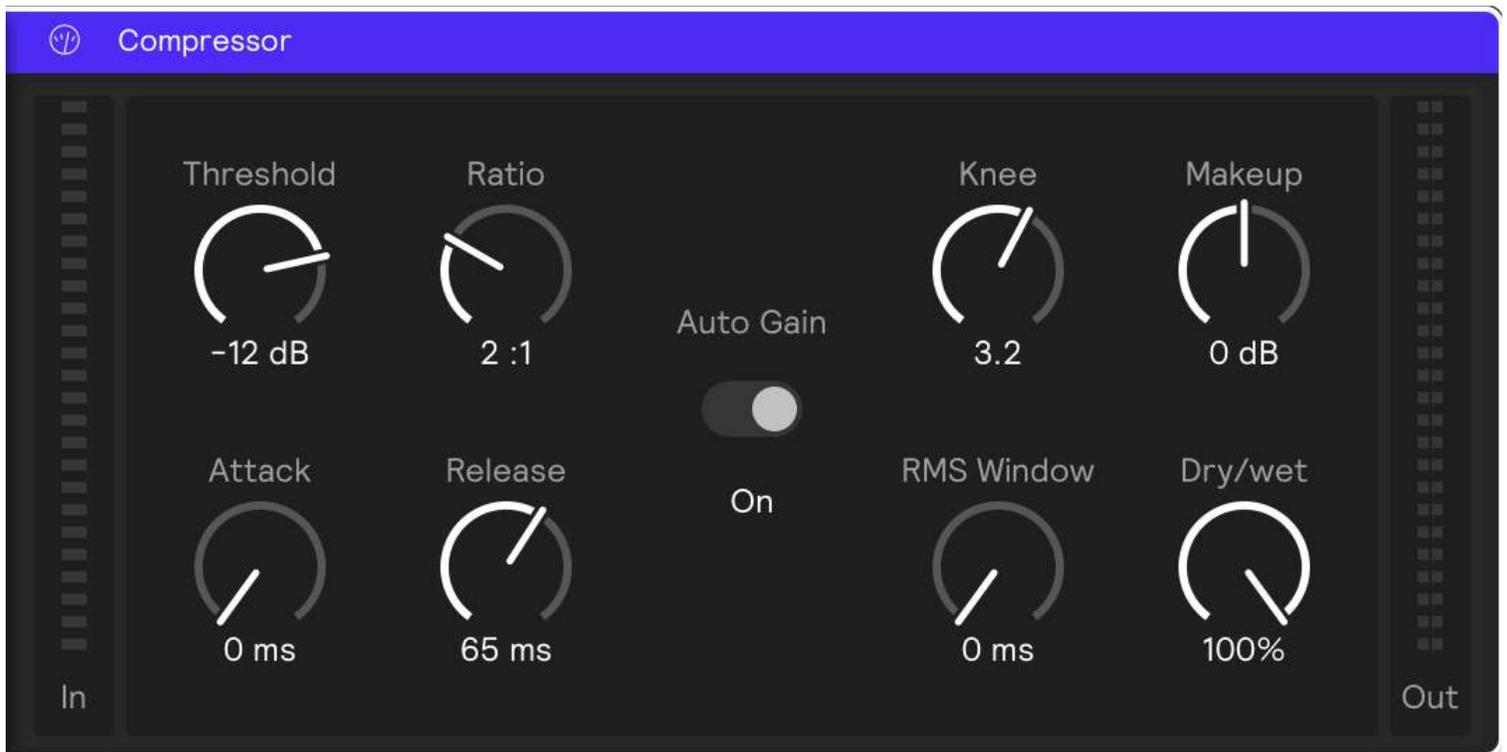
Feedback knob governs the level of modulated signal that is sent through the system again.

Increasing the **stereo** parameter widens the left - right panning range of the effect.



Compressor

Sensory Percussion's compressor is quick and easy to use - just add the effect, turn up the ratio and pull down the threshold to get the effect pumping. Tweak the **attack**, **release**, and **knee** to adjust the dynamic profile of the effect. **Note: Sidechain will be added to this effect in a future update.**

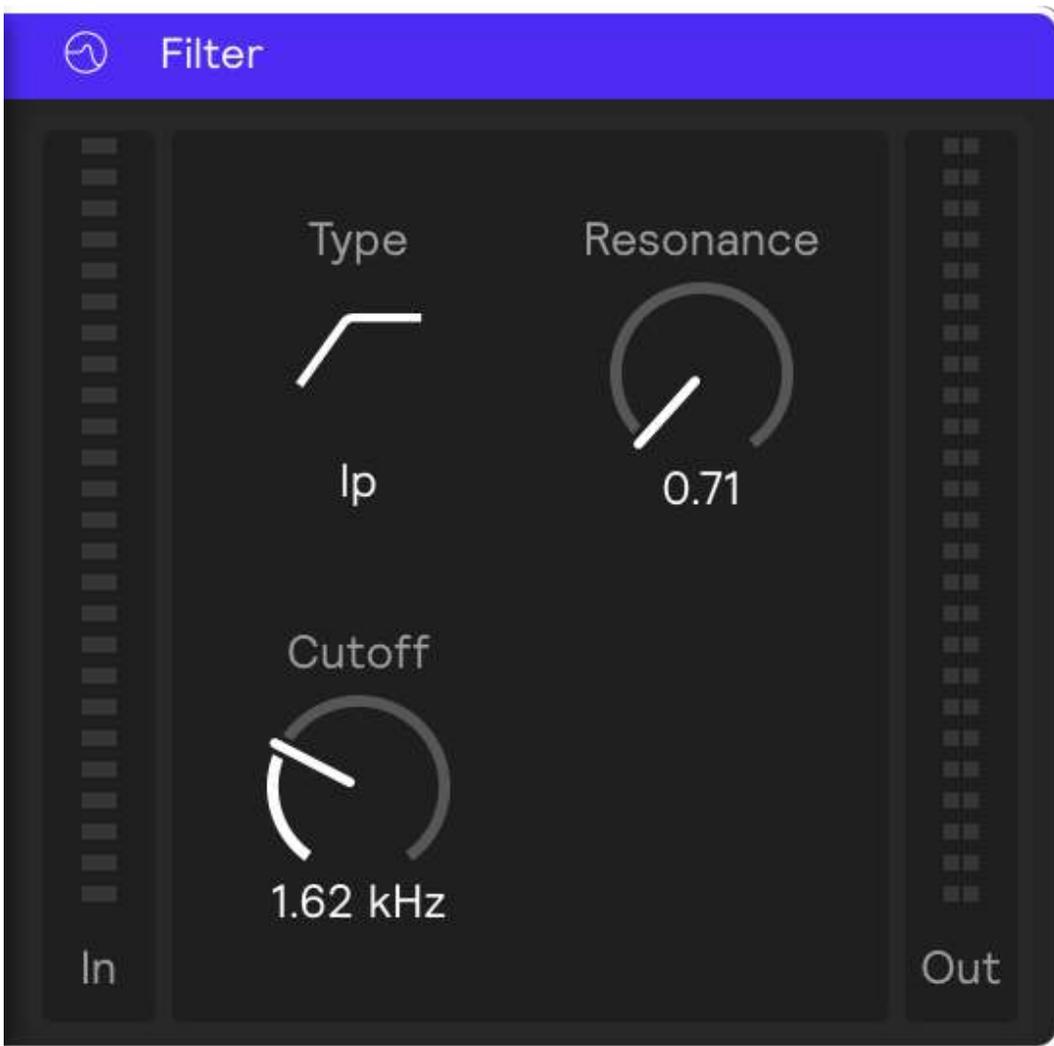


Filter

The filter effect is a collection of resonant filters that will be a versatile tool for you in your musical endeavors with Sensory Percussion. The **Cutoff** Frequency knob sets the frequency above and/or beneath which will be filtered from the signals, and the **Resonance** knob sets the amount that frequency will resonate.

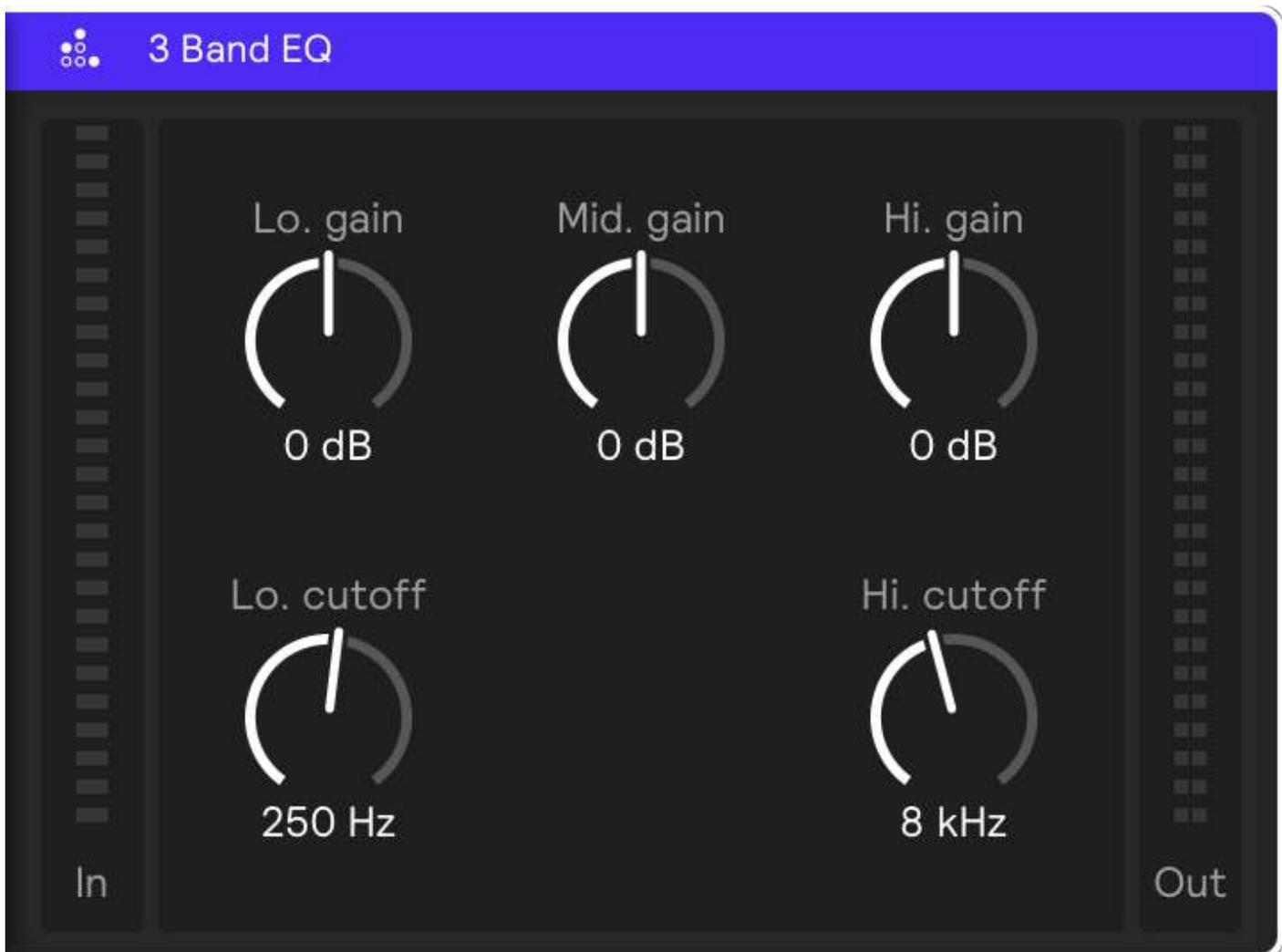
You can choose from three different filter types with the **Type** dropdown: **Low Pass (lp)**, **High Pass (hp)**, and **Band Pass (bp)**.

Low pass means that any frequency *above* the cutoff will be filtered out of the sound completely, and a **high pass** filter removes any frequency *below* the cutoff frequency. The **band pass** filter allows a wide band of frequencies around the cutoff to pass through the filter.



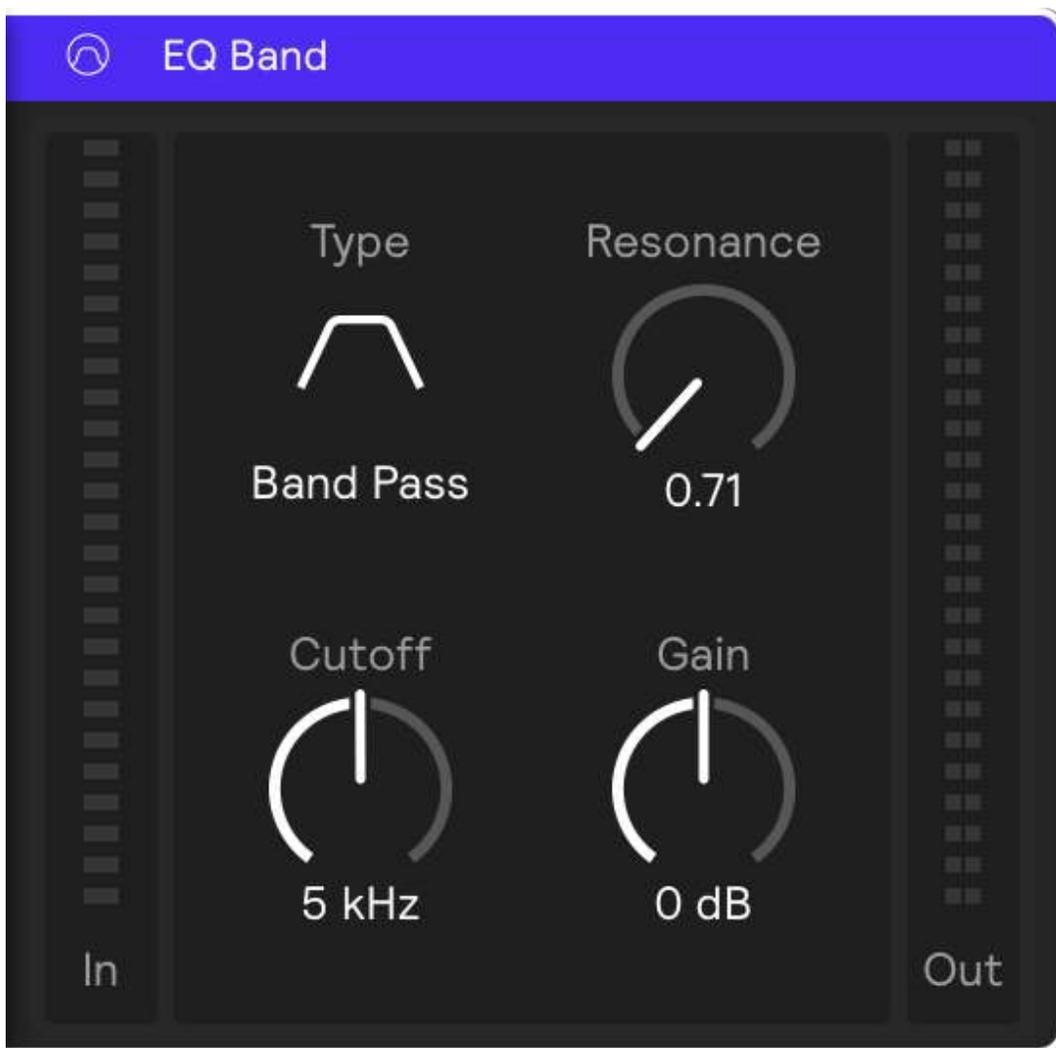
3 Band EQ

3 Band EQ behaves the same way as the Filter effect, but it contains 3 filters: **Lo**, **Mid**, and **Hi**. You can adjust the cutoff for lo and hi, as well as the gain for all three of them.



EQ Band

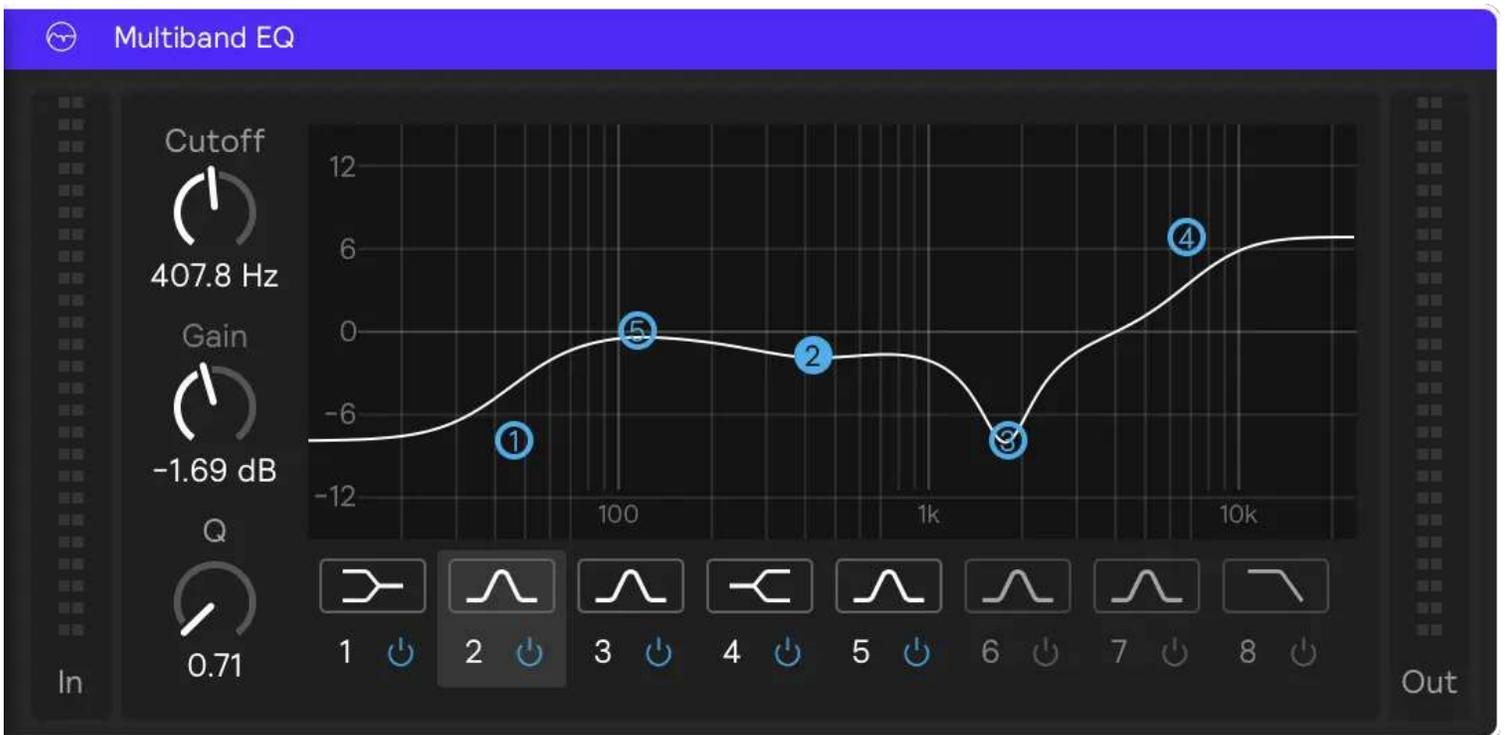
The EQ Band effect adds more filtering options. In addition to **Low Pass**, **High Pass**, and **Band Pass**, this effect also offers **Notch**, which removes only a small segment around the cutoff frequency; **High shelf** and **Low shelf**, which aren't as extreme as HP/LP, but reduce frequencies below or above the cutoff; and **Peak**, which boosts a small segment around the cutoff while filtering everything else. The **resonance** knob increases the volume at the cutoff frequency.



Multiband EQ

The Multiband EQ is cascading EQ bands for more fine control and combined with a realtime frequency spectrum UI, so you can see the sound sculpting in action.

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.



Flanger

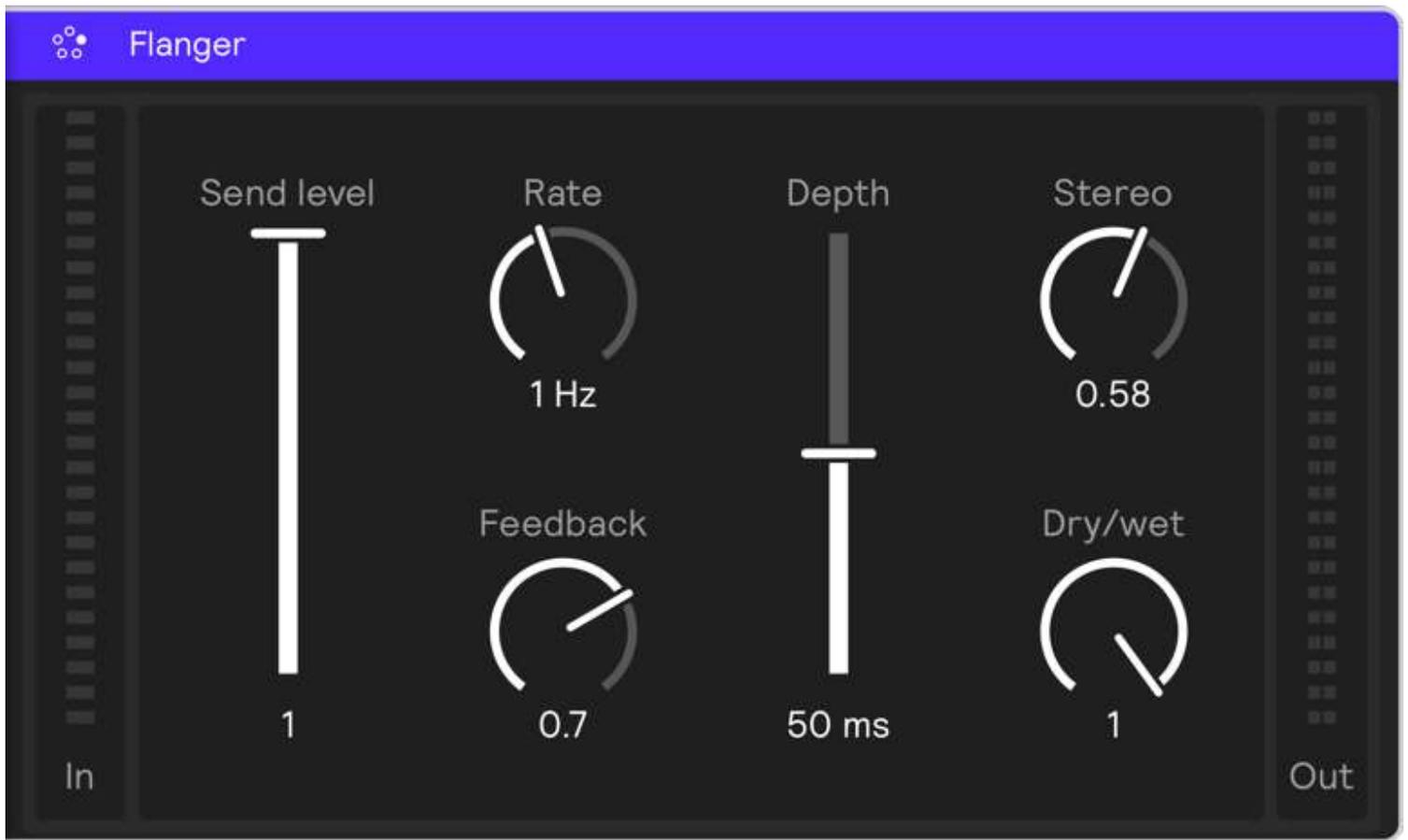
Flanging is created by duplicating the audio signal and delaying it by a minuscule amount, rather than applying all-pass filters like with chorusing and phasing modulations.

Send Level reduces the gain of audio input to the effect. Unlike adjusting Dry / Wet, modulating send level will preserve any audio tails.

The **depth** knob controls the sweeping range of the effect, whereas the **rate** controls the speed of the modulation.

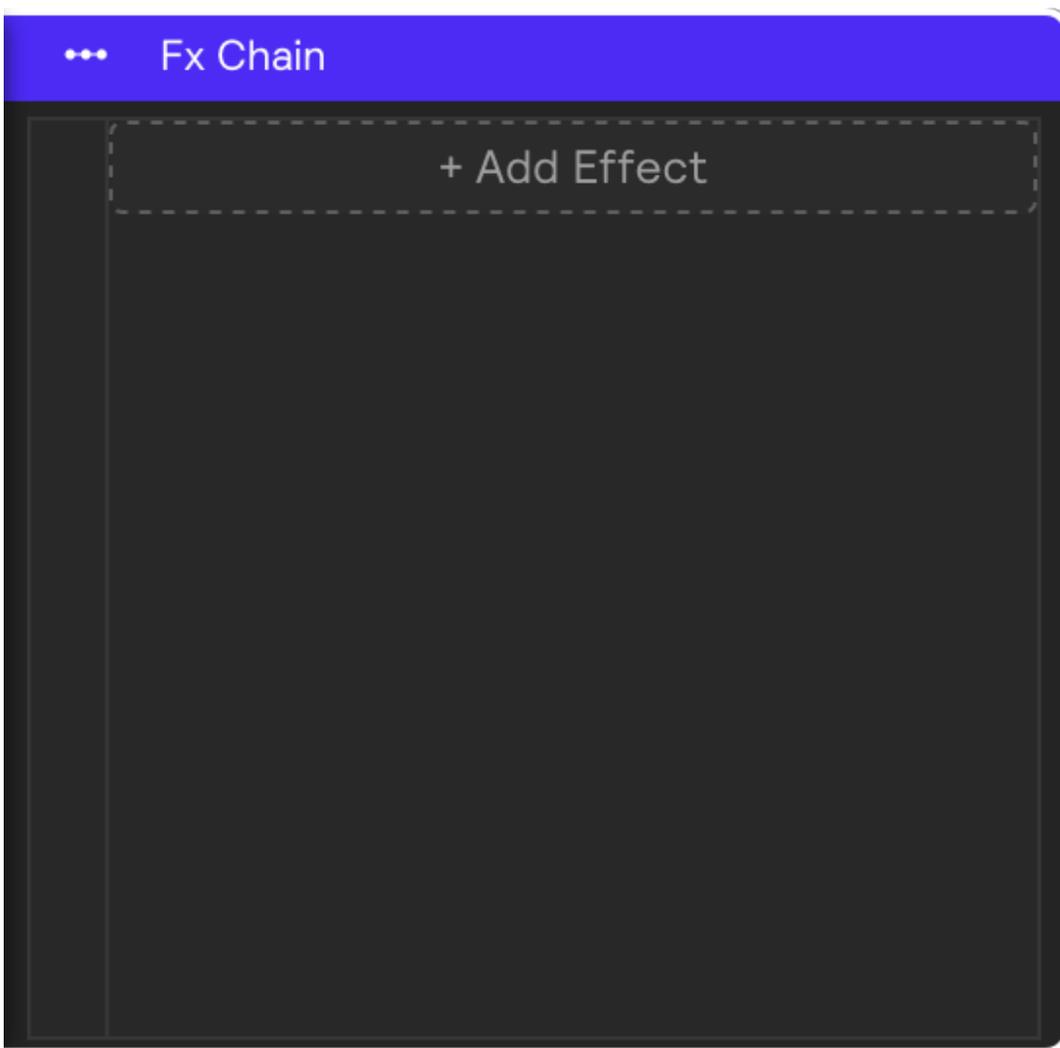
The **feedback** knob governs the level of modulated signal that is sent through the system again.

Increasing the **stereo** parameter widens the left - right panning range of the effect.



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.



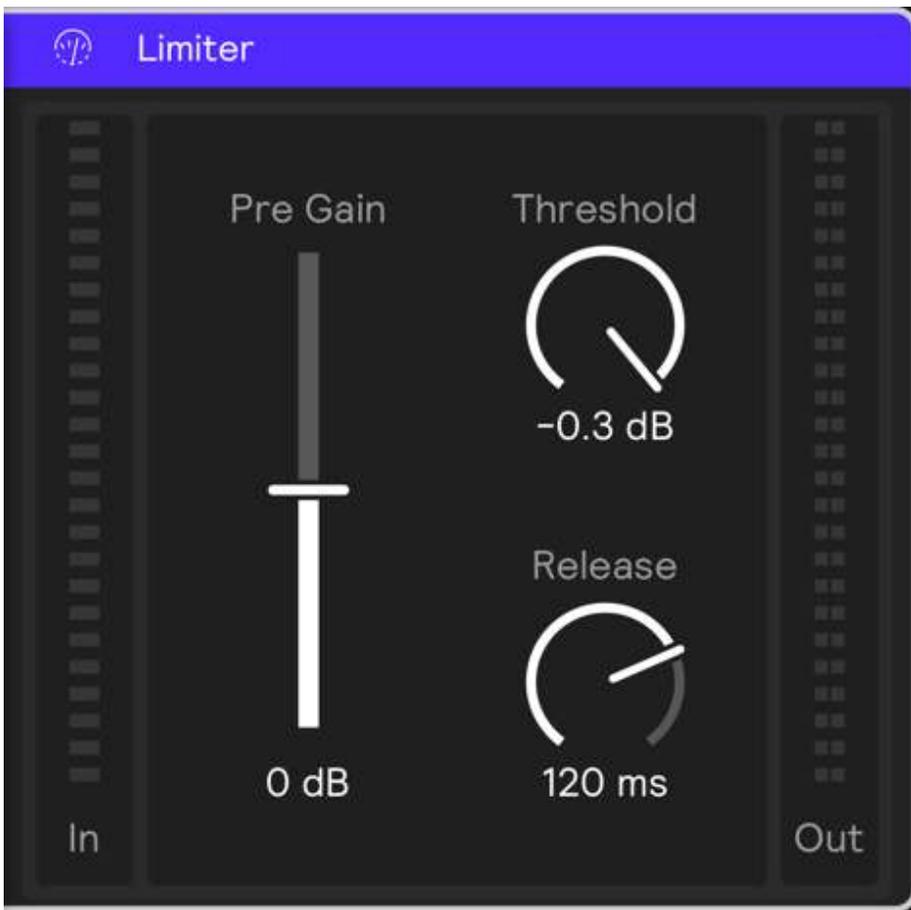
Limiter

The primary function of the limiter is to prevent the audio signal from exceeding a certain threshold (set in dB with the **Threshold** knob). It does this by reducing the gain of the signal when it exceeds the threshold. The **Release** knob sets the time it takes for the gain to return to normal after the signal falls below the threshold.

Send Level reduces the gain of audio input to the effect. Unlike adjusting Dry / Wet, modulating send level will preserve any audio tails.

The **Pre Gain** slider 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.



Phaser

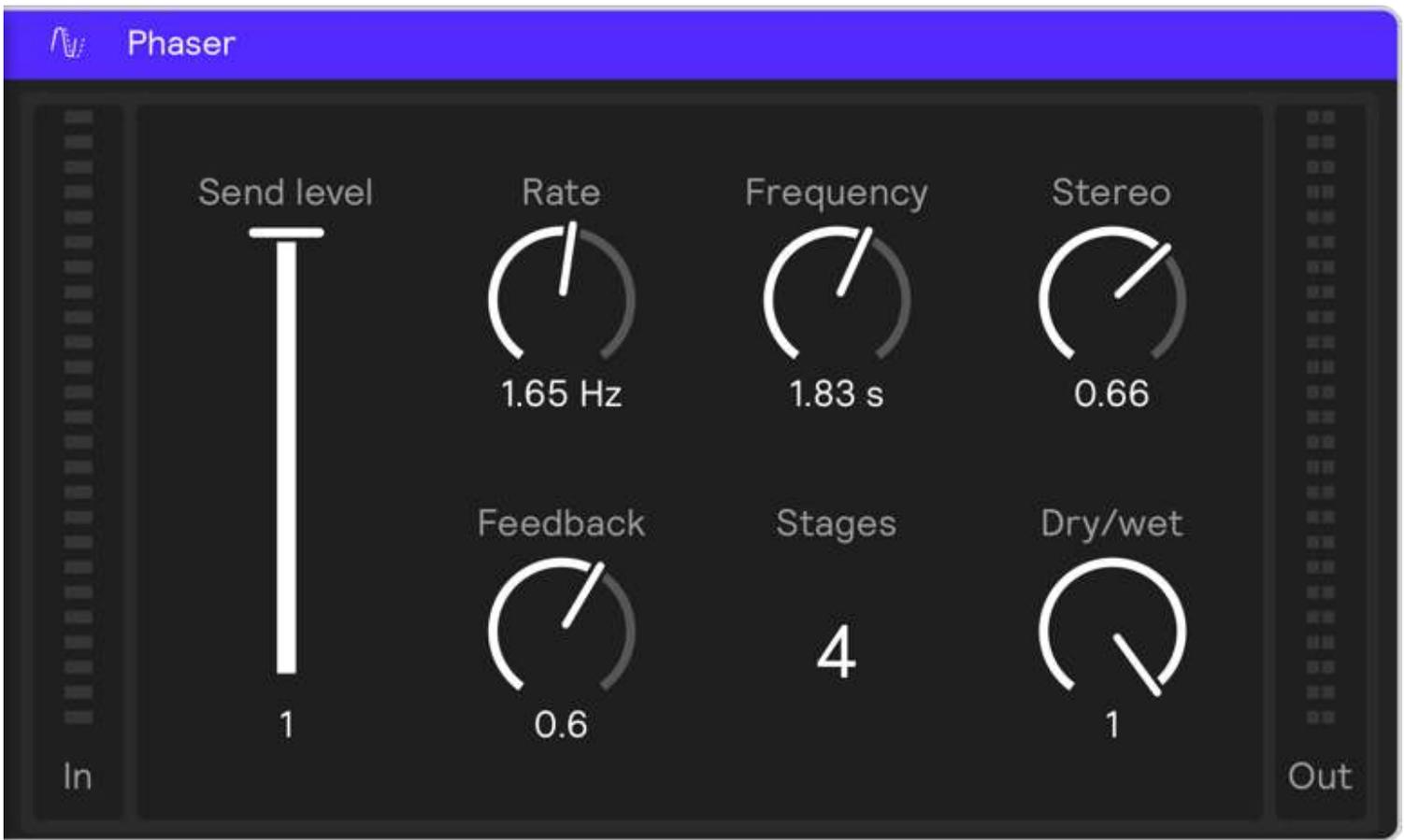
Send Level reduces the gain of audio input to the effect. Unlike adjusting Dry / Wet, modulating send level will preserve any audio tails.

The **Voices** input allows you to increase or decrease the number of phasing filters.

Rate controls the speed of the modulation.

Feedback knob governs the level of modulated signal that is sent through the system again.

Increasing the **stereo** parameter widens the left - right panning range of the effect.



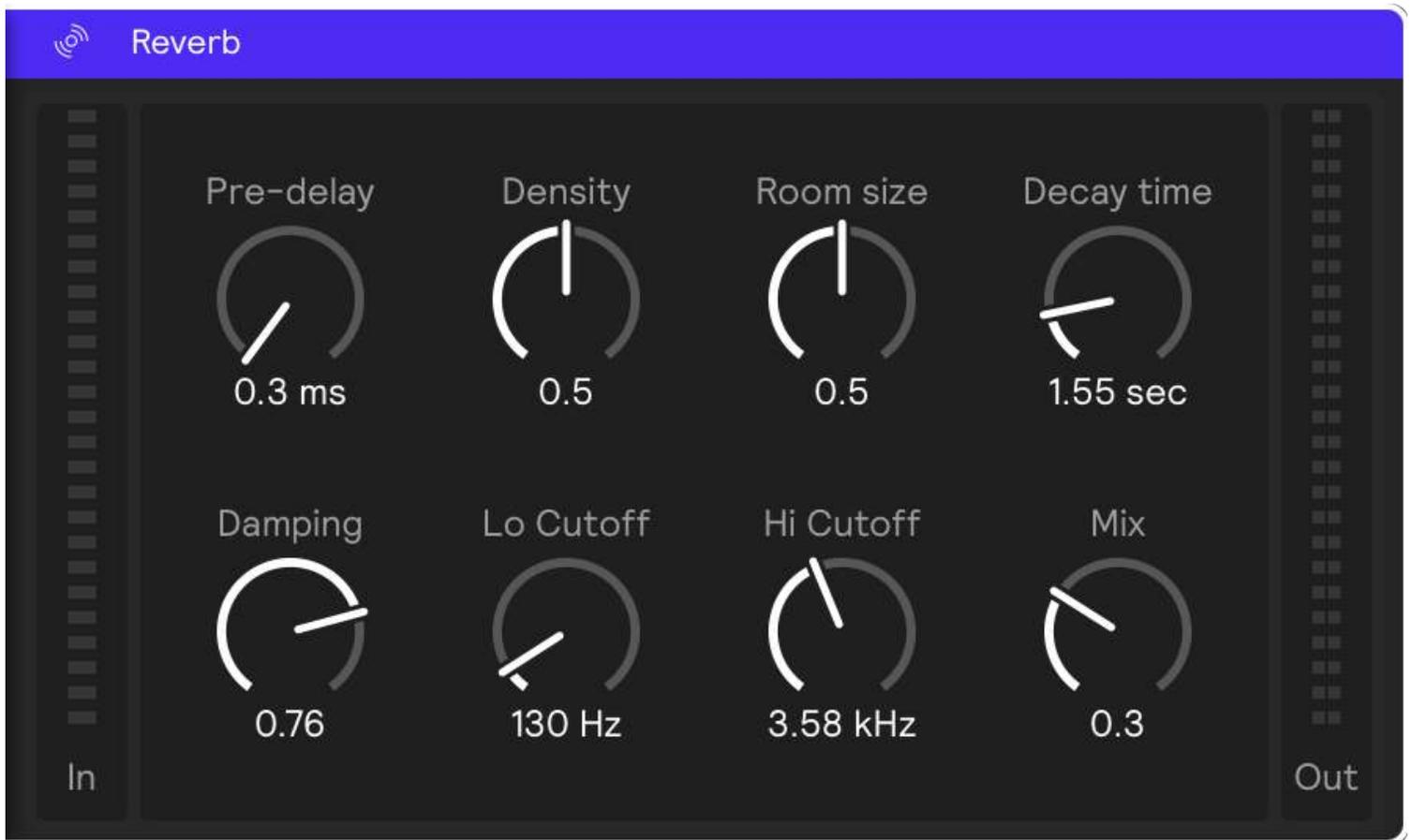
Reverb

The reverb unit in Sensory Percussion offers you a lot of control over the spatial environments you create for your kits.

Pre-delay (in milliseconds) sets the onset time for the reverberation. Set to zero, the reverb will kick in as soon as you strike the drum.

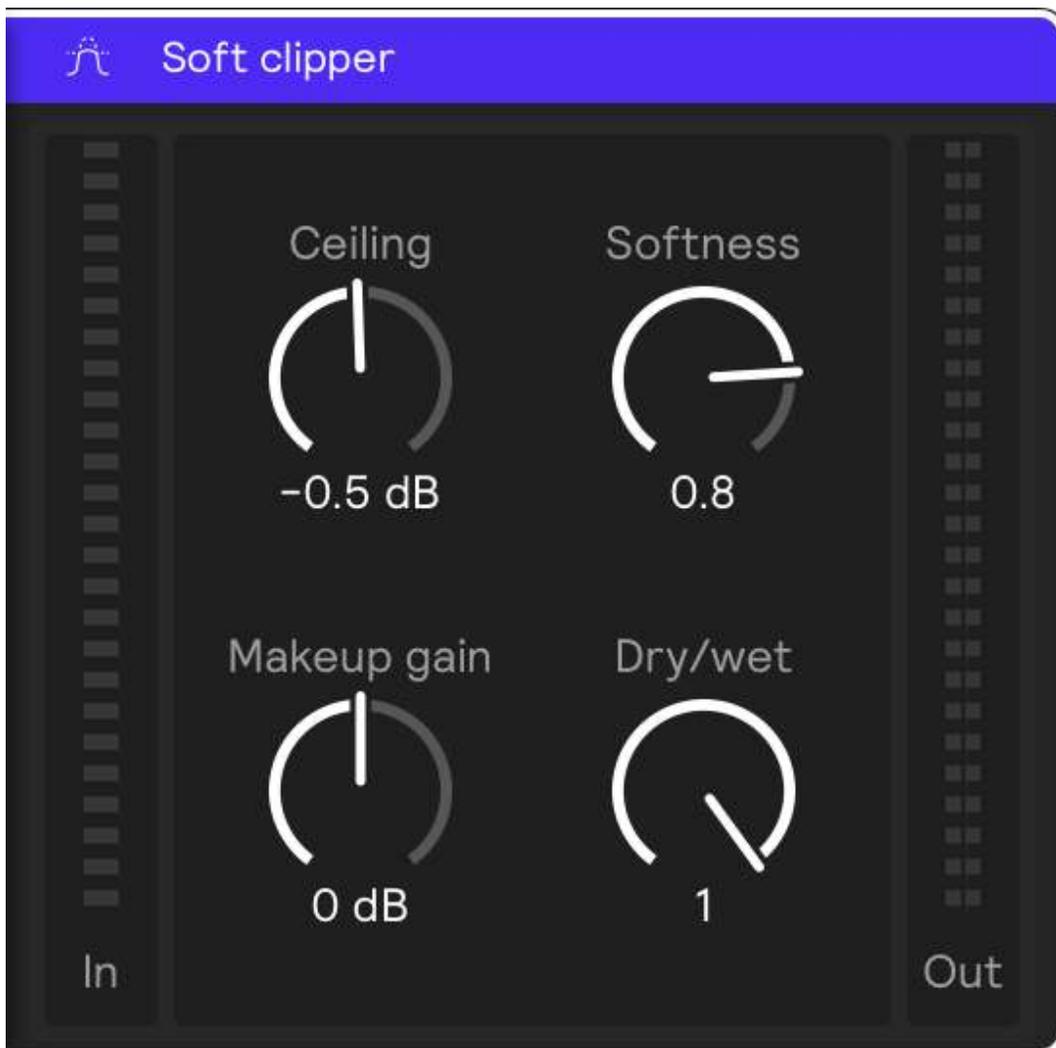
Room Size, of course sets the size of the room - increasing or decreasing the space in between early reflections.

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).



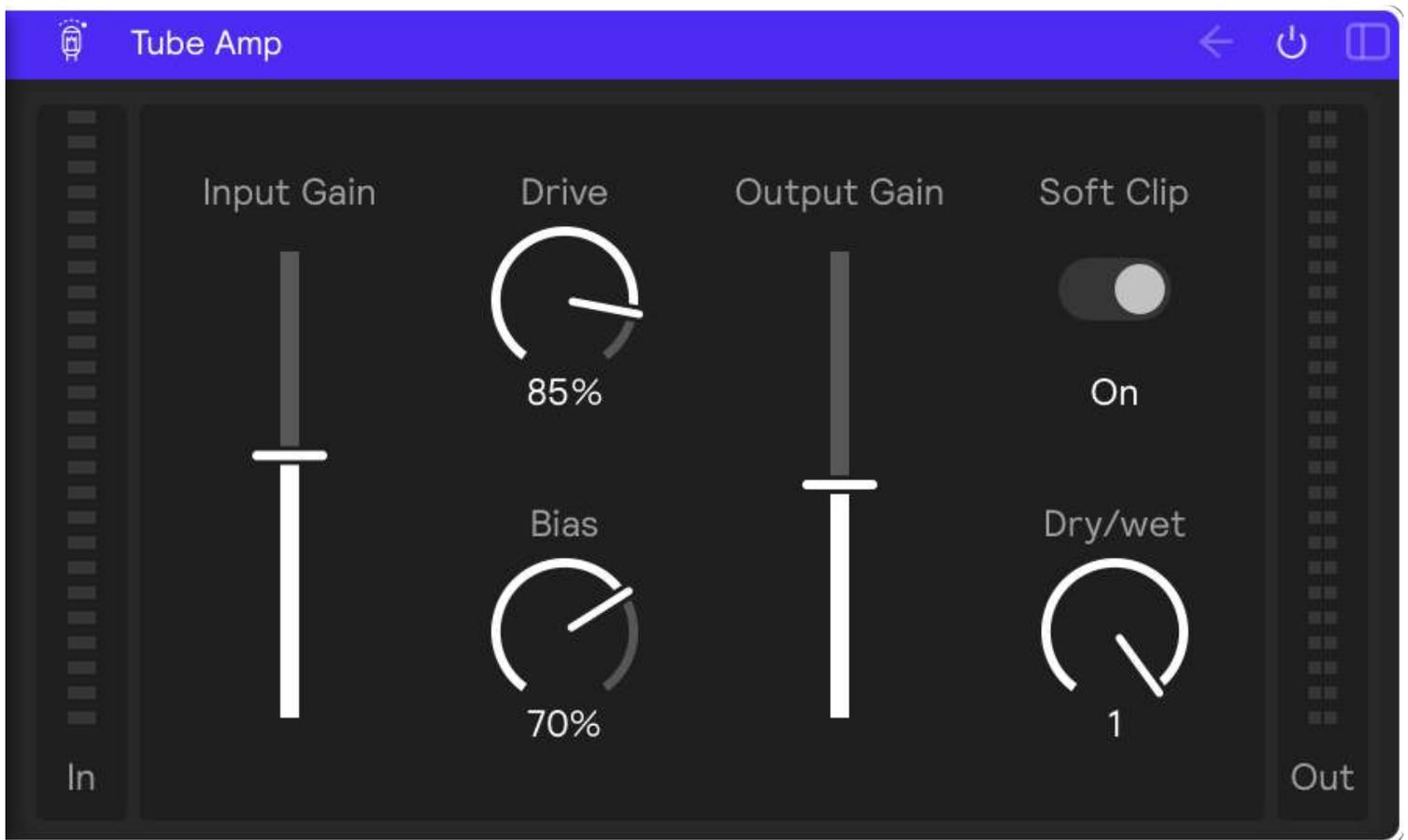
Soft Clipper

The soft clipper effect sets a decibel ceiling, and clips anything that goes above that ceiling, softening the waveform around the peak, creating harmonic distortion, rather than a digital clip sound. **Note: the Clipper and Soft Clipper effects will be merged in a future update.**



Tube Amp

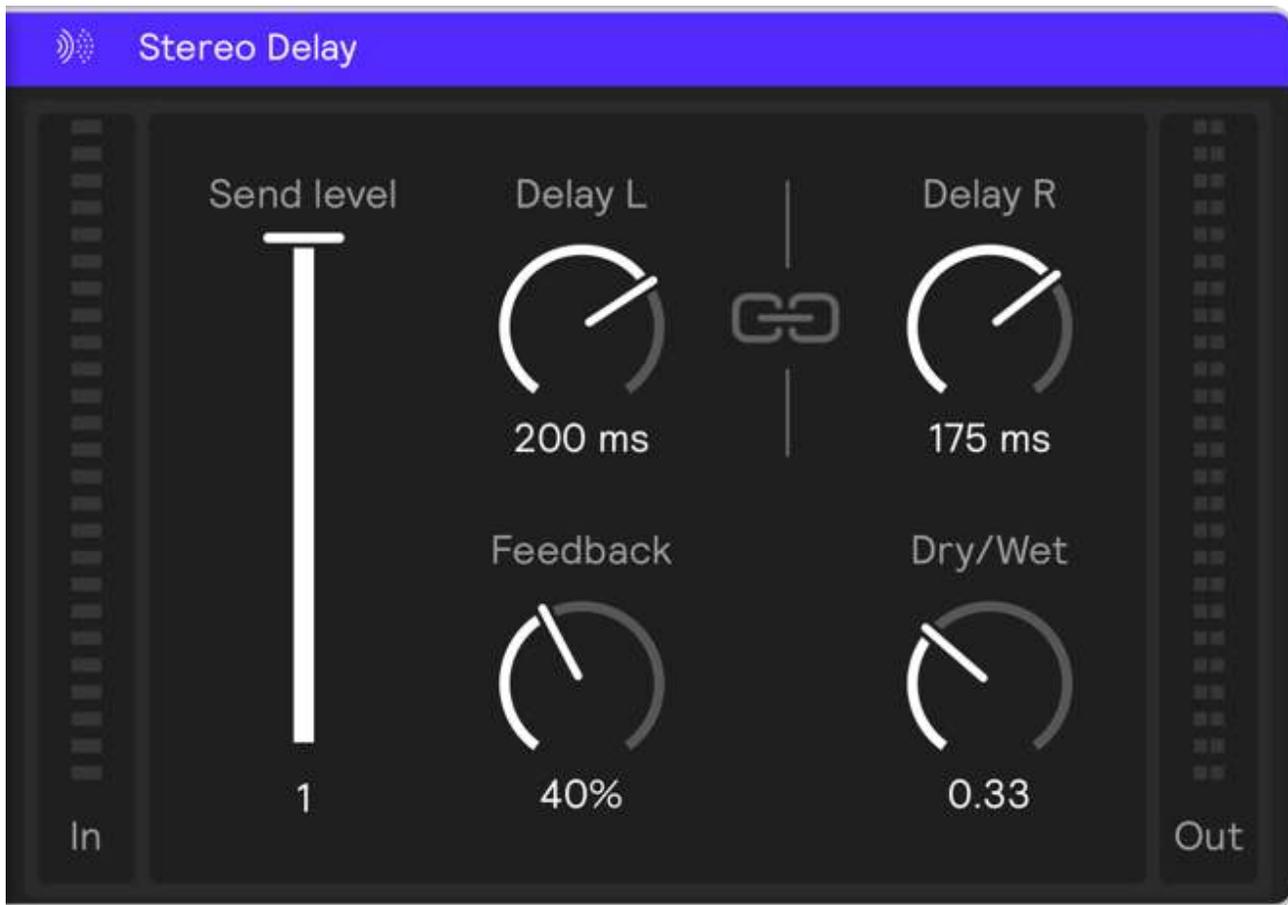
This amp simulation effect emulates the classic 12AX7 tube found in so many vintage amps.



Stereo Delay

A simple delay that can be used in stereo or mono mode. Click the chain icon to switch between the two modes.

Send Level reduces the gain of audio input to the effect. Unlike adjusting Dry / Wet, modulating send level will preserve any audio tails.



Modeled Delays

Sensory Percussion V2 has 5 different delay effects, each with their own slightly different parameters. However, all of them have the following parameters in common: **delay**, **balance**, **echo**, **feedback**, and **mix**

The **delay** knob sets the space between the echoes.

The **balance** knob 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 of the stereo image.

The **echo** knob controls the volume of each echo (but not the initial sound).

The **feedback** knob controls how many times the echoes will repeat.

The **dry/wet** knob 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.

All other parameters are unique to each of the five kinds of delays.

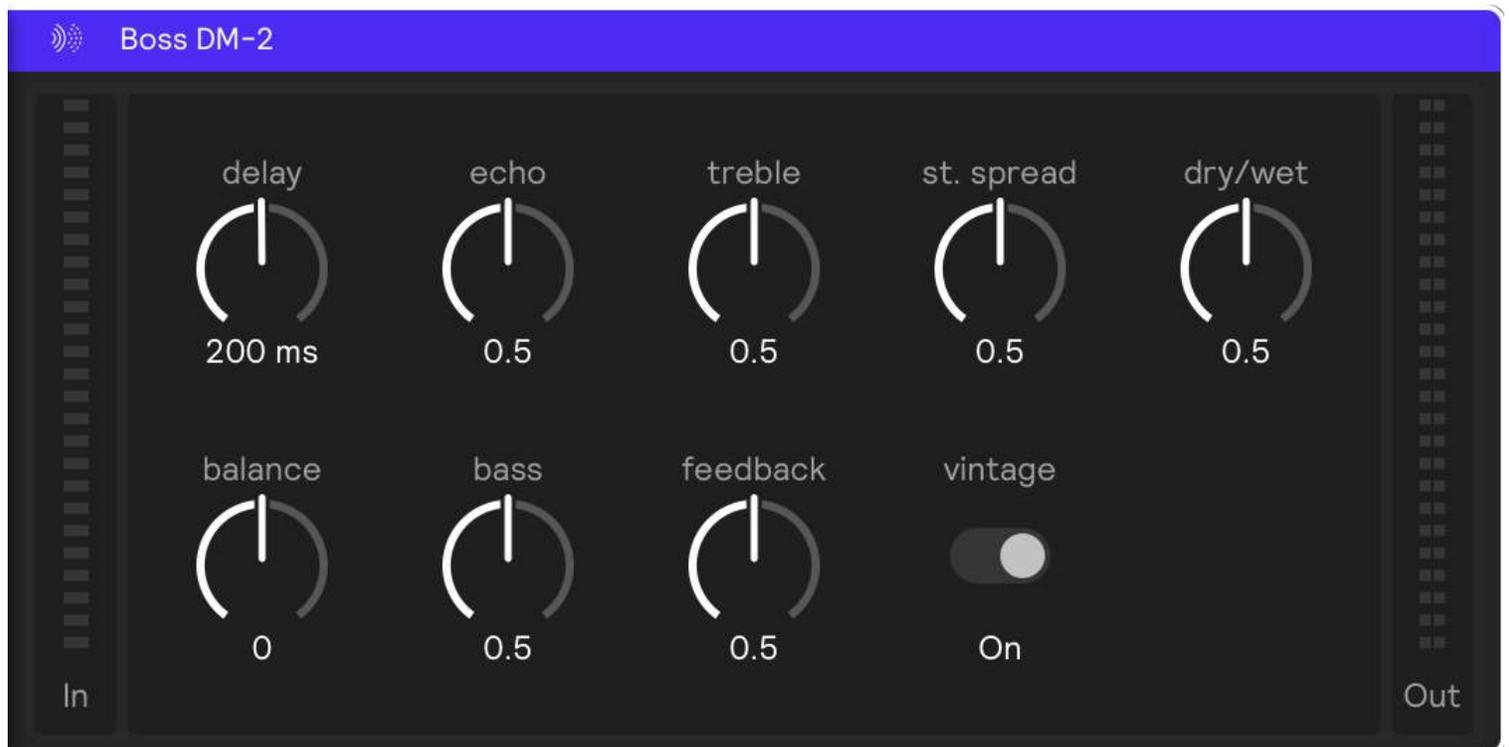
Boss DM-2

Electro Harmonix Deluxe Memory Man

Maestro EchoPlex EP-1

Maestro EchoPlex EP-3 Solid-State

Tel Ray OilCan



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.

- **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** Image Mode allows you to crossfade between sum (center) and difference (side) of L and R.

The Gain Utility control panel features a dark grey background with white text and controls. On the left and right sides, there are vertical level meters with 20 dB markings. The central area contains several controls:

- Gain:** A circular knob set to 0 dB.
- Pan:** A circular knob set to C (center).
- Input Mode:** A dropdown menu currently showing "Stereo".
- Image Mode:** A toggle switch that is currently turned off.
- Gain Ramp:** A horizontal slider set to 10 ms.
- DC Filter:** A toggle switch that is currently turned off.
- Phase Flip:** A toggle switch that is currently turned off.
- Width:** A circular knob set to 100 %.

The panel is labeled "In" on the bottom left and "Out" on the bottom right.

Virtual Inputs

What are Virtual Inputs?



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 automatically be created.

Here are all of the different types of virtual inputs:

Snare **Kick** **Tom** **Analog** **Keyboard**



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

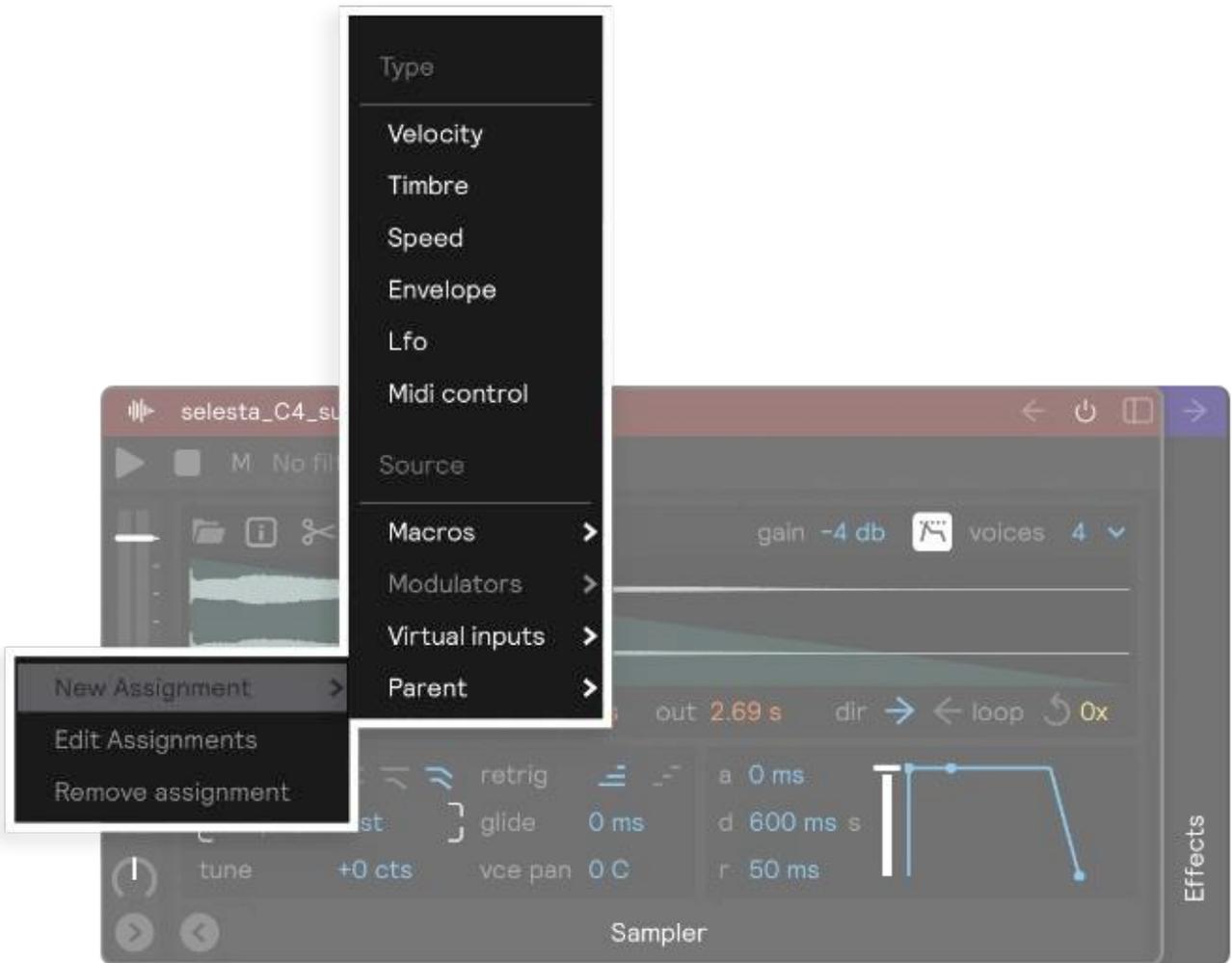
Assignments are a great way to add expressivity to your sounds. Assigning an aspect of your playing to control a knob, button, or slider within your set allows the sounds to really respond to the nuances of your playing. Create different combinations of assignments to make your set respond to *how hard*, *how fast*, and *where you play*--all in real-time and with fine-tuned control!

When using an assignment 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



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.

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.

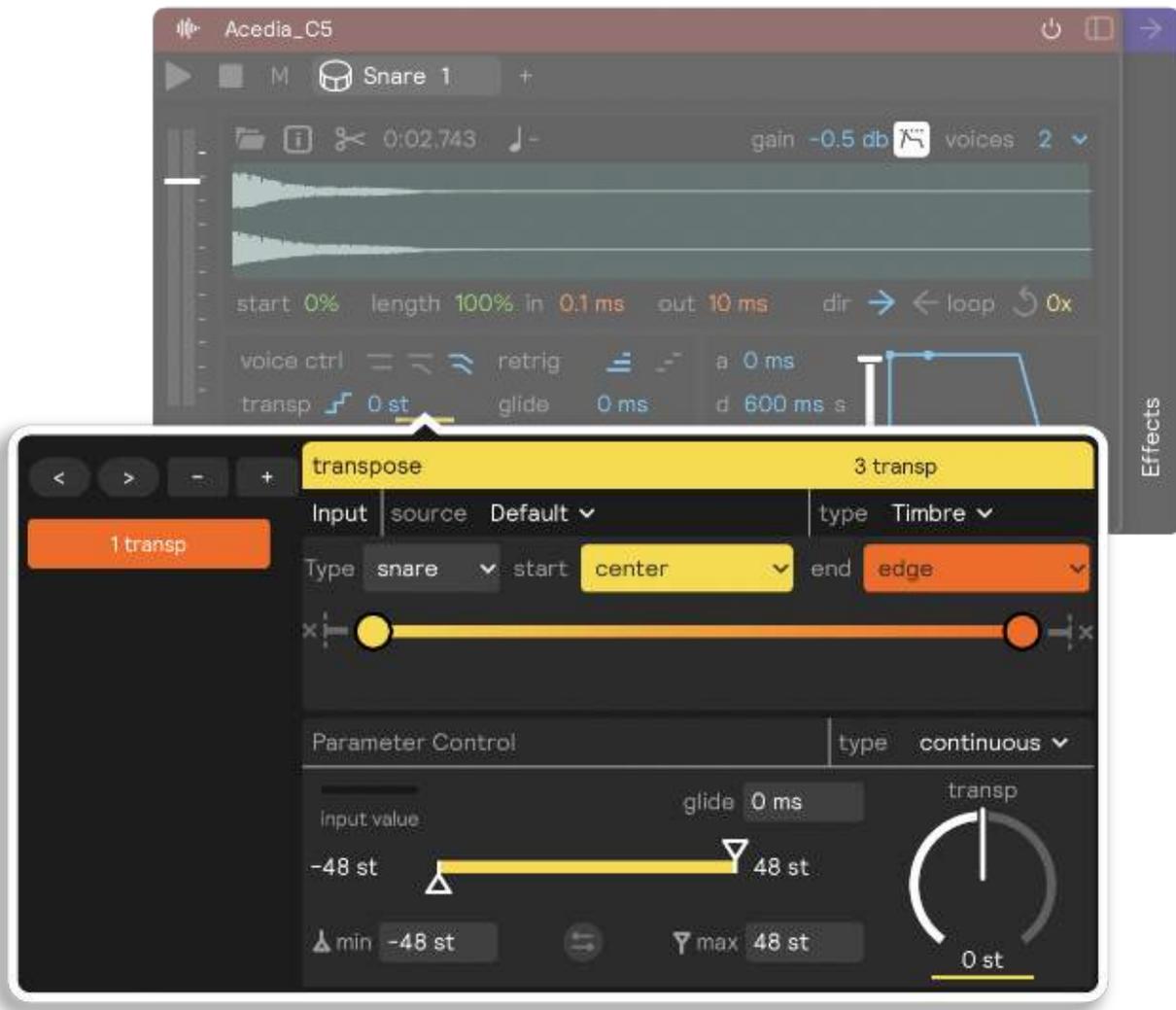
Selecting any of the 'Type' options from this menu will create an assignment with its 'Type' set to that option (Velocity, Timbre, Speed, Envelope, LFO, MIDI Control) and its Source set to 'Default'.

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.



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.

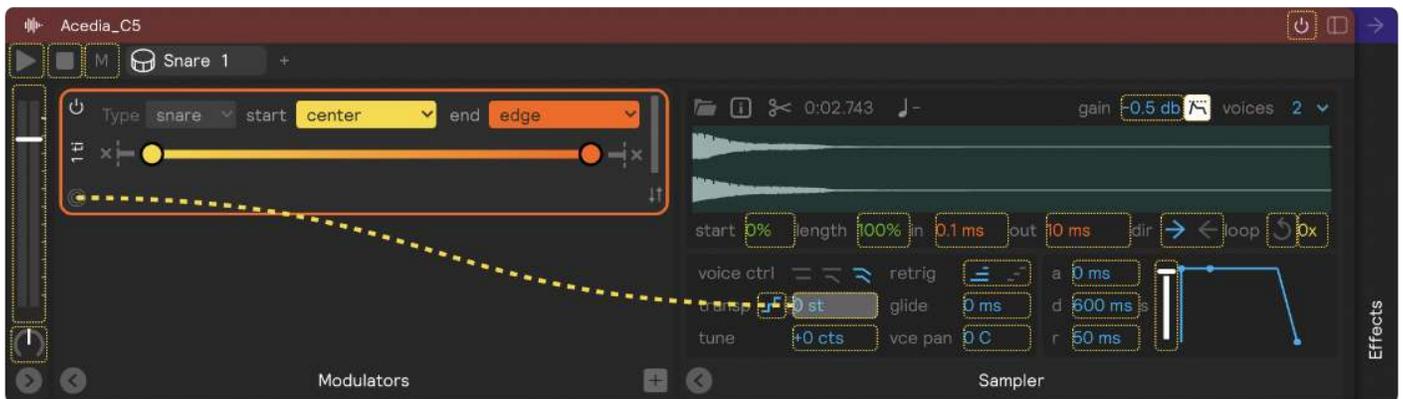
In addition to Source and Type, the assignment window allows you to adjust the sensitivity, parameter control range, parameter control type (continuous, momentary, toggle, target), and glide amount (the amount of time it takes to move from one output value to the next).

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:



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.

💡 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 generating a group from the cross-controlled layers to encapsulate them in a single layer.

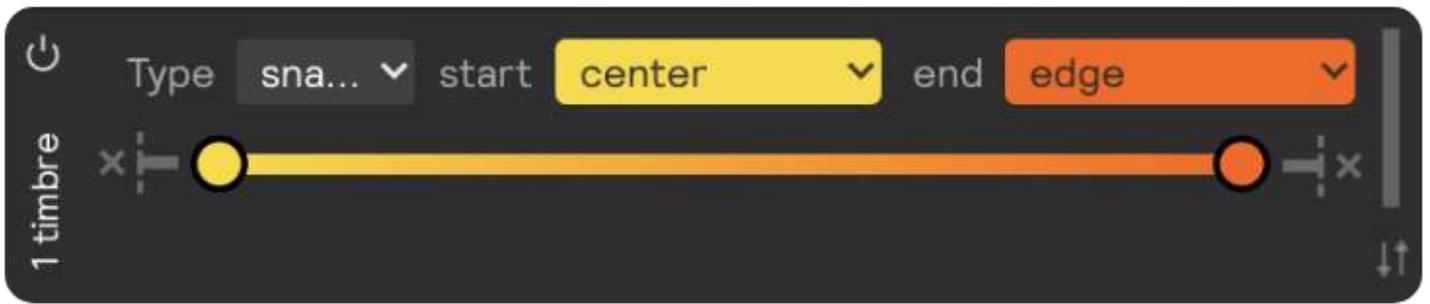
Assignment/Modulator Types

Velocity



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



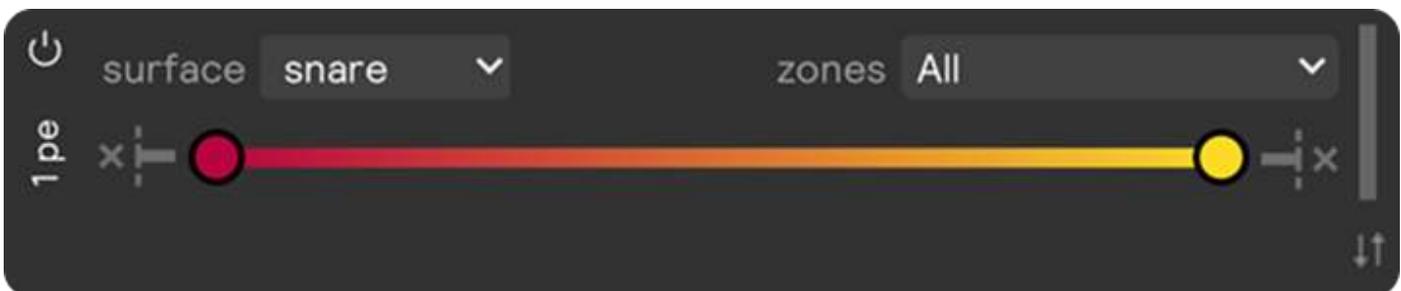
Sets a range between two timbral zones, for example: center and edge. You could right-click on a Reverb mix knob, select *New Assignment*, and select *timbre: center to edge*. Now hits in the center will send the mix knob close to 0 (no reverb) and hits on the edge will send the mix knob to close to 100.

Speed



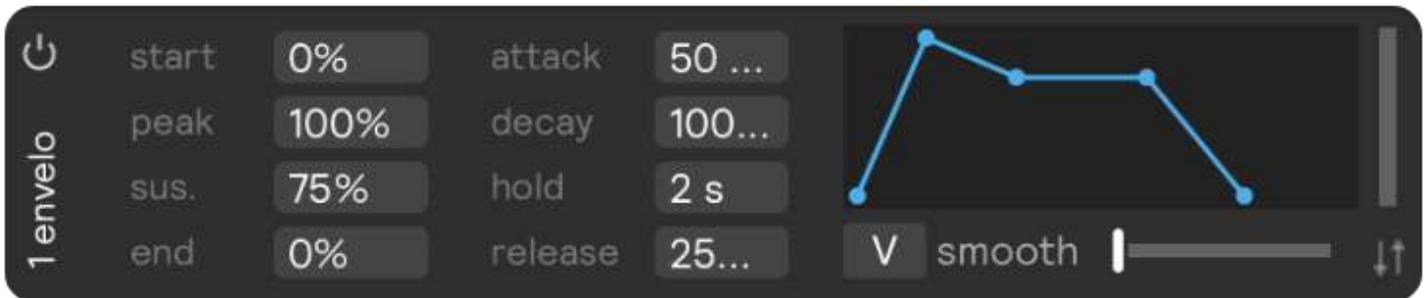
Sets a range between slow and fast. Playing fast (like buzz rolls) will set the parameter to its top value. As with all assignments you can adjust the sensitivity: maybe you want the parameter to be at its low value at medium fast playing, and move to its top level with brisk 16th notes, in that case you would drag both sides of the sensitivity range inwards.

Pedal



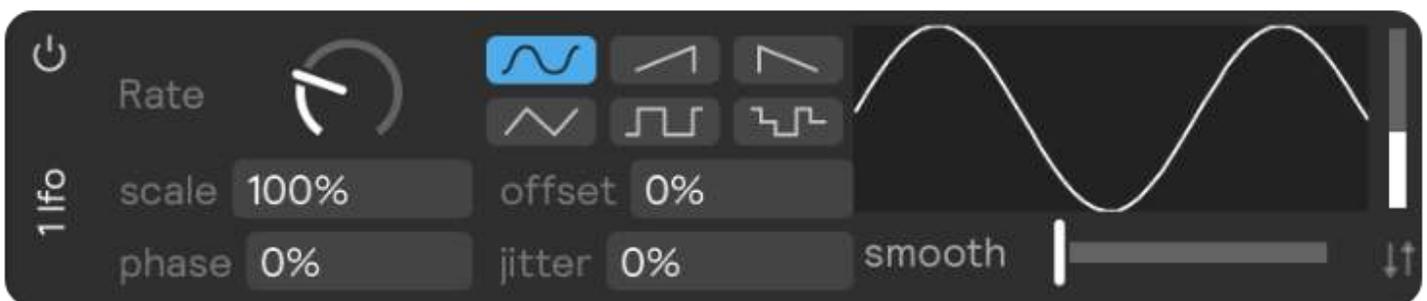
This is a hi-hat-specific modulator type that uses the pressure values from the your hi-hat sensor to modulate any parameter. This can be super fun when assigned to pitch control of the entire set, or to crazy effects chains. It's a great way to get your left foot involved in the modulation fun of Sensory Percussion!

Envelope



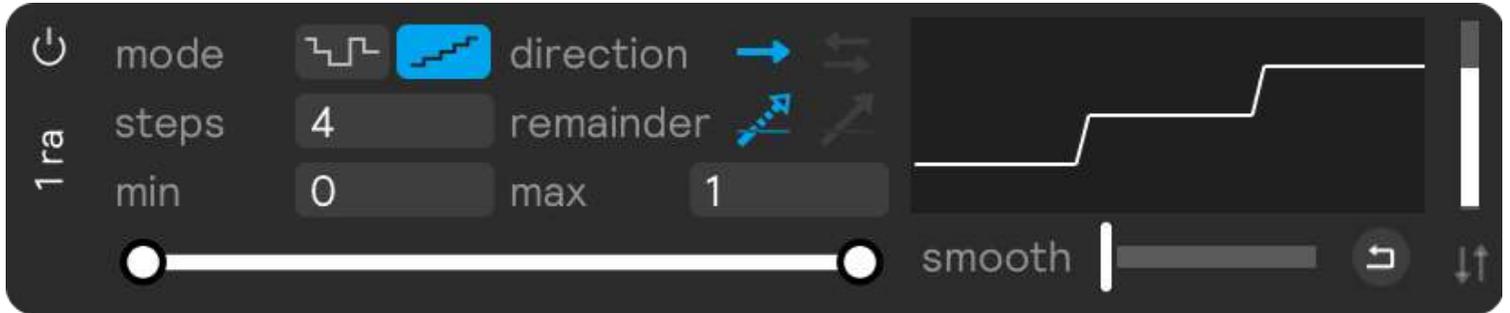
Sends a shape (*attack*, *decay*, *sustain*, *release*) to a parameter range. And because Sensory Percussion is a drumming system (in most cases you won't be interfacing with envelopes using a piano keyboard) there are the additional parameters of *start*, *peak*, *hold*, *end*, and *use velocity* which simulates the pressing and holding of a key.

LFO (Low Frequency Oscillator)



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.

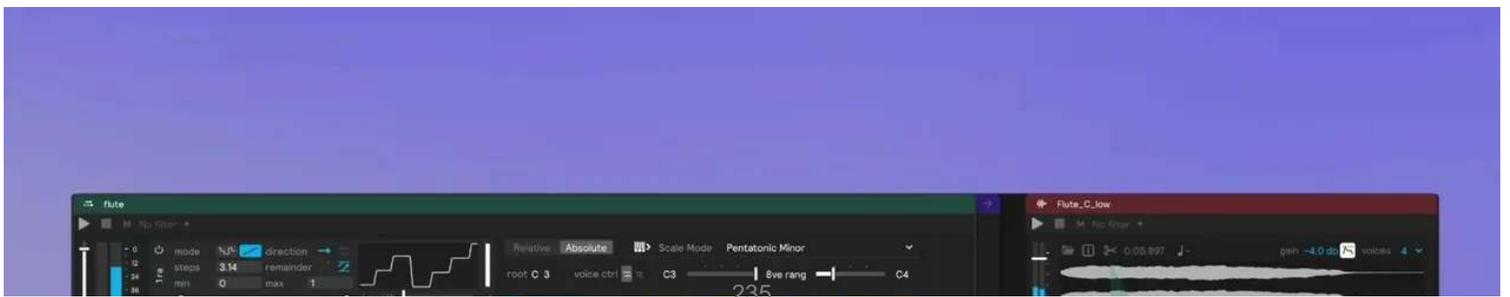
Random | Step



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 whatever knob it is assigned to in this order: `.01`, `.02`, `.03`, etc. In `rand` mode, it will simply send a randomized step within the `min` `max` boundary you have set.

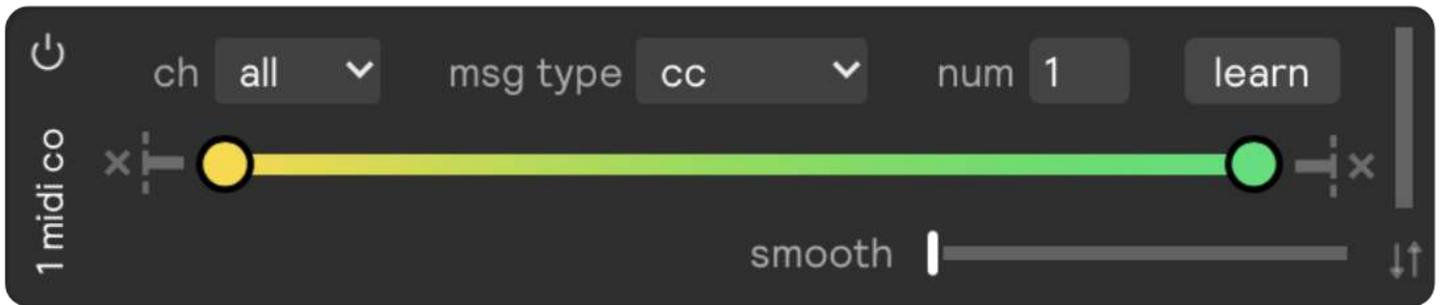
In `steps` mode, the `direction` control allows you to set whether the steps increment forwards and reset to the lowest value after the top is reached, or if it stairsteps down in reverse. If you simply want the steps to start at the top and decrement, choose the `forward` direction, but invert the range by selecting 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.





MIDI



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:

transpose 1 transp

Input source Default ▾ type Midi control ▾

ch all ▾ msg type cc ▾ num 1 learn

smooth |

Parameter Control type continuous ▾

input value

-48 st 48 st

min -48 st max 48 st

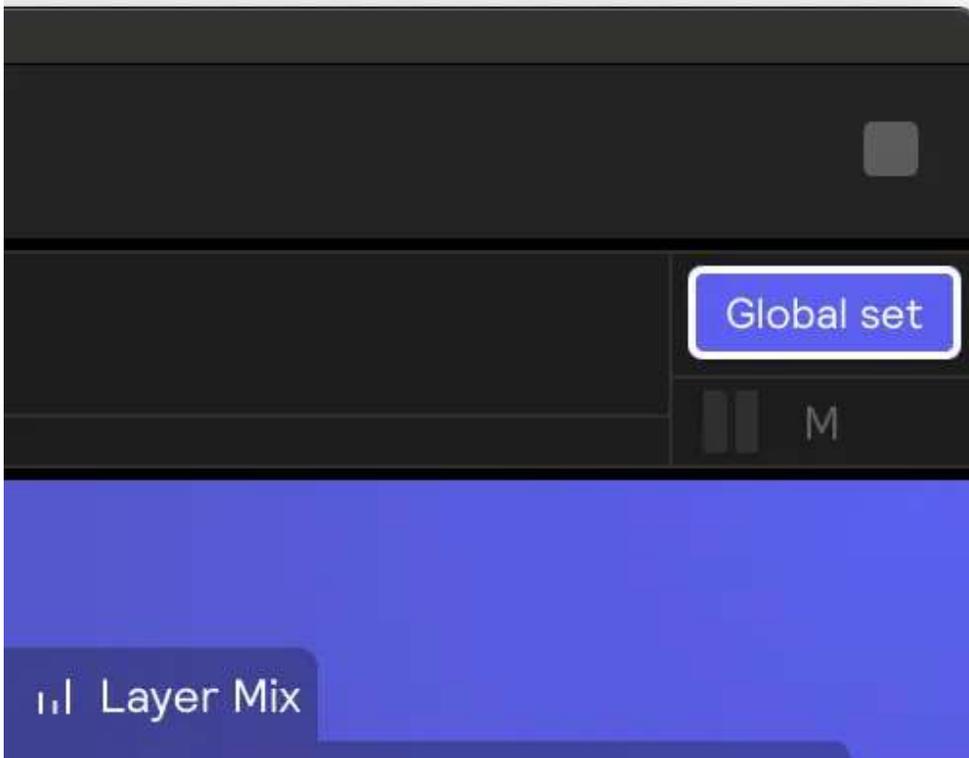
transp

0 st

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.



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.

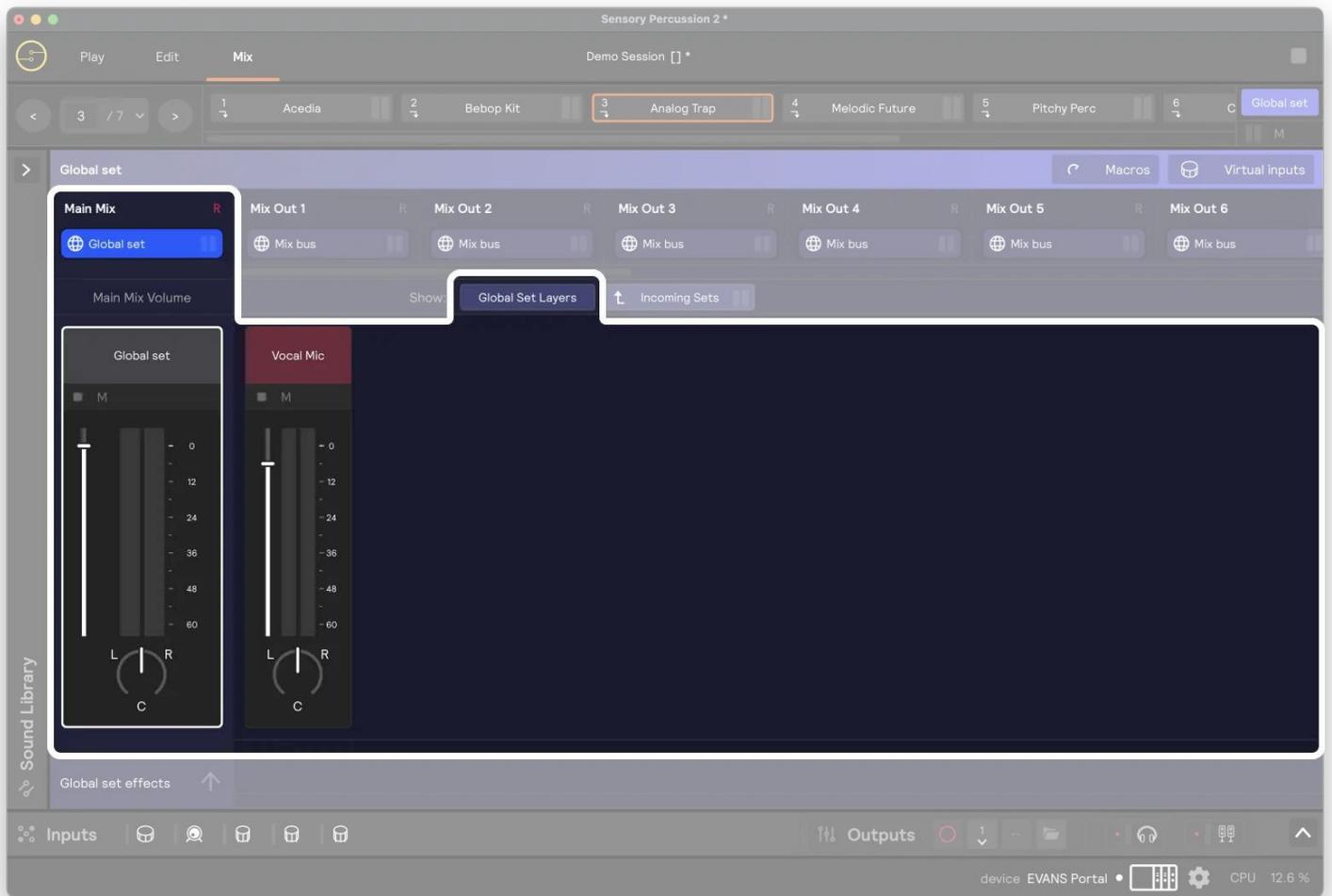
RECORD-ENABLE MIXES

You can record-enable mixes in the global set by clicking the  button on each mix. This will allow you to record the audio output of that mix to disk.

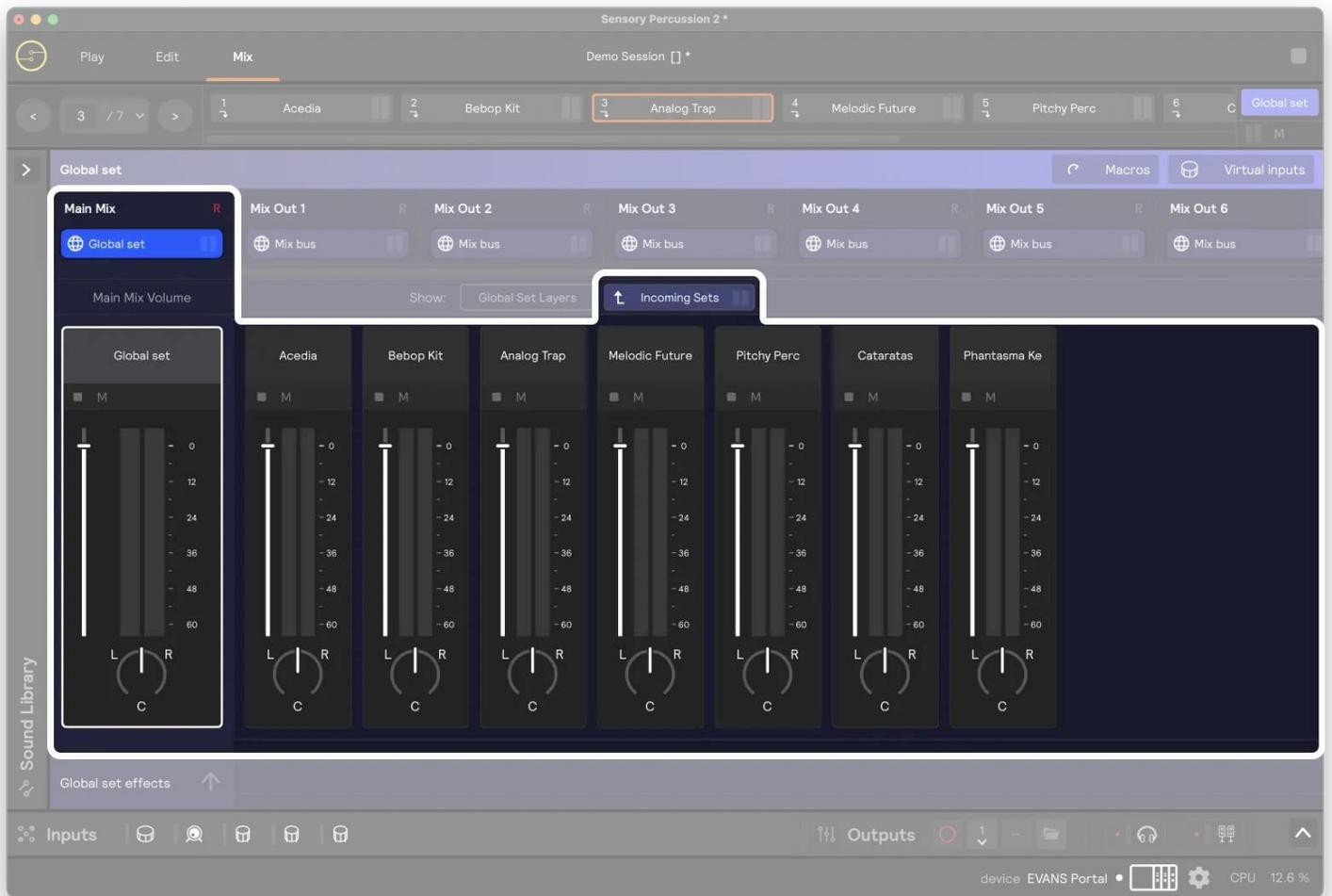
Main Mix

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.

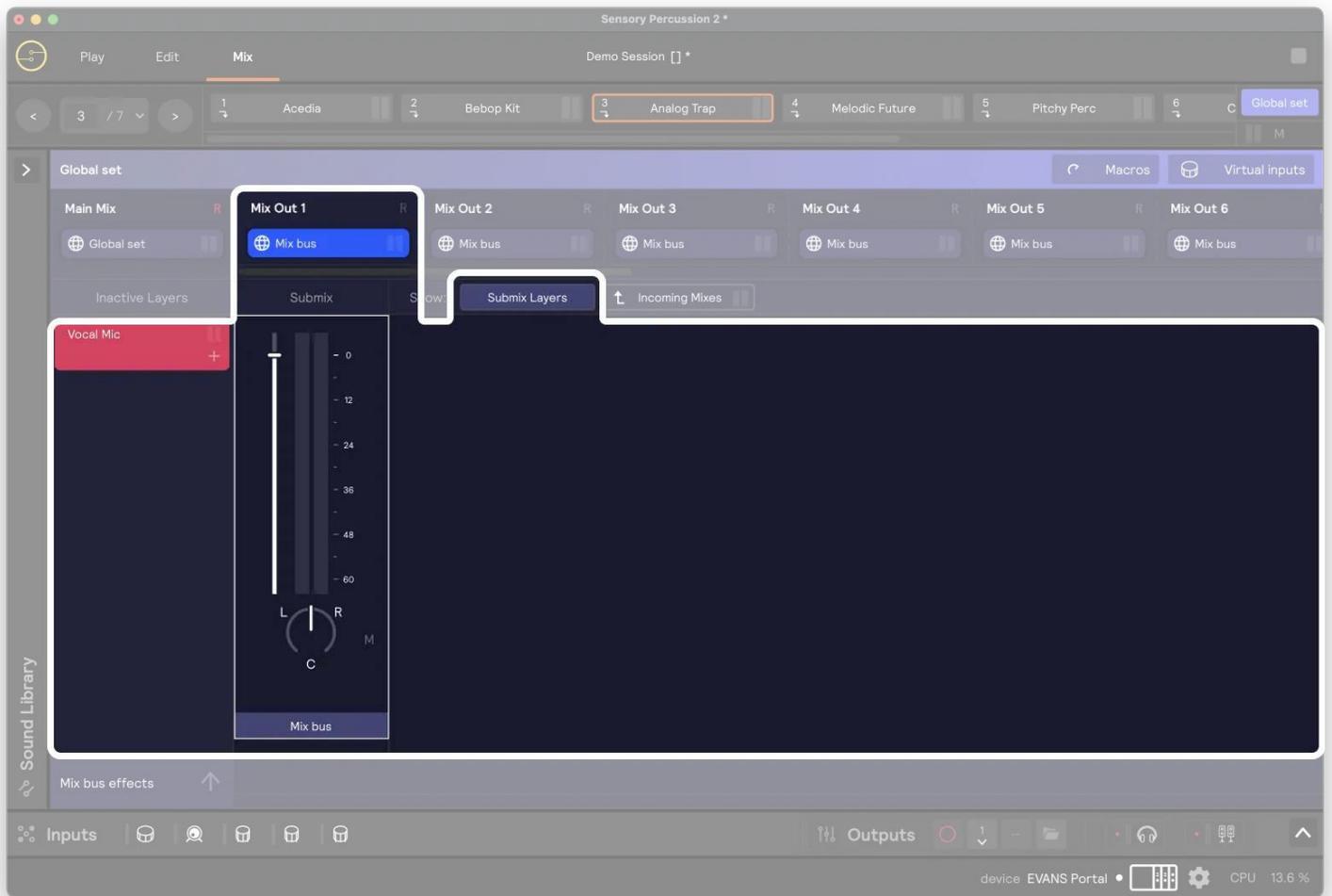
There are two views in the Main Mix. You can see the layers in your global set and mix those in the **Global Set Layers** view. This view is just like in all other sets.



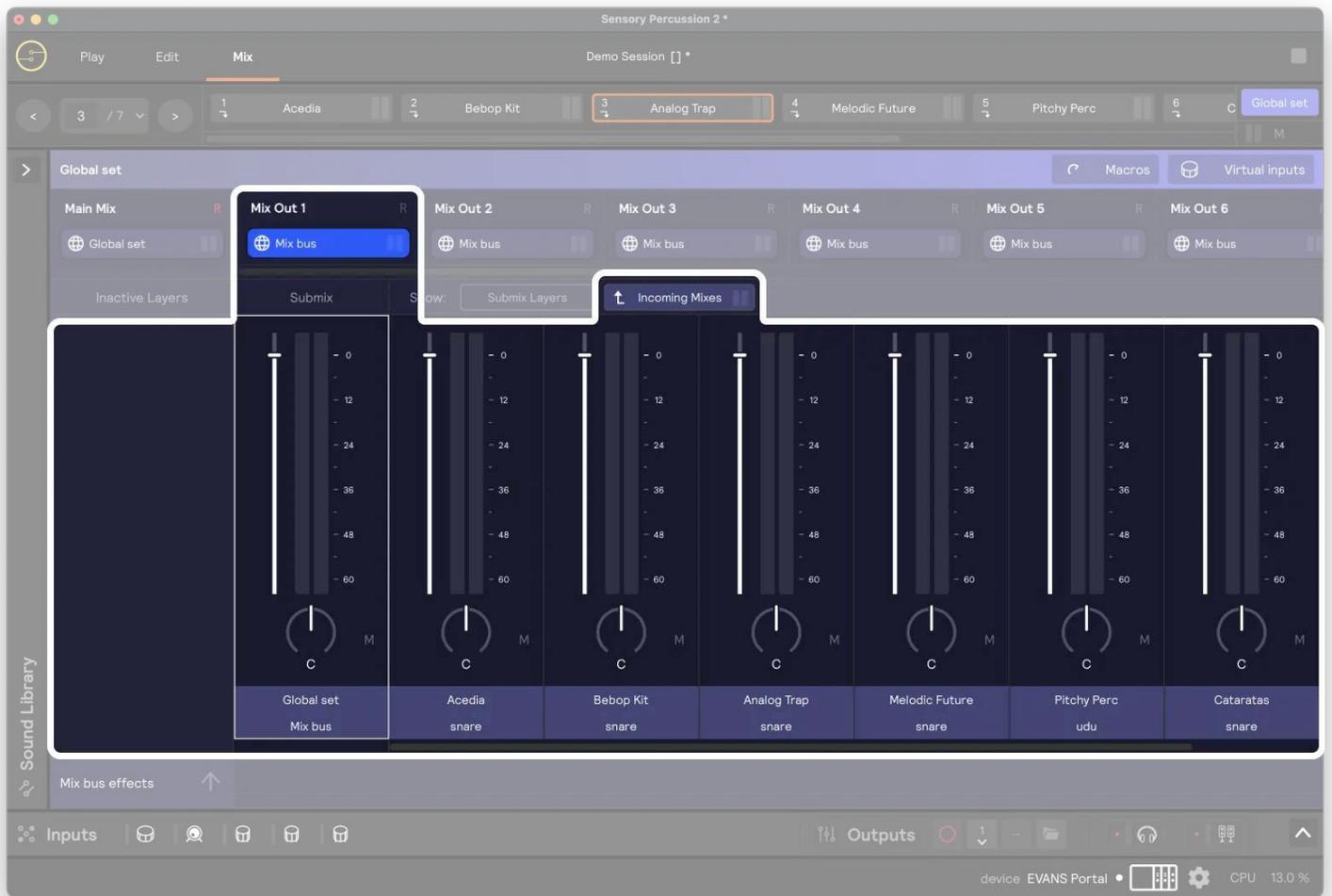
You can also see the incoming sets and mix those in the **"Incoming Sets"** view. This view is unique to the global set.



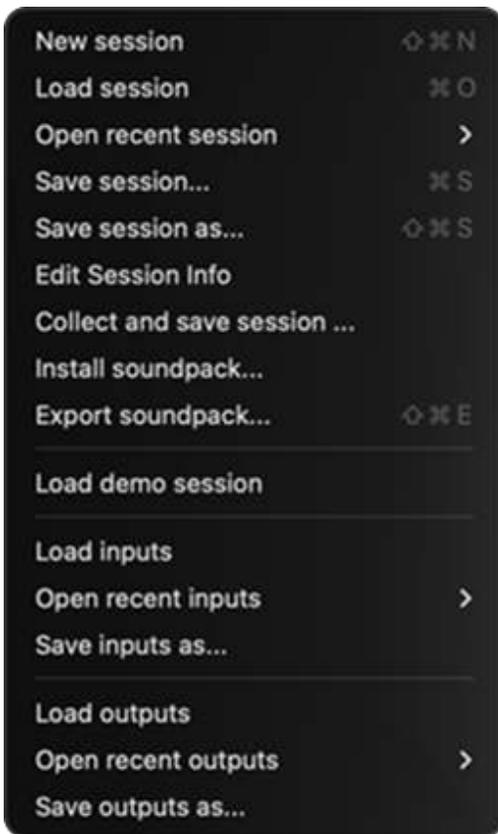
Every mix bus in the global set also has two views: "Submix Layers" where you can add layers to this submix from the Global Set.



And **"Incoming Mixes"** where you can see the layers that are coming into this mix from the corresponding submix of non-global sets.



File Menu



The file menu is located in the top left corner of the software. This menu is where you can manage your sessions.

The file menu has the following options:

New session

This will close whatever session you have loaded and create a completely blank session. From here, you can start building your own sets from scratch, or drag and drop pre-made assets from the library. When you create a new session, your work won't be saved to disk until you select `Save session` or press `⌘ + s`, at which point you'll be asked to name your session.

Load session

This will open up your finder/file explorer and from here, you can open a previously saved session from your computer. Session files have the extension `.sp2`

Open Recent session

This will show you a list of your recently opened sessions, and you can choose which one to open from there.

Save session...

Selecting "Save session" will save any unsaved changes to disk. If you are working in a new session, you'll first be asked to name your session and choose a location to save it.

Save session as...

Save as will make a copy of whatever session you have open with a new name of your choosing. The new file will be opened as the current active session.

Edit session info...

Selecting "Edit session info" will open a dialog where you can edit the metadata for your session, including the session name, description, credits, tags, and a version number. This can be useful especially if you plan on exporting this session as a soundpack.

Collect and save session...

This option will save your session and collect all the assets used in the session into a single folder. This is useful if you want to move your session to a different computer. Samples from the core library and installed packs will not be included in the collected session and need to be installed separately on each computer.

Install soundpack...

Use this option to select a `.spz` file from your file system to install a Sunhouse soundpack. Soundpacks are collections of samples and presets that can be used in Sensory Percussion.

Export soundpack...

This option opens a dialog that allows you to export your current session as a soundpack `.spz` file. You can choose which presets and samples to include in the soundpack, as well as edit the

soundpack metadata such as name, description, credits, and version number. This is useful for sharing your custom presets and samples with others or for backing up your work. [Learn more](#).

Load demo session

The demo session comes with Sensory Percussion and includes 11 presets that demonstrate the best of what Sensory Percussion can do. These sets range from rich chordal kits, to detailed acoustic drum mappings.

Load inputs

This option will allow you to select a `.spi` hardware input list from your file system. **Warning:** any changes you've made to your currently loaded inputs will be overwritten - so make sure you choose "Save inputs as..." if you want to keep your changes.

Open recent inputs

This will show you a list of your recently loaded input files.

Save inputs As...

Selecting will allow you to save your current hardware inputs to a `.spi` file for later use or to transfer to a different computer.

Load outputs

This option will allow you to select a `.spo` hardware output list from your file system.

Warning: any changes you've made to your currently loaded outputs will be overwritten - so make sure you choose "Save outputs as..." if you want to keep your changes.

Open recent outputs

This will show you a list of your recently loaded output files.

Save outputs As...

Selecting will allow you to save your current hardware outputs to a `.spo` file for later use or to transfer to a different computer.

Audio Buses & Sends

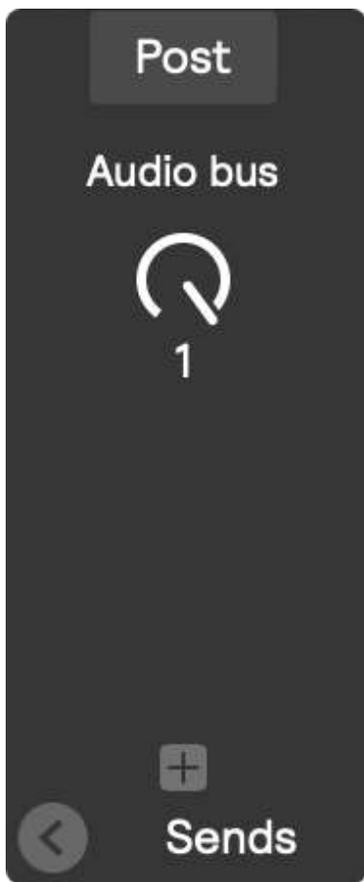
Sends and audio buses are two sides of the same thing. Sends let you route audio from any module--at any level--to an audio bus, where you can host effects.

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.



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.



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.

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.

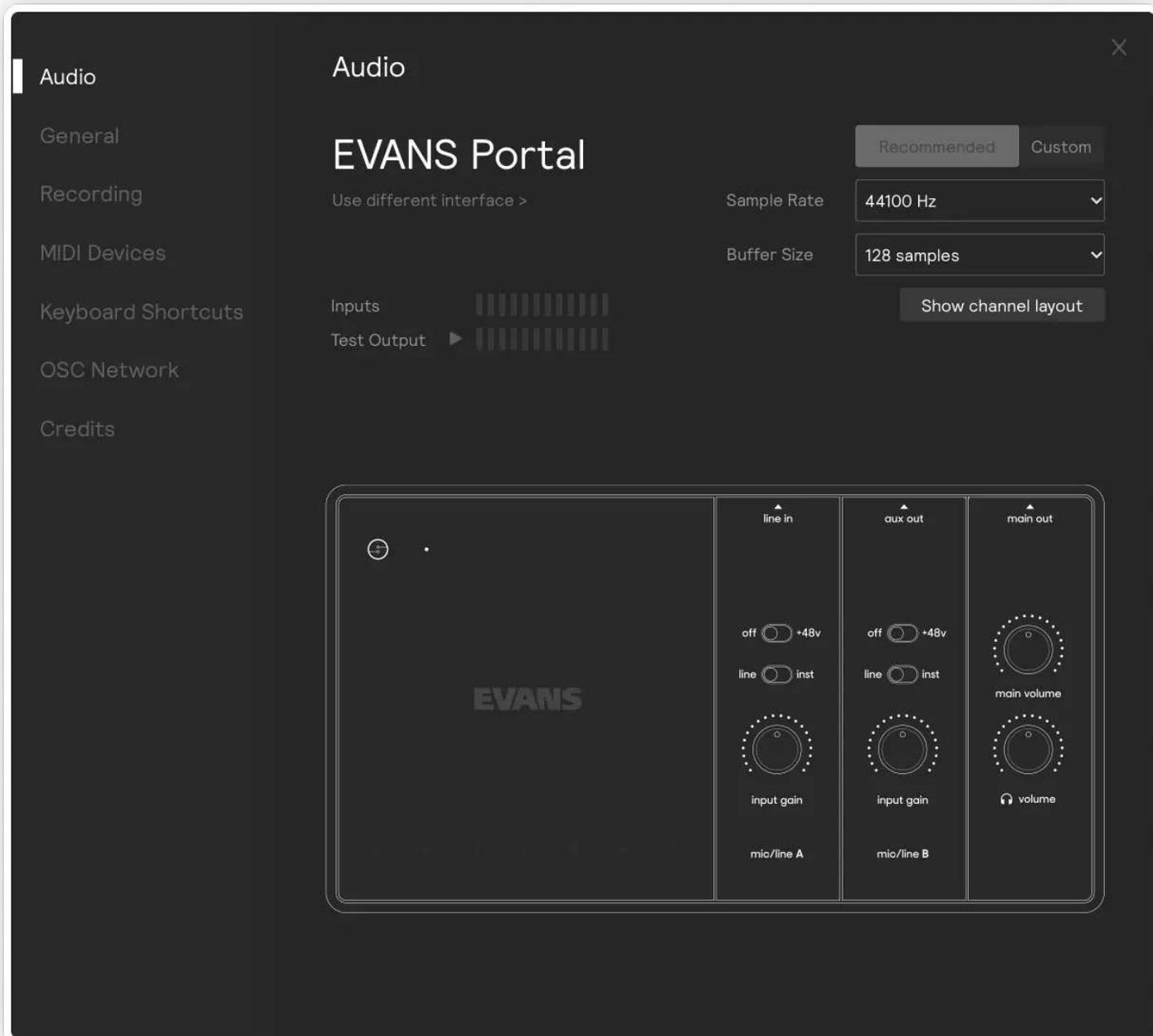
There are also some keyboard shortcuts you can use::

- Audio settings: **⌘/ctrl + ,**
- MIDI devices: **⌘/ctrl + .**
- Keyboard shortcuts: **⌘/ctrl + K**

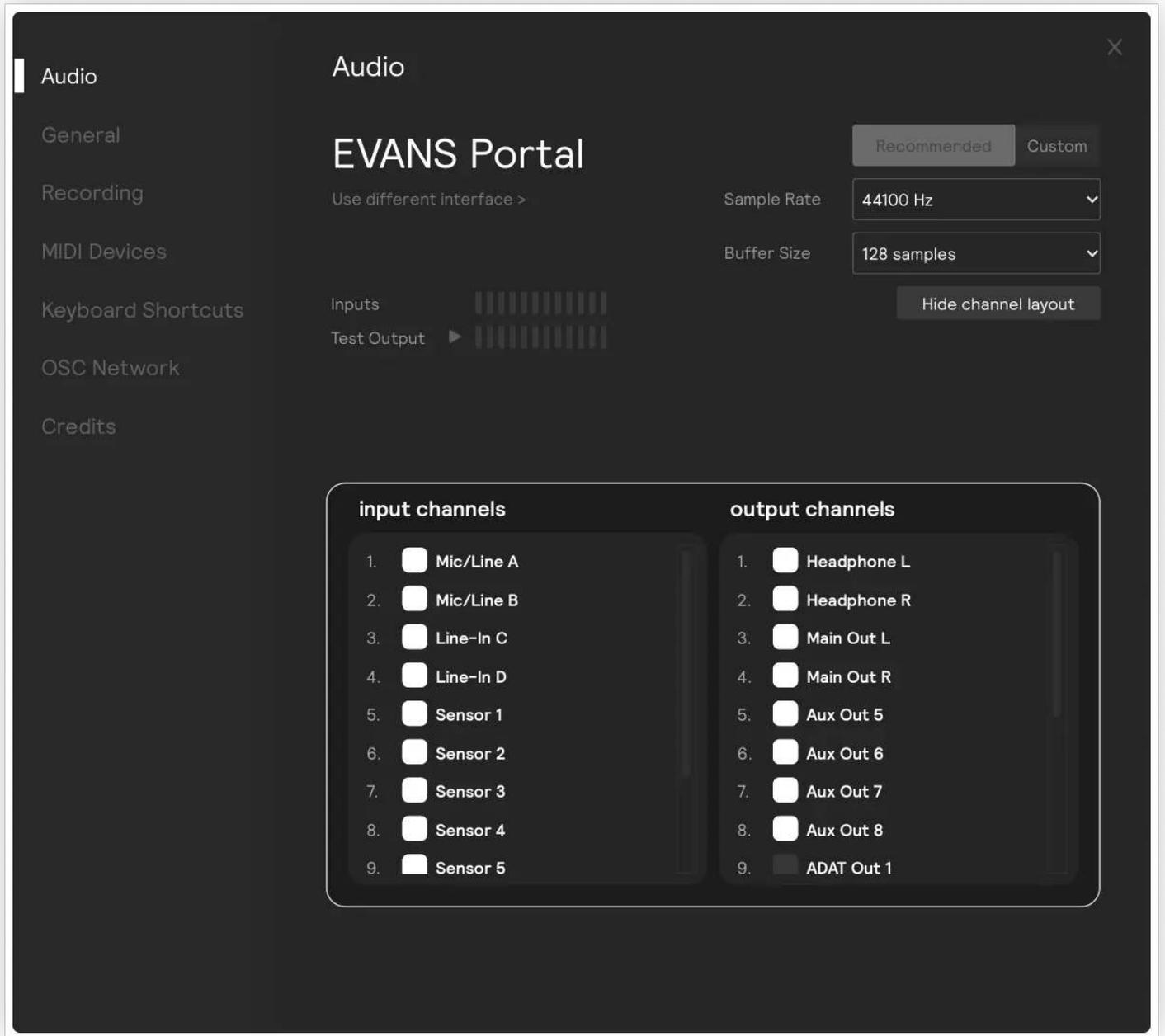
Audio Settings

The Audio Settings page is where you can configure various parameters of your audio interface. If you're using the EVANS Portal, you will see a custom audio settings page with an image of the Portal and the ability to choose Recommended or Custom settings. Sensory Percussion has recommended settings for active channels, sample rate, and buffer size. Although the recommended buffer size is 128 samples, if your machine is fast enough, lowering it to 64 samples will improve performance.

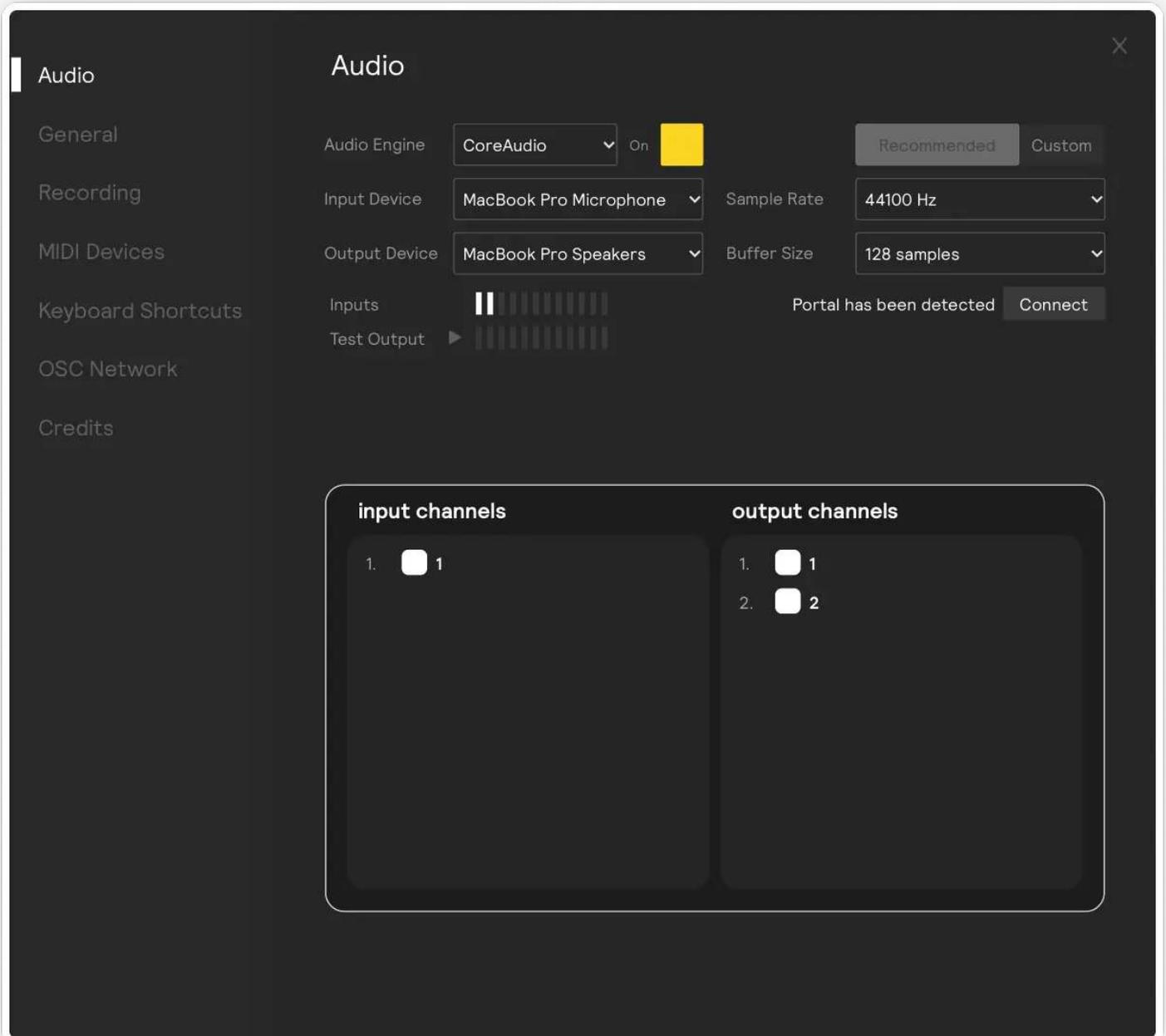
The input and output VU meters are visual indicators of your signal levels. Clicking the play button to the left of the output meter will play a test tone.



Clicking the **Show channel layout** button will show you the 12 input and 16 output channels of the Portal, allowing you to activate/deactivate however you'd like:

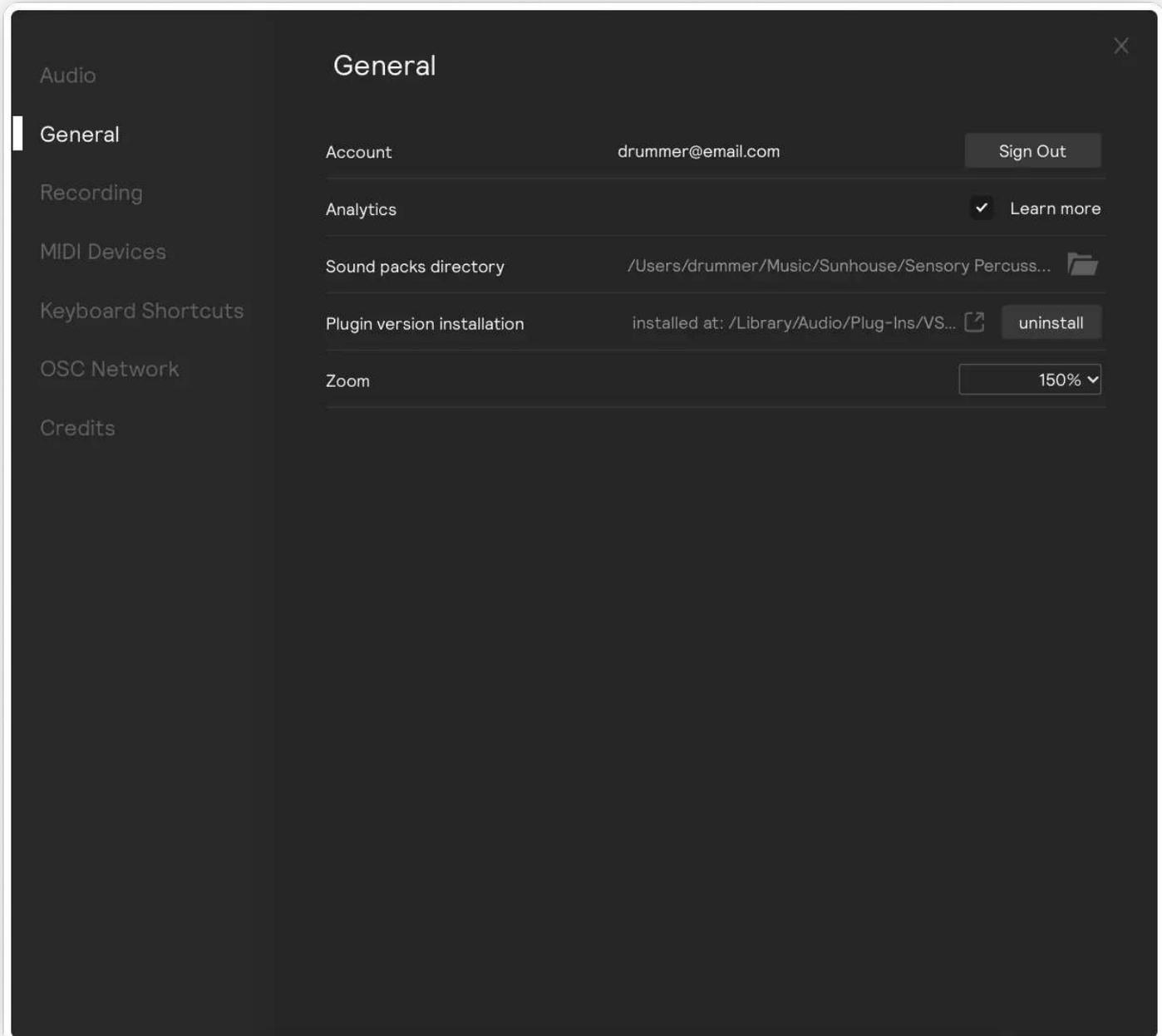


If you're using any audio interface other than the EVANS Portal, your audio settings page will look like this, with the channel layout open by default:



General Settings

This page allows you to view the email your Sunhouse account is registered to and sign in/out of this account.



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](#).

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.

Plugin installation

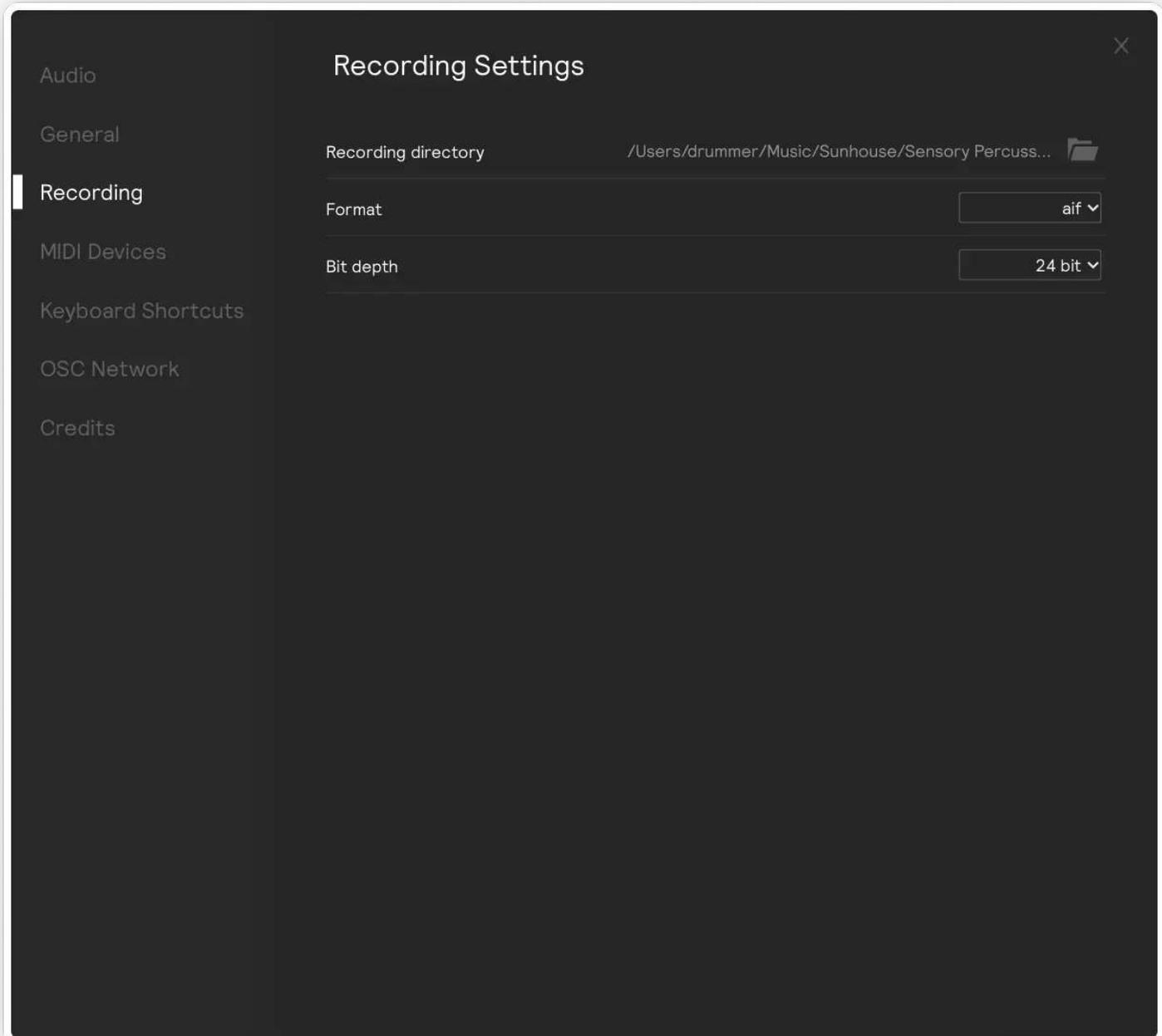
Manage the installation of the Sensory Percussion 2 VST plugin here. If you're having trouble with the plugin, you can try reinstalling it from this page.

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%.

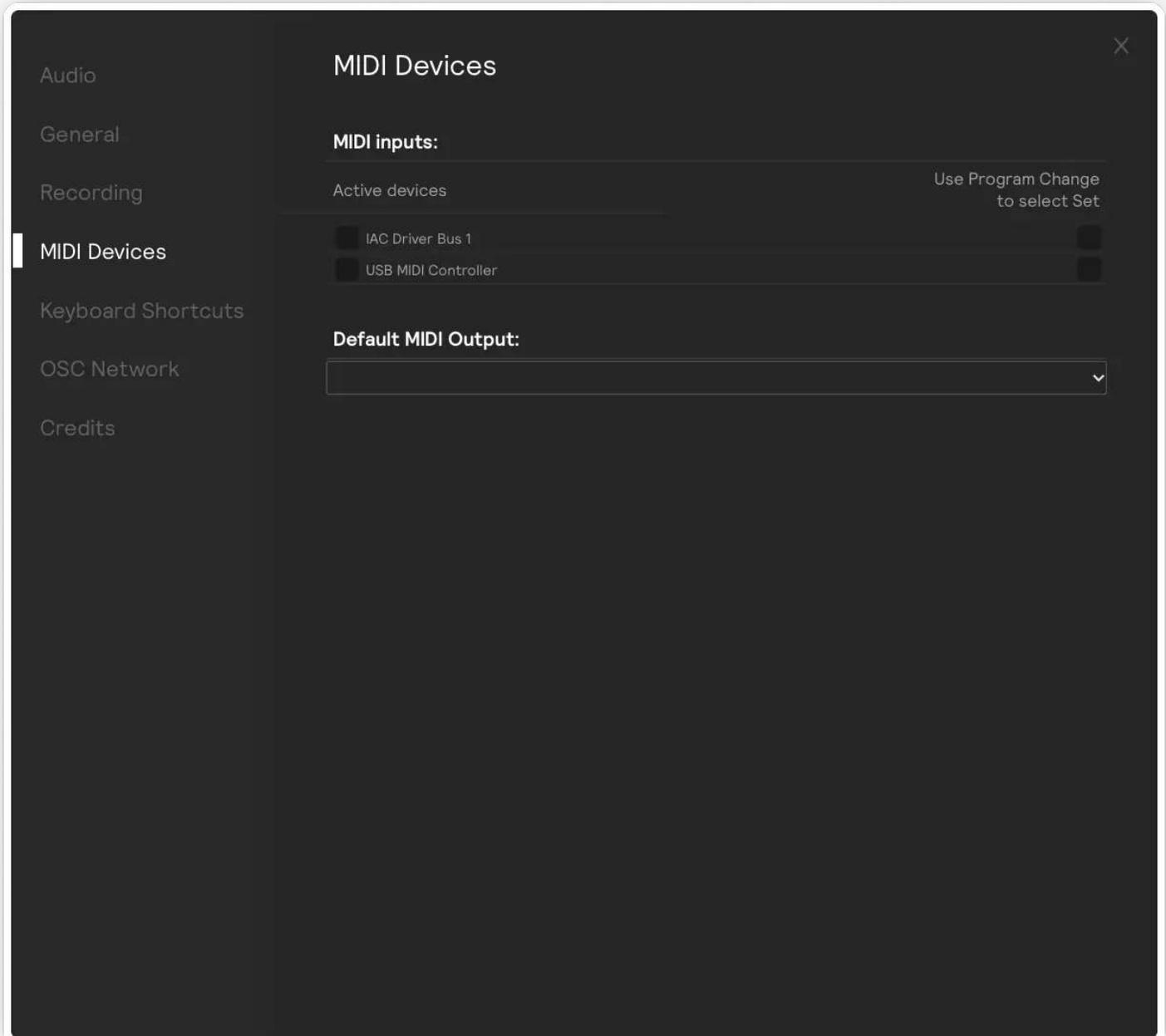
Recording Settings

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.



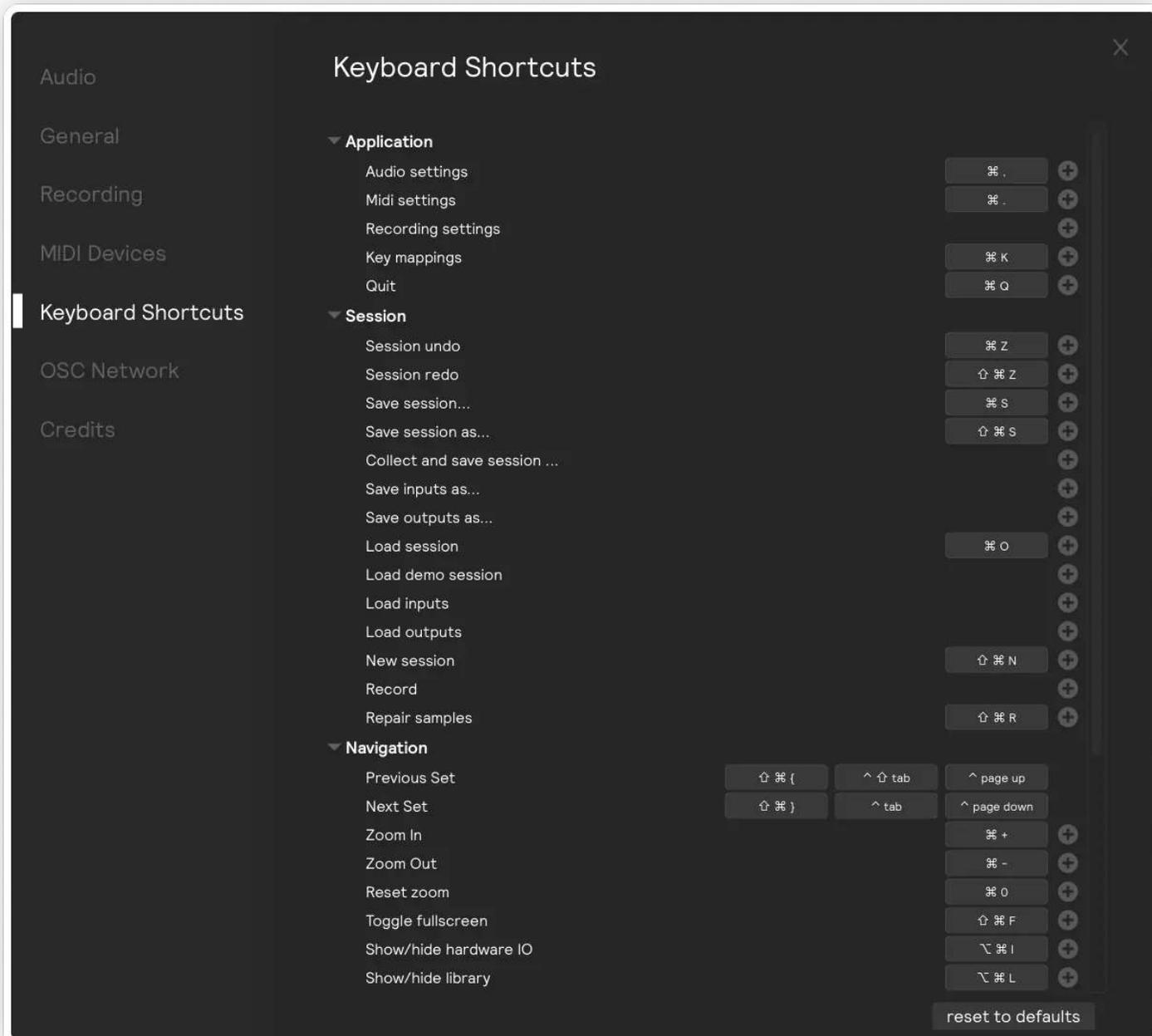
MIDI Devices

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](#).



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.



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.



Audio

Drumset Layout

General

Recording

MIDI Devices

Keyboard Shortcuts

OSC Network

Drumset Layout

Credits

Drum Type	Set Input Mapping	Reset
Kick	kick1	▼
Snare	snare1	▼
Side Snare	snare2	▼
Rack Tom 1	tom1	▼
Rack Tom 2	tom3	▼
Floor Tom 1	tom2	▼
Floor Tom 2	tom4	▼
HiHat	hihat1	▼
Ride R	cymbal1	▼
Crash L	cymbal2	▼
Crash R	cymbal3	▼



- Kick 1
- Snare 1
- Snare 2
- Tom 1
- Tom 3
- Tom 2
- Tom 4
- HiHat 1
- Cymbal 1
- Cymbal 2
- Cymbal 3

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.

Ableton Live Plugin

An overview of using the Sensory Percussion 2 VST plugin in Ableton Live

Add Assignments

An overview of creating assignments and best practices for organizing assignments.

Add Effects

A breakdown of how effects work in Sensory Percussion

Add a Microphone (or another audio source)

How to get audio from a microphone or line-input producing sound in Sensory Percussion.

Change Sets with an Assignment

A guide to switching sets with an Assignment

Audition Samples

A step-by-step guide for how to audition samples

Blend Between Zones

A guide to applying blends to samples across zones of the drum.

Choke Sounds

An overview of the various methods to cutoff sounds in Sensory Percussion 2

Cross Control

A simple guide on how to control sounds mapped to one drum with a different drum

Export a Sound Pack

A guide on how to export a sound pack from Sensory Percussion 2

Install Sound Packs

A guide to installing Sound Packs for Sensory Percussion 2

Control Parameters with MIDI-in

A basic guide on how to control stuff in Sensory Percussion with a MIDI device

Send MIDI Out

A guide for sending MIDI out of Sensory Percussion to other programs/devices

Navigate Complex Sets

Tips for navigating your sets' layers in edit view.

Record Your Performance

Tips for Recording Sensory Percussion

Relink Samples

Instructions on how to fix broken sample links.

Set Up MIDI Routing

Instructions on how to set up virtual MIDI routing on your computer

Use Melody and Harmony

A Compendium of Tips for Using Tonal Elements in Sensory Percussion

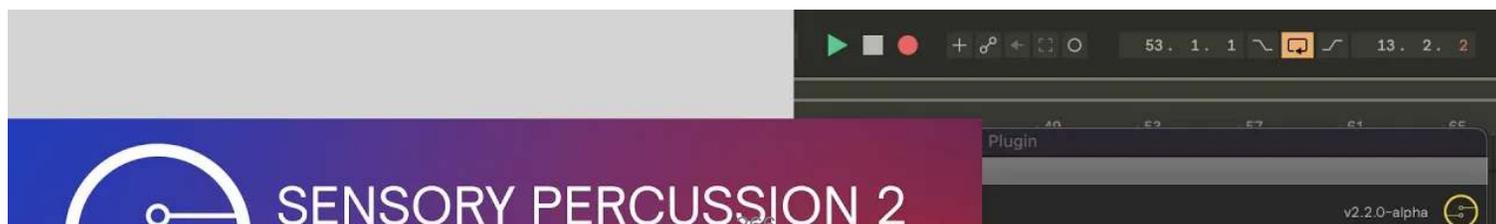
Use Thresholding

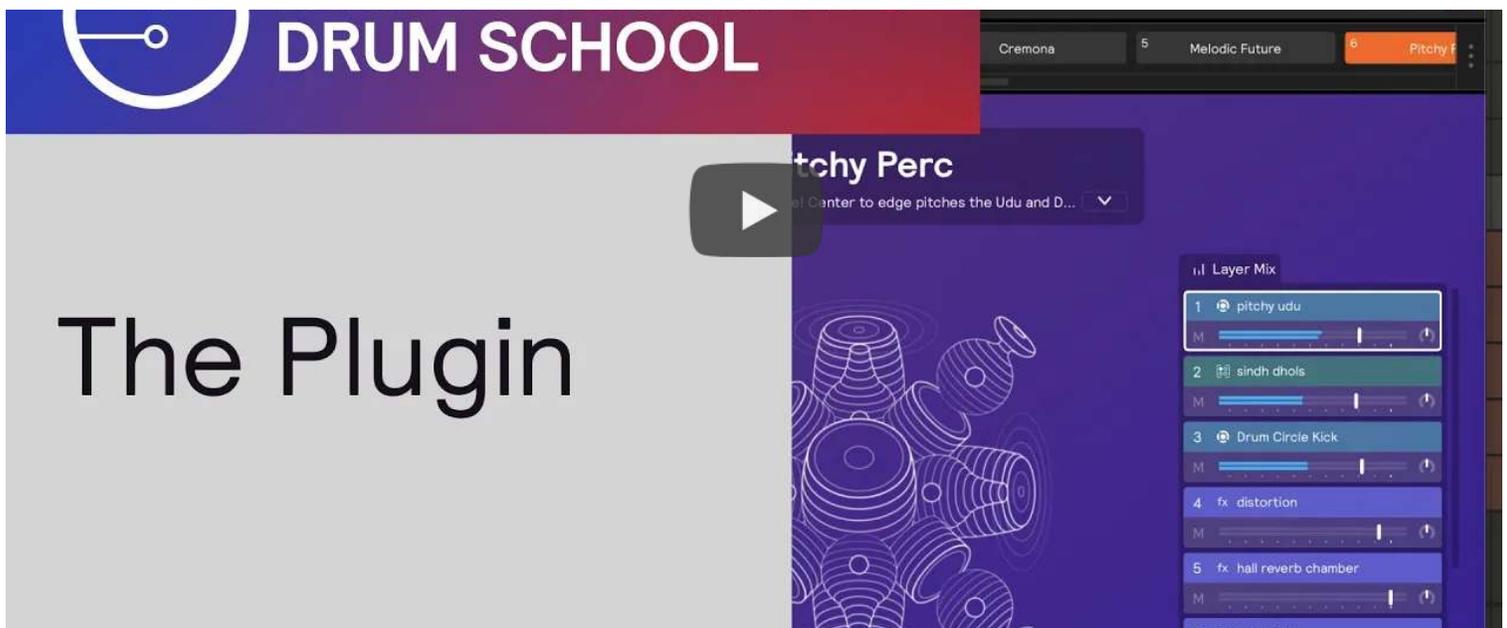
What is thresholding and how best to use it

How To Use the Ableton Live Plugin



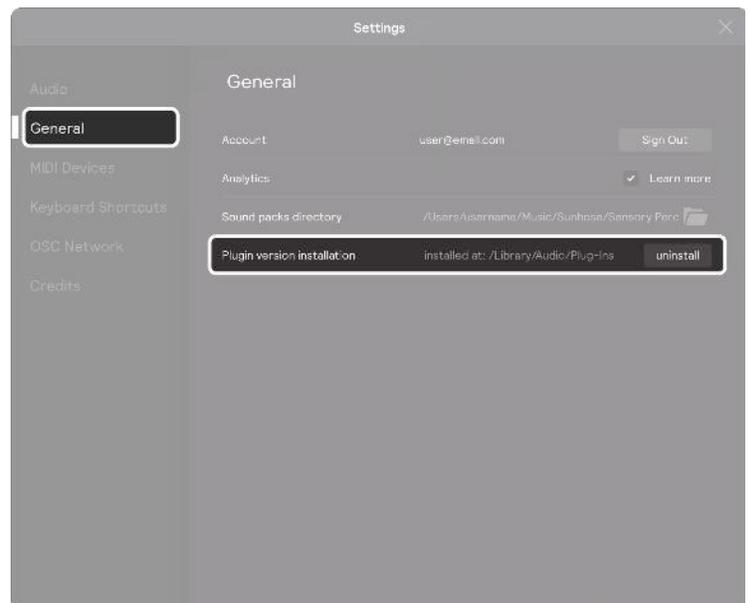
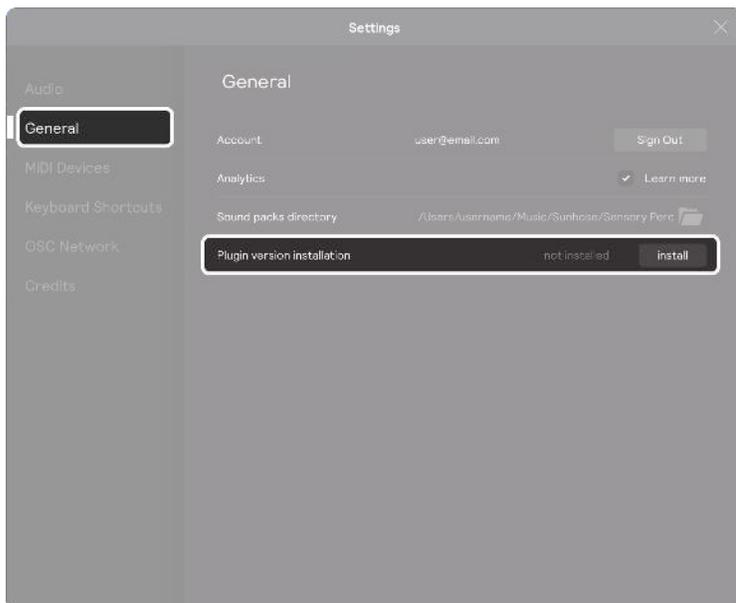
The Sensory Percussion 2 Ableton Plugin has all of the features of the standalone app, but it runs inside Ableton Live 11.3+. It will load inside other DAWs that support VSTs, but full usage of all seven sensor inputs is restricted by the DAW's ability to route multi-channel audio into VST effects. In 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.





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.



! INFO

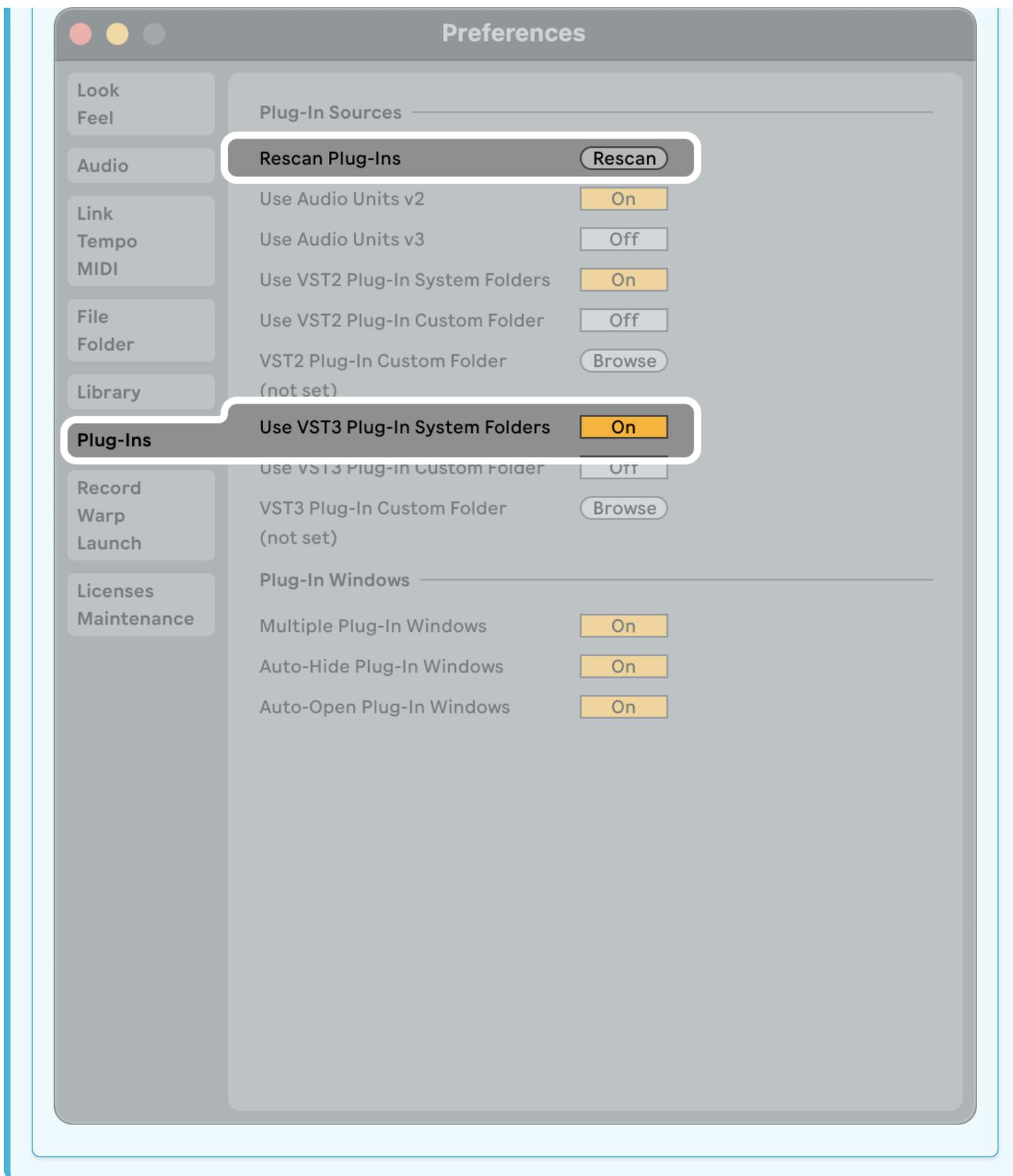
You can find the plugin in the VST3 folder of your system. The default location for VSTs on Windows is `C:\Program Files\Common Files\VST3` and on Mac it is `/Library/Audio/Plug-`

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.



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

ⓘ **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: 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:



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.



You'll want to enable all the mono and stereo inputs and outputs that you plan to use.

Input Config

Choose which audio hardware inputs to make available to Live's tracks. Every input pair can be used as one stereo in and/or two mono ins. Deactivating inputs reduces the CPU load.

Mono Inputs

1 & 2	<input type="checkbox"/>	<input type="checkbox"/>
3 & 4	<input type="checkbox"/>	<input type="checkbox"/>
5 & 6	<input type="checkbox"/>	<input type="checkbox"/>
7 & 8	<input type="checkbox"/>	<input type="checkbox"/>
9 & 10	<input type="checkbox"/>	<input type="checkbox"/>
11 & 12	<input type="checkbox"/>	<input type="checkbox"/>

Stereo Inputs

1/2	<input type="checkbox"/>
3/4	<input type="checkbox"/>
5/6	<input type="checkbox"/>
7/8	<input type="checkbox"/>
9/10	<input type="checkbox"/>
11/12	<input type="checkbox"/>

OK

Cancel

Output Config

Choose which audio hardware outputs to make available to Live's tracks. Every output pair can be used as one stereo out and/or two mono outs. Deactivating outputs reduces the CPU load.

Mono Outputs

1 & 2	<input type="checkbox"/>	<input type="checkbox"/>
3 & 4	<input type="checkbox"/>	<input type="checkbox"/>
5 & 6	<input type="checkbox"/>	<input type="checkbox"/>
7 & 8	<input type="checkbox"/>	<input type="checkbox"/>
9 & 10	<input type="checkbox"/>	<input type="checkbox"/>
11 & 12	<input type="checkbox"/>	<input type="checkbox"/>
13 & 14	<input type="checkbox"/>	<input type="checkbox"/>
15 & 16	<input type="checkbox"/>	<input type="checkbox"/>

Stereo Outputs

1/2	<input type="checkbox"/>
3/4	<input type="checkbox"/>
5/6	<input type="checkbox"/>
7/8	<input type="checkbox"/>
9/10	<input type="checkbox"/>
11/12	<input type="checkbox"/>
13/14	<input type="checkbox"/>
15/16	<input type="checkbox"/>

OK

Cancel

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

Input Channel	PORTAL Name
In bus E-L	Mic/Line A
In bus E-R	Mic/Line B
In bus F	Line-In C & D
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.

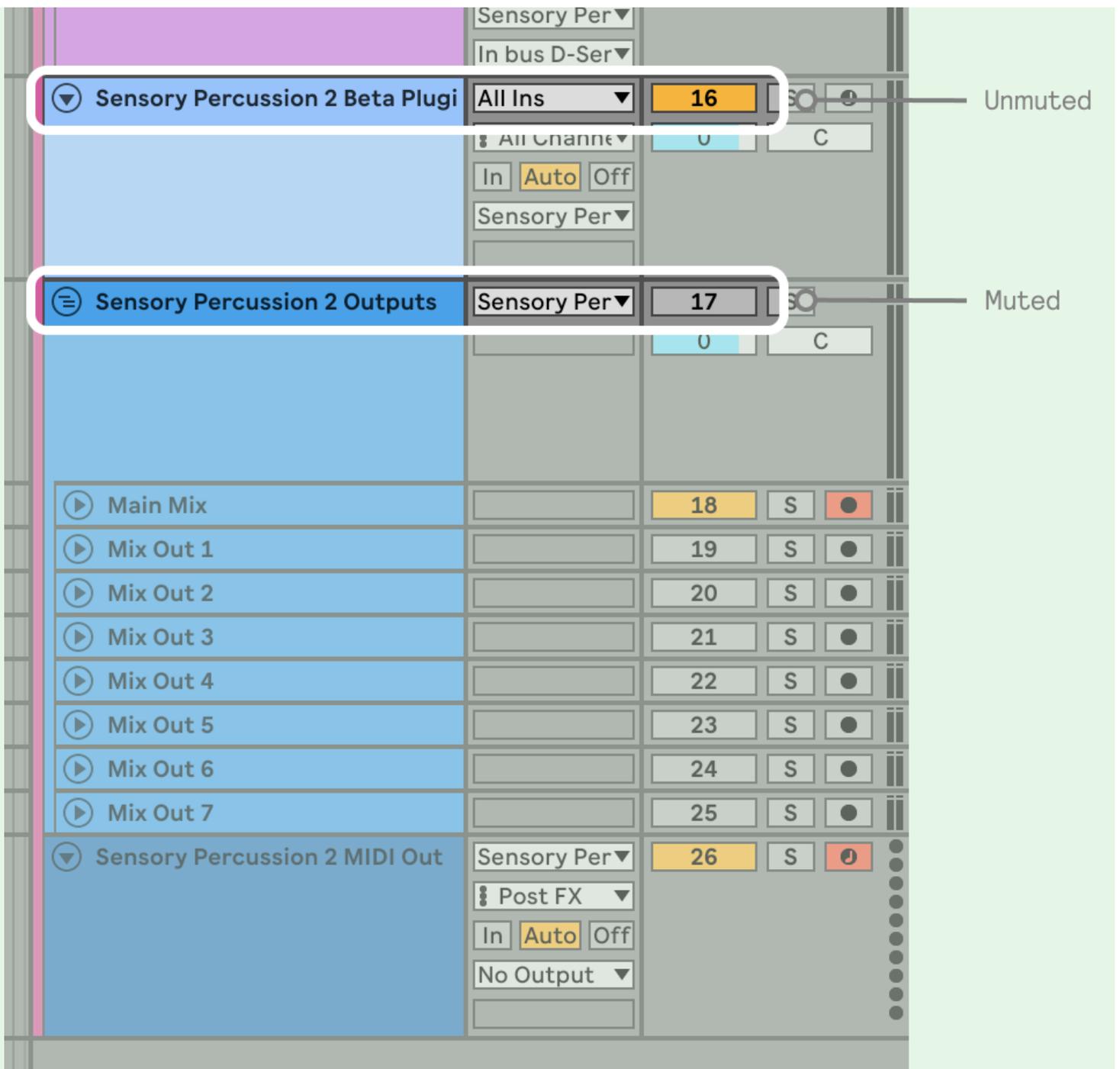
9. Record

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:



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:



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 CtrMIDIcc.amxd* (available in [this pack](#))

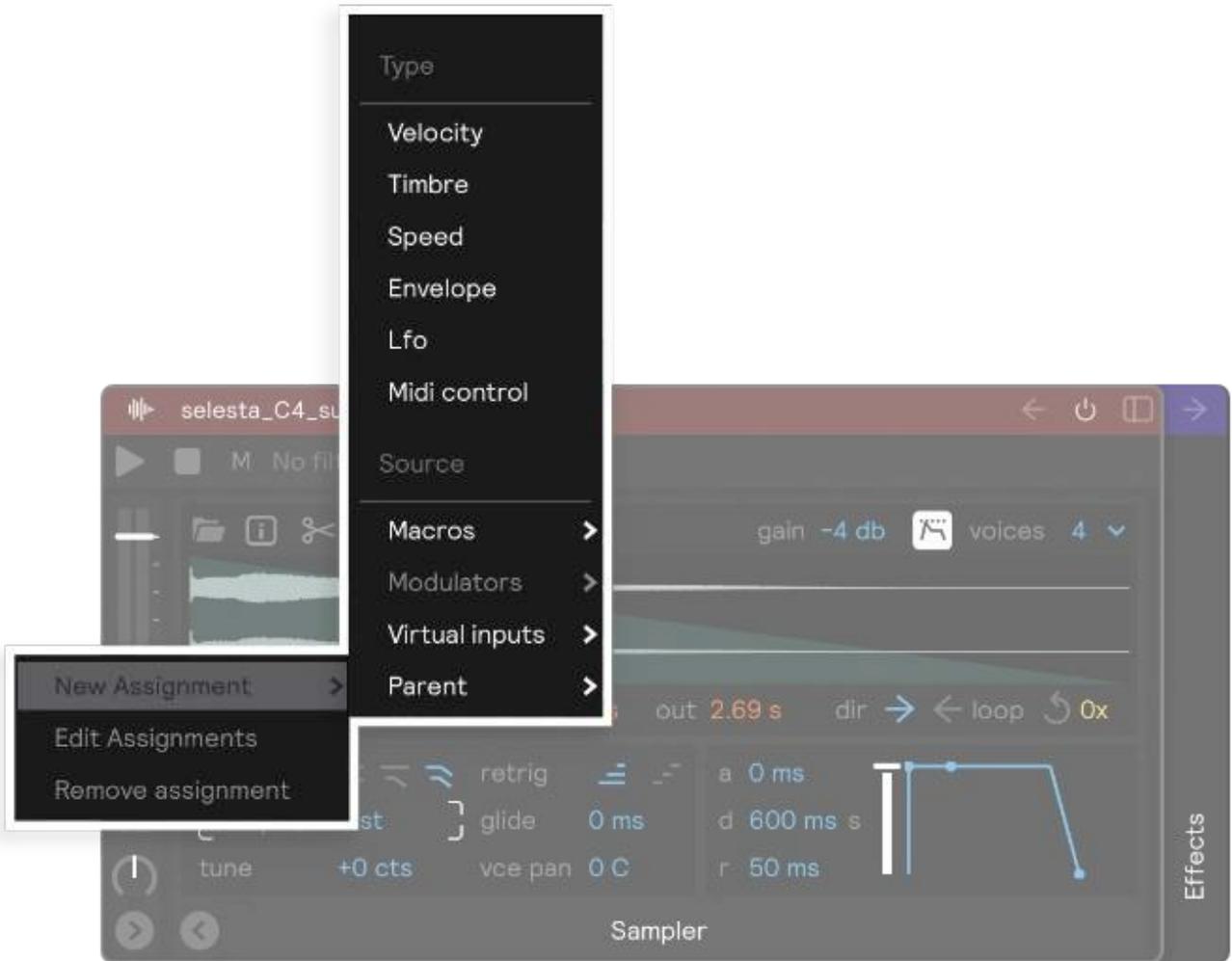
How To Add Assignments

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.



💡 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 default. 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 prominently 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.

Modulators

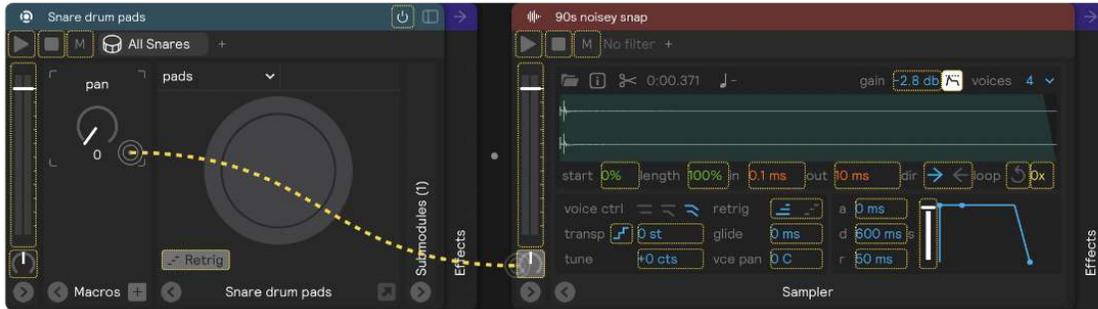


To create a modulator, first make sure the modulators panel is visible by selecting the panels dropdown in the top right corner:



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.

Macros



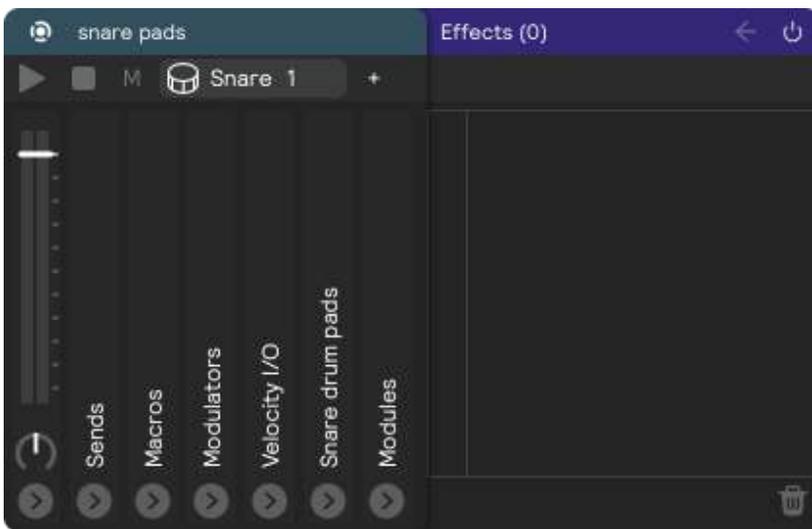
Macros can also be dragged and dropped to multiple parameters. Show the macros panel in the same way you show the modulator panel (select the panels dropdown in the module's top right corner and check "macros.")

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.



Effects Library

The effects library is on the left-hand side of the software, and this is where you will find 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.

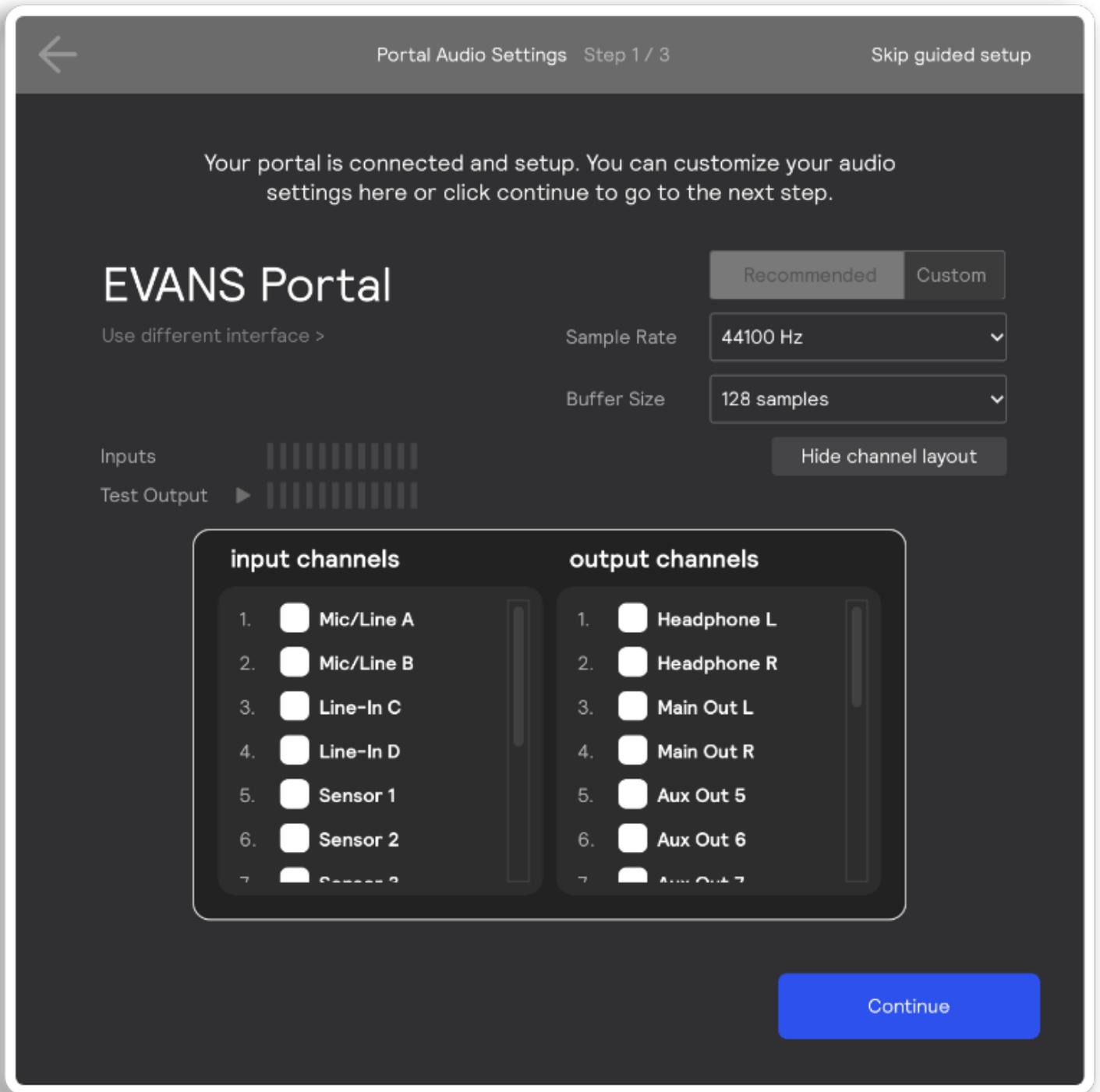
Add Microphone Input (or another another audio source)

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.



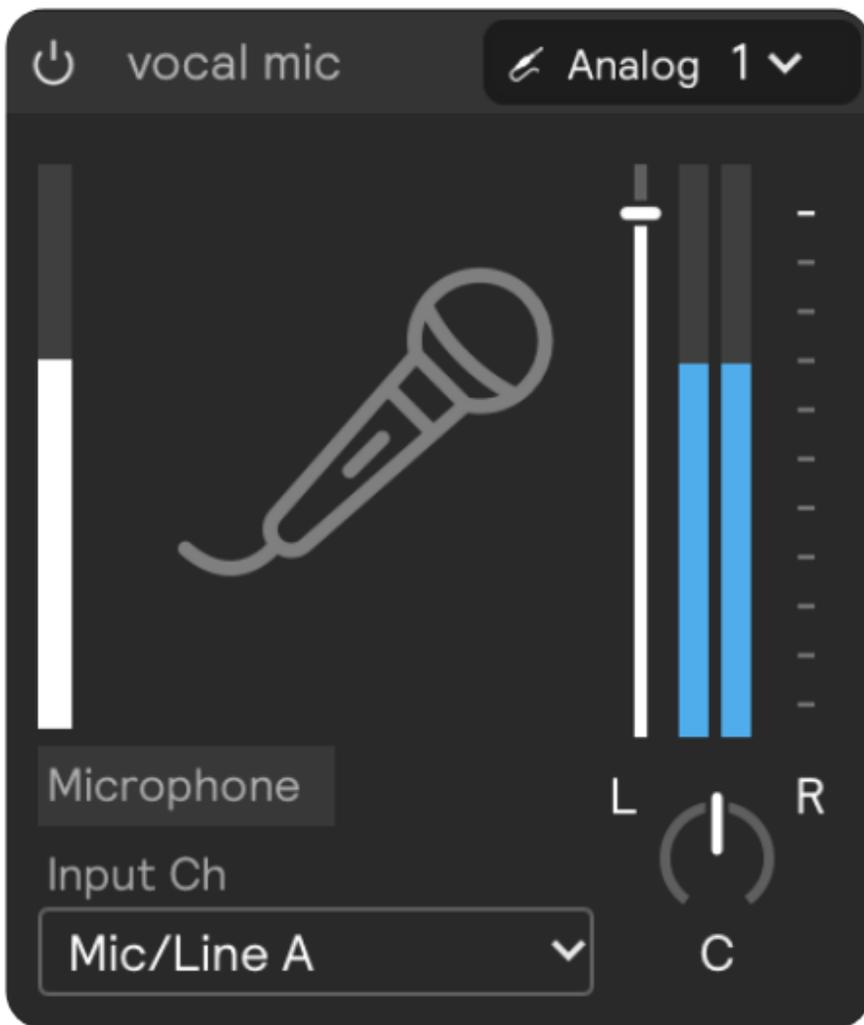
Create a hardware input and select its input channel

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.



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.

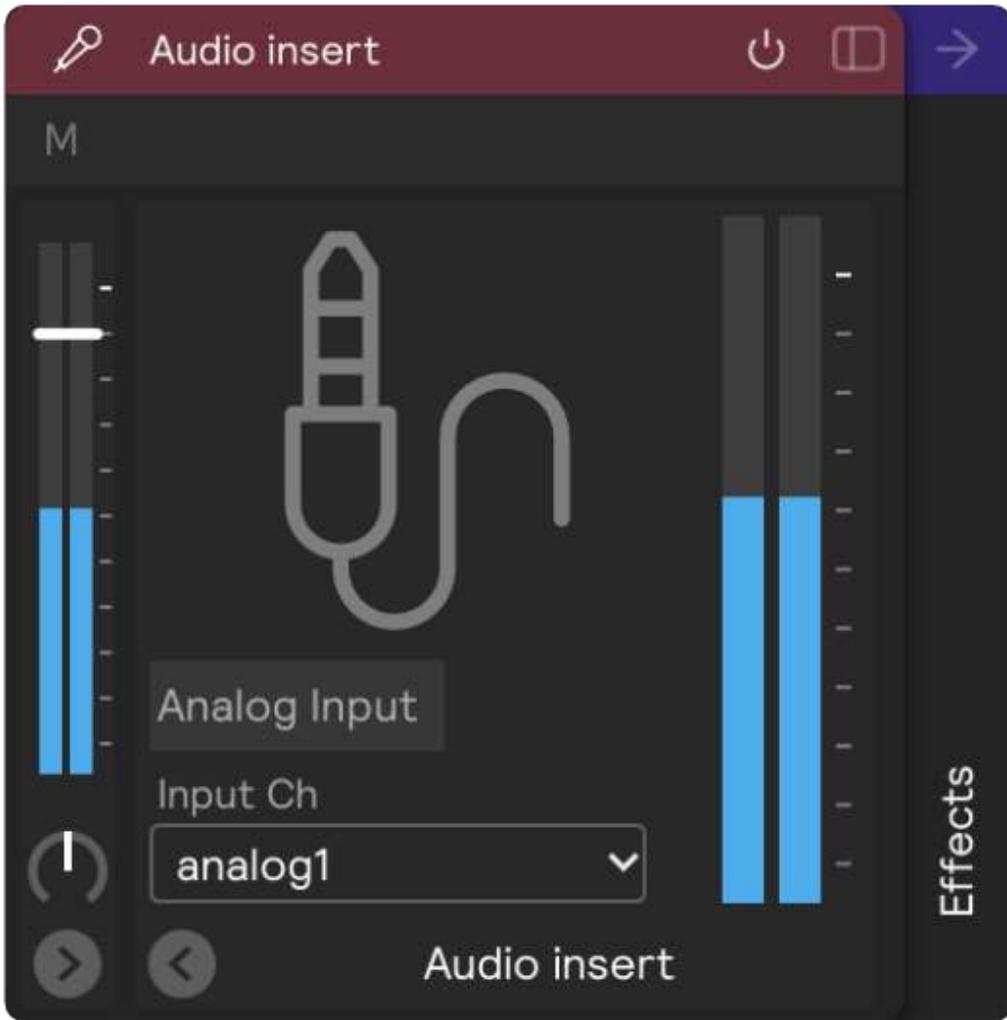


If you want, you can change the icon of the hardware input from an audio plug to a microphone, synth, or guitar, (and more), by selecting the button that says "Audio Insert."

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).

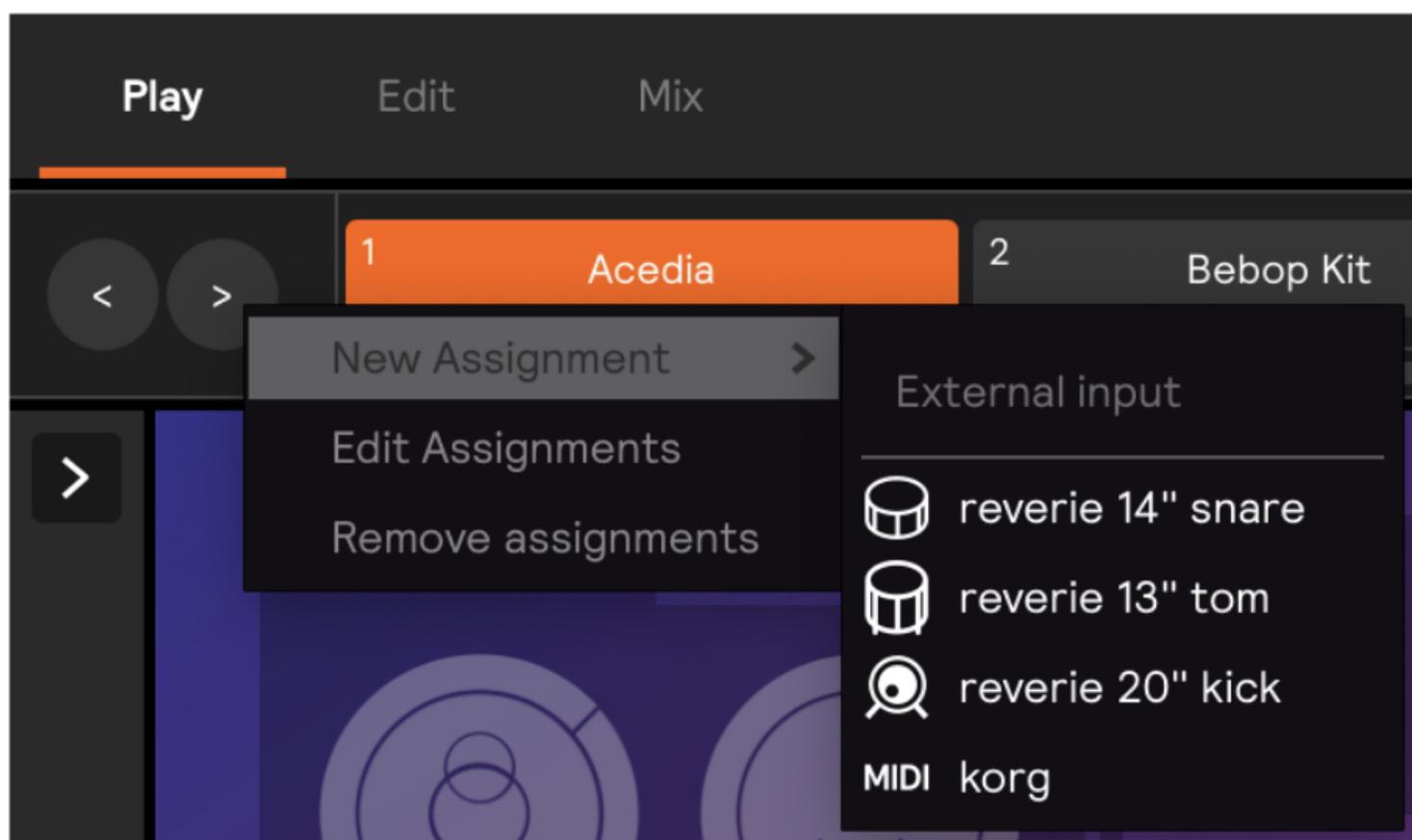


Bring up the fader and you are good to go! You can add FX, and copy and paste this audio insert into your other sets if you want.

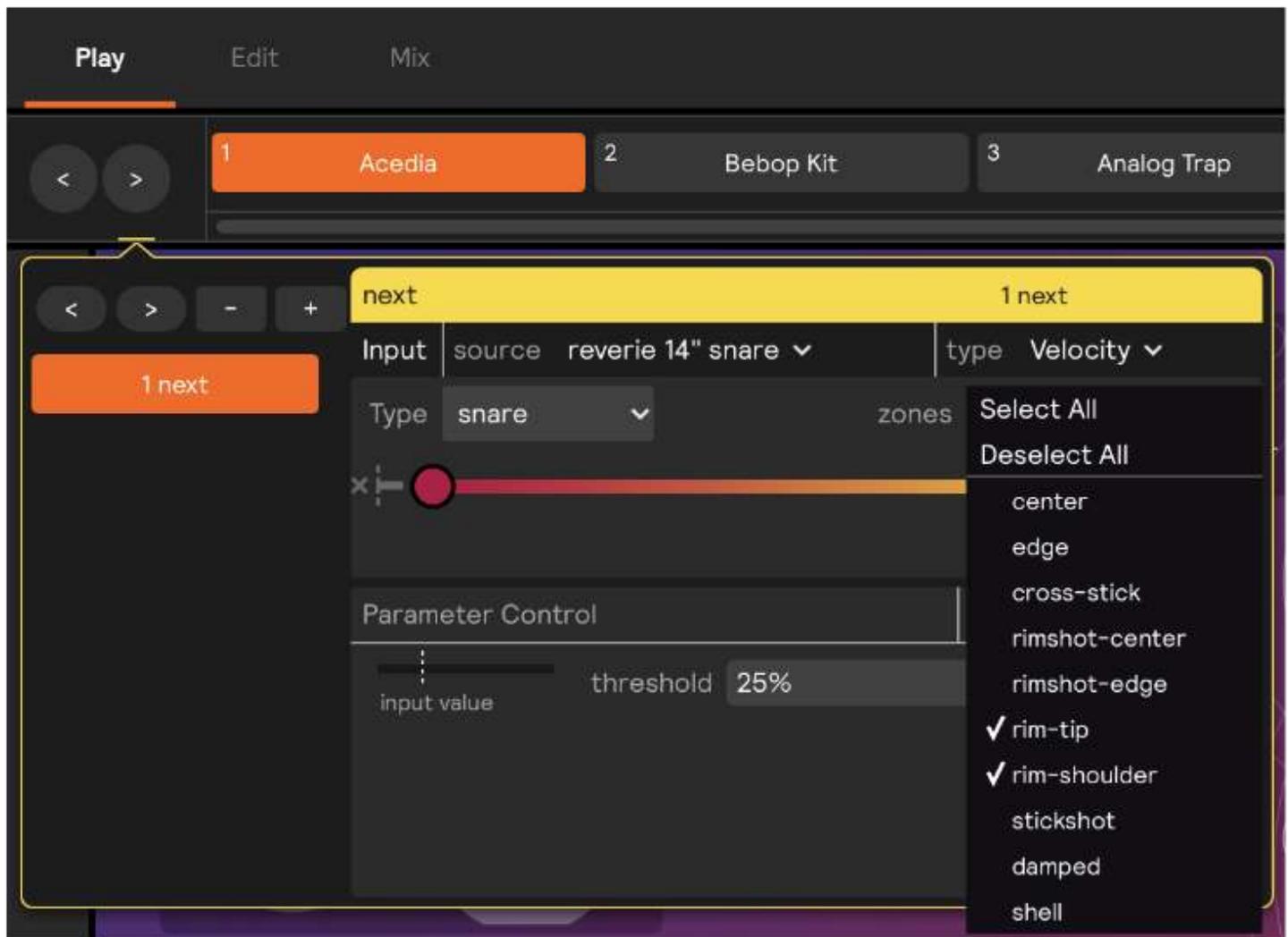
Change Sets with an Assignment

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.



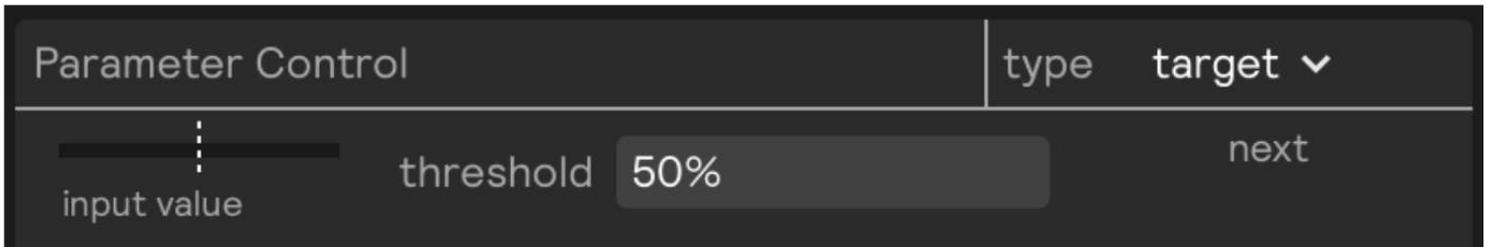
Then, you can select a zone or zones from the zones dropdown list in the assignments popup.



In the example above, only the rim-tip and rim-shoulder of the snare will move to the next set.

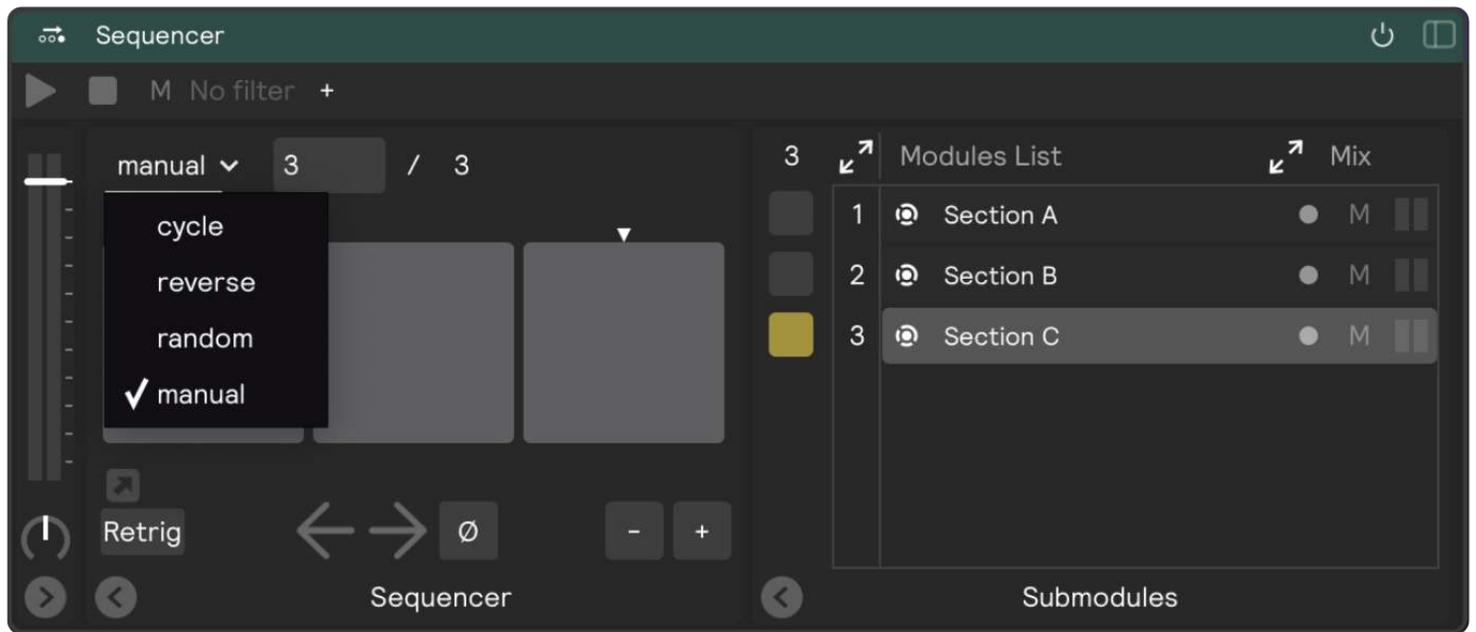
Some tips

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.



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.



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:

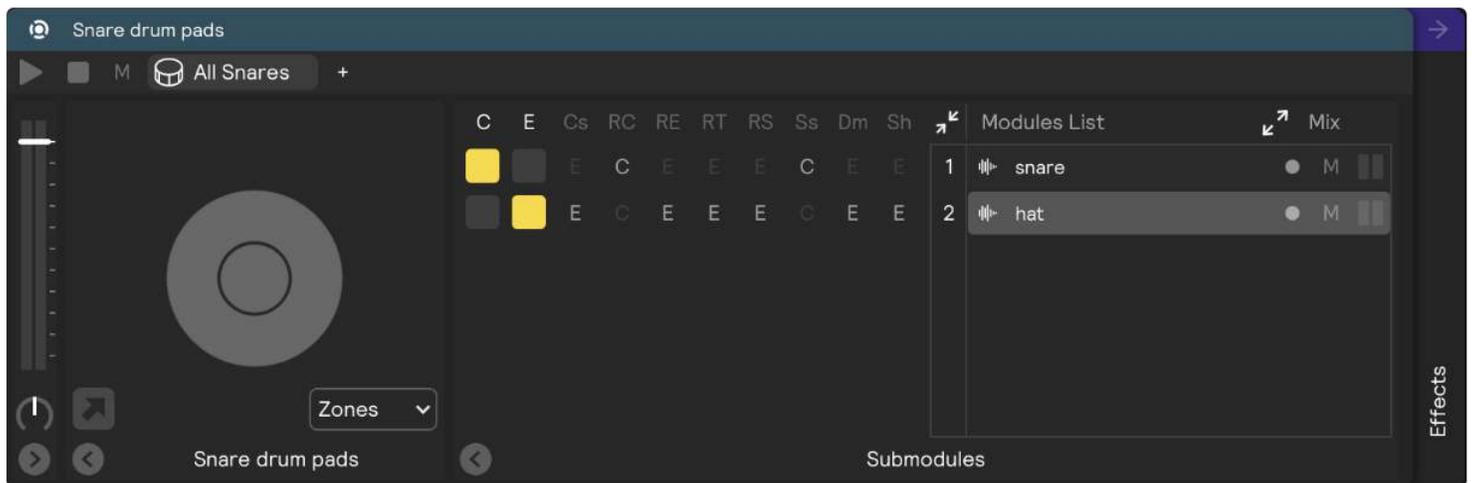
1. Pop open the [hardware outputs panel](#)
2. Look for the [analog output](#) that you want to use to audition samples.
3. Click on the headphone icon next to the meter so that it turns from gray to white.
4. Pop open the [library panel](#) and navigate to "Build/Samples," or to a folder that you have 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

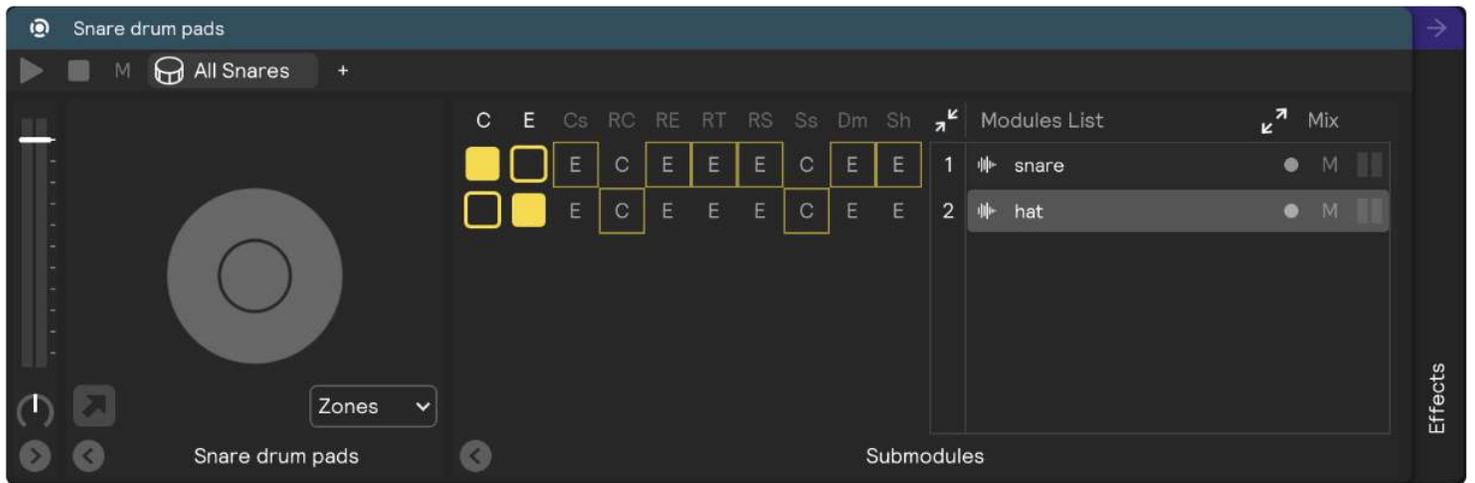
Blends are a feature entirely unique to Sensory Percussion that allow you to mix the samples assigned to different pads based on how you play.

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 from 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:



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.



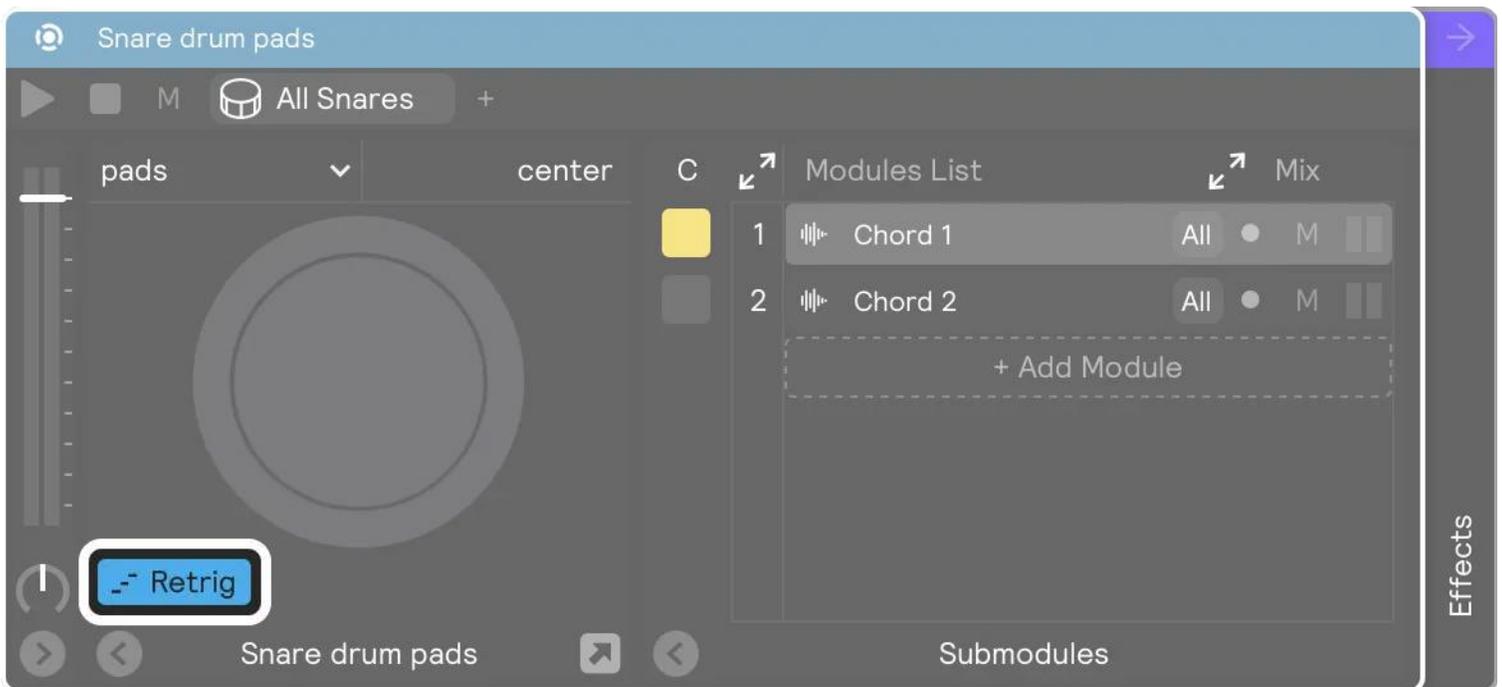
You can experiment with different combinations of blended and unblended modules to get some nice variety and expressivity between zones!

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.



! INFO

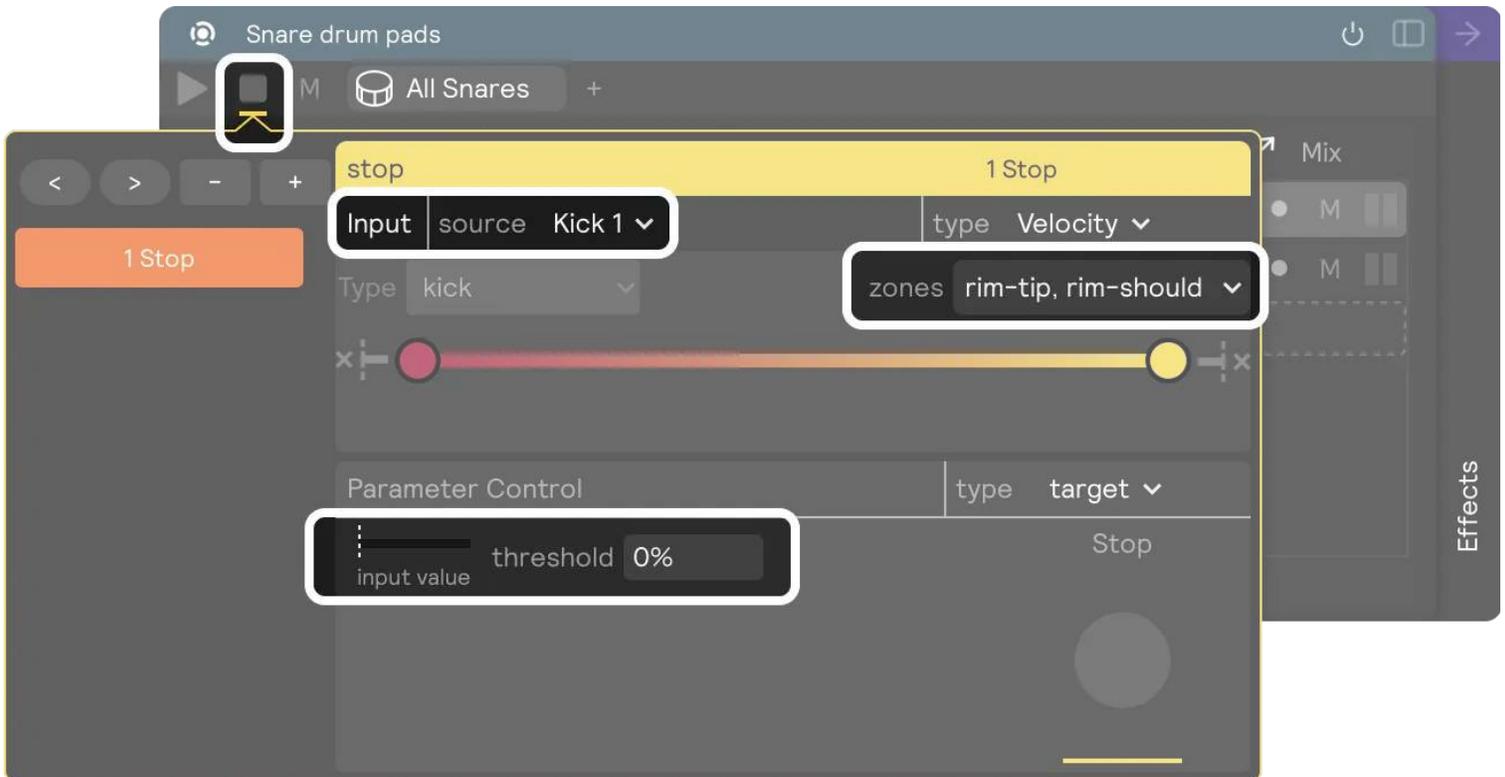
This will work in any controller, not just Drum Pads, and it will even work if you don't have generators producing sounds on some of the modules.

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.

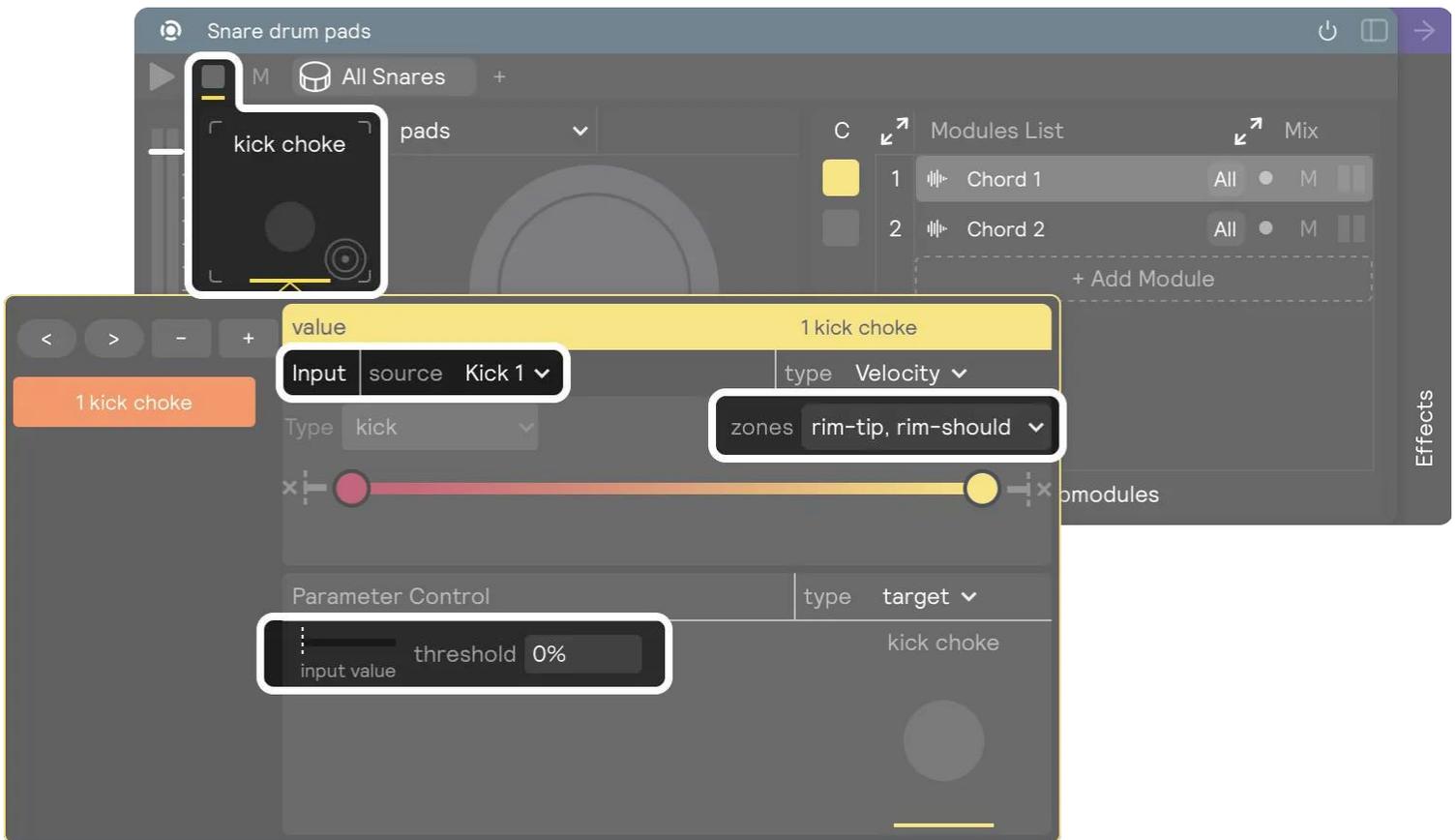
Using zone-specific velocity assignments on the stop button

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.



⚠ 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 may want 25% or higher, if you only want strong hits to engage the assignment.



💡 TIP

For more visual clarity, you can add the zone assignment 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.

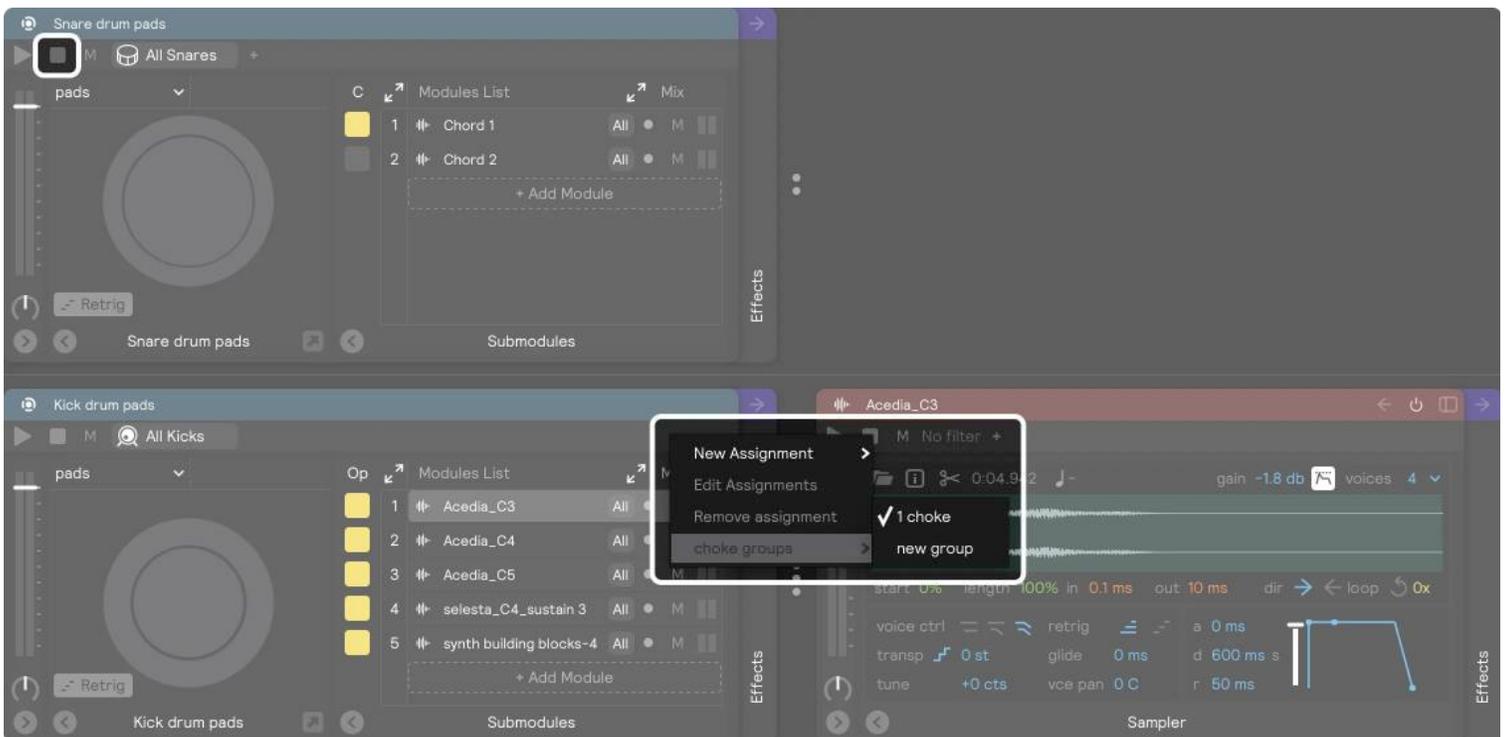
Only use this method to choke your sounds if you want a zone or MIDI controller to choke every sound in EVERY single set in your session. Otherwise, you should use one of the other methods outlined in this article.

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*.



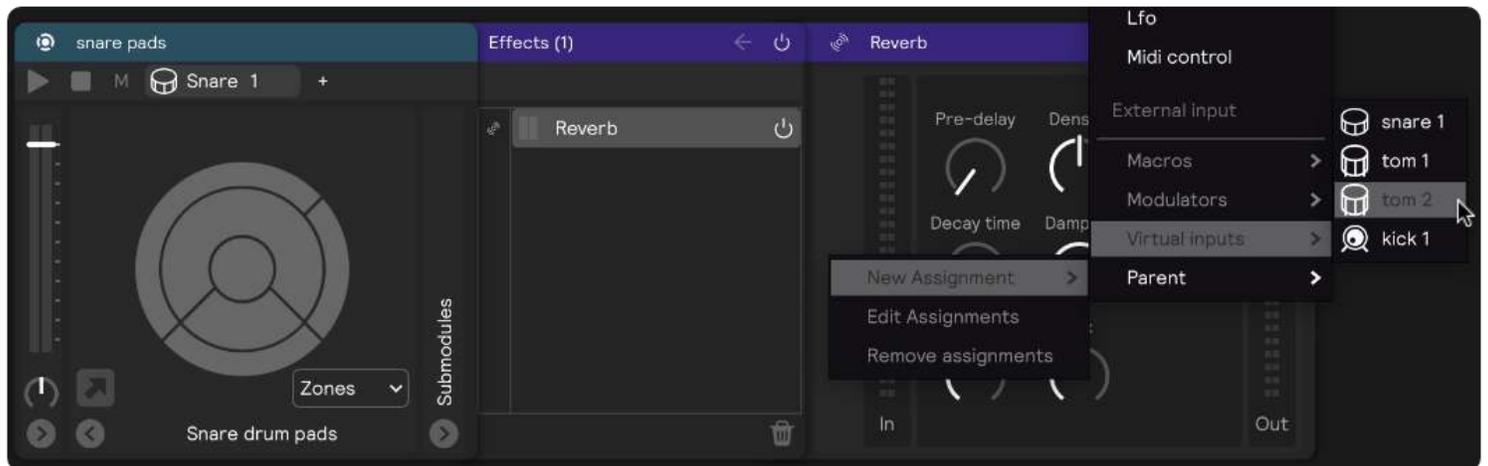
How To Control Parameters Across Drums

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.

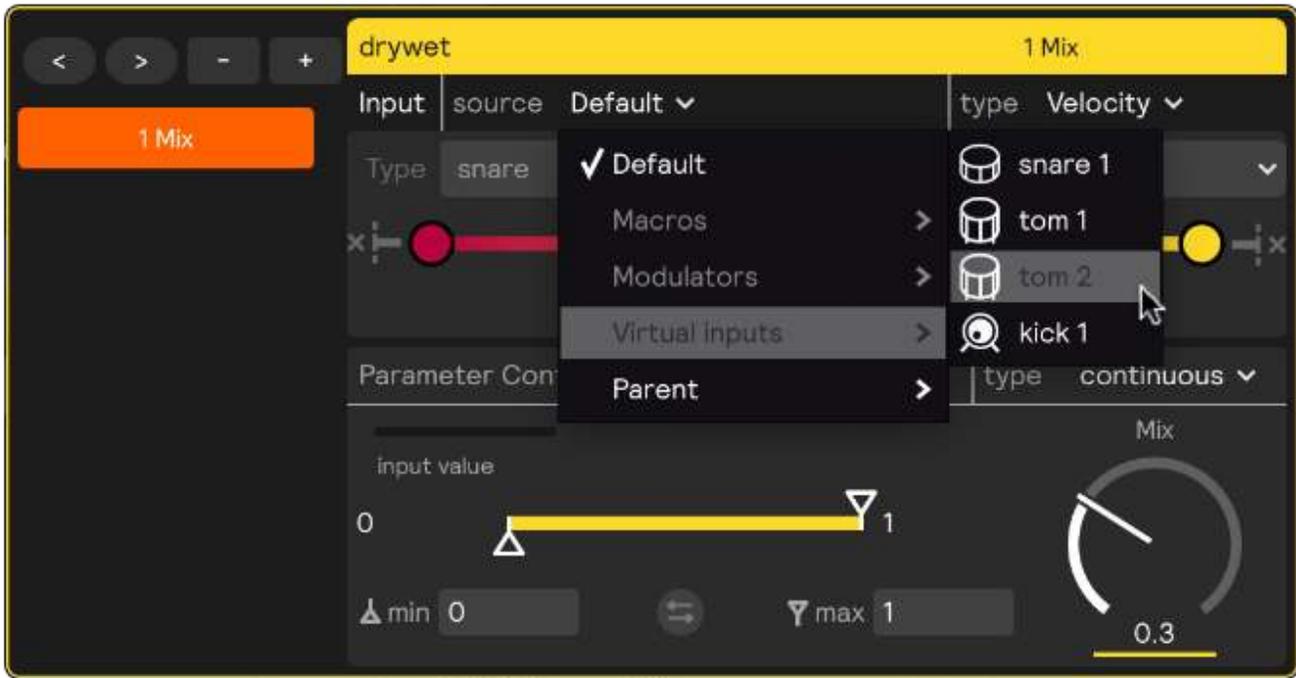
But, what if you want the velocity of your floor tom to control the mix level of that reverb mapped to your snare? Well, then you have to setup cross control.

You can setup cross control at two different points in the assignment creation process.

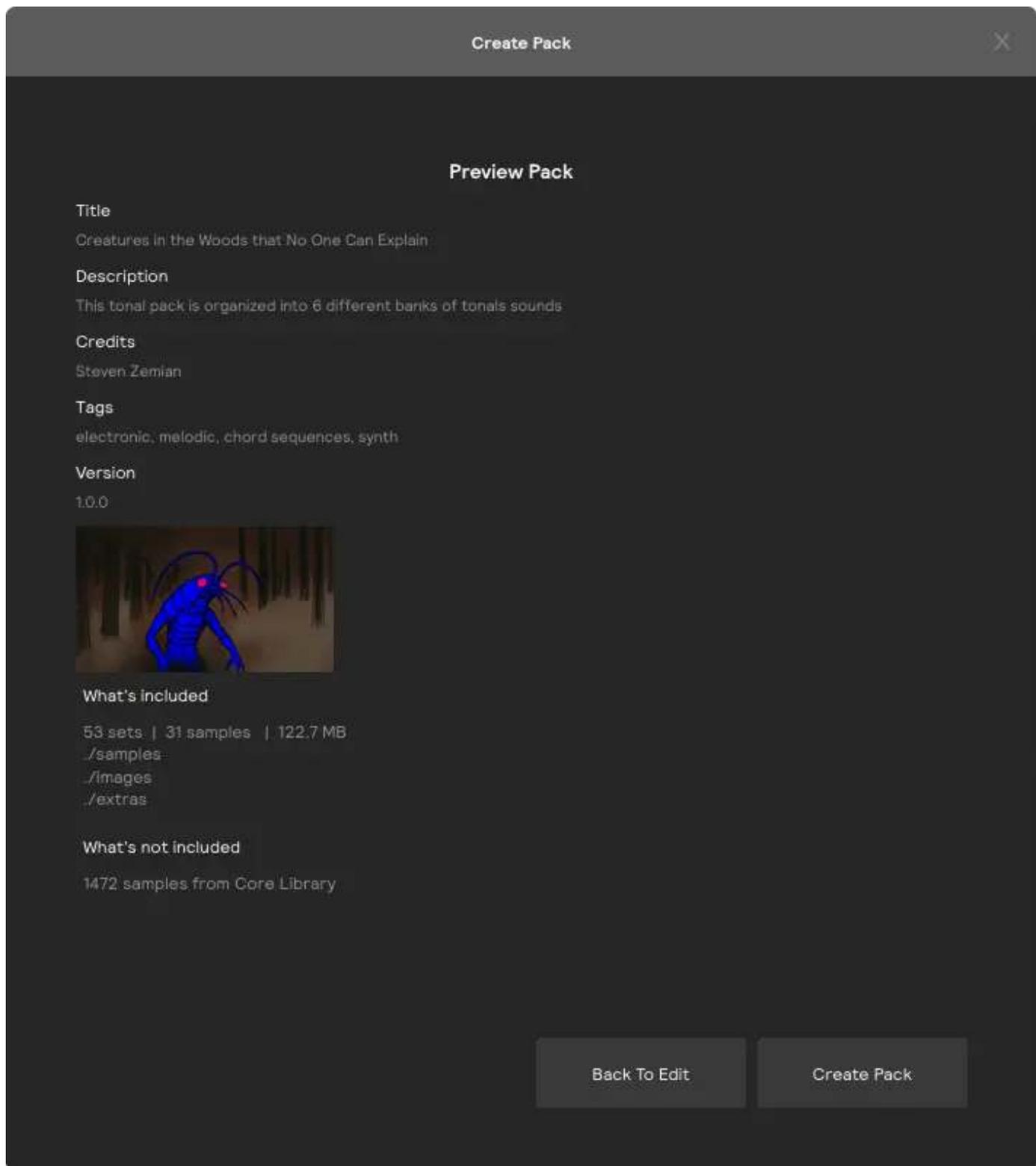
1. If you know right off the bat that you want cross control, then, when creating the assignment by right-clicking the parameter, select *New Assignment*>*Virtual Inputs* and then select whichever input you want to drive the parameter. In this case, it's Tom 2.



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.



How To Export a Sound Pack



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

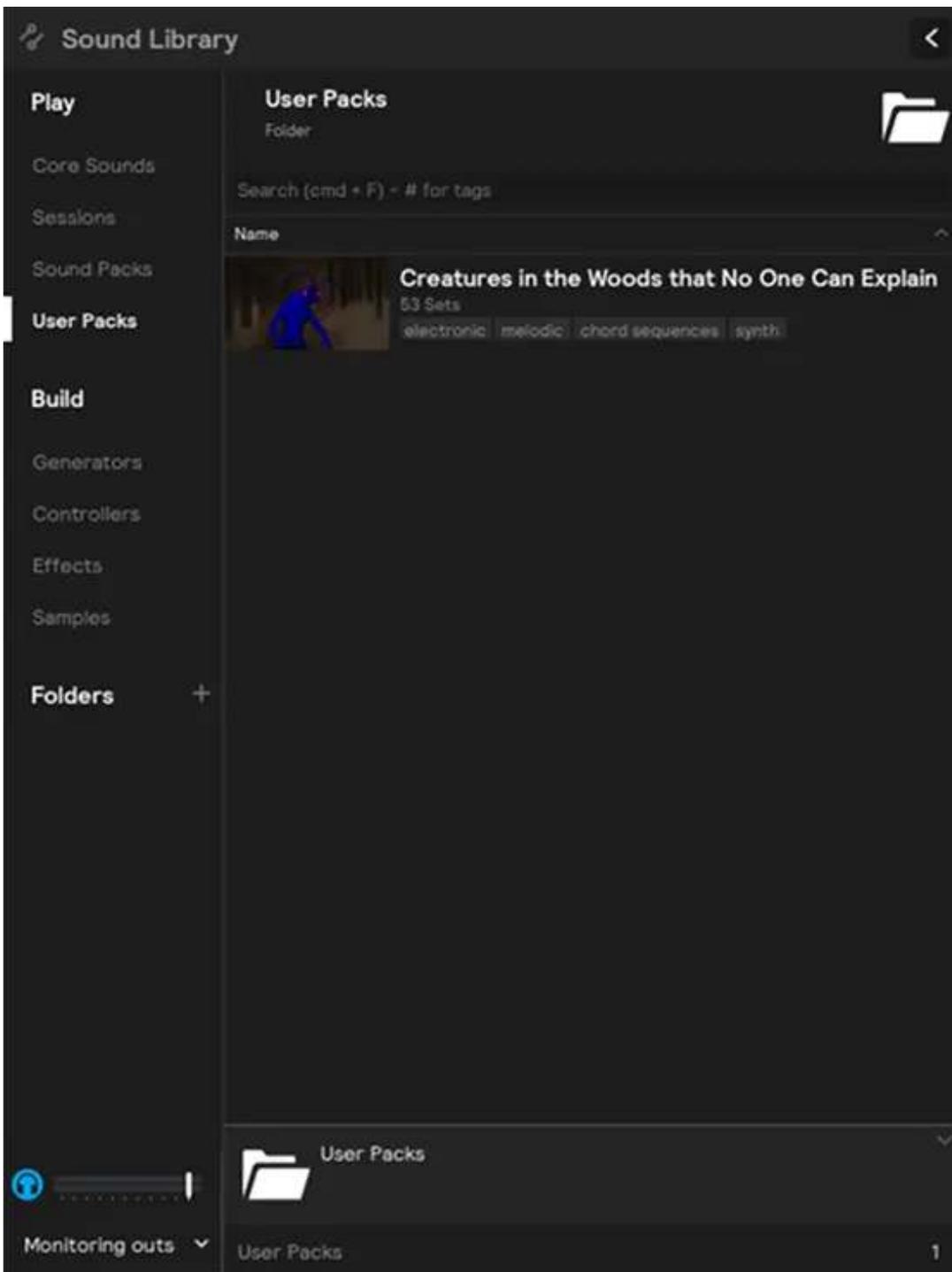
1. Open the session file (.sp2) for the pack.
2. Select **Export sound pack** from the File menu.
3. Fill out the metadata for the pack (*Title, Description, Credits, Tags, Version*).
4. Select a pack image.
5. If you have a samples folder to include with the pack, you can select “Include all audio files 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.

! INFO

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.



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, it will essentially **Collect and Save** the session, which gathers all of the linked audio files and puts them in a flat list in a newly created folder called `samples`.

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

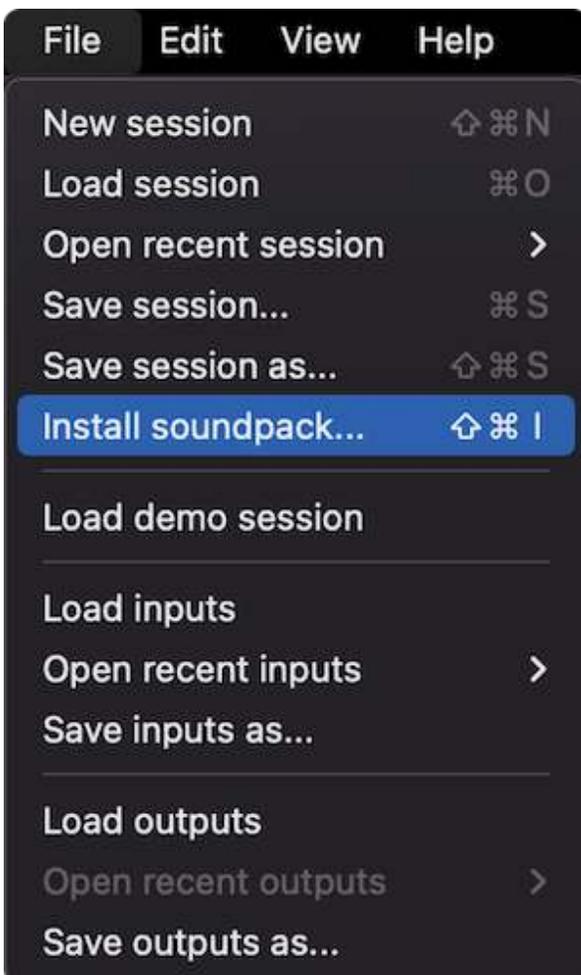
⚠ IMPORTANT

You must be on Sensory Percussion version 2.1.4 or later to install Sound Packs

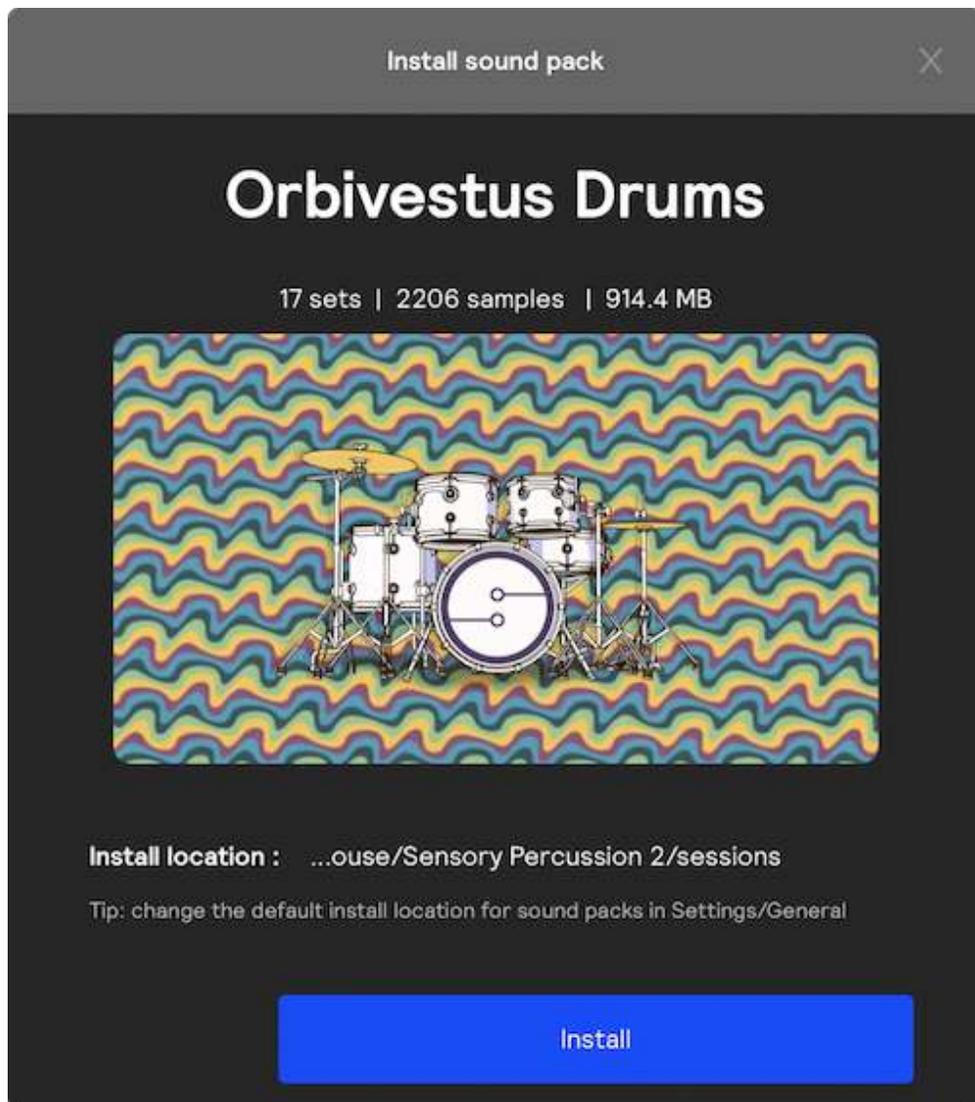
Sounds packs are a great way to expand your sound library. They are available for download from the [Sunhouse Downloads](#) page. Once you have downloaded the `.spz` file, you can install the pack in two ways:

Install from the File menu

Under `File` in the top menu bar of Sensory Percussion 2, select `Install Sound Pack...` and locate the `.spz` file you downloaded.



After opening the `.spz` file, you will be prompted to install the pack. Click `Install` to install the pack.



Once you've installed it, the new pack will now appear in the `Sound Packs` section of the `Library`.

Play

Core Sounds

Sessions

Sound Packs

Build

Generators

Controllers

Effects

Samples

Sound Packs

Name

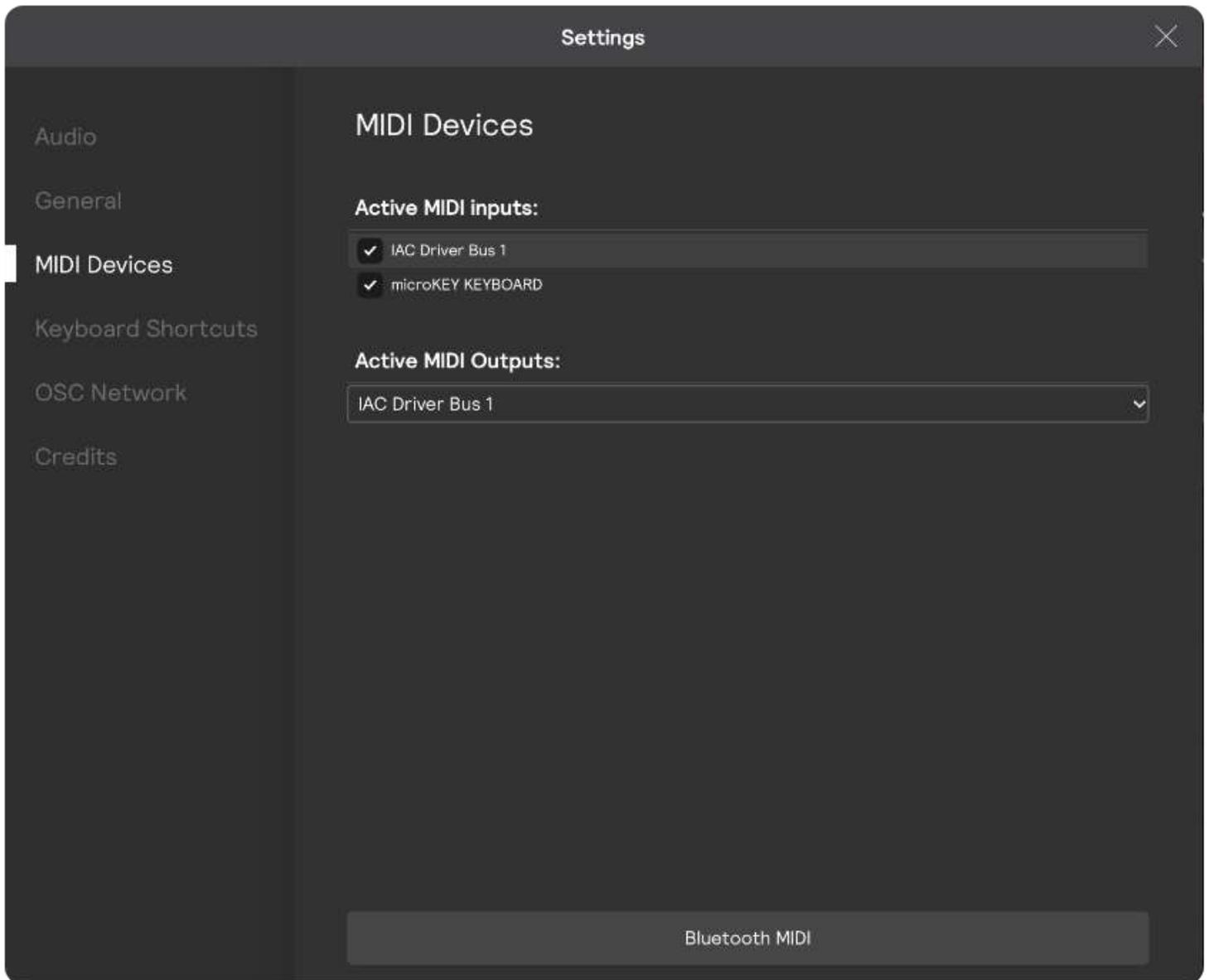


How To Control Parameters with MIDI Input

So ya wanna map some button and knobs from your MIDI controller to stuff in Sensory Percussion? This guide is for you.

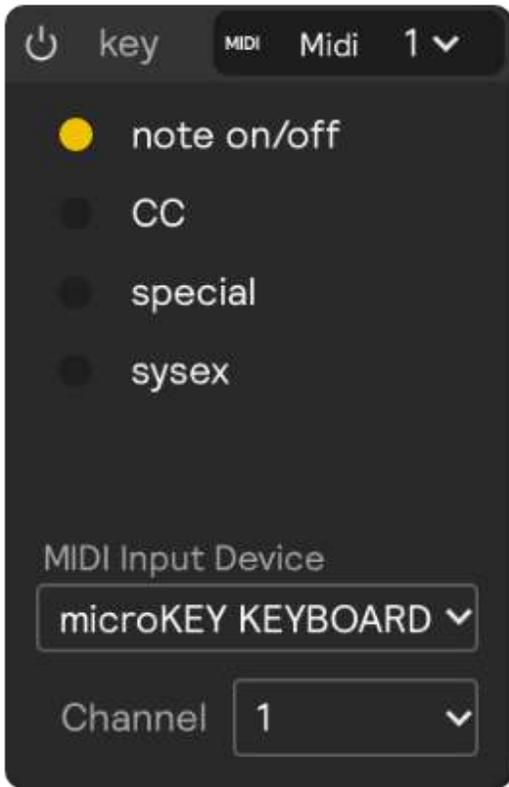
1. You've plugged in your device, right?

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.



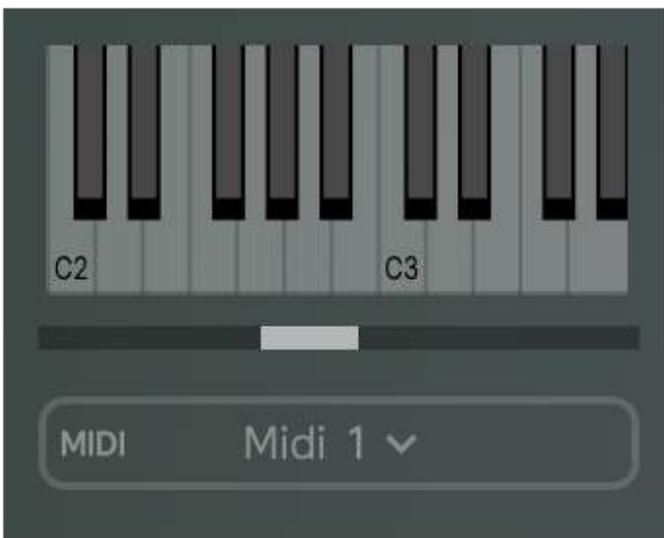
2. Add a MIDI Hardware Input.

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).



3. Add MIDI Virtual Inputs.

Whenever you create a new set, a MIDI [virtual input](#) will be created and automatically hooked up to your Hardware Input -- so if you're working from a brand new set (after you've created a MIDI hardware input), then you don't need to worry about this. But, if you want to control stuff in an existing set, you'll have to [add a new 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 Send MIDI Out of Sensory Percussion

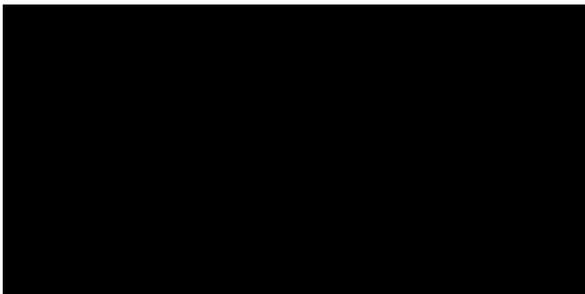
Sending MIDI information out of Sensory Percussion opens up a whole new world of possibilities: not only can you control sounds in other DAWs or physical devices, but you can also use it to [control video](#) in external MIDI-mappable software!

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.

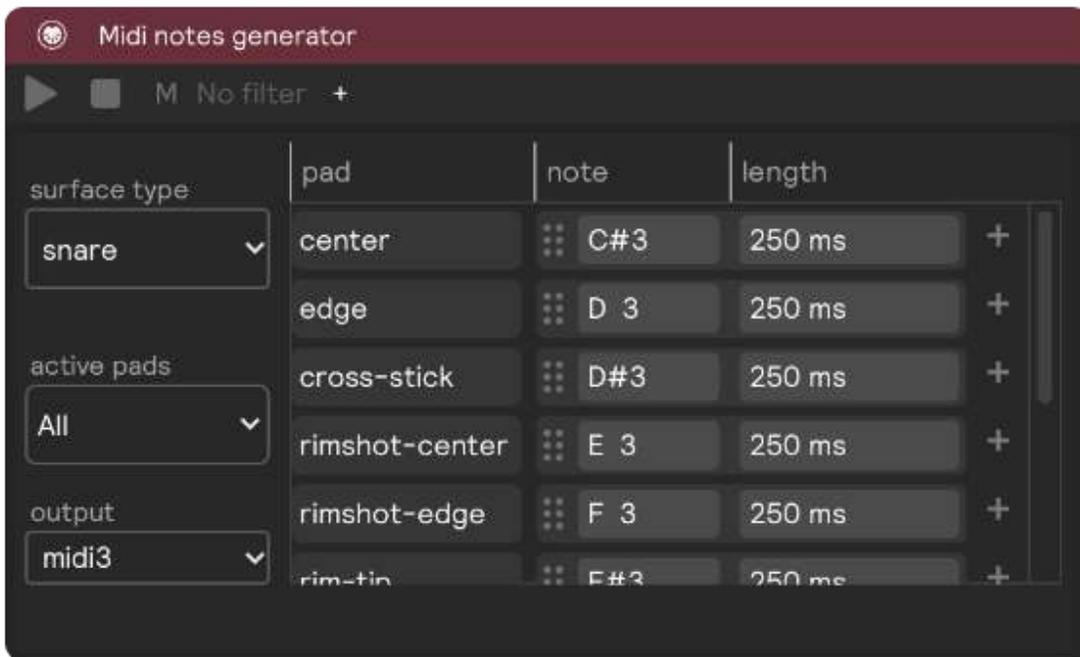
To send MIDI out of Sensory Percussion 2, there are two places you need to add MIDI objects: inside of your set and in your hardware outputs. It doesn't matter what order they're created, but they're both necessary.

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.

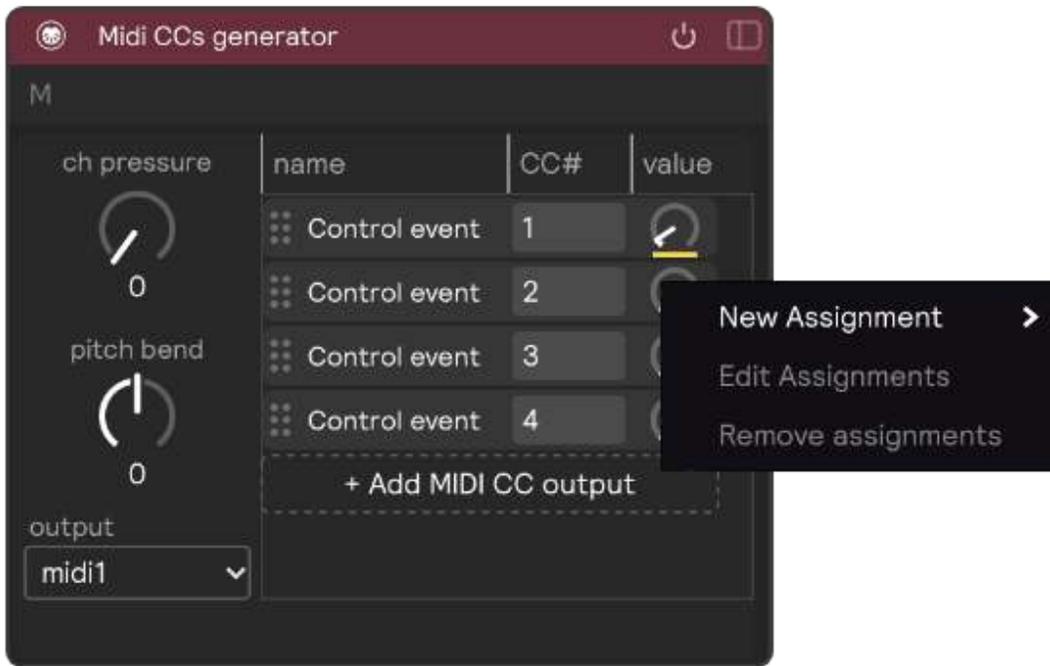


In the above example, only the center zone is activated, but you can activate anywhere from 1-10 zones, each send different MIDI note values (or the same values if you want). That means with just 4 drums, you can cover 40 notes of the scale!



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.



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

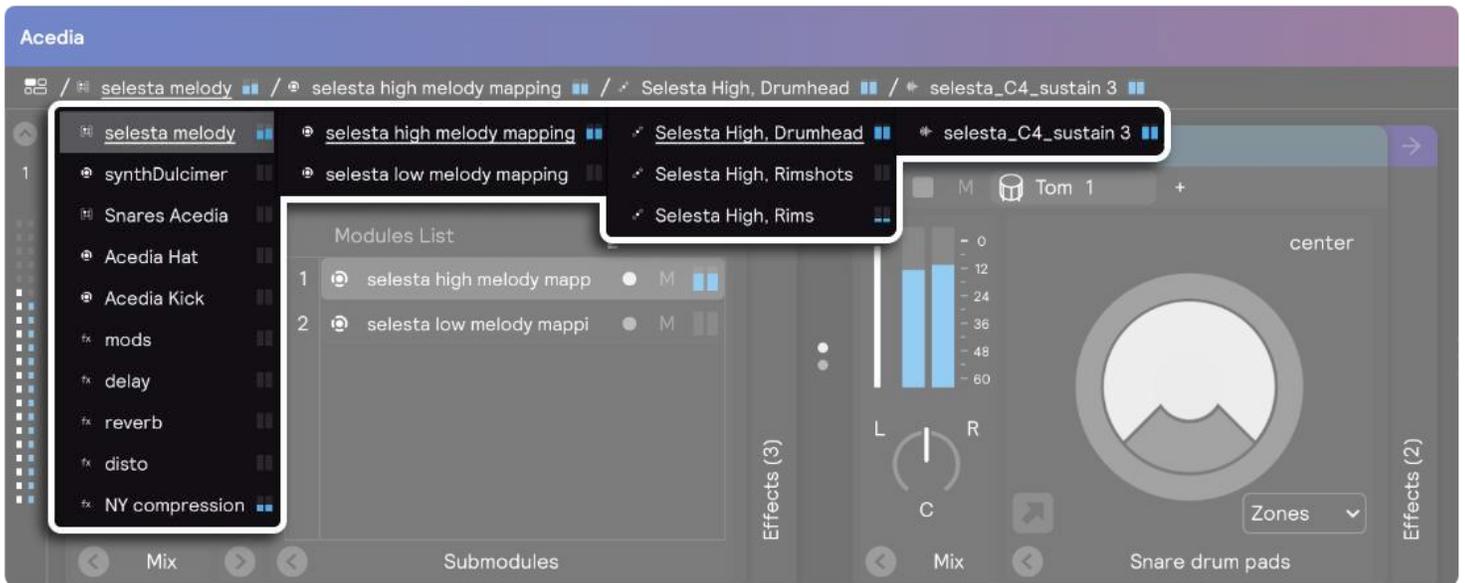
The modular structure of Sensory Percussion 2 allows you to create complex systems of interconnected modules. With the capacity for a single layer to hold hundreds of modules, each of which containing their own submodules, you can go as deep as you want! The problem is that there is only so much space 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.



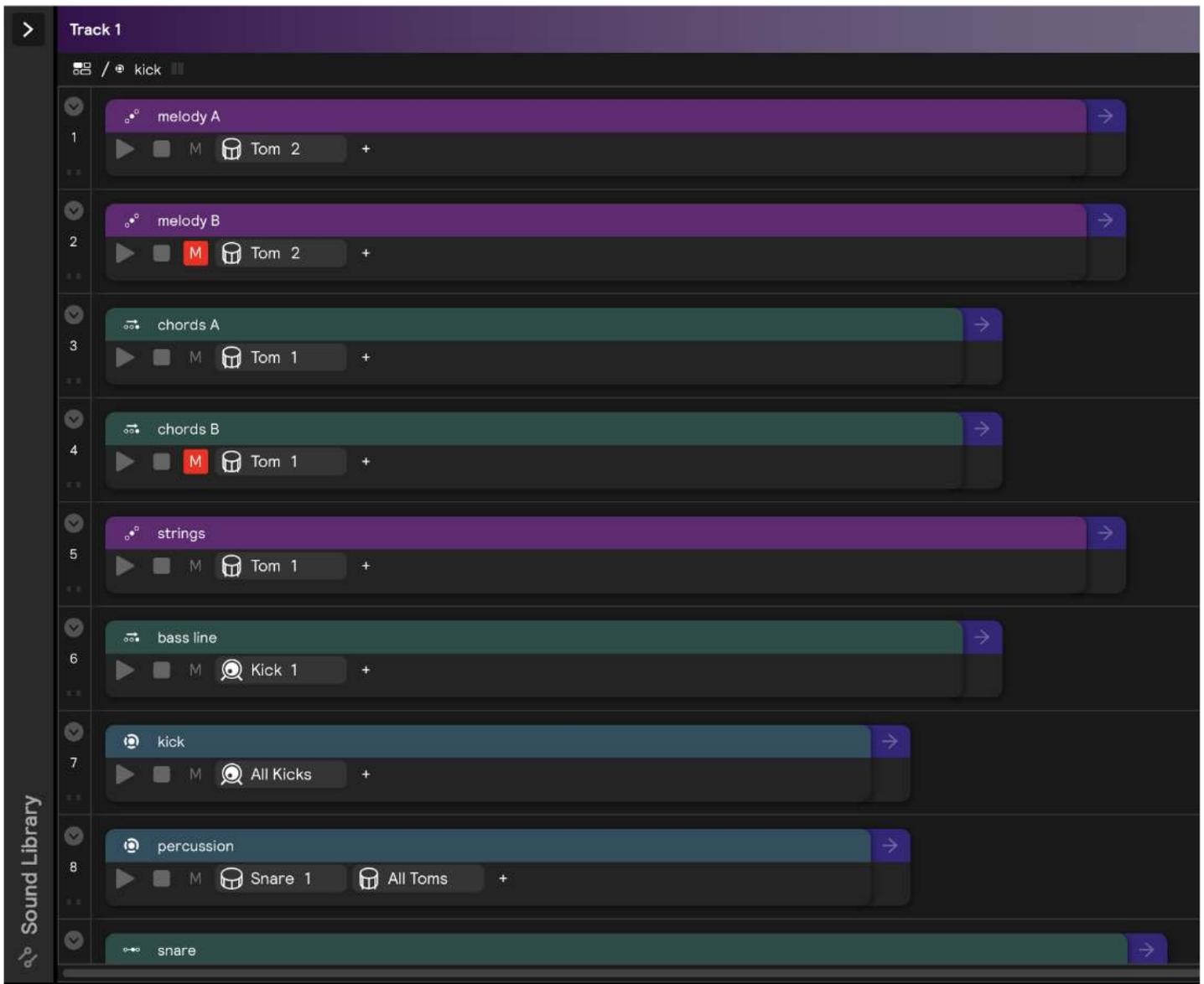
And if you right-click the name of a module in the breadcrumbs bar, you will then see a drop-down that gives you access to that module, all of its sibling modules, and all of the modules they contain. That means that when you right-click the top module in the breadcrumbs bar, you can see ALL of the modules 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 dropdown open and follow the blue VU meters!



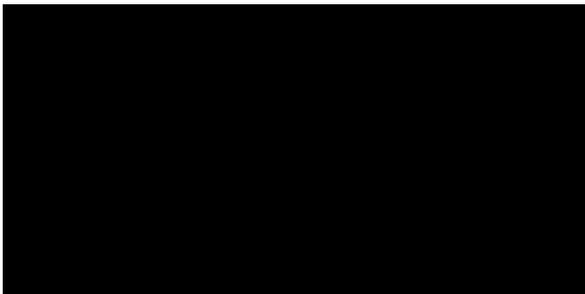
Group Controller is Your Friend

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:



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*.

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 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](#).

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.

INFO

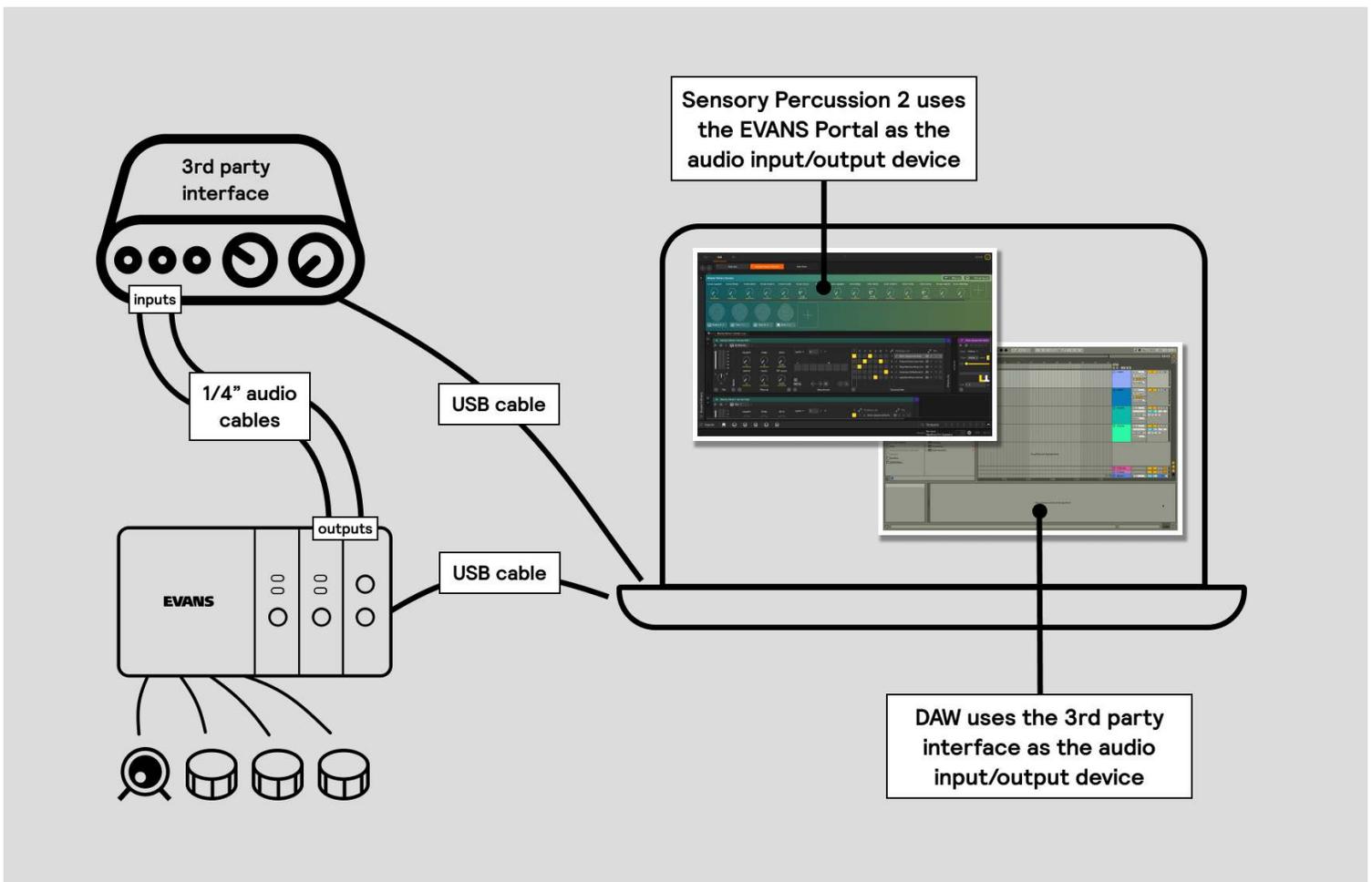
This tutorial goes over how to record stereo out of Sensory Percussion, meaning 2 channels: one left and one right. However, with our new [submix](#) feature, you can now create as many output channels as you want and distribute your sounds across them however you like. The recording process will be 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:



In this diagram, the signal flow goes from the sensors --> Portal --> 3rd party interface --> DAW

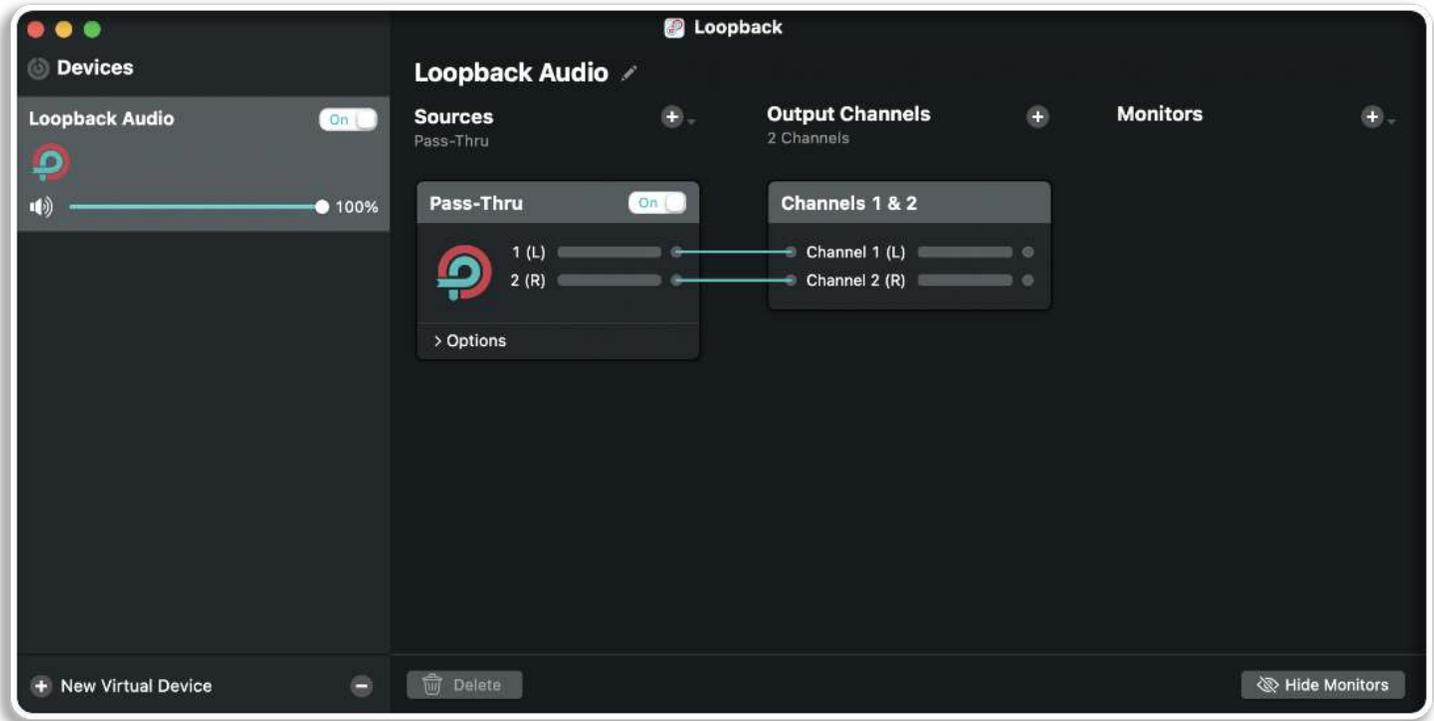
Using a virtual audio router to send audio to your DAW

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.

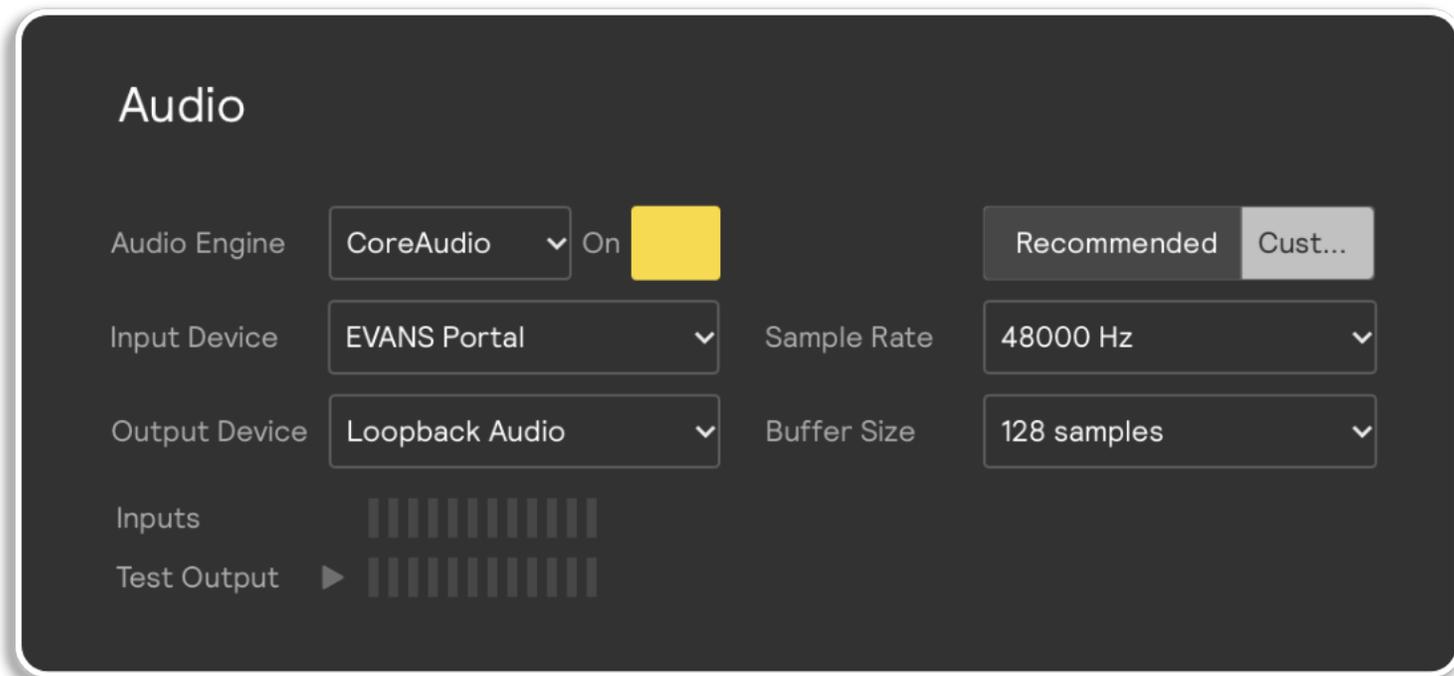
1. Open Loopback

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.



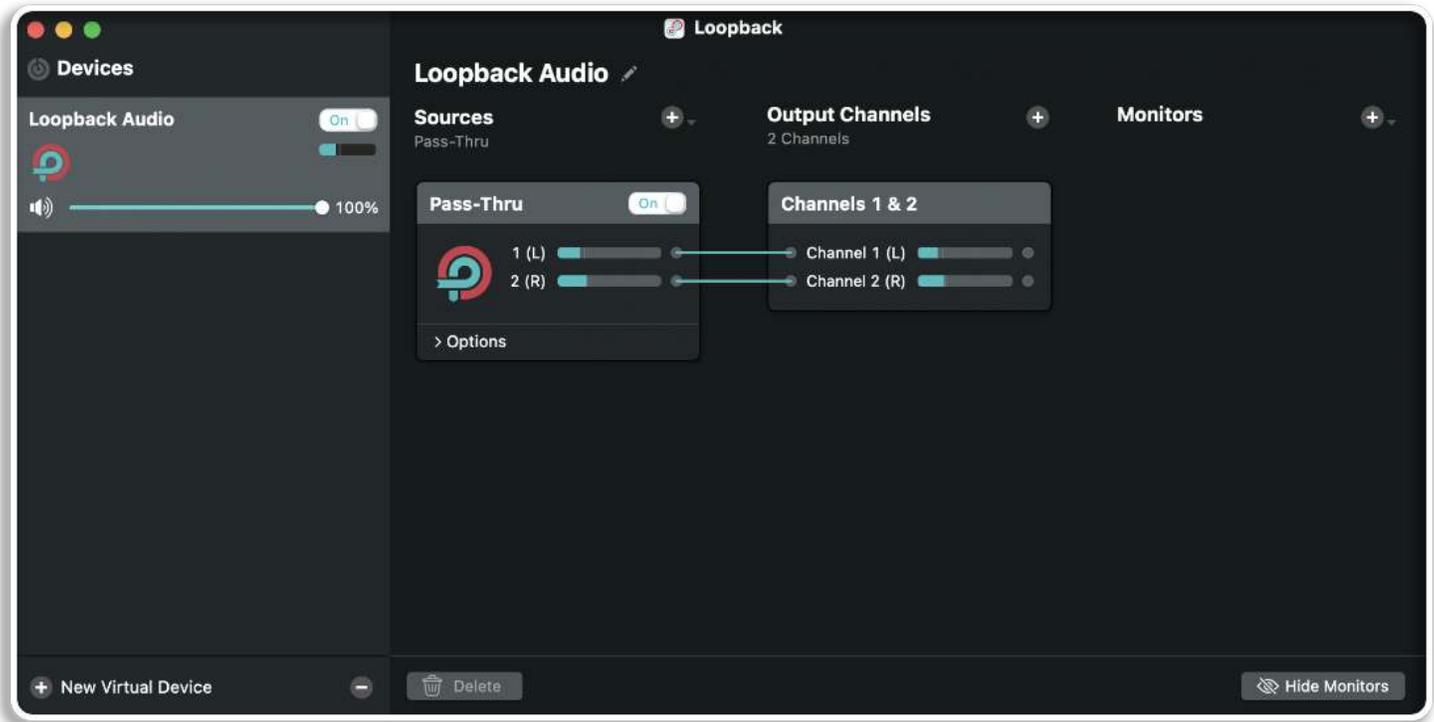
2. Route the output of Sensory Percussion to the Loopback Audio device

With Loopback still open, open Sensory Percussion and open the Audio Settings window with the shortcut $\text{⌘} + \text{,}$. In this window, change the output device to the virtual audio device you just created in loopback.



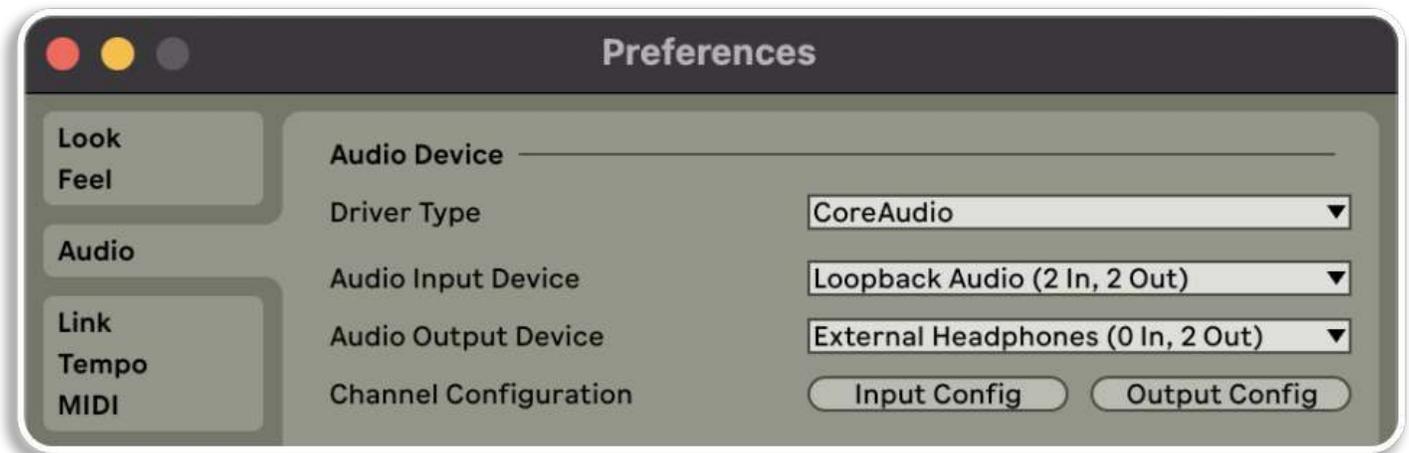
In this case, the output device is named "Loopback Audio," but if you changed the name of the device in Loopback, that will be reflected in the output device list in Sensory Percussion. Choosing the Loopback audio device as the output will automatically create a [hardware output](#) with the same name 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:



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.



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!

i 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 for some reason your session has samplers that can't find their samples, you can relink them by following these steps:

If the broken links are just in one set of your session, you can right-click the set and choose `Repair samples`. If there are multiple sets with broken links, you can choose to repair links for the entire session by selecting `Repair samples` from the "Edit" menu.

Next, you will be presented with a dialog that will allow you to choose the folder where your samples are located. Once you have selected the folder, click `Apply` and the samples will be relinked.

How to Set Up Virtual MIDI Routing

⚠️ MAC ONLY

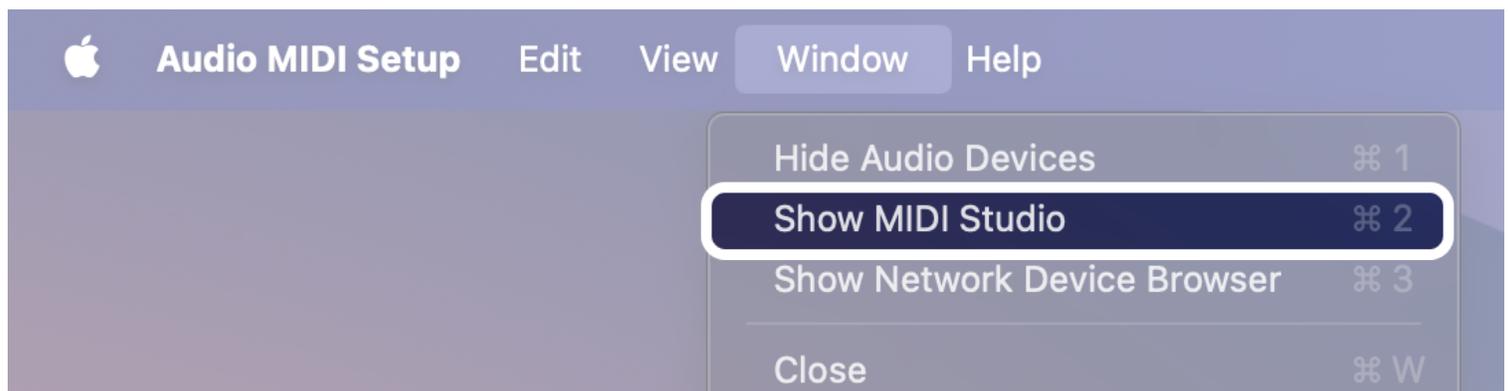
This page covers setting up virtual MIDI routing on Macs. If you are using a Windows computer, you will need to use a third-party application to create virtual MIDI ports. Here are a few common options:

- [loopMIDI](#) (free)
- [loopBe1](#) (free)
- [loopBe30](#) (paid)

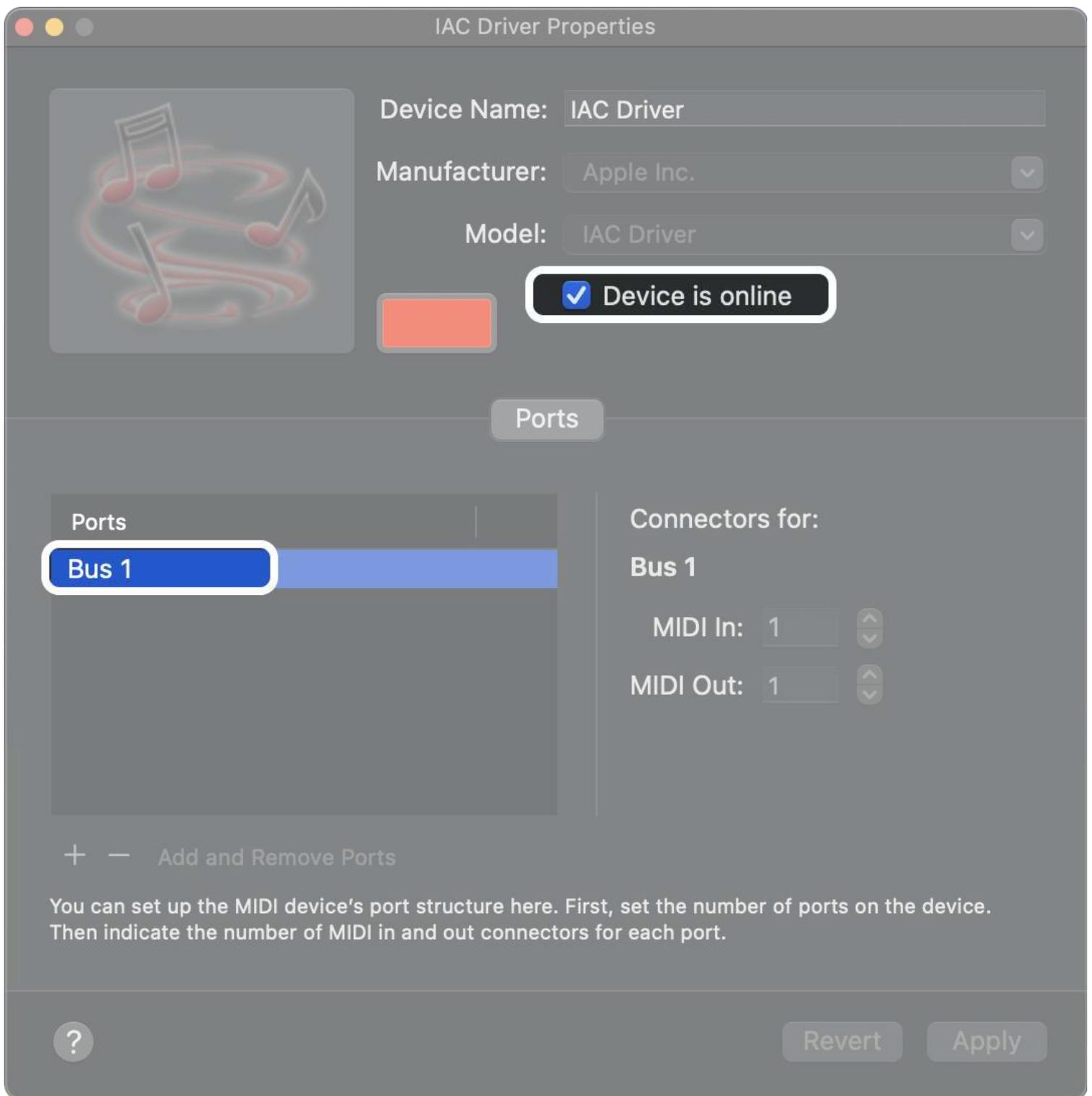
Sending MIDI between Sensory Percussion and another application on the same computer requires a few steps, since you'll be essentially running virtual MIDI cables between the two programs.

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.



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.



⚠ WARNING

If you would like to send **and** receive MIDI virtually in Sensory Percussion, you must use two AIC 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 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.

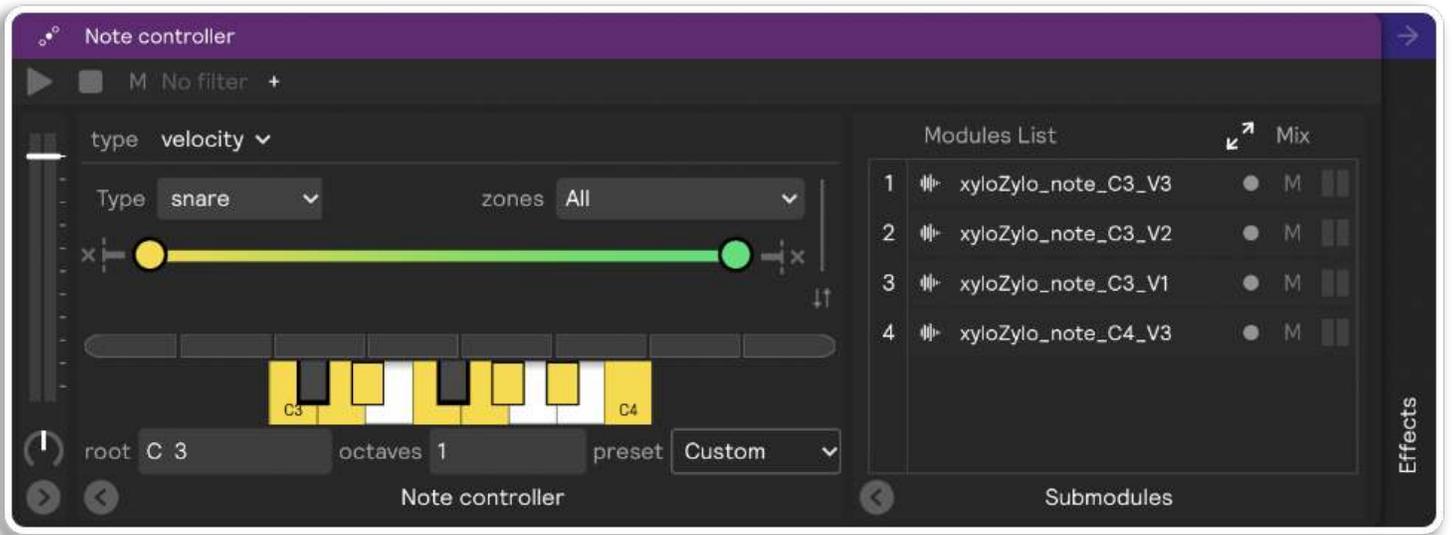
The added dimensions of timbre control, along with velocity, speed, and LFOs allows for rich melodic and harmonic structures never before possible on the drum set. And with the modular framework of Sensory Percussion V2, building advanced tonal structure into your Sensory compositions is now more manageable 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.



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*.

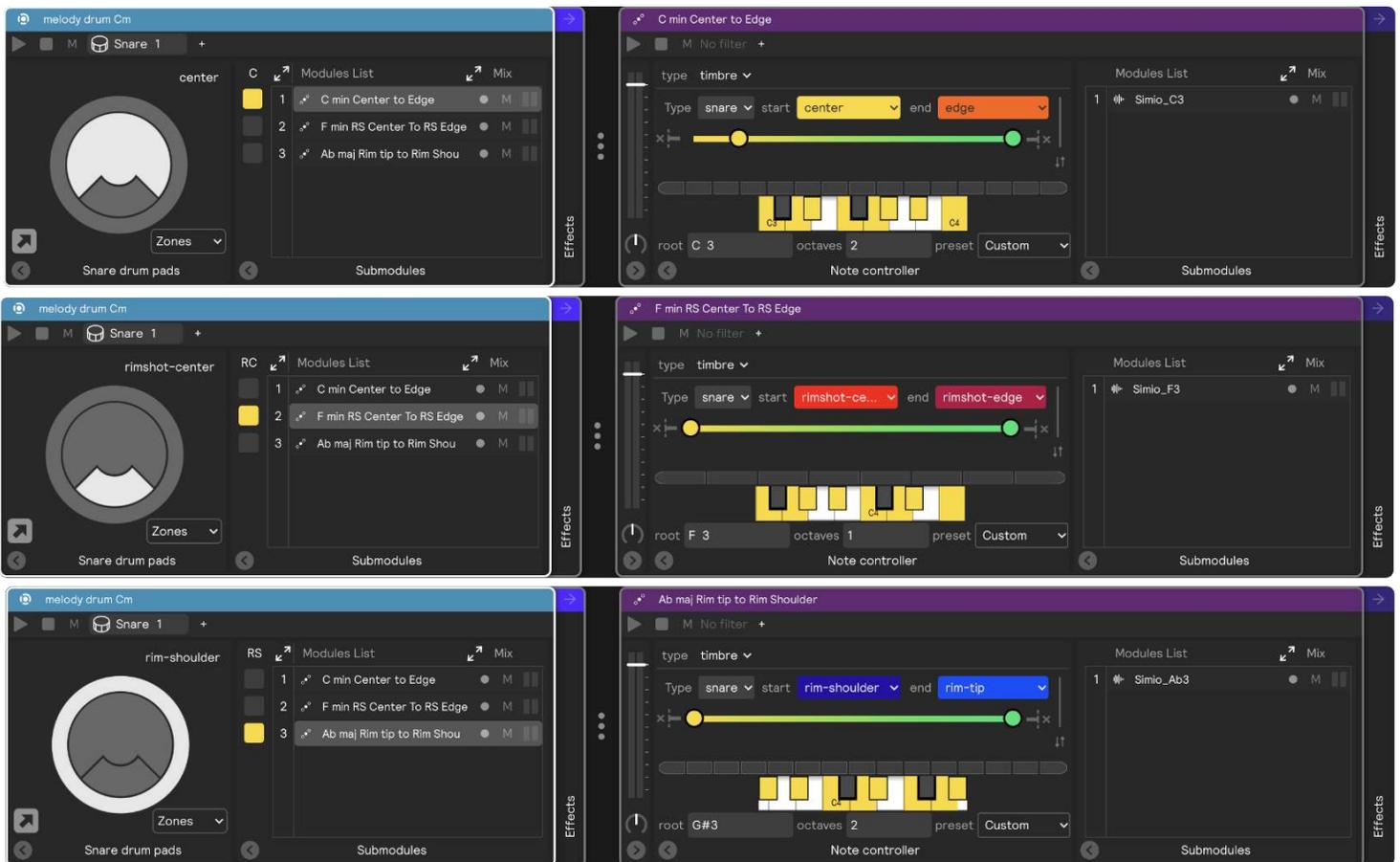
Building a Logical and Easily Playable Timbrally Sensitive Tonal Drum

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).



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).

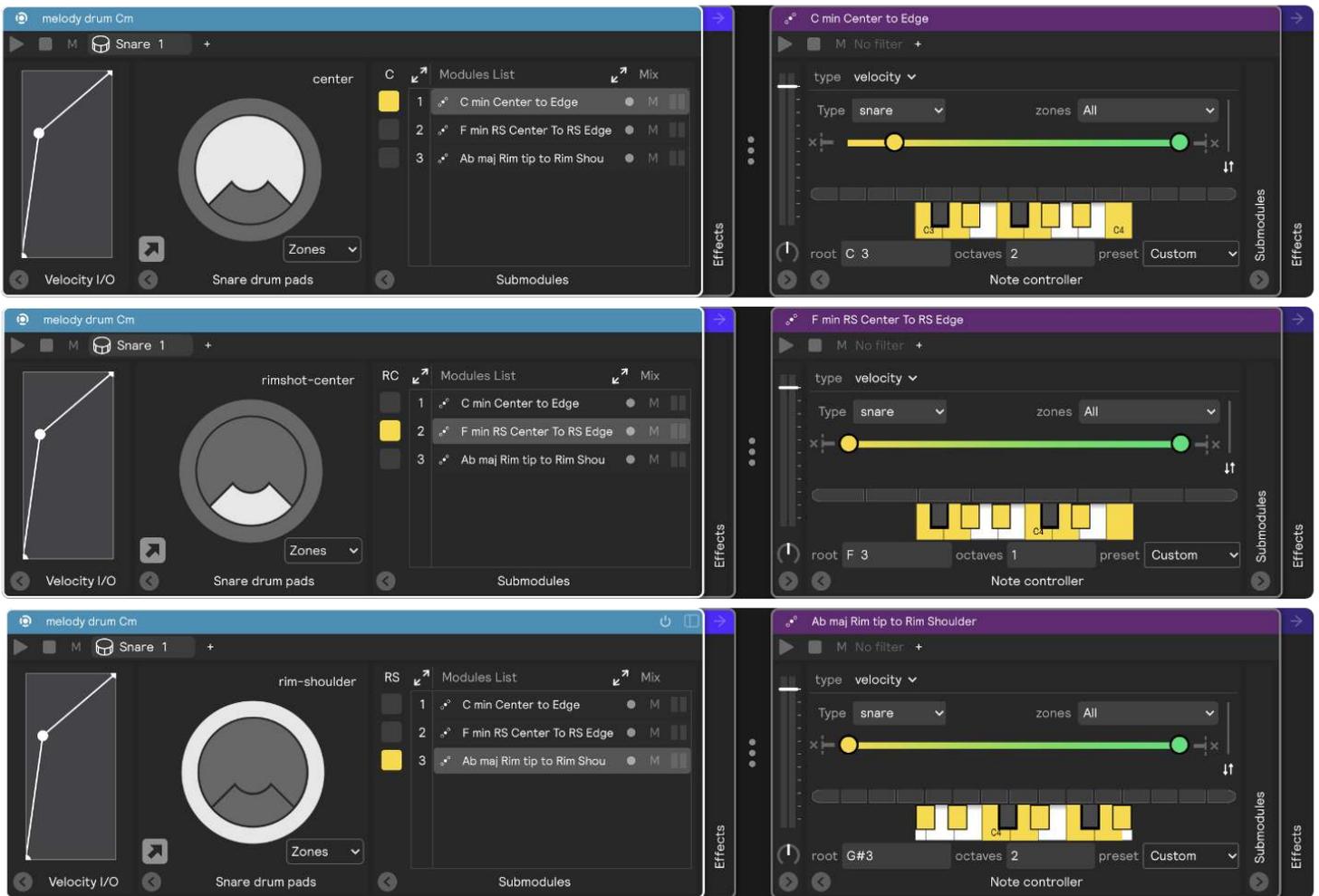
! INFO

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.

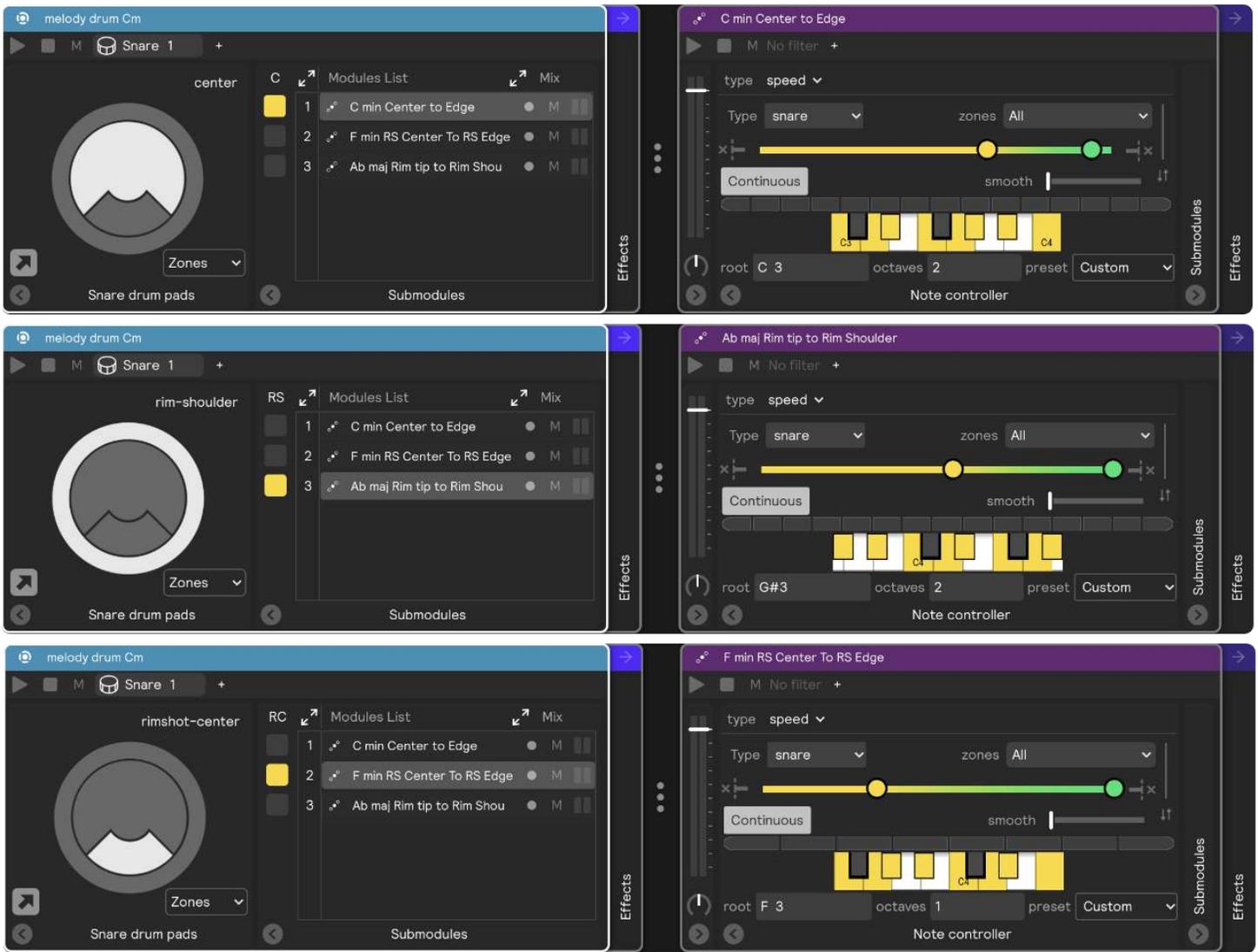
Velocity



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.

Speed

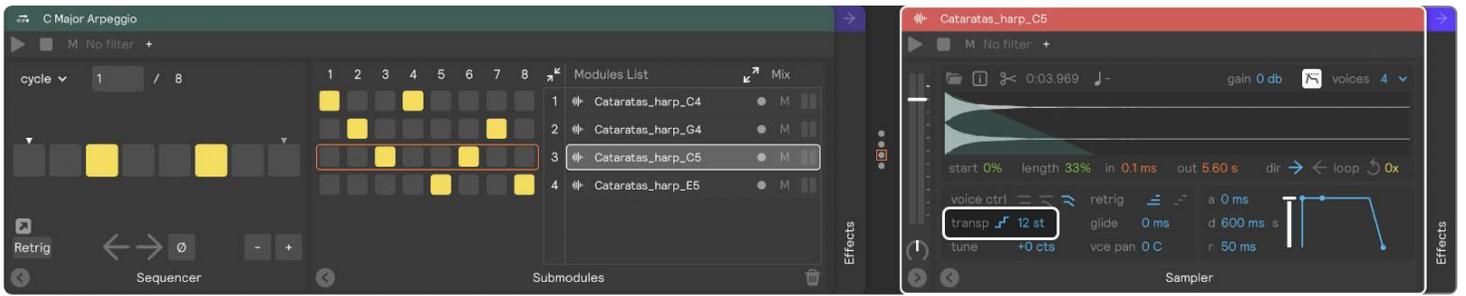


If you have selected "speed" for the type of note controller, try setting a high sensitivity like in the screenshots above: especially for zones on the head or rims, where you can play faster rolls. For Rimshot speed controllers, you can try a lower sensitivity.

Using the Sequencer to Employ Arpeggios

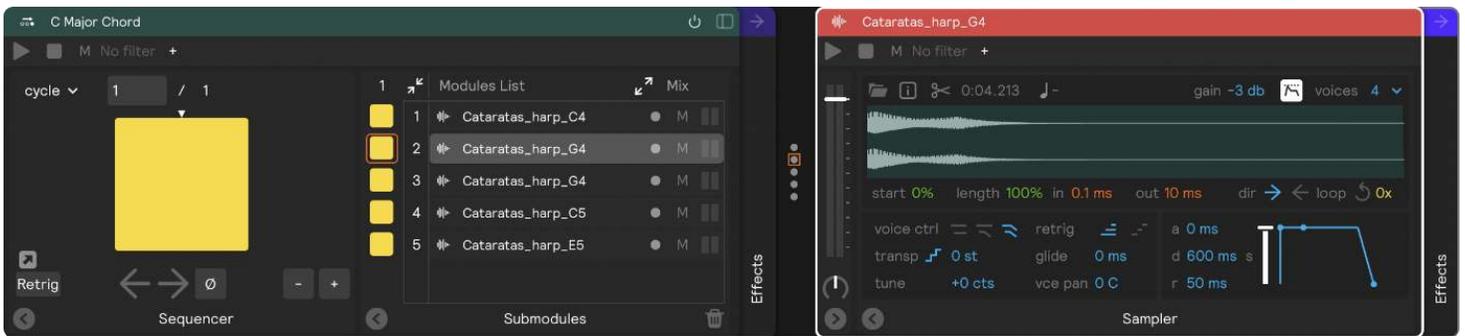
The basic version

The sequencer controller allows you to arpeggiate pitched samplers to create interesting melodies!



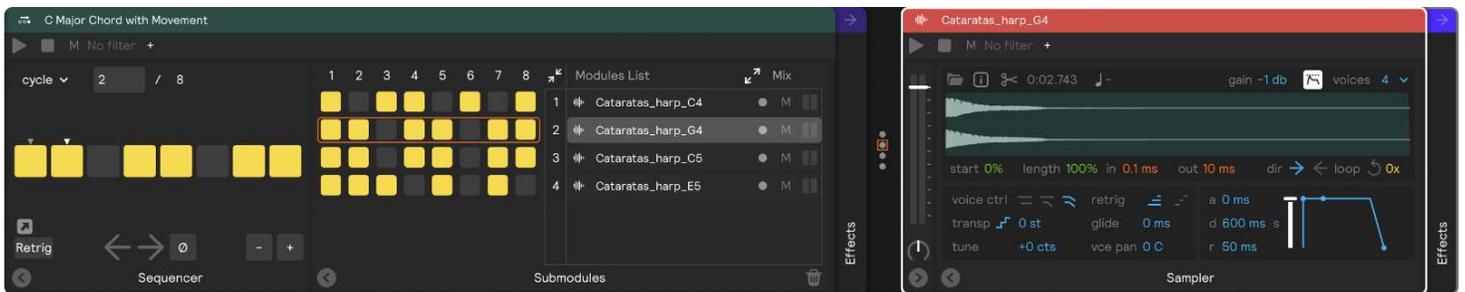
Above, the Cataratas harp sampler has been duplicated four times, with each sampler repitched using the "transpose" sampler feature to a different partial of a C Major triad. Steps were added to the sequencer and a nice, eight-step rhythmic pattern composed.

Static chord version



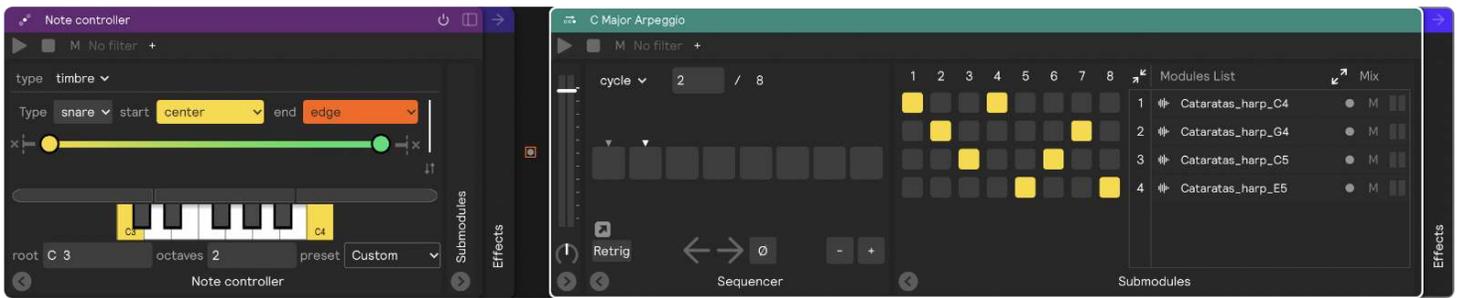
You can experiment by removing all but one of the steps and assigning all of the repitched samplers to that one step, functionally turning this sequencer into a [group controller](#).

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.

Note Controller as an Octaver



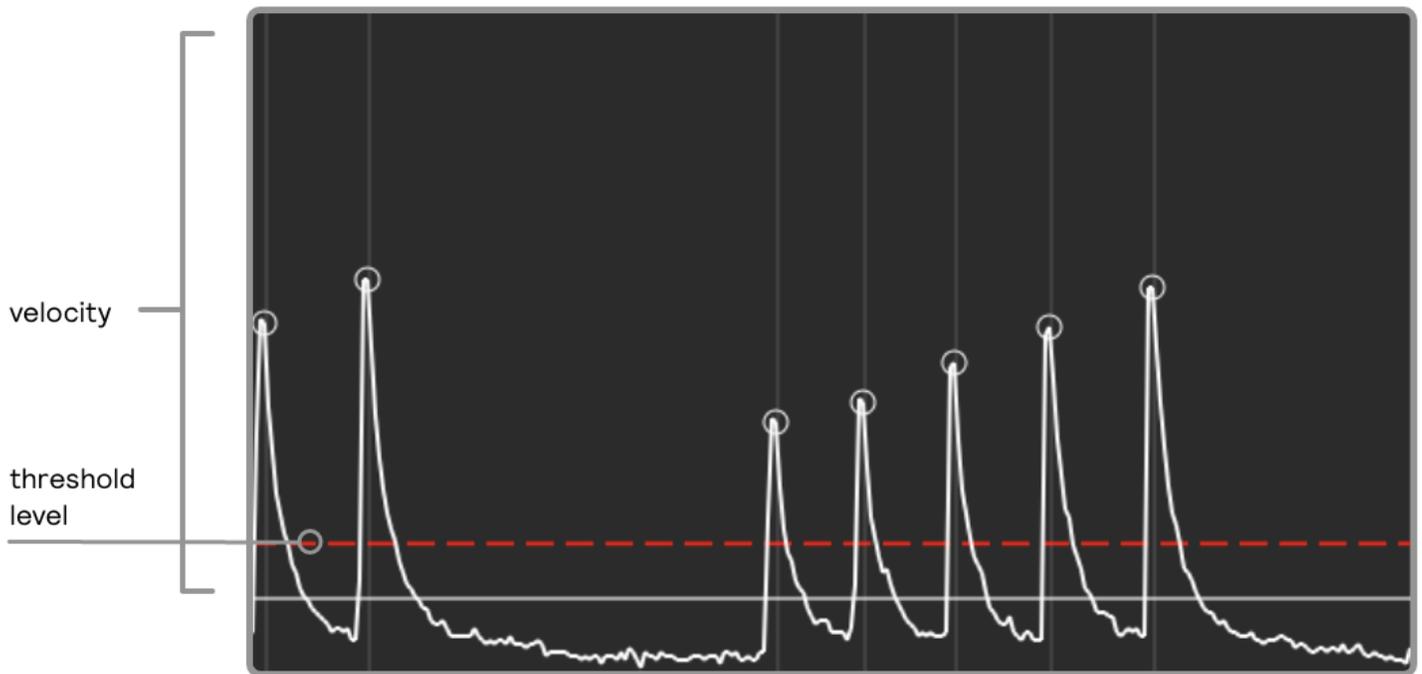
You can drag one of your sequenced melodic creations into a [Note Controller](#): or even right-click on it to [Group Into a note controller](#)

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.

! INFO

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 thresholding in Sensory Percussion V2:

Hardware Input Threshold: This will affect any sound being controlled by that input anywhere in your session.

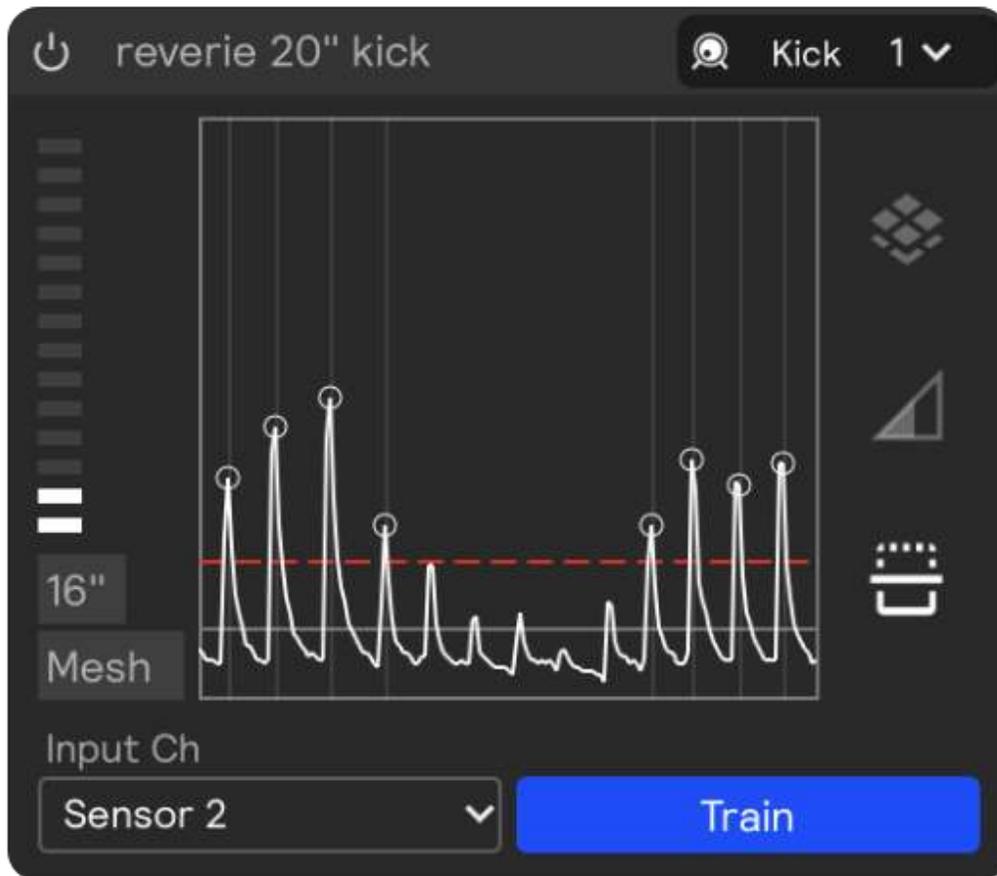
Module Threshold: This will affect only the sounds that the module contains.

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.

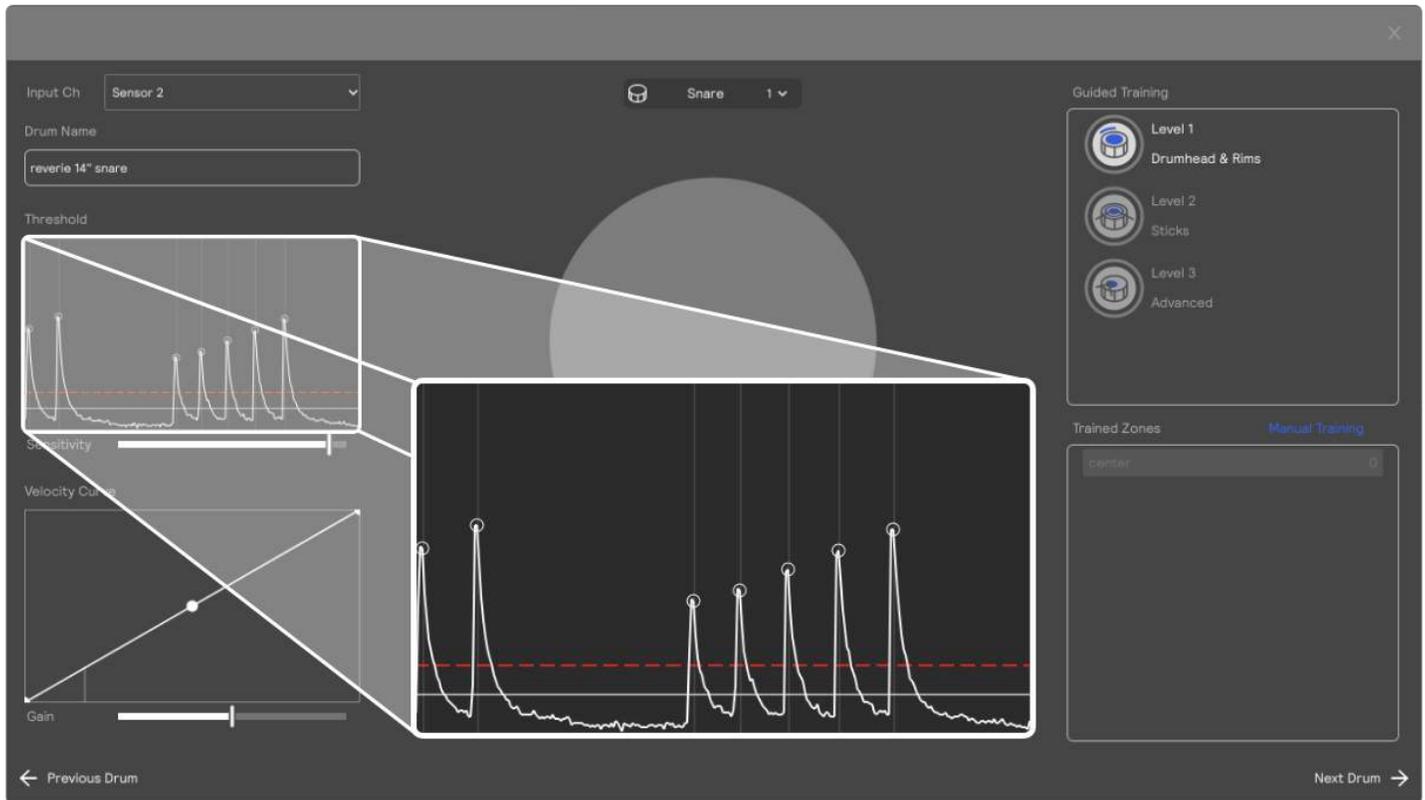
Depending on how you use it, thresholding can be a simple, helpful tool to manage cross-talk, or a method of enabling some rich sound design techniques.

Dealing with cross-talk: using the threshold panel on the hardware inputs



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 .



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.

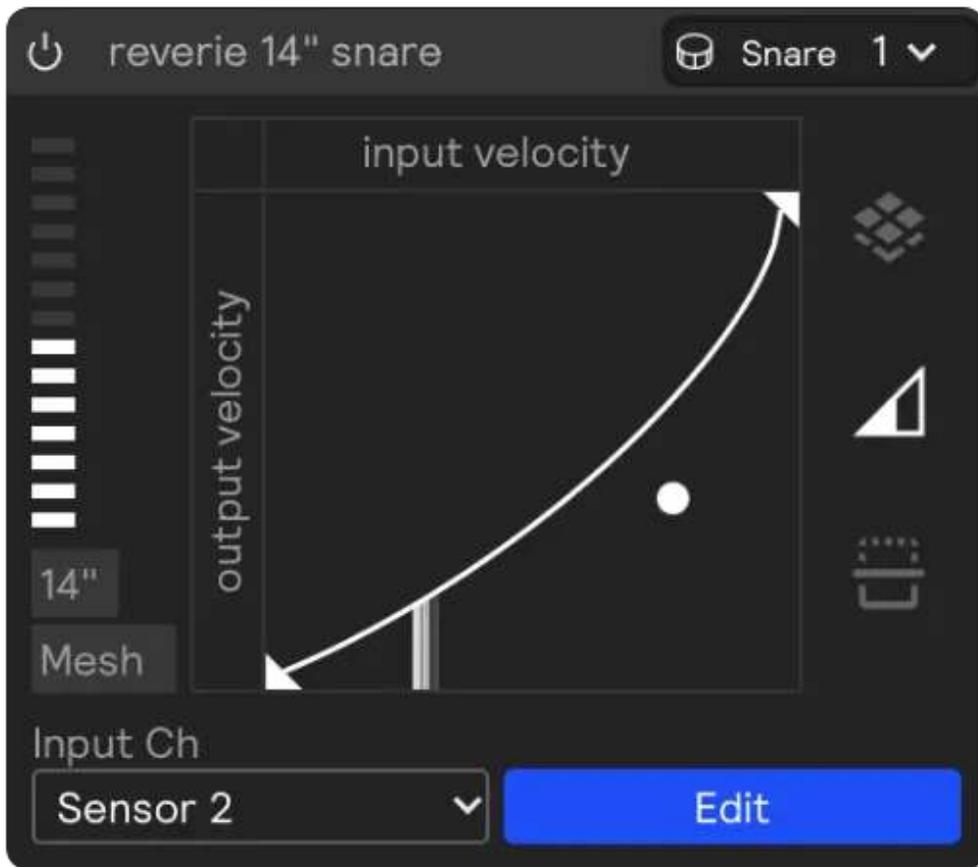
There is a way to threshold sounds on a per-module basis, which is outlined in the next section, but if you are okay with losing some sensitivity across all of your sets, then you can just raise the threshold of the hardware input above the cross-talk.

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.

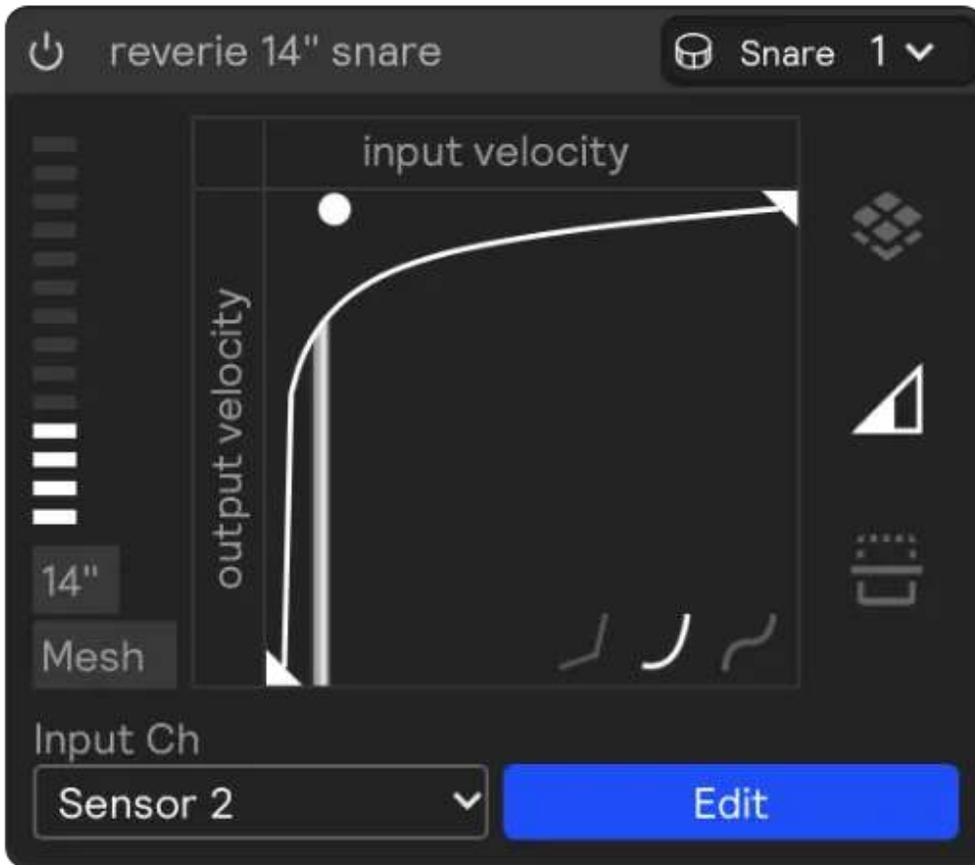
Because Sensory Percussion is extremely velocity-sensitive, if your drums are vibrating sympathetically, it can sometimes be detected as low velocity hits. If your velocity I/O settings are set somewhat linearly, then these sympathetic misfires are usually not a problem: it's really just the electronic sounds vibrating sympathetically with the acoustic object they are receiving input from.



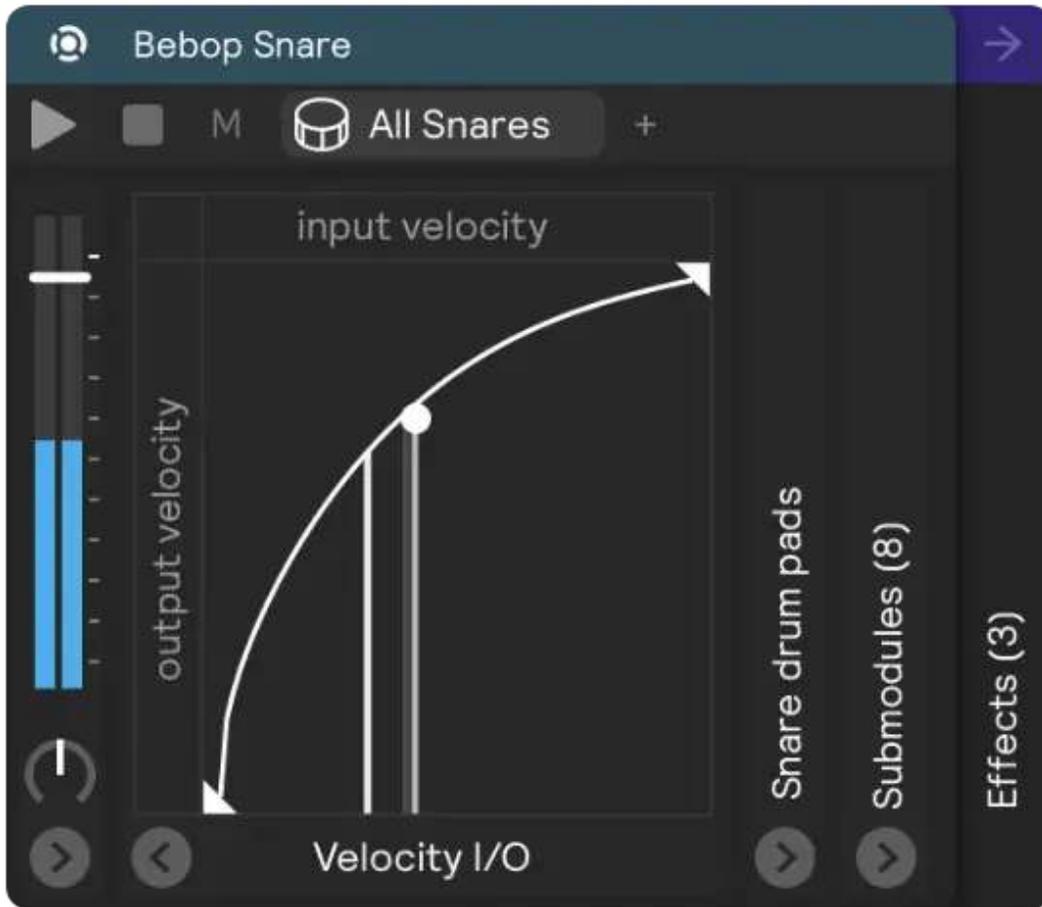
In the image above, low velocity hits are registered, but will be played back at a low volume.

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.



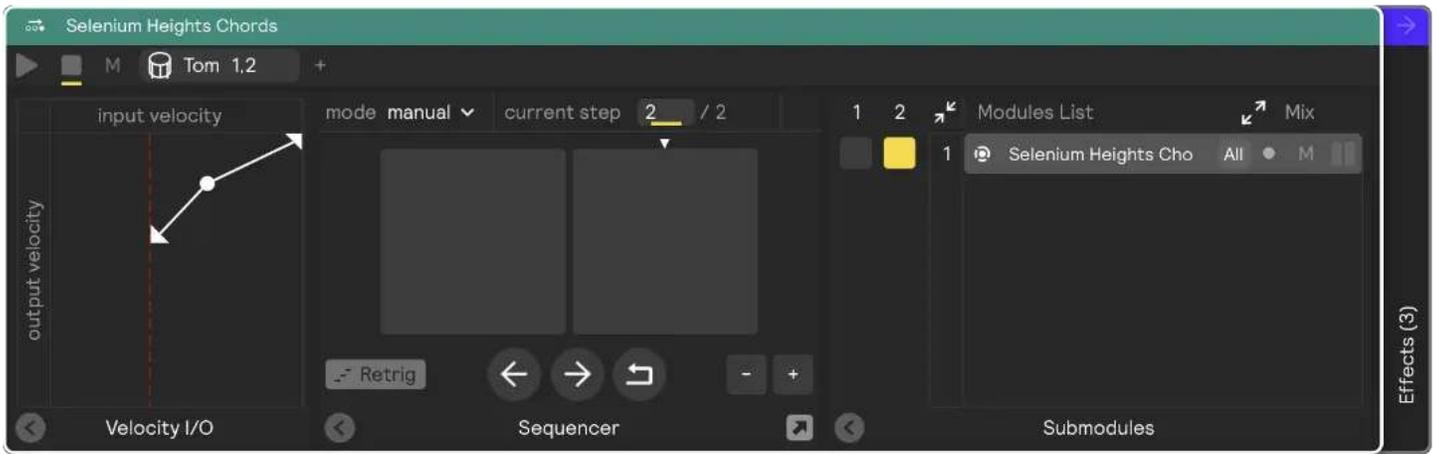
In the image above, even quiet cross-talk will cause a full scale hit to be played through any module receiving input from this hardware input. A setting like this should be avoided in almost all cases, since it's not likely you'll want every single sound in your set to not respond to velocity changes.



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

Velocity-Thresholded Chord Sequences

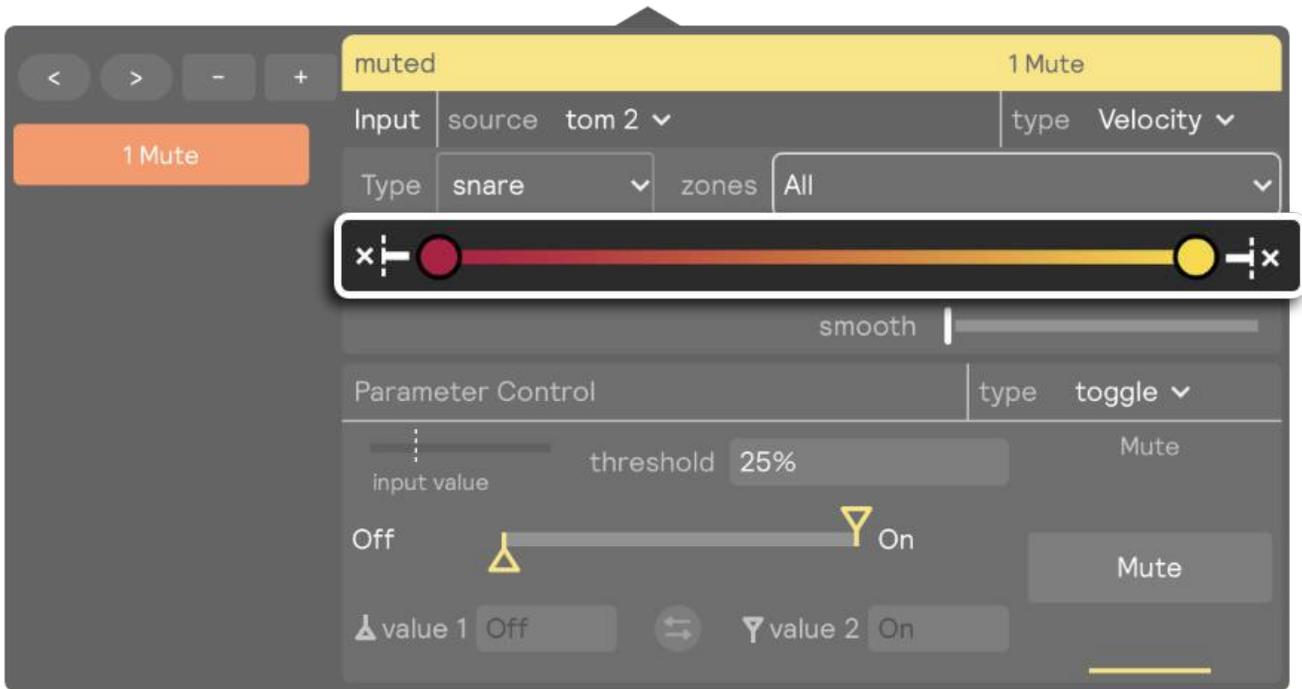


If you have a chord sequence or some other rich textural sound that you want to intentionally perform (and never have it fire off by accident), then velocity thresholding is a great solution.

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.



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:

1. Microphone permissions on macOS

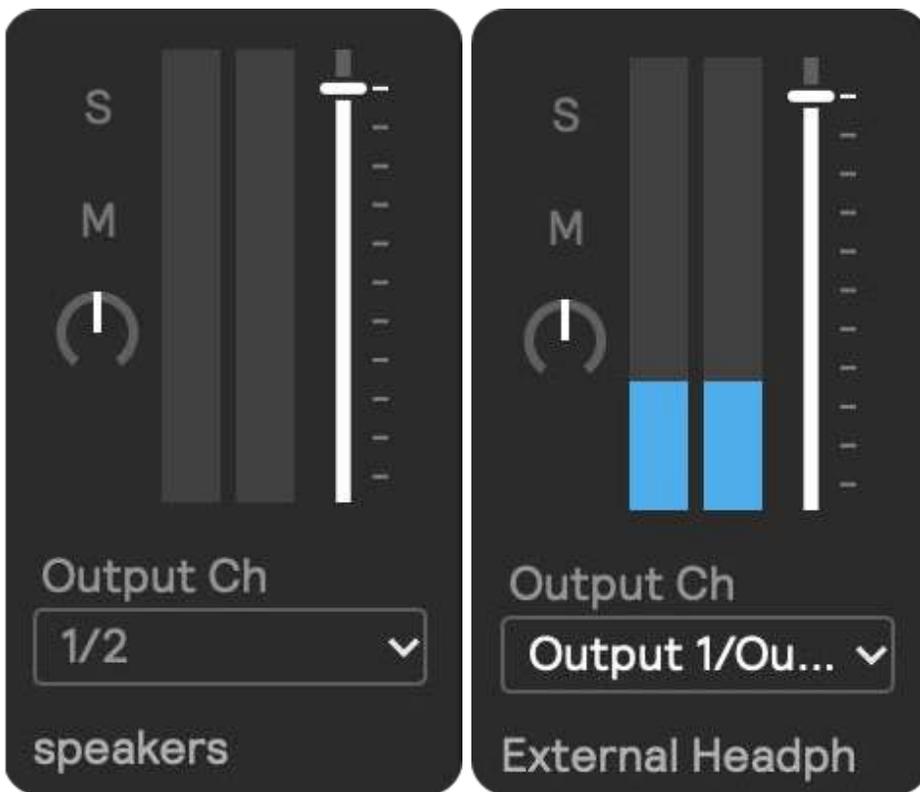
After installing Sensory Percussion and opening it for the first time, you'll be prompted to grant microphone permissions. If you don't grant microphone permissions, Sensory Percussion will not be able to access the audio from any channels on the Portal device.

You can grant permissions by going to System Preferences > Security & Privacy > Microphone and checking **Sensory Percussion 2.app**.



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):



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.

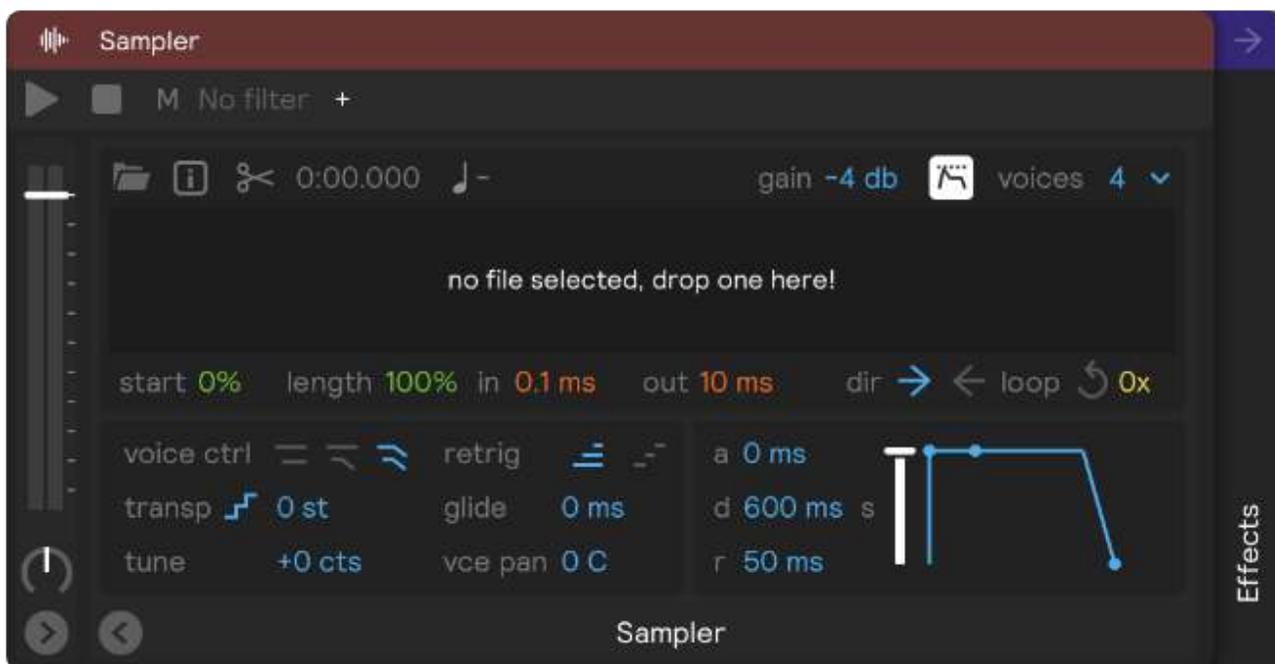
4. Something is muted inside of your set

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.



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.

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.

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.

Create Diagnostic Report



This process will collect information about your computer and Sensory Percussion setup to help the Sunhouse team diagnose any issues. The whole process just takes a few minutes.

Step 1 - Describe your issue

Please describe any issue you might be having. Try to be as descriptive and detailed as possible.

Step 2 - Record 10 seconds of yourself hitting your drums

After you click start, play the drums for 10 seconds. We will record the audio from the sensors to see if there are any signal issues. NOTE: We will also collect audio from the on-board microphone while you are playing to check for cross-talk issues.

Start

Step 3 - Generate report

We'll now collect information about your computer specs and Sensory Percussion settings. Please choose what information you'd like to include in the report.

Include Session Include Hardware I/O Include Preferences Include Crash Report

Save .zip

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.