osmose - user manual

rev. 2 for osmose firmware 2.0
english version

EXPRESSIVE

introduction

congratulations

and thank you for purchasing Osmose!

Osmose is one of the most expressive synthesizers ever created. It is a complete standalone polyphonic synthesizer featuring our patented Augmented Keyboard Action mechanism, where the keybed responds polyphonically to pressure, aftertouch, and note bend.

It features the EaganMatrix by Haken Audio, a deep modular sound design engine, giving access to incredible sounds ready to explore right out of the box. On top of this, Osmose can also be used as an advanced controller for external hardware and software synthesizers.

By default, Osmose is very sensitive, the lightest touch can control the sound. You can decrease this huge sensitivity, but we encourage you to discover this new approach to enrich your playing experience with a multitude of new nuances!

disclaimer

Osmose is a constantly evolving product, so the information contained in this manual is subject to change without notice and does not represent a commitment on the part of Expressive E.

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WARNING	- TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE. DO NOT PLACE OBJECTS FILLED WITH LIQUIDS ON THIS APPARATUS. - OPERATING VOLTAGE 12V DC, MAXIMUM CURRENT 1.5A - DO NOT ATTEMPT TO OPEN, REPAIR THE UNIT, OR REPLACE PARTS WITHIN IT (EXCEPT WHEN THE PRODUCT'S MANUAL PROVIDES SPECIFIC INSTRUCTIONS DIRECTING YOU TO DO SO; OR OUR AFTER-SALES SERVICE HAS AUTHORIZED YOU FORMALLY).

IMPORTANT SAFETY INSTRUCTIONS

Read these instructions carefully before using the product and always follow them. Expressive E cannot be held responsible for damage or data loss caused by improper use or modifications to the instrument. Do not throw away this instruction sheet. Instead, keep it for future reference.

Warning
• Never use or store the unit in places that are subject to high levels of vibration or extreme temperature (e.g., direct sunlight in an enclosed vehicle, near a heating duct, on top of heat-generating equipment); or humidity (e.g., baths, washrooms, on wet floors) or rain; or dust.
• Whenever you suspect the possibility of lightning in your area, or when there is a gas leak nearby, or when unused for long periods of time, pull the plug on the power cord out of the outlet.
• Do not use this apparatus close to magnetic fields.
• Never climb on top of, nor place heavy objects on the unit.
• Do not insert a finger or hand in any gaps in the instrument. Never insert or drop paper, metallic, or other objects into the gaps on the panel or keyboard. This could cause physical injury to you or others, damage to the instrument or other property, or operational failure. Expressive E cannot be held responsible for damage caused by improper use or modifications to the instrument, or data that is lost or destroyed.
• Only use attachments/accessories specified by the manufacturer. The unit should be connected to a power supply of only the type described in the operating instructions or as marked on the unit.
• Do not excessively twist or bend the power cord, nor place heavy objects on it. Doing so can damage the cord, producing severed elements and short circuits. Damaged cords are fire and shock hazards!
• Never handle the power cord or its plugs with wet hands when plugging into, or unplugging from, an outlet or this unit.
 • This unit, in combination with an amplifier and headphones or speakers, may be capable of producing sound levels that could cause permanent hearing loss. Do not operate for a long period of time at a high volume, or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should immediately stop using the unit, and consult an audiologist or an ENT doctor.

• A sound peak occurs on the stereo output of the instrument when it's being toggled on/off. You may want to turn down the volume on all speakers and headphones before doing so.
• In households with small children, an adult should provide supervision until the child is capable of following all the rules essential for the safe operation of the unit.
• To avoid scratches or damage, never use sharp objects on the body or screen of the instrument. Do not apply any pressure to the LCD screen.
• Do not force the unit's power supply cord to share an outlet with an unreasonable number of other devices. Be especially careful when using extension cords.
• Before cleaning the unit, turn off the power and unplug the power cord from the outlet. When cleaning, use a soft and dry cloth. Do not use gasoline, alcohol, acetone, turpentine, or any other organic solutions; do not use a liquid cleaner, spray, or cloth that's too wet.
• The total power used by all devices you have connected to the extension cord's outlet must never exceed the power rating (watts/amperes) for the extension cord. Excessive loads can cause the insulation on the cord to heat up and eventually melt through.
• When one of the following problems occurs, immediately turn off the power switch and disconnect the electric plug from the outlet. Then have the device inspected by Expressive E service personnel.

- The power cord or plug becomes frayed or damaged.
- It emits unusual smells or smoke.
- The instrument has been exposed to rain or moisture.
- The instrument has been dropped.
- Some objects have been dropped onto the instrument.
- Liquid has been spilled onto the instrument.
- There is a sudden loss of sound during use of the instrument.

• Do not attempt to open, repair the unit, or replace parts within it (except when this manual provides specific instructions directing you to do so; or our after-sale service authorizes you).

IMPORTANT NOTICE TO CONSUMERS
This product has been manufactured according to strict specifications and voltage requirements that are applicable in the country in which it is intended to be used. If you have purchased this product via the Internet, through mail order, and/or via a telephone sale, you must verify that this product is intended to be used in the country in which you reside.

WARNING: Use of this product in any country other than that for which it is intended could be dangerous and could invalidate the manufacturer's or distributor's warranty. Please also retain your receipt as proof of purchase, otherwise your product may be disqualified from the manufacturer's or distributor's warranty.

SUPPLIER'S DECLARATION OF CONFORMITY (for the USA):

Responsible Party: Expressive SAS
Address: 11 rue de la République 13002 Marseille
Phone: +33-185-091-168
Equipment Type: Polyphonic Synthesizer
Model: Osmose 49

This device complies with Part 15 of FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Industry Canada Compliance
This Class B digital apparatus complies with Canadian ICES-003
Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada

ROHS Compliance
Expressive SAS has conformed, and this product conforms, where applicable, to the European Union's Directive 2011/65/EU on Restrictions of Hazardous Substances (RoHS) as well as the following sections of California law which refer to RoHS, namely sections 25214.10, 25214.10.2, and 58012, Health and Safety Code; Section 42475.2 Public Resources Code.

This device complies with the requirements set out in the Council Directive on the Approximation of the Laws of the Member States relating to the Electromagnetic Compatibility Directive (2014/30/ EU), Low-voltage Directive (2014/35/ EU), RoHS directive (2011/65/EU). This product has been tested and found to comply with the harmonized standards for Information Technology Equipment. These harmonized standards are published under Directives of the Official Journal of the European Union. The integral text of the EU declaration of conformity is available at the following online address: www.expressivee.com

NOTICE REGARDING DISPOSAL
When this "crossed-out wheeled bin" symbol is displayed on the product, owner's manual, or power supply, it signifies that when you wish to dispose of this product, manual or power supply, you must do so in an approved manner. Do not discard this product, manual or power supply, along with ordinary household waste.

Contact	Technical support
Expressive SAS 11 Rue de la République 13002 Marseille France contact@expressivee.com	www.expressivee.com section "help" osmose@expressivee.com

overview
before you start

box content

1x Osmose expressive synthesizer
1x Quick Start Guide leaflet
1x product safety manual. Please read it before using an Osmose
1x USB cable
1x power supply with international adapters.

lockable power supply connector

⚠️ Osmose's power supply has a locking connector to prevent accidental disconnection. When inserting, first align the power connector's wings, so they match the horizontal notches on the power input. Push firmly, then rotate the barrel clockwise to secure it to the casing.

keyboard calibration

The rest position of Osmose's keys is calibrated while the unit is booting. Please make sure nothing is touching the keys during this step.

maintain the keybed's longevity

The Augmented Keyboard Action's unique playing feel is attained mainly by silicon cylinders below each key. While the material is designed to last numerous years without deteriorating, you will need to ensure that the cylinders can always revert to their uncompressed, idle position after being pressed.
Do not stow away your Osmose in a way that permanently compresses its keys, or you will risk the cylinders underneath losing their elasticity and needing to be replaced.

register your device

In order to get access to all Osmose-related download links like the up-to-date firmware, please enter the activation code from the brown quick start leaflet that came with your unit on the product registration page of your Expressive E user account. You can also register using the serial number itself (see sticker on the bottom of the instrument). Please contact our commercial support team if your unit has already been registered with another account and the former user forgot to unregister their unit.

firmware update
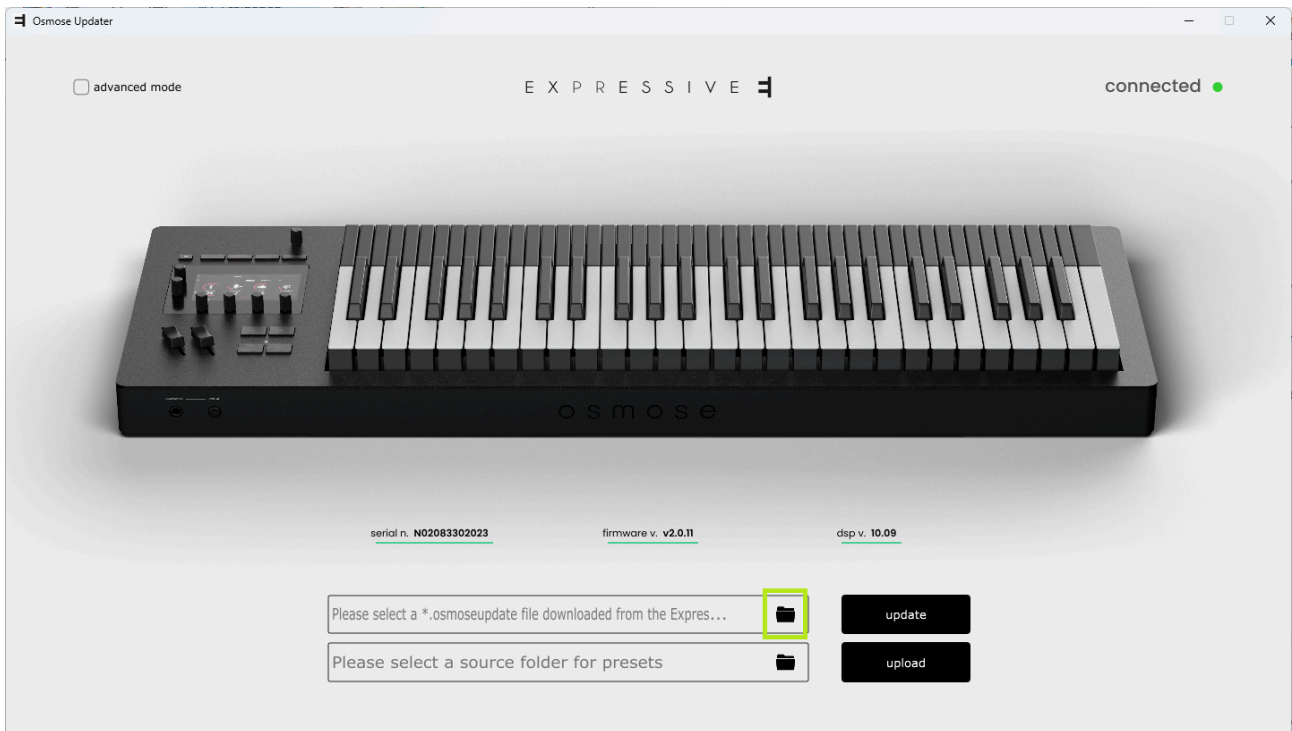
We always recommend installing the latest available firmware on your device. The firmware download comes bundled with the application OsmoseUpdater, which is used to back up/restore user data, update Osmose's operating system, and flash the EaganMatrix DSP firmware. For Osmose units that have firmware version 2.0 or higher installed on them, the OsmoseUpdater also allows uploading soundbanks into the preset memory of Osmose.

☝️ This manual revision 2.0 describes the feature set of Osmose with operating system version 2.0 or higher. If you don't find certain functions that are described in this manual on your Osmose, then make sure to upgrade your Osmose firmware.

The download is available in your customer account after registering your product on our website. For detailed instructions, please refer to this dedicated document:

🔗 Osmose firmware update instructions

quick start video

To gain an overview of the internal sound engine mode, we recommend watching ▶️ Osmose Quick Start: Internal Sound Engine Mode (OS v1.x).

The features added in version 2.0 of the firmware are introduced in this separate video: ▶️ Osmose firmware 2.0 - 7 things to know

hardware overview

1 **Power Input** - connects to the original 12V, 1.5A, center-positive power adaptor, featuring a lockable connector. See here for compatible power supplies.

2 **Audio Outputs** - Two pseudo-balanced, 1/4" TRS line audio outputs, controlled by the master volume knob on the front panel. Connect TS or TRS cables to make a connection to the inputs on your audio interface or mixing desk. If you wish to establish a balanced connection (only supported when the inputs are balanced as well), TRS cables are needed. When you are limited to using only one cable, connect only the left (L) channel for mono-summing.

3 **Pedals Inputs** - Two 1/4" TRS jack inputs for continuous control of parameters. By default, Pedal 1 is assigned to Sustain, and Pedal 2 is assigned to a macro parameter. Not all pedals are supported, and they need to be calibrated before usage, see pedal calibration.

4 **USB** - Class-compliant USB for bidirectional MIDI communication with a computer. Digital audio over USB is *not* supported. See also connect Osmose to your computer.

5 **MIDI DIN IN/OUT**- Standard 5-pin connectors for communication with MIDI devices. MIDI Out sends MIDI messages according to what is selected in config menu of External MIDI Mode. MIDI In can be used to trigger the internal sound engine.

6 **Master Volume** knob - controls the volume on the line audio outputs.

7 **Main Control Interface** - access to all of Osmose's parameters, see main control interface.

8 **Preset and Octave Buttons** - < and > buttons select the previous and next preset.
- and + buttons transpose the keyboard up or down in octaves. The LEDs indicate the current keyboard transposition state.
☝️ These buttons only affect the mode currently selected, see mode selection screen.

9 **Sliders** - a spring-centered pitch bend slider controls the global pitch bend. The modulation slider allows for extra control over synth parameters. The modulation slider always controls the same function as pedal input 2, see mod/pedal tab.

10 **Headphones Output** - 1/4" TRS stereo output. Its volume is controlled by the retractable headphone volume knob to its right.

augmented keyboard action

Osmose is constantly scanning the position of its keys, offering a seamless connection between every gesture played by the musician and the resulting sound.

☝️ The Augmented Keyboard Action on Osmose does *not* work as a capacitive surface like a touch screen or touchpad. It does not detect your finger position, but the position of its keys in order to always offer progressive pressure feedback even when playing with your eyes closed.

Three axis motions are taken into account:
- extended polyphonic **pressure**
- hi-resolution polyphonic **aftertouch**
- polyphonic pitch **bending**

main control interface

The left side of Osmose is built around an interactive graphic interface that provides access to all onboard parameters. The navigation works via five buttons and six clickable encoders whose functions change depending on the current screen.
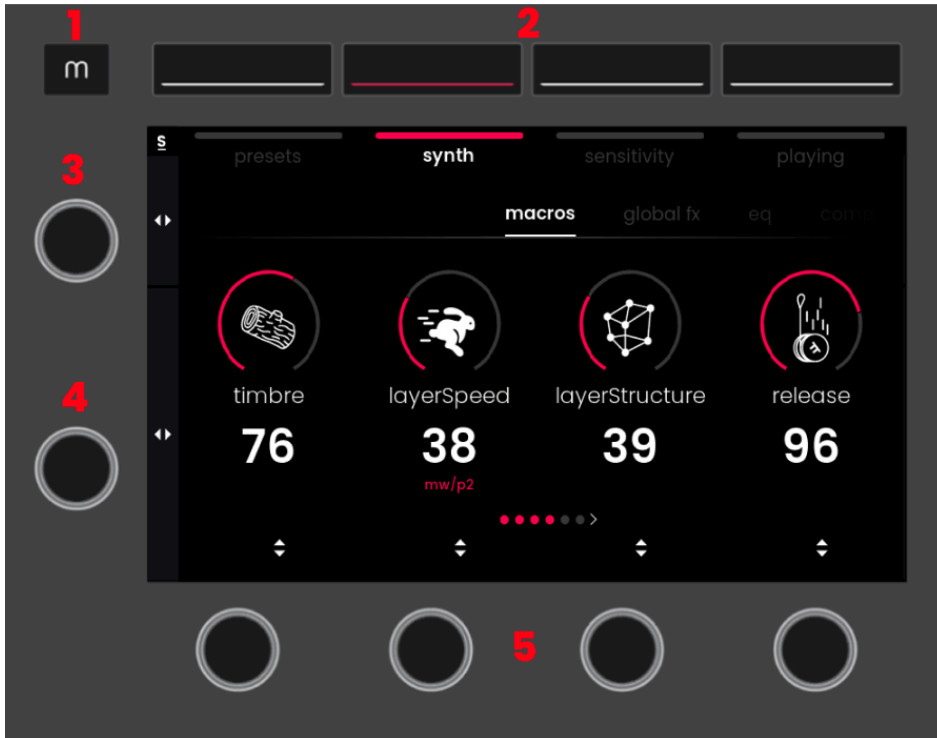
1. **MODE Button** - allows switching between controlling Sound Engine mode and External MIDI mode, see mode selection screen.

2. **MENU Buttons** - access one of the four menus of a mode.

3. **TAB Selector** - scrolls through the tabs of a menu. When in Sensitivity or Playing menu, pressing the Tab Selector freezes the settings of the menu to retain them even when switching presets.

4. **PARAMETER Selector** - scrolls through parameters inside a tab. When in Playing menu, pressing the Parameter Selector starts or pauses the Arpeggiator or switches Pressure Glide on and off.

5. **VALUE Encoders 1-4** - change the value of the parameter displayed above or scroll through a list of options. Pressing a Value Encoder might perform another special operation depending on the context.

mode selection screen

selecting the mode

Press the Mode button, then turn and press Value Encoder 1 to switch between controlling the internal Haken Audio EaganMatrix sound engine and configuring the behavior of the External MIDI mode.

ℹ️ Sound Engine mode and External MIDI mode will always run in parallel. Selecting a mode only decides which mode you would like to access and configure.

A symbol in the upper left corner of the display will indicate the currently selected mode at all times:

<u>s</u>   <u>e</u>

open global settings

Pressing Value Encoder 4 (below the cogwheel symbol ⚙️) in the Mode Selection screen opens the global settings of Osmose. They allow you to change the global tuning, calibrate pedals, display the firmware versions, change the screen brightness, etc.
For more information, refer to the global settings chapter.
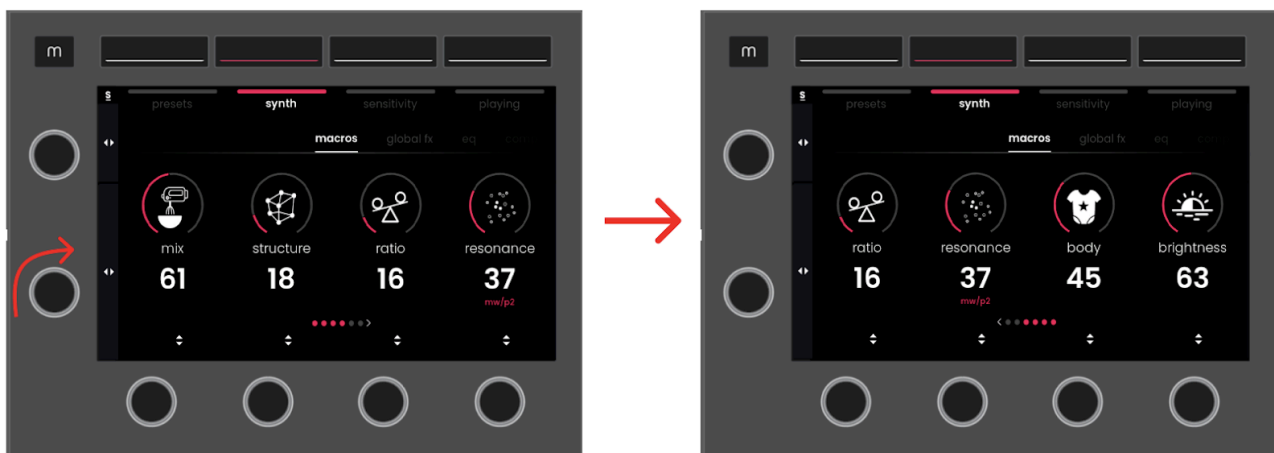
navigation principles

tab navigation

To scroll through tabs in a menu, turn the Tab Selector in the upper left.
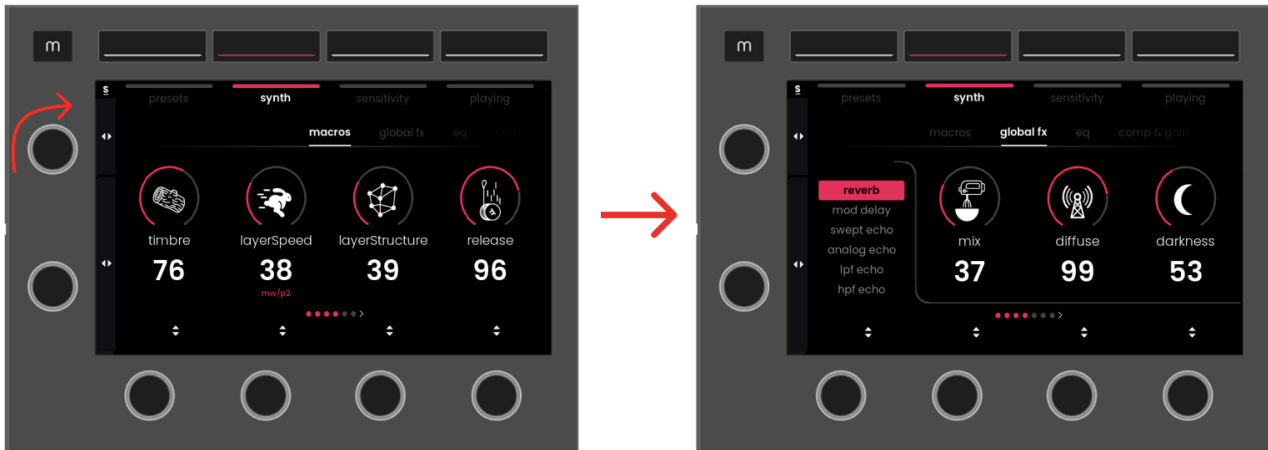
parameter navigation

If more than 4 parameters are available in a tab, turn the Parameter Selector to scroll through available parameters.

At the bottom of the screen, the icons pictured below indicate the number of total parameters in the tab:

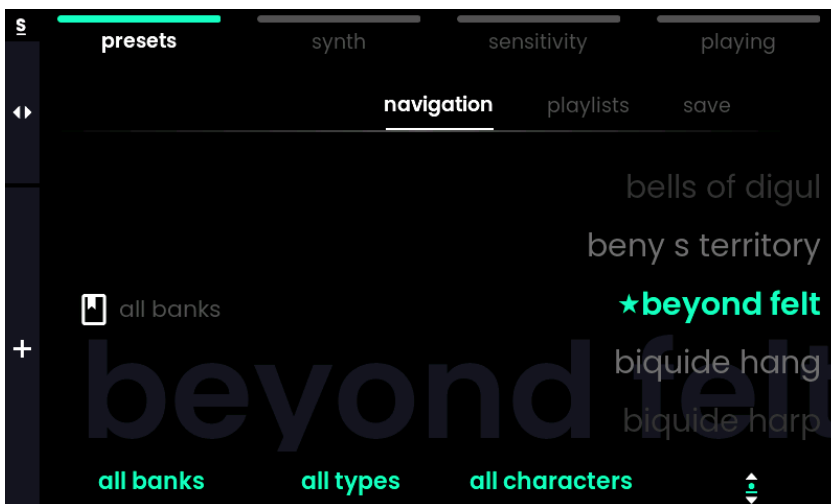# sound engine mode
presets menu

The Presets menu allows you to browse the sounds of the internal EaganMatrix sound engine and save user presets. It contains the following tabs:

navigation tab : access your presets library
playlist tab : access your playlists
**save tab** : save your current preset

navigation tab

The 'navigation' tab displays all the sound presets that are available on Osmose in alphabetical order. The currently loaded preset is highlighted in green and also displayed as a big gray watermark in the background.

Turn the right-most Vaue Encoder to select another preset. You need to push the Encoder to actually load the preset. You can also step through the current preset list with the dedicated Preset Buttons.

If a playing feature is activated on a preset, a press glide or arpeggiator icon appears on the left side of the screen:
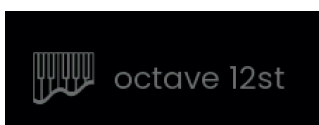
filter the preset list

Osmose can onboard up to 2048 presets. With about 500 factory presets already being installed, you still have more than 1500 free slots for user presets.

If you want to quickly find a specific sound, you can narrow down the preset list by selecting a bank, a type and character. For this, turn any of the first three Value Encoders below the screen, and the filter view will be shown.
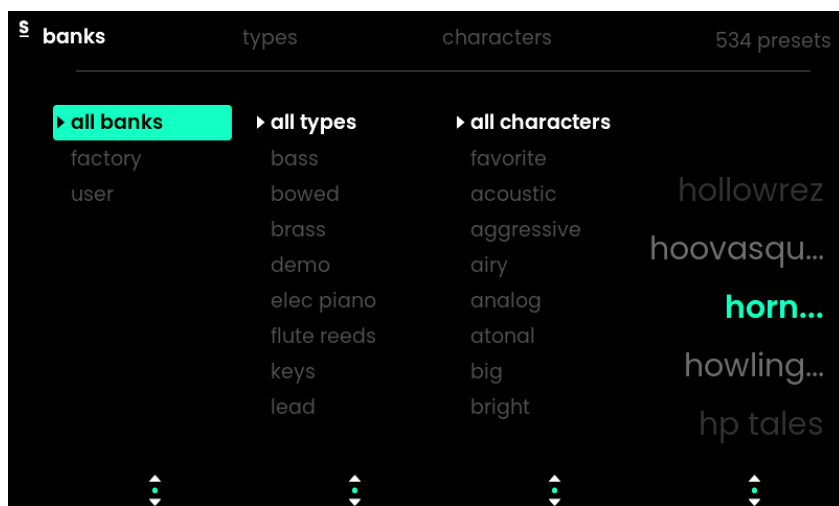
Use the first Encoder to choose a specific bank (factory, user, or upcoming expansion banks). Turn the second Encoder to choose a specific type of sound, like bass, pads, leads, or mallets. Use the third encoder to filter down the list based on a sound's character, like acoustic, FM, dark, electric, etc. Push or simply let go of the Encoder for a moment to make your selection.

⭐The character filter also contains the "favorite" tag that lets you refind presets that you have marked as favorites.

💡If you wish to explore sounds that feature the specific keybed gestures 'Strum' and 'Shake', those are available as a character tag as well.
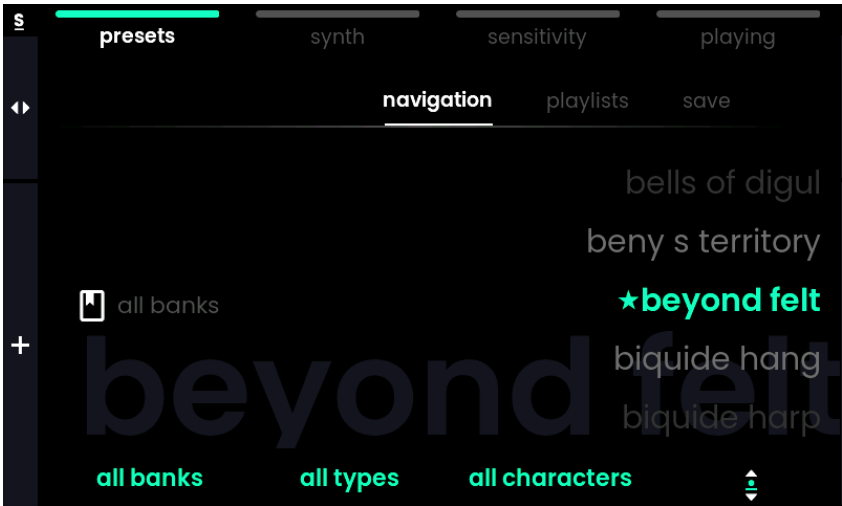
add a preset to your favorites

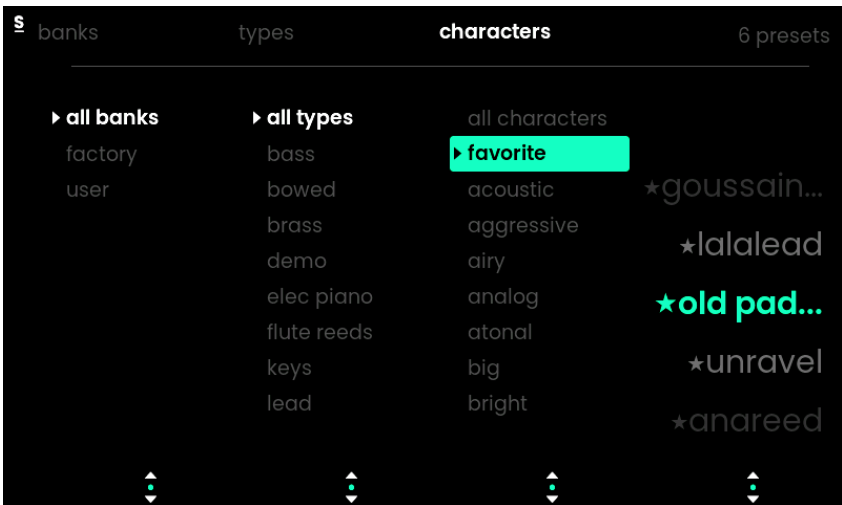You can add a preset to your favorites to easily refind it.

In the presets menu of sound engine mode, press the Parameter Selector next to the + symbol (the lower encoder left of the screen). A new "add to" screen will pop up. Press the Parameter Selector again to add the currently loaded preset to your favorites.
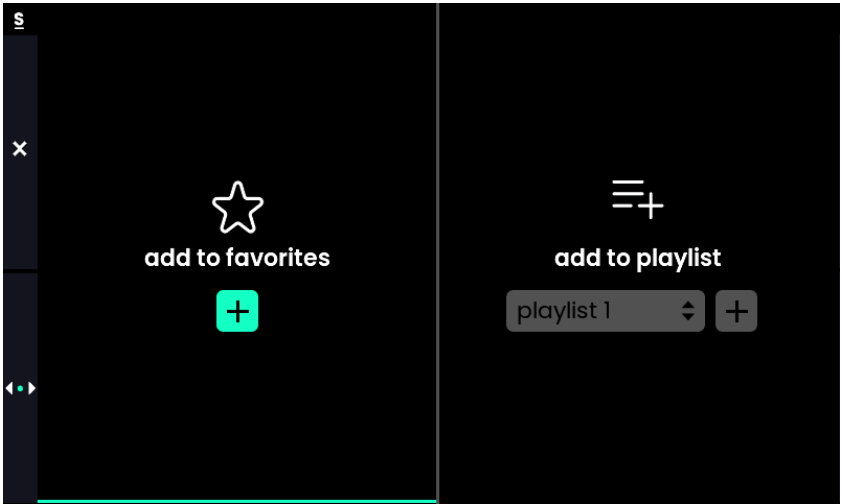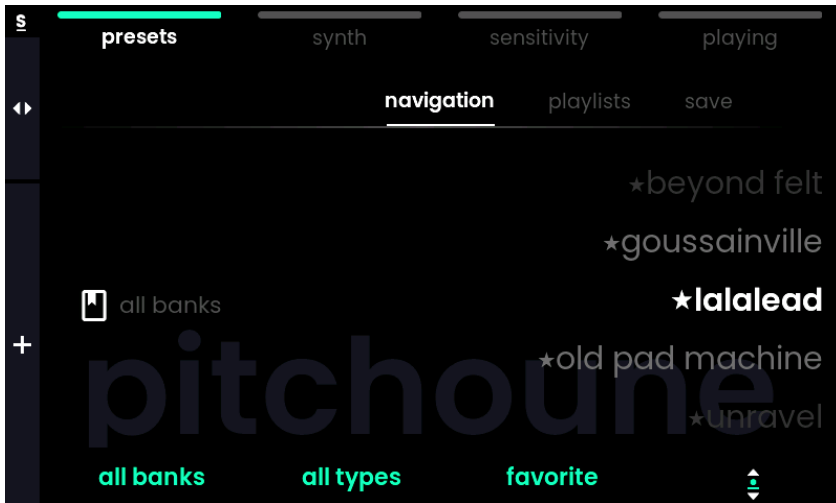
Favorite presets will appear with a ★ in the front of their name in the preset list:

You can filter the list to only show favorite presets by selecting the tag "favorites" for the character filter (turn Value Encoder 3 in the navigation tab).
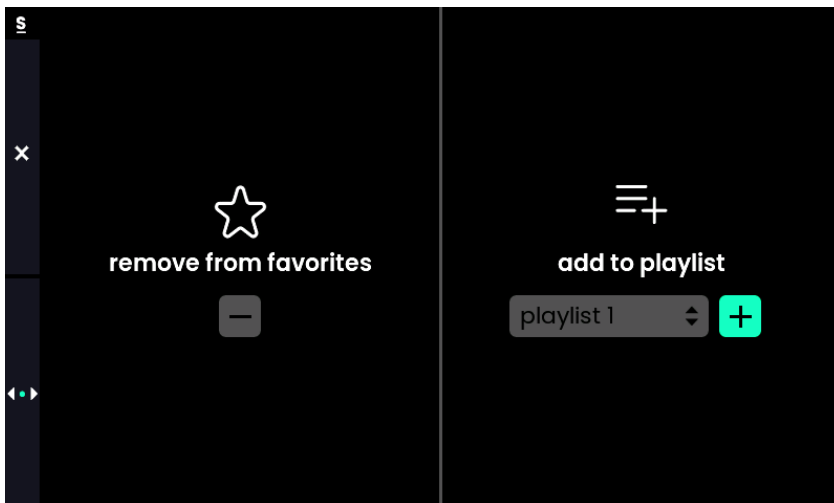
remove a preset from your favorites

You can remove a preset from your favorites by accessing the "add to" screen again. Click on the + symbol in the navigation tab, then **–** to "remove from favorites".

add a preset to a playlist

In navigation tab, press the Parameter Selector next to the **+** symbol (the lower encoder left of the screen). The "add to" screen will pop up:
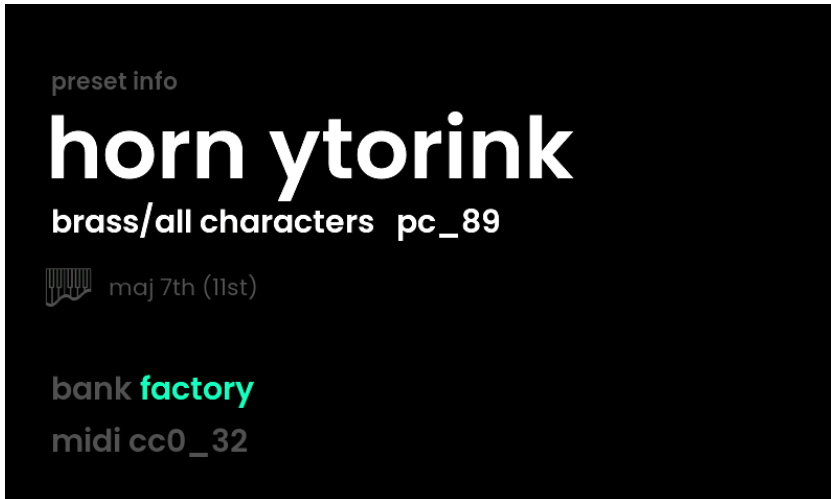

Scroll right by turning the same encoder and push to open the selection of which playlist you want the preset to be added to. Scroll further right to the **+** symbol and push to add the preset to the selected playlist.

☝️ If the "add to playlist" option is greyed out, then no playlist is available and you need to create a playlist first, see playlist tab.

display program change / bank select information

You can remotely switch presets in Osmose from an external device using MIDI messages. To find out which message needs to be sent to dial up a specific preset, long-press on Value Encoder 4 In the navigation tab.

preset info

horn ytorink

brass/all characters pc_89

maj 7th (11st)

bank **factory**

midi cc0_32

A preset info popup will display the MIDI Bank Select (CC#0) and Program Change (PC) value you need to send to Osmose to recall this preset remotely from an external device. Such messages are expected on either USB MIDI Port 2 input (the Haken Port) or the DIN MIDI input. For the latter to work, the din mode in the <u>midi i/o tab</u> of global settings needs to be set to "dsp in", "dsp in/out", or "cvc".

ℹ️Recalling presets that have been added to a playlist is simpler:
MIDI CC#0 (Bank Select) with a value of 0 to 29 lets you select from playlists 1 to 30, Program Change with a value of 0 to 127 will dial up the playlist's preset slot 1 to 128.
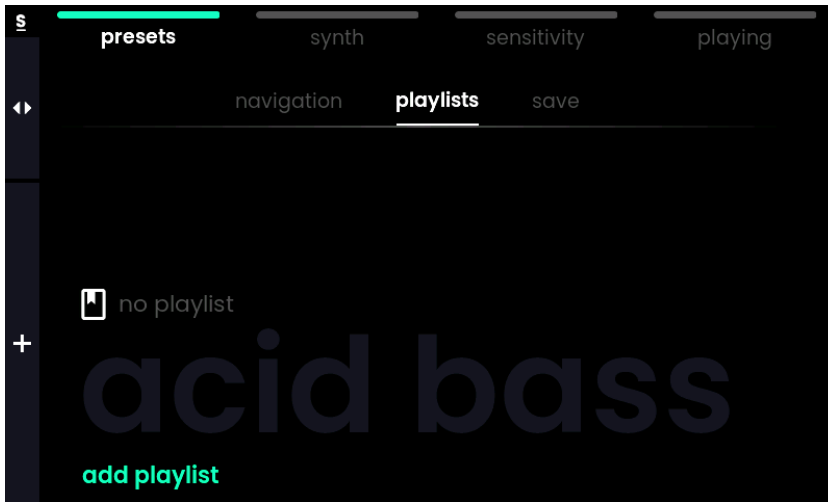
playlists tab

You can create up to 30 playlists with up to 128 presets each in order to prepare for a live performance or make a theme-based collection of sounds for a project you are working on.

Navigating presets in the playlist tab works just like in navigation tab: Either scroll with Value Encoder 4 and push to actually load the preset, or skip through the playlist's slots with the dedicated Preset Buttons. Use Value Encoder 1 to select the playlist. A filter view is not accessible in playlists tab.

create a playlist

By default, no playlist will be present on your Osmose. You must create a first playlist before you can add presets to it. This is done in the 'playlists' tab in the presets menu of sound engine mode. Press Value Encoder 1 below the screen ("add playlist") to create

your first playlist. If you already have a playlist created, you can add more by turning the first encoder when in playlist tab, then select 'add playlist'.

In the playlists tab, you can use the 'move' function to put a preset in a different position. Click on the second Encoder (below "move") to pick up the preset, turn the Encode to change the playlist position, and click again to drop the preset at that spot.
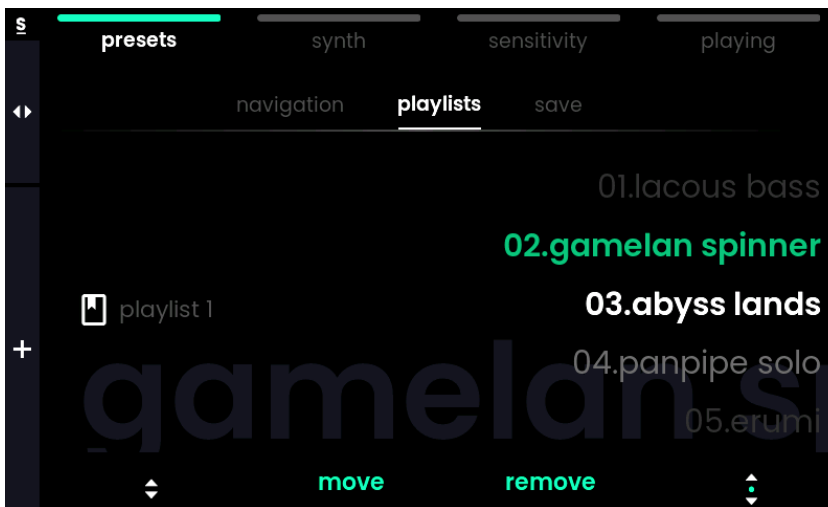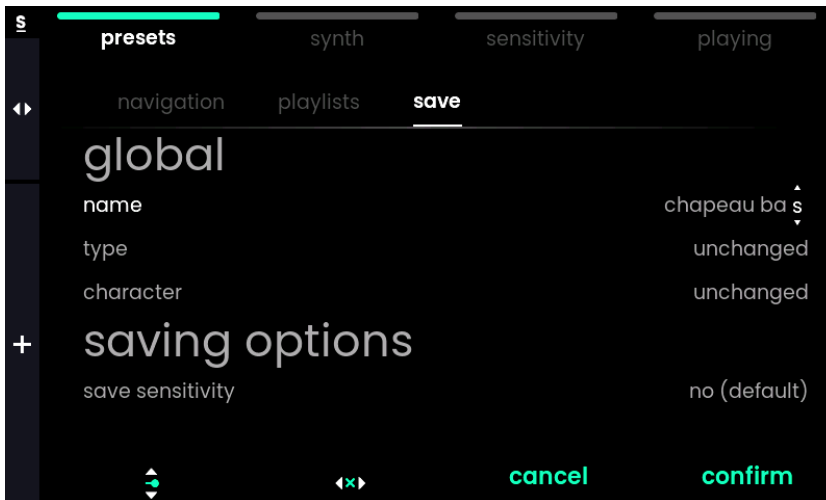

To remove the currently selected preset from a playlist, click on the third Encoder (below "remove").

save tab

The 'save' tab allows you to save the current state of a sound preset as a user preset in the 'user' bank. User presets can be recalled via the <u>navigation tab</u> like any other preset.

save tab - global parameters

Before saving a preset, you can define its name as well as its type and character tags. Use the first Value Encoder below the screen to navigate to the field you wish to update and click to enter the editing process. Turning the same encoder lets you change the symbol/tag. When naming a preset, turning the second encoder lets you move the cursor and clicking it deletes the current character. Click 'confirm' to save the changes or 'cancel' to reset the field to its previous state.

saving options
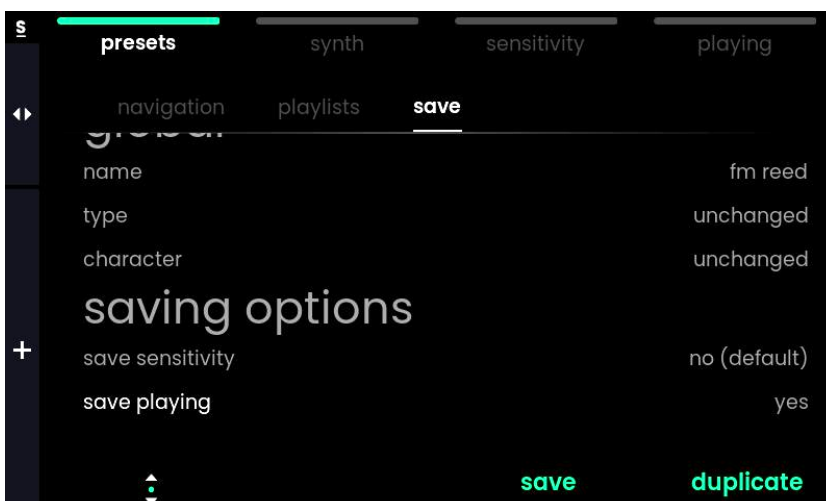
A user preset file always contains the sound's entire programmation of the EaganMatrix, which includes the 'synth' tab parameters such as macros and fx settings which are editable directly on Osmose. Optionally, you can also include your custom sensitivity settings as well as the playing menu settings (press glide or arpeggiator settings): 'Save sensitivity' lets you decide whether you wish to save the current

sensitivity menu settings as part of the user preset. This option is deactivated by default but may be useful to cater to the specific character of a sound. For instance, while a monophonic lead sound may be joyful to play with a lot of vibrato and bending, you may wish to deactivate bending altogether when playing more traditional electric piano sounds.

'Save playing' lets you decide whether you wish to save the playing menu settings with that preset. This option is activated by default because the press glide or arpeggiator settings are often considered an integral part of a preset's experience.

save a preset

'Save' will update the preset with all the changes you have made and include the saving options you chose. A safety prompt will ask you to give your OK to overwrite.
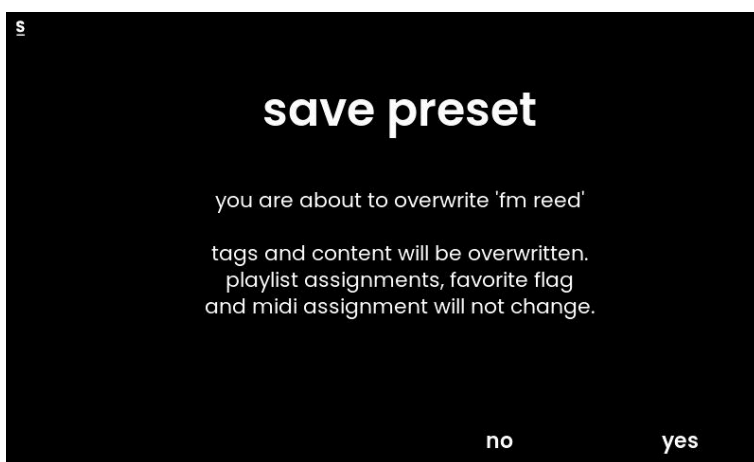
duplicate a preset

'Duplicate' is comparable to the "save as" option you know from computer applications. It saves a preset just like the save function, but doesn't overwrite the existing preset. If you didn't change the preset's name, Osmose will automatically add a number at the end of the original preset's name.
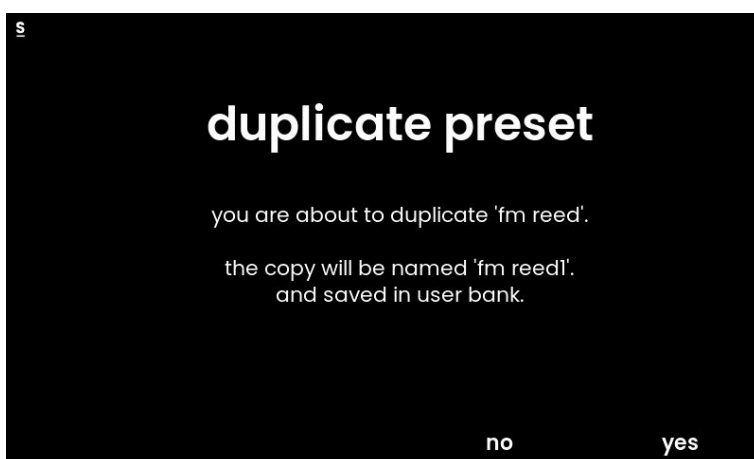
synth menu

The Synth menu allows you to adjust the sound of each selected preset individually. It also lets you change the behavior of the sliders and pedals for that sound. It contains the following tabs:

macros tab : tweak predefined macros for subtle to drastic changes to the sound of the preset
global fx tab : select the preset's global reverb or delay effect and adjust its parameters
**eq tab** : access a shelving equalizer to change the frequency balance between lows and highs
comp & gain tab : configure the pre-gain, the compressor settings, and the post-gain
voice tab : set the pitch slider range
assign tab : define the parameters controlled by the modulation slider and the pedals.

i If you wish to save the changes you have made, use the <u>save tab</u> inside the presets menu.

macros tab
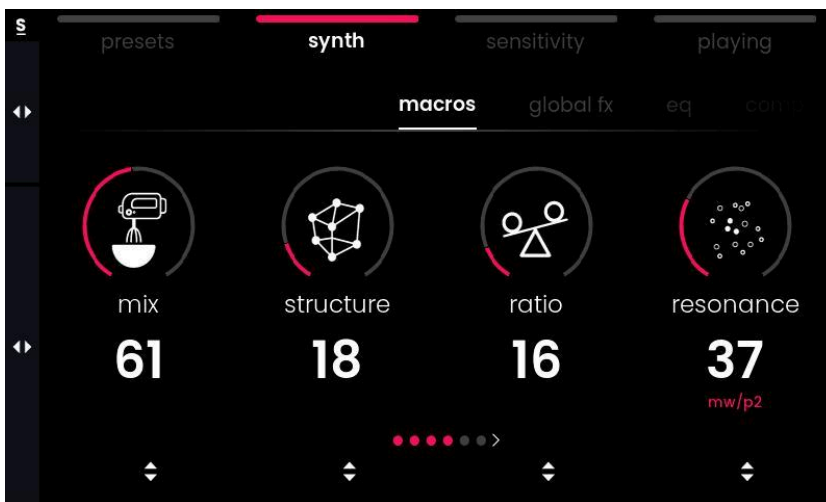
The first tab in the synth menu gives access to up to 6 sound macros that are predefined by the sound designers during preset creation. A single macro can modulate multiple parameters in Osmose's modular sound engine at once, allowing for subtle to drastic changes to the sound of a preset.

The choice of macros offered will be different depending on the preset type. It may include envelope times, cutoff values, FM ratios, etc. Presets that share the same type and character tag will have similar macros to play with. Find below some examples of basic macros you will come across often:

analog-style and fm sounds

timbre changes the tone of the sound source, adding more or fewer harmonics.

fmAmt is the amount of FM synthesis applied to the sound, generating complex timbres by modulating the frequency of one sound source with another.

fmRatio changes the FM ratio, the overtones/harmonics relations impacting the timbre of the sound.

cutoff is a filter control for attenuating high or low frequencies of the sound.

envAmt is the amount of envelope applied to the sound when you press the key; it is a form of automation that is triggered by the velocity of your gesture and added on top of the continuous gesture control.

envTime is the time length of the envelope applied to the sound. You can, for instance, morph from a very long pad with a lot of release to a short, brassy sound.

modulation is a cyclic and automatic variation applied to the whole timbre of the sound.

physical modeling, acoustic-type sounds

structure changes the harmonics of the sound by controlling the ratio between partials. Depending on the preset, it can morph the sound from a plucked string to something reminiscent of a marimba, a vibraphone...

body modified the tone by crossfading between different eq (convolutions) of instruments and material. For instance, it could morph a woody bamboo flute into something that sounds rather metallic.

resonance changes the decay/release of the sound, from short to long. Low values can sound like dampening or muting the vibration of a string or beam. Not to be confused with filter resonance.

global fx tab

The 'global fx' tab allows creating of a sense of space by adding a global time-based effect to the sound. The first parameter selects one of six reverb/delay/echo algorithms. Four FX parameters will vary depending on the effect chosen. Two parameters are always available:

mix controls the dry/wet of the FX, the amount of sound that passes through the FX.
extend will double the effective maximum delay time by running the effect at a lower sample rate. This means the "wet" part of the signal contains only lower frequencies (below the halfed sample rate), and you have to mix in "dry" to get more highs. In many cases, this sounds pretty natural. Many reverb effects don't do much with high frequencies anyway and will thus work well even when "extended".

The effect algorithms available and their four dedicated parameters are:

reverb

A versatile digital reverb that can mimic small rooms into huge ambient spaces.
💡 try to switch the 'extend' parameter to change time but also the timbre of this reverb.

diffuse is rather subtle. Depending on the decay time, different diffuse times can make the decay sound smoother or, if wanted, more metallic (ringing). It helps to fine-tune the reverb sound for a maximum quality output.
damping reduces high-frequency content with each feedback loop in the reverb. The sound gets duller over time.
darkness applies a high-frequency roll-off to the input into the reverb. The sound gets duller immediately.
decay is the amount of decay/reverb time

mod delay

A modulated delay for chorus and vibrato-like effect. It can sound really atmospheric, creating a very smooth modulated reverb-like sound, but at the expense of obvious early reflections and a pitch tail in the echoes that sweeps a bit.

modDepth is the amount of modulation in the delay
modRate is the rate of the modulation in the delay
feedback is the amount of delay feedback
time is the delay time

swept echo

Another flavor of a delay with modulations. It can achieve more of a flanger-like effect with huge stereo movements.

modDepth is the amount of modulation in the delay
modRate is the rate of the modulation in the delay
feedback is the amount of delay feedback
time is the delay time

analog echo

A delay with a more analog-like response. Like vintage echo effects, you can push the feedback to loud oscillations and play with time for crazy SFX.

noise is being added to the delay.
offset is a reverb timing offset between left and right channels (left channel time is the same as right channel time if the offset is 0 but is less when the offset is increased; this effect is not a linear timescale but can be noticeable/useful in some situations.)
feedback is the amount of delay feedback
⚠️ Analog echo can produce very loud feedback when this parameter is increased above a value of 70. Be ready to lower the volume when experimenting with this effect.
time is the delay time

LPF echo / HPF echo

A clean digital echo with a low or high pass filter for a more focused separation of the delay from the sound source.

LPF or **HPF** : when LPF is set to zero, it is similar to full damping, and when HPF is set to max, it is like full damping. The LPF and HPF are applied at the very end of the effect signal chain, not inserted in the delay chain. It means the echo is echoing the unfiltered signal internally, and the filtering happens only at the output.

offset is a reverb timing offset between left and right channel (left channel time is the same as left channel time if the offset is 0 but is less when the offset is increased; this effect is not a linear time scale but can be noticeable/useful in some situations).
**feedback** is the amount of delay feedback
time is the delay time

💡 If you still have a delay-like effect on your sound even with the mix at 0, then a delay-like effect might be programmed directly inside the EaganMatrix to add even more ambiance. A macro (often the 6th) in macros tab should allow you to change the delay time or to remove it entirely.

🔴 In the Haken Editor, global fx are called "Recirculator". Effects parameters are also accessible as a modulation destination to add even more variation with LFOs etc.

eq tab
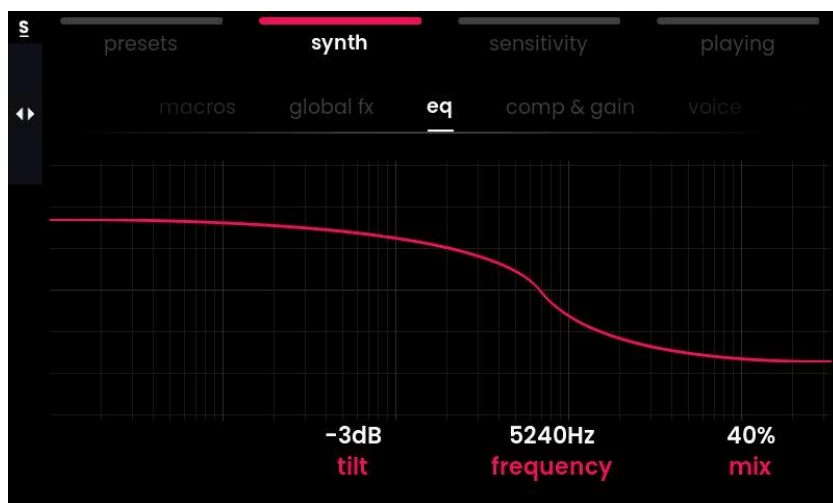
The 'eq' tab lets you balance the frequency components of a preset, shaping the sound either subtly or drastically "brighter" or "darker".
It is a general tilt equalizer based on a stereo pair of shelving filters with separately controllable low and high frequency components in the range of 120Hz to 15KHz.
The following parameters are adjustable:

tilt : Positive values will lead to more highs and fewer lows, negative values will boost lows while highs are attenuated (low and high being relative to the central frequency)
frequency : choice of the central frequency that defines the threshold between lows and highs
mix : dry/wet of the Tilt EQ, allowing parallel equalizing. The equalizer won't have any effect when the mix is set to 0%.

comp & gain tab
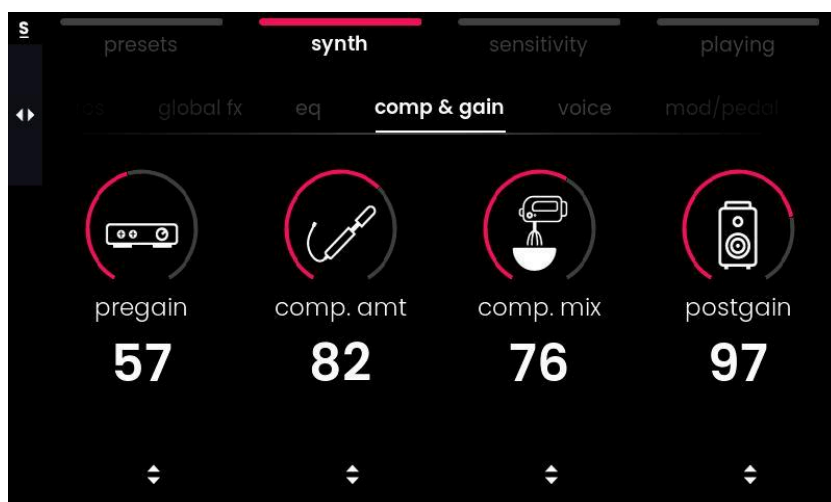
Since Osmose's sound engine EaganMatrix is a complex, modular synthesizer, modulations to the volume happen at numerous stages in sound design which leads to a possibly huge dynamic range. The 'comp & gain' tab allows you to handle the level and tame the dynamics of a preset with gain staging and a compressor.

pregain sets the level that enters the compressor. High values can add global saturation to the audio.

comp. amt is a one-knob control for a light compressor that can keep levels more consistent.*

comp. mix allows mixing the wet and dry signal of the compressor to achieve parallel compression.

postgain changes the overall volume of the sound right after the compressor at the end of the signal chain. Used to manually normalize a preset's loudness or compensate for too high volume induced by the saturation effects created with the pregain.

⬤ * The compression amount is a macro parameter that controls 3 compressor parameters inside the EaganMatrix at once:
Tweaking the comp. amt from 0 to 127 results in changing the threshold from 127 to 0, the attack from 127 to 0, and the ratio from 0 to 127.

voice tab
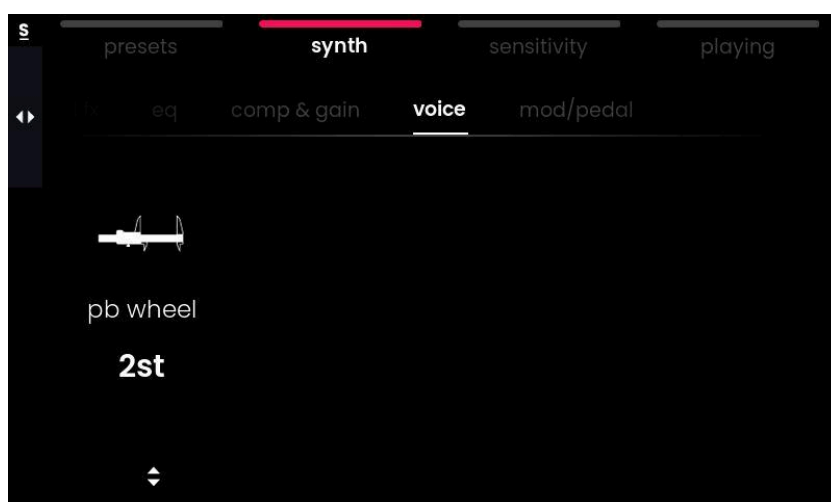
The 'voice' tab features only one parameter: the **pitch bend range** of the pitch slider. Contrarily to note bending on the keys, the slider will affect all played notes as a whole, just like a regular pitch wheel or touch strip would do.

mod/pedal tab
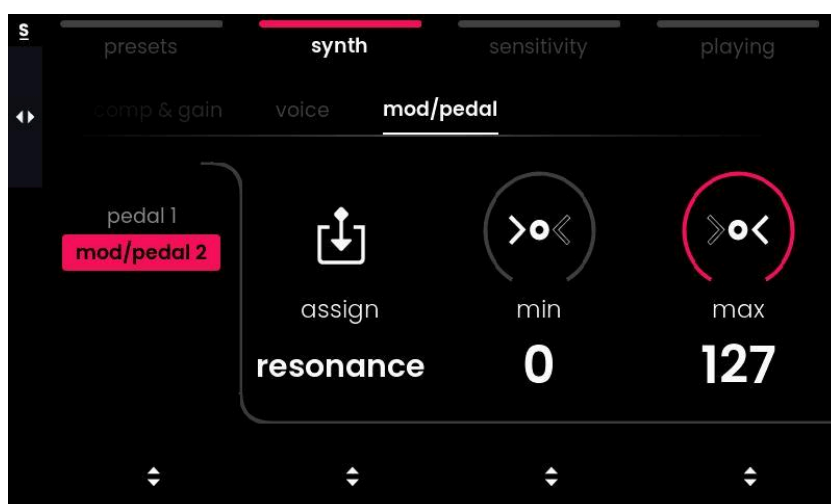
The 'mod/pedal' tab lets you choose the parameters that you control from the modulation slider and the two pedal inputs. These are always global parameters that will influence the sound as a whole, not on a per-note basis.

☝️ Not all pedals are supported, and you need to make sure to calibrate your pedals via the global settings before using them.

The first parameter allows you to select one of the two sources of modulation:

Pedal 1 is assigned to Sustain by default. **Pedal 2 and the Mod Slider** will always control the same parameter and are assigned to one of the sound macros by default.

For each of those two controller sources, you can modify:

assign for selecting the modulation targets like different types of sustain, the synth macros, the effects parameters, and the post gain. For instance, mapping your pedal to the post gain will make it act like a classic volume pedal.
**min** sets the minimum value controlled
max sets the maximum value controlled

i The sustain and sostenuto functions in Osmose work differently compared with regular keyboard instruments. Usually, sustain takes the current pressure/position of the notes played and keeps them in that state. On Osmose, Sustain, and Sostenuto are continuous controls that allow fading and swelling sustained notes when moving the expression pedal. See also: pedal compatibility and recommendations.

 i Sostenuto will only sustain notes that were held at the moment you pressed the Sostenuto pedal. It lets you hold one or several "drone" notes with your pedal and then lets you use both hands to play another part without any sustain on top. If you assign the two pedals to sostenuto 1 and sostenuto 2, respectively, you can hold and fade two sets of sostenuto notes at the same time.

sensitivity menu
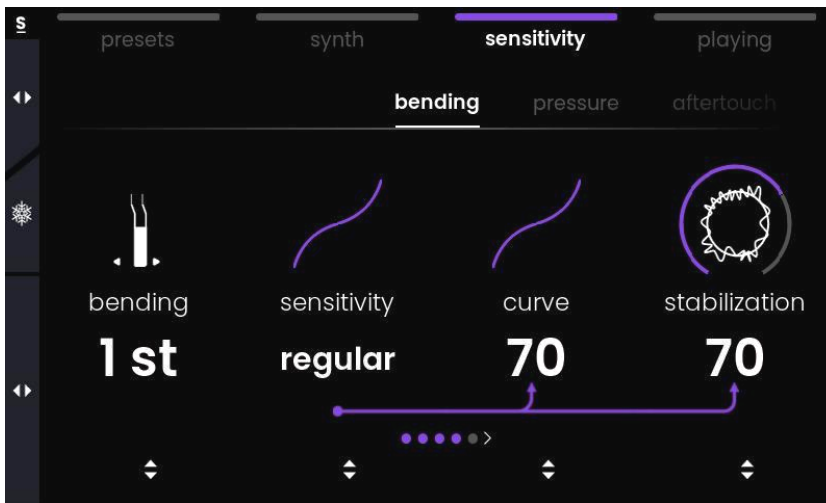
The Sensitivity Menu allows the user to change the response of the Augmented Keyboard Action. Four tabs are available:

bending tab : changes the response of the lateral movement on each key, incl. the pitch bend range and the amount of stabilization.
**pressure tab** : changes the response of the first part of the key travel. 'note on' determines the vertical threshold position at which a key actually triggers a note.
aftertouch tab : changes the response of the second part of the key travel.
default sensitivity tab : saves your current settings as the default sensitivity that will then be used across all factory sounds.

💡 The "save sensitivity" option of the save tab in the presets menu allows you to save a sensitivity along with a specific user preset.

bending tab
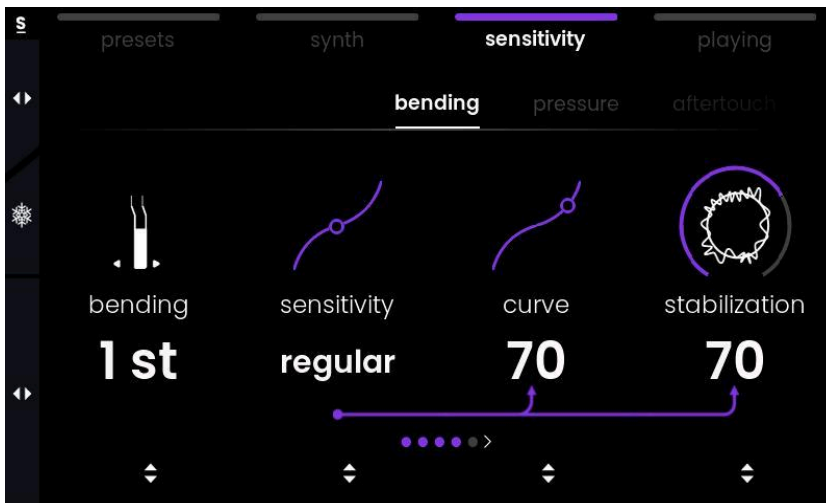
The 'bending' tab lets you change how the lateral bending of a key will affect the pitch. it contains the following parameters:

bending is the range that defines how far the pitch will be modulated at maximum deflection. Given the limited sideways key travel, you'll probably want to go with 1 or 2 semitones most of the time, but wider ranges can also produce interesting results.

sensitivity allows you to quickly choose between a set of predefined responses that affect how Osmose reacts to vibrato or bend gestures in a natural way, while at the same time helping you to stay in tune when no bending is intended. It steps through useful settings for both curve and stabilization at once. There are five sensitivity sub-presets that go from low, medium, regular, to sensitive, and high.

💡 bending range and sensitivity work great if you use them as counterparts: If you set a range of 2st for making bends while playing chords, medium sensitivity could be a good setup, however, if you only want to play vibrato and have subtle pitch variations selecting ¼ or ½ st with high sensitivity will yield best results.

curve will establish a dead zone around the middle of a key in order to avoid unwanted bends. However, playing vibrato with only subtle gestures will become increasingly difficult the bigger the dead zone is.

stabilization is an algorithm that will intelligently smooth out uneven motions that tend to happen especially during the first few moments of your keystroke.

💡 to visualize the difference between curve and stabilization, look at both curves while playing with a note. The point on sensitivity shows the result of both 'curve' and 'stabilization' parameters, while the point on curve shows the raw sensor data of this parameter.

activation allows you to enable bending only for specific notes. For instance, it might come in handy to only activate bending for the highest note when playing chords with the left hand and soloing with the right.

pressure tab
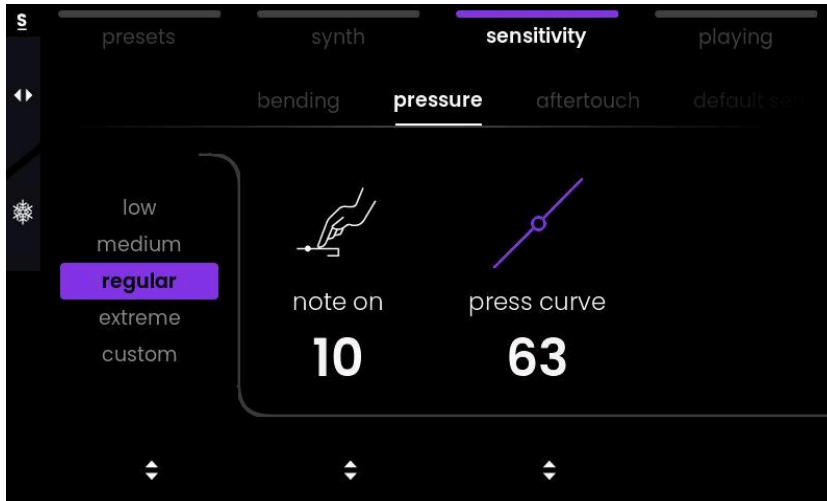
The 'pressure' tab concerns the first vertical dimension of the keys. The first parameter of the pressure tab offers sub-presets that adjust the following two parameters at once:

note on lets you define at which point of the downward key travel an actual note is triggered, which is called the 'note on' threshold.
**press curve** adjusts the response of the pressure dimension with a curve.

If you change those two parameters individually, the sub preset will switch to 'custom'.

💡 If you find yourself triggering notes unintentionally, then you may want to shift the 'note on' threshold more downwards the key travel by increasing its value. This will bring you more and more towards a classic keybed feel where notes are only triggered when you push a key right down to the bottom.
On the other hand, if you're eager to experiment with triggering notes using only light taps on a key's surface, then an 'extreme' setting for the pressure dimension will allow you to do exactly that.

aftertouch tab
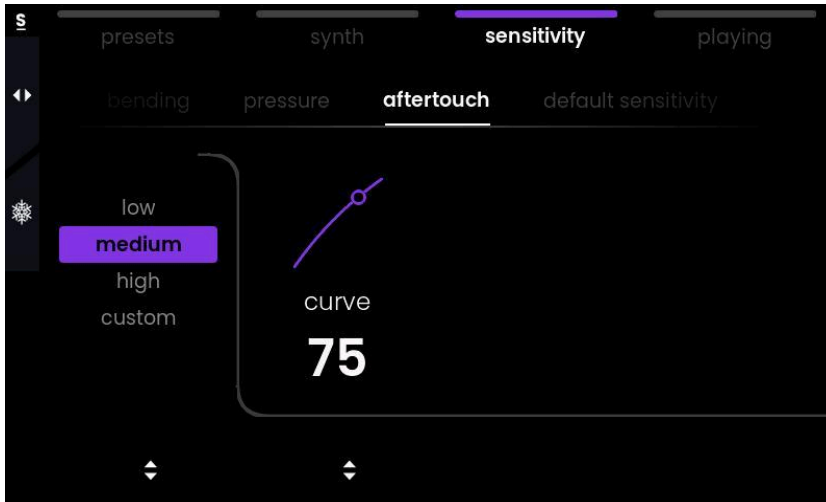
The aftertouch begins where the pressure axis motion is at the maximum. Aftertouch is the second part of the vertical key travel, following a clearly detectable pressure point. The first parameter of this tab suggests quick presets for the aftertouch sensitivity **curve**, which can also be finely adjusted by turning Value Encoder 2.

💡 The more notes you play at once, the harder it will become to push fully into the keys' aftertouch without bending the notes' pitch unintentionally. This would be an example of a situation where you might prefer to have a sensitive aftertouch that doesn't require lots of force to activate. On the other hand, if a preset triggers a special sound aspect upon entering the aftertouch, e.g. automatic ratcheting of a plucked sound, and you wish to have a clearer separation, it will help to dial down the aftertouch curve.
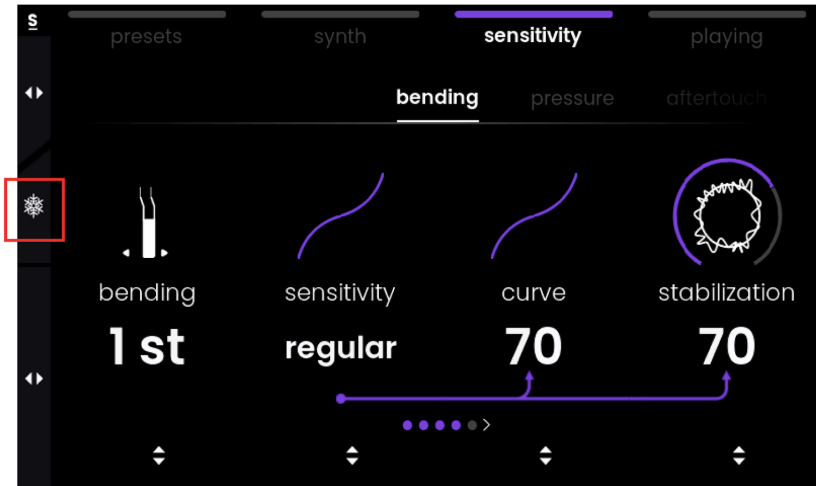
default sensitivity tab
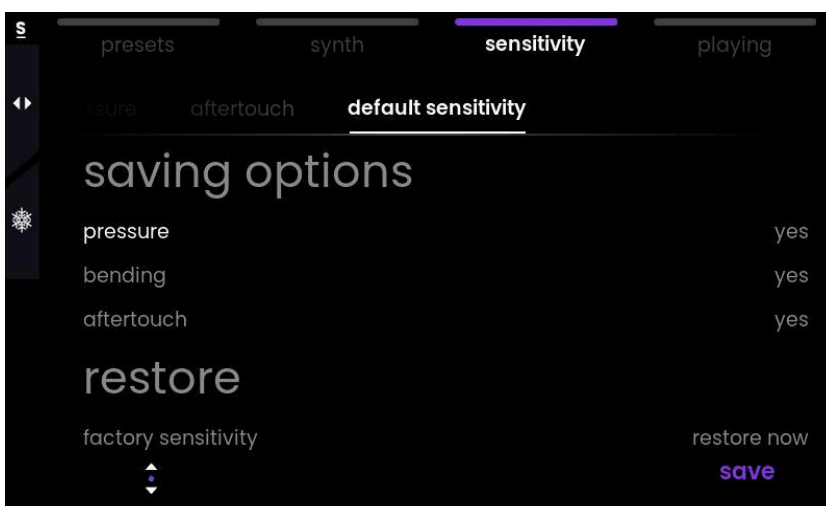
The last tab of the sensitivity menu allows you to save your current settings as the default sensitivity that will then be used across all factory sounds. Factory sounds don't have a specific sensitivity saved with them, so upon preset change, you will always fall back to the default setting saved at that time.

Defining your default sensitivity will help you feel at home with the instrument. While you're growing your level of comfort with Osmose, you may want to update that setting from time to time.
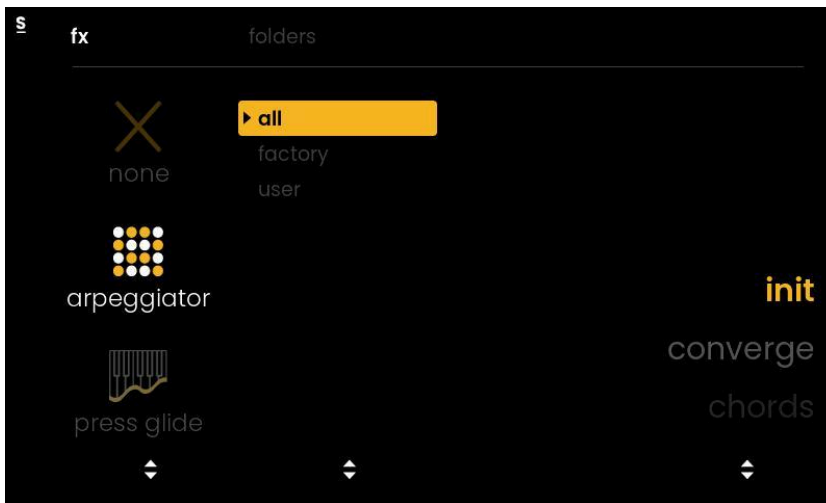
freeze sensitivity function

Pressing the Tab Selector in Sensitivity menu switches the Sensitivity Freeze ❄ on and off. When Freeze is enabled, the current sensitivity settings will be kept across preset changes, no matter the default sensitivity and no matter whether there is a custom sensitivity saved in a user preset.

'Sensitivity Freeze' lets you test a specific sensitivity setting without having to overwrite your 'default sensitivity'. It also allows for testing a sensitivity setting while scrolling through user presets that have custom sensitivity settings saved with them (compare the 'save sensitivity' option in the save tab of the preset menu).

Frozen sensitivity values are lost when turning off Osmose. If you want to keep a sensitivity setting, use the default sensitivity tab.

playing menu

The Playing menu gives access to advanced features that interpret your raw playing gestures in intelligent ways. After accessing the Playing menu with the fourth Menu button, turn Value Encoder 1 to choose either Pressure Glide, the Arpeggiator, or no playing feature at all.

If a playing feature is activated on a preset, a press glide or arp icon appears on the left side of the screen and will remain visible also in the factory and user tab of the presets menu:
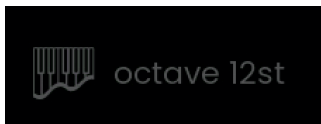

freeze playing function

Pressing the Tab Selector in Playing Menu switches the Playing Freeze ❄ on and off. When Freeze is enabled, the current playing settings will be kept across preset changes, no matter what is saved in the user preset you dial up.

pressure glide

The Pressure Glide feature lets you define a pitch interval within which two keypresses are interpreted as a legato line instead of polyphonic playing.

Unlike regular portamento, which makes the pitch glide to a new note within a fixed amount of portamento time, Haken Audio's Pressure-weighted Portamento reacts to the pressure ratio between the two notes. The pitch will dynamically glide between the notes in real-time, reacting to how you distribute pressure between them. You will need to release the first note completely to make the pitch arrive at the second note.

Feel free to watch the dedicated section on Pressure Glide in Osmose's Quick Start Video to better understand how Pressure Glide works.
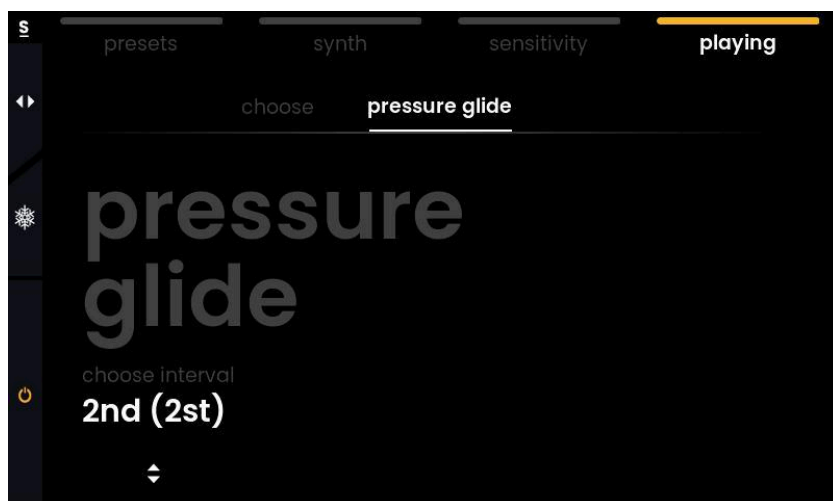
ℹ️ Important note when intending to play chords with Pressure Glide activated:
Two notes pressed simultaneously within the interval that you have set will always be joined into one pitch. For instance, with a pressure glide interval of 2 semitones, you can play chords with stacked thirds or wider voicings, but as soon as you play seconds, you will end up with one note with an averaged pitch instead of two discrete notes.

⏻ While in the playing menu, activate or deactivate Pressure Glide with a click on the Parameter Selector.

mpe arpeggiator
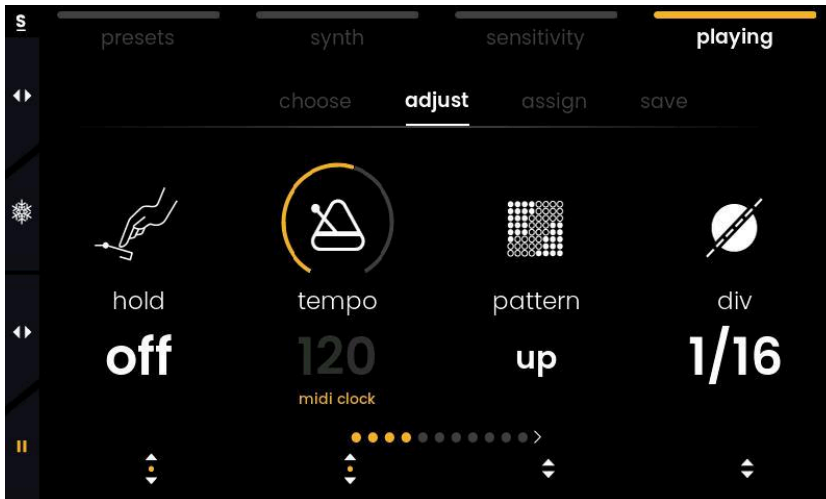
Arpeggiators usually trigger all notes with the same intensity, often resulting in a somewhat mechanical, monotonous sound. Osmose's MPE arpeggiator takes advantage of the fact that the instrument knows the exact position of each key at every given time. When playing the arpeggiator pattern, Osmose continues to take into account all three axis motions of the Augmented Keyboard Action keys: Pressure, Aftertouch, and Bending. It means that you can highlight single notes within your arpeggiator sequence just by pressing them differently from the others.
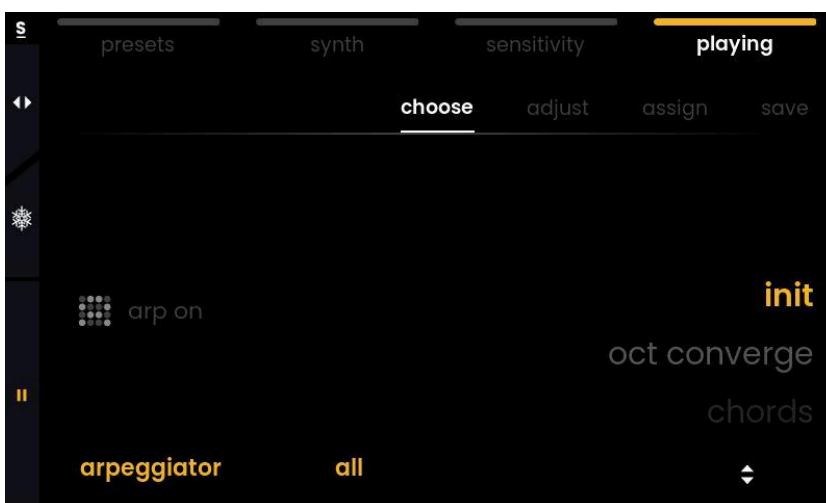
choose tab : load an arpeggiator preset
adjust tab : set the arpeggiator parameters
assign tab : let gestures and controllers modulate arpeggiator parameters
save tab : save the current arp settings as an arp preset

▶⏸ You can start or pause the Arpeggiator with a click on the Parameter Selector.

choose tab

The first tab of the arpeggiator is the 'choose' tab, giving access to the arpeggiator presets. The currently loaded arp preset is highlighted in yellow. Turn Value Encoder 4 to

select another preset. With Value Encoder 2, you can filter between the factory arp presets and your own user arp presets.

💡 To discover the arp presets and their interactions, we suggest loading a polyphonic flute or brass sound, or another preset with a rather short attack and release. It will be a good start to understanding how your gestures can modulate the arpeggiator.
💡 If you want to switch sound presets while keeping the same arp settings, use the freeze playing function.

adjust tab
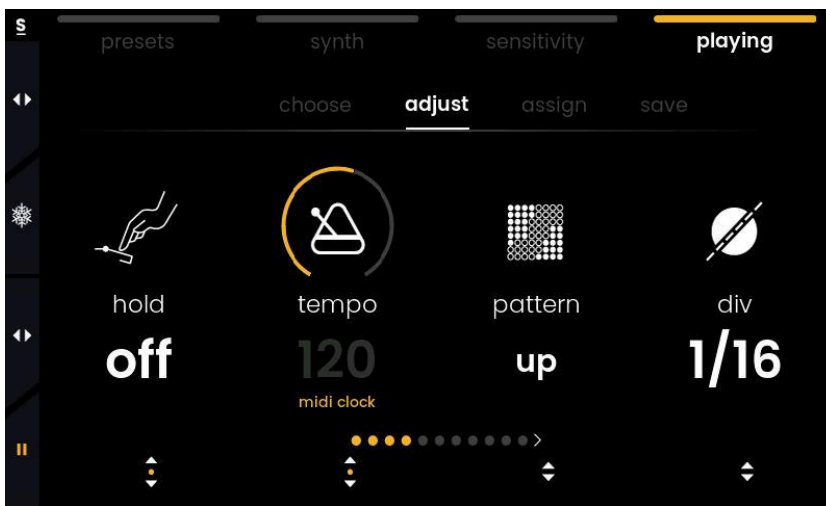
The 'adjust' tab contains all the arpeggiator parameters:

hold will make sure that the notes you press will continue to be triggered even when you let go of the keys. It will remember the maximum pressure applied to each key. The note repertoire will only be reset when you have already released all keys and then press a new key.

tempo defines the beats per minute. Pressing the Value Encoder below will switch between synching to an external MIDI clock and using the internal clock. Attention: Osmose is not capable of sending its own internal clock.

pattern lets you choose in which order the notes are played back.

division defines the note value of one arpeggiator step. It selects a division of the tempo that determines the speed at which the notes are played.

gate determines the length of the notes as a percentage of the duration of one note according to the arpeggio speed.

octave range lets you add multiple octaves above the notes played.

swing allows shifting every second arpeggiator step in time. 100 equals an even playback of all steps. Values above 100 will introduce more and more swing, until, eventually, every second step is joined with the next step.

ratchet will introduce multiple triggers during one arpeggiator step.

rise & fall will add some inertia to parameter changes, smoothing out fast increases or decreases in value.
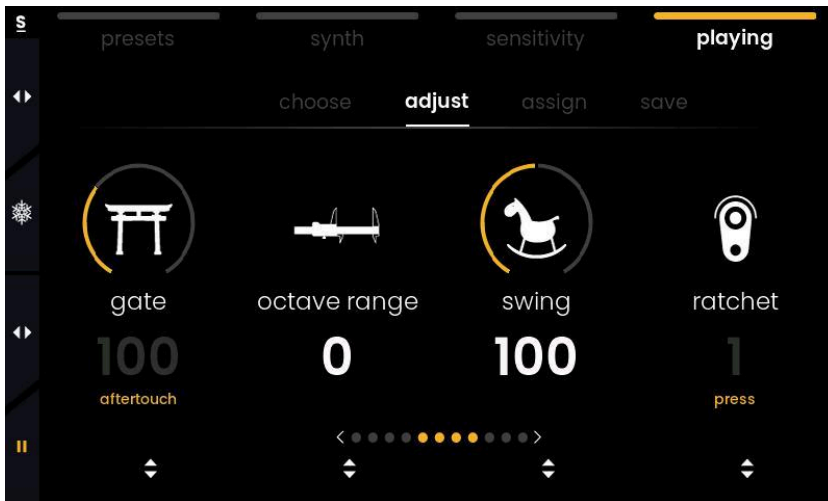
i When a parameter is controlled by a gesture of a controller (see <u>assign tab</u>), its value will be grayed out and the modulation source appears in yellow below the parameter. In the picture above, aftertouch controls the gate, and press controls the ratchet parameter.

assign tab
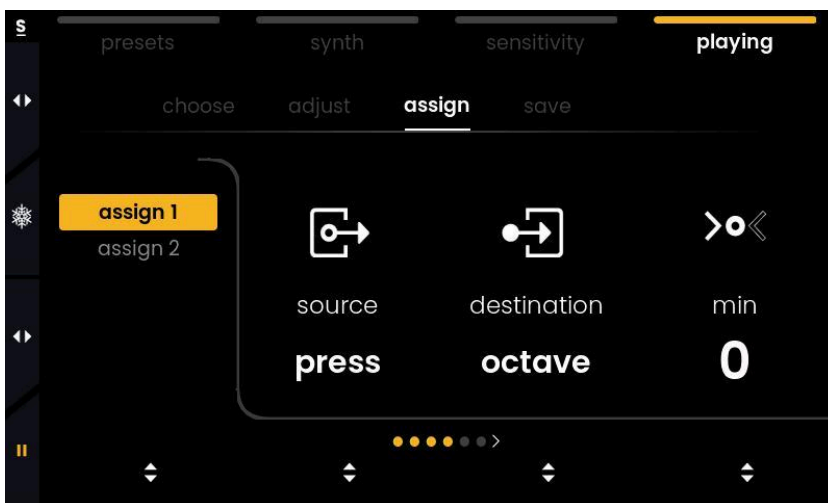
The programmed behavior of a sound preset when it comes to Pressure, Aftertouch, and Bending is also kept when using the Arpeggiator: When you bend individual notes, their pitch will continue to change, and if a sound becomes louder and brighter when pressing it further, then the same will also happen when the Arpeggiator is active.

Additionally, the way you press individual notes on the keybed can influence the arpeggiator parameters for that specific note. The 'assign' tab lets you set up the parameter mapping for this. Two 'assign' slots are available with the following set of parameters:

source selects a motion axis of the key or a controller that will affect the destination parameter. Here, bending to the left and bending to the right are available as separate sources. When using the mod slider or expression pedals as modulation sources, parameter changes will be global (not per-note).

destination selects the arpeggiator parameter that will be modulated. This includes all parameters listed in the adjust tab.

min sets the minimum value sent.

max sets the maximum value sent.

curve changes how resulting values are distributed when the source value goes from min to max. A linear response means values have equal ranges along the curve. If min is set to 1 and max is set to 2, then 2 is already selected when the source control is at 51% (MIDI value 64).

save tab

The 'save' tab of the MPE arpeggiator allows you to save the current settings of the arpeggiator as an arpeggiator preset that will then show up in the choose tab.

To give your arpeggiator a custom name, press Value Encoder 1 when the line 'name' is selected. Scroll through characters by turning the same encoder. Turn Value Encoder 2 to move the cursor. Once you're done, validate by pressing Value Encoder 4.

external midi mode

In addition to being a standalone synthesizer, Osmose can act as an expressive MIDI controller. All functions of the External MIDI mode work independently and in parallel to what is set up for the internal sound engine.

☝️ Please be aware that some synthesizers and DAWs might not support the new kind of interactions that Osmose offers, or only support them to a certain extent.

connect osmose to your computer

When you connect Osmose to your computer, two USB MIDI ports will appear:

1) external midi port

'Osmose Play/Port 1' [macOS] or **'Osmose' [Windows]**
Sends data according to the configuration chosen in External MIDI Mode (MPE by default). Use this port to control any external synth.

2) haken port

'Osmose Haken/Port 2' [macOS] or **'MIDIIN2/MIDIOUT2 (Osmose)' [Windows]**
Sends data of the internal synth engine in MPE+ format. Use this port to make the connection with the Haken Editor and to record performances using the internal engine in an external sequencer or DAW to replay or edit them.

⚠️ By default, Osmose doesn't send any data on the Haken port. This avoids receiving every message twice in applications that activate all recognized MIDI ports by default. You can activate the Haken Audio port in the Global Settings -> midi i/o -> haken usb mode.

setting up osmose in your daw

For instructions on how to use Osmose as a MIDI/MPE controller or as an external synthesizer in your DAW, please refer to our online knowledgebase:

🔗 Osmose DAW tutorials

introduction: legacy midi vs. mpe

a word on mpe

Osmose is part of a family of MIDI Polyphonic Expression (MPE) instruments and controllers that strive to tear down the expressive restrictions of common electronic instruments. When starting to control external instruments from Osmose, it's useful to understand the way legacy MIDI communication is set up and how the MPE extension builds upon this.

In a classic MIDI environment, all MIDI messages that belong to a sound are sent on one single MIDI channel. Any modulations (such as pitch bend or changes in timbre) are sent per channel and thus affect all notes of that sound in the exact same way. If other MIDI channels are used, then this is commonly done to address a separate instrument or track of a multitimbral sound engine, e.g. in a hardware workstation or in your DAW.

MPE is an official extension to the MIDI standard where multiple MIDI channels are used to control the same sound. One channel is retained for global messages (master channel), but every single note that is played is granted its own MIDI channel. This way, per-channel modulation can be applied to each note individually, giving you much more control over your polyphonic performance.

backward compatibility

Even if the external software or hardware instrument that you hook up to Osmose doesn't support MPE, you can still intuitively shape their sound directly via the keys of Osmose's Augmented Keyboard Action. Pressure and Aftertouch motion axes can continuously control any parameter inside the synth on a global basis. Bending can perform a pitch bend of all the notes you play as a whole.

In a non-MPE context, this global value of a motion axis will affect all the notes you play in the same manner, just as if you would move a knob or a fader on a standard MIDI controller. Osmose lets you define whether the global value sent by a motion axis is calculated as an average of the individual values of all keys pressed, or whether it is derived from the pressure or bending you apply to a specific single key (highest note, most pressed down, etc.).

ℹ️ Monophonic lines on external synths can always be played expressively from Osmose. This is because for monophonic sounds, there's always one dedicated channel per voice, even in a legacy monochannel setup.

config menu
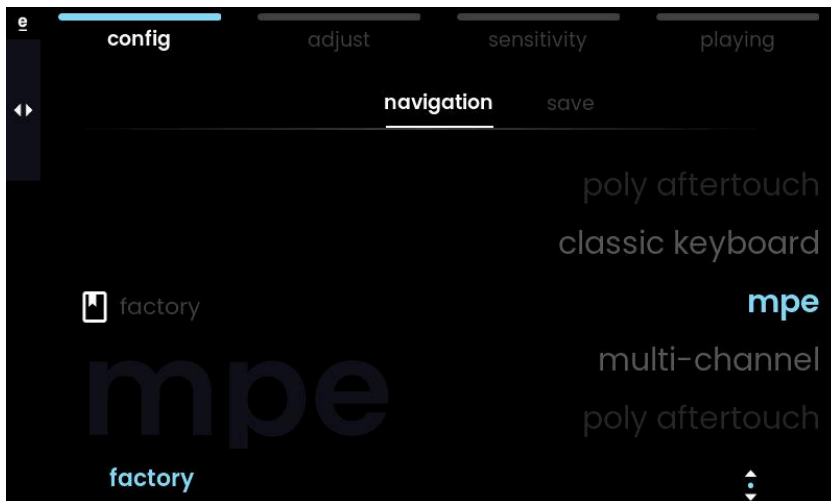
The config menu gives you access to different External MIDI configuration presets that help match the messages sent by Osmose with what is supported by your external synthesizers. Selecting a MIDI configuration will adapt the messages sent on Osmose's USB MIDI Port 1 and on its DIN MIDI output, also see .

navigation tab

Turn Value Encoder 4 or use the Preset buttons to step through the different External MIDI configurations. You need to push the Encoder to actally load a configuration.

If you have saved your own External MIDI config presets, you can turn the first Value Encoder below the screen to show only factory configs or user configs.

i External MIDI configurations can be fine-tuned via the adjust and sensitivity menus.

Find below the four External MIDI configuration presets that Osmose comes with by default. These configurations also contain a dedicated sensitivity setting optimized for the use case.

mpe

Is the default for controlling MPE-compatible software and hardware.
It sends MIDI messages according to the MIDI Polyphonic Expression standard.
The Pressure axis sends Velocity (MPE Strike) and Channel Pressure (MPE Pressure).
The Aftertouch sends CC74 (MPE Timbre, also called MPE Slide because it's the parameter that other MPE controllers often address with a sliding movement along the Y axis on the playing surface).
Note Bending sends pitch-bend messages (MPE Glide). MIDI channel 1 is reserved for global messages, and channels 2 to 16 are used to transmit one voice each.

classic keyboard

Is the best choice for full backward compatibility.
It sends MIDI messages like a legacy MIDI keyboard would do. The 'Note On' threshold in the sensitivity menu is moved down further along the key travel to mimic traditional keyboard actions.
The Pressure axis only sends Velocity, and the Aftertouch axis sends Channel Pressure, commonly called (mono) aftertouch. Note Bending is deactivated.
All messages are sent on MIDI channel 1.

poly aftertouch

is perfect for controlling software and hardware synths that offer polyphonic aftertouch. It behaves just like the Classic Keyboard configuration but sends Polyphonic Aftertouch instead of Channel Pressure to the Aftertouch axis.

multi-channel

Is useful for imitating the advantages of MPE with non-compatible software and hardware. For this, multiple instances of the same plugin or sound should be dialed up on the external device, each responding to a single MIDI channel.
The Multi-Channel configuration behaves just like the MPE configuration, where one MIDI channel is used to transmit one voice each, but lacks a channel for global messages.
To compensate for the lack of a global channel, global messages like CC1 (modulation slider) are sent as copies on every active channel.

save tab

The save tab allows you to save your own External MIDI config presets. When saving a MIDI configuration preset, it will include all changes made in the adjust menu and sensitivity menu of External MIDI mode. If you activate the 'save playing' option, you can also include the press glide or arp settings from the playing menu in the preset file.

To save a preset, enter a name and choose to save the playing option or not. If you use the 'save' button and a preset with the same name already exists on osmose, it will prompt you to confirm overwriting it. Choosing 'duplicate' will avoid overwriting by adding a number at the end of the name of the midi configuration preset.
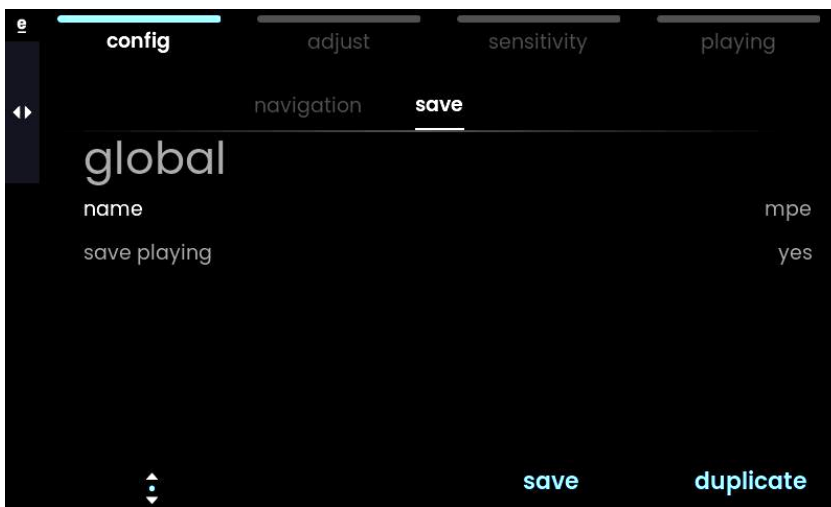
Once saved, your own External MIDI config presets will show up in the navigation tab of the config menu.

adjust menu

The adjust menu lets you determine the MIDI channel(s) used, as well as which MIDI message is sent by which key axis motion or controller.
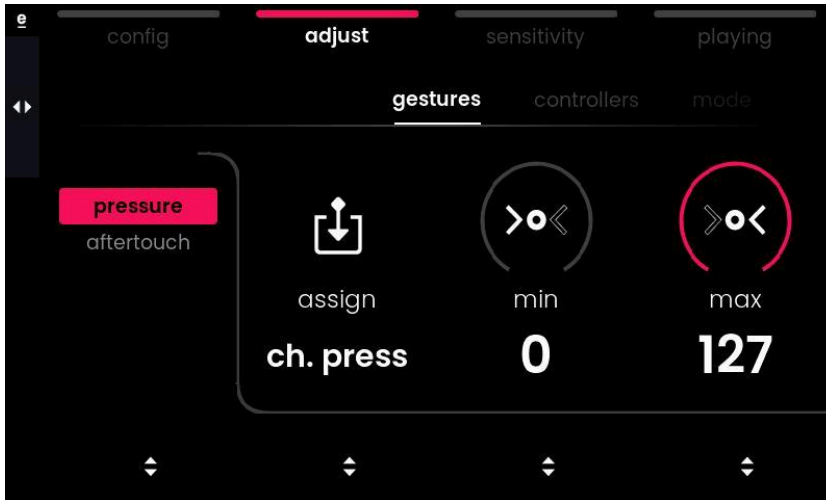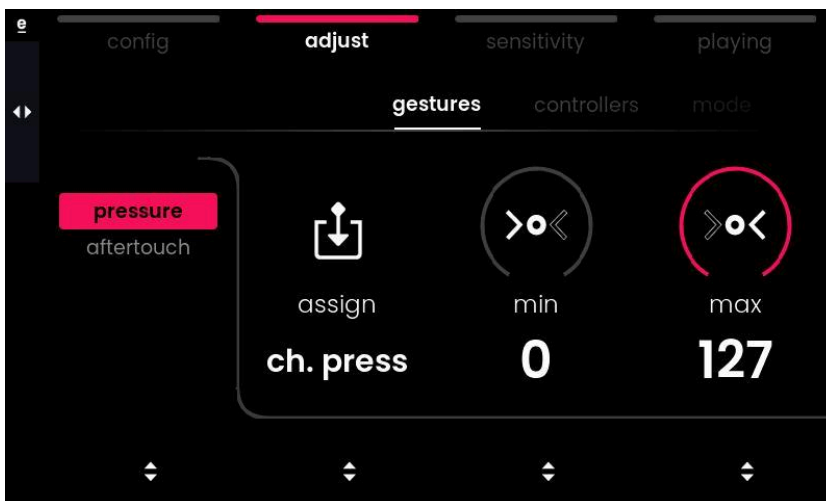

gestures tab : set what MIDI message is sent by the pressure and aftertouch axes
controllers tab : set what MIDI message is sent by the mod slider and the two pedals
mode tab : choose the MIDI configuration and MIDI channel(s) used

gestures tab

This tab sets what is sent by the pressure and aftertouch axes. First, select pressure or aftertouch with Value Encoder 1, then change its parameters:

assign selects the MIDI message sent for the axis motion selected on the left.
**min** sets the minimum value
max sets the maximum value

activation defines how the value of an axis motion is calculated for scenarios where only one value is sent for the entire keybed instead of per note. The parameter is only displayed if a mono-channel configuration like "classic keyboard" or "poly aftertouch" has been selected in the config menu. Options are:

- maximum: the most-pressed key defines the value
- minimum: the least-pressed key defines the value
- last note: the key you pressed last defines the value
- first note: the "oldest" key that is still held defines the value
- average: the value sent is calculated as an average of all pressed keys

controllers tab
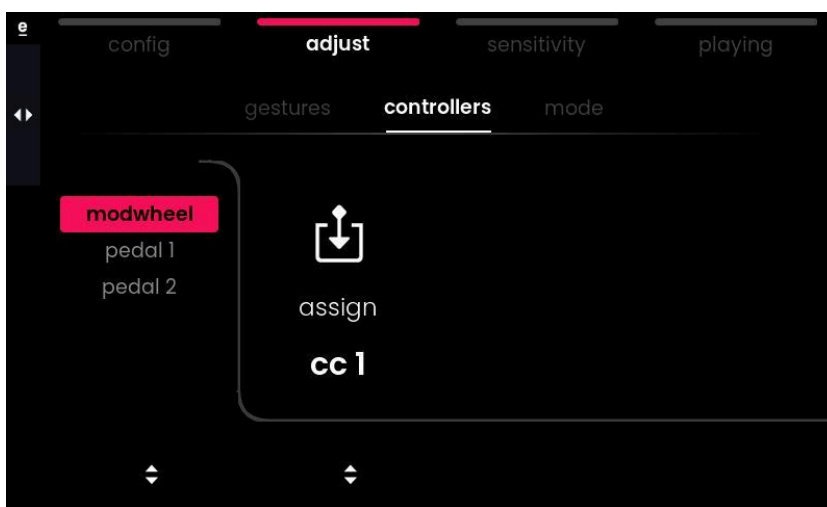
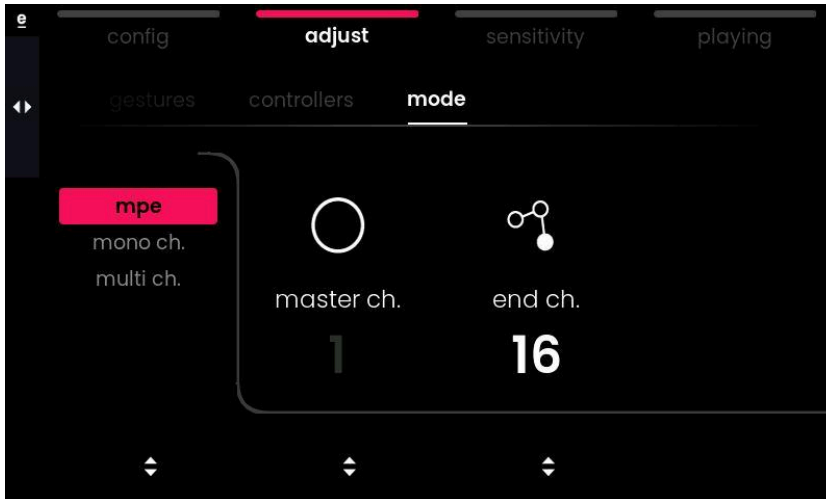This tab defines what is sent by the mod slider and the two pedals.
First, select the controller with Value Encoder 1, then change its parameters with Value Encoders 2 to 4:

assign selects the MIDI message sent by the controller on the left

min sets the minimum value

max sets the maximum value

mode tab

This tab allows you to determine the general MIDI mode and how MIDI messages are distributed across MIDI channel(s) within that mode. It is used to refine the configuration you choose within the config menu when the external software or hardware you wish to control requires it. Find possible adjustments below:

mpe
lets you define the end channel for the 'mpe' configuration. The master channel for global messages must remain 1 as per the MPE specification, but the end channel parameter allows you to reduce the channels used for transferring single notes, e.g. when your target device only has limited polyphony.
Example: When setting the end channel to 13, notes are distributed in a round-robin pattern across channels 2 to 13, resulting in 12 voices of MPE polyphony.

mono ch.
lets you define the single channel on which notes are sent for legacy MIDI configurations like the 'classic keyboard' and 'poly aftertouch' configuration.

multi ch.
lets you define the start and end channel for the 'multichannel' configuration. Example: When selecting start channel 4 and end channel 9, notes will be sent in a round-robin pattern across channels 4, 5, 6, 7, 8, and 9, leaving you with 6 notes polyphony.
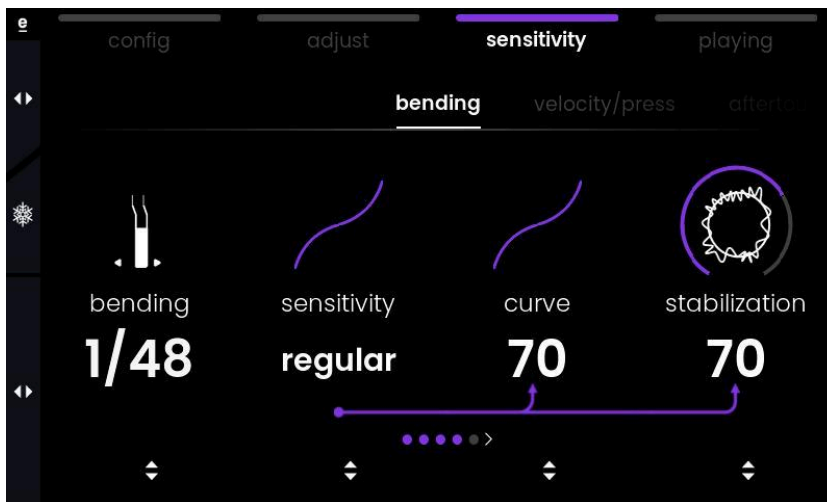
sensitivity menu

The Sensitivity menu of the External MIDI Mode generally offers the same functionality as the sensitivity menu of the Sound Engine Mode.
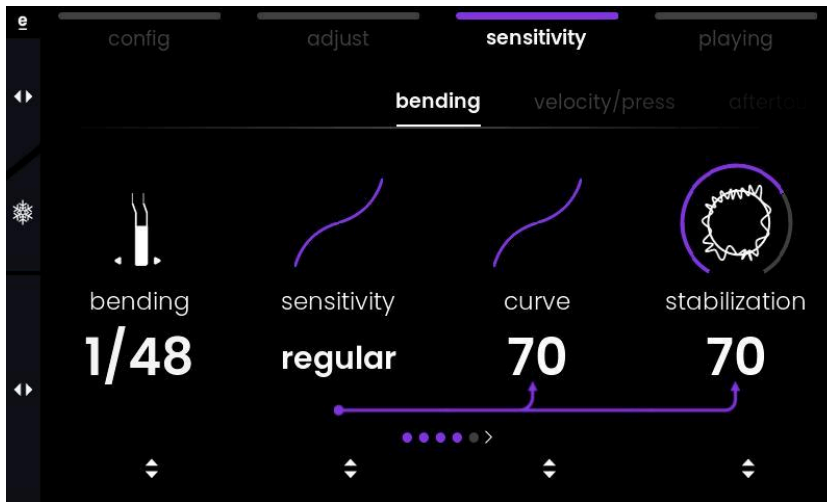
However, there are some specificities in External MIDI mode that are explained below.

bending tab

i The bending range inside the **bending tab** isn't shown as a number of semitones but as a fraction. It works together with the maximum bending range that can only ever be set inside the external software or hardware that you control.

Example: With the maximum bending range set to +-48 semitones in the target device (the most common setting in an MPE environment), 1/48 means that the effective range is 1 semitone.

velocity/press tab
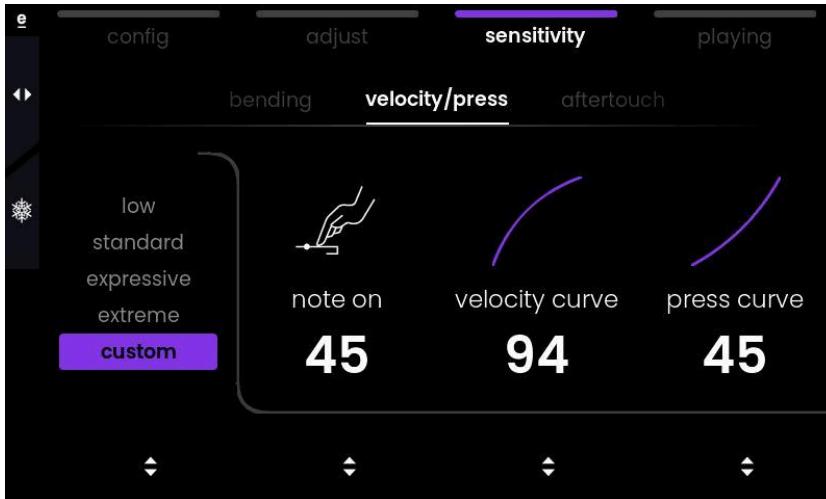
i In External MIDI mode, the **velocity/press tab** features additional velocity parameters. Internally, Osmose doesn't use MIDI Velocity (MPE Strike) at all, but for controlling external devices, MIDI Velocity is derived from the Pressure axis motion.

To adapt the velocity values sent by the arpeggiator of External MIDI mode, you need to change the *press* curve, *not* the velocity curve which controls the velocity of manually triggered keys only.

playing menu

The Playing menu gives access to advanced features that interpret your raw playing gestures in intelligent ways. After accessing the Playing menu with the fourth Menu button, turn Value Encoder 1 to choose either Pressure Glide, the Arpeggiator, or no playing feature at all.

freeze playing function

Pressing the Tab Selector in Playing Menu switches the Playing Freeze ❄ on and off. When Freeze is enabled, the current playing settings will be kept across MIDI configuration preset changes, no matter what is saved in the MIDI configuration you dial up.

pressure glide

Pressure glide in External MIDI mode functions the exact same way as Pressure Glide used in internal Sound Engine mode, except you can use it with any external hardware and software synth that supports MPE.
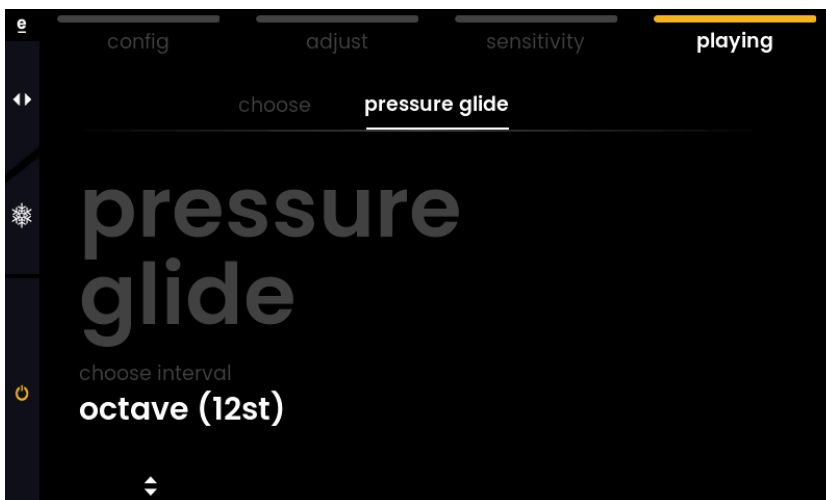

To learn how to use the pressure glide, please refer to the pressure glide section of internal Sound Engine mode.

mpe arpeggiator

The arpeggiator of the External Midi mode functions the same way as the one in internal Sound Engine mode, except it is meant for usage with external hardware or software synths.

To learn how to use the arpeggiator, please refer to the <u>arpeggiator</u> section of internal Sound Engine mode. Please note that arpeggiator presets are saved separately for Sound Engine and External MIDI mode.

i Since an arpeggiator typically plays monophonic lines that don't require the "polyphonic" aspect of MIDI Polyphonic Expression that much. Osmose's arpeggiator can actually sound very lively with non-MPE, legacy instruments as well. Just bear in mind that as soon as notes are overlapping in a non-MPE context, parameters like pitch bend will stay global and affect all sounding notes at once.
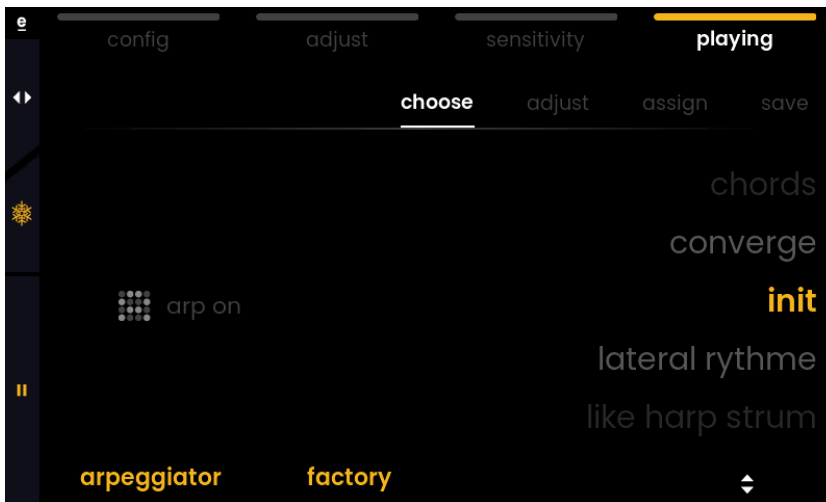

i The internal sound engine of Osmose doesn't use MIDI Velocity (MPE Strike) at all, but when using the arpeggiator of External MIDI mode, MIDI Velocity is derived from the Pressure position of a key: A slightly pressed key will send minimal MIDI velocity and a key that is pressed to the maximum of the Pressure key travel (no need to enter Aftertouch) will send maximum velocity.

global settings

The global settings are accessible by pressing the Mode button, then Value Encoder 4 below the screen (the one below the on-screen cogwheel (⚙)).

workflow tab
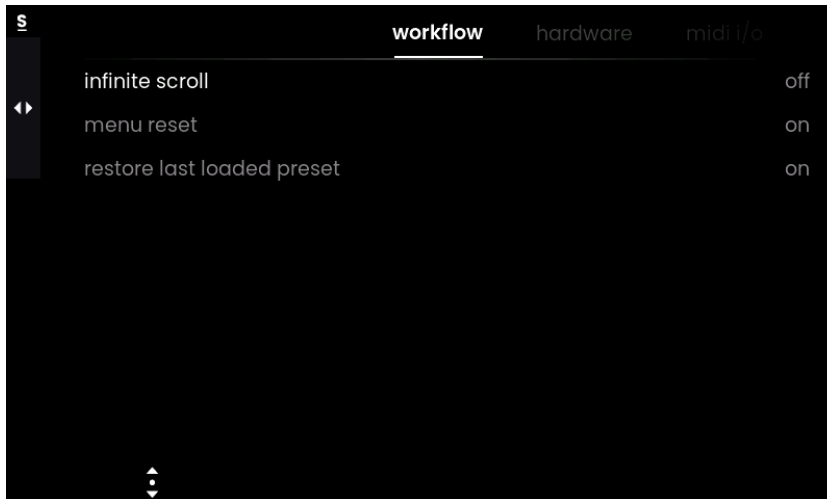
infinite scroll - when enabled, you will be able to pass from the first to the last tab of a menu and vice versa without the need to scroll through tabs in between. See the first screenshot below with infinite scroll set to off, and the second with infinite scroll enabled.
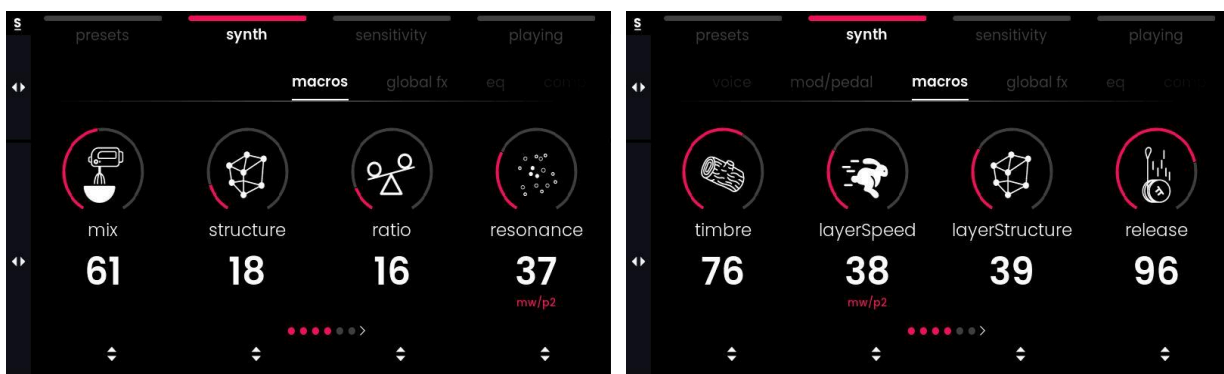
menu reset - when enabled, upon switching between menus, the navigation will always bring you back to the first tab of a menu instead of showing the tab that you had last accessed within that menu.

restore last loaded preset - when enabled, the last sound preset that was active before shutting down Osmose will be dialed up upon booting Osmose.

hardware tab
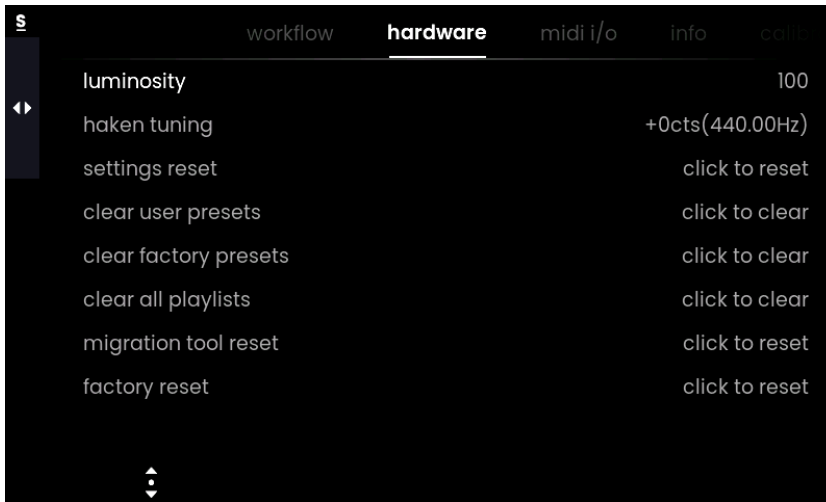
luminosity changes the brightness of the screen.

haken tuning changes the global tuning of the internal sound engine in cents.

settings reset resets all the parameters in the global settings to their default factory values.

clear user presets deletes all presets in the user bank.

clear factory presets deletes all presets in the factory bank.

clear all playlists deletes all playlists.

migration tool reset prepares Osmose for a clean downgrade to the old filesystem of firmware version 1.x. Not to be used without instructions by our technical support staff.

factory reset resets the Osmose firmware to its factory state without any presets installed. A factory reset includes all sound presets, the global settings, the default sensitivity, the arpeggiator presets, as well as all your MIDI configuration user presets and arpeggiator presets of External MIDI mode. To restore factory sounds, you need to use the advanced mode of the application OsmoseUpdater ("push osmose factory collection").

midi i/o tab

Two USB MIDI ports will show up on your USB host device (usually your computer) when Osmose is connected: Osmose Play and Osmose Haken, see also: connect Osmose to your computer. Adding the DIN MIDI 5-pin jacks to the equation, Osmose has a total of three MIDI ports. The 'midi i/o' tab lets you adjust the routing of the inputs and outputs of Osmose's MIDI ports to better suit your needs.

ext clock source selects the MIDI port used as the MIDI clock source for synchronization of the arpeggiator. Available clock sources are:
1/3 usb play (default)
2/3 usb haken
3/3 din

usb haken mode adjusts only the data sent on the USB MIDI Osmose Haken port. The input of the USB MIDI Haken port is always connected to the Haken sound engine no matter the MIDI I/O configuration. This allows you to control the DSP of the Osmose from an external USB host source using MPE and MPE+.

By default, no data is outputted on the Haken port. This avoids receiving every message twice in applications that activate all recognized USB MIDI ports by default.

Data outputted on the Haken port:
1/3 note only   MPE+
2/3 note & matrix   MPE+ & Haken Editor communication
3/3 disabled (default)   none

⚠️The MIDI data used for communication with the Haken Editor shouldn't be recorded for playback. Filter out all messages on MIDI channel 15 & 16 to avoid recording it in the first place.

💡 When the "haken local control" parameter is set to "off", the data sent on the USB MIDI Haken port will be optimized for recording in a DAW.

haken local control allows you to cut the communication between Osmose's keybed and the Haken sound engine. This is useful if you want to route the MIDI keyboard data through a DAW before sending it to the sound engine. This parameter also alters the behavior of the USB MIDI Haken output (see "usb haken mode" above).

on (default) : Osmose's keybed is connected to the sound engine
off : Osmose's keybed is disconnected from the sound engine

💡 In order to avoid MIDI loops, local control will be switched off automatically whenever the sound engine detects the DSP ping (CC117) arriving on the USB MIDI Haken Port (Port 2) input. The DSP ping is always sent when haken local control is enabled.

din mode adjusts the behavior of the 5-pin DIN style jacks. Unless you choose the specific option "5/5 cvc" (see below), the DIN MIDI output will always send the keyboard generated MIDI data as set up in the External MIDI mode. It is the same data that is sent on the USB MIDI Port 2..

1/5 default (default) : DIN MIDI outputs the keyboard-generated MIDI data as set up in the External MIDI mode (i.e. the same data that is sent on the Osmose Play port).

2/5 dsp in : just like "default", but additionally, the DIN MIDI input is connected to the Haken sound engine allowing you to play the EaganMatrix from an external DIN MIDI device using MPE data.

3/5 thru : just like "default", but additionally, any MIDI data that enters in the DIN MIDI input will be forwarded to the DIN MIDI output as well.

4/5 dsp in + thru : combines options 2/5 and 3/5.

5/5 cvc : allows you to use Haken Audio's Continuum Voltage Converter (CVC) device to control analog synthesizers from the Osmose. The DIN MIDI jacks establish a direct connection between the EaganMatrix and the CVC, using Haken Audio's proprietary i2c protocol. 🐞 Known flaw: This option disables the External MIDI Mode functionality on USB MIDI Port 1 for internal routing reasons.

midi i/o use cases

To help you understand the options of the midi i/o tab, find below some common use cases. Each use case is illustrated with a routing diagram for the corresponding MIDI I/O parameter settings (black box in the lower right).

ℹ️ If you wish to record a performance on Osmose as MIDI and playback an authentic (or edited) recreation of this into the device later, then use the USB MIDI *Haken* port (Port 2). The *Haken* port will always send and receive data meant for the EaganMatrix. Using the *Play* port instead risks that your original performance isn't reproduced correctly.

default configuration

Use the default configuration when playing Osmose as a standalone unit or when controlling an external synth (plugin or hardware) via the USB Play port or the DIN MIDI port.
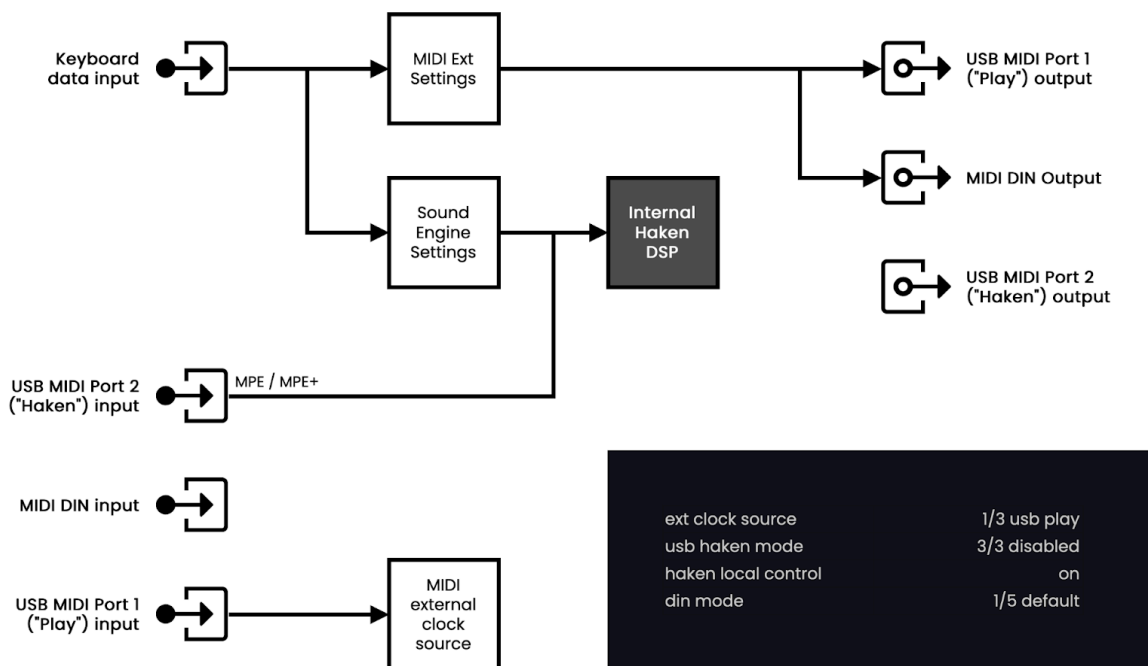
play and record eaganmatrix through your daw

These settings are recommended if you wish to record and later playback sequences played on the keyboard. They involve routing your playing through your DAW before sending it to the sound engine. It is the classic workflow of listening to your performance 'as recorded on tape' instead of monitoring the source directly.
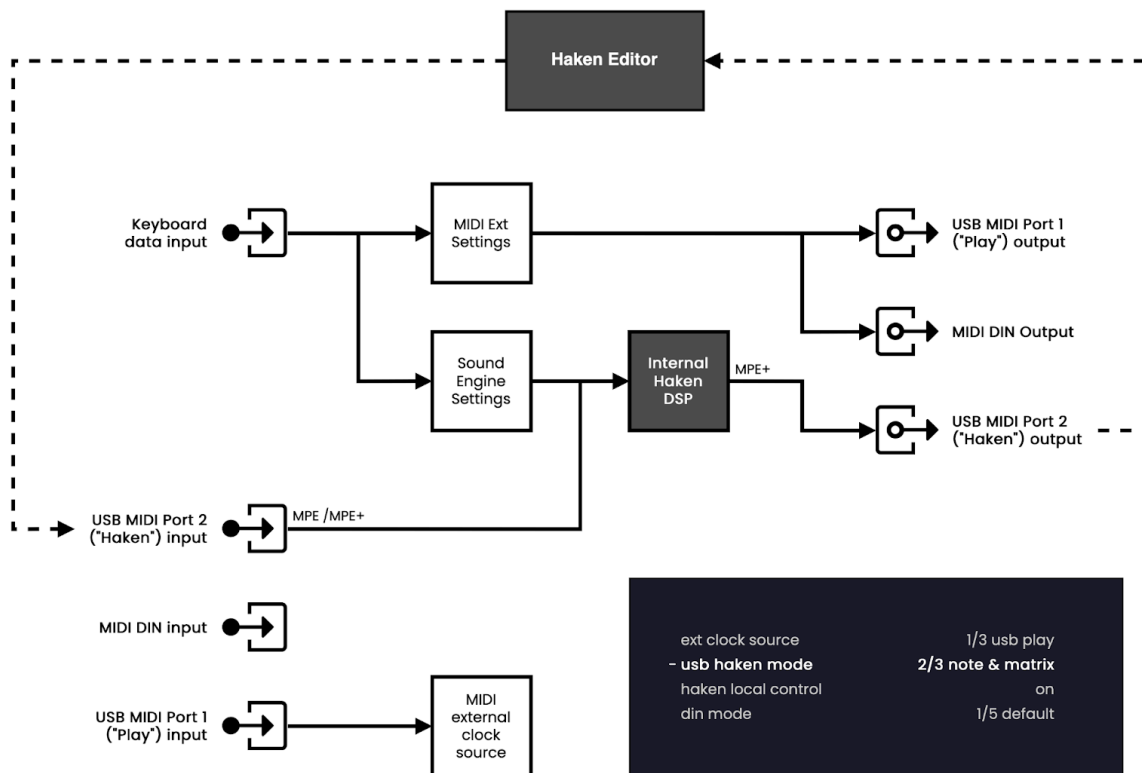
For detailed instructions on how to integrate Osmose as an external hardware instrument into your DAW, please refer to our online knowledgebase:
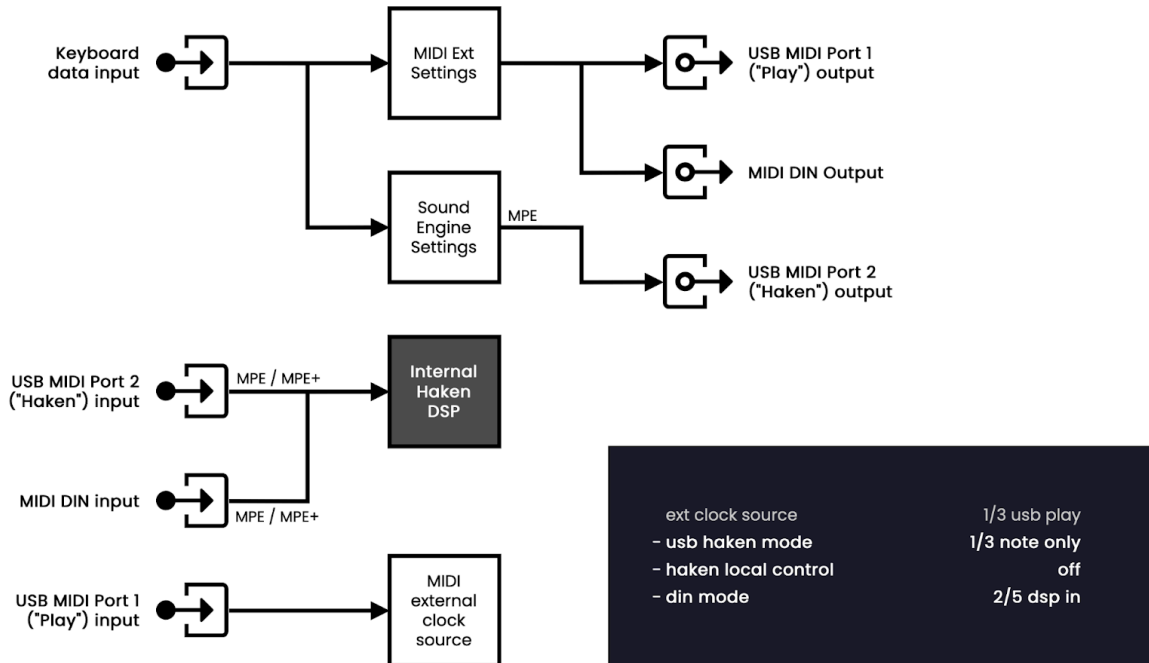🔗 Osmose DAW tutorials
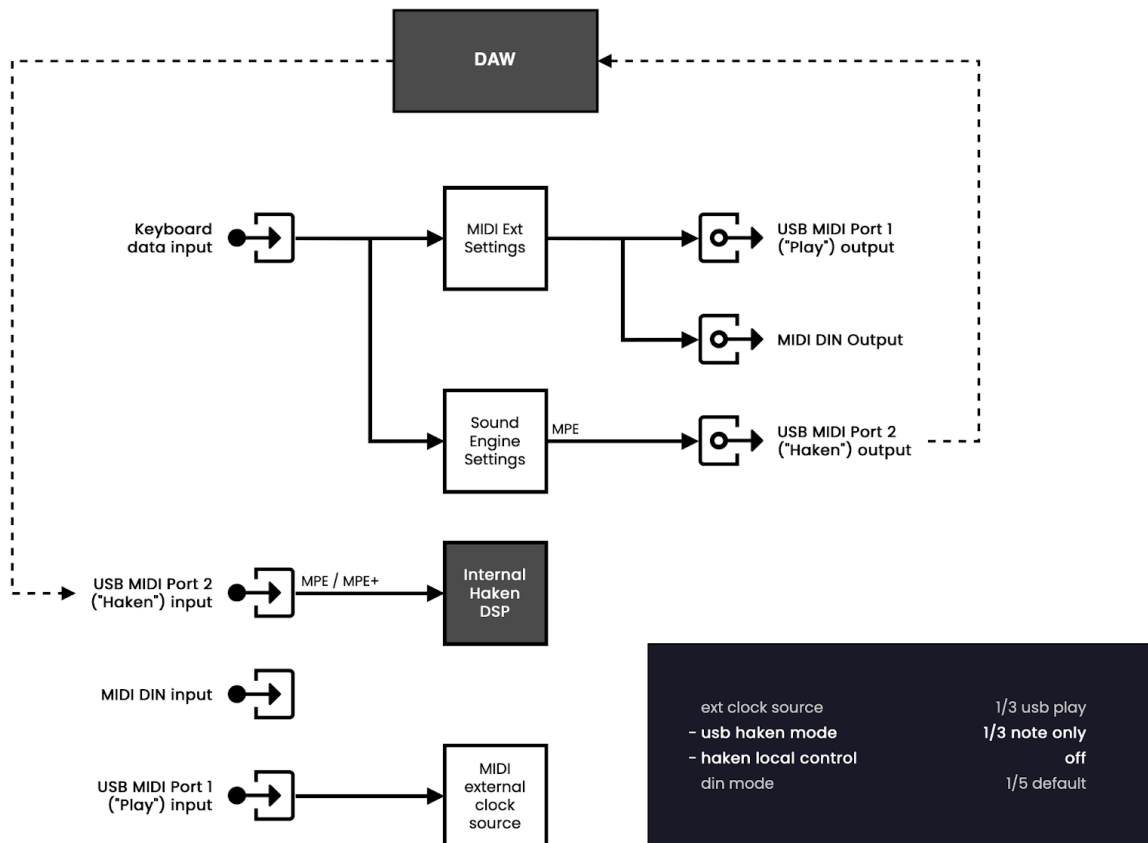
use the haken editor

This setting is required when using the Haken Editor to create and modify EaganMatrix presets in-depth. Also see: 🔗 Connecting Osmose to the Haken Editor

trigger the eaganmatrix from an external device

Use these settings to trigger the internal sound engine from an external source. They allow using the DIN MIDI input in addition to the USB Haken input (Port 2). Read Triggering the EaganMatrix from an external device for important information regarding the MIDI data expected by the EaganMatrix.

| ext clock source | 1/3 usb play |
- usb haken mode	1/3 note only
- haken local control	off
- din mode	2/5 dsp in

sync with a midi clock thru chain

Use these settings to synchronize Osmose's clock as part of a MIDI DIN Thru chain along with other synthesizers.

- ext clock source	3/3 din
usb haken mode	3/3 disabled
haken local control	on
- din mode	3/5 thru
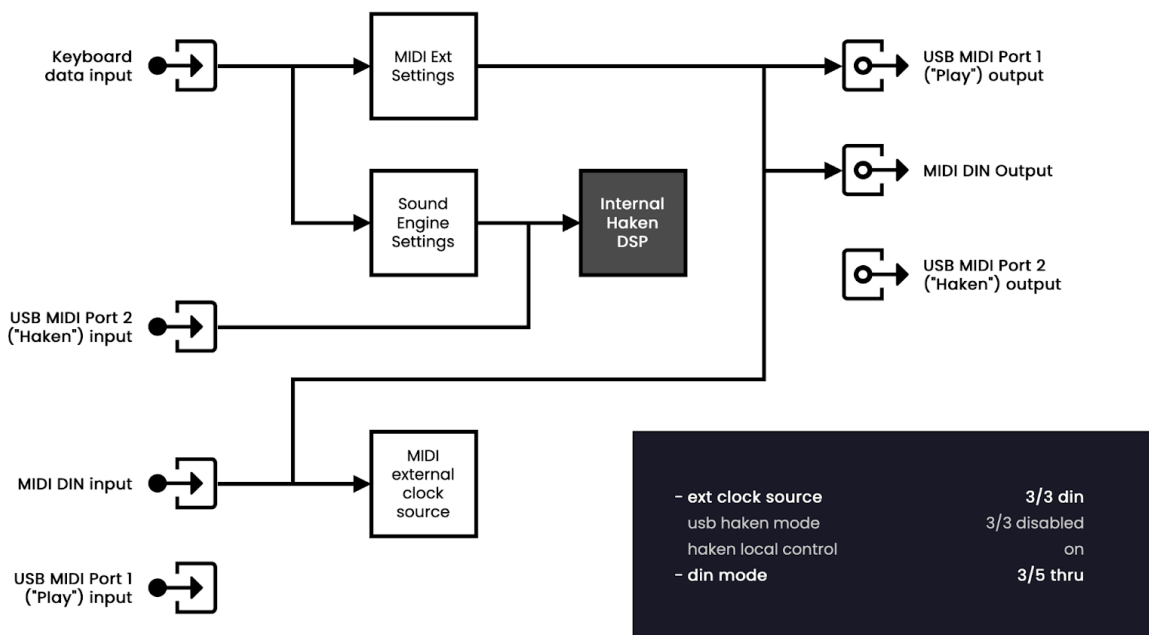
use the haken cvc

Use these settings when you have connected a Haken CVC to control an external synthesizer with a control voltage signal. Please be aware that you must plug a specific i2c cable provided by Haken Audio (not a regular MIDI cable) to make this setup work. A regular DIN MIDI cable only has 3 pins actually connected, while i2c uses all 5 pins/wires.
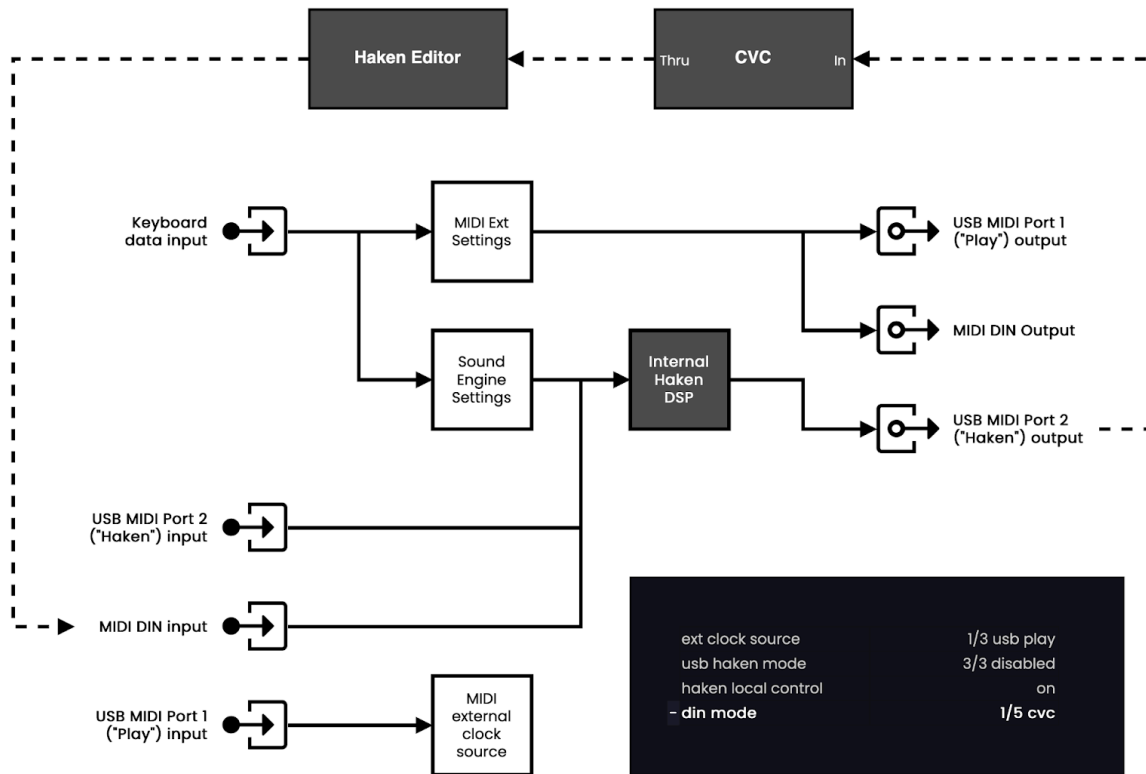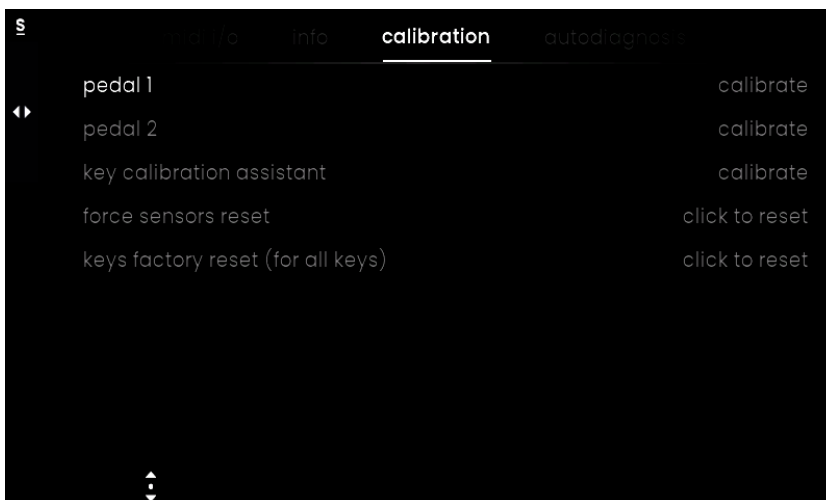
info tab

osmose vers. displays the version of the operating system running on your Osmose.

haken vers. displays the version of the EaganMatrix DSP firmware. This also includes the factory preset database.

calibration tab

pedal 1 / pedal 2 launches the calibration of the pedal inputs. For more details, see pedal calibration.

key calibration assistant allows the manual calibration of individual keys by defining their vertical, left, and right maximum positions. The assistant allows you to correct irregular behavior of single keys.

force sensors reset allows triggering the sensor calibration that usually happens during booting without the need to switch off your unit. It can be useful to troubleshoot or analyze random errors with sensor recognition.

keys factory reset (for all keys) allows resetting all key calibration data to the factory state. This will undo any manual calibration done in the meantime. If you wish to only reset single keys to their factory state, use the key calibration assistant instead.

pedal calibration

compatibility and recommendations

There is no established electrical norm for pedals in the industry, so only a selection of pedals will work well with Osmose. Here are the ones that we found to work fine:

Behringer FC600 [RTS assignment]
Clavia Nord Single Sustain
Dunlop Volume X Mini
Korg XVP-10
Lead Foot LFD-2
Moog EP-3 [mode: other, knob at max.]
M-AUDIO SP-2
M-AUDIO EX-P [mode: other, knob set low]
Nektar NX-P Universal Expression Pedal [switch set to "2"]
Roland DP-10 [Switch]
Yamaha FC3A
Yamaha FC4A
Yamaha FC7

Don't hesitate to share a recommendation with us if you find a pedal that works great but isn't on the list yet.

⚠️ When playing the Internal Sound Engine, we recommend using expression or half-damper pedals instead of on/off switches with Osmose. This is due to how the sustain works in the EaganMatrix:

In the EaganMatrix, sustain/sostenuto holds the actual pressure of a sound as if you keep your fingers in that position.
Often, presets are programmed to not only change the intensity of the core sound but also produce an additional sound aspect, e.g. some strings scratching or other mechanical noises when the pressure value is changed.
Using an on/off switch type pedal for sustain can trigger this "noisy" portion of a sound in an unnatural sounding way because values that are expected to move continuously jump between minimum and maximum all of a sudden.
Using continuous expression or half-damper pedals will avoid glitchy noises and

produce smoother results because they change the pressure value in a continuous, non-abrupt manner.
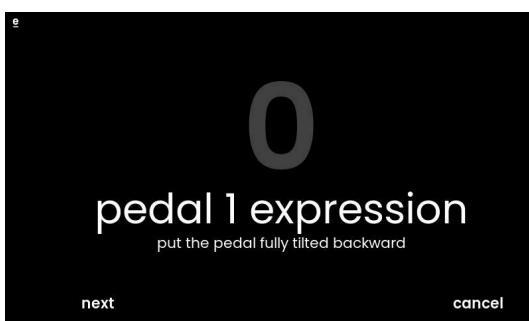
calibration procedure
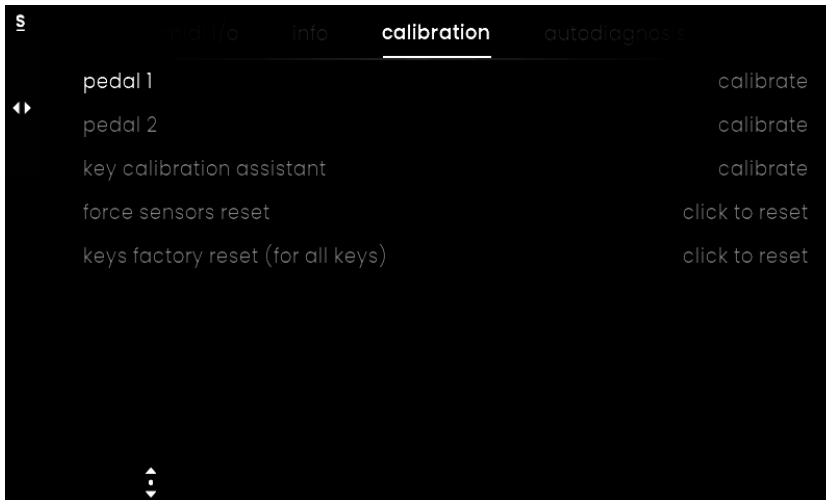
Turn Value Encoder 1 to select the pedal input your pedal is connected to, and then click to start the calibration process.

First, select whether you have connected an on/off switch (pedal sustain) or a continuous or half-damper pedal (pedal expression).

Make sure your pedal is at the minimum position (or not pressed for on/off switches), then press 'next'.

Make sure your pedal is at maximum position (pressed for on/off switches), then press 'next'.

The last page of the calibration process lets you check whether you are able to go through values from 0 to 127 smoothly. Click on confirm if all is okay.

advanced users

further documentation

For advanced use cases like establishing a connection with the Haken Editor, triggering Osmose's sound engine from an external source, switching sounds with Program Change messages, and remote-controlling parameters with MIDI CC messages, please refer to our online knowledge base:

🔗 Osmose Online Manual - Advanced Users

troubleshooting

troubleshooting knowledge base

If you encounter technical issues, please start by searching our online knowledgebase for a solution. When still stuck, please submit a ticket to our Osmose tech support team:

🔗 Osmose Online Knowledgebase - Technical Issues