Erae Sound

User Manual

Embodme

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1 Introduction

1.1 What is Erae Sound?

Erae Sound is a software synthesizer plugin by Embodme. It combines a dual analog generator engine with a deep modulation system and built-in effects, all designed to work with your Erae. Erae Sound runs inside Erae Lab, and as a VST3 or AU plugin in your DAW where the format is supported.

1.2 Key Features

- **Dual analog generator engine**: two independent generators, each with two oscillators, two filters, its own mix, pan and volume, feeding a shared effects section.
- **Per-parameter modulation**: every synthesis and effects knob has its own envelope and LFO depth, plus depth faders for pitch, velocity, pressure, slide and release velocity, and for Erae layout sources such as faders and keyboard position.
- **Modulation linking**: share envelope, LFO and curve settings between parameters with link groups A, B, C and D. Cross-modulation lets one source control another source's depth.
- **Four-slot effects rack**: up to four effects chosen from Distortion, Chorus, Flanger, Phaser, Delay, Reverb, Shimmer, Compressor and Param EQ, with per-generator sends and a direct output path.
- **Erae integration**: layout-aware modulation sources, presets that carry their Erae layout, and slot sync with your Erae.
- **Preset library**: browse, search, filter, tag, load, save and import factory and user presets, or load only one generator or the effects rack from a preset.
- **MPE support**: per-voice pitch, pressure and slide for expressive polyphonic performance.

1.3 What's New in This Beta

This beta adds and changes the following.

- **Save to your Erae tip:** when a preset you load is not on any slot of your Erae yet, a tip above the slot numbers shows how to save it: hold a slot number until its ring fills. With Sync on, choosing that slot on your Erae brings the preset back. To see it again later, click **Show tips again** in Erae Lab's settings. See Erae Integration.

- **Slots are filled from Erae Sound only:** to save a sound's layout to a slot, hold the slot number in Erae Sound. Holding a layout button on Erae 2 does not copy the previewed preset into that slot.
- **Changed presets are marked:** editing a preset's layout on the Erae or in Erae Lab marks the preset as changed (the asterisk after its name), so you know saving writes the new layout into it.
- **Diagnostics:** the **Diagnostics** setting in Erae Lab also covers Erae Sound. See Troubleshooting.

1.4 Who This Manual is For

This manual is written for musicians and sound designers who want to get the most out of Erae Sound. Whether you are building patches from scratch or exploring the preset library, each chapter walks you through a specific area of the plugin.

1.5 Manual Conventions

Throughout this manual:

- Parameter names appear in **bold** (for example **FREQ**, **RESO**).
- Parameter values appear in `code formatting` (for example `50%`, `Serial`).
- Cross-references link to other chapters, such as Generators or Modulation.

> **Tip:** Look for tip callouts like this one for shortcuts and best practices.

> **Tip:** Hover over any control in Erae Sound to see a short help text describing what it does.

2 Installation

Erae Sound is installed by Erae Lab. To install or repair it, use **Reinstall components** in Erae Lab's settings.

2.1 System Requirements

	Minimum	Recommended
macOS	11.0 (Big Sur) or later, Intel or Apple Silicon (universal binary)	macOS 12 or later
Windows	Windows 10 (64-bit)	Windows 10/11 (64-bit)
Linux	Ubuntu 20.04 or equivalent, x86_64	Ubuntu 22.04 or later
RAM	4 GB	8 GB or more
CPU	Any modern multi-core processor	Quad-core processor or better

A DAW that supports VST3 (all platforms) or AU (macOS) is required for plugin use. To use Erae Sound without a DAW, run it inside Erae Lab.

2.2 Plugin Formats

Erae Lab installs the Erae Sound plugin formats available for your platform:

- **VST3**: works in any VST3-compatible DAW on macOS, Windows and Linux.
- **AU (Audio Unit)**: macOS only. Works in Logic Pro, GarageBand and other AU hosts.

You do not need to choose between them. Erae Lab installs all available formats at once.

2.3 Installation Paths

Erae Lab installs the plugin in the standard locations that DAWs scan:

2.3.1 macOS

Format	Location
VST3	`~/Library/Audio/Plug-Ins/VST3/`
AU	`~/Library/Audio/Plug-Ins/Components/`

2.3.2 Windows

Format	Location
VST3	`%ProgramFiles%\Common Files\VST3\`

2.3.3 Linux

Format	Location
VST3	`~/.vst3/`

2.4 First Launch

2.4.1 Licensing and Demo Mode

The first time you open Erae Sound without a license, the **Erae Sound License** window appears.

- **Activate by email**: enter the email address you used for your purchase and click **Send Activation Email**. Open the email on the same computer, click the link inside, then return to Erae Sound and keep the window open while it activates.
- **Paste a token**: if you received an activation token, paste it into the field under **OR PASTE TOKEN DIRECTLY** and click **Apply Token**. A token only works on the machine it was issued for.
- **Demo**: click **Try Demo (5 min)** to start a five minute session. During the demo, saving and importing presets are disabled. When the time runs out, the license window returns: choose **Restart Demo**, **Log In** or **Purchase**.
- **Machine limit**: if your account has reached its activation limit, the **Machine Limit Reached** window lists your registered machines. Click **Deauthorize** next to one of them to free a slot, then activate this machine again.

Once activated, the license window shows your account and this machine, with a **Log Out** button.

If activation fails, check your internet connection (activation needs it), request a fresh activation email if needed, look in your spam folder, and retry.

2.4.2 Loading in a DAW

Most DAWs scan for new plugins at startup. If you installed Erae Sound while your DAW was open, trigger a manual rescan:

- **Ableton Live**: go to **Preferences > Plug-Ins** and click **Rescan**.
- **Logic Pro**: open **Logic Pro > Settings > Plug-in Manager** and click **Reset & Rescan Selection**.
- **Reaper**: go to **Options > Preferences > Plug-ins > VST** and click **Re-scan**.
- **Bitwig Studio**: go to **Settings > Plug-ins** and click **Rescan**.
- **FL Studio**: go to **Options > Manage plugins** and click **Find plugins**.

After the scan, look for **Erae Sound** in your DAW's instrument list and insert it on a MIDI track.

2.4.3 Running Inside Erae Lab

There is no separate Erae Sound application to install. To use Erae Sound without a DAW, open Erae Lab and run Erae Sound from there.

In this mode, Erae Lab owns the audio, MIDI and device setup. See Quick Start for a guided walk-through.

2.5 Troubleshooting

2.5.1 Plugin does not appear in my DAW

1. **Rescan your plugins.** Close and reopen your DAW, or use its manual rescan option (see above).
2. **Check the plugin path.** Make sure the plugin is in the folder listed in the Installation Paths tables above.
3. **Confirm format compatibility.** Logic Pro loads AU but not VST3. Ableton Live and most other DAWs use VST3.
4. **Reinstall components from Erae Lab.** If the files are missing, open Erae Lab and use **Reinstall components**.

2.5.2 macOS Gatekeeper warning

Erae Sound is code-signed and notarized with Apple, so it should not trigger Gatekeeper warnings. If you do see a message saying the software is from an unidentified developer or cannot be verified:

1. Open **System Settings > Privacy & Security**.
2. Scroll down to the **Security** section.
3. Find the message about Erae Sound being blocked and click **Open Anyway**.
4. Confirm when prompted.

You only need to do this once.

2.5.3 No sound when running inside Erae Lab

Make sure Erae Lab is using the correct audio output and MIDI input, then confirm that the master **Vol** knob in Erae Sound's header is turned up. See Troubleshooting for more detailed checks.

3 Quick Start

3.1 Play Your First Sound in 2 Minutes

1. **Open Erae Sound**: run it inside Erae Lab, or load it as a plugin on a MIDI track in your DAW.
2. **Select a preset**: in the header, use the left and right arrows next to the preset name to step through presets, or click the preset name to open the full list.
3. **Play some notes**: play your Erae or another MIDI controller, or send notes from your DAW's piano roll.
4. **Explore the tabs**: click **Synth** or **FX** in the header to shape the sound further.

That is all you need to get started.

3.2 Modulate a Parameter

Erae Sound modulation is destination-first: select the parameter you want to control, then set how much each source affects it.

1. **Select the destination**: click the knob you want to modulate, for example **FREQ** in a filter.
2. **Find the source**: in the Modulation Display below the generators, locate **ENV**, **LFO**, **PRES**, **SLIDE**, or another source from your Erae layout.
3. **Set the amount**: drag up or down inside that source's cell. Up adds positive modulation, down adds negative modulation, and the center line is zero.

You do not drag a modulation source onto a knob. Selecting the knob chooses the destination; the depth fader in the source cell sets the amount.

3.3 Main Tabs

Erae Sound is organized into two main tabs in the header:

- **Synth**: where you shape your two sound generators and set up modulation. See Generators and Modulation.
- **FX**: where you add and configure effects such as reverb, delay and distortion. See Effects.

3.4 Where to Go Next

- For a tour of every on-screen element, head to Interface Overview.
- To save and manage presets, see Presets.
- If something is not working as expected, check Troubleshooting.

4 Interface Overview

This chapter walks you through the main areas of the Erae Sound window. Every screen shares the same header bar at the top and a content area below it. The header gives you access to the tabs, presets, the preset library, the modulation overview and the output level, whichever tab you are working in.

Erae Sound full window

4.1 Window Layout

Erae Sound uses a fixed 16:10 aspect ratio. The default size is 1280 x 800 pixels. You can resize the window and the whole interface scales proportionally, from 800 x 500 up to 2560 x 1600.

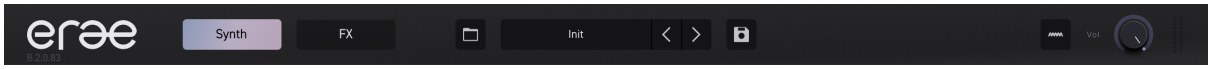
The window is divided into two main regions:

Region	Position	Purpose
Header bar	Top strip	Tabs, presets, library, modulation overview, master output
Content area	Everything below the header	The Synth or FX controls, the Modulation Display and the bottom panels

A help bar appears at the bottom of the window with a short description of the control under your mouse pointer.

4.2 Header Bar

The header bar spans the full width of the window. From left to right it holds the Erae logo, the tab selector, the library button, the preset navigation pill, the save button, the modulation overview button, the **Vol** knob and the VU meter.



Header bar detail

4.2.1 Tab Selector

The tab selector sits to the right of the logo and shows two tabs: **Synth** and **FX**.

- The active tab is highlighted in the accent color.
- Clicking a tab switches the upper part of the content area immediately.

The **Synth** tab is selected when you first open the plugin.

> **Tip:** You can switch tabs at any time without losing your work. All parameter changes are kept across tabs.

4.2.2 Library Button

A square button with a folder icon sits to the left of the preset navigation pill. Clicking it opens the **preset library** in place of the generators or effects, where you can browse, search, filter and load presets. Click the button again, or click the **Synth** or **FX** tab, to go back. See Presets for full details.

4.2.3 Preset Navigation Pill

The preset navigation pill is a joined control group with three segments:

Segment	What it does
Preset name	Shows the name of the loaded preset (for example `Init`). Click it to open a list of all presets and jump to one. An asterisk (*) after the name means the preset has unsaved changes.
Previous arrow	Loads the previous preset in the list
Next arrow	Loads the next preset in the list

The arrows stop at the first and last preset of the list. Loading another preset replaces your current sound right away, so save first if you want to keep your changes.

Right-click the pill to open the preset menu: **Import Preset…**, **Open Presets Folder**, **Save** and **Save As…**.

4.2.4 Save Button

A square button with a floppy disk icon sits to the right of the preset pill. Clicking it enters **edit mode**:

1. The preset name area becomes an editable text field, filled with the current preset name.
2. A checkmark button appears at the right of the field.
3. Type a new name (or keep the current one) and press **Enter** or click the checkmark to save.
4. Press **Escape** or click outside the field to cancel.

When a save completes, the button briefly flashes in the accent color.

A few rules apply:

- The name cannot be empty.
- Keeping the name of a factory preset is refused, because factory presets are read-only. Type a new name to save your own copy.
- Choosing the name of another existing preset is refused.

If a rule is not met, a small warning appears below the preset pill.

In the right-click menu, **Save** overwrites the current user preset directly, and **Save As…** opens the same name field to create a new user preset. **Save** is unavailable for factory presets. See Presets.

4.2.5 Modulation Overview Button

The button with a modulation icon, to the left of the **Vol** label, opens the **Modulation Overview**, which lists every active modulation in your patch. See Modulation Overview.

4.2.6 Volume Knob

Labeled **Vol**, this knob controls the master output level of Erae Sound. It ranges from silence at `0%` to full output at `100%`, follows an audio taper, and starts at `100%`.

4.2.7 VU Meter

The VU meter is the rightmost element in the header. It shows the stereo output level as two columns of small dots, one for the left channel and one for the right.

- **10 rows** per channel, spanning from `-48 dB` (bottom) to `0 dB` (top).
- The top dots change color to warn you that you are approaching clipping.
- A **peak hold** dot marks the loudest recent level for about one second before fading.

4.3 Content Area

The content area fills the rest of the window below the header. It is divided into three horizontal zones stacked top to bottom. The top zone depends on the active tab; the two lower zones are always there.

4.3.1 Synth Tab

Synth tab layout

Zone	What it contains
Generator section (top)	Two side-by-side generator panels, Generator A on the left and Generator B on the right. Each has two oscillators, two filters and a control bar.
Modulation Display (middle)	One cell per modulation source for the selected parameter, grouped as **MODULATION** (ENV, LFO), **MPE** (PITCH, VEL, PRES, SLIDE, RELVEL) and one group per element of the active Erae layout.
Bottom panels	From left to right: the **Envelope** panel, the **LFO** panel, the curve panel (titled after the selected source, for example **Pressure Curve**), the **VOICE** panel (voice and split settings) and the Erae layout thumbnail with its slot bar.

Clicking any knob selects it as the modulation destination: the Modulation Display and the Envelope, LFO and curve panels then show that parameter's modulation.

> **Tip:** The Modulation Display and the bottom panels are shared between the Synth and FX tabs. Selecting a parameter in either tab updates both sections.

For each generator panel, see Generators. For modulation, see Modulation.

4.3.2 FX Tab

FX tab layout

The FX tab keeps the same three zones, with the effects rack in the top zone:

Zone	What it contains
Effects rack (top)	The **Direct Out** panel on the left, then four effect slots side by side. Each slot holds one effect with its own knobs.
Modulation Display (middle)	Same as the Synth tab, showing the sources for the selected effect parameter.
Bottom panels	Same panels as the Synth tab.

For each effect type and its parameters, see Effects.

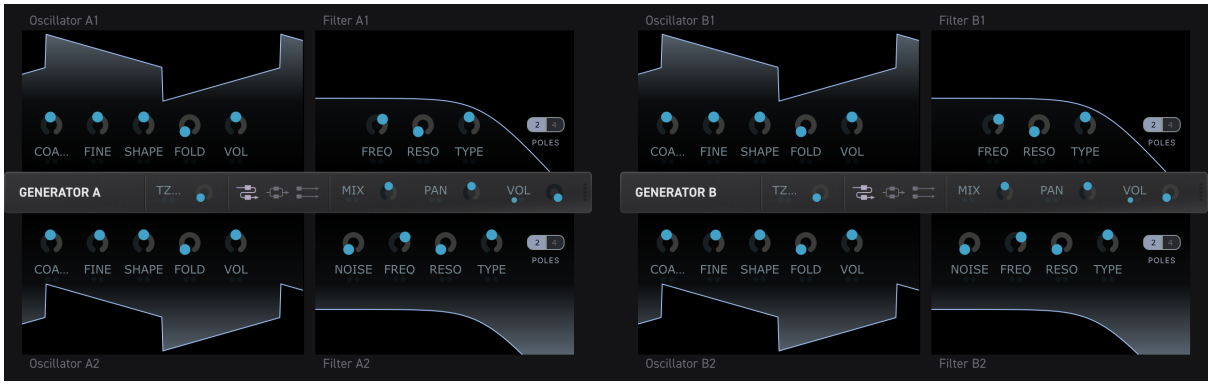
4.4 What's Next

Now that you know your way around the window, the following chapters explore each section in depth:

- Generators: oscillators, filters and routing inside each generator.
- Modulation: envelopes, LFOs, link groups and cross-modulation.
- Effects: the four-slot effects rack and every effect type.
- Erae Integration: using Erae Sound with your Erae.
- Presets: browsing, saving and organizing your sounds.

5 Generators

Erae Sound features two identical analog synthesis engines, **Generator A** (left) and **Generator B** (right), that run side by side. Each generator produces its own signal and sends it to the output and to the effects rack. This chapter covers every control inside a generator.



Generator section overview

5.1 Generator Layout at a Glance

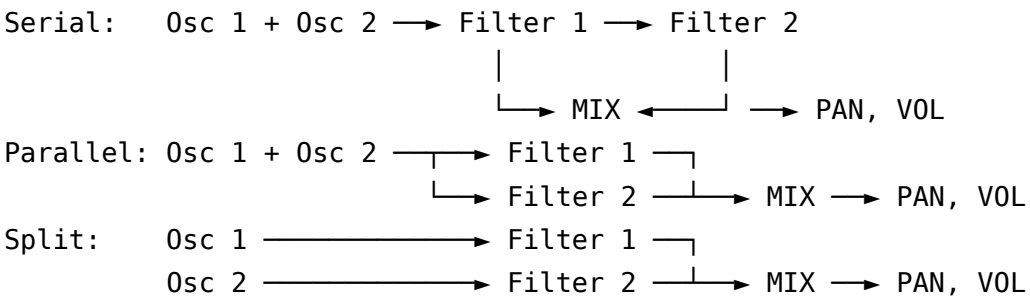
Each generator is organized into five areas:

Area	Position	Contents
Oscillator 1	Top left	Waveform visualizer and 5 knobs
Filter 1	Top right	Frequency response visualizer, 3 knobs and the **POLES** switch
Control Bar	Middle strip	Generator label, **TZFM**, routing buttons, **MIX**, **PAN**, **VOL** and a small level meter
Oscillator 2	Bottom left	Waveform visualizer and 5 knobs (mirrored)
Filter 2	Bottom right	Frequency response visualizer, 4 knobs and the **POLES** switch

The sections are titled after their generator: **Oscillator A1**, **Filter A1**, **Oscillator A2** and **Filter A2** for Generator A, and **Oscillator B1** to **Filter B2** for Generator B. The control bar shows **GENERATOR A** or **GENERATOR B**. Both generators have the same controls and signal flow, with completely independent settings.

5.2 Signal Flow

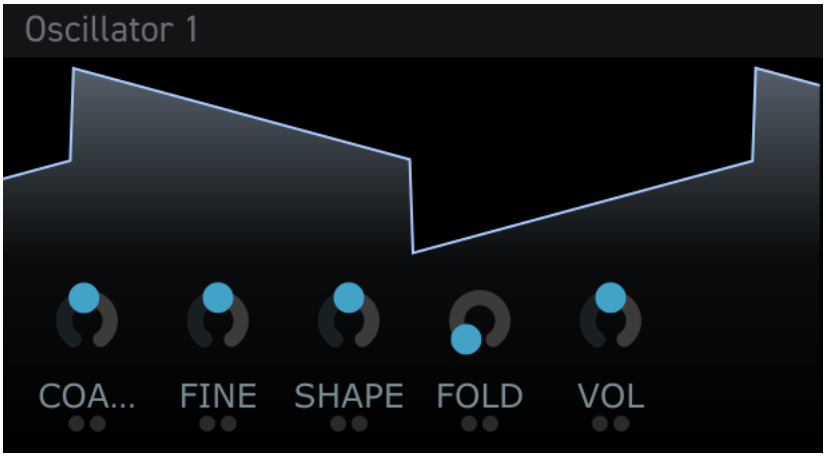
Each generator has three filter routing modes: **Serial**, **Parallel** and **Split**.



1. **Oscillator 1** and **Oscillator 2** each produce a waveform, shaped by **SHAPE** and **FOLD**. Their levels are set by their own **VOL** knobs.
2. In **Serial** and **Parallel**, the two oscillators are summed before filtering. In **Split**, they stay separate.
3. The oscillator signal reaches **Filter 1** and **Filter 2** according to the routing mode (see Filter Routing). Filter 2 can also blend in noise with its **NOISE** knob.
4. The **MIX** knob blends the Filter 1 and Filter 2 outputs.
5. **PAN** places the generator in the stereo field and **VOL** sets its output level.

5.3 Oscillators

Oscillator 1 and Oscillator 2 share the same five controls. Each oscillator has a real-time waveform visualizer.



Oscillator panel

5.3.1 Parameters

Knob	Description	Range	Default
COARSE	Pitch in semitones, shown as a note name	`0` to `127` (C-1 to G9)	`60` (C4)
FINE	Fine tuning	`-1.00` to `+1.00` semitone	`0.00` (Oscillator 2 in a new sound: `+0.10`)
SHAPE	Continuous waveform morph	`0%` to `100%`	`50%`
FOLD	Wavefolder amount	`0%` to `100%`	`0%` (off)
VOL	Oscillator level (audio taper)	`0%` to `100%` (silence to `0 dB`)	`-12 dB`

5.3.2 Waveform Shape

The **SHAPE** knob morphs through four waveforms as you turn it from left to right:

1. **Sine**: pure, smooth tone (far left)
2. **Triangle**: slightly brighter, odd harmonics
3. **Pulse**: hollow, reedy character
4. **Sawtooth**: full harmonic spectrum (far right)

The morph is continuous, so any position between these landmarks blends the two nearest waveforms.

> **Tip:** The waveform visualizer updates in real time, so you can see what the oscillator is producing as you turn **SHAPE**.

5.3.3 Wavefolder

The **FOLD** knob adds harmonics by folding the waveform back on itself. At `0%` the waveform passes through unchanged. As you raise it, the waveform folds more and more, producing rich overtones and increasingly complex timbres.

Wavefolding works especially well on simple waveforms like Sine and Triangle.

> **Tip:** Combine a moderate **FOLD** amount with a Sine wave for a warm, harmonically rich tone that stays musical.

5.3.4 Pitch and Tuning

COARSE sets the pitch offset of the oscillator. At its default of `60` (C4), the oscillator plays the notes you play at their written pitch: `72` plays one octave higher, `48` one octave lower. This works because the **PITCH** modulation source is set to `100%` on **COARSE** by default (see Modulation). **FINE** detunes by up to one semitone in either direction, useful for detuning Oscillator 2 against Oscillator 1 to create chorus-like thickness.

Oscillator **VOL** follows an audio taper. Its default of `-12 dB` leaves headroom so that two oscillators and modulation can sum without clipping.

> **Tip:** Set Oscillator 2's **COARSE** a fifth (67) or an octave (72) above Oscillator 1 for classic interval stacking.

5.4 Filters

Each generator has two independent filters. Filter 1 and Filter 2 have the same controls, and Filter 2 adds a **NOISE** knob.

Each filter section shows a real-time frequency response visualizer.

Filter panel

5.4.1 Filter 1 Parameters

Knob / Switch	Description	Range	Default
FREQ	Cutoff frequency, set as a note number	`0` to `143` (about 8 Hz to 31.6 kHz)	`93` (about 1.76 kHz)
RESO	Resonance	`0%` to `100%`	`0%`
TYPE	Continuous filter type morph	`0%` to `100%`	`50%` (Lowpass)
POLES	Filter slope	2 or 4	4

5.4.2 Filter 2 Parameters

Filter 2 has all the controls of Filter 1, plus one:

Knob / Switch	Description	Range	Default
NOISE	Crossfade between the filter's input signal and pink noise	`0%` to `100%`	`0%` (signal only)
FREQ	Cutoff frequency, set as a note number	`0` to `143` (about 8 Hz to 31.6 kHz)	`93` (about 1.76 kHz)
RESO	Resonance	`0%` to `100%`	`0%`
TYPE	Continuous filter type morph	`0%` to `100%`	`50%` (Lowpass)
POLES	Filter slope	2 or 4	4

5.4.3 Filter Type Morph

The **TYPE** knob morphs between three filter modes:

- **Far left** (`0%`): **Bandpass**, passes only frequencies near the cutoff.
- **Center** (`50%`): **Lowpass**, passes frequencies below the cutoff: the classic subtractive filter.
- **Far right** (`100%`): **Highpass**, passes frequencies above the cutoff.

Every position between these points produces a smooth blend.

5.4.4 Resonance

Turning up **RESO** boosts the frequencies right at the cutoff, creating a sharper peak. At high settings the filter starts to ring at the cutoff frequency.

5.4.5 Poles (Filter Slope)

The **POLES** switch has two segments, **2** and **4**. Click one to choose the slope:

- **2**: 12 dB per octave, a gentler slope.
- **4**: 24 dB per octave, a steeper, more aggressive slope.

The selected segment is highlighted.

> **Tip:** To get **FREQ** to follow the keyboard (key tracking), select **FREQ** and raise its **PITCH** depth in the Modulation Display.

5.4.6 Noise (Filter 2 Only)

The **NOISE** knob on Filter 2 crossfades the filter input between its normal signal and a pink noise source. At `0%`, Filter 2 receives only its signal (the oscillator mix, Filter 1's output in Serial mode, or Oscillator 2 in Split mode). At `100%`, it receives only noise. The crossfade keeps the loudness even across the range.

> **Tip:** A small amount of **NOISE** in Filter 2 with high **RESO** creates airy, breathy textures, great for pads and atmospheric sounds.

5.5 Visualizers

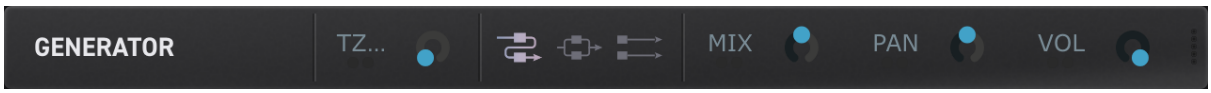
Each oscillator and filter section includes a real-time visualizer:

- **Oscillator visualizers** show the current waveform, reflecting **SHAPE**, **FOLD** and, for Oscillator 1, the effect of **TZFM** from Oscillator 2.
- **Filter visualizers** show the frequency response curve, reflecting **FREQ**, **RESO**, **TYPE** and **POLES**.

Both visualizers follow modulation, so if an envelope or LFO is moving a parameter, the visualizer animates with it.

5.6 Control Bar

The control bar is the horizontal strip between the upper and lower sections, labeled **GENERATOR A** or **GENERATOR B**. It holds the generator's FM, routing and output controls, and a small level meter at its right end.



Control bar

5.6.1 Control Bar Parameters (left to right)

Control	Type	Description	Range	Default
TZFM	Knob	Through-zero FM depth	`0%` to `100%`	`0%` (off)
Routing	Three buttons	Serial, Parallel or Split filter routing	Serial / Parallel / Split	Serial
MIX	Knob	Blend between the Filter 1 and Filter 2 outputs	`0%` to `100%`	`50%` (equal blend)
PAN	Knob	Stereo position of the generator	Hard left to hard right	Center
VOL	Knob	Generator output level	`0%` to `100%`	`100%` (Generator B in a new sound: `0%`)

5.7 Through-Zero FM (TZFM)

The **TZFM** knob controls through-zero frequency modulation, where **Oscillator 2 modulates the frequency of Oscillator 1**. This produces complex, harmonically rich timbres: metallic, bell-like and clangorous tones.

- At `0%`, there is no FM and Oscillator 1 runs at its normal pitch.
- As you raise **TZFM**, Oscillator 2 pushes Oscillator 1's frequency up and down, even through zero, without the pitch drift of simpler FM designs.

The result depends heavily on the pitch ratio between the two oscillators. Tune Oscillator 2 to simple intervals (octaves, fifths) relative to Oscillator 1 for harmonic results, or use detuned ratios for inharmonic, bell-like sounds.

> **Tip:** The Oscillator 1 visualizer shows the effect of TZFM in real time.

5.8 Filter Routing

The three routing buttons in the control bar set how the two filters receive the oscillator signal. The active button is highlighted.

5.8.1 Serial (default)

```
Osc mix ──► Filter 1 ──► Filter 2
```

The mixed oscillator signal enters Filter 1, and Filter 1's output feeds Filter 2. The **MIX** knob blends the output of Filter 1 with the output of Filter 2, so at `0%` you hear Filter 1 alone and at `100%` the full two-stage chain. This lets you sculpt the sound in two successive stages: for example, a lowpass followed by a highpass gives a bandpass-like effect with independent control over each cutoff.

5.8.2 Parallel

```
              ┌──► Filter 1 ──┐
Osc mix ──────┤               ├──► MIX
              └──► Filter 2 ──┘
```

Both filters receive the same mixed oscillator signal. Their outputs are blended with the **MIX** knob. This is useful for dual-filter sounds where each filter contributes a different character.

> **Tip:** In Parallel mode, set Filter 1 to Lowpass and Filter 2 to Highpass to emphasize two different frequency regions.

5.8.3 Split

```
Oscillator 1 ──► Filter 1 ──┐
Oscillator 2 ──► Filter 2 ──┴──► MIX
```

Oscillator 1 feeds Filter 1 and Oscillator 2 feeds Filter 2. The two filtered paths are blended with the **MIX** knob. This keeps the oscillators separate through the filter stage, so each one gets its own filter shape.

> **Tip:** In Split mode, use Oscillator 1 for a stable low foundation through Filter 1 and Oscillator 2 for a brighter or noisier layer through Filter 2.

5.9 Output Mix (MIX)

The **MIX** knob in the control bar blends the outputs of Filter 1 and Filter 2 with an equal-power crossfade:

- **Fully left** (`0%`): only Filter 1's output is heard.
- **Center** (`50%`, default): an equal blend of both filters.
- **Fully right** (`100%`): only Filter 2's output is heard.

5.10 Generator Pan

The **PAN** knob places the generator in the stereo field, from hard left to hard right. At the center (the default) the generator sits in the middle. Panning Generator A and Generator B apart is a quick way to widen a layered sound.

5.11 Generator Output Volume

The **VOL** knob in the control bar sets the output level of the generator. It is the last gain stage before the generator reaches the direct output and the effect sends.

By default, **VOL** is shaped by the envelope: the envelope depth for **VOL** is fixed at `100%`, so the envelope acts as the amplitude envelope of the generator. The ENV depth fader is not available for this knob. In a new sound, Generator A's **VOL** is at `100%` and Generator B's at `0%`, so you hear only Generator A until you turn Generator B up.

5.12 Generator Modulation

Every knob in the generator section can be modulated by the envelope, the LFO, pitch, velocity, pressure, slide, release velocity and Erae layout sources. Two small dots below each knob show whether its envelope (left dot) and LFO (right dot) are in use, and in which link group.

Modulation setup is covered in detail in Modulation.

5.13 Copying and Clearing a Generator

Right-click an empty area of a generator panel (not a knob) to open the generator menu:

- **Copy Generator A** (or **B**): copies all the generator's settings.
- **Paste Generator A** (or **B**): pastes the copied settings into this generator. You can copy Generator A and paste it into Generator B.
- **Clear Generator A** (or **B**): resets the generator to its default settings.

5.14 Two Generators Working Together

Generator A and Generator B are completely independent. Each has its own oscillators, filters, TZFM, routing, mix, pan and volume. Their outputs go to the effects rack, where the **Direct Out** panel and each effect slot have separate levels for each generator (see Effects).

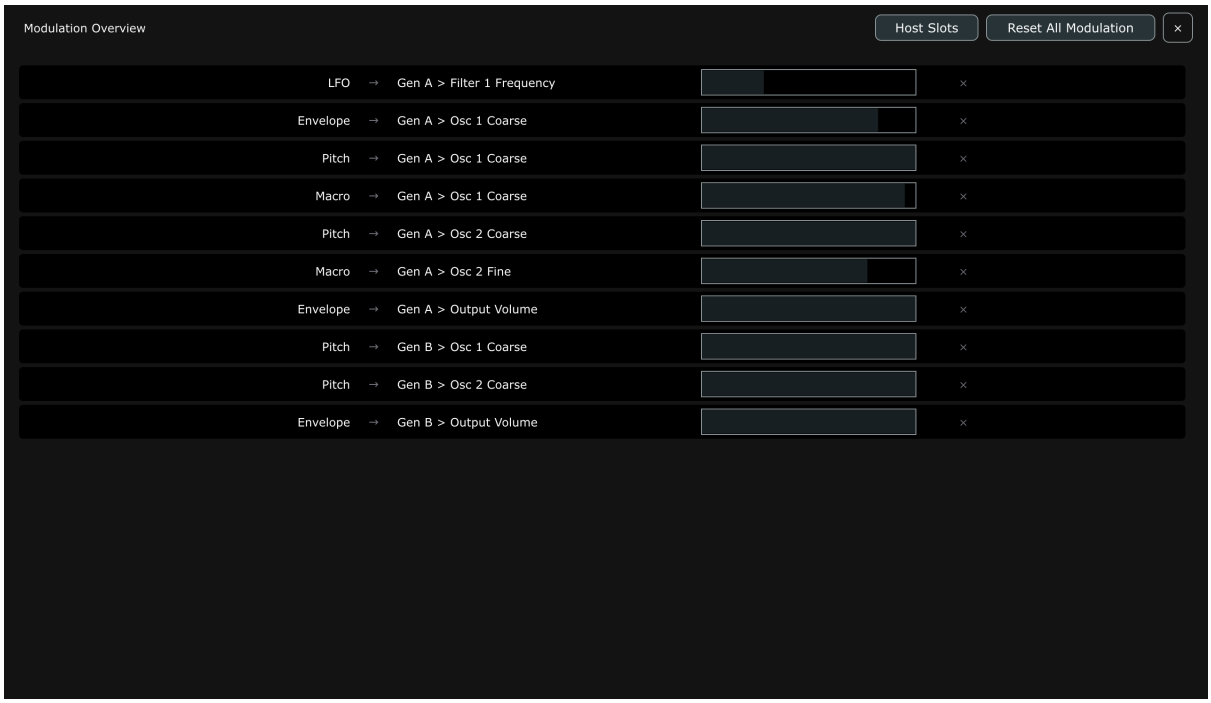
Some strategies for using both generators:

- **Layer two timbres**: use Generator A for a bright, cutting lead and Generator B for a warm pad underneath.
- **Split the performance range**: use the split controls in the **VOICE** panel to send different notes or MPE channels to Generator A and Generator B. See Voice and Split.
- **Detune for thickness**: set both generators to similar patches, detune them slightly and pan them apart.
- **Contrast**: set one generator to a simple waveform with heavy filtering and the other to a complex, folded waveform with an open filter.

> **Tip:** Each generator's **VOL** knob lets you balance the two generators against each other without a separate mixer.

6 Modulation

Erae Sound's modulation system is built around one idea: **every knob has its own complete modulation engine.** Instead of a central modulation matrix, each parameter carries its own envelope and LFO settings, MIDI source depths, response curves and cross-modulation connections. Click any knob to see and edit its modulation in the panels below.



Modulation overview

6.1 Concept: Per-Parameter Modulation

In most synthesizers, modulation is handled by a global matrix where you pick a source, pick a destination and set a depth. Erae Sound takes a different approach.

Every parameter in Erae Sound (oscillator pitch, filter cutoff, effect settings and so on) owns a complete modulation system. When you click a knob, the Modulation Display and the bottom panels show that parameter's envelope, LFO, response curves and modulation depths. There is no separate modulation page to navigate.

This means:

- **No slot limits.** Every parameter can be modulated by every source at once.
- **No context switching.** Select a knob and everything about its modulation appears right below.
- **Independent depths.** Two parameters can share the same LFO shape with completely different modulation amounts.

> **Tip:** Click any knob, or its label, to select it. The panels update instantly to show that parameter's modulation.

Right-click a knob to open its modulation menu:

- **Select**: selects the knob as the modulation destination without changing its value.
- **Copy Modulation** and **Paste Modulation**: copy the whole modulation setup of one knob and paste it onto another.
- **Clear Modulation**: removes all modulation from this knob.

6.2 Modulation Display Section

The **Modulation Display** is the horizontal strip in the middle of the window, between the generators (or effects) and the bottom panels. It shows every modulation source for the selected parameter as a rolling trace of the last two seconds.

Modulation display strip

6.2.1 Fixed Sources

Seven sources are always visible, in two groups:

Group	Label	Source	Description
MODULATION	**ENV**	Envelope	Envelope output for the selected parameter
MODULATION	**LFO**	LFO	LFO output for the selected parameter
MPE	**PITCH**	Pitch	The note you play plus pitch bend, in semitones from C4
MPE	**VEL**	Velocity	Note-on velocity
MPE	**PRES**	Pressure	Channel pressure (aftertouch)
MPE	**SLIDE**	Slide	MPE slide (CC 74)
MPE	**RELVEL**	Release Velocity	Note-off velocity

6.2.2 Erae Layout Sources

Additional sources appear to the right of the fixed sources when your Erae layout contains keyboards, faders, buttons or keys that send CC messages. They are labeled after the layout element (for example `Fader 1`, `Fdr2 Pres` or `KB1 X`) and grouped by element, with the group name written vertically at its right (for example **FADER 2**). When there are more sources than fit on screen, scroll the strip horizontally. See Appendix B for the full list.

Per-voice sources show the activity of the playing voices, while effect parameters show global traces. When the LFO **POLY** switch is on, the LFO trace follows the individual voices; otherwise it shows the shared LFO.

6.2.3 Visualizer and Depth Fader

Each source cell contains two layers:

- **Waveform display.** A real-time trace of the source's output.
- **Depth fader.** Drag up or down inside the cell to set how much this source affects the selected parameter, from `-100%` (bottom) to `+100%` (top), with `0%` at the center line. Double-click to reset the depth to `0%`.
  - Positive depths are shown with a warm fill.
  - Negative depths are shown with a red fill.

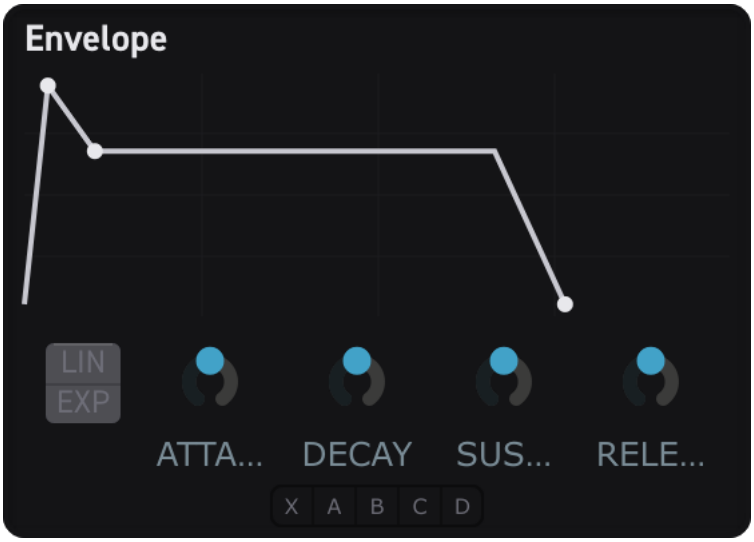
Some depths are fixed: the **ENV** depth of a generator's output **VOL** is always `100%` (the envelope is its amplitude envelope), so that fader is disabled.

6.2.4 Cross-Modulation Connection Points

Each source cell has a small circle in its top right corner: the connection point used for cross-modulation (see Cross-Modulation). Drag from one connection point to another to create a connection.

6.3 Envelope (ADSR)

The **Envelope** panel sits at the bottom left of the window. It provides an ADSR envelope for the selected parameter.



Envelope panel

6.3.1 Envelope Shape Preview

The upper part of the panel shows the ADSR shape. It updates as you turn the knobs, and you can also drag its three points directly: the peak sets **Attack**, the middle point sets **Decay** and **Sustain**, and the last point sets **Release**.

6.3.2 Parameters

Parameter	Range	Default	Description
ATTACK	about 2 ms to 10 s	about 2 ms	Time to rise from zero to full level after a note-on
DECAY	about 2 ms to 10 s	about 18 ms	Time to fall from full level to the sustain level
SUSTAIN	`0%` to `100%`	`70%`	Level held while the note is held
RELEASE	about 2 ms to 10 s	about 43 ms	Time to fall back to zero after note-off
LIN / **EXP**	Linear or exponential	**LIN**	Curve of the envelope segments

The time knobs use an exponential scale, so the lower part of the knob range gives fine control over short times while the upper part covers long sweeps.

6.3.3 Using the Envelope

1. Select a knob (for example, a filter **FREQ**).
2. In the Modulation Display, drag the **ENV** depth fader up to a positive value.
3. Adjust **ATTACK**, **DECAY**, **SUSTAIN** and **RELEASE** to shape the modulation.

The envelope starts on every note-on and enters its release stage on note-off.

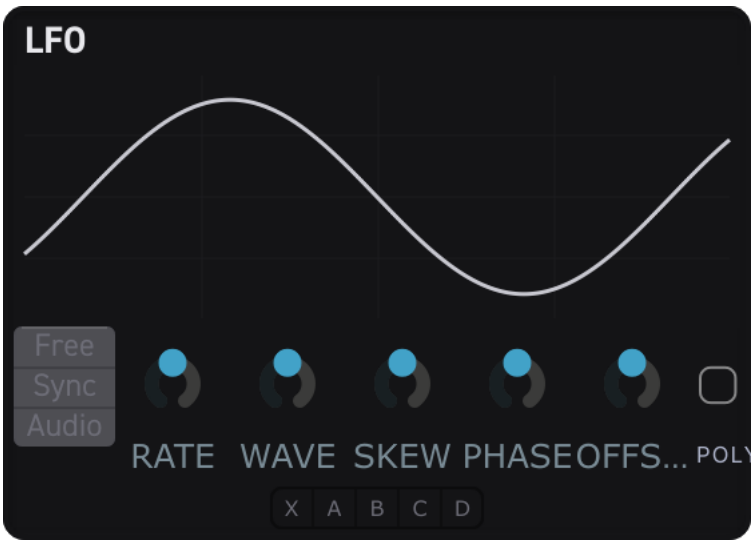
> **Tip:** For a pluck-like filter sweep, set a short **ATTACK** (about `5 ms`), a moderate **DECAY** (about `300 ms`), a low **SUSTAIN** (about `10%`) and a short **RELEASE** (about `200 ms`). Then give the filter **FREQ** a positive ENV depth.

6.3.4 Link Buttons

Below the knobs is the link selector, with five segments: **X**, **A**, **B**, **C** and **D**. **X** gives this parameter its own exclusive envelope; **A** to **D** assign it to a shared link group (see Modulation Linking). Parameters use group **A** by default.

6.4 Modulator (LFO)

The **LFO** panel sits to the right of the Envelope panel. It provides an LFO for the selected parameter.



LFO panel

6.4.1 Waveform Preview

The upper part of the panel shows the current waveform, updating as you change **WAVE**, **SKEW**, **PHASE** and **OFFSET**.

6.4.2 Mode Selector

Three buttons on the left of the knobs set the rate mode:

Mode	Rate Meaning
Free	Rate in Hz, from `0.01 Hz` to `20 Hz`. The LFO runs independently of the tempo.
Sync	Rate locked to the host tempo, from `1/64` to `4 bars`. See the Tempo Sync Reference Table.
Audio	Rate as a note, from `C-1` to `G9` (about 8 Hz to 12.5 kHz). Useful for audio-rate FM or AM effects.

6.4.3 Parameters

Parameter	Default	Description
RATE	about `1 Hz` in Free mode, `1/4` in Sync mode, `A4` in Audio mode	LFO speed. The unit depends on the mode.
WAVE	Sine	Waveform. Morphs continuously through five shapes: **Sine**, **Triangle**, **Saw Up**, **Square** and **Sample & Hold**. Positions in between crossfade adjacent shapes.
SKEW	`50%`	Waveform symmetry. At `50%` the waveform is symmetrical; turning left or right compresses or stretches the first half of each cycle.
PHASE	`0%`	Starting phase offset of the LFO cycle.

Parameter	Default	Description
OFFSET	50%	Shifts the output range: at 50% the LFO swings both ways, at 0% it only goes down, at 100% it only goes up.
POLY	Off	Switches between one shared LFO and one LFO per voice.

6.4.4 Retrigger

The LFO has no retrigger switch of its own. With **POLY** on, each voice runs its own LFO, and **PHASE** sets where the cycle starts. With **POLY** off, all voices share one free-running LFO.

The **RETRIG** switch in the **VOICE** panel is a voice setting: it decides whether a repeated note reuses its voice. See Voice and Split.

6.4.5 Using the Modulator

1. Select a knob (for example, an oscillator **COARSE**).
2. In the Modulation Display, drag the **LFO** depth fader to set the modulation amount.
3. Choose the mode (**Free**, **Sync** or **Audio**).
4. Adjust **RATE**, **WAVE**, **SKEW**, **PHASE**, **OFFSET** and **POLY** to shape the LFO.

> **Tip:** For a classic vibrato, select an oscillator **COARSE** knob, set a small positive LFO depth (about 5%), choose **Free** mode, set **RATE** to about 5 Hz, and leave **WAVE** on Sine.

6.4.6 Link Buttons

Below the knobs is the link selector (**X**, **A**, **B**, **C**, **D**). It works like the envelope's: **X** gives the parameter its own LFO, **A** to **D** share it with a link group. Parameters use group **A** by default. See Modulation Linking.

6.5 MIDI Modulation Sources

Erae Sound responds to several expressive MIDI sources. Each source has its own depth fader per parameter, so you decide how every gesture affects every part of your sound.

6.5.1 Available Sources

Source	Label	Default Polarity	Description
Velocity	**VEL**	Unipolar	Note-on velocity. Higher velocity gives more modulation.
Pressure	**PRES**	Unipolar	Pressure while holding a note.
Slide	**SLIDE**	Unipolar	MPE slide (CC 74), usually vertical finger movement on the Erae.
Pitch	**PITCH**	Bipolar	The note you play relative to C4, plus pitch bend, in semitones.
Release Velocity	**RELVEL**	Unipolar	Note-off velocity: how quickly you release the note.

PITCH is what makes the oscillators follow the keyboard: its depth is `100%` on both oscillators' **COARSE** knobs by default. Give a filter **FREQ** some **PITCH** depth to make its cutoff track the keyboard.

6.5.2 Depth Faders

Each source's depth fader sets the modulation amount for the selected parameter, from `-100%` to `+100%`. At `0%` the source has no effect.

- **Positive depth:** the source adds to the parameter. For example, higher velocity raises the filter cutoff.
- **Negative depth:** the source subtracts from the parameter. For example, higher velocity lowers the filter cutoff.

6.5.3 Response Curves and Polarity

Each MIDI source and Erae source can have its own response curve and polarity per parameter, edited in the curve panel (see Modulation Curves).

- **Polarity** decides whether the source works in one direction from zero (unipolar) or swings both ways around a center (bipolar).
- **Curves** reshape the source's response (for example, making velocity more or less sensitive in certain ranges).

> **Tip:** To make velocity affect mostly loud notes, apply an exponential curve to **VEL**. Soft notes then produce very little modulation while hard notes produce a lot.

6.6 Modulation Linking (A/B/C/D)

Link groups let several parameters share the same envelope or LFO settings, so they respond to the same modulation shape without you copying settings by hand.

6.6.1 How It Works

The envelope and the LFO each have four link groups: **A**, **B**, **C** and **D**. Each parameter chooses its envelope group and its LFO group independently, or uses an exclusive one.

Assignment	Behavior
X (exclusive)	The parameter uses its own envelope or LFO. Changes only affect this parameter.
A, **B**, **C** or **D**	The parameter shares envelope or LFO settings with every other parameter in the same group. Changing **ATTACK** in group A changes it for all group A parameters.

Every parameter starts in group **A** for both its envelope and its LFO, so a new sound's parameters all share one envelope and one LFO until you assign them elsewhere.

6.6.2 Important Details

- **Depths stay independent.** Even when two parameters share group A's envelope, each keeps its own ENV depth. One can have `+80%` while the other has `-20%`.
- **Envelope and LFO link separately.** A parameter can use envelope group B and LFO group C at the same time.
- **One choice at a time.** Clicking a segment selects it; to go back to an exclusive envelope or LFO, click **X**.

6.6.3 Assigning a Link Group

1. Select a knob.

2. In the Envelope or LFO panel, click **A**, **B**, **C** or **D** in the link selector.
3. The panel knobs now edit that group's shared settings.
4. Select another knob and assign it to the same group letter.
5. Both parameters now share the same envelope or LFO shape.

6.6.4 LED Indicators

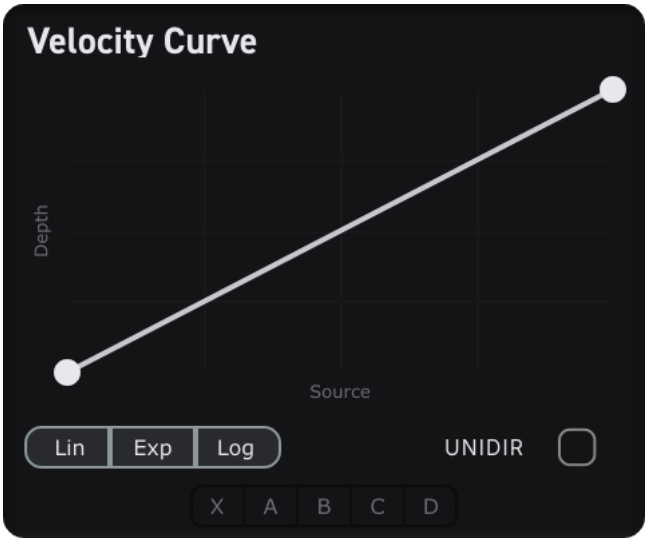
Each modulable knob has two small dots below it: the left dot for the envelope, the right dot for the LFO.

- A dot lights up when that source's depth is turned up on this knob.
- Its color shows the link group (A, B, C or D). An exclusive envelope or LFO uses the accent color.

> **Tip:** Put filter **FREQ** and **RESO** on the same envelope group, then give **FREQ** a high depth and **RESO** a low one.

6.7 Modulation Curves

The curve panel lets you reshape how a modulation source responds before it reaches a parameter. Instead of a straight line between source value and modulation amount, you can draw your own response.



Curve editor panel

6.7.1 Panel Layout

The curve panel sits to the right of the LFO panel. It shows the curve for the most recently clicked source cell (**PITCH**, **VEL**, **PRES**, **SLIDE**, **RELVEL** or an Erae layout source), and its title names that source (for example **Velocity Curve** or **Pressure Curve**). **ENV** and **LFO** have no curve.

Curves also apply to envelope and LFO knobs. When you select one of them (such as **ATTACK** or **RATE**), the curve panel shows the curve of the source you click for that knob, so you can fine-tune how velocity, pressure or slide affect envelope times and LFO settings.

6.7.2 Editing Curves

The graph draws the curve from the bottom left (source at `0`) to the top right (source at maximum).

- **Drag a point** to reshape the curve.
- **Double-click an empty spot** to add a point (and keep dragging it).
- **Double-click a point** to remove it.
- The first point stays at the left edge and the last point at the right edge.
- A curve has between 2 and 16 points.

6.7.3 Preset Curves

Three buttons below the graph load a preset shape:

Button	Curve Shape
Lin	Linear: a straight diagonal line (no reshaping)
Exp	Exponential: gentle at low values, steep at high values
Log	Logarithmic: steep at low values, gentle at high values

6.7.4 Polarity Toggle

The switch next to the preset buttons sets the source polarity. Its label shows the current setting:

- **UNIDIR** (unipolar): the source modulates in one direction from zero. Good for velocity, pressure and slide.
- **BIDIR** (bipolar): the source swings both ways around its center. Good for pitch.

PITCH is bipolar by default. All other sources start unipolar.

6.7.5 Curve Link Groups (A/B/C/D)

Like envelopes and LFOs, curves can be shared through link groups **A**, **B**, **C** and **D**, using the link selector at the bottom of the panel. When several parameters share a curve group for the same source, editing the curve on one updates all of them.

- Click **A**, **B**, **C** or **D** to assign the curve to that group.
- Click **X** to give the parameter its own curve again. Curves are exclusive by default.

6.7.6 Copy and Paste

Use the **Copy** and **Paste** buttons to transfer a curve shape: copy the curve, select another parameter or source, then paste.

6.8 Cross-Modulation

Cross-modulation lets one modulation source control another source's depth. This creates layered, evolving modulation that responds to your playing.

6.8.1 What Is Cross-Modulation?

Normally, each source has a fixed depth. Cross-modulation makes that depth vary in real time with another source's output.

Examples:

- **Envelope depth modulated by velocity.** The envelope has more effect when you play harder.
- **LFO depth modulated by pressure.** Vibrato deepens as you press harder into the surface.
- **Envelope or LFO depth set by an Erae fader.** Use a fader, or a keyboard expression source (such as `KB1 X`), from the active Erae layout to control how much the envelope or LFO shapes the sound.

A cross-mod connection always targets a parameter's **ENV** or **LFO** depth: those are the only cells you can drag onto. The source can be any cell (VEL, PRES, the ENV or LFO itself, an Erae fader), with one rule: the LFO cannot drive the ENV depth.

6.8.2 Creating a Cross-Mod Connection

1. Select a knob to view its sources in the Modulation Display.
2. **Drag from the connection point of one cell to another.** For example, drag from VEL to ENV.

3. A curved arrow appears between the two cells, and a narrow **cross-mod fader** appears in the target cell for that connection.
4. **Drag the cross-mod fader** up or down to set the connection depth, from -100% to +100%. A new connection starts at 0% and has no audible effect until you move its fader.

6.8.3 How It Works

When a cross-mod connection exists, the target's depth is adjusted in real time:

```
effective depth = base depth + (cross-mod source output x cross-mod depth)
```

For instance, if the ENV depth is +50% and velocity cross-modulates ENV at +30%: - At velocity 0: effective ENV depth is +50% - At full velocity: effective ENV depth is +80%

6.8.4 Example Recipes

These five patches build from the simplest modulation to a layered chain. Each one adds a single idea to the previous one.

1. Filter envelope, a single modulation. One source shaping one parameter, no cross-mod: a plucked filter sweep on every note.

1. Select a filter **FREQ** knob.
2. In the Envelope panel set **ATTACK** about 5 ms, **DECAY** about 300 ms, **SUSTAIN** about 10%, **RELEASE** about 200 ms.
3. Drag the **ENV** depth fader up to a positive value (for example +60%).

Every note now opens and closes the filter with a plucky contour.

2. Velocity opens the filter, still a single modulation. Add a performance source directly so harder hits sound brighter.

1. Keep the filter **FREQ** knob selected.
2. Drag the **VEL** depth fader up to a positive value.

Velocity is added straight onto the cutoff here, which is exactly what you want. (Recipe 3 shows when adding a source directly is the wrong move.)

3. Velocity-scaled pitch envelope for a kick punch (first cross-mod). Now a source controls another modulation's depth instead of the parameter itself.

1. Select an oscillator **COARSE** knob.
2. Click **X** in the Envelope panel's link selector so this envelope is not shared, then set **ATTACK** about 2 ms, **DECAY** about 80 ms and **SUSTAIN** 0%: a quick pitch drop that always settles back on the played note.
3. Give the **ENV** depth fader a small base value (or leave it at 0%).

4. Drag from the **VEL** connection point onto the **ENV** cell, then drag the new cross-mod fader up to about +60%.

Harder hits deepen the pitch drop while soft hits stay near the played pitch. Because velocity drives the envelope's depth, not the pitch itself, the resting pitch never drifts.

> **Tip:** Raising the **VEL** depth on **COARSE** directly would shift the whole note instead. Route velocity to the **ENV** (or **LFO**) cell whenever you want velocity to scale a movement rather than shift a value.

4. Pressure-deepened vibrato, cross-mod onto the LFO. The same idea, now targeting the LFO depth.

1. Select an oscillator **COARSE** knob.
2. In the LFO panel choose **Free** mode, **RATE** about 5 Hz, **WAVE** on Sine, and set a small **LFO** base depth (about 3%).
3. Drag from the **PRES** connection point onto the **LFO** cell, then drag the new cross-mod fader up to about +40%.

A light touch gives gentle vibrato; leaning in widens it.

5. A blooming filter, modulation of a modulation (chained cross-mod). Two connections stacked so one modulator shapes another, and a performance source shapes the whole gesture.

1. Select a filter **FREQ** knob.
2. In the LFO panel set a slow wobble: **RATE** about 2 Hz, **WAVE** on Sine, small **LFO** base depth (about 5%).
3. In the Envelope panel set a slow swell: **ATTACK** about 400 ms, **DECAY** about 600 ms, **SUSTAIN** about 40%.
4. **Connection 1, the envelope shapes the LFO:** drag from the **ENV** connection point onto the **LFO** cell, then set the new cross-mod fader to about +50%. The filter wobble now fades in as the envelope rises.
5. **Connection 2, velocity shapes the envelope:** drag from the **VEL** connection point onto the **ENV** cell, then set its cross-mod fader to about +60%. How hard you play now sets how far the whole gesture develops.

The note blooms: harder hits open a deeper, growing filter movement. This is a two-stage chain (velocity feeds the envelope, the envelope feeds the LFO), and you can keep layering connections up to the limit of 64.

6.8.5 Limits and Safety

- **Maximum 64 connections** across the whole patch.
- **Loop protection:** you cannot create a chain where source A modulates source B's depth while B also modulates A's depth.
- Each connection has its own depth and can be removed on its own.

6.8.6 Managing Connections

- **Adjust depth:** drag the connection's cross-mod fader in the target cell.
- **Remove:** double-click the cross-mod fader, or delete the connection in the Modulation Overview.

6.9 Modulation Overview

The **Modulation Overview** is an overlay that lists every active modulation across all parameters in your patch: a bird's-eye view of the whole routing.

6.9.1 Opening the Overview

Click the modulation overview button in the header, to the left of the **Vol** label. The overview opens as a scrollable list over the main interface.

6.9.2 What You See

Each row shows one active modulation:

- **Parameter name**: which knob is modulated
- **Source name**: which source provides the modulation (ENV, LFO, VEL, PRES, an Erae source or a cross-mod connection)
- **Depth slider**: the current depth, editable
- **Delete button** (×): removes this modulation

6.9.3 Editing from the Overview

Adjust any depth slider directly in the list, or delete modulations you no longer need. Changes take effect immediately. Right-click a depth slider to assign it to a host automation slot (see DAW Host Automation).

The **Reset All Modulation** button returns every modulation depth in the patch to its default and removes all cross-mod connections in one click. It does not ask for confirmation.

6.9.4 When to Use It

- To audit your patch and see all active modulation at a glance.
- To clean up unused modulation quickly.
- To understand a complex preset after loading it.

Press **Escape** or click the close button (×) to return to normal editing.

6.9.5 Multiple Erae Devices

When more than one Erae is connected, choose the active device in Erae Lab. Erae Sound follows Erae Lab's active device for layout sources.

6.10 DAW Host Automation

Erae Sound exposes its parameters to your DAW so you can record and play back automation in Ableton Live, Logic Pro, Cubase or any host that supports plugin automation.

There are two layers:

1. **Base parameters** are exposed directly: every generator knob and switch, every effect slot parameter, the **ENV** and **LFO** depths of each of those knobs, and the settings of the envelope and LFO link groups A to D (about 595 parameters in total). They appear in your DAW's list under technical names, for example `genA_analog_filter1_freq` or `main_fx_0_wet_a`.
2. **Other modulation depths** (such as **VEL**, **PRES**, **SLIDE**, **PITCH**, **RELVEL** and Erae sources) go through **64 host automation slots**. Slots are opt-in: assign a depth to a slot, and that slot becomes the automation lane your DAW writes to.

This split keeps the DAW list manageable while still letting you automate any modulation depth you care about.

6.10.1 Assigning a Modulation Depth to a Host Slot

1. In the Modulation Display, find the source whose depth you want the DAW to control.
2. **Right-click its depth fader.**
3. A menu opens, headed with what is being assigned (**Host Automation:** followed by the source and parameter).
4. Choose one of:
   - **Auto-assign to next free slot**: Erae Sound picks the lowest free slot.
   - **Choose specific slot…**: opens a submenu listing all 64 slots, so you can pick one (useful for consistent slot numbers, or to move an existing binding).

Once assigned, the slot's parameter (see Appendix A) mirrors the depth in both directions: moving the depth fader moves the DAW lane, and DAW automation moves the depth fader.

6.10.2 Replacing or Removing a Binding

Right-click the same depth fader again to:

- **Unassign**: frees the slot. The DAW lane still exists but no longer drives any depth.

- **Choose specific slot…**: picking a different slot moves the binding and frees the previous one.

6.10.3 Host Slots Tab

The **Host Slots** button in the Modulation Overview switches the list to the 64 slots, showing each slot's binding, live value and an **X** button to unassign it. The header shows how many slots are bound, and **Clear All** frees every slot at once. Click **Modulations** to return to the modulation list.

6.10.4 Slot Names in the DAW

Slot names in your DAW do not update while a session is open. A slot's current binding is always visible in the Host Slots tab. When your DAW rescans the plugin or reloads the project, hosts that read parameter names show each slot as `Slot 1 (unassigned)` or `Slot 1:` followed by its binding.

6.10.5 Bindings and Presets

Host slot bindings are stored with your DAW project (the plugin state), not in presets. Loading a preset keeps the current slot bindings, so a slot keeps driving the same kind of depth across the presets you audition.

> **Tip:** Use **Auto-assign** for most depths. Reserve specific slot numbers for the few controls you want at the same automation lane in every project.

6.11 Tempo Sync Reference Table

When the LFO is in **Sync** mode, **RATE** selects from the following musical divisions. The T suffix marks a triplet division.

Division	Label
1/64 note	`1/64`
1/32 note triplet	`1/32T`
1/32 note	`1/32`
1/16 note triplet	`1/16T`
1/16 note	`1/16`
1/8 note triplet	`1/8T`

Division	Label
1/8 note	`1/8`
1/4 note triplet	`1/4T`
1/4 note	`1/4`
1/2 note triplet	`1/2T`
1/2 note	`1/2`
1 bar	`1 bar`
2 bars	`2 bars`
4 bars	`4 bars`

The LFO completes one full cycle over the selected division. At `1/4` and 120 BPM, the LFO completes one cycle per quarter note (2 Hz).

> **Tip:** For a tremolo synced to eighth notes, set the LFO to **Sync** mode, choose `1/8`, give the generator **VOL** knob some LFO depth, and set **WAVE** to Sine or Triangle.

6.12 Summary

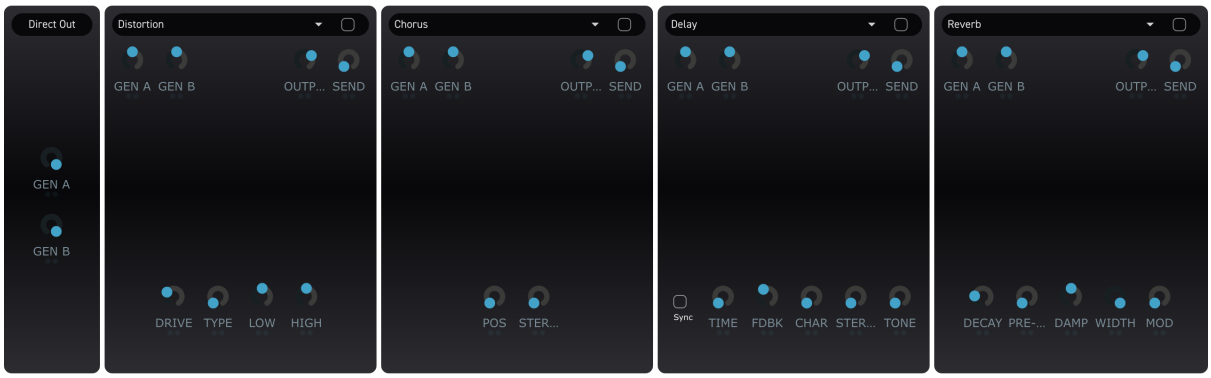
Feature	What It Does
Per-parameter modulation	Every knob owns its own complete modulation engine
Modulation Display	Real-time traces and depth faders for every source of the selected parameter
Envelope (ADSR)	Shapes modulation with Attack, Decay, Sustain and Release, linear or exponential
LFO	Free, Sync or Audio rate modulation with morphing waveforms
MIDI Sources	Pitch, Velocity, Pressure, Slide and Release Velocity
Link Groups (A/B/C/D)	Share envelope, LFO or curve settings across parameters
Modulation Curves	Custom response shaping with presets and polarity control
Cross-Modulation	Sources modulating other sources' depths for layered dynamics

Feature	What It Does
Modulation Overview	Full-patch list of all active modulation
DAW Host Automation	Direct automation of base parameters plus 64 opt-in slots for other depths

For how modulation interacts with your Erae, see Erae Integration. For effect parameter modulation, see Effects.

7 Effects

Erae Sound includes a built-in effects rack on the **FX** tab. Each generator reaches the output directly through the **Direct Out** panel, and can also be sent into up to four effect slots, from subtle ambience to dramatic transformations.



FX tab overview

7.1 FX Chain Overview

The effects rack has a **Direct Out** panel on the left and **4 effect slots** to its right.

- **Direct Out** sets how much of Generator A and Generator B goes straight to the output, without effects. Its two knobs, **GEN A** and **GEN B**, are at `100%` by default.
- Each **effect slot** receives Generator A and Generator B through its own **GEN A** and **GEN B** send knobs. Its **OUTPUT** knob sets how much of the effect reaches the output, and its **SEND** knob feeds the effect into the next active slot.

The slots work from left to right: **Slot 1**, **Slot 2**, **Slot 3**, **Slot 4**. With **SEND** at `0%` (the default), every slot works as an independent parallel effect on the generators. Turn **SEND** up to chain a slot into the next one.

Each slot holds one effect at a time, or `None` to leave it empty. You can place any combination of effects in any order: for example Distortion in Slot 1, Chorus in Slot 2 and Reverb in Slot 4.

> **Tip:** Order matters when you chain slots with **SEND**. A reverb sent into a distortion sounds very different from a distortion sent into a reverb.

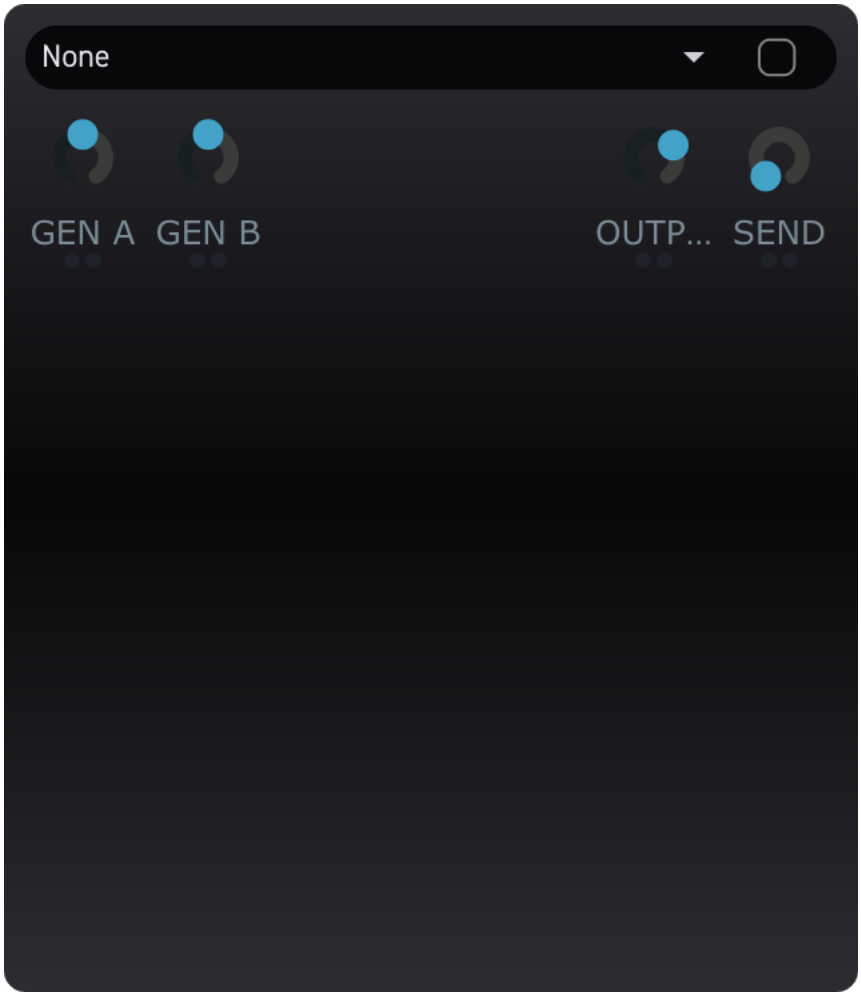
7.2 Available Effect Types

Use the dropdown at the top of each slot to choose the effect:

Type	Description
`None`	Empty slot, no processing
`Distortion`	Multi-algorithm overdrive and fuzz with low and high tone shaping
`Chorus`	Bucket-brigade (BBD) chorus with position and stereo controls
`Flanger`	Flanger with feedback and a manual sweep position
`Phaser`	4-stage phaser with a manual notch position and stereo offset
`Delay`	Analog-style delay with character morphing and tempo sync
`Reverb`	Plate reverb with modulation
`Shimmer`	Pitch-shifting reverb for ambient textures
`Compressor`	Dynamics control with threshold, ratio, timing and makeup gain
`Param EQ`	Two-band parametric equalizer

7.3 Common Controls

Every active slot has the same routing controls, whatever effect it holds.



FX slot common controls

7.3.1 Enable Switch

The switch at the right of each slot's header turns the effect on or off. When it is off (bypassed), the slot is silent: it no longer receives the generators and sends nothing to the output or to the next slot. This is useful for quick comparisons without removing the effect.

7.3.2 GEN A and GEN B

Each slot has two send knobs:

- **GEN A**: how much of Generator A is sent into this effect.
- **GEN B**: how much of Generator B is sent into this effect.

At `0%`, that generator does not reach the effect. Both are at `50%` (about `-12 dB`) by default. The direct, dry sound is set separately in the **Direct Out** panel.

Separate sends let you give each generator a different amount of effect: for example, drench Generator A in reverb while keeping Generator B mostly dry.

7.3.3 Output

The **OUTPUT** knob sets how loud this effect is in the final mix. It is at `70%` (about `-7 dB`) by default.

7.3.4 Send

The **SEND** knob feeds this slot's effect output into the next active slot, in addition to that slot's own **GEN A** and **GEN B** inputs. It is at `0%` by default.

7.3.5 Slot Menu

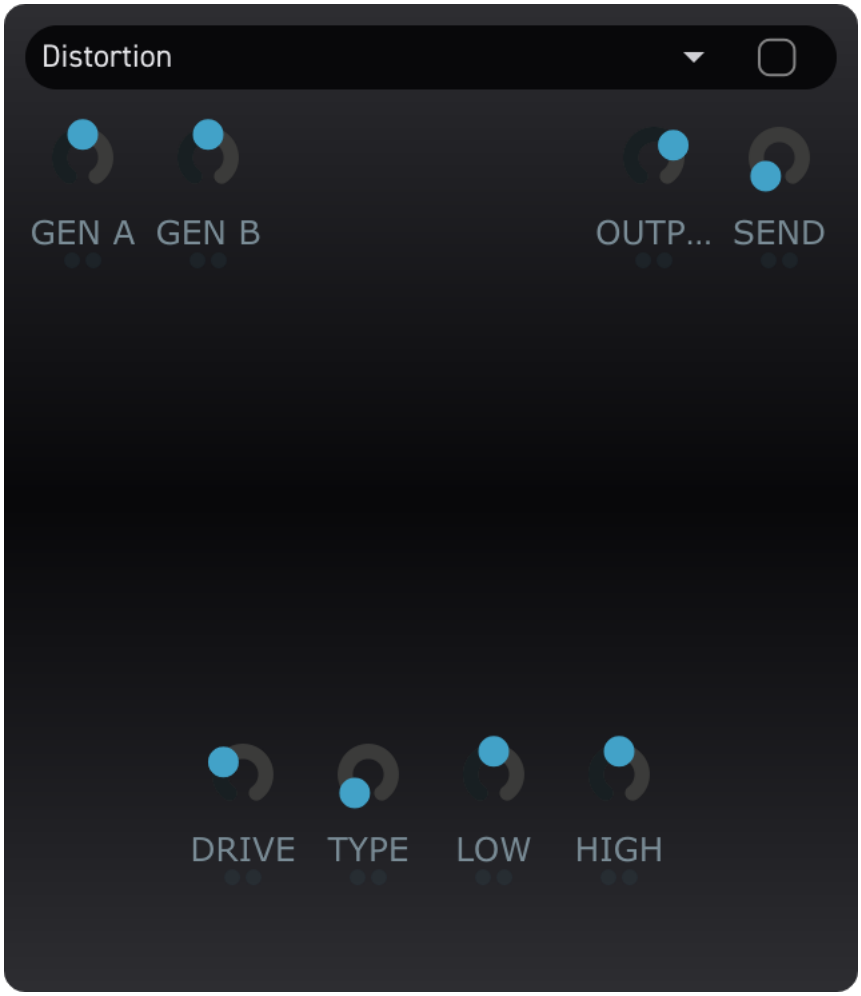
Right-click an empty area of a slot to open its menu:

- **Copy** and **Paste**: copy one slot (effect type, settings and modulation) and paste it into another.
- **Copy Rack** and **Paste Rack**: copy and paste all four slots at once.
- **Clear Slot** and **Clear Rack**: empty one slot, or the whole rack.

> **Tip:** All effect parameters, including these routing controls, can be modulated with the same modulation system as the generators. See Modulation.

7.4 Distortion

A multi-algorithm distortion with classic drive circuits and low and high tone shaping.



Distortion effect

7.4.1 Parameters

Label	Description	Default
DRIVE	Amount of gain into the distortion stage. Higher values give more saturation and harmonics.	`30%`
TYPE	Selects the distortion algorithm (see below). Continuous: it morphs smoothly between neighboring algorithms.	`0%`
LOW	Low shelf (around 200 Hz) applied before the drive stage, from `-24 dB` to `+24 dB`. Center is flat.	`50%`

Label	Description	Default
HIGH	High shelf (around 600 Hz) applied before the drive stage, from `-24 dB` to `+24 dB`. Center is flat.	`50%`

7.4.2 Distortion Algorithms

The **TYPE** knob sweeps through six distortion algorithms. As you turn it, the sound morphs smoothly between neighboring models.

From left to right:

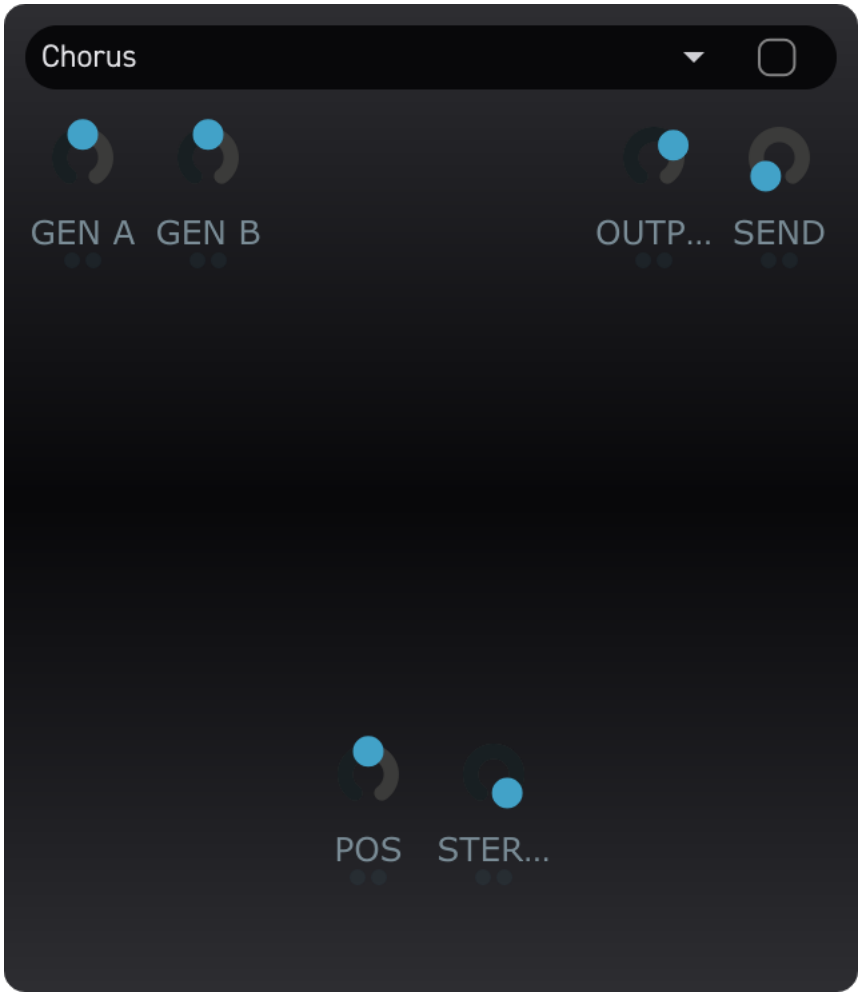
1. **Clean Boost**: a transparent gain stage with gentle saturation.
2. **Tape**: smooth tape saturation with soft compression.
3. **Tube Screamer**: warm, mid-focused overdrive inspired by the classic pedal.
4. **RAT**: aggressive clipping distortion with a harder edge.
5. **Big Muff**: thick, sustaining fuzz with a scooped midrange.
6. **Fuzz Face**: vintage fuzz with a buzzy, gated character.

> **Tip:** Because **TYPE** morphs continuously, you can find tones between the classic algorithms. Try halfway between Tube Screamer and RAT for a blend of warmth and bite.

LOW and **HIGH** shape the signal before it hits the distortion, so they change how the drive reacts as well as the tone: boost **LOW** for a thicker, heavier distortion, or cut it to keep the low end tight.

7.5 Chorus

A chorus built on bucket-brigade device (BBD) delay line emulation for an analog character. It has no internal LFO: the delay position is set by **POS**, so assign an LFO to **POS** to get the classic sweeping chorus movement.



Chorus effect

7.5.1 Parameters

Label	Description	Default
POS	Delay time of the chorus, from about 1 ms to 12 ms.	`50%`
STEREO	Offsets the right channel's delay from the left, widening the stereo image.	`100%`

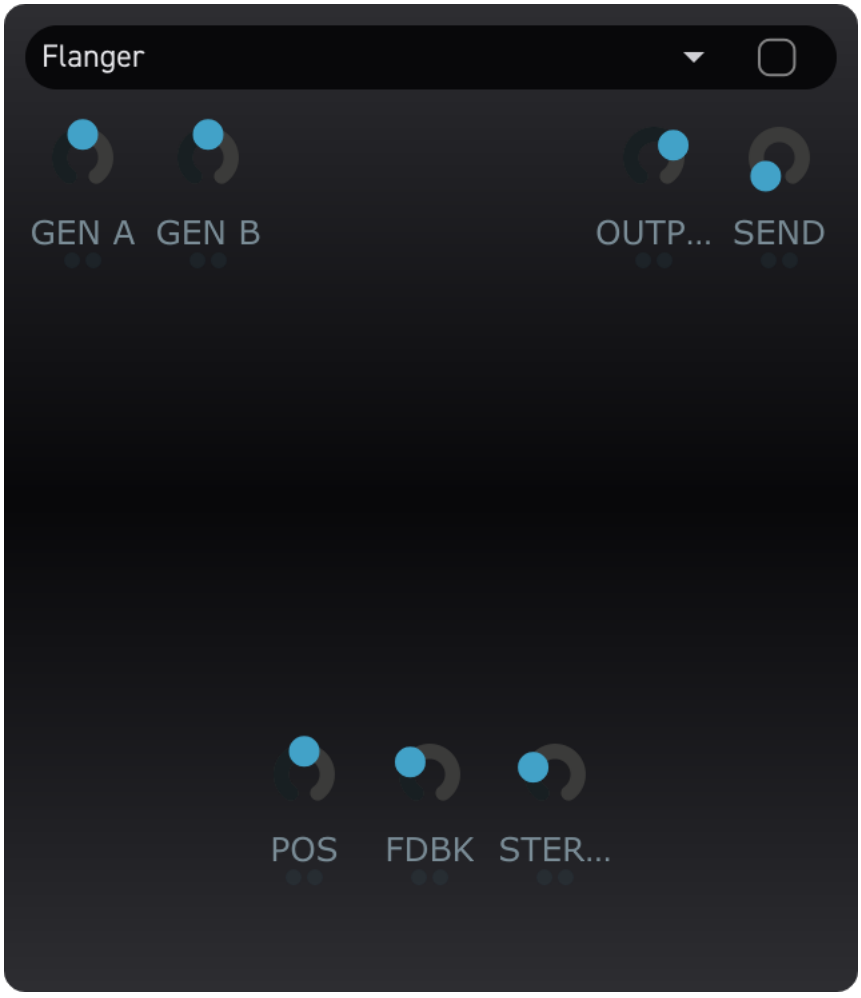
7.5.2 Position and Stereo

POS sets where the delay sits. Modulate it with an LFO (a slow Sine or Triangle works well) to get movement, and use the LFO depth to set how wide the sweep is. At `0%`, **STEREO** keeps both channels identical; turning it up delays the right channel further than the left for a wider sound.

> **Tip:** For a lush chorus, give **POS** a slow LFO (around `0.5 Hz`) with a moderate depth, and keep **STEREO** high.

7.6 Flanger

A flanger built on short delay lines with feedback. It produces sweeping, jet-like tones, from subtle movement to metallic resonance. Like the chorus, it has no internal LFO: modulate **POS** to sweep it.



Flanger effect

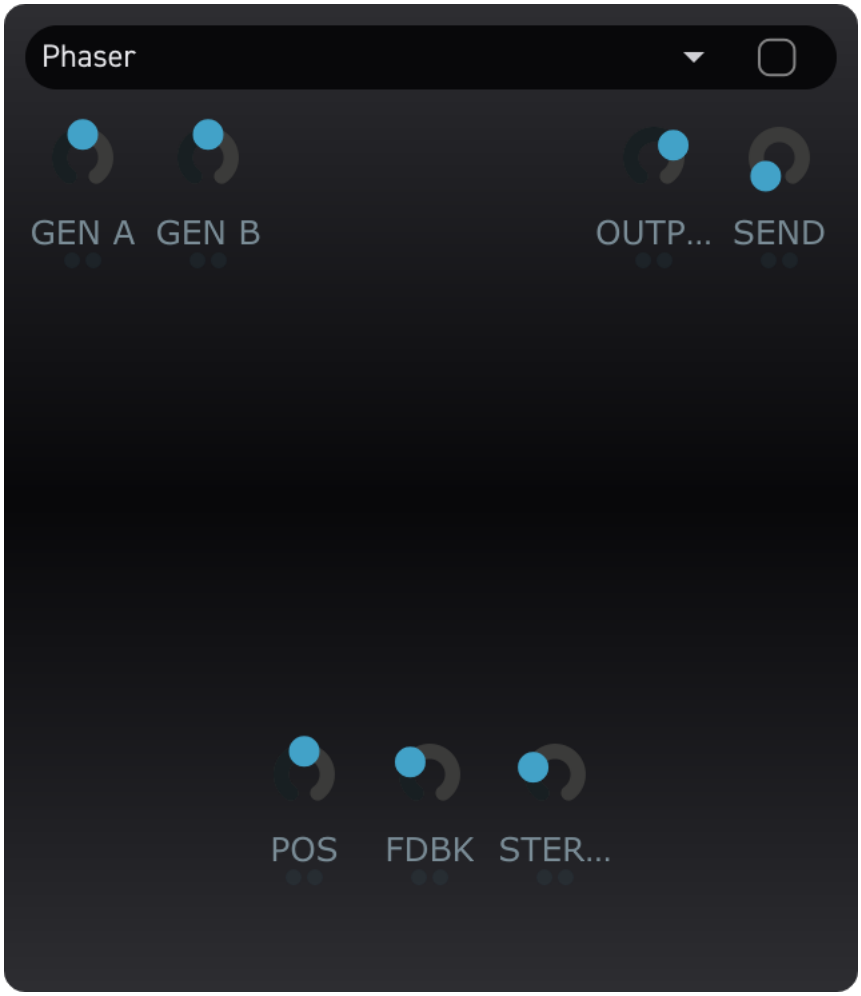
7.6.1 Parameters

Label	Description	Default
POS	Delay position, from about 0.5 ms to 10 ms. Moving it sweeps the flanging comb.	`50%`
FDBK	Amount of output fed back into the input, from 60% to 95%. Higher values give more resonant, metallic tones.	`30%`
STEREO	Offsets the right channel's position from the left. At `0%`, both channels match.	`25%`

> **Tip:** For a classic jet sound, set **FDBK** high and sweep **POS** slowly with an LFO. For a subtler effect, lower **FDBK**.

7.7 Phaser

A 4-stage phaser that places a series of notches in the spectrum. Modulate **POS** to sweep the notches, from gentle swirling to deep, resonant swooshes.



Phaser effect

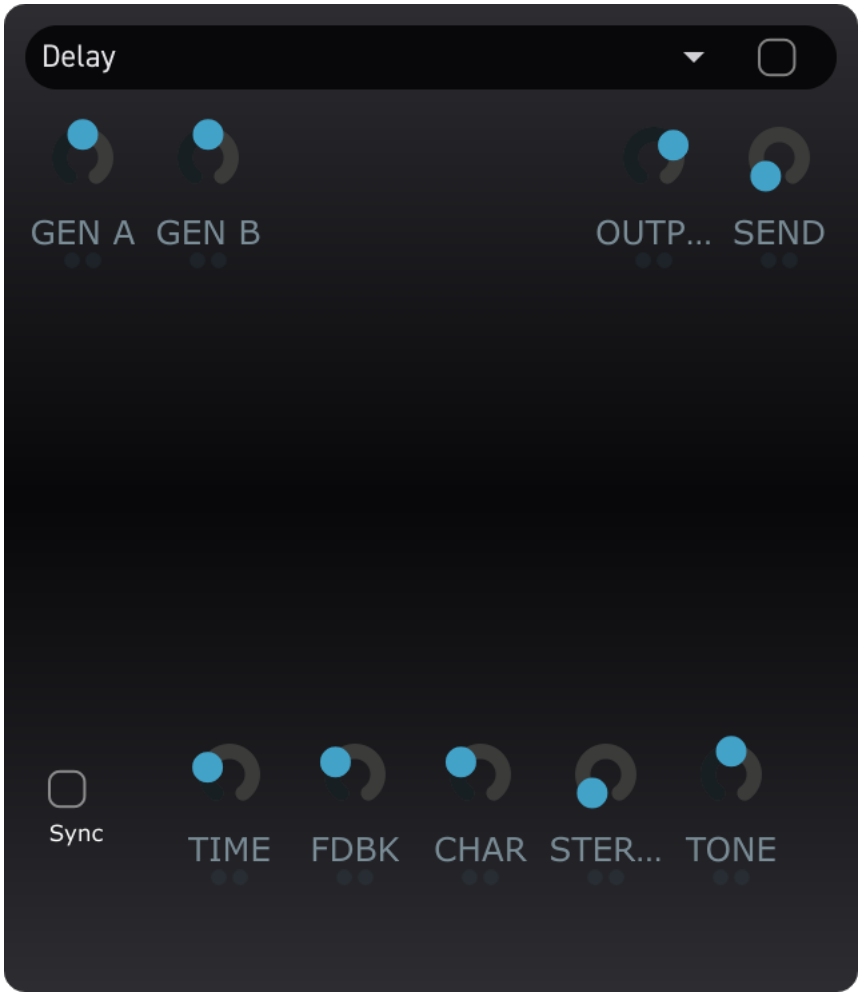
7.7.1 Parameters

Label	Description	Default
POS	Position of the notches.	50%
FDBK	Feeds the output back into the input (up to 95%), sharpening the notches for a more resonant effect.	0%
STEREO	Spreads the left and right notch positions apart for a wider stereo image.	25%

> **Tip:** Without feedback the phaser is smooth and gentle. Adding feedback makes it more dramatic, great for leads and pads.

7.8 Delay

An analog-style delay with a character control that morphs from clean repeats to degraded lo-fi echoes, and an optional tempo sync.



Delay effect

7.8.1 Parameters

Label	Description	Default
Sync	Switch. Off: **TIME** is set in milliseconds. On: **TIME** selects a note division locked to the tempo, from `1/64` to `4 bars` (limited to 2 seconds).	Off
TIME	Delay time, from 10 ms to 2000 ms when **Sync** is off.	25% (about 500 ms)
FDBK	Amount of delayed signal fed back. Higher values give more repeats.	`40%`

Label	Description	Default
CHAR	Character of the repeats (see below).	30%
STEREO	Stereo spread. At 0%, both channels repeat together. Higher values offset the right channel, then add ping-pong between channels.	0%
TONE	Tilt EQ on the repeats. Lower values darken them; higher values brighten them.	50%

7.8.2 Delay Character

The **CHAR** knob morphs between three personalities:

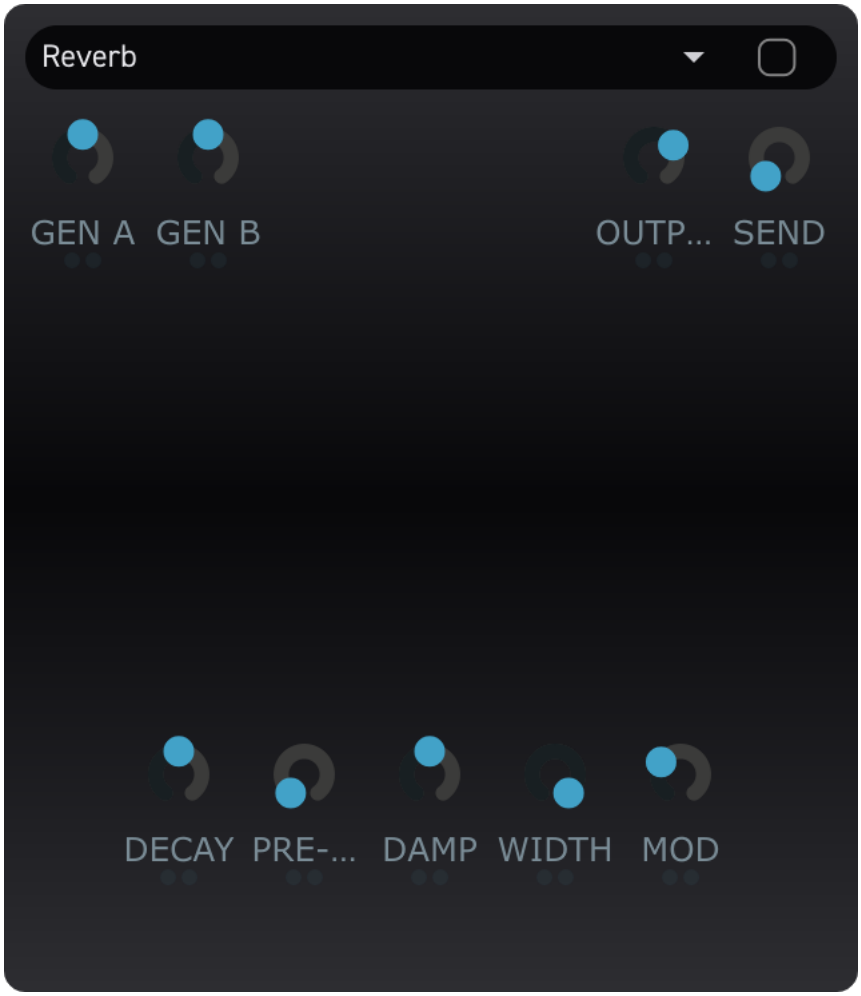
- At 0%, **Clean**: pristine repeats.
- Around 50%, **Tape**: warm echoes with saturation, wow and flutter, and a softer top end.
- At 100%, **Lo-Fi**: heavily degraded repeats with strong filtering, diffusion and grit.

Higher **CHAR** also limits the maximum feedback, so the repeats stay under control.

> **Tip:** A little **CHAR** (around 20% to 40%) adds warmth and life to repeats without sounding obviously lo-fi, especially on pads.

7.9 Reverb

A plate reverb based on the Dattorro algorithm. It produces smooth, lush tails, from tight spaces to long washes.



Reverb effect

7.9.1 Parameters

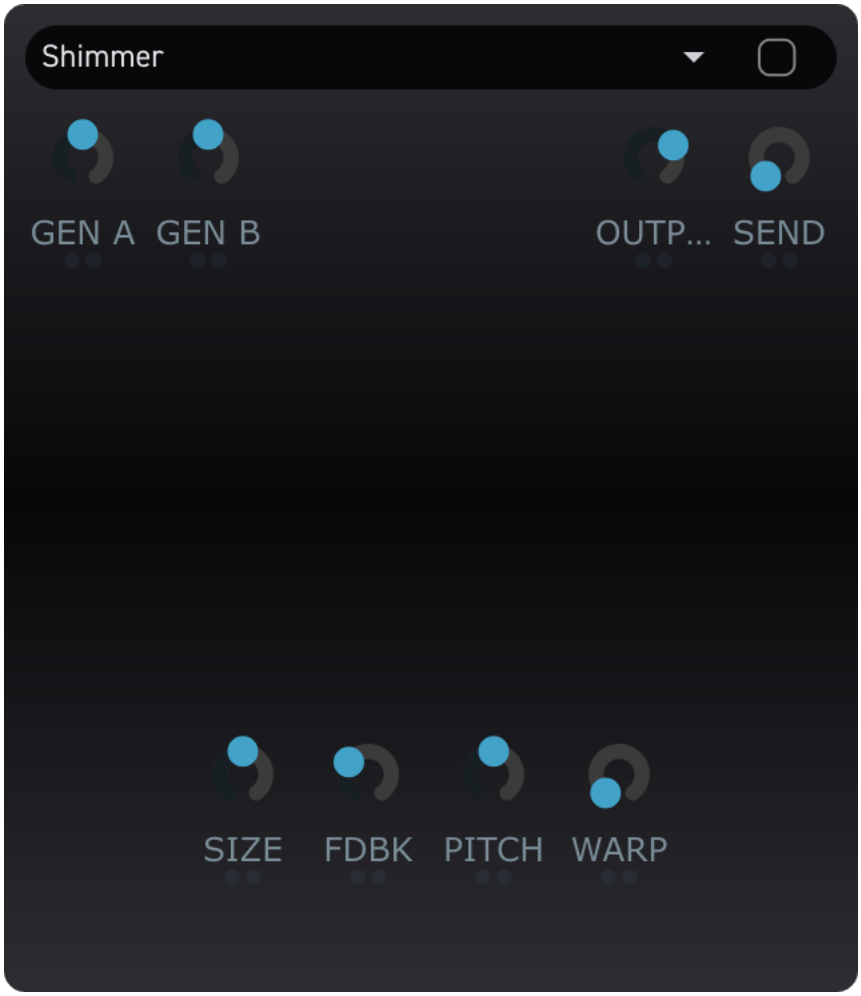
Label	Description	Default
DECAY	Length of the tail. Low values give short reflections; high values give long, sustained tails.	`50%`
PRE-DLY	Time between the dry sound and the start of the reverb, from 0 to 200 ms.	`0%`
DAMP	High-frequency damping of the tail. Higher values give a warmer, darker reverb.	`50%`
WIDTH	Stereo width of the reverb. At `0%` the reverb is mono; at `100%` it fills the stereo field.	`100%`

Label	Description	Default
MOD	Internal modulation of the reverb tank. Adds subtle movement that smooths the tail and reduces metallic ringing.	30%

> **Tip:** A little **PRE-DLY** (around 10% to 20%, that is 20 to 40 ms) keeps the dry sound clear and upfront even with long tails, which is useful for leads.

7.10 Shimmer

A pitch-shifting reverb for ethereal, ambient textures. The reverb feeds a pitch shifter whose output is fed back into the reverb, building shimmering layers of harmonics.



Shimmer effect

7.10.1 Parameters

Label	Description	Default
SIZE	Size of the reverb space. Higher values give longer, more diffuse tails.	`50%`
FDBK	Amount of pitch-shifted signal fed back into the reverb. Higher values build denser harmonic layers over time.	`50%`
PITCH	Pitch shift in the feedback path, from 12 semitones down (`0%`) to 12 semitones up (`100%`). At the center (`50%`) there is no shift.	`50%`
WARP	Adds saturation and darkening to the feedback path, for rougher, more evolving tails.	`0%`

> **Tip:** For the classic shimmer sound, turn **PITCH** fully right (an octave up) and set **FDBK** around `50%` to `70%`. For experimental textures, raise **WARP** and push **FDBK** higher.

7.11 Compressor

A dynamics processor for controlling peaks, adding sustain or tightening a sound.

7.11.1 Parameters

Label	Description	Default
THRESH	Level where compression starts, from `-30 dB` (`0%`) to `0 dB` (`100%`). Lower settings compress more.	`50%`
RATIO	Compression strength above the threshold, from `1:1` up to about `50:1`.	`30%`
ATK	How quickly compression reacts, from about 0.1 ms to 300 ms.	`20%`
REL	How quickly the gain recovers, from about 50 ms to 3 s.	`30%`

Label	Description	Default
MAKEUP	Output gain after compression, from `0` dB to `+20` dB.	`0%`

7.12 Param EQ

A two-band parametric equalizer for corrective or creative tone shaping.

7.12.1 Parameters

Label	Description	Default
FREQ 1	Center frequency of band 1, from 20 Hz to 2 kHz.	`30%`
GAIN 1	Gain of band 1, from `-24` dB to `+24` dB. Center is flat.	`50%`
Q 1	Width of band 1, from about 0.3 (wide) to 8 (narrow).	`30%`
FREQ 2	Center frequency of band 2, from 500 Hz to 20 kHz.	`70%`
GAIN 2	Gain of band 2, from `-24` dB to `+24` dB. Center is flat.	`50%`
Q 2	Width of band 2, from about 0.3 (wide) to 8 (narrow).	`30%`

7.13 Modulating FX Parameters

All effect parameters can be modulated with the same system as the generators: envelopes, LFOs, and performance sources such as pressure or slide. Effects are shared by all voices, so per-voice sources act on them as a whole rather than note by note.

7.13.1 Cross-Modulation

Cross-modulation connections also work on effect parameters, as on generator parameters. See Modulation for details.

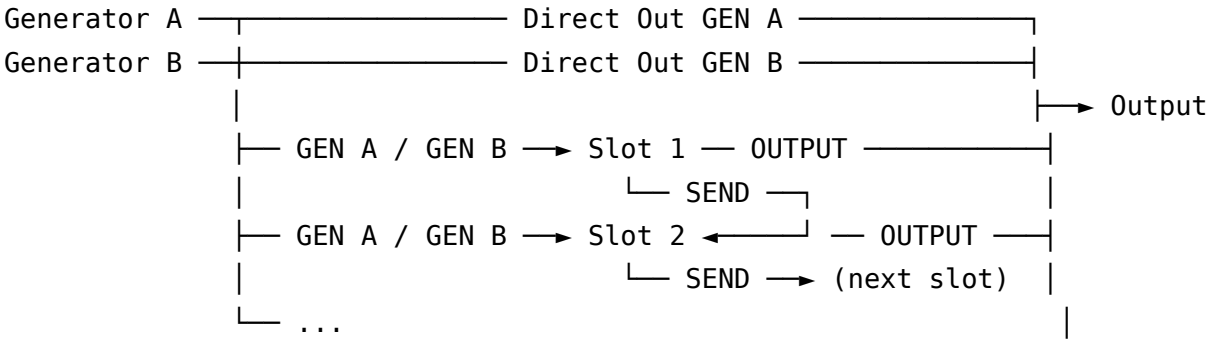
For example, you could:

- Modulate a reverb's **DECAY** with pressure, so pressing harder gives a longer tail.

- Sweep a delay's **CHAR** with an LFO for evolving echoes.
- Map velocity to the distortion **DRIVE** for touch-sensitive overdrive.
- Sweep a chorus, flanger or phaser **POS** with an LFO for classic modulation effects.

To modulate an effect parameter, click its knob, then set the depth of a source in the Modulation Display. See Modulation.

7.14 Signal Flow Summary



At each slot, **GEN A** and **GEN B** set how much of each generator enters the effect, and **SEND** from the previous active slot adds to that input. **OUTPUT** sets the slot's level in the final mix. The **Direct Out** knobs set the dry level of each generator.

Empty slots (None) are skipped, so you do not need to fill all four slots to use the rack.

8 Erae Integration

Erae Sound works with your Erae through Erae Lab. Your Erae stores layouts in its slots, and each Erae Sound preset can carry an Erae layout. A preset and a slot belong together when they hold the same layout.

> **Tip:** You do not need an Erae to use Erae Sound. The synth works in Erae Lab or as a DAW plugin. Erae-specific modulation sources appear when a layout is active.

8.1 Connection Model

Inside Erae Lab, Erae Sound follows Erae Lab's active device and shares its connection. In a DAW, Erae Sound also reaches your Erae through Erae Lab.

If several Erae are connected, choose the active device in Erae Lab.

The Erae layout thumbnail at the bottom right of the window shows the current layout. Under it, the slot bar holds a **Preset** button, slot buttons **1** to **8** and a **Sync** switch.

8.2 Layout Slots and Presets

A preset and a device slot are related when they contain the same layout.

When **Sync** is on (the default):

1. Changing the active slot, on the Erae or with the slot buttons in Erae Sound, checks the layout of that slot.
2. Erae Sound searches its preset library for a preset holding the same layout.
3. If it finds one, that preset loads automatically.
4. If it does not find one, Erae Sound uses the slot's layout. The current preset is not marked as modified.

When **Sync** is off, switching slots changes the layout without changing the current sound. This is useful in DAW sessions or with several plugin instances, where you do not want a slot change to replace an instance's sound.

> **Note:** Editing a layout, on the Erae or in Erae Lab, intentionally breaks the link between that layout and its preset. Once a layout has changed, its preset no longer loads automatically when you switch to that slot. To restore automatic recall, save the preset again with the edited layout.

8.3 Loading Presets With Layouts

When a preset contains an Erae layout and a device is connected:

1. Erae Sound applies the preset.
2. Erae Sound sends the preset's layout to the Erae as a temporary preview. The Erae does not switch slot, even when one of its slots holds the same layout.
3. To keep the layout on the Erae, save it to a slot (see Assigning a Layout to a Slot).

Click the **Preset** button in the slot bar at any time to show the current preset's layout on the Erae again, for example after switching slots. When another Erae Sound instance is driving the Erae, the **Preset** button appears dimmed; it still works, and clicking it brings your layout back.

If no device is connected, the preset still loads normally. Its layout becomes active inside Erae Sound, and its Erae sources are ready when you connect an Erae with that layout.

8.4 Assigning a Layout to a Slot

Normal use is automatic, but you can save the current Erae Sound layout into a slot of your Erae. Press and hold a slot button (**1** to **8**) for about 1.5s, until the ring fills: the current layout is saved to that slot on your Erae, and the slot button briefly shows the result. With **Sync** on, choosing that slot on your Erae then brings this preset back in Erae Sound.

Assigning is done from Erae Sound only: the slot buttons on the Erae do not assign layouts. A short click on a slot button switches to that slot.

8.5 Editing the Preset Layout in Erae Lab

When Erae Sound runs inside Erae Lab and an Erae is connected, you can edit the current preset's layout on Lab's canvas.

Hover the layout thumbnail: an **Edit layout in Lab** button appears in its top right corner. Click it. The Erae shows the preset layout and Erae Lab switches to its Lab view with that layout ready to edit. Zone highlighting on the rest of the thumbnail works as usual.

The button appears only when the preset has a layout and Erae Sound is licensed or in demo mode. Erae Sound in a DAW does not show it.

Each edit made in Lab shows on the Erae and in the thumbnail, and marks the preset as modified. Save or discard the edit from the header above Lab's canvas, as described in the Erae Lab manual, chapter Presets.

8.6 Erae Sound in a DAW and Erae Lab Together

Erae Sound in a DAW and Erae Lab can run at the same time, opened in any order. Layout edits made in Lab reach every Erae Sound in the DAW, layouts assigned from the DAW show in Lab, and everything stays in sync when the DAW quits, crashes or opens again, and when you unplug the Erae and plug it back.

8.7 Erae as Modulation Source

When a layout is active, Erae Sound reads its elements and creates modulation sources for those that send CC messages. They appear in the Modulation Display next to the built-in sources.

Typical sources include:

- keyboard X and Y position (absolute and relative) and finger movement speed
- fader position, pressure and movement speed
- XY pad (2D fader) X, Y, pressure and movement speed
- buttons with CC outputs
- individual keys: pressure, position and movement speed

Keyboard pressure and slide use the built-in **PRES** and **SLIDE** sources. All Erae sources travel as standard MIDI data, so they stay recordable and editable in your DAW. See Appendix B for the full list.

Hover over a source cell to highlight the matching element on the layout thumbnail, or hover over an element on the thumbnail to highlight its sources.

8.8 Using Erae Sound without Erae

Erae Sound works fully without connected hardware.

- Presets still load.
- The synth engine, modulation and effects still work.
- Erae sources stay inactive until a matching layout is active.

If you load a preset saved with Erae modulation assignments, those assignments stay in the preset and become active again when a matching layout is available.

8.9 What's Next

- To learn how modulation sources connect to parameters, see Modulation.
- To save and recall sounds, see Presets.
- For voice and split settings, see Voice and Split.

9 Presets

Presets capture your entire Erae Sound sound in a single file. Loading a preset restores every generator setting, the effects rack, the voice and split settings, the Erae layout and all modulation.

Preset navigation in the header

9.1 Browsing Presets

9.1.1 Header Navigation

The header gives quick access to presets without opening the library.

- **Preset name**: the center of the header shows the name of the loaded preset. Click it to open a list of all presets.
- **Previous / Next arrows**: the arrows to the right of the name step through presets one at a time, a fast way to audition presets in order. They stop at the first and last preset.

Choosing a preset from the list or with the arrows loads it right away. Unsaved changes to the current sound are not kept, so save first if you want them.

9.1.2 Library Browser

For more powerful browsing, click the **Library** button (the folder icon to the left of the preset name). The library replaces the generators or effects in the upper part of the window, with a search bar and a preset list. Click the **Library** button again, or a **Synth** or **FX** tab, to go back.

Library browser

9.1.2.1 Search Bar

Above the preset list, the search bar narrows the results:

- **Search field**: type to filter presets by name, type, designer, bank or instrument. Results update as you type.
- **Type** button: opens a list of preset types (Bass, Lead, Pad, Keys, Pluck, Drums, Brass, Strings, Organ, Texture, FX, Sequence, Arpeggiator). Tick one or more types to show only those; choose **Clear** to remove the filter.
- **Designers** dropdown: shows only one designer's presets. Choose `All Designers` to clear it.
- **Banks** dropdown: shows only one bank. Choose `All Banks` to clear it.
- **User** toggle: shows only the presets you created or imported, hiding factory presets.
- **Color dots**: click one or more colors to show only presets with those color tags.

All filters combine. For example, search for "warm" with the type set to Pad and **User** on to find only your own pads with "warm" in their name.

9.1.2.2 Preset List

The main area shows the matching presets in a table:

Column	Description
NAME	The preset name, with its color tag dot
TYPE	The preset types
DESIGNER	The creator of the preset
BANK	The preset bank
Delete icon	Deletes a user preset (not shown for factory presets)

Click a column header to sort by that column. The loaded preset is highlighted.

Click a preset to load it. When you hover over a preset's name, three chips let you load only part of it:

- **Load A**: loads only Generator A from that preset, leaving Generator B and the effects rack unchanged.
- **Load B**: loads only Generator B.
- **Load FX**: loads only the effects rack, leaving both generators unchanged.

Right-click a preset for **Import Preset...**, **Open Presets Folder**, **Color Tag** and, for user presets, **Delete**.

9.1.2.3 Re-sending a Layout to the Erae

Clicking the preset that is already loaded sends its layout to the Erae again, without reloading the sound. This is useful when another Erae Sound instance has taken over the Erae and you want this instance to reclaim it, or to restore the expected layout after switching slots.

When another Erae Sound instance is driving the Erae, the **Preset** button in the slot bar under the layout thumbnail appears dimmed. This is only an indicator: the button still works. Clicking it, or clicking the loaded preset in the list, sends your layout back to the Erae and restores the button.

> **Tip:** Factory presets are shown in a subtler color, so you can tell them apart from your own presets.

9.1.3 Factory and User Presets

Erae Sound separates presets into two kinds:

- **Factory presets**: sounds installed with Erae Sound. They are read-only and may be refreshed by updates.
- **User presets**: sounds you create, import or save with **Save As...**. They are editable and live in your user preset folder.

You can load, play and tweak factory presets freely while you design a sound, but a factory preset file cannot be renamed, deleted or overwritten. The library does not let you edit a factory preset's name, type, designer or bank, or delete it, and **Save** never overwrites a factory preset.

To keep changes made from a factory preset, use **Save As…** and give the sound a new name. Erae Sound writes a user preset and leaves the factory original unchanged.

Factory updates may add or replace factory presets. Your user presets, including **Save As…** copies, are kept.

9.2 Saving Presets

To save the current sound:

1. Click the **Save** button (floppy disk icon) in the header, to the right of the preset arrows.
2. The preset name becomes an editable field. Type a new name, or keep the existing one.
3. Press **Enter** or click the **checkmark** to confirm.

Keeping the name of a user preset overwrites it; a new name creates a new user preset. The save button flashes briefly to confirm.

You can also right-click the preset name in the header to open the preset menu:

- **Import Preset…**: imports one or more `.espreset` files into your user presets.
- **Open Presets Folder**: shows the preset folder in your file browser.
- **Save**: immediately overwrites the current user preset.
- **Save As…**: opens the name field to create a new user preset.

Save is unavailable for factory presets. Use **Save As…** to store your version as a user preset.

When the current preset has unsaved changes, an asterisk (*) appears after its name.

Loading a preset never adds the asterisk, and neither does switching slots on the Erae or in Erae Sound. Editing the preset's own layout does. Saving always stores the preset's own layout, even while the Erae shows another slot.

During the demo, saving and importing are disabled.

9.2.1 Canceling a Save

- Press **Escape** to cancel without saving.
- Click anywhere outside the name field to cancel.

9.2.2 Save Warnings

Erae Sound checks the name before saving:

- **Empty name**: "Name cannot be empty".

- **Factory preset name kept**: “Cannot overwrite read-only preset”. Type a new name to save your own version.
- **Name already used**: “A preset with this name already exists”. Choose a different name.

> **Tip:** To make a variation of a factory preset, load it, tweak it, then save it under a new name. Your version is saved as a user preset and the factory original stays untouched.

9.3 Presets Shared Across Instances

All Erae Sound instances share one preset library, inside Erae Lab and in every DAW. A preset saved in one instance is what the others load afterwards. New, renamed and deleted presets and color tag changes show in the list of every instance at once. If the preset you use is renamed elsewhere, its new name simply shows.

When another instance saves the preset you are using, Erae Sound asks in a notification:

- **Preset modified on disk. Reload?** when you have no unsaved changes.
- **Preset modified on disk. Reload and lose your changes?** when you have unsaved changes.

Reload loads the saved version, with no asterisk. **Keep** keeps your sound as it is and marks the preset as modified.

If you kept your version and then save over that preset, Erae Sound asks **This preset was changed in another instance. Overwrite it?**

- **Overwrite** writes your version. The other instances are then offered it in turn.
- **Save as new** opens the name field so you save your version under a new name. Closing the question does the same.

Inside Erae Lab, while Lab’s own view is shown, Lab asks the reload question instead. A save started from the preset layout header in Lab asks the overwrite question in that header.

9.4 Organizing Presets

9.4.1 Tags and Filters

Each preset can have one color tag: Red, Orange, Yellow, Green, Blue or Purple. To set it, click the dot next to the preset’s name, or right-click the preset and choose **Color Tag**. Choose **None** to remove it. Use the color dots in the search bar to filter the list by tag.

9.4.2 Editing Metadata

For user presets, double-click the **NAME**, **DESIGNER** or **BANK** cell to edit it, type your change and press **Enter**. Double-click the **TYPE** cell to open the type list and tick the types that fit the preset; a preset can have several types.

Factory preset details cannot be edited. Save a copy with **Save As…** if you want an editable version.

9.4.3 Deleting Presets

To delete a user preset, click the **delete icon** (X) at the right of its row, then click it again to confirm. You can also right-click the preset and choose **Delete**.

Factory presets cannot be deleted.

9.4.4 Importing Presets

Import Preset… copies the `.espreset` files you select into your user presets. If a name collides with an existing preset, Erae Sound adds a suffix so both are kept. When you import several presets at once, the first one is loaded.

9.5 Preset File Format

Erae Sound presets use the `.espreset` file extension. Each preset is self-contained and stores:

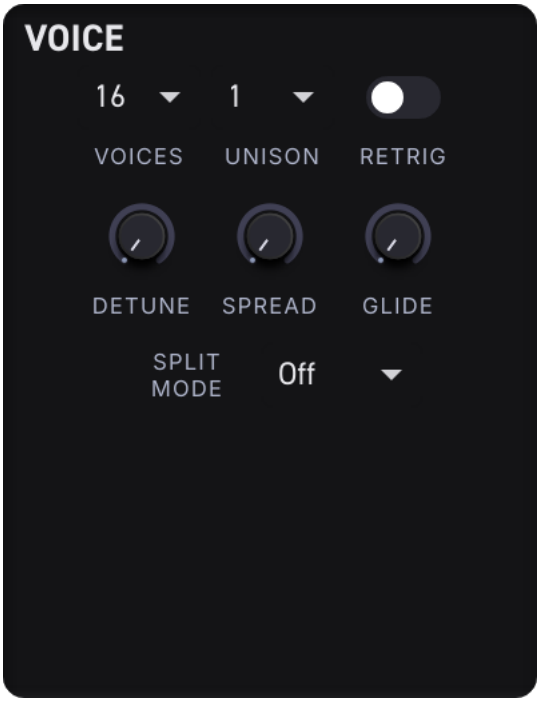
- All generator settings
- The effects rack (effect types, settings and routing)
- Voice settings (polyphony, unison, retrigger, detune, stereo spread, glide)
- Split settings
- The Erae layout
- All modulation, including cross-mod connections and curves
- Metadata: name, types, designer and bank

Loading a preset restores the complete sound. To share a preset, copy its `.espreset` file to another computer and import it there.

> **Tip:** Metadata such as type, designer and bank is stored in the file, so whoever imports your preset sees it in their library.

10 Voice and Split

The **VOICE** panel sits in the bottom row of the Synth and FX tabs, between the curve panel and the Erae layout thumbnail. It controls how many notes can play at once, how those notes are stacked and spread, and how notes are divided between Generator A and Generator B.



Voice and Split panels in the bottom bar

10.1 Voice Panel

The upper part of the **VOICE** panel sets polyphony, unison and glide for the whole instrument.

10.1.1 Parameters at a Glance

Parameter	Control	Range	Default	Description
VOICES	Dropdown	1 to 16	16	Maximum number of voices that can sound at once
UNISON	Dropdown	1 to 8	1	Number of stacked voices per note
RETRIG	Switch	On / Off	Off	Reuse the same voice when a note is played again
DETUNE	Knob	0 to 100 cents	0	Pitch spread between unison voices
SPREAD	Knob	0% to 100%	0%	Stereo spread of unison voices
GLIDE	Knob	0 to about 2 s	0	Portamento time between notes

10.1.2 Voices

VOICES sets the maximum number of voices that can sound together. With **VOICES** at 1, the synth is monophonic: each new note takes over the previous one. At 16, up to sixteen voices can ring at once. When all voices are busy, a new note takes over the oldest voice, starting with voices that are already releasing.

> **Tip:** Lowering the voice count saves CPU. If your patch only needs a few notes at a time, try 4 or 8 instead of 16.

10.1.3 Unison

UNISON stacks several voices on every note. With **UNISON** at 4, each key you press plays four voices.

Unison voices take their share of the **VOICES** budget: with **VOICES** at 16 and **UNISON** at 4, you can play four notes at once. **UNISON** can never use more voices than **VOICES** allows, so with **VOICES** at 1 there is no unison. The stacked voices are spread in pitch by **DETUNE** and in the stereo field by **SPREAD**.

10.1.4 Retrig

When **RETRIG** is on, playing a note that is still sounding (held or releasing) restarts it on the same voice, so repeated notes stay clean and consistent. When it is off, a repeated note starts on a new voice while the previous one finishes its release, so repeated notes can overlap.

10.1.5 Detune

DETUNE sets how far apart the unison voices are in pitch, in cents (hundredths of a semitone). The voices are spread evenly across this amount, half below and half above the played pitch. At 0, all unison voices play exactly the same pitch. Higher values give a wider, chorused sound.

> **Tip:** A **DETUNE** of 5 to 15 cents gives a classic analog thickness. Above `50`, it starts to sound like a deliberate detuned effect.

10.1.6 Spread

SPREAD sets the stereo position of the unison voices. At `0%`, all voices sit in the center. At `100%`, they are spread evenly from hard left to hard right.

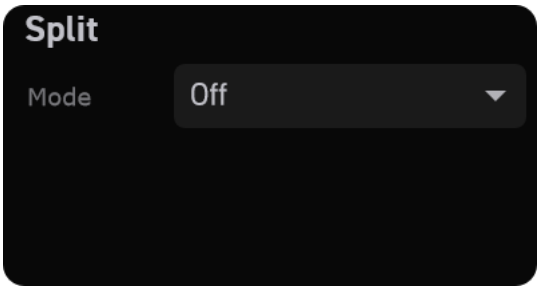
10.1.7 Glide

GLIDE (portamento) slides the pitch from one note to the next instead of jumping. At `0`, notes change pitch immediately. Turn it up for longer slides, up to about two seconds.

Glide works well with a low **VOICES** count for expressive mono or duo leads.

10.2 Split Controls

The lower part of the **VOICE** panel divides incoming notes between Generator A and Generator B. Use it to layer different sounds across the keyboard or to give different MIDI channels separate timbres.



Split panel

10.2.1 Split Mode

SPLIT MODE selects how notes are routed:

Mode	Behavior
`Off`	Every note plays through both generators
`Note`	Notes are divided by pitch at the split note
`MPE`	Notes are divided by MIDI channel

With **SPLIT MODE** set to `Off`, the split note and split channel controls are hidden.

10.2.2 Note Split

In `Note` mode, a **SPLIT NOTE** knob and its note name appear. The split note can be set anywhere from MIDI note `0` to `127`, shown as `C-2` to `G8` (in this display, MIDI note `60` is `C3`).

- Notes **below** the split note play only through **Generator A**.
- Notes **at or above** the split note play only through **Generator B**.

This is ideal for keyboard splits, for instance a bass on the left hand and a pad on the right.

> **Tip:** The default split note is MIDI note `60`, shown as `C3`: middle C, a natural place to divide most keyboard layouts.

10.2.3 MPE Split

In `MPE` mode, notes are routed by MIDI channel instead of pitch, with the **SPLIT CH** knob:

- Channels **1** to **SPLIT CH** play through **Generator A**.
- The channels above **SPLIT CH** play through **Generator B**.

SPLIT CH goes from 2 to 14, and defaults to 8: channels 1 to 8 play Generator A and channels 9 to 16 play Generator B. This is especially useful with MPE controllers like your Erae, which give each finger its own MIDI channel.

> **Tip:** See Erae Integration for more on using Erae layouts with Erae Sound.

10.3 MPE Support

Erae Sound is built around MPE (MIDI Polyphonic Expression). Every voice responds independently to three expressive dimensions:

- **Pitch bend**: per-note pitch changes, with a range of 48 semitones unless your controller announces another MPE pitch bend range.
- **Pressure**: per-note pressure, often routed to filter cutoff, volume or other timbre controls through the modulation system.
- **Slide**: per-note timbre control (CC 74), typically driven by vertical finger movement on an MPE surface.

These signals are available as modulation sources throughout Erae Sound. See Modulation for how to route them.

> **Tip:** Even without an MPE controller, the voice and split features work as usual.

10.4 Practical Recipes

10.4.1 Thick Unison Lead

1. Set **VOICES** to `4` and **UNISON** to 4, so each note uses all four voices.
2. Dial **DETUNE** to around `10` to `20` cents.
3. Set **SPREAD** to about `50%` for a wide stereo image.
4. Add a short **GLIDE** for smooth transitions between notes.

10.4.2 Split Keyboard (Bass and Pad)

1. In the **VOICE** panel, set **SPLIT MODE** to `Note`.
2. Set **SPLIT NOTE** to `C2` (MIDI note 48).
3. Design a bass sound on Generator A.
4. Design a pad sound on Generator B.
5. Play bass notes with your left hand and pad chords with your right.

10.4.3 MPE Dual-Timbre Performance

1. On your MPE controller, send one zone on MIDI channels 1 to 8 and the other on channels 9 to 16.
2. In the **VOICE** panel, set **SPLIT MODE** to `MPE` and keep **SPLIT CH** at 8.
3. Design a different sound on Generator A and Generator B.
4. Each zone now plays its own timbre with full per-note expression.

11 Shortcuts and Interactions

This chapter is a quick reference for the keyboard shortcuts, mouse gestures and interaction patterns in Erae Sound. Keep it handy while you work.

11.1 Keyboard Shortcuts

Action	macOS	Windows / Linux
Undo	`Cmd + Z`	`Ctrl + Z`
Redo	`Cmd + Shift + Z`	`Ctrl + Y`

These shortcuts work whichever tab is shown, as long as the Erae Sound window has keyboard focus.

When Erae Sound runs inside Erae Lab, `Cmd + Z` and `Cmd + Shift + Z` use Erae Lab's undo history, which holds the steps of both. When the next step belongs to Lab's view, the first press only switches to that view and the next press undoes it. See the Erae Lab manual, chapter The Canvas. Erae Sound in a DAW keeps its own history.

Press **Escape** to close the Modulation Overview, or to cancel typing a preset name.

11.2 Knob and Slider Interactions

Every knob and slider in Erae Sound responds to the same mouse gestures.

Gesture	What it does
Click and drag	Changes the value. Drag up to increase, down to decrease. Clicking a knob also selects it as the modulation destination.

Gesture	What it does
Double-click	Resets the knob to its default value.
Right-click	Opens the modulation menu: **Select**, **Copy Modulation**, **Paste Modulation**, **Clear Modulation**.
Mouse wheel	Changes the value in small steps.
Hover	Shows the current value below the knob (see Parameter Tooltips) and a help text at the bottom of the window.

11.3 Parameter Selection

Clicking a knob does more than change its value: it tells Erae Sound which parameter you want to modulate. The Modulation Display and the Envelope, LFO and curve panels update to show the selected parameter.

Gesture	What it does
Click a knob or its label	Selects that parameter. The Modulation Display shows all its sources.
Right-click a knob, then choose Select	Selects that parameter without touching its value.
Click an envelope or LFO knob or its label (ATTACK, DECAY, RATE and so on)	Selects that envelope or LFO setting, so you can modulate it in turn. The Modulation Display shows its sources.

For full details on modulation, see Modulation.

11.4 Modulation Display Interactions

The Modulation Display (the middle strip of the Synth and FX tabs) shows one cell per source for the selected parameter. Each cell has a depth fader and a connection point.

11.4.1 Depth Faders

Gesture	What it does
Drag up or down inside a cell	Sets the modulation depth for that source. Up is positive, down is negative, the center line is zero.
Double-click a cell	Resets its depth to zero.
Right-click a cell's depth fader	Opens the host slot menu so a DAW can automate this depth. See DAW Host Automation.
Click a PITCH, VEL, PRES, SLIDE, RELVEL or Erae source cell	Shows that source's curve in the curve panel.
Hover a source cell	Knobs that use this source show how much of it they receive, and the matching panel or layout element is highlighted.

Depths range from `-100%` to `+100%`. Positive depths use a warm fill, negative depths a red fill.

11.4.2 Cross-Modulation Connections

Each cell has a small **connection point** (circle) in its top right corner. You connect sources by dragging between these points.

Gesture	What it does
Drag from one connection point onto another cell	Creates a cross-modulation connection. A curved arrow shows the link. The target must be ENV or LFO.
Drag a cross-mod fader	Adjusts the cross-modulation depth (the narrow fader that appears in the target cell).
Double-click a cross-mod fader	Removes that connection.

11.4.3 Hover Highlighting

Gesture	What it does
Hover over a source cell	Highlights the matching element on the Erae layout thumbnail (for Erae and MPE sources).
Hover over an element on the layout thumbnail	Highlights the matching source cells in the Modulation Display.

This two-way highlighting shows at a glance which Erae elements feed which sources. See Erae Integration.

11.5 Parameter Tooltips

When you hover over or drag a knob, a small tooltip below it shows the current value. The format depends on the parameter:

Parameter type	Tooltip format	Example
General (shape, resonance, mix and so on)	Percentage	`75%`
Oscillator pitch (**COARSE**)	Note name and octave	`C4`, `F#3`
Fine tuning (**FINE**)	Semitones	`+0.10 st`
Filter cutoff (**FREQ**)	Frequency	`440 Hz`, `2.5 kHz`
Levels (**VOL**, effect **GEN A**, **GEN B**, **OUTPUT**, **SEND**)	Decibels	`-12.0 dB`
Envelope times	Milliseconds or seconds	`250 ms`, `1.20 s`
Modulation depths	Signed percentage	`+40%`
LFO rate in Free mode	Frequency	`0.25 Hz`, `4.0 Hz`
LFO rate in Sync mode	Note division	`1/4`, `1/8T`
LFO rate in Audio mode	Note name	`A4`
Delay **TIME** (Sync off)	Milliseconds or seconds	`500 ms`

The tooltip stays visible while you drag and disappears when you move the mouse away.

11.6 Visual Feedback Summary

Erae Sound gives consistent visual cues across its controls:

Control state	What you see
Normal	The knob shows its value with the accent color.
Hover	The knob is highlighted and its value appears below it.

Control state	What you see
Selected	The label of the selected knob is highlighted.
Modulated	Knobs and envelope or LFO sliders show a live indicator of the modulation being applied.
Link dots	The two dots under a knob show its envelope and LFO use and link group.

11.7 Quick Reference Card

I want to…	Do this
Undo my last change	`Cmd + Z` (Mac) or `Ctrl + Z` (Windows, Linux)
Redo an undone change	`Cmd + Shift + Z` (Mac) or `Ctrl + Y` (Windows, Linux)
Reset a knob to default	Double-click it
Select a parameter for modulation	Click the knob or its label
Copy a knob's modulation to another knob	Right-click it, **Copy Modulation**, then right-click the other knob, **Paste Modulation**
Set a modulation depth	Drag up or down inside the source cell
Reset a modulation depth to zero	Double-click the source cell
Automate a modulation depth from the DAW	Right-click the depth fader, then choose **Auto-assign to next free slot** or a specific slot
Create a cross-mod connection	Drag from one cell's connection point onto an ENV or LFO cell
Remove a cross-mod connection	Double-click the cross-mod fader
Change a value in small steps	Use the mouse wheel over a knob
Copy, paste or clear a generator	Right-click an empty area of the generator panel
Copy, paste or clear an effect slot	Right-click an empty area of the slot

I want to…	Do this
Close the Modulation Overview	Press Escape

11.8 Layout Bar Interactions

The slot bar under the Erae layout thumbnail has a **Preset** button, slot buttons **1** to **8** and a **Sync** switch. Click a slot button to switch the Erae to that slot; with **Sync** on, the matching preset loads. Press and hold a slot button for about 1.5s, until the ring fills, to save the current Erae Sound layout into that slot. Click **Preset** to show the current preset's layout on the Erae as a preview. See Erae Integration.

12 Troubleshooting

This chapter covers the most common issues you may encounter when using Erae Sound and how to resolve them. If your problem is not listed here, please visit the Embodme support page for further assistance.

12.1 Problem: Plugin doesn't appear in DAW

After installing Erae Sound, your DAW may not list it among available instruments. First, verify that the plugin files are in the correct location for your platform:

- **macOS:** `~/Library/Audio/Plug-Ins/VST3/`
- **Windows:** `%ProgramFiles%\Common Files\VST3\`
- **Linux:** `~/.vst3/`

Once you have confirmed the files are in place, run a plugin rescan from your DAW's preferences or plugin manager. On macOS, the system Gatekeeper may quarantine newly downloaded plug-ins. If the plugin still does not appear, open **System Settings > Privacy & Security** and allow Erae Sound to run. See Installation for full setup instructions.

12.2 Problem: No sound

If Erae Sound loads but produces no audio, check the following:

1. **MIDI routing**: make sure your DAW is sending MIDI to the Erae Sound track. The instrument needs to receive MIDI note data to produce sound.
2. **Preset**: verify that a preset is loaded. An empty or uninitialized state will not generate audio. See Presets for how to browse and load presets.
3. **Vol knob**: check that the master **Vol** knob in the header bar is turned up. If it is set to its minimum value, the output will be silent.
4. **VU meter**: look at the VU meter in the header. If it shows activity, the synth is producing sound and the issue is likely downstream in your DAW's mixer or audio routing.

12.3 Problem: I hear the sound twice (Erae Lab and the plugin both play)

If you are running Erae Sound inside Erae Lab and also as a plugin in your DAW at the same time, Erae Lab's built-in Erae Sound engine can sound at the same time as the plugin.

To route audio only through your DAW, click the power icon on the **Sound** tab in Erae Lab's top header bar to disable Erae Sound. This stops its audio engine while leaving layout editing and device sync active. Click the Sound-tab power icon again to re-enable Erae Sound.

Both copies share the same Erae layout context, so you do not need Erae Lab's built-in engine running for the plugin to receive your layout. Disabling it does not affect the plugin in your DAW.

12.4 Problem: High CPU usage

Erae Sound's CPU consumption depends primarily on voice count and active effects. To reduce load:

- Lower the **Voices** value in the Voice panel. Fewer simultaneous voices means less processing. See Voice and Split for details on voice management.
- Disable any effects you are not using by setting unused FX slots to **None**. Each active effect adds to CPU overhead. See Effects.
- Increase your audio interface buffer size in your DAW's audio settings. A larger buffer (e.g., `512` or `1024` samples) gives the CPU more time to process each block of audio.

12.5 Problem: Erae not connecting

If Erae Sound does not detect your Erae controller:

- Confirm that the Erae is connected to your computer via USB and is powered on.
- Erae Sound connects to the Erae automatically through Erae Lab. If the connection does not appear, unplug and reconnect the USB cable, then restart Erae Lab if needed.
- If using Erae Sound in a DAW, make sure Erae Lab is running when you need device-backed layout context.

See Erae Integration for a full overview of how Erae Sound communicates with the Erae.

12.6 Problem: Audio glitches or crackling

Clicks, pops, or crackling during playback usually indicate that your system cannot process audio fast enough. To resolve this:

- Increase your audio interface buffer size. A setting of `512` or `1024` samples is a good starting point for stable playback.
- Reduce polyphony by lowering the **Voices** parameter in the Voice panel. See Voice and Split.
- Close other CPU-intensive applications running on your system. Background tasks such as web browsers, video editors, or other plugins competing for CPU time can cause audio dropouts.

12.7 Problem: Preset won't save

If you are unable to save a preset, check for these common causes:

- The preset name field must not be empty. Enter a name before saving.
- Factory presets are read-only and cannot be overwritten, renamed or deleted. To keep changes made from a factory preset, save it under a new name.
- A name already used by another preset is refused. Choose a different name.
- Saving and importing are disabled during the demo. Activate a license to save your sounds.

See Presets for more details on managing your preset library.

12.8 Problem: A notification asks to reload or overwrite the preset

Preset modified on disk. Reload? (or **Preset modified on disk. Reload and lose your changes?**) means another Erae Sound, in Erae Lab or in a DAW, saved the preset you are using. **Reload** loads that version. **Keep** keeps yours and marks the preset as modified.

This preset was changed in another instance. Overwrite it? appears when you save over a preset that another instance saved after you loaded it. **Overwrite** replaces it with your version. **Save as new** keeps both. See Presets.

12.9 Problem: Erae Sound in Live and Erae Lab out of sync

In earlier versions, running Erae Sound in Ableton Live with Erae Lab open could leave Live's Erae Sound on old versions of your layouts, or lose slots. This is fixed: update Erae Lab and Erae Sound to the current version. They now stay in sync in any start order, when Live quits or crashes, and when you unplug the Erae and plug it back.

12.10 Problem: CC macros don't respond in a DAW

If a key's CC outputs (Key Pressure, X, Y) or a fader's CCs reach Erae Sound but the matching macro does not move, the cause is almost always a MIDI channel mismatch introduced by the host.

Most DAWs collapse incoming MIDI to a single channel (typically channel 1) before delivering it to a VST or AU instrument, unless the track is explicitly configured for MPE. Ableton Live, Logic without per-track MPE, Cubase, FL Studio, and Reaper all behave this way to some degree. The plugin receives the CC value but on a different channel than the layout assigned it to, so the macro mapping does not match.

To resolve:

- **Use a single MIDI channel for all macro CCs in a layout** when the layout is intended for a DAW plugin. Channel 1 is the safest default.
- **Or enable MPE mode on the DAW track**, which preserves per-channel routing (Ableton Live 11+, Logic Pro, Cubase 12+, Bitwig, Reaper).
- **Avoid assigning the same CC number to elements on different channels** within one layout. Even with a fallback in place, the plugin cannot disambiguate which element a CC value targets when the host strips the channel.

See Appendix C: DAW Setup in the Erae 2 manual for per-DAW MPE configuration steps.

12.11 Problem: A fader, slide, or pressure does nothing in my DAW

If notes play but a fader, slide (timbre), or pressure gesture has no effect on the plugin in your DAW (while the same preset reacts when you run Erae Sound inside Erae Lab), the gesture data is most likely not reaching the plugin. Work through this checklist:

1. **Free the Erae MIDI port.** These gestures travel on the Erae MIDI ports: faders and other CCs on the main port, slide (timbre) and per-note pressure on the Erae MPE port. If the Erae

Lab instance (or another application) is holding the port the data needs, the DAW cannot receive it. Close the other holder, or stop playing it. When a port it needs is already taken, Erae Sound shows the message "An Erae MIDI port is in use by another application. Close other software using it."

2. **Enable the Erae input on the track.** Make sure your DAW track's MIDI input is set to the Erae and is armed/monitoring. A track with its input disabled receives notes through other routing but never sees the fader and expression CCs.
3. **Enable MPE on the track for slide and pressure.** Slide (timbre) and per-note pressure are MPE expression. If the track is not in MPE mode, the host collapses every note onto one channel and the per-note movement is lost. Turn on MPE for the track (Ableton Live 11+, Logic Pro, Cubase 12+, Bitwig, Reaper). Faders that send ordinary CCs do not need MPE, but they still need the port and track input from steps 1 and 2.
4. **Check the channel.** If a fader or key CC arrives but its macro does not move, see Problem: CC macros don't respond in a DAW above for the channel-mismatch fix.

12.12 Problem: Modulation not working

If a modulation source (envelope or LFO) does not seem to affect a parameter:

- Make sure you have selected the target parameter by clicking its knob first. The selected parameter is shown in the Modulation Display at the bottom of the interface.
- Check that the **depth** fader in the Modulation Display is not set to zero. A depth of zero means the modulation source will have no effect on the parameter, regardless of its configuration.
- Verify that the modulation source itself is properly configured. For example, an envelope with all stages set to the same level, or an LFO with its rate at zero, will not produce meaningful modulation.

See Modulation for a complete guide to setting up modulation routing.

12.13 Problem: Licensing or demo activation fails

- If the activation link does not work, send a fresh activation email and open it on the same computer where Erae Sound is running.
- If you reached the machine limit, click **Deauthorize** next to another machine in the **Machine Limit Reached** window, or contact support.
- When the five minute demo ends, the license window returns: restart the demo, log in or purchase a license. Saving and importing presets stay disabled during the demo.

12.14 Crash Reports

If Erae Sound, or the host it runs in, closes unexpectedly, Erae Sound can send a crash report so we can find the cause. The **Diagnostics** setting, in Erae Lab's settings, decides what is sent. There is no prompt after a crash.

- **Without identifiers** (the default): a technical report that contains nothing that identifies you. Erae Lab's update checks are counted as daily unique users with a pseudonymous code that is deleted within 48 hours.
- **Full**: a more detailed report that support can match to your messages, plus daily usage statistics with your machine id, the identifier used for license activation and crash reports. Erae Sound itself sends the DAW it runs in; Erae Lab sends its version, your Erae model and firmware and the MIDI controllers you use with it.
- **Off**: no diagnostics are sent. Erae Lab's update checks still happen but are not counted as users. Manual bug reports still work.

For what each report contains and how long it is kept, see the privacy notice at embodme.com/privacy-policy. To have a full report or your usage records removed, write to **support@embodme.com** with the machine id shown in Erae Lab's settings or the email address of your license.

12.14.1 Choosing What Is Sent

The first time you open Erae Sound, one prompt asks:

> Help us make Erae better. When something goes wrong, Erae Sound sends a short technical report that doesn't identify you. Would you also share full diagnostics? That adds the recent log, your Erae's state and Erae usage statistics linked to this computer. You can change this anytime in Settings.

Yes sets **Diagnostics** to **Full**. **Not now**, or closing the message, keeps **Without identifiers**. You can change it at any time in Erae Lab's settings. Erae Sound and Erae Lab share the same choice.

12.14.2 Local Copies of Crash Reports

Erae Sound keeps its most recent crash reports on your computer until they are sent. If support asks for one, they will tell you where to find it. You can delete these copies at any time.

12.15 In-App Bug Reports

When your license includes it, a bug report button appears in the header and opens a report form. Describe what happened and send it: the report includes your current sound and technical details that help us investigate. If you can, reconnect your Erae and reproduce the problem right before sending.

If the button is not visible, contact support and include your Erae Sound version, operating system, host application, connected Erae model, and steps to reproduce.

12.16 Stuck Notes

If you are running inside Erae Lab, stop playback, release all held notes, then reconnect the Erae or MIDI controller if notes remain stuck. In a DAW, use your DAW's panic or all notes off command. If stuck notes keep coming back after switching layouts, send a bug report.

13 Appendix A: Parameter Reference

This appendix lists every user-facing parameter in Erae Sound, organized by section. Generators A and B have identical parameters: they are listed once and apply to both.

The **Default** column gives the value in a new, initialized sound. Presets set their own values. Where a knob shows percentages, `0%` to `100%` covers its full travel.

All knobs support modulation unless marked "Not modulatable". For details on assigning envelopes, LFOs and MPE sources, see Modulation.

13.1 Generator: Oscillator 1

Parameter	Range	Default	Description
COARSE	`0` to 127 (C-1 to G9)	`60` (C4)	Pitch offset of Oscillator 1 in semitones. At `60`, played notes sound at their written pitch.
FINE	`-1.00` to `+1.00` semitone	`0.00`	Fine tuning in fractions of a semitone.
SHAPE	`0%` to `100%`	`50%`	Morphs the waveform from sine through triangle and pulse to sawtooth.
FOLD	`0%` to `100%`	`0%`	Wavefolding for added harmonics.
VOL	`0%` to `100%` (silence to `0` dB, audio taper)	`-12 dB`	Level of Oscillator 1 before the filters.

13.2 Generator: Oscillator 2

Parameter	Range	Default	Description
COARSE	0 to 127 (C-1 to G9)	60 (C4)	Pitch offset of Oscillator 2 in semitones.
FINE	-1.00 to +1.00 semitone	+0.10 (double-click resets to 0.00)	Fine tuning. The small default detune adds character against Oscillator 1.
SHAPE	0% to 100%	50%	Morphs the waveform from sine through triangle and pulse to sawtooth.
FOLD	0% to 100%	0%	Wavefolding for added harmonics.
VOL	0% to 100% (silence to 0 dB, audio taper)	-12 dB	Level of Oscillator 2 before the filters.

13.3 Generator: Filter 1

Parameter	Range	Default	Description
FREQ	0 to 143 (note number, about 8 Hz to 31.6 kHz)	93 (about 1.76 kHz)	Cutoff frequency of Filter 1.
RESO	0% to 100%	0%	Resonance at the cutoff frequency.
TYPE	0% to 100%	50%	Morphs the response: Bandpass at 0%, Lowpass at 50%, Highpass at 100%, with smooth blends in between.
POLES	2 / 4	4	2-pole (12 dB per octave) or 4-pole (24 dB per octave) slope. Not modulatable.

13.4 Generator: Filter 2

Parameter	Range	Default	Description
NOISE	0% to 100%	0%	Crossfades Filter 2's input between its signal and pink noise.
FREQ	0 to 143 (note number, about 8 Hz to 31.6 kHz)	93 (about 1.76 kHz)	Cutoff frequency of Filter 2.
RESO	0% to 100%	0%	Resonance at the cutoff frequency.
TYPE	0% to 100%	50%	Morphs the response: Bandpass at 0%, Lowpass at 50%, Highpass at 100%.
POLES	2 / 4	4	2-pole (12 dB per octave) or 4-pole (24 dB per octave) slope. Not modulatable.

13.5 Generator: Control Bar

Parameter	Range	Default	Description
TZFM	0% to 100%	0%	Through-zero FM from Oscillator 2 into Oscillator 1, for metallic, bell-like timbres.
Routing	Serial / Parallel / Split	Serial	How the filters are connected. Serial: the oscillator mix goes through Filter 1, then Filter 2. Parallel: the mix feeds both filters. Split: Oscillator 1 feeds Filter 1 and Oscillator 2 feeds Filter 2. Not modulatable.
MIX	0% to 100%	50%	Equal-power crossfade between the Filter 1 and Filter 2 outputs. 0% is Filter 1 only, 100% Filter 2 only.

Parameter	Range	Default	Description
PAN	Hard left to hard right	Center	Stereo position of the generator.
VOL	0% to 100%	Generator A: 100%. Generator B: 0% (double-click resets to 100%)	Output level of the generator. Its envelope depth is fixed at 100%, so the envelope acts as the amplitude envelope.

13.6 Envelope

These settings belong to each parameter's exclusive envelope, or to envelope link groups A to D.

Parameter	Range	Default	Description
ATTACK	about 2 ms to 10 s	about 2 ms	Rise time after note-on.
DECAY	about 2 ms to 10 s	about 18 ms	Fall time to the sustain level.
SUSTAIN	0% to 100%	70%	Level held while the note is held.
RELEASE	about 2 ms to 10 s	about 43 ms	Fall time after note-off.
LIN / **EXP**	Linear / Exponential	Linear	Curve of the segments. Not modulatable.
Link	X, A, B, C, D	A	Exclusive envelope or shared link group. Set per parameter. Not modulatable.

13.7 LFO

These settings belong to each parameter's exclusive LFO, or to LFO link groups A to D.

Parameter	Range	Default	Description
Mode	`Free` / `Sync` / `Audio`	`Free`	Unit of **RATE**. Not modulatable.
RATE	Free: `0.01 Hz` to `20 Hz`. Sync: `1/64` to `4 bars`. Audio: `C-1` to `G9`	about `1 Hz` (Free)	LFO speed.
WAVE	Sine, Triangle, Saw Up, Square, Sample & Hold (continuous morph)	Sine	Waveform.
SKEW	`0%` to `100%`	`50%`	Waveform symmetry.
PHASE	`0%` to `100%`	`0%`	Starting phase of the cycle.
OFFSET	`0%` to `100%`	`50%`	Output range: both ways at `50%`, downward only at `0%`, upward only at `100%`.
POLY	`Off` / `On`	`Off`	One shared LFO, or one per voice. Not modulatable.
Link	`X`, `A`, `B`, `C`, `D`	`A`	Exclusive LFO or shared link group. Set per parameter. Not modulatable.

13.8 Modulation Depths

Every modulable knob has these depths, set in the Modulation Display.

Parameter	Range	Default	Description
ENV, **LFO** depth	`-100%` to `+100%`	`0%` (generator **VOL**: ENV fixed at `100%`)	Amount of envelope or LFO.
PITCH depth	`-100%` to `+100%`	`100%` on oscillator **COARSE**, `0%` elsewhere	Amount of played note plus pitch bend.

Parameter	Range	Default	Description
VEL, **PRES**, **SLIDE**, **RELVEL** depth	`-100%` to `+100%`	`0%`	Amount of each MIDI source.
Erae source depths	`-100%` to `+100%`	`0%`	Amount of each Erae layout source.
Cross-mod depth	`-100%` to `+100%`	`0%`	Amount of each cross-modulation connection (up to 64 per patch).
Curve polarity	`UNIDIR` / `BIDIR`	`BIDIR` for PITCH, `UNIDIR` for the others	Per source and parameter.
Curve link	`X`, `A`, `B`, `C`, `D`	`X`	Exclusive curve or shared curve group.

13.9 FX: Direct Out

Parameter	Range	Default	Description
GEN A	`0%` to `100%`	`100%`	Level of Generator A sent straight to the output, without effects.
GEN B	`0%` to `100%`	`100%`	Level of Generator B sent straight to the output, without effects.

13.10 FX Slot: Common Parameters

Every effect slot (1 to 4) has these routing parameters, whatever effect it holds.

Parameter	Range	Default	Description
Type	`None`, `Distortion`, `Chorus`, `Flanger`, `Phaser`, `Delay`, `Reverb`, `Shimmer`, `Compressor`, `Param EQ`	`None`	Effect loaded in the slot. Not modulatable.
Enable switch	`On` / `Off`	`On`	Turns the effect on, or bypasses it (the slot goes silent). Not modulatable.
GEN A	`0%` to `100%`	`50%` (about `-12` dB)	Send level from Generator A into this effect.
GEN B	`0%` to `100%`	`50%` (about `-12` dB)	Send level from Generator B into this effect.
OUTPUT	`0%` to `100%`	`70%` (about `-7 dB`)	Level of this effect in the final mix.
SEND	`0%` to `100%`	`0%`	Amount of this effect sent into the next active slot.

13.11 FX: Distortion

Parameter	Range	Default	Description
DRIVE	`0%` to `100%`	`30%`	Gain into the distortion stage.
TYPE	`0%` to `100%`	`0%`	Morphs between six algorithms: Clean Boost, Tape, Tube Screamer, RAT, Big Muff and Fuzz Face.
LOW	`0%` to `100%` (`-24 dB` to `+24 dB`)	`50%` (flat)	Low shelf before the distortion stage.

Parameter	Range	Default	Description
HIGH	0% to 100% (-24 dB to +24 dB)	50% (flat)	High shelf before the distortion stage.

13.12 FX: Chorus

Parameter	Range	Default	Description
POS	0% to 100% (about 1 ms to 12 ms)	50%	Delay time of the BBD chorus. Modulate it with an LFO for movement.
STEREO	0% to 100%	100%	Offset of the right channel's delay, for stereo width.

13.13 FX: Flanger

Parameter	Range	Default	Description
POS	0% to 100% (about 0.5 ms to 10 ms)	50%	Delay position of the flanger. Modulate it to sweep.
FDBK	0% to 100% (60% to 95% feedback)	30%	Feedback, intensifying the comb effect.
STEREO	0% to 100%	25%	Offset of the right channel's position, for stereo width.

13.14 FX: Phaser

Parameter	Range	Default	Description
POS	0% to 100%	50%	Notch position of the 4-stage phaser. Modulate it to sweep.
FDBK	0% to 100% (limited to 95%)	0%	Feedback for a more resonant sweep.
STEREO	0% to 100%	25%	Spreads the left and right notch positions apart.

13.15 FX: Compressor

Parameter	Range	Default	Description
THRESH	0% to 100% (-30 dB to 0 dB)	50%	Level where compression starts.
RATIO	0% to 100% (1:1 to about 50:1)	30%	Compression strength.
ATK	0% to 100% (about 0.1 ms to 300 ms)	20%	Attack time.
REL	0% to 100% (about 50 ms to 3 s)	30%	Release time.
MAKEUP	0% to 100% (0 dB to +20 dB)	0%	Gain after compression.

13.16 FX: Param EQ

Parameter	Range	Default	Description
FREQ 1	0% to 100% (20 Hz to 2 kHz)	30%	Center frequency of band 1.
GAIN 1	0% to 100% (-24 dB to +24 dB)	50% (flat)	Gain of band 1.
Q 1	0% to 100% (about 0.3 to 8)	30%	Width of band 1.
FREQ 2	0% to 100% (500 Hz to 20 kHz)	70%	Center frequency of band 2.
GAIN 2	0% to 100% (-24 dB to +24 dB)	50% (flat)	Gain of band 2.
Q 2	0% to 100% (about 0.3 to 8)	30%	Width of band 2.

13.17 FX: Delay

Parameter	Range	Default	Description
Sync	`Off` / `On`	`Off`	Off: **TIME** in milliseconds. On: **TIME** as a tempo division.
TIME	`0%` to `100%` (10 ms to 2000 ms; with Sync, `1/64` to `4 bars`, limited to 2 s)	25% (about 500 ms)	Delay time.
FDBK	`0%` to `100%`	`40%`	Feedback, creating repeating echoes. Higher **CHAR** lowers the maximum.
CHAR	`0%` to `100%`	`30%`	Character from clean through tape to lo-fi, adding saturation, filtering and wow and flutter.
STEREO	`0%` to `100%`	`0%`	Stereo spread, from identical channels to offset and ping-pong repeats.
TONE	`0%` to `100%`	`50%`	Tilt EQ on the repeats, from dark to bright.

13.18 FX: Reverb

Parameter	Range	Default	Description
DECAY	`0%` to `100%`	`50%`	Length of the reverb tail.
PRE-DLY	`0%` to `100%` (0 to 200 ms)	`0%`	Delay before the reverb starts.
DAMP	`0%` to `100%`	`50%`	High-frequency damping of the tail; higher is darker.
WIDTH	`0%` to `100%`	`100%`	Stereo width, from mono to full stereo.
MOD	`0%` to `100%`	`30%`	Internal modulation, reducing metallic ringing.

13.19 FX: Shimmer

Parameter	Range	Default	Description
SIZE	0% to 100%	50%	Size of the reverb space.
FDBK	0% to 100%	50%	Feedback of the pitch-shifted signal into the reverb.
PITCH	0% to 100% (-12 to +12 semitones)	50% (no shift)	Pitch shift in the feedback path.
WARP	0% to 100%	0%	Saturation and darkening in the feedback path.

13.20 Voice

Parameter	Range	Default	Description
VOICES	1 to 16	16	Maximum number of voices sounding at once. Not modulatable.
UNISON	1 to 8	1	Voices stacked per note, taken from the **VOICES** budget. Not modulatable.
RETRIG	Off / On	Off	When on, a note that is still sounding restarts on the same voice. Not modulatable.
DETUNE	0 to 100 cents	0	Total pitch spread of the unison voices, spread evenly around the played pitch. Not modulatable.
SPREAD	0% to 100%	0%	Stereo spread of the unison voices. Not modulatable.
GLIDE	0 to about 2 s	0 (off)	Portamento time between notes. Not modulatable.

13.21 Split

Parameter	Range	Default	Description
SPLIT MODE	`Off`, `Note`, `MPE`	`Off`	Off sends all notes to both generators. Note divides by pitch at the split note. MPE divides by MIDI channel. Not modulatable.
SPLIT NOTE	`0` to `127` (shown as `C-2` to `G8`)	`60` (shown as `C3`)	Notes below go to Generator A, notes at or above to Generator B. Shown in `Note` mode only. Not modulatable.
SPLIT CH	`2` to `14`	`8`	Channels 1 to **SPLIT CH** go to Generator A, higher channels to Generator B. Shown in `MPE` mode only. Not modulatable.

13.22 Master

Parameter	Range	Default	Description
Vol	`0%` to `100%` (audio taper)	`100%`	Master output level, in the header. Not modulatable.

13.23 Host Automation Slots

The DAW automation list also includes 64 generic slots, shown as `Slot 1` to `Slot 64`. A slot does nothing until you assign a modulation depth to it from inside Erae Sound.

Parameter	Range	Default	Description
Slot 1 to **Slot 64**	`-100%` to `+100%`	`0%`	Bipolar automation slot. When assigned, it drives its depth in both directions (DAW automation moves the depth, and moving the depth moves the DAW lane). Assign it from the right-click menu of any depth fader. See DAW Host Automation.

14 Appendix B: MIDI Reference

This appendix lists the MIDI messages Erae Sound responds to, by category. Use it as a quick reference when setting up controllers, recording in your DAW or checking your modulation.

For how to assign these sources to parameters, see Modulation. For Erae-specific setup, see Erae Integration.

14.1 Standard MIDI Sources

Erae Sound turns five kinds of MIDI data into modulation sources, available on every parameter.

Source	Modulation Display Label	MIDI Message	Value Range	Description
Velocity	**VEL**	Note On velocity	`0` to 127	How hard you strike the key. Captured at note-on and held for the whole note.
Release Velocity	**RELVEL**	Note Off velocity	`0` to 127	How quickly you release the key. Captured at note-off. Useful for release character.
Pressure	**PRES**	Channel Pressure (aftertouch)	`0` to 127	Continuous pressure while holding a note. Per voice with MPE.

Source	Modulation Display Label	MIDI Message	Value Range	Description
Slide	**SLIDE**	CC 74 (MPE timbre)	`0` to 127	Usually vertical finger position on an MPE surface. Updates continuously.
Pitch	**PITCH**	Note number and Pitch Bend	Semitones from C4	The note you play relative to C4, plus pitch bend. Per voice with MPE.

> **Note:** Velocity and Release Velocity are snapshot sources: they capture one value at note-on or note-off and hold it. The other sources update continuously during the note.

14.2 Pitch Bend Range

Erae Sound uses a per-note pitch bend range of **48 semitones** by default, the MPE standard, designed for wide expressive gestures. If your controller announces a different MPE pitch bend range (for example 12 or 24 semitones), Erae Sound follows it so notes stay in tune.

Pitch bend reaches the oscillators through the **PITCH** source, which is set to `100%` on each oscillator's **COARSE** knob by default.

14.3 MPE (MIDI Polyphonic Expression)

Erae Sound is an MPE instrument. It uses a **lower-zone MPE configuration** with 15 member channels (channels 2 to 16) and channel 1 as the manager channel.

14.3.1 Per-Voice Expression

With MPE, each voice responds independently to three expressive dimensions:

Dimension	MIDI Message	Per Voice?	Description
Pitch Bend	Pitch Bend (per channel)	Yes	Smooth pitch changes per finger, 48 semitones by default.
Pressure	Channel Pressure (per channel)	Yes	Pressure per finger. Each note follows the pressure on its own channel.
Slide	CC 74 (per channel)	Yes	Timbre per finger, typically vertical finger movement.

14.3.2 Channel Allocation

MPE controllers send each note on its own member channel. When a note arrives, Erae Sound gives it a free voice. If all voices are busy, it takes over the oldest voice, starting with voices that are already releasing.

14.3.3 MPE Split

When **SPLIT MODE** is set to `MPE` in the **VOICE** panel, notes are routed by channel. With the default **SPLIT CH** of 8:

- Channels **1** to **8** play through **Generator A**
- Channels **9** to **16** play through **Generator B**

This lets you play two timbres from separate zones of an MPE controller. See Voice and Split.

14.3.4 Using Erae Sound without MPE

Erae Sound also works with standard MIDI keyboards. Notes and velocities work the same way. Without MPE, expression messages are not per note: channel pressure on channel 1 affects all playing notes together.

14.4 Erae-Sourced MIDI CCs

When your Erae is connected and a layout is active, Erae Sound finds the layout elements that send CC messages and turns them into extra modulation sources. They appear in the Modulation Display next to the standard sources.

14.4.1 How CC Numbers Are Assigned

The CC numbers and channels used by Erae sources **come from your Erae layout**. Erae Sound reads the layout and maps each element to its CC number and MIDI channel automatically, so you do not need to know or set them yourself.

14.4.2 DAW Compatibility

All Erae sources send **standard MIDI CC messages**. This means:

- Every gesture is **recordable** in your DAW's MIDI editor.
- Recorded CC data **plays back** into Erae Sound, even without the Erae connected, as long as the matching layout is active.
- You can **edit** Erae-sourced data like any other MIDI CC.

14.4.3 Erae Source Types

The tables below list every type of Erae source. Which ones appear depends on the elements in your layout and which of their CC outputs are enabled. Numbers count up for each element of that kind in the layout.

14.4.3.1 Keyboard Position Sources

Source Type	Example Label	Description
Keyboard X	**KB1 X**	Absolute horizontal finger position
Keyboard Y	**KB1 Y**	Absolute vertical finger position
Keyboard X Relative	**KB1 XR**	Horizontal movement from the first touch point
Keyboard Y Relative	**KB1 YR**	Vertical movement from the first touch point
Keyboard Speed	**KB1 Motion Spd**	Speed of finger movement

> **Note:** Keyboard pressure and slide use the built-in **PRES** and **SLIDE** sources. They are not separate Erae sources.

14.4.3.2 1D Fader Sources

Source Type	Example Label	Description
Fader position	**Fader 1**	Position along the fader
Fader pressure	**Fdr1 Pres**	Finger pressure on the fader

Source Type	Example Label	Description
Fader speed	**Fdr1 Motion Spd**	Speed of finger movement on the fader

14.4.3.3 2D Fader (XY Pad) Sources

Source Type	Example Label	Description
Fader X	**Fdr1 X**	Horizontal position on the pad
Fader Y	**Fdr1 Y**	Vertical position on the pad
Fader pressure	**Fdr1 Pres**	Finger pressure on the pad
Fader speed	**Fdr1 Motion Spd**	Speed of finger movement on the pad

14.4.3.4 Button Sources

Source Type	Example Label	Description
Button	**Btn 1**	CC value sent by the button
Button on and off	**Btn1 On**, **Btn1 Off**	Separate sources when the button sends different CCs for press and release

14.4.3.5 Individual Key Sources

Source Type	Example Label	Description
Key Pressure	**Key1 P**	Pressure on the key
Key X	**Key1 X**	Absolute horizontal finger position on the key
Key Y	**Key1 Y**	Absolute vertical finger position on the key
Key X Relative	**Key1 XR**	Horizontal movement from the first touch point
Key Y Relative	**Key1 YR**	Vertical movement from the first touch point
Key Speed	**Key1 Motion Spd**	Speed of finger movement on the key

14.5 Quick Reference: All Modulation Sources

Category	Source	Label	Always Available?
Standard MIDI	Pitch (note and pitch bend)	**PITCH**	Yes
Standard MIDI	Velocity	**VEL**	Yes
Standard MIDI	Pressure	**PRES**	Yes
Standard MIDI	Slide (CC 74)	**SLIDE**	Yes
Standard MIDI	Release Velocity	**RELVEL**	Yes
Built-in	Envelope (ADSR)	**ENV**	Yes
Built-in	LFO	**LFO**	Yes
Erae	Keyboard (X, Y, XR, YR, speed)	for example **KB1 X**	Only with an Erae layout
Erae	1D Fader (position, pressure, speed)	for example **Fader 1**	Only with an Erae layout
Erae	2D Fader (X, Y, pressure, speed)	for example **Fdr1 X**	Only with an Erae layout
Erae	Button	for example **Btn 1**	Only with an Erae layout
Erae	Individual Key (pressure, X, Y, XR, YR, speed)	for example **Key1 P**	Only with an Erae layout

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14.6 Tips for DAW Integration

- **Record everything.** All MIDI sources, including Erae CCs, are standard MIDI data. Arm your track for MIDI recording and every gesture is captured.
- **Play back without hardware.** Recorded MIDI plays back through Erae Sound whether or not a controller is connected.

- **Pitch bend resolution.** Erae Sound reads full 14-bit pitch bend for smooth, high-resolution pitch control.
- **Use MPE-aware tracks.** For per-voice expression, enable MPE on your DAW track, so per-channel pitch bend, pressure and slide reach the right voices. See Troubleshooting for per-DAW checks.

For general troubleshooting, see Troubleshooting.