u-he

Zebralette

USER GUIDE

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HECKMANN AUDIO GMBH, BERLIN

Table of Contents

NOTE: Cryptic or CamelCase names (e.g. *SqueezeTrimStop*) will be simplified and otherwise improved in the 1.0 release version!

Introduction

About Zebralette3

Zebralette3 is a very flexible wavetable / additive oscillator with spline-based editing, plus a minimum of internal modulation: two identical LFOs, an ADSR and a multi-segment envelope (MSEG) i.e. just enough to transform a single Zebra3 oscillator into a great little synthesizer!

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Team 2024 (Q1)

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Terminology

Zebralette3 is such a complex little beast that it is impossible to avoid specialist words, or to be 100% precise without becoming too wordy. Knowing the following might help a bit...

Spline	Method used in graphics programs (and Zebralette3) to create and manipulate shapes. For details of the underlying math, see [Spline](#) in Wikipedia.
Spectrum	Short for *audio spectrum*, the range of audible frequencies. See also [Harmonic spectrum](#) and [Harmonic series (music)](#) in Wikipedia.
Curve Set	The (up to 16) morphable curves in the oscillator timeline. The Curve Set is also available as source in certain [oscillator effects](#).
Curve	Single member of the Curve Set. Also used generically e.g. in *Curve Morph*, a parameter in the MSEG editor: A 'curve' is not necessarily a waveform!
Guides	The set of 3 morphable helper curves used in the OSC EDITOR. Guides are also available as source in certain [oscillator effects](#).
Segment	Line connecting adjacent points on a curve.

Overview

As soon as you open Zebralette3 you should see the following panels:

CONTROL BAR		
OSCILLATOR SETTINGS		OSCILLATOR EFFECTS
GLOBAL SETTINGS	ADSR ENVELOPE / 2 x LFO (LOW FREQUENCY OSCILLATORS)	
MSEG (MULTI-SEGMENT ENVELOPE GENERATOR)		DELAY & REVERB EFFECTS
MODULATION MATRIX or KEYBOARD		
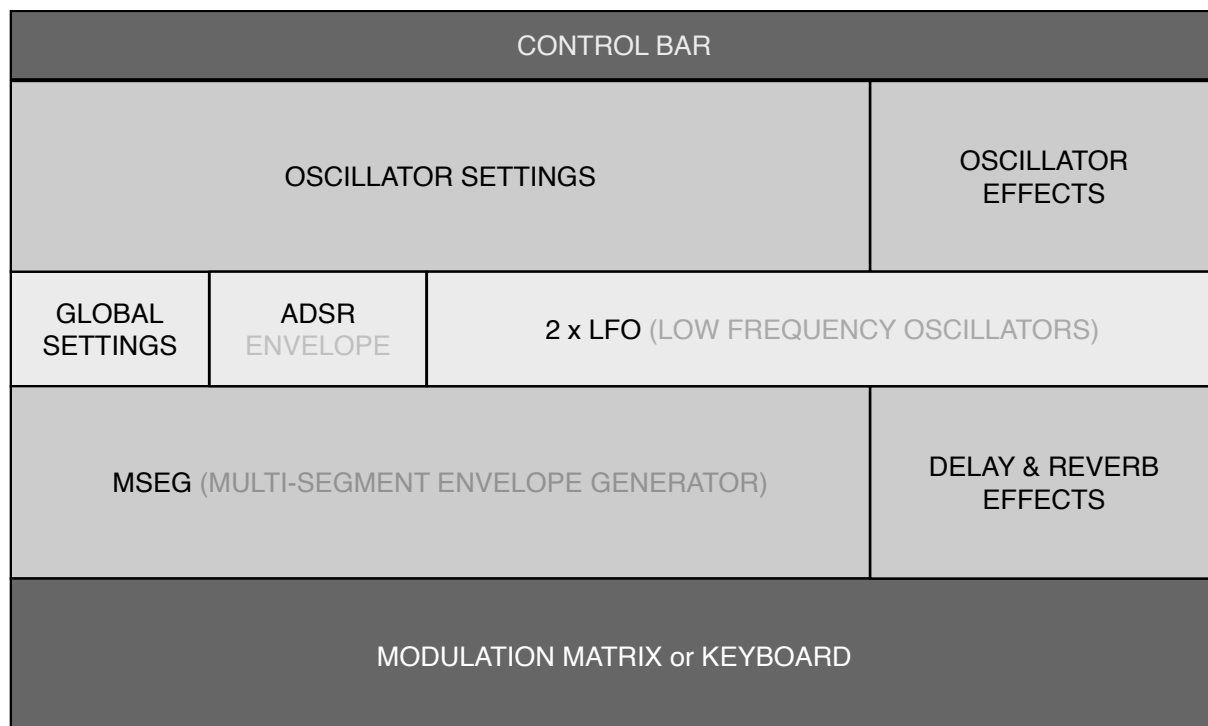
The Zebralette3 oscillator consists of a number of morphable spline-based **Curves** and up to three **Guides**. The Curve Set and Guides can be edited either as regular **waveform**s or as the equivalent **additive** spectra.

The oscillator can then be processed by a pair of extra **oscillator effects** arranged in series (which can alter the sound dramatically) before being **rendered** either as a classic **wavetable** or as the sum of up to 1024 sine waves. The latter **additive** mode offers a choice of functions which can expand, contract or otherwise mangle the spectrum towards total inharmonicity!

Control Bar

The narrow strip along the top hosts a few global parameters and utility functions...
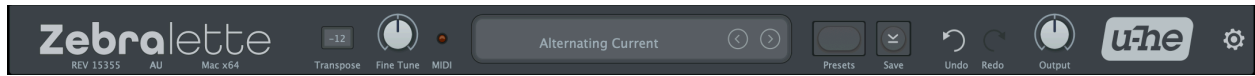
Revision

Hover over the REV label to view the revision number in the data display.

Transpose

Shifts the pitch by up to +/- 24 semitones (for a wider range also use the Tune knob).

Fine Tune

Offsets the overall pitch by up to +/- 100 cents i.e. 1 semitone.

MIDI

The MIDI activity indicator flashes whenever MIDI data is being received.

Data Display

Apart from showing the name of the currently selected patch, the central display has a few other duties: The triangles to the right step through the presets.

A click on the display opens a list of all presets in the currently selected directory. This is often easier than opening the browser, selecting a preset and exiting the browser again.

If you drag a Zebralette preset from outside the plugin and drop it onto the Data Display, it will be loaded (but not automatically saved).

Initialize preset: Whenever you want to program a new sound from scratch, right-click on the data display and select *init*.

Presets

Opens and closes Zebralette's browser. See the Preset Browser chapter.

Save

Clicking on [Save] opens a window where you can give your sound a name, enter your name (as author) and any details you like: preset description, performance control etc.. Then confirm via [Save Preset] or simply hit Return (for line breaks in the editable fields, use SHIFT+return). The preset will be saved in the User folder by default (see Preferences).

Right-clicking selects format options: The standard is *.h2p*, which has the advantage of being cross-platform compatible. The *.h2p extended* format is similar but also allows per-line comments – the preset files are therefore slightly larger.

Clicking on the final *Tag this Patch* entry opens a window where you can specify CATEGORY, FEATURE and CHARACTER tags for the currently loaded preset. See Preset Tagging.

Note that the selection status of points in the curve editors is saved with each preset.

Undo / Redo

These buttons can be used to fix recent mistakes. Although the number of steps in the buffer is limited, you can even undo a change of preset: so switching presets before saving doesn't necessarily mean losing your work.

Output

The final volume after the effects. Normally set to 100%, a preset's volume can be boosted up to 200% if necessary. Tip: If you find that most presets are too quiet or too loud you could lock the Output knob to your preferred level (see Parameter Locking on the next page).

u-he Badge

Clicking on the u-he company logo on the right opens a pop-up menu containing links to this user guide, to other relevant documentation, to our website, to our support forum and to our presence in various social networks.

Configuration

Clicking on the cogwheel on the right lets you set up various global preferences as well as remote control via MIDI CC. See the Configuration chapter.

Parameter locking

Right-click on any control and select *Lock*. The lock prevents values from changing when you switch presets, it does **not** prevent you from adjusting values! To unlock, right-click again and untick *Locked*.

Local Modulation

Several of the knobs include modulation source selectors so you don't need to use up a precious modulation slot. If a modulation source is selected below the knob, a small **dot** appears, as in this image.

To change the amount of modulation, click on the dot and move it just like a regular knob. The arc around the knob indicates modulation depth, including polarity: Modulation depth is always bipolar, even if the knob isn't.

Oscillator Panel

The upper panel contains all the basic oscillator parameters onb the left, a functionally reduced version of the oscillator editor in the centre, and the two Oscillator FX on the right.
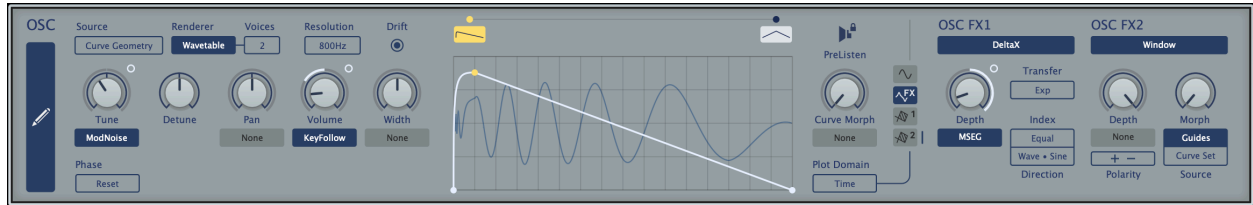
Full Editor Button

Clicking on the large blue button on the left opens the full OSC EDITOR page with its toolbox and many options. For details read the Oscillator Editor chapter.

Source

The Curves can be interpreted in two fundamentally different ways:

Curve Geometry ....The curve represents the waveform as-is (like *GeoMorph* in Zebra2).

Curve Spectrum ....The curve represents the harmonic spectrum: 1024 harmonics are scaled logarithmically for a range of about 10 octaves.

Renderer

Generates the final waveform, either in the form of a classic wavetable or as an additive spectrum with up to 1024 sine oscillators. The set of controls in the panel will change according to this option as well as to the selected Modifier in Additive mode.

Wavetable ....Renders the waveform like a classic wavetable synthesizer, updating it dynamically at the rate set by the *Resolution* parameter (see the next page).

Additive.......................Reproduces the spectrum of the waveform with the number of sine oscillators specified by the *Harmonics* parameter (see below). As these are free running and independently tunable, they can be processed to create **inharmonic** sounds (see *Spectral Distortion* and *Modifier* below).

Note: Oscillator effects that depend on altering the **phase** of harmonics (e.g. *Dissociate*) will have little or no effect in Additive mode.

Unison

Sets the number of stacked oscillators between 2 and 16. This option is only avalable if Renderer is set to *Wavetable*. See *Detune* on the next page.

Harmonics

The number of sine oscillators used for Additive rendering. The options range from 16 to maximum 1024. Very lower values are good for glassy, digital sounds with low CPU-usage, while medium to high values are better for virtual analogue. The default is 256.

Resolution

The density of waveform calculations (200 Hz, 800 Hz or 2000 Hz) i.e. how often they are updated per second. Higher resolution improves precision and smoothness at the cost of CPU.

Drift

If active, each new note is slightly detuned, emulating the imprecise pitch of classic analogue oscillators. Deactivate for more precision.

Tune

Pitch offset below / above standard. The range is -48 to +48 semitones.

Detune

Tuning offset when Unison (see above) is set to 2 or more. The range is +/- 2 semitones. Only available if the Renderer is *Wavetable*.

Spectral Distortion

Modifier strength. Only available if the Renderer is *Additive.*

Pan

Shift the stereo position to the left or right.

Volume

Oscillator gain before delay / reverb.

Width

Stereo separation if Voices is 2 or hihger. Only available when the Renderer is *Wavetable*.

Noise

Spectral chaos effect. Only available if the Renderer is *Additive.*

Phase

Random	If the Renderer is *Wavetable*, this option resets the oscillator to a random phase each time a note is played. If the Renderer is *Additive*, the phase of each individual harmonic is randomized.
Reset	Ensures that notes always start with the same phase. If the Renderer is *Additive*, the phases of the individual harmonics are unaltered.

Modifier

Only available if the Renderer is *Additive*. Some modifiers enable various additional knobs and switches. All modifiers are applied relative to the fundamental frequency i.e. the first harmonic.

Expansion	Stretches harmonics up one octave. At maximum *Spectral Distortion* the result is odd-numbered harmonics only.
Compression	Compresses all harmonics down to the fundamental (which they reach at maximum *Spectral Distortion*).
Curve	User definable bending of harmonics. Like oscillator effects, *Curve* taps into the Guides or the Curve Set, determining the expansion or compression for each harmonic based on its level along the chosen [**Spec. Curve Source**]. The [**Spectral Morph**] parameter either adjusts the position along the Curve's timeline (so you can use a curve that is different from the audible one) or crossfades between the three Guides.

While editing source curves for this modifier, the [Harmonic Grid](#) view is probably best, as each vertical line corresponds to a certain harmonic. Zoom in to view all grid lines / harmonics.

Negative values on the curve compress the corresponding harmonics towards the fundamental, while positive parts retune harmonics up to an octave above their original frequencies.

Harmonic Clusters   At maximum *Spectral Distortion* this mode organises the resulting spectrum into equally spaced 'clusters', according to a pattern determined by the *Cluster Select* parameter (only visible in this mode):

Cluster Select

0	Even Harmonics
10	Odd Harmonics
20	Every 3rd harmonic, starting from the 2nd
30	Every 3rd harmonic, starting from the 4th
40	Every 4th harmonic, starting from the 2nd
50	Every 4th harmonic, starting from the 5th
60	Every 5th harmonic, starting from the 2nd
70	Every 5th harmonic, starting from the 6th
80	Every 6th harmonic, starting from the 2nd
90	Every 6th harmonic, starting from the 7th
100	Every 7th harmonic, starting from the 2nd

Intermediate values crossfade: the pitches of the clusters are simply shifted while the relative tuning remains intact. Note that *Spectral Distortion* is less useful for creating harmonic sounds in this mode, as it often causes unwanted beating effects. On the other hand, low *Spectral Distortion* values are great for more inharmonic material.

Log Clusters   Similar to *Harmonic Clusters*, but instead of clusters being spaced evenly across the spectrum, they are distributed to ensure equal *energy* across the spectrum. Starting with 3 clusters, at maximum level 10 clusters are spaced precisely octaves apart – great for bells or organs etc..

Chaos Patterns   Reorganises harmonics into random patterns. [**Random Seed**] selects one of 100 preset patterns. [**Distortion Range**] selects one of the following:

Full Spectrum: Harmonics can be shifted anywhere in the spectrum.

One Octave: Each harmonic is randomly shifted +/- one octave.

Four Octaves: Each harmonic can be randomly shifted by as much as four octaves above or below its original frequency.

Ordered: The frequency of each harmonic is juggled up or down, but cannot cross paths with neighbouring harmonics: the order is preserved.

One Harmonic: Each harmonic is randomly shifted toward neighbouring harmonics only. This option lets you sequence or otherwise modulate randomness during playback: good for cymbals and other percussion.

Wild Randomness   Reorganises the harmonics in a randomised pattern sampled at Note On. Similar to *Chaos Patterns* but without repeats. Includes [**Distortion Range**] with the same options as *Chaos Pattern* (see above).

Basic Oscillator Editor

In the centre of the upper panel is a simpler version of the [full oscillator editor](#):
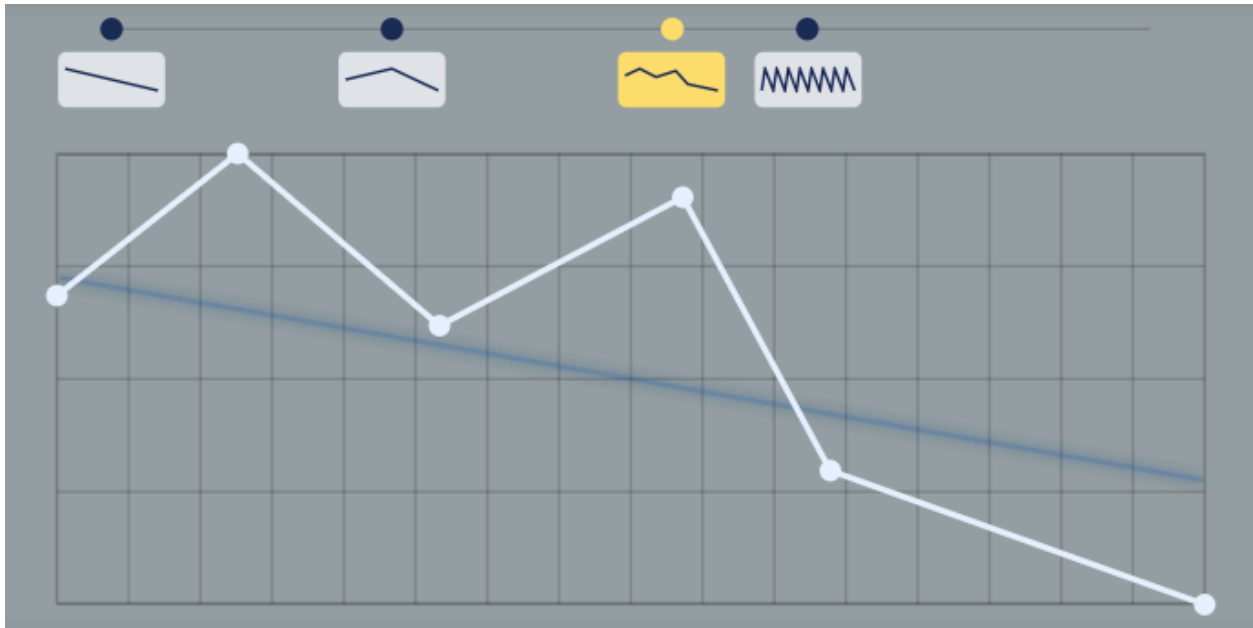
Quick Editing

Especially if you are already very familiar with a particular vector graphic application, you might have to practice for a while with these functions:

Add points	double-click in the background
Move a point	click & drag
Move a selection	click & drag any selected point
Select multiple points	click & drag in the background
Extend / reduce selection	shift+click points
Unselect all	click in the background
Remove selected points	hit backspace
Adjust curvature	click & drag on segments
Straighten segments	click on segments
Zoom in	roll the mouse wheel (hover over a point to fix it)

All these functions work in the full oscillator editor with the **Arrow Tool** selected, as well as in the MSEG editors.

Timeline

The line above the editing area can accommodate up to 16 Curves.

Click to select a Curve for editing, activate **[PreListen]** to audition that Curve only.

Double-click a Curve to set the Curve Morph value to that position.

To move a Curve, click on its anchor (the dot) and drag it along the timeline.

To delete a curve, right-click and select *Delete Curve*. The minimum number of curves is 2.

Timeline Context Menu

Right-clicking on the thin line at the top opens this menu:

> Add Empty Curve
> Add Morphed Curve
> Duplicate Selected
> Paste From Clipboard
> _____
> Distribute Evenly
> Reverse Order

Add Empty Curve inserts a falling sawtooth at the clicked position.

Add Morphed Curve inserts an interpolated Curve i.e. what Curve Morph would deliver.

Duplicate Selected inserts a copy of the currently highlighted Curve.

Paste From Clipboard inserts whatever has been copied via *Copy* or *CopySVG* (see below).

Distribute Evenly repositions all Curves so that they are evenly spread from 0 to 100.

Reverse Order reverses the positions of all Curves (i.e. each 100 minus the original y-position)

Oscillator Context Menu

The main context menu of the graphic editing area reveals several useful functions:

> Copy
> CopySVG
> Paste
> _____
> FlipX
> FlipY
> Beautify
> Simplify
> SinOMatic
> LineUp
> DistributeX
> CleanUp
> _____
> SelectAll
> SelectSimilar
> InvertSelection
> _____
> Delete
> _____
> ExportWav

Copy / CopySVG / Paste

           Standard clipboard functions. *CopySVG* also lets you paste a Curve into any graphics application that supports .SVG (Scalable Vector Graphics) format. Note that you can even copy and paste selections within or between curves.

FlipX / FlipY	Inverts the Curve or selection horizontally or vertically.
Beautify	Smooths the Curve or selection (doesn't affect steps).
Simplify	Removes points that have little impact on the shape of the Curve or selection, adding curvature wherever necessary. Can be applied in multiple passes.
SinOMatic	Similar to Beautify, but attempts to create perfect sine arcs.
LineUp	Adjusts the Curve or selection to form a straight line.
DistributeX	Spreads all points in the Curve or in the selection evenly along the x axis.
CleanUp	Removes points that have zero impact on the shape of the Curve or selection.
SelectAll	Selects the entire Curve.
SelectSimilar	Selects all points/segments with a similar function to the current selection.
InvertSelection	Selects all unselected points instead of the current selection.
ExportWav	Saves the Curve Set, including all morphed intermediates (but not the oscillator effects) as a .WAV-based wavetable file.

PreListen

Temporarily sets the position to the highlighted Curve, while disabling Curve Morph.

Curve Morph

Nominal position within the oscillator's timeline. Practically a smooth Curve selector.

Plot Domain

The blue line displays either the realtime waveform (like an oscilloscope) or the amplitudes of frequencies across the audio spectrum (like part of an analyser).

Time	Oscilloscope mode
Frequency	Spectrum analyser mode

Plot (unlabelled)

Appearance of the blue "realtime oscilloscope" trace in the editor window.

	Osc Wave preFX	Waveform before the oscillator effects
	Osc Wave postFX	Waveform after the oscillator effect
	FX1 Guide/Curve	The source used in OSC FX1
	FX2 Guide/Curve	The source used in OSC FX2

Note that the plot is pre-Renderer and is independant of the editor window's zoom factor (roll your mouse wheel to check that).

OSC FX

See the dedicated [Oscillator Effects](#) chapter.

Centre Panel

GLOBAL

Voice control parameters:

VCA

Use Gate (simple on/off) or the ADSR envelope to modulate the amplifier.

Attack Smooth

OFF allows strong clicks when envelope attack (A) is set very fast. The default is ON.

Voice Mode

poly   Normal polyphonic.

mono   Monophonic – each new note triggers the envelopes.

legato   Monophonic – envelopes are retriggered after spaces between notes. Allows for more interesting musical phrasing.

ENV

Envelope used for the VCA or other modulation targets (especially if VCA is set to Gate).

Velocity

For dynamic envelopes – keyboard velocity scales the envelope's output level.

A | D | S | R

A   Attack time
D   Decay time
S   Sustain level
R   Release time

LFO

Zebralette3 includes two identical low frequency oscillators:

Waveform

sine ....pure sine wave
triangle ....pure triangle
saw up....................rising saw (aka 'ramp')
saw down..............falling saw
sqr lo-hi..................square wave, restarts at the lower level
sqr hi-lo ....square wave, restarts at the higher level
rand hold ....random steps
rand glide ....random curves

Rate

This bipolar control scales the value set by the Sync parameter. Mostly useful for adjusting the absolute times (0.1s, 1s, 10s).

Restart

Selects rules for how LFO phase is reset.

sync..................LFOs of all voices are synchronized to the host, so they all adopt the same phase. Unlike *single* mode, the phases can still be modulated apart by a 'polyphonic' source such as Velocity, KeyFollow or Random.

single ....All voices share the same LFO, which is restarted at the next MIDI note after all previous notes have been released.

gate ....Notes restart the LFO for each voice independently at the specified Phase.

random.............Notes restart the LFO for each voice independently at a random phase, ignoring the value of Phase.

Time Base

The basic 'speed mode'. Time Base offers non-synchronized times measured in seconds (0.1, 1s or 10s) as well as a long list of values that are synchronized to song tempo, including dotted times (50% longer) and triplets (3 in the space of 2).

Phase

The position along its waveform at which the LFO will be started whenever a note is played. The value of Phase is irrelevant if Restart (see above) is set to random.

Polarity

Shifts the LFO wave upwards so that it only outputs positive values. The absolute amplitude is halved so that the maximum value cannot be exceeded.

Delay

A 'ramp-up' time for LFO level. Typically used for 'delayed vibrato'. Tip for whenever you need an extra little envelope at the expense of an LFO: Set Sync to 10s, set Restart to *gate* and adjust Delay. Use negative modulation levels for 'ramp-down' envelopes.

Depth Mod

Modulation of LFO level. For traditional vibrato, set the source to *ModWheel*, turn Depth Mod up to maximum, and connect the LFO to Tune (aka Osc1: Pitch) in the modulation matrix.

MSEG

A Multi-Stage Envelope Generator with extras...
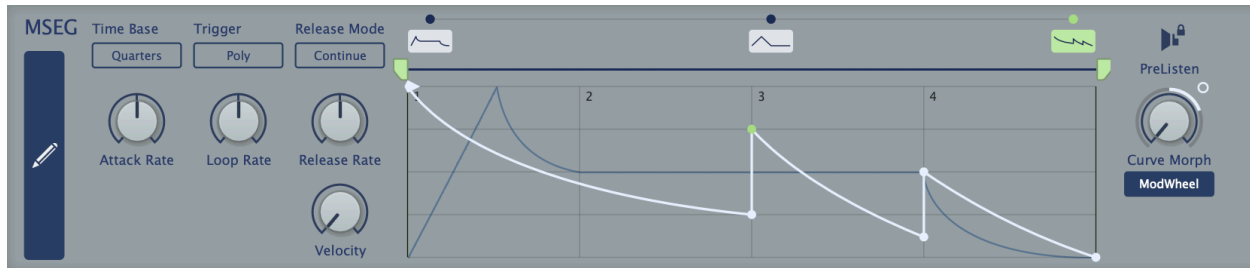
The MSEG consists of up to 7 morphable curves, each with its own loop: you can even smoothly morph between e.g. an ADSR-type envelope and a repeating unipolar LFO-type.

Please note that the final point is fixed at zero so that it can be used as VCA envelope in future. Attempts to move this point to the left will create a new point, while moving it to the right will lengthen the last segment.

Full Editor Button

Click on the large blue button on the left to open the full editor with its toolbox and extra options. For details please refer to the MSEG Editor chapter.

Time Base

Selects the unit that will correspond to integer steps in the editor's time-line. *Sixteenth*, *Quarters*, and *Notes* are synchronized to the song tempo.

Trigger

Poly..............standard polyphonic
Single..........only retriggers after all notes are released (like organ "percussion" register)
Mono...........standard monophonic

Attack Rate

Scales the speed of the Attack phase i.e. the part of the MSEG before the loop:
-1.00 is half, 1.00 is double, 2.00 is quadruple etc..

Loop Rate

Scales the speed of the loop: -1.00 is half, 1.00 is double, 2.00 is quadruple etc..

Release Rate

Scales the speed of the Release phase i.e. the part of the MSEG after the loop:
-1.00 is half, 1.00 is double, 2.00 is quadruple etc..

Velocity

The amount that MIDI velocity (e.g. how hard you hit a key) will affect MSEG output level.

Release Mode

On key lift...

Immediate ....jump to the Release phase.

Adaptive ....jump to the Loop End but use the value at the time of release as the first point in the Release phase.

Continue ....Finish the loop before starting the Release phase.

Basic MSEG Editor

One important feature of Zebralette3 is that the curve editors are as similar as possible so you only have to learn one way of working. For most features of the basic MSEG editor please refer to the section about the [basic oscillator editor](). The few differences:

> The MSEG timeline allows fewer curves (max. 7 in the current version)
>
> The MSEG graphic editor includes loop parameters
>
> The MSEG editor's final point is always zero.
>
> The MSEG plot only displays its realtime curve

Quick Editing

This is exactly the same as the oscillator editor:

Add points ....double-click in the background

Move a point....................................click & drag

Move a selection.............................click & drag any selected point

Select multiple points ....click & drag in the background

Extend / reduce selection ....shift+click points

Unselect all ....click in the background

Remove selected points...............hit backspace

Adjust curvature.............................click & drag on segments

Straighten segments ....click on segments

Zoom in..roll the mouse wheel (hover over a point to fix it)

PreListen

Temporarily sets the position to the highlighted MSEG while disabling Curve Morph.

Curve Morph

The nominal position within the MSEG's timeline. Can be modulated, of course!

Effects

To the right of the MSEG are two fairly simple effects. Click on the buttons below the EFFECTS label to switch the panel between **Delay** and **Reverb**...

Delay

Mode

Stereo	independent delays without cross-feed from one channel to the other
Ping-Pong	feeds the left channel into the right, then vice versa
Pong-Ping	feeds the right channel into the left, then vice versa

LP / HP

Cutoff controls for lowpass and highpass filters within the feedback path. Lower the value of LP for typical damping, increase HP to reduce bass and mid frequencies.

L / R

Independent delay times for the left and right channels, synchronized to host tempo. 'T' in the menu means triplet time (3 in in the space of 2) and 'D' means dotted (1.5 times as long).

Width

Stereo width of the delay signal.

Feedback

Regeneration amount – the output signals are fed back into the input for repeating echoes.

Diffuse

Diffusion makes the delay more 'fuzzy', indistinct. When set to maximum, individual echoes sound as if they had been treated with a short room effect.

Mix

Dry/wet balance. At maximum, the dry part of the signal is faded out completely.

On / Off

 Enable / disable the Delay effect.

Hidden Parameters

The following are only available as targets in the modulation matrix:

Time Scale............Delay offset.
Wow.......................Low frequency wavering, emulating tape delay.
Pan.........................Stereo panning. For a static offset, modulate with Constant.

Reverb

Pre

A single delay before the reverb starts.

Size

Room dimensions, from sardine can to infinity and beyond. Balance this with Decay..

Decay

Controls reflectivity of the room, essentially the opposite of Damp (see below). Affects how long it takes for the reverb tail to fade out.

Damp

Causes higher frequencies to fade out more quickly than low frequencies, imitating the 'warming' effect of carpets, curtains etc. in a room, or the audience in a concert hall.

Tone

Strong 'tilt' equalizer. Use in combination with Damp to colour the reverb.

Width

Stereo spread of the 'wet' signal. Does not affect the stereo width of the input signal.

Mix

Dry/wet balance. At maximum, the dry part of the signal is faded out completely.

On/Off

 Enable / disable the Reverb effect.

Pan

Hidden parameter only available as target in the matrix. Stereo panning. For a static offset, modulate with Constant.

Lower Panel

The button on the far left of the lower panel switches between the on-screen keyboard (KEYS) and the modulation matrix.

KEYS
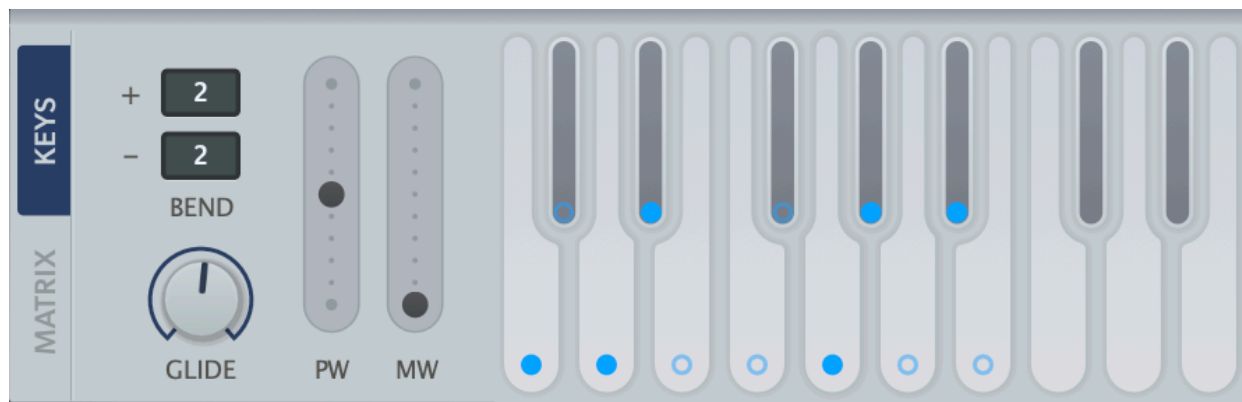
Bend

Set the pitch bend ranges (up/down) independently, from 0 to 24, 36 or 48 semitones.

Glide

Slurs the pitch between consecutive notes. "Portamento".

PW

On-screen pitch wheel (pitch bender). Visibly reacts to incoming MIDI pitch bend data.

MW

On-screen modulation wheel, reacts to MIDI CC#01. The value is not saved with the preset.

Virtual Keyboard

You can play notes with different velocities: Click close to the top/back for low velocities, or close to the bottom/front for high velocities.

Double-clicking on a note will sustain it. This feature is handy for sound design when you don't have a real keyboard at hand, or even for holding a drone while playing live. To release the latched note, click the same note again (or on any other note).

Scale Quantizer

Although the lowest octave can be played just like the rest of the keyboard, it can also be used to quantize MIDI notes to a particular scale. Click on the dots to include or exclude notes.

Scale Presets: Right-click on one of the dots to quickly set up one of 15 standard scales – the selected scale will appear with the clicked note as its root. To remove all dots, select *Clear*.

MATRIX

Click on the vertical MATRIX button to the left of the lower panel...

The modulation matrix connects a variety of sources i.e. MIDI controls, envelope, LFOs, MSEG to target parameters. Although none of the individual elements are lebelled, they become familiar ver quickly.

Matrix Anatomy

In the above example, oscillator Spectral Distortion and the oscillator effect 1 Curve Morph
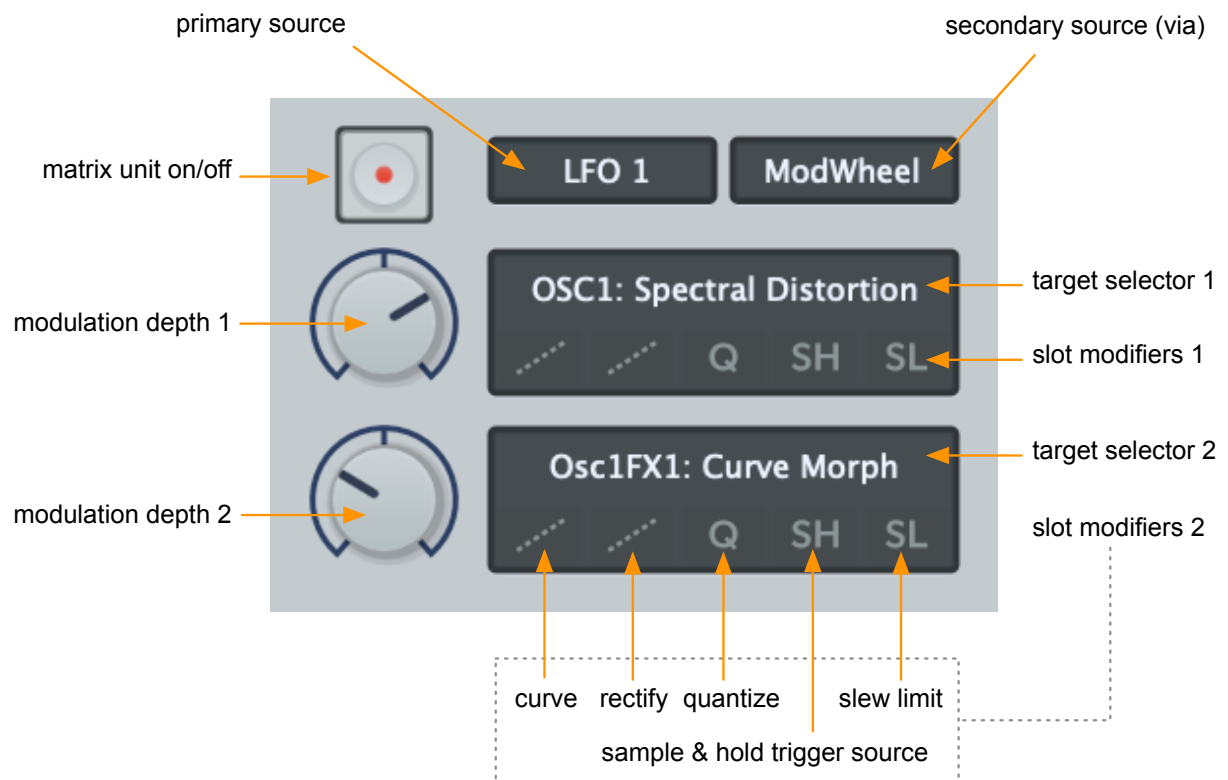
parameter are both being modulated by LFO1, the depth of which is controlled by the modulation wheel (or vice versa – see Secondary Source below).

On/Off

Disable the matrix unit whenever you want to compare its effect.

Primary Source

The top left selector specifies a primary modulation source. Click and select from the menu.

Secondary Source (aka 'via')

An optional secondary modulation source determines how much of the signal from the primary source is actually passed on to both targets. Click and select from the menu.

Note that the primary and secondary sources are usually interchangeable. Swapping LFO1 and Mod Wheel in the above example will have the same result, although "mod wheel via LFO" may seem less intuitive than "LFO via mod wheel".

Modulation Sources

As well as *Envelope*, *LFO 1, LFO 2, which* are self-explanatory, the following are available:

ModNoise..............Random fluctuation.

Control A/B ....User definable MIDI CC – see Preferences.

Gate ....+100 while a note is being played, otherwise zero.

KeyFollow ....Value derived from MIDI note number, pivots around 'E3' (note 64)

ModWheel ....Modulation wheel / joystick / lever. MIDI CC #01.

PitchWheel ....Pitch wheel / joystick / lever.

Pressure................Aftertouch. Zebralette recognizes both channel and polyphonic aftertouch.

Velocity ....MIDI note velocity data.

Alternate................Like *Constant*, but alternating between positive and negative per note.

Constant................Maximum value (100) per note.

Random.................Random values between -100 and +100, generated per note.

Slot Modifiers

Below each target selector is a row of buttons which can be used to modify the shape of the modulation signal, individually for each slot. They are processed in order from left to right:

Curve   Map the source onto an s-curve. Like a waveshaper for modulation signals.

| very compressed | compressed | linear | expanded | very expanded |
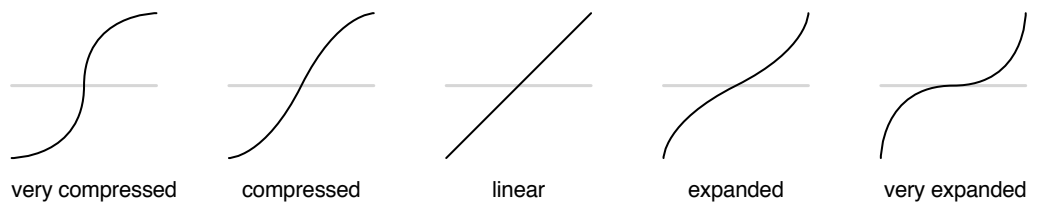
Rectify   Half-wave or full-wave rectification (in positive as well as negative versions), or make unipolar ('unipolarize'). The icons show how a bipolar ramp wave would appear after rectification.

| none | half wave + | half wave - | full wave + | full wave - | unipolarize |
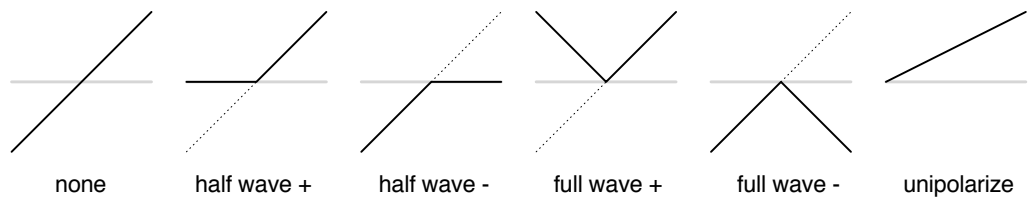
Quantize	**Q:** Adopt closest discrete values. The *integer* setting makes the modulation typically steppy, while the steps of 12 setting transforms bipolar sources into maximum 5 values (unipolar = maximum 3) including zero. All other options except *overtone series* quantize the output to certain scales:

overtone series ....harmonic overtones!
minor / major scale ....natural minor, regular major
minor / major chord.............chord tones (root, third fifth)
minor / major series............third intervals (repeats after two octaves)
fifths and octaves ....well, it's fifths and octaves only!

Note: As quantization is applied to the signal after the [Depth](#) control, lower Depth values mean fewer steps, not narrower steps. For instance if you quantize an LFO to steps of 12, you will hear no modulation at all unless you turn Depth up to at least 25.

Sample & Hold	**SH**: Whenever the modulation signal you select here crosses zero in the positive direction, the main source will be sampled and the value held i.e. stepped.

Note: The *Random* modulation source not only retriggers when a new note is played, but also whenever the option selected here crosses zero in the positive direction.

Slew	**SL**: Slew limiting is similar to Glide, but not only for pitches. Even the *Slow* option here is quite fast – SL is meant to soften transients in a modulation source e.g. LFO square wave or ModNoise. Note: For technical reasons, *Alternate*, *Random* and *Key Follow* cannot be slew limited.

Modulation Depth

The amount of the selected modulation source sent to the target...

Target Selectors

You can right-click on a target selector to open a menu containing all possible targets, but the most convenient way to select a target is often via drag & drop: Click on a target selector then drag the **crosshair** onto any knob or slider in Zebralette (except those in the control bar).

In the target menu, *Assign Recent* lists recently adjusted parameters so you can quickly assign multiple sources to the same target. Like a few hidden parameters, the *Glide* time is unavailable via drag & drop, but you will find it in the target menu under *Voices*.

Oscillator Editor

Click on the OSC button (the upper vertical blue rectangle) to open the full OSC EDITOR. Whenever you want to return to the main window, click on the yellow EXIT button (top left).

Note: The oscillator editor is also used for editing the three Guides, which appear as coloured shapes superimposed over the main Curve.

Asssuming you have explored the quick drawing options in the basic editor, you should already be familiar with many of the the options here. However, the expanded oscillator editor is recommended for more detailed work.

To jump directly to the MSEG EDITOR, click on that label (top left, next to OSC EDITOR).

Oscillator Context Menu

Right click anywhere within the editing area to open this menu:

```
MaxTo
MinTo
ScaleBelow
ScaleAbove
CutAbove
CutBelow
PrintTo
─────────────
Copy
CopySVG
Paste
─────────────
FlipX
FlipY
Beautify
Simplify
SinOMatic
LineUp
DistributeX
CleanUp
─────────────
SelectAll
SelectSimilar
InvertSelection
─────────────
Delete
─────────────
ExportWav
```

Copy / CopySVG / Paste

Standard clipboard functions. *CopySVG* also lets you paste a Curve into any graphics application that supports .SVG (Scalable Vector Graphics) format. Note that you can even copy and paste selections within or between curves.

FlipX / FlipY..........Inverts the Curve or selection horizontally or vertically.

Beautify..................Smooths the Curve or selection (doesn't affect steps).

Simplify..................Removes points that have little impact on the shape of the Curve or selection, adding curvature wherever necessary. Can be applied in multiple passes.

SinOMatic.............Similar to Beautify, but attempts to create perfect sine arcs.

LineUp....................Adjusts the Curve or selection to form a straight line.

DistributeX............Spreads all points in the Curve or in the selection evenly along the x axis.

CleanUp................Removes points that have zero impact on the shape of the Curve or selection.

SelectAll................Selects the entire Curve.

SelectSimilar........Selects all points/segments with a similar function to the current selection.

InvertSelection....Selects all unselected points instead of the current selection.

ExportWav............Saves the Curve Set, including all morphed intermediates (but not the oscillator effects) as a .WAV-based wavetable file.

Toolbox

To the left of the oscillator editor is a dynamic toolbox full of options and drawing tools: The content of the toolbox depends on what is selected in the **MAIN** palette:
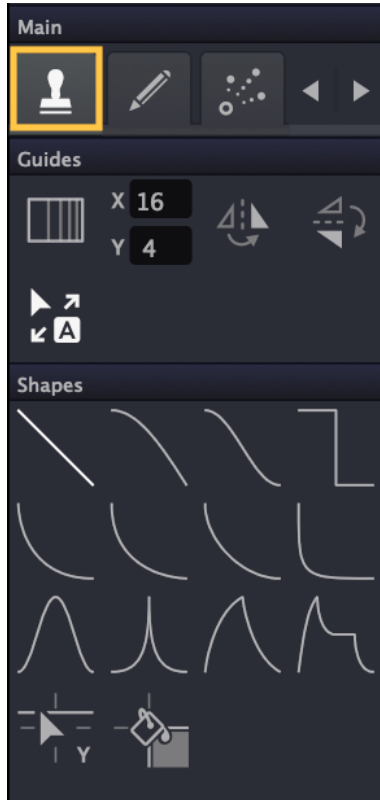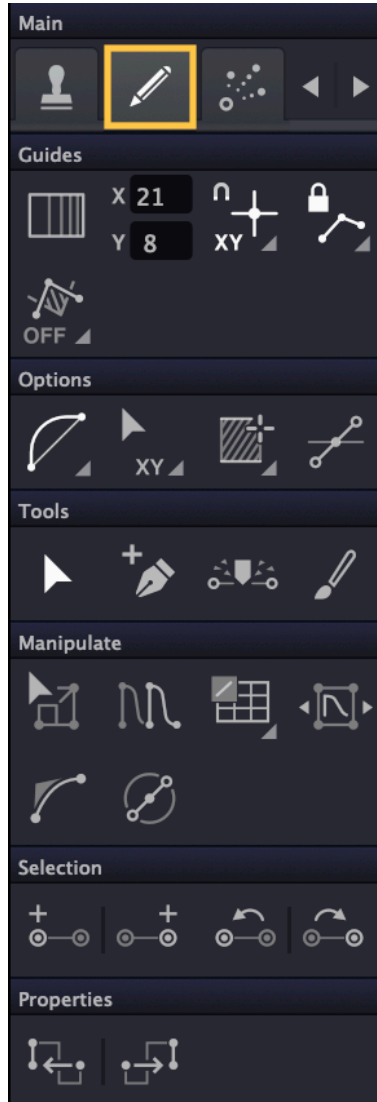
Shape Tools	Drawing Tools	Morph Tools
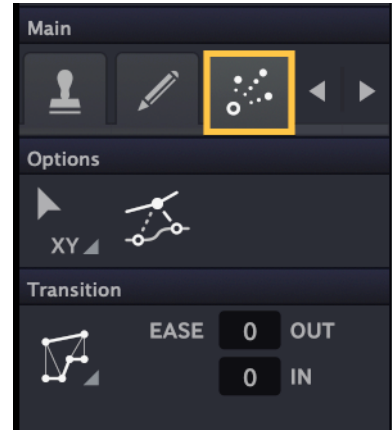
Context Help

Click on the question mark icon at the top of the toolbox to view appropriate **help text**, which will appear above or below the graphic editor while you work.

Shape Tools

Opens a set of options with which you can quickly draw complex forms using preset shapes.

Harmonic Grid

Activate this to replace the regular grid with one representing the harmonic series. The stronger lines are at harmonics 2, 4, 8, 16, 32, 64, 128, 256, 512.

Grid X/Y

Sets the number of lines in the grid, separately for X and Y. Ignored if the Harmonic Grid is active. Either hover over the numbers and roll your mouse wheel, or click and drag.

FlipX

Horizontally flip all shapes in the toolbox (see *12 Shapes* below).

FlipY

Vertically flip all shapes in the toolbox (see *12 Shapes* below).

AutoFlip

Automatically flips the curve, depending on the direction of drawing.

12 Shapes
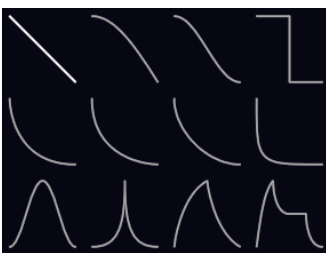
Select a shape you want to use as 'brush' in the graphic editor.
The image here shows the 'un-flipped' palette.

GridMoveY

Click and swipe to the left or right, then vertically shift the highlighted content.

GridStep

Click and swipe left or right to draw horizontal lines, creating steps.
Tip: Click and swipe across the entire width to erase the curve.

Drawing Tools

Opens a set of options and tools for drawing complex curves in a variety of ways...

Harmonic Grid

Activate this to replace the regular grid with one representing the harmonic series. The stronger lines are at harmonics 2, 4, 8, 16, 32, 64, 128, 256, 512.

Grid X / Grid Y

Sets the number of lines in the grid, separately for X and Y. Ignored if the Harmonic Grid is active. Either hover over the numbers and roll your mouse wheel, or click and drag.

Grid Snap

The grid lines can be magnetic – click to enable. Click on the small triangle to select whether points should snap to X (vertical lines), Y (horizontal lines) axes, or both.

SqueezeTrimStop

Squish compresses the selection when it reaches the edges of the editor (left/right/top/bottom). The new form will become permanent when you release the mouse button.

Keep Shape ensures that the shape and size of the selection remains intact when it reaches the left or right edge.

Keep Order is similar to *Keep Shape* except that movement is constrained by the neighbouring points.

Env Mode is similar to *Keep Order* except that movement to the right compresses or expands everything to the right of the selection.

Guide Selector

Click on the triangle at the bottom right of the icon to select a [Guide](#) for editing…

Guides Off goes back to normal Curve Set editing.

Miniature version of the selected Guide. 1 = blue, 2 = green, 3 = salmon.

Curvature Selector

Click to select a curvature type…

L is a bow-shaped curve.

S is a bidirectional curve. More curvature blends between linear and S-shaped.

Lpointy is like *L* but with a 'knee'.

Lsharp is like *L* but approaches the end points either horizontally or vertically.

Ssharp is like *S* but approaches the end points either horizontally or vertically.

Move (X/Y)

Restrict movement of a point or selection to the X or Y direction.

Move XY allows movement in any direction.

Move X only allows horizontal movement.

Move Y only allows vertical movement.

Selection Mode

How selection via the Arrow tool (see below) works...

Select only includes points within the drawn box.

HSelect (horizontal select) includes all points in the Y axis.

Handles

Reveals handles of a selection for detailed Spline editing. Note that handles cannot be dragged outside an invisible rectangle defined by the two neighbouring points.

ARROW

THE MULTI-PURPOSE TOOL

Swipe to select points, double-click to add points. Click & drag a selected point to move the selection. Click & drag a segment to adjust curvature.

Add Points

Clicking in the background inserts a point at that position. Clicking on a segment splits it at that position.

PointSplit

Click on a point then drag upwards to insert a horizontal segment, compressing other points to make room.

Paint

Freehand drawing. The curve will be simplified as soon as the mouse button is released.

Scale

To scale a selection horizontally, click & drag on its leftmost or rightmost point.
For vertical scaling, click & drag the lowest or highest point.

Multiply

Repeat a selection to the left via click & drag on its leftmost point, or repeat to the right via click & drag on its rightmost point.

Warp

WarpLinear: Linearly warp the curve or selection via click & drag on any point.

WarpExpo: Same, but exponential.

WarpCubic: Same, but cubic.

Rotate

Rotate the phase of the curve or selection via click & drag on a point.

ExpoForm

Approximate an exponential segment across multiple points. The more points in the selection, the more closely the result will resemble a proper exponential curve. Similar to 'L' curvature if there is no selection, overriding the *Curvature Selector* (see above).

HandleRotate

Click & drag a selected point or segment to rotate the spline handles.

ExpandSelection

ExpandSelectionL: Add a point to the left.

ExpandSelectionR: Add a point to the right.

MoveSelection

MoveSelectionL: Shift the selection one point to the left.

MoveSelectionR: Shift the selection one point to the right.

CloseShape

CloseShapeLeft: Creates a first point that aligns vertically with the final point.

CloseShapeRight: Creates a final point that aligns vertically with the first point.

Morph Tools

Opens a small set of tools used to define how each Curve morphs to the next one.

Morph Editing

In the editor window, the selected Curve appears above the next one in the timeline, with blue lines indicating how points will morph between them. To view intermediate stages, click anywhere in the background and drag downwards.

MorphVector

Cliock on any point (except the first or last) and drag away to reposition the point position for the morph. Note: These only work in the two *Closest* modes.

MorphType

xx

Ease In/Out

xx

Import / Export

xx Export CurveSets via ExportWav

xx Save individual curves via CopySVG.

xx Import options appear in the Toolbox
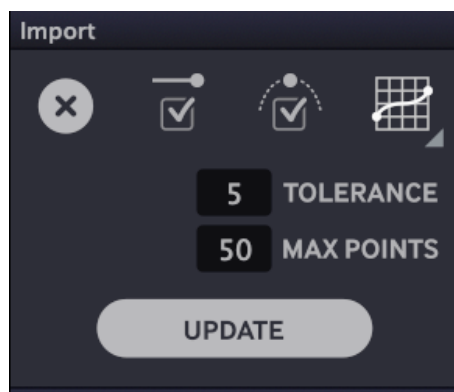
Tolerance xx

Max Points xx

ImportOptimiseEnds xx

ImportOptimisePhase xx

Match / Smooth / Linear xx

Guides

A set of 3 'helper' curves which can be used either to manipulate the currently selected Curve or as a CPU-friendly source for certain oscillator effects. Note that the MSEG has its own set of Guides, which are NOT available for the oscillator effects.

Context Menu

The context menu of the full oscillator editor offers the following extra functions:

```
MaxTo
MinTo
ScaleBelow
ScaleAbove
CutAbove
CutBelow
PrintTo
```
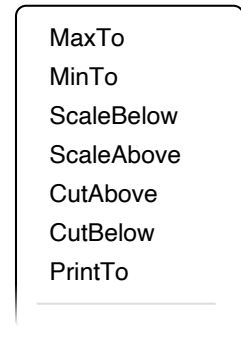
The current Guide transforms the highlighted Curve as follows:

MaxTo	The Guide sets maximum values for each handle in the Curve. The number of points is retained.
MinTo	The Guide sets minimum values for each handle in the Curve. The number of points is retained.
ScaleBelow	The Curve is scaled below the Guide, adding new points where necessary.
ScaleAbove	The Curve is scaled above the Guide, adding new points where necessary.
CutAbove	Everything above the Guide is cut, adding and/or removing points where necessary.
CutBelow	Everything below the Guide is cut, adding and/or removing points where necessary.
PrintTo	Simply copies the Guide to the Curve, replacing the original.

If the Guide is unselected (via click on its thumbnail in the toolbox), the roles of Guide and Curve are reversed!

The other menu items are the same as those in the Oscillator Context Menu (see there).

Oscillator Effects

These appear at the top right in the main view as well as bottom right in the Waveform Editor:

Extra Parameters

Oscillator effects in the original Zebralette had just one parameter plus modulation source and depth control. Choosing an oscillator effect in Zebralette3 often reveals additional parameters, some of which even offer a choice of related effects.

All oscillator effects include at least one modulatable parameter, often labelled *Depth* or *Frequency*, the role of which is as diverse as the oscillator effects themselves!

Remember: The main knob controls the nominal amount of the effect, while the depth of modulation from the selected source is via the dot above it (click and drag like a regular knob).

Source

Several of the oscillator effects either crossfade between the Guide curves or use parts of the Curve Set set (morphable!). In addition to the other options, the Source (either *Guides* or *Curve Set*) and a *Morph* knob will appear on the panel.

If *Guides* is chosen as Source, the Morph parameter crossfades between all three Guides, with Guide 2 at the central position (50.00). This option is very CPU efficient.

The *Curve Set* option lets you use the morphable curves. You can dedicate parts of the Curve Set to different tasks, for example 0-50 for the audio and 60-100 for the effects. Such parts can overlap, and you can even use the same Curve for the audio and the oscillator effects. Before you get TOO adventurous, please note that each use of a morphed *Curve* will increase CPU usage considerably, as these are recalculated at audio rates (see the Resolution parameter).

✓ none	
Curve Filter	
Filter	
Formant	**Spectral Effects** manipulate sets of harmonics.
Sparse	
Spectral Focus	
Tone Works	
DeltaX	
Map-o-Matic	
Phase Distortion	
Scrambler	**Wave Manipulation Effects** modify the wave as a whole.
Symmetry	
Sync	
Wrap & Zap	
Dual Wave	
Window	**Windowing Effects** use curves to alter the shape.
Zoom	
Dissociate	
Posterize	
Spectral Decay	**Time Variant Effects** create animation / motion.
Spectral Noise	
Twinkles	

Spectral Effects

These oscillator effects manipulate the spectrum, acting on each harmonic.

Curve Filter

The Guides or part of the Waveset itself define the frequency response of a filter within a range of 10 octaves (the levels of frequencies below or above this range is set by the vertical position of the left and right end points). The Frequency parameter shifts that curve for the full range of about 20 Hz to 20 kHz.

Filter

Simple non-resonant lowpass, bandpass or highpass. Includes 100% key follow.

Formant

Similar to Curve Filter except that the source attenuates partials within a fixed spectrum: overtones of **20Hz**, with a maximum close to 20 kHz. Best used with the Harmonic Grid.

Sparse

Randomly generates gaps in the spectrum. Depth controls the number of gaps as well as how strongly they are attenuated. The Sparse effect is great for randomized bell-like sounds, especially in combination with Spectral Decay (see below).

Spectral Focus

Attenuates harmonics

Odd	Reduces even harmonics, boosting adjacent odd harmonics.
Even	Reduces odd harmonics, boosting adjacent even harmonics. Note: As the fundamental is an odd harmonic, its level is also reduced.
Octaves	Reduces harmonics that are not octaves of the fundamental, boosting adjacent ones that are. Turns a sawtooth into an organ-like waveform.
Fundamental	Alters the level of the lowest harmonic.

Tone Works

Four different types of tonal control:

Brilliance	Boosts the levels of the upper two octaves of waveform harmonics
Smoothness	Attenuates the levels of the upper two octaves of waveform harmonics
Compression	Boosts quiet overtones (typically increases brilliance)
Expansion	Attenuates quiet overtones (typically decreases brilliance)

Wave Manipulation Effects

These oscillator effects directly modify the entire waveform.

DeltaX

Similar to classic FM synthesis. DeltaX offers the same choice of transfer functions as in the Scrambler effect – *Linear*, *Absolute*, *Square*, *Sqr Abs*, *Exp*, *Exp-*. *Note:* The closest equivalent to the original DX7-type phase modulation is *Linear*.

Delta Index offsets pitches between carrier and modulator. The modulator is usually the waveform itself, while the carrier is an extra sine wave. Swap by setting Direction to *Sine•Wave*.

Map-o-Matic

Applies a Wave or Guide to either the phase of the wave or the gain of harmonics. Four modes:

RePhase	The Phase of the waveform is remapped to the chosen curve. Like Phase Distortion in reverse: Here, curve sets the phase of the waveform itself i.e. not a raised cosine. A rising sawtooth plays the waveform as-is, a falling sawtooth plays it in reverse. A triangle plays it forward then backward in a single cycle. The Influence control blends between no effect and full effect.
Phase Offset	The selected curve is applied as a relative phase offset to the waveform. Like DeltaX in reverse: The curve offsets the phase not of a raised cosine, but of the waveform itself. The effect is about 20 times stronger than *RePhase*! A horizontal line in the center has no effect. Influence is the overall phase offset.
Value Grade	The levels of harmonics in the waveform are remapped to the selected curve. A rising sawtooth will have no effect on the waveform while an inverted sawtooth will invert it. Influence blends between no effect and full effect.
DrawStortion	Use the selected curve to draw custom distortion. Tip: You will generally want the center point to be exactly in the middle of the curve. The Influence control here is effectively an input gain.

Phase Distortion

Form of synthesis used in the '80s Casio CZ series of synthesizers. The original wave acts as a transfer function for the phase of a raised cosine. The Depth Parameter crossfades a straight ramp into the waveform from 0 (ramp) to 100 (waveform). It takes the latter and uses it as the phase function for a raised cosine.

Scrambler

Similar to operator feedback in FM synthesizers, the curve's phase is modulated by the curve itself, creating many new overtones. Runs the waveform through a mathematical transfer function (*Linear*, *Absolute*, *Square*, *Sqr Abs*, *Exp*, *Exp-*), then uses the result to modulate the waveform's own phase. Can get noisy very quickly, delivering all sorts of bright transitions.

Symmetry

Moves the centre of the wave to the left or right, expanding / compressing each half. With Depth set to 50.00 there is no effect. Tip: Create **classic PWM** by applying Symmetry to a square.

Sync

Simulates classic oscillator sync, but with a twist: Center adjusts the phase of the leader while the follower is being swept via Depth. If Center is set to 50.00, sweeps are symmetrical.

Wrap & Zap

Foldback distortion with several extras…

Mirror	The Depth control increases the gain and (recursively) folds back those parts of the wave that exceed the maximum.
Rotate	Same as Mirror, but folds from the opposite maximum. Resembles Sync when applied to a regular sawtooth.
Multiply	Similar to a sinusoidal wavefolder.
Clip	Simple hard clipper.
SoftClip	Simple soft clipper.

Windowing Effects

These oscillator effects use Waves or Guides to affect the shape of the wave.

Dual Wave

Extends the waveform by appending a curve taken from either the Curve Set itself or from the Guides. Depth controls the relative sizes of the two waves, while Morph specifies the position of the additional curve within the Curve Set or Guides.

Note that the second curve is always interpreted as [Curve Geometry](#).

Window

Applies a Guide or Wave as 'windowing' function to the waveform. Includes a *Polarity* option:

+	*(unipolar)*	Source curve values below zero (i.e. below the central horizontal line) will drag waveform values towards the bottom (-1). Positive values have no effect.
+ –	*(bipolar)*	Source curve values below zero drag waveform values towards the centre (0). Positive values have no effect.

Zoom

Zoom in or out of waveform, adjust phase

Wave Balance sets the relative sizes of the two halves. **Morph** is effectively a position control for the right half. See xx.

Time Variant Effects

These create animation / motion.

Dissociate

Animate overtones. Tip: Use in OSC FX1 only, process with another effect.

Posterize

Smooths out waveform transitions, like a lowpass filter on wave morphing. Optional sample & hold via a selectable trigger.

Spectral Decay

Uses Wave or Guide to set decay rates for each harmonic.

Spectral Noise

Creates a fuzzy, moving cloud effect

Twinkles

"Pings" random overtones. The Depth parameter xx. The optional **Trigger Source** xx

MSEG Editor

Click on the MSEG button (vertical blue rectangle) to open the MSEG EDITOR. To return to the main window, click on the yellow EXIT button at the top left. Although it has a very different function i.e. as a modulation source, the MSEG is edited in a very similar way to the oscillator.

Toolbox

To the left is a dynamic toolbox full of options and drawing tools: The content depends on what is selected in the **MAIN** palette – practically the toolbox "control centre":

Shape Tools	Drawing Tools	Morph Tools
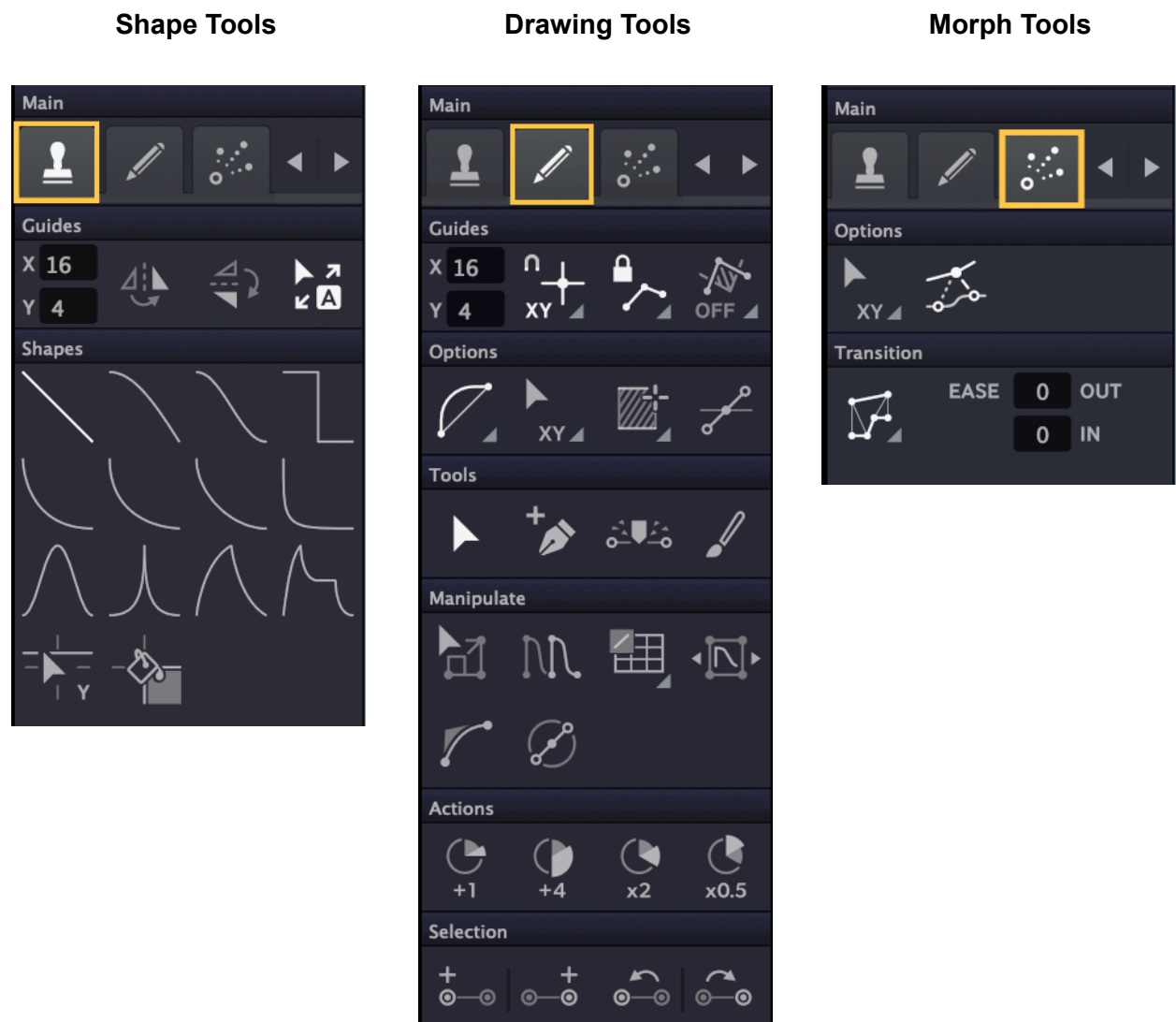
As you can see, the MSEG toolbox looks very similar to the oscillator toolbox. The Morph tools are even identical. There are a few differences, however:

•   The MSEG toolbox doesn't include the Harmonic Grid option

•   The MSEG toolbox doesn't include the CloseShape options

•   The MSEG toolbox includes tools that affect MSEG length…

MSEG Length

Near the bottom of the MSEG drawing toolbox is this row of buttons:
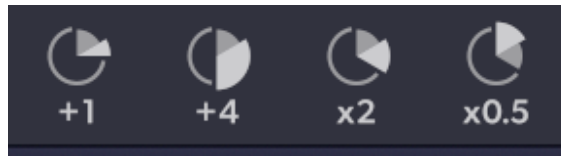
+1	Adds 1 unit
+4	Adds 4 units
x2	Doubles the size of the MSEG
x0.5	Halves the size of the MSEG… if possible.

Remember that the final handle is fixed at the bottom right of the window.

Editor Window

xx

xx

xx

PreListen

xx

Curve Morph

xx

Preset Browser

Overview

To open Zebralette's preset browser, click on the **[Presets]** button to the right of the data display. To exit the browser again, click on the same button, now marked with an X.

Folders appear on the left, presets in the centre and information about the currently active preset appear on the right. If you can't see any presets at all, click on the 'Local' folder immediately below the Search field.

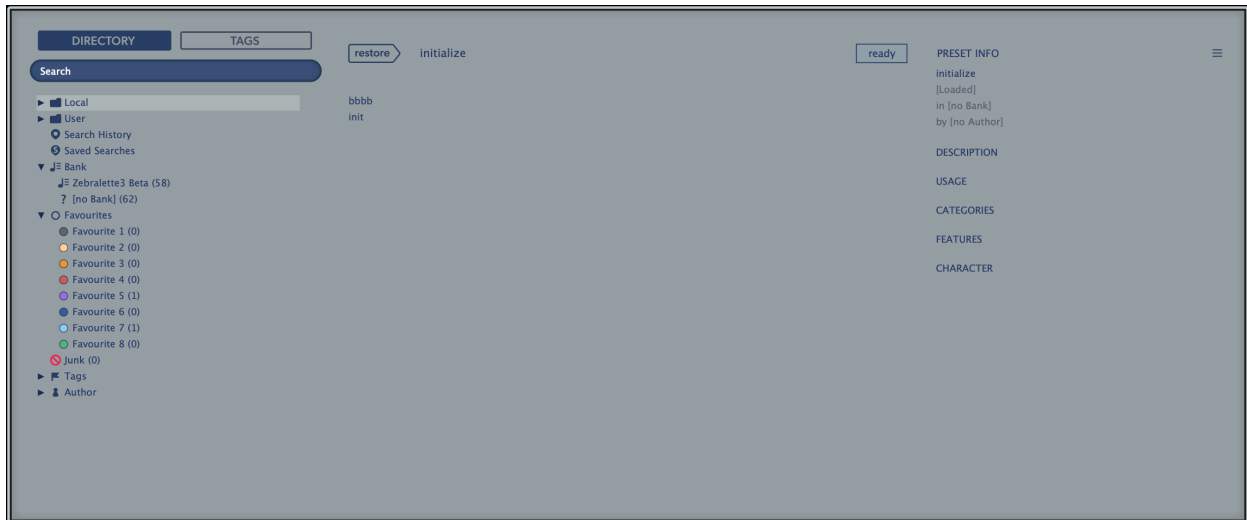If there is no PRESET INFO panel, click on the hamburger **[≡]** button in the top right corner and select *Show Preset Info.*

After selecting a preset from the central panel you can step through all the others using your computer's cursor keys.

That's all you really need to know! If you eventually decide to dig deeper, the browser offers many interesting features including a comprehensive search engine. For details, please read the rest of this chapter.

Default preset

When a new instance of Zebralette starts it checks whether the 'Local' root directory contains a preset called *default*, which is then loaded instead of the standard one. If you want to change the default preset, make sure that the *Local* folder is selected then **[Save]** the one you want under the name "default". Note that any file called *default.h2p* will not appear in the browser.

If a fresh instance of Zebralette is not loading your new default preset, it probably landed in the 'User' folder instead of 'Local' – see the [preference](#) *Save Presets To.*

Directory Panel

If you don't see this panel on the left of the Presets browser, click on the DIRECTORY tab
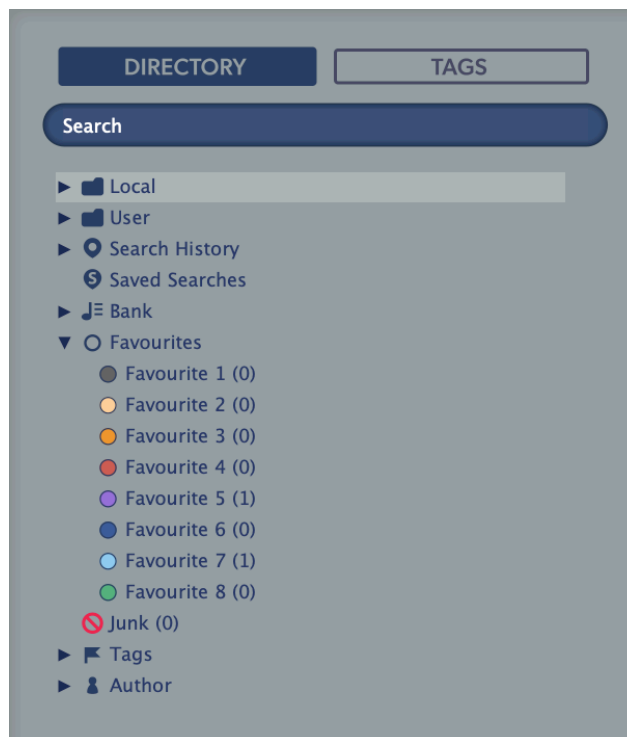
Local

Zebralette's factory presets are sorted into subfolders within 'Local'. Tip: It is best not to mess with the 'Local' folder, but to put your own creations and any other presets in the 'User' folder.

MIDI Programs

Important: Some hosts automatically route MIDI data into effect plug-ins, while others expect you to set this up yourself. For details, please refer to the documentation of your host app.

The 'Local' root a folder called 'MIDI Programs' which is normally empty. When the first instance of Zebralette starts, up to 128 presets in this folder are all loaded into memory so they can be selected via MIDI *Program Change* messages.

As the presets in the MIDI Programs folder are accessed in alphabetical order it is best to rename them, adding an index e.g. "000 rest-of-name" to "127 rest-of-name".

Unlike regular presets, MIDI Programs cannot be added, removed etc. on the fly. Any changes are only updated after the host has been restarted.

The 'MIDI Programs' folder can contain up to 127 sub-folders of 128 presets each, switchable via MIDI Bank Select message (CC#0) preceding the Program Change message. 'MIDI Programs' is bank 0 and sub-folders are addressed in alphabetical order starting with bank 1.

When Zebralette receives a Program Change message, it will display the bank and program numbers to the left of the preset name (e.g. "0:0" for the first preset in the first bank). In certain hosts, however, the first bank / preset is designated "1" instead of the correct "0".

To avoid another possible source of confusion, please make sure there are no junked presets in the 'MIDI Programs' folder: All files there are addressed, even if hidden!

User

The best address for your own creations as well as presets from other sources. You can either select 'User' immediately before saving, or set a global preference ensuring that it will always be saved in User (or a sub-folder thereof): See the preference Save Presets To.

Tip: It's worth finding out where the 'User' folder resides on your computer. Right-click on 'User' and select *Open in Finder / Explorer*.

Smart Folders

The top-level folders below 'User' don't contain real files, but list the results of querying a database. The content is dynamic – it will change whenever the underlying data changes.

You can drop smart folder content onto e.g. 'User' or the desktop to create folders containing real copies of those presets. See **Drag & Drop** a few pages down.

You can hide any of these smart folders – see *Hidden Folders* in the Directory's context menu.

Search History

Click on this folder to display the results of past searches (maximum 10). If you want the search results to be more permanent, right-click and select *Save Search*... To remove all searches from the list, right-click on the 'Search History' folder and select *Clear*.

Saved Searches

This folder contains any search results that were saved via right-click in the Search History list. To remove individual saved searches, right-click on the entry and select Delete.

Banks

These smart folders reference metadata about the version of the factory or third party library with which the preset was installed. See 'Preset Info' below. Banks are already predefined for factory presets.

You can create your own banks: Drag & drop one or more presets onto the main 'Bank' folder than enter a suitable name into the dialogue box.

To remove Bank attributes from selected presets, either drag & drop them onto the '[no Bank]' folder, or right-click on the Bank and select Remove Presets from Bank. Empty Banks will be automatically deleted.

Favourites

8 colour-coded smart folders. Presets dropped onto a 'Favourite' folder will be marked as such. Favourites can be imported / exported - see External Drag & Drop a few pages down.

You can clear the Favourite status from all presets of one particular colour / index at once by right-clicking on the 'Favourite' folder and selecting Remove All Favourite (n) Marks.

Junk

Smart folder pointing to all 'junked' presets – see the presets context menu on the next page. Presets dropped here will disappear from the browser unless they are made visible via Show

Junk in the Presets context menu. Note: this smart folder will not appear until at least one preset has been junked.

Like *Favourites*, Junk can be exported/imported (as *Junk.uhe-fav*) – see [External Drag & Drop](#).

Tags

Smart folders for each Category/Subcategory, Features and Character tag. Presets dropped onto these folders will adopt the corresponding tag. Presets dropped onto the '[no Tags]' folder will have all Category/Subcategory, Features and Character tags removed.

Author

Smart folders for each preset author. Tip: Instead of signing each of your creations individually you could sign just one of them, then select and drag & drop any others onto your new author smart folder. As the process cannot be undone, please use this feature with caution!

Duplicate Names

A smart folder containing presets that share the exact same name. This smart folder is hidden by default - see *Hidden Folders* in the Directory context menu.

Directory Context Menu

Refresh
Create New…
Rename…
Open in Finder
Move to Trash
On Open Expand to   >
Hidden Folders   >
✓ Show Folder Icons
Save Search *
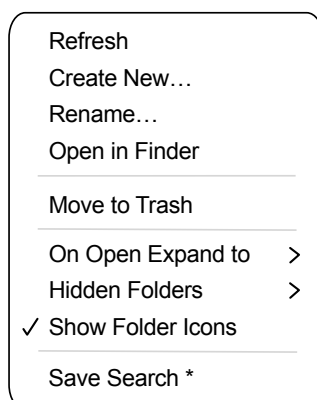
Right-clicking on any folder within Local or User will open this menu:

Refresh

This function forces the Zebralette browser contents to be updated. Although it will also work on a Mac, Refresh is mainly aimed at Windows users: It is necessary after any files or folders have been moved, added, removed or renamed using Explorer.

Create New...

Insert an empty subdirectory.

Rename...

Edit the folder name.

Open in Finder / Explorer

Opens a system window for the currently selected folder. If you hold down the option key (Mac) or ctrl key (Windows), this entry will change to 'Show in Finder / Explorer' and the folder will be highlighted instead of opened.

Move to Trash / Recycle Bin

Moves the selected folder to the system trash. If you right click on the Junk folder, this entry will be replaced by 'Remove All Junk Marks'. If you right click on a Bank smart folder, it will be replaced by 'Remove Presets from Bank' (see Smart Folders above).

On Open Expand to

These options determine how deeply the browser will open subdirectories whenever the GUI is opened or the refresh function is called. The none option collapses all folders, while the all levels option reveals all nested folders.

Hidden Folders

Select any smart folders you don't want to appear in the directory.

Show Folder Icons

Deselect this option if you find the folder icons distracting. The Junk icon is not affected.

Save Search

Saves the current search data so that the search can be repeated later.

Presets Panel

The centra area of the browser displays all presets in the current folder. Left-click to select.

restore > initialize		ready

Additive Piano	Northern Synbrass
Alien Escape	Oddblobs
All Thumbs	On Ruth Thats Ruth
Basic Shapes	Orb
Bouncy Lobster	Pin Piano
Bowed Sheet	Ploppsies
Bullfrog	Podracer Splurts
Clatterloop	Pro Solo
Clusteritis	PWM Strings
Digitron	Radio Astronomy 1
Dixie Keys	Radio Astronomy 2
Drop Shot	Rainy Day Keys
Filter Piano	Resinator
Flowing Seagrass	Rubber Sequence
Funky Northerner	Science Friction Bass
Glass Logs	Scrambled Twinkles
Gliders	Sharp Steel
Grainy Day	Soft Bell Keys
Infinity GS	Spectral Swell
Later or Sooner	Squeaky Note Loop
Liquid Machine	Squelch Rabbit
Minty Breath	Stone Hits In Space
Moving Chapel	Sulphuric Bass
Nineteen Siebenty Acht	Symbol Hits

Presets context menu

Right-click to open a menu containing functions that can be applied to individual presets.

- ● Mark as Favourite 1
- ● Mark as Favourite 2
- ● Mark as Favourite 3
- ● Mark as Favourite 4
- ● Mark as Favourite 5
- ● Mark as Favourite 6
- ● Mark as Favourite 7
- ● Mark as Favourite 8

🚫 Mark as Junk

✓ Show Junk

Select All
Deselect

Rename…
Copy to User Folder *
Show in Finder *
Convert to h2p *

Copy
Paste

Move to Trash *
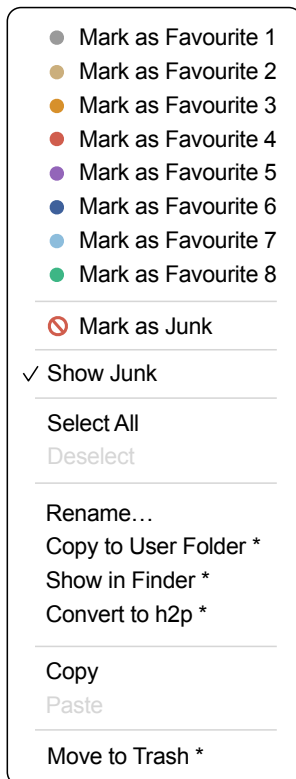
Mark as Favourite

Tick one of 8 'favourites'. The selected entry will be replaced with Unmark as Favourite.

Mark as Junk / Show Junk

Instead of deleting unloved presets, mark them as 'junk' so that they disappear from the browser. Activate Show Junk to display junked files instead, and mark them with a STOP symbol.

Select All, Deselect

See 'Multiple selection' on the next page.

Rename...

You can change the names of presets using this function. Note that only the most recently selected preset can be renamed i.e. you can't rename multiple files at once.

Copy to User Folder / Duplicate

The entry here depends on the status of the Save Presets To preference as well as on the location of the source preset(s) i.e. whether they are in the Local or the User folder. Selected presets are copied with a number appended to the name, which increments (just like the 'Auto Versioning' option) so that no preset can be overwritten by mistake.

Show in Finder / Explorer

Opens a system window for the right-clicked file. In smart folders only, holding down an option key (Mac) or ctrl key (Windows) replaces this entry with Show in Browser, which shows the currently selected file in its original location within Zebralette's browser.

Convert to native / h2p / h2p extended

Converts selected preset(s) into the format previously specified via right-click on **[Save]**.

Copy / Paste

Clipboard functions. Individual or multiple presets can be copied / pasted, even between Zebralette's browser and system windows (Finder, Explorer).

Move to Trash / Recycle Bin

Moves selected presets to the system 'trash'.

Extra Functions

Restore

At the top left of the Presets panel is a button labelled **[RESTORE]**. This lets you audition presets to your heart's content without losing track of the one that was loaded before you opened the browser. Clicking on **[RESTORE]** navigates to that preset and reloads it.

Scan / ready

In the top right of the presets panel is a dark rectangle normally labelled 'ready'. Whenever you use the Refresh function (see the Directory context menu on the previous page), this turns into a progress indicator showing the preset database being refreshed. The process should only take a few seconds, even for a large preset library.

Multiple selection

A block of adjacent presets can be selected via shift+click, and presets added to the selection via cmd-click (macOS) or alt+click (Windows). Presets can be moved to another folder via drag & drop. To deselect, click on any unselected preset or choose Deselect from the context menu.

Drag & Drop

Internal

You can drag and drop single or multiple files from the preset panel onto any folders in the directory panel. Files dragged onto regular folders will be moved unless you hold down option (Mac) or ctrl (Windows), in which case they will be copied instead. Files dropped onto smart folders will adopt the attribute of that folder: For instance, you can set e.g. the Author or Favourite status of several presets at once.

External

To manage your preset library externally you can drag presets and folders between Zebralette's browser and your desktop (or any system window). On the Mac, most Finder operations will automatically update the browser. Updating might not be immediate when using multiple formats or multiple host applications, but all it usually takes is a click on the GUI or in the directory tree (sets focus to the clicked instance of Zebralette).

On Windows, a manual Refresh (see Directory Context Menu) will be required before changes to the contents of the browser appear.

Another little helper: If you drag a Zebralette preset from e.g. your desktop and drop it onto the Data Display, that preset will be loaded (but not automatically saved).

Exporting smart folders

Drag any smart folder onto the desktop to create a new folder containing those presets. Drag an entry from your Search History, or the Category 'Duo', or one of the Authors...

Exporting favourite status

You can export Favourites, either all at once or individually: Shift+click and drag the 'Favourites' folder or one of its sub-folders onto the desktop to create a file called *Favourite (n).uhe-fav*. Such files can then be imported into Zebralette's browser on a different computer (for instance), via drag & drop onto the Favourites folder or anywhere within Favourites.

Note: Importing *.uhe-fav* files from another computer will only work 100% correctly if all preset names and locations are identical on both computers!

Note for MS Windows users

According to Microsoft, drag & drop will only work between applications with the same rights (i.e. both admin or both normal) – for security reasons. If the host was started using the "run as admin" option, drag & drop functionality will be limited: You can still drag objects between plug-ins, or from the plugin into system windows e.g. your desktop. However, attempts to drag & drop anything into the plugin from outside the host will fail. This applies to presets, folders, favourites, .uhe-soundset files or indeed anything that can be dropped onto the plug-in GUI.

Preset Info

The panel to the right displays information about the selected preset. If you can't see this panel, click on the 'hamburger' **[≡]** button in the top right corner and tick *Show Preset Info*:

✔ Show Preset Info
✔ Show Tags in Preset Info

Below the preset name you should see its path (from /Local or /User), the Bank and the Author (which also appear as smart folders).

DESCRIPTION and USAGE text is entered immediately before saving a preset. CATEGORIES, FEATURES and CHARACTER are the tags for the selected preset (see Preset Tagging). You can remove or add tags directly here (see Tagging via PRESET INFO).

If you prefer to see less information, hide the tags only or the entire PRESET INFO panel.

Installing Soundsets

Any soundsets we distribute ourselves will (eventually) be available in *.uhe-soundset* format.

Standard Method

To install, drag & drop the *.uhe-soundset* file into Zebralette – anywhere will work. The soundset should appear in the 'User' folder. If a soundset with the same name already exists in that location, any modified files will be backed up and the location of the backup file will be displayed.

Alternative Method

Soundsets in *.uhe-soundset* format can also be installed by clicking on the u-he badge, selecting *Install Soundset...* from the menu and navigating to the *.uhe-soundset* file.

Regular Folders

Folders containing Zebralette presets can be manually copied or moved into the 'User' folder. You might have to refresh the browser (see Directory context menu) before they appear there. A refresh is generally necessary in Windows but not in macOS.

Note: As *.uhe-soundset* files are basically ZIP-compressed folders, you can rename them i.e. replace the file extension with 'zip', then extract the presets and accompanying documentation.

Preset Tagging

Tags are elements of metadata, information added to presets so you can find them more easily.

IMPORTANT

Tags are updated automatically – clicking on the **[SAVE]** button isn't required! The main advantage is that presets don't have to be saved every time you edit a tag. The main caveat is that you should only edit tags after saving your preset.

For instance, if you decide to edit tags while creating a 2nd version of an existing preset, please remember that you are actually changing the tags in the original preset!

The Tagging Window

Right-click on the **[SAVE]** button and select Tag this Patch:

CATEGORY describes a preset by analogy to instrument types or typical usage, and each one

has an appropriate set of subcategories. FEATURES are technical classifications, and CHARACTER tags are pairs of opposites from which you can choose only one.

Tagging via PRESET INFO

In the PRESET INFO panel, right-click on the Category, Features or Character and select or unselect tags from the menu. Note that this method only works for individual presets. If you right-click on an existing tag, the first option in the menu becomes remove tag.

The function Create Search from Tags finds all presets with exactly the same set of Category, Features and Character tags.

Tagging via smart folder

You can tag presets by dropping ("drag & drop") any number of presets onto one of the Tags smart folders. To remove all tags, drag them onto the '[no Tags]' smart folder.

Search Functions

Search by Tags

Click on the [TAGS] tab to open this view. The buttons here let you set up search criteria according to existing tags with just a few mouse clicks:

Below the Search field are four sets of buttons (CATEGORIES, FEATURES, CHARACTER and FAVOURITES). The first three correspond to the tags in the tagging window (see the previous page), while the bottom row lets you find any presets you have tagged as Favourites.

Clicking on the [^] icon to the right of each heading hides the options for that set of tags.

Categories and Subcategories

Especially for Category tags, following a step-by-step tutorial (see the next page) is much easier than studying a full technical description, so here are just a few pointers:

Each Category has its own set of subcategories which appear below the main categories. Click on [Leads] and see them appear. Not selecting a subcategory here means "show me presets tagged with any subcategory". Selecting the top-left subcategory (which has the same name as the category) means "show me presets tagged without any subcategory". You should not find any of these in the factory presets!

You can select multiple categories without specifying subcategories if you hold command (Mac) or alt (Windows) while clicking on the category button. Try that with the [Keys] button.

Completed category+subcategory tags appear below the subcategories as buttons with 'off' switches [X] so that you can add other main categories by simply clicking on them.

So far we have actually been expanding the search, which is not very useful...

Search by Tags Tutorial

xx WIP.

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Features, Character and Favourites

Unlike multiple Category tags which expand the search, these types restrict the search. As a practical example let's find all "thin" and "moving" presets with a slow release...

Click on the TAGS tab. If any Categories are highlighted, click on them. Select [Slow Release] feature, then the [Thin] and [Moving] characters. You should now see about 10 hits in the presets panel – which is generally a good number to aim for while searching.

Summary

In the DIRECTORY panel, specify a search path via double-click. In the TAGS panel, select category tags. Add others if required to extend the search, but remember to hold down command (Mac) or alt (Windows) if you want to retain category tags that don't specify a subcategory. Select Features, Character and/or Favourites tags to refine the search.

Remember to exit the search path (if there is one) afterwards.

Search by Text

The Search Field lets you find presets according to a text string. An example: If you remember that the preset you want has the word "clock" in its name or description, simply enter clock into the Search field and hit Return...

This basic search normally looks into the preset name, author, the DESCRIPTION and USAGE (see the PRESET INFO panel). Searches are not case-sensitive, and quotes are not required unless you need to include spaces.

To restrict the search to a particular path, double click the desired folder. This path will appear immediately below the Search field instead of the preset folders, and you will only see folders within the specified path (if any exist) plus the usual bunch of smart folders.

A **Search Path** appears below the Search Field: The [^] button to the left moves the search path up one level. Alternatively, you can navigate directly to any higher level by right-clicking on the path. The [X] button to the right expands the path to include all Zebralette presets (in 'Local' as well as in 'User'), and all the regular preset folders will reappear.

Try a text search: Enter three or four letters then hit Return. For instance, star would find all files containing the text string star (e.g. mustard or starters). Entering "star wars" with the quotation marks would find e.g. Battlestar Warsaw.

Syntax

You can limit the scope of the search to just the preset name or specific parts of PRESET INFO by using name (preset name), author, desc (description) or use (usage) followed by a colon. For instance, *author:the* finds all presets by sound designers whose author names contain 'the'. Similarly, *desc:space* will find all presets with the word space in the description.

Logical Operators

The following logical operators can only be used between text elements.

AND requires that presets contain both words. It can be written explicitly if you prefer, but is not necessary. For example, *star AND wars* (or simply star wars) will find presets that contain both *star* and *wars*.

OR means that presets can contain just one of the words or both. For example, *star OR ship* will find presets that contain *star* as well as presets that contain *ship*.

NOT excludes presets containing the word. To find all presets that contain *star* but don't contain *ship*, enter *star NOT ship*.

Including Tags

Tags must appear after any text items.

Regular tags can also be entered into the search field if preceded with a '#'. For example, name:"hs " #bass:* will find all presets with "hs " in the name that are tagged as *Bass* with any or no subcategory. The colon separates category and subcategory, while the star (*) means "any subcategory, even none".

Note: Between multiple tags of the same type is an implicit *OR*, while between different types is an implicit *AND*.

Example searches

You could copy/paste these into Zebralette's search field and see what they find. Note that tags are automatically removed from the search field and appear as active tag buttons instead.

desc:classic = presets with the word "classic" in the description

author:vik = presets by Viktor

*use:"at ="* *author:how* = aftertouch-controlled presets by Howard

tasm OR urs #keys:piano = piano type presets by either Tasmodia or Urs

tasm OR NOT urs #pads:strings = string type presets by Tasmodia or anyone except Urs

Configuration

The cogwheel button at the top right opens the global configuration pages where you can adjust the window size and brightness or connect Zebralette parameters to MIDI continuous
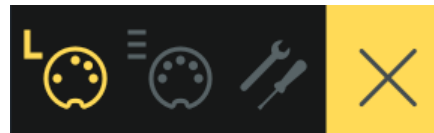
controllers.

The 4 buttons are MIDI Learn [L], MIDI Table [≡], Preferences [tools] and Close [X]:
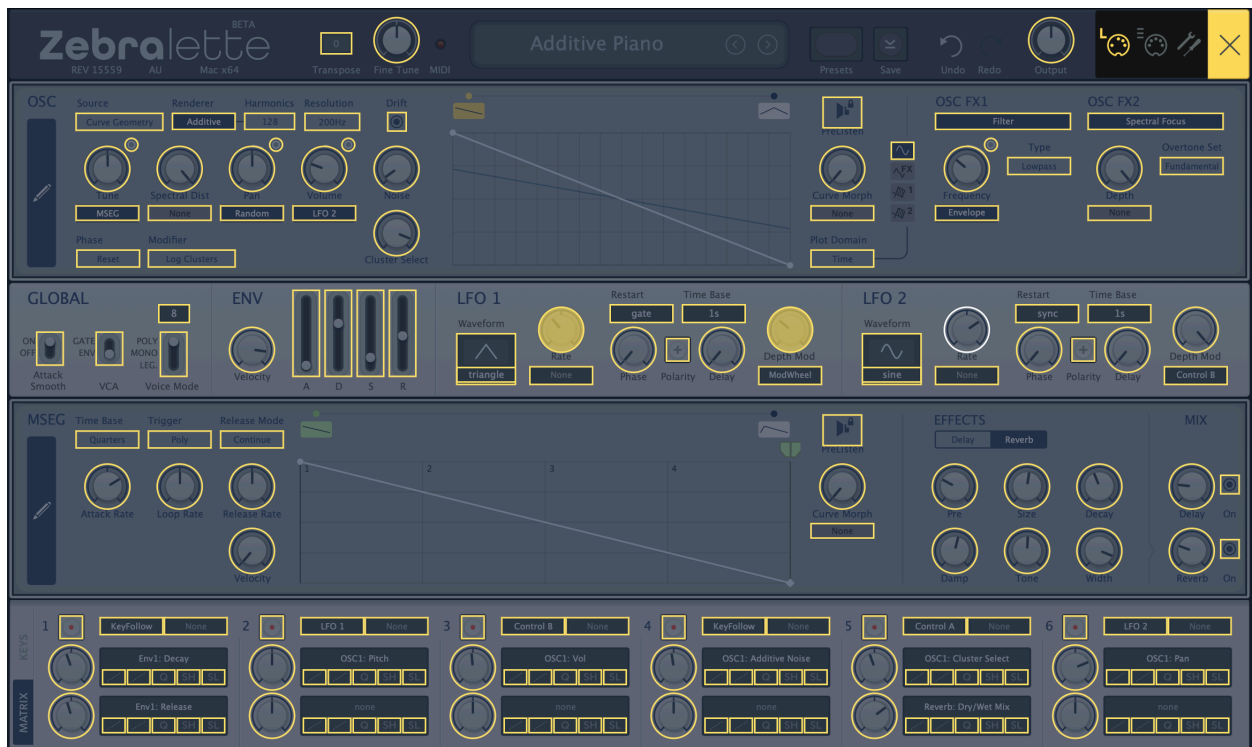
MIDI Learn

The MIDI Learn page is where you can connect MIDI CC (see above) to most parameters. But before connecting knobs and sliders on your master keyboard to Zebralette parameters (see the next page), it's best to know what a MIDI CC is...

CC i.e. "Control Change" is a multi-purpose message format for performing as well as editing presets. Note that CC isn't the only kind of MIDI performance data available; there are also messages for note on/off (including velocity), pitch bend and two kinds of aftertouch.

Thankfully, The MIDI Association left most of the CC numbers undefined, but two of them have meanings also recognized by Zebralette: CC#01 = modulation wheel, CC#64 = sustain pedal.

Click on the configuration button and select the 'L' MIDI icon (looks like a 5-pin DIN socket):

The window is a translucent overlay, with all MIDI-learnable elements appearing as selectable outlines. Already connected controls are filled (like LFO1 Rate and Depth Mod in this image), and the outline of the currently active control is highlighted in white (like LFO2 Rate here).

Try it: Click on the LFO1 Rate knob and send it some MIDI CC data (wiggle a knob or slider on your MIDI controller). To remove the new CC connection, double-click on the same knob.

Note: Controls in currently invisible panels will not be immediately available i.e. they cannot be switched over from within the MIDI Learn page. To access them, exit the configuration pages, select e.g. KEYS, then navigate back to the MIDI Learn panel.

All assigned controls will appear as a list in the MIDI Table page...

MIDI Table

Click on the configuration button (cogwheel) and select the MIDI icon labeled '≡'.

IMAGE xx

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Parameter

Selects one of Zebralette's many parameters, sorted into sub-menus. Click on the [ADD] button at the bottom and experiment! Afterwards, delete the line by clicking on the [X] to the right.

An experimental feature: Select *Last Clicked Control* from the bottom of the Parameter menu, enter any controller number then exit the configuration pages. Any MIDI controllable knob or switch in Zebralette will now respond to that controller – you just have to click on it first! The final option, *Last Clicked Control Fine*, is similar but with a significantly reduced range.

Channel / Controller

The next two fields are for MIDI channel and CC number.

Mode

Specifies the range / resolution of values. The last two options are for adjusting oscillator pitch
normal ....full range, continuous
integer ....full range, whole numbers only
fine....................................0.01 steps between the two integers closest to the current value
octaves ....max. 5 discrete values
semitone...........................+/- 6 semitones, continuous

Type

Specifies the kind of hardware. By far the most common is *Continuous 7-bit*.

Encoder 127....................'relative mode' endless rotary controls that repeatedly send the CC value 1 when turned up, or 127 (interpreted as -1) when turned down

Encoder 64 ....'relative mode' endless rotary controls that repeatedly send the CC value 65 when turned up, or 63 when turned down

*Continuous 7-bit*.............7-bit MIDI CC (normal resolution, common)

Continuous 14-bit ....14-bit MIDI CC (high resolution, rare)

Remove

To remove individual assignments, click on the **[x]** to the right of each line. To remove them all at once, click on the **[Delete All]** button at the bottom of the window.

Per Instance Control

Local i.e. per instance versions of the Control A Default and Control B Default settings in the Preferences (see the next few pages).
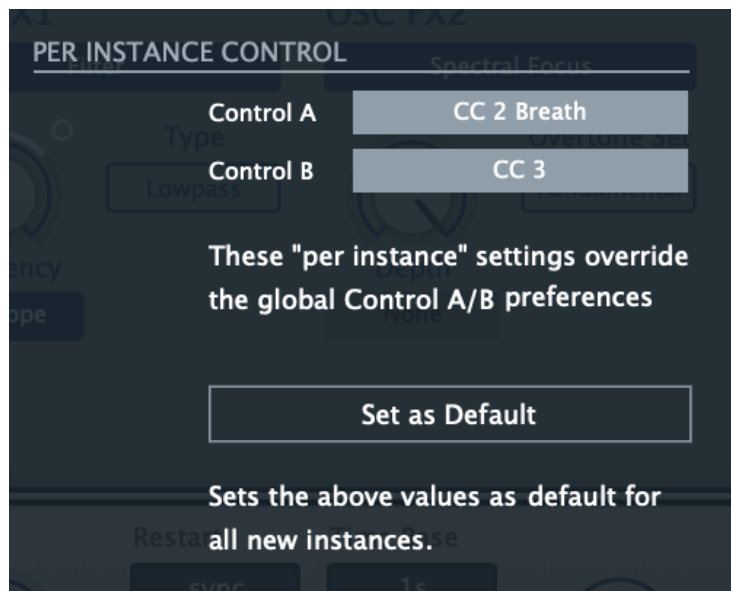
Note: Unlike the equivalent options in the Preferences page (see below), clicking on these fields does not open a menu (at least not in the current version of Zebralette), but act just like the rotary controls: To set a different CC either drag up and down or hover over the field and roll your mouse wheel.

[Set as Default] copies the Control A and Control B settings to the global Preferences...

Preferences

Click on the 'tools' icon to access the global options...

CONTROLS

Mouse Wheel Raster

If your mouse wheel is rastered (you can feel it clicking slightly as you roll the wheel), set this option to 'on' so that each little click increments the value in sensible steps.

Scroll Horizontal

Drection of scrolling within the presets panel.

Switch Behaviour

How the switches in the Global panel react:

drag ....Click and drag like a real switch
toggle ....Click anywhere on the switch (Voice Mode: click the position you want)
iterate ....Step through all positions

Note: Like the knobs, switches will always respond to rolling the mouse wheel.

APPEARANCE

Default Size

The GUI size for each new instance. You can temporarily change the GUI size without opening the Preferences page by right-clicking anywhere in the background.

Gamma

UI brightness. It can take a moment before the new setting appears.

Text Antialiasing

Smoothing of labels and values. Normally left on – only in certain special cases will switching this off improve readability.

PRESETS

Auto Versioning

If switched on, an index is appended to the preset name and automatically incremented each time you save it. For instance, saving 'Space' three times in a row would give you three files: 'Space', 'Space 2' and 'Space 3'.

Save Presets To

The user folder option prevents Zebralette from saving presets into the Local folder. Instead, they will land in the User folder (or a subfolder if selected).

Scan On Startup

Whether the preset library should be scanned and the database recreated when the first instance of Zebralette is started, e.g. when you reopen a project.

OTHERS

Base Latency

If you are certain that your audio system – hardware as well as software – uses buffers that are a multiple of 16 samples in size (please refer to the appropriate documentation), you can safely disable Zebralette's base latency. Otherwise leave it set to the default 16 samples to prevent crackles. A new Base Latency setting will only take effect when the host allows e.g. on playback or after switching the sample rate. Reloading Zebralette also works.

ABOUT THOSE BUFFERS

Internally, Zebralette processes audio in chunks of n x 16 samples. This 'block processing' significantly reduces the CPU load and memory usage of all our plug-ins.

If the number of samples to be processed is 41, Zebralette processes the first 32 and keeps the remaining 9 in a small buffer (16 samples is enough). Those 9 samples are then processed at the start of the next call... and so on.

The extra buffer is only necessary if the host or audio driver processes 'unusual' buffer sizes. In host apps that process buffers of e.g. 64, 128, 256 or 512 samples (multiples of 16), try switching it off so that Zebralette can process latency-free.

Control A/B Default

User definable MIDI controls. Set these to xx

MIDI Control Slew

Determines the strength of parameter smoothing for the following performance controls: pitch bend, modulation wheel, Control A, Control B and Pressure. With MIDI Control Slew set to 'off', Zebralette is more responsive to modulation wheel data (for instance), but performance control can sound rather grainy. The default setting ('Fast') is a good compromise between responsiveness and smoothness.

The 'Slow' option is adaptive: Whenever the incoming control data jumps suddenly between values that are further apart, no slew is applied.

Tips & Tricks

xx