



COMPUTER
music

ZEBRA cm



USER GUIDE

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Introduction

ZebraCM is a stripped-down, fixed architecture version of the mighty Zebra2 commissioned by 'Computer Music' magazine. Please note that ZebraCM is only available from CM, not from u-he directly or from any of our resellers!

Online resources

For downloads, news articles and support, go to the [u-he website](#)
For lively discussions about u-he products, go to the [u-he forum](#) at KVR
For friendship and informal news updates, go to the [u-he facebook page](#)
For video tutorials and more, go to the [u-he youtube channel](#)
For our soundsets and bundles, go to [u-he soundsets](#)
For 3rd party presets, go to [Patchlib](#)

Team 2021 (Q3)

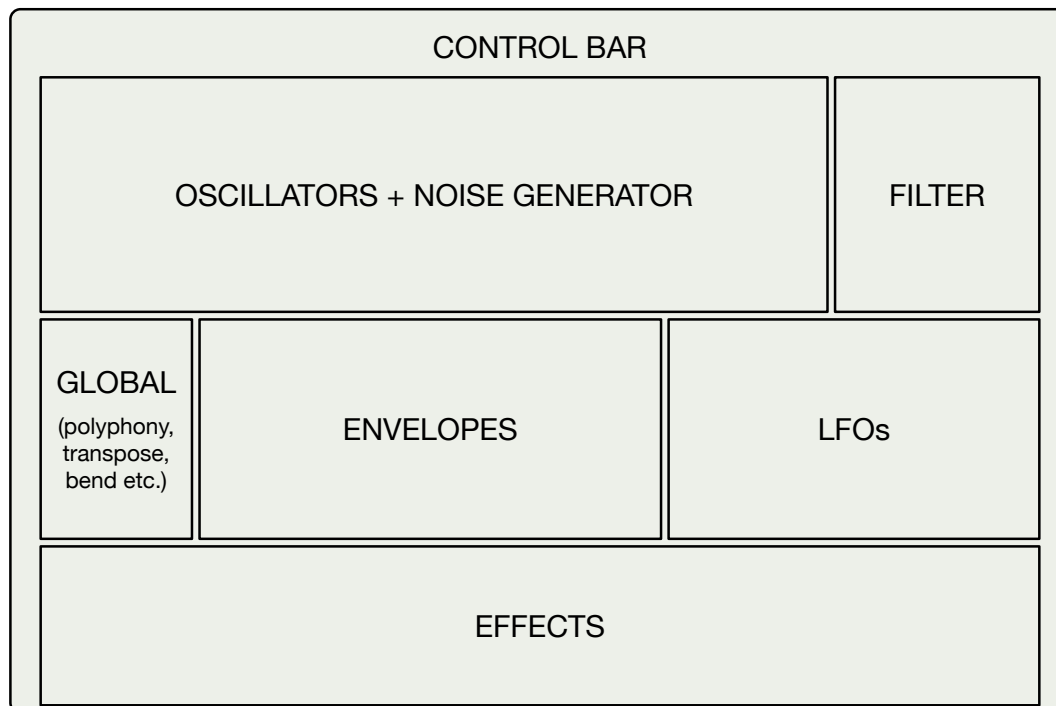
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Special thanks to Brian Rzycki for maintaining the original Patchlib.

For our terms of use and more, please refer to the file *license.txt* that came with the installer.

User Interface

The arrangement of modules in ZebraCM is very simple:

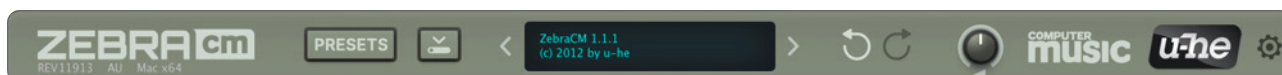


GUI Size

Right-clicking anywhere in the background opens a menu with GUI size options between 70% and 200% in 10% steps. Options larger than your screen will not be available. More permanent settings are available in the [Preferences](#).

Control Bar

Along the top of the ZebraCM window is a bar containing the following elements:



PRESETS

Opens the preset browser – see the extensive [Preset Browser](#) chapter.

Save



The button to the right of PRESETS stores the preset in either the *User* folder or the currently open folder, depending on the status of the *Save Presets To* [preference](#).

Right-clicking on the [Save] button lets you specify the preset **format**: The default is *.h2p* – highly recommended, as it is cross-platform compatible. The *.h2p extended* format also allows per-line comments (the preset files are therefore slightly larger). The *native* option is the format of your host system (*.fxp* for VST and AAX, *.aupreset* for Audio Units): Not recommended, but available if necessary. For an explanation of the final *Tag this patch* entry, see [Preset Tagging](#).

Data Display

Apart from showing the preset name, the central text display has several other duties:

Loading presets: Click on the arrows step through presets, or in the middle to select a preset from the current directory.

Values / Status: While a parameter is being edited, it shows the current value or status.

Drag & Drop: If you drag a preset from e.g. your desktop and drop it onto the Data Display, the preset 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*.

Undo / Redo



Click on the circular arrows to undo or redo an action. You can even undo a change of preset so that you don't lose any edits made to the previous one.

Output

ZebraCM's main volume control. Most of the factory presets have this set to 100, but you can boost very quiet signals up to 'normal' levels if necessary by setting higher values.

u-he Badge

Click on **u-he** for links to our website, to this user guide and other documents, to our user support forum at KVR and to our social network pages. At the bottom of the menu you will also see the entry *Install Soundset...* (see [Installing Soundsets](#)).

Cogwheel

Clicking on the cogwheel symbol at the far right of the control bar opens the 'configuration pages' where you can set up remote control via MIDI CC as well as several other global preferences. See the [Configuration](#) chapter.

Knobs and Switches

Operation is fairly standard click and drag up/down, but there are a few specialities:

Shift: To fine tune values, hold down a SHIFT key before moving the knob.

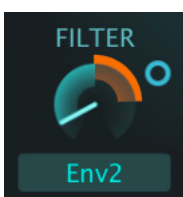
Mouse wheel: Hover over a knob and roll the wheel. You can also hold SHIFT to fine tune.

Default value: Double-click to reset a knob to its default value (most often zero).

Parameter locking: Right-click and select 'Lock'. The lock prevents the value from changing whenever you switch presets; it does NOT prevent you from adjusting the value directly. To unlock again, right-click and untick 'Locked' in the menu.

Modulation !

Several of the knobs have small **dots** which act like knobs to control the amount of modulation from a selected [modulation source](#) ('none' by default). To specify a source, click on the label.



Adjust the modulation depth by dragging the dot up and down like a regular knob – the coloured arc around the knob will move accordingly. If a modulation source has not been selected, clicking on the dot will open the list of sources.

Notes: Each of the [envelope](#) knobs has a pair of **fixed source** (velocity and key follow) modulation depth controls. Oscillator WAVE has a dedicated, full-sized knob for assignable modulation, and [Filter](#) Cutoff has two.

Modulation Sources

As well as LFOs and envelopes, the list of modulators include some standard MIDI messages for external control: pitchbend, modulation wheel (CC#01), polyphonic or channel aftertouch (Pressure), velocity and Gate. Control A and B are user definable MIDI CC.

ModWhl	Modulation wheel i.e. MIDI CC 2
PitchW	Pitch wheel / bender
CtrlA	Control A. User-definable MIDI CC (default is CC 2)
CtrlB	Control B. User-definable MIDI CC (default is CC 11)
LfoG1 *	Global LFO
Gate	Note on/off
Velocity	MIDI note velocity
Pressure	Aftertouch (accepts channel pressure or PolyAT... or both)
KeyFollow	Source relative to MIDI note number, plus Glide
KeyFollow2	As above, but especially for the highest note in duo voice mode (otherwise it is the same as KeyFollow)
Alternate	Per note alternating value
Random	Per note random value
Constant	Maximum value. Use Constant to force parameters (e.g. oscillator pitch or filter cutoff) beyond their normal range.
Env1	Amplifier envelope (by default)
Env2	Multi-purpose envelope
Lfo1	Voice LFO 1
Lfo2	Voice LFO 2

* '1' included in the name for the sake of compatibility with Zebra2

Main Panels

Oscillators

The two oscillators have identical features:



RESET

Causes the oscillator to start at the same **phase** (position within the waveform) each time a note is played. Otherwise, oscillator phase is random.

CRISP

Makes the oscillator sound slightly brighter overall at the cost of a little aliasing.

Volume

Oscillator output level.

Pan

Shifts the stereo position to the left or right.

Polywave (1/2/4/11)

Selects the number of unison waves, which can then be detuned (see DETUNE below).

TUNE

Oscillator tuning from -48 to +48 semitones.

DETUNE

Detune has two different functions, depending on the Polywave setting: In *Single* mode it is for fine tuning (+/- 50 cents). In *Dual*, *Quad* or *Eleven* mode it does not affect the overall pitch, but spreads the detuning equally. Of course you can still fine tune the oscillator via SHIFT+Tune.

SYNC

Activates oscillator-internal hard sync and reveals the accompanying knob. Classic ‘analogue’ hard-sync but with an integrated ‘master’ (i.e. you don’t need to use the other oscillator), this can add a lot of upper harmonics!

WAVE

The larger control morphs between the 16 waveforms. Although the ZebraCM oscillators are based on those in Zebra2, the waveset as well as the spectral effects are fixed in ZebraCM.



The lower knob is for waveform modulation – click on the label (‘none’) and select a source. The waves were chosen to (loosely) alternate between ‘dull’ and ‘bright’, which is why the maximum modulation depth is 2.00: ZebraCM is not a wavetable synth.

VIBRATO

The amount of pitch modulation directly from **LFO1** (0 – 100). The maximum depth here is only +/- 50 cents. For deeper vibrato, click on the assignable ‘...’ control below the *Tune* knob and select e.g. *LFO1* from the list.

FILTER

This is one of the many ‘spectral effects’ from Zebra2: a combination of lowpass (negative values) and highpass (positive values) filters.

SYMMETRY

Another of the Zebra2 ‘spectral effects’, Symmetry contracts the waveform towards the beginning (negative values) or end (positive values) of its cycle.

Symmetry modulation often sounds like **PWM** (pulse width modulation). Applied to a square wave (Waveform = 2.00), that’s precisely what it is.

Noise

Noise has traditionally been used for percussive sounds, wind effects, explosions etc..



Mono / Stereo

The noise modules can be made stereo, at the expense of a little extra CPU.

Volume

Noise output level.

Pan

Shifts the stereo position to the left or right.

Type

The unlabelled selectors at the top right of the panel offer four different flavours of noise:

White is a random signal with equal power across the spectrum. The two knobs adjust lowpass and highpass cutoff frequencies.

Pink is much darker. The two knobs adjust lowpass and highpass cutoff frequencies.

Digital is a square wave with random polarity, like a low-fi oscillator. It can be played in tune if PITCH is modulated by *KeyFollow* with the amount set to 64. See PITCH / REDUCE below.

Crackles produces random impulses, like a Geiger counter or a worn-out vinyl record. See PITCH / REDUCE below.

LOWPASS / HIGHPASS

In *White* or *Pink* modes: A pair of cutoff controls for 6dB/octave filters. Crackles mode also includes the lowpass filter.

PITCH / REDUCE

In *Digital* mode, PITCH controls the frequency while REDUCE adds irregularities. In *Crackles* mode, REDUCE lowers the probability of impulses.

Filter

Unlike Zebralette, ZebraCM also includes a multi-mode filter, with the following options:



Cutoff

The Cutoff determines a filter's edge frequency. Like the oscillators, the scale is in semitones. With Key Follow turned all the way down, the cutoff values of most filter types correspond to MIDI note numbers minus 12 (one octave). For instance, with Cutoff set to 81.00 a filter would resonate at 440Hz (middle A).

Resonance / Formant / Slope

Resonance is an internal feedback loop that emphasizes the cutoff frequency. In *LP Formant* it is the formant strength, while in the *EQ* types it adjusts the Slope.

Drive / Vowel / Gain / Split

The function of this knob also depends on the selected TYPE – see the list on the next page.

Key Follow

Adjusts how strongly the cutoff follows MIDI notes – the higher the note, the higher the cutoff. At 100%, it follows semitones precisely.

Note that the bottom row of knobs all modulate cutoff except in *LP Formant* mode, where the righthand knob modulates the Vowel parameter.

TYPE

Click on the graphic at the top of the filter panel to specify a type:

LP Xcite	24dB/octave lowpass, with a frequency-dependent exciter as the Drive parameter, which adds high frequencies.
LP Allround	CPU-friendly 24dB/octave lowpass, with a strong resonance and smooth coloration via Drive.
LP MidDrive	Boosts mid-range frequencies via Drive, good for leads that can cut through the mix.
LP OldDrive	Adds even-numbered harmonics for a vintage sound bordering on 'cheesy'.
LP Formant	Vocal filter type combining a non-resonant 12dB/octave lowpass with a resonant formant stage. The Formant parameter replaces resonance, and the vowel parameter morphs through A-E-I-O-U. Great for 'singing' voices and vocoder-like pads. Note: The mod target of the righthand assignable knob is the Vowel parameter!
LP Vintage	CPU-cheap analogue-modeled transistor ladder with 24dB rolloff.
LP 12dB	A 12dB/octave version of LP Allround
LP 6dB	A simple lowpass with a very shallow rolloff, non-resonant
BP RezBand	A resonant 12dB/octave bandpass model
BP QBand	Another resonant bandpass, with a different character
HP 24dB	Resonant 24dB/octave highpass
HP 12dB	Resonant 12dB/octave highpass
BR Notch	24dB/octave band reject
EQ Peaking	Peak / reject filter, like parametric 'mid' on a mixer. Res controls the slope of the peak. Gain has a range of -20dB (deep notch) to +24dB (strong peak). This type has little or no effect if Gain is zero.
EQ LoShelf EQ HiShelf	Two shelving models, to complete the trio of 'parametric EQ' filters. Like in EQ Peaking, the Gain parameter attenuates or boosts the frequency range (low or high), and Resonance controls the slope.
AP Phaser4 AP Phaser8	The two phasing models use 4 or 8 stage allpass (AP) filters to generate typical phasing effects. Cutoff controls the center frequency, while Resonance controls intensity. In the Phaser8 model, the Split parameter detunes the 8 stages.
LP Vintage2	CPU-intensive version of LP Vintage, capable of self-oscillation.
SR Decimate	Not actually a filter, this is a sample-rate reduction processor. The Cutoff parameter controls rate, meaning it can be tuned harmonically (set KeyF to 100). Neither Res nor Drive are used.

Global

The panel to the left contains parameters pertaining to pitch, master volume and pan...



Voice Mode (unlabelled)

The upper left selector has the following options:

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.

duoDuophonic. Like legato except that two notes can be played by splitting the oscillators according to lowest and highest note: Oscillator 1 pitch and filter Cutoff follow the lowest note while oscillator 2 pitch follows the highest note – for even more interesting (un)musical phrasing!

Voices

To prevent glitches while running CPU-intensive presets, you can reduce the maximum number of notes that ZebraCM will try to play at once: *few* = 4 notes, *medium* = 8 notes, *many* = 16 notes. Note: Due to intelligent voice allocation, these values are only approximate.

Transpose

Shifts incoming MIDI notes within a range of +/- 24 semitones.

Pitchbend (PB)

Sets pitch bend ranges independently from 0 to 24 semitones.

Glide

A smooth pitch transition between consecutive notes. Glide affects the KeyFollow modulator as well as the oscillators and filter.

VCA

Selects the 'amp envelope'. Setting *Gate* here lets you use both envelopes for other purposes.

Volume

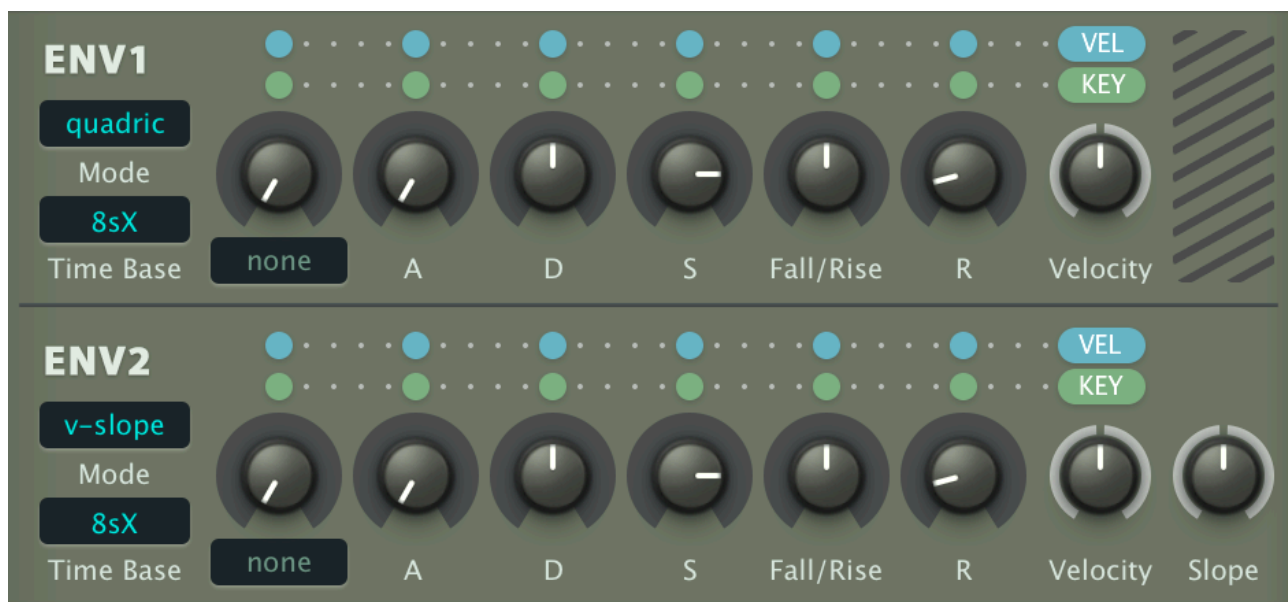
Overall volume **before any effects** Note: The Output knob in the control bar is post-FX, as are MASTER and RETURN in the FX grid (of course).

Pan

Stereo position. Try modulating this with a slow LFO with RESTART set to *free*.

Envelopes

Good old ADSR envelopes, but with several extras...



Mode

Specifies the curvature of all time-based envelope stages. There are 3 options:

quadricexponential curves. Attack is convex, Decay and Release are concave

linearstraight lines. Linear envelopes can sound unnatural

v-slopeexponential curvature via the '**Slope**' knob, which is hidden in the other two envelope modes. Setting -100 makes the curve very concave, -50 is close to *quadric*, zero is linear, +100 is very convex.

Time Base

8sXup to 8 seconds, knob scale is exponential (mid position is 1 second)

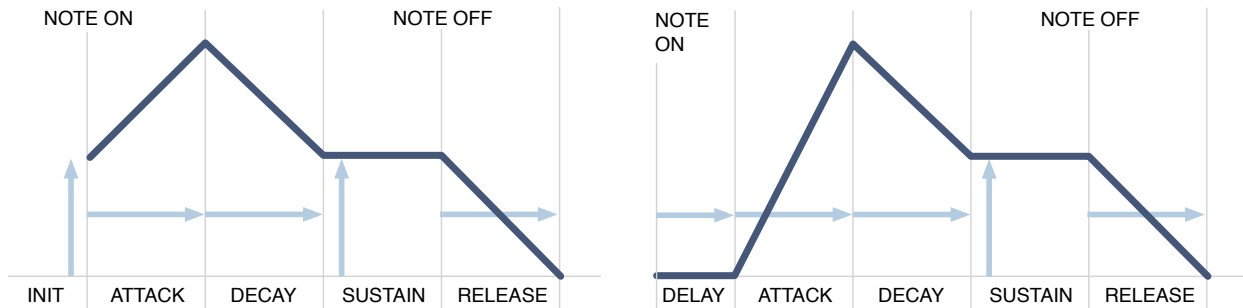
16sXup to 16 seconds, knob scale is exponential (mid position is 2 seconds)

10sup to 10 seconds, knob scale is linear so 20.00 means 2 seconds etc.

1/4, 1/1, 4/1times are relative to song tempo (beat, bar, 4 bars), the knob scale is linear

Pre-Attack ('none')

The knob labelled 'none' by default lets you set either an **initial level** above zero, or a **delay** before the attack phase starts.



Attack

The time it takes for the envelope to rise from zero (or the Init value) to maximum

Decay

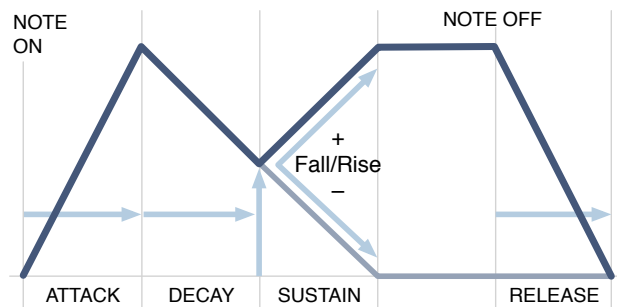
The time it takes to drop from maximum to the Sustain level

Sustain

The level after Decay. Normally remains at that position until the note is released

Fall/Rise

After the Sustain, negative values cause the envelope to fall to zero, while positive values cause it to rise to maximum. Larger absolute values mean longer fall/rise times.



Release

The time it takes to drop to zero after a note is released.

Velocity

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

VEL and KEY

Velocity and KeyFollow modulation depths for each envelope stage: click and drag on the dots. For instance, positive VEL for Decay will lengthen the decay times as you play harder, and negative KEY for Release will shorten the release times of higher notes, etc..

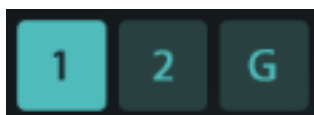
LFOs

Alongside envelopes, low frequency oscillators represent THE classic modulators – often for vibrato or cyclic movement e.g. a slowly drifting tonal change...



LFO selector

Before changing anything in this panel you will need to **select which LFO** you want to edit:



1 = LFO 1, **2** = LFO2, **G** = Global LFO (aka 'LfoG1'). The first two are polyphonic i.e. they are instantiated per voice: each note you play gets its own LFO. The main advantage over the global LFO is that the notes in a chord can have different amplitudes, rates and phases.

Remember that oscillator Vibrato uses LFO 1.

Waveform

sinepure sine wave
trianglepure triangle wave
saw uprising saw ('ramp')
saw downfalling saw
sqr lo-hisquare wave, restarted at the lower level
sqr hi-losquare wave, restarted at the higher level
rand holdrandom steps
rand gliderandom curves
userup to 32 steps. See [User Waveform](#) on the next page.

Rate

LFO speed. This bipolar control scales the value set by the SYNC parameter

Amplitude

LFO output level. For typical “vibrato via mod wheel”, do the following:

Select LFO 1. Click on the label below the Amplitude knob and select *ModWhl* as source. Turn the modulation depth up to maximum (click and drag on the dot). Then click on the label below oscillator TUNE and select *Lfo1*. Turn the modulation depth up to 1.00 or less (using SHIFT).

PHASE

Sets the phase (i.e. the position within its cycle) at which the LFO will be restarted every time a note is played. Ignored if Restart is set to *free*.

DELAY

Fade-in time.

SYNC

0.1s, 1s, 10s.....absolute time in seconds, three ranges

1/64 – 8/1.....synced to song tempo (includes dotted and triplets, maximum 8 bars)

RESTART

For LFO1 and LFO2 there are 2 options here:

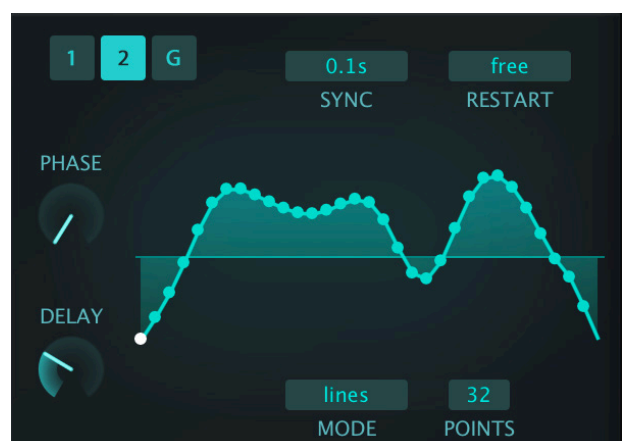
freethe LFO starts at a random position within its wave each time a note is played

gatethe LFO always starts at the same position within its wave (see *Phase* above)

For the global LFO, Restart sets the **number of bars** after which the LFO is automatically restarted at the specified phase (see *Phase* above).

User Waveform

Selecting the *user* waveform lets you create custom shapes with up to 32 values. The MODE switch specifies whether these values are output as **steps** or as straight **lines**, and POINTS sets the number of steps or lines:



Please note that SYNC (see above) sets the length of each step, so a complete cycle in the lefthand example would take 8 times $1/16 =$ half a bar in 4/4 time. In the righthand example a complete cycle would take 32 times 0.1 seconds = 3.2 seconds.

User Drawing Tools

Choose the *user* Waveform and right-click on the LFO graphic to see this context menu...

Copy	
Shapes	▶
Cmd-Draw	▶
Selection	▶
Reverse	
Invert	
Randomize	
Soften	
Normalize	
Make Unipolar	
Straighten	
Reset	
Quantise 4	
Quantise 6	
Quantise 8	
Quantise 12	
Quantise 16	
Quantise 24	
Lock	

All functions will be **restricted to a selection**, if one exists: To select multiple steps, hold down SHIFT, click and drag horizontally. To deselect everything, either click in the background (i.e. away from the selection) or right-click and choose *Deselect* from the *Selection* sub-menu.

Copy / PasteClipboard functions e.g. for transferring user waveforms between presets.

Shapes.....Create a *Ramp*, *Triangle*, *Sine*, *Cosine*, *Root*, or *Quadric* waveform. Drawing will be restricted to a selection if one exists. Set Steps to 32 and experiment!

Cmd-Draw / Alt-DrawModify the shape by dragging while holding **cmd** (Mac) or **alt** (Windows). The options are *Erase* (set zero), *Scale* (multiply), *Shift* (2D move) or *Warp* (2D bend).

SelectionApplies *Deselect*, *Invert*, *Shift Left*, *Shift Right*, *Select every 2nd / 3rd / 4th*. Try them out! If nothing is selected you will only see the three 'every' options.

Reverse.....Flips the current selection horizontally

Invert.....Flips the current selection vertically

Randomize.....Adds random offsets to the selection

Soften.....Interpolates between values. Try doing this several times.

NormalizeExpands the waveform vertically to minimum / maximum

Make UnipolarShifts all values into the positive, rescaling if necessary

StraightenDraws a straight line

ResetSets all (selected) values to zero

Quantize (nn)Adjusts values to an equally-spaced grid. Tip: Select '12' here and use the LFO for oscillator pitch modulation (set the modulation depth there to 12.00).

Effects Panels

Effects Routing

ZebraCM includes a modulated **chorus**-type effect, a **reverb** and a stereo **delay**. The panel on the right lets you route these in a variety of ways....



The Effects Grid

The three effects appear as **movable blocks** (simply drag elsewhere) within a 3 x 2 **grid** of **cells**. Note that the dry signal is injected into the **MASTER lane** (column of cells) – to use the **RETURN** lane, see **SEND** below! Double-click an effect to switch it on or off. Active effects appear brighter than inactive ones.

Right-click on an effect to open a menu where you can select an input and activate/deactivate or add/remove effects...

Input 1
Input 2
✓ same
✓ active
remove

Input 1 and Input 2 route signal between the two lanes. In the left image here, the Reverb should be either same or Input 1. In the right image the Reverb has *Input 1* selected (try setting this up and moving Rev up or down). The default is *same*.

As an alternative to double-clicking you can tick/untick *active* here.

Effects can be removed from the grid entirely. Click an empty cell to add again.

BYPASS

Temporarily deactivates all effects in the FX grid. The **BYPASS** status is truly global – you won't hear any effects in any of your presets on any day of the week until you deactivate this!

SEND

The level of dry signal being sent down the **RETURN** lane. You can modulate **SEND**: In the left image here, the modulation wheel turns up the signal being sent to the Reverb.

MASTER

Output volume for the lefthand lane.

RETURN

Output volume for the righthand lane.

Modulation FX

We believe no synthesizer should be without one of these:



Mode

Chorus.....chorus / flanger using short delay lines

Phorus.....chorus / flanger using allpass filters

Phase.....classic phaser unit

Feedback

Bipolar feedback control for ‘flanger’ type resonances.

Mix

Balance between the dry and wet signals.

Center

Nominal delay time / allpass cutoff.

Stereo

LFO phase offset between the two stereo channels. 50% often delivers the widest effect.

Speed

The rate of the ModFX module’s own LFO (0.1Hz to 1Hz).

Depth

Amount of *Center* modulation from the ModFX module’s own LFO.

EQUALIZER

The button activates a pair of low and high shelving filters between the dry and chorused signal, for instance to preserve the stereo position of bass frequencies while softening the chorus. Tip: Try using the EQ without any chorus effect – simply turn down the Mix knob.

LOW Freq. / Boost

Low crossover frequency and Gain for the dry signal below that frequency.

HIGH Freq. / Boost

High crossover frequency and Gain for the dry signal above that frequency.

Delay

The delay in ZebraCM is simpler than in Zebra2, but still quite flexible. There are two delay lines, each with time scaling and pan controls. Regular regeneration as well as cross regeneration, with a pair of shelving filters in the feedback paths, give you detailed control over the decay.



Sync

The two unlabelled selectors at the top set either a tempo-synchronized value (1/32nd to 1/1 triplet) or an absolute time (1 second), which is then scaled via the Ratio knobs (see below).

Feedback / X-Back

Normal regeneration and cross-regeneration amounts

Mix

Cross-fade between the dry signal and the processed signal.

HP / LP

Lowpass and highpass filters in the feedback paths affect the tone of successive repeats.

Ratio

The Ratio knob scales Sync value (see above) from 0% (4 samples long) to 200%.

Pan

Stereo position for each delay line.

Reverb

A much simplified version of Zebra2's original reverb unit...



MODE

The *Reverb* option is a standard model while *Metalverb* sounds more artificial but wider.

Feedback

How much of the reverb output signal is fed back into the input. If Range and Feedback are both set to maximum and Damp is at zero, the reverb will carry on almost indefinitely.

Dry / Wet

Separate controls for unprocessed and processed signal levels.

Damp

A simple lowpass filter in the feedback loop causes the higher frequencies to fade faster than low frequencies, imitating the 'warming' effect of carpets, curtains etc. in a room or the audience in a concert hall.

Range

Length from 'very short' to 'rather long'. Controls the impression of room size.

Mod / Speed

The depth and rate of the reverb's own LFO (modulates Range as well as Feedback).

Preset Browser

Overview

You can load a preset in the current folder by clicking on the data display, or step through them by clicking on the arrow symbols either side of the data display...or even drag a preset file from a system window or your desktop and drop it onto the data display. New versions of ZebraCM also include our powerful preset browser – click **PRESETS** in the upper bar (it then reads ‘CLOSE’):



Layout

Folders (or tag search tools) appear on the left, presets appear in the centre and information about the currently active preset appears on the right. If the PRESET INFO panel is not visible, click on the [≡] button (top right) and tick *Show Preset Info*. See [Preset Info View](#).

Default, init

When an instance of ZebraCM starts up it checks whether ‘Local’ contains a preset called *default*, and loads that instead of the demo preset.

If you prefer to have a simple template each time, right-click on the data display and select *init*, then select the Local folder and [SAVE] under the name *default*. If a fresh instance doesn’t load your new *default*, it will have landed in the User folder, in which case you should change the [preference](#) *Save Presets To* and repeat the above.

Note that a preset called *default* will not appear in ZebraCM’s browser.

Directory Panel

Local and User Folders

Factory presets are sorted into 8 folders. You will also find untagged copies of several of them in the 'Local' root. After selecting a preset you can use the cursor keys to step through them.

As 'Local' is primarily meant for factory content you should save all your own creations to the 'User' folder instead (see the *Save Presets To* [preference](#)).

MIDI Programs

As well as factory presets, 'Local' also contains a special folder called 'MIDI Programs'. When the first instance of ZebraCM starts, all presets in that folder (up to 128) are loaded into memory so they can be selected via MIDI Program Change message. To retain the order it is important to rename them e.g. '000 rest-of-name' to '127 rest-of-name'.

'MIDI Programs' can contain up to 127 sub-folders, switchable via MIDI Bank Select messages (CC#0). Send a Bank Select first, then a Program Change. The 'MIDI Programs' folder itself is bank 0, while sub-folders are addressed in alphabetical order starting with bank 1.

IMPORTANT: The content of the 'MIDI Programs' folder cannot be changed on the fly. Any changes there will only be updated after the host application is restarted.

Smart Folders

These are not regular folders, but the results of querying a database of all presets. The content is therefore dynamic; it will change whenever the underlying data changes.

Search History

A list of the most recent searches. To make them more permanent, right-click and select the *Save Search...* function. To empty the list, right-click on 'Search History' and select *Clear*.

Saved Searches

This folder contains any 'Search History' entries that have been saved. To remove entries here, right-click and select *Delete*.

Bank

These folders reference metadata about preset origin – the version of the factory library or the name of the soundsset with which the preset was installed. See [Preset Info](#).

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

To remove Bank attributes from selected presets, either drag & drop them onto the 'no Bank' folder you will see at the bottom of the Bank list, or right-click on the Bank and select *Remove Presets from Bank*. Empty Banks will automatically disappear.

Favourites

8 smart folders, one for each Favourite colour (1-8). See [Presets context menu](#) a few pages down. Only one Favourite colour/number can be set per preset. Presets dropped onto one of the 'Favourites' folders will be marked as such. Favourite status can be removed from all presets of one particular colour / index by right-clicking on the 'Favourite' folder and selecting *Remove All Favourite (n) Marks*.

Junk

A list of 'junked' presets (see [Presets context menu](#) below). Presets dropped on this folder will disappear unless you make them visible via *show Junk*. The context menu also includes a function to remove the *Junk* status from all presets at once (*Remove Junk from Presets*).

Tags

Smart folders for each Categories, Features and Character tag. Presets dropped onto these folders will adopt the corresponding tag. Presets dropped onto the 'Untagged' folder will have all Categories, Features and Character tags removed.

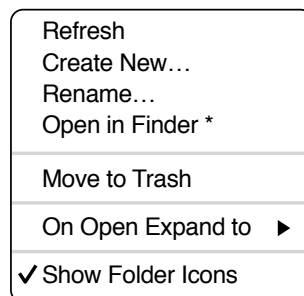
Author

Smart folders for each author name as defined when presets are saved. Presets dropped onto these folders will adopt the new name. Tip: Instead of signing each one of your creations, you could sign just one of them, select and drag them all onto the 'Author/ (You)/' smart folder. As the process cannot be undone, please use this feature with caution!

See the section [Internal Drag & Drop](#) a few pages down.

Directory context menu

Right-clicking on any folder within Local or User will open this menu:



Refresh

Updates the browser. Windows users might need to call this function whenever files have been moved, added, deleted or renamed in Explorer. Refresh is seldom necessary on the Mac.

Create New...

Insert a fresh, empty subfolder.

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.

On Open Expand to

Sets which nested directories will appear in the directory whenever the GUI is loaded. The first option (*none*) collapses all folders, while the final option (*all levels*) reveals all nested folders.

Show Folder Icons

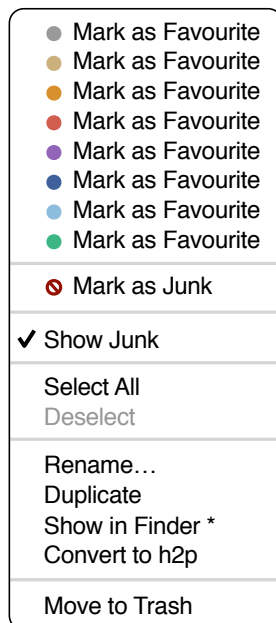
Show symbols to the left of each folder. Note that the Junk symbol remains visible as long as *Show Junk* is ticked (see [Presets context menu](#) below), even if no presets have been junked.

Presets Panel

The central area of the browser shows all presets in the selected directory. Click to load.

Presets context menu

Right-click in the preset list to open a menu containing the following functions:



Mark as Favourite

Choose one of 8 'favourite' marks. The entry will be replaced with *Unmark as Favourite*.

Mark as Junk / Show Junk

Instead of deleting presets you can mark them 'Junk' so they disappear from the browser. Activate *Show Junk* to display junked files and mark them with a STOP symbol.

Select All, Deselect

See 'Multiple Selection' on the next page.

Rename

Rename the most recently selected preset.

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 highlights the currently selected file in its original location within ZebraCM's browser.

Convert to native / h2p / h2p extended / nksf

Selected presets are converted to the format specified in the [SAVE] button context menu (or in the browser's PATCH FORMAT field).

Move to Trash / Recycle Bin

Send selected presets to the system trash.

RESTORE

At the top left of the Presets panel is a [RESTORE] button which lets you audition presets to your heart's content without losing track of the one that was loaded before.

Tag this Patch



The **flag** button opens the *Tag This Patch* overlay (see [Preset Tagging](#) below). An alternative to right-clicking on the [Save] button.

Preset Info View



The **triple bar** opens a menu with only two entries: *Show Preset Info* lets you display or hide the righthand panel, while *Show Tags in Preset Info* lets you show/hide tags there.

Multiple selection

A block of adjacent presets can be selected via *shift*+click, and individual presets can be added to the selection via *cmd*-click (Mac) / *alt*+click (Win). Presets can be moved to a different folder via drag & drop (see the next paragraph). To deselect, either click on an unselected preset or choose *Deselect* from the context menu.

Internal Drag & Drop

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

External Drag & Drop

Presets and folders can also be moved or copied between ZebraCM'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 if you use multiple formats or multiple host applications, but all it usually takes is a click anywhere in ZebraCM, which sets the focus to the clicked instance.

On Windows systems, a manual *Refresh* (see [Directory Context Menu](#)) will be required before changes to the browser contents appear.

Exporting smart folders

Drag a smart folder onto e.g. your desktop to create a folder containing **real** copies of those presets. For instance, an entry in the Search History, one of the Favourites, the 'Drums' category (including sub-folders), all presets with the *Duo* feature, or an Author...

Exporting favourite / junk status

You can export Favourite **status**, either all at once or individually. Shift+click and drag the 'Favourites' folder onto the desktop to create a file called *Favourites.uhe-fav*. The process is similar for sub-folders: If you shift+click and drag e.g. 'Favourites 5' onto the desktop, this will create a file called *Favourite 5.uhe-fav*. Such files can be imported into ZebraCM's browser on a different computer for instance, via drag & drop onto (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!

Preset Info Panel

The panel to the right shows information about the selected preset. If you can't see this panel, click on the triple bar [≡] 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. DESCRIPTION and USAGE text is entered immediately before saving a preset. CATEGORIES, FEATURES and CHARACTER are the tags for the currently selected preset. You can remove or add tags directly here (see [Tagging via Preset Info](#) below)...

Switches

At the bottom right of the browser window are two global switches...

BYPASS EFFECTS

Mirrors the BYPASS button in the EFFECTS panel so you can check 'dry' presets without leaving the browser. Remember: This switch is truly global – you won't hear any effects ever until you deactivate it!

PATCH FORMAT

Specifies the format in which your patches will be saved. The default is *.h2p* (recommended). To save in the plugin version's own file format (e.g. *.vst* or *.aupreset*), select *native*. The *.h2p extended* format can include comments for each line.

Installing Soundsets

Any soundsets we distribute ourselves will have the extension *.uhe-soundset*, and third parties are encouraged to use this format for their own soundsets (for details, contact our support team).

Standard Method

To install, simply drag & drop the *.uhe-soundset* file into ZebraCM – anywhere will work. The soundset folder should appear within the 'User' folder. If a soundset with the same name already exists there, 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...* and navigating to the desired file.

Regular Folders

Folders containing ZebraCM 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 long file extension with 'zip', then extract the presets and documentation manually.


Preset Tagging

“Tags” are elements of metadata, information that you can add to presets so that they can be found more easily.

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 one, please remember that you are actually **changing the tags in the original preset!**

The Tagging Window

To open the tagging window, either right-click on the [SAVE] button and select *Tag this Patch*, or click on the FLAG icon at the top right of the preset browser.

 EDIT TAGS

CLOSE

CATEGORIES

Bass

Pads

Leads

Keys

FX

Drums

Seq+Arp

Other

Acoustic

Analogue

Digital

Dist+LoFi

E-Bass

FX Bass

Plucks

Rhythmic

Sub

Sync

Synth

Vocal

FEATURES

Mono

OscSync

Modulated

Glide

CHARACTER

Moving

Dirty

Phat

Synthetic

FEATURES

Mono

Poly

Duo

Chord

BPM

OscSync

Dry

Modulated

Percussive

Soft Attack

Slow Release

Glide

CHARACTER

Bright

Constant

Clean

Soft

Phat

Natural

Dark

Moving

Dirty

Aggressive

Thin

Synthetic

CATEGORIES describe a preset by analogy to instrument types or typical usage, and each has a more or less appropriate set of subcategories. FEATURES are technical classifications, and CHARACTER tags are pairs of opposites from which you can choose just one. When you are finished, click on [CLOSE] at the top right of the window.

Tagging via Preset Info

In the PRESET INFO panel, right-click on the Category, Features or Character labels and select or unselect tags in the context menu. If you right-click on a tag, the first option in the menu becomes *Remove Tag...*

The function *Create Search from Tags* finds all presets with the exact same set of tags. This function can be used to locate differently named duplicates.

Tagging via Smart Folder

You can tag presets by dragging them onto any of the Tags subfolders in the directory. To remove all tags from presets, drag and drop them onto the [no Tags] subfolder.

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 4 sets of buttons (CATEGORIES, FEATURES, CHARACTER and FAVOURITES). The first 3 correspond to the tags in the tagging window (see the previous page), while the bottom row lets you find 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

Here are a few bullet points to get you started. Especially for Category tags, following a step-by-step tutorial is much easier than studying a full technical description. Try these:

Each Category has its own set of subcategories. Not selecting a subcategory here means “show me presets tagged with any subcategory”. Click on [Leads]...

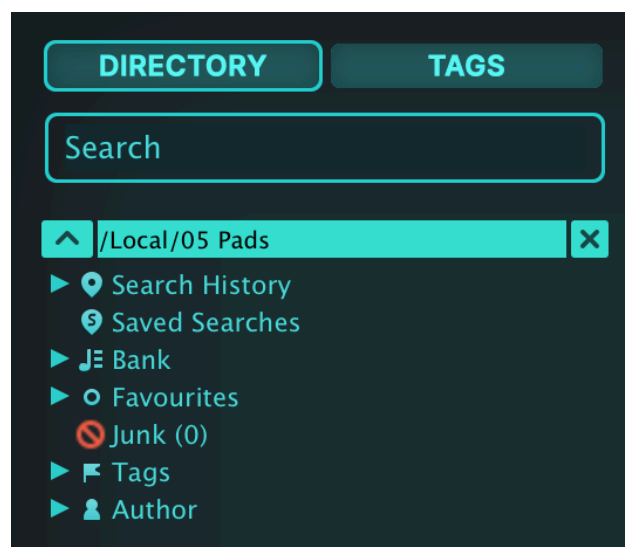
You can select multiple categories without specifying a subcategory if you hold *cmd* (Mac) or *alt* (Windows) while clicking on the category. Try that with the [Keys] button. The number of hits increases dramatically.

Selecting a subcategory (e.g. [Bass]) with the same name as the main category means “show me all presets in the Bass category that do not have any subcategories defined”.

Complete 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.

Search by Text

The Search field lets you find presets according to a string of characters i.e. text. If you remember that the preset you’re looking for has the word “clock” in either its name or its description, simply enter “clock” into the Search field and hit Return...



Search normally looks into the preset name, the author, DESCRIPTION and USAGE (see the PRESET INFO panel). Searches are not case-sensitive, and quotes are not required unless you want to include spaces between words.

To restrict the search to a particular path e.g. ‘Local/05 Pads’, double click on the ‘05 Pads’ folder. This restricted path appears below the Search field instead of the preset folders. You will only see smart folders and any subfolders of the specified path.

The [^] button to the left moves the search path up one level (in this case to ‘/Local’). The [X] button to the right sets the search path to include all ZebraCM presets (i.e. ‘Local’ and ‘User’), and the regular preset folders reappear.

Try it: 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 double quotes!) would find e.g. *Battlestar Warsaw*, if such a preset existed.

Syntax

Scope

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

An alternative syntax lets you use the so-called wildcards **?** (means any single letter) and ***** (anything or nothing). However, the scope name, author, desc or use must be specified, followed by '=', the search must be complete, and logical operators are not allowed.

Logic

The AND operator specifies that presets contain both words surrounding it. AND is implicit, but can be written explicitly if you prefer: For example, star AND wars (or simply star wars) will find presets that contain both star and wars.

OR only requires that presets contain one of the words surrounding it. For example, star OR wars will find presets that contain star as well as presets that contain wars. Or both.

NOT excludes presets containing the following word. To find all presets that contain 'star' but do not contain 'wars', enter 'star NOT wars'.

Examples using standard syntax

brass OR string	'brass' or 'string' appear in the Name, Author, Description or Usage
brass string	both 'brass' AND 'string' appear somewhere in the preset
use:vibrato	'vibrato' appears in Usage
"at ="	aftertouch usage is mentioned in the Author, Description or Usage field. Note that '=' is not a valid character within preset names
"hs s" ctrl #Mono	All monophonic factory presets starting with an 's' that use at least one of the A / B performance controls

Examples using alternative syntax

desc=p*t?n*	would find e.g. 'proton' or 'painting', but not 'antiproton'
author=*ow?rd	would find "Howard" and "Urs + Howard", but not "Howard + Urs".
author=t*o*i*	would find both Tasmodia and Teksonik

Configuration



Click on the cogwheel icon at the top righthand corner to open the global configuration pages where you can adjust the UI size and brightness as well as connect ZebraCM parameters to MIDI continuous controllers. A row of 4 buttons appears:



These are MIDI Learn (L), MIDI Table (≡), Preferences (“tools” symbol) and Close (X). Tip: Right-click anywhere within the row of buttons to set the current page as default.

About MIDI CC

CC (‘Control Change’) is a multi-purpose message format used for editing and performing presets. CC isn’t the only kind of MIDI performance data. For instance, there are different messages for note on/off (including velocity), pitch bend and two kinds of aftertouch.

Although the MIDI Manufacturers Association (MMA) was kind enough to leave most of the 128 CC numbers undefined, two of them have specific meanings that ZebraCM recognizes:

01 = modulation wheel

64 = sustain pedal

Previous versions of Zebra2 also offered the CC controls Breath (CC 02) and Expression (CC 11). These were replaced by user definable CC sources *Control A* and *Control B*. See the [Preferences](#).

Note that you don’t actually need a real breath controller (for instance) or an expression pedal to make use of CC messages. Most of the names are purely convention – you can use anything that can send a definable CC e.g. knobs or sliders on your MIDI keyboard, or a controller lane in your MIDI sequencer.

Later MMA revisions to the MIDI spec even include a bunch of esoteric CC definitions such as ‘Celeste Detune Depth’, probably at the request of a home organ manufacturer or two. We can safely ignore all such definitions.

MIDI Learn

ZebraCM can be remote-controlled / automated by messages from MIDI hardware or from your MIDI sequencer application. Click on the configuration button then the [L] icon to open this view:



The overlay shows all MIDI-learnable elements as selectable outlines. Controls that are already assigned appear filled, like OSC 1 'Wave', 'Tune' and 'Detune' in this image. The currently active element, the one ready to be learned, is highlighted like OSC 2 'Wave' here.

Try it: Click on the OSC 1 'Tune' knob and send some MIDI CC data (move a knob or slider on your MIDI controller). The 'Tune' knob turns opaque and can now be controlled remotely.

Tip: If you ever have problems with parameters magically resetting themselves, the usual reason is an accidental MIDI learn. Click on the **MIDI Table** icon [≡] and have a look...

MIDI Table

Clicking the cogwheel and selecting the [=] icon opens an editable list of MIDI CC assignments:



Parameter

The field on the left selects one of ZebraCM's parameters from several sub-menus. Click on the 'Add' button at the bottom and experiment with this option!

Channel / Controller

The next two fields are for MIDI channel and CC number (see About MIDI CC above).

Mode

Specifies the range and/or resolution of values:

Normalfull range, continuous

Integerfull range, whole numbers only

Fine.....0.01 steps between the two integers closest to the current value

Type

Specifies the output from knobs / sliders on your hardware controller. Continuous7bit is by far the most common, but you should check your hardware specifications anyway:

Encoder127‘relative mode’ endless knobs that repeatedly send the CC value 1 when turned up, or 127 (interpreted as -1) when turned down

Encoder64‘relative mode’ endless knobs that repeatedly send the CC value 65 when turned up, or 63 when turned up

Continuous7bit7-bit MIDI CC (normal resolution, common)

Continuous14bit14-bit MIDI CC (high resolution, less common)

Removing Assignments

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

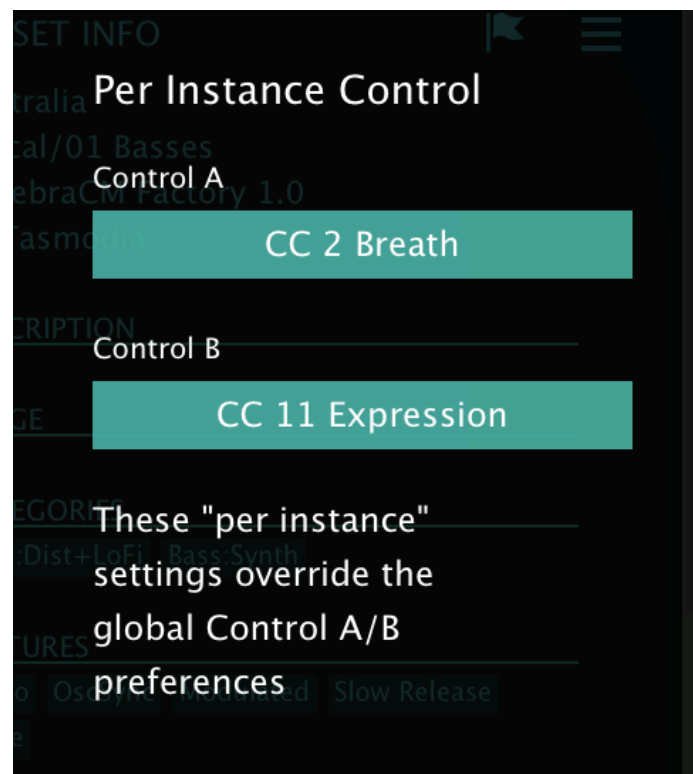
Last Clicked

This is an experimental feature, “work in progress”: At the very bottom of the Parameter menu are two options, *Last Clicked Control* and *Last Clicked Control Fine*. Select *Last Clicked Control*, enter a suitable controller (MIDI CC) and exit the configuration pages. Whichever control you click will respond to that CC.

The *Fine* option is similar, but has a very narrow range. This means that you can program a pair of knobs to remote-control anything “coarse” as well as “fine”.

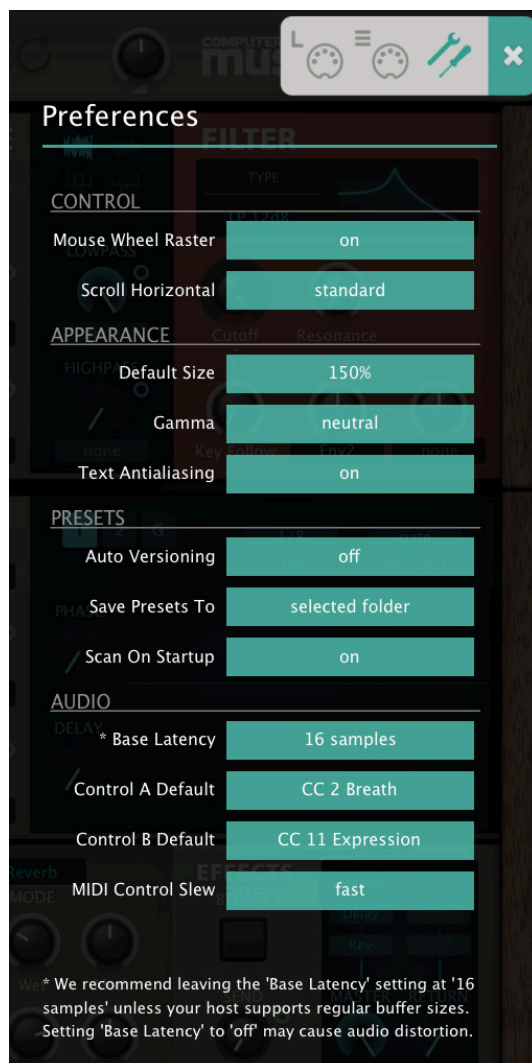
Per Instance Control

Local versions of the *Control A Default* and *Control B Default* preferences (see below). Note that these are not saved with each preset, but per instance with the project.



Preferences

Clicking on the cogwheel then the [TOOLS] icon will open the Preferences window...



Mouse Wheel Raster

If your mouse wheel is rastered (you can feel slight clicks as you roll it), switch this on and parameter values will increment in ‘sensible steps’ e.g. integers.

Scroll Horizontal

Folders containing more files than can be displayed in the window can be scrolled page-wise via mouse wheel. Opinions differed about the direction, so we made this optional.

Default Size

Sets the UI size for each new instance. Note that you can temporarily change the size by right-clicking in the background.

Default Skin

This setting will only appear if you have an alternative skin installed – at the time of writing, there are none available. This option specifies the skin for each new instance, but you can temporarily change the skin by right-clicking in the background.

Gamma

The default brightness.

Text Antialiasing

Smoothing of all labels and values. Usually left on, in rare cases switching this option off can improve readability.

Auto Versioning

If this option is 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

Choosing 'user folder' here causes all saved presets to land in the User folder instead of the currently selected folder.

Scan On Startup

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

Base Latency

Only disable this option if you are 100% sure that your audio system – hardware as well as software – uses buffers that are a multiple of 16 samples. Otherwise you should leave it at '16 samples' to prevent crackles.

Note that a new Base Latency setting will only take effect when the host allows e.g. on playback or after switching the sample rate. Reloading ZebraCM will always work.

ABOUT THOSE BUFFERS

Internally, ZebraCM processes audio in chunks of $n \times 16$ samples. This so-called 'block processing' method significantly reduces CPU load and memory usage.

For instance, if the number of samples to be processed is 41, ZebraCM will process 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.

Note: The extra buffer is only necessary if either the host or the audio driver is processing "unusual" buffer sizes. In the many hosts that process buffers of 64, 128, 256 or 512 samples (all multiples of 16), try switching it off so that ZebraCM can process latency-free.

Control A/B Default

The list of modulation sources in earlier versions of u-he plug-ins included the fixed MIDI CC Breath (CC#02) and Xpress (expression pedal, CC#11). We replaced these with user-definable CC sources called **CtrlA** and **CtrlB**, retaining Breath and Expression as the default CC to ensure compatibility with older presets.

MIDI Control Slew

The strength of parameter smoothing for all performance control sources: PitchW (pitch wheel), ModWhl (modulation wheel), CtrlA, CtrlB as well as ATouch (aftertouch).