WAV3+CORE

HARMONIC WAVETABLE SYNTHESIZER

WAV3+CORE User Manual

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W3PC Audio · wav3pluscore.com

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0. Introduction

What WAV3+CORE is

WAV3+CORE (pronounced "wave plus core") is a wavetable synthesizer by W3PC Audio, made as a VST3 plug-in.

It does more than bend one waveform or move between waveforms: the aim is to let you **design the movement itself**. Its main features are:

- **Six wavetable oscillators.** Each oscillator holds four waves, Wave A to D, and can morph between them.
- **Harmonic EQ and formant control.** Raise or lower individual harmonics by number, or move the pitch while keeping the "mouth shape" of a voice.
- **Wave Effects (16 types).** Fold, Warp, SelfSync and more reshape the waveform itself.
- **More sources.** NOISE, STRING (a physical model of strings and winds), METAL (metallic sounds) and WAVE SEQ (a sequencer that switches between oscillators).
- **Two multimode filters** with 19 types, in series or in parallel.
- **25 effects** that you can reorder and run in parallel.
- **Arpeggiator and chord functions**, with per-step values (velocity, length, ratchet, slide, accent and more) and TB-303 style knobs.
- **AI SOUND.** Describe a sound in words and your own AI (your API key, or a local LLM) builds the patch.

WAV3+CORE is **donationware**: every feature is free and there is no license key. If you like it, a donation is very welcome.

System requirements

Item	Details
OS	Windows 11 (64-bit)
Format	VST3
Tested DAWs	FL Studio, Cubase, Cakewalk Sonar
Mac	Not supported at the moment

CPU load depends a lot on the sound. If it is too heavy, lower **Quality (Live)** or **FX Quality** on the GLOBAL page (chapter 9).

Installation

WAV3+CORE comes as a zip file, without an installer.

1. Extract the downloaded zip file.
2. Copy the `WAV3PLUSCORE.vst3` folder, as a whole, to `C:\Program Files\Common Files\VST3` (click "Continue" if Windows asks for administrator permission).
3. Rescan plug-ins in your DAW.
4. Load "WAV3+CORE" (manufacturer W3PC Audio) as an instrument.

> **If your DAW does not find it**: right-click the zip file → "Properties". If there is an "Unblock" checkbox near the bottom, tick it, click OK, then extract and copy again (this removes the mark Windows adds to files downloaded

> from the internet).

To uninstall, delete the folder `C:\Program Files\Common Files\VST3\WAV3PLUSCORE.vst3`. Your presets and settings (chapter 2) stay.

On the first start, `Documents\WAV3PLUSCORE\Presets` is created and the factory presets are written there (chapter 2).

Donations and contact

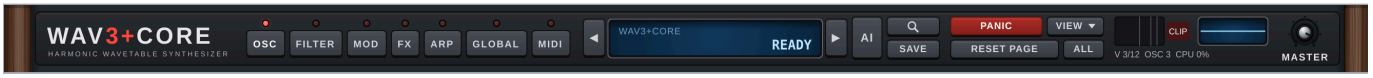
- **Website**: https://wav3pluscore.com
- **Donate**: https://ko-fi.com/wav3pluscore
- **Contact**: info@wav3pluscore.com

Click the **WAV3+CORE logo** in the header to see the version number and buttons for the website and Ko-fi.

When reporting a problem, please include your DAW, what you did and what happened, and a screenshot if possible.

1. Basics

The screen



The top of the window (the header) is the same on every page. From left to right:

Item	Details
Logo	Click it for the About screen: version, website and a Ko-fi (donation) button.
Page buttons	Switch between the seven pages: **OSC** / **FILTER** / **MOD** / **FX** / **ARP** / **GLOBAL** / **MIDI**. The dot above the open page lights up.
Preset display (LCD)	Shows the category, number and preset name. While you move a knob it shows that knob's name and value instead. A "*" after the name means the sound has been changed. Click it to open the preset menu (chapter 2).
◀ ▶	Load the previous / next preset.
AI	Opens AI SOUND (chapter 11).
Magnifier / SAVE	Search / save presets (chapter 2).
PANIC	Stops all voices and effect tails at once. Use it if a note keeps sounding.
VIEW	Skin (Graphite / Snow), Zoom, Show Modulation, Remember Page, Frame Rate, GPU Rendering and Check for Updates. These settings become the default for every instance (the zoom is also saved with each song).
RESET PAGE / ALL	Reset the parameters on the current page / all parameters to their defaults.
Meters	"V 3/12" = voices playing / voice limit, "OSC 3" = oscillators playing, "CPU" = approximate CPU use.
CLIP / scope	CLIP lights for about one second when the output clips (click to clear). The small screen shows the output waveform.
SAFE	Shown under the meter: how many times the last-stage safety limiter (always on, protects ears and speakers) has acted. It only turns the sound down above +18 dBFS and clips at +24 dBFS; normal sounds are never touched. Cleared by changing the sound or pressing PANIC.
MASTER	Overall volume.

Keyboard and wheels



The bottom of the window has an on-screen keyboard. Click a key to play it.

- The two wheels on the left are **Pitch Bend** (springs back to the centre) and **Mod Wheel** (CC#1; double-click to reset).
- **Right-click** a key to latch (hold) it. Right-click or click it again to release.
- Light blue keys are the keys being pressed (playing). The range with a coloured band and chord names is the chord pad zone (chapter 8).

- Grey keys are notes outside the current scale while **Lock** (Scale Lock) on the ARP page is on. This is only a display: they still play as usual (with **Keys** on, they snap to the scale; chapter 8).

About screen

Click the **WAV3+CORE logo** at the left of the header. It shows the version number and buttons for donations (**SUPPORT ON KO-FI**) and the website (**WEBSITE**). Close it with CLOSE, the Esc key, or a click outside it.



Update check

When the window opens, WAV3+CORE checks for a new version at most once a day. It only reads the version information on wav3pluscore.com; nothing that identifies you or your computer is sent.



- If a new version is available, a small **UPDATE** appears at the top right of the preset display (LCD). Click it to open the download page in your browser. Nothing is downloaded or installed automatically.
- If the check fails (offline, for example), nothing is shown.
- Turn off **Check for Updates** in VIEW and no connection is made at all.

Knobs

Action	Result
Drag up / down	Change the value.
Drag with the right button	Fine adjustment (8 times finer).
Double-click	Reset to the default.
Right-click	Open the knob menu (below).

The knob menu:

Item	Details
Enter Value...	Type a value. Enter confirms, Esc cancels. For time knobs, a number without a unit is read in the unit shown (with "250 ms" shown, typing 500 gives 500 ms; type "0.5 s" for seconds).
Reset to Default	Reset to the default.
Modulate with ▸	Choose a modulation source (LFO, envelope, velocity…) for this knob. It goes into the first free Mod Matrix slot with Range +50% and BI-LINEAR + (nothing happens if all 20 slots are in use).
Mod Amount...	Adjust the depth of the modulation connected to this knob, right there.
Remove Modulation	Remove the modulation connected to this knob.
MIDI Learn	Choose it, then move a MIDI controller to assign it to this knob (chapter 10).

Resetting a section

Right-click the title strip of a section (plate) to get "Reset …". It resets only the knobs and buttons inside that section.

Copying oscillators

On the OSC page, right-click an OSC row in SOURCES to copy, paste, copy to another OSC or swap. The LFO tabs on the MOD page offer the same for LFO settings only.

How modulation is shown

When a knob is modulated, an **arc** (the range the modulation moves it through) and a **dot** (its current position) appear around it. LCD screens also show the current position as dots. Turn this off with **Show Modulation** in VIEW.

Zoom and skins

VIEW also has these settings (v1.5; each is saved per computer and does not affect the sound):

- **Remember Page**: when you close and reopen the window, it opens on the page you left. `In Song` (default) also saves the page with the song, so it opens there when you reload the project. `This Session Only` only restores it when you reopen the window (not saved with the song).
- **Frame Rate**: how many times per second moving displays (meters, LCDs, waveforms) are redrawn. `30 fps` (default) or `60 fps` (smoother, more drawing work).
- **GPU Rendering (Direct2D)**: draws the window with the GPU on Windows (on by default). If the window flickers or turns black on your computer or DAW, turn it off to draw with the CPU instead.

Use **Zoom** in VIEW to set the window size from 50% to 150%. You can also drag the bottom-right corner of the window, or the edges and corners of the DAW's plug-in window.

- While you drag, the screen is shown as a stretched still picture (slightly soft). When you stop, it is redrawn sharply at the new size.
- The DAW's window can take any shape. The interface is scaled to the largest size that fits while keeping its proportions, centred, and the rest is filled with the panel colour.
- When you stop, if the window's shape does not match the interface, WAV3+CORE asks the DAW for a size that fits, following the direction you dragged (width or height). Some DAWs keep the window as it is. Sizes below 50% or above 150% are brought back into that range.
- Only while you drag the triangle at the bottom-right corner does the window keep its proportions.
- The zoom is saved with each song (project) and comes back when you reopen it. A new instance opens at the zoom you chose last.

There are two skins:

- **Graphite**: dark panel (used for the pictures in this manual)
- **Snow**: white panel

DAW automation

Almost every parameter can be automated in your DAW. The exceptions are the **parameters that set the routing**; they are still saved with the sound as usual.

- Mod Matrix SOURCE / CONTROL / DESTINATION
- Destinations of the ARP MOD lanes
- FX CHAIN order and parallel (‖)
- FX In of each source
- OSC Trigger / Env (TRIGGER)
- Filter 2 Own ENV

This keeps the automation in your songs from shifting when more choices (destinations, effects…) are added in later versions.

The full parameter list is in the last chapter (chapter 14).

2. Presets

Browsing

- ◀ ▶ load the previous / next preset.
- **Click the preset display (LCD)** to open the menu. Factory presets are listed by category; your own presets by folder and category. The current sound is ticked.

At the bottom of the menu:

Item	Details
Save Preset...	Save the current sound (same as the SAVE button).
Load Preset File...	Load a preset file (.wav3preset) from anywhere.
Open Preset Folder	Open the preset folder in Explorer.
Restore Factory Presets...	Rewrite the factory presets with the original sounds (see "Where files are kept").
Support on Ko-fi	Opens the donation page (Ko-fi) in your browser.

Searching

The **magnifier** in the header opens the search window. It searches names, categories, genres, folders and tags made automatically from the sound (mono, arp, unison, reverb…).

- Words separated by spaces must all match (e.g. `pad lofi`). Case does not matter.
- **Click** / ↑ ↓: load that sound. The window stays open so you can compare sounds.
- **Double-click** / **Enter**: load and close.
- **Esc**: close.

Saving

Press **SAVE** in the header to open the save window.

Field	Details
Name	Preset name (up to 64 characters).
Category	e.g. LEAD / PAD / BASS. Saved in capitals and used to group the menu.
Genre	e.g. Trance / Lo-Fi. Optional; used by search.
Folder	Where the preset is saved.

Enter saves, **Esc** closes.

- If you load one of your presets and save without changing the name, the file is overwritten.
- If you load a factory preset and save, the factory file is not overwritten; the sound is saved as a new user preset (USR, directly in the Presets folder) (v1.5).
- If a different file with the same name exists, you are asked before it is replaced.
- A sound made by AI SOUND is saved with the AI's name and category already filled in, into the `AI` folder (chapter 11).

Factory presets

WAV3+CORE comes with 341 factory presets in the categories ARP / BASS / BELL / BRASS / DRUM / FX / KEYS / LEAD / PAD / PLUCK / STRINGS / VOCAL, plus **v1.1 New Waves** (8 sounds added in v1.1 that use the new built-in waves and features).

Presets numbered after 256 use the newer features: arpeggiator lanes, the 303 knobs, OSC TRIGGER, FREE MOD, the Filter 2 envelope and the chord pads.

Where files are kept

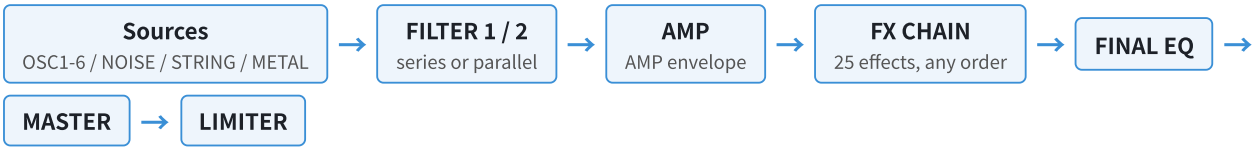
What	Where
Presets	`Documents\WAV3PLUSCORE\Presets`
Factory presets	`Documents\WAV3PLUSCORE\Presets\Factory\<category>\<number> <name>.wav3preset`
Settings (skin, MIDI Learn, AI)	`%APPDATA%\WAV3PLUSCORE`

- If your Documents folder has been moved (for example to OneDrive), the folder is created there.
- The factory presets are written from the plug-in to the Factory folder on the first start. After that they are ordinary files: you can overwrite, rename or delete them.
- **Deleted factory presets do not come back by themselves.** To restore all of them, use **Restore Factory Presets...** in the menu (your own presets are not touched).
- If the folder cannot be written (no permission, read-only, missing drive), the built-in factory presets still appear in the list and work. Only SAVE is unavailable.
- If writing stops halfway (for example the disk is full), only the presets written so far appear. Free some space and restart; the rest is written then.

3. Signal flow

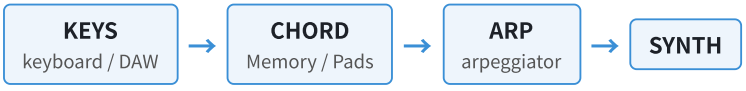
Before the details, here is the overall picture of how sound travels through WAV3+CORE. Each part is explained from chapter 4 on.

Audio



1. **Sources**: nine of them: OSC1-6 (wavetable), NOISE, STRING and METAL. WAVE SEQ switches which of OSC1-6 plays (chapter 4).
2. **Filters**: for each source, the **F1<>F2** knob sets how much goes to Filter 1 and Filter 2. With **Bypass** on, the source skips the filters.
   - On the FILTER page, **F1 Out** set to `To Filter 2` puts the filters in series (Filter 1 → Filter 2); `Output` runs them in parallel.
   - **Link** makes Filter 2's cutoff follow Filter 1 (**Offset** shifts it in semitones).
3. **AMP**: the AMP envelope shapes the volume over time (chapter 6).
4. **FX CHAIN**: 25 effects in any order; neighbours can run in parallel (chapter 7). Each source can choose where it enters the chain (**FX In**). `Direct Out` skips the effects.
5. **FINAL EQ → MASTER → LIMITER**: a 6-band EQ after all effects, the overall volume (MASTER) and the final limiter. To limit before the MASTER volume, use **Pre Limiter** inside the FX CHAIN (v1.5, chapter 7).

MIDI from the keys



Notes pass through the chord functions (CHORD) and the arpeggiator (ARP) before they reach the synth. With both off, the notes you play sound as they are. **Chord/Arp Mode** on the ARP page sets whether chords are passed to the arpeggiator (`Chord -> Arp`) or the two run separately (`Independent`) (chapter 8).

Modulation

What	How many	Where
LFO	6 (one per OSC)	MOD page
Envelopes	AMP / FILTER / FILTER 2 / NOISE / FREE 1-4 / PITCH	MOD page, FILTER page
Mod Matrix	20 slots	MOD page
Macros	6	MOD page
ARP lanes (MOD1-4)	4	ARP page

All of them can move the parameters listed as Mod Matrix destinations. The easiest way is to right-click a knob and choose **Modulate with** (chapter 1).

4. OSC page



The OSC page is where the raw sound is made. Pick a source in **SOURCES** on the left and the right side shows its settings.

SOURCES

Row	Details
OSC 1-6	Wavetable oscillators. The current wave name is shown under each row.
NOISE	Noise (13 types).
STRING	Physical model of strings and winds.
METAL	Metallic sound model.
WAVE SEQ	Sequencer that switches between OSC1-6.

- The round button at the left of each row turns that source on or off.
- The **OSC / SHAPE** tabs at the top switch between the oscillator's basic settings (OSC) and waveform shaping (SHAPE).
- Right-click an OSC row to copy, paste, copy to another OSC or swap. Only the OSC settings are copied, not that OSC's LFO (v1.5; copy the LFO separately by right-clicking its LFO tab on the MOD page). An OSC Link Source set to the OSC itself (Self) stays Self when pasted.

WAVETABLE

Each oscillator holds four waves, **Wave A to D**, and **Wt-Pos** morphs smoothly between them. The screen shows the current wave frames layered.

Control	Details
Wave A	The main wave. ◀ ▶ step through the waves.
Wave B / C / D	Morph targets. `Off` = not used.
DRAW	Draw a wave by hand into a User slot (see "Drawing a wave").
Width	For Pulse, the pulse width. For Sine / Saw / Tri / Ramp and the other built-in waves it makes the wave asymmetric (Sine: the length of each half cycle; Saw etc.: the ratio of the slopes). 50% = unchanged. No effect on User / Add / Resynth / Noise.
Round	Rounds the corners of Pulse (no effect on other waves).
Wt-Pos	Moves through the frames that are set, in the order A → B → C → D. Move it with an LFO or envelope in the Mod Matrix for a sound that keeps changing.
Morph	How the frames blend. `Mix` = crossfade the two waves (as before). `Harmonic` = interpolate the harmonics (level and phase), so waves with different phases do not cancel on the way and the overtones "migrate". Each wave's Harmonic EQ and Shape Amt apply before the interpolation; Wave Effects and formant lock apply after it. Not used for Resynth waves.
Intensity	Bends how the wave is read, changing the tone. Int. Mode picks how.
Int. Mode	`Bend +` / `Bend -` / `Bend +/-` / `Formant` / `Spectrum` / `Mirror` / `Sync` / `Quantize`
Fmt Shift	Moves the formant (the vowel-like peaks) up or down without changing the pitch (±24 semitones).
Fmt Track	How much the formant follows the played pitch. 100% = follows it like an ordinary instrument; 0% = the peaks stay put (the same "mouth shape" on every note).

> Fmt Shift / Fmt Track (formant lock) work on User / Add / Resynth waves (not on built-in waves). The reference pitch is the analysed original pitch for Resynth and C4 for User / Add; playing at that pitch sounds like the original.

Wave types

The built-in waves include analog types (Saw, Pulse, Warm Saw…), sync, FM, phase distortion, folding and distortion, vocal (Vox A-U, Choir Ah…) and growl / wobble bass waves (Growl FM, Reese Core, Wobble Sub, Talk Bass…). Version 1.1 adds 80 more, 150 in total (organ / keys, pipe organ, acoustic instruments, bell / mallet, spectral, chip / bass and growl). The full list is in the appendix.

There are also slots for your own waves:

Name	Contents	Made with
User 1-8	A single-cycle WAV or a hand-drawn wave	IMPORTED WAVEFORMS on the GLOBAL page, or DRAW
Add 1-8	A wave built from harmonic levels and phases (additive)	ADDITIVE OSCILLATORS on the GLOBAL page
Resynth 1-6	A many-frame wavetable made by analysing a recording	RESYNTHESIS on the GLOBAL page

When a Resynth wave is selected, the Wave B-D row turns into playback settings and Width / Round turn into Speed / Start / End.

Control	Details
Play	Steps through the frames in the recording's own time. Wt-Pos then sets where playback starts.
Loop	`Off` / `Forward` (repeat) / `Ping-Pong` (back and forth).
Key Sync	Restarts playback on every key press.
Speed	Playback speed (0-400%). Also a Mod Matrix destination (OSCn Resynth Speed).
Start / End	Start and end of the loop.

Only the analysis is saved in songs and presets; the original WAV file is not.

Drawing a wave (DRAW)

DRAW opens the drawing window. You can draw with points and curves, or freehand. Choose the User slot to write into and confirm; the wave becomes Wave A.

SHAPE tab

The SHAPE tab reshapes the waveform of the selected oscillator.

HARMONIC EQ

An EQ that raises or lowers harmonics by number (6 bands). Unlike a normal EQ it works on **which harmonic** rather than on frequency, so it hits the same harmonic on every note.

Control	Details
Position	Which harmonic (1-64).
Gain	Boost or cut (±24 dB).
Width	How wide (0.3-16).

Wave Effects (16 types)

Effects that reshape the waveform. Any number can be on at once. Each has an **on/off** switch and an **Amount**; at 0% nothing changes.

Effect	Details
Warp	Blends reading the wave forwards and backwards. 100% gives the time-reversed shape (a Saw's rise and fall swap).
Twist	Little change up to about 30%, then a sharp spike grows inside the wave. At 100% it is close to Warp at 100%.
Drive	Boosts and hard-clips the wave (up to 16 times).
Window	Applies a triangular window that pulls both ends of the cycle to zero.
Offset	Shifts where the cycle starts.
Wave	Moves the wave towards a sine of the same period (stronger fundamental).
Bit Reduction	Lowers the amplitude bit depth (1 bit at 100%).
Shrink	Squeezes the cycle shorter and fills the rest with zero (pulse-like).
SelfSync	Repeats part of the cycle several times (hard-sync-like).
Multipoint	Zeroes the areas around three equally spaced points.
LPF	Smooths the wave, cutting high harmonics.
HPF	Subtracts the LPF result from the wave, emphasising edges.
Fold	Folds back whatever exceeds ±1 (wavefolding).
Spectrum	Raises and lowers even and odd harmonics alternately (a complex, phaser-like colour).
Random All	Randomises the level of every harmonic.
Random Odd	Randomises only the odd harmonics.

Frame Shape (A-D)

Shape Amt A-D set how much of the harmonic EQ and Wave Effects is applied to each frame, Wave A to D. For example, A at 0% and D at 100% morphs from clean to shaped as Wt-Pos moves.

Harm (in PHASE / ZONE) randomises the phase of each harmonic: the same harmonic levels, but a different wave shape and drive response.

PITCH

Control	Details
Oct	Octave (±6).
Semi	Semitones (±12).
Fine	Fine tuning (±100 cents).
Key Trk	Off = plays at C4 + Oct / Semi / Fine whatever key is pressed, ignoring pitch bend and glide.
Quantize	Pitch Quantize (v1.5). On = this oscillator's pitch movement (pitch bend, portamento (glide), LFOs and the Mod Matrix) snaps to the **Key / Scale** on the ARP page, so it moves in steps (a "robot voice" style effect). Off by default (the sound stays as before).
Smooth	Time to glide between the Quantize steps (ms). 0 = hard steps.

- Quantize is per oscillator, so one oscillator can step while the others glide.
- The targets are the notes of the scale plus the played note itself, so a key outside the scale still sounds as played while nothing moves it. With a Chromatic scale the pitch snaps to semitones.
- Oct / Semi / Fine, unison Detune and the small Drift movement are not snapped (they apply on top).
- Try it: turn Quantize on and slowly move the pitch bend wheel while holding a key. Routing `LFO1 -> OSC1 Pitch` with a wide Range in the Mod Matrix also shows it.

OUTPUT

Control	Details
Level	Volume.
Pan	Left/right position.
Pan>Uni	How much the unison spread moves with Pan. 100% = the whole spread moves to the Pan position; 0% = the spread stays as it is.
F1<>F2	How much goes to Filter 1 and Filter 2 (left = Filter 1, right = Filter 2).
Bypass	Skip the filters and go straight to the AMP.
FX In	Where this source enters the FX chain. `All FX` = from the start; `From #n` = from slot n (earlier effects are skipped); `Direct Out` = no effects.

PHASE / ZONE

Control	Details
Start	Start phase (0-360°).
Rand	Amount of random start phase.
Harm	Harmonic phase randomisation (see Frame Shape).
Key Lo / Key Hi	Key range this oscillator plays (key zone).
Fade	Fade-in width in semitones from each edge of the zone. Overlap two zones to crossfade.

UNISON

Stacks copies of one oscillator for thickness and width.

Control	Details
Unison	Unison on/off.
Voices	Number of copies (1-16).
Detune	Amount of detune.
Spread	Stereo width.
Mix	Balance between the centre voice and the outer voices.
Tone	Cuts (−) or lifts (+) the upper harmonics of the outer voices.
Det.Curve / Spr.Curve / Mix.Curve	How Detune / Spread / Mix are distributed across the voices.
L<>R	Swaps left and right.
Even	Starts the voices with evenly spaced phases (never on top of each other), giving a strong sync-like sound.

The small screen at the bottom right shows the position and level of each voice as bars.

> **Tip for Mix**: lowering Mix hollows out the centre voice and makes the detune stand out. For a normal thick unison, start around 50%.

UNISON CHORD

Spreads the unison voices (up to 16) over the tones of a chord, so one key plays a chord. On top of that the voices can start one after another or move their pitch (the UNISON ARP of v1.1). Only works while UNISON is on.

Control	Details
On	The switch at the right end of the title strip. Off = the whole UNISON CHORD rests (Chord and Mode do nothing; plain unison). The settings are kept, so turning it back on restores them. Can be automated to switch within a song. On by default.
Chord	`Off` = as before (every voice on the played note). `Octave` / `5th` / 20 chord types (`Maj` to `m9` , the same as the ARP chord pads) / `Scale` (stacked thirds in the song Key / Scale, starting from the played note) / `Played` (the keys you hold = paraphonic, see below).
Mode	`Off` (the chord as is when a Chord is chosen) / `Strum` (tones start one after another) / `Converge` (the tones gather on the root) / `Arp` (the tones play one after another at Rate = an arpeggio from one key) / `Arp Link` (voice count and Detune change in a 4-step cycle on each note)
Order	Order for Strum / Arp (Up / Down / Center Out / Random).
Shape	How Converge gathers and how Arp plays (table below).
Loop	Repeat Strum / Converge / Arp. With Loop off, Arp plays Steps steps and then keeps the whole chord.
Rate	Step speed for Converge / Arp (note value).
Strum	Strum interval (ms).
Range / Steps	With Chord `Off` : Converge pitch range (semitones) / number of steps. With a chord selected, Range is how far up the chord is stacked (semitones), Steps is the number of Converge steps / the Arp pattern length.
Link	Depth of Arp Link.

What Shape means with a chord selected:

Shape	Converge (tones to the root)	Arp (which tones sound on each step)
Spread	Along the chord tones down to the root (all together)	One tone at a time, in Order
Alternate	Like Spread, but odd steps are mirrored below the root	The root stays on + one tone at a time
Up	The chord mirrored below the root rises to the root in semitones	Tones are added one by one (1, 2, ... all)
Down	From the chord tone down to the root in semitones	Starts with all tones and removes them one by one
Random	Each step jumps to some tone below its own	One random tone per step (Order is ignored)

With Chord `Off`, `Converge` works exactly as in v1.1 (from the Range offsets back to the played note). `Arp` with Chord `Off` plays the detuned voices one at a time.

How voices are spread: the tones are filled from the lowest up, with the voices divided evenly (any remainder goes to the lower tones first). Voices on the same tone detune against each other (a tone with a single voice has no detune). For example 7 voices with `Maj` gives root x3, third x2, fifth x2.

Range: the basic chord (`Maj` = 0 / 4 / 7 semitones) always sounds. When Range is wider than that, the chord tones an octave up are added as far as Range allows (24 = up to two octaves; `Scale` keeps stacking thirds). At the default Range 7, `Octave` gives the root plus one octave up, and `Maj` gives just the basic chord.

> The wavetable band is chosen from the highest chord tone, so stacking upwards does not alias.

Chord = Played (paraphonic): the unison voices are spread over the keys you are holding. While any oscillator is set to `Played`, the whole synth runs **one voice only**, however many keys you press, and the filter and envelopes are shared by the whole chord (like a vintage paraphonic synth).

- The first key starts the voice (that key is the root and sets the velocity).
- Adding keys adds their notes. With Retrigger on (POLYPHONY), each added key restarts the envelopes (pitch and velocity stay those of the first key); with it off, the envelopes do not restart (legato). Releasing a key redistributes the voices over the remaining keys. Even if you release the root key, only the keys still held sound.
- Releasing all keys starts the release (the last chord is kept during the release).
- Mono / voice count in POLYPHONY and Range are not used. Oscillators that are not set to `Played` play the root key only.
- Notes from the ARP, the chord pads and Chord Memory count as held keys, so a chord pad can play on a single voice.

OSC LINK

Modulates this oscillator with another one (2 slots).

Control	Details
Link Source	`None` / `OSC1 (Self)` / OSC2-6. The oscillator's own number is shown as `(Self)`.
Type	`FM` / `AM` / `Ring Mod` / `Sync`
Amount	Modulation depth.

TRIGGER

Detaches the oscillator from the keys so it plays in rhythm: kicks, hi-hats, chopped synths and so on.

Control	Details
Trigger	`Key` = normal (plays while a key is held). `Step` = every ARP step (with ARP off, every Rate Div). `Arp Mod 1-4` = every step of that ARP MOD lane (bar height = hit strength). `LFO 1-6` = every LFO cycle.
Env	The Free ENV restarted on each hit; it shapes the oscillator's level.
Phase Reset	Restarts the wave at the Start phase on each hit (the same attack every time).

With anything other than `Key`, the Env restarts on every hit while a key is held. Nothing sounds until the first hit. Mod Matrix routings that use the same Free ENV restart too, so you can use it for things like a kick's pitch drop.

NOISE

Control	Details
Type	`White` / `Pink` / `Brown` / `Blue` / `Digital` / `Crackle` / `Transient` / `Resynth 1-6`
Color	Brightness.
Width	Stereo width.
Level / Pan	Volume and position.
F1<>F2 / Bypass / FX In	As for the oscillators.
Follow AMP ENV	On: the noise follows only the AMP envelope (when you release a key it fades out with the AMP Release, together with the rest of the sound). Off: the noise uses its own envelope (ENVELOPE > NOISE on the MOD page). On for new sounds; songs and presets saved earlier (including the factory presets from 1.0) load with it off (they sound as before). While it is on, the knobs on the NOISE tab of ENVELOPE on the MOD page are dimmed.

`Transient` starts from the same random seed on every note, so the attack noise is identical each time. `Crackle` is crackling noise; `Digital` is grainy digital noise.

`Resynth` plays the part of a sound analysed in RESYNTHESIS that harmonics cannot describe (breath, scraping and so on). **Follow** chooses which OSC's playback position it follows (`Auto` = the first OSC playing the same Resynth slot).

STRING

A physical model of strings and winds.

Control	Details
Excite	How it is played: `Pluck` / `Bow` / `Reed (Wind)` / `Flute (Wind)`
Decay / Damping	Length of the ring / damping of the highs.
Brightness	Brightness.
Position	Where the string is plucked.

Control	Details
Body / Body Type / Body Size	Body resonance. Body Type: `Classic` / `Guitar` / `Violin` / `Cello` / `Piano Board` / `Wood Box` / `Metal Can` / `Sitar`.
Octave / Semi / Fine / Key Trk	Pitch.
Level / Pan / F1<>F2 / Bypass / FX In	As for the oscillators.

METAL

A model of metallic sounds such as bells, cymbals and gongs. The screen shows the partials (the components of the sound).

Control	Details
Model	`Random` / `Bell` / `Bar` / `Tube` / `Plate` / `Gong` / `Cymbal` / `China` / `Crash` / `Sizzle` / `Snare Wire` / `Membrane` / `Wood` / `Glass` / `Plastic`
Seed A / B / Morph	Two seeds for the partial layout, and a blend between them.
Rich / Stretch / Tilt	Number of partials / stretching of their spacing / level of the upper partials.
Hardness / Vel>Hard / Position / Noise	Strike hardness / velocity to hardness / strike position / strike noise.
Mode	`Hit` (decays after the strike) / `Sustain` (keeps ringing).
Decay / Damp / Sustain / Release	Length and decay of the ring.
Beat / Shimmer / Glide / Width	Beating / shimmer / pitch drift / width.
Ring / Ring Ratio	Ring modulation amount and ratio.
Octave / Key Trk / Level / Pan / F1<>F2 / Bypass / FX In	As for the oscillators.

WAVE SEQ

Switches which of OSC1-6 plays, in up to 16 steps.

Control	Details
On	On/off.
Steps	Number of steps (1-16).
Step 1-16	The OSC for each step.
Rate	Switching speed (note value).
Crossfade	Smoothness of the switch.
Retrigger	On = restart on every note; off = follow the song's bars.

5. FILTER page



From top to bottom the FILTER page shows **SIGNAL FLOW** (routing), the **envelopes** and the **filters**. The left column is Filter 1, the right column Filter 2.

SIGNAL FLOW

A picture of the routing from the sources through the filters to the AMP.

- The bar under each **SOURCES** box shows how much of that source goes to Filter 1 and Filter 2 (F1<>F2). Clicking a box takes you to that source on the OSC page.
- **F1 Out**: `Output` = the two filters run in parallel. `To Filter 2` = Filter 1 feeds Filter 2 (series).
- **Link**: Filter 2's cutoff follows Filter 1's cutoff.
- **Offset**: with Link on, how many semitones Filter 2's cutoff is shifted from Filter 1.

FILTER 1 / 2 ENVELOPE

Envelopes that move the filter cutoff over time. The screen shows the shape.

Control	Details
Delay	Time from the key press until it starts.
Attack	Time to rise to the top.
Hold	Time it stays at the top.
Decay	Time to fall to Sustain.

Control	Details
Sustain	Level while the key is held.
Release	Time to fall after the key is released.
Curve	Curve of Attack / Decay / Release (straight to exponential).
Sync	Set the times in note values (1/4 etc.).

How far the envelope moves the cutoff is set with **ENV>Cutoff** in the filter section.

Own ENV (right of the Filter 2 title): on = Filter 2 uses its own envelope. Off = it shares Filter 1's envelope (the own envelope is shown dimmed). The first time you turn it on, Filter 1's envelope values are copied. The Filter 2 envelope is also available as the Mod Matrix source `ENV Filter 2`.

Filter 1's envelope is the same as the FILTER tab on the MOD page (editing either changes both).

FILTER 1 / 2

The screen shows the filter's frequency response. **Drag horizontally for Cutoff and vertically for Resonance.** When the cutoff is modulated, its current position is shown too.

Control	Details
Type	Filter type (table below).
Stages	Number of Allpass stages (1-32). More stages delay the lows more, for a laser-like zap.
Pitch	Puts the cutoff exactly on the played note (following pitch bend and glide). The Cutoff knob then becomes **Offset** (semitones from the note; 12 = one octave up) and Key Trk is disabled.
Cutoff	Cutoff frequency.
Resonance	Emphasis around the cutoff.
ENV>Cutoff	How much the envelope moves the cutoff.
Drive	Saturation inside the filter. Works with Ladder / Diode / Scream / Formant / Vowel / Comb / Phaser / Allpass (dimmed for other types). On Ladder, Diode and Scream, Drive above 30% now distorts much harder (v1.5; up to 30% it is unchanged).
Morph	Type-dependent shaping (table below). Dimmed for types where it has no effect.
Pan	Left/right position.
Key Trk	How much the cutoff follows the played pitch (100% = one semitone per semitone, reference C4).

Filter types

Type	Details
Lowpass 24dB / 12dB	Removes highs (24 dB is steeper).
Highpass 24dB / 12dB	Removes lows.
Bandpass	Keeps only the area around the cutoff.
Notch	Removes only the area around the cutoff.
Peak	Boosts the area around the cutoff.
Allpass	Shifts the phase without changing the level (Stages; Morph = dry/wet).
Ladder	Analog-style ladder lowpass.

Type	Details
Diode	Diode ladder; good for 303-style bass.
Scream	Heavily driven, screaming filter.
Formant	Vowel-like filter.
Morph	The Morph knob moves LP → BP → HP → Notch.
Comb + / Comb -	Comb filters (Morph = damping).
Dual Peak / Dual Notch	Two peaks / notches (Morph = spacing).
Vowel	Vowel filter (Morph = A → E → I → O → U).
Phaser	Phaser-style (Morph = stage spread).

With Formant / Vowel selected, a **Voice** slider appears in place of Stages. It sets the voice size (left = child, about 1/4 = woman, middle = man, right = large).

6. MOD page



The MOD page holds everything that adds movement: envelopes, LFOs, the Mod Matrix and macros.

ENVELOPE

Choose the envelope with the tabs.

Tab	Details
AMP	Volume envelope.
FILTER	Filter 1 cutoff envelope (the same one as on the FILTER page).
NOISE	NOISE volume envelope. Not used while **Follow AMP ENV** is on in NOISE on the OSC page (the knobs are dimmed). Sustain defaults to 1.0 (full).
FREE1-4	General-purpose envelopes, used as Mod Matrix sources and by OSC TRIGGER.
PITCH	Pitch envelope.

The controls are **Delay** / **Attack** / **Hold** / **Decay** / **Sustain** / **Release** (DAHDSR) plus a **Curve** for Attack / Decay / Release. Turn on **Sync** for a stage to set its time in note values (1/4 etc.). An Attack turned fully left rises in 0.1 ms (with **0.1ms Attack** On on the GLOBAL page; 1 ms when Off). Whether a retriggered note restarts from zero or continues from the current level is set with **Env Start** on the GLOBAL page (chapter 9). You can also edit on the screen:

- Drag a point **horizontally** to change that stage's time (Delay / Attack / Hold / Decay / Release).
- Drag the Sustain point **vertically** to change the Sustain level.
- Drag a line (Attack / Decay / Release) **up or down** to change that segment's curve (pull up to bulge upward).

- Synced stages do not move horizontally, because their time is set by the note value.

FREE ENV Custom (MSEG)

FREE1-4 switch between `ADSR` (set with the knobs) and `Custom` (draw your own).

Action	Result
Click an empty spot	Adds a point (up to 128).
Drag a point	Moves it. The end points move vertically only.
Drag the ◆ between points up / down	Changes that segment's curve.
Right-click a point	`Sustain point` (holds here while the key is down) / `Loop start` (repeats from here to the sustain point) / `Delete point`
Right-click menu	`Load shape` (ADSR / Pluck / Swell / Ramp Up / Ramp Down / Gate 1/16 x4 / Wobble Loop), `No sustain (one-shot)`, `No loop`

With Sync on, the time axis is in beats, you can pick the length (1/16 to 8 Bars) and points snap to the beat grid (hold Shift to move freely). Without Sync, hold Shift to snap to the grid.

LFO

There are six LFOs, **one for each of OSC1-6** (LFO 1 = OSC1's LFO).

Control	Details
Wave	`Sine` / `Triangle` / `Square` / `Saw` / `S&H` / `Reverse Saw` / `Smooth Rnd` / `Noise` / `Custom`
Rate	Speed (Hz).
Phase	Start position (0-360°).
Skew	Leans the wave forward (Triangle → Saw). 0% = unchanged.
Delay	Time from the key press until the LFO starts.
Fade	Time for the LFO to fade in.
LFO>Cut	How much this LFO moves the filter cutoff directly.
Mod Amt	Overall depth of this LFO's modulation.
Mode	`Free` (runs freely) / `Retrig` (restarts on each note) / `Host` (locked to the DAW bar position) / `One Shot` (plays once per note)
Sync	Set the speed in note values (1/8 etc.).
Delay Sync / Fade Sync	Set Delay / Fade in note values.

With `Custom` you can draw one LFO cycle on the screen.

- **Double-click** an empty spot to add a point; double-click a point to delete it.
- **Drag** a point to move it; drag a line **up or down** to change its curve.
- Two points at the same position make a jump (a square-wave-like step).
- **Right-click** for `Load Shape` (Triangle / Sine / Saw Down / Ramp Up / Square / Pulse 1/4 / Steps / Decay), `Grid` (snap), `Flip Vertical` and `Reverse (Mirror)`.

MOD MATRIX

A table that sets what moves (source), what is moved (destination) and by how much (range). There are 20 slots; switch between them with **1-10 / 11-20** at the top right.

Column	Details
ON	Turns the slot on/off without losing its settings. Off keeps the source, range and destination but stops the modulation (the row is dimmed), handy for A/B-ing a single slot.
SOURCE	What does the moving (table below).
RANGE	How much. The upper handle on the slider sets the top of the range, the lower handle the bottom (double-click = automatic). The amount is shown on the right.
CURVE	How the source is used: `BI-LINEAR +` (−1 to +1 as it is) / `BI-LINEAR -` (inverted) / `UNI-LINEAR +` (0 to 1) / `UNI-LINEAR -` (1 to 0, strongest when the source is 0).
CONTROL	A second source that scales this slot (e.g. the LFO only works as far as the Mod Wheel is raised).
DESTINATION	What is moved: almost any parameter of the oscillators, filters, envelopes, EQ, effects and more.

> **Choosing a CURVE**: for sources that go from 0 to 1 (envelopes, Velocity, Mod Wheel, Aftertouch, Macros), use `UNI-LINEAR +`: nothing moves at 0, and the destination moves by up to Range. With `BI-LINEAR` the destination stays shifted by −Range while the source is 0 (on pitch, the note stays out of tune). Sources that swing up and down, such as LFOs, stay on `BI-LINEAR +` and move ±Range around the knob value.

◀ ▶ step to the previous / next item. The menus are grouped by target (OSC 1 ▸, Filter 1 ▸, FX ▸ …).

Sources

Source	Details
LFO1-6	The per-OSC LFOs.
ENV Amp / ENV Filter / ENV Filter 2 / ENV Noise / ENV Pitch / Free ENV1-4	Envelopes.
Velocity / Note / Aftertouch	Key velocity / pitch / aftertouch.
Mod Wheel / Pitch Bend / Expression	Wheels and pedal (Expression = CC#11; CC#4 is accepted too).
OSC1-6 Out	The oscillator's audio output itself. It moves at audio rate, giving FM-like effects.
Macro 1-6	The macro knobs.
Random	A random value per note (fixed while the note plays).
Alternate	+1 / −1, swapping on every note.
Gate	1 while a key is held, 0 when released.
Constant (On)	Always 1. Use it to offset a destination by the Range, or together with CONTROL.
Arp Mod 1-4	The current value of the MOD lanes (FREE MOD) on the ARP page.
External	The level of the sidechain input (0 to 1). Route another track to this plugin's sidechain input in your DAW and set Attack / Release / Gain in EXTERNAL INPUT on the MIDI page (chapter 10). Open the filter with a kick, widen the Detune on a snare and so on. It is a 0-to-1 source, so use a `UNI-LINEAR` curve.

MACROS

Six macro knobs. Assign one macro to several Mod Matrix slots and one knob moves many parameters together. Double-click a name to rename it (saved with the preset).

7. FX page



FX CHAIN

The **FX CHAIN** on the left lists the 25 effects in the order the sound passes through them.

- **Click a row** to show that effect's settings on the right.
- **The dot at the left of a row** turns the effect on or off.
- **Drag a row** to change the order.
- **" ‖ " at the right of a row** puts that effect **in parallel** with the one above it. Parallel effects receive the same signal and their outputs are added (the dry signal is mixed in only once).
- The % at the right end of a row is an estimate of that effect's CPU use. The title shows the load of the whole synth and of all effects.
- The box at the bottom is the fixed final stage after all effects (it cannot be moved). From top to bottom it follows the signal: **FINAL EQ → MASTER (volume) → LIMITER** (v1.5). Click a row to show its settings in the lower panel, and use the dot to turn it on or off.

Effects that are off use almost no CPU. Most effects have a **Mix** control (blend with the dry sound).

> **Heavy effects**: Conv Reverb, Chroma and Multiband use a lot of CPU. If things get heavy, use fewer effects or lower Quality (Live) or FX Quality on the GLOBAL page.

The effects

EQ (parametric EQ)

A 6-band EQ. Because it sits inside the FX chain, it can be moved and modulated from the Mod Matrix (destinations EQ1-6 Freq / Gain / Q).

Drag the numbered points on the screen to change frequency and gain. Below, choose each band's type (`Off` / `Low Pass` / `Band Pass` / `High Pass` / `Notch` / `Low Shelf` / `Peaking` / `High Shelf`), slope (−12 / −24 / −48 dB/oct) and on/off.

The EQ panel at the top right always shows the EQ inside the FX CHAIN (CHAIN EQ). To edit the FINAL EQ at the end, click the **FINAL EQ** row at the bottom of the FX CHAIN; it appears in the lower panel (v1.5).

Distortion

Effect	Main controls	Details
Distortion	Type (Soft Clip / Hard Clip / Tube / Fold / Custom), Drive, Output, Mix, Asym, Bias, Warp	Distortion. With `Custom` you draw your own curve with points on the screen (right-click to copy the curve of another Type). Asym = different distortion for the upper and lower halves, Bias = adds DC to push it to one side, Warp = lifts quiet parts (+, harder) or pushes them down (−, softer). These three work with every Type.
Saturator	Type (Tape / Tube / Transformer / Warm), Drive, Tone, Output, Mix	Gentle saturation that makes the sound fuller and warmer.
Bitcrusher	Bits, Downsample, Mix	Gritty sound from lower bit depth and sample rate.
Simulator	Mode, Size, Tone, Mix, Output	Adds the character of a speaker or device (table below). Load a `User IR` with **Load IR...**.

> **Cleaner distortion (v1.1)**: Distortion and Saturator follow **FX Quality** on the GLOBAL page (default `2x`): they run at 2x / 4x internally and use anti-aliased curves (ADAA). The harsh, unrelated grit that distortion normally adds (aliasing) is greatly reduced, so even high notes stay clean when pushed hard. If things get heavy, set FX Quality to `Off` for the original, lighter processing (chapter 9).

Simulator modes:

Group	Modes
Cabinet	Speaker 8in / Speaker 10in / Combo 1x12 / Cabinet 2x12 / Cabinet 4x12 / Bass 1x15 / Bass 2x15 / Open Back
Device	Small Radio / AM Radio / Telephone / Cell Phone / Megaphone / Walkie-Talkie / TV Speaker / Laptop / Earbuds
Bandwidth	Bandwidth 16k / 11k / 5.5k / 3k
Tone	Loudness / Smile / Mid Push / Air / Bandpass / High Only / Valleys / Hollow / Resonant Tube
User	User IR (your own WAV, such as a cabinet IR)

Resonance

Effect	Main controls	Details
Resonator	Type (String / Tube / Plate / Membrane), Pitch (Played Notes / Fixed), Note, Decay, Damping, Mix, Output	A pitched resonating body, tuned to the notes you play or to a fixed Note.
Chroma	Source (Scale / Played Notes), Key, Scale, Color, Tightness, Low / High, Fine, Octaves, Octave Shift, Octave Tilt, Output	Pitched resonance that makes the sound ring in a key and scale (or with the notes you play). It can turn noise or wobbling sounds into something that follows the song's key. **Color** = blend of dry and resonance (above 100% the resonance gets even stronger), **Tightness** = sharpness of the resonance (higher = clearer pitch and longer ring), **Low / High** = note range, **Octaves** = which octaves ring (All / Played Oct / Played ±1 / Played ±2).

Modulation and width

Effect	Main controls	Details
Chorus	Rate, Shape, Depth, Delay, Feedback, Spread, Mix	Chorus. **Shape** (v1.5) = the LFO waveform. `Sine` = the original smooth movement / `Triangle` = a linear sweep / `Soft Tri` = a triangle with rounded corners / `Square` = a rounded square (jumps between two values) / `Saw Up`, `Saw Down` = ramps / `Random` = glides to a new random target every cycle / `Custom` = draw your own. With Custom the LCD on the left becomes the drawing screen (same as the LFO Custom on the MOD page: drag points, double-click to add or remove a point, drag a segment up or down to curve it, right-click for templates, grid and flips). The drawn shape is saved with the preset and the song.
Hyper	Rate, Shape, Unison, Detune, Retrig, Mix	Stacks and moves copies of the sound for thickness. **Shape** (v1.5): the same 8 shapes as the Chorus; `Random` moves every voice differently, `Custom` is drawn on the LCD.
Flanger	Rate, Shape, Depth, Delay, Feedback, Spread, Mix	Flanger. Shape as on the Chorus.
Phaser	Stages (2-12), Rate, Shape, Depth, Center, Feedback, Spread, Mix	Phaser. Shape as on the Chorus.
Dimension	Size, Mix	Natural stereo width.
Pan	Position, Depth, Rate, Sync, Shape, Phase	Auto-pan.

Effects with a Rate can be synced to note values with Sync. With FX Quality at `2x` / `4x`, Chorus and Flanger use a more accurate interpolation while modulating (the highs stay brighter).

Delay and reverb

Effect	Main controls	Details
Delay 1-3	Time (or a note value with Sync), Feedback, Ping-Pong, Offset, Stereo Offset, Filter (Type / Cutoff / Resonance), Swap L/R, Mix	Three delays. Ping-Pong bounces left and right; Swap L/R swaps the sides. **Offset** moves the delay time earlier or later (it works with Sync too, for repeats that push or lay back while staying in time). **Stereo Offset** gives the two sides different times for a blurred width. New in v1.1: **F.Pos** (where the Filter sits: `Out` = on the output only / `Loop` = inside the feedback, so each repeat gets darker with LP or thinner with HP; inside the loop the Resonance is tamed so the repeats never build up), **Mod** (tape-style pitch wobble, a mix of slow and fast movement), **Diffuse** (smears the repeats; it gets denser with every pass and melts into a reverb-like wash), **Drive** (gentle saturation inside the feedback; louder repeats get rounded off and stay under control). New sounds start slightly analog (F.Pos `Loop`, Mod 12%, Drive 15%); older songs and presets load with the original values (`Out`, 0, 0).
Reverb / Reverb 2	Type, Pre-Delay, Size, Decay (can sync), Damp, Mod, Width, Low Cut, High Cut, Filter, Mix	Two reverbs. **Type** (v1.1): `Smooth` = a smooth, warm reverb with a diffused onset, highs that fade naturally ahead of the Decay, and movement inside the tail / `Classic` = the original reverb. **Mod** = how much the tail moves (higher gives a chorus-like width). On `Classic`, 25% is the original (very subtle) movement; above 25% it gets deeper and faster (v1.1.1; 25% and below sound exactly as before). Higher Damp makes the highs fade sooner for a darker tail. New sounds start with `Smooth` and Mod 35%; older songs and presets load as `Classic` with Mod 25% (the original movement).

Effect	Main controls	Details
Conv Reverb	IR (Room / Hall / Plate / Cathedral / Spring / User File), Pre-Delay, Low Cut, High Cut, Mix, Output	Reverb using the response of a real space (IR). Load your own IR (WAV / AIFF / FLAC) with the **Load IR...** button; the IR then switches to `User File`.

Dynamics

Effect	Main controls	Details
Transient	Attack, Sustain, Speed, Length, Output, Mix	Strengthens or softens the attack and the tail.
Compressor	Threshold, Ratio, Attack, Release, Makeup, Knee, Mix	Compressor. **Knee** (v1.1) = the compression eases in over this range (dB) around the Threshold (0 = a hard knee, as before). The curve on the screen rounds off by the same amount.
Multiband	Depth, Time, Upward, Downward, In / Out Gain, Low / Mid / High Gain, Low / High Crossover	3-band compressor that lifts quiet parts and holds down loud ones, for a bright, dense sound.
Sidechain	Source (Internal / External), Depth, Rate, Curve, Attack, Release, Threshold, Ratio, Ext Release	Rhythmic volume ducking ("pumping"). `Internal` follows the song tempo automatically (Rate = interval, Release = recovery length, Curve = recovery shape). `External` follows the DAW's sidechain input, such as a kick (Threshold / Ratio / Ext Release). Attack and Depth are used by both.
Pre Limiter	On, Input, Ceiling, Release, Attack, Soft Clip, Auto Release, Stereo Link, Look / Look Time	(v1.5) A second limiter you can place inside the FX CHAIN, with the same controls and behaviour as the final LIMITER. The whole FX CHAIN comes before the MASTER volume, so you can set the ceiling with Pre Limiter and then the overall level with MASTER (the usual "limiter → volume" order of most synths). Like any other effect, drag it anywhere or put it in parallel (it starts at the very end, just before FINAL EQ). Off by default. If Look (lookahead) is on in both Pre Limiter and the final LIMITER, the delay is the sum of both. When Pre Limiter Look is on, do not put Pre Limiter in parallel (‖); sources whose FX In is `Direct Out`, or that enter the chain after Pre Limiter, sound early by the lookahead time (up to 5 ms) (a limitation in v1.5).

TRANCE GATE

A step gate that chops the sound. While the song plays, it follows the song's beat.

Control	Details
Rate	Length of one step (note value).
Steps	Number of steps (1-32).
Length	How much of each step sounds.
Depth	Depth of the chop.
Attack / Release	How each step starts and ends.
Mix	Blend with the dry sound.

On the screen, **click a step to turn it on/off and drag up/down to change its level**. Right-click for patterns (Default / All On / Clear / 1/8 Pulse / Offbeat / Invert / Random). The step pattern is saved with the sound.

FINAL EQ / LIMITER

	Details
FINAL EQ	A 6-band EQ after all effects and before the MASTER volume, for final shaping. It can be turned off. The graph is on the left (drag the points); type, slope and on/off for each band are on the right.
LIMITER	The very last limiter, **after** the MASTER volume. Keeps the output from getting too loud. Input, Ceiling, Release, Attack, Soft Clip, Auto Release, Stereo Link and Look / Look Time. **Attack** sets how fast the level starts to go down (0 = instant, which can distort low notes). A little slower means less distortion and more punch at the start of each note (the very start may go slightly above Ceiling; the always-on safety limiter at the end protects you). New sounds start at 2 ms; older songs and presets load with 0. With **Look** (lookahead) on, the sound is delayed by **Look Time** (0.1 to 5 ms) so the limiter can start turning down before a peak arrives (the least distortion). The plugin reports this delay to your DAW, which compensates for it automatically. However, when you switch Look on or off or change Look Time, some DAWs may drop out for a moment or only apply the new delay after you restart playback, so it is best to set it while building the sound and not change it during playback. When you play live, the sound is delayed by Look Time.

8. ARP page



The ARP page brings together the **chord functions (CHORD)** and the **arpeggiator (ARP)** that process the notes you play.

SIGNAL FLOW

The strip at the top shows the flow: keys → CHORD → ARP → SYNTH.

Part	Details
CHORD: Memory / Pads	Turn the chord functions on or off (see CHORD below).
ARP: On	Turn the arpeggiator on or off.
Chord/Arp Mode	`Chord -> Arp` = chords made by the chord functions are passed to the arpeggiator. `Independent` = they run separately.
Key / Scale	The song's key and scale, used by the chord pads and to snap arpeggiator notes to the scale. `Chromatic` = no snapping (as before).
Lock	Scale Lock. On (default): arpeggiator notes snap to the scale, the chord pads use chords of the scale, and keys outside the scale are greyed out on the on-screen keyboard. Off: the Scale is not used (the same as `Chromatic` ; the chord pads use major chords of the Key, and no keys are greyed out).

With Lock on, while a chord is sounding from the chord pads or Chord Memory, **a scale that fits that chord** is used instead (for both the arpeggiator snapping and the greyed-out keys). If all of the chord's notes are in the Key / Scale, nothing changes. If not (a borrowed chord, for example), it uses the scale starting on the chord's root that contains all of

its notes and shares the most notes with the song's scale (for example, E in A minor → E Phrygian Dominant, B ♭ in C major → B ♭ Lydian). When you release the chord, it goes back to the Key / Scale.

Turn on **Keys** (with Lock on) and the notes you play on the keyboard that do not go through the pads, Chord Memory or the arpeggiator also snap to the current scale (to the chord's scale while a pad is held). Notes outside the scale move to the nearest scale note (down when equally close). Off by default.

There are 33 scales: the basics (Major, Minor, Dorian…) plus Japanese (In), Hirajoshi, Ryukyu, Pelog, Iwato, Kumoi, Epic, Romantic and more. The list is in the appendix.

When a scale is selected (and Lock is on), the arpeggiator's notes (after the OCT / PITCH lanes) snap to it. Notes shifted up snap up, notes shifted down snap down, and unshifted notes go to the nearest scale note. Notes you play with the arpeggiator off sound as played (greyed-out keys still play).

CHORD

Memory (chord lock)

Plays a stored chord shape from a single key, transposed so that the key you press is the root.

1. Choose a slot with **Slot**.
2. Press **LEARN CHORD**, then play the chord on the keyboard.
3. Turn **Memory** on: one key now plays that chord.

The stored chord appears on the `MEMORY` tab of the **CHORD MEMORY** screen on the right.

Turn on **Legato Chords** (right of Slot) and pressing another key stops the previous key's chord and replaces it with the new one (notes that belong to both chords keep ringing). Releasing the key whose chord was replaced does not stop the chord that is sounding. Off (the default): chords stack until each key is released. The chord pads always replace the previous chord, whatever this switch is set to.

Pads (chord pads)

Turns one octave of the keyboard (12 keys) into pads that play the chords of the scale.

Control	Details
Zone	The first key of the pad octave (default C2). The zone is coloured on the keyboard at the bottom.
Type	`Triad` / `7th` / `9th`
Voicing	`Smooth` = moves to the closest shape from the previous chord (voice leading). `Fixed` = keeps the shape set by Inv.
Inv	Inversion (Root / 1st / 2nd / 3rd).
Octave	Pitch (the root starts around C3).
Bass	Adds the root an octave lower.

- Pressing the next pad stops the previous chord (shared notes are not restarted).
- The `PADS` tab of the CHORD MEMORY screen shows the chords on the 12 pads. Click to audition, right-click to choose a different chord (Auto / Scale Chords / 20 types per root / Reset All). Re-chosen chords are stored as semitones from the key, so they transpose when you change Key.

ARPEGGIATOR

Control	Details
Pattern	Note order (table below).
Play	`Loop` = repeats / `One Shot` = stops after one cycle / `One Shot + Hold` = holds the last note until the key is released.
Sync	On = speed in note values (Rate Div); off = Rate in Hz.
Rate / Rate Div	Speed.
Octaves	How many octaves it spans.
Gate	Length of each note within its step.
Strum	Spread time for the Strum patterns (0-200 ms).

Patterns:

Pattern	Details
Up / Down / Up/Down / Up/Down (Repeat)	Rising / falling / back and forth (with or without repeating the end notes).
As Played	In the order played.
Random	Random.
Chord	All held notes together.
MIDI Pattern	Plays a loaded MIDI file pattern (see MIDI PATTERN).
Converge / Diverge	Outside in / inside out.
Thumb / Pinky	The lowest / highest note alternates with the others.
Trill	Alternates neighbouring notes.
Strum Up / Strum Down / Strum Up/Down	Notes slightly staggered, like a guitar strum.

FEEL

Control	Details
Swing	Delays the off-beats for a swung rhythm.
Hum. Timing / Hum. Velocity / Hum. Gate	Small random variations of timing / velocity / length for a human feel.
Phase	`Retrig` = restart on every key press / `Host` = follow the song's bar position / `Free` = keep running.
Offset	Shifts the starting step.

ARP PATTERN (step lanes)

The screen on the right lets you draw per-step values in lanes. Switch lanes with the tabs.

Lane	Details
NOTES	Shows the notes the arpeggiator plays.

Lane	Details
VEL	Velocity (0-100%).
LEN	Length (10-200%, multiplied by Gate).
REST	Rests.
OCT	Octave (−2 to +2).
PITCH	Semitones (−12 to +12).
RATCH	Plays a step 1-4 times.
SLIDE	Connects smoothly to the next step (with Mono it glides with portamento).
ACC	Accent: louder, with a deeper filter envelope (amount = the Accent knob).
MOD1-4	FREE MOD: moves any parameter by step values (below).

- **Click / drag** to draw. **Right-click** for the menu (Steps 1-32 / Reset / Randomize / Shift / Copy Steps 1-4 to All / Reset All).
- Each lane can have its own length (1-32). Lanes of different lengths drift against each other (polymeter).
- **STEPS ON/OFF** at the top right turns all lanes off. When off, the lanes have no effect (the sound is the same as the defaults) and only NOTES is shown.
- Lane values are saved with the sound.

FREE MOD (MOD1-4)

The MOD lanes move a parameter with per-step values. At the top right of the lane, choose the **destination** (the same list as the Mod Matrix) and the **amount** (−100 to +100%). **Glide** moves smoothly to the next step. The MOD lane values can also be used as the Mod Matrix sources `Arp Mod 1-4` and by OSC TRIGGER.

303 knobs

The row at the bottom of the screen is a set of shortcuts for TB-303 style bass.

Knob	What it actually moves
Cutoff / Reso	Filter 1 Cutoff / Resonance
Env Mod / Decay	Filter 1 ENV>Cutoff / filter envelope Decay
Accent	Strength of the ACC lane
Slide	Portamento time (works with Mono + the SLIDE lane)
Drive	Filter 1 Drive (dimmed for filter types where it has no effect)
Tune	Overall transpose (Master Transpose)

Set Filter 1 to `Diode` or `Ladder` and turn on Mono on the GLOBAL page for a classic 303 sound.

MIDI PATTERN

MIDI file patterns used when Pattern is `MIDI Pattern`.

1. Choose a slot with **Slot**.
2. **LOAD MIDI FILE** loads a MIDI file (.mid).
3. **CLEAR** empties the slot.

The pattern is transposed so that the lowest note in the MIDI file lands on the lowest key you hold. Patterns are saved with the sound.

9. GLOBAL page



The GLOBAL page holds settings for the whole sound and the tools for making your own waves (import, additive and resynthesis).

PITCH BEND

Control	Details
Range Down / Range Up	How many semitones pitch bend moves down / up (0-24).

PORTAMENTO

Glides the pitch from one note to the next.

Control	Details
Mode	`Off` / `Norm, Fix` / `Norm, Var` / `Fing, Fix` / `Fing, Var`
Time	Glide time (0-10 s).
Curve	Shape of the glide.

- `Norm` = always glides. `Fing` = glides only when you play the next key while still holding the previous one (legato).
- `Fix` = the same time whatever the interval. `Var` = longer for larger intervals.

DRIFT / BURST

Control	Details
Drift	Slow random pitch drift per oscillator, for analog-style instability.
Burst	Adds a short "pop" at the moment of each note-on.
0.1ms Attack	(v1.1) When On, an envelope Attack turned fully left rises in 0.1 ms instead of 1 ms, for snappier kicks and plucks. New sounds start On; older songs and presets load Off.

POLYPHONY / MONO

Control	Details
Polyphony	How many notes can play at once (1-64).
Mono	Single-note playing (for bass and leads).
Retrigger	In Mono, the next note restarts the envelopes. Off = legato playing continues the envelopes.
Same Note	When the same key is played again: `Cut` = stop the previous note / `Overlap` = let its tail ring on.
Env Start	(v1.1) When a note is retriggered while still sounding: `Zero` = envelopes restart from zero, and the oscillator phase and Retrig / One Shot LFOs restart too (after a 3 ms fade, so it does not click) / `Level` = envelopes continue from the current level (as before). New sounds start with `Zero`; older songs and presets load with `Level`.

MASTER

Control	Details
Transpose	Overall transpose (semitones).
Tune	Overall fine tuning (cents).

WAVETABLE (quality)

Control	Details
Rolloff	Slightly softens the very highest harmonics to reduce harshness and aliasing (default 15%).
Quality (Live)	Oversampling while playing (`Off` / `2x` / `4x`). The waveforms are already built so the highs do not alias, so **`Off` is usually enough**. Higher settings use more CPU (a safety net for extreme sound design).
Quality (Render)	Quality when rendering offline (`Same as Live` / `2x` / `4x`). While rendering, the higher of Live and Render is used.
FX Quality	(v1.1) How much faster Distortion / Saturator run internally (`Off` / `2x` / `4x` , default `2x`). At `2x` and above they also use anti-aliased curves, and Chorus / Flanger use a more accurate interpolation. While rendering, `2x` becomes `4x` automatically. Use `4x` for an even cleaner lead, or `Off` (the original processing) if things get heavy. Saved with each sound. Older songs and presets also load at `2x` (less grit from Distortion / Saturator, almost no change in level).

> **If it feels heavy**: first try Quality (Live) at `Off` , then FX Quality at `Off` if it is still heavy. Rendered audio is set by Quality (Render), so lowering Live does not change your bounces.

CUT GROUP

Stops other WAV3+CORE instances in the same DAW (like an open / closed hi-hat).

Control	Details
Cut	The group this instance stops when it plays (Off / 1-16).
Cut By	The group that stops this instance (Off / 1-16). Match another instance's Cut number and it stops this one when it plays.
Fade	Fade time when stopping.

With Cut and Cut By set to the same number, an instance stops its own previous note (choke). It does not work if the DAW runs the plug-in in a separate process (bridged).

MIDI MONITOR

Shows incoming MIDI from your keyboard or DAW: the last note, velocity and CC, plus the current VEL / MOD / BEND / AT (aftertouch) / EXP / SUS values.

IMPORTED WAVEFORMS

Eight slots for single-cycle WAVs (one period of a waveform). Imported waves are used as `User 1-8` on the oscillators.

Button	Details
IMPORT...	Load a WAV file.
X4 / X3 / X2	Extract several cycles from one file into this and the following slots (for Wave A-D morphing).
CLEAR	Empty the slot.

ADDITIVE OSCILLATORS

An additive editor where you draw the level and phase of each harmonic (8 slots). The waves are used as `Add 1-8` on the oscillators.

Part	Details
Slot / Name	Slot and name.
PRESET	Load a preset harmonic layout.
CLEAR	Clear everything.
AMP / PHASE	Draw harmonic levels / phases.
Smooth	Smooths the drawn harmonics.
ANTI-RING	Reduces overshoot (ringing) at the corners of the wave. Turn it off if the sound gets muddy.

The screen shows harmonics 1-128; drag with the mouse to draw.

RESYNTHESIS

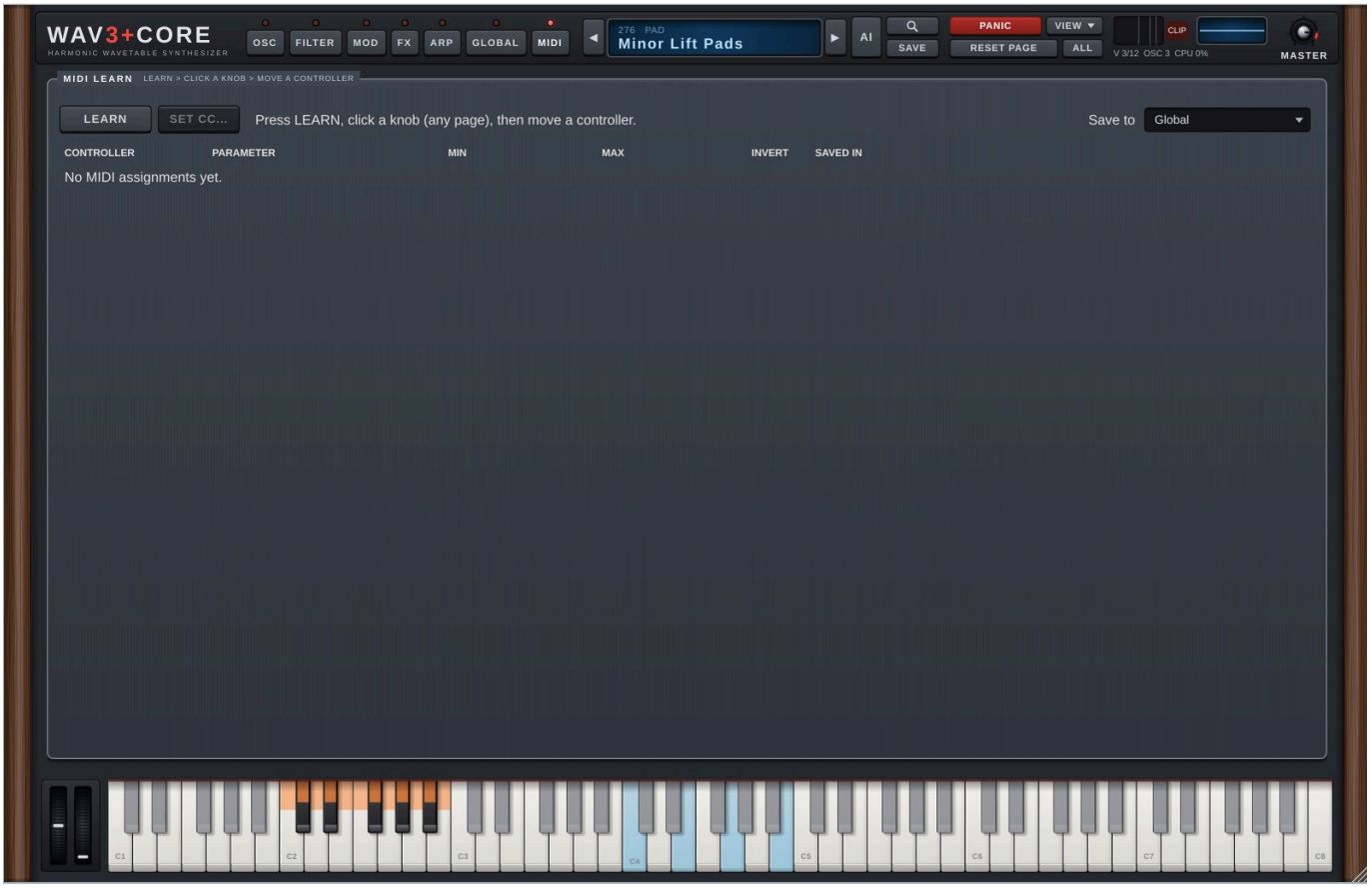
Analyses a recording (WAV) into a wavetable with many frames that change over time (6 slots). The results are used as `Resynth 1-6` on the oscillators and on NOISE.

Part	Details
IMPORT... / CLEAR	Load a sound / empty the slot.
Frames	Number of frames for the next import or re-analysis.
Phase	`Aligned` = harmonic phases locked to the fundamental (smooth morphing).
Root	Original pitch of the sound. `Auto` = detect.
Pitch > / Level > EXPORT	Export the recording's pitch / level movement to a Free ENV (Custom) and connect it in a free Mod Matrix slot.

The screen on the right shows how harmonics 1-64 and the level change over time.

> When you use a recording, please make sure you have the right to use it.

10. MIDI page



The MIDI page assigns the knobs and faders (CCs) of your MIDI controller to WAV3+CORE's knobs (MIDI Learn).

Assigning

1. Press **LEARN**.
2. Click the knob you want, on any page.
3. Move a knob on your MIDI controller.

You can also right-click a knob, choose **MIDI Learn** and then move the controller.

Without a controller at hand, **SET CC...** lets you pick the CC number from a list.

The assignment list

Column	Details
CONTROLLER	CC number.
PARAMETER	The assigned parameter.
MIN	Parameter position when the controller is at 0.
MAX	Parameter position when the controller is at 127.
INVERT	Reverses the direction.
SAVED IN	`Global` = the same assignment in every project and preset. `This preset` = saved with the preset, and overrides a Global assignment of the same CC.
X	Removes the assignment.

Save to at the top right chooses where new assignments are saved (Global / This preset).

Assigning CC 1 (Mod Wheel) does not stop it from working as the Mod Matrix source `Mod Wheel`.

Global assignments are saved in `%APPDATA%\WAV3PLUSCORE`.

EXTERNAL INPUT (external input modulation)

At the bottom of the MIDI page. Route another track (a kick, for example) to this plugin's **sidechain input** in your DAW, and its level becomes the Mod Matrix source **External** (0 to 1). Only the level is read (no pitch tracking), so it is light; it uses the same input as the SIDECHAIN effect (External).

Control	Details
Attack	How fast the value follows a rising level (ms). Shorter = snappier.
Release	How fast it falls back when the level drops (ms).
Gain	Boost for the measured level (dB), so a quiet input can still reach 1. Anything above 1 is clamped.
Level	The current value of External (meter). It stays still while nothing is connected.

How to use it: in the Mod Matrix on the MOD page, set SOURCE to `External`, DESTINATION to e.g. `Filter1 Cutoff`, CURVE to `UNI-LINEAR +` and set the RANGE.

- How to connect a sidechain depends on the DAW (some DAWs do not support sidechain inputs on instruments).
- **Not available in FL Studio.** FL Studio does not pass audio input to instrument plugins (not even through Patcher). The same applies to `External` in the SIDECHAIN effect.
- While nothing is connected External is 0, so existing songs sound the same as before.

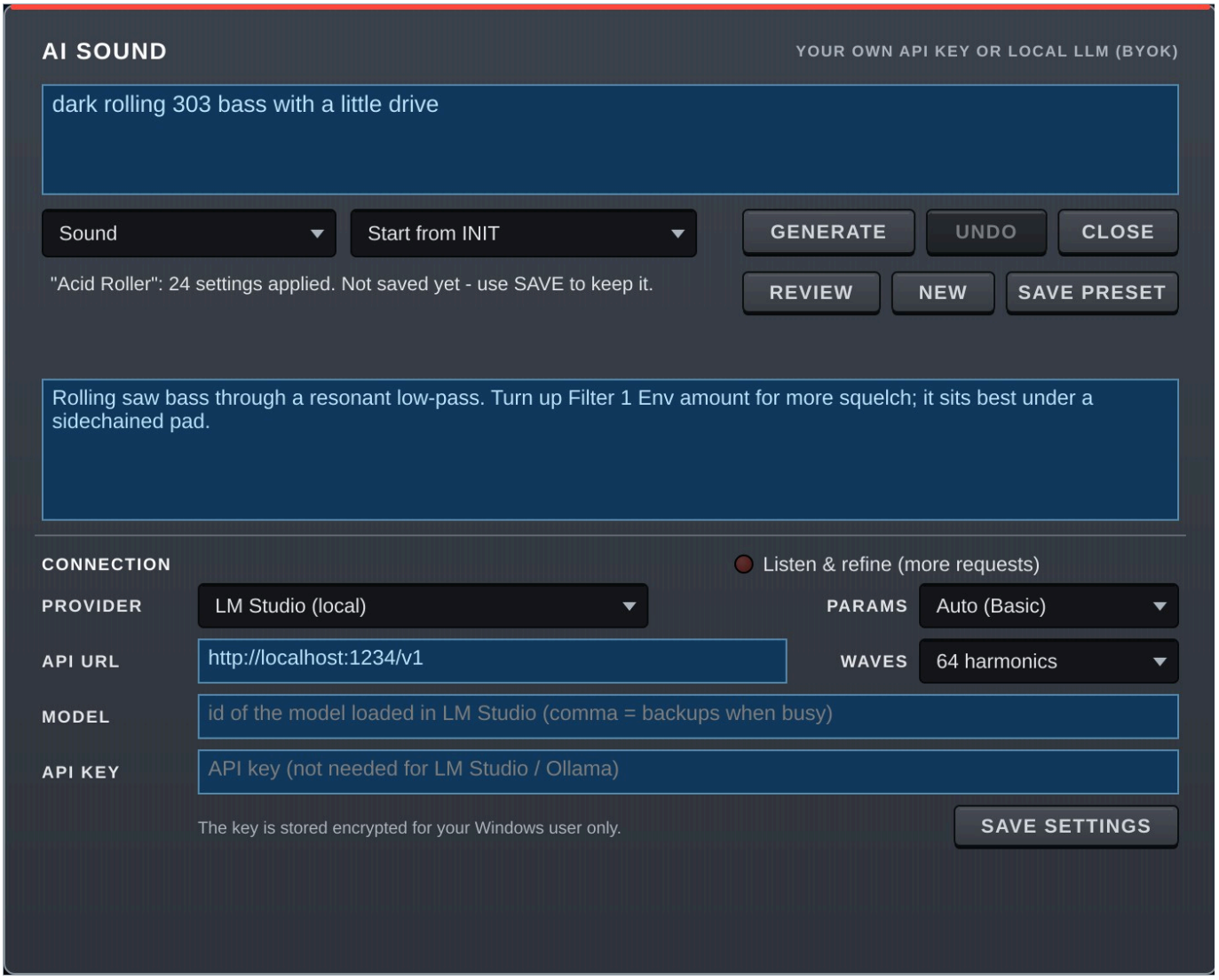
- While no voice is sounding, External cannot move FX knobs (the voices carry the value, like Macros).

11. AI SOUND

AI SOUND lets you describe a sound in words; an AI then chooses the parameters and builds the patch. It can also make arpeggiator steps, chord progressions and MIDI phrases.

No AI is built into WAV3+CORE. You connect it to **your own AI**: a cloud AI used with your own API key, or a local LLM running on your computer (BYOK = Bring Your Own Key).

The **AI** button in the header opens the window.



What is sent

When you make a request, the following is sent to the provider you set up (a cloud AI or a local LLM):

- The text of your request.
- A description of WAV3+CORE and the list of parameters the AI may change (the range is set with PARAMS).
- The values of the current sound's parameters (only those that differ from the defaults).
- With Listen & refine on, the results of measuring the sound (numbers such as brightness and length; no audio is sent).

Depending on the provider, sent data may be stored or used to improve their services. Please check each provider's terms.

Connecting

Set it up under **CONNECTION** at the bottom of the window.

Field	Details
PROVIDER	`OpenAI` / `Anthropic (Claude)` / `Google Gemini` / `LM Studio (local)` / `Ollama (local)` / `Custom (OpenAI-compatible)`
API URL	Filled in for the chosen provider. Enter it yourself for Custom.
MODEL	The model ID (see your provider's documentation). List backups separated by commas and the next one is tried when the first is busy (e.g. `model-a, model-b`).
API KEY	Your key for a cloud AI. Leave it empty for a local LLM.
PARAMS	Which parameters the AI may change (see "PARAMS").

SAVE SETTINGS saves them.

- The API key is stored encrypted, readable only by your Windows user, in `%APPDATA%\WAV3PLUSCORE`. It is never written into presets or project files.
- The key is never sent over `http://` (unencrypted) to anything other than your own computer (you get an error). Use `https://` for cloud AIs.
- **Never show your API key to anyone or paste it into chats or social media.**

Setup examples

If you are not sure which AI to use, these two are the easiest to try.

	Google Gemini	LM Studio
Runs on	The cloud (Google)	Your own computer
Cost	Free tier (no card needed)	Free
Sound design quality	High	Depends on your computer and model
You need	A Google account	A computer with enough memory
Data	Sent to Google	Stays on your computer

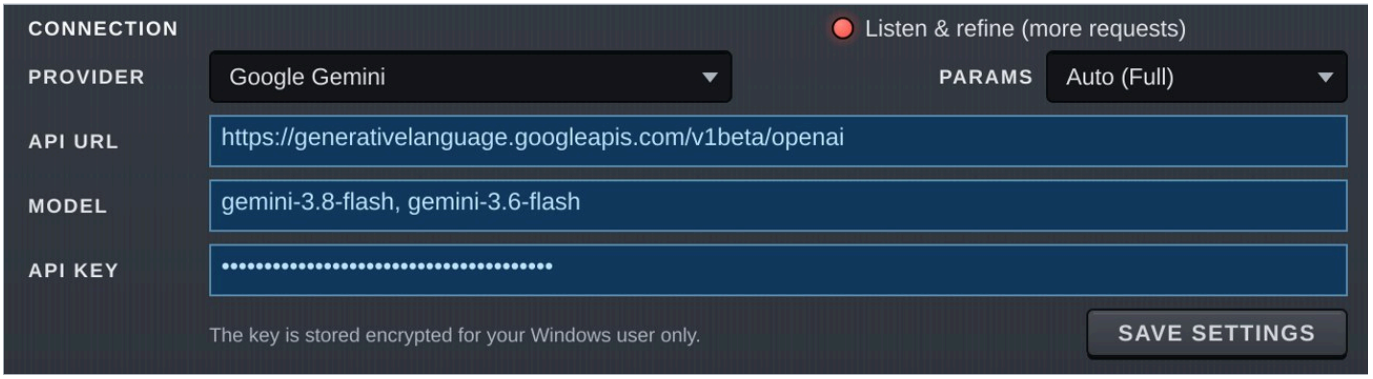
> Screens, names, free-tier terms and model names of these services can change. This section reflects October 2026.

Google Gemini (try it on the free tier)

1. Create an API key

1. Open **Google AI Studio** (https://aistudio.google.com) in your browser and sign in with your Google account. Accept the terms the first time.
2. Click **Get API key** at the bottom left, then **Create API key**.
3. Copy the new key.

2. Set up WAV3+CORE



1. Open AI SOUND with the **AI** button in the header.
2. Choose `Google Gemini` under **PROVIDER** (the API URL is filled in).
3. Enter `gemini-3.8-flash` under **MODEL**. Adding a backup after a comma helps when the first is busy (e.g. `gemini-3.8-flash, gemini-3.6-flash`).
4. Paste the key under **API KEY**.
5. Click **SAVE SETTINGS**. PARAMS can stay at `Auto` (Full for cloud AIs).
6. Describe a sound in the box at the top and click **GENERATE** (e.g. `bright supersaw trance lead`).

About the free tier

- The free tier needs no card. Requests per minute and per day are limited; see the limits in AI Studio.
- Content sent on the free tier may be used to improve Google's products (per Google's pricing page). If that matters to you, use the paid tier (set up Billing) or a local LLM.
- If you get "503" or similar busy errors, wait a little or add a backup model in MODEL.

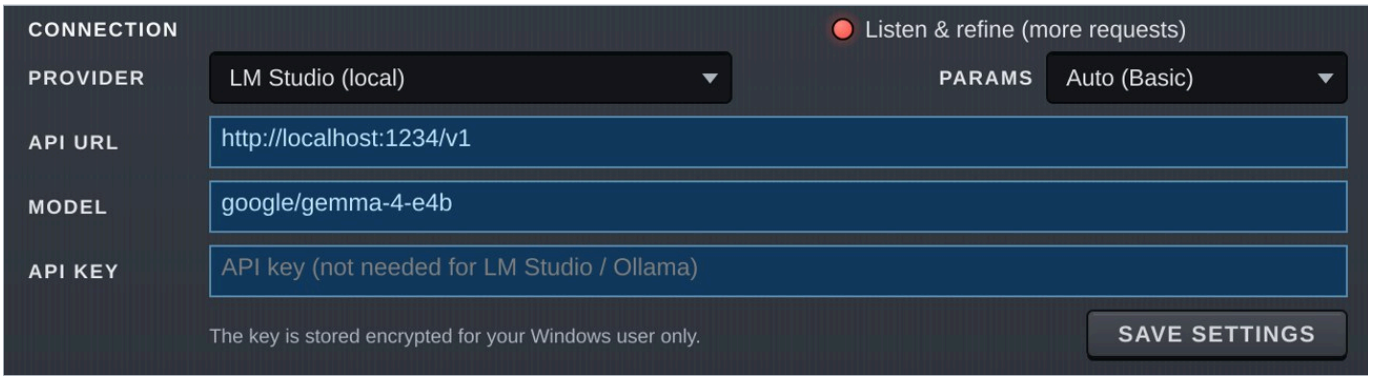
LM Studio (run it on your computer)

LM Studio is a free app that runs an AI (a local LLM) on your own computer. There are no fees and no data leaves your machine.

1. Prepare LM Studio

1. Download and install LM Studio from https://lmstudio.ai.
2. Find and download a model on the **Discover** screen. Start with a small one (e.g. Gemma 4 E4B = `google/gemma-4-e4b`) that fits in your computer's memory (VRAM).
3. Open the **Developer** screen (**Local Server** in older versions), load the model and start the server. Keep the default port `1234`.
4. In the load settings, set **Context Length** (how much the AI can read at once) to about `16384`. If it is too short you get "The AI ran out of room…".
5. For models with a thinking / reasoning feature, turning it off makes them more reliable.

2. Set up WAV3+CORE



1. Choose `LM Studio (local)` under **PROVIDER** (the API URL becomes `http://localhost:1234/v1`).
2. Enter the model identifier exactly as LM Studio shows it under **MODEL** (e.g. `google/gemma-4-e4b`). Copy and paste it to avoid typos.
3. Leave **API KEY** empty.
4. Click **SAVE SETTINGS**. Leaving PARAMS at `Auto` (Basic for local models) is recommended.
5. With the LM Studio server running, click **GENERATE**.

If it does not work

- "Set the model id.": MODEL is empty.
- "HTTP 400", "HTTP 404" and so on: check that MODEL matches the identifier shown in LM Studio, and that the model is loaded and the server is running.
- "The AI ran out of room…": increase Context Length.
- No reply / very slow: the model may be too large. Use a smaller model, or set PARAMS to Basic.

Others

- **OpenAI / Anthropic (Claude)**: create an API key in their developer consoles (OpenAI Platform / Claude Console), choose the PROVIDER and enter MODEL and API KEY. Paid per use.
- **Ollama**: install a model with `ollama pull <model name>`, choose `Ollama (local)` under PROVIDER and enter the model name under MODEL (the API URL is `http://localhost:11434/v1`).

What to make (modes)

Choose what to make in the box at the bottom left.

Mode	Makes
Sound	A sound (parameters).
Arp Steps	ARP step lanes (VEL / OCT / PITCH / SLIDE / ACC…).
Chord Progression	A chord progression, placed on the chord pads and also saved as a MIDI file.
MIDI Pattern	A MIDI phrase, put into the ARP's MIDI Pattern slot and also saved as a MIDI file.

MIDI files made by the AI are saved in `Documents\WAV3PLUSCORE\MIDI\AI`. The **MIDI FOLDER** button (shown for Chord Progression / MIDI Pattern) opens the folder so you can drag the files into your DAW.

The AI is instructed not to copy existing songs.

Drawing waves (WAVES)

Set **WAVES** in the settings area to `32 harmonics`, `64 harmonics` or `128 harmonics` and, in Sound mode, the AI can draw its own waves to fit the sound. With `Off` it uses only the built-in waves.

- The AI draws a single-cycle wave by listing harmonic strengths. More harmonics give more detailed, brighter waves, but a longer reply that uses more tokens (cost).
- Up to 4 waves per reply, placed in Wave A-D of the oscillators (OSC1-6 when PARAMS is Full or above, otherwise OSC1-4).
- Each wave is stored, with a name, in an Add slot of ADDITIVE OSCILLATORS (chapter 9). Empty Add slots are used first; when none are free, a slot is overwritten.
- When a built-in wave is good enough, the AI picks it instead of drawing one.
- **UNDO** goes back to the sound before the AI changed it, drawn waves included.

Making a request

1. Describe the sound you want in the box at the top. Any language is fine.
2. Choose **Start from INIT** (build from the initial state) or **Change the current sound** (edit what you have).
3. Press **GENERATE** (it turns into STOP while working).

The AI replies with a short comment, in the language you wrote in.

- Pressing GENERATE again continues the conversation, so you can ask for changes ("brighter", for example).
- **NEW** forgets the conversation and starts over.
- **UNDO** returns to the sound before the AI changed it.
- **REVIEW** asks the AI for its opinion of the current sound and how to improve it. Nothing is changed.
- **SAVE PRESET** saves the AI's sound as a preset (with the AI's name and category, in the `AI` folder).

> **Arpeggiator and chords**: the AI does not touch the arpeggiator or chord settings unless you ask. Even with Start from INIT, your current arpeggiator, chord and MIDI pattern setup is kept.

Tips

- Mention the kind of sound (lead, pad, bass…), brightness, thickness, movement and effects. Example: `bright supersaw trance lead with a little delay`
- Movement (LFOs and so on) is only added if you ask. Write things like `slowly evolving` or `wobble` when you want it.
- You can ask by effect or knob name too, such as "add Conv Reverb" or "cut the lows with the EQ" (within the PARAMS range).

Listen & refine

When on, after a Sound is made the sound is played in the background and measured, and the AI sees the results and fixes the patch (up to 2 rounds).

- For the measurement the arpeggiator and chord functions are switched off; C3 is held for 1.5 s, then a C major chord at C4 for 1.5 s.
- "Listened and checked: the AI is happy…" in the status line means the AI accepted the sound.
- It uses more requests, so it uses more tokens (cost).

PARAMS

Choose which parameters the AI may change. A wider range allows finer sound design but makes the description sent to the AI longer.

PARAMS	Range
Basic	Main controls (OSC1-4, filters, envelopes, main effects, Mod Matrix 1-6…). For local LLMs.
Standard	Basic + EQ and all effects.
Full	Standard + wave shaping (Wave B-D, Intensity, Wave Effects, harmonic EQ), OSC5-6, all 20 Mod Matrix slots, envelope details, Free ENVs, NOISE / STRING / METAL / WAVE SEQ, macros.
Everything	Almost everything, except the limiter, sidechain, FX order and parallel routing, Cut Group and quality settings.
Auto	Full for cloud AIs, Basic for local LLMs.

More parameters make it easier for the AI to get lost, so Auto (Full) is recommended for everyday use. Choose Everything when Full is not enough.

Whatever the range:

- The MASTER volume is never raised above its current value. The FX LIMITER is always switched on (Ceiling −1 dB or lower). Separately, the last-stage safety limiter that protects ears and speakers (SAFE, chapter 1) is always active.
- When the AI does not set a mod matrix CURVE, it is chosen from the source (UNI-LINEAR + for envelopes, Velocity, Macros and so on; BI-LINEAR + for LFOs and the like; chapter 6).
- Empty (reserved) choices and choices that load your own files (Conv Reverb's User File, Simulator's User IR) are never chosen.

Tokens and cost

The status line shows the tokens used (the amount of text the AI read and wrote):

```
Tokens 21,505 in (88% cached) / 1,056 out · Session 85,038 / 1,402
```

Item	Meaning
in / out	Sent to the AI / returned by the AI this time.
cached	Share of what was sent that matched the previous request (cache). Cached input is charged at a lower rate (depending on the provider).
Session	Totals since the window was opened.

Prices depend on the provider and model. Please check their price lists.

Troubleshooting

Message	What to do
HTTP 401 etc.	Check your API key and URL.
Busy (503 etc.)	Wait a little, or add backup models in MODEL.
The AI ran out of room…	Increase the local LLM's context length.

Message	What to do
The AI did not write a patch…	Try again or rephrase (one automatic retry is already made).

A log of the communication is kept in `%APPDATA%\WAV3PLUSCORE\AI.log` (plain text; the API key and anything after "?" in URLs are not written). It helps when something goes wrong.

12. Sound design examples

Here are three walk-throughs that start from the initial state. The numbers are only starting points; adjust them by ear.

To return to the initial state: press **ALL** in the header. Every parameter goes back to its default (only OSC1's Saw is playing).

Example 1: trance supersaw lead

A bright lead built from a thick unison and a tempo-synced delay.

1. Press **ALL** to start from the initial state.
2. On the OSC page, select OSC1 (Saw) and turn on **Unison** in UNISON.
   - Start with Voices `9`, Detune around `30` ct, Spread `80%`, Mix `50%`.
3. In SOURCES, turn on **OSC2**, set Wave A to `Saw` and PITCH **Oct** to `+1`. Set its OUTPUT Level to about `0.5`.
4. On the FILTER page, check that Filter 1's Type is `Lowpass 24dB` and lower **Cutoff** a little (around 6-8 kHz).
5. In the AMP envelope on the MOD page, set **Release** to about `0.4` s.
6. On the FX page, turn on **Delay 1**, turn on **Sync**, set the time to `1/8.` (dotted eighth) and Mix to about `20%`.
7. Turn on **Reverb** with Mix at `20-25%`.

> For more width, add **Hyper** or **Dimension** in the FX. If the centre feels thin, raise the UNISON **Mix**.

Example 2: 303-style acid bass

A squelchy bass made with the arpeggiator lanes and the 303 knobs.

1. Press **ALL** to start from the initial state.
2. On the GLOBAL page, turn on **Mono** in POLYPHONY / MONO.
3. On the FILTER page, set Filter 1's Type to `Diode`.
4. On the ARP page, turn on ARP **On** in SIGNAL FLOW.
   - Pattern `Up`, **Sync** on, Rate Div `1/16`, Octaves `1`.
5. In ARP PATTERN on the right, click a few steps in the **ACC** lane for accents, and add two or three steps in the **SLIDE** lane.
6. Move the 303 knobs at the bottom:
   - **Cutoff** around `300` Hz, **Reso** high, **Env Mod** `50%`, **Decay** `0.2` s, **Accent** about `80%`.
   - Add a little grit with **Drive**.
7. Hold a low key (around C2) and the phrase keeps playing.

> For a fatter sound, add **Distortion** (`Tube`, for example) or **Saturator** in the FX.

Example 3: slowly morphing pad

A pad whose character changes over time, made by moving the Wave A-D morph with an LFO.

1. Press **ALL** to start from the initial state.
2. In WAVETABLE on the OSC page, set Wave A to `Saw`, Wave B to `Vox A`, Wave C to `Choir Ah` and Wave D to `Organ` (any waves you like will do).

3. Turn on UNISON with Voices `5` and Detune around `15` ct.
4. In the AMP envelope on the MOD page, set **Attack** to about `1` s and **Release** to about `2` s.
5. On the **LFO 1** tab, slow the Rate down to about `0.1-0.2` Hz.
6. Right-click the **OSC1 Wt-Pos** knob and choose **Modulate with ▸ LFO ▸ LFO1**. LFO1 → OSC1 Wt-Position goes into the Mod Matrix; set its **Range** to about `50%`.
7. On the FX page, turn on **Reverb 2** or **Conv Reverb** (`Hall`) with Mix around `35%`.

> For more movement, add the **Harmonic EQ** or **Wave Effects** on the SHAPE tab and vary how much they apply per frame with **Shape Amt A-D**.

Start with AI, finish by hand

It also works well to get a rough sound from AI SOUND (chapter 11) and finish it yourself.

1. Describe the sound you want in AI SOUND (e.g. `dark, slowly evolving pad`).
2. If you like it, save it with **SAVE PRESET**.
3. Add movement with **Modulate with** from the knob menus, swap effects and so on.
4. When you are done, save again with **SAVE** in the header.

13. Appendix

Built-in waves

Family	Waves
Basic	Sine / Saw / Pulse / Tri / Ramp / Noise
Analog	Warm Saw / Saw+Square / Warm Square / Saw+Tri / Pulse 25 / Pulse 12 / Pulse 5 / Soft Pulse / Organ
Sync / reso	Sync Saw 2.5 / Sync Saw 3.7 / Sync Square / Reso Saw Lo / Reso Saw Hi
FM	FM 1:1 Soft / FM 1:1 Hard / FM 1:2 / FM 1:3 / FM 2:1 / FM 1:4 Bright / FM 3:2 / FM Feedback
Phase distortion	PD Saw / PD Reso / PD Reso Tri
Digital / experimental	Step Sine / Stair 8 / Comb 3rd / Buzz Odd / Buzz 64 / Fold Sine 2 / Fold Sine 5 / Fold Tri 3 / Clip Sine / Tanh Saw / Half Rect / AM 7 / Cheby Mix / Asym Fold / Grit Spectrum / Glitch 16 / Crush Sine / Metallic / Sine Burst
Vocal	Vox A / Vox E / Vox I / Vox O / Vox U / Choir Ah / Vox AE / Nasal / Vox OI / Throat
Bass / growl	Growl FM / Growl Saw / Reese Core / Wobble Sub / Yoi / Neuro Fold / Tear / Bark / Screech / Talk Bass
Organ / keys (v1.1)	Drawbar 888 / Drawbar Full / Drawbar Mellow / Drawbar Bright / Drawbar Perc / Combo Organ / Reed Organ / EP Tine / EP Reed / Clav
Pipe organ (v1.1)	Principal 8' / Stopped Flute / Open Flute / Gamba / Trumpet Stop / Oboe Stop / Vox Humana / Principal Chorus / Full Organ / Cornet
Acoustic (v1.1)	Trumpet / Horn / Trombone / Clarinet / Oboe / Sax / Flute / Violin / Cello / Harpsichord / Nylon Guitar / Piano
Bell / mallet (v1.1)	Glass / Bell / Tubular / Marimba / Xylophone / Vibes / Celesta / Music Box / Steel Drum / Gong Tone
Spectral (v1.1)	Saw 2H / Saw 4H / Saw 8H / Saw 16H / Even Only / Octaves / Octaves+5ths / Formant 4 / Formant 8 / Formant 16 / Formant 32 / Comb 4
Chip / bass (v1.1)	Chip Tri / Chip Saw / Chip Wave / Chip Pulse 33 / Chip Bass / Sub Octave / Soft Square / Fat Bass / Pluck Bass / Boom Sine
Growl (v1.1)	Grind / Gnash / Mangle / Chew / Shred / Riddim / Gurgle / Snarl / Crunch Saw / Filth / Rip / Belch / Hydra / Scrape / Wreck / Chaos FM
Your own	User 1-8 / Add 1-8 / Resynth 1-6

Scales (Scale on the ARP page)

Chromatic / Major / Minor / Harmonic Minor / Melodic Minor / Dorian / Phrygian / Lydian / Mixolydian / Locrian / Major Pentatonic / Minor Pentatonic / Blues / Japanese (In) / Hirajoshi / Ryukyu / Whole Tone / Phrygian Dominant / Hungarian Minor / Double Harmonic / Neapolitan Minor / Lydian Dominant / Altered / Diminished (H-W) / Diminished (W-H) / Bebop Dominant / Major Blues / Egyptian / Pelog / Iwato / Kumoi / Epic / Romantic

Chroma (FX) has its own list: Major / Minor / Harmonic Minor / Melodic Minor / Dorian / Phrygian / Lydian / Mixolydian / Locrian / Major Penta / Minor Penta / Blues / Whole Tone / Chromatic

Note values (Sync choices)

From `16/1` to `1/64`, with dotted (`.`) and triplet (`T`) values. Examples: `1/4` = quarter note, `1/8.` = dotted eighth, `1/16T` = sixteenth triplet.

Mod Matrix destinations

There are 371 destinations, grouped by target in the menu (OSC 1 ▸, Filter 1 ▸, ENV ▸, FX ▸ …). The main ones:

- Per OSC: Pitch / Level / Pan / Uni Detune / Uni Spread / Uni Mix / Filter Blend / Link1 and Link2 Amt / Wt-Position / Intensity and more
- OSC1-6 together (All): Pitch / Level / Pan / Uni Detune / Uni Spread / Uni Mix / Filter Blend
- LFO: LFO > Pitch Amt / LFO > Cutoff Amt (1-6, and all together)
- Filters: Cutoff / Reso / ENV Amt / Drive / Pan / Morph
- Envelopes: times and Sustain
- EQ1-6: Freq / Gain / Q
- Effect controls, NOISE / STRING / METAL, Voice Level

Troubleshooting

Problem	What to do
A note keeps sounding	Press **PANIC** in the header. It can rarely happen, for example while turning knobs as you play.
CPU is too high	Lower Quality (Live) or FX Quality on the GLOBAL page / use fewer heavy effects (Conv Reverb, Chroma, Multiband) / fewer unison Voices / lower Polyphony.
Too loud or distorted	Lower MASTER. If CLIP lights, check the LIMITER's Ceiling on the FX page. If **SAFE** appears under the meter, the sound went above +18 dBFS and the safety limiter that protects ears and speakers acted (chapter 1). Check settings with very high level, drive, resonance or feedback. The display clears when you change the sound or press PANIC.
Presets do not appear	Check that `Documents\WAV3PLUSCORE\Presets` can be written (chapter 2, "Where files are kept").
A factory sound was deleted	Restore Factory Presets... in the preset menu brings it back.
AI SOUND cannot connect	See chapter 11, "Troubleshooting", and `%APPDATA%\WAV3PLUSCORE\AI.log`.
The window looks blurry in FL Studio	Open the gear (wrapper settings) on the plug-in window, turn on **DPI aware**, then save the song and restart FL Studio.

File locations

What	Where
Plug-in	`C:\Program Files\Common Files\VST3\WAV3PLUSCORE.vst3`
Presets	`Documents\WAV3PLUSCORE\Presets`
MIDI made by the AI	`Documents\WAV3PLUSCORE\MIDI\AI`

What	Where
Settings (skin, zoom for new instances, MIDI Learn, AI)	`%APPDATA%\WAV3PLUSCORE`
AI communication log	`%APPDATA%\WAV3PLUSCORE\AI.log`

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- **Using your sounds**: sounds made with WAV3+CORE and its factory presets may be used freely in your music and other works, commercial or not. No credit or notice is required.
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- **AI SOUND**: the AI services used with AI SOUND (OpenAI, Anthropic, Google and others) are subject to their own terms of use and pricing.
- **Disclaimer**: WAV3+CORE is provided as is. W3PC Audio accepts no liability for any damage arising from its use.

> **Watch your volume** WAV3+CORE gives you a lot of freedom, so some settings can produce very loud sounds, strong bass, frequencies too high or too low to hear, or strong resonance. These can damage speakers, amplifiers, headphones, audio interfaces and other equipment, and your hearing. Start sound design at a low volume. Keeping the final LIMITER (chapter 7) on is recommended.

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Version history

Version	Date	Changes
1.5.0	2026-11-01	**UNISON CHORD** (rebuilt UNISON ARP: spread the unison voices over chord tones with Chord, or over the keys you hold with Played; Strum / Converge / Arp Link / Arp; an On switch per plate). **Harmonic morphing** (Morph = Harmonic). **External input modulation** (the sidechain level as the Mod Matrix source External; not available in FL Studio). **Pitch Quantize** per oscillator. **PRE LIMITER** (a second limiter you can place anywhere in the FX CHAIN, before the MASTER volume), and FINAL EQ moved to the bottom of the FX CHAIN. LFO shapes for Chorus / Flanger / Phaser / Hyper (8 shapes and a hand-drawn Custom), an On switch per Mod Matrix slot, Legato Chords in Chord Memory. VIEW: Remember Page (reopen on the page you left), Frame Rate (60 fps) and GPU Rendering. Raising the filter Drive no longer lowers the volume, and Ladder / Diode / Scream distort much harder above 30% (Ladder / Formant / Vowel / Diode / Allpass; older songs and presets that use Drive get louder, and the factory presets were re-levelled). REVERB Classic Mod; CHROMA / RESONATOR now hear the whole chord even at polyphony 1. Many fixes, including the comb-like sound of distortion in parallel blocks, ARP Sync note bursts, recovery from NaN and safer loading.

Version	Date	Changes
1.1.0	2026-10-25	80 new built-in waves and presets that use them. REVERB Type (Smooth) and Mod, DELAY F.Pos (Loop), Mod, Diffuse and Drive, oversampling and anti-aliasing for Distortion / Saturator (FX Quality on the GLOBAL page), COMPRESSOR Knee, LIMITER Attack and lookahead (Look), Env Start, 0.1ms Attack, Scale Lock and Keys, NOISE Follow AMP ENV, MIDI Learn from a knob's right-click menu, AI SOUND can draw waves (WAVES). A last-stage safety limiter that protects ears and speakers (+18 dBFS, SAFE under the meter). Faster preset switching, new knob and ENV panel design, and window resizing that follows the DAW. Fixed combo boxes for choices with reserved slots (Conv Reverb IR, Distortion / Saturator Type…) selecting the wrong item, and places that could crash. Info-only dialogs now have just an OK button. Older songs and presets load with their original sound (only Distortion / Saturator get cleaner with FX Quality 2x).
1.0.1	2026-10-20	Fixed the pitch of 41 factory presets (mod matrix CURVE). AI SOUND now picks the CURVE from the source. Added the website and contact e-mail to the plugin info, and a thumbnail for DAW plug-in browsers.
1.0.0	2026-10-18	First public release

14. Parameter list

All 1754 WAV3+CORE parameters. Repeated sets, such as OSC1-6 or the Mod Matrix slots, are shown once with the number replaced by **n** (an inner number by **k**). "Count" is how many parameters the row stands for.

- **ID** is the name used in preset files and in the DAW.
- Parameters marked × under **Automation** cannot be automated from the DAW (chapter 1, "DAW automation").
- `Reserved` choices (empty slots kept for the future) are left out.
- Times are in seconds. Envelope Attack ranges from 0.001 to 20 s, but with **0.1ms Attack** on (GLOBAL page) the far-left position is 0.1 ms (chapter 9).

LFO (per OSC)

Name	ID	Count	Range / choices	Default	Automation
OSCn LFO Rate	`oscNLfoRate`	6	0.02 to 200	5	
OSCn LFO Waveform	`oscNLfoWaveform`	6	Sine / Triangle / Square / Saw / S&H / Reverse Saw / Smooth Rnd / Noise / Custom	Sine	
OSCn LFO Tempo Sync	`oscNLfoSync`	6	On / Off	Off	
OSCn LFO Sync Division	`oscNLfoSyncDivision`	6	note values (16/1 to 1/64T)	1/4	
OSCn LFO Phase	`oscNLfoPhase`	6	0 to 360	0	
OSCn LFO to Cutoff Amount	`oscNLfoToCutoffAmount`	6	-100 to 100	0	
OSCn LFO Mod Amount	`oscNLfoModAmount`	6	0 to 200	100	
OSCn LFO Delay	`oscNLfoDelay`	6	0 to 20	0	
OSCn LFO Fade	`oscNLfoFade`	6	0 to 20	0	
OSCn LFO Delay Tempo Sync	`oscNLfoDelaySync`	6	On / Off	Off	
OSCn LFO Delay Sync Division	`oscNLfoDelaySyncDivision`	6	note values (16/1 to 1/64T)	1/4	
OSCn LFO Fade Tempo Sync	`oscNLfoFadeSync`	6	On / Off	Off	
OSCn LFO Fade Sync Division	`oscNLfoFadeSyncDivision`	6	note values (16/1 to 1/64T)	1/4	
OSCn LFO Mode	`oscNLfoMode`	6	Free / Retrig / Host / One Shot	Free	
OSCn LFO Skew	`oscNLfoSkew`	6	0 to 100	0	

OSC

Name	ID	Count	Range / choices	Default	Automation
OSCn On	`oscNOn`	6	On / Off	On	
OSCn Waveform	`oscNWaveform`	6	Sine / Saw / Pulse / User 1 / User 2 / User 3 … 172 choices	Saw	
OSCn Pulse Width	`oscNPulseWidth`	6	1 to 99	50	
OSCn Round	`oscNRound`	6	0 to 100	25	
OSCn Level	`oscNLevel`	6	0 to 1	1	
OSCn Octave	`oscNOctave`	6	-6 to 6	0	
OSCn Semitone	`oscNSemitone`	6	-12 to 12	0	
OSCn Detune	`oscNDetune`	6	-100 to 100	0	
OSCn Unison	`oscNUnison`	6	On / Off	Off	
OSCn Unison Detune	`oscNUnisonDetune`	6	0 to 200	25	
OSCn Unison Detune Curve	`oscNUnisonDetuneCurve`	6	-1 to 1	0	

Name	ID	Count	Range / choices	Default	Automation
OSCn Unison Voices	`oscNUnisonVoices`	6	1 to 16	7	
OSCn Unison Mix	`oscNUnisonMix`	6	0 to 100	50	
OSCn Unison Mix Curve	`oscNUnisonMixCurve`	6	-1 to 1	1	
OSCn Phase Random	`oscNPhaseRandom`	6	0 to 1	1	
OSCn Stereo Spread	`oscNStereoSpread`	6	0 to 1	0.8	
OSCn Stereo Spread Curve	`oscNStereoSpreadCurve`	6	-1 to 1	0	
OSCn Pan	`oscNPan`	6	-100 to 100	0	
OSCn Pan to Unison	`oscNPanUnisonFollow`	6	0 to 100	100	
OSCn Filter Blend	`oscNFilterBlend`	6	0 to 100	0	
OSCn Filter Bypass	`oscNFilterBypass`	6	On / Off	Off	
OSCn Harmonic EQ k Position	`oscNHarmonicEqKPosition`	36	1 to 64	1	
OSCn Harmonic EQ k Gain	`oscNHarmonicEqKGain`	36	-24 to 24	0	
OSCn Harmonic EQ k Width	`oscNHarmonicEqKWidth`	36	0.3 to 16	3	
OSCn Warp On	`oscNWarpEnabled`	6	On / Off	Off	
OSCn Warp Amount	`oscNWarpAmount`	6	0 to 100	0	
OSCn Twist On	`oscNTwistEnabled`	6	On / Off	Off	
OSCn Twist Amount	`oscNTwistAmount`	6	0 to 100	0	
OSCn Drive On	`oscNDriveEnabled`	6	On / Off	Off	
OSCn Drive Amount	`oscNDriveAmount`	6	0 to 100	0	
OSCn Window On	`oscNWindowEnabled`	6	On / Off	Off	
OSCn Window Amount	`oscNWindowAmount`	6	0 to 100	0	
OSCn Offset On	`oscNOffsetEnabled`	6	On / Off	Off	
OSCn Offset Amount	`oscNOffsetAmount`	6	0 to 100	0	
OSCn Wave On	`oscNWaveEnabled`	6	On / Off	Off	
OSCn Wave Amount	`oscNWaveAmount`	6	0 to 100	0	
OSCn Bit Reduction On	`oscNBitReductionEnabled`	6	On / Off	Off	
OSCn Bit Reduction Amount	`oscNBitReductionAmount`	6	0 to 100	0	
OSCn Shrink On	`oscNShrinkEnabled`	6	On / Off	Off	
OSCn Shrink Amount	`oscNShrinkAmount`	6	0 to 100	0	
OSCn Self Sync On	`oscNSelfSyncEnabled`	6	On / Off	Off	
OSCn Self Sync Amount	`oscNSelfSyncAmount`	6	0 to 100	0	
OSCn Multipoint On	`oscNMultipointEnabled`	6	On / Off	Off	
OSCn Multipoint Amount	`oscNMultipointAmount`	6	0 to 100	0	
OSCn LPF On	`oscNLpfEnabled`	6	On / Off	Off	
OSCn LPF Amount	`oscNLpfAmount`	6	0 to 100	0	
OSCn HPF On	`oscNHpfEnabled`	6	On / Off	Off	
OSCn HPF Amount	`oscNHpfAmount`	6	0 to 100	0	
OSCn Fold On	`oscNFoldEnabled`	6	On / Off	Off	
OSCn Fold Amount	`oscNFoldAmount`	6	0 to 100	0	
OSCn Spectrum On	`oscNSpectrumEnabled`	6	On / Off	Off	
OSCn Spectrum Amount	`oscNSpectrumAmount`	6	0 to 100	0	
OSCn Random All On	`oscNRandomAllEnabled`	6	On / Off	Off	
OSCn Random All Amount	`oscNRandomAllAmount`	6	0 to 100	0	
OSCn Random Odd On	`oscNRandomOddEnabled`	6	On / Off	Off	
OSCn Random Odd Amount	`oscNRandomOddAmount`	6	0 to 100	0	

Name	ID	Count	Range / choices	Default	Automation
OSCn Link k Source	`oscNLinkKSource`	12	None / OSC1 / OSC2 (Self) / OSC3 / OSC4 / OSC5 / OSC6	None	
OSCn Link k Type	`oscNLinkKType`	12	FM / AM / Ring Mod / Sync	FM	
OSCn Link k Amount	`oscNLinkKAmount`	12	-100 to 100	0	
OSCn Start Phase	`oscNStartPhase`	6	0 to 360	0	
OSCn Wave B	`oscNWaveB`	6	Off / Sine / Saw / Pulse / User 1 / User 2 … 173 choices	Off	
OSCn Wave C	`oscNWaveC`	6	Off / Sine / Saw / Pulse / User 1 / User 2 … 173 choices	Off	
OSCn Wave D	`oscNWaveD`	6	Off / Sine / Saw / Pulse / User 1 / User 2 … 173 choices	Off	
OSCn Wt-Position	`oscNWtPosition`	6	0 to 100	0	
OSCn Intensity	`oscNIntensity`	6	0 to 100	0	
OSCn Intensity Mode	`oscNIntensityMode`	6	Bend + / Bend - / Bend +/- / Formant / Spectrum / Mirror / Sync / Quantize	Bend +	
OSCn Morph Mode	`oscNMorphMode`	6	Mix / Harmonic	Mix	
OSCn Unison Tone	`oscNUnisonTone`	6	-100 to 100	0	
OSCn Unison Arp Mode	`oscNUniArpMode`	6	Off / Strum / Converge / Arp Link / Arp	Off	
OSCn Unison Arp Strum Time	`oscNUniArpStrumTime`	6	1 to 500	30	
OSCn Unison Arp Order	`oscNUniArpOrder`	6	Up / Down / Center Out / Random	Up	
OSCn Unison Arp Range	`oscNUniArpRange`	6	0 to 24	7	
OSCn Unison Arp Steps	`oscNUniArpSteps`	6	1 to 16	4	
OSCn Unison Arp Rate	`oscNUniArpRate`	6	note values (16/1 to 1/64T)	1/16	
OSCn Unison Arp Shape	`oscNUniArpShape`	6	Spread / Alternate / Up / Down / Random	Spread	
OSCn Unison Arp Link Depth	`oscNUniArpLinkDepth`	6	0 to 100	70	
OSCn Unison Arp Loop	`oscNUniArpLoop`	6	On / Off	Off	
OSCn Unison Chord	`oscNUniChord`	6	Off / Octave / 5th / Maj / m / dim … 25 choices	Off	
OSCn Unison Chord On	`oscNUniChordOn`	6	On / Off	On	
OSCn Shape Amount A	`oscNShapeAmtA`	6	0 to 100	100	
OSCn Shape Amount B	`oscNShapeAmtB`	6	0 to 100	100	
OSCn Shape Amount C	`oscNShapeAmtC`	6	0 to 100	100	
OSCn Shape Amount D	`oscNShapeAmtD`	6	0 to 100	100	
OSCn Key Track	`oscNKeyTrack`	6	On / Off	On	
OSCn Unison Flip L/R	`oscNUnisonFlip`	6	On / Off	Off	
OSCn Pitch Quantize	`oscNPitchQuantize`	6	On / Off	Off	
OSCn Pitch Quantize Smooth	`oscNPitchQuantizeSmooth`	6	0 to 200	0	
OSCn Key Low	`oscNKeyLow`	6	0 to 127	C-1	
OSCn Key High	`oscNKeyHigh`	6	0 to 127	G9	
OSCn Key Fade	`oscNKeyFade`	6	0 to 24	0	
OSCn Harmonic Phase Random	`oscNHarmPhaseRand`	6	0 to 100	0	
OSCn FX In	`oscNFxIn`	6	All FX / From #2 / From #3 / From #4 / From #5 / From #6 … 26 choices	All FX	×
OSCn Resynth Play	`oscNResyPlay`	6	On / Off	Off	
OSCn Resynth Speed	`oscNResySpeed`	6	0 to 400	100	
OSCn Resynth Loop	`oscNResyLoop`	6	Off / Forward / Ping-Pong	Off	

Name	ID	Count	Range / choices	Default	Automation
OSCn Resynth Loop Start	`oscNResyLoopStart`	6	0 to 100	0	
OSCn Resynth Loop End	`oscNResyLoopEnd`	6	0 to 100	100	
OSCn Resynth Key Sync	`oscNResyKeySync`	6	On / Off	Off	
OSCn Resynth Reverse	`oscNResyReverse`	6	On / Off	Off	
OSCn Resynth Start	`oscNResyStart`	6	0 to 100	0	
OSCn Unison Even Phase	`oscNUnisonEven`	6	On / Off	Off	
OSCn Formant Shift	`oscNFormantShift`	6	-24 to 24	0 st	
OSCn Formant Track	`oscNFormantTrack`	6	0 to 100	100 %	
OSCn Trigger	`oscNTrigger`	6	Key / Step / Arp Mod 1 / Arp Mod 2 / Arp Mod 3 / Arp Mod 4 / LFO 1 / LFO 2 / LFO 3 / LFO 4 / LFO 5 / LFO 6	Key	×
OSCn Trigger Env	`oscNTrigEnv`	6	Free ENV 1 / Free ENV 2 / Free ENV 3 / Free ENV 4	Free ENV 1	×
OSCn Trigger Phase Reset	`oscNTrigPhase`	6	On / Off	On	

NOISE

Name	ID	Count	Range / choices	Default	Automation
Noise Type	`noiseType`	1	White / Pink / Brown / Blue / Digital / Crackle / Transient / Resynth 1 / Resynth 2 / Resynth 3 / Resynth 4 / Resynth 5 / Resynth 6	White	
Noise Filter Blend	`noiseFilterBlend`	1	0 to 100	0	
Noise Filter Bypass	`noiseFilterBypass`	1	On / Off	Off	
Noise Level	`noiseLevel`	1	0 to 1	0	
Noise Delay	`noiseDelay`	1	0 to 20	0	
Noise Attack	`noiseAttack`	1	0.001 to 20	0.001	
Noise Hold	`noiseHold`	1	0 to 20	0	
Noise Decay	`noiseDecay`	1	0.001 to 20	0.2	
Noise Sustain	`noiseSustain`	1	0 to 1	1	
Noise Release	`noiseRelease`	1	0.001 to 20	0.05	
Noise Attack Curve	`noiseAttackCurve`	1	-1 to 1	0	
Noise Decay Curve	`noiseDecayCurve`	1	-1 to 1	0.3	
Noise Release Curve	`noiseReleaseCurve`	1	-1 to 1	0.3	
Noise Delay Tempo Sync	`noiseDelaySync`	1	On / Off	Off	
Noise Delay Sync Division	`noiseDelaySyncDivision`	1	note values (16/1 to 1/64T)	1/4	
Noise Attack Tempo Sync	`noiseAttackSync`	1	On / Off	Off	
Noise Attack Sync Division	`noiseAttackSyncDivision`	1	note values (16/1 to 1/64T)	1/4	
Noise Hold Tempo Sync	`noiseHoldSync`	1	On / Off	Off	
Noise Hold Sync Division	`noiseHoldSyncDivision`	1	note values (16/1 to 1/64T)	1/4	
Noise Decay Tempo Sync	`noiseDecaySync`	1	On / Off	Off	
Noise Decay Sync Division	`noiseDecaySyncDivision`	1	note values (16/1 to 1/64T)	1/4	
Noise Release Tempo Sync	`noiseReleaseSync`	1	On / Off	Off	
Noise Release Sync Division	`noiseReleaseSyncDivision`	1	note values (16/1 to 1/64T)	1/4	
Noise On	`noiseOn`	1	On / Off	Off	
Noise Pan	`noisePan`	1	-100 to 100	0	
Noise Width	`noiseWidth`	1	0 to 100	0	

Name	ID	Count	Range / choices	Default	Automation
Noise Color	`noiseColor`	1	-100 to 100	0	
Noise Transient Decay	`noiseTransientDecay`	1	1 to 500	20	
Noise Key Low	`noiseKeyLow`	1	0 to 127	C-1	
Noise Key High	`noiseKeyHigh`	1	0 to 127	G9	
Noise Key Fade	`noiseKeyFade`	1	0 to 24	0	
Noise FX In	`noiseFxIn`	1	All FX / From #2 / From #3 / From #4 / From #5 / From #6 … 26 choices	All FX	×
Noise Resynth Follow	`noiseResynthFollow`	1	Auto / OSC 1 / OSC 2 / OSC 3 / OSC 4 / OSC 5 / OSC 6	Auto	
Noise Follow AMP ENV	`noiseEnvSyncAmp`	1	On / Off	On	×

STRING

Name	ID	Count	Range / choices	Default	Automation
String On	`stringOn`	1	On / Off	Off	
String Level	`stringLevel`	1	0 to 100	70	
String Excite	`stringExcite`	1	Pluck / Bow / Reed (Wind) / Flute (Wind)	Pluck	
String Decay	`stringDecay`	1	0.05 to 20	3	
String Damping	`stringDamping`	1	0 to 100	40	
String Brightness	`stringBrightness`	1	0 to 100	70	
String Position	`stringPosition`	1	1 to 50	20	
String Body	`stringBody`	1	0 to 100	30	
String Octave	`stringOctave`	1	-3 to 3	0	
String Pan	`stringPan`	1	-100 to 100	0	
String Filter Blend	`stringFilterBlend`	1	0 to 100	0	
String Filter Bypass	`stringFilterBypass`	1	On / Off	Off	
String Key Track	`stringKeyTrack`	1	On / Off	On	
String Semi	`stringSemi`	1	-24 to 24	0	
String Fine	`stringFine`	1	-100 to 100	0	
String Body Type	`stringBodyType`	1	Classic / Guitar / Violin / Cello / Piano Board / Wood Box / Metal Can / Sitar	Classic	
String Body Size	`stringBodySize`	1	50 to 200	100	
String Key Low	`stringKeyLow`	1	0 to 127	C-1	
String Key High	`stringKeyHigh`	1	0 to 127	G9	
String Key Fade	`stringKeyFade`	1	0 to 24	0	
String FX In	`stringFxIn`	1	All FX / From #2 / From #3 / From #4 / From #5 / From #6 … 26 choices	All FX	×

METAL

Name	ID	Count	Range / choices	Default	Automation
Metal On	`metalOn`	1	On / Off	Off	
Metal Level	`metalLevel`	1	0 to 100	70	
Metal Model	`metalModel`	1	Random / Bell / Bar / Tube / Plate / Gong … 15 choices	Bell	
Metal Mode	`metalMode`	1	Hit / Sustain	Hit	

Name	ID	Count	Range / choices	Default	Automation
Metal Seed A	`metalSeedA`	1	1 to 999	1	
Metal Seed B	`metalSeedB`	1	1 to 999	2	
Metal Morph	`metalMorph`	1	0 to 100	0	
Metal Rich	`metalRich`	1	0 to 100	70	
Metal Stretch	`metalStretch`	1	-100 to 100	0	
Metal Tilt	`metalTilt`	1	-12 to 12	0	
Metal Hardness	`metalHardness`	1	0 to 100	75	
Metal Vel>Hard	`metalVelHard`	1	0 to 100	40	
Metal Position	`metalPosition`	1	1 to 50	20	
Metal Noise	`metalNoise`	1	0 to 100	25	
Metal Decay	`metalDecay`	1	0.05 to 20	5	
Metal Damp	`metalDamp`	1	0 to 100	30	
Metal Sustain	`metalSustain`	1	0 to 100	60	
Metal Release	`metalRelease`	1	0.01 to 10	1.5	
Metal Octave	`metalOctave`	1	-3 to 3	0	
Metal Pan	`metalPan`	1	-100 to 100	0	
Metal Filter Blend	`metalFilterBlend`	1	0 to 100	0	
Metal Filter Bypass	`metalFilterBypass`	1	On / Off	Off	
Metal Beat	`metalBeat`	1	0 to 100	35	
Metal Shimmer	`metalShimmer`	1	0 to 100	20	
Metal Glide	`metalGlide`	1	-100 to 100	0	
Metal Width	`metalWidth`	1	0 to 100	50	
Metal Ring	`metalRing`	1	0 to 100	0	
Metal Ring Ratio	`metalRingRatio`	1	0.25 to 8	1.414	
Metal Key Track	`metalKeyTrack`	1	On / Off	On	
Metal Key Low	`metalKeyLow`	1	0 to 127	C-1	
Metal Key High	`metalKeyHigh`	1	0 to 127	G9	
Metal Key Fade	`metalKeyFade`	1	0 to 24	0	
Metal FX In	`metalFxIn`	1	All FX / From #2 / From #3 / From #4 / From #5 / From #6 … 26 choices	All FX	×

WAVE SEQ

Name	ID	Count	Range / choices	Default	Automation
Wave Seq On	`waveSeqOn`	1	On / Off	Off	
Wave Seq Rate	`waveSeqRate`	1	note values (16/1 to 1/64T)	1/8	
Wave Seq Steps	`waveSeqSteps`	1	1 to 16	4	
Wave Seq Crossfade	`waveSeqCrossfade`	1	0 to 100	10	
Wave Seq Retrigger	`waveSeqRetrigger`	1	On / Off	On	
Wave Seq Step n	`waveSeqStepN`	16	OSC 1 / OSC 2 / OSC 3 / OSC 4 / OSC 5 / OSC 6	OSC 1	

FILTER

Name	ID	Count	Range / choices	Default	Automation
Filter1 Type	`filter1Type`	1	Lowpass 24dB / Highpass 24dB / Bandpass / Notch / Lowpass 12dB / Highpass 12dB … 19 choices	Lowpass 24dB	
Filter1 Resonance	`filter1Resonance`	1	0 to 1	0	
Filter1 Cutoff	`filter1Cutoff`	1	20 to 24000	24000	
Filter2 Type	`filter2Type`	1	Lowpass 24dB / Highpass 24dB / Bandpass / Notch / Lowpass 12dB / Highpass 12dB … 19 choices	Lowpass 24dB	
Filter2 Resonance	`filter2Resonance`	1	0 to 1	0	
Filter2 Cutoff	`filter2Cutoff`	1	20 to 24000	24000	
Filter1 Output	`filter1Output`	1	Output / To Filter 2	Output	
Filter 1 Pan	`filter1Pan`	1	-100 to 100	0	
Filter 2 Pan	`filter2Pan`	1	-100 to 100	0	
Filter Link	`filterLink`	1	On / Off	Off	
Filter Link Offset	`filterLinkOffset`	1	-24 to 24	0	
Filter 1 Drive	`filter1Drive`	1	0 to 100	30	
Filter 2 Drive	`filter2Drive`	1	0 to 100	30	
Filter 1 Morph	`filter1Morph`	1	0 to 100	0	
Filter 2 Morph	`filter2Morph`	1	0 to 100	0	
Filter 1 Allpass Stages	`filter1AllpassStages`	1	1 / 2 / 4 / 8 / 16 / 32	2	
Filter 2 Allpass Stages	`filter2AllpassStages`	1	1 / 2 / 4 / 8 / 16 / 32	2	
Filter 1 Key Track	`filter1KeyTrack`	1	0 to 100	0 %	
Filter 2 Key Track	`filter2KeyTrack`	1	0 to 100	0 %	
Filter 1 Pitch Mode	`filter1PitchMode`	1	On / Off	Off	
Filter 2 Pitch Mode	`filter2PitchMode`	1	On / Off	Off	
Filter 1 Formant Voice	`filter1FormantVoice`	1	0 to 100	Man x1.00	
Filter 2 Formant Voice	`filter2FormantVoice`	1	0 to 100	Man x1.00	
Filter 1 Pitch Offset	`filter1PitchOffset`	1	-48 to 48	0 st	
Filter 2 Pitch Offset	`filter2PitchOffset`	1	-48 to 48	0 st	

Envelopes

Name	ID	Count	Range / choices	Default	Automation
Filter2 ENV to Cutoff Amount	`filter2EnvToCutoffAmount`	1	-300 to 300	0	
Delay	`ampDelay`	1	0 to 20	0	
Attack	`ampAttack`	1	0.001 to 20	0.01	
Hold	`ampHold`	1	0 to 20	0	
Decay	`ampDecay`	1	0.001 to 20	0.15	
Sustain	`ampSustain`	1	0 to 1	0.7	
Release	`ampRelease`	1	0.001 to 20	0.3	
Attack Curve	`ampAttackCurve`	1	-1 to 1	0	
Decay Curve	`ampDecayCurve`	1	-1 to 1	0.3	
Release Curve	`ampReleaseCurve`	1	-1 to 1	0.3	
Filter Delay	`filterEnvDelay`	1	0 to 20	0	
Filter Attack	`filterEnvAttack`	1	0.001 to 20	0.001	

Name	ID	Count	Range / choices	Default	Automation
Filter Hold	`filterEnvHold`	1	0 to 20	0	
Filter Decay	`filterEnvDecay`	1	0.001 to 20	0.25	
Filter Sustain	`filterEnvSustain`	1	0 to 1	0	
Filter Release	`filterEnvRelease`	1	0.001 to 20	0.2	
Filter Attack Curve	`filterEnvAttackCurve`	1	-1 to 1	0	
Filter Decay Curve	`filterEnvDecayCurve`	1	-1 to 1	0.3	
Filter Release Curve	`filterEnvReleaseCurve`	1	-1 to 1	0.3	
Free ENV n Delay	`freeEnvNDelay`	4	0 to 20	0	
Free ENV n Attack	`freeEnvNAttack`	4	0.001 to 20	0.01	
Free ENV n Hold	`freeEnvNHold`	4	0 to 20	0	
Free ENV n Decay	`freeEnvNDecay`	4	0.001 to 20	0.15	
Free ENV n Sustain	`freeEnvNSustain`	4	0 to 1	0.7	
Free ENV n Release	`freeEnvNRelease`	4	0.001 to 20	0.3	
Free ENV n Attack Curve	`freeEnvNAttackCurve`	4	-1 to 1	0	
Free ENV n Decay Curve	`freeEnvNDecayCurve`	4	-1 to 1	0.3	
Free ENV n Release Curve	`freeEnvNReleaseCurve`	4	-1 to 1	0.3	
Free ENV n Amount	`freeEnvNAmount`	4	0 to 200	100	
Pitch ENV Delay	`pitchEnvDelay`	1	0 to 20	0	
Pitch ENV Attack	`pitchEnvAttack`	1	0.001 to 20	0.01	
Pitch ENV Hold	`pitchEnvHold`	1	0 to 20	0	
Pitch ENV Decay	`pitchEnvDecay`	1	0.001 to 20	0.15	
Pitch ENV Sustain	`pitchEnvSustain`	1	0 to 1	0.7	
Pitch ENV Release	`pitchEnvRelease`	1	0.001 to 20	0.3	
Pitch ENV Attack Curve	`pitchEnvAttackCurve`	1	-1 to 1	0	
Pitch ENV Decay Curve	`pitchEnvDecayCurve`	1	-1 to 1	0.3	
Pitch ENV Release Curve	`pitchEnvReleaseCurve`	1	-1 to 1	0.3	
Pitch ENV Amount	`pitchEnvAmount`	1	0 to 200	100	
Amp Delay Tempo Sync	`ampDelaySync`	1	On / Off	Off	
Amp Delay Sync Division	`ampDelaySyncDivision`	1	note values (16/1 to 1/64T)	1/4	
Amp Attack Tempo Sync	`ampAttackSync`	1	On / Off	Off	
Amp Attack Sync Division	`ampAttackSyncDivision`	1	note values (16/1 to 1/64T)	1/4	
Amp Hold Tempo Sync	`ampHoldSync`	1	On / Off	Off	
Amp Hold Sync Division	`ampHoldSyncDivision`	1	note values (16/1 to 1/64T)	1/4	
Amp Decay Tempo Sync	`ampDecaySync`	1	On / Off	Off	
Amp Decay Sync Division	`ampDecaySyncDivision`	1	note values (16/1 to 1/64T)	1/4	
Amp Release Tempo Sync	`ampReleaseSync`	1	On / Off	Off	
Amp Release Sync Division	`ampReleaseSyncDivision`	1	note values (16/1 to 1/64T)	1/4	
Filter Delay Tempo Sync	`filterEnvDelaySync`	1	On / Off	Off	
Filter Delay Sync Division	`filterEnvDelaySyncDivision`	1	note values (16/1 to 1/64T)	1/4	
Filter Attack Tempo Sync	`filterEnvAttackSync`	1	On / Off	Off	
Filter Attack Sync Division	`filterEnvAttackSyncDivision`	1	note values (16/1 to 1/64T)	1/4	
Filter Hold Tempo Sync	`filterEnvHoldSync`	1	On / Off	Off	
Filter Hold Sync Division	`filterEnvHoldSyncDivision`	1	note values (16/1 to 1/64T)	1/4	
Filter Decay Tempo Sync	`filterEnvDecaySync`	1	On / Off	Off	
Filter Decay Sync Division	`filterEnvDecaySyncDivision`	1	note values (16/1 to 1/64T)	1/4	
Filter Release Tempo Sync	`filterEnvReleaseSync`	1	On / Off	Off	

Name	ID	Count	Range / choices	Default	Automation
Filter Release Sync Division	`filterEnvReleaseSyncDivision`	1	note values (16/1 to 1/64T)	1/4	
Free ENV n Delay Tempo Sync	`freeEnvNDelaySync`	4	On / Off	Off	
Free ENV n Delay Sync Division	`freeEnvNDelaySyncDivision`	4	note values (16/1 to 1/64T)	1/4	
Free ENV n Attack Tempo Sync	`freeEnvNAttackSync`	4	On / Off	Off	
Free ENV n Attack Sync Division	`freeEnvNAttackSyncDivision`	4	note values (16/1 to 1/64T)	1/4	
Free ENV n Hold Tempo Sync	`freeEnvNHoldSync`	4	On / Off	Off	
Free ENV n Hold Sync Division	`freeEnvNHoldSyncDivision`	4	note values (16/1 to 1/64T)	1/4	
Free ENV n Decay Tempo Sync	`freeEnvNDecaySync`	4	On / Off	Off	
Free ENV n Decay Sync Division	`freeEnvNDecaySyncDivision`	4	note values (16/1 to 1/64T)	1/4	
Free ENV n Release Tempo Sync	`freeEnvNReleaseSync`	4	On / Off	Off	
Free ENV n Release Sync Division	`freeEnvNReleaseSyncDivision`	4	note values (16/1 to 1/64T)	1/4	
Pitch ENV Delay Tempo Sync	`pitchEnvDelaySync`	1	On / Off	Off	
Pitch ENV Delay Sync Division	`pitchEnvDelaySyncDivision`	1	note values (16/1 to 1/64T)	1/4	
Pitch ENV Attack Tempo Sync	`pitchEnvAttackSync`	1	On / Off	Off	
Pitch ENV Attack Sync Division	`pitchEnvAttackSyncDivision`	1	note values (16/1 to 1/64T)	1/4	
Pitch ENV Hold Tempo Sync	`pitchEnvHoldSync`	1	On / Off	Off	
Pitch ENV Hold Sync Division	`pitchEnvHoldSyncDivision`	1	note values (16/1 to 1/64T)	1/4	
Pitch ENV Decay Tempo Sync	`pitchEnvDecaySync`	1	On / Off	Off	
Pitch ENV Decay Sync Division	`pitchEnvDecaySyncDivision`	1	note values (16/1 to 1/64T)	1/4	
Pitch ENV Release Tempo Sync	`pitchEnvReleaseSync`	1	On / Off	Off	
Pitch ENV Release Sync Division	`pitchEnvReleaseSyncDivision`	1	note values (16/1 to 1/64T)	1/4	
Free ENV n Mode	`freeEnvNMode`	4	ADSR / Custom	ADSR	
Free ENV n Custom Sync	`freeEnvNMsegSync`	4	On / Off	Off	
Free ENV n Custom Length	`freeEnvNMsegLength`	4	1/16 / 1/8 / 1/4 / 1/2 / 1 Bar / 2 Bars / 4 Bars / 8 Bars	1 Bar	
Filter 2 Own ENV	`filter2EnvOwn`	1	On / Off	Off	×
Filter 2 ENV Delay	`filter2EnvDelay`	1	0 to 20	0	
Filter 2 ENV Attack	`filter2EnvAttack`	1	0.001 to 20	0.001	
Filter 2 ENV Hold	`filter2EnvHold`	1	0 to 20	0	
Filter 2 ENV Decay	`filter2EnvDecay`	1	0.001 to 20	0.25	
Filter 2 ENV Sustain	`filter2EnvSustain`	1	0 to 1	0	
Filter 2 ENV Release	`filter2EnvRelease`	1	0.001 to 20	0.2	
Filter 2 ENV AttackCurve	`filter2EnvAttackCurve`	1	-1 to 1	0	
Filter 2 ENV DecayCurve	`filter2EnvDecayCurve`	1	-1 to 1	0.3	
Filter 2 ENV ReleaseCurve	`filter2EnvReleaseCurve`	1	-1 to 1	0.3	
Filter 2 ENV Delay Tempo Sync	`filter2EnvDelaySync`	1	On / Off	Off	
Filter 2 ENV Delay Sync Division	`filter2EnvDelaySyncDivision`	1	note values (16/1 to 1/64T)	1/4	
Filter 2 ENV Attack Tempo Sync	`filter2EnvAttackSync`	1	On / Off	Off	
Filter 2 ENV Attack Sync Division	`filter2EnvAttackSyncDivision`	1	note values (16/1 to 1/64T)	1/4	
Filter 2 ENV Hold Tempo Sync	`filter2EnvHoldSync`	1	On / Off	Off	
Filter 2 ENV Hold Sync Division	`filter2EnvHoldSyncDivision`	1	note values (16/1 to 1/64T)	1/4	
Filter 2 ENV Decay Tempo Sync	`filter2EnvDecaySync`	1	On / Off	Off	
Filter 2 ENV Decay Sync Division	`filter2EnvDecaySyncDivision`	1	note values (16/1 to 1/64T)	1/4	
Filter 2 ENV Release Tempo Sync	`filter2EnvReleaseSync`	1	On / Off	Off	
Filter 2 ENV Release Sync Division	`filter2EnvReleaseSyncDivision`	1	note values (16/1 to 1/64T)	1/4	

MOD MATRIX / MACROS

Name	ID	Count	Range / choices	Default	Automation
Mod n Source	`modNSource`	20	Off / LFO1 / LFO2 / LFO3 / LFO4 / LFO5 … 43 choices	Off	×
Mod n Range	`modNRange`	20	-100 to 100	0	
Mod n Curve	`modNCurve`	20	BI-LINEAR + / BI-LINEAR - / UNI-LINEAR + / UNI-LINEAR -	BI-LINEAR +	
Mod n Control	`modNControl`	20	Off / LFO1 / LFO2 / LFO3 / LFO4 / LFO5 … 43 choices	Off	×
Mod n Destination	`modNDestination`	20	Off / OSC1 Pitch / OSC2 Pitch / OSC3 Pitch / OSC4 Pitch / OSC5 Pitch … 372 choices	Off	×
Mod n On	`modNOn`	20	On / Off	On	
Mod n Range Low	`modNRangeLow`	20	-100 to 100	0	
Mod n Range Low Linked	`modNRangeLink`	20	On / Off	On	
Macro n	`macroN`	6	0 to 100	0	

EQ / FINAL EQ

Name	ID	Count	Range / choices	Default	Automation
EQ Band n Freq	`eqBandNFreq`	6	20 to 20000	80	
EQ Band n Q	`eqBandNQ`	6	0.1 to 10	0.7	
EQ Band n Gain	`eqBandNGain`	6	-18 to 18	0	
EQ Band n Type	`eqBandNType`	6	Off / Low Pass / Band Pass / High Pass / Notch / Low Shelf / Peaking / High Shelf	Peaking	
EQ Band n Slope	`eqBandNSlope`	6	-12dB/oct / -24dB/oct / -48dB/oct	-12dB/oct	
EQ Band n On	`eqBandNOn`	6	On / Off	On	
Final EQ On	`finalEqOn`	1	On / Off	Off	
Final EQ Band n Freq	`finalEqBandNFreq`	6	20 to 20000	80	
Final EQ Band n Q	`finalEqBandNQ`	6	0.1 to 10	0.7	
Final EQ Band n Gain	`finalEqBandNGain`	6	-18 to 18	0	
Final EQ Band n Type	`finalEqBandNType`	6	Off / Low Pass / Band Pass / High Pass / Notch / Low Shelf / Peaking / High Shelf	Peaking	
Final EQ Band n Slope	`finalEqBandNSlope`	6	-12dB/oct / -24dB/oct / -48dB/oct	-12dB/oct	
Final EQ Band n On	`finalEqBandNOn`	6	On / Off	On	

FX

Name	ID	Count	Range / choices	Default	Automation
FX Distortion On	`fxDistortionOn`	1	On / Off	Off	
FX Distortion Type	`fxDistortionType`	1	Soft Clip / Hard Clip / Tube / Fold / Custom	Soft Clip	
FX Distortion Drive	`fxDistortionDrive`	1	1 to 50	1	
FX Distortion Output	`fxDistortionOutput`	1	-24 to 12	0	
FX Distortion Mix	`fxDistortionMix`	1	0 to 100	100	
FX Bitcrusher On	`fxBitcrusherOn`	1	On / Off	Off	
FX Bitcrusher Bits	`fxBitcrusherBits`	1	1 to 16	16	

Name	ID	Count	Range / choices	Default	Automation
FX Bitcrusher Downsample	`fxBitcrusherDownsample`	1	1 to 50	1	
FX Bitcrusher Mix	`fxBitcrusherMix`	1	0 to 100	100	
FX Chorus On	`fxChorusOn`	1	On / Off	Off	
FX Chorus Shape	`fxChorusShape`	1	Sine / Triangle / Soft Tri / Square / Saw Up / Saw Down / Random / Custom	Sine	
FX Chorus Rate	`fxChorusRate`	1	0.05 to 10	0.8	
FX Chorus Depth	`fxChorusDepth`	1	0 to 100	50	
FX Chorus Delay	`fxChorusDelay`	1	1 to 50	20	
FX Chorus Feedback	`fxChorusFeedback`	1	0 to 90	0	
FX Chorus Spread	`fxChorusSpread`	1	0 to 100	50	
FX Chorus Mix	`fxChorusMix`	1	0 to 100	50	
FX Flanger On	`fxFlangerOn`	1	On / Off	Off	
FX Flanger Shape	`fxFlangerShape`	1	Sine / Triangle / Soft Tri / Square / Saw Up / Saw Down / Random / Custom	Sine	
FX Flanger Rate	`fxFlangerRate`	1	0.02 to 10	0.3	
FX Flanger Depth	`fxFlangerDepth`	1	0 to 100	70	
FX Flanger Delay	`fxFlangerDelay`	1	0.1 to 10	2	
FX Flanger Feedback	`fxFlangerFeedback`	1	-95 to 95	50	
FX Flanger Spread	`fxFlangerSpread`	1	0 to 100	50	
FX Flanger Mix	`fxFlangerMix`	1	0 to 100	50	
FX Phaser On	`fxPhaserOn`	1	On / Off	Off	
FX Phaser Shape	`fxPhaserShape`	1	Sine / Triangle / Soft Tri / Square / Saw Up / Saw Down / Random / Custom	Sine	
FX Phaser Stages	`fxPhaserStages`	1	2 / 4 / 6 / 8 / 12	4	
FX Phaser Rate	`fxPhaserRate`	1	0.02 to 10	0.5	
FX Phaser Depth	`fxPhaserDepth`	1	0 to 100	60	
FX Phaser Center	`fxPhaserCenter`	1	100 to 5000	800	
FX Phaser Feedback	`fxPhaserFeedback`	1	-95 to 95	30	
FX Phaser Spread	`fxPhaserSpread`	1	0 to 100	50	
FX Phaser Mix	`fxPhaserMix`	1	0 to 100	50	
FX Hyper On	`fxHyperOn`	1	On / Off	Off	
FX Hyper Shape	`fxHyperShape`	1	Sine / Triangle / Soft Tri / Square / Saw Up / Saw Down / Random / Custom	Sine	
FX Hyper Rate	`fxHyperRate`	1	0.05 to 10	0.5	
FX Hyper Unison	`fxHyperUnison`	1	1 to 8	4	
FX Hyper Detune	`fxHyperDetune`	1	0 to 100	15	
FX Hyper Retrig	`fxHyperRetrig`	1	On / Off	Off	
FX Hyper Mix	`fxHyperMix`	1	0 to 100	50	
FX Dimension On	`fxDimensionOn`	1	On / Off	Off	
FX Dimension Size	`fxDimensionSize`	1	0 to 100	50	
FX Dimension Mix	`fxDimensionMix`	1	0 to 100	50	
FX Delay n On	`fxDelayNOn`	3	On / Off	Off	
FX Delay n Time	`fxDelayNTime`	3	1 to 2000	350	
FX Delay n Tempo Sync	`fxDelayNSync`	3	On / Off	Off	

Name	ID	Count	Range / choices	Default	Automation
FX Delay n Sync Division	`fxDelayNSyncDivision`	3	note values (16/1 to 1/64T)	1/8	
FX Delay n Feedback	`fxDelayNFeedback`	3	0 to 95	35	
FX Delay n Ping-Pong	`fxDelayNPingPong`	3	On / Off	Off	
FX Delay n Mix	`fxDelayNMix`	3	0 to 100	30	
FX Delay n Offset	`fxDelayNOffset`	3	-50 to 50	0	
FX Delay n Stereo Offset	`fxDelayNStereoOffset`	3	-50 to 50	0	
FX Reverb On	`fxReverb1On`	1	On / Off	Off	
FX Reverb Pre-Delay	`fxReverb1PreDelay`	1	0 to 200	20	
FX Reverb Size	`fxReverb1Size`	1	0 to 100	50	
FX Reverb Decay	`fxReverb1Decay`	1	0.1 to 20	2	
FX Reverb Damp	`fxReverb1Damp`	1	0 to 100	30	
FX Reverb Width	`fxReverb1Width`	1	0 to 100	100	
FX Reverb Mix	`fxReverb1Mix`	1	0 to 100	25	
FX Compressor On	`fxCompressorOn`	1	On / Off	Off	
FX Compressor Threshold	`fxCompressorThreshold`	1	-60 to 0	-20	
FX Compressor Ratio	`fxCompressorRatio`	1	1 to 20	4	
FX Compressor Attack	`fxCompressorAttack`	1	0.1 to 100	10	
FX Compressor Release	`fxCompressorRelease`	1	5 to 1000	100	
FX Compressor Makeup	`fxCompressorMakeup`	1	0 to 24	0	
FX Compressor Mix	`fxCompressorMix`	1	0 to 100	100	
FX Limiter On	`fxLimiterOn`	1	On / Off	Off	
FX Limiter Input	`fxLimiterInput`	1	0 to 24	0	
FX Limiter Ceiling	`fxLimiterCeiling`	1	-24 to 0	-0.3	
FX Limiter Release	`fxLimiterRelease`	1	1 to 1000	50	
FX Order n	`fxOrderSlotN`	25	EQ / Distortion / Bitcrusher / Chorus / Hyper / Flanger … 25 choices	EQ	×
FX Reverb Decay Tempo Sync	`fxReverb1DecaySync`	1	On / Off	Off	
FX Reverb Decay Sync Division	`fxReverb1DecaySyncDivision`	1	note values (16/1 to 1/64T)	1/1	
FX Chorus Rate Tempo Sync	`fxChorusRateSync`	1	On / Off	Off	
FX Chorus Rate Sync Division	`fxChorusRateSyncDivision`	1	note values (16/1 to 1/64T)	1/4	
FX Hyper Rate Tempo Sync	`fxHyperRateSync`	1	On / Off	Off	
FX Hyper Rate Sync Division	`fxHyperRateSyncDivision`	1	note values (16/1 to 1/64T)	1/4	
FX Flanger Rate Tempo Sync	`fxFlangerRateSync`	1	On / Off	Off	
FX Flanger Rate Sync Division	`fxFlangerRateSyncDivision`	1	note values (16/1 to 1/64T)	1/4	
FX Phaser Rate Tempo Sync	`fxPhaserRateSync`	1	On / Off	Off	
FX Phaser Rate Sync Division	`fxPhaserRateSyncDivision`	1	note values (16/1 to 1/64T)	1/4	
FX Delay n Filter Type	`fxDelayNFilterType`	3	Off / Lowpass / Highpass / Bandpass	Off	
FX Delay n Filter Cutoff	`fxDelayNFilterCutoff`	3	20 to 20000	2000	
FX Delay n Filter Resonance	`fxDelayNFilterResonance`	3	0 to 100	20	
FX Delay n Filter Position	`fxDelayNFilterPos`	3	Out / Loop	Loop	×
FX Delay n Mod	`fxDelayNMod`	3	0 to 100	12	
FX Delay n Diffuse	`fxDelayNDiffuse`	3	0 to 100	0	
FX Delay n Drive	`fxDelayNDrive`	3	0 to 100	15	
FX Reverb Filter Type	`fxReverb1FilterType`	1	Off / Lowpass / Highpass / Bandpass	Off	
FX Reverb Filter Cutoff	`fxReverb1FilterCutoff`	1	20 to 20000	2000	
FX Reverb Filter Resonance	`fxReverb1FilterResonance`	1	0 to 100	20	

Name	ID	Count	Range / choices	Default	Automation
FX Reverb 2 Filter Type	`fxReverb2FilterType`	1	Off / Lowpass / Highpass / Bandpass	Off	
FX Reverb 2 Filter Cutoff	`fxReverb2FilterCutoff`	1	20 to 20000	2000	
FX Reverb 2 Filter Resonance	`fxReverb2FilterResonance`	1	0 to 100	20	
FX Reverb 2 On	`fxReverb2On`	1	On / Off	Off	
FX Reverb 2 Pre-Delay	`fxReverb2PreDelay`	1	0 to 200	20	
FX Reverb 2 Size	`fxReverb2Size`	1	0 to 100	50	
FX Reverb 2 Decay	`fxReverb2Decay`	1	0.1 to 20	2	
FX Reverb 2 Decay Tempo Sync	`fxReverb2DecaySync`	1	On / Off	Off	
FX Reverb 2 Decay Sync Division	`fxReverb2DecaySyncDivision`	1	note values (16/1 to 1/64T)	1/1	
FX Reverb 2 Damp	`fxReverb2Damp`	1	0 to 100	30	
FX Reverb 2 Width	`fxReverb2Width`	1	0 to 100	100	
FX Reverb 2 Mix	`fxReverb2Mix`	1	0 to 100	25	
FX Transient On	`fxTransientOn`	1	On / Off	Off	
FX Transient Attack	`fxTransientAttack`	1	-100 to 100	0	
FX Transient Sustain	`fxTransientSustain`	1	-100 to 100	0	
FX Transient Speed	`fxTransientSpeed`	1	0 to 100	70	
FX Transient Length	`fxTransientLength`	1	5 to 500	40	
FX Transient Output	`fxTransientOutput`	1	-24 to 12	0	
FX Transient Mix	`fxTransientMix`	1	0 to 100	100	
FX Reverb Low Cut	`fxReverb1LowCut`	1	20 to 2000	20	
FX Reverb High Cut	`fxReverb1HighCut`	1	200 to 20000	20000	
FX Reverb 2 Low Cut	`fxReverb2LowCut`	1	20 to 2000	20	
FX Reverb 2 High Cut	`fxReverb2HighCut`	1	200 to 20000	20000	
FX Reverb Type	`fxReverb1Type`	1	Classic / Smooth	Smooth	×
FX Reverb Mod	`fxReverb1Mod`	1	0 to 100	35	
FX Reverb 2 Type	`fxReverb2Type`	1	Classic / Smooth	Smooth	×
FX Reverb 2 Mod	`fxReverb2Mod`	1	0 to 100	35	
FX Multiband On	`fxMultibandOn`	1	On / Off	Off	
FX Multiband Depth	`fxMultibandDepth`	1	0 to 100	100	
FX Multiband Time	`fxMultibandTime`	1	0 to 100	50	
FX Multiband Upward	`fxMultibandUpward`	1	0 to 100	100	
FX Multiband Downward	`fxMultibandDownward`	1	0 to 100	100	
FX Multiband In Gain	`fxMultibandInGain`	1	-24 to 24	0	
FX Multiband Out Gain	`fxMultibandOutGain`	1	-24 to 24	0	
FX Multiband Low Gain	`fxMultibandLowGain`	1	-24 to 24	0	
FX Multiband Mid Gain	`fxMultibandMidGain`	1	-24 to 24	0	
FX Multiband High Gain	`fxMultibandHighGain`	1	-24 to 24	0	
FX Multiband Low Crossover	`fxMultibandLowCross`	1	40 to 1000	120	
FX Multiband High Crossover	`fxMultibandHighCross`	1	1000 to 12000	2500	
FX Saturator On	`fxSaturatorOn`	1	On / Off	Off	
FX Saturator Type	`fxSaturatorType`	1	Tape / Tube / Transformer / Warm	Tape	
FX Saturator Drive	`fxSaturatorDrive`	1	0 to 36	6	
FX Saturator Tone	`fxSaturatorTone`	1	-100 to 100	0	
FX Saturator Output	`fxSaturatorOutput`	1	-24 to 12	0	
FX Saturator Mix	`fxSaturatorMix`	1	0 to 100	100	
FX Sidechain On	`fxSidechainOn`	1	On / Off	Off	

Name	ID	Count	Range / choices	Default	Automation
FX Sidechain Source	`fxSidechainSource`	1	Internal / External	Internal	
FX Sidechain Depth	`fxSidechainDepth`	1	0 to 100	80	
FX Sidechain Rate	`fxSidechainRate`	1	note values (16/1 to 1/64T)	1/4	
FX Sidechain Release	`fxSidechainRelease`	1	5 to 100	60	
FX Sidechain Curve	`fxSidechainCurve`	1	-100 to 100	30	
FX Sidechain Attack	`fxSidechainAttack`	1	0.1 to 200	1	
FX Sidechain Threshold	`fxSidechainThreshold`	1	-60 to 0	-24	
FX Sidechain Ratio	`fxSidechainRatio`	1	1 to 20	8	
FX Sidechain Ext Release	`fxSidechainExtRelease`	1	5 to 1000	120	
FX Limiter Soft Clip	`fxLimiterSoftClip`	1	0 to 100	0	
FX Limiter Auto Release	`fxLimiterAutoRelease`	1	On / Off	Off	
FX Limiter Stereo Link	`fxLimiterStereoLink`	1	0 to 100	100	
FX Conv Reverb On	`fxConvOn`	1	On / Off	Off	
FX Conv Reverb IR	`fxConvIr`	1	Room / Hall / Plate / Cathedral / Spring / User File	Hall	
FX Conv Reverb Mix	`fxConvMix`	1	0 to 100	30	
FX Conv Reverb Pre-Delay	`fxConvPreDelay`	1	0 to 200	0	
FX Conv Reverb Low Cut	`fxConvLowCut`	1	20 to 2000	20	
FX Conv Reverb High Cut	`fxConvHighCut`	1	200 to 20000	20000	
FX Conv Reverb Output	`fxConvOutput`	1	-24 to 12	0	
FX Chroma On	`fxChromaOn`	1	On / Off	Off	
FX Chroma Source	`fxChromaSource`	1	Scale / Played Notes	Scale	
FX Chroma Key	`fxChromaKey`	1	C / C# / D / D# / E / F / F# / G / G# / A / A# / B	C	
FX Chroma Scale	`fxChromaScale`	1	Major / Minor / Harmonic Minor / Melodic Minor / Dorian / Phrygian / Lydian / Mixolydian / Locrian / Major Penta / Minor Penta / Blues / Whole Tone / Chromatic	Major	
FX Chroma Color	`fxChromaColor`	1	0 to 200	100	
FX Chroma Tightness	`fxChromaTight`	1	0 to 100	50	
FX Chroma Low	`fxChromaLow`	1	12 to 120	C2	
FX Chroma High	`fxChromaHigh`	1	12 to 120	C7	
FX Chroma Fine	`fxChromaFine`	1	-50 to 50	0	
FX Chroma Output	`fxChromaOutput`	1	-24 to 12	0	
FX Pan On	`fxPanOn`	1	On / Off	Off	
FX Pan Position	`fxPanPosition`	1	-100 to 100	0	
FX Pan Depth	`fxPanDepth`	1	0 to 100	50	
FX Pan Rate	`fxPanRate`	1	0.01 to 20	1	
FX Pan Sync	`fxPanSync`	1	On / Off	On	
FX Pan Sync Division	`fxPanSyncDivision`	1	note values (16/1 to 1/64T)	1/4	
FX Pan Shape	`fxPanShape`	1	Sine / Triangle / Square / Saw / S&H / Reverse Saw / Smooth Rnd	Sine	
FX Pan Phase	`fxPanPhase`	1	0 to 360	0	
FX Gate On	`fxGateOn`	1	On / Off	Off	
FX Gate Rate	`fxGateRate`	1	note values (16/1 to 1/64T)	1/16	
FX Gate Steps	`fxGateSteps`	1	1 to 32	16	
FX Gate Length	`fxGateLength`	1	5 to 100	75	

Name	ID	Count	Range / choices	Default	Automation
FX Gate Depth	`fxGateDepth`	1	0 to 100	100	
FX Gate Attack	`fxGateAttack`	1	0.1 to 50	1	
FX Gate Release	`fxGateRelease`	1	1 to 300	15	
FX Gate Mix	`fxGateMix`	1	0 to 100	100	
FX Parallel n	`fxParallelN`	24	On / Off	Off	×
FX Distortion Asym	`fxDistortionAsym`	1	-100 to 100	0	
FX Distortion Bias	`fxDistortionBias`	1	-100 to 100	0	
FX Distortion Warp	`fxDistortionWarp`	1	-100 to 100	0	
FX Simulator On	`fxSimulatorOn`	1	On / Off	Off	
FX Simulator Mode	`fxSimulatorMode`	1	Speaker 8in / Speaker 10in / Combo 1x12 / Cabinet 2x12 / Cabinet 4x12 / Bass 1x15 … 31 choices	Cabinet 4x12	
FX Simulator Size	`fxSimulatorSize`	1	50 to 200	100	
FX Simulator Tone	`fxSimulatorTone`	1	-100 to 100	0	
FX Simulator Mix	`fxSimulatorMix`	1	0 to 100	100	
FX Simulator Output	`fxSimulatorOutput`	1	-24 to 12	0	
FX Chroma Octaves	`fxChromaOctRange`	1	All / Played Oct / Played ±1 / Played ±2	All	
FX Chroma Octave Shift	`fxChromaOctShift`	1	-2 to 2	0	
FX Chroma Octave Tilt	`fxChromaOctTilt`	1	-100 to 100	0	
FX Resonator On	`fxResonatorOn`	1	On / Off	Off	
FX Resonator Type	`fxResonatorType`	1	String / Tube / Plate / Membrane	String	
FX Resonator Pitch	`fxResonatorPitch`	1	Played Notes / Fixed	Played Notes	
FX Resonator Note	`fxResonatorNote`	1	24 to 96	C3	
FX Resonator Decay	`fxResonatorDecay`	1	0.05 to 10	1.5	
FX Resonator Damping	`fxResonatorDamping`	1	0 to 100	40	
FX Resonator Mix	`fxResonatorMix`	1	0 to 100	50	
FX Resonator Output	`fxResonatorOutput`	1	-24 to 12	0	
FX Delay n Swap L/R	`fxDelayNSwapLR`	3	On / Off	Off	
FX Limiter Attack	`fxLimiterAttack`	1	0 to 20	2	
FX Limiter Lookahead	`fxLimiterLookahead`	1	On / Off	Off	×
FX Limiter Lookahead Time	`fxLimiterLookaheadTime`	1	0.1 to 5	1.5	×
FX Oversample	`fxOversample`	1	Off / 2x / 4x	2x	×
FX Compressor Knee	`fxCompressorKnee`	1	0 to 24	0	
FX Pre Limiter On	`fxPreLimiterOn`	1	On / Off	Off	
FX Pre Limiter Input	`fxPreLimiterInput`	1	0 to 24	0	
FX Pre Limiter Ceiling	`fxPreLimiterCeiling`	1	-24 to 0	-0.3	
FX Pre Limiter Release	`fxPreLimiterRelease`	1	1 to 1000	50	
FX Pre Limiter Soft Clip	`fxPreLimiterSoftClip`	1	0 to 100	0	
FX Pre Limiter Auto Release	`fxPreLimiterAutoRelease`	1	On / Off	Off	
FX Pre Limiter Stereo Link	`fxPreLimiterStereoLink`	1	0 to 100	100	
FX Pre Limiter Attack	`fxPreLimiterAttack`	1	0 to 20	2	
FX Pre Limiter Lookahead	`fxPreLimiterLookahead`	1	On / Off	Off	×
FX Pre Limiter Lookahead Time	`fxPreLimiterLookaheadTime`	1	0.1 to 5	1.5	×

ARP / CHORD

Name	ID	Count	Range / choices	Default	Automation
Arp On	`arpOn`	1	On / Off	Off	
Arp Pattern	`arpPattern`	1	Up / Down / Up/Down / As Played / Random / Chord … 16 choices	Up	
Arp Tempo Sync	`arpSync`	1	On / Off	On	
Arp Rate	`arpRate`	1	0.5 to 20	8	
Arp Rate Sync Division	`arpRateSyncDivision`	1	note values (16/1 to 1/64T)	1/16	
Arp Octaves	`arpOctaves`	1	1 to 4	1	
Arp Gate	`arpGate`	1	1 to 100	80	
Arp Swing	`arpSwing`	1	0 to 100	0	
Arp Humanize Timing	`arpHumanizeTiming`	1	0 to 100	0	
Arp Humanize Velocity	`arpHumanizeVelocity`	1	0 to 100	0	
Arp Humanize Gate	`arpHumanizeGate`	1	0 to 100	0	
Chord On	`chordOn`	1	On / Off	Off	
Chord Legato	`chordMono`	1	On / Off	Off	×
Chord Slot	`chordSlot`	1	1 to 8	1	
Chord/Arp Mode	`chordArpMode`	1	Chord -> Arp / Independent	Chord -> Arp	
Arp MIDI Pattern Slot	`arpMidiPatternSlot`	1	1 to 4	1	
Arp Phase Mode	`arpPhaseMode`	1	Retrig / Host / Free	Retrig	
Arp Phase Offset	`arpPhaseOffset`	1	0 to 63	0	
Arp Strum Time	`arpStrumTime`	1	0 to 200	30	
Arp Play Mode	`arpPlayMode`	1	Loop / One Shot / One Shot + Hold	Loop	
Arp Steps On	`arpLanesOn`	1	On / Off	On	
Scale Key	`scaleKey`	1	C / C# / D / D# / E / F / F# / G / G# / A / A# / B	C	
Scale Type	`scaleType`	1	Chromatic / Major / Minor / Harmonic Minor / Melodic Minor / Dorian … 33 choices	Chromatic	
Chord Pad On	`chordPadOn`	1	On / Off	Off	
Chord Pad Zone	`chordPadZone`	1	21 to 97	C2	
Chord Pad Type	`chordPadType`	1	Triad / 7th / 9th	Triad	
Chord Pad Voicing	`chordPadVoicing`	1	Smooth / Fixed	Smooth	
Chord Pad Inversion	`chordPadInversion`	1	Root / 1st / 2nd / 3rd	Root	
Chord Pad Octave	`chordPadOctave`	1	-2 to 2	0	
Chord Pad Bass	`chordPadBass`	1	On / Off	Off	
Arp Mod n Destination	`arpModNDestination`	4	Off / OSC1 Pitch / OSC2 Pitch / OSC3 Pitch / OSC4 Pitch / OSC5 Pitch … 372 choices	Off	×
Arp Mod n Amount	`arpModNAmount`	4	-100 to 100	100	
Arp Mod n Glide	`arpModNGlide`	4	0 to 100	0	
Arp Mod n Unipolar	`arpModNUnipolar`	4	On / Off	Off	
Arp Accent	`arpAccent`	1	0 to 100	50 %	
Scale Lock	`scaleLock`	1	On / Off	On	×
Scale Snap Keys	`scaleSnapKeys`	1	On / Off	Off	×

GLOBAL and others

Name	ID	Count	Range / choices	Default	Automation
Filter1 ENV to Cutoff Amount	`filter1EnvToCutoffAmount`	1	-300 to 300	0	
Master Volume	`masterVolume`	1	-60 to 6	0	
Pitch Bend Range Up	`pitchBendRangeUp`	1	0 to 24	2	
Pitch Bend Range Down	`pitchBendRangeDown`	1	0 to 24	2	
Portamento Mode	`portamentoMode`	1	Off / Norm, Fix / Norm, Var / Fing, Fix / Fing, Var	Off	
Portamento Time	`portamentoTime`	1	0 to 10	0.2	
Portamento Curve	`portamentoCurve`	1	-1 to 1	0	
Drift	`driftAmount`	1	0 to 100	0	
Burst	`burstAmount`	1	0 to 100	0	
Wavetable Rolloff	`wavetableRolloff`	1	0 to 100	15	
Oversample	`oversamplingMode`	1	Off / 2x / 4x	2x	
Polyphony	`polyphonyVoices`	1	1 to 64	12	
Mono	`monoMode`	1	On / Off	Off	
Mono Retrigger	`monoRetrigger`	1	On / Off	On	
Master Transpose	`masterTranspose`	1	-24 to 24	0	
Master Tune	`masterTune`	1	-100 to 100	0	
Cut Group	`cutGroup`	1	Off / 1 / 2 / 3 / 4 / 5 … 17 choices	Off	
Cut By	`cutBy`	1	Off / 1 / 2 / 3 / 4 / 5 … 17 choices	Off	
Cut Fade	`cutFade`	1	1 to 500	10	
Render Quality	`renderQuality`	1	Same as Live / 2x / 4x	4x	
Ext In Attack	`extInAttack`	1	0.1 to 500	10	
Ext In Release	`extInRelease`	1	1 to 2000	150	
Ext In Gain	`extInGain`	1	0 to 48	0	
Voice Same Note	`voiceSameNote`	1	Cut / Overlap	Cut	
ENV Fast Min Attack	`envFastAttack`	1	On / Off	On	×
ENV Retrigger From Zero	`envRetrigZero`	1	On / Off	On	×