

ECHELON AUDIO

FUSION

Hybrid Wave + Sample + Noise Synthesizer — User Manual



The FUSION interface (Play view). Hover any knob, button or toggle in the plugin for a quick tip; this manual covers every control in full.

FUSION is a polyphonic synthesizer that fuses three layers — a wavetable core, a pitch-tracked sample (load your own), and a noise layer — through a shared filter, dual envelopes, three LFOs, up to 7-voice unison and built-in chorus, delay and reverb. Lock a Key/Scale/Chord for one-finger stacks, follow SCOUT for automatic session key, and route anything to anything with the 8-slot modulation matrix or by dragging a source chip straight onto a knob.

Global & Header Controls

Control	What it does
Play / Edit / Mod tabs	Play is the performance view (hero visual, keyboard, ten macro knobs); Edit is the deep-edit view (layers, envelope, voice, motion); Mod holds the filter envelope, LFOs and the modulation matrix.
A / B	Snapshot compare — stores the current sound in this slot and flips to the other; tweak, then click again to compare.
Preset < > / Save	Browse the 156-preset bank plus your saved sounds; SAVE stores the current sound as a user preset.
SCOUT	Follow SCOUT's broadcast key & scale over EchelonLink so FUSION stays in the session's key automatically.
Transpose	When on, changing Key shifts the actual pitch (with Chord/Scale lock) instead of only re-mapping notes.
■ CAP / ● / ■	MIDI capture — FUSION is always listening. Drag the CAP chip into your DAW to drop the recent take as a MIDI clip; ● freezes/resumes the buffer, ■ clears it.
Bypass	Mute FUSION's output processing.
■ Graphics	Toggle the background visuals — turn off to save CPU.
? (Help)	About FUSION and a guide to the controls.
On-screen keyboard	Click or drag to audition — notes go through the same scale/chord engine as your MIDI.

Controls

Setup Bar

The musical frame every note passes through.

Control	Range	What it does
Osc	Hybrid / Wavetable / Sample / Noise	Quick layer recipe — Hybrid blends wavetable + sample + noise; Wavetable, Sample or Noise favor a single layer.
Mode	Poly / Mono	Poly for chords and pads; Mono plays one voice for basses and leads.
Key	C ... B (chromatic)	Root note for the scale lock and chord generation.

Control	Range	What it does
Scale	Major, Minor, Dorian, Mixolydian, Phrygian, Lydian, Harm Minor, Penta Maj, Penta Min, Blues	Locks incoming notes to this scale — out-of-key notes snap to the nearest scale tone.
Chord	None / Triad / 7th / Sus2 / Sus4 / Power / Octave	One-finger chords — every key you play is expanded to this chord shape.
Voices	1 ... 32	Maximum simultaneous notes (polyphony).
Wave Shape	Saw / Square / Sine / Triangle	Base wavetable shape for the wave layer.

Play Tab — Macro Knobs

The ten performance knobs — the whole sound at arm's reach.

Control	Range	What it does
Strum	0 ... 120 ms	Staggers chord tones over time like a strummed guitar — needs a Chord type selected to hear it.
Attack	0.5 ... 3000 ms	How fast a note fades in — instant for plucks, long for pads.
Release	5 ... 8000 ms	How long a note rings out after you let go of the key.
Cutoff	80 Hz ... 18 kHz	Filter cutoff — the master brightness control; close it for dark pads, open it for bite.
Res	0 ... 100%	Emphasis right at the cutoff — adds squelch and whistle as you push it.
Drive	0 ... 100%	Anti-aliased saturation on the synth output — thickens and warms all three layers.
Delay	0 ... 100%	Send to the built-in stereo delay — adds rhythmic echoes behind the notes.
Reverb	0 ... 100%	Send to the built-in reverb — sets the sound back into a space.
Chorus	0 ... 100%	Stereo chorus amount — widens and shimmers the combined layers.
Output	-18 ... +12 dB	Final output level of the instrument.

Edit Tab — Layers

The three sound sources FUSION fuses.

Control	Range	What it does
Wave	0 ... 100%	Level of the wavetable layer — the harmonic core of the sound.
Sample	0 ... 100%	Level of the pluck-sample layer — adds an acoustic attack transient.
Noise	0 ... 100%	Level of the noise layer — air, breath and texture on top.
Sample slot	drop / browse	Drop a WAV/AIFF (or click to browse) and the SAMPLE knob plays YOUR one-shot — an 808, a vocal chop, a foley hit — pitch-tracked from its detected root note. Double-click to clear.

Edit Tab — Envelope, Voice & Motion

Amp envelope body (Attack/Release live on the macro row), unison thickness and the quick modulation LFO.

Control	Range	What it does
Decay	5 ... 5000 ms	How fast a note falls from its peak to the sustain level.
Sustain	0 ... 100%	The level held while the key stays down.
Unison	1 ... 7 voices	Stacks up to 7 detuned copies per note — instant thickness.
Detune	0 ... 40 ct	How far apart the unison copies drift — subtle chorus to wide supersaw.
Spread	0 ... 100%	Pans the unison copies across the stereo field.
Analog	0 ... 10 ct	Per-voice vintage drift — small random pitch wobble like aging hardware.
Vel Cut	0 ... 100%	How much key velocity opens the filter — play harder, sound brighter.
Filter Type	Clean / Ladder	Filter character — Clean is transparent; Ladder adds classic analog-style bite.
LFO Rate	0.05 ... 20 Hz	Speed of the Motion module's modulation LFO.
LFO Depth	0 ... 100%	How far the LFO moves its target.
LFO Dest	Cutoff / Pitch / Amp	What the Motion LFO modulates.

Mod Tab — Filter Envelope (Env 2)

A dedicated envelope for the filter, with velocity and bipolar amount.

Control	Range	What it does
F Attack	0.5 ... 3000 ms	How fast the filter envelope opens the cutoff. Short = a pluck or a bite; long = a brass-style swell.
F Decay	5 ... 5000 ms	How fast the cutoff falls back toward the sustain level after the attack — this is what makes a pluck a pluck.
F Sustain	0 ... 100%	Where the cutoff settles while you hold the note. 0 = the filter closes completely.
F Release	5 ... 8000 ms	How long the cutoff takes to return after you let go.
F Amount	-100 ... +100%	How far the envelope moves the cutoff, up to ± 4 octaves. Negative inverts it, so the filter closes on the attack — that is the acid/reverse sweep.
F Velocity	0 ... 100%	How much harder playing opens the filter further — makes a patch respond to your touch.

Mod Tab — LFO 1 & LFO 2

Two per-voice LFOs for the modulation matrix (independent of the Motion module).

Control	Range	What it does
Shape	Sine, Triangle, Saw Up/Down, Square, S&H, Smooth S&H	The LFO waveform.
Rate	0.02 ... 40 Hz	LFO speed when Sync is off.
Sync	On / Off	Lock the LFO to the host tempo instead of a free rate.
Division	4 Bar ... 1/32 (incl. triplets)	Tempo-synced LFO cycle length when Sync is on.
Retrig	On / Off	Restart the LFO from phase zero on every new note.

Mod Tab — Amount & Bend / FX Depth

Performance range and the FX engines' character controls.

Control	Range	What it does
Bend Range	0 ... 48 st	How many semitones a full pitch-bend deflection moves. 2 is standard; MPE controllers usually want 48.
Delay Time	1 ... 1490 ms	Echo spacing for the delay send.
Delay FB	0 ... 100%	How much of each echo feeds back in — how many repeats you get before it dies away.

Control	Range	What it does
Reverb Size	0 ... 100%	Size of the reverb space, from a tight room to a long hall.

Mod Tab — Modulation Matrix

Eight routes. Pick a Source and Destination per slot and set a bipolar Amount — or just drag a source chip from the rail onto any knob; the knob then shows its modulation range as a blue arc.

Control	Range	What it does
Source	Off, Env 1, Env 2, LFO 1, LFO 2, Velocity, Key Track, Random, Mod Wheel, Aftertouch, Bend	What drives this route.
Destination	Cutoff, Resonance, Pitch, Amp, Wave, Sample, Noise, Detune, Spread, Drive, Chorus, Delay, Reverb, Pan, Output	What the source moves.
Amount	-100 ... +100	Depth and polarity of the route. Double-click zeroes it; × clears the route.

Tips

- One-finger writing: set Key + Scale, pick a Chord shape, add Strum — every key you press becomes a played chord in key.
- Load your own one-shot into the sample slot (an 808, a vocal chop, a foley hit) — it is pitch-tracked from its detected root and becomes the SAMPLE layer.
- For acid and reverse sweeps, push F Amount negative so the filter closes on the attack instead of opening.
- Drag a source chip (LFO, envelope, Mod Wheel...) straight onto a knob to route it — the blue arc shows the modulation range.
- Played something great before pressing record? Drag the CAP chip into your DAW — the take is already captured as MIDI.
- Knobs: drag (Shift = fine), wheel, double-click to reset, right-click to type a value.