

Kiln Synthesizer

User guide · version 0.2.0



What it is

A software synthesizer with three oscillator slots that each run wavetable, analog morph or sample, dedicated sub and noise, two ZDF filter slots, the Glass modal resonator, a 48-slot modulation matrix and nine effects. Drop a sound into Anneal and a search that runs entirely on your machine breeds four ordinary, editable patches toward it. 554 factory presets. VST3, AU and AAX for Windows and macOS.

Each of the three oscillator slots runs one engine: WT picks one of 80 in-house wavetables and scans its frames, ANA is a single continuous shape lane from sine through triangle and saw to pulse with pulse width, and SMP repitches a sample. Unison builds to 16 voices per slot with detune and spread, FM phase-modulates a slot from a higher-numbered sibling and RING multiplies them. Dedicated sub and noise sources sit beside the three slots. Wavetable playback measures alias-clean at minus 151 dBc.

Two ZDF filter slots run in series, parallel or split, each SVF, Ladder, Comb, Formant or Glass. The ladder self-oscillates in tune within plus or minus 0.1 cents across five octaves. Glass is the modal resonator the instrument is named for, a first-class per-voice filter: MATERIAL morphs glass to metal to wood, POSITION is the strike point, DAMP is how fast the ring dies and SHIMMER adds dispersion, with SIZE alongside them. It is keytracked by default, and 82 factory patches are built on it.

The MATRIX page holds 48 routes. Sources include four DAHDSR envelopes, four LFOs, random, chaos, four named macros, velocity, wheels, aftertouch and per-note MPE pressure, slide and lift; everything continuous is a target, including modulation depths themselves. The arpeggiator runs up, down, up-down, as-played, random or chord over one to four octaves, host-synced, with swing, latch and a probability that rolls seeded dice, so a bounce repeats exactly. Nine effects sit in a reorderable chain: EQ, compressor and OTT, oversampled saturation, chorus, phaser, flanger, delay with wow and diffusion, reverb with shimmer, utility and a defeatable master soft clip.

Anneal takes up to four seconds of dropped audio and breeds four ordinary, editable patches toward it. It runs entirely on your machine, and it is a starting point for editing, not a claim of exact resynthesis; the self-recovery evaluation returned 6 of 6 within the family bar. The library lists 554 factory patches with search, tags and scope, every one tagged, macro-named, mod-wheel-active and loudness-leveled, with 28 MPE patches and a Learn tag among them. FIELD redraws your saved patches as a timbre map, dark to bright across and pad to pluck down.

MPE runs end to end with bend accuracy measured at minus 0.2 cents, and MTS-ESP and .scl microtuning retune to within plus or minus 0.02 cents. Per-voice analog drift is seeded, so offline bounces are bit-reproducible. ECO, STD and ULTRA set the quality trade per patch and an AUTO governor sheds unison, then quality, then voices under measured load; offline renders always use Ultra. 64 voices maximum, 16 by default. The window is freely resizable from 1120x752 to 1920x1290 at a fixed aspect, and the keyboard across the foot plays from the computer keyboard, with Z and X moving the typing octave.

Built and used at a working recording studio. Support: support@vitricaudio.com

Key features

- Three oscillator slots, each wavetable, analog morph or sample, with 16-voice unison
- Glass, a modal resonator as a per-voice filter: Material, Size, Position, Damp, Shimmer
- Two ZDF filter slots in series, parallel or split; the ladder tracks within 0.1 cents
- 48-slot modulation matrix, four DAHDSR envelopes, four LFOs, random and chaos sources
- Anneal breeds four ordinary, editable patches toward a dropped sound, all on your machine
- 554 factory presets, 80 in-house wavetables, nine effects, and MPE end to end

Working the instrument

The Stage across the top renders your actual signal as light: oscillator lamps, filament threads, the glass crucible, the furnace mouth. When it glows, that is your sound. PLAY shows the Stage plus the macro tier, and every factory patch names its four macros. DESIGN shows everything: three oscillator panels, two filters, the master strip and the bottom band of envelopes, LFOs, matrix, arp and FX. OSC, FILTER, MOD, ARP, FX and MASTER share the rail under the Stage, keys 1 to 6 switch sections, and clicking an instrument on the Stage opens the same page.

Each oscillator slot runs one engine. WT picks one of 80 in-house tables and scans frames with TBL, ANA is one continuous shape lane from sine to triangle to saw to pulse with PW, and SMP repitches a sample. UNI, DET and SPRD build unison up to 16 voices per slot; FM phase-modulates a slot from a higher-numbered sibling and RING multiplies. Two filter slots run in series, parallel or split, each SVF, Ladder, Comb, Formant or Glass, and Glass is keytracked by default.

Click a plain value, or focus it and press Return, to type. Return commits a valid value and Escape cancels; a rejected value stays in the editor with an error mark and a range explanation. Units can be typed, such as 2.75 kHz, -3.25 ct, 53.7 ms for an envelope, or 0.05 s for a compressor attack, and a bare number uses the displayed unit. Knob arrows and wheels keep the coarse and fine grids, Shift is fine and double-click resets. On the FX EQ, drag the three nodes with Shift for fine movement: LOW and HIGH change gain while MID changes frequency and gain, and exact values sit along the graph's lower edge.

The keybed runs the full width of the plate and lights each note as it sounds. The readout above it shows the current typing range, and Z and X move the typing octave. Held musical-typing notes survive ordinary control adjustments; opening a value editor or overlay, recalling a preset, or leaving the editor releases them. The bracket keys step presets. ECO, STD and ULTRA set the CPU and quality trade per patch, an AUTO governor sheds unison, then quality, then voices under measured load, and offline renders always use Ultra.

Typical uses

- **Start from a reference sound.** Drop it into Anneal and pick from four bred, editable patches. The search is local, so it works in the studio, on the bus and on a plane.
- **Basses and leads.** Three oscillator slots with 16-voice unison each, dedicated sub and noise, and FM and ring cross-modulation for weight and bite that stay tuned.
- **Textures and keys.** The Glass modal resonator turns any source physical, per voice, with 82 factory Glass patches to start from.
- **Performance.** MPE end to end with bend accuracy measured at minus 0.2 cents, four named macros on every factory patch, and 28 dedicated MPE patches in the library.

Full specification

- Three oscillator slots, each running wavetable (WT), analog morph (ANA) or sample (SMP)
- Dedicated sub and noise sources beside the three slots
- 16-voice unison per slot, with detune and spread
- FM phase-modulation from a higher-numbered slot, and RING multiplication between slots
- 80 in-house wavetables, up to 256 frames of 2048 samples; zero third-party content
- Alias-clean wavetable playback measured at minus 151 dBc
- Two ZDF filter slots, routed in series, parallel or split
- Filter models per slot: SVF, Ladder, Comb, Formant and Glass
- The ladder self-oscillates in tune within plus or minus 0.1 cents across five octaves
- Glass modal resonator as a first-class per-voice filter, keytracked by default
- Glass controls: Material, Size, Position, Damp and Shimmer
- 82 factory Glass patches carry the signature timbre
- 48-slot modulation matrix; depths are automatable and are themselves modulation targets
- Four DAHDSR envelopes, four LFOs, random and chaos sources
- Four named macros on every factory patch
- Modulation sources include velocity, wheels, aftertouch and per-note MPE pressure, slide and lift

- Arpeggiator: up, down, up-down, as-played, random or chord over one to four octaves
- Arpeggiator is host-synced, with swing, latch and seeded probability, so bounces repeat
- Nine effects in a reorderable chain, plus a defeatable master soft clip
- Effects: EQ, compressor and OTT, oversampled saturation, chorus, phaser, flanger
- Effects: delay with sync, wow and diffusion; reverb with shimmer; utility
- Anneal: local audio analysis and patch search returning four ordinary, editable patches
- Anneal accepts mono or stereo audio at 8 to 384 kHz and analyzes its first four seconds
- Anneal self-recovery evaluation: 6 of 6 within the family bar; not exact resynthesis
- Anneal CANCEL stops a search, keeps its target and discards partial results
- Field: saved user patches drawn as a 2D timbre map, dark to bright by pad to pluck
- Library: 554 factory patches with search, tag chips and FACTORY or USER scope
- SAVE NEW creates a named user patch and refuses to replace an existing name
- 554 factory presets: tagged, macro-named, mod-wheel-active and loudness-leveled
- 28 MPE patches and a Learn tag in the library
- MPE end to end, with bend accuracy measured at minus 0.2 cents
- MTS-ESP and .scl microtuning retune to within plus or minus 0.02 cents
- Per-voice analog drift is seeded, so offline bounces are bit-reproducible
- 64 voices maximum, 16 by default
- ECO, STD and ULTRA quality per patch; an AUTO governor sheds unison, then quality, then voices
- Offline renders always use Ultra quality
- The heaviest measured battery uses 5.67 percent of one core at 48 kHz / 128
- Native-unit text entry on the ledger, Design controls and the graphed FX EQ
- Keybed across the foot of the plate, played from the computer keyboard; Z and X move the octave
- Freely resizable window, 1120x752 up to 1920x1290, at a fixed aspect
- VST3, AU and AAX, Windows and macOS

Installation on Muse Hub

Muse Hub installs and updates this edition for you, and purchase, refunds and uninstall are handled there too. Once installed the plugin opens and runs directly from the Hub, with no further steps inside the plugin. On Windows the plugin installs as VST3 and AAX. On macOS the installer places VST3, AU and AAX builds in the standard system plugin folders. If the plugin does not appear in a host, rescan plugins and confirm the host is 64-bit.

Requirements: Windows 10 or later (64-bit) or macOS 11 or later, Intel or Apple Silicon. Settings and presets are the same as the edition sold at vitricaudio.com, so projects open in either edition.

Frequently asked questions

What is Anneal?

A local audio-analysis and patch-search workflow. Drop a sound of up to four seconds and an evolutionary search breeds four ordinary, editable patches toward it. It is a starting point for editing, not exact

resynthesis; the self-recovery evaluation returned 6 of 6 within the family bar.

Does Anneal need an internet connection?

No. Analysis and search run entirely on your machine. It works on a plane.

Which oscillator types are present?

Wavetable, analog morph and sample in each of the three slots, plus dedicated sub and noise sources. Unison builds to 16 voices per slot, and FM and ring cross-modulation run between slots.

What is Glass?

A modal resonator that sits as a first-class per-voice filter model, with Material, Size, Position, Damp and Shimmer, keytracked by default. 82 factory patches are built on it.

Does the ladder filter track?

It self-oscillates in tune within plus or minus 0.1 cents across five octaves. Per-voice analog drift is seeded, so offline bounces are bit-reproducible.

Does it support MPE and microtuning?

Yes. MPE runs end to end with bend accuracy measured at minus 0.2 cents, and MTS-ESP and .scl microtuning retune to within plus or minus 0.02 cents. The library holds 28 MPE patches.

How many voices, and how heavy is it?

64 voices maximum and 16 by default. The heaviest measured battery, two seven-voice unison slots through reverb and delay on 16 voices, used 5.67 percent of one core at 48 kHz and a 128-sample block on the reference Mac. An AUTO governor sheds unison, then quality, then voices under measured load, and offline renders always use Ultra.

Which formats and DAWs does Kiln Synthesizer support?

VST3, AU and AAX on Windows 10+ and macOS, Intel and Apple Silicon. That covers Pro Tools, Logic Pro, Ableton Live, Cubase, Studio One, FL Studio, REAPER and every other major host.