

ECHORIUM

TAPE DELAY · SPACE · MOD · COMP · EQ

USER MANUAL

VERSION 1.0

BEATSKILLZ

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WELCOME TO ECHORIUM

Echorium is a submerged echo machine: five effect engines — a physics-modeled tape delay, a convolution reverb, a three-mode modulation section, a compressor with warm drive, and a 4-band EQ — wired into one instrument and playable from a single animated X/Y pad.

Every echo you hear passes through a genuinely modeled tape loop: saturation that compounds with each repeat, head-gap losses that keep echoes warm rather than thin, wow and flutter that drift independently per channel, real sampled tape hiss, and dropouts that dull as they dip. Around that core, 28 real captured spaces, three modulation engines, analog-style glue and tone shaping complete the picture.

HIGHLIGHTS

- **5 FX engines** — Tape Delay, Space, Mod, Comp and EQ, each with its own bypass.
- **Living X/Y pad** — X bends tape speed (0.5× to 2×), Y pushes feedback; 12 tempo-locked animation patterns play it for you.
- **28 convolution IRs** — 16 springs, 6 plates and 6 halls, captured at 96 kHz.
- **Pitch-shifting delay layer** — shimmer cascades and interval ghosts at ± 5 , ± 7 or ± 12 semitones.
- **True reverse delay** — every echo stays reversed as it decays, aligned to the host grid.
- **250+ factory presets** in 18 banks, plus a musical dice randomizer.
- **76 automatable parameters**, undo/redo, A/B compare, resizable interface (50–200%).

TWO DEPTHS, ONE WINDOW

Stay on the Macro page for instant, playable results — or flip to EDIT for detailed control of all 76 parameters. The two views stay perfectly in sync.

INSTALLATION & ACTIVATION

SYSTEM REQUIREMENTS

WINDOWS

Windows 10 or higher (64-bit)
VST3 · AAX
Intel / AMD multi-core processor
4 GB RAM minimum (8 GB recommended)

MAC OS

macOS 10.13 or higher
VST3 · AU · AAX
Universal — Intel & Apple Silicon native
4 GB RAM minimum (8 GB recommended)

INSTALLING

Run the installer for your platform and follow the prompts. The installer places the plugin formats in your system's standard locations. Restart your DAW (and rescan plugins if your host requires it), then load Echorium on any audio or bus track — it appears under **BeatSkillz > Echorium** in the Delay / Reverb effect categories.

ACTIVATING YOUR LICENSE

The first time you open Echorium you will be asked to activate. Enter the license key from your BeatSkillz account and confirm. You can also open the activation panel at any time with the **key icon** in the bottom-right of the interface, next to BYPASS.

NOTE

License authorization requires an internet connection. Once activated, Echorium works offline.

FILE LOCATIONS

Presets and impulse responses are installed as plain files you can browse, back up and extend:

PLATFORM	LOCATION
macOS	~/Library/Application Support/Beatskillz/Presets/Echorium/
Windows	%APPDATA%\Beatskillz\Presets\Echorium\

You can add your own WAV impulse responses and preset banks here — see Sections 5.2 and 7.

INTERFACE OVERVIEW

Echorium has two working depths in one window: the **Macro page** (X/Y) for instant, playable results, and **Edit mode** for detailed control of all five engines. Switch between them with the **X/Y / EDIT** toggle at the top-left of the lower panel.

THE HEADER BAR

CONTROL	FUNCTION
Undo / Redo	Step backward or forward through your edits.
Heart	Mark the current preset as a favourite.
Preset Name	Opens the preset browser (see Section 7).
< > arrows	Step to the previous / next preset.
+ / -	Save a new preset / delete the current preset.
Dice	Musical randomizer — rolls a new, usable sound every time.
A / B	Two independent states for instant comparison of settings.

ALWAYS VISIBLE

CONTROL	FUNCTION
IN / OUT	Input and output gain (± 12 dB) with stereo LED metering.
BPM readout	The current host tempo, shown on every page.
Visualizer	A neon display that reacts to delay time, feedback, tape speed, modulation and reverb.
Info (i) / Key	Opens the About panel / license activation.
BYPASS	Global bypass for the whole plugin.

TOOLTIPS & RESIZING

Hover over any control and a one-line description appears in the tooltip bar — the fastest way to learn Echorium. To resize, drag the bottom-right corner anywhere from 50% to 200%; Echorium remembers your chosen size between sessions.

THE MACRO PAGE

The Macro page distills the whole engine into five knobs and a pad. Each macro blends an entire module; underneath, Edit mode holds the detail. The two views are bidirectionally linked — switching between them never makes the sound jump.

4.1 THE FIVE MACRO KNOBS

MACRO	COLOUR	WHAT IT DOES
AGE	Orange	Blends in the Comp engine's drive, compression and degradation — years of wear on one knob.
SPACE	Purple	Pours in convolution reverb and spatial depth, up to 200% wet.
TIME	Cyan	Controls the tape delay blend — the heart of the machine.
MOVEMENT	Green	Adds chorus / flanger / phaser modulation and stereo width.
MIX	White	Global dry/wet for everything at once — instant parallel processing.

Each macro has a small bypass switch beneath its label, letting you mute a whole engine without touching its settings.



Macro knobs above, the X/Y pad and visualizer below

4.2 THE X/Y PAD

The pad is a playing surface. Drag the cursor anywhere:

- **X axis — Tape Speed** (0.5× to 2×). True varispeed: moving the cursor bends the pitch of everything in the loop, exactly like dragging a tape reel.
- **Y axis — Feedback** (0 to 99%). From a single slap at the bottom to the edge of beautiful self-oscillation at the top.

Both axes are automatable in your DAW, so cursor rides can be recorded and replayed. Push the feedback high and let the loop sing — self-oscillation is allowed and musical; a governor only intervenes if the loop truly runs away.

SYNC & SPEED

The SYNC button and division menu above the pad set the delay time grid (see Section 5.1), and the SPEED arrow scales the animation rate. The pad itself stays playable in either mode.

4.3 ANI MODE – ANIMATED PATTERNS

Flip the **FREE / ANI** switch and the cursor plays itself. Twelve motion patterns orbit around wherever you last placed the cursor, phase-locked to your host tempo. Engaging ANI crossfades in over a few milliseconds, so it never clicks the pitch.

CONTROL	RANGE	FUNCTION
Pattern	12 shapes	The shape of the animated cursor motion.
Rate	1/4 – 8 bars	How long one loop of the pattern takes, locked to host tempo.
Depth	0 – 100%	How far the animation travels from the position you set.

THE TWELVE PATTERNS

Circle The classic — speed and feedback swell 90° apart.	Fig-8 Feedback at double rate, so it wanders rather than repeats.	Swing Pure tape-speed sway; feedback stays where you put it.
Dive Feedback builds across the cycle, then releases and resets.	Steps Eight held positions — rhythmic, not smooth.	Drift The same steps slewed soft, wobbling like worn tape.
L / Rev L An eased L-shape traced out and retraced.	Square All four edges of the pad, closing without retracing.	Spiral Three turns winding out from centre and back again.
Bounce Feedback drops and rebounds four times while speed drifts.	Chaos A modulated Lissajous — scrambled to the ear, locked to the bar.	Tip Patterns free-run at the current tempo when the transport is stopped.



ANI mode — the pattern menu open over the X/Y pad

EDIT MODE

Click **EDIT** and the lower panel becomes a five-tab workstation: **TAPE DLY** · **SPACE** · **MOD** · **COMP** · **EQ**. Each tab is colour-coded to match its macro knob and carries its own bypass switch.

5.1 TAPE DLY – THE TAPE DELAY ENGINE



The Tape Dly page

Echorium's delay models the physics of a running tape loop: saturation compounds with every pass so repeats bloom and squash as they regenerate, head-gap losses keep echoes warm rather than thin, and slower tape speeds are audibly darker — just like the classic machines.

CONTROL	RANGE	FUNCTION
Time	10 – 2000 ms	Delay time when Sync is off.
Sync / Division	1/16 – 1/1 (+T)	Locks delay time to host tempo, including triplets.
Feedback	0 – 99%	Regeneration — up to musical self-oscillation.
Speed	0.5× – 2×	Tape speed with true varispeed pitch behaviour.
Wow	0 – 10%	Slow tape pitch drift (0.3–1 Hz) for analog warmth.
Flutter	0 – 10%	Fast tape modulation (4–15 Hz).
Filter	200 Hz – 20 kHz	Low-pass — the wear and dullness of tape.
L-R Drift	0 – 100%	Stereo variation between left and right delay times.
Hiss	0 – 100%	Real sampled tape hiss, fed through the feedback loop.
Dropout / Mix	0 – 100%	Random tape dropouts that dull as they dip / delay blend.

REVERSE & THE PITCH-SHIFT LAYER

CONTROL	RANGE	FUNCTION
REV	On / Off	True reverse delay — every echo stays reversed as it decays, aligned to the host grid.
Shift	-12, -7, -5, +5, +7, +12 st	Interval of the pitch-shifted delay voice.
Regen	0 – 100%	Shifted voice into the loop — a cascade climbing per repeat.
Direct	0 – 100%	Shifted voice straight to the output — a stable ghost an interval away.

SHIMMER

Set Shift to +12, raise Regen, and add a long Space decay: the classic shimmer wash, generated inside the tape loop itself.

5.2 SPACE – CONVOLUTION REVERB



The Space page with live IR waveform display

Space is a true convolution reverb: 28 real impulse responses captured at 96 kHz, organised into **Springs (16)**, **Plates (6)** and **Halls (6)**. IRs switch glitch-free while audio runs, and the waveform display shows exactly where your decay setting lands. The IR library is an open folder of WAVs (Section 2) — drop in your own spaces at any time.

CONTROL	RANGE	FUNCTION
IR Select	28 IRs	Choose the space; step with the arrows or pick from the menu.
Decay	0.1 – 8 s	Reverb tail length, shown live on the waveform.
Pre-Delay	0 – 500 ms	Time before the reverb onset.
Wet / Dry	0–200% / 0–100%	Reverb level (beyond 100% for full submersion) and dry level.
Low / High Cut	20 Hz–2 kHz / 1–20 kHz	Shape the tail's spectrum.

5.3 MOD – CHORUS / FLANGER / PHASER



The Mod page

Three modulation engines share one page. Each remembers its own settings, so you can switch modes freely — only MIX is shared. The **PRE / POST** switch changes the routing: **PRE** (default) modulates *into* the tape loop, so every repeat is captured with the modulation baked in and successive echoes decorrelate and bloom apart. **POST** modulates the whole wet wash for the classic ensemble/chorale shimmer.

MODE	CHARACTER	CONTROLS
Chorus	A 6-voice ensemble on non-harmonic ratios — the voices never re-align. Lush, wide, endless.	Rate (0.01–20 Hz), Depth, Width, Mix
Flanger	Classic sweep with resonance feedback; free or tempo-synced from 1/8 to 8 bars.	Rate, Depth, Resonance, Sync, Mix
Phaser	2–12 selectable all-pass stages with smooth, tempo-synced sweeps — from subtle swirl to thick resonant motion.	Stages, Phase, Depth, Mix

5.4 COMP – COMPRESSOR & DRIVE

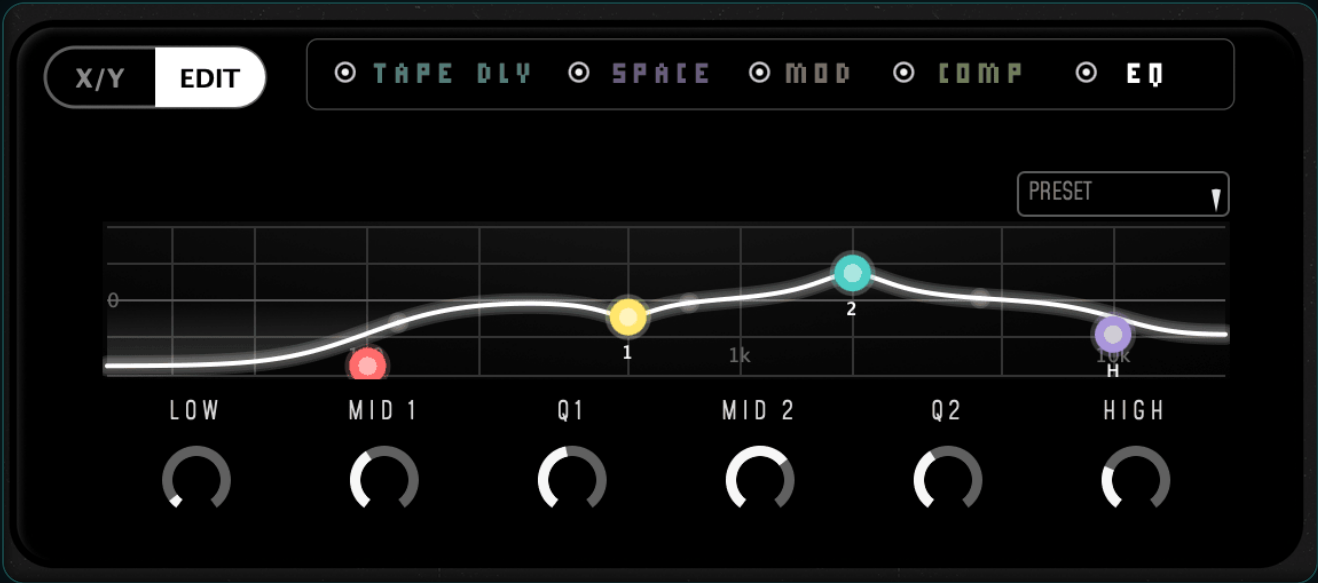


The Comp page with gain-reduction meter

Warmth and dynamics in one move: a soft-knee compressor that stays musical at sane settings and turns into pumping character at the extremes, paired with an even-harmonic drive that thickens without dirtying. Auto makeup holds your level steady while the character changes, and stereo-linked detection keeps the image rock solid.

CONTROL	RANGE	FUNCTION
Threshold	–48 – 0 dB	Where the soft-knee compression begins.
Ratio	1:1 – 20:1	From gentle glue to pumping character.
Attack	0.1 – 100 ms	Fast to clamp, slow to let transients through.
Release	10 – 1000 ms	Recovery time.
Drive	0 – 100%	Warm, even-harmonic saturation.
Mix	0 – 100%	Parallel blend of the processed signal.

5.5 EQ – 4-BAND EQUALIZER



The EQ page — drag the handles directly on the curve

A 4-band EQ with a fully interactive display: grab any handle and drag to set frequency and gain. It sits at the end of the chain, placing your echoes exactly where the mix needs them.

BAND	RANGE	FUNCTION
Low Shelf	20 – 500 Hz, ± 12 dB	Weight or clean-up at the bottom.
Peak 1	100 Hz – 2 kHz, Q 0.1–10	First parametric band.
Peak 2	500 Hz – 10 kHz, Q 0.1–10	Second parametric band.
High Shelf	2 – 20 kHz, ± 12 dB	Air or darkness in one drag.

EQ STARTING POINTS

The dropdown offers 15 one-click shapes: **FLAT · OLD TAPE · BOXY · RADIO · TELEPHONE · LO-FI · WARM · DARK · THIN · AIR · SUB LIFT · MID BOOST · MID SCOOP · PRESENCE · VOCAL**. Each is a starting point — the bands stay fully editable afterwards.

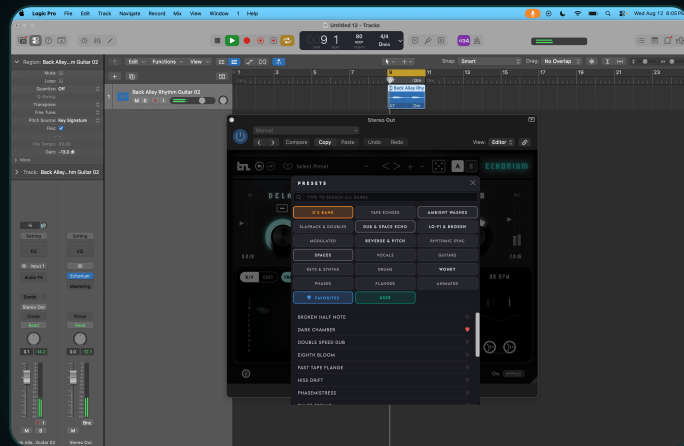
GLOBAL CONTROLS & SIGNAL FLOW

CONTROL	RANGE	FUNCTION
Input Gain	±12 dB	Level into the engine, with stereo LED metering.
Output Gain	±12 dB	Level out of the engine.
High Pass	20 Hz – 1 kHz	Global input high-pass filter.
Low Pass	1 – 20 kHz	Global input low-pass filter.
Global Mix	0 – 100%	Master dry/wet over the whole chain.
Bypass	On / Off	Global bypass; each module also has its own.

INPUT GAIN ▶ HP / LP ▶ MOD ▶ TAPE DELAY ▶ SPACE ▶ COMP ▶ EQ ▶ OUTPUT
GAIN ▶ GLOBAL MIX

With the Mod section's POST switch engaged, MOD moves after SPACE: Delay ▶ Space ▶ Mod — chorus over the whole wet wash.

PRESETS



The preset browser

Click the preset name to open the browser: categories on the left, presets on the right, with search, keyboard navigation, favourites, rename, duplicate and delete. Saving a preset places it in your **User** category.

FACTORY BANKS

Over 250 presets ship in 18 banks:

BANK	BANK	BANK
G's Bank (featured)	Modulated	Keys & Synths
Tape Echoes	Reverse & Pitch	Drums
Ambient Washes	Rhythmic Sync	Wonky
Slapback & Doubles	Spaces	Phaser
Dub & Space Echo	Vocals	Flanger
Lo-Fi & Broken	Guitars	Animated

THE DICE

The dice button in the header is a musical randomizer, not a noise generator. It rolls from ten curated recipes — sometimes delay only, sometimes delay with reverb and EQ, sometimes pure modulation — each with musically sensible ranges. Roll until something surprises you, then refine in Edit mode and save.

Presets are plain files (see Section 2) — easy to copy, share and back up.

TIPS & TECHNIQUES

DUB THROWS

Set Sync to 1/4 or 1/8T, push Feedback to around 75%, and ride the Y axis on sends from your mixer. For classic dub tanks, pick a Dub Spring or Dub Tank IR in Space and keep the Wet high.

TAPE STOP & PITCH DIVES

Automate the X axis (tape speed) down to 0.5× for a half-speed, octave-down smear — or use the DIVE animation pattern at 2 bars for a hands-free build and release.

SHIMMER CATHEDRALS

Shift +12, Regen around 40%, a Hall IR with 6–8 s decay, and MOVEMENT adding a touch of 6-voice chorus in POST mode. Feed it pads or vocals and hold on.

BROKEN TRANSISTOR RADIO

Raise Dropout and Hiss, pull the delay Filter down toward 2 kHz, choose the RADIO or TELEPHONE EQ shape, and add AGE until it crumbles just enough.

PHASER IN THE LOOP

Switch Mod to Phaser in PRE mode, push the stages up and sync the sweep: every repeat is captured mid-swirl, so the echoes ripple apart instead of wobbling together.

SELF-OSCILLATION AS AN INSTRUMENT

With no input playing, raise Feedback to 99% and tap a short sound through: the loop keeps singing. Play the X axis to pitch the drone — the governor keeps it on the rails.

A/B EVERYTHING

Before a bold move, copy your state to B. Push as far as you like, then flip A/B to hear exactly what you gained — and keep whichever wins.

SUPPORT & CREDITS

GETTING HELP

For support, downloads, license management and FAQs, visit www.beatskillz.com and open the Support section, or contact the BeatSkillz support team from your account page. Please include your OS version, DAW and plugin version (shown in the About panel) with any report.

UPDATES

Updates are free and are announced through your BeatSkillz account and newsletter. Installing an update over an existing version keeps your presets and settings.

CREDITS

ROLE	CREDIT
DSP & Code	Gaurav Dayal
GUI	Gaurav Dayal
Published by	BeatSkillz

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ECHORIUM
SINK INTO SOUND