



ECHELON AUDIO

EA-SAT

Saturator

USER MANUAL · v1.1.0



The EA-SAT interface. Every control is documented below; hover any control in the plugin for the same description as a tooltip.

WHAT EA-SAT IS

EA-SAT is a saturator with three voicings: **Tube** (2nd-harmonic, even-order glow), **Tape** (3rd-harmonic smoothness with a touch of top-end loss) and **Console** (odd + even blend, firmer curve — present and edgy). Drive pushes the signal into the curve, Tone tilts the result dark or bright, Mix blends it against the clean signal and Output trims the level.

Auto Ceiling (on the rear panel) keeps the box from ever clipping the bus: density rises into a soft ceiling like tape into saturation, so you can lean on Drive freely. DELTA plays only the harmonics being added.

Matched Bypass is on by default: bypass compares at equal loudness, so the only thing you judge is the sound.

SIGNAL FLOW

IN → **Drive** → **Tube / Tape / Console curve** → **Tone tilt** → **Mix (dry / wet, latency-aligned)** → **Output** → **Auto Ceiling (soft -0.5 dBFS)** → **OUT**

Drive sets how hard the signal hits the selected curve; the Mode buttons choose which curve. Tone is a single-knob tilt applied after the curve, so it shapes the harmonics you just made rather than what goes in.

Mix blends the saturated path against the latency-aligned clean signal, Output trims the result, and Auto Ceiling (when on) catches anything that would exceed -0.5 dBFS after those stages.

EVERY KNOB, SWITCH AND SELECTOR

FRONT PANEL CONTROLS

Control	Range · default	What it does
Drive	0...100 % · 30	How hard you push into the saturation. More = more harmonics and grit.
Tube	Mode · Tube (default)	2nd-harmonic warmth — thick and round. Gentle even-order glow.
Tape	Mode	3rd-harmonic smoothness with a touch of top-end loss — dark and cohesive.
Console	Mode	Odd + even blend, firmer curve — present and edgy. Mix-bus glue.
Tone	-100 (Dark)...+100 (Bright) · Flat	Tilt the output dark (-) to bright (+).
Mix	0...100 % · 100	Blend the saturated signal with the clean — parallel warmth.
Output	-12...+12 dB · 0	Level trim after saturation.

PRESS REAR TO FLIP THE UNIT

REAR PANEL

The rear panel holds the one switch the front face does not need to show: Auto Ceiling. It is saved with every preset and recalled like any other voicing control.

Control	Range · default	What it does
Auto Ceiling	off / on · on	ON: a soft -0.5 dBFS ceiling after the Mix and Output stage, so Drive can never push the output into clipping — density rises into the ceiling like tape into saturation. OFF: raw saturator level for purists (watch your output meter).

METERS AND DISPLAY

Element	What it shows
Drive heat ring	The amber ring around Drive glows hotter as you push into the curve — a glance tells you how hard the box is working.
Power lamp	She's on.

SHARED ACROSS THE ESSENTIALS LINE

CHASSIS BUTTONS

Every Essentials unit shares one chassis, so the footer strip works the same way on all twelve. The buttons below are present on EA-SAT; the ones the unit does not need are simply not there.

Button	What it does
Presets	Use-named factory starting points plus your saved USER presets. Pick one, tweak, then + Save your own; Del removes a USER preset (factory presets cannot be deleted).
A / B	Two independent settings slots. Click to flip between A and B while the audio runs; both slots are saved with the session.
A>B (copy)	Copy the current slot into the other one, so B starts from A and you only change the one thing you are auditioning.
ARTIST	The five-knob face: the same engine with only the controls that matter for a performance-led session, at a size that reads across the room. Toggle back for the full panel at any time.
DELTA	Hear only what the unit is changing — output minus the latency-aligned input. If it sounds wrong here, it sounds wrong in the mix. The honesty check for any move.
BYPASS	Bypass the whole plugin.
= (Matched Bypass)	Bypass compares at equal loudness — no louder-is-better trick. On by default.
REAR	Flip the unit around for the fine-print controls (mix, sidechain filter, link, calibration and the unit's deeper options).
SAVE	Store the current settings as a USER preset you can recall anytime.

PRESETS

Factory presets are named for the job, not the setting — pick the one that describes your source, then adjust by ear. Any change you make can be stored as a USER preset with + Save.

Vocals — Vocal Warmth (Tube) · Vocal Air (Tube) · Vocal Tape Silk · Lead Vocal Grit · Rap Vocal Edge · Warm Vocal Body · Airy BGV Sheen

Drums — Drum Bus Grit (Console) · Kick Saturate (Tube) · Snare Grit (Console) · Drum Bus Warm (Tape) · Parallel Crush

Bass and low end — Bass Thicken (Tube) · 808 Harmonic (Tube) · Bass DI Grit (Console) · Sub Warmth (Tape)

Guitars and synths — Guitar Crunch (Console) · Guitar Warm (Tube) · Synth Lead Bite (Console) · Synth Pad Silk (Tape)

Bus and master — Mix Glue (Console) · Tape Smooth · Master Sheen (Tape) · Master Warm Glue (Tape) · Master Console Sheen · Master Tube Round · Full Mix Grit (Console)

Character and utility — Init · Lofi Tape Crush · Aggressive Distortion

CALIBRATION AND LEVEL

Like every Essentials unit, EA-SAT is built around the analog convention **0 VU = -18 dBFS**. Feed it a signal whose average sits around -18 dBFS and every default, every preset and every meter reading lands where it was voiced to.

Drive is calibrated so that 30 % on a source averaging -18 dBFS is gentle — a glow, not a crunch. Feed the unit 6 dB hotter and the same Drive setting sits 6 dB deeper into the curve, so level the track first (or use Output on the plugin before it) and let Drive be a tone control rather than a gain stage.

LATENCY

EA-SAT reports its latency to the host (a handful of samples for the latency-aligned Mix and DELTA paths and the Auto Ceiling look-ahead); the DAW compensates automatically, so a parallel blend never combs.

TIPS

- Start with Tube at Drive 25–30 %, Mix 70–80 % on a lead vocal. If it needs edge, switch to Console before you add Drive.
- Tape rolls a little top off as it saturates — add +5...+10 of Tone to put the air back without losing the smoothness.
- For a parallel crush, run Drive 70–90 % in Console and pull Mix back to 40 %: the grit sits under the clean transient instead of replacing it.
- On a master, keep Drive 12–18 %, Mix 100 % and leave Auto Ceiling on — the harmonics read as density, not distortion.
- Flip DELTA to hear the harmonics alone. If the delta is mostly low-end mud, tilt Tone bright or switch from Tube to Console.

Echelon Audio · EA-SAT · drag a knob to adjust, Shift-drag for fine control, double-click to reset, right-click or double-click a value to type it. Support: info@echelon.audio