



ECHELON AUDIO

EA-76

FET Limiting Amplifier

USER MANUAL · v1.1.0



The EA-76 interface. Every control is documented below; hover any control in the plugin for the same description as a tooltip.

WHAT EA-76 IS

EA-76 is a FET limiting amplifier: a fast, program-hungry compressor whose gain cell reacts in microseconds and whose character comes from being driven. There is no threshold knob — **the Input IS the threshold**. Push Input for more grab, pull Output back to restore the level, and pick a Ratio from 4:1 up to the all-buttons-in crush.

Four front-panel controls do the whole job; the rear panel adds the modern conveniences a fast FET never had — parallel Mix, a sidechain high-pass, stereo Link and a Cal trim — without changing how the front feels.

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

SIGNAL FLOW

IN → **Input drive** → **FET gain cell (Attack · Release · Ratio)** → **Output** → **Mix (dry / wet, latency-aligned)** → **OUT · sidechain: program or Ext SC** → **SC HPF** → **Link** → **detector**

The detector is fed from the program (or the external sidechain when Ext SC is on), through the SC HPF, then linked across channels by the Link amount. Gain reduction is applied by the FET cell, Output restores the level, and Mix blends the result against the latency-aligned dry signal.

Auto Ceiling (rear) keeps a hot Output from clipping the bus while you drive the front panel hard.

EVERY KNOB, SWITCH AND SELECTOR

FRONT PANEL CONTROLS

Control	Range · default	What it does
Input	-12...+36 dB · 8	Drives the amount of limiting — there is no threshold knob, the input IS the threshold. Push for more grab.
Output	-24...+24 dB · 0	Makeup gain after the cell — restore the level you squashed off.
Attack	1...7 · 3	Faster as you turn up (7 ≈ 20 μs). Slow lets transients crack through; fast clamps everything.
Release	1...7 · 4	Faster as you turn up (7 ≈ 50 ms). The cell also listens to the material — sustained squash recovers slower.
Ratio	4:1 / 8:1 / 12:1 / 20:1 / ALL · 4:1	How hard it clamps above the knee. 4:1 is the everyday vocal setting; 20:1 is limiting; ALL is every button in at once — the famous distorting, exploding crush for drum rooms and parallel tracks.
Meter	GR / +4 / +8 · GR	VU mode. GR shows how much the cell is pulling down; +4 and +8 show output level against the 0 VU reference.

PRESS REAR TO FLIP THE UNIT

REAR PANEL

The fine print lives on the back: these controls change how the unit listens and how it sits in a chain, and they are saved with every preset.

Control	Range · default	What it does
Mix	0...100 % · 100	Parallel blend. 40–60 % = classic crush-under.
SC HPF	Off (20)...300 Hz · Off	Stops bass from pumping the cell. The filter is on the detector only; the audio never passes through it.
Link	0...100 % · 100	Stereo link. 100 % = locked image, lower lets channels breathe independently.
Cal	-6...+6 dB · 0	Calibration — shifts the 0 VU reference ± 6 dB so the unit sits right in any chain.
Ext SC	off / on · off	External sidechain — key the compressor from the sidechain input instead of the program.
Auto Ceiling	off / on · on	Catches a hot Output before it clips the bus, so you can drive Input freely.

METERS AND DISPLAY

Element	What it shows
VU	Needle ballistics. GR mode reads gain reduction downward from 0; +4 / +8 read output level against 0 VU (0 VU = -18 dBFS, shifted by Cal).
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-76; 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.

Button	What it does
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).
GR / +4 / +8	Meter mode. GR shows how much the unit is pulling down; +4 and +8 show output level against the 0 VU reference (0 VU = -18 dBFS, shifted by the Cal trim).
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 — Lead Vocal Punch · Vocal Grab · Aggressive Rap Vocal · Smooth RnB Vocal · BGV Glue · Pop Vocal Control · Rock Vocal Grit · Vocal Parallel Blend

Drums — Snare Crack · Drum Room Explode · Parallel Smash · Kick Punch · Drum Bus Glue · Room Mic Ambience · Parallel Drum Punch · Tom Attack · OH Cymbal Control

Bass and low end — Bass Grip · 808 Tighten · Sub Bass Control · Synth Bass Bite · DI Bass Even · Slap Bass Pop

Guitars and keys — Electric Gtr Bite · Acoustic Gtr Level · Guitar Bus Sustain

Bus and utility — Init · Limit Catcher · Aggressive Nuke All · Full Mix Glue · Master Bus Color · Pumping FX · Gentle Leveler

CALIBRATION AND LEVEL

Like every Essentials unit, EA-76 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.

Because Input is the threshold, calibration matters more here than on a threshold-knob compressor: a track that hits the unit 6 dB hot will be 6 dB deeper into limiting at the same Input setting. Use the Cal trim on the rear panel to re-centre the 0 VU reference if your chain runs hot or cold, and read GR on the VU while you set Input.

LATENCY

EA-76 reports its latency to the host (a handful of samples for the latency-aligned Mix and Delta paths, plus the Auto Ceiling look-ahead); the DAW compensates automatically. Delta and Mix are always time-aligned to the dry signal,

so a parallel blend never combs.

TIPS

- Set Input until the VU shows 3–6 dB of GR on the loudest phrases, then bring Output up until Matched Bypass sounds level. That is 90 % of the unit.
- Attack 3 / Release 5 at 4:1 is the everyday vocal. For rap, go 8:1, Attack 5, Release 7 and let it grab.
- ALL-buttons on a room mic or a parallel drum bus, then Mix 40–50 % — the explosion sits under the dry kit without eating the transients.
- Low end pumping the cell? Raise SC HPF to 80–120 Hz before you touch Attack.
- Use DELTA to hear exactly what is being pulled down. If the delta is mostly breaths or plosives, raise SC HPF or slow the Attack.

Echelon Audio · EA-76 · drag a knob to adjust, Shift-drag for fine control, double-click to reset, right-click or double-click a value to type it.
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