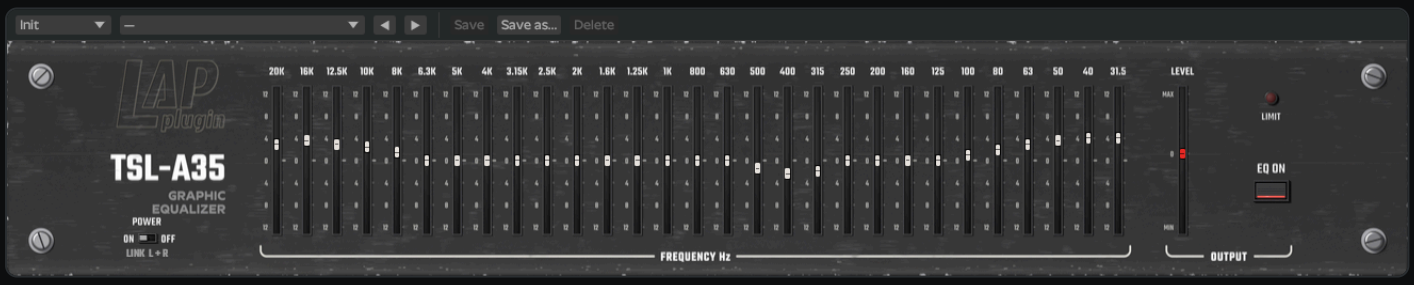
TSL SERIES · EQUALIZER

LAP TSL-A35

THIRD-OCTAVE GRAPHIC EQUALIZER · V1.6.1 · USER MANUAL

What it is. TSL-A35 is a third-octave graphic equalizer with 29 bands on the ISO centres from 31.5 Hz to 20 kHz. Each band is a gyrator-simulated inductor in series with a capacitor, hanging off a fader between the two sides of a summing amplifier: in the middle the band does nothing, towards the top it boosts, towards the bottom it cuts, ±12 dB at the centre frequency. The bands overlap and interact like in the real circuit — neighbouring faders add up to broader shapes, the phase follows the curve — which is what a graphic equalizer sounds like, not a stack of ideal digital bells. LEVEL sets the output (about +14 / −16 dB), EQ ON bypasses the filter section inside the unit. The whole board — balanced input, both filter sections, output stage — is a real-time component-level circuit model.

A mastering plugin. TSL-A35 — like every plugin of the TSL series — solves the electronics as a circuit in real time; one stereo instance takes about 9 % of a CPU core (17 % at 4×) at 48 kHz with the default 2× oversampling on the development machine. It is made for the master bus, stems and a few key tracks, not as an insert on every track of a session.



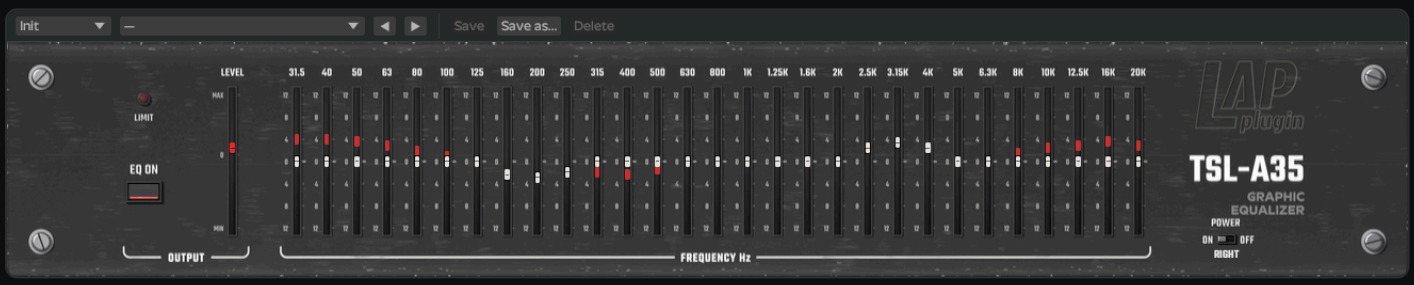
1 Working the panel

Action	Result
drag a fader	vertical drag moves the handle; `Shift` for fine control; clicking the slot jumps the handle there; the mouse wheel works too
hover a fader	the value is shown above the handle: band gain in dB of the scale, LEVEL in dB against unity
double-click a fader	back to 0 dB (LEVEL: unity) — `Ctrl` -click does the same
EQ ON	pressed = filters in the signal path; released = bypassed inside the unit (input and output stage stay, LEVEL still works)

LIMIT LED	lights from about 3 V at the output (+10 dB above the nominal level, −8.5 dBFS sine)
slider POWER	the unit on / off; off = dry signal, delay-matched
click the LAP logo	opens the About window
right-click the panel	the settings menu

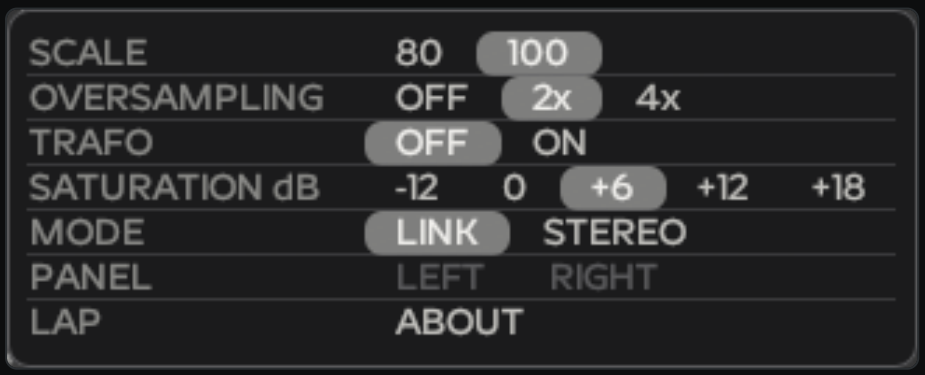
2 Two units: LINK and STEREO

The hardware is a mono unit; a stereo track gets two of them. One panel is shown at a time. **LINK** (default): the left panel drives both units. **STEREO**: left and right are set independently; the menu row PANEL chooses which one you see — the right panel is the mirror image of the left one, so the two read as the halves of a stereo pair. Faders the other channel has moved away from 0 dB are drawn as red handles at their position. Switching LINK → STEREO copies the left settings to the right, so the sound does not change. On a mono track only the left unit runs.



The right panel in STEREO: mirror image of the left one; red handles show where the left unit's faders are.

3 Menu





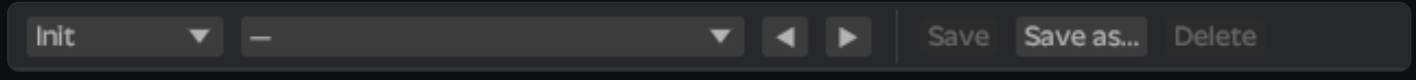
Left: the settings menu (right-click the panel). Right: the About window (click the LAP logo).

Menu row	Choices	What it does
SCALE	80 · **100**	window size: 1052 × 176 or **1315 × 220**, plus the 30 px preset bar
OVERSAMPLING	OFF · **2x** · 4x	OFF = no oversampling (the board runs at 44.1 / 48 kHz); how fast the board is solved, counted from 44.1 / 48 kHz (88.2 / 96 / 176.4 / 192 kHz hosts run the same board). With OFF the top band loses most of its range — use 2x or 4x for mastering. At 176.4 / 192 kHz with 4x, use a buffer of 512 samples or more
TRAFO	**OFF** · ON	the series output transformer after the unit
SATURATION dB	−12 · 0 · **+6** · +12 · +18	how hard the transformer is driven (level is compensated)
MODE	**LINK** · STEREO	both units from the left panel, or left and right independent
PANEL	**LEFT** · RIGHT	which unit is shown in STEREO (view only, saved with the project)
LAP	ABOUT	version, formats and links

4 Levels and response

Item	Value
nominal level	−18 dBFS = 1 V at the unit's input and output; faders at 0 and LEVEL at unity give 0 dB
band range	±12 dB at the centre frequency (the real board gives +11.7 … +13.2 dB boost, −12.0 … −15.0 dB cut — the top bands cut a little deeper)
flat response	within 1.3 dB from 20 Hz to 20 kHz (−1.3 dB at 20 kHz)
LEVEL	+13.9 dB … −16.3 dB, unity at 55 % of the travel
distortion	about 0.002 % at 63 Hz, 1 kHz and 8 kHz (1 V); the output stage clips at about +20 dB above nominal
latency	2× at 44.1 / 48 kHz: 30 samples, OFF: 0, 4×: 36 (+30 for the transformer, always included, also with TRAFO off)

5 Presets



The preset bar above the panel lists the factory presets (Air, Loudness, Mud Cut, Presence, Telephone — both channels set alike) and your own. Presets include the menu settings; POWER is not part of a

preset. User presets are stored in `%APPDATA%\LAP\TSL-A35\presets` (Windows) and `~/.local/share/LAP/TSL-A35/presets` (Linux).