

LA9B Levelling Compressor

Smooth Analogue Levels. One Dial.



INTRODUCTION

The LA9B is a simple, great-sounding levelling compressor for vocals, instruments and full mixes. One main dial does the heavy lifting, so you can spend less time tweaking and more time listening. It is free to use. Optional Input and Output Xformer stages add the gentle, level-dependent saturation of analogue transformers.

Please note: the LA9B is an original design and is not related to, or a model of, the famous LA2A Opto Compressor.

FEATURES

- One-dial compression: just turn Compress until it sounds right
- Two modes (A and B) with different characters - try both
- Input gain, output gain and Auto Level matching
- Input Xformer and Output Xformer: switchable analogue transformer saturation, voiced differently at the input and the output
- Saturation LEDs show how hard each transformer stage is working
- 4x oversampled, linear-phase transformer processing, with latency reported to your DAW
- Optional Side-Chain low-cut to keep bass from over-triggering

- Stereo Input and Output meters, plus a Gain Reduction meter
- Clean, simple layout - every control is on the front panel

CONTROLS

Input:	Sets the level going into the compressor (-12 to +12 dB). It comes before the Input Xformer, so with the Xformer On, turning Input up also increases transformer saturation.
Compress:	The main dial. Turn clockwise for more compression.
Side-Chain:	On/Off. Filters low frequencies from the detector.
Mode:	A or B. Two different compression characters.
Output:	Makes up the level after compression (0 to +18 dB). It comes before the Output Xformer, so with the Xformer On, turning Output up also increases transformer saturation.
Auto Level:	On/Off. Matches the output level to the input level. While On, the Output dial has no effect, and the matched level is what drives the Output Xformer.
Xformer (Input):	On/Off, bottom left. Adds transformer saturation and tone before the compressor. The compressor and the Input meter hear the coloured signal. Off by default.
Xformer (Output):	On/Off, bottom right. Adds transformer saturation and tone after the Output dial or Auto Level, as the final stage. Off by default.
Saturation LEDs:	One above each Xformer switch. Glows brighter as that transformer saturates harder; dark when the Xformer is Off. See TRANSFORMER STAGES.
Meters:	<i>Left and right:</i> Input and Output levels. The Input meter reads after the Input dial and Input Xformer; the Output meter reads after the Output Xformer. <i>Centre:</i> Gain Reduction (moves down as compression increases).

TRANSFORMER STAGES

The LA9B has two transformer stages: Input Xformer and Output Xformer. Each is switched On or Off with its own button and each is Off by default. Both use the same engine, but each has its own voicing.

Where they sit in the signal path

- Input dial (-12 to +12 dB)
- Input Xformer
- Compressor (Side-Chain detector, Compress, Mode)
- Output dial, or Auto Level when it is On
- Output Xformer
- Output meter

Because Input comes first, turning it up pushes the Input Xformer (and the compressor) harder. In the same way, the Output dial, or the level chosen by Auto

Level, sets how hard the Output Xformer is driven. The compressor and its Side-Chain detector hear the signal after the Input Xformer.

What each stage does

Inside each stage the audio is processed at 4 times the host sample rate to keep the saturation clean, in this order:

- Low-frequency boost (low shelf) before the saturator, so lows are driven harder than highs
- Soft saturator: a smooth, symmetrical curve with no hard threshold, producing mainly odd-order harmonics
- Matching low-frequency cut after the saturator: the exact inverse of the boost
- Low-end bump: a fixed, mild boost in the bass
- Gentle high-frequency roll-off
- DC blocker, to remove any offset created by the saturation

Because the cut exactly undoes the boost, the stage is spectrally flat for quiet signals. Saturation rises with level and as frequency falls, so bass and loud peaks thicken first, and there is no sudden onset.

Voicings

The two stages share all their code but are tuned differently. These are the current start values:

- Input Xformer: cleaner with a little drive. Low Saturation intensity; low boost at 110 Hz (+5 dB); bass bump at 80 Hz (+0.6 dB); roll-off at 24 kHz.
- Output Xformer: less drive, a deeper low end and a slightly softer top. Very low Saturation intensity; low boost at 120 Hz (+5 dB); bass bump at 60 Hz (+1.0 dB); roll-off at 22 kHz with a softer knee.

Switching and loudness

Saturation is scaled to a nominal level of -12 dBFS RMS. At that level (a 1 kHz sine), the On path is gain-matched to the Off path, so switching an Xformer changes the tone rather than the loudness. Louder signals are saturated progressively more. Switching On or Off uses a short crossfade of about 15 ms, so there are no clicks.

Latency

The oversampling uses linear-phase filters and is always running, so the latency is fixed and does not change when you switch an Xformer On or Off. The Off path is delayed by exactly the same amount, so timing never shifts when you toggle. The two stages are in series, so their latency adds. The total is reported to your DAW for automatic delay compensation. The compressor itself adds no latency.

Saturation LEDs

Each Xformer switch has an LED above it that shows how much the saturator is bending the signal peaks. It is dark when its Xformer is Off, and glows brighter as saturation increases. The LED rises quickly and falls slowly (about 200 ms), so brief peaks are easy to see. A flicker on loud peaks is normal and is the effect working; a constantly bright LED means heavy saturation, so lower Input (or Output) if you want it subtler.

EXAMPLES OF USE

Vocals	Select Mode A. Start with Compress low and raise it until the performance sounds even. Turn Auto Level On to compare before and after at the same loudness.
Drums	Select Mode B. Increase Compress gradually and listen to how the energy of the kit changes. Use Output to restore level if Auto Level is Off.
Acoustic Guitars	Start with Mode A and gentle Compress. Switch Side-Chain On if low strums or body boom trigger too much squeeze.
Bass	Try either mode. Keep Side-Chain Off so low notes are levelled properly, and use moderate Compress.
Mix Bus	Use gentle Compress with Side-Chain On, and keep the Gain Reduction meter showing only light movement.
Adding warmth	Switch Input Xformer On and raise Input until its LED just begins to glow on the loud parts. Add Output Xformer for extra low-end weight. Keep Auto Level On to compare with Xformers Off at the same loudness.
Anything else	Experiment! Flip between Mode A and B, and compare with Auto Level On to judge the sound, not the loudness.

QUICK TIPS

- Watch the Input meter: use Input to avoid driving the plugin too hard.
- If the sound feels flat, back off Compress.
- Xformer saturation depends on level: if an LED glows constantly, lower Input (or Output).
- Set your DAW to compensate plugin delay, so Xformer latency does not offset parallel tracks.
- Trust your ears first. The meters are there to help, not to decide.

STUDIO9 PLUGINS FREEWARE LICENSE

Copyright (c) 2026 Studio9 Plugins

This software is provided free of charge for both personal and commercial use.

You may:

- Install and use this software free of charge.
- Use this software in personal, educational, non-profit, and commercial environments.

You may not:

- Sell, resell, rent, lease, or sublicense this software.
- Modify, reverse engineer, decompile, or create derivative works from this software.
- Redistribute this software without prior written permission from Studio9 Plugins.
- Bundle this software with any hardware product, software product, or commercial offering without prior written permission from Studio9 Plugins.

Any authorized redistribution must include this license and all copyright notices.

DISCLAIMER

THIS SOFTWARE IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED.

STUDIO9 PLUGINS SHALL NOT BE LIABLE FOR ANY LOSS, DAMAGE, CLAIM, OR LIABILITY OF ANY KIND ARISING FROM THE USE OF OR INABILITY TO USE THIS SOFTWARE.

USE OF THIS SOFTWARE IS ENTIRELY AT YOUR OWN RISK.

By installing or using this software, you agree to the terms of this license.