

Zero Effort Compression

ZeroComp is an intelligent audio compressor that learns from the audio material and auto-configures itself to achieve musical and stable compression. It operates with three parallel models (Smooth, Tight, Fat) and adapts the parameters in real-time based on the characteristics of the signal, including crest factor, dynamics, and transients.

General description of the plugin, functionality, and benefits

- Real-time signal analysis: the plugin estimates the crest factor (ratio between peak and average level) and uses this information to automatically calibrate the compression parameters (threshold, ratio, attack, release, knee, makeup gain).
- Three parallel models always active: you can change style between Smooth, Tight and Fat instantly without interruptions; each model has a different character and response, ensuring flexibility on voice, percussion instruments and bus/mix.
- Stability and convergence: the engine avoids parameter oscillations, achieves a consistent result, and shows the convergence status for each model.
- Main advantages:
 - Quick setup thanks to self-analysis.
 - Musical results with minimal manual adjustment.
 - Suitable for tracking, mixing and mastering.

Learning flow and operationality

1. Insert ZeroComp on the track: the plugin automatically goes into learning mode.
 2. Play the audio to be processed: as soon as it has learned the characteristics of the signal, it creates the models for the compressors.
 3. When the convergence is over, the plugin is ready and starts processing the audio.
- Reset: to reset the analysis and rebuild the models, press the "Reset" button.



Description of the controls

- **Compression (%)**
 - Continuous control 0–100% of the amount of compression applied.
 - No compression is applied to 0%.
 - A dynamic range equal to the crest factor detected by the plugin is compressed at 100%.
 - Intermediate values modulate the gain reduction accordingly, keeping the response consistent with the signal analysis.
- **Style (Smooth / Tight / Fat)**
 - Select the compression character.
 - Smooth: sweet and musical response; excellent on melodic voices (R&B/traditional) and Recommended on the master for transparent control.
 - Tight: fast and precise response; great on drums, acoustic guitars when you want to emphasise the pin, and on buses with light compression (aim at ~3 dB of GR). Different character compared to Fat.
 - Fat: full and decisive tone; indicated on bass, drums and aggressive voices (rock/punk/rap).
- **Distortion (%)**
 - Pre-compression harmonic saturation; increases presence and density.
 - Recommended 5–15% for general use; increase with caution on dynamic material.

- **Reset**
 - Reset the analysis and force the reconstruction of the models; useful when you change material or want to recalibrate.
- **Bypass**
 - Quickly turn A/B comparison processing on/off.
- **Metres and Indicators**
 - Input/Output Level: input/output signal levels.
 - Gain Reduction: gain reduction applied.

Suggestions for use

- **Initial settings**
 - Set "Compression" around 30–60% for a music control of the signal.
 - Add "Distortion" between 5–15% for greater presence, evaluating the A/B effect.
- **Choice of style**
 - Smooth on the master and on more melodic voices (R&B/traditional) when looking for transparency and musicality.
 - Tight on acoustic drums and guitars when you want to emphasise the pen, and on buses with light compression; adjust "Compression" to obtain ~3 dB of reduction on the GR metre; more controlled character than Fat.
 - Fat on drums and aggressive voices (rock/punk/rap); compared to Tight it has a denser character; avoid on bus/master so as not to compress excessively.
- **Mix and Mastering**
 - In the mix, adjust "Compression" just enough to stabilise the material without crushing it.
 - In mastering, prefer Smooth on the master with conservative values (20–40%) and monitor the GR; avoid the use of Fat on the master.
 - If you notice pumping or excessive breathing
 - Reduce "Compression" or choose a style with a softer release (Smooth/Fat).
- **Real-time style changes**
 - Take advantage of parallel analysis to instantly switch between models and choose the best font during playback.

Quick settings (examples)

- **Melodic voice (Smooth)**

- Compression: 25–45%
- Distortion: 0–10%
- GR target: 3–6 dB
- Note: aim for transparent control, reduce Distortion if it increases sibilanza.

- **Aggressive rock/punk/rap voice (Fat)**

- Compression: 40–70%
- Distortion: 10–30%
- GR target: 6–9 dB
- Notes: If the sound breathes too much, try reducing Compression or switch to Tight.

- **Drums — punch and transients (Tight)**

- Compression: 30–60%
- Distortion: 10–30%
- Target GR: 2–6 dB
- Notes: Emphasises the strum/attack on percussion elements and acoustic guitars.

- **Drums — density and body (Fat)**

- Compression: 35–65%
- Distortion: 10–30%
- Target GR: 3–6 dB
- Notes: denser character; if the tail becomes too short, lower Compression.

- **Bus (Tight, light compression)**

- Compression: 15–35%
- Distortion: 0–5%
- Target GR: ~3 dB
- Notes: maintains cohesion without crushing; prefer Tight on buses over Fat.

- **Master (Smooth, transparent control)**

- Compression: 20–40%
- Distortion: 0–5%
- Target GR: 1–3 dB
- Note: Avoid Fat on the master; always check with A/B and level-matching.