

FONOCAL

Low-End Control

User Guide

Version 1.0.0 • VST3 (Windows & macOS) + AU (macOS) • fonocal.com • support@fonocal.com

Introduction

Fonocal Low-End Control analyses the low-frequency content of your audio, detects specific problems in the sub and low-mid range, calculates exactly how much correction is needed, and applies it — telling you in plain language what it did and why.

The plugin does not require any EQ knowledge. Insert it on a track, play audio, press Analyse, then press Apply. The intelligence engine handles the rest.

What it detects

- **Strong sub energy** — excessive low-frequency weight below 120 Hz
- **Low-mid buildup** — mud accumulation around 150–350 Hz
- **Combined sub and mud problems**
- **Thin low-end** — insufficient low-frequency content
- **Balanced low-end** — no significant correction needed

What it corrects

- Low shelf at the detected sub resonance frequency (adaptive, 40–120 Hz)
- Peaking EQ cut at the dominant sub resonance (when present at a distinct frequency)
- Peaking EQ cut at 250 Hz for mud correction
- Focus (Q) control for surgical vs broad correction
- Mix control for parallel dry/wet blending

Interface Overview

The window is one screen with no tabs. The before/after spectrum is always shown as the main element on the left. The intelligence panel is on the right. The five controls sit in a single row across the bottom.

Note: earlier versions had an Intelligence / Spectrum tab toggle. As of v0.9.1.22 the tabs were removed — the spectrum is permanently visible, so no switching is needed.

Spectrum (left, main element)

A real-time before/after frequency display covering 20 Hz to 400 Hz on a logarithmic scale. The grey/lavender curve is the signal before processing (dry); the coral curve is after processing (wet). The gap between them is exactly what the plugin is doing. A reduction readout and the Sub / Mud / Ref band levels are shown around the display. The spectrum freezes when the plugin is bypassed.

Intelligence panel (right)

- **Mode selector** — Mix Bus, Bass, Kick, or Drums. Sits at the top of the panel.
- **Band energy meters** — Sub (30–120 Hz), Mud (150–350 Hz), Mid Ref (400–800 Hz) in dB
- **Diagnosis strip** — the detected low-end condition in plain language, with a coloured accent border indicating the condition
- **Correction summary** — exact frequencies and dB values to be applied, with a confidence indicator (High / Medium / Low)
- **Suggested values** — Mud, Tight, Focus, Mix shown as chips
- **Detailed explanation** — plain-language description of what was detected
- **Result banner** — after you press Apply, a short banner briefly appears over the explanation confirming what happened, then fades. If Apply made a change it describes it; if the settings already matched the suggestion it says so.
- **Analyse and Apply buttons**

Controls (bottom row)

Control	Range	What it does
Mud	0–100%	Peaking cut at 250 Hz. 0% = no cut. 100% = –15 dB.
Tightness	0–100%	Low shelf cut at the detected sub frequency. 0% = no cut. 100% = –15 dB.
Focus	0–100%	Q (width) of the mud filter. Higher = more surgical.
Mix	0–100%	Dry/wet blend. 100% = fully processed.
Output	–24 to +12 dB	Output level trim after processing.

The four tone controls use a coral value readout; Output uses a blue readout to signal that it is a gain stage, not tone shaping. Values are shown in white beneath each knob.

Progress bar

A thin bar at the bottom of the spectrum fills as the analyser accumulates audio. It shows the percentage of the minimum analysis window filled and briefly shows "Done" after analysis completes.

Workflow

Basic workflow

- **1. Insert.** Place the plugin on the track to analyse. It loads with all controls at zero — no processing on load.
- **2. Select mode.** Choose Mix Bus, Bass, Kick, or Drums to match your source. This adjusts the analysis thresholds.
- **3. Play audio.** Start playback. The progress bar fills as the analyser accumulates a minimum of 2 seconds.
- **4. Press Analyse.** The plugin waits for high confidence before firing — 2 seconds on strong signals, up to 8 on quiet material.
- **5. Read the result.** The diagnosis strip shows what was detected; the correction summary shows exact frequencies and dB values; the explanation describes what you will hear.
- **6. Press Apply.** Sets the suggested parameter values. A short result banner then appears briefly over the explanation confirming what happened (it describes the change, or notes that settings already matched the suggestion).
- **7. Fine-tune.** Adjust knobs manually if needed. Lower Mix if the correction feels too strong.

Adaptive analysis window

The analyser accumulates 2–8 seconds of audio before firing. On a loud mix bus or kick with clear spectral content it fires at 2 seconds with High confidence. On quiet or heavily compressed material it keeps accumulating up to 8 seconds. Below -50 dB it fires at 8 seconds with Low confidence and a note that the level is too low for reliable results.

Confidence levels

Level	Meaning	What to do
High	Strong signal, clear spectral character. Reliable.	Trust the result and press Apply.
Medium	Signal present but quiet or spectrally flat. Approximate.	Apply and adjust, or try a louder section.
Low — too quiet	Signal below -50 dB. Unreliable.	Check your signal chain; try a louder section.

Analysis Modes

The mode selector adjusts detection thresholds to match the expected spectral characteristics of the source.

Mix Bus

Balanced thresholds for full mixes. Moderate sub and mud sensitivity. Slightly conservative to avoid over-processing a complete mix.

Bass

Higher sub threshold — bass instruments naturally have strong sub energy. Tightness scaled down slightly to preserve low-end character. Use on bass guitar, synth bass, bass DI.

Kick

Aggressive tightening is appropriate. Sub threshold elevated, focus boosted for surgical cuts. Use on kick drum tracks.

Drums

Balanced mode for full drum buses. Moderate corrections across both sub and mud ranges. Use on drum buses and room mics.

Licensing & Activation

Fonocal Low-End Control uses a licence key activation system. No iLok or USB dongle is required. An internet connection is needed only for the initial activation; after that the plugin works fully offline.

Your licence key

Licence keys have the format FNCL-XXXX-XXXX-XXXX-XXXX (24 characters including dashes). The FNCL- prefix is fixed; the four groups after it are unique to your purchase. Your key was emailed at the time of purchase. Each licence covers up to 3 machines.

Activating the plugin

- Purchase from fonocal.com — key and installer link are emailed immediately.
- Run the installer. On Windows the plugin installs to C:\Program Files\Common Files\VST3\; on macOS the VST3 goes to /Library/Audio/Plug-Ins/VST3/ and the AU component to /Library/Audio/Plug-Ins/Components/.
- Open your DAW and scan for new plugins.
- Insert Fonocal Low-End Control on any track.
- The activation screen appears. Enter your email and licence key exactly as received.
- Click Activate. The plugin validates against licenses.fonocal.com.
- Activation is stored locally — you will not need to activate again on the same machine.

If activation fails

Message	What to do
Invalid licence key	Re-check the key against your purchase email. Enter it exactly, with dashes.
Network error	Check your connection. The plugin connects to licenses.fonocal.com on port 443; some firewalls/VPNs block this — try once with them off.
Too many devices	You have reached the 3-machine limit. Contact support to free a slot.
Licence file corrupted	Restart your DAW and try again. If it persists, contact support.

Support & System Requirements

Support

For activation issues, technical problems, or refund requests contact support@fonocal.com. We aim to respond within 3 business days.

System requirements

Item	Requirement
Operating System	Windows 10/11 (64-bit) or macOS 11+
Plugin Format	VST3 (Windows & macOS); AU (macOS)
Architecture	Windows x64; macOS Universal (Apple Silicon + Intel)
DAW	Any VST3 host — Cubase, Ableton Live, Studio One, Reaper, FL Studio, Bitwig — or any AU host on macOS (Logic Pro, GarageBand)
Internet	Required for first activation only
Copy Protection	Licence key — no iLok required

Updates

You receive free updates for the lifetime of the plugin. Update notifications are emailed to your registered address. Re-running a new installer is all that is needed; your activation carries over.

Analysis accuracy is an area of ongoing development; future updates will continue to refine how the plugin measures and describes low-end content.

Privacy

The plugin does not collect telemetry or usage data. The only network calls it makes are to licenses.fonocal.com during activation. After activation it operates fully offline.