

Cobalt Limiter Neo User Manual

Manual language: English

Product version: 0.9.0

1. Introduction

Cobalt Limiter Neo is a mono/stereo brickwall limiter plugin designed for peak control on mix buses, master buses, and individual tracks.

Version 0.9.0 supports the Windows 64-bit edition. A macOS version is not available at this time.

Cobalt Limiter Neo keeps peaks within a specified Ceiling while visualizing input, output, and gain reduction in real time. With **Clean** and **Aggressive** modes, you can switch between more transparent control and denser, punch-oriented control.

Main features:

- **Brickwall limiting** — final-stage peak control with a Ceiling guard
- **Fixed 3 ms lookahead** — reported to the host as plugin latency
- **Detector oversampling** — Off / 2x / 4x (default 4x)
- **Clean / Aggressive** — timing and character switching
- **REALTIME LIMITER VIEW** — realtime display of input, output, and gain reduction (with GR readout)
- **dB-aligned controls** — Threshold / Ceiling aligned to the same dB scale as the meters

Cobalt Limiter Neo can be used as an Insert effect on its own, and also inside the FX Rack of Cobalt Drift Neo.

2. About the Demo Build

In Demo builds, output fades to silence after **900 seconds (15 minutes)** from plugin load. Reload the plugin to continue. The timer uses a monotonic clock and is not reset by wall-clock changes or sample-rate changes.

Full product builds do not include this time limit.

In 0.9.0, specifications, GUI, parameter layout, and save formats may change in future updates. Back up important DAW project files before use.

3. System Requirements

Supported OS

- Windows 11 64-bit recommended
- Windows 10 64-bit or later

Supported Formats

- VST3
- CLAP

The CLAP edition is an experimental distribution format. Behavior may vary depending on the host environment. If stability is your priority, we recommend starting with the VST3 edition.

Supported Hosts

- 64-bit DAWs that support VST3 or CLAP
- Mono or stereo audio tracks (matching input and output channel counts)

4. Installation and Launch

Cobalt Limiter Neo is distributed as a zip package. There is no installer. Extract the zip and place the plugin files manually.

Distribution file names

Expected file names:

- Cobalt Limiter Neo.vst3
- Cobalt Limiter Neo.clap

VST3 install location

Place the plugin in one of the following folders:

```
C:\Program Files\Common Files\VST3\  
%LOCALAPPDATA%\Programs\Common\VST3\
```

For all users, the following folder is usually recommended:

```
C:\Program Files\Common Files\VST3\
```

CLAP install location

Place the plugin in one of the following folders:

```
C:\Program Files\Common Files\CLAP\  
%LOCALAPPDATA%\Programs\Common\CLAP\
```

After placing the VST3 or CLAP file, restart your DAW or run a plugin rescan.

5. First Steps

1. Load Cobalt Limiter Neo as an **Insert** on an audio track (or the master bus)
2. Confirm that host **latency compensation** is enabled (fixed 3 ms lookahead)

- 3. Feed audio to the track (playback, input, or loop material)
- 4. Check track monitor, mute, level, and master output
- 5. Set **CEILING** to your target level (default –1.00 dB), then adjust limiting amount with **THRESHOLD**

Use the central **REALTIME LIMITER VIEW** to watch input, output, and GR while you adjust.

6. Screen Layout

The Cobalt Limiter Neo window uses a single-screen layout based on **980 × 560** pixels. The window can be resized from **75% to 200%** with a fixed aspect ratio.

Area	Position	Content
Header	Top	Title, MODE, OS (Oversampling), Menu, BYPASS
Left panel	Left	INPUT, Input meter, THRESHOLD
Center	Center	REALTIME LIMITER VIEW (graph, GR readout)
Right panel	Right	OUTPUT, CEILING, Output meter
Footer	Bottom	VST3 / CLAP ■ SYNTH STUDIO NEO

A practical workflow is to set the output ceiling with **CEILING**, set reduction amount with **THRESHOLD**, then switch **MODE** and **OS** as needed.

REALTIME LIMITER VIEW

The central graph shows limiter activity in real time.

Item	Content
Title	REALTIME LIMITER VIEW
Level axis	0 dB to –48 dB
Input	Cyan-style trace
Output	Filled area plus cyan-style trace
Gain reduction (GR)	Lime-style trace (drawn upward)
GR readout	Current gain reduction (dB, 1 decimal place, lime)

The 0 dB line is highlighted in amber. The **THRESHOLD** / **CEILING** vertical faders are aligned to the same dB scale as this graph and the side meters.

Side level meters display 0 dB to –48 dB, with tick labels at 0 / –12 / –24 dB.

7. Header Controls

The top header handles mode selection, detector oversampling, menu, and bypass.

Control	Role
MODE	Switch between Clean / Aggressive

Control	Role
OS	Detector oversampling Off / 2x / 4x
Menu	About (version information)
BYPASS	Plugin bypass ON / OFF

Version 0.9.0 does not include a dedicated preset bar (Bank / SAVE / INIT / Undo / Redo). Settings are retained through DAW project saves and the host's plugin state save.

BYPASS skips processing while keeping parameter settings. Meters continue to show input peaks while bypassed (output peak matches input, GR is 0). It is host-automatable.

8. Quick Start

On the master bus

1. Insert Cobalt Limiter Neo near the end of the master bus
2. Enable host latency compensation
3. Set **CEILING** around -1.00 dB
4. Leave **OS** at 4x (default)
5. Start with **MODE** set to **Clean**
6. Lower **THRESHOLD** to apply only the gain reduction you need
7. Check final level with the graph **GR** readout and DAW meters

On individual tracks or buses

1. Insert on tracks with hot peaks (drum bus, vocals, leads, and similar)
2. Set **CEILING** to the track's target peak
3. Shape transient control with **THRESHOLD**
4. Try **Aggressive** if you want faster response or more density
5. Balance levels with **INPUT** / **OUTPUT** as needed

Basic workflow from defaults

1. Start from the default values (Mode: Clean, OS: 4x, Threshold: 0.00 dB, Ceiling: -1.00 dB)
2. Set **CEILING** to your target peak
3. Lower **THRESHOLD** to start limiting
4. Check reduction amount with the **GR** readout
5. Try **Aggressive** if the sound feels thin or needs more punch
6. Adjust **OS** as needed
7. Confirm final output with **OUTPUT** and DAW meters

9. Parameter Reference

GUI Label	Host Name	Range	Default	Description
MODE	Mode	Clean / Aggressive	Clean	Limiter character and timing
OS	Oversampling	Off / 2x / 4x	4x	Peak detector oversampling factor
THRESHOLD	Threshold	−36.00 to 0.00 dB	0.00 dB	Drive reference for limiting
CEILING	Ceiling	−12.00 to 0.00 dB	−1.00 dB	Output ceiling
INPUT	Input	−24.00 to +24.00 dB	0.00 dB	Input gain
OUTPUT	Output	−24.00 to +6.00 dB	0.00 dB	Output gain
BYPASS	Bypass	Off / On	Off	Processing bypass

10. MODE and Oversampling

MODE

Mode	Typical use
Clean	More transparent control. Relatively gentle attack / release
Aggressive	Faster response and density. Includes pre / post soft clipping

Approximate internal timing and safety by Mode:

Item	Clean	Aggressive
Attack	about 0.14 ms	about 0.05 ms
Release	about 300 ms	about 88 ms
Safety margin	about −0.65 dB	about −0.12 dB
Pre-limit processing	Pass-through	Soft clip
Post-limit processing	None	Ceiling soft clip

Prefer **Clean** for transparent master processing. Prefer **Aggressive** for drums that need stronger transient control, or buses where you want more density.

OS (Oversampling)

GUI Label	Host Name	Choices	Default	Description
Off / 2x / 4x	Oversampling	Off / 2x / 4x	4x	Peak detection oversampling factor

OS changes the density of the **peak detector**. It does not oversample the entire audio path.

- **Off** — sample-peak detection at the host sample rate
- **2x** — about 2× detection density with added interpolation points
- **4x** — about 4× detection density with added interpolation points (default)

On the master bus, start with the default **4x**. Try 2x or Off if you need lower CPU load.

11. THRESHOLD / CEILING / INPUT / OUTPUT

THRESHOLD

THRESHOLD sets how strongly the limiter works. Lowering it increases gain reduction for the same input.

Effective pre-gain includes Input plus $\max(0, \text{Ceiling} - \text{Threshold})$ of drive. In other words, lowering Threshold below Ceiling pushes the signal by that difference and makes the limiter work more aggressively.

CEILING

CEILING is the output upper limit. The default is -1.00 dB, which is a convenient headroom target for streaming and mastering workflows.

Mode-dependent safety margins keep the actual target gain slightly below Ceiling. Confirm final levels with both the **GR** readout and DAW meters.

INPUT / OUTPUT

Control	Description
INPUT	Input gain before the limiter. Raising it tends to increase reduction
OUTPUT	Final output gain. Affects both the detection path and the output

INPUT / OUTPUT are smoothed over about 20 ms, which helps reduce clicks during abrupt automation.

12. Signal Flow

Signal flows roughly in this order:

```
[Input L/R]
→ [Bypass?] → Yes → Output (no processing)
→ [Input Gain + Threshold drive]
→ [Mode character]
    ■■ Clean: pass-through
    ■■ Aggressive: soft clip
→ [Fixed 3 ms lookahead]
→ [Peak detection (OS: Off / 2x / 4x)]
→ [Gain Reduction (Attack / Release)]
→ [Delayed read × GR × Output Gain]
→ [Aggressive only: Ceiling soft clip]
→ [Output L/R]
→ [Meter publish: Input / Output / GR]
```

Lookahead and latency

Lookahead is a **fixed 3 ms**. This amount is reported to the host as plugin latency (for example, 144 samples at 48 kHz). Enable latency compensation in your DAW.

13. Presets

Version 0.9.0 does not provide Factory / User banks or a dedicated preset save UI.

How settings are retained:

- DAW project save
- Host-provided plugin state / preset features

A Cobalt-series common preset bar may be added in a future update.

14. Limitations

Version 0.9.0 and Demo builds have the following limitations and notes:

- Specifications may change in future updates
- No dedicated preset save / export UI
- Demo builds fade to silence after 900 seconds (15 minutes) from load. Reload the plugin to continue
- Follow any additional evaluation notices included with the distribution package or shown in the app

15. Usage Notes

- Because of the fixed lookahead, enable host **latency compensation**
- Lowering **THRESHOLD** a lot increases gain reduction and perceived density. Keep it to the minimum you need while watching **GR**
- **Aggressive** responds faster and adds soft clipping, so character is stronger than Clean
- **OS** at 4x increases detector CPU load
- Setting **CEILING** near 0.00 dB leaves less clip margin for the host or downstream processing. For streaming, about -1.00 dB is a good starting point
- Inside the Cobalt Drift Neo FX Rack, it also works as a peak safety tool during sound design. It is not a full mastering loudness suite, but as a standalone plugin it is suitable for mix / master peak control
- If the CLAP edition is unstable, try the VST3 edition

16. Troubleshooting

Plugin does not appear in the DAW

- Confirm the VST3 or CLAP file is in the correct folder
- Run a plugin rescan in the DAW
- Confirm you are using a 64-bit DAW

No sound / no audible change

- Confirm audio is feeding the track
- Check track monitor, mute, and level
- Confirm **BYPASS** is not ON

- If **THRESHOLD** stays at 0.00 dB, little reduction may occur unless input exceeds Ceiling
- If you are on a Demo build, check whether the 15-minute limit has been reached. If so, reload the plugin

Timing feels off / latency is noticeable

- Enable host latency compensation
- Check total delay with other lookahead plugins

Too loud or distorted

- Lower **OUTPUT**
- Lower **INPUT**
- Raise **THRESHOLD** to reduce reduction
- Switch from **Aggressive** back to **Clean** and compare
- Check DAW track meters

Peaks do not settle near Ceiling

- Lower **CEILING** slightly (for example $-1.00\text{ dB} \rightarrow -1.20\text{ dB}$)
- Clean up excessive peaks on the input side first
- Compare with **OS** set to 4x

High CPU load

- Set **OS** to 2x or Off
- Reduce the number of instances in the project
- Increase the DAW buffer size

CLAP edition does not behave as expected

- Confirm the install location
- Try the same settings in another DAW or with the VST3 edition
- Run a plugin rescan

17. Specifications and Credits

Item	Content
Product	Cobalt Limiter Neo
Version	0.9.0
Supported OS	Windows 64-bit
Formats	VST3, CLAP
Channels	Mono / stereo
Lookahead	Fixed 3 ms (reported to host as latency)
Developer	Synth Studio Neo

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Version information is also available from Menu → **About**. Demo builds may show a Demo suffix in the version string.

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