

Clipper 7 — User Guide

7-Mode High Resolution Clipper

Version: 1.0

Website: <https://hakanyurdakul.com/clipper7/>

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Formats: Standalone Application (Windows 64-bit), VST3 (Windows)

Audio Engine: 96 kHz Ready / 32-bit Floating Point

Clipper 7 is a precision digital clipper built around a dual-layer FFT analysis engine that monitors both input and output signals in real time. Instead of relying solely on waveform-based shaping, Clipper 7 allows users to see the spectral impact of clipping at every step — making it easier to control tonal balance, detect unwanted harmonics, and dial in musical results with confidence.

The processor includes seven unique clipping algorithms and up to 8x oversampling, providing flexible tonal options for mixing and mastering. Clipper 7 is available as both a Standalone application and a VST3 plugin.

Key Features

- **Engine:** Dual-Layer FFT-Driven High-Resolution Clipper
- **Clip Types:** 7 distinct algorithms for tonal shaping
- **Oversampling:** Up to 8x real-time oversampling for reduced aliasing
- **Analyzer:** Dual-Layer Input/Output FFT display for precise harmonic monitoring
- **FFT Engine:** 4096 / 8192-point resolution with Blackman window
- **Response Model:** Internal 4.5 dB tilt and 350 ms ballistic decay
- **Gain Structure:**
 - Drive: 0 to +24 dB
 - Clip (Threshold): 0 to -24 dB
 - Output Trim: 0 to -90 dB
- **Metering:** Gain Reduction meter and Dual-layer LR Peak meters (background = input, foreground = output)
- **Precision:** 32-bit floating-point processing
- **Sample Rates:** 44.1 - 96 kHz (Standalone), Host-Dependent in VST3

Standalone-Only Features

- **Playback:** Drag & Drop loading with Loop functionality
- **Export:** Render processed audio to WAV (16-bit or 24-bit)

Standalone Architecture

The standalone architecture enables instant loading, looping, and analysis of audio files without requiring a DAW. It's designed for fast, focused audio work— whether for reference checking, harmonic inspection, or precision adjustments.

CPU-Efficient Processing

Each tool is engineered with highly optimized DSP and lightweight graphics, ensuring stable, low-latency performance in both standalone and VST3 formats—even under heavy analysis or high sample rates.

Analyzer and Windowing

High-Resolution Spectrum Engine

This tool provides a high-resolution real-time spectrum display optimized for accurate dual-layer frequency visualization during playback.

Blackman Windowing

An ultra-low spectral leakage Blackman window provides clean frequency separation and stable fundamentals, minimizing spectral smearing between adjacent bands.

Precision Engine Support

The application operates using a high-resolution 32-bit floating-point processing engine, optimized for desktop performance and stable real-time operation.

Understanding the Spectrum Display

While other clippers use a static oscilloscope to show you a flat line of a clipped peak, **Clipper 7** uses a high-resolution Dual Layer Spectrum Analyzer. It doesn't just show you how much volume you removed—it reveals the harmonics and tone you created.

Why does the spectrum "breathe"?

Clipping is a non-linear process. The specific harmonic content generated depends on the exact micro-second a transient hits the threshold. Even in a perfect digital loop, the phase of your kick drum interacts with the clipping threshold slightly differently on every hit.

Clipper 7's engine is sensitive enough to capture these **micro-dynamic variations**. If the visual moves slightly, it is showing you the organic, living nature of the saturation—similar to how analog gear reacts dynamically to incoming audio.

- **4.5dB Slope:** The display uses a calibrated 4.5dB tilt. While standard Pink Noise creates a flat line at 3dB, Clipper 7 uses the steeper 4.5dB slope preferred by mastering engineers. This aligns the visual with **modern musical balance**, ensuring that if your mix looks flat on screen, it sounds solid in the speakers.
- **350ms Averaging:** Clipper 7 uses a specialized 350ms integration time. This mimics the reaction time of a standard **VU meter** (and the human brain), allowing you to see the "Body" and "Tonal Balance" of the sound, rather than just jittery, instantaneous peaks.

Standalone File Management and Export

Flexible Loading

- **Load Button:** Browse files via your system dialog.
- **Drag & Drop:** Drag audio files directly onto the window for instant loading.

Audio Export

It is intended for reference renders, comparison, and archiving.

- **Format:** WAV
- **Bit Depth:** Selectable 16-bit or 24-bit

WAV Output Only

The application processes all audio in high-resolution 32-bit float, so exporting to compressed formats would cause generation loss and artifact buildup. To preserve full fidelity, the output is limited to uncompressed WAV with selectable 16-bit or 24-bit depth.

Credits

Development: Application architecture, processing integration, analysis engine, and user interface design by Hakan Yurdakul. DSP implementations use JUCE framework components.

Framework: Developed using the JUCE framework.

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Installation & First Launch (Windows)

Clipper 7 standalone version is a portable application. No installation is required.

1. Download and unzip the file.
2. Double-click **Clipper7.exe** to launch the application.

Note: On the first launch, Windows may display a “**Windows protected your PC**” message. This occurs because the application is not yet code-signed by Microsoft.

To continue:

1. Click **More info**
2. Click **Run anyway**

The application does not install background services or modify system files.

VST3 Plugin

1. Copy the file "**Clipper7.vst3**" to the standard VST3 folder on your computer:
C:\Program Files\Common Files\VST3\
2. Once copied, restart your **DAW** or rescan your plugins.