Kerosene

Saturation Plugin

User's Guide

Version 1.0.6 : For Mac and Windows

Acedia Audio

Figure 1: The Kerosene Control Panel

(1) Acedia Audio Logo - Click for resize menu | (2) Autogain toggle | (3) Bypass toggle | (4) Preset management control with arrows | (5) Drive control dial | (6) Color control dial | (7) Mix control dial | (8) Saturation type selection | (9) Transfer function visualizer | (10) Noise control section (Dirt/Duck/Follow/Tone) | (10) Compression & EQ section (Release/Compress/Warmth/Cut Control/Input/Output)

The upper section of the interface is where the main controls are located: three large dials for Drive, Color, and Mix sit alongside a real-time transfer function visualizer that shows you exactly what the saturation is doing to your signal. The bottom section is a panel, with the Noise engine on the left and Compression & EQ on the right. The top bar gives you access to presets, Autogain, and Bypass.

The design philosophy behind Kerosene is straightforward: everything you need for quick, musical saturation lives in the top three dials. Everything you need for deeper sound design — texture, dynamics, and frequency shaping — lives in the Advanced Panel below. You can get great results from the top row alone, but the real depth of the plugin opens up when you start combining saturation modes with the noise engine and compressor.

Saturation is one of the most fundamental tools in audio production. It is the sound of circuits being pushed, of tape being driven, of valves glowing hot. It adds harmonics, shapes dynamics, and introduces the musical grit that makes recordings feel alive. Whether it's the gentle warmth of a console channel just starting to break up or the full-blown chaos of a cranked amplifier, saturation is woven into how we hear and make music.

Kerosene was built to bring all of this into one plugin. A saturation environment with four algorithms which cover a range of analog character: the smooth compression of soft clipping, the aggressive bite of hard clipping, the asymmetric warmth of tube circuits, and the magnetic cohesion of tape machines. Each one responds differently to your signal and produces its own harmonic fingerprint that evolves as you push the drive harder.

But saturation is only part of what's going on here. The integrated noise engine adds analog-style texture that reacts to your signal's dynamics, ducking under loud passages, rising with transients, or just sitting underneath as a constant bed of character. A built-in compressor handles dynamics after the saturation stage with soft-knee characteristics and its own warmth control, while high and low-pass filters let you sculpt exactly which frequencies get saturated.

The real-time transfer function visualizer shows you what the saturation is actually doing. Every parameter change is reflected live in the curve, and when audio is playing, your signal trace maps through it so you can see exactly how your waveform is being shaped. It's an incredibly useful tool for understanding the relationship between your controls and the sound coming out.

Kerosene ships with 41 factory presets organized by source material: vocals, drums, bass, guitar, synths, mix bus, creative, and parallel processing. Each one is a starting point. The real power comes from adjusting and combining controls to find what works for your material.

Whether you need transparent warmth on a master bus, gritty texture on a drum loop, tape-style compression on a vocal, or complete destruction on a synth, Kerosene has you covered. And the visual feedback means you always know exactly what you're doing to the signal.

SATURATION TYPE

The saturation type selector sits directly beneath the Drive dial and is really the heart of Kerosene. It determines the fundamental character of the saturation applied to your signal. Each of the four modes produces a distinct harmonic profile and responds differently to how hard you push the drive.

Switching between types also changes the shape of the transfer function curve in the visualizer, giving you instant visual feedback on how each mode reshapes your signal. At low drive settings the differences can be subtle. Crank the drive up and the character of each mode becomes unmistakable.

Select your saturation type using the arrow buttons beside the selector, or click into it and choose from the dropdown.

Figure 2: Saturation Type Selector Close-up

SOFT CLIP

Soft Clip is the most transparent and forgiving of the four modes. It gently rounds off signal peaks as they approach the clipping threshold, gradually compressing dynamics with predominantly odd harmonic content. A pre-emphasis filter boosts the highs before the saturation stage and a matching de-emphasis restores balance afterward, adding subtle top-end presence without harshness. This is the one to reach for on buses, masters, and anywhere you want warmth without an obvious distortion character.

HARD CLIP

Hard Clip is where things get aggressive. Signal peaks that exceed a variable threshold are sharply truncated, producing a harsher, more obviously distorted sound loaded with both odd and even harmonics. The Color control adjusts the clipping threshold: turning it darker lowers the threshold for earlier, heavier clipping, while brighter settings raise it for a cleaner bite. A PolyBLEP correction smooths the clipping transitions to suppress aliasing artifacts, keeping the aggressive character clean even at high drive settings. Hard Clip works brilliantly on drums, aggressive vocals, and anything that needs an obvious edge.

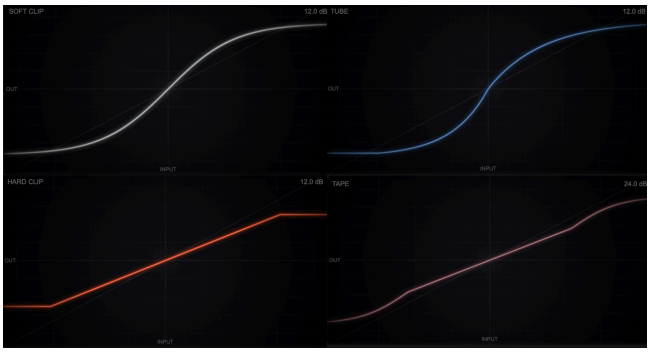

Figure 3: Transfer Function Comparison

TUBE

Tube models the asymmetric saturation of valve circuits. The positive and negative halves of the signal are processed differently: the positive swing saturates gently while the negative swing clips harder, just like a real triode valve. This asymmetry produces a rich mix of even and odd harmonics, and the Color control shifts the balance between them. The result is warm, punchy, and naturally dynamic. Tube excels on bass, vocals, and anything where you want harmonic richness without losing the feel of the performance.

TAPE

Tape simulates the magnetic hysteresis of analog tape machines. Unlike the other modes, Tape maintains internal state per channel: the previous sample's value influences how the current one is processed, creating the subtle temporal smearing that gives tape its characteristic warmth and cohesion. A soft-knee saturation curve handles the dynamics while the hysteresis effect adds low-order harmonic content that thickens the sound without adding harshness. The Color control adjusts both the hysteresis amount and the saturation knee together. The hysteresis model is sample-rate-compensated, so the tape character stays consistent whether you're working at 44.1 kHz or 192 kHz. Tape is especially effective on full mixes, drum buses, and anything that benefits from that glue-like quality of tape compression.

DRIVE

The Drive dial is your main control for how hard the signal hits the saturation algorithm. The harder you push, the more your audio gets driven into the non-linear region of the selected curve. The range spans from -12 dB to +24 dB, giving you everything from subtle harmonic enhancement to heavy distortion.

How your audio distorts depends heavily on which saturation type is selected. Soft Clip compresses gracefully, Hard Clip gets aggressive fast, Tube adds increasing asymmetric warmth, and Tape thickens and smears progressively. Since Drive is a gain control, it will increase the output level. Compensate for this manually with the Output control, or let Autogain handle it.

Double-click the Drive dial to reset it to 0 dB.

COLOR

Color adjusts the tonal character of the saturation. It's a bipolar control: center position is neutral, left goes warmer and darker, right goes brighter and more present.

The key thing to understand is that Color operates *before* the saturation stage. It's not just an EQ on the output. It affects which frequencies get driven into saturation. A dark Color setting will saturate more low-frequency content; a bright setting pushes more high-frequency energy into the curve. This interaction between Color and saturation type is one of the most expressive parts of Kerosene's sound design. Double-click to reset to the center.

Figure 4: Drive, Color, and Mix Dials Close-up

MIX

Mix sets the balance between the original dry signal and the processed wet signal. At 100% you hear only the saturated output; at 0% the signal passes through untouched. This is your parallel saturation control. Blend a heavily driven signal underneath the original to add harmonics and density without losing transients or changing the dynamic feel. This technique works especially well on drums, bass, and full mixes where you want the weight of saturation without completely replacing the original character.

Double-click the Mix dial to reset it to 100%.

THE TRANSFER FUNCTION VISUALIZER

The visualizer takes up the right side of the main control area and shows the saturation transfer function in real time: the relationship between what goes in and what comes out. A straight diagonal line means a clean signal; as you increase drive and change saturation types, the curve bends and reshapes to show you exactly how the signal is being altered.

It responds to every relevant parameter: drive, color, saturation type, filters, compression, warmth. When audio is playing, a live signal trace appears on the curve so you can see how your actual waveform maps through the saturation function. Ghost traces show up when the Dirt control is active, reflecting the noise being mixed in. At high energy levels, rising ember particles appear with increasing drive.

The corners of the visualizer display the current saturation type and drive amount for quick reference, and the visualizer dims to grey when the plugin is bypassed.

The visualizer is one of the best ways to learn how different saturation modes behave. Try switching between types at the same drive setting and watch how the curve changes shape. What you see directly corresponds to the harmonic differences you're hearing.

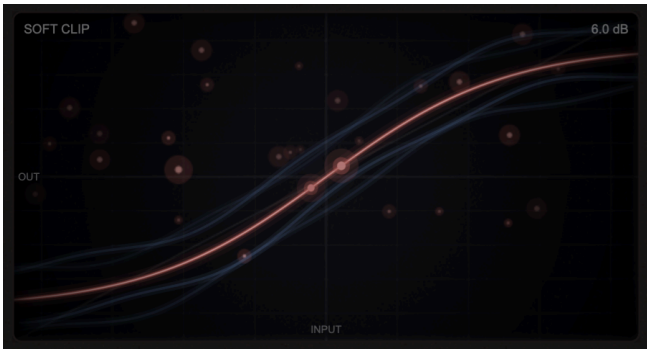

Figure 5: Visualizer with a live signal trace and active Dirt ghost traces

AUTOGAIN

Autogain, in the top-left corner of the interface, automatically compensates for the volume increase caused by the Drive control. When it's engaged, Kerosene applies an opposing level reduction based on the gain profile of the selected saturation algorithm. This lets you push the drive without the signal getting louder, so you can judge the tonal effect of the saturation without being fooled by a simple volume increase.

The compensation amount varies per saturation type, since each algorithm produces a different gain profile at any given drive setting. Soft Clip needs a more aggressive correction to account for its inherently higher output, while Hard Clip uses a lighter touch.

Autogain is invaluable for honest A/B comparisons. Enable it, dial in your saturation, then toggle Bypass to compare the processed and clean signals at matched volume. This is the most reliable way to hear what the saturation is actually adding to your sound.

BYPASS

The Bypass sits next to the Autogain control in the top-left area. When engaged, all processing is bypassed and the dry signal passes through clean.

Use Bypass together with Autogain for level-matched comparisons. Our ears naturally perceive louder signals as sounding better, so unless you level-match, you'll always think the saturated version sounds better even when it doesn't. Removing that bias lets you hear what the processing is actually doing.

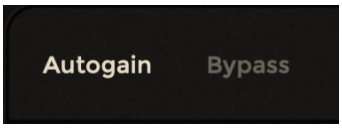

Figure 6: Autogain and Bypass toggles close-up

PRESET SYSTEM

The preset browser lives at the center of the top bar. Use the arrow buttons on either side to step through presets, or click the display to open the full menu. Factory presets are organized into categories: Vocals, Drums, Bass, Guitar, Synths, Mix Bus, Creative, and Parallel. Your own presets appear separately.

From the menu you can also save your current settings as a new preset or open the preset folder on disk for manual management. Every parameter in the plugin is stored, including all advanced panel settings.

Kerosene ships with 41 factory presets organized by source material:

- **Vocals** — Vocal Warmth, Vocal Presence, Vocal Grit, Vocal Tape, Vocal Lo-Fi, and Vocal Radio. Everything from gentle warmth to lo-fi character.
- **Drums** — Drum Glue, Drum Punch, Drum Tape Slap, Vintage Kit, Drum Transistor, Drum Smash, and Parallel Drum Crush. Gentle bus glue through to aggressive parallel crushing.
- **Bass** — Bass Warmth, Bass Growl, Bass Tape, Bass Fuzz, and Sub Saturation. Tube, tape, and clipping flavours for low-end sources.
- **Guitar** — Guitar Clean Boost, Guitar Crunch, Guitar Fuzz, and Acoustic Shimmer. Clean to heavy, electric and acoustic.
- **Synths** — Synth Thickness, Synth Tape Warble, Pad Warmth, and Synth Destruction. Subtle thickening to all-out destruction.
- **Mix Bus** — Console Glue, Tape Mastering, Bus Warmth, Hot Input Console, and Analog Sum. Subtle settings for bus and master processing.
- **Creative** — Worn Cassette, Vinyl Simulation, Broken Speaker, Telephone, Total Destruction, and Industrial. Extreme, lo-fi, and sound design. Autogain is off on these so the level changes are intentional.
- **Parallel** — Parallel Heat, Parallel Crunch, and Parallel Tape. High drive with low mix, designed for parallel processing.

To save your own presets, select "Save Current..." from the preset menu and give it a name. User presets are stored on disk and can be managed by selecting "Open Preset Folder" from the menu.

Figure 7: Preset selection menu structure close-up

Figure 8: Advanced controls panel close-up

The Advanced Panel spans the bottom of the interface, split into two sections: the Noise engine on the left and Compression & EQ on the right. Each section has its own accent colour for quick visual identification.

NOISE SECTION

The Noise section is where you add analog-style dirt and texture. Unlike a simple noise generator, this has reactive qualities: enabling ducking in response to your signal, following your input dynamics, and being shaped tonally. Making it useful for everything from subtle tape hiss to heavy lo-fi degradation.

DIRT

Dirt is a vertical slider that controls how much noise and grit gets mixed into the signal path. At 0% nothing is added. As you push it up, a noise source blends into the audio, adding texture that ranges from subtle warmth to obvious grit.

The Dirt signal sits *before* the saturation stage in the signal chain. That means the noise itself gets saturated along with your audio. It integrates the texture into the sound rather than just layering it on top. This is especially noticeable at higher drive settings where the saturation compresses and shapes the noise together with the source.

The noise uses a per-channel state with independent random seeds, so the stereo image stays stable and nothing collapses to mono.

DUCK

Duck controls how much the noise level drops when audio is playing. At 0% the noise stays constant. As you increase Duck, it will quiet down during louder passages and become more audible in quiet moments and silence.

This recreates the behaviour of real vintage gear. Tape machines and analog circuits have a noise floor that you notice in quiet passages but that gets masked when the music is loud. Higher Duck settings make this effect more dramatic, with the noise swelling up in the gaps between notes and phrases.

FOLLOW

Follow does the opposite of Duck. Instead of the noise hiding when audio is present, it rises when the signal gets loud. Increase Follow and the noise becomes responsive to transients, effectively riding along with the dynamics of your input.

This creates interesting textural effects where hits and transients bring a burst of grit that decays with the signal. It works especially well on percussive material and can add a real sense of impact and energy.

Duck and Follow can be used together, and they interact with each other. Experimenting with different balances between the two opens up a wide range of dynamic noise behaviours that you simply cannot get from a static noise generator.

TONE

Tone adjusts the spectral balance of the noise signal. Left goes darker and bassier; right goes brighter and hissier. It's a tilt filter on the noise source, letting you match the noise character to whatever you're working with.

Dark noise settings are great for emulating tape hiss on warm, bass-heavy material. Bright settings add the crackling, high-frequency texture you associate with vinyl or aged recordings. Combined with Dirt, Duck, and Follow, Tone gives you precise control over every aspect of the noise engine's character.

Figure 9: Noise controls section close-up

COMPRESS

Compress adjusts the amount of compression applied after the saturation stage. It's a single-knob compressor that simultaneously adjusts threshold, ratio, and knee to give you a musical range from subtle levelling to heavy squash.

The compressor uses a true soft-knee design, so compression engages gradually rather than switching on abruptly at the threshold. This makes the compression character feel natural and transparent. A sidechain high-pass filter at 80 Hz is always active in the detection circuit, preventing kick drums and other low-frequency content from pumping the compressor and causing the entire mix to duck.

WARMTH

Warmth adds harmonic saturation within the compressor stage itself, separate from the main saturation engine. It uses asymmetric tube-style distortion with both even and odd harmonic content, followed by a DC blocker and output softening.

At low settings it adds subtle harmonic richness that thickens the sound without obvious distortion. Push it higher and it gets more aggressive, stacking saturation on top of whatever the main drive is already doing. This is especially effective alongside moderate compression: the compressor controls the dynamics while Warmth adds density.

INPUT

Input adjusts the signal level entering the plugin, from -24 dB to +12 dB. It operates before any processing and can be used to drive the saturation harder or softer without touching the Drive control. This is handy when working with material at different levels, letting you calibrate the input stage to hit the saturation at the right level for your source.

OUTPUT

Output sets the final signal level leaving the plugin, from -24 dB to +12 dB. Use it to compensate for any level changes introduced by saturation, compression, or filtering. When Autogain is off, this is your primary tool for level-matching the processed signal to the original.

CUT

Cut is a frequency range slider that combines the high-pass and low-pass filters into a single control. It represents the full audible spectrum from 20 Hz to 20 kHz, with two handles that define the frequency window entering the saturation stage. The left handle sets the high-pass cutoff and the right handle sets the low-pass cutoff. Everything between the two handles passes through; everything outside is filtered out.

Drag either handle independently to move that filter cutoff, or grab the region between the two handles to shift the entire frequency window up or down while preserving its width. The two handles can be brought together to the same point, progressively narrowing the passband until the signal is completely cut. When a handle is at its default position — 20 Hz for the low cut, 20 kHz for the high cut — that filter is bypassed entirely and has no effect on the signal.

Both filters sit in the signal chain after the noise engine but before the main saturation stage. This means they shape which frequencies actually enter the saturation algorithm, giving you direct control over which harmonics get generated. Use the low cut to remove rumble or keep bass frequencies from dominating the saturation character. Use the high cut to tame harshness or fizz that heavy saturation can produce, or to focus the effect on a specific frequency range. Rolling off the top end after saturation is a classic technique for achieving that analog warmth where transformers and tape naturally attenuate high-frequency content.

At extreme settings with both handles close together, you can isolate a narrow band of frequencies for saturation while leaving everything else clean. Combined with the Mix control, this opens up creative possibilities for frequency-targeted parallel saturation.

RELEASE TOGGLE

The Release toggle switches the compressor between a fast and slow release time. Fast release lets the compressor recover quickly, preserving more of the signal's natural dynamics and transient detail. Slow release applies a longer recovery, creating a smoother, more sustained compression that's useful for gluing elements together.

Which one you want depends on the material. Fast release works well on percussive sources where you need punch and clarity. Slow release is better suited to sustained material like pads, vocals, and bus processing where you're after a more even, controlled feel.

Figure 10: Compression & EQ controls section close-up

SIGNAL FLOW

Audio moves through Kerosene in this order:

1. Input Gain — Sets the level hitting the processing chain.

2. Dirt/Noise Engine — Noise generation with duck, follow, and tone shaping.

3. High & Low Cut Filters — Frequency shaping before saturation.

4. Drive + Saturation — The selected algorithm (Soft Clip, Hard Clip, Tube, or Tape) with 4x oversampling and DC blocking.

5. Autogain Compensation — Per-algorithm output level correction.

6. Compressor — Soft-knee compression with warmth and sidechain HPF.

7. Output Gain + Mix — Final level and wet/dry blend.

8. Bypass Crossfade — Smooth transition to dry signal when bypassed.

The saturation stage runs at 4x oversampling to keep aliasing artifacts at bay. All parameter changes are smoothed to prevent clicks, pops, and zipper noise during automation or manual adjustments.

KEYBOARD SHORTCUTS

Double-click any dial or slider — Reset to default value.

Arrow keys on selectors — Step through saturation types and presets.

TIPS FOR GETTING THE MOST OUT OF KEROSENE

Use Autogain for honest comparisons. Turn it on, dial in your saturation, then flip Bypass.

Start with Drive and saturation type. Get the basic character right before reaching for the advanced panel. The interaction between Drive, Color, and saturation type alone covers an enormous range of sounds.

Use Mix for parallel saturation. Heavy drive with a reduced Mix setting lets you add density and harmonics without destroying transients or changing the dynamic feel of your source.

Dirt + Duck for vintage character. A small amount of Dirt with moderate Duck creates the feel of a noise floor that breathes with your audio, like real analog equipment.

Compress + Warmth for glue. Moderate compression with a touch of Warmth is a great way to glue a bus or full mix together, adding cohesion without obvious squash.

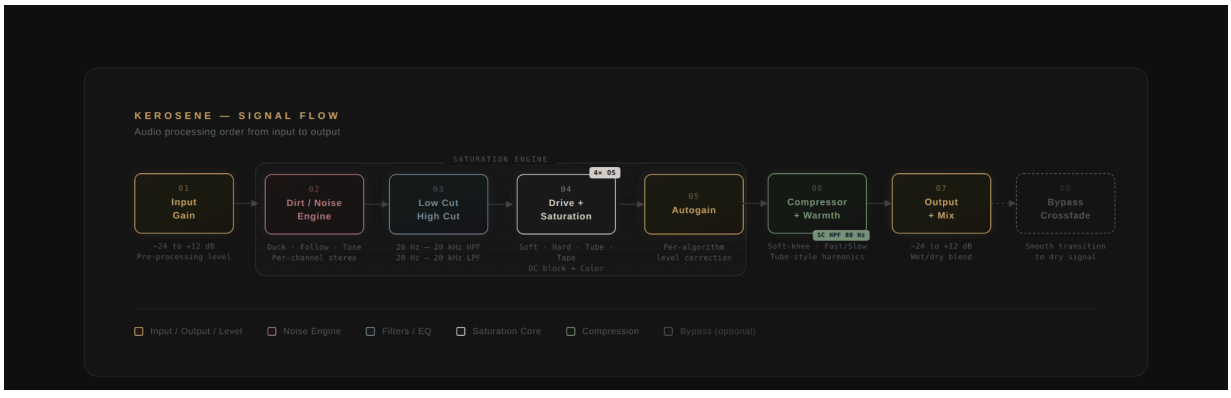

Figure 12: Kerosene signal flow diagram

RESIZING THE INTERFACE

Clicking on the Acedia Audio logo in the top right will open the GUI resize dialog, allowing you to resize the plugin interface.

SYSTEM REQUIREMENTS

Plug-in Formats: VST3, AU

macOS: 13.0 or later (Apple Silicon native)

Windows: 10 or later (64-bit)

RAM: 4 GB minimum, 8 GB recommended

Disk Space: 50 MB

Supported DAWs: Logic Pro, Ableton Live, FL Studio, Cubase, Reaper, and any host supporting VST3 or Audio Units.

An internet connection is required at the time of activation.

SUPPORT

If you run into any issues or have questions, get in touch:

support@acediaaudio.com

Visit **acediaaudio.com** for updates, documentation, and resources.