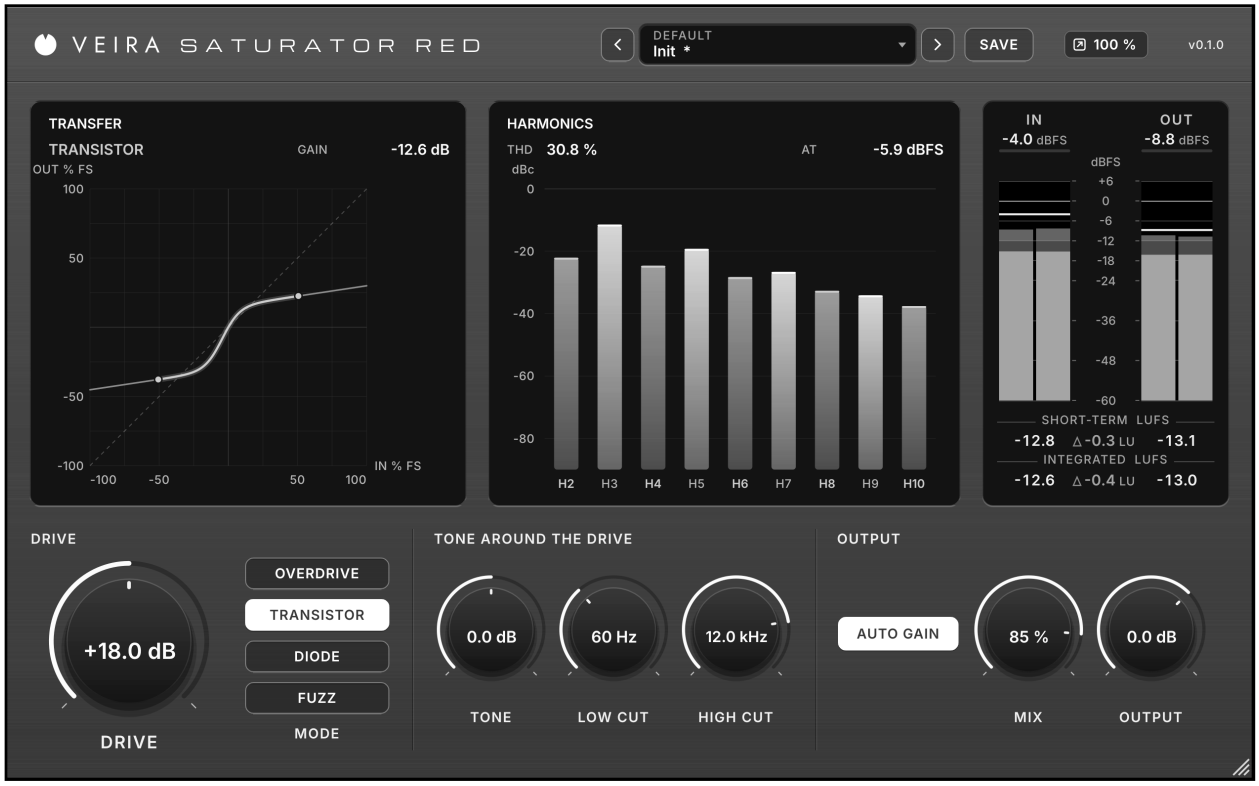
VEIRA

SATURATOR

VEIRA Saturator Red

User Manual

The bold one of the four VEIRA colour saturators: stompbox overdrive, a transistor stage, diode clipping and fuzz, with DRIVE up to 36 dB, a TONE that tilts what goes into the drive, a level-matched AUTO GAIN and parallel MIX.



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Welcome

Thank you for choosing **VEIRA Saturator Red**. It adds grit, warmth and edge in the manner of analog circuits: the classic overdrive pedal, a single transistor stage, diode clipping and a two-transistor fuzz. Use it a little to thicken a vocal or glue a mix bus, more to make a bass growl or a snare crack, and all the way for distorted guitars, fuzzed synths and broken-speaker effects.

It is the bold one of the four VEIRA colour saturators, and it is painted like the rest of the Red family: deep lacquered red, cream print and black knobs.

What makes it different

- **Four MODES:** [OVERDRIVE], [TRANSISTOR], [DIODE] and [FUZZ], each its own curve with its own mix of harmonics, measured and shown.
- **A TONE around the drive.** [TONE] tilts what goes into the drive and takes half of it back afterwards, so it changes the colour of the distortion more than the clean sound. [LOW CUT] before and [HIGH CUT] after shape the band.
- **Hear the colour, not the volume.** [AUTO GAIN] takes back what [DRIVE] adds in level and matches the output's loudness to the input's, so turning [DRIVE] changes the character, not how loud it is.
- **Parallel in time.** [MIX] blends the dry signal in step with the driven one, so parallel saturation never combs.
- **Clean of aliasing.** The curve runs at 8 times the sample rate with antiderivative anti-aliasing: even [FUZZ] at full [DRIVE] keeps what folds back around −70 dBc.
- **See it:** the [TRANSFER] curve with the span your peaks reach, and the [HARMONICS] it makes at your level, with the THD.
- **39 factory presets** in 9 folders.

How this manual is organised. *Getting started* installs and activates the plugin. *The panel at a glance* names its parts. *How saturation works* explains harmonics and what happens inside. *Controls* and *Displays* explain every control and graph. *Presets*, *Recipes*, *Specifications* and *Troubleshooting* close the manual.

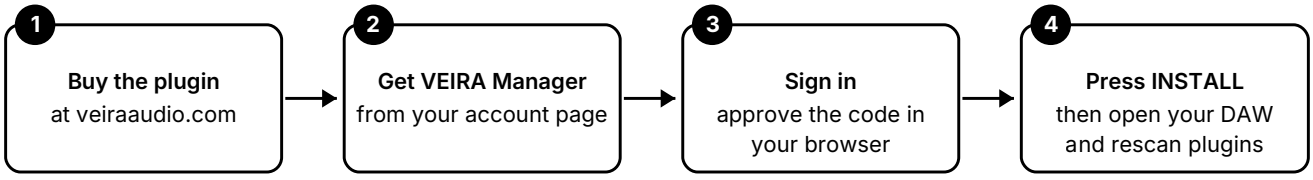
Getting started

What you need

macOS	macOS 11 Big Sur or later. Native on Apple silicon and Intel Macs (universal).
Windows	Windows 10 or 11, 64-bit.
Plugin formats	VST3 (macOS and Windows), Audio Units (macOS), and a standalone app. Pro Tools (AAX) versions arrive once they are signed for Pro Tools.
Hosts	Any DAW that loads VST3 or Audio Units: Logic Pro, Cubase, Nuendo, Ableton Live, Studio One, Reaper, FL Studio, Bitwig and others.
Account	A VEIRA account at veiraaudio.com, and the free **VEIRA Manager** app.
Internet	Needed to install and to refresh the licence. The plugin itself never goes online.

Install with VEIRA Manager

VEIRA plugins are not downloaded from the website one by one. You install them with **VEIRA Manager**, the free VEIRA app that installs, updates and activates everything you own. Its own manual covers it in full; the short version is:



One account works on up to three computers. Updates are free for life.

FIGURE 1 From purchase to first sound in four steps.

1. **Buy** VEIRA Saturator Red at **veiraaudio.com**. It's a one-time purchase: you own it for good, with free updates.
2. **Download VEIRA Manager** from your account page (or veiraaudio.com/manager) and install it.
3. **Sign in.** VEIRA Manager shows a short code and opens your browser; confirm the code there. Your password is never typed into the app.
4. Find VEIRA Saturator Red in the list and press INSTALL. When it says SHOW, it's installed. Open your DAW and let it rescan its plugins.

After installing, VEIRA Saturator Red appears in your DAW under the manufacturer **VEIRA** (in Logic Pro: Audio Units ▸ VEIRA ▸ VEIRA Saturator Red).

Activation and the licence

VEIRA Manager keeps a licence on your computer that the plugins check. It is refreshed every time VEIRA Manager opens and stays valid for 30 days offline, so you can work without internet as long as you open VEIRA Manager now and then.

Without a valid licence, VEIRA Saturator Red still loads and works, but **its sound fades out for 1.5 seconds every 30 seconds**, and a strip along the bottom of its window says why (for example, *NOT ACTIVATED ON THIS COMPUTER. SIGN IN WITH VEIRA MANAGER.*). Clicking the strip opens your account page.

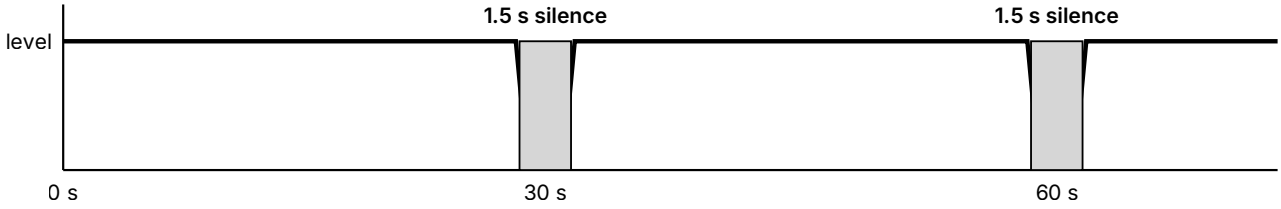


FIGURE 2 What an unlicensed copy does. With a valid licence the audio is never touched.

- **Activating while your DAW is open** takes effect within about two minutes. You don't need to reload the plugin.
- **"Not activated on this computer"**: open VEIRA Manager and sign in.
- **"Expired"**: open VEIRA Manager while online; it renews the licence at once.
- **"Not included"**: the signed-in account doesn't own VEIRA Saturator Red. Check that you're signed in with the account you bought it with.

Formats and where the files go

VEIRA Manager puts every format in the standard place, so you never need to copy files by hand:

Format	macOS	Windows
VST3	`~/Library/Audio/Plug-Ins/VST3` (just for me, the default) or `/Library/Audio/Plug-Ins/VST3` (all users)	`C:\Program Files\Common Files\VST3` (all users, the default) or `%LOCALAPPDATA%\Programs\Common\VST3`
Audio Units	`~/Library/Audio/Plug-Ins/Components` or `/Library/Audio/Plug-Ins/Components`	(Audio Units are macOS only)
Standalone	`~/Applications/VEIRA` or `/Applications/VEIRA`	`C:\Program Files\VEIRA` or `%LOCALAPPDATA%\Programs\VEIRA`

You choose *just for me* or *all users* in VEIRA Manager's install settings.

The standalone app runs VEIRA Saturator Red on its own, with your audio interface's input and output, which is handy for trying presets without a DAW.

The panel at a glance

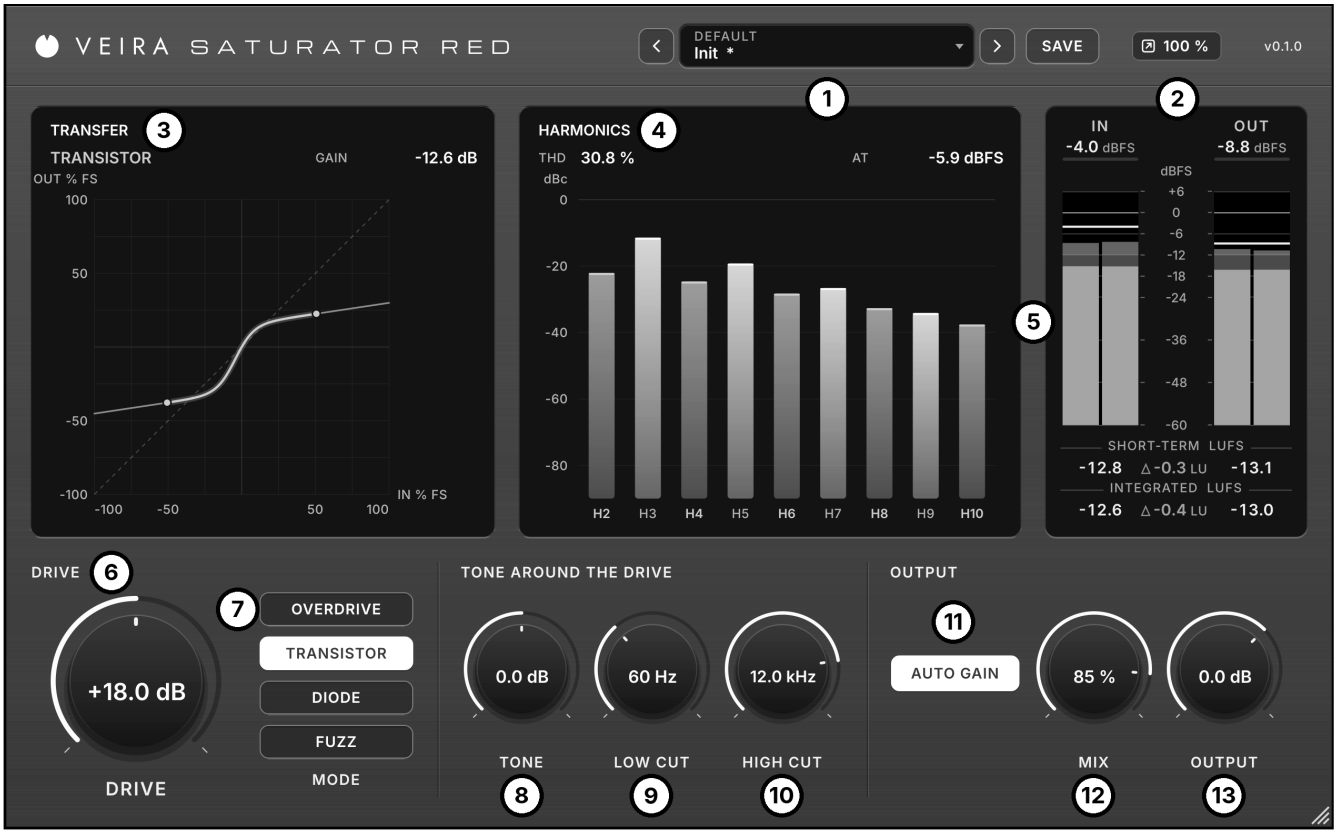


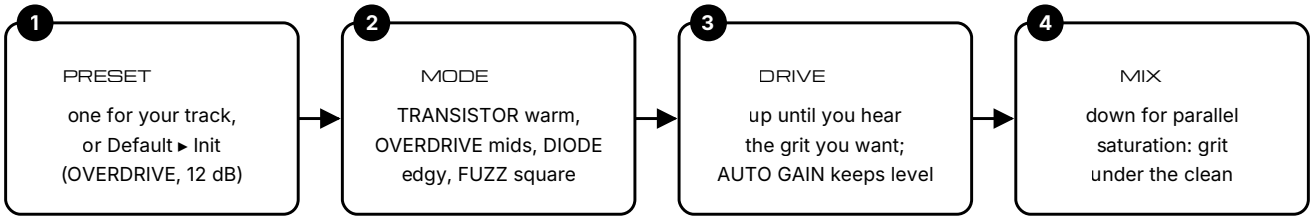
FIGURE 3 VEIRA Saturator Red on a mix: TRANSISTOR with DRIVE at +18.0 dB, LOW CUT 60 Hz, HIGH CUT 12.0 kHz, AUTO GAIN on and MIX 85 %.

	Part	What it does
1	Preset browser	Steps through and saves presets. See *Presets*.
2	Size button	The window's size: 75 to 200 %, or *Fit to screen*.
3	TRANSFER	The curve your signal goes through, with the span your peaks reach.
4	HARMONICS	The 2nd to 10th harmonic and the THD the curve makes at your level.
5	Meter bridge	IN and OUT meters with short-term and integrated loudness.
6	DRIVE	How hard the signal hits the curve.
7	MODE	OVERDRIVE, TRANSISTOR, DIODE or FUZZ.
8	TONE	Tilts what goes into the drive, darker or brighter.
9	LOW CUT	Takes lows out before the drive.
10	HIGH CUT	Smooths the fizz after the drive.
11	AUTO GAIN	Keeps the loudness, so you hear the colour.

	Part	What it does
12	MIX	Parallel saturation: the driven signal against the dry one.
13	OUTPUT	The level after everything.

The window has the TRANSFER and HARMONICS displays at the top and the meter bridge at the right. The controls sit in three groups along the bottom, under the captions DRIVE, TONE AROUND THE DRIVE and OUTPUT.

Quick start: saturation in four moves



Then TONE for the colour of the distortion, and LOW CUT or HIGH CUT if the lows get flubby or the top fizzes.

FIGURE 4 The quickest way to saturation. *Default ▸ Init*: OVERDRIVE at 12 dB of DRIVE, AUTO GAIN on, MIX 100 %.

Using the controls

Every VEIRA plugin is played like a piece of hardware. The same few parts appear on every panel:

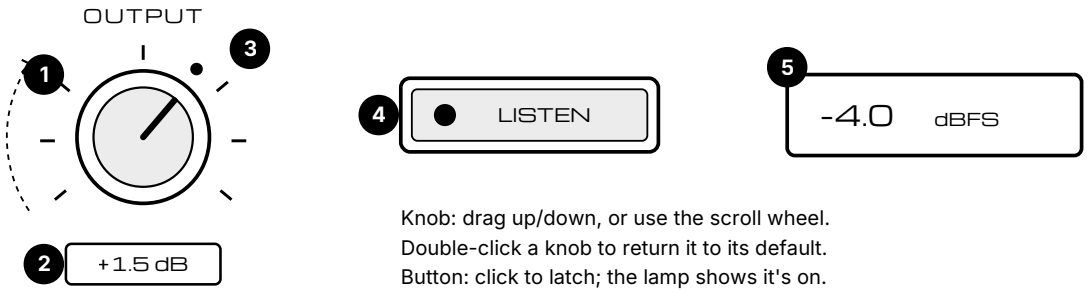


FIGURE 5 The parts you'll find on every VEIRA panel (the labels are examples).

- 1 **Knob.** Drag up to turn it clockwise, down to turn it back, or use your mouse wheel. **Double-click** returns it to its default. The engraved pointer and the small dot on the scale show where it's set.
- 2 **Value window.** The backlit window under each knob shows its exact value with its unit.
- 3 **Silkscreen label.** The control's name, as it appears in your DAW's automation list.
- 4 **Push button.** Click to switch on; the lamp lights and the cap sits lower in its bezel. Click again to switch off.

- (5) **Readout.** Live numbers update ten times a second so you can read them while the meters move. A value over 0 dBFS shows as a warning.

Tooltips: hover over any control or display for a short explanation. On displays, the tooltip depends on where you point.

Automation: every knob and button is a host parameter, so you can automate it in your DAW and control it from a MIDI controller or control surface that your DAW maps.

Units: VEIRA never shows a bare number. **dBFS** is level against digital full scale (0 dBFS is the loudest a digital signal can be); **dB** is a change in gain; **LUFS** is loudness as streaming services and broadcasters measure it; **LU** is a difference in loudness (1 LU = 1 dB).

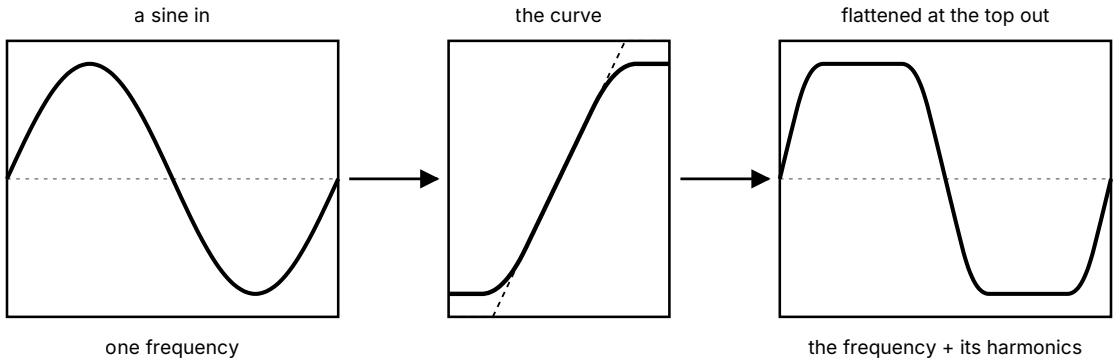
On VEIRA Saturator Red's panel the parts look a little different from the drawing above:

- **Knobs show their value in the middle** ([+18.0 dB], [60 Hz], [85 %]): the knobs are black, and a ring printed in cream on the paint around each one (in print, the light arc) shows how far it is turned. The control's name is printed under the knob. [DRIVE], the one you touch most, is the large one.
- **Type a value:** right-click a knob (Control-click on a Mac). A field opens with the current value; type the new one and press Return. The number is enough: **18** for 18 dB of [DRIVE], **120** for a 120 Hz [LOW CUT], **8** or **8k** for an 8 kHz [HIGH CUT]; **off** switches a cut off. Press Escape or click elsewhere to leave it unchanged.
- **Buttons have no lamps:** the selected [MODE] and [AUTO GAIN], when it is on, fill with cream with red lettering (in print, a light button); the others are dark wells in the paint with cream lettering. One mode is always selected.
- **The window size.** VEIRA Saturator Red opens at 100 %, 1260 × 780 points. To change it, click the size button (2) in the header and choose 75, 90, 100, 125, 150 or 200 % or *Fit to screen* (sizes that don't fit your display are left out); or drag the grip in the bottom-right corner (double-click it for 100 %); or press Cmd + [=] and Cmd + [-] (Ctrl on Windows) to step up and down and Cmd + [0] for 100 %. Your DAW saves the size with the session, and new instances open at the size you chose last.
- **The face:** deep lacquered red with cream print and black knobs. The displays, the meter bridge and the preset window are dark screens set into the paint, so the meters keep their usual colours. Every label on the paint stands at least 4.5:1 against it (the WCAG AA contrast for text).

How saturation works

Harmonics: the colour of a saturator

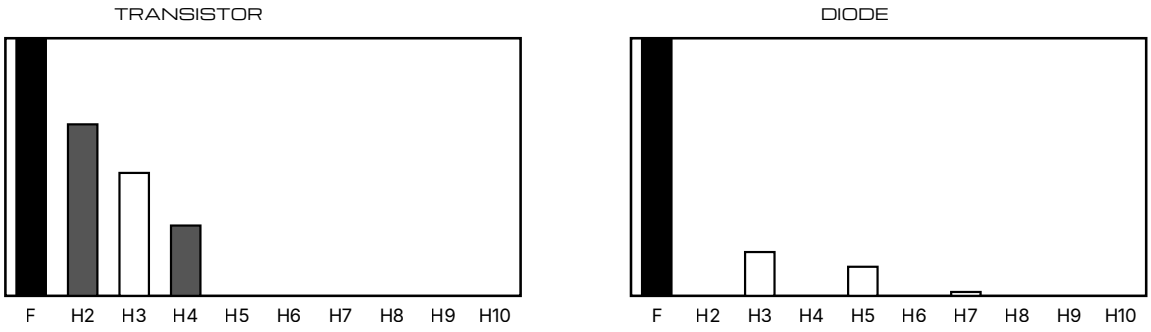
Every amplifier, transistor, valve and tape machine has a limit. Push a signal close to it and the circuit can't follow any more: the peaks of the wave are rounded or flattened. A flattened wave is no longer a pure tone. It holds **harmonics**, new tones at 2, 3, 4 … times the frequency of the note, and those harmonics are what you hear as warmth, thickness, grit or fuzz.



Saturation bends the signal through a curve that runs out of room near the top. The flattened wave holds new frequencies at 2, 3, 4 … times the note: its harmonics. Their mix is the colour of the saturator.

FIGURE 6 A sine through a clipping curve: the flattened wave holds the note plus its harmonics.

Which harmonics, and how many, is the character. A curve that treats the top and bottom of the wave alike (symmetric) makes only **odd** harmonics (3rd, 5th, 7th …): edgy and bright, a little hollow. A curve that treats them differently (lopsided, biased) also makes **even** harmonics (2nd, 4th …): an octave and an octave and a fifth above the note, which sound warm and full. A soft curve that rounds the peaks makes mostly low harmonics; a hard one that flattens them makes many, up to the very top, which is the buzz of a fuzz.

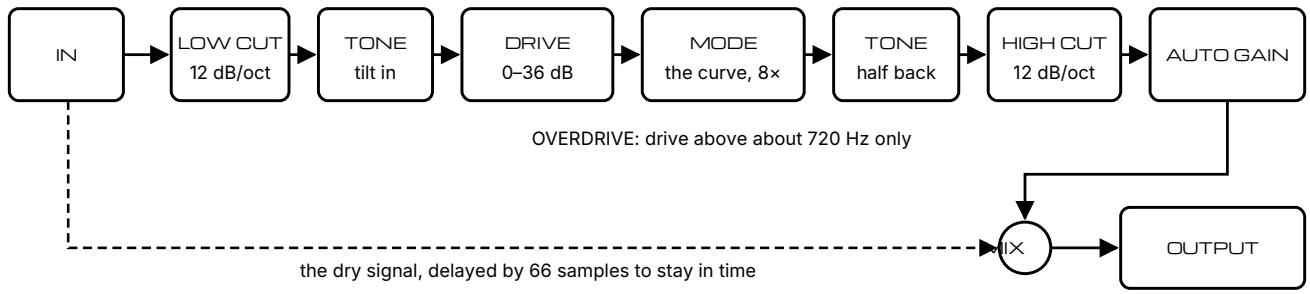


Even harmonics (dark: H2, H4 …) are octaves and fifths of the note: warm and full. Odd harmonics (white: H3, H5 …) sound edgier and brighter. Computed from the two curves at DRIVE 12 dB for a 1 kHz sine at −18 dBFS RMS.

FIGURE 7 The harmonics of the TRANSISTOR and DIODE curves, relative to the note (F), as the HARMONICS display shows them.

How hard the signal hits the curve is the amount. Gently, only the loudest peaks touch it, so saturation also works a little like a fast limiter: it rounds the peaks and makes the sound denser. Hard, everything is flattened and the sound turns into distortion.

What happens inside VEIRA Saturator Red



The curve runs at 8 × the session's rate with antiderivative anti-aliasing; a DC blocker (8 Hz) follows it.
Latency: 66 samples at every rate (1.4 ms at 48 kHz), reported to your DAW. MIX 0 % is the input, delayed, bit for bit.

FIGURE 8 The signal flow.

1. LOW CUT takes lows out of what goes into the drive.
2. TONE tilts the signal around 800 Hz.
3. DRIVE sets how hard it hits the curve. In OVERDRIVE the drive applies above about 720 Hz only, as in the classic overdrive pedal.
4. **The MODE's curve** runs at 8 times the session's sample rate, with antiderivative anti-aliasing, then back down; a DC blocker at 8 Hz takes away any offset a lopsided curve makes.
5. **Half of TONE is taken back**, so the clean sound moves only by half while the distortion keeps the full tilt.
6. HIGH CUT smooths the top of what the curve made.
7. AUTO GAIN keeps the loudness, MIX blends with the dry signal (delayed to stay in time), and OUTPUT sets the level.

Latency: 66 samples at every sample rate (1.4 ms at 48 kHz), the oversampling filters, always the same and reported to your DAW, which compensates. Your DAW's bypass and MIX's dry signal are delayed by the same amount, and MIX at 0 % is the input, delayed, bit for bit.

Controls

DRIVE and MODE

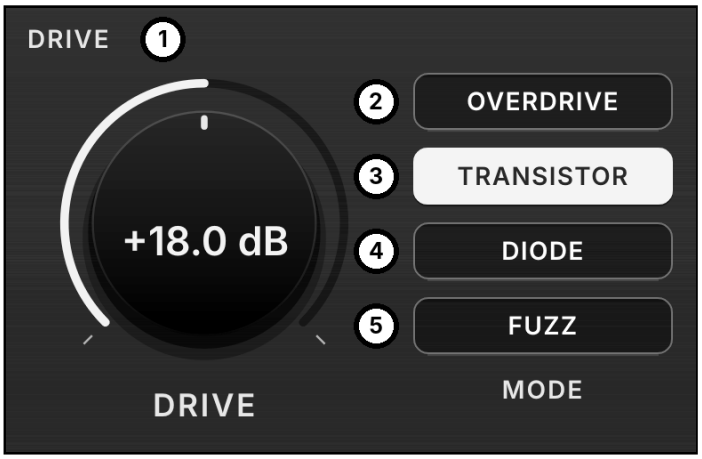
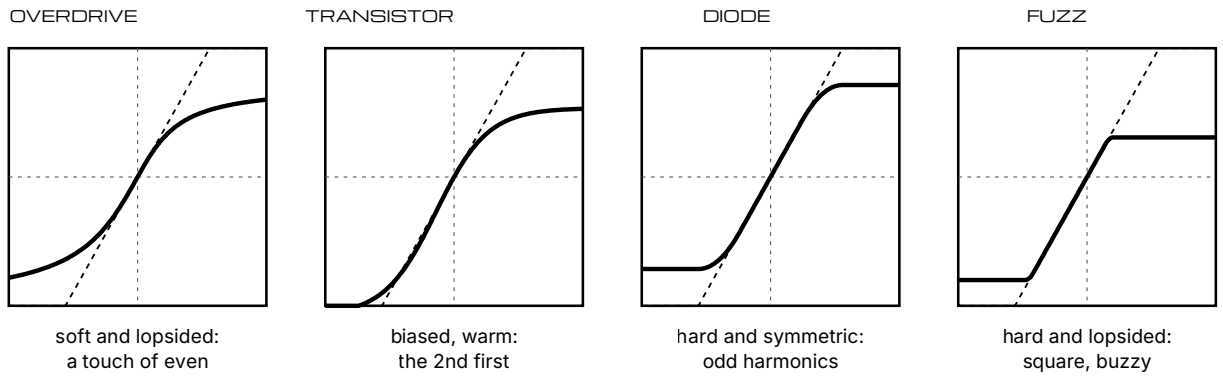


FIGURE 9 The DRIVE group: 1 DRIVE, and the four MODE buttons: 2 OVERDRIVE, 3 TRANSISTOR (selected), 4 DIODE and 5 FUZZ.

Control	Range	Default	What it does
DRIVE	0 to 36 dB	+12.0 dB	How hard the signal hits the curve.
MODE	OVERDRIVE, TRANSISTOR, DIODE, FUZZ	OVERDRIVE	The curve: the kind of saturation.

DRIVE raises the signal into the curve, from 0 to 36 dB. With AUTO GAIN on, the loudness stays where it was and only the colour changes, so you can turn DRIVE by ear. The harmonics rise steadily with it: TRANSISTOR gives 10.3 % THD at 12 dB of DRIVE and 35 % at 30 dB (a 1 kHz sine at −18 dBFS RMS). Because the curve depends on level, a louder track saturates more at the same setting; the factory presets were made on tracks peaking at −8 dBFS and buses at −4 dBFS.

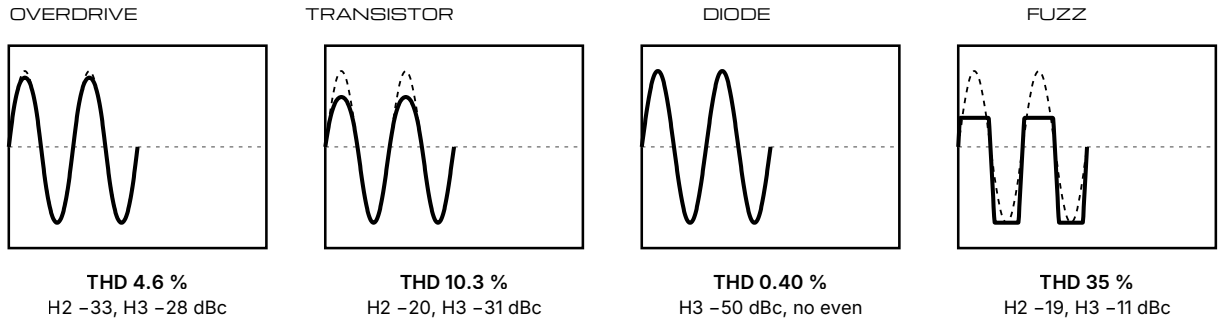
MODE picks the curve. Switching modes fades out and in over 10 ms, so it never clicks.



The four curves, input across and output up (the dashed line is no change). FUZZ also adds 12 dB more gain.

FIGURE 10 The four curves (computed from the plugin's own formulas).

- [OVERDRIVE]**: the classic overdrive pedal.** Diodes in the gain stage's feedback: a soft clip, a little lopsided (one diode against two), so mostly odd harmonics with a touch of even. And, as in the pedal, the drive applies only **above about 720 Hz**: the lows reach the curve almost clean and stay tight while the mids push forward. The guitar mode, and great on bass, organ and a mix bus that needs to come forward.
- [TRANSISTOR]**: a single transistor stage.** A warm, biased curve that makes the **2nd harmonic first**: thick, round and full, the most "analog warmth" of the four. For bass DI, vocals, keys, mix buses and masters.
- [DIODE]**: hard clipping to ground with two silicon diodes.** Clean up to a point, then flattened, the same on both sides: **odd harmonics only**, edgy and bright. Little colour at low [DRIVE] (0.40 % THD at 12 dB), then a hard edge: for snare crack, pick attack, aggressive vocals and clipping in parallel.
- [FUZZ]**: the two-transistor fuzz.** 12 dB more gain and a hard, lopsided clip: **square and buzzy**, even and odd harmonics together. For guitar and synth fuzz, distorted bass and effects.

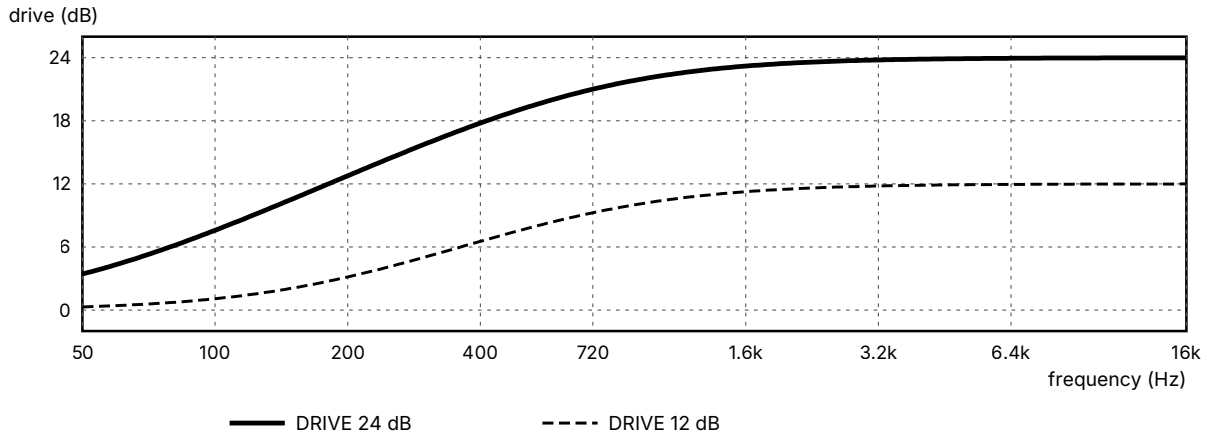


Two cycles of a 1 kHz sine at −18 dBFS RMS with DRIVE at 12 dB (drawn at the same height; dashed: the sine in), and what was measured through each MODE.

FIGURE 11 What each mode does to a sine, and what was measured.

[MODE] (1 kHz, −18 dBFS RMS, [DRIVE] 12 dB)	THD	2nd harmonic	3rd harmonic
[OVERDRIVE]	4.6 %	−33 dBc	−28 dBc
[TRANSISTOR]	10.3 %	−20 dBc	−31 dBc

MODE (1 kHz, −18 dBFS RMS, DRIVE 12 dB)	THD	2nd harmonic	3rd harmonic
DIODE	0.40 %	none	−50 dBc
FUZZ	35 %	−19 dBc	−11 dBc



In OVERDRIVE, as in the classic overdrive pedal, the drive applies above about 720 Hz: the lows reach the curve almost clean and stay tight, while the mids are pushed forward.

FIGURE 12 How much OVERDRIVE drives each frequency, at 12 and 24 dB of DRIVE.

TONE AROUND THE DRIVE: TONE, LOW CUT and HIGH CUT

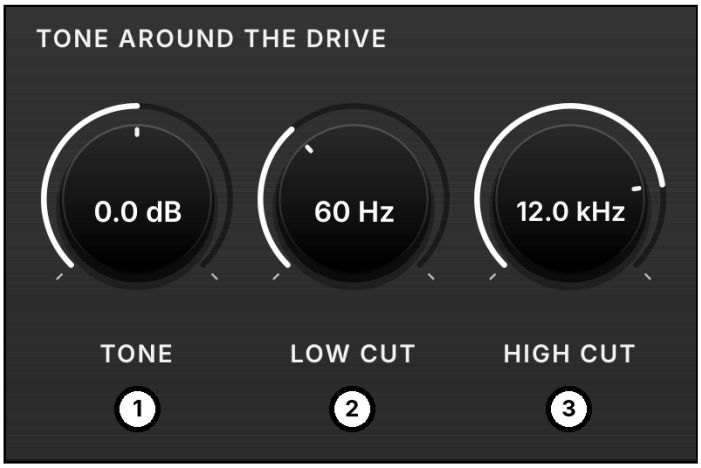
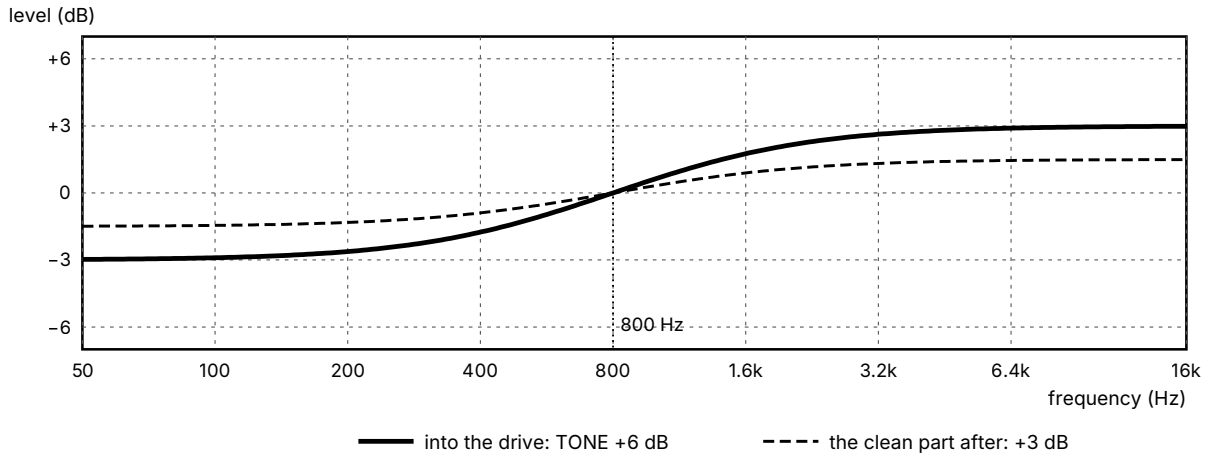


FIGURE 13 The TONE AROUND THE DRIVE group: 1 TONE, 2 LOW CUT and 3 HIGH CUT.

Control	Range	Default	What it does
TONE	−6 to +6 dB	0.0 dB	Tilts the signal into the drive around 800 Hz and takes half of it back after.
LOW CUT	OFF, 20 Hz to 1 kHz	OFF	A 12 dB/oct high-pass **before** the drive. Fully left is OFF.
HIGH CUT	1 kHz to 20 kHz, OFF	OFF	A 12 dB/oct low-pass **after** the drive. Fully right is OFF.

TONE decides which part of the sound is driven hardest. Turned up (+), the highs go into the curve hotter: a brighter, more biting distortion. Turned down (–), the lows and low mids are driven harder: darker and thicker. After the curve, half of the tilt is taken back, so the clean part of the sound moves by only half as much while the distortion keeps all of it. That makes TONE a control for the **colour of the grit** rather than an EQ. Measured: at +6 dB a 3 kHz tone gets 3.1 % THD where at −6 dB it gets none, and a 200 Hz tone the other way round.



TONE tilts the signal into the drive and takes half of it back after: the highs are driven harder, but the clean sound only moves by half. Measured: +6 dB gives a 3 kHz tone 3.1 % THD where −6 dB gives none.

FIGURE 14 TONE at +6 dB: the tilt into the drive, and what is left of it in the clean part afterwards.

LOW CUT takes lows out before the drive. Big low notes eat up the curve: they push the whole wave into the clip and make the distortion flubby and wobbly, a little like a speaker farting out. A low cut at 60–150 Hz gives a tighter, clearer distortion on guitars, vocals and drums. The presets for bass keep it off or low (up to 80 Hz); the telephone and megaphone effects set it high (400–700 Hz).

HIGH CUT works after the drive and smooths the fizz the curve adds at the top: 8–12 kHz takes the edge off a distorted guitar or bass, 3–5 kHz makes a lo-fi, telephone or radio band with LOW CUT.

All three glide when you move them (20 ms, in log frequency), so they can be swept and automated without clicks.

OUTPUT: AUTO GAIN, MIX and OUTPUT

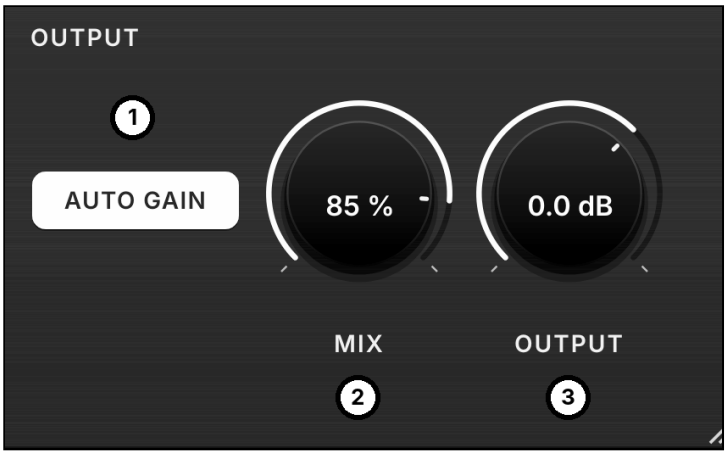
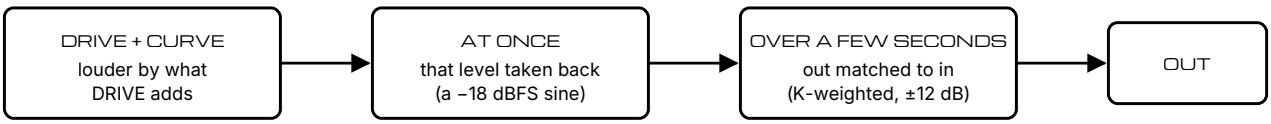


FIGURE 15 The OUTPUT group: 1 AUTO GAIN (on), 2 MIX and 3 OUTPUT.

Control	Range	Default	What it does
AUTO GAIN	on, off	on	Keeps the loudness, so you hear the colour, not a louder signal.
MIX	0 to 100 %	100 %	Parallel saturation: the driven signal against the dry one, in time.
OUTPUT	−24 to +12 dB	0.0 dB	The level after everything.

AUTO GAIN is the honest way to judge saturation: louder always sounds “better” for a moment, so a fair comparison needs equal loudness. It works in two steps. **At once**, the level that DRIVE, TONE and the curve add to a −18 dBFS RMS sine is taken back. **Then**, because a curve’s gain depends on the level going in (a quiet passage is driven less than a loud one), the loudness of the output is compared with the input’s over the last few seconds (K-weighted, as loudness meters weigh it; silence below −60 dBFS isn’t counted) and the difference, up to ±12 dB, is taken back too, gliding over half a second.



Turning DRIVE changes the colour, not the loudness. A curve’s gain depends on the level going in (a quiet passage is driven less than a loud one), so the loudness of the output is then matched to the input’s over the last few seconds.

Measured: a 1 kHz sine stays within 0.05 dB in every mode at DRIVE 0–36 dB; drums, bass and a rock mix at DRIVE 18 dB within 0.5 dB.

FIGURE 16 AUTO GAIN in two steps.

Switch AUTO GAIN off when you want the level rise of real drive, for example into a compressor that should react to it, and set the level with OUTPUT.

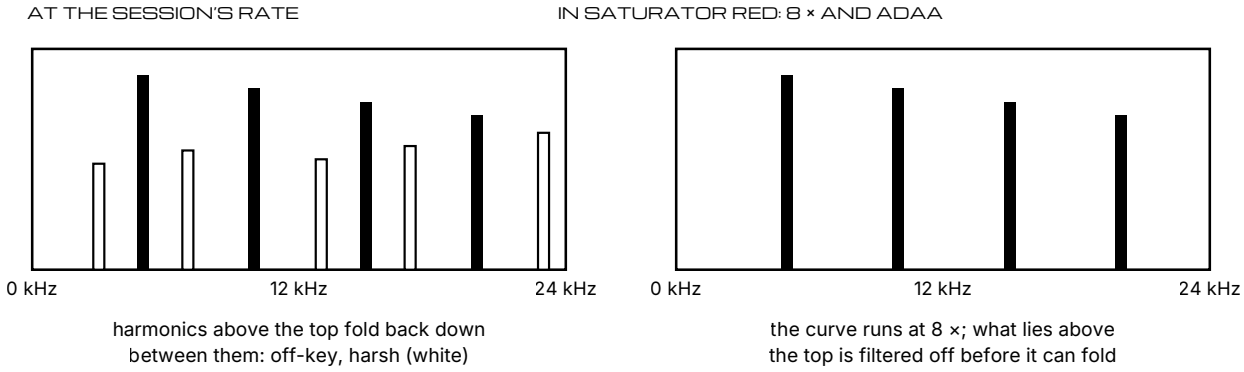
MIX blends the saturated signal with the dry one. The dry signal is delayed by exactly the latency of the oversampling, so the two are in time and the blend never combs: this is **parallel saturation**, the grit and density of a hard drive under the clean, natural sound. Many presets work this way (MIX 20–70 %).

AUTO GAIN matches the driven signal; when you blend it under the dry one, TONE and the cuts shift its phase a little, so the blend can come out up to 3 dB quieter. The factory presets correct for this with their OUTPUT; when you set MIX yourself, trim OUTPUT until the meter bridge's Δ INTEGRATED reads about 0.0 LU.

OUTPUT sets the final level, from −24 to +12 dB.

Aliasing, and why it doesn't happen here

A curve makes harmonics, and a hard curve makes them far above what your session's sample rate can hold. In a plain digital saturator those harmonics **fold back** below the top of the range, as tones that aren't in any harmonic relation to the note: harsh, off-key and grainy. VEIRA Saturator Red runs the curve at 8 times the sample rate, through steep filters (4 × with 100 dB filters, then a further 2 ×), and uses **antiderivative anti-aliasing** (ADAA), which softens what the curve makes above the oversampled range before it can fold.



Measured, a 5 kHz sine at −6 dBFS driven 24 dB, the worst component that isn't a harmonic: OVERDRIVE, TRANSISTOR and DIODE −94 dBc (the measurement's floor), FUZZ −72 dBc (−46 dBc without the antiderivative step).

FIGURE 17 Harmonics above the top of the range, roughly: folded back as off-key tones at the session's rate (left); filtered off in VEIRA Saturator Red (right).

At 44.1 kHz, FUZZ at full DRIVE (36 dB) on a 3 kHz sine at −6 dBFS left aliasing at −70 dBc.

Displays

TRANSFER

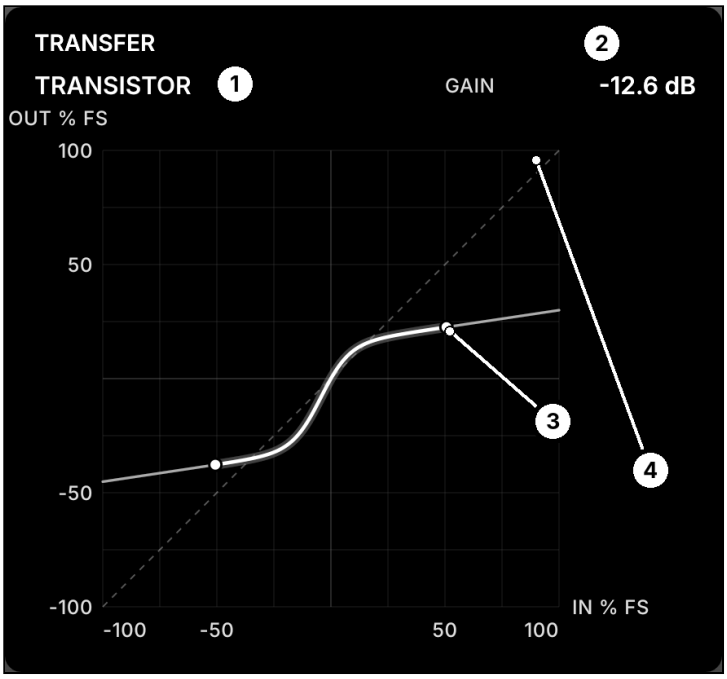


FIGURE 18 The TRANSFER display: 1 the mode, 2 GAIN, 3 the lit span your peaks reach, and 4 the dashed line of no change.

TRANSFER draws the whole saturator as a curve: the **input across** and the **output up**, both in percent of full scale (−100 to 100). It includes everything that changes the shape and the level: DRIVE, TONE (as it drives 1 kHz), AUTO GAIN, MIX and OUTPUT. OVERDRIVE is shown as it drives the mids (at 1 kHz).

- **The curve** (red; in print, the thick line). Where it bends away from the **dashed line** (no change), the signal is being saturated.
- **The lit span** is the part of the curve your signal's peaks reach right now, between two dots. A short lit span in the straight middle means little saturation; a span that reaches the flat ends means hard clipping.
- **The mode** is printed at the top left, and GAIN at the top right: how much AUTO GAIN's correction and OUTPUT change the level, in dB.

Watch how the curve flattens as you raise DRIVE, how FUZZ sits off-centre (lopsided) and DIODE is the same on both sides, and how MIX straightens the curve again by blending in the dry signal.

HARMONICS

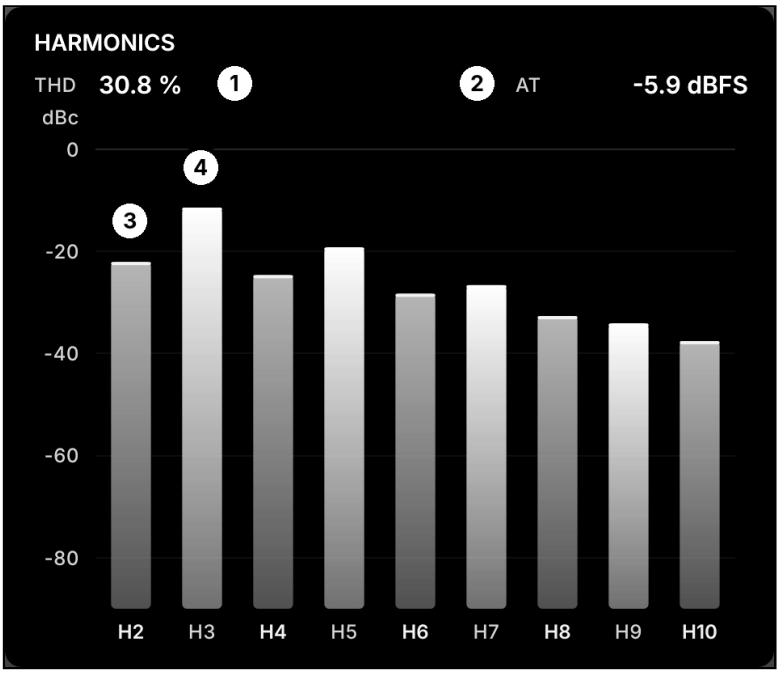


FIGURE 19 The HARMONICS display: 1 THD, 2 AT, the level it is computed for, 3 an even harmonic (H2) and 4 an odd one (H3).

HARMONICS shows the **2nd to the 10th harmonic** (H2 to H10) that the curve makes of a 1 kHz sine at **your input's level right now** (AT, in dBFS), in dBc: decibels below the note, from 0 at the top to −80 at the bottom. Above them, THD sums them up in percent.

- **Even harmonics** (H2, H4, H6, H8, H10) are drawn in red with red labels: warm and full.
- **Odd harmonics** (H3, H5, H7, H9) are drawn light grey: edgy and bright.

In print, the even bars are the darker ones. Compare the modes on your own material: TRANSISTOR stands on a tall H2, DIODE shows odd bars only, and FUZZ fills the whole row. TONE and the cuts aren't part of this picture: it shows the curve itself.

Meter bridge (IN | OUT)

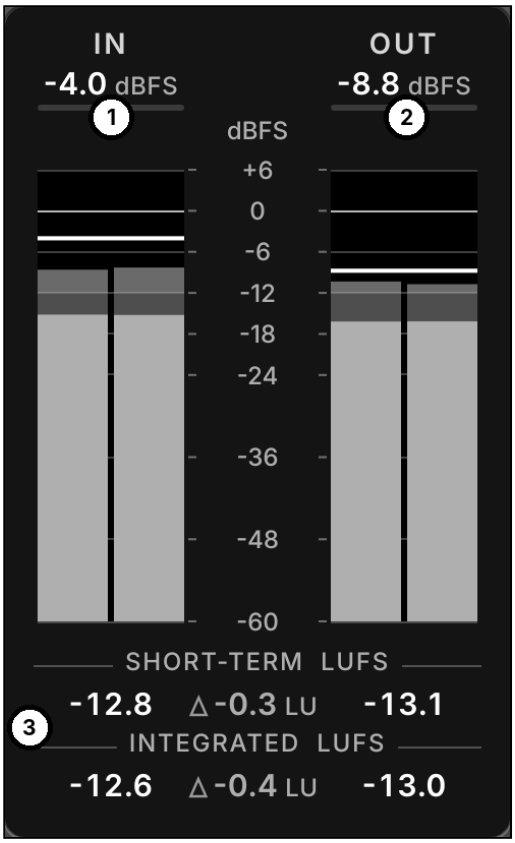


FIGURE 20 The meter bridge: 1 IN and 2 OUT, with 3 short-term and integrated loudness.

The bridge has input and output meters with one dBFS scale between them. With AUTO GAIN on, the Δ readings stay close to 0 LU.

Reading the IN and OUT meters

The meter bridge measures what goes into VEIRA Saturator Red and what comes out, in level and in loudness. The drawing shows the input and output columns; any extra column on your plugin's bridge is described above.

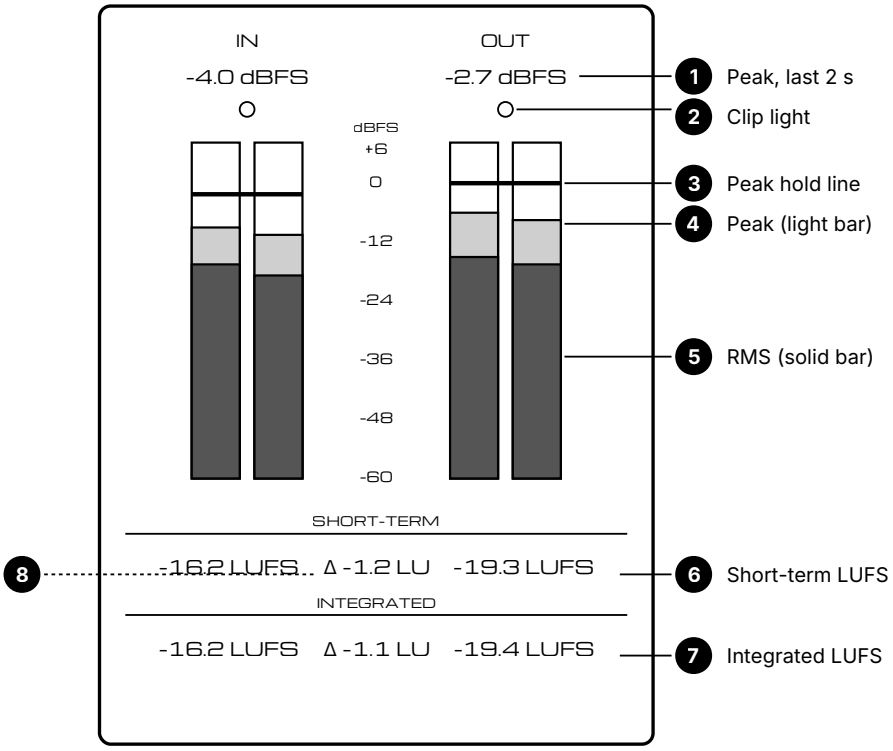


FIGURE 21 The meter bridge, left and right channel bars for input and output, with loudness below.

- 1 **Peak readout:** the highest sample peak of the last two seconds, in dBFS. It turns to a warning above 0 dBFS.
- 2 **Clip light:** lights on any sample at or over full scale. It stays lit until you click the meter.
- 3 **Hold line:** marks the recent peak on the bar.
- 4 **Peak bar** (the lighter part): the instantaneous sample peak of each channel.
- 5 **RMS bar** (the solid part): the average level over 300 ms, closer to how loud it sounds.
- 6 **SHORT-TERM:** loudness over the last 3 seconds, in LUFS, for the input (left) and the output (right).
- 7 **INTEGRATED:** loudness of everything since the measurement started, gated as the ITU-R BS.1770-4 and EBU R 128 standards require.
- 8 **Δ (delta):** OUT minus IN, in LU. It tells you how much louder (+) or quieter (−) VEIRA Saturator Red made the signal, so you can match levels fairly when you compare with bypass. It reads -- while either side is too quiet to measure (below −70 LUFS).

The scale: on screen the bars are coloured like a studio console: green below −12 dBFS, yellow from −12 to −3, orange from −3 to 0 and red above 0 dBFS.

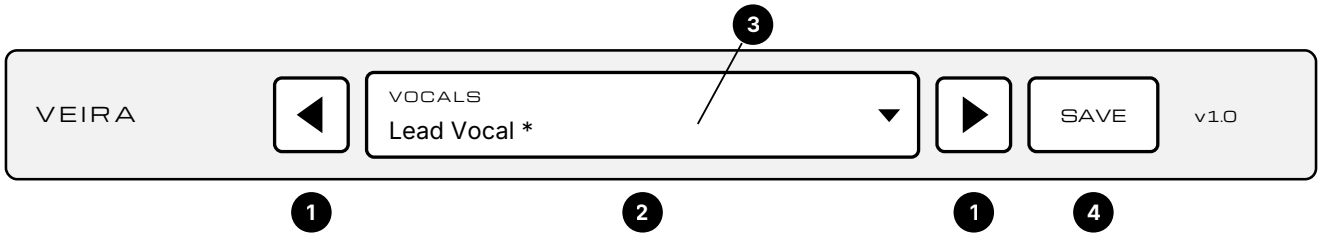
Clicks: click a level meter to reset its hold and clip light. Click the loudness readouts to restart the integrated measurement, for example at the start of a song.

Presets

VEIRA Saturator Red comes with **39 factory presets** in 9 folders. Each one is a starting point made for a real job. Load one close to what you need, then adjust the first control its note mentions.

The preset browser

The preset browser sits in the header, at the top of the window.



The header: logo and plugin name, then the preset browser, then the version.

FIGURE 22 The preset browser.

- 1 ◀ ▶ step to the previous or next preset, through every folder in order.
- 2 **The display** shows the folder (small, above) and the preset's name. Click it to open the preset menu. Hover over it to read the preset's note: what it's for and what to adjust first.
- 3 **An asterisk (*)** after the name means you've changed something since the preset loaded.
- 4 SAVE stores your current settings as a user preset.

The preset menu

Clicking the display opens a menu with:

- one submenu per **factory folder**, in the order shown below;
- **User Presets**, with your own presets in their folders;
- **Save...**, **Delete** (only for user presets: factory presets can't be deleted), **Rescan** (re-reads the user folder, if you copied presets in by hand) and **Show User Preset Folder** (opens it in Finder or Explorer).

Saving your own presets

1. Set VEIRA Saturator Red the way you like it.
2. Press SAVE. A dialog opens inside the plugin window.
3. Type a name, choose a folder or type a new folder name, and confirm.

Each user preset is one small .veirapreset file:

	Folder
macOS	~/Library/Audio/Presets/VEIRA/VEIRA Saturator Red/<Folder>/
Windows	%APPDATA%\VEIRA\VEIRA Saturator Red\Presets\<Folder>\

Copy these files to move your presets to another computer, or to back them up. Presets keep loading in future versions: any control added later simply starts at its default.

Presets in your DAW

The factory presets also appear in your DAW's own preset or program menu, named *Folder: Name* (for example *Vocals: Lead Vocal*). Whatever preset is selected is saved with your session and comes back when you reopen it, including the asterisk if you'd changed it.

The **Default ▸ Init** preset equals a fresh instance of the plugin: every control at its default.

The factory folders

Folder	Presets
Default	Init
Drums	Snare Crack, Kick Beater Bite, Drum Bus Grit, Room Smash, Overhead Edge
Bass	Bass Growl, Warm Bass DI, Synth Bass Fuzz, Pick Bass Clank, Saturated Sub
Guitar	Edge Of Breakup, Crunch Rhythm, Hot Lead Drive, Diode Distortion, Vintage Fuzz
Keyboards	Electric Piano Bark, Organ Overdrive, Synth Lead Edge, Lo-Fi Keys
Vocals	Vocal Presence, Gritty Rock Vocal, Megaphone Voice, Aggressive Rap Vocal, Warm Vocal Thickener
Mix Bus	Mix Glue Warmth, Mix Bus Punch, Analog Bus Color, Loud Mix Edge
Mastering	Subtle Harmonics, Master Density, Clip Edge Master, Warm Low Mids
Creative FX	Total Fuzz, Broken Speaker, Telephone Grit, Parallel Destroy, Dark Fuzz Bass, Radio Edge

Levels. The presets were made on drums and buses peaking at −4 dBFS, tracks at −8 dBFS and masters at −3 dBFS. A saturator reacts to level: on a louder track the same DRIVE saturates more, on a quieter one less, so **set DRIVE first**, then MIX. AUTO GAIN is on in every preset, and each one comes out within 0.05 dB of bypass (K-weighted) on matching material once it has heard a few seconds.

Recipes

Each recipe starts from a factory preset; the numbers are a starting point for your track.

A bass that growls and still sits

1. Load *Bass* ▸ *Bass Growl* (OVERDRIVE, DRIVE +16.0 dB, MIX 65 %): the drive works above about 720 Hz, so the lows stay clean.
2. Raise MIX for more growl, lower it for more of the clean DI.
3. For warmth instead of growl, try *Bass* ▸ *Warm Bass DI* (TRANSISTOR, 8 dB).

Parallel grit on a drum bus

1. Load *Drums* ▸ *Drum Bus Grit* (TRANSISTOR, DRIVE +8.0 dB, MIX 45 %).
2. Raise DRIVE for more attitude; AUTO GAIN keeps the level.
3. For a crushed, bright room under the kit, use *Drums* ▸ *Room Smash* and lower MIX if the cymbals get harsh.

A guitar from clean to crunch

1. Load *Guitar* ▸ *Edge Of Breakup* (OVERDRIVE, DRIVE +9.0 dB): picking harder breaks it up more.
2. For rhythm crunch, *Guitar* ▸ *Crunch Rhythm* (DRIVE +18.0 dB, LOW CUT 100 Hz keeps the chords tight).
3. For a lead, *Guitar* ▸ *Hot Lead Drive*; raise HIGH CUT for more bite.

A vocal that comes forward

1. Load *Vocals* ▸ *Vocal Presence* (TRANSISTOR, DRIVE +6.0 dB, MIX 30 %).
2. Raise MIX until the vocal sits forward without sounding distorted, then back off a touch.
3. For a thin vocal, *Vocals* ▸ *Warm Vocal Thickener*; for an edgier rap vocal, *Vocals* ▸ *Aggressive Rap Vocal*.

Warmth on the mix bus or the master

1. Load *Mix Bus* ▸ *Mix Glue Warmth* (TRANSISTOR, DRIVE +4.0 dB, MIX 40 %), or *Mastering* ▸ *Subtle Harmonics* on a master.
2. Switch your DAW's bypass on and off: with AUTO GAIN on, the difference you hear is the colour alone.
3. Before a limiter, *Mastering* ▸ *Clip Edge Master* adds a little diode clipping in parallel (MIX 20 %).

A telephone or radio voice

1. Load *Creative FX* ▸ *Telephone Grit* (LOW CUT 400 Hz, HIGH CUT 3.2 kHz) or *Creative FX* ▸ *Radio Edge*.
2. LOW CUT and HIGH CUT set the band; DRIVE how broken it sounds.

Specifications

Type	Saturator: four analog-style curves (overdrive, transistor, diode, fuzz) at 8 × the sample rate with first-order antiderivative anti-aliasing
Channels	Mono and stereo
Latency	66 samples at every sample rate (1.4 ms at 48 kHz), constant, reported to the host; the DAW's bypass and MIX's dry signal are delayed by the same amount
Clean when idle	MIX 0 % is the input, delayed, bit for bit
DRIVE	0 to 36 dB (default +12.0 dB); FUZZ adds 12 dB more; OVERDRIVE drives above about 720 Hz
MODE	OVERDRIVE, TRANSISTOR, DIODE, FUZZ (default OVERDRIVE); switching fades over 10 ms
THD	1 kHz at −18 dBFS RMS, DRIVE 12 dB: OVERDRIVE 4.6 %, TRANSISTOR 10.3 %, DIODE 0.40 %, FUZZ 35 %
Aliasing	5 kHz at −6 dBFS driven 24 dB: −94 dBc (the measurement's floor) in OVERDRIVE, TRANSISTOR and DIODE, −72 dBc in FUZZ; at 44.1 kHz, FUZZ at 36 dB on 3 kHz: −70 dBc
TONE	−6 to +6 dB (default 0.0 dB), tilt around 800 Hz into the drive, half taken back after
LOW CUT	OFF, 20 Hz to 1 kHz, 12 dB/oct, before the drive (default OFF)
HIGH CUT	1 to 20 kHz, OFF, 12 dB/oct, after the drive (default OFF)
AUTO GAIN	On or off (default on): at once, then the output's loudness matched to the input's over a few seconds (K-weighted, ±12 dB); a 1 kHz sine within 0.05 dB in every mode at DRIVE 0–36 dB
MIX	0 to 100 % (default 100 %), the dry signal in time
OUTPUT	−24 to +12 dB (default 0.0 dB)
Metering	TRANSFER (the curve with the span the peaks reach, GAIN); HARMONICS (H2 to H10 in dBc and THD at the input's level); IN and OUT meters (peak, RMS); short-term and integrated loudness per ITU-R BS.1770-4 / EBU R 128
Sample rates	44.1 to 192 kHz
Presets	39 factory presets in 9 folders, plus your own
Window	1260 × 780 points at 100 %; 75 to 200 % or Fit to screen, from the size button, the corner grip or Cmd/Ctrl + = - 0; saved with the session and remembered for new instances
Formats	VST3, Audio Units, standalone; AAX once signed
Plugin ID	Manufacturer Veir, plugin Vsar

Troubleshooting and questions

The sound drops out for a moment every 30 seconds. The plugin isn't activated on this computer. Open VEIRA Manager and sign in; the strip at the bottom of the plugin's window says exactly what's wrong. See *Getting started ▸ Activation and the licence*.

I don't see VEIRA Saturator Red in my DAW. Make sure VEIRA Manager shows SHOW (installed) for it, then rescan plugins in your DAW. In Logic Pro, open the Plug-in Manager and choose *Reset & Rescan Selection* if needed. Look under the manufacturer **VEIRA**.

Turning DRIVE up doesn't make it louder. That's AUTO GAIN at work: it keeps the loudness so you hear the colour. Switch it off if you want the level to rise, and set the level with OUTPUT.

The level drifts for a moment after I change something. AUTO GAIN matches the loudness over the last few seconds and glides to the new value over half a second. Give it a few seconds of music after a big change.

With MIX under 100 % it's quieter than bypass. The driven signal and the dry one are no longer exactly in phase after TONE and the cuts, so the blend can come out up to 3 dB lower. Raise OUTPUT until Δ INTEGRATED reads about 0.0 LU; the factory presets already do this.

The distortion sounds flubby or farty. Too much low end is going into the curve. Raise LOW CUT (60–150 Hz), or use OVERDRIVE, which drives above about 720 Hz only.

The top fizzes. Lower HIGH CUT (8–12 kHz), or turn TONE down.

Does VEIRA Saturator Red add latency? Yes: 66 samples at every sample rate (1.4 ms at 48 kHz), always the same, and reported to your DAW, which compensates automatically. The host's bypass is delayed by the same amount, so bypassing keeps the track in time.

Does it use a lot of CPU? More than a simple saturator, because the curve runs at 8 times the sample rate with steep filters, which is what keeps it clean of aliasing. OVERDRIVE is the heaviest of the four modes.

The window is too small (or too big) on my screen. Click the size button in the header and pick a size or *Fit to screen*, or drag the bottom-right corner. The size is saved with your session.

How do I type an exact value? Right-click the knob (Control-click on a Mac), type the number and press Return.

Do my sessions keep my settings? Yes. Every control, the selected preset and the window size are saved with your session.

Contact: support@veiraaudio.com. Mention your computer (Mac or Windows and its version), your DAW and version, and what you see.



VEIRA Saturator Red · User Manual · Version 0.1.0

Support: **support@veiraaudio.com** · Web: **veiraaudio.com**

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