VEIRA

MASTERING LIMITER

VEIRA Max

User Manual

A loud, clean mastering limiter: a soft clipper and a true-peak lookahead limiter share the work, and the displays show what each one takes off and where your master stands against the streaming services.



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Welcome

Thank you for choosing **VEIRA Max**. It is a mastering limiter: you turn GAIN up, and Max keeps every peak under the CEILING you set, including the peaks that hide between the samples. A soft clipper and a lookahead limiter share the job, and you decide how much each one does. Max can take a premaster to −4 LUFS and beyond, but it is built to sound clean at any loudness, and to tell you honestly what the loudness costs.

What makes it different

- **Two stages, one knob to balance them.** CLIP moves the work between a smooth, oversampled soft clipper (loud, a little edge) and a transparent lookahead limiter (clean). At 0 % it is all limiter.
- **A true-peak ceiling you can trust.** With TRUE PEAK on, the ceiling holds for the peaks between the samples too, as streaming services and broadcasters measure them. A −1.0 dBTP ceiling reads −1.05 dBTP on a standard meter.
- **You see what it takes off.** The waveform shows the output in front and, behind it, the input that was cut away; the lane under it splits the reduction into clipper and limiter.
- **Loudness where you need it.** A loudness panel shows integrated, short-term and momentary loudness, the true-peak maximum, PLR, and how much a streaming service at −14 LUFS would turn your master down.
- **Fair comparisons.** MATCH plays the result at the input's loudness, so you hear what Max does to the sound, not just that it's louder.
- **Ready for the final bounce.** DITHER adds TPDF dither for 16- or 24-bit files, under the ceiling.
- **A clean, legible face.** Large knobs with the value in their middle, text you can read at a glance, and a window you can scale from 75 % to 200 %.

How this manual is organised. *Getting started* covers installing and activating. *The panel at a glance* names every part of the window. *How a limiter works* is a short primer, and *Loudness explained* covers LUFS, true peak and what streaming services do with your master. *Controls* and *Displays* explain every knob, button and graph with drawings. *Presets* and *Recipes* get you working fast, and the last chapters hold the specifications and answers to common questions.

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:

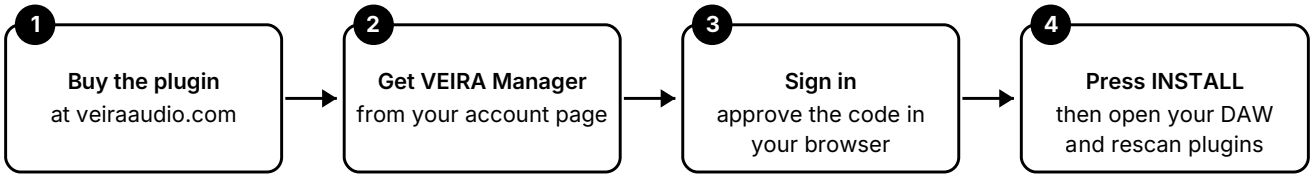


FIGURE 1 From purchase to first sound in four steps.

1. **Buy** VEIRA Max 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 Max 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 Max appears in your DAW under the manufacturer **VEIRA** (in Logic Pro: Audio Units ▸ VEIRA ▸ VEIRA Max).

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 Max 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.

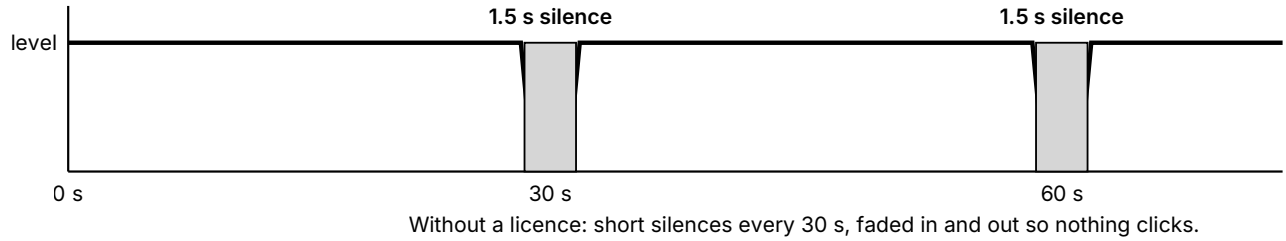


FIGURE 2 What an unlicensed copy does. With a valid licence the audio is never touched.

- **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 Max. 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 Max 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 Max with +10 dB of GAIN on a premaster: the output (in front) sits under the −1.0 dBTP ceiling and the input (behind) shows what was taken off.

	Part	What it does
1	Preset browser	Steps through and saves presets. See *Presets*.
2	Waveform	The last 4.5 seconds: output in front, the input that was cut off behind it.
3	Ceiling line	The CEILING, drawn on the waveform. Drag it to set the ceiling.
4	REDUCTION lane	How much the clipper and the limiter take off, over time.
5	LOUDNESS lane	The output's short-term loudness over time, against −14 LUFS.
6	Meter bridge	Input and output level and loudness.
7	REDUCTION meter	The total reduction as a bar that moves like an analog VU, with its reading.
8	Loudness panel	The output's loudness, true peak, PLR and the streaming turn-down.
9	GAIN	How hard the music is pushed into Max.
10	CEILING	The highest the output may go.

	Part	What it does
11	CLIP	How much of the work the soft clipper does.
12	RELEASE and AUTO	How fast the limiter lets go; AUTO adapts it to the music.
13	LINK	How much the two channels are limited together.
14	TRUE PEAK	Makes the ceiling hold between the samples too.
15	MATCH and its readout	Listen at the input's loudness.
16	NO DITHER, 24 BIT, 16 BIT	Dither for the final bounce.

The window has the large waveform display at the top left, the meter bridge in the middle, and the REDUCTION meter over the loudness panel at the right. The controls sit in three groups along the bottom, under the captions LEVEL, SHAPE and OUTPUT: how loud, how it gets there, and what leaves the plugin.

Using the controls

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

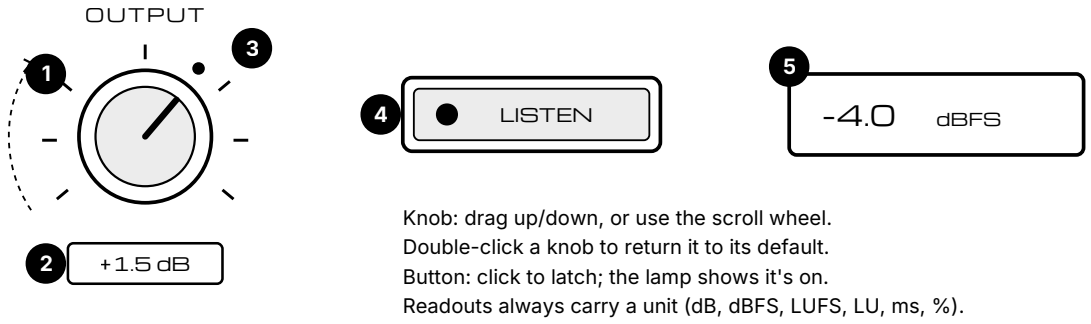


FIGURE 4 The parts you'll find on every VEIRA panel (the labels are examples).

- 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 Max's panel the parts look a little different from the drawing above:

- **Knobs** show their value **in their middle** (+10.0 dB, -1.0 dBTP, 120 ms), and a lit ring (blue on screen; in print, the lighter arc) shows how far each is turned. Drag, use the wheel, or double-click (or Alt/Option-click) for the default, as on every VEIRA knob.
- **Type a value:** right-click a knob (Control-click on a Mac). A field opens over the knob with the current value; type the new one and press Return. The number is enough: **8** for a GAIN of +8 dB, **-2** for a CEILING of −2.0, **200** for a RELEASE of 200 ms. Press Escape or click elsewhere to leave it unchanged.
- **Buttons** have no lamps: AUTO, TRUE PEAK, MATCH and the selected dither button fill with colour when they are on (orange on screen; in print, a solid light button instead of a dark one with an outline). Click again to switch off; the dither buttons work as a group, so one of the three is always lit.
- **Resize the window:** drag its bottom-right corner (the small diagonal lines). It scales from 75 % to 200 % of its normal size and keeps its proportions, so everything stays sharp. Your DAW saves the size with the session.

Where to put VEIRA Max

- **On the master bus, last.** Max is the final stage of a master: put it after your EQ, compression and any other processing. Anything after Max can push the peaks back over the ceiling.
- **Leave the master fader at 0 dB.** In most DAWs the master fader comes after the inserts, so raising it would lift the output above Max's ceiling. Leave room in the mix instead: a premaster peaking around −3 to −6 dBFS gives Max a clean start, and GAIN does the rest.
- **On a single track or bus** (a vocal, a drum bus, stems), Max works as a peak catcher: use a sample-peak ceiling a few dB under full scale and the track presets.

How a limiter works

If you already know limiters, skip to *Loudness explained*. If not, this chapter will make every control obvious.

A digital file has a hard top: **0 dBFS**. Nothing can be louder than that, and anything that tries is cut flat ("clipped"), which sounds harsh. Music, though, is mostly quiet with short, sharp peaks: a snare hit or a consonant can stand 10–15 dB above the body of the sound. Those few peaks decide how loud you can make the whole song before it hits the top.

A **limiter** turns the peaks down, quickly and only as much as needed, so you can raise everything else. You push the music in with GAIN; whatever would rise above the CEILING is held down to it. The quiet parts come up by the full amount of GAIN; the peaks don't move. The song gets louder and denser.

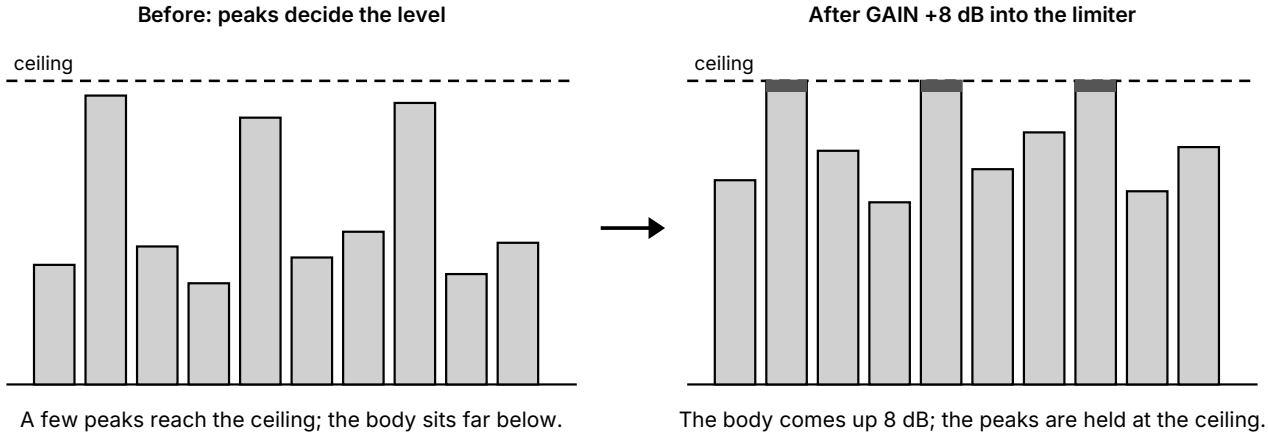


FIGURE 5 A limiter lets you raise the whole song while the peaks stay at the ceiling. The dark caps mark the peaks that were held down.

Limiting is not free. Every dB of reduction flattens a peak, and peaks are where the punch of a drum or the bite of a consonant lives. A little reduction (1–3 dB) is usually inaudible; a lot (8 dB and more) makes a master dense, loud and eventually flat or distorted. Max shows you exactly how much it is taking off, so you can decide.

Clipper and limiter

There are two ways to stop a peak, and Max uses both.

- A **clipper** rounds the top of the wave off, instantly, sample by sample. It never lets anything through and keeps the transient's timing, but rounding a wave adds harmonics: a little edge or grit. Max's clipper is *soft*: it is linear until 2 dB under its threshold and then bends smoothly into it, and it runs at eight times the sample rate so the harmonics it makes don't fold back as aliasing.
- A **limiter** turns the volume down for a moment around each peak, like a very fast hand on a fader. The wave keeps its shape, so it's cleaner, but turning down takes time: a limiter that is too fast distorts, one that is too slow pumps.

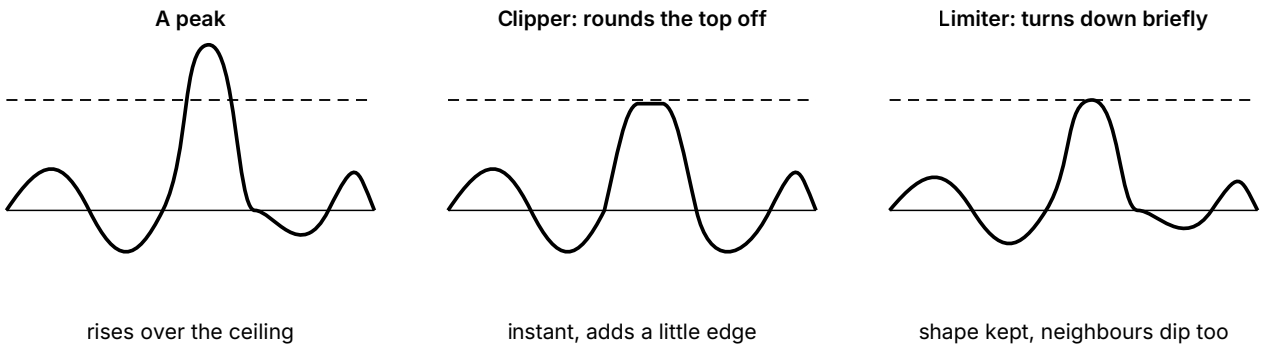


FIGURE 6 The same peak handled two ways. The dashed line is the ceiling. The clipper flattens only the top; the limiter turns the whole moment down, so the notes either side of the peak get a little quieter too.

Used together, each covers the other's weakness: the clipper shaves the sharpest, shortest peaks (where a limiter would have to move hardest), and the limiter handles the rest cleanly. CLIP sets the balance.

What happens inside VEIRA Max

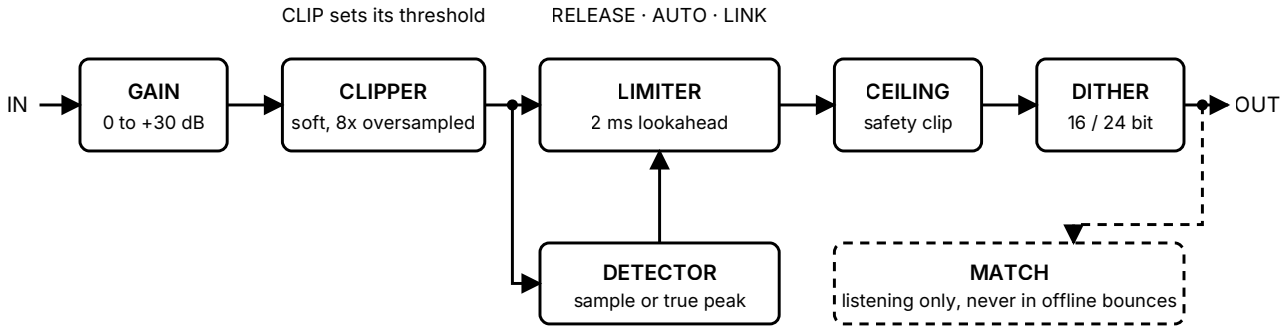


FIGURE 7 Signal flow. GAIN drives the music into the soft clipper, then into the lookahead limiter, whose detector looks ahead 2 ms for peaks (between the samples too, with TRUE PEAK). A last safety clip catches rounding residue at the ceiling; dither is added under it. MATCH only turns down what you hear while playing.

- **Lookahead.** The limiter sees each peak 2 ms before it arrives, so it can turn down smoothly *in time* instead of reacting late. It cannot overshoot: every peak gets at least as much reduction as it needs. This delays the audio by a fixed amount (224 samples at 48 kHz), which Max reports to your DAW so everything stays in time.
- **Stereo.** With LINK at 100 % both channels are turned down together, so the stereo image never moves.
- **Clean when idle.** With CLIP at 0 %, TRUE PEAK off and the music under the ceiling, the output is the input, delayed, bit for bit.

Loudness explained

Mastering is about loudness, and loudness has its own units. This chapter explains them in plain language. Everything here is also what the meters in Max show you.

Level is not loudness

A **peak meter** (dBFS) shows the highest sample: how close you are to the top. It tells you almost nothing about how loud a song *sounds*. A sparse acoustic song and a dense rock master can both peak at −1 dBFS, yet the rock master sounds far louder, because its average energy is much higher.

Loudness is measured the way ears hear it. The standard (ITU-R BS.1770, used by EBU R 128 and every streaming service) first filters the signal with **K-weighting**, a curve that gently cuts the deep bass and lifts the upper mids and highs a little, because our ears are less sensitive to deep bass and most sensitive in the presence range. Then it averages the energy. The result is in **LUFS** (Loudness Units relative to Full Scale). In the US you'll also see **LKFS**: the same thing.

- **LUFS** is an absolute loudness: −14 LUFS, −23 LUFS. Closer to 0 is louder.
- **LU** is a *difference* in loudness. 1 LU = 1 dB. A master at −10 LUFS is 4 LU louder than one at −14 LUFS.

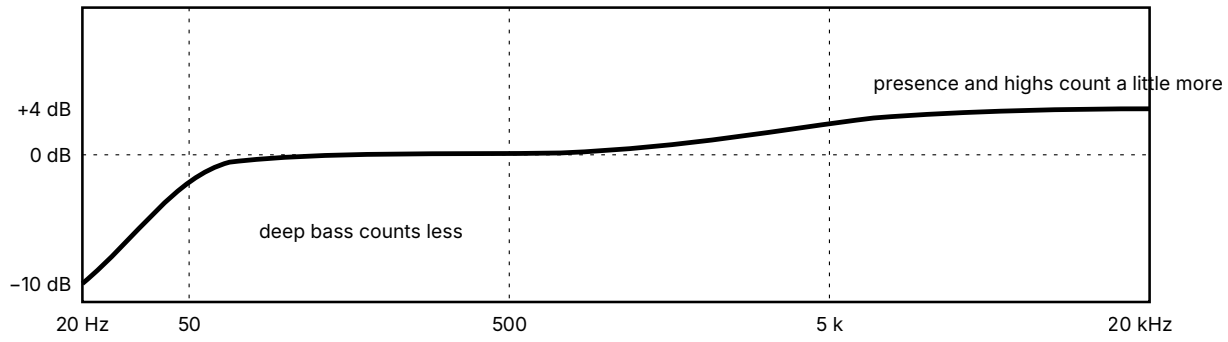


FIGURE 8 K-weighting, roughly. Before loudness is averaged, very low frequencies are turned down and the highs are lifted about 4 dB, so the number follows what ears hear.

Three time windows

Loudness depends on how long you listen, so the meters give three readings:

- **Momentary:** the last 0.4 seconds. Jumps with every phrase.
- **Short-term:** the last 3 seconds. The most useful reading while you work: it follows sections (verse, chorus).
- **Integrated:** the whole song (or programme) since the measurement started. This is the single number streaming services and broadcasters use. It is *gated*: silence and very quiet passages (below −70 LUFS, and anything more than 10 LU under the song's own average) are left out, so a long fade or a quiet intro doesn't drag the number down.

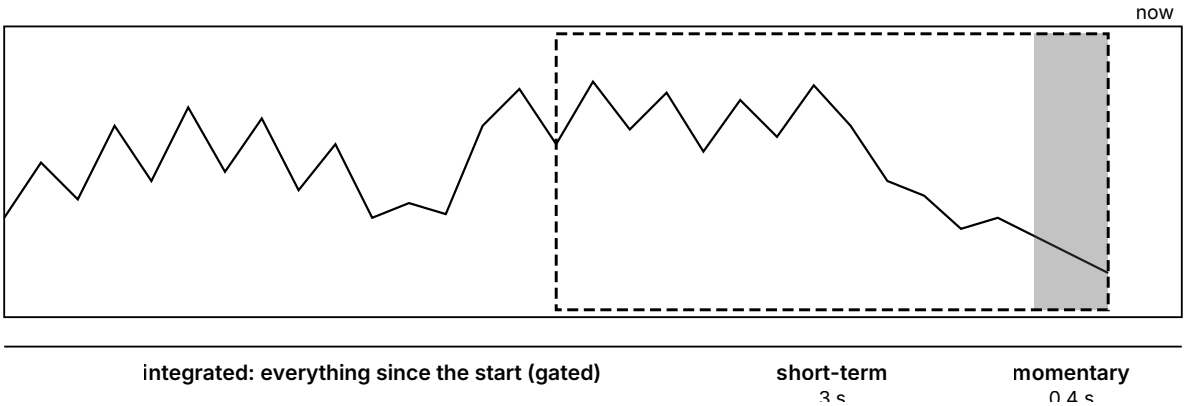


FIGURE 9 The three windows, ending at the present moment (right). The momentary reading is the shaded strip, short-term the dashed box, and integrated the whole span.

True peak (dBTP)

A digital file stores *samples*, but what you hear is the smooth wave that a converter draws through them. Between two samples, that wave can rise **higher than either sample**: an *inter-sample peak*. A file whose highest sample is 0.0 dBFS can produce a wave that peaks at +1 or +2 dB when it is converted or, especially, when it is encoded to MP3 or AAC for streaming. Then it distorts, in the listener's player, where you can't fix it.

True peak estimates that real wave by oversampling, and reads in **dBTP**. That's why delivery specifications ask for a true-peak limit (usually −1 dBTP, sometimes −2), and why TRUE PEAK in Max should be on for any master.

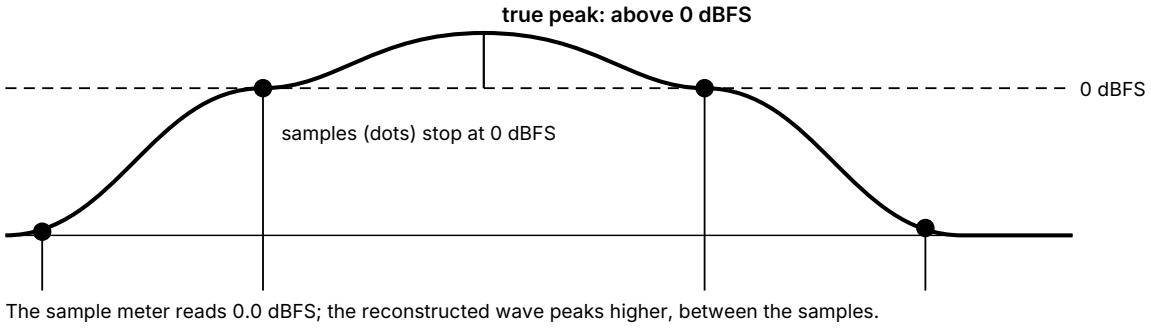


FIGURE 10 An inter-sample peak. The dots are the samples a file stores; the line is the wave a converter or a codec rebuilds from them.

PLR: how much punch is left

PLR (peak-to-loudness ratio) is the true-peak maximum minus the integrated loudness, in dB. It tells you how much room the peaks have above the body of the song, which is a good sign of how hard it has been limited:

PLR	What it usually means
14 dB and more	Open and dynamic: acoustic, jazz, classical, a gentle master.
10–13 dB	Balanced: room for transients, loud enough for most pop.

PLR	What it usually means
8–9 dB	Dense and modern: firm limiting.
under 8 dB	Heavily limited: loud, with less punch.

The PLR of a −14 LUFS master with a −1 dBTP ceiling can be no less than 13 dB; a −8 LUFS master at −1 dBTP has at most 7. Loudness and dynamics trade directly.

What streaming services do with loudness

Most music services **normalise**: they measure each song's integrated loudness and turn it down (and in some cases up) so that every song plays at about the same level. A master made louder than the service's reference doesn't play louder; it's simply turned down, and only the loss of dynamics remains.

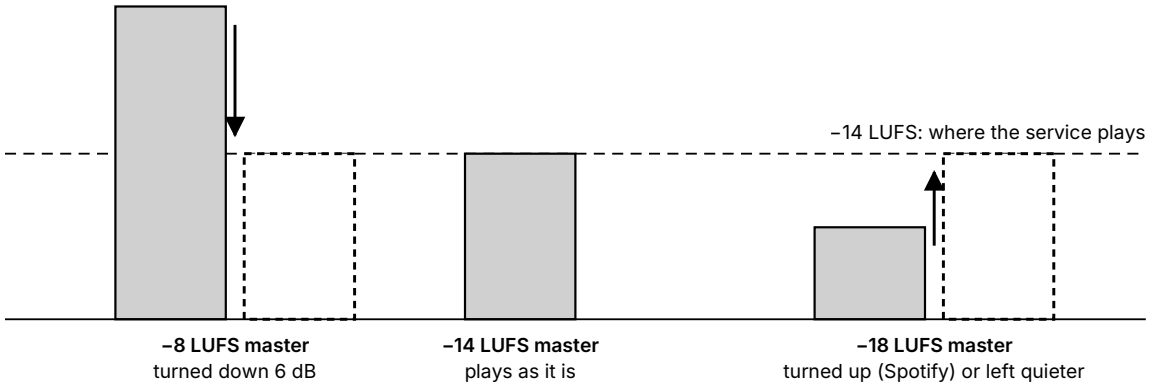


FIGURE 11 Normalisation. Grey is the master as delivered, dashed is how it plays. All three end up at the same loudness; the loud one has only lost its dynamics.

Typical reference levels (October 2026; some are published, others measured by independent testers):

Service	Plays at about	What it does
Spotify	−14 LUFS	Turns louder songs down; turns quieter ones up only as far as −1 dBTP allows. Asks for −1 dBTP, or −2 dBTP if the master is louder than −14.
Apple Music	−16 LUFS	Sound Check turns louder songs down.
YouTube	−14 LUFS	Turns louder music down, never up.
Amazon Music	−14 LUFS	Turns louder music down.
Tidal	−14 LUFS	Normalises whole albums by their loudest track, down only.
Deezer	−15 LUFS	Turns louder music down.
SoundCloud	−14 LUFS	Recommends −14 LUFS, true peak under −1 dBTP.

Broadcast is stricter: European TV and radio (EBU R 128) deliver at −23 LUFS, US television (ATSC A/85) at −24 LKFS, with true peak under −1 or −2 dBTP.

So how loud should a master be? There is no single right answer. A master at −14 LUFS and −1 dBTP plays at full level everywhere with all its dynamics. Many genres are still mastered louder (−10 to −7 LUFS) for their sound, accepting the turn-down. Max lets you do either, and its AT -14 LUFS reading tells you exactly how much a −14 LUFS service will take back.

> **Tip:** For loudness-normalised delivery, aim for the sound, not the number. Use MATCH to hear whether more GAIN actually improves the master, at equal loudness.

Controls

LEVEL: GAIN and CEILING



FIGURE 12 The LEVEL group: 1 GAIN and 2 CEILING, each showing its value in its middle.

Control	Range	Default	What it does
GAIN	0 to +30 dB	+0.0 dB	How hard the music is pushed into Max.
CEILING	−12 to 0 dB	−1.0 dBTP	The highest the output may go: dBTP with TRUE PEAK on, dBFS with it off.

GAIN is the loudness control. Every dB of GAIN raises everything that is below the ceiling by a dB; whatever would cross the ceiling is caught by the clipper and the limiter instead. There is no automatic target: you set GAIN by ear and by the loudness panel. As a guide, watch the REDUCTION meter:

- **1–3 dB** of reduction on the loudest moments: transparent, the sound barely changes.
- **4–6 dB:** a firm, dense master; you can start to hear it on drums.
- **8 dB and more:** loud, modern, with obvious density; listen carefully for flattened drums and distorted bass.

CEILING is the highest the output may ever go. With TRUE PEAK on, the knob reads in **dBTP** and the ceiling holds for the peaks between the samples too; with it off, it reads **dBFS** and limits the samples only. The default −1.0 dBTP is what most streaming services ask for. Use −2.0 dBTP for loud, bright masters that will be encoded to lossy formats, and −0.3 dBTP or so only for formats that are never re-encoded (a CD, for example).

You can also set the ceiling on the waveform: **drag the amber line**, or **double-click it** to return to −1.0. See *Displays*.

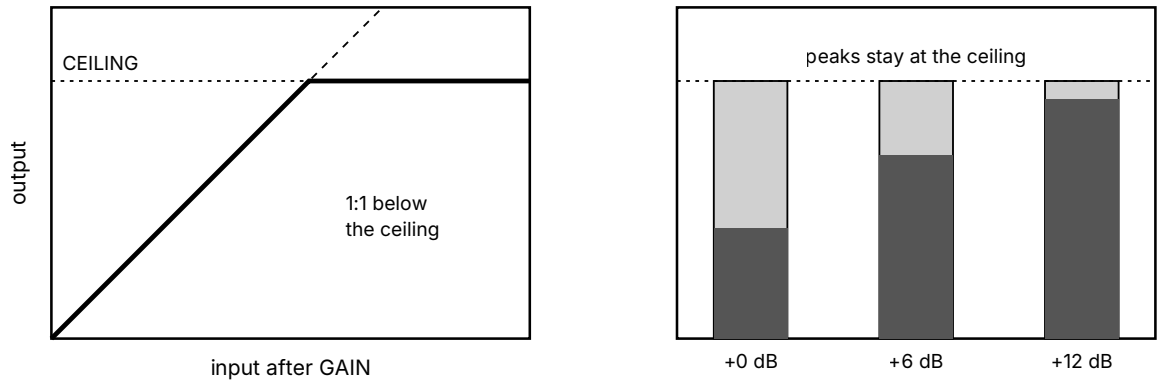


FIGURE 13 Left: what Max does to level. Below the ceiling, output follows input; above it, everything is held at the ceiling. Right: more GAIN raises the body of the song (dark) towards the peaks (light, at the ceiling).

SHAPE: CLIP, RELEASE, AUTO and LINK

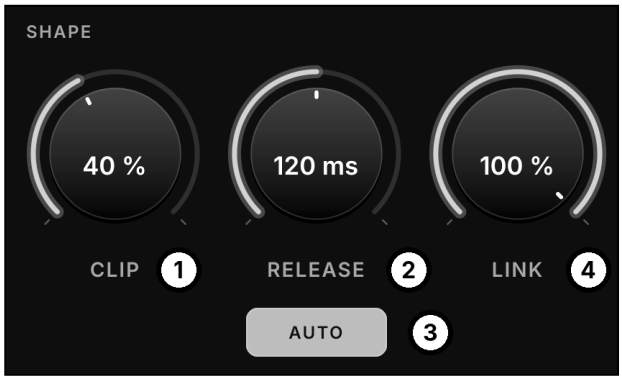


FIGURE 14 The SHAPE group: 1 CLIP, 2 RELEASE, 3 AUTO and 4 LINK.

Control	Range	Default	What it does
CLIP	0 to 100 %	40 %	How much of the peak control the soft clipper does before the limiter.
RELEASE	5 to 1000 ms	120 ms	How quickly the limiter lets go after a peak.
AUTO	on / off	on	Lets go quickly after short peaks and slowly through dense passages.
LINK	0 to 100 %	100 %	Stereo link: how much the two channels are turned down together.

CLIP

CLIP sets where the clipper starts working, relative to the ceiling. Its threshold sits at the ceiling plus 24 × (1 − CLIP)² dB:

CLIP	Clipper threshold	What you get
0 %	out	All limiter: the cleanest.
20 %	15.4 dB over the ceiling	Only freak transients are clipped.
40 % (default)	8.6 dB over the ceiling	The sharpest drum peaks are shaved; the limiter does the rest.

CLIP	Clipper threshold	What you get
60 %	3.8 dB over the ceiling	The clipper does a good share: louder, a little edge.
80 %	1.0 dB over the ceiling	Mostly clipper.
100 %	at the ceiling	The clipper does it all; the limiter only polishes.

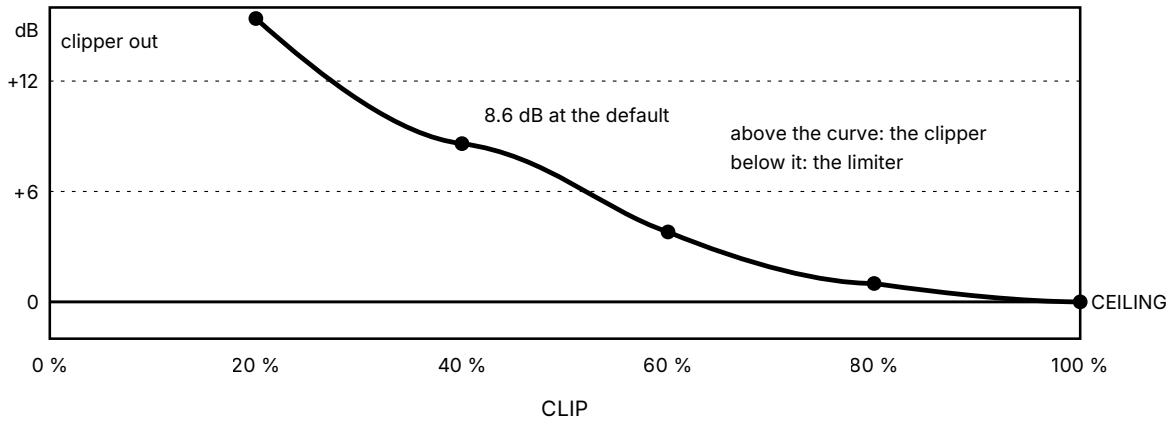


FIGURE 15 Where the clipper starts, over the ceiling, as CLIP turns up. Peaks rising above the curve are clipped; the limiter handles everything between the curve and the ceiling.

How it sounds. Clipping is the loudest way to stop a peak, because it never turns the neighbouring sound down. On drum-heavy music it adds level with little audible change, until it doesn't: too much clipping turns snares papery and adds a grainy edge to vocals and cymbals. Limiting is the cleanest, but heavy limiting can pump or soften transients. Turn CLIP up for density and edge, down for clarity. On the REDUCTION lane, the clipper's share is drawn in orange and the limiter's in red, so you can see the balance.

RELEASE and AUTO

RELEASE is how quickly the limiter recovers after a peak (the time to recover 90 % of the reduction).

- **Short (5–60 ms):** recovers between beats. Denser and louder, but on bass-heavy music it can distort low notes, because the gain moves within a single bass cycle.
- **Medium (80–200 ms):** the usual range for mastering.
- **Long (300–1000 ms):** smooth and clean, but with a lot of reduction the whole mix can audibly duck after each hit ("pumping").

With **AUTO** on (the default), the limiter uses two envelopes: a fast one that recovers in a quarter of the RELEASE time after short peaks, and a slow one that settles on sustained reduction, so dense passages (a loud chorus) are held steadily while isolated peaks recover quickly. RELEASE still sets the overall pace. Turn AUTO off for a predictable, fixed release, or for deliberate pumping effects.

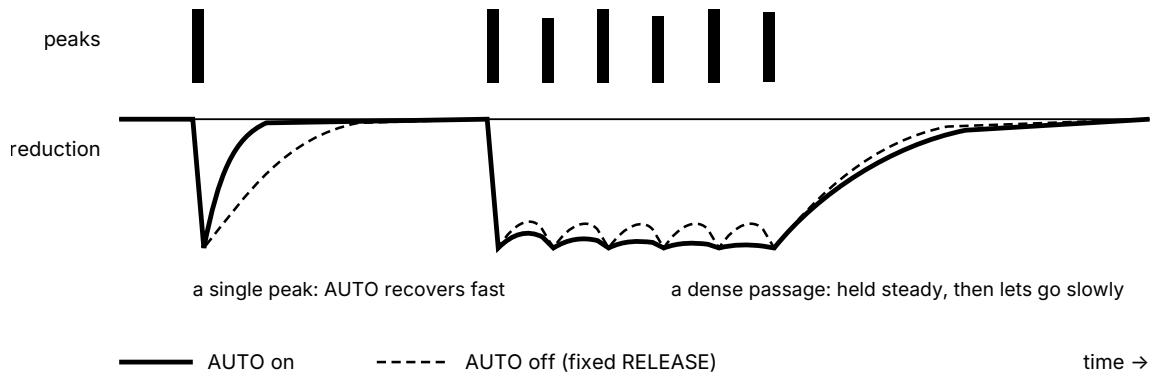


FIGURE 16 Gain reduction over time (down = more reduction). With AUTO off the gain swings up and down between closely spaced hits; with it on, an isolated peak recovers quickly and a run of hits is held steadily.

LINK

LINK sets how much the left and right channels share their limiting.

- **100 % (default):** both sides are turned down together, by whichever needs more. The stereo image never moves. Use this for almost every master.
- **Lower:** each side can be limited more on its own. A loud hi-hat on the left no longer turns the right side down, which gives a little more loudness and width, but the image can lean towards the quieter side during big peaks.
- **0 %:** fully independent. The *Wide And Loud* preset uses this as an effect.

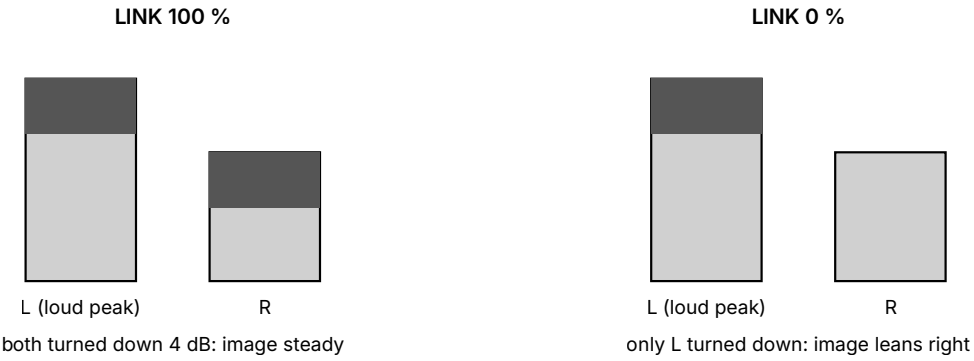


FIGURE 17 A peak on the left channel. The dark tops are the reduction applied to each side.

OUTPUT: TRUE PEAK, MATCH and DITHER

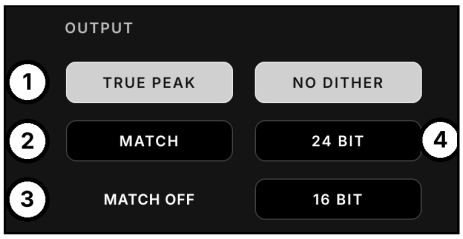


FIGURE 18 The OUTPUT group: 1 TRUE PEAK (filled: on), 2 MATCH, 3 the MATCH readout and 4 the dither buttons, with NO DITHER selected.

Control	Settings	Default	What it does
TRUE PEAK	on / off	on	The ceiling holds between the samples too (ITU-R BS. 1770).
MATCH	on / off	off	Plays the output at the input's loudness, for comparing.
NO DITHER / 24 BIT / 16 BIT	one of three	NO DITHER	TPDF dither for the final bounce.

TRUE PEAK. On, the limiter watches the wave between the samples (at eight times the sample rate) and aims 0.05 dB under the ceiling, so a standard true-peak meter reads −1.05 dBTP at a −1.0 ceiling, even at +24 dB of GAIN. The CEILING, the OUT meter and the loudness panel then read in dBTP. Off, Max limits the samples only (dBFS); the wave between them may rise a little higher. Leave it on for masters; turn it off for tracks inside a mix, where inter-sample peaks don't matter yet, or for the cleanest possible path (see *Clean when idle* in the previous chapter).

MATCH. Louder always sounds better, which makes it impossible to judge a limiter by ear: turning up GAIN will always seem to improve things. With MATCH on, Max measures the loudness of the input and of the output (K-weighted, over about 3 seconds) and turns the output down by the difference, so you hear what limiting does to the *sound* at equal loudness. The readout under the button shows how much it is turning down (for example MATCH -6.2 dB), or MATCH OFF.

- MATCH only ever turns down, and only for listening. **Offline bounces always leave it out.**
- In a **real-time bounce** (or when recording the output to another track) it would be printed: turn it off first.
- Because it averages over 3 seconds, give it a moment after you change GAIN before you judge.

DITHER. When a 32-bit floating-point mix is saved as a 16- or 24-bit file, the last bit is rounded, which leaves a faint distortion on quiet fades. Dither replaces that with a tiny, smooth noise. Choose NO DITHER for everything that isn't the final file (the default), 24 BIT when you bounce a 24-bit master (hi-res, most streaming deliveries) and 16 BIT when you bounce a 16-bit master (a CD).

Max adds TPDF dither *under* the ceiling, so it never breaks the true-peak limit. Dither once, at the very end: keep Max last in the chain.

Displays

Waveform, REDUCTION and LOUDNESS lanes

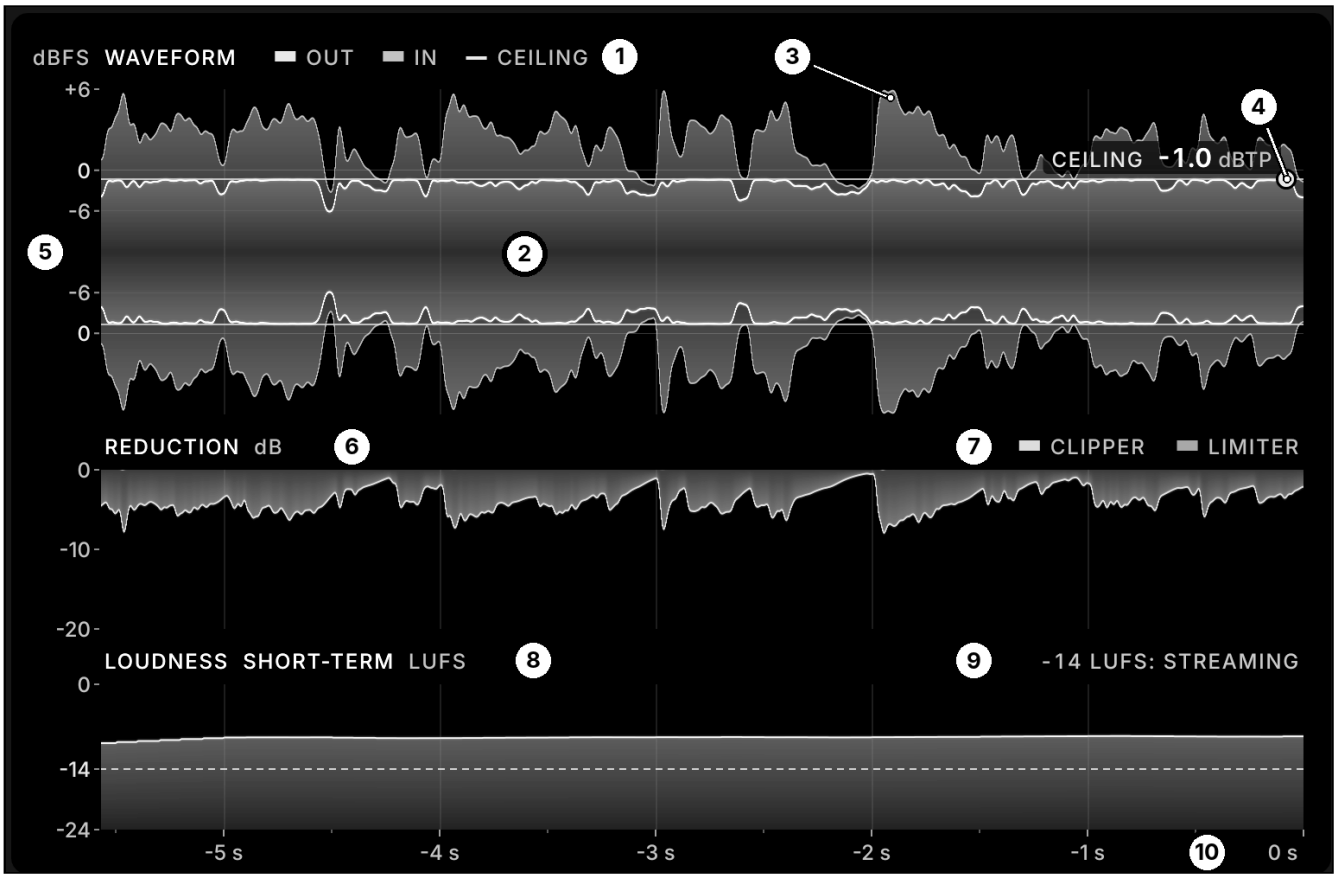


FIGURE 19 1 Legend, 2 output, 3 input, cut away, 4 ceiling line and grip, 5 level scale, 6 REDUCTION lane, 7 clipper and limiter key, 8 LOUDNESS lane, 9 the −14 LUFS line, 10 time scale.

The large display shows the last 4.5 seconds, newest at the right edge (0 s), with a mark every half-second.

Waveform. 2 The **output** is drawn in amber, in front, mirrored around the centre line, as a DAW draws a waveform. 3 Wherever the input (after GAIN) rose above the output, it shows **behind** it as a lighter grey shadow: that shadow *is* what Max took off. On paper the output is the darker band in the middle; the input is the paler outline beyond it.

- 5 The scale is **linear**, like a DAW's waveform, with 6 dB of room above full scale: 0 dBFS sits at half height and the edges are +6. So the input can be drawn above the ceiling.
- 4 The **ceiling** is the amber line on both sides of the centre, labelled with its value (CEILING -1.0 dBTP). The output never crosses it. **Drag** the line (or its round grip at the right) up or down to set CEILING; **double-click** it to return to −1.0.

What to look for: a thin grey shadow only on the drum hits means gentle, transparent limiting. A thick shadow everywhere, with an output flat as a ruler, means you are losing the music's movement: back off GAIN.

6 **REDUCTION** shows how much Max took off over time, from [0] at the top down to [-20] dB. 7 The two stages are stacked: the **clipper** (orange) and the **limiter** (red) under it. On paper, both hang down from the top line; the key at the top right ([CLIPPER], [LIMITER]) names them.

8 **LOUDNESS** ([SHORT-TERM], [LUFS]) draws the output's short-term loudness (3 s) as a filled curve, on a scale from [0] to [-24] LUFS. 9 The dashed line marks **−14 LUFS**, labelled [-14 LUFS: STREAMING]: the level most streaming services play at. Anything above it will be turned down.

Hover anywhere on the three plots for a read-out of that moment: [TIME], [IN] and [OUT] peaks (dBFS), [CLIPPER] and [LIMITER] reduction (dB) and [SHORT-TERM] loudness (LUFS).

REDUCTION meter and loudness panel

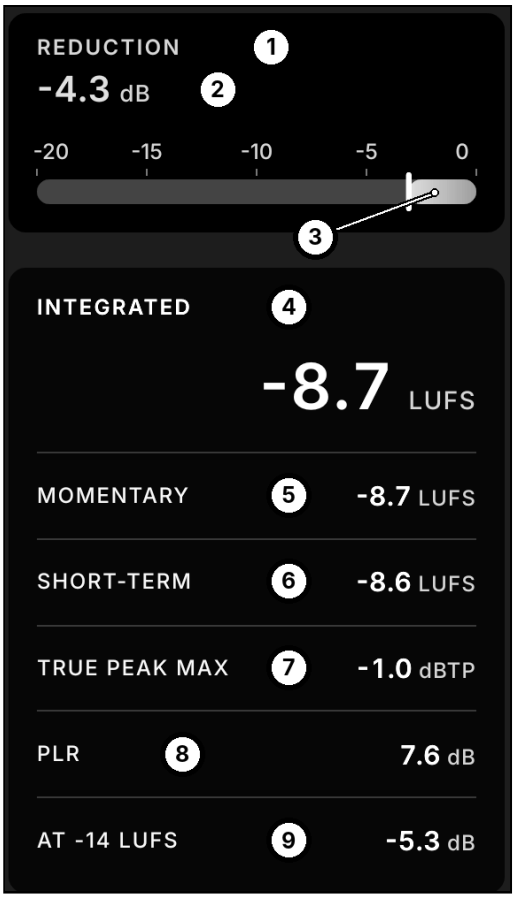


FIGURE 20 The [REDUCTION] meter: 1 its name, 2 its reading and 3 the bar under its scale; the loudness panel: 4 [INTEGRATED], 5 [MOMENTARY], 6 [SHORT-TERM], 7 [TRUE PEAK MAX], 8 [PLR] and 9 [AT -14 LUFS].

1 **REDUCTION meter.** The total reduction (clipper and limiter together). 3 The bar (red on screen; in print, the lighter block) grows from the right-hand end, [0], towards the left as Max turns the peaks down, on a scale marked [-5], [-10], [-15] and [-20] dB, evenly spaced. It moves exactly like the needle of an analog VU meter (99 % of a change in 300 ms, with a slight overshoot), so it averages and sits below the

instantaneous peaks: it shows how hard Max is working on average. ❷ The number under the name shows the deepest reduction of the last quarter-second (red while Max is working, [0.0] when it isn't), so it usually reads a little more than the bar.

The **loudness panel** measures the output, after everything Max does:

	Reading	What it tells you
❹	[INTEGRATED] (large)	The loudness of everything since the measurement started, gated, in LUFS. The number streaming services use.
❺	[MOMENTARY]	Loudness over the last 0.4 s.
❻	[SHORT-TERM]	Loudness over the last 3 s.
❼	[TRUE PEAK MAX]	The highest peak since the measurement started: dBTP with [TRUE PEAK] on, dBFS with it off. It turns red above 0.
❽	[PLR]	[TRUE PEAK MAX] minus [INTEGRATED], in dB: how much punch is left.
❾	[AT -14 LUFS]	How much a streaming service that plays at −14 LUFS would turn this master down (dB). [0.0] means it plays as it is; it turns red beyond 6 dB.

Readings show [--] until there is enough signal to measure. **Click the panel** to start a new measurement, for example at the start of the song; this also restarts the integrated loudness on the meter bridge and clears [TRUE PEAK MAX].

> **Tip:** Play the whole song (or at least its loudest section and a verse) before trusting [INTEGRATED] and [PLR]. Start a new measurement each time you change [GAIN] a lot.

Meter bridge (IN | OUT)

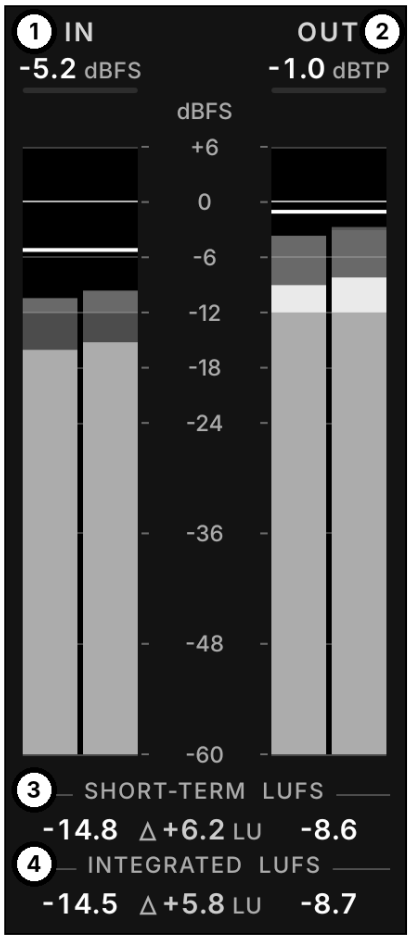


FIGURE 21 Max's meter bridge: 1 input, 2 output (in dBTP with TRUE PEAK on), 3 short-term and 4 integrated loudness, with the OUT − IN difference.

In VEIRA Max the meter bridge sits between the waveform and the REDUCTION meter. It has **no GR column** (the REDUCTION meter and lane show the reduction), and one scale between the IN and OUT meters. With TRUE PEAK on, the OUT peak readout shows the **true peak** and reads in dBTP; the IN readout is always the sample peak in dBFS. Δ shows how much louder Max made the song, in LU: the same as your GAIN minus what was limited away. Everything else works as described below.

Reading the IN and OUT meters

The meter bridge measures what goes into VEIRA Max 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.

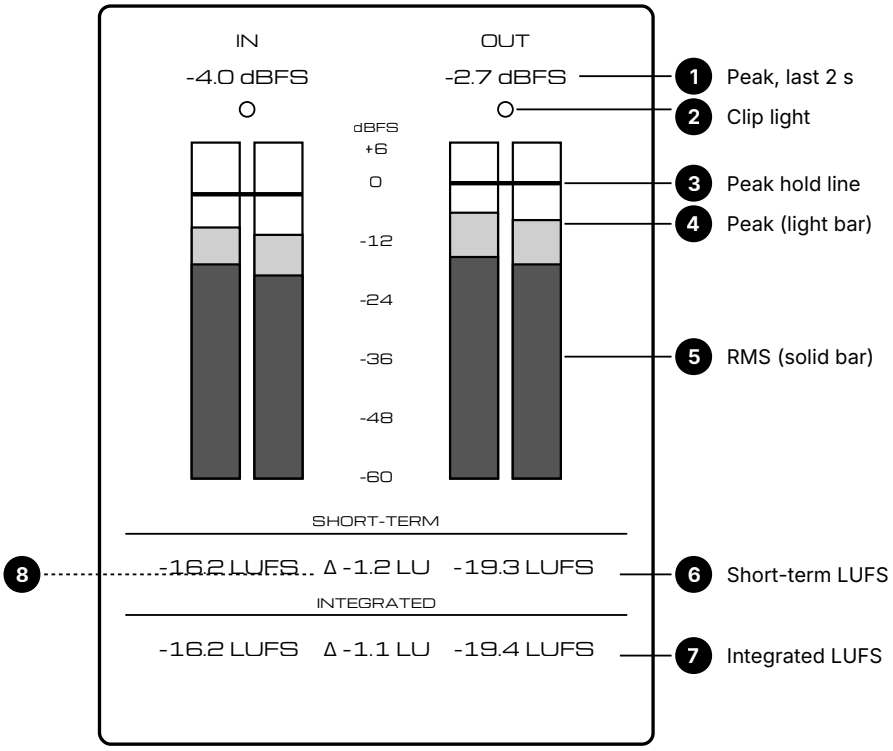


FIGURE 22 The meter bridge, left and right channel bars for input and output, with loudness below.

- 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 Max 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.

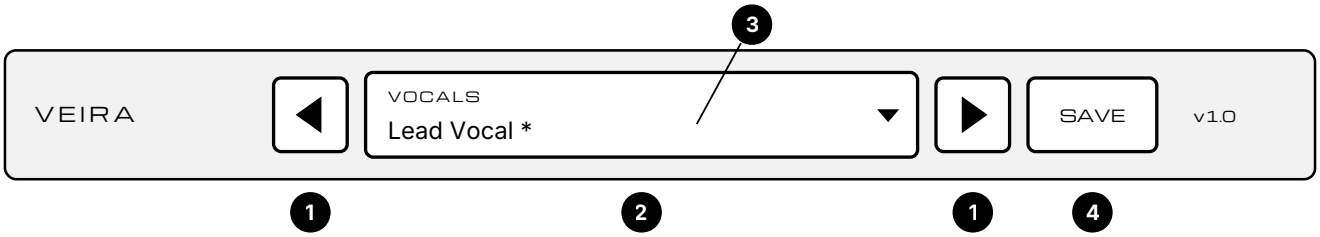
Clicks: click a level meter to reset its hold and clip light. Click the loudness readouts to restart the integrated measurement, for example at the start of a song.

Presets

VEIRA Max comes with **73 factory presets** in 15 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 23 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 Max 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 Max/<Folder>/
Windows	%APPDATA%\VEIRA\VEIRA Max\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	Drum Peak Tamer, Snare Crack Control, Kick And Snare Smash, Room Mic Crush, Hi-Hat Peak Smoother
Bass	Bass Peak Tamer, Bass Level Lift, Synth Bass Limit, Upright Bass Smooth
Guitar	Acoustic Strum Tamer, Electric Rhythm Limit, Clean Guitar Peaks, Fingerpicked Leveler
Keyboards	Piano Peak Tamer, Piano Level Lift, Electric Piano Limit, Synth Lead Limit, Synth Pad Leveler
Strings	Violin Peak Tamer, Cello Level Lift, String Section Glue, Low Strings Control
Brass	Trumpet Peak Tamer, Trombone Level Lift, Horn Section Glue, Low Brass Control
Woodwinds	Flute Peak Tamer, Sax Level Lift, Clarinet Peak Control, Flute Breath Leveler
Vocals	Lead Vocal Peak Tamer, Male Vocal Upfront, Female Vocal Upfront, Rap Vocal Tight, Backing Vocal Glue, Podcast Voice Leveler, Male Voice Over Limit, Ballad Vocal Gentle
Mix Bus	Mix Bus Peak Catch, Mix Bus Glue, Rough Mix Preview, Stem Peak Safety, Mix Headroom Guard
Mastering	Dynamic Acoustic Master, Smooth Ballad Master, Transparent Master, Balanced Master, Modern Pop Master, Modern Rock Master, CD Master 16 Bit, Hi-Res Master 24 Bit
Streaming	Streaming -14 LUFS, Lossy Safe -14 LUFS, Streaming -16 LUFS, Podcast -16 LUFS, Loud For Streaming, Loud Stream -2 dBTP
Loud	Loud Rock Master, Hip-Hop Master, EDM Master, Club Master, Maximum
Broadcast	Broadcast -1 dBTP, Broadcast -2 dBTP, Lossy Safe -3 dBTP, Dialogue Peak Guard, Live Broadcast Guard
Creative FX	Clipper Crush, Pumping Limiter, Wide And Loud, Lo-Fi Squash, Soft Clip Warmth

Levels matter. The presets assume close drum tracks peaking around −4 dBFS, other tracks around −8 dBFS, mix buses around −4 dBFS, and premasters around −3 dBFS peak and −16 LUFS integrated. On hotter or quieter material, move GAIN by the same number of dB first, then fine-tune it by the loudness panel (masters) or the REDUCTION meter (tracks). MATCH is off in every preset; dither is on only in *CD Master 16 Bit* and *Hi-Res Master 24 Bit*.

Recipes

Step-by-step starting points. In each, use MATCH to compare at equal loudness before you settle on GAIN, and turn it off again before a real-time bounce.

A master for streaming at −14 LUFS

1. Put Max last on your master bus. Load **Streaming ▸ Streaming -14 LUFS** (or **Lossy Safe -14 LUFS** for a loud, bright mix).
2. Click the loudness panel to start a new measurement, and play the whole song.
3. Raise or lower GAIN until INTEGRATED reads about −14 LUFS. AT -14 LUFS should read 0.0.
4. Check TRUE PEAK MAX: it stays at or under the ceiling (−1.0 or −2.0 dBTP).
5. If you will bounce a 24-bit file, select 24 BIT.

A loud, modern master

1. Load **Mastering ▸ Modern Pop Master** (about −8.5 LUFS) or one of the *Loud* folder presets.
2. Set GAIN for the integrated loudness the note names. Watch the REDUCTION lane: the clipper (orange) should take the drum peaks, the limiter (red) the rest.
3. Turn on MATCH and switch the plugin's bypass in your DAW: at equal loudness, does the master still punch? If the drums sound flat, lower GAIN or CLIP; if the low end distorts, lengthen RELEASE.
4. Turn MATCH off. Note PLR and AT -14 LUFS so you know what streaming will take back.

A CD master

1. Load **Mastering ▸ CD Master 16 Bit**: a −0.3 dBTP ceiling with 16 BIT dither on.
2. Set GAIN for about −9 LUFS integrated, or to taste.
3. Bounce at 16 bit, 44.1 kHz. Don't add dither anywhere else.

A true-peak guard for broadcast

1. Set the programme's loudness *before* Max (for example to −23 LUFS for EBU R 128).
2. Load **Broadcast ▸ Broadcast -1 dBTP** (or **Broadcast -2 dBTP** for −24 LKFS / ATSC A/85). CLIP is 0 %: the cleanest path.
3. Leave GAIN near 0. Max only catches the peaks; the REDUCTION meter should rarely move.

Control a vocal or a drum track

1. On the track, load **Vocals ▸ Lead Vocal Peak Tamer** (or a *Drums* preset).
2. Raise GAIN until the REDUCTION meter shows 3–5 dB on the loudest words or hits.
3. The quiet parts come up by the same GAIN; the peaks stay at the sample-peak ceiling, leaving headroom for the mix.

Hear what the loudness costs

1. Set Max up for your master, then turn on [MATCH]. The readout shows how much it turns the output down (for example [MATCH -6.0 dB]).
2. Switch your DAW's bypass for the plugin on and off. Both now play at the same loudness, so you hear only the change in sound: punch, depth, distortion.
3. Lower [GAIN] 1 dB at a time until bypass and Max sound equally good, then decide how much louder than that you want to go.
4. Turn [MATCH] off when you're done.

Pumping as an effect

1. Load **Creative FX ▸ Pumping Limiter**: [CLIP] 0 %, [AUTO] off, [RELEASE] 30 ms.
2. [GAIN] sets how deep the mix ducks on each kick; [RELEASE] sets how fast it swells back. Try 150–300 ms for a slow, breathing pump in time with the beat.

Specifications

Type	Mastering limiter: soft clipper + lookahead true-peak limiter
Channels	Mono and stereo
Latency	224 samples at 48 kHz (2 ms lookahead plus the oversampling filters), constant, reported to the host; the DAW's bypass is delayed by the same amount
Clipper	Soft, linear to 2 dB under its threshold; 8x oversampled with linear-phase filters, flat to 19.4 kHz at 44.1 kHz
Limiter	2 ms lookahead, cannot overshoot; sample-peak or 8x true-peak detection
True-peak accuracy	A −1.0 dBTP ceiling reads −1.05 dBTP on a BS.1770 meter, at 44.1, 48 and 96 kHz
GAIN	0 to +30 dB (default +0.0 dB)
CEILING	−12 to 0 dB (default −1.0 dBTP)
CLIP	0 to 100 % (default 40 %)
RELEASE	5 to 1000 ms (default 120 ms)
AUTO	On / off (default on)
LINK	0 to 100 % (default 100 %)
TRUE PEAK	On / off (default on)
MATCH	On / off (default off); never applied in offline bounces
Dither	NO DITHER, 24 BIT, 16 BIT (TPDF, under the ceiling; default NO DITHER)
Metering	Waveform (4.5 s) with clipper and limiter reduction and short-term loudness; reduction bar with VU ballistics; integrated, momentary and short-term loudness, true-peak maximum, PLR and streaming turn-down per ITU-R BS.1770-4 / EBU R 128; IN and OUT meters (peak, RMS, LUFS)
Presets	73 factory presets in 15 folders, plus your own
Window	1360 × 900 points; resizable from 75 % to 200 %, saved with the session
Formats	VST3, Audio Units, standalone; AAX once signed
Plugin ID	Manufacturer Veir, plugin Vmax

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 Max 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**.

My bounce is quieter than what I heard. MATCH was on during a real-time bounce or while recording the output. Offline bounces always leave MATCH out; for real-time bounces, turn it off first.

TRUE PEAK MAX **reads a little above my ceiling.** Check that TRUE PEAK is on: with it off, Max limits the samples, and the wave between them can rise slightly higher. Also check that nothing comes *after* Max in the chain (another plugin, the master fader, a pan law); Max should be last.

Another meter reads a different true peak. True-peak meters estimate the wave between samples, and less precise ones read a little differently. Max's ceiling is checked against a standard BS.1770 meter (−1.05 dBTP at a −1.0 ceiling). A meter placed before Max, or a meter that reads sample peak, will of course differ.

Everything sounds flat or distorted. Too much reduction. Lower GAIN until the REDUCTION meter stays under about 6 dB, then listen at equal loudness with MATCH. If only the bass distorts, lengthen RELEASE or turn AUTO on. If snares sound papery, lower CLIP.

The streaming service will turn my master down. Is that bad? No, it only means your master is louder than the service's reference. It will play at the same level as everything else; only its dynamics are reduced. AT -14 LUFS shows how much. See *Loudness explained*.

Does Max add latency? Yes: 224 samples at 48 kHz, constant, which your DAW compensates automatically. For live monitoring through Max (recording through it), you may notice it; insert Max on the master bus for mixing and mastering, not on a live input.

Should I add dither elsewhere too? No. Dither once, in the last plugin, at the bit depth of the file you bounce. Leave NO DITHER selected for everything that isn't the final bounce.

The window is too small (or too big) on my screen. Drag its bottom-right corner. It scales from 75 % to 200 % and keeps its proportions; 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 Max · User Manual · Version 0.2.0

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

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