VEIRA

MID/SIDE EQUALIZER

VEIRA EQ Red

User Manual

The mid/side one of the four VEIRA colour EQs: eight bands, each on the stereo signal, its mid, its side, or one channel, with BASS MONO, AIR and WIDTH for the stereo field, LISTEN, and minimum or linear phase.



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Welcome

Thank you for choosing **VEIRA EQ Red**. It is a stereo equalizer for mixing and mastering: eight bands, each a bell, a shelf, a cut or a notch, and each set to work on the **stereo** signal, its **mid** (the centre), its **side** (the width), or the **left** or **right** channel alone. It is the mid/side one of the four VEIRA colour EQs (White, Red, Gold and Blue).

With Red you can do what a stereo EQ can't: lift the presence of a vocal in the centre without brightening the cymbals on the sides, clean the low mids out of wide guitars without thinning the bass and kick, make the low end mono, add air to the stereo field only, or fix a boom on one side of a recording. The graph draws the mid curve and the side curve over a live spectrum of each, and LISTEN lets you hear the mid or the side alone.

What makes it different

- **Every band picks its channel:** STEREO, MID, SIDE, LEFT or RIGHT, on any of the eight bands and six band types.
- **Stereo tools built in.** BASS MONO removes the side below MONO BELOW, AIR lifts the side's top, and WIDTH sets the side's level from 0 to 200 %.
- **The mono sum stays put.** Side-only work changes the width and never what a mono speaker plays.
- **Two curves, two spectra.** The mid and the side, each drawn over its own live spectrum.
- LISTEN plays the mid or the side alone on both speakers, so you hear exactly what a band is acting on.
- **Minimum or linear phase**, AUTO GAIN, and analog-shaped bells right up to 20 kHz, as in VEIRA EQ White.
- **Flat is exact.** With every band flat and the width tools neutral, the output is the input bit for bit (in linear phase, an exact delay).

How this manual is organised. *Getting started* covers installing and activating. *The panel at a glance* names every part of the window. *How mid/side EQ works* is a short primer on equalizers and on mid and side. *Working on the graph*, *Controls* and *The stereo field* explain every control with drawings; *Minimum and linear phase* explains the PHASE buttons. *Which colour EQ to choose* compares the four colour EQs. *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:

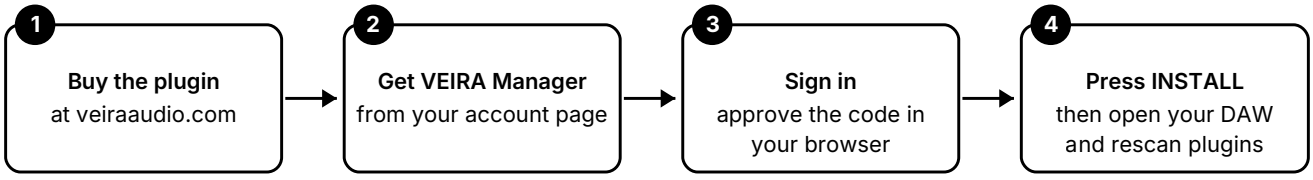


FIGURE 1 From purchase to first sound in four steps.

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

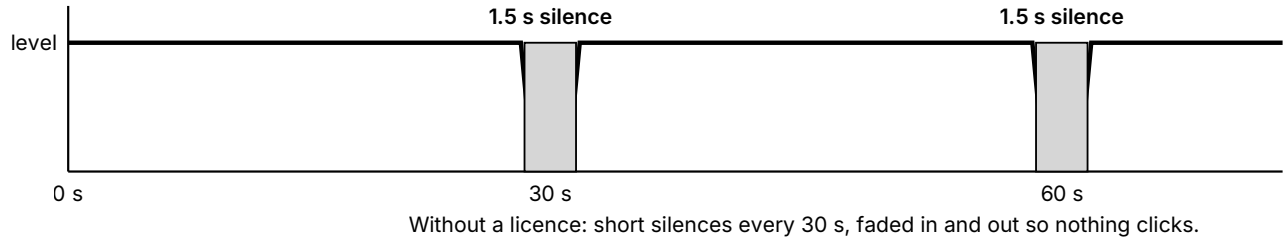


FIGURE 2 What an unlicensed copy does. With a valid licence the audio is never touched.

- **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 EQ 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 EQ 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



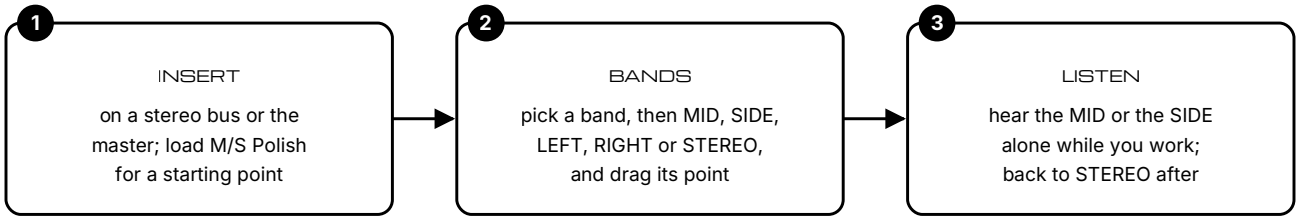
FIGURE 3 VEIRA EQ Red, the lacquered-red unit, on a full mix: the mid curve (red) with weight, a cut at 280 Hz (band 3, selected and hovered) and a lift at 3 kHz; the side curve (rose) with its low end made mono below 120 Hz by BASS MONO, a cut at 600 Hz, presence at 6 kHz and +2 dB of AIR. WIDTH 110 %, AUTO GAIN on.

	Part	What it does
1	Preset browser	Steps through and saves presets. See *Presets*.
2	The graph	The mid curve and the side curve over the live spectrum of the output's mid and side.
3	Band points	One numbered point per band, tagged with its channel (M, S, L, R; none for stereo).
4	Read-out	The band under the mouse, or the two curves at the mouse.
5	Status line	The phase mode and its latency, and what AUTO GAIN is doing.
6	Range button	The graph's scale: ±6, ±12 or ±24 dB.
7	Meter bridge	Input and output level and loudness.
8	BANDS	Picks the band the knobs show.
9	Type buttons	BELL, LOW SHELF, HIGH SHELF, LOW CUT, HIGH CUT, NOTCH.

	Part	What it does
10	BAND n knobs	FREQUENCY, GAIN, Q and SLOPE of the selected band.
11	ON and the channel buttons	The band in or out; STEREO, MID, SIDE, LEFT or RIGHT.
12	BASS MONO and MONO BELOW	No side under the frequency you choose: a mono low end.
13	AIR	A high shelf on the side.
14	WIDTH	The side's level, 0 to 200 %.
15	OUTPUT	The final level.
16	AUTO GAIN	Keeps the loudness the same whatever the curves do.
17	PHASE and LATENCY	MINIMUM or LINEAR phase, with the latency it adds.
18	LISTEN	STEREO, MID or SIDE: what you hear while you work.

The graph fills the top of the window, with the meter bridge beside it. The strip along the bottom reads left to right: which band, what the band does and where (BAND 3), the stereo field (WIDTH), and the end of the chain (OUTPUT).

Quick start: a better stereo picture in three moves



Init has bands 2, 3, 5 and 7 on the mid and 4 and 6 on the side, all flat: the output is the input.

FIGURE 4 The quickest way in. *Default* ▸ *Init* is a clean start: every band flat (cuts off), the width tools neutral, minimum phase, AUTO GAIN off.

Using the controls

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

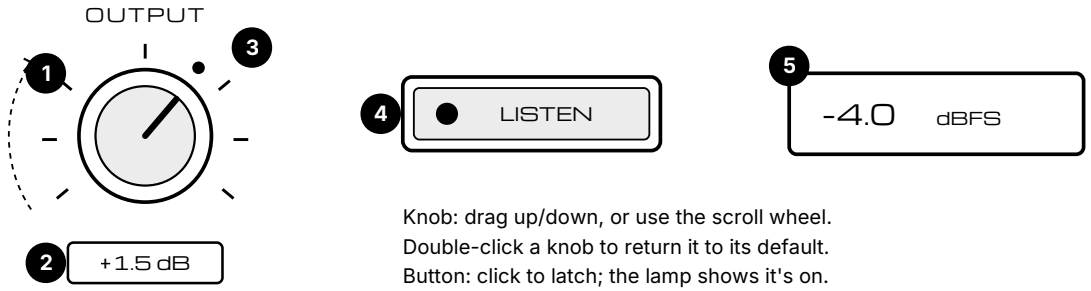


FIGURE 5 The parts you'll find on every VEIRA panel (the labels are examples).

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

- **Knobs show their value in the middle** (280 Hz, -1.5 dB, 1.20, 110 %): 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. Drag, use the wheel, or double-click for the default. A knob that does nothing at the moment is dimmed, still readable: GAIN on a cut or a notch, SLOPE on anything but a cut, MONO BELOW while BASS MONO is off.
- **Type a value:** right-click a knob (Control-click on a Mac), type the new value and press Return. Frequencies can be typed as **120**, **2.5k** or **2500**. Press Escape or click elsewhere to leave it unchanged.
- **Buttons have no lamps:** a selected or switched-on button fills with cream with dark lettering (in print, a light button with a dark outline, standing out from the darker wells around it); when it is off it is a shallow well in the paint with cream lettering.
- **Resize the window:** drag its bottom-right corner (the small diagonal lines). It scales from 75 % to 200 % of its normal size (1480 × 900 points) and keeps its proportions. Your DAW saves the size with the session.

- **The face:** Red is painted like VEIRA Limiter Red: deep lacquered red, with cream print and black knobs. The graph, the meter bridge and the preset window are dark screens set into the paint. Every label on the paint stands at least 4.5:1 against it (the WCAG AA contrast for text).

How mid/side EQ works

If you already know EQ and mid/side, skip to *What happens inside VEIRA EQ Red*.

Equalizers in one page

Every sound is a mix of frequencies: low ones you feel (the thump of a kick, the weight of a bass), middle ones that carry most of the tone and the words, and high ones that bring detail, breath and air. An equalizer turns chosen frequency regions up or down. On the graph the horizontal axis is **frequency**, 20 Hz to 20 kHz, and the vertical axis is **gain**: above the 0 dB line is louder, below is quieter.

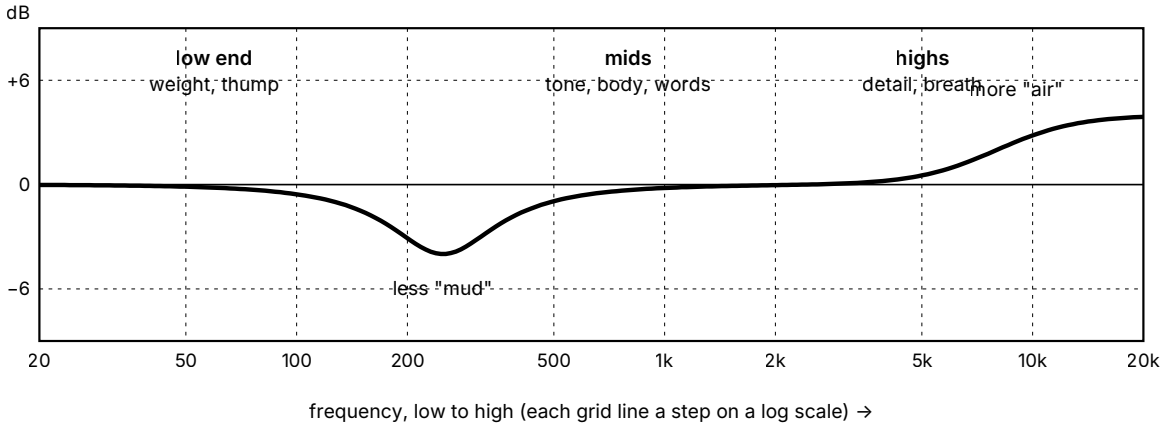


FIGURE 6 An EQ curve reads like a map of the spectrum: low frequencies on the left, high on the right, louder above the 0 dB line, quieter below.

Each band has a **frequency** (where it acts), a **gain** (how much it boosts or cuts) and a **Q** (how wide it is: low Q broad and musical, high Q narrow and surgical). A good habit: cut narrow, boost wide, and judge at equal loudness.

Mid and side

A stereo mix is two channels, left and right. But it can just as well be described as **mid** and **side**:

- the **mid** is what both channels have in common: the centre of the stereo picture, where the lead vocal, the kick, the snare and the bass usually sit. It is also what a mono speaker (a phone, a club's mono system, a radio) plays.
- the **side** is what differs between them: the width, the room, the reverbs, wide guitars, pads and cymbals.

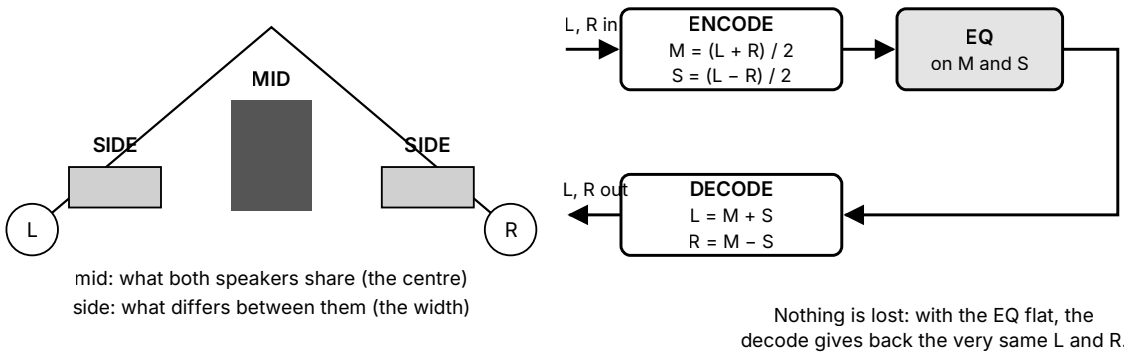
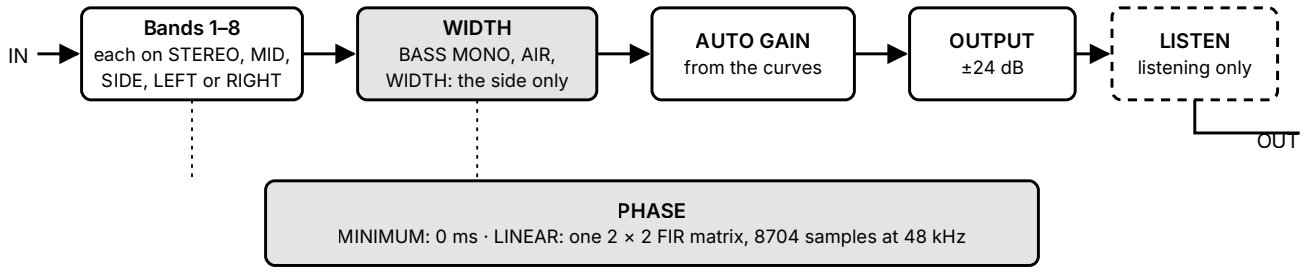


FIGURE 7 Mid and side. The mid is the average of the two channels, the side half their difference. Decoding adds and subtracts them again, so nothing is lost.

An EQ on the mid changes the centre; an EQ on the side changes the width. So you can brighten cymbals and reverbs without brightening the vocal, or lift the vocal's presence without lifting the hi-hats: two jobs a stereo EQ can't separate.

What happens inside VEIRA EQ Red



The signal moves into mid/side only while a MID or SIDE band or a width tool acts; LISTEN is for your ears only.

FIGURE 8 Signal flow. The eight bands make a mid curve and a side curve (and a left and right one when a band is set to one channel); the width tools act on the side; PHASE decides how it is all applied.

- **Mid/side only when it's needed.** The signal moves into mid/side while a MID or SIDE band, or a width tool, is acting, and back to left/right for LEFT and RIGHT bands. With everything flat it never leaves left/right: the output is the input bit for bit.
- **Exact.** Mid and side are worked out in double precision; on a full mix, encoding and decoding gives back every sample exactly.
- **Minimum phase** (the default) runs each band as analog-matched filter sections, sample by sample: no latency. **Linear phase** turns the whole stereo response into long filters that delay every frequency equally; it adds latency, which Red reports to your DAW. See *Minimum and linear phase*.
- **Smooth and click-free.** Frequency, gain and Q glide over about 20 ms; switching a band's type, slope or channel fades it out and back in; switching PHASE or LISTEN fades the output out over 8 ms and back.
- **Mono tracks.** On a mono track every band but SIDE acts on the one channel, and the width tools rest (a mono signal has no side).

Working on the graph

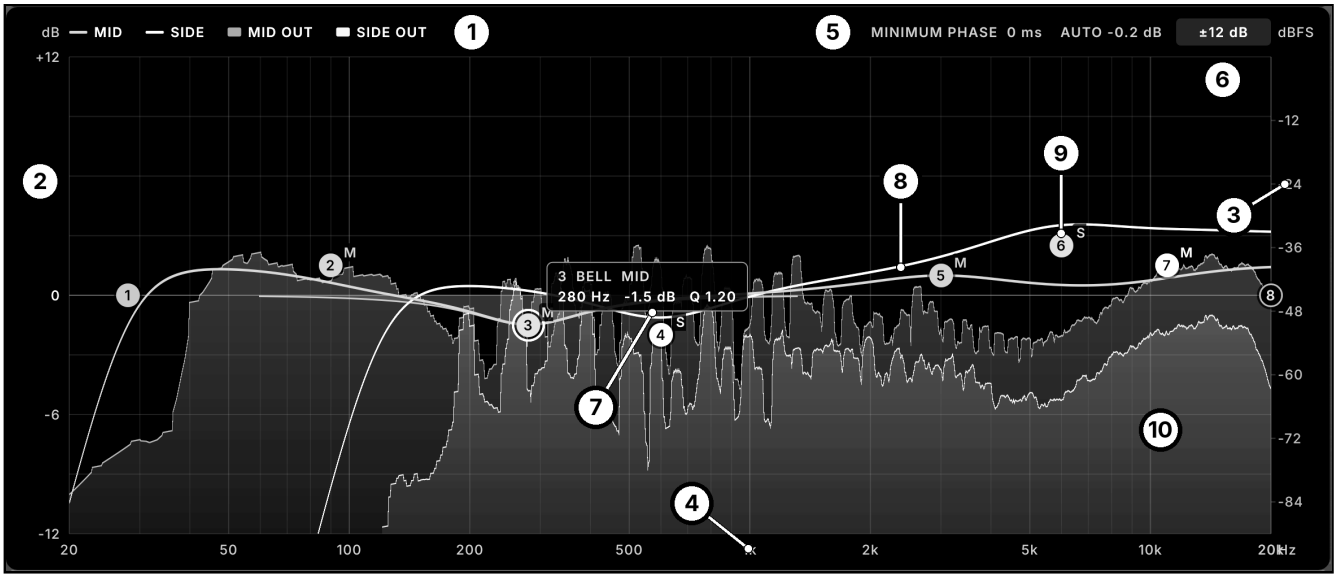


FIGURE 9 The graph: 1 legend, 2 the EQ's dB scale, 3 the analyser's dBFS scale, 4 frequency scale, 5 status line, 6 range button, 7 the mid curve, 8 the side curve, 9 a band point with its channel tag (S), 10 the spectrum of the output's mid and side.

- 7 **The mid curve** (red) and 8 **the side curve** (rose, the lighter line): what all the bands and width tools do to the centre and to the width. In print the mid curve is the darker line; the side curve is the lighter one. A STEREO band shows in both; a LEFT or RIGHT band shows in both too, more gently, since one channel is half of the mid and half of the side.
- 10 **The spectrum** of the output: the mid (red, MID OUT) and the side (rose, SIDE OUT), live. On most mixes the side sits well under the mid, especially in the low end; with BASS MONO on it disappears below MONO BELOW. 1 The legend names all four.
- 9 **The band points**, numbered 1 to 8, each tagged with its channel: M, S, L or R (a stereo band has no tag). The selected band's own curve is shaded in its colour.
- 2 The EQ's scale in dB (left) and 3 the analyser's in dBFS (right, tilted 4.5 dB per octave so a balanced mix reads level). 6 The range button sets the EQ's scale: ±6, ±12 or ±24 dB. 5 The status line shows the phase mode, its latency, and what AUTO GAIN applies.

Moving bands with the mouse

On the graph	What it does
Drag a point	Left and right: FREQUENCY; up and down: GAIN. Dragging a band that is off switches it on.
Shift + drag	The same, finely.
Mouse wheel on a point	Q: wider or narrower.
Double-click a point	Switches the band on or off.

On the graph	What it does
Alt / Option-click a point	Returns its gain to 0 dB.
Hover	On a point: its number, type, channel, frequency, gain, slope and Q. Elsewhere: the mid and the side curves at the mouse.

Clicking or dragging a point also selects its band, so the knobs show it.

Controls

BANDS: choosing a band and its type

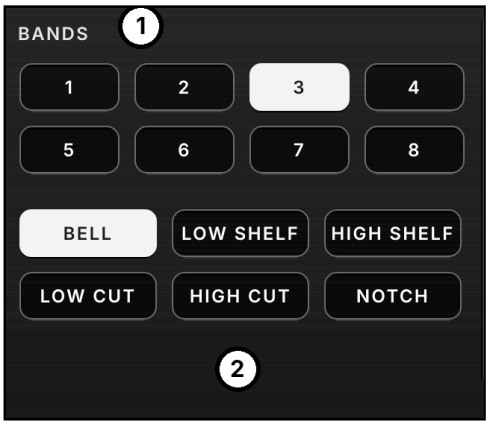


FIGURE 10 1 The eight band buttons, band 3 selected; 2 the six type buttons, BELL selected.

1 The **band buttons** 1 to 8 choose which band the knobs show; clicking a point on the graph does the same. 2 The **type buttons** set the selected band's filter: BELL, LOW SHELF, HIGH SHELF (they boost or cut), LOW CUT, HIGH CUT, NOTCH (they only remove).

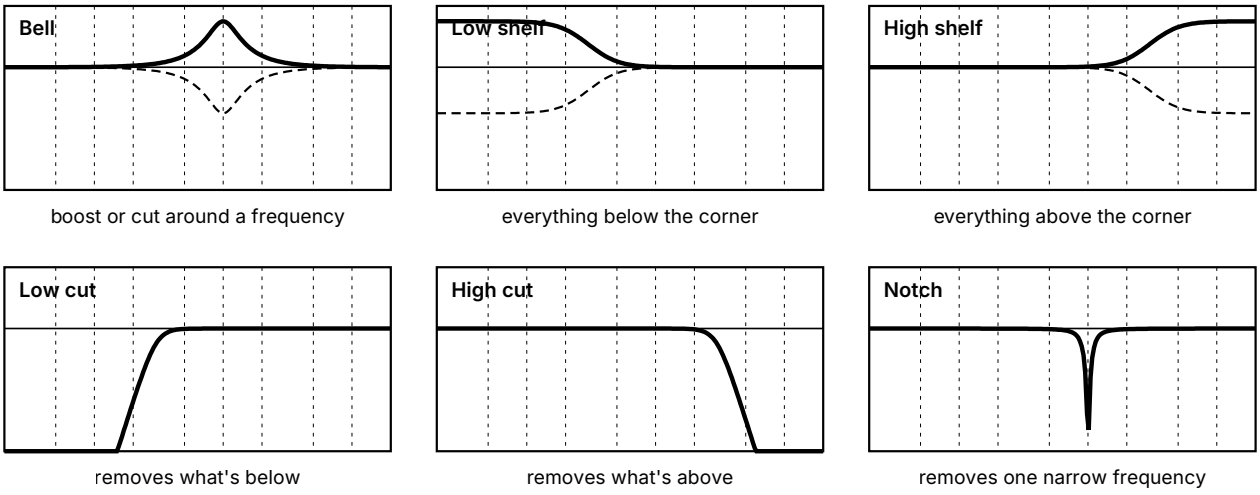


FIGURE 11 The six filter types. Solid lines show a boost, dashed lines the same band set to cut. Cuts and the notch have no gain.

- **Bell:** boosts or cuts a region around its frequency.
- **Low shelf / high shelf:** raise or lower everything below or above the corner.
- **Low cut / high cut:** remove everything below (high-pass) or above (low-pass) the corner, at the band's SLOPE.

- **Notch:** a very deep, narrow cut for a hum or a ring; in minimum phase it removes that frequency completely.

The eight starting bands. A new instance (and *Default* ▸ *Init*) opens with a mastering split: bands on the mid for the body and the voice, on the side for the room and the width. All flat or off, so it is perfectly transparent:

Band	Type	FREQUENCY	Channel	State
1	Low cut	25 Hz	STEREO	off
2	Low shelf	90 Hz	MID	on, 0 dB
3	Bell	250 Hz	MID	on, 0 dB
4	Bell	700 Hz	SIDE	on, 0 dB
5	Bell	2.5 kHz	MID	on, 0 dB
6	Bell	5 kHz	SIDE	on, 0 dB
7	High shelf	10 kHz	MID	on, 0 dB
8	High cut	20 kHz	STEREO	off

Bells start at Q 1.00, shelves and cuts at 0.71, cuts at 24 dB/oct.

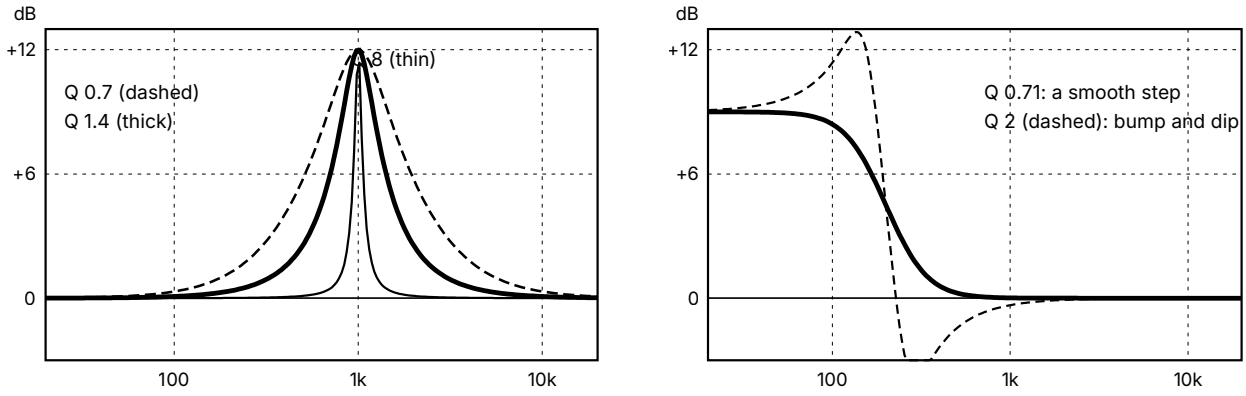
BAND n: FREQUENCY, GAIN, Q, SLOPE, ON and the channel



FIGURE 12 The selected band: 1 FREQUENCY, 2 GAIN, 3 Q, 4 SLOPE (dimmed: band 3 is a bell), 5 ON and 6 the channel buttons, MID selected.

Control	Range	Default	What it does
FREQUENCY	20 Hz to 20 kHz	per band	The centre of a bell or notch, or the corner of a shelf or cut.
GAIN	−24 to +24 dB	0.0 dB	How much a bell or shelf boosts or cuts. Dimmed for cuts and notches.
Q	0.10 to 18	1.00 (bells), 0.71 (shelves and cuts)	The width of a bell or notch; the shape of a shelf or cut (0.71 is the plain one).

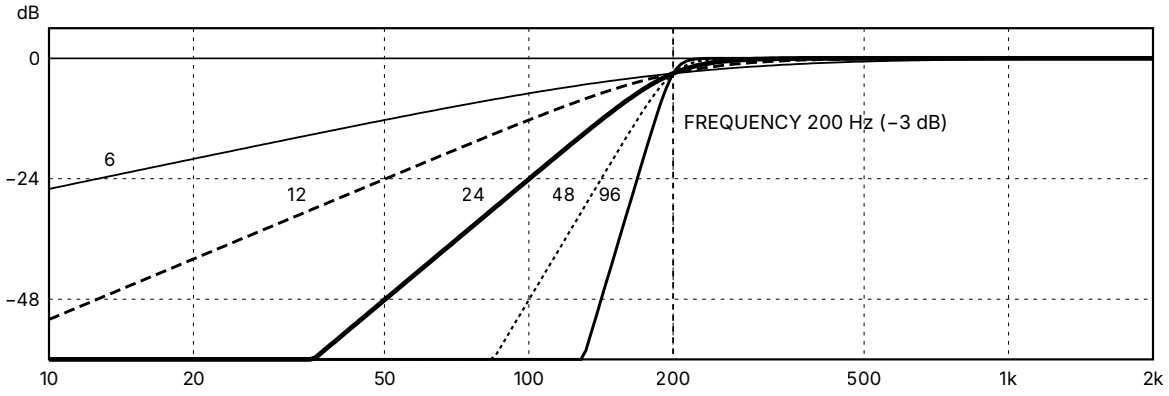
Control	Range	Default	What it does
SLOPE	6, 12, 18, 24, 36, 48, 72, 96 dB/oct	24 dB/oct	How steep a cut is. Dimmed for other types.
ON	on / off	per band	Puts the band in or out.
Channel	STEREO, MID, SIDE, LEFT, RIGHT	per band	Which part of the stereo signal the band acts on.



a +12 dB bell at 1 kHz

a +9 dB low shelf at 200 Hz

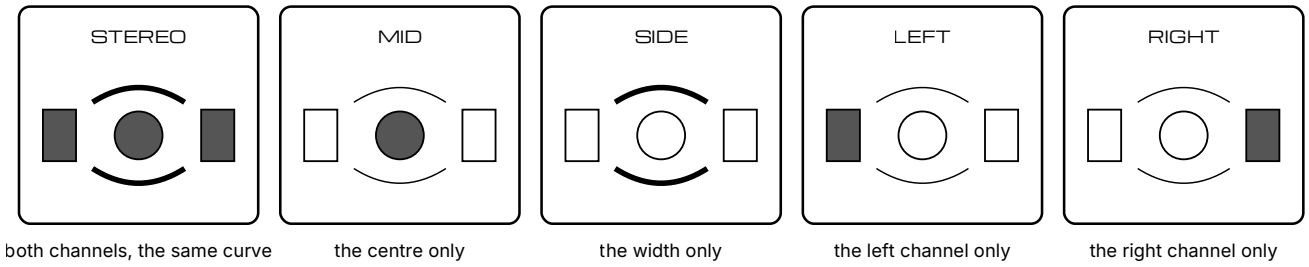
FIGURE 13 Left: a +12 dB bell at three Q settings. Right: Q on a shelf: 0.71 is a smooth step, 2 adds a small bump and dip.



LOW CUT at 200 Hz with SLOPE 6, 12, 24, 48 and 96 dB/oct (labels at −30 dB)

FIGURE 14 Low cuts at the same FREQUENCY with different slopes. Steeper slopes keep more of what's above the corner and remove more of what's below.

The channel: STEREO, MID, SIDE, LEFT, RIGHT



Dark: what the band acts on. The circle is the centre (mid), the arcs the width (side), the boxes the two speakers.

FIGURE 15 What each channel setting acts on.

- STEREO**:** both channels get the same curve, like an ordinary EQ. The image doesn't move.
- MID**:** the centre only. Use it for what sits in the middle: the vocal's presence, the kick and bass weight, a centred snare. It also changes the mono sum, since mono *is* the mid.
- SIDE**:** the width only. Use it for what lives in the stereo field: cymbals, room, reverb, wide guitars and pads. **It never changes the mono sum.**
- LEFT / RIGHT**:** one channel alone, for a recording problem on one side (a boom from a mic too close to a cabinet, a dull overhead). It changes the mono sum by half its gain.

The graph shows the band's effect in the mid curve, the side curve, or both, and tags its point M, S, L or R. Changing the channel fades the band out and back in, so you can try it while the music plays.

> **Tip:** the same frequency on the mid and the side, one up and one down, moves an element between the centre and the sides without changing the overall balance. *Mastering* ▸ *Vocal Forward Master* lifts 2.8 kHz in the mid and dips it in the side.

WIDTH: BASS MONO, MONO BELOW, AIR and WIDTH



FIGURE 16 The WIDTH section: 1 MONO BELOW at 120 Hz, 2 BASS MONO (on), 3 AIR at +2.0 dB and 4 WIDTH at 110 %.

Control	Range	Default	What it does
BASS MONO	on / off	off	Removes the side under MONO BELOW: the low end becomes mono.
MONO BELOW	20 to 500 Hz	120 Hz	Where BASS MONO acts (a 24 dB/oct high-pass on the side). Dimmed while BASS MONO is off.
AIR	0 to +8 dB	0.0 dB	A high shelf on the side at 10 kHz.
WIDTH	0 to 200 %	100 %	The side's level: 0 % is mono, 200 % doubles the side.

None of these changes the mono sum: they act on the side only. They are explained, with drawings, in the next chapter.

OUTPUT, AUTO GAIN, PHASE and LISTEN

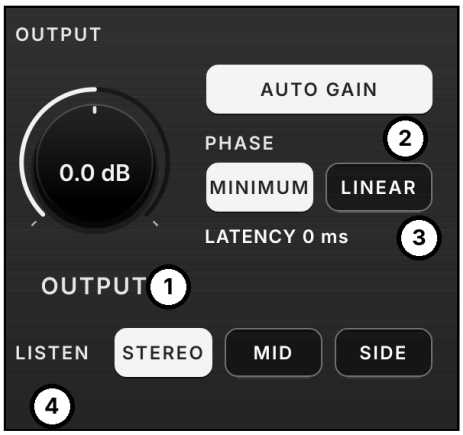
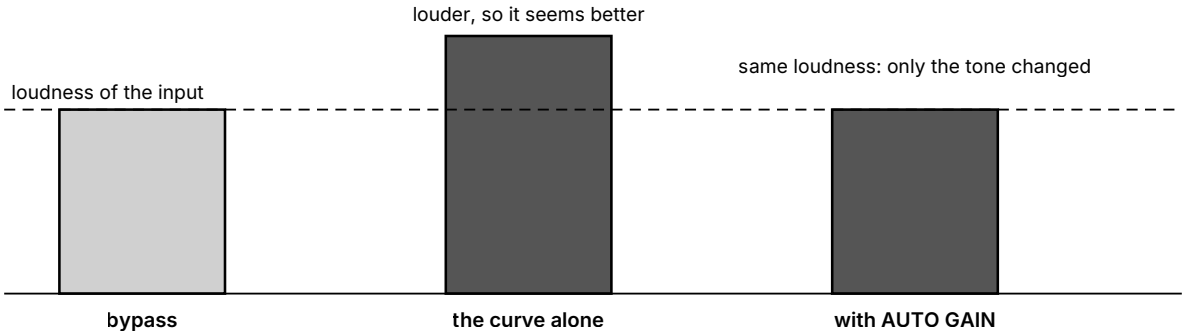


FIGURE 17 1 OUTPUT, 2 AUTO GAIN (on), 3 PHASE with MINIMUM selected and LATENCY 0 ms under it, 4 LISTEN with STEREO selected.

Control	Range	Default	What it does
OUTPUT	−24 to +24 dB	0.0 dB	The final level.
AUTO GAIN	on / off	off (on in every factory preset but Init)	Keeps the loudness the same whatever the curves do.
PHASE	MINIMUM, LINEAR	MINIMUM	How the curves are applied. Not automatable (it changes the latency).
LISTEN	STEREO, MID, SIDE	STEREO	What you hear. Listening only: not saved in presets, not automatable, left out of offline bounces.

AUTO GAIN

A boost makes the music louder, and louder always sounds better for a moment. With AUTO GAIN on, Red works out from the curves how much louder or quieter they make typical music, and takes exactly that back off.



a +4 dB high shelf: on its own it adds loudness; AUTO GAIN takes exactly that back off.

FIGURE 18 What [AUTO GAIN] does. It reads the curves, not the music, so it never pumps.

It is calculated from the curves themselves, K-weighted like a loudness meter on the spectrum of a typical mix, with the side counted 6 dB under the mid (as it sits in most mixes). It glides as you move a band, and the status line shows what it applies. Every factory preset but Init has it on and keeps the loudness within 0.5 LU of the input.

LISTEN

[LISTEN] chooses what you hear: the normal [STEREO] output, the [MID] alone or the [SIDE] alone, each on both speakers.

- [SIDE] is a revelation on most mixes: the room, the reverbs, the wide guitars and the cymbals, with the centre gone. Use it while you set [SIDE] bands, [AIR] and [BASS MONO]: with [BASS MONO] on, the low end disappears from it.
- [MID] is roughly what a mono speaker plays. Use it to set [MID] bands and to check the vocal and the low end.
- It is for listening only: **offline bounces always leave it out**, it isn't saved in presets and can't be automated. In a real-time bounce it would be printed, so set it back to [STEREO] first. The meters measure the real output, not what [LISTEN] plays.

The stereo field

BASS MONO and MONO BELOW

Low frequencies carry most of a mix's energy, and in the side they cause trouble: they make a vinyl cut difficult, they come and go on club systems that sum the low end to mono, and they make the low end sound loose on headphones. BASS MONO removes the side under MONO BELOW (a 24 dB/oct high-pass on the side), so everything under that frequency sits in the centre.

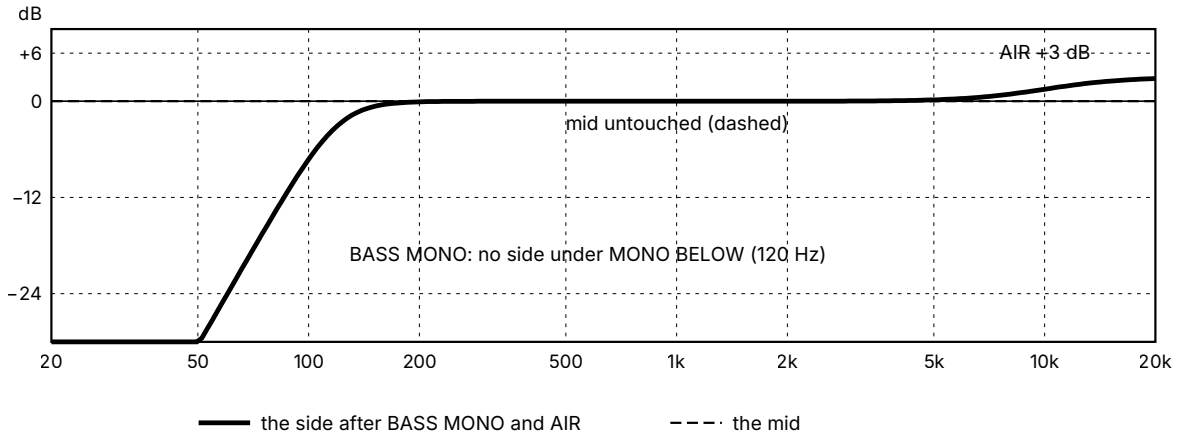


FIGURE 19 The side with BASS MONO at 120 Hz and AIR at +3 dB. The mid (dashed) is untouched.

- **80–120 Hz** suits most mixes and masters: the kick and bass become mono, while the room and the low end of pads keep their width above.
- **150–200 Hz** for a stereo synth bass or a chorused bass that must hold up in mono (*Bass* ▸ *Stereo Synth Bass Mono* uses 160 Hz).
- Higher than about 250 Hz starts to narrow guitars and keys; listen with LISTEN on SIDE to hear what goes.

Measured: with BASS MONO at 150 Hz, a 50 Hz tone in the side comes down by 38 dB.

AIR

AIR is a high shelf at 10 kHz on the side only: up to +8 dB of sheen in the cymbals, the room and the reverb tails, while the vocal and the snare in the centre stay as they were. +1.5 to +3 dB is usually plenty on a master; *Mastering* ▸ *Air On The Sides* uses +3 dB.

WIDTH

WIDTH sets the side's level. 100 % leaves it as it is; under 100 % the mix gets narrower, down to mono at 0 %; above 100 % it gets wider, to twice the side at 200 %.

The centre (dark) stays where it is; WIDTH scales the side (grey). The mono sum never changes.

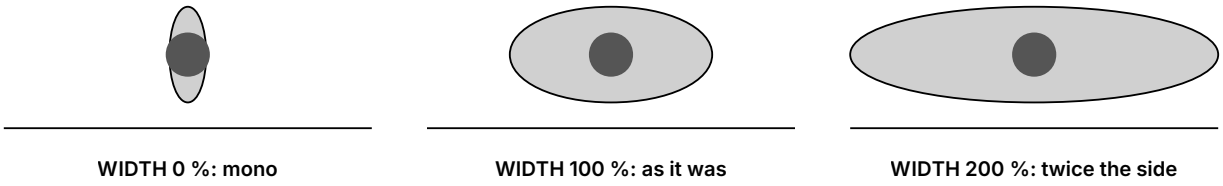
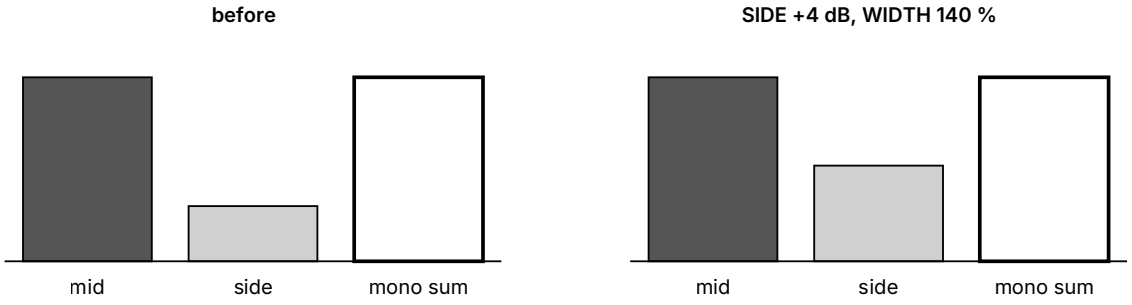


FIGURE 20 WIDTH scales the side; the centre stays where it is.

A little goes a long way: 105–120 % opens a mix; much more starts to sound hollow and puts more of the music into the side, where it can disappear on a mono speaker. Pair a wider mix with BASS MONO so the low end stays solid.

What stays the same in mono



Mono is L + R = 2 × mid: the side cancels out of it. Side-only work changes the width, never what a mono speaker plays.

FIGURE 21 Side-only work and the mono sum. The side cancels out of L + R, so a speaker playing mono hears only the mid.

Everything that acts on the side only, SIDE bands, BASS MONO, AIR and WIDTH, changes the stereo picture without changing the mono sum. Measured on a full mix with side bands, BASS MONO, AIR and WIDTH at 140 % all working: the mono sum changed by −152 dB (rounding only), in both phase modes, while the side rose 1.5 dB. What does change mono is only what is meant to: MID, STEREO, LEFT and RIGHT bands.

Minimum and linear phase

Every equalizer delays some frequencies a little more than others around the frequencies it changes: **phase shift**. In **minimum phase** (the default, like an analog EQ) that delay is as small as it can be and there is no latency. **Linear phase** delays every frequency by exactly the same amount, so the phase of the music doesn't change at all, at the cost of a fixed latency and a faint "pre-ring" before sharp transients.

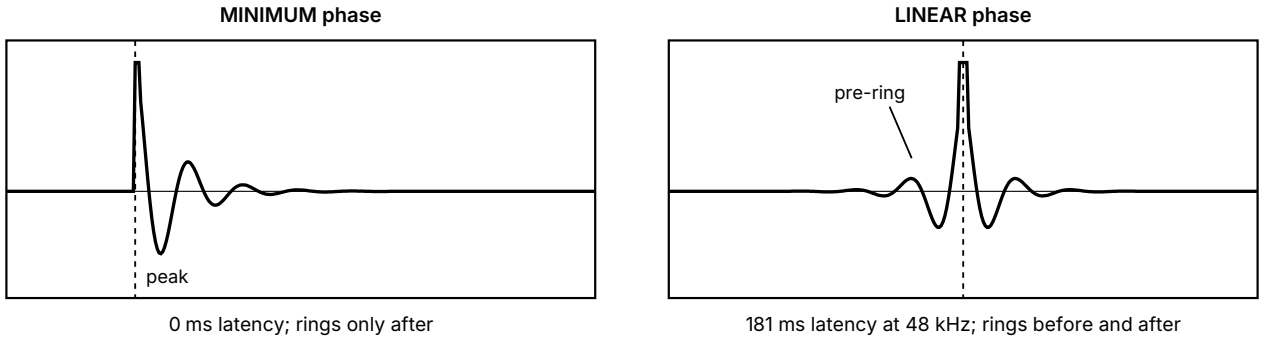


FIGURE 22 One click through the same boost in each mode. Minimum phase rings only after the click; linear phase rings symmetrically around it.

	MINIMUM	LINEAR
Latency	none	8704 samples at 44.1 and 48 kHz (181 ms at 48 kHz); 17408 at 88.2 / 96 kHz; 34816 at 176.4 / 192 kHz
Phase	shifts around each band, like an analog EQ	unchanged
Transients	ring only after the hit	a faint pre-ring before the hit, longest for steep, low cuts
Notches	infinitely deep	about −12 dB at 60 Hz (Q 10), −37 dB at 1 kHz
Use it for	mixing, drums, anything live; hum notches	mastering, where mid and side curves should leave the phase between them untouched

In linear phase Red applies the whole response as one stereo filter (left and right in, left and right out), so mid, side, left and right bands all stay exactly in time with each other. The factory *Mastering* presets use it; the *Surgical Fixes* use minimum phase.

The latency is always the same whatever the bands do, and Red reports it to your DAW, which compensates for it automatically; the DAW's bypass is delayed by the same amount. Don't monitor a live input through linear phase. Switching PHASE fades the output out over 8 ms and back in, and because it changes the latency, PHASE can't be automated.

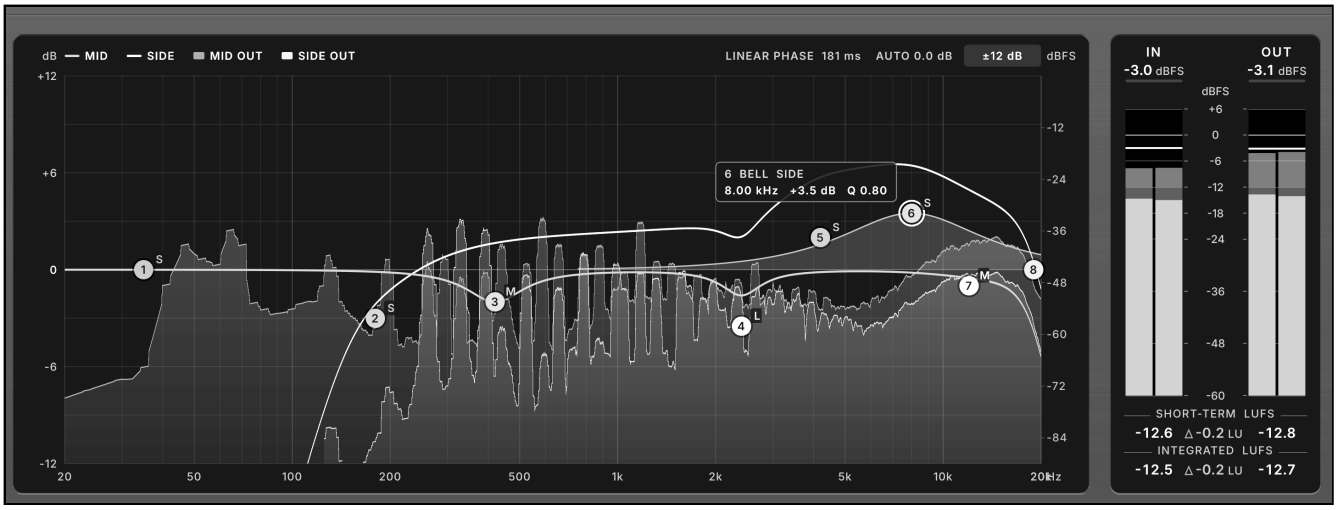


FIGURE 23 A corrective stereo curve in [LINEAR] phase ([LINEAR PHASE 181 ms]). The side (lighter line) has a 48 dB/oct low cut at 35 Hz, [BASS MONO] at 160 Hz, a cut at 180 Hz and lifts at 4.2 and 8 kHz (band 6, selected); the mid a cut at 420 Hz and a high shelf down at 12 kHz; band 4 cuts 2.4 kHz on the left channel only ([L]). [WIDTH] 130 %.

Analog shape to the top of the range

Red's minimum-phase filters keep their analog shape right up to 20 kHz, so a boost at 15 kHz is as broad as the knob says instead of squeezed narrower near the top of the range ("cramping").

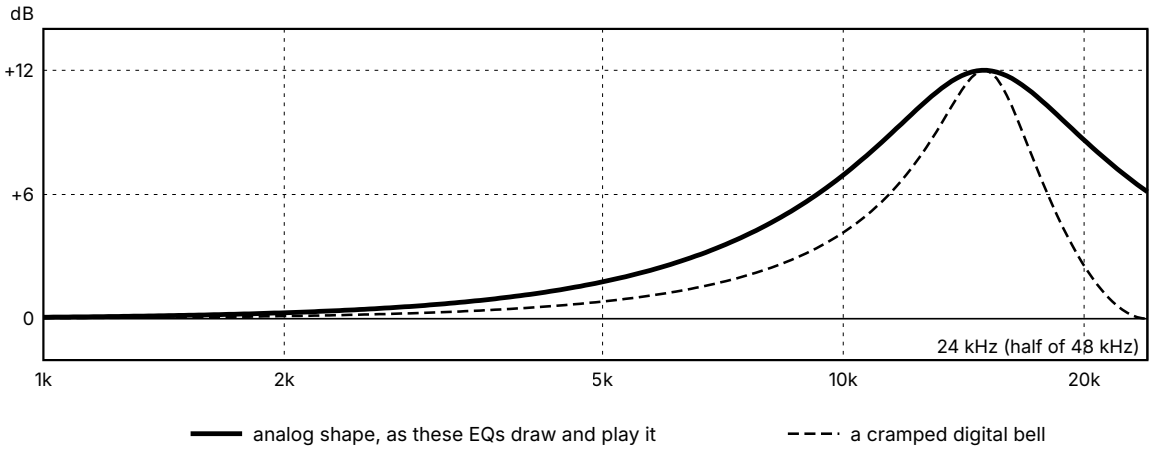


FIGURE 24 A +12 dB bell at 15 kHz, Q 1, at 48 kHz. Red's bell (solid) stays within 0.84 dB of the analog shape; a cramped digital bell (dashed) falls far short of it.

Displays

The graph

The graph is described in *Working on the graph*: the mid and side curves, the band points with their channel tags, the live spectrum of the output's mid and side, the two scales and the read-out under the mouse.

What to look for: compare the side spectrum with the mid. A side that is strong in the low end (close to the mid under 150 Hz) is a sign that BASS MONO will tighten the mix. A side that sticks up in the upper mids often means harsh cymbals or wide synths, a job for a SIDE bell.

Meter bridge (IN | OUT)

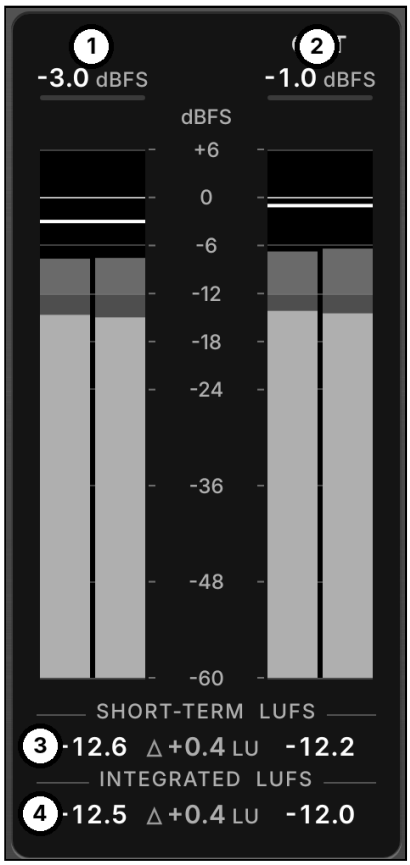


FIGURE 25 The meter bridge: 1 input and 2 output, 3 short-term and 4 integrated loudness, with the OUT − IN difference between them.

VEIRA EQ Red uses the standard VEIRA meter bridge, with an input and an output column. It always measures the real output, whatever LISTEN plays. Δ shows how much louder or quieter Red made the music, in LU: with AUTO GAIN on it stays close to 0.0.

Reading the IN and OUT meters

The meter bridge measures what goes into VEIRA EQ 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.

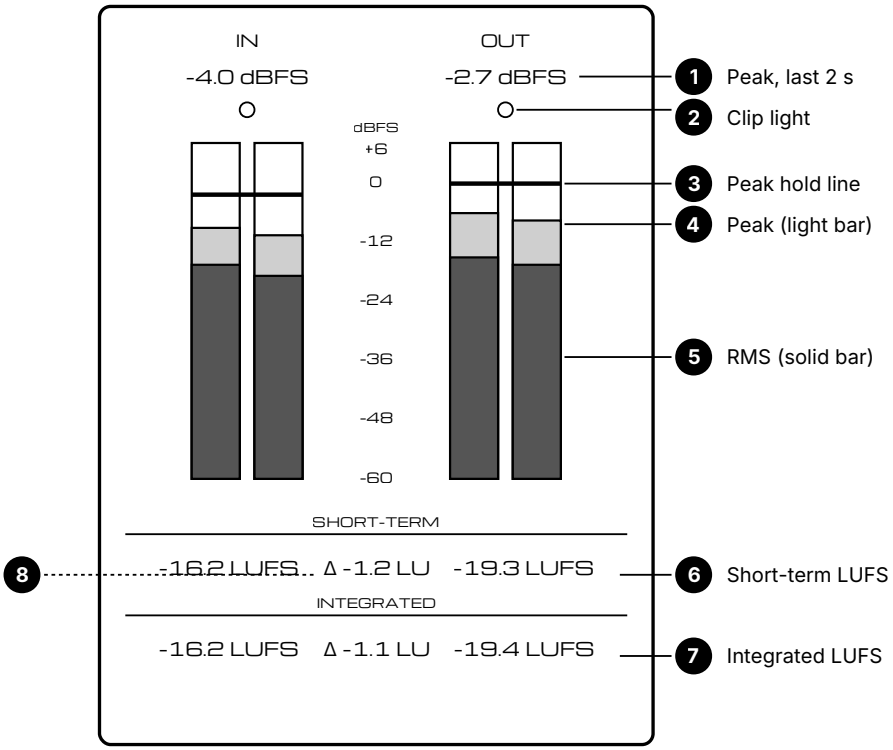


FIGURE 26 The meter bridge, left and right channel bars for input and output, with loudness below.

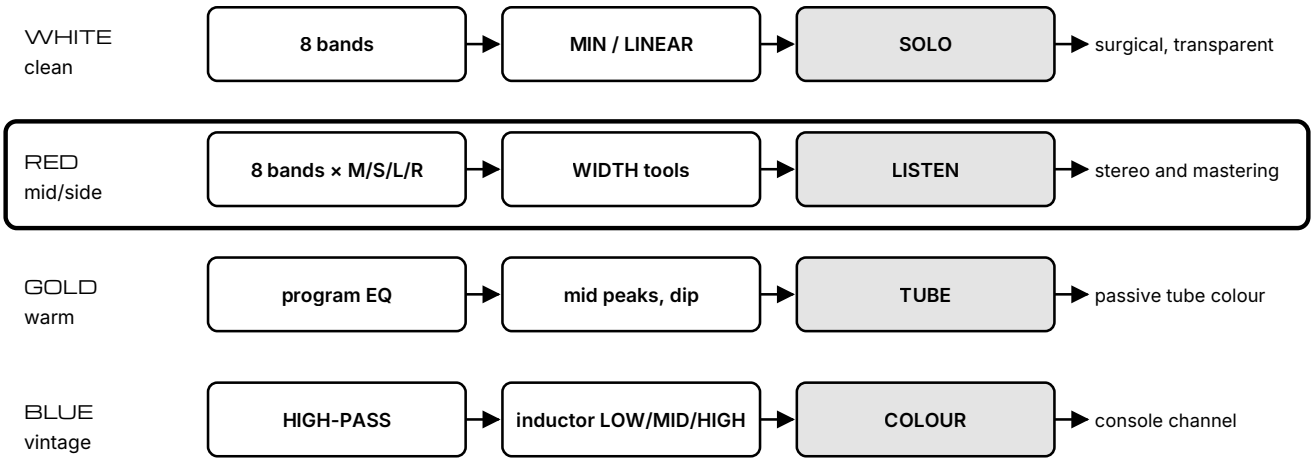
- 1 **Peak readout:** the highest sample peak of the last two seconds, in dBFS. It turns to a warning above 0 dBFS.
- 2 **Clip light:** lights on any sample at or over full scale. It stays lit until you click the meter.
- 3 **Hold line:** marks the recent peak on the bar.
- 4 **Peak bar** (the lighter 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 EQ 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.

Which colour EQ to choose

VEIRA EQ Red is one of four VEIRA colour EQs, each painted like the colour limiter of the same name. All four draw their curve over the live spectrum, show the same meter bridge and keep their curves' analog shape up to 20 kHz. What differs is the kind of EQ, and how much of its own sound it adds.



Grey: what gives each colour its character. The framed row is the one in your hands.

FIGURE 27 The four colour EQs, side by side.

	Character	Choose it when
White	Clean, surgical. Eight bands of any type, minimum or linear phase, SOLO, AUTO GAIN.	You need precision and no colour: fixing resonances, hum, rumble; tone shaping you don't want to hear; transparent mastering.
Red	Mid/side. Eight bands, each on the stereo signal, its mid, its side, or one channel; BASS MONO, AIR, WIDTH and LISTEN.	The stereo picture is the job: a vocal in the centre, cymbals on the sides, mono low end, width on a master.
Gold	Warm. A passive tube program EQ with a mid-range section, in the tradition of the classic tube program EQs, and TUBE drive.	You want broad, flattering moves: weight in the lows without mud, a silky top, a little tube warmth.
Blue	Vintage. A 1970s British inductor console EQ: high-pass, resonant low shelf, mid bell, gradual high shelf, stepped frequencies, COLOUR.	You want the console sound: punchy lows, a forward mid, character you can hear on drums, bass, guitars and vocals.

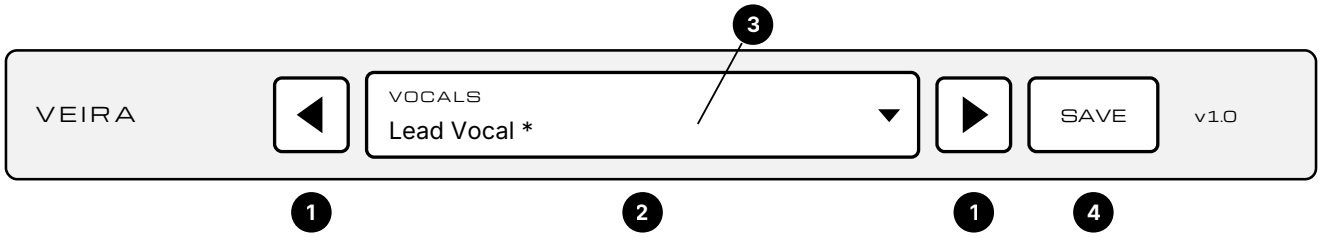
Red is the stereo one. It is as clean as White, with the stereo field as a second dimension. If a problem is in one place of the picture (the centre, the sides, one channel), Red fixes it there and leaves the rest alone.

Presets

VEIRA EQ Red comes with **34 factory presets** in 8 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 28 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 EQ 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 EQ Red/<Folder>/
Windows	%APPDATA%\VEIRA\VEIRA EQ 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	Overheads Wide Cymbals, Drum Bus Mono Kick, Room Mics Focus, Snare Center Crack
Bass	Stereo Synth Bass Mono, Bass Center Tight, Bass Side Fizz, Sub Mono Low Cut
Keys And Synths	Pad Width, Piano Stereo Clean, Synth Center Thin, Keys Narrow Lows
Vocals	Lead Center Focus, Stereo Backing Spread, Vocal Reverb Clean, Doubles Wider
Mix Bus	Bus Width Lift, Bus Mono Lows, Bus Center Punch, Bus Side Clean
Mastering	M/S Polish, Wide And Open, Tight Center, Vocal Forward Master, Bass Mono Master, De-Harsh Sides, Warm Mid, Air On The Sides
Surgical Fixes	Side Mud Cut, Side Harshness, Mono Compatible Lows, Mid Hum 50 Hz, One-Sided Boom Fix

Levels and stereo. An EQ doesn't react to level, so these presets work at any level; they were measured with close drum mics and buses peaking at −4 dBFS, other tracks at −8 and premasters at −3, on stereo material that matches each folder. Every preset but Init has AUTO GAIN on and keeps the loudness within 0.5 LU, so switching presets changes the tone and the image, not the level. Each preset switches off the bands it doesn't use. The *Mastering* presets run in linear phase. Mid/side presets need a stereo source: on a mono track the side has nothing to work on.

Recipes

Step-by-step starting points. In each, leave AUTO GAIN on while you judge, and use LISTEN to hear the part you are working on.

An everyday mid/side master

1. Put Red on the master bus, before the limiter. Load **Mastering ▸ M/S Polish**: a 22 Hz low cut, +0.8 dB of mid low shelf at 90 Hz, −1.5 dB in the side at 300 Hz, BASS MONO at 100 Hz and +1.5 dB of AIR, in linear phase.
2. Set LISTEN to SIDE and adjust band 4 until the side's low mids sound clean but not thin. Back to STEREO.
3. Compare with bypass. For more width try **Wide And Open**; for a firmer centre **Tight Center**.

Bring a buried vocal forward

1. Load **Mastering ▸ Vocal Forward Master**: +1.5 dB at 2.8 kHz in the mid, −1.0 dB at 2.8 kHz in the side.
2. Sweep bands 5 and 6 together between 2 and 4 kHz to where the voice speaks most clearly.
3. The vocal steps forward and nothing else gets louder.

A mono low end for clubs and vinyl

1. Load **Mastering ▸ Bass Mono Master** (BASS MONO at 120 Hz) or turn BASS MONO on yourself.
2. With LISTEN on SIDE, raise MONO BELOW until the kick and bass are gone from the side, and stop before guitars and keys start to thin.

Tame harsh cymbals without dulling the vocal

1. Load **Mastering ▸ De-Harsh Sides** (−2 dB at 4 kHz and −1.5 dB at 7.5 kHz, side only) or **Surgical Fixes ▸ Side Harshness** for a single narrow cut.
2. Set LISTEN to SIDE, sweep the cut onto the harshest spot, then back to STEREO.

Make a stereo synth bass mono-safe

1. Load **Bass ▸ Stereo Synth Bass Mono**: BASS MONO at 160 Hz.
2. Check in mono (your DAW's mono button, or LISTEN on MID): the bass holds its weight, and its width is kept above 160 Hz.

Fix a boom on one side

1. Load **Surgical Fixes ▸ One-Sided Boom Fix**: a −4 dB cut at 120 Hz on the LEFT channel.
2. If the boom is on the right, click RIGHT for band 2. Tune its FREQUENCY to the boom.

Specifications

Type	Eight-band mid/side equalizer with stereo width tools, minimum or linear phase
Channels	Stereo; mono (every band but SIDE acts on the one channel, the width tools rest)
Band channels	STEREO, MID, SIDE, LEFT or RIGHT, per band
Band types	Bell, low shelf, high shelf, low cut, high cut, notch, on every band
FREQUENCY	20 Hz to 20 kHz
GAIN	−24 to +24 dB (default 0.0 dB); bells and shelves
Q	0.10 to 18 (default 1.00 for bells, 0.71 for shelves and cuts)
SLOPE	6, 12, 18, 24, 36, 48, 72 or 96 dB/oct (default 24); cuts
BASS MONO, MONO BELOW	On / off (default off); 20 to 500 Hz (default 120 Hz); a 24 dB/oct high-pass on the side
AIR	0 to +8 dB (default 0.0 dB); a high shelf on the side at 10 kHz
WIDTH	0 to 200 % (default 100 %); the side's level
OUTPUT	−24 to +24 dB (default 0.0 dB)
AUTO GAIN	On / off (default off); from the curves, K-weighted, the side counted 6 dB under the mid
PHASE	MINIMUM (default) or LINEAR; not automatable
LISTEN	STEREO (default), MID, SIDE; listening only, left out of offline bounces
Latency	None in minimum phase. Linear phase: 8704 samples at 44.1 and 48 kHz (181 ms at 48 kHz), 17408 at 88.2 / 96 kHz, 34816 at 176.4 / 192 kHz; constant and reported to the host; the DAW's bypass is delayed by the same amount
Mono compatibility	Side-only work changes the mono sum by −152 dB (rounding only), measured on a full mix
Flat	Bit for bit the input in minimum phase; an exact delay in linear phase
Display	Mid and side curves over the output's mid and side spectrum; EQ scale ±6, ±12 or ±24 dB; analyser in dBFS, tilted 4.5 dB/oct; hover read-outs
Metering	IN and OUT meters: peak, RMS, short-term and integrated LUFS, OUT − IN in LU
Presets	34 factory presets in 8 folders, plus your own
Window	1480 × 900 points; resizable from 75 % to 200 %, saved with the session
Formats	VST3, Audio Units, standalone; AAX once signed
Plugin ID	Manufacturer Veir, plugin Verd

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 EQ 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**.

The mix sounds hollow, or the vocal has gone. LISTEN is on SIDE (or MID). Set it back to STEREO. Offline bounces always leave it out.

My SIDE bands, BASS MONO, AIR and WIDTH do nothing. The track is mono, or the material is: a mono signal has no side. Put Red on a stereo track or bus.

Everything is late when I play through it. PHASE is on LINEAR, which adds 181 ms at 48 kHz. Your DAW compensates on playback, but don't monitor a live input through it.

The low end sounds thinner after BASS MONO. MONO BELOW is set too high, or the mix had a lot of wide low end. Lower MONO BELOW; listen to the side with LISTEN while you set it. Mono low end doesn't lose level in mono: what a mono speaker plays is unchanged.

A LEFT or RIGHT band changes the balance between the sides. That's what it does: it acts on one channel only, so it also changes the mid and the side, each by about half as much. Use MID or SIDE for changes that keep the balance.

My boost sounds better, but is it? Turn AUTO GAIN on and compare again. The Δ on the meter bridge shows any loudness difference left.

How do I type an exact value? Right-click the knob (Control-click on a Mac), type the number (frequencies as **2.5k** or **2500**) and press Return.

Do my sessions keep my settings? Yes. Every band, the width tools, the phase mode, the selected preset, the graph's range and the window size are saved with your session. LISTEN is for listening and is not kept in presets.

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



VEIRA EQ Red · User Manual · Version 0.1.0

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

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