VEIRA

MASTERING EQUALIZER

VEIRA Mastering EQ

User Manual

A stepped, two-channel mastering equalizer: every control clicks to a fixed position, so a setting can be written down and recalled exactly, with left/right or mid/side, a linear-phase mode and a tube output stage.



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Welcome

Thank you for choosing **VEIRA Mastering EQ**. It is an equalizer built the way mastering engineers like them: two channels of six bands, with **every control stepped**. The frequency knobs click from one fixed position to the next, the gains move in 0.5 dB steps and the Q has eight settings. That is how the classic mastering consoles were built, and for the same reasons: a setting can be written on a recall sheet and set again exactly, the left and right channels can be matched by eye, and small moves stay small.

The panel is laid out like a mastering console: a large display of the curve over the spectrum of your music and the VEIRA meter bridge across the top, then the two channel strips, one above the other, each running from the low end on the left to the top end on the right. Every knob shows its value inside it, in text you can read at a glance, and the window scales from 75 % to 200 %.

What makes it different

- **Stepped, repeatable controls.** Twelve frequency positions per band, chosen for mastering; gains from −8 to +8 dB in 0.5 dB steps; eight Q values. Nothing drifts and nothing is “about there”.
- **Two channels: left and right, or mid and side.** [MODE] makes channel A the left or the middle and channel B the right or the sides, so you can brighten only the width, or clean the low end of the sides without touching the centre. [LINK] makes one EQ for both.
- **ANALOG or LINEAR phase.** [ANALOG] filters behave like a good analog desk, with no latency of their own. [LINEAR] gives the very same curve without any phase shift, at the cost of about 100 ms of latency that your DAW compensates.
- **A tube output stage.** [TUBE] adds a triode-like colour, mostly second harmonic, that grows with the level. At 0 % (or with [TUBE IN] out) it is exactly clean.
- **The curve tells the truth.** THE CURVE draws the engine’s own response over the spectrum of the output, accurate to 0.01 dB, and shows both channels at once.
- **Transparent at rest.** With every band flat and the tube out, the output is the input, bit for bit (only delayed by the tube stage’s 64 samples), in L/R and in M/S.

How this manual is organised. *Getting started* covers installing and activating. *The panel at a glance* names every part of the window and gives a quick start. *How a mastering EQ works* is a short primer on equalizers, stepped controls, mid/side and phase. *Controls* explains every knob and button with drawings computed from the plugin’s own filters. *THE CURVE and the meters* teaches you to read the displays, and *Presets*, *Recipes*, *Specifications* and *Troubleshooting* follow.

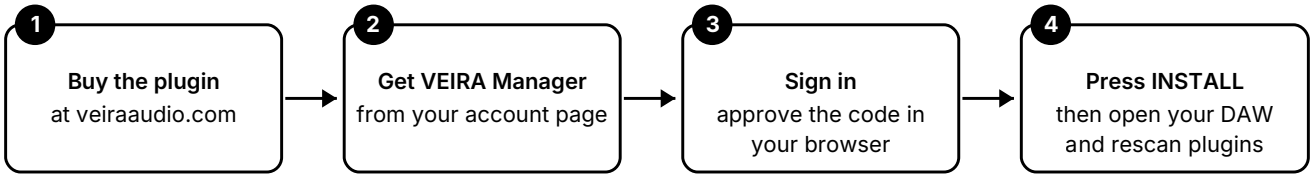
Getting started

What you need

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

Install with VEIRA Manager

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



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

FIGURE 1 From purchase to first sound in four steps.

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

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 Mastering EQ 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.

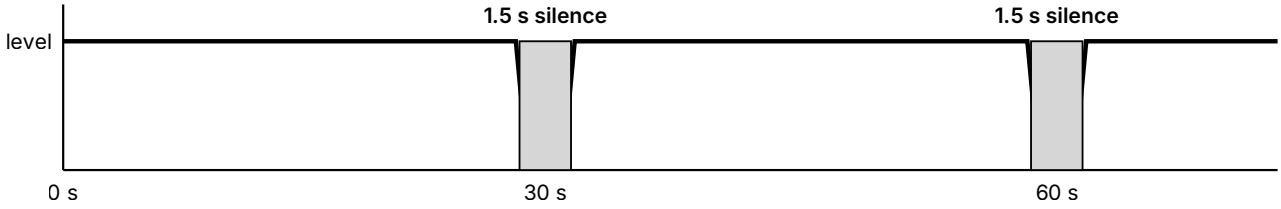


FIGURE 2 What an unlicensed copy does. With a valid licence the audio is never touched.

- **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 Mastering EQ. 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 Mastering EQ 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 Mastering EQ in L / R with LINK on (channel B dimmed), while a song plays: a broad low-shelf lift, a small dip at 200 Hz and a lift of the top, with TUBE IN and TUBE at 35 %.

	Part	What it does
1	Preset browser	Steps through and saves presets. See *Presets*.
2	THE CURVE	The large display: each channel's EQ curve over the spectrum of the output.
3	Meter bridge	IN and OUT level, short-term and integrated loudness, and the difference in LU.
4	Channel A	The upper row: LEFT in L/R mode, MID in M/S mode.
5	IN (A)	Channel A's EQ in or out.
6	LOW CUT	An 18 dB/oct high-pass, 16 to 150 Hz, or Off.
7	LOW SHELF	GAIN and FREQ, 20 to 300 Hz.
8	LOW MID	A bell: GAIN, FREQ 60 Hz to 1 kHz and Q.
9	HIGH MID	A bell: GAIN, FREQ 700 Hz to 10 kHz and Q.
10	HIGH SHELF	GAIN and FREQ, 1.5 to 25 kHz.
11	HIGH CUT	An 18 dB/oct low-pass, 6 to 27 kHz, or Off.
12	Channel B	The lower row: RIGHT in L/R mode, SIDE in M/S mode, with its own IN.

	Part	What it does
13	MODE and LINK	L / R or M / S; LINK makes channel B follow channel A.
14	PHASE	ANALOG (minimum phase) or LINEAR (no phase shift).
15	LATENCY	The delay the plugin reports to your DAW, in ms.
16	OUTPUT STAGE	TUBE (the tube's drive, in %) and OUTPUT (the final level, in dB).
17	TUBE IN	The tube stage in or out.

The panel reads like a console: the **display and the meters** across the top, then **two identical channel strips**, A above B, each running from the low end on the left to the top end on the right. The band names (LOW CUT to HIGH CUT) are printed once, above channel A, and stand for both rows; each knob's caption under it says what it sets (GAIN, FREQ or Q). The **global** controls sit in the column on the right: how the two channels are used (MODE, LINK), the PHASE mode and the OUTPUT STAGE.

Using the controls

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

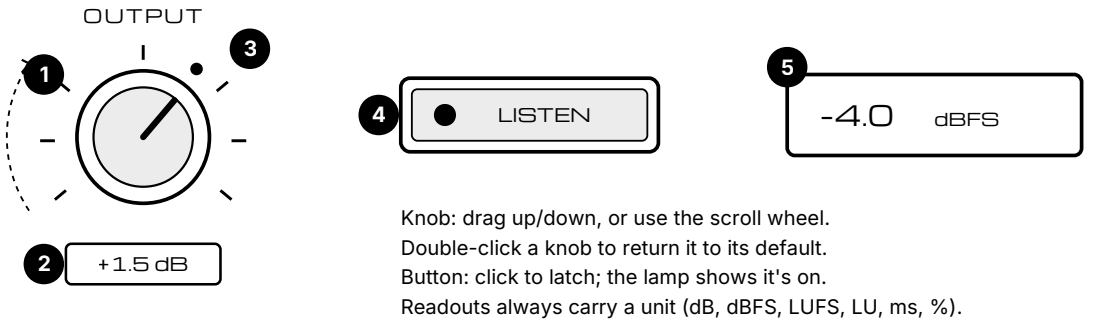


FIGURE 4 The parts you'll find on every VEIRA panel (the labels are examples).

- 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.

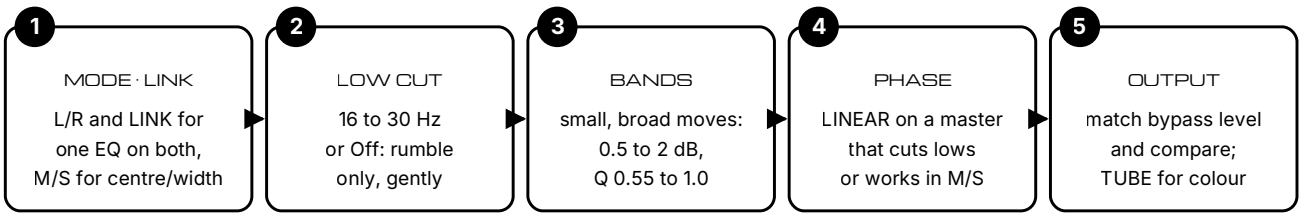
Automation: every knob and button is a host parameter, so you can automate it in your DAW and control it from a MIDI controller or control surface that your DAW maps.

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

- **Knobs** show their value **in their middle**, with its unit (+1.5 dB, 2.5 kHz, 0.70, Off), and a lit ring (blue on screen; in print, the lighter arc) shows how far each is turned. Every knob clicks to a fixed position: drag a frequency knob up or down to sweep through its positions. 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. Gains take any number and land on the nearest 0.5 dB step (**-1.5**). The frequency and Q knobs take one of their positions, written as on the knob or shorter: **60 Hz** or **60**, **2.5 kHz** or **2.5k**, **Off**, and for Q **0.70** (with both decimals). Press Escape or click elsewhere to leave it unchanged.
- **Buttons** have no lamps: a button that is on (IN, LINK, TUBE IN, the chosen L / R or M / S and ANALOG or LINEAR) is filled (orange on screen; in print, the solid, lighter button), one that is off is dark with an outline.
- **Dimmed knobs.** While LINK is on, channel B's knobs are dimmed: B follows A, and B's own settings are kept for when you unlink. While TUBE IN is out, the TUBE knob is dimmed. A dimmed knob still turns.
- **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 the curve and the text stay sharp. Your DAW saves the size with the session.

Quick start: a master in five moves



Listen at the same loudness with and without the EQ: the meter bridge shows OUT − IN in LU.

FIGURE 5 The quickest way to a clean mastering EQ. The rest of this manual explains each step.

Or load a factory preset close to your job (see *Presets*): each preset's note says which control to set first.

How a mastering EQ works

If you already master with stepped equalizers, skip to *Controls*. If not, these pages explain the ideas behind the panel.

What an equalizer does

An equalizer turns some frequencies up or down. Low frequencies are the weight of a mix (kick, bass, the body of a piano), the middle is where voices and most instruments live, and the top is presence, attack and air. A mastering EQ makes **small, broad corrections** to a finished mix: a little more air, a little less mud, a low end that sits right on every speaker.

Each band of VEIRA Mastering EQ has one of five shapes:

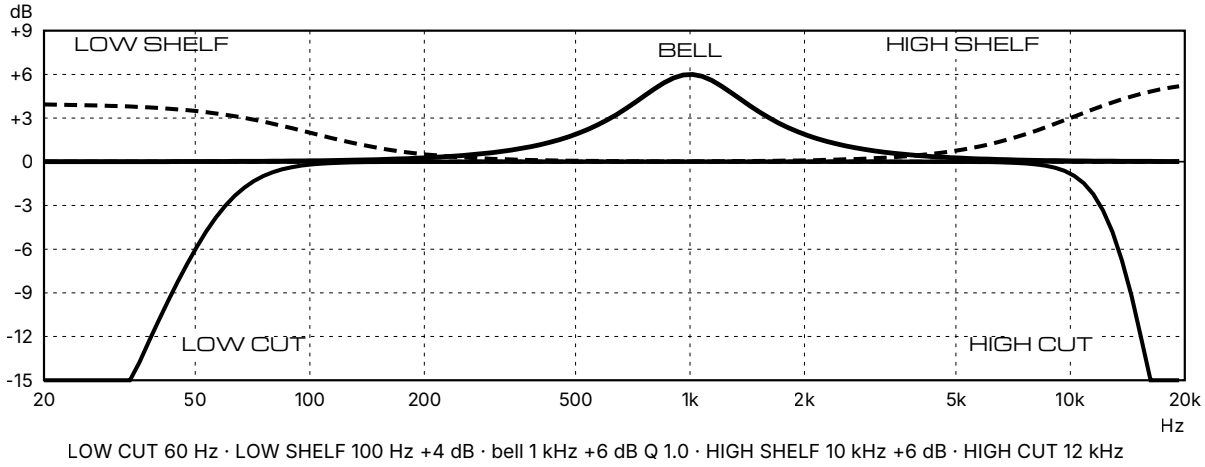


FIGURE 6 The five shapes, computed from the plugin's own filters. A cut removes everything beyond its frequency; a shelf lifts or lowers everything beyond it by a set amount; a bell lifts or lowers a region around its frequency.

- A **cut** (LOW CUT, HIGH CUT) takes away everything below (or above) its frequency, more and more the further you go. Use it for rumble, subsonic energy or hiss.
- A **shelf** (LOW SHELF, HIGH SHELF) lifts or lowers everything below (or above) its frequency by the same amount, like tilting the end of the spectrum. On a master it's the most natural way to add weight or air.
- A **bell** (LOW MID, HIGH MID) lifts or lowers a region around its frequency. **Q** sets how wide: a low Q is a broad, gentle hill, a high Q a narrow peak or notch.

Why stepped controls

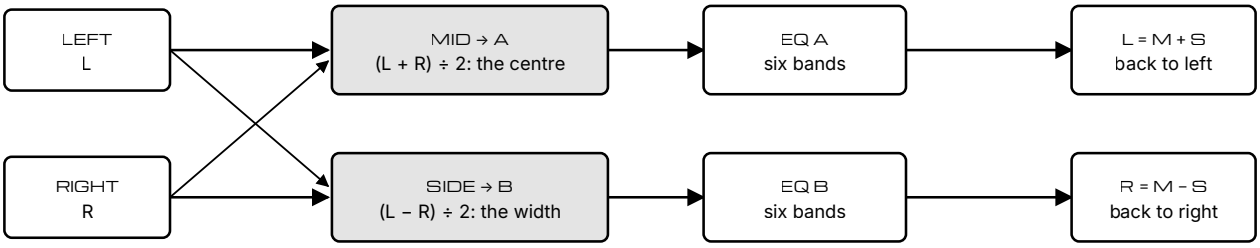
On a continuous knob, "a little more air" might be +1.3 dB at 11.7 kHz one day and +1.6 dB at 12.4 kHz the next. Stepped controls take that away. Every setting is one of a known set of positions, so:

- **Recall is exact.** Write "HIGH SHELF 12 kHz, +1.5" on the sheet and the next session sounds the same.
- **Two channels match by eye.** In L/R mode, set the same positions on A and B and they are identical, to the last decimal.

- **The positions are chosen for mastering.** The frequencies are the ones mastering engineers reach for (30 Hz rumble, 250 to 300 Hz mud, 3 to 5 kHz presence, 12 to 16 kHz air), spaced so that one click is a step you can hear.

Mid and side

A stereo mix can be split two ways. **Left and right** are the two speakers. **Mid and side** are what the two speakers share (the *middle*: usually the kick, the bass, the lead vocal and the snare) and what differs between them (the *side*: reverb, wide guitars and keys, room sound, the width of the mix).



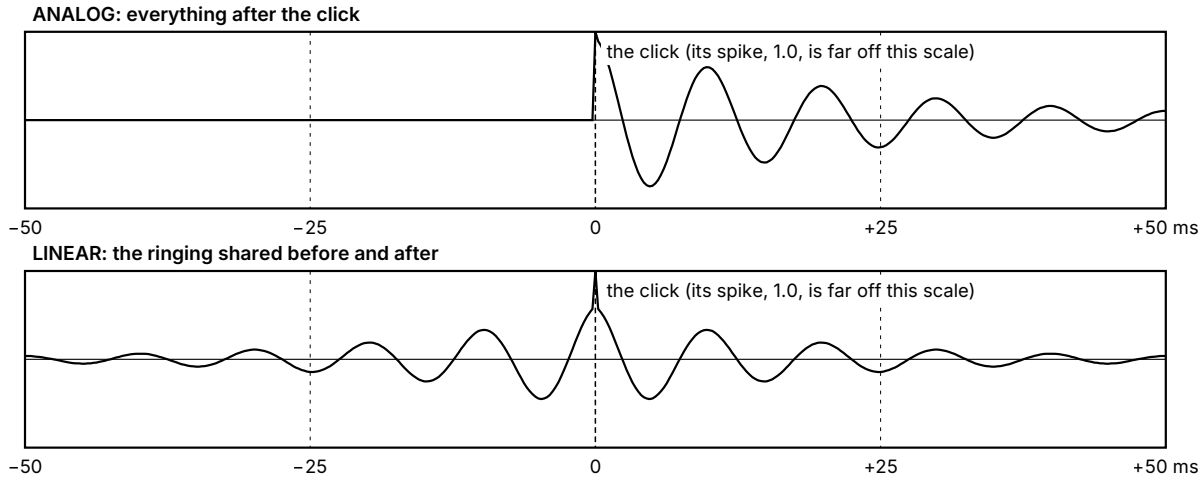
The kick, bass, lead vocal and snare usually sit in the MID; reverb, wide guitars, pads and room in the SIDE.
Nothing set: the round trip is exact. A cut on B touches only what differs between the speakers.

FIGURE 7 M/S mode. The mix is turned into mid and side, channel A equalizes the middle and channel B the sides, and the result is turned back into left and right.

With [MODE] at [M / S], channel A works on the middle and channel B on the sides. That opens up moves a stereo EQ can't make: brightening only the width, taming a harsh guitar panned wide without dulling the vocal, or **cutting the lows of the sides** so the low end is mono and solid on every system. With nothing set, the round trip from L/R to M/S and back is exact.

Phase: ANALOG and LINEAR

Every analog equalizer, and every ordinary digital one, shifts the **timing** of the frequencies it touches a little, most of all around the frequencies it changes. This is called *phase shift*, and it is part of the sound of analog EQ: usually harmless, sometimes even pleasant. A **linear-phase** equalizer applies the same curve without shifting any frequency in time, at the cost of delay (latency) and a faint *pre-ring*: on very narrow, deep moves a little of the ringing comes just before a sharp sound instead of just after it.



A click through LOW MID 100 Hz at +8 dB, Q 4.5, with the latency taken out. Same curve, different timing.

FIGURE 8 A click through a narrow 100 Hz boost, computed from the plugin. In ANALOG (top) the bell rings after the click. In LINEAR (bottom) the curve is the same, but the ringing is shared out evenly before and after the click, and nothing in the click is shifted in time.

Which to use is a matter of the job, not of quality. On a master, LINEAR keeps the waveform's shape when you cut the low end, and keeps mid/side work free of phase side effects. ANALOG has no latency and sounds like an analog desk. *Controls* ▸ *PHASE* has the details.

What happens inside VEIRA Mastering EQ

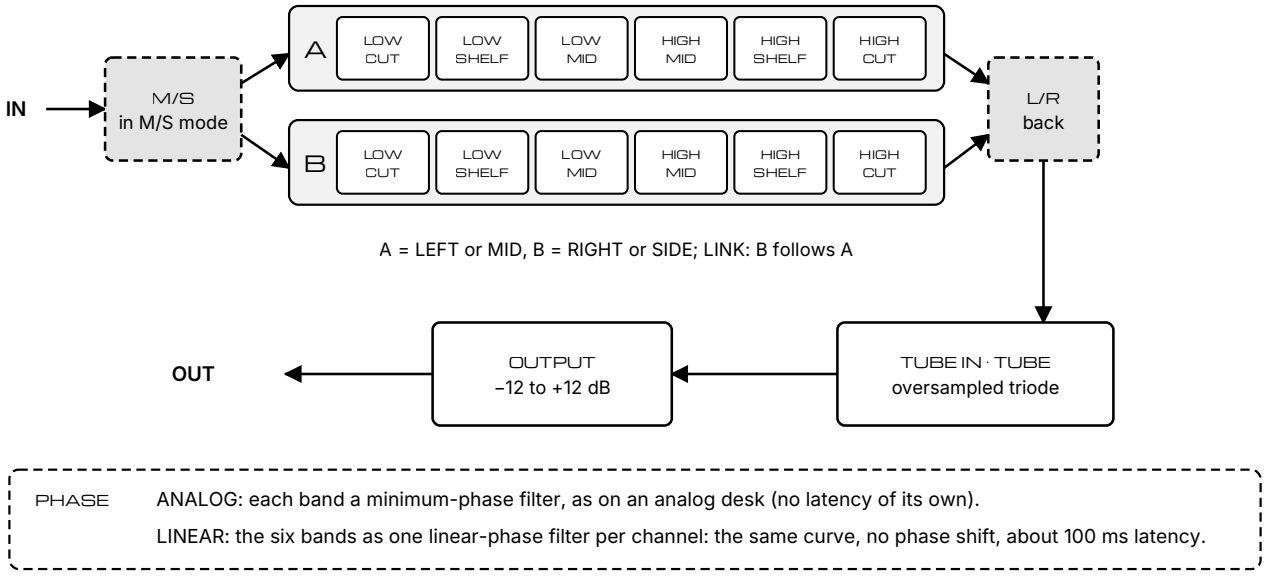


FIGURE 9 Signal flow. In M/S mode the input is turned into mid and side; each channel goes through its six bands; the result is turned back into left and right, then goes through the tube stage and OUTPUT.

Step by step:

1. **MODE.** In M / S mode, left and right are turned into mid and side; in L / R mode they stay as they are.

2. **The two channels.** Channel A (left or mid) and channel B (right or side) each go through their six bands in order: [LOW CUT], [LOW SHELF], [LOW MID], [HIGH MID], [HIGH SHELF], [HIGH CUT]. With [LINK] on, B uses A's settings. A band at 0 dB, a cut at [OFF], or a channel with [IN] out does nothing at all.
3. **PHASE.** In [ANALOG] each band is a minimum-phase filter, matched to the analog shape up to the top of the audio range. In [LINEAR] the six bands of each channel become one linear-phase filter with the same curve.
4. **Back to L/R.** In [M / S] mode, mid and side are turned back into left and right.
5. **The tube stage**, when [TUBE IN] is in: a triode-like curve driven by [TUBE], computed at four times the sample rate (twice at 88.2 and 96 kHz) so its harmonics stay clean.
6. **OUTPUT** sets the final level, in 0.5 dB steps.

On a **mono track**, channel A does the work and [MODE] has no effect (there are no sides).

Controls

The two channel strips

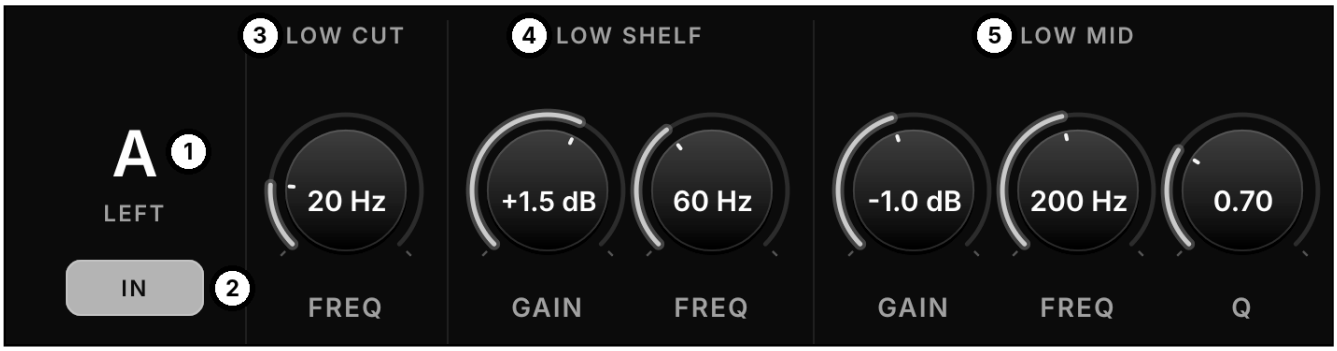


FIGURE 10 The left half of channel A: 1 the channel's name, 2 IN, 3 LOW CUT, 4 LOW SHELF (GAIN, FREQ), 5 LOW MID (GAIN, FREQ, Q).



FIGURE 11 The right half of channel A: 1 HIGH MID (GAIN, FREQ, Q), 2 HIGH SHELF (GAIN, FREQ), 3 HIGH CUT.

The two strips are identical. Channel **A** (top) is LEFT or MID, channel **B** (bottom) is RIGHT or SIDE; the name under each letter follows MODE. The band names are printed once, above channel A, and the knobs of channel B sit straight under the same knobs of A. In each band the knobs sit side by side: the **gain** (GAIN, −8 to +8 dB) first, then the frequency (FREQ) and, on the bells, the width (Q). The cuts have a frequency knob only.

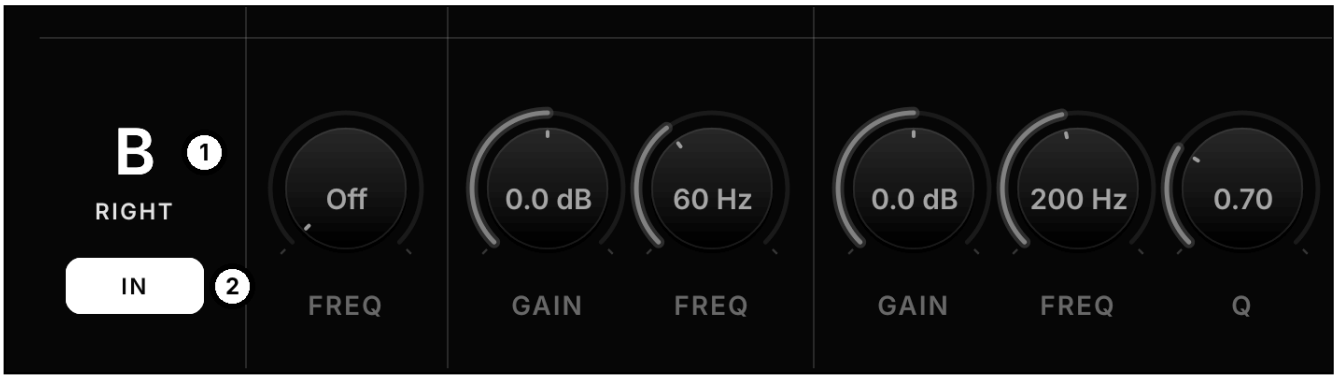


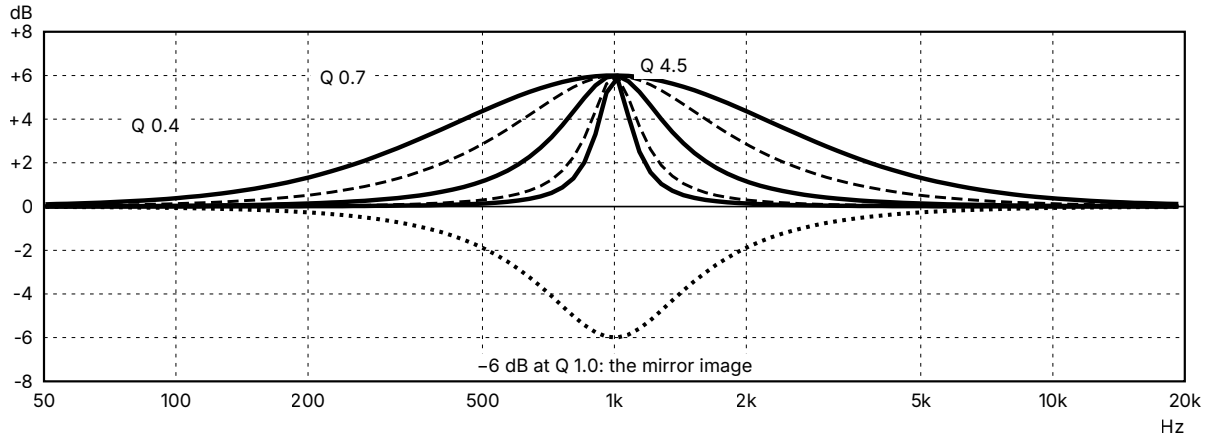
FIGURE 12 Channel B, dimmed here because LINK is on: 1 its name (RIGHT in L / R, SIDE in M / S) and 2 its own IN. Its knobs keep their own settings for when you unlink.

Control	Positions	Default	What it does
IN	in / out	in	The channel's EQ in or out (the tube stage and OUTPUT stay).
LOW CUT	Off, 16, 20, 25, 30, 40, 50, 60, 80, 100, 120, 150 Hz	Off	An 18 dB/oct high-pass.
LOW SHELF GAIN	−8 to +8 dB, 0.5 dB steps	0.0 dB	Lifts or lowers everything below the frequency.
LOW SHELF FREQ	20, 30, 40, 50, 60, 80, 100, 120, 150, 200, 250, 300 Hz	60 Hz	Where the shelf reaches half its gain.
LOW MID GAIN	−8 to +8 dB, 0.5 dB steps	0.0 dB	Lifts or lowers a region.
LOW MID FREQ	60, 80, 100, 120, 150, 200, 250, 300, 400, 500, 700 Hz, 1 kHz	200 Hz	The bell's centre.
LOW MID Q	0.40, 0.55, 0.70, 1.00, 1.40, 2.00, 3.00, 4.50	0.70	The bell's width: low is wide.
HIGH MID GAIN	−8 to +8 dB, 0.5 dB steps	0.0 dB	Lifts or lowers a region.
HIGH MID FREQ	700 Hz, 1, 1.4, 2, 2.5, 3, 3.5, 4, 5, 6, 8, 10 kHz	3.5 kHz	The bell's centre.
HIGH MID Q	0.40 to 4.50, as LOW MID	0.70	The bell's width.
HIGH SHELF GAIN	−8 to +8 dB, 0.5 dB steps	0.0 dB	Lifts or lowers everything above the frequency.
HIGH SHELF FREQ	1.5, 2.5, 3.5, 5, 6, 8, 10, 12, 14, 16, 20, 25 kHz	12 kHz	Where the shelf reaches half its gain.
HIGH CUT	6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 27 kHz, Off	Off	An 18 dB/oct low-pass.

A band at 0.0 dB is switched off inside the engine: it adds nothing, not even rounding. So a strip you haven't touched is exactly transparent. Double-click any knob to return it to its default.

The bells: LOW MID and HIGH MID

The two bells overlap between 700 Hz and 1 kHz, so between them they cover 60 Hz to 10 kHz. Use LOW MID for weight, warmth and mud (100 to 300 Hz), boxiness (400 to 500 Hz) and honk (700 Hz to 1 kHz); use HIGH MID for nasal tones (1 to 1.4 kHz), presence and attack (2 to 5 kHz) and harshness or sibilance (5 to 8 kHz).



HIGH MID at 1 kHz, +6 dB, Q 0.4, 0.7, 1.4, 3.0 and 4.5 (0.55, 1.0 and 2.0 fall between), and a −6 dB cut at Q 1.0.

FIGURE 13 The Q steps, computed from the plugin. The same +6 dB bell at 1 kHz from the widest Q (0.4, a broad hill over several octaves) to the narrowest (4.5, a peak about a third of an octave wide). A cut is the mirror image of a boost.

- **Q 0.40 to 1.00** are the mastering widths: broad, musical lifts and dips that move a whole region. Most mastering moves use 0.55 to 1.0.
- **Q 1.40 and 2.00** are for a clear problem: one resonant note, a harsh band.
- **Q 3.00 and 4.50** are surgical: a hum, a ringing drum, a single resonance. At 4.5 a −6 dB cut at 60 Hz removes mains hum and barely touches the bass around it (see *Restoration ▸ Hum Region 60 Hz*).

A boost and a cut of the same size and Q are exact mirror images, so you can undo a move in a mix by setting its opposite.

The shelves: LOW SHELF and HIGH SHELF

The shelves are **broad and gentle**, as on the classic mastering desks (their Q is 0.6). A shelf reaches **half its gain at its frequency** and its full gain about two octaves beyond it. So LOW SHELF at 100 Hz, +4 dB, is +2 dB at 100 Hz and about +4 dB at 25 Hz: it warms the low end without a bump.

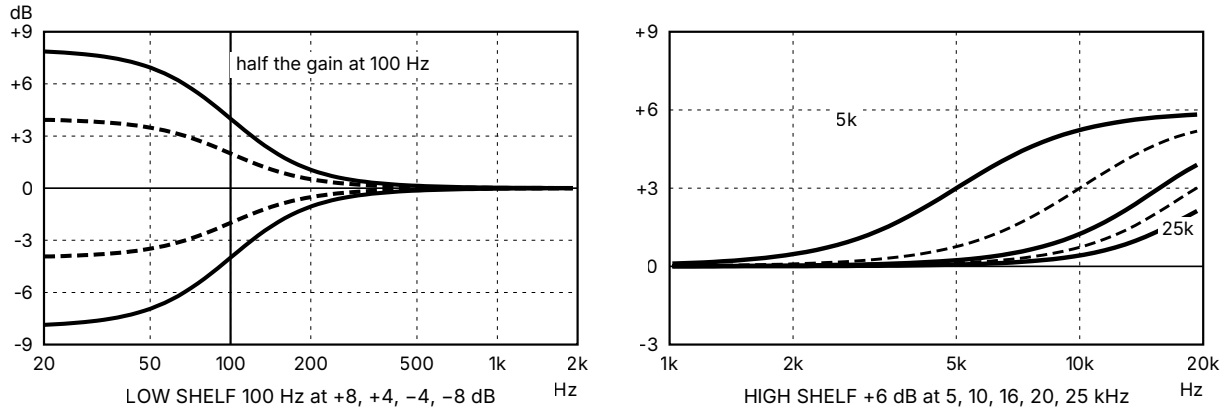


FIGURE 14 Left: LOW SHELF at 100 Hz, from +8 to −8 dB. Right: HIGH SHELF at +6 dB at five of its positions. The highest positions mostly act above 20 kHz, where you feel an openness rather than hear a boost.

The top HIGH SHELF positions are **air**: at 20 kHz the shelf is only half way up within the range you hear, and at 25 kHz even less. HIGH SHELF at 25 kHz and +8 dB adds about +3 dB at 20 kHz and +0.6 dB at 10 kHz. THE CURVE shows this honestly. Use the high positions for a subtle sense of openness; for a lift you clearly hear, use 10 to 16 kHz.

The cuts: LOW CUT and HIGH CUT

Both cuts fall at **18 dB per octave**: steep enough to remove what you don't want, gentle enough not to ring. The named frequency is the −3 dB point.

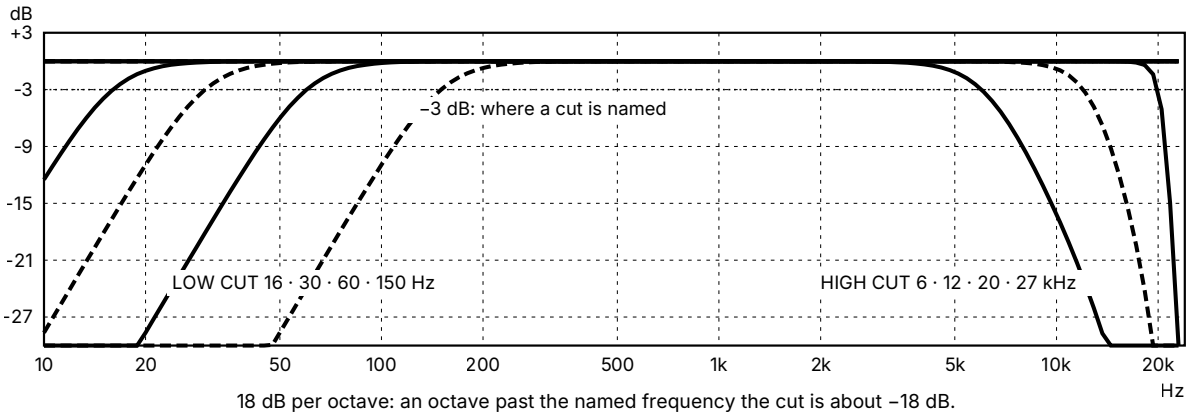


FIGURE 15 LOW CUT at 16, 30, 60 and 150 Hz and HIGH CUT at 6, 12, 20 and 27 kHz, computed from the plugin.

- LOW CUT **16 to 30 Hz** is the mastering range: it removes subsonic rumble and DC wobble that use up headroom without being heard. Higher positions (40 to 150 Hz) are for tracks, stems and the sides in M/S mode.
- HIGH CUT at 22 kHz and above only cleans the ultrasonic band; 6 to 18 kHz is for creative work, old recordings and hiss.

The HIGH CUT never rises above 0 dB anywhere, even close to the top of the range at 44.1 and 48 kHz.

> **Tip:** On a dense, loud mix, an ANALOG low cut can raise the sample peaks by a few dB without changing how loud it sounds: it shifts the phase of the lowest notes, and their peaks no longer line up with the rest. In LINEAR the peaks stay put. That's why the factory presets that cut the lows of a master use LINEAR.

MODE and LINK

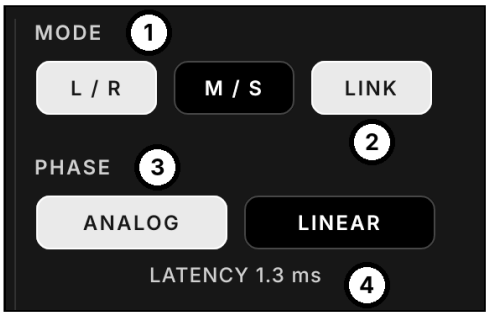


FIGURE 16 1 MODE: L / R or M / S (here L / R), 2 LINK (on), 3 PHASE: ANALOG or LINEAR (here ANALOG), 4 the latency.

Control	Settings	Default	What it does
L / R · M / S	L/R or M/S	L / R	What channels A and B are: left and right, or mid and side.
LINK	on / off	off	Channel B follows channel A.

MODE. In L / R, A is the left speaker and B the right. Use it for the classic stereo master (usually with LINK), or to correct a recording whose two sides differ (see *Restoration ▸ Dull Right Channel*). In M / S, A is the middle and B the sides; see *How a mastering EQ works ▸ Mid and side*. The chosen button is filled, and the names under the letters change to MID and SIDE.

LINK. One EQ for both channels: B uses A's settings, and B's knobs are dimmed (they keep their own settings for when you unlink). THE CURVE's legend then reads B RIGHT = A (or B SIDE = A). In L / R mode LINK is the normal way to master a stereo mix. In M / S mode LINK gives the mid and the sides the same curve, which is the same as a linked L/R EQ, so you would normally unlink in M/S.

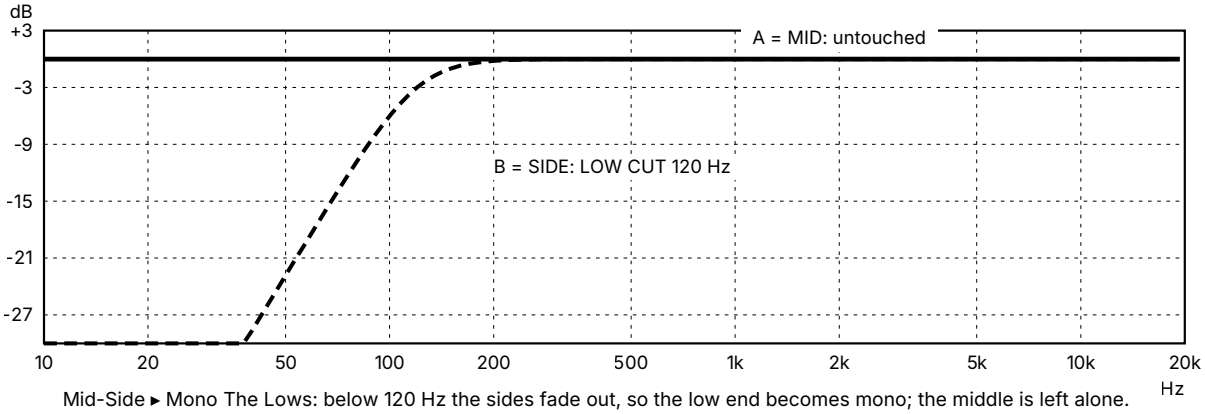


FIGURE 17 A typical M/S move, computed from the plugin: the factory preset Mid-Side ▸ Mono The Lows cuts the sides below 120 Hz and leaves the middle alone.

PHASE

Control	Settings	Default	What it does
ANALOG · LINEAR	ANALOG or LINEAR	ANALOG	How the curve is made: minimum phase, or linear phase.
LATENCY	readout		The delay the plugin reports to your DAW.

ANALOG. Each band is a minimum-phase filter, as on an analog console, with no latency of its own. VEIRA Mastering EQ's filters keep their analog shape right up to the top of the audio range, where ordinary digital EQs squeeze high shelves and bells into narrow, cramped shapes.

LINEAR. The six bands of each channel are combined into one linear-phase filter with **the same curve** (within 0.07 dB of ANALOG from 25 Hz up), with no phase shift at all. It's the choice for:

- **Cutting or shelving the lows of a master.** The waveform keeps its shape and the peaks don't rise.
- **Mid/side work.** The mid and the side stay exactly in time with each other.
- **Matching a reference closely**, when you want only the tonal change and none of the phase's.

Its costs are **latency** (about 97 ms at 48 kHz and above, 106 ms at 44.1 kHz; see below), and a faint **pre-ring** before sharp sounds on narrow, deep moves (see the click drawing in *How a mastering EQ works*). Below 25 Hz the steepest cuts are a fraction of a dB gentler in LINEAR than in ANALOG.

The latency. The LATENCY readout shows what the plugin reports to your DAW, which delays everything else to keep your session in time:

Sample rate	ANALOG	LINEAR
44.1 kHz	64 samples (1.5 ms)	4,672 samples (105.9 ms)
48 kHz	64 samples (1.3 ms)	4,672 samples (97.3 ms)
96 kHz	64 samples (0.7 ms)	9,280 samples (96.7 ms)
192 kHz	0	18,432 samples (96.0 ms)

The 64 samples in ANALOG belong to the tube stage's oversampling, which always runs, so the latency never changes when you switch the tube in or out.

Switching. When you change PHASE the plugin fades out, waits for the new latency to settle and fades back in, so it never clicks. Your DAW may need a moment (or a stop and start of playback) to pick up the new latency. PHASE can't be automated, because it changes the latency.

> **Tip:** Set PHASE before you start a long session, or before you bounce. On a master, LINEAR is the safe default whenever you cut lows or work in M/S; while tracking or playing live through the plugin, use ANALOG.

OUTPUT STAGE: TUBE, OUTPUT and TUBE IN

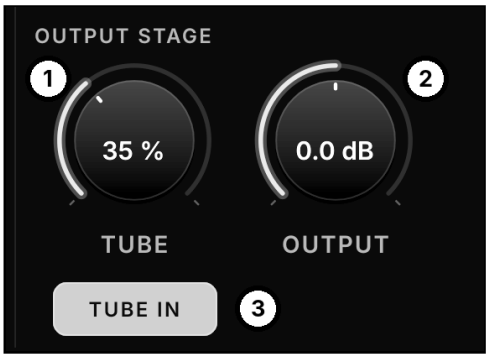
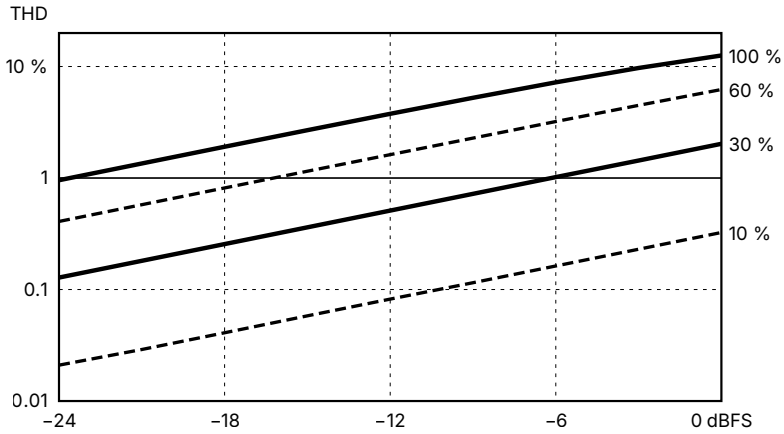


FIGURE 18 1 TUBE, 2 OUTPUT, 3 TUBE IN.

Control	Range	Default	What it does
TUBE IN	in / out	out	The tube stage in or out.
TUBE	0 to 100 %, 1 % steps	30 %	How hard the tube is driven.
OUTPUT	−12 to +12 dB, 0.5 dB steps	0.0 dB	The final level.

The tube. A triode-like stage after the EQ: it adds harmonics, mostly the **second** (an octave above each note, the warm, rounding kind), and some third. Like a real tube, its colour **grows with the level**: quiet passages pass almost clean, and the loud ones get the most. It is computed at four times the sample rate (twice at 88.2 and 96 kHz), so its harmonics don't fold back into the audio band.



THD of a 1 kHz sine against its peak level, TUBE 10, 30, 60, 100 %

TUBE	−18 dBFS	−6 dBFS	0 dBFS
10 %	0.04 %	0.16 %	0.3 %
30 %	0.26 %	1.02 %	2.0 %
60 %	0.81 %	3.21 %	6.2 %
100 %	1.91 %	7.22 %	12.6 %

mostly the 2nd harmonic;
the colour grows with level

FIGURE 19 The tube's distortion (THD) on a 1 kHz sine against its peak level, computed from the plugin. Each 6 dB of level roughly doubles it, and each step of TUBE raises it.

- **10 to 30 %:** a touch of density and glue: at 30 %, about 0.25 % THD at −18 dBFS and 1 % at −6 dBFS. The factory *Mastering* presets stay at or under 40 %.
- **40 to 60 %:** clearly warmer and thicker, for a bus or a track.
- **100 %:** about 7 % THD at −6 dBFS, 12 % near 0 dBFS: drive as an effect (see *Creative FX ▸ Tube Smash*).

TUBE fades in over its first 5 %, so at 0 % the stage is exactly clean, the same as TUBE IN out. The tube changes the level very little (at most about half a dB at 100 % near full scale), but it does lift the negative peaks a little more than the positive ones, as real tubes do. Check the peaks before your limiter.

OUTPUT sets the final level, after the tube. Use it to **match the level with bypass**: boosts make the music louder, and louder always sounds “better” for a moment. Set OUTPUT so that the meter bridge’s Δ reads about 0.0 LU, then compare with the plugin bypassed.

THE CURVE and the meters

THE CURVE

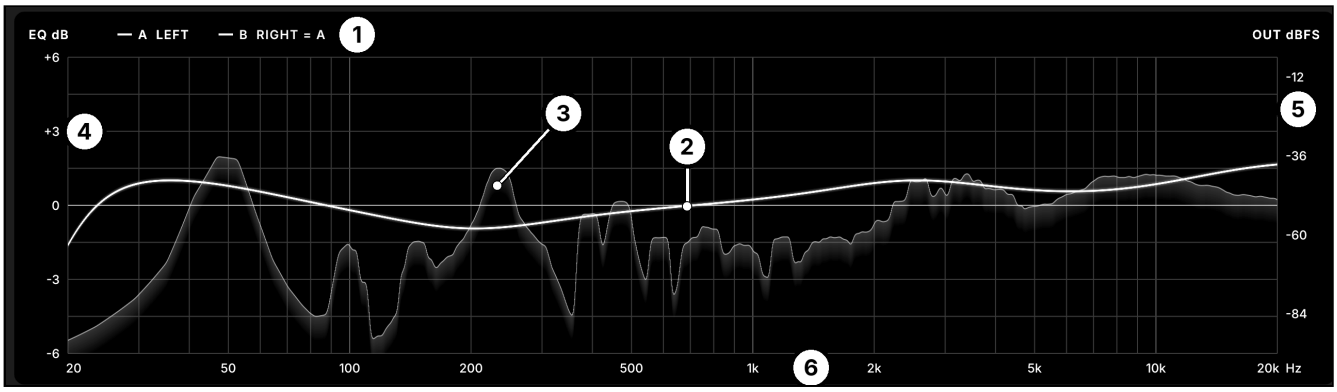


FIGURE 20 THE CURVE: 1 the legend, 2 channel A's curve, 3 the spectrum of the output, 4 the EQ dB scale (click it to zoom), 5 the spectrum's dBFS scale, 6 the frequency scale.

The large display draws **what the EQ does**, as the engine computes it: the curve is the plugin's own response, accurate to 0.01 dB, not an approximation.

- 2 **The curves.** Channel A in amber, channel B in teal. When the two are the same (with LINK, or with the same settings), only one curve is drawn and 1 the legend reads B RIGHT = A (or B SIDE = A). On paper, read the legend: A is always named first, at the left.
- 3 **The spectrum** of the output, faint behind the curves: an 8192-point FFT smoothed to 1/6 octave and tilted 4.5 dB per octave, so a balanced mix reads about level. Use it to see where the energy of the music is, not to set the EQ by eye.
- 4 **The EQ scale** (EQ dB). Click it to switch between ±3, ±6 (the default) and ±12 dB. Mastering moves are small: at ±3 dB a 1 dB shelf is easy to see.
- 5 **The spectrum's scale** (OUT dBFS), on the right.
- 6 **Frequency**, 20 Hz to 20 kHz.

Hover anywhere on the display to read both curves at that frequency: a box at the top right shows, for example, 5 kHz A +1.0 dB B +1.0 dB.

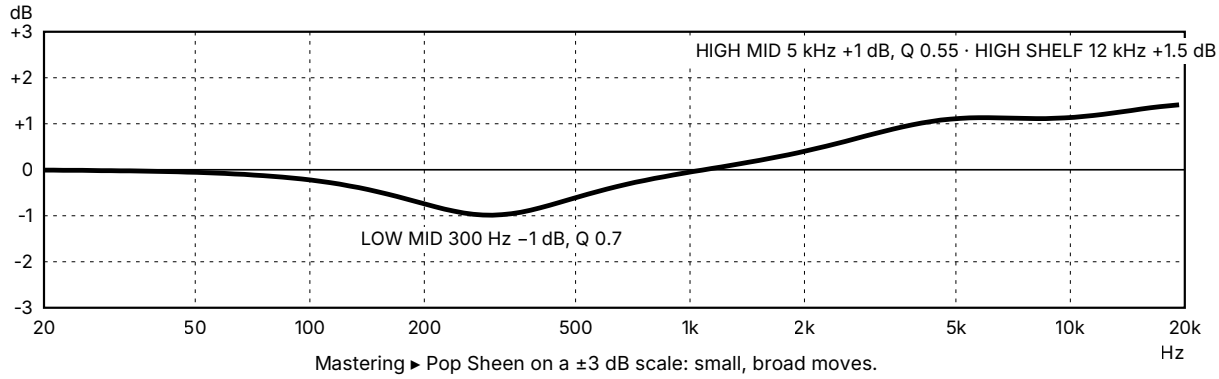


FIGURE 21 A typical mastering curve: the factory preset Mastering ▸ Pop Sheen, computed from the plugin.

The meter bridge

The meter bridge on the right of the display measures what comes into VEIRA Mastering EQ (IN) and what goes out (OUT). The most useful reading on a mastering EQ is **Δ**, the difference in loudness between out and in: with it at about 0.0 LU, you hear what the EQ does to the tone, not to the level.

Reading the IN and OUT meters

The meter bridge measures what goes into VEIRA Mastering EQ 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.

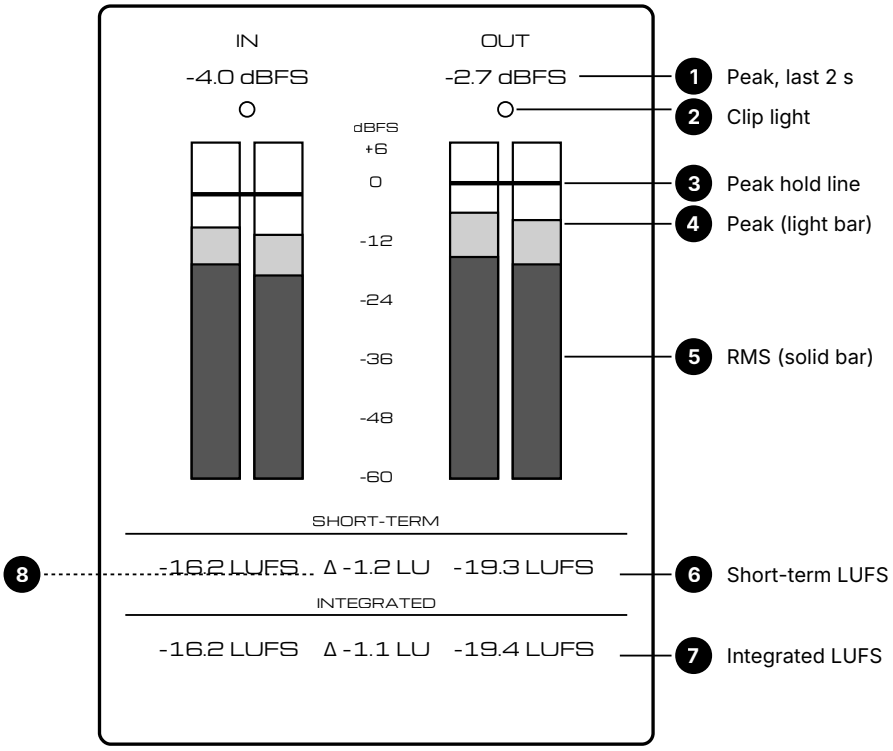


FIGURE 22 The meter bridge, left and right channel bars for input and output, with loudness below.

- 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 Mastering EQ 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.

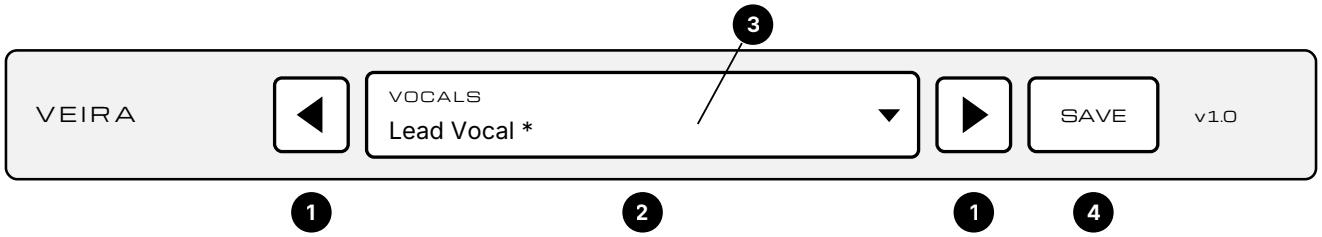
Clicks: click a level meter to reset its hold and clip light. Click the loudness readouts to restart the integrated measurement, for example at the start of a song.

Presets

VEIRA Mastering EQ comes with **82 factory presets** in 14 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 Mastering EQ 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 Mastering EQ/<Folder>/
Windows	%APPDATA%\VEIRA\VEIRA Mastering EQ\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

How they are made. The track and bus presets (*Drums* to *Mix Bus*) are **linked**. The *Mastering* presets keep to small moves (0.5 to 2 dB), wide bells, HIGH CUT off and TUBE at most 40 %. Every *Mid-Side* preset, and every one that cuts the lows of a master, runs LINEAR.

> **Levels.** Each preset's OUTPUT is trimmed so it plays at about the level of bypass (within half a dB in *Mastering*, *Mix Bus* and *Mid-Side*, 1 dB elsewhere); *Telephone* and *AM Radio* play about 4.5 and 5 dB under on purpose. With TUBE IN, a hotter input gets more colour.

Folder	Presets
Default	Init
Drums	Kit Punch And Snap, Kick Weight, Snare Crack, Overheads Shimmer, Drum Bus Tube Glue
Bass	Bass Weight, Bass Growl, Bass Mud Cut, Sub Synth Focus, Bass Tube Warmth
Guitar	Acoustic Sparkle, Acoustic Body, Strummed Mud Cut, Electric Bite, Fingerpicked Air
Keyboards	Piano Bright Lift, Piano Warmth, Electric Piano Bell, Synth Pad Air, Organ Mud Cut
Strings	Strings Silk, Warm String Section, Violin Rosin Tamer, Cello Body
Brass	Brass Blare Tamer, Brass Warmth, Trumpet Bite, Horn Section Fat
Woodwinds	Flute Breath Air, Sax Honk Tamer, Clarinet Woody Warmth, Reed Edge Soften
Vocals	Vocal Presence, Vocal Air, Vocal Tube Warmth, Nasal Vocal Fix, Proximity Fix
Mix Bus	Mix Bus Polish, Mix Bus Tube Glue, Mix Bus Mud Cut, Mix Bus Air, Mix Bus Harsh Tamer
Mastering	Open The Top, Tame The Boom, Warm A Thin Master, De-Harsh Upper Mids, Gentle Smile, Low Mid Clean Up, Calm A Bright Master, Lift A Dark Master, Loudness-Ready Tilt, Hip-Hop Low End, Club Weight, Rock Master Bite, Pop Sheen, Acoustic Natural Air, Tube Master Warmth, Metal Mud Scoop, Vinyl-Safe Lows
Mid-Side	Mono The Lows, Side Air, Centre Focus, Widen The Top, Vocal Up The Middle, Harsh Sides Tamer, Kick And Bass Centre
Restoration	Rumble Filter, Hum Region 60 Hz, Hum Region 50 Hz, Harsh Old Recording, Dull Transfer Lift, Cassette Transfer, Vinyl Transfer, Dull Right Channel
Creative FX	Telephone, AM Radio, Lo-Fi Crunch, Tube Smash, Extreme Dark Tilt, Hard Bright Tilt, Super Wide Sides

Recipes

Master a stereo mix

1. Put VEIRA Mastering EQ first or second on the master chain, before your limiter. Load **Default ▸ Init**, then press [LINK] and set [PHASE] to [LINEAR].
2. Play the loudest section and listen. Decide what the mix needs, in words: “a bit more air”, “less mud”, “a fuller low end”.
3. Make each move on channel A with a broad shape: [HIGH SHELF] 12 or 16 kHz, +0.5 to +1.5 dB for air; [LOW MID] 250 or 300 Hz, −1 dB, Q 0.7 for mud; [LOW SHELF] 60 or 80 Hz, +1 dB for weight.
4. Set [LOW CUT] to 20 or 25 Hz only if the mix has rumble you don’t need.
5. Match the level with [OUTPUT] (Δ about 0.0 LU) and compare with bypass. If you can’t hear the difference at matched level, the move wasn’t needed.
6. Write the settings down, or save them as a preset.

Tighten the low end with mid/side

1. Load **Mid-Side ▸ Mono The Lows**: [M / S], [LINEAR], [LOW CUT] 120 Hz on channel B (the sides).
2. Lower the side [LOW CUT] to 80 Hz for a gentler effect, or raise it to 150 Hz for a mix with very wide low synths.
3. Listen on headphones and on a mono speaker: the kick and bass should feel more solid and centred, the width above unchanged.
4. Watch the peaks: in [LINEAR] they don’t move.

Brighten only the width

1. Load **Mid-Side ▸ Side Air** or **Widen The Top**, or set [MODE] to [M / S] and [PHASE] to [LINEAR].
2. On channel B (the sides), raise [HIGH SHELF] at 10 or 12 kHz by 1 to 2 dB.
3. The reverbs, wide guitars and cymbals open up; the vocal and the snare in the centre stay as they were.
4. If the sides get harsh, use **Harsh Sides Tamer**: a gentle [HIGH MID] cut at 3 to 5 kHz on channel B.

Remove mains hum

1. Load **Restoration ▸ Hum Region 60 Hz** (America and parts of Asia) or **Hum Region 50 Hz** (Europe, Africa, most of Asia and Australia).
2. They cut a narrow band (Q 4.5) at the mains frequency. Fine-tune by ear: if a buzz remains an octave up, use [HIGH MID] or the other channel’s [LOW MID] at 100 or 120 Hz (the second harmonic) with the same narrow Q.
3. Keep cuts as small as works: a deep, narrow cut at 50 or 60 Hz also takes a little of a bass note on that pitch.

Fix a recording whose two sides differ

1. Set [MODE] to [L / R] with [LINK] off.

2. Listen to each side alone (most DAWs can solo a channel with a pan or utility plugin). Find what one side lacks.
3. EQ only that side: for example, on channel B a HIGH SHELF lift for a dull right channel (see **Restoration ▸ Dull Right Channel**).
4. Use the hover read-out on THE CURVE to compare the two curves at any frequency.

Warm a thin master with the tube

1. Load **Mastering ▸ Warm A Thin Master** or **Tube Master Warmth**, or press TUBE IN with TUBE at 30 %.
2. Raise TUBE slowly while the loudest section plays, until the master feels fuller and denser. Stay at or under 40 % on a master.
3. Check the peaks on the meter bridge before the limiter: the tube lifts the negative peaks a little.
4. Match the level with OUTPUT and compare with TUBE IN out.

Specifications

Type	Stepped two-channel mastering equalizer with a tube output stage
Channels	Mono and stereo; on mono tracks channel A works and MODE has no effect
Channel modes	L / R (A left, B right) or M / S (A mid, B side); LINK: B follows A
Bands per channel	LOW CUT, LOW SHELF, LOW MID, HIGH MID, HIGH SHELF, HIGH CUT
Frequencies	12 positions per band (see *Controls*)
Gains	−8 to +8 dB in 0.5 dB steps (default 0.0 dB)
Bell Q	0.40, 0.55, 0.70, 1.00, 1.40, 2.00, 3.00, 4.50 (default 0.70)
Shelves	Q 0.6: half the gain at the named frequency
Cuts	18 dB/oct (3rd-order Butterworth); LOW CUT 16 to 150 Hz, HIGH CUT 6 to 27 kHz, or Off
PHASE	ANALOG (analog-matched minimum phase) or LINEAR (linear phase, within 0.07 dB of ANALOG from 25 Hz up)
Latency	ANALOG: 64 samples (1.3 ms at 48 kHz; none at 176.4 kHz and above). LINEAR: 4,672 samples at 44.1 and 48 kHz (105.9 and 97.3 ms), about 96 ms at 96 and 192 kHz. Reported to the host.
TUBE IN · TUBE	In / out (default out) · 0 to 100 % (default 30 %); triode-like, mostly 2nd harmonic; 4x oversampled (2x at 88.2 and 96 kHz)
OUTPUT	−12 to +12 dB in 0.5 dB steps (default 0.0 dB)
Bypass	At *Init* the output is the input, delayed, bit for bit, in L/R and M/S
Display	Both channels' curves (the engine's own response), over an 8192-point FFT of the output, 1/6 octave, 4.5 dB/oct tilt; ±3, ±6 or ±12 dB
Metering	IN and OUT meters (sample peak, RMS); short-term and integrated loudness per ITU-R BS.1770-4 / EBU R 128; OUT − IN in LU
Presets	82 factory presets in 14 folders, plus your own
Window	1600 × 880 points; resizable from 75 % to 200 %, saved with the session
Formats	VST3, Audio Units, standalone; AAX once signed
Plugin ID	Manufacturer Veir, plugin Vmeq

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 Mastering EQ 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 session is out of time, or the plugin feels late, in LINEAR. LINEAR adds about 100 ms of latency, which the plugin reports. Make sure your DAW's plugin delay compensation is on; after switching PHASE, stop and start playback so the DAW picks up the new latency. While recording or playing live through the plugin, use ANALOG.

Channel B's knobs are greyed out and don't do anything. LINK is on: channel B follows channel A. Switch LINK off to set B on its own; its settings were kept.

M/S does nothing on my track. The track is mono: there are no sides, so channel A does all the work. Put the plugin on a stereo track or bus.

The peaks went up after a low cut. In ANALOG, cutting the lowest frequencies of a dense, limited mix shifts their phase, and the peaks can rise by a few dB with no change in loudness. Use LINEAR for low cuts on a master, or put the EQ before your limiter.

The TUBE knob is greyed out. TUBE IN is out. Press it to switch the tube stage in.

I boosted and it sounds better. Is it? Maybe it's only louder. Match the level with OUTPUT until the meter bridge's Δ reads about 0.0 LU, then compare with bypass.

Can I automate the EQ? Every knob and button can be automated except PHASE, which changes the latency. The frequency and Q knobs move in steps, so automating them jumps from one position to the next.

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.

I typed a frequency and the knob jumped somewhere else. The frequency and Q knobs only take their own positions. Type one exactly as it reads on the knob (or short: **60**, **2.5k**, **Off**), and Q with both decimals (**0.70**).

Do my sessions keep my settings? Yes. Every control, the selected preset, the display's dB range 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 Mastering EQ · User Manual · Version 0.2.0

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

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