VEIRA

TUBE PROGRAM EQUALIZER

VEIRA Passive EQ

User Manual

A tube program EQ in the tradition of the passive program EQs of the 1950s, on its own and laid out like a rack unit: low shelves you can boost and attenuate at once, a resonant high boost, a gentle high attenuation, and the make-up amplifier with its output transformer.



Contents

Welcome 3
Getting started 4
What you need 4
Install with VEIRA Manager 4
Activation and the licence 5
Formats and where the files go 5
The panel at a glance 6
Quick start: warmth in three moves 7
Using the controls 7
How a program EQ works 9
What happens inside VEIRA Passive EQ 10
Controls 11
The dials: 0 to 10 11
LOW FREQUENCY: FREQ, BOOST and ATTEN 12
HIGH FREQUENCY: FREQ, BOOST and BANDWIDTH 13
HIGH ATTEN: ATTEN SEL and ATTEN 14
Stepped frequencies 15
AMPLIFIER: DRIVE and OUTPUT 16
SWITCHES: AUTO GAIN, EQ IN / OUT and PILOT 17
The low-end trick 19
BOOST must sit above ATTEN 19
Setting it, step by step 20
Working by ear 21
Compare at equal loudness 21
Levels and the amplifier 21
Where to put it 21
Presets 22
The preset browser 22
The preset menu 22
Saving your own presets 22
Presets in your DAW 23
The factory folders 23
Recipes 24
Weight without mud on a bass 24
A kick with weight and click 24
A silky vocal top 24
A warm mix bus 24
The low-end trick on a master 24
An old radio voice 24
Specifications 25
Troubleshooting and questions 26

Welcome

Thank you for choosing **VEIRA Passive EQ**. It is a tube program equalizer in the tradition of the passive program EQs of the 1950s: broad, flattering curves on stepped frequencies, made by a passive network and brought back up by a tube amplifier and its output transformer. It is the unit on its own, laid out like a rack unit, with nothing on its face but knobs and switches.

It has the famous low section whose boost and attenuation you can use at the same time, for more weight underneath and less mud above it; a resonant high boost with its own bandwidth; a long, gentle high attenuation; and the amplifier, which you can push with DRIVE for warmth. It is quick to use and hard to make sound bad.

What makes it different

- **The low-end trick.** BOOST and ATTEN on the same low frequency work together: more weight below it, a gentle dip above it. This manual has a chapter on it, including how far apart to set the two dials.
- **The silky top.** HIGH FREQUENCY BOOST with HIGH ATTEN keeps a high shine while taking the harshness off the very top.
- **Curves fitted to the hardware.** The passive network's curves are fitted to published measurements of the original hardware, and they keep their analog shape right up to 20 kHz.
- **The amplifier and its transformer.** DRIVE adds a triode's 2nd harmonic, more on loud peaks than on quiet passages, and the transformer's 3rd on heavy bass. At 0 % it is clean.
- **Dials from 0 to 10, as on the hardware,** with the dB each one does shown under it.
- **A face with no screens.** An original 1950s rack design in green hammertone enamel: bakelite knobs over printed dials, bat-handle toggles and a jewel pilot lamp. You work by ear.

VEIRA EQ Gold has the same low and high curves, with a mid-range section added below them and a gold face with a curve screen and meters. Choose Passive EQ when you want the program EQ on its own.

How this manual is organised. *Getting started* covers installing and activating. *The panel at a glance* names every part of the window. *How a program EQ works* is a short primer. *Controls* explains every section with drawings. *The low-end trick* shows how to set the famous low curve. *Working by ear* covers comparing and levels on a face with no meters. *Presets*, *Recipes*, *Specifications* and *Troubleshooting* close the manual.

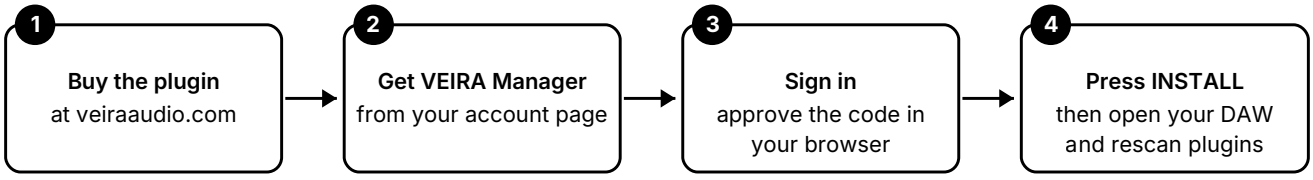
Getting started

What you need

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

Install with VEIRA Manager

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



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

FIGURE 1 From purchase to first sound in four steps.

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

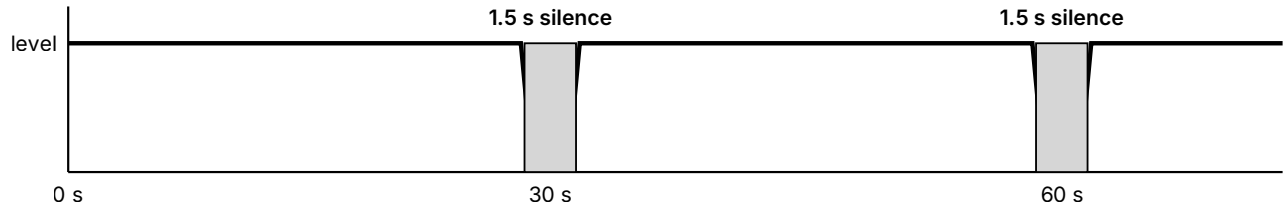


FIGURE 2 What an unlicensed copy does. With a valid licence the audio is never touched.

- **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 Passive 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 Passive 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

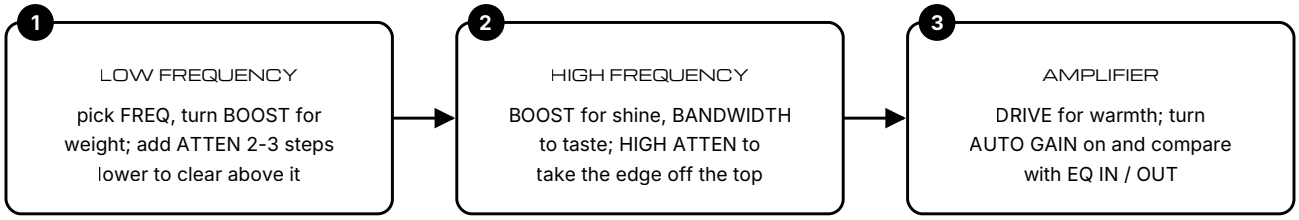


FIGURE 3 VEIRA Passive EQ, the green hammertone rack unit: the low-end trick at 60 Hz (BOOST at 6, ATTEN at 2.5), a broad high boost at 10 kHz, a little HIGH ATTEN at 20 kHz and DRIVE at 30 %.

	Part	What it does
1	Preset browser	Steps through and saves presets. See *Presets*.
2	LOW FREQUENCY	FREQ, BOOST and ATTEN: the low shelves you can boost and attenuate at once.
3	HIGH FREQUENCY	FREQ, BOOST and BANDWIDTH: a resonant high boost.
4	HIGH ATTEN	ATTEN SEL and ATTEN: a long, gentle high cut.
5	AMPLIFIER	DRIVE (how hard the amplifier and its transformer are pushed) and OUTPUT (the final level).
6	AUTO GAIN	Takes off the loudness the curve adds or removes.
7	EQ IN / OUT	The equalizer in or out, to compare.
8	PILOT lamp	Lit while the EQ is in.
9	Window corner	Drag to resize the window.

The equalizer is on top (LOW FREQUENCY on the left, HIGH FREQUENCY on the right) and the rest of the chain is below it: HIGH ATTEN, then the AMPLIFIER, then the SWITCHES. That is also the order the sound goes through.

Quick start: warmth in three moves

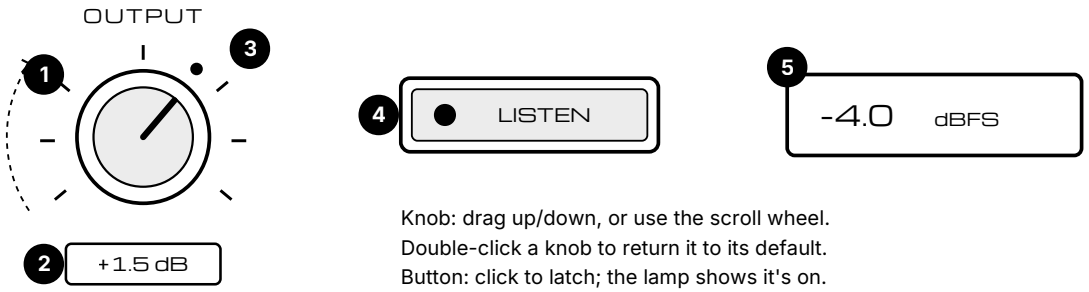


Or start from a factory preset: each was level-matched on its material, so comparing is fair.

FIGURE 4 The quickest way in. *Default* ▸ *Init* is a clean start: every dial at 0, DRIVE at 0 %: the output is the input.

Using the controls

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



Knob: drag up/down, or use the scroll wheel.
Double-click a knob to return it to its default.
Button: click to latch; the lamp shows it's on.
Readouts always carry a unit (dB, dBFS, LUFS, LU, ms, %).

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

- **Dials read 0 to 10,** as on the hardware: the numbers printed around each knob are the dial, not dB. The window under the knob shows what it does in dB ([+8.1 dB]). See *The dials: 0 to 10*.
- **Signs show the direction.** [BOOST] windows read their lift with a plus sign ([+8.1 dB]) and [ATTEN] windows their cut with a minus sign ([-4.4 dB]).
- **Frequency knobs click.** [FREQ] and [ATTEN SEL] move in steps between the frequencies printed around them. A frequency knob whose section is at 0 is dimmed, still readable: the section is doing nothing yet, so its frequency doesn't matter. [BANDWIDTH] dims with the high boost.
- **Type a value:** right-click a knob (Control-click on a Mac), type the new value and press Return. The dials take either dB (**6 dB**) or a dial position (**4.5**); [BANDWIDTH] takes a Q (**0.9**). Double-click a knob for its default.
- **Switches instead of buttons.** [AUTO GAIN] and [EQ] are bat-handle toggles: up is [ON] / [IN], down is [OFF] / [OUT]. There are no lit buttons; the [PILOT] lamp glows while the EQ is in.
- **No screens, no meters.** The face has knobs and switches only, as the hardware had. The only windows are the value windows under the knobs, the preset browser and, while [AUTO GAIN] is on, the correction it is making. Use your DAW's meters for levels (see *Working by ear*).
- **Resize the window:** drag its bottom-right corner (the small diagonal lines). It scales from 75 % to 200 % of its normal size (1440 × 720 points) and keeps its proportions. Your DAW saves the size with the session.
- **The face:** green hammertone enamel with cream print, between rack ears. Every text is at least 12 pt (most 16–19 pt) and stands at least 4.5:1 against the enamel (the WCAG AA contrast for text).

How a program EQ works

If you already know EQ, skip to *What happens inside VEIRA Passive EQ*.

Every sound is a mix of frequencies: low ones you feel, middle ones that carry the tone and the words, high ones that bring detail and air. An equalizer turns chosen regions up or down. In this manual's drawings the horizontal axis is **frequency**, 20 Hz to 20 kHz, and the vertical axis is **gain**: above 0 dB is louder, below is quieter.

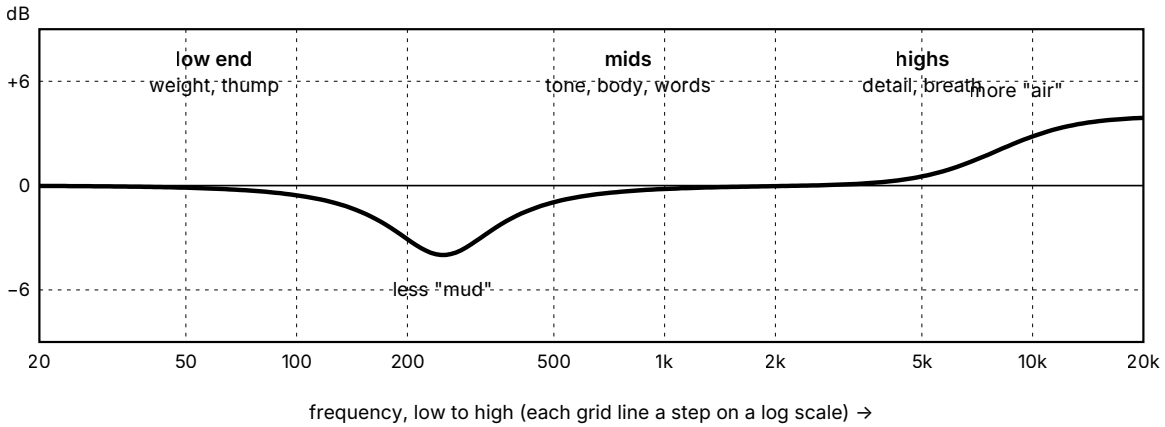


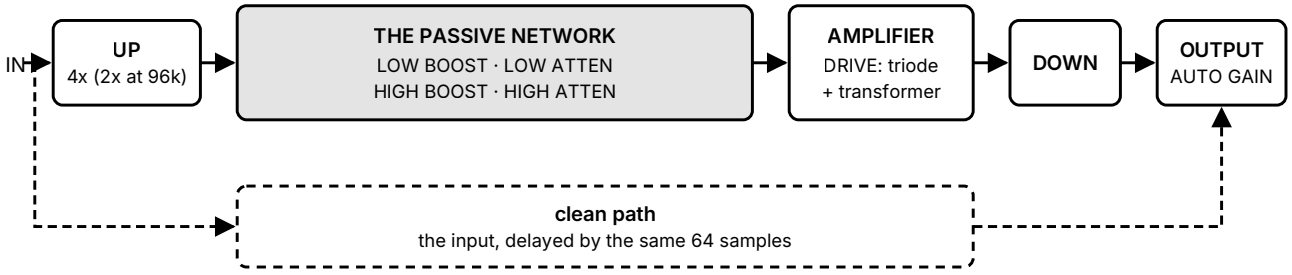
FIGURE 6 An EQ curve reads like a map of the spectrum: low frequencies on the left, high on the right, louder above the 0 dB line, quieter below.

A modern parametric EQ lets you put a band anywhere, at any width. A **program EQ** is different: it was built to shape whole programmes (a mix, a master, a broadcast) with a few broad, gentle curves on fixed frequencies. Its **passive** network of coils, capacitors and resistors can only take level away (about 16 dB of it), so a **tube amplifier** after it brings the level back up. That gives the curves their character: broad, smooth and hard to make sound unnatural, and the amplifier adds a little warmth on the way out.

Three habits suit Passive EQ:

- **Think in regions, not frequencies.** Pick the step nearest what you want and judge by ear; the curves are broad enough that the exact frequency rarely matters.
- **Boost freely, but compare at equal loudness.** Its boosts flatter. AUTO GAIN keeps the comparison honest.
- **Combine opposite moves.** Boost and attenuation on the same end of the spectrum don't cancel: they make new shapes (*The low-end trick*, *The silky top*).

What happens inside VEIRA Passive EQ



While every dial is at 0 and DRIVE at 0 %, you hear the clean path; touching anything fades over 20 ms between the two.

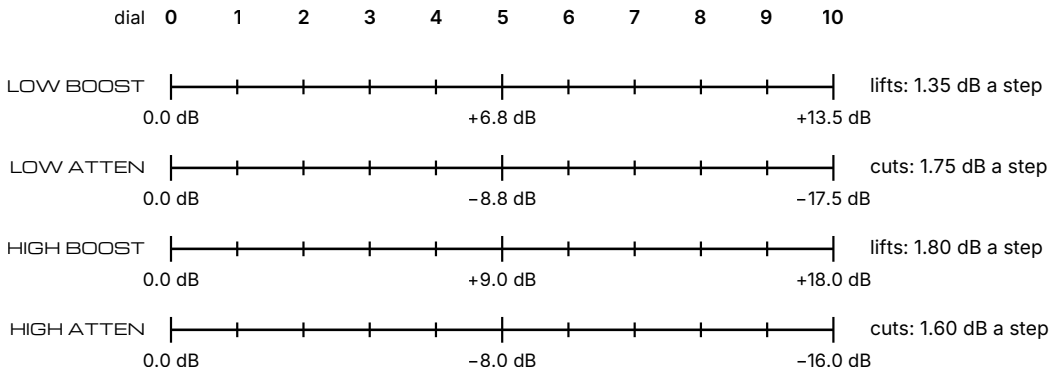
FIGURE 7 Signal flow. The signal is taken up to four times its rate, through the passive network's four sections and the amplifier, and back down; OUTPUT and AUTO GAIN set the final level.

- **Oversampled.** Passive EQ works at four times the sample rate (twice at 88.2 and 96 kHz, as it is at 176.4 and 192 kHz). That lets its curves keep their analog shape right up to 20 kHz (within 0.023 dB of the analog curves from 20 Hz to 20 kHz) and keeps the amplifier's harmonics from folding back as aliasing. It costs a small latency: **64 samples** at 44.1 to 96 kHz (1.3 ms at 48 kHz), none at 176.4 and 192 kHz, always the same whatever the settings and reported to your DAW.
- **The passive network** is four sections in a row: LOW BOOST, LOW ATTEN, the high boost and HIGH ATTEN. The low ones and HIGH ATTEN are first-order shelves, as the network's resistors and capacitors make them; the high boost is a coil-and-capacitor resonance.
- **The amplifier** makes up the network's loss: a triode stage and an output transformer. DRIVE pushes them harder.
- **Clean when flat.** With every dial at 0 and DRIVE at 0 % (*Init*), you hear the clean path: the input, delayed by the same 64 samples, bit for bit. Touching anything crossfades over 20 ms between the two paths, which are aligned in time.
- **Click-free steps.** When you turn a frequency knob, the curve glides to the new frequency (at most an octave per 40 ms), so switching never clicks.

Controls

The dials: 0 to 10

Every gain knob of Passive EQ ([BOOST], [ATTEN], the high [BOOST] and [HIGH ATTEN]'s [ATTEN]) reads 0 to 10, as on the hardware. 10 is the section's full range, and the dials are **linear in dB**: 5 is half the range, and each step of 1 is a tenth of it.



The windows read what each dial does in dB: plus for BOOST, minus for ATTEN.

FIGURE 8 What the dials are worth: [BOOST] lifts, [ATTEN] cuts. A step of [LOW ATTEN] is worth more than a step of [LOW BOOST]: that matters for *The low-end trick*.

Dial	10 on the dial
[LOW FREQUENCY] [BOOST]	13.5 dB
[LOW FREQUENCY] [ATTEN]	−17.5 dB
[HIGH FREQUENCY] [BOOST]	18 dB
[HIGH ATTEN] [ATTEN]	−16 dB

The window under each knob shows the dB, so you never need to work it out. When you type a value, give either: **6 dB** sets the dial to whatever gives 6 dB, **4.5** sets the dial to 4.5.

LOW FREQUENCY: FREQ, BOOST and ATTEN

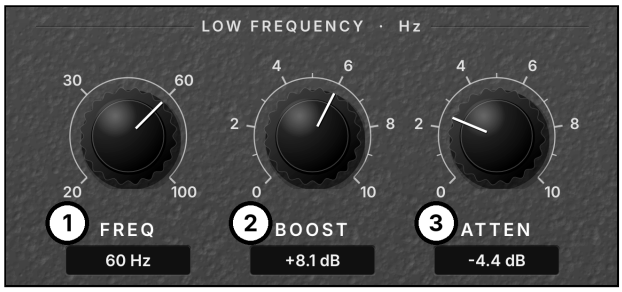


FIGURE 9 The LOW FREQUENCY section: 1 FREQ at 60 Hz, 2 BOOST at 6 (+8.1 dB) and 3 ATTEN at 2.5 (-4.4 dB).

Control	Range	Default	What it does
FREQ	20, 30, 60, 100 Hz	60 Hz	Where the low section works, for both BOOST and ATTEN.
BOOST	0 to 10 (0 to 13.5 dB)	0	A broad shelf that lifts the lows; nearly full at the frequency on the dial.
ATTEN	0 to 10 (0 to −17.5 dB)	0	A shelf that takes the lows away, reaching much higher than the boost.

The two low shelves are first-order curves: very gentle slopes that spread over several octaves. BOOST lifts everything below its frequency, and at full boost is still 3 dB up at five to seven times the frequency on the dial (100, 200, 300 and 700 Hz for 20, 30, 60 and 100 Hz). ATTEN reaches higher still: at full attenuation it is still 3 dB down at twelve to fifteen times the dial (250, 400, 800 and 1500 Hz).

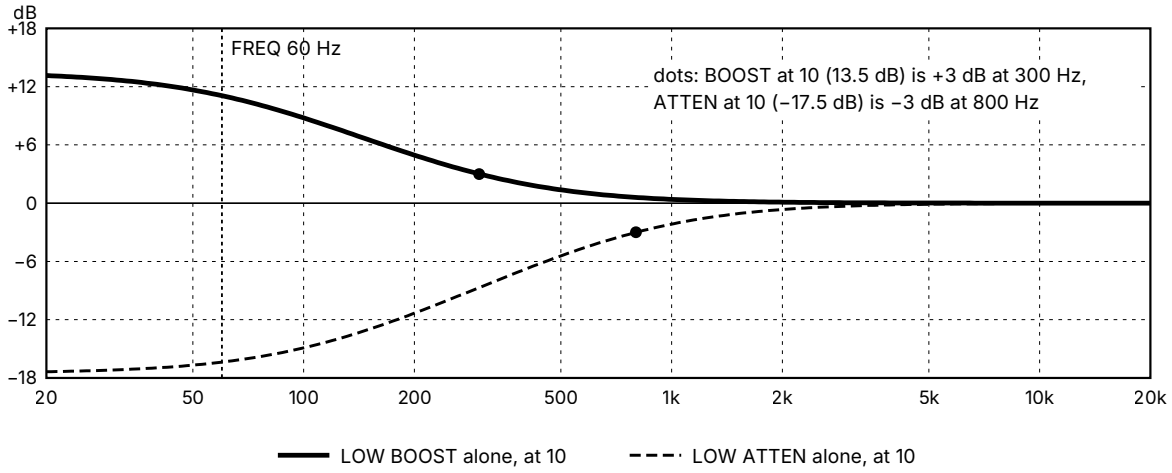


FIGURE 10 The two low shelves alone, at full depth, with FREQ at 60 Hz. The attenuation (dashed) reaches much further up than the boost.

- **20 and 30 Hz** are for the sub: weight you feel more than hear, in a master or a kick.
- **60 Hz** is the body of a kick and a bass guitar.
- **100 Hz** reaches into the warmth of the low mids: thicker, rounder.

Using both at once is the famous low-end trick, which has its own chapter: *The low-end trick*.

HIGH FREQUENCY: FREQ, BOOST and BANDWIDTH

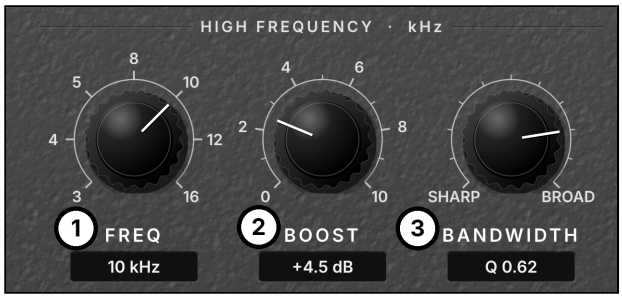


FIGURE 11 The HIGH FREQUENCY section: 1 FREQ at 10 kHz, 2 BOOST at 2.5 (+4.5 dB) and 3 BANDWIDTH reading Q 0.62.

Control	Range	Default	What it does
FREQ	3, 4, 5, 8, 10, 12, 16 kHz	10 kHz	The centre of the boost.
BOOST	0 to 10 (0 to 18 dB)	0	How much it lifts.
BANDWIDTH	SHARP (Q 2.2) to BROAD (Q 0.45)	Q 0.99 (the middle)	How wide the boost is; the window reads the Q.

The high boost is a resonant peak, like the coil-and-capacitor circuit it comes from. Turn BANDWIDTH towards SHARP for a focused peak (Q 2.2) and towards BROAD for a wide, open one (Q 0.45). Like the hardware, it narrows as you boost more.

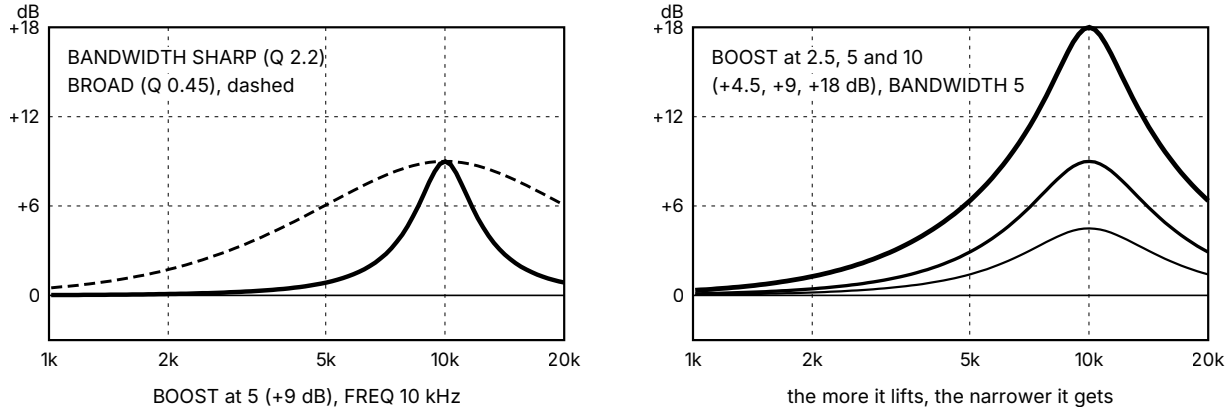


FIGURE 12 Left: BANDWIDTH sharp and broad. Right: the same BANDWIDTH at three amounts of BOOST: the more it lifts, the narrower it gets.

- **3–5 kHz:** presence and bite, for a vocal or a guitar that should speak.
- **8–12 kHz:** shine and openness: cymbals, the breath of a voice, a mix's top.
- **16 kHz** with BANDWIDTH broad: "air", a lift you feel more than hear.

HIGH ATTEN: ATTEN SEL and ATTEN

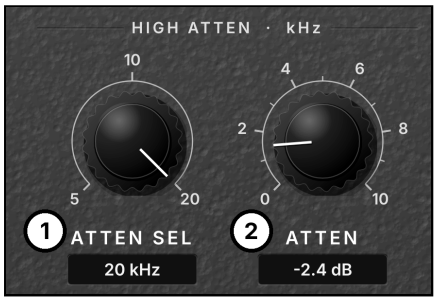


FIGURE 13 The HIGH ATTEN section: 1 ATTEN SEL at 20 kHz and 2 ATTEN at 1.5 (-2.4 dB).

Control	Range	Default	What it does
ATTEN SEL	5, 10, 20 kHz	10 kHz	Where the attenuation is aimed.
ATTEN	0 to 10 (0 to −16 dB)	0	How much of the top it takes away.

HIGH ATTEN is a long, gentle shelf that starts well below its frequency: at full attenuation it is already 3 dB down at 600 Hz, 1.5 kHz or 2.5 kHz for the 5, 10 and 20 kHz positions. So small amounts soften a whole top end, and large ones make it dark and vintage.

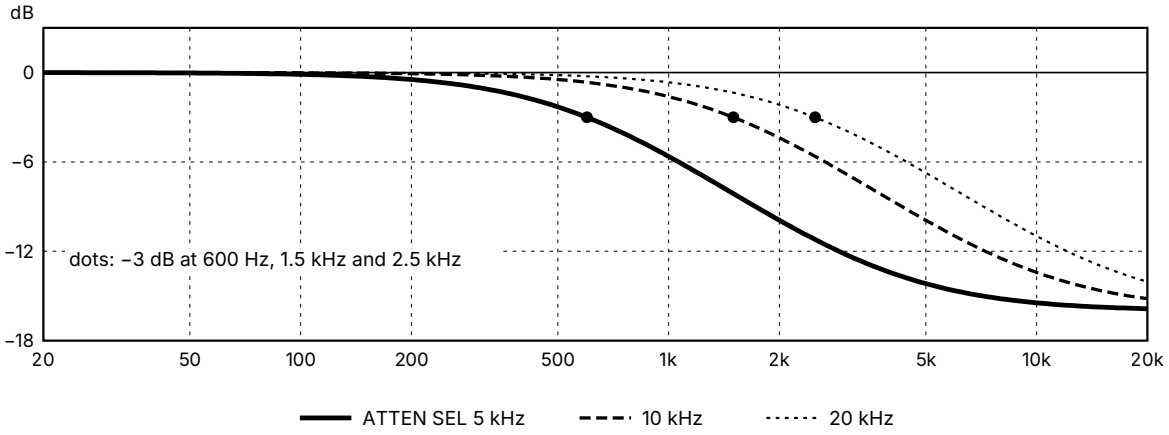


FIGURE 14 HIGH ATTEN at full depth at its three positions. 20 kHz is the gentlest; 5 kHz darkens the whole top.

The silky top

Used with the high boost, HIGH ATTEN keeps the shine of the peak while taking the harshness off around it: the boost's resonance stays, the edge goes. This is the classic silky top for vocals, strings and masters.

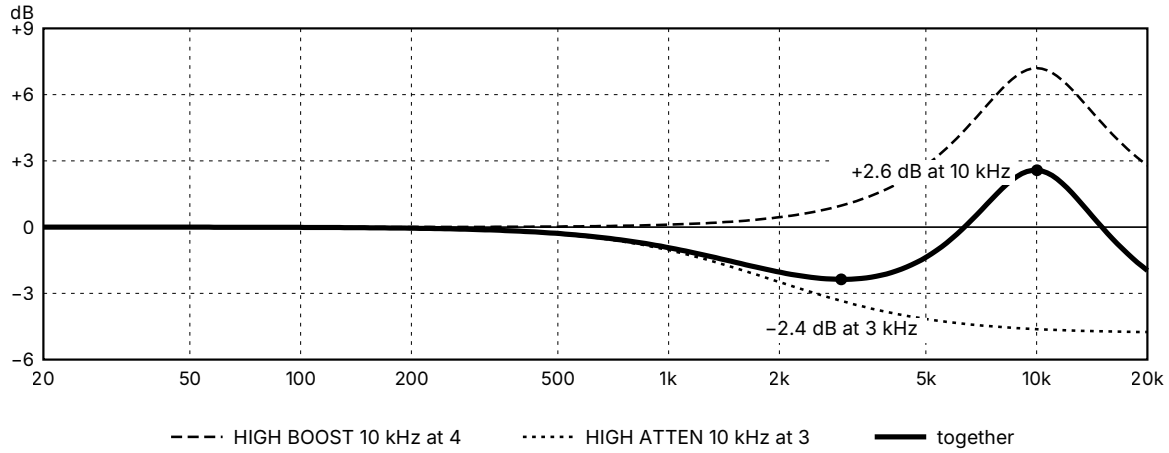
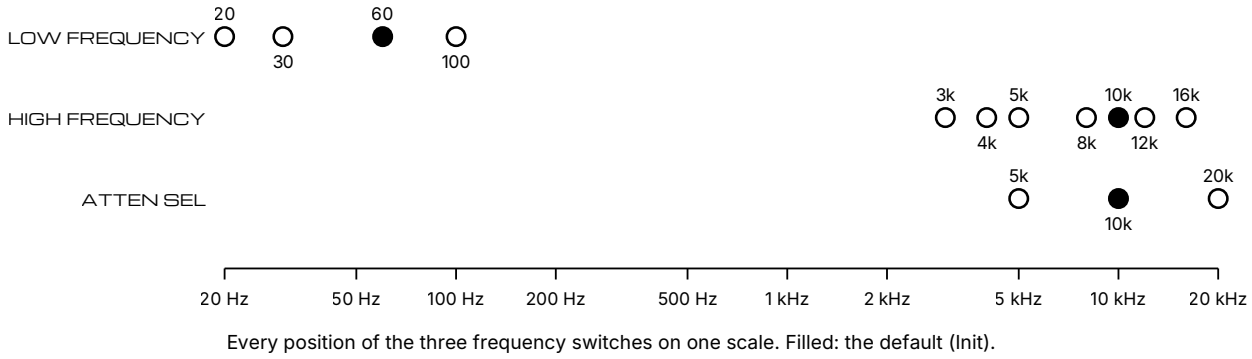


FIGURE 15 *Vocals* ▸ *Silky Vocal Top*: the high boost at 10 kHz (dial 4, BANDWIDTH 6) with HIGH ATTEN at 10 kHz (dial 3). The peak stays; the upper mids beneath it come down a little.

Stepped frequencies

All three frequency knobs click between fixed positions, as on the hardware. The positions are chosen so that each one is a musically different place; in between there is nothing a broad curve would do differently.



Every position of the three frequency switches on one scale. Filled: the default (Init).

FIGURE 16 Every position of FREQ (low and high) and ATTEN SEL, on one frequency scale.

When you change position while the music plays, the curve glides to the new frequency instead of jumping, so stepping never clicks.

AMPLIFIER: DRIVE and OUTPUT

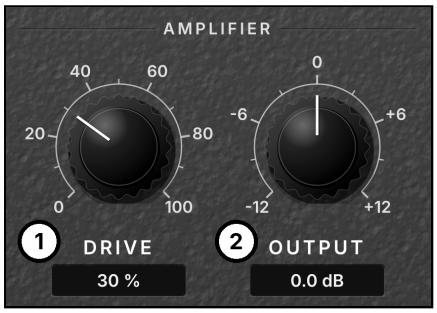
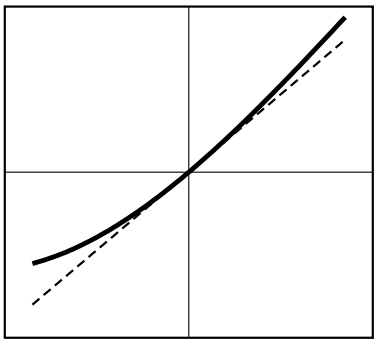


FIGURE 17 The AMPLIFIER section: 1 DRIVE at 30 % and 2 OUTPUT at 0.0 dB.

Control	Range	Default	What it does
DRIVE	0 to 100 %	0 %	How hard the amplifier and its output transformer are pushed. 0 % is clean.
OUTPUT	−12 to +12 dB	0.0 dB	The final level, after the amplifier.

The passive network loses about 16 dB, and in the hardware the amplifier brings it back. DRIVE pushes that amplifier harder. Its **triode** bends the two halves of the waveform a little differently, which adds smooth, low-order harmonics, the 2nd leading. Louder passages get more of it than quiet ones, so it thickens the loud moments and leaves a quiet passage at its level (−0.01 dB at −20 dBFS, at full DRIVE). Its **output transformer** adds a little 3rd harmonic on heavy bass, where the iron works hardest.



in → (dashed: a straight wire)
the triode bends the two halves apart

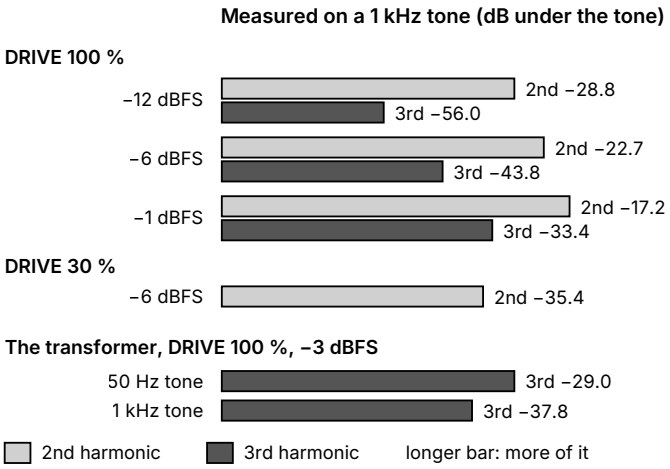


FIGURE 18 Left: the triode's curve against a straight wire. Right: what DRIVE adds to a 1 kHz tone at three levels (measured), and the transformer's 3rd harmonic on a bass tone against a mid tone.

- **10–25 %:** warmth you feel more than hear. Most presets live here.
- **30–50 %:** audible glow and density on drums, bass and keys.
- **70–100 %:** saturated and thick: an effect (*Creative FX* ▸ *Full Amp Drive*).

The amplifier runs at four times the sample rate, so a 15 kHz tone driven at 100 % leaves nothing above −85 dB where aliasing would fall. It works on the EQ's output, so a big low boost drives it harder: listen to DRIVE again when you add a lot of BOOST.

OUTPUT sets the final level. Use it to match levels by ear, or let AUTO GAIN do it for the curve.

SWITCHES: AUTO GAIN, EQ IN / OUT and PILOT

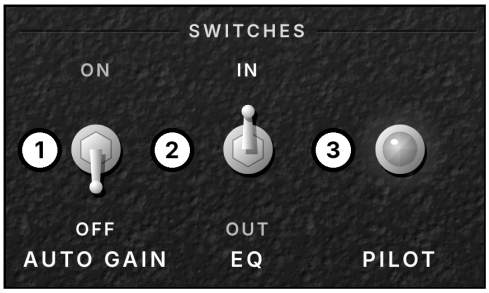
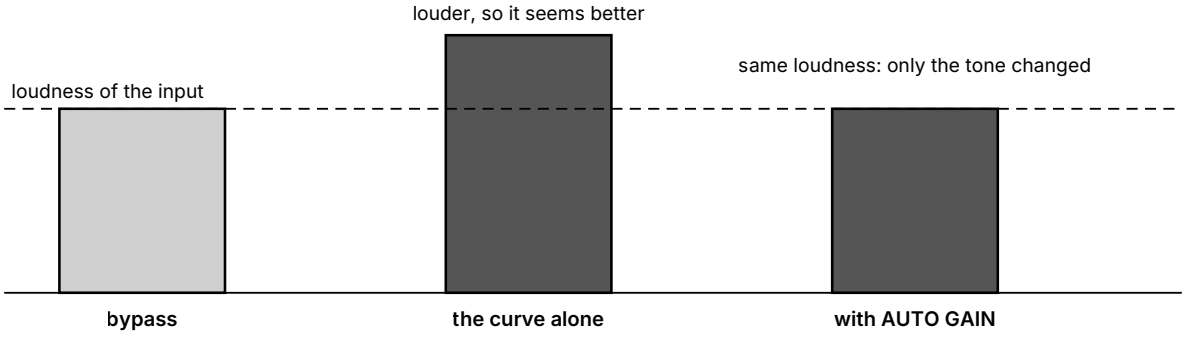


FIGURE 19 The SWITCHES: 1 AUTO GAIN (down: OFF), 2 EQ (up: IN) and 3 the PILOT lamp, lit because the EQ is in (in print, the light grey disc).

Control	Range	Default	What it does
AUTO GAIN	ON / OFF	OFF	Takes off the loudness the curve adds or removes.
EQ	IN / OUT	IN	The equalizer in or out; the amplifier and OUTPUT stay.
PILOT	lamp	lit	Lit while the EQ is in.

AUTO GAIN



LOW BOOST at 6 (+8.1 dB): on its own it adds loudness; AUTO GAIN takes exactly that back off.

FIGURE 20 A low boost makes the music louder. AUTO GAIN takes exactly that back off, so you compare tone, not level.

With AUTO GAIN on, Passive EQ works out from the curve how much louder or quieter it makes music with a typical mix's spectrum, weighted like a loudness meter, and takes that back off. While it is on, a window appears under the switches showing the correction it is making in dB (for example -1.2 dB when the curve

adds 1.2 dB). It reads the curve, not the music, so it never pumps; it glides over 20 ms as you turn a knob. Measured on pop and rock mixes, five curves came out within 1.2 LU of the input. It doesn't account for what DRIVE adds; OUTPUT still works on top of it.

EQ IN / OUT and the PILOT lamp

EQ switches the equalizer in (up) or out (down), gliding over 20 ms, so you can compare the curve with no curve. The amplifier and OUTPUT stay, so you hear only what the EQ does. The PILOT lamp is lit while the EQ is in and dark while it is out, so you can tell from across the room. For a comparison with Passive EQ completely out, use your DAW's bypass (which Passive EQ delays by its 64 samples, so the track stays in time).

The low-end trick

The trick that made the program EQs of the 1950s famous: turn up BOOST and ATTEN on the same low frequency at the same time. You would expect them to cancel. They don't, because the attenuation reaches much higher than the boost:

- **Below the frequency** the boost wins: more weight.
- **A little above it**, where the attenuation is still working but the boost has faded, you get a gentle dip that clears the mud.

More bottom, less boom. On a kick, a bass, a broadcast voice or a whole mix, it gives weight without the low mids clouding up.

BOOST must sit above ATTEN

Here is the part most people get wrong. A step of ATTEN is worth more dB than a step of BOOST (1.75 dB against 1.35 dB), and ATTEN reaches higher. So **equal dials nearly cancel at the bottom**: with BOOST and ATTEN both at 5 there is no lift left at 20 Hz, only a dip above it. The classic lift with a dip above it comes when BOOST **sits 2 to 3 steps above** ATTEN. VEIRA found this while building the factory presets, and the low-end trick presets are built on it.

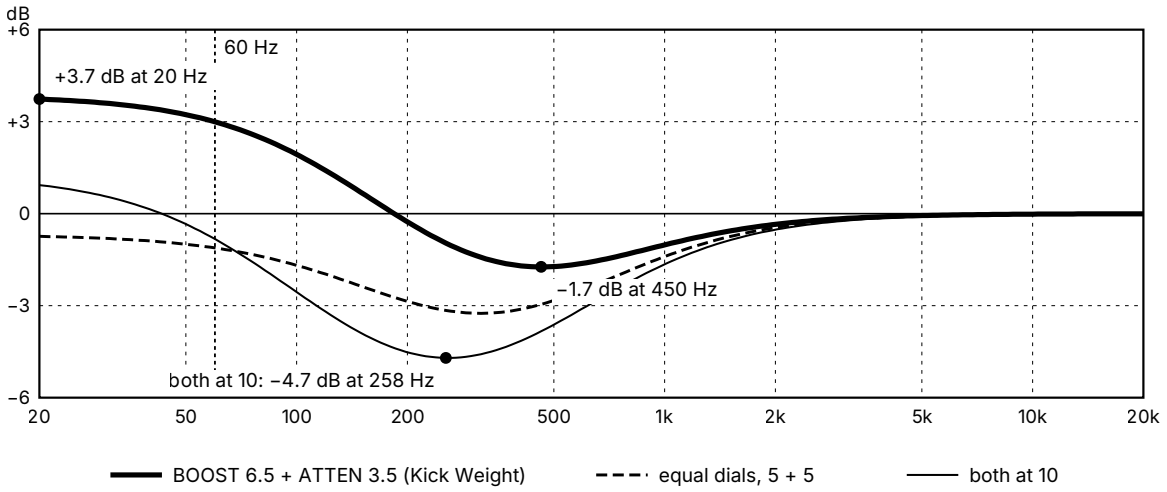


FIGURE 21 The low-end trick at 60 Hz. *Drums ▸ Kick Weight* (BOOST 6.5, ATTEN 3.5, three steps apart, solid) gives +3.7 dB at 20 Hz and −1.7 dB at 450 Hz. Equal dials (dashed) lose the lift. Both at 10 (thin) still lift the very bottom a little, with a deep dip above.

In the passive network the boost and the attenuation share one loop, so the boost takes some depth out of the attenuation as you turn it up; that is part of the sound, and Passive EQ does the same. Measured at 60 Hz:

BOOST + ATTEN	At 20 Hz	The dip above
6.5 + 3.5 on the dials (+8.8 / −6.1 dB, *Kick Weight*)	+3.7 dB	−1.7 dB at 450 Hz
+10 dB and −5 dB (dials about 7.4 and 2.9)	+6.0 dB (+5.0 dB at 60 Hz)	−1.2 dB at 550 Hz

BOOST + ATTEN	At 20 Hz	The dip above
both at 10 (+13.5 / −17.5 dB)	+0.9 dB	−4.7 dB at 258 Hz

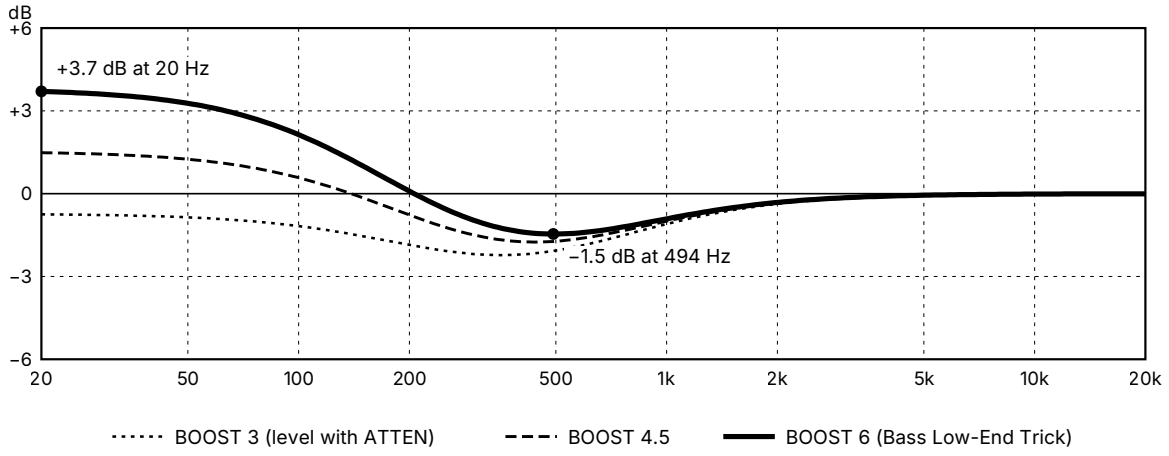


FIGURE 22 The same ATTEN with three amounts of BOOST. Level with ATTEN, the lift is gone; three steps above it (*Bass* ▸ *Bass Low-End Trick*) you get +3.7 dB at 20 Hz and a −1.5 dB dip at 494 Hz.

Setting it, step by step

1. Choose FREQ: 30 Hz for sub weight, 60 Hz for a kick or a bass, 100 Hz for a voice or warmth.
2. Turn up BOOST until the bottom has the weight you want (about 5 to 7).
3. Bring up ATTEN slowly, keeping it **2 to 3 steps under** BOOST. Listen to the low mids clear.
4. Stop before the bass loses its body. If the lift has gone, ATTEN is too close to BOOST: lower it a step, or raise BOOST.
5. Turn on AUTO GAIN, or match with OUTPUT, and compare with EQ OUT.

The dip sits higher than some descriptions of the trick suggest: around 450–550 Hz at 60 Hz with moderate settings, and higher at 100 Hz. Passive EQ's curves follow published measurements of the hardware's network, so trust your ears more than a rule of thumb.

> **Tip:** ready-made low-end tricks: *Drums* ▸ *Kick Weight*, *Bass* ▸ *Bass Low-End Trick*, *Bass* ▸ *Synth Sub Weight*, *Vocals* ▸ *Broadcast Voice*, *Mix Bus* ▸ *Mud Cleanup*, *Mastering* ▸ *Master Low-End Trick* and, for sound design, *Creative FX* ▸ *Extreme Trick*.

Working by ear

Passive EQ's face has no curve screen and no meters, as the hardware had none. That keeps your attention on the sound. A few habits make it easy.

Compare at equal loudness

A louder sound nearly always seems better, and Passive EQ's boosts add level. Before you judge a change:

- turn AUTO GAIN on: it takes off what the curve adds, so EQ IN / OUT compares tone, not level; or
- set OUTPUT by ear so IN and OUT sound equally loud, checking with your DAW's level or loudness meter if you like.

Each factory preset's OUTPUT was already fitted to its material, so switching presets changes the tone, not the level.

Levels and the amplifier

The curves don't depend on level, but the amplifier does: on a hot track DRIVE colours more, on a quiet one less. If a preset sounds too driven, lower DRIVE or the level going in. Passive EQ has no input level control; use your DAW's clip gain or the plugin before it.

Where to put it

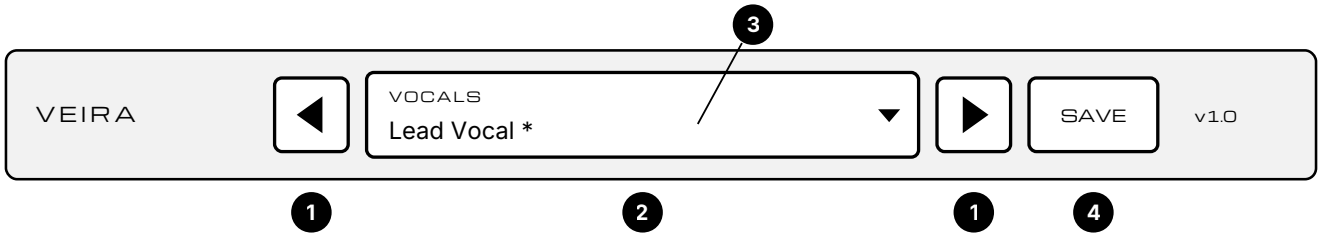
Passive EQ works on mono and stereo tracks, buses and the master. On a stereo track both channels get the same curve. Because its latency (64 samples at 44.1 to 96 kHz) is constant and reported, your DAW keeps everything in time, including when you bypass it.

Presets

VEIRA Passive EQ comes with **63 factory presets** in 12 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 Passive 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 Passive EQ/<Folder>/
Windows	%APPDATA%\VEIRA\VEIRA Passive 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

Folder	Presets
Default	Init
Drums	Kick Weight, Snare Snap, Snare Body, Overhead Air, Dark Room, Drum Bus Glue
Bass	Bass Low-End Trick, Round DI, Pick Bass Attack, Synth Sub Weight, Upright Wood, Driven Bass Growl
Guitar	Acoustic Sparkle, Acoustic Warmth, Clean Chime, Electric Bite, Heavy Rhythm Tight
Keyboards	Piano Warmth, Bright Pop Piano, E-Piano Glow, Organ Drive, Pad Air
Strings	Violin Silk, Cello Warmth, Section Air, Bow Bite, Pop Strings Lift
Brass	Trumpet Mellow, Horn Section Punch, Trombone Weight, Bright Horn Stabs, Soft Brass Warmth
Woodwinds	Sax Warmth, Sax Edge, Flute Breath, Clarinet Wood, Soft Flute
Vocals	Female Vocal Air, Silky Vocal Top, Warm Male Vocal, Vocal Presence, Pop Vocal Sheen, Broadcast Voice
Mix Bus	Mix Bus Sheen, Bus Warmth, Rock Bus, Gentle Smile, Mud Cleanup, Vocal Bus Polish
Mastering	Master Air, Master Low-End Trick, Warm Master, Club Master Polish, Hip-Hop Weight, Acoustic Master, Rock Master
Creative FX	Telephone, Old Radio, Full Amp Drive, Extreme Trick, Air Lift, Next Room

Levels matter for DRIVE. The curves don't depend on level, but the amplifier does. The presets were set for tracks peaking at −8 dBFS, close drums and buses at −4 and premasters at −3: on hotter tracks DRIVE colours more, on quieter ones less. Each preset's OUTPUT was fitted so its material comes out as loud as it went in (every preset outside Creative FX within 0.05 dB; *Creative FX ▸ Telephone* comes out 0.7 dB quieter with OUTPUT at its +12 dB limit), so switching presets changes the tone, not the level. AUTO GAIN is off in the presets.

Recipes

Step-by-step starting points. Compare each with EQ OUT, and with your DAW's bypass.

Weight without mud on a bass

1. Load **Bass ▸ Bass Low-End Trick**: FREQ 60 Hz, BOOST 6, ATTEN 3, DRIVE 25 %.
2. Try FREQ at 30 Hz for a deeper, sub-heavy bass, or 100 Hz for a thicker one.
3. Raise ATTEN until the low mids clear, keeping it 2 to 3 steps under BOOST; stop before the bass thins.

A kick with weight and click

1. Load **Drums ▸ Kick Weight**: the low-end trick at 60 Hz (6.5 and 3.5) and a little high boost at 3 kHz.
2. Step the high FREQ between 3 and 5 kHz to find the beater.
3. BOOST sets the weight; keep ATTEN three steps under it.

A silky vocal top

1. Load **Vocals ▸ Silky Vocal Top** (the high boost at 10 kHz, dial 4, with HIGH ATTEN at 10 kHz, dial 3, DRIVE 20 %).
2. For a brighter voice, move the high FREQ to 12 or 16 kHz and turn BANDWIDTH towards BROAD.
3. If the S sounds get louder, add a little more HIGH ATTEN or a de-esser after Passive EQ.

A warm mix bus

1. Load **Mix Bus ▸ Bus Warmth** or **Mix Bus Sheen**.
2. Set DRIVE by ear between 15 and 40 %: it sets how much density and glue you get.
3. Switch EQ OUT and IN to check the curve alone, then compare with your DAW's bypass for the amplifier.

The low-end trick on a master

1. Load **Mastering ▸ Master Low-End Trick**: FREQ 30 Hz, BOOST 3, ATTEN 1.5, DRIVE 10 %.
2. Check it on full-range monitors or good headphones: the change is below 60 Hz and a dip around the low mids.
3. For more weight on hip-hop or club material, try **Hip-Hop Weight** or **Club Master Polish**.

An old radio voice

1. Load **Creative FX ▸ Old Radio** or **Telephone**.
2. Raise DRIVE for more grit; step the high FREQ to move the honk; HIGH ATTEN sets how old it sounds.

Specifications

Type	Passive tube program equalizer with its make-up amplifier and output transformer, in the tradition of the passive program EQs of the 1950s
Channels	Mono and stereo
LOW FREQUENCY	FREQ 20, 30, 60, 100 Hz (default 60); BOOST 0 to 10 (13.5 dB); ATTEN 0 to 10 (−17.5 dB)
HIGH FREQUENCY	FREQ 3, 4, 5, 8, 10, 12, 16 kHz (default 10); BOOST 0 to 10 (18 dB); BANDWIDTH Q 2.2 to 0.45 (default 0.99)
HIGH ATTEN	ATTEN SEL 5, 10, 20 kHz (default 10); ATTEN 0 to 10 (−16 dB)
AMPLIFIER	DRIVE 0 to 100 % (default 0 %, clean); OUTPUT −12 to +12 dB (default 0.0 dB)
Switches	AUTO GAIN on / off (default off); EQ in / out (default in); PILOT lamp
Dials	Linear in dB (5 = half the range); type dB (“6 dB”) or a dial position (“4.5”)
Processing	4x oversampled (2x at 88.2 / 96 kHz, 1x at 176.4 / 192 kHz); curves within 0.023 dB of their analog shape from 20 Hz to 20 kHz
Latency	64 samples at 44.1 to 96 kHz (1.3 ms at 48 kHz); none at 176.4 and 192 kHz; constant and reported to the host; the DAW’s bypass is delayed by the same amount
Flat	With every dial at 0 and DRIVE at 0 %: the input, delayed, bit for bit
Display and metering	None: knobs and switches only; AUTO GAIN’s correction is shown while it is on
Presets	63 factory presets in 12 folders, plus your own
Window	1440 × 720 points; resizable from 75 % to 200 %, saved with the session
Formats	VST3, Audio Units, standalone; AAX once signed
Plugin ID	Manufacturer Veir, plugin Vpas

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 Passive 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**.

Where is the curve, or the meters? There are none: the face is knobs and switches only, as the hardware had. Use your ears, AUTO GAIN for fair comparisons, and your DAW's meters for levels. If you want a curve screen and meters with these curves, VEIRA EQ Gold has them.

A frequency knob looks grey. Its section is at 0, so it does nothing yet. Turn up the section's dial and the knob lights.

I boosted and attenuated the same low frequency and the lift disappeared. ATTEN is too close to BOOST. A step of ATTEN is worth more than a step of BOOST, so equal dials nearly cancel at the bottom. Keep BOOST 2 to 3 steps above ATTEN. See *The low-end trick*.

The low end got louder but muddier. Add ATTEN at the same FREQ (the low-end trick), 2 to 3 steps under BOOST.

Everything sounds better with Passive EQ in. Is it? Probably louder. Turn AUTO GAIN on, or match with OUTPUT, and compare again.

I hear distortion on loud parts. DRIVE is high, or a big low boost is driving the amplifier hard. Lower DRIVE, or lower the level going into Passive EQ.

Does Passive EQ add latency? 64 samples at 44.1 to 96 kHz (1.3 ms at 48 kHz), none at 176.4 and 192 kHz. It is always the same and your DAW compensates for it automatically.

How do I type an exact value? Right-click the knob (Control-click on a Mac), type the number and press Return: dB ("6 dB") or a dial position ("4.5").

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

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



VEIRA Passive EQ · User Manual · Version 0.1.0

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

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