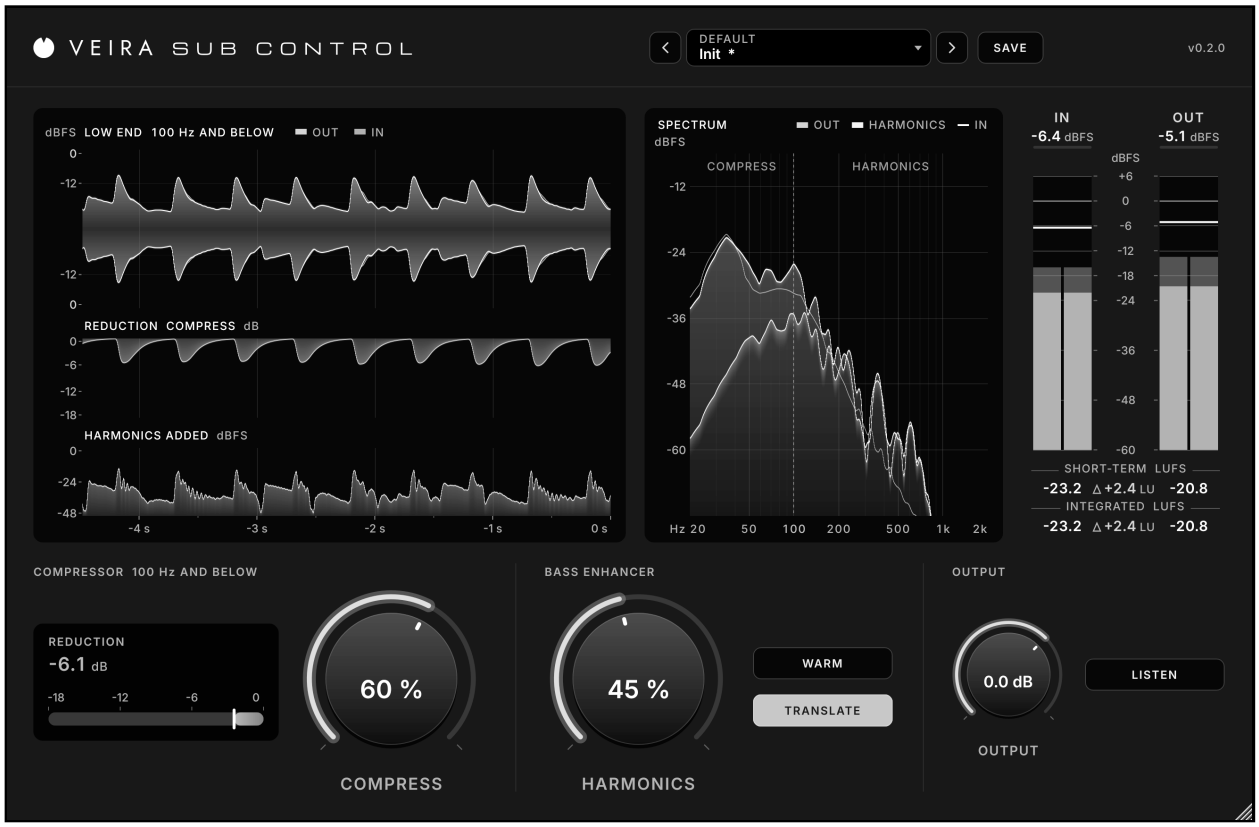
VEIRA

LOW-END CONTROLLER

VEIRA Sub Control

User Manual

A one-knob compressor for 100 Hz and below, next to a bass enhancer that adds harmonics, so your low end sits at one level and still carries on phones and laptops.



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
Using the controls 7
How low end works 9
What we call the low end 9
Why the low end is uneven 9
Why small speakers miss the bass 9
Harmonics: the bass you hear without the bass 10
Two kinds of harmonics 11
What happens inside VEIRA Sub Control 12
Controls 13
COMPRESS and the REDUCTION meter 13
HARMONICS, WARM and TRANSLATE 16
OUTPUT and LISTEN 18
Displays 19
LOW END 19
SPECTRUM 21
The meter bridge (IN | OUT) 22
Presets 24
The preset browser 24
The preset menu 24
Saving your own presets 24
Presets in your DAW 25
The factory folders 25
Recipes 26
Even out a bass line 26
Make an 808 heard on phones 26
Tame a boomy acoustic guitar or piano 26
Glue the low end of a mix 26
Grit and weight on a kick 26
Specifications 27
Troubleshooting and questions 28

Welcome

Thank you for choosing **VEIRA Sub Control**. It does two jobs that almost every low end needs, and only those two, on one simple panel:

- COMPRESS evens out the low end. Loud bass notes come down, quiet ones come up, and the usual level stays where it was. It works on 100 Hz and below only, so the click of a kick, the pick of a bass and everything else above it pass untouched.
- HARMONICS adds harmonics of the low end, in two styles: WARM, a tube-like saturation for weight and grit, and TRANSLATE, which adds the exact harmonics that let phones, laptops and earbuds, which can't play the sub at all, still carry the bass line.

Three displays show what happens: the **LOW END** display draws the lows over time with how much COMPRESS turned them down and how loud the harmonics are, the **SPECTRUM** shows the lows and the added harmonics by frequency, and the meter bridge measures level and loudness.

What makes it different

- **One knob that does the same on any track.** COMPRESS follows the low end's own level, so 40 % does the same job on a quiet bass at −26 dBFS as on a loud one at −6 dBFS. There is no threshold to set.
- **Only the lows.** The compressor listens to 100 Hz and below and only turns that range up or down. A loud hi-hat or vocal never moves it.
- **Bass that survives small speakers.** TRANSLATE adds the exact 2nd to 5th harmonics of the sub, placed so they don't pile onto its peaks, so the bass line is heard where the sub itself can't be played.
- **Zero latency.** Nothing is delayed, so it works on live inputs and while tracking.
- **Transparent at rest.** At COMPRESS 0 % and HARMONICS 0 % the output is the input, bit for bit.
- **A clean, legible face.** Large knobs with the value in their middle, text you can read at a glance, values you can type, and a window you can scale from 75 % to 200 %.

How this manual is organised. *Getting started* covers installing and activating. *The panel at a glance* names every part of the window. *How low end works* is a short primer on bass, small speakers and harmonics; read it if you've ever wondered why your 808 vanishes on a phone. *Controls* explains each knob with drawings of what it does, *Displays* teaches you to read the displays, and *Presets*, *Recipes*, *Specifications* and *Troubleshooting* follow.

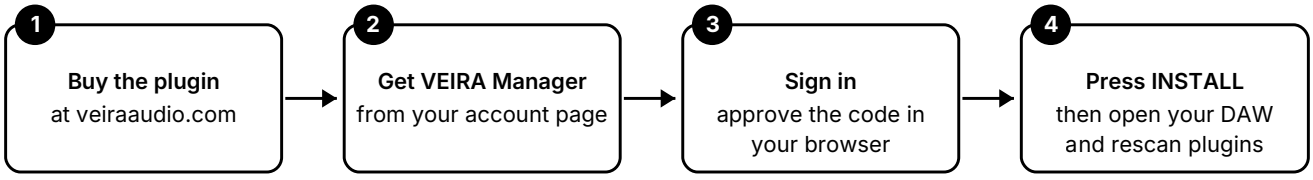
Getting started

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.

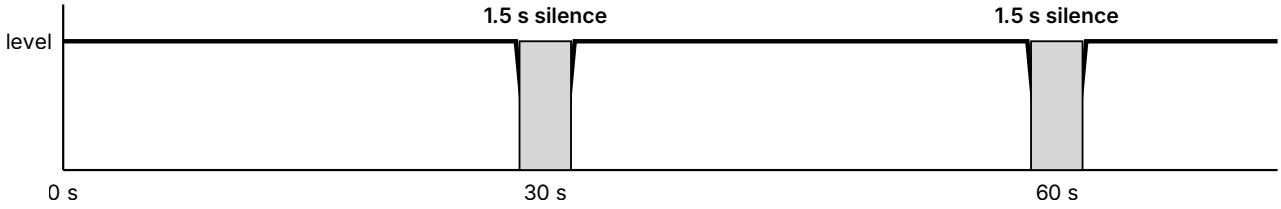
1. **Buy** VEIRA Sub Control at **veiraaudio.com**. It's a one-time purchase: you own it for good, with free updates.
2. **Download VEIRA Manager** from your account page (or veiraaudio.com/manager) and install it.
3. **Sign in.** VEIRA Manager shows a short code and opens your browser; confirm the code there. Your password is never typed into the app.
4. Find VEIRA Sub Control 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 Sub Control appears in your DAW under the manufacturer **VEIRA** (in Logic Pro: Audio Units ▸ VEIRA ▸ VEIRA Sub Control).

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 Sub Control 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.



Without a licence: short silences every 30 s, faded in and out so nothing clicks.

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 Sub Control. 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 Sub Control 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

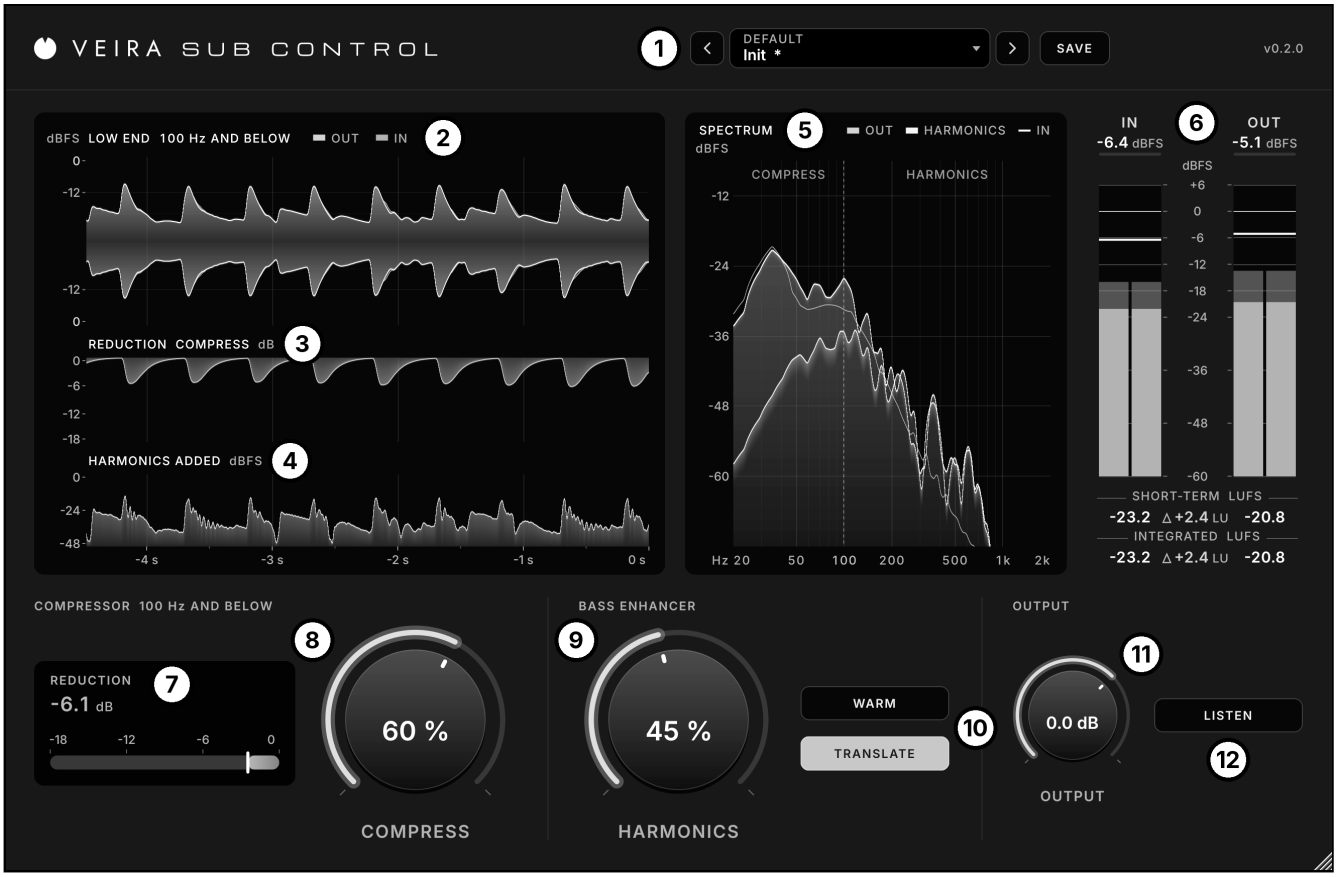


FIGURE 3 VEIRA Sub Control on a bass line, with COMPRESS at 60 % and HARMONICS at 45 % in the TRANSLATE style.

The window has three areas: the **LOW END** display and the **SPECTRUM** across the top, the **meter bridge** at the right, and the controls along the bottom in three groups: COMPRESSOR 100 Hz AND BELOW with the REDUCTION meter, BASS ENHANCER and OUTPUT.

	Part	What it does
1	Preset browser	Steps through and saves presets. See *Presets*.
2	LOW END	The lows (100 Hz and below) over the last 4 seconds, in and out.
3	REDUCTION lane	How much COMPRESS turns the lows down, over time.
4	HARMONICS ADDED lane	How loud the added harmonics are, over time.
5	SPECTRUM	The lows and the harmonics by frequency, 20 Hz to 2 kHz.
6	Meter bridge	Input and output level and loudness.
7	REDUCTION meter	A bar showing how much the lows are turned down right now.
8	COMPRESS	How much the low end is evened out.

	Part	What it does
9	HARMONICS	How much of the harmonics is added.
10	WARM / TRANSLATE	The style of the harmonics.
11	OUTPUT	The level going out.
12	LISTEN	Hear only the lows and the harmonics.

Using the controls

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

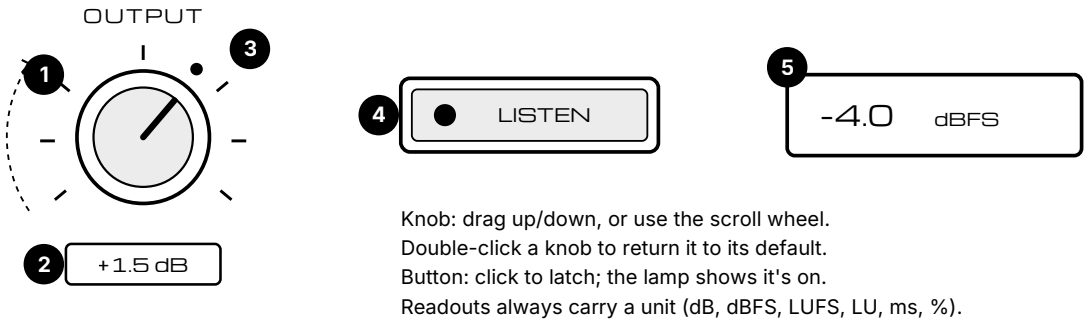


FIGURE 4 The parts you'll find on every VEIRA panel (the labels are examples).

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

- **Knobs** show their value **in their middle**, and a lit ring (blue on screen; in print, the lighter arc) shows how far each is turned. Drag, use the wheel, or double-click (or Alt/Option-click) for the default, as on every VEIRA knob.

- **Type a value:** right-click a knob (Control-click on a Mac). A field opens over the knob with the current value; type the new one and press Return. The number is enough: **40** for COMPRESS, **-1.5** for OUTPUT. Press Escape or click elsewhere to leave it unchanged.
- **Buttons** have no lamps: the selected style, WARM or TRANSLATE, is filled (orange on screen; in print, the solid, lighter button), the other is dark with an outline. LISTEN is filled the same way while it is on.
- **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 displays and the text stay sharp. Your DAW saves the size with the session.

How low end works

If you already know why bass disappears on a phone, skip to *What happens inside*. If not, the next pages explain the two problems Sub Control solves: an uneven low end, and a low end that small speakers can't play.

What we call the low end

The **low end** is roughly everything below 100–150 Hz: the fundamentals of the kick drum, the bass guitar, the 808 and synth basses, the lowest piano and organ notes, the tuba and the double bass. The lowest note of a four-string bass, E1, is about 41 Hz; a typical 808 sits between 40 and 60 Hz. Above that, from about 100 to 300 Hz, is where these instruments have their body and their first harmonics.

The low end carries most of a mix's energy. That's why it's so hard to control: a bass note that is a few dB louder than the others pushes the whole mix, and a bass note that is a few dB quieter leaves a hole.

Why the low end is uneven

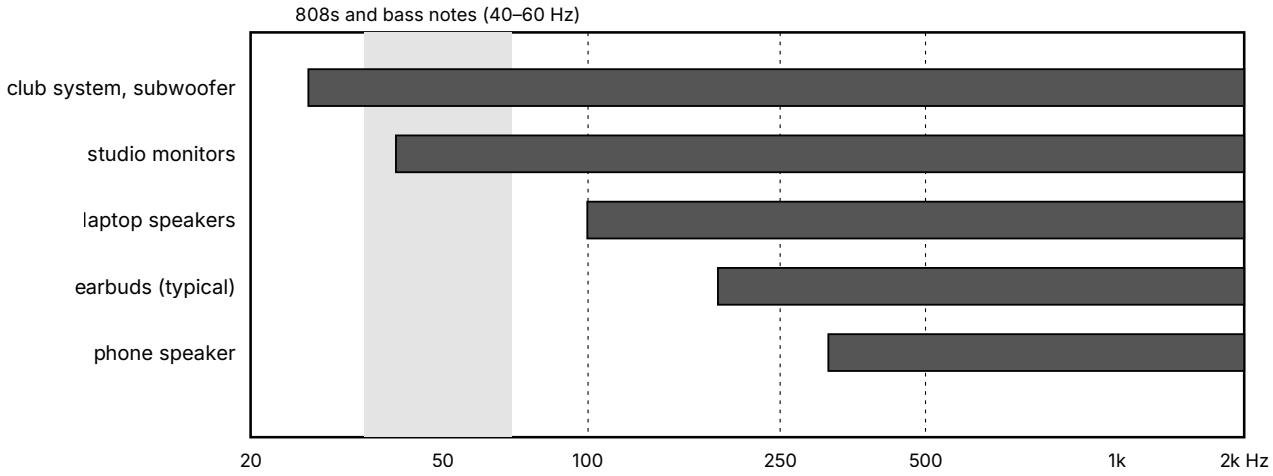
A bass line is rarely even in level, for reasons that have nothing to do with the player:

- **Rooms and instruments resonate.** Some notes ring louder than others because the instrument's body, the cabinet or the room boosts them. On an acoustic bass or a cello one note may jump out by 6 dB.
- **Playing varies.** Fingers dig in harder on some notes; a kick drum is hit harder on the downbeat.
- **Synths and 808s change pitch.** A low 808 note and a high one can have very different weight, and sub drops swell and fade as they slide.

An ordinary compressor can even this out, but it hears the whole signal: a loud snare in the overheads or the pick attack of a bass sets it off just as much as the bass note itself. Sub Control's COMPRESS listens to the lows alone and turns the lows alone up or down.

Why small speakers miss the bass

Every speaker has a lowest frequency it can play at a useful level. Big studio monitors and club systems reach down to 30–40 Hz; small speakers simply can't move enough air to play low notes.



Roughly where each kind of speaker starts to play at a useful level (typical values; every model differs).

FIGURE 5 Small speakers start far above the sub. On a phone, an 808 at 45 Hz is simply not reproduced.

On a phone or a laptop, a sine-like sub bass or an 808 doesn't get quieter: **it disappears**. A clean synth bass with little above its fundamental vanishes the same way. And a large share of music is heard exactly there: on phones, laptops, earbuds, smart speakers and car systems with small door speakers.

Harmonics: the bass you hear without the bass

Almost every musical note is made of a **fundamental**, the frequency of the note itself, plus **harmonics** at whole-number multiples of it: twice, three times, four times the fundamental, and so on. A bass note at 55 Hz (the A an octave below the bass's open A string) has harmonics at 110, 165, 220 and 275 Hz.

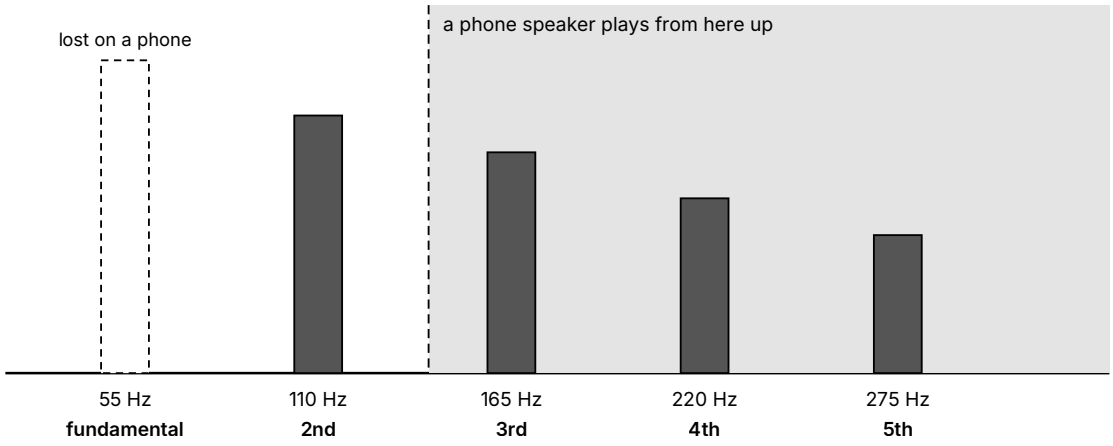


FIGURE 6 A 55 Hz bass note and its harmonics. The fundamental (dashed) is below what a phone can play; its harmonics are not.

Here is the useful part. When your ear hears a set of harmonics, 110, 165, 220 and 275 Hz, all spaced 55 Hz apart, your brain fills in the note they belong to and you **hear the pitch of 55 Hz**, even when there is no 55 Hz at all. This is called the **missing fundamental** (or *phantom fundamental*), and it's why you can follow a bass line on a phone with a weak bass: you are hearing its harmonics and your brain is doing the rest.

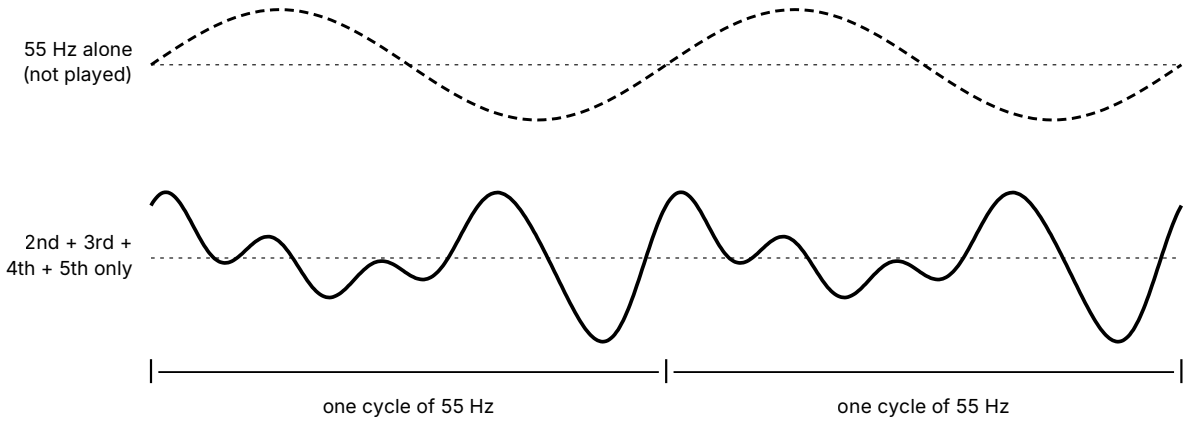


FIGURE 7 The harmonics on their own (solid) repeat exactly once per cycle of the missing 55 Hz note (dashed). The ear hears that repeat as the bass note.

So the cure for bass that disappears is not more bass, which a small speaker can't play anyway, but **harmonics of the bass** in the range it *can* play. That is what HARMONICS adds. On full-range speakers you still hear the real sub; on small ones, the harmonics carry the line.

Two kinds of harmonics

There are two ways to make harmonics, and Sub Control offers both:

- **Saturation (WARM)** bends the waveform, as a tube amplifier or tape does when pushed. It adds a whole family of harmonics, even and odd, that fade off as they go up. It changes the *tone*: thicker, warmer, grittier, the way a bass sounds through a driven amp. Pushed hard, it growls.
- **Exact harmonics (TRANSLATE)** builds the 2nd, 3rd, 4th and 5th harmonics of the sub directly, at set levels, and nothing else. It is the cleanest way to make a sub audible on small speakers: it adds the pitch cues the ear needs without distorting the sound.

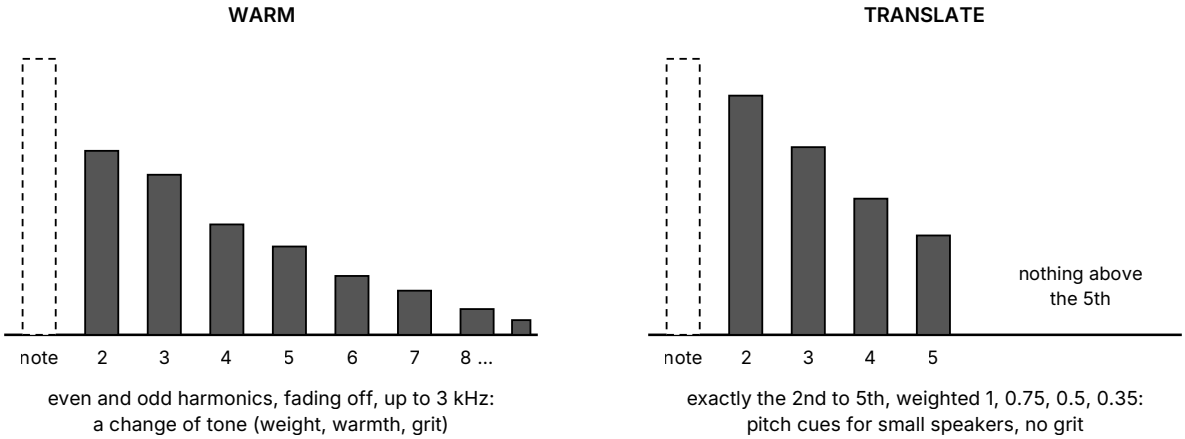


FIGURE 8 What each style adds above a bass note (dashed: the note itself, which neither style changes). Heights are illustrative.

What happens inside VEIRA Sub Control

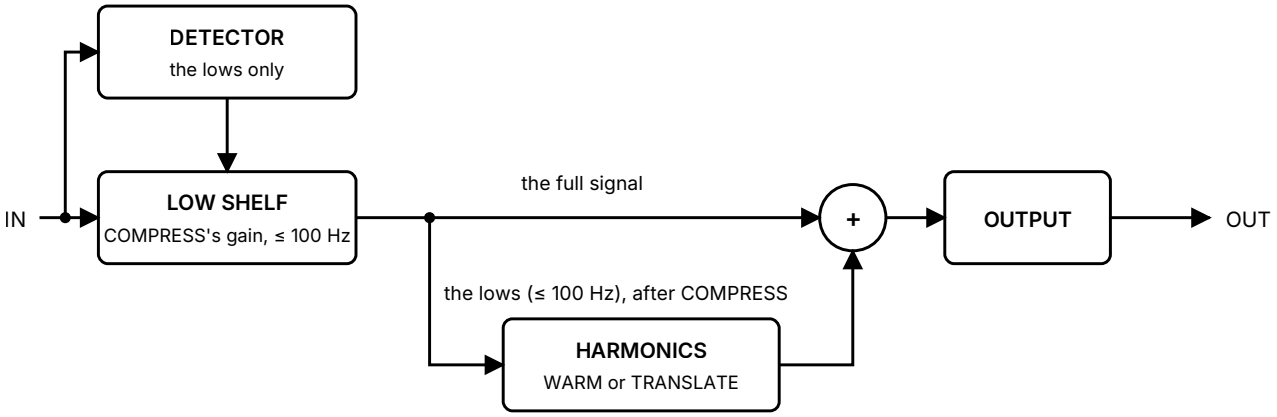


FIGURE 9 Signal flow. The detector measures the lows alone; a low shelf turns only the lows up or down; harmonics are made from the evened-out lows and added to the full signal; then OUTPUT. LISTEN lets you hear just the lows and the harmonics.

1. **The detector** listens to everything at 100 Hz and below (through a 24 dB per octave filter), with both channels linked, so the stereo image never shifts. Nothing above 100 Hz can move the gain: loud 1 kHz bursts over a steady 45 Hz tone change its gain by less than 0.001 dB.
2. **A low shelf** applies the gain: the full change below about 60 Hz, most of it at 100 Hz, almost nothing an octave above and nothing from 400 Hz up. So COMPRESS changes the lows and leaves the rest of the sound alone.
3. **The harmonics** are made from the lows *after* COMPRESS, so they are as even as the lows are, and added to the full signal. Neither style changes the note itself.
4. OUTPUT sets the final level.

There is **no latency**: nothing is delayed, so Sub Control can sit on a live input or be used while recording, and your DAW's own bypass is exact.

Controls

COMPRESS and the REDUCTION meter

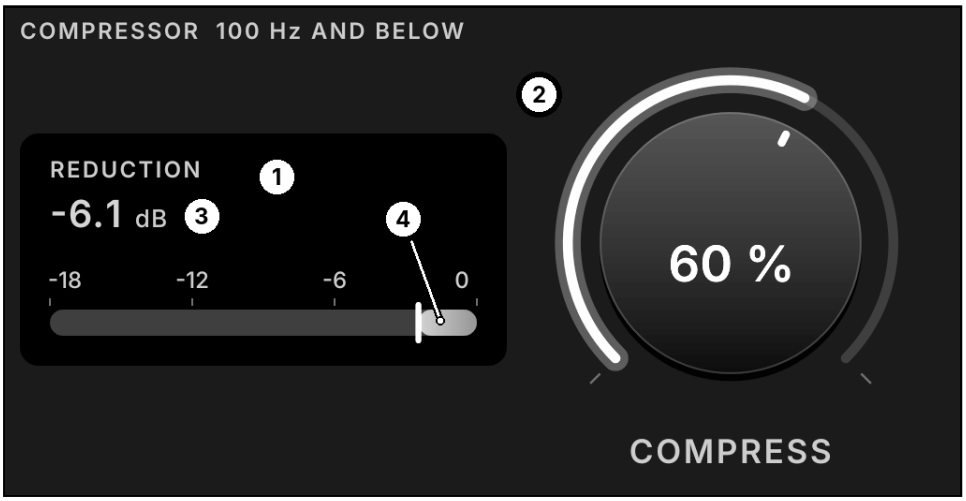


FIGURE 10 The section COMPRESSOR 100 Hz AND BELOW: 1 the REDUCTION meter with 3 its readout and 4 its bar, and 2 COMPRESS.

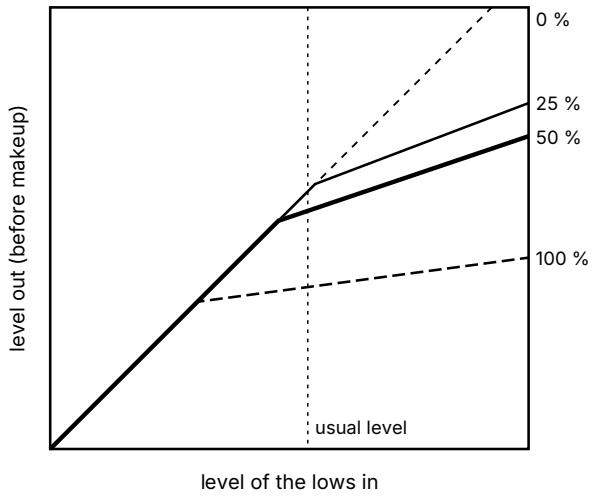
Control	Range	Default	
COMPRESS	0 to 100 %	30 %	How much the low end (100 Hz and below) is evened out.

COMPRESS is a complete low-end compressor on one knob. Turn it up and loud low notes come down, quiet ones come up, and the usual level of the lows stays where it was.

How it decides what "loud" is. A normal compressor needs a threshold in dBFS, and the right value depends on how loud your track is. COMPRESS doesn't: it keeps track of the lows' own **usual level**, their average over the last couple of seconds (ignoring decays and silences, which would pull it down), and works around that. So the same setting does the same job on a quiet track and a loud one: the same bass line at −26 and at −6 dBFS gets the same gain changes, within 0.002 dB.

What the knob moves. As you turn COMPRESS from 0 to 100 %, two things happen together:

- the **threshold** moves from 4 dB *above* the usual level down to 10 dB *below* it, so more and more of each note is compressed;
- the **ratio** rises from 1:1 (no compression) to 8:1, with a soft knee 6 dB wide.



COMPRESS sets both:

0 %: ratio 1:1, nothing happens

50 %: threshold 3 dB under the usual level, ratio 4.5:1

100 %: threshold 10 dB under, ratio 8:1

Then the makeup gives back what a note at the usual level lost, so quiet notes come up and the average level stays the same.

FIGURE 11 The compressor curve at different COMPRESS settings, drawn against the lows' usual level (illustrative, soft knee not drawn). Higher settings bend lower and flatter.

Makeup is automatic. What a note at the usual level is turned down by is given back, so COMPRESS evens the lows out *without making them quieter*: on a bass line, the average level moves by 0.002 dB at 70 %. The result is that loud notes come down and quiet notes come up toward the middle.

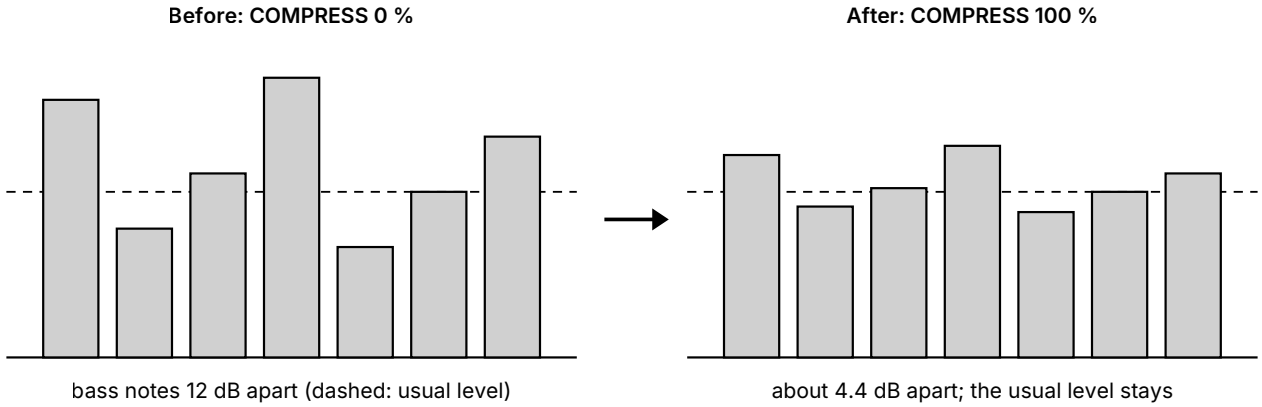


FIGURE 12 On a bass line whose notes vary by 12 dB, COMPRESS 50 % leaves 7.3 dB of variation and 100 % leaves 4.4 dB.

Timing is built in. The gain moves down in 25 ms (attack) and back up in 100 ms (release): slow enough to follow a 30 Hz waveform cleanly, fast enough to let the next note through. There is no lookahead, which is what keeps the latency at zero, so, as with any compressor, the first few milliseconds of a note pass at the gain the lows had just before it. After a decay the lows have been turned up, so at high settings a note's start can be a little louder than its body (on a bass line at 60 %, by about 2 dB on average).

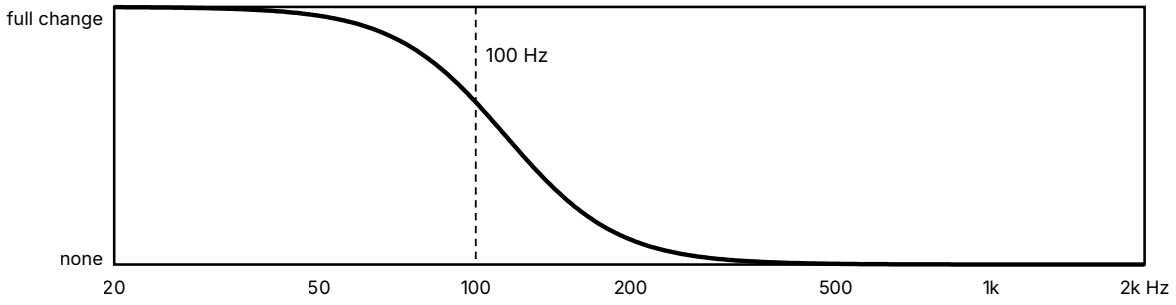
How it sounds and typical settings.

- **15–30 %:** gentle levelling for mix buses and masters; the factory Mastering presets sit at 15–25 %.
- **30–50 %:** natural, steady low end on bass, keys, cellos, low brass and vocals.
- **50–70 %:** firm control for uneven basses and kicks.
- **100 %:** a flattened, wall-of-sub effect (*Creative FX* ▸ *Sub Flattener*).

> **Tip:** On 808s and kicks, keep COMPRESS under about 50 %, or follow Sub Control with a limiter. Because the tail of a kick or 808 is quieter than its hit, COMPRESS turns it up like any quiet part: the boom gets longer and the start of each hit can peak higher. Sometimes that's exactly the fuller sustain you want; if not, lower COMPRESS.

Things worth knowing.

- **The usual level moves slowly, on purpose,** so a few loud notes don't drag it. After a big jump in the lows (a quiet intro, then a loud chorus), COMPRESS works harder for the first several seconds of the new part.
- **Silence is left alone.** The makeup fades out between 40 and 50 dB under the usual level, so silence and the very ends of tails are not lifted. Nothing is applied until the lows' level is known, so the first note after you load the plugin isn't lifted either.
- **Only the lows are touched.** The gain is applied by a low shelf: the full change below about 60 Hz, most of it at 100 Hz, almost nothing an octave higher and nothing from 400 Hz up.



How much of COMPRESS's gain change reaches each frequency (approximate shape)

FIGURE 13 The low shelf that applies COMPRESS. Kick clicks, bass pick noise and everything above the lows stay untouched.

The REDUCTION meter

1 The REDUCTION meter shows how much the lows are being turned down right now. 4 Its bar (red on screen; in print, the block to the right of the white marker) grows from the right-hand end, 0 dB (nothing taken off), towards the left, on a scale marked 0, −6, −12 and −18 dB. It moves like the needle of a VU meter, smoothly and with a little weight, so it shows the musical feel of the compression rather than every millisecond. 3 The number above it (-6.1 dB in the picture) is the most the lows were turned down over the last quarter-second, so it usually reads a little more than the bar.

Because COMPRESS also *turns quiet notes up* (the makeup), the meter shows only half the story: it grows on loud notes and falls back to 0 between them. The REDUCTION lane on the LOW END display shows the same thing over time. See *Displays*.

How much is right? On a bass line the bar typically swings a few dB on the loudest notes. The Bass presets average about 1.5–4.5 dB of reduction while the bass plays, with peaks around 3–10 dB.

HARMONICS, WARM and TRANSLATE

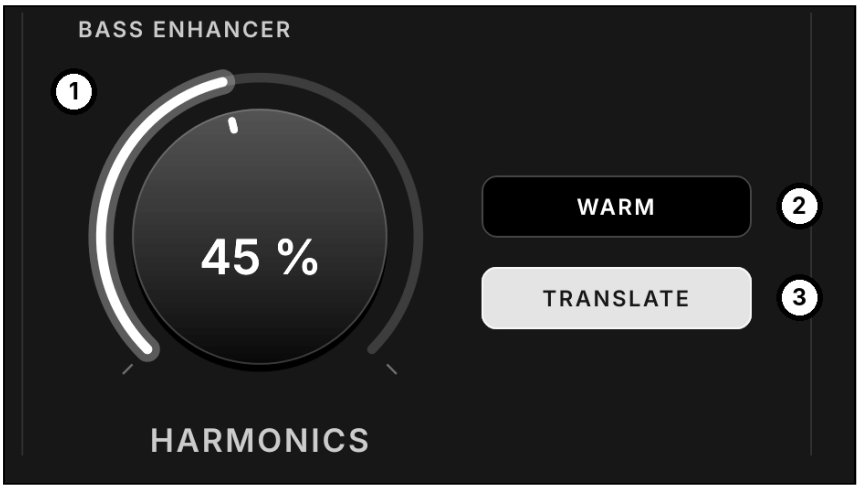


FIGURE 14 The BASS ENHANCER section: 1 HARMONICS, 2 WARM and 3 TRANSLATE (filled: selected).

Control	Range	Default	
HARMONICS	0 to 100 %	20 %	How much of the harmonics is added. 0 % adds none.
WARM / TRANSLATE	one or the other	WARM	The style of the harmonics.

HARMONICS sets how much of the harmonics is added; the two buttons choose which kind. Exactly one is always selected, and it is filled. Switching between them crossfades over 20 ms, so you can switch while the music plays.

Both styles share important behaviour:

- **They are made from the lows only** (100 Hz and below, after COMPRESS). Guitars, vocals and cymbals never get harmonics.
- **They don't change the note itself.** The harmonics are *added* above the bass note; the note keeps its level (within 0.02 dB from 30 to 95 Hz).
- **They don't depend on level.** The same setting gives the same amount on a quiet track and a loud one.
- **They are clean.** Because only the band under 100 Hz is processed, there is no aliasing: on a loud 95 Hz tone through WARM at 100 %, everything else stays more than 115 dB down.

WARM

WARM saturates the lows like a tube: an asymmetric soft curve that adds even and odd harmonics, then filtered to stay under 3 kHz. It adds weight, warmth and, at higher settings, grit.

- **At 100 %** the harmonics together sit about 10 dB under the lows; on a 55 Hz tone the 2nd harmonic is 12.1 dB and the 3rd 14.2 dB below the note.
- **8–15 %:** a touch of warmth. **20–30 %:** weight. **35–50 %:** grit. **80–100 %:** fuzz and growl (*Creative FX ▸ Bass Fuzz Grind*).
- Like any saturation, it raises the peaks of a note a little: up to about 0.9 dB at 25 % and 3 dB at 100 %.

Use it on bass guitars, kicks, low synths, low strings and brass, and anything with a low end that sounds cold or thin.

TRANSLATE

TRANSLATE adds the exact 2nd, 3rd, 4th and 5th harmonics of the sub, and nothing else: the pitch cues that let phones, laptops and earbuds carry a bass line they can't play. It follows the pitch of the note, and adds no new sub of its own (it is filtered above 60 Hz).

- **At 100 %** the harmonics together are as loud as the lows. The four harmonics are weighted 1, 0.75, 0.5 and 0.35 (the 2nd strongest).
- **Peaks stay under control.** Each harmonic is set to a fixed phase against the note, chosen so the harmonics don't pile onto the note's peaks. On steady 28–96 Hz notes the peak rises by at most 0.2 dB at 25 % and 3 dB at 100 % (in phase, it would be 3.3 and 9.2 dB). Where the pitch falls fast, like the start of an 808, or the note is already distorted, the alignment is looser and the peak can rise more (about 1.7 dB at 25 % in an 808's first 40 ms).
- **On a phone-sized speaker** the Small Speakers presets make the part 3.6 to 9.1 dB louder.

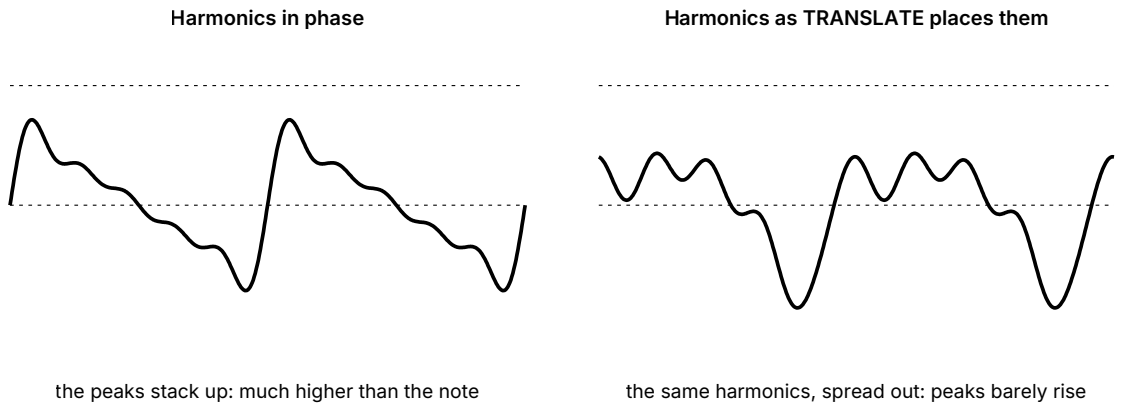


FIGURE 15 The same note with the same harmonics at the same levels, in two phase arrangements (illustrative). TRANSLATE chooses phases that keep the peak low, so you gain small-speaker reach without losing headroom.

Typical settings. 8–20 % on masters and mix buses (*Mastering* ▸ *Master Sub Translate*), 20–35 % on 808s and synth basses, 35–50 % for strong reach, and up to 75 % or more for bass guitars and clean basses that must read on phones (*Small Speakers* ▸ *Bass Guitar Reach*). At 100 % it blooms like an added octave layer (*Creative FX* ▸ *Bass Octave Bloom*).

> **Tip:** Set TRANSLATE while listening on the speaker you care about: your phone, your laptop's speakers or a pair of earbuds. On studio monitors the harmonics can sound like too much long before they're enough on a phone. Then check back on the monitors that the low end hasn't turned buzzy.

WARM or TRANSLATE?

You want	Choose
The bass to sound warmer, fuller, thicker, grittier	WARM
A driven, amp-like or fuzzy low end	WARM, higher settings
An 808 or sub to be heard on phones and laptops	TRANSLATE

You want	Choose
A clean synth bass or sine sub to read in a mix	TRANSLATE
The master's low end to translate, without colour	TRANSLATE, low settings

OUTPUT and LISTEN

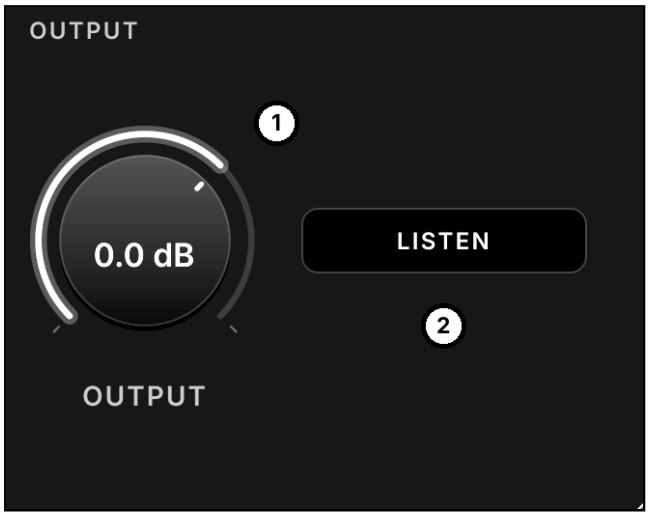


FIGURE 16 The OUTPUT section: 1 OUTPUT and 2 LISTEN (off).

Control	Range	Default	
OUTPUT	−24 to +12 dB	0.0 dB	The level going out, in 0.1 dB steps.
LISTEN	on / off	off	Hear only the lows (100 Hz and below) and the harmonics.

OUTPUT

OUTPUT sets the final level. Because COMPRESS keeps the usual level and the harmonics don't change the note, Sub Control rarely changes loudness much, but added harmonics do add a little energy, and both COMPRESS and HARMONICS can raise peaks. Use the Δ readings on the meter bridge to level-match before you compare with bypass. The factory presets are already trimmed: each one changes the level against bypass by at most 0.22 dB (K-weighted).

LISTEN

LISTEN plays only what Sub Control works on: the lows, 100 Hz and below, plus the harmonics it adds. Use it to:

- hear how even the low notes are while you set COMPRESS;
- hear exactly what WARM or TRANSLATE adds, and set HARMONICS;
- find out what's actually in a track's low end (rumble, boom, a note that rings).

LISTEN crossfades in and out over 20 ms, and it is a **listening aid**: it switches itself off for offline bounces, so it can never end up in an export.

Displays

LOW END

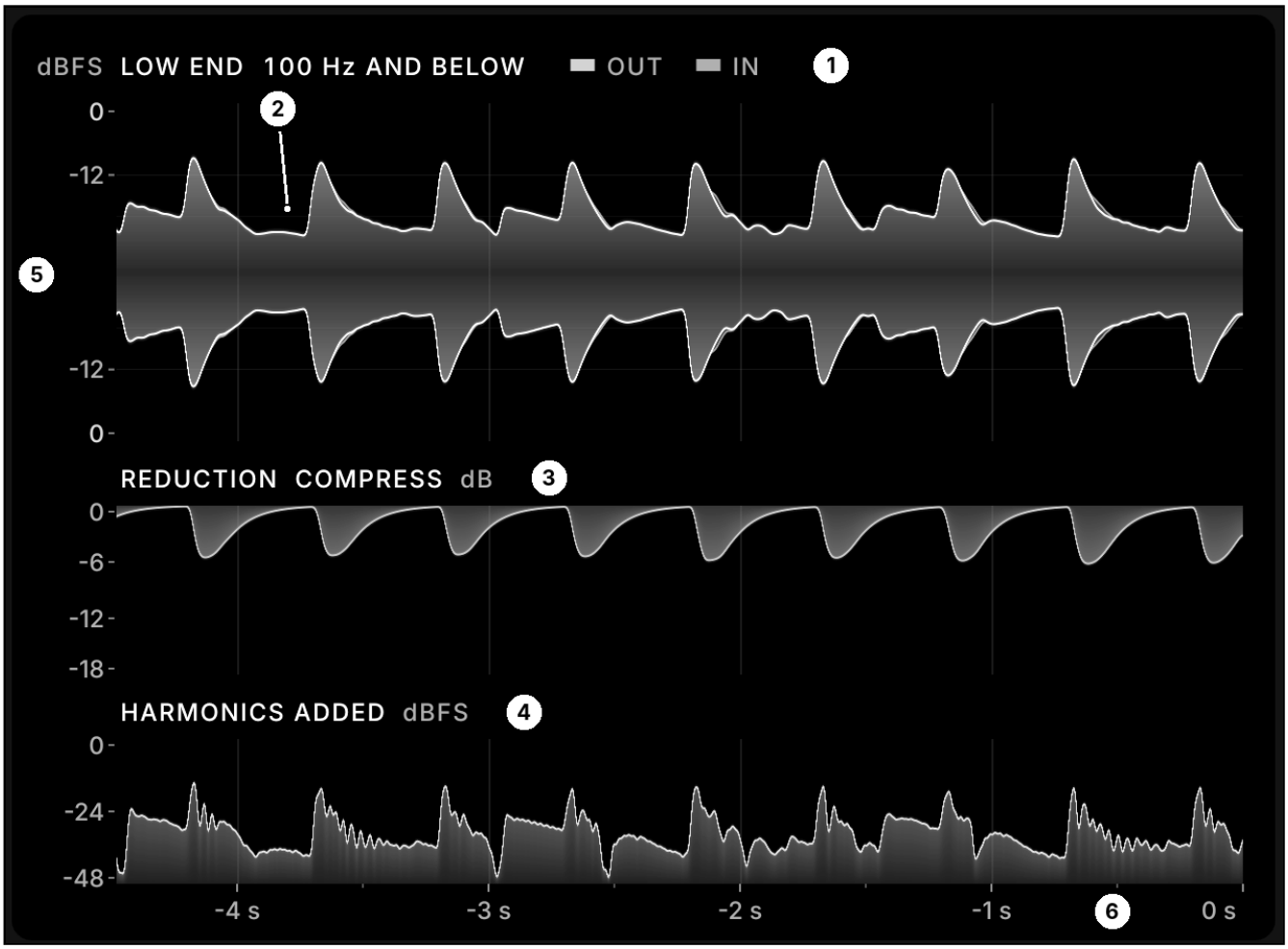


FIGURE 17 The LOW END display: 1 legend, 2 the lows, out and in, 3 the REDUCTION lane, 4 the HARMONICS ADDED lane, 5 the level scale and 6 the time scale.

The LOW END display shows the last 4 seconds, newest at the right edge (0 s), with a mark every second. It has three lanes that share one time line, so you can look straight down from a note to see what COMPRESS and HARMONICS did to it.

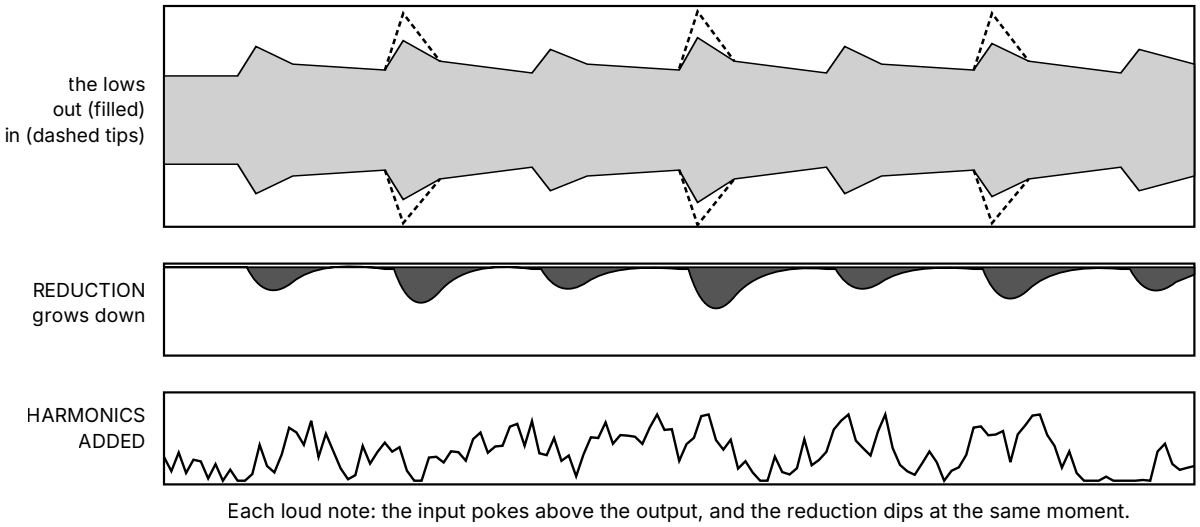


FIGURE 18 How to read the three lanes, one above the other on the same time line.

2 **The lows.** The band under 100 Hz, as a mirrored outline around a centre line. The output is drawn in front (amber on screen, the filled shape); the input is drawn behind it (grey on screen) and shows only *where it was louder*, so whatever pokes out above the output is what COMPRESS took off. Where the output is taller than the input, COMPRESS lifted a quiet note.

5 **The scale** is in dBFS: 0 at the outer edges, then −12 toward the middle (−24 has a grid line but no label). The height follows a compressed scale (−12 dBFS is at 58 % of the height, −24 at a third), so a bass line fills the lane at any healthy level.

3 **REDUCTION** (REDUCTION COMPRESS dB): how much COMPRESS turns the lows down, growing down from 0 to −18 dB, with marks at 0, −6, −12 and −18. On screen it's red. Each loud note makes a dip; between notes it returns toward 0.

4 **HARMONICS ADDED** (dBFS): the level of the harmonics HARMONICS adds, from −48 to 0 dBFS, with marks at 0, −24 and −48. On screen it's teal. At HARMONICS 0 % the lane is empty.

Hover anywhere over the three lanes for a cursor that reads, at that moment: TIME, LOWS IN and LOWS OUT (dBFS), REDUCTION (dB) and HARMONICS (dBFS).

What to look for.

- **An even low end** shows as an output outline whose peaks line up at about the same height from note to note, with the input poking out only on the notes that were too loud.
- **Over-compression** shows as an outline as flat as a ruler, with long, deep dips in REDUCTION. Back off COMPRESS unless you want that effect.
- **Tails getting longer:** if the output stays tall long after each kick or 808 hit, COMPRESS is lifting the tail. Lower it if the boom rings too long.

SPECTRUM

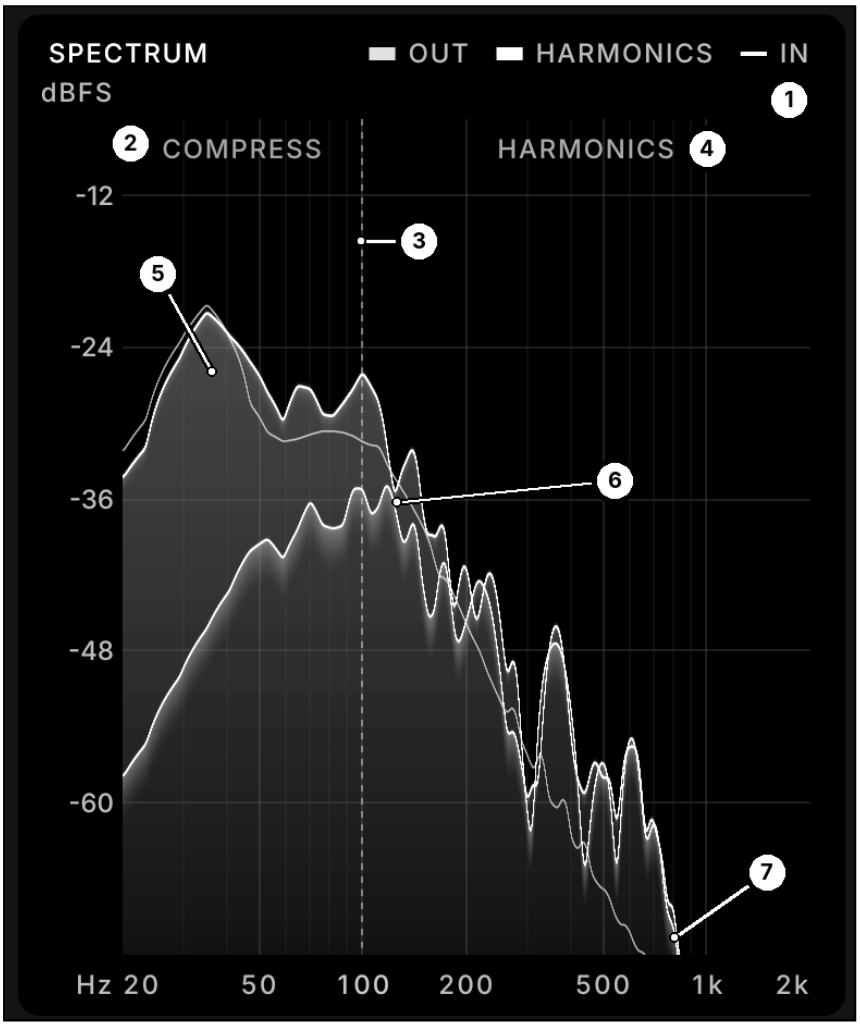


FIGURE 19 The SPECTRUM: 1 legend, 2 the COMPRESS zone, 3 the 100 Hz line, 4 the HARMONICS zone, 5 the output, 6 the harmonics and 7 the input.

The SPECTRUM shows 20 Hz to 2 kHz, the whole range Sub Control works in, smoothed to 1/12 of an octave so notes and their harmonics stand out as peaks.

- 5 **OUT** (amber on screen): the output, the filled area with the bright outline.
- 6 **HARMONICS** (teal on screen): the harmonics Sub Control adds, on their own. In print, it's the second outlined curve that starts low at the left (under 100 Hz there is little of it) and rises to meet the output above 100 Hz.
- 7 **IN** (a thin light line): the input, for comparison.
- 3 A **dashed line at 100 Hz** divides the display. Left of it 2 is where COMPRESS works; right of it 4 is where the harmonics carry the bass on small speakers.

The level scale on the left (dBFS) follows the music in 6 dB steps, so the curves stay on screen whether the track is loud or quiet.

What to look for.

- **Under 100 Hz,** compare the output with the input line: they should have the same shape, but notes that were too loud now sit lower.
- **Above 100 Hz,** watch the harmonics curve rise as you turn up HARMONICS. With TRANSLATE, you'll see clear peaks at 2, 3, 4 and 5 times each note; with WARM, a denser spread reaching higher.
- **Where the output pulls above the input line** above 100 Hz, that's the harmonics adding energy a small speaker can play.

Hover over the display for a tooltip that explains the half you point at.

The meter bridge (IN | OUT)

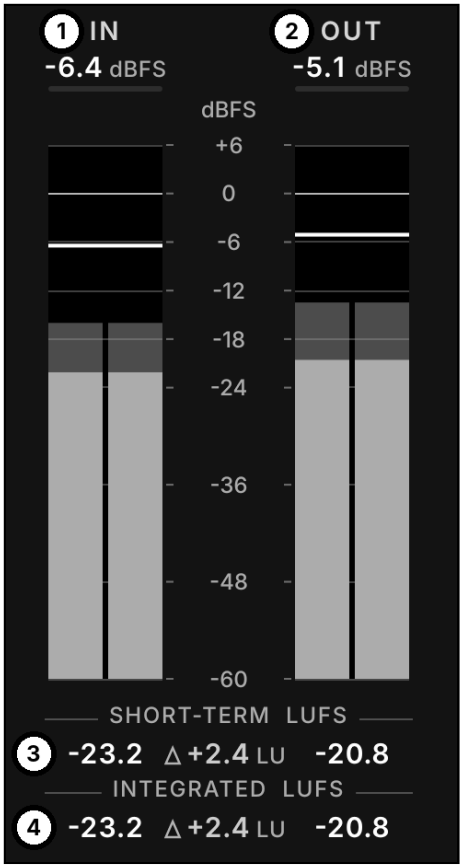


FIGURE 20 The meter bridge: 1 input and 2 output level, 3 short-term and 4 integrated loudness with the OUT − IN difference.

VEIRA Sub Control's meter bridge is the standard one, measured on the plugin's input and output. On a mono track, both bars of each meter show the same mono signal.

Reading the IN and OUT meters

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

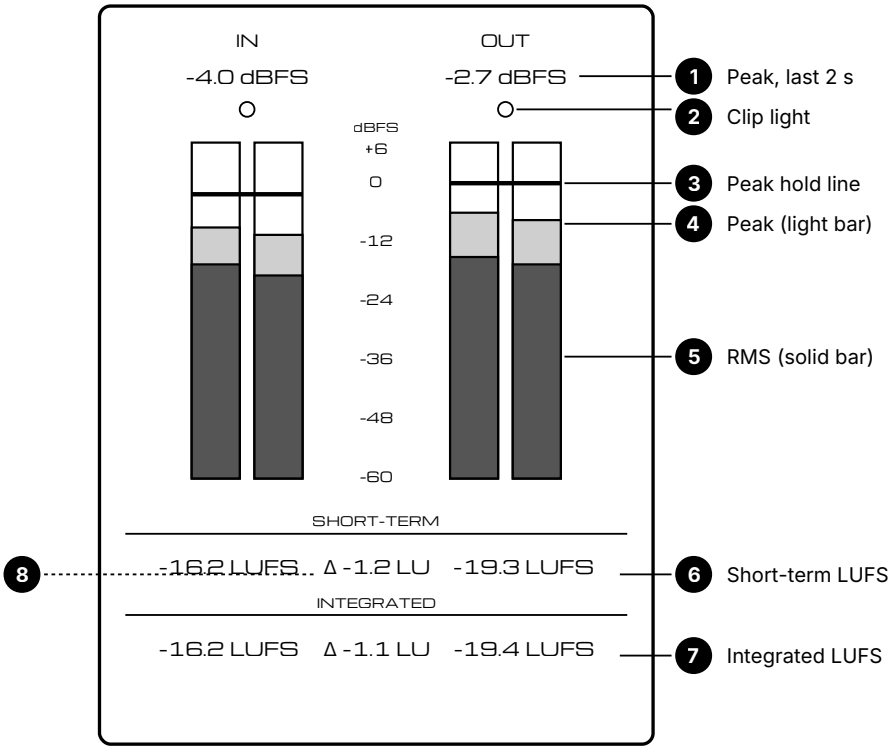


FIGURE 21 The meter bridge, left and right channel bars for input and output, with loudness below.

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

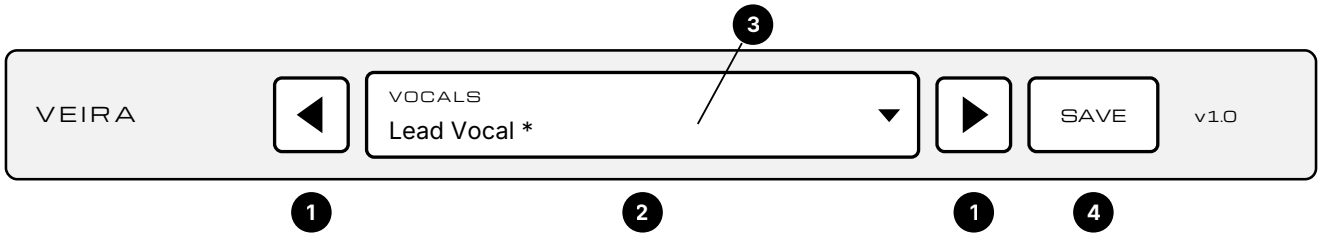
Clicks: click a level meter to reset its hold and clip light. Click the loudness readouts to restart the integrated measurement, for example at the start of a song.

Presets

VEIRA Sub Control comes with **68 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 22 The preset browser.

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

The preset menu

Clicking the display opens a menu with:

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

Saving your own presets

1. Set VEIRA Sub Control 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 Sub Control/<Folder>/
Windows	%APPDATA%\VEIRA\VEIRA Sub Control\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 Low End Control, Kick Weight, Kick Hit Leveler, Drum Bus Low Glue, Room Mic Low Leveler, Gritty Kick Drive
Bass	Even Bass Line, Fingerstyle Leveler, Rock Bass Grit, Warm Round Bass, Heavy Bass Leveler, Bass Small Speaker Lift, Synth Bass Even, Synth Bass Translate
Guitar	Acoustic Boom Tamer, Gentle Body Control, Warm Acoustic Body, Fingerpicked Low Even, Strummed Boom Control
Keyboards	Piano Left Hand Tamer, Warm Piano Lows, Organ Pedal Even, Synth Pad Low Tamer, Synth Keys Low Weight
Strings	Cello Low Even, Double Bass Control, Warm Low Strings, Low Strings Translate
Brass	Tuba Low Even, Bass Trombone Weight, Low Brass Tamer, Low Brass Translate
Woodwinds	Bassoon Low Even, Bass Clarinet Warmth, Low Reed Tamer, Low Reeds Translate
Vocals	Proximity Boom Tamer, Deep Vocal Weight, Baritone Vocal Even, Podcast Boom Control, Voice Over Warmth
Mix Bus	Mix Low End Glue, Steady Kick And Bass, Warm Mix Weight, Mix Small Speaker Lift, Gentle Low Leveler
Mastering	Master Low End Even, Master Gentle Glue, Master Sub Translate, Master Warm Low End
808s	808 Note Leveler, 808 Gentle Glue, 808 Translate Weight, Sub Drop Smoother, Trap 808 Control, Gritty 808 Weight
Small Speakers	808 Phone Reach, Trap 808 Laptop Lift, Sub Drop Earbud Reach, 808 Small Speaker Even, Subtle 808 Translate, Bass Guitar Reach
Creative FX	Sub Flattener, Bass Fuzz Grind, Bass Octave Bloom, Kick Boom Squash, Synth Harmonic Bloom

Levels hardly matter. COMPRESS works against the lows' own level and HARMONICS is level-independent, so a preset does the same on a quiet or a loud track. Each preset stays within 0.5 dB of bypass in loudness, with peaks at or under −3 dBFS at typical levels.

Recipes

Step-by-step starting points. In each, finish by comparing with bypass using the Δ readings on the meter bridge.

Even out a bass line

1. Load **Bass ▸ Even Bass Line**, or start from Init.
2. Switch on [LISTEN] and play the part. You hear only the lows: notes that jump out are obvious.
3. Raise [COMPRESS] until those notes sit level with the rest: usually 40–60 %. On the LOW END display, the output peaks should line up note to note.
4. Switch [LISTEN] off. Add a little [WARM] (10–30 %) with [HARMONICS] if the bass needs weight.

Make an 808 heard on phones

1. Load **Small Speakers ▸ 808 Phone Reach**, or **808s ▸ 808 Translate Weight**.
2. Play the track through your phone, or through the smallest speakers you have.
3. Raise [HARMONICS] ([TRANSLATE]) until the 808's notes are clearly heard as a line, usually 25–45 %.
4. Back on your monitors, check that it doesn't sound buzzy, and watch the output peak: if it climbs, lower [OUTPUT] or follow Sub Control with a limiter.

Tame a boomy acoustic guitar or piano

1. Load **Guitar ▸ Acoustic Boom Tamer** or **Keyboards ▸ Piano Left Hand Tamer**.
2. Play the part where the low strings or the left hand boom. Raise [COMPRESS] until the REDUCTION meter catches those moments and the boom stops swelling, usually 25–45 %.
3. Keep [HARMONICS] at 0 % unless the part sounds thin.

Glue the low end of a mix

1. On the mix bus, load **Mix Bus ▸ Mix Low End Glue** (or **Mastering ▸ Master Low End Even** on a master).
2. Keep [COMPRESS] low, 15–30 %. Aim for a REDUCTION meter that only moves a dB or two on the biggest kick-and-bass moments.
3. For small-speaker reach, switch to [TRANSLATE] and keep [HARMONICS] at 8–20 % (**Mix Bus ▸ Mix Small Speaker Lift**, **Mastering ▸ Master Sub Translate**).

Grit and weight on a kick

1. Load **Drums ▸ Gritty Kick Drive** or **Drums ▸ Kick Weight**.
2. Set [HARMONICS] ([WARM]) for the amount of body or dirt; back off if it gets too dirty.
3. If the boom rings longer than you want, lower [COMPRESS].

Specifications

Type	Low-end compressor (100 Hz and below) and bass enhancer
Channels	Mono and stereo; channels linked
Latency	None
Transparency	At COMPRESS 0 % and HARMONICS 0 %, the output is the input, bit for bit
COMPRESS	0 to 100 % (default 30 %); threshold +4 to −10 dB against the lows' usual level, ratio 1:1 to 8:1, 6 dB soft knee, automatic makeup; attack 25 ms, release 100 ms
Detection	24 dB per octave low-pass at 100 Hz, power averaged over 25 ms
Gain	4th-order low shelf just above 100 Hz; nothing from 400 Hz up
HARMONICS	0 to 100 % (default 20 %)
WARM	Saturation of the lows, even and odd harmonics, low-passed at 3 kHz; at 100 % about 10 dB under the lows
TRANSLATE	Exact 2nd to 5th harmonics (weights 1, 0.75, 0.5, 0.35), high-passed at 60 Hz; at 100 % as loud as the lows
WARM / TRANSLATE	Default WARM; switching crossfades over 20 ms
OUTPUT	−24 to +12 dB in 0.1 dB steps (default 0.0 dB)
LISTEN	The lows (≤ 100 Hz) and the harmonics alone; off in offline bounces
Displays	LOW END (4 s; lows, REDUCTION 0 to −18 dB, HARMONICS ADDED −48 to 0 dBFS); SPECTRUM (20 Hz–2 kHz, 1/12 octave); REDUCTION meter (a bar, 0 to −18 dB, with VU-like movement)
Metering	IN and OUT meters (sample peak, RMS); short-term and integrated loudness per ITU-R BS. 1770-4 / EBU R 128
Presets	68 factory presets in 14 folders, plus your own
Window	1320 × 860 points; resizable from 75 % to 200 %, saved with the session
Formats	VST3, Audio Units, standalone; AAX once signed
Plugin ID	Manufacturer Veir, plugin Vsub

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 Sub Control 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**.

COMPRESS **doesn't seem to do anything.** Check that the track has a low end: press LISTEN. If you hear little or nothing, there's nothing under 100 Hz for COMPRESS to work on. Also remember that it measures against the lows' own level: a bass line that is already even gets little reduction, and that's correct.

After a quiet intro, the first chorus sounds over-compressed. The usual level moves slowly on purpose, so after a big jump in the lows COMPRESS works harder for the first several seconds. Lower COMPRESS a little, or automate it higher for the intro and lower for the chorus.

My kick or 808 boom got longer. COMPRESS turns up quiet parts, and a tail is a quiet part. Lower COMPRESS (under about 50 % on 808s), or use that sustain on purpose.

The peaks went up. High COMPRESS can make a note's start louder than its body, and both harmonics styles add a little peak level (up to about 3 dB at 100 %). Lower OUTPUT, or follow Sub Control with a limiter.

TRANSLATE **sounds like too much on my monitors.** Set it on the speaker you're targeting (a phone or laptop), then check on monitors. What's barely enough on a phone can sound obvious on full-range speakers.

My bounce sounds different from what I heard. Check LISTEN: it switches itself off for offline bounces, so the bounce always contains the full signal.

Does it add latency? No. Sub Control has no latency, so it works on live inputs and while recording.

The window is too small (or too big) on my screen. Drag its bottom-right corner. It scales from 75 % to 200 % and keeps its proportions; the size is saved with your session.

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

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

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



VEIRA Sub Control · User Manual · Version 0.2.0

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

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