VEIRA

INSTRUMENT TUNER

VEIRA Tuner

User Manual

A free tuner for guitar, bass guitar and ukulele, with a chromatic mode for anything else. A needle for quick tuning, a strobe for the last tenth of a cent, and your sound passing through untouched.



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Welcome

Thank you for choosing **VEIRA Tuner**, a free VEIRA plug-in. Put it on the track your guitar, bass or ukulele comes in on, play a string, and it tells you which string you are playing, what note it should be, and how far off it is: a big needle for the quick part of tuning, and a strobe under it for the fine part.

The window has one large display at the top: the **note** you are tuning to on the left, the **needle** in the middle, the **cents off** and the **target** frequency on the right, and the **strobe** along the bottom. Under it, the **string row** shows the strings of the tuning you picked, low to high. Along the bottom you choose the INSTRUMENT and its TUNING, set the REFERENCE A4 pitch, and MUTE the output while you tune.

What makes it different

- **It knows your instrument.** Guitar, 4- and 5-string bass and ukulele, with 18 tunings between them, from Standard to Drop C, DADGAD and the open tunings. It finds the string you play by itself, and you can lock it to one string when a string is far out.
- **A needle and a strobe.** The needle shows the cents at a glance; the strobe drifts left when the string is flat and right when it is sharp, slower and slower as you get closer, and stands still when it is in tune. Its finest row still moves at a tenth of a cent.
- **Steady, exact readings.** A plucked guitar or ukulele string reads within 1 cent 0.13 seconds after you pluck it, a bass string within 0.20 seconds, and the reading holds steady while the string rings.
- **Your sound untouched.** No latency, and with MUTE off the output is the input, bit for bit. MUTE silences the output with a 10 ms fade, so you can tune on stage without a click.
- **Any reference pitch.** REFERENCE A4 from 415 to 466 Hz: 440 Hz standard, 442 or 443 Hz to play with an orchestra, 415 Hz for baroque pitch, 432 Hz if your band tunes there.
- **A clean, legible face.** Large readings you can see from a few steps away, and a window you can scale from 75 % to 200 %.

How this manual is organised. *Getting started* covers adding VEIRA Tuner to your account and installing it. *The panel at a glance* names every part of the window and has a quick start. *How a tuner works* explains notes, octaves and cents, how the plug-in hears pitch, and what happens inside it. *The tunings* lists every string of every tuning. *Controls* and *Displays* explain each part in detail, and *Presets*, *Recipes*, *Specifications* and *Troubleshooting* follow.

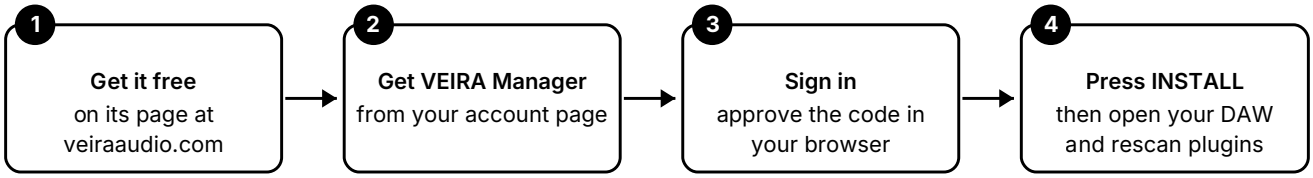
Getting started

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.
Your instrument	Plugged into your audio interface (a guitar or bass into an instrument input), or a microphone in front of an acoustic instrument.

Get it free, then install with VEIRA Manager

VEIRA Tuner costs nothing, but like every VEIRA plugin it lives in your VEIRA account, and **VEIRA Manager**, the free VEIRA app, installs it and keeps it up to date. Plugins are never downloaded from the website one by one.



No payment and no card. One account works on up to three computers, with every update.

FIGURE 1 From the website to your first tuned string in four steps.

1. **Get it free.** On VEIRA Tuner's page at **veiraaudio.com**, click *Get it free*. You need a VEIRA account with a confirmed email address; VEIRA Tuner goes straight into your account, without a payment or a card, and it's yours to keep.
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 Tuner 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 Tuner appears in your DAW under the manufacturer **VEIRA** (in Logic Pro: Audio Units ▸ VEIRA ▸ VEIRA Tuner).

Activation and the licence

VEIRA Manager keeps a licence on your computer that the plugins check, free ones included. 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 Tuner still loads and still tunes, but **the sound passing through it 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.

- **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 have VEIRA Tuner yet. Click *Get it free* on its page at veiraaudio.com with that account, then open VEIRA Manager.

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 Tuner on its own, with your audio interface's input and output: plug in your instrument and tune without opening a DAW.

The panel at a glance



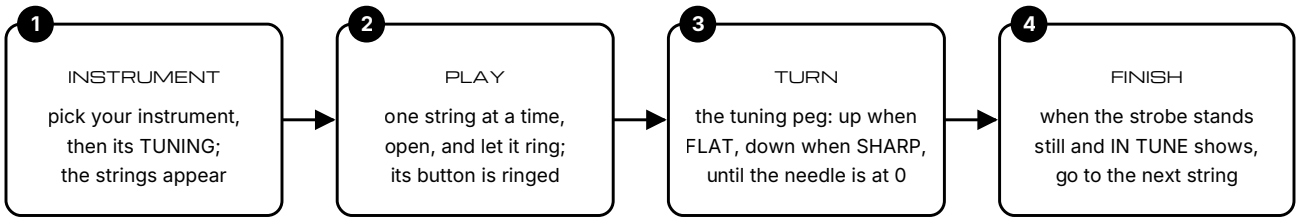
FIGURE 2 VEIRA Tuner with the factory preset *Default* ▸ *Init* (guitar, Standard, A4 = 440 Hz) while the A string plays 6 cents flat.

The window has three parts. The **tuner display** fills the top: what you are tuning to, how far off you are, and the strobe. Under it, the **string row** and, along the bottom, the **settings**: INSTRUMENT, TUNING, REFERENCE A4 and OUTPUT (MUTE). The **meter bridge** runs down the right.

	Part	What it does
1	Preset browser	Steps through and saves presets. See *Presets*.
2	Note and frequency	The string you are tuning (STRING 5), its note with the octave (A2), and the frequency you are playing, in Hz.
3	Needle	How far the string is from its note, −50 to +50 cents.
4	CENTS OFF	The same in numbers, with what to do: FLAT · TUNE UP, SHARP · TUNE DOWN or IN TUNE.
5	TARGET	The frequency the string should have, at the reference pitch.
6	Flat and sharp lamps	FLAT ◀, the in-tune dot, ▶ SHARP.

	Part	What it does
7	STROBE	Three rows of bars that drift left (flat) or right (sharp) and stand still when the string is in tune.
8	AUTO	The tuner finds the string by itself (lit), or stays on the string you locked.
9	String row	The tuning's strings, low to high, with their numbers. The one being tuned is ringed; click one to lock it.
10	INSTRUMENT	Guitar, Bass (4 or 5 strings), Ukulele or Chromatic.
11	TUNING	The instrument's tunings: Standard, Drop D, DADGAD and more.
12	REFERENCE A4	The pitch everything is tuned against, 415 to 466 Hz.
13	MUTE	Silences the output while you tune (under the caption OUTPUT).
14	Meter bridge	Input and output level and loudness.

Quick start: in tune in four moves



Tune up to the note: if a string is sharp, go below the note first, then bring it up.

FIGURE 3 The quickest way to a tuned instrument. The factory presets set the instrument and tuning in one click.

Using the controls

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

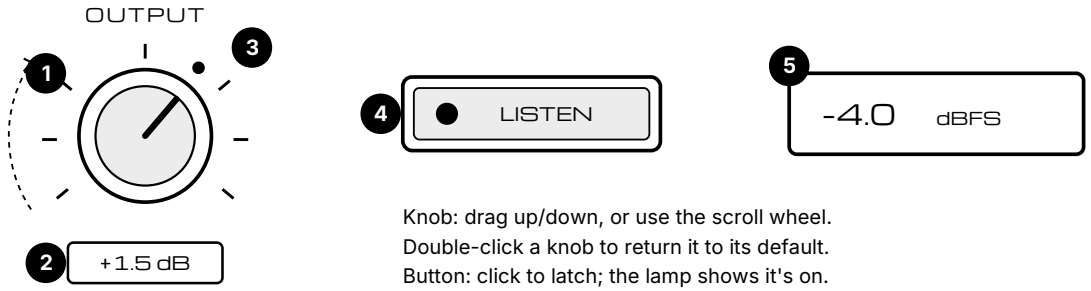


FIGURE 4 The parts you'll find on every VEIRA panel (the labels are examples).

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

- **One knob**, [REFERENCE A4], shows its value **in its middle** ([440.0 Hz]), with a lit ring (blue on screen; in print, the lighter arc) showing how far it is turned. Drag, use the wheel, or double-click for the default, as on every VEIRA knob.
- **Type a value:** right-click the knob (Control-click on a Mac). A field opens over it with the current value; type the new one, for example **442**, and press Return. Press Escape or click elsewhere to leave it unchanged.
- **Menus instead of switches:** [INSTRUMENT] and [TUNING] are menu buttons. Click one and pick from the list that opens.
- **Buttons without lamps:** [MUTE], [AUTO] and the string buttons have no lamp. [MUTE] fills with colour when it is on (orange on screen; in print, a solid button with dark lettering instead of an outlined one). [AUTO] and a locked string light up as described in *Controls*.
- **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 readings stay sharp. Your DAW saves the size with the session.

How a tuner works

If you tune by ear already and know what a cent is, skip to *The tunings*. If not, these pages make every reading on the display obvious.

Pitch, notes and octaves

A plucked string vibrates back and forth many times a second, and the air carries that vibration to your ear as a tone. The number of vibrations per second is the **frequency**, measured in hertz (**Hz**); we hear it as **pitch**. The guitar's A string, for example, vibrates 110 times a second: 110 Hz.

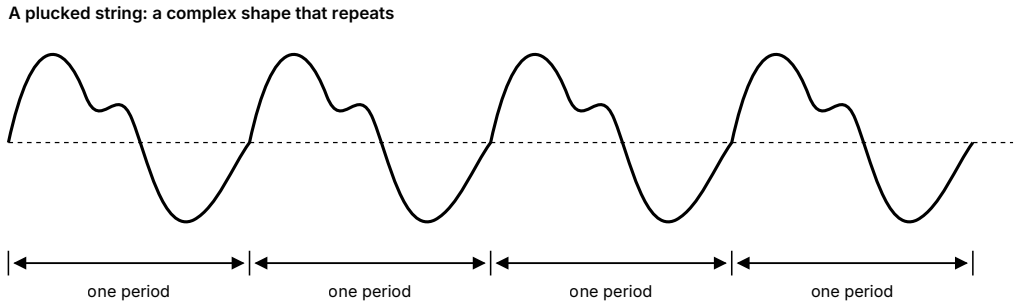


FIGURE 5 A string's waveform is not a smooth wave, but its shape repeats. The time it takes to repeat is the period; the number of repeats per second is the frequency, the pitch you hear.

How a tuner reads pitch. A tuner listens to the string and looks for the length of time after which the waveform repeats itself. One over that time is the frequency. The hard part is doing this exactly and quickly while the string's sound changes: the first moment of a pluck is noisy and a little sharp, and the sound decays as it rings.

- **Notes.** Western music divides pitch into 12 equal steps per octave, called **semitones**: C, C♯, D, E♭, E, F, F♯, G, A♭, A, B♭, B. Each semitone is about 6 % higher in frequency than the one below it.
- **Octaves.** Doubling the frequency gives the same note an **octave** higher: A2 is 110 Hz, A3 220 Hz, A4 440 Hz. The number after the note name is its octave, in scientific pitch notation: middle C is C4, and **A4** is the note everything else is tuned from.
- **The reference.** A4 is set to 440 Hz in most music today. Every other note is worked out from it, so if you move the reference (see REFERENCE A4), every note moves with it.

Harmonics, and why tuners can be fooled by an octave. A string doesn't vibrate at one frequency only. Besides its **fundamental** (the note), it vibrates at 2, 3, 4, 5… times that frequency: the **harmonics** (or overtones), which give the instrument its tone. On a bass, especially through a small speaker or a bright pickup, the 2nd harmonic can be much stronger than the fundamental, and a simple tuner then reads the note an octave too high.

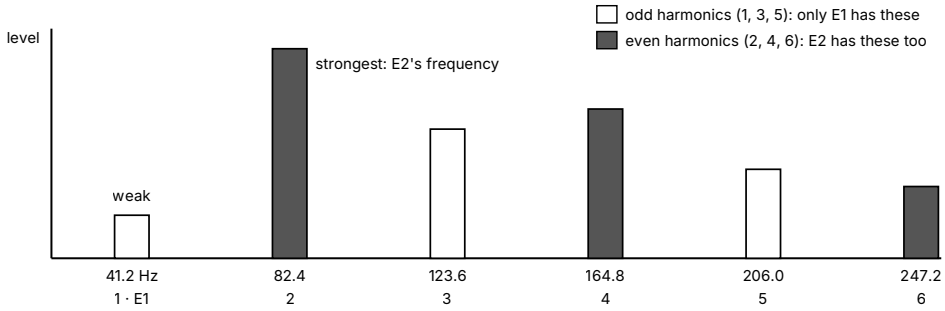


FIGURE 6 The low E of a bass (E1, 41.2 Hz). Its fundamental is weak and its 2nd harmonic strong, so it looks a lot like E2. The odd harmonics (white) give it away: VEIRA Tuner checks for them and reads E1.

Cents: how far off is “off”

Within a semitone, tuners measure in **cents**: one semitone is divided into 100 cents, so an octave is 1200 cents. A cent is the same musical distance at any pitch, which is why tuners use it instead of hertz: 6 cents flat is 0.38 Hz on the A string, but 1.1 Hz on the high E.

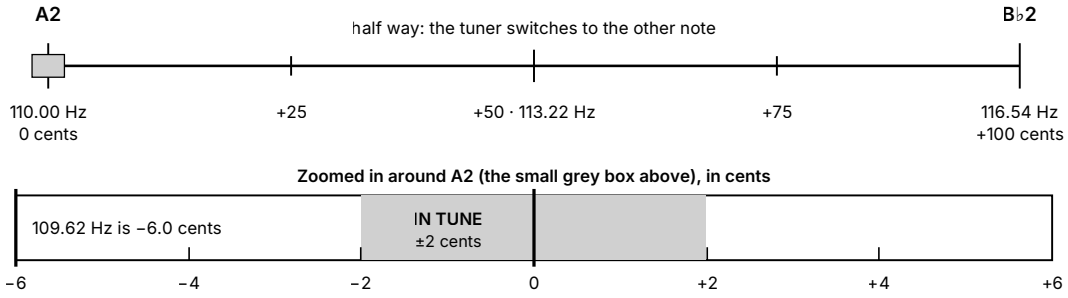


FIGURE 7 One semitone, A2 to B♭2, is 100 cents. Zoomed in, the grey zone is ±2 cents around the note, where VEIRA Tuner shows IN TUNE. The window on the first page read −6.0 cents: 109.62 Hz instead of 110.00 Hz.

How close is close enough? Most listeners can’t hear a single note being off by less than about 5 cents, but two strings played together beat against each other, and in a chord small errors add up. VEIRA Tuner calls a string **in tune within ±2 cents**; the strobe lets you go much further, down to a tenth of a cent, when you want every string exact.

What happens inside VEIRA Tuner

Your sound and the tuner take two separate paths. The audio goes straight through: with MUTE off, the output is the input, bit for bit, with no delay. Beside it, the tuner listens to a copy.

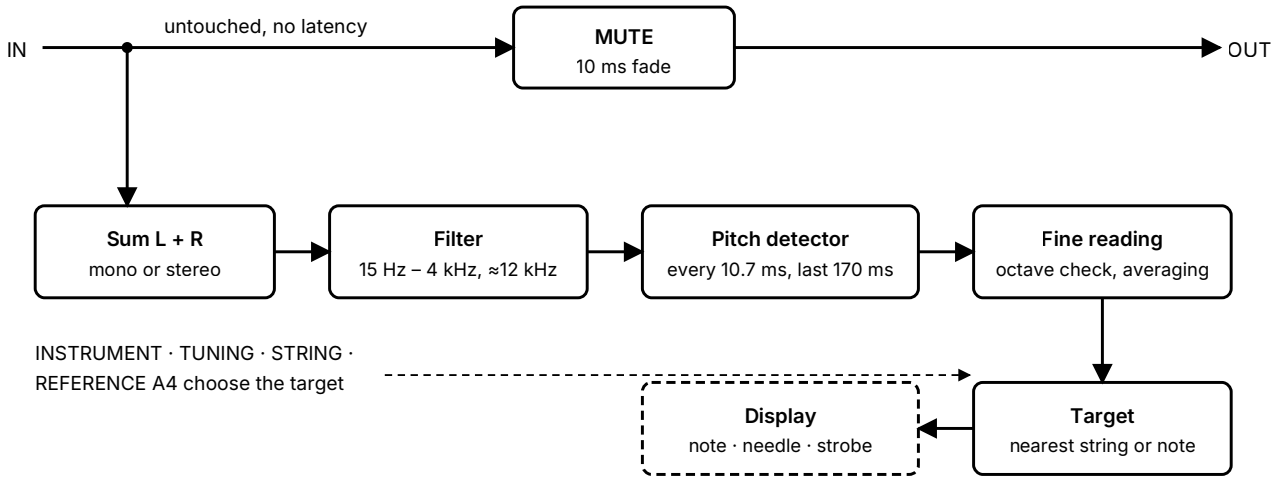


FIGURE 8 Signal flow. The audio passes straight from IN to OUT (through MUTE only when it is on). The tuner listens to a copy, finds the pitch, compares it with the target string or note, and draws the result.

Step by step, about 94 times a second:

1. **Listen.** The channels are added together (a stereo track is read as one), filtered to the range where strings live and turned into a lighter signal to analyse.
2. **Find the period.** The last 170 ms are searched for the time after which the waveform repeats. If the signal isn't clearly repeating (silence, hiss, hum, talking), there is no reading.
3. **Check the octave.** If the strongest repetition could be an octave too high (the bass case above), the tuner looks for the odd harmonics of the lower note and, if they are there, reads the lower note. Once a note is held, the tuner follows it near its last reading, so it never jumps an octave while the string rings.
4. **Fine reading.** The exact pitch is measured from how the fundamental moves between two looks at it, averaged over the last dozen readings and weighted by how precise each one was. This is what keeps the reading steady to a fraction of a cent.
5. **A new pluck.** When the level jumps (a new pluck), the reading restarts, leaving out the first 20 ms of the attack, which is noisy and slightly sharp on every string.
6. **Compare.** The pitch is compared with the **target**: in a tuning, the nearest string (or the string you locked); in Chromatic, the nearest note. The difference, in cents, goes to the display.

The tuner only reads a signal above **−60 dBFS** (its RMS level; once a note is reading, it holds down to −64 dBFS as the string decays). After the string stops, the display holds the last reading for 1.2 seconds, marked HELD, then asks you to *Play a string*.

Latency, bypass and sessions

- **No latency.** VEIRA Tuner reports no latency and adds none, so it can sit on a track you are recording or playing through live.
- **Bypassed, it keeps reading.** When you bypass the plug-in in your DAW, the sound passes through and the tuner still shows the pitch. Bypass is not the same as MUTE: to silence the output, use MUTE.
- **Sessions.** Every control, the selected preset and the window size are saved with your session. A session saved with MUTE on opens silent.

The tunings

Pick the INSTRUMENT first, then its TUNING. Each instrument has its own list and remembers its own tuning: switch from Guitar (Drop D) to Ukulele and back, and the guitar is still in Drop D.

The standard tunings

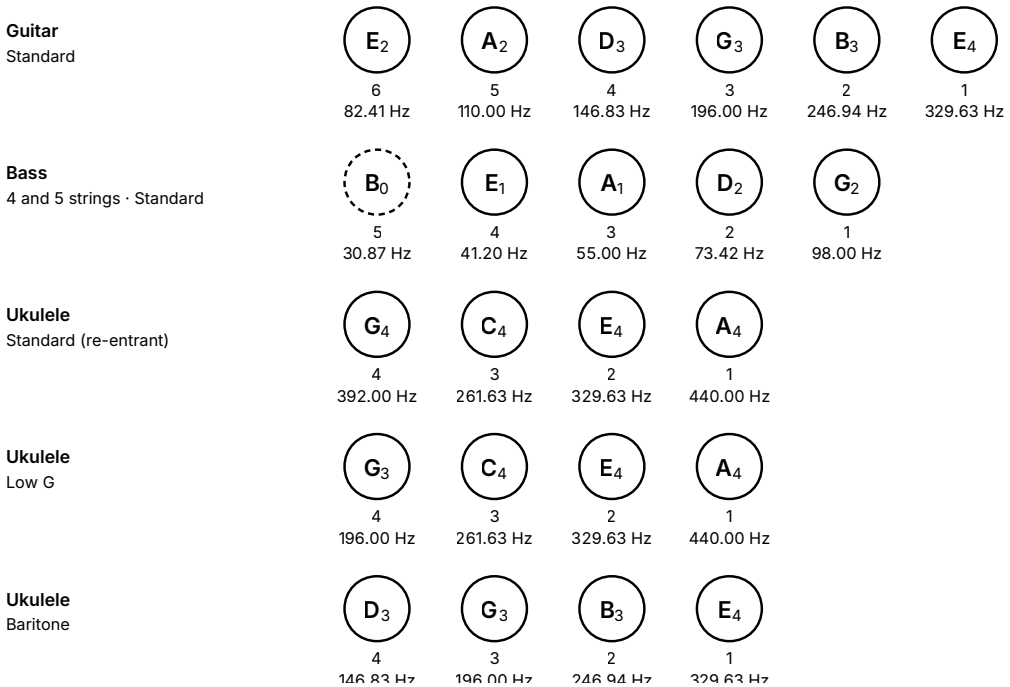


FIGURE 9 The standard tunings, drawn like the panel's string row: low to high from left to right, each string's number under it (1 is the highest string), and its frequency at A4 = 440 Hz. The dashed B is the 5-string bass's extra low string. On a standard ukulele the 4th string is a high G: the strings go up and down again.

- **Guitar, Standard:** E A D G B E. The most common tuning on six-string guitars.
- **Bass, Standard:** E A D G, an octave under the guitar's four lowest strings. The **5-string** adds a low B under them (30.87 Hz).
- **Ukulele, Standard:** G C E A with a **high G** (G4): soprano, concert and tenor ukuleles. The G is higher than the C next to it; this is called **re-entrant** tuning.
- **Ukulele, Low G:** the same with the G an octave lower (G3), for a fuller range, often on tenor.
- **Ukulele, Baritone:** D G B E, the same as the guitar's four highest strings.

Drop and alternate tunings

	string 6	string 5	string 4	string 3	string 2	string 1
Guitar						
Standard	**E2** 82.41	**A2** 110.00	**D3** 146.83	**G3** 196.00	**B3** 246.94	**E4** 329.63
Drop D	**D2** −2 73.42	**A2** 110.00	**D3** 146.83	**G3** 196.00	**B3** 246.94	**E4** 329.63
Half Step Down	**E♭2** −1 77.78	**A♭2** −1 103.83	**D♭3** −1 138.59	**G♭3** −1 185.00	**B♭3** −1 233.08	**E♭4** −1 311.13
Full Step Down	**D2** −2 73.42	**G2** −2 98.00	**C3** −2 130.81	**F3** −2 174.61	**A3** −2 220.00	**D4** −2 293.66
Drop C	**C2** −4 65.41	**G2** −2 98.00	**C3** −2 130.81	**F3** −2 174.61	**A3** −2 220.00	**D4** −2 293.66
DADGAD	**D2** −2 73.42	**A2** 110.00	**D3** 146.83	**G3** 196.00	**A3** −2 220.00	**D4** −2 293.66
Open G	**D2** −2 73.42	**G2** −2 98.00	**D3** 146.83	**G3** 196.00	**B3** 246.94	**D4** −2 293.66
Open D	**D2** −2 73.42	**A2** 110.00	**D3** 146.83	**F♯3** −1 185.00	**A3** −2 220.00	**D4** −2 293.66
Open E	**E2** 82.41	**B2** +2 123.47	**E3** +2 164.81	**G♯3** +1 207.65	**B3** 246.94	**E4** 329.63
Bass, 4 strings						
Standard			**E1** 41.20	**A1** 55.00	**D2** 73.42	**G2** 98.00
Drop D			**D1** −2 36.71	**A1** 55.00	**D2** 73.42	**G2** 98.00
Half Step Down			**E♭1** −1 38.89	**A♭1** −1 51.91	**D♭2** −1 69.30	**G♭2** −1 92.50
Bass, 5 strings						
Standard		**B0** 30.87	**E1** 41.20	**A1** 55.00	**D2** 73.42	**G2** 98.00
Drop A		**A0** −2 27.50	**E1** 41.20	**A1** 55.00	**D2** 73.42	**G2** 98.00
Half Step Down		**B♭0** −1 29.14	**E♭1** −1 38.89	**A♭1** −1 51.91	**D♭2** −1 69.30	**G♭2** −1 92.50

differs from Standard: the number is how many semitones up (+) or down (−)

FIGURE 10 Every guitar and bass tuning VEIRA Tuner offers, low string on the left, with each string's frequency in Hz at A4 = 440 Hz. Grey cells are the strings that differ from Standard; the small number says by how many semitones. The ukulele tunings are in the drawing above.

- **Drop D (guitar and bass):** only the lowest string goes down a whole step (2 semitones), from E to D: heavier riffs, power chords with one finger.
- **Half Step Down / Full Step Down:** every string a semitone or a whole step down. Bends get easier, the sound darker; many rock and blues players use them. Half Step Down is written with flats: E♭ A♭ D♭ G♭ B♭ E♭.
- **Drop C:** Full Step Down with the lowest string down a further whole step to C.
- **DADGAD:** the modal tuning of Celtic and folk guitar.
- **Open G, Open D, Open E:** the open strings play a major chord. **Open E raises three strings**, which puts extra tension on the neck: tune up slowly.
- **A big change** (Standard to Drop C, say) can leave a string nearer its neighbour's note, so AUTO takes it for the neighbour: lock the string you are tuning (see *Controls ▸ The string row and AUTO*).
- **5-string bass, Drop A:** the low B down a whole step to A (27.5 Hz, the lowest note on a piano).

Controls

INSTRUMENT and TUNING

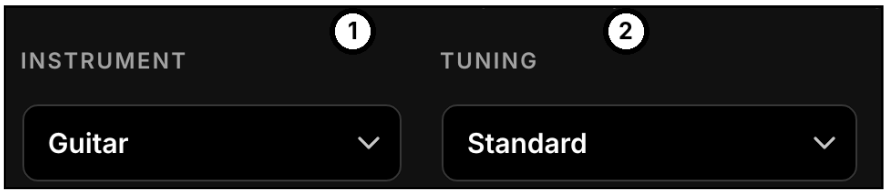


FIGURE 11 1 INSTRUMENT and 2 TUNING. Click either to open its menu.

Control	Choices	Default	What it does
INSTRUMENT	Guitar, Bass (4 strings), Bass (5 strings), Ukulele, Chromatic	Guitar	Chooses the instrument: its tunings, the string row and the range the tuner listens to.
TUNING	Guitar: 9 tunings; Bass, 4 strings: 3; Bass, 5 strings: 3; Ukulele: 3	Standard	The notes the strings are tuned to. Shows *Any note*, dimmed, in Chromatic.

INSTRUMENT. The menu lists *Guitar*, *Bass, 4 strings*, *Bass, 5 strings*, *Ukulele* and *Chromatic*, with a tick by the current one. Your DAW's automation list shows the same choices as *Guitar*, *Bass 4*, *Bass 5*, *Ukulele* and *Chromatic*.

INSTRUMENT also sets the range of frequencies the tuner listens to, wide enough for every string of every tuning and its harmonics: **Guitar** 45 to 1500 Hz, **Bass** (4 or 5 strings) 24 to 700 Hz, **Ukulele** 100 to 1500 Hz, **Chromatic** 24 to 1500 Hz. A bass's low E (41.2 Hz) is below the guitar's range, so tune a bass with Bass selected.

Chromatic has no strings: the target is simply the nearest note, from A0 to F♯6. Use it for any other instrument (a mandolin, a violin, a piano note, a horn), for a tuning that isn't in the lists, or to check a single note. The string row then says *Chromatic: any note, A0 to F#6. The nearest note is the target.*, the TUNING button shows *Any note* and is dimmed, and the note caption on the display reads NOTE instead of STRING.

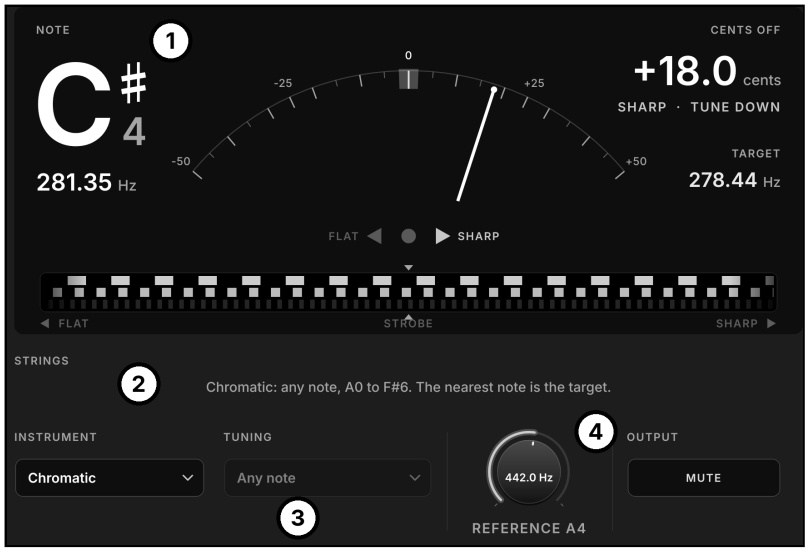


FIGURE 12 Chromatic, with REFERENCE A4 at 442 Hz: 1 the nearest note, C♯4, under the caption NOTE, 18 cents sharp; 2 the string row's message instead of strings; 3 TUNING dimmed, showing *Any note*; 4 the reference.

TUNING. The menu lists the current instrument's tunings, each with its notes in brackets so you can see what you are choosing, for example *Drop D (D A D G B E)*. Picking one changes the string row at once.

Each instrument keeps **its own tuning**: VEIRA Tuner stores one tuning setting per instrument (in your DAW: *Guitar Tuning*, *Bass 4 Tuning*, *Bass 5 Tuning* and *Ukulele Tuning*). Switching instrument doesn't lose the others, which is handy if you play guitar and bass on the same track.

The string row and AUTO

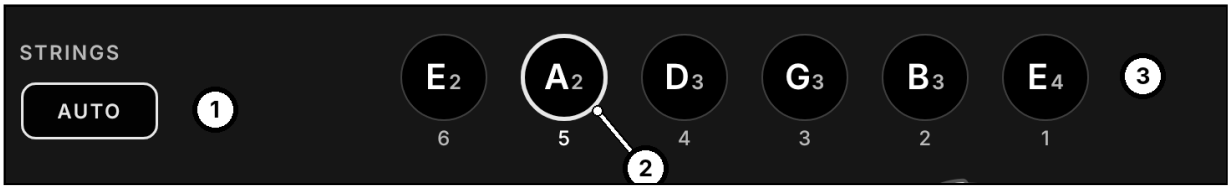


FIGURE 13 The string row: 1 AUTO, lit; 2 the A string, ringed because it is the one being tuned; 3 the high E, string 1. Under each button, its string number.

Control	Choices	Default	What it does
AUTO	on or off	on	The target is the string nearest to what you play.
String buttons	one per string	none locked	Click to lock the tuner to that string; click again for AUTO.

The row shows the tuning's strings **low to high, left to right**, each with its note and octave, and its **string number** underneath: 1 is the highest string (the guitar's high E), 6 the lowest. Hover over a string for its exact frequency at the current reference, for example *String 5: A2, 110.00 Hz*.

- **The string being tuned** is **ringed**: a ring around its button (blue on screen; green when it is in tune; in print, the button with the thick outline).

- **AUTO** (lit when on: blue lettering in a blue outline; in print, the outlined button). VEIRA Tuner picks the string whose note is **nearest** to what you play. It doesn't jump between two strings when you are halfway between them: it stays on the string it was on until another one is **30 cents closer**.
- **A locked string** is filled solid (blue on screen; in print, the dark button with light lettering), and AUTO goes out. The tuner now compares everything you play with that string, however far off it is. Click the locked string again, or click AUTO, to go back.

When to lock a string. AUTO works perfectly as long as each string is closer to its own note than to its neighbour's. A new string, or one far out after a big tuning change, can be nearer a neighbour's note; then AUTO reads it as the wrong string. Lock it:

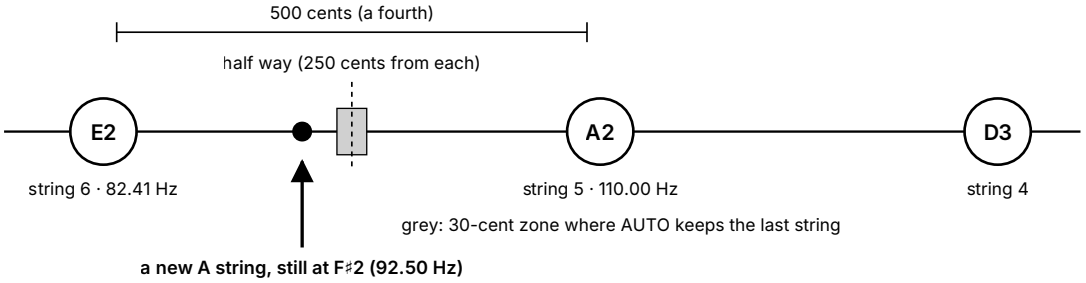


FIGURE 14 AUTO picks the nearest string. A string tuned far down can sit nearer its neighbour's note; lock the string you are tuning and the reading is against the right note.

When a string is more than 50 cents off, the needle rests just past the end of its scale, but CENTS OFF shows the full amount (−300.0 cents above), and FLAT · TUNE UP or SHARP · TUNE DOWN tells you which way to turn.

The lock is a host parameter, *String* (Auto, String 1 to String 6), so it is saved with the session and can be automated. If you lock string 6 and then switch to a 4-string instrument, the tuner simply works as AUTO.

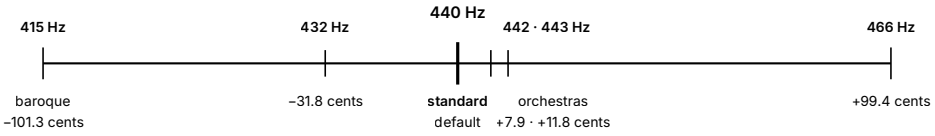
REFERENCE A4



FIGURE 15 1 REFERENCE A4, at 440.0 Hz.

Control	Range	Default	What it does
REFERENCE A4	415.0 to 466.0 Hz, in 0.1 Hz steps	440.0 Hz	The frequency of A4. Every string and note is worked out from it.

REFERENCE A4 sets the pitch everything is tuned against. Every target moves with it, by the same number of cents: at 442 Hz, the guitar's A string becomes 110.50 Hz instead of 110.00 Hz, and the TARGET readout and the string tooltips show the new frequencies.



Every string moves by the same number of cents as A4. At 442 Hz: A2 = 110.50 Hz, E2 = 82.78 Hz, E4 = 331.13 Hz. 415 Hz is about a semitone under 440 Hz; 466 Hz about a semitone over.

FIGURE 16 The REFERENCE A4 range, with the pitches people use. The cents are how far each moves every note from where it is at 440 Hz.

- **442 or 443 Hz:** many orchestras, and some pianos, tune a little higher. Ask the pianist or the conductor.
- **415 Hz:** baroque pitch, for period instruments; about a semitone under 440.
- **432 Hz:** if your band or a recording you play along with tunes there.
- **Matching a recording** that is a little off standard pitch: play along in Chromatic, read how many cents off the recording's notes are, and move REFERENCE A4 until they read 0.

Turn the knob, or right-click it and type the frequency: **442** is enough.

MUTE

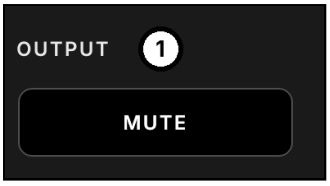


FIGURE 17 1 MUTE, under the caption OUTPUT, here off.

Control	Choices	Default	What it does
MUTE	off or on	off	Silences the output while you tune. The tuner keeps reading.

MUTE is for tuning without the audience (or the band, or the recording) hearing it. Click it and the output fades to silence over **10 ms**; click again and it fades back in. The fade is a smooth curve, so neither move clicks. While it is on, the button fills with colour (orange on screen; in print, solid with dark lettering) and the display shows **OUTPUT MUTED** at its top right.

- **The tuner keeps reading** while the output is muted; it listens to the input.
- **Anything after VEIRA Tuner** on the track hears silence too. Put it first on the track so MUTE silences the whole chain.
- **MUTE is saved with your session.** If you save with it on, the session opens silent: switch it off before you play the song.
- **Bypass is not mute.** Bypassed, the plug-in passes the sound through, and the tuner still reads.

Displays

The tuner display

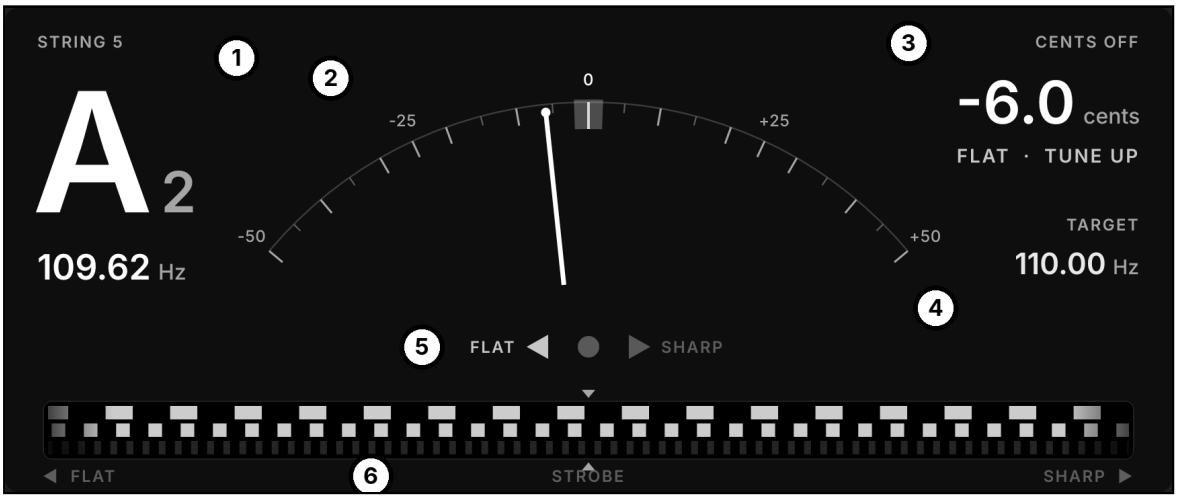


FIGURE 18 The tuner display: 1 the string and note, with the frequency you are playing; 2 the needle; 3 the cents and what to do; 4 the target frequency; 5 the lamps; 6 the strobe.

Read it from the outside in: the **left** says what you are tuning, the **right** how far off it is in numbers, and the **middle** shows the same as a picture you can follow while you turn the peg.

- 1 **The note.** The caption above it says STRING 5 (the string the tuner is comparing with; NOTE in Chromatic). The big letter is the target note, with its octave beside it (A2), and sharps and flats drawn as ♯ and ♭. Under it, the frequency you are actually playing, to a hundredth of a hertz (109.62 Hz).
- 2 **The needle** swings over a scale from −50 to +50 cents: see below.
- 3 **CENTS OFF**, to a tenth of a cent (-6.0 cents), and the status under it: FLAT · TUNE UP, SHARP · TUNE DOWN (orange on screen; in print, the line of capitals under the number) or IN TUNE (green).
- 4 **TARGET**: the frequency the string should have at the current REFERENCE A4 (110.00 Hz).
- 5 **The lamps**: FLAT and the left-pointing triangle light (orange) when the string is more than 2 cents flat, the right-pointing triangle and SHARP when it is more than 2 cents sharp, and the dot in the middle (green) when it is in tune. In print, the lit triangle is the solid one and the word beside it is brighter.
- 6 **The strobe** is the fine tuning display: see below.

The numbers update ten times a second, so you can read them while the string rings. The needle and the strobe move 60 times a second.

In tune. Within ±2 cents, everything that shows the reading turns green on screen: the note, the cents, the needle, the dot between the lamps, the strobe's bars, and the ring around the string's button. The status reads IN TUNE. In print, look for the words IN TUNE and the lit dot between the two triangles.

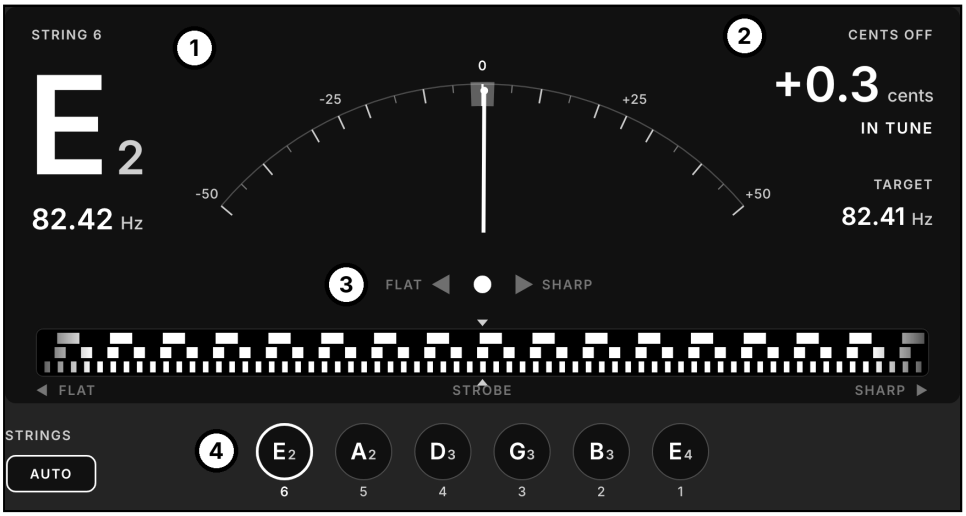


FIGURE 19 The low E in tune, 0.3 cents sharp: 1 the note, 2 +0.3 cents and IN TUNE, 3 the dot between the lamps lit, the needle in the grey zone and the strobe almost still, 4 the ring around the E string.

The needle

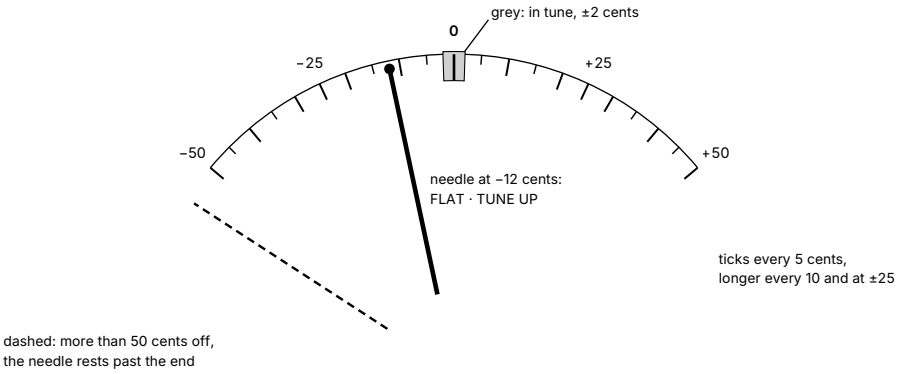


FIGURE 20 The needle's scale: −50 to +50 cents, one degree per cent, with the in-tune zone of ±2 cents shaded at the top.

The needle shows the cents as an angle: one degree per cent, so ±50 cents fill the arc. It swings smoothly to each new reading, like a well-damped meter, so it settles instead of jittering, and it turns green on screen when it is inside the shaded in-tune zone (±2 cents) and the string is in tune. When the string is more than 50 cents off, the needle stops just past the end of the scale; read CENTS OFF for the full amount.

Use the needle for the **first part** of tuning: turn the peg until the needle comes into the middle of the arc. Then switch your eyes to the strobe.

The strobe

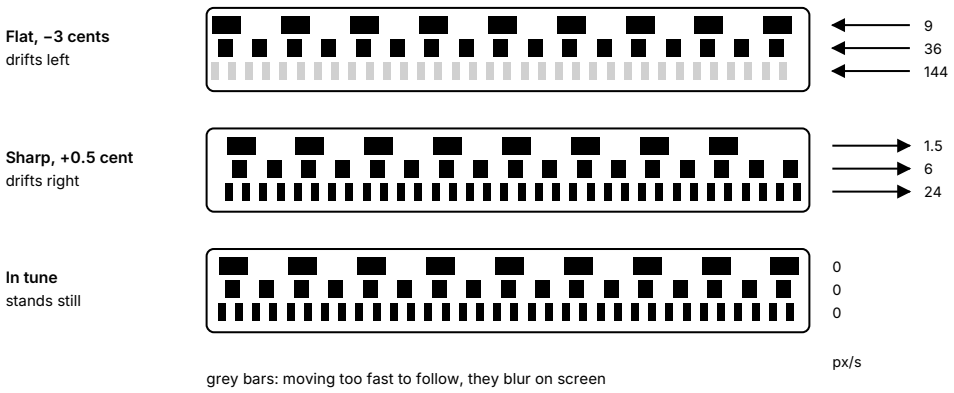


FIGURE 21 The strobe's three rows. Flat: the bars drift left; sharp: right; in tune: they stand still. The rows move at 3, 12 and 48 pixels a second per cent off (at 100 % window size): the top row for coarse tuning, the bottom row for the last fraction of a cent.

The strobe is the fine-tuning part of the display. Its bars **drift left when the string is flat** and **right when it is sharp**, at a speed that grows with the error, and **stand still when it is exactly in tune**. The words ◀ FLAT and SHARP ▶ under the band remind you which way is which, and the small triangles above and below the band mark its centre.

- **Three rows, three speeds.** The top row (wide bars) moves 3 pixels a second for every cent off, the middle row 12 and the bottom row (narrow bars) 48. Far from the note, the lower rows move too fast to follow and blur; as you get closer, they slow down and come into focus one after another.
- **A tenth of a cent.** At 0.1 cent off, the bottom row still creeps by about 5 pixels a second. Tune until even it stands still.
- **Turning the peg.** Turn so the bars slow down. If they speed up, you are going the wrong way.
- On screen the bars are blue while a string is reading, green when it is in tune and grey while the last reading is held.

When nothing is playing: HELD and *Play a string*

When the string stops (or you mute it with your hand), the display **holds the last reading for 1.2 seconds**: the status reads HELD, the readings dim and the strobe stops. That gives you time to look before you pluck again. After that, the readings show --, the needle returns to 0, and the middle of the display says *Play a string* (*Play a note* in Chromatic).

When MUTE is on, a badge reading **OUTPUT MUTED** sits at the top right of the display (an orange pill on screen; in print, the solid rounded block with dark lettering).

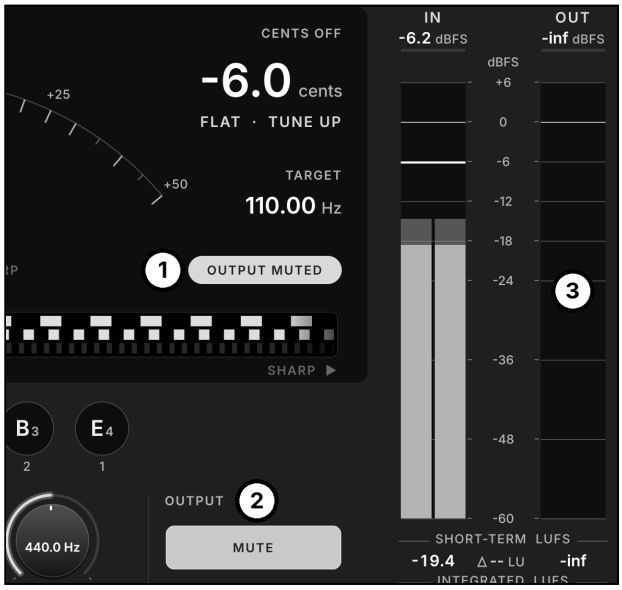


FIGURE 22 MUTE on: 1 the *OUTPUT MUTED* badge on the display, 2 the MUTE button filled, 3 the OUT meter empty while the tuner still reads the string.

With the output silent, the bridge's OUT readouts show -inf and the Δ loudness readings show --.

Meter bridge (IN | OUT)

VEIRA Tuner's bridge is the standard VEIRA meter bridge. Because the sound passes through untouched, IN and OUT read the same, and Δ reads 0.0 LU, unless MUTE is on. Use the IN column to check your input level: the tuner reads anything above −60 dBFS, so a normal recording level is plenty.

Reading the IN and OUT meters

The meter bridge measures what goes into VEIRA Tuner 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.

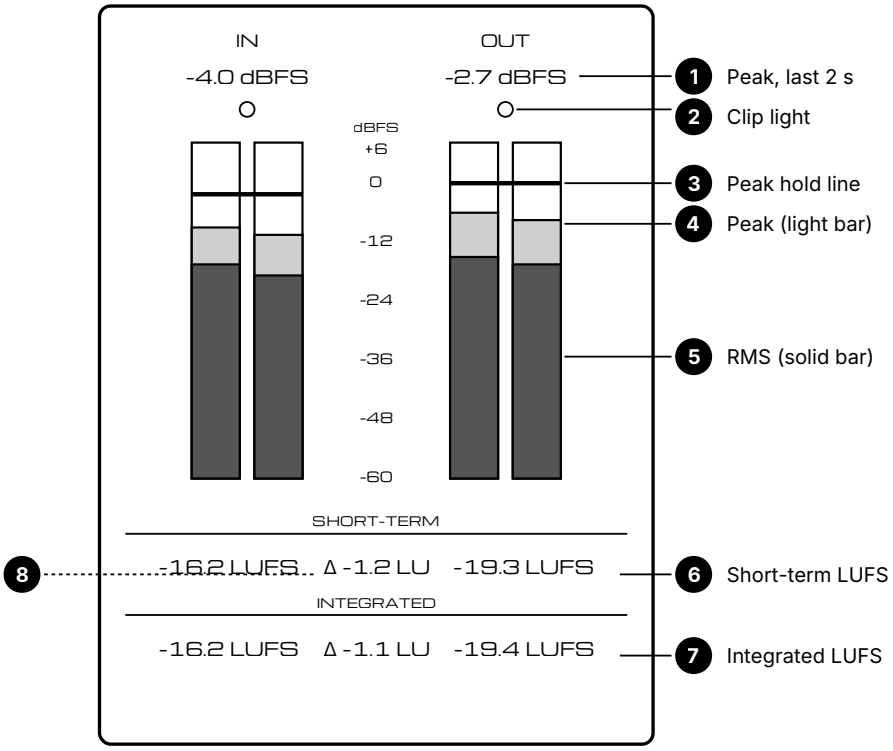


FIGURE 23 The meter bridge, left and right channel bars for input and output, with loudness below.

- 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 Tuner 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.

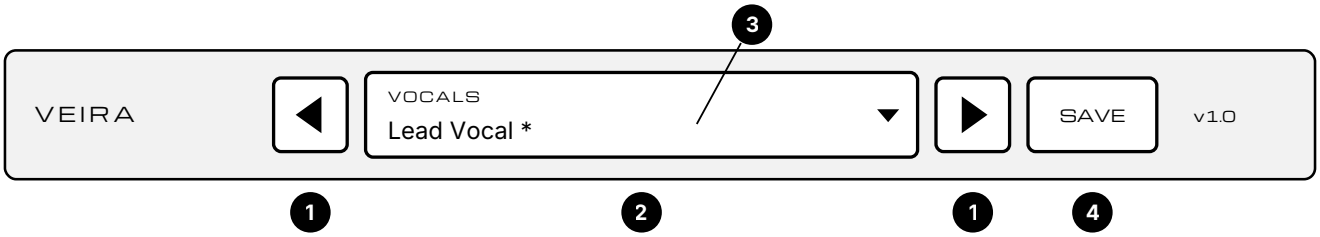
Clicks: click a level meter to reset its hold and clip light. Click the loudness readouts to restart the integrated measurement, for example at the start of a song.

Presets

VEIRA Tuner comes with **25 factory presets** in 5 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 24 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 Tuner 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 Tuner/<Folder>/
Windows	%APPDATA%\VEIRA\VEIRA Tuner\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

The presets set the instrument, its tuning and the reference pitch (and AUTO); none of them mutes the output.

Folder	Presets
Default	Init (Guitar, Standard, 440 Hz)
Guitar	Guitar Standard, Drop D, Half Step Down, Full Step Down, Drop C, DADGAD, Open G, Open D, Open E
Bass	Bass Standard, Bass Drop D, Bass Half Step Down, 5-String Standard, 5-String Drop A, 5-String Half Step Down
Ukulele	Ukulele Standard, Ukulele Low G, Baritone Ukulele, Ukulele Standard 442 (A4 = 442 Hz)
Chromatic	Chromatic 440, Orchestra 442, Orchestra 443, Baroque 415, Chromatic 432

All the presets in the Guitar and Bass folders, and the first three ukulele presets, are at A4 = 440 Hz. The Chromatic presets differ only in their reference pitch.

> **Levels.** Unlike most VEIRA presets, these don't depend on how loud your track is: the tuner reads anything above −60 dBFS the same way. Give it a clean, healthy input (see *Recipes ▸ Tuning on a DAW track*), and keep effects after the tuner, not before it.

Recipes

Step-by-step ways to work. In each, play **open strings**, one at a time, and let each ring.

Tune a guitar

1. Load **Guitar ▸ Guitar Standard** (or set INSTRUMENT to *Guitar* and TUNING to *Standard*). Check AUTO is lit.
2. Pluck the low E (string 6) with a medium attack and let it ring. Its button is ringed and the display shows STRING 6 and E2.
3. Turn the peg until the needle is near 0, then watch the strobe and turn slowly until its bars stand still and IN TUNE shows.
4. Do the same for A, D, G, B and the high E. The string row shows which string the tuner thinks you are playing.
5. Go round once more: tuning one string changes the neck's tension a little, so the first strings may have moved.

> **Tip:** Approach each note from below. If a string is sharp, turn it below the note, then bring it up: the string settles better and stays in tune longer.

Tune a bass

1. Load **Bass ▸ Bass Standard**, or **Bass ▸ 5-String Standard** for a five-string. A bass needs Bass selected: its low strings lie under the range the Guitar setting listens to.
2. Pluck each string with your finger near the neck, where the fundamental is strongest, and let it ring. A low string needs a little longer to settle (0.20 s on the low B), so wait a moment before you read the strobe.
3. Tune as for the guitar: needle to the middle, then strobe still. The 5-string's low B reads B0, 30.87 Hz.

Tune a ukulele

1. Load **Ukulele ▸ Ukulele Standard** (high G), **Ukulele Low G** or **Baritone Ukulele**, whichever your instrument is strung for.
2. In standard tuning, the string row reads G C E A from left to right, but the G (string 4) is higher than the C next to it. Don't worry about the order: AUTO finds the string from its pitch.
3. Tune each string to IN TUNE. Nylon strings stretch for days after restringing; check again before you play.

An alternate tuning (Drop D, Open G…)

1. Load the tuning from the **Guitar** folder, for example **Drop D**, or pick it with TUNING.
2. Tune the strings that change first; the grey cells in *The tunings ▸ Drop and alternate tunings* show which. In Drop D, only the low string goes down, to D2.

3. If a string is more than about half way to its neighbour's note (a big change, like Standard to Drop C), AUTO may take it for the neighbour. **Click the string's button** to lock it, tune it until IN TUNE, and click it again (or AUTO) when you are done.
4. Check the other strings: a big change in tension on one string pulls the others a little.

Tuning on a DAW track (and with MUTE)

1. Insert VEIRA Tuner as the **first plug-in** on the track your instrument comes in on, before any amp simulator or effect. Distortion, chorus and octave effects make the pitch harder to read.
2. Record-arm the track or turn on input monitoring, so your live input passes through the track's plug-ins.
3. Check the IN meter moves when you play: anything above −60 dBFS reads, so a normal recording level is plenty.
4. Click MUTE to tune in silence: the output fades out, OUTPUT MUTED shows on the display, and everyone else hears nothing. The tuner keeps reading.
5. Tune, then click MUTE again before you play. Leave VEIRA Tuner on the track: with MUTE off it changes nothing and adds no latency.

> **Tip:** On stage, the standalone app with your audio interface works the same way: instrument in, the app's output to the amp or the mixing desk, and MUTE between songs.

Play with an orchestra or a piano at 442 Hz

1. Load **Chromatic ▸ Orchestra 442** for any instrument, or keep your instrument's tuning and set REFERENCE A4 to 442 (right-click the knob and type **442**). For ukulele there is **Ukulele ▸ Ukulele Standard 442**.
2. Tune as usual. Every target is now 7.9 cents higher than at 440 Hz; the TARGET readout shows the new frequency.
3. Not sure what the reference is? Play a piano's A4 into VEIRA Tuner in Chromatic at 440 Hz and read the cents: about +8 means 442, about +12 means 443.

Specifications

Type	Tuner for guitar, bass guitar and ukulele, with a chromatic mode
Channels	Mono and stereo; the pitch is read from the sum of the channels
Latency	None
Audio	Passes through untouched, bit for bit, with MUTE off; bypassed, the tuner keeps reading
INSTRUMENT	Guitar, Bass (4 strings), Bass (5 strings), Ukulele, Chromatic (default Guitar)
TUNING	Guitar: Standard, Drop D, Half Step Down, Full Step Down, Drop C, DADGAD, Open G, Open D, Open E. Bass, 4 strings: Standard, Drop D, Half Step Down. Bass, 5 strings: Standard, Drop A, Half Step Down. Ukulele: Standard, Low G, Baritone (default Standard for each)
String	Auto or a locked string, String 1 to String 6 (default Auto); Auto changes string only when another is 30 cents closer
REFERENCE A4	415.0 to 466.0 Hz in 0.1 Hz steps (default 440.0 Hz)
MUTE	Off or on (default off); 10 ms fade either way
Detection range	Guitar 45–1500 Hz; Bass 24–700 Hz; Ukulele 100–1500 Hz; Chromatic A0 (27.5 Hz) to F♯6 (about 1.5 kHz)
Readings	About 94 per second; settles within 1 cent 0.13 s after a pluck on guitar and ukulele, 0.20 s on bass
In tune	Within ±2 cents
Level gate	−60 dBFS RMS to start reading, held down to −64 dBFS; last reading held 1.2 s
Display	Note and octave, played frequency (0.01 Hz), cents (0.1 cent), target frequency, needle (−50 to +50 cents), three-row strobe (3, 12 and 48 px/s per cent), flat and sharp lamps, string row
Metering	IN and OUT meters (sample peak, RMS); short-term and integrated loudness per ITU-R BS. 1770-4 / EBU R 128
Presets	25 factory presets in 5 folders, plus your own
Window	1160 × 720 points; resizable from 75 % to 200 %, saved with the session
Formats	VST3, Audio Units, standalone; AAX once signed
Plugin ID	Manufacturer Veir, plugin Vtun

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. If it says *Not included*, add VEIRA Tuner to that account with *Get it free* on its page. See *Getting started ▸ Activation and the licence*.

I don't see VEIRA Tuner 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**.

No pitch is shown: it keeps saying *Play a string*.

- Check the IN meter. If it doesn't move, no signal is reaching the plug-in: record-arm the track or turn on input monitoring, and check the track's input is the one your instrument is plugged into.
- If IN moves but stays under about −60 dBFS, the signal is too quiet: turn up the instrument's volume or the interface's input gain.
- Check INSTRUMENT. Each setting listens to its own range: a bass with *Guitar* or *Ukulele* selected, for example, has low strings outside that range.
- Play one open string at a time: a strummed chord has no single pitch.

It shows the wrong string. In AUTO, the tuner picks the string nearest to the pitch. A string far out of tune (a new string, a big tuning change) can be nearer a neighbour's note. Click the button of the string you are tuning to lock it. Also check TUNING: in Drop D, the low string's target is D, not E.

It reads the wrong octave.

- Make sure INSTRUMENT matches your instrument: Bass for a bass, and the right ukulele tuning (*Standard* has a high G4, *Low G* a G3).
- Play the open string, not a harmonic: a harmonic at the 12th fret sounds an octave above the string. In Chromatic, the octave shown is the one you play.
- If a low bass string still reads high, pluck it nearer the neck, where its fundamental is stronger.

The reading is jumpy, or there is no reading on a noisy input.

- Put VEIRA Tuner **before** any effects: distortion, chorus, delay, reverb and octave effects all blur the pitch.
- Damp the strings you aren't tuning; their ringing adds other notes.
- A string still reads with noise 20 dB below it. With more noise than that, use the instrument's pickup or DI rather than a microphone, or turn the instrument up.

I hear nothing from the track. Check MUTE: when it is on, the button is filled and the display shows *OUTPUT MUTED*. A session saved with MUTE on opens muted.

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.

Do my sessions keep my settings? Yes: every control, the selected preset and the window size.

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



VEIRA Tuner · User Manual · Version 0.1.0

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

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