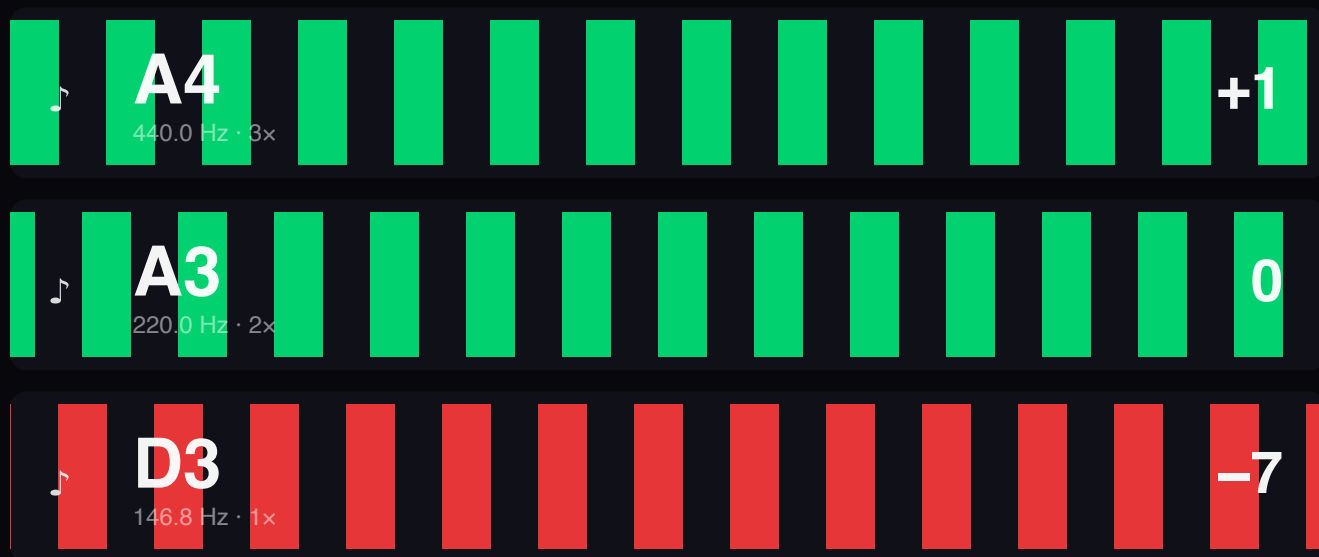


V-Tune

User Guide

A precision strobe tuner for handpans
and other multi-modal instruments.



The three-band strobe display — still + green when locked, drifting + red when out of tune.

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1. Welcome

What V-Tune is and why it exists

V-Tune is a precision strobe tuner built for handpans and other multi-modal instruments — drums, gongs, bells, anything where a single strike excites several pitches at once. Most chromatic tuners give up on these instruments because they're built around one fundamental. V-Tune is built around three: a fundamental, an octave, and an octave-plus-fifth (the 12th), all rendered as independent strobe bands so you can read every partial without them fighting each other.

Under the hood, V-Tune uses FFT peak detection plus phase-rate Goertzel analysis — the FFT tells you which frequencies are loud, the Goertzel measures how stable each one is, frame to frame. You see the result as classic strobe-pattern bars: motion = drift, still = locked.

This guide walks through every part of the app. It's short — V-Tune is a small tool, and the parts that exist exist for a reason. Read it once, then keep tuning.

2. Quick start

From cold app to tuned note in about a minute

1. Grant microphone access

On first launch V-Tune asks for the mic. Allow it. You can change device later in Settings Input.

2. Pick a note

In **Tuning / Scale** tap the note layout to choose your fundamental. Use **OCT -** / **OCT +** to set the octave. The three foundation strobe bands (1×, 2×, 3×) update instantly.

3. Press **Let's Go**

Audio starts. Strike your instrument. The bars freeze when you're in tune; they drift left when you're flat, right when you're sharp.

4. Read the cents number on the right of each band

White digits = in tune (within $\pm 5\text{¢}$ by default). Grey digits = out of tune. The big number is exactly how many cents off you are.

Sample strobe band — in tune



3. The strobe display

The big black panel — where you actually read the tune

The strobe display is the centre of V-Tune. Each horizontal stripe is one band — a frequency the app is tracking. By default you get three foundation bands stacked top-to-bottom:

- 3× — the 12th (octave + fifth). Top of the stack.
- 2× — the octave.
- 1× — the fundamental. Bottom of the stack.

A thicker cyan separator marks the boundary between foundation bands and any custom bands you add (via the Spectrum Analyser).

Reading a band

Each band shows you five things at a glance:

- ♪ icon (far left) — the per-band pitch pipe. See section 4.
- Note label — e.g. “D3”. The note this band is tuned to.
- Frequency — the exact target in Hz, under the note label.
- Strobe bars — the moving red/green pattern. Motion direction tells you sharp vs flat.
- Cents readout (far right) — the deviation in cents, signed. White when in tune, grey otherwise.

Colours, and what they mean

 In tune (within $\pm 5\text{c}$)	 Out of tune
 Selected band	 ♪ Pipe — continuous tone
 ♪ Pipe — beep mode / detected note	 Scale "ding" highlight

Motion = drift

Bars moving left your input is flat (pitch too low). Tune up. Bars moving right your input is sharp (pitch too high). Tune down. Bars holding still you're locked. The whole band turns green and the cents readout goes white.

Bar sharpness also matters: when the pitch is unstable (during the attack transient of a strike, or with very noisy input), the bars feather and blur. As the note settles they sharpen up. This is configurable via Settings Softness.

Peak hold + decay

V-Tune holds the strobe pattern for ~4 seconds after each strike, then fades it out over a second. This means you can let the note die away and still read the tune from the held pattern — no need to keep re-striking. A louder hit resets the hold timer.

4. The pitch pipe (♪)

A reference tone for every band, three clicks deep

Each strobe band has a ♪ icon on its left edge. Click it to hear the band's exact target frequency. Click again to cycle modes:

♪	Off	Silent. The default state.
♪	Tone	Continuous sine reference. Plays the band's frequency forever (until you click again). Useful for hum-along tuning.
♪	Beep	Silent until the band detects a strike — then it fires a brief reference beep at the target frequency. So as you tune each strike triggers a comparison tone you can match against. This is the LinoTune-style mode.

Clicking the ♪ icon on a different band moves the pipe to that band — same mode, new frequency. Only one band can be piping at a time. To stop completely, click the active band's ♪ until it cycles back to Off.

5. The pitch selector

Where you tell V-Tune which note to listen for

On desktop and tablet the pitch selector lives inside the Tuning / Scale accordion in the side panel. On phones it becomes the Quick-Pitch bar at the bottom of the screen (see section 6). It has two modes:

Chromatic mode

A piano-keyboard layout — 7 naturals + 5 sharps. Tap any key to tune to that note in the current octave. Use the OCT – / OCT + buttons below to drop or raise the octave. This is the default mode on launch.

Scale mode

Pick a pre-saved handpan scale (Kurd, Amara, Celtic, etc.) from the SCALE dropdown above the keyboard. The note picker switches from a chromatic keyboard to just the notes in that scale, each with a fixed octave matching the physical instrument. The **ding** (root) is highlighted in purple. Switching scales auto-selects the ding.

Note naming: in scale mode the accidentals follow the scale's convention (Kurd uses flats, Amara uses sharps). In chromatic mode they follow your Settings Notation preference.

Live note indicator

While audio is running, the note V-Tune is currently picking up from the microphone gets a soft cyan glow ring around its button. This is purely informational — it doesn't change which note you're tuning against. Useful for quickly orienting yourself when you strike an unfamiliar partial.

Tuning reference — PURE vs EQUAL

Above the note layout is a PURE / EQUAL toggle that decides what the three foundation bands are measured against:

- PURE (default) references each band against an exact integer multiple of the fundamental — 1×, 2×, 3×. A handpan whose partials are tuned to those pure ratios reads 0 on every band. This is the acoustically correct reference for handpan partial tuning.
- EQUAL references each band against the nearest equal-tempered note instead. On a pure handpan the compound-fifth (3×) band then reads about +2 cents — the real, constant difference between a pure 3:1 fifth and a tempered fifth. Use this if you tune your partials to equal temperament.

The octave (2×) band reads the same either way — octaves are an exact 2:1 in both systems. Only the compound fifth differs.

Collapsing the panel (desktop)

On desktop you can collapse the whole side panel to a slim strip — use the control beneath the stopwatch — to give the strobe display more width. Click the matching control on the strip to bring it back; collapsing also closes any open section so it reopens tidy.

6. Mobile Quick-Pitch bar

The pitch selector, condensed for thumbs

On phones and narrow tablets the pitch selector collapses into a sticky bar at the bottom of the screen. It does everything the desktop pitch selector does — scale dropdown, note selection, octave +/–, start/stop — in a touch-friendly layout that respects the iPhone home-indicator strip.

- SCALE dropdown — same scales as desktop, sits above the note grid.
- Chromatic mode — 3 rows of 4 notes, plus an OCT/Start-Stop row.
- Scale mode — responsive grid of scale notes, each labelled with its octave.
- Let's Go — fills whatever width remains in the bottom row.

Tip: the side menu (burger icon) on mobile hides everything else — accordions, spectrum analyser, settings. Open it when you need them, close it when you want to see the strobe full-screen.

7. Spectrum Analyser & Isolation windows

See the full frequency content, then isolate the bits you care about

The Spectrum Analyser is on by default (toggle it under Settings if you want it off). It opens a frequency-domain view across the audible range — a real-time picture of every harmonic your instrument is producing.

Isolation windows (ISO)

V-Tune starts with two isolation windows ready to go — a teal one and a purple one. Each is a bracket on the spectrum; V-Tune finds the loudest peak inside the bracket and drives a dedicated strobe band from it, shown beneath the spectrum. The band carries the same colour as its bracket, so it's always clear which window feeds which band.

Drag either end of a bracket to move it; the frequency / note / cents readout follows so you can line an edge up against a note. This is how you tune partials that aren't the fundamental, octave or 12th — say, a particular overtone. Remove a window with its × button, and draw a new one any time with Shift + drag (or touch-hold then drag on mobile) across the spectrum; you can have up to two at once, splitting the band area 50/50. A re-added window reclaims the freed colour slot.

8. Settings

Every knob, what it does

Input

Input device	Which microphone V-Tune listens to. Default uses the system mic.
Mic sensitivity	Gain in dB applied before analysis. Bump it up if your input is quiet, drop it if you're clipping.

Strobe feel

Brightness	How bright the red/green strobe bars are. Lower for ambient lighting, higher for stage / sunlight.
Softness	Edge feather on the strobe bars. Sharp when locked, automatically soft when way out of tune. This slider sets the upper bound.
Speed	How fast the strobe pattern reacts. Higher = livelier, lower = calmer / easier to read.

Reading the frequencies

Tolerance ($\pm$ cents)	How close you have to be before V-Tune calls you in tune. Default is ± 5 cents.
Hysteresis	Extra slack once you're locked, so a tiny wobble doesn't flicker back to red. Default 1.5 cents.
Readout smoothing	How much to smooth the cents number on the right. Higher = steadier digit, slower response. Default 75%.
Display smoothing	Smoothing applied to the strobe motion itself. Independent of readout smoothing. Default 75%.

Analysis

Reference A4	Concert pitch. Default 440 Hz. Set to 442 for some orchestral work, 432 if you're into that.
Hum filter	Notches out mains hum at 50 Hz (UK/EU) or 60 Hz (US), plus harmonics. Off by default.

9. Stopwatch

Time your tuning sessions

Open the Stopwatch accordion from the side panel for a simple running timer. Start, pause, reset. Unlike the other accordions, the stopwatch does not auto-close after 10 seconds of non-interaction — a running timer disappearing would be rude.

On desktop, no accordion auto-closes at all (you have the screen real estate, no reason to hide them). The 10-second auto-close only applies on mobile and tablet, where the side panel covers the strobe.

10. Theme, notation, and the onboarding tour

A few preferences worth knowing about

Light / dark theme

Toggle from the header. Dark is the default and what this guide matches; light is well-tested but mostly useful in very bright environments.

Notation

Pick how accidentals are labelled in Settings. Notation: ♯ sharps, ♭ flats, Do solfège, or DE German naming (which uses H for B and B for B $\flat$).

Re-running the onboarding tour

The first-launch tour walks you through every UI element by spotlighting it and asking you to interact. If you skipped it or just want a refresher, hit Show tour again at the bottom of the Settings accordion.

Press Esc or click the x to skip at any time — your scale and selection get restored. Complete the tour by pressing **Let's Go** on the last step and V-Tune leaves you on the default working layout: spectrum analyser on with its two isolation windows, accordions closed.

Staying up to date (desktop)

The macOS, Windows and Linux apps update themselves. When a newer version is published, V-Tune notices on launch and offers a one-click Install & Restart — no need to redownload or reinstall. (iOS and Android update through their stores; the web app refreshes itself.)

11. Tips & troubleshooting

Things to try if something feels off

“The bars are jittery / never lock.”

Background noise is usually the culprit. Try (a) lowering mic sensitivity until just your strikes register, (b) enabling the hum filter at your local mains frequency (50 Hz UK/EU, 60 Hz US), (c) bumping readout smoothing up a notch.

“The cents number is right but the strobe disagrees.”

They’re measuring different things. The cents number is a median-filtered, EMA-smoothed reading designed to be a stable digit you can read. The strobe is raw phase rate — it shows instantaneous motion. Trust the strobe for fine adjustments; trust the cents number for the overall verdict.

“It’s telling me I’m in tune but I’m clearly not.”

Check Settings Reference A4. If it’s set to something exotic (442, 432) you’ll be tuning against a different concert pitch. Also check you’re on the right note — handpans have rich overtones, and it’s easy to accidentally lock onto a partial that isn’t the fundamental. The live note indicator on the pitch selector (cyan glow) helps catch this.

“The strobe is too lively / too sluggish.”

Settings Speed is your friend. Drop it for a calmer reading, raise it for a more responsive one. Pair with display smoothing for fine control.

“I want to tune a partial that isn’t 1x, 2x, or 3x.”

Turn on the Spectrum Analyser, find the peak you care about, and shift+drag (or touch-hold drag on mobile) a bracket around it. V-Tune will generate a dedicated strobe band for that partial.

“My phone screen has a notch / home indicator.”

Handled — V-Tune respects iOS safe-area insets on the header, the Quick-Pitch bar, and the side drawer. The strobe never hides behind the notch or the home-indicator strip.

That’s the whole app. Strike a note, watch it lock in.