

TURBOBASS MANUAL

Version 1.0. Psychoacoustic bass enhancer, AU and VST3 for macOS.

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1. WHAT TURBOBASS DOES

Small speakers (phones, laptops, earbuds, TV speakers) can't reproduce the lowest notes of a bass line: below about 100–150 Hz they barely move air. Our ears have a shortcut, though: when they hear the harmonics of a note (2×, 3×, 4× its frequency...), they fill in the fundamental by themselves. This is the "missing fundamental" effect.

TurboBass uses it. It splits off the low band, generates a controlled series of harmonics that follow the bass note exactly, and mixes them back in at a level that tracks how loud the bass is. The result: bass you can *hear* on any speaker, without boosting the sub frequencies that small speakers can't play and that eat the headroom of your mix.

It also works on full-range systems as a tone shaper: warm even harmonics for roundness, odd harmonics and tube drive for growl and bite, and the Body control for weight in the upper bass.

TurboBass adds no latency.



The TurboBass window: the response graph on the left, the harmonic shape and level law on the right, controls below.

2. INSTALLATION

Requirements: macOS 11 or later, Apple Silicon or Intel; a host that loads Audio Unit or VST3 plug-ins (Logic Pro, GarageBand, Ableton Live, Cubase, Reaper, Bitwig, Studio One, FL Studio...).

1. Open `TurboBass-1.0.0-mac.pkg` and follow the installer. Under Customize you can choose the Audio Unit, the VST3 or both (default).
2. The plug-ins go to `/Library/Audio/Plug-Ins/Components` (AU) and `/Library/Audio/Plug-Ins/VST3` (VST3).
3. Restart your host. In Logic Pro, TurboBass is under Audio Units → 134 Audio → TurboBass.

To uninstall, delete `TurboBass.component` and `TurboBass.vst3` from those folders.

3. TRIAL AND ACTIVATION

TurboBass runs as a full-featured trial for 3 days. After that it keeps working, but its output is muted for 2 seconds every 20 seconds until you activate a license. The top bar shows how many trial days are left.

ACTIVATING

1. Buy a license at 134audio.com/turbobass. The license key arrives by e-mail and is shown on the order page.
2. Copy the key. In TurboBass, click the Trial button in the top bar (or the TurboBass logo, then Enter license key). The key is filled in from the clipboard; otherwise paste it into the field.
3. Click Activate. The panel shows "Licensed to ..." and the trial button disappears from every TurboBass instance.

Activation needs an internet connection once. After that, TurboBass works offline.

ONE COMPUTER PER LICENSE

A license is active on one computer at a time. To move it:

- Planned move: on the old computer, click the logo, then Manage license, then Deactivate, then activate on the new one.
- Old computer unavailable: activate on the new computer; TurboBass says the key is active elsewhere and offers Move license here. The old computer loses the license the next time it goes online. A key can be moved 3 times in 30 days; for more, write to us.

Reinstalling macOS or TurboBass on the same computer doesn't use up anything: activate again with the same key.

4. QUICK START

1. Insert TurboBass on a bass, 808, kick or sub track, or on a bass bus. On a full mix it works too, but you have less control.
2. Pick a preset with ◀ ▶ or the preset menu. Default is a good start; Small Speakers, Laptop Speaker and Earphone Bass are for translation; Warm Sub, 808 Tube and Growl for tone.
3. Set Frequency to where the speakers you care about stop reproducing bass: around 80–100 Hz for a mix that should still sound full on good monitors, 120–150 Hz for laptop and phone speakers.
4. Switch Listen to Harmonics to hear only what TurboBass adds, and shape it with Tone, Character and Drive. Switch back to Mix.
5. Set the amount with Harmonics. Check on small speakers (or a phone) and on your monitors.

5. THE INTERFACE

TOP BAR

- Logo: opens the About panel: version, updates, license, credits.
- ◀ preset ▶: step through the factory presets or pick one from the menu. edited appears when the settings differ from the selected preset.
- Update x.y.z (green): a newer version is available; click to download it. TurboBass checks once a day.
- Trial: days left in the trial; opens the license panel.
- Limiter on/off: a soft limiter on the added signal (see [Controls](#)).

RESPONSE GRAPH

The curves show what TurboBass does at each frequency for the current settings:

-  Original bass: the low band below Frequency, at the Original Bass level.
-  Body: the upper-bass weight added around Frequency.
-  Harmonics: the band where the generated harmonics sit. The stems mark the 2nd, 3rd and 4th harmonics of a note at Frequency (solid: even, dashed: odd).
-  Result: the overall response.

The handles can be dragged: the white circle at the top sets Frequency, the right orange handle Range, the orange handle at the peak Harmonics (up and down), the green one Body.

HARMONIC SHAPE

One period of a note (blue) and the harmonics TurboBass adds to it (orange), and below, the level of each harmonic, 2nd to 6th, relative to the strongest. The label tells the overall color: warm and even, balanced, or growl and odd.

LEVEL LAW

How the harmonic level follows the bass level: the input in dBFS on the horizontal axis, the harmonics on the vertical one, with the 1:1 line dashed. The slope (dB per dB) is shown at the top right; it is set by Dynamics and Sustain.

USING THE KNOBS

- Drag up and down; hold Shift for fine control.
- Mouse wheel or trackpad scroll changes the value; with Shift, in fine steps.
- Double-click resets to the default value.

6. CONTROLS

CONTROL	RANGE	WHAT IT DOES
Split		
Frequency	40–200 Hz	The crossover. Bass below it is the source of the harmonics and is controlled by Original Bass; everything above passes untouched. Set it where your target speakers lose the bass.
Orig. Bass	Off, –60 ... +6 dB	Level of the original low band. Lower it (or turn it off) to make room: the harmonics carry the bass line on small speakers and the sub stops eating headroom.
Body	0–100 %	Adds weight in the octave above Frequency (where small speakers still work), following the same level law as the harmonics. Useful when Original Bass is low.
Harmonics		
Harmonics	–60 ... +12 dB	The amount of generated harmonics.
Tone	Warm ... Neutral ... Growl	Balance between even harmonics (2nd, 4th, 6th: warm, round, octave-like) and odd harmonics (3rd, 5th: hollow, growling, more aggressive).
Character	0–100 %	How fast the series falls off. Low: mostly the 2nd and 3rd harmonics, soft. High: more upper harmonics, brighter and more present on tiny speakers.
Drive	0–100 %	Blends the clean harmonic series into a tube-style saturation of the bass. Adds density and a vintage edge.
Range	1–3 oct	The top of the harmonic band, in octaves above Frequency. Wider reaches higher harmonics; narrower keeps them close to the bass.
Dynamics		
Sustain	0–100 %	Keeps the harmonics up as notes decay: flatter level law and a slower release. Higher for 808s and long subs, lower to keep attacks punchy.

Dynamics	0–200 %	How the harmonic level tracks the bass level. 100 % follows loudness perception, so the perceived bass changes as the real one would. Below 100 % it's more even (compressed), above it's more dynamic.
Mono	0–100 %	How much the harmonics are generated from the mono sum of the low band. 100 % gives a solid, centered bass; lower values keep stereo bass content wider.
Output		
Output	–24 ... +12 dB	Output gain. Presets set it so that the result is about as loud as the input.
Listen	Mix, Harmonics, Bass	Mix: the result. Harmonics: only what TurboBass adds. Bass: only the original low band below Frequency.
Limiter	On, Off	A soft limiter on the added signal only (harmonics and Body), which keeps them from clipping on loud notes. The dry signal is never touched.

7. PRESETS

PRESET	FOR
Default	A balanced starting point on any bass.
Warm Sub	Round, even harmonics for subs and soft basses.
Growl	Odd harmonics and drive for aggressive basses.
Small Speakers	Translation to small speakers, keeping some original sub.
Subtle Glue	A little warmth and presence, barely noticeable as an effect.
808 Tube	808s: low crossover, tube drive, long sustain.
Deep Sub Warm	Very low subs that need to be heard elsewhere.
808 Presence	808s that should cut through a busy mix.
Sub Sustain	Long sub notes: the harmonics hold as the note decays.
Round Bass	Bass guitar and upright: transparent warmth, attack preserved.
Fretless Warmth	Smooth, singing bass guitar.
Synth Low Mid	Synth basses that need low-mid character.
Modern Punch	Modern electronic bass: tight and present.
Growl Bite	Maximum growl: strong odd harmonics, high drive.
Tube Drive	Saturated, vintage-style bass.
Kick Thump	Kicks: short sustain, emphasis on the thump.
Kick Body	Kicks: more low body.
Laptop Speaker	Mixes that must work on laptop speakers.
Earphone Bass	Earbuds and phone speakers: high crossover, little sub.
Heavy Dub	Dub and reggae: very warm, the harmonics sustain through rests.
Air Foundation	Hi-fi material: a gentle, transparent lift.

Wide Harmonic	A wide, 3-octave harmonic band with balanced tone.
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Bright Character	Bright, upper-harmonic-rich bass.
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Speaker Replace	Replaces the sub entirely with harmonics and upper-bass Body: the classic "multimedia" setting for very small speakers.
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8. TIPS

- Check on the speakers you're targeting. A phone or laptop next to the monitors is the fastest test. The goal is that the bass line is easy to follow there, not that it sounds boomy on the monitors.
 - Less sub, more harmonics frees headroom: with Orig. Bass at -3 to -6 dB and the harmonics up, the mix can be louder without the sub pushing the limiter.
 - Even for warmth, odd for definition. Warm tones blend in; growl tones stand out, but get tiring when overdone.
 - Kicks and basses together: use TurboBass on each separately with different Frequency settings rather than once on the bus, so their harmonics don't collide.
 - Mono at 100 % is the safe choice for club and vinyl: the low end stays centered.
 - Keep the Limiter on unless you have a reason not to; it only acts on peaks of the added signal.
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9. TROUBLESHOOTING

TURBOBASS DOESN'T APPEAR IN MY HOST

Restart the host completely. In Logic Pro, open Plug-in Manager and choose Reset & Rescan Selection for TurboBass. In other hosts, rescan the plug-in folders. Make sure the AU and/or VST3 were selected in the installer.

THE SOUND DROPS OUT EVERY 20 SECONDS

The trial has ended. Activate a license ([section 3](#)).

"CAN'T REACH 134AUDIO.COM"

Activation needs internet access once. Check the connection, a firewall or proxy, and try again.

"THIS KEY IS ACTIVE ON ANOTHER COMPUTER"

Click Move license here, or deactivate it on the other computer first ([section 3](#)).

"LICENSE KEY NOT FOUND"

Copy the key again from the e-mail or the order page; it starts with letters and digits and has several dashes.

10. SUPPORT AND PRIVACY

Questions, problems, ideas: info@134audio.com.

Once a day, TurboBass contacts 134audio.com to check for updates and to verify the trial or license. It sends an anonymous identifier of the computer (a one-way hash, not the hardware serial), the TurboBass and macOS versions, and, when activated, the license key. Activation also sends the computer's name, so that TurboBass can tell you where a key is in use. Nothing about your projects or audio is ever sent. Purchases are handled by our reseller, Polar. Details: [privacy_policy](#).

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