

HEAR FLAT

Personal Headphone Calibration User Manual

FREE / PRO shared manual | Last updated: 2026-05-31 | Developer: The Black Boxx



Main Hear Flat interface with manual callouts.

A practical field guide for creating, saving, fine tuning, and exporting by-ear headphone calibration curves.

Manual Map

Section	Topic	Use it for
-	Free vs Pro	Mode differences, feature availability, and where license status is displayed.
1	Interface tour	Header, graph, reference controls, Fine Tune, Master Gain, selected-band readout.
2	Curve workflow	Permanent curves, working copies, Free-mode limits, autosave, Save, and Save As.
3	Startup and library	New Curve, Curve Library, recovery, and Windows file locations.
4	Calibration mode	Pink/white noise loudness matching and practical calibration tips.
5	Fine Tune With Music	Small music-based refinements, auditioning, and Flat vs Current checks.
6	EQ export	Export formats, saved export files, and how to share a correction curve.
7	Activation	How to activate Hear Flat Pro and what to check if activation fails.
8	Settings reference	General, display, calibration, Fine Tune, and export options.
-	Support	Product, developer, support site, and version information.

Core idea: Hear Flat is a by-ear calibration workflow. Work in small moves, commit often, and save permanently only when the curve is ready.

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Developer: The Black Boxx

Hear Flat is a headphone calibration plugin you adjust by ear (no measurement hardware required).

It helps you create a personal correction curve so your headphones sound more balanced and consistent.

Key ideas

- The graph is the primary editor: 24 bands are edited via draggable nodes.
- Calibration Mode uses noise loudness-matching (technical / objective-ish).
- Fine Tune With Music mode is for musical listening and small tonal refinements (creative / subjective).
- The curve workflow is safe:
 - Commit = Autosave (safe, frequent, does NOT overwrite your permanent curve)
 - Save = Permanent save (explicit overwrite of the permanent curve)

Important notes / limitations

- This is a by-ear method. Ear shape, headphone seal, pad wear, and listening level strongly affect results.
- Hearing is most sensitive around ~2-5 kHz; small moves there can feel huge.

- Take breaks to avoid ear fatigue (especially in highs and upper mids).
- Use safe listening levels.
- Only one active Hear Flat instance is allowed at a time; additional instances will output silence.

Noise types (Pink vs White)

- Pink noise has approximately equal energy per octave. It usually sounds more balanced for calibration.
- White noise has equal power per Hz. It sounds brighter and more fatiguing, but can help spot treble issues quickly.

Recommended: start with Pink, use White briefly as a sanity-check.

FREE VS PRO

Hear Flat is available in two modes:

FREE

Includes:

- Calibration Mode
- Fine Tune With Music
- Curve Quality
- Calibration Confidence
- EQ Export
- Commit / Autosave workflow

FREE mode allows full calibration and evaluation of the software.

PRO

Includes everything in FREE, plus:

- Save Curves
- Save As
- Curve Library
- Profile Management
- Multiple permanent curve workflows

PRO is intended for users who want to build, organize, and maintain a library of headphone correction profiles.

Feature availability is shown directly within the plugin.

The About dialog displays your current license status:

License status shown as: FREE or PRO

SECTION 1 - What each part does



Figure 1. Main Hear Flat interface with the primary working areas labeled.

1) About dialog (click HEAR FLAT)

- Click the HEAR FLAT title in the header to open the About dialog.
- The About dialog shows: license status (FREE/PRO), account, version number, and developer information.
- When the About dialog opens, a short vector logo animation plays on the right (~1.5s) and then remains as a static mark.
- Click anywhere in the plugin to close it.

License Status

Hear Flat displays your current license state in two locations:

- Header badge (FREE or PRO)
- About dialog

FREE indicates the plugin is operating without a registered license.

PRO indicates the plugin has been successfully activated with a valid license.

2) Header Metrics (Curve Quality + Calibration Confidence + Progress)

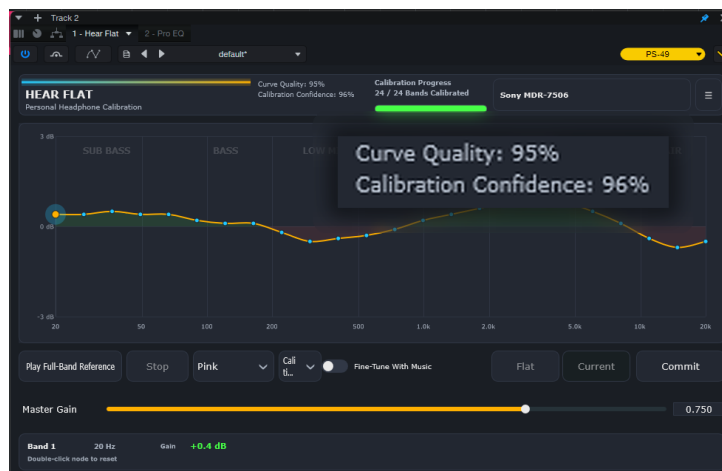


Figure 2. Header metrics enlarged for readability.

The header contains two live metrics and a progress indicator:

- Curve Quality (%):

A score based on the curve itself (smoothness and overall correction). Higher is generally better.

- Calibration Confidence (%):

A score based on your calibration process (stability, revisits, completion, fine-tune verification, etc.). Higher is better.

- Calibration Progress:

Shows how many of the 24 bands you have modified at least once, plus a progress bar.

Both Curve Quality and Calibration Confidence are saved with each curve file.

3) Curve Button (active curve name + preview)

- Shows the currently active curve name.
- An asterisk (*) means the working copy differs from the permanent saved curve.
- A miniature curve preview appears on the right side (vector-rendered from curve data).

Layout:

- Left ~40%: curve name (auto-fits; truncates with "..." if needed)
- Right ~50%: right-justified mini curve preview
- Click the curve button to open curve actions:
- New Curve..., Open Curve..., Save, Save As..., Close Curve

4) Menu Button

Opens the File menu:

- New Curve
- Open Curve...

- Save (Ctrl+S)
- Save As... (Ctrl+Shift+S)
- Export EQ...
- View EQ Export
- Close Curve
- Recent Curves
- Undo / Redo
- Reset to factory defaults
- Settings...

Shortcuts:

- Undo: Ctrl+Z
- Redo: Ctrl+Y (or Ctrl+Shift+Z)

Settings panel highlights

- Maximum Recommended Correction: hard-limits how far any node can be adjusted (e.g. +/-3 dB / +/-6 dB / +/-12 dB).
- Export Smoothing + Midrange Compensation: affect export output only (raw curve stays unchanged).
- Display toggles: region labels, curve fills, node tooltips, guide line.
- Fine Tune options: enable Flat vs Current, audition mode/boost/ducking.
- Settings are saved globally and persist across new plugin instances/sessions.

5) Commit Button (Autosave)

Commit is an autosave of the working copy.

- Safe to press constantly while experimenting.
- Never overwrites your permanent saved curve.

Visual feedback:

- Orange dot means there are changes that have NOT been autosaved yet.
- After commit, the button briefly flashes "Autosaved".

6) Frequency Graph (main editor)

- The orange curve is your current 24-band calibration.
- The curve updates live while you edit.
- Each blue node is one calibration band.

Node actions:

- Click: select a band
- Drag up/down: change gain for that band

- Double-click: reset that band to 0.0 dB instantly

Helpful visuals:

- Selected node is larger and highlighted.
- A faint vertical guide line drops from the selected node to the frequency axis.

7) Reference Controls (Calibration Mode tools)

- Play Full-Band Reference: starts broadband reference noise (pink or white).
- Stop: stops test noise.
- Noise Type: Pink or White.
- Bandwidth: Calibration (Q), Octave, or 1/3 Octave (affects band preview width).
- Fine-Tune With Music: switches to music-based refinement (disables test noise).
- Flat / Current (Fine Tune A/B): compare uncorrected (Flat) vs corrected (Current) instantly.
- These buttons are always visible, but only enabled when Fine Tune With Music is ON and the feature is enabled in Settings.

8) Fine Tune Audition (Band Solo/Emphasis)

When Fine-Tune With Music is enabled, you can temporarily focus on a single frequency band.

Audition also supports "edit while auditioning": you can drag the node while auditioning to change that band.

How to audition:

- Alt+Click a graph node to audition that band (Ctrl+Alt also works). Keep holding the mouse.
- Or press and hold the Audition button in the Selected Band panel.

While auditioning:

- The main mix is ducked (see Settings -> Audition Ducking).
- The selected band is overlaid on top of the ducked mix.

Editing while auditioning:

- While holding Alt+Click on a node, drag up/down to adjust that band.
- Release the mouse to return to normal playback. The band stays at the new value.

9) Master Gain

Controls the overall output level of the plugin.

10) Selected Band Info (below Master Gain)

Shows:

- Band number
- Frequency
- Gain

- Double-click reminder

Fine Tune only:

- Audition button: temporarily focuses the selected frequency band while you hold it (ducks the mix and overlays the band).

SECTION 2 - Curve management workflow (Permanent vs Working vs Autosave)

Hear Flat uses a safe workflow so you can experiment without destroying a good curve.

Definitions

- Permanent curve: the saved curve on disk. Only changes when you use Save or Save As.
- Working copy: what you are currently editing in the plugin.
- Autosave: a temporary saved copy of your working state, written by Commit.

Commit = Autosave (safe)

Use Commit often.

- Writes a per-curve ".autosave" file.
- Never overwrites the permanent curve file.

Save = Permanent save (explicit)

Use Save when you are confident the curve is good.

- Overwrites the permanent curve file using the current working copy.

Save As = new permanent curve

Creates a new permanent curve based on the current working copy.

Use this to create variations (e.g. "Warm", "Bright", "Neutral").

Dirty indicators

- Curve name with "*" means the working copy differs from the permanent curve.
- Orange dot on Commit means the working copy differs from the autosave.

FREE Mode Curve Workflow

FREE users can:

- Create calibration curves
- Edit calibration curves
- Commit (autosave) calibration progress
- Export EQ settings

FREE users cannot:

- Save permanent curves
- Open saved curves
- Access the Curve Library
- Manage saved profiles

When a PRO-only feature is selected, Hear Flat will display an upgrade message explaining which features require PRO.

SECTION 3 - Startup: New Curve or Curve Library

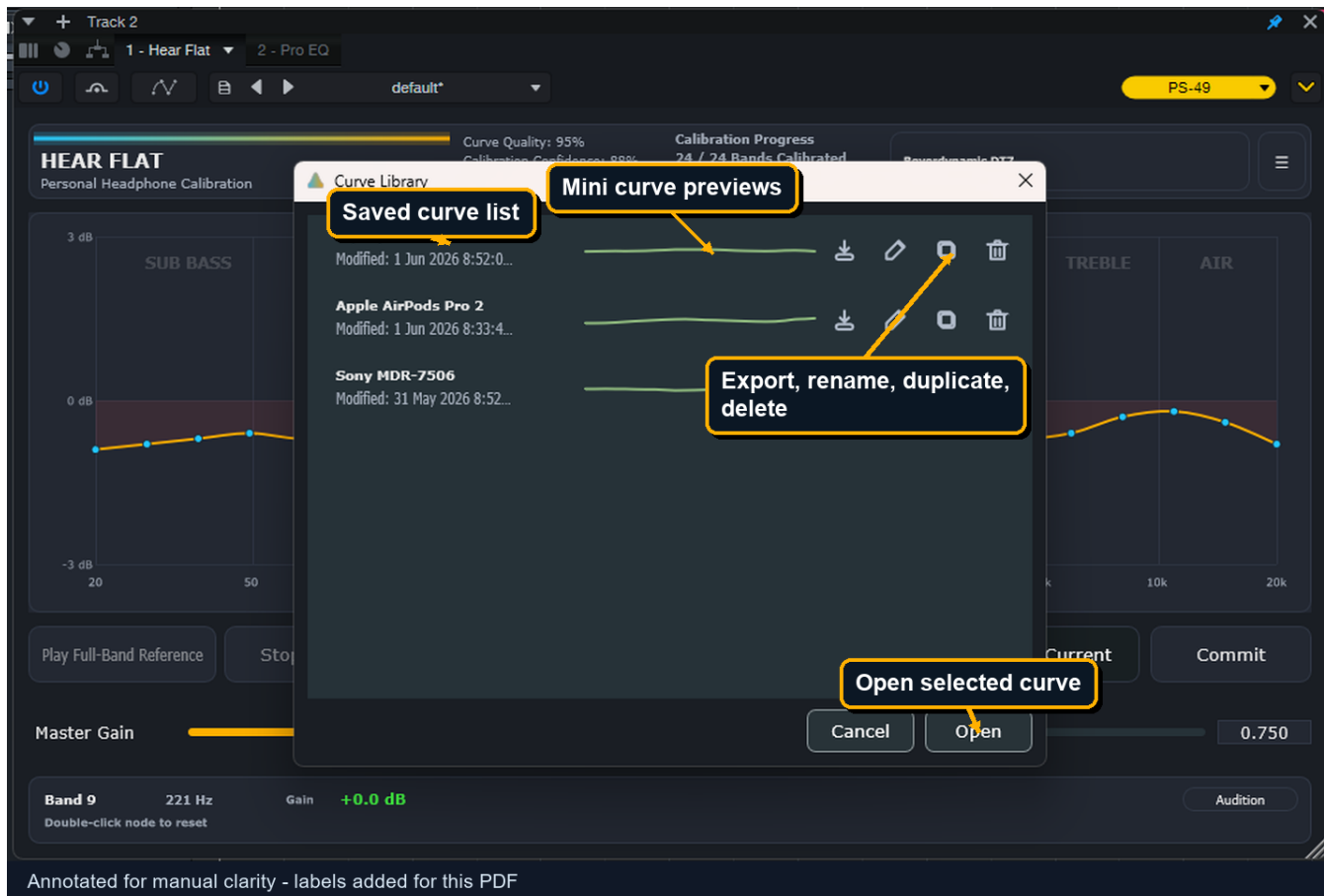


Figure 3. Curve Library actions for opening and managing saved curves.

On plugin open, you will be prompted to:

- New Curve
- Open Existing (Curve Library)

Note: If the startup splash animation is enabled, this prompt appears after the splash finishes.

New Curve

- 1) Choose New Curve.
- 2) Enter a curve name.
- 3) Click Create.

This creates:

- A permanent curve file
- A working copy for editing

Curve Library

- 1) Choose Open Existing (Curve Library).
- 2) Single-click a curve name to select it, then click Open.
 - Double-click a curve name to open it immediately.
- 3) Optional per-curve actions:
 - Export icon: opens the EQ Export dialog for that curve (see Section 6).
 - Rename icon: permanently renames the curve on disk.
 - Duplicate icon: creates an exact copy and prompts for a name.
 - Delete icon: deletes the curve (confirmation depends on Settings).

When a curve is opened:

- The permanent curve is loaded
- A working copy is created
- Editing always applies to the working copy (permanent is never edited directly)

Auto recovery (autosave)

If an autosave exists that differs from the permanent curve, Hear Flat can prompt you to recover it.

File locations (Windows)

- Permanent curves: %AppData%\HearFlat\Curves\<Name>.hfcurve
- Autosaves: %AppData%\HearFlat\Curves\<Name>.autosave

SECTION 4 - Calibration Mode (Noise Loudness Matching)

Calibration Mode applies when:

- Fine-Tune With Music = OFF

Goal

Loudness-match frequency regions so no band jumps out relative to the broadband reference.

Recommended starting settings

- Noise Type: Pink
- Bandwidth: Calibration (Q)
- Moderate listening level (avoid fatigue)

Workflow

- 1) Press Play Full-Band Reference.
- 2) Start in the midrange (roughly 800 Hz - 2 kHz) to anchor the overall balance.
- 3) For each band:

- a) Click-and-hold the band's node (band-limited noise plays seamlessly).
 - b) While holding, drag the node up/down until it matches the reference loudness.
 - c) Release to return instantly to the full-band reference.
- 4) Work outward:
 - After mids feel even, do bass/sub-bass, then presence/treble.
 - 5) Press Commit often to autosave progress.
 - 6) When you like the result, use Save (Ctrl+S) or Save As to permanently save.

Practical tips

- Make small moves (0.5 to 1.0 dB), then re-check.
- Use short holds (1-3 seconds) with frequent returns to reference to reduce memory bias.
- If very low bass is hard to match, check seal first (fit issues aren't fixable with EQ alone).
- Take breaks (2-3 minutes of silence every ~10-15 minutes).

Sanity checks

- Switch Bandwidth to Octave to confirm the curve isn't overly jagged.
- Briefly switch to White noise to spot treble imbalance, then return to Pink.

SECTION 5 - Fine Tune With Music (Musical Refinement)

Fine Tune mode applies when:

- Fine-Tune With Music = ON

In this mode:

- Test noise is disabled (your music plays continuously).
- You edit using nodes while listening to real tracks.

Workflow

- 1) Stop test noise (if playing), then enable Fine-Tune With Music.
- 2) Play familiar music (multiple genres if possible).
- 3) Make very small adjustments (often ≤ 1 dB).
- 4) Use Audition to confirm what changed:
 - Audition a node to focus on that band (Alt+Click or press/hold Audition).
 - Keep adjustments small and re-check after each change.

Auditioning a band (Fine Tune only)

Use this to investigate harshness, resonances, sibilance, mud, or vocal presence.

Option A (fast):

- Alt+Click a node to audition that band while you hold the mouse.

- While holding, you can drag up/down to adjust the band.
- Release to return to normal music playback.

Option B (panel button):

- Press and hold Audition in the Selected Band panel.
- Release to return to normal playback.

While auditioning, Hear Flat ducks the full mix so the band stands out (ducking amount is configurable).

Audition is both a listening aid and an editing workflow: you can adjust the band while auditioning, then release to return to the full mix.

Flat vs Current (Fine Tune A/B)

Use this to verify whether your curve is helping or hurting a track.

- Flat: bypasses the correction curve (uncorrected playback).
- Current: applies the correction curve (corrected playback).

Shortcuts:

- Space or Tab toggles Flat/Current while Fine Tune is ON (and the feature is enabled in Settings).

SECTION 6 - EQ Export (Share / Apply your curve in other EQs)

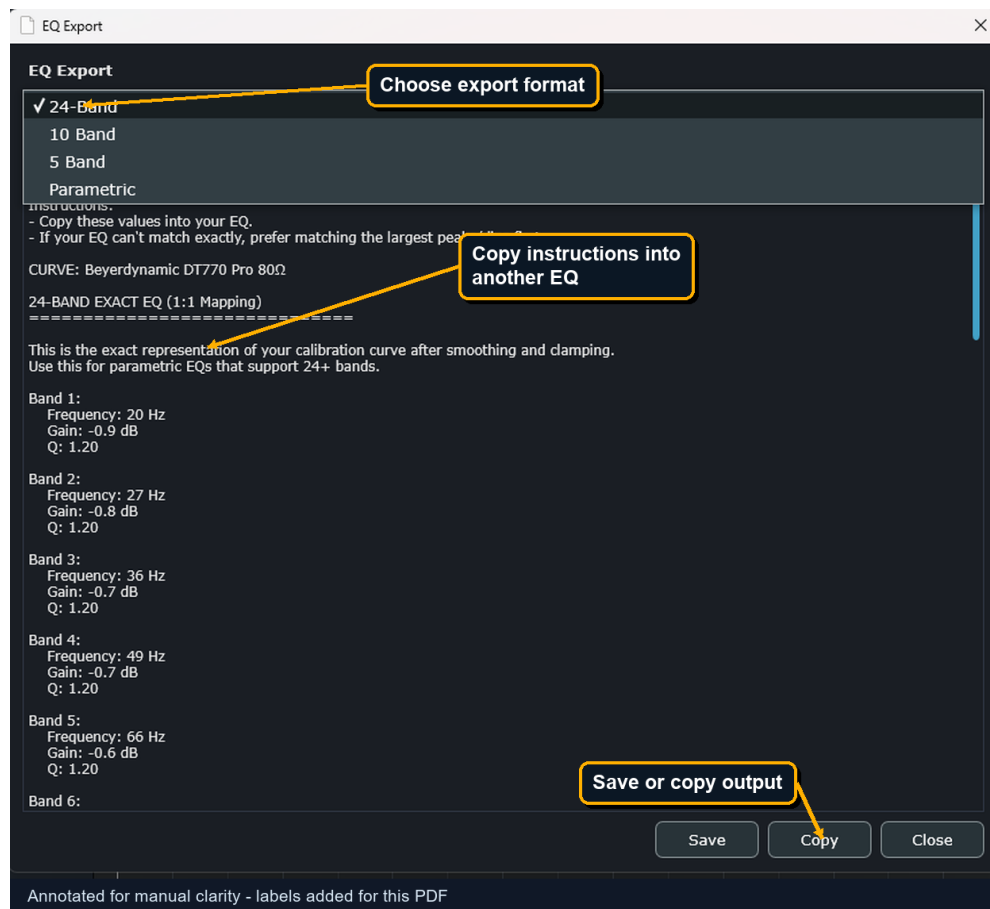


Figure 4. EQ Export dialog with format selection and save/copy controls.

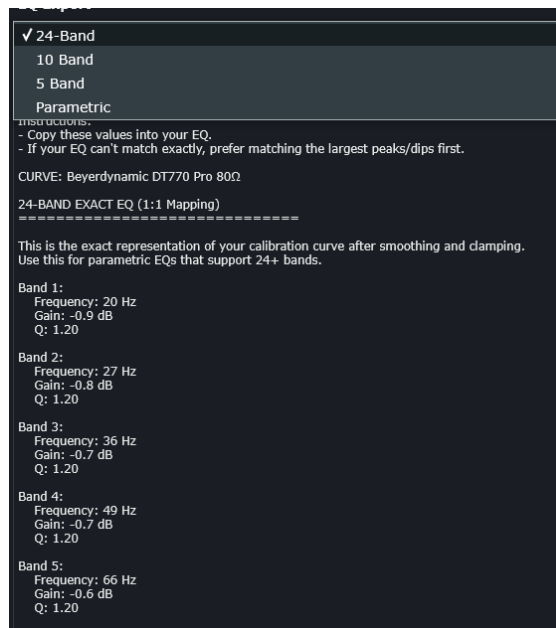


Figure 5. Export text detail view for copying settings into another EQ.

Hear Flat can generate text instructions for common EQ types.

Exports are saved per correction curve, with one file per export type.

Export types

- 24-Band: exact 1:1 mapping (24 filters, one per Hear Flat band)
- 10 Band: ISO-style 10 band approximation
- 5 Band: broad "stock EQ" approximation (shelves + bells)
- Parametric: 8-filter approximation (shelves + bells)

How to export (current active curve)

- 1) Click the Menu button.
- 2) Choose EQ -> Export EQ...
- 3) Select an export type.
- 4) Click Save to write the export file, or Copy to copy the text to the clipboard.

How to export (any saved curve)

- 1) Open the Curve Library (Menu -> Open Curve...).
- 2) Click the Export icon for the curve you want.
- 3) Choose export type and Save.

Overwrite behavior

If an export file for that curve + type already exists, Hear Flat will ask before overwriting it.

Viewing saved exports

Menu -> EQ -> View EQ Export lists all saved correction curves, and the export types saved for each.

Selecting one opens a viewer dialog where you can Copy the instructions.

Export file locations (Windows)

- Exports: %AppData%\HearFlat\Exports\<Curve Name> - 24-Band.txt (and similarly for other types)

SECTION 7 - Activating Hear Flat Pro

To activate Hear Flat Pro:

- 1) Open the About dialog by clicking HEAR FLAT.
- 2) Select Activate License.
- 3) Enter:
 - Your email address
 - Your license key
- 4) Click Activate.

After successful activation:

- License status changes to PRO

- PRO features become available immediately
- Activation is stored locally and persists between sessions

If activation fails:

- Verify your email address
- Verify your license key
- Check for typing errors

SECTION 8 - Settings Reference

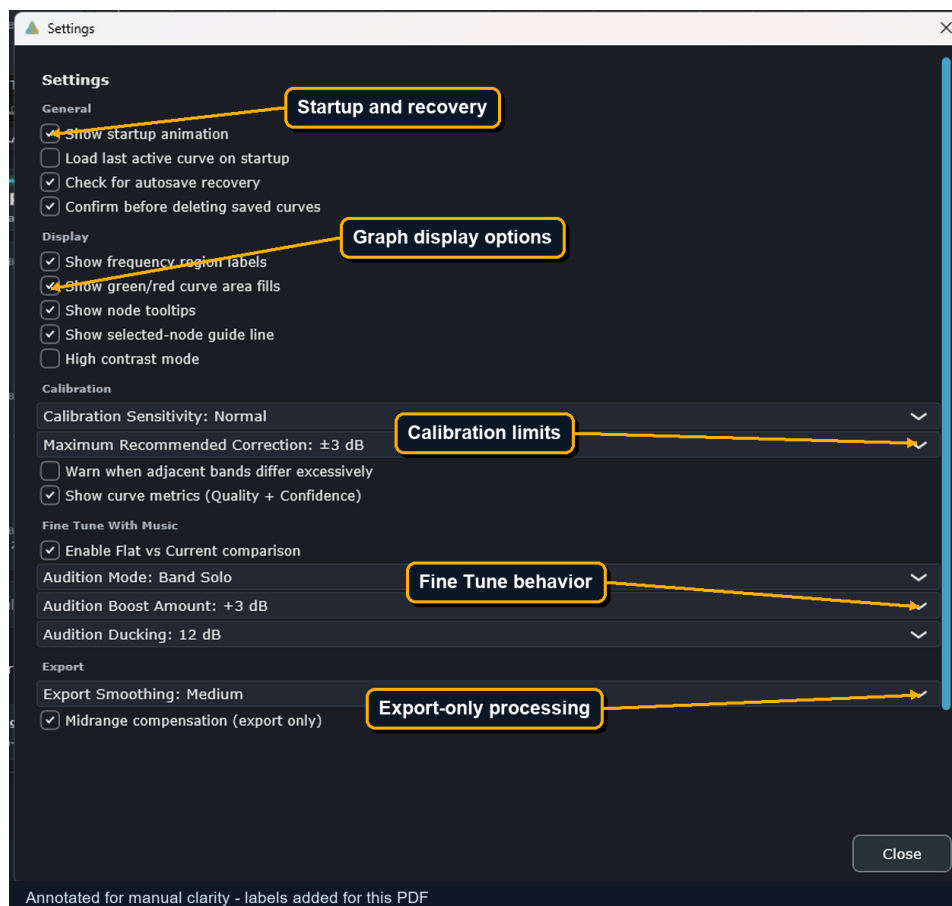


Figure 6. Settings panel grouped by startup, display, calibration, Fine Tune, and export behavior.

General

- Show startup animation: plays the splash UI animation when the editor opens.
- Load last active curve on startup: automatically opens the last used curve (if it still exists).
- Check for autosave recovery: prompt to recover autosave changes when opening a curve.
- Confirm before deleting saved curves: requires confirmation for delete operations.

Display

- Show frequency region labels: draws SUB BASS / BASS / MIDRANGE labels on the graph.

- Show curve area fills: draws subtle green/red fill above/below 0 dB.
- Show node tooltips: enables graph tooltips and Curve Library icon tooltips.
- Show selected-node guide line: draws a faint vertical guide line from the selected node.
- High contrast mode: increases graph contrast for visibility.

Calibration

- Calibration Sensitivity: Low / Normal / High affects drag sensitivity while calibrating.
- Maximum Recommended Correction: constrains all bands to a recommended range.
- Warn when adjacent bands differ excessively: warns about very jagged curves (translation risk).
- Show calibration confidence: reserved for future use.

Fine Tune With Music

- Enable Flat vs Current comparison: enables the Flat/Current buttons and Space/Tab shortcut.
- Audition Mode:
- Band Solo: ducks the main mix and overlays the band.
- Band Emphasis: similar overlay, but with gentler ducking.
- Audition Boost Amount: boost applied to the audition band in Emphasis mode.
- Audition Ducking: amount the main mix is reduced while auditioning (3/6/12/24 dB).

Export

- Export Smoothing: Low / Medium / High smoothing strength applied to export output only.
- Midrange compensation (export only): applies psychoacoustic midrange compensation to export output only.

Support

Product:

Hear Flat

Developer:

The Black Boxx

For updates, documentation, and support, visit:

blackboxxstore.com

Version:

1.0

End of manual.