Touchstone Monitor & Reference: Quick Start Guide

Version: 1.0.1
Rack Format: 4U Studio Effect (collapses to active 1U folded strip)
Requirements: Reason 10.1 or later (macOS Universal & Windows 64-bit, Standalone DAW & Reason Rack Plugin)
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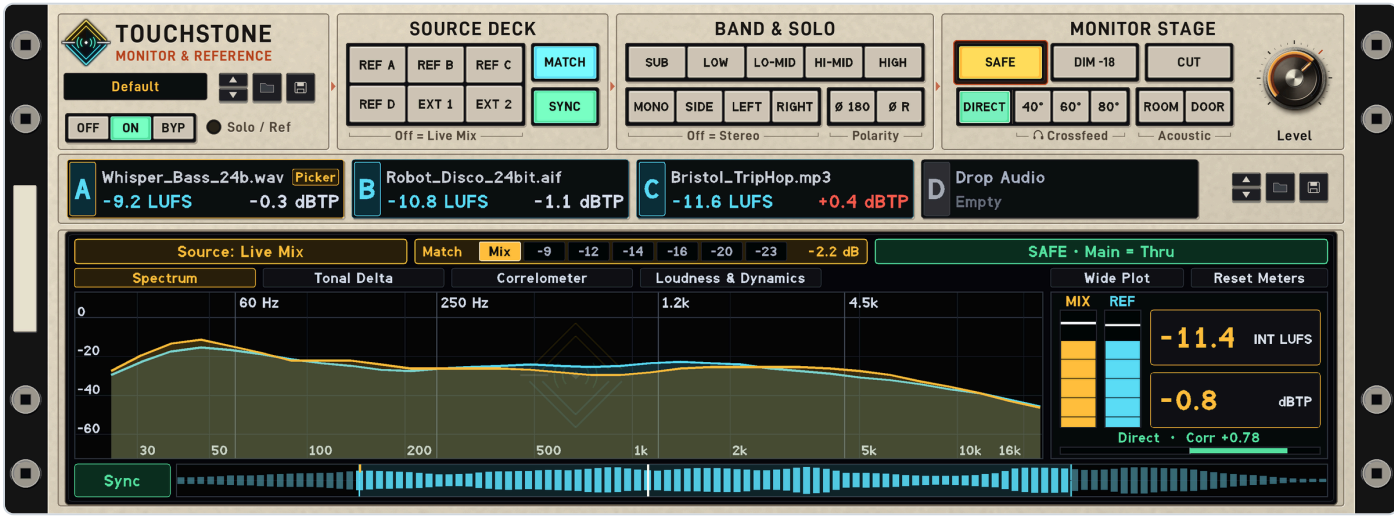
Touchstone puts a dedicated studio control room, 4-slot loudness-matched reference deck, 5-band solo matrix, headphone crossfeed and room simulator, and 4-view mastering meter right inside Reason's Master Section. It solves two everyday mixing problems at once: removing loudness bias when A/B-ing against commercial masters, and keeping monitoring tools from printing into your exported bounces.



Touchstone 4U Front Panel: Spectrum RTA, Reference Cartridges & Meter Bridge

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1. Two-Minute Wiring: Master Insert vs. Standalone Control Room

Pick the setup that matches your audio interface and mixing workflow.

Option A: Master Section Insert (Fastest Setup, 2-Output or 4+ Output Rig)

1. Drag **Touchstone** into the **final insert slot** of Reason's Master Section (`Insert Send "To"` to `Main Mix In L/R` , `Main Out L/R` to `Insert Return "From"`). Reason patches these cables automatically.
2. **2-output laptop or headphone rig**: Leave `SAFE` **Off** while mixing so you hear Reference A/B, Band Solo, Crossfeed, and Room simulation through your main outputs. Touchstone lights the amber `Solo / Ref` lamp and displays `LIVE • Monitor on Main` whenever non-flat monitoring is active. Click `SAFE` before bouncing so `Main Out` locks to clean unity passthrough.
3. **4+ output audio interface (permanently Export-Safe)**: Flip the rack (`Tab`) and patch Touchstone's `Monitor Out L/R` straight to **Hardware Interface Audio Out 3/4** (your headphone or monitor controller feed). Latch `SAFE` **On** permanently (or load the `Export Safe Control Room (Phones Out 3–4)` preset):
   - **`Main Out L/R`** stays locked to a bit-for-bit copy of `Main Mix In` . Nothing you solo, match, dim, mute, or crossfeed can ever leak into *Export Song as Audio File*.
   - **`Monitor Out L/R`** carries your full control room chain, and Crossfeed isolates automatically to `Monitor Out` whenever both outputs are patched.

Option B: Standalone Post-Master / SSL Control Room Hub

Place Touchstone directly in the rack between Reason's **Master Section** and **Hardware Interface** if you want SSL mixer `PFL/AFL` solos and `FX` cues to pass straight through your headphone room and meters:

1. Patch **Master Section** `Master Out L/R` to Touchstone `Main Mix In L/R` (your clean print mix and loudness anchor).
2. Patch **Master Section** `Ctrl Room Out L/R` to Touchstone `Ctrl Room In L/R` (carries SSL solos and FX cues, and mirrors Reason's SSL `Ctrl Room` volume knob onto your reference tracks automatically).
3. Patch Touchstone `Main Out L/R` to **Hardware Interface** `Audio Out 1/2` (and optionally `Monitor Out L/R` to `Audio Out 3/4` for dedicated headphones with isolated Crossfeed).



Touchstone 4U Rear Patchbay: 4 Stereo Inputs, 5 Independent Stereo Outputs & Control Room CV

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2. 60-Second Level-Matched Reference A/B (`Ref A` through `Ref D` + `Match`)

Comparing an unmastered -14 LUFS mix against a -8 LUFS commercial release fools your ears into preferring whichever track is louder. Touchstone removes that volume jump automatically:

1. **Load up to 4 references**: Drag MP3, WAV, or AIFF tracks straight onto Cartridges **A** through **D**, or click a cartridge to target it (`Picker` badge) and browse with the **Sample Browser** on the right. Touchstone scans each file in the background and shows its unmatched **LUFS** and **dBTP** true peak. (You can also patch live stems or rough mixes into rear `Ext Ref 1` and `Ext Ref 2` .)
2. **Choose your `Match` target**: Leave `MATCH` lit in Bay 2. In the CRT's top-center `Match` pill, click `[Mix]` to auto-trim every reference to match your live mix's loudness (-24.0 to +18.0 dB range with a -0.3 dBTP peak ceiling), or click a fixed target (`[-9]` , `[-12]` , `[-14]` , `[-16]` , `[-20]` , `[-23]`) to lock references to a standard loudness target even when your mix is stopped. Your live mix always stays at 0.0 dB unity.
3. **Flip between Mix and Reference in one click**: Click `REF A` through `EXT 2` in the **Source Deck** (or click any loaded cartridge card) for a smooth 10 ms crossfade. Click the lit button again to jump straight back to `Live Mix` . Even while listening to `Live Mix` , Touchstone keeps streaming your target reference in the background so **Spectrum**, **Tonal Delta**, and **Loudness & Dynamics** update side by side.
4. **Sync to timeline or loop a chorus**: Leave `SYNC` lit (`DAW Sync`) so reference playback follows Reason's song position, or turn `SYNC` off (`Cue Loop`) to loop and scrub choruses on the bottom waveform bar even while Reason's transport is stopped.

Song File Size Tip: Reason embeds loaded samples inside self-contained songs. If you drop several full-length 24-bit WAV tracks into the deck, delete unused slots before archiving or sharing your `.reason` file to keep project sizes small.

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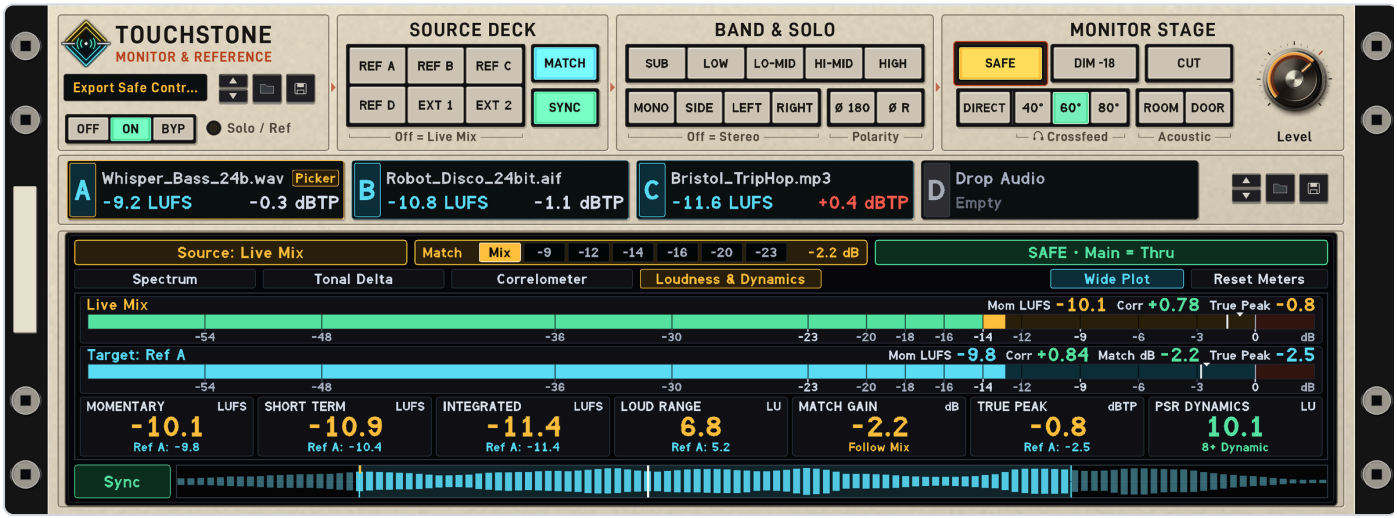
3. Frequency, Stereo & Phase Checks (`Band & Solo`)

Every filter and monitor switch sits **after** the Mix/Reference selector, so flipping between your mix and a reference auditions both through the exact same 24 dB/oct phase-aligned filters.

- **5-Band Solo (`SUB | LOW | LO-MID | HI-MID | HIGH`)**: Splits at **60 Hz**, **250 Hz**, **1.2 kHz**, and **4.5 kHz** with 0.00 dB flat reconstruction.
  - **Click** any band to solo it; click the active band again to return to **Full Range**.
  - `Shift + Click` adds or removes individual bands (selecting all five returns to Full Range).
  - **Click and drag** horizontally across adjacent buttons to sweep a multi-band span (for example, `LOW` through `HI-MID` for 60 Hz to 4.5 kHz).
  - Click the amber `Solo: ...` badge in the CRT Mode Bar at any time to clear straight back to Full Range.
- **Channel Matrix (`MONO | SIDE | LEFT | RIGHT`)**: Check mono collapse, stereo side energy, or send Left or Right to both ears. Click the active button again to return to **Stereo**.
- **Differential Polarity (`Ø 180 | Ø R`)**: Runs right *before* the Channel Matrix and Correlometer. `Ø 180` flips both channels; `Ø R` flips only the Right channel so you can confirm in one click whether a phase-cancelling stereo stem snaps back into focus when inverted.



Loudness & Dynamics Wide Plot: Twin Mix/Ref Lanes & 7 LPM Readout Cards

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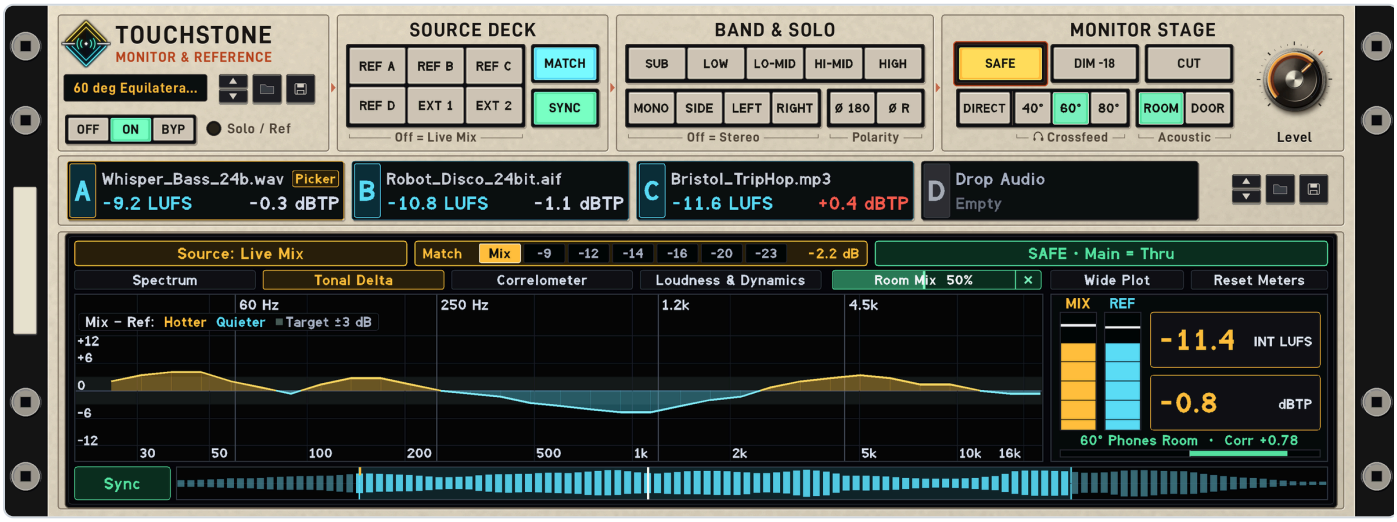
4. Headphone Translation (`Crossfeed` , `Room` & `Door`)

Headphones isolate your left and right ears completely, exaggerating hard panning and making vocal-to-reverb depth harder to judge. Bay 4 (**Monitor Stage**) gives you two translation tools that work separately or together:

1. **Speaker-Angle Crossfeed (`DIRECT || 40° | 60° | 80°`)**: Brings hard-panned elements out of your head with natural interaural timing and head-shadow filtering while holding mono sub-bass at 0.0 dB:
   - `40°` : Tight desktop nearfield focus with strong center anchoring.
   - `60°` : Standard equilateral studio monitor triangle (the best everyday starting point).

- `80°` : Wide midfield and mains spread for checking hard pans and stereo reverb tails.
- Click `DIRECT` (or click the active angle again) to turn Crossfeed off. When both `Main Out` and `Monitor Out` are patched, Crossfeed isolates automatically to `Monitor Out` (`Phones` tag in the CRT footer) so studio speakers stay dry.

2. **Acoustic Environment (`ROOM | DOOR`)**:
   - `ROOM` (green): Puts tight, treated control-room early reflections around dry closed-back headphones without shifting loudness or clouding sub-60 Hz bass. Pair `ROOM` with `60°` Crossfeed for a natural studio monitor feel.
   - `DOOR` (amber): Simulates listening through a closed studio door from the hallway outside. Click it for a fast gut-check on whether your lead vocal and kick drum carry through the wall.



Tonal Delta View with 60° Headphone Crossfeed & Treated Control Room Active

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5. Reading the 4-View Mastering CRT at a Glance

Click the four mode tabs along CRT Row B (and toggle `Wide Plot` on the right to expand any view full-width):

- `Spectrum` : 32-band RTA comparing your **Live Mix** (amber) against your **Target Reference** (cyan) across 25 Hz to 18 kHz, paired with the right-hand Meter Bridge.
- `Tonal Delta` : Plots `Mix − Ref` across ±12 dB with a shaded **±3 dB sweet-spot corridor**. Amber peaks above 0 dB mean your mix is hotter than the reference in that band; cyan dips below 0 dB mean your mix is leaner.
- `Correlometer` : 32-band stereo phase bars. **Green bars toward +1** indicate solid mono-compatible phase; **red bars toward -1** flag out-of-phase frequencies that will thin out or cancel in mono.
- `Loudness & Dynamics` : Displays twin Mix and Reference loudness bars alongside Integrated LUFS, Short-Term LUFS, Loudness Range (`LRA`), True Peak (`dBTP`), and **PSR Dynamics** (`8+ Dynamic` in green, `5.5 to 8 Tight` in amber, `below 5.5 Squashed` in red). Click any readout card to reset latched meters.

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6. `SAFE` , `DIM −18` , `CUT` & Ear-Saver Protection

- `SAFE` **(Armored Amber Guard)**: Locks `Main Out L/R` to a bit-for-bit copy of `Main Mix In` at 0 samples latency. Leave it latched permanently when monitoring off `Monitor Out` (`HW Out 3/4`), or engage it before exporting on a 2-output setup.

- `DIM -18` : Instant -18.0 dB monitor pad for talking in the room or checking quiet-level balance.
- `CUT` **(Red)**: Click-free 5 ms monitor mute. `Main Out` (when `SAFE` is on), `Main Thru` , `Scope Out` , `Ref Out` , and every CRT meter keep running live while your speakers are muted.
- `Level` **(-24.0 to +12.0 dB)**: Calibrated monitor volume trim (`Cmd/Ctrl + Click` resets to 0.0 dB unity).
- **Ear-Saver Fuse**: Clamps runaway peaks above +6.02 dBFS or heavy DC offsets on the monitor path (`FUSE!` `Reset` flashes red on the CRT until clicked). Normal audio below +6.02 dBFS passes untouched.

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7. Panel Gestures & Shortcuts Cheat Sheet

Target	Click / Drag Gesture	Modifier / Reset Gesture
Source / Band / Channel / Polarity / Crossfeed / Acoustic	Click button to engage; click active button again to return to flat default (`Live Mix` , Full Range, Stereo, `DIRECT` , Dry)	`Cmd/Ctrl/Alt + Click` resets group to default
5-Band Solo Strip	Click 1 band; drag horizontally across buttons for a contiguous span	`Shift + Click` adds or removes individual bands
Reference Cartridges `A` through `D`	Click card to target Sample Browser (`Picker`) and toggle playback if loaded	Drag MP3, WAV, or AIFF onto card; `Cmd/Ctrl/Alt + Click` returns to `Live Mix`
CRT Row A (`Source` , `Match` , `SAFE`)	Click `Source` to step sources; click `Match` to toggle; click `[Mix / −9 to −23]` chip to pick target; click `SAFE` to toggle	`Cmd/Ctrl/Alt + Click` resets `Source` to `Live Mix` , `Target` to `Mix` , or `SAFE` to `Off`
CRT Row B (Mode Bar)	Switch `Spectrum` , `Tonal Delta` , `Correlometer` , `Loudness & Dynamics` ; toggle `Wide Plot` ; click `Reset Meters`	`Cmd/Ctrl/Alt + Click` any tab returns to `Spectrum` ; click active `Room` / `Door` / `Solo` badge to clear
CRT Loudness Cards / Matrix	Click anywhere in the Meter Bridge cards, Split Matrix, or Wide 7-Card Strip to flush meters and clear `FUSE!`	Same as clicking `Reset Meters`
Waveform Scrubber (Row D)	Click or drag along the waveform to move `Cue Position` ; click `Sync` / `Cue` pill to toggle	`Shift + Drag` for 0.2x fine scrubbing; `Cmd/Ctrl/Alt + Click` resets offset to 0.0%
Monitor `Level` Knob	Drag vertically to trim -24.0 to +12.0 dB	`Cmd/Ctrl + Click` snaps to 0.0 dB unity
1U Folded Rack Strip	Direct access to `OFF/ON/BYP` , Patch Browser, `A` to `D` & `E1` / `E2` , `SUB` to `HI` solo, `XFEED` , `SAFE` , `Level` , and scribble tape	Folds 4U console down to 1U while keeping core control room switches live