

Axe-Fx II Tone Match Mini Manual

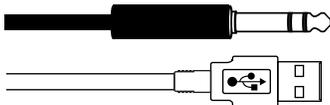
The Tone Match block changes the sound of an Axe-Fx preset to match a reference signal, such as a recording or the feed from a mic on a live amp. The result can be saved right into the preset where it was created, or exported as a User Cab IR for use in other presets. All amp and effect settings are fully editable in presets using Tone Match.

1 Create



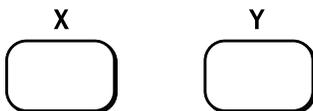
Use your Axe-Fx II to **create a starting point** that is reasonably close to the desired sound. Use the same or a similar amp type, and try to set the tone controls and drive/gain appropriately. When matching a real amp it is recommended to create a custom IR of its speaker first. Remember to include the Tone Match block, which should typically replace or follow a cab.

2 Connect



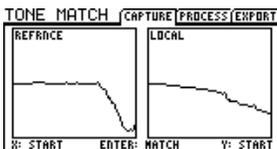
Connect your **reference signal** to the Axe-Fx II and configure the Tone Match block to "listen" at the desired inputs. The quality, duration, and content are all critical. You should use a high-quality recording which isolates the tone you're trying to match without other instruments, vocals, or excess noise, or the feed from a mic/pre on a live amp.

3 Capture



When you're ready, press the front panel "X" button to "capture" a sample of the reference (press X again to stop.) Next, Tone Match needs to "hear" your starting preset, so play your guitar into the Axe-Fx II and press "Y" to capture this "local" signal. Advanced users might create test tones, or to create routings which capture both reference and local at the same time.

4 Compare



When capturing is complete, you will see two side-by-side "frequency plots." Press ENTER on the Axe-Fx II to create the final Tone Match. You'll be able to hear the result right away when you play your guitar into the Axe-Fx II.

5 Complete



Now fine tune and save. The Tone Match block "Process" page has parameters to tweak, or you can adjust other blocks as desired (turn any pre-amp FX back on!) When you STORE, the Tone Match is saved right in the preset, which can be exported and shared like any other. Alternately, you can EXPORT Tone Match data into a User Cab memory.

1 Create



The Starting Point Preset

Use your Axe-Fx II to **create a starting point** preset. Use the same or similar amp and cab models, set the tone controls appropriately, and try to get the gain/drive amount "right". The closer the better, but remember, Tone Match aims to close the gap, so don't obsess.

Remember to insert the Tone Match block. Place it in the signal path where you want it to process the tone. You can either use it to replace a cab, or in addition to a cab (see below.) If you have an IR of the actual cab you're trying to match, using it in the signal path makes perfect sense.

To Cab or Not to Cab?

The Tone Match block can be used in place of or in addition to a cab. The following general guidelines are offered, but it is in fact possible to obtain usable results with or without a cab block in either case.



Consider the Tone Match block instead of a Cab block when you cannot find or create an IR of the cab used on a recording.



NOTE: Use a "stand-in" (a cab that sounds "close") while dialing in the starting point. (Remember to bypass or remove it later when you capture the local signal.)

When you're matching a real amp, best results will often be obtained by first creating a **USER IR** of the amp's speaker.

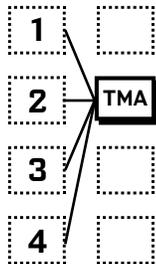
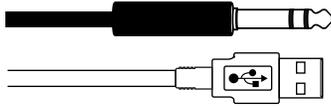
See the Axe-Fx owner's manual for more on how to create and your own custom "user" IRs.

For your starting point preset, load your custom IR into a Cab block and use the "correct" or a substitute amp model. Keep the cab turned ON during capture.

Hold the Effects

In general, your starting point preset should have no effects in front of the Tone Match block at this point. You might add some for "flavor" while dialing in, but set them to BYPASS before doing a Tone Match. The exception might be a drive or EQ that is really integral to getting the starting preset to sound or feel "right." Effects after the Tone Match block are okay, but it's perhaps best to hold off until after capturing.

2 Connect



Configure the Reference Input

For the Tone Match block to work, it first needs to “capture” short snippets of both the external “reference” signal and the sound of your starting point preset, aka the “local” signal.

The **reference signal** reaches the block through any of 9 different selectable inputs. These allow you to design a workflow that’s best for you. Depending on the structure of your preset, select the appropriate “REFERENCE SOURCE” input on the PROCESS page of the Tone Match block’s edit menu. The following choices are available:

Row 1–4: Selects any block from the column to the left of the Tone Match block. Using one of these options requires that your reference signal be routed on the grid to the Tone Match block. Except in rare cases, it is best to use one of the other “direct input” options below.

Input 1–2: Selecting **Input 1** or **2** effectively *ignores* the grid and (invisibly) routes signal directly from the designated input to the reference input of the Tone Match block. “INPUT 2” would be the typical selection when your reference signal is the analog output from a computer audio interface or the feed from a mixer/mic pre connected directly to the 1/4” inputs on the rear of the Axe-Fx II.

Block L–R: Using the left or right inputs of the Tone Match block depends on the reference signal being present on the grid and routed to the appropriate block input. Like the options “Row 1-4”, this would be a somewhat rare configuration.

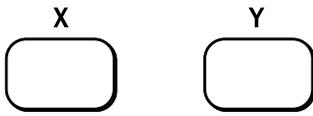
USB: Perhaps the most convenient way to pass a recording to the Tone Match block is via USB. You don’t need to make any special I/O settings to use this option. Simply play the file from your computer into the first available Axe-Fx II USB output.

In all cases, the Tone Match block sums L+R when you stereo signals.

Set Proper Levels

It is important that the reference signal reaches the tone block at a appropriate level. You can use the front panel input meters and the **I/O Audio : Input** page to monitor and control INPUT 1 or INPUT 2 levels. The meters and controls in your computer audio application can easily establish that the levels of incoming USB signals are appropriate.

3 Capture



Quality and Quantity First

Tone Match provides best results when you use high quality signals which sufficiently represent the full tonal range of the source.

Format: For reference recordings, lossless formats (WAV, etc.) are superior to lossy formats (MP3, YouTube, etc.).

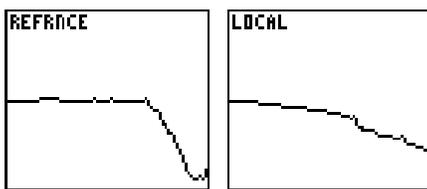
Production Value: Naturally, you'll want to match tones that sound great to begin with. A crummy recording of a great amp won't do!

Isolation: The use of raw, isolated, "lone-guitar" tracks is essential as additional instruments/vocals/noise (and certain effects) will add unwanted frequencies which "contaminate" the Tone Match.

Range: Demonstrating the "tonal range" of the source is key. Ten seconds of diverse chording and lines does more to establish how an amp responds than sixty seconds of sustained high notes.

Duration: By default, the capture process averages about a ten second window. For more or less time, increase or decrease **Average Time** on the PROCESS page of the Tone Match edit menu. The "capture window" is roughly 4-5x this value in seconds—plenty for Tone Match to "hear" all it needs. If the frequency plot "falls flat" before you press stop, you have the window set too small. Setting to max invokes a "peak hold" mode where the maximum is used rather than the average.

Mono: The Tone Match block analyzes only mono signals, isolating or summing input channels. Use the REFERENCE CHAN and LOCAL CHAN selectors on the PROCESS page of the Tone Match Edit menu to determine how incoming signals will be handled (L, R, L+R SUM).



Capture Both Signals

The capture process is simple. Open the Tone Match Block Edit menu and go to the CAPTURE page. When you're ready, press the front panel "X" button to begin capturing the **reference signal** and then let it roll. You'll see the spectrum "build" as the incoming signal is analyzed. To stop the capture, press X again. Avoid excess silence by pressing start or stop as source as material begins and ends.

Repeat the capture process for the **local signal** using the "Y" button to start and stop. Remember that if you intend to use the Tone Match to *replace* a Cab, you'll want to bypass the Cab block while capturing the local signal. Play your guitar to "generate" material for the block to analyze. It's best to play the same chords or phrases as those of the reference track.

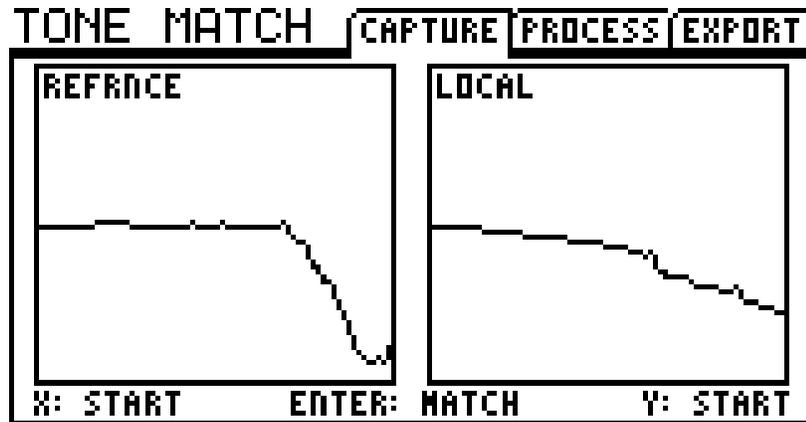
Advanced users may also wish to use the onboard synth block to generate test tones—white or pink noise or swept sine waves—to present perfectly consistent program material to both the reference and local amps.

4 Compare

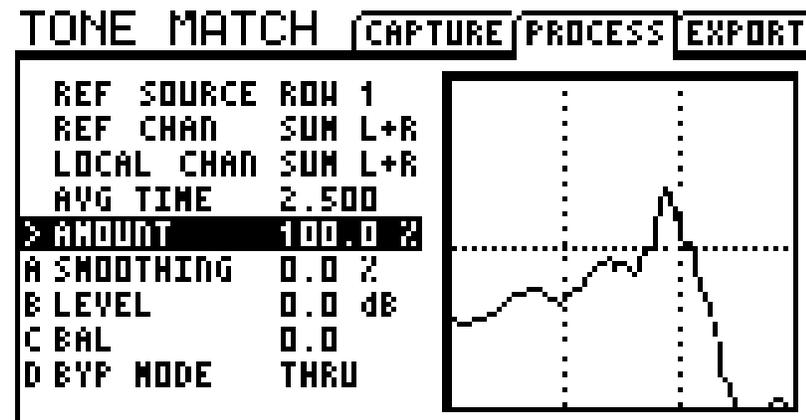


Match the Tone

Having completed the captures, you should see a spectrum for each of the signals in the display.



To create the Tone Match, press **ENTER**. Turn to the PROCESS page of the Tone Match edit menu to review your result as a frequency plot.



You can listen to the results immediately. If you're pleased, tweak and save to complete the process (see **Step 5**). Otherwise, turn back to the CAPTURE page to try again.

Hearing Differences

Our hearing is more sensitive to some frequencies than others, and different volume levels change how we perceive the "equal loudness" of different tones. When auditioning matched tones, or when making adjustments, remember that even small differences in level can have a dramatic impact on perception. Also, be sure to check your work at "gig levels" whenever possible, ideally in the context of a mix.

5 Complete

STORE



Fine Tune and Save

The Tone Match block has two parameters for optional fine-tuning. These appear on the PROCESS page of its edit menu.

Amount: Scales the effect of the Tone Match filter from 0–100%. Use this to control how much tone re-shaping is applied.

Smoothing: This “intelligently” averages the frequency curve to smooth the Tone Match result uniformly across all octaves. It first blends out minor ripples and ultimately eases all but extreme peaks or troughs.

Level, Balance and **Bypass Mode** work the same as in any other block.

Ultimately, you need to STORE. When you do (by pressing **STORE... ENTER... ENTER**) the Tone Match result is saved right inside the preset—a perfect portable package. You can edit, swap, export, share online or do anything else with it that you please.

The intent of Tone Matching is to provide the means for precision reproduction of any guitar tone without intense “tweaking.” That said, even when you’ve performed a totally satisfying Tone Match, you still have the total flexibility of the entire Axe-Fx at your disposal. Indeed, one of the best aspects of Tone Match is that nothing is set in stone.

You can adjust the amp tone, drive or dynamics, tweak to “sit” in a mix, apply effects, or create alternate routing configurations.

Exporting Results

Finally, Tone Match results can be exported for use as User Cab IRs. The EXPORT page of the Tone Match edit menu allows you to select a location, rename, and store the resulting file.

This provides the capability for instance, to use multiple simultaneous Tone Match results in a single preset by loading them up in CAB blocks instead of using the Tone Match block, or taking advantage of other parameters only available in the CAB (air, room, delay, etc.).

6 Context

Beyond Tone

Sometimes the quest can seem like a goal in itself. We created Tone Match to make it easier to “get that sound”, but also to inspire an end result: music. Copping a tone is cool, but with advanced technology, the saying, “tone is in the hands” has perhaps never been more apt. Now that you’ve created a preset, consider taking a step back from the quest for tone to make some music.