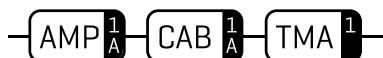


# Axe-Fx III Tone Match Mini Manual

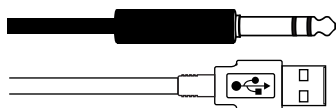
The **Tone Match Block** changes the sound of an Axe-Fx preset to match the sound of a reference signal, such as a recording, third party modeler, or the feed from a mic on a live amp. Tone Match results can be saved within the Tone Match block of the preset where they were created, or exported as a **User Cab IR** for use in other presets. Tone Matching is an easy way to close the gap on getting a specific sound. Here is an overview of the process.

## 1 Create



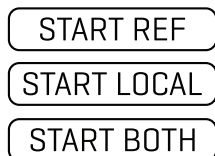
Use your Axe-Fx to create a starting preset that is reasonably close to the desired sound. Use the same amp or a similar type, and try to set the controls appropriately for the right amount of distortion. You can add the Tone Match block *after* a Cab block, or replace the Cab Block completely if you can't find a cab that sounds reasonably close. When matching a real amp it is recommended to capture its speaker first if possible, then use Tone Match to close the gap. (See *IR Capture* in the Axe-Fx III Owner's Manual).

## 2 Connect



Next, you must connect a *Reference Signal* to your Axe-Fx. This is the sound you want to match – usually the feed from a mic preamp/mixer/device, or the output of your audio file player. Connect this to the Axe-Fx through your desired input and set **Reference Source** in the tone match block accordingly. A sample diagram appears on [p. 7](#). The quality, duration, and content of your source material are all critical. The live feed from an amp or modeler typically produces the best results. Recordings must isolate the tone you're trying to match without other instruments, vocals, or unrelated noise.

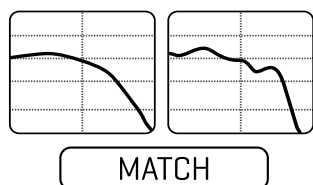
## 3 Capture



First choose a **Mode** on the Config page of the Tone Match block: use "LIVE" mode for a live amp or modeler, or "OFFLINE" mode for a recording. Next, turn to the Capture page and use the soft buttons to start the capture process.

The "Local" signal is the sound of your Axe-Fx itself—the "starting preset" you created to begin this process. For a recording, capture the reference first using "START REF" (soft-knob A). Capture the local signal whenever you are ready (soft-knob B). If you are matching a live amp, use "START BOTH" (soft-knob C). You will see the side-by-side frequency plots update in realtime.

## 4 Compare



To finish capturing and complete the process, press "MATCH" (soft-knob D). You'll be able to hear the result right away when you play your guitar into the Axe-Fx III. You can re-do one or even both of the captures to try again.

## 5 Complete



Now you can refine your settings. The Tone Match block "Config" page has parameters to adjust, or you can edit other blocks as desired. Recapture until you achieve a match that you are happy with. When you STORE, the Tone Match data is saved right in the preset. If you want to remove the Tone Match block, you can EXPORT its data into a User Cab memory instead, which also allows you to use it easily across multiple presets.

# 1 Create



**Reference:** The sound you want to match to—typically a recording or the feed from a live amp, modeler, etc.

**Local:** The sound of your Axe-Fx III “starting preset”.

## Create a Starting Preset

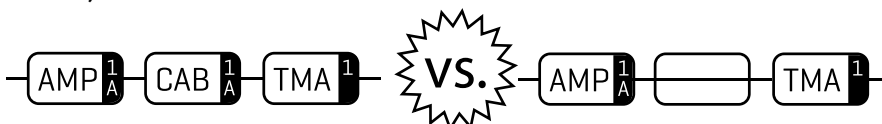
The first step in creating a Tone Match is to create a “starting preset” in the Axe-Fx. Get as close as possible to the sound you want to match by using an amp model that corresponds as closely as possible to whatever is used in the reference. Dial the tone in by hand to be reasonably close, setting basic controls like Bass, Mid, Treble, Presence and Drive/Overdrive to match the knobs of the actual amp—or by ear if you don’t know what these should be. TIP: Turning your guitar volume down can make it easier to assess distortion amount when comparing a real amp to a model.

A final word of advice: get as close as you can but don’t obsess. Remember, Tone Match aims to close the gap, and you can always refine and re-match later.

## To Cab or Not to Cab?

Next, insert the Tone Match block itself, placed wherever you want it to act on the tone—typically just after the amp and/or cab.

In fact, the Tone Match block can be used *with* or *without* a Cab block:



This scenario is ideal when you are matching a live amp. Ideally, you will capture the Impulse Response (“User Cab”) of the actual speaker in the amp you are matching. (See the Axe-Fx owner’s manual for more on how to create and your own custom “user cab” IRs, and check out Cab-Lab, our cab capture software.)

If that’s not possible, you may be able to find a very close substitute in the factory cabs or a 3rd party library. If that doesn’t work, you might consider using no cab block at all...

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, or if the reference material is something other than a mic’d guitar speaker (an acoustic guitar, a 3rd party speaker simulator, etc.)

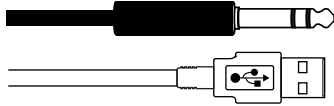
NOTE: You may wish to use a “stand-in” cab so things sound at least “listenable” while you dial in. Just remember to bypass or remove it later when you capture the local signal.



## Hold the Effects, Please!

Your starting preset should typically have NO EFFECTS. You might want some for “flavor” while dialing in, but set them to BYPASS before doing a Tone Match. One exception might be a drive pedal or EQ that is truly integral to getting the starting preset to sound or feel right, but the simple rule of thumb is to add effects after the match.

## 2 Connect



### Configure the Reference Input

The Tone Match block needs to monitor *both* the external “**reference**” signal (the feed from your live amp/device or recording) and the internal “**local**” signal (the sound of your Axe-Fx “starting preset”). The local signal is easy: just place the Tone Match block on the grid after your amp and optional cab as directed on the previous page.

The reference signal must be routed to the Tone Match block through any of nine different selectable inputs. Set “**Reference Source**” on the Tone Match **Config** accordingly. The various options are detailed below:

**Input 1–4:** These route signal from a physical analog input jack directly to the Tone Match block. “INPUT 3” (located on the rear of the Axe-Fx) is the default setting. If you need to use XLR cabling, switch to Input 2.

**Block In:** This option selects the signal at the input of the Tone Match block on the grid. Since the “Local” signal arrives to the block in the same way, this would be an uncommon choice, and you would need to make changes to the preset while you work. (One example of why you’d do this would be to tone matching a cab block on the grid.)

**USB 1/2, 3/4, 5/6, 7/8:** Perhaps the most convenient way to pass a recording to the Tone Match block is via USB. Simply set the Axe-Fx III as the audio device in your OS or application, and play the file from your computer into the selected Axe-Fx USB output pair. (Output 1/2 will be the default pair).

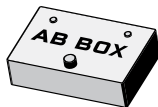
### Mono!

Tone matching is mono! The “**Reference Channel**” parameter on the Config page specifies whether you want the block to monitor the **left**, the **right** or the **sum** of left and right reference channels.

### Set Levels Appropriately

It is important that there is no clipping anywhere in your signal path. Unwanted distortion generates “rogue” frequencies, so a reference signal that is too loud cannot be matched accurately. Use the front panel LED meter bridge and the **Meters** page of the **Home** menu to monitor levels. If the inputs clip, reduce your source levels or use the **I/O : Levels** page to trim Axe-Fx III inputs.

Use the output knobs of the Axe-Fx to control its level in your monitors or headphones.



### Split the Guitar Signal for a Live Match

The Axe-Fx III can split your guitar’s signal, sending it to both to the grid *and* a physical output jack. This makes it easy to feed both LOCAL and REFERENCE at the same time without a Y-cable or A/B switch.

We recommend using Output 3 (or 4). Begin with the OUT 3 knob turned all the way down. Connect your guitar to the Axe-Fx instrument input, connect **Output 3** to your amp’s input, and make the following setting: **Setup : I/O : Audio : Output 3 : Copy Input 1 : ON**

Now, slowly turn the OUT 3 knob up (full volume = unity gain). Everything you play will be sent both the the Axe-Fx and your connected amp or device. (If this creates hum from a ground loop, use a Humbuster™ cable.)

### 3 Capture

START REF

START LOCAL

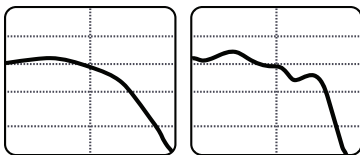
START BOTH

**Push-Knob A:**  
**Start/Stop Reference**

**Push-Knob B:**  
**Start/Stop Local**

**Push-Knob C:**  
**Start BOTH**

**Push-Knob D:**  
**MATCH**  
**(i.e. Stop BOTH)**



### Matching Different Source Material

Before we talk about HOW to capture, let's review WHAT you can capture.

- **LIVE AMP + MICS:** To match a live amp, use the line-level feed from a mixer or preamp to match one or more microphones on a connected guitar speaker. Set Mode on the Config page to "LIVE".
- **AMP WITH LOAD BOX:** If you connect and properly use a load box like the Fractal Audio X-load LB-2, you can match the speaker output from an amp without a cab or microphones.
- **ANOTHER MODELER:** Matching another modeler is easy, since it almost certainly outputs a line level signal which can be connected directly to an input on the Axe-Fx. DO NOT accidentally connect a power amp speaker output to any input of the Axe-Fx or you may do serious damage to it! As with a an amp, set Mode on the Config page to "LIVE".
- **A RECORDING:** You can also match a high quality recordings. The use of raw, isolated guitar tracks is essential as additional instruments/vocals/noise (and even some effects) will add unwanted frequencies and mislead the match. For reference recordings, lossless formats (WAV, AIF, FLAC, etc.) are superior to lossy formats (MP3, YouTube, etc.). Set Mode on the Config page to "OFFLINE".

### A Good Match Requires a Broad Tonal Reference

Whether your reference source is live signal or a recording, it ideally needs to demonstrate the complete sonic range of the source. This is easy to control if you have a guitar in your hands: ten seconds of diverse chording "up the neck" plus some "chugs" and other noises will do more to establish how an amp responds than any amount of high-note soloing in a single key. In fact, *don't* play musically; avoiding key centers gives the match more to work with. If you're using a reference recording, it's OK to play along to generate the local signal, but you can experiment to achieve different results.

**Duration:** By default, the capture process considers about ten seconds. For more or less time, increase or decrease **Averaging Time** on the Config page of the Tone Match edit menu. If the frequency plot "falls flat" before you press stop, the window is set too small. By setting the knob fully clockwise you can engage "PEAK HOLD" mode, which considers the entire duration of a performance.

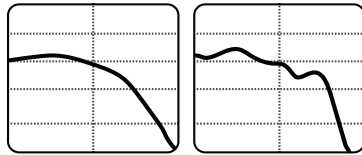
### Capturing is Simple

The capture process itself is simple. Open the Tone Match Block Edit menu and go to the **Capture** page. When you're ready, press the desired button to begin capturing. Push-knob A starts the Reference capture. Push knob B starts the Local, and Push-knob C starts both at the same time.

Two windows show the data as reference and local are captured. You'll see these "build up" as the incoming signals are analyzed. To stop the capture, press the stop button or press Match (Push-knob D). Avoid excess silence by pressing start or stop as source just as the source material begins and ends.

- **TIP:** Remember that if you intend to use the Tone Match to replace a Cab block, you must bypass the Cab block before capturing the local signal.
- **TIP:** Instead of a guitar, advanced users may wish to use the onboard synth block to generate "test tones"—white or pink noise, swept sine waves, etc., feeding these to both the reference and local amps at the same time.

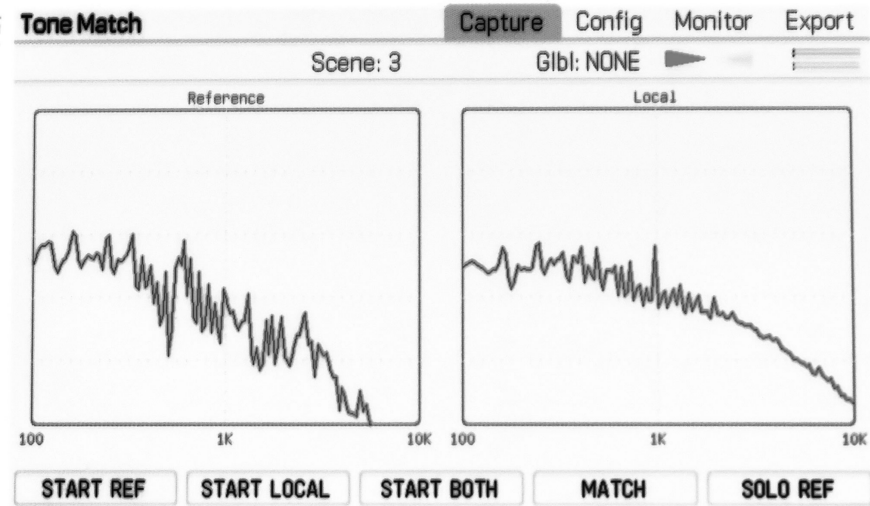
## 4 Compare



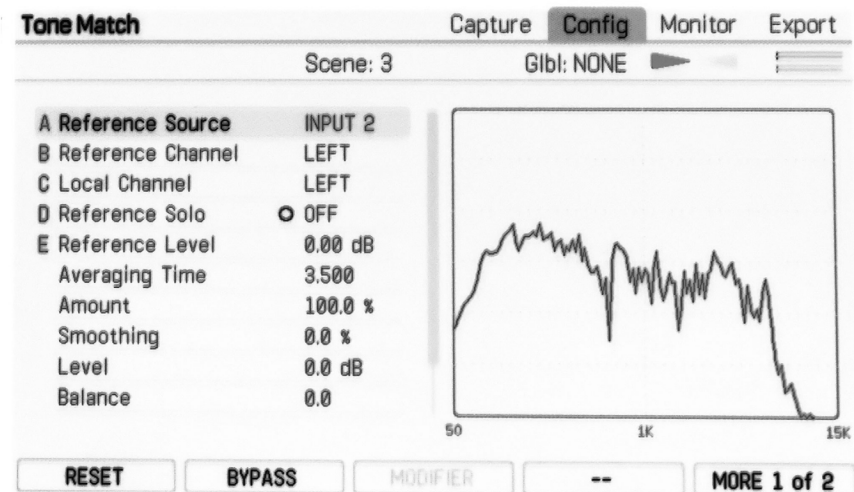
MATCH

### Match the Tone!

Having completed both local and reference captures, you should see a spectrum for each of the signals in the display:



To create the Tone Match, press the MATCH button (push-knob D). Turn to the Config page of the tone match menu to view your result:



You can listen to the results immediately and make certain post-processing adjustments such as amount and smoothing (see p. xx). If the match doesn't sound right, return to the CAPTURE page and try again after checking connections, levels, source material, etc.

### Hear a Difference?

Tone Matching is a powerful tool to shape the frequency response of a sound. Used appropriately, it can result in a “dead match” making it virtually impossible to distinguish between two sources. If you hear differences, this may be due to user errors such as mis-matching gain/distortion amounts, improperly setting levels, or choosing poor source material. Sometimes, you may think you hear a tonal difference that is really just a volume difference. Even small differences in level make us hear very different tonal balances. Always try to Match levels as closely as possible when comparing two sources. If the match is way off, check levels, check routing, and try again!

## 5 Complete

STORE



### Fine Tuning a Tone Match

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 prevalent the tone match effect will be.

**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 smooths all except extreme contours.

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

### Save Your Match

Ultimately, you need to STORE the results of your work. When you do (by pressing STORE... ENTER... ENTER) the Tone Match result is saved right inside the preset—a perfectly portable package. You can edit, swap, export, share or do anything you please with it. Please take note that sharing a tone match of any impulse response that you do not have the rights to distribute will constitute a breach of the End User License Agreement and could even constitute an intellectual property crime.

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.).

*A NOTE ABOUT CONTEXT: Copping a tone with advanced technology is cool, but it has never been more important to remember that tone is also very much “in the hands”. When the quest itself becomes the goal, keep tone in perspective by focusing on your playing and your music.*

# SETUP: Matching a Live Amp

The diagram at right shows a simple set up for Tone Matching a live amp or modeler. Follow the basic instructions presented earlier in this guide and see below for tips.

1. When matching an amp, the first consideration is how to best represent the sound of the amp. Preamp, number of mics, mic type and mic position are critical. There are abundant resources about how to capture the sound of a guitar amp using microphones. You can either work in with the amp in isolation, or record it and make adjustments until you are satisfied.

- As explained on page 2 of this guide, you can Tone Match with or without a Cab block. Once you have the amp mic'd up and sounding great, you may wish to pause to capture a custom Impulse Response as directed in the Axe-Fx III manual.

- If you are using a modeler or an amp with a speaker-simulated output, you don't need a mic or preamp and can connect a line level output directly to the input of the Axe-Fx III.

- Using a load box like the Fractal Audio X-LOAD LB-2, you can also match JUST an amp with no speaker.

2. To avoid the need for a Y cable or A/B box, the guitar's output signal is fed to the amp from the Axe-Fx through Output 3L by making the following setting: **SETUP : I/O : OUTPUT 3 : Copy Input 1 : ON**

3. For this diagram, the Tone Match block **Reference Source** is set to the default of INPUT 3, though you could easily use any other input as desired. Adjust input levels if needed using: **SETUP: I/O: Input: Input 3**

- **TIP:** To revert the Tone Match block to its default settings, turn to its **CONFIG** page and press the **RESET** button (Push-knob A). This defaults all parameters but does NOT clear match data.

4. Use the **START BOTH** button to begin captures and the **MATCH** button to finish. For a live match, play "big chords" in a variety of positions so the Tone Match block can really "hear" the sound of the amp.

5. Adding an optional footswitch makes it easy to compare your tone match to the reference source.

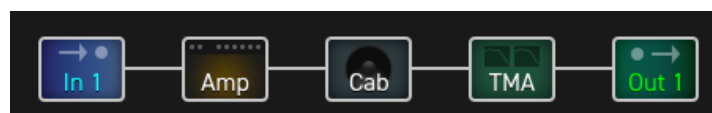
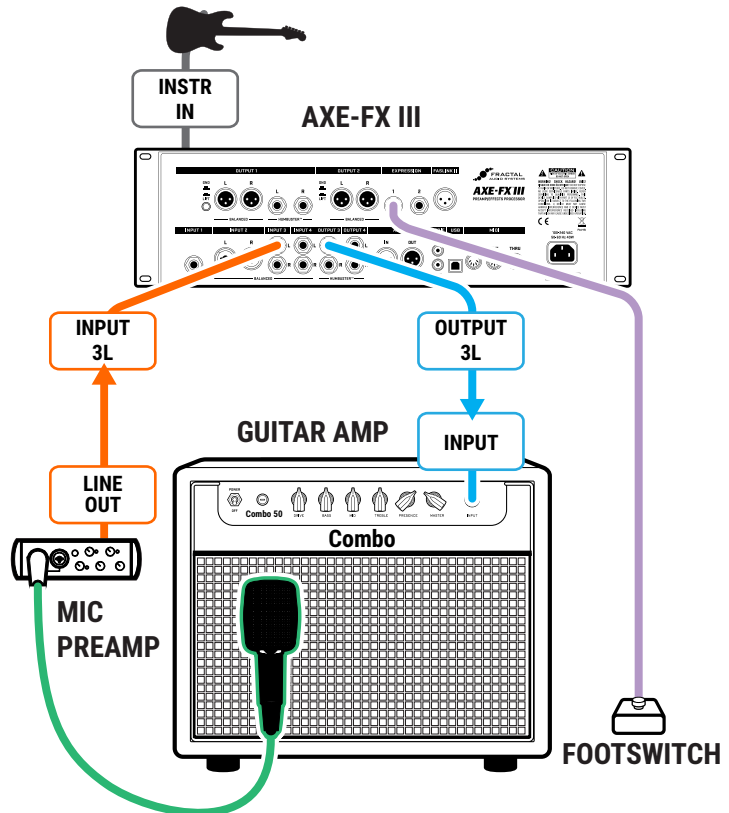
- Use a normal guitar cable to connect a generic make-break latching switch to the **EXPRESSION 1** jack on the Axe-Fx III.

- Select the **"Reference Solo"** parameter on the **Config** page of the Tone Match block edit menu.

- Press **ENTER** and change the Modifier **SOURCE** to **"Pedal 1"**.

- Turn to the **Modify** page to test your footswitch. You should see the "dot" on the graph move up or down when you stomp the switch. Press **EXIT** to return to the tone match block.

- Adjust the **Reference Level** parameter until the local and reference signals are the same volume.



A minimal preset for tone matching.