

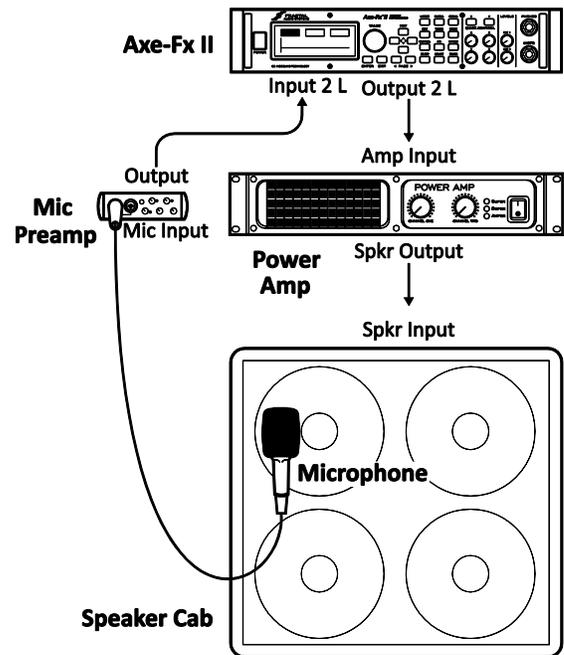
# CAPTURING IMPULSE RESPONSES WITH THE AXE-FX II

Impulse Response files (“IRs”) allow the Axe-Fx to profile the sonic properties of a real speaker system. The CAB block is pre-loaded with “Factory” IRs for 70 different speakers, while 50 “User” IR slots allow you to load custom impulses. In the past, custom IRs had to be captured and converted through a complex process. Now, firmware 3.0 for the Axe-Fx II lets you easily create your own IRs, measuring the response of your favorite speakers and creating the impulse right in the box! You simply connect the Axe-Fx II to a power amp and speaker, input the feed from your mic, capture, name, and save the IR to a USER slot.

## COMPONENTS & CONNECTIONS

To capture your own IRs, you’ll need your Axe-Fx II and several common pieces of pro audio equipment. Remember that every component in the chain contributes to the sound: the amp, cab, mic, and preamp. A sonically neutral solid-state **power amp** is best. High wattage is not important as an accurate impulse can be captured at relatively low levels, but take care to match the amp to the impedance of the connected cab. Select a **microphone** suited for guitar cab recording and position it according to your preference of tones. The web is filled with excellent info on mic placement, distance, angle, etc., but don’t be afraid to experiment. A **preamp** brings the signal of the mic up to line level for processing. This also contributes to the tone, but even the simple preamp in an inexpensive mixer can produce excellent results. With an optional mixer, multiple microphones can be combined to produce a tone that blends their best characteristics. (*It is also possible to capture mics individually and then blend them in a preset.*) Do not apply dynamics processing (e.g. compression) as this will misrepresent the response.

- Leave your guitar connected and monitors powered on so you can audition results when the capture is finished.
- Ensure that the current Axe-Fx II Preset does not use the **FX LOOP** block, and that the Axe-Fx II option **I/O:AUDIO:COPY OUT1 TO OUT2** is set to “OFF.”
- Mic the cab, which should be in a quiet, isolated place where background noise won’t be a problem.
- Connect the mic to the preamp and connect the preamp output to the **INPUT 2 Left (FX RETURN)** of the Axe-Fx II.
- Connect **OUTPUT 2 Left (FX SEND)** of the Axe-Fx II to the input of your power amp input.
- Connect the power amp’s speaker out to your speaker cabinet. Turn the preamp and power amp ON.



## CAPTURING AN IMPULSE RESPONSE

Once you’ve made required connections, press **UTILITY** on the Axe-Fx II and page to “**IR CAP**”.

Press **ENTER** with the onscreen **[TEST]** button selected to generate a sample “chirp” for setting levels. The test signal should sound loud enough to measure the speaker without background noise interference, but not loud enough to be uncomfortable or overdrive the power amp or speaker. The front panel **INPUT 2 LED** meters of the Axe-Fx II will indicate the signal level at **INPUT 2**. Adjust the levels of the power amp and preamp until an optimal level is obtained (the red LED indicates a level of -6db and may flicker on during peak “healthy” levels). If signal is especially low, you may need to increase the virtual input trim of the Axe-Fx II Input 2 (found under I/O: INPUT). When levels are set correctly, navigate to the onscreen **[CAPTURE]** button and press **ENTER**.

Wait quietly for the capture to complete (~20 seconds), then use the **NAV** keys and **VALUE** wheel to select a location (“Save to #”) and a name, then navigate to the onscreen **[SAVE]** button, and press **ENTER** twice to store the impulse.

To audition your saved IR, change the CAB block of any preset to the USER cab number where you saved the custom IR. You can combine multiple IRs using multiple CAB blocks or the “Stereo” cab mode.

Remember that microphones have tonal “color” which contributes significantly to an IR. As when recording, being able to hear what the mic “hears” by placing the cab in isolation will help produce desired results quickly. Mic position and distance are also critical, and it may take several attempts to find your “sweet spot.”