



# **ELECTRONIC AUDIO EXPERIMENTS**

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## **Technical Manual**

Citadel

Manual Revision 1

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# 1 Introduction

Thank you for your purchase of the Electronic Audio Experiments Citadel. This manual includes all the information you need to properly use and enjoy your pedal. We've also included some background that you might find interesting.

The Citadel is a preamp-style overdrive taking some inspiration from the sounds of 1960s and 1970s British amplifiers. It doesn't emulate a specific amplifier model. Instead, it is a mix of design elements that combine into something special. It delivers classically-inspired drive tones with the signature clarity, dynamics, and power of our other preamp and drive pedal offerings. It is also a highly effective foundation, letting you stack your favorite boost, distortion, and fuzz pedals with the sound and feel of a cranked tube amp.

Under the hood, the Citadel is a remix of our Model feT pedal. The Sunn Model T, which inspired the Model feT, owes its circuit design to the vast family tree of amplifiers descended from the Fender 5F6-A Tweed Bassman. The 5F6-A is one of those circuit designs where seemingly minor changes to the formula can dramatically impact the sound. Indeed, its various iterations trace the evolution of rock music itself.

The EAE team (especially Brad) has collectively worked on our fair share of amps over the years, and many of our personal amps are substantially modified as well. But, while we've been fortunate to see a few Model T's pass our respective workbenches, we could never modify such a sacrosanct piece of equipment. So instead, Brad took a junked Model feT board, swapped out several components, and created a prototype he dubbed "Marsha." The sound was, so to speak, one letter off, but we kept coming back to it even after multiple years of the prototype kicking around the workshop. With some key modifications we could trade doomy overdrive for a clear, piano-like driven sound. We enjoyed not being tied down to a specific amp, and instead we decided the pedal should have its own voice.

So, here is the Citadel. You can use it just like the Model feT: either as an amp-in-a-box drive pedal, a preamp with a clean power amp, or as part of an ampless direct recording setup. We hope you enjoy it. Thanks for reading!

-John Snyder, EAE

## 2 Power and I/O

To power your Citadel, use a standard, reliable 9VDC center-negative supply with a 2.1mm barrel tip. The Citadel has a current draw of 70mA when active. An isolated power supply is preferred when using the Citadel in a signal chain with several pedals. Recommended brands include Truetone™, Voodoo Lab™, Cioks™, etc.

The power input is protected against over-voltage, under-voltage, and reverse polarity conditions. The unit will not turn on if an incorrect power supply is used. Please note that all Electronic Audio Experiments products do not use batteries.

Use standard 1/4" patch cables to patch the Citadel into a pedal chain, as normal. The input jack is on the top right and the output jack is on the top left.

## 3 Controls

The controls are as follows:

**Bright Gain** Turn clockwise to add gain from the parallel Bright channel, which is voiced for chime and sparkle. Adds bite to the drive tone at higher settings. The Bright channel is fully muted when this control is at zero.

**Normal Gain** Turn clockwise to add gain from the parallel Normal channel, which has a dark, full-bodied voicing. Higher settings produce a thicker gain sound. The Normal channel is fully muted when this control is at zero.

**Master Volume** Turn clockwise to increase the overall output level. This control is capable of high volumes to guarantee loud operation even at the cleanest Gain settings. Use judiciously!

**Bass, Midrange, Treble** Passive 3-band FMV (Fender/Marshall/Vox) tone stack. Moderately mid scooped and relatively subtle in its operation compared to an active EQ, but decidedly authentic. Controls are highly interactive. This configuration is most effective (i.e. has the widest range) at clean to medium gain settings. For a flatter EQ curve into the front of a mid scooped amp, try Midrange at max with the Bass and Treble at zero.

The Citadel uses soft-touch relay switching in a true bypass configuration. The relay will default to the bypass state in the event of power loss.

## 4 Detailed Operating Instructions

The Citadel can be used in a few different configurations:

**Standard pedal operation:** use as normal. Be sure to try stacking other pedals in front!

**As a preamp into an FX return:** Connect the output to the effects return/power amp input of another amplifier. The Citadel replaces the existing preamp entirely.

**Preamp with a dedicated power amp:** Connect the output to a dedicated power amp. This approach assumes you are using a traditional guitar/bass speaker cabinet, otherwise see below.

**In an ampless rig:** Connect the Citadel output to an analog or DSP speaker cabinet simulator, then to a PA, powered full range speaker, and/or monitors. You can also run the Citadel directly into an audio interface, using a DAW plugin for speaker cab emulation.

To dial in your Citadel for the first time, start with all EQ knobs at their midpoint. Leaving the Bright Gain control off, turn up the Normal Gain and Master volume until you reach your desired amount of drive and volume. Then, turn up the Bright Gain control. You should hear extra gain and high end presence as the Bright Gain is turned up. Try adjusting the relative mix of Normal and Bright gains to achieve your desired sound and feel.

From there, adjust the EQ slowly, listening as you rotate each control. While highly common, the FMV eq is relatively idiosyncratic. Consider the following:

- The Bass, Midrange, and Treble knobs are highly interactive. You may find some combinations you did not expect.
- The EQ is more effective at lower gain settings. At higher gain, you will reduce dynamic range between gain stages which also reduces the effective EQ range. This is normal.
- This tone stack has a midrange cut by default. In fact, the flattest response comes from setting Bass at 0, Treble at 0, and Midrange at 10. This is helpful if you are using an amp with a pronounced mid cut, such as a Fender Twin.
- Don't be afraid to explore the full range of each EQ knob. For example, the extreme counterclockwise range of the Treble control is actually an effective bass boost at some settings.

While Citadel sounds great on its own, it can really shine when used in tandem with other pedals. For example, with a Fuzz Face type pedal you can get 60's psychedelic rock sounds, where a cranked amp transforms a simple fuzz into a wall of sound. A Rangemaster-style treble booster up front can be used for early heavy metal sounds. A screamer-style overdrive up front with a high-output humbucker can evoke 80's thrash sounds. The possibilities are vast.

As one final note: Citadel can get very loud! We made this pedal as loud as possible so that clean tones may be dialed in without sacrificing volume. Extremely high volume and gain settings can result in feedback or undesired clipping. When in doubt, dial in the Master Volume to match the level when the pedal is disengaged, and make small adjustments from there.

# Revision History

Version	Changes
0	Draft Copy