



MICROCAB I

OWNER'S MANUAL

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INTRODUCTION

Thank you for purchasing the ADA MICROCAB Miked Guitar Cabinet Emulator. The MICROCAB is designed to deliver the distinct warmth and presence of a "close-miked" guitar speaker cabinet directly to a mixing console in both recording studios and sound reinforcement applications. The MICROCAB uses the signal from the preamp outputs of a guitar amplifier, or a rack-mounted preamp such as the ADA MP-1 MIDI TUBE PREAMP. Your new MICROCAB will preserve all the tone and fidelity from your guitar, preamp, and effects units, while delivering the frequency response of various speaker cabinets, simulating difficult and time-consuming miking techniques used in recording studios. Please take a few moments to read this manual and familiarize yourself with your new MICROCAB.

IMPORTANT: At this time, please complete and return the enclosed warranty card.

FEATURES

- Produces the resonance, depth, sonic quality of a miked guitar cabinet.
- Emulates any type or size of guitar cabinet.
- Stereo ins and outs.
- Variable THUMP control allows you to "tune your cabinet's" low end.
- HI BALANCE control emulates mike placement and cabinet brightness.
- XLR and 1/4" mic and line outputs deliver more tone direct to tape.
- Pass Thru outputs give you the flexibility to use the MICROCAB on stage.

PRECAUTIONS

WARNING: To prevent fire or shock hazard, do not expose this appliance to rain or moisture.

CAUTION: To prevent electric shock, do not remove cover. No user serviceable parts inside. Refer servicing to qualified service personnel.

SET UP WARNING:

DO NOT PLUG YOUR AMPLIFIER OUTPUTS INTO THE MICROCAB INPUTS. The MICROCAB Miked Guitar Cabinet Emulator is designed for use in the preamp/effects stage of your guitar component system. A signal from the power amplifier will overload and damage the MICROCAB.

Note: Refer to the centerfold illustration of this manual for MICROCAB diagram.

QUICK SET UP

The MICROCAB Miked Guitar Cabinet Emulator is designed to accept the preamp/effects output levels only. **DO NOT PLUG YOUR AMPLIFIER OUTPUTS INTO THE MICROCAB INPUTS.**

1. Connect stereo outputs of your preamp or effects device to the stereo inputs (A & B) on rear panel of MICROCAB.
2. For line-level inputs on your mixing console use the MICROCAB 's 1/4" outputs. For mic level inputs connect the MICROCAB 's XLR (balanced) outputs. For stereo operation, connect outputs A & B to separate inputs on your mixing console.
3. Use ground lift switch on rear panel if necessary to eliminate any line noise or hum



that may be present from poorly-balanced power sources or ground loops in your system.

Note: You must have a good tone first! Set your preamp and effects to get your best tone using your whole rig, including the guitar speaker cabinets, before patching in the MICROCAB.

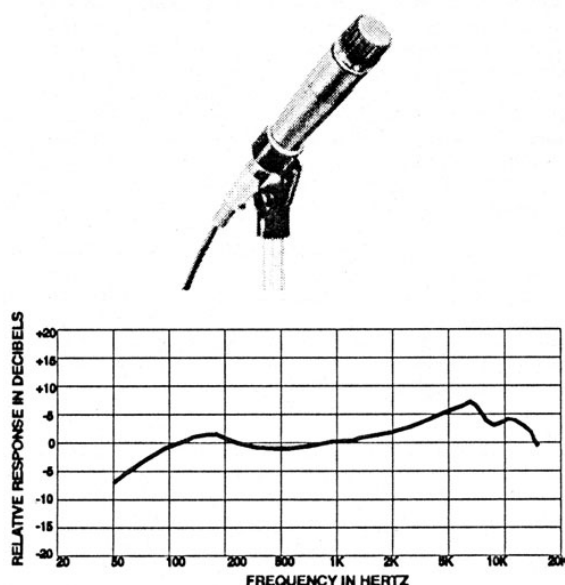
USING THE MICROCAB

The MICROCAB can be used in the recording studio to quickly capture "that right tone" just as it sounds coming out of your guitar cabinets. The MICROCAB is also used for live sound reinforcement to get the exact tone on stage into the house system, without much of the hassle involved in lengthy sound checks and mike placement trial and error, while providing absolute isolation from other instruments onstage.

Since guitar speaker cabinet systems don't have a flat frequency response, some outboard EQ is essential to simulate the characteristic tone and presence of a "live" speaker cabinet. The ADA MICROCAB is designed specifically to emulate the presence, tone and coloration found in a variety of modern and vintage speaker cabinets.

Further, since the signal at the speaker cabinet is brought to your mixing console via a microphone, and not through a direct box (this would sound terrible), the microphone's frequency response must be taken into account. The MICROCAB is designed to accommodate this characteristic, delivering the "feel" and tone that has become an integral part of the sound of amplified guitar.

Additionally, the ADA MICROCAB is capable of emulating the close-miking characteristics of the Shure SM57 microphone—the industry standard for guitar miking in the studio and live sound reinforcement. The SM57 is well-noted for its "proximity effect," or low frequency boost at 180 Hz when placed very near the sound source (see Huber, Microphone Manual, Focal Press, 1988, p. 258), further enhancing the "thump" effect of the British-style 4 x 12 cabinet. Also note (Graph C, p. 18) that the high frequency response from the Shure SM57 when placed off-axis is greatly attenuated. The shallow comb filter nodes across the mid-frequency band are another "live" characteristic that the ADA MICROCAB incorporates into its tone-shaping circuitry (comb filter).



The Shure SM57 (note characteristic "bump" at 180 Hz).



HOW TO GET THE BEST TONE WITH YOUR MICROCAB

First, get your best tone using your whole regular rig, including your speaker cabinets! Now, to capture that tone to tape, insert the MICROCAB between your preamp and your power amp. Remember, you can listen to your regular speaker tone by using the MICROCAB's pass-thru jacks on the rear panel. These are hard-wired directly off the input jacks.

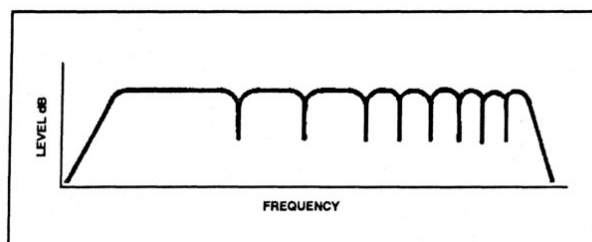
Try the variety of cabinet configuration tone settings offered by the MICROCAB to obtain the sound you want, starting with the exact speaker configuration that you are using. Use the HI BALANCE tone control on the front panel to adjust the brightness, and the THUMP control to boost or cut the amount of low-frequency resonance, especially if you are emulating a sealed cabinet. The MICROCAB offers emulations of 12-inch speakers in 1, 2, and 4-speaker configurations, in both open-back and sealed enclosures. You can also use the VINTAGE settings for a darker-sounding tone coloration.

Note: When using headphones with the MICROCAB, you may want to adjust HI BALANCE downward to compensate for high frequency emphasis found in most headphones.

WHAT THE MICROCAB DOES

The ADA MICROCAB is a tone-shaping device designed to emulate the complex physical and psychoacoustic effects that make up the unique "live" sound of a close-miked guitar cabinet. In the early days of recording, "distant" or "ambient" miking—often using a single room microphone for the entire performance—was the standard; the distinctly modern technique of close-miking adds more immediacy and control over the instrument voice. There are some "competitive" products on the market, simple band pass filters, cutting highs and some lows. Such speaker emulators can sound "muddy," that is, lacking in definition or "presence." Only the ADA MICROCAB offers true emulation of a classic "close-miked" speaker cabinet. The MICROCAB delivers improved voicing, brilliant presence, "in your face" high-midrange sizzle (1.2-1.5 KHz), and the characteristic "thump" (low frequency resonance) found in classic guitar cabinets. Moreover, the ADA MICROCAB offers you the versatility of having a variety of speaker cabinet tones at your fingertips in one compact single-space rack device.

The purpose of calling the ADA MICROCAB a "miked" guitar cabinet emulator is to distinguish it by features that account for the microphone in the audio path. As the number of speakers is increased in a miked cabinet, the number of signal paths to the microphone increases, adding a comb filter effect to the guitar sound on tape. The sound from these "paths" have a different distance to travel to get to the microphone element and therefore when they combine they produce cancellations and reinforcements across the frequency spectrum. This is one of the sources of the "complex" feel of the close-miked guitar cabinet.



Comb Filter

The "thump" or low frequency resonance in guitar cabinets mentioned above is perhaps the most powerful characteristic in live amplified guitar performance. Most cabinets are like the 4 x 12 (an array of four 12" speakers as is used in British-style stack-type cabinets) with no ports (holes as in hifi loudspeaker enclosures) and no open backs. The frequency produced by such a speaker cabinet array is around 200 Hz (abbr. for Hertz or cycles per second), which resonates with the human chest cavity. The ADA MICROCAB is unique in its ability to reproduce this power and feel of the live performance directly to tape!



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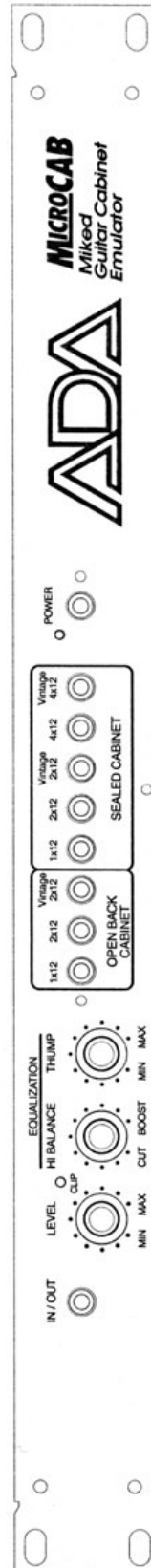


MICROCAB

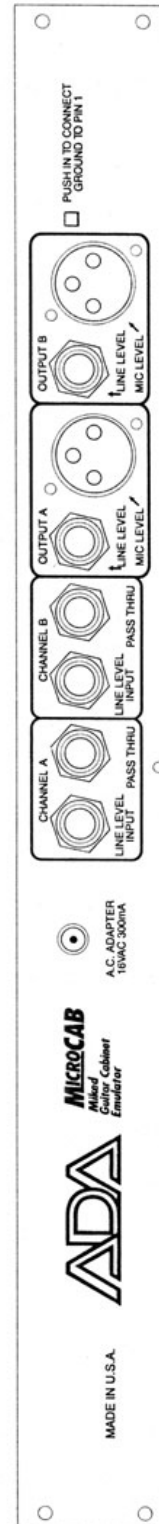
Miked Guitar Cabinet Emulator

ADA

AMPLIFICATION



Front Panel



Rear Panel

GLOSSARY

SOME AUDIO TERMS RELEVANT TO WHAT THE MICROCAB DOES

(From the CAMEO Dictionary of Creative Audio Terms, Gary Davis & Associates, 1979)

Coloration

Non-uniform frequency response resulting in distortion of the tonal quality of the source.

Close Miking

A technique for recording or sound reinforcement whereby the microphones are placed close to vocalists and to instruments or small groups of instruments. Close miking provides a great deal of presence and detail for the nearby sound source(s), while avoiding leakage from more distant sound sources. Most of today's popular music recordings use close microphone techniques.

Comb filter

A comb filter has a series of very narrow, deep notches where signals are attenuated. When the frequency response of such filters is graphed they resemble a hair comb.

Directivity factor

For a loudspeaker, this is a measurement of how much the speaker focuses the sound in a given direction. Directivity is measured by taking the ratio of the average sound level throughout 360 to the maximum sound level in front of the speaker (at a given distance and frequency).

Distant miking

A microphone placement technique where one or more mics are located at a distance of at least several feet from the performers. Distant microphone placement allows a greater area to be covered using fewer microphones than close mic placement, and is ideal for some types of recording. Distant mic placement usually will not provide the presence and detail possible with close mic placement.

Hass effect

Also known as the "precedence effect/" this psychoacoustic phenomenon was first described by Helmut Hass. The Hass effect describes our ability to perceive the location of a sound source based on the relative level and arrival time of the sound in each ear.

Presence Range

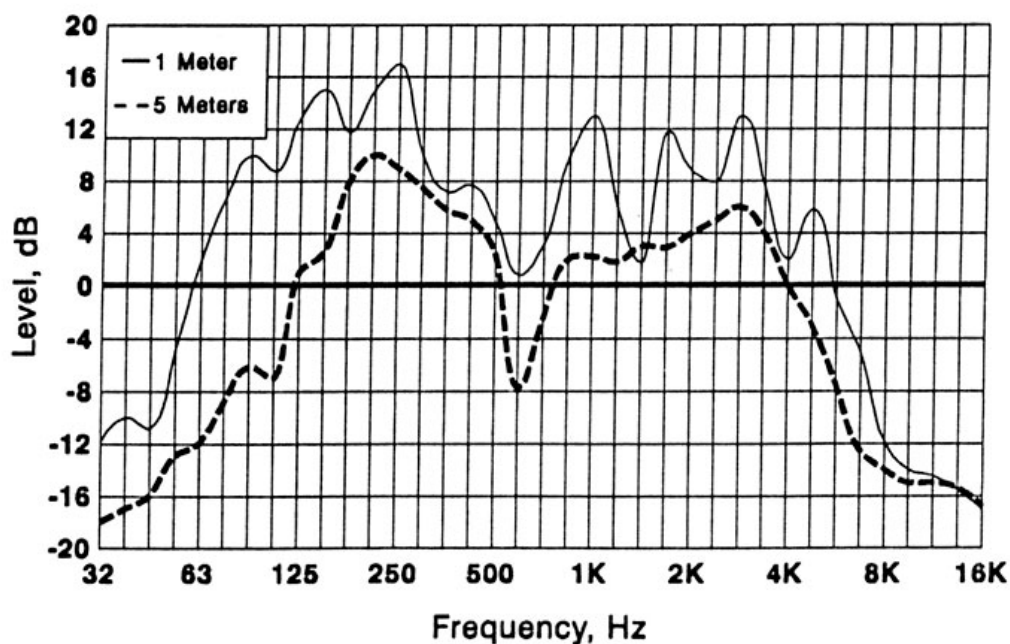
Refers to that area of the audio frequency spectrum which affects the perceived presence of the sound. Assuming there is no echo or reverb, presence or the feeling of being "up front" will be determined by the relative balance of those frequencies falling roughly in the 2 kHz to 5 kHz range.

Voicing

Refers to the careful equalization of a speaker/amplifier system as in a recording studio monitor or sound reinforcement system to achieve a particular sound or effect.

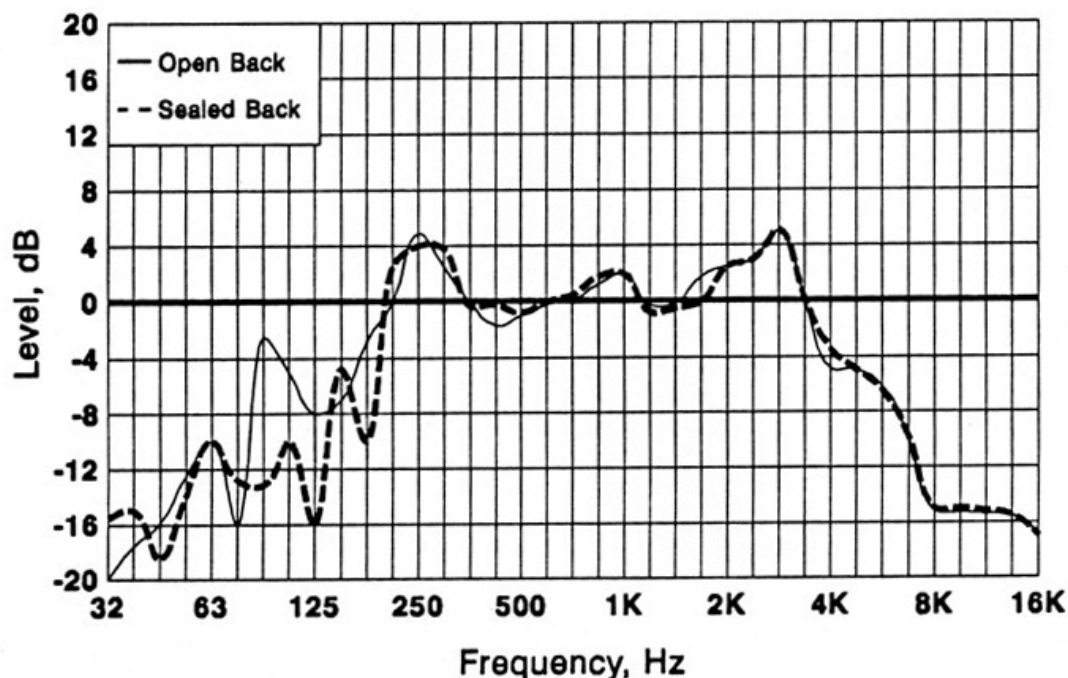


GRAPH A Vintage 4x12 Close/Far Miked



Above graph shows increasing tonal complexity of a 4 x 12 Vintage cabinet as the microphone is moved closer to the speaker cabinet. At 5 meters, note fewer peaks, less low range "thump," and less mid-hi range notches in the lower, dashed line. The greater the coloration of the signal, the richer (and livelier) your tone will be.

GRAPH B Close Miked 2x12 Open Back/Sealed Back

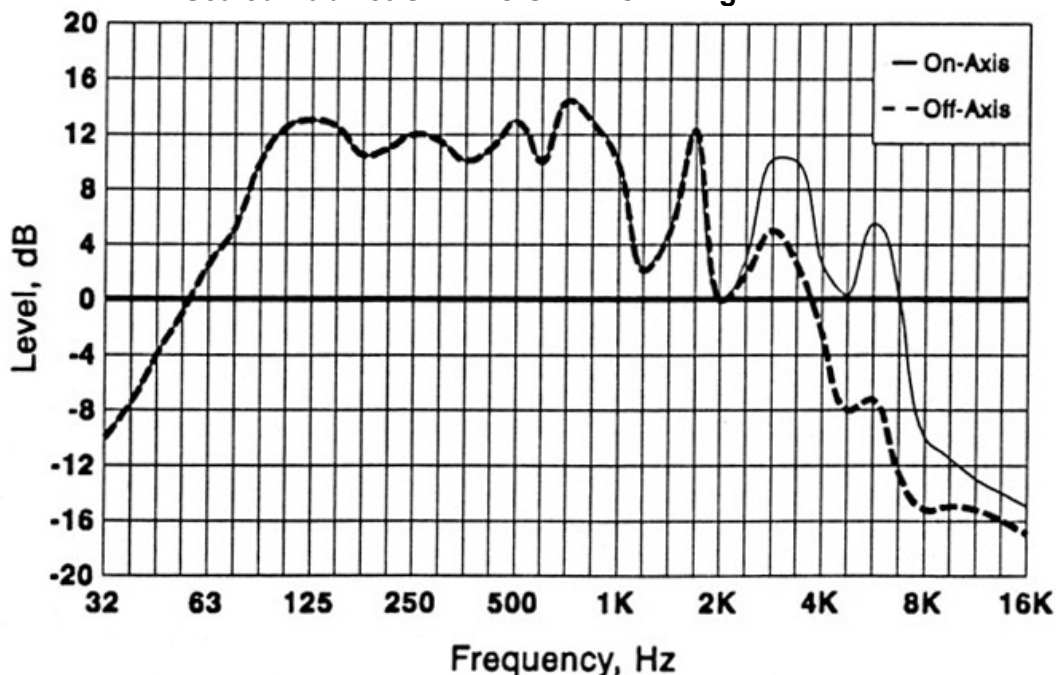


Above graph compares response from an open back (solid line) vs. sealed back (dashed line) 2 x 12 speaker cabinet. Note uneven and lower level response below 200 Hz in sealed



cabinet, resulting in more complex and "darker" tone. The MicnoCAB offers eight types of open/sealed enclosures.

GRAPH C 4x12 Sealed Cabinet Off-Axis/On-Axis Miking



This graph compares on-axis (solid line) vs. off-axis (dashed line) response characteristics in a close-miked 4 x 12 sealed cabinet. Note lower off-axis response above 2 KHz, resulting in less "brightness." This response difference can be emulated in the MICROCAB by adjusting the HI BALANCE tone control.

SPECIFICATIONS

Dimensions:	1 rack unit x 5" deep
Width	19"
Depth	5"
Height	1-3/4"
Weight:	2.5 lbs. / 4.5 lbs., shipping
Maximum Input:	+20dBV
Maximum Output:	+19dBm
Input Impedance:	50k ohms
Power Consumption:	4 Watts - External A.C adapter 117 VAC/60 Hz
	220 VAC / 50 Hz optional
	100 VAC 50/60 Hz optional .

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