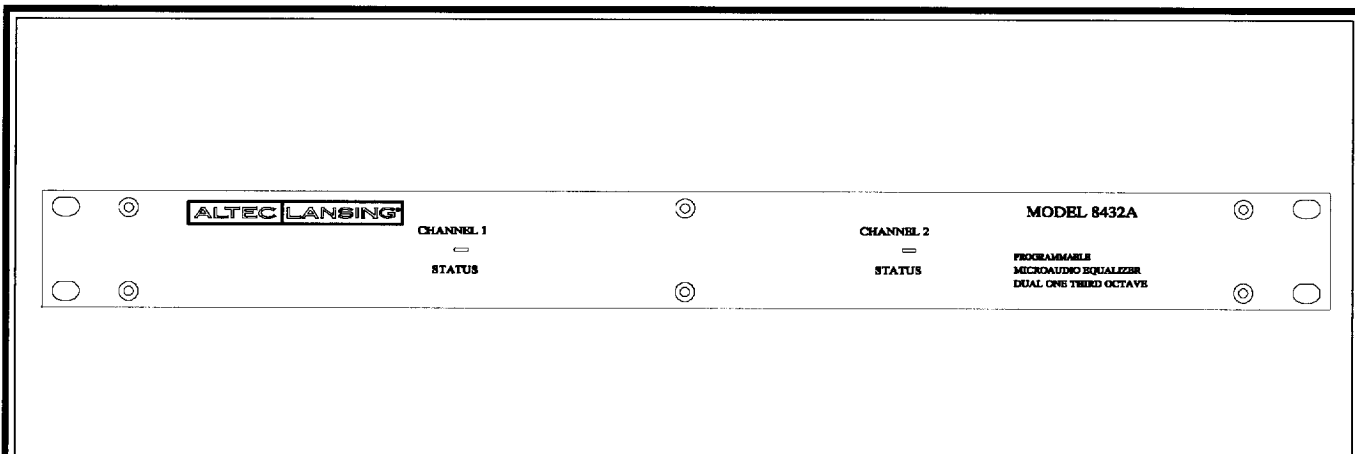




a MARK IV company

# 8431A/8432A Programmable Equalizers



- ★ Electronically Balanced Inputs and Outputs
- ★ Fully and Independently Programmable

- ★ 28 Band Equalizers
- ★ 100% Tamper-proof

## KEY SPECIFICATIONS

**Frequency Response:** 20 Hz 20 kHz,  $\pm 1$  dB  
(with HPF and LPF at 10 Hz and 32 kHz respectively).

**% (Total Harmonic Distortion + Noise):**  
< 0.01%  
(at unity gain from 20 Hz to 20 kHz).

**Noise Floor:** < -88 dBm  
(A-weighted at unity gain, HPF and LPF at 10 Hz and 32 kHz respectively).

< -86 dBm  
(22 Hz to 22 kHz at unity gain, HPF and LPF at 10 Hz and 32 kHz respectively).

**Dynamic Range:** > 106 dB.

### Input Circuitry:

Type: Electronically-balanced.  
Impedance: 30 k $\Omega$  balanced or unbalanced.  
Nominal level: 0 dBu (0.775 vrms).  
Maximum level: +20 dBu.

### Output Circuitry:

Type: Electronically-balanced.  
Source impedance: 50  $\Omega$ .  
Min. load impedance: 600  $\Omega$ .  
Nominal power: 0 dBm (0.775 vrms across 600  $\Omega$  load).  
Maximum power: +20 dBm.

## DESCRIPTION

The Altec Lansing models **8431A/8432A** are 28 band, one-third octave programmable equalizers. The **8431A** is a single channel and the **8432A** offers two independent channels. Two versions of each unit are offered. The **-PA232** version uses the standard RS-232 protocol and may be connected to an RS-232 port without external adapters. The **-PA422** version conforms to the standard PA-422 communications protocol, allows for longer control cable runs, and is useable with other PA-422 compatible products.

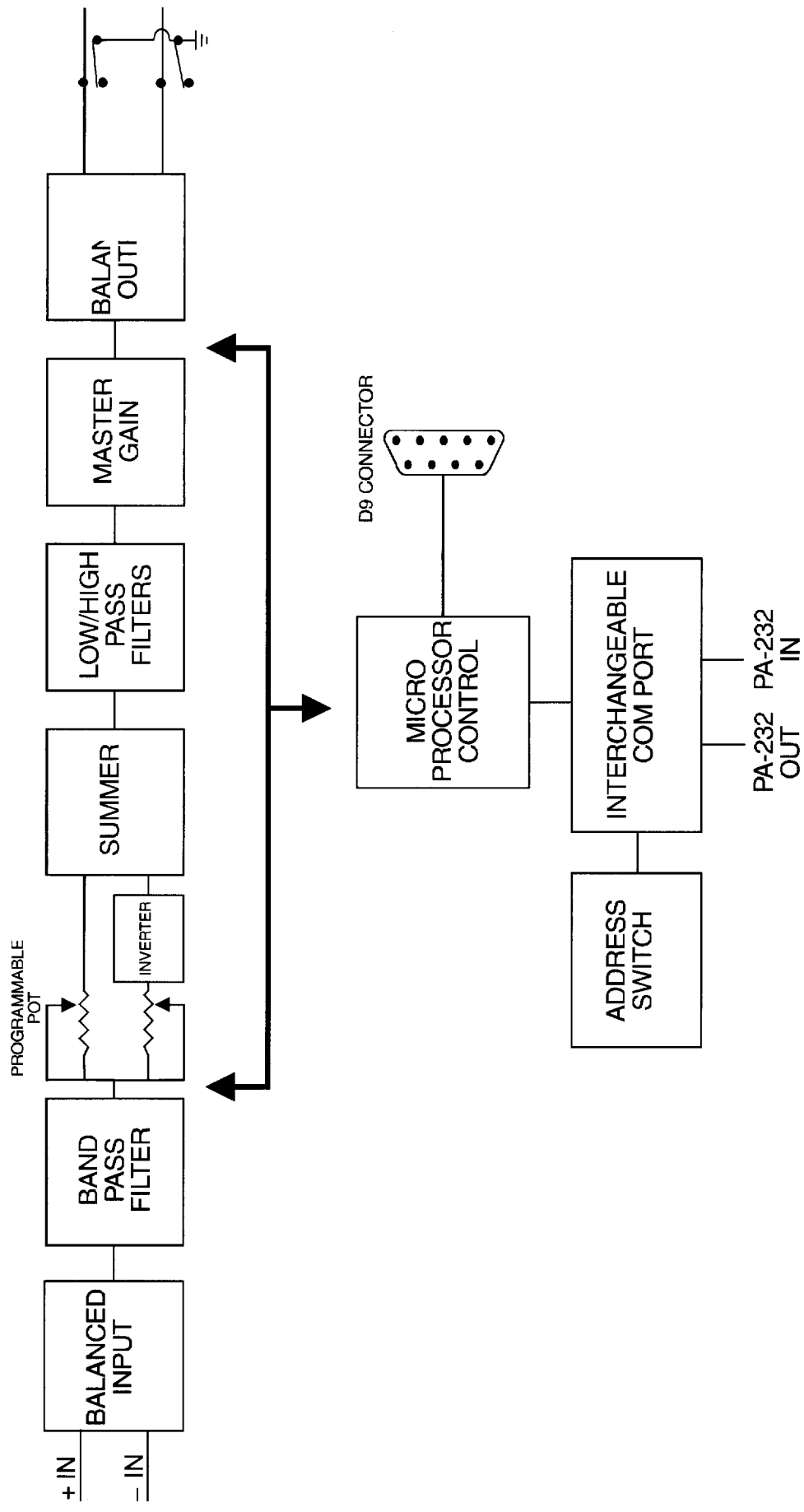
The equalizers are programmed using Acoustagraphics™, a menu-driven software program. This software, along with the unique packaging of the units, makes these equalizers ideal for situations which require tamper-proof, compact and reliable equalization.

The unit allows 0-10 dB of boost/cut per band in 1/2 dB steps, and a master gain control offering 0-10 dB in 1/2 dB steps. Each channel has seven non-volatile memory locations and one active memory. High and low pass filters offer programmable corner frequencies for each channel. A Remote Memory Select switch (per channel) allows for external closures to reprogram the equalizer from a preset memory. An EQ Bypass switch allows the user to easily remove the signal from a processed channel.

There are two optional plug-in isolation transformers available: the **15550A** input transformer and the **15560A** output transformer.

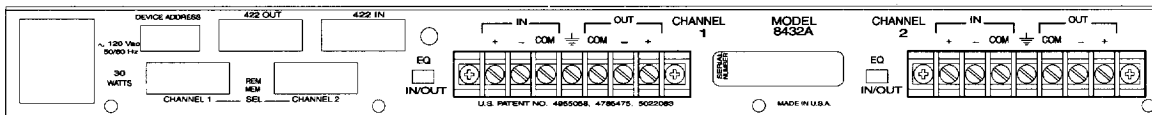
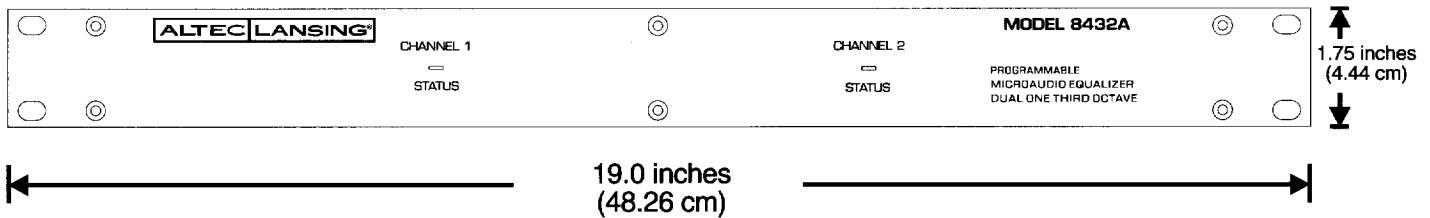
## SPECIFICATIONS (continued)

<b>Channels:</b>	One. 8431A: 8432A: Two, completely independent.	<b>Controls and Switches:</b>	Address selection: One 8-position DIP switch. Channel bypass: One slide switch per channel.
<b>Number of Bands:</b>	28 one-third octave wide bands on ISO center frequencies from 31.5 Hz to 16 kHz.	<b>Indicators:</b>	One dual colored LED per channel to indicate Status and Clipping. One power LED.
<b>Filter Type:</b>	Active analog 2nd order bandpass filter set.	<b>Power Requirements:</b>	115/230 Vac, 50/60 Hz, 18 watts (device will operate at 100 Vac line voltages).
<b>High Pass Filter (HPF):</b>	Programmable corner frequency, 12 dB/octave slope.	<b>Turn-on Transient Protection:</b>	3 second delay before signal can pass through.
<b>Low Pass Filter (LPF):</b>	Programmable corner frequency, 12 dB/octave slope.	<b>Operating Temperature Range:</b>	Up to 50 °C (122 °F).
<b>Programmability:</b>	Boost/cut of each frequency band: ±10 dB in ½ dB steps. Master gain: 0 - 10 dB in ½ dB steps. LPF corner frequency: 6 kHz, 7 kHz, 9 kHz, 11 kHz, 13 kHz, 15 kHz, 23 kHz, 32 kHz. HPF corner frequency: 10 Hz, 32 Hz, 50 Hz, 63 Hz, 80 Hz, 100 Hz, 125 Hz, 160 Hz. User memories: DEF (0), 1, 2, 3, 4, 5, 6, and 7 (non-volatile). Memory pointers: OFF, 1, 2, 3, 4, 5, 6, and 7 (non-volatile). Remote memory selection (RMS): Via external contact closures, one RMS connector per channel. Channel selection: 1, 2. Device address selection: Via 8-position DIP switch.	<b>Dimensions:</b>	Height: 1.75 inches (4.4 cm). Width: 19.0 inches (48.2 cm). Depth: 14.0 inches (35.6 cm).
<b>Communications Interface:</b>	8431A / 8432A-PA232: PA-232 communications interface conforming to ANSI S4.49-1991 timing and protocol standards but with D9 connectors wired to the RS-232 standard. Maximum cable length is 50 ft. (15.2 m).  8431A/8432A-PA422: PA-422 communications interface conforming to ANSI S4.49-1991 standard. Maximum cable length is 4,000 ft. (1.2 km).	<b>Weight:</b>	Net: 10.2 lbs (4.62 kg). Shipping: 14.0 lbs (6.35 kg).
<b>Connectors:</b>	Audio: One 7-terminal barrier strip per channel w/chassis to common and jumper.  Remote Memory Select (RMS): One D9-male connector per channel.  Power: IEC 3-prong ac receptacle w/fuse holder.  Communications Interface: One D9-male (input), one D9-female (output linking).	<b>Color:</b>	Black.
		<b>Enclosure:</b>	Rack-mount chassis, 3/16" aluminum front panel.
		<b>Included Accessories:</b>	<ul style="list-style-type: none"> <li>- One rack-mount hardware kit.</li> <li>- Two D9-female cable connectors with shells (for RMS connector).</li> <li>- One 3 ft. linking cable.</li> <li>- One IEC power cord.</li> <li>- One set of universal voltage stickers.</li> <li>- One 5¼" AcoustaGRAPHICS software disk.</li> <li>- One 3½" AcoustaGRAPHICS software disk.</li> <li>- One Installation and Operating Instructions for the 8431A/8432A.</li> <li>- One AcoustaGRAPHICS Software Guide.</li> <li>- One T.25A, 250 V fuse (for 230 V ac operation).</li> </ul>
		<b>Optional Accessories:</b>	<ul style="list-style-type: none"> <li>- 15550A input isolation transformer.</li> <li>- 15560A output isolation transformer.</li> <li>- 8060A RS-232/PA-422 adapter (for -PA422 models).</li> <li>- 8062A Dual port PA-422 internal card (requires half length slot in PC compatible computer system, for -PA422 models only).</li> </ul>
		<b>AcoustaGRAPHICS™</b> is a trademark of Altec Lansing Corporation.	
		ALTEC LANSING® continually strives to improve its products and their performance. Therefore, specifications are subject to change without any advance notice.	



**SYSTEM BLOCK DIAGRAM**

## DIMENSIONS and BACK PANEL LAYOUT



## ARCHITECT'S and ENGINEER'S SPECIFICATIONS

The equalizer shall have one (8431A) or two (8432A) channels. Each channel shall have 28 one-third octave frequency bands at the preferred ISO center frequencies between 31.5 Hz and 16 kHz and a master gain control. The gain of each frequency band shall be programmable in 1/2 dB steps from -10 dB to +10 dB. The master gain control shall be programmable from 0 dB to +10 dB. There shall be no internal or external gain controls, or other front panel controls. The equalizer shall be micro-processor-controlled and programmable only from external means.

Each channel shall have a 12 dB/octave high pass filter with software-selectable corner frequencies of 10 Hz, 32 Hz, 50 Hz, 63 Hz, 80 Hz, 100 Hz, 125 Hz, and 160 Hz. There shall also be a 12 dB/octave low pass filter (per channel) with software-selectable corner frequencies of 6 kHz, 7 kHz, 9 kHz, 11 kHz, 13 kHz, 15 kHz, 23 kHz, and 32 kHz. The inputs and outputs of the equalizer shall be electronically balanced with provisions for optional input and output isolation transformers.

Each channel shall have eight non-volatile memories, one default memory containing the actual "live" settings and seven user memories for storing additional pre-set equalization settings. One programmable, non-volatile, memory pointer for each channel shall be provided to permit quick changes on cue. The memory pointer shall have the capability to be disabled or "point" to one of the seven user memories.

The 8431A-PA422 and 8432A-PA422 shall have a PA-422 compatible device interface port. The 8431A-PA232 and 8432A-PA232 models shall have an RS-232 compatible device interface port.

The equalizer shall meet the following performance criteria: Maximum input level: +20 dBu; Input impedance: 30 k $\Omega$ ; Maximum output power: +20 dBm; Output noise: <-88 dBm A-wtd. (all gains at unity); Dynamic range: >106 dB; THD: <0.01% (all gains at unity). The unit shall require one rack space (1.75 in., 4.4 cm). The unit shall operate at 100 Vac, 115 Vac or 230 Vac, 50/60 Hz.

The equalizer shall be the Altec Lansing models 8431A and 8432A.



a MARK IV company

P.O. BOX 26105 • OKLAHOMA CITY, OK 73126-0105 • U.S.A.

Phone: 405/324-5311 or FAX: 405/324-8981

© 1994 ALTEC LANSING CORPORATION