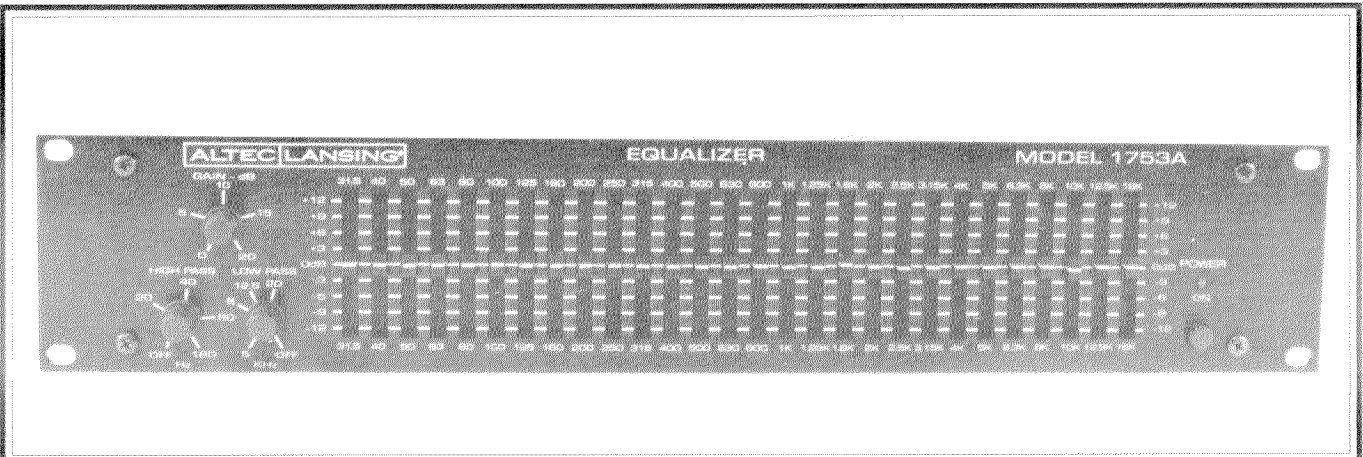




# 1753A 28 Band 1/3 Octave Equalizer



- ★ Constant Q Active Band-pass Filters
- ★ Adjustable High- and Low-Pass Filters
- ★ Electronically Balanced Input & Output
- ★ 28 Band Boost and Cut

## KEY SPECIFICATIONS

<b>Type:</b>	Active filter set with 28 constant-Q minimum phase shift band-pass filters at ISO preferred 1/3 octave center frequencies.
<b>Frequency Response:</b>	20 Hz to 20 kHz, + 0/-1 dB. (reference 1 kHz)
<b>THD:</b>	<0.03%. (0 dBm output, unity gain)
<b>IMD (SMPTE):</b>	<0.03%. (0 dBm output, unity gain)
<b>Noise:</b>	>-78 dBm. (unity gain, unweighted)
<b>Dynamic Range:</b>	>110 dB.
<b>Load Impedance:</b>	600 ohms or higher.
<b>Operating Gain:</b>	0 dB.
<b>Available Gain:</b>	20 dB.

## DESCRIPTION

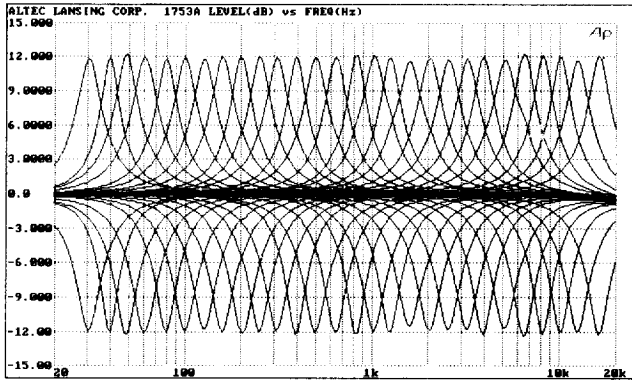
In the tradition of striving for the highest quality and reliability, Altec Lansing introduces the **1753A** Equalizer backed by a vast knowledge of equalization technology. The **1753A** is designed to provide cost-effective accurate control for the custom tailoring of frequency response in any professional or industrial application.

The **1753A** features 28 constant-Q active Band-pass filters at the ISO preferred 1/3 octave center frequencies from 31.5 Hz to 16 kHz. Each filter section provides up to 12 dB of boost or cut at its center frequency and is designed to skirt with adjacent filters for minimum ripple and optimum combining characteristics over a wide range of control settings. A 20 dB gain control is provided to restore equalization losses that may occur.

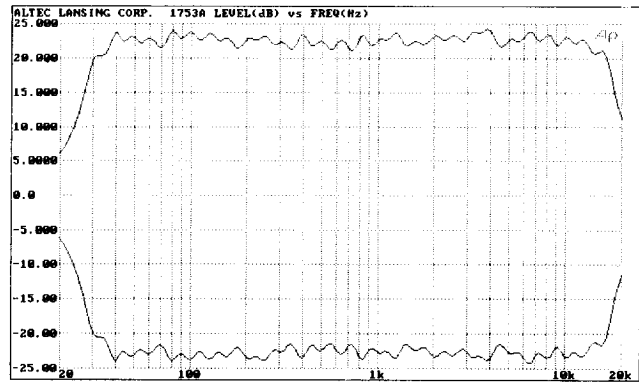
The variable high-pass filter, with a slope of 18 dB per octave, allows adjustment of the system's lower cutoff frequency from below 20 Hz to 160 Hz. The variable low-pass filter also has a slope of 18 dB per octave and can operate from 5 kHz to above 20 kHz, providing a smooth high-end roll off. Other features include an automatic AC dropout bypass, output muting that suppresses turn on/off transients, XLR and barrier strip input and output connectors, and electronically balanced input and output circuitry. The universal power transformer permits 100, 120, 200, 220, 240 Vac, 50/60 Hz operation. In case of AC power loss, the capability of silently switching to DC battery power is provided by a barrier strip connector on the rear of the chassis. There are two optional plug-in isolation transformers available: the **15550A** input transformer and the **15560A** output transformer.

The Altec Lansing Model **1753A** Equalizer is the choice among professionals where precision graphic equalization is required.

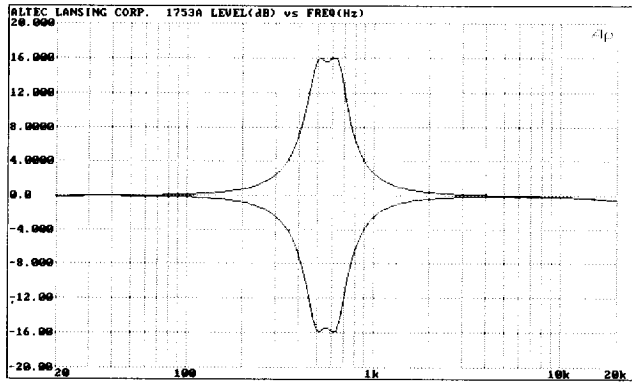
# Typical Response Curves for the 1753A



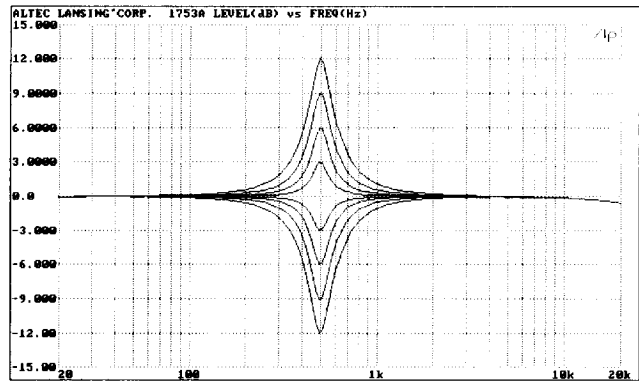
28 1/3-Octave Filters at Maximum Boost and Cut ( $\pm 12$  dB). Plotted Individually.



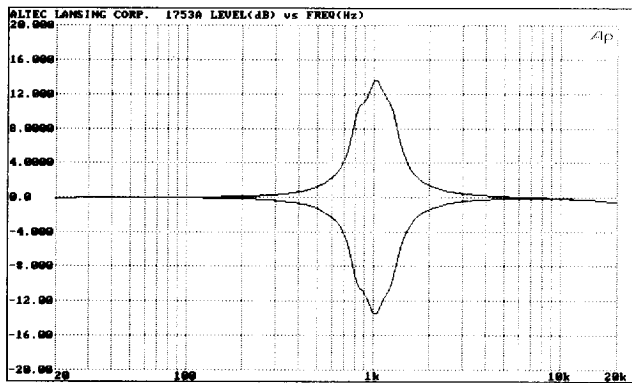
All Filters at Maximum Boost and Cut.



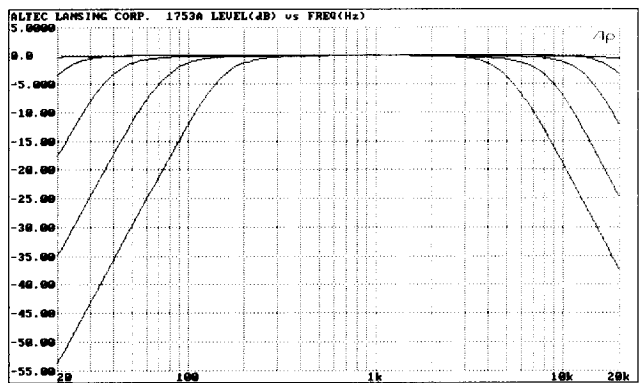
Single Filter, 500 Hz, Shown at Each Front Panel Setting.



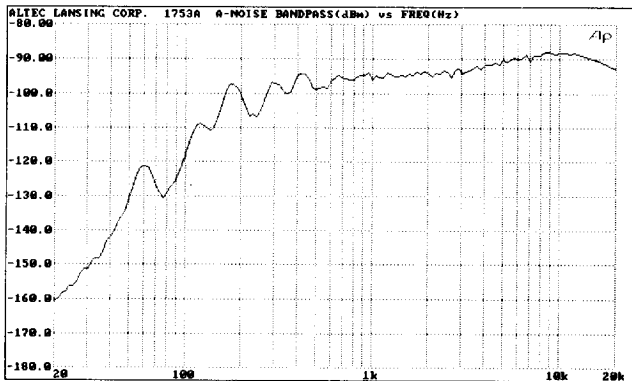
Two Adjacent Filters, 500 Hz and 630 Hz, at Full Boost and Cut.



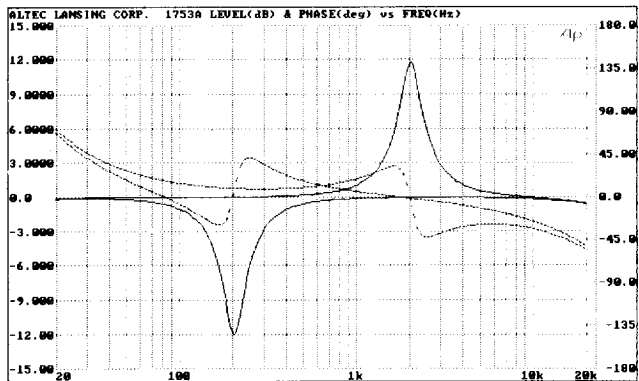
High- and Low-Pass Functions (18 dB/oct) Plotted Individually.



1 kHz Filter at +12 dB and -12 dB, 800 Hz and 1.25 kHz Filters at +4 dB and -4 dB, Respectively.



200 Hz Filter at -12 dB, 2 kHz Filter at +12 dB and Respective Phase Angles (deg) Vs Frequency (Hz)



A-Weighted Noise (dBm) Vs Frequency (Hz)

## SPECIFICATIONS (continued)

### Input:

(reference 0 dBv = 0.775 Vrms)

Type: Electronically balanced.  
 Impedance: 30 kohms balanced.  
 15 kohms unbalanced.  
 Nominal level: 0 dBv (0.775 Vrms).

### Power requirements:

AC: 100, 120, 200, 220, 240 Vac, 50/60 Hz,  
 10 Watts.  
 DC: Bipolar 24/28 Vdc at 200 mA (auto-  
 matic transfer to DC mode if AC power  
 fails)

### Output:

(reference 0 dBm = 0.775 Vrms across 600 ohms)

Type: Electronically balanced.  
 Impedance: 44 ohms balanced.  
 22 ohms unbalanced.  
 Maximum level: +24 dBm.

### Operating Temperature Range:

Up to 60°C (140°F).

### Dimensions:

Height: 3.5 inches (8.9 cm).  
 Width: 19.0 inches (48.3 cm).  
 Depth: 9.75 inches (24.8 cm).

### High-Pass Filter:

Variable low frequency cutoff from  
 below 20 Hz to 160 Hz with slope of  
 18 dB per octave.

### Weight:

Net: 10.7 lbs (4.9 kgs).  
 Shipping: 14.0 lbs (6.0 kgs).

### Low-Pass Filter:

Variable high frequency cutoff from 5  
 kHz to above 20 kHz with slope of 18  
 dB per octave.

### Enclosure:

Rack-mount chassis.  
 18 GA steel main chassis.  
 18 GA steel top, sides, rear cover.  
 3/16 inch (0.5 cm) aluminum front  
 panel

### Controls:

28 center detented slide controls at  
 1/3 octave ISO center frequencies  
 from 31.5 Hz to 16 kHz, ±12 dB boost  
 or cut.  
 Gain, High-pass filter and Low-pass  
 filter controls.  
 AC power switch (bypasses 1753A  
 when shut off).

### Color:

Black.

### Accessories:

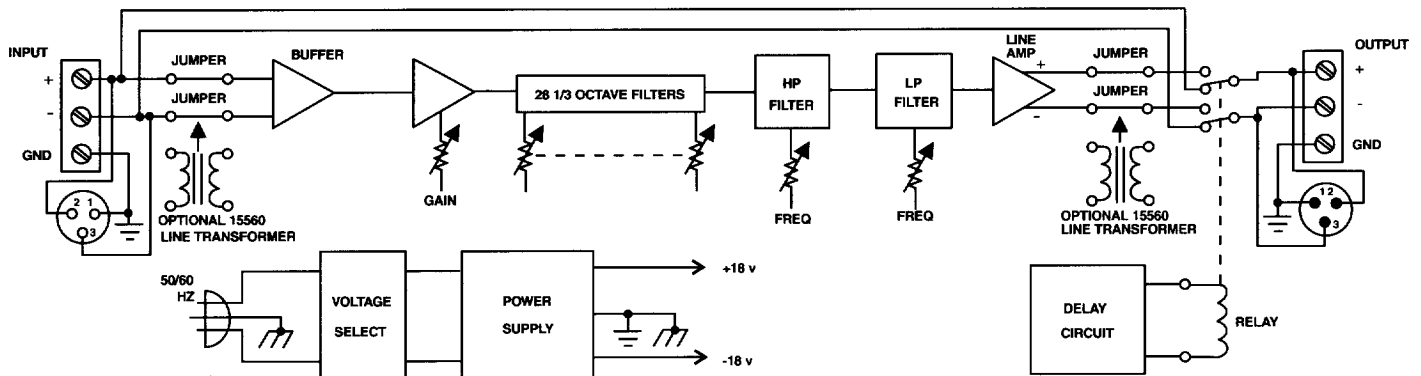
10402 Perforated Security Cover.  
 15550A Input Isolation Transformer.  
 15560A Output Isolation Transformer.

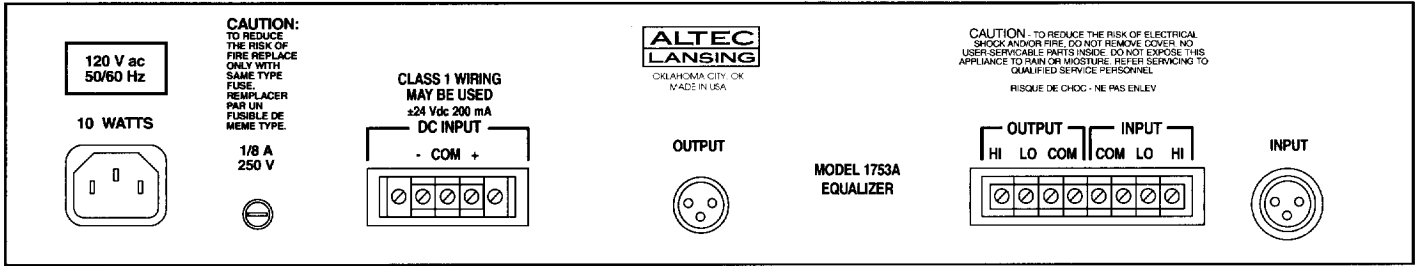
### Connections:

Input: Female XLR.  
 Barrier strip.  
 Output: Male XLR.  
 Barrier strip.  
 AC power: IEC power cord receptacle.  
 DC power: Barrier strip.

Altec Lansing continually strives to improve its  
 products and their performance. Therefore, specifica-  
 tions are subject to change without any advance notice.

## Block Diagram of 1753A





## 1753A Rear Panel Layout

### ARCHITECT'S and ENGINEER'S SPECIFICATIONS

The equalizer shall contain 28 constant-Q active Band-pass filters at the ISO preferred 1/3 octave center frequencies from 31.5 Hz to 16 kHz. Each filter shall provide up to 12 dB of boost or cut at its center frequency and shall be designed to skirt with adjacent filters for minimum ripple and optimum combining characteristics over a wide range of control settings. The amount of boost or cut shall be controlled by center detented linear slide type controls. A front panel rotary control shall provide 20 dB of gain to restore equalization losses. The equalizer shall also contain 18 dB/octave high-pass and low-pass filters with continuously variable cutoff frequency points adjustable from below 20 Hz to 160 Hz for the high-pass and 5 kHz to above 20 kHz for the low-pass. These cutoff frequency points shall be adjusted with front panel rotary controls.

The input and output shall be electronically balanced, and the output shall be capable of driving a load of 600 ohms or higher. An optional plug-in line transformer shall be available for input and output. The unit shall contain an automatic AC power dropout bypass and output muting that suppresses turn on/off transients. Barrier strip and XLR connectors shall be provided for input and output signal wiring. The unit shall provide a front panel power switch with an LED indicator

showing Power On status. The equalizer shall have a universal transformer that permits 100, 120, 200, 220, 240 Vac, 50/60 Hz operation. It shall also have the capability of silently switching to DC battery power in case of AC power loss.

The equalizer shall meet the following criteria. Maximum input level: +24 dBv (12.3 Vrms). Nominal input level: 0 dBv (0.775 Vrms). Input impedance: 30 kohms balanced and 15 kohms unbalanced. Maximum output level: +24 dBm. Output impedance: 44 ohms balanced, 22 ohms unbalanced. Frequency response: 20 Hz to 20 kHz, +0/-1 dB referenced at 1 kHz. Operating gain: 0 dB. Dynamic Range: greater than 110 dB. THD: less than 0.03% with 0 dBm output at unity gain. IMD (SMPTE): less than 0.03% with 0 dBm output at unity gain. Noise: less than -78 dBm A-weighted at unity gain.

The equalizer shall be enclosed in a black 18 GA steel rack mountable chassis with a 3/16 inch (0.5 cm) aluminum front panel. The dimensions shall be 3.5 inches (8.9 cm) high by 19.0 inches (48.3 cm) wide by 9.75 inches (24.8 cm) deep and shall have a net weight of 10.7 lbs. (4.9 kgs). An optional security cover shall also be available.

The equalizer shall be called the Altec Lansing **1753A**.



a MARK IV company

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