

DESCRIPTION

The Altec 1631A Electronic Dividing Network is a single-channel active crossover designed to provide a user selectable crossover frequency from 100 Hz to 8000 Hz. The unit may be used as a two-way frequency dividing network for bi-amplified systems, or in pairs for tri-amplified applications. Operating at line level (+16 dBm maximum) with zero insertion loss, the 1631A has both 15,000 ohm unbalanced input and 30,000 ohm balanced input configurations. Unbalanced High-Frequency and Low-Frequency outputs will accept a minimum load of 600 ohm and deliver a maximum level of +20 dBm.

The frequency and characteristics of the filters are determined by a plug-in module. This allows the user complete freedom in choosing the frequency, order and characteristic of the high-pass and low-pass sections. Each section may be

controlled independently, allowing for crossover frequency overlap or spread, or even different slopes for each section. Modules for 500 Hz and 800 Hz maximally flat third-order Butterworth filters are supplied with the unit.

Several types of equalization are available. A continuously variable control provides up to 4 dB of boost or cut at 10 kHz. A selector switch allows 6 dB peak boost at five frequencies commonly used for Thiele B-6 aligned low-frequency speaker systems.

A plug-in module may be configured to provide custom equalization to compensate for the falling high-frequency response of various combinations of horns and drivers. Additional controls include a low-frequency delay adjustment and high-pass output level and polarity adjustments.

SPECIFICATIONS

Type:	Single channel, two-way electronic dividing network with user selectable crossover frequency.
Input Configuration:	Single balanced or unbalanced input. Accepts signal input from any high- or low-impedance, active or passive, balanced or unbalanced source.
Input Impedance:	15,000 ohms unbalanced or 30,000 ohm balanced.
Input Common-Mode Rejection:	55 dB typical 60 Hz to 1000 Hz.
Output Configuration:	One unbalanced high-pass output, one unbalanced low-pass output.
Output Impedance:	Internal 47 ohm source impedance. 600 ohm minimum load.
Maximum Output Level:	+ 20 dBm (+ 18 dBV)
Output Protection:	Safe for short circuit or +/-25VDC
Overall Gain:	0 dB with controls set flat.
Frequency Response:	+/- 0.5 dB 30 Hz to 20 kHz with high-pass and low-pass outputs combined.
Distortion:	Total harmonic and intermodulation distortion typically 0.02%, 0.1% maximum at 20 kHz, +20 dBm output with controls set flat.
Noise Output:	- 88 dBm (- 90 dBV) maximum, 20 Hz to 20 kHz bandwidth.
High/Low Channel Crosstalk:	60 dB typical.
Crossover Frequency Range:	100 Hz to 8000 Hz. Set by miniature plug-in module. 500 Hz and 800 Hz modules supplied. An empty module is also provided for custom construction by the user.
Filter Type:	18 dB per octave, third-order Butterworth for normally supplied modules. Possible custom module constructions by user include first-, second-, and third-order Butterworth, Bessel, or Chebyshev configurations, chosen independently for high-pass and low-pass channels.
Signal Delay:	Continuously variable from 0 msec (actually 25 usec) to 2 msec for low-pass output.

Relative Phase:

Low-Pass Output:	Output in phase with input with delay control at minimum.
High-Pass Output:	Switchable, 0 or 180 degrees, output relative to input.
Equalization:	
High-Frequency:	Continuously variable, +/- 4 dB at 10 kHz, Q = 3
Low-Frequency:	Second-order underdamped filter with 6 dB peak boost switchable for frequencies of 29, 32, 35, 45 or 60 Hz. Also a "flat" position provides a high-pass filter with a 12 dB per octave rolloff, 3 dB down at 30 Hz for subpassband speaker protection. These peak boost filters provide the equalization required for Thiele B-6 aligned low-frequency speaker/enclosure combinations.
Horn/Driver:	Miniature plug-in modules provide custom equalization to compensate for the falling high-frequency response of various combinations of horns and drivers. A module with flat response is provided.
Transient Performance:	Not limited by slew rate or power bandwidth of 20 Hz to 20 kHz under normal operating conditions.
Controls:	<ul style="list-style-type: none">1 rotary low-frequency equalization selector.1 continuously variable low frequency delay adjustment.1 high-frequency gain control.1 high-frequency equalization control.1 push button high-frequency polarity (180 degree phase) reversal switch.1 rocker power switch.
Indicators:	<ul style="list-style-type: none">1 power-on indicator.
Connections:	
Input:	<ul style="list-style-type: none">1 stereo 1/4" phone jack (tip, ring, sleeve) for balanced or unbalanced input.1 XLR-3 type female for balanced or unbalanced input.
Output:	<ul style="list-style-type: none">1 mono 1/4" phone jack (tip, sleeve) for unbalanced low-frequency output.1 XLR-3 type male for unbalanced low-frequency output.1 mono 1/4" phone jack (tip, sleeve) for unbalanced high-frequency output.1 XLR-3 type male for unbalanced high-frequency output.

Special: 1 RCA phono jack for common bass connection.

Power Requirements: 100, 120, 220, 240 VAC 50/60 Hz. user selectable. Supplied wired and fused for 120 VAC with a power consumption of 15 watts. A detachable IEC line cord with 120 volt grounding plug is supplied.

Power Protection: Universal fuse holder accepts 1/16 amp., 250 volt 1/4" x 1-1/4" MDL type slo-blo fuse for 100 or 120 VAC. A replacement fuse-post cap is available to allow use of 5mm x 20mm slo-blo fuses for 220/240 volt operation.

Mounting: Standard 19" rack space, 1-3/4" high (1 standard rack unit), requires 8-1/2" behind panel including connectors.

Dimensions: 1.73" (4.4 cm) H x 19.0" (48.3 cm) W x 4.875" (12.4 cm) D

Weight: 4.74 pounds (2.15 kg)

Color: Black

Accessories: Removeable transparent plastic security cover is supplied with the unit.

ARCHITECT'S AND ENGINEER'S SPECIFICATIONS

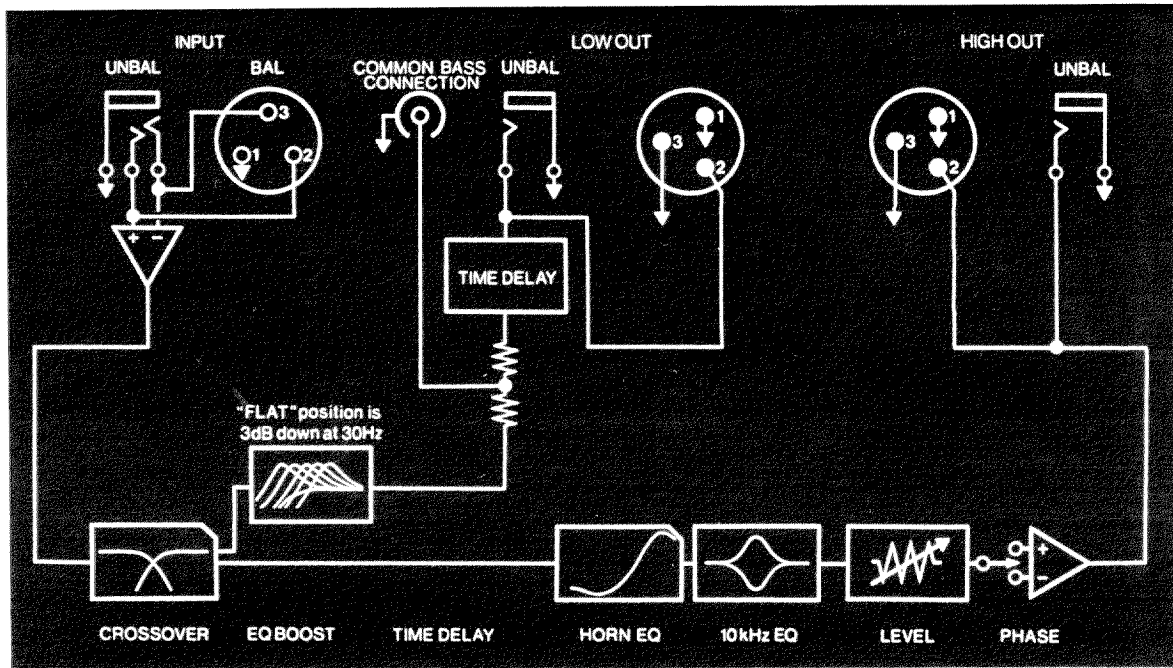
The Electronic Dividing Network shall have a user selectable crossover frequency within the range of 100 Hz to 8000 Hz using a field configurable plug-in module. It shall be possible to select separately the frequency, order and characteristic of the high-pass and low-pass filter sections.

The Electronic Dividing Network shall meet the following specification criteria: it shall provide an input impedance of 15,000 ohm unbalanced or 30,000 ohm balanced. The high-pass and low-pass outputs shall accept a minimum load of 600 ohms and shall have an internal source impedance of 47 ohms. The gain shall be 0 dB direct and the network shall have a frequency response of +/- 0.5 dB from 30 Hz to 20 kHz, representing a combined output of high-pass and low-pass filter sections with the controls set flat. The total harmonic and intermodulation distortion shall be less than 0.1% at 20 kHz at maximum output of +20 dBm. Noise level shall be less than -88 dBm for 20 Hz to 20 kHz bandwidth.

The Electronic Dividing Network shall have the following controls: 1 high-frequency output level, 1 high-frequency equalization, 1 low-frequency signal delay adjustment, 1 push-button high-frequency polarity reversal switch, 1 six-position low-frequency equalization selector switch, 1 rocker power switch. All controls except the power switch shall be completely enclosed by a transparent security cover. A universal power transformer shall permit use on 100, 120, 220, 240 VAC lines. The power consumption shall be 15 watts @ 120 VAC 50/60 Hz line operation. The unit shall have a standard IEC type detachable AC line cord.

The Electronic Dividing Network shall conform to the following dimensions: 1.73" H x 19.0" W x 4.875" D, with a weight of 4.74 pounds.

The Electronic Dividing Network shall be the Altec Lansing Model 1631A.



ELECTRONIC DIVIDING NETWORK BLOCK DIAGRAM



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