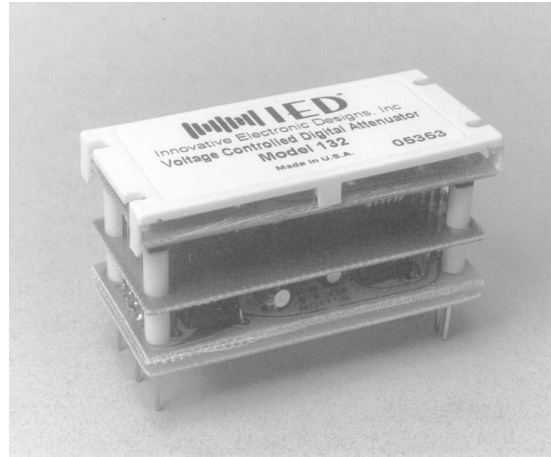


IED MODEL 132

VOLTAGE CONTROLLED DIGITAL ATTENUATOR

The 132 Voltage Controlled Digital Attenuator module is a precise, accurate remote volume control. It is used on individual channels of the IED 4000 Series Automatic Mixer System and 5000 Series Audio Processing System cards. The IED Model 132 uses internal digital processing to approach an ideal log transfer characteristic more closely than even the best log potentiometers. Attenuation is 0 dB at 5V, and increases at the rate of 19.2 dB per volt as control voltage is decreased. It is within .375 dB of the theoretical curve for the first 42 dB of attenuation. Unit-to-unit matching is excellent, making it ideal for applications requiring close tracking between any number of inputs.



FEATURES

- Precision Attenuation
- Superior Audio Performance
- Excellent Matching
- Surpasses Premium Attenuators
- .375 dB Resolution
- Extremely Low Noise
- Very Low Output Impedance
- High Input Impedance

SPECIFICATIONS:

ELECTRICAL, +15 V, -15 V, 25C (77F)

Gain	Unity
Frequency Response	±0.15 dB
20 Hz - 20 kHz, +14 dBu	
Maximum Input Level	+21 dBu
Maximum Output Level	+21 dBu
$R_L \geq 2 \text{ k}\Omega$	
Total Harmonic Distortion, THD	<0.004%
+14 dBu, 20 Hz - 20 kHz	
10 Hz - 80 kHz filters	
Intermodulation Distortion, IM	<0.003%
+14 dBu, 60 Hz + 7 kHz	
Noise Referred to the Input, NRI	-90 dBu
22 Hz - 22 kHz filters	
Attenuation	
External control voltage = V_{REF}	0 dB
External control voltage = 0.39V	88.5 dB

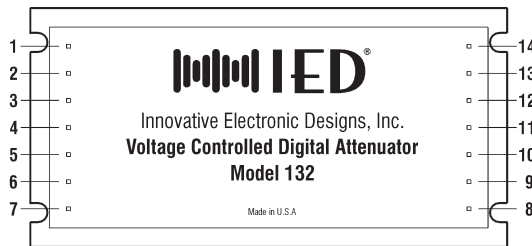


Attenuation slope 19.2 dB/V
 From 0.39V to 5V
 Reference Voltage, V_{REF} 5V, $\pm 5\%$
 Reference Current 10 mA Max
 Input Impedance, Z_{IN} 100 k Ω
 Output Impedance, Z_{OUT} < 0.1 Ω
 Control Input Impedance 100 k Ω
 Power Supply
 Supply Voltage Range $\pm 13.5V$ to $\pm 16.5V$
 Supply Current +10 mA, -6 mA
 $V = +15 V$ 10 mA
 $V = -15 V$ 6 mA

MECHANICAL

Size 0.90" H X 0.95" W X 1.95" L
 Weight (22g) 0.76 Oz.

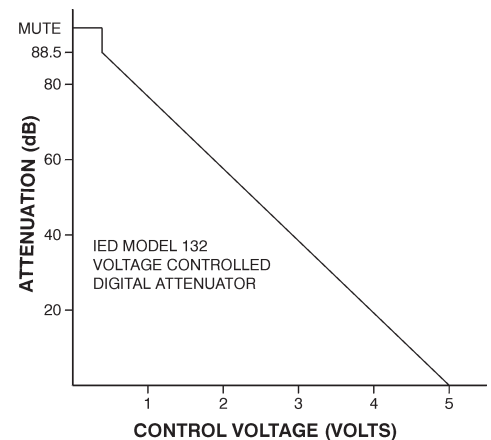
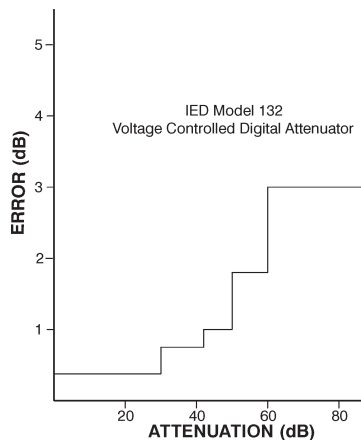
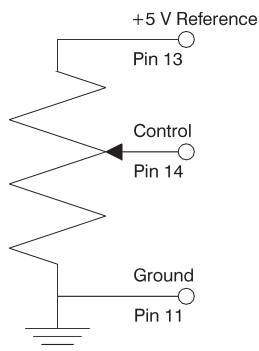
PIN CONNECTIONS



PIN	FUNCTION	PIN	FUNCTION
1	Input +	8	+15 V
2	No Pin	9	-15 V
3	No Pin	10	No Pin
4	Ground	11	Ground
5	No Pin	12	No Pin
6	No Pin	13	V_{REF}
7	Output +	14	Control

APPLICATION INFORMATION

10 k Ω Reverse Log Taper pot for Log Taper Curve



Notes

1. Control voltage may be derived from the internal +5V reference (Pin 13) as shown, or from an external +5V reference. If an external reference is used it must be adjusted to equal the internal reference in order to be able to reach the 0 dB end of the range.
2. Connecting the clockwise end of the control to the reference causes output to increase with clockwise rotation.
3. Several Model 132 modules may be controlled from the same potentiometer by connecting their Controls (Pin 14) together.

*Innovative Electronic Designs, Inc. • 9701 Taylorsville Road • Louisville, Kentucky 40299 • USA
 Phone: (502) 267-7436 • Fax: (502) 267-9070 • Internet: <http://www.iedaudio.com>*