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Find the *Mountain Engineering & Technology ME-1007* at our website: ***Click HERE***

Mountain Engineering & Technology

ME-1007

Resistive Attenuator Variable Mixer



Features

- Resistively attenuates Channel A from +6dB to -40dB in 0.5dB steps and mixes that result with Channel B
- Selectable DC current path carries up to 70mA continuous
- Selectable Input/Output impedances of 100Ω/120Ω/75Ω
- Accurate bandwidth from 10kHz to 10MHz
- Remote control of all functions via standard RS-232 port and GPIB
- Serial² RS-232 port expander for use with other ME&T products
- Accepts BNC, Bantam, and 310 connectors
- Connects directly to ME-1001/2/3/4 Line Simulators as variable S/N ratio noise mixer or monitor port simulator

Compatibility

Used in conjunction with ME&T line simulators, the ME-1007 allows noise immunity testing and monitor port simulation of the following standards:

Applications

- Facilitates noise immunity testing of T1 / E1 receivers by providing:
  Variable S/N Ratios
  Line-Input Referred Noise (Far End)
  Line-Output Referred Noise (Near End)
- Simulates DSX-1 and E1 monitor ports
- Creates "Hot" and "Cold" pulse amplitudes
- Perform 60Hz Longitudinal Pulse Amplitude Envelope test
- Allows automated testing of office and long line repeaters, DSX channel banks, CSU's, DSU's, and other telecom equipment

General Description

The ME-1007 is a high accuracy, wide bandwidth variable attenuator and mixer. The attenuator, Channel A, has 0.5dB incremental resolution from +6dB to -40dB and is resistive (flat frequency response) over a 10kHz to 10MHz bandwidth. Channel B has a flat frequency response over the same bandwidth. The mixer combines the signal on Channel B at 0dB, -12dB, or -18dB with the attenuator's input/output to create variable S/N ratios. Both channel inputs and the mixer's output have

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- US and European AMI-PCM codes:

  T1 - 1.544Mb/s

  T1C - 3.152Mb/s

  T2 - 6.312Mb/s

  CEPT - 2.048Mb/s

  CEPT - 8.448Mb/s

- ISDN Primary rate standards, 1.544Mb/s and 2.048Mb/s

- ANSI T1.408 and CCITT G.703 Sect. 6 including the 60Hz longitudinal pulse amplitude envelope test.

selectable impedances of 100Ω/120Ω/75Ω allowing them to connect directly with ME&T Line Simulators for both US and European applications.
The ME-1007 also includes a fully automatic Auto Test function creating the 60Hz Longitudinal Pulse Amplitude Envelope test specified in both ANSI T1.408 and CCITT G.703 Section 6.

To facilitate use in automated test environments, all ME-1007 functions can be operated either by front panel controls or through computer control via RS-232 or GPIB ports. Designed specifically to be a companion product to ME&T simulators, the ME-1007 features a proprietary Serial² RS-232 port expander allowing a single RS-232 line to control both the ME-1007 and an ME&T simulator. Its versatility and functionality make the ME-1007 ideal for both Design and Test groups.

Operating Specifications

(Valid at all attenuation settings, test signal (f_o) = 772kHz and 0°C < $T_{ambient}$ < 50°C unless otherwise stated)

Input

Terminating Impedance ..... 100Ω/120Ω/75Ω, ±5%

Recommended Frequency Range ..... 10kHz to 10MHz

Maximum Balanced Input Voltage,
Zero to Peak (At 0dB setting) ..... ±6V

Maximum Continuous Balanced DC Input Current,
Input Center-Tap to Output Center-Tap 70mA

Output

Sourcing Impedance ..... 100Ω/120Ω/75Ω, ±5%

Maximum Rise/Fall Time At 0dB,
$V_{IN} = 3V_{PEAK}$, 10% to 90% ..... < 40nsec

Maximum Output Voltage, Zero to Peak ..... ±6V

Maximum Overshoot At 0dB,
$V_{IN} = 3V_{PEAK}$ ..... < 10%

Short Circuit Tolerance ..... Continuous

Attenuation Characteristics

Attenuation range at 772kHz:
Channel A ..... +6.0dB to -40.0dB
Channel B ..... 0.0dB, -12dB, or -18dB

Attenuation Accuracy

Attenuation accuracy at 772kHz:
Channel A (any setting) ..... ± 0.25dB
Channel A (any setting) ..... ± 0.25dB

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-3dB Bandwidth:
Channel A ..... <10kHz to 10MHz
Channel B ..... <10kHz to 10MHz

Attenuation accuracy at 772kHz:
Channel A (any setting) ..... ± 0.25dB
Channel A (any setting) ..... ± 0.25dB

Attenuation tolerance at all other frequencies is given by the following graph:

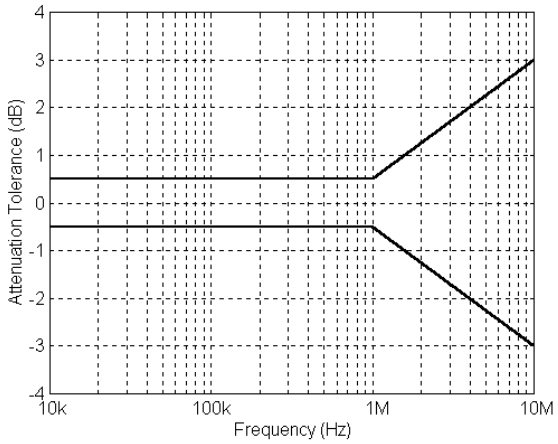
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DC Path Characteristics

Nominal Resistance 150Ω
Nominal Inductance ..... 50 mH

DC path is user selectable to be either Channel A or B. To avoid damaging relay contacts, current flowing in the DC path must be brought to 0mA before switching the path from Channel A to Channel B.

The DC path can sustain 100mA current at 50% duty cycle over a 30sec period.



CLICK ON GRAPH TO ENLARGE

Available Options

Power Supply: Available for 100V, 120V, or 240V power supplies.
Chassis: Available in Bench Top or 19" Rack Mount chassis.
Battery Back-Up: Allows the ME-1007 to return to its last operating front panel settings on power-up.
GPIB Interface: Comm Port #2 is replaced with an IEEE-488 compatible computer interface.

General Specifications

Power input voltage:
Option A ..... 105V to 130V
Option B ..... 210V to 250V
Option J ..... 90V to 110V
Power input frequency ..... 45Hz to 66Hz
Power consumption 10W
Dimensions (w x h x d in inches) ..... 17 x 3.5 x 14
Weight ..... 13 lbs
Storage temperature ..... -40°C to 85°C

Ordering Information

Transmission Line Simulator: ME-1001-A-1CD
Options: A - 120V supply
B - 240V supply
J - 100V supply
1 - Bench-top chassis
2 - Rack-mount chassis
C - Battery back-up
D - Noise mixer

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