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## 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
- Serial<sup>2</sup> 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:

- US and European AMI-PCM codes:  
T1 - 1.544Mb/s  
T1C - 3.152Mb/s  
T2 - 6.312Mb/s

## 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 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.

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.

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 Serial<sup>2</sup> 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.

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## Operating Specifications

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

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### Input

Terminating Impedance ..... 100 $\Omega$ /120 $\Omega$ /75 $\Omega$ ,  
 $\pm 5\%$

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

Maximum Balanced Input Voltage,  
Zero to Peak (At 0dB setting) .....  
 $\pm 6\text{V}$

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

### Output

Sourcing Impedance ..... 100 $\Omega$ /120 $\Omega$ /75 $\Omega$ ,  
 $\pm 5\%$

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

Maximum Output Voltage, Zero to Peak .....  
 $\pm 6\text{V}$

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

Short Circuit Tolerance .....  
Continuous

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## Attenuation Characteristics

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

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

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## Attenuation Accuracy

Attenuation accuracy at 772kHz:  
Channel A (any setting) .....  $\pm$   
0.25dB  
Channel A (any setting) .....  $\pm$   
0.25dB

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Channel A (any setting) .....  $\pm$   
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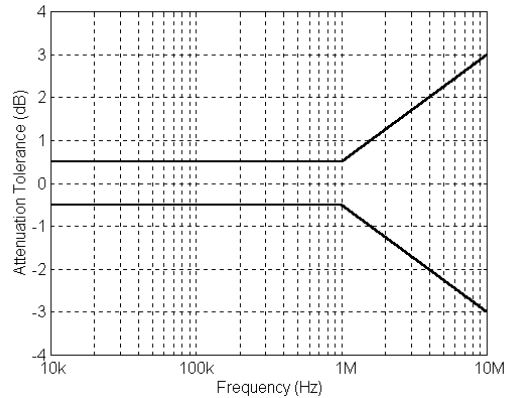
Attenuation tolerance at all other frequencies is given by  
the following graph:

## 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 \_\_\_\_\_