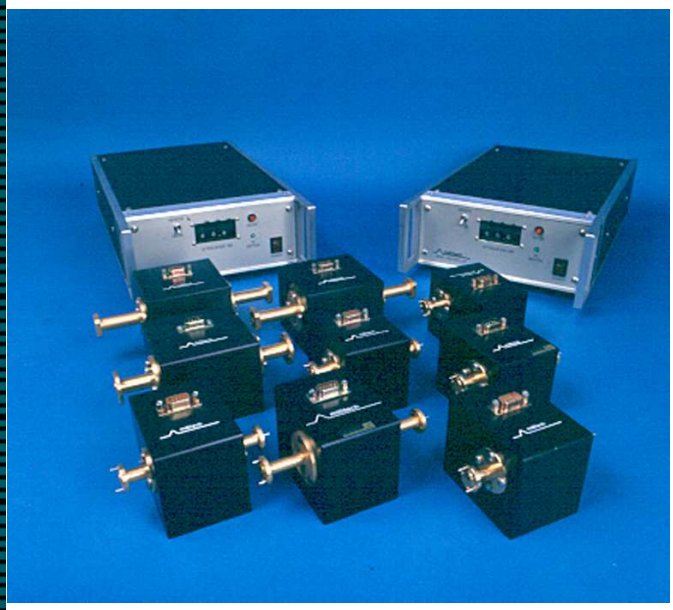
millitech®

Millimeter-Wave Technology & Solutions

SERIES MWA

MOTORIZED WAVEGUIDE ATTENUATORS



FEATURES:

- Parallel TTL logic (BCD) input
- Digiswitch™ for “manual” operation
- Optional GPIB compatibility
- Fast, accurate change of attenuation
- 0 to 50 dB in less than 5 seconds
- Status LED indicator
- CE certified

APPLICATIONS:

- Automated test equipment
- Systems use with AGC requirements
- Automated data acquisition

DESCRIPTION

Millitech series MWA motorized waveguide attenuators are rotary vane devices which provide very accurate and repeatable attenuation. They are available for laboratory, ATE, STE, and OEM applications. Attenuation control options include: manual front panel, Digiswitches™, GPIB interface control, and RS-232C interface. Millitech’s unique no-slip drive mechanism ensures accuracy.

The heart of the controller is a microprocessor which drives a stepper motor to achieve the desired attenuation. This controller provides repeatability and resolution (to 0.1 dB over the ranges of 0 to 50 in any of the standard waveguide bands from 18 to 170 GHz). Attenuation values are selected in less than 5 seconds by a quiet DC motor capable of 125,000 incremental steps. Single or ganged units provide low VSWR and insertion loss. Units include internal limits and “homing” reference devices to ensure reliability, repeatability, and long-term accuracy (see typical performance data).

The controller for the attenuator is offered in a wide range of configurations and packaging options to satisfy virtually any application, operating environment, and interface requirement.

The instrumental model is a fully packaged version (see outline drawings) which includes all power supplies and is offered with the choice of a GPIB or serial interface. The attenuator can be controlled either locally using the push button on the instrument’s front panel or remotely using the interface. This model is offered in three enclosure options: the standard benchtop version, the single controller rack-mountable version, and the 19” dual-controller rack-mountable version.

If motorized operation is not required, Millitech also offers series DRA direct reading attenuators and series LSA level set attenuators.

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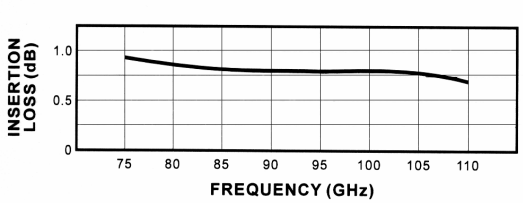
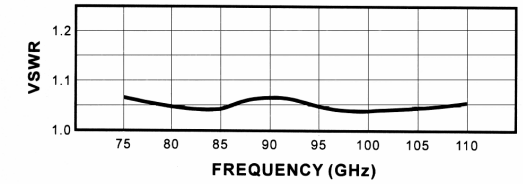
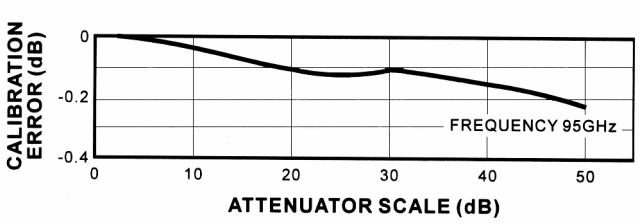
IS000069 REV01 ECO# 0605-08-11

TYPICAL PERFORMANCE







ELECTRICAL SPECIFICATIONS

Model Number	MWA-42	MWA-28	MWA-22	MWA-19	MWA-15	MWA-12	MWA-10	MWA-08*1	MWA-06*1
Frequency band and range (GHz)	K 18-26.5	Ka 26.5-40	Q 33-50	U 40-60	V 50-75	E 60-90	W 75-110	F 90-140	D 110-170
Accuracy to 50 dB (dB/%) (whichever is greater)	0.1/2.0	0.1/2.0	0.1/2.0	0.1/2.0	0.1/2.0	0.1/1.25	0.1/2.5	0.2/3.0	0.3/3.0
Rated power (W) (max)	0.5	0.5	0.5	0.5	0.3	0.3	0.3	0.3	0.3
Insertion loss (dB) (max)	0.5	0.5	0.6	0.7	0.8	1.0	1.0	1.5	2.0
Repeatability (dB) (typ)	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Resolution (dB) (typ)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Attenuation range (dB)*2 (min/max)	0/50	0/50	0/50	0/50	0/50	0/50	0/50	0/50	0/50
VSWR (max)	1.25:1	1.15:1	1.15:1	1.15:1	1.2:1	1.2:1	1.2:1	1.5:1	1.5:1

*1 – Calibrated range limited to 30 dB above 110 GHz.
*2 – Calibrated to 50 dB. Usable to 59.9 dB.

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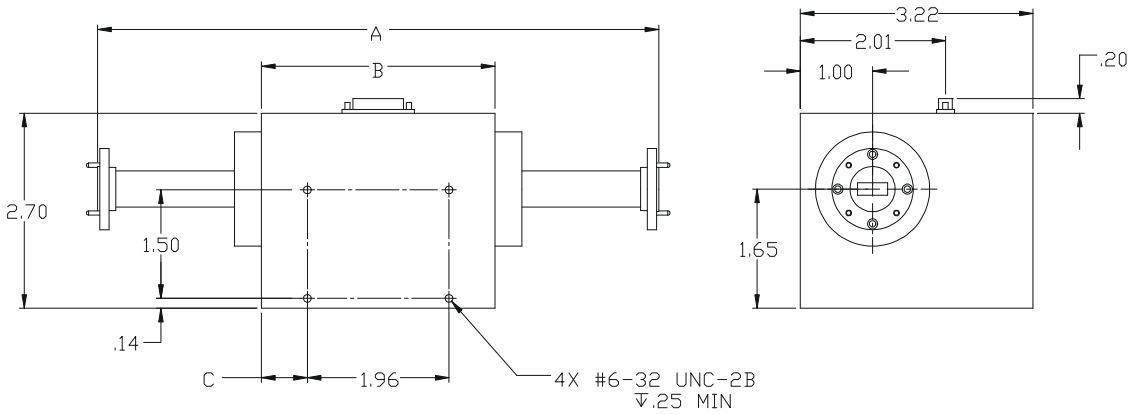
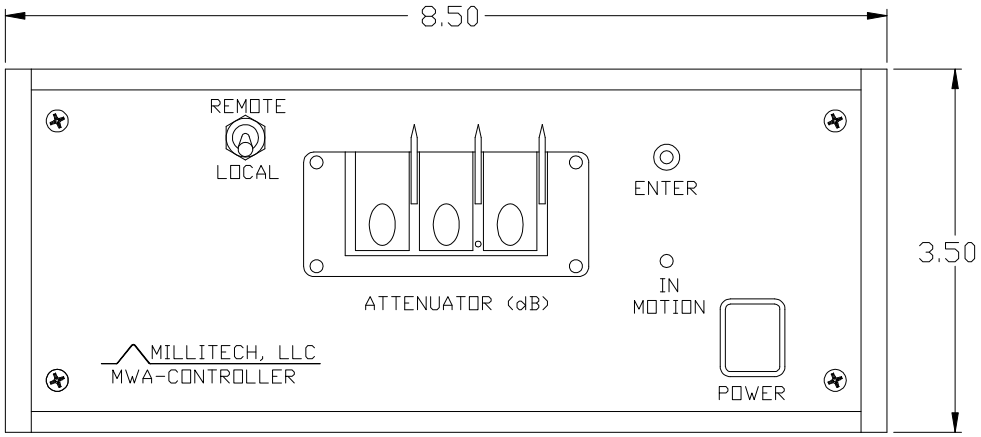
OUTLINE DRAWINGS*

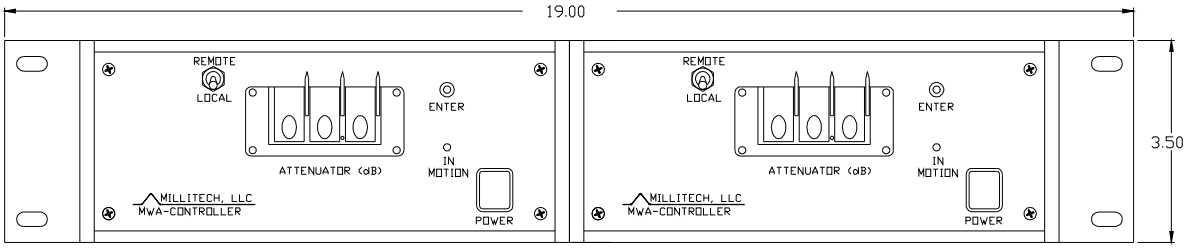
Motorized Waveguide Attenuator



Instrumentation Model Controller Panel



19" Dual Rack Version



*The outlines shown may not reflect the latest information. Please contact Millitech for current outline drawings.

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MECHANICAL SPECIFICATIONS

Model Number	MWA-42	MWA-28	MWA-22	MWA-19	MWA-15	MWA-12	MWA-10	MWA-08	MWA-06
A (in/mm)	8.07/205.0	6.89/175.0	5.90/149.7	4.92/125.0	3.94/100.1	3.94/100.1	3.94/100.1	3.542/89.96	3.542/89.96
B (in/mm)	3.23/82.04	3.23/82.04	3.23/82.04	2.36/59.94	2.36/59.94	2.23/59.94	2.36/59.94	2.36/59.94	2.36/59.94
C (in/mm)	0.633/16.07	0.633/16.07	0.633/16.07	0.200/5.08	0.200/5.08	0.200/5.08	0.200/5.08	0.200/5.08	0.200/5.08
Flange MIL.F-3922	/54-001*	/54-003*	/67B-006	/67B-007	/67B-008	/67B-009	/67B-010	/67B-M08	/67B-M06

*With #4-40 threaded holes.

HOW TO ORDER

Specify Model Number
MWA-XX-ØØØØØ (attenuator only)
MWA- ØØ-ABCDØ (controller with cable)
MWA-XX-ABCDØ (motorized waveguide attenuator with controller)

XX = Waveguide Band
- **WR** – number

A = Power Supply Voltage Options
- **1** – 100-120 VAC (instrumentation model only)
- **2** – 200-220 VAC

B = Model Configuration Options
- **I** – instrumentation model (benchtop version)
- **R** – single rack mounted version
- **D** – 19” dual rack mounted version (requires 2 controllers)

C = Interface Options
- **G** – GPIB interface
- **S** – serial interface

D = Length of Cable (in feet)
- **6** – 6 feet (standard)
- **L** – other length (please specify)

Ø = Other Options
- **N** – nonstandard (please specify requirements)

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