INSTRUCTION MANUAL

BROADBAND

PREAMPLIFIER

MODEL BPA-1000

10 kHz – 1 GHz

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ELECTRO-METRICS

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10 kHz-1 GHz

SERIAL NO: N/A

ELECTRO-METRICS CORPORATION

231 Enterprise Road, Johnstown, New York 12095
Phone: (518) 762-2600 Fax: (518) 762-2812

EMAIL: info@emihq.com **WEB: http://www.electro-metrics.com**

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WARRANTY

This Model BPA-1000 Broadband Preamplifier is warranted for a period of 12 months (USA only) from date of shipment against defective materials and workmanship. This warranty is limited to the repair of or replacement of defective parts and is void if unauthorized repair or modification is attempted. Repairs for damage due to misuse or abnormal operating conditions will be performed at the factory and will be billed at our commercial hourly rates. Our estimate will be provided before the work is started.

APPENDIX A
BPA-1000 ACCESSORIES

A-1.0 Standard Accessories

The following accessories are included as standard with each BPA-1000.

a. Power Cord.

b. BNC-TNC Adapters (2).

DESCRIPTION AND USE ELECTRO-METRICS MODEL BPA-1000 BROADBAND PREAMPLIFIER

1.0 Introduction

The Electro-Metrics Model BPA-1000 Broadband Preamplifier is a self-contained module used to improve the sensitivity of EMI analyzers, spectrum analyzers, oscilloscopes, and many other devices without distorting the amplitude accuracy.

2.0 Specifications

2.1 Electrical

Frequency Range:	10 kHz-1 GHz
Gain:	26 dB Typical
(Gain level chart furnished with each unit--Figure 1)	
Flatness:	±1.5 dB
Noise Figure:	7 dB Maximum above 100 kHz
Power Output: (@1 dB compression)	+8 dBm Typical
Maximum Input Level:	1 Vrms.
Impedance:	50Ω
VSWR:	<2:1
2nd Order Intercept:	+30 to +43 dBm Typical
3rd Order Intercept:	+20 dBm Typical
Connectors:	Type TNC
Power Requirements:	115/230 VAC, 50-60 Hz. (Approx. 2.5 W)

2.2 Mechanical

Length:	300 mm (11.9").
Width:	224 mm (8.8").
Height:	148 mm (5.8").
Weight:	Approx. 3.2 kg (7 lbs).

3.0 Power Supply

3.1 Power Requirements

a. AC power sources:

1) 105-130 VAC, 50-60 Hz.

2) 210-260 VAC, 50-60 Hz.

3.2 Power Source Selector

The Power Source Selector is incorporated as part of the power input connector. The number visible in the window indicates the nominal AC power source for which the receiver is set. To change the power source setting:

a. Remove the power cord from the connector plug.

b. Slide the clear cover to the left.

c. Pull the handle marked FUSE PULL and remove the fuse.

d. Rotate the handle to the left and gently pull the printed circuit voltage selector card from its slot.

e. Orient the card so that the desired operating voltage appears on the top-left side.

f. Firmly push the voltage selector card back into its slot.

g. Rotate the FUSE PULL handle to the right and install the correct rating fuse.

h. Slide the clear cover to the right and reconnect the AC power cord to the connector.

CAUTION

Verify that the Power Source Selector setting corresponds to the AC power source being used. Operation on "220" VAC with the module set for "110" VAC can cause extensive circuit damage.

3.3 Fuse Specifications

The BPA-1000 uses the following fuses:

a. 115 VAC operation: 1.0 AMP 3AG SLO-BLO.

b. 230 VAC operation: 0.5 AMP 3AG SLO-BLO.

4.0 Description Front/Rear Panel

4.1 Front Panel

a. POWER ON INDICATOR

Type: LED.

Color: Amber.

Function: when lighted, indicates that the BPA-1000 is turned "ON".

b. POWER SWITCH

Type: Two position toggle switch.

Function: Used to place the unit in operation.

c. INPUT/OUTPUT CONNECTORS

Type: TNC.

Two (2) BNC-TNC adapters supplied with each unit.

Function: Self-explanatory.

4.2 Rear Panel

a. POWER INPUT CONNECTOR

Type: Combined voltage selector and fuse holder.

Function: Connects the BPA-1000 to the selected AC power source.

5.0 Operating Instructions

5.1 Initial Power-Up Procedure

a. Before applying power to the BPA-1000 check the following:

1) Power Source Selector setting should correspond to the AC power source being used.

2) FUSE should be correct rating for the AC power source being used.

b. Connect the power cord between the rear panel POWER Connector and the AC power source. The BPA-1000 is turned on using the front panel POWER Switch. The LED "POWER-ON" indicator should be lighted when the unit is on. Allow a minimum warm-up time of 30 minutes.

5.2 Applications

The BPA-1000 Broadband Preamplifier is designed to be used whenever preamplification is required within a test system to improve the overall sensitivity.

CAUTION

The nominal gain of 26 dB, from 10 kHz to 1 GHz, is for a 50Ω impedance and the maximum safe input level is 1 Vrms. If the 1 Vrms input level limit is exceeded, the internal circuitry of the unit may be damaged.

If the BPA-1000 is being used as an antenna output amplifier, there is the possibility of damage being caused by electrostatic discharges (ESD). This situation may occur since most antennas have a center conductor with a shield ground and not an actual earth ground. Under certain enviromental conditions (low humidity, low temperatures, etc), static built-ups may occur. If discharged through the BPA-1000, it could cause damage to the amplifier circuitry. Use proper grounding techiques within the test setup to minimize this problem.

FIGURE 1

GAIN LEVEL CHART

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