

INSTRUCTION MANUAL

For **Preamplifier**

Model PAP-501

10 MHz to 1000 MHz, 21 dB Gain



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1.0 Introduction

This manual includes product specifications, safety precautions, product maintenance and warranty information.

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2.0 Product Specifications

Model:	PAP-501
Electrical	
Frequency Range:	10 MHz to 1000 MHz
Minimum Gain:	21 dB
Flatness:	+ 2 dB
Max input:	+10 dBm, 2 VDC
P _{out} at 1 dB compression point:	+10 dBm
Noise Figure:	3.5 dB
Impedance (Input/Output):	50Ω
Connector types:	BNC (f)
Power adapter (Output /Input):	6 VDC, 500 mA / 115 VAC, 60 Hz (230VAC,50 HZ)
Power adapter plug size:	2.5 x 5.5 mm
Operating Temperature:	10 °C to 40 °C
Mechanical	
Dimensions L x W x H:	3.6 x 2.1 x ¾ inches / 9.1 x 5.3 x 1.9 cm
Weight:	0.4 lbs / 0.2 kg

This equipment is designed for indoor use only.

2.1 Other related equipment available from Com-Power.

- PS-400 or PS-500 Near Field Probe Kits
- Biconical Antennas up to 300 MHz
- Log Periodic Antenna upto 1 GHz

2.2 Other RF and Microwave preamplifier models available from Com-Power

Model	Specifications
PAL-010	100 Hz to 30 MHz, 28 dB
PAM-103	1 MHz to 1 GHz, 33 dB
PAM-6000	1 to 6 GHz, 30 dB
PAM-118A	1 to 18 GHz, 40 dB
PAM-840A	18 GHz to 40 GHz, 42 dB

3.0 Important Precautions

Observe the following safety precautions to ensure user safety and maximizing the operating life of the preamplifier.

- Use only the power adapter supplied with the preamplifier.
- Exercise caution when handling the preamplifier because it is sensitive electrostatic discharge.
- Avoid using the preamplifier in environments with excessive heat or moisture.

There are no other user serviceable parts inside the unit. Do not remove the main instrument cover. If the preamplifier needs repair please contact authorized Com-Power service center.

3.1 Excessive RF input

Do not exceed RF input level indicated on front panel. Excessive RF input may damage the preamplifier's sensitive input and will not be covered under warranty.

3.2 Saturation

In addition possible damage to the preamplifier input, excessive RF signals may cause the preamplifier to saturate. When a preamplifier reaches saturation point the gain will reduce and cause a nonlinear increase in output power resulting inaccurate measurements. PAP-501 can handle up to +10 dBm (117 dBμV) input signal.

3.3 Calibration

The factory recommended calibration period for the Preamplifier is 12 months. However, its performance should be checked periodically to ensure the preamplifier is operating within the rated specification given in section 2.0 of this manual.

4.0 Warranty

Com-Power warrants to its Customers that the products it manufactures will be free from defects in materials and workmanship for a **period of 3 years**. This warranty shall not apply to:

- Transport damages during shipment from your plant.
- Damages due to poor packaging.
- Products operated outside their specifications.
- Products Improperly maintained or modified.
- Consumable items such as fuses, power cords, cables, etc.
- Normal wear
- Calibration
- Products shipped outside the United States without the prior knowledge of Com-Power.

In addition, Com-Power shall not be obliged to provide service under this warranty to repair damage resulting from attempts to install, repair, service or modify the instrument by personnel other than Com-Power service representatives.

Under no circumstances does Com-Power recognize or assume liability for any loss, damage or expense arising, either directly or indirectly, from the use or handling of this product, or any inability to use this product separately or in combination with any other equipment.

When requesting warranty, calibration or repair services, it is recommended that the original packaging material be used for shipping. Damage due to improper packaging will void warranty.

In the case of repair or complaint, a label should be attached to the housing of the instrument which describes briefly the faults observed. Please include the name, telephone number and email address of the contact person. Please visit our website www.com-power.com and fill out the Repair request form by selecting Repair under service menu.

4.1 Maintenance

This product contains no user replaceable parts. If the unit does not operate or needs calibration, please contact Com-Power Corporation. Any modifications or repairs performed on the unit by anyone other than an authorized factory trained technician will void warranty.

The exterior surface may be cleaned with mild detergent and then be wiped with a dry, clean, lint-free cloth. Use care to avoid any liquids or foreign objects entering the chassis.

5.0 Application and product operation

5.1 Application

Com-Power PAP-501 Preamplifier are designed specifically for EMI radiated emissions testing up to 1 GHz.

The PAP-501 high gain of the preamplifier

- Amplifies signals within its operational frequency band to improve the overall signal noise ratio of the measurement system.
- Compensates for signal losses associated with the use of cables and antennas operating within its frequency range.
- Due to its very small size provides an excellent means to increase sensitivity of near field probes.

5.2 Items included with the preamplifier

The following accessories and documents are supplied with the Model PAM-6000 Preamplifier:

- Power Adapter
- Instruction Manual

Optional items

- ISO-17025 calibration data and certificate

5.3 Front and rear panel layout description

5.3.1 Front Panel

The simple panel shown in the photo below consists of BNC type connector for RF input and output, LED indicator and power adapter jack. Please observe the maximum input rating printed on front panel. To turn on the RF amplification just plug in the power adapter. The green LED light will turn on to indicate the unit is operational.



5.4 Troubleshooting Common problems

Problem: Gain is low or no gain.

A: Make sure the power adapter is plugged in and the green LED is lit.

Check if the input and output cables are connected securely. Wiggle both cables and verify if the signal level changes on the receiver. If the signal changes replace the defective cable and check again. Make sure the cable from the signal source is connected to the input not the output.

Verify if the signal source connected and RF is turned on. If the signal source is an antenna or near field probes make sure they are properly connected.

Inject a known signal level into the preamplifier and check the gain. For example if you inject 50 dB μ V, you should read ~ 71 to 73 dB μ V on the receiver. Please be cautious not to exceed the input limits given in specification table of this manual.

6.0 Typical Preamplifier Gain

