

## PORTABLE ATTENUATION MEASUREMENT SYSTEM (PAMS) 864-936 MHz

### Features

- MEASURES PATH LOSS, SIGNAL STRENGTH SHIELDING EFFECTIVENESS
- 864-936 MHz
- PATH LOSS ACCURACY: +/- 1 dB TYP.
- RECEIVER RANGE: 0 TO -120 dBm
- TRANSMITTER POWER: -30 TO +30 dBm
- SYNTHESIZED: 1 MHz and 100 kHz STEP SIZE
- MICROPROCESSOR CONTROLLED
- AC or BATTERY OPERATION



### Description

PAMS is a user-friendly, microprocessor-based transmitter and receiver system that measures path loss and shielding effectiveness in RF shielded enclosures. Lightweight and compact, each PAMS unit measures approximately 12" x 5" x 5" and weighs 5.5 lbs., making PAMS ideally suited to field measurement tasks. Rugged construction insures instrument survivability in a field test environment.

PAMS incorporates a self-calibrating microprocessor-based architecture that provides for ease of use. It requires only minimal operator instruction for error-free operation. Its backlit LCD output displays shielding effectiveness, battery status, and other operating parameters.

PAMS provides an optimum solution for measuring the shielding effectiveness of RF enclosures.

PAMS can also be used with the RF Antenna Switch and up to 12 Ground Plane Antennas (available separately). A monitoring network can be installed around a shielded room. The antennas are placed around the outside of the room, and using the PAMS Receiver attached to the RF Switch, the operator is able to monitor the shield from various places around the room.

When operating in the shielding level mode, PAMS determines shielding integrity to levels as high as 120 dB at 900 MHz.

The PAMS receiver and transmitter are synthesized, with a minimum tuning step size of 100 kHz. Both units are battery powered, and can be operated in an AC mode when connected to the external battery charger. Normal battery operation time is 4 hours for the receiver, and 2 hours for the transmitter. "REFLEX" rapid charge control recharges batteries in 90 minutes without the memory effects normally associated with NiCd cells.

The receiver provides accurate level detection for signals in the range of -120 dBm to 0 dBm. Typical accuracy is +/-1.0 dB. An internal limiter provides protection to the receiver in the unlikely event that the receiver and transmitter are connected together.

The transmitter provides a maximum output power of +30 dBm (1 watt). Output power can be adjusted in 1 dB steps down to -30 dBm. Internal ALC circuitry maintains output level accuracy. The output of the transmitter is fully protected against damage.

The PAMS transmitter features a built-in 750-1000MHz comb generator for measuring small enclosures. The -10dBm pickets can be measured with a spectrum analyzer.

The PAMS system includes transmitter, receiver, antenna switch box, batteries, power packs, manual and a rugged transit case.

interference resistant, ruggedized

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### Specifications

#### PAMS Receiver

Operating Frequency:	864-936 MHz
Tuning Step Size:	1 MHz and 100 kHz
Operating Modes:	Path Loss, Shielding Level
IF Bandwidth:	20 kHz nominal
1 <sup>st</sup> IF:	90 MHz
2 <sup>nd</sup> IF:	455 kHz
RF Input Connector:	BNC female
RF Input Impedance:	50 ohms nominal
Input Preselection:	80 MHz 1 dB bandwidth
Signal Level Relative Accuracy:	+/- 1.0 dB (-120 dBm to 0 dBm)
Absolute Level Accuracy:	+/- 2.0 dB (-120 dBm to 0 dBm)
Maximum Safe Input Level:	+30 dBm (1 watt) minimum
Battery Operation:	4 hours minimum at full charge
Batteries:	Nickel Cadmium
AC/Charger Operation:	95-265VAC, 48-65 Hz
Charge Time:	90 minutes typical, "REFLEX" charge control
Controls:	ON/OFF/VOLUME, FREQUENCY TUNE / F.DIGIT(frequency tune), THOLD (sets threshold level for go/no-go testing), LIGHT (backlights LCD display), CAL (used to provide path loss or shielding reference level normalization), MODE (selects threshold or monitor mode)
LED Indicators:	BATTERY OVERTEMP, BATTERY CHARGE, BATTERY FAULT
LCD Displayed Functions:	Frequency, Battery Level, Mode (Path Loss, Shielding Level), Threshold Level Set, CAL Status, LOCK Status, Freq Adjust Status (1MHz/100kHz)
Weight:	5.5 lbs nominal
Case Size:	11.7"H x 5.1"D x 4.9"W
Standard Accessories:	32 ohm headphones, battery charger/power pack, manual, 1/4 wave on top of 1/2 wave vertical monopole antenna



Note: All specifications guaranteed at 25°C unless otherwise specified.

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### Specifications

#### PAMS Transmitter

Operating Frequency:	864-936 MHz
Tuning Step Size:	1 MHz and 100 kHz
Maximum Output Power:	+30 dBm minimum (CW mode) -10 dBm (Broadband mode)
Output Power Control:	1 dB steps from -30 to +30 dBm
Output Level Accuracy:	+/-1.0 dB maximum
Harmonics:	-60 dBc maximum
Output Impedance:	50 ohms nominal
Load VSWR:	Safe operation into infinite VSWR (isolator protected)
RF Output Connector:	BNC female
Battery Operation:	2 hours minimum at full charge
Batteries:	Nickel Cadmium
AC/Charger Operation:	95-265VAC, 48-65 Hz
Charge Time:	90 minutes typical, "REFLEX" charge control
Controls:	ON/OFF, FREQUENCY TUNE, 1MHz/100kHz (frequency tune), LIGHT (backlights LCD display), LOCK (locks out all controls), ATTEN (toggles between 0dB and 60dB of attenuation), MODE (selects CW or broadband mode)
LED Indicators:	BATTERY OVERTEMP, BATTERY CHARGE, BATTERY FAULT
LCD Displayed Functions:	Frequency, Battery Level, Output Level, LOCK Status, Freq Adjust Status (1MHz or 100kHz), Broadband / CW Mode
Weight:	5.5 pounds nominal
Case Size:	11.7"H x 5.1"D x 4.9" W
Standard Accessories:	Battery charger/AC power pack, manual, 1/4 wave on top of 1/2 wave vertical monopole antenna



#### COMPLETE SYSTEM

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Includes:	PAMS Receiver PAMS Transmitter 3 amp Battery Charger / AC Power Pack (2 each) Antennas (2 each) 12 Position Antenna Switch 32 ohm headphones Operator's Manual Airtight & Watertight Heavy Duty Transit Case
Weight:	28 lbs. Nominal (all items installed in Transit Case)
Size:	21.5" L x 14.6" H x 8.1" D (nominal Transit Case)

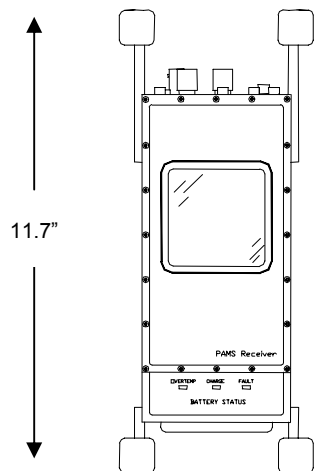
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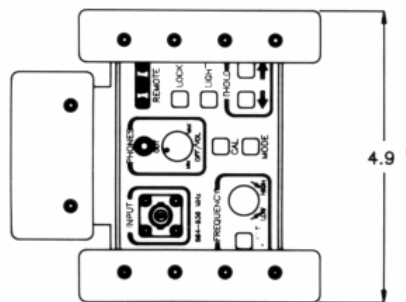
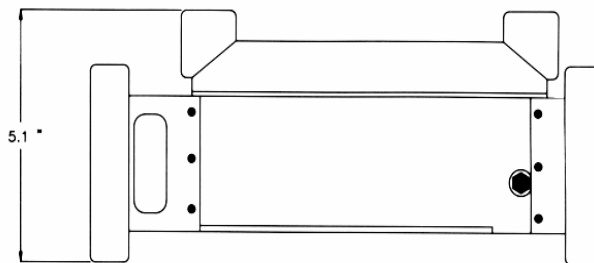
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## Outline Drawings

SIDE VIEW



FRONT VIEW



TOP VIEW

## PAMS ORDERING INFORMATION

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- PAMS Complete System, part number 310-010042-001
- PAMS Receiver Only, part number 301-010046-001
- PAMS Transmitter Only, part number 310-010045-001
- RF Antenna Switch, 12 Position, part number 310-010040-001
- Ground Plane Antenna, part number 310-010041-001