

PathTrax 500 489-512 MHz

Features

- MEASURES PATH LOSS, SIGNAL STRENGTH, SHIELDING EFFECTIVENESS
- 489-512 MHz
- PATH LOSS ACCURACY: +/- 1 dB TYP.
- RECEIVER RANGE: 0 TO -120 dBm
- TRANSMITTER POWER: -30 TO +30 dBm
- SYNTHESIZED: 1 MHz, 100kHz and 10 kHz STEP SIZE
- MICROPROCESSOR CONTROLLED
- AC or BATTERY OPERATION
- SERIAL CONTROLLABLE



Description

The PathTrax model 500 is a user-friendly, microprocessor-based transmitter and receiver system that measures signal strength, path loss, or shielding effectiveness in the 489-512MHz band. Lightweight and compact, each PathTrax unit measures approximately 12" x 5" x 5" and weighs 5.5 lbs., making PathTrax ideally suited to field measurement tasks. Rugged construction insures instrument survivability in a field test environment.

PathTrax incorporates a self-calibrating microprocessor-based architecture that provides for ease of use and error-free operation. Equipment status and measured data are clearly displayed on a 2.5" x 2.5" backlit LCD. The RS232 serial interface allows remote operation of the system.

The PathTrax receiver's four operating modes make propagation surveys a simple task. In "Spectrum Monitor" mode a portion of the frequency spectrum can be displayed on the LCD display to help find possible interfering signals or to locate a clear test frequency. A test frequency can be monitored in "Signal Strength" mode to insure a clear channel or to measure the signal strength of a test signal. "Path Loss" mode can be used to make relative path loss measurements compared to a measured reference.

When in "Shield Level" mode, the PathTrax system can be used to measure the shielding effectiveness of an enclosure.

The PathTrax receiver and transmitter are synthesized, with a minimum tuning step size of 10 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. A rapid charge controller recharges The NiCd batteries in 90 minutes.

The receiver provides accurate level detection for signals in the range of -120 dBm to 0 dBm. Typical accuracy is +/-1.0 dB. A preselector filter helps to maintain a high system dynamic range in the presence of large out of band signals.

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 PathTrax system includes transmitter, receiver, portable antennas, batteries, AC/DC power modules, manual, and a rugged transit case.

PathTrax 500 489-512 MHz

Specifications

PathTrax Receiver

Operating Frequency:	489-512 MHz
Tuning Step Size:	1 MHz, 100 kHz, and 10 kHz
Operating Modes:	Signal Strength, Path Loss, Shielding Level, Spectrum Monitor
IF Bandwidth:	20 kHz nominal
1 st IF:	90 MHz
2 nd IF:	450 kHz
RF Input Connector:	TNC 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
Controls:	ON/OFF/VOLUME FREQUENCY / F.DIGIT (frequency tune) THOLD (sets threshold level for go/no-go testing) LIGHT (backlights LCD display) LOCK (locks the controls) CAL (used to provide path loss or shielding reference level normalization) MODE (selects operating mode)
LED Indicators:	Battery OVERTEMP, CHARGE, FAULT
LCD Displayed Functions:	Frequency, Battery voltage, Mode, Measured Data, Threshold Level, CAL Status, LOCK Status, Frequency Adjust Step Size.
Remote Operation:	RS232 serial interface, 9 pin miniature connector
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, portable antenna



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

PathTrax 500 489-512 MHz

Specifications

PathTrax Transmitter

Operating Frequency: 489-512 MHz
Tuning Step Size: 1 MHz, 100 kHz, and 10 kHz
Maximum Output Power: +30 dBm minimum (CW mode)
Output Power Control: 1 dB steps from -30 to +30 dBm
Output Level Accuracy: +/-1.0 dB maximum
Harmonics: -40 dBc maximum
Output Impedance: 50 ohms nominal
Load VSWR: Safe operation into infinite VSWR
RF Output Connector: TNC 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

Controls: ON/OFF
FREQUENCY/F.DIGIT (frequency tune, output level adj)
LIGHT (backlights LCD display)
LOCK (locks the controls)
ATTEN (steps the output level in 10dB steps)
MODE (selects between frequency adj and level adj mode)
LED Indicators: Battery OVERTEMP, CHARGE, FAULT
LCD Displayed Functions: Frequency, Battery Level, Output Level, LOCK Status, Freq Adjust Step Size

Remote Operation: RS232 serial interface, 9 pin miniature connector

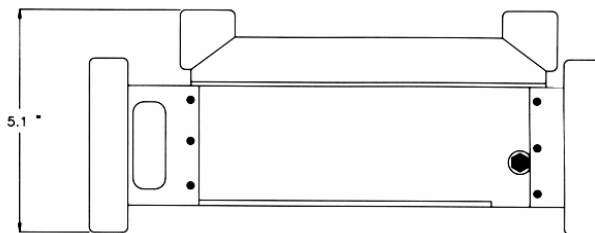
Weight: 5.5 pounds nominal
Case Size: 11.7"H x 5.1"D x 4.9" W
Standard Accessories: Battery charger/AC power pack, manual, portable antenna



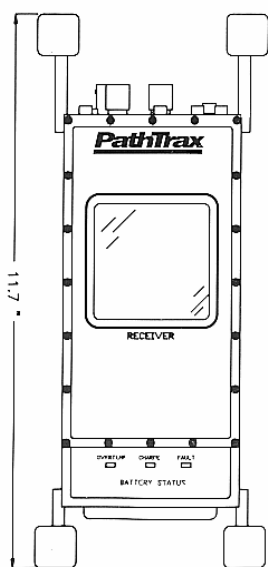
COMPLETE SYSTEM

Includes: PathTrax Receiver
PathTrax Transmitter
3 amp Battery Charger / AC Power Pack (2 each)
Antennas (2 each)
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)

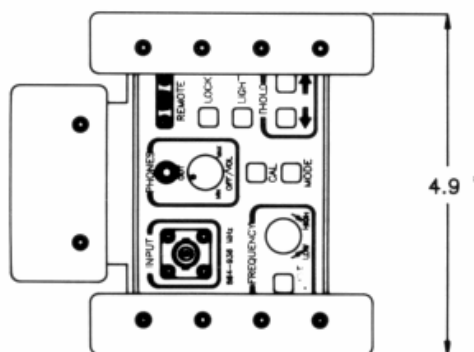
Outline Drawings



SIDE VIEW



FRONT VIEW



TOP VIEW

Transit Case

