

## PROPAGATION SURVEY SYSTEM 885-960 MHz

### Features

- MEASURES PATH LOSS, SIGNAL STRENGTH SHIELDING EFFECTIVENESS
- GSM BAND (885-960 MHz)
- PATH LOSS ACCURACY: +/- 1 dB TYP.
- RECEIVER RANGE: 0 TO -120 dBm
- TRANSMITTER POWER: -30 TO +30 dBm
- SYNTHESIZED: 1 MHz, 100 kHz and 10 kHz STEP SIZE
- MICROPROCESSOR CONTROLLED
- AC or BATTERY OPERATION
- RS-232 CONTROLLABLE



### Description

The PathTrax, model PTS915, is a user-friendly, microprocessor-based transmitter and receiver system that measures signal strength, path loss, and shielding effectiveness in the GSM operation 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. It requires only minimal operator instruction for error-free operation. Its backlit LCD output displays path loss measurements, battery status, and other operating parameters.

PathTrax provides an optimum solution for GSM/Cellular site surveys. Once the receiver is calibrated with the transmitter, the receiver measures pathloss directly. With a push of a button, the receiver displays signal strength.

PathTrax also provides an effective survey tool for determining the location of system components in wireless LAN or PBX applications operating in 902-928 MHz ISM band.

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

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 5 hours for the receiver, and 2 hours for the transmitter (at 1 watt output power). "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 10 dB steps down to -30 dBm. Internal ALC circuitry maintains output level accuracy. The output of the transmitter is fully protected against damage.

The PathTrax transmitter and receiver can be controlled via a RS-232 communications link, with a measurement speed of better than 100 ms (including time to change frequencies).

The PathTrax system includes transmitter, receiver, antennas, batteries, power packs, and a rugged transit case.



interference resistant, ruggedized

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### Specifications

#### PTR915 PathTrax GSM Receiver

Operating Frequency:	885-960 MHz
Tuning Step Size:	1 MHz, 100 kHz and 10 kHz
Operating Modes:	Path Loss, Signal Strength, Shielding Level
IF Bandwidth:	20 kHz nominal
1 <sup>st</sup> IF:	90 MHz
2 <sup>nd</sup> IF:	455 kHz
RF Input Connector:	TNC female
RF Input Impedance:	50 ohms nominal
Input Preselection:	5 pole Chebychev, 80 MHz 1 dB bandwidth
Signal Level Relative Accuracy:	+/- 1.0 dB (-115 dBm to 0 dBm)
(Path Loss & Shielding Modes):	+/- 2.0 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:	5 hours minimum at full charge
Batteries:	Nickel Cadmium
AC/Charger Operation:	95-265VAC, 48-65 Hz
Charge Time:	90 minutes typical, "REFLEX" charge control
Remote Operation:	via RS-232 serial interface
I/O Connectors:	9 pin subminiature connector
Controllable Functions:	All functions except ON/OFF/VOLUME
Output Data:	All measurement data and instrument status
Reading Rate:	50 ms (time to read data and step tuning frequency)
Controls:	ON/OFF/VOLUME, FREQUENCY TUNE, COARSE / FINE (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)
LED Indicators:	BATTERY OVERTEMP, BATTERY CHARGE, BATTERY FAULT
LCD Displayed Functions:	Frequency, Battery Level, Mode (Path Loss, Signal Strength, Shielding Level), Threshold Level Set, CAL Status, LOCK Status, Freq Adjust Status (Coarse or Fine)
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, antenna



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

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## PROGATION SURVEY SYSTEM 885-960 MHz

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### Specifications

#### PTTX915 PathTrax GSM Transmitter

Operating Frequency:	885-960 MHz
Tuning Step Size:	1 MHz, 100 kHz and 10 kHz
Maximum Output Power:	+30 dBm minimum
Output Power Control:	10 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 (isolator protected)
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, "REFLEX" charge control
Remote Operation:	via RS-232 serial interface
I/O Connectors:	9 pin subminiature connector
Controllable Functions:	All functions except ON/OFF
Output Data:	All measurement data and instrument status
Tuning Rate:	50 ms (time to change frequency)
Controls:	ON/OFF, FREQUENCY TUNE, COARSE FINE (frequency tune), LIGHT (backlights LCD display), LOCK (locks out all controls), ATTEN (controls output power in 10 dB steps)
LED Indicators:	BATTERY OVERTEMP, BATTERY CHARGE, BATTERY FAULT
LCD Displayed Functions:	Frequency, Battery Level, Output Level, LOCK Status, Freq Adjust Status (Coarse or Fine)
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, antenna
Complete System Includes:	PTRX915 PathTrax GSM Receiver PTTX915 PathTrax GSM Transmitter 3 amp Battery Charger / AC Power Pack (2 each) Antennas (2 each) 32 ohm headphones Operator's Manual and Laminated Operator's Card 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)



#### PATHTRAX ORDERING INFORMATION

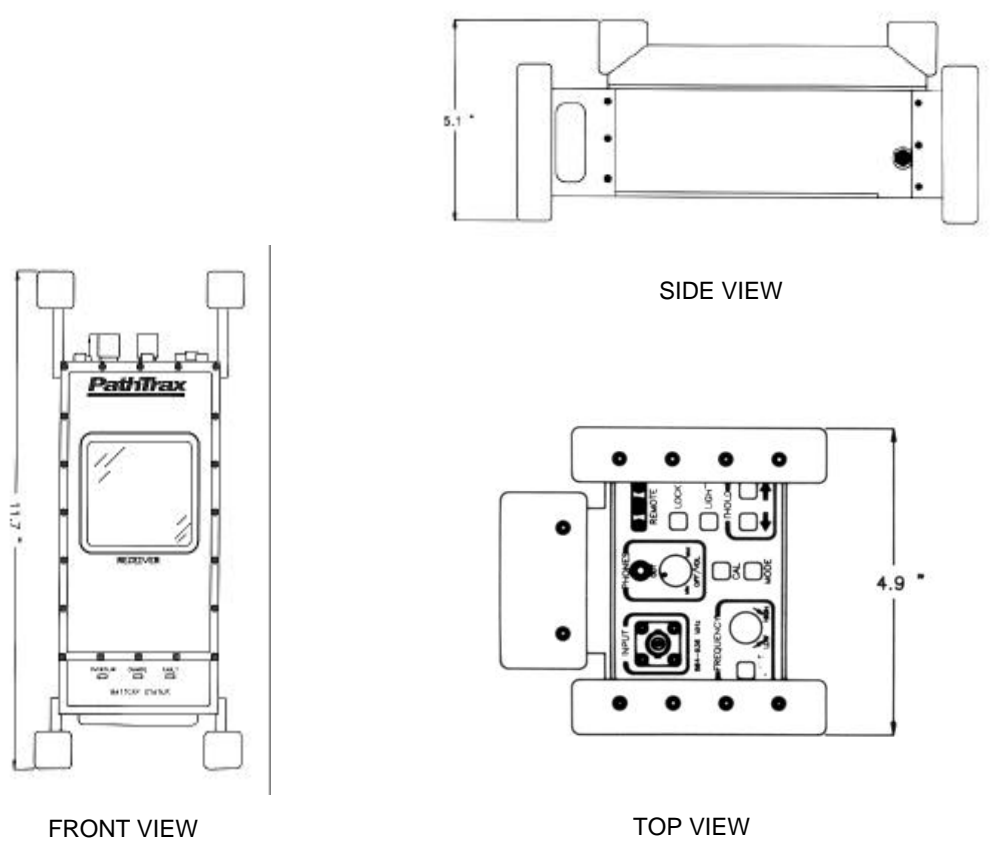
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- PathTrax GSM Complete System, order model number 310-010044-001
- PathTrax GSM Receiver Only, order model number 301-010050-001
- PathTrax GSM Transmitter Only, order model number 301-010049-001
- Other Frequency Bands Available

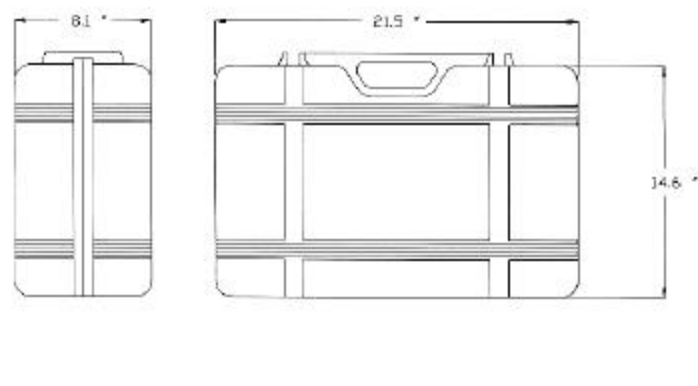
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## PROGATION SURVEY SYSTEM 885-960 MHz

### Outline Drawings



### Transit Case



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