



## MCP-Based Physical Layer Tester (PLT-M)



### OVERVIEW

Square Peg Communications Inc.'s fourth-generation Physical Layer Tester (PLT-M) is a generic PC based test tool which supports the testing and type approval of mobile terminals and base stations for various satellite or wireless communications networks. The PLT-M is based on Square Peg's Multi-Channel Platform (MCP) Channel Unit, a software-defined radio providing baseband-to-RF functionality.

The generic PLT-M hardware platform runs software specific to the equipment type under test. The following applications are currently available or in development:

#### Product

BGAN Physical Layer Tester (BMCP)

IsatData Pro Physical Layer Tester (DMCP)

#### Inmarsat Standards

BGAN, FleetBroadband, SwiftBroadband, SB-SAT

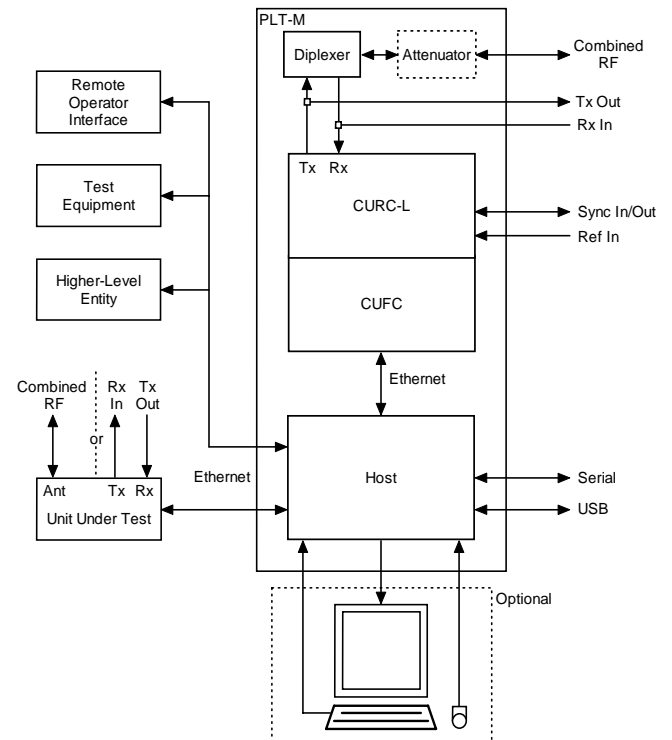
IsatData Pro



### PLATFORM

The PTL-M implements the communication channels at L-band. Up to four transmit and four receive

channels are supported. It communicates with an optional Protocol Tester or network emulator as well as external test equipment and the unit under test over a LAN or serial connection. The PLT-M includes a high stability 10 MHz frequency reference and provides a local or remote Windows-based Operator Interface.





# SPECIFICATIONS

## RF

Connector	<b>Combined RF: N female Rx In / Tx Out: SMA female</b>
Impedance	<b>50 ohms nominal</b>
Receive frequency	<b>1626.5 to 1675.0 MHz</b>
Receive frequency step size	<b>1 Hz</b>
Receive level (Rx In)	<b>-35 to +16 dBm per channel +16 dBm max total</b>
Receive level (Combined RF)	<b>-34 to +17 dBm per channel +17 dBm max total</b>
Receive level (Combined RF, with optional high power attenuator)	<b>-4 to +43 dBm per channel +43 dBm max total</b>
Receive level measurement resolution	<b>0.01 dB</b>
Receive level measurement accuracy	<b>± 1.0 dB</b>
Receive spurious signals	<b>≤ -55 dBc</b>
Receive phase noise density	<b>@ 10 Hz: ≤ -55 dBc/Hz @ 100 Hz: ≤ -75 dBc/Hz @ 1 kHz: ≤ -85 dBc/Hz @ 10 kHz: ≤ -90 dBc/Hz @ 100 kHz: ≤ -100 dBc/Hz</b>
Receive 3 <sup>rd</sup> order intermodulation	<b>≤ -55 dBc (two carriers at 3 dB below maximum, receive path attenuation adjusted optimally)</b>
Receive I/Q amplitude and phase imbalance	<b>Negligible</b>
Transmit frequency	<b>1518.0 to 1559.0 MHz</b>
Transmit frequency step size	<b>1 Hz</b>
Transmit level (Tx Out)	<b>-90 to -25 dBm per carrier</b>
Transmit level (Combined RF)	<b>-91 to -26 dBm per carrier</b>
Transmit level (Combined RF, with optional high-power attenuator)	<b>-121 to -56 dBm per carrier</b>
Transmit level resolution	<b>0.01 dB</b>
Transmit level accuracy	<b>± 1.0 dB</b>
Transmit phase noise density	<b>@ 10 Hz: ≤ -50 dBc/Hz @ 100 Hz: ≤ -70 dBc/Hz @ 1 kHz: ≤ -87 dBc/Hz @ 10 kHz: ≤ -90 dBc/Hz @ 100 kHz: ≤ -100 dBc/Hz</b>
Transmit spurious	<b>≤ larger of -55 dBc or -90 dBm</b>
Transmit 3 <sup>rd</sup> order intermodulation	<b>≤ -55 dBc with two carriers at 3 dB below maximum</b>
Transmit frequency accuracy	<b>± 1 × 10<sup>-7</sup></b>
Transmit I/Q amplitude and phase imbalance	<b>Negligible</b>

## REFERENCE

Source	<b>Internal / External</b>
Connector	<b>BNC female</b>
Impedance	<b>50 ohms</b>
Frequency	<b>10 MHz</b>
Level	<b>0 dBm ± 2 dB</b>
Frequency error (internal)	<b>≤ 10<sup>-7</sup> (with yearly calibration)</b>

## BASEBAND INTERFACES

Sync	<b>TTL, configurable as input or output Input impedance: ≥ 1000 ohms Load impedance: ≥ 100 ohms</b>
Ethernet	<b>2 x 10/100/1000 Base T</b>
Serial	<b>1 x RS-232, 1 x RS-232/422/485</b>
USB	<b>4 x USB 2.0, 2 x USB 3.0</b>
Video	<b>VGA, DVI</b>
Audio	<b>Standard PC audio</b>

## MECHANICAL/ENVIRONMENTAL

Form factor	<b>19" / 2.5U rack mount (optional 0.5U filler plate available)</b>
Size (with bumpers)	<b>L 51 cm x W 51.75 cm x H 12.07 cm L 20 in x W 20.38 in x H 4.75 in</b>
Weight (with internal high-power attenuator)	<b>≈ 7 kg (15 lb)</b>
Power connector	<b>IEC 320 male</b>
Voltage	<b>100-240 VAC, 50/60 Hz</b>
Current (typical, with four 600 MHz DSPs)	<b>≈ 1.5 A rms at 115 VAC</b>
Operating temperature	<b>10°C to 35°C</b>
Operating humidity	<b>20% to 75% relative humidity, non-condensing</b>
Regulatory	<b>FCC, CE and RoHS compliant Safety: EN61010-1 Emissions &amp; immunity: EN61326-1 Class A</b>

## PROCESSING

Host	<b>Core i7</b>
DSPs	<b>4 to 8 TigerSHARC, 500/600 MHz</b>
FPGA	<b>Virtex-5, Kintex-7</b>



# CONTACT Us

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