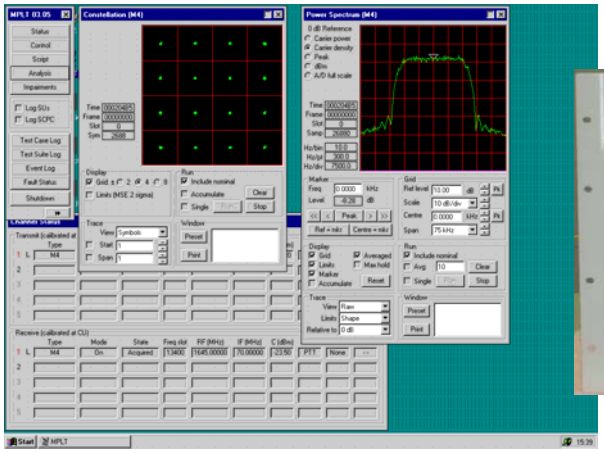
Square Peg Communications Inc.

Physical Layer Tester (PLT)



Overview

Square Peg Communications Inc.'s second-generation Physical Layer Tester (PLT-H) 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 generic PLT-H hardware platform runs software specific to the equipment type under test. The following applications are currently available:

Product	Inmarsat Standards
Inmarsat BGAN Physical Layer Tester (BPLT)	BGAN, FleetBroadband, SwiftBroadband, SB-SAT
Inmarsat-C Physical Layer Tester (CPLT)	Inmarsat-C
Inmarsat Aeronautical Ground Data Unit (GDU)	Classic Aero
Inmarsat Packet Data Service MES Physical Layer Tester (IPLT)	GAN Mobile Packet Data Service (MPDS)
Inmarsat Mini-M / M4 Physical Layer Tester (MPLT)	mini-M, GAN Mobile ISDN, Fleet 33/55/77, Swift 64

Platform

The PLT comprises the following components:

CHANNEL UNIT

The PC-based Channel Unit implements the communication channels at IF. Up to four transmit and four receive channels are supported. It communicates with an optional Protocol Tester over a LAN or serial connection. The CU includes a high stability 10 MHz frequency reference and provides a Windows based Operator Interface.

IF UNIT

The optional IF Unit combines the CU transmit channels, and applies the combined signal to three Tx feeds for LES testing. It combines the signals from four Rx feeds and applies the combined signal to the CU receive channels. External noise sources or other signals can be added independently to the composite Tx and Rx signals.

RF UNIT

The optional RF Unit converts the CU IF feeds to and from L-band, at the appropriate levels for connection to an MES antenna port. L-band noise can be added to the MES L-band feed

SPECIFICATIONS

PHYSICAL

Channel Unit (CU)	**19" / 6U rack mount industrial PC**
IF Unit (IFU)	**19" / 3U rack mount enclosure**
RF Unit (RFU)	**19" / 3U rack mount enclosure**

RF

Connector	**N female**
Impedance	**50 Ω nominal**
Receive frequency	**1626.5 to 1675.0 MHz**
Receive frequency step size	**1 Hz**
Receive level (into high-power attenuator)	**0 to +48 dBm (+45 dBm max per channel)**
Receive level (into RFU)	**–30 to +18 dBm**
Receiver spurious signals	**≤ –55 dBc**
Receiver phase noise density	**@ 100 Hz: ≤ –70 dBc/Hz** **@ 1 kHz: ≤ –80 dBc/Hz** **@ 10 kHz: ≤ –90 dBc/Hz** **@ 100 kHz: ≤ –100 dBc/Hz**
Receiver 3rd order intermodulation	**≤ –55 dBc (two carriers at 3 dB below maximum, receive path attenuation adjusted optimally)**
Receiver I/Q amplitude and phase imbalance	**Negligible**
Transmit frequency	**1518.0 to 1559.0 MHz**
Transmit frequency step size	**1 Hz**
Transmit level (from high-power attenuator)	**–60 dBm max per-carrier (internally generated carriers)** **–15 dBm max (externally applied noise)**
Transmit level (from RFU)	**–30 dBm max per-carrier (internally generated carriers)** **+15 dBm max (externally applied noise)**
Transmit level resolution	**0.01 dB**
Transmit level accuracy	**± 1.0 dB**
Transmit phase noise density	**@ 100 Hz: ≤ – 70 dBc/Hz** **@ 1 kHz: ≤ – 80 dBc/Hz** **@ 10 kHz: ≤ – 84 dBc/Hz** **@ 100 kHz: ≤ – 95 dBc/Hz**
Transmit spurious	**< –55 dBc**
Transmit 3rd order intermodulation	**≤ –55 dBc with two carriers at 3 dB below maximum**
Transmit frequency accuracy	**± 1 × 10^{-7}**
Transmit I/Q amplitude and phase imbalance	**Negligible**

IF TRANSMIT

Connector	**BNC female**
Impedance	**50Ω**
Frequency	**41.5 – 90.0 MHz**
Level	**–20 dBm to –40 dBm per channel**

IF RECEIVE

Connector	**BNC female**
Impedance	**50Ω**
Frequency	**41.5 – 90.0 MHz**
Level	**–20 dBm to –40 dBm per channel**

REFERENCE

Source	**Internal / External**
Connector	**BNC female**
Impedance	**50Ω**
Frequency	**10 MHz**
Level	**+7 dBm ± 1 dB**
Aux. reference out level	**-1 dBm ± 2 dB**
Frequency error	**≤ 10^{-7}**

POWER

Connector	**IEC 320 male**
Voltage	**105-130 VAC or 205-250 VAC, 47-63 Hz**
Current (PLT-H Channel Unit with 4 channels)	**≈ 2.54 A rms at 115 VAC**
Current (PLT IF Unit)	**≈ 0.06 A rms at 115 VAC**
Current (PLT RF Unit)	**≈ 0.12 A rms at 115 VAC**

CONTACT US

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