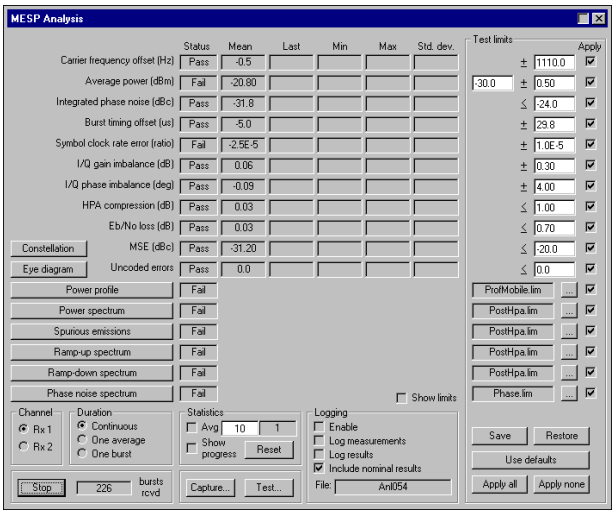
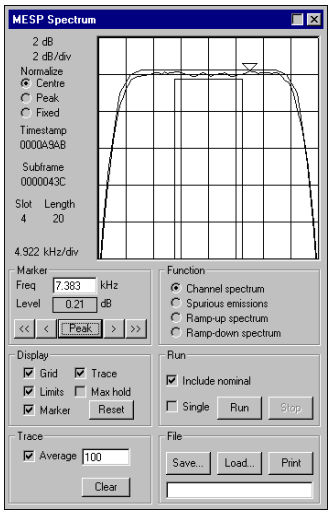
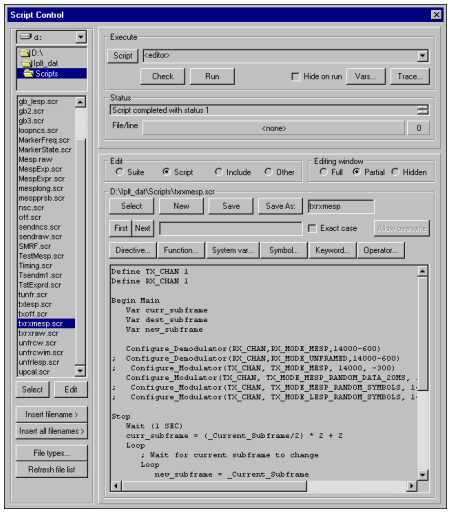
Square Peg Communications Inc.

IPDS MES Physical Layer Tester (IPLT)







Overview

Square Peg Communications Inc.'s IPDS MES Physical Layer Tester (IPLT) is a software application that runs on the generic Physical Layer Tester (PLT) platform. The IPLT supports the testing of physical layer performance and protocol implementation for Mobile Earth Stations implementing Inmarsat Packet Data Services (IPDS / MPDS) and packet based Fleet 77 and Swift 64 services.

The IPLT supports all of the MPDS channel types using state of the art DSP based modem technology. Real time signal analysis is performed on all received bursts in real time.

The IPLT is a powerful and flexible test tool but is easy to use. A familiar Windows based user interface provides easy access to test functions, while a powerful scripting language allows every feature of the IPLT and equipment under test to be exercised in automated testcases and suites.

The IPLT has been successfully used by manufacturers worldwide in the development and type approval of MESs.

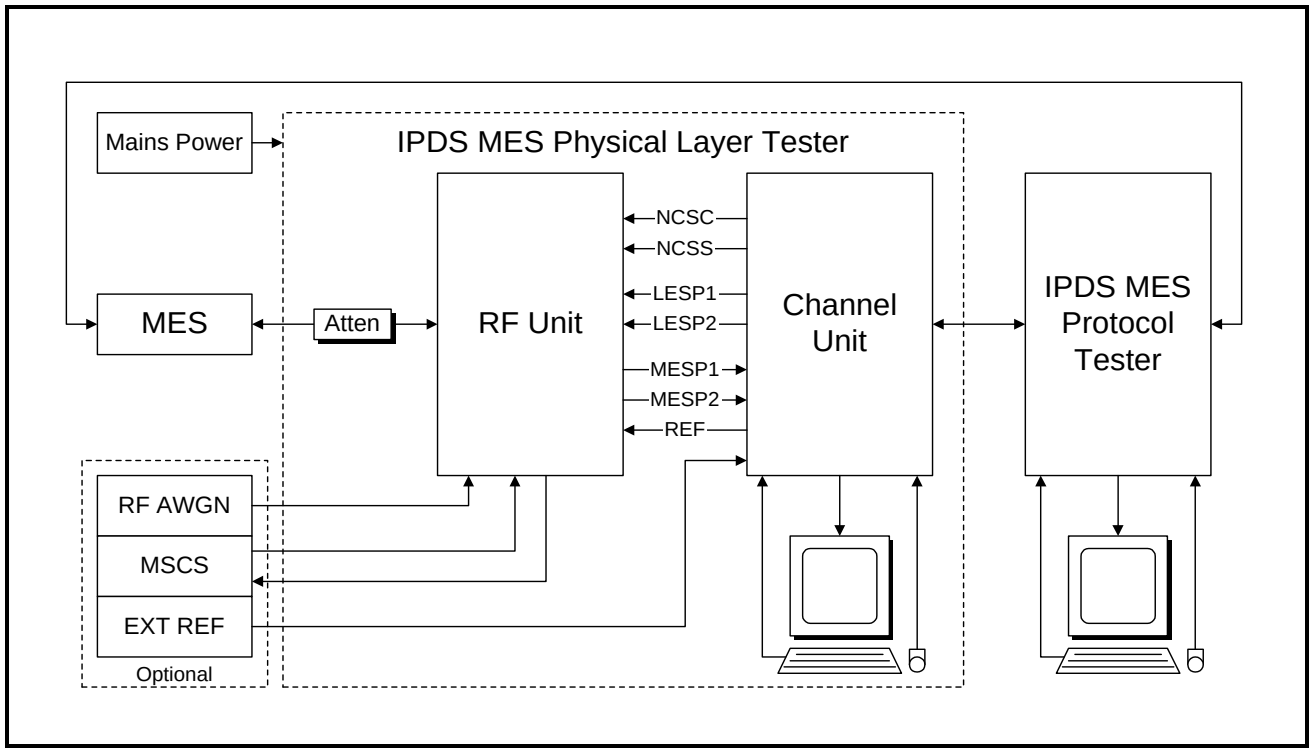
Specifications

TRANSMIT CAPABILITIES

NCS modulators	**2 simultaneous**
LESP/MESP modulators	**2 simultaneous**
LESP/MESP channel impairments	**Independently-specifiable parameters:** ▪ **Fixed carrier frequency error** ▪ **Peak Doppler rate/offset** ▪ **Reacquisition carrier offset** ▪ **Adjacent channel interference** ▪ **Co-channel interference** ▪ **I/Q phase imbalance** ▪ **I/Q gain imbalance** ▪ **Continuous phase noise** ▪ **Discrete phase noise (99 Hz from carrier)** ▪ **Fading bandwidth, C/M ratio, differential delay** ▪ **Phase jump size, interval** ▪ **Transmission path delay**

RECEIVE CAPABILITIES

MESP demodulators	**2 simultaneous**
MESP signal analysis	**1 selected MESP channel** **Burst capture (raw samples and soft decisions)** **Burst replay (from raw samples)**



IPLT CONFIGURATION

(Not all components are required for all test applications)

RECEIVE CAPABILITIES (continued)

MESP signal analysis	**Selectable pass/fail limits for measurements:** ▪ **Carrier frequency offset** ▪ **Average power** ▪ **Integrated phase noise** ▪ **Burst timing offset** ▪ **Symbol clock rate error** ▪ **I/Q gain and phase imbalance** ▪ **Constellation mean-squared error** ▪ **HPA compression** ▪ **Eb/No loss** ▪ **Uncoded errors** ▪ **Power profile** ▪ **Power spectrum** ▪ **Out-of-band emissions** ▪ **Ramp-up/ramp-down emissions** ▪ **Phase noise spectrum**

LOGGING CAPABILITIES

General	**Protocol Tester interface messages** **Transmitted/received PDUs** **MESP user data** **Test sequence progress and outcome** **System events, faults, and abnormal conditions**
MESP signal analysis	**Signal analysis measurements** **Signal analysis statistics** **Raw input samples** **Demodulator soft decisions**

SCRIPT CAPABILITIES

General	**Looping and conditional structures** **User-defined variables and procedures** **Compile-time symbol substitution** **Conditional compilation** **User input and interaction** **Logging and displaying events and results** **Integrated development environment**
IPLT-specific	**Configuring and controlling modulators and demodulators** **Sending LESP and MESP PDUs** **Sending NCS SUs** **Receiving MESP PDUs** **Generating signal blockage events** **Sending and receiving messages to simulate the Protocol Tester**

Contact Us

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