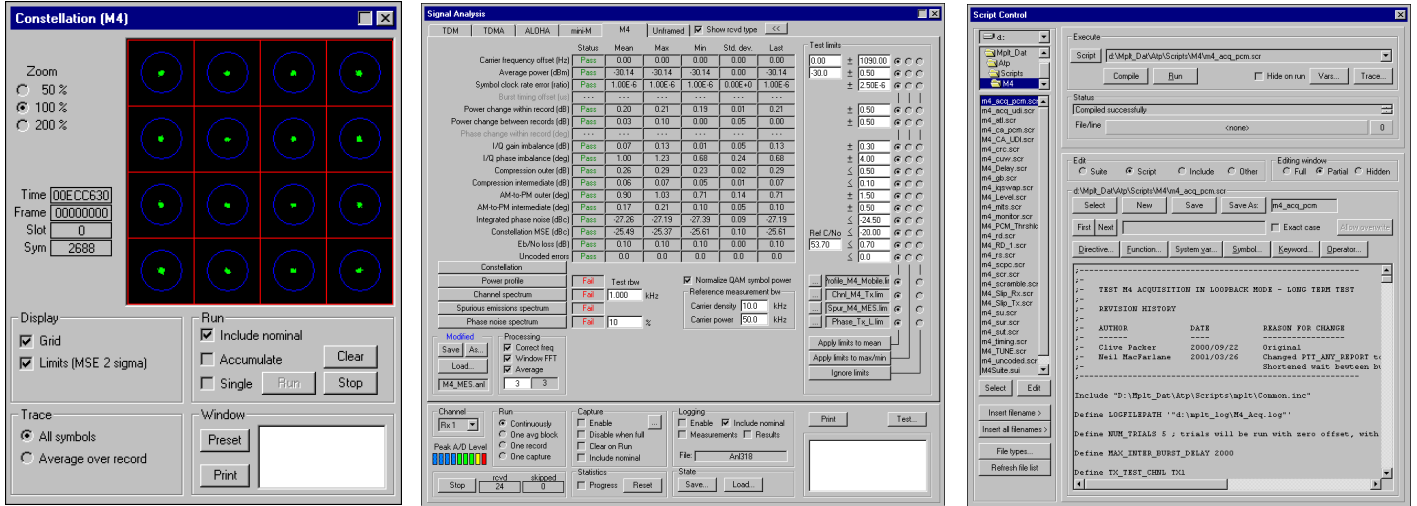




Square Peg

Communications Inc.

Mini M / M4 Physical Layer Tester (MPLT)



Overview

Square Peg Communications Inc.'s Mini-M / M4 Physical Layer Tester (MPLT) is a software application that runs on the generic Physical Layer Tester (PLT) platform. The MPLT supports the testing of physical layer performance and protocol implementation of Land Earth Stations and Mobile Earth Stations implementing Inmarsat Mini-M, M4, Fleet 77 and Swift 64 services.

The MPLT supports all of the Mini-M / M4 channel types using state of the art DSP based modem technology. A variety of interfaces are provided enabling external devices to be connected through the MPLT to the equipment under test.

The MPLT 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 MPLT and equipment under test to be exercised in automated testcases and suites.

The MPLT has been successfully used by manufacturers worldwide in the type approval of MESS and the authorization of LESSs.



Specifications

TRANSMIT CAPABILITIES

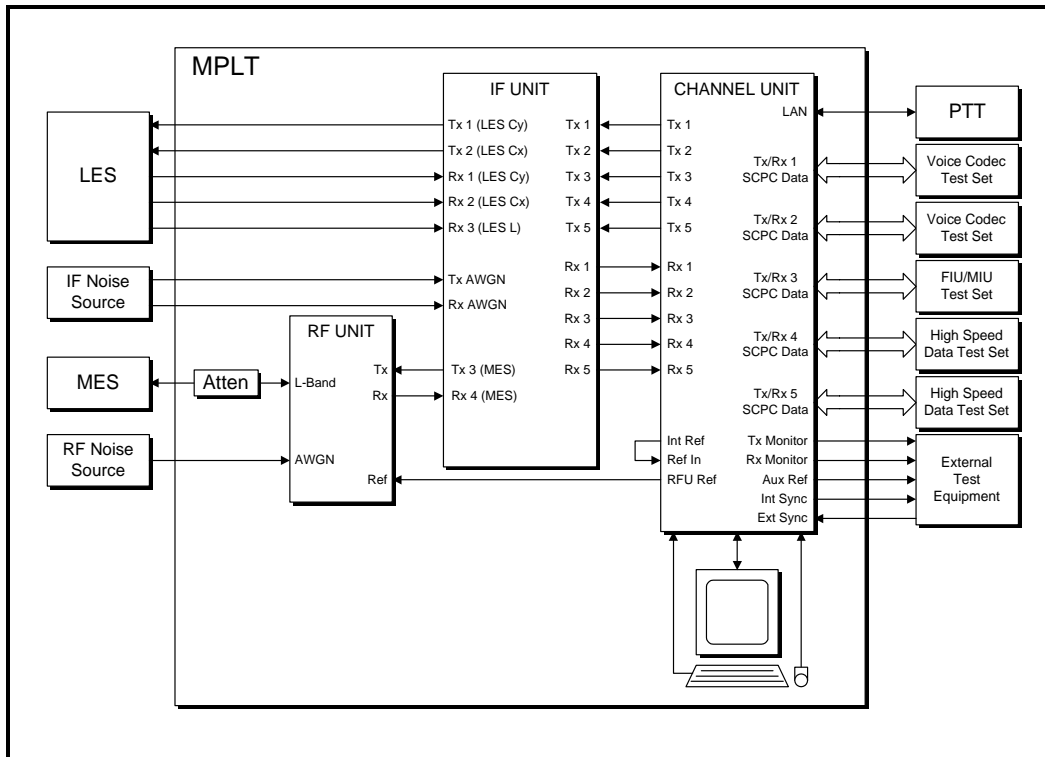
Modulators
Channel types

- 5 simultaneous
- TDM (6 kbps BPSK)
- TDMA (3 kbps BPSK)
- ALOHA (3 kbps BPSK)
- mini-M (2.8 kbps OQPSK)
- M4 (33.6 kbps 16-QAM)
- Test tones (CW, two-tone, etc.)

Channel impairments

Independently-specifiable parameters:

- Fixed carrier frequency error
- Doppler rate, peak offset
- Reacquisition carrier offset
- Adjacent channel interference level and frequency offset
- Co-channel interference level
- I/Q gain and phase imbalance
- Continuous phase noise spectrum, level
- Discrete phase noise level
- Fading model, bandwidth, C/M ratio, differential delay
- Phase jump distribution, magnitude, interval
- Amplitude jump distribution, magnitude, interval
- Transmission path delay
- Symbol rate error
- HPA non-linearity
- AWGN



MPLT CONFIGURATION

(Not all components are required for all test applications)

RECEIVE CAPABILITIES

- | | |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Demodulators | 5 simultaneous |
| Channel types | TDM (6 kbps BPSK)
TDMA (3 kbps BPSK)
ALOHA (3 kbps BPSK)
mini-M (2.8 kbps OQPSK)
M4 (33.6 kbps 16-QAM) |
| Signal analysis | Signal capture (raw samples and soft decisions)
Signal replay (from raw samples)
Selectable pass/fail limits for measurements: <ul style="list-style-type: none"> ▪ Carrier frequency offset ▪ Average power, power rate of change ▪ Phase change ▪ Integrated phase noise ▪ Burst timing offset ▪ Symbol clock rate error ▪ I/Q gain and phase imbalance ▪ Constellation mean-squared error ▪ HPA compression and AM/PM ▪ Eb/No loss ▪ Uncoded errors ▪ Power profile ▪ Spectral shape ▪ Out-of-band emissions ▪ Phase noise spectrum |

LOGGING CAPABILITIES

- | | |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| General | Protocol Tester interface messages
Transmitted/received SUs and SCPC data
Test sequence progress and outcome
System events, faults, and abnormal conditions |
| 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
Configuring and controlling modulators and demodulators
Flexible definition of SU formats
Sending and receiving SUs and SCPC data
Controlling channel simulator
Generating signal blockage events
Sending and receiving messages to simulate the Protocol Tester |
| MPLT-specific | |



Contact Us

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