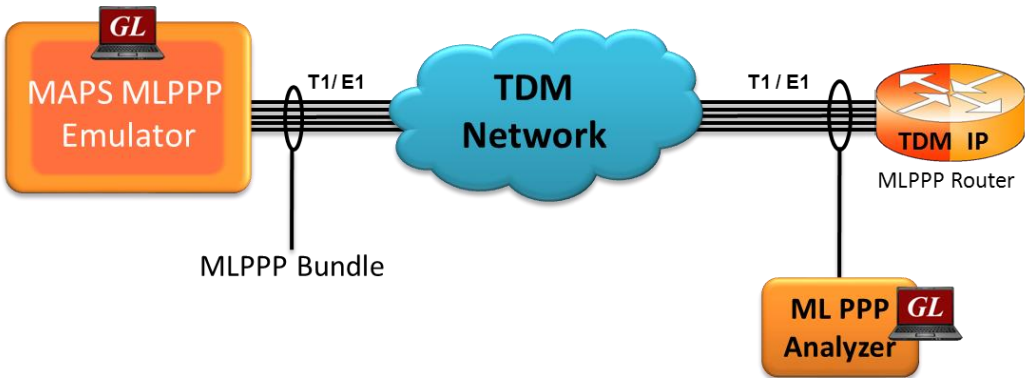
MAPS™ MC-MLPPP Emulator

(Scripted MLPPP Conformance Testing)



Overview

GL's Message Automation and Protocol Simulation (MAPS™) platform is a general purpose Protocol Emulator for various protocols encountered in the telecom space. MC-MLPPP is one such advanced protocol simulator for Multi Class, Multi Link, PPP protocols over TDM (T1 E1). The tester can simulate a complete PPP or MLPPP link between two peers, with MLPPP signaling conforming to IETF specifications.

The MAPS™ MLPPP supports error tracking, regression testing, conformance testing, and load testing. It can run pre-defined test scenarios against MLPPP test objects in a controlled and deterministic manner. The test tool also incorporates the flexibility to modify call parameters and message contents (arbitrary manipulation of messages, information elements and message sequence on the different protocols).

MAPS™ MLPPP conformance scripts are suitable for conformance tests and functional tests, where test objects can be accurately, reliably and comfortably validated for compliance with IETF standard. MAPS™ MLPPP supports powerful utilities such as Message Editor and Script Editor which allow new scenarios to be created or existing scenarios to be modified using MLPPP messages and parameters.

For more information, refer to MAPS™ MLPPP Emulator web page.

Main Features

- Performs MC-MLPPP as well as PPP simulation over TDM (T1/E1)
- Supports LCP with the following negotiation options -
  - PPP options: MRU (Maximum Receive Unit), ACFC (Address and Control Field Compression), PFC (Protocol Field Compression), and Magic Number
  - MLPPP Options: MRRU (Maximum Received Reconstructed Unit), Short Sequence Header format, Long sequence header format, Endpoint Discrimination, and Multi-class
  - Multi-Class Options: Multilink Header Format
- Supports the following NCP: IPCP (RFC 1332), IPCP Extensions (RFC 1877), and PPPMuxCP (RFC 3153)
- Supports IP compression negotiation option conforming to RFC 3544
- Supports customization of call flows using Script editor and Message editor
- Ready-to-use conformance scripts for quick testing
- Scripted call generation and automated call reception
- Provides protocol trace with full message decoding, and graphical ladder diagrams of call flow with time stamp
- Provides call statistics with associated captured events and error events during call simulation
- Provides protocol trace with full message decoding, custom trace, and graphical ladder diagrams during active simulation

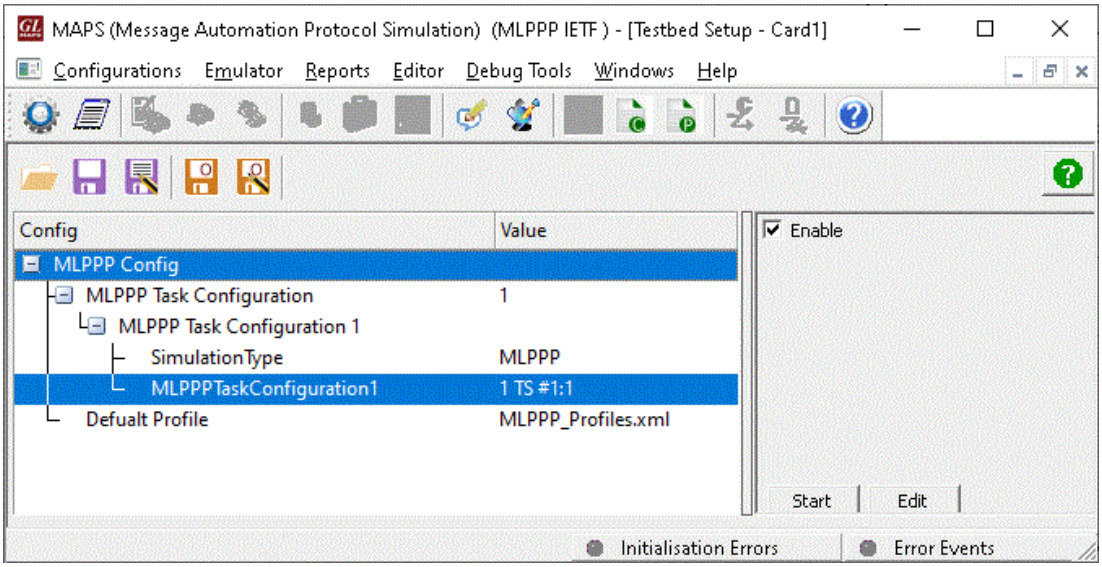
GL Communications Inc.

818 West Diamond Avenue - Third Floor, Gaithersburg, MD 20878, U.S.A

(Web) www.gl.com - (V) +1-301-670-4784 (F) +1-301-670-9187 - (E-Mail) info@gl.com

Testbed Setup Configuration

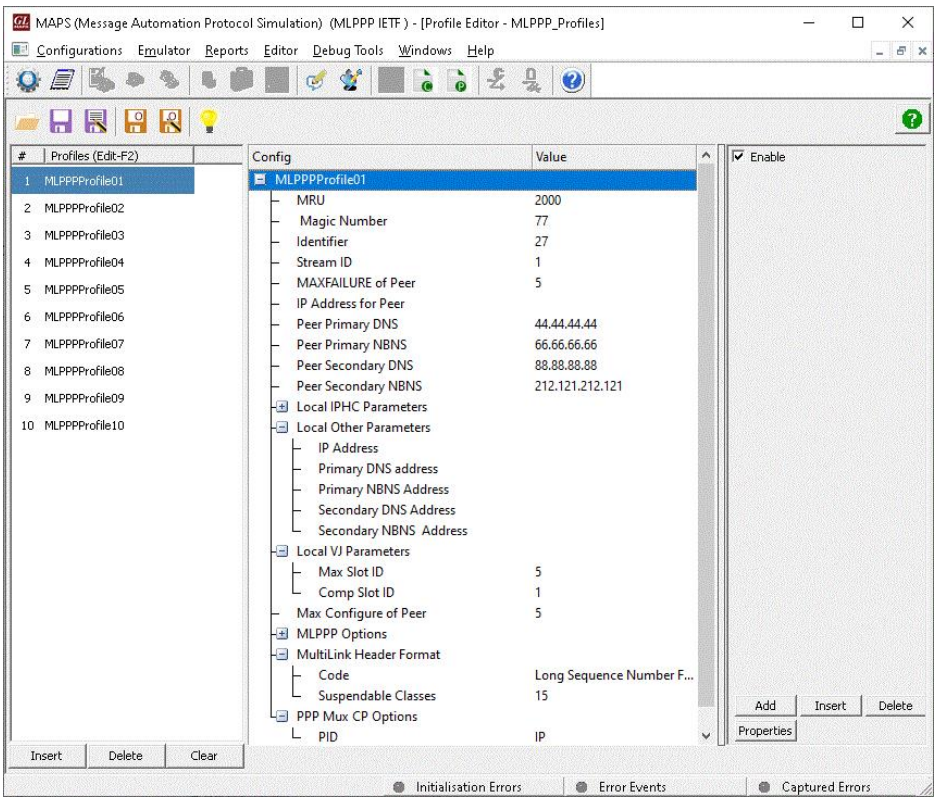
Test Bed setup is provided to establish communication between MAPS™ MLPPP and the DUT. It includes MLPPP task configuration parameters such as Link configuration, and Simulation Type to transmit and receive messages MLPPP/PPP messages. Default profile used to configure MAPS™ MLPPP end terminals with test parameters.



Testbed Setup

Profile Editor

This feature allows loading profile to edit the values of the variables using GUI, replacing the original value of the variables in the message template. An XML file defines a set of multiple profiles with varying parameter values that allow users to configure call instances in call generation and to receive calls.

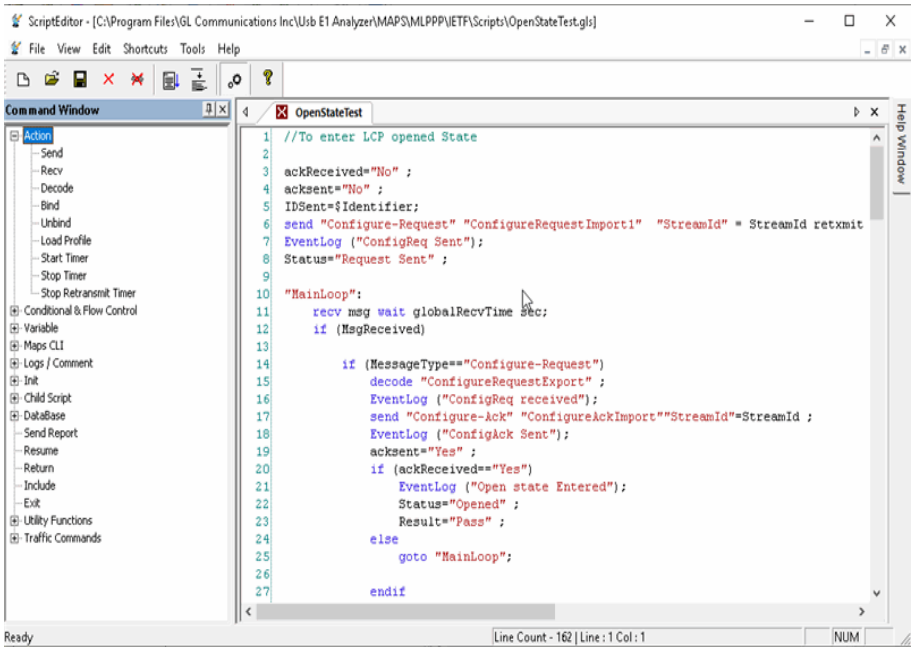


Profile Editor

Pre-processing Tools

Script Editor

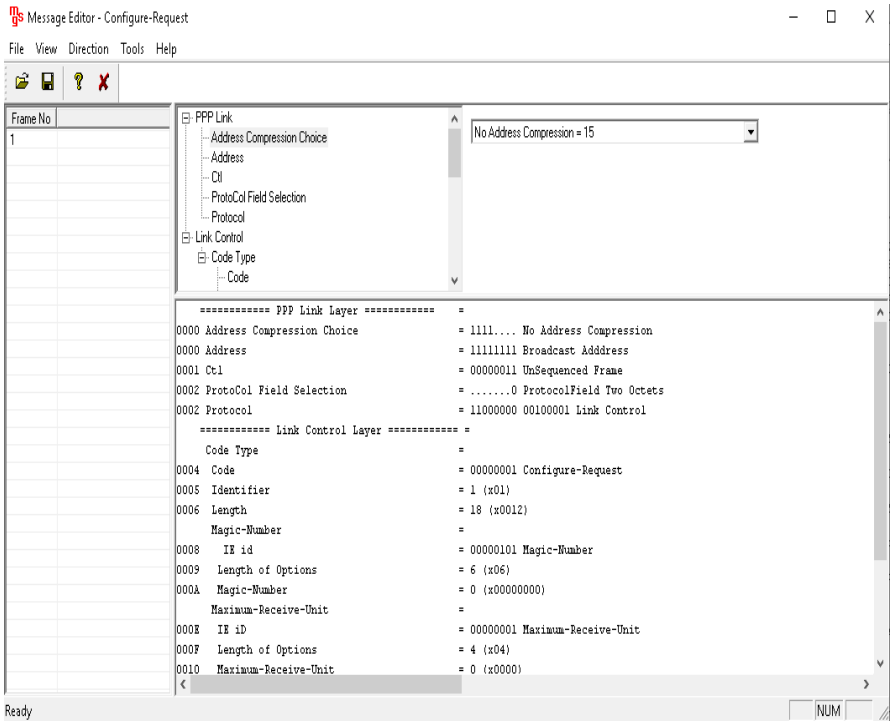
The script editor allows the user to create / edit scripts and access protocol fields as variables for the message template parameters. The script uses pre-defined message templates to perform send and receive actions.



Script Editor

Message Editor

With message editor, users can build a template for each protocol message type. The value for each field may be changed in the message template prior to testing. The protocol fields comprises of mandatory fixed parameters, mandatory variable parameters, & optional variable parameters.

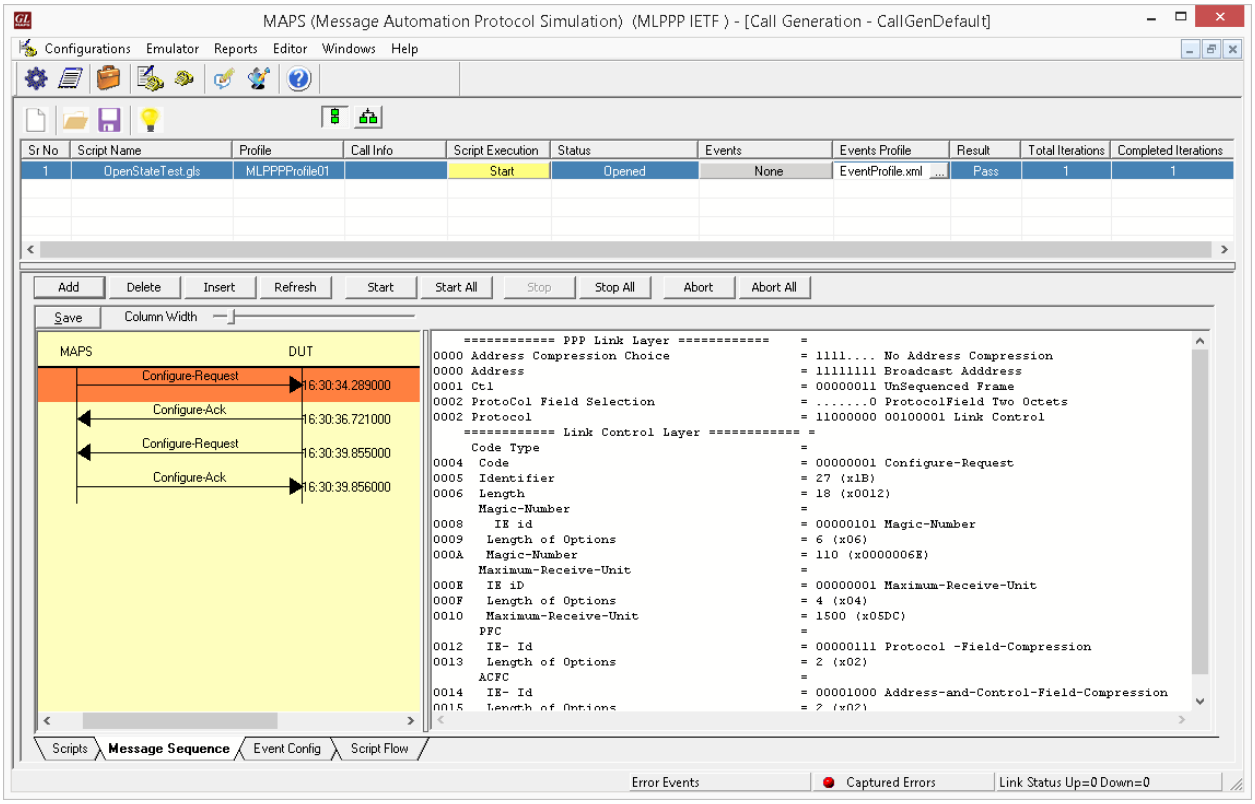


Message Editor

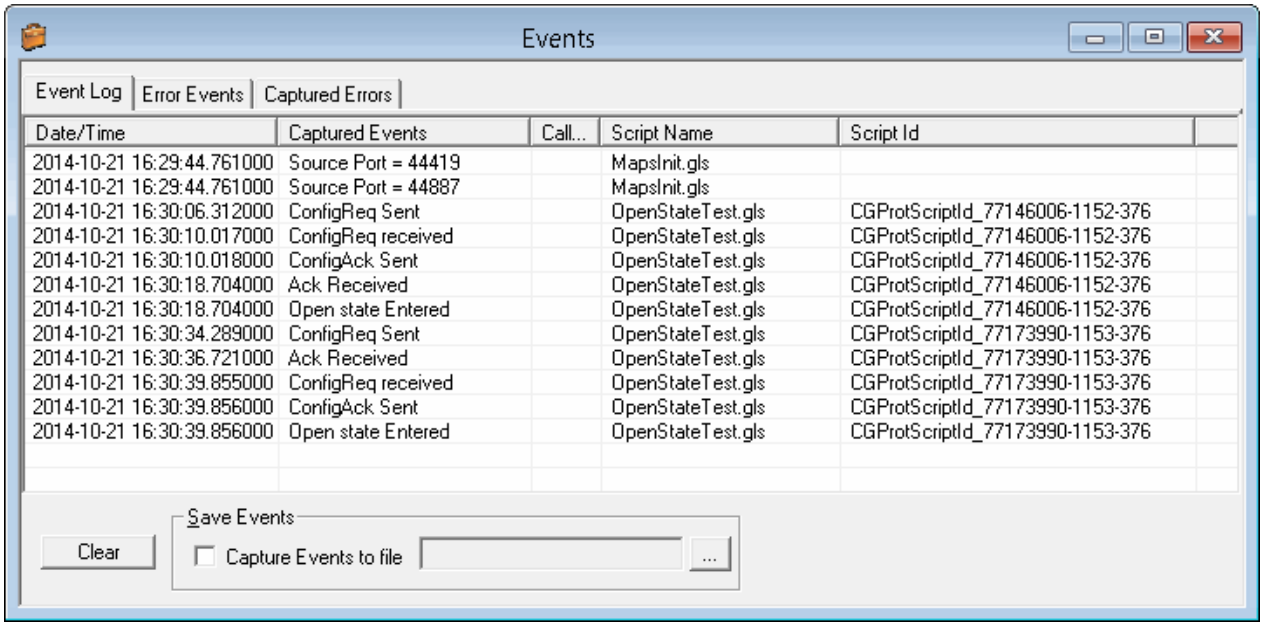
Call Generation and Reception

In call generation, MAPS™ is configured for the out going messages, while in call receive mode, it is configured to respond to incoming messages. Tests can be configured to run once, multiple iterations and continuously. Also, allows users to create multiple entries using quick configuration feature.

The editor allows to run the added scripts sequentially (order in which the scripts are added in the window) or randomly (any script from the list of added script as per the call flow requirements). The test scripts may be started manually or they can be automatically triggered by incoming messages.



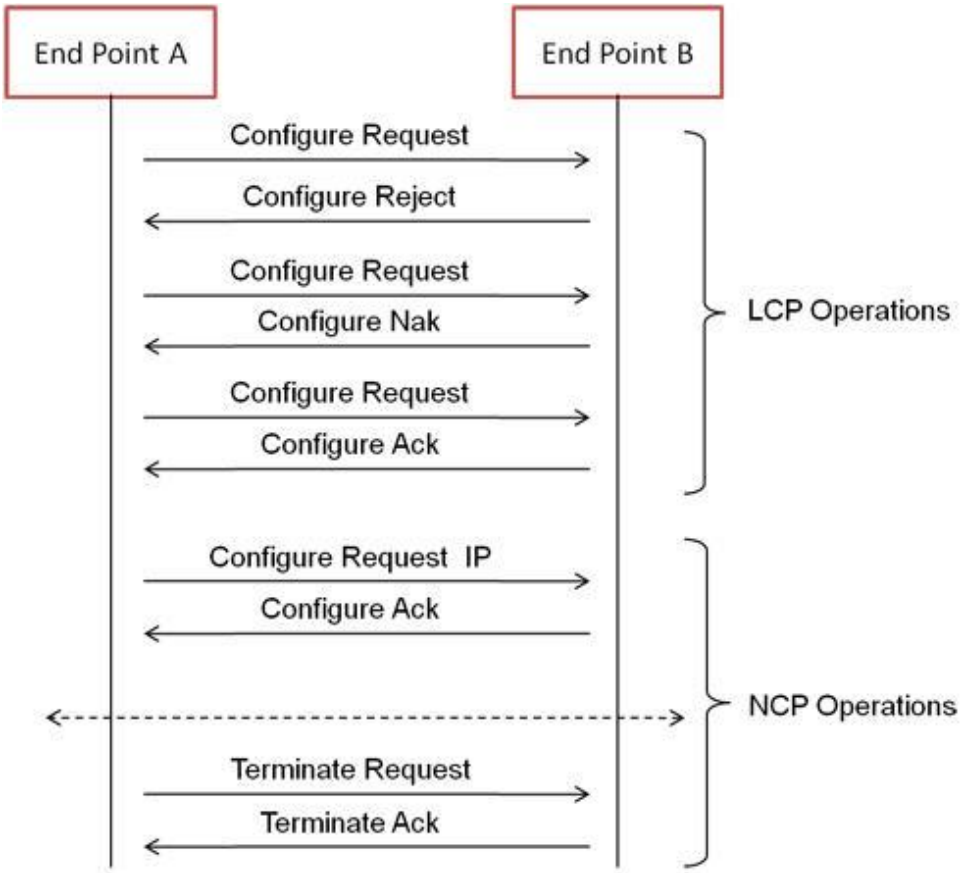
Call Generation



Events Log

Typical MLPPP Call Procedure

MAPS™ MLPPP is configured as one of the peer ends initiating the call flow by sending CONFIGURE REQUEST message with Magic Number, Maximum Receive Unit, Protocol Field Compression and Address Field Compression Fields. MAPS™ receives Configure-Ack and the link is set to open state.



MLPPP Call Procedure

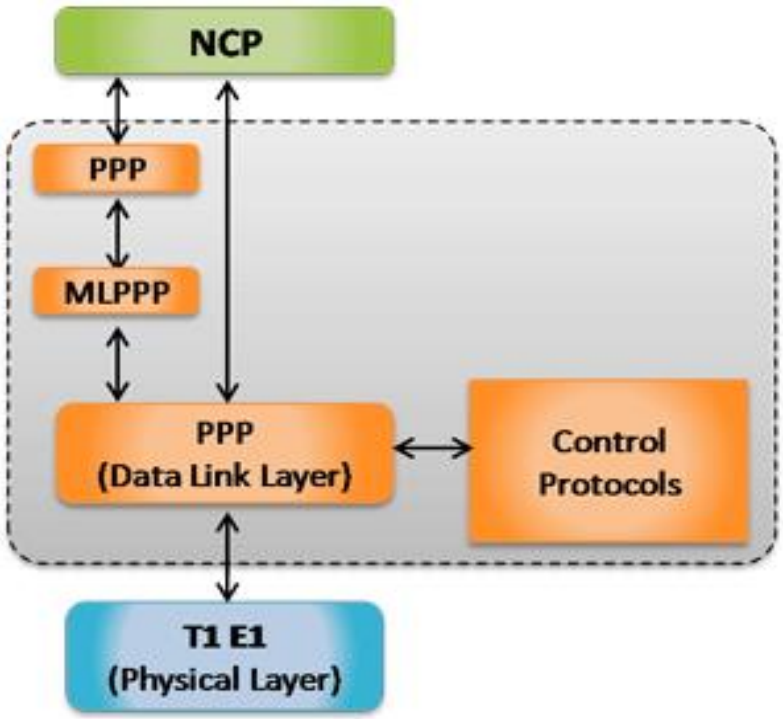
Supported Conformance Tests are:

- PPP Conformance Test Scripts
  - Link Establishment Phase
  - Link Maintenance Phase
  - Link Terminating Phase
  - Generalized Test
  - NCP Negotiation Phase
- MLPPP Conformance Test Scripts
  - Link Establishment Phase
  - Link Maintenance Phase
  - Link Terminating Phase
  - MLPPP Generalized Test

- MLPPP Bundle Test Scripts
  - PPP Links for MLPPP Bundle
  - MLPPP Short Sequence Test
  - MLPPP Initialize Sequence Number Test
  - MLPPP Control Field Test
  - NCP over MLPPP/PPP
  - Bundle Echo Test
- Multi-Class MLPPP Test Scripts
- PPP MUX CP Test Scripts

Supported Protocol Standards

Supported Protocols	Standard / Specification Used
Point-to-Point Protocol	RFC1661
Multi-Link PPP	RFC1990
Multi-Class Extension to Multi-Link PPP	RFC2686
IPCP	RFC1332
IPCP Extensions	RFC1877
PPPMuxCP	RFC3153



Buyer's Guide

Item No	Product Description
XX652	MAPS™ MC-MLPPP Conformance Scripts

Item No	Related Software (TDM Networks)
XX135	Real-time T1 or E1 MLPPP Analyzer
XX635	PPP Emulation
XX636	MC-MLPPP Emulator

Item No	Related Hardware
PTE001	tProbe™ Dual T1 E1 Laptop Analyzer with Basic Analyzer Software
XTE001	Dual T1 E1 Express (PCIe) Boards (requires additional licenses)
FTE001	QuadXpress T1E1 Main Board (Quad Port– requires additional licenses)
ETE001	OctalXpress T1E1 Main Board plus Daughter Board (Octal Port– requires additional licenses)

Note: PCs which include GL hardware/software require Intel or AMD processors for compliance.

For more information, refer to signaling and traffic simulator webpage.

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