PacketExpert™ 1G Ethernet/IP Tester
(mTOP™ Rack and Probe Platforms)

Overview

GL offers multi-interface test appliance in two variants - mTOP™ 1U/2U rack enclosure and mTOP™ Probe unit.

- The **mTOP™ 1U/2U rack enclosure** can be stacked with multiple PacketExpert™ USB units to provide high density GigE ports form factor solution for testing GigE switches, routers and network conditions.

- The **mTOP™ Probe** variant is an all-in-one self-contained test instrument, which includes single PacketExpert™ USB units along with necessary PC hardware in a single box. The comprehensive mTOP™ Probe is designed for easier portability and convenient for drive testing.

Both the mTOP™ platforms can contain PacketExpert™ 1G USB units. PacketExpert™ 1G includes 4x 1Gbps ports, out of which 2 ports support Electrical/Optical interfaces, and the other 2 ports are support only Electrical interface.

Both mTOP™ variants include additional USB 2.0 or 3.0 ports (with support for mouse/keyboard), 2 GB Ethernet ports, in-built PC with solid-state hard drive (up to 256 GB), standard 8 GB memory, and HDMI Interface (VGA), Windows® 10 64-bit OS. There are no moving parts with the unit, so reliability and longevity are integral.

PacketExpert™ provides the important functionalities such as Wire speed BERT, RFC 2544 Testing, Smart Loopback, ExpertSAM, Record and Playback, PacketBroker, Multi Stream Traffic Generator and Analyzer, ExpertTCP and WAN IP link Emulation.

With additional licensing (CXE100) remote controlling of PacketExpert™ through multiple command-line based clients is available. The Command line Interface (CLI) feature allows the users to access all the aforementioned functionalities remotely via C#, TCL, Python clients and MAPS™ CLI Server.

For detailed information on mTOP™ PacketExpert™, visit [https://www.gl.com/packetexpert-high-density-12-24-port-ethernet-tester.html](https://www.gl.com/packetexpert-high-density-12-24-port-ethernet-tester.html)
Main Features
- High density Ethernet Ports with 12 (1G) ports on 1U mTOP™ rack. Stack multiple mTOP™ PacketExpert™ units to increase scalability of the solution and handle large number of ports.
- mTOP™ Probe unit for portability and convenient drive testing
- Flexibility in running multiple interface tests from a single mTOP™ test unit
- Selective-Port and Smart Loopback
- Layer 1, Framed Ethernet (Layer 2), Stacked MPLS (Layer 2.5), IP (Layer 3), and UDP (Layer 4).
- User selectable Electrical and/or Optical interface allows mixed technology testing.
- Generate and capture Ethernet traffic on Electrical/Optical (up to 10/100/1000 Mbps) and Optical only (10 Gbps) interfaces
- All interfaces can run simultaneously and independently.
- Detailed frame statistics in tabular format for all the ports.
- Command line Interface (CLI) support requires CXE100 licenses to access all the functionalities remotely using TCL, Python, C# clients and MAPSTM™ CLI Client/Server architecture.
- Real-time results are presented per port and all-port basis in both tabular as well as graphical formats.
- Consolidated detailed test result reports for all the ports on all the devices in PDF and CSV file formats.

Multi-Device Capability

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Wire Speed BER Testing

Wire speed BER measures Bit Error Rate on Layer1, Framed Ethernet (Layer2), MPLS (Layer2.5), IP and UDP layers. Supports various PRBS patterns such as $2^{9}-1$, $2^{11}-1$, $2^{15}-1$, $2^{20}-1$, $2^{23}-1$, $2^{29}-1$, and $2^{31}-1$ including constant patterns such as All Ones, All Zeroes, Alternate Ones-Zeroes and user-defined test patterns ranging from 1 bit to 32 bits.

The screen below displays the supporting PacketExpert™ software, which can easily control multiple hardware units from a single GUI, multiplying the number of ports available per system.

Users can configure the 4 ports individually available on each of the devices. HD-PacketExpert™ (12 Ports) includes 3 devices configurations and HD-PacketExpert™ (24 Ports) includes 6 devices configurations.

RFC 2544 Testing

PacketExpert™ supports Throughput, Latency, Frame Loss and Back to Back tests as specified in RFC 2544. Similar to BERT, RFC 2544 can be done over Framed Ethernet (Layer2), Stacked VLAN (Q-in-Q), Stacked MPLS, IP or UDP.

RFC 2544 allows the test frame to be configured with Stacked VLAN and Stacked MPLS. This way, end to end RFC 2544 test can be conducted across a Carrier Ethernet/MPLS network.

Users can configure the 4 ports individually available on each of the devices. HD-PacketExpert™ (12 Ports) includes 3 devices configurations and HD-PacketExpert™ (24 Ports) includes 6 devices configurations.
Report Generation

HD-PacketExpert™ includes report generation option to generate consolidated CSV and PDF file format reports for all the 12 (1G) ports. The following sample CSV and PDF reports generated for ‘All ports BERT’ test includes Interface, BERT Statistics, Tx/Rx Statistics, Tx Configuration, and Rx Configuration details for each of the 12 (1G) ports.

Remote Control

PacketExpert™ supports Command Line Interface (CLI) requires additional CXN100 licensing to remotely access all functionalities such as All Port Bert, All Port Loopback, Bert Loopback, RFC 2544, IP WAN Emulator, Record Playback, ExpertSAM™, and PacketBroker using TCL, Python, C# clients MAPS™ CLI Server/Client architecture.
1U mTOP™ Rack Based 1G Hardware Unit (3 PXE100s)

12 Total Ethernet Ports (HD-PacketExpert-12)
- mTOP™ System (embedded SBC, 3x PXE100)
- PacketExpert™ 1G (PXE100) interfaces -
  - 6x 1000 Base-X Optical OR 10/100/1000 Base-T Electrical
  - 6x (10/100/1000) Base-T Electrical

24 Total Ethernet Ports (HD-PacketExpert-24)
- mTOP™ System (embedded SBC, 6x PXE100)
- PacketExpert™ 1G (PXE100) interfaces -
  - 12x 1000 Base-X Optical OR 10/100/1000 Base-T Electrical
  - 12x (10/100/1000) Base-T Electrical

SBC Specifications
- Intel NUC Core i3 or optional i7 Equivalent, Windows® 10 64-bit Pro Operating System
- USB 3.0 Hub, ATX Power Supply
- 240GB Hard drive, 8G Memory (Min)
- Two HDMI ports (Optional VGA to HDMI interface)

External Dimensions
- Length: 16 Inches
- Width: 19 Inches
- Height: 2x 1U mTOP™ (HD-PacketExpert-24) or 1U mTOP™ (HD-PacketExpert-12)

Power Supply
- ATX Power Supply

Order information
- PXE100 - PacketExpert™ Options
- MT001/MT001E (1U)
- MT001+MT002/ MT001E+MT002 (Stacked 1U)

mTOP™ 1G Probe Specifications

Interfaces
- 4x Total Ethernet ports
- 2x 10/100/1000 Base-T Electrical only
- 2x 1000 Base-X Optical OR 10/100/1000 Base-T Electrical
- Single Mode or Multi Mode Fiber SFP support with LC connector

SBC Specifications
- Intel NUC Core i3 or optional i7 Equivalent, Windows® 10 64-bit Pro Operating System
- USB 3.0 Hub, 12V/3A Power Supply
- 256GB Hard drive, 8G Memory (Min)
- Two HDMI ports (Optional VGA to HDMI interface)

External Dimensions
- Length: 10.4 inches
- Height: 3 inches
- Width: 8.4 inches

Power Supply
- 12 volts, 3 Amps

Order information
- PXE100
- MT005/MT005E

Buyer’s Guide
PX100 - PacketExpert™ 1G
CXE100 - CLI Server for PXE100
PX112 - PacketExpert™ 1G – SA (12-Port)
PX124 - PacketExpert™ 1G – SA (24-Port)
MT001 - mTOP™ 1U Rack Mount Enclosure w/SBC (Intel i3 Core)
MT001E - mTOP™ 1U Rack Mount Enclosure w/SBC (Intel i7 Core)
MT002 - mTOP™ 1U Rack Mount Enclosure w/o SBC
MT003 - mTOP™ 2U Rack Mount Enclosure w/SBC
MT004 - mTOP™ 2U Rack Mount Enclosure w/o SBC
MT005 - mTOP™ Probe with Intel i3 Core
MT005E - mTOP™ Probe with Intel i7 Core

Refer [https://www.gl.com/packetexpert-high-density-12-24-port-ethernet-tester.html](https://www.gl.com/packetexpert-high-density-12-24-port-ethernet-tester.html) webpage.

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