Generate and Analyze Ethernet Traffic up to 10 Gbps

Overview

GL’s PacketExpert 10G™ (PXG100) provides comprehensive testing of 1000 Mbps and 10 Gbps wirespeed Ethernet/IP networks. It has two 10Gbps Optical ports, and two 1000 Mbps Electrical/Optical ports, which are capable of BERT, Smart Loopback, BERT/Loopback, and RFC 2544 test functionalities.

Each GigE port provides independent Ethernet/VLAN/MPLS/IP/UDP testing at wirespeed with applications such as BERT, Smart Loopback, BERT/Loopback, and RFC 2544. BERT is implemented for all layers. RFC 2544 is applicable for Layers 2, 2.5, and 3, and Loopback is applicable for Layers 2, 3, and 4.

GL also offers Touchscreen Handheld PacketExpert 10G™ version of 10G Ethernet/IP Tester (PXG101), with a Tablet PC mounted on PacketExpert 10G™, making it highly suitable for field testing.

PacketExpert 10G™ supports the following important functionalities – Wire speed BERT, Smart Loopback, RFC 2544 Testing, PacketBroker, Record Playback, and ExpertSAM, Multi-Stream UDP/TCP Traffic Generator and Analyzer, and ExpertTCP™.

It truly takes confusion out of Ethernet/IP testing at all protocol layers - from Layer1 frames to IP/UDP packets. It can be used as a general purpose Ethernet to IP performance analysis tool for 10 Mbps, 100 Mbps, 1 Gbps and 10Gbps Ethernet Local Area Networks and Wide Area Networks (WAN).

With the capability to generate/receive traffic with stacked VLAN (Q-in-Q) and stacked MPLS, PacketExpert 10G™ finds use in testing a wide range of networks – from testing individual links/switches, testing local Ethernet/IP networks (LAN), end to end testing of Wide Area Networks (WAN), testing Core/MPLS networks, and much more.

GL’s other Ethernet/IP tester variants include PacketExpert™ - in 1Gbps versions. These are portable quad port models. There is also the HD-PacketExpert™ in 12 and 24 GigE port versions, for testing GigE switches, routers & network conditions and WAN Emulators - IPLinkSim™ and IPNetSim™ for testing GigE switches, routers and network conditions.

For detailed information on PacketExpert 10G™, visit http://www.gl.com/packetexpert-10g-optical-ethernet-tester.html

Electrical or Optical Ports Interface (1000 Mbps)

Two 10Gbps Optical Ports (10G BASE-SR, -LR -ER Full-Duplex SFP)

Two 1000M Base-T Electrical Ports

Two 1G Base-X Optical SFP

Layer 2/3 + Ethernet Switch (and Router) Testing

Testing Multi-Protocol Label Switching (MPLS), Q-in-Q (Stacked VLAN) Enabled Networks

End-to-end Testing of 10G Network Paths for QoS Parameters

QoS Testing of Triple-Play Services (Voice, Video, and Data)

TCL based CLI Interface

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Wire Speed BER Testing
PacketExpert 10G™ supports Wire speed BERT up to 10Gbps simultaneously over Framed Ethernet (Layer2), Stacked VLAN (Q-in-Q), Stacked MPLS (Layer 2.5), IP and UDP. It can generate and receive various BER Traffic Patterns, including various PRBS patterns, Bit Error Insertion, and FCS Error Insertion. Wire speed BERT is also supported on 1000 Mbps Electrical /Optical interface.
The screen below displays the PacketExpert 10G™ GUI, running All Port BER test on Port#1 and Port#2 10G optical ports.

RFC 2544 Testing
PacketExpert 10G™ supports RFC 2544 tests up to 10Gbps. RFC 2544 tests includes Ethernet Throughput, Latency, Frame Loss, and Back-to-Back performance tests in accordance with RFC 2544 specifications. The test is setup such that the traffic can be generated and transmitted on either of the ports and the looped back traffic from the DUT is received on the opposite port validating the test parameters. RFC 2544 tests are also supported on 1000 Mbps Electrical /Optical interface.
Report Generation
PacketExpert 10G™ includes report generation option to create consolidated CSV and PDF file format reports for 10G Optical and 1000Mbps Electrical/Optical ports. The following sample CSV and PDF reports generated for ‘All ports BERT’ test includes Interface, BERT Statistics, Tx/Rx Statistics, Tx/Rx Configuration details for each of the Electrical and Optical ports.

Remote Control
PacketExpert 10G™ supports Command Line Interface (CLI) to access all functionalities such as All Port Bert, All Port Loopback, Bert/Loopback, and RFC 2544 via TCL or Python clients using MAPS™ CLI Server environment.
**Specifications**

- **Interfaces:**
  - 2 x 1G Base-X Optical OR 1000 Base-T Electrical
  - 2 x 10G Base-SR, -LR, -LR Optical only
  - Single Mode or Multi Mode Fiber SFP support with LC connector

- **Protocols:**
  - RFC 2544 compliance

- **Bus Interface:**
  - USB 2.0

- **External Power Supply:**
  - +12 Volts, 2.2 Amps

- **Physical Specification:**
  - Length: 6.39 in. (162.3 mm)
  - Width: 9.96 in. (252.9 mm)
  - Height: 2.10 in (53.3 mm)
  - Weight: 3.75 lbs. (1.7 kg)

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**Buyer's Guide**

- **Related Software**
  - **PXG100** - PacketExpert 10G™
  - **PXG105** - Wire speed Record /Playback 10G
  - **PXG106** - ExpertSAM™ 10G
  - **PXG107** - PacketBroker 10G
  - **PXG108** - ExpertTCP™ 10G
  - **ETH100** - PacketCheck™
  - **PKV100** - PacketScan™ (Online and Offline)