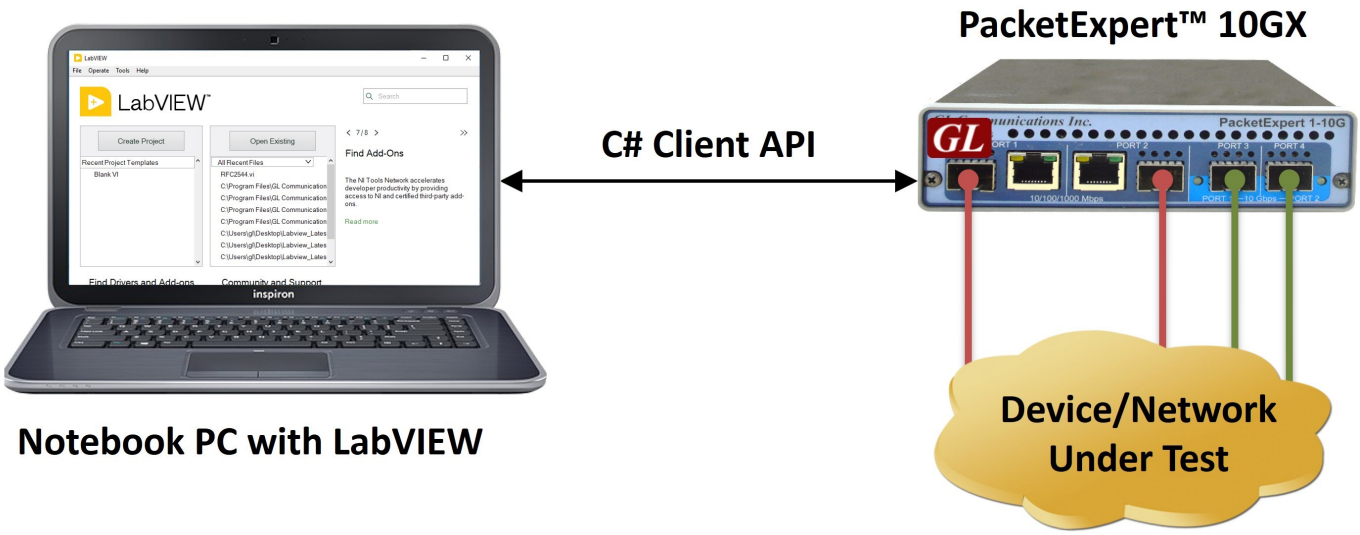
PacketExpert™ LabVIEW



Overview

LabVIEW is a popular framework for test automation and is used worldwide to integrate different vendor equipment and automate the use of the same.

With LabVIEW, it is easy to create flexible test scripts that control multiple hardware components, customize the test system using graphical programming, and include analysis tools—all through a user-friendly drag-and-drop interface. This makes the system compatible with GL's PacketExpert™ software.

Using PacketExpert™ APIs, user can seamlessly integrate PacketExpert™ into LabVIEW. The PacketExpert™ C# API DLL can be directly imported into LabVIEW, and used in the graphical environment provided by LabVIEW to control PacketExpert™ devices and automate testing.

This integration allows engineers to get the full potential of PacketExpert™ within the LabVIEW environment. For instance, importing the C# Client API DLL into LabVIEW instantly enables you to run a wide range of PacketExpert™ test applications, including BERT, RFC 2544, Loopback, and more.

For more information, please visit PacketExpert™ LabVIEW webpage.

Main Features

- Capability of remote operation, automation and multi-site connectivity using C# client
- Supports BERT, Loopback, RFC 2544, Record Playback, and Analyzer functionalities
- Offers complete lab management and test automation solution
- Multiple PacketExpert™ can be controlled remotely from single client application via MAPS™ CLI server
- Support for a wide range of tests setup, interfaces, protocols, and script languages
- C# client access through LabVIEW
- High Level APIs allows to access PacketExpert™ functionalities
- Scripts for MAC, VLAN, MPLS, IP and UDP layers testing
- Remote monitoring capability

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

Configuration

The configuration summary can be viewed at configuration pane. User can configure various attributes such as the Server IP Address, Port number, Device type, Port Index etc., in the Configuration pane.

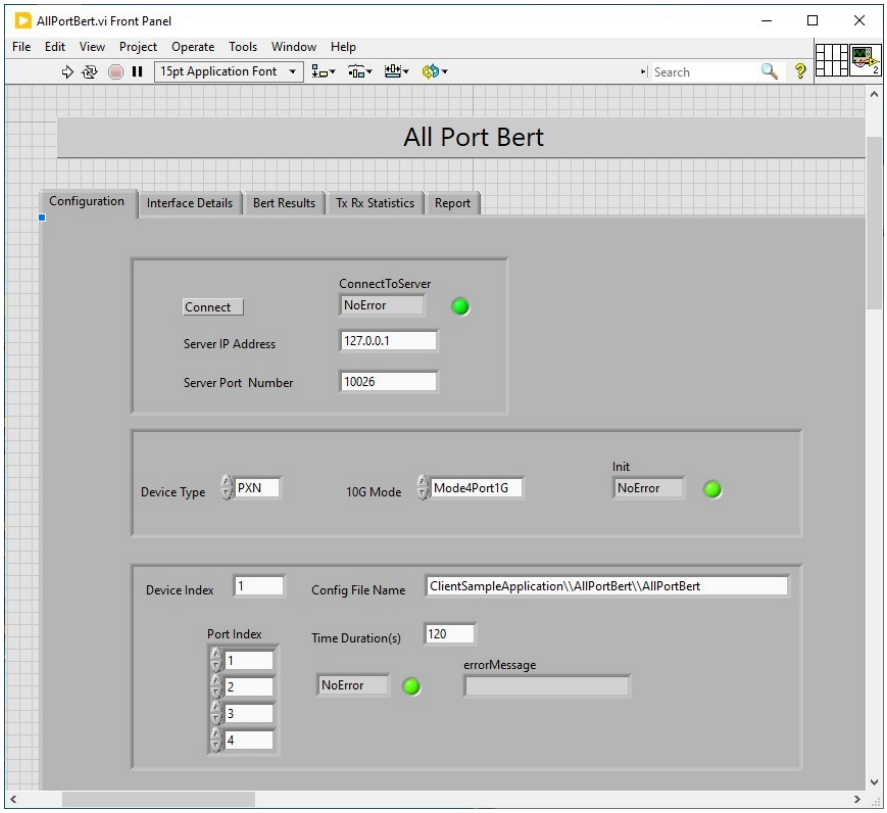
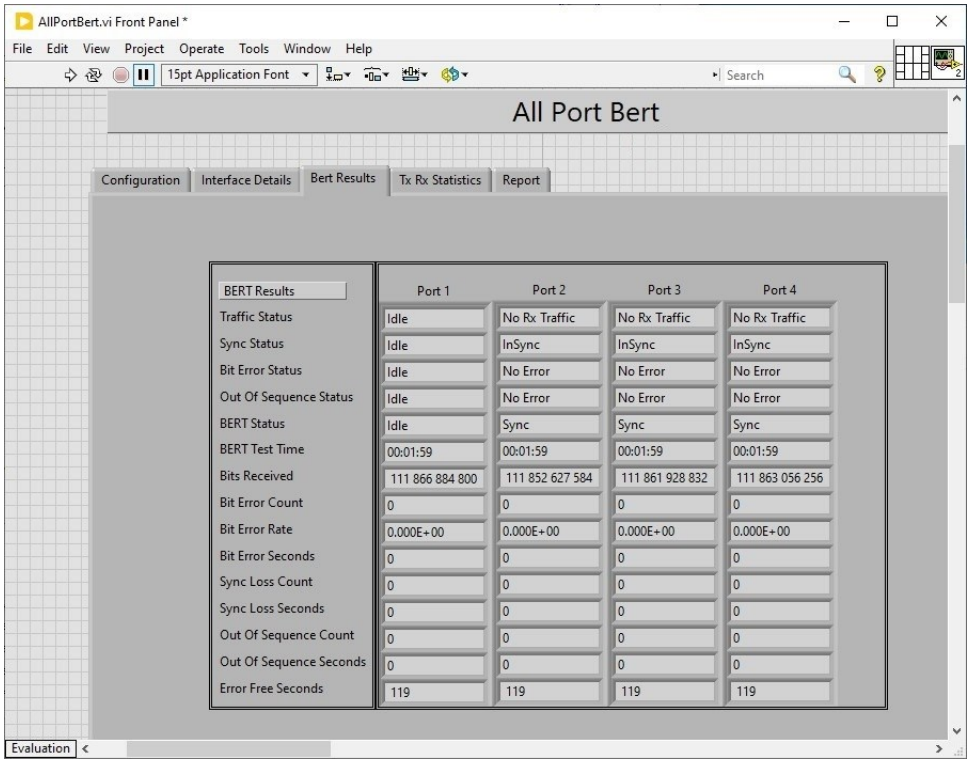


Figure: PacketExpert™ LabVIEW Configuration

BERT Results

LabVIEW displays the BERT results in the **BERT Results** pane. The Result screen displays both **BERT Status** and **BERT Statistics**



Port Statistics

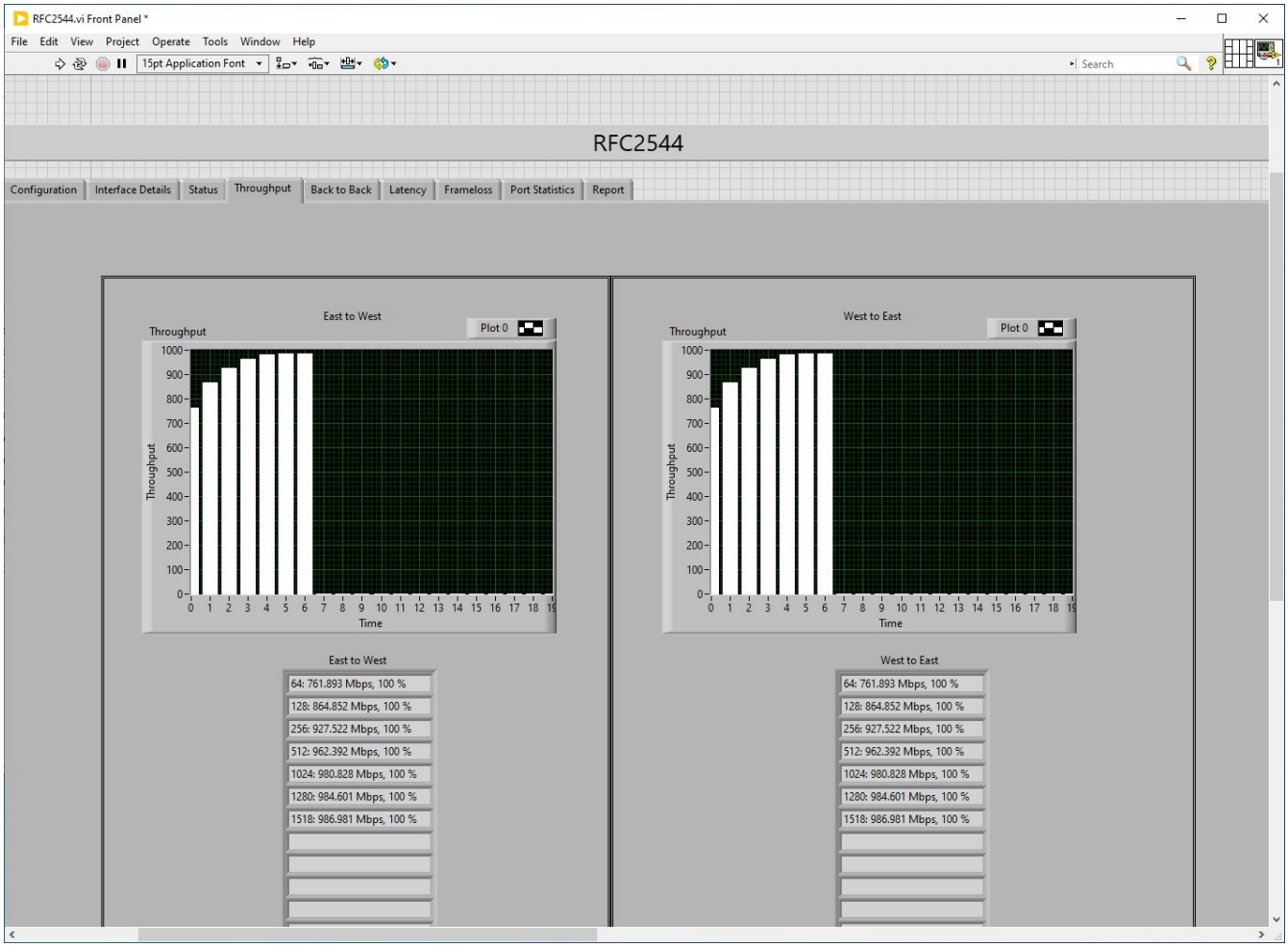
Detailed Tx Rx frame statistics per port are provided. In addition to statistics like Frame Count, Frame Rate, Link Utilization, other statistics like Frame Type (Unicast/Broadcast/Multicast, VLAN), frame lengths (64, 65-127, 1024-1518, Oversized, Undersized), and FCS Error Frames are also provided.

Figure: Port Statistics

RFC 2544 Test Results

The graph displays the Throughput, Back-to-Back, Frame Loss, or Latency test results in graphical format. Select Graph from the View drop-down menu. P1->P2 and P2->P1 are displayed separately. Select the desired direction from the Dir drop down. Results are displayed in both tabular as well as graph format. Supports test report generation in both PDF and CSV formats.

- **Status** – displays test status such as In Progress, Completed, and Aborted. In addition, it displays status of learning frames and test frames for the current trial along with Bandwidth, Frame Size, and Frame Count
- **Throughput Results and Graphs** – Throughput Results and Graphs displays the results of the throughput test. Both P1->P2 and P2->P1 results are displayed depending on the test direction. Results are displayed for all the frame sizes. For each frame size, the bandwidth rate (% of the line rate) and the calculated data rate in Mbps are displayed
- **Latency Results and Graphs** – Latency Results and Graphs displays the results of Latency test in microseconds. The following depicts the RFC 2544 Latency result statistics on 1G ports in P1->P2 and P2->P1 directions
  - **Bit Forwarding**: Time difference between the first bit of the tag frame is received on the Rx port and the first bit of the tag frame is sent out on the Tx port
  - **Store And Forward**: Time difference between the first bit of the tag frame is received on the Rx port and the last bit of the tag frame is sent out on the Tx port
- **Back-to-Back** – Back-to-Back values are displayed in terms of the burst size (in milliseconds) for each frame size. Graphically, the burst size is plotted against frame size
- **Frame Loss** – This displays the results of the Back-to Back test. The unit is Frames\Burst



RFC 2544 Throughput Test Results

Report Generation

The Report Generation option allows users to create detailed test reports in PDF and CSV formats. This window lets the user configure the report file details.

The PDF or CSV report is saved in the installation directory. It contains test configuration details and test results. All results are saved in tabular as well as graphical format, just as in the GUI.

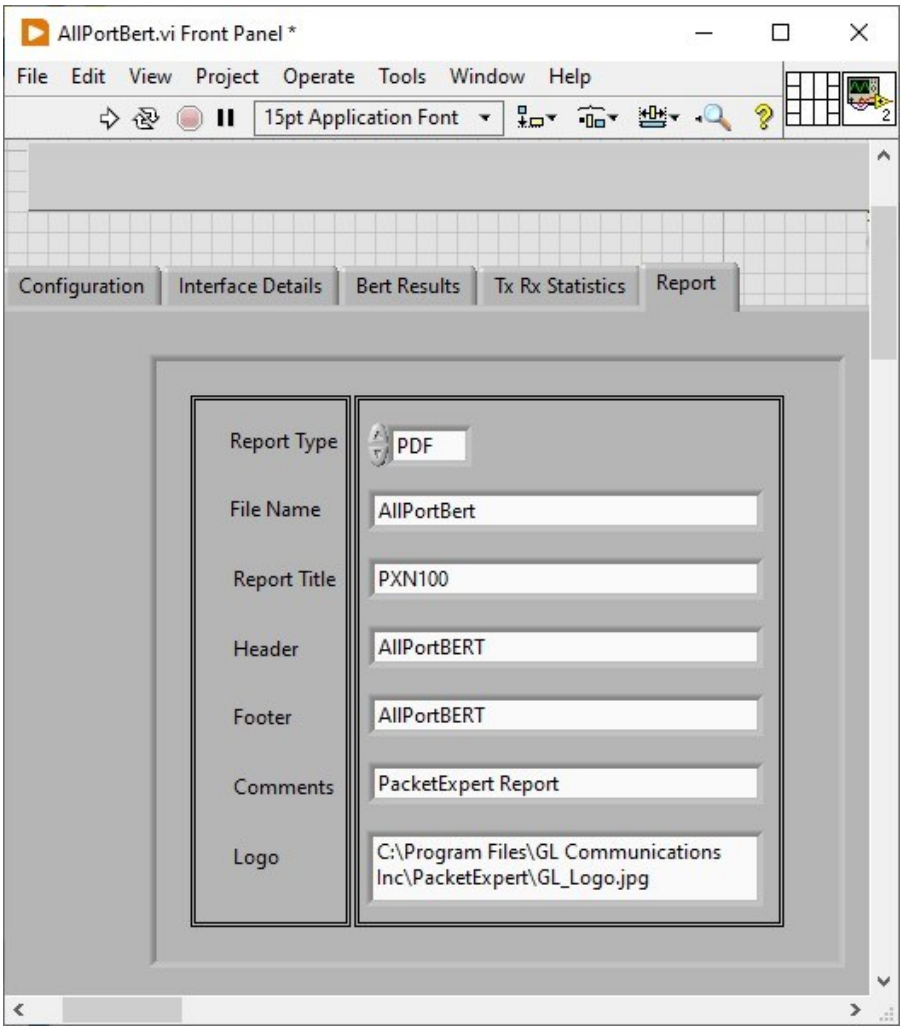
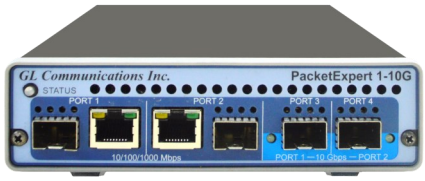


Figure: PDF Report Sample

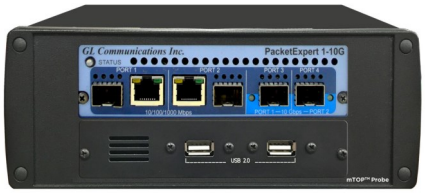
Hardware Specifications



Portable 10GX Hardware Unit

1U mTOP™ PacketExpert™ 10GX Rack Unit (3 PXN100s)

Stacked 1U mTOP™ PacketExpert™ 10GX Rack Unit



PacketExpert™ 10GX mTOP™ Probe

Physical Specification:

Length: 8.45 in. (214.63 mm)

Width: 5.55 in. (140.97 mm)

Height: 1.60 in (40.64 mm)

Weight: 1.713 lbs. (0.75 kg)

- **Dimension:** 1U/2U mTOP™ - 19” W x 16” L
- 1U mTOP™ Rackmount Enclosure can support up to 3 PXN100s
- 2U mTOP™ Rackmount Enclosure can support up to 6 PXN100s
- Optional 4 to 12 Port SMA Jack Trigger Board (TTL Input/Output)
- **Weight:** (not including the rails)
  1U with 3x PXN100 : 11 lbs
  2U with 6x PXN100 : 22 lbs

Physical Specification:

Length: 10.4 in. (264.16 mm)

Width: 8.4 in. (213.36 mm)

Height: 3.0 in. (76.2 mm)

Bus Interface: USB 3.0

External Power Supply:

- +12 Volts, 3 Amps (For portable units having serial number ≥ 188400)
- +9 Volts, 2 Amps (For portable units having serial number < 188400)
- Optional 4-Port SMA Jack Trigger Board (TTL Input/Output)

SBC Specifications:

- Intel Core i3 or optional i7 Equivalent, Win10 64-bit Pro OS
- USB 2.0 or 3.0 Hub, ATX Power Supply
- 240 GB Hard drive, 8G Memory (Min)
- Two HDMI ports (Optional VGA to HDMI interface)

SBC Specifications:

- Intel Core i3 or optional i7 NUC Equivalent, Win10 64-bit Pro OS
- USB 2.0 or 3.0 Hub, Power Supply +12 Volts, 3 Amps
- 256 GB Hard drive, 8G Memory (Min)
- Two HDMI ports (Optional VGA to HDMI interface)

Temperature: Operating Temperature
0° C to +50° C (only up to operating altitude of 5000 feet, and for Optical SFPs only i.e. Non Electrical SFPs)
+5° to +40° C (for operating altitude up to 10,000 feet, and for both Electrical and Optical SFPs)
Non-Operating Temperature: -30° to +60° C

Humidity: Operating Humidity: 0% to 80% RH
Non-Operating Humidity: 0% to 95% RH

Altitude: Operating Altitude: up to 10,000 feet
Non-Operating Altitude: up to 50,000 feet

Interfaces:
4 x 1G Base-X Optical OR 10/100/1000 Base-T Electrical
2 x 100Mbps Base-FX Optical
2 x 2.5 Gbps Electrical Interface
2 x 10G Base-SR, -LR -ER Optical only
Single Mode or Multi Mode Fiber SFP support with LC connector

Protocols:
IEEE 802.3ae LAN PHY compliance
RFC 2544 compliance

Pelican Carry Case

Buyer's Guide

Item No	Product Description
PXN100	PacketExpert™ 10GX
PXN101	10G option for PXN100
CXN100	CLI Server for PXN100
PXE100	PacketExpert™ 1G
CXE100	CLI Server for PXE100

Item No	Related Hardware
PXN112G	PacketExpert™ 10GX (12-Port) - Rackmount
PXN124G	PacketExpert™ 10GX (24-Port) - Rackmount
MT001	mTOP™ 1U rackmount w/ SBC (with core i3)
MT001E	mTOP™ 1U rackmount w/ SBC (with core i7)
MT002	mTOP™ 1U rackmount w/o SBC

Item No	Related Software
PXN105	Wire speed Record /Playback 10GX
PXN106	ExpertSAM™ 10GX
PXN107	PacketBroker 10GX
PXN108	ExpertTCP™ 10GX
PXN108	Multi-Stream Traffic Generator and Analyzer 10GX

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

For more information, please visit PacketExpert™ LabVIEW webpage.

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