If this is your First-Time-Use of PacketExpert™ 10G unit, then we recommend you to follow all the steps explained in PacketExpert-10G-Quick-Install-Guide before proceeding with the steps below.

For PacketExpert™ 10G functional verification, basic “All Port BERT” test can be performed using a single PacketExpert™ 10G unit.

“All Port BERT” test scenario can be demonstrated on 1G ports by directly connecting Port 1 to 2 through Ethernet cable (for Electrical Interface test)

OR “All Port BERT” test scenario can be demonstrated on 10G ports by directly connecting Port 1 to 2 through SFP and Optical cable (for Optical interface test).

Step1: Connect the cables

Perform Test on 10G Optical Interface

**Note:** Optical Interface Test is possible on 10G Port 1 and Port 2 only.

- For 10G Optical Interface Type, plug-in SFP Transceivers to the optical ports and connect LC optical cable to 10G: Ports 1 & 2, (refer to figure).
- **Note:** Make sure SFP is properly locked and the optical cable is properly plugged-in.

Perform Test on 1G (Electrical or Optical Interface)

- For 1G Electrical Interface type, cross-connect 1G: Port 1 to 2 using Ethernet cable as shown in the figure below.
- For 1G Optical Interface type, plug-in SFP Transceivers to the optical ports and connect LC optical cable to 1G: Ports 1 & 2, (refer to figure).

**Note:** Make sure SFP is properly locked and the optical cable is properly plugged-in.
Step2: Launch PacketExpert 10G Application

- Right click on the PacketExpert 10G shortcut icon on the desktop and select "Run as administrator" to launch PacketExpert 10G application as shown in the figure below.
- Click on Launch 10G option, to invoke the application with 10G ports.
- Or click on Launch 1G option, to invoke the application with 1G ports.

Note: The application may take some time to get started due to hardware and software initializations.

For 10G Optical connections,

On launch, All Port Bert application is loaded, by default. Also, a default configuration file is automatically loaded with the pre-configured settings. On the RHS side, in the Interface pane, select the ports from the drop-down list and verify the following settings for each port.

- Interface Type = Optical
- Speed = 10000Mbps
- Verify IP Addresses for 10G: Ports 1 & 2 are configured as listed below:
  - Port1: 192.168.1.102
  - Port2: 192.168.1.103

Note: For 1G Electrical or Optical connections,

On the RHS, in the Interface pane, select the ports from the Port Selection drop-down list and set the following for each port:

- Select Interface Type = Electrical (or) Optical (depending on the ports connected)
- Speed = 1000Mbps
- Verify IP Addresses for 1G: Ports 1 & 2, which are configured as listed below:
  - Port1: 192.168.1.101
  - Port2: 192.168.1.104
- Click on the Apply button (this will set the Interface Type in the hardware)
**Step 3: Verify Links**

To verify PacketExpert 10G basic functionality, we will run a BERT test between 10G: Ports 1 and 2 (this means the destination for 10G Port 1 is 10G Port 2 and vice versa)

- Verify that the Link Status is UP on both ports, that is, on launch, the LHS tree should display 10G: 2 ports with green LEDs link status (refer to figure). If the LED shows red (refer to the figure), then link is down.

- Refer to troubleshooting steps below to get the links UP:
  - Check if the Optical cables are connected to the correct ports (i.e. Ports 1 and 2 are connected) - refer to the figure above.
  - Check if there are any loose connections and secure the cables properly
  - If still link is not UP, double click "Interface" under the port in the LHS tree to launch the "Interface" dialog in one of the RHS panes. Click the "Apply" button. This will reinitialize the port and will force it to go through the auto negotiation cycle again.
  - The above steps should get the link UP. If problem still persists, contact GL Communications Inc.

**Step 4: Configure MAC Addresses**

Each port should have the destination MAC addresses configured correctly. Follow the steps below to configure destination MAC addresses correctly:

For 10G: Port 1,

- In the LHS tree, under Port 1 ➔ Bert, double click Tx Config. The Tx Config window opens up in one of the RHS panes
- Go to MAC tab
- Click "Resolve" button next to Destination MAC address. (refer to figure)
- Enter the IP Address of the destination port (10G Port2) as 192.168.1.103
- Click Resolve
- It will run ARP and returns the MAC Address of the destination port, with Result displayed as "Success" (refer to figure)
- Click OK, this will configure destination MAC address for the port

Repeat the above steps for 10G: Port 2 to configure its MAC address (Enter the IP Address of the destination port - 10G Port1 as: 192.168.1.102)
Step 5: Start test

- From the LHS tree, hold the keyboard **Control** key and in the GUI select **Bert** using mouse under Port1, and Port2 tree simultaneously.

- Click **Start** (refer to figure)

Step 6: Verify Results

Follow steps below to verify the **Results** while the test is running, in the RHS pane.

Under 10G: Port1, from LHS tree, click **Results** under **Port1 → Bert**, the Results pane opens up in one of the 4 RHS panes

- Under Bert Status pane, verify these LEDs → Sync Status LED = Green, Bit Errors LED = Green, Out of Sequence Packets LED = Green

- Under Bert Statistics pane, verify these values:
  - Bert Status = Sync
  - Bit Error Count = 0
  - Bit Error Rate = 0.000E+000
  - Bit Error Seconds = 0
  - Sync Loss Count = 0
  - Sync Loss Seconds = 0
  - Out of Sequence Count = 0
  - Out of Sequence seconds = 0

Repeat this step for 10G: Port 2 and verify correct results for both the ports. If any port shows errors, contact GL Communications Inc.
Step 7: Stop test

- To stop the test after verifying the results, again hold the keyboard **Control** key and select **Bert** using mouse from the LHS tree under Port1, and Port2 and click **Stop** (refer to figure)