If this is your First-Time-Use of PacketExpert™ 1G unit, then we recommend you follow all the steps explained in PacketExpert-1G-Quick-Install-Guide before proceeding with the steps below.

For PacketExpert™ 1G functional verification, basic “All Port BERT” test can be performed using a single PacketExpert™ 1G unit.

“All Port BERT” test scenario can be demonstrated by directly connecting Port 1 to 4 and Port 2 to 3 through Ethernet cable (for Electrical Interface test)

OR “All Port BERT” test scenario can be demonstrated by directly connecting Port 2 to 3 through SFP and Optical cable (for Optical interface test).

Step1: Connect the cables

Perform Test on Optical Interface

**Note:** Optical Interface Test is possible only between Ports 2 and 3.

- For Optical Interface Type, plug-in SFP Transceivers to the optical ports and connect LC optical cable to ports 2 & 3, (refer to figure).
- **Note:** Make sure SFP is properly locked and the optical cable is properly plugged-in.

Perform Test on Electrical Interface

Cross-connect Port 2 to 3 and Port 1 to 4 using Ethernet cable as shown in the figure below.
Step2: Launch PacketExpert™ 1G Application

- Right click on the PacketExpert shortcut icon on the desktop and select ”Run as Administrator” to launch PacketExpert™ 1G application. The application should invoke without any errors.

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

On launch, All Port Bert application is loaded, by default. Also, a default configuration file is automatically loaded with the following settings:

For Electrical connections,

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 = Electrical
- Linkspeed = Auto (automatic detection and adjustment of linkspeed)
- Verify Disable Auto Negotiation is unchecked
- Verify IP Addresses for Ports 1 to 4 are configured as listed below:
  - Port1: 192.168.1.101
  - Port2: 192.168.1.102
  - Port3: 192.168.1.103
  - Port4: 192.168.1.104
- Click Apply

Note: For Optical connections,

- On the RHS side, in the Interface pane, select the ports from the drop-down list and do the following for each port:
- Select Interface Type = Optical
- Verify ‘Disable Auto Negotiation’ is unchecked
- Verify IP Addresses for Ports 2 & 3 are configured as listed below:
  - Port2: 192.168.1.102
  - Port3: 192.168.1.103
- Click on the Apply button (this will set the Interface Type to Optical in the hardware)

To verify PacketExpert™ 1G basic functionality, we will run a BERT test between:

- Either between Ports 2 and 3 (this means the destination Port for Port2 is Port3 and vice versa)
- OR between Ports 1 and 4 (this means the destination Port for Port1 is Port4 and vice versa)
Step 3: Verify Links

- Verify that the Links are UP. On launch, the LHS tree should display all the 4 ports with green LEDs link status (refer to figure). If any of the ports shows red LED (refer to the figure), then link is down. Follow these steps to correct:
  - Check if the Electrical/Optical cable is connected between the port and the destination port (i.e. Ports 1 and 4 are connected and Ports 2 and 3 are connected) - refer to the figure above.
  - If cable is connected, check if there are any loose connections and secure it
  - 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 else, 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 Port1, Electrical Connections,
- In the LHS tree, under Port1→Bert, 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 (Port 4) as below:
  - 192.168.1.104 (IP address of Port4)
- 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 this for Port2, Port3 and Port4. Enter the IP Address of the destination port as below:
  - For Port2: 192.168.1.103 (IP address of Port3)
  - For Port3: 192.168.1.102 (IP address of Port2)
  - For Port4: 192.168.1.101 (IP address of Port1)
Step 5: Start test

- From the LHS tree, hold the keyboard **Control** key and in the GUI select **Bert** using mouse under Port1, Port2, Port3 and Port4 tree simultaneously.

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

Step 6: Verify Results

- While the test is running, verify the **Results** in the RHS pane.
- For 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 all 4 ports and verify correct results for all 4 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 Port 1, Port 2, Port 3, and Port 4.

- Click Stop (refer to figure)