

If this is your First-Time-Use of PacketExpert™ 1G unit, then we recommend you 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 by directly connecting Port 1 to 2 through Ethernet cable (for Electrical Interface test)

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

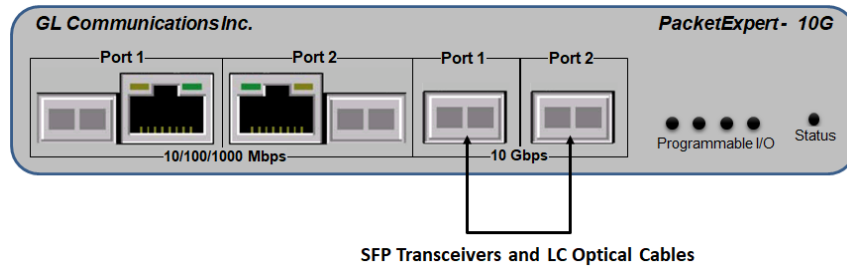
Step 1: Connect the cables

Perform Test on 10G Optical Interface

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

- Plug-in SFP Transceivers to the optical ports and cross connect LC optical cable between Port 1 and Port 2 as shown in the figure below.

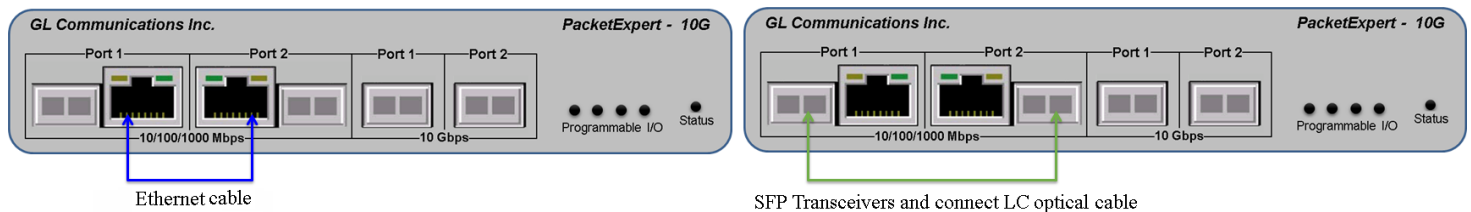
Note: Make sure SFP is properly locked and the optical cable is properly plugged-in.



Perform Test on 1G (Electrical or Optical Interface)

- For 1G Electrical Interface type, cross-connect 1G: Port 1 to 2 using Ethernet CAT5 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.

On launch, **All Port Bert** application is loaded, by default. To load Bert/Loopback, select **Bert/Loopback** from the **Applications** drop-down list as shown in the figure Also, a default configuration file is automatically loaded with the pre-configured settings.

Step 3: Configure Interface parameters

For 10G Optical connections,

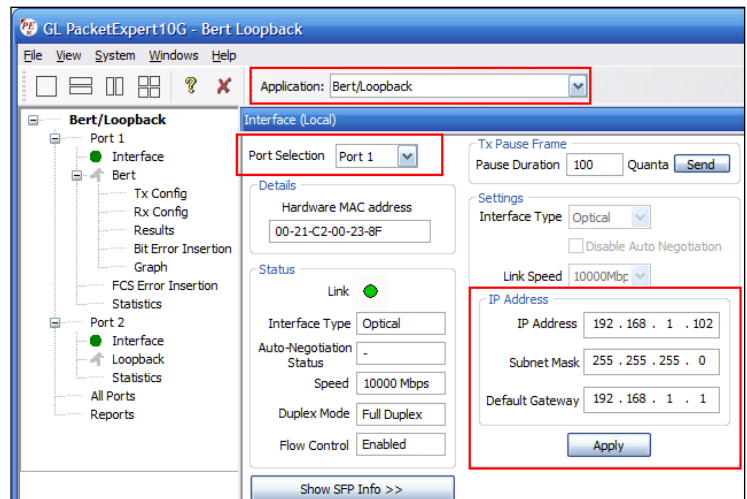
On the RHS side, in the **Interface** pane, select the ports from the drop-down list and verify the following settings for each port.

- Interface Type = **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 side, in the **Interface** pane, select the ports from the **Port Selection** drop-down list and set the following for each port:

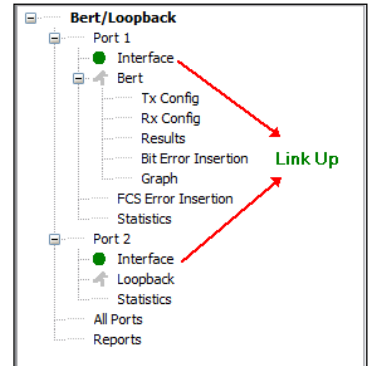
- Select **Interface Type = Electrical** (or) **Optical** (depending on the ports connected)
- Speed = **1000Mbps**
- Verify IP Addresses for **1G: Ports 1 & 2**, which are configured as listed below:
 - Port1: 192.168.1.101
 - Port2: 192.168.1.104
- Click on the **Apply** button (this will set the Interface Type in the hardware)
- Verify that the Link Status is **UP** on both ports, that is, the function tree should display Port 1 and Port 2 with green LEDs link status (refer to figure).



Step3: Verify Links

- Verify that the Links are UP. On launch, the LHS tree should display all the 2 ports with green LEDs link status (refer to figure). If any of the ports shows red LED, then link is down. Refer to

Note: If the LED shows red, then link is down. Refer to [PacketExpert™ Quick Install Guide](#) for **Troubleshooting** steps to get the links UP

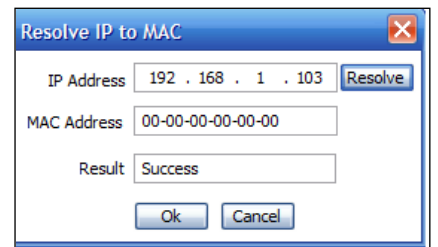
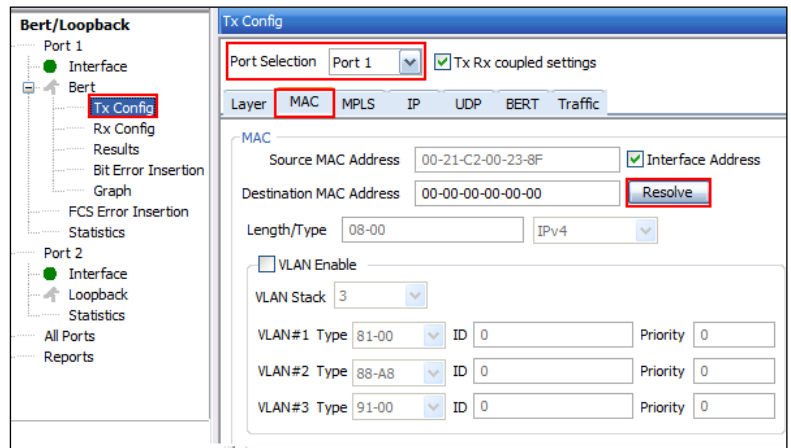


Step4: Configure MAC Addresses

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

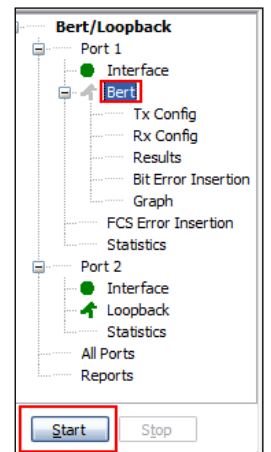
For Port1, Electrical Connections,

- 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:
 - 192.168.1.103 (IP address of Port2)
- 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. Enter the IP Address of the destination port as below:
 - For Port2: 192.168.1.102 (IP address of Port1)



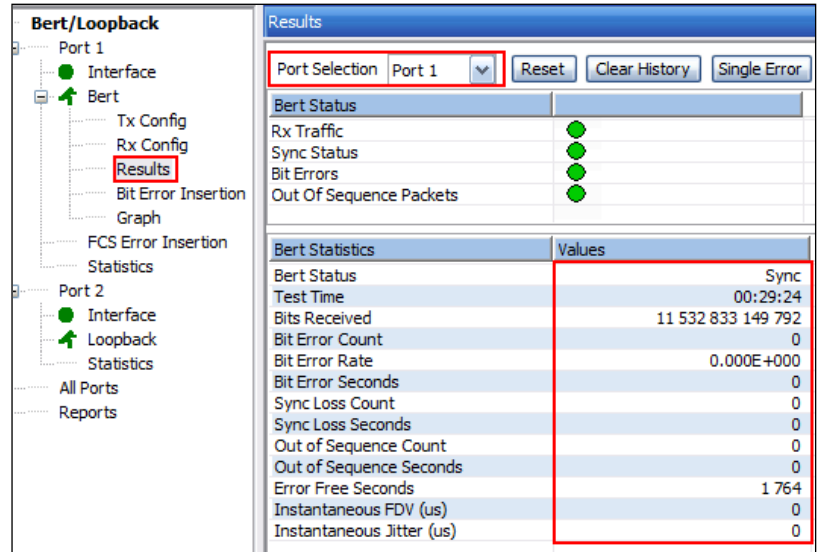
Step5: Start test

- To Start the Bert test, from the function tree menu select **Bert** and Click **Start** (refer to figure)



Step6: 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 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



Bert Status	
Rx Traffic	●
Sync Status	●
Bit Errors	●
Out Of Sequence Packets	●

Bert Statistics	Values
Bert Status	Sync
Test Time	00:29:24
Bits Received	11 532 833 149 792
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
Error Free Seconds	1 764
Instantaneous FDV (us)	0
Instantaneous Jitter (us)	0

Repeat this step for both the ports and verify correct results for 2 ports. If any port shows errors, contact GL Communications Inc.

Step7: Stop test

- To stop the test after verifying the results, from the function tree menu select **Bert** and Click **Stop** (refer to figure)

