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)*

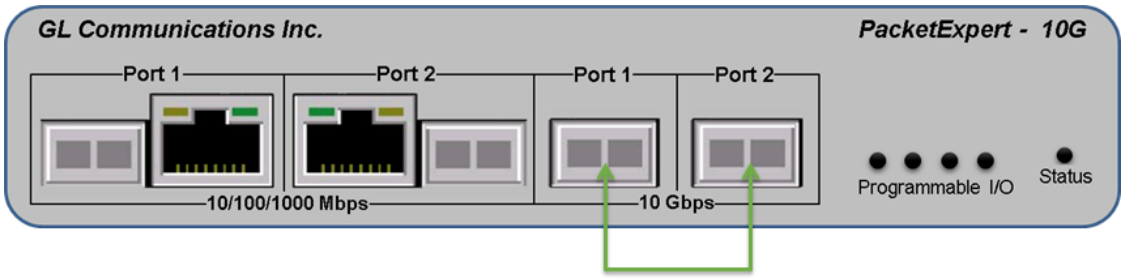
*OR "**All Port BERT**" test scenario can be demonstrated on **10G ports** by directly connecting **Port 1 to 2** through **SFP and Optical cable** (for Optical interface test).*

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.

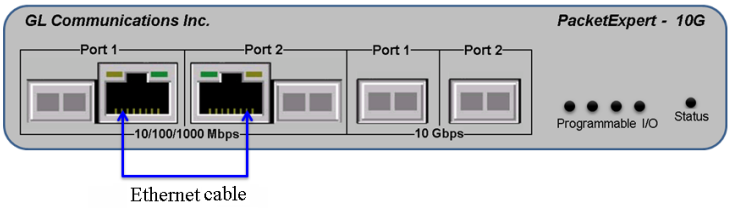


SFP Transceivers and connect LC optical cable

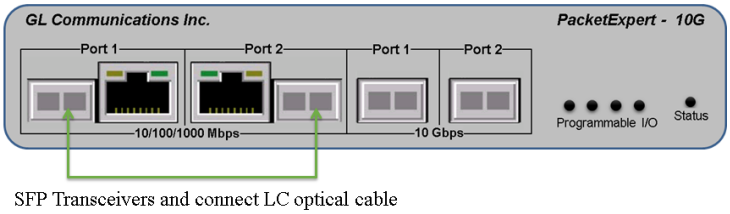
Perform Test on 1G (Electrical or Optical Interface)

- 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.



Ethernet cable

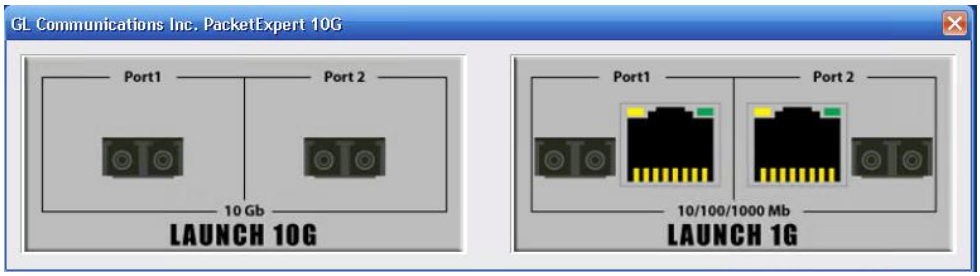


SFP Transceivers and connect LC optical cable

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.

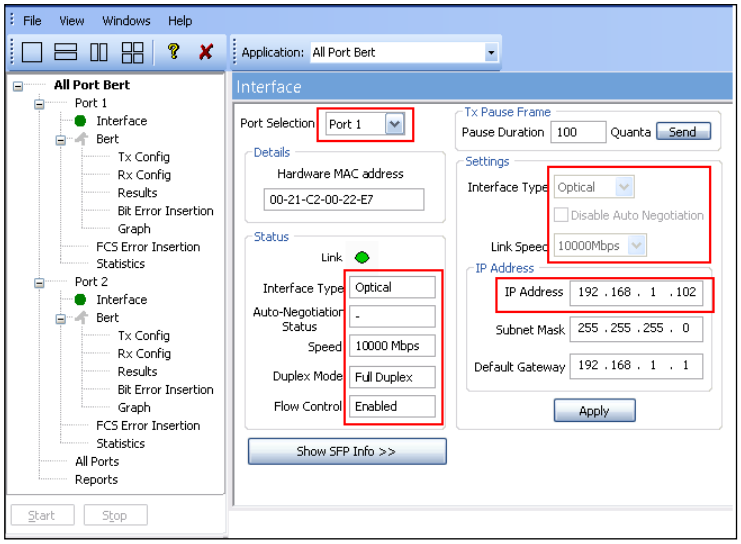


Note: The application may take some time to get started due to hardware and software initializations.

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



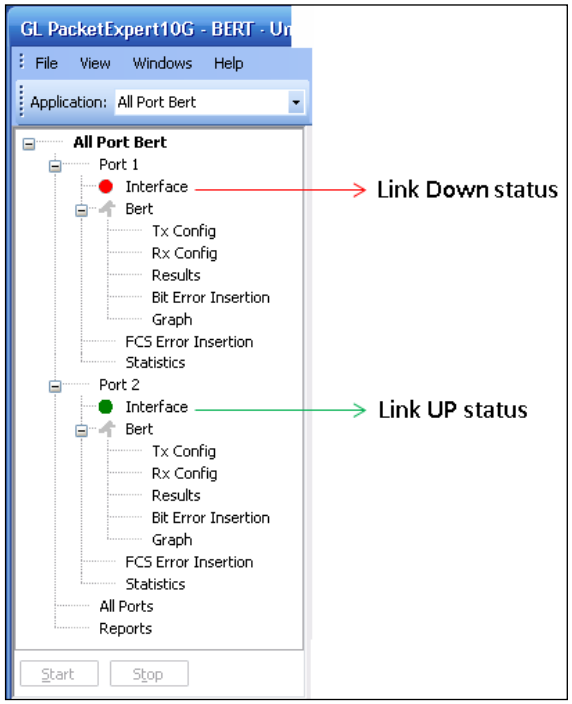
Note: For 1G Electrical or Optical connections,

On the RHS 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)

Step3: 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 Port1 is 10G Port2 and vice versa)



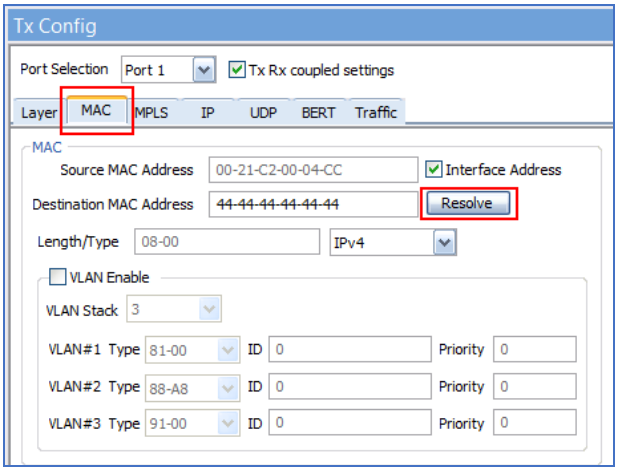
- Verify that the Link Status is UP on both ports, that is, on launch, the LHS tree should display 10G: 2 ports with green LEDs link status (refer to figure). If the LED shows red (refer to the figure), then link is down.

- 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.

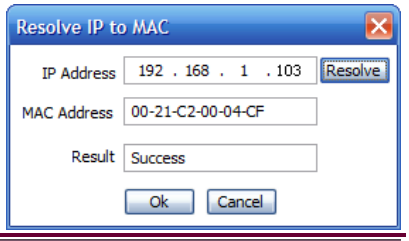
Step4: Configure MAC Addresses

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



For 10G: Port1,

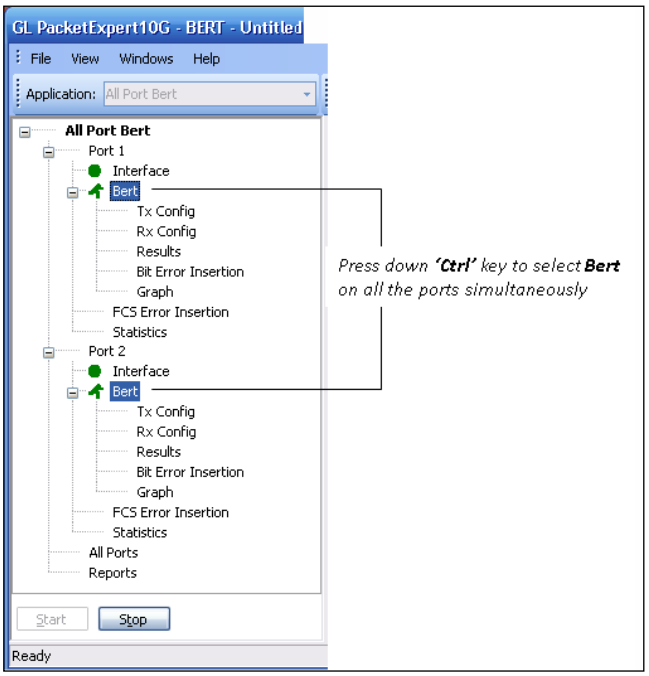
- In the LHS tree, under **Port 1 → Bert**, double click **Tx Config**. The Tx Config window opens up in one of the RHS panes
- Go to **MAC** tab
- Click **"Resolve"** button next to Destination MAC address. (refer to figure)
- Enter the IP Address of the destination port (10G Port2) as 192.168.1.103
- 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: Port2 to configure its MAC address (Enter the IP Address of the destination port - 10G Port1 as: 192.168.1.102)

Step5: Start test

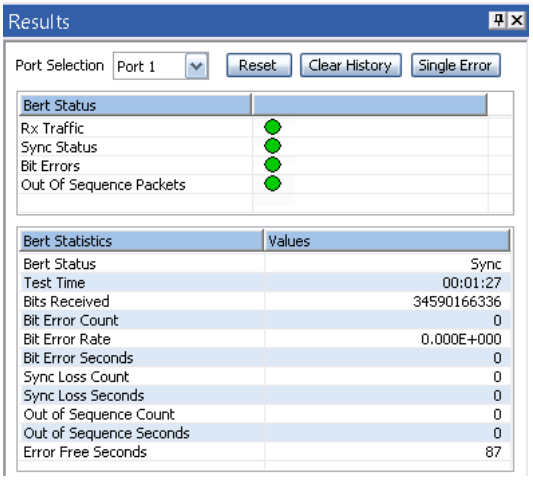
- From the LHS tree, hold the keyboard **Control** key and in the GUI select **Bert** using mouse under Port1, and Port2 tree simultaneously.
- Click **Start** (refer to figure)



Step6: 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.

Step7: 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)