If this is your First-Time-Use of PacketExpert™ 1G unit, then we recommend you to 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

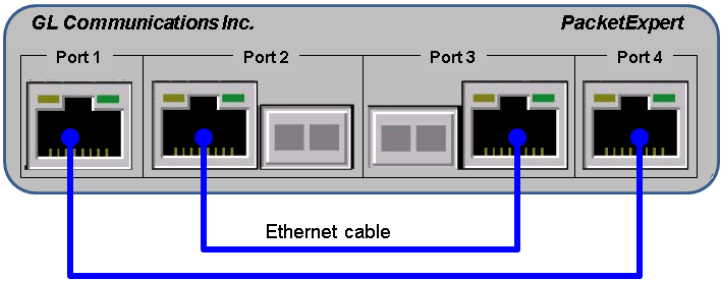
Perform Test on Optical Interface

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.

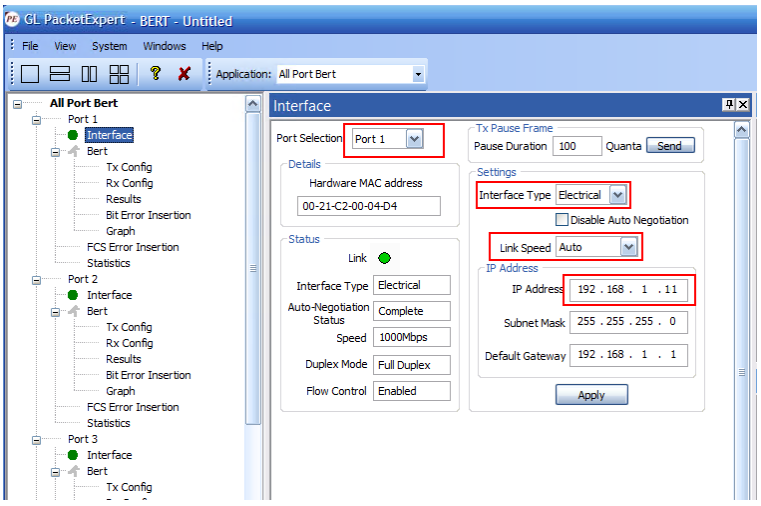
Note: The application may take some time to get started due to hardware and software initializations.

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: 192.168.1.11
  - Port2: 192.168.1.102
  - Port3: 192.168.1.103
  - Port4: 192.168.1.44
- 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)

Step3: Verify Links

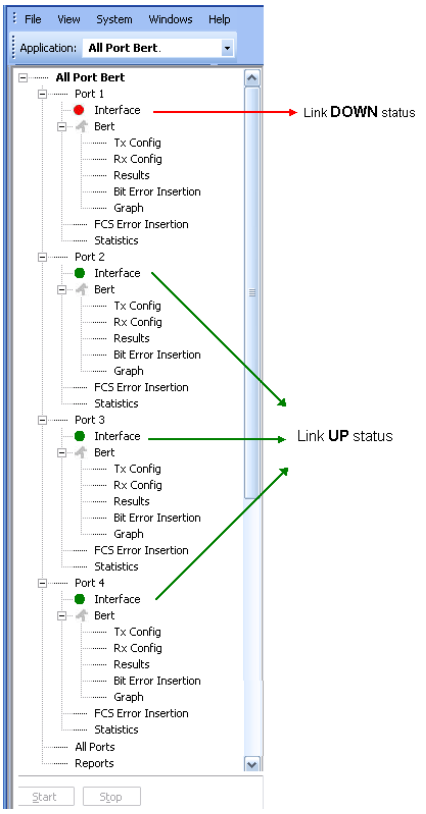
- Verify that the Links are UP. On launch, the LHS tree should display all the 4 ports with green LEDs link status (refer to figure). If any of the ports shows red LED (refer to the figure), then link is down. Follow these steps to correct:

  - 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.

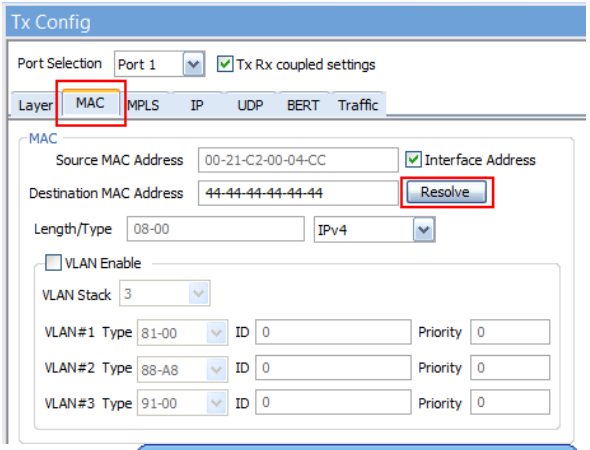


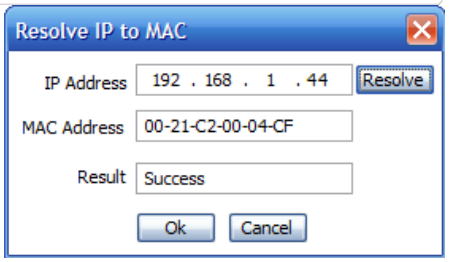
Step4: Configure MAC Addresses

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

For Port1, Electrical Connections,

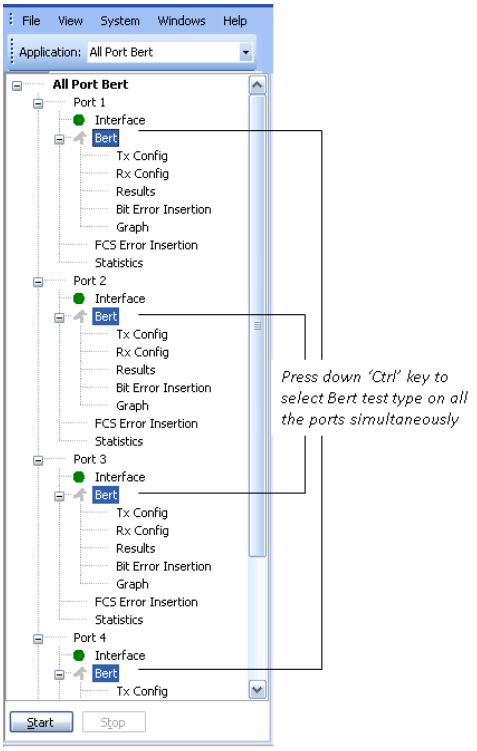
- In the LHS tree, under **Port1→Bert**, click **Tx Config**. The Tx Config window opens up in one of the RHS panes
- Go to **MAC** tab
- Click "**Resolve**" button next to Destination MAC address. (refer to figure)
- Enter the IP Address of the destination port (Port 4) as below:
  - 192.168.1.44 (IP 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: 192.168.1.11 (IP address of Port1)





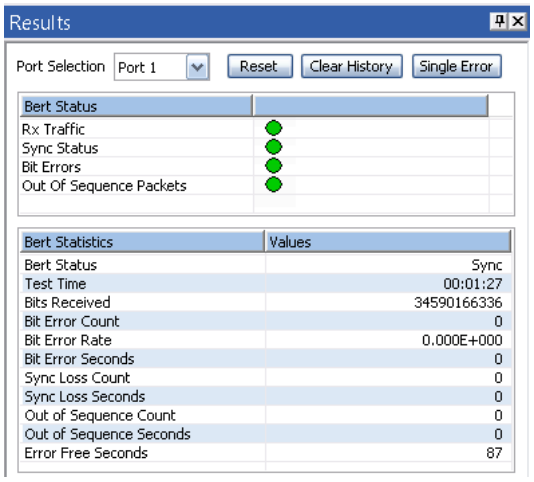
Step5: Start test

- 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)



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 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.

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, Port2, Port3 and Port4
- Click **Stop** (refer to figure)