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.

**Quick Verification**

“RFC 2544” is a basic application available within the PacketExpert™ software. No additional license installation is required.

*For ‘RFC 2544’ functional verification, self-test can be performed using a single PacketExpert™ 1G unit.*

“RFC 2544” test is supported on Port#2 and Port#3 only, and the test scenario can be demonstrated by directly connecting Port 2 to 3 using *Ethernet cable* (for Electrical Interface test) or connect Port 2 to 3 using *SFP and Optical cable* (for Optical interface test).

**Step 1: Connect the cables**

Perform Test on Port 2 and Port 3 (Electrical or Optical Interface)
- For Electrical Interface type, connect Port 2 to PC1 using Ethernet cable as shown in the figure.
- Similarly, connect Port 3 to PC2 using Ethernet cable.
- For Optical Interface type, plug-in SFP Transceivers to the optical ports and connect LC optical cable between Port 2 and PC1, (refer to figure). Similarly, connect Port 3 and PC2.

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

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**Step 1: Note down the IP Addresses**

The IP Addresses for Ports 1 to 4 on PacketExpert™ are pre-configured as listed below:
- Port1: 192.168.1.101
- Port2: 192.168.1.102
- Port3: 192.168.1.103
- Port4: 192.168.1.104

**Step 2: 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.
• By default, the PacketExpert is invoked displaying All Port Bert application. To load RFC2544, select **RFC2544** from the Applications drop-down list as shown in the figure.

• Verify that the Link Status is **UP** on both ports, that is, the function tree should display Port 2 and Port 3 with green LEDs link status (refer to figure).

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

## Step 3: Configure Interface parameters

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 do the following for Port 2 and Port 3:

- **Interface Type = Electrical** (or) **Optical** (depending on the ports connected)
- **Link Speed = Auto**
- Click on the **Apply** button (this will set the Interface Type in the hardware)
- Wait for some time as the port auto-negotiates with its link partner. Verify the following:
  - Auto-Negotiation status = Complete, Speed = 1000 Mbps (if the connected NIC card is configured for 1000 Mbps. Else, it has to show 100 Mbps or 10 Mbps depending on the NIC card's speed)
  - Similarly, repeat the above procedure for **Port 3**

## Step 5: Default Test Parameter Settings

- RFC2544 function includes default values for all test parameters (refer to figure). User can run the self-test without any changes to these values.

- **Global configuration** provides configurations common to all the tests, while each of the test has separate options as shown in the screen.

- Double click on Throughput, observe the default **Throughput** test configurations, which includes Trial Duration, Number of Trials, Min and Max bandwidth for either directions (Port2 to Port3 and Port3 to Port2) configurations.

- Double click on Latency, observe the default **Latency** test configurations, which includes Trial Duration, Number of Trials and bandwidth for either directions (Port2 to Port3 and Port3 to Port2).

- Double click on Frame Loss, observe the default **Frame Loss** test configurations, which includes Trial Duration, Number of Trials, Min and Max bandwidth for either directions (Port2 to Port3 and Port3 to Port2).
Double click on Back-to-Back, Observe the default Back-to-Back test configurations, which includes Trial Duration, Number of Trials, Bursts Size in msec and No. of Bursts for either directions (Port2 to Port3 and Port3 to Port2).

Step 6: Start test

Select RFC2544 in the Function Menu list and click Start to run the test.

Step 7: Verify Results

While the test is running, verify the Results in the RHS pane.

Results start displaying after the Time Duration selected by the user for each test.

From the function tree, double-click Results and observe that the Results pane opens up in one of the 4 RHS panes.

The Results pane -> Status tab shows the status while the test is running indicating the sending test frames. For each and every trial, prior to sending the test frames, RFC 2544 learning frames are sent, which can be observed in the figure below.

Tabular and Graphical results can be viewed for each of the test procedure, that is Statistics as well as Graph results.

➢ Throughput Statistics and Graph Results
➢ **Latency** Statistics and Graph Results

<table>
<thead>
<tr>
<th>Frame Size</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>64</td>
<td>0.5000 ms</td>
</tr>
<tr>
<td>128</td>
<td>0.5000 ms</td>
</tr>
<tr>
<td>256</td>
<td>0.5000 ms</td>
</tr>
<tr>
<td>512</td>
<td>0.5000 ms</td>
</tr>
<tr>
<td>1024</td>
<td>0.5000 ms</td>
</tr>
<tr>
<td>2048</td>
<td>0.5000 ms</td>
</tr>
<tr>
<td>5120</td>
<td>0.5000 ms</td>
</tr>
</tbody>
</table>

➢ **Back-to-Back** Statistics and Graph Results

➢ **Frame Loss** Statistics and Graph Results