

## Normal Instructions – Follow these precisely

**DO NOT CONNECT** Portable PacketExpert™ hardware unit to PC

Perform Software installation first, followed by and Hardware Driver License installation.

- PC Requirements – Windows® 7 and Windows® 8 (32 bit or 64 bit)
- CPU Requirements – Dual Core processor or higher; RAM Recommended - 4 GB
- Install software from the GL installation CD.
- Execute **PacketExpert\_Setup\_x86\_X\_YY\_ZZ.exe (for 32 bit OS) or PacketExpert\_Setup\_x64\_X\_YY\_ZZ.exe (for 64 bit OS)** from the installation CD
- Follow onscreen instructions, the device driver for the new hardware is automatically installed
- Execute **GLHwLicenseInstaller.exe** from the installation CD to install hardware licenses
- Run **T1E1AppList.exe** available in the C:\Program Files (x86)\GL Communications Inc\GL Hardware License Installer (or C:\Program Files\GL Communications Inc\GL Hardware License Installer) directory and confirm that the purchased PacketExpert™ - Wire speed Record /Playback licenses (PXE105) are listed against the hardware purchased.

**NOW CONNECT** Portable PacketExpert™ hardware unit to power adapter and AC power

- Then connect the PacketExpert™ hardware unit to USB 2.0 connector on PC using the USB cable provided by GL
- The PacketExpert™ hardware unit is recognized and the device driver is installed at this point

## Quick Checkout

This functional verification is focused on capturing and filtering the traffic of interest and verifying the capture for no errors.

In this test, we transmit wirespeed multi-stream traffic. The traffic has 5 BERT streams, each with a different set of MAC/IP Addresses, UDP Ports and BERT patterns, at an aggregate wirespeed rate. We filter in a single BERT stream for recording, while rejecting all other 4 streams. We then run the recorded BERT stream against BERT application to verify that the filtering and recording was done correctly.

The test requires two PacketExpert units to be installed on two PCs with port 2 of PacketExpert-A connected to port 2 of PacketExpert-B.



### Note:

**All the configuration files referenced in the steps below can be found in the "RecPlaybkTestFiles" directory, which is present in the PacketExpert Installation directory (Eg: C:\Program Files\GL Communications Inc\PacketExpert\RecPlaybkTestFiles).**

- On PacketExpert-A,
  - Load **"Playback Only"** from the Application drop down menu,
  - Load configuration **"Test4\_PEX\_A\_PlaybackOnly\_Multistream.cfg"**. This will configure PacketExpert-A to transmit **PRBS\_5\_Streams.ntar** continuously on **Port 2**. The file PRBS\_5\_Streams.ntar contains prerecorded traffic, which is a mix of 5 streams at an aggregate wirespeed rate.
- On PacketExpert-B,
  - Load **"Record Only"** from the Application drop down menu.
  - Load the configuration **"Test4\_PEX\_B\_RecordOnly\_Filter.cfg"**. This will configure PacketExpert-B to filter only the stream containing **2<sup>23</sup>-1** traffic on **Port 2**, and capture 2048 MB (Maximum on board memory capacity) of the 2<sup>23</sup>-1 traffic to the file **"PRBS\_1\_Stream\_Rec.ntar"**. All other stream packets are rejected.
- Start Recording on PacketExpert-B
- Start Playback on PacketExpert-A

- While recording is in progress on PacketExpert-B, verify that the Data Rate (Mbps) shows around 831 Mbps (In Port Statistics window of Port 2). This is the Layer 2 data rate, which is lower than the line rate of 100% because of the traffic frame size mix - 119 (for 2<sup>9</sup>-1 pattern), 135 (for 2<sup>11</sup>-1 pattern), 263 (for 2<sup>15</sup>-1 pattern), 1317 (for 2<sup>20</sup>-1 pattern) and 93 (for 2<sup>23</sup>-1 pattern).
- Wait till Recording is done on PacketExpert-B. On PacketExpert-B, verify these statistics in the Aggregate Statistics window - Transferred Frames = 16,777,215, Capture File Size (Bytes) = 2,097,151,875. Now, we have the file “PRBS\_1\_Stream\_Rec.ntar”, inside RecPlaybkTestFiles folder, which will contain traffic for only **2<sup>23</sup>-1 pattern**. Verify the size on disk is 2,097,152 KB. (It will not be full 2048 MB, because of per packet header overhead).
- Open “PRBS\_1\_Stream\_Rec.ntar” in Wireshark. Verify that it contains 16,777,215 frames, and each frame is a UDP frame of length 89 bytes (4 bytes FCS are left out while recording).
- On PacketExpert-A,
  - Load “**All Port BERT**” from the Application drop down menu,
  - Load “**Test4\_PEX\_A\_BERT\_SinglePort.cfg**”. This will configure PacketExpert-A to receive and analyze the single stream **2<sup>23</sup>-1 traffic** on **Port2**.
- On PacketExpert-B,
  - Load “**Playback Only**” from the Application drop down menu,
  - Load configuration “**Test4\_PEX\_B\_PlaybackOnly.cfg**”. This will configure PacketExpert-B to transmit once, the just now recorded file “**PRBS\_1\_Stream\_Rec.ntar**” file on Port 2.
- Start **BERT** on PacketExpert-A Port2.
- Start **Playback** on PacketExpert-B. Wait till file is transferred on to onboard buffer, and playback starts.
- Verify **No Sync Loss/Bit Errors** on PacketExpert-A Port2.
- Wait till **Playback** is done on PacketExpert-B.
- On PacketExpert-A, in Port Statistics window for Port 2, verify total Rx frames = 16,777,215 frames. Also, verify, Rx 65-127 Frames received = 16,777,215 frames.
- If **No Sync Errors/Bit Errors** on PacketExpert-A

## Troubleshoot

If you did not follow the above instructions in the given sequence, troubleshoot using the steps below:

- If you connect PacketExpert™ hardware unit to the PC prior to installing the software, then the proper USB device driver will not be installed. User has to search for the driver and install it manually. Do the following:
  - Go to **Control Panel**→**System**→**Device Manager**
  - Verify that there is an entry with “!” mark against the ‘GL Communications USB Packet Expert’ entry
  - Right click on the device, click **Update Driver** option, and choose **Browse My Computer For Driver Software**
  - Follow the on-screen instructions to complete the installation. Please refer to detailed installation instructions on the CD if you are still having problems.
- If the optional software is not activated, you may have not installed the Hardware licenses or Dongle licenses. You can do so as explained in the section above at any time after installing the software.
- Ensure that the Power Adapter is connected to the PacketExpert™ and to the AC Power on the strip or Wall. Ensure that the Power Strip is ON.
- Make sure that the USB cable is securely connected to the PacketExpert™ and to the PC USB 2.0 Connector.
- Follow the detailed instructions in the **PacketExpert™ Installation Guide**.
- If you are still having issues or have other questions call GL Communications Inc. @ 301 670 4784