Normal Instructions – Follow these precisely

START WITH DONGLE UNPLUGGED FROM MACHINE

Perform Software installation first, followed by dongle license installation.

- Run the PacketGen™ executable (**Packetgen.exe)** from the Installation CD. Follow the on-screen instructions to complete the software installation.
- It is recommended to reboot the system after the software installation.
- Run **..*Dongle License Installer\\GLDongleLicenseInstaller.exe* from Installation CD on the PC where SIP and RTP Cores have to be executed. The **SIP and RTP cores** can be installed on either the same PC where the PacketGen™ is installed or on a remote PC with a **Listener.exe**. The Listener allows PacketGen™ GUI to operate the SIP/RTP cores remotely.
- Once the license installation is completed, plug the dongle to the USB 2.0 port of your computer. Windows® should install all required drivers automatically. A red light should appear on the dongle indicating that it is functioning correctly from a physical point of view.
- To communicate with the SIP and RTP cores PacketGen™ requires **Listener** to be active on the PC with SIP and RTP Core.
- Activate the **Listener** by double-clicking on the Listener icon 🎴 from the desktop. If Listener icon is not available on the desktop, copy **Listener.exe** from the installation directory and invoke. Observe that a small **Listener** icon 🎴 will appear in the task bar.
- Double-click the **PacketGen™** icon 📇 from the desktop. The application should invoke without any errors.

Verification

For functional verification the user must connect **PacketGen™** computer to the SUT (system under test), or prepare two PacketGen™ computers. Make certain that both PacketGens and SUT are on the same network. The SIP and RTP core is configured with the IP address of the NIC on that computer.

Alternatively, the user may also prepare a single PacketGen™ computer with two NICs on the same PC connected in loop back (attach a cross-over network cable between the two network cards or connect both network cards to the same hub or switch).

For illustration purposes, we assume the 2 IP addresses as **192.xx.xx.169** and **192.xx.xx.21** (one of them is PacketGen™ computer, and the other can be the other NIC on PacketGen™ PC / SUT / a PacketGen™ SIP Core on another PC). Note that both the IP addresses should be in the same subnet.

Single PC with Two NIC Cards in Loopback

📑 **Note:** If two NIC cards are not available, then we can setup an additional virtual IP Address for the same NIC. Contact your system administrator to avoid IP address conflicts before you perform the steps below.

- Click **Start → Control Panel → View Network Status and Tasks** (under Network and Internet) → **Change Adapter Settings→ Local Area Connection** from windows menu
- Select the Local Area Connection, right click, and select **Properties** button to open the properties window
- Select **Internet Protocol Version 4 (IPv4)** from the list of connections and click on **Properties** button
- Click on **Advanced** button to open Advanced TCP/IP Settings dialog
- Click on **Add** button under the IP Settings tab to add additional IP Address
- Enter the second virtual IP Address, subnet mask, and click **Add**.
- Click **Ok** on all the windows to accept the new settings

1) Verify that the Listener is activated (the listener icon should appear in the system tray)

2) Select, **File → SIP Setup** to access the **SIP Setup Configuration** screen.

3) Click on the **SIP** button to place the SIP Core icon and **RTP** button to place the RTP Core icon. By default the SIP and RTP icon will display the IP address of the default network card on the PC.

4) For the additional NIC cards (or the second virtual IP address) add **SIP** and **RTP Core** again as explained in the previous step. Now, there will be 2 sets of SIP-RTP core one for each NIC card (or IP addresses associated with the NIC) as mentioned above.

5) Connect the SIP core to the RTP core. Right-click on the **SIP** icon and right click on to the corresponding **RTP** icon with the same IP address. Observe the connecting line between the SIP-RTP.

6) Click on the **Start** button in order to initialize the SIP/RTP cores. The icon will turn green indicating the successful connection. Observe that the SIP Core, RTP Core, and SIP Timer command windows are invoked. Minimize all these windows and proceed to Call Generation and Reception.

PacketGen connected to SUT (or Two PacketGens on different PCs)

Perform the steps below from **2** to **6** for additional SIP core on another PC, if two PacketGens are used instead of an SUT.

1) Verify that the Listener is activated (the listener icon should appear in the system tray)

2) Select, **File → SIP Setup** to access the **SIP Setup Configuration** screen.

3) Click on the **SIP** button to place the SIP Core icons and **RTP** button to place the RTP Core icon. By default the SIP and RTP icon will display the IP address of the default network card on the PC.

4) Connect the SIP core to the RTP core. Right-click on the **SIP** icon and right click on to the corresponding **RTP** icon with the same IP address. Observe the connecting line between the SIP-RTP.

5) Click on the **Start** button in order to initialize the SIP/RTP cores. The icon will turn green indicating the successful connection. Observe that the SIP Core, RTP Core, and SIP Timer command windows are invoked. Minimize all these windows and proceed to Call Generation and Reception.

Call Generation and Reception

1) From the PacketGen™ GUI, select **File → User Login** (or click on)

2) Select **File → Add Call Agent** or click on the icon from the User Login screen. Each SIP Core is identified as a Call Agent and requires user authentication to be set.

3) Enter a unique identity (alphanumeric) in the **Identity** column, appropriate IP address in the **Server Name/Address** column. In our test case, SIP Core on NIC1 (**192.xx.xx.169**) is configured as call agent with **Call Agent_1** and SIP Core on NIC2 (**192.xx.xx.21**) is configured with **Call Agent_2**.

4) To associate a user with the call agent (this identity will be used throughout PacketGen™ as the Call Agent identity), click on the **Login** button. Enter the User Name as '**test**'. Password is optional and you may leave it blank.

5) Click **OK**. The Login button should change to **Logout**. This confirms that the user has properly logged into PacketGen™.

6) Close the User Login screen, and proceed to configure the protocol standards and user agents

Follow the Step **2** to **5** for the additional SIP Core if two PacketGens are used instead of an SUT.

7) Select, **File → Protocol Configuration Setup** (or click)

8) Click on the **Details** button of **Call Agent_1** to open **User Agent Configuration**

9) On the **SIP Parameters** tab, enter the **User Name** as UA1, and change the Host Name to **192.168.10.169**
- Double-click on the already existing default Contact List and modify as **UA1@192.168.10.169**.
- Click under the User Agent list pane to confirm the changes to the contact **URL**.
- Click on the User Agent list pane again to confirm the change in the **URL**.

10) Verify the codec under the **Media Parameters** tab. By default μlaw is selected in the codec list. You may use the Up and Down arrow buttons (within the Supported list) in order to prioritize the codec.

11) Select **File > Save As Configuration** and save the created configuration as **CA1_Config**.Close User Agent Configuration window and return to Protocol configuration window.

12) The **Protocol Configuration Setup** window now displays the saved user configurations for **CA1_Config** under the Configuration drop down list.

13) Select the saved configuration **CA1_Config** for **Call Agent_1** and click to start and activate the SIP User Agents.

14) Once the SIP Call agents are activated, the start button changes to .

15) Close the Protocol Configuration window and return to PacketGen™ main screen

Follow the Step **7** to **15** for the additional SIP Core if two PacketGens are used instead of an SUT. This will be the **Call Agent_2**.

16) We now have user '**UA1@192.xx.xx.169**' on **Call Agent_1** and '**UA1@192.xx.xx.21**' as **Call Agent_2**.

17) The PacketGen™ is now ready to be used for establishing calls and send/receive media over the established call. From the **PacketGen**^{TM} main screen select, **Function > Manual Call Generation** (or click ![icon]).

18) Select the '**Call Agent_1'** from the drop down menu.
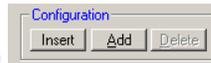
19) Click **Add** from the **Configuration** section ![Configuration Insert Add Delete] the in order to add a new call instance.

20) Select the call instance, and double- click on the area underneath **Local UA** field and select the desired Local UA as **UA1@192.168.10.169** using the drop down menu.

21) Select the call instance, and double- click on the area underneath **Remote UA** field and enter the desired Remote UA host name and address, say in this example, as **UA1@192.168.10.121**.

22) Select the call instance on which the call has to be established, and click on **Dial** from the **Status** column.

23) To establish the call, the **Call Agent_2** (another PacketGen™ or SUT) on the other end should accept the incoming call.

24) If the other **Call Agent_2** is PacketGen™, select **Function > Manual Call Reception**.

25) Select the **Call Agent_2** from the drop down menu. Observe the incoming call and click **Accept** to answer the incoming call from **Call Agent_1**. The button will change to **HangUp**.

26) Check the **Auto Answer** box in order to automatically accept all incoming calls to the MCR screen.

Troubleshoot

- *"Security Error: Application is not licensed",* if you see this error when you run PacketGen™ it indicates a problem with either your dongle or license file.
  - ➢ First verify that the dongle is plugged in and the red light is on
  - ➢ Navigate to *C:\Program Files\GL Communications Inc\GLDONGLE*
  - ➢ Run *haspinfohl.exe*. Verify that Status is **OK** and make a note of the Serial #.
  - ➢ Run *appl_list.exe*. Verify that there is a line in the table reading *PKS101 PacketGen™ SIP Core* and *PKS102 PacketGen™ RTP Soft Core* with the serial number you noted above.
  - ➢ If the dongle does not appear in haspinfohl.exe, verify that it appears as a USB device in the Windows Device Manager. If it does not appear even in the device manager, remove the dongle and plug it into a different USB port, preferably one directly on the motherboard.

- Reasons why the Verification Step might fail are various:
  - ➢ Intermittent Frame Errors or Bit Errors generally indicates faulty equipment, either due to the Ethernet cable, the NICs or both.
  - ➢ Complete failure to SYNC could be a configuration issue, please review your settings. It could also be due to firewalls or other forms of security software. Please disable any security software if possible and try again.

- If you cannot resolve your issues, please contact your appointed technical support person or reach us at info@gl.com.