Software and License Installation

Note1: *If you have purchased* MAPS™ HD *product, you will receive a network appliance with all the necessary PC hardware interfaces, Operating System, required MAPS™ applications, GL's HD NICs, and licenses pre-installed. And therefore, you will need to only plug-in the monitor, and connect the network appliance to the power outlet. Then connect the USB Hardware Dongle you have received with the shipment, and proceed to verification steps.*

- PC Requirements
  - Windows® 7 and above Operating System (64 bit Only).
  - Core i7 (or equivalent), 32 GB Memory, GL's HD NIC (**4x 1 Gbps / 2x10 Gbps NIC** ports), Regular PC NIC, and USB 2.0 Ports.
- NOW PLUG-IN the USB Hardware Dongle to the PC to the USB 2.0 port of your computer. A red light should appear on the dongle indicating that the device is functioning correctly and ready to use.
- You can verify if the purchased licenses are installed. Navigate to *C:\Program Files\GL Communications Inc\GLDONGLE* directory, execute *appl_list.exe* and confirm that the following licenses are listed:
  - PKS155 (MAPS™ BICC IP)
  - PKS102 (RTP Traffic)
  - PKS109 (HD RTP Traffic) ***Note2*

  **Note2: Additional licenses may be required for optional codecs and other traffic options. Please verify that all licenses purchased are displayed using the appl_list.exe utility.

Verification

For functional verification, the *MAPS™ BICCIP HD* application installed on each PC can be configured as (Client or Server node) network entities. The following steps explain MAPS™ BICCIP configuration on the PCs to simulate BICC call control messages procedures between the nodes. It can also be configured to handle RTP traffic automatically over signaling.

On HD PC1, MAPS™ is configured as **Client** node, and on HD PC2, MAPS™ is configured as **Server** node simulating BICC interface procedures and RTP traffic.

GL's HD card connections verification:
Verify that network cables are properly connected. Make sure that the cable connectors are pushed in correctly. You should feel and hear a small click while plugging the cables. Also, you can use the monitoring tool (refer to Troubleshoot section) to check the Ethernet links UP or DOWN status.

On the HD PC1, MAPS™ BICC – Client Instance (GUI)
- Right-click on the **MAPS™ BICC IP** desktop icon and select 'Run as Administrator'
  - Select Protocol Standard as **BICC-IP** and Protocol Version as **UK**.
  - Select **Node** as **Serving Node.**
  - Select **Transport** as **M3UA** and click **OK**.
- On the Test Bed Default window, click 📁 and select **Client_HD_RTP_4Cores** configuration and check for the configuration settings as below:
  - Verify that the **SCTP Mode** is set to **Client,** and the **M3UA Termination Type** is set to **ASP** (maintain Client association)
  - Set **Exchange Type** to Control
  - Set the **Serving Node IP Address** to PC IP address and **Remote Serving Node IP address** to Destination PC IP address
  - Set **Serving Node Port** to **2905,** and **Serving Node Point Node** to **1.1.1**
  - Set **Remote Serving Node Port** to **2906,** and **Remote Serving Node Point Node** to **2.2.2**

- ➢ Set **Enable RTP** to **True**
- ➢ **RTP Hardware Interface Type** as "GL's High Density Interface Card" (If you have purchased PKS109 - HD RTP Traffic License)
- ➢ Click 💾 **Save** button to save the changes to the same **Client_HD_RTP_4Cores** file.
- In the **Profile Editor (Editor > Profile Editor),** load the **MS_Profiles** and choose MSProfile01 profile from the left pane. Choose and edit the profile which is used for call simulation. The called and calling number are configured as per the test requirements. Verify that the Traffic is enabled and is set to **IVR traffic type**. This automatically sends and detects DTMF digits verifying the traffic. Traffic direction settings for IVR traffic type is irrelevant. Click 💾 **Save** button to save the changes to the same **MS_Profiles** file.

On the HD PC2, MAPS™ BICC IP - Server Instance (GUI)

- Right-click on the **MAPS™ BICC IP** desktop icon and select 'Run as Administrator'
  - ➢ Select Protocol Standard as **BICC-IP** and Protocol Version as **UK**.
  - ➢ Select **Node** as **Serving Node.**
  - ➢ Select **Transport** as **M3UA** and click **OK**.
- On the Test Bed Default window, click 📁 and select **Server_HD_RTP_4Cores** configuration and check for the configuration settings as below:
  - ➢ Verify that the **SCTP Mode** is set to **Server,** and **M3UA Termination Type** is set to **SGP** (maintain Server association)
  - ➢ Set **Exchange Type** to Non Control
  - ➢ Set the **Serving Node IP Address** to PC IP address and **Remote Serving Node IP address** to Destination PC IP address
  - ➢ Set **Serving Node Port** to **2906,** and **Serving Node Point Node** to 2.2.2
  - ➢ Set **Remote Serving Node Port** to **2905,** and **Remote Serving Node Point Node** to 1.1.1
  - ➢ Set **Enable RTP** to **True**
  - ➢ **RTP Hardware Interface Type** as "GL's High Density Interface Card" (If you have purchased PKS109 - HD RTP Traffic License)
- Click 💾 **Save** button to save the changes to the same **Server_HD_RTP_4Cores** file.
- In the **Profile Editor** (Editor > Profile Editor), load the **MS_Profiles** and choose MSProfile01 profile from the left pane. Choose and edit the profile which is used for call simulation. The called and calling number are configured as per the test requirements. Verify that the Traffic is enabled and is set to **IVR traffic type**. This automatically sends and detects DTMF digits verifying the traffic. Traffic direction settings for IVR traffic type is irrelevant. Click 💾 **Save** button to save the changes to the same file

- On the same MAPS™ BICC IP instance, where it is configured as **Server**, select **Incoming Call Handler Configuration** from the **Configuration** menu. Ensure that the **BICC_Call.gls** script is loaded against the **Initial Address** message in the **Incoming Call Handler Configuration** window.
- Click **Start** on both the instances to start the test bed setup.
- Once the Testbed is started MAPS™ is internally connected to the RTP core, which can be verified as shown in the RTP Core console window. **Note:** Wait till all the 4 RTP Cores are initialized, as initialization of all the 4 RTP cores might take few minutes.

<u>**Note**</u>: Once the test bed setup is started on the both instances of MAPS BICC IP (one acting as client and other as server) verify that the **Link Status** is **UP** (indicated in Green color) from the **Reports** menu before placing the call. Refer to troubleshoot section for any issues.

- On HD PC1, where MAPS™ BICC IP is configured as **Client**, select **Emulator > Load Generation** from main menu.
- By default, *BICC_Call.gls* script and *MSProfile00******* profiles are loaded.
  - ➢ Total calls to Generate by default is set to '*', (indicates no limit)
  - ➢ Maximum Active calls to 2000.
  - ➢ Fixed statistical distribution pattern

- Click *Start* button to initiate the bulk call generation.

- Click 🐚 icon on both the MAPS instances and observe the SCTP, M3UA scripts executed indicating the active link status.
- Return to MAPS™ Server PC, observe in the **Call Reception** window. Observe that the calls are automatically received at the *Call Reception (Server)* window running the Rx script.
- To verify results, invoke **Statistics** window from **Reports** menu, to view the number of calls passed/failed, which are also plotted as pie-graph, Calls per sec graph, and Simultaneous calls per sec graph. Switch to Message Stats tab to view the statistics of the messages sent/received related to GSMAIP protocol.
- Observe the RTP packets received on each port of the GL's HD card logged in the RTP Core console

Troubleshoot

- *"Security Error: Application is not licensed",* if you see this error when you run MAPS™ BICCIP it indicates a problem with either your dongle or license file.
  - ➢ Run *appl_list.exe*. Verify that there is a line in the table reading *PKS155 MAPS™ BICCIP* with the serial number you noted above.

- *Fails to start SCTP Services and associated SCTP Link status is Down*, follow the steps below -
  - ➢ Run *MAPS™ BICCIP application as administrator* – right-click select 'Run as Administrator' option.
  - ➢ You should *Turn off Windows Firewall* on Windows® and on any 3rd party Anti-Virus software that may be installed on the PC to allow SCTP Link Status to be up. *Turn OFF Windows Firewall* - navigate to Control Panel > Systems & Security > Windows Firewall, click Turn Off windows Firewall for all networks.

- Verify Physical Connection
  - ➢ Check manually the LEDs on the HD card connected, if the GL's HD Interface card is located at local system
  - ➢ To verify from remote location, run **Monitoring.exe** utility, which displays the link status SFP Type connection and the auto negotiated link speed.
  - ➢ Important Column Description:
    - P - Port number
    - A - Adapter number
    - Type - Connection type
    - Link - Link speed (Down indicates cable is unplugged or SFP module is incompatible)

- If you cannot resolve the issues, please contact the appointed technical support person. If you do not know the technical support contact, please reach us at info@gl.com.