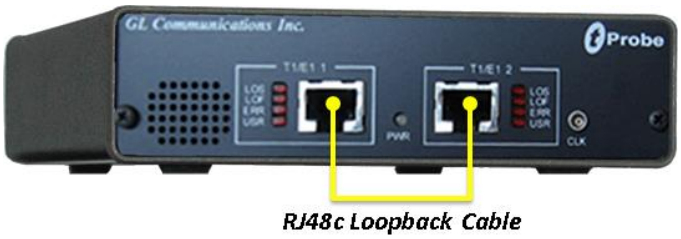
It is assumed that the T1/E1 Analyzer Hardware, Software and License installations are already performed referring to the purchased Hardware Installation Guide.

MAPS™ GSMA Application Verification

For functional verification, 2 instances of **MAPS™ GSMA** application is configured on a single PC configured as source and destination nodes. The following steps explain MAPS™ GSMA configuration on the same PC in loopback mode to simulate GSM protocol supporting procedures over A interface.
On first instance, MAPS™ is configured as **MSC** (Mobile Switching Center), and on the second instance, MAPS™ is configured as **BSC** (Base Station Controller) node generating supported procedure messages.

Cross-connect T1/E1 Port #1 and Port #2 of the Hardware unit back-to-back using RJ48c loopback cable.

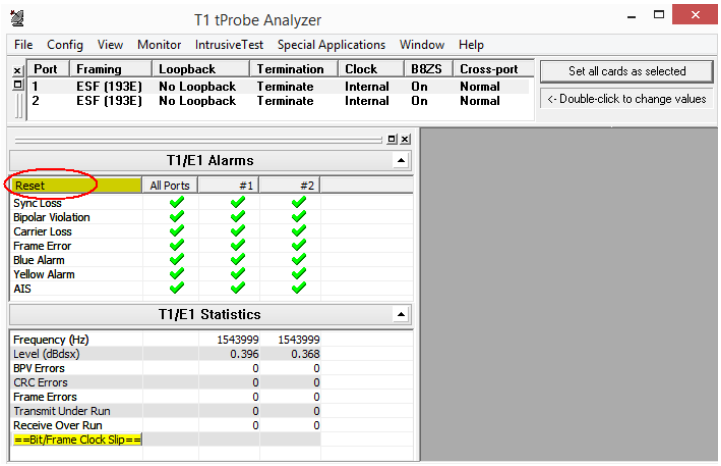


RJ48c Loopback Cable

- Click on the **T1/E1 Analyzer** icon created on the desktop (or) from the installation directory, click on **UsbNGT1.exe** and launch T1/E1 Analyzer application.

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

- Verify the following **Interface** settings in the T1/E1 main GUI
  - For **T1 Analyzer**, configure Port #1 and Port #2 with the following
    Framing = ESF, Loopback = No Loopback, Termination = Terminate, Clock = Internal, Cross Port = Normal
  - For **E1 Analyzer**, configure Port #1 and Port #2 with the following
    Framing = CCS, Loopback = No Loopback, Termination = Terminate, Clock = Internal, Cross Port = Normal
- Verify the **Sync and Alarm Status** between the ports are indicated in **Green** ✔ in **T1/E1 Alarms** pane. Click **Yellow Reset** button to reset the alarms.



- From T1/E1 Analyzer main window, invoke the **WCS Server: Special Applications > Windows Client Server (WCS) > WCS Server.**
- Configure WCS as follows -
  - Listen Port = 17080 (for T1 systems); 17090 (for E1 systems)
  - Messaging = Binary

- Version = 4

- Click on **Start GL Server** button.

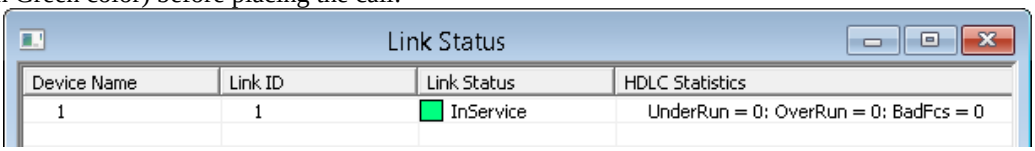
First MAPS™ GSMA (GUI) – (MSC)

- From T1/E1 Analyzer main window, from **Special Applications** menu > select **Protocol Emulation** > **MAPS™ GSM A Interface Emulator**
- This instance of MAPS™ is configured for **Call Reception**
- While invoking the first MAPS™ GSMA instance, verify the following in the **Protocol Selection** window -
  - **Protocol Standard = GsmA**
  - **Protocol Version = GSM900**
  - **Node = MSC.** Click **Ok**
- By default, Testbed Setup widow is displayed. Click  and select **Loopback_Sig-Card2_B-Card2** and check for the following parameter default values:
  - **MSC Point Code =** 2.2.2
  - **Adjacent DPC =** 1.1.1
  - **Signaling Port** = 2
  - **Signaling Timeslot** = 23 (for T1); 31 (for E1)
  - **BSC Point Code =** 1.1.1
  - **Circuit Group 1 - Port Number** = 2
- From MAPS GsmA main window, select **Configuration > Incoming Call Handler Configuration**.
  - Verify that the **MO.gls** script is loaded against the **LOCATION UPDATING REQUEST** and **CM SERVICE REQUEST** message. Close the window
- From MAPS GsmA main window, select **"Editor"** menu -> invoke **Profile Editor** window:
  - Click  and load **"MS_Profiles"** file, select **BSC01MS001** profile from the left pane. Set **Type of Call** to **Terminate MO Call**. Set **Service Type for MT Call** to **Speech Call**. Click  **Save** button.
  - In the same Profile Editor window, again click  and load **"TrafficProfile"** file. Scroll down the left pane and select **Card2TS01** profile. Set **Enable Traffic** to **AutoTraffic-File** and **Traffic Direction for AutoTraffic** to **Tx-Rx**. Click  **Save** button. Exit from the Profile Editor window.

Second MAPS™ GSMA (GUI) – (BSC)

- This instance of MAPS™ is configured for **Call Generation**
- From T1/E1 Analyzer main window, from **Special Applications** menu > select **Protocol Emulation** > **MAPS™ GSM A Interface Emulator**
- While invoking the second MAPS™ GSMA instance, verify the following in the Protocol Selection window -
  - Protocol Standard **= GsmA**
  - Protocol Version **= GSM900**
  - Node **= BSC.** Click **Ok**
- By default, Testbed Setup window is displayed. Click  and select **Loopback_Sig-Card1_B-Card1** and check for the following parameter default values:
  - BSC Point Code **= 1.1.1**
  - Adjacent DPC **= 2.2.2**
  - Signaling Port **= 1**
  - Signaling Timeslot = 23 (for T1); 31 (for E1)
  - MSC Point Code **= 2.2.2**
  - Circuit Group 1 - Port Number = **1**

- From MAPS GsmA main window, select **"Editor"** menu -> invoke **Profile Editor** window:
  - Click and load **"MS_Profiles"** file. From the left pane, select **BSC01MS001** profile. Set **CM Service Type** to **Mobile Originating Call Establishment**. Set **Location Update Type** to **Normal Location Updating**. Click **Save** button.
  - In the same Profile Editor window, again click and load **"TrafficProfile"** file. From the left pane, select **Card1TS01** profile. Set **Enable Traffic** to **AutoTraffic-File** and **Traffic Direction for AutoTraffic** to **Tx-Rx**. Click **Save** button. Exit from the Profile Editor window.
- **Start** the testbed on both MAPS™ instances.
- From MAPS™ SS7 main window, select **Reports** menu > invoke **Link Status** window. Verify that the **Link Status** is **UP** (indicated in Green color) before placing the call.



- On both the MAPS™ main window, click icon and open **Call Reception** window, observe that SLTM script is activated.
- In the MAPS™ GSMA (BSC) main window, select **Emulator > Call Generation** option
  - By default, you will observer multiple call instances loaded with **MO.gls** script and **BSC01MS0**** profiles respectively in the window.
- Select the instance loaded with **MO.gls** script and **BSC01MS001** profile. Click on the yellow Start button.
- Observe that the Location Update procedure is initiated and is followed by Mobile Originating procedure.
- In the MAPS™ GSMA (MSC), in **Call Reception** window**.** Observe that the calls are automatically received in the **Call Reception** window running the Rx (MO.gls) script.
- Wait for the call to terminate, and verify the **Message Sequence** flow at both generation and reception end.
- Select any message in the ladder diagram and observe the respective decode message on the right pane for the respective message.