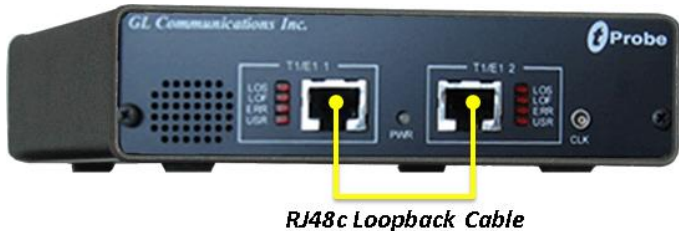


It is assumed that the T1/E1 Analyzer Hardware, Software and License installations are already performed referring to the purchased Hardware Installation Guide.

## MAPS™ MAP Application Verification

For functional verification, 2 instances of MAPS™ MAP application can be invoked on a single PC configured as source and destination nodes. The following steps explain MAPS™ MAP configuration on the same PC in loopback mode to simulate MAP protocol supporting procedures.

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

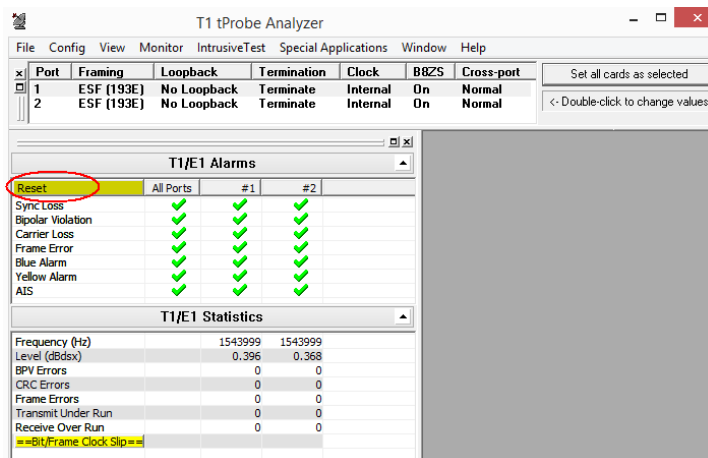


RJ48c Loopback Cable

- 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 Analyzers, configure Port #1 and Port #2 with the following Framing = D4 (or ESF), Loopback = No Loopback, Termination = Terminate, Clock = Internal, Cross Port = Normal
  - For E1 Analyzers, 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 GUI, invoke the **WCS Server: Special Applications > Windows Client Server (WCS) > WCS Server**.
- Configure WCS as follows -
  - Listen Port = 17090 (for E1 systems); 17080 (for T1 systems)


- Messaging = Binary
- Version = 4
- Click on **Start GL Server** button. Minimize the window.

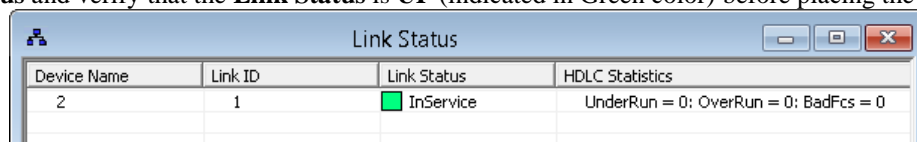
For the test setup, configure, two MAPS™ instances, one as **HLR** (Home Location Register), and the other MAPS™ MAP instance as **MSC** (Mobile Switching Center) node to generate supported procedure messages.

## First MAPS™ MAP (GUI) – (HLR)


- From T1/E1 Analyzer main GUI, invoke an instance of **MAPS™ MAP** application from **Special Applications > Protocol Emulation > MAPS™ MAP Emulator**.
- This MAPS™ instance is configured for **Call Reception**
- While invoking the MAPS™ MAP instance, verify the following in the **Protocol Selection** window -
  - Protocol Standard = MAP
  - Protocol Version = 3GPP
  - Node = HLR. Click **Ok**
- By default, **Testbed Setup** window is displayed. Click  and select **HLR\_MSC** configuration file and check for the settings as below:
  - T1/E1 Port Number = 2
  - Timeslot =23 (for T1 Systems); 31 (for E1 Systems)
  - HLR Subsystem Number = 6
  - **Node or Interface Type with SSN** is set to **MSC-8**
- From MAPS™ MAP main window, select **Configuration > Incoming Call Handler Configuration** from the main menu and verify that the **UpdateLocationRes\_HLR.gls** script is loaded against the **updateLocationArg** message. Exit from the window.

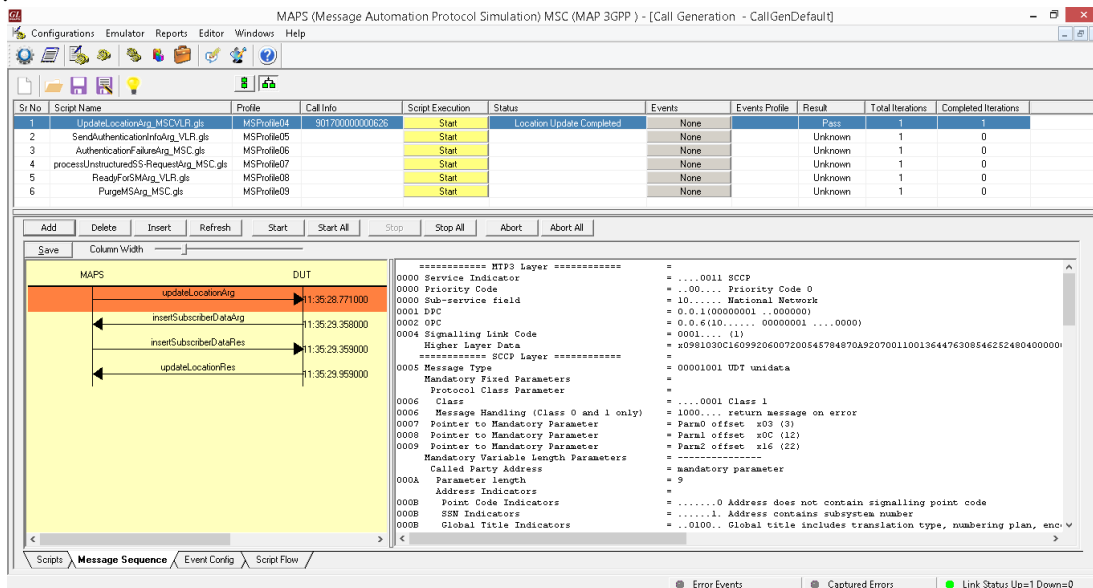
## Second MAPS™ MAP (GUI) – (MSC)

- From T1/E1 Analyzer main GUI, invoke another instance of **MAPS™ MAP** application, from **Special Applications > Protocol Emulation > MAPS™ MAP Emulator**.
- This instance of MAPS™ is configured for **Call Generation**
- While invoking the second MAPS™ MAP instance, verify the following in the **Protocol Selection** window -
  - Protocol Standard = MAP
  - Protocol Version = 3GPP
  - Node = MSC. Click **Ok**
- By default, **Testbed Setup** window is displayed. Click  and select **MSC\_HLR** configuration file and check for the settings as below:
  - **T1/E1 Port Number** = 1
  - **Timeslot** =23 (for T1 Systems); 31 (for E1 Systems)
  - MSC Subsystem Number = 8
  - **Node or Interface Type with SSN** is set to **HLR-6**
- **Start** testbed on both the MAPS™ instances
- **Note:** Once the test bed setup is started on both the instances of MAPS™ MAP (MSC and HLR). From the **Reports** menu -> select **Link Status** and verify that the **Link Status** is **UP** (indicated in Green color) before placing the call.



Device Name	Link ID	Link Status	HDLC Statistics
2	1	<span style="color: green;">■</span> InService	UnderRun = 0; OverRun = 0; BadFcs = 0

- On both the MAPS™ main window, select **Emulator** > invoke **Call Reception** window, observe the SLTM script is activated.
- From MAPS™ MAP (MSC) main window, select **Emulator** > **Call Generation** from main menu
  - By default, you will observe multiple call instances with scripts supporting the MAP procedures loaded. Select the call instance loaded with the **UpdateLocationArg\_MSCVLR.gls** script and **MSPProfile04** profile.
- Click **Start** yellow button in Script Execution column to initiate the procedure.
- In MAPS™ HLR main window, click  icon and open **Call Reception** window. Observe that the calls are automatically received running the Rx 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 in the right pane for the respective message.



- From the main MAPS™ MAP window on any of the instance, select **Report** menu -> invoke **Events** and observe the occurring call events in the log.

