

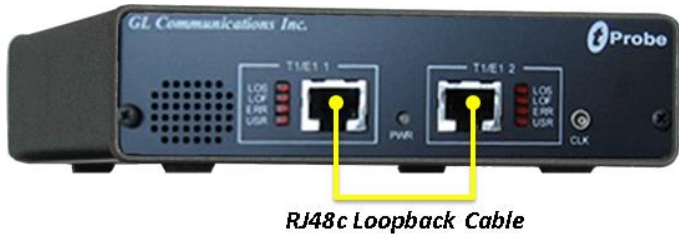
Note: MAPS™ IUP UK is supported on E1 systems.

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

**MAPS™ IUP Application Verification**

For functional verification of MAPS™ IUP application, two instances of MAPS™ IUP application are configured on the same PC. On the first instance, MAPS™ is configured as **Incoming Network** terminal, and the second MAPS™ instance is configured as **Outgoing Network** terminal generating IUP procedure messages.

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

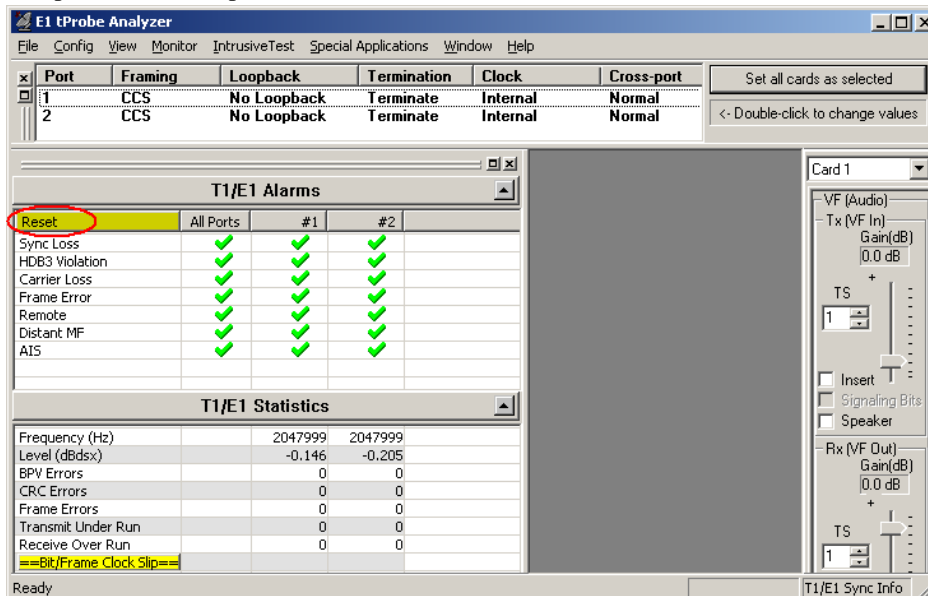


**RJ48c Loopback Cable**

- Click on the **E1 Analyzer** icon created on the desktop (or) from the installation directory, click on **UsbNGE1.exe** and launch 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 E1 main GUI
  - 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 E1 Analyzer main window, invoke the **WCS Server: Special Applications > Windows Client Server (WCS) > WCS Server**.
- Configure WCS as follows -
  - Listen Port = 17090 (for E1 systems)
  - Messaging = Binary
  - Version = 4
  - Click on **Start GL Server** button. Minimize the window.


### On the first MAPS™ IUP instance

- From E1 Analyzer main window, from **Special Applications > Protocol Emulation > MAPS™ IUP Emulator**
- This MAPS™ instance is configured for **Call Reception**
- By default, **Testbed Setup** window is displayed. Click  and select **Card2** configuration and check for the following parameter default values:
  - **Exchange Type** = Non Control
  - **CIC to Circuit Mapping** = Timeslot Based
  - **SSP Source Point Code** = 2.2.2
  - **Adjacent Destination Point Code** = 1.1.1
  - **Signaling Port** = 2
  - **Signaling Timeslot** = 31 (for E1)
  - **Destination Point Code** = 1.1.1
  - **Port Number** = 2
  - **Routing Destination Point Code** = 1.1.1
- From MAPS™ IUP main window, select **Configuration > Incoming Call Handler Configuration**. Make sure that the **IUP\_Call.gls** script is loaded against the **IUP Initial and Final Address Message (IFAM)** and **IUP Initial Address Message (IAM)** messages. Exit from the window.
- From MAPS™ IUP main window, select “**Editor**” menu -> invoke **Profile Editor** window:
  - Click  and load “**IUP\_Profiles**” file. Scroll down the left pane and select **Card2TS01** profile. Set **Card number** = 2, **Timeslot** = 1, **OPC** = 2.2.2, **DPC** = 1.1.1 parameter values. Set **Initiating Protocol** to IAM. Click  **Save** button.
  - In the same Profile Editor window, click  and load “**TrafficProfile**” file. Scroll down the left pane and select **Card2TS01** profile. Set **Enable Traffic** to **AutoTraffic-File** type and **Traffic Direction for AutoTraffic** to **Tx-Rx**. Click  **Save** button. Exit from the Profile Editor window.


### On the second MAPS™ IUP instance

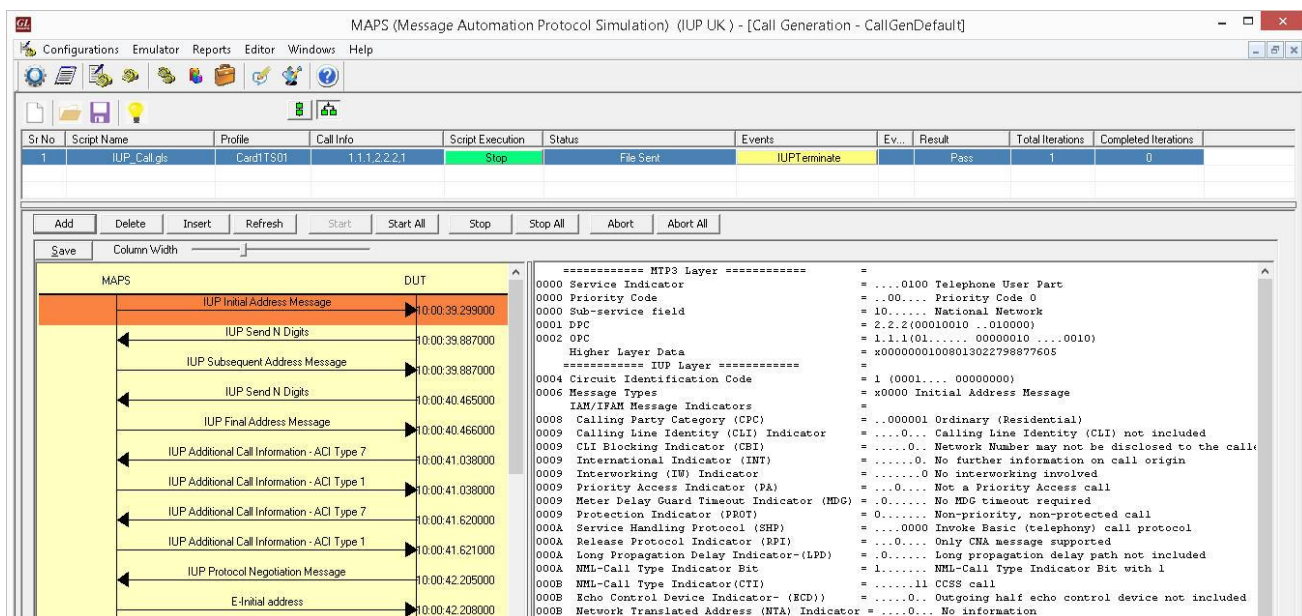
- From E1 Analyzer main window, from **Special Applications > Protocol Emulation > MAPS™ IUP Emulator**
- This MAPS™ instance is configured for **Call Generation**
- By default, **Testbed Setup** window is displayed. Click  and select **Card1** configuration and check for the following parameter default values:
  - **Exchange Type** = Control
  - **CIC to Circuit Mapping** = Timeslot Based
  - **SSP Source Point Code** = 1.1.1
  - **Adjacent Destination Point Code** = 2.2.2
  - **Signaling Port** = 1
  - **Signaling Timeslot** = 31 (for E1)
  - **Destination Point Code** = 2.2.2

- **Port Number = 1**
- **Routing Destination Point Code = 2.2.2**
- From MAPS™ IUP main window, select “**Editor**” menu -> invoke **Profile Editor** window:
  - Click  and load “**IUP\_Profiles**” file. From the left pane, select **Card1TS01** profile. Set **Card number = 1, Timeslot = 1, OPC = 1.1.1, DPC = 2.2.2** parameter values. Set **Initiating Protocol to IAM**. Click  **Save** button.
  - In the same Profile Editor window, click  and load “**TrafficProfile**” file. From the left pane, select **Card1TS01** profile. Set **Enable Traffic to AutoTraffic-File** type and **Traffic Direction for AutoTraffic to Tx-Rx**. Click  **Save** button. Exit from the Profile Editor window.
- **Start** the testbed on both the MAPS™ instances
- **Note:** Once the test bed setup is started on both the instances of MAPS™ IUP, from **Reports** menu > invoke **Link Status** window. 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™ IUP instances, click  icon and open **Call Reception** window. Observe that SLTM script is activated.
- In the MAPS™ second instance, select **Emulator > Call Generation** from main menu.
- By default, a call instance loaded with **IUP\_Call.gls** script and **Card1TS01** profile is displayed. Select the instance and click on the **Start** option to initiate the call generation.
- Return back to the MAPS™ first instance, in the **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 on the right pane for the respective message.



The screenshot shows the MAPS software interface. At the top, there's a menu bar with 'Configurations', 'Emulator', 'Reports', 'Editor', 'Windows', and 'Help'. Below it is a toolbar with various icons. A table displays the current call instance:

Sr No	Script Name	Profile	Call Info	Script Execution	Status	Events	Ev...	Result	Total Iterations	Completed Iterations
1	IUP_Call.gls	Card1TS01	1.1.1.2.2.2.1	Stop	File Sent	IUPTerminate		Pass	1	0

Below the table is a control bar with buttons: Add, Delete, Insert, Refresh, Start, Start All, Stop, Stop All, Abort, Abort All. The main area is split into two panes. The left pane shows a ladder diagram with messages between MAPS and DUT:

- IUP Initial Address Message (10:00:39.299000)
- IUP Send N Digits (10:00:39.887000)
- IUP Subsequent Address Message (10:00:39.887000)
- IUP Send N Digits (10:00:40.465000)
- IUP Final Address Message (10:00:40.466000)
- IUP Additional Call Information - ACI Type 7 (10:00:41.038000)
- IUP Additional Call Information - ACI Type 1 (10:00:41.038000)
- IUP Additional Call Information - ACI Type 7 (10:00:41.620000)
- IUP Additional Call Information - ACI Type 1 (10:00:41.621000)
- IUP Protocol Negotiation Message (10:00:42.205000)
- E-Initial address (10:00:42.208000)

The right pane shows the decoded message for the selected 'IUP Initial Address Message' (0000):

```

===== MTP3 Layer =====
0000 Service Indicator = .....0100 Telephone User Part
0000 Priority Code = .....0000 Priority Code 0
0000 Sub-service field = 10..... National Network
0001 DPC = 2.2.2(00010010 ..010000)
0002 OPC = 1.1.1(01..... 00000010 ....0010)
Higher Layer Data = x00000001008013022798877605
===== IUP Layer =====
0004 Circuit Identification Code = 1 (0001.... 00000000)
0006 Message Types = x0000 Initial Address Message
IAM/IFAM Message Indicators
0008 Calling Party Category (CPC) = ..000001 Ordinary (Residential)
0009 Calling Line Identity (CLI) Indicator = .....0... Calling Line Identity (CLI) not included
0009 CLI Blocking Indicator (CBI) = .....0... Network Number may not be disclosed to the call
0009 Interworking Indicator (IWI) = .....0... No further information on call origin
0009 Interworking (IW) Indicator = .....0... No interworking involved
0009 Priority Access Indicator (PA) = .....0... Not a Priority Access call
0009 Meter Delay Guard Timeout Indicator (MDG) = ..0..... No MDG timeout required
0009 Protection Indicator (PROT) = 0..... Non-priority, non-protected call
000A Service Handling Protocol (SHP) = .....0000 Invoke Basic (telephony) call protocol
000A Release Protocol Indicator (RPI) = .....0... Only CMA message supported
000A Long Propagation Delay Indicator-(LPD) = .....0... Long propagation delay path not included
000A NML-Call Type Indicator Bit = 1..... NML-Call Type Indicator Bit with 1
000B NML-Call Type Indicator (CTI) = .....11 CCSS call
000B Echo Control Device Indicator- (ECD) = .....0... Outgoing half echo control device not included
000B Network Translated Address (NTA) Indicator = .....0... No information
  
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