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

> 📝 **Note:**
> After upgrading OS to Windows® 10, if the software shows error while invoking the T1 E1 application then, re-install the T1 E1 Analyzer.

MAPS™ ISDN Application Verification

For functional verification, 2 instances of **MAPS™ ISDN** application is configured on a single PC, as Subscriber (User) and Switch (Network) nodes. The following steps explain MAPS™ ISDN configuration on the same PC in loopback mode to simulate ISDN call control scenario.

On the first instance, MAPS™ is configured as **Switch**, and on the second instance, MAPS™ is configured as **Subscriber** generating ISDN call control messages.

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


RJ48c Loopback Cable

> 📝 **Note:**
> In this example, we have used tProbe T1 E1 analyzer. User can apply these steps on any T1 E1 hardware platforms such as Portable USB T1 E1 Analyzer, Dual Express PCIe card, Octal/Quad T1 E1 Analyzer, and Universal PCI T1 E1 Analyzer.

- Click on the **T1/E1 Analyzer** icon created on the desktop and launch T1/E1 Analyzer application.
- 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
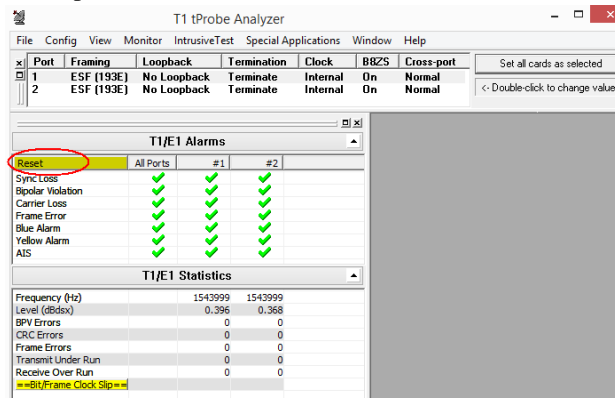
- Verify the **Sync and Alarm Status** between the ports are indicated in **Green** ✔ in **T1/E1 Alarms** pane. Click **Reset** button to reset the alarms.

- From T1/E1 Analyzer main window, invoke the **WCS Server** from **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. Minimize the window.

Configuring MAPS™ ISDN as Switch

- From T1/E1 Analyzer main window, select **Special Applications → Protocol Emulation → MAPS™ ISDN**
- Configure the following in the **Protocol Selection** window -
  - ➢ Protocol Standard = **ISDN**
  - ➢ Protocol Version = **ITU**
  - ➢ Node = **Switch.**
  - ➢ Click **Ok**

- This instance of MAPS™ is configured for **Call Reception**
- By default, **Testbed Setup** window is displayed. Click 📁 and select '**1 Switch_Card2'**, check for the following default parameter values:
  - ➢ Channel Mapping = **Timeslot Based**
  - ➢ T1/E1 Port Number = **2**
  - ➢ Signaling Timeslot = **16**
  - ➢ Signaling Subchannel = **1..8**
  - ➢ End User Configuration = **Switch_Profiles.xml**

- On the MAPS™ ISDN main window, select **Configuration → Incoming Call Handler Configuration**. Verify that the **Recvcall.gls** script is loaded against the **SETUP** message. Now, Close the window
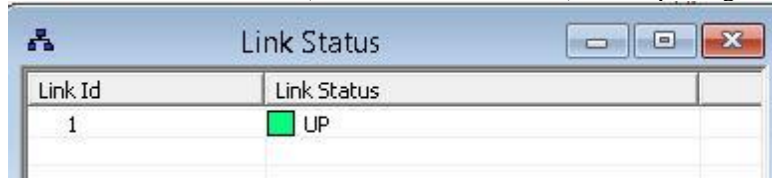
> **Note:**
>
> If the script is not loaded properly, then, in the **Incoming Call Handler Configuration**, click on Load Configuration 📁 icon and load **Master Configuration**.

Configuring MAPS™ ISDN as Subscriber

- From T1 E1 Analyzer main window, from **Special Applications → Protocol Emulation → MAPS™ ISDN**
- Configure the following in the Protocol Selection window -
  - ➢ Protocol Standard = **ISDN**
  - ➢ Protocol Version = **ITU**
  - ➢ Node = **Subscriber.**
  - ➢ Click **Ok**

- This instance of MAPS™ is configured for **Call Generation**

- By default, **Testbed Setup** window is displayed. Click 📁 and select '**1 Subscriber_Card1'** and check for the configuration settings as below:
  - ➢ Channel Mapping = **Timeslot Based**
  - ➢ T1/E1 Port Number = **1**
  - ➢ Signaling Timeslot = **16**
  - ➢ Signaling Subchannel = **1..8**
  - ➢ End User Configuration = **Subscriber_Profiles.xml**

- Start the test bed setup on both the MAPS™ instances

- Once the test bed setup is started on both the instances of MAPS™ ISDN (Switch and Subscriber), select **Reports → Link Status** window. Ensure that the **Link Status** is **UP** (indicated in Green LED) before placing the call.

Link Id	Link Status
1	🟩 UP

- In MAPS™ ISDN (Subscriber) main window, click 📑 **Call Generation** icon from the toolbar
  - ➢ By default, multiple call profiles are loaded with **Placecall.gls** script and **Card1TS**** profiles.

📋 **Note:**

If the script/profile is not loaded properly, then, in the **Call Generation** window, click on Load Configuration 📁 icon and load **Default** configuration.

  - ➢ Now, select the pre-configured call instance and click on **Start** to start placing the ISDN calls.

- Now, go to MAPS™ ISDN Switch, from the toolbar, click 🐝 **Call Reception** icon. Observe that the calls are automatically received in the **Call Reception** window with **Recvcall.gls** script.

- Wait for the calls to terminate and verify the **Message Decode** and **Message Sequence** at both **Generation** and **Reception** end.
- Select any message in the ladder diagram and observe the decode message on the right pane.