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USER MANUAL
GS81 USB MODEM

San Telequip Pvt. Ltd.
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www.santelequip.com

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1 INTRODUCTION

GS81 USB modem is a multi-functional, ready to use, rugged unit that can be embedded or plugged into any application. The modem can be controlled and customized to various levels by using the standard AT commands. The modem is fully type-approved, it can speed up the operational time with full range of Voice, Data, Fax and Short Messages (Point to Point and Cell Broadcast). The modem also supports LTE (Up to Class 4) for spontaneous data transfer**.**

2 FEATURES

Quad Band
(For India only)

1. LTE FDD B1/B3/B5/B8
2. LTE TDD B38/B39/B40/B41
3. WCDMA: B1/B8
4. D-SCDMA: B34/B39
5. DMA: BC0
6. GSM B3/B8

1. Output power 23dBm±2dB for LTE-TDD B38/B39/B40/B41
2. Control via 3GPP TS 27.007, 27.005 and Quectel enhanced AT commands
3. Interface- USB cable A to MINI B type.
4. Coding Scheme: CS1 to CS4
5. CSD up to 14.4 kbps(Non-transparent)
6. Mobile Originated (MO) and Mobile Terminated (MT),Cell Broadcast(CB),Text and PDU mode.
7. Supports Internet service protocols TCP/UDP/FTP/HTTP/MMS
8. Supports Packet Switched Broadcast Control Channel(PBCCH)
9. Supports PAP protocol and USSD
10. Supports auto-bauding for serial port from 4800 bps to 115200 bps.
11. LED Indication for Power ON, Network status, VBUS (Usb power)
12. Dimensions: 93 x 78 x 33 mm (excluding connectors)
13. Weight: 125 grams
14. Housing: Metallic Enclosure

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3 INSTALLING THE MODEM

To install the modem, plug the device on the provided SMPS Adapter.

Inserting/ Removing the SIM Card

Note: Keep modem power off while inserting SIM.
To insert or remove the SIM Card, it is necessary to press the yellow SIM holder ejector button with sharp edged object like a pen or a needle. When this is done the SIM holder comes out a little, then pull it out and insert or remove the SIM Card. Place the SIM card properly as per the direction of the installation. It is very important that the SIM is placed in the right direction for its proper working condition.


Yellow SIM holder
Ejector button
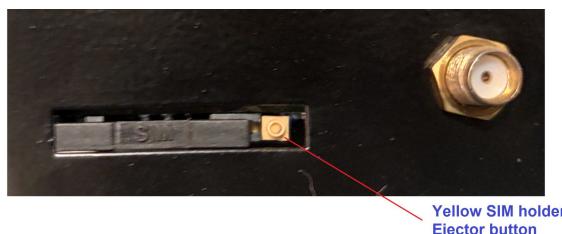
Connecting External Antenna

Connect 4G USB modem to the external SMA antenna male end.

Antenna
Connector

Antenna

.
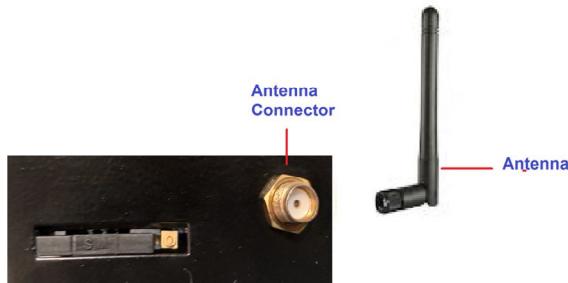
Power Supply

Screw type connector with 9-40V DC, 2A supply.

V+   V-   E
9 - 40V DC Power Input

4

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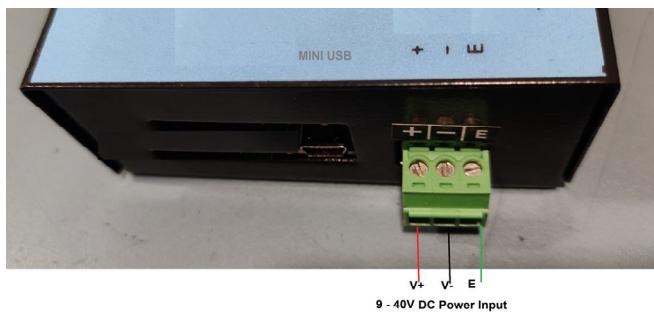
4 PACKAGE CONTENTS

Check your package to make certain it contains the following items:
1) GS81 USB modem device x 1
2) SMA antenna (Rubber) x 1
3) USB cable A to Mini B type x 1
4) DIN RAIL mounting kit x 1
5) 3 pin connector for power supply x 1

5 MODEM CONNECTORS TO EXTERNAL DEVICES

Connector	Function
SMA	RF antenna connector
MINI USB Connector	USB cable A to MINI B type
Adaptor Socket	Power supply connector
SIM card holder	SIM card

6 LED INDICATIONS

6.1 Power ON
LED will continuously glow after device gets power ON.

6.2 VBUS (USB power)
LED will glow after connecting device to PC using USB cable.

6.3 Network status/GPRS connectivity

| Action changes	Network status
Flicker slowly (200ms ON and 1800ms off)	Network searching
Flicker slowly (1800ms ON and 200ms off)	Connected to network (Idle)

7 USB DRIVER INSTALLATION PROCESS

For USB serial driver installation setup file go to below link.
*http://santelequip.com/download/INTERFACE%20CONVERTER/SC11%20USB%20to%20Serial/DriverSC11UK4I.rar*

Open extracted folder, then double click on "setup", then click on "Open" button.

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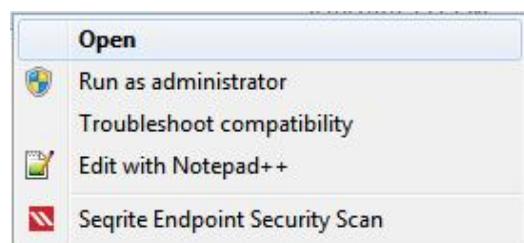
## i) Click on "Next" button.

ii) Click on "Next" button.

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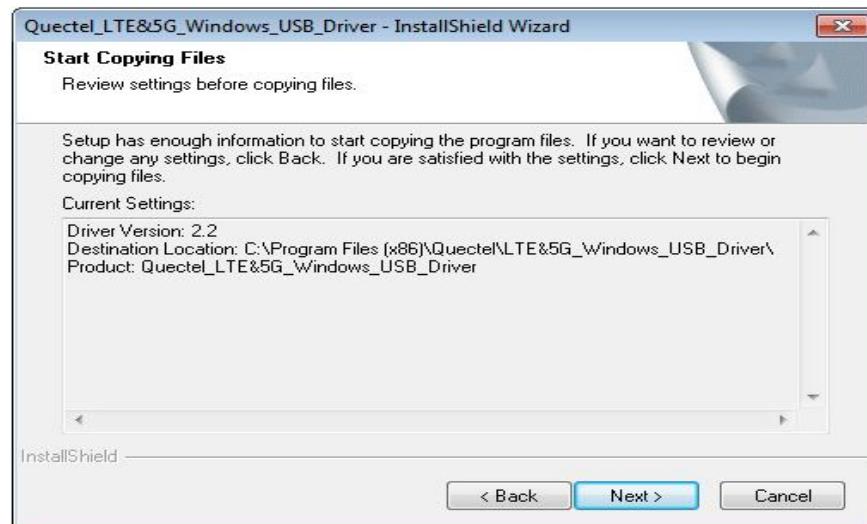
iii) Click on "Finish" button.
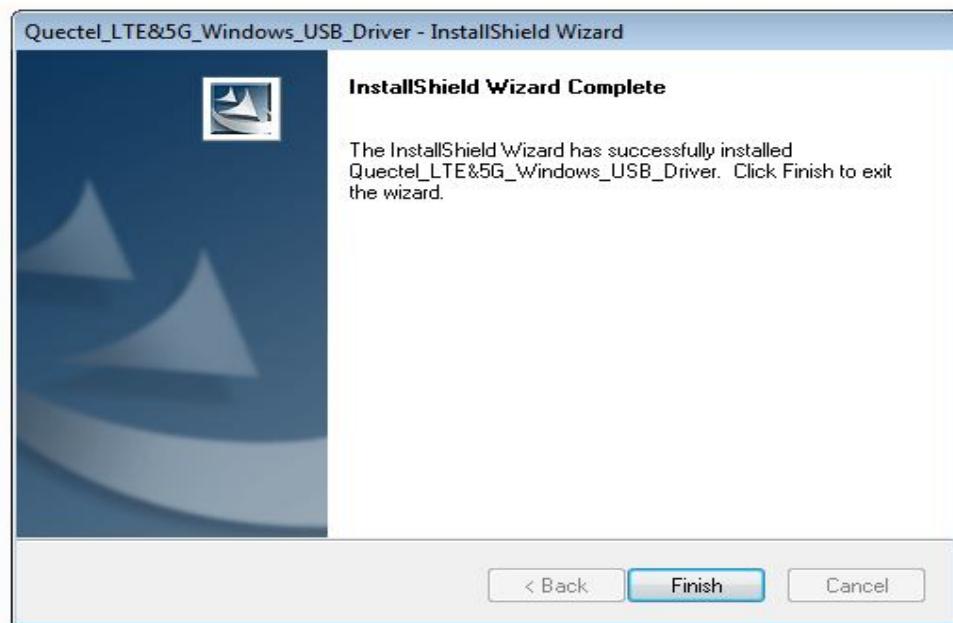
8 CONNECTION DIAGRAM

USB connection between modem and PLC/SCADA/serial device.
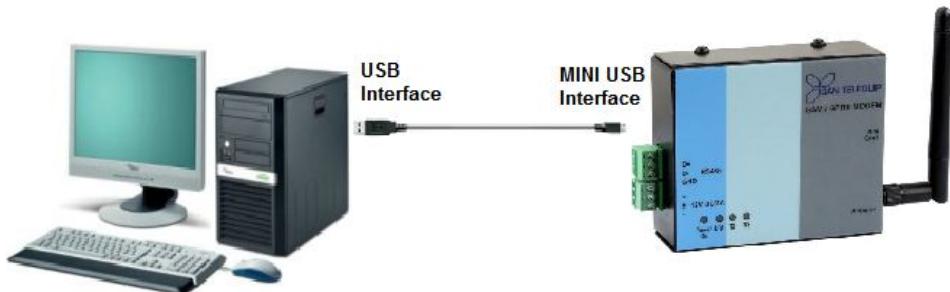
POWER SUPPLY CONNECTOR DETAILS

PIN no.	PIN details
1	+Terminal of 24V DC IN
2	-Terminal of 24V DC IN
3	GND

9 SERIAL TERMINAL UTILITY-DOCKLIGHT INSTALLATION

1) Download **Docklight** software from below link.

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http://santelequip.com/download/UTILITY%20SOFT/Docklight.rar

2) Extract **.rar** file and follow below procedure to install Docklight software.
i) Open extracted docklight folder.
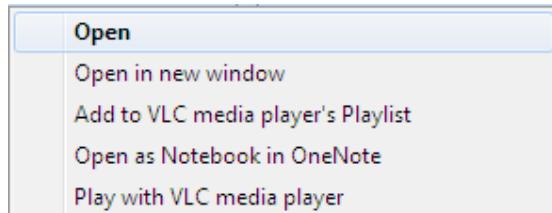
ii) Click on "OPEN" button.

iii) Click on "OPEN" button

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Connecting. Converting. Leading !
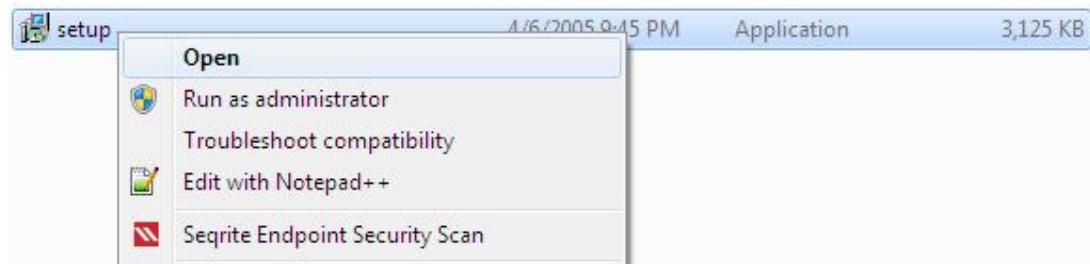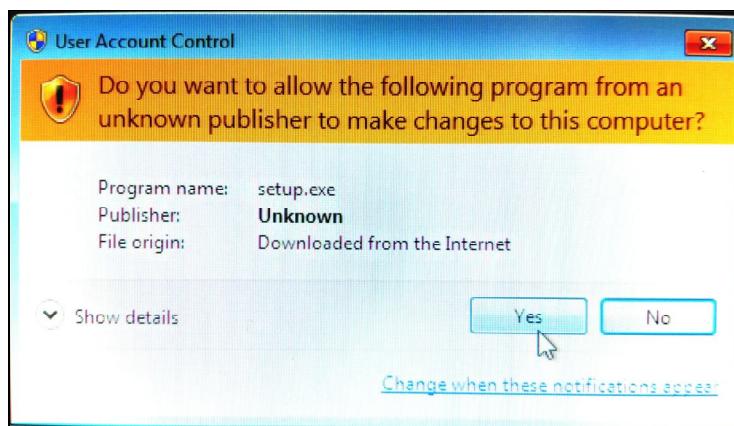
iv) Click on "NEXT" button.

v) Click on "NEXT" button.

vi) Click on "NEXT" button.

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Connecting. Converting. Leading !
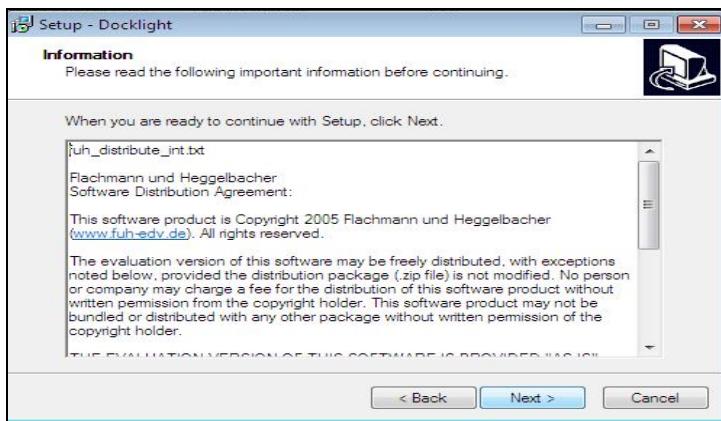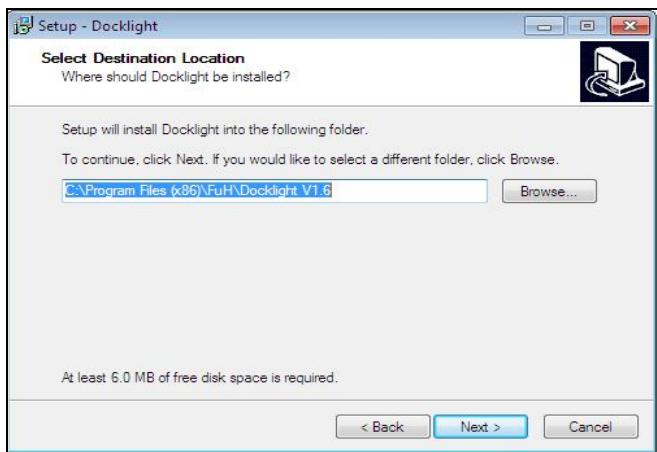
vii) Click on "NEXT" button.

viii) Click on "INSTALL" button.

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Connecting. Converting. Leading !
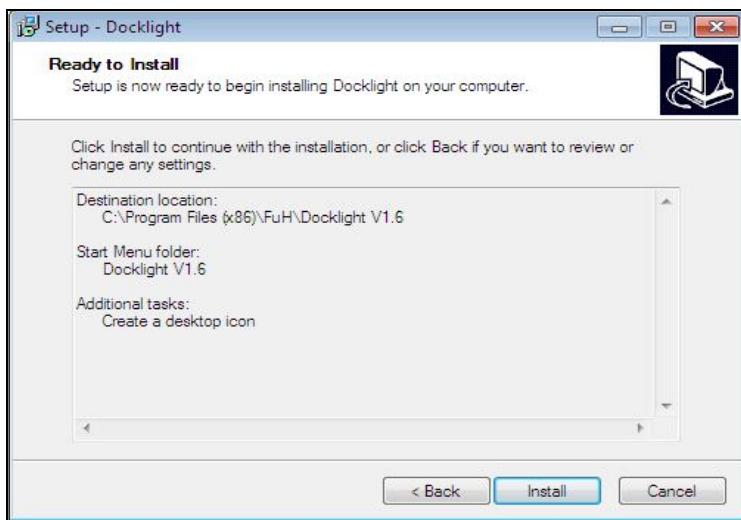
ix) Click on "FINISH" button.

10 MODEM BASIC OPERATION

1) Download docklight log file of **GS81 USB** from following below link.
http://santelequip.com/download/INTERFACE%20CONVERTER/SC11%20USB%20to%20Serial/DriverSC11UK4I.rar
2) First insert SIM card into SIM card slot of GS81 USB modem.
3) After SIM card inserting, connect GS81 USB modem device to the PC using USB cable.
4) At last Power ON device.

1) DEVICE CONFIGURATION

i) GO TO START >> DEVICE MANAGER >> COM PORTS >>

Check for **Quectel USB AT Port COM** number and enter same in **Docklight** for start communication in step 3.

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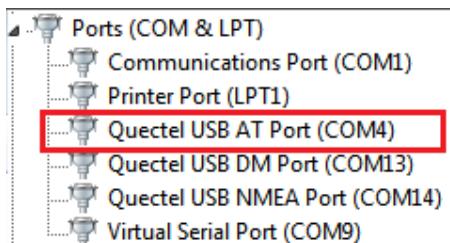
**ii) Open the Docklight log file GS81 USB Click on "OPEN" button.**
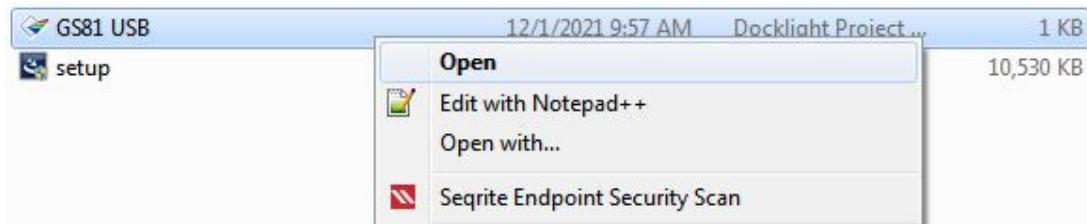
iii) Click on "COM" in the right corner Project setting dialogue box will show in docklight.
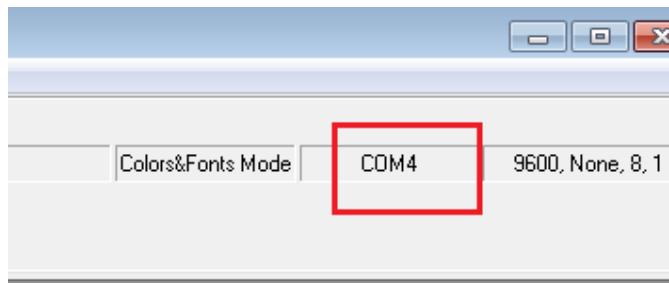
iv) Setting up COM Port and Parameters

Set COM port number, baud rate,parity,data bits,stop bits then click on **"OK"** button.

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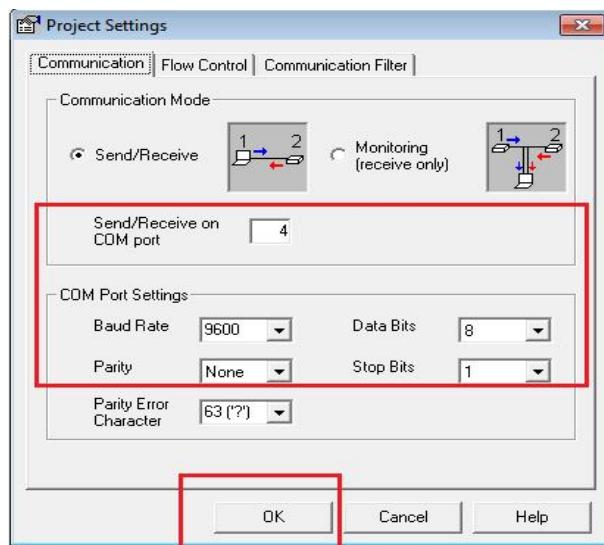
v) To start communication click on Keyboard Console On.
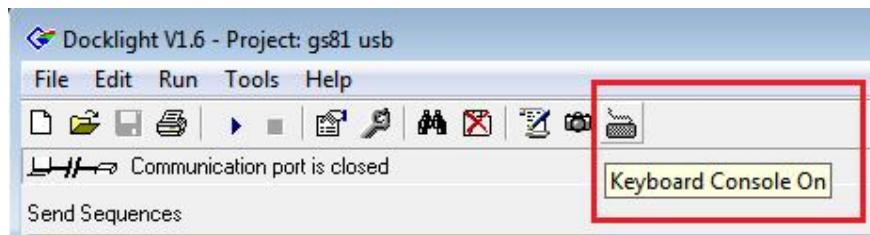
2 Testing of basic AT commands

Follow following sequence of AT commands.
NOTE: FOLLOW FOLLOWING SEQUENCE OF AT COMMANDS.
Send first command You should get response as **"OK"**. Means modem is connected properly.

i) Click on arrow button front of the respective command to send AT command.
Module should send "OK" response.
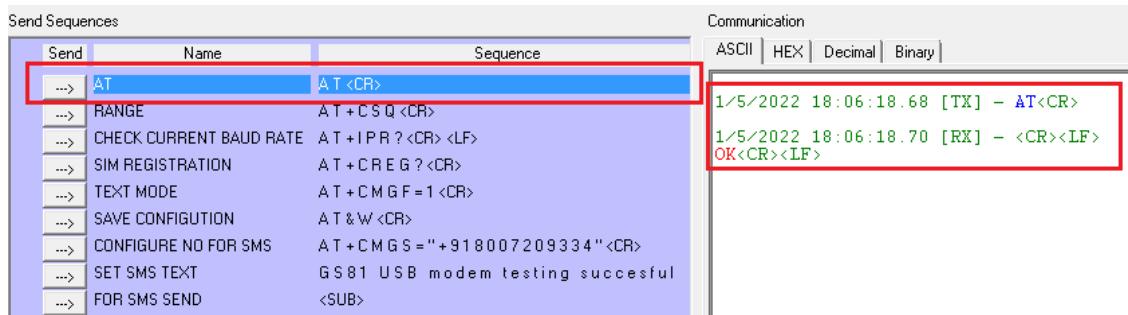
ii) Click on arrow button front of the respective command to verify range strength.

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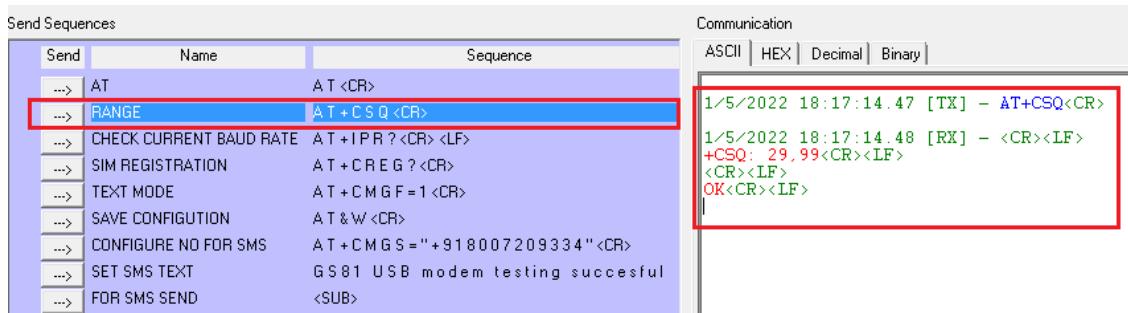
iii) Click on arrow button front of the respective command to check baudrate.
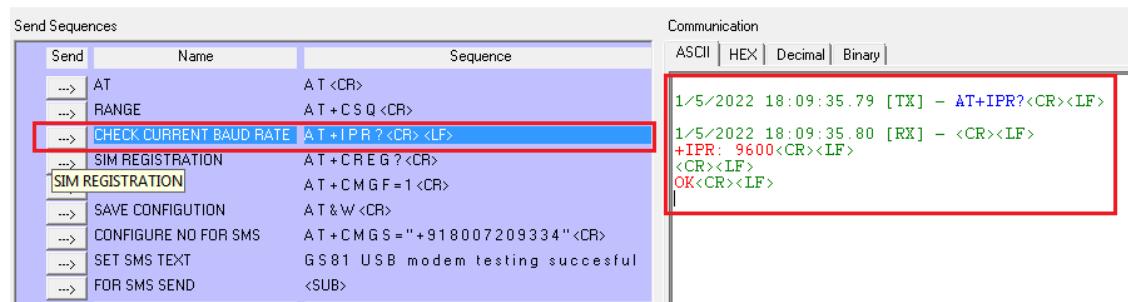
iv) Click on arrow button front of the respective command to check SIM registration.
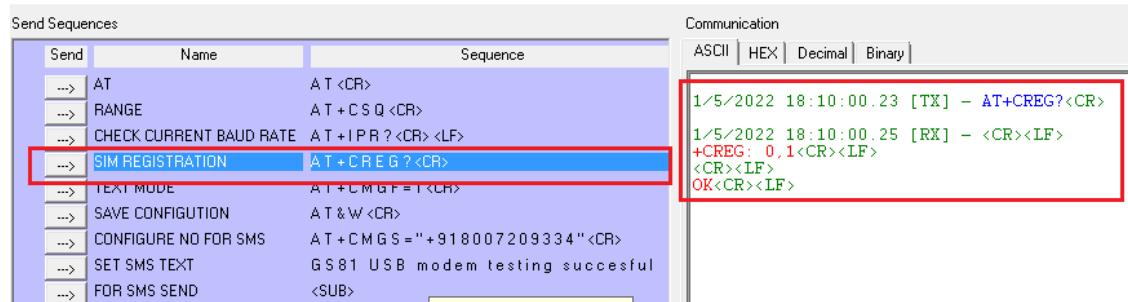
Response and its meaning for SIM registration command ("AT+CREG?"):
1. +CREG: 0,0 = SIM not registered.
   If above response comes,then power off modem and reinsert SIM.
2. +CREG: 0,1 = SIM Registered successfully.
3. +CREG: 0,2 = SIM not registered, but modem searching a new operator to register.
   If above response comes,then power off modem and reinsert SIM.
4. +CREG: 0,5 = Registered in roaming.

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v) Click on arrow button front of the respective command to set text mode.

vi) Click on arrow button front of the respective command to save above configuration.

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vii) Double click on this command and enter your contact number on which you want to recive SMS.
Click on arrow button front of the respective command to set a contact number.
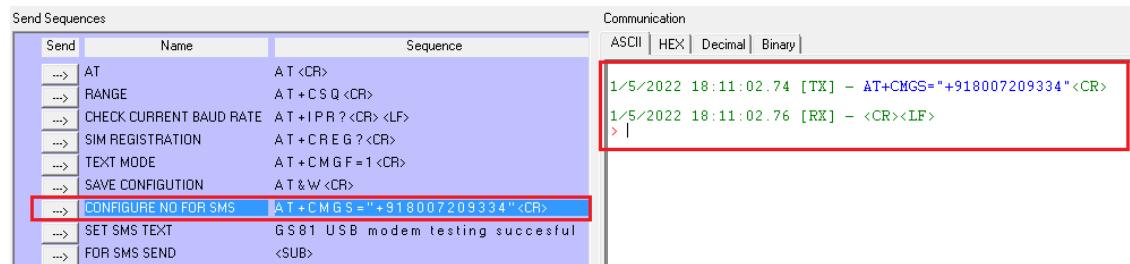
viii) Double click on this command for edit msg text words.
Click on arrow button front of the respective command to send SMS text body.

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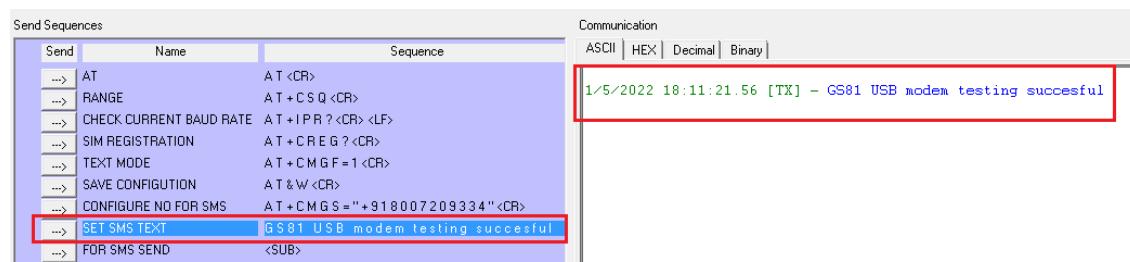
ix) Enter "1A" in hex in this command
Click on arrow button front of the respective command to send SMS
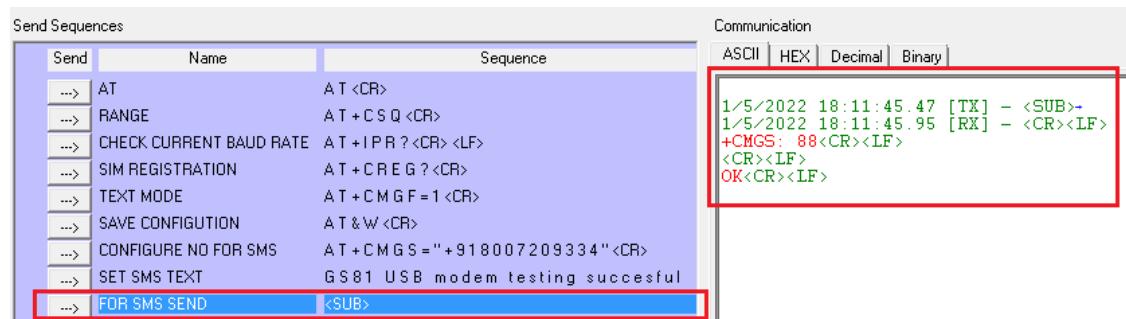
After sending last command SMS will be received on configured number.

11.GPRS INTERNET ACCESS

Given below is the procedure for connecting GSM modem to a PC and establishing a GPRS connection to the internet through standard **"Dial-up-networking"**

Double click the **"Phone and Modems Options"** in **"Control Panel"**.
Double click the **"Phone and Modems Options"** icon.
Select the **"Modems"** tab.
Click the **"Add…"** button at the bottom of the menu

Make sure the **"Don't detect my modem; I will select it from a list."** Is selected.
Your next screen will ask you which modem you have, Make sure **"Standard 9600 bps Modem"** is selected.

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The next screen will ask you which COM port your Modem is connected to.
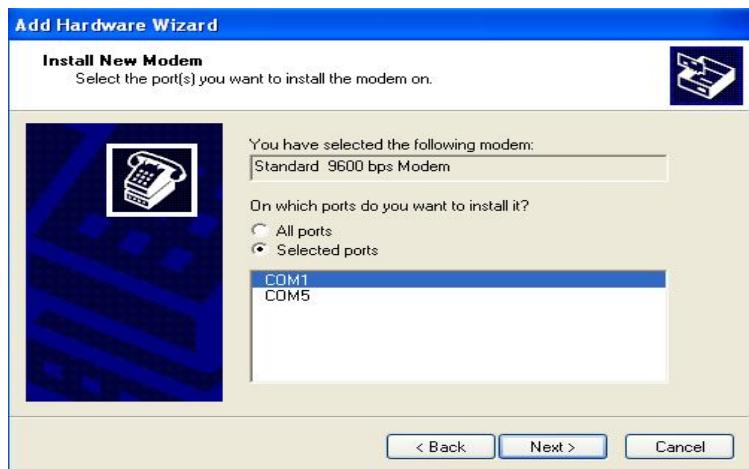
Select COM port to which modem is connected as shown above and press **Next>**

You will then be greeted with a message saying **"Your modem has been set up successfully".**
Press **"Finish"**
Select your Modem from the list in your **"Phone and Modems Options"** and click the **"Properties"** button.
A new window will appear as shown below.

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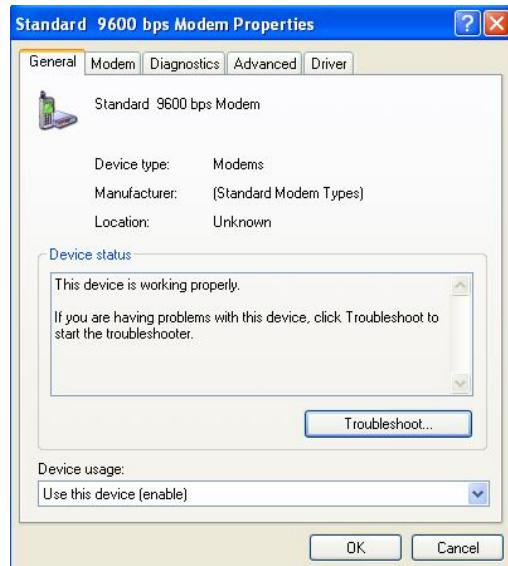
You can choose **"Diagnostics"** to test your modem to ensure you have selected appropriate COM port.

Click on **"Advanced"** Tab and enter the setting as shown below
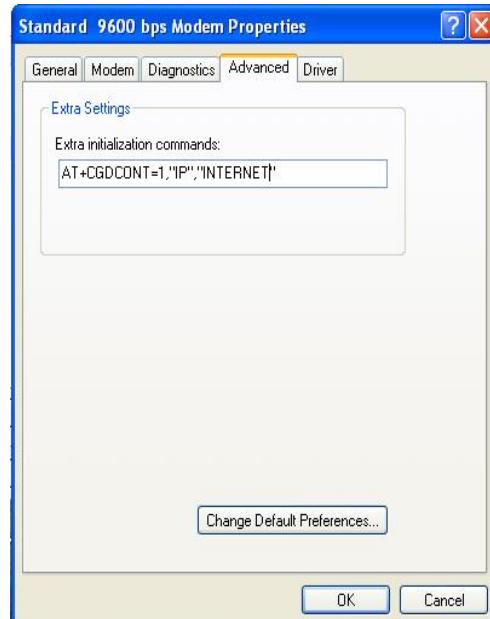
Please note that you have to obtain APN(Access Point name) from your cell phone provider to replace "INTERNET" value in above settings.

You Can then establish a Dial up networking connection as following-
  1. Double click **"My Network places"** icon.

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2. Select **"View My Network Connections"**
3. Select **"Add a new Network connection"**

You have to dial number as **"*99#".**

Select Properties in above box.
Select appropriate modem and press Dial.
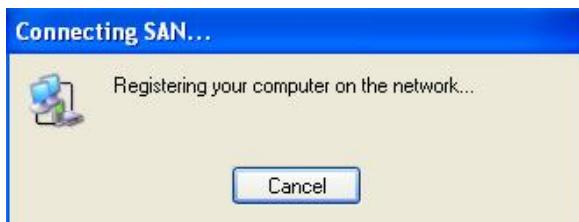
After successful configuration Modem gets connected to GPRS and following message get displayed

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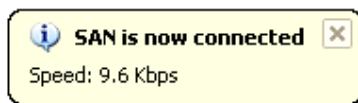
12 TROUBLESHOOTING

Q) If The modem does not answer through the serial link
A) Check Power input of the modem
B) Check for communication port is properly configured.
The factory setting for the baud rate is 9600 bps.
C) Close any other application running on the port that you are using for modem.