Drill & Drop Probe Compact Trouble Shooting

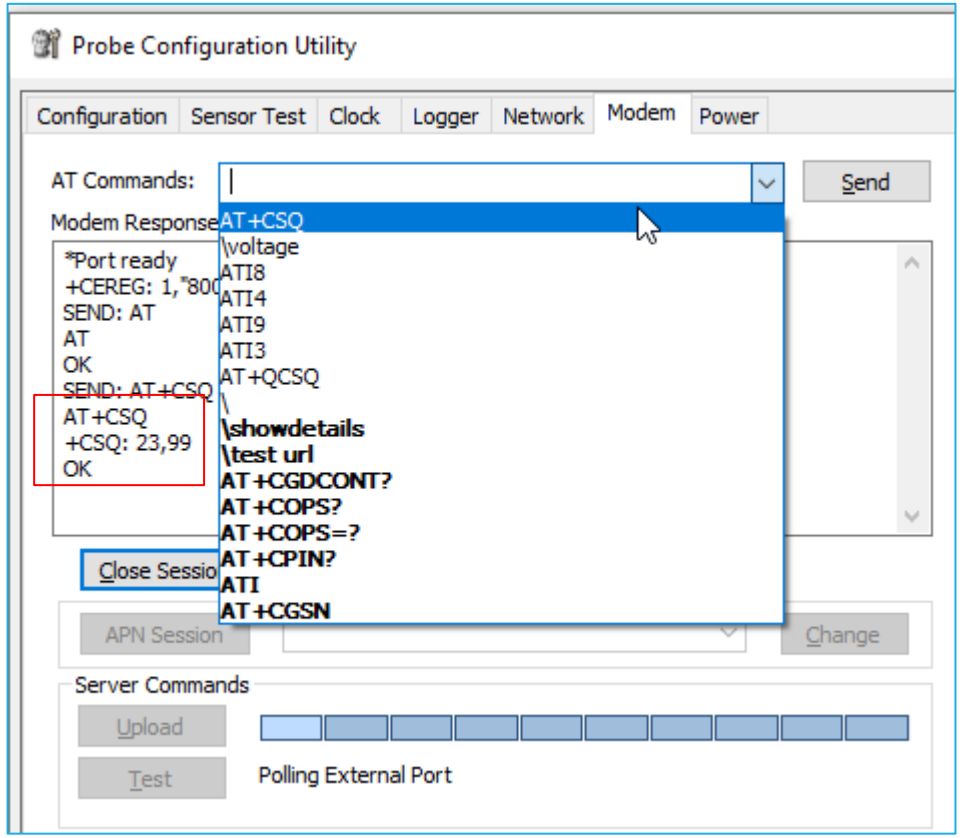
Sentek

Potential Problems & Solutions Overview

1. Cable chewing by animals – page 3
2. Lightning strike - Replace unit
3. Canopy height interference with antenna signal- page 4
4. Sim card account expired
5. Battery Life Investigate battery life – page 7
6. Cannot connect to probe- No power to probe – page 11
7. Battery status right now – page 7
8. Modem not lighting up – page 22
9. Modem not uploading – page 21
10. Telecom communication problem
11. Physical damage to Compact - Replace unit
12. Water intrusion into Compact - Replace unit

1. Cable chewing by animals

2. Canopy height interference with antenna signal



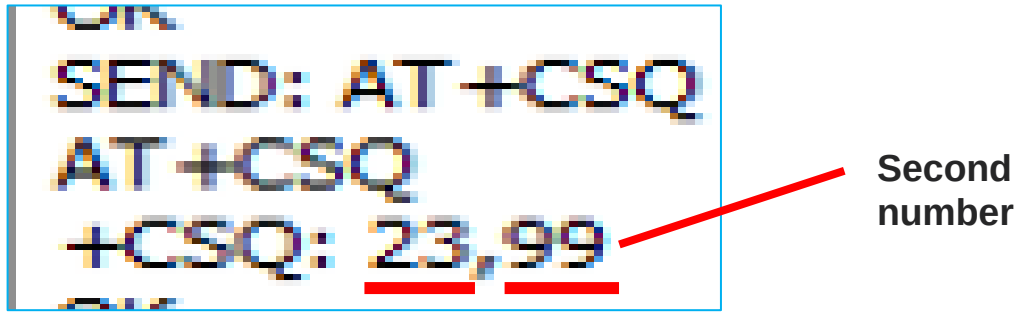
The signal level may differ depending upon the modem model .

For instance For NTC- 3000 AT command is AT +CSQ

And for a NTC-100 modem is AT +QCSQ

You can run AT command At +CSQ for signal test .

A result of 99 indicates no signal, anything else over 14 is good. This number can vary considerably, and two or three readings should be taken to get a good indication. Consistent results of 99, or below 10 may indicate antenna problems or other connection issues. The second number can generally be ignored.



3. For better connectivity

Internal Antenna

External Antenna

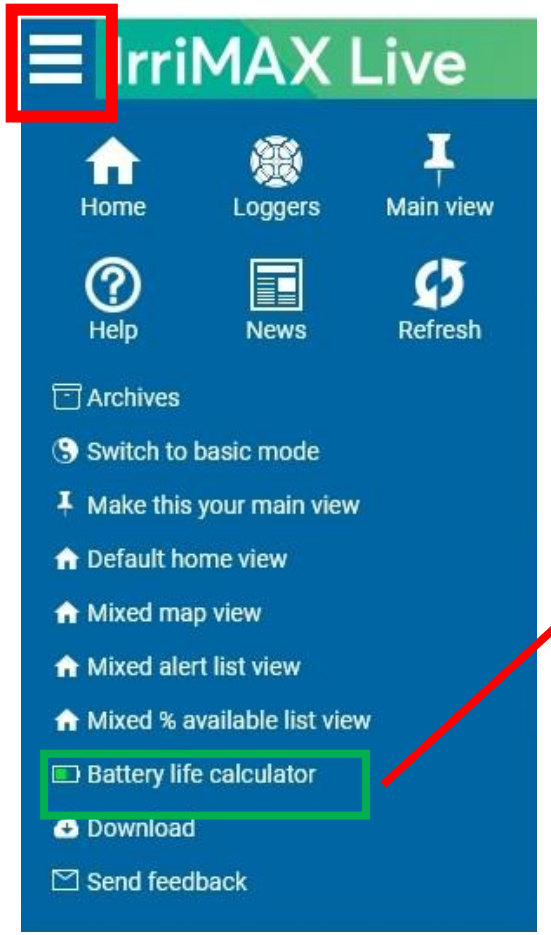
High Gain Antenna

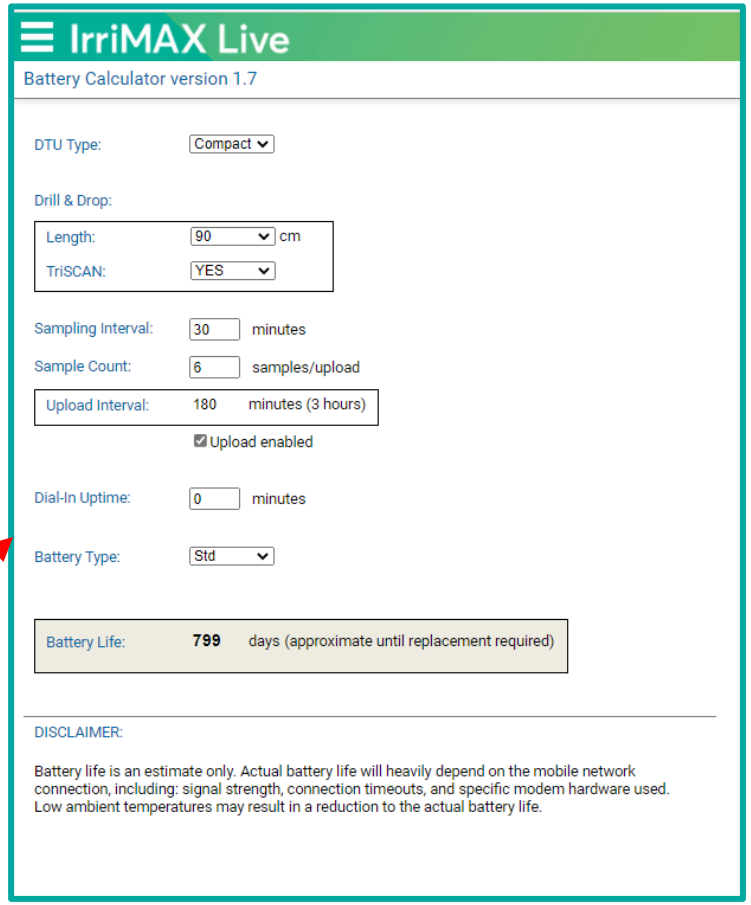
To Check Batteries Life

1. What you should expect from battery life?

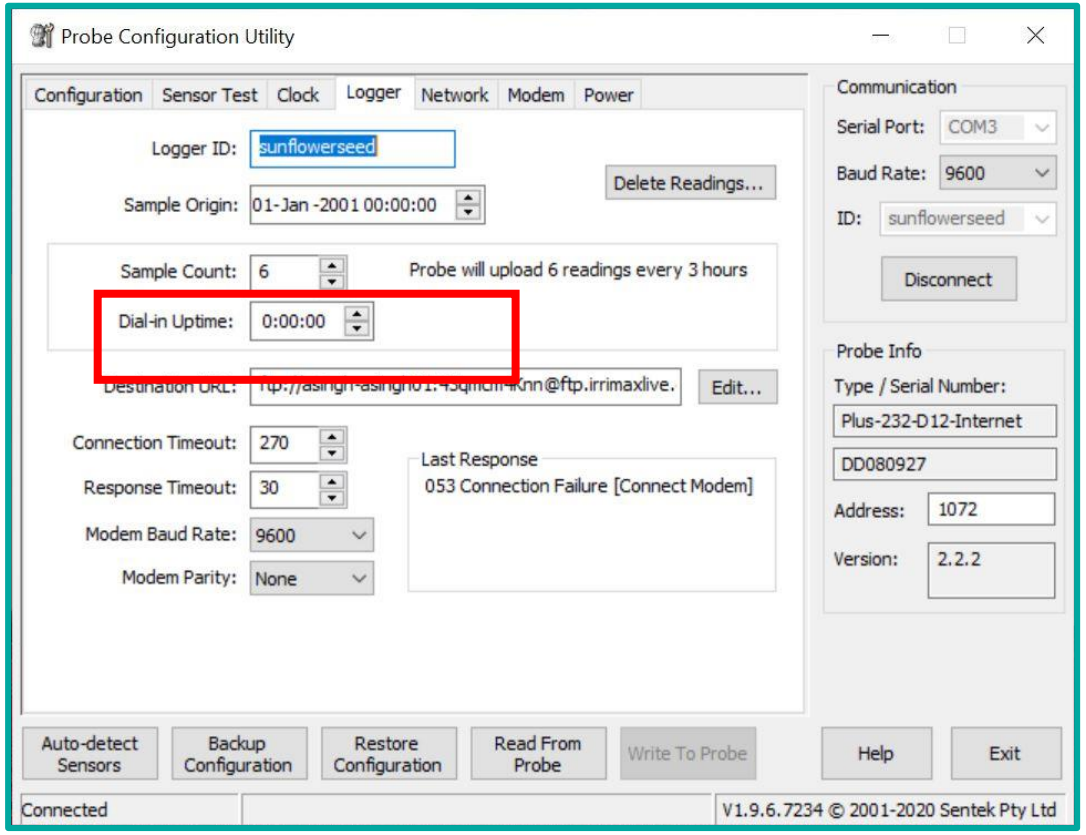
You can view the **Battery life calculator** in the IrriMAX Live account.

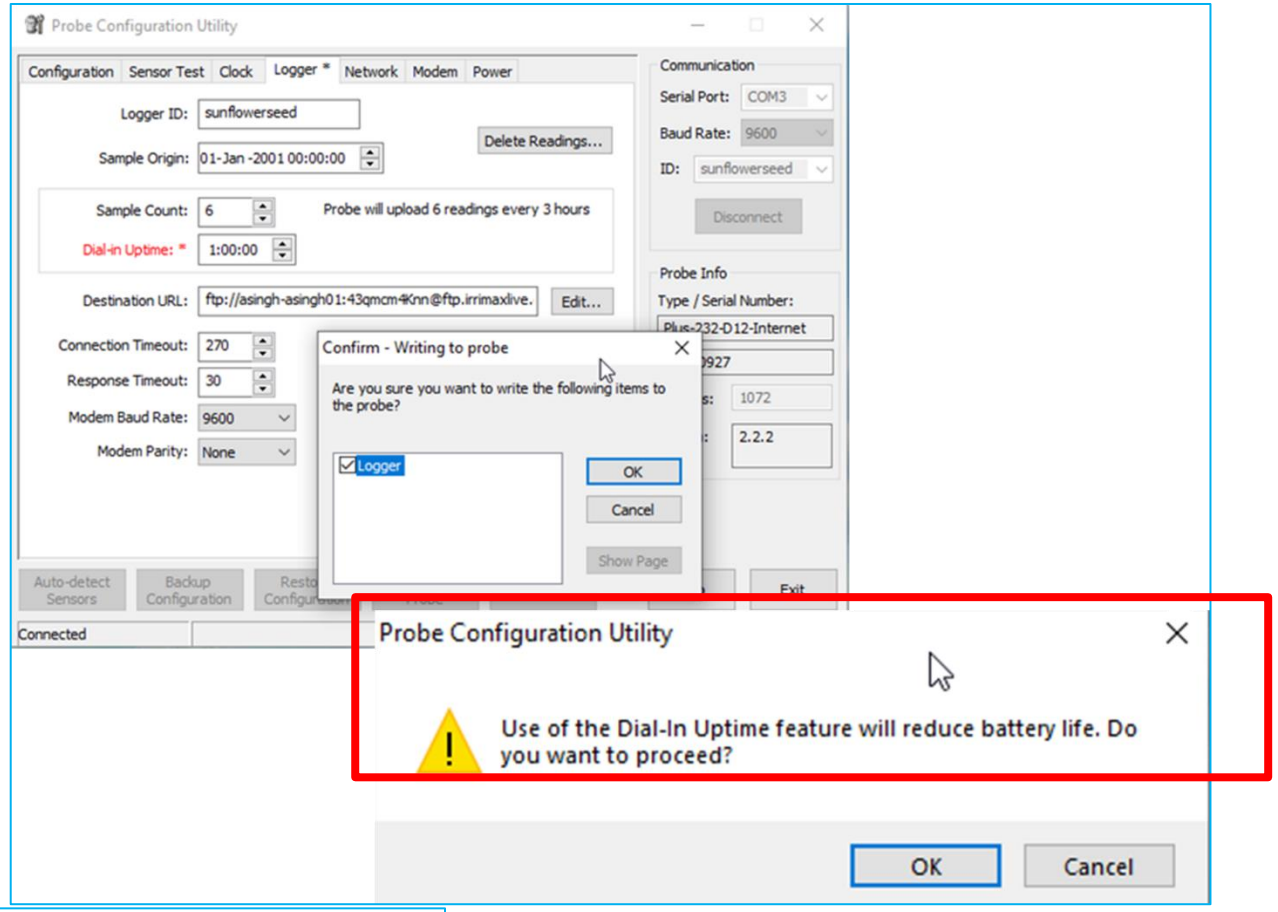
- Login to your IrriMAX Live account.
- Click the **main menu**
- Next, tap the Battery life calculator, to check the Battery Calculator.
- Type in your DTU type and probe details…..





2. If battery does not last, check Dial In Uptime = 0:00:00

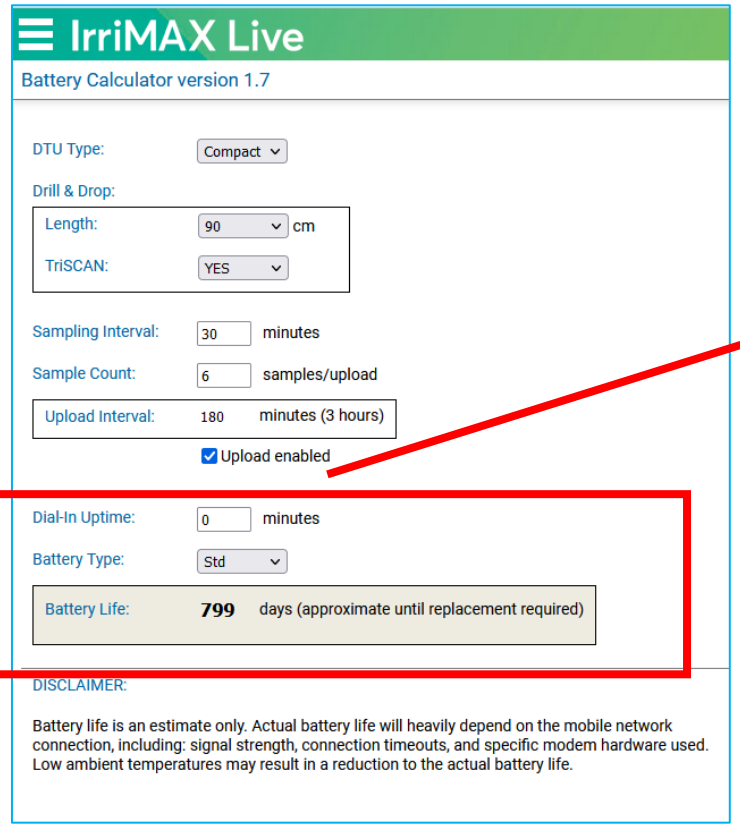


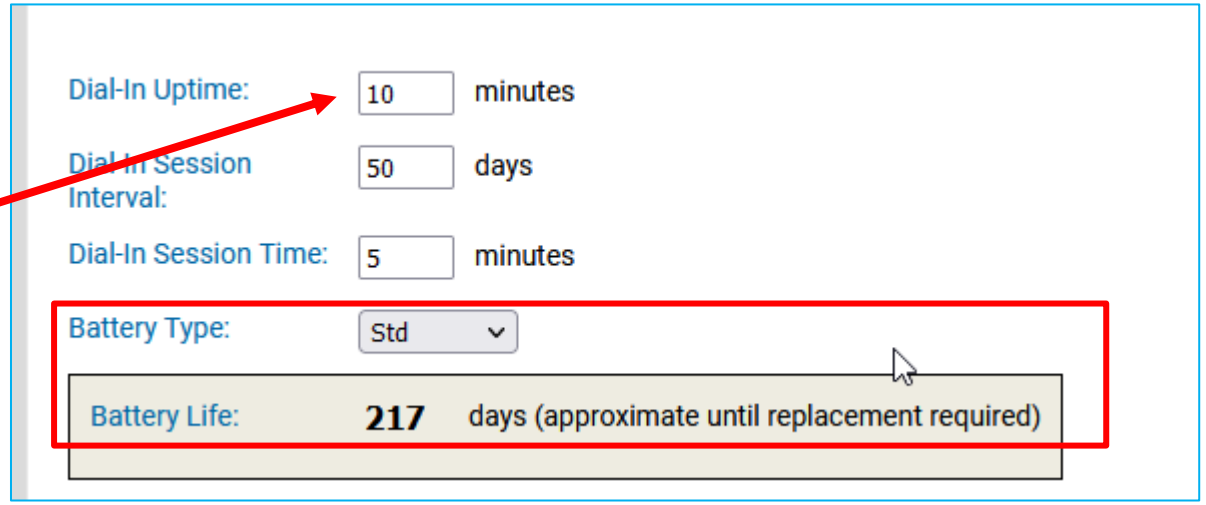


In case if the battery don't last for a longer time, it is recommended to check the Dial-in Uptime.
If the time is changed or modified you may experience a difference in battery life, as the modem consume maximum battery if left **on** for a longer time.

When you try to update the time you receive a pop-up waring message on your PConfig screen.

3.Dial-In-Uptime in IrriMAX Live





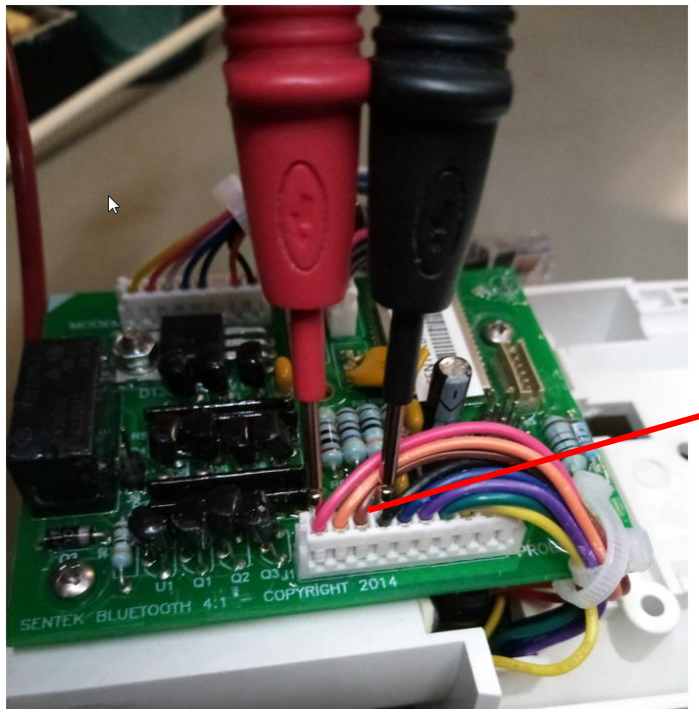
So it recommended to set the time 0 minutes.

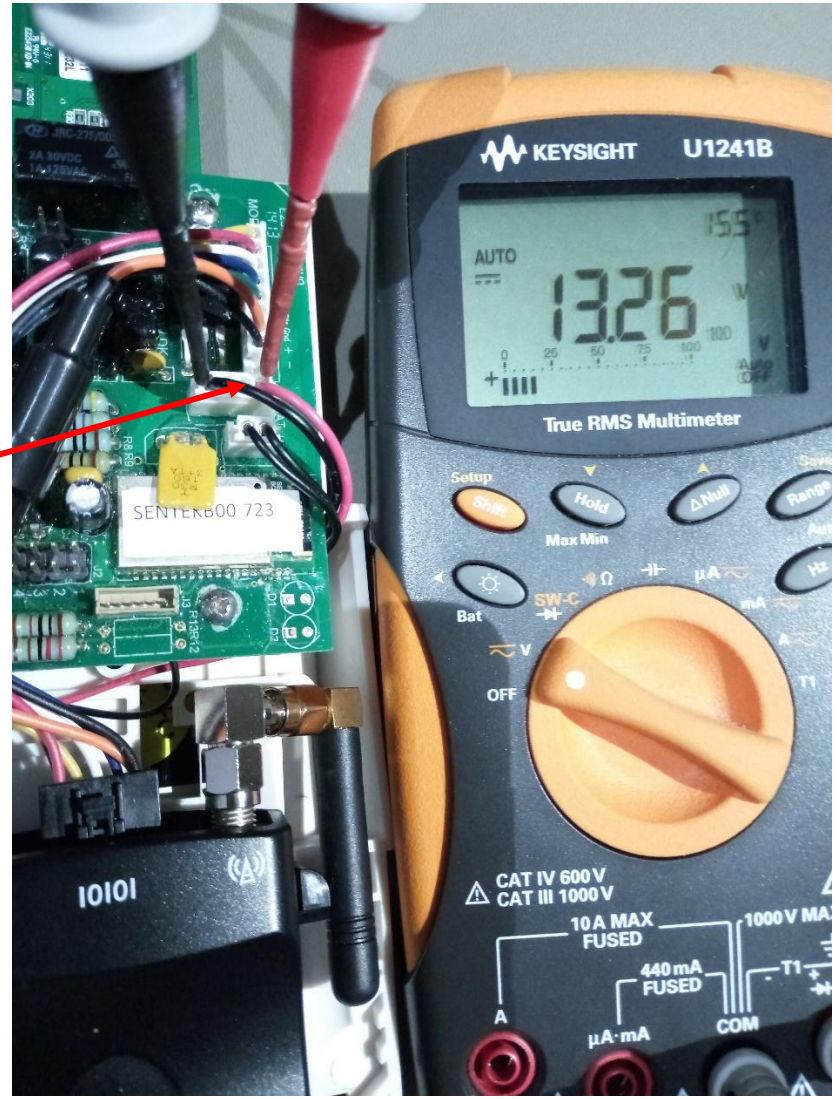
As displayed in the example once we update the time to 10 min the battery life has been updated to from 799 to 217.

4. Check Voltage at battery plug

PCB has no power, cable damage or not plugged in correctly with probe

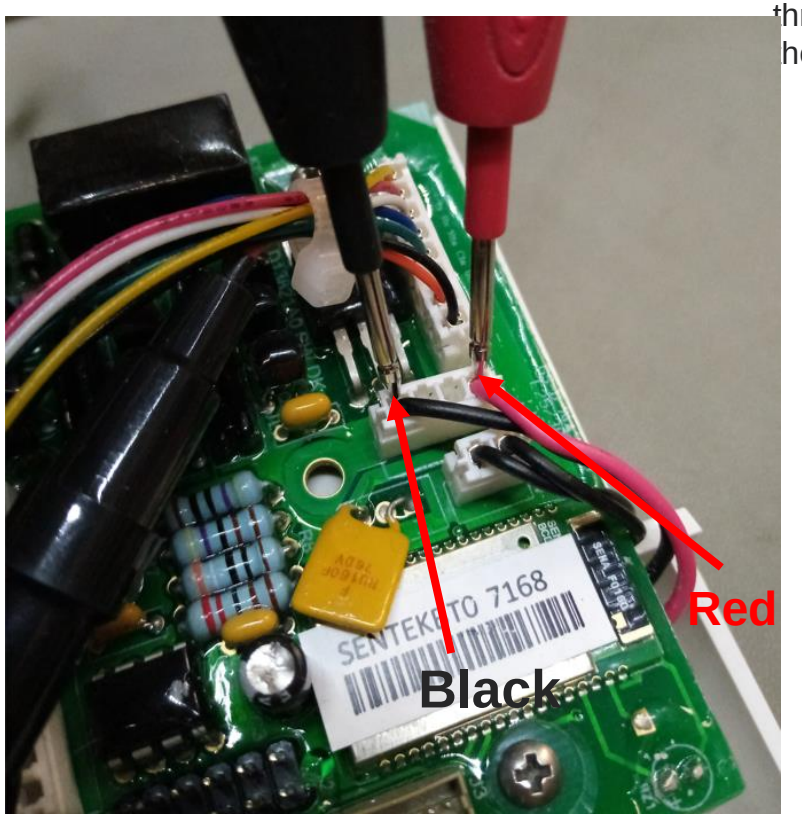
The **Red Multimeter** lead should be connected to the +Positive Battery wire and the **Black -Negative Multimeter** lead connected to the +Positive connection point on the Compact PCB.





5. Is power going to the probe?

Check **red** and **black** wire on long plug. To Check the Voltage by probing the **red** and **black** wires on the plug labelled J1.)



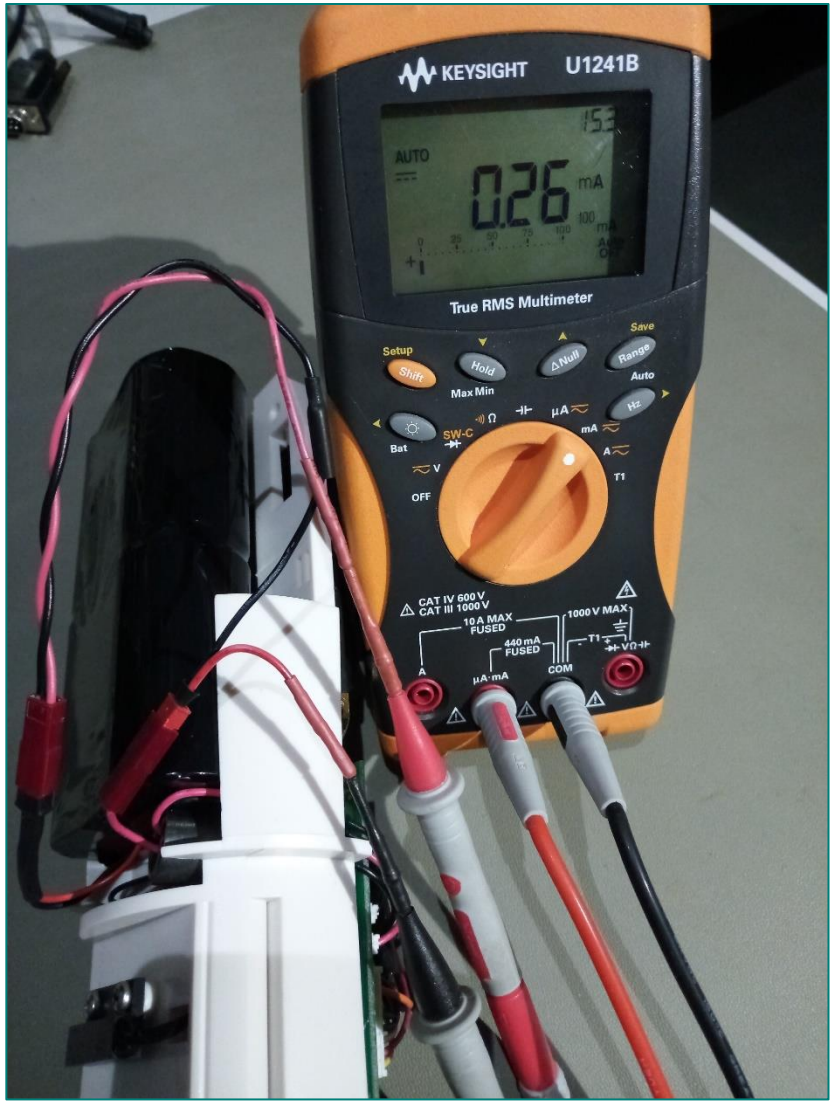
Currently compact bodies are glued onto this threads. You need to unplug the frame to test he connections on J1.

Test result

6. Sleep Mode Current test = < 0.45

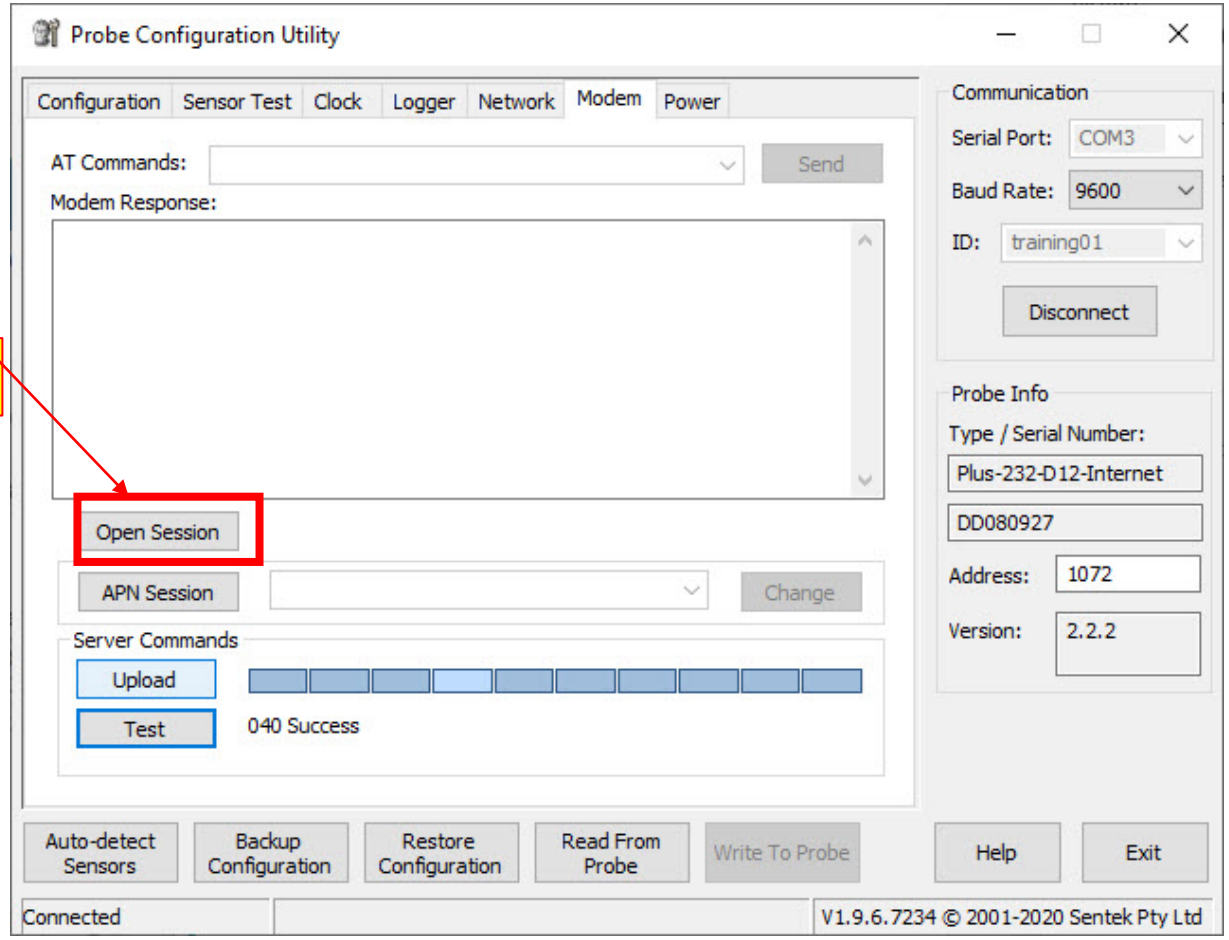
If you receive the value 0.26 mA that indicates Current is fine

Note : If the sleep mode Current is **0.8** mA or higher then this shows that some part of the system is faulty.

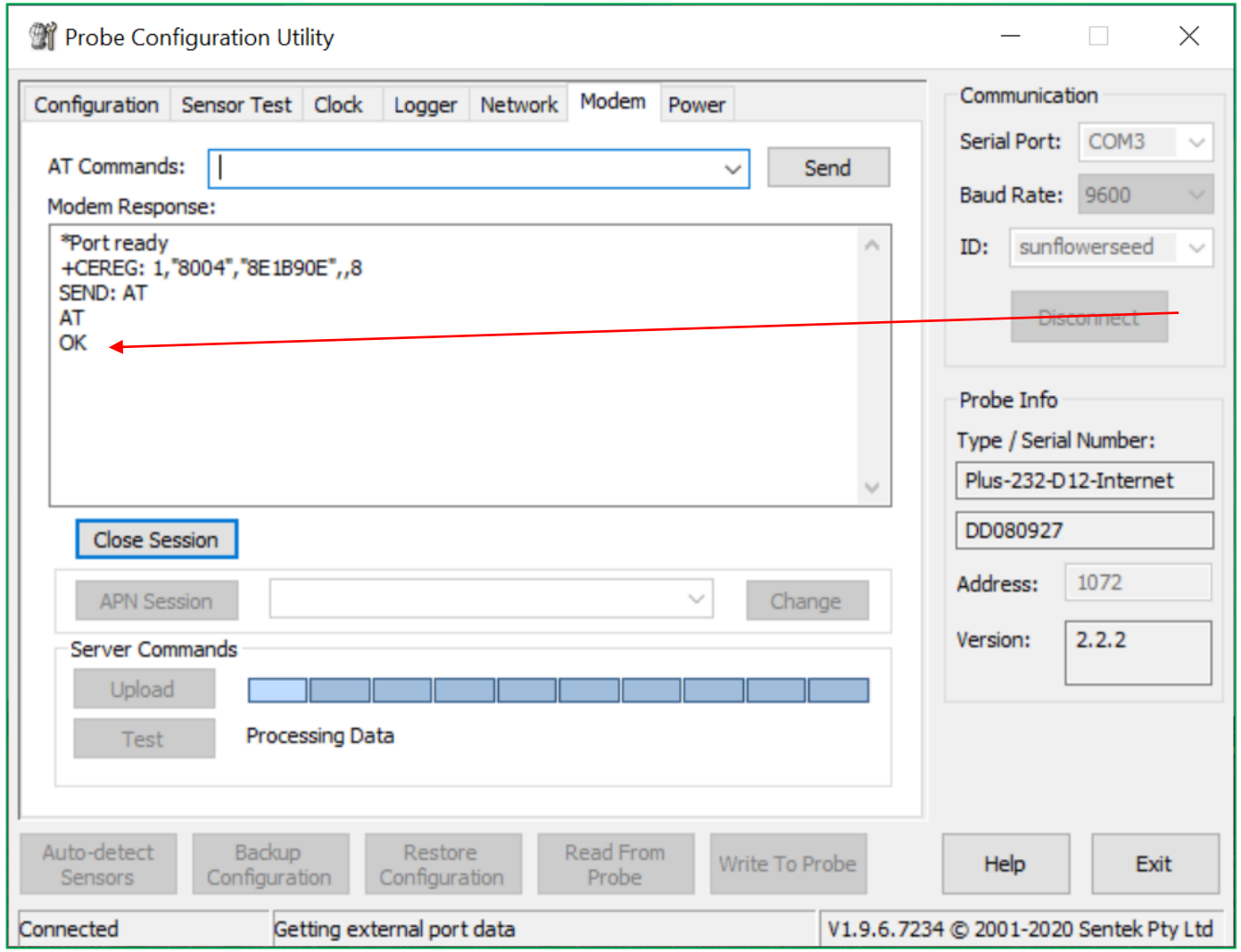


7. Now Test Current under load in "Open Session"

Click "Open Session"



8. Test Current under load in “Open Session”



This shows the session is now open

9.Test Current in “Open Session” (Modem is active)

The current will vary during the test from approximately 30 mA to 60 mA, the average being about 40 mA.

Minimum

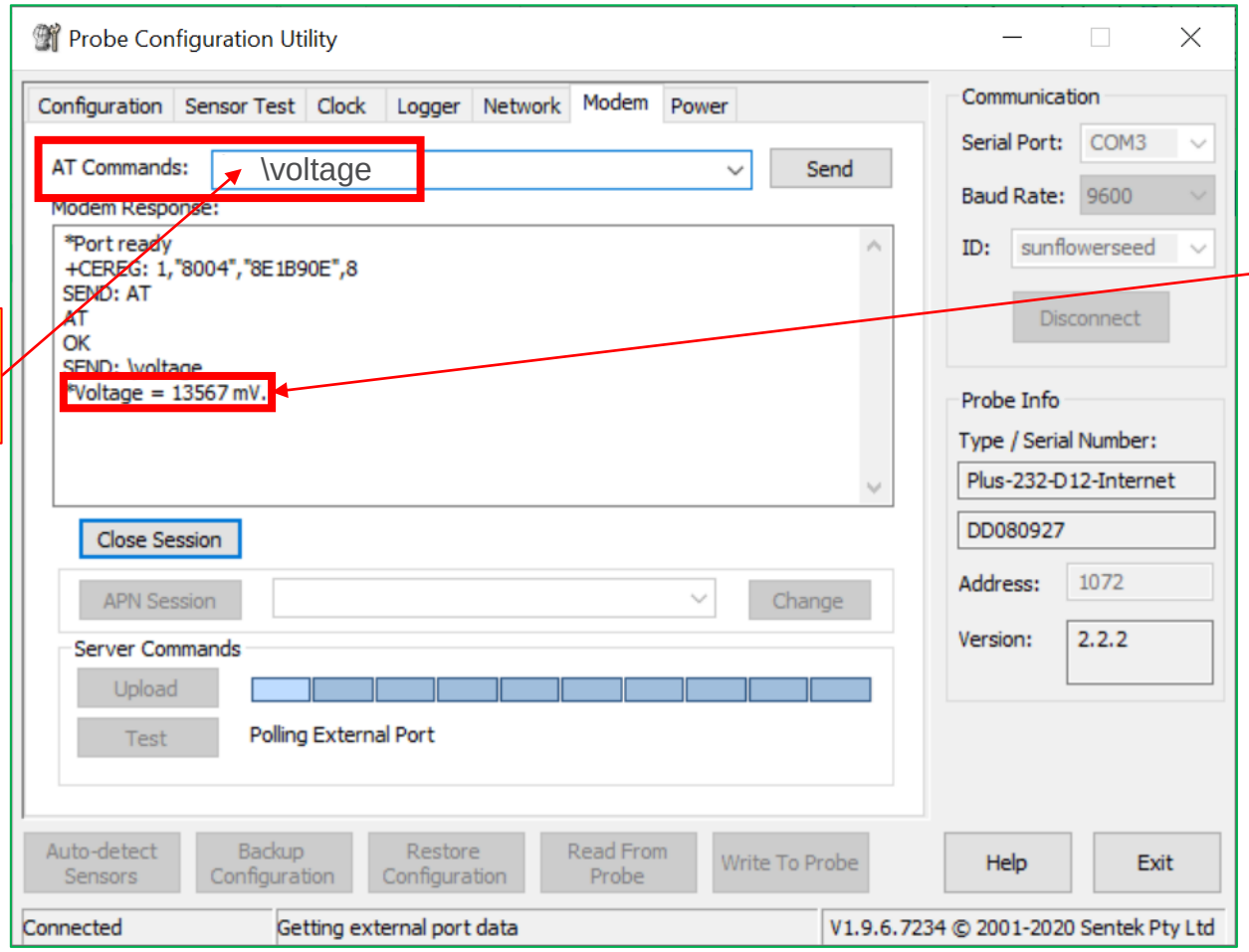
Medium

Maximum

It show the expected range for this operation with the Modem active **‘On’.**

10. Test Voltage under Load in “Open Session

Readings should be above 12000 - 13000 mVolts.



under AT Commands:
type in: \voltage

Read Voltage level here

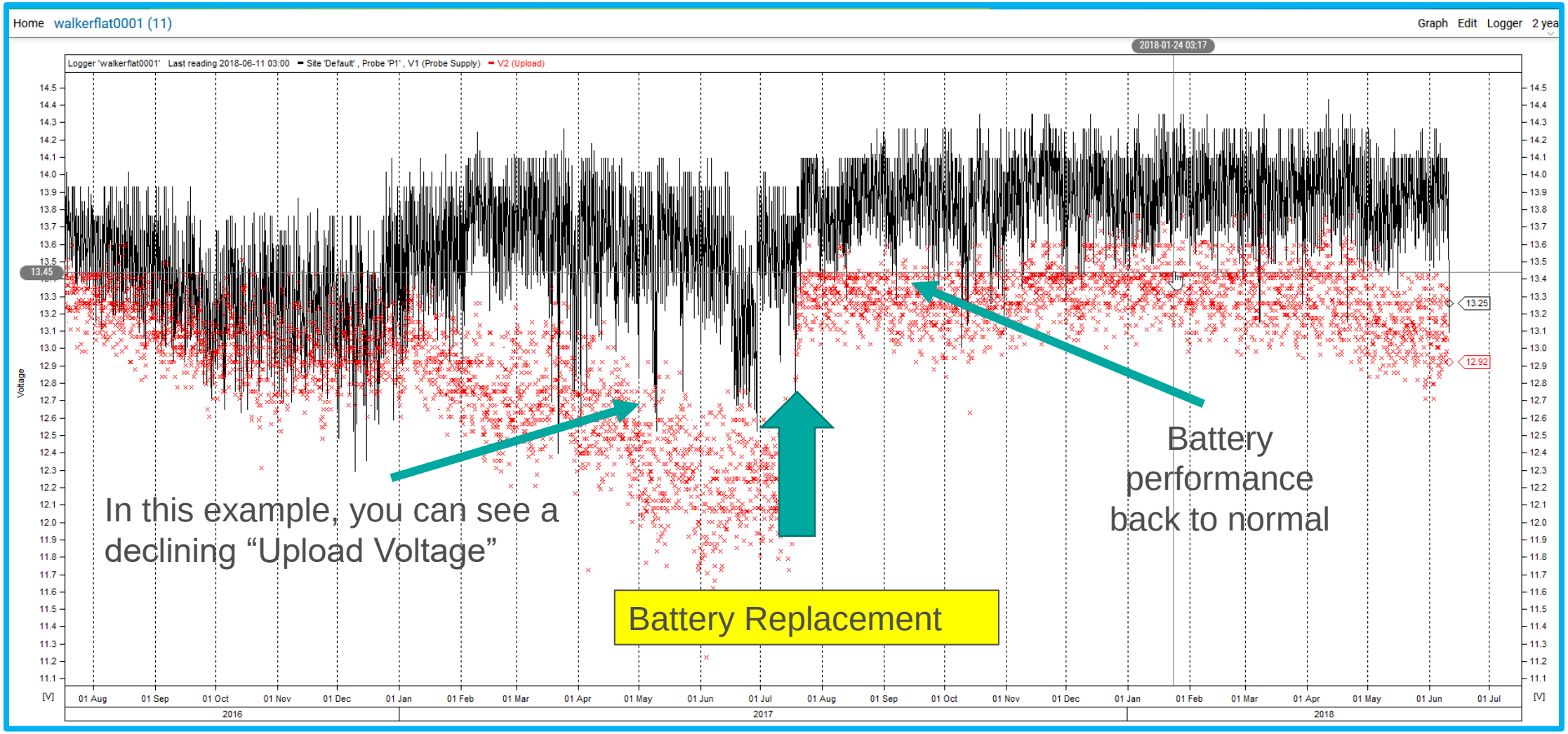
11. Test Voltage under Load in “Open Session

The Test voltage photos for ‘ **Open Session** ’ and **the ‘ Upload** ’ test show a voltage range during both tests; Average

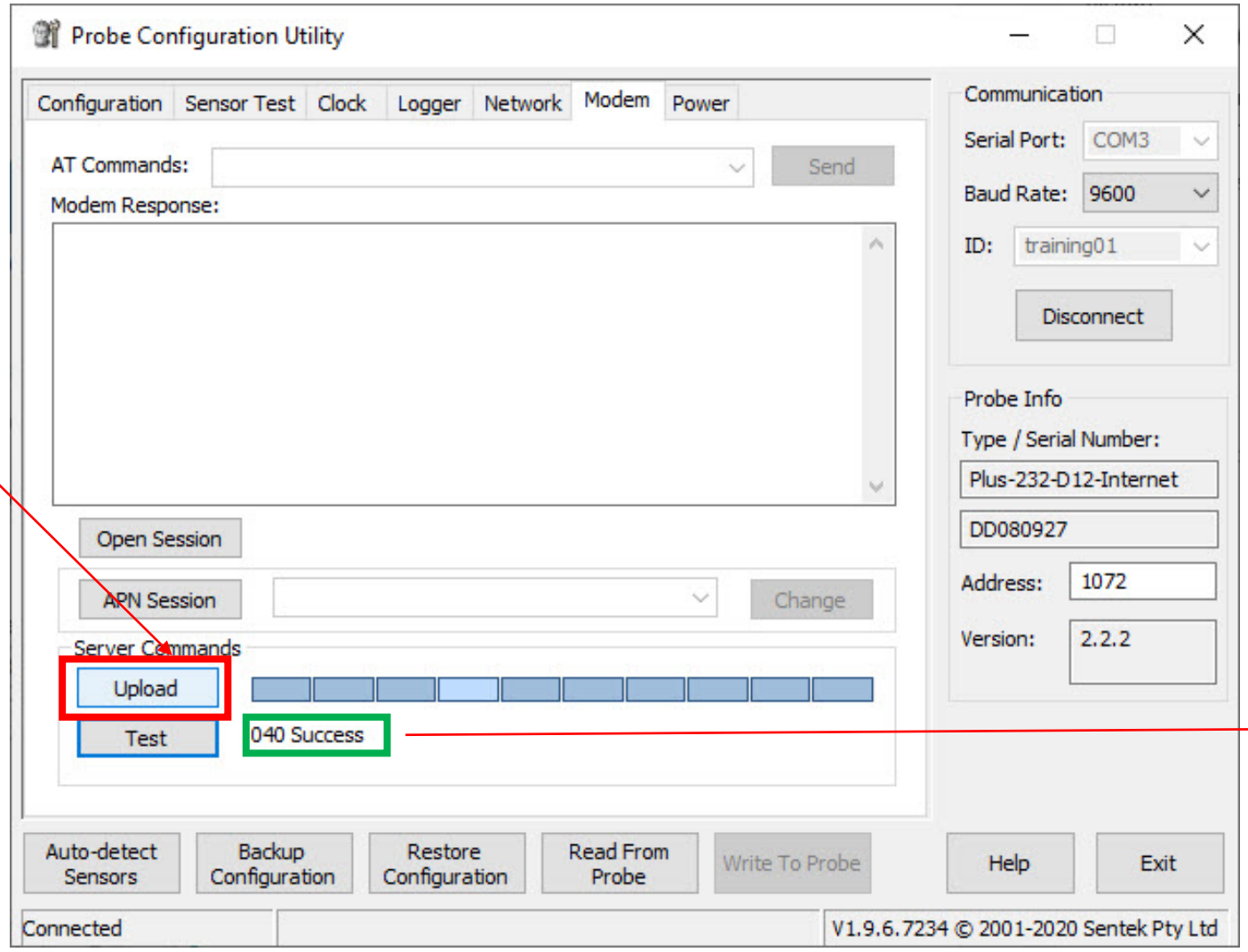
The Average voltage should be about **13.42 mV**

Note: If the Voltages level drops down to **11 Volts** anytime during a test then this indicates that the battery will need replacing very soon.

12. Log into IrriMAX Live and look at Probe Supply & Upload Voltages



13. Run Modem Upload Test



Click “Upload”

A successful upload test is indicated by 040 Success

14. Run Modem Upload Test

053 Connection Failure Modem not responding to commands, or could not connect to internet (see note below)

Progress codes	Server	Upload response codes
000 No Error Only occurs after first ever power on (No upload has been attempted)	Disconnecting from FTP server, APN server and shutting down modem	040 Success Upload was successful (file transferred to FTP server)
001 Initializing Interface Initialisation and connect strings being sent		041 Success (No Data) No new data to upload
002 Initializing FTP Connecting to FTP server		042 User Cancel Pressed Cancel in PConfig
003 Transferring data		051 Clock Not Set Clock needs to be reset (modify or re-sync with PC and write to probe)
004 Uploading to Server Uploading file/s to FTP server		053 Connection Failure Modem not responding to commands, or could not connect to internet (see note below)
005 Disconnecting from		054 Server Error Problem communicating with FTP server

15. Modem Light

Visual – LED indicator

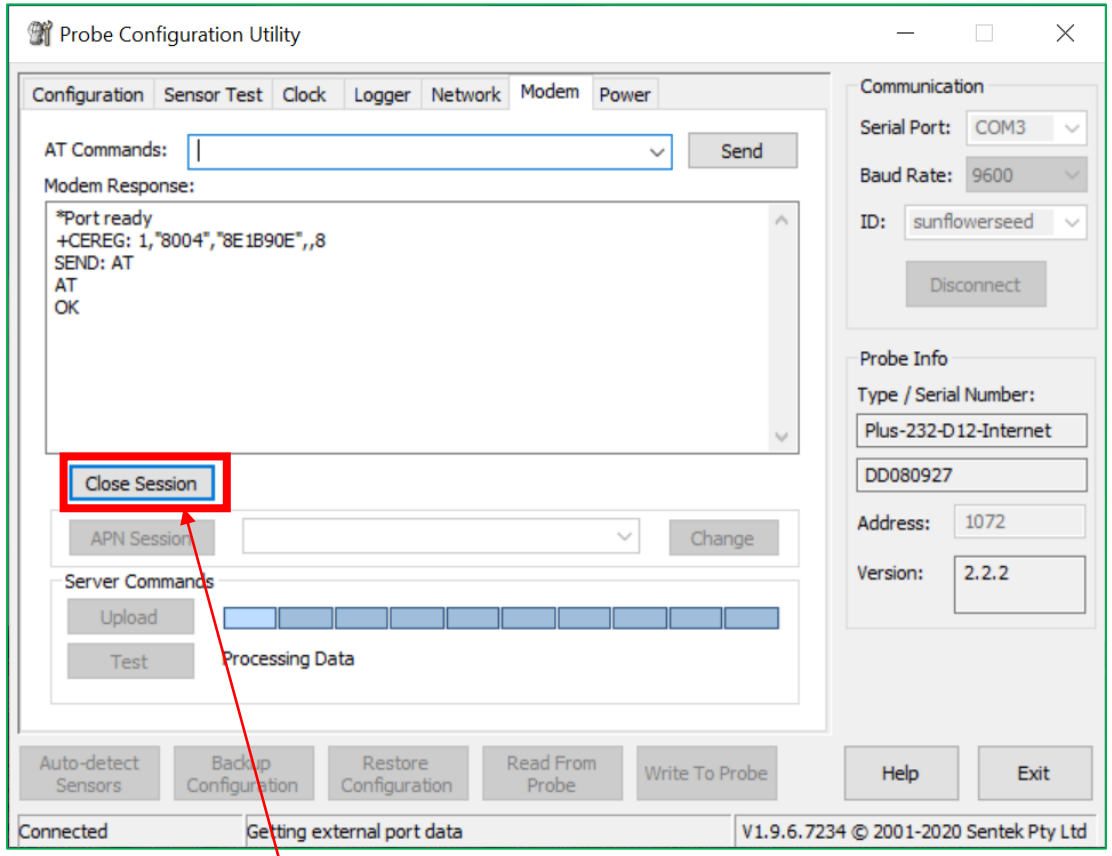
The NTC-100 modem has a Network LED which visually indicates the RSRP.

The table below details the signal strength relative to the reported value from the network service command.

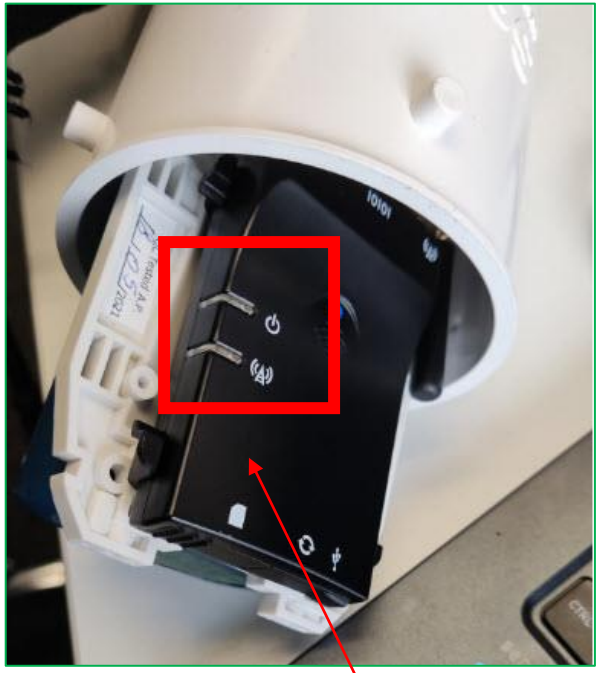
RSRP (Reference Signals Received Power)
RSRQ (Reference Signal Received Quality)

Signal Strength	Network LED (RSRP)	RSRP	RSRQ
Excellent	GREEN	> -90	> -90
Good	AMBER	-90 to -100	-10 to -15
Fair	RED	-100 to -120	-15 to -20
Poor	Off	< -120	< -20

16. Shut down “Open Session” causes the Modem Light to go out



Click “Close Session”



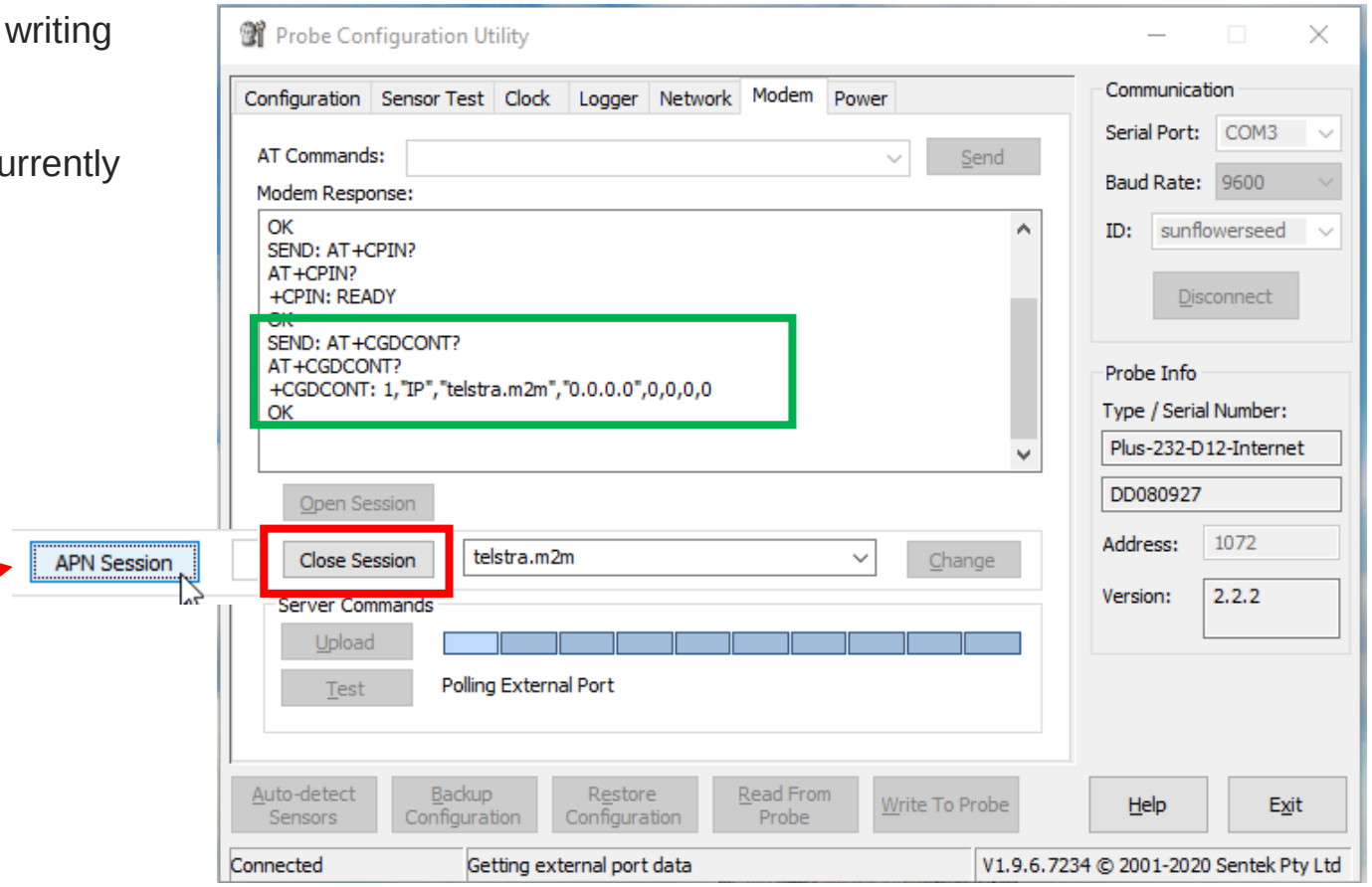
Make sure the Modem Power light goes **off**, when you close an “Open Session”.

17. APN Session

This field shows progress messages when reading or writing the APN.

The APN session is used to query the APN which is currently set in the modem .

Click APN Session

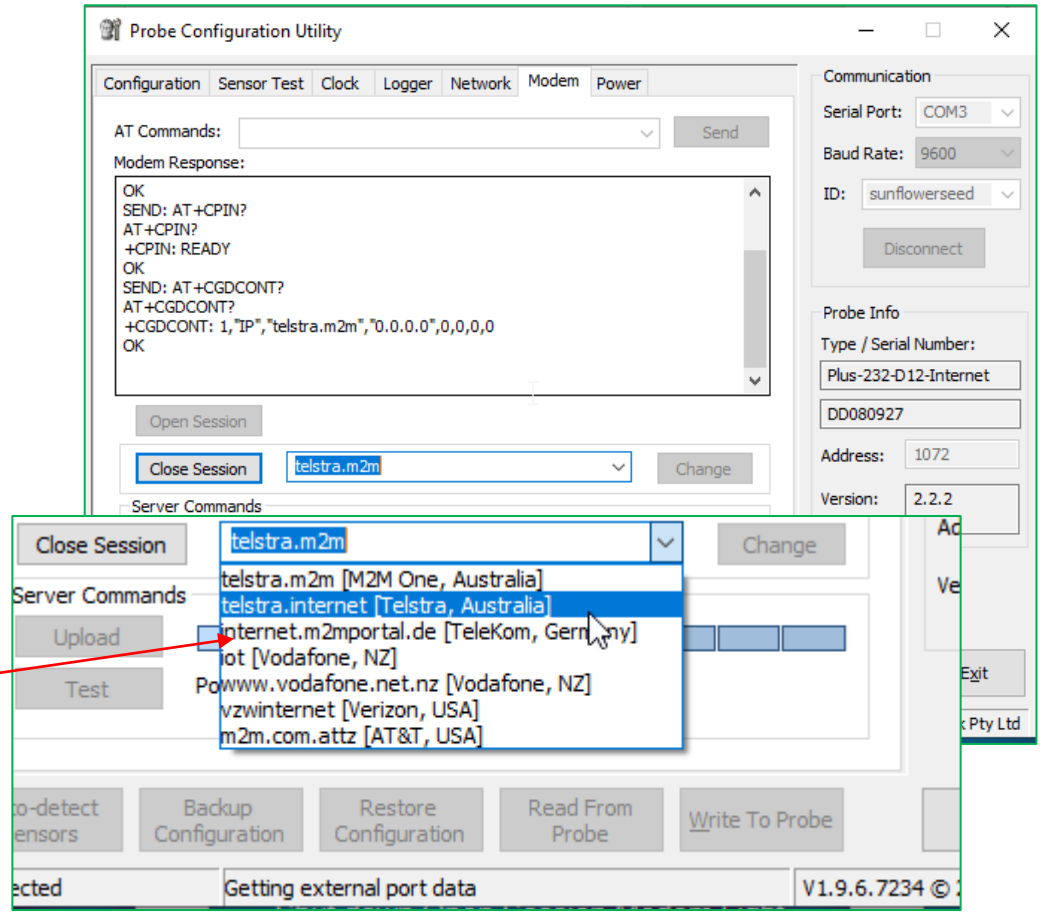


18. APN Session Cont..

A new APN value can be entered or selected from the drop-down list.

“**APN Session**” provides a way to retrieve and update the APN (Access Point Name) in the modem.

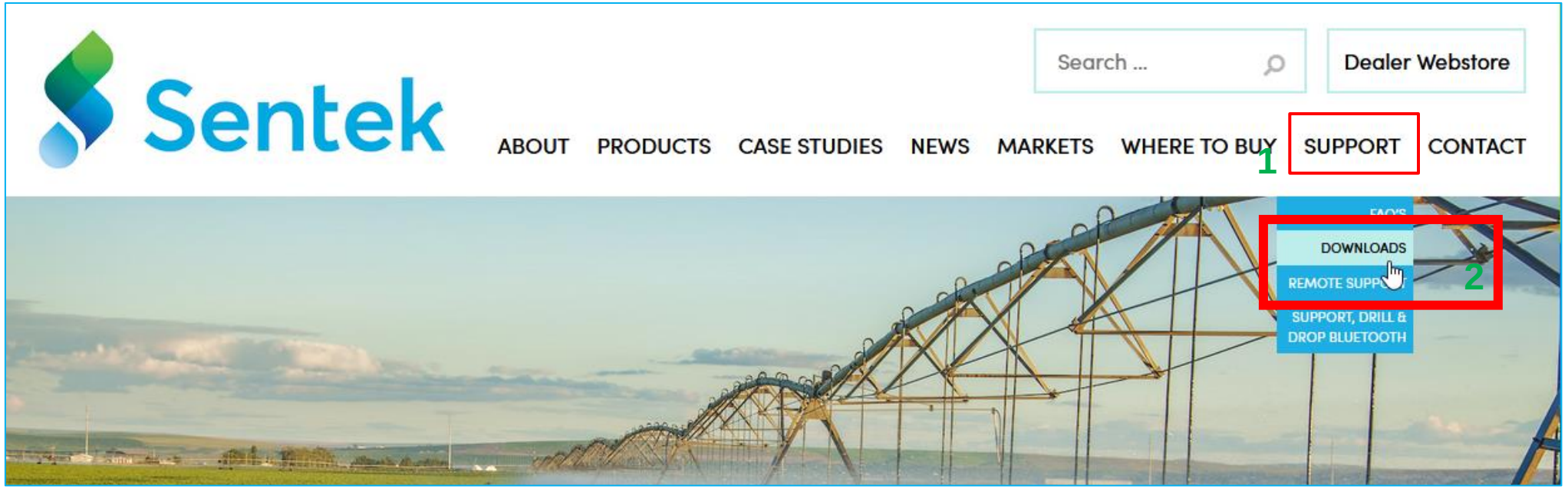
Select the APN number for your telecom provider here



19. If the modem is being changed, match with new network settings

SENTEK Webpage → Select Telemetry& DTU → Download Config File

Download the network setting from **Sentek** webpage.
From **Support** drop-down list, select **Downloads**.



20. Download

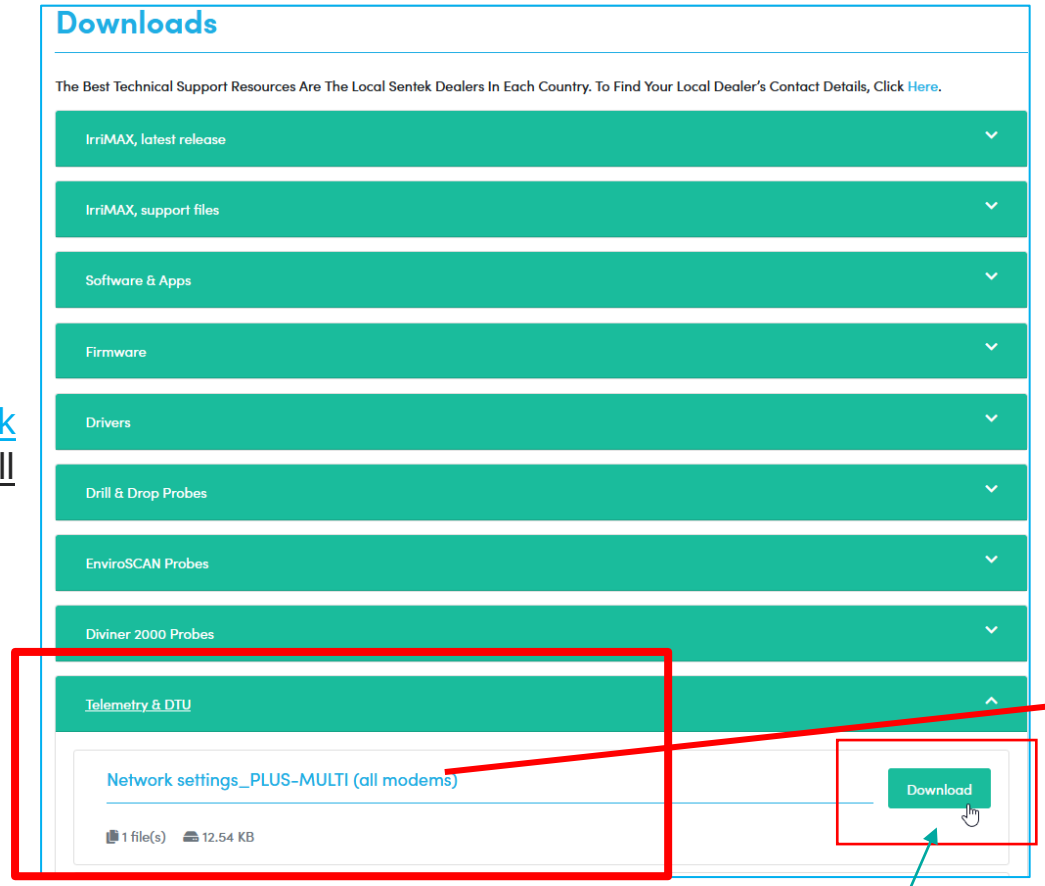
Next to go to network settings,

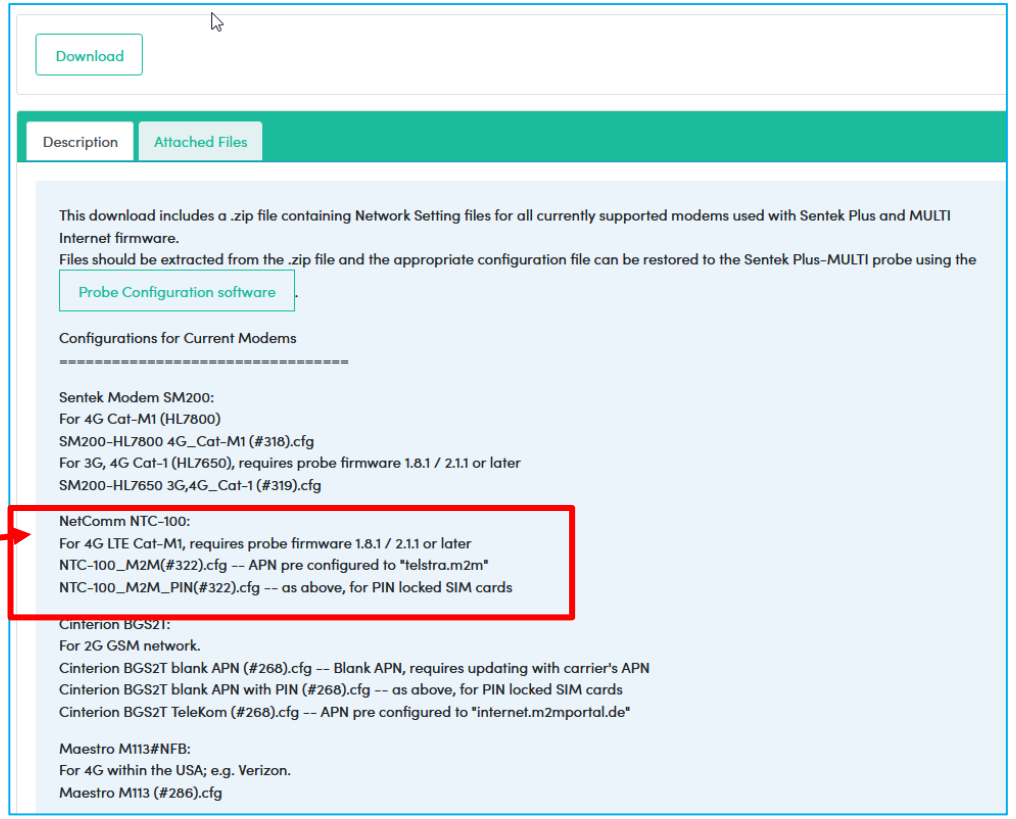
Choose an option:

- Click **Download** tab>Save Files

Or

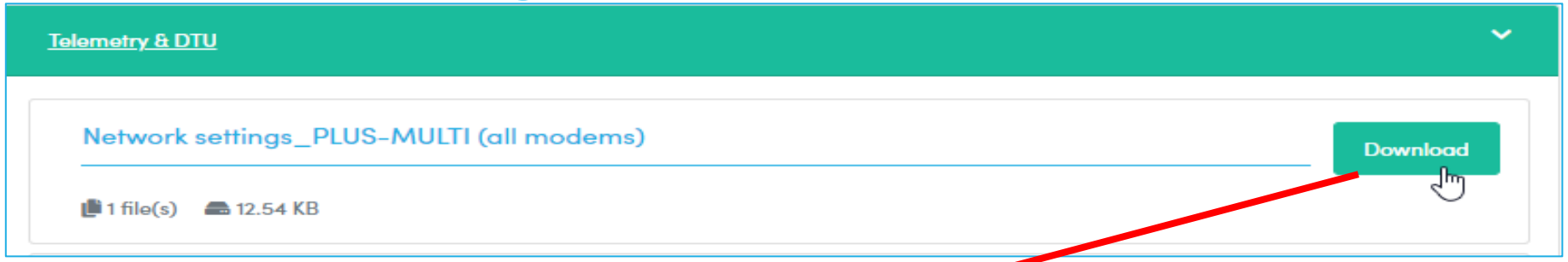
- You can click Network settings :Plus-Multi (all modems)

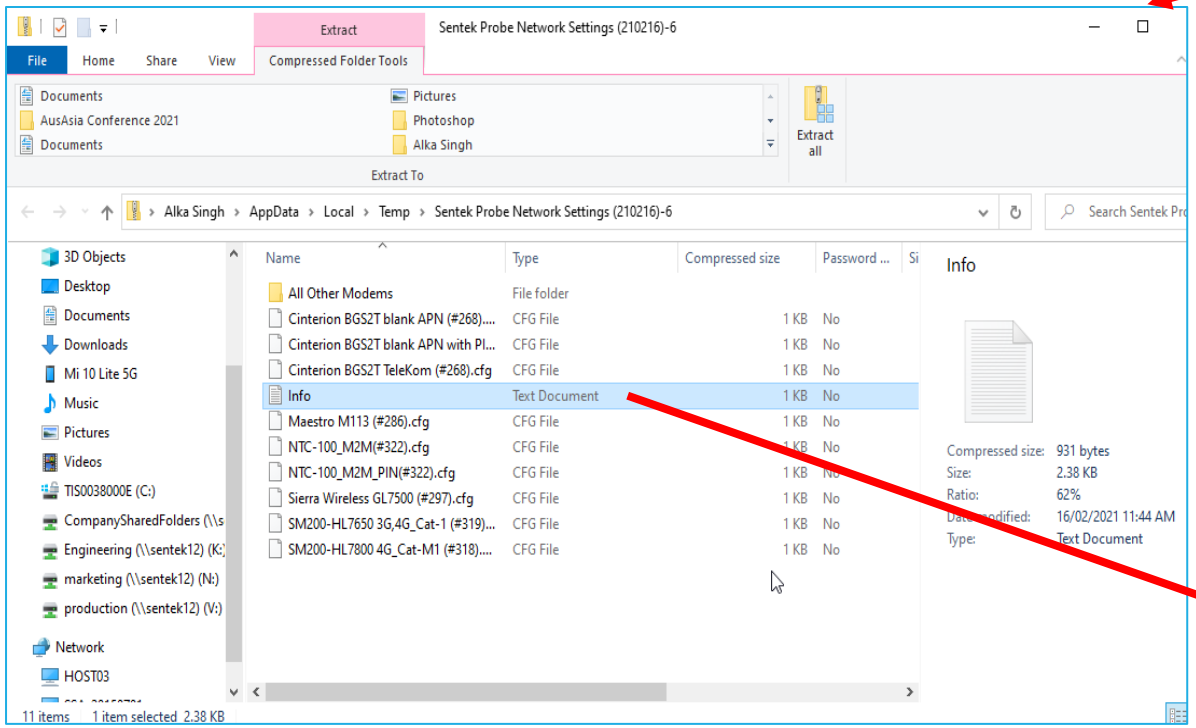


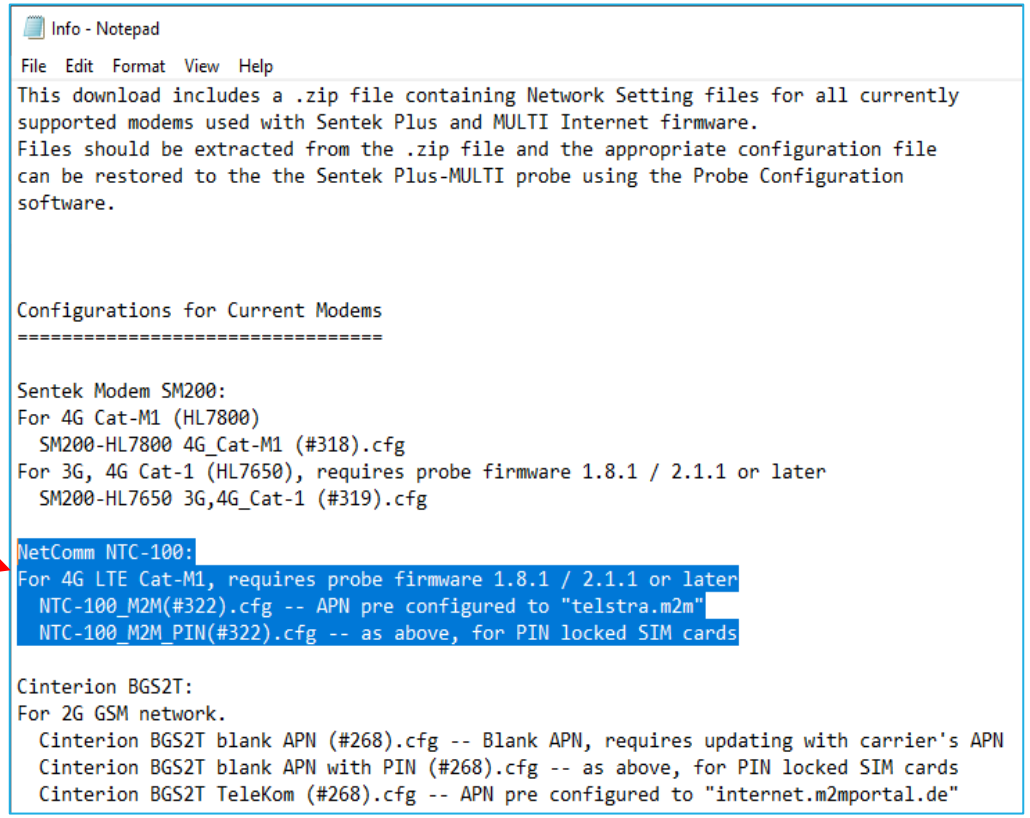


Download

21. Download Config File



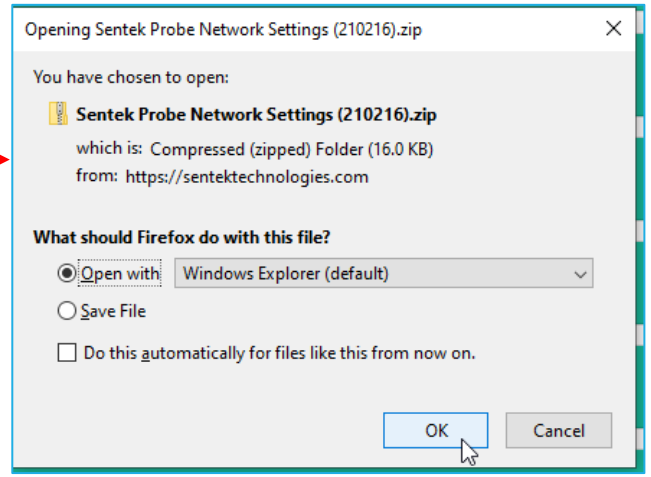




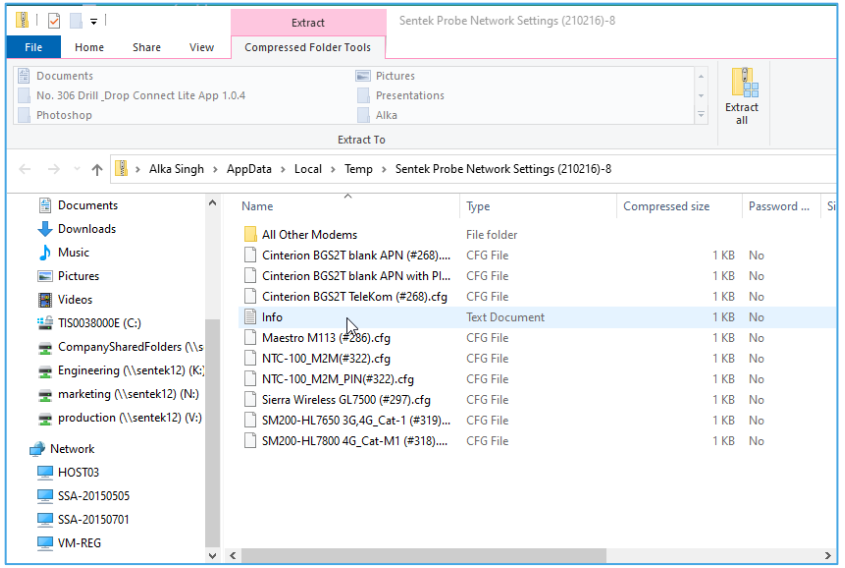
You can copy the config file and you can restore it by using **Probe Configuration software** from **Software & Apps.**

Download Config File

- Once you have Download the **Network setting file**.
- You receive a windows pop-up asking where you wish to save the file.
- Select **Windows explore** (recommended), click **OK.**
- Now, your file is in your local folder.

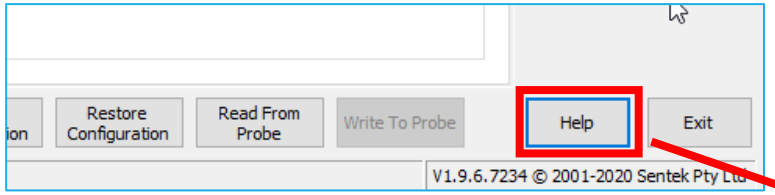


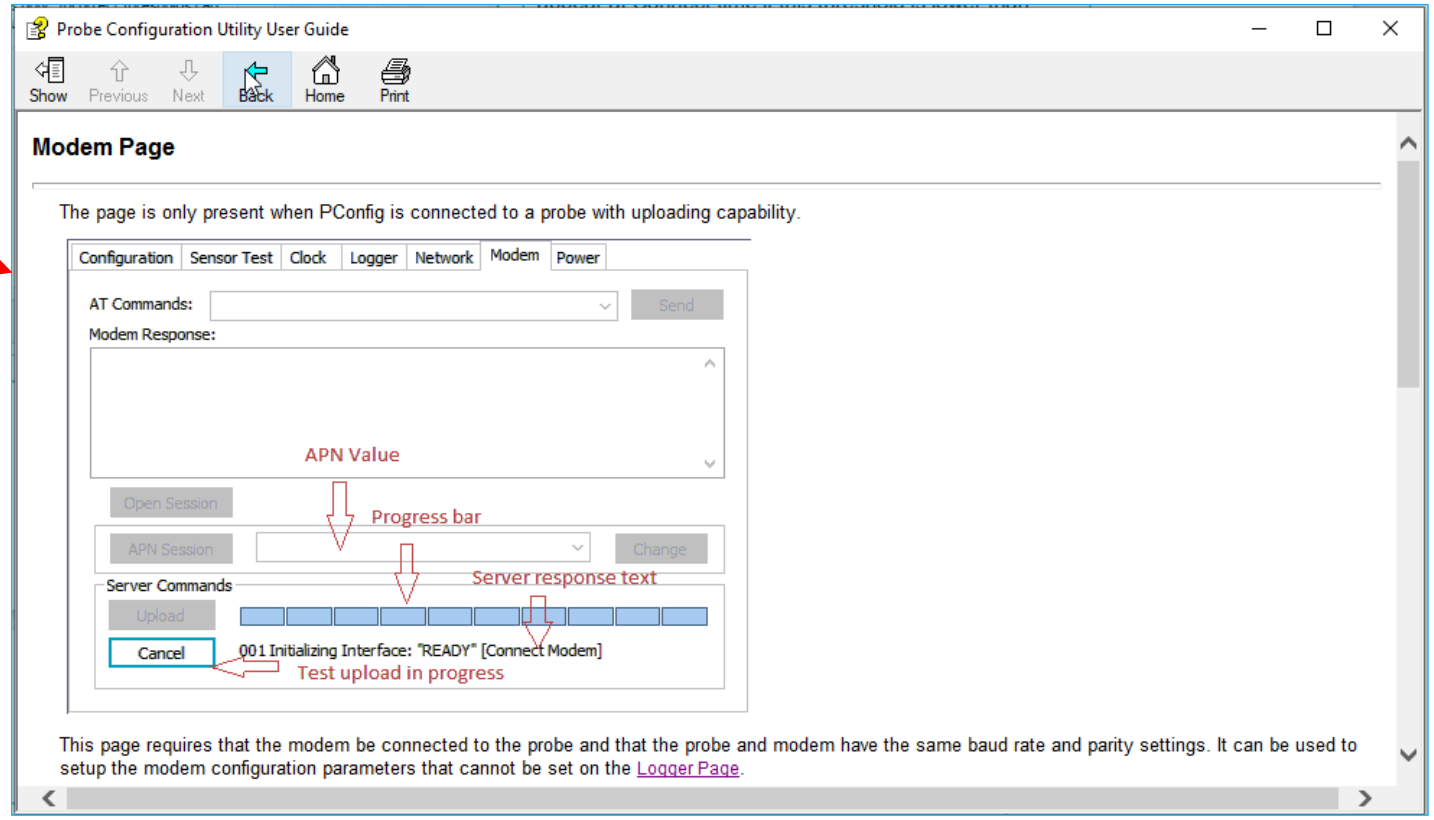
Your name>App Data> Local>Temp> Sentek Probe Network Settings(212016)



22. Help

For more detailed information about each tab, click **Help** tab.





23. Important Links

- *Sentek Plus Hardware Manual (Ver. 2.1) - Sentek Technologies*
- *Probe Configuration Utility*

Thank you