Sentek Modem V1.4

Setup Process

Sentek

Overview

The Sentek Modem SM200 is a wireless modem allowing devices to connect to a wireless network. It offers data connectivity on 2G, 3G and 4G networks using the Sierra Wireless.

The Sentek Modem is specifically designed to connect with Sentek soil moisture probes, TriSCAN probes and it provides Bluetooth connectivity to allow true wireless setup and configuration.

Supported Variants:

- Modem Only
- Compact / All-In-One

It is fully compatible with current and older firmware.

(Suitable to iOS users)

1. Installation Steps for the SM200

The product package should contain the following items:

- Sentek Modem SM200 with Plastic internal holder
- SIM card slot holder
- Antenna
- Warranty and Support Information, User Manual

2.Products and Equipment Needed

Compact PLUS unit

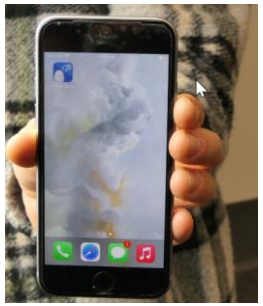
Equipped with SIM card modem for cellular data transmission, battery powered.

Drill & Drop probe

With RS232 connection type and a split cable. *If you have an older style probe with a separate "brick" logger do not use this guide.*

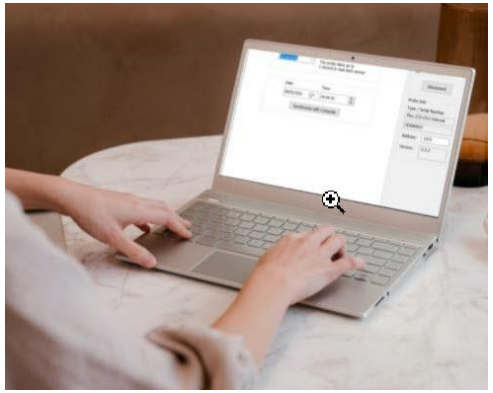
USB Probe Configuration Cable + Driver for Windows

Connects the probe to your PC, to transfer commands and settings to the probe



Your Mobile Phone

With Sentek Probe Utility installed.



Your Laptop

With a USB port and Pconfig softwar e + USB Cable Driver installed.

3. Front View

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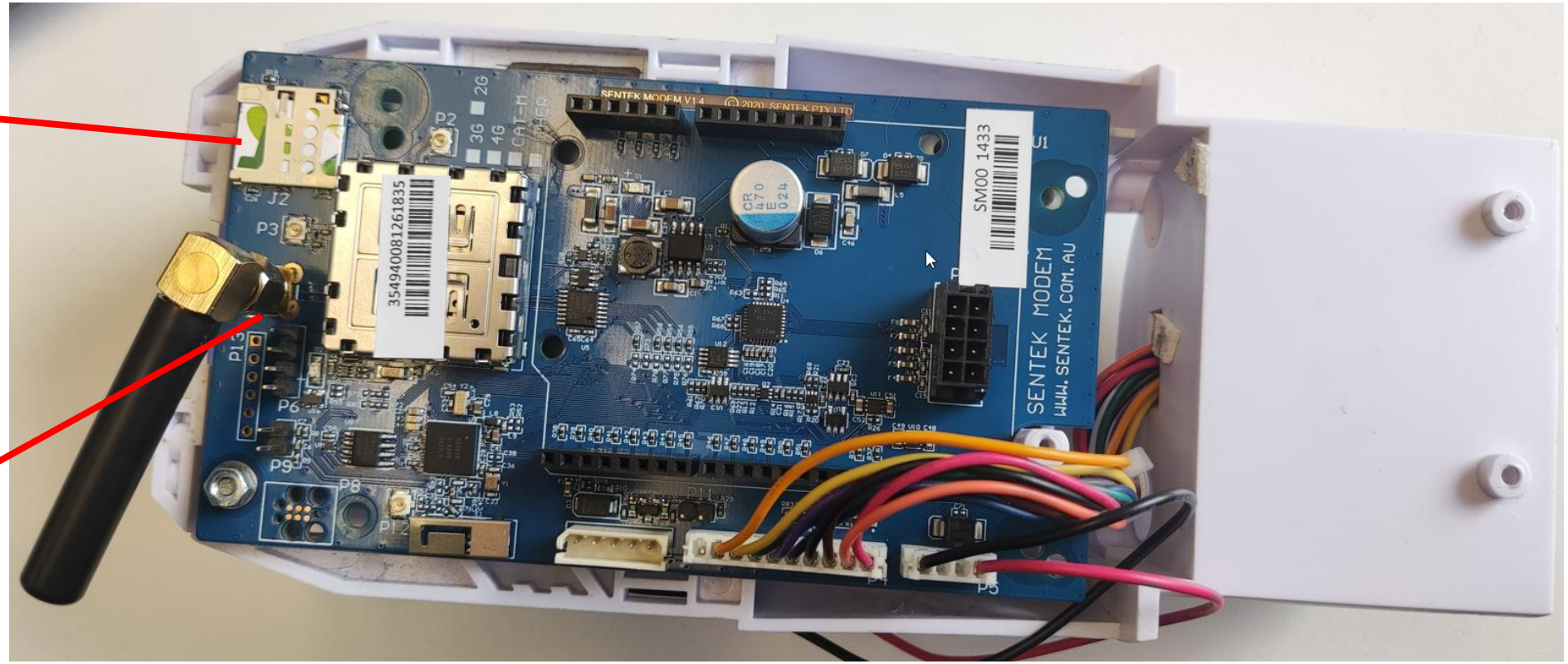
Sim card slot holder

Antenna Connector



4. Types of Antennas

Internal antenna comes along with modem

External Antenna

High Gain antennas are useful corn crops, particularly trees with canopies and in areas with poor connectivity.

Note: For the installation process, refer to the Installations Guide. The instructions in this guide will help you with installation process of the Probe.

Installing Sentek Probe Utility App

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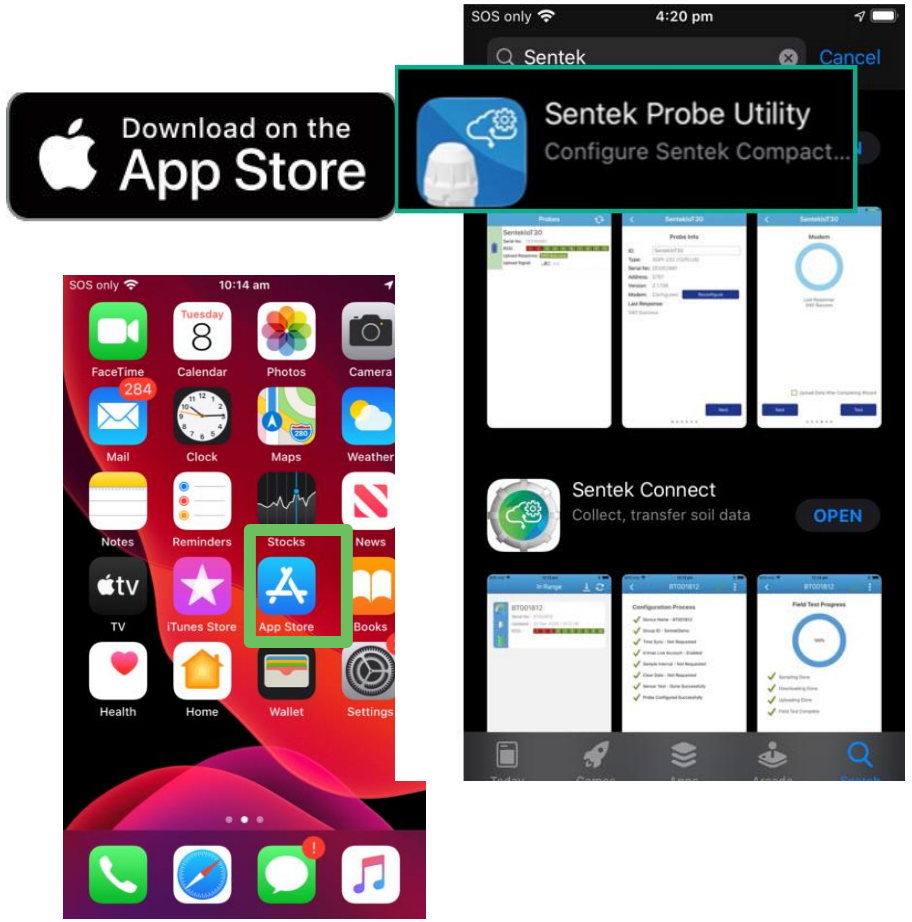
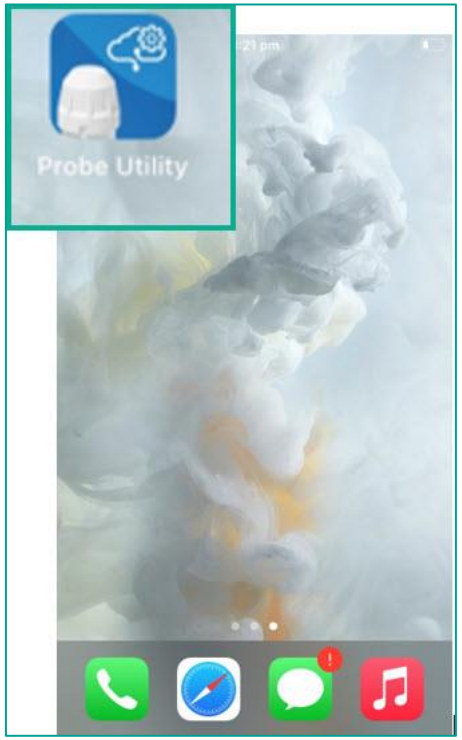
1. How to install the Sentek Probe Utility App

On your **iPhone**, you need to open the **App S** e.

- To install the **Sentek Probe Utility app**, you must sign in with your Apple ID or create one.
- To search for apps by name, tap Search then type the name of the app. **(Sentek)**
- Tap **GET** then tap **INSTALL**.

Once the application has finished installing, it shows up on the **Home screen** of your iPhone. **(Probe Utility)**





Connecting All The Equipment

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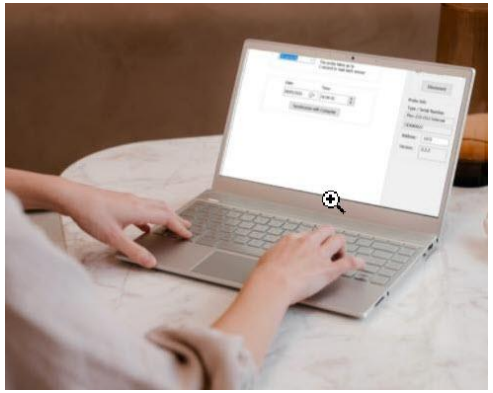
1. Connecting all the equipment's

These are the parts you need to

SM-200 with or without Sim

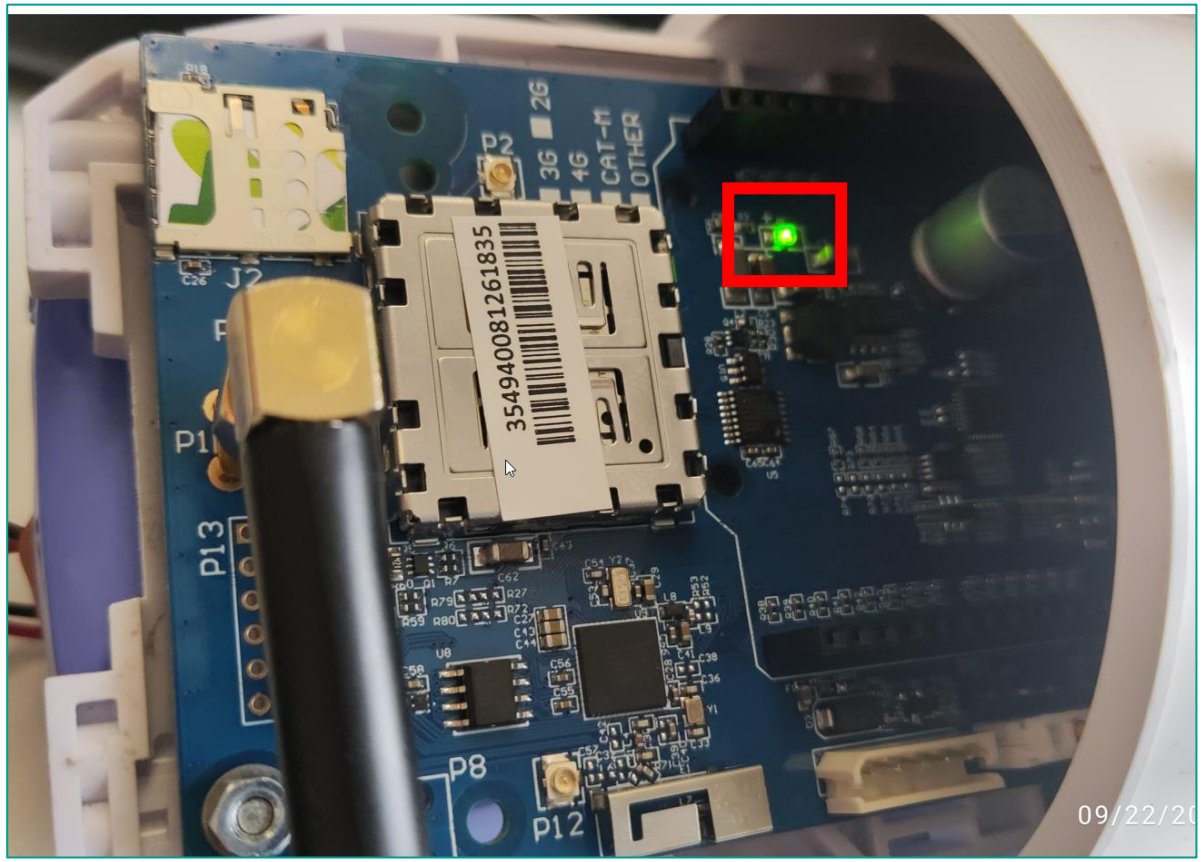
All-in-one base and set

iPhone with Sentek Probe Utility app installed.



2. Status Indicators

The **green** light indicates the modem is powered.



3. For better connectivity (Different Antennas)

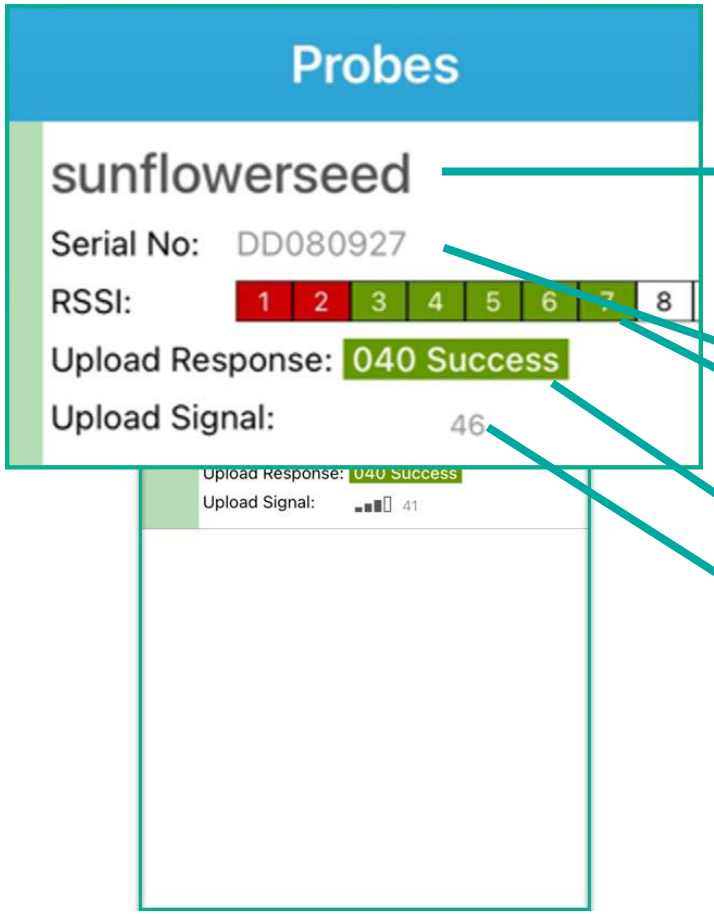
External Antenna, Moulded, It can Installed directly onto All-in-One cap antenna connection

High Gain antennas are useful corn crops, particularly trees with canopies and in areas with poor connectivity.

External Antennas

5. Probes

This screen provides you with the Probe information.



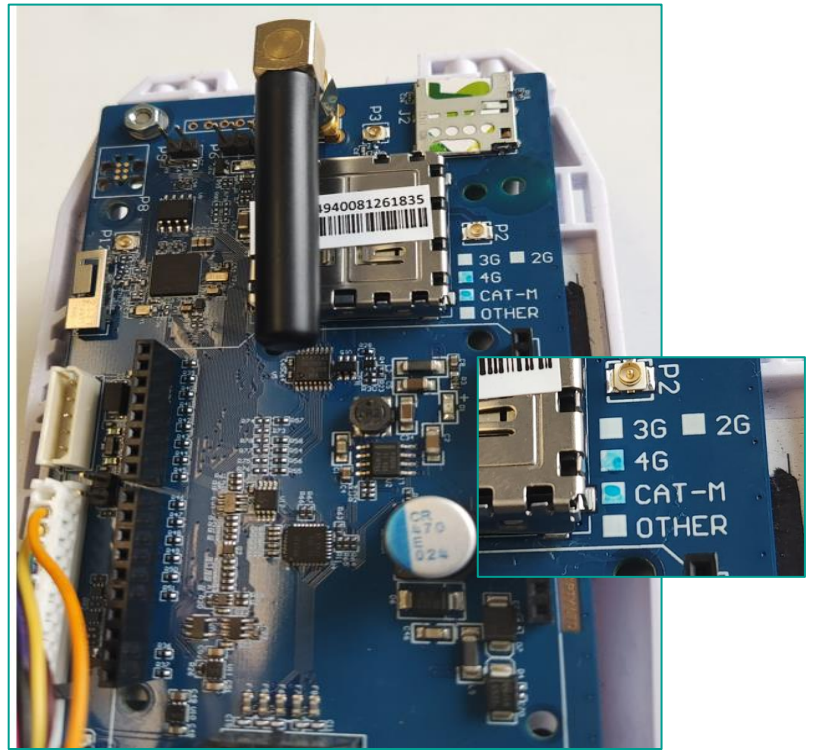
Icon Name	Icon	Description
Logger ID	In this example it is "**sunflowerseed**"	This name is used to supply the IrriMAX Live database Logger ID. The default is the probe's serial number. The logger ID can be up to 16 alpha-numeric characters and underscores and cannot contain spaces.
Serial No:		The serial number is a unique identification number in your device for the identification and for warranty purposes.
RSSI (Received Signal Strength Indicator)		The RSSI helps you to identify the **Signal strength** between the modem and the phone in which App is running . For more information on signal strength indicator ; **see the following slides.**
Upload Response		The Upload Response displays the status at the end of the most recent upload or attempt to upload.
Upload Signal		The **Upload Signal** helps you to check whether the signal is up to the speed.

7. Testing Signal Strength

Value	RSSI (Received signal strength indicator)	Condition
255	No Signal	
< 20	0 Bars	
20-29	1 Bar	
30- 39	2 Bars	
40-49	3 Bars	
>=50	4 Bars	

The modem identify the signal quality.

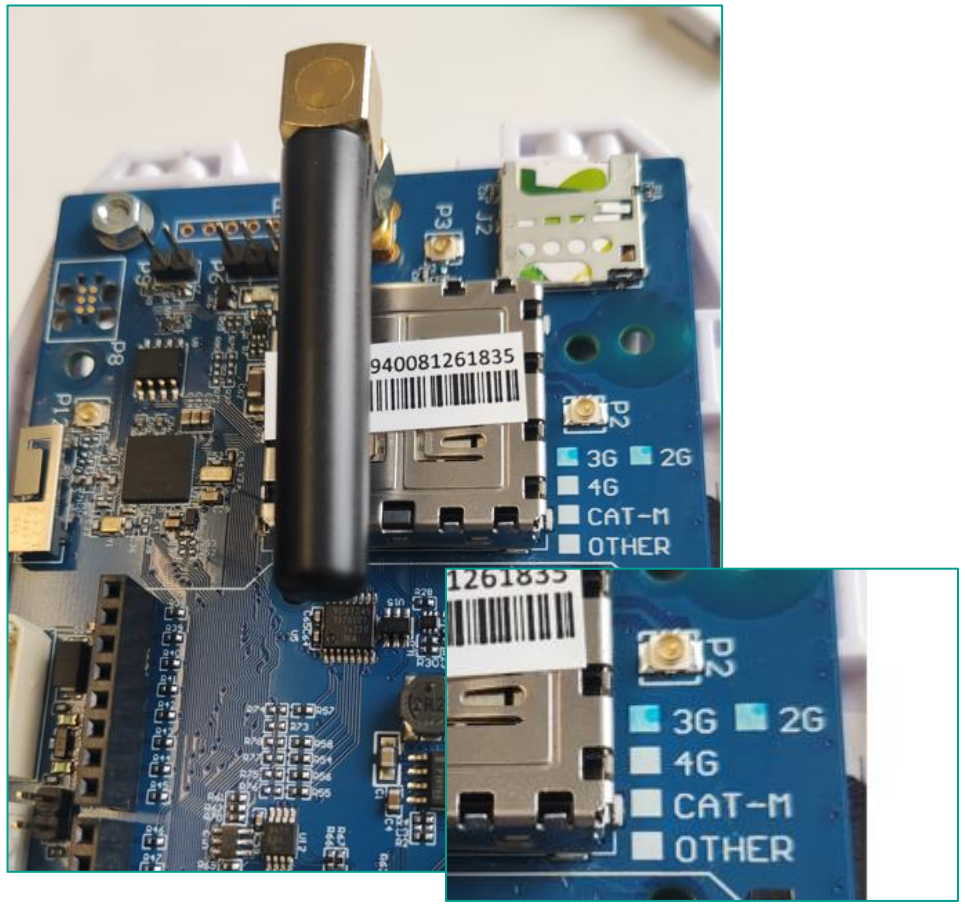
- If you receive 2 bars and above, the signal quality is excellent.
- If you receive 1 bar there is a weak signal, but will still provide you with a reading.



8.Testing Signal Strength

However, if the you are using 2G/3G connection then the following strength will show:

Value	RSSI (Received signal strength indicator)	Condition
<=1	0	
2-6	1 Bars	
7-14	2Bars	
15-21	3 Bars	
>22	4 Bars	



9.Modem last upload response code

Sl.No	Last response	Indicators
1	040-049	Success
2	041 Success	No Data
3	042	Upload Cancelled
4	050-079	Failure
5	080	Modem In Use
6	081-082	Uploading
7	083-099	Failure
8	000-039	Check
9	199	**Initialising** (Shown upon first power on, before and while SM200 modem communicates with probe.
10	198	No Probe Found (**Show in Grey**) After initialisation, if no probe was found.

10. Time Synchronization

The Sentek Modem automatically updates your probe time. The clock screen shows the probe's date and time.

Note: Now you can update the probe time by using your phone time settings.

By default, the date and time is visible on the Lock Screen, and it is set based on your location.

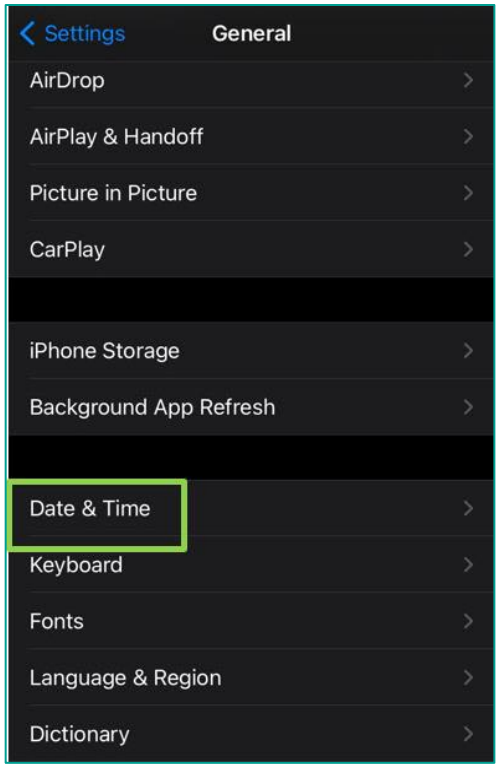
- Click **Next**

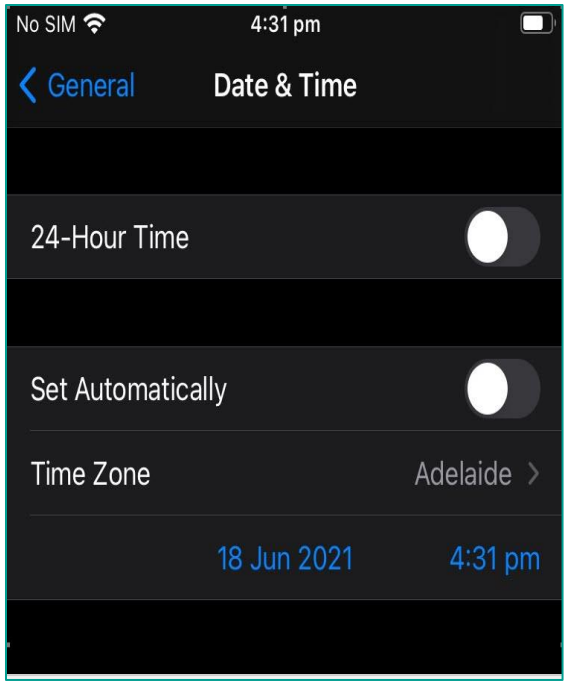
11. Change Date and Time in your iPhone

- From your home screen, tap on the **Settings** icon.
- **Tap "General". Then** The button is located about halfway down the General menu.

You can adjust them.

- Go to Settings > General > Date & Time.
- Turn on any of the following:
  - 24- hour Time
  - Set Automatically - To modify the default date and time, you can turn off the **Set Automatically** and then change the date and time displayed.





12. Sensor Test Tab

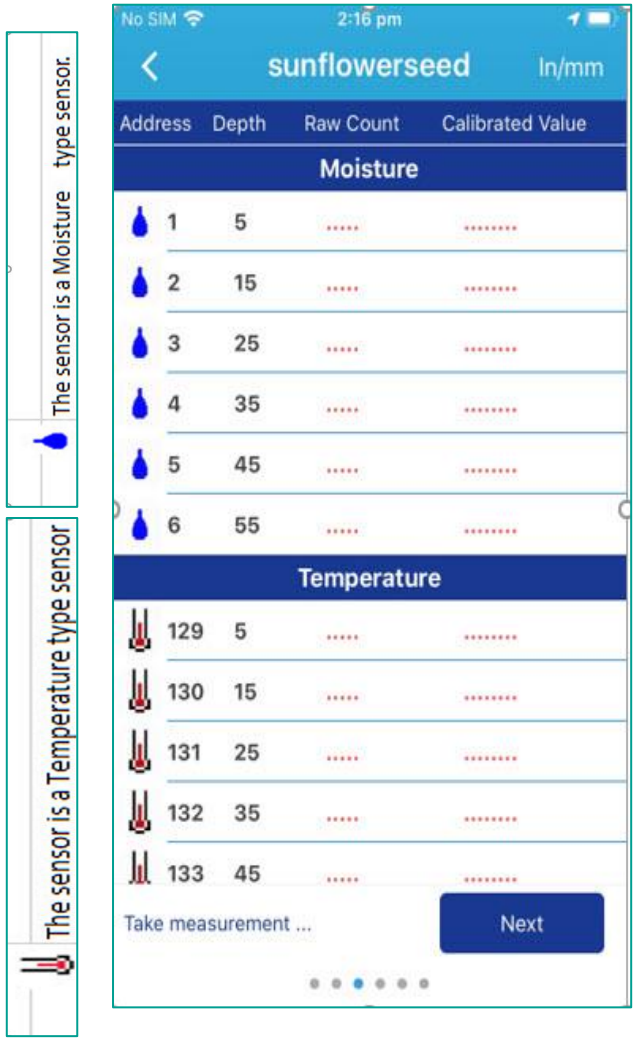
This section provides you information about the configuration value statues.

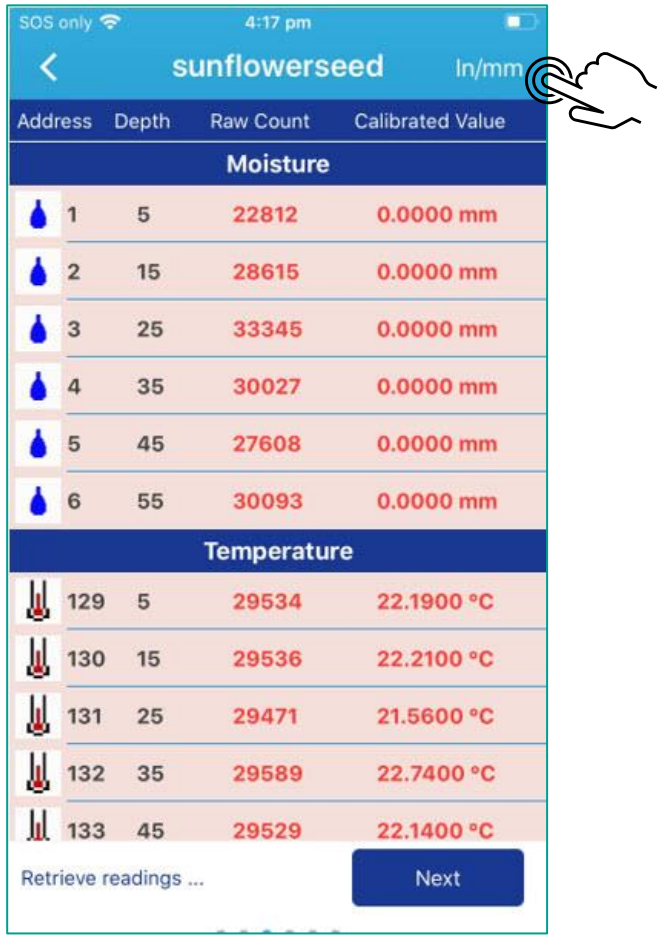
- **Address**: It displays the sensor address for each sensor.
- **Depth**: It provides the depth of each sensor.
- **Raw Count**: It displays the raw count for each sensor.
- **Calibrated Value**: It displays the converted sensor value after applying the calibration equation.
- **Inches/mm :** To change the unit in In/mm you can click on in/mm at the top-right corner of your screen.

The change in colour indicates that the sensor is querying the raw count and moisture values.

They continuously retrieve the reading from the probe and displaying on the list.

- Click **Next**





13. Modem Tab

This section provides you information about Modem and it response.

Last Response: 040 is a success response, it displays the status at the end of the most recent upload or attempt to upload.

Test : This button initiates a connection to the Internet but does not upload any readings.

Note : The probe and modem should not be deployed in the field until a successful test has been done.

Upload Data After Completing Wizard: This is the ultimate test , you can conduct before going to the field.

Once you tick the check box it the box will appear as ✅

- Click **Next**

14. Upload Location

This section provides you with the information on how you can upload your Probe Location directly into your IrriMAX Live account.

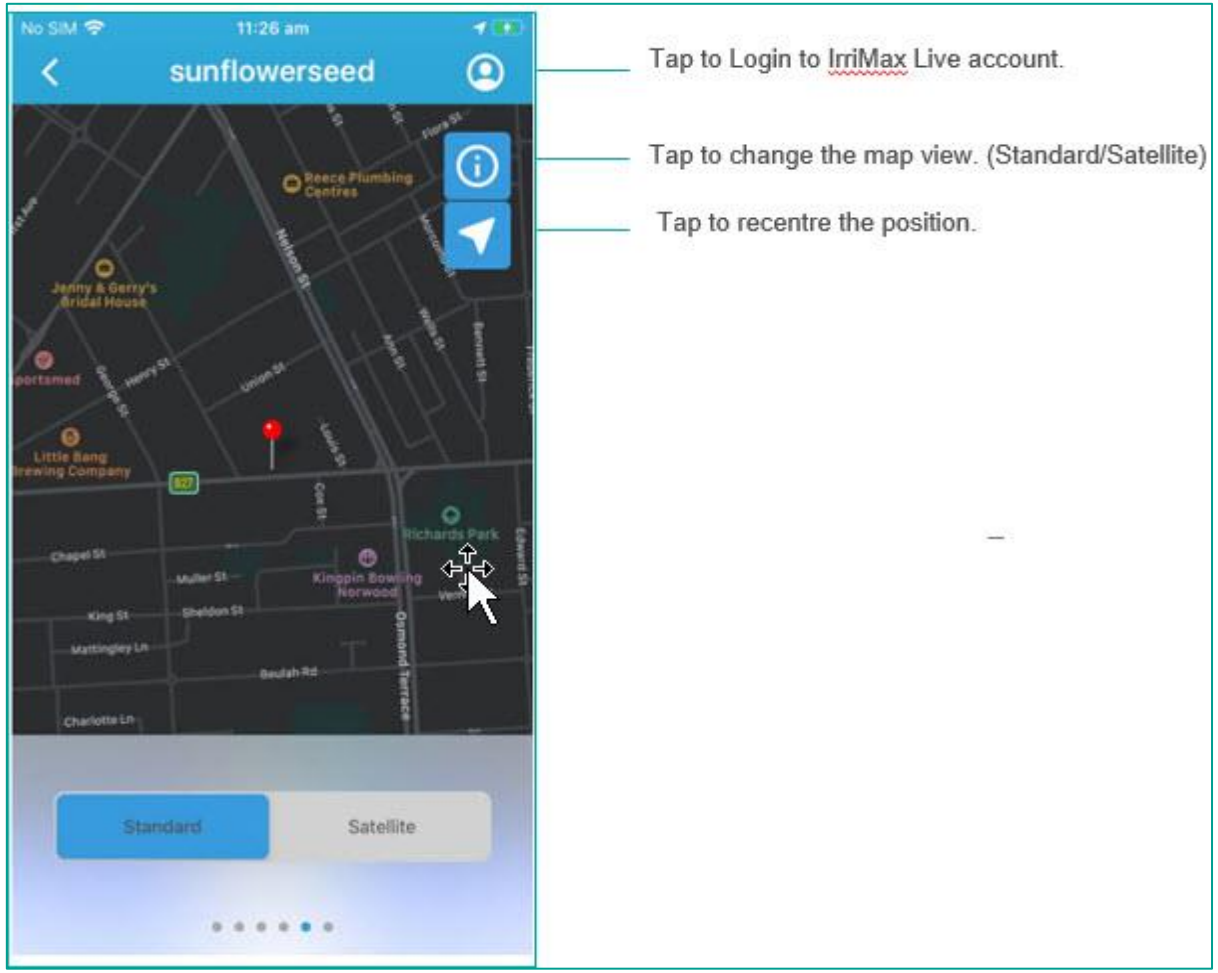
Icons

The following icons are included in Sentek Probe Utility to:

Login to your IrriMAX Live account for uploading photo and location.

- With the help of information symbol you can search for the location on the **map**, Tap and hold the pin until you see the pin appear under your finger and drop it to get help in finding the probe location.

If the pin is not placed in the right location , you can continue to touch and hold the pin and move it to a preferred spot.

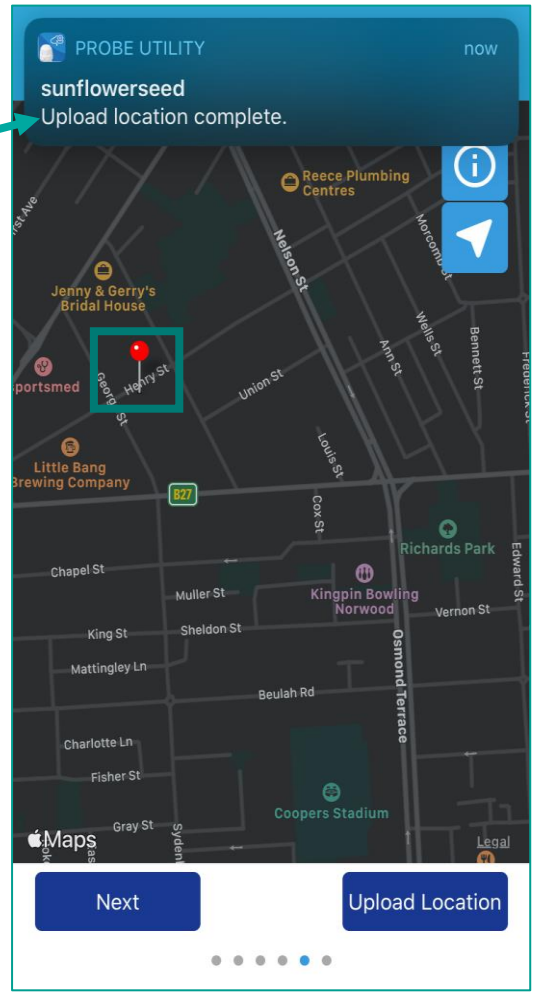


Upload Location Cont…

Scroll to the bottom of the screen and Click on the **Upload Location**.

You get a pop-up message on your phone screen.

Click **Next**.



15.Take Photo

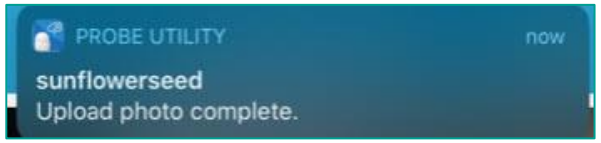
This section provides you information on how you can directly upload the photo into your IrriMAX Live Account.

To take and upload a photo, follow these steps:

- Click photo of the probe or your location.
- To upload from your mobile device, tap the Upload icon at the bottom right of your screen.
- Once uploaded, you can view it in **IrriMAX** Live.

You will then get a notification saying your photo is uploaded.

- Click **Next**.



16.Glossary

App	The Sentek Probe Utility
RSSI (Received Signal Strength Indicator)	This helps you to know how well your device can receive the signal from the an access point . (it identity's if your modem is receiving enough signal to get a better wireless connection.)
Logger ID	This name is used to supply the IrriMAX Live database Logger ID.
Serial No:	It is a unique identification number in your device for the identification and for warranty purposes.
Upload Response	It displays the status at the end of the most recent upload or attempt to upload.
Upload Signal	It helps you to check weather the signal is up to the speed in your modem.

17.References and Publication Information

The following table lists the documents that are referred to within this document:

17.1 References to Other Documents

Document Name
Sentek Modem SM200

17.2 Functional Evolutions

Application Version	New / Updated Features	Document Version
Sentek Modem SM 200	N/A	1.0

17.3 Publication History

Document Version	Application Version	Publication Date	Editor	Overview
1.0	1.0			Initial publication of the document.

Thank you

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