

# RF300 Instruction Manual

## Contents

Page No.	Section No.	Title
2	Section 1.0	System Set-Up
3	Section 1.1	PC Vs Cloud Data Storage
4	Section 2.0	Data Logger and Network Set-Up
7	Section 2.1	Advanced Network Configuration
8	Section 2.2	General Settings For PC Set-Up
12	Section 2.3	PC Storage Set-Up Completion
13	Section 3.0	Viewing Devices On The PC
14	Section 3.1	Data Logger Status and Properties
15	Section 3.2	Data Logger Sessions
17	Section 3.3	Graphing Data
28	Section 3.4	Saving & Exporting Data
21	Section 4.0	Data Logger Management
23	Section 4.1	Adjusting Data Logger Settings
26	Section 4.2	Muting & Resetting Alarms
27	Section 4.3	Deleting A Data Logger
28	Section 5.0	Viewing Previously Saved Data
26	Section 6.0	Signing into a Cloud Account
28	Section 6.1	Data Logger and Cloud Set-Up
31	Section 6.2	General Settings for Cloud Set-Up
32	Section 6.3	Viewing Data Loggers on Cloud
33	Section 6.4	Add New Data Logger on Cloud
37	Section 6.5	Viewing Cloud Data and Graphs
40	Section 6.6	Event Logs
42	Section 6.7	Resetting Alarms
43	Section 7.0	LCD Icons
44	Section 7.1	Data Logger Screens
45	Section 7.2	Battery Life & Charging
46	Section 7.3	Reset & Factory Restore
47	Section 7.4	Firmware Updates
51	Section 8.0	Enterprise Network
52	Appendix 1	RF300 Email to SMS/Text Service (US only)

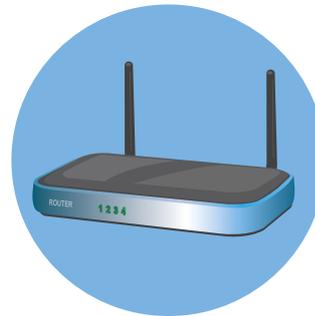
Ensure that you have the following:



WiFi Data Logger



Micro USB Cable



Router or  
Access Point



PC or Laptop  
(running Windows 7 or  
above)

## System Set-Up

- 1 You will need the SSID and password for the wireless network. The password is sometimes referred to as the passphrase or passkey and often found on the rear of the wireless router.
- 2 Download and install the free WiFi Sensor software from [www.comarkinstruments.com/software](http://www.comarkinstruments.com/software) or [www.comarkusa.com/software](http://www.comarkusa.com/software).
- 3 Make sure you 'allow' any security access highlighted by your Firewall or Antivirus program. Your system may automatically request this.
- 4 When you have installed the software an icon will be placed on your desktop.



# Section 1.1

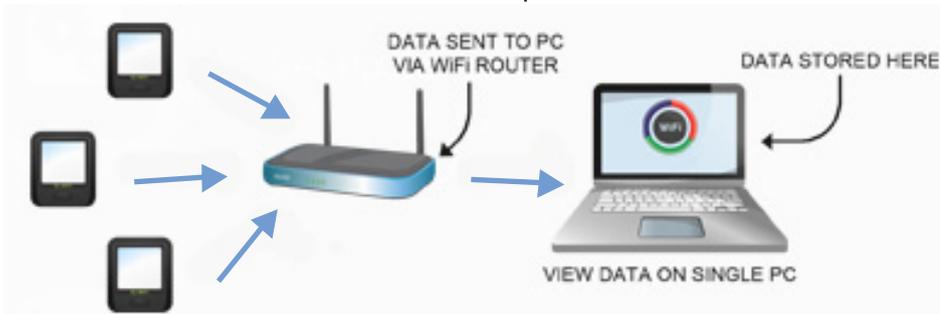
# PC Vs Cloud Data Storage

## Data Storage Choices

There are two data storage choices for your WiFi monitoring system; on the PC or on the Cloud.

### PC Data Storage

With PC data storage all your data is stored locally on your PC. All data is kept within your local network and no internet connection is required.



To store data from your data loggers on your PC please click 'On This PC' during the set-up process. Please turn to Section 2.0 for detailed instructions for setting up your data loggers for PC storage.

### Hint / Tip:

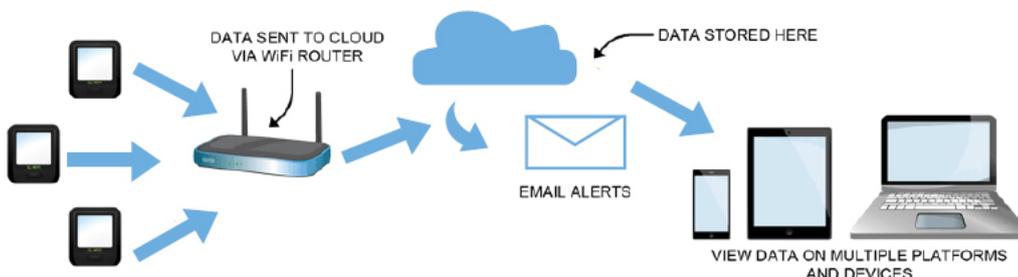
The PC and the logger MUST be on the same part of the network.

The software must be running for the data logger to send data to it. Should the software be closed accidentally or it shuts down (this will happen when the PC goes into sleep mode) the loggers will go into hibernation mode and retain their data until the software is opened again. The loggers will indicate they have lost connection by the antenna flashing. It may take a full transmit period to reconnect the logger to the PC software and then a number of hours to fully download the recorded data. This will depend on how long the device has been disconnected. It is important to know that while disconnected alarms will not be received by the software and the USER will be unaware of them.

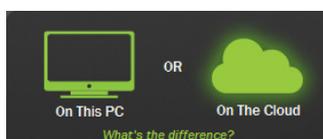


### Cloud Data Storage

With Cloud data storage all your data is stored remotely on our secure servers . Data is transferred to our servers through the internet and is then accessible from anywhere via a web browser on any internet enabled data logger.



To store data from your data logger(s) on the Cloud please click 'On The Cloud' during the set-up process. Please turn to Section 6 for detailed instructions for setting up your data logger(s) on the Cloud.



# Section 2.0 Data Logger and Network Set-Up

This section is for PC users.

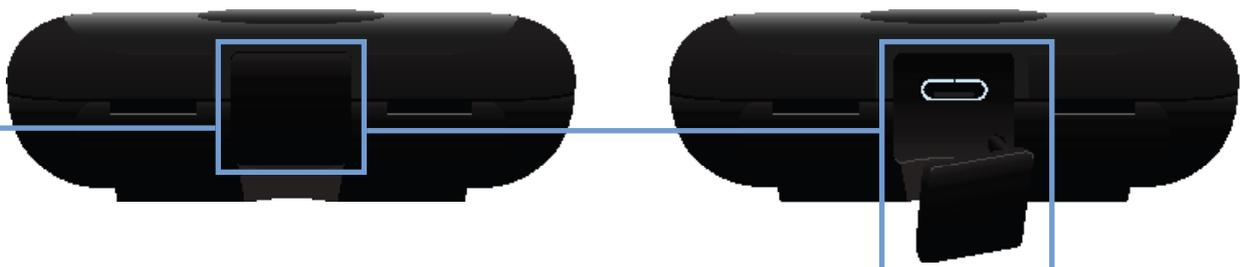


1 Start the Diligence WiFi software by double clicking the desktop icon.

2 Click 'Set-Up Device' button and choose 'On This PC'.

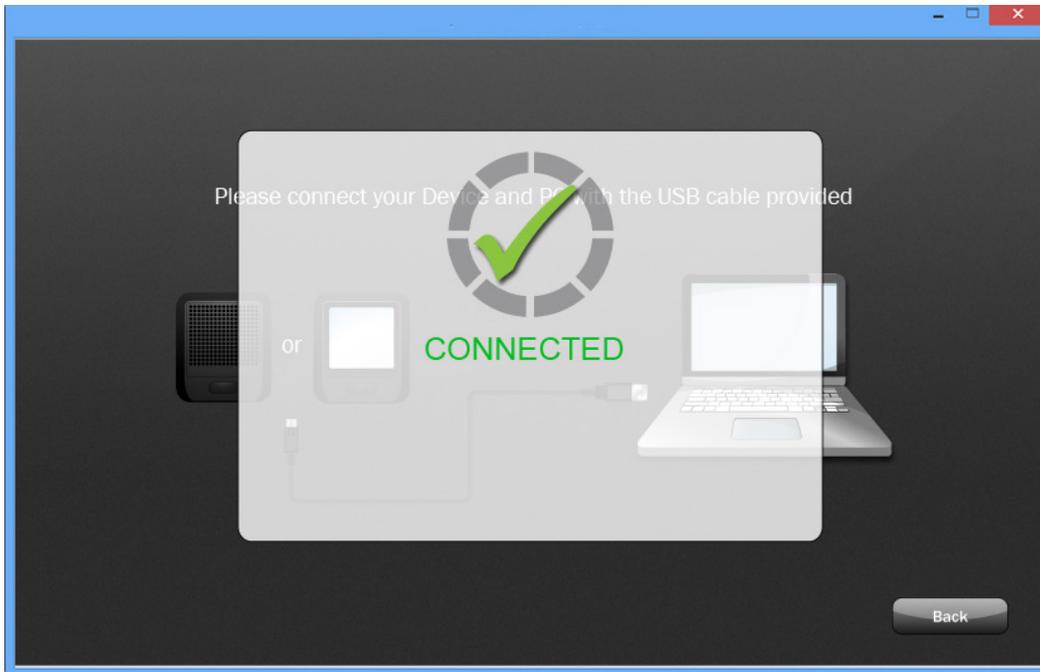


3 Connect the data logger to your PC using the USB cable provided. The USB socket on the data logger is protected by a rubber bung, remove this to gain access to the socket.



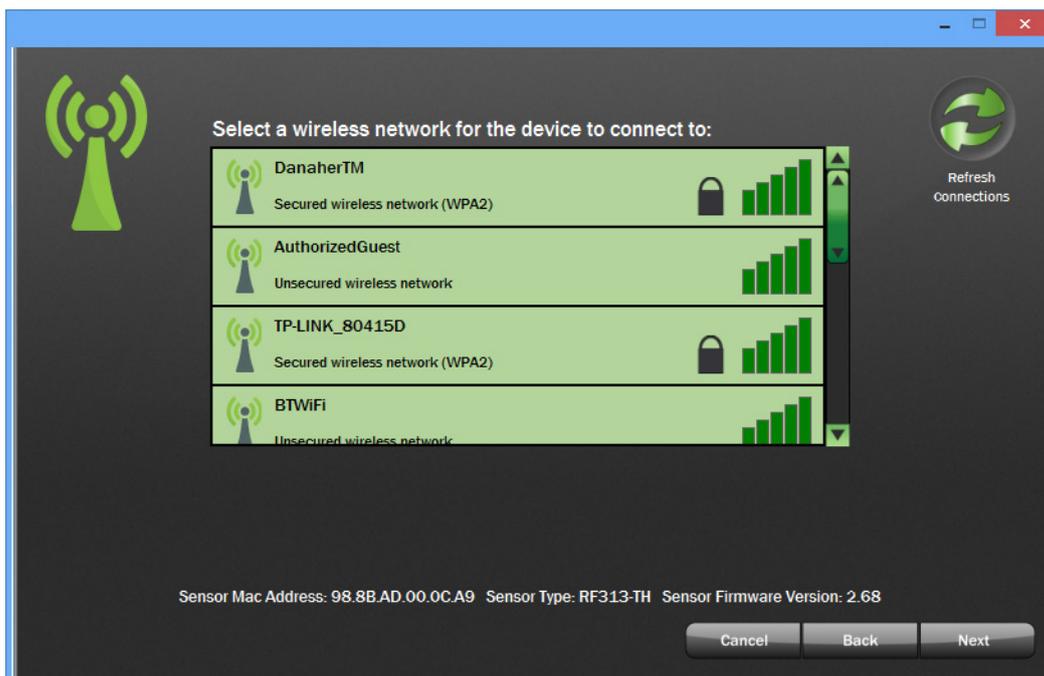
## Section 2.0 Data Logger and Network Set-Up

**Note:** If the data logger connects successfully you will see the following screen. If it fails, check the cable is fully connected to the data logger and PC. The software will automatically try again.



### 4 Scanning

When the message 'scanning' appears the data logger is listening for wireless networks that are currently in range. Once scanning has completed a list of available networks will be displayed. If the list is blank press the 'refresh connections' button on the top right.



## Section 2.0 Data Logger and Network Set-Up

- 5 Select the network you wish to connect to.
- 6 If you use a hidden network simply scroll to the bottom of the list and select 'Join Other Network' and then fill in your network details.
- 7 Enter the password. Press 'Connect'. After the router has successfully connected press 'Next'.

**Note:** If the data logger fails to connect to your wireless router the following screen will appear. Follow the on screen instructions and check the four points below.

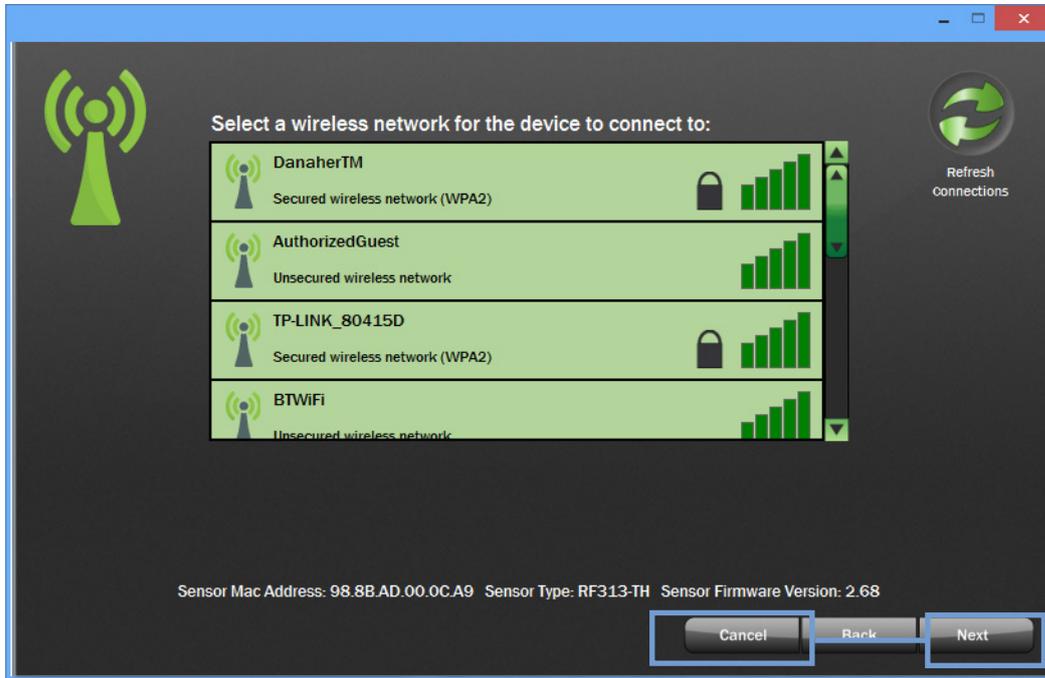


- 1) Check your password
- 2) Click on the software refresh button
- 3) Re-orientate the position of your data logger
- 4) Ensure your WiFi router is turned on and within range of the data logger

Go to Section 2.3 for Cloud set-up and 2.2 for PC set-up.

## Section 2.1 Advanced Network Configuration

If you need to configure additional network settings such as a static IP address, tick the Enter Advanced Network Options box before clicking 'Next'.



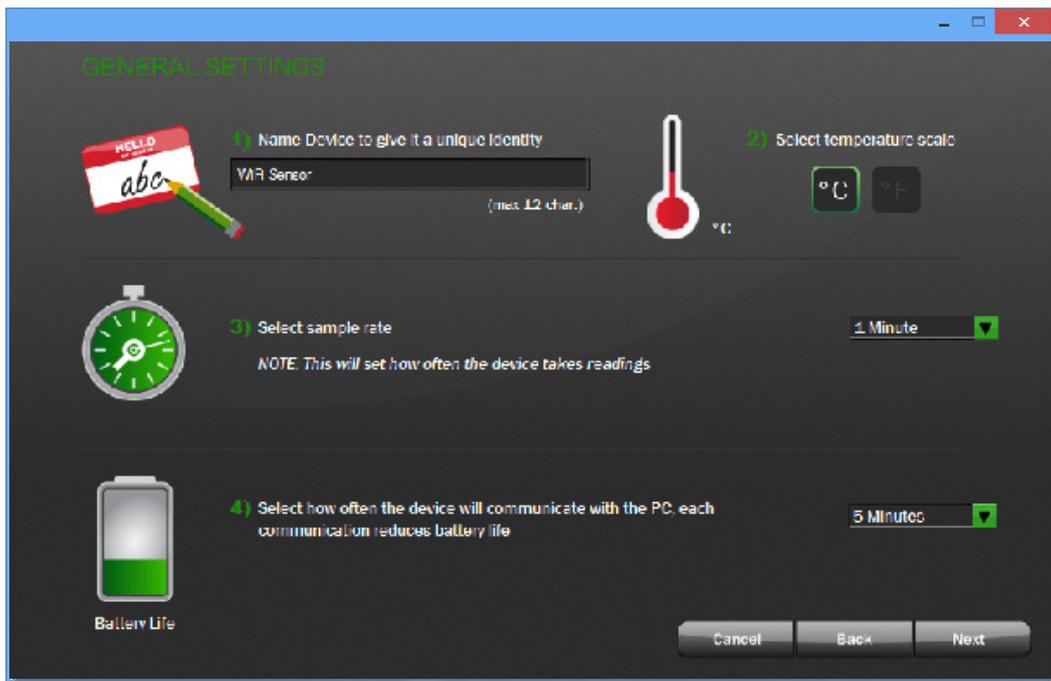
Enter the IP address to configure the Data logger along with the Subnet Mask and Default Gateway.

It is also possible to lock the data logger so that it will only connect to one Wireless Access Point. This may be necessary if you have multiple Access Points with the same SSID. Enter the MAC Address of the Access Point.



## General Settings

- 1 Enter a name for the data logger, the temperature scale, sample rate and transmission rate.



### Sample rate

This sets how often the data logger takes a reading.

**Note:** This is not how quickly the data logger transmits the data.

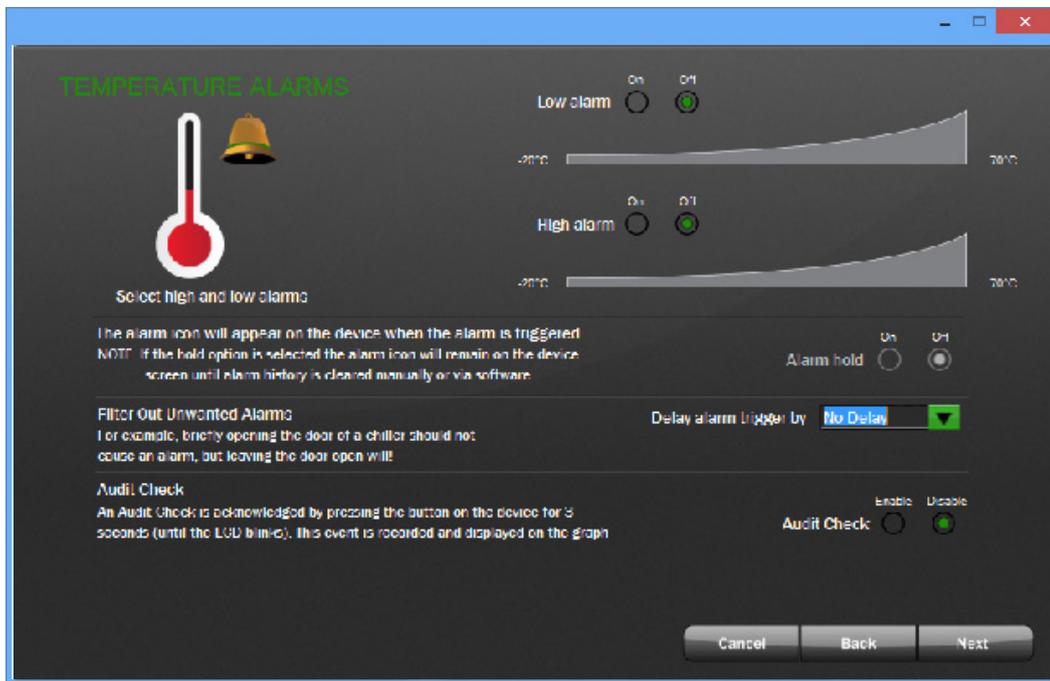
### Frequency of sample transmission

This sets how often the data logger transmits the information back to the PC.

In the example above the data logger takes a reading every 1 minute and logs this information on-board the data logger. Every five minutes the data logger will transmit the readings to the PC.

**NOTE:** the battery icon gives an indication of the battery life based on the settings you have selected. a fuller battery indicated a longer run time before charging is required. You can play with the settings to get your ideal setting.

## 2 Temperature Alarm set-up.



### Low / High Alarms

You can set an alarm to be triggered once a data logger exceeds a high or low temperature.

**Note:** If you try to set the low alarm higher than the high alarm (and vice versa) you will get an error message.

### Alarm Delay

Use this to filter out unwanted alarms by delaying the alarm trigger. Select the desired delay from the dropdown box.

### Alarm Hold

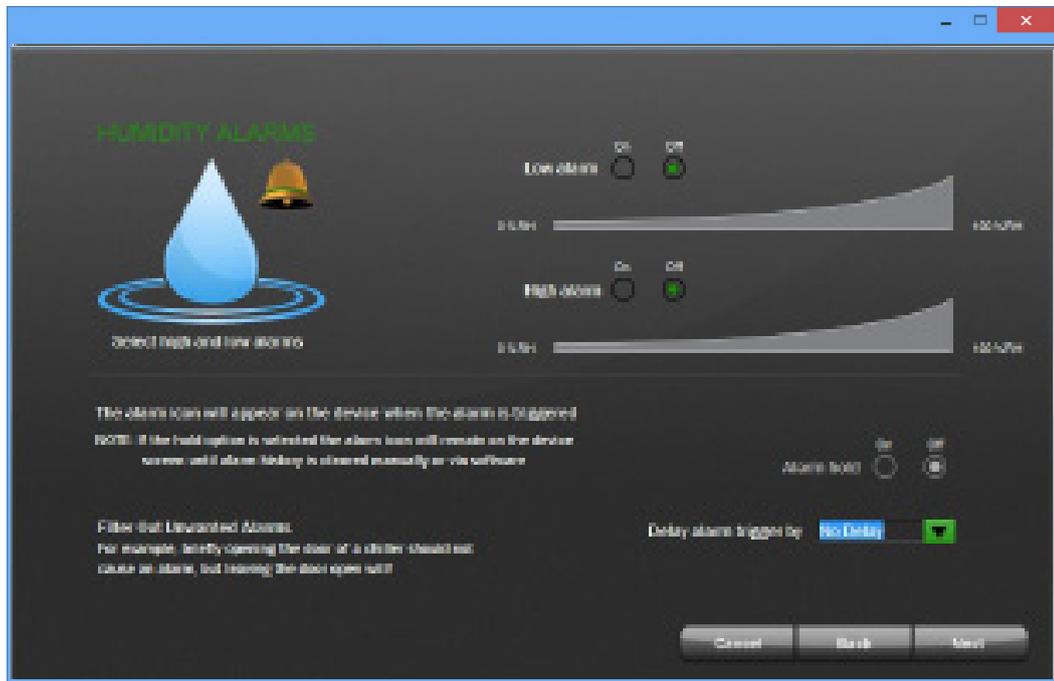
This will hold the data logger in its alarm state even when the temperature has returned to an acceptable range.

For example if the 'High Alarm' is set to 42°C and the temperature measured rises to 46°C it will trigger an alarm. If the reading then drops down to 41°C and 'Alarm Hold' is switched on, the data logger will remain in an alarmed state. If 'Alarm Hold' is switched off then the data logger would revert back to its normal state. In this situation you can check missed alarms by reviewing the graph.

### Audit Check

This function will allow a user to record on the graph when a data logger is physically checked. This is acknowledged by pressing and holding the data logger button for three seconds.

### 3 Humidity Alarm set-up.



#### Low / High Alarms

You can set an alarm to be triggered once a data logger exceeds a high or low humidity level.

**Note:** If you try to set the low alarm higher than the high alarm (and vice versa) you will get an error message.

#### Alarm Hold

This will hold the data logger in its alarm state even when the humidity has returned to an acceptable range.

For example if the 'High Alarm' is set to 42%RH and the humidity rises to 46%RH it will trigger an alarm. If the reading then drops down to 41%RH and 'Alarm Hold' is switched on, the data logger will remain in an alarmed state. If 'Alarm Hold' is switched off then the data logger would revert back to its normal state. In this situation you can check missed alarms by reviewing the graph.

## Select Probe Type

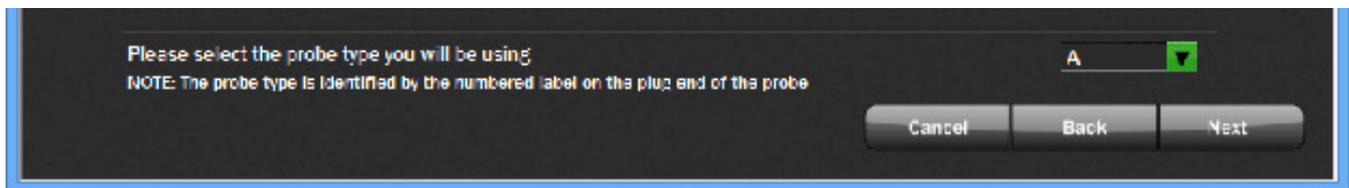
You can set the type of probe you will be using by selecting the probe number or letter from the dropdown box.

### 4a TC Probe Selection

You can set the type of thermocouple probe you will be using by selecting the probe type from the dropdown box: K, J, N and T.



### 4b TP Probe Selection



- Note: i) The probe number can be located on the label attached to the probe cable.
- ii) Selecting an incorrect probe type will cause measurement inaccuracies.



## Section 2.3

## PC Storage Set-Up Completion

Once set-up has completed successfully you will see the following screen.



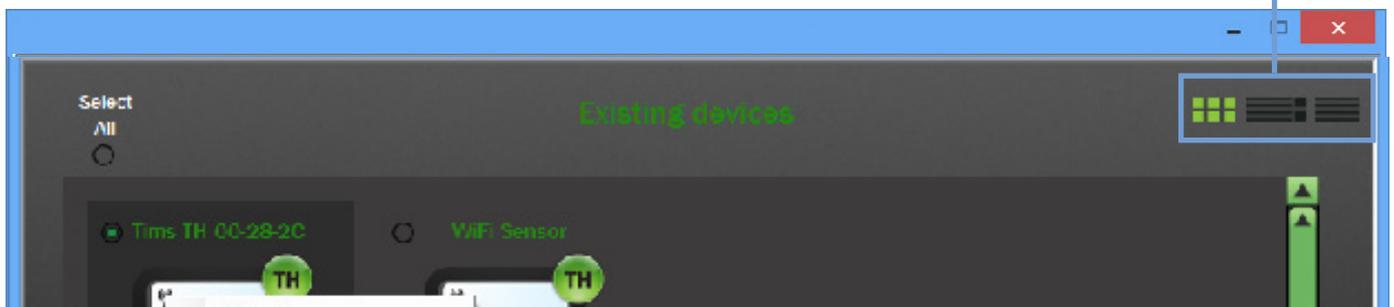
Click 'Next' to return to the starting screen.

Go to Section 3.0 - Viewing Data Loggers on a PC

1 Click on the second button to view the data loggers (View Devices).



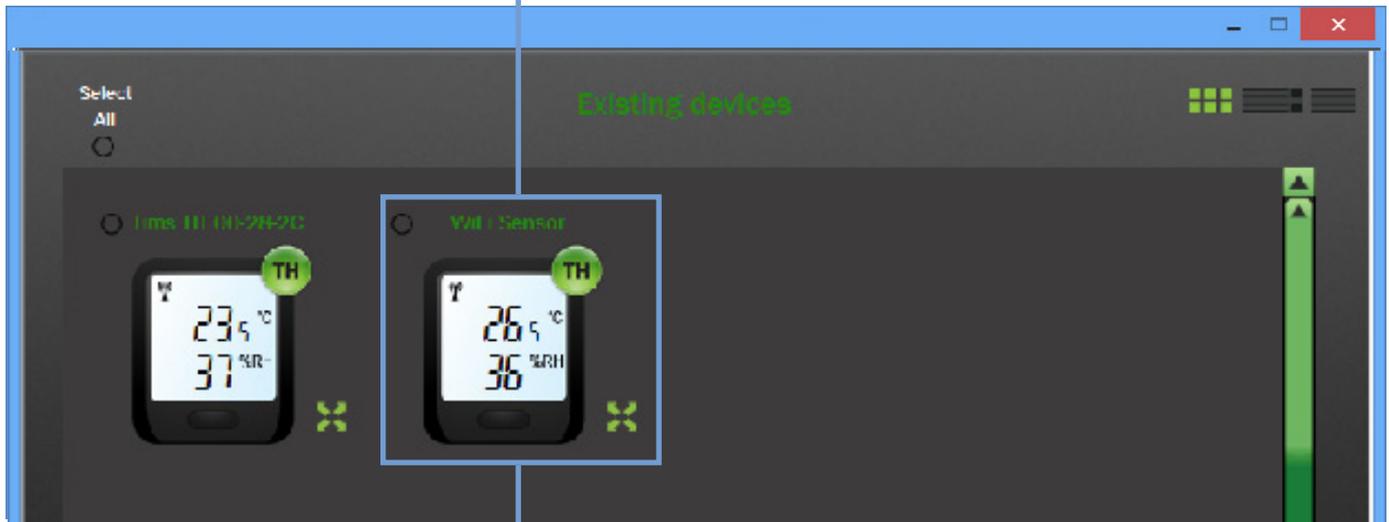
2 Notice the icons in the top right hand corner. Click on these to change the way the information is presented.



## Section 3.1

## Data Logger Status & Properties

- 1 In some screens, clicking on a data logger icon will display an enlarged view.



### Data Storage System (Automatic)

The PC gathers data into sessions.

#### 1 Sessions (in more detail)

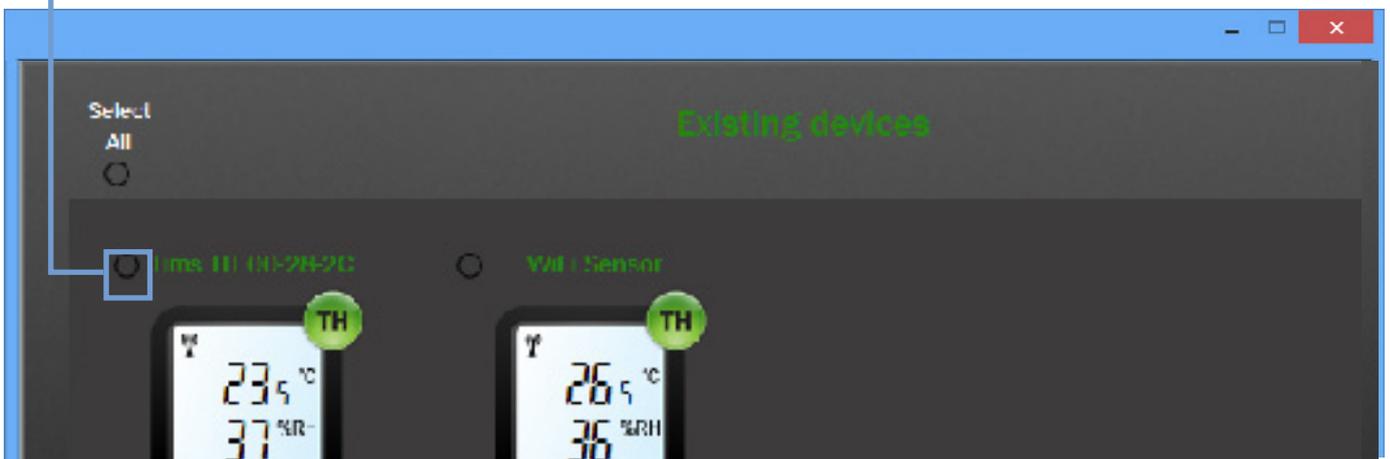
The data is split into what are called 'sessions'.

New sessions are started by:

- a change in sample rate
- b change of data logger name
- c change in alarm settings

**For example** a new session will begin when you change the name of the data logger. You may wish to move the data logger from 'Storage One' to 'Chiller One'. The data splits into two separate sessions. The resulting graphs will now be titled correctly.

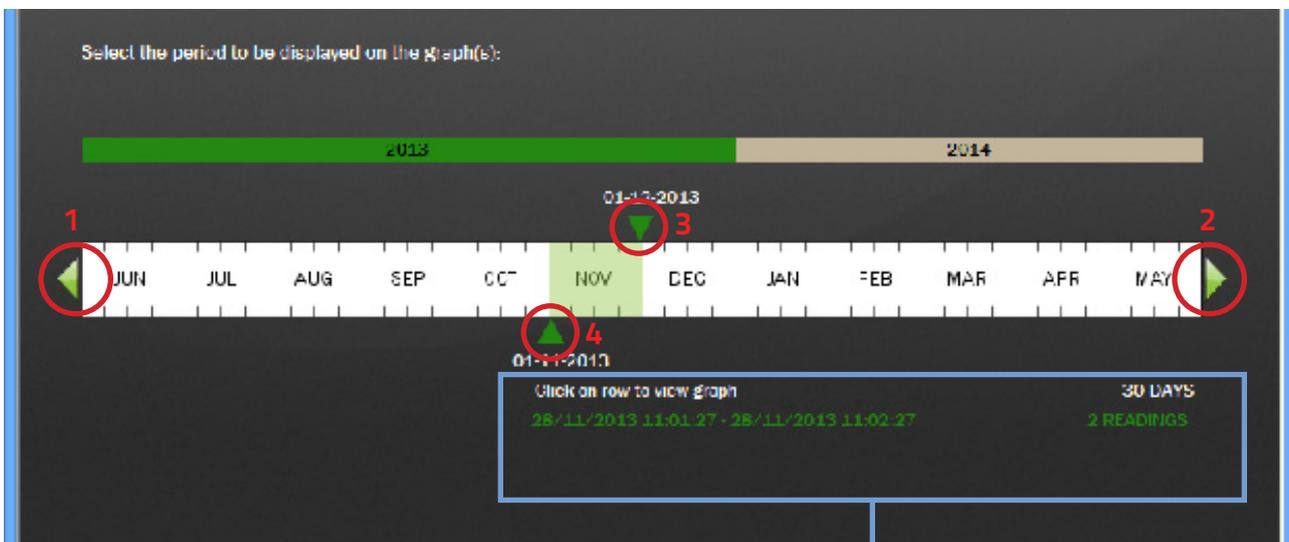
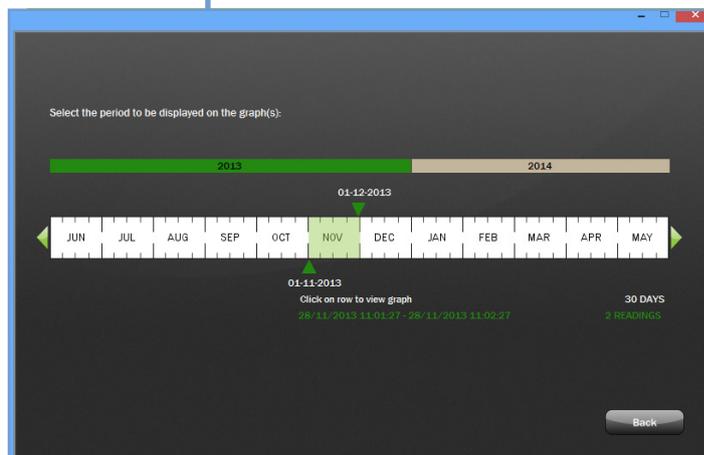
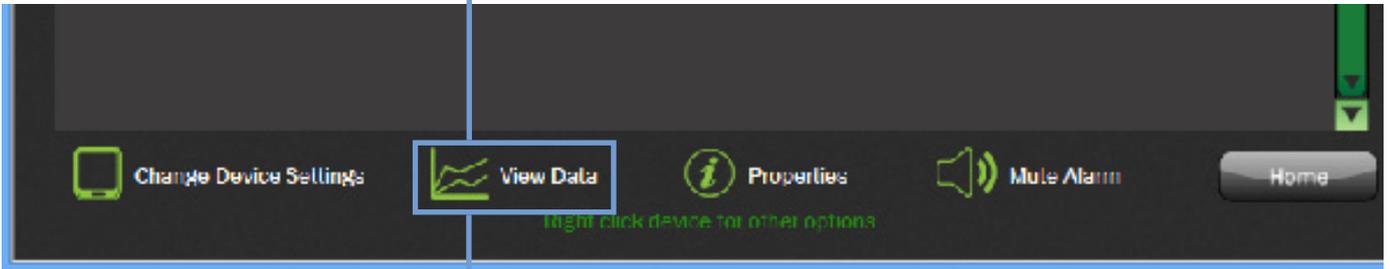
2 To view a session, select the data logger that you wish to see in greater detail.



## Section 3.2

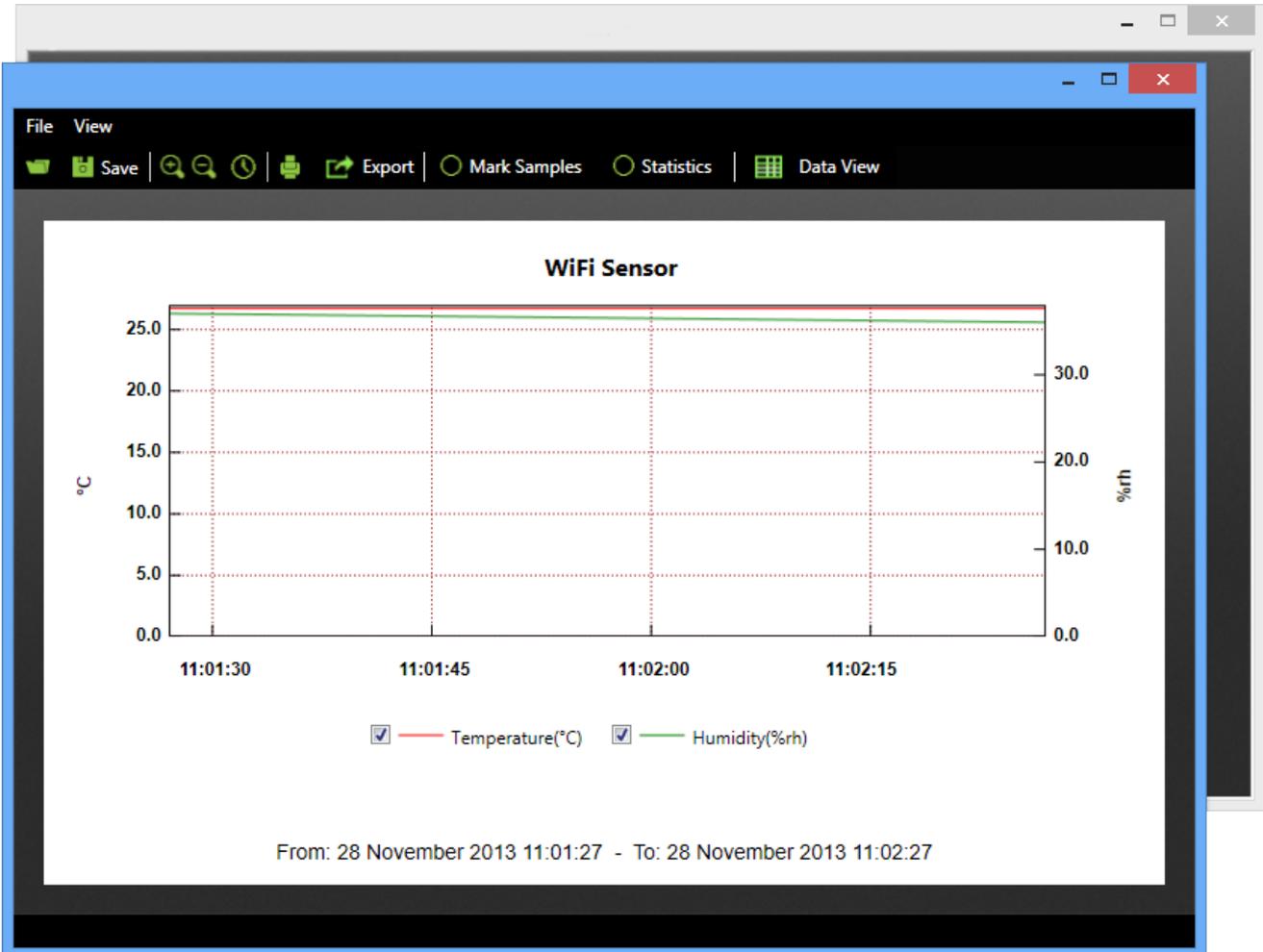
## Data Logger Sessions

- 3 Click on the 'View Data' icon located at the bottom of the screen and this will display the 'Graphing Sessions' screen.



- 4 List of recorded 'sessions'. Click on a row to view the graph.
- 5 If necessary, drag the date sliders to view sessions within a date range.  
Note: Arrows 1 and 2 allow you to scroll through the years. Arrows 3 and 4 allow you to select a time period of which to view sessions from.

- 1 To view a graph, select the session by clicking on the relevant row.

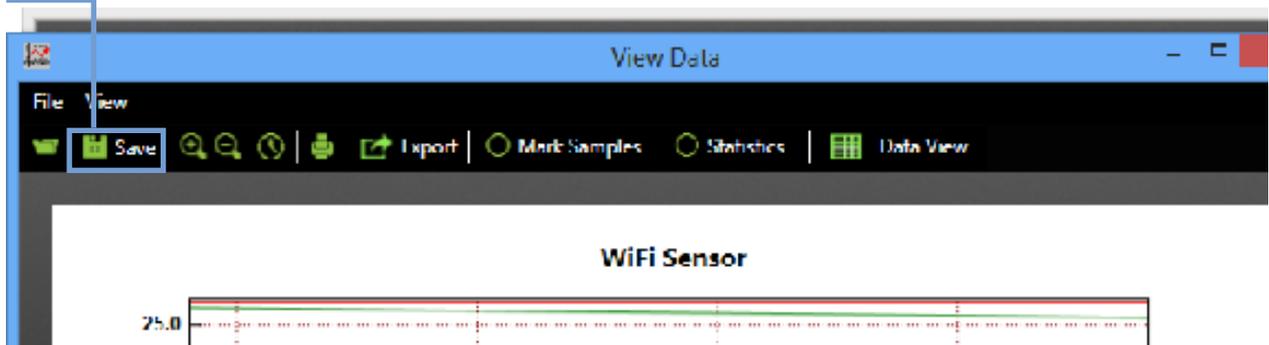


- 2 You can alter the information you wish to view by clicking on the tick boxes below the graph.

## 1 Additional Saving Method (Manual)

If you wish to capture a particular event and save this information as a separate file you can do this by opening the graph and selecting 'Save'.

Note: The system will ask you for a file name. Give the file a unique name.

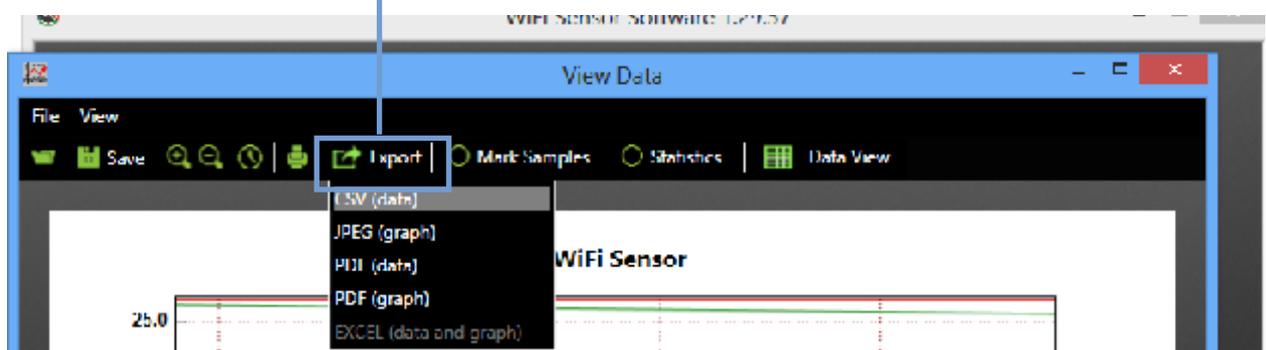


## Saving and Zoom

Using zoom within a graph, you can zoom in on an event and save this as a separate file. Be aware the graphing program always optimises the view for you, data is not affected, only the way the data set is displayed.

## 2 In a graph screen press the 'Export' button and select the required format.

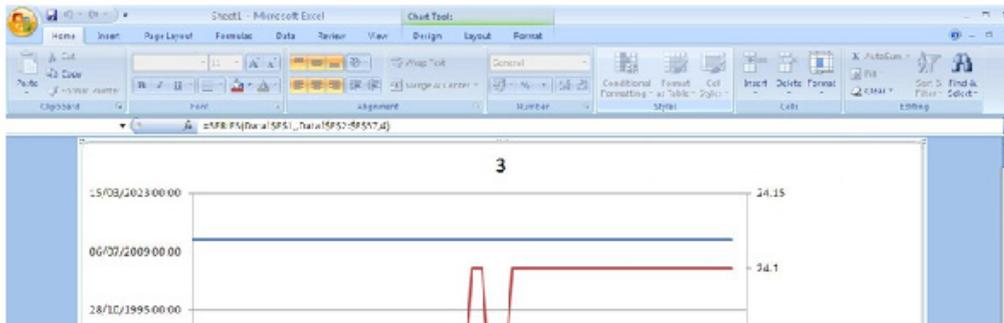
Note: Bottom option will only work if you have Excel installed



## Section 3.4

## Saving & Exporting Data

- 3 Excel will automatically run and import data.



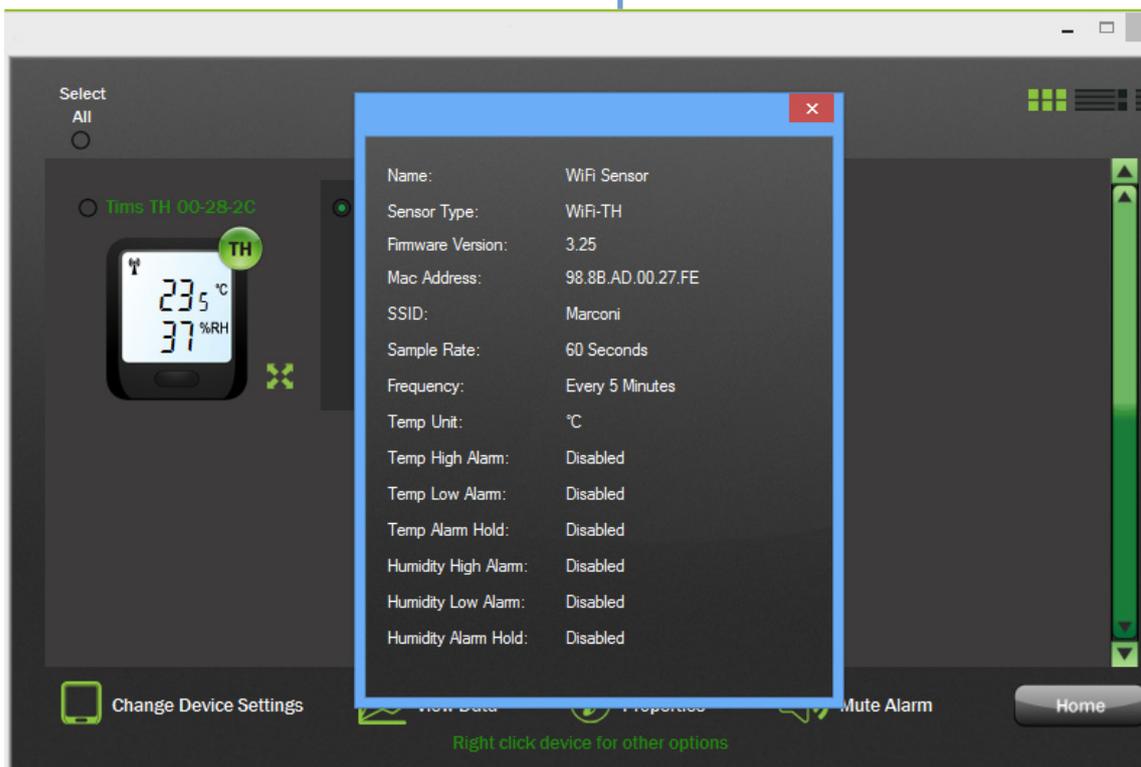
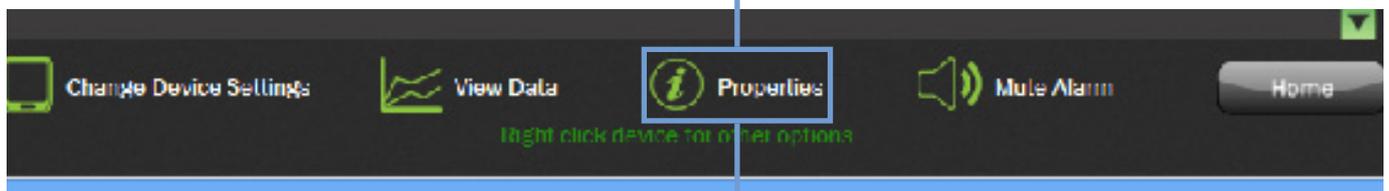
- 4 You can access the raw data through the second tab in the Excel spread sheets.

The spreadsheet shows the following data:

3 Time	Temperature(°C)	Humidity(rh)	Dew Point(°C)
1 09/05/2012 09:40	24.6	48	10.6
2 09/05/2012 09:40	24.5	48	10.6
3 09/05/2012 09:40	24.5	48	10.6
4 09/05/2012 09:40	24	42	10.3
5 09/05/2012 09:40	24	42	10.3
6 09/05/2012 09:40	24	42	10.3
7 09/05/2012 09:40	24	42	10.3
8 09/05/2012 09:40	24	42	10.3
9 09/05/2012 09:40	24	42	10.3
10 09/05/2012 09:40	24	42	10.3
11 09/05/2012 09:40	24	42	10.3
12 09/05/2012 09:40	24	42	10.3
13 09/05/2012 09:40	24	42	10.3

Data logger properties gives you a summary of all your data logger settings.

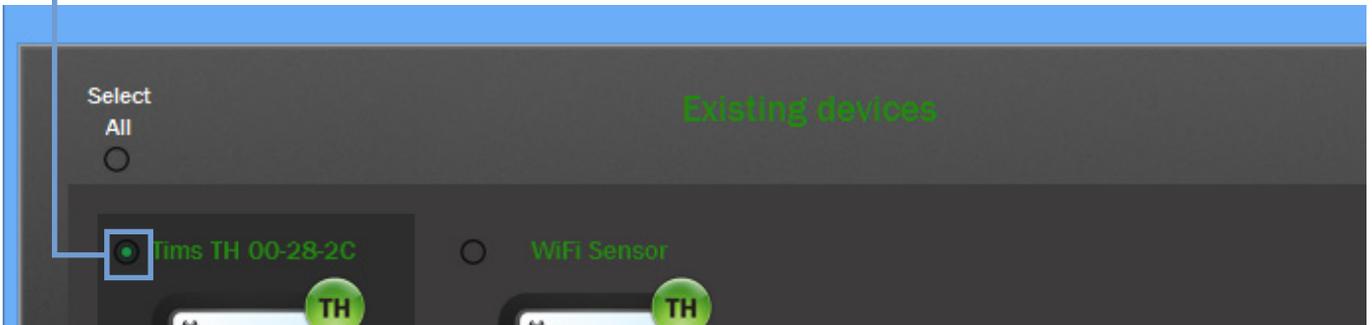
- 1 Select a data logger.
- 2 Click on the 'Properties' icon at the bottom of the screen.



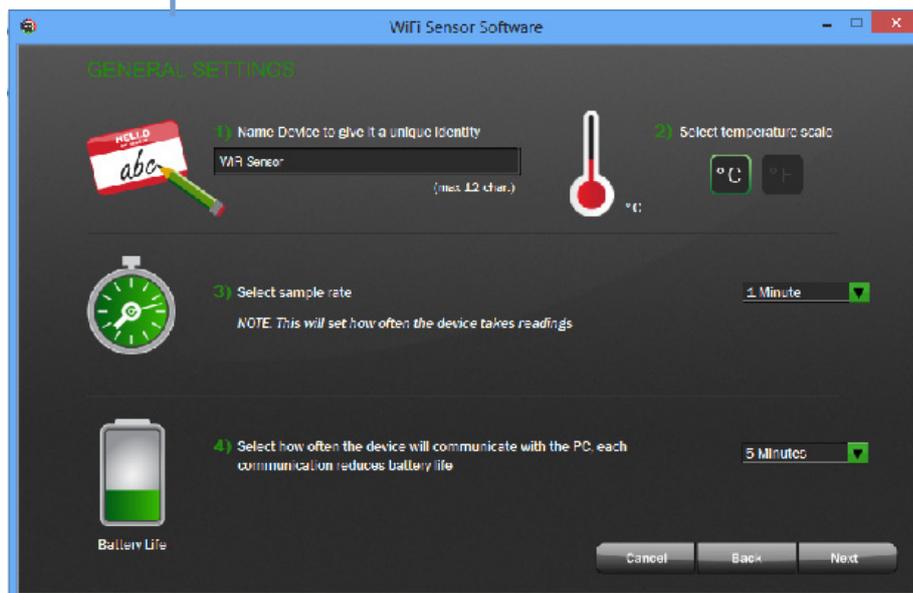
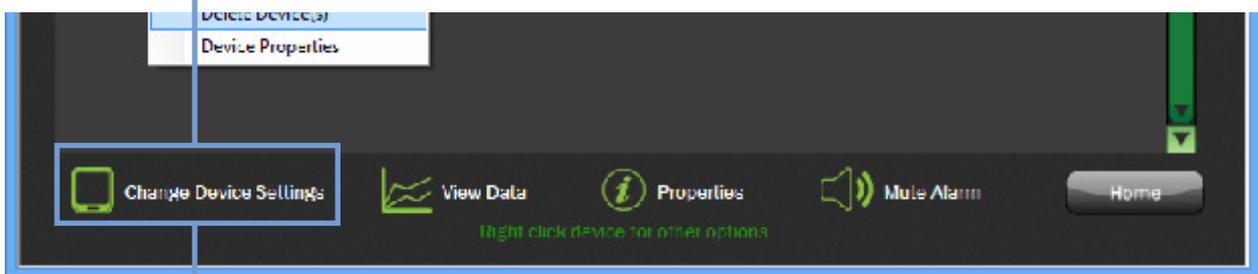
## Section 4.1

## Adjusting Data Logger Settings

- 1 To adjust data logger settings over the air, select the data logger that you wish to change.



- 2 Click on the 'Change Device Settings' icon located at the bottom of the screen and this will take you to the General Settings screen.



- 3 Follow steps as before in section 2.2.

## Section 4.1

## Adjusting Data Logger Settings

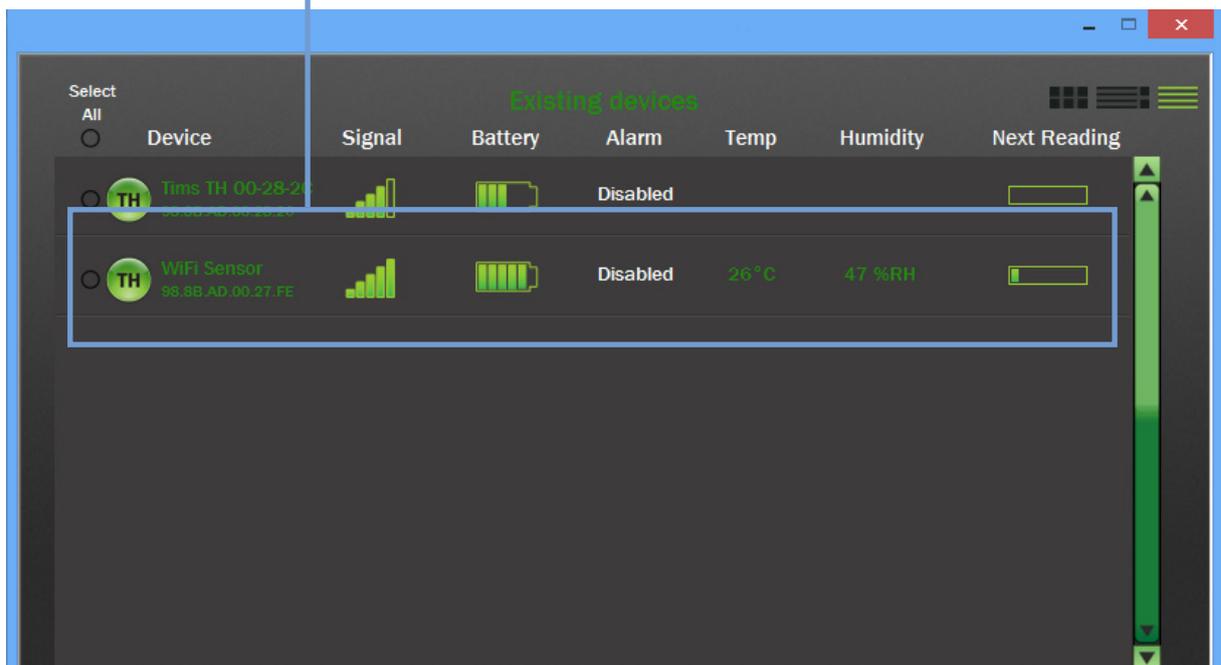
**Note:** The updates will take effect only when the data logger next transmits.

**For example** In the above example the data logger will communicate every minute so it could take a minute for the data logger to update.

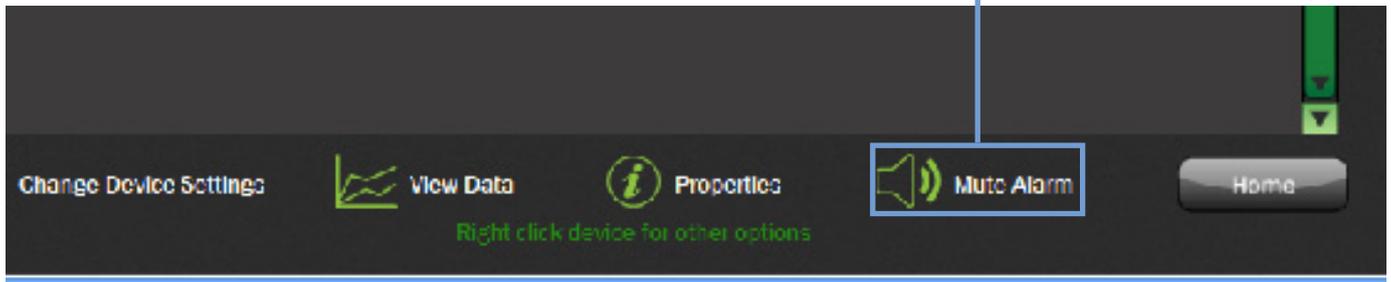
To save power a user may decide to transmit readings once every 30 minutes. In this case it will take at least 30 minutes for the data logger to update settings. If the sensor settings need updating earlier i.e; before the next regular transmission, there is the ability to 'force a transmission'.

### Force Transmission

To force transmissions press the data logger button three times until the RSSI (Received Signal Strength Indication) screen is displayed. The data logger will transmit every few seconds while this screen is displayed and will finish after a minute or when the button is pressed.

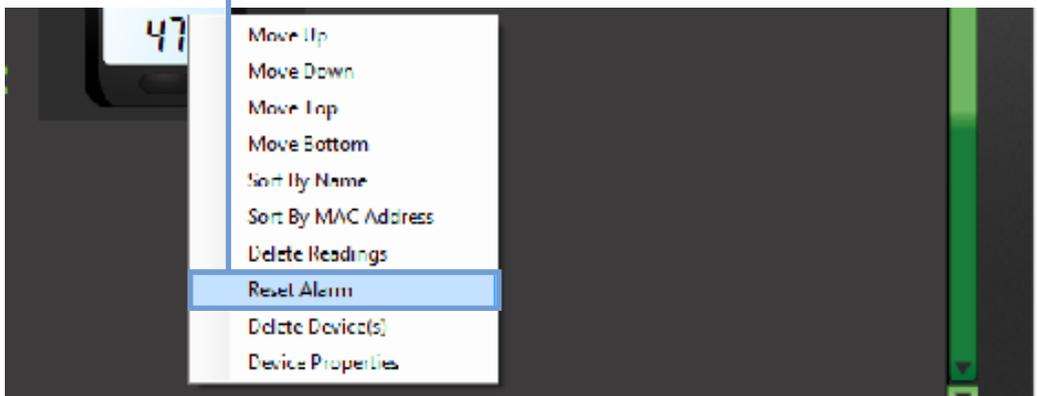


- 1 To mute alarms generated by the PC software, click on the 'Mute Alarm' icon located at the bottom of the screen.  
Note: This will mute all sounding alarms on your PC. There is no need to individually select them.



When the data logger reading has returned to an acceptable range, the alarm can be reset in one of two ways.

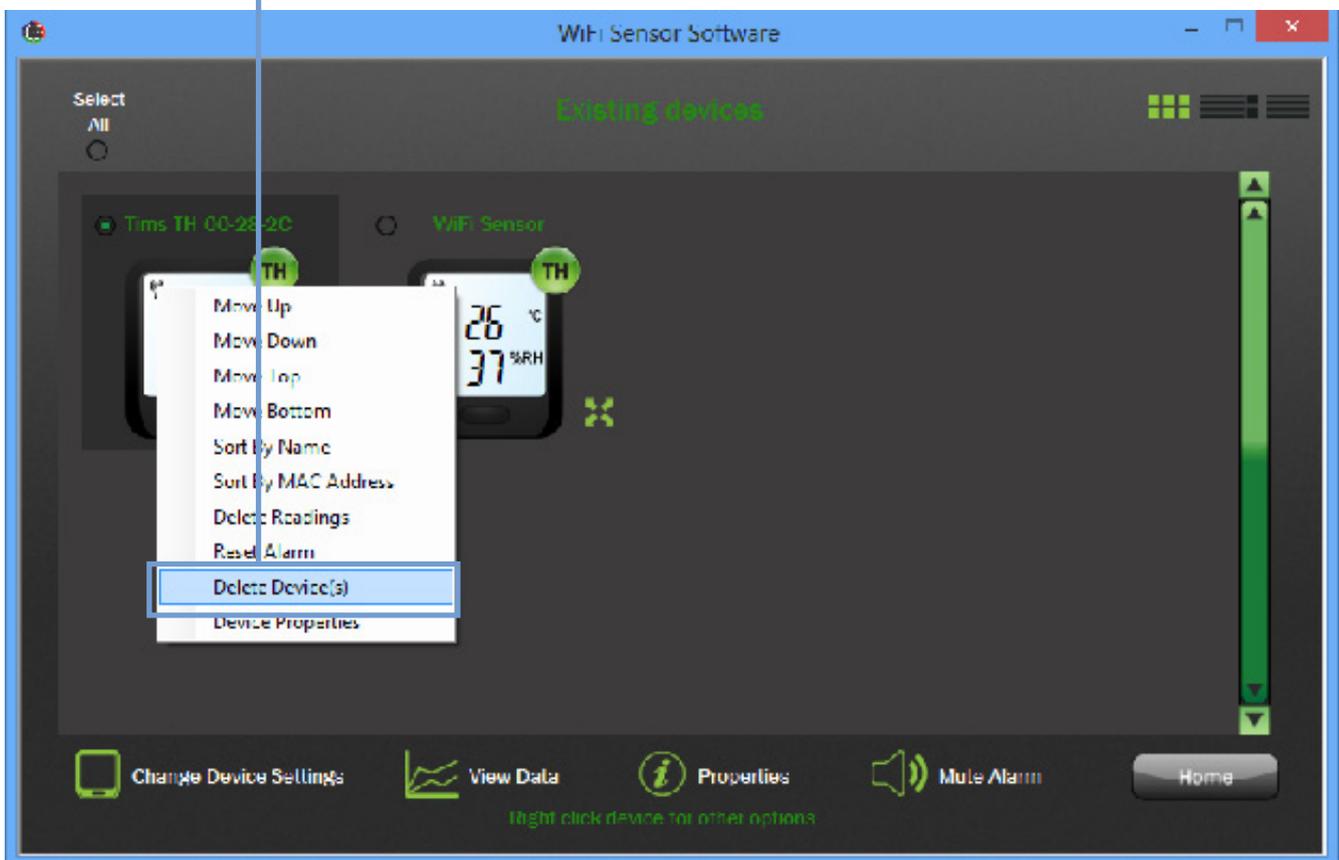
- 2 At the data logger, by briefly pressing the button.
- 3 In the software, by selecting the 'Reset Alarm' option from the drop-down list. The alarm will be reset when the data logger next transmits.



You can delete data loggers. This will delete the data logger from the PC program including all 'sessions'. ('sessions' are detailed more in section 3.4.2, Saving Data.) It will not delete any files you have specifically 'saved' from the graph.

1 Select a data logger from a view and right click.

2 From the options select 'Delete Device(s)'.



**Note:** If you have multiple data loggers selected, then all those selected will be deleted.

You will then be given the option to archive the data logger data. This will save all the data logger sessions as .txt files locally to your PC which can be viewed at a later date.

1 Click on the third button to view previously saved data.



This allows you to view any files you have saved from the graph. (see section 3.4 - Saving Data)

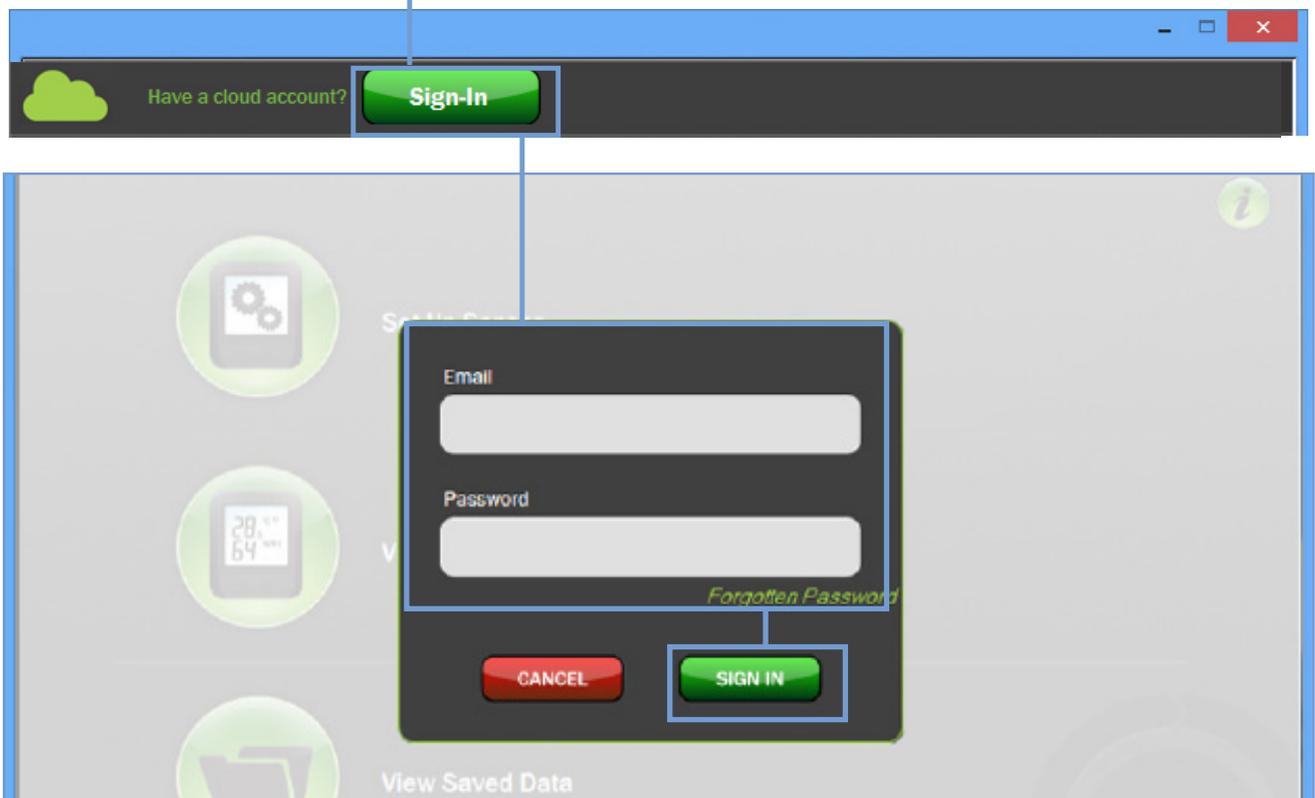
# Section 6.0 Cloud Account: Sign-In and Set-Up

## This Section Is For Cloud Users



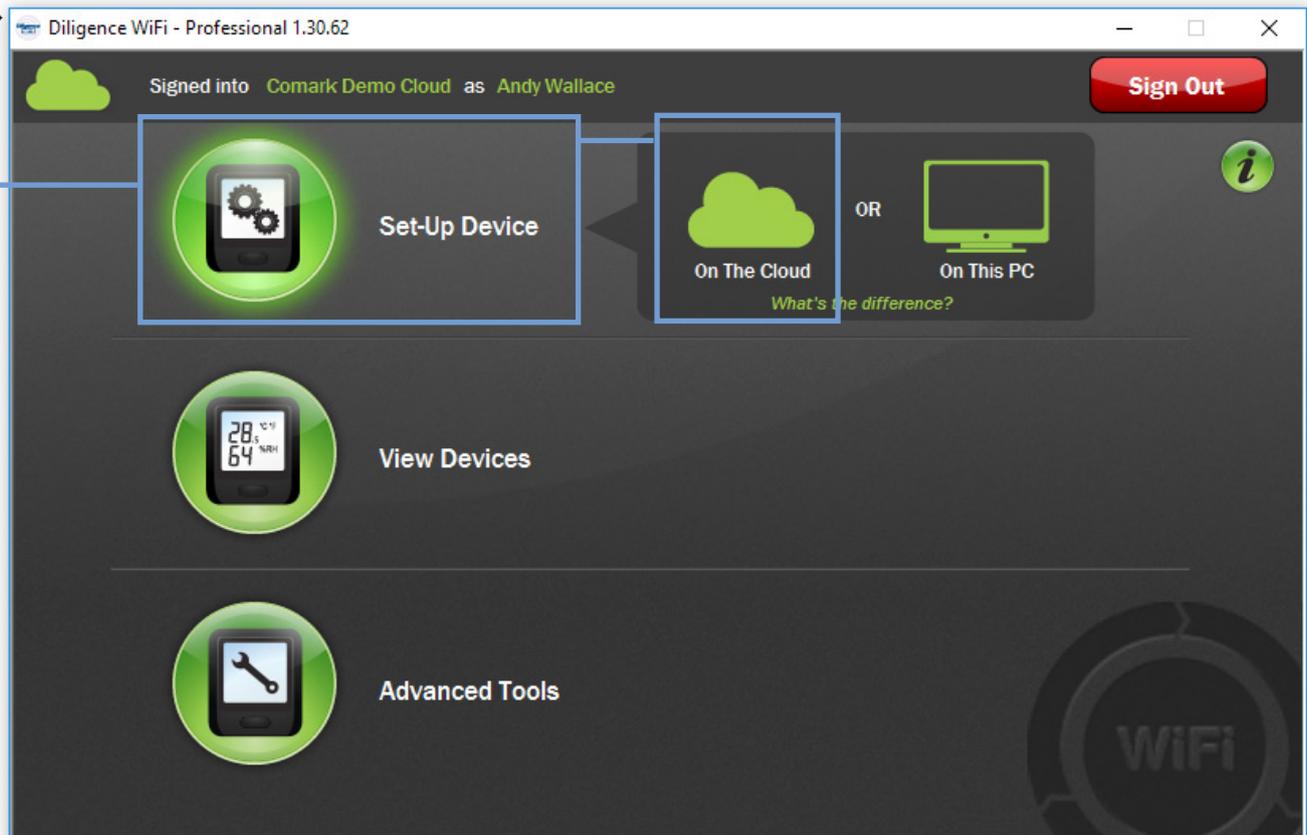
1 Start the Diligence WiFi software by double clicking the desktop icon.

2 To sign into your Comark Cloud Account on the Diligence WiFi Software click the green 'Sign In' button and then enter your account details into the fields that appear. Finally click 'Sign In' to log into your account.

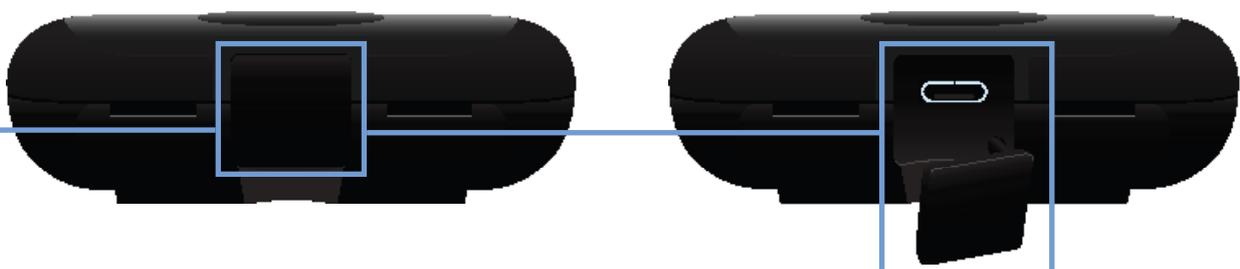


## Section 6.0 Cloud Account: Sign-In and Set-Up

- 3 Click 'Set-Up Device' button and choose 'On The Cloud'.  
(If a firmware upgrade message appears on the screen at this stage, refer to section 8.4 Firmware Updates.)

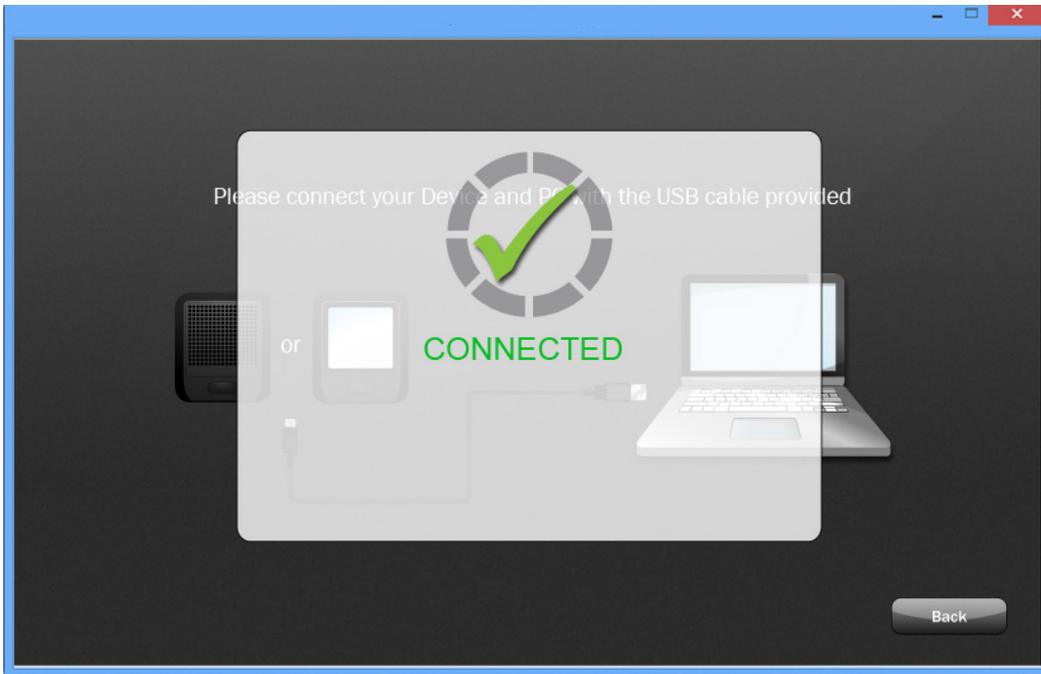


- 4 Connect the data logger to your PC using the USB cable provided. The USB socket on the data logger is protected by a rubber bung, remove this to gain access to the socket.



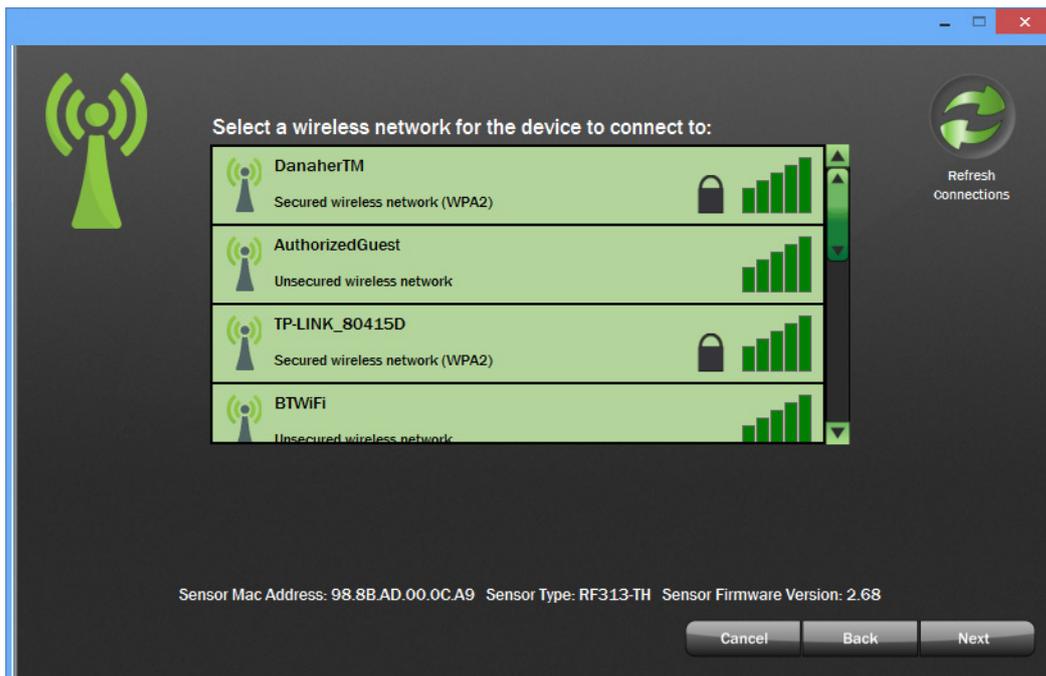
# Section 6.0 Cloud Account: Sign-In and Set-Up

**Note:** If the data logger connects successfully you will see the following screen. If it fails, check the cable is fully connected to the data logger and PC. The software will automatically try again.



## 5 Scanning

When the message 'scanning' appears the data logger is listening for wireless networks that are currently in range. Once scanning has completed a list of available networks will be displayed. If the list is blank press the 'refresh connections' button on the top right.



## Section 6.0 Cloud Account: Sign-In and Set-Up

- 6 Select the network you wish to connect to.
- 7 If you use a hidden network simply scroll to the bottom of the list and select 'Join Other Network' and then fill in your network details.
- 8 Enter the password. Press 'Connect'. After the router has successfully connected press 'Next'.

**Note:** If the data logger fails to connect to your wireless router the following screen will appear. Follow the on screen instructions and check the four points below.



- 1) Check your password
- 2) Click on the software refresh button
- 3) Re-orientate the position of your data logger
- 4) Ensure your WiFi router is turned on and within range of the data logger

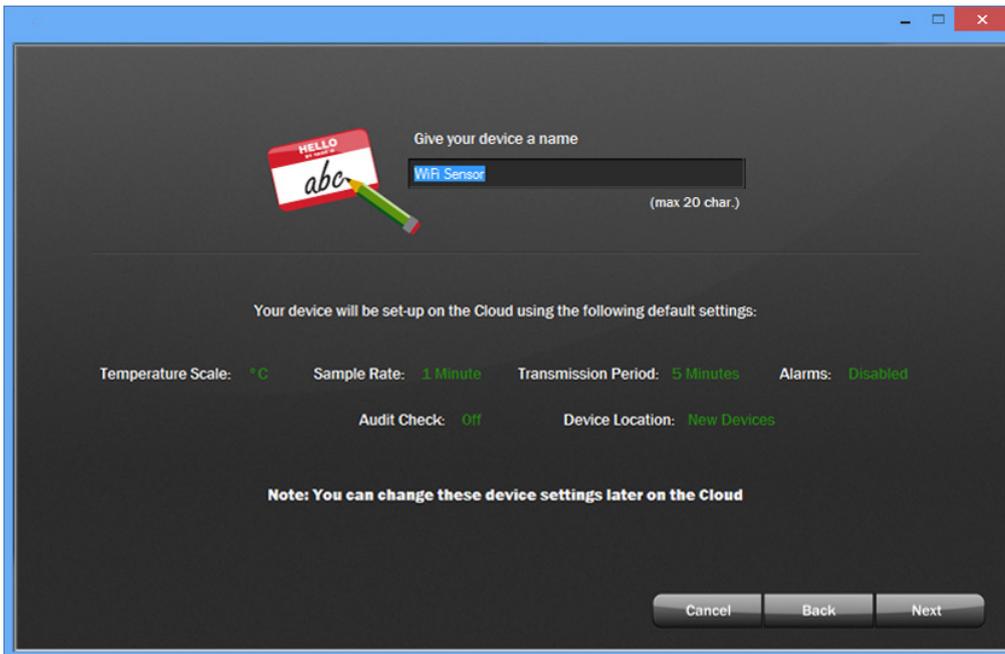
Go to Section 2.3 for Cloud set-up and 2.4 for PC set-up.

# Section 6.0 Cloud Account: Sign-In and Set-Up

## General Settings

- 9 Enter your data logger name. This page shows the default settings for your data logger. Any changes you wish to make can be done through your Comark Cloud Account. Once you have entered your data logger name, click 'Next'.

**Note:** For some Comark WiFi data loggers, this page will offer you a choice of probe type. Please select the one you wish to use with your data logger before continuing.



- 10 Once your data logger is set up on your Comark Cloud Account you will get this confirmation screen. Please refer to Section 6.1 to view your data and make further adjustments.



# Section 6.1 Set-up New Data Logger on Cloud

1 Click on the first button to set-up the data loggers (View Devices).



2 Click on 'New Devices' to select the data logger to be set-up. Then select 'Change Device Settings'.

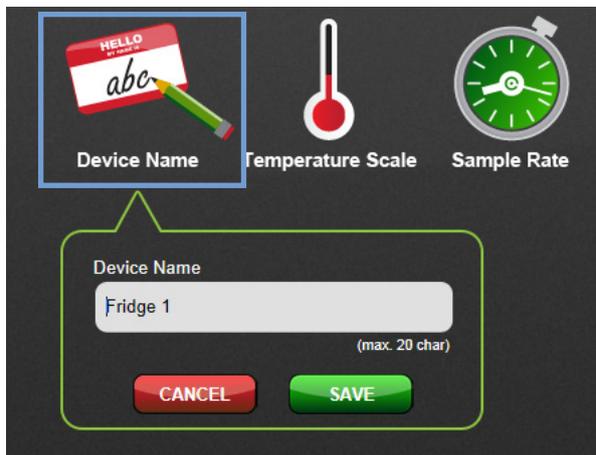


# Section 6.1 Set-up New Data Logger on Cloud

- 3 From the 'Change Device Settings' screen you can change the name of the data logger, the temperature scale, sample rate, transmission and alarms.

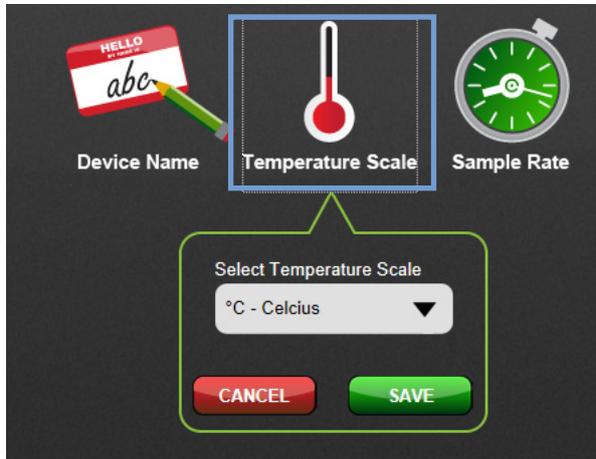


- 4 Click on 'Device Name' to change the name of a data logger.

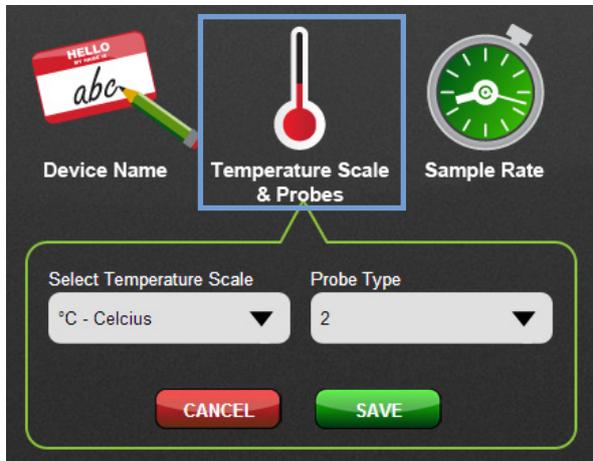


# Section 6.1 Set-up New Data Logger on Cloud

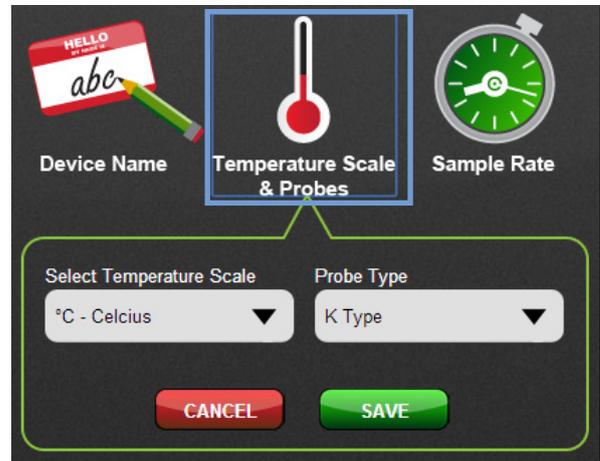
- 5 Click on 'Temperature Scale' to select either Centigrade or Fahrenheit scale.



- 6 For Diligence WiFi Loggers with probes, you can select the temperature scale and probe type.



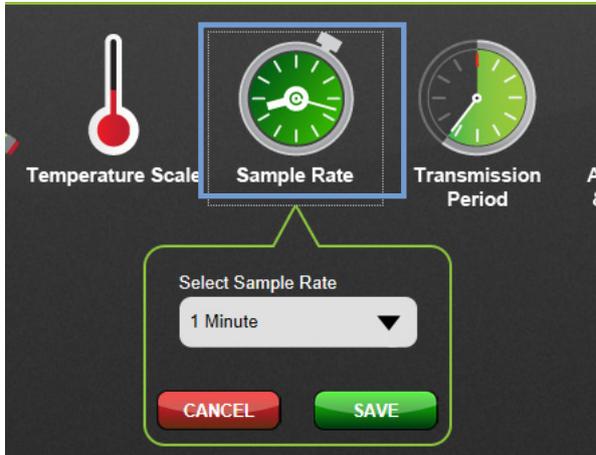
Probe selection for RF312-TP Data Logger



Probe selection for RF314-TC Data Logger

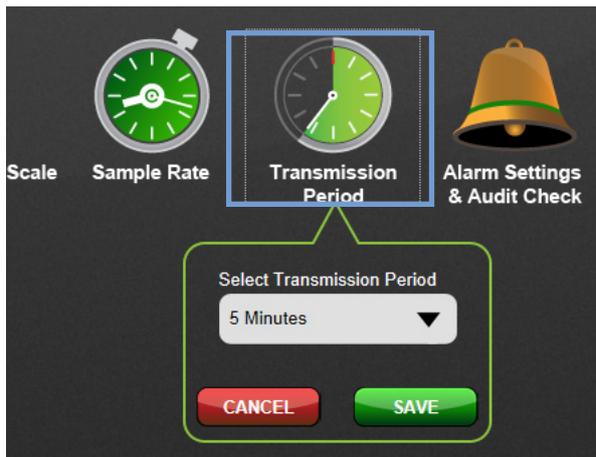
## Section 6.1 Set-up New Data Logger on Cloud

- 7 Click on 'Sample Rate' to select the timing between temperature or humidity readings.



**Hint/Tip:** For a Fridge, Cooler or Freezer containing food, sample rate of 30 minutes is the norm.

- 8 Click on 'Transmission period' to adjust the time period between data transmissions to and from the data logger and Diligence WiFi Cloud.



**Hint/Tip:** Hint/Tip: For a food service application a 1 hour transmission rate is fine.

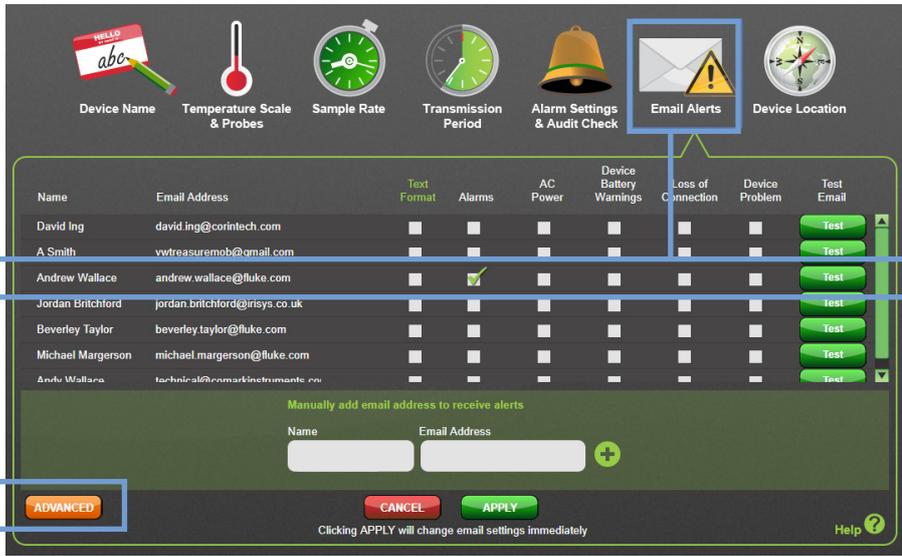
- 9 Click on 'Alarm Setting and Audit Check' to set low and high alarms, the alarm delay period and to enable an audit check on alarms.



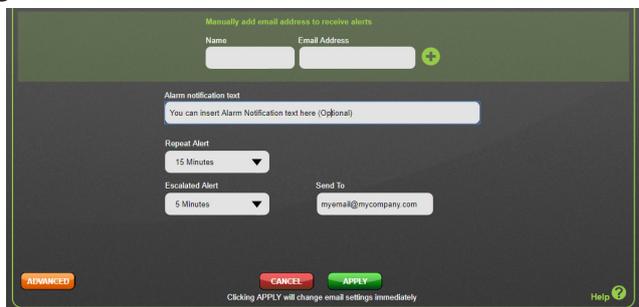
**Note:** When the Audit Check is selected it enables the user to identify when they physically visit the logger by holding down the button on the front of the device.

# Section 6.1 Set-up New Data Logger on Cloud

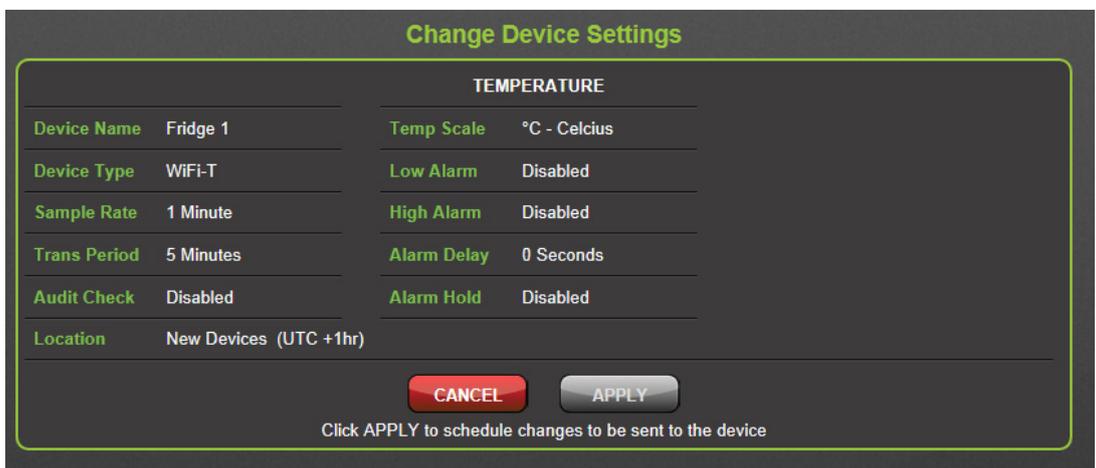
10 Click on 'Email Alerts' to select the parameters for an email alert.



11 The email address of the account holder will automatically be shown in the address list above. Select the user details, then click advanced. Users can manually add additional email addresses so further contacts can receive emails. Entering alarm notification text is optional. If required, a user can insert their own text into the field for alarm e-mails. Set up the Repeat Alert - an alarm can be emailed every 15, 30, 45 or 60 minutes until it is acknowledged. It can also be set to never send an email. Click apply.



12 As changes are made to the settings of a data logger, they show in red on the 'Change Device Settings' screen. Once required changes have been made, click 'Apply' to action. The settings will transmit from the Cloud to the data logger at the next transmission period.



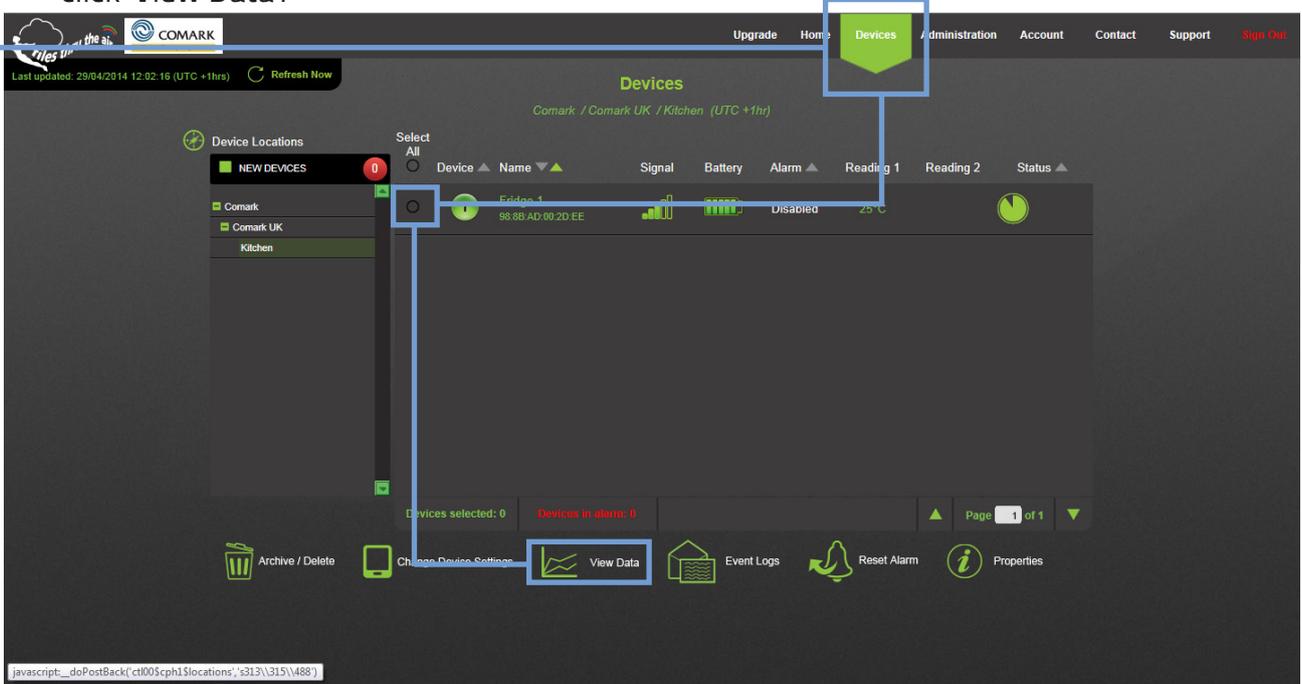
- 1 Click on the second button to view the data loggers (View Devices).



## Section 6.3

## Viewing Cloud Data and Graphs

- 1 From the home screen, click the Devices Tab, select the data logger you wish to view, then click 'View Data'.



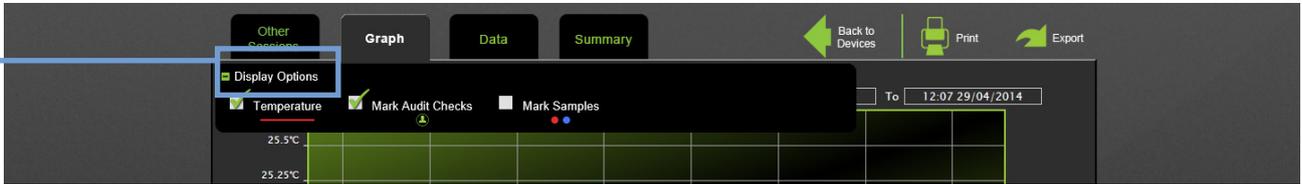
- 2 The graph is shown on the screen. Use the zoom function to select the period visible in the graph. If the mouse is hovered over the graph, the temperature, date and time at that point are shown in an information box.



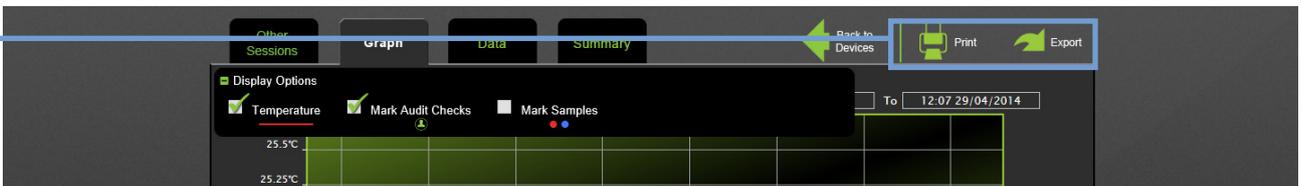
## Section 6.3

## Viewing Cloud Data and Graphs

- 3 Click the 'Display Options' to select the parameters to be included in the graph.



- 4 Click the icons to print or export the graphs. Graphs exported from this screen are in PDF format.



- 5 Click the 'Data' tab to view information in tabular format. Click on the 'Export' icon to export the data list to a CSV file.

A screenshot of the software interface showing the 'Data' tab. The 'Data' tab is highlighted with a blue box. A table of sensor session data is displayed. The table has columns for 'Date', 'Time', and 'Temperature'. The data is as follows:

Date	Time	Temperature
29/04/2014	11:27:58	24.7°C
29/04/2014	11:28:59	24.7°C
29/04/2014	11:29:59	24.7°C
29/04/2014	11:30:59	24.8°C
29/04/2014	11:31:59	24.8°C
29/04/2014	11:32:59	24.8°C
29/04/2014	11:33:59	24.8°C
29/04/2014	11:34:59	24.8°C
29/04/2014	11:35:59	24.8°C
29/04/2014	11:36:59	24.8°C
29/04/2014	11:37:59	24.9°C
29/04/2014	11:38:59	24.9°C

The 'Export' button in the top right corner is highlighted with a blue box. The page title is 'Sensor Session Data' and the breadcrumb trail is 'Comark / Comark UK / Kitchen (UTC +1hr) / Fridge 1'. The top navigation bar includes links for 'Upgrade', 'Home', 'Devices', 'Administration', 'Account', 'Contact', 'Support', and 'Sign Out'.

## Section 6.3

## Viewing Cloud Data and Graphs

- 6 Click the 'Other Sessions' tab to view a summary of data sessions. From this screen a 'Session Audit' shows why new data sessions were started. Click on the 'Export' icon to export an Audit in PDF format.

The screenshot shows the 'Sensor Session Data' interface for a device named 'Comark / Comark UK / Kitchen (UTC +1hr) / Fridge 1'. The 'Other Sessions' tab is selected. The 'Available Sessions' table shows two sessions on 29 April 2014. The 'Session Audit' panel on the right lists the reasons for a new session: 'Changes Made By: Alison Butler', 'Temperature Low Alarm: 0 °C → 10 °C', and 'Temperature Low Alarm: Enabled'. A blue box highlights the 'Other Sessions' tab, and another blue box highlights the 'Export Device Audit PDF' button.

Session Start	Session End	Time Zone	Readings
29/04/2014 12:08:47	29/04/2014 12:23:47	UTC + 1	16
29/04/2014 11:27:58	29/04/2014 12:07:59	UTC + 1	41

Session Audit

Reason(s) for new session

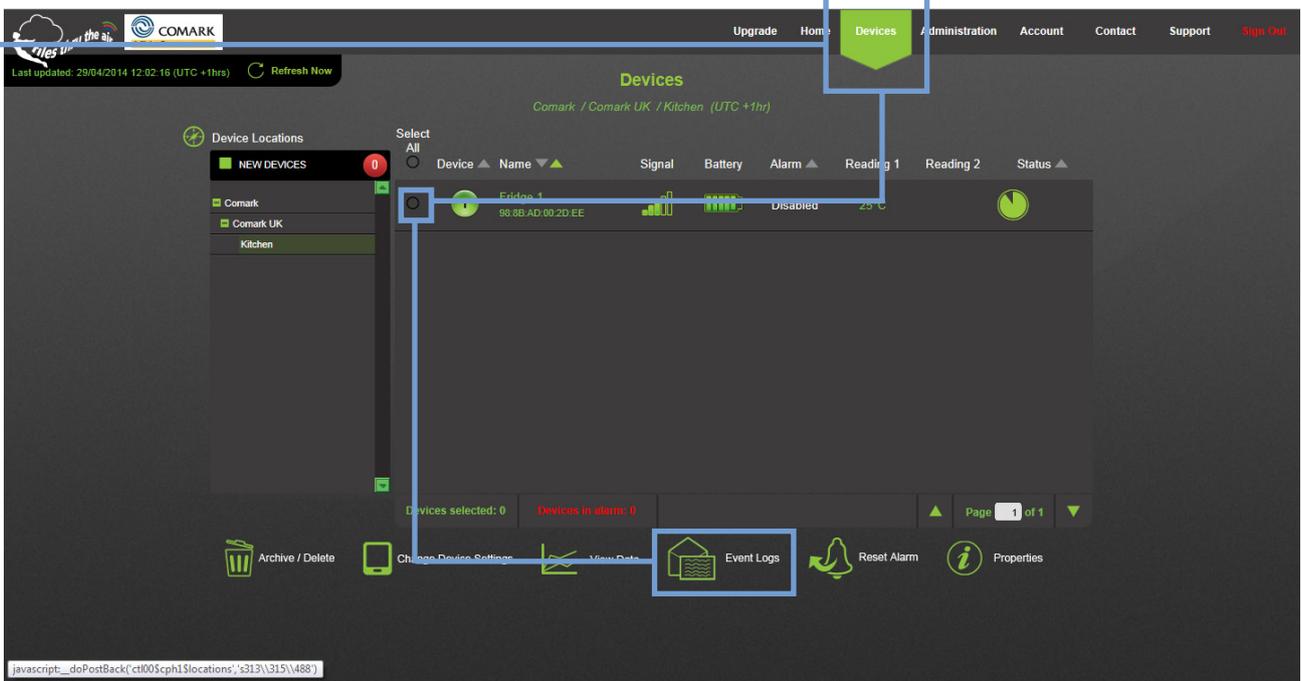
- Changes Made By: Alison Butler
- Temperature Low Alarm: 0 °C → 10 °C
- Temperature Low Alarm: Enabled

- 7 Click the 'Summary' tab to view a summary of information for the data logger (device), measurement statistics and settings.

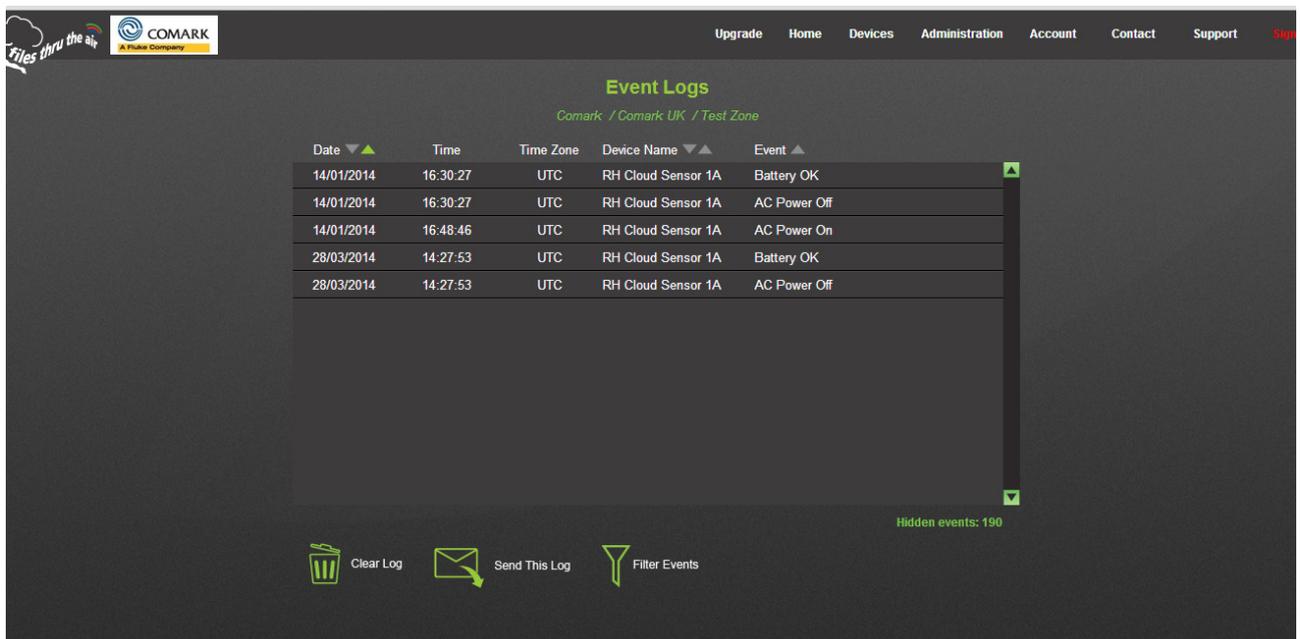
The screenshot shows the 'Sensor Session Data' interface for the same device. The 'Summary' tab is selected. The table displays temperature readings over time on 29/04/2014.

Date	Time	Temperature
29/04/2014	11:27:58	24.7°C
29/04/2014	11:28:59	24.7°C
29/04/2014	11:29:59	24.7°C
29/04/2014	11:30:59	24.8°C
29/04/2014	11:31:59	24.8°C
29/04/2014	11:32:59	24.8°C
29/04/2014	11:33:59	24.8°C
29/04/2014	11:34:59	24.8°C
29/04/2014	11:35:59	24.8°C
29/04/2014	11:36:59	24.8°C
29/04/2014	11:37:59	24.9°C
29/04/2014	11:38:59	24.9°C

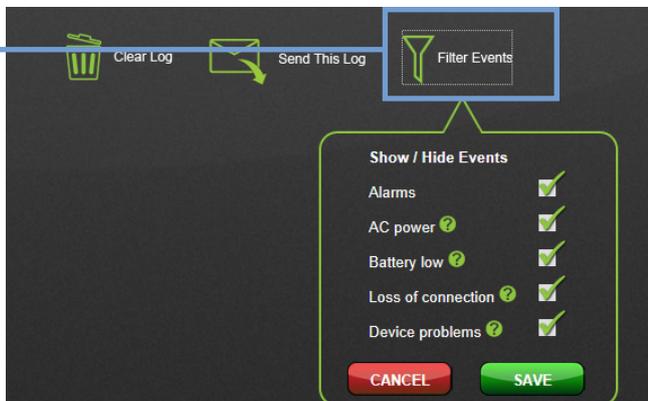
- 1 From the home screen, click the Devices Tab, select the data logger you wish to view, then click 'Event Logs'.



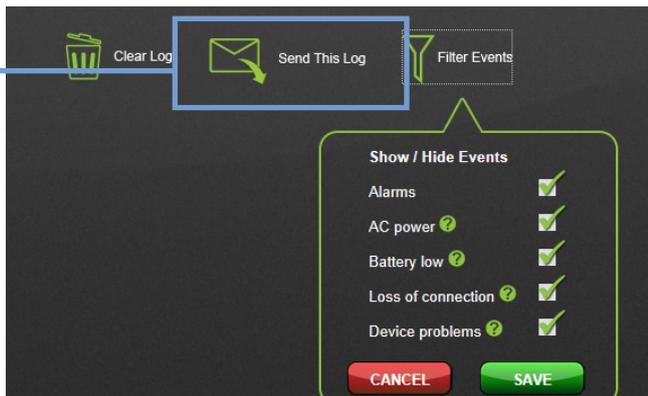
- 2 Once your data logger is set-up on your Cloud Account you will get this confirmation screen.



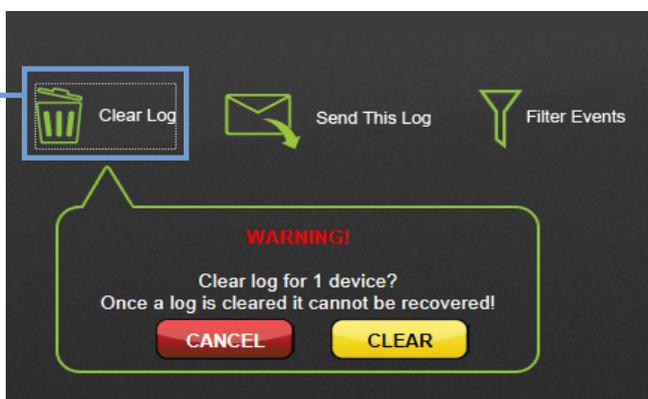
3 Click on 'Filter Events' to show or hide events such as alarms, low battery, AC Power, loss of connection etc.



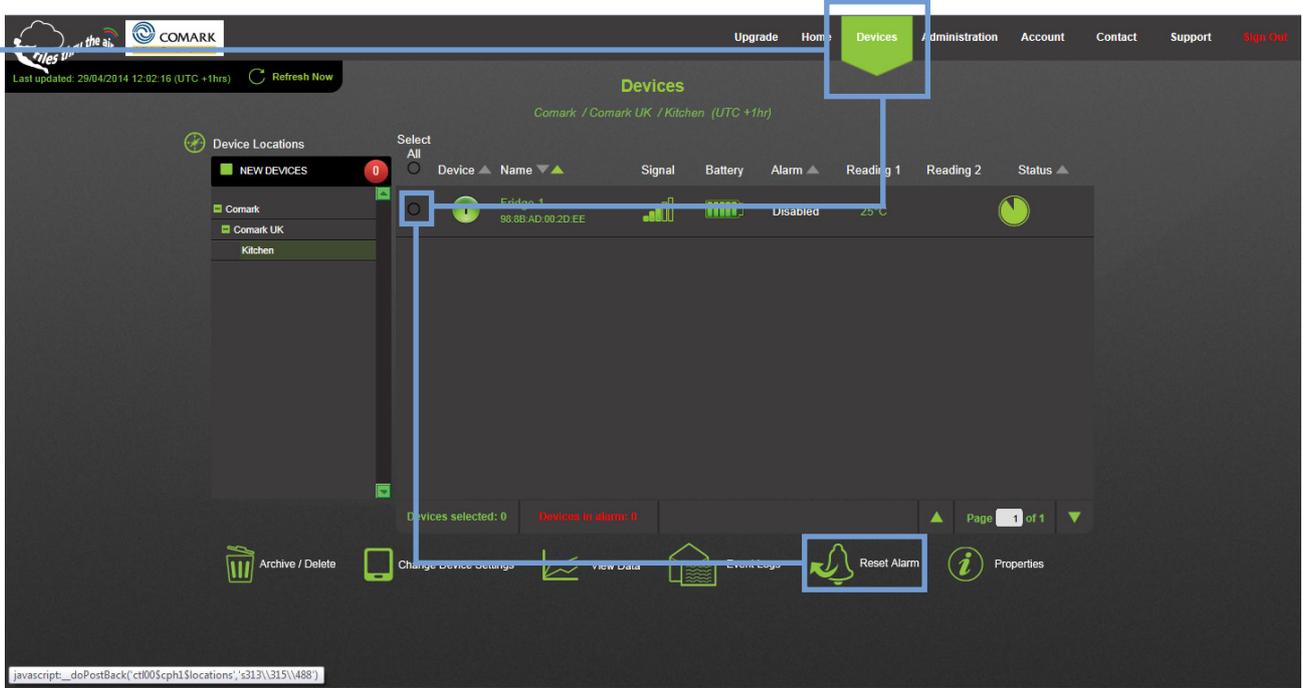
4 Click on 'Send This Log' to email the log data. Users can be selected from a drop down of registered system users.



4 Click on 'Clear Log' to remove the logged data from the list. **Note:** Once cleared from the list the log data cannot be recovered.



- 1 From the home screen, click the Devices Tab, select the data logger you wish to view, then click 'Reset Alarm'.



**Note:** Once 'Reset Alarm' is selected, the data logger will no longer show the alarm in the Devices List or locally on the data logger screen. It should be noted that without remedial action the conditions that triggered the alarm will remain.

## 1 LCD Icons

### Signal Icon



(Not Displayed)  
Not connected to a network



(Solid)  
Communications with PC/  
Cloud OK



(Flashing)  
Lost communications with PC/  
Cloud

### Alarm Icon

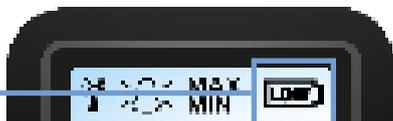


(Not Displayed)  
No Alarms



(Flashing)  
Alarm threshold triggered

### Battery Icon



(Not Displayed)  
Battery OK



(Solid)  
Charging



(Flashing)  
Battery Low - Recharge

### Max Icon



The Maximum recorded value is being displayed.

### Min Icon



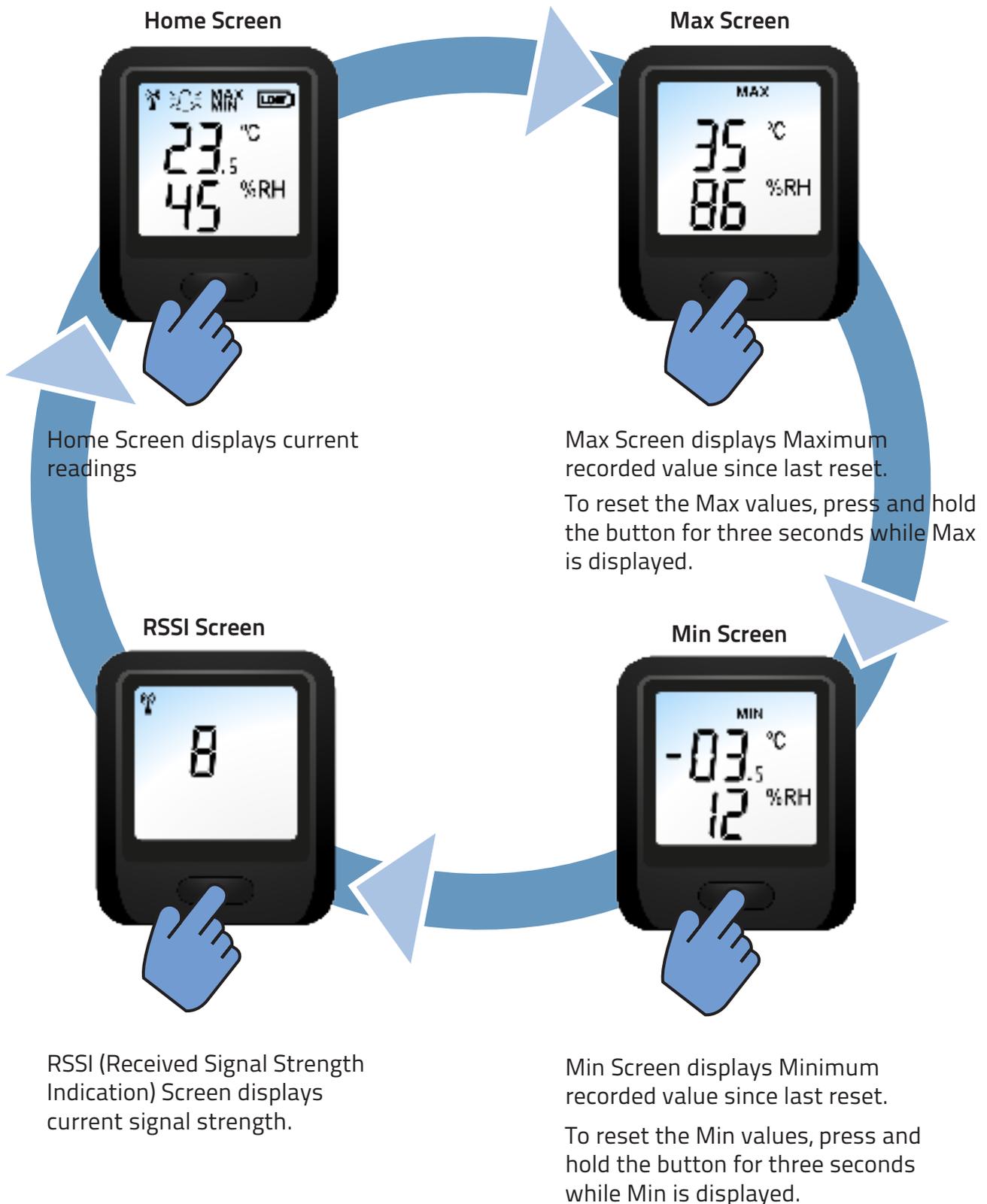
The Minimum recorded value is being displayed.



Probe has been disconnected from the data logger and it can no longer record data.

## 2 Data Logger LCD Screens

Use the button on the data logger to cycle through the display screens.



### Optimising battery performance:

The data loggers can be powered in one of two ways:

- 1 Internal Battery Power
- 2 USB/Mains Power

### Battery Power

These data loggers contain rechargeable batteries. It is good practice to optimise your system to avoid excessive recharging cycles.

To do this be aware of the following;

- 1 Transmitting uses a lot of battery power. By increasing the time between transmissions the battery will last longer.  
**For example; for a short battery life transmit every minute, for a medium battery life transmit every 10 minutes and for a long battery life transmit once every hour.**
- 2 The data logger detects when your PC is turned off or the software is closed and enters a power-saving mode. In this mode the data logger wakes-up every 15 minutes to test communications but continues to gather data ensuring that no information is lost.
- 3 When you turn your PC back on, it can take up to 30 minutes for the data logger to synchronize. This saves a lot of power. Under normal circumstances the data logger will synchronize within 15 minutes. If the data logger is mains powered, synchronization will complete within five minutes. Once communication is re-established the data logger returns to its normal transmission rate.

### USB/Mains Power

If you have a critical process or do not wish to recharge data loggers, you can opt to have the USB charger plugged in continuously.



### Reset / Restore Sensor Data Logger

#### 1 Reset data logger

**Warning:** The data logger will retain all settings but may lose data that has not been transferred to the PC.

The data logger can be reset by holding the button for 10 seconds. Release the button when LOW is flashing in the top right hand corner of the display or rSt is shown.

#### 2 Restore Factory Settings

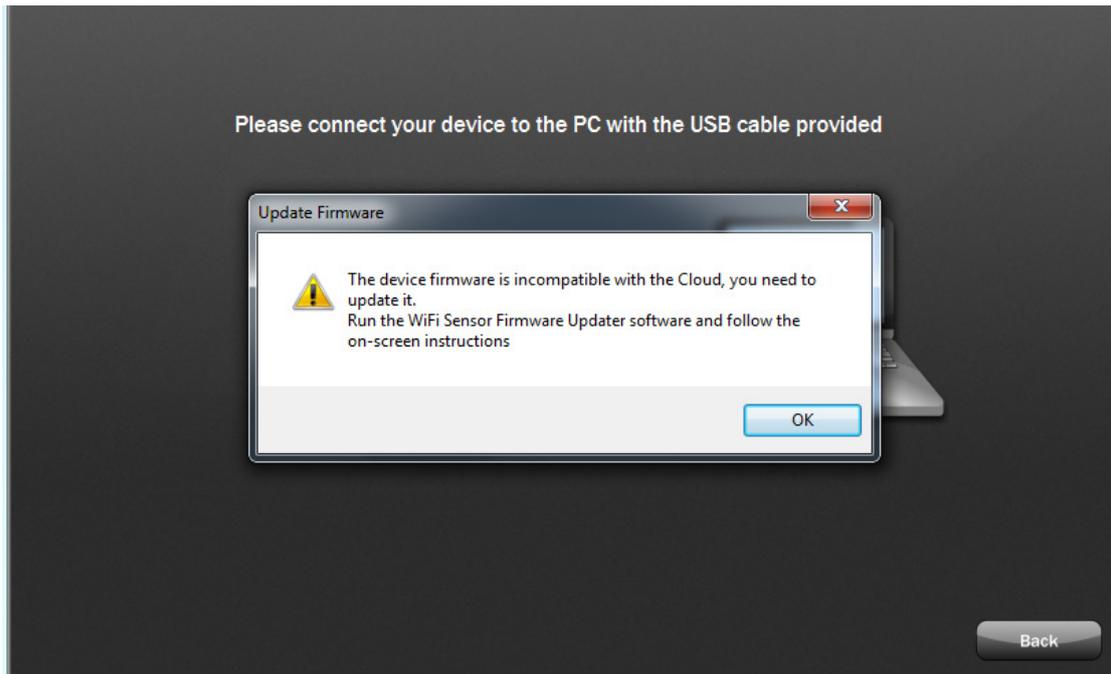
**Warning:** Only use restore when all other methods have failed.

A factory reset can also be performed, hold the button for 20 seconds until appears **FAR5** on screen. Doing this will return the data logger to the factory state deleting all settings and clearing all previously recorded data.

### Data Logger Firmware Updater

A Firmware Updater is installed with all versions of the Diligence WiFi Software and is accessible via the Start menu.

If you are running a Cloud version of Diligence WiFi and a firmware update is required the following information message appears on screen.



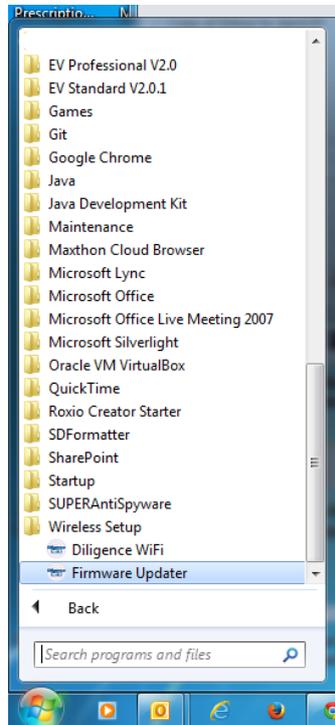
Note: Before starting the upgrade process, the latest Diligence WiFi firmware upgrade will need to be downloaded from the Comark website software page - [www.comarkinstruments.com/software](http://www.comarkinstruments.com/software).

Any data logger already monitoring on a Diligence WiFi PC or Cloud system will need to be removed from the software before updating as the firmware update will reset and delete any data. You will be prompted to archive data when the logger is removed from the software so your temperature and humidity records are not lost. Any settings will be retained.

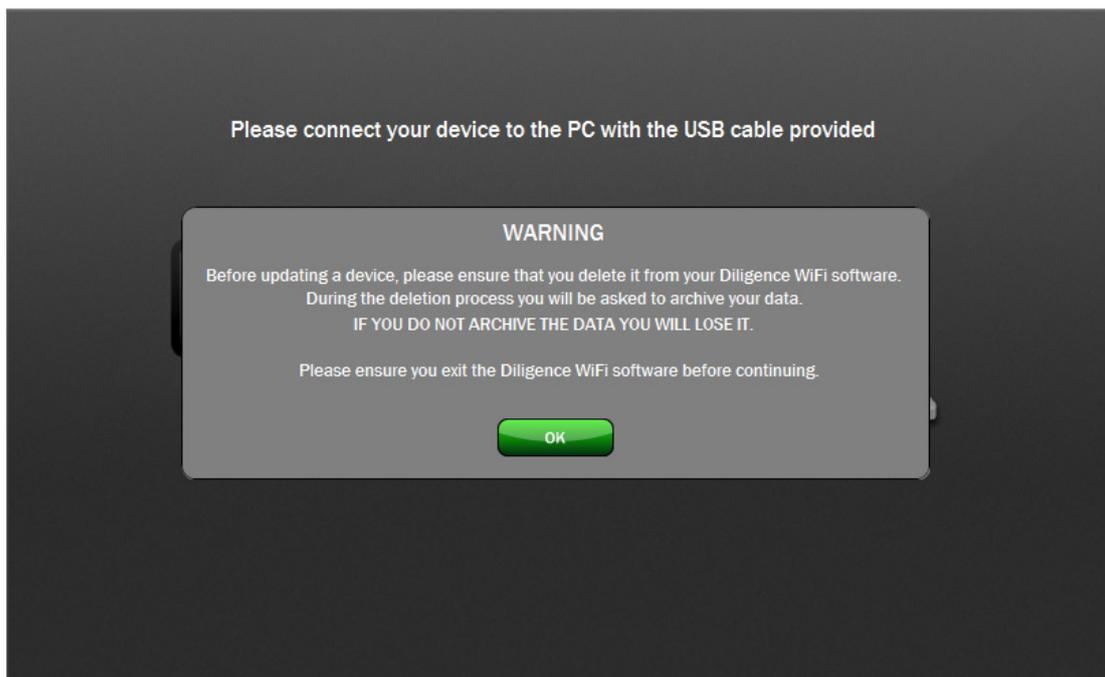
If there are multiple loggers to upgrade it saves time removing them all, then running the firmware upgrade.

## Upgrade Procedure

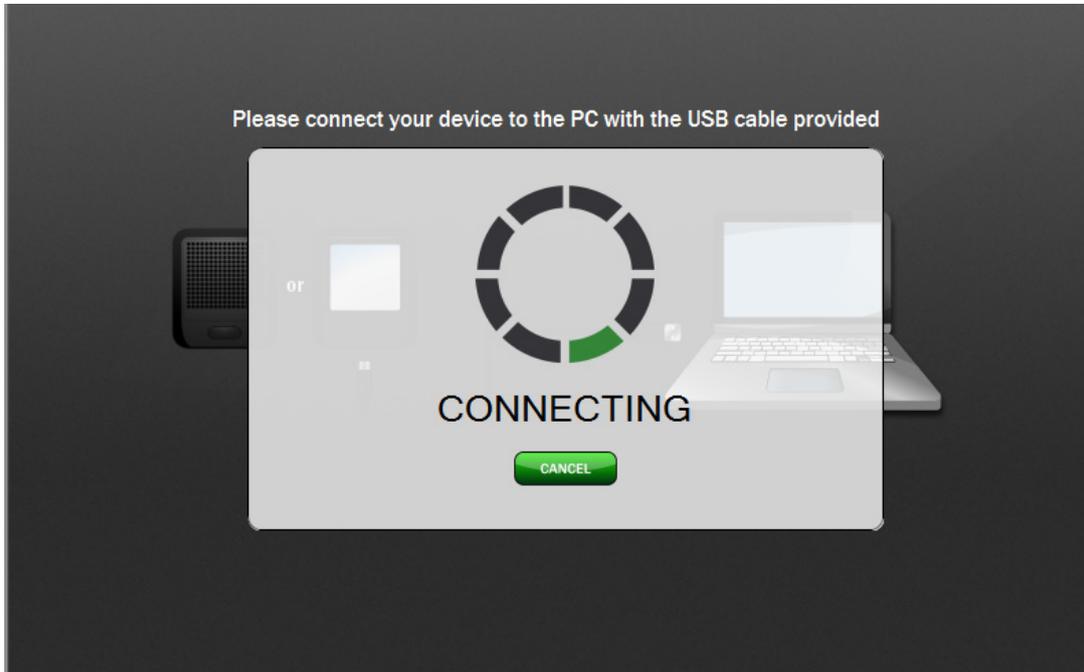
- 1 On your PC, Click the 'Start' icon, then select 'All Programs'. Open the 'Wireless Setup' folder and click on the 'Firmware Updater' icon.



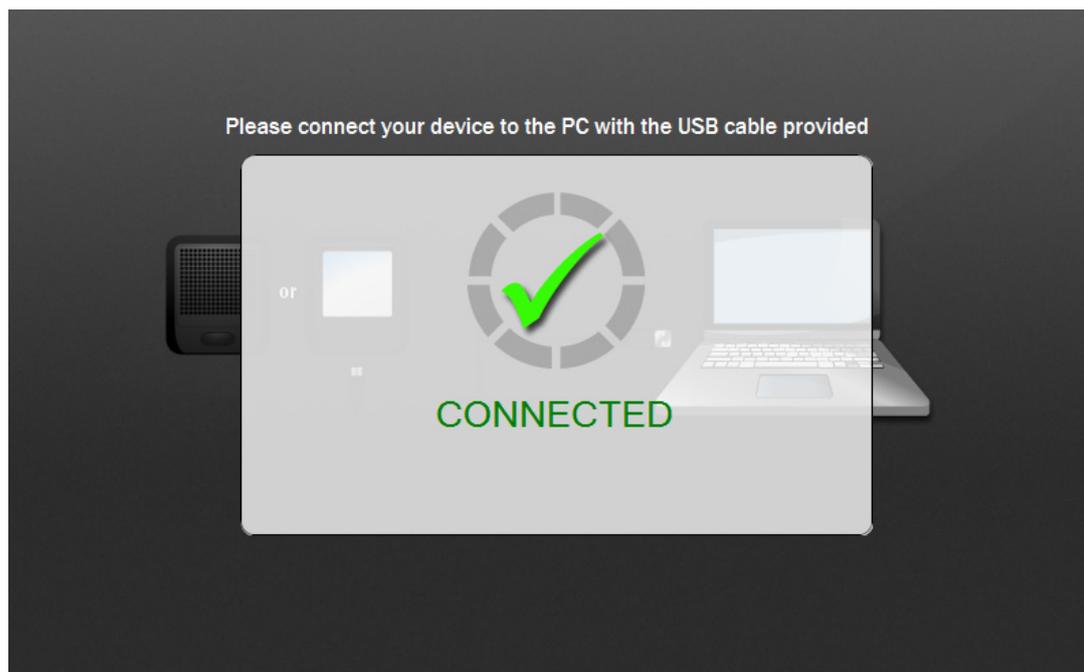
- 2 After archiving data and deleting existing data loggers from the system, connect the data logger to the PC via the USB cable provided. Click OK to proceed.



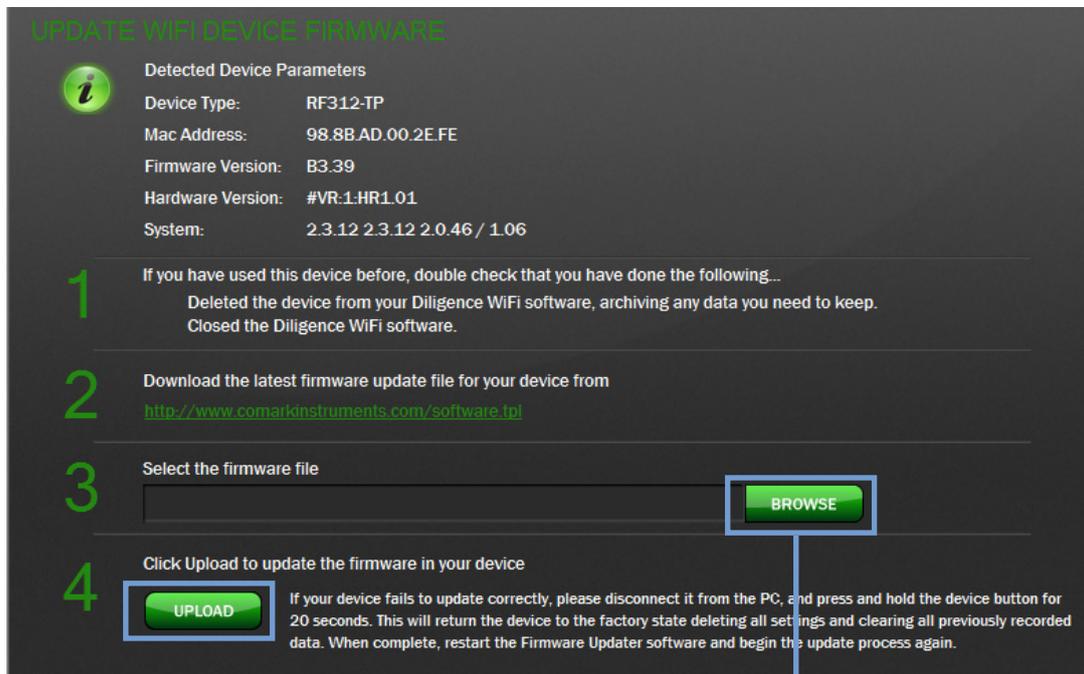
- 3 The screen will show the software connecting with the data logger.



- 4 Then it will show when successfully connected.

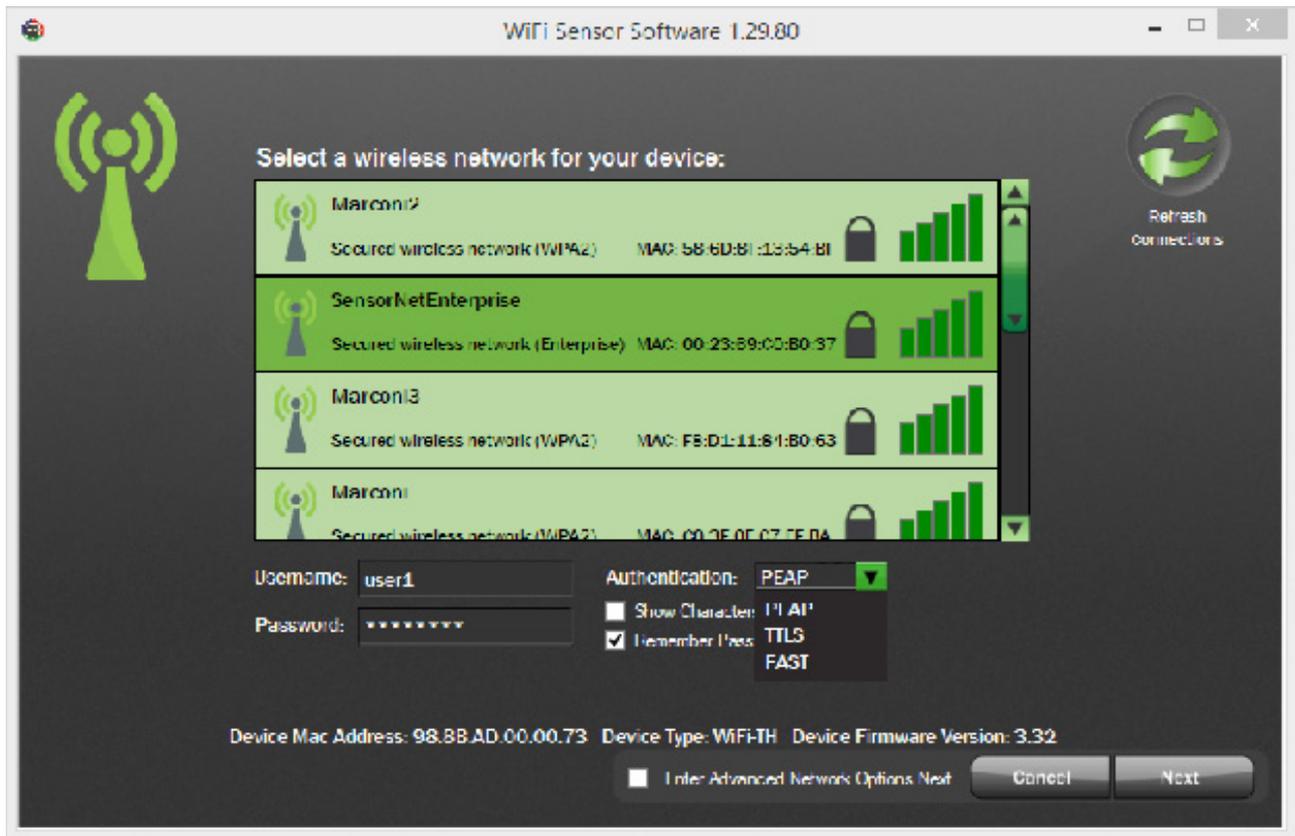


- 5 After a few seconds, the firmware update page will open.



Browse to locate the firmware file for your data logger model on your PC. It can be downloaded from Comark Instruments Software page. ([www.comarkinstruments.com/software](http://www.comarkinstruments.com/software)). Click 'Upload' to begin and follow the on-screen instructions to run.

- 6 A successful update will be shown on screen. Click 'OK' to complete the process. The software will close automatically. It is now safe to remove the data logger from the PC and re-add the data logger to the software to continue to monitor temperature and/or humidity.



To configure an Enterprise network, enter your username and password. You will also need to select the Authentication type. If you do not know which one to use, please consult your IT administrator.

## Applies to US users only

In the United States it is possible to send email alerts from the Cloud Dashboard direct to your phone as text alerts.

Although email can be read on a smartphone, there can be times and situations when more advantageous to receive a short email as a text.

Most of the USA phone providers provide email to text/SMS support so check with your provider to see whether they operate the service. They will also provide the address format for the email to text service they provide. There are often two formats shown, one for SMS and one for MMS messages.

To enable text messages from your Comark Cloud Account, visit the 'Change Device Settings' page and click on email alerts.

Create a new address in the following format:

(10 digit number - your mobile/cell phone number)@(e-mail address for service provider e-mail to text service)

Note: You must also check the "text format" box as this ensures the message is formatted for an SMS.

If you are trying to send an email that is more than 160 characters long, it will be sent through the Multimedia Message Service (MMS). If the person receiving the messaging does not have a messaging plan that includes Multimedia Messaging, then they will not receive the message.

Some carriers also offer email to MMS gateways so if the email exceeds 160 characters, use an MMS gateway instead of an SMS gateway.

Carrier	SMS Gateway Domain	MMS Gateway Domain
Alltel	[insert 10-digit number]@message.alltel.com	[insert 10-digit number]@mms.alltelwireless.com
AT&T	[insert 10-digit number]@txt.att.net	[insert 10-digit number]@mms.att.net
Boost Mobile	[insert 10-digit number]@myboostmobile.com	[insert 10-digit number]@myboostmobile.com
Cricket Wireless		[insert 10-digit number]@mms.cricketwireless.net
Project Fi		[insert 10-digit number]@msg.fi.google.com
Sprint	[insert 10-digit number]@messaging.sprintpcs.com	[insert 10-digit number]@pm.sprint.com
T-Mobile	[insert 10-digit number]@tmomail.net	[insert 10-digit number]@tmomail.net
U.S. Cellular	[insert 10-digit number]@email.uscc.net	[insert 10-digit number]@mms.uscc.net
Verizon	[insert 10-digit number]@vtext.com	[insert 10-digit number]@vzwpx.com
Virgin Mobile	[insert 10-digit number]@vmobl.com	[insert 10-digit number]@vmpix.com
Republic Wireless	[insert 10-digit number]@text.republicwireless.com	