

# SMART LOGGER™

## User Manual V1.0.0



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Depot**



1-800-517-8431

5 Commonwealth Ave  
Woburn, MA 01801  
Phone 781-665-1400  
Toll Free 1-800-517-8431



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## PRODUCT OVERVIEW

The Wagner Meters SMART LOGGER™ is a Bluetooth® low energy temperature and humidity data logger featuring the latest Bluetooth® 4.0 technology and a Nordic NRF51822 chip. It collects temperature and relative humidity readings from the surrounding environment and records them as historical data. The SMART LOGGER™ can store up to 12,000 temperature and relative humidity (referred to as 'Humidity' in the app) measurements. Any smartphone or smart device with Bluetooth® 4.0 or above can download and install the accompanying app to store and monitor the temperature and relative humidity of the environment as conditions change. The SMART LOGGER™ is small, lightweight, portable, and highly accurate for a wide variety of uses within the construction industry, cold chain logistics, archives, labs, museums, and much more.

## Potential Product Applications

1. Construction / Building Sites
2. Wood Products shipping and transport
3. Perishable item (Food, Rx) transport
4. Refrigerated Storage and Shipping
5. Archive Rooms / Vaults
6. Laboratory testing and storage rooms
7. Museum displays and storage

## SMART LOGGER™ Features

1. Bluetooth® 4.0 compatible
2. Built-in highly sensitive temperature and relative humidity sensor
3. Real-time display of temperature and relative humidity
4. Stores up to 12,000 entries of temperature and relative humidity data
5. Programmable intervals of temperature and relative humidity data storage and alarm thresholds.
6. Email reports directly from the SMART LOGGER™ app
7. Capable of pairing to a Bluetooth® 4.0 compatible printer
8. Capable of OTA (Over the Air) firmware updates

## Product Specification

Item	Specification
Signal Transmission Frequency	2.400 - 2.4835GHz
Protocol Standard	Bluetooth® 4.0
Modulation Mode	GFSK
Transmit Interval	2S, adjustable
Built-in Battery	CR2450 3V 550mAh (Battery is replaceable)
Output Power	-4 dBm, adjustable
Communication Rate	1 Mbps
Transmission Distance	Up to ~180 ft (55 meters), adjustable
Storage	12,000 data measurements
Battery Life	300 days (Dependent upon mode and frequency of operation)
Net Weight	1 ounce (30g)
Dimensions	2.3 in. (58mm) 2.5 in. (64mm) 0.8 in (20mm) (This includes the mounting tabs)
Temperature Measurement Range	-77°F (-25°C~) 140°F (60°C)
Operating Temperature Range	-77°F (-25°C~) 140°F (60°C)
RH Measurement Range	0~100%RH
Temperature Measurement Accuracy	±0.3°
RH Measurement Accuracy	±3%RH

## Caution

1. The SMART LOGGER™ should be in close proximity to the receiving device to ensure transmission of data.
2. Keep away from water and corrosive materials.

## Powering On/Off

Device Status	Operation	LED Light Instruction	Instructions
Turn ON	Press the Power button for 3 seconds.	The green LED light flashes continuously for 3 seconds when turned ON, then flashes once every 10 seconds.	When ON, the device starts sending the real-time data. View Configure mode for the respective OS to establish data recording.
Turn OFF	Press the Power button for 3 seconds.	The red LED light flashes 5 times, then the unit turns OFF.	Turn OFF the device.

## The SMART LOGGER™ App

**NOTE:** In order to record and store data, **Data Record**, located in the **Configuration** screen of the SMART LOGGER™ app, must be turned on. To clear the Smart Logger memory, turn **Data Record** off, save settings, and then press **Configuration** and reverse the process.

The SMART LOGGER™ app is a free mobile application, available on the Google Play Store and iTunes, that allows you to connect the SMART LOGGER™ through a Bluetooth® 4.0 connection to your Android™ or Apple mobile device and adjust settings, receive and record data, synchronize, and send to email. Either search “Wagner Meters” or “Wagner SMART LOGGER” on either service.

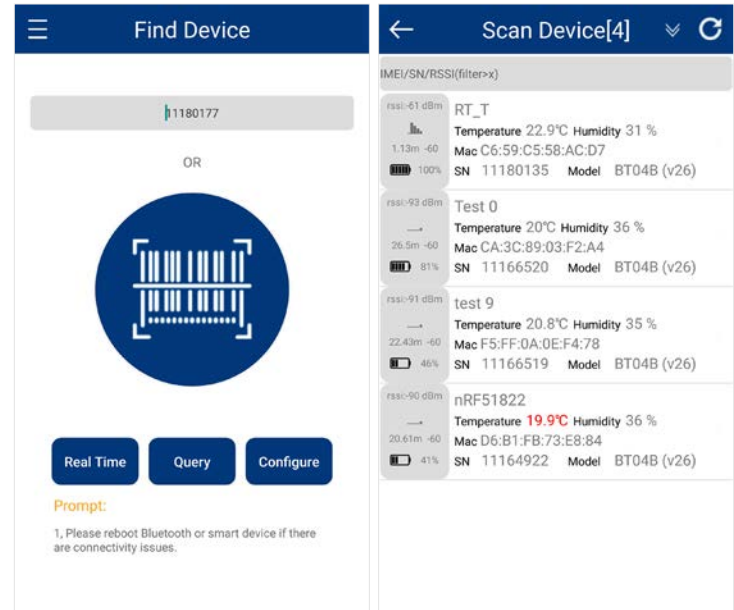
Please Note:

1. The Smart Logger™ app requires iOS 10.0 or later.
2. One mobile phone app can scan up to 300 devices.
3. The mobile phone screen size should be more than 2 inches (4.7cm) wide and the resolution must be more than 1280x720 pixels as shown in the illustrations below.



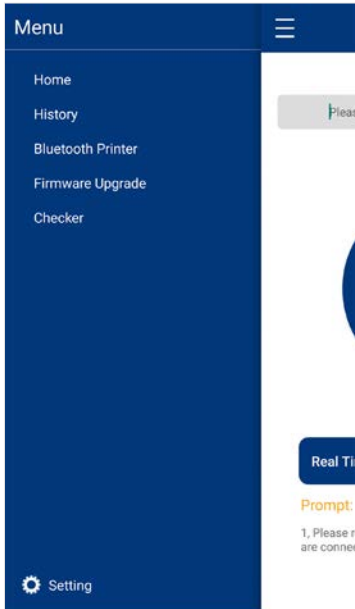
## ANDROID™ VERSION USER INTERFACE

Open the SMART LOGGER™ app. On the main screen, there are three buttons: **Real Time**, **Query**, and **Configure**; as well as the menu button at the upper-left corner of the screen. To connect to a SMART LOGGER™, either scan the serial number barcode, manually enter the serial number in the appropriate space on the home screen, or click the **Real Time**, **Query**, or **Configure** buttons and a list of devices, within range, will self-populate.

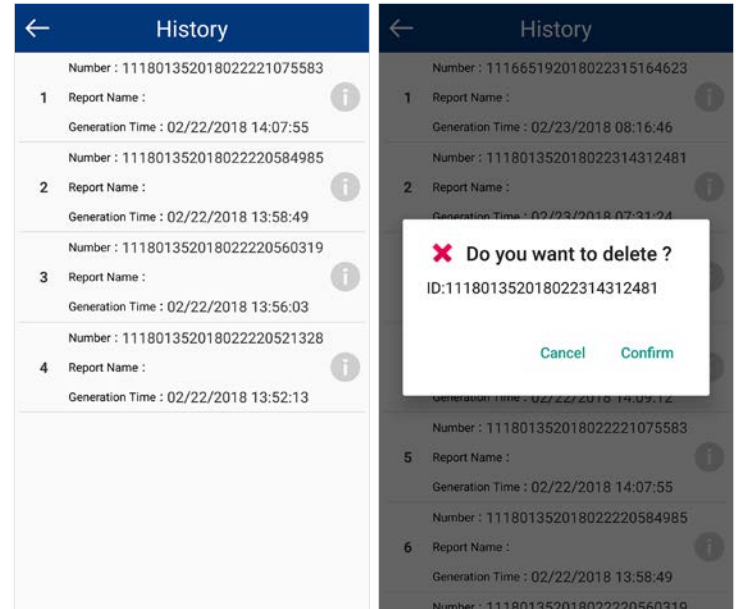


## Menu Screen

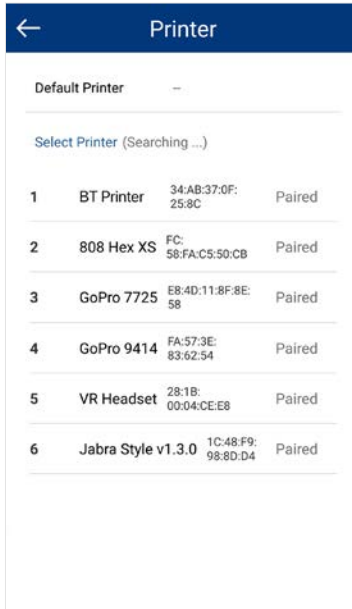
Press the **Menu** bars at the top left of the app screen to retrieve historical reports, pair a Bluetooth® printer, update the firmware by OTA, and inspect equipment.



**History** retrieves a list of individual reports that have been created and saved. Once this list has been retrieved, you can tap to view a specific report or touch and hold the report to delete.

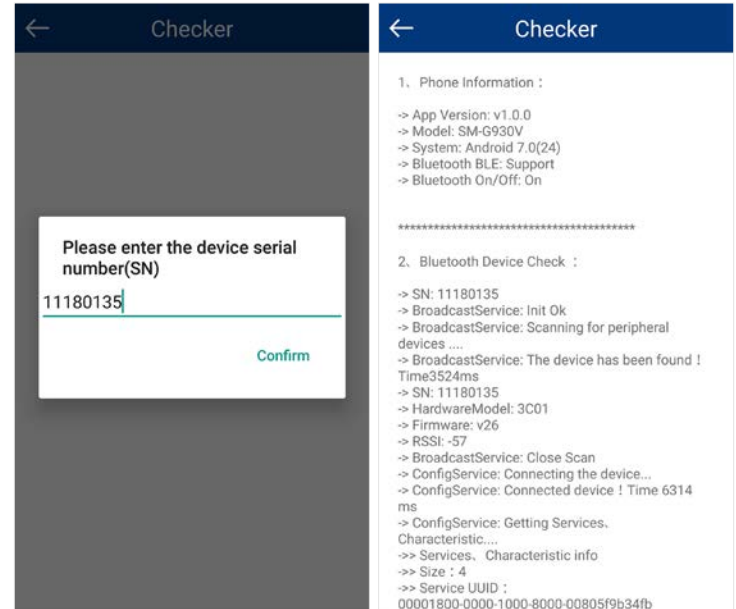


**Bluetooth® Printer** allows an available Bluetooth® printer to be chosen and utilized to print the desired report data.

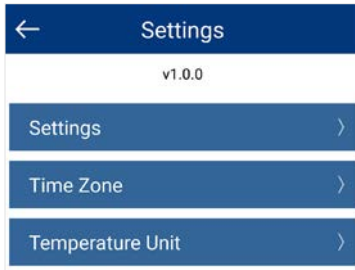


**Firmware Upgrade** allows for firmware verification and updating to the SMART LOGGER™, if necessary.

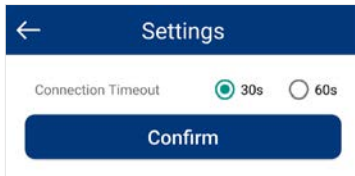
**Checker** will run a diagnostic on the phone, SMART LOGGER™, and the connection.



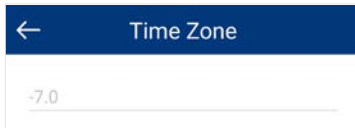
## Settings Screen



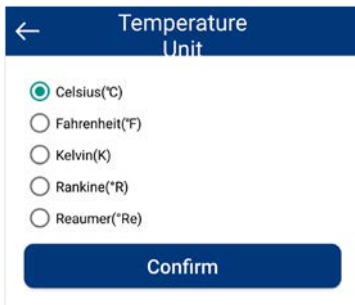
From the **Menu** screen, click on **Settings** in the lower left corner to see and adjust the settings, the system time zone, and temperature unit scales. There are also options to download firmware and check for firmware updates.



**Settings** allow the user to define how long the SMART LOGGER™ and Android™ device will stay connected prior to timing out.

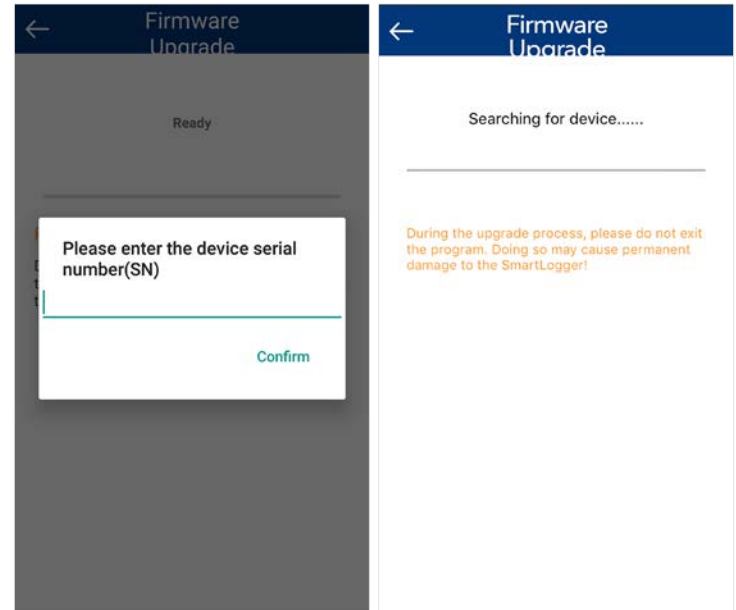


**Time Zone** allows for a user-defined time zone setting. The PDF/CSV reports will utilize this set time zone.



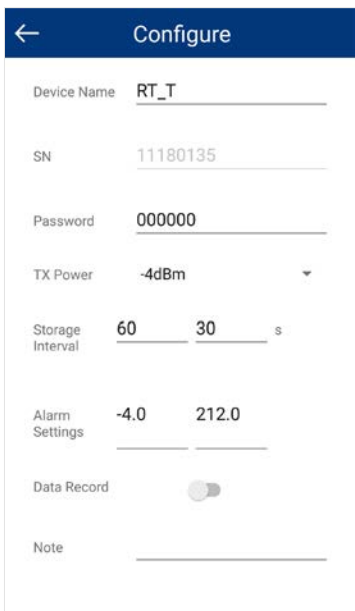
**Temperature Unit** allows the user to choose what measurement scale is preferred for the PDF/CSV reporting.

**Download Firmware and Check for Updates** allows for OTA (Over the Air) firmware updating of the SMART LOGGER™. By entering the serial number of the SMART LOGGER™ in question, it is either confirmed to have the most current firmware or the user is guided through the process of updating to the latest firmware. Once complete, the user will see, "update successful".



## Main Screen

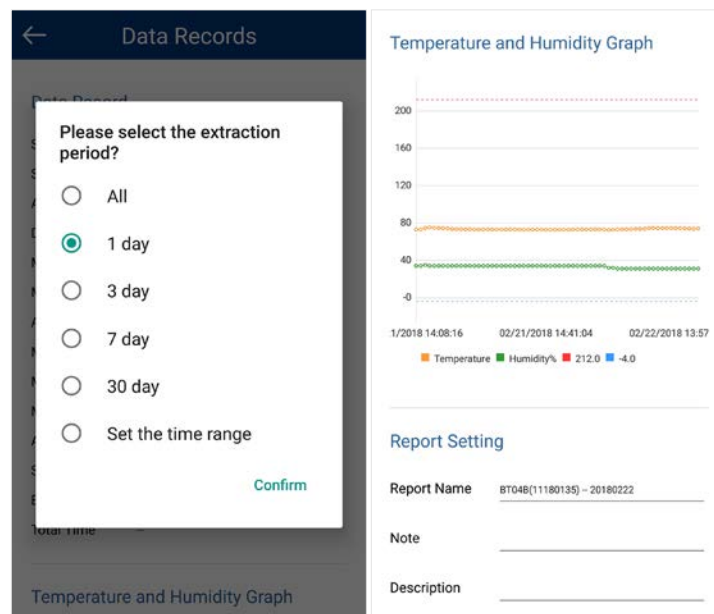
From the main screen, the user can manually enter the serial number or scan the serial number of the SMART LOGGER™ and then click the **Configure button** to access various customizable parameters. The **Configure button** can also be pressed initially, populating a list of SMART LOGGER™ devices in close proximity, which allows the user to select the desired device and enter into the configure screen directly.



The SMART LOGGER™ app can create a unique user-defined device name and password. In addition, normal and alarm data storage intervals and parameters can be set. Lastly, the SMART LOGGER™ allows flexibility to choose the transmission power in order to conserve battery life. As mentioned earlier, **Data Record** must be activated to record data. Once configuration changes have been made, click **Save Settings** and a confirmation pop-up window will appear if successful.

**Real Time** screen displays the device name, real-time temperature, relative humidity, and power, along with current date and time. If the temperature exceeds user-defined limits, the numbers will appear in red. There is no edit function within this screen.

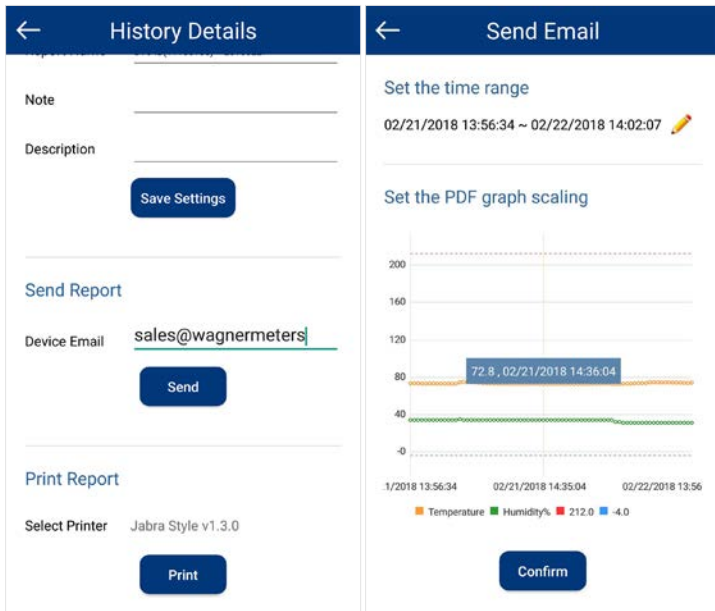
**Query** allows the user to choose how much stored data to retrieve for reporting purposes. Once the desired reporting period is chosen, the record displays SN code, storage interval, alarm settings, the total of all data recorded, the maximum/minimum/Avg/MKT temperature/relative humidity during recording, start time, end time, total recording time, temperature/relative humidity graph, and Bluetooth® printing/emailing capability.



**Note:** A red line on the graph indicates a high-temperature threshold and a blue line indicates a low-temperature threshold.

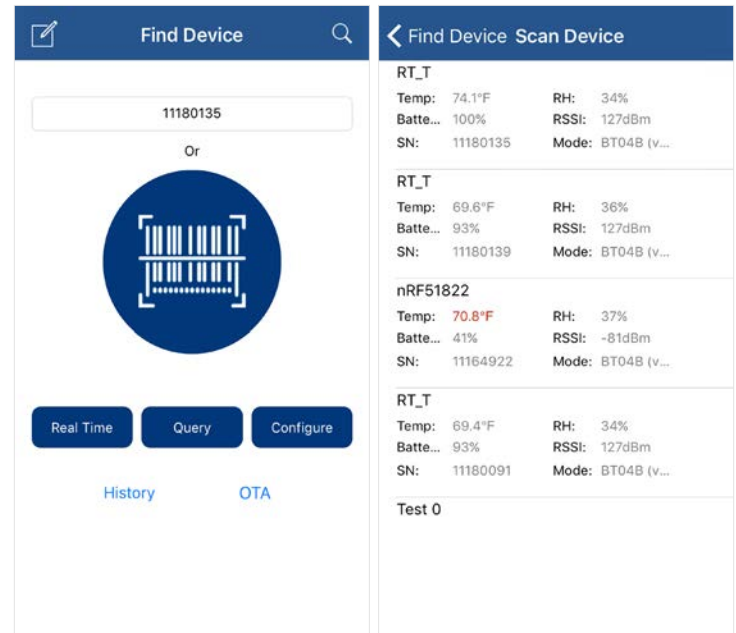


The **Send Report** section of the Data Records allows the user to email data directly from the SMART LOGGER™ app. Enter the email account on the Android™ device and click Send. From here, the report start/end time/graph scaling can be user-defined. Once the information is chosen, simply confirm and the PDF/CSV files are generated and inserted into an email, ready for sending.



## iOS® VERSION USER INTERFACE

Open the SMART LOGGER™ app. On the main screen, there are three buttons: Real Time, Query, and Configure. To connect to a SMART LOGGER™ via any of these options, either scan the serial number barcode or manually enter the serial number in the appropriate space on the home screen and then press the desired option. There is also a search option (magnifying glass) in the top right corner of the home screen that, when pressed, creates a list of all devices within range.



## Main Screen

After manually entering the SMART LOGGER™ serial number, scanning the serial number barcode, or clicking search on the top right side of the home page, the user will be allowed to enter the **Configuration** mode. The **Pencil/Edit** icon at the top left of the **Find Device** screen directs to the **Temperature Unit** page which allows the user to choose which measurement scale is preferred for the PDF/CSV reporting. Both screens are shown below:

Back	Setting	Save
SN	11180135	
Password	000000 >	
Transmit Power	-4(dBm) >	
Storage Interval	60,30(s) >	
Alarm Settings	-4.0,212°F >	
Data Record	<input checked="" type="checkbox"/>	
Device Name	RT_T >	
Remarks	>	
Description	>	

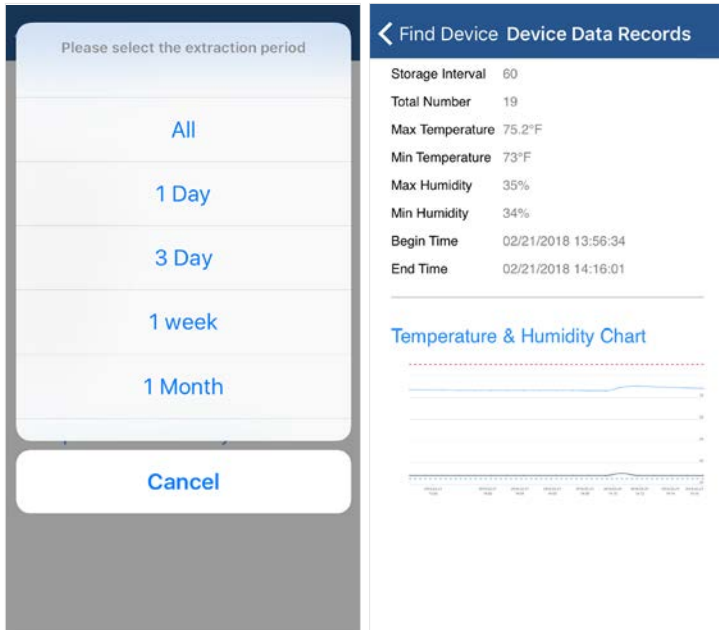
< Find Device	Setting	Save
<b>Temperature Unit</b>		
<input type="checkbox"/>	Degrees Celsius(°C)	
<input checked="" type="checkbox"/>	Fahrenheit(°F)	
<input type="checkbox"/>	Kelvin(K)	
<input type="checkbox"/>	Lambertian Degree(°R)	
<input type="checkbox"/>	Lecking Degrees(°Re)	

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**Real Time** screen displays the device name, real-time temperature, relative humidity, and power, along with current date and time. If the temperature exceeds user-defined limits, the numbers will appear in red. There is no edit function within this screen.

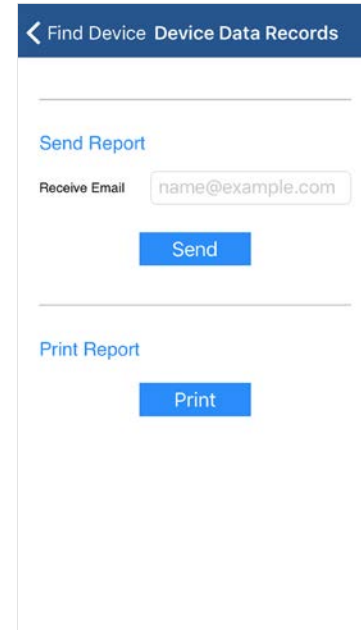
< Find Device	Real Time
11180135(BT04B)	100%
73.4°F	34%
02/21/2018 14:22:15	

**Query** allows the user to choose how much stored data to retrieve for reporting purposes. Once the desired reporting period is chosen, the record displays SN code, storage interval, alarm settings, the total of all data recorded, the maximum/minimum/Avg/MKT temperature/relative humidity during recording, start time, end time, total recording time, temperature/relative humidity graph, and Bluetooth® printing/emailing capability.

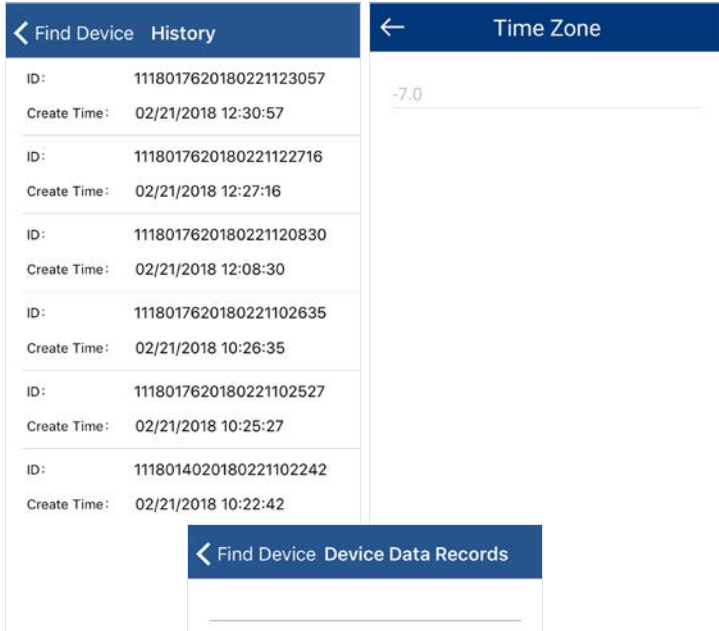


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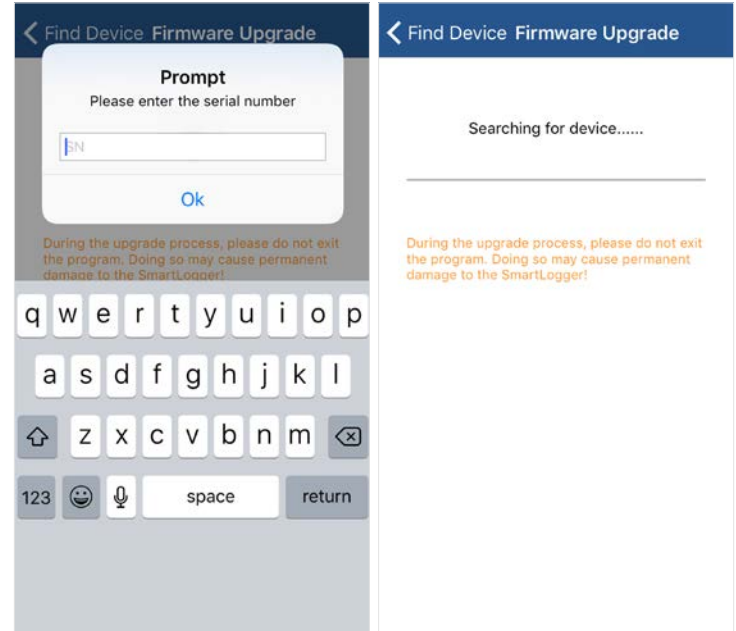
The **Send Report** section of the Device Data Records allows the user to email data directly from the SMART LOGGER™ app. Enter the email account on the iOS® device and click send. From here, the report start/end time/graph scaling can be user-defined. Once the information is chosen, simply confirm and the PDF/CSV files are generated and inserted into an email, ready for sending.



**History** retrieves a list of individual reports that have been created and saved. Once this list has been retrieved, you can tap to view a specific report or touch and hold the report to delete.



**OTA** (Over the Air) allows the user to determine if the latest firmware version is loaded into the SMART LOGGER™ and if not, the user will be prompted through a process for downloading and updating to the latest version.





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