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## User Manual for the MaxPlus Alpha Cooler®

Intended for 1 – 6 °C bedside storage of Red Blood Cells/Cold Plasma with integrated temperature monitoring capabilities



**Website:** <https://www.packmaxq.com/maxplus-alpha2>

**Reference Materials:** <https://www.packmaxq.com/alpha2-reference>

**Brochure:** [https://95b9fbd1-9ffa-459c-ae2d-60f638c87b24.filesusr.com/ugd/311dee\\_5ab867452dfe425baa1f5ce69336ac9a.pdf?index=true](https://95b9fbd1-9ffa-459c-ae2d-60f638c87b24.filesusr.com/ugd/311dee_5ab867452dfe425baa1f5ce69336ac9a.pdf?index=true)

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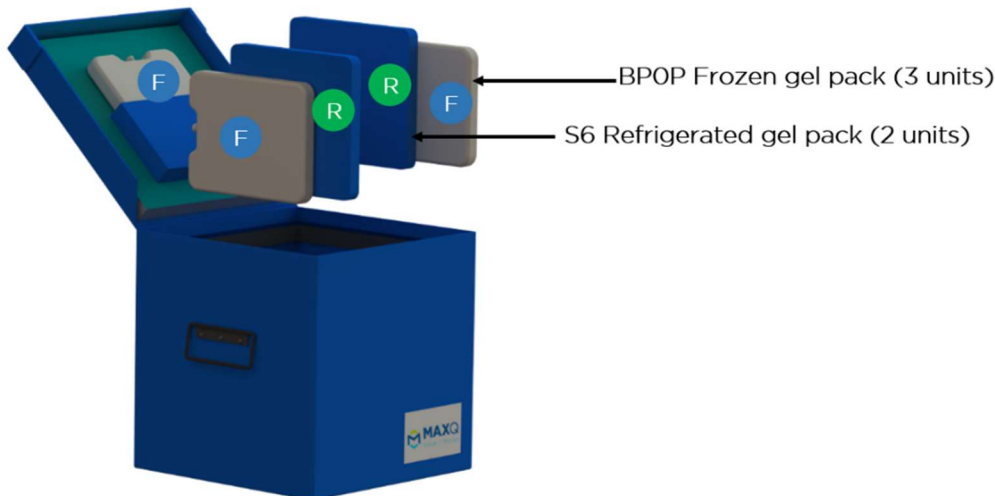
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Please NOTE: If you encounter a feature or an issue that is not included in this manual please contact MaxQ Research for help.  
Contact us – 405-466-5629 or [sales@packmaxq.com](mailto:sales@packmaxq.com)

## 1. System Overview

MaxPlus Alpha Cooler is exclusively designed for hospital transfusion services with MaxQ's proprietary integrated monitoring system for actively monitoring blood product temperature inside the cooler and providing comprehensive status report through a mobile application.



### Gel pack arrangement

- F 3 x Frozen - 2 against Left and Right wall and 1 on the lid
- R 2 x Refrigerated - 2 against Left and Right frozen gel packs

### 1.1 System

#### Components

- MaxPlus Alpha Cooler (1)
- Main Controller (1)
- Glycol Buffered Wireless Payload sensor (1)
- S6 blue gel packs (2 units), BPOP white gel packs (3 units)

### 1.2 System Accessories

- Micro-USB charging cable with power adapter
- SD card reader
- Spare battery for the buffered wireless payload sensor
- USB Bluetooth adapter for communicating with Desktop computer

### 1.3 Cooler Specifications

- **Outer dimensions:** 13.25"x13.25"x13.25"
- **Inner dimensions:** 10"x10"x10"
- **Payload dimensions:** 6"x10"x8" (LxWxH)
- **System Weight:** 13.7 lbs. (Excluding payload)
- **Payload:**
  - Type: Red blood cells or Thawed Plasma
  - Capacity: 2 to 10 units
  - Temperature: 1 – 6 °C
  - Validated Storage Duration: Up to 24 hour

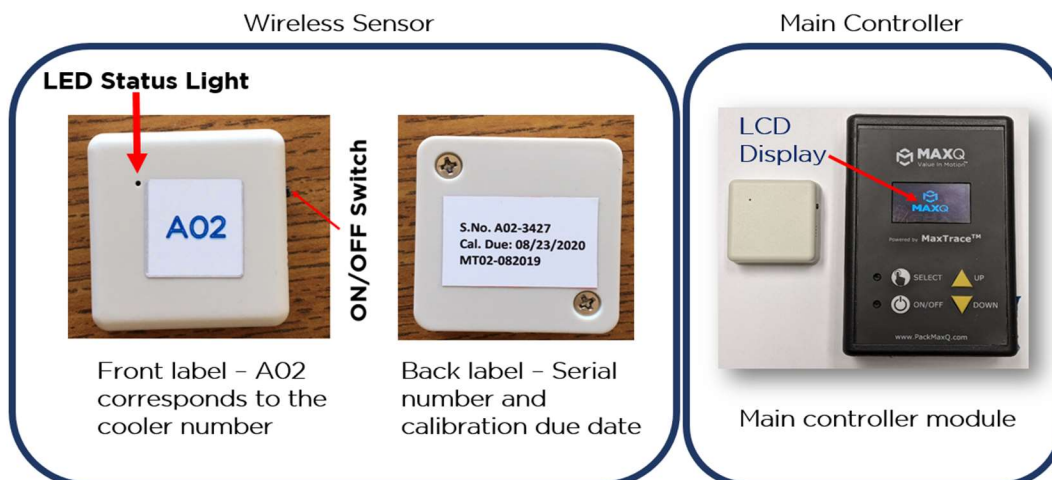
## 1.4 Integrated monitoring system

### 1.4.1 Wireless sensor module -

Placed inside the cooler along with the blood products for measuring payload temperature and communicating with Main controller module.

### 1.4.2 Main controller module -

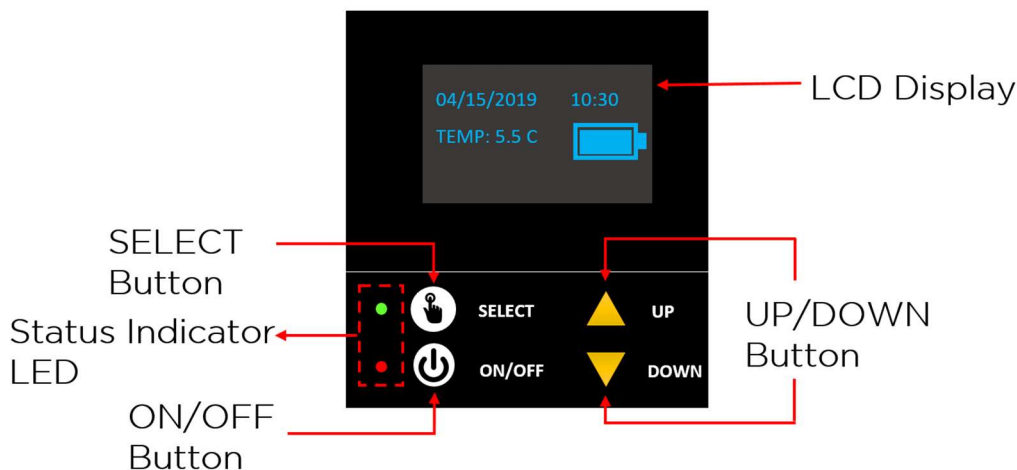
Removable controller with a display that can be placed in the lid of the Alpha Cooler.



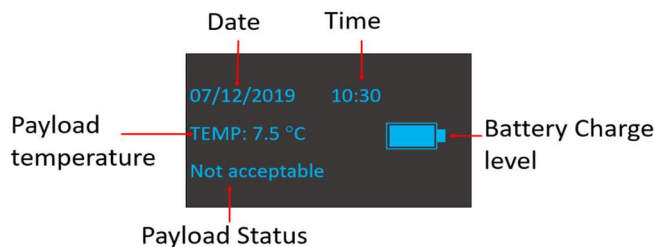
### 1.4.3 System Specifications

1	Memory	8GB (SD card, pre-installed)
2	Program Interval	2 minutes (minimum) to 1 hour
3	Temperature Sensor	Integrated circuit temperature sensor
4	Resolution	0.1°C
5	Accuracy	±0.5°C
6	Sensor Response Time	>2s
7	Operating Temperature	-20°C to +70°C
8	Alarm	Yes (Audible)
9	Battery	2800mAh Lipo battery
10	Calibration	3 point NIST Traceable Calibration Certificate
12	Mobile Application	Connect to <b>"MaxTemp"</b> Mobile Application (FREE Download from Apple or Google Store)
13	Desktop Application	Windows application <b>"MaxTemp"</b> (FREE download from Microsoft app store)
13	Application Compatibility	Mobile phones running operating systems greater than Android 5.0 or iOS 11 Microsoft windows 10 operating system
14	Data / Report export	Built-in PDF report generator in the mobile applications

## 2. List of buttons and functions on Main Controller



- **ON/OFF Button:** 'Turn ON' / 'Turn OFF' the system
- **SELECT Button:** SELECT specific user option and to 'STOP' temperature data logging operation.
- **UP/DOWN Button:**
  - Move arrow up or down in the user selection menu
  - Increase or decrease values



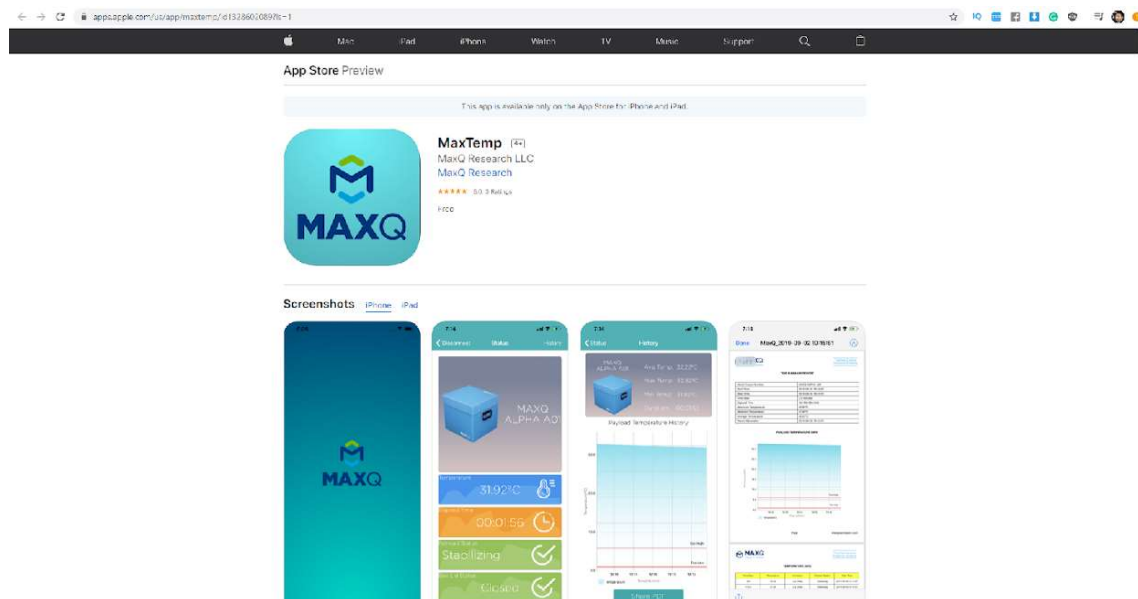
### ***LCD Display during Data Logging***

- **LCD Display:** The LCD display provides the user a visual representation of different options to choose from, after *turning ON* the system. During temperature data logging operation, the display shows –
  - Date and Time of Last Data Point
  - Payload temperature
  - Payload status – Not Acceptable if temperature went out of specified temperature range
  - Battery Capacity

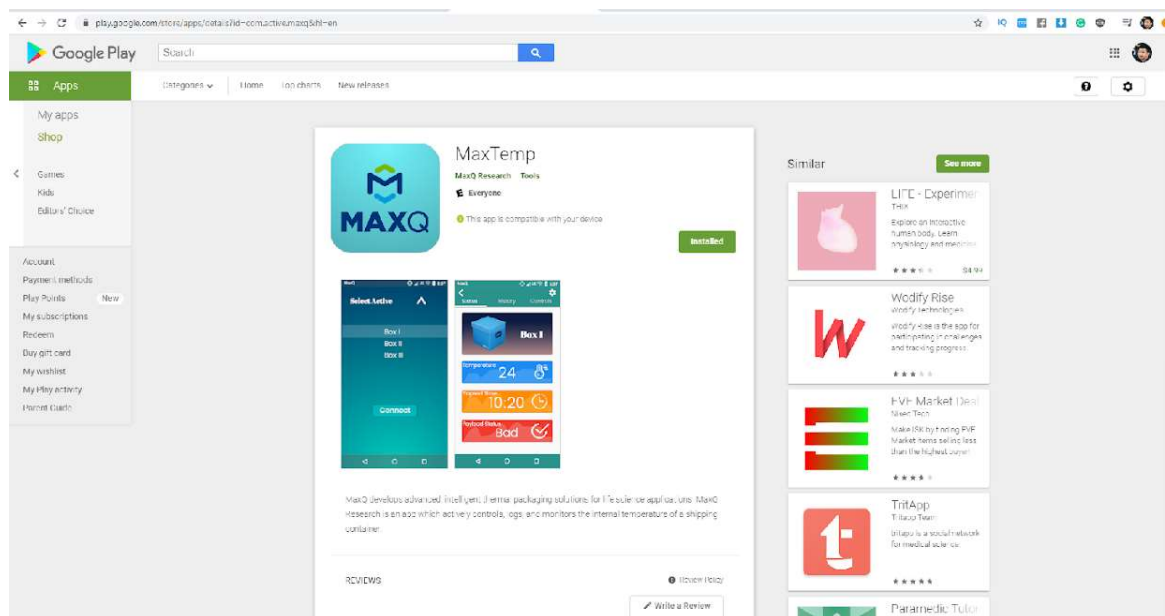
### 3. MaxTemp Application Download

MaxPlus Alpha cooler comes with free iOS and Android mobile applications, as well as a Windows desktop application to download historical temperature and generate a comprehensive compliance report.

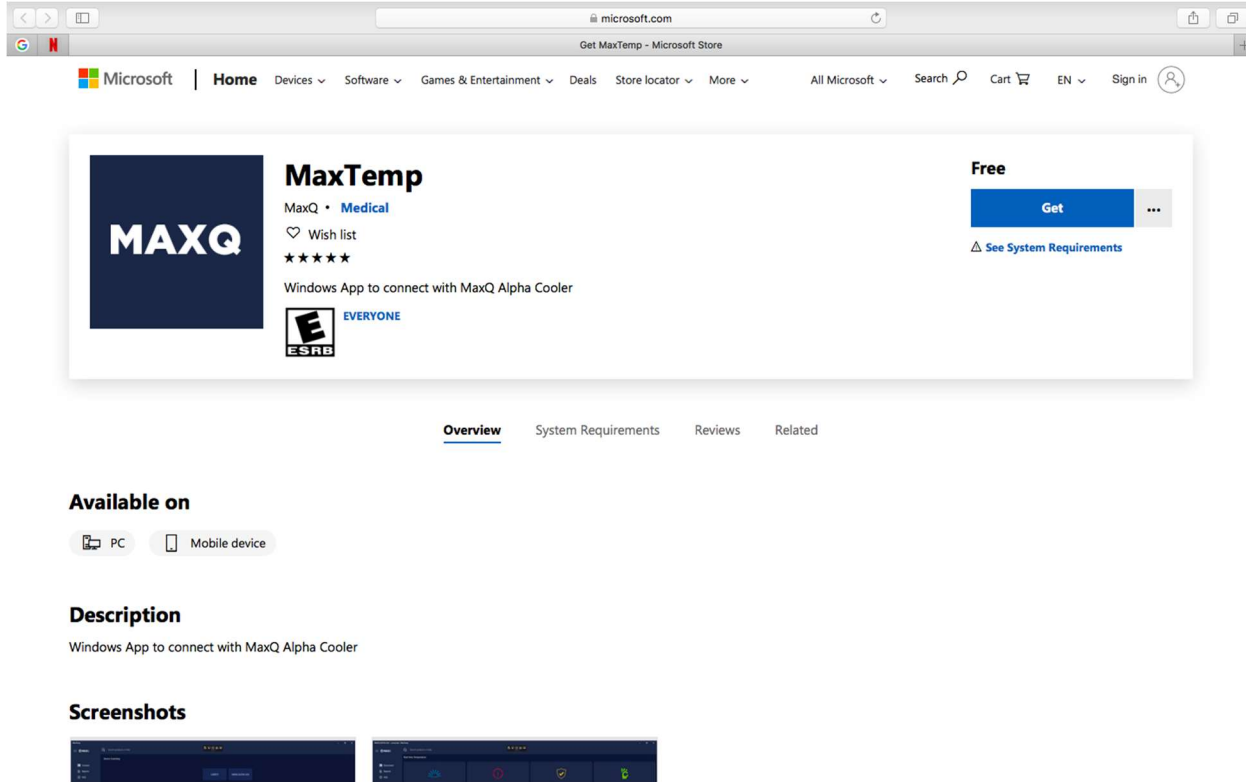
#### 3.1 iOS app – [Download Now!](#)



#### 3.2 Android app – [Download Now!](#)



### 3.3 Windows App – [Download Now!](#)





## 4. MaxTemp Software Operating instructions

*Note: DO NOT open the lid of the cooler when connecting with the cooler from a mobile device. This can result in losing connection with cooler and data loss.*

Step 1) The MaxPlus Alpha cooler should be in the temperature logging mode (running) to connect with the MaxTemp application.

Step 2) Make sure the Bluetooth on your mobile device / computer is turned ON and visible for other devices.

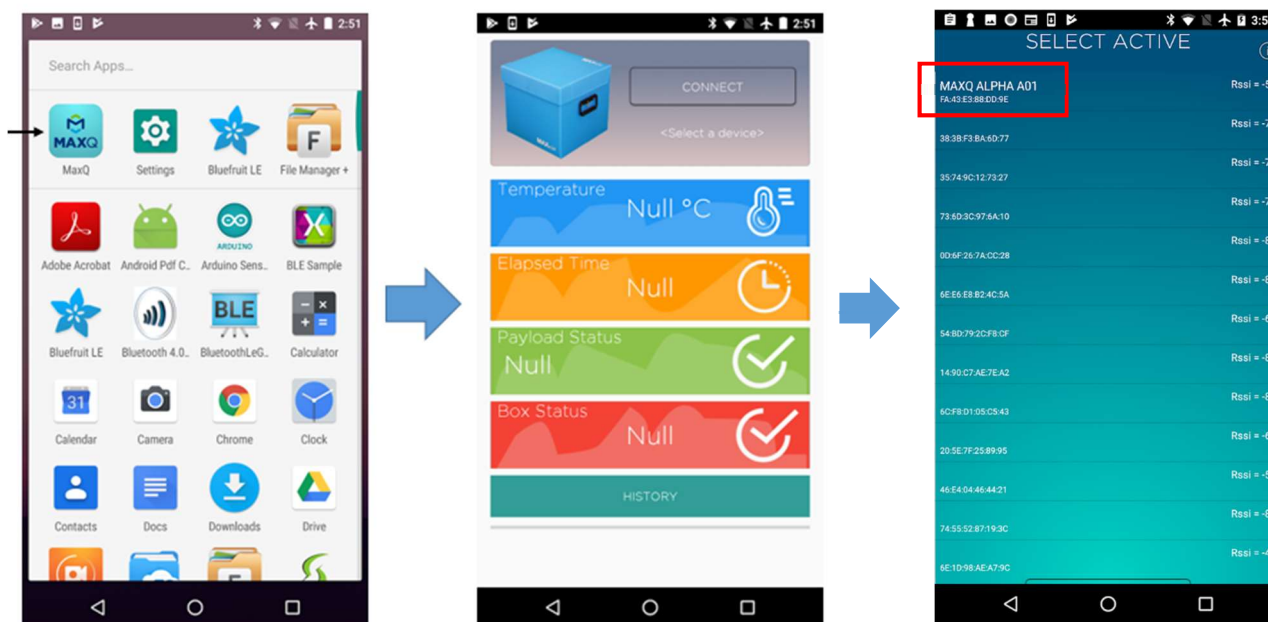
Step 3) Locate the MaxTemp application on your mobile device / computer.

Step 4) Open the application.

Step 5) Select the specific MaxPlus Alpha Cooler that you are attempting to connect – for example the screen below shows “MAXQ ALPHA A01” cooler. Each MaxPlus Alpha Cooler is designated with a unique number which is labeled on top of the cooler lid, inside the cooler and on the front face of the wireless sensor.

### 4.1 MaxTemp Android Application

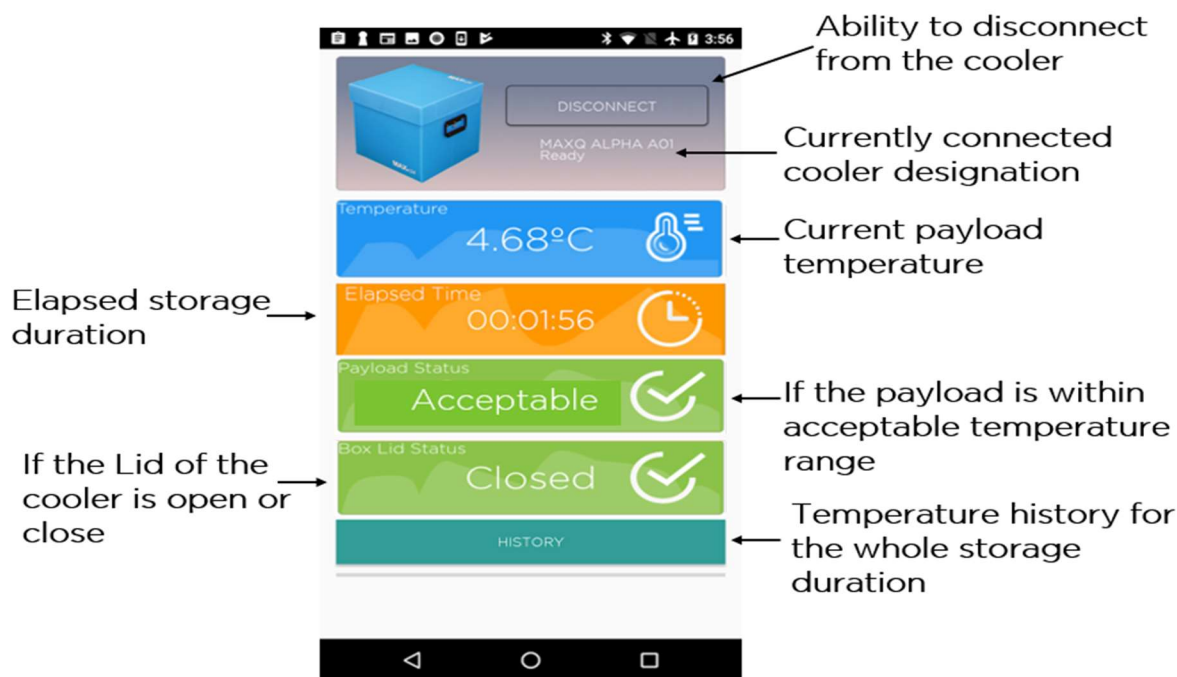
\*Graphics are illustrations for an Android Mobile Device



First screen after opening the App

List of Bluetooth enabled devices

After you select the specific cooler, the next screen (shown below) will show the current product status. Each icon on the application is explained below:



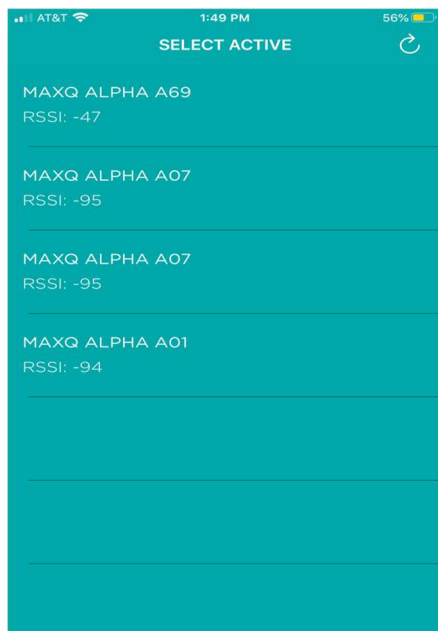
- The **DISCONNECT** button on the top allows the user to disconnect the application from the cooler
- The **HISTORY** button in the bottom allows the user to download payload temperature data for the entire storage duration in the form of a graph and a summary table
- The **TEMPERATURE** panel indicates the current payload temperature
- The **ELAPSED TIME** panel indicates the elapsed storage duration for the cooler
- The **PAYLOAD STATUS** panel displays temperature range based acceptability of the blood product. If the unit went out of the required 1-6°C temperature range, it will show the status to be “Not Acceptable”
- The **BOX STATUS** panel shows if the lid of the cooler is currently opened or closed

**Note:** If you are in data logging mode, after you have connected with the cooler using the MaxTemp app, you will be disconnected from the cooler after 30 seconds to make sure the cooler can capture any excursion events during the data logging period. However, if you have stopped data logging then the cooler will be connected with the app unless you disconnect from it.

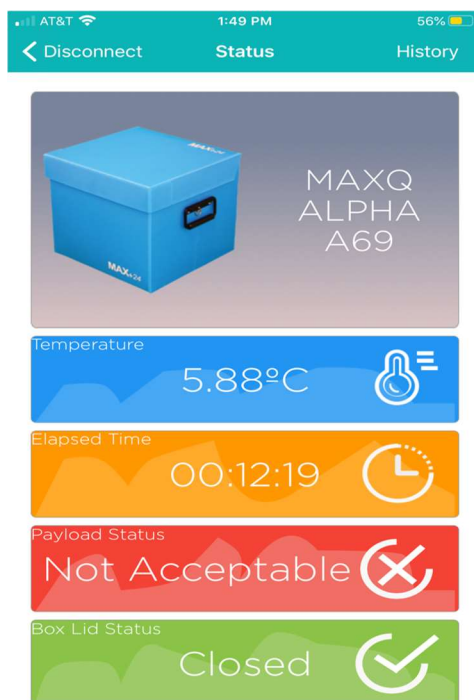
## 4.2 MaxTemp iOS Application

After launching the MaxTemp application on your iOS mobile device, you will be presented with the screen below:

\*Graphics are illustrations for an iOS device



**Step 1:** Select the Alpha Cooler number corresponding with the one on your cooler. This will pair your mobile device with the cooler. You will then see the following screen:

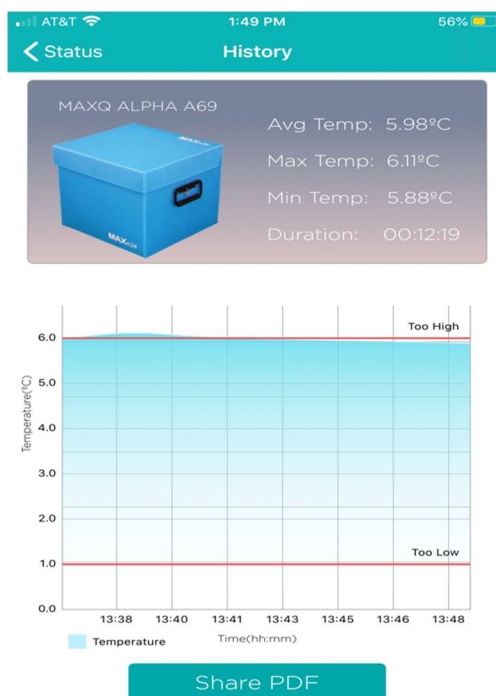


**Step 2:** From this page, you will be presented with a list of options:

- The **DISCONNECT** icon on top left of the screen allows the user to disconnect the application from the cooler
- The **HISTORY** icon on top right of the screen allows the user to download payload temperature data for the entire storage duration in the form of a graph and a summary table
- The **TEMPERATURE** panel indicates the current payload temperature
- The **ELAPSED TIME** panel indicates the elapsed storage duration for the cooler
- The **PAYLOAD STATUS** panel displays temperature range based acceptability of the blood product. If the unit went out of the required 1-6°C temperature range, it will show the status to be “Not Acceptable”
- The **BOX STATUS** panel shows if the lid of the cooler is currently opened or closed

**Note:** If you are in data logging mode, after you have connected with the cooler using the MaxTemp app, you will be disconnected from the cooler after 30 seconds to make sure the cooler can capture any excursion events during the data logging period. However, if you have stopped data logging then the cooler will stay connected with the app unless you disconnect from it.

**Step 3:** At the end of each trip or storage cycle, the ‘HISTORY’ button can be pressed on the mobile application and the user will be able to download temperature data for the entire trip duration. (Screenshot below):



**Note:** It is strongly recommend to stop logging data on the cooler at the end of the trip before downloading the ‘HISTORY’. Depending on the elapsed time, the ‘HISTORY’ file may be larger and might take up to 120 seconds to complete download. **DO NOT turn OFF the cooler until the download is complete.**

**Step 4:** From here, you can analyze the temperature data from the run, and share the data with coworkers by clicking the “Share PDF” icon.

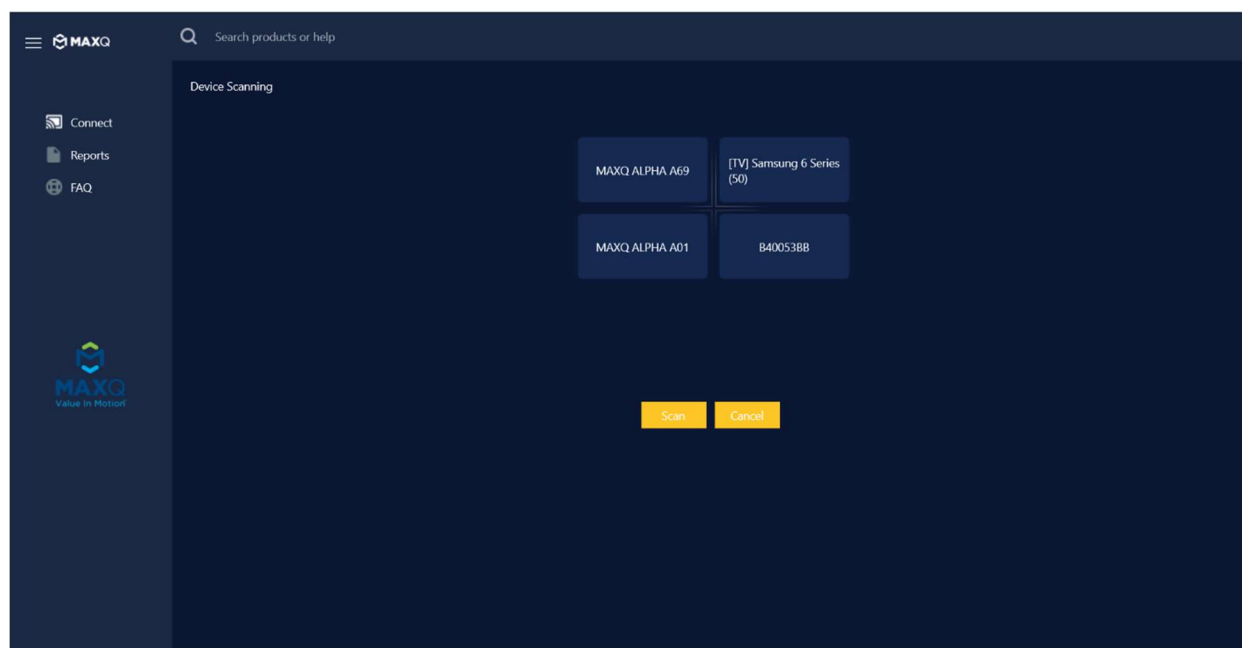
### 4.3 MaxTemp Windows Application

The following are instructions to download the cooler data onto a desktop computer using the MaxTemp Windows application. The steps listed below are based on the assumption that the cooler has been issued for an OR trip and the trip has been completed.

**Step 1:** Press and hold the ‘SELECT’ button on the lid for three seconds to stop data logging. **DO NOT PRESS THE ‘ON/OFF’ BUTTON.** Doing so will result in loss of the data.

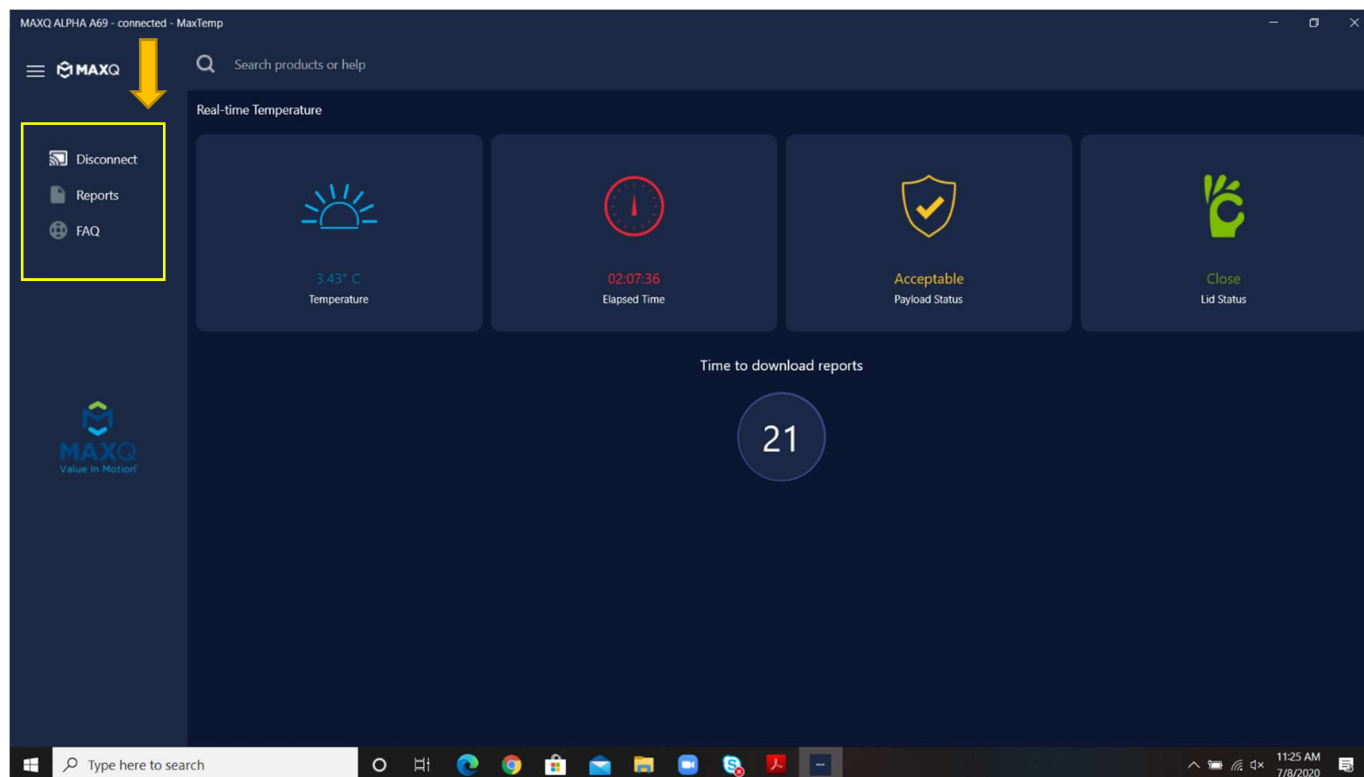
**Step 2:** Open the MaxTemp Windows application on your desktop.

**Step 3:** Select the device that corresponds with the number of your Alpha Cooler

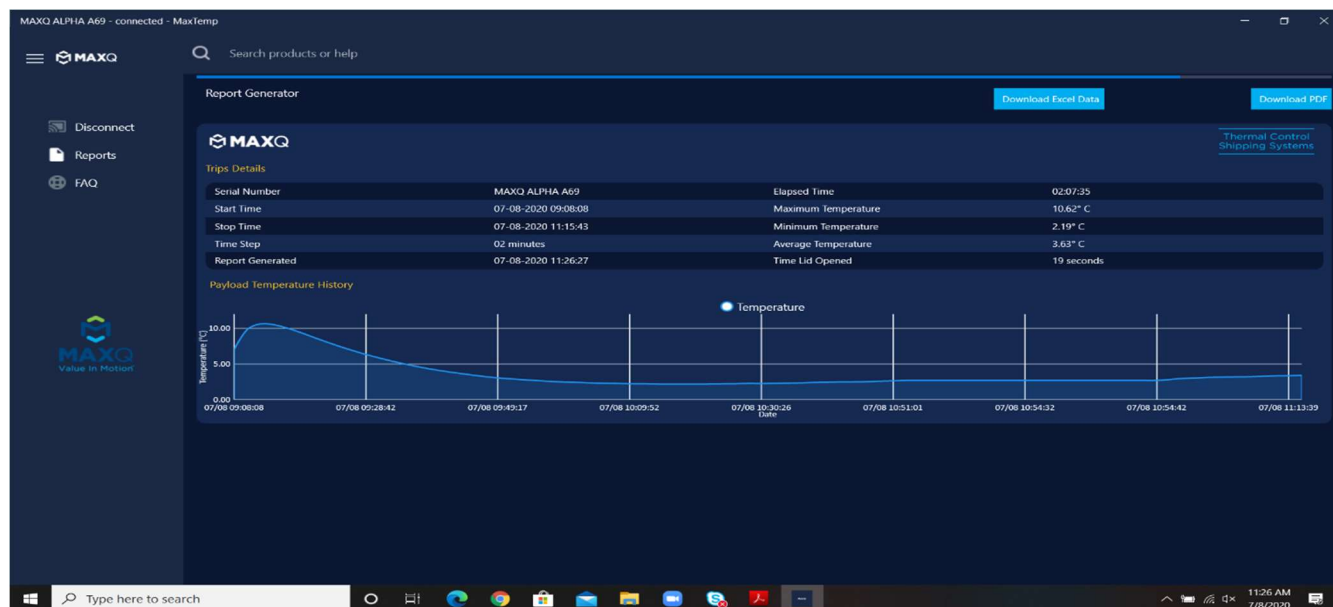


**NOTE:** Only one cooler can be connected to the MaxTemp Windows Application at a time. If you do not see your cooler on the connection screen, you are most likely connected to the cooler on another MaxTemp Application either on a Mobile device or a Windows Desktop. Please disconnect from other device to continue.

**Step 4:** You will be presented with a screen with a timer counting down from 30 seconds. Select the 'REPORTS' button on the left side bar.



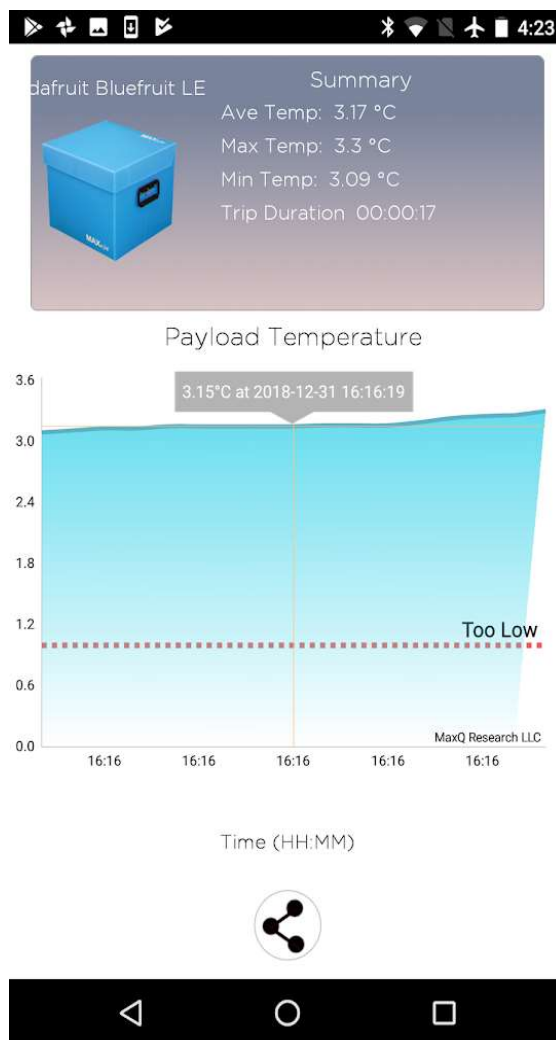
**Step 5:** You will then see a screen that includes data from the cooler run. At this point, you can download the PDF by clicking on the 'DOWNLOAD PDF' button.



**Note:** If you are in data logging mode, after you have connected with the cooler using the MaxTemp Windows application, you will be disconnected from the cooler after 30 seconds to make sure the cooler can capture any excursion events during the data logging period. However, if you have stopped data logging then the cooler will be connected with the app unless you disconnect from it.

#### 4.4 Viewing Temperature logs

At the end of each trip or storage cycle, the 'HISTORY' button can be pressed on the mobile application and the user will be able to download temperature data for the entire trip duration. (Screenshot below)



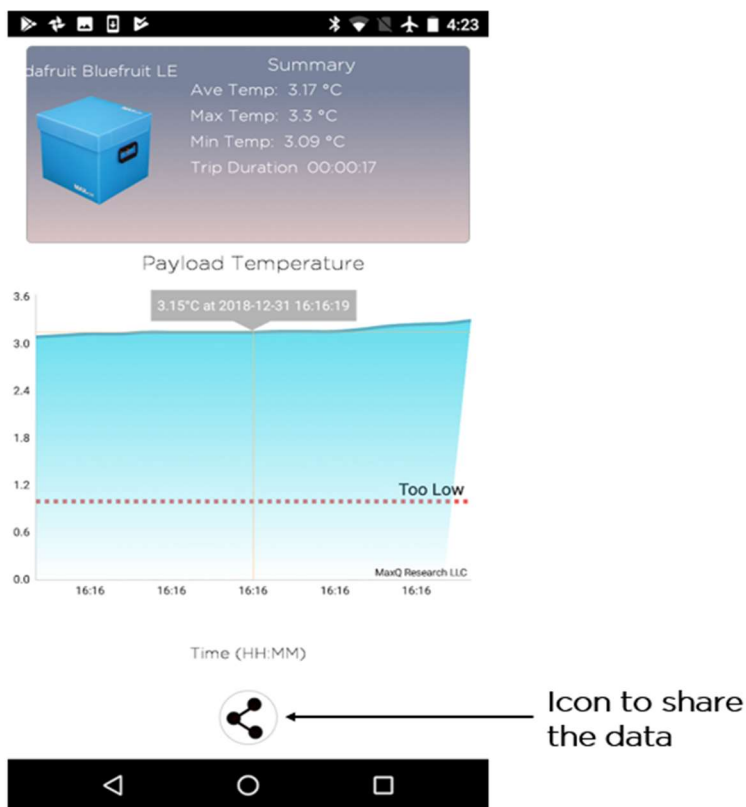
- This screen gives the user a summary of blood product (payload) temperature over the whole storage duration up to that point and a graphical representation of the temperature data. The summary at top of the screen includes – Average temperature, Maximum temperature, Minimum temperature of the payload, and total elapsed time.



- The graph shown on the screen is the blood product temperature history since the cooler temperature logging was initiated by the user. The user has options to zoom-in at a specific point on the graph to look at temperature data for a particular time.

#### 4.5 Temperature report generation

At the end of every trip, the user can generate a PDF report that summarizes the trip in terms of blood unit temperature data (Max, Min, and Average), a graph, and tabulated temperature data. Press the 'SHARE' icon at the bottom of the page, and the application will automatically generate a PDF report.



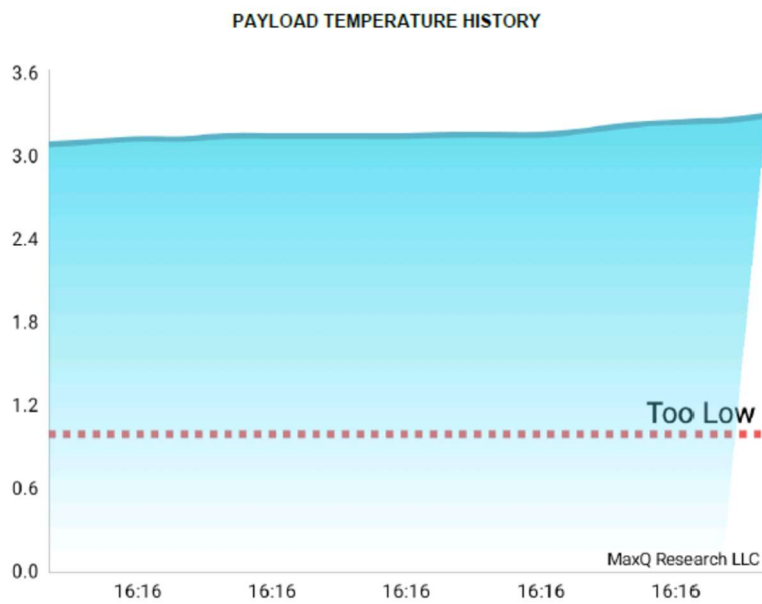
##### 4.5.1 Report format

The generated report will have the following structure:

- 1) A summary table including:
  - a) Serial number of the cooler – Designation provided by MaxQ for each individual cooler (labeled at multiple locations on the cooler)
  - b) Time Stamp – Start and Stop time for the trip
  - c) Time Step – How often the data was recorded
  - d) Elapsed Time – How long the blood units were in the cooler
  - e) Max, Min, and Average temperature – What was the maximum, minimum and average temperature of the units inside the cooler for the whole trip

2) A graphical representation of the payload temperature as shown below:

MaxQ Cooler Number	MAXQ ALPHA A01
Start Time	2019-04-26 10:07:16
Stop Time	2019-04-26 10:37:33
Time Step	111 seconds
Elapsed Time	00:00:04
Maximum Temperature	6.4 °C
Minimum Temperature	5.54 °C
Average Temperature	6.12 °C
Report Generated	2019-04-26 10:37:33



- 3) A detailed table that presents each temperature data point with lid status, payload status, and time stamp recorded throughout the trip.

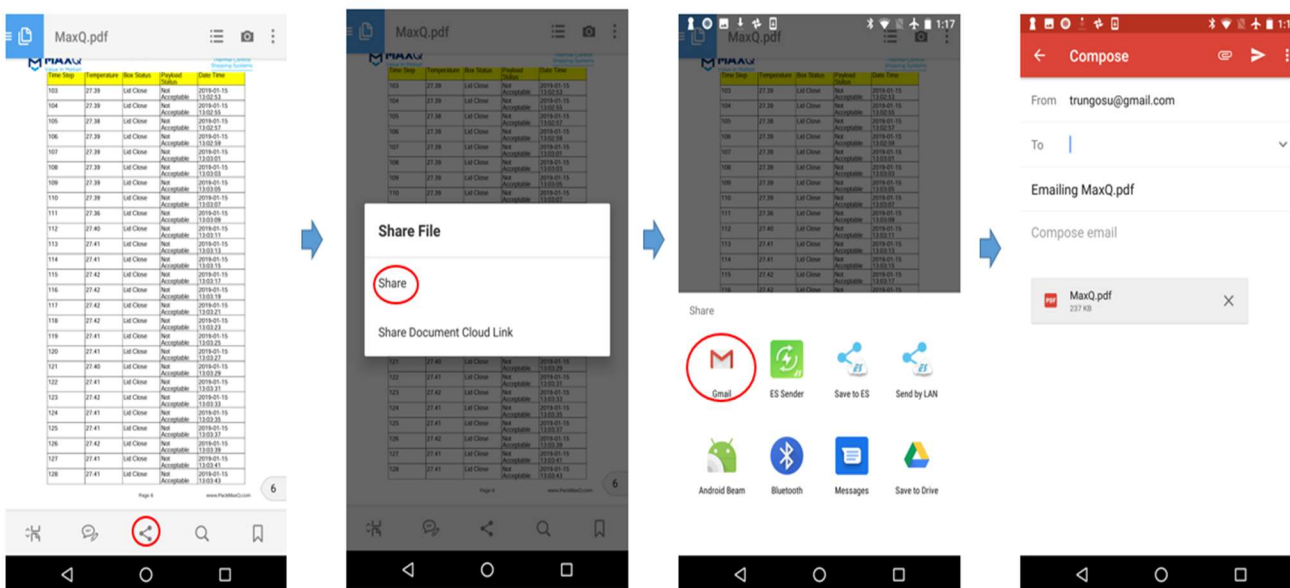
**TEMPERATURE DATA**

Time Step	Temperature	Box Status	Payload Status	Date Time
1	3.09	Lid Close	Acceptable	2018-12-31 16:16:10
2	3.11	Lid Close	Acceptable	2018-12-31 16:16:12
3	3.13	Lid Close	Acceptable	2018-12-31 16:16:14
4	3.13	Lid Close	Acceptable	2018-12-31 16:16:16
5	3.15	Lid Close	Acceptable	2018-12-31 16:16:18
6	3.15	Lid Close	Acceptable	2018-12-31 16:16:20
7	3.15	Lid Close	Acceptable	2018-12-31 16:16:22
8	3.15	Lid Close	Acceptable	2018-12-31 16:16:24
9	3.15	Lid Close	Acceptable	2018-12-31 16:16:26
10	3.16	Lid Close	Acceptable	2018-12-31 16:16:28
11	3.16	Lid Close	Acceptable	2018-12-31 16:16:30
12	3.16	Lid Close	Acceptable	2018-12-31 16:16:32
13	3.19	Lid Close	Acceptable	2018-12-31 16:16:34
14	3.23	Lid Close	Acceptable	2018-12-31 16:16:36
15	3.25	Lid Close	Acceptable	2018-12-31 16:16:38
16	3.26	Lid Close	Acceptable	2018-12-31 16:16:40
17	3.30	Lid Close	Acceptable	2018-12-31 16:16:42

## 4.5.2 Report retrieval and archiving (download and sharing)

The MaxTemp application allows the user to share the report with relevant personnel. The steps involved are below:

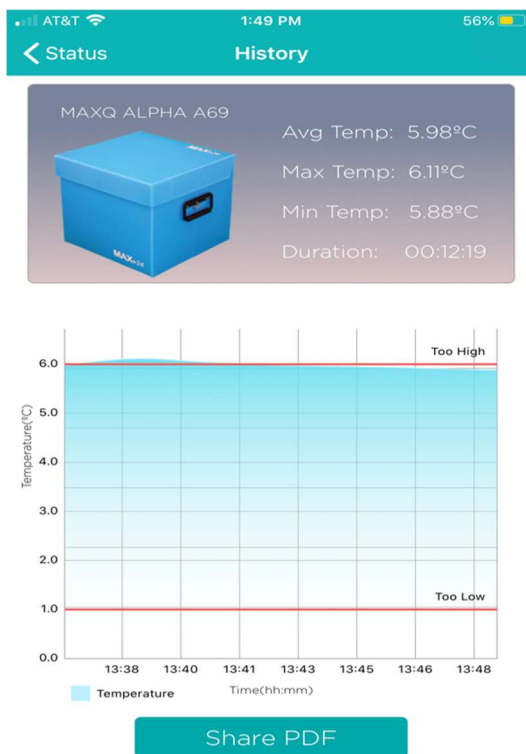
### For Android MaxTemp Application:



- After the user has generated the PDF described in the previous section, a 'Share' icon will appear at the bottom of the screen. Press the 'Share' icon.
- On the next screen, a pop up window will appear – click 'Share'.
- That will take the user to a pullup window with various sharing options. For example, the user can use an e-mail service such as 'Gmail' to send a copy of the report. The application also allows the user to use 'Text' to share the report.

With the use of this feature, the user can create a repository of reports for each and every trip for the MaxPlus Alpha cooler.

**iOS MaxTemp Application:**



- After the user has generated the PDF described in the previous section, a 'Share PDF' icon will appear at the bottom of the screen. Press the 'Share PDF' icon.
- On this screen, you can choose to share the PDF via email, text, or your preferred method.

With the use of this feature, the user can create a repository of reports for each and every trip for the MaxPlus Alpha cooler.

**Note:** The share option is applicable for Android and iOS MaxTemp application. Windows MaxTemp desktop application allows the user to save the report in PDF format on the desktop and the user can e-mail using a browser or mailing application such as outlook.

## 5. Cooler Pack-out Configuration & Steps

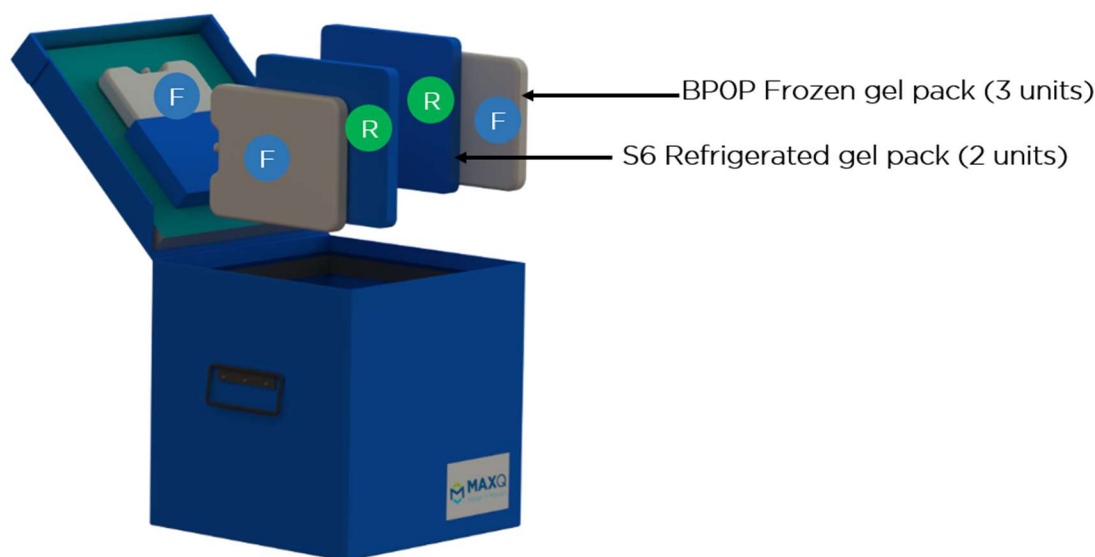
### 5.1 Gel pack and sensor Pre-conditioning:

**Step 1:** Charge three BPOP (white bottle) in the freezer (-20°C for a minimum of 12 hours)

**Step 2:** Charge two S6 gel packs (blue bottle) in the refrigerator (1-6°C for a minimum of 12 hours)

**Step 3:** Charge the payload wireless sensor in the same refrigerator along with the S6 gel packs (1-6°C for a minimum of 12 hours)

### 5.2 Pack-out Procedure:



#### Gel pack arrangement

-  3 x Frozen - 2 against Left and Right wall and 1 on the lid
-  2 x Refrigerated - 2 against Left and Right frozen gel packs

**Step 1:** Place two units of frozen BPOP gel packs against the cooler walls.

**Step 2:** Place two refrigerated S6 gel packs against the frozen BPOP gel packs making sure to place them on the inside face to avoid putting blood components in close contact with frozen coolant.

**Step 3:** Insert the last frozen BPOP gel pack into the pouch attached to the lid. Close the cooler lid.

**Step 4:** Place the Main Controller device in the dedicated slot on top of the cooler. Turn ON the Main Controller and follow on- ↑ screen instructions.

**Note:** Do not turn ON the Main Controller device before placing it inside the dedicated slot. The wireless sensor pairing will not work if the main controller device is not placed properly on the cooler lid.

**Step 5:** Close the clear plastic door for the main controller. Turn on the wireless sensor.

**Step 6:** Wait until the first temperature data is displayed on the screen. Place payload wireless sensor inside the cooler.

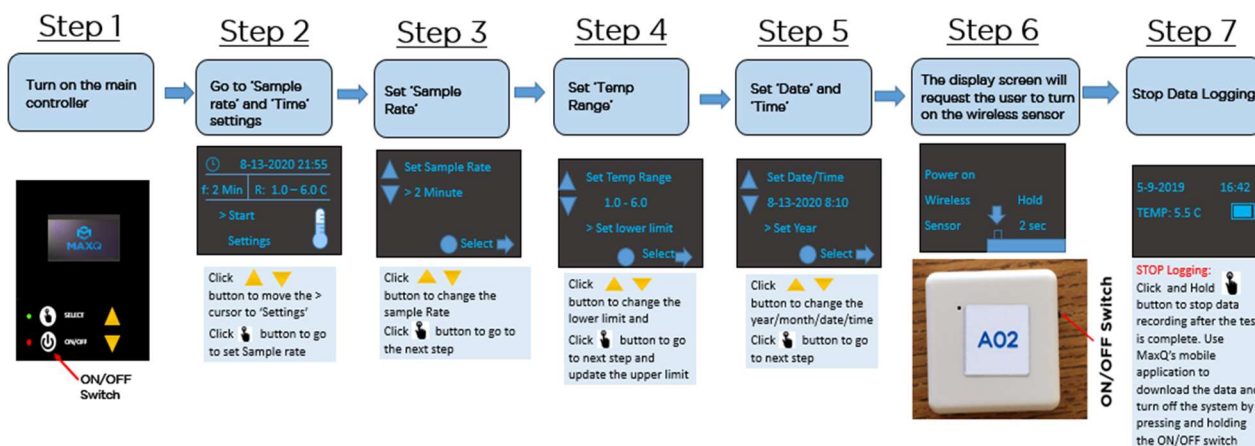
**Step 7:** Place payload (blood products) inside the cooler.

**Step 8:** Close the cooler lid.

## 6. Preparing the Cooler for Initial Use

### List of assumptions:

- **Temperature Stabilization:** Initially there is a period when the cooler is reaching equilibrium and the sensor may show temperature warmer than 6°C. This period can vary from 15-30 minutes and is considered stabilization period.
- **Minimum battery level:** The main controller should at least be 50% charged before issuing the cooler.
- **DO NOT PRESS THE ON/OFF BUTTON WHILE THE SYSTEM IS RECORDING TEMPERATURE DATA.** Pressing the button



will result in loss of data

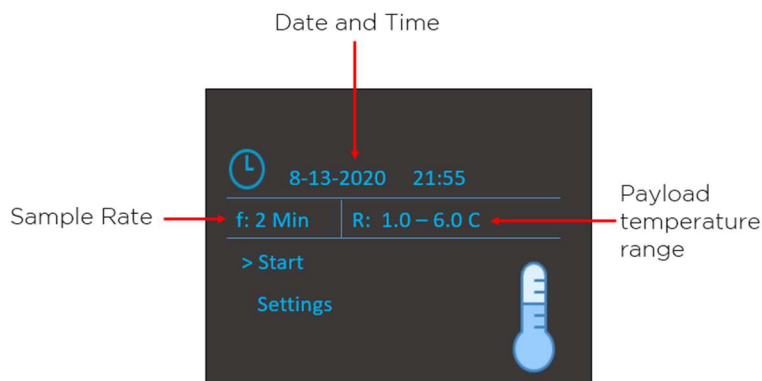
### 6.1 Setting up the temperature monitoring rate (Sample time)

- **Step 1:** Turn the Main Controller ON by pressing the ON/OFF button once. The display will show battery level for the Main Controller module.
- **Step 2:** Place the Main Controller device in the dedicated slot on top of the cooler.

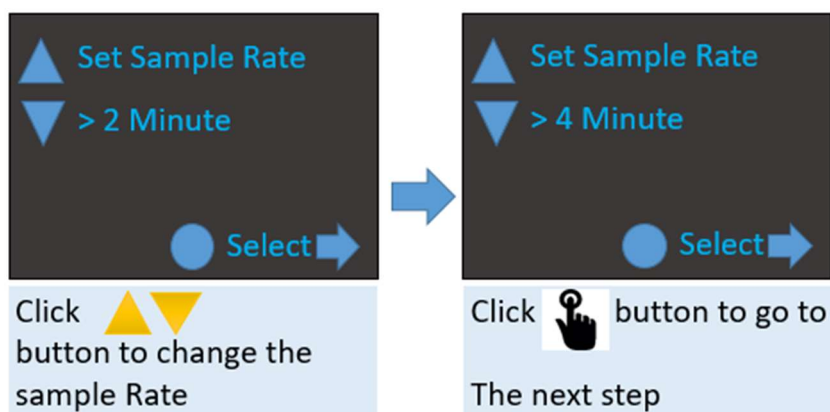
**Note:** Do not turn ON the Main Controller device before placing it inside the dedicated slot on the cooler lid. The wireless sensor pairing will not work if the main controller device is not placed properly on the cooler lid.

- **Step 3:** For those using the system for the first time, please check the 'Sample Rate' (how often the payload temperature is recorded) and 'time and date' displayed on the screen. If these parameters need to be adjusted, the user can - Use the '**Down**' button to move the > cursor to 'Settings' and press the '**Select**' button to go into 'Sample Rate', 'Temp Range' and 'Date/Time' setting.

**Note:** Select "**Start**" if there is no change to 'Sample Rate', 'Temp Range' and displayed Date and Time

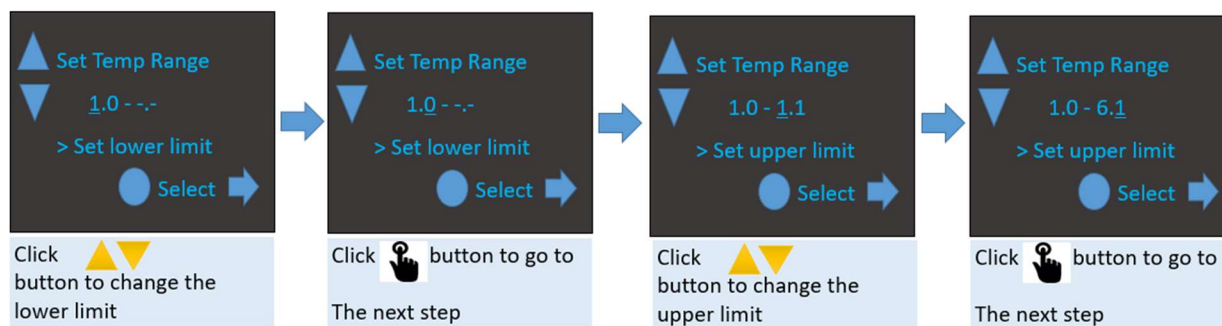


- **Step 4:** Please set how often the payload temperature is recorded (Sample rate)
  - Use the '**UP**' or '**DOWN**' button to change the sample rate. The default sample rate is 2 which means one temperature data recorded every 2 minutes (30 data points every hour). This is the minimum sample rate. The user can increase the number to decrease the sample rate. For example, a sample rate of 10 would mean payload temperature data recorded once every 10 minutes (6 data points every hour).
  - Press the '**SELECT**' button to accept the changes and go to the next screen.





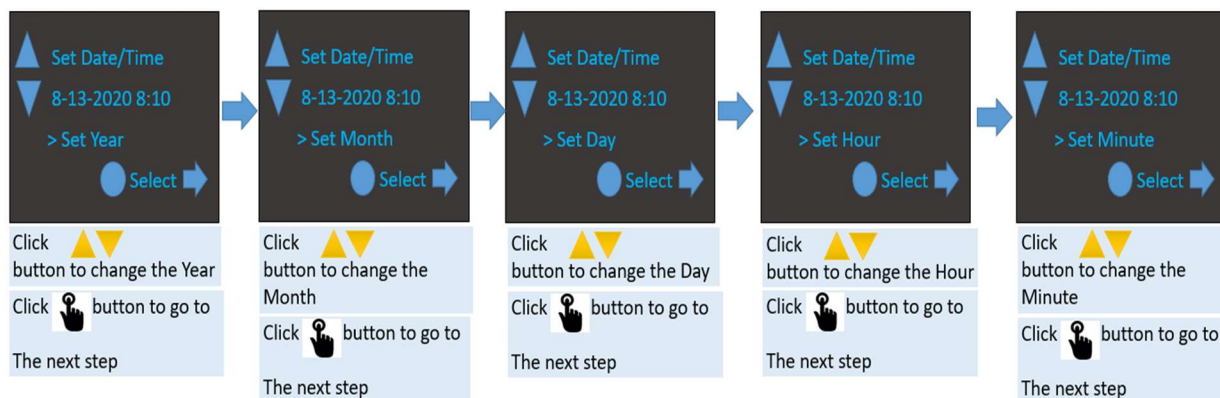
## 6.2 Setting up payload temperature range



- **Step 5:** Under this step, the user can select the acceptable lower and upper payload temperature range for the product that will be stored inside the cooler. The standard temperature range for the cooler is 1-6°C for refrigerated RBC/Plasma. However, if the cooler is being used for transportation of refrigerated RBC/Plasma, then the user can change the temperature range to 1-10°C
  - Setting the lower limit: Use the ‘UP’ or ‘DOWN’ button to increase or decrease the value
  - Press ‘SELECT’ to accept the change and move to the next screen.
  - Setting the upper limit: Use the ‘UP’ button to increase the value to acceptable upper temperature value.
  - Press ‘SELECT’ to accept the change and move to the Date/Time Screen

## 6.3 Setting up Date and Time on the main controller

- **Step 6:** Inside the Date and Time setting the user can change year, month, day, hour and minute sequentially (pictures



below).

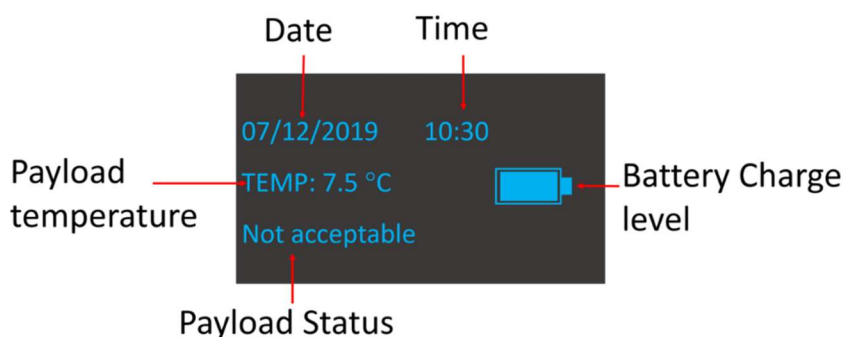
- Use the ‘UP’ or ‘DOWN’ button to increase or decrease the value
- Press ‘SELECT’ to accept the change and move to the next screen.

After the user has adjusted the ‘minute’ and accepted the change, the system will automatically go to the next screen.

- **Step 7:** The next screen will ask the user to turn the wireless sensor ON. Push and hold the black button for 2 seconds to turn the Wireless sensor module ON.



For verification, check the blue LED status light on the wireless sensor. If the blue LED on the wireless sensor blinks once then the Wireless sensor module is ready. The display on the main controller will show battery level (similar to figure below) for the wireless sensor and automatically start logging payload temperature. The LCD display during temperature logging is shown below:



**DO NOT PRESS THE ON/OFF BUTTON WHILE THE SYSTEM IS RECORDING TEMPERATURE DATA. Pressing the button will lead to loss of data.**

- The screen will show
  - Date and Time
  - Temperature of the payload
  - Payload status – Not Acceptable if payload temperature went below or above the user defined payload temperature range
  - Battery level - % of charge remaining in the main controller
- **Step 8:** To STOP recording, press and hold the SELECT button for a few seconds and release. The screen will display 'Logging stopped' and ask the user to download the data before turning the Main Controller off. For turning the wireless sensor off push and hold the black button for 2 seconds.

## 7. Packing and Issuing the Alpha Cooler (for daily operational use)

### 7.1 Gel pack and Sensor Preconditioning:

**Step 1:** Place three units of BPOP gel packs in the freezer (-20°C for a minimum of 12 hours)

**Step 2:** Place two units of S6 gel packs in the refrigerator (1-6°C for a minimum of 12 hours)

**Step 3:** Place the wireless sensor in the refrigerator along with the S6 gel packs

### 7.2 Cooler Pack-out:

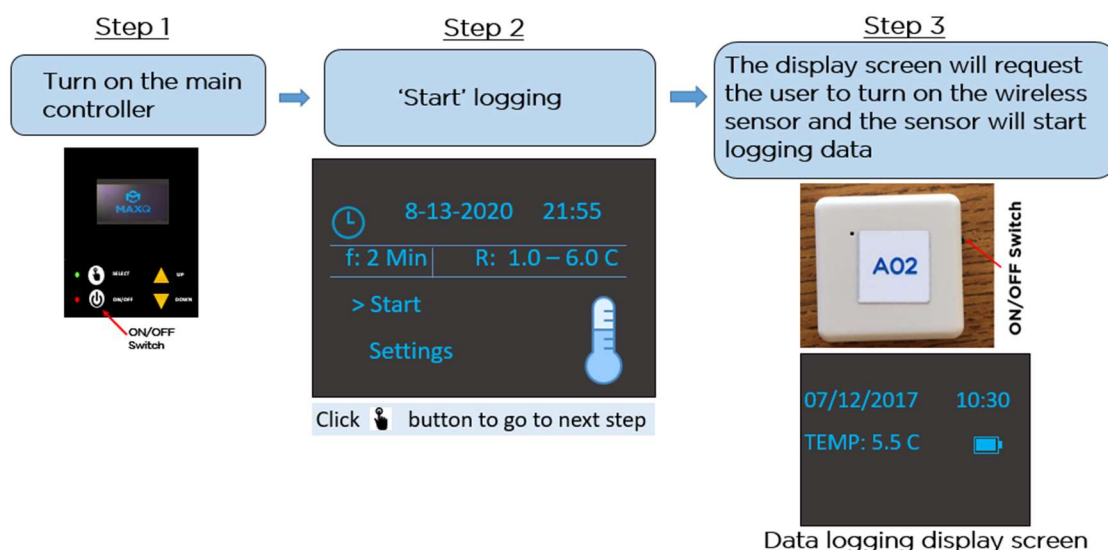
**Step 4:** Place two units of frozen BPOP gel packs against the cooler walls.

**Step 5:** Place two refrigerated S6 gel packs against the frozen BPOP gel packs.

**Step 6:** Insert the last frozen BPOP gel pack into the pouch attached to the lid. Close the lid.

### 7.3 Start Temperature Monitor

**Step 7:** Place the Main Controller device in the dedicated slot on top of the cooler. Turn ON the Main Controller and follow on-screen instructions.



**Step 8:** When prompted, turn ON the wireless sensor (hold black button for 2-3 seconds and release).

**Step 9:** Close the clear plastic door for the main controller. Wait till you see the first temperature data on the display, Open the cooler lid and then place Wireless sensor inside the container.

**Note:** After the wireless sensor has been turned on, the user is requested to allow the sensor to establish secure communication with the main controller (15-20 seconds) before opening the lid of the cooler to place the sensor inside the cooler. The user can confirm established connection between the wireless sensor and the display by verifying temperature data that will be displayed on the screen. After verifying the temperature data is displayed on the screen, then the user may open the cooler to place the wireless sensor. *Please note that opening the lid of the cooler before the wireless sensor has been able to communicate with the main controller can result in data loss and cooler from logging the temperature.*

## 7.4 Finish Pack-out of the Cooler

**Step 10:** Place payload (blood products) inside the cooler.

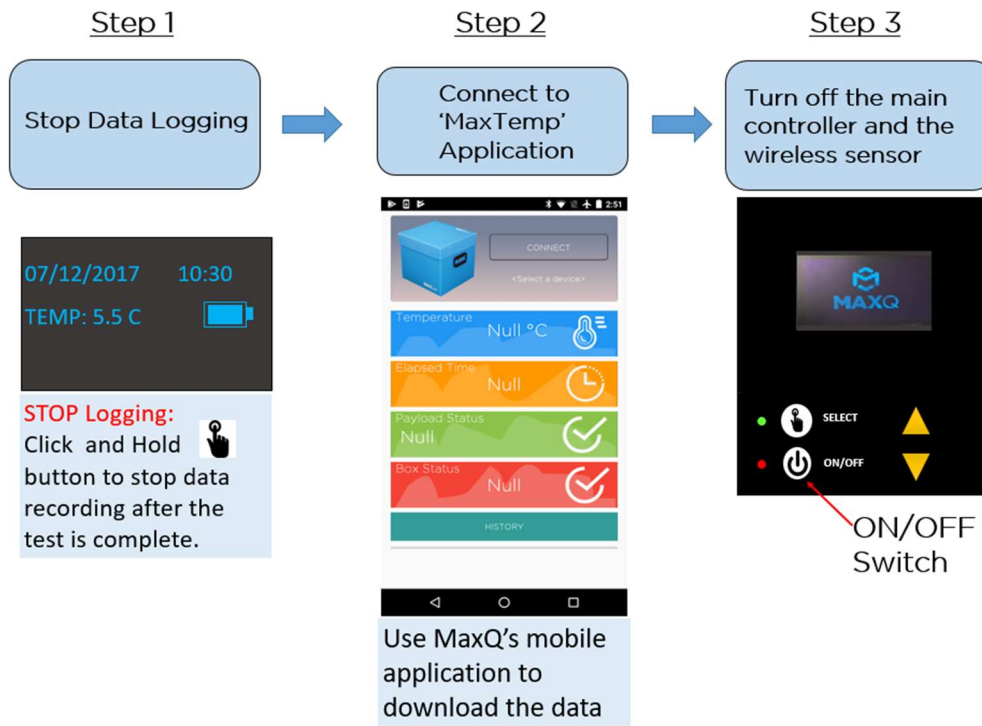
**Step 11:** Close the lid and issue the cooler.

## 7.5 Retrieve temperature data after cooler return / trip end

**Step 12:** To STOP recording, press and hold the SELECT button for a few seconds and release. The screen will display 'Logging stopped' and ask the user to download the data before turning the Main Controller off.

**Step 13:** Connect with "MaxTemp" iOS, Android, or Windows application to download temperature data (refer to 'MaxTemp Application' Section 4 above). Once the data is downloaded, the cooler can be opened and any remaining blood products can be assessed for "Return to Inventory".

**Step 14:** After successfully retrieving the data, turn both the main controller and wireless sensor OFF. If the cooler needs to be issued right away, please press the "ON/OFF" button and the system will reboot and ready for next trip in seconds! The wireless sensor will also have to be turned off (press and hold the black button for 2 seconds) and turned back on again for the next trip.



***Stopping Temperature Log and Data Retrieval.***

**Note: After the trip is complete, DO NOT forget to turn OFF the Wireless sensor. The battery will drain faster if left ON.**

## 8. Cooler Maintenance

### 8.1 Charging the Cooler

To charge the integrated temperature logger system, please remove the main controller from its designated slot on top of the cooler. Connect the micro-USB cable (included in the kit) to the main controller charging port in the bottom (similar to charging a mobile phone). Approximate time to charge the battery to full capacity is 3 hours. The system is capable of recording temperature data for 3-days (at 2 minute interval) in a single charge. It is recommended that the cooler be charged once every three days.

Get the main controller out of the slot



Micro-USB port



Connect the micro-USB charger included with the system

### 8.2 Sensor Calibration

It is recommended that your wireless sensor be calibrated yearly. This can be done by MaxQ. At 11 months after implementing your Alpha Cooler, please get in contact with your MaxQ sales representative to coordinate shipping and recalibration of your sensor. It is recommended to have multiple coolers and to stagger the recalibrations in order to not be without operational coolers.

### 8.3 Wireless Sensor battery change

The Wireless Sensor battery has roughly a 6-month charge and utilizes a CR2450 3V Lithium coin cell battery. Replacement batteries can be bought on Amazon or at a local grocery store.

## 8.4 Wireless Sensor Re-Pairing

### Re-pairing Sensor to Controller

If you have a sensor that will not connect to a controller it may have unpaired, try to connect the sensor a few more times before re-pairing the devices. One of the easiest ways a sensor can un-pair from a controller is if the sensor is put into pairing mode. Pairing mode is activated by holding the sensor button down for more than 10 seconds. Even if the sensor did not pair to a new device it loses all memory of its previous pair when put into pairing mode.

To re-pair the devices

Ensure all other MaxPlus controllers are off around the device to be repaired.

Be sure that the sensor and controller have the same serial number.

Turn on the controller and ensure the sensor is turned off.

Press the up and down arrows simultaneously.

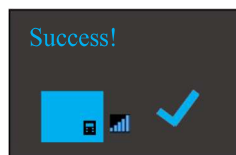


On the screen you should see “Pairing Mode” for a second then the screen will change to “Waiting for sensor” screen.



Press and hold the black button on the side of the sensor for 10-15 seconds, then release.

Once you see the screen that says “Success” and you hear a beep the sensor is paired to the controller, and it should take you back to the home screen.



Wait 5-10 seconds and if you do not hear a beep or see “Success!” then try to hold down the black button on the side of the sensor for 10-15 seconds again and be sure that you can see a blue light flashing when you release. If you do not see a blue light or it still will not pair send us an email at the address below.

[sales@packmaxq.com](mailto:sales@packmaxq.com)

## 9. Cleaning Procedures

MaxPlus Alpha Cooler is recommended to be cleaned with commercially available cleaning products that can be used on plastic surfaces. Some of the recommended cleaning products are:

- Sani-Cloth
- Virex
- OR wipes
- 6 – 8% Hydrogen Peroxide solution
- 6-10% Bleach solution

The MaxPlus Alpha Cooler is manufactured with a plastic that is chemically inert, with a NIL pH factor. Most oils, solvents and water have no effect, allowing it to perform even when exposed to harsh chemicals.

## 10. Cooler Validation instructions

Please refer to the Validation guide – <https://www.packmaxq.com/alpha-reference-materials>



## 11. FAQs and troubleshooting guide

### 11.1 Wireless sensor

#### 11.1.1 Wireless sensor is Turned ON but the blue LED is NOT ON

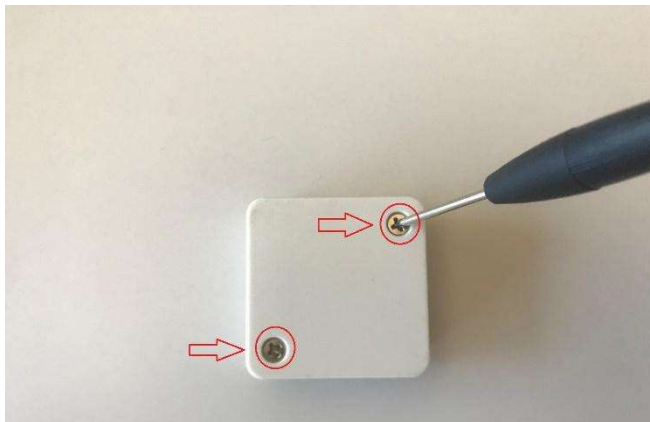
**Possible Cause:**

1. Battery placed incorrectly
2. Possible low voltage on the Battery

**Corrective Measure:**

1. Open the back of the sensor and check the battery placement

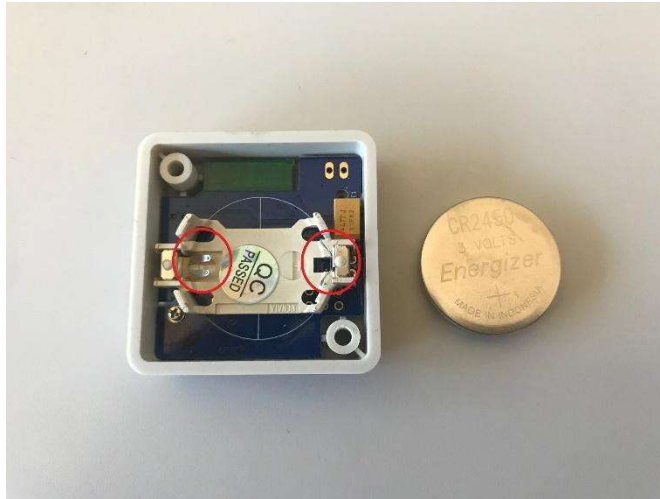
Step 1: Remove 2 screws in the back



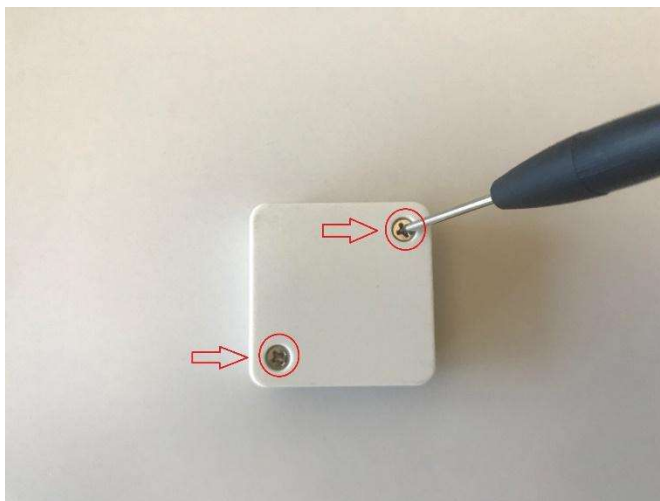
Step 2: Remove the back cover of the sensor and remove the battery



Step 3: Check if the battery holder pin is in contact with the battery. Adjust if necessary



Step 4: Put the battery back and close the enclosure



### 11.1.2 Replace battery in the Wireless sensor – Use CR2450 3V Lithium Coin Battery

- Open the back of the sensor following the steps above.
- Replace the battery. Use CR2450 3V Lithium Coin Battery



## 11.2 Main Controller

### 11.2.1 Main controller screen does not turn ON after pressing the ON/OFF button

**Possible Cause:**

1. Most likely the main controller battery is low on charge or completely drained.

**Corrective Measure:**

1. Connect the micro-USB cable to charge the main controller and fully charge the system

Get the main controller out of the slot



Micro-USB port



Connect the micro-USB charger included with the system

### 11.2.2 Main controller stuck in the “Power on wireless sensor” screen

**Possible Cause:**

1. Wireless sensor is NOT turned on

**Corrective Measure:**

1. Hold the button for more than “2 seconds” to turn on the Wireless sensor



### 11.2.3 Main controller screen does not show the Wireless sensor battery level

**Possible Cause:**

1. Wireless Sensor is not turned on or Battery is too low.

**Corrective Measure:**

1. Make sure the wireless sensor is turned on and battery level indicator shows at least “MEDIUM”.
2. If the problem persists, then replace the wireless sensor battery.



### 11.2.4 Red LED flashed 3 times then the main controller screen displays “No SD Card. Please Insert then Reset”

**Possible Cause:**

1. There is no SD Card in the main controller

**Corrective Measure:**

1. Insert the SD Card in the designated slot of the main controller and restart the



device.

### 11.2.5 Sample rate will not change with the UP/DOWN button

**Possible Cause:**

1. Sample rate is at the minimum or maximum value

**Corrective Measure:**

1. Alpha temperature monitoring system has a default sample rate of 2 min. The can be adjusted between 2 to 60 minutes.



sample rate

### 11.2.6 The temperature display screen freezes in the middle of logging

**Possible Cause:**

1. Sample rate is too high

**Corrective Measure:**

1. Wait for the Main Controller to display the temperature data based on the Sample rate. For example, if the sample rate is set to 5 min – wait for 5 mins for the screen to display the temperature data.
2. If the screen doesn't update please check the Wireless sensor is turned on. The Blue LED should flash every **4 seconds**



### 11.2.7 Buzzer won't turn off

**Possible Cause:**

1. The lid is open for more than 10 seconds

**Corrective Measure:**

1. Please close the lid for the buzzer to turn off.



## 11.3 Application

### 11.3.1 MaxTemp App takes too long to download data or crashes after a while

#### Possible Cause:

1. Cooler may have been running for more than 24 hours resulting in a large data file.

#### Corrective Measure:

1. Make sure you stop data logging on the cooler by holding the Select (You should see on the screen "Please download data before turning off" button off". You will then have 30 minutes to download the data.
2. Larger files will take longer time to transfer over Bluetooth to the application. For example, if temperature data is recorded every 2 minutes the entire data set into the mobile application.
3. If the first try failed, wait for 30 seconds and then try to connect again. Make sure your phone screen is on all time.



large data  
button  
off". You  
minutes  
the entire  
Make sure

### 11.3.2 Main controller is accidentally turned off before downloading the data.

#### Possible Cause:

User error



SD Card reader provided by MaxQ

#### Corrective Measure:

1. Take out the SD card from the main controller
2. Place the SD card in the slot of the

SD card reader provided with the system

3. Connect the SD card reader to the USB port of your Desktop/Laptop computer
4. Copy the test data to the computer based on the timestamp from the SD card
5. Eject the SD card reader from the Desktop computer
6. Re-insert the SD card in the Main Controller

### 11.3.3 Screen shows 'SD Card Full'

**Possible Cause:**

1. SD Card is out of memory and need to delete some older files to record new data

**Corrective Measure:**

1. Please take out the SD from the cooler and insert into the SD card reader provided with the MaxPlus Alpha cooler. Insert the SD card reader into a USB port on a Computer and save all of the older files to the Computer. Now you can delete them from the SD card. Re-insert the SD card back into the designated slot on the cooler and restart the cooler.

If your problem is not listed in this guide please contact MaxQ Research for help. Contact us – 405-466-5629 or [sales@packmaxq.com](mailto:sales@packmaxq.com)