TEMPERATURE SENSOR
Introduction
Version 1.1

1. Introduction

Temperature sensor is suitable for monitoring the temperature of a certain sector inside a vehicle in real-time, especially when delivering perishables. When the temperature exceeds preset value, an alert will be sent to platform, allowing you to take immediate measures to prevent the goods from rot and loss.

2. Picture

Connector

Sensor bulb

3. Specification

Operating voltage	5V DC
Working current	<10mA
Communication interface	RS232
Baud rate	9600
Type	NTC temperature sensor (thermistor transducer)
Working temperature	-40℃-125℃（-30-110℃ recommended)

4. Supported devices

| X3 | GT06E | JM-VG04 | JM-VL02 | JM-VW01 |

5. Wiring diagram

GT06E, X3, JM-VG04, JM-VL02
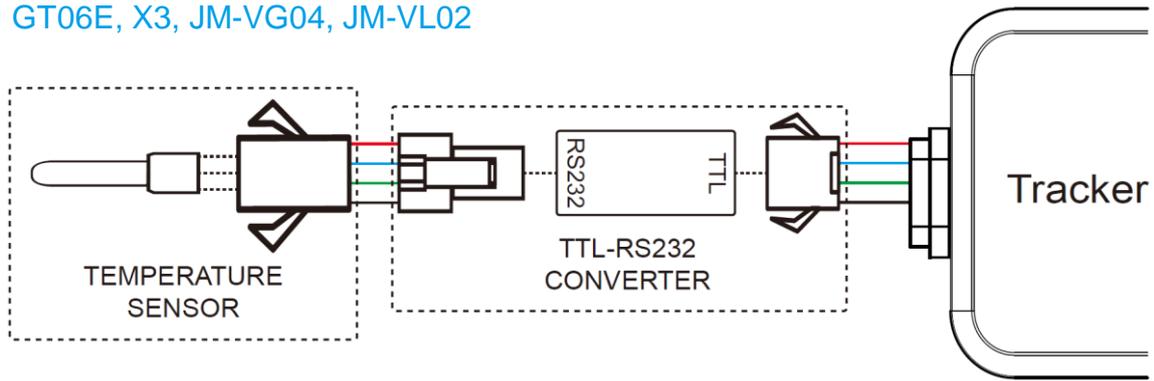
JM-VW01
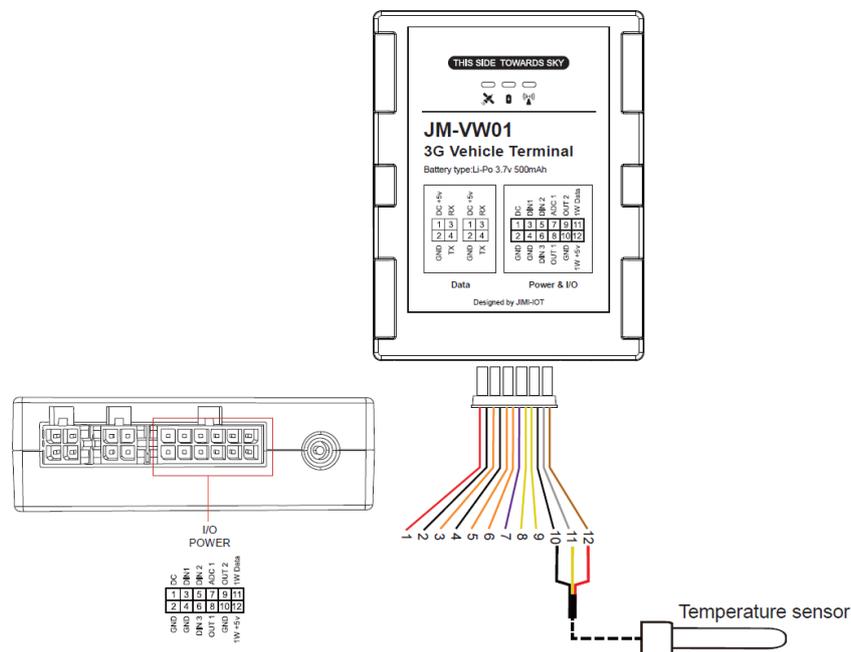
6.1 Commands of X3

● **Function: Turn on/off the power supply of communication interface**
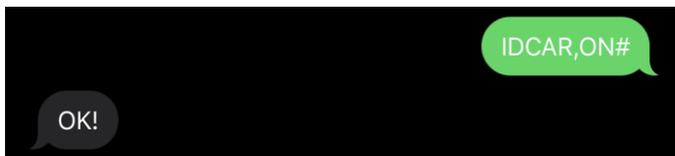
Command: IDCAR,ON/OFF#

IDCAR,ON#

OK!

● **Function: Activate/block data transmission of communication interface**

Command: WSTC,ON,X# (X=1-3)

   X=1: reserved for common peripherals, Baud rate is 115200

        X=2: specific for RFID reader, Baud rate is 9600

        X=3: specific for temperature sensor, Baud rate=9600

Note:

1. When this command WSTC,ON,X# is sent, to function it you have to restart the device by sending command RESET#, or you can restart manually.

2. For customers using third-party platforms, X=2 or X=3 is suitable for other peripherals whose Baud rate is 9600.
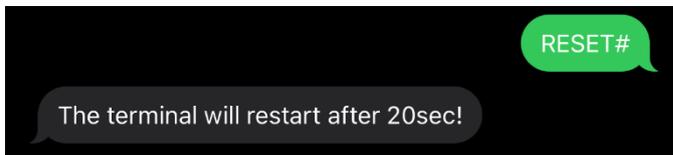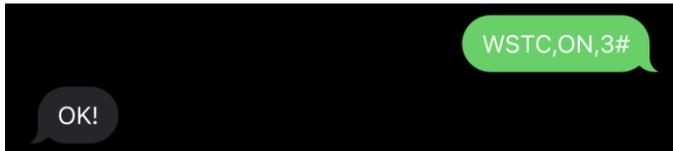
- **Function: Set the time interval of collecting data**

Command: TEMPREP,TEMP,T#

T=1-255 (unit: second), the time interval of collecting temperature data, default=1s.
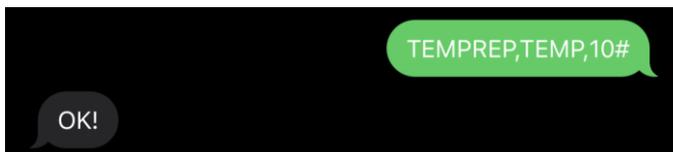
- **Function: Set the time interval of uploading data**

Command: TEMPREP,ON/OFF,T#

T=10-3600 (unit: second), the time interval of uploading temperature data, default=20s.

- **Function: Activate/block data pack filtering**

Command: TEMPMODE,A#

A=0: Filter out abnormal temperature values when uploading.

A=1: Upload temperature values without filtering.
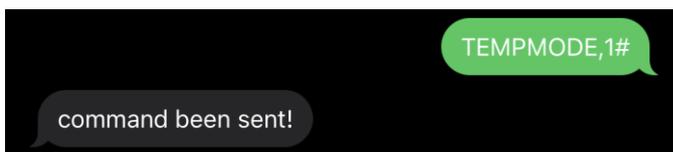
6.2 Commands of GT06E

- **Function: Activate/block temperature monitoring**

Command: WSTC,A,B,C#

A=ON/OFF, activate/block data transmission of communication interface.

B=1, peripheral type 1, reserved for users.

B=2, peripheral type 2, specific for RFID reader.

B=3, peripheral type 3, specific for temperature sensor.

C=BPS, Baud rate of the interface, optional value: 4800, 7200, 9600, 19200, 38400, 57600, 115200.

Note: When setting this function, any parameter can't be omitted or missed, also the Baud rate ought to be correct.

WSTC,ON,3,9600#

setting OK.WSTC,ON,3,9600

6.3 Commands of JM-VG04

● **Function: Turn on/off the power supply of communication interface**
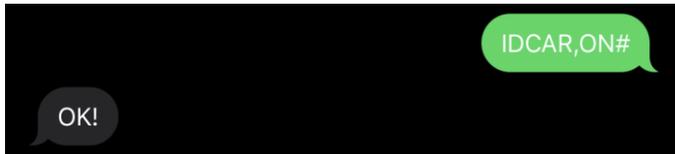
Command: IDCAR,ON/OFF#

IDCAR,ON#

OK!

● **Function: Activate/block data transmission of communication interface**

Command: WSTC,ON,X#　(X=1-3)

　　　　X=1: reserved for common peripherals, Baud rate is 115200

　　　　X=2: specific for RFID reader, Baud rate is 9600

　　　　X=3: specific for temperature sensor, Baud rate=9600

Note: For customers using third-party platforms, X=2 or X=3 is suitable for other peripherals whose Baud rate is 9600.

WSTC,ON,3#

OK!
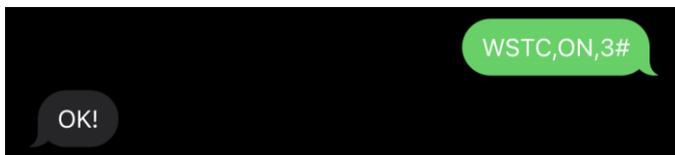
6.4 Commands of JM-VL02

● **Function: Turn on temperature monitoring**

Command: TRAN,SW,A,B#　and　OUTPUT,1#

　　　　SW=ON/OFF, turn on/off temperature monitoring.

　　　　A=1-3, peripheral type, when A=3, peripheral type=temperature sensor, default=3.

　　　　B=Baud rate of interface transmission, default=9600bps.

　　　　　　When

　　　　　　B=0, Baud rate=4800bps,

　　　　　　B=1, Baud rate=9600bps,

　　　　　　B=2, Baud rate=19200bps,

　　　　　　B=3, Baud rate=14400bps,

　　　　　　B=4, Baud rate=38400bps,

　　　　　　B=5, Baud rate=57600bps,

　　　　　　B=6, Baud rate=115200bps.
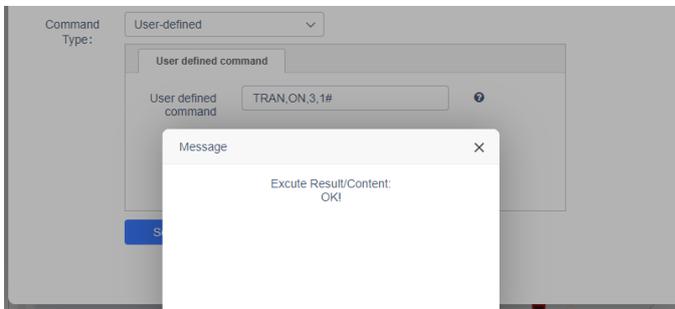
After sending TRAN,SW,A,B#, you'll have to activate 5V interface by sending OUTPUT,1#.
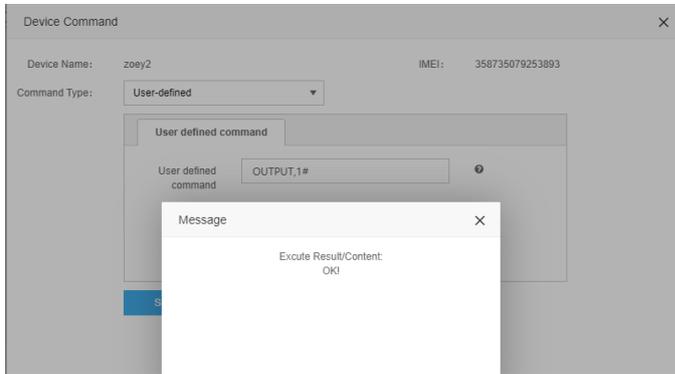
6.5 Commands of JM-VW01

● **Function: Choose the type of reserve 1-wire**

Explanation: Reserve 1-wire supports either iButton or temperature sensor, you need to configure the interface for matching related accessory.

Command: MODE1W,A#

       A=0, turn off 1-wire.

       A=1, turn to the type for temperature sensor.

       A=2, turn to the type for iButton (DEFAULT)
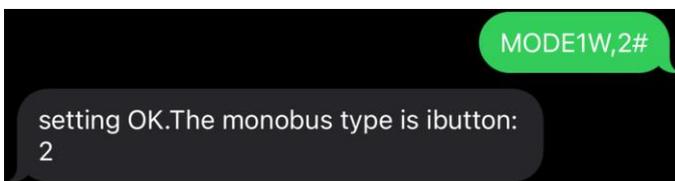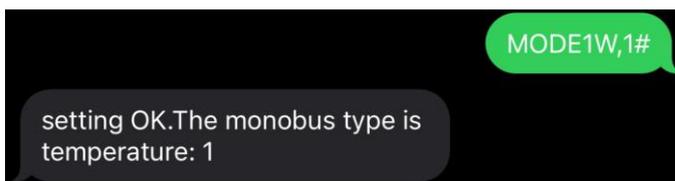
● **Function: Connect with multiple temperature sensors**

After connecting a temperature sensor to 1-wire, you can number it by sending a command TEMPSET,1#, the device will reply "Set TEMP Sensor 1 succeed". Then you can disconnect the 1st temp sensor and connect the 2nd one (as right picture shows), you can number it by sending TEMPSET,2#, and the device will reply "Set TEMP Sensor 2 succeed". After doing so, connect the two temp sensors to 1-wire, and you will get the temp data from both.
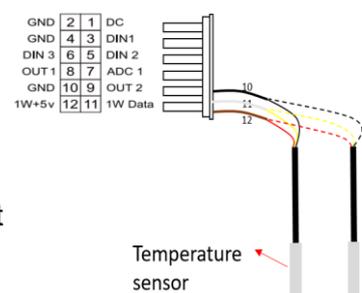
Note:

- This device supports at most 5 temperature sensors.
- If you only require one temperature sensor, after connecting it with 1-wire, you also have to send TEMPSET,1# to number it.

> TEMPSET,1#

Set TEMP Sensor 1 succeed
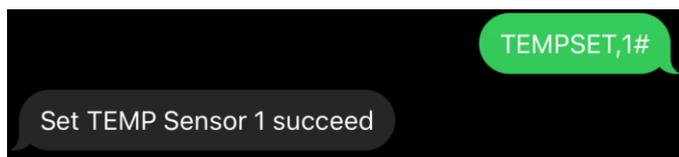
● **Function: Set the interval of uploading data**

Command: TEMPTIMER,T1,T2#

T1=0 or 5-86400 (unit: second), the time interval of uploading temperature data when ACC is ON. T1=0 means no uploading when ACC is ON, default T1=15.

T2=0 or 5-86400 (unit: second), the time interval of uploading temperature data when ACC is OFF. T2=0 means no uploading when ACC is OFF, default T2=0.

> TEMPTIMER,60,0#

setting OK.Temperature,ACCON
T1:60s,ACCOFF T2:0s;
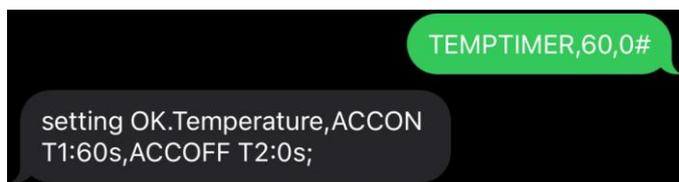
● **Function: Set the threshold of temperature**

Explanation: When a sector's temperature is higher/lower than preset upper/lower limit, you will receive an alert informing you of the incident.

Command: TEMPALM,SW,ID,M,H,L#

SW=0, turn off this alert (DEFAULT).
SW=1, turn on this alert.

ID=0 or 1-5, the ordinal number of the temperature sensor you are setting, ID=0 means you are setting overall temperature sensors.

M=0/1, alert type. When M=0, you will receive platform + app alert, when M=1, you will receive platform + app + SMS alert.

H=0/-400~1250 (unit: 0.1˚C), the upper limit, default=1000.
L=0/-400~1250 (unit: 0.1˚C), the lower limit, default=-400.

> TEMPALM,1,1,1,250,100#

Setting OK.TEMPALM
ID1,SW:1,M:1,H:250,L:100,T:5,FLG:0
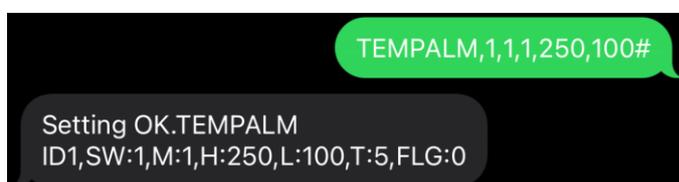
● **Function: Set the threshold of temperature change**

Explanation: When temperature's change is larger than preset limit in a preset period, you will receive an alert informing you of the incident.

Command: TEMPC,SW,ID,M,T,H,L#

> SW=0, turn off this alert (DEFAULT).
>
> SW=1, turn on this alert.
>
> ID=0 or 1-5, the ordinal number of the temperature sensor you are setting, ID=0 means you are setting overall temperature sensors.
>
> M=0/1, alert type. When M=0, you will receive platform + app alert, when M=1, you will receive platform + app + SMS alert.
>
> T=5-86400 (unit: second), the time period, default=60.
>
> H=1-2000 (unit: 0.1˚C), the limit for temperature increase, default=50, when temperature change is larger than the limit in the time period, device will send an alert "Temperature Change (H)".
>
> L= 1-2000 (unit: 0.1˚C), the limit for temperature decrease, default=50, when the temperature decrease is larger than the limit in the time period, device will send an alert "Temperature Change (L)".

Example: TEMPC,1,1,1,60,30,30#

> SW=1, means this alert is turned on.
>
> ID=1, means this command if for setting 1st temperature sensor.
>
> M=1, you will receive alert on platform and app, as well as an SMS alert.
>
> T=60, H=30, L=30, means if temperature increases over 3˚C or decreases over 3˚C in 60 seconds, the device will send a temperature change alert.

TEMPC,1,1,1,60,30,30#

Setting OK.TEMPC
ID1,SW:1,M:1,H:60,L:30,T:30

7. Platform

1)Click "Report" on homepage.

(Check the image next page 👇👇👇)
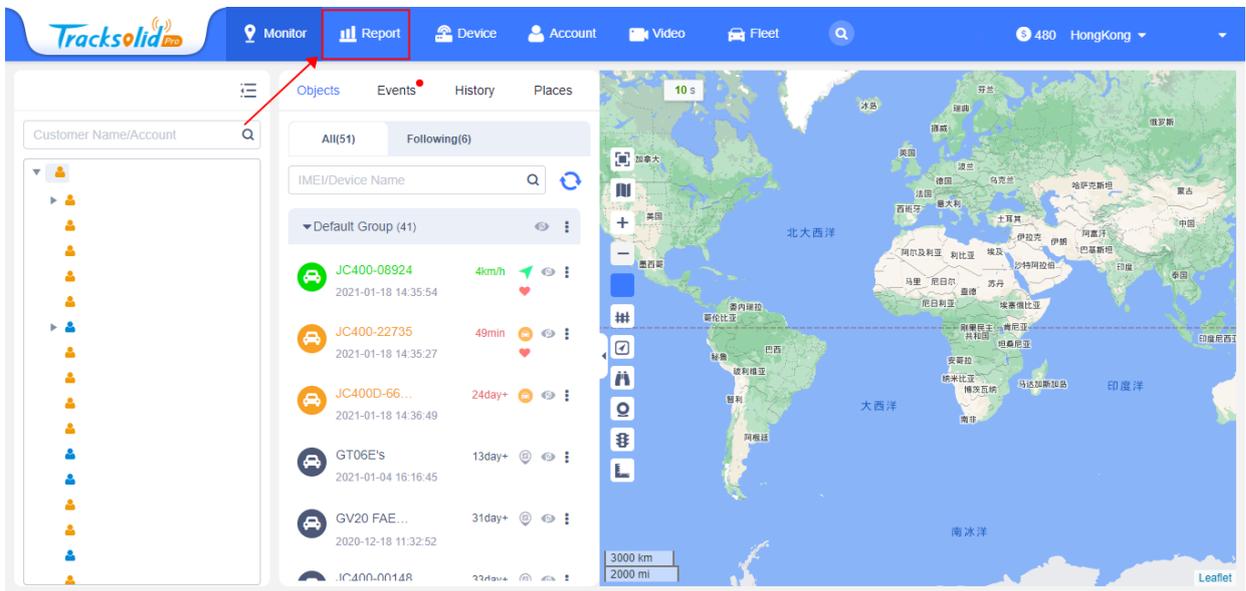
2) Click "Temperature" on the left column, select the account and time period and input the IMEI number, then click "View Chart" or "Export".
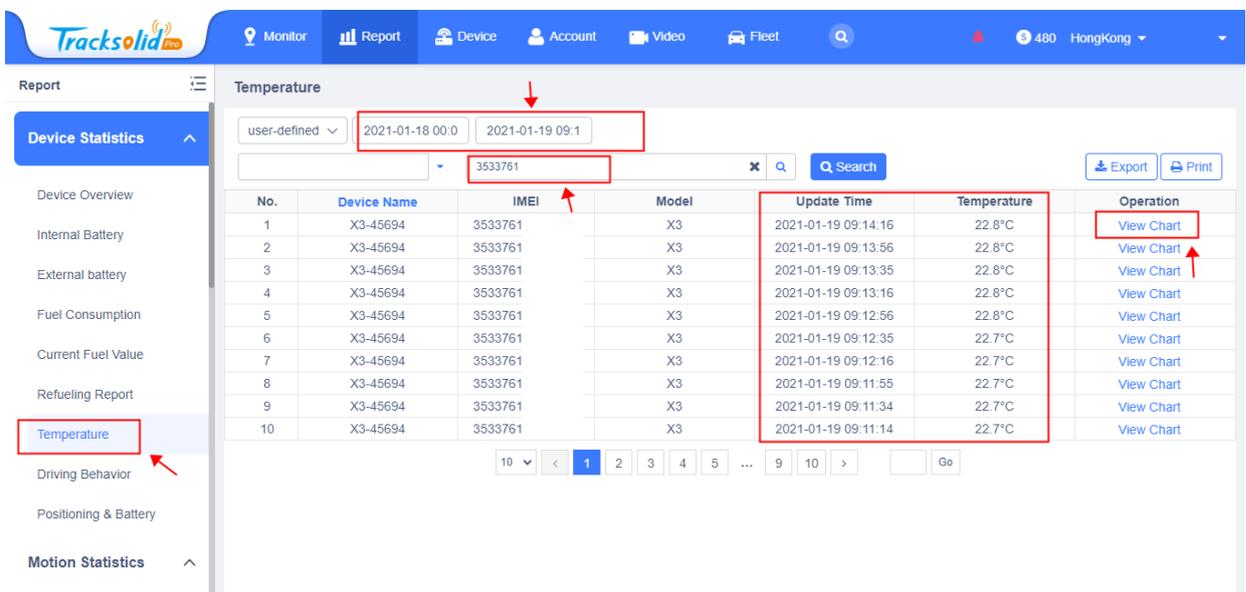
3) Then you can view the temperature history graph.
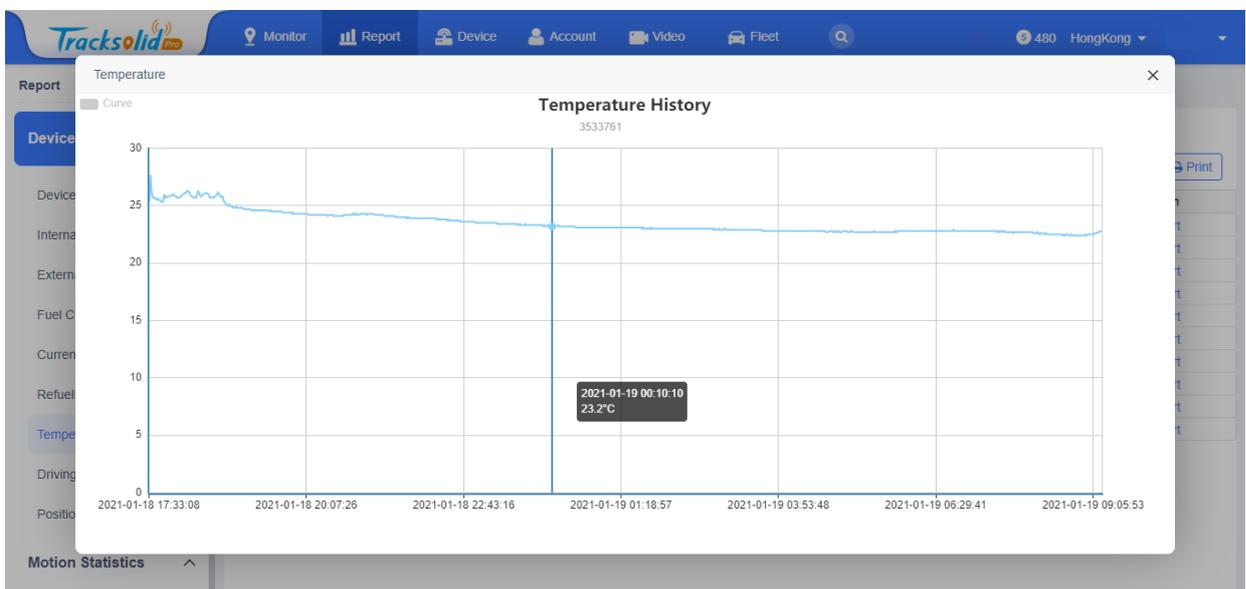
4) Or export a temperature report.

| No.	Device Name	IMEI	Model	Update Time	Temperature
			Temperature Report(from 2021-01-18 00:00 to 2021-01-19 09:14)		
1	X3-45694	3533761	X3	2021-01-19 09:14:56	22.8°C
2	X3-45694	3533761	X3	2021-01-19 09:14:36	22.8°C
3	X3-45694	3533761	X3	2021-01-19 09:14:16	22.8°C
4	X3-45694	3533761	X3	2021-01-19 09:13:56	22.8°C
5	X3-45694	3533761	X3	2021-01-19 09:13:35	22.8°C
6	X3-45694	3533761	X3	2021-01-19 09:13:16	22.8°C
7	X3-45694	3533761	X3	2021-01-19 09:12:56	22.8°C
8	X3-45694	3533761	X3	2021-01-19 09:12:35	22.7°C
9	X3-45694	3533761	X3	2021-01-19 09:12:16	22.7°C
10	X3-45694	3533761	X3	2021-01-19 09:11:55	22.7°C
11	X3-45694	3533761	X3	2021-01-19 09:11:34	22.7°C
12	X3-45694	3533761	X3	2021-01-19 09:11:14	22.7°C
13	X3-45694	3533761	X3	2021-01-19 09:10:54	22.7°C
14	X3-45694	3533761	X3	2021-01-19 09:10:34	22.7°C
15	X3-45694	3533761	X3	2021-01-19 09:10:14	22.6°C
16	X3-45694	3533761	X3	2021-01-19 09:09:54	22.6°C

Temperature