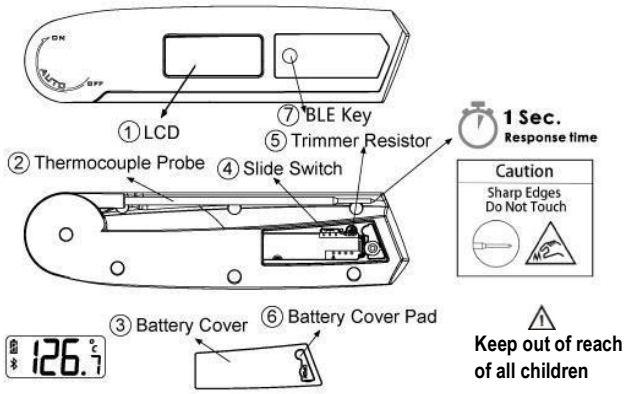
TCK512BTFP Thermocouple Thermometer Operating Instructions

Congratulations on the purchase of the product. We hope that you can make use of this product for a long time and it helps you with your work. Information that is useful and important for understanding the function is highlighted in the instructions text.

① LCD
② Thermocouple Probe
③ Battery Cover
④ Slide Switch
⑤ Trimmer Resistor
⑥ Battery Cover Pad
⑦ BLE Key



*** IP65 Splash Proof**

⚠ **Keep out of reach of all children**

OPERATION

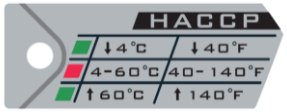
1. Power on
   Swing out the foldable thermocouple probe (②) greater than an angle of 20° for use.
2. Display LCD
   All necessary information is displayed on the LCD.
   The individual symbols have the following meanings:
   2.1 Display for current measured values
   2.2 Minus sign (negative measured values)
   2.3 Battery status indicator
   2.4 Temperature unit
   2.5 BLE sign
3. ℃/℉
   Please open the battery cover. Insert a pointed object to press left the slide switch (④), you can change the LCD display from ℃ to ℉. Oppositely, press right the slide switch to change the LCD display from ℉ to ℃.
4. Power off
   4.1 The thermocouple probe (②) swings back to switch off.
   4.2 Without BLUETOOTH connection, automatically power off if left idle for more than 60 minutes to extend battery life.

TRIMMER RESISTOR

Fine tune accuracy through the trimmer resistor (⑤).

HACCP CHECK

The "HACCP CHECK" feature is incorporated in our thermometer temperature to indicate critical temperature zone. The LED backlight indicates a food product stays in a safe or unsafe HACCP "Danger Zone" temperature. The green and red LED backlight will always be lit before power off.



A Green LED backlight indicates a safe cool or frozen condition below 4℃ (40℉) or indicates a safe holding temperature above 60℃ (140℉).

When temperature is between 4℃ and 60℃, the red LED backlight indicates that the temperature is fallen within the HACCP "Danger Zone" from 4℃ to 60℃ (40~140℉).

⚠ **CAUTION**

The thermometer should be protected from the following:

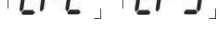
1. Electro Static Discharge
2. "Thermal shock" caused by large or abrupt ambient temperature changes.
- allow 30 minutes for unit to stabilize before use when exposed to "thermal shock".
3. Do not leave the unit on or near objects of high temperature.
4. Keep out of reach of all children.

STORAGE & CLEANING

Clean the device with a damp cloth. Do not use any solvents such as Acetone as they corrode the plastic. Isopropyl alcohol may be used to disinfect. Do not submerge any part of the thermometer. The thermometer should be stored at room temperature between –20 to +65℃ (-4 to 149℉).

LCD ERROR MESSAGES

The thermometer incorporates visual diagnostic messages as follows:



'Er2' is displayed when the thermometer is exposed to rapid changes in the ambient temperature.
'Er3' is displayed when the ambient temperature exceeds the range of 0℃~50℃. The thermometer should be allowed plenty of time (minimum 30 minutes) to stabilize to the working/room temperature.



Error 5~9, for all other error messages it is necessary to reset the thermometer. To reset it, turn the instrument off, remove the battery and wait for a minimum of one minute, reinsert the battery and turn on. If the error message remains please contact the Service Department for further assistance.



'Hi' or 'Lo' is displayed when the temperature being measured is outside of the measurement range.

BATTERIES

The thermometer incorporates visual low battery indication as follows:



'Battery OK': measurements are possible



'Battery Low': battery needs to be replaced, measurements are still possible



'Battery Exhausted': measurements are not possible

BATTERY REPLACEMENT

⚠ When the 'Low Battery' icon indicates the battery is low, the battery should be replaced immediately with AAA, 1.5V batteries.

Note: Please must turn the instrument off (swing back the thermocouple probe②) before replacing the batteries. Place the battery cover③ before power on (swinging out the foldable thermocouple②) to prevent the instable power supply of loose batteries.

1. Pull out the Battery Cover Pad (⑥)
2. Loosen the screw and pull out the Battery Cover (③)
3. Replace and reinstall with new batteries
4. Place the Battery Cover (③) back and fasten the screw
5. Plug the Battery Cover Pad (⑥) to avoid failure of water proof

⚠ **If the device is not to be used for a long time, turn the power off, remove and store the batteries in a cool, dry place.**
⚠ **Dispose of used batteries properly and keep away from children.**
⚠ **Disposal of batteries into fire or a hot oven, or mechanically crushing or cutting of batteries that can result in an explosion.**
⚠ **Leaving batteries in an extremely high temperature surrounding environment that can result in an explosion or the leakage of flammable liquid or gas.**
⚠ **The batteries subjected to extremely low air pressure that may result in an explosion or the leakage of flammable liquid or gas.**
⚠ **Risk of Explosion if Battery is replaced by an Incorrect Type.**

SPECIFICATION

Measurement Range	-50~300℃ (-58~+572℉)
Operating Range	0~50℃ (32~+122℉)
Accuracy (Tamb=25℃)	-30~150℃: ±0.5℃/0.9℉, otherwise ±1℃/1.8℉ or 1% of reading, whichever is greater
Resolution	0.1℃/0.1℉
Response time(90%)	1 sec.
Battery Life	48 hours continuous use
Dimensions	161.05x40.20x29.32 mm (6.34×1.58×1.15 inch)
Weight	117.9 grams(4.16 oz) including batteries (AAA*2 pcs)

⚠ **Caution: Please make sure the target to be measured will not exceed the temperature range of the probe to avoid permanent damage of the thermocouple probe.**
⚠ **Caution: To avoid electric shock and thermometer damage, do not measure live circuit where voltage exceeding 24V AC RMS or 60V DC with the thermocouple probe.**
⚠ **EMC/RFI: Readings may be affected if the unit is operated within radio frequency electromagnetic field strength of approximately 3 volts per meter, but the performance of the instrument will not be permanently affected.**

BLUETOOTH APP OPERATING INSTRUCTIONS

Swing out the foldable thermocouple probe to turn on the thermometer, and activate the Bluetooth broadcast 30 sec. When “pairing successful” with app, the Bluetooth of thermometer will be in "connection mode" until the thermometer is turned off. Unless the distance between the two devices becomes too far for the connection, the thermometer will reactivate the broadcast for 30 seconds.

If the app is not connected within 30 seconds, Bluetooth will enter "sleep mode." Press the BLE button (⑦) to restart the Bluetooth broadcast for another 30 seconds.

-Bluetooth Broadcast: The Bluetooth sign flashes on the LCD.
-Connection Mode: The Bluetooth sign is continuously displayed on the LCD.
-Sleep Mode: No Bluetooth sign is displayed on the LCD.

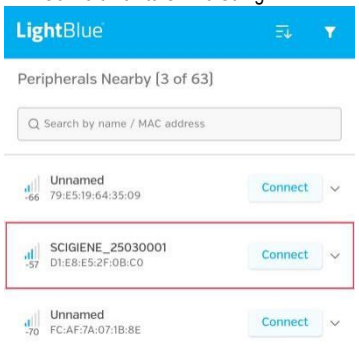
< For Android >

1. Download “LightBlue” APP from the Google Play. (Figure 1)
2. Turn on “Bluetooth” of the android device and the thermometer.
3. Launch the " LightBlue " APP on the android device.
4. Choose “Scigiene" device. (Figure 2)
5. Pair the thermometer with the android device & click “Properties: Notify”. (Figure 3)
6. Click “Hex” (Figure 4) and select the units “UTF-8 String”. (Figure 5)
7. Click “SUBSCRIBE”. (Figure 6)
   Simply insert the thermocouple probe into the measurement target, and then LCD will display the measured temperature. Start to sync the temperature data to the Android device via Bluetooth at the same time (Figure 7)
8. Record the measurement with BLE key (Figure 8)
   Press the BLE key (⑦), the end of temperature data with the character **"A"** transmits to the APP via Bluetooth ,and the℃ or ℉ sign flashes on the LCD.

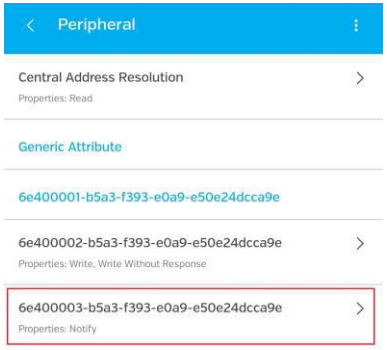


(Figure 1)

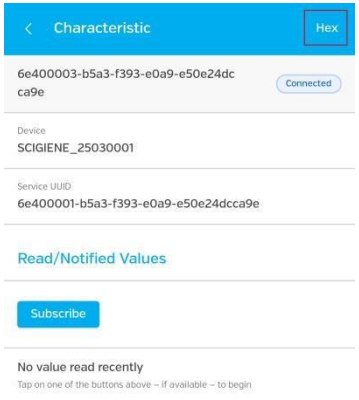
EX.: Convert Hex to UTF-8 String



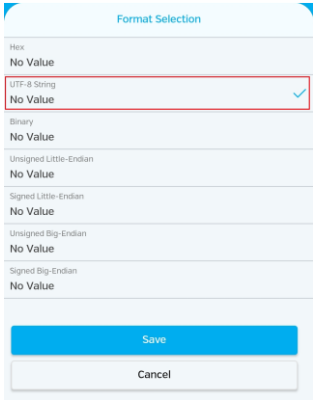
(Figure 2)



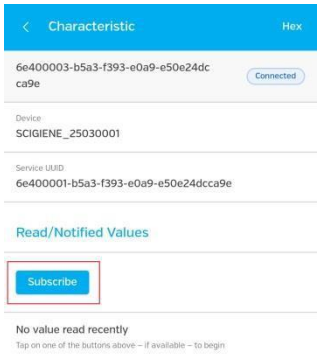
(Figure 3)



(Figure 4)



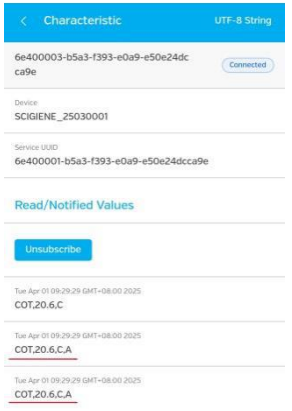
(Figure 5)



(Figure 6)



(Figure 7)



(Figure 8)

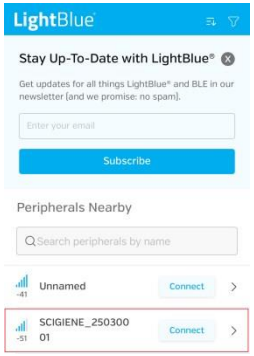
< For iOS >

1. Download “LightBlue” APP from the App Store. (Figure 9)
2. Turn on “Bluetooth” of the iOS device and the thermometer.
3. Launch the "LightBlue" APP on the iOS device.
4. Choose “Scigiene" device. (Figure 10)
5. Pair the thermometer with the iOS device & click “Properties: Notify”. (Figure 11)
6. Click “Hex” (Figure 12) and select the units “UTF-8 String”. (Figure 13)
7. Click “SUBSCRIBE”. (Figure 14)
   Simply insert the thermocouple probe into the measurement target, and then LCD will display the measured temperature. Start to sync the temperature data to the IOS device via Bluetooth at the same time. (Figure 15)
8. Record the measurement with BLE key (Figure 16)
   Press the BLE key (⑦), the end of temperature data with the character **"A"** transmits to the APP via Bluetooth ,and the℃ or ℉ sign flashes on the LCD.

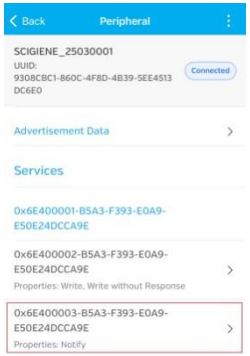


(Figure 9)

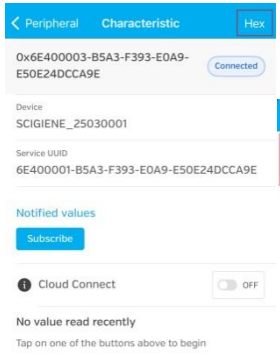
EX.: Convert Hex to UTF-8 String



(Figure 10)



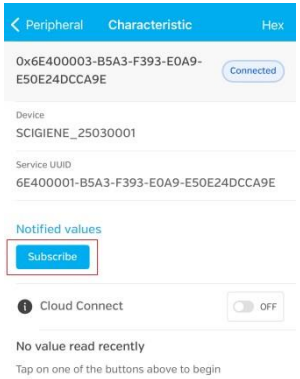
(Figure 11)



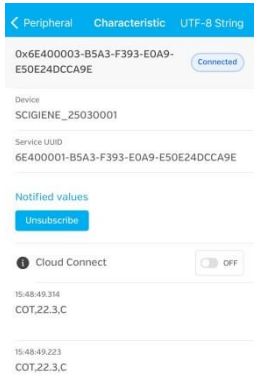
(Figure 12)



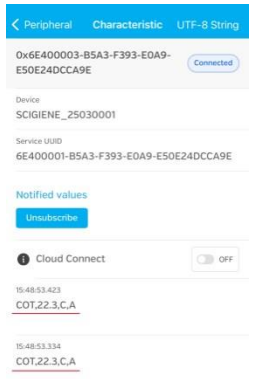
(Figure 13)



(Figure 14)



(Figure 15)



(Figure 16)

DATA FORMAT

1. Nordic BLE Module UUID:

6e400001: -b5a3-f393-e0a9-e50e24dcca9e: UART Service

6e400002: -b5a3-f393-e0a9-e50e24dcca9e: RX

6e400003: -b5a3-f393-e0a9-e50e24dcca9e: TX Characteristic BLE Module → APP

2. Ambient Temperature:

Ex: AMB=25.9℃

Byte No	1	2	3	4	5	6	7	8	9	10	11	12
ASCII	**A**	**M**	**B**	**,**	**2**	**5**	**.**	**9**	**,**	**C**	**CR**	**LF**
HEX	0x41	0x4D	0x42	0x2C	0x32	0x35	0x2E	0x39	0x2C	0x43	0x0D	0x0A

Ex: AMB=78.6℉

Byte No	1	2	3	4	5	6	7	8	9	10	11	12
ASCII	**A**	**M**	**B**	**,**	**7**	**8**	**.**	**6**	**,**	**F**	**CR**	**LF**
HEX	0x41	0x4D	0x42	0x2C	0x37	0x38	0x2E	0x36	0x2C	0x46	0x0D	0x0A

3. Probe Measurement Temperature:

Ex: COT=25.0℃

Byte No	1	2	3	4	5	6	7	8	9	10	11	12
ASCII	**C**	**O**	**T**	**,**	**2**	**5**	**.**	**0**	**,**	**C**	**CR**	**LF**
HEX	0x43	0x4F	0x54	0x2C	0x32	0x35	0x2E	0x30	0x2C	0x43	0x0D	0x0A

Ex: COT=77.0℉

Byte No	1	2	3	4	5	6	7	8	9	10	11	12
ASCII	**C**	**O**	**T**	**,**	**7**	**7**	**.**	**0**	**,**	**F**	**CR**	**LF**
HEX	0x43	0x4F	0x54	0x2C	0x37	0x37	0x2E	0x30	0x2C	0x46	0x0D	0x0A

4. Probe Measurement Temperature by pressing the BLE Key (⑦) :

Ex: COT=25.0℃

Byte No	1	2	3	4	5	6	7	8	9	10	11	12	13	14
ASCII	**C**	**O**	**T**	**,**	**2**	**5**	**.**	**0**	**,**	**C**	**,**	**A**	**CR**	**LF**
HEX	0x43	0x4F	0x54	0x2C	0x32	0x35	0x2E	0x30	0x2C	0x43	0x2C	0x41	0x0D	0x0A

Ex: COT=77.0°F

Byte No	1	2	3	4	5	6	7	8	9	10	11	12	13	14
ASCII	**C**	**O**	**T**	**,**	**7**	**7**	**.**	**0**	**,**	**F**	**,**	**A**	**CR**	**LF**
HEX	0x43	0x4F	0x54	0x2C	0x37	0x37	0x2E	0x30	0x2C	0x46	0x2C	0x41	0x0D	0x0A

5. Battery Level:

Ex: BAT=25%

Byte No	1	2	3	4	5	6	7	8	9
ASCII	**B**	**A**	**T**	**,**	**2**	**5**	**%**	**CR**	**LF**
HEX	0x42	0x41	0x54	0x2C	0x32	0x35	0x25	0x0D	0x0A

6. Going OFF: Display "going OFF" before the thermometer power off.

Byte No	1	2	3	4	5	6	7	8	9	10	11
ASCII	**g**	**o**	**i**	**n**	**g**		**O**	**F**	**F**	**CR**	**LF**
HEX	0x67	0x6F	0x69	0x6E	0x67	0x20	0x4F	0x46	0x46	0x0D	0x0A

BLUETOOTH GENETAL SPECIFICATION

Item	Specification
Chipset	Nordic nRF52810
Power Rating	DC 1.8V to 3.6V
Operation Temp.	-30 ~ 85℃
Storage Temp.	-40 ~ 85℃
Humidity non-operating	95 % Maximum
Frequency and Power	2402-2480 MHz;; 40 ch;
Certification	E-RED Contain FCC ID: SH6MDBT42Q Contain IC ID: 8017A-MDBT42Q CMIIT ID: 2016DJ4571 TELEC(MIC): 201-160496 NCC: CCAM16LP1180T2

FCC

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and
(2) This device must accept any interference received, including interference that may cause undesired operation.
CAUTION:
To assure continued FCC compliance:
1. Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.
2. This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.
This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

IC

This device complies with Industry Canada license exempt RSS standard(s). Operation is subject to the following two conditions:
(1) This device may not cause interference, and
(2) This device must accept any interference, including interference that may cause undesired operation

Scigiene
1295 Morningside Avenue, Unit 16-18
Scarborough, ON M1B 4Z4 Canada
Phone: 416-261-4865 Fax: 416-261-7879
www.scigiene.com