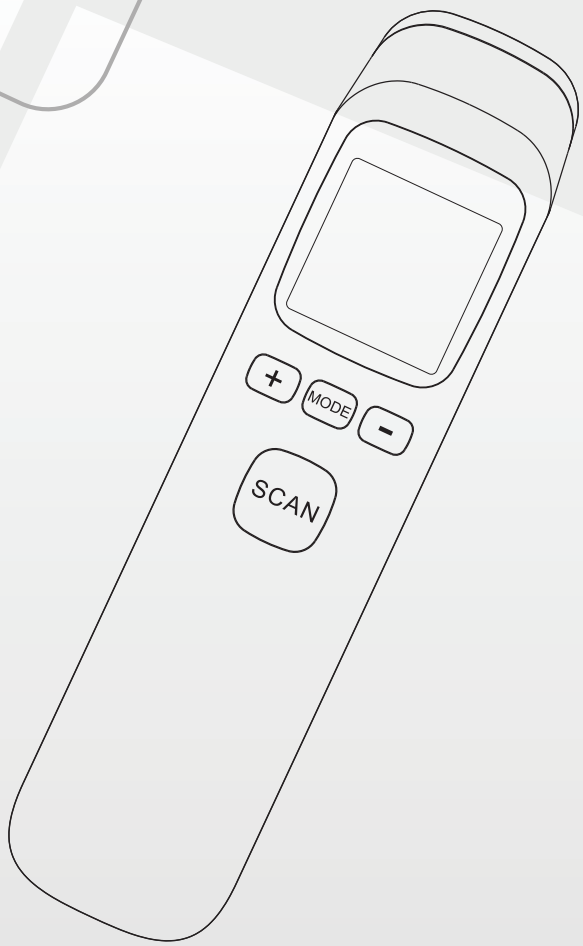


MANUAL

Infrared Thermometer

MODEL:CK-T1502

Please read the manual before use

Edition : V1.0

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Electromagnetic Compatibility Statement

1. Product Introduction and Classification

This product is designed for the measurement of human body temperature by collecting the infrared thermal radiation from the human forehead, which has the advantages of simple and sanitary operation, and fast and accurate measurement. Users only need to align the probe to the forehead, press the measuring button, then the human body temperature is measured. It is widely used in schools, customs, hospitals, and families.

This product is a medical equipment of Class II with the protection level of IP22, belonging to the internal power supply equipment without application parts.It is a continuous running equipment, which can not be used in the mixed gases of the flammable anesthetic gas and air, oxygen or nitrous oxide and is classified by EU as Class II a.

Scope of Application:Display the body temperature of measured object by measuring the forehead heat radiation.

The legends,warnings and their meanings are as follows:

	Symbol for “General warning sign”		Symbol for “This way up”
	Symbol for “Serial number”		Symbol for “Keep dry from rain”
	Symbol for “Batch code”		Symbol for “CE mark”
	Symbol for “Manufacturer”		Symbol for “Date of manufacturer”
	Symbol for “The operation guide must be read”		
	Symbol for “Fragile,handle with care”		
	Symbol for “Non-ionizing electromagnetic radiation”		
	Symbol for “This marking shown on the product or its literature,indicates that it should not be disposed of, with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.”		

Contraindications: None

2. Basic Working Principle

Any object will release the infrared radiation energy, and the surface temperature directly determines the size and

wavelength of the radiation energy. Based on this principle, this product is designed to apply the German high-precision infrared sensor to detect the infrared radiation energy with the wavelength of 5-14μm released by human body, and accurately measure the human body temperature through the accurate operation and a variety of compensation correction.

3. Technical Parameters

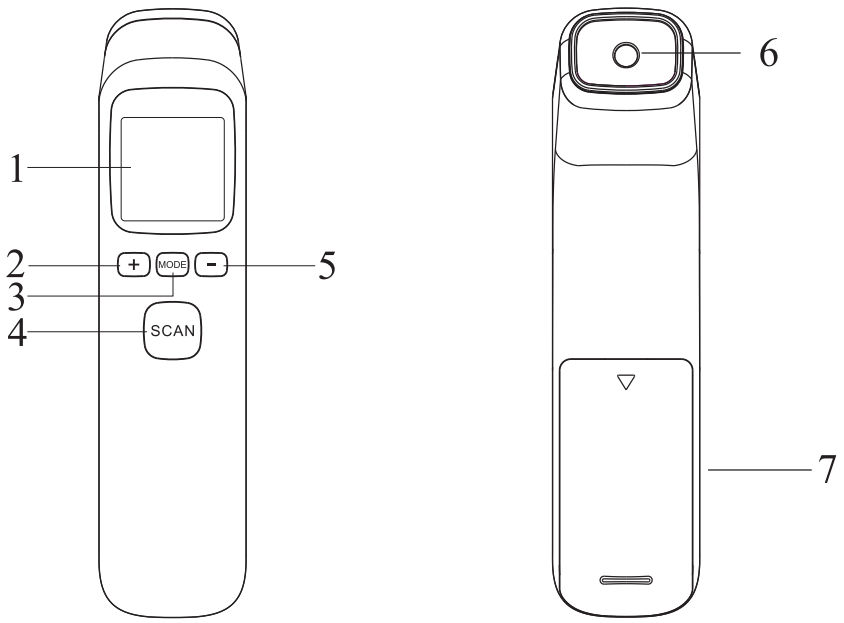
Model	CK-T1803
Measuring method	Non-contact
Measuring distance	3cm~5cm
Measuring range	32℃~42.5℃(89.6℉~108.5℉)
Tolerance scope	Within 35℃~42℃ ±0.2℃ Out of range35℃~42℃ ±0.3℃
Display resolution	0.1℃
Adjusted mode	body mode
direct mode	surface mode
measuring site	forehead
reference site	armpit
Operating environment	a temperature range 10°C~40°C; a relative humidity range 15%~85%(non-condensing); atmospheric pressure 80kPa~106kPa
Transport storage environment	a temperature range 0°C~50°C; a relative humidity range ≤90%(non-condensing); atmospheric pressure 80kPa~106kPa
Power supply	DC 3V(2 of AAA alkaline batteries)
Power tip	Low battery
Backlight	High brightness backlight
Display unit	Celsius or Fahrenheit degree
Automatic shutdown	15Secs
Size	190mm×40mm×40mm
Weight	67g（without batteries）

4. Product Features

- High-precision infrared sensor ensures the stable and reliable performance;
- Strong ambient temperature adaptability makes it normally used in the complex environments;
- New independent intellectual property rights on the probe structure ensure more accurate measurement;
- Automatically save the last measuring value.
- Large-size LCD screen, high brightness backlight, and clear and soft display;
- Two kinds of temperature units, Celsius and Fahrenheit degree, are optional;
- Automatic shutdown, and energy saving.

5. Configuration

1. LCD Screen 2. Up Button 3. Mode Selection Switch
4. Scan Button 5. Down Button 6. Infrared Probe
7. Battery Cover



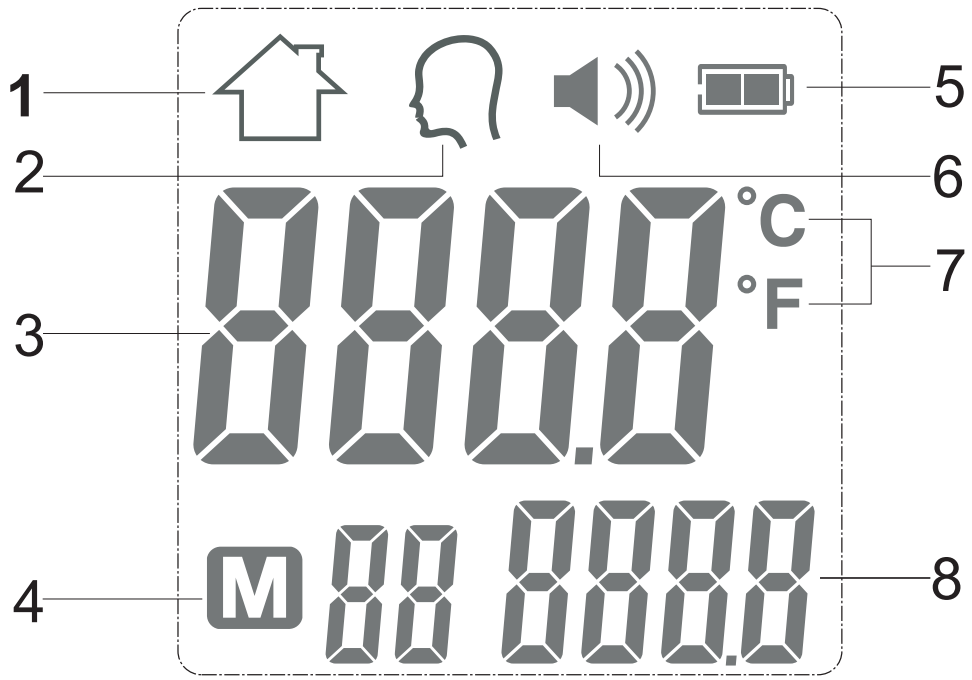
6. Structure and Compositions

This product consists of the infrared sensor, microprocessor, memory, power supply, electro-acoustic components, LCD screen, and enclosure.

Product accessories: Operation Manual, warranty card, and certificate.

7. Icon Definition

Icon Definition	Icon	State Description	
Measuring Mode	1	Surface temperature	
	2	Body temperature	
Display Value	3	Measured temperature value	
Storage Location	4	Location of memory group No.	
Battery Symbol	5		Low battery status
			Sufficient power
Buzz Symbol	6	Display	Buzzer on with beep
		No display	Buzzer off without beep
Temperature Unit	7	Celsius degree	
		Fahrenheit degree	
Storage Data Readout	8	The displayed values are memory values	



8. Set operations

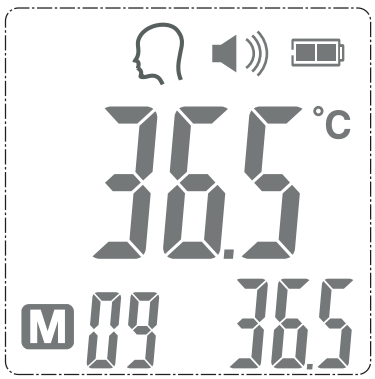
This product provides the function settings including the temperature unit, warning tone switch, temperature alarm point, temperature offset, and measuring mode, and so on. The measuring mode is set by the MODE button, and the other settings are set in the Set Menu.

The table of Set Menu is as follows:

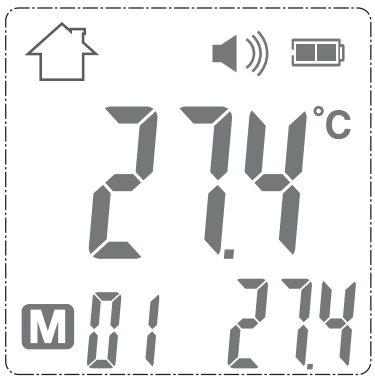
Menu	Function	"-"Key	"+"Key	Initial Value	Remarks
F1	Temperature Unit	℃	℉	℃	
F2	Temperature Alarm Point	Decrease 0.1℃	Increase 0.1℃	38℃	
F3	Temperature Offset	Downward offset 0.1℃	Upward offset 0.1℃	0.0	Range from -3℃ to +3℃
F4	Warning Tone Switch	Off	On	On	

Measuring Mode Setting

In the Power-On state, the screen displays the current measuring mode (Fig. 8.1), press the MODE button to select the desired measuring mode (Fig. 8.2), and the setting takes effect immediately.



(Fig. 8.1)



(Fig. 8.2)

Temperature Unit Setting----F1

Press the "MODE" button for 2 secs, the screen displays F1 (Fig. 8.3), press the "-" button, select the temperature unit of Fahrenheit (Fig.8.4) ,press the "+" button, select the temperature unit of Celsius (Fig.8.5).



(Fig. 8.3)



(Fig. 8.4)



(Fig. 8.5)

Temperature Alarm Point Setting----F2

Press the “MODE” button for 2 secs, the screen displays F1, press the “MODE” button once to enter F2, then press the “+” button to increase the temperature value by 0.1℃（0. 1℉）, and press the“-”button to decrease the temperature value by 0. 1℃（0. 1℉）. Note: The alarm default value is 38℃（100. 4℉）.

Temperature Offset Setting----F3

Press the “MODE” button for 2 secs, the screen displays F1, press the “MODE” button twice to enter F3, then press the “+” button to increase the deviation value by 0.1℃（0. 1℉）, and press the“-” button to decrease the deviation value by 0. 1℃（0. 1℉）.When the season or environment changes,the infrared thermometer shall be checked and adjusted.

Warning Tone ON/OFF Setting----F4

Press the “MODE” button for 2 secs, the screen displays F1, press the “MODE" button three times to enter F4, and press the “+” button to turn on (ON symbol appears on the screen) or turn off the beep (OFF symbol appears on the screen).

After entering the Set Menu operation, if you want to modify a setting, you can continuously press the Menu key to select. Save the settings in order after the completion of new settings, if shutdown and exit at midway, the new settings will not be saved.

After entering the Set Menu, if pressing the measuring key is invalid, the measurement will not be implemented by the thermometer.

Tips:

1. Body temperature mode is suitable for the measurement of human body temperature which is obtained from the dynamic compensation between the ambient temperature and forehead surface temperature.

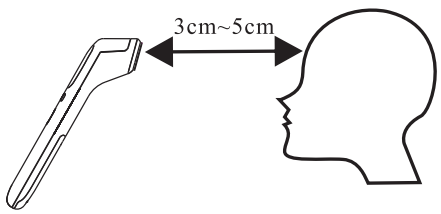
2. According to the ambient temperature, measuring distance, specific individual skin differences and other factors, the temperature offset value can be used to amend the measured value through the different value between target measured value and true value, with the correction range of from -3.0 ℃ to +3.0 ℃ and the factory setting of 0.0 ℃.

For example, if the body temperature measured by the thermometer is 36.2 ℃, and the actual temperature of measured target is 37.0 ℃, then enter into F3 to increase the deviation by 0.8℃, after completing, the same result as the actual body temperature is obtained.

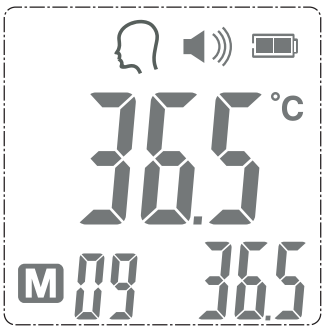
9. Measuring Method

Make sure that the measuring mode above on the screen is the body temperature mode.

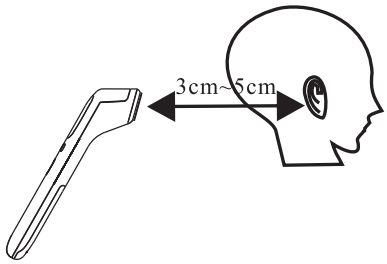
Align the thermometer probe to forehead in the middle and keep it vertical with the distance of about 3-5 cm (Fig. 9.1). Press the measuring key, after 1 second with the sound of "beep", the measured value (Fig. 9.2) is displayed and the measurement is completed. If the measured value exceeds the temperature warning point (the default value is 38℃), the warning tone of five “beeps” is triggered.



(Fig. 9.1)



(Fig. 9.2)



(Fig. 9.3)

If the environmental temperature changes largely and affects the forehead temperature, please measure it through aligning on the back of earlobe (Fig.9.3).

⚠*Tips*

Before and after use, please keep the sensor and probe inside clean.

Please put the thermometer in a stable environment. When the ambient temperature changes greatly (from indoors to outdoors), please use it after keeping it for about 30 minutes.

Do not begin measuring the body temperature immediately after measuring extremely high or low temperature. Please hold it for 30 minutes and then use it.

When the measured object comes from the place where the temperature is greatly different from the test ambient temperature, keep the thermometer stay in the test environment for at least five minutes or more.

Try not to use it after blowing, shower, sweating, smearing cosmetics, etc. on the forehead.

Don't use it within 30 minutes after exercise, bathing or eating.

10. Battery Replace

When ▭ displays on the LCD, it is indicated that the battery has already in a low battery state.

Operations:

Open the battery cover and replace the battery.

Do not mistake the positive and negative electrodes of battery.

Please use the specified battery, non-rechargeable battery cannot be charged.

Please remove the batteries if it is not in use for a long time (More than 3 months).

Do not mix the old and new batteries, different types of batteries.

For the old battery after replacing, please follow the local regulations for processing.

11. Maintenance and Precautions

Keep the sensor and probe cavity clean, otherwise it will affect the measurement accuracy.

Cleaning Methods:

1. Surface cleaning: Wipe it with little medical alcohol or water by a clean soft cloth or cotton stick.
2. Sensor and probe cavity cleaning: Gently wipe the probe cavity or the top of the sensor with little medical alcohol by a clean soft cloth or cotton stick. Only use it until the alcohol is completely volatile.

⚠Notes

Please read the Operation Manual before use. Please make sure the battery is installed.

Forbidden to immerse the thermometer in any liquid and exposure it at too high or too low temperature for a long time.

No collision, falling or mixing with sharp objects. No disassembly is allowed.

The thermometer should not be used in sunlight or water.

Please do not use it under strong electromagnetic interference.

Place the thermometer in a position where the child cannot touch it.

Recommend several exercises to familiarize yourself with the measurement methods and try not to change the product factory setting.

The measured value does not replace the physician diagnosis.

No any special maintenance during use. Please contact the seller or manufacturer for any fault.

Please follow the local laws and regulations to deal with the waste and residue at the end of the product service life.

If you have any problems with this device, such as setting up, maintaining or using, please contact with service personnel of ShenZhen Changkun Technology CO.,LTD. Don't open or repair the device by yourself.

Please report to ShenZhen Changkun Technology CO.,LTD.

if any unexpected operation or events occur.

After drop/ shock, that may cause changes in the performance, please contact with service personnel of ShenZhen Changkun Technology CO.,LTD. Don't open or repair the device by yourself.The use of heat and cold producing devices, such as electric heating blankets,heating pads or ice packs, may impair the performance of device and increase the risk of injury to the patient.

If you are allergic to plastic/rubber, please don't use this device.

This device must only be serviced, repaired and opened by individuals at authorized sales centers Don't open or repair the device by yourself.

At least 30 min required for me equipment to cool from the maximum storage temperature between uses until it is ready for intended use.

This equipment needs to be installed and put into service in accordance with the information provided in the accompanying documents.

Wireless communications equipment such as wireless home network devices, mobile phones, cordless telephones and their base stations, walkie-talkie scan affect this equipment and should be kept at least a distance d away from the equipment. The distance d is calculated by the manufacturer from the 800 MHz to 2.5 GHz column of Table 6 of IEC 60601-1-2:2007, as appropriate.

Do not use the device if it is damaged in any way. The continuous use of a damaged unit may cause injury, improper results, or serious danger.

The device should be kept out of the reach of children/pets. to avoid inhalation or swallowing of small parts.When not in use, store the device in a dry room and protect it against extreme moisture, heat, lint, dust and direct sunlight. Never place any heavy objects on the storage case.

IP22: The first number 2: Protected against solid foreign objects of 12.5 mm Φ and greater. The second number: Protected against vertically falling water drops when

enclosure titled up to 15º. Vertically falling drops shall have no harmful effects when the enclosure is titled at any angle up to 15º on either side of the vertical.

Please dispose of the device/battery/accessory/packing in accordance with the legal obligation in your area.

Warning: No modification of this equipment is allowed.

The patient is an intended operator. The patient can measure and change battery under normal circumstances and maintain the device and its accessories according to the user manual.

Manufacturer will provide circuit diagrams, component part lists, descriptions, calibration instructions to assist to service personnel in parts repair.

The materials (ABS) of expect contact with patient had passed the ISO 10993-5 and ISO 10993-10 standards test, no toxicity, allergy and irritation reaction. They are compliance with the MDD requirements.Based on the current science and technology, other potential allergic reactions are unknown.

The minimum measurement time until the beep is heard must be maintained without exception!

This product does not need to be calibrated during the warranty period.

Handing of battery and wastes method,please act according to the native law to proceed to handle.

Suitable to forehead measurement.

User moved between the environment with big temperature difference (≧10℃)/ The human body temperature of user not reach thermal balance, caused the inaccurate measurement./ Delayed treatment, Wrong treatment.

When used outside the operating environment, the measured value may be inaccurate.

This device was designed and manufactured for a long service life. However it is generally recommended to have the device inspected once a year by the Authorized Service Center located in your country to ensure correct function and accuracy.(The accuracy checking is not a free service and therefore we recommend that you contact the Authorized Service Center to get a quotation before you send out the

product.)

12. Quality Commitment and After-sales Service

The service life of this product is 3 years and we offer free maintenance service of 1 year.

Notes: For any failure caused by the user personal reasons or any damage resulted from the unauthorized disassembly, the free maintenance service is not provided.

For the date of manufacture, please see the warranty card.
Preparation Date of Manual: July 19, 2018Version No.:V1.0

Software version V1.0

13. Troubleshooting

Fault Description	Disposal Methods
"HI" displays on the screen	1. Check the measured object. Try not to use it after sun, hot bath, sweating, hot air blowing, and smearing cosmetics, etc. on the forehead. 2. Check the temperature offset setting (>0)and the factory setting is 0.0. 3. Check the operation environment. If the instrument has just measured the ultra-high temperature environmental, then directly measure the low temperature object, thus, the test deviation will occur and it should be used in a relatively stable environment after placing it for about 10 minutes to obtain a new testing heat balance.
“LO" displays on the screen	1. Check the measured object. Try not to use it after cold, cold bath, cold air blowing and smearing cosmetics, etc. on the forehead. 2. Check the temperature offset setting (<0) and the factory setting is 0.0. 3. Check the operation environment. If the ambient temperature changes too much, or the instrument has just measured the ultra-low temperature object, then directly measure the high temperature object, thus, the test deviation will occur and it should be used in a relatively stable environment after placing it for about 10 minutes to obtain a new testing heat balance. 4. Check the measuring distance (3-5cm).
No response after pressing buttons	1.Reinstall the battery 2. Check whether the operation is implemented in the Set Menu or not.
No display or abnormal display	Reinstall the battery
No beep tone	Check whether the tone setting is off
The machine turns off immediately after power on	Check the battery power and reinstall the battery

Appendix - Electromagnetic Compatibility Statement

The Infrared Thermometer conforms to the EMC test standard IEC60601-1-2:2014。

Table 1

Guidance and Manufacturer's Statements - Electromagnetic Emission		
This equipment is intended for use in the electromagnetic environments specified below, and the purchasers or users shall ensure that it is used in these electromagnetic environments.		
Emission Test	Conformity	Electromagnetic Environments——Guidance
Radio-frequency emission IEC/CISPR 11	Group 1	The radio frequency energy of this device is applied only when the internal functions are running, so its radio frequency emission is very low, which has no electromagnetic interference to the electronic equipment nearby.
Radio-frequency emission IEC/CISPR 11	Type-B	This device is suitable for using in home network and networks which are directly connected to the public low voltage power supply of residences.
Harmonic radiation IEC61000-3-2	Not applicable	
Voltage fluctuation and scintillation radiation IEC61000-3-3	Not applicable	

Table 2

Guidance and Manufacturer's Statements——Electromagnetic Immunity			
This device shall be used in the prescribed electromagnetic environments and the customer or user shall ensure that the equipment is used in the electromagnetic environments specified below.			
Immunity Test	Test Grade	Conformity Grade	Electromagnetic Environments—Guidance
Electrostatic discharge IEC61000-4-2	±6KV Contact discharge ±8KV Air discharge	±6KV Contact discharge ±8KV Air discharge	The floor must be made of wood, concretes or tiles. If the floor is paved with synthetic materials, the relative humidity is at least 30%
Electric fast transient pulse group IEC61000-4-4	±2KV Double power line ±1KV Double input/output line	Not applicable	The quality of network power must be a typical commercial or hospital environment.
Surge IEC61000-4-5	±1KV line to line ±2KV line to earth	Not applicable	
Voltage dips, short interruptions and voltage variations IEC61000-4-11	<5% UT (Dip>95% UT) 0.5 cycle 40% UT (Dip 60% UT) 5 cycles 70% UT (Dip 30% UT) 25 cycles <5% UT (Dip>95%UT) 5 seconds	Not applicable	The quality of network power must be a typical commercial or hospital environment.If the device needs to be kept running during the interruption of network power, we recommend the uninterrupted power supply of UPS.
Power frequency magnetic field (50/60Hz) IEC61000-4-8	3A/m	3A/m 50/60Hz	The Power frequency magnetic field shall be the electrical level in a typical commercial or hospital environment.
Note: UT refers to the AC network voltage before applying the test voltage.			

Table 3

Guidance and Manufacturer's Statements—Electromagnetic Immunity			
This device shall be used in the prescribed electromagnetic environments and the customer or user shall ensure that the equipment is used in the electromagnetic environments specified below.			
Immunity Test	Test Grade	Conformity Grade	Electromagnetic Environments—Guidance
Conduction immunity IEC61000-4-6	3 Vrms 150k-80MHz	Not applicable	The floor must be made of wood, concretes or tiles. If the floor is paved with synthetic materials, the relative humidity is at least 30%.
Radiated immunity IEC61000-4-3	3 V/m 80M-2. 5GHz	3 V/m	The portable and mobile RF communication equipment must be used outside a specified distance from any part of the equipment and / or system (including cables). This isolation distance is calculated by the appropriate equation with the selected transmitter frequency. The formula for the recommended isolation distance is as follows: $d=1.2\times\sqrt{P}$ $d=1.2\times\sqrt{P}$ 80MHz to 800MHz $d=1.2\times\sqrt{P}$ 80MHz to 2.5GHz Wherein, P is the rated output power of transmitter, in watts; d is the recommended distance in meters. The field strength of RF transmitter obtained from measuring a by the electromagnetic field must be less than the conformity grade within each frequency range b. Interference may occur near the device marked the following symbol:
Note 1: In 80MHz-800 MHz, apply the formula at a higher frequency range. Note 2: The above guidelines are not suitable for all situations, since the unknown structures, objects, and crowds can absorb and reflect the electromagnetic waves,which will affect the electromagnetic propagation.			
a The field strength of the base stations of radio mobile phone (cellular box wireless)and the terrestrial mobile radio receivers, antenna receiving devices, FM and AM radios as well as TV broadcasts can not be accurately estimated by using purely theoretical methods. In order to evaluate the electromagnetic environment generated by the solitary radio frequency transmitter, the methods of electromagnetic field measurement should be considered. If the field strength of equipment used exceeds the required RF level, it is necessary to observe whether the device will work properly.Once abnormal conditions have been detected, measures must be taken such as repositioning the device or moving it to other conditions. b In the frequency range of 150k -80MHz, the field strength should be less than 3V / m.			

Table 4

Recommended Distances between This Device and Portable / Mobile RF Communication Devices			
This device can be used in an electromagnetic environment where RF interference is controlled. In order to avoid electromagnetic interference, the customers or users should maintain the minimum recommended distances between the device and portable / mobile RF communication devices. The following recommended distance below is calculated based on the maximum output power of communication device.			
Maximum rated output powerof the transmitter (W)	Calculate the isolation distance (m) according to the transmitter frequency		
	150kHz-2MHz $d=1.2\times\sqrt{P}$	80MHz-800MHz $d=1.2\times\sqrt{P}$	800MHz-2. 5GHz $d=1.2\times\sqrt{P}$
0. 01	0. 12	0. 12	0. 23
0. 1	0. 37	0. 37	0. 74
1	1. 17	1. 17	2. 34
10	3. 69	3. 69	7. 38
100	11. 67	11. 67	23. 34

