Infrared Thermometer

Operator's Manual

Model: YK-IRT1

Revision	V1.2
Effective	2020.10.10

Before using this Infrared thermometer ,please read the user's manual carefully and use it accordingly.Please keep the user's manual property for reference at any time.(The pictures in this manual are for reference only)

Xuzhou Yongkang Electronic Science Technology Co., Ltd.

Symbols and Definitions

Symbols	Definitions
立	BF type applied part
(symbol)	Refer to operation manual
⚠	Cautions
IP22	First characteristic numeral 2: Against ingress of solid foreign objects:≥12.5mm diameter Second characteristic numeral 2 Against ingress of water with harmful effects:dripping(15º tilted)
(symbol)	Manufacturer
(symbol)	Date of manufacture
EC | REP	European union representative
SN	Serial number
(symbol)	Standby
(symbol)	Separate collection
(symbol)	Keep dry
(symbol)	Keep away from sunlight
93% ... 15%	Operating Humidity range
+55℃ ... -20℃	Operating Temperature range
CE 0123	Product certification

Contents

1 Product Introduction

1.1 Intended use

The infrared thermometer of we produced is specially for measuring body temperature, it can measure human ear and forehead temperature, it suitable for medical unit and home use.

User Group

Age: Adult/Children

-Fever patient;

-Other people who need to have their temperature taken

-Doctor

1.2 Contraindications

otitis externa, otitis media

1.3 Features

1) This machine has two functions, it can measure both ear and forehead temperature.

2) 1 second measure the temperature, easily and fast.

3) Sensor measurement technology, high precision.

4) Automatically power-off, if left idle for 60 seconds.

5) One-key measurement, easy to use.

6) Fever prompt, better to know your physical condition .

7) Stores 12 sets recent measurement data, easy for your data contrast.

8) Safety by infrared measuring, avoid the damage of the measuring by traditional mercury thermometer.

1.4 Structure

1 ——————

2 ——————

3 ——————

4 ——————

5 ——————
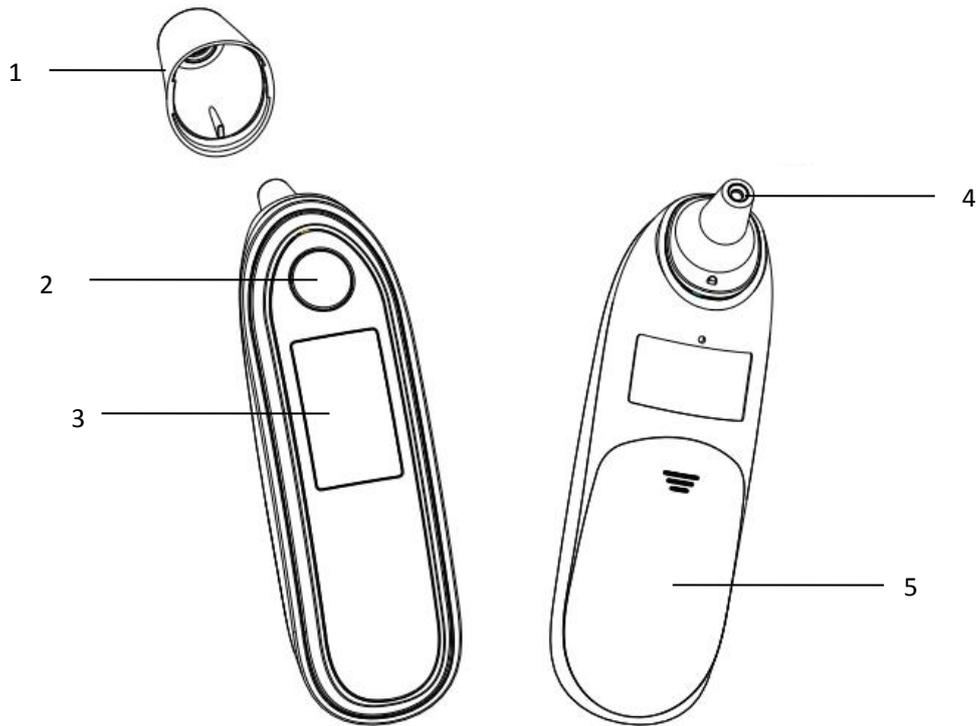
1. Forehead Temperature Cap

2. Start Button + measuring Button

3. Display Screen

4.Sensor Probe

5. Battery Cover

1.5 Display

1 —————— 5

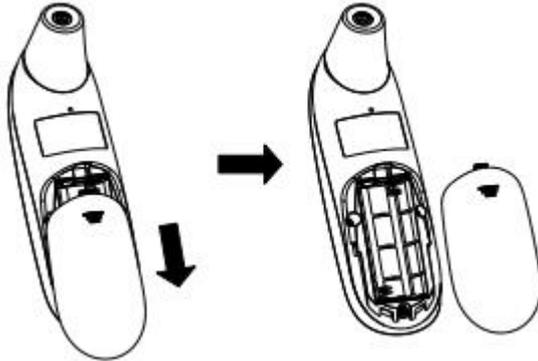2 —————— 6

3 ——————

4 —————— 7
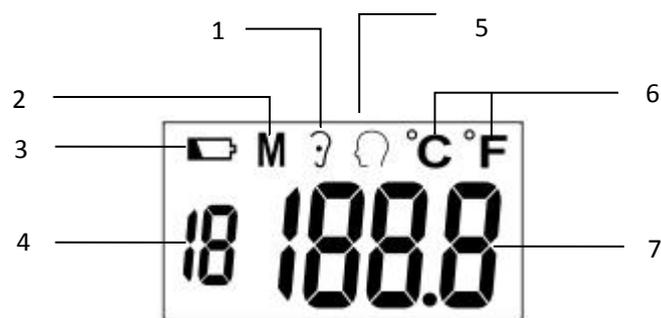
1. Ear Temperature Indicator

2. Memory Mode

3. Low Battery Indicator

4. Memory Data Sets Number

5. Forehead Temperature Indicator

6. Temperature Unit

7. Temperature Reading

2 Battery Installation Usage

1) Remove the battery cover as the arrow direction according.

2) Install 2 AAA batteries, ensure each battery is in the proper direction.
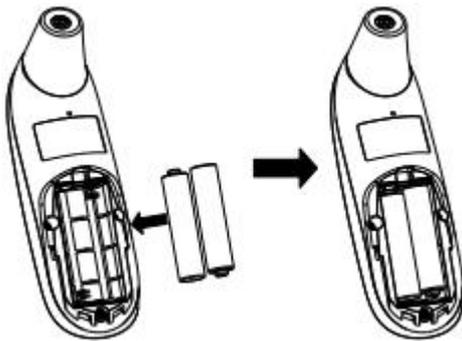
3)   Close the battery cover.
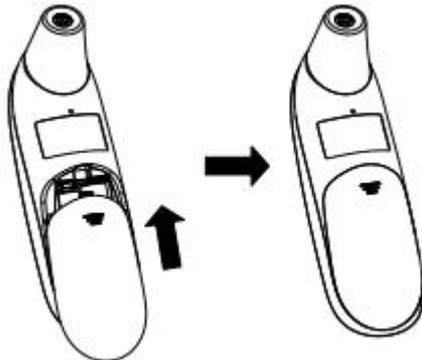
3 Measurement

The Infrared thermometer can automatically identify now is under forehead or ear temperature.

3.1 Measuring Steps

Step 1: Install the batteries, press the Start button, all symbols appear on the display, 1 second later it appears the temperature measured last time, the sign 'M' appears at the same time.

Step 2: The sign "M" disappear, forehead/ear indicator appear, it means the place you measured last time, then the temperature unit flickering, now is the measuring interface.

Step 3：Direct the probe to measuring area （Shown in Figure 3.1.1 and 3.1.2）, press the "measuring" button till a "Beep" sound from the buzzer. Measuring program starts. Keeping devi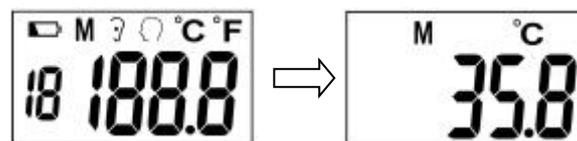ce in position for one second after two "Beep" sounds, the temperature value will show on screen along with the model symbol.

Note: After two "Beep"sounds, the measurement is completed and the measurement results are displayed.

Step 4: During next 6 seconds when test result lasting on the screen, user can no longer make a measurement until a sound of "Beep"reminder and a "℃/℉" symbol twinkling on the screen.

Step 5: No operation in 60 seconds, the device will record the last measuring data and shut down automatically.

Attention :Under the condition of continuous operation, the internal dry battery can supply power for about 1500 times

3.1.1 Method to Measuring Ear Temperature

Take off the forehead temperature cover. With the subject's head upright, take hold of the outer part of the ear, gently pull back and upward to straighten the ear canal, put the probe to ear canal slowly till the body of device stay completely close to ear canal.

⚠ Attention ⚠

Pull ear back in children younger than one year of age

Pull ear back and upward for all testes elder than one year of age.

3.1.2 Method to Measuring Forehead Temperature

When measuring forehead temperature，do not take off the forehead temperature cover, aim at the middle of the forehead (above eyebrows) and hold the product vertically, at a distance of less than 1cm.

3.2 Memory View

Click the power button while the device in off state, "M" symbol will appear on the screen one second after the screen light up. Press the "Measure" button to review the record. The test result will show up with a model symbol distinguish forehead temperature or ear temperature. Press "Measure" button in five seconds to check the next group data of total 12 groups. Once new data recorded, the sequence No. increase consecutively, group No. 12 disappear and the newest record will always be No. 1.

3.3 ℃/℉ Switch

Pressing"start" button for 3 seconds when the device in shutdown state，the unit will be switched between ℃/℉。

Cautions：This operation is unable to recycle switch，turn off and operate as 3.3 again to switch the unit back.
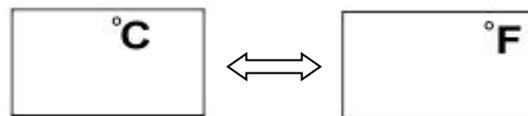
3.4 Fever Prompt Function

Thermometer has fever prompt function. When body temperature is over 38.0 ℃ during measurement, the thermometer will give out a "beep——beep——beep" sound in order to remind the person who is under test that he/she gets a fever. At the same time, backlight of 3 different colors will indicate the state of temperature: normal, on the high side or fever.

Green backlight: Below 37.5 ℃, indicating temperature is normal;

Yellow backlight: Between 37.6~38.0℃, indicating temperature is on the high side（should pay attention to the temperature）;

Red backlight: over 38.1℃, indicating fever(should see a doctor as soon as possible).

Attention ：The product is suitable for professional use or domestic use

The correct use method is the key to the accuracy of measurement. Operators should have certain knowledge of body temperature. The operating environment shall be in accordance with the instructions.

3.5 Common Malfunction and Solutions

Phenomenons	Possible Reasons	Solutions
Flicker	power deficiency	Replace battery immediately
Blank screen	Thermometer is power off automatically.	Restart by pressing the Start and measuring Button
	Battery isn't installed properly	Check the battery board
	Battery has no power	Replace battery immediately
	Screen is still blank	Contact distributor and send back the product for repairation

	TEMP is too low	————
Lo	Environment TEMP is too low	Measurement in proper environment
	TEMP is too high	————
Hi	Environment TEMP is too high	Measurement in proper environment

3.6 Notes

3.6.1 Note for Ear Temperature Measurement

● People with ear diseases such as otitis externa, or otitis media prohibited to use.

● If the measuring probe is covered with ear wax, it will lead to inaccurate measurement, even lead to cross infection between different people. Therefore, after each temperature measurement, users must use alcohol to clean measuring probe in order to keep it clean.

● After using alcohol to wipe measurement sensor, please wait for 5 minutes before measurement, so as to restore the thermometer to the necessary working temperature.

3.6.2 Note for Forehead Temperature Measurement

● Please measure at the same point when doing forehead temperature measurement, , otherwise the temperature value will have difference.

● In order to ensure the measurement accuracy, there should no hair, sweat, cosmetics and dirt, etc on the forehead when measurement.

● Cold coverage, sweating, and other cooling measures on fever patient's forehead will make the measurement result lower. Users should avoid measurements in this case.

3.6.3 Others

● Please keep the sensor and probe clean before and after measurement;

● Best work environment temperature is between 15℃~40℃.

● Don't use the thermometer in extreme environment, namely temperature is below 15℃ or over 40℃, humidity is over 85%RH or below 30%.

● When the people being measured comes from a place where the temperature has a big difference from the test environment, he/she should stay in the test environment for at least 5 minutes in order to keep balance of the body temperature. Otherwise, the measurement result will be influenced.

● If the product is taken from a place where the temperature has a big difference from the test environment, then the product should be placed in the test environment for 20 minutes before measurement.

● Please keep the surrounding environment stable.Don't measure in the fan, air conditioning vent airflow circle.

● Please avoid using the thermometer under direct sunlight,even outdoor.

● Measurement time interval in 20s .

● Advise to measure few minutes later after waking up.

● Do not measure after swimming or bathing or other reasons not yet completely dry.

- Please do not measure temperature after exercising, bathing or meal within 30 minutes,
- Before measuring body temperature, do not make any diet, and do not engage in sports activities.
- Do not measure baby temperature during or after breast-feeding.
- The thermometer can take away from the temperature measurement sites, only after the end of the voice prompts to hear the temperature.
- It contains small parts. In order to avoid swallowing, children need to use it under the supervision of adults.
- If the performance is inconsistent with the description or changes, stop using immediately and contact the manufacturer.
- Do not use this product if you are allergic to ABS, metal and other materials.
- The infrared thermometer is equipped with a fuse, which can realize overcurrent circuit protection. If the user hears a "snap" in the process of use, the fuse is blown out and the infrared thermometer cannot normally realize its function, please stop using immediately and keep in touch with the manufacturer.
- The height of the infrared thermometer should not exceed two meters.
- Use the infrared thermometer to stay away from equipment that generates strong electric and magnetic fields.
- When using a thermometer, there should be no high-power equipment such as high-voltage cables, X-ray machines, ultrasonic instruments, and electrotherapy machines around.
- Direct use in the environment of electromagnetic interference shall be avoided to prevent temporary influence on its accuracy.（(e.g., mobile phone, near microwave)）
- Warning: Use of this infrared thermometer adjacent to or stacked with other equipment should be avoided because it could result in improper observed to verify that they are operating normally.
- Warning：Use of accessories,transducers and cables other than those specified or provided by the manufacturer of this equipment could result in increased electromagnetic emissions or decreased electromagnetic immunity of this equipment and result in impropre operation.
- Warning：Portable RF communications equipment (including peripherals   such as antenna cables and external antennas)should be used no closer than 30cm(12 inches)to any part of the infrared thermometer ,including cables specified by the manufacturer. Otherwise,degradation of the performance of this infrared thermometer   could result.

Recommendations made three measurements in the following three cases,then take the higher value as the measurement results.

1) Children under three with weakened immune systems (in particular, to judge by children or without fever thermometer);

2) Not yet fully familiar with the use of a thermometer, so each measured temperature value

may not be the same;

3) When suspect the measurement value is low.

4 Manufacturer's Declaration of the EUT

Statement:

- The infrared thermometer or user should use the product in the electromagnetic environment specified in the following table, otherwise it may cause abnormal operation of the product.
- The internal structure of the infrared thermometer adds magnetic rings, magnetic beads, and conductive cloth to spray conductive paint to avoid electromagnetic interference, so as to prevent adverse events to patients and operators due to electromagnetic interference.
- The infrared thermometer can be maintained and calibrated once every two years, and the basic safety and basic performance of the infrared thermometer have been guaranteed.
- Infrared thermometer is a table-top equipment，it suitable for medical unit and home use.

**Guidance and manufacturer´s declaration – electromagnetic emission – for all
EQUIPMENT AND SYSTEMS**

1	Guidance and manufacturer´s declaration – electromagnetic emission	
2	The Infrared thermometer is intended for use in the electromagnetic environment specified below. The customer or the user of Infrared thermometer should assure that it is used in such an environment.	
3	Emissions test	Compliance
4	RF emissions CISPR 11	Group 1
5	RF emissions CISPR 11	Class B
6	Harmonic emissions IEC 61000-3-2	N/A
7	Voltage fluctuations / flicker emissions IEC 61000-3-3	N/A

**Guidance and manufacturer's declaration – electromagnetic immunity –
for all EQUIPMENT and SYSTEMS**

Guidance and manufacturer's declaration – electromagnetic immunity

The infrared thermometer is intended for use in the electromagnetic environment specified below. The customer or the user of the infrared thermometer should assure that it is used in such an environment.		
Immunity test	**EN 60601** **test level**	**Compliance level**
Electrostatic discharge (ESD) IEC 61000-4-2	± 8 kV contact ± 15 kV air	± 8 kV contact ± 15kV air
Electrostatic transient / burst IEC 61000-4-4	± 2 kV for power supply lines ± 1 kV for input/output lnes	N/A
Surge IEC 61000-4-5	± 1 kV differential mode ± 2 kV common mode	N/A
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	< 5 % U_T (>95 % dip in U_T) for 0.5 cycle 40 % U_T (60 % dip in U_T) for 5 cycles 70 % U_T (30 % dip in U_T) for 25 cycles	N/A

	< 5 % U$_T$ (>95 % dip in U$_T$) for 5 sec	
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	30 A/m	30A/m
NOTE	U$_T$ is the a. c. mains voltage prior to application of the test level.	

Guidance and manufacturer´s declaration – electromagnetic immunity –
for EQUIPMENT and SYSTEM that are not LIFE-SUPPORTING

Guidance and manufacturer´s declaration – electromagnetic immunity		
The infrared thermometer is intended for use in the electromagnetic environment specified below. The customer or the user of the infrared thermometer should assure that it is used in such an environment.		
Immunity test	**EN 60601 test level**	**Compliance level**
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz	N/A

Table 9 - Test specifications for enclosure port immunity to RF wireless communications equipment

Test frequency (MHz)	Band[a] (MHz)	Service[a]	Modulation [b]	Maximum power (W)	Distance (m)	IMMUNITY TEST LEVEL (V/m)
385	380 -390	TETRA 400	Pulse modulation [b] 18 Hz	1,8	0.3	27
450	430 - 470	GMRS 460, FRS 460	FM[c] ± 5 kHz deviation	2	0.3	28
710						
745	704 - 787	LTE Band 13, 17	Pulse modulation [b] 217 Hz	0,2	0.3	9
780						
810						
870	800 - 960	GSM 800/900. TETRA 800, iDEN 820, CDMA 850, LTE Band 5	Pulse modulation [b] 18 Hz	2	0,3	28
930						
1 720	1 700-1 990	GSM 1800; CDMA 1900; GSM 1900·	Pulse modulation [b]	2	0,3	28

1 845						
1 970						
2 450	2 400-9 570	Bluetooth, WLAN, 802.11 b/g/n, RFID 2450, LTE Band 7	Pulse modulation [b] 217 Hz	2	0,3	28
5 240			Pulse			
5 500	5 100-5 800	WLAN 802.11 a/n	modulation [b]	0,2	0.3	9
5 785			217 Hz			

NOTE:

If necessary to achieve the immunity test level, the distance between the transmitting antenna and the me equipment or me system may be reduced to 1 m. The 1 m test distance is permitted by IEC 61000-4-3.

a) For some services, only the uplink frequencies are included.

b) The carrier shall be modulated using a 50 % duty cycle square wave signal.

c) As an alternative to FM modulation, 50 % pulse modulation at 18 Hz may be used because while it does not represent actual modulation, it would be worst case.

5 About the Temperature

1) the concept of body temperature: the body temperature refers to the body's internal temperature, the so-called normal body temperature is a healthy person's body temperature, in accordance with the measurement location, time, different objects may show different results.

2) the normal body temperature, the different parts of the body to measure the results are not the

same. Therefore, different parts of the measurement results should not be used to compare with each other. In physical health, multi test several times, prior to know their "normal temperature". NOTE: Product measurement data are used only as an aid to diagnosis.

6 Maintenance and Attention

●The probe of the Infrared thermometer is one of the most important parts , the front probe is most vulnerable. So be careful when using the measurement, avoid damaging the probe.

●Please wipe the LCD screen and the shell is gently with clean soft cloth;

●Please place the Infrared thermometer in a cool and dry place, avoid direct sunlight;

● If a period of time not plan to use it,please cover the cap and remove the battery;

●Please click the following ways to clean the probe:

●**Cleaning frequency:**

When using at home, clean once before each use, clean once after each use.

Used in medical institutions, when measuring forehead temperature, non-contact conditions, the doctor according to the necessary situation about 10 times to clean once.

When measuring ear temperature in medical institutions, disposable ear temperature sleeve is recommended

●**Cleaning method:**

use 75% alcohol cotton wet cloth to clean the infrared thermometer shell and temperature head, and then dry with a dry soft cotton cloth.

If encounter has unfavorable clean dirt, can stick on soft cotton cloth water or neutral detergent wipe, reoccupy dry cloth wipe.

●**Precautions:**

Never clean with abrasive cleaners, thinners or gasoline.

Never immerse the instrument in water or other liquids

Be careful not to scratch yourself.

●The packaging products should be stored in a temperature of - 20 ℃ - 55 ℃, relative humidity is 15%～93% , non corrosive gases and well ventilated room.

●For a long time (more than 3 months) is not in use, please remove the battery storage. In addition into the battery is not used for a long time, may be due to battery leakage caused by fault;

●The treatment of waste batteries according to the city of relevant environmental protection regulations for processing;

●If you need maintenance, please contact the manufacturer

● If you don't comply with the above note matters

 and other proper use and lead to machine failure, the company does not assume responsibility for the quality.

•Do not repair or maintain during use.

•If you think the device is damaged or abnormal, please stop using the device. Please contact the manufacturer. It is strictly forbidden for the user to dismantle or repair by himself.

•The thermometer contains sensitive elements, which should be treated with caution. The aging of the elements will affect the performance of the thermometer. At the same time, the thermometer should not be used in the environment with electromagnetic interference.

•The infrared thermometer is composed of high quality sensitive parts, which can not be repaired by users themselves.

•Please place the thermometer in a place where children, pets, etc. can not be touched, so as to prevent falling, biting and affecting the product performance. Children need to use it under the supervision of adults.

•Warning: this device is not allowed to be modified

NOTE: Please follow local laws to dispose of waste scrap.

•The results of ear temperature measurement by infrared thermometer were compared with those of oral mercury thermometer in control group.

♦**Preparation before use:**

Before the controlled trial, all subjects had no eating, drinking or strenuous activity for half an hour, and the environmental conditions were referred to the instruction.

♦**Inspection method：**

During the measurement, the mercury end of the oral thermometer, which was thrown below 35℃, was placed at an Angle in the hot bag under the subject's tongue, and the body temperature was read and recorded after 5 minutes with the lips closed tightly.Let's say the mercury thermometer is 37.5 ℃.

At the same time as the oral temperature is measured, the ear temperature is measured.The user reads three consecutive temperatures in the same ear for no more than one minute at a time. The average value is taken, if the result is a reading of 37.2℃, compared with the value of the mercury thermometer.The difference between the temperature of 37.5℃ and the mercury thermometer is within the error range of ±0.3℃, indicating that the infrared thermometer is normal.

If the reading is 36.5℃, with a difference of 1 ℃, the infrared thermometer needs to be calibrated. measures

You can contact the manufacturer for calibration inspection within the warranty period.

The calibration cycle of this equipment is 2 years, and the calibration unit is: the manufacturer.

•The verification of the basic safety and performance of the thermometer shall comply with the inspection procedures for the whole infrared thermometer.

Production specifications

No.	Item	Specifications
1	Name	Infrared Thermometer

2	Model	YK-IRT1、YK-IRT2、YK-IRT3、YK-IRT4
3	Product Categories	Internal power supply equipment BF type application part
4	Units of measurement	℃ & ℉ key to switch
5	Range	34.0℃～43.0℃ （Apply to ear temperature and forehead temperature）
6	Range Indicator	<34.0℃ Show Lo，>43.0℃ Show Hi
7	Accuracy	＜35.0℃ and ＞42.0℃ : ±0.3℃ 35.0℃～42.0℃ : ±0.2℃ （Apply to ear temperature and forehead temperature）
8	Measuring position	Ear / forehead auto-sensing
9	Measuring interval	About 6 s
10	The ambient temperature exceeds	≧40.0℃：show Hi ＜10.0℃：show Lo
11	Buzzer frequency	About 4kHz
12	Automatic shut-down	60 seconds after no operation
13	Low Voltage Tips	<2.4±0.4V ，Battery symbol flashes
14	Memory function	Save last measured 12 memories (without memory Lo / Hi)
15	Operating Voltage	DC 2.4～3.3V
16	Working current	Standby：＜2uA，Power：<5 mA (VDD=3.0V)Without backlight
17	battery	2×1.5V AAA
18	Tri-color backlit	≤37.5℃ Green 37.6℃～38.0℃ Yellow ≥38.1℃ Red
19	Normal operating conditions	Ambient temperature：15℃～40℃ Relative humidity：30%～85% Atmospheric pressure：70kPa～106kPa
20	Storage and transportation temperature	Ambient temperature：-20℃～55℃ Relative humidity：15%～93% Atmospheric pressure：50kPa～105kPa
21	Size	120mm×40mm×30mm（L×W×H）
22	N.W.	About 50g
23	Duration of use	5 years
24	the time required for	About 30min

	me equipment to warm from the minimum storage temperature between uses until it is ready for intended use; and	
25	the time required for me equipment to cool from the maximum storage temperature between uses until it is ready for intended use	About 20min
26	the time from switching "on" until the me equipment is ready for normal use, when it exceeds 15 s	About 10 seconds
27	Applied parts specified	Temperature probe and its circuit
28	Use specification	1.Expected medical instructions: Infrared thermometer can measure the human ear temperature and forehead temperature 2.Expected patient population: Age: Adult/Children -Fever patient; -Other people who need to have their temperature taken 3.Expected use or interaction with body parts tissue type: Ears and forehead 4.Expected user profile: Fever patients or people who need to measure their temperature, doctors, etc 5.Application environment: Avoid electromagnetic interference Extreme temperature Avoid pollution and dust Avoid direct sunlight, etc 6.Operating principle: Infrared thermometers measure temperature by detecting infrared energy radiating from a person's forehead and ears.
29	Pollution degree	Pollution degree2:Micro-environment with non-conductive pollution,expect occasional conductivity caused by condensation

30	Overvoltage category classification	Class I
31	Fuse	0.35A 6V

After-sale Service.

1. One year free warranty period will be provided after sales.

2. Our company cannot provide the free warranty service due to the malfunction caused by personal reason, details as follow:

1）The malfunction caused by disassemble and modify the product.

2）The product inner malfunction caused by dropping while picking up or operating.

3）The malfunction caused by improper used or lack of reasonable cared.

4）The malfunction caused by operating not following the operator's manual.

5）The malfunction caused by natural disasters,such as flooding,fire.

6）The malfunction caused by improper repaired by repaired shop which isn't our authorized.

3. Please show your valid warranty card and shopping vouchers when you need free service.

4. Please bring the product to repaired shop which is our authorized when you need free repaired.

5. When performing warranty service, if needed, you can provide information on product components to circuit diagrams and repairable identified by our qualified technical personnel.

6. We will collect reasonable charge when we repair some malfunctions which out warranty service.

| Inventory list	Quantity
Host of infrared thermometer	1
AAA battery	2
User manual	1
Guarantee card	1

Contact information:

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EC	REP
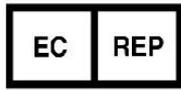
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