Infrared Thermometer

Operator’s Manual

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)

version number: V1.0
The latest revision date: 03-2017

Contents

1 Product Introduction

1.1 Intended use

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

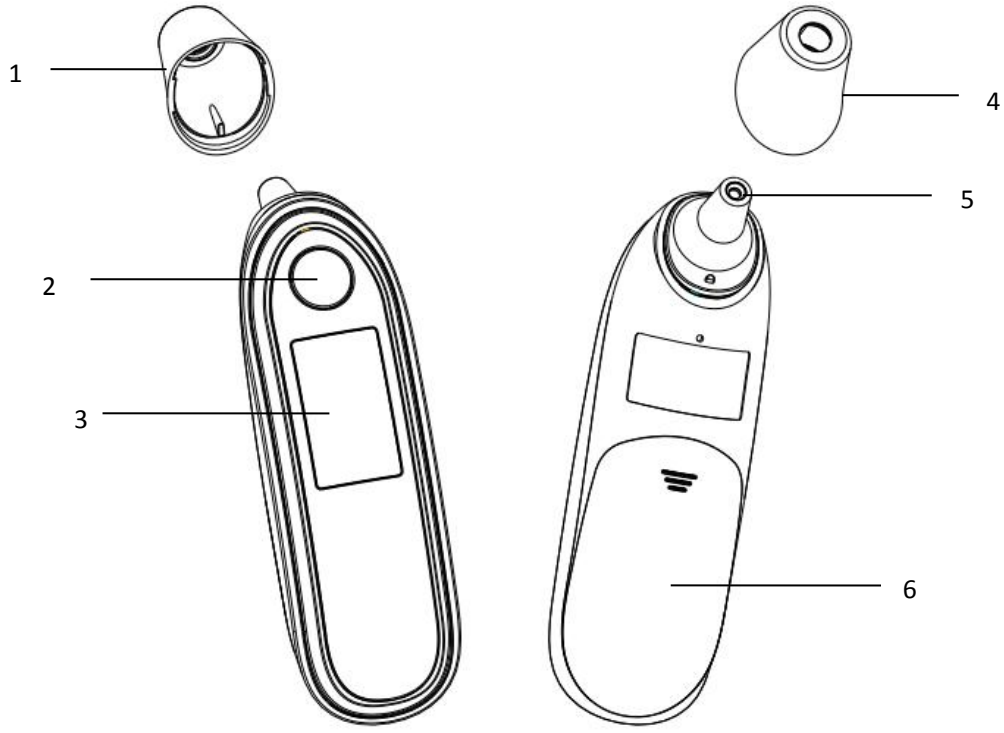
1.2 Contraindications

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) Alarm for fever, better to know your body situation.
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

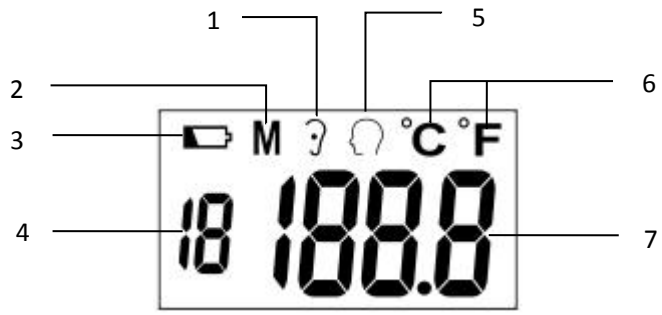


1. Forehead Temperature Cap （前额温度帽）
2. Start Button
3. Display Screen
4. Forehead Temperature Cap

5. Sensor Probe

6. Battery Cover

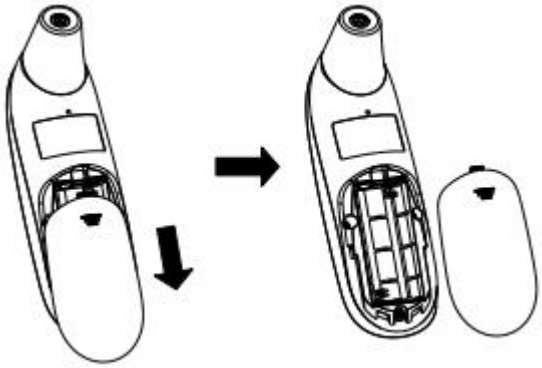
1.5Display



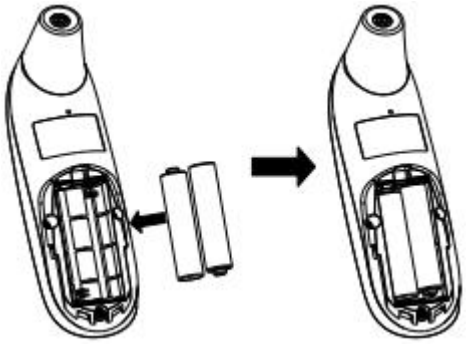
1. Ear Temperature Indicator
2. Memory Mode
3. Low Battery Indicator
4. Memory Data Sets Number
5. Forehead Temperature Indicator
6. Temperature Unit
7. Temperature Reading

2 Battery Installation Usage

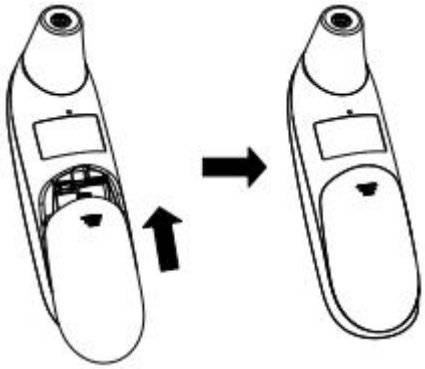
1) Remove the battery cover as the arrow direction according.



2) Inset 2 AAA powerful batteries, ensure each battery is in the proper direction.



3) Close the battery cover.

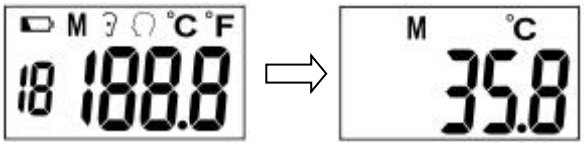


3 Measurement

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

3.1 Measuring Steps

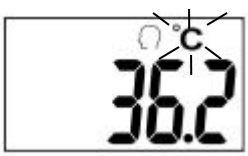
Step 1: Inset the battery, press the Start button, all symbols appear on the display, 1 second later it appears the temperature measured last time, the sign 'M' appears at the same time.



Step 2: The sign "M" disappear, forehead/ear indicator appear, it meas 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 speaker. Measuring program starts. Keeping device in position for one second after two "Beep" sounds, the temperature value will show on screen along with the model symbol.

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" aural 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.

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 testees elder than one year of age.

3.1.2 Method to Measuring Forehead Temperature

Do not take off the forehead temperature cover, locate the probe to midway of subject's forehead, stay close to skin.

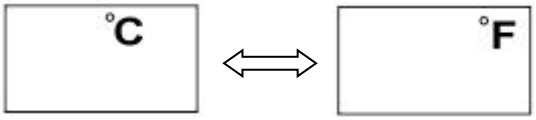
3.2 Memory View

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 down "Power" button for 3 seconds when the device in off 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

Themometer has fever prompt function. When body temperature is over 38.0 ℃ during measurement, the themometer 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).

3.5 Common Malfunction and Solutions

Phenomenons	Possible Reasons	Solutions
Flicker	power deficiency	Replace battery immediately
Blank screen	Themometer is power off automatically.	Restart by pressing the power key
	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
Lo	TEMP is too low	————
	Environment TEMP is too low	Measurement in proper environment
Hi	TEMP is too high	————
	Environment TEMP is too high	Measurement in proper environment

3.6 Notes

3.6.1 Note for Ear Tempreture Measurement

- People with ear diseases such as otitis externa, or otitis media should not 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.

3.6.2Note for Forehead Tempreture 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 10℃ and 40℃.
- Don't use the themometer in extreme environment, namely temperature is below -20℃ or over 50℃, humidity is over 95%RH.
- 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.

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

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	Electromagnetic environment - guidance
4	RF emissions CISPR 11	Group 1	The infrared thermometer uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
5	RF emissions CISPR 11	Class B	The infrared thermometer is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supp
6	Harmonic emissions IEC 61000-3-2	N/A	

7	Voltage fluctuations / flicker emissions IEC 61000-3-3	N/A	lies buildings used for domestic purposes.

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**	**Electromagnetic environment - guidance**
Electrostatic discharge (ESD) IEC 61000-4-2	± 6 kV contact ± 8 kV air	± 6 kV contact ± 8 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %.
Electrostatic transient / burst IEC 61000-4-4	± 2 kV for power supply lines ± 1 kV for input/output lines	N/A	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	± 1 kV differential mode ± 2 kV common mode	N/A	Mains power quality should be that of a typical commercial or hospital environment.
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 < 5 % U_T (>95 % dip in U_T) for 5 sec	N/A	Mains power quality should be that of a typical commercial or hospital environment. If the user of the infrared thermometer requires continued operation during power mains interruptions, it is recommended that the infrared thermometer be powered from an uninterruptible power supply or a battery.
Power frequency (50/60 Hz)	3 A/m		Power frequency magnetic fields should be at levels characteristic of a

magnetic field IEC 61000-4-8		3 A/m	typical location in a typical commercial or hospital environment.
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**	**Electromagnetic environment - guidance**
			Portable and mobile RF communications equipment should be used no closer to any part of the infrared thermometer including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz	N/A	Recommended separation distance $d = [\frac{3.5}{V_1}]\sqrt{P}$ $d = [\frac{3.5}{E_1}]\sqrt{P}$ 80 MHz to 800 MHz $d = [\frac{7}{E_1}]\sqrt{P}$ 800 MHz to 2.5 GHz
Radiated RF IEC 61000-4-3	3 V/m 80 MHz to 2.5 GHz	3 V/m	where p is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in metres (m).[b] Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey,[a] should be less than the compliance level in each frequency range.[b] Interference may occur in the vicinity of equipment marked with the following symbol: 

NOTE 1 At 80 MHz and 800 MHz, the higher frequency range applies.

NOTE 2 These guidelines may not apply in all situations. Electromagnetic is affected by absorption and reflection from structures, objects and people.

[a] Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the infrared thermometer is used exceeds the applicable RF compliance level above, the infrared thermometer should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the infrared thermometer.

b Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3V/m.

Recommended separation distances between portable and mobile RF communications equipment and the EQUIPMENT or SYSTEM - for EQUIPMENT and SYSTEMS that are not LIFE-SUPPORTING

Recommended separation distances between portable and mobile RF communications equipment and the infrared thermometer			
The infrared thermometer is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the infrared thermometer can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the infrared thermometer as recommended below, according to the maximum output power of the communications equipment			
Rated maximum output of transmitter W	Separation distance according to frequency of transmitter **m**		
	150 kHz to 80 MHz $d = [\frac{3.5}{V_1}]\sqrt{P}$	80 MHz to 800 MHz $d = [\frac{3.5}{E_1}]\sqrt{P}$	800 MHz to 2.5 GHz $d = [\frac{7}{E_1}]\sqrt{P}$
0.01	/	0.12	0.23
0.1	/	0.38	0.73
1	/	1.2	2.3
10	/	3.8	7.3
100	/	12	23
For transmitters rated at a maximum output power not listed above the recommended separation distance d in metres (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.			

NOTE 1 At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

5 About the Tempreture

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".

6 Maintenance and Attention

The probe of 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 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:

Use a cotton stickor soft cloth gently wipe with water or alcohol, and do not placed this product in water or a liquid immersion;

Is the packaging products should be stored in a temperature of - 20 DEG C - 50 DEG C, relative humidity is not more than 85%, 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 there is in need of repair, can provide information required for the circuit diagram and maintenance, if there is any doubt from circuit maintenance , 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.

Production specifications

No.	Item	Specifications
1	Name	Infrared Digital Thermometer
2	Duration of use	3 years
3	Product Categories	Internal power supply equipment BF type application part
4	Units of measurement	℃ & ℉ key to switch
5	Range	34.0℃～43.0℃
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℃
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：10℃～40℃ Relative humidity：≦85% Atmospheric pressure：70kPa～106kPa
20	Size	120mm×40mm×30mm（L×W×H）
21	N.W.	50g

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.