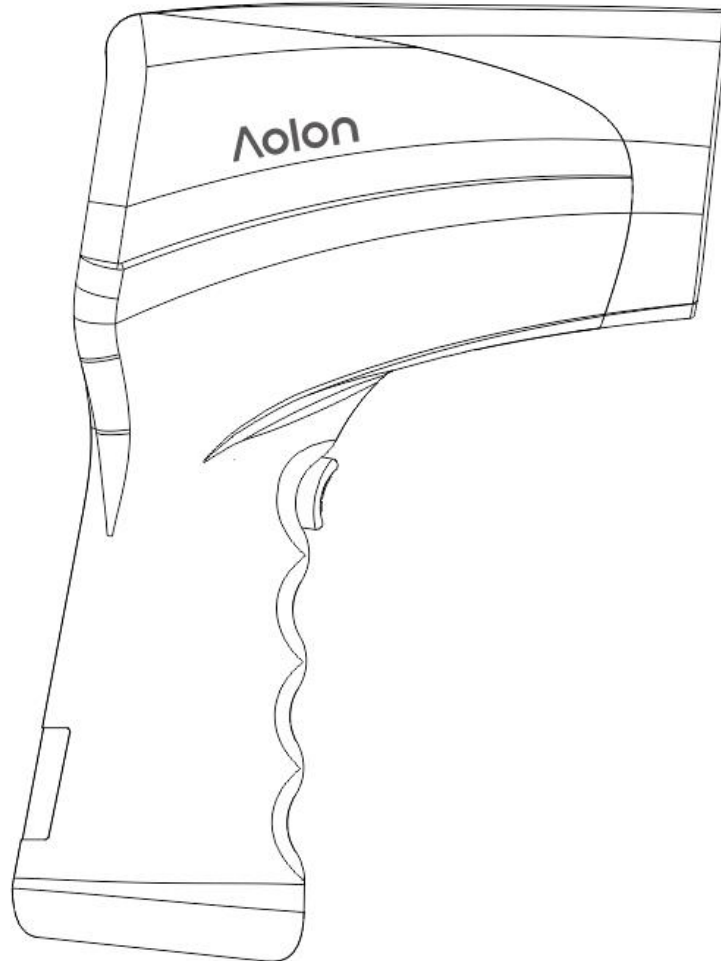


Use Manual of Infrared Thermometer

(Please read carefully before use!)



Model: T1

Thank you for purchasing the Aolong infrared thermometer.

In order to use the product safely and correctly, please read and fully understand the safety precautions in this manual.

Please keep this manual at hands for easy reference.

This manual has a warranty card. Please keep it properly.

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I. Precautions

Warning

1. It is dangerous to make self-judgment and treatment only based on the measurement results. Please follow the doctor's instructions.

- Self-judgment may worsen the condition.

2. Do not touch or blow the infrared sensor, or hold it against the steam.

- Damaged or dirty infrared sensor may cause abnormal measurement results.

3. If there is any temperature difference between the storage place and the measurement place, please place the product at room temperature (measurement place) for about 30 minutes before measurements.

- Abnormal measurement result is possible.

4. Please put the product out of the reach of children.

- If you accidentally eat the battery or battery cover, please contact your doctor immediately.

5. Do not measure near the heated or cooled air or air outlet.

- Otherwise, the measurement result may be inaccurate.

6. When the infrared sensor is dirty, wipe it gently with a cotton ball or a soft dry cloth dipped in 95% absolute alcohol.

- Wiping with toilet paper or paper towels will scratch the infrared sensor and cause incorrect measurement results.

7. The product should be protected from mechanical damage such as heavy falls or collisions.

- Inaccurate measurement result is possible.



Caution

1. The distance between the product and the forehead must be less than 5CM.
 - Otherwise, the measurement result may be inaccurate.
2. Do not drink, eat or exercise before or during the measurement. Do not measure when you are sweating.
 - Otherwise, the measurement result may be inaccurate.
3. Do not discard the battery to a hazardous area or other unspecified places.
 - Otherwise, the battery may wear out.
 - Otherwise, the environment may be polluted.
4. The product can be self-checked.
5. Cosmetics and skin color will affect the accuracy of temperature due to different infrared radiation rates.
 - Black people should manually adjust the temperature compensation value before measuring.
6. The product shall not be exposed to water or under direct sunlight.
7. For measurement of the forehead temperature, the product must be operated in the forehead temperature mode (see point 10 of the operating steps).

Advice

1. Please tell your doctor that you measured temperature with the product.
2. Please do not forcefully collide, drop, trample and shake the product.
3. Do not disassemble, repair or modify the product.
4. The product is not waterproof. Please keep the product free from liquid (alcohol, water droplets, hot water, etc.).
5. The product must be kept clean and stored in a dry place.
6. If you have any problems, please contact the sales office. Do not repair the product by yourself.
7. The product is susceptible to radiation interference. Do not use it in environments with strong electromagnetic interference.
8. Dispose of the waste and residue at the end of the service life of the product according to local laws and regulations.

Electromagnetic Compatibility



Caution:

- The product meets the requirements of YY0505 standard on electromagnetic compatibility.
- Please install and use the product according to the EMC information provided in the accompanying documents.
- Portable and mobile RF communication equipment may affect the performance of the product. When using, please keep it away from strong electromagnetic interference such as mobile phones, microwave ovens, etc.;
- The guideline and manufacturer's instructions are detailed in the attachment.
- Basic performance: "Without electromagnetic interference, the product can measure the temperature within the range of 32.0°C ~42.9°C (the allowable measurement error is $\pm 0.3^{\circ}\text{C}$ within the range of 32.0°C ~42.9°C). With electromagnetic interference, the product can measure the temperature within the range of 32.0°C ~42.9°C .



Warning:

- The equipment or system should not be used close to or stacked with other equipment. If it is necessary, observe and verify that it can operate normally for its intended use.

- Except for cables sold by manufacturers of equipment or systems as spare parts for internal components, the use of accessories and cables that are not specified may result in increased emissions from equipment and systems or reduced interference.
- The operation of equipment and systems below the minimum amplitude or minimum value described in this manual may result in inaccurate results.

Attachment:

Guideline and manufacturer's instructions – Electromagnetic emission		
The product is expected to be used in the electromagnetic environment specified below. The purchaser or user should ensure that it is used in this electromagnetic environment:		
Emission test	Compliance	Electromagnetic environment - Guideline
RF emission as per GB 4824	Group 1	The product uses radiofrequency energy only for its internal functions. Therefore, its RF emissions are very low, and there is little possibility of interference with nearby electronic equipment.
RF emission as per GB 4824	Class B	The product is suitable for use in all facilities, including domestic facilities and all facilities directly connected to the public low-voltage power supply network for domestic use.
Harmonic emission as per GB 17625.1	NA	
Voltage fluctuation/flicker emission as per GB 17625.2	NA	

Guideline and manufacturer's instructions – Electromagnetic immunity			
The product is expected to be used in the electromagnetic environment specified below. The purchaser or user should ensure that it is used in this electromagnetic environment:			
Immunity test	IEC 60601 test level	Coincident level	Electromagnetic environment – Guideline
Electrostatic discharge as per GB/T 17626.2	± 6 kV contact discharge ± 8 kV air discharge	± 6 kV contact discharge ± 8 kV air discharge	The floor should be wood, concrete or ceramic tiles. If the floor is covered with synthetic materials, the relative humidity should be at least 30%.
Electrical fast transient burst as per GB/T 17626.4	± 2 kV in relative to power line ± 1 kV in relative to input/output line	NA	NA
Surge as per GB/T 17626.5	± 6 kV difference-mode voltage ± 8 kV common-mode voltage	NA	NA
Voltage dips, short interruptions and voltage changes on the power input line as per GB/T 17626.11	$<5\%$ U_T , for 0.5 cycle ($>95\%$ dip at U_T) 40% U_T , for 5 cycle (60% dip at U_T) 70% U_T , for 25 cycle (30% dip at U_T) $<5\%$ U_T , for 5s ($>95\%$ dip at U_T)	NA	NA
Power frequency magnetic field as per GB/T 17626.8	3A/m	3A/m, 50Hz	Power frequency magnetic field should have the characteristics of power-frequency magnetic field level in a typical place such as a business place or hospital.
Note: U_T refers to the AC grid voltage before the test voltage is applied.			

Recommended isolation distance between portable and mobile RF communication equipment and the product			
The product is expected to be used in an electromagnetic environment where radiofrequency radiation disturbance is controlled. According to the maximum rated output power of the communication equipment, the purchaser or user can prevent electromagnetic interference by maintaining the following recommended minimum distance between the portable and mobile RF communication equipment (transmitter) and the product.			
Maximum rated output power of the transmitter W	Isolation distance corresponding to different frequencies of the transmitter/m		
	150 kHz ~ 80 MHz	80 MHz ~ 800 MHz	800 MHz ~ 2.5 GHz
	$d = 1.2\sqrt{P}$	$d = 1.2\sqrt{P}$	$d = 2.3\sqrt{P}$
0.01	NA	0.12	0.23
0.1	NA	0.38	0.73
1	NA	1.2	2.3
10	NA	3.8	7.3
100	NA	12	23
For the maximum rated output power of the transmitter not listed in the above table, the recommended isolation distance d, in meters (m), can be determined by the formula in the corresponding transmitter frequency column, where P is the maximum rated output power of the transmitter provided by the transmitter manufacturer, in watts (W).			
Note 1: At 80MHz and 800MHz, the formula for the higher frequency band should be used.			
Note 2: These guidelines may not be suitable for all situations. Electromagnetic propagation is affected by absorption and reflection from buildings, objects and people.			

II. Scope of Application

The product displays the temperature by measuring the thermal radiation of the forehead of the measured object. If necessary, use medical alcohol for surface cleaning and disinfection. Do use too much alcohol to avoid damage to the product. Place it in a clean and dry place after use. The product can be reused for unlimited times.

III. Contraindications

1. Target user: children, adults.
2. Contraindications:

The normal body temperature of a person is in a range. If you have a fever, please consult your doctor for a diagnosis.

Birth defects, congenital malformations, septic shock, circulatory failure, etc. may seriously affect the temperature measurement.

Do not use the product at inflammatory, traumatic, and postoperative locations.

3. Warnings and precautions: see the use manual for details.

IV. Product Performance

Period	≤ 1 s	
Mode	Measurement	LO is displayed when the temperature is less than 32°C ; The temperature value is displayed when the temperature is $\geq 32^{\circ}\text{C}$ and $\leq \text{FV}^{\circ}\text{C}$. The buzzer will sound BI-BI when the temperature is $\geq \text{FV}^{\circ}\text{C}$, and HI is displayed when it exceeds 42.9°C .
	Calibration	The temperature value of the measured object is displayed.
Fever alarm point	The settable range is $37.2^{\circ}\text{C} \sim 39^{\circ}\text{C}$, and the default alarm temperature is 38°C .	
Data storage	30 sets of measurement data can be stored for analysis and comparison.	
Sound alert	The buzzer sounds BI-BI.	
Auto power-off	1. Press and hold the " $^{\circ}\text{C}/^{\circ}\text{F}$ " key to power off. 2. If there is no key operation, it will automatically power off within 60 seconds.	
Appearance	Meet the man-machine calibration.	

V. Correct Use

Battery replacement

Use two AA alkaline batteries. Install the battery with the positive and negative poles in the correct location; otherwise it will not function (as shown below).



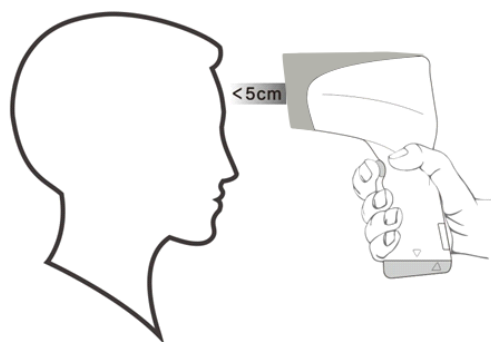
三角符号对齐可打开电池盖

Align the two triangle symbols to open






Operating steps

1. Power on:

Press the test key to power on. At this time, the LCD lights up, the backlight is on, the power-on self-test is performed, and then "-----" is displayed, indicating that temperature measurement can be started.





2. Measurement

- a. In ready-for-measurement state, press the Setting key " " to quickly switch between the Measurement mode and Calibration mode. If the symbol " " is displayed, it indicates it is in Measurement mode. If the symbol " " is displayed, it indicates it is in Calibration mode.
- b. In ready-for-measurement state, press the " " or " " key to quickly switch between the temperature units. If the symbol " $^{\circ}\text{C}$ " is displayed, it indicates that the temperature is displayed in $^{\circ}\text{C}$. If the symbol " $^{\circ}\text{F}$ " is displayed, it indicates that the temperature is displayed in $^{\circ}\text{F}$.
- c. Preparation for measurement. Make sure that there is no hair covering on the forehead. If there is sweat or dust on the forehead, wipe it.
- d. Make sure the sensor head is less than 5CM from the part to be measured. In the ready-for-measurement state in Measurement mode, press the measurement key. After about 1 second, the buzzer sounds Bi to indicate the end of the measurement and display the temperature value.


※ The part above the bridge of the nose and between the eyes is the radiation source closest to the normal body temperature. In measurement, the sensor should be directly aligned with the center of the forehead, and less than 5CM from the forehead to avoid large deviations in the measured temperature.

3. Calibration mode (only for testing)

- a. In ready-for-measurement state, if the symbol " " is displayed, it indicates it is in calibration mode. Press the Setting key " " to switch between Measurement mode and Calibration mode.

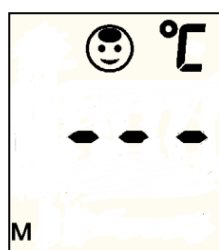
- b. Preparation for measurement. If there are water stains, dust or dirt on the object to be measured, wipe it to improve the measurement accuracy.
 - c. Make sure that the sensor head is less than 5CM away from the object to be measured. In the ready-for-measurement state in Calibration mode, press the measurement key. After about 1 second, Bi sounds to indicate the end of the measurement and display the temperature value.
 - d. ※ Calibration mode is the mode in which the thermometer displays the temperature measured from the standard black body;
- ※ Do not measure the liquid with vapor, otherwise the vapor will liquefy in the temperature probe and affect the measurement accuracy;
- ※ Do not measure on the bright metal surface, such as the surface of the stainless steel electric kettle, so as to avoid excessive measurement error.

4. View and memory clear


- a. In the power-on mode, press the memory key "  " to enter the memory data query mode in which the temperature value of the first group is displayed. Press the memory key to switch to the next group; a maximum of 30 groups can be displayed. When the data is stored in the 31st group, the 1st group will be automatically overwritten.





Memory view mode












No memory data

- 5. Power off: Press and hold the “°C/°F” or “  ” key in the working state to power off.

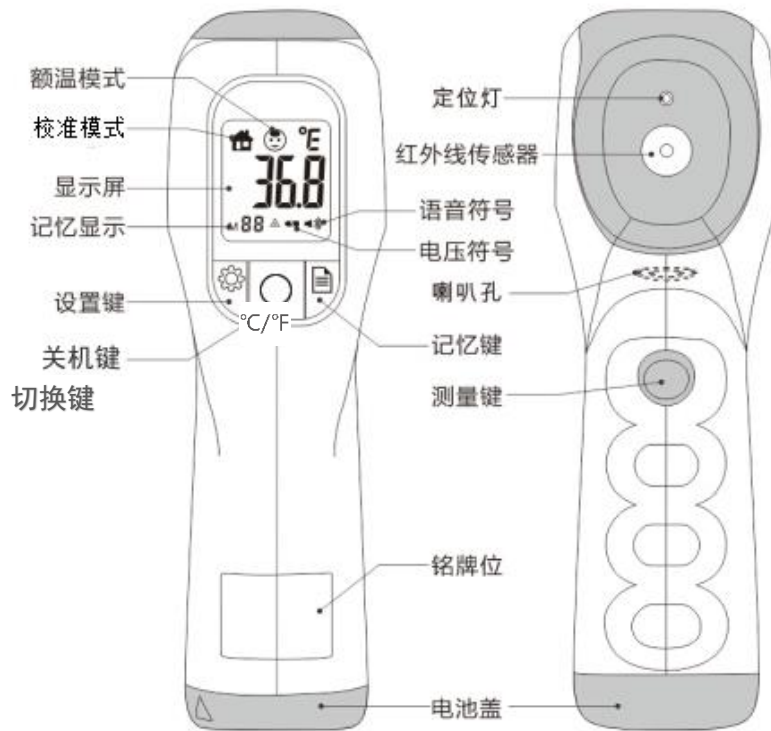
※ If there is no operation after power on, it will automatically power off within 60 seconds.

6. Low voltage display: When the battery voltage is less than DC (2.6 ± 0.1) V, the LCD will display both the battery low voltage symbols "  " and "Erb".
7. Parameter setting: The product has four parameter setting functions such as “alarm temperature setting F1” , “temperature compensation setting F2” , “sound alert setting F3” , and “working mode switching F4” . Press and hold the Setting key "  " in the power-on state to enter the parameter setting state. The setting menu table is as follows:

Setting key	Functions	Parameter adjustment	Default value
F1	Alarm temperature setting	Press “  ” and “  ” to increase or decrease	38°C
F2	Temperature compensation setting	Press “  ” and “  ” to increase or decrease	0°C
F3	Sound alert setting	Press “  ” and “  ” to switch on or off	ON
F4	Working mode switching	Press “  ” and “  ” to switch on or off	

VI. Product Description

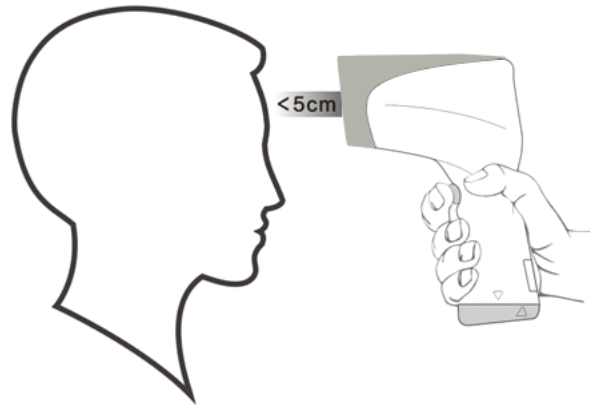
The product is composed of housing, temperature sensor, infrared sensor, circuit board, LCD, buzzer and battery.



额温模式	Measurement mode
校准模式	Calibration mode
显示屏	LCD
记忆显示	Memory display
设置键	Setting key
切换键	Toggle key
定位灯	Positioning lights
红外线传感器	Infrared sensor
语音符号	Sound symbols
电压符号	Voltage symbol
喇叭孔	Bellmouth orifice
记忆键	Memory key
测量键	Measurement key
铭牌位	Nameplate position
电池盖	Battery cover

VII. Measurement Principle

Forehead temperature: Any object above the absolute zero ($-273\text{ }^{\circ}\text{C}$) will emit infrared rays. The product receives infrared rays from the human forehead through an infrared sensor, and gets the temperature data to obtain the body temperature.



WHO provides reference values for normal body temperature:

Forehead temperature	$35.8^{\circ}\text{C} \sim 37.8^{\circ}\text{C}$
Cochlear temperature	$35.8^{\circ}\text{C} \sim 38^{\circ}\text{C}$
Axillary temperature	$34.7^{\circ}\text{C} \sim 37.3^{\circ}\text{C}$
Oral temperature	$35.5^{\circ}\text{C} \sim 37.5^{\circ}\text{C}$
Anus temperature	$36.6^{\circ}\text{C} \sim 38^{\circ}\text{C}$

The normal range of body temperature varies from person to person, and the temperature measured in different parts of the same person at different times is also different. Most people's forehead temperature is higher than oral temperature and axillary temperature, but there are also cases where the forehead temperature is lower than the axillary temperature. In order to correctly judge whether a family member has a fever, you should know his/her temperature under normal conditions.

VIII. Technical Performance

Product name: infrared thermometer

Model: T1

Power supply voltage: DC 3V (2 AA alkaline batteries)

Power: 0.1W

Measurement principle: The body temperature is displayed by measuring the infrared heat radiation of the forehead.

Measurement range: 32.0°C ~42.0°C in Measurement mode; 0°C -99.9°C in Calibration mode.

Resolution: 0.1°C

Maximum allowable error: $\pm 0.2^{\circ}\text{C}$ within the range of 35.0°C ~42.0°C ;
 $\pm 0.3^{\circ}\text{C}$ beyond the range of 35.0°C ~42.0°C ;

Display: LCD

Memory storage: 30 sets of the latest measurement data can be stored

Automatic power-off: within 60 seconds

Size: 105 × 48 × 150mm (length × width × height)

Weight: about 165g (including battery)

Operating environment: temperature: 16°C ~ 35°C ;

Humidity: $\leq 85\%$;

Transportation and storage environment: temperature: $\leq -20^{\circ}\text{C} \sim 55^{\circ}\text{C}$;

Humidity: 10%~93%;

Air pressure: 70kPa ~ 106kPa.

IX. Key Parts

Name	Model	Manufacturer
Thermopile temperature sensor	AGP2401	Shenzhen Xinkongyuan Electronic Technology Co., Ltd.
Single chip	SN8P1929	Sonix (Taiwan) Technology Co., Ltd.
LCD	TNLCDT80	Shenzhen Lanzhou Electronics Co., Ltd.



Caution: The replacement of parts by the user will reduce the minimum safety of the product.

X. Accessories

One use and technical manual

Two AA alkaline batteries

XI. Maintenance and storage

After use, please maintain and store the product.


1. Use a soft dry cloth to gently wipe the product.

※ Do not use water or detergents, thinners, or volatile oils containing abrasives.

2. If the product is dirty, wipe it gently with a soft dry cloth or cotton ball dipped in absolute alcohol with a concentration of more than 95%. If it is still not clean, please contact the service center.


※ Do not wipe with toilet paper or paper towels.

3. Do not store the product in places with direct sunlight, high temperature and humidity, lots of dust, near the fire, and vulnerable to vibration and shock.




4. When the product is not used for a long time, the battery should be taken out to avoid leakage.
5. When both the battery symbols " " and "Erb" appear on the LCD, it means that the battery is low and needs to be replaced as soon as possible.
6. The product is equipped with special chips and sensors and has stable performance and reliable quality. If you cannot solve the abnormal situation, you may call the manufacturer or the company designated by the manufacturer. If necessary, we will provide materials such as circuit diagrams and component lists to help you repair the equipment.
7. The product must be stored in a clean and dry place.
8. Do not place the product in places where there is electric shock.
9. Do not store the product in extreme temperature above 55 °C or below -20 °C and above 95%.

XII. Troubleshooting

Phenomenon	Cause	Solutions
Nothing appears after the product is power on	The batteries are exhausted.	Replace the batteries.
	The polarity of the battery is incorrect.	Correct the polarity.
The temperature measured is too low.	The measurement position is incorrect.	Correctly measure according to the instructions
	There is dirt on the sensor or forehead.	Remove the dirt.
The temperatures in continuous	It may be affected by changes in airflow.	Do not measure near the heated or cooled air or air outlet.

measurement change greatly.		
	It is beyond the scope of desired use.	Use in the temperature range of 16°C ~35°C.

XIII. Symbol Description

	BF application part
	Waste product recycling
	Warnings and Cautions

XIV. Others

Manufacturing date: see outer packaging

Lifetime: 5 years

Production license number: 桂食药监械生产许 20200033 号

Registration certificate number/technical requirement number: 桂械注准 20202070110

Registrant/manufacturer: Aolon Communication Co., Ltd.

Registrant/address: No.202,Bldg.3 CHINA-ASEAN Science Park, No.5 Binhe Road, Hi-tech Zone, Nanning, Guangxi, CHINA

Tel: 0771-5715739

✂

产品保修卡

保修说明：
 1. 本产品自售出之日起，在两年内凭保修卡我公司负责免费维修。
 2. 在保修期内，凡属于产品质量、工艺结构等引起的故障均属于保修范围。
 3. 违反操作规程或达不到设备所需条件而引起的故障。
 4. 用户使用不当或擅自拆装造成的设备故障或损坏的。
 5. 因用户运输、存储不当或其他原因引起设备损坏的。
 6. 保修卡中无售出单位盖章或填写不完整的不予保修。

名称：红外额温计 型号：T1

用户姓名		电话	
详细地址			
产品型号		产品编号	
购买日期		经办人	
故障描述			

Warranty Card

Notes:

1. We provide free maintenance for two years since the product is sold.
2. During the warranty period, all failures caused by product quality, process structure, etc. are covered by the warranty card.
3. The following situations are covered by the warranty card: failure caused by violation of operation regulations or failure to meet the conditions required for the product.
4. Malfunction or damage caused by improper use or unauthorized disassembly.
5. Damage due to improper transportation, storage or other reasons.
6. No seal of seller or incomplete filling in the warranty card.

Name: Infrared Thermometer Model: T1

User name		Telephone	
Address:			
Model		Product ID	
Date of purchase		Handling person	
Failure description			