

Infrared Ear/ Forehead Thermometer

TS51



EN



CE
2797



IP 22 RoHS REACH



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Importer



Distributor

INSTRUCTION MANUAL

Please read this instruction manual carefully
before using your Infrared thermometer

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Introduction

Intended Use:

This thermometer is intended for home use and the measurement of human body temperature in people of all ages. This thermometer takes temperatures in seconds by measuring the heat generated by the ear canal/ on the forehead.

Type of Use/ Reuse

Multiple patient multiple use

Intended User

The Patient is an intended operator.

Patient selection criteria: Handicapped persons and children are the exception of handicapped persons and children need assistance by another person to use the device.

Contraindication:



1. The ear is infected with otitis or suppuration.
2. The ear canal treated with ear drops or other medications.
3. Blood or drainage in ear canal.
4. Face and/or ear deformities
5. Forehead is scarred or compromised tissues
6. Patient' s skin is on certain medication of measurement site.

Important Information before Use

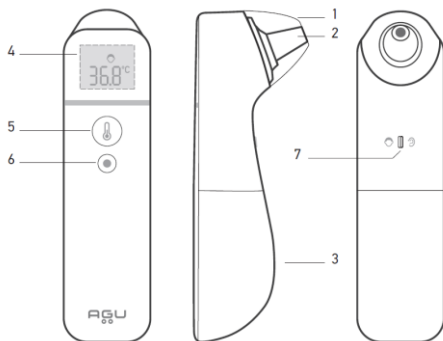
When using this product, please be sure to follow all the notes listed below. Any action against these notices may cause injury or affect the accuracy.

1. Do not disassemble, repair, or remodel the thermometer.
2. Be sure to clean the thermometer lens each time after usage.
3. Avoid direct finger contact with the lens.
4. WARNING: No modification of this equipment is allowed.
5. It is recommended that user may take 3 temperatures. If they are different, use the highest reading.
6. Do not expose the thermometer to extreme temperature, very high humidity, or direct sunlight.
7. Avoid extreme shock or dropping the device.
8. Before the measurement, patients and thermometer should stay in steady state room condition for at least 30 minutes.
9. Avoid measuring temperature in 30 minutes after exercise, bathing, or returning from outdoor.
10. To protect the environment, dispose of empty batteries at appropriate collection sites according to national or local regulations.
11. Please use the thermometer solely for its intended purpose.
12. There are no absolute body temperature standards. Keep reliable records of your personal temperature to serve as a reference for judging a fever.
13. Under any circumstances, the temperature taking result is ONLY for reference. Before taking any medical action, please consult your physician.
14. The thermometer is calibrated at the time of manufacture. If at any

time you question the accuracy of temperature measurements, please contact an authorized distributor for sending calibration services, additional cost may apply for return shipping fee.

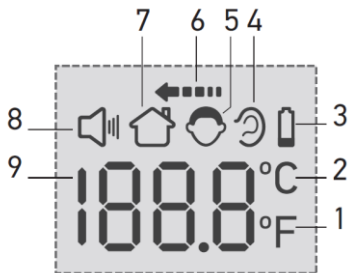
15.  CAUTION - Avoid potential allergic reactions, please avoid the front of scanner in direct contact to patient's wound.
16.  CAUTION - Please keep this device away from pets, pests, and children.
17.  CAUTION: Please keep away from children and pets, because small parts may be inhaled or swallowed.
18. If you would require any assistance during setting up, using or maintaining, please contact the manufacturer.
19. Avoid using the device near an operating cell phone or microwave oven.
20. If any serious incident that has occurred in relation to the device should be reported to the manufacturer and the competent authority of the Member State in which the user is established.
21. Neonatal under 6 months, the ear canal is still under development, very narrow so the temperature of the eardrum often cannot be recorded and the result displayed is often too low.
22. Make sure the ear canal is clean not blocked by earwax.

Product Identification



- 1 Cover Cap
- 2 Sensor
- 3 Battery Compartment Cover
- 4 Segment Display
- 5 Start Button
- 6 O/I Button (ON/OFF Button)
- 7 Measurement Mode Switch (Ear/ Forehead)

Description of LCD Display



- 1 Measurement result in Fahrenheit
- 2 Measurement result in Celsius
- 3 Low battery level
- 4 External ear canal measurement mode
- 5 Forehead measurement mode
- 6 Measurement in process
- 7 Object temperature measurement mode
- 8 Sound notification enable
- 9 Measurement result

Tips for Measuring Temperature

Bear in mind that the thermometer needs to have been in the room in which the measurement is taken for at least 30 minutes before use.

NOTE:

- Some people produce different readings in their left and right ear. In order to record temperature changes, always measure a person's temperature in the same ear.
- The ear thermometer may be used by children only under adult supervision. Measurement is usually possible over the age of 6 months. In infants under 6 months, the ear canal is still very narrow so the temperature of the eardrum often cannot be recorded and the result displayed is often too low.
- The measurement must not be taken in an ear affected by inflammatory diseases (e.g. discharging pus or secretion), after possible ear injuries (e.g. eardrum damage) or in the healing period after operative procedures. In all of these cases, please consult your doctor.
- Use of the thermometer on different persons can be inappropriate in the event of certain acute infectious diseases because of the possible spread of germs despite cleaning and disinfection. If you have any doubts, please consult your doctor.
- This thermometer may only be used without a disposable protective cover.
- If you have been lying on one ear for some time, the temperature is slightly raised. Wait a little while or measure in the other ear.
- As ear wax can affect the measurement, you should clean the ear before measuring if necessary.

Measuring Body Temperature on the Ear

1. Remove the Cover Cap.
2. Press the "O/I" button for 1 second to switch the thermometer on. Following a successful self-test, the device emits beep sound.
3. Slide the Measurement Mode Switch to Ear Mode.
4. Make sure that the sensor tip and also the ear canal are clean. As the ear canal is slightly curved, you have to pull the ear slightly up and backwards before inserting the sensor tip. This is important so that the sensor tip can be pointed directly at the eardrum.
5. Insert the sensor tip carefully and press the Start button for 1 second.
6. When temperature measurement is complete, you will hear 1 short beep and the body temperature will appear in the display.
7. After the temperature has been measured, the device will automatically enter the standby mode after 5 seconds and the device is ready for the next measurement.

Measuring Body Temperature on the Forehead

Please note that the forehead/temples must be free from sweat and cosmetics and that taking medication and skin irritations can distort the result when measuring temperature on the forehead.

1. The cap should be in position on the probe nozzle.
2. Press the "O/I" button for 1 second to switch the thermometer on. Following a successful self-test, the device emits beep sound.
3. Slide the Measurement Mode Switch to Forehead Mode.
4. Place the probe on your temple. Slide the probe across your forehead to the other temple, and then release pressure on button to stop temperature taking. You' ll hear a beep and your temperature will come up on the screen..
5. When temperature measurement is complete, you will hear 1 short beep and the body temperature will appear in the display.
6. After the temperature has been measured, the device will automatically enter the standby mode after 5 seconds and the device is ready for the next measurement.

Noted:

1. To ensure accuracy, please wait at least 5 seconds between successive readings. Otherwise, the device will show "Err" with 3 short beeps.
2. If your device is not located to the forehead.

Measuring Object/Liquid Temperature

1. Press the "O/I" button for 1 second to switch the thermometer on. Following a successful self-test, the device emits beep sound.
2. Aim the thermometer to the object/ liquid, and double-click the "Start" button.
3. When temperature measurement is complete, the object/ liquid temperature will appear in the display.
4. After the temperature has been measured, the device will automatically enter the standby mode after 5 seconds and the device is ready for the next measurement.

Noted:

1. To ensure accuracy, please wait at least 5 seconds between successive readings. Otherwise, the device will show "Err" with 3 short beeps.

Setting Sound On/Off

- (1) Press the "Start" button for 3 seconds in the OFF mode, and you enter the sound setting.
- (2) The default is sound ON.
- (3) If you wish change the setting, press the "Start" button and it will change the state.
- (4) After the change is complete, the device will automatically shut down in 3 seconds to memorize the setting.

Setting °C/°F

- (1) Press the "Start" button for 8 seconds in the OFF mode, and you enter the °C/°F setting.
- (2) If you wish change the setting, press the "Start" button and it will change the state.
- (3) After the change is complete, the device will automatically shut down in 3 seconds to memorize the setting.

Setting Date/Time

- (1) Press the "O/I" button for 5 seconds in the OFF mode, and you enter the date/time setting.
- (2) The setting sequence is Year – Month – Date – Hour – Minute. If you wish change the setting, press the "Start" button and it will change the state, and then press the "O/I" button to confirm.
- (3) After the change is complete, the device will automatically shut down in 5 seconds to memorize the setting.

Memory Function

Memory Recall:

You can recall up to 9 measurements currently stored in memory to share with your physician or trained healthcare professional.

1. When the device is on, press once briefly on the “Memory” Button, then pass it again to show the last measurement.
2. Press the “Memory” button. The last measured value will appear on the display.

Memory Deletion:

Remove batteries, memory will be cleared.

NOTE:

All the readings will be cleared no matter record in Human Mode or Object Mode.

Cleaning and Disinfecting

For home use device disinfection, 75% alcohol (available in the pharmacy) can be used.



- **Measurement Sensor**

Clean the measurement sensor with an alcohol swab before and after each measurement.

- **Thermometer:**

Use a soft, dry cloth to clean thermometer body. Never use abrasive cleaning agents, thinners or benzene for cleaning. Do not scratch the surface of the probe lens or the display. Do not expose the thermometer to extreme temperatures, humidity, direct sunlight, or shock.

Battery Installation

When the batteries get weak, the battery warning symbol appears . It is still possible to measure temperature. The batteries must be replaced. When the battery symbol flashes  and “Lo” appears in the display, the batteries must be replaced. If the batteries are too flat, then the thermometer will switch off automatically.

NOTE:

- It is recommended to remove the batteries if the unit will not be used for an extended period of time.
- Please properly dispose of the batteries away from small children and heat.
- Batteries must be disposed of in accordance with local environmental and institutional policies.
- It is recommended not to use rechargeable, unqualified or different spec of batteries as it may damage the device or cause circuit shortcut.
- Dispose of used batteries in accordance with the applicable legal regulations. Never dispose of batteries in the normal household waste.

STEPS to change battery

1. Open the battery case by sliding off the cover on the back of the unit.
2. Remove used battery.
3. Replace with 2 x 1.5V LR03(AAA) alkaline batteries in designated area. (check for the right polarity before replace with the new battery)
4. Slide the cover back on. Unit is ready for immediate use

Operating the Bluetooth Function

This product is an **Infrared Thermometer with Bluetooth function**. Design without entering personal information. If the device has a transmission function, the transmission measurement data is designed to be encrypted and transmitted, and will not be tampered with or retrieve user-related information during the transmission process. The firmware and software of the product have been programmed in the production process, and the programming interface is different from the data transmission interface. When programming to the microcontroller, use an encrypted programmer, so there is no need to worry about the software being tampered with during transmission.

Bluetooth function requirement:

- An Android device with Android version 4.3 or above and hardware support for Bluetooth 4.2.
- An iOS device with iOS version 5 or above and hardware support for Bluetooth 4.2.

How to activate the Bluetooth function:

Please refer to the instruction manual of your mobile phone or computer for how to activate the Bluetooth function.

Set Up Process

- (1) Please determine your mobile phone or computer has BLE4.2.
- (2) Turn on the **TS51**, when the Bluetooth icon shows on the device , it means **TS51** is under broadcast condition.
- (3) Please check the connecting condition from your mobile phone or computer. The device name should be "**TS51**" .
- (4) Every measure reading will be transfer to your mobile phone or computer automatically.

Error Code

When a malfunction or incorrect temperature measurement occurs, an error message will appear as described below (comes with backlight).



LCD Display	Cause	Solution
H	The temperature measured is higher than 43°C (109.4°F)	Operate the thermometer only between the specified temperature ranges. If necessary, clean the sensor tip. In the event of a repeated error message, contact your retailer or Customer Services.
L	The temperature measured is lower than 34°C (93.2°F)	
Err	The operating temperature is not in the range 15°C~40°C (59°F~104°F)	Operate the thermometer only between the specified temperature ranges.

Trouble Shootings

Trouble	Probable Case	Recommended Action
Failed to power on.	Batteries are drained.	Replace with a new battery
	Batteries are not correctly aligned with terminals.	Reinsert batteries correctly.
	The thermometer is damaged.	Contact your retailer or Customer Services.
Low battery symbol appears.	Low battery.	Replace with a new battery as soon as practical
	In colder temperature batteries have weaker electrical charges.	Warm up the batteries or use the device in a warmer setting.
The measurement is abnormal or if there is any doubt on the measured result	Incorrect measure position.	Reposition the probe point the eardrum or rescan the forehead.
	The measuring distance is too far.	Move the probe closer to the measuring site.
	The measuring is hampered by earwax , hair, oil, sweat, etc.	Remove obstructions from ear or forehead.
	The lens of probe is dirty.	Clean the lens according to <i>cleaning and disinfecting</i> .
	You have just come from extreme temperatures environment.	Stay in steady state room at least for 30 minutes.
	The thermometer has been stored in a cold	Put the thermometer in steady state room at

Trouble	Probable Case	Recommended Action
	room or exposed to direct sunlight.	least for 30 minutes.
	Measurement was taken in incorrect mode.	Switch to proper mode.
Power switches off automatically.	System design.	Push the power button again.
	Batteries are drained.	Replace with a new battery
	The thermometer is damaged.	Contact your retailer or Customer Services.

Technical Specification

- Measuring range :
Human Body : 34°C ~43°C (93.2°F ~ 109.4°F)
- Laboratory Accuracy:
34°C ~43°C±0.2°C (93.2°F ~ 109.4°F ±0.4°F)
- Calibration Accuracy:
±0.2°C(±0.4°F): from 34°C ~43°C (93.2°F ~ 109.4°F)
- Display resolution : 0.1°C
- Operating environment :
15°C~40°C (59°F~104°F)
with relative humidity 15% to 95% (non condensing)
Atmospheric pressure: 700~1060 hPa 
- Storage/ Transportation environment :
-25 to 55 °C(-13 to 131 °F)
with relative humidity 15% to 95% (non condensing)
Atmospheric pressure: 700~1060 hPa 
- Power supply : 2 x 1.5V LR03(AAA) alkaline
- Memory: 9 sets
- Weight : approx. 100g (without battery)
- Dimensions : approx. 145.1 x 38 x 50.2 mm (L×W×H)
- Frequency : 2402~2480GHz
- Output power range : <=4dBm
- Shelf life : 3 years
- For Customer Service










To obtain further service please contact AViTA Corp. for the address of the repair location. Enclose the Proof of Purchase. Include \$10.00 USD for the return shipping and handling. Include a letter, with your name, address, phone number, and description of the specific problem. Pack the product carefully to prevent damage in transit. Because of possible loss in transit, we recommend insuring the product with return receipt requested.








EMC Tables








<p>TS51 is intended for use in the electromagnetic environment specified below. The customer or the user of TS51 must make sure that it is used in such an environment.</p>			
<p>Guidance and manufacturer' s declaration - Electromagnetic emissions</p>			
Phenomenon	Professional healthcare facility environment a)	HOME HEALTHCARE ENVIRONMENT a)	
Conducted and radiated RF MISSIONS	CISPR 11 Group 1 Class A (Not BLE Function) Group 2 Class A (With BLE Function)	CISPR 11 Group 1 Class B (Not BLE Function) Group 2 Class B (With BLE Function)	
Harmonic distortion	Not applicable (Note: Power by Battery or DC Input) Only the AC input needs to be tested		
Voltage fluctuations and flickering	Not applicable (Note: Power by Battery or DC Input) Only the AC input needs to be tested		
<p>a) The equipment is suitable for use in Home Health Environments and Professional Health Care Environments limited to patient rooms and respiratory treatment facilities in hospital or clinics. The more restrictive acceptance limits of Group 1 Class B (CISPR 11) have been considered and applied. The equipment is suitable for use in the mentioned environments when directly connected to the Public Mains Network.</p> <p>b) The test is not applicable in this environment unless the ME EQUIPMENT and ME SYSTEM used will be connected to the PUBLIC MAINS NETWORK and the power input is otherwise within the scope of the Basic EMC standard.</p>			
<p>Guidance and manufacturer' s declaration - Electromagnetic immunity - Enclosure port</p>			
Phenomenon	Basic EMC standard or test method	Immunity test levels	
		Professional healthcare facility environment	HOME HEALTHCARE ENVIRONMENT
ELECTROSTATIC DISCHARGE	IEC 61000-4-2	± 8kV contact ± 2 kV, ±4kV ±, ±8 kV, ±15 kV air	
Radiated RF EM fields	IEC 61000-4-3	a)	10 V/m b) 80MHz - 2.7 GHz 80% AM at 1kHz

Proximity fields from RF wireless communications equipment	IEC 61000-4-3	<p>COMPLIANT</p> <p>NOTE: Further information about distances to be maintained between portable and mobile RF communications equipment (transmitters) and the TS51 can be requested from supplier using the contact information provided in this manual. However, it is advisable to keep the equipment at an adequate distance of, at least, 0.5 m from mobile phones or other RF communications transmitters to minimise possible interference.</p>
RATED power frequency magnetic fields.	IEC 61000-4-8	<p>30 A/m c) 50 Hz or 60 Hz</p>
<p>a) The equipment is suitable for use in Home Health Environments and Professional Health Care Environments limited to patient rooms and respiratory treatment facilities in hospital or clinics. The more restrictive IMMUNITY acceptance limits have been considered and applied.</p> <p>b) Before modulation is applied.</p> <p>c) This test level assumes a minimum distance of at least 15 cm between the ME EQUIPMENT or ME SYSTEM and sources of power frequency magnetic fields.</p>		

Explanation of Symbols

	The CE marking with the Registration Number of the Notified Body. This denotes the compliance of Regulation (EU) 2017/745
	Medical Device
	Manufacturer
	Authorized representative in the European Community
	Date of manufacture (YYYY-MM-DD or YYYY-MM)
	Batch code (YYMMWWWW)
	Serial number (YYMWWWWXXXXX)
	Keep dry
	Temperature limit

	Humidity limitation
	Atmospheric pressure limitation
	Caution
	Consult the instruction for use
	Disposal information: Should you wish to dispose of the article, do so in accordance with current regulations. Details are available from your local authority. WEEE 2012/19/EU Directives
RoHS	This product fulfilling the requirements of the RoHS Directive 2011/65/EU.
REACH	This product fulfilling the requirements of the REACH Directive EC 1907/2006 and its amendments, do not contain Substances of Very High Concern in concentration above the limit of 0.1 %. No substance(s) is/are present in the parts of the product above the concentration of 0.1 % weight by weight.
	Stand-by
	Device classification type BF

<p>IP 22</p>	<p>This product meets the basic safety and essential performance requirements indicated in the IP22 conditioning test (protection against solid foreign objects of 12.5mm \varnothing and greater and against vertically falling water drops when enclosure tilted up to 15°)</p>
	<p>The empty, completely flat batteries must be disposed of through specially designated collection boxes, recycling points or electronics retailers. You are legally required to dispose of the batteries.</p>
	<p>Importer</p>
	<p>Distributor</p>
	<p>Model Number</p>
	<p>Country of Manufacturer</p>
	<p>Unique Device Identifier</p>
	<p>Keep away from sunlight</p>

Electronic IFU available at <http://www.avita.com.tw>

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