Infrared Thermometer

User Manual

tenoví

Product Information

Product Name: Tenovi Infrared Thermometer Model: TE-BTMI-A1
Manufactured for Tenovi

Statement

All statements, information, and recommendations in this document are provided "AS IS" without warranties, guarantees or representations of any kind, either express or implied. The information in this document is subject to change without notice.

Introduction

Thank you for purchasing this Tenovi Infrared Thermometer. Please read the User Manual carefully to make sure safe and proper use of this thermometer. Please read and fully understand the Safety Precautions before use.

Keep the User Manual with this thermometer for future reference.

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This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference.

(2) This device must accept any interference received, including interference that may cause undesired operation.

Notes:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions,may cause harmful interference to radio communications.However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Caution: Any changes or modifications to this device not explicitly approved by manufacturer could void your authority to operate this equipment.

Package Contents

No.	Name	Quantity
1.	Tenovi Infrared Thermometer	1
2.	Pouch	1
3.	Battery (AAA)	2
4.	User Manual	1

Safety Precautions

Read the following precautions carefully before using the thermometer.

ATTENTION
Take care of the temperature probe lens, which is fragile.
No service /maintenance while the equipment is in use.
Dispose of used batteries with care. To protect the environment, you are recommended to send the used batteries to a designated collection point.
The thermometer doesn't need recalibration.
- Make sure that the thermometer is not exposed to lint, dust, light (including sunlight), etc. - Please note the effects of degraded sensors that can degrade performance or cause other problems. - Make sure that the thermometer is not exposed to pets, pests. damaged, please stop using it.
If the thermometer is soiled or its infrared optical components is damaged, please stop using it. - The lay operator or lay responsible organization should contact the manufacturer or manufacturer's representative on the following issues: -assistance in setting up, using, or maintaining the equipment or system when needed, or to report unexpected operation or events.
The IR thermometer is identified as intended for consumer use. The patient is an intended operator.
- The effect that the following actions could be unsafe as applicable: use of accessories, detachable parts, and materials not described in the instructions for use or modification of the equipment.
- The hazards that can result from unauthorized modification of the equipment.

	The manufacture can provide the circuit diagram, component part list, description and calibration instructions to assist service personal for parts repair.
⃠	Do not subject the thermometer to vibration or impact.
⃠	Do not take body temperature readings within 20 minutes after you do physical exercises or get excited.
⃠	Do not use the thermometer for continuous temperature monitoring purposes.
⃠	Do not use the thermometer for purposes that are not specified in this User's Manual. Follow the instructions in the "Measurement Process" chapter and carefully operate the thermometer when measuring children's temperature.
⃠	Do not immerse the thermometer in water or other liquid. Clean and disinfect the thermometer as described in the "Cleaning and Disinfection" chapter.
⃠	Do not touch the tip of the temperature probe, on which a precise temperature sensor resides.
	Keep the temperature probe clean to make sure accurate readings.
	Before measuring the temperature from the ear canal, clean the earwax, if any.
	The ambient temperature must not be extremely high or low. To make sure accurate readings, keep the thermometer under room temperature for more than 30 minutes before use.
⃠	Do not use the thermometer under an ambient temperature higher than 40°C (104°F) or lower than 10°C (50°F), which is beyond the operating temperature range of the thermometer.
	Risk of pollution! The user is recommended to send the overdue thermometer to local garbage disposal site or send it back to us.
	2 AAA batteries of 1.5V are the only replaceable accessories of the thermometer. Please do not use the batteries of other voltages or specifications.

⚠ Warning
⃠ Do not force the temperature probe of the thermometer into an ear canal. Otherwise, the ear canal may get injured.
⃠ Do not use the thermometer if the ear is infected with otitis or suppuration.
Keep the thermometer out of the reach of children.
For accurate results, take measurements one minute apart.
The thermometer is not intended to diagnose or treat any health problem or disease. The measurement results are for reference only.
It is dangerous to make a self-diagnosis or self-treatment based on the obtained measurement results. For such purposes, please consult a doctor.
⃠ Do not charge an alkaline dry-cell battery or throw it in fire. Otherwise, the battery may explode.
⃠ Do not disassemble the thermometer or attempt to repair it. Otherwise, the thermometer may be damaged permanently.
⃠ Do not take temperature measurements on body parts other than forehead and ears. Otherwise, the temperature readings may be inaccurate.
⃠ During measurement, do not use a mobile phone or any other device that may cause electromagnetic interference.
⃠ Do not use the thermometer in an environment where flammable anesthetic mixture with air or with oxygen or nitrous oxide is available.
⃠ Do not open the battery cover when using the thermometer.

Symbols

Symbol	Description
	Type BF applied part.
⚠	Attention must be paid.

Symbol	Description
	The action is prohibited.
	Information about the manufacturer.
	Date of manufacture.
	Consult the instructions for use.
	Waste electrical materials should be sent to a dedicated collection point for recycling.
IP22	Degree of protection against the Ingress of water.
	Humidity
	Temperature limitation
	Atmospheric Pressure
 Warning	A personal injury or damage to the thermometer may occur if the thermometer is not used correctly.
 Attention	Inaccurate reading or damage to the thermometer may occur if the thermometer is not used correctly.
	Non-ionizing radiation

Body Temperature Basics

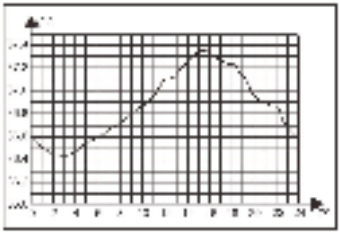
• The normal body temperature is a range.
• The normal range varies from person to person and can fluctuate throughout the day.
• The normal range also varies by body site. Therefore, measurements from different sites should not be compared directly.

To determine if an individual is experiencing an elevated body temperature and/or having a fever, it is critical to know the individual's normal body temperature when he/she is well. Take multiple readings to obtain the normal body temperature range and note the specific body site measured, for example: forehead or eardrum temperature.

Body Site	Normal Temperature Range
Forehead	34.7°C-37.3°C (94.5°F- 99.1°F)
Eardrum	35.8°C-38.0°C (96.4°F-100.4°F)
Mouth	35.5°C-37.5°C (95.9°F- 99.5°F)
Armpit	34.7°C-37.3°C (94.5°F- 99.1°F)
Rectal	36.6°C-38.0°C (97.9°F-100.4°F)

The normal body temperature range varies slightly with age and gender. Generally, newborns or children have higher body temperatures than adults, and adults have higher body temperatures than the elderly. Women's body temperatures are approximately 0.3°C (0.5°F) higher than men's.

Variation in body temperature



Normal body temperature fluctuates throughout the day and is also affected by external factors. The body temperature of an individual is the lowest between 2:00 a.m. and 4:00 a.m. and the highest between 2:00 p.m. and 8:00 p.m. An individual's body temperature typically changes by less than 1°C (1.8°F) each day.

Product Description

1) Overview

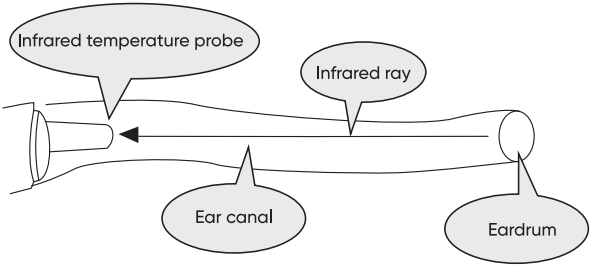
Infrared Thermometer TE-BTMI-A1 measures the body temperature based on the infrared energy emitted from the eardrum or the forehead. Users can quickly get measurement results after positioning properly the temperature probe in the ear canal or on the forehead.

2) Structure

The thermometer consists of a shell, an LCD, a measure button, a beeper, an infrared temperature sensor, and a Microprocessor.

3) Operating principle

The infrared temperature sensor collects infrared energy emitted by the eardrum or the skin surface. After being focused by a lens, the energy is converted into a temperature reading by the thermopiles and measurement circuits.



Features

01 Good safety
- Passive infrared receiving technology.

02 Easy operation
- Ergonomic design
- One button measurement

03 Quick measurement
- 1-second measurement

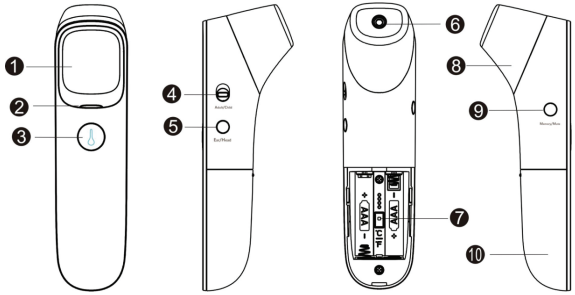
04 High accuracy
- Advanced infrared temperature sensor, with high sensitivity
- High accuracy with automatic temperature calibration

05 Diverse functions
- 20 readings recall
- Fever alert
- Switching between oC and oF
- Automatic power-off, power saving

06 Intended patient population
- Forehead mode applies to all age groups
- Ear mode applies to people above 3 months

07 Child mode
- This mode is recommended for people under 12 years of age.

Product Structure



(1) LCD display screen
(2) Indicator
(3) Power button / Measure button
(4) Adult mode / Child mode
(5) Mode button (Forehead / Ear / Object)
(6) Probe (take off the cover when measuring the ear temperature) (applied part)
(7) Unit switch button(℃/℉)
(8) Probe cover (put the cover on when measuring the forehead temperature)
(9) Memory button / Sound switch
(10) Battery cover

Display description

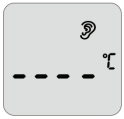
1. Object temperature mode
2. Forehead temperature mode
3. Child mode
4. Ear temperature mode
5. Mute / un-mute
6. Fahrenheit / Celsius degrees
7. Low battery
8. Memory recall
9. Temperature value

Sounds and indicator color instructions

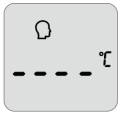
Range	Sounds	Indicator Color
Forehead temperature (Adult / Child)		
22.0°C-37.5°C/71.6°F-99.5°F	A long beep	Green
37.6°C-43°C/99.6°F-109.4°F	3 short double beeps	Red
Ear temperature (Adult / Child)		
34.0°C-37.5°C/93.2°F-99.5°F	A long beep	Green
37.6°C-43.0°C/99.6°F-109.4°F	3 short double beeps	Red
Object temperature		
0°C-100°C/32.0°F-212°F	A long beep	Green

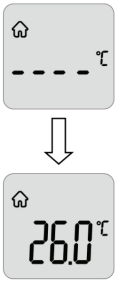
Note: When the forehead and the ear temperature is between 22.0°C/71.6°F and 37.6°C/99.5°F, the ear temperature is between 34.0°C/93.2°F and 37.5°C/99.5°F, there will be a long beep and a green indicator.This indicates that your body temperature is normal.
When the forehead and ear temperature is between 37.6°C/99.6°F and 43°C/109.4°F, there will be 3 short double beeps and a red indicator. This indicates that your body temperature is a little high. You may have a fever. Please consult your doctor if you are not sure.

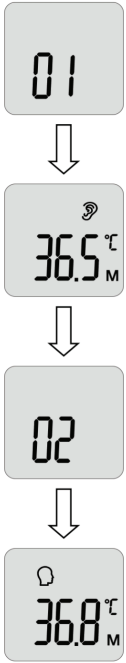
Display and Operating Instructions

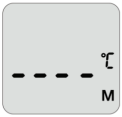
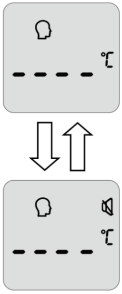
Screen Display	Operating Instructions Displayed State	Sound and Indicator Color
Measuring forehead temperature (Adult / Child)		
   Ear temperature for adult  Ear temperature for child	Take off the probe cover, press and release the **Power button** for 1 second to power on the thermometer. Press the **Mode button,** the thermometer enters the Ear mode. The symbol "**Ear**" is displayed on the screen. Switch to the adult or child measurement mode by switching the side adult/child button according to your measurement needs. Insert the temperature probe into a proper position in the ear canal. Press the **Measure button** to start a measure-ment.	See the table in the "Sounds and indicator color instructions" section.

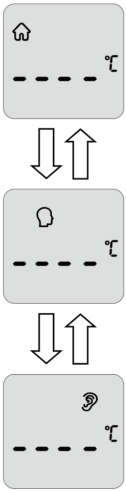
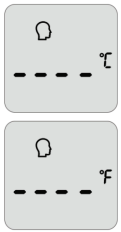
Display and Operating Instructions

Screen Display	Operating Instructions Displayed State	Sound and Indicator Color
Measuring forehead temperature (Adult / Child)		
   Forehead temperature for adult  Forehead temperature for child	Put the cover on the probe, press and release the **Power button** for 1 second to power on the thermometer. Press the **Mode button**, the thermometer enters the Forehead mode. The "**Head**" symbol is displayed on the screen. Switch to the adult or child measurement mode by switching the side adult/child button according to your measurement needs. Point the thermometer to the center of the forehead, about 1-3cm away from the skin surface. Press and release the **Measure button**. The temperature will be displayed on the screen.	See the table in the "Sounds and indicator color instructions" section.
Measuring Object temperature		

Screen Display	Operating Instructions Displayed State	Sound and Indicator Color
	Press and release the **Power button** for 1 second to power on the thermometer. Then press the **Mode button**. The thermometer enters the Object mode. The “House” symbol is displayed on the screen. Point the thermometer to the center of the object. Press and release the **Measure button**. The temperature will be displayed on the screen.	See the table in the “Sounds and indicator color instructions” section.
Out of the measuring range display		
	In Ear mode, a temperature reading of more than 43.0°C (109.4°F) In Forehead mode, a temperature reading of more than 43°C (109.4°F) In Object mode, a temperature reading of more than 100°C (212.0°F)	A long beep with the red indicator light.
	In Ear mode, a temperature reading of less than 34.0°C (93.2°F) In Forehead mode, a temperature reading of less than 22.0°C (71.6°F) In Object mode, a temperature reading of less than 0°C (32.0°F)	A long beep with the red indicator light.
Recall 20 memories		

Screen Display	Operating Instructions Displayed State	Sound and Indicator Color
	In a power-on state, press the **Memory button** to enter the memory mode. When the **Memory button** is released, **01** will be shown, followed by the recorded reading. Press the **Memory button** again for the next recorded data. **02** will be shown, followed by the recorded reading. A maximum of 20 temperature readings can be recalled. When the maximum number of records is exceeded, the earliest memory data will be overwritten. **Note:** **01** represents the latest data.	Silent, the indicator light is green.
No memory data / Clear memory data		

Screen Display	Operating Instructions Displayed State	Sound and Indicator Color
	The display is as shown , when there is no more data checked while recalling memories. Remove 2 dry batteries and after 10 seconds re-install the power to clear all memory data.	With a long beep, the green indicator light shows up and turn red, when device is powered on.
Switching between mute and un-mute		
	In the power-on state, press and hold the sound switch button for about 2 seconds to switch the sound on or off. When the sound is turned on, it will beep once and the mute symbol will be displayed when the sound is off. The "**Mute**" symbol is displayed in Mute mode and disappears in Un-mute mode.	When the sound is turned on, the green indicator light shows up with a long beep.
Switching between object temperature and body temperature		

Screen Display	Operating Instructions Displayed State	Sound and Indicator Color
	Press the **Mode button** to switch between object temperature and body temperature. Body temperature contains the Forehead temperature and Ear temperature.	The silent green indicator light
Switching between ˚F/ ˚C		
	In the power off state, remove the battery cover, and toggle the ℃/℉ unit in the battery compartment to switch the toggle device.	Silent

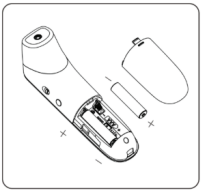
Screen Display	Operating Instructions Displayed State	Sound and Indicator Color
Er1	The ambient temperature is higher than 40.0°C (104.0°F) or lower than 10.0°C (50.0°F).	A long beep with the red indicator light.
ErC	An error occurs when data is being read from or written to the memory, or the temperature correction is not complete.	A long beep with the red indicator light.
	When the battery voltage is lower than 2.5V ± 0.1V, the low battery symbol will appear on the display. Please replace the batteries.	Silent.

Connecting the Thermometer to the Tenovi Gateway

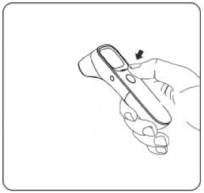
The thermometer has a built-in Bluetooth module that automatically will connect to the Tenovi Gateway. To properly use the thermometer with the Tenovi Gateway, please follow the instructions below:

Step 1: Plug in the Tenovi Gateway and wait for the LED ring to turn red.

Step 2: Install the battery into the thermometer.

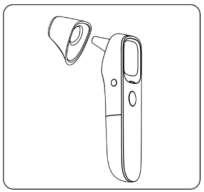


Step 3: Press the **blue button** on the Thermometer to turn it on.



Step 4: Point the thermometer at the center of your forehead and press the **blue button** again to take a measurement. The gateway should beep and turn green.

Measuring Ear Temperature



1. Take the probe cover off from the thermometer before measuring the ear temperature.
2. Press the Power button to power on the thermometer.

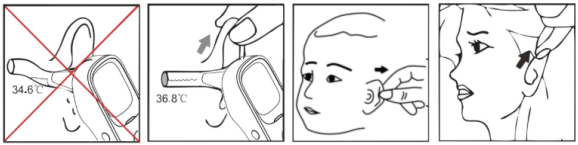
3. Press the **Mode button**, the thermometer enters the Ear mode. The "**ear**" symbol is displayed on the screen.

4. When measuring an adult, switch the button to the "**adult**" mode. When measuring children, switch the button to the "**child**" mode and the symbol baby is displayed on the screen.

5. Insert the temperature probe into the ear canal.

6. Press and release the **Measure button**. The ear temperature reading will be display on the screen instantly.

Note: Children under 1 year: Pull the ear straight back. Children aged 1 year to adult: Pull the ear up and back.



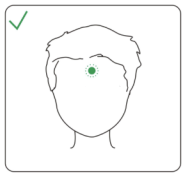
Do not force the thermometer into the ear canal. Otherwise, the ear canal may get injured.

When taking the temperature on an adult, gently pull the ear up and 19 back to make sure the ear canal is straight, so that the temperature probe can receive an infrared ray from the eardrum.

Be careful when taking temperature on a child, whose ear canal is small.

Measuring Forehead Temperature

1. Put the cover on the probe of thermometer.
2. Press the **Power button** to power on the thermometer.
3. Press the **Mode button**, the thermometer enters the Forehead mode. The "**head**" symbol is displayed on the screen.
4. When measuring adults, switch the button to the "**adult**" mode. When measuring children, switch the button to the "child" mode and the "**baby**" symbol is displayed on the screen.
5. Point the thermometer probe to the center of the forehead, about 1-3cm away from the skin surface.



6. **Press and release the Measure button** for 1 second. The temperature reading will be displayed on the screen instantly.
7. If no measurement is conducted, the thermometer will be powered off automatically in 10 seconds.

Measuring Object Temperature

1. Put the cover on the probe of thermometer.
2. Press the **Power button** to power on the thermometer.
3. Press the **Mode button**, the thermometer enters the **Object mode.** The "house" symbol is displayed on the screen.
4. Point the thermometer probe to the center of the object, about 1-3cm away from the object surface.
5. Press and release the **Measure button** for 1 second. The temperature reading will be displayed on the screen instantly.
6. If no measurement is conducted, the thermometer will be powered off automatically in 10 seconds.

After a measurement

1. After each measurement, you can enter the recall mode and query earlier temperature readings. For more details, see "Recall 20 memories" in the preceding table.

2. After each measurement, clean the temperature probe with a soft cloth, and put the thermometer in a dry and well-ventilated place.

Notes:

1. The thermometer is suitable for an indoor environment without strong air convection (for example, winds from a fan, an air-conditioner, or a heater) between the thermometer and the person.

2. Make sure that the ear canal is clean and dry before starting a measurement. It is recommended to clean the ear canal with a cotton swab if any dirt exists. Otherwise, the temperature probe may be polluted and temperature readings may be inaccurate.

3. Do not hold the thermometer for a long time, because it is sensitive to the ambient temperature.

4. Make sure the probe is free of foreign matters before use.

5. Make sure there is no sweat or hair covering the forehead before taking a forehead temperature otherwise, the result could be incorrect.

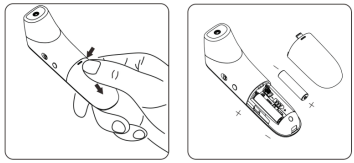
6. No intense emotion or strenuous exercises before measuring.

7. After measuring the data once, you should wait for the indicator to turn off and measure the next data.

Replacing Batteries

1. Slide the battery cover off along the marked direction and take it off.

2. Insert the two AAA batteries into the compartment according to the stated polarities.



⚠ Make sure that the batteries are installed correctly. Otherwise, the thermometer may be damaged.

⚠ If the low-battery symbol is displayed on the screen, replace the batteries.

⚠ Batteries of a same type should be used. Dispose the used batteries in accordance with the local environmental policies.

⚠ The thermometer is shipped with batteries. First open the battery cover, then remove the insulating piece.

Cleaning and Disinfection

Recommended detergents:
* Medical detergents;
* Home use mild detergents; Cleaning steps:
(1) Take the batteries out before cleaning.
(2) Clean the temperature probe with a soft cloth. Clean the lens of the temperature probe with a cotton swab.
(3) Wipe the thermometer body with a slightly damp soft cloth.

⚠ Keep water out off the lens during the cleaning process. Otherwise, the lens may be damaged.

⚠ The lens may be scratched if it is cleaned with a hard object, which might result in inaccurate readings.

⚠ Do not clean the thermometer with corrosive cleansers. During the cleaning process, do not immerse any part of the thermometer into liquid, or allow liquid to penetrate the thermometer.

Disinfection

Recommended disinfectants:
* Isopropyl alcohol solution (concentration: 70%)
* Medicinal alcohol (concentration: 75%)
* Sodium hypochlorite solution (concentration: 3%)

Disinfecting steps:

1) Wet the clean soft cloth with a small quantity of disinfectant, wipe the thermometer and quickly dry it.
2) Disinfect the thermometer body and the area around the temperature probe with a cloth slightly moistened with 75% medical alcohol.
Do not use hot steam or ultraviolet radiation for disinfection.
Otherwise, the thermometer may be damaged or quickly aged.
Clean and disinfect the thermometer under the temperature of +10°C~+40°C(50°F-104°F), the relative humidity of 15%~85%RH (no condensation) and the barometric pressure of 86kPa~106kPa.

Maintenance

Preventive inspection & maintenance period
1) Ensure the safety of thermometer, and check whether it has potential safety hazards in normal use each week, e.g. whether the lens is broken, the shell has cracks and the sensing head is polluted. Do not use the thermometer with potential safety hazard. Clean the thermometer if not used for a long time.

2) After each use, clean the temperature probe as described in the "Cleaning and Disinfection" chapter.

3) Store the thermometer in a dry, dust-free, and well-ventilated place. Make sure that the thermometer is not exposed to sunlight. Make sure that the storage and transportation environments meet the requirements.

4) Check regularly whether safety risks exist.

5) Remove the batteries if the thermometer will not be used for more than two months.

Troubleshooting

Problem	Possible Cause	Solution
The thermometer fails to power on.	Low battery	Change the batteries.
	Polarities of the batteries are reversed.	Make sure that the batteries are installed correctly.
	The thermometer is damaged.	Contact the manufacturer.
"Er1" is displayed.	The ambient temperature is lower than 10°C (50.0°F) or higher than 40°C (104°F).	Take a measurement under an ambient temperature between 10°C (50.0°F) and 40°C
The temperature reading is lower than the typical body temperature range.	The lens of the temperature probe is dirty.	Clean the lens using a cotton swab.
	The thermometer probe is not aligned to the eardrum.	Reposition the thermometer probe so that it is aligned to the eardrum.
	The thermometer is used within 30 minutes after being taken from a cold environment.	Wait for more than 30 minutes after the thermometer is moved into the measurement environment.
The temperature reading is higher than the typical body temperature range.	The temperature probe is damaged.	Contact the manufacturer.

Specifications

Product Name	Tenovi Infrared Thermometer
Product Model	TE-BTMI-A1
Power Supply Mode	Internal power supply
Operating Voltage	DC 3V
Battery Model	AAA x 2
Battery Life	Alkaline dry battery for around 20,000 measurements
Operating Mode	Continuous operating
Display	Segment LCD
Measure time	About 1 second
Latency Time	About 3 seconds
Measuring Range	Forehead mode: 22.0°C–43.0°C (71.6°F–109.4°F) Ear mode: 34.0°C–43.0°C (93.2°F–109.4°F) Object mode: 0.0°C–100.0°C (32.0°F–212.0°F)
Accuracy (Laboratory)	Forehead: ±0.2°C (36.0°C-39.0°C) ; ±0.3°C (22.0°C-36.0°C / 39.0°C~43.0°C); Ear mode: ±0.2°C (36.0°C-39.0°C) ; ±0.3°C (34.0°C-36.0°C / 39.0°C~43.0°C); Object mode: ±1.0°C/±2.0°F
Accuracy(Clinical)	±0.3°C (±0.6°F)
Resolution	0.1°C (0.1°F)
Measuring site	Ear canal, Forehead (keep distance 1~3 cm from forehead), Object (point at center of the object being measured)
Reference body site	Armpit
Mode of operation	Adjusted mode
Software version	1.0.0
Memory	20 temperature readings
Low-battery Alert	The low-battery symbol is displayed if the power voltage is lower than 2.5 V±0.1V
Automatic Power-off	The thermometer automatically powers off if it is not used in 10±1 seconds.
Outer dimensions	155.2×39.6×49.1mm
Weight (g)	Thermometer (with batteries): 101 g
Service life	2 years

Specifications

Manufacturing date	See the label
Operating Environment	Temperature: 10°C~ 40°C (50°F–104°F)
Humidity:	v15%–95% RH, non-condensing
	Atmospheric pressure: 86–106 kPa
Storage	Temperature: -20°C to 50°C (-4°F–122°F)
Transportation	Humidity:<95 RH, non-condensing
	Atmospheric pressure: 50–106 kPa

The infrared thermometer has been tested and conforms to the standard ASTM E1965-98. ASTM laboratory accuracy requirements in the display range of 96.8°F to102.2°F (36°C-39°C) for ear canal IR thermometers is ±0.4°F (±0.2°C). Note that for mercury-in-glass and electronic thermometers, the requirement per ASTM Standards E667-86 and E1112-86 is ±0.2°F (±0.1°C).

Security Class

Type of protection against electric shock: internally powered equipment.
Degree of protection against electric shock: Type BF applied part.

- Degree of protection against ingress of water:IP22
- Safety degree of using in flammable anesthetic gas blending with air, oxygen or nitrous oxide: Non-AP/APG
- No application parts of the thermometer prevents defibrillation charge effect.
- No application parts of the thermometer output signal.
- The thermometer is impermanent installed device.

Storage and Transportation

The thermometer can be transported using general transportation tools. Severe vibration, shock, or rain must be avoided during transportation. The thermometer must be packaged and then stored in a well-ventilated room without corrosive gas.

EMC Information–Guidance and Manufacture's

Declaration

1* WARNING: Use of this equipment adjacent to or stacked with other equipment should be avoided because it could result in improper operation. If such use is necessary, this equipment and the other equipment should be observed to verify that they are operating normally."

2* 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 improper operation."

3* WARNING: Portable RF communications equipment (including peripherals such as antenna cables and external antennas) should be used no closer than 30 cm (12 inches) to any part of the ME equipment, including cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment could result."

Table 1

Declaration – electromagnetic emission	
Emissions test	Compliance
RF emissions CISPR 11	Group 1
RF emissions CISPR 11	Class B
Harmonic emissions IEC 61000-3-2	Not applicable
Voltage fluctuations/	Not applicable
flicker emissions IEC 61000-3-3	

Table 2

Declaration – electromagnetic immunity		
Immunity test	IEC 60601 test level	Compliance level
Electrostatic discharge (ESD) IEC 61000-4-2	±8 kV contact ±2 kV, ±4 kV, ±8 kV, ±15 kV air	±8 kV contact ±2 kV, ±4 kV, ±8 kV, ±15 kV air
Electrical fast transient/burst IEC 61000-4-4	± 2 kV for power supply lines ± 1 kV for input/output lines	Not applicable
Surge IEC 61000-4-5	IEC 61000-4-5 ± 0.5kV, ± 1 kV line(s) to lines ± 0.5kV, ± 1 kV, ± 2 kV line(s) to earth	Not applicable

Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	0 % UT; 0.5 cycle At 0°, 45°, 90°, 135°, 180°, 225°, 270°and 315° 0 % UT; 1 cycle and 70 % UT; 25/30 cycles Single phase: at 0° 0 % UT; 250/300 cycles	Not applicable
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8v	30 A/m	30 A/m
NOTE: UT is the a.c. mains voltage prior to application of the test level.		

Table 3

declaration - electromagnetic immunity		
Immunity test	IEC 60601 test level	Compliance level
Conducted RF IEC 61000-4-6	3V 0.15 MHz to 80 MHz 6 V in ISM bands between 0.15 MHz and 80 MHz	Not applicable
Radiated RF IEC 61000-4-3	10V/m 80 MHz to 2.7 GHz	10V/m

Table 4

declaration - IMMUNITY to proximity fields from RF wireless communications equipment				
Immunity test	IEC 60601 test level		Compliance level	
	Test frequency	Modulation	Maximum power	Immunity level

Radiated RF IEC 61000-4-3	385 MHz	**Pulse Modulation: 18Hz	1.8 W	27 V/m	27 V/m
	450 MHz	*FM+ 5Hz deviation: 1kHz sine	2 W	28 V/m	28 V/m
	710 MHz 745 MHz 780 MHz	**Pulse Modulation: 217Hz	0.2 W	9 V/m	9 V/m
	810 MHz 870 MHz 930 MHz	**Pulse Modulation: 18Hz	2 W	28 V/m	28 V/m
	1720 MHz 1845 MHz 1970 MHz	**Pulse Modulation: 217Hz	2 W	28 V/m	28 V/m
	2450 MHz	**Pulse Modulation: 217Hz	2 W	28 V/m	28 V/m
	5240 MHz 5500 MHz 5785 MHz	**Pulse Modulatio n: 217Hz	0.2 W	9 V/m	9 V/m
Note* - 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. Note** - The carrier shall be modulated using a 50 % duty cycle					
Square wave signal.					

Warranty and After-Sale Service

The device is under warranty for one year from the date of purchase.
The batteries, the packaging, and any damage caused by improper use are not covered by the warranty.
Excluding the following user-caused failures:
1.Failure resulting from unauthorized disassembly and modification. 2.Failure resulting from an unexpected dropping during application or transportation.
3.Failure resulting from not following the instructions in the user's manual

tenovi

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