Introduction

The EET-302 thermometer is specifically designed for safe use in the ear canal. The Infrared Ear Thermometer is a device capable of measuring body temperature by detecting the intensity of infrared light emitted from the human ear canal. It converts the measured heat into a temperature reading displayed on the LCD screen. When properly used it will quickly and accurately assess your temperature.

Important Notice:

1. This thermometer is intended for home use only. It’s not meant to replace a visit to the doctor. Please consult with a doctor if you have health concerns.
2. There is no gender or age limitation for using the infrared ear thermometer.
3. Always attach a new, clean probe cover for each body temperature reading.
4. Do not expose the thermometer to temperature extremes (below -13°F/-25°C or over 131°F/55°C) nor excessive humidity (>95%RH).
5. This thermometer must only be used with this brand thermometer probe covers.
6. Keep the battery away from children.

Please read all instructions carefully and thoroughly before using this product.
1. Probe Cover
2. Probe
3. TEST Button
4. (Button
5. Battery Cover

The Infrared Ear Thermometer measures core body temperature, which is the temperature of a body's vital organs. (See Figure 1) Temperatures taken in the ear canal accurately reflect core body temperatures since the eardrum is in the cranial cavity and is not affected by the environment. The eardrum shares the same blood supply with the hypothalamus (part of the brain). Therefore, body temperature changes are reflected sooner in the ear than they are in other parts of the body.

**Basic Functions**

<table>
<thead>
<tr>
<th>Function</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real Time Clock</td>
<td>The real time clock will be recorded with the memory function and help you to recognize each measurement result. Please see the real time clock setting instruction to learn how to set up the time prior to first use.</td>
</tr>
<tr>
<td>Room Temperature</td>
<td>Suitable ambient room temperature is important, and the thermometer will always let you know the temperature of your surroundings. Please see the Illustration For Use section to learn how to get the correct room temperature.</td>
</tr>
<tr>
<td>Ear Temperature Mode</td>
<td>The thermometer has been designed for practical use. It’s not meant to replace a visit to the doctor. Please also remember to compare the measurement result to your regular body temperature. Please see the Illustration For Use section to learn how to measure the body temperature.</td>
</tr>
<tr>
<td>Object Temperature Mode</td>
<td>The object mode shows the actual surface temperatures, which is different from the body temperature mode. It can help you to monitor if the object temperature is suitable for the baby or patient, for example the baby's milk. Please see the Illustration For Use section to learn how to measure the object temperature.</td>
</tr>
<tr>
<td>Fever Alarm</td>
<td>If a body temperature &gt; 100°F (37.8°C) while in ear mode, there will be a long beep sound followed by three short beep sounds to warn the user of potential fever.</td>
</tr>
<tr>
<td>Memory Mode</td>
<td>The last 10 readings are saved and stored in memory under body mode and object mode respectively for ear and object measurements. Each recording also records the measurement date/time/mode.</td>
</tr>
<tr>
<td>°C/°F Switch</td>
<td>Please see the Selecting A Temperature Scale section to learn how to change between Celsius and Fahrenheit.</td>
</tr>
<tr>
<td>Probe Cover Automatic Detection</td>
<td>Automatic detection function, convenient for testing with or without probe cover.</td>
</tr>
</tbody>
</table>

**LCD Display Introduction**

- Temperature in Room temperature mode or time in Time mode
- AM and PM sign in Time mode
- Room temperature sign
- Object temperature mode
- Probe cover sign
- Ear temperature mode
- Memory mode
- Unit sign: °F/°C
- Low voltage sign
- Fever Indictor

**Figure 1**

Vital Organs
Ear Thermometer Advantages

Clinical studies have shown that the ear is an excellent site for temperature measurement because temperatures taken in the ear reflect the body’s core temperature. Body temperature is regulated by the hypothalamus, which shares the same blood supply as the tympanic membrane. Changes in core body temperature are usually seen sooner at the tympanic membrane than at other sites, such as the rectum, mouth or under the arm. Advantages of taking temperatures at the ear versus other sites:

- **Axillary temperature readings only reflect skin temperature which may not indicate the internal body temperature.**
- **Rectal temperatures often lag significantly behind internal body temperature changes, especially at times of rapidly changing temperatures.**
- **Oral temperatures are often influenced by eating, drinking, thermometer placement, breathing through the mouth, or the inability of the person to close their mouth completely.**

Normal Body Temperature

A person’s normal temperature range tends to decrease with age. The following table shows normal ranges by age:

<table>
<thead>
<tr>
<th>Age</th>
<th>Ear Temperature (°F)</th>
<th>Oral Temperature (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2 Years</td>
<td>97.5 - 100.4 °F</td>
<td>36.4 - 38.0 °C</td>
</tr>
<tr>
<td>3-10 Years</td>
<td>97.0 - 100.0 °F</td>
<td>36.1 - 37.8 °C</td>
</tr>
<tr>
<td>11-65 Years</td>
<td>96.6 - 99.7 °F</td>
<td>35.9 - 37.6 °C</td>
</tr>
<tr>
<td>Over 65 Years</td>
<td>96.4 - 99.5 °F</td>
<td>35.8 - 37.5 °C</td>
</tr>
</tbody>
</table>

Normal ranges vary from person to person and can be influenced by many factors such as: time of day, level of activity, medications and gender.

**Remark:** The normal temperature range of ear testing is 96.4-100.4°F (35.8-38.0°C)

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Real Time Clock Setting

When using the thermometer for the first time please set the parameters of the thermometer. While the thermometer is off press and hold the **button** for 3 seconds to enter into the setting mode.

1. **Set the time format**
   - The device can display the time in either an AM/PM (12-hour) or a 24:00(24-hour) format. Press and release **TEST BUTTON** to select the format. With the preferred time format on the display, press **button**, then the Hour figure will flash automatically.

2. **Set the hour**
   - Press and release the **TEST BUTTON** to advance one hour until the correct hour appears. After the hour is set, press **button**, then the Minute figure will flash automatically.

3. **Set the minute**
   - Press and release the **TEST BUTTON** to advance one minute until the correct minute appears. After the minute is set, press **button**, then the Year figure will flash automatically.

4. **Set the month**
   - Press and release the **TEST BUTTON** to advance one month until the correct month appears. After the month is set, press **button**, then the Date figure will flash automatically.

5. **Set the date**
   - Press and release the **TEST BUTTON** to advance one day until the correct month appears. After the day is set, press **button** to exit the setting mode.
**Get the room temperature**

1. When the thermometer is turned on, room temperature will be shown on the screen with the thermometer icon. Room temperature, date, and time will alternately display every 3 seconds. (See figure 1)

2. For room temperature, the thermometer should be placed on a table and should avoid direct sunlight or air conditioner flow.

3. The room temperature can be referenced 5 minutes after taking the temperature.

![Figure 2]

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**To measure ear temperature:**

1. To achieve accurate readings make sure a new, clean probe cover is in place before each measurement. Place a new probe cover on the probe firmly, making sure the probe and the inner portion of the probe cove fit snugly.

2. Press the **BUTTON**, the display is activated and shows all segments. After self-checking Figure 3 appears on the display screen with beeps so you can start a new measurement. If an error message appears, it means the thermometer is not ready for a measurement.

   a. The probe cover icon indicates taking the ear temperature with the probe cover when present, and vice versa.

   b. To avoid the risk of cross contamination it is recommended that you always measure the ear temperature with a probe cover.

![Figure 3]

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**To measure object temperature:**

1. First eject the probe cover.

2. Aim the thermometer probe at the center of the object you want to measure at a distance of 1 to 2 cm (around half inch).

3. Press the **BUTTON** to turn on the thermometer, you can take the object temperature after hearing two beep sounds. (see figure 5)

**Remarks:**

This mode shows the actual, unadjusted surface temperatures, which is different from the body temperature.

![Figure 5]

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**How to switch between ear mode and object mode:**

While the thermometer is on, press and hold the Power **BUTTON** and the Test Button for 1 second to switch between ear and object modes.
Illustration For Use

After measurement:
1. Power off: Device will automatically shut off if left idle for more than 1 minute to extend battery life.
2. Clean the probe after each use to ensure an accurate reading, and to avoid cross contamination if no probe was used. (See the section of Care and cleaning for details.)

Fever indicator:
In Ear mode:
1. If the temperature reading is below 100.0°F (37.8°C), a happy face ☺️ will be displayed next to the reading.
2. If the temperature reading is 100.0°F (37.8°C) or above, a sad face 😞 will be displayed next to the reading.

BackLight:
The display will only be lit GREEN for 3 seconds when the unit is ready for a measurement or if a measurement is completed. The backlight design is beneficial for reading in poor light condition.

Temperature Taking Hints

1. The right ear reading may differ from the reading taken at the left ear. Therefore, always take the temperature in the same ear.
2. The ear must be free from obstructions or excess earwax buildup to take an accurate reading.
3. External factors may influence ear temperatures such as:
   - Recently laying on one ear or the other
   - had their ears covered
   - been exposed to very hot or very cold temperatures
   - been recently swimming or bathing in these cases, leave the situation and wait 20 minutes prior to taking a temperature.
4. Anyone wearing hearing aids or ear plugs should remove the devices and wait 20 minutes prior to taking a temperature.
5. When using the thermometer on infants under age 1, pull the ear up to make sure the sensor faces the eardrum. (See Figure 6)

Memory Mode

6. When using the thermometer on individuals over the age of 1, pull the ear back to make sure the sensor faces the eardrum. (See Figure 7)
7. Do not touch the probe window. A cotton swab and medicinal alcohol may be used to clean the sensor window.
8. If the thermometer is stored in a significantly different environment that the testing location, place it in the testing location for approximately 30 minutes prior to testing.

Figure 6

Figure 7

Figure 8

Figure 9
Selecting A Temperature Scale

1. Temperature readings are available in the Fahrenheit (°F) or Celsius (°C) scale.
2. With the unit off, press and hold the TEST BUTTON for 3 seconds to enter into unit changing mode.
3. Press and release TEST BUTTON to select the unit.
4. When the preferred unit is on the display, press OK BUTTON to exit the unit changing mode and the chosen unit is saved.

![Figure 10]

Care And Cleaning

1. Probe covers are intended for single use only! Absent, damaged, perforated, or soiled probe covers can lead to inaccurate temperature readings.
2. The probe window must be kept clean, dry, and undamaged at all times to ensure accurate readings. The accuracy of temperature readings can be affected by damage to the probe window, or the presence of dirt and ear wax on the probe window.
3. Fingerprints, earwax, dust and other soiling compounds reduce transparency of the window and result in lower temperature readings. If the thermometer is accidentally placed in the ear without a probe cover installed, the window must be cleaned immediately.
4. The probe window is the most delicate part of the thermometer. To safely clean the window, gently wipe its surface with a cotton swab slightly moistened with isopropyl alcohol and immediately wipe dry with a clean cotton swab. After cleaning, allow at least 5 minutes drying time before taking temperatures.
Note: Do not use any chemical other than isopropyl alcohol to clean the probe window.
5. Use a soft, dry cloth to clean the thermometer display and exterior.

Care And Cleaning

6. The thermometer is not waterproof. Do not submerge the unit in water when cleaning.
7. Store thermometer and probe cover in a dry location, free from dust and contamination and away from direct sunlight.
8. Periodically clean and disinfect the device following use to prevent patient cross infection. -Use a soft cloth slightly moistened with a 70% isopropyl alcohol solution to disinfect the thermometer and probe. Do not use abrasive cleaners.
9. Ensure that children do not use the instrument unsupervised; some parts are small enough to be swallowed.
10. Do not remove or modify the equipment without permission.
11. Strong electromagnetic fields may interfere with the proper operation of the thermometer. Do not use this thermometer close to sources of strong electromagnetic radiation.

Battery Replacement

1. Replace battery when " " appears in the upper right corner of LCD display. (See Figure 11)
2. Slide battery cover down as shown in Figure 12.
3. Remove battery and install 2 new AAA alkaline batteries as shown in Figure 13.
4. Slide battery cover back on.

![Figure 11]

![Figure 12]

![Figure 13]
Specifications

| Measuring range | Ear mode: 82.4°F~109.4°F (28.0°C~43.0°C)  
|                 | Object mode: -4°F~121°F (-20°C~100°C)  
|                 | Room temperature: 32°F~122°F (0°C~50°C) |
| Measuring site  | Ear canal (Ear Mode) |
| Reference body site | Oral (This thermometer converts the ear temperature to display its "oral equivalent.") |
| Operation mode  | Ear mode (Adjust mode) |
| Laboratory accuracy | Ear mode: ±0.4°F (0.2°C) during 95.9°F~107.6°F (35.5°C~42.0°C)  
|                  | at 59.0°F~95.0°F (15°C~35°C) operating temperature range ±0.5°F (0.3°C) for other measuring and operating temperature range  
|                  | Object mode: ±1% or ±4°F (2°C) whichever is greater  
|                  | Room temperature: ±4°F (±2°C) |
| Display resolution | 0.1°F or 0.1°C |
| Measure time     | Approximately one second |
| Operating temperature range | Ear/Object mode: 50°F~104°F (10°C~40°C), 15%~85%RH, non-condensing  
|                  | Storage and Transport temperature range: -13°F~131°F (−25°C~55°C), 15%~95%RH, non-condensing  
| Clinical accuracy | Clinical bias: 0.14°F (0.08°C)  
|                  | Clinical repeatability: 0.22°F (0.12°C)  
|                  | Limits of agreement: 1.27°F (0.71°C) |
| Shock            | Withstands drop of 3 feet |
| Dimension        | 155 x 38 x 47 mm |
| Weight           | Approximately 83 grams (with batteries) |
| Battery          | DC3V (2×AAA battery) |
| Battery life     | Approx. 1 year/3000 readings |
| Ingress protecting rating | IP22 |

Troubleshooting

<table>
<thead>
<tr>
<th>Error message</th>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Er1</td>
<td>Measurement before thermistor is ready</td>
<td>Take a measurement until ø or appears on the display.</td>
</tr>
<tr>
<td>Er2</td>
<td>The ambient temperature is not within the range between 50°F and 104°F (10°C~40°C).</td>
<td>Place the thermometer in a room for at least 30 minutes at room temperature between 50°F and 104°F (10°C~40°C).</td>
</tr>
<tr>
<td>Er3</td>
<td>The thermistor is placed incorrectly or unsteady.</td>
<td>Read Illustration For Use thoroughly and take a new temperature measurement.</td>
</tr>
<tr>
<td>Er4</td>
<td>The thermistor shows a rapid ambient temperature change.</td>
<td>Allow the thermistor to rest in a room for at least 30 minutes at room temperature: between 50°F and 104°F (10°C~40°C).</td>
</tr>
<tr>
<td>Er5</td>
<td>The thermistor is not functioning properly.</td>
<td>Unload the battery, wait for 1 minute and repower it. If the message reappears, contact the retailer for service.</td>
</tr>
</tbody>
</table>

Calibration

The thermometer is initially calibrated at the time of manufacture. If the thermometer is used according to the instructions, periodic re-calibration is not required. However, we recommend checking calibration every two years or whenever clinical accuracy of the thermometer is in question. If the thermometer is still not functioning properly, please send the complete device to the dealers or manufacturer.

The above recommendations do not supersede the legal requirements. The user must always comply with legal requirements for the control of the measurement, functionality, and accuracy of the device which are required by the scope of relevant laws, directives or ordinances where the device is used.

ASTM laboratory accuracy requirements in the display range of 96.8 to 102.2°F (36.0 to 39.0°C) for IR thermometers is ±0.4°F (±0.2°C), whereas for mercury-in-glass and electronic thermometers, the requirement per ASTM Standards E 667-86 and E 1132-86 is ±0.2°F (±0.1°C).

- **Type BF applied part**
- **Direct Current**
- **Disposal of this product and used batteries should be carried out in accordance with the national regulations for the disposal of electronic products.**
- **Consult Accompanying Documents**
- **LOT**
- **Batch Code**
The thermometer has a limited one year warranty. Do not attempt to disassemble or repair the thermometer by yourself. Should service be required during or after the warranty period you must contact the seller. Repackage the thermometer carefully in its original packaging or securely package it to avoid damage during shipping. Include the original sales slip indicating the date of purchase, a note describing the problem, and your return address. Send the thermometer prepaid and insured. Contact the manufacturer or the manufacturer’s representative:
- for assistance, if needed, in setting up, using or maintaining the thermometer;
- to report unexpected operation or events.

This appliance conforms to the following standards: ASTM E1965-98 Standard Specification for Infrared Thermometers for Intermittent Determination of Patient Temperature, ISO 80601-2-56 Medical electrical equipment — Part 2-56: Particular requirements for basic safety and essential performance of clinical thermometers for body temperature measurement, IEC 60601-1-11 Medical electrical equipment — Part 1-11: General requirements for basic safety and essential performance — Collateral Standard: Requirements for medical electrical equipment and medical electrical systems used in the home healthcare environment and complies with the requirements of IEC 60601-1-2 (EMC), AAMI/ANSI ES60601-1 (Safety) standards. And the manufacturer is ISO 13485 certified.

Thermometer is warranted by manufacture to be free from defects in material and workmanship under normal use and service for a period of one year from the date of delivery to the first user who purchases the instrument. This warranty does not cover batteries, damage to the probe window, or damage to the instrument caused by misuse, negligence or accident, and extends to only to the first purchaser of the product. Additionally this warranty becomes void, if the thermometer is operated with anything other than this brand thermometer probe covers.

Caution: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user authority to operate the equipment.

Note: 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. 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 and correct the interference by one or more of the following measures:
- Reorient or relocate the receiving antenna.
- Increase the distance between the equipment and the receiver.
- Connect the equipment to 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.

The device satisfies the EMC requirements of the international standard IEC 60601-1-2. The requirements are satisfied under the conditions described in the table below. The device is an electrical medical product and is subject to special precautionary measures with regard to EMC which must be published in the instructions for use. Portable and mobile HF communications equipment can affect the device. Use of the unit in conjunction with non-approved accessories can affect the device negatively and alter the electromagnetic compatibility. The device should not be used directly adjacent to or between other electrical equipment.
### Electromagnetic Compatibility Information

#### Table 1
**Guidance and declaration of manufacturer-electromagnetic emissions**

<table>
<thead>
<tr>
<th>Emissions test</th>
<th>Compliance</th>
<th>Electromagnetic environment guidance</th>
</tr>
</thead>
<tbody>
<tr>
<td>RF emissions CISPR 11</td>
<td>Group 1</td>
<td>The device uses RF energy only for its internal function. Therefore, its emissions are very low and are not likely to cause any interference in nearby electronic equipment.</td>
</tr>
<tr>
<td>RF emissions CISPR 11</td>
<td>Class B</td>
<td>The device is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.</td>
</tr>
<tr>
<td>Harmonic emissions IEC 61000-3-2</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Voltage fluctuations/flicker emissions IEC 61000-3-3</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

#### Table 2
**Guidance and declaration of manufacturer-electromagnetic immunity**

<table>
<thead>
<tr>
<th>IMMUNITY test</th>
<th>IEC 60601 test level</th>
<th>Compliance level</th>
<th>Electromagnetic environment guideline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrostatic discharge (ESD) IEC 61000-4-2</td>
<td>± 6 kV contact</td>
<td>± 6 kV contact</td>
<td>Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 40%.</td>
</tr>
<tr>
<td>Electrostatic transient/burst IEC 61000-4-4</td>
<td>± 8 kV air</td>
<td>± 8 kV air</td>
<td></td>
</tr>
<tr>
<td>Surge IEC 61000-4-5</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Voltage dips, short interruptions and voltage variations on power supply lines IEC 61000-4-11</td>
<td>&lt; 5% UT (+95% dip in UT) for 0.5 cycle 40% UT (60% dip in UT) for 5 cycle 70% UT (30% dip in UT) for 35 cycle &lt;5% UT (+95% dip in UT) for 5 sec</td>
<td>N/A</td>
<td>Power frequency magnetic fields should be at levels characteristic of a typical commercial or hospital environment.</td>
</tr>
<tr>
<td>Power frequency (50/60 Hz) magnetic field IEC 61000-4-8</td>
<td>3 A/m</td>
<td>3 A/m</td>
<td></td>
</tr>
</tbody>
</table>

#### Table 3
**Guidance and declaration of manufacturer-electromagnetic immunity**

<table>
<thead>
<tr>
<th>IMMUNITY test</th>
<th>IEC 60601 test level</th>
<th>Compliance level</th>
<th>Electromagnetic environment guidance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conducted RF IEC 61000-4-6</td>
<td>3 V/m 350 kHz to 80 MHz</td>
<td>N/A</td>
<td>Portable and mobile RF communications equipment should be used no closer to any part of the device, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance:</td>
</tr>
<tr>
<td>Radiated RF IEC 61000-4-3</td>
<td>3 V/m 80 MHz to 2.5 GHz</td>
<td>3 V/m</td>
<td></td>
</tr>
</tbody>
</table>

#### Table 4
**Recommended separation distances between portable and mobile RF communications equipment and the device**

<table>
<thead>
<tr>
<th>Rated maximum output power of transmitter (W)</th>
<th>Separation distance according to frequency of transmitter (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>80 MHz to 200 MHz</td>
</tr>
<tr>
<td>0.01</td>
<td>0.12</td>
</tr>
<tr>
<td>0.1</td>
<td>0.38</td>
</tr>
<tr>
<td>1</td>
<td>1.3</td>
</tr>
<tr>
<td>10</td>
<td>3.8</td>
</tr>
<tr>
<td>100</td>
<td>12</td>
</tr>
</tbody>
</table>

For transmitters rated at a maximum output power not listed above, the recommended separation distance in metres (m) can be estimated using the equation applicable to the frequency of the transmitter, w here P is the maximum output power rating of the transmitter (W) according to the transmitter manufacturer. **NOTE 1: At 80 MHz and 860 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.