



## Infrared Forehead/Ear Thermometer

Thanks for buying and using this product, please read this manual carefully before use.



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CE 0197

User manual

PG-IRT1603











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## Safety precautions

- The warning signs and illustrations indicated in the manual are intended to enable you to use the product safely and correctly and to prevent any harm to you and others. Warning signs, illustrations and their meanings are as follows.

 **Caution: please refer to attached file.**

Legend	
	General rules and guidelines. The left graph shows general compulsion.
	Warning symbol.
	Prohibited. This symbol tells you what not to do. it means general prohibition in left picture.
	Do not disassemble.
	Type BF Applied part
	Water resistance, moisture resistance.
	Please read the manual carefully before use.
	The package of this unit can comply with the requirements of green environmental protection.
	The material of product or product itself is made of renewable material so that we can recycle this product, which benefits the environment and our earth.
	Do not discard / Do not throw in trash.
IP Classification: IP22	

 <b>Warning</b>	
<ul style="list-style-type: none"> <li>•Please ask professional doctors to explain the measured value of body temperature.</li> <li>•The product is only used for human body temperature measurement.</li> <li>•Please do not use this product for purposes other than body temperature measurement.</li> <li>•Do not use mobile phones close to this product.</li> <li>•Please do not use equipment that generates electromagnetic fields near the product.</li> </ul>	
<ul style="list-style-type: none"> <li>• Please do not disassemble or repair this device by yourself.</li> <li>• Please do not bend or stretch the device.</li> <li>• Please do not impact or drop this product.</li> </ul>	

### Warning items

- This unit is only used for human body temperature measurement without use of disease diagnosis; it cannot be used for emergency and continuous measurement in surgery.
- Parental guidance required for children under the age of twelve. Children's temperature should only be measured under the guidance of an adult.
- Patients should not diagnose a disease and/or get treatment by themselves on the basis of a measurement result. Please consult a physician.
- Children under 12 years of age and those who cannot express their thoughts must be supervised during use.
- Please do not use this product if you suffer from otitis external, tympanitis, or other ear diseases.



If you use or store this product beyond the range of specified temperature and humidity, it may not reach original performance specification.

Use environment: temperature: from 50°F~104°F,  
humidity: from 15%RH~93%RH

Storage environment: temperature: from -13°F~131°F,  
humidity: from 0%RH~93%RH

### Product introduction

**Intended use:** Infrared Forehead Thermometer intended to measure human body temperature by measuring forehead or ear canal.

**Scope of application:** Displaying the body temperature of the measured object by measuring the heat radiation of the forehead or inner ear canal.

#### Features:

1. Non-touching type infrared measurement of ear/forehead temperature.
2. Multiple colors and backlight display: White, Green, Orange and Red.
3. 9 sets of memory values.
4. Switch between Fahrenheit°F and Celsius°C.  
(original setting is Celsius°C)
5. Instant measurement within 1 second.
6. The design is convenient and economical without earmuff, which can save subsequent use costs.
7. It has the function of sound on/off.

8. When the machine is idle for 30 seconds, the power will turn off automatically.

#### • Warm tip:

The measurement results of this unit at any time are meant to be a reference, it can not replace the medical diagnosis of professional doctor. If you have any questions about a temperature result, please consult a doctor or physician.

### Use caution items

#### Warning

1. It is very dangerous for patients to judge and treat on their own only by measurement results, so please be sure to follow the doctor's instructions.
  - ◆ Self-judgment may lead to a worsening condition of patient.
2. Please do not touch with your hands or blow infrared sensor with your mouth.
  - ◆ When the infrared sensor is damaged or dirty, it may cause abnormal measurement results.
3. If there is a temperature difference between the storage site and the measurement site, please place it at room temperature (measurement site) for about 30 minutes before next measurement.
  - ◆ May result in incorrect measurement results.
4. Please keep this product out of the reach of children.
  - ◆ Children can potentially harm their ears with misuse. If a child swallows a battery or the transparent cover, please contact your doctor immediately.
5. When measuring body temperature, please do not get close to air conditioning.
  - ◆ Avoid affecting the measurement accuracy.
6. Before and after use: Use a cotton swab dipped in 75% alcohol to wipe the probe surface. (If you see stains, fog or water on the infrared sensor glass, please use a cotton swab dipped in 75% alcohol to clean the infrared sensor glass gently.)
  - ◆ Do not use toilet paper or facial tissue, they risk scratching the infrared sensor resulting in incorrect measurement results.
  - ◆ Avoid cross-infection of ear disease.
7. The product suffers mechanical damage.
  - ◆ There is a possibility that the measurement is not right.

8. If the product touches water or is dropped in water, fully dry before use, especially water on the surface of the sensor should be cleaned with a cotton swab.

◆ Our aim is to avoid causing safety accidents and affecting measurement accuracy.

#### Caution:

- Please do not use this product with people who suffer from otitis external, tympanitis and other ear diseases.
  - ◆ It is possible to worsen the affected area.
- Please do not use this product after swimming, bathing or with wet ears.
  - ◆ It is possible to have a lower measurement.
- Do not place waste battery to danger zone.
  - ◆ The battery may break.
- When measuring the ear temperature, the product must be operated in the ear temperature mode.
  - ◆ Can result in inaccurate measurement result.

#### Suggestions

- When discussing your temperature measurement results with a doctor, please specify to the doctor mode (Forehead or Ear) that you measured in.
- Please don't force impact, fall, trample or shake this product.
- Please do not disassemble, repair or modify this product.
- Please do not allow liquid to enter the body of the product.
- Store the product in a clean, dry place.
- If you find any problems, please contact the sales team, you can not repair the product by yourself.
- Please do not use under the environment of electromagnetic interference.
- Please deal with the waste and residue of this product at the end of the service life according to local laws and regulations.

### Common sense about body temperature

#### The comparison of different measurement methods.

The measured values are different if we use different measurement methods. The WHO provides normal human body temperature reference values, please see below table about the specific temperature difference.

Measurement methods	Normal body temperature
Anal temperature	97.8°F ~ 100.4°F

Oral temperature	95.9°F ~ 99.5°F
Axillary temperature	94.5°F ~ 99 °F
Cochlear temperature	96.5°F ~ 100.4°F
Oral temperature	95.9°F ~ 99.5°F (PG-IRT1603 measured value)

#### The changes in human body temperature

Humans are constant body temperature animals, the body temperature is basically constant, but it is not totally changeless, the human body temperature is constantly changing in a day, the details are as follows:

##### At night

**Lowest** Body temperature is lowest because of sleep and decreasing activity. (below 98.6°F )

##### In the morning

**Higher** From warm bed to the lower temperature room in the morning, the whole body's muscles get contractions and produce heat.

##### At noon

**Highest** After lunch, the human body reaches the highest temperature and the body will adjust naturally.

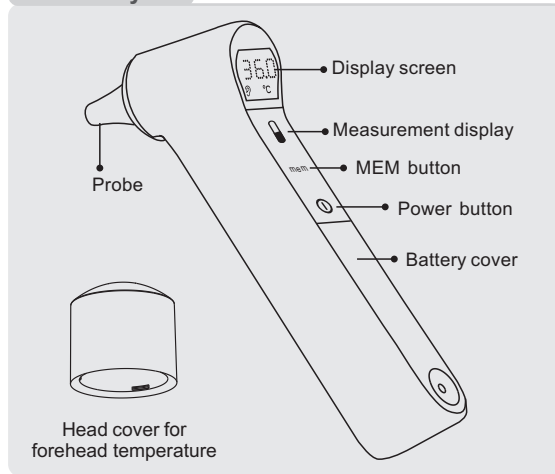
##### Three or four o'clock in the afternoon

**Lower** Due to physical exertion, blood sugar decreases.

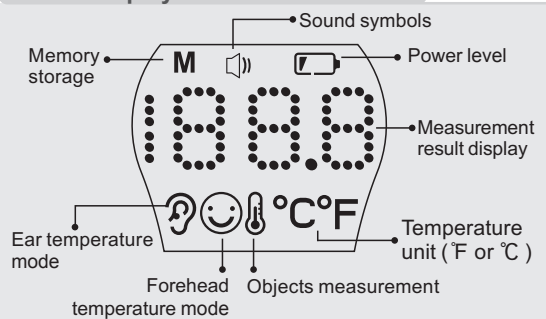
##### In the evening

**Lowest** Due to sun down, the room temperature goes down.

#### Product layout



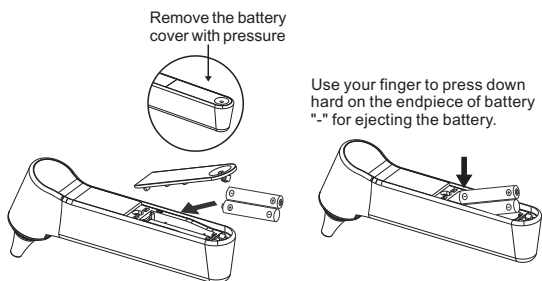
## Screen display marks



## Battery installation explanation

### Battery installation flow:

1. Press the battery cover, the battery cover will pop open automatically.
2. Prepare two AAA batteries with the module of 1.5V AAA (number seven battery) batteries (It is recommended to use alkaline batteries), please install into base of battery according to correct positive and negative poles.



### Insufficient power caution:

when battery voltage is low, LCD shows "LO" sign and battery mark is always on, which means you should replace the battery.



### Warm prompts

- If storing the product for an extended period, please remove the battery to assure longevity. Battery fluids may harm the product; and pollute our environment.
- It is recommended to use alkaline batteries.
- The way to handle a scrapped battery should match the requirements of local country government and environmental protection organizations.



## Basic parameter instructions

### 1. Sound function: turn on/off

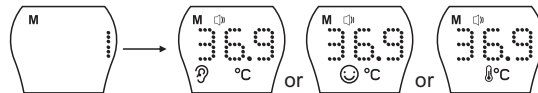
- 1) In the power-on state, press the "mem" key to set the sound on or off.
- 2) After pressing, the LCD screen will show "🔊" meaning the sound is on and will produce a short beeping sound.
- 3) Press "mem" button again, "🔊" will disappear, meaning the sound is off.

### 2. Toggling between °F and °C

In off status, long press "mem" button for six seconds, it can switch between Fahrenheit degree (°F) and Celsius degree (°C). Wait for 8 seconds to turn on the product automatically or press "⏻" to turn off the product directly.

### 3. Memory storage function

In off status, press "mem" button, the product can read and save 9 sets of measurement values in order (as below picture shows). It will turn off automatically after 30 seconds. Press "⏻" button to turn off manually.



### 4. Back light status instructions

When measured temperature is <math>93.2^{\circ}\text{F}</math>, the display reads LO with a red light.

When measured temperature value is  $93.2^{\circ}\text{F} \sim 98.8^{\circ}\text{F}$ , the display reads with a green light.

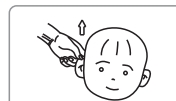
When measured temperature value is  $98.9^{\circ}\text{F} \sim 100.5^{\circ}\text{F}$ , the display reads with an orange light.

When measured temperature value is  $100.6^{\circ}\text{F} \sim 109.4^{\circ}\text{F}$ , the display reads with a red light.

When measured temperature value is  $>109.5^{\circ}\text{F}$ , the display reads with a red light and shows HI.

**Warm prompts: This function is for reference only.**

## Introduction of Measurement methods



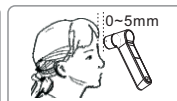
Please pull back the ear for children.

Ear temperature



Please pull these persons' ears back above, (over one year old kids and adults)

Ear temperature

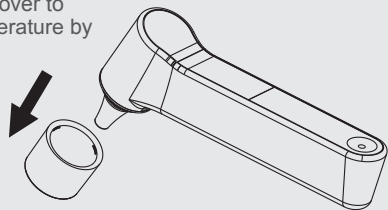


Forehead

Forehead temperature

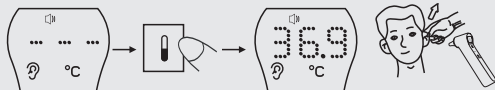
## 1. Ear temperature measurement

Remove the forehead thermometer cover to measure temperature by ear.



1.1 After removing the cover, please press the **⓪** button to turn on this product to enter the ear temperature measurement mode, LCD will display measurement value last time. Then put the thermometer in your ear, the ear temperature can be measured directly by pressing "**Ⓜ**" button.

1.2 After 1 second, you can see the measurement result.



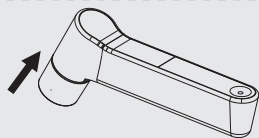
When LCD is flashing, we are waiting for starting measurement.

Measurement result

**Note:** If you did not hear the beep sound, this means that the temperature measurement has not yet been completed. Please do not remove the thermometer probe from ear canal at this time. (If you have disabled the sound indication, it will have no sound indication.)

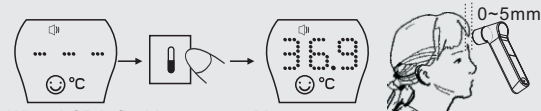
## 2. Forehead temperature measurement

Install head cover of forehead thermometer which can measure forehead temperature.



2.1 After installing head cover of forehead thermometer, press "**⓪**" button to turn on this product to enter the forehead temperature measurement mode, LCD will display measurement value last time. Then the forehead thermometer is aimed at the forehead and measurement distance should be 0~5mm, the forehead temperature can be measured directly by pressing "**Ⓜ**" button.

2.2 After 1 second, you can see the measurement result.



When LCD is flashing, we are waiting for starting measurement.

Measurement result

**Note:** If you did not hear the beep sound, this means that the temperature measurement has not yet been completed. Please do not remove the thermometer probe from forehead at this time. (If you have disabled the sound indication, it will have no sound indication.)

## 3. Object pattern measurement

The installation of the head cover of forehead temperature has no influence to object pattern measurement.

3.1 Long press "**⓪**" button to enter the object measurement mode for 6 seconds, and then aim the thermometer at the object, the temperature of the target object can be measured directly by pressing "**Ⓜ**" button.

3.2 After 1 second, you can see the result of the measurement.



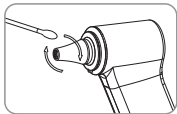
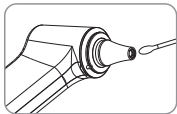
When LCD is flashing, we are waiting for starting measurement.

Measurement result

**Note:** If you did not hear the beep sound, this means that the temperature measurement has not yet been completed. Please do not remove thermometer probe from target object at this time. (If you have disabled the sound indication, it will have no sound indication.)

## Product cleaning instructions

In order to ensure precise measurements, it is recommended to clean the device after each use. Please use a cotton swab dipped in 75% alcohol to wipe the thermometer probe and remove any residue and/or dirt. We recommend you clean the probe for at least 5 seconds then wipe the other components with a soft and dry cloth for at least 10 seconds. After cleaning, please ensure that there is no visible dirt or residue on your thermometer, Wait 10 minutes before measuring. The device can be cleaned a maximum of 40000 times.



Why do you need to do a cleaning job after each measurement?

Because infrared temperature uses a highly sensitive technique to detect the temperature of the target object, not only will any earwax or dust affect the measurement accuracy, but it is more likely to cause a bacteria infection. So we suggest that you cleaning as well as the diagram shows after each use.

### Frequently Asked Questions and Solutions

Screen display	Reasons	Solutions
HI	When the target object temperature is higher than measurement range (the ear temperature is more than 109.4°F), the LCD screen will show "HI".	1. (When the measurement probe is not properly placed in the ear canal or if the measurement distance is too far during the measurement process, the measurement result may be low.)
Lo	When the target object temperature is lower than measurement range (the ear temperature is less than 93.2°F), the LCD screen will show "Lo".	2. When measurement probe is dirty, the measurement value may be low; one should use a cotton swab dipped in alcohol to wash the measurement probe properly.
Er.H	This product has a max operating temperature of 104°F. When the temperature exceeds this point, the LCD screen will display an error message "Er.H".	When you operate this product, the environment temperature cannot be greater than 104°F.
Er.L	This product has a lower operating temperature of 50°F. When the ambient temperature exceeds this temperature point, the LCD screen will display an error message "Er.L".	When you operate this product, the environment temperature can not be lower than 50°F
Err	When the environment temperature changes rapidly about 5 degrees, it will show "Err" during measurement in object temperature mode, then shutdown automatically.	When it shows "Err", please place this product and keep steady in current environment for 30 minutes before next measurement.
When the operation is wrong, if the sound is turned on, then the sound will read the value and remind at this moment.(A short beep will be heard.)		

### Troubleshooting

Phenomenons	Reasons	Solutions
When the power is turned on, the screen can not be displayed.	The battery is exhausted.	Replace with a new battery.
	The battery polarity is wrong.	The battery polarity is the same as the battery case.
The measurement temperature is low.	The measurement position is not correct.	Measure the temperature correctly according to the instructions.
	There's a blockage in the sensor or ear canal.	Please clear all debris before measurement.
Big temperature fluctuations with continuous measurement.	The measurement interval is too small.	The interval for each measurement should be above 10 seconds.

## Specifications of the product

**Product name:** Infrared Forehead/Ear Thermometer

**Model number:** PG-IRT1603

**Product appearance dimensions:** 31×175×72mm

**Product weight:** about 77g (without battery)

**Measuring range:** 93.2°F-109.4°F.

**Object temperature:** 32°F-199.7°F (0°C- 93.2°C)

**Resolution ratio:** 0.1°C/°F

**Measurement Location:** laboratory

**Accuracy:** (95.0°F~107.9°F)±0.4°F, (35.0°C~42.0°C) ±0.2°C, other temperature ± 0.3°C.

**Operation temperature:** 50.0°F~104.0°F (10.0°C~40.0°C), relative maximum humidity 15%RH~93%RH

**Atmospheric pressure:**70kPa~106kPa

**Transportation/storage temperature:** -13°F~131°F (-25°C~55°C), relative maximum humidity 0%RH~93%RH

**Atmospheric pressure:** 50kPa~106kPa

**Display screen:** LCD display screen, 4 bit numbers and special icons.

**Sound:** when you turn on the product and are ready to measure, a short beep will be heard.

The measurement is finished with a long beep.

System error or fault: beeps quickly three times.

Fever alert: beeps quickly ten times with urgency.

**Memory:** record nine temperature settings in memory mode.

**Automatically shut down:** if no operation for 30 seconds, the device will shutdown automatically.

**Battery:** two 1.5V AAA batteries (alkaline batteries are recommended).

**Period of use:** five years

**1603 Forehead mode:**

Clinical bias, Dcb: 0.078

Limits of Agreement, LA: 0.243

Clinical Repeatability,  $\sigma$  : 0.069

Reference body site: forehead

Measuring site: forehead

**Packing parts list:**



1. Main body
2. Product manual

## Appendix 1 Guidance and Manufacturer Declaration Tables

Guidance and manufacturer's declaration—electromagnetic emissions		
The Model PG-IRT1603 Infrared Thermometer is intended for use in the electromagnetic environment specified below. The customer or the user of the Model PG-IRT1603 Infrared Thermometer should assure that it is used in such an environment.		
Emissions	Compliance	Electromagnetic environment-guidance
RF emissions CISPR 11	Group 1	The Model PG-IRT1603 Infrared Thermometer uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class B	The Model PG-IRT1603 Infrared Thermometer is used in home and it's powered by DC 3V
Harmonic emissions IEC 61000-3-2	N. A.	
Voltage fluctuations/ flicker emissions IEC 61000-3-3	N. A.	

Guidance and manufacturer's declaration – electromagnetic immunity			
The Model PG-IRT1603 Infrared Thermometer is intended for use in the electromagnetic environment specified below. The customer or the user of the Model PG-IRT1603 Infrared Thermometer should assure that it is used in such an environment.			
Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment-guidance
Electrostatic discharge (ESD) IEC 61000-4-2	±8 kV contact ±2 kV, ±4 kV, ±8 kV, ±15KV air	±8 kV contact ±2 kV, ±4 kV, ±8 kV, ±15 KV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	30 A/m, 50/60Hz	30 A/m, 50/60Hz	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
NOTE U <sub>i</sub> is the a.c. mains voltage prior to application of the test level			



Guidance and manufacturer's declaration – electromagnetic immunity			
The Model PG-IRT1603 Infrared Thermometer is intended for use in the electromagnetic environment specified below. The customer or the user of the Model PG-IRT1603 Infrared Thermometer should assure that it is used in such an environment.			
Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz 6 Vrms 150 kHz to 80 MHz outside ISM bands <sup>a</sup>	N/A	<p>Portable and mobile RF communications equipment should be used no closer to any part of the Model PG-IRT1603 Infrared Thermometer, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.</p> <p><b>Recommended separation distance</b></p> $d = \left[ \frac{3,5}{E_1} \right] \sqrt{P}$ $d = \left[ \frac{7}{E_1} \right] \sqrt{P}$ <p>80MHz to 800MHz</p> <p>800MHz to 2.7GHz</p> <p>where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in metres(m).</p> <p>Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, <sup>a</sup> should be less than the compliance level in each frequency range <sup>b</sup></p> <p>Interference may occur in the vicinity of equipment marked with the following symbol:</p> 
Radiated RF IEC 61000-4-3	10 V/m 80 MHz to 2.7 GHz	10 V/m	<p>where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in metres(m).</p> <p>Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, <sup>a</sup> should be less than the compliance level in each frequency range <sup>b</sup></p> <p>Interference may occur in the vicinity of equipment marked with the following symbol:</p> 

NOTE 1 At 80 MHz and 800 MHz, 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.

a The ISM (industrial, scientific and medical) bands between 0,15 MHz and 80 MHz are 6,765 MHz to 6,795 MHz; 13,553 MHz to 13,567 MHz; 26,957 MHz to 27,283 MHz; and 40,66 MHz to 40,70 MHz. The amateur radio bands between 0,15 MHz and 80 MHz are 1,8 MHz to 2,0 MHz, 3,5 MHz to 4,0 MHz, 5,3 MHz to 5,4 MHz, 7 MHz to 7,3 MHz, 10,1 MHz to 10,15 MHz, 14 MHz to 14,2 MHz, 18,07 MHz to 18,17 MHz, 21,0 MHz to 21,4 MHz, 24,89 MHz to 24,99 MHz, 28,0 MHz to 29,7 MHz and 50,0 MHz to 54,0 MHz.

b The compliance levels in the ISM frequency bands between 150 kHz and 80 MHz and in the frequency range 80 MHz to 2,7 GHz are intended to decrease the likelihood that mobile/portable communications equipment could cause interference if it is inadvertently brought into patient areas. For this reason, an additional factor of 10/3 has been incorporated into the formulae used in calculating the recommended separation distance for transmitters in these frequency ranges.

c Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the Model PG-IRT1603 Infrared Thermometer is used exceeds the applicable RF compliance level above, the Model PG-IRT1603 Infrared Thermometer should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the Model PG-IRT1603 Infrared Thermometer.

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

**Recommended separation distances between  
portable and mobile RF communications equipment and the  
Model PG-IRT1603 Infrared Thermometer**

The Model PG-IRT1603 Infrared Thermometer is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the Model PG-IRT1603 Infrared Thermometer can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the Model PG-IRT1603 Infrared Thermometer as recommended below, according to the maximum output power of communications equipment.

Rated Maximum output of transmitter  W	Separation distance according to frequency of transmitter		
	150 kHz to 80 MHz $d = [\frac{3.5}{V_1}] \sqrt{P}$	80 MHz to 800 MHz $d = [\frac{3.5}{E_1}] \sqrt{P}$	800 MHz to 2.7 GHz $d = [\frac{7}{E_1}] \sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23

For transmitters rated at a maximum output power not listed above the recommended separation distance d in metres (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

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

NOTE 2 These guidelines may not apply in all situations.

Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.