

WT1/WT2 Electronic Thermometer User's Manual

Guangdong Biolight Meditech Co., Ltd.

Product Information

- Product Model: WT1/WT2
- Product Name: Electronic Thermometer
- Manufacturer Name: Guangdong Biolight Meditech Co.,Ltd.
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Revision History

This manual has a revision number. This revision number changes whenever the manual is updated due to software or technical specification change. Contents of this manual are subject to change without prior notice.

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Statement

Manufacturer holds the copyright of this manual, and we are also entitled to deal with this manual as confidential files. This manual is only used for operation, maintenance and service of product, someone else can not publish the manual.

This manual contains exclusive information protected by copyright laws and we reserve its copyright. Without written approval of manufacturer no parts of this manual shall be photocopied, Xeroxed or translated into other languages.

The contents contained in this manual are subject to amendments without notification.

Manufacturer's Responsibility

Only under the following circumstances will manufacturer be responsible for the safety, reliability and performance of the instrument:

- All the installation, expansion, readjustment, renovation or repairs are conducted by the personnel certified by manufacturer.
- The storage condition, operation condition and electrical status of the instrument conform to the product specification.
- The instrument is used in accordance with the user's manual.

About this manual

This manual contains the instructions necessary to operate the product safely and in accordance with its function and intended use. Observance of this manual is a prerequisite for proper product performance and correct operation.

This manual is based on the maximum configuration and therefore some contents may not apply to your product. If you have any question, please contact us.

This manual is an integral part of the product. It should always be kept close to the equipment so that it can be obtained conveniently when needed.

Illustrations are for reference only. They may be not in conformity with your products.

Signs in this manual:



Warning: Indicates a potential hazard or unsafe practice that, if not avoided, will result in death or serious injury.



Caution: Indicates a potential hazard or unsafe practice that, if not avoided, could result in minor personal injury or product/property damage.



Note: Provides application tips or other useful information to ensure that you get the most from your product.

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1. Intended Use

The device is intended to be used for measuring and monitoring human temperature continuously via wireless signal transmission of the measuring result.

2. Application

The device is reusable and intended for measuring human temperature for persons over two years old. It can be used in hospital and at home.

3. Safety Information



Warning:

- Any form of modification to this device is forbidden;
 - Don't used the device together with MRI or CT equipment;
 - Explosion danger: don't use the device in flammable anesthetic gas;
 - Don't squeeze the device. If the housing is broken, please stop using the device.
-



Caution:

- Please check device regularly to make sure that it contacts skin tightly; otherwise the data may be inaccurate.
- The device is for indoor use only;
- Please pay attention to the operation temperature and humidity. Using the device in a condition that does not satisfy the requirement may lead measurement error;
- The effective wireless transmission distance is 15m in a barrier-free environment. If more than this distance, the product might not work. Please use this product within effective wireless transmission distance;
- Muscle and fat affect wireless transmission, so the transmission range would be weaken when adult or obese child use the device.
- Magnetic and electrical fields are capable of interfering with the proper

performance of the device. For this reason make sure that all external equipments operated in the vicinity of the device comply with the relevant EMC requirements. Mobile phone, X-ray equipment or MRI devices are a possible source of interference as they may emit higher levels of electromagnetic radiation.

 **Caution:**

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.**

The user is cautioned that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment

FCC STATEMENT:

- 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.**

FCC RADIATION EXPOSURE STATEMENT:

- This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.
 - This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
-

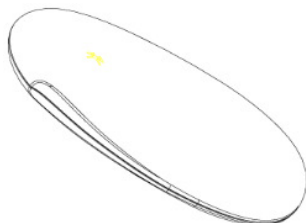
 **Note:**

- The device is not sterile;
 - Doctor should make diagnosis on clinical manifestation and symptoms, only with using the device as subsidiary;
 - This product has been calibrated. No other routine maintenance and calibration is needed in addition to the replacement battery;
 - If the system upgrade, please update the program;
 - It is impossible that the application is incompatible with other application on your receiver. Please contact us if you meet this kind of matters;
 - If you have questions concerning setting up, using, maintaining of the device or any unexpected events, please contact manufacturer or its representatives.
 - When the patient is the operator, please use and maintain the device according to this manual.
-

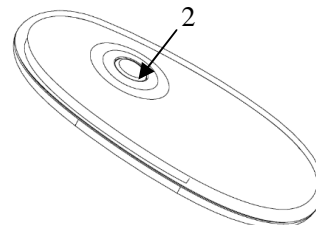
4. Appearance

◆ **WT1:**

Front View:



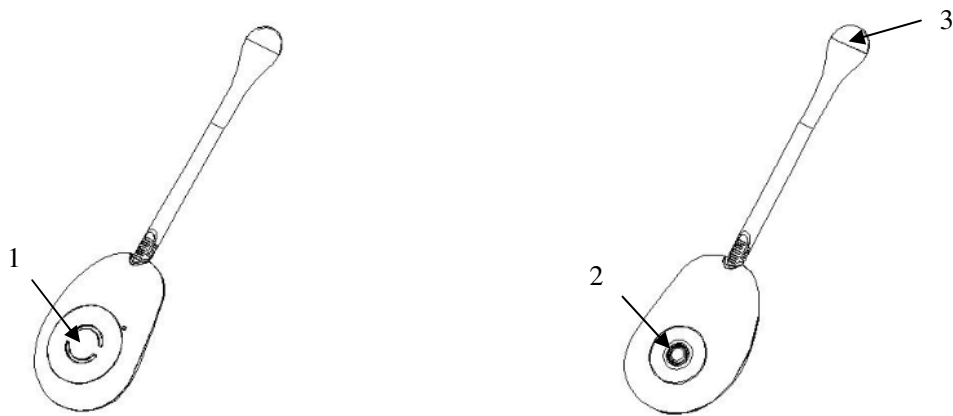
Rear View:



◆ **WT2:**

Front View:

Rear View:




1. Battery compartment
2. Armpit temperature measuring probe
3. Tongue temperature measuring probe

5. Download And Install The Software

1、 Software download methods:

- Users who use the ISO system device can log in iPhone App Store, enter "wearcare" and search for the software of "育儿宝" in the searching results. Or scan the QR code of IOS on the packing box to download.
- Users who use the Android system device can log in the wearcare official website: <http://www.wearcare.cn> for download. Or scan the QR code of Android on the packing box to download.

2、 Download the software of "育儿宝"  click installation button for free installation.

6. Battery Installation Steps

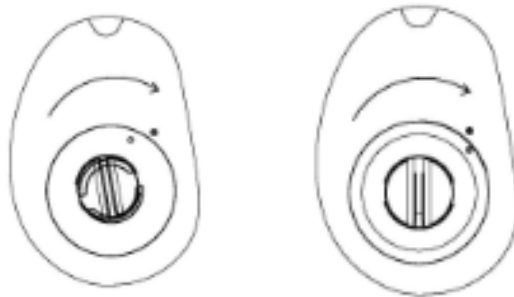
1) Using the battery cover tools to open the battery cover according to the direction shown below:



2) Put in the battery:



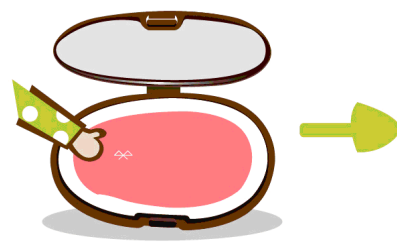
3) Using the battery cover tools to install the battery cover. Tighten the battery cover according to the direction shown below:



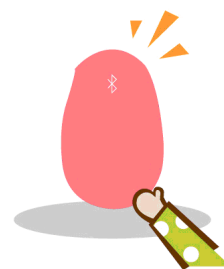
7. Using Steps

- 1) Turn on receiver and open Bluetooth;
- 2) Take out the temperature sensor from the packing box. Install the battery according to the above-mentioned method. The temperature sensor will start up automatically. The indicator light flash fast;
- 3) Enable the software. The device will connect automatically. When it connects successfully, it will display the message “Connects successfully”.
- 4) Wear the temperature sensor. The steps are as follows:

Step 1:

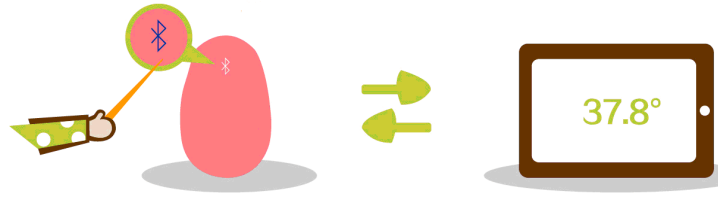


Open the packing box



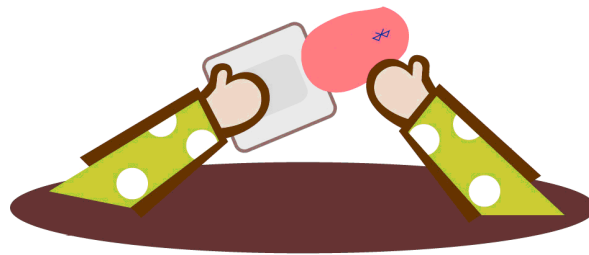
Take out the temperature sensor

Step 2:



When the temperature sensor connects to mobile terminal application software successfully, the Bluetooth indicator light will shine.

Step 3:



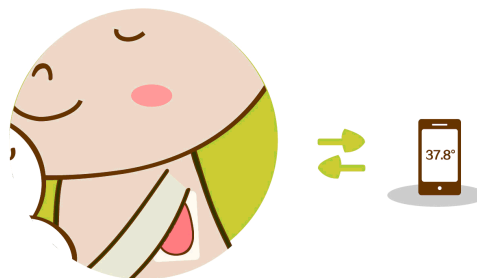
Paste the sticker

Step 4:



Paste the device onto armpit

Step 5:



The measuring result will be transmitted to mobile terminal application software immediately via wireless signal transmission.

- **Adult should help child to wear and operate the device.**
- **Please remain holding your arm tight at least for 5~8 minutes to get exact temperature.**
- **After finishing the measurement, please put the temperature sensor back to packing box to avoid consuming battery power for the device is always in starting up condition.**

WT2 temperature sensor is also can be use to measure mouth temperature. The steps are as follows:

- 1) Connect the tongue temperature measuring probe to the temperature sensor;
- 2) Put the tongue temperature measuring probe into your mouth and near to left or right side of the tongue;
- 3) Press the probe with tongue and hold your temperature sensor with your hands to prevent it sliding in the mouth.



Note:

- **The temperature sensor is able to startup and shutdown automatically. When you take out the temperature sensor from the packing box, it will startup automatically. On the contrary, when you put it into the packing box, it will shutdown automatically.**
- **When the temperature sensor doesn't connect to the mobile terminal application software, the indicator light will flash twice periodically. And when it does, the indicator light will flash once periodically.**
- **This product has overrun prompted function, and users can set the alarm limit themselves.**



Caution:

- **When WT2 is used to measure armpit temperature, please pull off the tongue temperature measuring probe.**
- **We recommend the users to use the original manufactured stickers. You'd better wear the device in a cool environment to get better wearing experience. If you feel unwell (uncomfortable or allergic) when use the sticker, please replace other sticker as doctor's advice.**
- **When measuring for a long time, please check whether there is skin allergy**

phenomenon at site. If there is allergy, you should immediately stop using it.

- Please do not re-paste the sticker if it appears fold, a new sticker is required.
 - Skin preparation in advance is required when worn by adult.
 - Please clean the surface of the device with 75% concentrated medical alcohol before and after use it. You should clean the skin contacted the device with medicinal alcohol after taking off the device. The material that contacts skin is nontoxic, nonirritating and will not cause allergy or any other side effect.
 - To avoid the disruption from an incoming call or text message during the measurement, we recommend to switch your IOS device (if with 3G card) to flight mode and turn on Bluetooth.
 - That pet or pest touches the device may cause the user's allergy or any other side effect. Please clean the surface of the device with 75% concentrated medical alcohol before use it.
 - That children play the device may damage the temperature measuring probe and affect the measure accuracy.
-

8. Normal Body Temperature

Age/year	Normal body temperature scope	
	Celsius temperature/°C	Fahrenheit temperature/°F
2	34.7~37.2	94.5~99.1
3~10	35.9~36.7	96.6~98.0
11~65	35.2~36.9	95.3~98.4
>65	35.6~36.3	96.0~97.4


The normal temperature can vary by:

- a) Age;
- b) Person;
- c) Time of day (often highest in the evening) ;

Where on body the temperature was taken, body temperature can be raised by:

- a) Being active;
- b) Eating;
- c) Feeling strong emotions;
- d) Menstruating (women);
- e) Taking certain medicines;

- f) Being in a high temperature or high humidity;
- g) Teething (in a young child – but no higher than 37.8°C);
- h) Wearing heavy clothing.

 **Note: Different measure size and different measure method may lead to different temperature value.**

9. Maintenance and Cleaning

- a) Clean the surface of the device with 75% concentrated medical alcohol before and after use it.
- b) Please replace the battery when the low battery indication appears, otherwise the device will not work correctly;
- c) The product lifetime is 3 years. The treatment of the device and battery at the end of their life should be compliance with local laws and regulations.
- d) The probe should be cleaned and disinfected, but never sterilized.

Warning:

- **Do not sterilize or autoclave the device;**
- **If you notice any deterioration or damage to probe, stop from using the device immediately;**
- **Other use of cleaning agents and disinfectants beside alcohol may damage the device and shorten product lifetime or cause safety hazards.**

10. Accessory and Specifications

10.1 Accessory

Number	Items	WT1	WT2
1	CR2025 button battery	/	One
2	Battery cover tool	/	One
3	Sticker	One	One
4	User manual	One	One

10.2 Safety Specification

According to the MDD 93/42/EEC, the electronic thermometer is Type II a equipment. Classified according to the IEC60601-1 is as follows:

Parts	Classification of protection against electric shock	Degree of protection against electric shock	Degree of protection against ingress of liquid	Degree of protection against hazards of explosion	Mode of operation
Mainframe	Internally	CF	WT1: IP27 WT2: IP22	Not suitable	Continuous

Note:

Internally: Internally powered equipment

CF: Type CF applied part

Not suitable: Equipment is not suitable for use in the presence of flammable anesthetic mixture with air or with oxygen or nitrous oxide.

IP22: The device can prevent the solid foreign matter whose diameter is not less than 12.5mm into the equipment shell, and prevent the effects on the equipment after dropping of water in the tilt angle of 15°.

IP27: The device can prevent the solid foreign matter whose diameter is not less than 12.5mm into the equipment shell, and prevent the effects on the equipment after short term immersing.

10.3 Technical Specifications


Production model	WT1、WT2
Size	WT1: 51mm×31.8mm×8.5mm WT2: 51mm×36.2mm×10.2mm
Weight	WT1: 9.6g WT2: 10.5g, The weight with tongue temperature measuring probe is 12.3g.
Measure specifications	
Measure scope	25.00°C ~ 45.00°C
Measure accuracy	±0.05°C (35.00°C ~ 38.50°C) ±0.1°C (25.00°C ~ 34.99°C and 38.51°C ~ 45.00°C)
Temperature unit	“°C” or “°F”

Update time	Every 3s
Bluetooth indicator light	Not connected: flash twice continuously. Connected: flash once.
App software platform	
IOS system	iPhone 4s、iPhone5、iPhone5s、iPad3+、iPad mini
Android (4.3+) system	Mobile phone, iPad
Battery	
Type	WT1: CR2032, 3V/225mAH button battery WT2: CR2025, 3V/170mAH button battery
Work time	≥365 days (8 hours per day)
Environment specifications	
Temperature	Operating: 5℃~+40℃; Transportation and storage: -20℃~+55℃.
Humidity	Operating: 25%~95% (non condensing) ; Transportation and storage: 25% ~ 95% (non condensing).
Atmospheric pressure	Operating: 700hPa~1060hPa; Transportation and storage: 500hPa~1060hPa.





11. Troubleshooting

Symptom	Possible Reason	Solution
No warning voice	System voice is closed	Set the system voice properly
Cannot make connection between device and receiver	<ol style="list-style-type: none"> 1. Bluetooth does not be open on receiver; 2. The version of Android in the receiver device isn't 4.3 or 4.3+. 3. The version of Bluetooth is not 4.0; 4. Out of connection range; 5. Wrong wearing position. 	<ol style="list-style-type: none"> 1. Open Bluetooth; 2. Upgrade the Android system to version 4.3 or 4.3+. 3. Use the receiver device with Bluetooth 4.0; 4. Close to receiver; 5. Adjust the position of receiver.
Can not turn on device	<ol style="list-style-type: none"> 1. The battery power might be at shortage or no electricity; 2. The device itself might be damaged. 	<ol style="list-style-type: none"> 1. Restart the device; 2. Please replace the battery; 3. Contact customer service.

Symptom	Possible Reason	Solution
The temperature data cannot be display properly	1.Low battery of device	1. Restart the device or replace the battery; 2. Contact customer service

 **Note:** Electrical schematic diagram and component list are only provided to repair station or personnel which have been confirmed qualified by the manufacturer.

12. Equipment Symbols

Symbol	Symbol Note
	Type CF applied part, without defibrillation protected.
	Refer to this user's manual.
	Symbol for the marking of electrical and electronics devices according to Directive 2002/96/EC
	Date of manufacture
SN	Serial number
IP22	Enclosure degree of ingress protection. (WT2)
IP27	Enclosure degree of ingress protection. (WT1)

Appendix A Guidance and Manufacturer's Declaration of EMC

 **Note:**

- This product needs special precautions regarding EMC and needs to be installed and put into service according to the EMC information provided, and this unit can be affected by portable and mobile RF communications equipment.
 - Do not use a mobile phone or other devices that emit electromagnetic fields, near the unit. This may result in incorrect operation of the unit.
-

 **Caution:**

- This unit has been thoroughly tested and inspected to assure proper performance and operation.
 - This machine should not be used adjacent to or stacked with other equipment and that if adjacent or stacked use is necessary, this machine should be observed to verify normal operation in the configuration in which it will be used.
-

Guidance and manufacture's declaration – electromagnetic emission		
The device <i>is</i> intended for use in the electromagnetic environment specified below. The customer of the user of the device should assure that it is used in such an environment.		
Emission test	Compliance	Electromagnetic environment – guidance
RF emissions CISPR 11	Group 1	The device use 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 emission CISPR 11	Class B	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.
Harmonic emissions IEC 61000-3-2	Not applicable (Battery operated device)	
Voltage fluctuations/ flicker emissions IEC 61000-3-3	Not applicable (Battery operated device)	

Guidance and manufacture's declaration – electromagnetic immunity


The device is intended for use in the electromagnetic environment specified below. The customer or the user of device 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	±6 kV contact ±8 kV air	±6 kV contact ±8 kV air	Floors should be wood, concrete or ceramic tile. If floor are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient/burst IEC 61000-4-4	±2 kV for power supply lines ±1 kV for input/output lines	Not applicable (Battery operated device)	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	± 1 kV line(s) to line(s) ± 2 kV line(s) to earth	Not applicable (Battery operated device)	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	<5% U_T (>95% dip in U_T) for 0.5 cycle 40% U_T (60% dip in U_T) for 5 cycles 70% U_T (30% dip in U_T) for 25 cycles <5% U_T (>95% dip in U_T) for 5 sec	Not applicable (Battery operated device)	Mains power quality should be that of a typical commercial or hospital environment. If the user of the device requires continued operation during power mains interruptions, it is recommended that the device be powered from an uninterruptible power supply or a battery.
Power frequency magnetic field (50Hz/60Hz) IEC 61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.

NOTE U_T is the a.c. mains voltage prior to application of the test level.

Guidance and manufacture's declaration – electromagnetic immunity

The device is intended for use in the electromagnetic environment specified below. The customer or the user of the device should assure that it is used in such an environment.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance
<p>Conducted RF IEC 61000-4-6</p>	<p>3 V_{rms} 150 kHz to 80 MHz</p>	<p>Not applicable (Battery operated device)</p>	<p>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.</p> <p>Recommended separation distance</p> $d = 1,2\sqrt{P}$
<p>Radiated RF IEC 61000-4-3</p>	<p>3 V/m 80 MHz to 2.5 GHz</p>	<p>3 V/m</p>	$d = 1,2\sqrt{P} \quad 80 \text{ MHz to } 800 \text{ MHz}$ $d = 2,3\sqrt{P} \quad 800 \text{ MHz to } 2,5 \text{ GHz}$ <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,^a should be less than the compliance level in each frequency range.^b</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 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 device is used exceeds the applicable RF compliance level above, the device should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the device.

b 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 device .**

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

Rated maximum output power of transmitter (W)	Separation distance according to frequency of transmitter (m)		
	150 KHz to 80 MHz	80 MHz to 800 MHz	800 MHz to 2.5 GHz
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.