

BRAUN

WelchAllyn®

ThermoScan®

PRO 6000

Ear thermometer

Instructions for use



PRO 6000

BRAUN

ThermoScan®

PRO 6000 Ear thermometer

This manual applies to **# 901054** Ear Thermometer, **# 901009** Accessory, Thermometry, and **# 901010** Accessory, Thermometry

REF 06000-200

REF 06000-300

REF 06000-100

REF 06000-150

REF 06000-125

REF 104894

These instructions for use (IFU) may contain information about products that may or may not be approved for use by a relevant regulatory authority in any particular country or region of the world. Customers and/or End-Users are requested to contact their local sales representative for further information regarding regulatory registration status and availability of products.



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Baxter Technical Support:

baxter.com/contact-us

Visit locations:

baxter.com/contact-us

Replacement parts

Probe covers: 06000-005, 06000-801, 06000-800

For a complete list of parts, go to baxter.com

Made in Mexico

This product is manufactured under license to the 'Braun' trademark.
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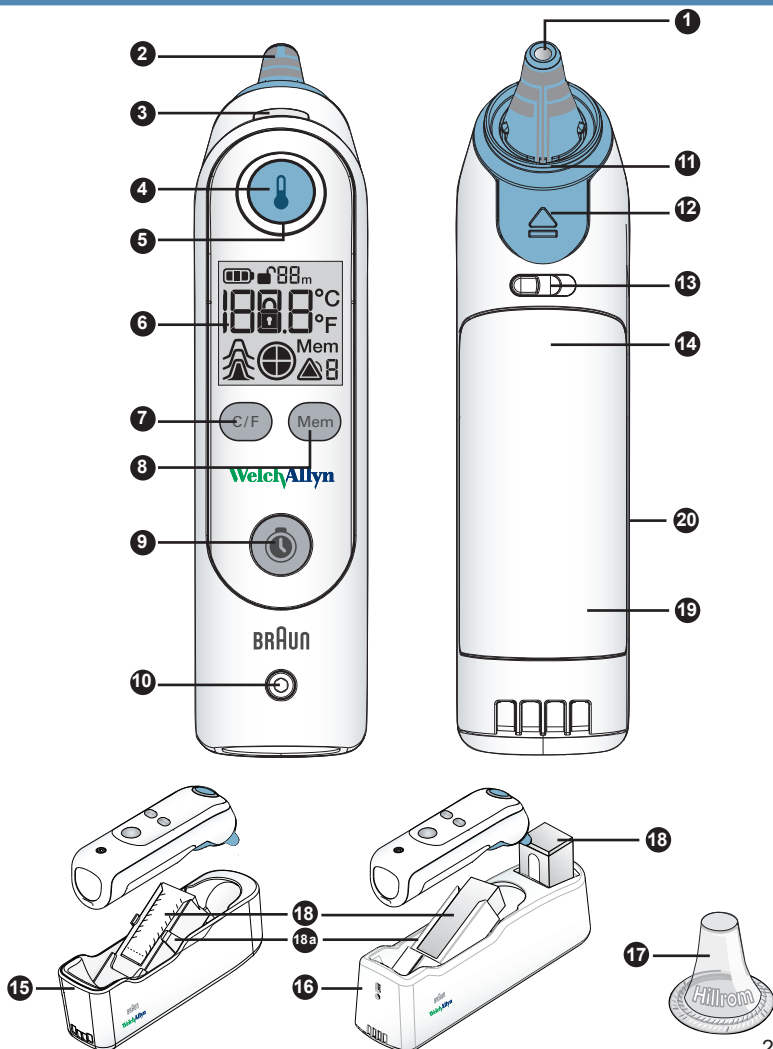
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Duracell is a registered trademark.

Use only
Baxter
probe covers



1. Braun ThermoScan® PRO 6000 Ear thermometer



2. Package components

Braun ThermoScan® PRO 6000 Ear thermometer

Cradle

Probe covers (1 or 2 probe cover boxes, depending on model)

2 (AA) **Duracell** alkaline batteries

3. Product description (See Section 1. **Braun ThermoScan® PRO 6000** Ear thermometer)

- | | |
|---|---|
| ➊ Probe lens window | ➋ Probe cover ejector |
| ➌ Probe | ➍ Battery door latch |
| ➎ ExacTemp light | ➏ Battery door |
| ➐ Measure button | ➑ Small cradle - one storage box |
| ➒ Measure light | ➓ Large cradle - two storage boxes |
| ➔ Display | ➕ Probe cover |
| ➖ C/F button | ➗ Probe cover box |
| ➙ Memory button | ➘ Probe cover box carrier |
| ➚ Timer button | ➙ GTIN code |
| ➛ Tether mount (Tether sold separately) | ➚ Temperature scale switch (inside battery compartment) |
| ➜ Probe cover detect switch | |

4. Screen elements

1 Battery

 **Full battery**—indicates battery is between 100% and 70% of usable battery capacity

 **Partial battery**—indicates battery is between 70% and 30% of usable battery capacity

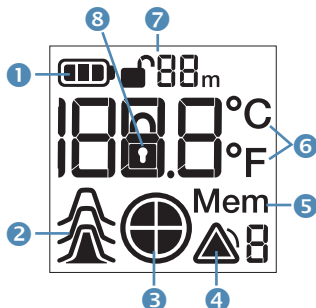
 **Low battery**—indicates battery is between 30% and 10% of usable battery capacity

 **Critically low battery**—battery is between 10% and 1% of usable battery capacity. When final segment flashes, batteries have low power. The thermometer will take a proper measurement but batteries must be replaced soon. If rechargeable batteries are in use, batteries should be recharged.

 **Empty battery**—battery has 1% or less of usable battery capacity. When battery outline flashes, the thermometer will not operate. Replace the batteries. If rechargeable batteries are in use, batteries should be recharged. See "Replacing the batteries."

2 Probe cover icon

The icon animates in an upward motion to remove probe cover. The icon animates in a downward motion to apply a probe cover.
See "Using the **Braun ThermoScan® PRO 6000** Ear thermometer."



3 Timer icon

The **Braun ThermoScan® PRO 6000** Ear thermometer includes a 60 second timer that features an audible notification and visual indicator at 0, 15, 30, 45, and 60 seconds. The first quadrant begins flashing when timer starts and becomes solid at 15 seconds. This repeats for each 15 second interval. The timer turns off automatically 5 seconds after 60 seconds is completed. See "Manual timer."

4 Alert icon

Icon that appears with error message.
See "Errors and notifications."

5 Memory indicator

Indicates the reading shown on the display is the reading in memory. See "Memory."

6 C/F scale

Indicates default temperature scale. Either °C or °F will display, depending on setting. See "C/F (Celsius/Fahrenheit)."

7 Security unlock icon and countdown time

(Requires charging station or compatible Baxter vital signs device, sold separately.) If the security function is enabled, it requires the thermometer be returned to the charging station within a pre-selected time interval. Countdown time indicates the amount of time remaining until the thermometer will be locked if not returned to the charging station. See "Advanced functions."

8 Security lock icon

(Requires charging station or compatible Baxter vital signs device, sold separately.) Indicates the thermometer is locked. Return the thermometer to the charging station to reset the countdown and resume normal operation. See "Advanced functions."

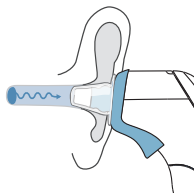
5. About the Braun ThermoScan® PRO 6000 Ear thermometer

5.1 Intended Use

The **Braun ThermoScan® PRO 6000 Ear thermometer** is indicated for the intermittent measurement of human body temperature for patients having ages ranging from normal weight (full term) newborn to geriatric adults in a professional use environment. The probe cover is used as a sanitary barrier between the infrared thermometer and the ear canal.

5.2 How does Braun ThermoScan® work?

The **Braun ThermoScan® PRO 6000 Ear thermometer** technology reads the infrared energy emitted by the tympanic membrane and surrounding tissues to determine the patient's temperature. To help ensure accurate temperature measurements, the sensor itself is warmed to a temperature close to that of the human body. When the **Braun ThermoScan®** is placed in the ear, it continuously monitors the infrared energy until a temperature equilibrium has been reached and an accurate measurement can be taken. The thermometer displays an actual measured ear temperature or clinically accurate, oral equivalent temperature that has been validated in clinical studies by comparing IR measurements with the oral readings from afebrile and febrile patients of various ages. Unadjusted operating mode ear temperature readings are available via unadjusted mode, which can be accessed using the **Welch Allyn Service Tool**.



5.3 PerfecTemp Sensor System

Speed and ease of access are two key advantages of ear thermometry. Concerns regarding accuracy and reliability have hindered adoption of this technology. In clinical studies, the precision of ear temperature measurement has been shown to be influenced by ear canal anatomy and variability in user technique. Proper probe placement can also be a challenge, particularly with young patients that move around during measurement. Shallow probe placement, coupled with anatomical variabilities such as ear canals with a small circumference and poor visibility of the tympanic membrane, can result in readings that are low compared to core temperature because the thermometer could be focused on the cooler outer ear canal.

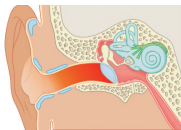


Table 1: Ear canal temperature gradient

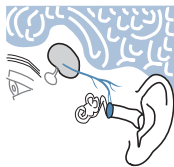
The **Braun ThermoScan® PRO 6000** Ear thermometer incorporates a new proprietary sensor system, **PerfecTemp**, that overcomes the challenges presented by ear canal anatomy and variations in technique among clinicians. The thermometer collects information about the direction and depth of ear probe placement as it is placed into the ear canal and automatically incorporates this information into the temperature calculation. Incorporating information related to patient specific anatomy and exact ear probe placement in the ear canal increases the accuracy of the measurement as compared to core temperature, especially when probe positioning is not ideal.

5.4 ExacTemp technology

The **Braun ThermoScan® PRO 6000** Ear thermometer also features **ExacTemp** technology which supports temperature measurement reliability by detecting the stability of the probe placement during the measurement. The **ExacTemp** light flashes during the measuring process and remains illuminated when the measurement is complete, indicating consistent placement of the probe during the measurement process. Consistent probe placement helps support accurate temperature measurement.

5.5 Why measure in the ear?

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 temperature¹. Body temperature is regulated by the hypothalamus², which shares the same blood supply as the tympanic membrane³. 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 traditional sites:



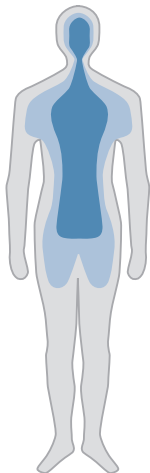
- Axillary temperature measurements reflect skin temperature which may not reliably indicate the internal body temperature.
- Rectal temperatures often lag significantly behind internal body temperature changes, especially at times of rapidly changing temperatures. Also, there is a risk of cross contamination.
- 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.

1. Guyton A C, Textbook of medical physiology, W.B. Saunders, Philadelphia, 1996, p 919

2. Guyton A C, Textbook of medical physiology, W.B. Saunders, Philadelphia, 1996, p 754-5

3. Netter H F, Atlas of Human Anatomy, Novartis Medical Education, East Hanover, NJ, 1997, pp 63, 95.

5.6 Body temperature



Normal body temperature is a range. The following table shows that this normal range also varies by site. Therefore, measurements from different sites, even if taken at the same time, should not be directly compared.

Normal ranges by site¹:

Axillary ^{1,2} :	95.6–99.4 °F	35.3–37.4 °C
Oral ^{1,2} :	95.7–99.9 °F	35.4–37.7 °C
Rectal ^{1,2} :	96.6–100.8 °F	35.9–38.2 °C
ThermoScan^{1,2}:	95.7–99.9 °F	35.4–37.7 °C

A person's normal temperature range tends to vary with age. The following table shows normal ThermoScan ranges by age.

Normal ThermoScan ranges by age^{1, 2}:

< 3 months	96.4–99.4 °F	35.8–37.4 °C
3–36 months	95.7–99.6 °F	35.4–37.6 °C
> 36 months	95.7–99.9 °F	35.4–37.7 °C

The range of normal varies from person to person and can be influenced by many factors such as time of day, level of activity, medications, and gender.

1. Sund-Levander M, Forsberg C, Wahren LK. Normal oral, rectal, tympanic and axillary body temperature in adult men and women: a systematic literature review. Scand J Caring Sci 2002 June;16(2):122–8.

2. Herzog L, Phillips SG. Addressing concerns about fever. Clin Pediatr (Phila) 2011 May;50(5):383–90.

6. Contraindications

None

6.1 What affects accuracy

Always use a new disposable probe cover for each measurement to maintain accuracy and hygiene. The right ear measurement may differ from the measurement taken in the left ear. Therefore, always take the temperature in the same ear. The ear must be free from obstructions or excess earwax build-up to take an accurate reading.

External factors that may influence ear temperatures include:

Factor	Affected	Not affected
Used probe cover	✓	
Ambient temperature		✓
Wet / dirty / damaged lens	✓	
Hearing aid	✓	
Lying on pillow	✓	
Moderate cerumen (ear wax)		✓
Otitis media (ear infections)		✓
Tympanostomy tubes		✓

In the event the patient is lying on a pillow or wearing ear plugs or a hearing aid, remove the individual from the situation and wait 30 minutes prior to taking a temperature.

7. Warnings and cautions



WARNING This thermometer is for professional use only.



WARNING This thermometer must only be used with genuine Baxter probe covers.



WARNING Do not use any cleaning agent other than isopropyl or ethyl alcohol for cleaning the probe lens window and probe as specified in the cleaning section of this manual.



WARNING If cleaning instructions are not followed, the device may be exposed to fluid ingress. If this occurs, there is a risk of the probe tip overheating and potentially causing a burn to the user or the ear canal of the patient. In addition, fluid ingress may cause inaccurate temperature readings.



CAUTION Do not use any cleaning agent other than those on the approved list of cleaners for cleaning the body of the thermometer.



WARNING To avoid inaccurate measurements, always attach a new, clean probe cover for each temperature measurement.



WARNING The probe lens window must be kept clean, dry, and undamaged at all times to ensure accurate measurements. To protect the probe lens window, always keep the thermometer in the storage cradle while transporting or when not in use.



WARNING This thermometer is not intended for pre-term babies or small-for-gestational age babies.

WARNING Do not modify this equipment without authorization of manufacturer.



CAUTION Never use the thermometer for purposes other than those it has been intended for. Please follow the general safety precautions.



CAUTION Do not expose the thermometer to temperature extremes (below -20°C / -4°F or over 50°C / 122°F) nor excessive humidity ($> 85\% \text{ RH}$).



CAUTION This thermometer complies with current required standards for electromagnetic interference and should not present a problem to other equipment nor is it affected by other devices. As a precaution, avoid using this device in close proximity to other equipment.



WARNING Verify that the probe cover does not come off prior to use. A probe cover that comes off during use can cause asphyxiation.



WARNING Do not use an ear thermometer if there is blood or drainage in the external ear canal.



WARNING An ear thermometer should not be used on a patient who exhibits symptoms of an acute or chronic inflammatory condition of the external ear canal.



WARNING Common situations like the presence of moderate amounts of cerumen (ear wax) in the ear canal, otitis media, and tympanostomy tubes do not significantly impact temperature readings. However, complete ear canal occlusion due to cerumen (ear wax) can result in lower temperature readings.



WARNING If prescription ear drops or other medications have been placed in the ear canal, use the untreated ear to take a measurement.



WARNING Patients who have deformities of the face and/or ear may not be able to have a temperature taken with an ear thermometer.



WARNING The use of the thermometers adjacent to or stacked with other equipment or medical electrical systems should be avoided because it could result in improper operation. If such use is necessary, the thermometers and other equipment should be observed to verify that they are operating normally.



WARNING Maintain minimum separation distance between the **Braun ThermoScan® PRO 6000** Ear thermometer and portable RF communication equipment. The **Braun ThermoScan® PRO 6000** Ear thermometer performance might degrade if you do not maintain a proper distance between equipment.



WARNING Use only accessories recommended by Baxter for use with the **Braun ThermoScan® PRO 6000** Ear thermometer. Accessories not recommended by Baxter might affect the EMC emissions or immunity.

7.1 Residual Risk

This device complies with relevant electromagnetic interference, mechanical safety, performance, and biocompatibility standards. However, it cannot completely eliminate potential patient or user harm from the following:

- Harm or device damage associated with electromagnetic hazards
- Harm from mechanical hazards
- Harm from device, function, or parameter unavailability
- Harm from misuse error, such as inadequate cleaning
- Harm from device exposure to biological triggers that may result in severe systemic allergic reaction

8. Setup

8.1 Battery installation

Your **Braun ThermoScan® PRO 6000** Ear thermometer ships with two (AA) alkaline batteries. See "Replacing the batteries".

The **Braun ThermoScan®** Charging station (sold separately) ships with one rechargeable battery pack.

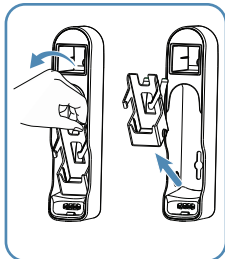
8.2 Mounting instructions (Large cradle only)

Mounting hardware not included.

The large cradle (2 box storage) can be mounted as an easily removable wall hanger or a permanent wall mount. All mounting must be done into a wall stud. To mount the cradle the following items are needed:

- 2 #8 wood or sheet metal, pan head screws, 1.25 in (3.2 cm) long
- Ruler (or tape measure can be substituted)
- Screwdriver to match drive of screws

- 1 Remove probe cover box carrier from the cradle by rotating the probe cover box carrier forward.**



- 2 Mount to wall:**

• **Removable wall hanger:**

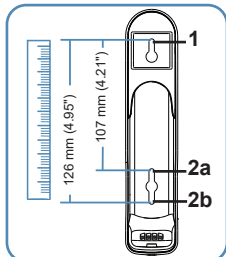
Locate the stud on the wall. Mount the 1st screw in position **1** and the 2nd screw in position **2a**.

• **Permanent wall mounting:**

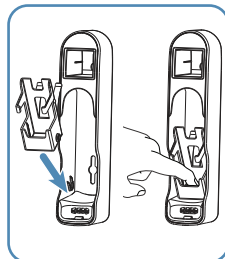
Locate the stud on the wall. Mount the 1st screw in position **1** and the 2nd screw in position **2b**. Tighten screws.



NOTE Permanent mounting is not recommended if using the charging station to access the security function, other advanced functions or charge the rechargeable battery.



- 3 Place probe cover box carrier back in cradle by lining up the brackets and pushing down.**



8.3 Tether installation

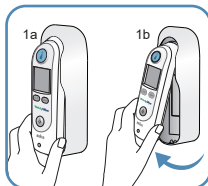
A kit to tether the thermometer to the cradle is available separately. Installation instructions are provided with the tethering kit. Contact Baxter Technical Support for details.

9. Using the Braun ThermoScan® PRO 6000 Ear thermometer

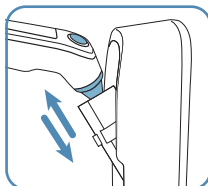
Temperature measurement

- 1 Remove thermometer from cradle by gripping thermometer at base and pivoting up.**

Thermometer will turn on automatically. Probe cover icon  will flash on display indicating a new probe cover is needed.

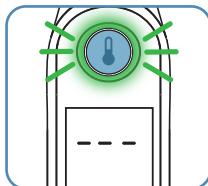


- 2 Attach new probe cover** by pushing probe tip straight into box, then pulling thermometer out.



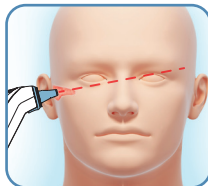
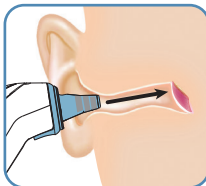
- 3 Wait for the ready indication.**

Ring around **measure**  button turns green, thermometer will beep once and three lines on display indicate thermometer is ready.



- 4 Place probe snugly in ear canal and direct toward opposite temple.**

Keep thermometer probe steady in the ear canal. Correct probe placement is essential for accurate measurements.



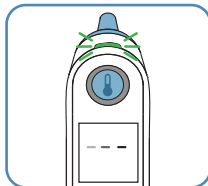
5 Press and release measure button.



The thermometer will beep once, running dashes will appear on the display then the green **ExacTemp** light will flash, indicating consistent probe position.

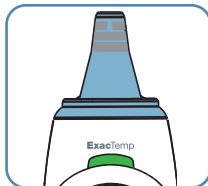


NOTE Always press the measure  button before taking a measurement.

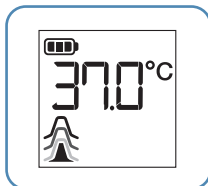


6 Temperature measurement.

A long beep and steady green **ExacTemp** light will signal the end of the measuring process.

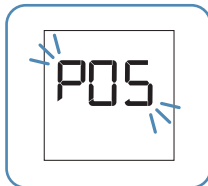


The temperature will show on the display.



If the thermometer is unstable or patient is moving during the measuring process, the device will beep, the green **ExacTemp** light will flash and POS (Position Error) will flash on the display. **Be sure the device is stable and restrict patient movement for the next measurement. Change the probe cover to reset.**

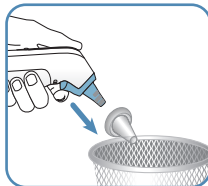
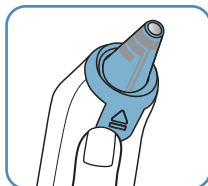
* See “Errors and notifications”



- 7 Remove used probe cover** by pressing Probe Cover Ejector button .

To achieve accurate measurements, use a new, clean probe cover for each measurement.

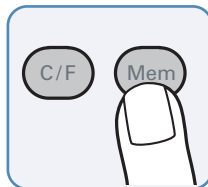
To take another measurement, place a new, clean probe cover on the thermometer. If no action is taken the thermometer will enter **Sleep** mode after 10 seconds or upon return to the thermometer cradle or host device.



10. Controls

10.1 Memory

Press **MEM** (the memory button) to reveal the last completed temperature. The temperature will show with a Mem indicator until **MEM** (the memory button) is pushed again, a new probe cover is applied, or the thermometer enters sleep state. Memory can also be accessed from the thermometer sleep mode and will display for 5 seconds before returning to sleep.



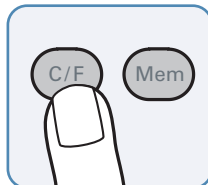
10.2 C/F (Celsius/Fahrenheit)

Once the temperature scale has been set (see "Default temperature scale"), the alternative scale can be quickly referenced at any time while a temperature is displayed.

- 1** If the temperature scale is set to Celsius, press and release **C/F** (the C/F button) to view the temperature in Fahrenheit.
- If the temperature scale is set to Fahrenheit, press and release **C/F** to view the temperature in Celsius.
- 2** Press and release **C/F** again to revert back to default scale.



NOTE If temperature conversion is disabled, refer to the Service Manual for more information.



10.3 Manual timer

The **Braun ThermoScan® PRO 6000** Ear thermometer includes a 60 second timer that features an audible notification and visual indicator at 0, 15, 30, 45, and 60 seconds. The timer turns off automatically 5 seconds after 60 seconds is completed. The timer can be stopped at any time by pressing the Timer button or applying a probe cover. This feature can be used to time pulse, respirations, etc. To use this feature:

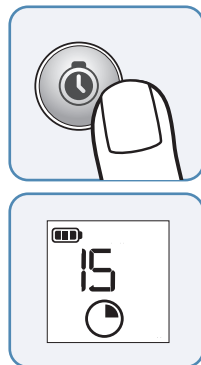
- 1 Press and hold Timer button  for one second to activate timer. A beep (audible notification) is heard at initiation of the timer.

The display will show timer counting up in seconds.

The display will show an icon that has four 15 second quadrants.

The timer will beep at the completion of each 15 second interval to provide audible notification. Then the current segment will become solid and the next segment will flash.

At 60 seconds a long beep will sound, all quadrants will appear solid ending the timer function. The thermometer will exit the timer mode after an additional 5 seconds.



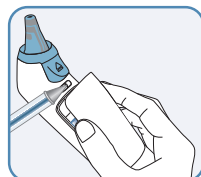
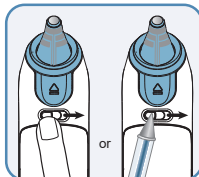
- 2 To stop the timer at any time, press the Timer button.

11. Settings

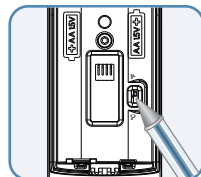
11.1 Default temperature scale

To set the default temperature scale:

- 1 Open battery door by sliding spring latch to the right using your finger or a pointed object such as a pen. While holding the latch in the open position, grasp the battery door and remove it. Remove batteries and set aside. Once batteries are removed, the C/F switch is accessible.



- 2 Slide switch to C or F using a pen or pointed object.
- 3 Place batteries back into thermometer. Snap the battery door back into place and ensure the latch returns to the original latched position. Celsius or Fahrenheit symbol will appear on the display.



11.2 Advanced functions

The **Welch Allyn Service Tool** software is required to modify the thermometer's configuration. A charging station and rechargeable batteries or compatible Baxter device is required to connect to the PC running the **Welch Allyn Service Tool**. (See "Advanced function settings" and "Service tools")

Item	Description	Settings	Default setting
PerfectTemp	Improves reading accuracy by detecting placement of probe in ear canal	On/Off	On
C/F button	Use the C/F button to view measurements in the non-default (alternate) temperature scale. When off (disabled) only the default scale is available.	On/Off	On
Default C/F manual switch	When on (enabled), the default scale can be set using the manual switch in the battery compartment. When the control is off (disabled), the radio buttons for Celsius and Fahrenheit are enabled allowing the service tool to set the default scale.	On/Off	On
Security function	Sets countdown time after removal from charging dock to lock	1 through 12 hours	Off
Timer icon	Displays an icon along with the timer counter	On/Off	On
Unadjusted operating mode	Places thermometer in mode to detect raw ear temperature only	Allows user to set device to unadjusted operating mode	Off

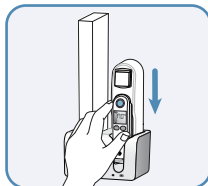
11.3 Advanced function settings

The **Welch Allyn Service Tool** software is required to modify the thermometer's configuration.

A charging station and rechargeable batteries or compatible Baxter device is required to connect to the PC running the **Welch Allyn Service Tool**.

Follow the instructions to access **Braun ThermoScan® PRO 6000 Ear** thermometer advanced settings using the **Welch Allyn Service Tool**.

- 1 Dock the **Braun ThermoScan® PRO 6000 Ear** thermometer in the Charging Station



- 2 The recommended action is to use the USB cable that connects to the wall adapter—unplug it from the wall adapter and plug it into your computer.



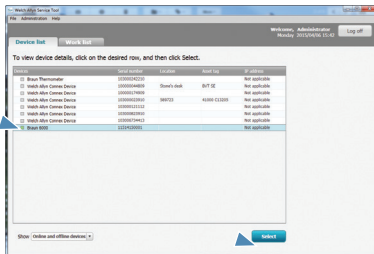
- 3
 - a. Launch the **Welch Allyn Service Tool**.
 - b. If the startup screen with the "Add new features" and "Service" button appears click **Service**.
 - c. Log in as ADMIN with no password or use any account you previously created.



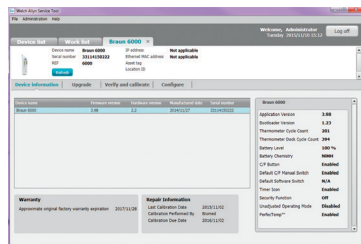
NOTE If the log on prompt does not appear click the Log on button. You must be logged on to access the configuration dialog.



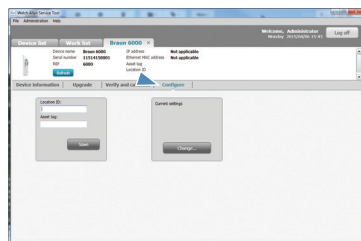
- 4 Click the **Braun ThermoScan® PRO 6000 Ear** thermometer from the Device list (Device list) to highlight, then click the select button.



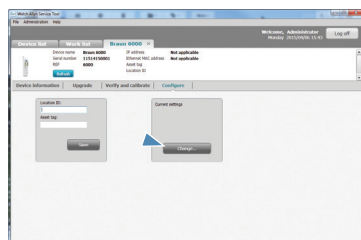
- 5 The device tab opens.



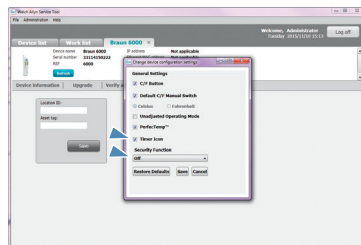
- 6 Click the **Configure** tab to the right of the device information tab.



- 7 Click the **Change** button in the current settings box. The configuration settings dialog box opens.



- 8 Select the setting you wish to enable or disable by clicking the check box next to the setting. A check mark indicates the setting will be enabled, an empty check box indicates the setting will be disabled. To select the Security function click the drop down menu and click the desired time or Off to disable. To restore the factory default settings click **Restore Defaults**. Once the desired settings are selected click the **Save** button to send the settings to the **Braun ThermoScan® PRO 6000** Ear thermometer and close the box.



To close the box without changing the settings click the **Cancel** button.

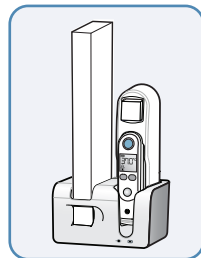
11.4 Service tools

For more information on the **Welch Allyn Service Tool** and Service Tool installation guide go to hillrom.com/en/services/welch-allyn-service-tool/ and download the service tool found under the Services & Support Tab/Service Centers/Download service tool.

11.5 Charging station for storage, charging, and security function (optional)

A charging station is available for the **Braun ThermoScan® PRO 6000** Ear thermometer. The charging station automatically recharges the thermometer when using the rechargeable battery which is included. Use of alkaline batteries in the thermometer while using the charging station is permitted but the alkaline batteries will not be charged.

The charging station has an electronic, individually adjustable security function which requires the thermometer to be returned to the station within an individually pre-selected time or the thermometer will be locked. The charging station serves as a convenient storage base which can also be wall mounted.

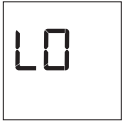


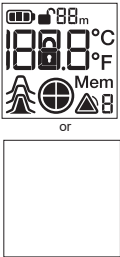
Contact Baxter Technical Support for details.

Baxter Technical Support:

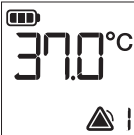
baxter.com/contact-us

12. Errors and notifications

Error message	Situation	Solution
	No probe cover is attached (animates ON).	Attach new, clean probe cover.
	Used probe cover is attached (animates OFF).	Discard probe cover that is on and attach new, clean probe cover if taking another temperature measurement.
	(POS = position error) The infrared monitor cannot find a temperature equilibrium and allows no measurement.	Change the probe cover to reset. Restrict patient movement and ensure that the positioning of the probe is correct and remains stable while taking new temperature.
	Ambient temperature is not within the allowed operating range of 10–40 °C (50–104 °F) or changing too rapidly.	Wait 20 seconds until thermometer turns off automatically, then turn on again. Ensure thermometer and patient are in an environment for 30 minutes where the temperature is between 10–40 °C (50–104 °F) prior to measurement.
 	Temperature taken is not within typical human temperature range. HI will be displayed when temperature is higher than 42.2 °C (108 °F). LO will be displayed when temperature is lower than 20 °C (68 °F).	Change probe cover to reset. Then, make sure thermometer is properly inserted and take a new temperature.

Error message	Situation	Solution
	System error (All icons display or display is blank) If error persists, If error still persists, If error still persists,	Wait 20 seconds until the thermometer turns off automatically, then turn on again. ... reset the thermometer by removing the batteries and putting them back in. ... batteries are dead. Insert new batteries. ... contact local Baxter Technical Support or representative.
	Battery is low, but thermometer will still operate correctly.	Insert new batteries.
	Battery is too low to allow temperature measurement.	Insert new batteries.
	Do you have any further questions?	... Contact local Baxter Technical Support or representative.

13. PerfectTemp status

Error message	Situation	Solution
	PerfectTemp sensor system is not functioning or disabled.	... Contact local Baxter Technical Support or representative.
	U is "Unadjusted Operating Mode." Mode used for raw temperature measurement. Requires service tool access to enable.	See "Advanced function settings" and adjust settings via Service Tool or contact local Baxter Technical Support or representative.

14. Maintenance and service

14.1 Cleaning the probe lens window, probe, and contacts



WARNING Only use Baxter thermometer disposable probe covers.



WARNING Do not use damaged, perforated, soiled or poor fitting probe covers. Do not reuse probe covers.



WARNING Dirty probe lens window = lower readings. Fingerprints, cerumen, dust, and other soiling components reduce transparency of the tip and result in lower temperature measurements. If thermometer is placed in ear without a probe cover, clean immediately.



WARNING Do not damage probe lens window. Avoid touching probe lens window except when cleaning. If probe lens window is damaged return to Baxter for service.



WARNING If cleaning instructions are not followed, the device may be exposed to fluid ingress. If this occurs, there is a risk of the probe tip overheating and potentially causing a burn to the user or the ear canal of the patient. In addition, fluid ingress may cause inaccurate temperature readings.



CAUTION Do not modify, change or adjust probe lens window. These changes will affect calibration and accuracy of the thermometer. If probe lens window is damaged return to Baxter for service.



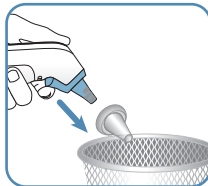
CAUTION Do not use a cleaning solution other than isopropyl or ethyl alcohol to clean probe lens window and probe. Bleach and other cleaning agents will cause permanent damage to the probe and probe lens window.



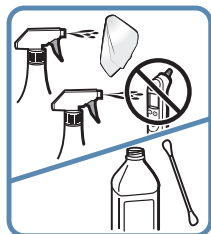
CAUTION Cleaning the probe lens window and probe

The thermometer probe and probe lens window should be cleaned when there are fingerprints, cerumen, dust, or other soiling components present, following the directions below:

- 1 Remove probe cover and discard.



- 2 Moisten cotton swab or cloth slightly with isopropyl or ethyl alcohol. Do not saturate.



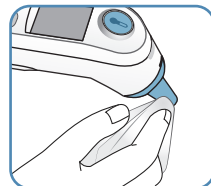
- 3 Gently wipe surface of probe lens window with cotton swab or cloth slightly moistened with isopropyl or ethyl alcohol only.



NOTE: Use gentle pressure when cleaning the sensor to prevent damaging the unit by accidentally changing the position of the sensor.



- 4 With probe facing down, wipe the probe with a damp cloth or cleaning wipe moistened with isopropyl or ethyl alcohol.



- 5 Gently wipe with dry, clean cotton swab or cloth immediately.

- 6 Allow at least 5 minutes drying time before taking temperature. Make sure probe lens window is clean and dry prior to use.

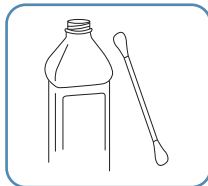


Cleaning the contacts

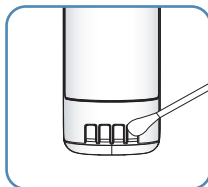


CAUTION Do not use bleach solutions of any kind when cleaning metal electrical contacts. It will damage the device.

- 1 Slightly dampen a cotton swab with 70% isopropyl alcohol.



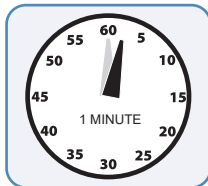
- 2 Remove the thermometer from the dock and clean the metal electrical contacts on the thermometer.



- 3 Place the thermometer aside for 1 minute, allowing the contacts to air dry.



NOTE If any cleaning agent, other than isopropyl or ethyl alcohol, comes into contact with the probe, probe lens window, or contacts immediately wipe dry. Then clean the probe, probe lens window, and contacts with isopropyl or ethyl alcohol.



14.2 Cleaning the thermometer body and cradle



CAUTION Do not submerge the thermometer. Excess liquid may cause damage to the thermometer.

Wipes should be moist, not saturated.



CAUTION Do not use any chemical other than those listed in the “Approved Cleaning Solutions” table below to clean the thermometer body and cradle. Other cleaning agents could cause damage to the thermometer.

When cleaning the probe lens window or probe **ONLY** use isopropyl or ethyl alcohol.



CAUTION Do not use abrasives pads or cleaners.

Approved cleaning solutions

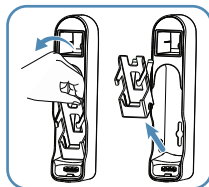
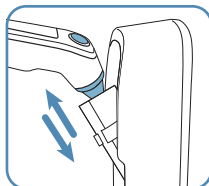
Family	Solution or brand	Probe lens window	Probe	Contacts	Thermometer body & cradle	Tether
Chlorine and chlorine compounds	10% Chlorine bleach solution	No	No	No	Yes	Yes
Quaternary ammonium compounds	CaviWipes	No	No	No	Yes	Yes
	Clinell Universal Wipes					
	SaniCloth					
Hydrogen peroxide	Virox Oxivir	No	No	No	Yes	Yes
Alcohol	70% isopropyl or ethyl alcohol	Yes	Yes	Yes	Yes	Yes

Additional cleaning agents may be periodically evaluated for compatibility. If your cleaning agent is not listed, contact Baxter Technical Support to determine if additional cleaning agents are approved for use. As needed, clean the thermometer body and cradle following the below directions.



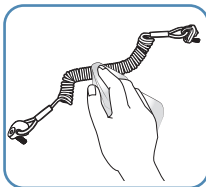
NOTE If any cleaning agent, other than isopropyl or ethyl alcohol, comes into contact with the probe, probe lens window or contacts immediately wipe dry. Then clean the probe, probe lens window, and contacts with isopropyl or ethyl alcohol.

- 1 For additional protection, we recommend placing a new probe cover on the thermometer probe to protect this area when cleaning the body of the thermometer.
- 2 Use a damp cloth or cleaning wipe with cleaning solution from the "Approved Cleaning Solutions" table. To clean the body, ensure that the wipe is moist, not saturated. Wipe the body with the display facing up.
- 3 Remove probe cover box carrier from the cradle by rotating the probe cover box carrier forward. See section "Removing and installing probe cover box carrier".
- 4 Wipe the cradle and probe cover carrier with a damp cloth or cleaning wipe with cleaning solution from the "Approved Cleaning Solutions" table.
- 5 Allow at least 5 minutes drying time before taking temperature. Make sure probe, body, and cradle are clean and dry prior to use.



14.3 Cleaning the tether (sold separately)

- 1 To clean the tether, ensure that the wipe is moist, not saturated. Wipe the tether with a damp cloth or cleaning wipe with cleaning solution from the "Approved Cleaning Solutions table".

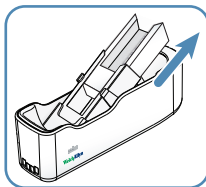


14.4 Installing new probe cover box

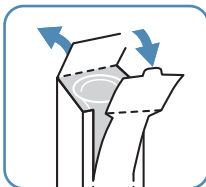


WARNING Verify that the probe cover does not come off prior to use. A probe cover that comes off during use can cause asphyxiation.

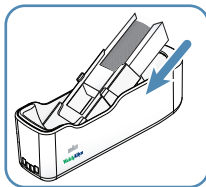
- 1 Remove empty probe cover box from probe cover box carrier by pulling up.



- 2 Open the new probe cover box. Pull down on the perforated strip. Discard perforated strips.

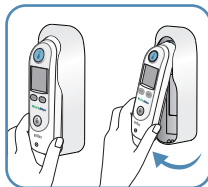


- 3 Insert new probe cover box into probe cover carrier by placing inside brackets and pushing down.

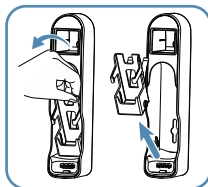


14.5 Removing and installing probe cover box carrier

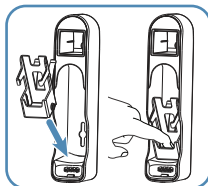
- 1 Remove thermometer from cradle by gripping thermometer at base and pivoting up.



- 2 Remove probe cover box carrier from the cradle by rotating the probe cover box carrier forward.



- 3 Place probe cover box carrier back in cradle by lining up the brackets and pushing down.



14.6 Storage environment

Store thermometer and probe covers in a dry location (the thermometer is not protected against ingress of water), free from dust and contamination and away from direct sunlight.

Storage temperature:
-20–50 °C (-4–122 °F)

Storage humidity:
0–85% non condensing

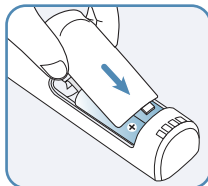
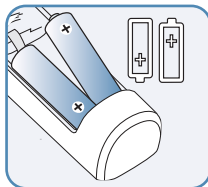
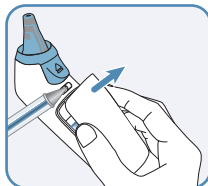
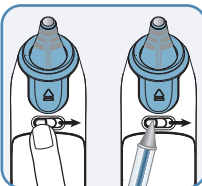
14.7 Replacing the batteries

The thermometer is supplied with two 1.5 V batteries type AA (LR 6).
For best performance, Duracell alkaline batteries are recommended.



NOTE The battery life performance testing was based on the **Duracell** alkaline batteries. Batteries other than these are not guaranteed to provide the same life performance results.

- 1 Insert new batteries when the battery symbol begins to flash on the display (See "Errors and notifications").
- 2 Open battery door by sliding spring latch to the right using your finger or a pointed object such as a pen. While holding the latch in the open position, grasp the battery door and remove it.
- 3 Remove the batteries and replace with new batteries, making sure the poles are in the right direction.
- 4 Snap battery door back into place and ensure the latch returns to original latch position.



This product contains batteries and recyclable electronic waste. To protect the environment, do not dispose of it in the trash, but take it to appropriate local collection points according to national or local regulations.

14.8 Calibration testing

The thermometer is initially calibrated at the time of manufacture. If the thermometer is used according to the instructions for use, periodic readjustment is not required. However, Baxter recommends checking calibration on an annual basis or whenever clinical accuracy of the thermometer is in question. Procedures for checking calibration are outlined in the 9600 Plus Calibration Tester (REF 01802-110) instructions for use manual.

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.

15. Specifications

Displayed temperature range:	20–42.2 °C (68–108 °F)
Operating ambient temperature range:	10–40 °C (50–104 °F)
Operating relative humidity range:	15–95% noncondensing
Display resolution	0.1 °C or 0.1 °F
Accuracy for displayed temperature range:	± 0.2 °C $\pm (0.4$ °F) (35.0 °C–42 °C) (95 °F–107.6 °F) ± 0.3 °C $\pm (0.5$ °F) (outside this temperature range)
Clinical bias:	
limits of agreement:	Please contact customer care.
clinical repeatability:	
Reference body site:	Oral measuring
Site:	Ear
Storage temperature:	-20–50 °C (-4 –122 °F)
Storage humidity:	0–85% non condensing
Shock:	Withstands drop of 3 ft (91.44 cm)
Warm up time:	Initial start-up time: 3–4 seconds
Measurement time:	2–3 seconds
Automatic power down:	10 seconds
Battery life:	6 months / 1000 measurements
Battery type:	2 × MN 1500 or 1.5 V AA (LR6)
Thermometer dimension:	6 in × 1.7 in × 1.3 in (152 mm × 44 mm × 33 mm)
Thermometer weight:	3.6 oz (100 g) without batteries
Ingress protection:	IPX0



CAUTION Do not use this device in the presence of electromagnetic or other interference outside the normal range specified in IEC 60601-1-2.



Intertek

Authorized Australian Sponsor
Welch Allyn Australia Pty
Limited 1 Baxter Drive
Old Toongabbie NSW 2146
Australia
1800 445 576

Symbol definitions:

For information on the origin of these symbols, see the Welch Allyn symbols glossary: welchallyn.com/symbolsglossary.



Type BF Applied Part



Measure icon



Caution

The caution statements in this manual identify conditions or practices that could result in damage to the equipment or other property, or loss of data.



Timer



Warning

The warning statements in this manual identify conditions or practices that could lead to illness, injury, or death. Warning symbols will appear with a grey background in a black and white document.



Calibration date



The product should not be discarded as unsorted waste but must be sent to separate collection facilities for recovery and recycling.

NiMH

Nickel-metal hydrid battery



Consult instructions for use (IFU or DFU). A copy of the IFU is available on this website. A printed copy of the IFU can be ordered from Baxter for delivery within 7 calendar days.



Manufacturer



Storage temperature



Manufacturer date



Storage humidity



Keep dry



Global Trade Item Number



Unique device identifier



Lot Code



Medical Device



Reorder number



Do not reuse, Single use device



Importer



Fragile



Serial number



Latex free



Product identifier



BPA



Recyclable



Keep out of reach of children

16. Warranty

For Model Braun ThermoScan® PRO 6000 Ear thermometer

Welch Allyn (an affiliate of Baxter) warrants the product to be free of defects in material and workmanship and to perform in accordance with manufacturer's specifications for the period of 3 years from the date of purchase from Welch Allyn or its authorized distributors or agents.

The date of purchase is: 1) the invoiced ship date if the device was purchased directly from Welch Allyn, 2) the date specified during product registration, or 3) the date of purchase of the product from a Welch Allyn authorized distributor as documented from a receipt from said distributor, whichever date is earlier.

This warranty does not cover damage caused by 1) handling during shipping, 2) use or maintenance contrary to labeled instructions, 3) alteration or repair by anyone not authorized by Welch Allyn, or 4) accidents. 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. Replaced units under warranty will have the remainder of the replaced unit's warranty length. Additionally, this warranty becomes void if the thermometer is operated with anything other than genuine Baxter probe covers.

17. EMC information

Special precautions concerning electromagnetic compatibility (EMC) must be taken for all medical electrical equipment. The **Braun ThermoScan® PRO 6000** Ear thermometers comply with IEC/EN 60601-1-2.

- All medical electrical equipment must be installed and put into service in accordance with the EMC information provided in the device's instructions for use.

- Portable and mobile RF communications equipment can affect the behavior of medical electrical equipment.

The device complies with all applicable and required standards for electromagnetic interference.

- It does not normally affect nearby equipment and devices.
- It is not normally affected by nearby equipment and devices.
- It is not safe to operate the device in the presence of high-frequency surgical equipment.
- It is good practice to avoid using the device in extremely close proximity to other equipment.



NOTE The **Braun ThermoScan® PRO 6000** Ear thermometer has essential performance requirements associated with temperature measurement. In the presence of EM disturbances, the device might not display a measurement. Once the EM disturbances stop, the **Braun ThermoScan® PRO 6000** Ear thermometer will self-recover and perform as intended.

17.1 Electromagnetic emissions

Emissions test	Compliance
RF emissions CISPR 11	Group 1, Class B
Harmonic emissions IEC 61000-3-2	Class A
Voltage fluctuations/flicker emissions IEC 61000-3-3	Complies

17.2 Electromagnetic immunity

Immunity test	IEC 60601 test and compliance level
Electrostatic discharge (ESD) IEC 61000-4-2	±8 kV contact ±15 kV air
Electrical fast transient/burst IEC 61000-4-4	+/- 2kV for power lines
Surge IEC 61000-4-5	+/- 0.5 kV, +/- 1 kV line(s) to line(s)
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	0 % UT; 0.5 cycle At 0°, 45°, 135°, 180°, 225°, 270°, 315°, 0% UT; 1 cycle
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	30 A/m
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz–80 MHz 6 Vrms in ISM bands from 150 kHz–80 MHz 80% AM at 1 kHz
Radiated RF IEC 61000-4-3	3 V/m 80 MHz–2.7 GHz 80% AM at 1 kHz

17.3 Recommended separation distances between portable and mobile RF communications equipment and the thermometers

The **Braun ThermoScan® PRO 6000** Ear Thermometers are intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or user of the thermometers can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the thermometers as recommended in this table, according to the maximum output power of the communications equipment.

Rated max. output power of transmitter (W)	Separation distance according to frequency of transmitter (m)			
	150 kHz–80 MHz outside ISM bands	150 kHz–80 MHz in ISM bands	80–800 MHz	800 MHz–2.7 GHz
	$d = \lceil \frac{3.5}{V_1} \rceil \sqrt{P}$	$d = \lceil \frac{12}{V_2} \rceil \sqrt{P}$	$d = \lceil \frac{12}{E_1} \rceil \sqrt{P}$	$d = \lceil \frac{23}{E_1} \rceil \sqrt{P}$
0.01	0.12	0.20	0.40	0.77
0.1	0.37	0.63	1.26	2.42
1	1.17	2.00	4.00	7.67
10	3.69	6.32	12.65	24.24
100	11.67	20.00	40.00	76.67



NOTE For transmitters rated at a maximum output power not listed in this table, the recommended separation distance d in meters (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 At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.



NOTE These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects, and people.

17.4 Test specifications for enclosure port immunity to proximity magnetic fields

Test frequency	Modulation	Immunity test level (A/m)
134.2 kHz	Pulse modulation ¹ 2.1 kHz	65 (rms before modulation is applied)
13.56 MHz	Pulse modulation ¹ 50 kHz	7.5 (rms before modulation is applied)

¹ The carrier shall be modulated using a 50% duty cycle square wave signal.

Test specifications for enclosure port immunity to RF wireless communications equipment (IEC 61000-4-3)

Test freq. (MHz)	Band (MHz) ¹	Service ¹	Modulation	Maximum power (W)	Distance (m)	Immunity test level (V/m)
385	380–390	TETRA 400	Pulse modulation ² 18 Hz	1.8	0.3	27
450	430–470	GMRS 460, FRS 460	FM3 ±5 kHz deviation 1 kHz sine	2	0.3	28
710 745 780	704–787	LTE band 13, 17	Pulse modulation ² 217 Hz	0.2	0.3	9
810 870 930	800–960	GSM 800/900, TETRA 800, iDEN 820, CDMA 850, LTE Band 5	Pulse modulation ² 18 Hz	2	0.3	28
1720 1845 1970	1700–1990	GSM 1800; CDMA 1900; GSM 1900; DECT; LTE Band 1, 3, 4, 25; UMTS	Pulse modulation ² 217 Hz	2	0.3	28
2450	2400–2570	Bluetooth® , WLAN, 802.11 b/g/n, RFID 2450, LTE Band 7	Pulse modulation ² 217 Hz	2	0.3	28
5240 5500 5785	5100–5800	WLAN 802.11 a/n	Pulse modulation ² 217 Hz	0.2	0.3	9

¹ For some services, only the uplink frequencies are included.

² The carrier shall be modulated using a 50% duty cycle square wave signal.

³ As an alternative to FM modulation, 50% pulse modulation at 18 Hz may be used because, while it does not represent actual modulation, it represents the worst case.