

BPBIO250

User's Manual

Please note the important information below before reading this manual.

Warning

Failure to observe these precautions can result in personal injury or equipment damage.

Caution

Failure to comply with safety precautions can damage the equipment.

Note

Referring to notes can help improve equipment use.

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Visit our website (www.inbody.com) to view and download additional information about the BPBIO320/320n. InBody Co., Ltd. reserves the right to modify the appearance, specifications, etc. of this product to improve its quality, without prior notice.

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BPBIO250

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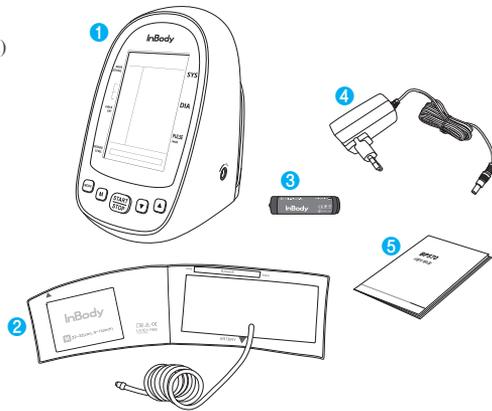
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I. Product Introduction

- This product is a professional automatic blood pressure monitor used by medical professionals. 5 measurement modes can be selected according to various medical environments. Rechargeable batteries can be used without replacing batteries. The User can measure blood pressure even in dark environments.
- This blood pressure monitor has cuffs of various size. So, Users can measure the blood pressure and pulse rate of a children and adult users whose arm circumferences are between 17 cm and 42 cm.
- Do not use this blood pressure monitor on pregnant women and newborn babies.

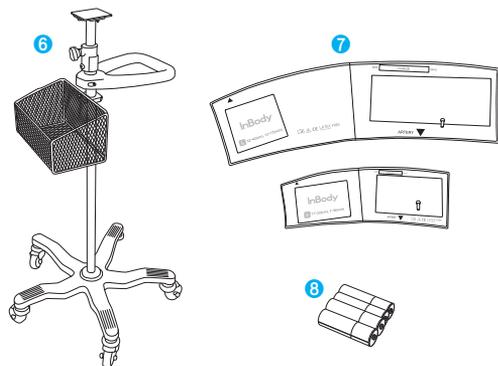
* Product Components

- 1 BPBIO250
- 2 M-sized Cuff
(only for the arm-circumference of 22 to 32 cm)
- 3 Lithium-ion Battery
(DC 3.63 V, 2600 mAh, 9.438 Wh)
- 4 Dedicated AC Adapter
(Input power: AC 100-240 V 0.5 A, 50-60Hz
Output power: DC 6.0 V, 2.0 A)
- 5 User's Manual

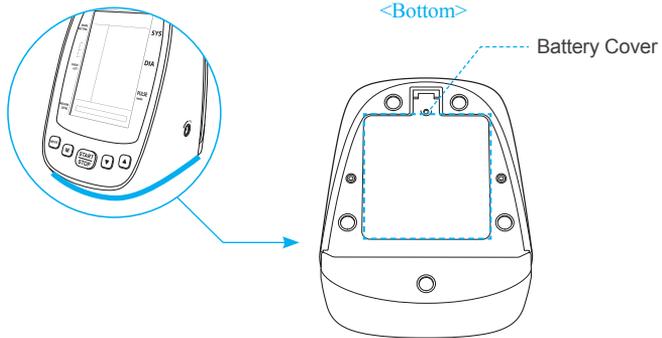
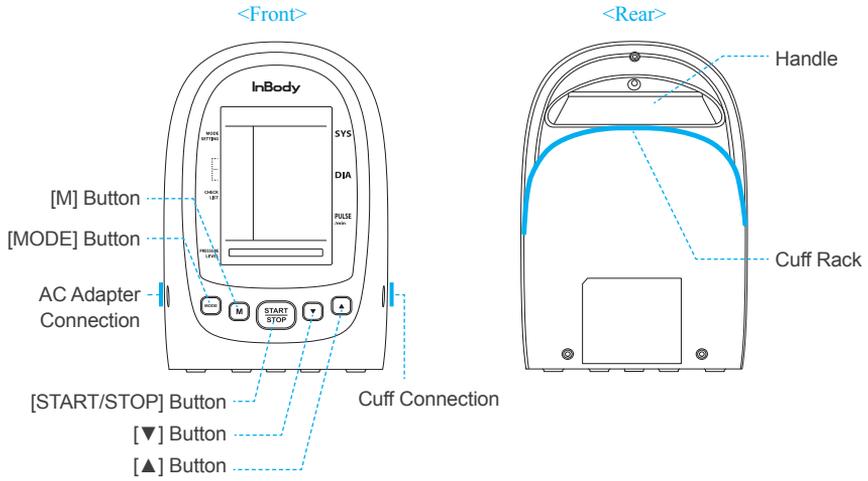


* Optional Components

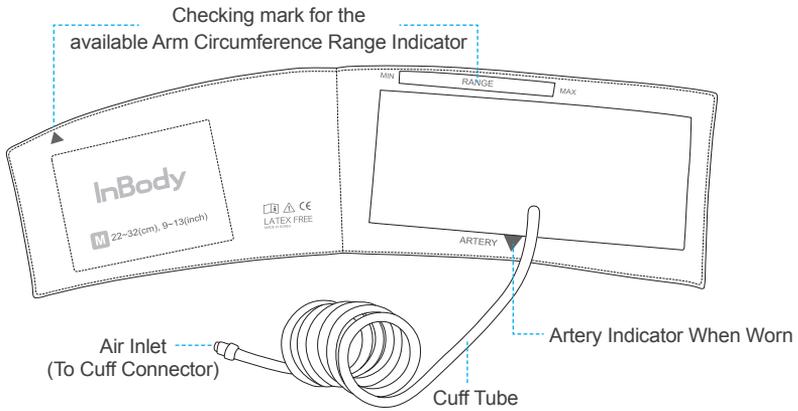
- 6 Stand
- 7 S and L sized Cuff
(S: 17-22 cm only, L: 32-42 cm only)
- 8 AA Batteries
(1.5 V, 4 EA)



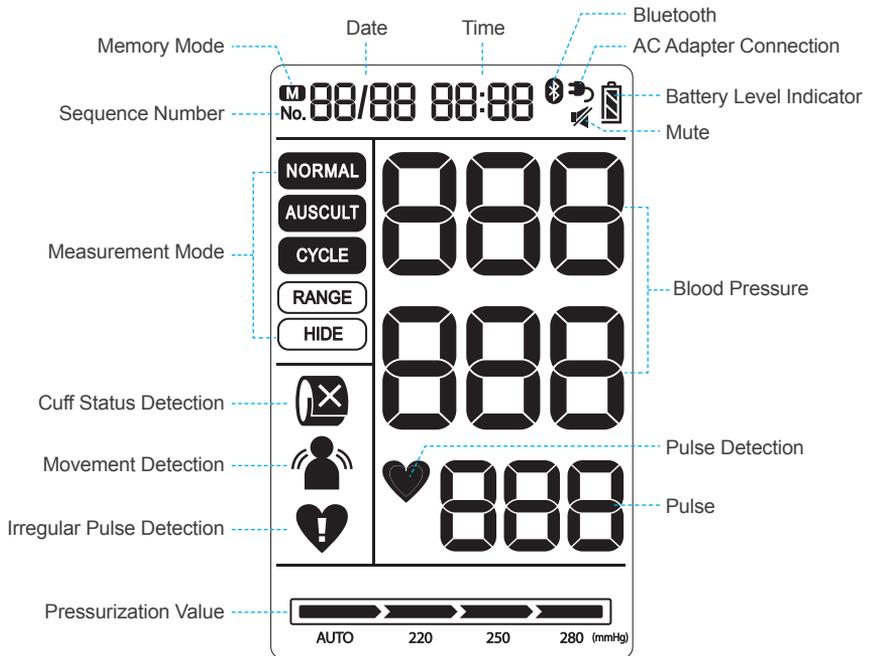
* Main Unit Parts



* Cuff Parts



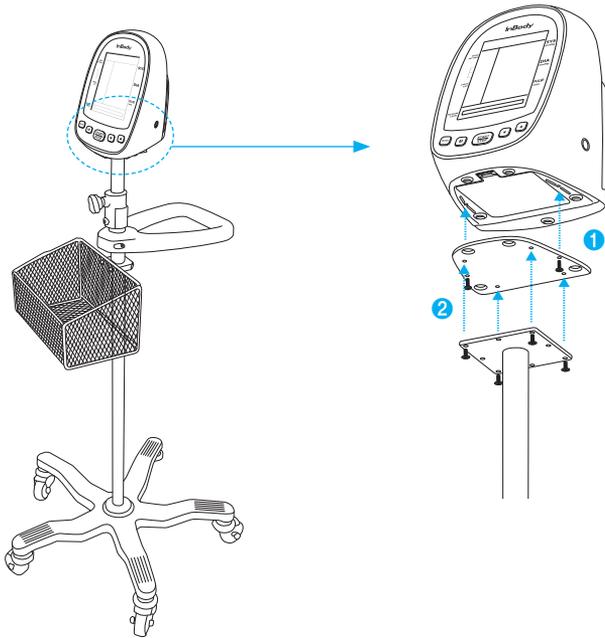
* Display Parts



* Installation for optional stand

- The Stand can be installed on the Main Unit.
- Various size Cuff can be stored in the Stand Box.
- The Stand can be installed in the following sequence.

- 1 Fix the Main Unit with the bracket.
- 2 Fix the Bracket with the Stand using four screws.



Note

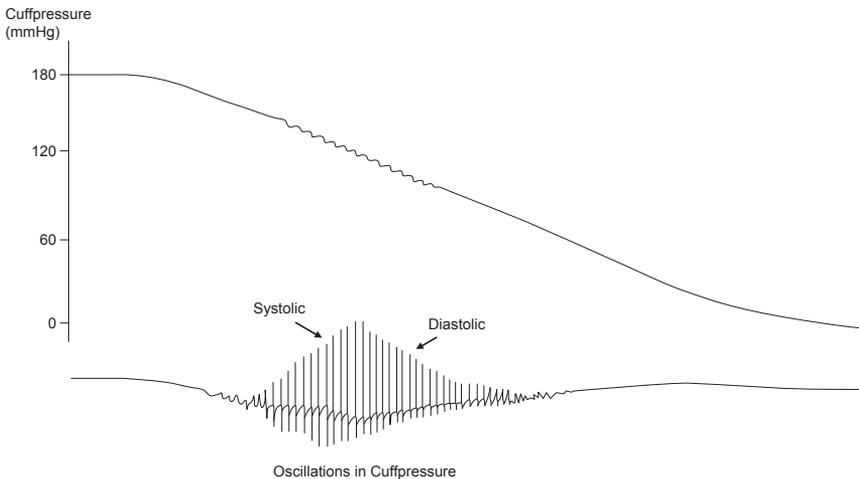
- Make sure the lithium-ion battery is inserted before installing the Stand.
- The Bracket and six set screws are enclosed in the Stand Box.
- Please check the assembly manual for more details.

II. Blood Pressure Measurement Method

A. Non-Invasive Blood Pressure Measurement Principles

Oscillometric method

Blood pressure is a measurement of changes in the pressure on the blood vessels. Blood pressure can be measured by direct or indirect measurement. This equipment supports indirect measurement using a cuff. This equipment tracks and analyzes the blood flow oscillations under the pressure using the cuff from the highest to the lowest pressure as shown by the figure below when the minute pressure speed is determined by the heartbeat. This equipment adopts oscillometric method using a cuff for blood pressure measurement. It determines the systolic, diastolic and average pressure on the basis of the blood flow oscillations measured through the cuff. The point where the maximum amplitude of the blood flow oscillation appeared is the average pressure, the points where the 70% and 60% amplitudes appeared are the systolic and the diastolic pressure respectively.



B. Precautions Before Measurement

Warning

1. Do not use blood pressure monitor near Magnetic Resonance Imaging (MRI) equipment. If MRI is to be performed, remove the Cuff from the patient.
2. Do not use the blood pressure monitor near the equipment that generates noise, such as equipments which uses frequencies or electric scalpel. Otherwise, it may cause failure and malfunction.
3. Do not use blood pressure monitor together with the defibrillator. Otherwise, it may cause an electric shock.
4. Do not use blood pressure monitor together with the high pressure oxygen therapy equipment.
5. Do not use blood pressure monitor at the same time with other medical devices or electronic devices.
6. Do not use blood pressure monitor near radios or mobile phone.
7. Do not use blood pressure monitor in an environment where flammable gas is generated or chemicals are stored.
8. Do not use blood pressure monitor in an environment where there is moisture or risk of gas or flame.
9. Do not use blood pressure monitor in an unstable environment such as area with vibration such as an emergency helicopter or an ambulance.
10. Do not use blood pressure monitor for newborns or pregnant women. The measured value may be incorrect.
11. Sanitize the Cuffs when used in patients with skin disorders.
12. Check the condition of a mastectomy patient if the blood pressure monitor was used.
13. Check the condition of the patient regularly if the patient needs to use the Cuff for a long time.
14. Do not measure blood pressure on the arm that is on intravenous injection, transfusing, or dialysis.
15. Do not measure blood pressure on the arm attached to a catheter, oxygen saturation concentration (SpO₂) sensor, or other equipments.
16. measured result is thought to be inaccurate due to various factors, check the blood pressure of the patient by using the facilitation method or the auscultatory method. The patient's condition may deteriorate.
17. Measured results can only be interpreted by experienced healthcare professionals and cannot be used for diagnosis, medication or other treatment performed at the consumer's discretion without a prescription.
18. Do not connect multiple blood pressure monitors simultaneously on one patient.
19. Do not move the main unit by holding the AC Adapter or Cuff. There is a danger of device falling to the patient if a cable or cuff is removed from the Main Unit.

20. Do not give strong impact to the main unit. Otherwise, it may cause failure and malfunction.
21. There is a possibility of death due to injury or suffocation if the air tube is wrapped around the neck.

 **Caution**

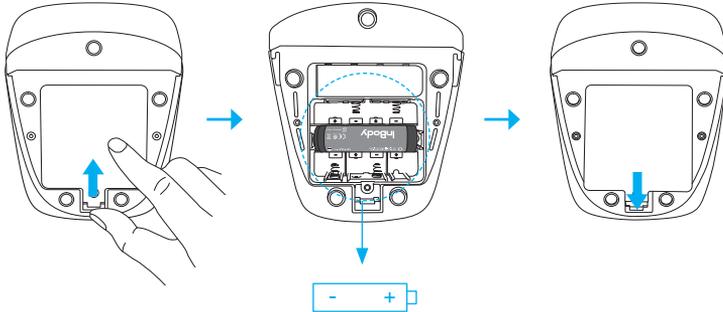
1. Do not use the blood pressure monitor without wrapping the Cuff on the arm.
2. Do not use or store the blood pressure monitor in an environment where the Cuff and the Air Tube are pressed by heavy objects or the Cuff and the Air Tube can be pressed.
3. Please note that the cuff and air tube can be damaged by a sharp bite.
4. Excessive repeated measurements may cause temporary internal bleeding (bruising) due to the compression.
5. Take a sufficient amount of resting for at least 5 minutes before taking the measurement.
6. Excessively high or low temperatures, humidity and pressure may affect the operation of the equipment and may cause malfunction. Use blood pressure monitor within the range specified in the product specifications.
7. Measured values may be inaccurate in the following cases. Check the following list before using the device:
 - A patient with arrhythmia
 - A patient with aortic disease
 - A patient with tremor
 - A patient using artificial heart or artificial lung
 - A patient whose body temperature is significantly low or whose circulation is poor
 - When the other equipments are attached to the arm to which the Cuff is wrapped
 - When an improperly sized Cuff is wrapped around the arm
 - When measuring blood pressure while wearing thick clothes
 - When measuring blood pressure with sleeves rolled up
 - When talking or moving during the measurement
 - When the position of the cuff is lower or higher than the heart
8. Do not use blood pressure monitor in a place where the Main Unit can fall easily.
9. If blood pressure monitor was not used for a long time, always test before use.
10. Do not disassemble or modify the equipment.
11. Use only the dedicated Cuff for accurate measurements.
12. Keep away from children and infants.
13. Stop the measurement immediately when the patient feels severe pain during the measurement or feels an abnormality.
14. Packing material and other wastes should be disposed according to the relevant laws and regulations.

15. Repair and inspection can be done only by the authorized staff of InBody Co., Ltd. For repair and inspection, please contact InBody Co., Ltd.
16. Operation of a radio equipment may interfere with the measurement.
17. Please note the following when using the Bluetooth function of BPBIO250.
 - This product is compatible with Android 4.3(Jellybean) with BLE or newer and iPhone 4S/iOS7 or newer.
 - Connect only the devices or programs provided by the InBody.

C. Preparation For Measurement

(1) Inserting/replacing lithium-ion battery

- 1 Remove the battery cover on the bottom of the product.
- 2 Insert the lithium-ion battery in the right direction.
- 3 Close the battery cover.



Note

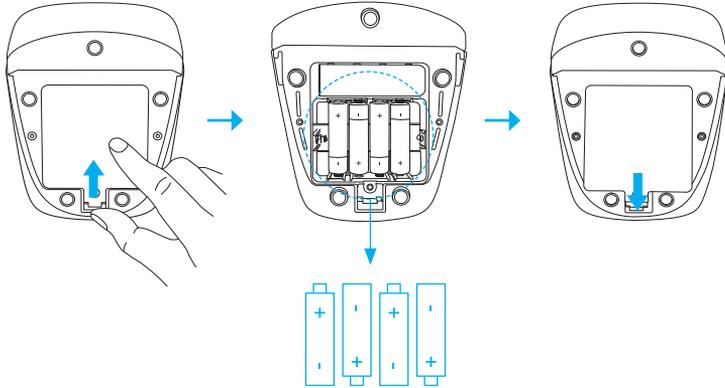
- The lithium-ion battery is provided as the basic component of BPBIO250.
- AA size battery can also be used if a lithium-ion battery is unavailable.

Caution

- Do not install batteries with wet hands.
- Make sure that the polarities (+) and (-) are correct when lithium-ion battery is installed.
- Use only dedicated lithium-ion battery for BPBIO250.
- Use battery only for the blood pressure measurements.
- Remove the lithium-ion battery from battery compartment when it will be not used for a long time.
- Wash thoroughly with running water if the battery fluid gets on your skin or clothes.
- Dispose of the lithium-ion battery according to the local regulation.
- Using a wrong lithium-ion battery may cause the device performance to deteriorate or damage the device and cause a fire.

(2) Inserting/replacing the AA batteries

- 1 Remove the battery cover on the bottom of the product.
- 2 Insert four AA size batteries in the right direction.
- 3 Close the battery cover.



Note

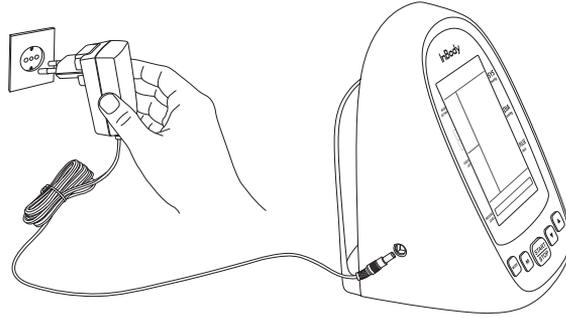
- AA batteries and lithium-ion batteries cannot be used at the same time.

Caution

- Do not install batteries with wet hands.
- Make sure that the polarities (+) and (-) are correct when batteries are installed.
- Use 1.5V AA-size alkaline or manganese batteries.
- Do not use new and used batteries together.
- Replace all four AA batteries at once when replacing batteries.
- Remove the batteries from the battery compartment when it will not be used for a long period.
- Dispose of used batteries at designated locations.

(3) Using the dedicated AC adapter

- 1 Connect the dedicated AC Adapter Connector to the AC Adapter Connection of the Main Unit of the blood pressure monitor.
- 2 Connect the dedicated AC adapter to the power outlet.



Warning

- Do not connect or disconnect the AC Adapter with wet hands.
- Do not put heavy objects above the AC Adapter cable.
- Do not use the AC Adapter if it is damaged.

Caution

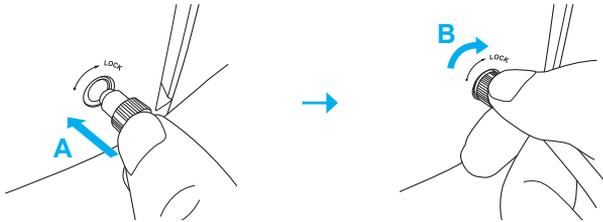
- Plug the AC Adapter into the wall outlet securely.
- When unplugging the AC Adapter, grasp the adapter body and pull it out.
- Disconnect the AC Adapter in sequence from wall outlet to BPBIO250.
- Do not apply excessive force to AC Adapter body and plug.
- Keep the AC Adapter Connector away from foreign objects.
- Use only the AC Adapter provided by InBody Co., Ltd.
- Do not use it for other purposes except the blood pressure measurement.
- Do not place the BPBIO250 in an area where it is difficult to disconnect the AC Adapter.

* AC Adapter's Specification

Manufacturer	XP Power Limited
Model Name	VEP15US06-XA1122A
Rated	Input: 100-240 V~, 0.5 A, 50/60 Hz Output: 6.0 Vd.c., 2.0 A
Type	Class II, Direct Plug-in Type
Approval	IEC 60601-1: 2005 + A1: 2012

(4) Connecting cuff

- 1 Insert the Air Inlet of the Cuff into the Cuff Connection on the Main Unit.
- 2 Press lightly as shown in A and turn it clock-wist as shown in B to tighten the connection.



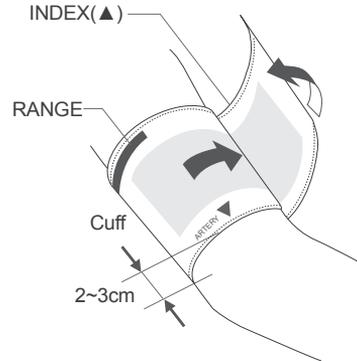
Note

- To remove the cuff, press the air inlet of the cuff slightly in the direction of the arrow A and turn it in the opposite direction of the arrow B.

D. Blood Pressure Measurement

(1) Wearing the Cuff

- 1 Wrap the Cuff around the arm, about 2-3 cm above the elbow.
- 2 Make sure that the Index (▲) on the Cuff is within the RANGE bar, and replace the cuff with the proper size if the index deviates from the RANGE.
- 3 Place the Cuff so that the ARTERY (▼) is on the arterial position.
- 4 Slightly loosen the Cuff where you can fit one finger.



! Note

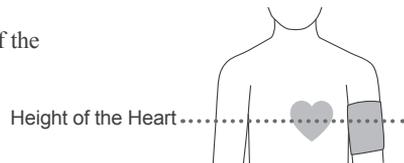
- The basically provided Cuff is the M-Sized Cuff, and it is for 22 to 32 cm in arm circumference. If arm circumference is bigger or smaller, use L-sized (32 to 42 cm) or S-sized (17 to 22 cm) Cuff.

! Note

- For correct measurement, wrap the Cuff properly.
- If the Cuff is loosely wrapped, the result can be inaccurate.
- If you have a wound in your arm, follow your doctor's instructions.

(2) Proper Measurement Posture

- 1 Place the left arm so that the middle of the cuff is at the patient's heart position.
- 2 Please allow the patient to relax in a comfortable posture.

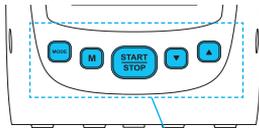


! Caution

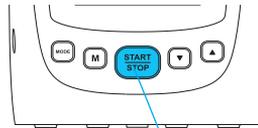
- The measurement posture may affect the blood pressure measurement.
- Please take correct posture for accurate blood pressure measurement.
- Measure blood pressure with your back and arms supported.
- When in seated position, keep your feet on the ground without twisting the legs.

(3) Turning the Power On/Off

- The blood pressure monitor will be turned on by pressing any of the five buttons on the Main Unit.
- The blood pressure monitor will be turned off by pressing and holding the [START/STOP] button.
- BPBIO250 provides power saving function
If there is no operation within 5 minutes, the blood pressure monitor automatically turns off.



The power is turned on by pressing and holding the button.



The power is turned off by pressing and holding the button.

Note

- The operation of the blood pressure monitor will be different depending on which button is pressed to switch on the device.

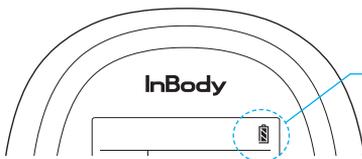
[MODE], [▼], [▲] buttons: Turning on → NORMAL mode standby screen

[M] button: Turning ON → MEMORY mode screen

[START/STOP] button: Turning ON → Starting measurement in NORMAL mode

(4) Checking Battery Level

- The battery level can be checked on the upper right corner of the screen when the machine is switched on.
- If the AC Adapter icon will be displayed instead of the Battery Level Indicator if the AC Adapter () is plugged in.



: The battery level is sufficient.



: The batteries will soon be drained.



: The batteries have been completely drained. Charge the lithium-ion batteries or replace with new AA batteries.

(5) Charging the Lithium-Ion Batteries

- Lithium-Ion Batteries can be charged with Dedicated AC Adapter.
- When the Lithium-Ion Batteries are drained, charge it (4 hours for full charge) before using it.

- 1 Make sure the Lithium-Ion Batteries are inserted in the Main Unit.
- 2 Connect the dedicated AC Adapter Connector to the AC Adapter Connection of the Main Unit.
- 3 Plug the Dedicated AC Adapter to the power outlet.
- 4 After a while, the following indication will appear and charging begins.

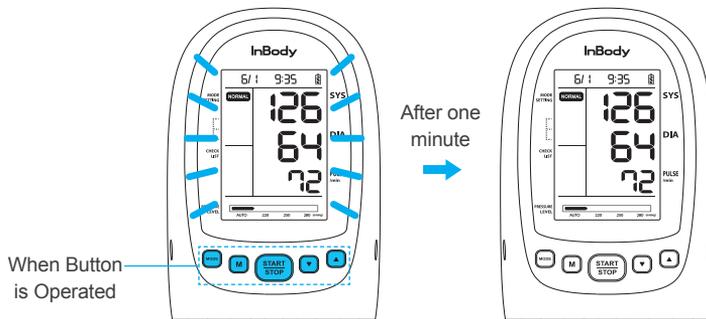


Caution

- AA batteries will not be charged even if the dedicated AC Adapter is plugged in.
- Charge the Lithium-Ion Batteries once a month even if the blood pressure monitor is not being used.

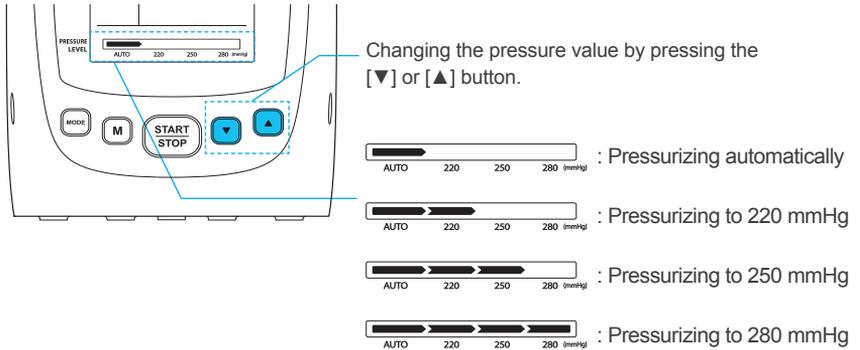
(6) LCD Backlight

- The LCD backlight function allows the user to measure blood pressure even in dark conditions.
- The LCD backlight turns on automatically by pressing buttons.
- The LCD backlight turns off after one minute when buttons are not operated.



(7) Pressurization Value Setting

- The user can set the desired pressure value by pressing the [▼] or [▲] button before measuring blood pressure.
- The pressure value can be set from Auto, 220, 250 or 280.

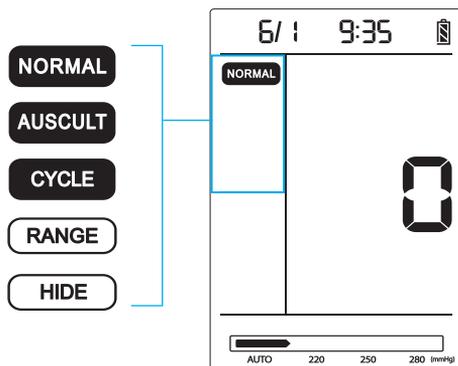


⚠ Caution

- Do not pressurize more than necessary.
- Pressurizing more than necessary may cause pains.

(8) Five measurement modes

- Five measurement modes can be selected according to various medical environments in BPBIO250.
- The measurement mode can be checked in the upper left corner of the LCD screen.

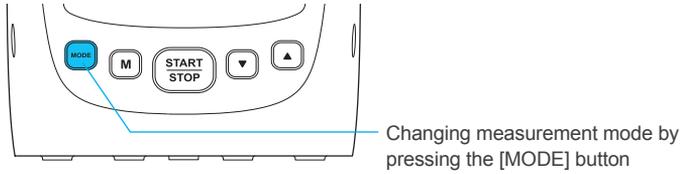


- Each measurement mode can be used in the following situations.

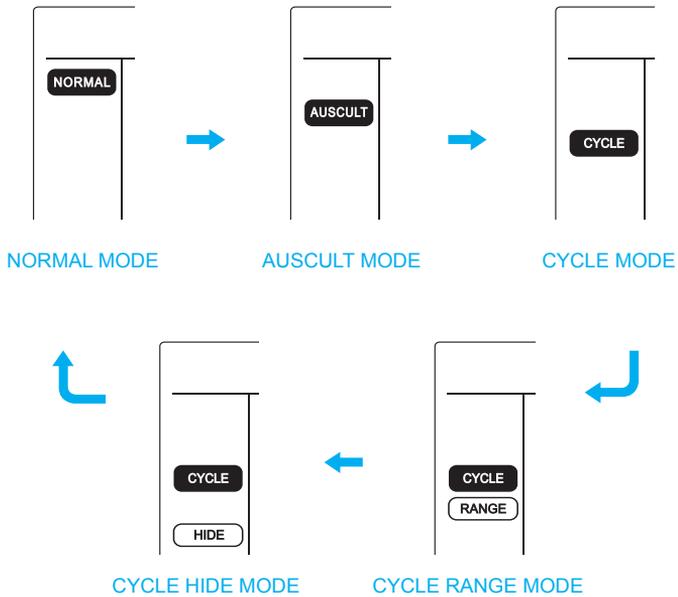
Measurement	Icon display	Description
NORMAL mode	NORMAL	Used for general one measurement of blood pressure
AUSCULT mode	AUSCULT	Used for measuring blood pressure with the auscultatory method (Replacing aneroid or mercury blood pressure monitor)
CYCLE mode	CYCLE	Used to measure blood pressure repeatedly several times
CYCLE RANGE mode	CYCLE RANGE	CYCLE mode + RANGE function (RANGE function: If the measured value is out of the setting range, result will be noted.)
CYCLE HIDE mode	CYCLE HIDE	CYCLE mode + HIDE function (HIDE function: Measurement will not be displayed on the screen.)

* Changing Measurement Mode

- Measurement mode can be changed by pressing the [MODE] button.



- Measurement Mode Changes in Sequence: NORMAL → AUSCULT → CYCLE → CYCLE RANGE → CYCLE HIDE → NORMAL.

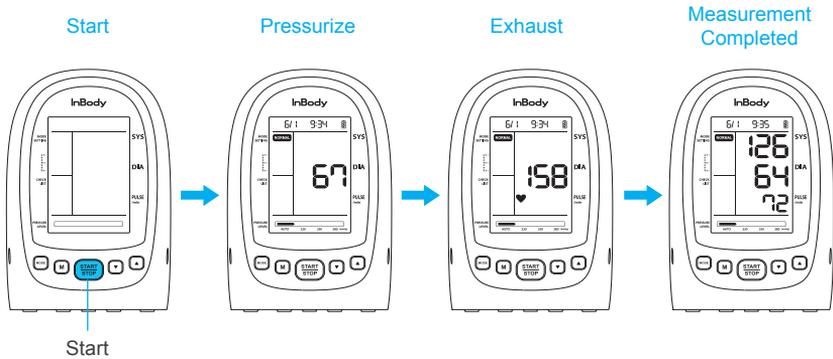


* NORMAL Mode

- NORMAL Mode is used for normal blood pressure measurement.

<Measurement Order>

- 1 Make sure that the Cuff is correctly worn and the measurement posture is correct again.
- 2 Press the [START/STOP] button of the blood pressure monitor to start blood pressure measurement.
- 3 When pressurization starts and the pressure reaches a certain extent, the measurement begins while air is being exhausted slowly.
- 4 When the measurement is completed, the blood pressure is displayed on the screen and is automatically saved.



! Note

- Month / Day Hour: Minute is displayed only when date and time are set.
- For more information on how to set the date and time, refer to “F. User Settings”.

! Caution

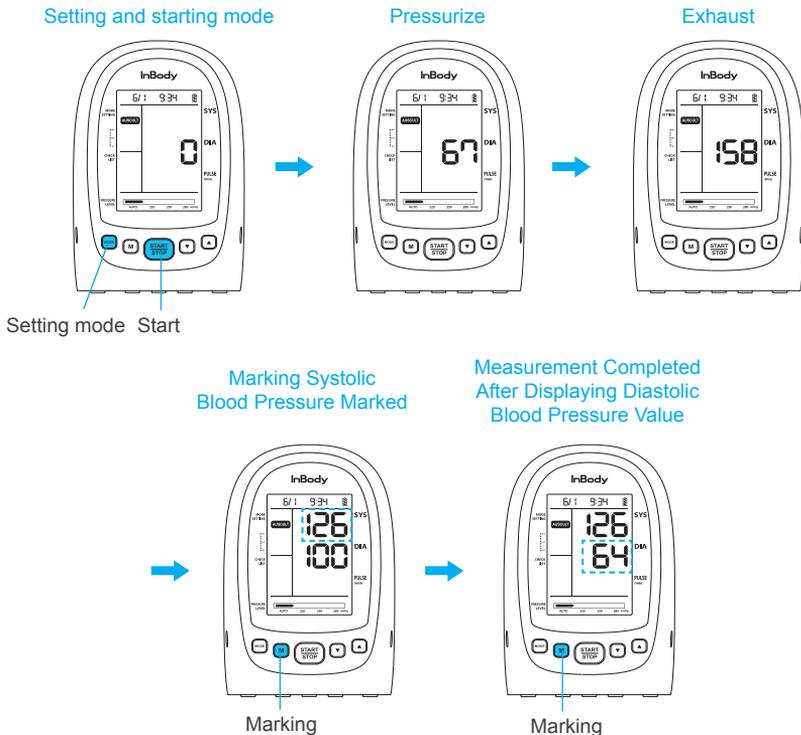
- Do not talk or move during the measurement.
- During the measurement, look at the patient’s condition near the patient.
If the user feels pain or has problems during the measurement, press the [START/STOP] button. If problem is still occurred, remove the air tube from the device or cuff from the arm.

* AUSCULT Mode

- This mode is used when measuring blood pressure with stethoscope.
- This mode can replace aneroid or mercury blood pressure monitor.
- The systolic and diastolic blood pressure can be recorded through marking during exhaust.
- Manual pressurization is possible during exhaust.

<Measurement Order>

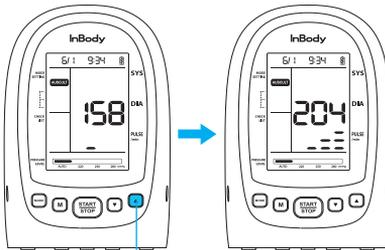
- 1 Make sure that the Cuff is worn correctly and the posture is correct.
- 2 Place the stethoscope in the arm artery.
- 3 Set to AUSCULT Mode by pressing the [MODE] button.
- 4 Press the [START/STOP] button to start the blood pressure measurement.
- 5 When the pressure reaches to a certain level, the exhaust will happen slowly.
- 6 Listen to the auscultation sound during exhaust and press the [M] button to mark the systolic and diastolic blood pressure.
- 7 After measurement, the result is displayed and saved automatically.



 **Note**

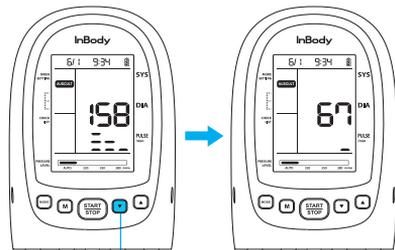
- Month / Day Hour: Minute is displayed only when date and time are set.
 - For more information on how to set the date and time, refer to “F. User Settings”.
 - AUSCULT mode does not automatically measure blood pressure.
 - AUSCULT mode does not detect heartbeats.
 - In AUSCULT mode, pulse is not displayed.
 - In AUSCULT mode, motion and irregular pulse wave are not detected.
 - If no marking is performed, the measurement is automatically terminated at a certain pressure or less.
- The AUSCULT mode allows manual pressurization to be performed at the desired pressure during exhaust in case the patient cannot hear.
- 1 Press and hold the [▲] button during exhaust.
 - 2 The manual pressure indicator is displayed while pressing this button, and pressurization begins.
 - 3 Release the [▲] button after the appropriate pressurization, and the pressure stops.
- If rapid exhaust is required, manual exhaust is possible to achieve desired pressure.
- 1 Press and hold the [▼] button during exhaust.
 - 2 The manual pressure indicator is displayed while pressing this button, and rapid exhaust begins.
 - 3 Release the [▼] button after the appropriate pressurization, and the rapid exhaust stops and switch to normal exhaust speed.

During Exhaust



Press and Hold to Start Manual Pressurization.

During Exhaust



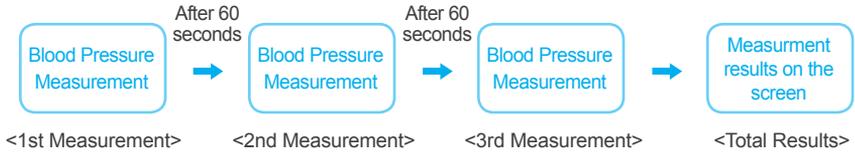
Press and Hold to Start Rapid Exhaust.

 **Note**

- If pressure exceeds 300 mmHg, the measurement is terminated and an error is displayed.
- Use the manual pressure function while checking the patient’s condition. Long term pressurization may cause pains.

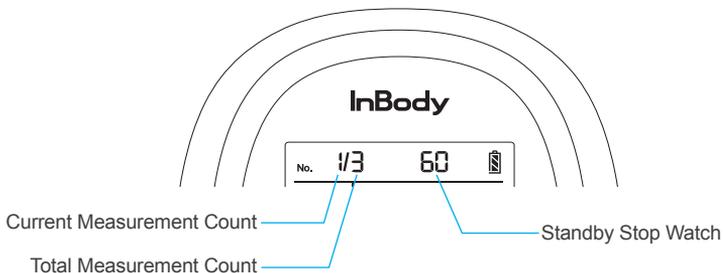
* CYCLE Mode

- In CYCLE mode, the patient can measure blood pressure repeatedly.
- The number of measurements and standby time can be set.
- If the measurement count is set to 3 times and the standby time is set to 60 seconds, the operation in the CYCLE mode will be performed shown below.



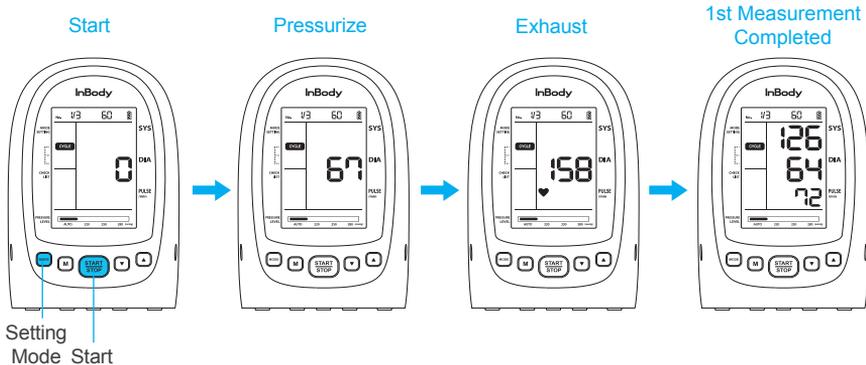
<Measurement Order>

- 1 Make sure that the Cuff is correctly worn and the posture is correct again.
- 2 Set to CYCLE mode by pressing the [MODE] button.
- 3 Press the [START/STOP] button to start the blood pressure measurement.
- 4 When pressurization starts and the pressure reaches a certain extent, the measurement begins while air is exhausting slowly.
- 5 After measurement, the result is displayed and saved automatically.
- 6 The current number of measurements is changed.
- 7 After the standby time has elapsed, the next measurement starts.

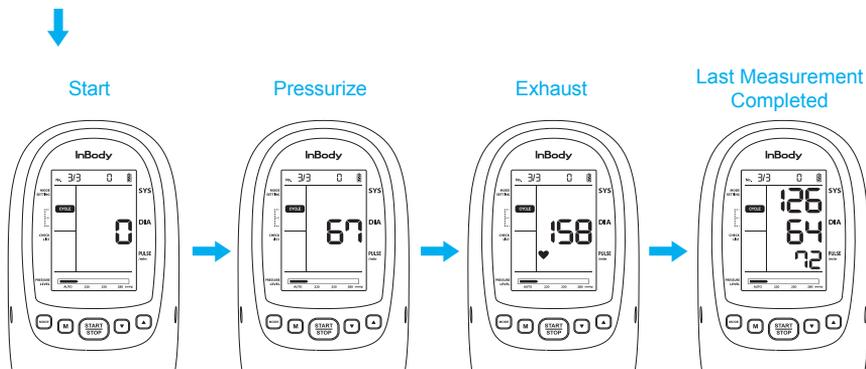


! Note

- The current number of measurements / the total number of times and the standby time are showed in date and time display field.
- For more information on how to set the number of measurements and standby time, refer to “F. User Settings”.
- The measurement date and time can be checked in the MEMORY Mode.



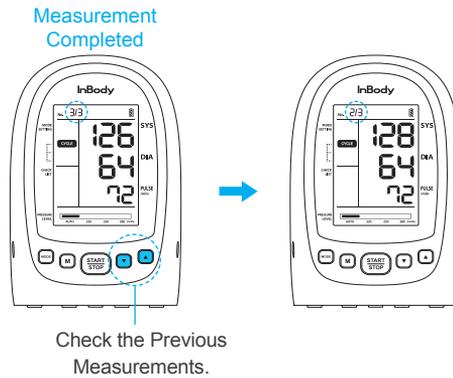
Start and Finish 2nd Measurement



Note

- The next measurement can be started immediately by pressing the [START / STOP] button when the standby time is reduced.
- All remaining measurements can be canceled during measurement by pressing the [START/STOP] button.

- In the CYCLE Mode, the previous measurement results can be checked.
- If all measurements are completed for the set number of times, the previous measurement result can be checked by pressing the [▼] or [▲] button.



 **Note**

- The previous measurements can only be checked when all the measurements have been completed for the set number of times.

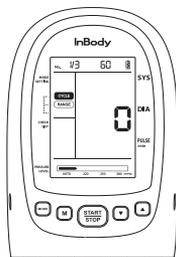
* CYCLE RANGE Mode

- In the CYCLE RANGE Mode, the patient can measure his / her blood pressure repeatedly by utilizing the RANGE function.
(RANGE function notifies the user when the measured value is out of the average measurement range.)
- The previous measurement result can be checked after the measurement is completed.
- The RANGE function allows the user to set the expected measurement range of systolic and diastolic blood pressure, respectively.
- When the systolic blood pressure range is set from 160 to 180 mmHg and the diastolic blood pressure range is set from 100 to 130 mmHg, CYCLE RANGE mode operates to measure if the blood pressure is out of those ranges.

<Measurement Order>

- 1 Make sure that the cuff is correctly worn and the measurement posture is correct again.
- 2 Set to CYCLE mode by pressing the [MODE] button.
- 3 Press the [START/STOP] button of the blood pressure monitor to start the blood pressure measurement.
- 4 When pressurization starts and the pressure reaches to a certain level, the measurement begins while air is exhausting slowly.
- 5 When the measurement is completed, the blood pressure is displayed on the screen and is automatically saved.
- 6 The current number of measurements is changed.
- 7 After the standby time has elapsed, the next blood pressure measurement starts.

[Measurement-standby screen]



Show Current Pressure



Show Systolic Pressure
RANGE Set Value
(160-180)



Show Diastolic Pressure
RANGE Set Value
(100-130)

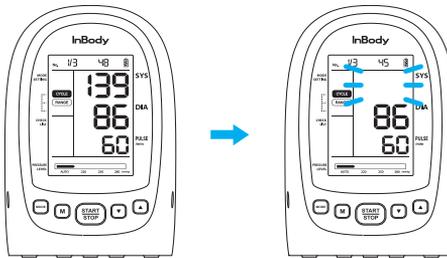
 **Note**

- The RANGE value and the current pressure value will alternately displayed on the screen.
- The current number of measurements / the total number of measurements and the standby time are displayed in date and time display field.

For more information on how to set the number of measurements, standby time, and RANGE, refer to “F. User Settings”.

[Measurement Completed Screen]

In Case the Blood Pressure is Out of RANGE



 **Note**

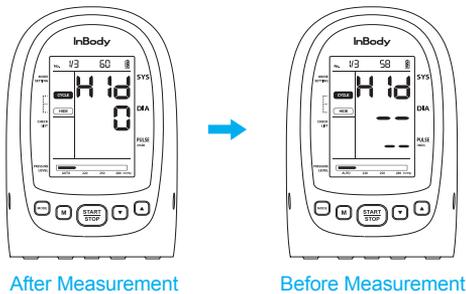
- The previous measurement can be checked by pressing the [▼] or [▲] button after all measurements are completed.

* CYCLE HIDE Mode

- In the CYCLE HIDE mode, the patient can measure his / her blood pressure repeatedly by utilizing the HIDE function.
(HIDE function: It does not display measurements on screen.)
- The measurement operation is the same as the CYCLE mode.
- The measurement result can be checked in the MEMORY Mode after the measurement is completed.

<Measurement Order>

- 1 Make sure that the Cuff is correctly worn and the measurement posture is correct again.
- 2 Set to CYCLE HIDE mode by pressing the [MODE] button.
- 3 Press the [START/STOP] button of the blood pressure monitor to start the blood pressure measurement.
- 4 When pressurization starts and the pressure reaches a certain extent, the measurement begins while air is exhausting slowly.
- 5 When the measurement is completed, the ‘--’ is displayed on the screen and is automatically saved.
- 6 The current number of measurements is changed.
- 7 After the standby time has elapsed, the next blood pressure measurement starts.

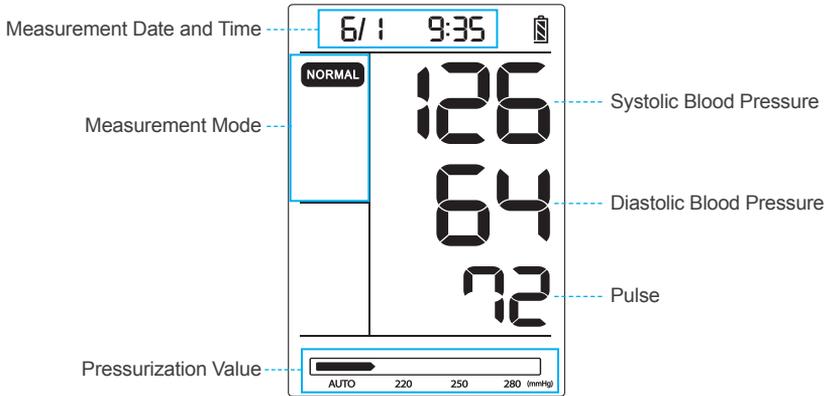


! Note

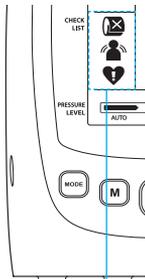
- In the CYCLE HIDE Mode, the measured values are not displayed on the screen.
- The blood pressure measured with the HIDE function can be checked in the MEMORY mode.

(9) Checking Measurement Results

① Checking the Blood Pressure Basic Information



② Checking the Status of the Cuff, Movement, and Irregular Pulse



Detection of Cuff Status:

The Cuff was loose. Please wear it properly and try again. If the user is wearing thick clothes, please measure after taking them off.



Movement Detection:

Movement is detected during the measurement. Please try again.



Irregular Pulse Detection:

Irregular pulse is detected. Please try again.

Note

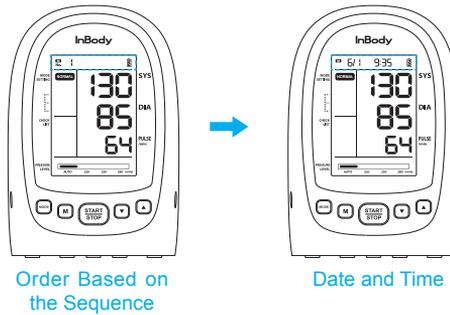
- Irregular pulse is detected when the pulse is 25% off the reference pulse.
- Irregular pulse may be due to movement during the measurement.

E. Checking Saved Measurements (MEMORY MODE)

- (1) Press the [M] button to check the saved measurements.
- (2) Sequence number and measurement date and time are displayed.
- (3) Press the [▼] or [▲] button to check the saved results one by one.

 : Go to Past Measured Results

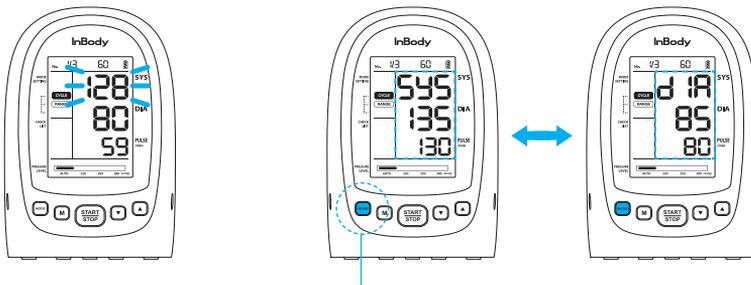
 : Go to Recent Measured Results



- (4) Recorded results in CYCLE RANGE mode are displayed as below.
 - If the measured value is out of the set range, the measured value will blink.
 - The set range can be checked while the [MODE] button is held down.

Values which are Out of the Range Blinks

Systolic & Diastolic Values Setting



Set Ranges Will be Displayed While Pressed

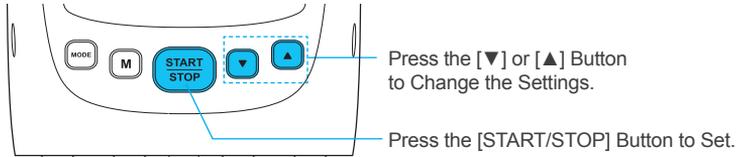
(5) Press the [M] button again to exit the MEMORY Mode.

 **Note**

- Up to 99 measurements can be saved.
- Press and hold the [▼] or [▲] button to check quickly the past or recent results.
- Month / Day Hour: Minute is displayed only when date and time are set.
- ‘--’ is displayed if there is no saved blood pressure.
- The saved blood pressure measurement value can be deleted. For more information on how to delete the results, refer to “F. User Settings”.

E. User Settings

- Press and hold the [MODE] button to set the measurement mode and function.
- The settings are displayed
- Press the [▼] or [▲] button to change the settings and press the [START/STOP] button to set it.
- Press and hold the [MODE] button again to exit the user setup screen.



(1) Summary of User Settings

Setting Items	Display	Description	Remarks
F01	CYC	Setting number of repeated measurements in the CYCLE (RANGE, HIDE) Mode	1 to 6 Times
F02	Int	Setting the Standby Time in the CYCLE (RANGE, HIDE) Mode	30, 60, 90, 120 Seconds
F03	S-H	Setting the Systolic Blood Pressure Range in the CYCLE RANGE Mode	Setting Maximum and Minimum Value
F04	d-H	Setting the Diastolic Blood Pressure Range in the CYCLE RANGE Mode	Setting Maximum and Minimum Value
F05	Snd	Setting Sound ON / OFF	
F06	Clr	Deleting Saved Results	
F07	-	Setting Date and Time	
F08	SPd	Setting Exhaust Speed	

(2) F01: Setting Number of Repeated Counts

- The number of repeated measurements can be set in the CYCLE (RANGE, HIDE) mode.

<Measurement Order>

- 1 Press and hold the [MODE] button for 3 seconds to enter the User Setting Mode.
- 2 Press the [▼] or [▲] button to set **F01**.
- 3 Press the [START/STOP] button to switch to the repeat count setting.
- 4 Press the [▼] or [▲] button to select the number of measurements.
- 5 When the selection is completed, press the [START/STOP] button to complete the settings.
- 6 After the setting is completed, press and hold the [MODE] button for 3 seconds, and return to the previous screen



F01 Screen Setting



Setting Repeat Count

Note

- By pressing the the [▼] or [▲] buttons, you can access the settings directly.
- The number of measurements can be set from 1 to 6 times.

(3) F02: Setting Standby Time

- The standby time between the repeated measurements can be set in the CYCLE (RANGE, HIDE) Mode.

<Measurement Order>

- 1 Press and hold the [MODE] button for 3 seconds to enter the user settings mode screen.
- 2 Press the [▼] or [▲] button to set **F02**.
- 3 Press the [START/STOP] button to enter the standby time setting.
- 4 Press the [▼] or [▲] button to select the standby time.
- 5 When the selection is completed, press the [START/STOP] button to complete the setting.
- 6 After setting is completed, press and hold the [MODE] button for 3 seconds, and return to the previous screen



Setting F02 Screen



Setting standby time

Note

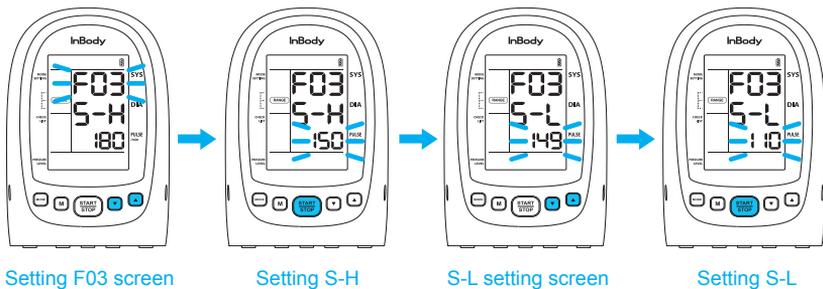
- Press and hold [▼] or [▲] button to quickly change the setting.
- Standby time can be set from 1, 2, 5, 10, 20 and 30 minutes.

(4) F03: Setting Systolic Blood Pressure Range

- The systolic blood pressure range can be set in the CYCLE RANGE Mode.

<Measurement Order>

- 1 Press and hold the [MODE] button for 3 seconds to enter user settings.
- 2 Press the [▼] or [▲] button to set **F03**.
- 3 Press the [START/STOP] button to enter the maximum value (S-H) for systolic blood pressure range settings.
- 4 Press the [▼] or [▲] button to select the maximum value for systolic blood pressure range.
- 5 When the selection is completed, press the [START/STOP] button to complete the setting.
- 6 Set to minimum value for the systolic blood pressure range.
Press the [▼] or [▲] button to select the minimum value (S-L) for systolic blood pressure range.
- 7 When the selection is completed, press the [START/STOP] button to complete the setting.
- 8 After setting is completed, press and hold the [MODE] button for 3 seconds, and return to the previous screen



Note

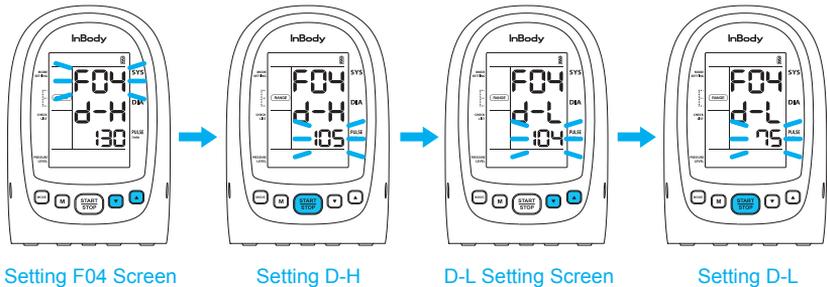
- Press and hold [▼] or [▲] button to quickly change the settings.
- The minimum value (S-L) can be set after setting the maximum value (S-H).
- S-H can be set to '1 to 300' and S-L can be set to '0 to S-H'.

(5) F04: Setting Diastolic Blood Pressure Range

- The diastolic blood pressure range can be set in the CYCLE RANGE mode.

<Measurement Order>

- 1 Press and hold the [MODE] button for 3 seconds to enter user settings mode screen.
- 2 Press the [▼] or [▲] button to set **F04**.
- 3 Press the [START/STOP] button to enter the maximum value (S-H) for diastolic blood pressure range settings.
- 4 Press the [▼] or [▲] button to select the maximum value for diastolic blood pressure range.
- 5 When the selection is completed, press the [START/STOP] button to complete the setting.
- 6 Set to minimum value for the diastolic blood pressure range.
Press the [▼] or [▲] button to select the minimum value (d-L) for diastolic blood pressure range.
- 7 When the selection is completed, press the [START/STOP] button to complete the setting.
- 8 After setting is completed, press and hold the [MODE] button for 3 seconds, and return to the previous screen



Note

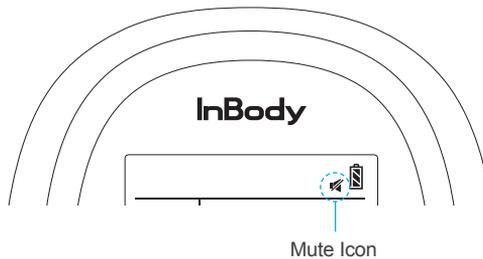
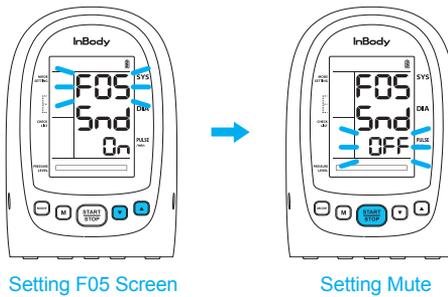
- Press and hold [▼] or [▲] button to quickly change the settings.
- The minimum value (d-L) can be set after setting the maximum value (d-H).
- d-H can be set to '1 to 300' and d-L can be set to '0 to d-H'.

(6) F05: Setting Mute

- If the user doesn't want the sound, it can be muted.

<Measurement Order>

- 1 Press and hold the [MODE] button for 3 seconds to enter under settings.
- 2 Press the [▼] or [▲] button to set **F05**.
- 3 Press the [START/STOP] button to enter the sound settings.
- 4 Press the [▼] or [▲] button to select the sound ON/OFF.
- 5 When the selection is completed, press the [START/STOP] button to complete the setting.
- 6 After setting is completed, press and hold the [MODE] button for 3 seconds, and return to the previous screen



(7) F06: Deleting Memory

- The saved blood pressure measurement can be deleted.

<Measurement Order>

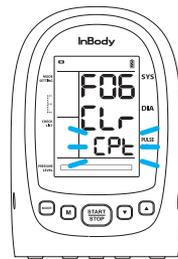
- 1 Press and hold the [MODE] button for 3 seconds to enter user settings.
- 2 Press the [▼] or [▲] button to set **F06**.
- 3 Press the [START/STOP] button to enter the delete settings.
- 4 Press the [▼] or [▲] button to select the No or YES.
- 5 When the selection is completed, press the [START/STOP] button to start deleting the memories.
- 6 CLr appear in the pulse column and the memory deletion is completed.
- 7 After setting is completed, press and hold the [MODE] button for 3 seconds, and return to the previous screen



Setting F06 Screen



Selecting Memory Deleting



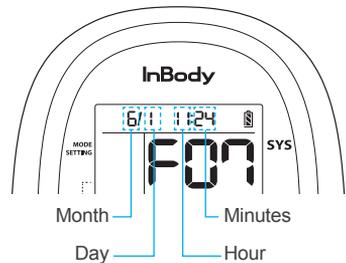
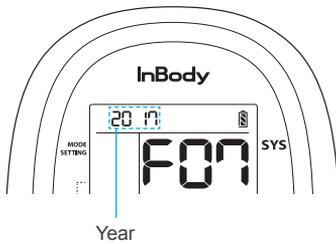
Memory Deleting Completed

(8) F07: Setting Date and time

- The user can set the date and time.

<Measurement Order>

- 1 Press and hold the [MODE] button for 3 seconds to enter user settings.
- 2 Press the [▼] or [▲] button to set F07.
- 3 Press the [START/STOP] button to enter the Date and Time settings.
- 4 Set the clock in the order of year, month, day, hour and minute.
(The number being set flashes.)
- 5 Press the [▼] or [▲] button to specify the year, and press the [START/STOP] button to save the settings.
- 6 Set the month, day, hour, and minute in the same way.
- 7 After setting is completed, press and hold the [MODE] button for 3 seconds, and return to the previous screen.



 **Caution**

- For a correct blood pressure management, please set date and time first, and then use the blood pressure monitor.
- When the batteries are replaced, the clock is reset.

(9) F08 : Setting Fast / Slow Precision measurement

- Slow Precision measurement mode ensures the measured results even if there was a disturbance such as the movement of a patient. But, the measurement speed will be slower than a Fast measurement mode.

<Measurement Order>

- 1 Press and hold the [MODE] button for 3 seconds to enter user settings.
- 2 Press the [▼] or [▲] button to set **F08**.
- 3 Press the [START/STOP] button to enter the Fast / Slow Precision settings.
- 4 Press the [▼] or [▲] button to select the F(Fast measurement mode), S(Slow Precision measurement mode).
- 5 After setting is completed, press and hold the [MODE] button for 3 seconds, and return to the previous screen.



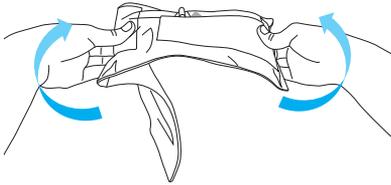
Setting F08 Screen



Setting Measurement Speed

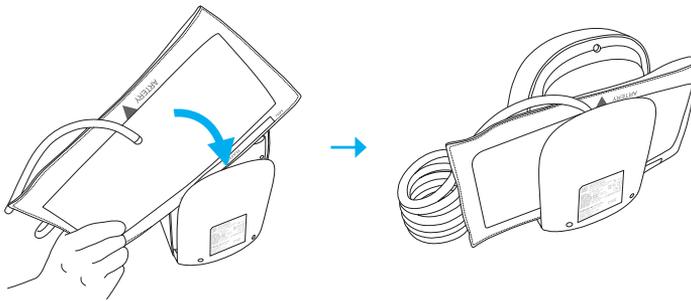
III. Storage

- (1) Keep the blood pressure monitor clean.
- (2) Wipe the stain off with a smooth and lint free cloth.
- (3) Keep the cuff on the cuff rack in a flat state.



 **Note**

- To unfold the cuff, hold the both sides of the cuff and stretch them in the opposite direction of the cuff curl.



The BPBIO250 should be transported or stored under the following conditions.

Temperatures Range	- 10 ~ 70°C
Relative Humidity	10 ~ 85% RH (No Condensation)
Atmospheric Pressure	50 ~ 106 kPa

 **Caution**

- Keep the blood pressure monitor away from water, heat, humidity, direct sunlight, dust, bleach or corrosive gas.
- Do not store blood pressure monitor in a place subject to vibration or impact.
- Do not store blood pressure monitor in a place that is easily accessible to the patient.
- Do not use volatile liquids, benzene thinner, etc. when cleaning the main unit or cuff.
- Cuffs cannot be washed. Be careful not to expose the Cuff to water.
- Do not bend or press the cuff with force. Otherwise, the cuff may be damage.
- Do not operate the blood pressure monitor with the cuff in the cuff rack. Otherwise, the blood pressure monitor may be damaged.

IV. Troubleshooting

A. Error Message

If a problem is occurred, **Err** is displayed in the systolic blood pressure field and a letter or number appears in the diastolic blood pressure field.

Error	Reason	Measure
Err 1	Fault in pressurization on cuff <ul style="list-style-type: none"> · Not connected with the cuff · Wearing the cuff, too loosely · Air is leaking from the cuff 	<ul style="list-style-type: none"> · Check the cuff connection and how it's worn. · If the air leaks out from the cuff, replace cuff with a new one.
Err 2	The pressure in the cuff unexpectedly changes during pressurization <ul style="list-style-type: none"> · Moving severely · The air tube is folded · The cuff is released · The air tube falls out 	<ul style="list-style-type: none"> · Measure the blood pressure in a stable state after checking the device connection and the cuff.
Err 3	The pressure in the cuff unexpectedly changes during exhaustion <ul style="list-style-type: none"> · Moving severely · The air tube is folded · The cuff is released · The air tube falls out 	
Err 4	The signal of a blood pressure is too weak <ul style="list-style-type: none"> · Measured in thick clothes · The pulse is weak by nature 	<ul style="list-style-type: none"> · If it was measured on the clothes, take off the clothes and measure at bare skin. · Check how the Cuff is worn.
Err 5	The pressure exceeds 300 mmHg <ul style="list-style-type: none"> · The user carried out the manual pressurization excessively · Severely moves 	<ul style="list-style-type: none"> · When manual pressure is applied, pressurize the appropriate amount. (Pressurize 30 to 40 mmHg higher than the expected blood pressure.) · Measure the blood pressure in a stable state.
Err 7	It is a failure due to malfunction	Please contact the InBody Customer Center (+82-80-501-3939).
Lo	Low battery voltage	Charge the lithium-ion batteries or replace the AA batteries with new ones.

B. Troubleshooting

Problem	Cause	Measure
There is no response even the button was pressed.	The lithium-ion batteries or AA batteries are incorrectly inserted	Check lithium-ion battery or AA battery polarities and reinstall the batteries to match with '+' and '-' marks.
	Lithium-ion batteries or AA batteries are discharged	Charge the lithium-ion batteries or replace the AA batteries with new ones.
The exhaust is too fast.	The cuff is loosely wrapped around the arm	Please wrap the cuff properly, and measure.
No sound was heard from the blood pressure monitor.	The mute setting is on	The beep sound of this blood pressure monitor can be turned on and off. Refer to the 'Setting mute' on page 39.
Pressurization is lower or higher than the blood pressure.	The patient moves during the blood pressure measurement	Make sure that the patient is relaxed without moving or talking during the blood pressure measurement.
	The pressure value setting is not Auto	Refer to 'Setting pressurization value' on page 17 to pressurize.

V. Others

A. Optional Equipment

- S, L Sized Cuff (S: 17-22 cm only, L: 32-42 cm only)
- AA Batteries
- Stand

B. Safety Information

Safety Symbols

	Power Adapter Connection Terminal
	BF-Type Equipment
	Operating instructions
	CLASS II equipment (Dedicated AC adapter)

Other Symbols

	Disposal Guidelines
	Disposal Guidelines (Lithium-ion battery)
	Recycling lithium-ion (Lithium-ion battery)
	Manufacturer
	Authorized representative in the EUROPEAN COMMUNITY
	European conformity
	Serial number

Disposal of old Electrical & Electronic Equipment

(Application in the European Union and other European countries with separate collection system.) This symbol indicates that this product shall not be treated as household waste. Instead, it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. For more detailed information about recycling this product, please refer to local governing ordinances and recycling plans.

C. Product Classification

- Type of protection against electric shock: Class 2 equipment or Internal power source typed equipment
- Level of protection against flooding: General Equipment (No special protection against external water infiltration)
- Operation mode: Continuous operation
- Level of protection against electric shock: BF-type equipment

D. Specifications

Product Name	BPBIO250
Display Method	Digital Display Method (Custom Segment LCD)
Test Instructions	Oscillometric
Test range	Pressure: 0 - 300 mmHg, Pulse: 30 - 240 bpm
Measurement Pressure Range	Systolic: 60 - 250 mmHg, Diastolic: 40 - 200 mmHg
Degree of Precision	Pressure: Within ± 3 mmHg, Pulse: Within $\pm 3\%$
Minimum Scale Unit	1 mmHg
Measurement Results	Systolic Blood Pressure, Diastolic Blood Pressure, Pulse
Measurement Time	Approx. 30 seconds on average (20-50 seconds depending on the pulse and blood pressure value)
Pressurization Time	Approx. 15 seconds
Pressurization	Automatic Pressurization Method
De-pressurization	Automatic Exhaust Method
Exhaust	Automatic Rapid Exhaust Method
Save	Saved 99 blood pressure information
Rated Range of Cuff Pressure	0 - 300 mmHg
Communication Method	Bluetooth 4.0 Low Energy (BLE)
Used Frequency	2402 MHz - 2480 MHz
RF-Power (max)	BT: 7.19 dBm, BLE: 8.21 dBm (EIRP)
Rated Power	DC 6V, 2A (four 1.5V AA-size batteries or dedicated AC adapter) or Rechargeable Li-ion Battery pack 3.63 V, 2600 mAh, 9.438 Wh
Rated Input (Dedicated AC Adapter)	AC/DC Adapter Input: 100-240 V~, 50/60 Hz, 0.5 A

Operating Environment	10 - 40°C, 15 - 85% RH, 70 - 106 kPa
Storage Environment	-10 - 70°C, 10 - 85% RH, 50 - 106 kPa (No Condensation)
Dimension	Approx. 122 (W) × 150 (L) × 195 (H) mm
Equipment Weight	Approx. 958 g (Main unit: Approx. 767 g, Lithium-ion battery: Approx. 47 g, Cuff: Approx. 144 g)
Package Weight	Approx. 1.5kg
Manufacturing Country	Republic of Korea
Manufacturing Company	InBody Co., Ltd.

* For purposes of improvement, specifications are subject to change without notice.

* This product is a 'medical equipment'. Please read the guide and cautions before using this blood pressure monitor.

* This product can be operated in at least one Member State without infringing applicable requirements on the use of radio spectrum.

E. EMC Declaration

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

Immunity Test	IEC 60601-1-2 Test Level	Compliance Level	Electromagnetic Environment - Guidance
Electrostatic discharge (ESD) IEC 61000-4-2	± 8 kV contact ± 2 kV, ± 4 kV, ± 8 kV, ± 15 kV air	± 8 kV contact ± 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%.
Electrical fast transient/burst IEC 61000-4-4	± 2 kV 100 kHz repetition frequency	± 2 kV 100 kHz repetition frequency	Mains power quality should be that of a typical commercial or hospital environment.
Surge Line-to-line IEC 61000-4-5	± 0.5 kV, ± 1 kV	± 1 kV	Mains power quality should be that of a typical commercial or hospital environment.
Surge Line-to-ground IEC 61000-4-5	± 0.5 kV, ± 1 kV, ± 2 kV	± 2 kV	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips IEC 61000-4-11	0 % UT; 0.5 cycle At 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315°	0 % UT; 0.5 cycle At 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315°	Mains power quality should be that of a typical commercial or hospital environment. If the user of the EUT image intensifier requires continued operation during power mains interruptions, it is recommended that the EUT image intensifier be powered from an uninterruptible power supply or a battery.
	0 % UT; 1 cycle and 70 % UT; 25/30 cycles single phase: at 0°	0 % UT; 1 cycle and 70 % UT; 25/30 cycles single phase: at 0°	
Voltage interruptions IEC 61000-4-11	0 % UT; 250/300 cycle	0 % UT; 250/300 cycle	
RATED power frequency magnetic fields (50/60Hz) IEC 61000-4-8	30 A/m	30 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.

<p>Conducted disturbances induced by RF fields IEC 61000-4-6</p>	<p>3 V 0.15 MHz - 80 MHz 6 V in ISM bands between 0.15 MHz and 80 MHz 80 % AM at 1 kHz</p>	<p>3 V 0.15 MHz - 80 MHz 6 V in ISM bands between 0.15 MHz and 80 MHz 80 % AM at 1 kHz</p>	<p>Portable and mobile RF communications equipment should be used no closer to any part of the EUT, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance:</p>
<p>Radiated RF EM fields IEC 61000-4-3</p>	<p>3 V/m 80 MHz - 2.7 GHz 80 % AM at 1 kHz</p>	<p>3 V/m 80 MHz - 2.7 GHz 80 % AM at 1 kHz</p>	<p> $d = \left[\frac{3.5}{V_1} \right] \sqrt{P}$ $d = \left[\frac{3.5}{E_1} \right] \sqrt{P} \quad 80 \text{ MHz to } 800 \text{ MHz}$ $d = \left[\frac{7}{E_1} \right] \sqrt{P} \quad 80 \text{ MHz to } 2.7 \text{ GHz}$ <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 meters(M). Field strengths from fixed RF transmitters as determined by an electromagnetic site survey, should be less than the compliance level in each frequency range. Interference may occur in the vicinity of equipment marked with the following symbol:</p>  </p>

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