Upper Arm Blood Pressure Monitor

BPM-617

Instruction Manual

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Thank you for choosing iProven. Please read the instructions carefully in order to accurately and safely utilize this device.

The BPM-617 measures blood pressure and heart rate and saves the results. It offers real-time clinically accurate readings that are simple and easy to read thanks to the Oscillometric Measuring method. This method measures blood pressure while the cuff is inflating thereby offering fast and accurate results. The inflation stops once the maximum blood pressure measurement has been achieved. This avoids any discomfort or excessive squeezing of the wrist.

Blood pressure measurements may be invalid or inaccurate if they are not performed in accordance with the instructions provided in this manual. Please keep this manual handy for future reference.
You can also find the digital version on www.iproven.com

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Professional Care Brought Home

Intended use of the BPM

The BPM-617 is an upper arm digital monitor that is used for measuring blood pressure and heart rate with an arm circumference ranging from 8 ¾" - 16 ½" (22cm to 42cm). The device is intended for home use and adults only. The cuff should be maintained at the same level as the heart.

Special features

The BPM-617 comes with a user memory feature that can save up to 250 measurements for two different users (500 total), aside from a guest mode. You can sync your device with the app, to store an unlimited number of measurements. The device provides an average of the last three readings taken within 30 minutes so that you can keep track of your health and check for hypertension.
Upon completing a new measurement, it will also display your prior measurement for an easy instant comparison of readings. The voice broadcast mode (which can be switched on or off) makes it easy to know your results without having to check the screen.

The large, 5.7" wide, high-contrast monitor screen and backlit display help read results easily, even in the dark. The device is FDA-approved and comes with a WHO indicator and a five-year warranty. It is also one of the quietest devices with a noise level of less than 48dB.

Choose your power supply

This device can be used either with included batteries OR an AC adapter.

1. Battery mode: Use 4 AA batteries as indicated
2. AC Adapter mode: Use the adapter cable included in the box with a 5V–1A charger

Note - The adapter cannot be used to charge or recharge the batteries

Installing the batteries

1. Open the battery cover.
2. Insert four AA batteries as per the symbols in the battery compartment.
3. Close the battery cover.

Setting the date and time

Firstly, ensure you set the time and date correctly so the device can record the results with the correct details. You can also choose whether to keep the voice mode on or off.

1. With the monitor OFF, press and hold the SET button. It will display the Bluetooth symbol ᛒ
2. Press the SET button again it will enter voice setting mode. You will hear "Voice on" or "Voice off". Press the MEM button to change it on or off and to increase the voice volume. Select the SET button to confirm the voice setting.
3. Press the MEM button to switch the date format between month/day/year and day/month/year.
4. Press the SET button to confirm the date format, then the year will flash. Press the MEM button to change the year and SET to confirm.
5. Repeat step 4 for setting the date, month, and time.
6. After completing the settings, the LCD will display DONE and it will turn off.

Using the app

Our device works perfectly well even without an app. If you would like to use it with the app, please follow the instructions in the insert provided in the box.

Setting the user ID

There are 3 user IDs. User 1 and user 2, with memory storage of 250 readings each, and a guest user with no memory space.

1. When the display is off, press the SET button and the user ID will show. Press it again to switch between the users - user 1, 2 or guest.
2. Press the START/STOP button to confirm the user ID and then proceed to your measurement.

Before using your device

For an accurate result and the best insight into your blood pressure pattern, please measure using the same arm every time. It is recommended to use the left arm which has a better blood flow.

- Take your blood pressure at the same time(s) every day.
- Do not use the device in a cold environment.
- Avoid hot drinks, caffeine, tobacco, food, alcohol, and strenuous exercises at least 30 minutes before taking your blood pressure.
- Empty your bladder before taking your measurement.

Preparing the measurement

Before a measurement sit down and relax for 3 minutes. Let your blood pressure stabilize.

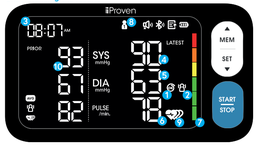
- Make sure you remove all accessories from the wrist and arm (bracelets, watch, etc) before strapping the cuff to your arm.
- Roll up your sleeve to reveal the skin of your upper arm and ensure your sleeve isn't too tight.
- Hold your arm with your palm facing up and slide the cuff onto your upper arm approximately one inch above the bend in your elbow.
- Position the tube off-center toward the inner side of the arm in line with the little finger. Or position the artery mark on the cuff over the main artery.

- Fasten the cuff to your arm tightly but not painfully. There should be a one-finger space between the cuff and your skin.
- Ensure that your test arm is resting on a flat surface, with your palm facing up.
- Sit comfortably with your back straight and supported.
- Keep your feet flat on the floor and do not cross your legs.

Taking a measurement

1. Breathe slowly 5 times and press the START/STOP button to begin the measurement. Keep your arm still.
2. First, the measured air pressure will calibrate to zero and then the cuff will inflate and start reading the blood pressure and heart rate.
3. The symbol 1 ♡ should indicate OK meaning the cuff is correctly secured. If the 2 ♡ flashes that means there's too much movement and you need to hold your arm still.
4. When the measurement has been completed, the results will appear on the screen. The measurement is also saved in the memory.
5. Remove the cuff and switch off the monitor.

Understanding the results



Upon completing your measurement, you will see on the display 3 the date and time of your reading, 4 your systolic pressure, 5 diastolic pressure, 6 heart rate, 7 WHO blood pressure color indication, 8 user 1, 2 or guest who's taking the measurement, 9 ♡♥ if you have an irregular heartbeat (See "Irregular Heartbeat" section for more) and details of your 10 prior measurement.

Basic info about blood pressure

Systolic pressure means that the ventricles contract and pump out blood, increasing the blood pressure. This is sometimes referred to as the "higher number". The diastolic pressure means that the ventricles relax so the blood pressure decreases. This is sometimes referred to as the "lower number".

WHO indicator

After each measurement, the indicator shows the corresponding category color on the right of the display. The colors represent the different categories of the World Health Organisation blood pressure classification as depicted in the chart. The indicator helps you quickly interpret the results of the measurement.

World Health Organization(WHO) and International Society of Hypertension(ISH)

Blood Pressure Category	Systolic mmHg (upper#)		Diastolic mmHg (lower#)
Optimal	less than 120	And	less than 80
Normal	120-129	And	80-84
High normal	130-139	Or	85-89
Mild hypertension	140-159	Or	90-99
Moderate hypertension	160-179	And/Or	100-109
Severe hypertension	Higher than 180	And/or	Higher than 120

Irregular heartbeat

The device is equipped with irregular heartbeat detection, IHB. The algorithm of the device compares the longest and shortest intervals of registered pulse waves (the time interval) and calculates the standard deviation. If the differences in the time intervals are more than 25% you have an irregular heartbeat and the IHB sign: will appear on the display. If the device detects irregular heartbeat during consecutive measurements and you are following the correct procedure, please consult your doctor.

Changes in blood pressure

There are many factors that cause fluctuations in blood pressure. Weather, emotions, stress, food, and physical activities, all these cause variations in blood pressure. Bear in mind that measuring in clinical settings tends to cause blood pressure to increase. This is called the "white coat effect".

Using the memory function

Make sure that the date and time are set correctly.
(See "Setting up the device" section)

- Every measurement is automatically saved in the memory. It has a maximum capacity of 500 (250 x 2 users) measurements. To view the recorded data press the MEM button while the monitor is inactive.
- Once the button is pressed, one of the user symbols starts blinking. To switch to the other user, press the SET button.
- It will display the average value of the last 3 records first (if taken within a 30-minute period) and indicated by the AVG symbol.
- Use the MEM and SET buttons to go through the previous records.
- Note: The most recent record is shown first followed by the previous measurements.

Deleting the records

If you want to delete one of your recorded measurements, follow these steps:

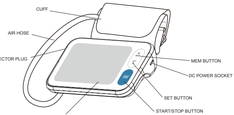
1. Make sure the monitor is inactive; press the START/STOP button to put it off if needed.
2. Press MEM to go to Memory. One of the user symbols will start blinking.
3. To switch to the other user, press the SET button.
4. Use the MEM and SET buttons to find the record you want to delete.
5. Press and hold the START/STOP button for 3 seconds.
6. "DEL" will appear with "Y" blinking. Press the SET button to confirm.
7. If you don't want to delete it, press the MEM button to get "NO" and SET to confirm.
8. "DONE" will appear, indicating that the selected stored data is deleted.

In case you want to delete ALL of your recorded measurements for one user, follow these steps:

1. When the device is in the memory function, select the user whose records you want to delete and press the SET button for 3 seconds.
2. "DEL" will appear on the screen and "AL" will be blinking
3. Press the SET button to confirm.
4. "DONE" will show meaning all the selected stored data for that user is deleted.

Components of the BPM

Cuff
Air Hose
PCBA
Pump
Valve



SYMBOL	DESCRIPTION	EXPLANATION
SYS	Systolic blood pressure	High pressure result
DIA	Diastolic blood pressure	Low pressure result
PULSE/min	Pulse display	Pulse in beats per minute
mmhg	mmHg	Measurement Unit of the blood pressure
AVG	Average value	The average value of the blood pressure
ᛒ	Bluetooth icon	The bluetooth icon blinks when the bluetooth is working
	Cuff wearing	The cuff is secured
	User ID	User 1/2/Guest
	Current Time	Time(year/month/day/hour/minute)
♡	Heartbeat	Heartbeat dectection during measurement
	Hand shaking	Hand shaking makes results inaccurate
	Battery Indicator	Indicates the capacity of the battery
♡♥	Irregular heartbeat	Irregular heartbeat
	Data transmitting	Data is transmitting
	Voice broadcast	The function of voice broadcast is turned off
LATEST	The latest record	The latest record
PRIOR	The Prior record	The Prior record

Power supply	Battery powered mode: 6VDC 4×AA batteries AC adaptor powered mode: 5V ⎓ 1A (Please only use the recommended AC adaptor model).
Display mode	Digital LCD V.A.124mm × 76mm
Measurement mode	Oscillographic testing mode
Measurement range	Rated cuff pressure: 0mmHg~299mmHg Measurement pressure: SYS: 60mmHg~230mmHg DIA: 40mmHg~130mmHg Pulse value: (40-199)beat/minute
Accuracy	Pressure: 5 (1~40 ℃ within±3 mmHg Pulse value:±5%
Normal working condition	A temperature range of: +5°C to +40°C A relative humidity range of 15% to 90%, non-condensing, but not requiring a water vapour partial pressure greater than 50 hPa An atmospheric pressure range of : 700 hPa to 1060 hPa
Storage & transportation condition	Temperature:-20°C to +60°C. A relative humidity range of ≤ 93%, non-condensing, at a water vapour pressure up to 50 hPa
Measurement perimeter of the upper arm	About 22 cm ~ 32 cm, 22 cm ~ 42 cm
Weight	Approx.325g (Excluding the batteries and cuff)
External dimensions	Approx.174mm×100mm×41mm
Attachment	4×AA batteries,user manual,AC adapter
Mode of operation	Continuous operation
Degree of protection	Type BF applied part
Protection against ingress of water	IP21 It means the device could protected against solid foreign objects of 12.5mm and greater, and protect against vertically falling water drops.
Device Classification	Battery Powered Mode: Internally Powered ME Equipment AC Adaptor Powered Mode: Class II ME Equipment
Software Version	A01

WARNING: No modification of this equipment is allowed.

⚠ Caution

This device is intended for indoor, home use.
* This device is not intended for public use.
* This device is portable, but it is not intended for use during patient transport.
* This device is not suitable for continuous monitoring during medical emergencies or operations.
* This device is intended for non-invasive measuring and monitoring of arterial blood pressure. It is not intended for use on extremities other than the arm, or for any purpose other than obtaining a blood pressure measurement.
* This device is for adults. Do not use this device on babies or infants. Do not use it on children unless otherwise instructed by a medical professional.
* Do not use on pregnant women, including pre-eclamptic, patients.
* The device is not suitable for use on patients with implanted, electrical devices, such as cardiac pacemakers, defibrillators.
* The effectiveness of this device has not been established for use:
-on users with common arrhythmias such as atrial or ventricular premature beats or atrial fibrillation,
-on users with peripheral arterial disease,
-on users undergoing intravascular therapy, or with arteriovenous (AV) shunt. Consult a medical professional before use.
* Do not use this device for diagnosis or treatment of any health problem or disease. Contact your physician if you have or suspect any medical problem. Do not change your medications without the advice of your physician or health care professional.
* If you are taking medication, consult your physician to determine the proper time to measure your blood pressure.
* This device may be used only for the intended use described in this manual, the manufacturer shall have no liability for any incidental, consequential, or special damages caused by misuse or abuse.
* Report any unexpected operation or events to the manufacturer.
* Do not apply the cuff on an arm that has an intravenous drip or a blood transfusion attached.
*Do not kink, fold, stretch, compress, or otherwise deform the tube during measuring, as the cuff pressure might continuously increase, which could prevent blood flow and result injury.
*Taking blood pressure measurements too frequently could disrupt blood circulation and cause injuries.
* Do not apply cuff to areas on patient where skin is delicate or damaged. Check cuff site frequently for irritation.
* Warning: Do not place the cuff on the arm of a person whose arteries or veins are undergoing medical treatment, i.e. intra-vascular access or intra-vascular therapy or an arteriovenous (A-V) shunt, which could disrupt blood circulation and cause injuries.
* Do not place the cuff on the arm on the same side of a mastectomy (especially when lymph nodes have been removed). it is recommended to take measurements on the unaffected side.
* Do not wrap the cuff on the same arm to which another monitoring device is applied. One or both devices could temporarily stop functioning if you try to use them at the same time.
* Please check that the operation of the device does result in prolonged impairment of patient blood circulation.
* Warning: On the rare occasion of a fault causing the cuff to remain fully inflated during measurement, loosen and remove the cuff immediately. Prolonged high pressure applied to the arm (cuff pressure >300 mmHg or constant pressure >15 mmHg for more than 3 minutes) might lead to bruising and discolour of skin.
* Warning: Do not use this device with high-frequency (HF) surgical equipment at the same time.The unit should not be used for prolonged monitoring during medical emergencies or operations.
The cuff being inflated for a prolonged time will lead to numbness of the wrist and fingers, causing pain and ecchymosis.
Use the according to the instructions of this manual to guarantee efficient performance and durability of the device.
* Do not use this device for diagnosis or treatment of any health problem or disease. Contact your physician if you have or suspect any medical problem. Do not change your medications without the advice of your physician or health care professional.
* If you are taking medication, consult your physician to determine the proper time to measure your blood pressure.
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The cuff complies with the requirements of ISO 10993- 5:2009 and ISO 10993-10:2010.
The cuff does not cause any potential allergic reaction or contact injury, but those allergic to polyester, nylon, or plastic may take caution.
There is no need for calibration during the two years of guaranteed service.

Maintenance

Make sure to place the device away from the sun. Store it in a dry place.
When you want to clean the device, you should use a dry cloth. Do not place it in water or clean it with wet cloths.
Also, be careful not to shake or throw the device.
For better performance, keep it in a room with a stable temperature and away from dust.
The cuff should not be cleaned as it may affect the accuracy of the reading.

EMC guidance

The ME EQUIPMENT or ME SYSTEM is suitable for home healthcare environments.

Warning: Don't be near the active HF surgical equipment and the RF shielded room of an ME system for magnetic resonance imaging, where the intensity of EM disturbances is high.

Warning: Use of this equipment adjacent to or stacked with other equipment should be avoided because it could result in improper operation. If such use is necessary, this equipment and the other equipment should be observed to verify that they are operating normally. Warning: Use of accessories, transducers, and cables other than those specified or provided by the manufacturer of this equipment could result in increased electromagnetic emissions or decreased electromagnetic immunity of this equipment and result in improper operation.

Warning: Portable RF communications equipment (including peripherals such as antenna cables and external antennas) should be used no closer than 30 cm (12 inches) to any part of the equipment TMB-2088-C including cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment could result.

Technical description

1. All necessary instructions for maintaining BASIC SAFETY and ESSENTIAL PERFORMANCE with regard to electromagnetic disturbances for the excepted service life.
2. Guidance and manufacturer's declaration - electro-magnetic emissions and Immunity

Safety information

The signs below might be in the user manual, labeling, or other components. They are the requirement of standard and using.

	Symbol for "THE OPERATION GUIDE MUST BE READ"		Symbol for "TYPE BF APPLIED PARTS"
	Symbol for "MANUFACTURER"		Symbol for "ENVIRONMENT PROTECTION - Electrical waste products should not be disposed of with household waste. Please recycle where facilities exist. Check with your local authority or retailer for recycling advice"
SN	Symbol for "SERIAL NUMBER"		
	Symbol for "DIRECT CURRENT"		
	Date and Country of manufacture		For indoor use only
	Caution: These notes must be observed to prevent any damage to the device.		Symbol for "Class II Equipment"
			Symbol for "Recycle"

Guidance and manufacturer's declaration - electromagnetic emissions	
Emissions test	**Compliance**
RF emissions CISPR 11	Group 1
RF emissions CISPR 11	Class [B]
Harmonic emissions IEC 61000-3-2	Class A
Voltage fluctuations / flicker emissions IEC 61000-3-3	Comply

Guidance and manufacturer's declaration – electromagnetic Immunity		
Immunity Test	IEC 60601-1-2 Test level	Compliance level
Electrostatic discharge (ESD) IEC 61000-4-2	±8 kV contact ±2 kV, ±4 kV, ±8 kV, ±15 kV air	±8 kV contact ±2 kV, ±4 kV, ±8 kV, ±15 kV air
Electrical fast transient/burst IEC 61000-4-4	±2 kV for power supply lines ±1 kV signal input/output 100 kHz repetition frequency	±2 kV for power supply lines Not Applicable 100 kHz repetition frequency
Surge IEC61000-4-6	±0.5 kV, ±1 kV differential mode ±0.5 kV, ±1 kV, ±2 kV common mode	±0.5 kV, ±1 kV differential mode Not Applicable
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	0% U_T: 0,5 cycle. At 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315°. 0% U_T: 1 cycle and 70% U_T: 25/30 cycles: Single phase: at 0°. 0% U_T: 250 / 300 cycle	0% U_T: 0,5 cycle. At 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315°. 0% U_T: 1 cycle and 70% U_T: 25/30 cycles: Single phase: at 0°. 0% U_T: 250 / 300 cycle
Power frequency magnetic field IEC 61000-4-8	30 A/m 50 Hz / 60 Hz	30 A/m 50 Hz / 60 Hz
Conduced RF IEC61000-4-6	3 V 0,15 MHz – 80 MHz 6 V in ISM and amateur radio bands between 0,15 MHz and 80 MHz 80% AM at 1 kHz	3 V 0,15 MHz – 80 MHz 6 V in ISM and amateur radio bands between 0,15 MHz and 80 MHz 80% AM at 1 kHz
Radiated RF IEC61000-4-3	10 V/m 80 MHz – 2,7 GHz 80% AM at 1 kHz	10 V/m 80 MHz – 2,7 GHz 80% AM at 1 kHz

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

FCC statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

PROBLEM	SYMPTOM	CHECK THIS	REMEDY
No power	Display can not light up.	Batteries are depleted.	Replace with new batteries.
		Batteries are inserted incorrectly.	Insert the batteries correctly.
		Adapter is inserted incorrectly.	Insert the AC adapter correctly.
High Battery	bAt H shows	The battery is too high.	Replace with new batteries.
Low Battery	bAt Lo shows	The battery is too low.	Replace with new batteries.
Error message	E 1 shows	The cuff is not wrapped or wrapped incorrectly, or the cuff air plug is loose.	Refasten the cuff and insert air tube plug correctly then measure again.
	E 2 shows	Excessive body motion (such as shaking of the arm with the cuff on) or weak Pulse is detected.	Relax for 5 minutes, and then keep still, measure again.
	E 3 shows	Pulse is not detected during measuring.	Loosen the clothing on the arm and measure again.
	E 4 shows	The measurement failed.	Relax for 5 minutes and measure again.
	EEx shows	Hardware error (X can be some digital symbol, such as 1, 2, 3, etc.)	Turn off monitor and measure again. If EEx still appears on the display, please contact the retailer or our customer service.
	Err & Usb shows	Adapter error	Replace with the authorized adapter.
Warning message	Out shows	Out of measurement range	Relax for a moment and then measure again. If the problem persists, contact your physician.

NOTE: If the product still does not work, contact our Customer Service. Under no circumstance should you disassemble or attempt to repair the unit by yourself.

Warranty

This Limited Warranty covers any defects in materials or workmanship under normal use during the Warranty Period. iProven will either replace the product or repair the product at no charge, using new or refurbished replacement parts. The Warranty Period of this iProven product is **5 years** from the date of purchase. A replacement product or product part assumes the remaining warranty of the original product purchase. This Limited Warranty does not cover batteries and packaging, nor any problem that is caused by conditions, malfunctions, or damage not resulting from defects in material or workmanship.

If for any reason you are unsatisfied with our product, feel free to reach out to iProven directly. We offer a refund or will replace the product for free within 100 days from your purchase.

Contact us: support@iproven.com

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