FYSIC

Fully Automatic Upper Arm

Blood Pressure Monitor

Model Number: C02 / FB160

USER'S MANUAL

CONTENTS

1 Introduction and Intended Use

It enables reliable measurement of systolic and diastolic blood pressure as well as pulse through the oscillometric method.

Before using, please read this instruction manual carefully and then keep it in a safe place.

1.1 Remember…

- Only a health-care professional is qualified to interpret blood pressure measurements.
- This device is NOT intended to replace regular medical checkups.
- Blood pressure readings obtained by this device should be verified before prescribing or making adjustments to any medications used to control hypertension. Under no circumstances should YOU alter the dosages of any drugs prescribed by your physician.
- This monitor is intended for use by adults only. Consult with a physician before using this instrument on a child.
- In cases of irregular heartbeat, measurements made with this instrument should only be evaluated after consultation with a physician.
- Host products, including accessories, shall be processed in accordance with local regulations after reaching the life cycle.

1.2 Warnings and Precautions ⚠

Warning: The use of other accessories other than those specified or provided by the equipment manufacturer may cause electromagnetic radiation to increase or decrease electromagnetic immunity resulting in operational failure

Warning: This system may fail to yield specified measurement accuracy if operated or stored in temperature or humidity conditions outside the limits stated in the specifications section of this manual.

Warning: The separate ac adapter which is intended to connect USB interface of Blood Pressure Monitor has not been evaluated according to IEC 60601-1. The safety of the product shall be reappraised when it power supply by a separate ac adapter.

Warning: The user must check that the equipment functions safely and see that it is in proper working condition before being used.

Warning: The device is not suitable for use in the presence of flammable anesthetic mixtures with air or with oxygen or nitrous oxide.

Warning: The patient is an intended operator, the functions of monitoring blood pressure and pulse rate can be safely used by patient. The routine clean and changing batteries can be performed by the patient.

Warning: This device can not be used together with hf surgical equipment.

Warning: Use of power adapters

1. Adapter: input 100-240V, 50/60hz output DC 5V 1A
2. Do not to position the device to make it difficult to operate the disconnection device while using adaptor.
3. Avoid usage in wet, moisture, high temperature, corrosive gas environments and in direct sunlight.

Warning: Too frequent measurements can cause injury to the PATIENT due to blood flow interference.

Warning:	Don’t place the cuff over wound part.
Warning:	Pressurization of the CUFF can temporarily cause loss of function of simultaneously used monitoring ME EQUIPMENT on the same limb.
Caution:	To avoid any possibility of accidental strangulation, keep this unit away from children and do not drape tubing around your neck.
Caution:	To avoid damaging the device, keep this unit away from children and pets.
Caution:	The standard material used for the bladder and tubing is latex-free.
Attention:	Self-measurement means control, not diagnosis or treatment. Unusual values must always be discussed with a physician. Under no circumstances should you alter the dosages of any drugs prescribed by a physician.
Attention:	The pulse display is not suitable for checking the frequency of heart pacemakers!
Attention:	In cases of irregular heartbeat, measurements made with this instrument should only be evaluated after consultation with a physician.
Note:	To obtain the greatest accuracy from your blood pressure instrument, it is recommended that the instrument be used within the specified temperature and the relative humidity, please see the Technical Specifications.
Note:	The cuff is treated as the applied part. The user should contact the manufacturer for assistance, if needed, in setting up, using or maintaining the device.
Note:	This device contains sensitive electronic components. Avoid strong electrical or electromagnetic fields in the direct vicinity of the device (e.g. mobile telephones, microwave ovens) during use. These can lead to erratic results.
Note:	Do not attempt to service or repair this device yourself. Should a malfunction occur, refer to local distributor or the manufacturer.

2 Important Information on Blood Pressure and its Measurement

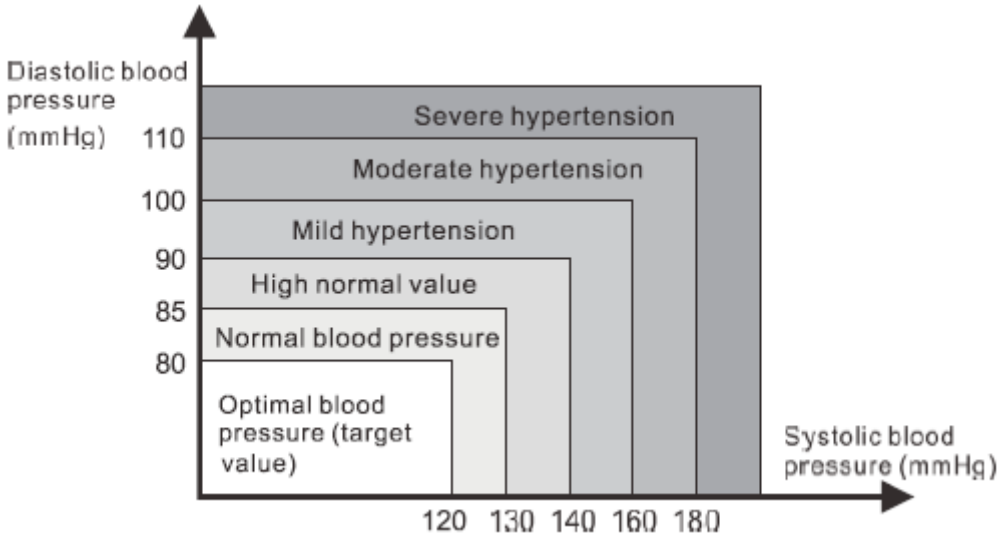
2.1 How does high or low blood pressure arise?

Your level of blood pressure is determined in the circulatory center of the brain and adjusts to a variety of situations through feedback from the nervous system. To adjust blood pressure, the strength and speed of the heart (Pulse), as well as the width of circulatory blood vessels is altered. Blood vessel width is controlled by fine muscles in the blood vessel walls.

Your level of arterial blood pressure changes periodically during heart activity: During the “blood ejection” (Systole) the value is highest (systolic blood pressure value). At the end of the heart’s “rest period” (Diastole) pressure is lowest (diastolic blood pressure value).

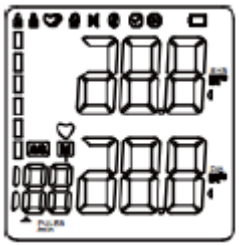
2.2 Which values are normal?

Please refer to the diagram below (Picture-01)



Picture-01

There are six grids in the display of device. Please refer to the picture-01-01. Different grids represent different interval scales of WHO.

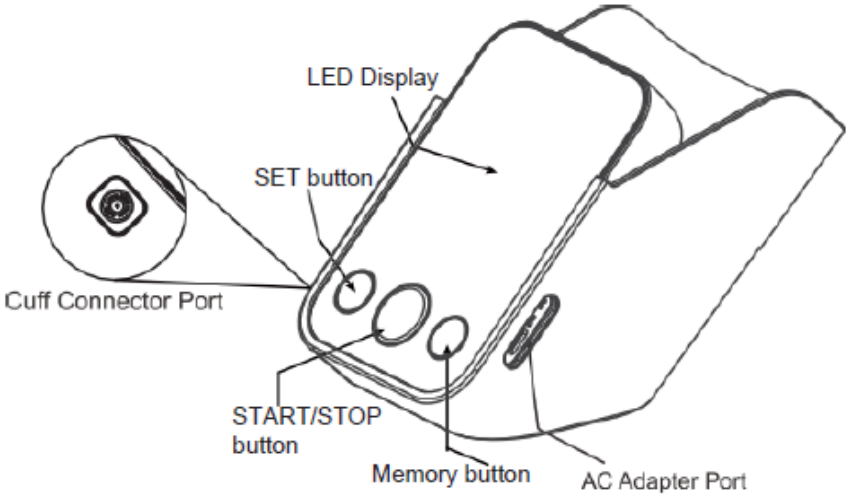


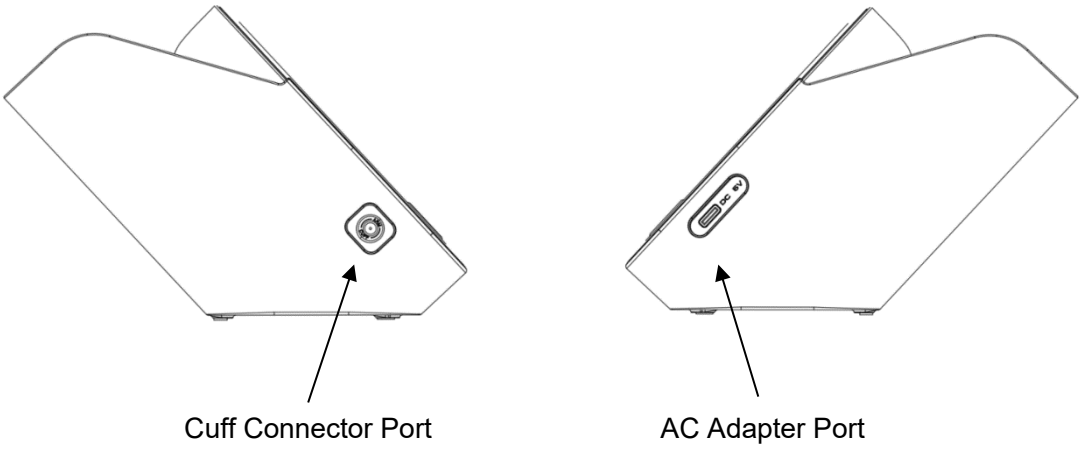
Blood pressure value	WHO grids in device	WHO Classification
DIA<80 & SYS<120	1	Optimal blood pressure
DIA<85 & SYS<130	2	Normal blood pressure
DIA<90 & SYS<140	3	High normal value
DIA<100 & SYS<160	4	Mild hypertension
DIA<110 8<SYS<180	5	Moderate hypertension
DIA>= 110 or SYS>= 180	6	Severe hypertension

Picture-01-01

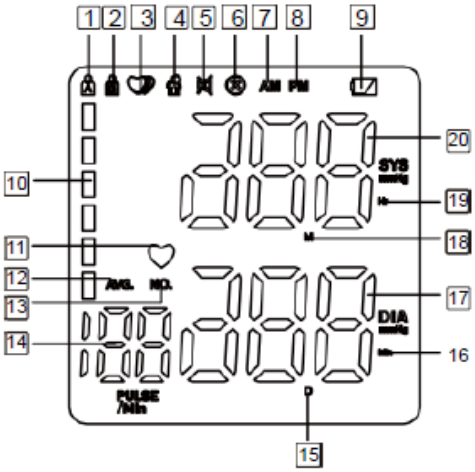
3 Components of your blood pressure monitor

3.1 Measuring unit





Picture-02



Picture-03

3.2 The symbols on the LCD display

1. User A
2. User B
3. Irregular heartbeat symbol
4. Movement error symbol
5. Mute symbol
6. Cuff self-detecting function
7. AM symbol
8. PM symbol
9. Low battery symbol
10. WHO function symbol
11. Heartbeat symbol (Flashes during measurement)
12. Average value symbol
13. NO. symbol
14. Pulse symbol
15. Date symbol
16. Minute symbol
17. Systolic blood pressure
18. Month symbol
19. Hour symbol
20. Diastolic blood pressure

3.3 Features of C02 / FB160

1. Cuff self-checking function
2. Double users: 2 x 120 sets memory
3. Average value function
4. Irregular heartbeat checking
5. WHO function
6. Low battery display
7. External power adapter support
8. Auto power-off
9. Cuff storage
10. Led display
11. Acrylic lens
12. Time & data display

4 Using your Monitor for the First Time

4.1 Activating the pre-installed batteries

Battery Installation

Use only 1.5V “AA” alkaline batteries with this device.

1. Press the hook on the bottom of the battery cover and lift the cover off in the direction of the arrow (Picture-04).

2. Install 3 “AA” size batteries and make sure the + (positive) and - (negative) polarities match the polarities of the battery compartment, then close the battery cover. Make sure that the battery cover is securely in position.

Picture-04

Battery replacement

Low Battery Indicator

1. When the Low Battery Indicator appears on the display, turn the monitor off and remove all the batteries. Replace with 3 new batteries at the same time. Long-life alkaline batteries are recommended.
2. To prevent the damage of monitor from leaked battery fluid, please take out of battery if the monitor unused in a long time (generally more than 3 months). If battery fluid gets in your eyes, immediately rinse with plenty of clean water. Contact a physician immediately.
3. Dispose of the device, components and optional accessories according to applicable local regulations. Unlawful disposal may cause environmental pollution.

4.2 System Settings

After you load the battery or connect power for the monitor, long press the SET button for more than 3s, and then you can start to set.

Setting the Year:

When the year display is flashing, press the MEM button continuously and it will increase 1 by 1 until 2099, and then return the initial year, once the year set, press SET button to confirm.

Setting Month/Date:

Initial Month/Date is 1/01, when the Month display is flashing, press the MEM button, and the month will increase 1 by each press, then press SET button to confirm your setting. And set the date in same way.

Setting Time:

When the hour display is flashing, press the MEM button, and the hour will increase 1 by each press, then press SET button to confirm your setting. And set the minute in same way.

Setting the User:

Press the MEM button to select User A or User B. When display A (/B) on the screen, press the MEM button to switch to user B (/A). Press the SET button to confirm.

Record Delete:

When you checking the memory data, long press MEM button to delete existing user measurement data.

Note:

If you decide to delete all the records, please keep the records in another way, in case you need it some

days later. Take the battery out won't lead to a record missing.

5 Measurement Procedure

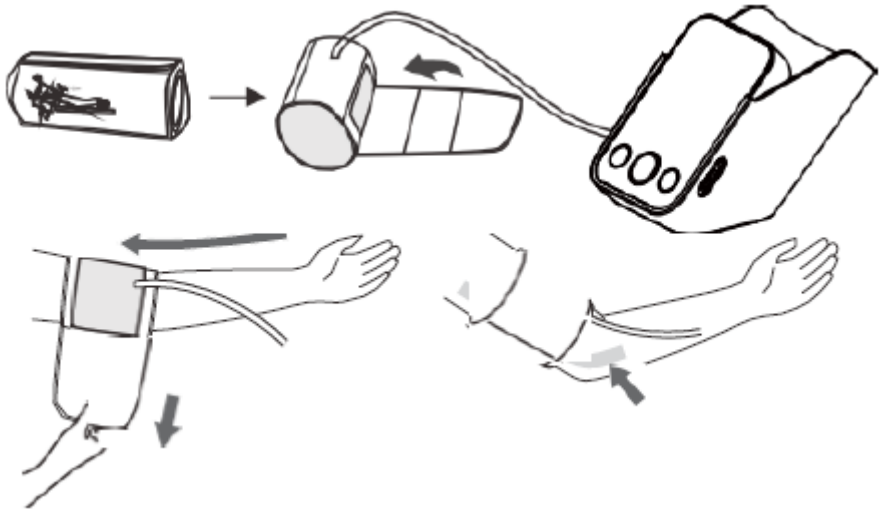
5.1 Before measurement:

- Avoid eating and smoking as well as all forms of exertion directly before measurement. These factors influence the measurement result. Find time to relax by sitting in an armchair in a quiet atmosphere for about ten minutes before taking a measurement.
- Remove any garment that fits closely to your upper arm.
- Always measure on the same arm (normally left).

5.2 Fitting the Cuff

Please refer to picture-05

a) Wrap the cuff around your upper left arm. The rubber tube should be on the inside of your arm extending downward to your hand. Make certain the cuff lies approximately 2 to 3 cm above the elbow. Important! The Φ on the edge of the cuff (Artery Mark) must lie over the artery which runs down the inner side of the arm.
b) To secure the cuff, wrap it around your arm and press the hook and loop closure together.
c) There should be little free space between your arm and the cuff. You should be able to fit 2 fingers between your arm and the cuff. Cuffs that don't fit properly result in false measurement values. Measure your arm circumference if you are not sure of proper fit.
d) Lay your arm on a table (palm upward) so the cuff is at the same height as your heart. Make sure the tube is not kinked.



Picture-05

5.3 Measure Procedure

Refer to picture-06

1. Sit comfortably in a chair with your feet flat on the floor.
2. Select your User ID (A or B).
3. Stretch your arm forward on the desk and keep relaxing, make sure the palm of hand is upturned. Make sure arm is in correct position, to avoid body movement. Sit still and do not talk or move during the measurement.

After the cuff has been appropriately positioned on the arm and connected to the blood pressure monitor, the measurement can begin:

a) Press the START/STOP button. The pump begins to inflate the cuff. In the display, the increasing cuff pressure is continually displayed.
b) After automatically reaching an individual pressure, the pump stops and the pressure slowly falls. The cuff pressure is displayed during the measurement.
c) When the device has detected your pulse, the heart symbol in the display begins to blink.
d) When the measurement has been concluded, the measured systolic and diastolic blood pressure values, as well as the pulse will be displayed.
e) The measurement results are displayed until you switch the device off. If no button is pressed for 60 seconds, the device switches off automatically.
f) Cuff self-checking symbol ( )

The cuff incorrect symbol ( ) will be displayed if the cuff wrapping too loose to detect enough pressure.

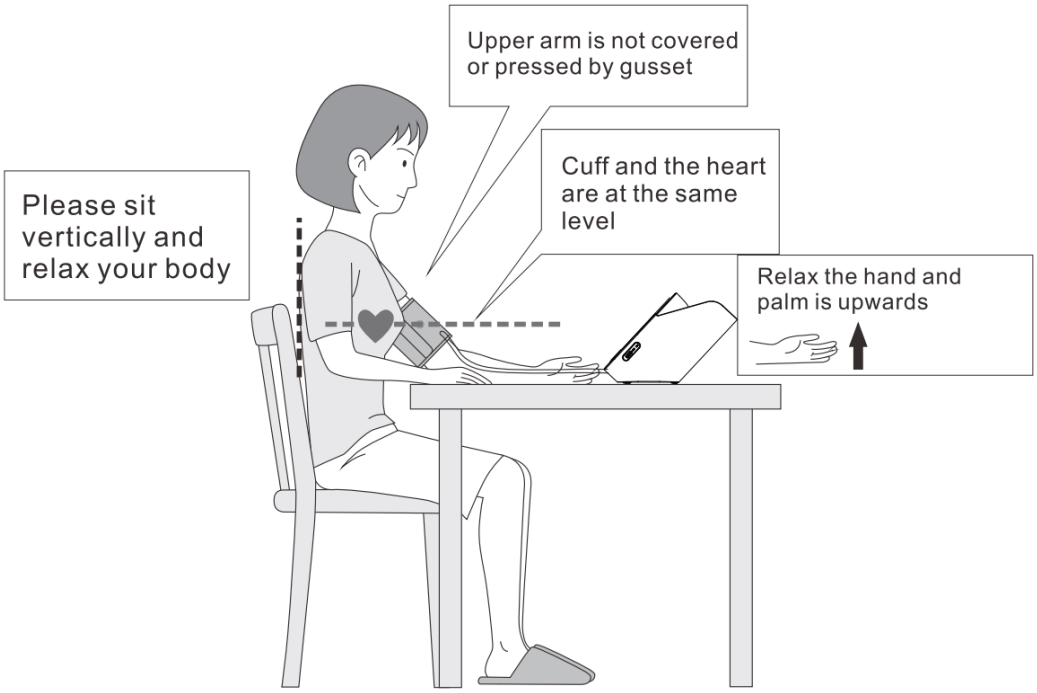
g) Movement error symbol ( )

The Movement Error Symbol ( ) is displayed if you move your body during the measurement. Please remove the cuff, and wait 2-3 minutes. Reapply the cuff and take another measurement.

NOTE:

Patient Position:

1) Comfortably seated
2) Legs uncrossed
3) Feet flat on the floor
4) Back and arm supported
5) Middle of the CUFF at the level of the right atrium of the heart


Upper arm is not covered or pressed by gusset
Cuff and the heart are at the same level
Please sit vertically and relax your body
Relax the hand and palm is upwards

Picture-06

Irregular Heartbeat Detector

This symbol - indicates that certain pulse irregularities were detected during the measurement. In this case, the result may deviate from your normal basal blood pressure – repeat the measurement.

Information for the physician on frequent appearance of the Irregular Heartbeat Symbol.

This instrument is an oscillometric blood pressure monitor device that also analyzes pulse frequency during measurement. The instrument is clinically tested.

If pulse irregularities occur during measurement, the irregular heartbeat symbol is displayed after the measurement. If the symbol appears more frequently (e.g. several times per week on measurements performed daily) or if it suddenly appears more often than usual, we recommend the patient to seek medical advice. The instrument does not replace a cardiac examination, but serves to detect pulse irregularities at an early stage.

5.4 Error Indicates

The following symbol will appear on the display when measuring abnormal

SYMBOL	CAUSE	CORRECTION
No display appears	Weak battery or improper placement	Replace both batteries with new ones. Check the battery installation for proper placement of the battery polarities.
Er 1	Sensor abnormal	Check if the pump is working or not. If it is working, then the problem is sensor abnormal. Please send it to the local distributor.
Er 2	Monitor could not detect pulse wave or cannot calculate the blood pressure data	Check if the air releasing is too slow or not. If it is too slow, please check if there is any dust in the tube plug of the cuff and the cuff port in the device. If yes, please clean and start the measurement again. If no, please send the device back to the local distributor.
Er 3	Measurement result is abnormal (SYS≤35mmHg, DIA≤23mmHg)	Occasionally-measure for one more time / Always - send it to local distributor
Er 4	Too loose cuff or air leakage (Cannot inflate to 30mmHg within 15s)	Tie the cuff correctly and make sure the air plug is properly inserted in the unit
Er 5	The air tube is crimped	Correct it and make the measurement again
Er 6	The sensor is sensing great fluctuation in the pressure	Please keep quiet and don’t move
Er 7	The pressure that the sensor sensing is over the limit	Please send back to the local distributor
Er 8	The demarcation is incorrect or the device has not been demarcated	Please send back to the local distributor

Problem	Check	cause and solutions
No power	Check the battery power	Replace new one
	Check the polarity position	Installation for proper placement of the batteries polarities
No inflation	Whether the plug insert	insert into the air socket tightly
	Whether the plug broken or leak	Change a new cuff
Err and stop working	Whether move the arm when inflate	Keep the body peaceful
	Check if chatting when measured	Keep quite when measure
Cuff leak	Whether the cuff wrap too loose	Wrap the cuff tightly
	Whether the cuff broken	Change a new cuff
⚠ Please contact the distributor if you can't solve the problem, do not disassemble the unit by yourself!		

SYMBOL DESCRIPTIONS

The following symbols may appear in this manual, on the Digital Blood Pressure Monitor C02 / FB160, or on its accessories. Some of the symbols represent standards and compliances associated with the Digital Blood Pressure Monitor C02 / FB160 and its use.

	Authorized Representative in the European Community
	CE Mark: conforms to essential requirements of the Medical Device Directive 93/42/EEC.
	Date of manufacture.
	Manufacturer
	Specifies serial number
	Type BF applied part
	Direct current

	DISPOSAL: Do not dispose this product as unsorted municipal waste. Collection of such waste separately for special treatment is necessary.
	Follow instructions for use
	Put up
	Fragile
	Afraid of the rain
	Fear of the sun
	Class II equipment
	Handle gently
	Temperature range
No Sterilize requirement	
Not category AP / APG equipment	
Mode of operation: continuous	

5.5 Memory

Each unit stores 120 sets measurements for 2 users, totally 240 sets (User A and B).

Viewing the stored values

With the unit off, press the Memory button. The display first shows "A", then shows an average of all measurements stored in the unit. Please note: Measurements for each user are averaged and stored separately. Be certain that you are viewing the measurements for the correct user. Pressing the Memory button again displays the previous value. To view a particular stored memory, press and hold the Memory button to scroll to that stored reading.

5.6 Discontinuing a Measurement

If it is necessary to interrupt a blood pressure measurement for any reason (e.g the patient feels unwell),

the Start/Stop button can be pressed at any time. The device then immediately lowers the cuff pressure automatically.

5.7 Using the AC Adapter

You may also operate this monitor using a CE approved AC adapter (output 5V DC1A with Type C connector).

a) Ensure that the AC adapter and cable are not damaged.
b) Plug the adapter cable into the AC adapter port on the right side of the blood pressure monitor.
c) Plug the adapter into your electrical outlet. When the AC adapter is connected, no battery current is consumed.

Note: No power is taken from the batteries while the AC adapter is connected to the monitor. If electrical power is interrupted,(e.g., by accidental removal of the AC adapter from the outlet) the monitor must be reset by removing the plug from the socket and reinserting the AC adapter connection.

6 Care and Maintenance

Wash hands after each time measurement.
If one device is used by different patients, wash hands before and after each use.

a) Do not expose the device either to extreme temperatures, humidity, dust or direct sunlight.
b) The cuff contains a sensitive air-tight bubble. Handle this cuff carefully and avoid all types of stress through twisting or buckling.
c) Clean the device with a soft, dry cloth. Do not use gas, thinners or similar solvents. Spots on the cuff can be removed carefully with a damp cloth and soapsuds. The cuff with bladder must not be washed in a dishwasher, clothes washer, or submerged in water.
d) Handle the tube carefully. Do not pull on it. Do not allow the tubing to kink and keep it away from sharp edges.
e) Do not drop the monitor or treat it roughly in any way. Avoid strong vibrations.
f) Never open the monitor! This invalidates the manufacturer’s warranty.
g) Batteries and electronic instruments must be disposed of in accordance with the locally applicable regulations, not with domestic waste.

7 Warranty/Service

Your blood pressure monitor is guaranteed for 24 months against manufacturers‟ defects for the original purchaser only, from date of purchase. The warranty does not apply to damage caused by improper handling, accidents, professional use, not following the operating instructions or alterations made to the instrument by third parties.
Warranty only applies to the main device and its cuff. All other accessories are not covered by warranty. There are no user serviceable parts inside. Batteries or damage from old batteries is not covered by the warranty.

8 Certifications

Device standard:
This device is manufactured to meet the European blood pressure monitors: EN1060-3 / IEC 80601-2-30 / ISO81060-1 / IEC60601-1-11 / IEC60601-1
Electromagnetic compatibility:
Device fulfills the stipulations of the International standard IEC60601-1-2
The declaration of conformity is available on:
http://DOC.hesdo.com/FB160-DOC.pdf

9 Technical Specifications

Model: C02 / FB160
Weight: 326.4g(Batteries are included)
Display: 62.5 * 63.5 mm LED Digital Display
Size: 123 (W) x 82 (L) x 25 (H) mm
Accessories: 1×Main Device, 1×Cuff, 1×Users manual, 1x case, 3x AA batteries
Operating Conditions: Temperature: 5°C to 40°C; Humidity: 15% to 93% RH;
Storage And Shipping Conditions: Temperature: -25°C to 70°C; Humidity:≤ 93% RH;
Atmospheric pressure range：70kPa~106kPa
Measuring method: Oscillometric
Pressure sensor: Resistive
Measuring range: DIA: 40 – 130 mmHg SYS 60 - 230
Pulse: 40 to 170 per minute
Cuff pressure display range: <300mmHg
Memory: Automatically stores the last 120 measurements for 2 users (total 240)
Measuring resolution: 1 mmHg
Accuracy: Pressure within ± 3 mmHg / pulse ± 5 % of the reading
Power source: a) 3*AA batteries, 1.5 V
b) AC adapter INPUT: 100-240VAC 50/60HZ OUTPUT: 5V DC 1A
Accessories: Wide range rigid cuff 22 - 40 cm
Automatically power off: 60 seconds
Users: Adult

10 EMC Declaration

1) *This product needs special precautions regarding EMC and needs to be installed and put into service according to the EMC information provided, and this unit can be affected by portable and mobile RF communications equipment.
2) * Do not use a mobile phone or other devices that emit electromagnetic fields, near the unit. This may result in incorrect operation of the unit.
3) * Caution: This unit has been thoroughly tested and inspected to assure proper performance and operation!
4) * Caution: this machine should not be used adjacent to or stacked with other equipment and that if

adjacent or stacked use is necessary, this machine should be observed to verify normal operation in the configuration in which it will be used

Guidance and manufacture's declaration – electromagnetic immunity			
The device is intended for use in the electromagnetic environment specified below. The customer or the user of device should assure that it is used in such an environment.			
Immunity test	**IEC 60601 test level**	**Compliance level**	**Electromagnetic environment - guidance**
Electrostatic discharge (ESD) IEC 61000-4-2	±8 kV contact ±2 kV, ±4 kV, ±8 kV, ±15 kV air	±8 kV contact ±2 kV, ±4 kV, ±8 kV, ±15 kV air	Floors should be wood, concrete or ceramic tile. If floor are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient/burst IEC 61000-4-4	±2 kV for power supply lines ±1 kV for input/output lines	Not applicable	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	± 1 kV line(s) to line(s) ± 2 kV line(s) to earth	Not applicable	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	0 % UT; 0.5 cycle at 0°,45°,90°, 135°, 180°, 225°, 270°, 315° 0 % UT ; 1 cycle 70 % UT; 25/30 cycle 0% UT; 250/300 cycle	Not applicable	Mains power quality should be that of a typical commercial or hospital environment. If the user of the device requires continued operation during power mains interruptions, it is recommended that the device be powered from an uninterruptible power supply or a battery.
Power frequency (50Hz/60Hz) magnetic field IEC 61000-4-8	30 A/m 50/60Hz	30 A/m 50/60Hz	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
NOTE UT is the a.c. mains voltage prior to application of the test level.			

Guidance and manufacture's declaration – electromagnetic immunity			
The device is intended for use in the electromagnetic environment specified below. The customer or the user of the device should assure that it is used in such an environment.			
Immunity test	**IEC 60601 test level**	**Compliance level**	**Electromagnetic environment - guidance**
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz 3 V RMS outside the ISM band, 6 V RMS in the ISM and amateur bands 80% AM at 1kHz	Not applicable	Portable and mobile RF communications equipment should be used no closer to any part of the device, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. **Recommended separation distance** d=0.35√p d=1.2√p
Radiated RF IEC 61000-4-3	10 V/m 80 MHz to 2.7 GHz 80% AM at 1kHz	10 V/m 80 MHz to 2.7 GHz 80% AM at 1kHz	80MHz to 800MHz： d=1.2√p 800MHzto 2.7GHz： d=2.3√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.  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:
NOTE 1 At 80 MHz and 800 MHz, the higher frequency range applies.			

NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.
A Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the device is used exceeds the applicable RF compliance level above, the device should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the device. B Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

Guidance and manufacture's declaration – electromagnetic emission		
The device is intended for use in the electromagnetic environment specified below. The customer of the user of the device should assure that it is used in such an environment.		
Emission test	**Compliance**	**Electromagnetic environment – guidance**
RF emissions CISPR 11	Group 1	The device use RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emission CISPR 11	Class B	The device is suitable for use in all establishments, including domestic establishments other than domestic and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	Not applicable	
Voltage fluctuations/ flicker emissions IEC 61000-3-3	Not applicable	

Recommended separation distances between portable and mobile RF communications equipment and the device			
The device is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the device can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the device as recommended below, according to the maximum output power of the communications equipment.			
Rated maximum output power of transmitter (W)	Separation distance according to frequency of transmitter (m)		
	150 KHz to 80 MHz	80 MHz to 800 MHz	800 MHz to 2.7 GHz
	$d = 1{,}2\sqrt{P}$	$d = 1{,}2\sqrt{P}$	$d = 2{,}3\sqrt{P}$

0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23

For transmitters rated at a maximum output power not listed above, the recommended separation distance d in 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 1 At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.
NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

Guidance and manufacturer's declaration - electromagnetic immunity

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

Test frequency (MHz)	Band [a] (MHz)	Service [a]	Modulation [a]	Maximum power (w)	Distance (m)	IMMUNITY TEST LEVEL (V/m)
385	380-390	TETRA 400	Pulse Modulation [b] 18 Hz	1.8	0.3	27
450	430-470	GMRS 460, FRS 460	FM [c] ±5 kHz deviation 1 kHz sine	2	0.3	28
710	704-787	LTE Band 13, 17	Pulse Modulation b) 217 Hz	0.2	0.3	9
745						
780						
810	800-960	GSM 800/900, TETRA 800, iDEN 820, CDMA 850, LTE Band 5	Pulse Modulation [b] 18 Hz	2	0.3	28
870						
930						
1720	1700-1990	GSM 1800; CDMA 1900; GSM 1900; DECT; LTE Band 1,3 4,25;UMTS	Pulse Modulation [b] 217 Hz	2	0.3	28
1845						
1970						
2450	2400-2570	Bluetooth, WLAN 802.11 b/g/n, RFID 2450,	Pulse Modulation [b] 217 Hz	2	0.3	28

		LTE Band 7				
5240 5500 5785	5100-5800	WLAN 802.11 a/n	Pulse Modulation [b] 217 Hz	0.2	0.3	9
NOTE If necessary to achieve the IMMUNITY TEST LEVEL, the distance between the transmitting antenna and the ME EQUIPMENT or ME SYSTEM may be reduced to 1 m. The 1 m test distance is permitted by IEC 61000-4-3.						
a) For some services, only the uplink frequencies are included. b) The carrier shall be modulated using a 50% duty cycle square wave signal. c) As an alternative to FM modulation. 50% pulse modulation at 18 Hz may be used because while it does not represent actual modulation, it would be worst case.						
The MANUFACTURER should consider reducing the minimum separation distance, based on RISK MANAGEMENT, and using higher IMMUNITY TEST LEVELS that are appropriate for the reduced minimum separation distance. Minimum separation distances for higher IMMUNITY TEST LEVELS shall be calculated using the following equation: $E = \frac{6}{d}\sqrt{P}$ Where P is the maximum power in W, d is the minimum separation distance in m, and E is the IMMUNITY TEST LEVEL in V/m.						

Shenzhen Jamr Technology Co., Ltd.
2nd Floor, A-building, No.2 Guiyuan Road, Guihua community, Guanlan town,
Longhua new district, 518100 Shenzhen, PEOPLE"S REPUBLIC OF CHINA
Shanghai International Holding Corp. GmbH (Europe)
Eiffestrasse 80, 20537 Hamburg, Germany. shholding@hotmail.com

Imported by:
Commaxx BV
Wiebachstraat 37
6466 NG Kerkrade
The Netherlands

Version Number: 1.1