Instruction Manual

Bluetooth Blood Pressure Monitor for Wrist

HPL-108

Contents

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Introduction

Thank you for purchasing HPL-108 Bluetooth Blood Pressure Monitor for Wrist.

For your safety, please be sure to read this Instruction Manual thoroughly before using the Blood Pressure Monitor. For other specific information about your own blood pressure, CONTACT YOUR PHYSICIAN.

Warning Signs & Safety Statements
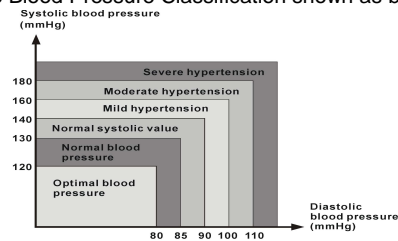
ATTENTION!!
Read user's manual before use.

Type BF applied part.

Health and Blood Pressure Values
- Classification of Blood Pressure by the WHO:
  The World Health Organization (WHO) and the Inter-national Society of Hypertension (ISH) developed the Blood Pressure Classification shown as below.

According to the blood pressure classification by the WHO/ISH (revised in 1999)
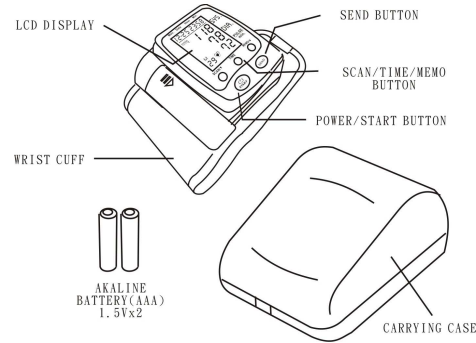
Warning
- If the event of the cuff pumping up and not stopping, please open the cuff at once.
- Do not measure repeatedly for a long period of time.
- This device is not supposed to be used if your wrist has any wound or injury.
- If locks connectors are used in the construction of tubing, there is a possibility that they might be inadvertently connected to intra-vascular fluid systems, which case may allow air to be pumped into a blood vessel.
- Take batteries out of the housing if the unit is not to be used for a long time.
- Do not use different type, date or brand-name batteries, and this may lead to an incorrect reading.
- Leaving the batteries in the blood pressure monitor for a long period and not using the device may damage the main unit.

Suggestions before Measuring Blood Pressure

1. It is recommend that persons has one of the diseases as heart troubles, kidney trouble, hyper-tension, diabetes, arteriosclerosis or frustration problem of blood vessel, please consult your physician before and during using the blood pressure monitor to determine if your wrist blood pressure accurately reflects your actual blood pressure.
2. Please sit or lie down for at least 5-10 minutes before taking a measurement.
3. Avoid eating, smoking, exercising, bathing and drinking (alcohol/caffeine/or tea) for at least 20-30 minutes before taking a measurement, and avoid talking during a measurement.
4. Be sure the wrist cuff is at the same level as your heart.

5. Stress raises blood pressure. Keep calms and relax yourself during a measurement.
6. Wait 2-3 minutes before taking another blood pressure measurements.
7. Keep the records for your physician as reference. Reminded that one measurement does not provide you with real blood pressure value, only long-term records will reveal the long-term trend of your blood pressure. Try to measure your blood pressure at the same time each day for consistency.

Device Descriptions

LCD DISPLAY

SEND BUTTON

SCAN/TIME/MEMO BUTTON

POWER/START BUTTON

WRIST CUFF

AKALINE BATTERY(AAA) 1.5Vx2

CARRYING CASE

Description of Control Buttons

● **POWER**: To turn on or turn off the unit and Start inflating to measure blood pressure and pulse.
● **SEND**: Transmit data to PC or turn on/turn off voice in power off mode.
● ⏲ **TIME**: To set the Date/Time.
● **MEMO/▲**: To review the measured record(s) manually /

To select the digit of Sate/Time.
- **SCAN/▼**: Automatically review all previously memorized record(s) / To select the digit of Date/Time / To delete memorized record(s).

Description of LCD Display Symbols
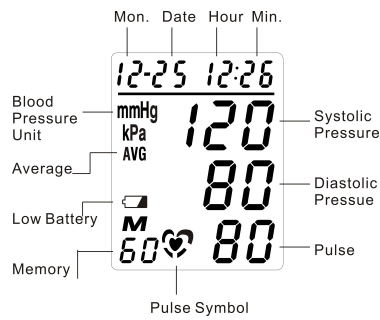

Installing/Replacing Batteries

Be sure the unit turned off before installing/replacing batteries, or the memories & Date/Time setting will be erased. **If the batteries are removed for more than 30 seconds, the memories of the unit and the setting of Date/Time will be erased** as well**.** Then, you must reset the Date/Time.

1. Slide the battery compartment cover in the direction of the arrow to remove it.
2. Place the batteries (two AAA Alkaline batteries) in the compartment as indicated by the polarity symbols (+ and -) marked below. Then all symbols will be shown on the screen for 1 second and then return to standby
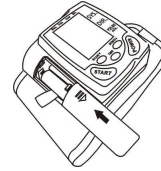
mode.
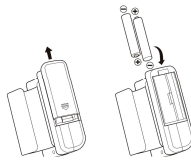
3. Replace the battery compartment cover as below dotted line and slide it in the direction of the arrow.
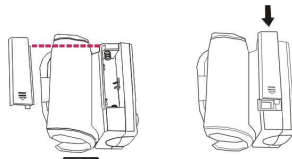
Note: When (Low Battery indicator) appears on the display, the batteries are weak. Change the batteries as soon as possible, or it may not be able to take any measurement. And, the memories and the Date/Time setting of the unit may be lost.

Warning:

a. Be sure to follow the instruction above when installing or replacing the batteries.
b. We recommend you to use the **ALKALINE batteries** for the best performance and the longest device life.
c. Use only brand new batteries of the required size and DO NOT mix using old and new or different type of batteries together.
d. Remove the batteries if not using the blood pressure monitor for an extended period (i.e., 3 months). The batteries can leak chemicals then damage the electronic parts.
e. Immediately replace run-down batteries with new ones.
f. Check the batteries periodically and replace them when necessary.

Program Date and Time

Make sure you have turned off the unit before you program the Date and Time.

1. Continuously press ⏰ **TIME** button for 2 seconds until "**2009"** shown on the screen and starts to flash.
2. Press **MEMO/▲** button or **SCAN/▼** button to set the number representing the **Year**.
   (You can press and hold **MEMO/▲** or **SCAN/▼** buttons for about 1 seconds, the number of the **Year** will be displayed in the faster speed.)
3. Press ⏰ **TIME** button to confirm the **Year** setting. Then the number representing the **Date** will flash.
4. In the same manner, set the **Month**, **Date**, **Hour** and **Minute**.

Note: After replacing batteries, always check the Date/Time is properly set or not first, then use the blood pressure monitor. If the batteries are removed for more than 40 seconds, you must reset the Date/Time.

How to Apply the Wrist Cuff

1. Keep your left arm in front of you with your palm facing up. Apply the wrist cuff so that the monitor is on the inside of your wrist with the display facing up like your palm.
2. As in the figure below, cover the wrist cuff by leaving a space of 1/4"~1/2" between the edge of the wrist cuff and the bottom of your palm.
3. Hold the end of the wrist cuff and wrap the cuff around your wrist. The cuff should be tightened evenly and left no room between the cuff and your wrist for most accurate measuring result. (Do not pull the cuff too hard

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or it will make the wrist cuff too tight.)
4. The excess part of the cuff can be folded and attached to the other side of the cuff.
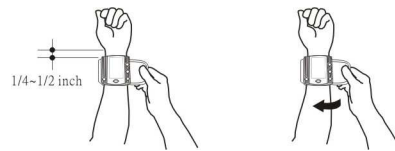
Correct Measuring Position

In order to read the accurate value, please sit or lie down to measure. Rest your left arm on the table and use the enclosed storage box, a cushion or a pillow as bolster. With left palm face up and keep the cuff at the same level as your heart. Higher or lower level will affect the readings. (If the wrist cuff is lower than the level of the heart, blood pressure will be measured higher.)

Measurement while sitting down:

a. Place your elbow on a table and have the wrist rest on an object such as your storage case or a cushion.
b. Make sure the wrist cuff is at the same level as your heart. (It is very important to obtain your true blood pressure.)
c. Relax your whole arm with the palm facing up.
d. Relaxing your body before measurement by taking several deep breaths.

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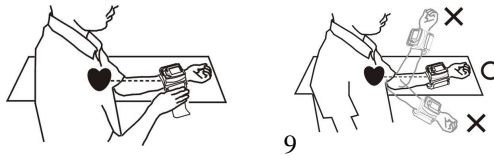
How to Take A Measurement

Please read and follow directions in the section "Suggestions before Measuring Blood Pressure" and "How to Apply the Arm Cuff" before taking a measurement.

1. Press **POWER** button to turn on the unit.
   All the symbols displayed for a couple seconds then the number **0** will flash.
2. Press **POWER** button again, the cuff automatically inflates to approximately 170mmHg. (50mmHg higher than the average systolic blood pressure reading.)
3. When the cuff reaches your correct inflation level, it begins to deflate automatically with decreasing numbers shown on the display. The Heart Symbol ❤ flashes as the onset of oscillation signals.

Mon. Date Hour Min.	Mon. Date Hour Min.	Mon. Date Hour Min.
10-01 12:00	10-01 12:00	10-01 12:00
150 mmHg	148 mmHg	118 mmHg
		76
♡	❤	70 ♡

* If during deflation the blood pressure monitor senses that higher pressure is required to measure the user's blood pressure, the device will stop deflation and pump again to reach the workable pressure (up to the max. 280 mmHg). If the inflation continues and doesn't stop, please untie the cuff immediately or turn off the unit by pressing the **POWER** for 1 second**.**

4. The monitor exhausts the residual air when the measurement is completed. The Heart Symbol ♡ stops flashing and your blood pressure and pulse will appear on the display. In the mean time, the unit announces the measured value of Systolic, Diastolic

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and Pulse. After taking the measurement, the latest measured readings will always be displayed before the power is turned off.

Note:
● Wait for at least 3 minutes if you want to take another measurement. Waiting allows your blood vessels to bounce back to normal status. More rest time may be required between measurements depending on individual physiological conditions.
● While starting the unit each time, it will give a voice prompt. If you don't need, please off the announcement.

How to Use the Memory Features

The blood pressure and pulse measured and displayed are automatically stored in the memory. The blood pressure monitor can store up to 80 measurements (or 40 x 2 users). If more than 80 measurements have been taken, the earliest measurement will be erased and replaced by the most recent measurement.

1. **Review the Average Value and previously measurements:**
    Press **MEMO/▲** button, the unit first display the average values of Systolic, Diastolic and Pulse. (Averaged from all memorized readings.) Press **MEMO/▲** button again to review the measurement from the latest to the earlies.

    The latest measurement (**M 01**) appears when you press **MEMO/▲** button. **M 01** is the latest reading measured. The Systolic, Diastolic, Pulse and Date/Time of the measurement will be displayed. Press **MEMO/▲** button to repeatedly review other memorized readings.

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The readings will be displayed as **M 02, M 03, M 04** … etc. You can press **SCAN/▼** button to switch to the automatic display mode.

2. **Scan all previous measurements:**
   Press **SCAN/▼** button, the unit will display all measurements one by one in one in one second interval. In the automatic display mode, You can press **MEMO/▲** button to switch to the single display mode.

How to delete Single or All Memories

1. **Delete single measurement:**
   You can delete the single memory just after taking the measurement. Press **SCAN/▼** button then "dEL" will appear and flash. Press **SCAN/▼** button again to confirm the delete function.

2. **Delete all measurements:**
   Turned off the unit first then keep pressing **SCAN/▼** until "dEL ALL" displayed. Press **SCAN/▼** button again and all memories will be deleted when "00 ALL" shown on the screen.
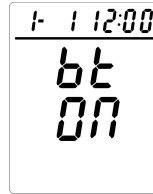
```
 dEL        00
 ALL        ALL
     M           M
```

Searching Bluetooth Address：

1. Before the using, please install the Alkaline batteries in the battery compartment. You will hear three short beep tones and turn off the device.

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2. Press **Send** button and it shows "**BT ON**" to turn on bluetooth feature.
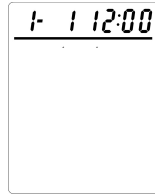
(Figure1)   (Figure 2)

3. Press **MEMO/▲** button or **SCAN/▼**button to turn on or turn off the bluetooth feature.
Note：Please turn off bluetooth feature to save power consumption.
4. When turn on the bluetooth feature, please press **Send** button again and it shows the bluetooth address **(00-1C-97-2F-FF-2E)** on the display. Please type the bluetooth address from up to down and left to right and each device has different address/code.
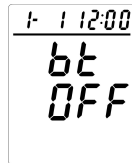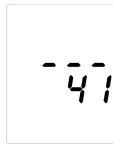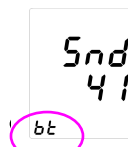

(Figure 3)   (Figure 4)

5. Press **Send** button again. It shows "— — — and 41"(41 means 41 records) and it can start pairing.
6. When it shows "**Snd 0 or（Snd xx）** " and "bt" on the left lower corner, it means pairing successfully.

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|	

```- - -```
```41```
	```Snd```
	```41```
	(bt)

(Figure 5)	(Figure 6)

7. Press **Send** button again to transmit the data. If there is no any record, press **Send** button again to turn off the device. If no data transmission, press ⏻**/Start** button to turn to stand by mode.

Note: During the stand by mode, it will turn off bluetooth feature if it did not complete the pairing to save power. Please press ⏻**/Start** button for one second to turn off the device and turn on the device again to pair it.

|	

```Snd```
```41```
(bt)
	```I- 1 12:00```
	```mmHg 0```
	(bt)
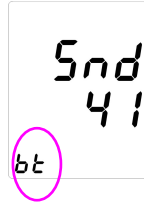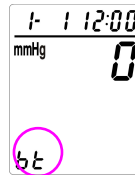
(Figure 7)	(Figure 8)

<u>Installing BPPLINK Software:</u>

Please ensure installing BlueSoleil application program first, the icon of " ⓑ " shows on the screen. Then HPL-108 can link the computer via Bluetooth

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Next install the BPPLINK-BT application program to transfer the data from HPL-108 to PC. Follow these steps to install the program:
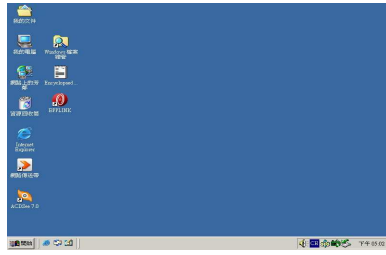
Step 1.
Please insert the installation CD and run the installation program (C:\Program File\BPPLINK-BT). Please select the destination folder and click NEXT then click FINISH to complete the installation.

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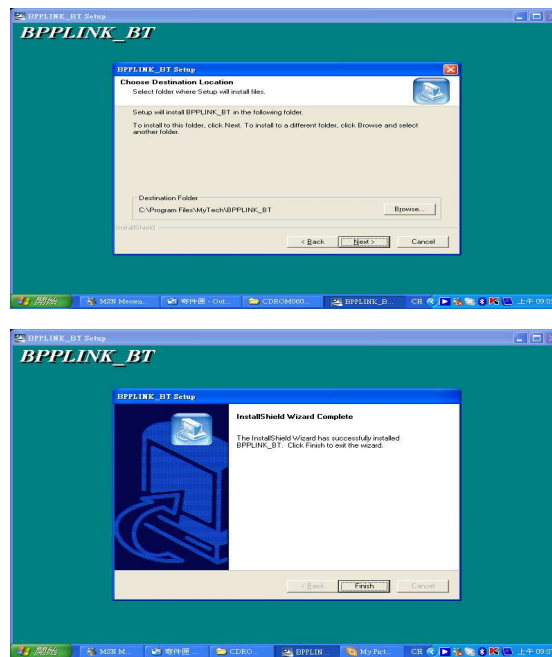
Step 2.
When you finish installing BPPLINK-BT program, the icon
of "BPPLINK" will show on the desktop.

**<u>Using PC-Bluetooth Dongle Function:</u>**

Step 1.
When you turn on the computer, you can find the icon of
"BPPLINK-BT" and "BlueSoleilon" on the screen.

Step 2.
Please connect the Bluetooth USB Adapter to the USB port
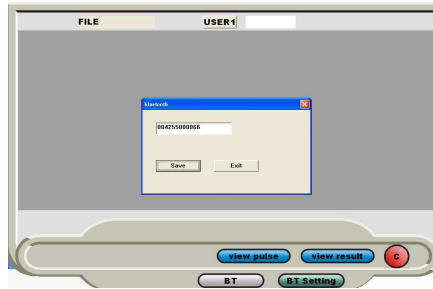on computer and turn on the HPL-108 unit.

Step 3.
Click the icon of "BPPLINK" on the screen to run the
program and click the [BT Setting] **BT Setting** button to
enter Bluetooth Mode.

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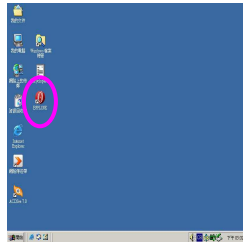
Step 3.
Please key-in the Bluetooth ID number in the dialogue box
and press **save** and press **BT** button again, the computer
will connect the HPL-108 unit automatically

Step 4.
When PC screen shows below dialogue box, it means
connecting successfully. You can start to take
measurements (refer to how to take a measurement) and
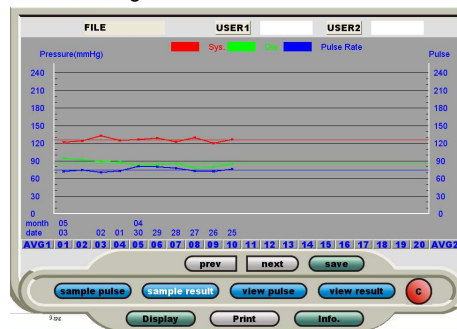**transmit** the measurement results via Bluetooth.

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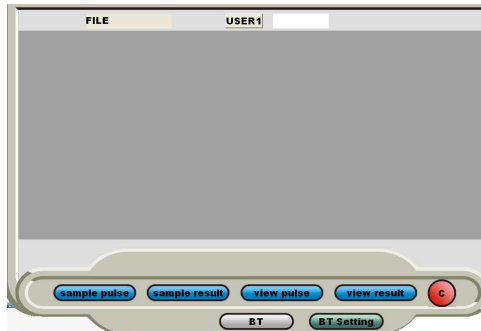
Step 5.
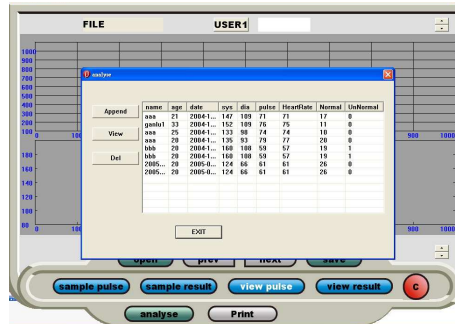- Sample Pulse：Click the button to take a measurement on real time and show the measuring curves of blood pressure/pulse.
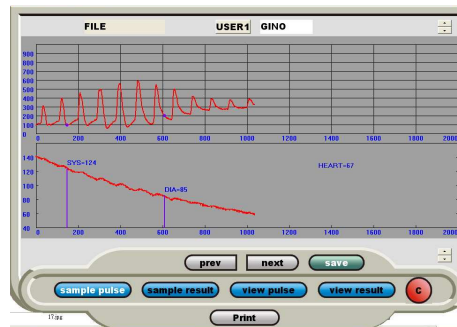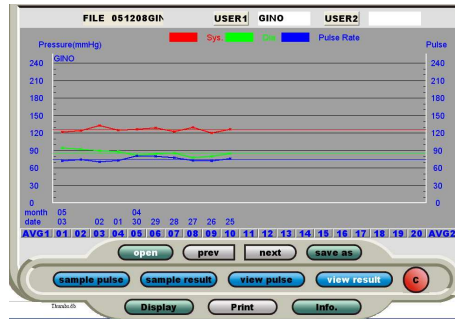

- Sample Result：Click the button to transfer the measured results of HPL-108 to PC for data statistic management.

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● View Pulse：Look up the measured values that you
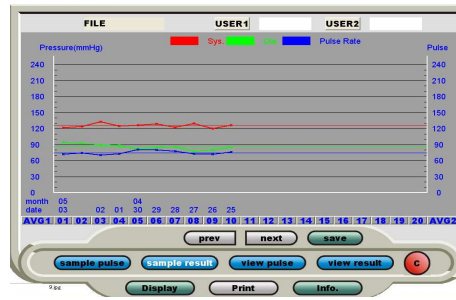have already stored on the computer.

● View Result：Look up the measured curves that you
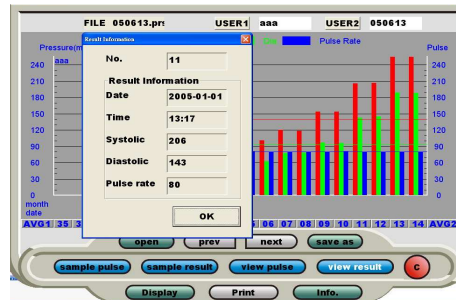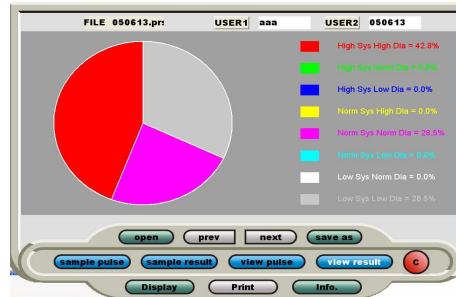have already stored on the computer.

Step 6.
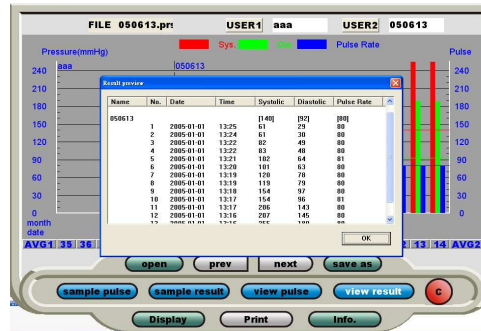Manage Measured Results：

(Line Graph)

(Bar Graph)

(Circle Graph)

(Compare Analyze Graph)

(Print the statistical graph)
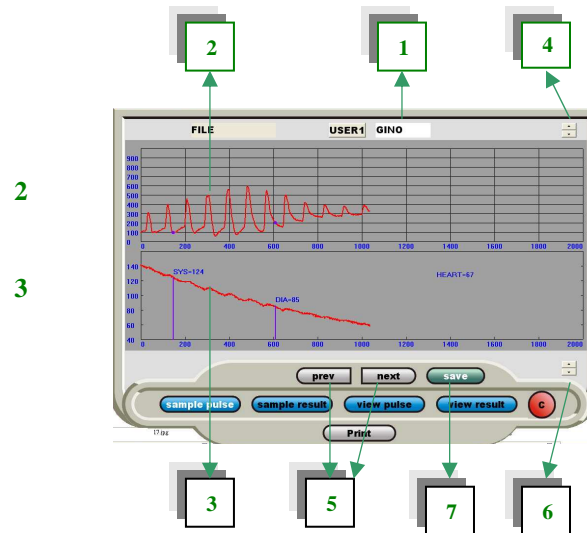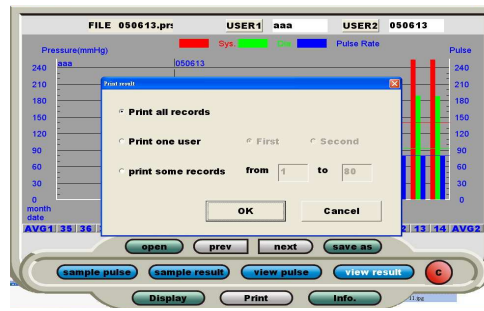
Note:
1. Please key-in the file name before storing measured curves.
2. It shows measuring curves of pulse on real time.
3. It shows measuring curves of blood pressure on real time.
4. Adjusting curves of pulse in upper and lower displacement.
5. Adjusting curve of blood pressure in left and right sides.
6. Adjusting curve of blood pressure in upper and lower.
7. Storing the measured curves.
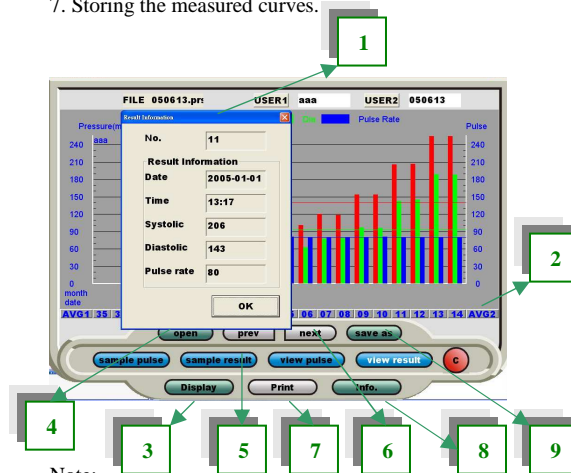
Note:
1. Listing one of the result information.
2. Average values of blood pressure.
3. Choosing the display style of the statistical graph.
4. Open stored file.
5. Checking the previous record.
6. Checking the next record.
7. Printing the statistical graph.
8. Listing the measured results.
9. Storing the measured values.

Using Mobile-Bluetooth Function:

System Requirement：

(1) The mobile phone needs to support MIDP2.0 or JSR82 (Bluetooth Protocol).
(2) The recommend mobile phone model No.: Nokia 7610, Sony Erisson 750.

Install and Uninstall Program：
Please see the instructions of installing and uninstalling on user manual of the mobile phone.

How to Set up the program：
1. System Setting：
Please install the BPPLINK application program on mobile phone. Please click the file: BPPLINK to enter the Bluetooth address setting in 2-3 seconds. Please key-in the correct Bluetooth address of BPM and then press "Back" to return BT list "Figure 1". Double-click back to main function list (Figure 2).

BT list	Blood pressure monitor & bluetooth
● 111111111111	Measure Historical Meas. Statistic Bluetooth Link System Setting
Option Back	Option Exit

【Figure 1】　　　　　【Figure 2】

2. Operate BPPLINK program：

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If Bluetooth address is empty when operate the BPPLINK program, the program will enter Bluetooth address setting automatically (Refer to Figure 1). If there is the existed address, the BPPLINK will search Bluetooth service and establish the connection. When the LCD of mobile phone shows green icon, you can start taking measurements.

※ Note: You have to power off HPL-208 and then power on before operating BPPLINK program. It cannot establish blue tooth connection to power off HPL-208.

3. Bluetooth Link：
(1) HPL-208 BPM will link the mobile phone automatically when BPPLINK program is operating.
(2) Select "Bluetooth Link" on main function list (Refer to Figure 2), and then mobile phone will show "bluetooth service searching" (Figure 3).
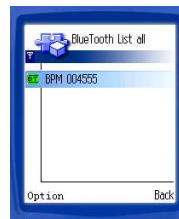

【Figure 3】　　　【Figure 4】

(3) Figure 4: Please key-in cable soft password "12345".

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【Figure 5】 　　 【Figure 6】

(4) Figure 5: Press YES to confirm establishing the connection.
(5) Figure 6: Green icon indicates Bluetooth Link successfully.
(6) Figure 7: White icon indicates the mobile phone can not find the Bluetooth service and Bluetooth Link failed.
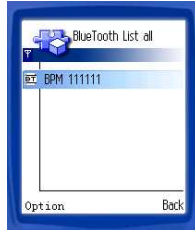
【Figure 7】 　　 【Figure 8】

(7) Figure 8: Red icon indicates the mobile find the Bluetooth service but not connect yet.
(8) Figure 9: When the LCD displays white icon, please press "Option"(Figure 9). Please re-start to power on the HPL-208 BPM and select "service & connect" to re-connect.

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【Figure 9】

※Note:
(1) If the link is failed, please exit the BPPLINK program.
Power off the HPL-208 BPM and power on again. Then
re-operate the BPPLINK program.
(2) "Disconnect" means to disconnect the link of present
Bluetooth.

4. Measurement：
You can start to take measurements when Bluetooth Link
set up successfully. Please select "Measure" on main
function list (Figure 2), the mobile phone send the
command to HPL-208 BPM to measure blood pressure.
(Refer to Figure 10,11)

【Figure 10】

【Figure 11】

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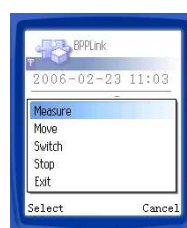
(1) When start measuring, the LCD shows the mmHg increasing and the heart symbol flashing (Refer to Figure 10).

(2) The function OPTION can switch different graphs and send the command to start or stop the measurement. (Refer to Figure 11)

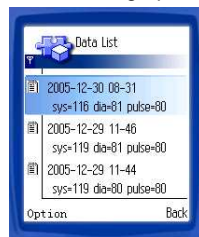(3) Different colors indicate different results of the measurements (green, yellow, purple and red colors which represent normal, normal high, warning and dangerous)

(4) Send a SMS to the programmed number automatically when the measurement results are over the setting value twice.

Meas.	Warning	Normal	Warning	Dangerous
SYS	0-99	100-139	140-159	160-255
DIA	0-59	60-89	90-99	100-255

5. Statistic：

(1) Please select "statistic" on main function list (Figure 12) to list measurements and select "data load" to upload the previous measurement results from HPL-208 Bluetooth BPM. Press Analyse and the LCD displays different graphs as below.

【Figure 12】 　　　　　【Figure 13】

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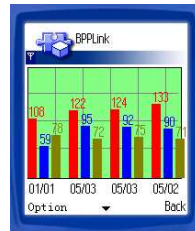
【Figure 14】

【Figure 15】
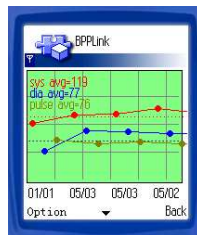
【Figure 16】

【Figure 17】
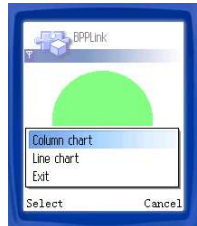
【Figure 18】

6. Historical Measurement:

Select "Historical Meas" on main function list. Different colors indicate different results of the measurements (green, yellow, purple and red colors which represent normal, normal high, warning and dangerous).

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【Figure 19】　　　　【Figure 20】
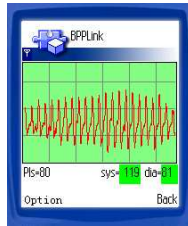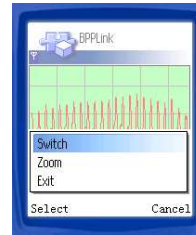
【Figure 21】　　　　【Figure 22】

【Figure 23】　　　　【Figure 24】

7. System setting：
Select "System setting" on main function list (Refer to Figure 2) to set following functions.

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【Figure 25】

(1) Name: Set the user name. (Refer to Figure 26)
(2) Phone book: Set the SMS phone numbers. (Refer to Figure 27)
(3) ALARM: Set the alarm clock to remind users to measure blood pressure. (Up to 6 times daily) (Refer to Figure 28)
(4) BlueTooth: Manage the bluetooth address setting. (Refer to Figure 29)

【Figure 26】　　【Figure 27】
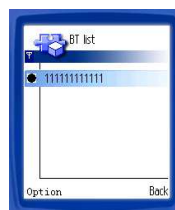
【Figure 28】   【Figure 29】

TROUBLESHOOTING

Condition	Correction
The program is crashed can not work	Turn off the mobile phone and turn on it; power off the HPL-208 BPM and power on it then operate BPPLINK program.
It can not connect to Bluetooth	Power off the HPL-208 BPM and power on it; exist the BPPLINK program and enter again.
If the alarm time is set but there is no sound when the alarm time is reached	Operate BPPLINK program again or increase the volume level of the mobile phone.
The low battery is shown on the LCD. Battery voltage is excessively low	Please make sure the electric power of battery is sufficient before connecting Bluetooth.

Maintenance

Storage

1. Always put the device in the storage box attached when not in use or during transporting.
2. If you won't use the device for an extended period like over 3 months, remove the batteries.
3. Do not store the device under direct sunlight, high temperature, humid, dusty, or corrosive environment.
4. Do not stretch, bend or tug the wrist cuff too hard.
5. Do not wet the unit.

Cleaning
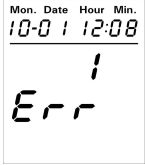
1. Do not use an alcoholic-base, benzene, gasoline or solvent agent to clean the device.
2. Wipe with a moistened cloth with clean water or a mild cleaning agent and then dry the device with a soft and dry cloth.
3. The dirt on the cuff can be wiped by the moistened cloth and soap.
4. Do not flush the device and cuff.
5. Do not bend the cuff or sleeve and wrap the sleeve to the inside-out surface.
6. Do not disassemble the device or dismantle the cuff or try to repair by yourself. If any problem happens, bring the device to the distributor for further examination.
7. Do not operate the device under the severe environment of extreme temperature or humidity, or direct sunshine.

Error Message & Troubleshooting

The unit is manufactured through the complete quality assurance system.

If the measurement is not made correctly, the following error will be displayed. Measure your blood pressure again correctly.
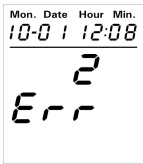
ERROR MESSAGE

Error Indicators	Cause	How to correct
Mon. Date Hour Min. 10-01 12:08 1 Err	●Incorrect posture in measurement or the user moves or talks during measurement. ●There are any artificial interference and noise during measurement. ●User is tense and does not relax or has severe heart beat problem.	●Cuff is not fastened well; please fasten again by following the instructions. ●Wait at least 3 minutes before taking another measurement. Repeat steps listed under "How to Take a Measurement." ●User has special characteristic, please refer to a physician.

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Error Indicators	Cause	How to correct
Mon. Date Hour Min. 10-01 12:08 2 Err	●No pulse or blood pressure sensed. ●Incorrect posture during measurement. ●Cuff is not wrapped properly.	●Cuff is not fastened correctly or not tight enough; please fasten the cuff by following the instructions. ●Wait at least 3 minutes before taking another measurement. Please see "How to Take a Measurement" on page 15.
Mon. Date Hour Min. 10-01 12:08 3 Err	● Insufficient or failure inflation. ● Cuff broken.	●Cuff is not fastened well; please re-fasten the cuff by following the instructions. ●Pump, or venting valve or deflation valve failure, please contact the distributor.

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If a trouble occurs while you are using the blood pressure monitor, check the attached Troubleshooting first. If you can not measure your blood pressure correctly even after taking the following countermeasures, the monitor may be broken. Please send the unit to the distributor for repair. Do not dismantle or try to repair the monitor by yourself.

TROUBLESHOOTING

Condition	Cause	Correction
After the batteries are installed, no indication or symbol displayed on the LCD. The wrong indication when power is turned on.	●Batteries are not installed properly. ●Batteries run out the electricity.	●Check and correct the battery polarities. ●Remove the old batteries and wait for one minute, then install the new batteries.
The inflation cannot be done or the air pressure cannot rise.	Cuff is not wrapped properly.	●Check the wrist position and fasten the cuff correctly and re-measure the pressure again.
⊂▰	Battery low. Battery voltage is excessively low.	●In order to keep the previous measurements & date/time, ensure the unit is turned off before replacing batteries. ●Replaced with new "AA" Alkaline batteries.

Condition	Cause	Correction
The blood pressure cannot be taken, and the LCD shows error message or wrong result.	-----	●Re-fasten the cuff. ●Relax yourself. ●Keep the cuff and heart at the same level during the measurement. ●Keep silent and still in measurement. ●If the patient has severe heart beat problem, and the blood pressure reading may not be correct.
Under normal operating circumstance, the reading at home is different from that of the clinics.	-----	●Usually people feel tenser in the hospital or clinic (white robe effect) than in their home. ●Record the results and consult with your physician.
Each measurement has various reading.		●The variation might be due to the different environments. ●The blood pressure is changing according to the physiological or psychological status of the human body.

Specifications

Model No.	HPL-108
Display	LCD Digital Display
Measurement Method	Oscillometric method
Measurement Range	Pressure: 20~280mmHg Pulse: 40~190 / minute
Accuracy / Calibration	Pressure: ±3mmHg or 2% of reading Pulse: ±5% of reading
Memory capacity	80 sets memories (80x1 user or 40x 2 users)
Inflation	Automatic inflation by air pump
Deflation	Automatic liner pressure deflation valve
Pressure Release	Automatic exhaust valve
Sensor	Semiconductor pressure sensor
Power Supply	3V DC (2 "AAA" alkaline batteries)
Measuring Interval	1 mmHg
Operating Temperature / Humidity	+10℃~+40℃ (50 ^{0}F~104 ^{0}F) 40%~85% R.H. maximum
Storage Temperature / Humidity	-20℃~+50℃ (-4 ^{0}F~122 ^{0}F) 15%~85% R.H. maximum
Battery Life	Approx. 180-200 uses (alkaline batteries)
Unit Weight	Approx. 120 grams (not including batteries)
Cuff Size	Wrist Circumference approx. 135~195mm (5 1/4~ 7 3/4 inch)
Unit dimensions	Approx. 74 (l) x 72 (w) x 25 (h) mm
Accessories	Storage Case, Instruction Manual,

Please understand that specifications may be changed without prior notice.

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Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user authority to operate the equipment.

This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.   These limits are designed to provide reasonable protection against harmful interference in a residential installation.   This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is needed.
- Consult the dealer or an experienced radio/TV technician for help.

Service Center:

Zephyr Znnapolis

Phone: +1 (443) 569 3603

Fax: +1 (443) 926 9402

E-Mail: sales@zephyr-technology.com

Address

1 Annapolis Street, Suite 200, Annapolis, MD 21401 U.S.A.