



PROFESSIONAL MEDICAL PRODUCTS

Code 32780 24-Hour Ambulatory Blood Pressure Monitoring System

Instruction Manual



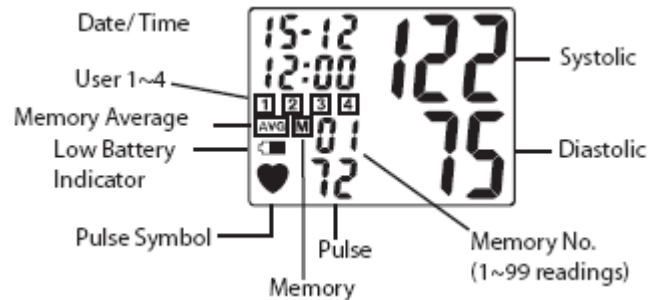
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OVERVIEW

DB-51H Ambulatory Blood Pressure Monitoring System is a non-invasive oscillometric blood pressure monitor capable of measuring blood pressure at pre-programmed intervals throughout the day. It is intended to be used at home to record patient blood pressure over a 24 hour period for gathering trending information in non-critical settings. It is not intended to be used as real time monitoring of patients in critical care environment. It is intended for use by a trained medical practitioner as an aid or adjunct to diagnosis and treatment.

DB-51H unit is worn by a waist belt or shoulder strap and is connected to a cuff wrapped around the non-dominant upper arm. The cuff is inflated automatically at pre-programmed intervals. Heart pulse can also be measured.



CHECKLIST

Package contains the following:

- 32780 unit
- PC-link software with CD-R & USB plug
- Monitor pouch, Waist belt and shoulder strap
- Adult size cuff
- Lithium rechargeable battery
- User manual

PC minimum requirements

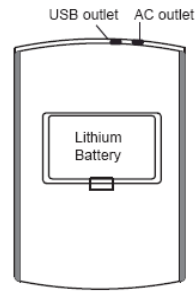
- Windows XP or later
- Pentium 233 MHz
- 4 GB hard disk
- 128 MB ram
- Monitor resolution: XGA 800 x 600 or higher

SAFETY PRECAUTIONS

- Babies, young children or individuals who cannot express their consent are not suitable to take blood pressure measurement.
- Individuals with serious arteriosclerosis are not suitable to take blood pressure measurement.
- Blood pressure readings may change in case of pregnancy. Pregnant women can consult their doctor before taking measurement.
- It is intended for use following consultation and instruction by a physician.
- The interpretation of blood pressure measurement values should only be performed by a physician. The accuracy of measurement may be affected by position of the subject, physical conditions, movement, and use outside the operating instructions written in this manual.

BATTERY INSTALLATION

1. Remove the screw and lift the cover to open the battery compartment.
2. Install 1 Lithium rechargeable batteries as indicted. Mare sure to match polarities (+,-) on the batteries.
3. Replace the battery cover by inserting and tightening the screw.



Please remove the battery when not in use for more than 3 months. Otherwise, battery may leak and cause damage to the unit.

SETTING UP THE SYSTEM

To set up the unit, simply input the parameters by pressing the buttons on the unit without using computer. User can set TWO time periods.

5.1 Date & Time Setting

1. Press and hold the "⌚ AVG" button for a few seconds until the Year display flashes.
2. Press the "M ▲" or "■ ▼" button to select the current year.
3. Press the "⌚ AVG" button to confirm Year Setting.
4. Follow the same steps to set the Month, Date, Hour and Minute.

5.2 1st Time Period Setting

5.2.1 Set Time Start

1. Screen shows "C ---". To enable 24-hour function, press the "M ▲" or "■ ▼" button to select "ON" and press the "⌚ AVG" button to confirm.



2. Screen shows "A ---". To set the first starting time, press the "M ▲" or "■ ▼" button to select "ON" and press the "⌚ AVG" button to confirm.



3. When Hour digit flashes, press the "M ▲" or "■ ▼" button to select Hour. Press the "⌚ AVG" button to confirm.
4. When Minute digit flashes, press the "M ▲" or "■ ▼" button to select Minute. Press the "⌚ AVG" button to confirm.
5. For example, you have set 8:00 you want to start the 1st measurement.

5.2.2 Set Time End

1. After that, you will jump to page "2" on the screen.
2. Screen shows "A --- ". To set the first ending time, press the "M ▲" or "■ ▼" button to select "ON" and press the "⌚ AVG" button to confirm.



3. When Hour digit flashes, press the "M ▲" or "■ ▼" button to select Hour. Press the "⌚ AVG" button to confirm.
4. When Minute digit flashes, press the "M ▲" or "■ ▼" button to select Minute. Press the "⌚ AVG" button to confirm.
5. For example, you have set 12:00 you want to end the 1st measurement.

5.3 2nd Time Period Setting

5.3.1 Set Time Start

1. After that, you will jump to page "3" on the screen.



2. Screen shows "A --- ". To disable 2nd set of time, press the "M ▲" or "■ ▼" button to select "OFF" and press the "⌚ AVG" button to confirm.

To set 2nd set of predetermined time, press the "M ▲" or "■ ▼" button to select "ON". Press the "⌚ AVG" button to confirm.

3. When Hour digit flashes, press the "M ▲" or "■ ▼" button to select Hour. Press the "⌚ AVG" button to confirm.
4. When Minute digit flashes, press the "M ▲" or "■ ▼" button to select Minute. Press the "⌚ AVG" button to confirm.
5. For example, you have set 15:00 you want to start the second measurement.

5.3.2 Set Time End

1. After that, you will jump to page "4" on the screen.
2. Screen shows "A ---". To disable 2nd set of time, press the "M ▲" or "■ ▼" button to select "OFF" and press the "⌚ AVG" button to confirm. To set the second ending time, press the "M ▲" or "■ ▼" button to select "ON" and press the "⌚ AVG" button to confirm.



3. When Hour digit flashes, press the "M ▲" or "■ ▼" button to select Hour. Press the "⌚ AVG" button to confirm.
4. When Minute digit flashes, press the "M ▲" or "■ ▼" button to select Minute. Press the "⌚ AVG" button to confirm.
5. For example, you have set 20:00 you want to end the second measurement.

5.4 Time Interval Setting

1. After that, the screen shows "AbP".



2. When Hour digit flashes, press the "M ▲" or "■ ▼" button to select Hour. Press the "⌚ AVG" button to confirm. (It allows you to adjust from 0 to 9)
3. When Minute digit flashes, press the "M ▲" or "■ ▼" button to select Minute. Press the "⌚ AVG" button to confirm. (It allows you to adjust from 0 to 55)
4. For example, you have set 00:20 (20 min). Then the unit will start to measure on 08:00, 08:20, 08:40, 09:00, 09:20, 09:40, 10:00, 10:20, 10:40, 11:00, 11:20, 11:40, 12:00; 15:00, 15:20, 15:40, 16:00, 16:20, 16:40, 17:00, 17:20, 17:40, 18:00, 18:20, 18:40, 19:00, 19:20, 19:40, 20:00)

TAKING MEASUREMENT

6.1 Applying the arm cuff

1. To apply the cuff, simply slide the sleeve up the patient's arm, ensuring the size indicator is at the top of the cuff. The cuff should be approximately 1-2 cm between the bottom of the cuff and your elbow joint.



2. Connect the tube from the cuff to the unit. Drape the tube over the patient's shoulder, around the neck, across the opposite side of the body.
3. Put the unit into the pouch. Attach the pouch to the patient using either the waist belt or shoulder strap depending on the patient's preference.
4. To ensure proper unit operation, start a measurement by pressing "START" button. If problem occurs, review the setup and fitting of the system.

6.2 Preparing and Educating the Patient

When the measurement starts, the patient should:

- avoid excess movement during measurements
- relax the instrumented arm, slightly away from the body
- avoid hand movement
- avoid flexing the muscles during measurement
- not remove the cuff between measurement

The patient can stop a measurement in progress by pressing "ⓘ" button.

The patient can start a measurement at any time by pressing "START" button.

RETRIEVING THE DATA (VIA PC OR FROM THE UNIT)

Before retrieving the data from the unit, disconnect the unit from the patient. You could retrieve the data via PC or from the unit.

7.1 Reading Data from the Unit

7.1.1 View Past Readings

1. Press the "M ▲" button to enter memory function.
2. Press the "■ ▼" button to select page "1".

3. Press the "M ▲" button to display the next sets of values. Past readings are displayed from the most recent to the oldest.
4. This can store up to 396 sets of past readings.
5. Each page can store 99 sets of past readings. Select page "2" for the 100th – 198th sets, select page "3" for the 199th – 297th sets and select page "4" for 298th – 396th sets of past readings.

7.1.2 View Average Readings

1. Press the "☉ AVG" button to enter Average function.
2. Press the "■ ▼" button to select page "1".
3. Press the "☉ AVG" button to view different Average values. 5 different Average Values are available.

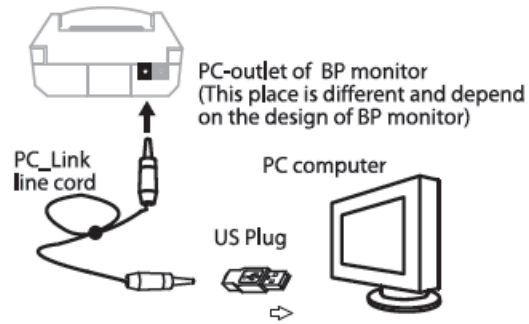
Symbol on Display	Average Values of
1 h	One Hour
1 d	One Day
7 d	One Week
30 d	One Month
ALL	All Readings

7.1.3 Delete Past Readings

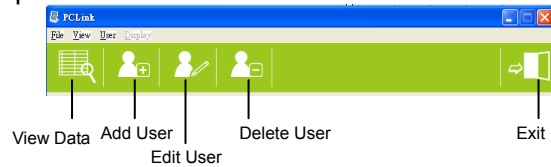
1. Press the "■ ▼" button to select page "1".
2. Press and hold the "M ▲" & "■ ▼" buttons simultaneously for 5 seconds. Symbol of "ALL EE" will be displayed and all past readings stored in page "1" will be deleted.
3. Follow the same steps to delete page "2", "3" and "4".

7.2 Retrieving Data via PC

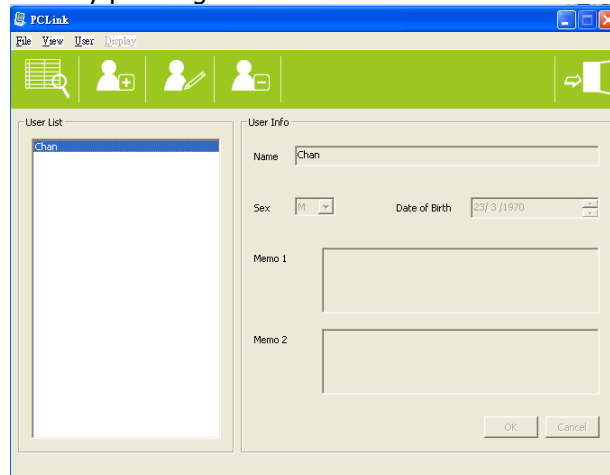
1. Install PC-link software to your computer. It suits for window XP or later.
2. Connect USB cable to your computer and blood pressure monitor.



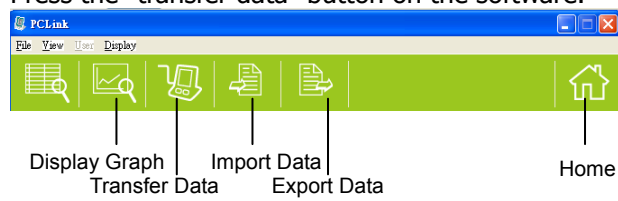
3. Open PC-link software.



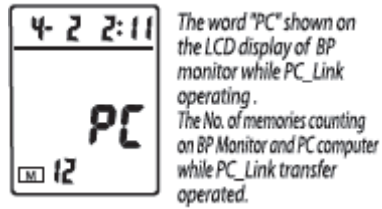
4. Input New User information like name, sex, date of birth by pressing "Add User" icon.



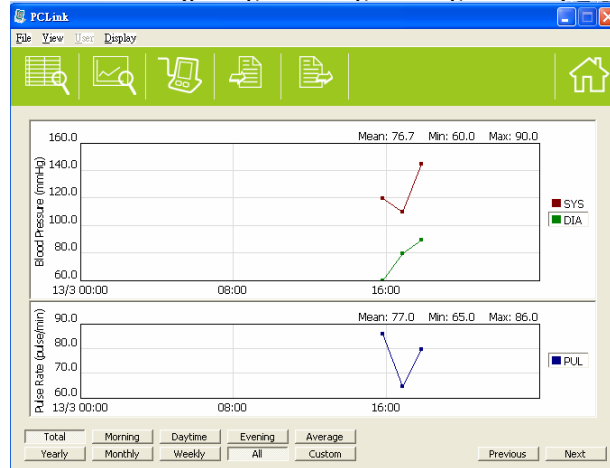
5. Double-click the user name.
6. Turn on the blood pressure monitor. Choose Page "1" by press "▼" button.
7. Press the "transfer data" button on the software.



8. On the unit, press "M ▲" and "⊕ AVG" two buttons at the same time without release till "PC" word is shown on the screen.



9. You could display the data in graphic chart in different date (morning, daytime, evening, average) and different time (yearly, monthly, weekly, custom).



10. You could save the data and print the data.

TROUBLE SHOOTING

Problem	Cause	Solution
No display when you press the Power/Start button	Have the batteries run out?	Replace new batteries.
	Are the battery polarities wrong?	Re-align batteries in correct polarities.
"Err P" displayed	Fail to inflate	Check if the cuff is properly connected. Replace the air tube if it is broken.
"Err 1" displayed	Deflate too rapidly	Return for servicing.
"Err 2" displayed	Movement during measurement	Do not move during measurement
	Signal interference	Remove interfering source e.g. mobile phones, magnets.
"Err 3" displayed	Incorrect results	Measure again.

Note: If your problem cannot be solved by the above, consult your store of purchase. Do not disassemble the unit.

STORAGE & MAINTENANCE

- Keep away the unit from direct sunlight, extreme temperatures, humidity or moisture.
- Use a dry, soft cloth to clean the unit, or if desired, use a cloth lightly dampened with water.
- Do not use alcohol, benzene, thinner or other volatile liquids to clean the unit.
- Do not wash or expose the arm cuff to liquid.
- Remove batteries from the unit when it will not be used for more than 3 months.

SPECIFICATIONS

Model No.	32780
Measurement Method	Oscillometric
Measurement Range	Pressure: 20 – 280 mmHg Pulse Rate: 40 – 195 beats/min
Accuracy	Pressure: +/- 3 mmHg Pulse Rate: +/- 5%
Inflation	Pump driven
Pressure Detection	Semi-conductor
Power Supply	Lithium rechargeable battery
Auto Power Off	3 minutes after last operation
Storage Environment	-20°C to 60°C, 10% to 95% RH
Operation Environment	10°C to 40°C, 30% to 85% RH
External Dimensions	184 (L) x 84 (W) x 33 (H) mm
Net Weight	260g (batteries excluded)
Cuff Dimensions	For arm circumference of 22-34 cm (Special size to be ordered separately)

Note: Subject to modification without prior notice.



Manufacturer: GIMA S.p.A.
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