

# **HEART OBSERVER INSTRUCTION MANUAL**

Edition: V1.0P10

**Non-medical Equipment**

## **Customer Instructions**

Distinguished customers, thank you for purchasing our product Heart Observer. Please be sure to read the manual carefully before using this unit for the first time. Failure to follow these instructions may cause measuring abnormality, equipment damage or personal injury. We assume no responsibility for personal injury or damage sustained by or through use of this product.

We have the ultimate right to explain this manual. No part of this manual may be photocopied, reproduced or translated into another language without the prior written consent. We reserve the right to improve and amend it at any time without prior notice.

In case of modifications, you will NOT be advised with a Modification Notice. The information in this manual should NOT be regarded as the promise of our company.

All rights reserved!

Issue Date: February 2, 2010

## Notes on Safety

This unit is designed for monitoring the heart rate for users. It is not designed or intended for medical diagnosis. **Never use the unit in critical situations!**

- **Self-diagnosis and treatment is dangerous.**

The measurement results are for monitoring purpose only, and should never be used as a basis for starting or modifying treatment without independent confirmation by medical examination. **DO NOT** make diagnosis yourself by the measurement and analysis results; always consult your doctor if abnormal information is presented frequently.

-**The values displayed by the unit are the ones at the time of measurement.** Medical conditions can change suddenly. If you notice any change in your condition, consult your doctor, regardless of the measurement results.

- **DO NOT** use the unit for treatment, we will not be responsible for the suddenness happened during a measurement.



### Warnings!

- ✧ Do not use with a cardiac pacemaker.
- ✧ Do not use with a defibrillator.

- ✧ Do not use in the presence of flammable anesthetics, drugs or pressurized oxygen (such as in a hyperbaric chamber, ultraviolet sterilizer or oxygen tent).
- ✧ Do not attempt self-diagnosis of the measurement results and analysis. Always consult your doctor.
  - Self-diagnosis may lead to deterioration in your condition.
- ✧ Do not use on people with sensitive skin or allergies.
  - This may result in exanthema, skin irritation, or eczema.
- ✧ Keep out of reach of small children and people who can not express their consent.
- ✧ Do not use for any purpose other than obtaining an electrocardiograph.
- ✧ Do not expose the unit to strong shocks or vibrations, or drop or step on the unit.
- ✧ Do not use batteries of a type other than that specified in this manual.
- ✧ Do not apply over clothing.
- ✧ Do not take measurements when there are drops of water on your skin, such as from sweat or after bathing.
- ✧ Do not take measurements where the unit will be exposed to strong electromagnetic forces.

## **Caution!**

- ✧ Do not expose the unit to static electricity. Always disperse any static electricity from your body before handling the unit.
- ✧ Do not take measurements in a moving vehicle.
- ✧ Do not use a cellular phone near the unit.

- ✧ Do not disassemble, repair, or modify the unit.
- ✧ Do not insert batteries with their polarities reversed.
- ✧ The chest electrode will be impeded by excessive body hair, regularly remove hair at the electrode contact point.

## **General**

- ✧ Avoid extremes in temperature and humidity. Do not use this unit in locations subject to high or low temperatures or humidity.

Use at a temperature within 5°C to 40 °C and below 80% RH.

- ✧ Do not sterilize this unit in an autoclave or gas sterilizer (EOG, formaldehyde, high density ozone etc.)
- ✧ Do not wash this unit with water.
- ✧ Do not store the unit in the following ambient conditions.
  - Locations exposed to direct sunlight.
  - Locations subject to high temperatures and high humidity.
  - Wet or damp locations where water may get on the unit.
  - Dusty locations.
  - Near fires or open flames.
  - Locations exposed to strong vibration.
  - Locations exposed to strong electromagnetic fields.

✧ Dispose of the unit and its accessory according to applicable local regulations.

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### 1. General Description

Thank you for purchasing and using Heart Observer monitor. The unit is designed for business men and sub-health men. Business men should pay more attention to their health condition; fatigue and work stress can lead to physical decline. Heart Observer is convenient for checking and improving poor living habits.

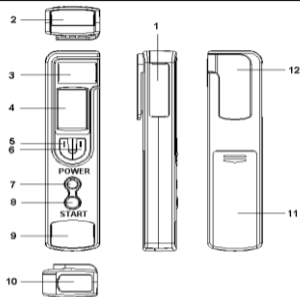
The unit provides helpful ECG and analysis for the user, and can help you learn the condition for user's heart in a short period. If the measurement result is frequently abnormal, it is recommended the user see a doctor, so that the detail or exact diagnosis can be done in time at hospital.

**Note:** The instruction describes all the functions of which some might not be applied to your units.

#### 1.1 Know Your Unit

## Heart Observer Instruction Manual

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Picture 1-1

- 1: Right index finger Electrode:
- 2: USB Interface: Transmit data and ECG to the PC through this interface.
- 3: Right thumb finger Electrode
- 4: Displaying screen: Display of date and time, ECG and analysis result, menu items etc.

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5: Left button: Press this button you can sequentially increase the parameter under adjustment by one increment. And you can skim the main menu items by pressing this button.

6: Right button: Press this button you can sequentially decrease the parameter under adjustment by one decrement. And you can skim the main menu items by pressing this button.

7: POWER Button:

Press this button for 3 seconds to turn unit on.

Short press: press it for 1 second to confirm your setting.

Long press: press it for 2 seconds to return to the previous level menu.

Note: the unit can not be powered off by the POWER button and will power off after a time(set by you).

8: START button: Shortcut key for taking measurements. And press this button to start measurements. When operation in "ECG Replay" and "Data Management" items, this key is used as confirmation key.

9: Left thumb finger Electrode

10: Left index finger Electrode

11: Battery cover:

12: Clip for fixing the unit

### 1.2 Product Features

- ✧ Small, portable and easy to use
- ✧ Completely cable free
- ✧ Measurement, record and deletion of ECG and HR
- ✧ Two measuring modes for selection
- ✧ Transmit data to management software by USB data
- ✧ Fast measurement in just 30 seconds
- ✧ 20 records of heart rate, data analysis and ECG
- ✧ Organic Light Emitting Display (OLED) screen display
- ✧ Auto power-off during a period no operation is taken
- ✧ Automatically analysis of heart status
- ✧ Powered by two AAA batteries
- ✧ Suitable for business men and sub-health men

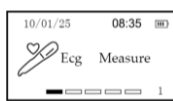


### 1.3 Display

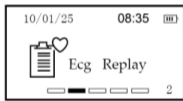
The screen is used to display analysis results, electrocardiograph and all kinds of parameters, such as time & date, battery status etc., and manage the data stored in inner memory.

#### Main menus:

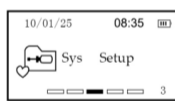
Press the POWER button for 3 seconds to power on the unit and enter the main menu. Five items are included in the main menu, refer to Picture 1-2. short press the LEFT button or RIGHT button to move to the last or next item.



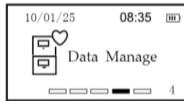
(1)



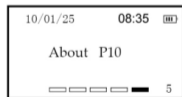
(2)



(3)



(4)



(5)

Picture. 1-2

**ECG Measure:** by this item, you can set the measurement mode. The options are easy mode, continue mode and exit for selection.

**ECG Replay:** by this item, you can replay the saved ECG data and waveforms.

**Sys Setup:** by this item, you can set the system parameters, such as the date and time, beep sound on /off, and the time of auto-power off, ECG replay speed, filter setting etc.

**Data Manage:** by this item, you can review or delete the measured records.

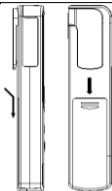
**About P10:** by this item, you can learn the software version of the unit.

## 2. Inserting and Replacing Batteries

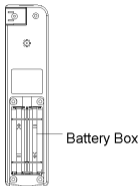
**2.1** Open the cover of battery box on the back of the unit, refer to the picture 2-1.

**2.2** Insert two AAA batteries lightly as indicated by the polarity sign:(refer to Picture 2-2)

**Note:** Make sure the polarity of the batteries is correctly inserted.



Picture 2-1



Picture 2-2

### 2.3 Close battery box cover



**Make sure that the polarity of the batteries is correct. Otherwise the unit cannot operate normally.**

#### Battery life and replacement

When the power is deficient, the power icon will become an empty box, please replace battery in time, avoiding the measurement is affected.

- ◇ Always make sure the unit is turned off before replacing the batteries.
- ◇ Dispose of the used batteries according to the applicable local regulations.



### Warnings!

If battery fluid should get in your eyes, immediately rinse with plenty of clean water. Consult a doctor immediately.

### Caution!

- ✧ Do not use batteries not specified for this unit. Do not insert the batteries with the polarities in the wrong direction.
- ✧ Do not dispose of batteries in fire.
- ✧ If battery fluid should get on your skin or clothing, immediately rinse with plenty of clean water.
- ✧ Remove the batteries from this unit when you are not going to use it for a long period of time (approximately three months or more).
- ✧ Do not use batteries of a different type together.
- ✧ Do not use new and used batteries together.

## 3 Date and Time

**Always set the date and time before using the unit for the first time.**

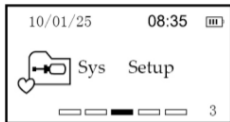
Make sure the date and time are correct before using the unit, reset them if necessary. The ID number, date and time are important indicators when a measurement is taken.

### 3.1 Date and time setting

**Note:** The date and time on this unit can be viewed in the format of "Date/Month/Year"; "Hour/Minute" on the above of the screen.

(1) Press the POWER button for 3 seconds to turn on the unit.

(2) Press the LEFT or the RIGHT button to navigate to the "Sys setup" item, refer to picture 3-1. And then short press the POWER button to enter the "sys setup" screen.



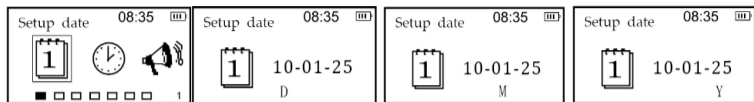
Picture. 3-1

**Setup Date:** Short press the POWER button to enter the date setting screen, refer to the Picture 3-2(1).

And then short press the POWER button to select the item you want to set, the order is D(Date)->M(month)->Y(year). Make the item selected and press the LEFT or RIGHT button to increase or decrease the parameter's value.

Once the parameter's value is made set, the system will save it automatically. Long press the POWER button to return the previous screen.

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- (1) (2) Day (3) Month (4) Year

Picture 3-2

**Setup time:** After returning to “system setup” screen, press the LEFT or RIGHT button to move to the “Setup Time” item, refer to Picture 3-3(1). And then short press the POWER button to enter the time setup screen.

Short press the POWER button to select the item you want to set, the order is H(Hour)->M(Minute)->S(Second). Press the LEFT or RIGHT button to increase or decrease the parameter's value. After finishing the settings, long press the POWER button to return to the previous screen.



- (1) (2) Hour (3) Minute (4) Second

Picture 3-3

### 4. ECG Measurement

#### Important Notes on Taking a Measurement

In order to obtain a good heart rate reading, it is important that measurements are taken correctly.

Before taking a measurement for the first time, read these instructions carefully and make sure you observe the following tips each time you take a measurement.

- ✧ Make sure that the electrodes are directly touching your skin.
- ✧ If your hands or skin are dry, wipe them with a damp towel so that they are slightly moist.
- ✧ If the electrodes are dirty, wipe any dirt off with a soft cloth moistened with disinfectant alcohol or a cotton swab.
- Take care not to use too much disinfectant alcohol when cleaning the electrodes.
- Do not spray or apply disinfectant alcohol on parts other than the electrodes.
- ✧ Do not move during measurement.
- Movement, including talking, coughing, or sneezing, during measurement may affect the measurement results.
- ✧ If the position of your finger or arm is inappropriate during measurement, the results may be unreliable, so make sure to check their position before taking a measurement.

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- ◇ After taking a measurement, disinfect the electrodes by wiping them with a soft cloth or cotton swab moistened with disinfectant alcohol. If you do not disinfect the electrodes there is a risk of skin disease.

### Measurement methods:

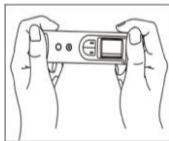
#### Preparation:

Make sure that you are in relaxed position. And user can take a measurement as the following methods. Prepare your pose and then press the START button to start a measurement. The measuring mode is depended on your setting in “ECG measure” menu. Refer to “Measurement Mode settings” .

Note: The ideal posture is one where you are seated comfortably with your back straight. You can also take a measurement while you are standing or while lying down.

#### Palm-palm measurement:

Make sure that hold the metal electrode 3 of the unit with the right thumb and the electrode 1 with the right index finger, then hold the electrode 9 with left thumb and the electrode 10 with the left index finger, refer to Picture 4-1.

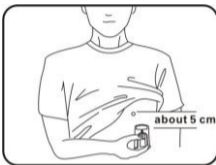


Picture 4-1

#### Palm-chest measurement:

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If palm measurement is not ideal, please adopt palm-chest measurement. Hold the unit with right hand; make sure that the index finger touch metal electrode 1 and right thumb touch metal electrode 3 comfortably and closely. Place the electrode 10 against left chest on bare skin about 5 cm below your left nipple. (Refer to picture 4-2)



Picture 4-2

Note: If you have any problems applying the unit when measuring in palm-chest mode, please ask your doctor for advice.

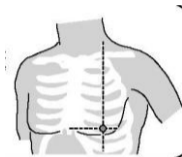
### Improper Operation Methods:

- A. The touch point of the right hand does not contact well with the unit.
- B. The handheld gesture is NOT correct.

- C. The electrode 10 does not contact fully the skin.(E.g. with clothes on body while taking measurements).

### Measurement for Female

Locate the unit at the lower end of breastbone and move horizontally to the middle of the left part of the chest. If necessary, gently lift the breast and place the “10” electrode under the left breast. Unless the electrode comes in contact with the brassiere, it is NOT necessary to remove it; if you have any problem, **please consult your doctor.**



Picture 4-3

**Important:** The small open circle indicates the proper position of electrodes, as shown in Picture 4-3.

### Notes:

- ❖ Make sure that you are relaxed and that your chest is free of tension.
- ❖ Press the electrode 10 to make it closely against your bare chest. Do not place the electrode on clothing as this will result in an inaccurate measurement.
- ❖ If measuring in dry circumstance, which might cause weak heart pulse signal, please wet your skin or hands with some diluted salt water or clean water. This would strengthen the

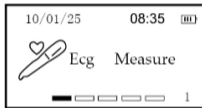
heart pulse signals, and make the analysis much more accurate.

- ✧ When taking an palm-chest measurement, if you have problems applying the unit so that the metal electrodes 10 is flat against your chest, please ask your doctor for advice.

### Measurement Mode settings

Select “Ecg Measure” item, shown in picture 4-4, and then Short press the POWER button to enter the screen such as in pic.4-5(1).

There are two measurement modes for selection, such as Easy and Continue, refer to pic.4-5(1) and pic.4-5(2).



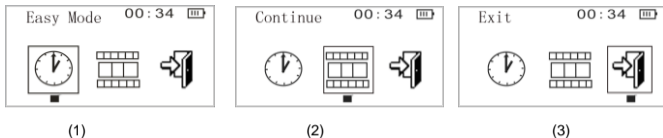
Picture 4-4

Press the LEFT or RIGHT button to move the selection box.

Then short press the POWER button and the little black quadrate macula shifts to below the item and indicates the item is selected. The unit will perform the measurement in this mode whenever pressing the START button until you change the mode to the other one.

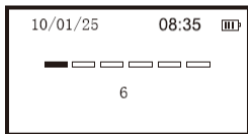
By the “Exit” item, you can return to the previous screen; Additionally, you can also long press the POWER button to exit.

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Picture 4-5

- (1) Easy Mode: quickly take a measurement in 30 seconds and display measurement results and heart analysis. The results measured in this mode can be selected to be saved into the unit.



Count down before measurement



Heart rate waveform(时间改成 08: 36)

Picture 4-6

Description of pic 4-6:

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10/01/25: indicates the date, in the format of Day/month/year (ie. 10th January,2025 ).



: The clock icon flicks with the heartbeat icon.

25 : indicates the countdown of measurement in Easy mode, which is from 29-0 (seconds).

08:35/08:36: indicates the time, in the format of Hour/minute.



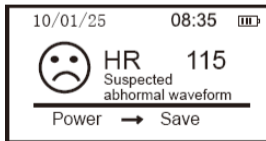
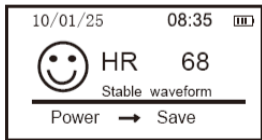
simulates the heartbeat and beep sound may be issued if the “Beep sound” is set ON.



: ECG waveform

### Display and analysis of Measurement results (ONLY in Easy mode)

After 30-second measurement, the unit will display the measurement results and result analysis. There are two analysis results:



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(1)

(2)

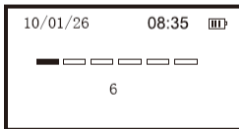
Picture 4-7

- (1) 😊: Stable waveform;  
(2) ☹️: Suspected abnormal waveform;

Under the screen in pic.4-7, short press the POWER button, you can save this piece of measurement result and analysis. After that, the display returns to the main menu screen.

For the details of ECG analysis, transfer the data to the accompanying software.

- (2) Continue Mode: For continually measuring and displaying heart rate data. This mode is applied for user to monitor heart rates in a period. But the results are not be recorded into the unit.



Count down before measurement



Heart rate waveform

Picture 4-8

Description of pic 4-8:

## Heart Observer Instruction Manual

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10/01/26: indicates the date, in the format of Day/month/year (ie. 10th January,2026 ).

HR : heart rate.

68 : indicates the measured real heart rate in Easy mode, which is from 29-0 (seconds).

08:35/08:36: indicates the time, in the format of Hour/minute.



· simulates the heartbeat and beep sound may be issued if the “Beep sound” is set ON.

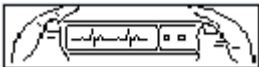


: ECG waveform

- (3) Exit: By this item, you can return to the previous screen; Additionally, you can long press the POWER button to exit.

### Notes:

- ✧ If the contact of the electrodes becomes loose, or the conditions change during measurement, the measurement may not proceed.
- ✧ When the electrodes are not contacted well during the measurement, the display will switch to the screen such as in pic 4-9. Thus, please adjust your gesture for accurate measurement.



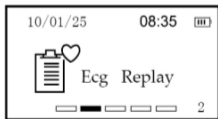
Picture 4-9

**Important:** Keep still and do not move until the measurement is complete.

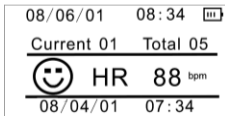
### 5 ECG Replay

Select the “ECG Replay” item in the main menu screen, refer to pic.5-1(1). Short press the POWER button to enter the ECG replay screen, such as in pic.5-1(2). Short press the POWER button again to display the corresponding ECG waveform.

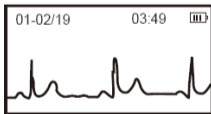
The first data record is the lately measured one. Press the LEFT or RIGHT button to display and review the last or next record.



(1)



(2)



(3)

Picture 5-1

Description of Pic 5-1(2)&(3)

08/06/01: indicates the current date, in the format of Day/month/year.

08: 34: indicates the current time, in the format of Hour/minute.

Total 05: indicates that the unit stores 5 pieces of records.

Current 01: indicates the current record is the first one.

😊 HR 88<sup>mm</sup>: the heart rate value is 88bpm and the status of heart rate is judged as normal(indicated by a smile face);

08/04/01: indicates the measurement date, in the format of Day/month/year.

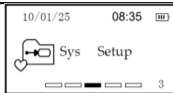
07:34: indicates the measurement time, in the format of Hour/minute.

01-02/19: 01: indicates the first record; 02/19: indicates that the waveform of the record rolls from the first screen to the 19<sup>th</sup> screen and the current screen is the second one.

: ECG waveform

## 6 System Settings

Enter the “Sys Setup” screen by short pressing the POWER button under the screen as shown in picture 6-1. By this menu item, you can make settings to the measurement system, such as date, time, beep sound, ECG replay speed, filter or automatically power-off time.



Picture 6-1

### 6.1 Date Settings

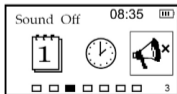
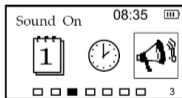
For more information on the date setting, please refer to section “Date and Time”.

### 6.2 Time Settings

For more information on the time setting, please refer to section “Date and Time”.

### 6.3 Beep sound settings

In the “Sys setup” screen, press the LEFT or RIGHT button to move the selection box to the “Sound off(on)” item, and then short press the POWER button to change simulant heartbeat sound switch. Refer to Pic 6-2.



Picture 6-2

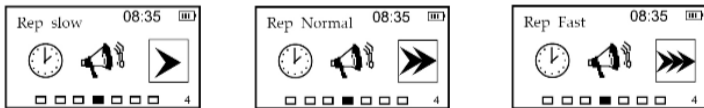
**Sound on:** during measuring, the unit gives off the simulative heartbeat sound.

**Sound off:** during measuring, the simulative heartbeat sound is off..

### 6.4 ECG replay speed setting

In the “Sys setup” screen, press the LEFT or RIGHT button to move the selection box to the “Rep Normal(Fast/Slow)” item and short press the POWER button to change ECG replay speed.

ECG Replay speeds contain Rep Normal, Rep Slow, Rep Fast. Please set according to your need.



Picture 6-3

### 6.5 Filter setting

In the “Sys setup” screen, press the LEFT or RIGHT button to move the selection box to the “Filter On(Off)” item and short press the POWER button to select Filter On or Filter off.

If setting filter on, the system may filter out the interferential waves and the ECG waveform is evener.

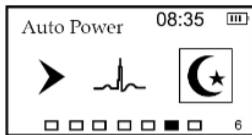


Picture 6-4

### 6.5 Auto power-off interval settings

In the “Sys setup” screen, press the LEFT or RIGHT button to move the selection box to the “Auto power” item such as in picture 6-5 (1) and then short press the POWER button to enter its setting screen(refer to picture 6-5 (2)). And then press the LEFT or RIGHT button to increase or decrease the auto power-off interval, the adjustable intervals are 10, 30, 60, 120 (seconds).

If no operation is performed on the unit during the set interval, the unit will power off automatically.



(1) (加上 (1) 和 (2))



(2)

Picture 6-5

### 6.6 Exit the “Sys setup”

In the “Sys setup” screen, press the LEFT or RIGHT button to move the selection box to the “Exit” item, refer to pic .6-6. And then short press the POWER button again to exit.



Picture 6-6

Additionally, you can directly return to the previous screen whenever long pressing the POWER

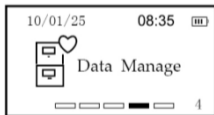
button.

## 7 Data management

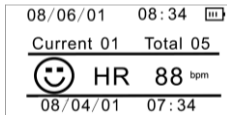
By this item, you can review the data record measured in Easy mode, or delete any data item.

### Data review

In the main screen, press the LEFT or RIGHT button to move to the “Data Manage” item (see picture 7-1(1)) and then short press the POWER button to enter the screen such as in picture 7-1(2). And then, press the LEFT or RIGHT button to review the next or last data record.



(1)



(2)

Picture 7-1

### Caution!

The measurements from the heart observer are regarded as useful guides for your doctor, it is not able

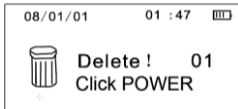
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to detect all changes in heart conditions, for medical conditions can change suddenly. Always consult your doctor if you notice any changes in you condition, regardless of the measurement results. Consult a doctor even if “Stable waveform” is displayed as the measurement results, if you have been diagnosed with a heart condition.

### Data deletion:

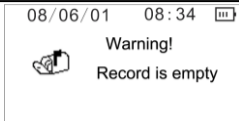
On the screen such as in picture 7-1(2), press the LEFT or RIGHT button to select the data item you want to delete and short press the POWER button to confirm and the following screen appear.



Picture 7-2

Short press the POWER button to delete this data record or long press the POWER button to return to the previous screen.

If no data item is stored in the unit, you may see the following screen when entering into the “Sys setup” screen.



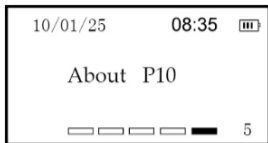
Picture 7-3

### Data transmission

For more information, please refer to the accompanying **Software Instruction Manual**.

### 8 About P10

In the main menu screen, press the LEFT or RIGHT button to move to the “About P10” item and then short press the POWER button to enter. Then you will learn the software version information, such as in Picture 8-1.



Picture 8-1

## 9 Trouble Shooting

Problem	Cause	Solution
The unit can NOT be turned on.	1 The batteries are worn out. 2.The batteries are inserted incorrectly. 3. The unit might be broken out.	1.Replace batteries with new ones. 2. Reinstall batteries with their polarities correctly. 3. Please contact the local service center.
The unit is failure in measuring heart rate.	1. The electrodes are not making good contact with your body.	1 Place the electrode correctly. 2.Keep motionless and avoid moving

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	2. Have not kept still during measurement. 3. Electromagnetic interference. 4. The signal is too weak.	when measuring 3.Keep away from electromagnetic interference 4. Attempt to take another measurement. (e.g. Chest/Cable measurement)
Others		Please contact our company.

## 10. Maintenance and Storage

- ✧ Clean the unit with a cloth lightly dampened with water, disinfectant alcohol or detergent, and then wipes it dry with a dry cloth.
- ✧ Wipe the electrodes using a cloth dampened with disinfectant alcohol.
- ✧ Do not wipe the unit with benzene, gasoline, paint thinner, concentrated alcohol, or other volatile detergents.
- ✧ Do not drop this unit or subject it to strong impact. This could damage the unit.
- ✧ Do not attempt to disassemble the unit. There are no user serviceable parts. Repairs should only be carried out by authorized personnel.

## Heart Observer Instruction Manual

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- ◇ Do not sterilize this unit in an autoclave, ultraviolet sterilizer or gas sterilizer (EOG, formaldehyde, high density ozone etc.)
- ◇ This unit does not require calibration during the expected life cycle.
- ◇ When display the low voltage mark “”, please change the batteries in time. Dispose the used batteries according to the applicable local regulations.
- ◇ Please take out the batteries if the unit is not to be used for a long period of time.
- ◇ The environment temperature for transport or storage of the packaged unit is (  $-20^{\circ}\text{C} \sim 55^{\circ}\text{C}$  ), and the humidity is  $\leq 93\%$ , no condensation.










### Caution:

- ◇ Keep operating environment clean, quiet, no erodent and no flammable material. Do not use this unit in the environment with too high or too low temperature and humidity
- ◇ If this unit is splashed or contaminated by water drop, please stop operating.
- ◇ Please do not use the unit at once when it is moved from cold place to the warm and moist place.
- ◇ Please do not use sharp tools to operate any of buttons.

- ✧ Do not immerse the unit into liquids or clean the surface with organic liquid, and do not splash liquids on the unit.

### 11 Key Symbols

Symbol	Meaning	Symbol	Meaning
	Type CF applied part		POWER/return button
	Warnings! Consult ACCOMPANYING DOCUMENTS.		USB interface
	Heart rate: Unit: bpm (beat per minute)		Low battery voltage
<b>SN</b>	Serial Number		European union approval

### 11 Technical Specifications

**Classification:** According to the tip-and-run protection, it can be classified into the internal power;

its application type is CF and it is the movable common facility with no defibrillator or protection.

### heart rate Measurement

Lead Position: Lead I- Hand lead only

Sampling Rate: 250Hz

Heart Rate Measurement Range: 30bpm~240bpm

ECG Bandwidth: 1HZ—40HZ

Accuracy of Heart Rate Measurement:

30 bpm~100 bpm:  $\pm 2$ bpm

101 bpm~240 bpm:  $\pm 4$ bpm

### Display:

Type: OLED

Parameters: Heart Rate

### Environment Requirement:

Operation temperature: 5°C~40°C

Storage temperature:	-20℃～55℃
Operation humidity:	≤80%, no condensation
Storage humidity:	≤93%, no condensation
Atmospheric pressure:	80 Kpa -106Kpa

### **POWER Supply:**

2 AAA alkaline batteries

### **Classification:**

Type of protection:	Internally powered equipment
Degree of protection:	CF type
Safety:	IEC 60601-1

### **Accessories:**

Two AAA Batteries

One Instruction manual

One Quick Operation Guide

One Warranty card

One sheet of material

### **Optional Accessories**

One USB cable

One Data Management Software

### **Mechanical:**

Dimension: 130×30×20 mm

Weight: 110g(with alkaline batteries)

### **Storage:**

Data and heart rate strips storage

Heart rate Strips: 20-measurement result storage in Easy mode

### **Notes:**

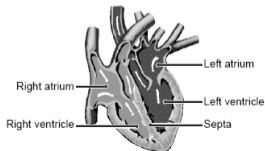
- ✧ **Specifications may be changed without prior notice.**
- ✧ **Disposal of this product and used batteries should be carried out in accordance with**

## Appendix

### General information about the Heart Rate Measurements

The heart is a muscular pump controlled by electrical impulses generated by the body. It is divided into two by the septa and each side has two chambers –an atrium and a ventricle-linked by a one-way valve. The left atrium and ventricle control oxygenated blood, and the right atrium and ventricle control de-oxygenated (“used”) blood.

The electrical impulse that causes the heart to beat spreads across the atria, causing the left and right atrium to contract and pump blood into the left and right ventricles respectively. The two ventricles then contract and pump blood out of the heart. The heart muscle then relaxes, or re-polarises, allowing blood to fill up the heart again.



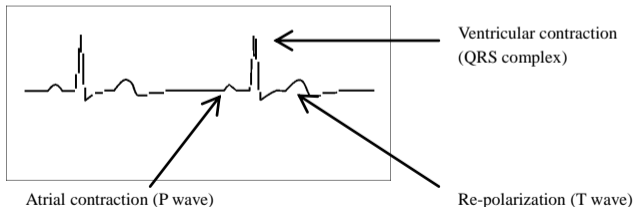
## Heart Observer Instruction Manual

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An Heart Observer is able to measure the electrical impulse as it passes across and through the heart, causing the heart to beat. An ECG does not measure the movement of your heartbeat, but rather the electrical activity that causes the heart to beat. The measurements recorded by an Heart Observer, when combined with a medical examination, can help your doctor monitor your heart condition. The ECG measurements recorded by the unit are NOT designed or intended for medical diagnosis. Conditions such as arrhythmia and Ischemia can only be diagnosed by a doctor through a special examination.

### About the ECG

The ECG waveform shows the rhythm of your heartbeat during the 30-second measurement and displays the electrical activity causing the heart to beat. The waveform for each heartbeat shows the progress of the electrical impulse across and through the heart.



The first peak indicates the spread of the impulse over the atria and the beginning of their contraction. This is known as the P wave. The second peak indicates the spread of impulse over the ventricles and the beginning of their contraction. This is known as the QRS complex. The third peak indicates the activity as the heart relaxes (re-polarization), and is known as the T wave.

### **What is Arrhythmia?**

Arrhythmia is a condition where the heartbeat rhythm is abnormal due to flaws in the bio-electrical system that drives the heartbeat. Typical symptoms are skipped heartbeats, premature contraction, an abnormally rapid (tachycardia) or slow (bradycardia) pulse. This can be caused by heart disease, ageing, physical predisposition, stress, lack of sleep, fatigue etc. Arrhythmia can only be diagnosed by a doctor through a special examination.

### **What is Ischemia?**

Ischemia is a condition in which insufficient oxygen is supplied to parts of the heart or other parts of the body. This is usually due to a blockage or partial blockage of an artery. Ischemia can only be diagnosed by a doctor through a special examination.



## Heart Observer Instruction Manual

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