

ECG Watch User Manual



1.1 Product parameters

CPU: NRF 52832
ECG chip: Texas Instruments TI
PPG chip: HRS 3300
Bluetooth antenna: Taiwan full-wave ceramic antenna

LCD: 1.3 inches TFT color screen
Resolution: 240*240 pixel
Bluetooth: 4.0 BT
Waterproof grade: IP67

Precautions

- ※ The product can be worn while washing hands, face and swimming for short time. Do not touch hot water or wear it for underwater swimming.
- ※ Please do not break or collide product; otherwise, the machine body will be easily scratched and damaged.
- ※ Please do not disassemble the product arbitrarily; otherwise, there will be quality problem.
- ※ Explosion will occur in the case of fire, so please do not put in the fire.
- ※ Please use the product under the environment at -5°C ~45°C.
- ※ Please clean the product with cloth and it's not suggested to wash with other detergents such as soap and shower gel, etc.
- ※ The product is not used for diagnosis, treatment and prevention of disease.
- ※ Please do not allow children or pets to touch with the product to avoid harm.

Charging diagram

Please operate strictly as per below diagram.



1.2 Use and requirement

A: Long press touch screen to turn on.

B: Slide touch screen left and right to switch interface of watch.

Sport information:
show steps,
calories,
distance

ECG function:
long press to enter and
put one of your hand on
the side steel button to
test and last 30's, check
on your phone app

Heart rate:
measure
automatically for
30's to check
heart rate

Blood pressure:
measure blood pressure
automatically when enter
this interface and still for
30's your phone app

Sleep monitor:
shows sleeping
time and quality of
last night

Multi sport mode:
long press to enter multi
sport mode, press again
to start any sport mode

Message reminder:
long press to enter
to browse QQ,
WECHAT, SMS
message

Stop watch:
long press for 5's to
start stop watch and
long press again to quit

Anti-lost:
long press the
interfaceto ring
your phone

Power off:
long press for 3's will
shows YES or NO,
choose YES and long
press to power off

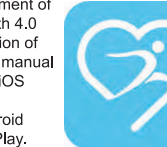
1.3 Switch main interface

long press to switch the main interface:



1.4 Download software/Connect with watch

System requirement of mobile: Android 4.4 and above, iOS 8.0 and above
Hardware requirement of mobile: smart mobile of Bluetooth 4.0 and above, open QR code function of mobile to scan QR code on user manual to download "Wear Heart" APP. iOS users can search Wear Heart to download in App Store, and Android users can download in Google Play.



*It's suggested to scan QR code to download APP through mobile browser. Do not scan with WeChat to download directly.



Google Play

iOS

Android

2.1 Connect with watch

Open the APP downloaded in mobile and please register private account firstly.

The users in Chinese mainland can register with phone number, while users in foreign countries, Hong Kong, Macao and Taiwan can register with email.

Open APP and enter [Me] interface, click to connect "Wear Heart" watch. If the Bluetooth of mobile is not opened, APP will require to open the Bluetooth. Click OK, enter interface of device search to connect.

Note: to connect mobile with watch, the Bluetooth of mobile should be opened and there is no other paired device in the Bluetooth of mobile. For mobile, do not connect with watch directly in the Bluetooth of mobile. If the watch can't be connected after using for a period of time, please cancel all pairings in the Bluetooth of mobile and then connect with watch in APP.

2.2.1 Notification setting

After connecting with wristband, find [Wristband Management] on [Me] interface. When Android mobile enters [Wristband Management] for the first time, it will prompt opening notification read permission. After selecting OK, open the switch of Wear Heart on the pop-up page of notification permission. When iOS system connects with wristband, pairing request will pop up automatically. Please allow the pairing, otherwise the wristband can not receive notification.

2.2.2 Brighten screen by lifting/turning wrist

In [Wristband Management], turn on or turn off brighten screen by lifting/turning wrist.
Brighten screen by lifting wrist: the wristband moves to normal watch looking posture from vertical position, surface angle is 30°~85° and the screen will brighten automatically.

2.2.3 Firmware upgrade of wristband

After the mobile connects with device, click firmware download & upgrade.
If upgrade fails midway, please upgrade again after waiting for 3 minutes or after charging the wristband.

3.1 APP sports/health

3.1.1 PPG displays heart rate value of offline test of wristband

After connecting with wristband, click [Wristband Management] on [Me] interface of APP to open [Hourly Monitoring of Heart Rate]. The wristband will automatically open PPG hourly monitoring of heart rate and save data. The wristband will save historical data for 7 days by default. After the wristband connects with APP, drop down to refresh synchronous data on homepage. Click "Calendar" to view historical data.

3.1.2 Health

Health interface monitors three human health data: heart rate, blood pressure, ECG.

3.1.3 Heart rate

Heart rate means beats per minute of normal person under resting state and it's also called as resting heart rate. In general, it's 60~100 beats per minute and there are individual differences due to age, gender or other physiological factors.

3.1.4 Blood pressure

Certain pressure is required to transport human blood to each part of body and this pressure is called as blood pressure. The blood pressure value of normal person is [SBP 90~139mmHg] [DBP 60~89mmHg].

3.1.5 ECG

In each cardiac cycle of heart, pacemaker, atrium and ventricle get excited in succession. With the change of bioelectricity, formal graph of potential change will be extracted from body surface through electro-cardiograph (ECG for short). Examination significance of ECG: monitor and examine various diseases such as arrhythmia, atrial hypertrophy, myocardial infarction and myocardial ischemia, etc. Touch electrode plate of wristband with finger of right hand. Circulation loop of electricity passes body and produces various waveforms of ECG.

3.2 Measurement method

3.2.1 Measurement calibration

When measuring with wristband for the first time, measurement calibration is required. To keep more accurate measurement data, please calibrate accurately and input your original blood pressure value precisely.

3.2.2 One-key measurement

Open "one-key measurement" interface to measure. Touch metal key on the surface of device with finger of right hand.

***In the case of poor contact, please moisten wrist and finger with water, then test again.**

3.2.3 Offline measurement of PPG

After wristband remains on interface of heart rate measurement for over 1s, PPG detection will start and measure heart rate. In the end of test, the wristband will vibrate and display test result. **(If the skin color of user is deep, deviation may occur with simple PPG test, so it's strongly suggested to use one-key measurement on APP)**

3.2.4 Care/remote check

By adding friends in address book, make real-time monitoring and sharing the health of family members, relatives and friends. Click to check sport & health data of friends.

3.2.5 Offline measurement of ECG heart rate

The wristband switches to ECG + PPG display interface. Touch metal key with finger of right hand for 3s (refer to figure). Test for 30s, wristband vibrates and interface of test completion. If test is successful (display to APP), ECG data will be saved on wristband. After the wristband connects with APP and data is synchronous, upload to cloud server. The user can check test result on APP. If test fails (display Fail), please check wearing way of wristband and if electrode plate touches with skin. Or moisten skin with water and start test again.

Note: data storage occupies large memory of wristband. For offline measurement of ECG heart rate, the wristband can only save 3 groups of historical data. Users should promptly connect with APP and keep synchronous data. If offline measurement has more than 3 groups of data, subsequent test data will automatically cover the earliest historical data.

Prompt: to increase the accuracy of test and convenience of checking data, it's strongly suggested to use one-key measurement on APP.

3.3 Precautions

※ Important precautions for measuring ECG signal:

The quality of ECG signal influences the accuracy and consistency of measurement result to a great extent, while signal quality is limited by measuring method of acquired signal. To obtain good ECG signal and reliable measurement result, correct measuring method and operation steps are especially important.

※ Before the first time of measurement:

- Wash hands with water to release residual charge and keep hands moist. If necessary, please eliminate the grease on skin with soap.
- Wipe the grease or dust on the surface of metal electrode with wet cloth. If necessary, please clean with alcohol.
- Before measurement, relax and sit down, keep comfortable posture of body as far as possible.
- Keep sufficient touch between metal electrode and skin. If permitted, rub the electrode on skin for a while to reduce the impedance between skin and computer, and realize good contact.

※ During measuring process:

- Keep proper and stable contact between skin and electrode, avoid excessive force
- Do not move body during measuring process such as moving arms, talking, coughing or sneezing, etc.

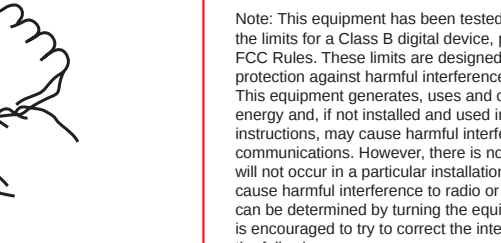
In the end of measurement

If ECG waveform is in disorder and drifts seriously, heart rate and measurement result may be inaccurate, then measure again as per above descriptions. After ECG measurement, ECG report will be generated. Open any one record of HRV to check ECG report.

Common problems

1. Heart rate is inaccurate or ECG waveform is irregular with large differences while measuring.

It's generally caused by poor contact between electrode plate on wristband and human body while measuring. Please keep sufficient contact between two electrode plates on the bottom of wristband and wrist. If the wrist is small, press the surface of both ends of wristband with two fingers to prevent cocking of wristband, which will lead to poor contact of two electrodes on bottom and influence signal.
As shown in right figure:



2. Why hypertensive and hypotensive must measure blood pressure after calibration?

According to experiment, blood pressure of human body has linear relation with calibration value, and blood pressure can be estimated through calibration value. Due to individual differences, individual model is different. Individual differences between hypertensive and hypotensive are relatively obvious, so they must measure blood pressure after calibration.

3. The wristband has no notification such as call reminder.

When Android wristband enters notification setting after connection for the first time, reading permission of notification should be ticked. When iOS system connects, pairing should be selected. In notification setting of iPhone, notification permission of phone, SMS, WeChat and QQ should be opened and tick "notification center".

FCC Caution:

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

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

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 connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.