ECG Recorder

Instruction Manual

Product Model: YK-ER5

Version: V1.0

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1.Safety Information

1.1 Safety Notices

This instruction manual describes the purpose, functions, and safe operating procedures of the device. Before using this device, please read and fully understand the contents of this instruction manual to ensure that you can use the device correctly and ensure the safety of the patient and the operator.

⚠ Notice

1. When Bluetooth is disconnected, the application cannot connect to the ECG monitoring device via Bluetooth to view the ECG.
2. When the ECG monitoring device leads become detached, the application will display a lead detachment notification.
3. This product is not suitable for users with physical disabilities or those who are unable to understand the instructions for use.
4. Users may encounter critical malfunctions such as software crashes and server outages. If you encounter the above issues and cannot resolve them independently, please contact technical support engineers for assistance.
5. The results of an electrocardiogram (ECG) diagnosis may differ from those of the doctor. The doctor should make a judgment based on their clinical ECG expertise and experience.
6. Please use the matching electrocardiogram (ECG) acquisition device. The acquisition device must be able to provide data that conforms to the data interface standard of this product.
7. Heart rate calculation method: HR=60×1000/RR interval (RR interval unit: ms).

8. If the heart rate value drops significantly suddenly or becomes an invalid value, and no heartbeat waveform is displayed, cardiac arrest may occur. Immediate attention must be paid to this situation.
9. No modifications to this product are permitted.
10. This product is not permitted to be used in conjunction with defibrillators, high-frequency surgical equipment, electrosurgical equipment, diathermy devices, pacemakers, electrical stimulators, CT or MRI equipment.
11. Please keep this product dry, avoid getting it wet, and avoid strong impacts.
12. Do not use this product in strong magnetic fields, as this may affect the measurement results.
13. If you experience heart discomfort or irregular heartbeats, please contact your doctor immediately for treatment.
14. Do not squeeze the product forcefully. If the outer shell cracks, please stop using it.
15. Do not place this product near a fire source to avoid damaging the product or causing the battery to explode;
16. If the electrode pads are contaminated with foreign matter or dust, please clean them with a soft cloth before taking the measurement.
17. When the battery of this product is low, please charge it in time by connecting it to a power source using a Type-C data cable.
18. Improper disposal of products and accessories at the end of their lifespan can harm the natural environment and human

health. In such cases, they should be disposed of in accordance with the relevant environmental protection regulations of the city and should not be discarded at will.

19. Please use this product within the temperature and humidity range specified in the instruction manual, and within a space with good heat dissipation. Extremely cold, hot, or humid environments will affect the performance and lifespan of the product, so please avoid using it in such environments.
20. Bluetooth requirements: Bluetooth 5.0 or above to transmit ECG data to the mobile app in real time, with a Bluetooth transmission rate of ≥80KB.
21. This recorder belongs to the CF type application section (the application section includes metal electrodes and a plastic housing) and internal power supply device, with a liquid ingress protection rating of IP22;
22. This recorder is a device that cannot be used in the presence of flammable anesthetic gas mixed with air or flammable anesthetic gas mixed with oxygen or nitrous oxide.
23. Recorder repairs must be performed by professional technicians from our company or our designated repair centers. Unauthorized personnel are prohibited from disassembling the recorder; otherwise, the manufacturer will not be liable for any damage or consequences.For repair inquiries, please contact our company or our designated repair centers (circuit diagrams, component lists, annotations, calibration details, and other relevant technical documents required for repairs can be

obtained from our company by our designated repair centers).

24. The physiological waveforms, parameters, and prompts displayed by this product are for reference only and should not be used as a basis for clinical diagnosis or treatment.
25. For a better user experience, please update your application version promptly.
26. This product collects surface electrical signals from the left and right thumbs and the left knee or left ankle of the human body using metal electrode pads and calculates the voltage difference to obtain electrocardiogram signals.
27. The electrodes used with this product must be custom-made metal electrodes provided by our company. The use of incompatible metal electrodes is strictly prohibited. Additionally, electrodes must not be replaced or modified arbitrarily. During use, care must be taken to prevent electrode oxidation, as this will otherwise affect the accuracy of measurement results.
28. Unauthorized personnel are prohibited from replacing the product's internal battery. Our company shall not be held liable for any equipment damage or safety hazards arising from unauthorized battery replacement.
29. This product is for adults only.
30. When not in use, this product should be stored properly to prevent damage caused by pets, insects, or children.

1.2 Definitions of Symbols

	CF type		Power on/off		Warn
	Validity period		Manufacturer		Production date
	Temperature Limit		Sunscreen		Afraid of rain
	Humidity Limit		Bluetooth		Follow the operating instructions
	Class II equipment		up		Non-ionizing radiation
	Discarded electrical and electronic equipment is marked separately .				
IP22	Enclosure protection rating: Protects against entry of particles with an outer diameter of 12.5 mm; protects against vertical water droplets.				
	The symbol is a pollution control mark for electronic information products. This indicates that the product has an environmentally friendly lifespan of 5 years and can be recycled; it should not be discarded at will; dry cell batteries are not included.				

2. Product Overview

The electrocardiogram (ECG) recorder (hereinafter referred to as the "Recorder") is a handheld 1-lead ECG monitoring device. It is intended for use in medical institutions or home settings to detect an individual’s ECG waveform and heart rate. Through a wireless transmission module and a supporting application, it enables ECG monitoring, health management, and data sharing functions. The intended operator of this device is the patient themselves.

2.1 Scope of Use

This product is suitable for detecting ECG waveforms and heart rate in medical institutions or home settings. It can provide a reference for medical professionals in their diagnostic process.

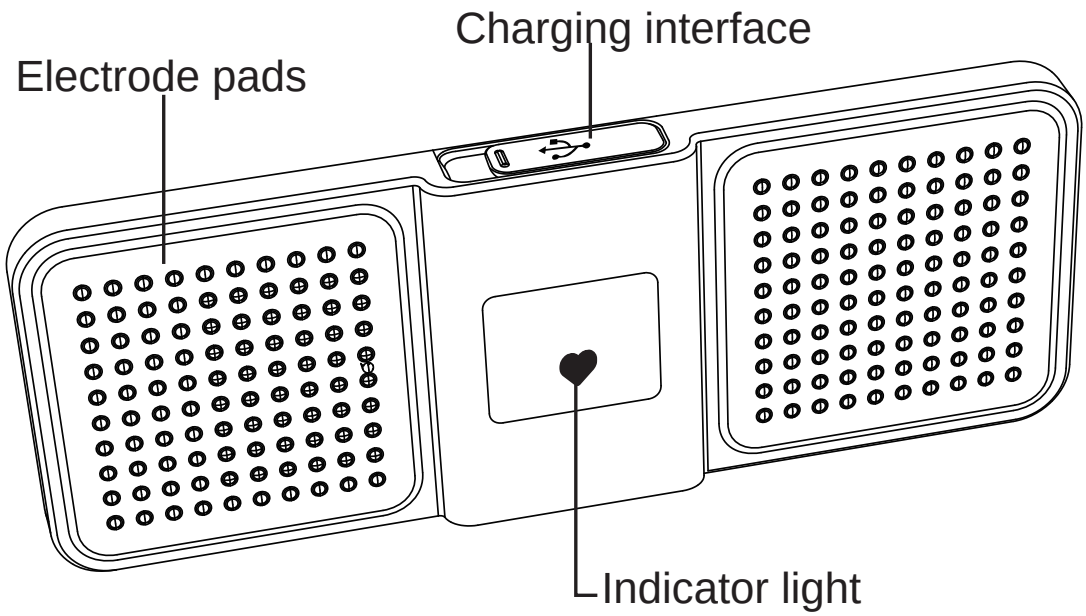
2.2 Contraindications

No contraindications have been identified to date.

2.3 Structural Composition

The electrocardiogram (ECG) recorder (hereinafter, the "Recorder") consists of three components: a main unit, a Type-C data cable, and a supporting application program.

2.4 Product Illustration



1. Indicator light : When powered on, the graphic " ♡ " will be displayed as a flashing blue light ;
2. Electrode Pads: During the measurement, keep your left and right thumbs or index fingers lightly touching the electrode pads until data collection is complete. (see Chapter 3.6 Test Methods for specific operating procedures).
3. Charging port: Connect the Type-C charging cable to the device and adapter, and then plug it into a power source to start charging.

3. Operating Instructions

3.1 Unpacking and Inspection

Before opening the box, please carefully inspect the packaging. If any damage is found, please contact the carrier or our company immediately. If the packaging is intact, please unpack it correctly and carefully remove the equipment and other components from the box. Check the equipment for any mechanical damage and ensure all items are present. If you have any questions, please contact our company immediately.

⚠ warn

1. Please keep the packaging box and packaging materials safe for future use during transportation or storage.
2. Please keep the warranty card safe for warranty purposes.
3. When handling packaging materials, local regulations or hospital waste disposal procedures must be followed, and packaging materials must be kept out of reach of children.
4. The equipment may be contaminated with microorganisms during storage, transportation and use. Please check that the packaging is intact before use, especially for disposable accessories. If any damage is found, please do not use it.
5. The product's production date and expiration date are shown on the label.

3.2 Downloading and Installing the APP

Apple (iOS) users, scan the QR code below to open it in your browser or WeChat.

Download path for Android users: Scan the QR code below.
(This can only be opened with a browser.)

3.3 APP Operating Environment Requirements

Equipment	Minimum configuration requirements
Software environment	■ Android: Android 5.0 and compatible versions;
	■ Apple: iOS 11.0 and compatible versions .
Hardware configuration	■ Android version: Screen display resolution of 1920x1080px or higher , RAM of 8GB or higher , storage of 32GB or higher, screen size of 7 inches or higher ; ■ Apple iOS version: minimum screen resolution of 1920x1080px or higher , RAM of 2GB or higher , storage of 32GB or higher, and screen size of 7 inches or higher .
Network conditions	■ Cellular network, WIFI

3.4 APP Usage Restrictions

The app needs to be used in conjunction with our company's specified model of electrocardiogram recorder;

The app requires a specific software runtime environment; see "App Software Runtime Environment" for details.

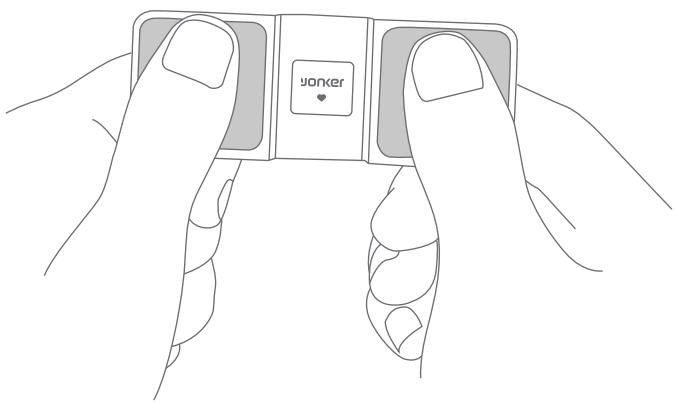
3.5 Maximum Concurrency

Maximum concurrency: 1, response time <10s.

3.6 Test Methods

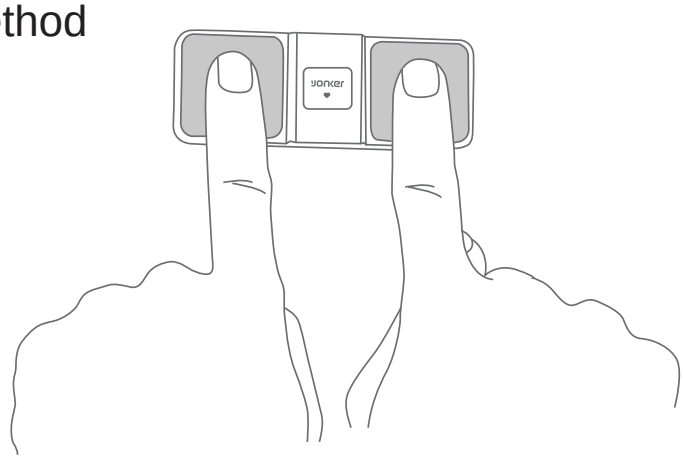
3.6.1 Single-Lead Measurement Posture

1.Place the side with the heart-shaped icon against your chest, then lightly touch the electrode pads with your left and right thumbs respectively, and remain still until the measurement is complete.
aMeasurement Method (see the figure below for reference).



2. Place the side of the device with the heart-shaped icon against your chest. Gently touch the electrode pads with the index fingers of both hands, and remain still until the measurement is complete.

b Measurement Method

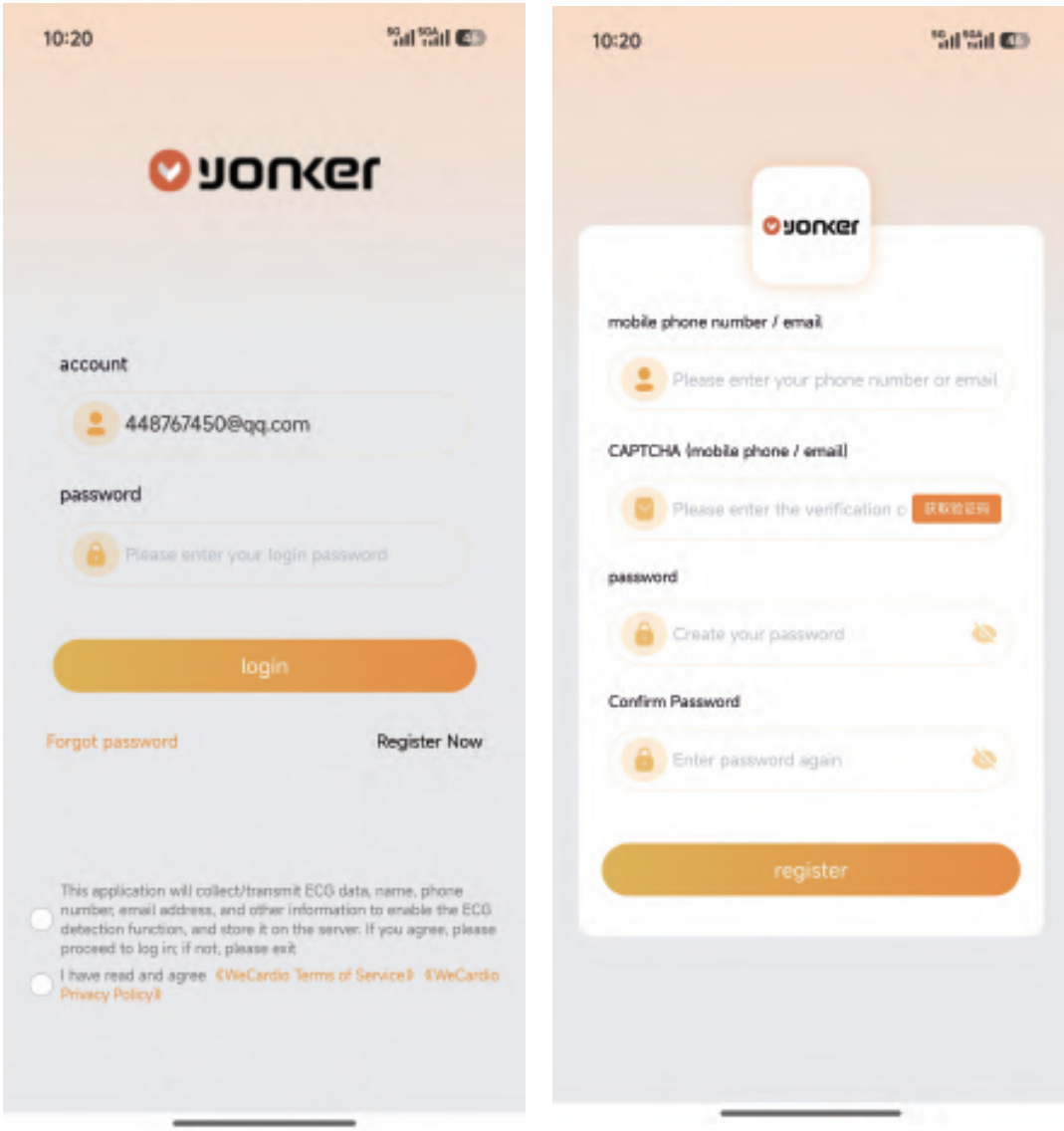


⚠ Notice

1. During use, it is best to avoid shaking or moving your fingers .
2. Before you begin the measurement, please wash your hands with water or wipe them with a damp cloth.
3. Automatically enters the measurement stage after contact with both hands . The pressure should be moderate, neither too tight nor too loose.
4. During the measurement process, you must remain seated, relaxed, and refrain from talking or shaking the equipment, otherwise it will affect the electrocardiogram waveform.
5. The software shows the current battery level. It is recommended to charge the battery in time when the power is low to avoid affecting its use.
6. Automatic shutdown: When the ECG recorder's battery is low, the yellow light will flash for 10 seconds and the device will automatically shut down; when the lead is detached or Bluetooth is disconnected for 3 minutes ± 5 seconds, the device will automatically shut down.

3.7 Software Operation

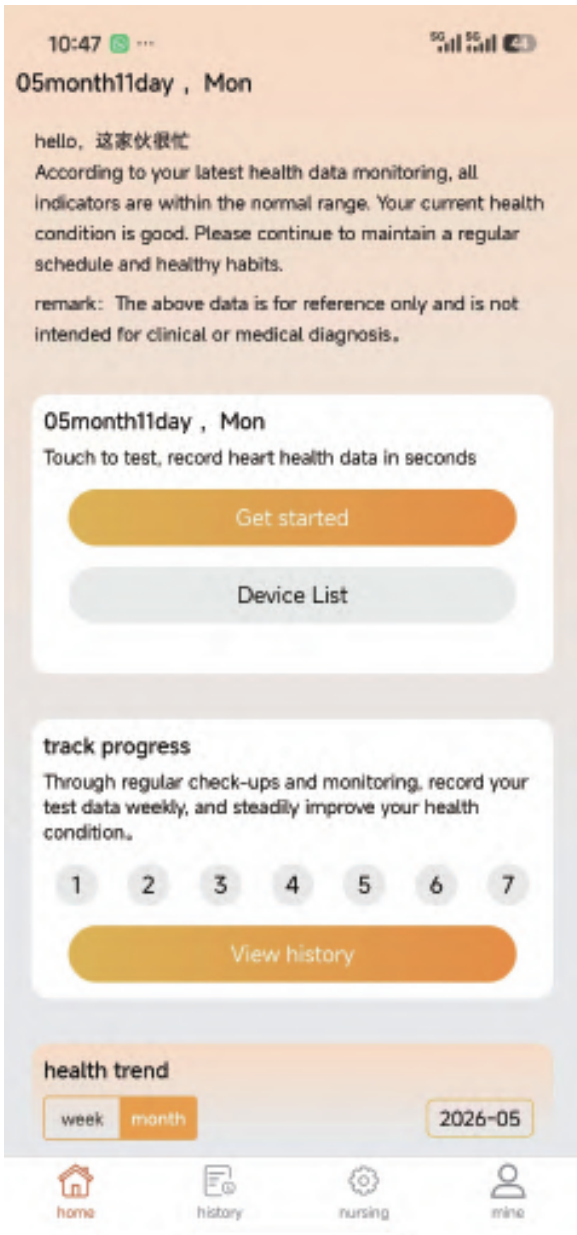
3.7.1 Registration and Login

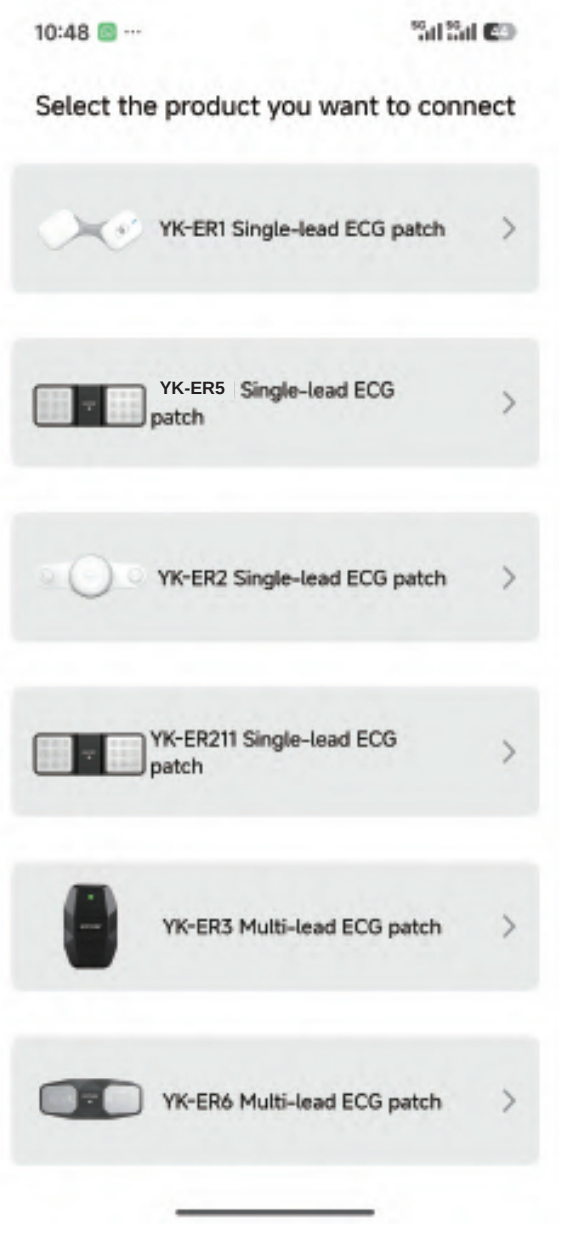


1. Download and install the Lead ECG app via Google Play.
2. New users can click "Register" to register an account, enter the "Account Registration" page, fill in the information, and start the registration process.
3. After successful account registration, you will be returned to the login page to log in.

3.7.2 Adding a Device

Press and hold the recorder's power button to turn it on. The blue indicator light (shown as " ♡ " on the recorder's screen) will flash, indicating that the device is waiting for a Bluetooth connection. Open the mobile app homepage (as shown below), tap "Start Using," and add the device model you want to pair. You will then enter the search page to complete the pairing.

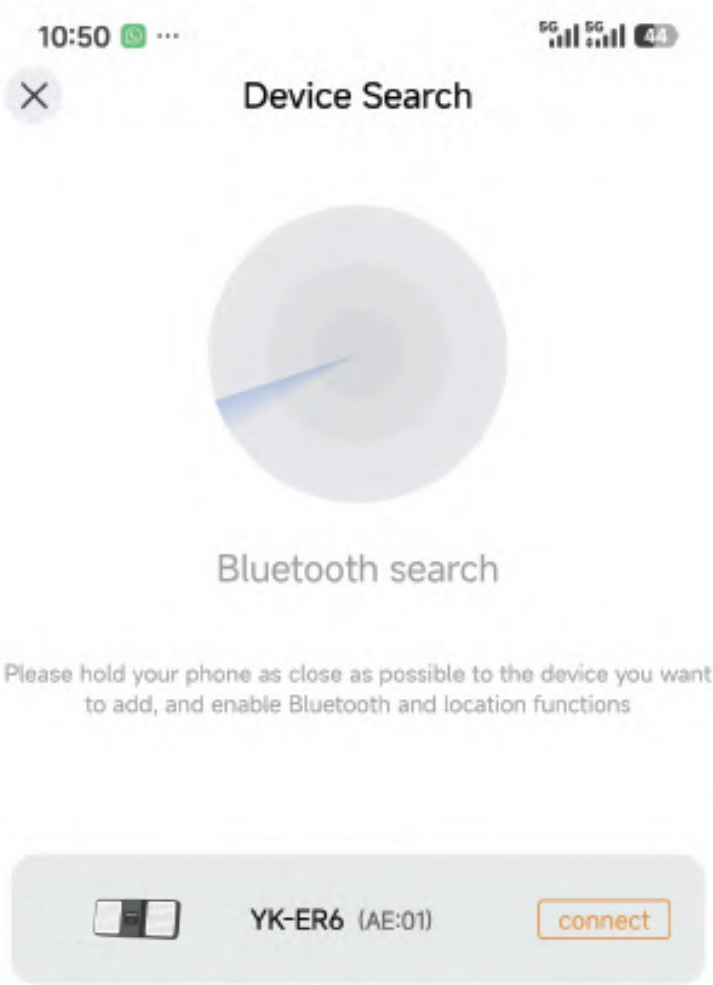




Once the device to be paired is found, click to connect. After a successful Bluetooth connection, the blue light will stay on. After completion, the test will begin (as shown in the picture).

⚠ Notice

- After exiting the app in the background, the device indicator light flashes blue .
- If the device is not turned on, the page will display a message indicating that no device was found.
- When other devices are opened, one or more devices will be found. Select the device you want to bind.



3.7.3 Equipment Setup

This page displays the ECG waveform and heart rate data in real time.

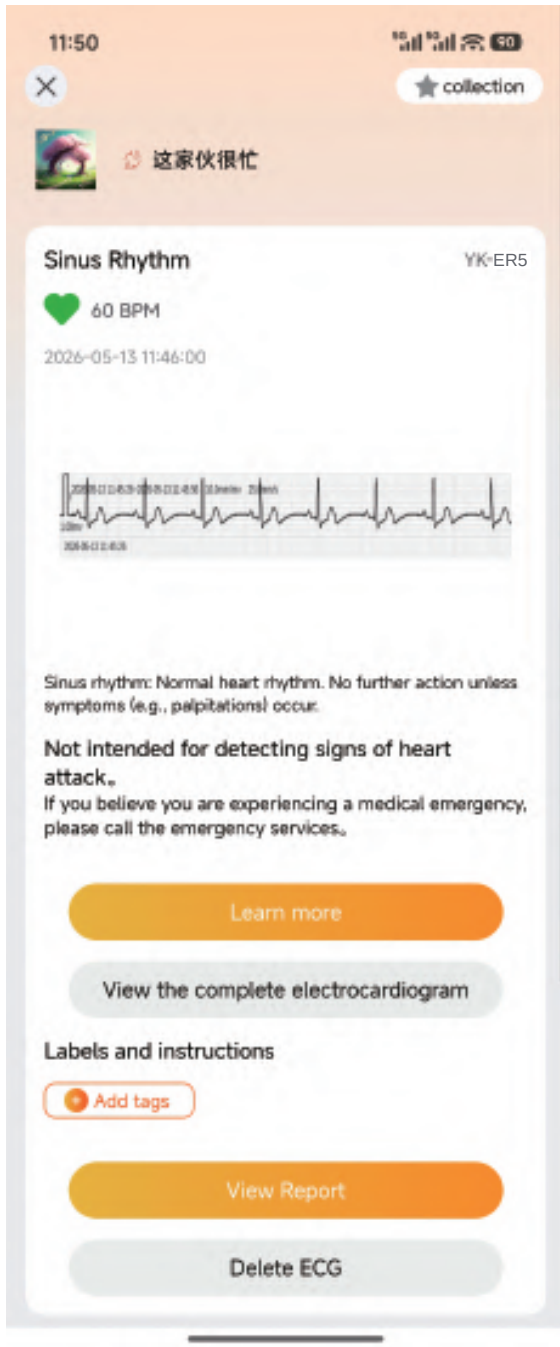
Once the posture is ready and ECG signal acquisition begins, the page will display " Data acquisition will begin in 5 seconds," and a countdown will start. The signal acquisition time is 30 seconds. If a pop-up message appears saying "Data duration is less than 30 seconds and cannot be analyzed normally," it means the signal acquisition was too short and needs to be repeated.

When a pop-up window displays "Device disconnected," it means that the device has been disconnected and needs to be reconnected.

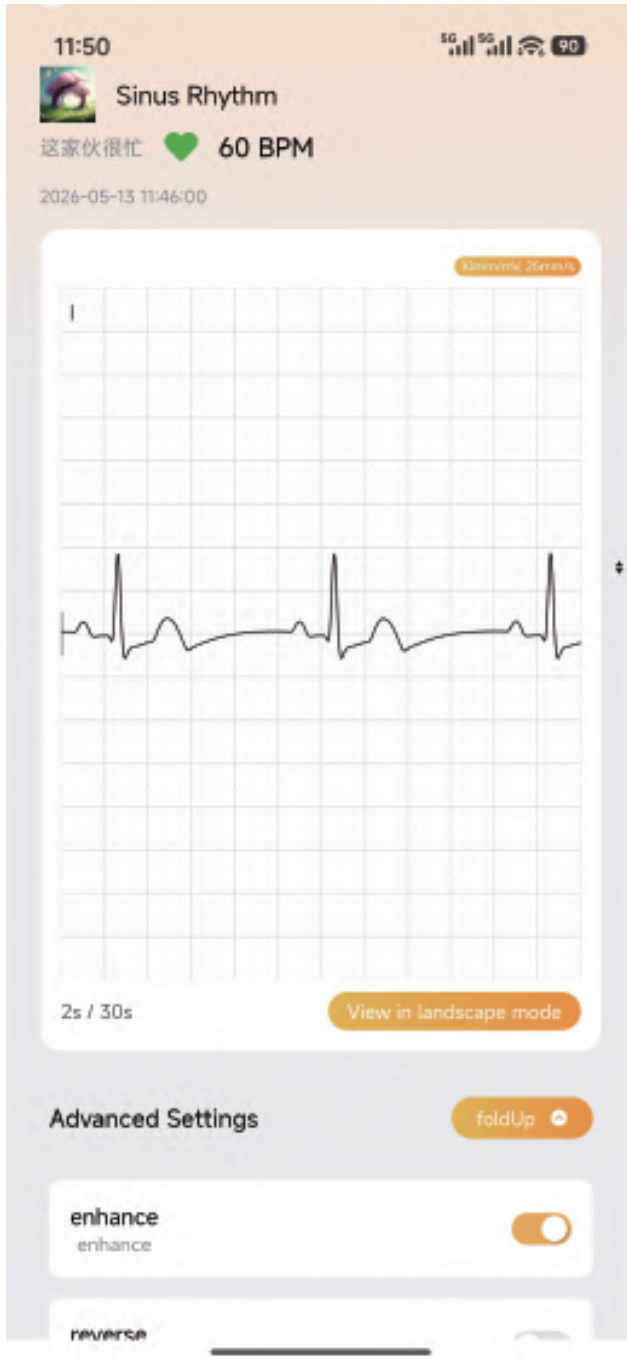
YK-ER5	Equipment Model
	Current device power
	The current device connection status can be displayed as either not connected or connected.
	Current heart rate
	Collection time
Gain control	5 mm/mv
	10 mm/mv
Paper Speed	25 mm/s
Electrocardiogram	Single-lead electrocardiogram

3.7.4 Measurement Records

1. After the measurement is completed, you can view the measurement results on the homepage.
2. The "Home" dropdown menu displays historical measurement data, including specific device model, measurement date, measurement time, and heart rate, as shown in the image below:

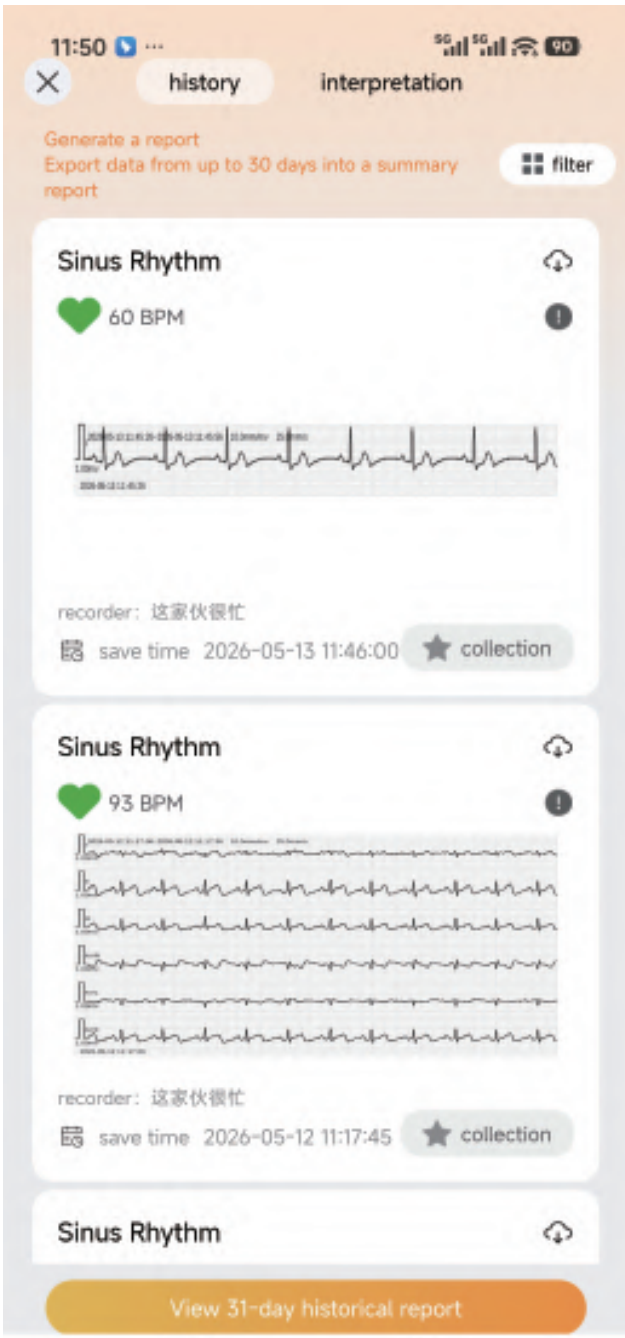


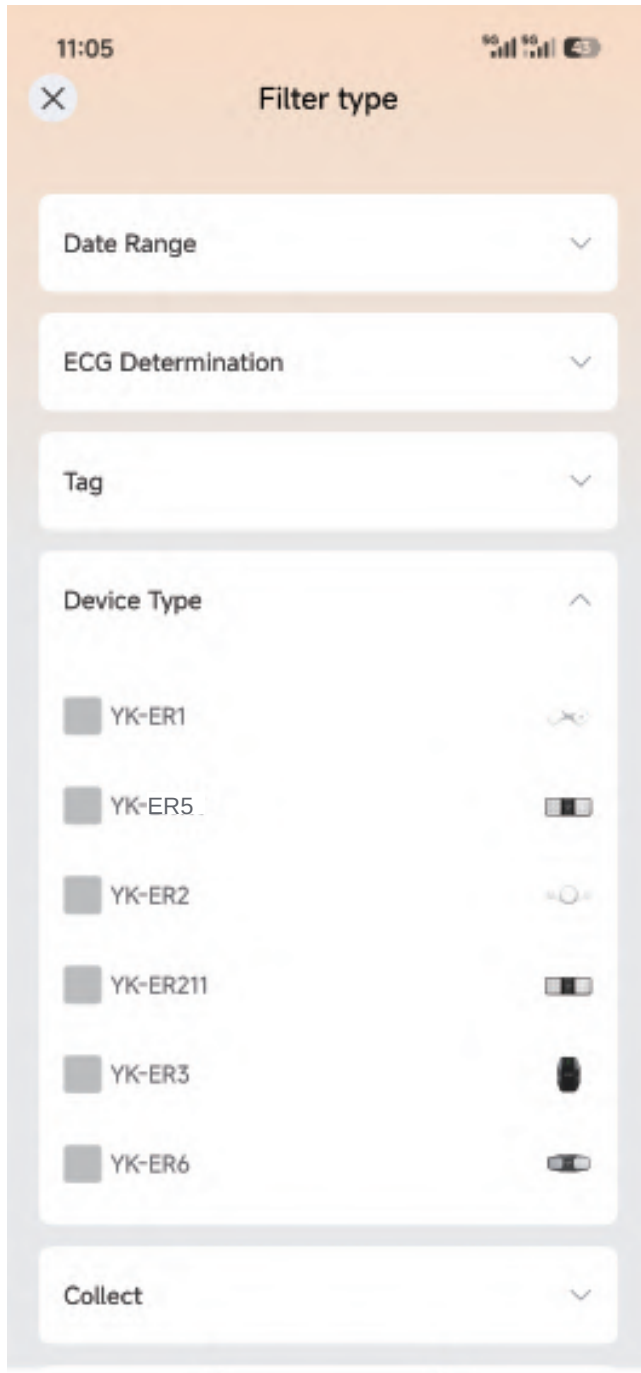
3. Clicking on any data point below will take you to the page shown in the image. Clicking "View Full ECG" will then take you to the ECG page. Swipe the progress bar left and right to view the complete ECG, as shown in the image below:



3.7.5 Page Search

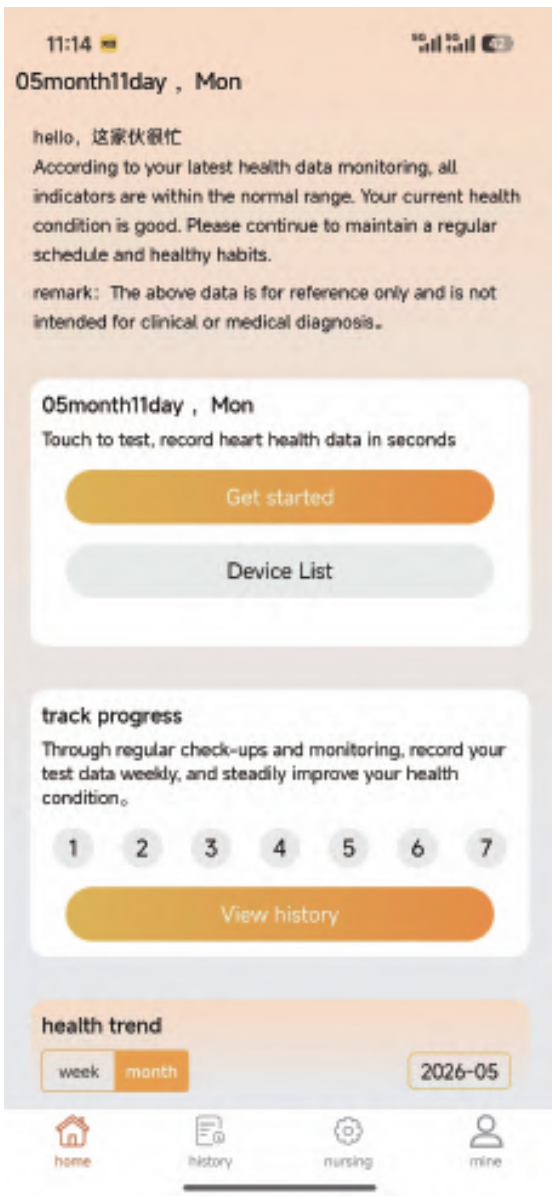
Click the “Filter” button in the History Records interface to select and filter historical measurement data from different device models.





3.7.6 Add Device

Click the "Device List" button on the main interface to enter the device management interface. This interface will display the devices that have been bound, and also provides functions to delete and add devices. Click the "Add Device" button to add a new device; click the delete icon in the upper right corner of a bound device to remove it. Please note that once a device is deleted, all its tested data will be cleared, so please proceed with caution.

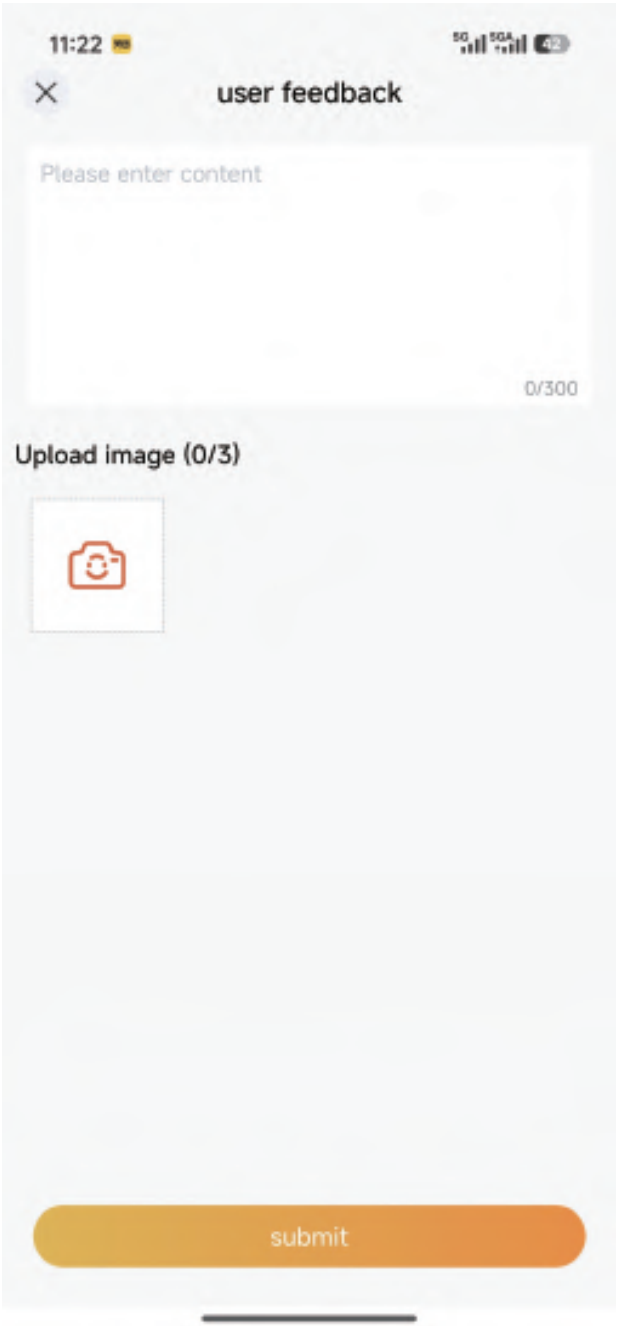


3.7.7 Personal Information Settings

Once logged in, the My page will display your personal information. Tap Profile to go to the page as shown in the figure, where you can set your profile picture, nickname, gender, height, weight, and date of birth.

3.7.8 User Feedback

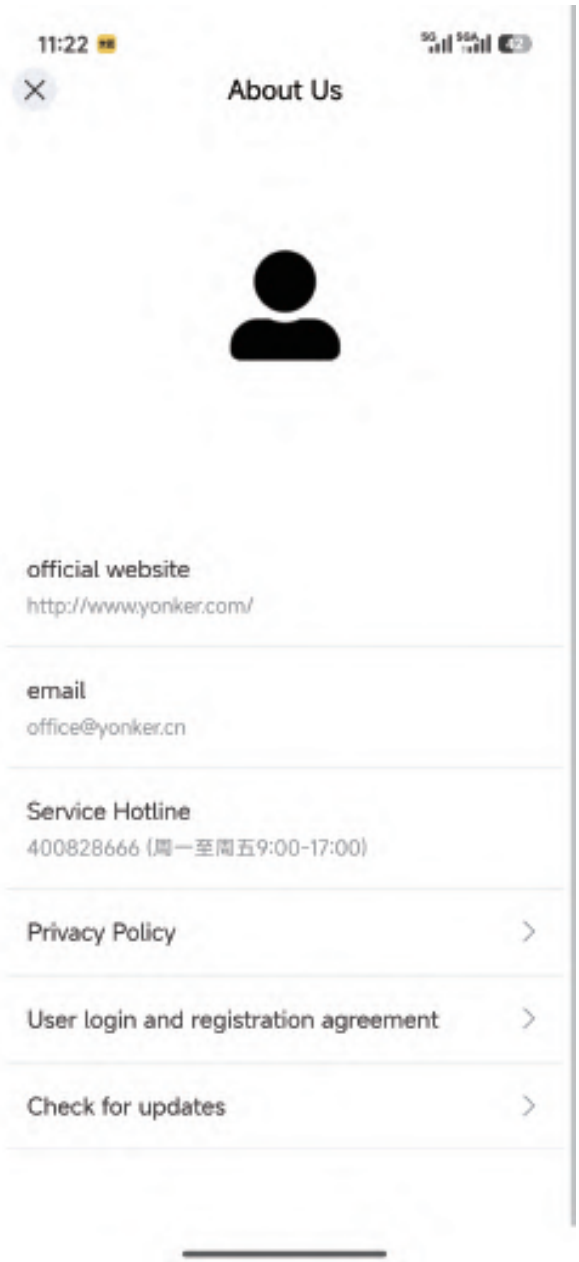
If you have any other issues you'd like to report to our company or our backend system, you can go to the "My" page, click "User Feedback," edit the text content of your feedback, or click to upload an image. Click "Submit" at the bottom of the page to complete your feedback.



3.7.9 About Us

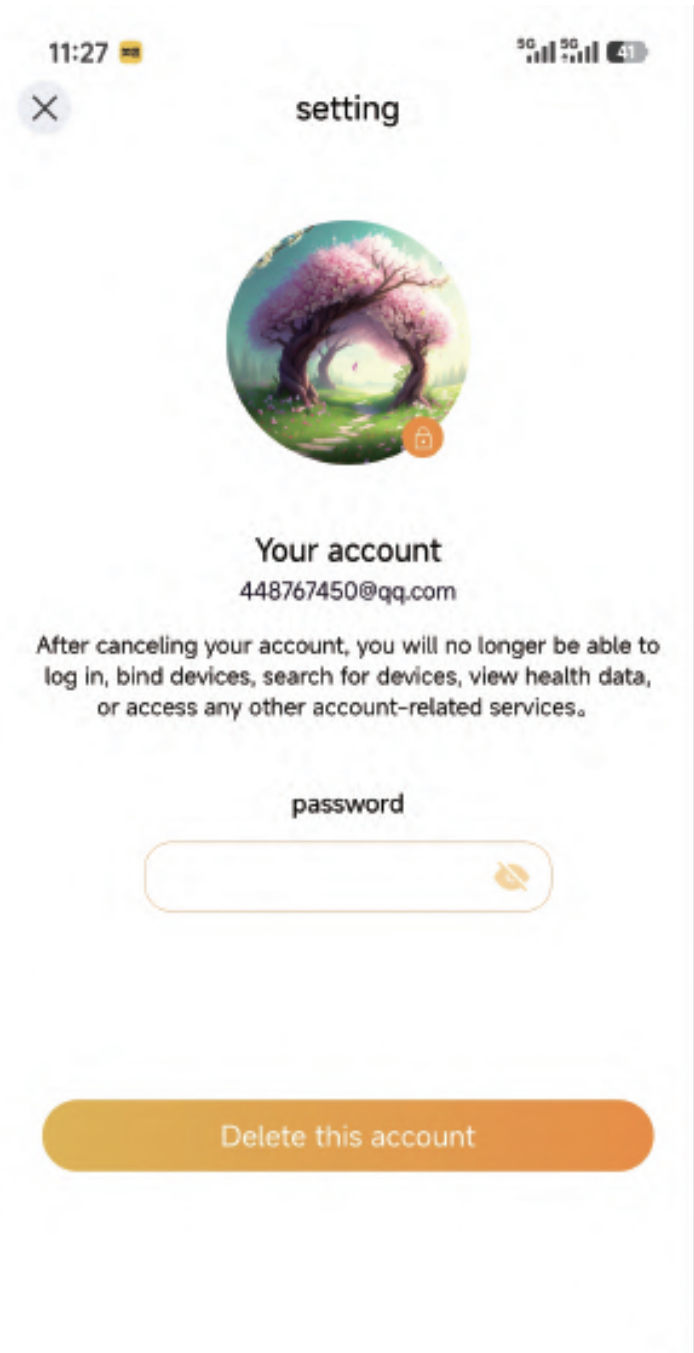
Clicking "About Us" will display the following information: current software version number, official website, email address, service hotline, service hours, privacy policy, user login agreement, and check for new version.

To update the software, click "Check for new versions". If an update is available, click to update. If the current version is already the latest, a pop-up window will appear saying "This is already the latest version".



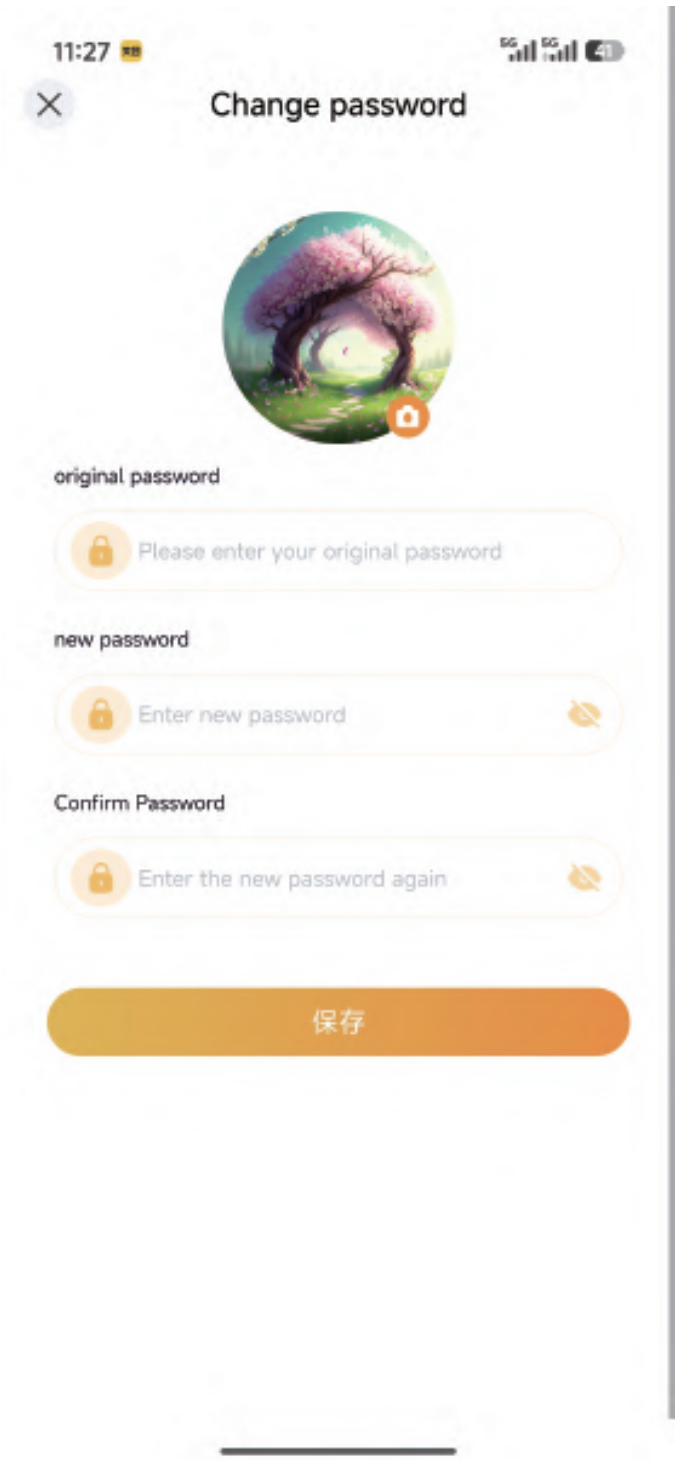
3.7.10 Account Cancellation

On the "Me" page, tap "Account Management" → "Delete Account" → "Password Verification" → Complete Deletion.



3.7.11 Change Password

On the "Me" page, tap "Account Management" → "Change Password" → "Reset Password." After entering your new password twice, tap "Confirm" to complete the password change.



4. Charging Instructions

Charging is done via a Type-C interface. The indicator light flashes green while charging and remains on when fully charged.

⚠ Notice

- When the dashcam's battery is low, the indicator light will flash yellow for 10 seconds and then automatically shut down . Please charge it promptly to avoid affecting its use. The battery level will be displayed on the app screen after connection.
- If the device is not to be used for an extended period (more than 3 months), please fully charge it before storing it.
- This equipment requires a Class II adapter that meets the requirements of IEC 60601-1 or GB 9706.1-2020 standards, and the adapter must meet the 2 MOPP insulation requirement.

5. Maintenance and Upkeep

5.1 Maintenance

5.1.1 Daily Cleaning and Disinfection

- When dust or dirt appears on the product surface, please wipe it with a dry, clean, soft cloth.
- When the main unit is heavily soiled, wipe it with a soft cloth dampened with water or neutral detergent, wrung out thoroughly. After wiping away the dirt, wipe it again with a dry, soft cloth.
- If the electrodes are heavily soiled, wipe them with a soft cloth dampened with alcohol disinfectant.
- Please use a clean cloth that will not produce lint.
- Do not use abrasives.

- If there is a temperature difference between the place of use and the place of storage, please let it sit for 30 minutes before use.

⚠ Notice

- When multiple people are using the product, please disinfect it with 75% medical alcohol before use. Be careful not to let water or alcohol seep into the product.
- Do not store the computer in the following places:
    1. Places where water is likely to splash.
    2. Places with high temperature, humidity, direct sunlight, high dust, and high salt content.
    3. Tilt, places that will vibrate or impact.
    4. Places where chemicals or corrosive gases are stored.
- Disposal Recommendation : Please dispose of the main unit, accessories, and separately sold items in accordance with the relevant environmental protection regulations of the city .

5.1.2 Routine Inspection

To record an accurate electrocardiogram, please perform the following checks :

1. Before use, please check whether the main unit has any abnormal appearance such as deformation, damage, electrode corrosion, or dirt.
2. When recording an electrocardiogram, please make sure that recording begins as soon as the electrodes touch the skin.
3. During use, please check for any unusual odors or noises.

5.1.3 Repairs

If you experience any abnormalities during use or routine checks, please stop using the product and contact our company for assistance.

5.2 Common Faults and Solutions

Fault phenomenon	Possible reasons	Solution
The phone cannot connect recorder	1. The recorder battery is low. 2. Turn off Bluetooth on your phone. 3. The recorder is damaged.	1. Charge the recorder 2. Turn on your phone's Bluetooth. 3. Contact customer service
The ECG waveform has large noise and the displayed waveform is abnormal.	1. Skin that is too dry or oily 2. There are excessively strong interference sources in the environment. 3. Excessive muscle tension causes electromyographic interference. 4. The device is too far away from the mobile phone.	1. Clean your hands properly, making them moist but not oily. 2. Try using it in a different environment. 3. Relax your shoulders, back, and fingers. 4. Bring your phone close to the dashcam.
Historical data cannot be viewed on mobile phones	1. Insufficient phone storage space 2. Software issues	1. Clear the cache and delete useless data. 2. Contact customer service
The recorder cannot be turned on.	1. Low battery power 2. The recorder is damaged.	1. Charge the recorder 2. Contact customer service
Other issues	/	Contact customer service

6. Electromagnetic Compatibility

The electromagnetic compatibility (EMC) specifications of the recorder (YK-ER5) fully comply with YY 9706.102-2021 and YY standards. Clause 202 of 9706.247-2023 stipulates that the verification method for electromagnetic compatibility indicators shall also be carried out in accordance with this standard.

When the recorder operates in the electromagnetic environment specified in this EMC technical datasheet, its basic performance is unaffected.

Basic performance of the recorder (YK-ER5): detection of the electrocardiogram waveform and heart rate.

Magnetic fields may interfere with the normal operation of the instrument. Furthermore, this recorder may cause electromagnetic interference to other electronic products. Therefore, please note the following points when the instrument is in operation:

⚠ warn

- Purchasers or users of this device should use the recorder (YK-ER5) in the electromagnetic environment specified in Tables 1, 2, 3, and 4 (see YY 9706.102-2021) , otherwise the recorder (YK-ER5) may malfunction.
- Portable and mobile radio frequency communication devices may affect the normal use of the recorder (YK-ER5) . Please use the recorder (YK-ER5) in the recommended electromagnetic environment .

- Using accessories and cables other than those provided by the recorder (YK-ER5) manufacturer may result in increased emissions or reduced immunity of the recorder (YK-ER5) .
- The recorder (YK-ER5) should not be used near or stacked with other devices. If it must be used near or stacked, its normal operation underthe configuration in which it is used should be observed and verified.
- The following cables must be used to meet the requirements for electromagnetic emission and interference immunity:

Name	Cable length (m)	Should I block it
charging cable	1.0	no

Table 1

Guidelines and Manufacturer's Statements— Electromagnetic Launch		
The recorder (YK-ER5) is intended for use in the electromagnetic environments specified below, and the purchaser or user shall ensure that it is used in such electromagnetic environments.		
Launch test	**Compliance**	**Electromagnetic Environment - Guide**
Radio frequency transmission GB /T 4824 (CISPR 11)	Group 1	The recorder (YK-ER5) uses RF energy for its internal functions. Therefore, its radio frequency radiation is very low and the possibility of interfering with nearby electronic equipment is minimal.
Radio frequency transmission GB /T 4824 (CISPR 11)	Category B	The recorder (YK-ER5) is suitable for use in all facilities, including home facilities and those directly connected to the public low-voltage power grid of residential homes.
Harmonic emission GB /T 17625.1	Category A	
Voltage fluctuation/ scintillation emission GB /T 17625.2 (IEC 61000-3-3)	Conform to	

Table 2

Guidelines and Manufacturer's Statements - Electromagnetic Immunity			
The recorder (YK-ER5) is intended for use in the electromagnetic environments specified below, and the purchaser or user shall ensure that it is used in such electromagnetic environments.			
Anti-interference test	**IEC 60601 test level**	**Compliance Level**	**Electromagnetic Environment - Guide**
electrostatic discharge GB/T 17626.2 (IEC61000-4-2)	±6kV contact discharge ±8kV air discharge	±6kV contact discharge ±8kV air discharge	The floor should be made of wood, concrete, or tile. If the floor is covered with a synthetic material, the relative humidity should be at least 30%.
Electric Fast Transient Second Charge Group GB/T 17626.4 (IEC61000-4-4)	±2kV power supply line ±1kV input/ output lines	±2kV power supply line not applicable	The mains power supply should have the quality typically used in commercial or hospital environments.
surge GB/T 17626.5 (IEC61000-4-5)	± 1 kV line-to-line ± 2 kV line to ground	±1kV line-to-line not applicable	The mains power supply should have the quality typically used in commercial or hospital environments.

Voltage dips, short interruptions and voltage variations on power input lines GB/T 17626.11 (IEC61000-4-11)	< 5% UT , lasting 0.5 cycles(>95% transient decrease in UT) . 40% UT , for 5 consecutive cycles (60% temporary decrease in UT) . 70% UT, lasting for 25 cycles (30% temporary drop in UT) . <5% UT, lasting 5 seconds (>95% transient decrease in UT).	< 5% UT , lasting 0.5 cycles (> 95% sag on UT) 40% UT , lasting for 5 cycles (60% temporary drop in UT) . 70% UT , for 25 cycles (30% sag on UT).< 5% UT , lasting 5 seconds (On UT , 、 >95% temporary drop)	The mains power supply should have the quality typical of commercial or hospital environments. If the user of the equipment needs continuous operation during power outages, it is recommended that the equipment be powered by an uninterruptible power supply (UPS) or battery.
Power frequency magnetic field (50/60Hz) GB/T 17626.8	3 A/m	3 A/m	The power frequency magnetic field should have the power frequency magnetic field level characteris-

	tics of typical locations in a typical commercial or hospital environment.
Note: U_T refers to the AC mains voltage before the test voltage is applied .	

Table 3

Guidelines and Manufacturer's Statements - Electromagnetic Immunity			
The recorder (YK-ER5) is intended for use in the electromagnetic environments specified below, and the purchaser or user shall ensure that it is used in such electromagnetic environments.			
Anti-interference test	**IEC 60601 test level**	**Compliance Level**	**Electromagnetic Environment - Guide**
Radio frequency conduction GB/T 17626.6 (IEC61000-4-6) Radio frequency radiation GB/T 17626.3 (IEC61000-4-3)	3 V (RMS value) 150 kHz~ 80 MHz 3 V/m 80 MHz ~ 2.5 GHz	3 V (RMS value) 3 V/m	Portable and mobile radio frequency communication devices, including cables, should not be used closer to any part of the recorder (YK-ER5) than the recommended isolation distance . This distance should be calculated using a

			formula corresponding to the transmitter frequency. Recommended isolation distance d = $1.2\sqrt{P}$ d = $1.2\sqrt{P}$ 80 MHz to 800 MHz d = $2.3\sqrt{P}$ 800 MHz to 2.5 GHz In the formula: P—The maximum rated output power of the transmitter as provided by the transmitter manufacturer, in watts (W). d—Recommended isolation distance, in meters (m) The field strength of a fixed radio frequency transmitter is determined by electromagnetic field survey [a] , and should be lower than the compliance level in each frequency range [b] .  Interference may occur near devices marked with the following symbols .

Note 1: At the 80MHz and 800MHz frequencies, the formula for the higher frequency band is used.

Note 2: These guidelines may not be suitable for all situations, as electromagnetic propagation is affected by absorption and reflection from buildings, objects, and the human body.

For fixed transmitters, such as base stations for wireless (cellular, cordless) telephones and terrestrial mobile radios, amateur radio, AM and FM radio broadcasting, and television broadcasting, the electromagnetic field strength cannot be accurately predicted in theory. To assess the electromagnetic environment of a fixed RF

transmitter, an electromagnetic field survey should be considered. If the field strength at the location of the recorder (YK-ER5) is measured to be higher than the applicable RF compliance level, the recorder (YK-ER5) should be observed to verify its normal operation. If abnormal performance is observed, supplementary measures may be necessary, such as readjusting the orientation or position of the recorder (YK-ER5) .

b. The electric field strength should be less than 3V/m across the entire frequency range of 150kHz to 80MHz.

Table 4

Recommended isolation distance between portable and mobile radio frequency communication devices and recorders (YK-ER5)

The recorder (YK-ER5) is intended for use in electromagnetic environments where radio frequency radiated interference is controlled. Based on the maximum rated output power of the communication equipment, purchasers or users can prevent electromagnetic interference by maintaining the minimum distance between the portable and mobile radio frequency communication equipment (transmitter) and the recorder (YK-ER5) as recommended below .

The transmitter's maximum rated output power W	Isolation distance (m) corresponding to different frequencies of the transmitter		
	150 kHz~80MHz $d = 1.2\sqrt{P}$	80MHz~800MHz $d = 1.2\sqrt{P}$	800MHz~2.5GHz $d = 2.3\sqrt{P}$

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

For transmitters whose maximum rated output power is not listed in the table above, the recommended isolation d, in meters (m), can be determined using the formula in the corresponding transmitter frequency column. Here, P is the transmitter's maximum rated output power provided by the transmitter manufacturer, in watts (W).
Note 1: At the 80MHz and 800MHz frequencies, the formula for the higher frequency band is used.
Note 2: These guidelines may not be suitable for all situations, as electromagnetic propagation is affected by absorption and reflection from buildings, objects, and the human body.

7. Annexs

7.1 Product Package Lis

Serial Number	Name	Quantity	Remark
1	Electrocardiogram recorder	1	
2	Charging cable	1 item	
3	Manual	1 copy	
4	Certificate of Conformity	1	
5	Storage bag	1	

8. After-Sales Service

8.1 Warranty and Service Explanation

1) The company provides users with a one-year free warranty and lifetime maintenance.
2) If the Recorder malfunctions, do not attempt to disassemble or reassemble it by yourself. Please contact the manufacturer's customer service center immediately. In special cases where repair by qualified technicians other than the manufacturer's is required, our company can provide product circuit diagrams, component lists, and other relevant technical documents. For such requests, please contact our customer service center for assistance.
3) The company is not responsible for free repair or replacement of any direct or indirect damage caused by improper use of the equipment. The user will be responsible for the repair costs (including transportation fees).

The following situations are not covered by the warranty:

1. Unable to produce a warranty card, invoice, or proof of purchase.
2. Damage caused by improper use or other human factors
3. Damage caused by unforeseen natural disasters

For products beyond the warranty period, we will provide paid repair services.

Our company reserves the right to interpret this warranty information.

8.2 Manufacturer Information

Registrant Name/Manufacturer Name/After-Sales Service Provider Name: Xuzhou Yongkang Electronic Technology Co., Ltd.

Registered Address: No. 19, Yinshan Road, Xuzhou High-tech Industrial Development Zone

Production Address/After-sales Service Unit Address: 2nd&3rd floor of Building No.5, Block B, Huaihai Biomedical Industry Park, No. 5 Tengzhai North Road, Xuzhou High-tech Industrial Development Zone, 221000 Xuzhou, PEOPLE'S REPUBLIC OF CHINA

Production Date: See product label

Service Life: 5 years

Telephone: 0516-87892766

Fax: 0516-87892766-606

Postal code: 22100

Website: www.yonker.cn

Email: office@yonker.cn

Appendix A: Safety Requirements

Product Name	Electrocardiogram recorder
Product Model	YK-ER5
Protection level	IP22
Classification by level of protection against electric shock	CF type equipment
Classification by type of electric shock protection	Class II, Internal power supply equipment
Classification by operating mode	Continuous operation equipment
Does the equipment have an application section that protects against defibrillation discharge effects?	This equipment does not have any application section for defibrillation discharge effect protection.
Permanent installation equipment or non-permanent installation equipment	Non-permanent installation equipment
Classified according to the level of safety when used in flammable anesthetic gases mixed with air or flammable anesthetic gases mixed with oxygen or nitrous oxide.	It cannot be used in the presence of flammable anesthetic gases mixed with air or flammable anesthetic gases mixed with oxygen or nitrous oxide.
Charging power supply	External power supply : Input 100V-240V; 50/60Hz, Output 5V ⎓ 2A

Electrical parameters	Internal power supply	DC 3.7V
	Battery capacity	120 mAh
	Automatic shutdown	The recorder automatically shuts down after 3 minutes of inactivity.
Low voltage warning	When the voltage is 3.3V±0.1V , the indicator light will flash yellow for 10 seconds and then automatically shut down.	
Charging time	Approximately 3 hours	
Working hours	>24 hours	
Use period	5 years	

Appendix B: Environmental Requirements

Work environment	Ambient temperature	5ºC～45 ºC	1. If stored or used outside the temperature and humidity range specified by the manufacturer, the system may not achieve the claimed performance. 2. During transportation, avoid strong impacts, direct collisions,
	Relative Humidity	10 %～ 95 % (Non-condensing)	
	Atmospheric pressure	70kPa～106kPa	

Transportation and storage environment	Ambient temperature	-20ºC～+55ºC	exposure to sunlight or rain . After packaging, the recorder should be stored in an environment that meets the temperature, humidity and atmospheric conditions, free from corrosive gases and in a well-ventilated indoor environment .
	Relative humidity	≤ 95% (non-condensing)	
	Atmospheric pressure	70kPa～106kPa	

Appendix C: Product Specifications

Product Dimensions	90.5*34*7.5mm
Product weight	21g
Number of leads	Single lead
Heart rate measurement range	30-300 bpm
Heart rate measurement error	±2bpm
Input Impedance	≥10MΩ
System Noise	<25μV (peak-to-valley)
Impulse response	overshoot <10%

<table>
<tr><td>Frequency response</td><td colspan="2">Sine wave signal 0.67Hz～40Hz
(+3dB～-3dB)</td></tr>
<tr><td>Rated input amplitude</td><td>Input frequency and waveform</td><td>Amplitude changes</td></tr>
<tr><td>2.0mv</td><td>0.67Hz～40Hz, sine wave</td><td>140%～70%[a]</td></tr>
<tr><td>1.5mv</td><td>1Hz, triangular wave, 40ms bottom width</td><td>70 %～ 110 %[b]</td></tr>
<tr><td colspan="3">a is the output amplitude relative to a 5 Hz sinusoidal input signal.
b is the output amplitude relative to a triangular wave input signal with a bottom width of 200ms.</td></tr>
<tr><td>Gain accuracy</td><td colspan="2">With all possible gain settings, the output signal is equivalent to the input test signal, with a maximum amplitude error of ±10%.</td></tr>
<tr><td rowspan="2">Mobile software</td><td>Software Name</td><td>Dynamic electrocardiogram recorder software</td></tr>
<tr><td>Model/Specification</td><td>YK-ER5</td></tr>
<tr><td rowspan="3">Embedded software</td><td>Software Name</td><td>ECG recording software</td></tr>
<tr><td>App models/ specifications</td><td>Lead ECG</td></tr>
<tr><td>Release version</td><td>1</td></tr>
</table>

Communication methods	Bluetooth connection	
Gain control	5 mm/mv , 1 0mm/mv	
Paper Speed	25mm/s	
Bluetooth module	Frequency	2402～2480MHz
	Modulation type	GFSK
	Effective radiated power	≤20dBm