LEPU MEDICAL

AI-ECG Tracker

Operator’s Manual

I Foreword

Declaration

Shenzhen Carewell Electronics Co., Ltd. (hereinafter referred to as "Carewell ") makes no warranties of any kind, including (but not limited to) implied warranties of merchantability and fitness for a particular purpose. Carewell shall not be liable for errors contained in this material or for incidental or consequential damages caused by the provision, actual performance and use of this specification.

As Carewell will continue to improve the equipment or software, the configuration and performance of subsequent models will be changed without other notice.

Copyright

Version

Part No.: 24420035-03

Release Date: 2026-03

Version: V1.4

General Notes

- *Italic* text is used to indicate prompt information or quote the referenced chapters or sections.
- [XX] is used to indicate the character string in the software.
- → is used to indicate operational procedures.
- All illustrations in this manual serve as examples only and may differ from what is actually seen.

Special Notes

The warnings, cautions and tips in this manual are used to remind readers of some specific information.

⚠ Warning

Indicates the information you need to know about how to avoid possible injury to the person being examined and medical personnel.

Caution

Indicates the procedures you must strictly follow to avoid data loss or corruption of the software application files.

Note

Provides other useful information, such as extended explanations, hints, or reminders.

II Manufacturer's Liability and Warranty

Manufacturer's Liability

Carewell is responsible for the safety, reliability and performance of the device, only if:

- Assembly operations, expansions, re-adjustments, improvements and repairs of this device are performed by personnel authorized by Carewell;
- The electrical installation of the relevant room complies with the applicable national and local requirements;
- The device is used in accordance with the instructions in this manual.

Carewell shall not be responsible for direct, indirect or ultimate damage or delay caused by:

- The device is disassembled, stretched and re-adjusted;
- Maintenance or modification of the device is conducted by unauthorized personnel;
- Subsequent damage caused by improper use or maintenance;
- Replacement or removal of serial number label and manufacture label.
- Mis-operation caused by the neglect to the instructions in this manual.

Warranty

✦ Manufacturing process and raw materials

Carewell warrants that the instrument is manufactured with the required raw materials and processes. In the normal operation and maintenance condition, if Carewell receives reports of

manufacturing processes and material failures, it will repair or replace the hardware products.

- **Software or devices**

Software or devices installed in Carewell's products will be repaired by replacing the software or devices upon receipt of reports proving that the software or devices are defective, but Carewell cannot guarantee that the use of the software or devices will not be interrupted or error free.

Shipping and other charges are not included in the above warranty.

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Table of Contents

Chapter 1 Safety Guidance

1.1 Safety Information

To use this software safely and effectively, please get familiar with the basic operation methods of Windows system before using it. Read this Operator's Manual thoroughly, be familiar with the functions of the ambulatory ECG analysis software, and fully understand the correct operation methods and the following precautions for use.

⚠ Warning

This product cannot be used for treatment or ECG monitoring.

⚠ Warning

This product is not intended for home use.

⚠ Warning

The measured ECG data and diagnostic results of this product should be used in combination with the clinical situation of the patient. The measured values and diagnostic results cannot replace regular examination.

⚠ Warning

This product does not support the analysis of ECG data of patients under 18 years of age.

⚠ Warning

Installation of this software wouldn't create any safety concerns to the healthcare institute, no data is transmitted to or from outside. The AI-ECG Tracker wouldn't collect any additional data from users except all indicated in this Operator's Manual.

⚠ Warning

To make sure that the software can be used in your environment, we recommend that you add the software to your office's anti-virus software white list.

⚠ Warning

To ensure that the system works properly as designed, we recommend that you install the software into the hardware as required, and use the correct version of the operating system.

⚠ Warning

Hospitals need to ensure the stability and security of the networks they use to prevent interruptions in data transmission or malicious damage that could affect patient examinations and patient data security.

❗ Caution

Before operating the software, the operator must obtain the use authorization from Shenzhen Carewell Electronics Co., Ltd., and fully understand the contents of this manual before operating the software.

❗ Caution

This software should be scanned with security software (anti-virus software, protection software) before installation.

❗ Caution

This software should be used with the security software protection feature turned on.

❗ Caution

It needs to connect a specific ECG device and upload the acquired signals to the corresponding port for automatic analysis and diagnosis.

☞ **Note**

All illustrations provided in this manual are used as examples only. All names shown in the illustrations are purely fictitious and any resemblance is purely coincidental.

1.2 Symbol Description

Symbol	Description	Symbol	Description
	Manufacturer		Date of manufacture
	Please read the manual instruction before use		Caution! Consult accompanying documents
CE 0123	This mark means that this device is entirely in conformance with the MDD 93/42 EEC	EC REP	Authorized Representative in the European Community
	Refer to Operator's Manual (Background: blue; Symbol: white)	CH REP	Authorized representative in Switzerland
SN	Serial number	LOT	Batch code
	Humidity limit		Temperature limit
	Atmospheric pressure limitation		Recovery / recyclable
	Keep away from rain		Fragile
MD	Medical device		

☞ **Note**

Your software does not necessarily have all of the above symbols.

Chapter 2 Product Introduction

The AI-ECG Tracker supports receiving long-range ECG data from ambulatory ECG acquisition devices, editing analysis results, and generating ECG diagnosis reports as a reference basis for physicians' clinical diagnosis.

2.1 Intended Use

The AI-ECG Tracker is intended for use by qualified healthcare professionals in hospitals and healthcare facilities for the assessment of arrhythmias using ECG data acquired from adults without pacemakers. The product supports downloading and analyzing data recorded in compatible formats from any device used for the arrhythmia diagnostics such as Holter, event recorder, standard conductive paste/gel 12-lead ambulatory ECG devices, or other similar devices when assessment of the rhythm is necessary. The AI-ECG Tracker provides ECG signal processing and analysis on a beat by beat basis, QRS detection, Supraventricular and Ventricular Ectopic Beat detection, QRS feature extraction, interval measurement, heart rate measurement, and rhythm analysis. The AI-ECG Tracker is not for use in life supporting or sustaining systems or ECG monitoring and Alarm devices.

The AI-ECG Tracker interpretation results are not intended to be the sole means of diagnosis for any abnormal ECG. It is offered to physicians and clinicians on an advisory basis only in conjunction with the physician’s knowledge of ECG patterns, patient background, clinical history, symptoms, and other diagnostic information.

2.2 Contraindications

- Not suitable for diagnosis of non-cardiac abnormalities.
- Not suitable for diagnosing patients with pacemakers.
- Not suitable for analysis of recordings performed on minors.
- Not suitable for diagnosis other than cardiac arrhythmia.
- The device must not be used as a physiological monitoring of vital signs.

2.3 Structure and Composition

The functional modules of this software include: physician diagnostic client (including ECG test list module, ECG analysis and diagnosis module, ECG report printing module), ECG analysis server (including ECG analysis module, interface module, data storage module).

2.4 Intended Population

The AI-ECG Tracker is qualified for use in the general adult population ranging from healthy subjects to adults with cardiac and/or non-cardiac abnormalities.

2.5 Applicable Standards

- EN 62304:2006+A1:2015 Medical device software - Software life-cycle process
- EN 82304-1:2018 Health software – Part 1: General requirements for product safety
- EN 60601-2-47:2015: Medical Electrical Equipment - Part 2-47: Particular Requirements for the Basic Safety and Essential Performance of Ambulatory Electrocardiographic Systems

- ANSI/AAMI EC57:2012(R2020): Testing and reporting performance results of cardiac rhythm and ST segment measurement algorithms

2.6 Method for Calculating the Heart Rate

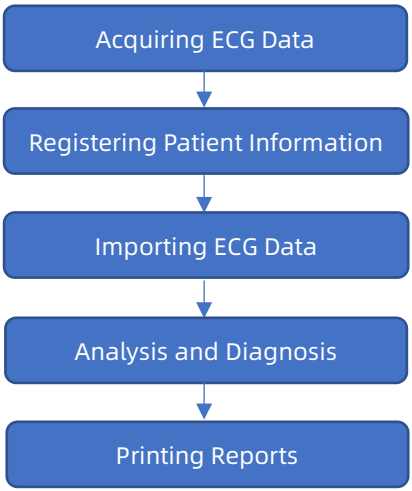
Calculate a heart rate every 8 seconds.

2.7 Method for Calculating a Pause

A pause is diagnosed when RR interval ≥ 3 seconds.

2.8 Workflow

The workflow of an ambulatory ECG examination is as follows:



Chapter 3 Installation and Login

3.1 Installation Environment Requirement

The installation environment should meet at least the following requirements:

	Item	Recommended Configuration
Hardware environment	CPU	Intel® Core™ i5
	RAM	8GB
	Hard drive size	1T
	Display screen	Resolution: 1920 × 1080 pixels
	Printer	Resolution: 600dpi
	Connectors	RJ45 port, USB 2.0/3.0
Software environment	Operating system	Windows 10/11 64 bit
Working environment	Temperature	+5℃ - +40℃
	Relative Humidity	25%-85%, non-condensing
	Atmospheric pressure	700hPa-1060hPa

3.2 Installation

⚠ Warning

If this software has been installed on your computer, please uninstall the currently installed version first, and then follow the steps below to reinstall it after a successful uninstallation, otherwise the installation may fail.

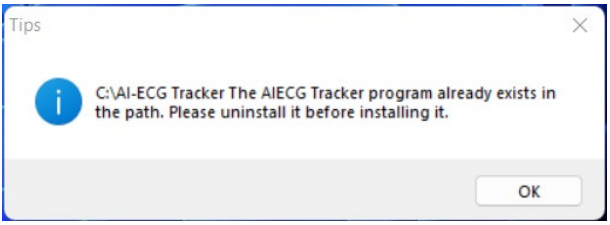
Caution

When installing, please use an administrator account with high privileges.

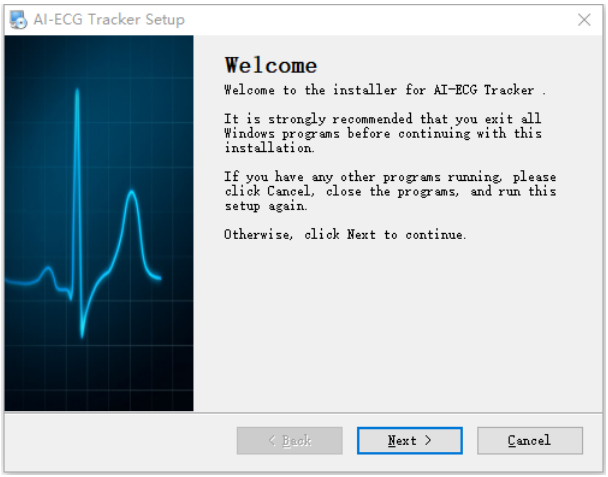
To install the software, follow the steps below:

1. Right-click the installer and select [Run as administrator].

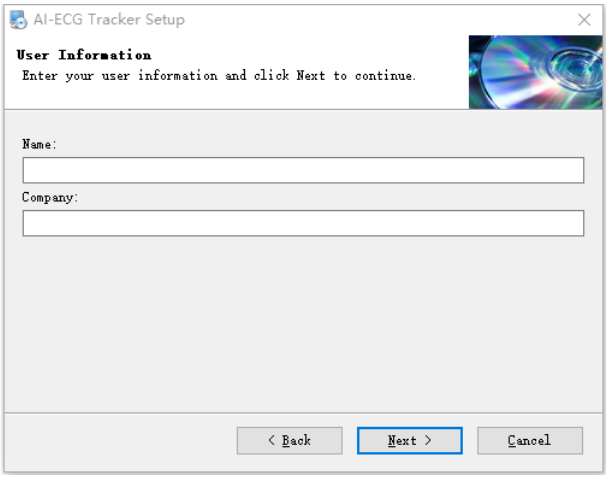
2. If the following prompt appears during installation, you will need to manually uninstall the AI-ECG Tracker program that already exists on your computer, and then use the installation package to install it. If this prompt does not appear, then follow the steps below to continue the installation.



3. The following window pops up, click the [Next] button.



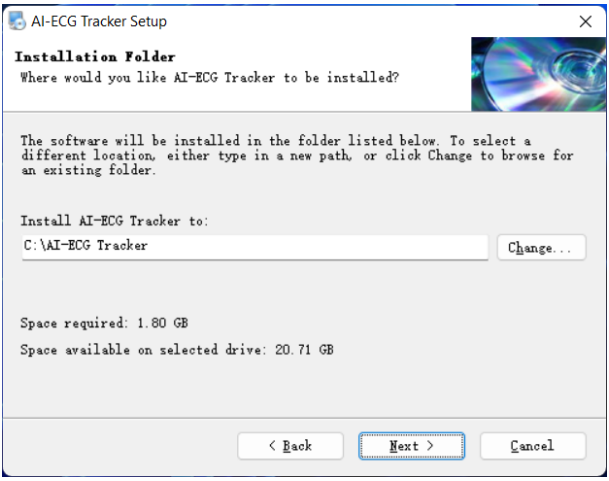
4. The following window pops up, enter the relevant information and then click the [Next] button.



Name: Automatically get the normal user name, for Administrator user, you need to enter it by yourself.

Company: Enter the company name.

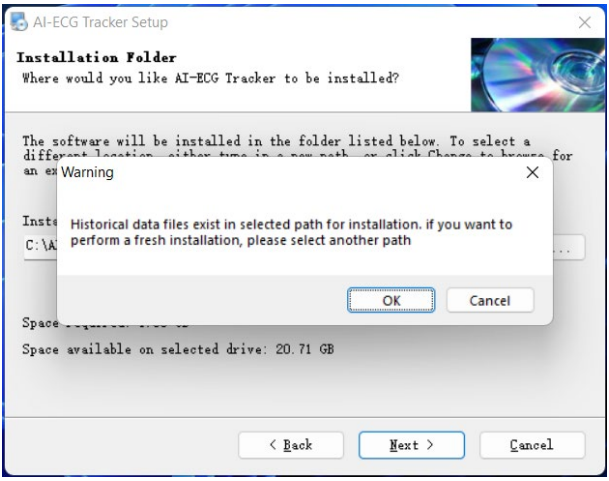
5. The following window pops up, click the [Next] button to install the application to the default path (recommended), or click the [Change] button, select the target installation path, and then click the [Next] button.



Caution

The installation path for this software only supports English, if the path contains other languages, the installation will not succeed.

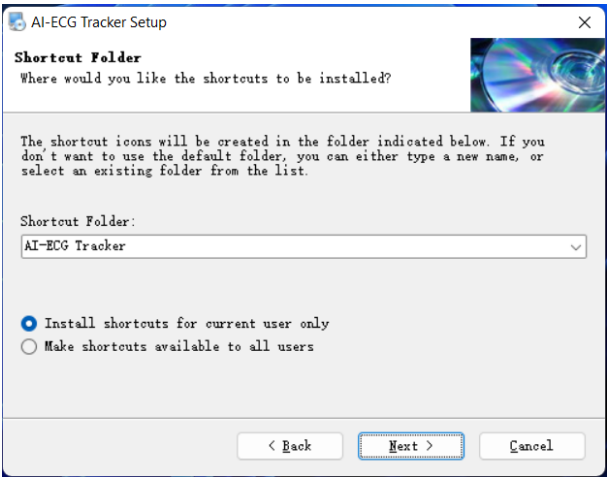
6. If you are not installing the software for the first time, if you select the path for the first installation, you will be prompted with "Historical data files exist in selected path for installation, if you want to perform a fresh installation, please select another path", click [OK], and then click the [Next] button.



Note

Because the system will detect whether there is historical data under the installation path during installation, a prompt will pop up when you click the [Next] button. Just click [OK] when installing the software for the first time. If historical data exists under the installation path, it will prompt "Historical data files exist in selected path for installation, if you want to perform a fresh installation, please select another path". This is to confirm whether you want to use the historical data existing under the installation path, if yes, select [Next], otherwise select [Back] to return to the select path step and select a new installation path.

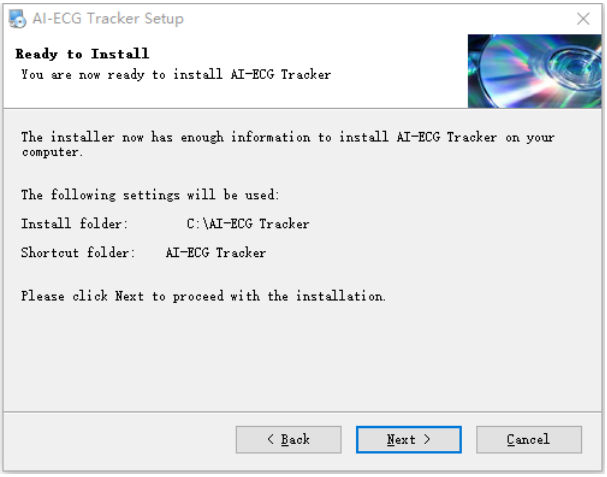
7. The following window pops up, click the [Next] button.



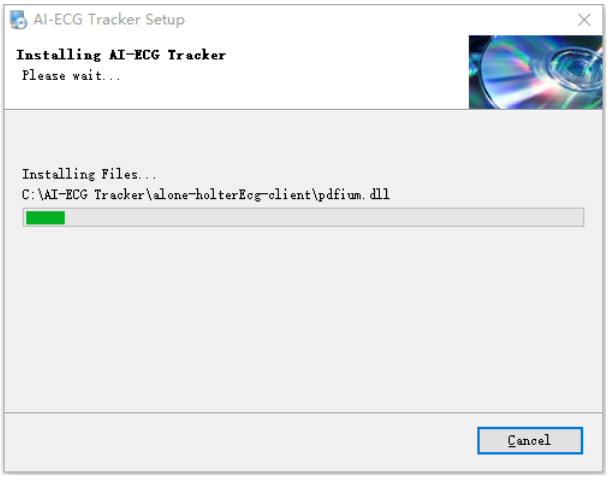
Note

Here it is up to the user to decide whether to make the software available only to the user currently logged into Windows or to all users.

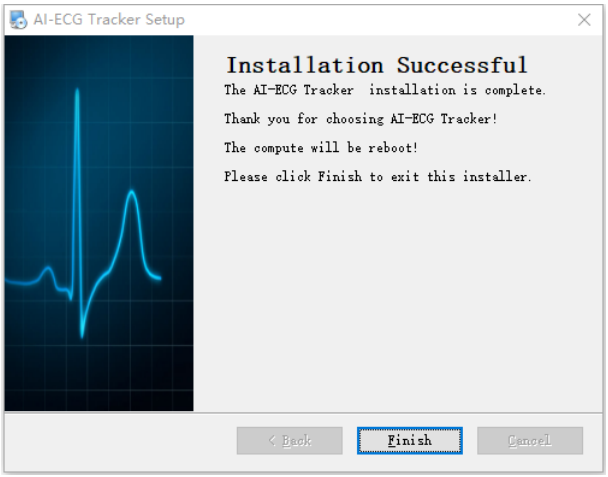
8. When the installation is ready, the following window pops up, click the [Next] button.



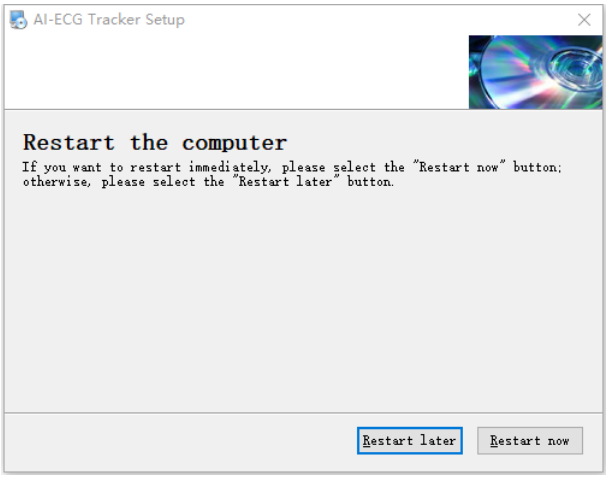
9. Start the installation process.



10. After the software is successfully installed, click the [Finish] button.



11. Restart your computer to complete the installation of this software.



Warning

Please save the unsaved data before restarting the computer. Only after restarting the computer can you log in to the software properly.

Note

If you select [Restart later], you will need to restart the computer manually later.

3.3 Licensing

When the AI-ECG Tracker is successfully installed, you need to activate the client of AI-ECG Tracker prior to the first use. Choose one of the following ways to activate your client:

- Online licensing
- Offline licensing

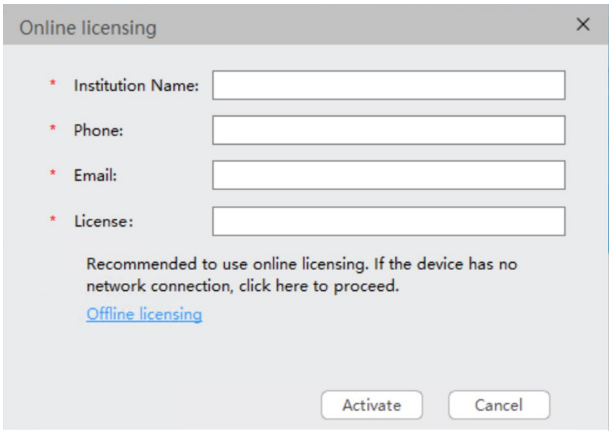
Online Licensing

If your computer installed with AI-ECG Tracker is capable to connect to the Internet, you can choose online licensing, a simpler way.

1. Double-click the shortcut icon 

on the computer desktop to open the client, you can see “Client not licensed”. Click [Click to obtain a license].

2. The licensing window displays. Enter the required information (Institution name, Phone No, Email, license code). Then select [Activate].



☞ Note

You can obtain the license code from the accompanying document of the AI-ECG Tracker product package. One license code is to activate one computer.

3. The activation starts and the activation progress displays. After successful activation, the login screen no longer displays "Client not licensed". At this time, you can enter your password to log in.

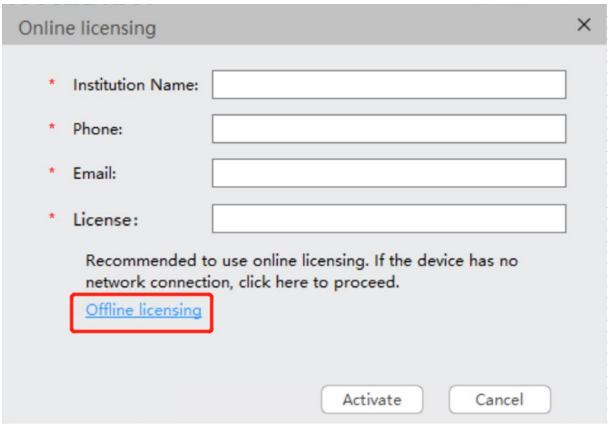
Offline Licensing

If your computer installed with AI-ECG Tracker is unable to connect to the Internet, you can activate the client through offline licensing.

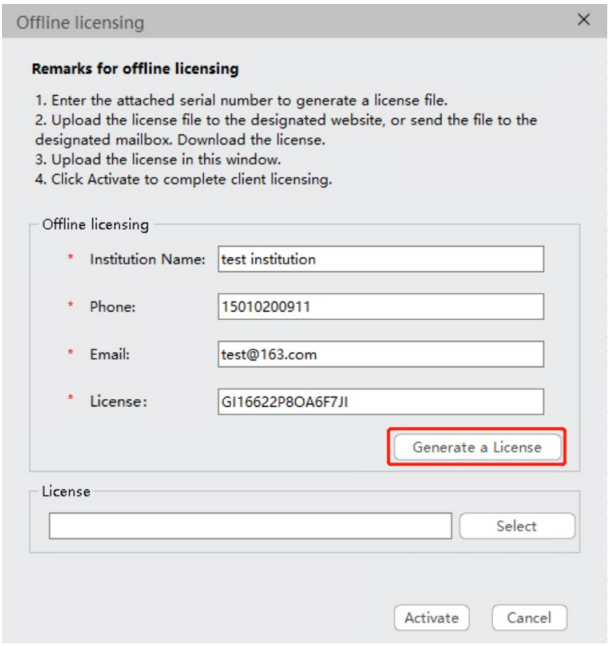
1. Double-click the shortcut icon 

on the computer desktop to open the client, you can see “Client not licensed”. Click [Click to obtain a license].

2. The licensing window displays. Select [Offline licensing].



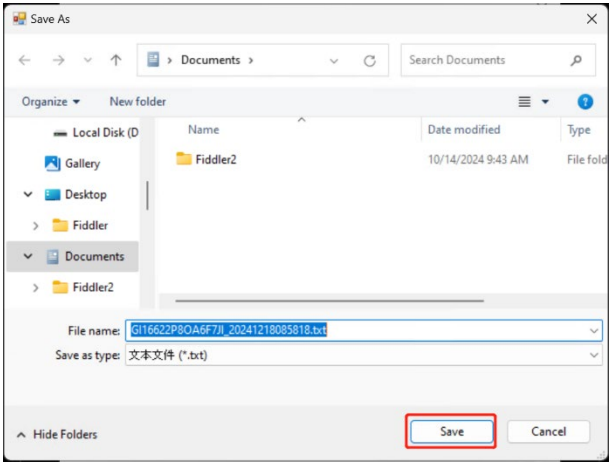
3. The offline licensing window displays. Enter the required information (Institution name, Phone No, Email, license code). Then select [Generate a License].



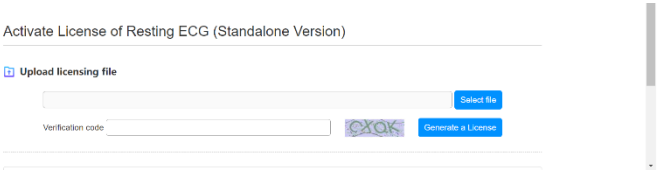
4. The licensing file saving screen pops up. Select [Save] to save the licensing file.

☞ Note

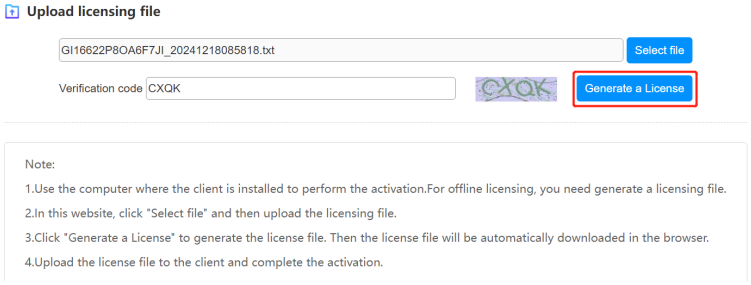
Please remember the location where the licensing file is saved. The licensing file will be used later.



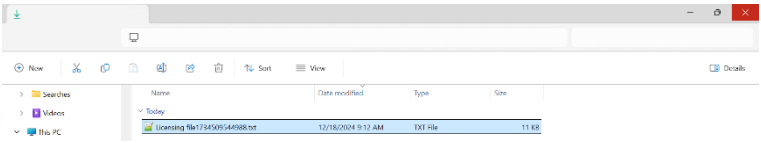
5. Open the browser, and enter the license website (https://ecardiot.lepucloud.com/register/en/).



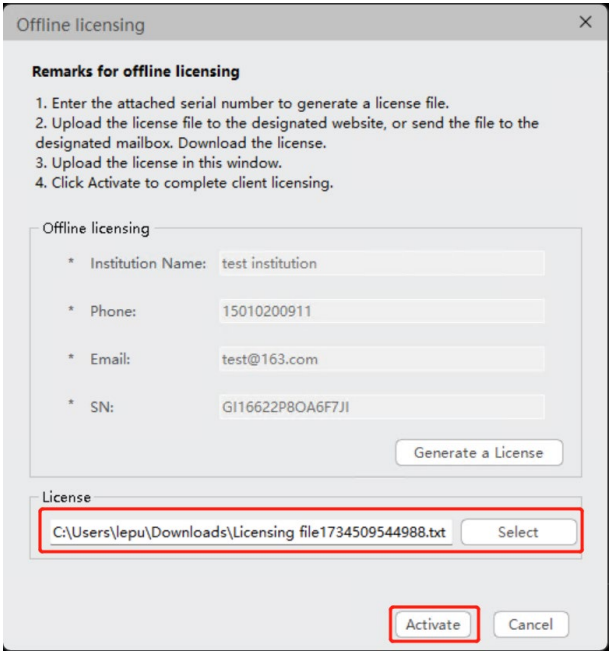
6. Select [Select file] > Select the licensing file saved in step 4 > Enter the verification code > Select [Generate a License]. A license is generated and saved in your computer.



The license is saved in the path of “Download” folder by default.



7. Go to the offline licensing screen, and import the license generated in the website, and then select [Activate].



8. The activation starts and the activation progress displays. After successful activation, the login screen no longer displays "Client not licensed". At this time, you can enter your password to log in.

3.4 Login

After successful installation of the software, the default account is admin, with administrator privileges, you can create up to 5 ordinary users. The signature of each user can only be

maintained when logging in by their respective account. To add users, please refer to *11.1 Modifying or Adding Account*.

To log in to the software, follow the steps below:

1. Double-click the shortcut icon 

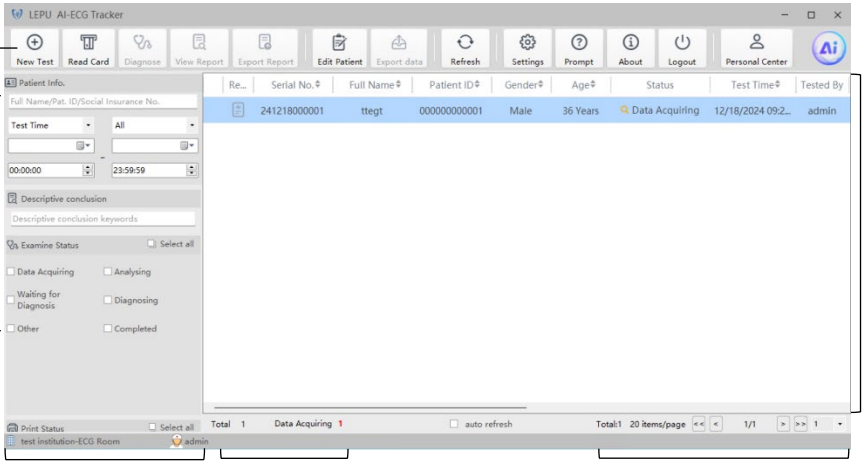
of the software on the desktop, the login screen pops up.

2. Select the appropriate account.
3. Click [Login] to enter the main screen for the selected account.

Chapter 4 Screen Introduction

4.1 Main Screen

After logging in to the software, the following main screen is displayed. The main screen contains the following areas:



Menu Bar

Item	Function Description
New Test	Create a new test information
Read Card	Upload the acquired data from the device or import the acquired data from the memory card
Diagnose	Give a diagnosis for this test
View Report	View and download diagnostic reports for completed tests
Export Report	Export diagnostic reports for completed tests
Edit Patient	Edit the created patient information

Item	Function Description
Export Data	Export ECG data and test information of the selected case
Refresh	Refresh the test list
Settings	Perform settings for basic patient information, data list, file output, and institution. See *Chapter 10 System Setup* for details.
Prompt	View tips on using the software: 1. Language setup: follows the operating system language option by default. You do not need to configure it manually or use the language option of your choice if you change it on the login page. 2. Date format: follows the date format of the operating system. 3. Time format: follows the 24-hour format. 4. Screen resolution: to get the best display effect, it is recommended to set the screen resolution to 1920*1080. 5. Text scaling: to get the best display effect, 100% scaling is recommended, text may not be displayed in full in a mode other than 100%. For a better use experience, please disable screen scaling. **Caution** **If you have changed your computer's time zone, please restart your computer and use the software again to avoid any inconsistencies in the date format.**

Item	Function Description
About	Check the software version number and check for updates. Click the [Check for Updates] button in the About screen to manually check if there is an updateable version, if there is an updateable version, you can see the latest version information, if you need to download the updated version, you can click [Download Now], after the download is complete, click Install to complete the check for updates operation, if the current version is already the latest version, there is no need to download and install again.
Logout	Log out of the current user account.
Personal Center	View login information, modify or add accounts, view favorites and log records. See *Chapter 11 Personal Center* for details.

Query Area

Search test records based on criteria such as patient info, test status, and print status. The result of the query is displayed in the list on the right.

Test List

This area displays a list of all test information and can also display related cases that have been queried.

Login Info

This area displays the name of the current account, the hospital it belongs to, and the department name.

Message Reminder

Audible alerts and message alerts when there are new tasks.

Page Info

This area displays the test list in pages.

4.2 Basic Operations

Edit patient information

When the test is not in the “Completed” status, select the test record, and click the [Edit Patient] button in the menu bar in the upper left corner of the main screen, then you can modify the registered patient information in the opened screen.

You can also edit patient information during diagnosis. Click the icon  in the upper left corner of the diagnosis screen and modify the patient information in the opened screen.

Copy patient information

The system supports one-click copying of patient information.

After selecting a test record, click the right mouse button and select [Copy user to clipboard] to copy the patient’s name, gender and age information.

Lock/Unlock

The system supports locking the test record to be diagnosed by the current user, or unlocking it without restricting the diagnostician.

After selecting a test record, click the right mouse button and select [Lock] or [Unlock] to lock or unlock the diagnosis.

Re-diagnose

When the test is in the “Completed” status, select the test record, click the right mouse button and select [Rediagnose], after confirming that the diagnosis result needs to be modified, the test status will change to "Diagnosing" and the diagnosis can be made again.

View operation log

After selecting a test record, click the right mouse button and select [Operation Log] to view the operation records of this test.

Refresh

Click the [Refresh] button in the menu bar of the main screen to update the test list.

Set header

You can set the items that you want to display in the test list. In the title bar of the list, click the right mouse button and select the [Set Header] button, you can select the fields to be displayed in the test list from the pop-up window.

All list items are displayed by default.

Select page

- Select << or >> icons to go directly to the first or last page.
- Select < or > icons to turn one page forward or one page backward.
- Click on the page number drop-down list and select the corresponding page number to jump directly to the page you want.

Adjust the order of list items

You can drag and drop any item in the list title bar to reorder the list items.

List content sorting

The ⇕ symbol in some list headers (e.g., 

) indicates that the list will be displayed in forward or reverse order according to the title. Click the title to change the status of the list:

- ⇕: Indicates that the list returns to its default state.
- ⇓: Indicates that the list is displayed in reverse order according to the title.
- ⇑: Indicates that the list is displayed in forward order according to the title.

Query

Set the query criteria by checking the check box, and then select “Search” to make queries. The search results will be displayed in the test list.

If you need to clear the current query criteria, select the [Reset] button.

Delete

When you click the [Delete] button, a confirmation dialog box will pop up and the selected check record will be deleted after you confirm the deletion.

Chapter 5 Acquiring ECG Data

Acquire the patient's ECG data using the ambulatory ECG acquisition device. Please refer to the Operator's Manual of the device for details on how to use it.

Chapter 6 Registering Patient Information

Click the [New Test] button in the main menu area in the upper left corner of the main screen and register patient information in the pop-up window in the following way.

1. Enter the patient's basic information. Patient name, gender, age and age unit are required by default.
2. Check the order information. The default ordering department is the department to which the currently logged-in user belongs; the default order placer is the currently logged-in user.
3. Select the recording device.
4. Click the [OK] button.

Chapter 7 Importing ECG Data

There are two ways to import data into the analysis software.

- Connect the device and import the acquired data from the device

Operation procedures:

1. Connect the device to the computer via a USB adapter.
2. Select a test record in “Data acquiring” status.
3. Click the [Read Card] button in main menu area in the upper left corner of the main screen, a Read Card window pops up.
4. In the pop-up window of selecting the corresponding device model file, click the [OK] button.
5. In the Read Card window, select [OK].

- Import the stored acquired data

Operation procedures:

1. Select a test record in “Data acquiring” status.
2. Click the [Read Card] button in main menu area in the upper left corner of the main screen, a Read Card window pops up.
3. Click the folder icon to the right of the [Designated File] box.
4. In the opened window, select the data file to be imported from the local saved or memory card.
5. Click [Open], and return to the Read Card window.
6. In the Read Card window, click [OK].
7. When prompted that the operation is successful, click [OK].

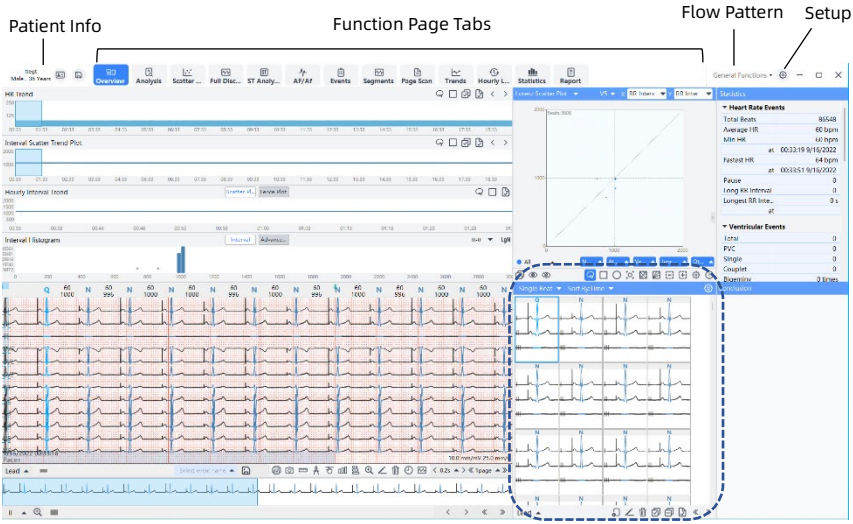
☞ **Note**

The system will automatically find the memory card connected to the computer and check the file data format to get the corresponding data format file according to the type of the selected monitoring device when creating the test.

Chapter 8 Analysis and Diagnosis

After importing data, the system will automatically start data analysis, and after successful analysis, the data status will automatically change to "Waiting for diagnosis", and you can double-click the test record or click the [Diagnose] button to enter the diagnosis screen. This screen provides a multi-angle analysis of the acquired ECG signals, and then generates a diagnostic report.

8.1 Diagnostic Screen Layout



Patient Info

The patient information area displays the patient's name, gender and age.

Function Page Tabs

Depending on the selected function, the set function page tabs are displayed. The page tags included differ between functions. For function options, see the following introduction.

Flow Pattern

The software contains 4 pre-defined flow patterns, including: [General Functions], [Advanced Analysis], [Pacing Analysis], and [All Functions]. The default configuration of the function options in each flow pattern is shown in the table below.

Function Options	Flow Pattern		
	General Functions	Pacing Analysis	All Functions
Overview	√		√
Full Disclosure	√		√
Analysis	√		√
ST Analysis	√		√
AF/Af	√		√
Events	√		√
Segments	√		√
Page Scan	√		√
Trends	√		√
Hourly List	√		√
Heart Rate Turbulence		√	√
Pacing Histogram		√	√
Pacing Trends		√	√

Function Options	Flow Pattern		
	General Functions	Pacing Analysis	All Functions
Pacing Events		√	√
Pacing List		√	√
Template			√
Scatter Plot	√		√
Superimposition Plot			√
Histogram			√
Fence Plot			√
Scatter Superimpose			√
Statistics	√		√
Report	√	√	√

To change the flow pattern, select the black drop-down button General Functions▼ and then select an appropriate pattern in the pop-up list.

Areas and Buttons

Each functional page is composed of multiple areas. Each area has its specific control icons. For detailed information of main areas, see *8.2 Main Areas*.

Setup

Select the icon ⚙, the parameter setup window pops up. You can set the beat color, event threshold, general operations, etc. For more information, see *8.4 Parameter Setup*.

8.2 Main Areas

Generally each functional page is composed of multiple areas that are selectively placed under different function pages to facilitate physicians to conveniently and quickly diagnose with information from several aspects. However, the areas displayed under different pages have the same function. It mainly introduces the following areas:

- Trends
- Scatter trends
- Fence plot
- Histogram
- Beats
- Waveform and compressed waveform
- Scatter plot
- Superimposition plot

8.2.1 Trends

Trends Type

Minute Trends

The trends are formed by average heart rate per minute or RR interval per minute. You can quickly edit heart beat types on the trends.

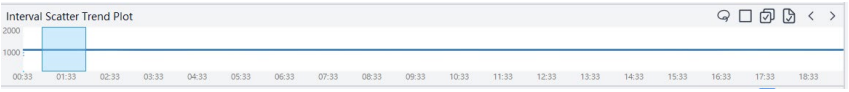
The icons on the right side of the trends are introduced below:

Icon/Text	Functions	Details
	Lasso selection	In the trend graph, move the mouse to draw a closed curve for selection.

Icon/Text	Functions	Details
	Rectangular selection	In the trend graph, drag the mouse to draw a rectangular or square for selection.
	Previous page	Turn one page backward.
	Next page	Turn one page forward.
	Select by page	Select the content on the current page.
	Select all	Select all contents.

Scatter Trends

The scatter trends displays the heart rate or RR interval scatter trends. You can edit the heart beat type on the scatter trends.

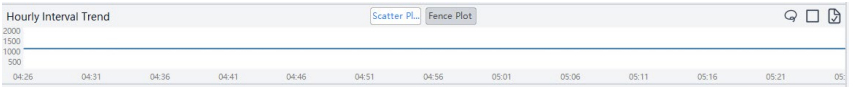


The icons on the right side of the scatter trends are introduced below:

Icon/Text	Functions	Details
	Previous page	Turn one page backward.
	Next page	Turn one page forward.
	Lasso selection	In the trend graph, move the mouse to draw a closed curve for selection.
	Rectangular selection	In the trend graph, drag the mouse to draw a rectangular or square for selection.
	Select by page	Select the content on the current page.
	Select all	Select all contents.

Hourly Trends

The trends are formed by the average heart rate per hour or RR interval per hour. You can quickly edit heart beat types on the trends.



The icons on the right side of the trends are introduced below:

Icon/Text	Functions	Details
	Lasso selection	In the trend graph, move the mouse to draw a closed curve for selection.
	Rectangular selection	In the trend graph, drag the mouse to draw a rectangular or square for selection.
	Select by page	Select the content on the current page.

Toggle Display

On the trends, you can switch between heart rate trend and RR interval trend.

Place the cursor on the trends, and then right click the mouse to pop up a menu. You can select options in the menu:

Options	Functions
HR Trend	Display the trend of heart rate.
RR Interval Trend	Display the trend of RR interval.

Select an Area

You can select the desired area by dragging the mouse or using the icon on the right side.

Edit Beat Type

You can edit beat type on the trends. Place the cursor on the trends, and then right click the mouse to pop up a menu.

You can select options in the menu:

Options	Functions
Modify beat type in selected area	Select an appropriate area on the trends, and then select this option. Then the heart beat type window will pop up. You can select the desired type from the window for the selected area.
Delete beats in selected area	Select an appropriate area on the fence plot, and then select this option, a window pops up prompting you to confirm the deletion. After confirming the deletion, the heart rate and RR interval values of the currently selected area will be deleted.
Set to atrial fibrillation (Af) in selected area	Select an appropriate area on the trends, and then select this option. Then the heart beat type (except ventricular heart beat and artifact) in the selected area will be changed to atrial fibrillation.
Set to non-atrial fibrillation (Af) in selected area	Select an appropriate area on the trends, and then select this option. Then the heart beat type labelled as atrial fibrillation in the selected area will be changed to sinus beat.
Set atrial fibrillation (Af) (full range)	Set the heart beat type (except ventricular types and artifact) to atrial fibrillation in the full range of trends.
Set to non-atrial fibrillation (Af) (full range)	Set the heart beat type labelled as atrial fibrillation to sinus beat in the full range of trends.

8.2.2 Fence Plot

The fence plot and the hourly trend are displayed in the same window, you can switch the display by clicking the Fence Plot button. There displays the fence plot of HR or RR interval. The beat type can be edited on the plot.

The icons on the right side of the fence plot are introduced below:

Icon/Text	Functions	Details
<	Previous page	Turn one page backward.
>	Next page	Turn one page forward.
	Lasso selection	In the trend graph, move the mouse to draw a closed curve for selection.
	Rectangular selection	In the trend graph, drag the mouse to draw a rectangular or square for selection.
	Select by page	Select the content on the current page.

Toggle Display

On the fence plot, you can switch between heart rate trend and RR interval trend.

Select the fence plot, and then right click the mouse to pop up a menu and select the following options on the menu:

Options	Functions
HR Trend	Display the trend of heart rate.
RR Interval Trend	Display the trend of RR interval.

Select an Area

You can select the desired area by dragging the mouse or using the icon on the right side.

Edit Beat Type

You can edit beat type on the fence plot.

Select the fence plot, and then right click the mouse to pop up a menu and select the following options on the menu:

Options	Functions
Modify beat type in selected area	Select an appropriate area on the fence plot, and then select this option. Then the heart beat type window will pop up. You can select the desired type from the window for the selected area.
Delete beats in selected area	Select an appropriate area on the fence plot, and then select this option. After confirming the deletion, the heart rate and RR interval values of the currently selected area will be deleted.
Set to atrial fibrillation (Af) in selected area	Select an appropriate area on the fence plot, and then select this option. Then the heart beat type (except ventricular heart beat and artifact) in the selected area will be changed to atrial fibrillation.
Set to non-atrial fibrillation (Af) in selected area	Select an appropriate area on the fence plot, and then select this option. Then the heart beat type labelled as atrial fibrillation in the selected area will be changed to sinus beat.

8.2.3 Histogram

The system can provide multiple types of histograms.

The icons on the right side of the histogram are introduced below:

Icon/Text	Functions	Details
Interval	Interval histogram	Display interval histogram.
Advanced amount	Advanced amount histogram	Display histogram composed of the percentage of advance amount.
R-R	Set to display histograms of different heart beat types.	You can select the histogram of desired beat type pattern. The available beat type includes R-R, N, N-N.
lgN	Histogram of logarithmic mode	Display a histogram of logarithmic mode

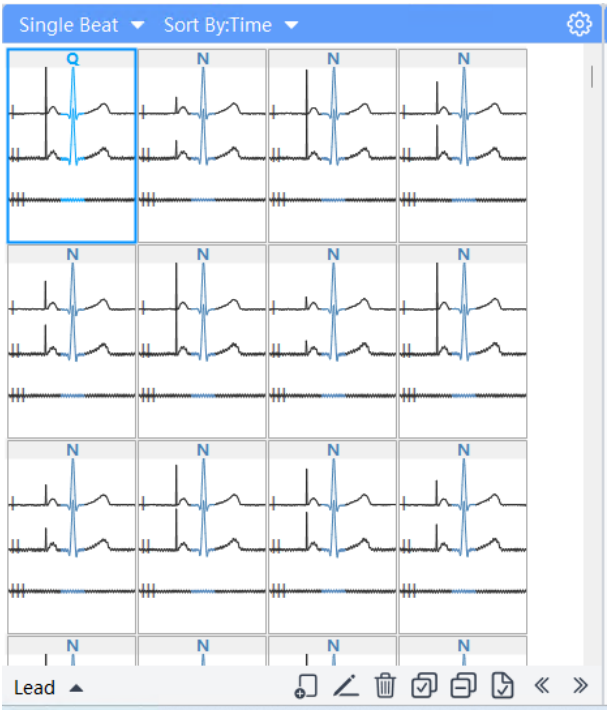
Toggle Display

Place the cursor on the histogram, and then right click the mouse to pop up a menu and select the following options:

Options	Functions
HR	Display a histogram of heart rate.
RR interval	Display a histogram of RR interval.
Hide or show type toolbar	Display or hide the beat type/pattern window used for histogram. The function is same as the button R-R on the right side of Histogram.

8.2.4 Beats

Each beat is displayed separately. Each beat panel can show 3-lead ECG waveforms. You can edit or delete the heart beat type.



Icons and text on the bottom of the beat area are introduced below:

Icon/Text	Functions	Details
[Lead]	Set which lead to be displayed	Select [Lead] to pop up a window and select the desired lead to be displayed in beats.
[Single Beat] / [Multi-Beat]	Used to switch the number of beats contained in	Select [Single Beat] to display one beat in each beat panel. The default setting is [Single Beat].

Icon/Text	Functions	Details
	the waveform of the beat panel.	Select [Multi-Beat] to display 3 or more beats in each beat panel.
Sort By:Time	Select the fields you want to sort by	You can select to sort by time, RR interval, advance amount, compensatory pause, R height, QRS width, QRS area and beat type.
	Setup	Select this button to set the beat display type, time length of multi-beat, and display area ratio in the pop-up window.
	Place all the beats in the list in separate beat templates	Click this button to confirm and place all the beats in the list into separate beat templates.
	Edit beat type	Select one or more beat panels, and then select this icon to pop up a window of beat types. Then you can select a desired beat type for change.
	Delete	Select one or more beat panels, then select this icon to delete beats.
	Select all	Select all contents.
	Select inversely	Unselect the currently selected item and select the currently unselected item.
	Select by page	Select the content on the current page.

Icon/Text	Functions	Details
«	Previous page	Turn pages backward to view the beats.
»	Next page	Turn pages forward to view the beats.

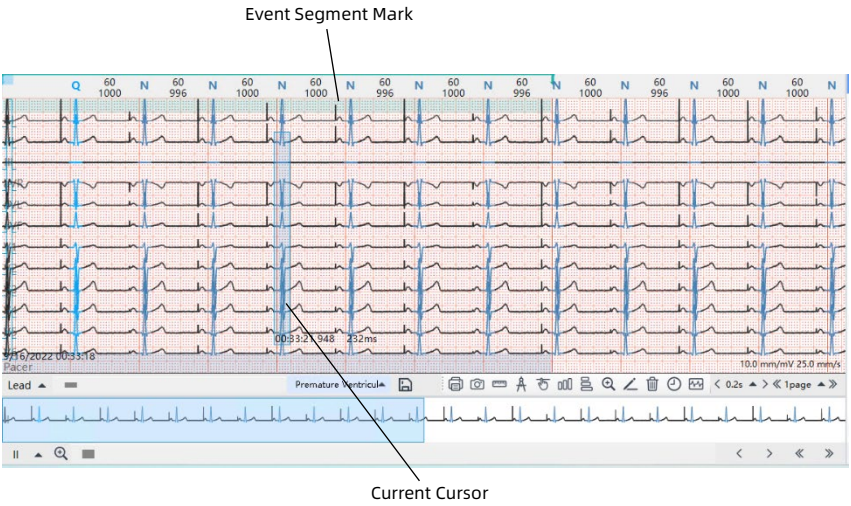
Quick Operations

- Select one beat panel: Right click the mouse.
- Select more beat panels: Hold [Ctrl] key on the keyboard + select multiple panels by right clicking the mouse.
- Delete the beat panels: Select the panel, and then press [Delete] key on the keyboard.
- Edit: Select one or more beat panels, and then enter the shortcut key on the keyboard, then you can change the beat type accordingly. For shortcut keys for each beat, see *8.4 Parameter Setup --> Beat Shortcut Key*.

8.2.5 Waveform and Compressed Waveform

In the waveform area, you can select all or the target lead waveform. In the compressed waveform area, only one lead waveform can be selected for display.

The waveform area displays detailed waveforms, beat types, heart rates, RR intervals, and corresponding template numbers. You can edit the beat type and mark the event segment on the waveform area.



Above the waveform area, the green horizontal line represents the event segment that has been added to the Segment page. In the waveform area, the blue vertical line indicates the position of the current cursor.

In the compressed waveform area, the blue background area indicates the position of the current waveform in the whole ECG data.

Icons and text on the bottom and right side of the waveform area are introduced below:

Icon/Text	Functions	Details
[Lead]	Set which lead to be displayed	Select [Lead] to pop up a window and select the desired lead to be displayed in the waveform area and compressed waveform area.
	Mark and add event segments	• Select an appropriate event from the events list to the left of this icon, then select this icon, the marked event

Icon/Text	Functions	Details
		segment will be added and displayed on the Segment page and the Report page. ● If the selected event is less than 8 seconds, the system intercepts the 8-second segment by default. If the selected event is longer than 8 seconds, intercept it according to the actual length.
<	Forward	Display the previous part of waveform at the set time interval.
>	Backward	Display the next part of waveform at the set time interval.
<<	Previous page	Display the previous page at the set time interval.
>>	Next page	Display the next page at the set time interval.
	Used for ECG segment print setup.	When this icon is selected, you can set the print content, segment name, etc. in the pop-up window.
	Mark and add event segments	● On the current waveform, select this icon, then select an appropriate event in the events list that pops up. The marked event segments are added and displayed on the Segment page and the Report page. ● If the selected event is less than 8 seconds, the system

Icon/Text	Functions	Details
		intercepts the 8-second segment by default. If the selected event is longer than 8 seconds, intercept it according to the actual length.
	Enable / Disable gauge.	When this icon is selected, you can measure the waveform with an electric gauge on the screen.
	Enable / Disable calipers.	When this icon is selected, you can use the continuous scales to measure the waveform.
	Used to move the waveform.	When this icon is selected, you can move the waveform vertically.
	Set the gain.	Used to set the waveform gain.
	Set the speed.	Used to set the waveform sweeping speed.
	Used to set the waveform display ratio.	After setting, the waveform can be displayed proportionally.
	Used to add/modify the beat type.	Select one segment of waveform, and then select this icon to pop up the heart beat type window, and select the appropriate heart beat type.
	Used to delete.	Select one segment of waveform, and then select this icon to delete the beat type and interval value on this waveform.

Icon/Text	Functions	Details
	Used for time positioning of the waveform.	When this icon is selected, you can select the date and time you need to be positioned in the pop-up window.
	Used to filter the interference (Available in the waveform area of Full Disclosure and Segment page)	Used to filter the EMG/low pass, and power frequency interference on the waveform.

Icons and text on the bottom of the compressed waveform area are introduced below:

Icon/Text	Functions	Details
I	Set which lead to be displayed.	Lead I is displayed by default. It can be set as I, II, III, aVR, aVL, aVF, V1 and V5.
	Used to set the display ratio of the waveforms displayed in compressed waveform	After setting, the waveform can be displayed proportionally.
<	Backward	Display the previous part of the compressed waveform
>	Forward	Display the next part of the compressed waveform
<<	Previous page	Turn one page backward.
>>	Next page	Turn one page forward.

Select Single Beat

Select the QRS complex of a beat, the system automatically selects current beat.

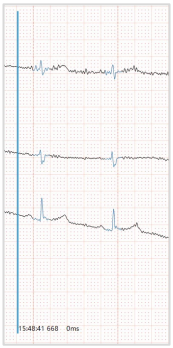
Select a Segment

In the waveform area, you can select one segment of waveform and edit the beat type there.

- Method of setting an area: If the desired waveform covers multiple pages or a longer period, you can use the method of setting the starting position to select the segment.
- Method of selecting an area: If the desired waveform displays on current screen, you can use the method of selecting the start position and dragging the mouse to select the segment.

To set an area, perform as follows:

1. Select a point (avoiding the QRS complex), and then left click the mouse. A blue marker line appears.



2. Right click the mouse to pop up a menu, and select [Set as start point].
3. Move the mouse to the appropriate position and right click the mouse to pop up a menu. Select a desired operation in the menu.

To select an area, perform as follows:

On the waveform, left click the mouse and drag it to the appropriate location, and then release the mouse. A blue rectangular appears for the selected area.

Edit Beat Type

You can edit beat type on the waveforms.

Select an area, and then right click the mouse to make the corresponding selection in the pop-up menu.

Options	Functions
Modify beats in set area	When you set an area, you can select this option to edit the heart beat type in the pop-up menu.
Delete beats in set area	When you set an area, you can select this option to delete the beats in the set area.
Delete beats in set area and insert in batch	When you set an area, after selecting this option, the original beat type, heart rate and R-R interval value are deleted, and sinus beats are inserted according to the average heart rate.
Delete beats in set area and set insertion	When you set an area, after selecting this option, the original beat type, heart rate and R-R interval value are deleted, and user-defined R-R interval, heart rate and sinus beats are inserted to all beats in the set area.

Options	Functions
Modify beats in selected area	When you select an area, you can select this option to pop up a beat type window. You can select a desired beat type for change.
Delete beats in selected area	When you select an area, you can select this option to delete the beats in the selected area.
Delete beats in selected area and insert in batch	When you select an area, after selecting this option, the original heart beat type, heart rate and R-R interval value are deleted, and sinus beats are inserted according to the average heart rate.
Delete beats in selected area and set insertion	When you select an area, after selecting this option, the original heart beat type, heart rate and R-R interval value are deleted, and user-defined R-R interval, heart rate and sinus beat are added to all heart beats in the selected area.
Insert in batch at current cursor position	When this option is selected, the beat without annotation will be marked as sinus beat from the current cursor position on.
Set insertion at the current cursor position	When this option is selected, the beat without annotation will be marked as user-defined beat type from the current cursor position on.

Quick Operations

- Delete beat singly: Select the QRS complex of one beat, and then press [Delete] key on the keyboard.
- Delete beats in batch: After selecting an area, and then press [Delete] key on the keyboard.
- Edit: After selecting an area, you can enter the shortcut key of beat types, and the beat types will change accordingly on the screen.

- Add a beat: In the non-QRS complex area, when the cursor is displayed as a blue vertical bar, you can enter the shortcut key of the beat type to add a beat at the current cursor position.
- Add ECG segment: Select the icon below the waveform area to add the currently selected waveform directly to the Segment page and Report page.

Time Positioning

A specific time can be located in the waveform.

In the waveform, right click the mouse and select [Time Positioning] in the pop-up menu to set the date and time to be positioned.

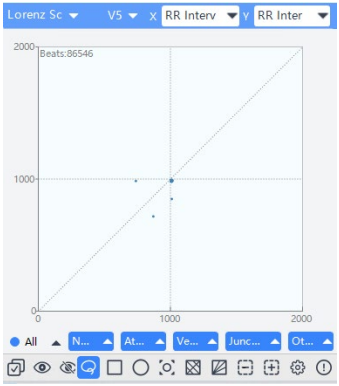
Delete ECG Segment

For marked event, you can remove the marking of the segment.

In the waveform, right click the mouse and select [Delete ECG Segment] in the pop-up menu to cancel the annotation.

8.2.6 Scatter Plot

In the scatter coordinate plot, you can switch the display of interval or difference scatter plot through icon function, display/hide scatter points, and select scatter points.



Icons and text on the bottom of scatter plot are introduced below:

Icon/Text	Functions	Details
Lorenz Sc	Set the type of scatter plot.	Three types of scatter plots can be selected: Lorenz Scatter Plot, RR Difference Plot and R Height Scatter Plot.
X RR Interv / Y R Height	Set the displaying items in X-axis and Y-axis of the scatter plot	You can set parameters for X-axis (X) and Y-axis (Y). X-axis and Y-axis can be defined as RR interval, RR interval (4s), advance amount, compensatory pause, R height, QRS width and QRS area respectively.
	Hide scatter points	After selecting some scatter points, select this icon to hide these scatter points in the scatter plot.
	Display scatter points	After selecting this icon, the hidden scatter points are displayed in the scatter plot.
	Select all	Select all contents.
[All]	Set the displayed beat type in scatter plot	The default option is [All]. Select [All] to pop up a window, you can set the beat type according to your needs.
	Lasso selection	In the scatter plot, move the mouse to draw a closed curve for selection.
	Rectangular selection	In the scatter plot, drag the mouse to draw a rectangular or square for selection.

Icon/Text	Functions	Details
	Circle selection.	In the scatter plot, drag the mouse to draw a circle for selection.
	Display variance line	After selecting this icon, the variance line is displayed in the coordinate chart.
	Display equal HR line	After selecting this icon, the equal HR line is displayed in the coordinate chart.
	Zoom in / Zoom out	Select  to enlarge the scatter plot. Select  to return to the regular display screen.
	Scatter plot setup	Set the background color, auxiliary line color, coordinate line color, and coordinate scale of the scatter plot.
	Prompts	List the beat types corresponding to different colors.

Toggle Display

On the scatter plot, you can switch between the interval scatter plot, interval scatter plot (4 sec), difference scatter plot and difference scatter plot (4 sec).

Select the scatter plot, and then right click the mouse to pop up a menu and select the following options:

Options	Functions
Interval scatter plot	Display interval scatter plot.
Difference scatter plot	Display a difference scatter plot.

Options	Functions
Interval scatter plot (4 sec)	Display a 4-second interval scatter plot.
Difference scatter plot (4 sec)	Display a 4-second difference scatter plot.

Scatter Plot Display Settings

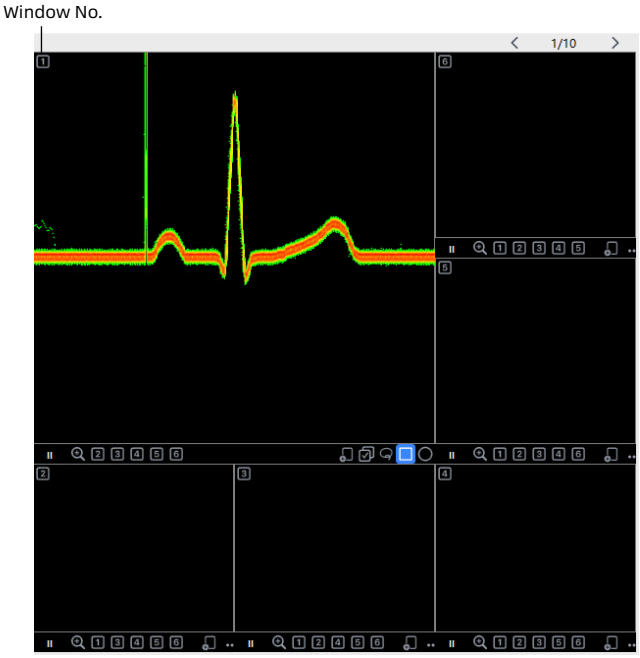
Select the scatter plot, and then right click the mouse to pop up a menu and select the following options:

Options	Functions
Coordinate auxiliary line	When selected, the coordinate auxiliary line is displayed. When deselected, the coordinate auxiliary line is hidden.
Equal HR line	When selected, the equal HR line is displayed. When deselected, the equal HR line is hidden.
Variance line	When selected, the variance line is displayed. When deselected, the variance line is hidden. The variance line and the equal HR line are mutually exclusive.
Scatter plot setup	Set the scatter plot background color, auxiliary line color, coordinate line color and coordinate scale.
Enlarge scatter plot	Select this option to enlarge the scatter plot. Select the [Scatter Plot] tab at the top of the screen to return to the regular display screen.

8.2.7 Superimposition Plot

Superimposition plot displays the image of the superimposed waveform. The superimposition area contains a main window

and 5 auxiliary windows. The superimposition plot in each window can be split to other windows.



Icons and text on the bottom of the superimposition plot are introduced below:

Icon/Text	Functions	Details
I	Set which lead to be displayed.	Lead I is displayed as a superimposed lead by default. It can be set as I, II, III, aVR, aVL, aVF, V1, V2, V3, V4, V5, V6 and Pacer.
	Used to adjust the display ratio.	Used to display the waveform according to enlargement ratio.

Icon/Text	Functions	Details
	Used to select a window for the selected waveform	The superimposed waveforms in the current window can be moved to other windows in whole or in part. The specific operations as follows: 1. Select the desired waveforms through lasso, rectangular or circle selection tools. 2. In the current window, select the target window number, or click the numeric key corresponding to the window number on the keyboard, and then the selected waveforms will be displayed in the corresponding window.
	Lasso selection.	In the superimposition plot, move the mouse cursor to draw a closed curve for selection.
	Rectangular selection.	In the superimposition plot, drag the mouse cursor to draw a rectangular or square for selection.
	Circle selection.	In the superimposition plot, drag the mouse cursor to draw a circle for selection.
	Used to expand	Click on this icon in windows numbered 2-6 to display hidden icons.

Icon/Text	Functions	Details
	hidden icons.	

Toggle Display

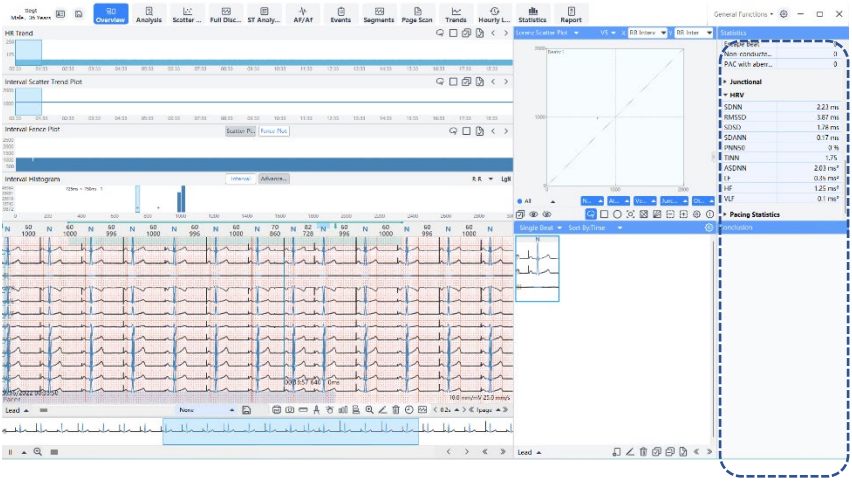
In the superimposed waveforms, right click the mouse to pop up a menu and switch between heart beats and P-wave superimposition plot.

8.3 Main Functional Pages

8.3.1 Overview Page

The Overview page displays patient ECG data from multiple perspectives, including trend, scatter trend plot, hourly graphic trend, fence plot, histogram, scatter coordinate plot, waveforms and beat templates for heart rate/interval.

Select the expansion button « on the right side of the screen, the hidden statistics lists and conclusion area can be displayed, as shown in the following figure.



When an area is selected in the trend, the areas of histogram, fence plot, waveforms, scatter plot, and beats display it correspondingly.

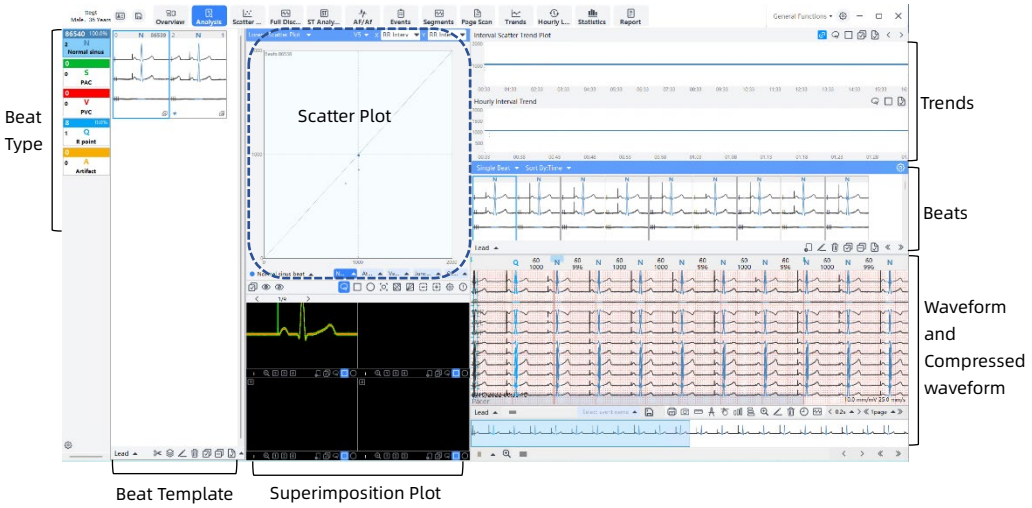
Other Areas

For specific operations of each area, see *8.2 Main Areas*.

8.3.2 Analysis Page

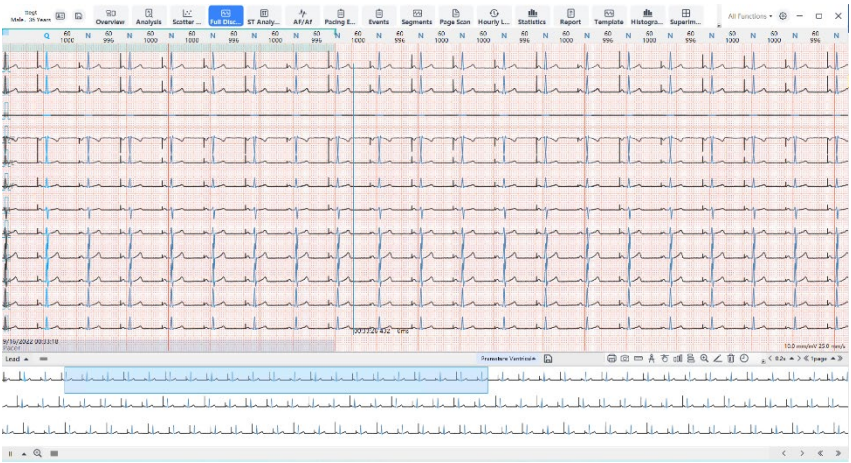
The Analysis page displays the heart beat types and their templates contained in ECG data, also the trend, scatter plot and superimposition plot can be viewed at the same time.

For the specific operations of each area, see *8.2 Main Areas*.



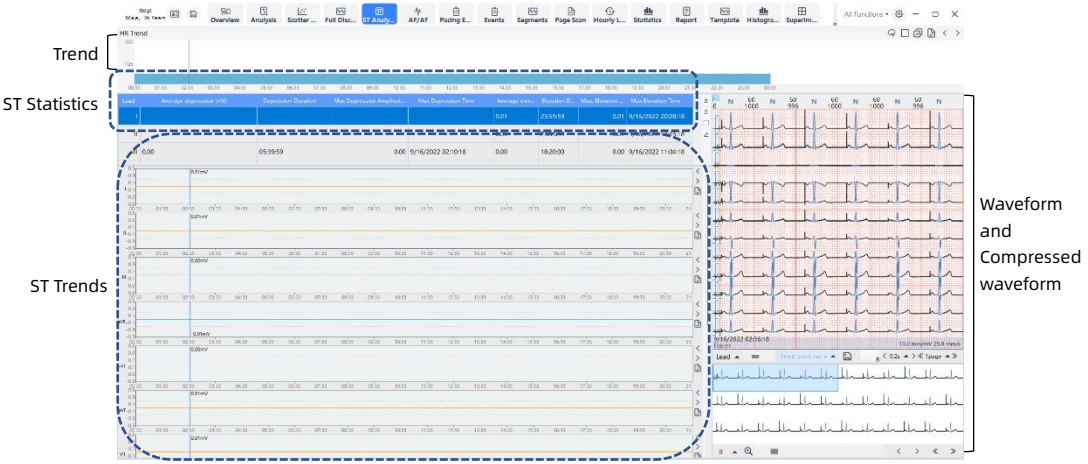
8.3.3 Full Disclosure Page

On the Full Disclosure page, you can view the detailed ECG waveform, mark the ECG segments and modify the beat types. For specific operations, see *8.2 Main Areas*.



8.3.4 ST Analysis Page

The ST Analysis page displays ST statistics, ST trends, and related waveforms. ST value can be modified and re-analyzed.



ST statistical list shows the average ST value in each lead, the duration of depression and elevation, the amplitude of maximum depression and elevation, and the occurrence time of maximum depression and elevation.

ST trend shows a graph plotted by average ST values, where yellow represents ST elevation and blue for ST depression.

Icons and text in ST statistics and trend are introduced below:

Icon/Text	Functions	Details
↓	Locate the position of maximum ST depression of the selected lead in the waveform and ST trends.	When this icon is selected, the blue cursor will locate the lowest ST value in the trend. At the same time, the waveforms show the ECG context.
↑	Locate the position of maximum ST elevation of	When this icon is selected, the blue cursor will locate the highest ST value in the trend. At the same time,

Icon/Text	Functions	Details
	the selected lead in the waveform and ST trends.	the waveforms show the ECG context.
	Lock ST statistics.	Lock the current ST statistics. After locking, the icon  is displayed. Select this icon to unlock after confirmation, and the ST statistics will be updated simultaneously according to the relevant operation.
	Modify the ST segment statistics of the selected lead.	After selecting this icon, you can modify the average ST amplitude, the duration of depression and elevation, the amplitude of maximum depression and elevation, and the occurrence time of maximum depression and elevation in the pop-up window.
	Previous page	Turn one page backward.
	Next page	Turn one page forward.
	Lasso selection	In the trend graph, move the mouse to draw a closed curve for selection.
	Rectangular selection	In the trend graph, drag the mouse to draw a rectangular or square for selection.
	Select by page	Select the content on the current page.
	Select all	Select all contents.

Icon/Text	Functions	Details
	Zoom in ST trends	Select this icon to zoom in the ST trends vertically.
	Zoom out ST trends	Select this icon to zoom out the ST trends vertically.

Edit ST Statistics

You can use the icon  on the right side of the ST statistics table to pop up a window, and edit the statistics in the window. See the sections for icon introduction for details.

Edit ST Trends

On the ST trends, you can edit the ST elevation or depression value. Click on the ST trends, and then right click the mouse to pop up a window. You can selection options in the menu:

Options	Functions
Modify the value of ST segment in selected area	On the ST trends, select an appropriate area, and then select this item to modify the ST elevation or depression value in the selected area.
Delete ST segment in selected area	On the ST trends, select an appropriate area, and then select this item to delete the ST value in the selected area.

Re-analyse ST Segment

On the ST trends, perform overall or partial re-analysis of the selected lead.

Click on the ST trends, and then right click the mouse to pop up a window. You can selection options in the menu:

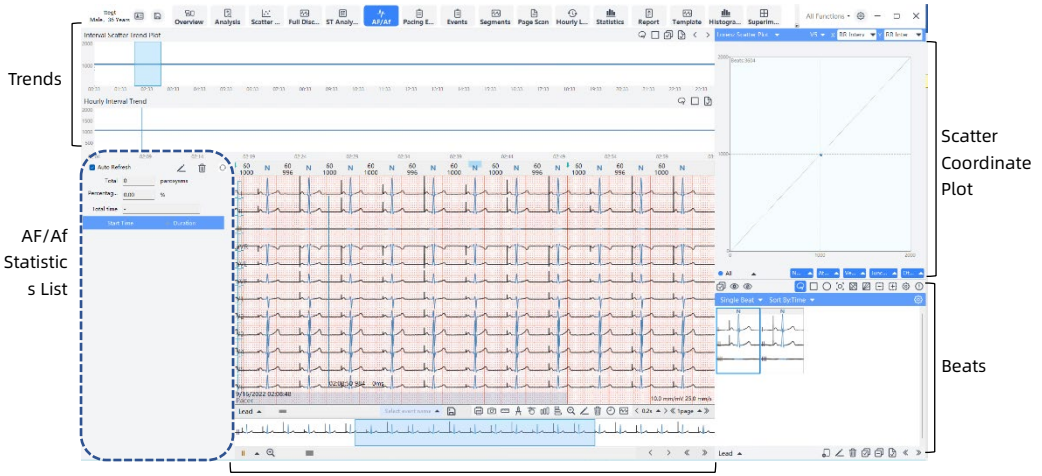
Options	Functions
Re-analyse ST segment	All leads are selected by default, and all ECG data are re-analysed.
Re-analyse ST segment in selected area	Select the waveform on ST trend, and then select this item to make re-analysis for the selected area and lead.

Other Areas

For the specific operations of other area, see *8.2 Main Areas*.

8.3.5 AF/Af Page

The AF/Af page count the events of atrial flutter and atrial fibrillation, and the corresponding waveforms and scatter plot of each event can be displayed.



AF/Af Statistics List

In the statistical list of atrial flutter and atrial fibrillation, the start time and duration of each atrial flutter or atrial fibrillation

event are shown. Select one event and the corresponding waveforms are displayed.

Other Areas

For the specific operations of other area, see *8.2 Main Areas*.

8.3.6 Events Page

The Events page displays a list of arrhythmia events automatically identified by the analysis software and the 8 to 15 second waveforms associated with the events.

For the operations of waveform and compressed waveform, see *8.2 Main Areas*.

Event List

The event list lists all event types analyzed for ECG data. All events that occur under each event type are displayed in the event thumbnail area.

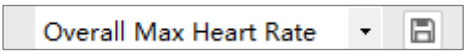
> **Note**
>
> **The type and number of events displayed in the event list are not updated in real time. After operating on the event list, you need to**

select the [Refresh] button under the event list to manually update the event list.

Event Thumbnails

Event thumbnails display a miniature image of all event waveforms for a certain event type. The display length of the event waveform can be set to 8s, 10s, or 15s. Event thumbnails can be added as segments to Segment page or Report.

Icons and text on the bottom of the event thumbnails are introduced below:

Icon/Text	Functions	Details
[Lead]	Set which lead to be displayed.	Select [Lead] to pop up a window and select the desired lead to be displayed in the event thumbnails.
	Set the duration of the event waveform.	Set the duration of the event waveform. It can be set to 8s, 10s, 15s.
	Add to ECG segment	Select the current event as a segment and add it to the Segment page and Report. You can set the appropriate name for the segment in the drop-down list on the left (shown below) before adding it. If not selected, the segment name will be empty. 
	Select all	Select all contents.
	Select inversely	Unselect the currently selected item and select the currently unselected item.

Icon/Text	Functions	Details
	Select by page	Select the content on the current page.
«	Previous page	Display the previous page of event thumbnails.
»	Next page	Display the next page of event thumbnails.
	Delete event	Select an event in the event thumbnail area, then select this icon to delete the event. You cannot delete events under [Overall Max Heart Rate], [Overall Min Heart Rate], [Sinus Max Heart Rate], [Sinus Min Heart Rate], [Tachycardia] and [Bradycardia] in the event list.

In the event thumbnails area, click the right mouse button to bring up a pop-up menu. There are similar functions to icon/text in the menu.

The software can automatically identify the following events:

PVC	Supraventricular premature contractions	Longest ventricular tachycardia
PVC couplet	PAC couplet	Longest supraventricular tachycardia
PVC bigeminy	PAC bigeminy	Fastest ventricular tachycardia
PVC trigeminy	PAC trigeminy	Fastest supraventricular tachycardia

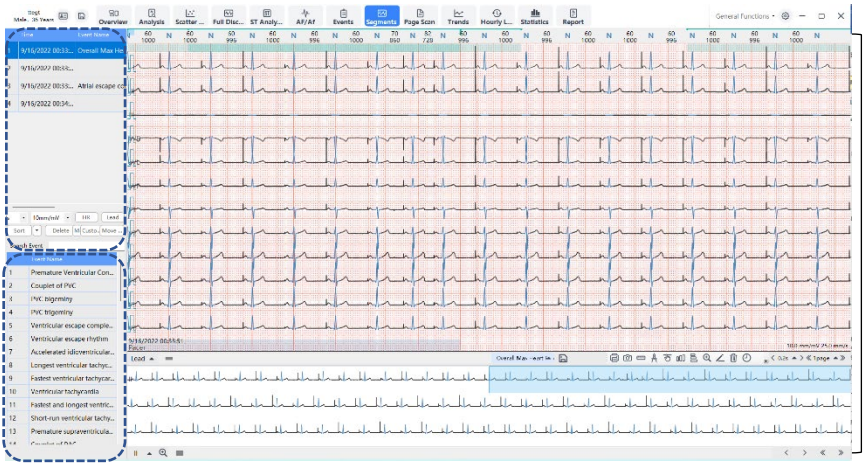
Vent Tachy	Supraventricular Tachycardia	Fastest and longest ventricular tachycardia
Short-run ventricular tachycardia	Short-run supraventricular tachycardia	Fastest and longest supraventricular tachycardia
Tachy	Bradycardia	Atrial fibrillation
Atrial escape rhythm	Pause	Ventricular escape rhythm
Junctional escape rhythm		

The software can also perform statistics on the following events:

Overall Max HR	Sinus Max Heart Rate	Long RR interval
Overall Min HR	Sinus Min Heart Rate	

8.3.7 Segment Page

The Segment page displays the events manually marked in the waveform area from all pages, and the event related waveform are correspondingly displayed. The intercepted waveform will be displayed in the report.



Edit Segment

Select the button under the segment list to do the following:

- Select [HR] to modify the heart rate in the segment.
- Select [Leads] to modify the lead information.
- Select [Up] or [Down] to move the selected segment up or down in the list.
- Select [Delete Segment] to delete the selected segment.

Event Type List

For the event type list, you can do the following:

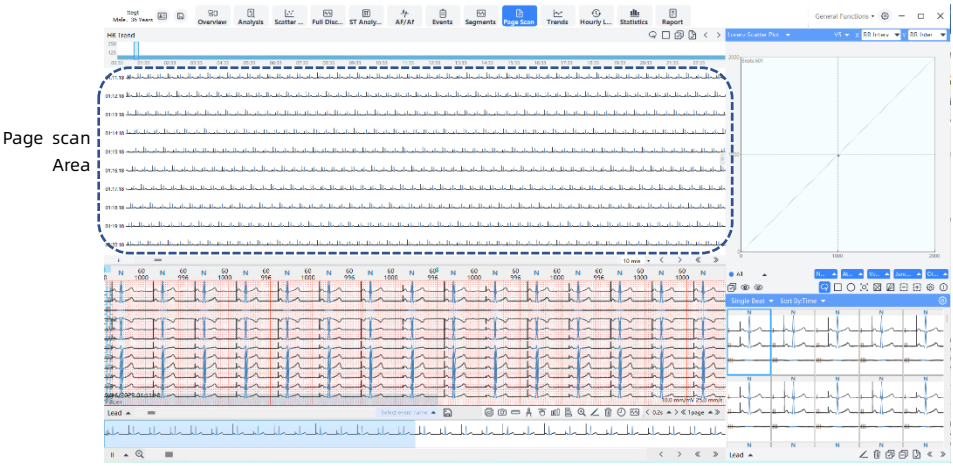
- In the search field, enter a keyword to find the event name containing the keyword.
- Double-click an event name to update the current segment with that event type.

Other Areas

For the specific operations of other area, see *8.2 Main Areas*.

8.3.8 Page Scan

The Page Scan page displays a scatter plot of the data on this page and the HR or interval graphic trend. You can set the length of each page to be displayed. For the operations of waveform and compressed waveform, see *8.2 Main Areas*.



The icons below the page scan area are introduced below:

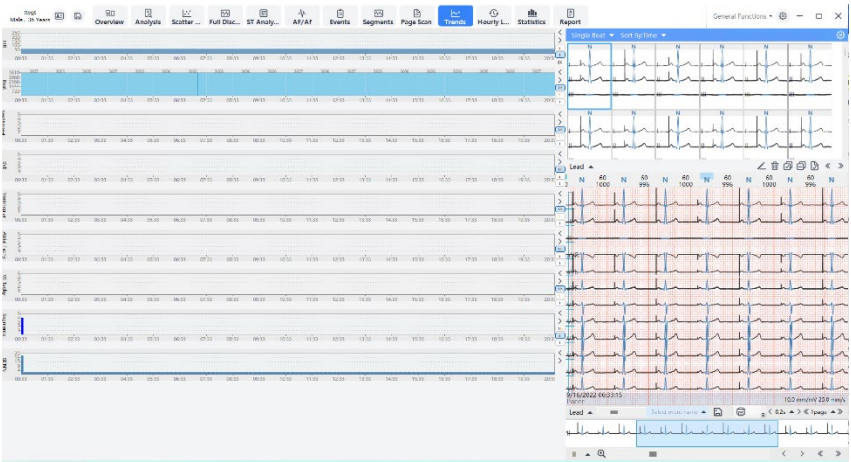
Icon/Text	Functions	Details
I	Set which lead to be displayed	After selecting this item, in the window that pops up, select the desired lead to be displayed in the page scan area. The default setting is lead I.
10 min	Set the duration of the page display	After selecting this item, in the drop-down list that pops up, select how many minutes of waveform to display per page. The default setting is 10min per page.
<	1 line forward	After selecting this icon, the selected waveform segment is moved forward by one line.

Icon/Text	Functions	Details
›	1 line backward	After selecting this icon, the selected waveform segment is moved backward by one line.
«	Previous page	Display the previous page of page scan.
»	Next page	Display the next page of page scan.

8.3.9 Trends Page

The Trends page displays the overall HR trend graph and the number of beats and segments per hour, as well as the distribution of ventricular, supraventricular, atrial tachycardia, ventricular tachycardia, long RR intervals, and SDNN.

Click on the bar graph to display the corresponding event. For the operations of waveform and compressed waveform, see *8.2 Main Areas*.



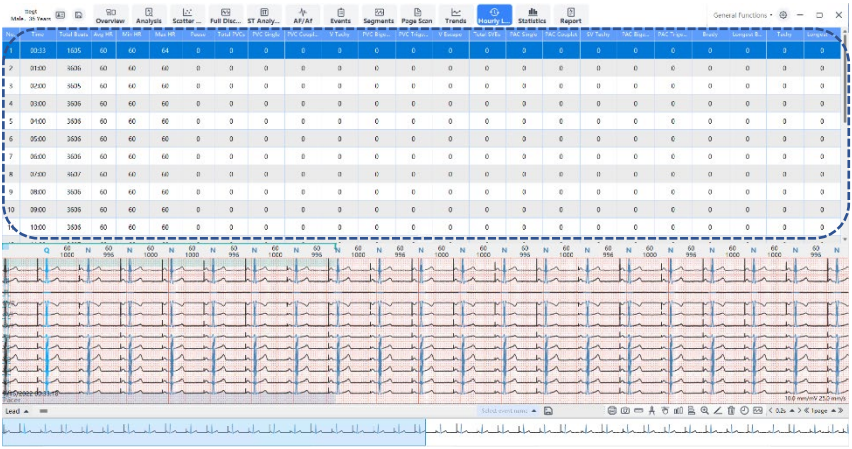
8.3.10 Hourly List Page

The Hourly List page displays event statistics per hour, including the total number of heart beats, heart rate, and the

number of arrhythmias that occurred. Click the button  in the middle of the page to expand the hourly list. Click the button  below the expanded list to fold the hourly list.

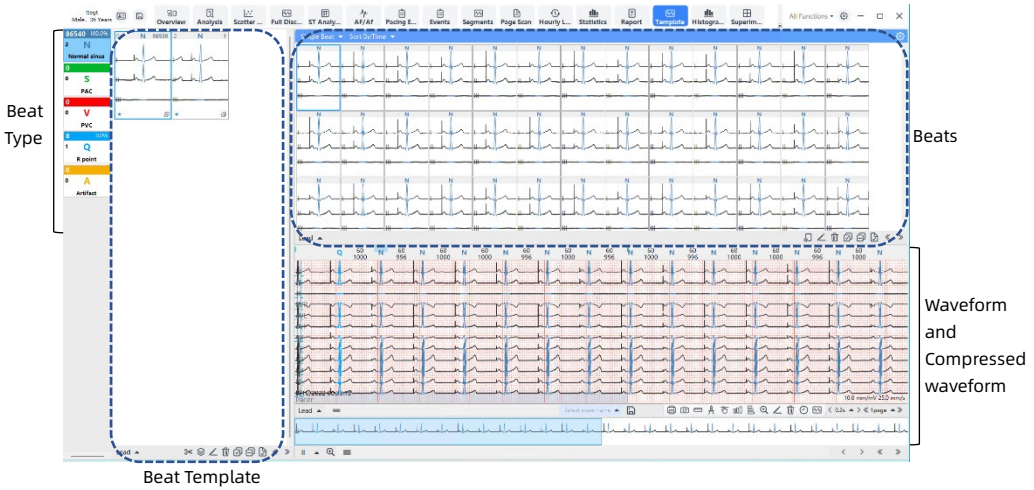
The corresponding waveform of one hour is displayed. For the operations of waveform and thumbnails, see *8.2 Main Areas*.

Hourly List



8.3.11 Template Page

Template page displays the AI-algorithm identified beat types contained in the ECG data, and the templates used under each type, as well as the detailed heart beats and waveforms under each template.



Beat Type

The beat types that this software can identify are shown in the table below.

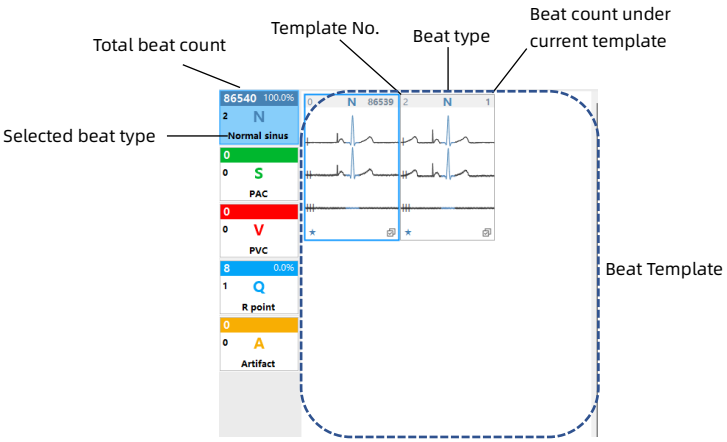
Beat Type Abbreviation	Explanation
N	Normal sinus beat
S	PAC (Premature atrial contraction)
V	PVC (Premature ventricular contraction)
JT	Accelerated junctional tachycardia
AT	Accelerated supraventricular tachycardia
VT	Accelerated idioventricular rhythm
SE	Atrial escape beat
JE	Junctional escape beat
VE	Ventricular escape beat
AF	Atrial flutter
Af	Atrial fibrillation

Beat Type Abbreviation	Explanation
N_PS	Ventricular preexcitation
N_CRB	CRBBB (Complete right bundle branch block)
N_CLB	CLBBB (Complete left bundle branch block)
Af_CRB	A-Fib CRBBB (Atrial flutter, atrial fibrillation with complete right bundle branch block)
N_B1	I°AVB (First degree atrioventricular block)

Each beat type is displayed in a preset color. To set the beat color, see *8.4 Parameter Setup --> Color Setup*.

Beat Template

After a beat type is selected, the beat template under that type is displayed on the right side.



- There may be multiple beat templates under one beat type.
- ★ indicates that the template has been viewed.

- A negative number in the template No. indicates that the template has been modified, such as "-800".
- Up to three waveforms can be displayed in each template, and the displayed leads can be configured.
- Each template can be superimposed with waveforms based on the beats it contains. Up to 20 beats can be superimposed in one template. For superimposition settings, please refer to the introduction of [Layout and Parameters] in *8.4 Parameter Setup*.
- After the template is selected, all the beats under the template are displayed in the right area.

Icons and text below the template are introduced as follows.

Icon/Text	**Functions**	**Details**
[Lead]	Set which lead to be displayed	Select [Lead] to pop up a window and select the desired lead to be displayed in templates.
	Split templates	After selecting this icon, you can select the lead in the pop-up window. The system will split the template according to the beat pattern.
	Merge templates	Drag the mouse to select two or more templates and then select this icon to merge the selected templates into one template.
	Modify templates	Select one or more templates, and then select this icon to pop up the beat type window, and then select the appropriate heart beat type there for change.

Icon/Text	Functions	Details
	Delete templates	Select one or more templates, and then select this icon to delete them.
	Select all	Select all contents.
	Select inversely	Unselect the currently selected item and select the currently unselected item.
	Select by Page	Select the content on the current page.
«	Previous page	Turn pages backward to view the heartbeat template.
»	Next page	Turn pages forward to view the heartbeat template.

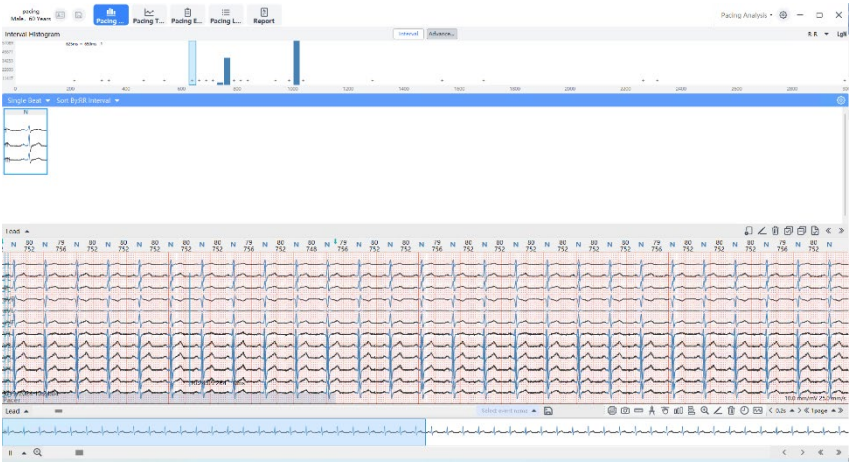
In the heartbeat template area, click the right mouse button to bring up a pop-up menu. There are similar functions to icon/text in the menu.

Other Areas

For the specific operations of other area, see *8.2 Main Areas*.

8.3.12 Pacing Histogram Page

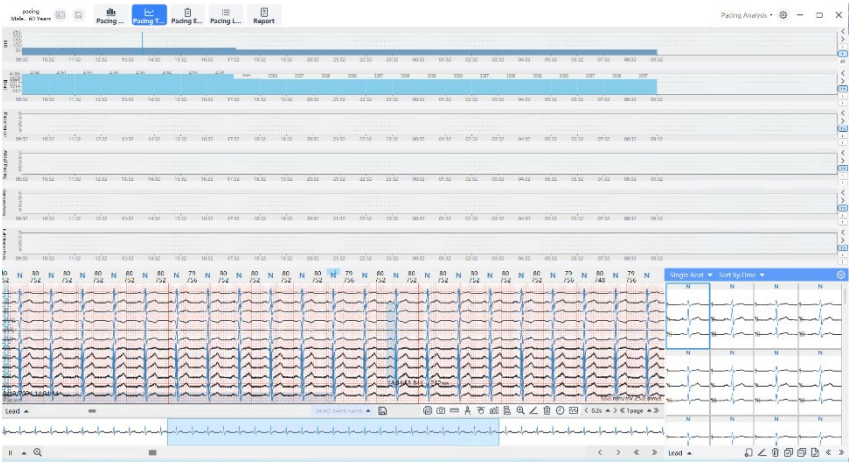
The Pacing Histogram page displays the interval histogram of pacing data by default. For the operations of waveform and compressed waveform, see *8.2 Main Areas*.



8.3.13 Pacing Trends Page

The Pacing Trends page displays pacing data trends, including HR (RR interval) trend, beat, pacemaker, atrial pacing, ventricular pacing, and dual chamber pacing.

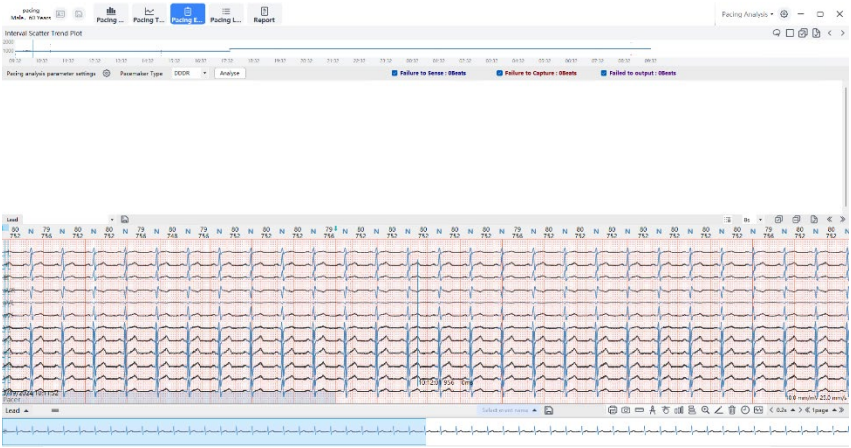
For the operations of waveform and thumbnails, see *8.2 Main Areas*.



8.3.14 Pacing Events Page

On the Pacing Events page, click the icon  to set the parameters for the pacing analysis and display the abnormal events analyzed according to the parameters.

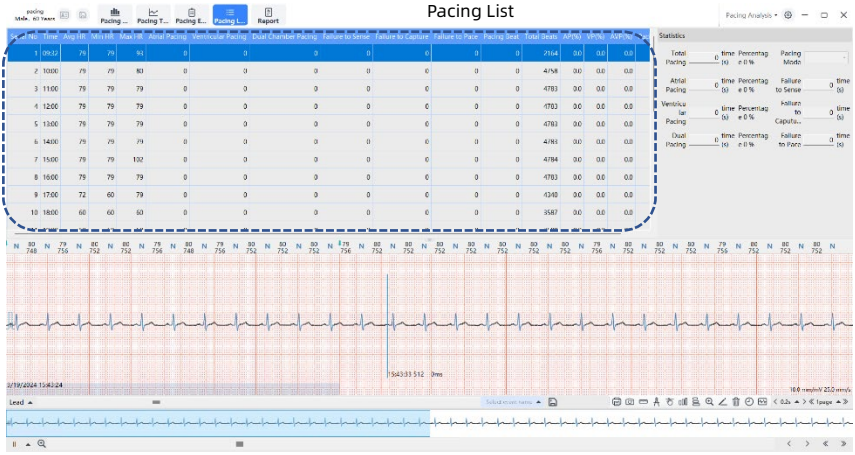
For the operations of waveform and compressed waveform, see *8.2 Main Areas*.



8.3.15 Pacing List Page

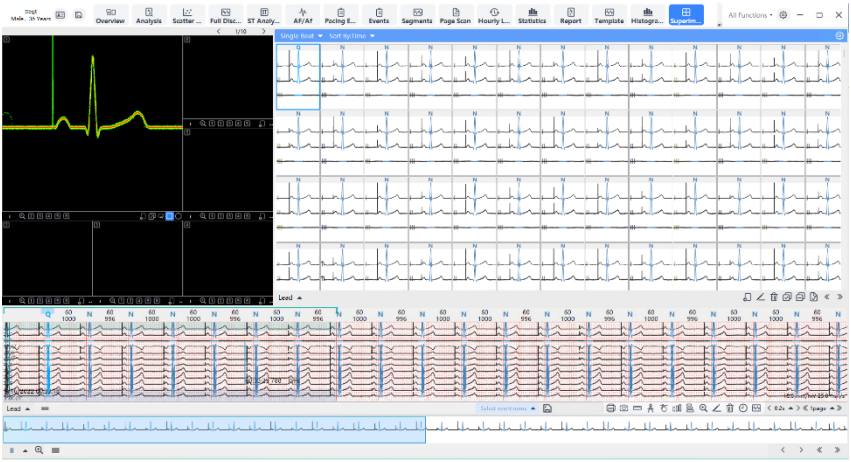
The Pacing List page displays pacing-related parameters and their statistics, including average HR, fastest and slowest HR, atrial pacing, ventricular pacing, dual chamber pacing, failure to sense, failure to capture, failure to output, pacing beat, total number of beats, etc..

For the operations of waveform and thumbnails, see *8.2 Main Areas*.



8.3.16 Scatter Superimposition Page

The Scatter Superimposition page displays the image of the superimposed waveform, waveforms and beat templates for heart beats / P-wave. For the specific operations of each area, see *8.2 Main Areas*.



8.3.17 Statistics Page

The Statistics page displays the relevant statistical values for the case data, including monitoring start and end times,

monitoring duration, statistical values for heart rate, ventricular, supraventricular, atrial flutter / atrial fibrillation events and ST segment. The statistics can be edited and saved.

8.3.18 Report Page

On the Report page, you can edit diagnosis and generate reports.

Set Report Content

A standard report includes the following contents:

- Report summary
- Hourly list
- Graphic trends
- ECG segments
- ST trends (optional)
- Pacing event list (optional)
- QT analysis report (optional)

If patient have taken other tests, the report may also include other contents.

Generate Diagnosis

The software supports to provide auto analysis by clicking [Generate Diagnosis] button. Physician can edit descriptive summary and diagnosis.

You can preview the report, and then select [OK] to generate and output the paper report.

Add to Favorites

For reports that need to be filed, select the [Add to Favorites] button. After successful adding to favorites, you can view it conveniently in [Personal Center].

8.4 Parameter Setup

In the Diagnosis screen, click the ⚙ button to enter the parameter setup window.

Item	Description
Color Setup	Set the background color of the ECG display area. Set the frame line color of the grid. Set the internal line color of the grid. Set the appropriate color for each beat type. In the analysis software, the different heart beat types are indicated in separate colors. Each heart beat appears in the waveform or graph in a set color.
Event Threshold Setup	Set the ECG event threshold.
General Operation Setup	Set prompts for deletion. [Confirmation prompt for beat deletion in waveform area]: When checked, a deletion prompt appears when the beat is deleted from the waveform area. [Confirmation prompt for beat graph deletion]: When checked, a deletion prompt appears when beat graph is deleted. Set the display duration of the scatter plot in the overview page: display all time range of the scatter plot or the first hour of the scatter plot by default. Set whether to prompt when saving a segment. Set the arrow indicator for SDNN increase or decrease during HRV analysis.

Item	Description
Print	Set the printing related information.
Shortcut Key	Set shortcut keys for each heartbeat.
Segment Dictionary Sequence	Set the sequence in which segments are displayed in the dictionary. You can reorder the items by clicking the ↑ or ↓ button.
Layout and Parameters	Set layout in event screen, template, functional display, etc. ● Layout setup [Event thumbnail location in Events page]: [Top], [Bottom] You can set whether the event thumbnail is located at the top or bottom of the Event page. After this setting is changed, you need to restart the Diagnose screen for it to take effect. ● Template [Superimposed beats in one template]: This is used to set the maximum number of beats that can be superimposed on the beat template. Up to 20 beat waveforms can be superimposed. [Display one beat if beat count greater than setting of superimposed beats in one template]: When the beat template contains a large number of beats that exceed the maximum number of superimposed beat waveforms you want, then only the first beat is displayed as a representative to avoid cluttered superimposed display. ● Function display [Display sinus max/min heart rate in Events page]: Set whether to add statistics of [Sinus

Item	Description
	Max Heart Rate] and [Sinus Min Heart Rate] in the event list under the Events page. [Display tachycardia and bradycardia events in Events page]: Set whether to add events of [Tachycardia] and [Bradycardia] to the event list under the Events page. ● HR statistics [Correlate Max/Min HR with Hourly List]: Changes to the values of [Overall Max Heart Rate] and [Overall Min Heart Rate] on the Events page can be set to update in conjunction with the fastest HR and slowest HR corresponding to the hourly list, statistics, and report pages. Once checked, when the overall maximum heart rate value is updated, the fastest heart rate on the Statistics and Report pages will be updated simultaneously, and the updated value will be used for all fastest heart rates that exceed this updated value in the Hourly List. Similarly, after the overall minimum heart rate is updated, the slowest heart rate is also updated in the same way. ● Event location in waveform area in Events page Under the Events page, set the display location of the event waveform in the waveform area. When set to [Center], the event waveform is located in the middle of the waveform area. When set to [Left], the event waveform is displayed from the left side of the waveform area.

Item	Description
	● Deletion in event list When deleting an event in the event thumbnail on the Events page, the original beat type of the deleted event can be marked using [N] (sinus beat) or [A] (Artifact). ● Add ECG segment from Events page In the Events page, when you need to add certain event thumbnails as segments, to the Segment page or to Report, you can set the naming method for the segments. [Segment name same as event name]: Use the name of the event, as the name of the segment. [Empty segment name (except for heart rate events)]: The name of the event is not used, making the segment nameless. However, the name of the [Overall Max Heart Rate] and [Overall Min Heart Rate] will be retained.

Chapter 9 Report Management

You can view and print paper reports or output PDF reports.

9.1 Printing Reports

Reports can be printed under the main screen and the Report page in the Diagnose screen.

To print the reports in the main screen, follow the steps below:

1. Select a test record that is in "Completed" status.
2. Click the [View Report] button in the menu bar of the main screen to open the report preview screen.
3. Select the [Print Current Page] or [Print All] button to print the report.

To print the report immediately upon diagnosis, proceed as follows:

1. In the main screen, double click on the selected case to enter the diagnosis screen.
2. Select the [Report] page.
3. Select [Print Preview] at the bottom right of the screen. The print preview screen expands.
4. After preview, select  to print the report.

9.2 Export PDF Report

You can export PDF reports from the main screen and the Report page of the Diagnose screen.

In the main screen, reports can be exported in one of the following ways:

Method 1:

1. Select a test record that is in "Completed" status.

2. Click the [View Report] button on the menu bar of the main screen to open the report preview screen.
3. Select [Save as].
4. Choose the appropriate storage path.
5. Select [Save].

Method 2:

1. Select a test record that is in "Completed" status.
2. Click the [Export Report] button on the menu bar of the main screen.
3. Choose the appropriate storage path.
4. Select [Save].

To export the report immediately upon diagnosis, proceed as follows:

1. In the main screen, double click on the selected case to enter the diagnosis screen.
2. Select the [Report] page.
3. Select [Print Preview] at the bottom right of the screen. The print preview screen expands.
4. Select [Export PDF].
5. Choose the appropriate storage path.
6. Select [Save].

Chapter 10 System Setup

Click [Settings] in the menu bar of the main screen to enter the system setup screen.

Item	Description
Basics	Height unit: cm, ft Weight unit: kg, lb.
Data List Setting	Set the data status color, the default is black. Click on the colour field to set the corresponding display colour for each data status.
	Set the print status color, the default is black. Click on the colour field to set the corresponding display colour for each print status.
File Export Setting	You can set the file naming convention as needed. The optional fields include: name, age, test time, and patient No.. Sample filename is displayed according to the field selected in [File naming convention settings]. After setting, this information will be displayed in the title of the ECG diagnostic report.
	Set the output path of the file.
	Set the path to save the log.
Institution Settings	Set the institution name, address, telephone, website, Logo, and department name.

Chapter 11 Personal Center

Click [Personal Center] in the menu bar of the main screen to enter the personal center screen, where you can view user list, your personal information, your favorites and operation logs.

11.1 Modifying or Adding Account

Select an account in the user list and click the [Modify] or [Add] button to modify or add account-related information, including contact phone, email address, whether it is enabled or not, etc. You can also upload signature images for easy signature of subsequent diagnostic reports.

11.2 Reviewing Personal Favorites

In the favorites list of [My Favorite], the following operations can be performed on the cases added to favorites.

- Search for cases added to favorites: at the top of the list, filter by patient gender, or enter keywords: patient name/remarks to find the case.
- View cases added to favorites: Double-click a case to go to the diagnosis screen of that case.
- Cancel adding to favorites: Select a case, right-click to select [Cancel Bookmark].

11.3 Querying Operation Logs

You can query user operation logs, including records of new tests, uploading data and other operations. You can query the operation log by time.

Appendix A Cybersecurity Measures

A.1 Personal Information Safety

Protecting personal health information is a major component of security strategy. To protect the personal information and ensure the proper software performance, the user should take necessary precautions in accordance with local laws and regulations and institution's policies. Recommends health care organizations or medical institutions to implement a comprehensive and multifaceted strategy to protect the information and systems from internal and external security threats.

To ensure the operator and patients' safety and protect their personal information, the user should implement security practices or measures that include:

- Physical safeguards - physical safety measures to ensure that unauthorized personnel do not have access to the software.
- Operational safeguards - safety measures during operation.
- Administrative safeguards - safety measures in management.
- Technical safeguards - safety measures in technical field.

The basic principles are as follows:

- The access/operation of the software is restricted to authorized personnel only. Assign only staff with a specific role the right to use the software.
- Ensure that the software is connected only to the authorized/approved device.

- Users should install and operate the software within authorized specifications, including installation environment, security configuration, etc.
- Anti-virus measures such as installing antivirus software, carrying out USB device virus scanning prior to using USB flash drive.
- Turn on your firewall to protect against hacker attacking.
- Please protect the privacy for the information and the data displayed on the screen, and for the information and the data stored in the computer.
- Log files generated by the software do not contain protected medical data.

A.2 Data Interface

Network interface	The device uses the TCP/IP network protocol to communicate with the ECG server. The physician diagnostic client uses the HTTPS network protocol to communicate with the ECG server.
Data import	The physician diagnostic client supports the import of ECG data using USB 2.0/3.0.
Data type	The ECG server supports ambulatory ECG data in Carewell ECG format.

A.3 User Access Control

Before using this software, you must activate it with an authorized activation code to ensure data access security.

The software has 2 user roles: admin user, ordinary user.

- Admin user: can manage users (add or modify user information), set up the system, add and query patients, and upload ambulatory ECG data. Can view, modify,

confirm, search and download ECG diagnostic results and generate diagnostic reports.

- Ordinary user: can add and query patients, and upload ambulatory ECG data. Able to view, modify, confirm, search and download ECG diagnostic results and generate diagnostic reports.

A.4 Software Upgrade

To upgrade the software, users can download the latest version of the software installer and reinstall it. To ensure the integrity and security of the downloaded installer, the MD5 checksum is used for verification.

CE 0123

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