

AMU+

Non-Invasive Glucometer

Version: 2.1
2022

User Manual

Please read this Guide carefully, follow correctly, and keep properly.

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1/Introduction

Dear users, thank you very much for choosing our product. Please read this Guide carefully before you start using the product, this Guide specifically details function, features and usage of the product.

AMU+ is for self-health management and supplement accessory. It can't be relied on alone in the treatment.

This device is not intended to replace the ordinary blood glucometer. Do not make fundamental changes in your treatment program without talking to your health care team.

You can find the latest version of this User Manual at our website: <https://vanguide.ca/>

1.1 Function

The device is a non-invasive in vitro glucose monitor. It does not cause any trauma and does not require consumables, so it prevents the user from physical pain during the test. You can use the product several times successively in one day, so it is very convenient for daily health inspections.

The product combines highly integrated technology and multiple blood glucose testing methods to collect values of health parameters by touching the sensor for one minute.

1.2 Applications

The device is a glucose monitoring device suitable for detecting trends and tracking patterns of glucose levels in adults (20 to 75 years of age). The device is indicated to support effective diabetes management.

1.3 Appearance

The product is generally shaped as a head-up, which is convenient for desktop operation and display of data. The product is divided into two parts, protective cover and main unit. The data acquisition is set on the plane of the main unit and the display is set on the falling surface of the device body. The planar design has four finger slots including three electrodes and a physiological data acquisition slot. The pictures below and the corresponding explanations show all the features of the product.:



1.4 Safety Notice



Warnings, which must be observed to avoid injury to the operator



Cautions, may damage the product or other products



Attention, must be followed to avoid damage to the product

1.5 Operating Conditions

Working temperature: 15°C~35°C

Avoid direct sunlight to prevent heat accumulation

Storage temperature range: -5 °C~ 55 °C

Storage relative humidity range: ≤95%

Working Voltage: 5V

Working Current: 1 A

The power adapter should be 5V/1A, meet the LPS standard and have CCC or CE mark.

Put the product on a smooth surface

1.6 Precautions

Important. Test and calibration operations are

prohibited during the charging process.

Do not start the test when fingers are cold.

Do not start the test after physical exercise.

Please make sure the heart rate is normal before starting the test.

The test should be started in a seated position with the arms relaxed on a firm platform.

Ensure fingertip integrity and neatness

2/Using the Device

2.1 Icon Instruction

	“User” icon To view the user account.
	“New User” icon To create a personal account.
	“All User Account” icon
	“Test” icon To start a test.
	“History” icon To view history data.
	“Calibration” Icon To calibrate the product.
	“Setting” Icon To set the glucose unit and Time & Date.

2.2 Charging the Device

Before using the device for the first time, you need to charge the device. To charge the device, plug the USB cable connected to the charger into the device and plug the charger into the power source. Leave the device plugged in until the battery icon indicates full and the indicator light in the upper right corner of the screen is off. When the battery symbol indicates red,

the rechargeable battery is exhausted and you must recharge.

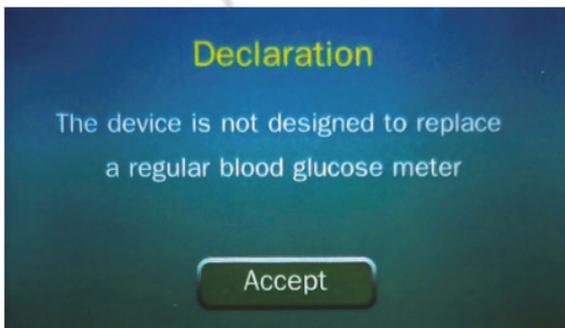
2.3 Turning the Device On and Off

Press the power button for 3 seconds to turn the device on, and press the power button for 3 second to turn the device off.

If the device is idle for more than 5 minutes, the screen will turn off automatically, and if the device is idle for more than 10 minutes, the power will turn off automatically and the screen will not turn off automatically during measurement.

2.4 First-time Operation

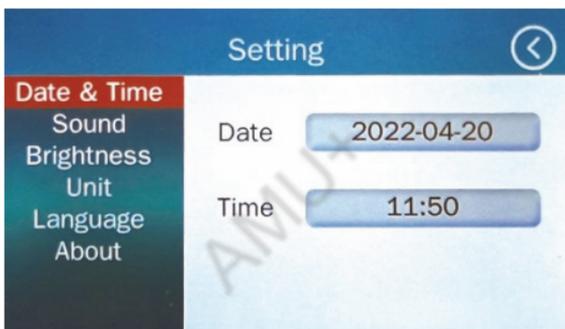
The first time the device is activated, the user is reminded that the device is not intended to replace an ordinary blood glucometer.



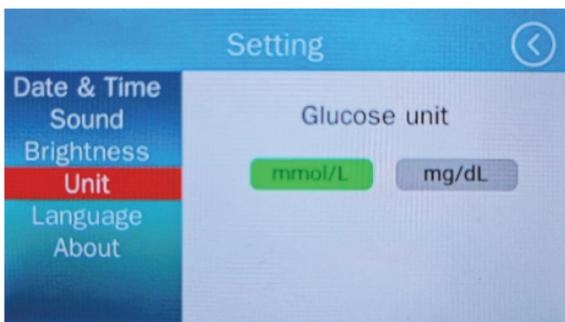
After accepting the statement, the user can click the Setting button in the main menu to set the date, time and glucose units.



Setup date and time,

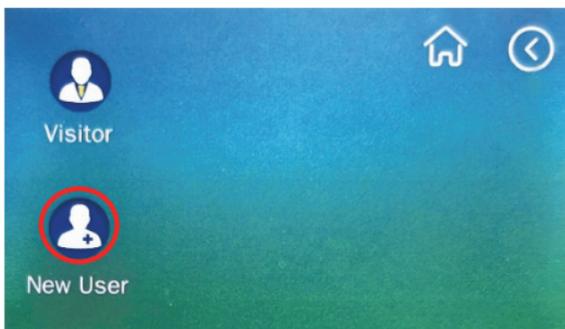


Setup glucose unit

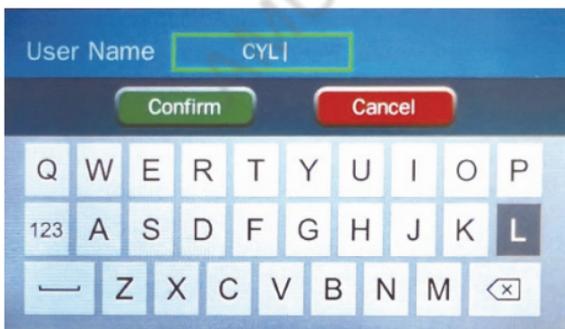


2.5 Signing Up User's Account

Press "User" in the main menu, and press "New User" to sign up.

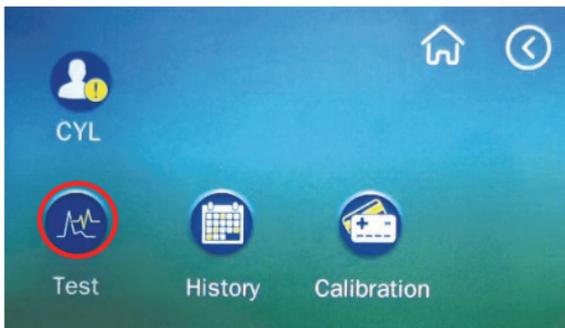


Then enter a username of up to seven characters.

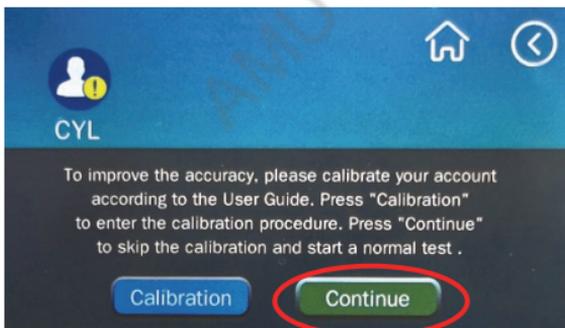


2.6 Performing a Measurement

Choose a user and click "Test"



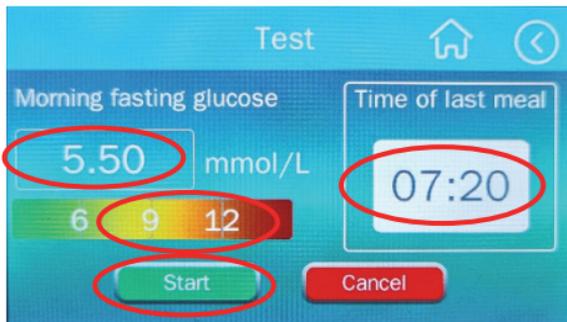
Then click "Continue" to start a normal test



Attention: To improve the accuracy of the test, click "Calibration", see "Calibrating the Device" for more details.

In a normal test, the user should enter two parameters,

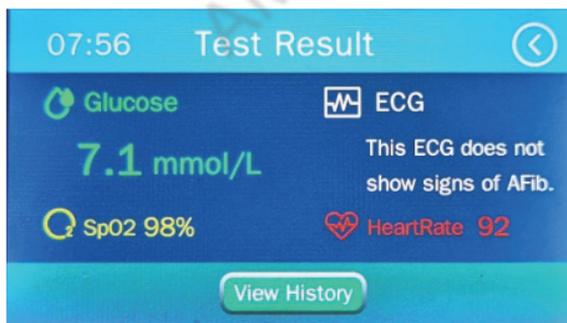
fasting blood glucose (using the default value of 5.5, or a range if the user does not know the value of this parameter) and the time of the last meal,



Click “Start” and put four fingers on the slots when there is a notice “Testing will start in 15s”.



The test result will show up in one minute.



2.7 Test Result

NO.	Interface	Description
1	“Home” Button	Returning to the main interface
2	“Back” Button	Returning to the user interface
3	“Blood Glucose”	Displaying the blood glucose
4	“Oxygen Saturation”	Displaying the oxygen saturation
5	“Heart Rate”	Displaying the pulse
6	“ECG”	Displaying the ECG
7	“View History”	Displaying the history data

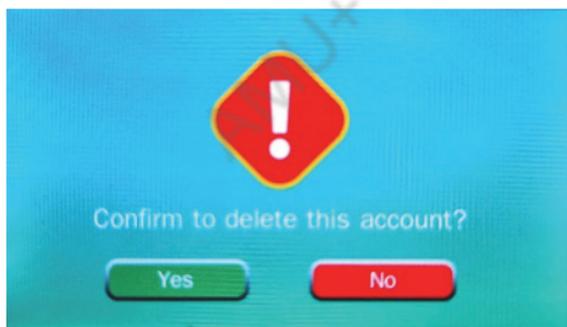
2.8 Viewing History

Select "View History" and then select "Glucose" or "SpO2" or "HR" or "ECG" to view blood glucose, oxygen saturation, heart rate, or ECG in a chart or list.

	Date	Time	Result
Glucose	2022-07-07	12:15:48	6.00
SpO2	2022-07-07	12:18:19	5.83
HR	2022-07-08	17:51:51	5.51
ECG	2022-07-09	10:38:26	5.77
	2022-07-11	07:55:54	7.19
	2022-07-11	07:58:58	7.27

2.9 Deleting User's Account

To delete the account, long press on the account which you want to delete and then choose "Yes".



3/Calibrating the Device

Accurate blood glucose test results are the prerequisite to guarantee effective and safe glucose control treatment. And as one of the common methods for monitoring the effect of blood glucose control, the standardized use of non-invasive glucometer is gaining more and more attention. Regular calibration can enable the device to maintain accurate status and provide continuous service to the users.

3.1 Calibration Procedure

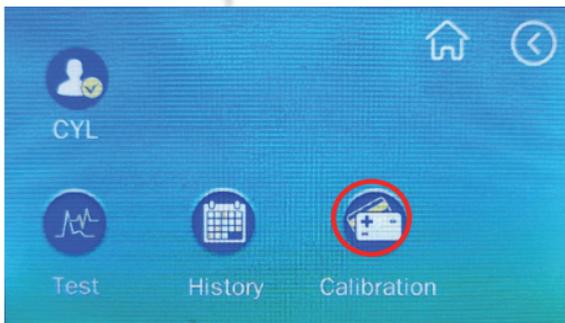
To improve the accuracy of the test, user can choose "Calibration" to provide more reference. Through the calibration process, the device learns more about the user's glucose metabolism status and the user can obtain more accurate results in subsequent tests
Caution. After Calibration is done, user doesn't need to input "Morning fasting glucose" before starting a test anymore. However we strongly recommend the user to perform the calibration procedure again when changing the medical method.

Caution. The calibration process takes 4 hours. Please ensure that the device is fully charged and do not use the device for other purposes or other users during this

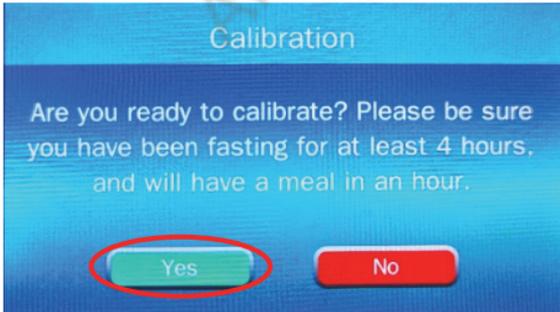
period. To ensure accurate calibration, follow all instructions in order. If you cannot complete the entire procedure correctly, you have to recalibrate from the beginning.

The calibration procedure includes 5 invasive glucose measurements (at time points of -30, 30, 60, 120 and 180 minutes of mealtime) and at least 30 non-invasive glucose measurements at multiple time points.

3.1.1 **Step 1:** Make sure you are **fasting** (at least 4 hours fasting), click "Calibrate" in your user account and then click "Yes" to take your **first non-invasive** glucose measurement. After the first non-invasive test is completed, you will be asked to take an invasive glucose measurement and enter the **invasive** values into the device.



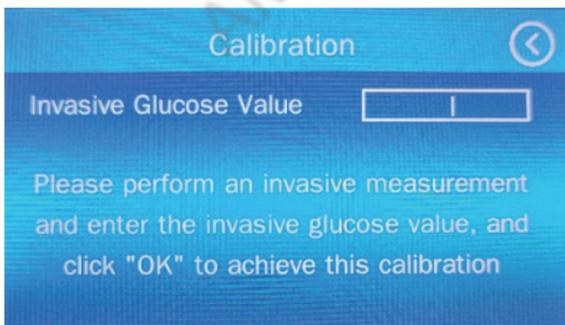
Choose "Calibration" in user account



Click "Yes" to start procedure



Take a non-invasive test and the value will be recorded automatically



Take an invasive testing, input value

3.1.2 **Step 2:** A meal is eaten one hour later and five **non-invasive tests** are performed immediately after the meal. Once you are ready, Click "Start" to start a non-invasive testing. All 5 tests should be performed before the first checkpoint, i.e. 30 minutes after a meal. The device will record testing time and value of the test will be shown as "-" mark (don't do invasive glucose test in this step).

The image shows a table with three columns: 'CYL', 'Calibration', and a home icon. The table has four rows. The first row has 'Number' as '1', 'Test Time' as '2022/07/07 09:07', and 'Invasive Glucose Value' as '5.56'. The second and third rows are empty. The fourth row has '31' in the 'CYL' column, a 'Start' button in the 'Calibration' column (circled in red), and '10:01:18' in the rightmost column.

CYL	Calibration	Home	Back
Number	Test Time	Invasive Glucose Value	
1	2022/07/07 09:07	5.56	
31	Start	10:01:18	

Take non-invasive test for 5 times

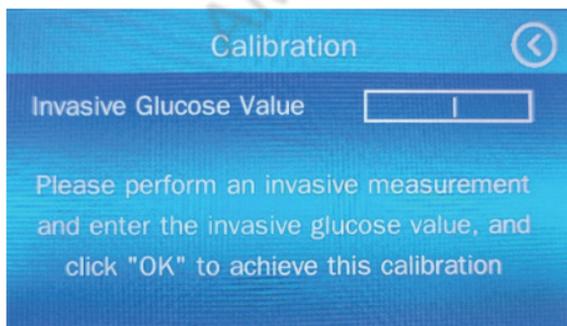


5 non-invasive tests as directed

CYL	Calibration		
Number	Test Time	Invasive	Glucose Value
1	2022/07/07 09:07	5.56	
2	2022/07/07 09:17	-	
3	2022/07/07 09:21	-	
4	2022/07/07 09:30	-	
5	2022/07/07 09:36	-	
31	Start		10:01:18

All non-invasive test results will be automatically recorded after each test.

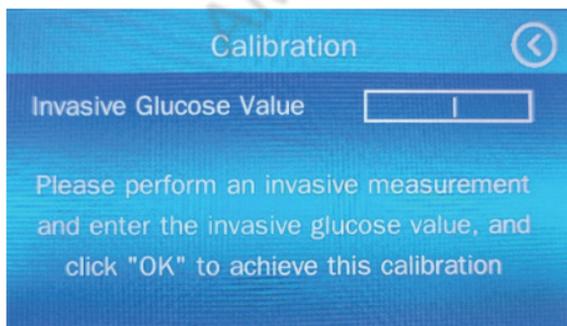
3.1.3 **Step 3:** After **30 minutes** of the mealtime, do invasive test for once and input the value in device, then perform **5 non-invasive tests**. All 5 tests should be done before the second check point - 60 minutes after mealtime.



After 30 minutes of meal time, the user is required to do an invasive test and record the results.

Number	Test Time	Invasive Glucose Value
6	2022/07/07 09:42	-
7	2022/07/07 09:46	7.00
8	2022/07/07 09:53	-
9	2022/07/07 09:59	-
10	2022/07/07 10:03	-
31	Start	16:45:39

3.1.4 **Step 4:** After **60 minutes** of the mealtime, do invasive test for once and input the value in device, then perform **7 non-invasive tests**. All 7 tests should be done before the third check point - 120 minutes after mealtime.



After 60 minutes of meal time, the user is required to do an invasive test and record the results.

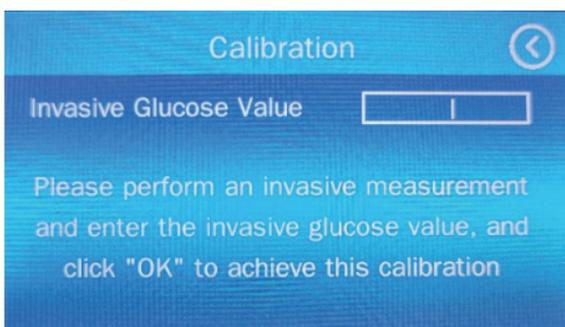
CYL	Calibration	
Number	Test Time	Invasive Glucose Value
11	2022/07/07 10:15	7.56
12	2022/07/07 10:22	-
13	2022/07/07 10:29	-
14	2022/07/07 10:37	-
15	2022/07/07 10:47	-
31	<input type="button" value="Start"/>	16:46:33

Take non-invasive test for 7 times



7 non-invasive tests as directed

3.1.5 **Step 5:** After **120 minutes** of meal time, the user is required to do an invasive test and record the results then do **7 non-invasive tests**. All 7 tests should be done before the fourth check point, 180 minutes after mealtime.



After **120 minutes** of the mealtime, user needs to do an invasive test and record result

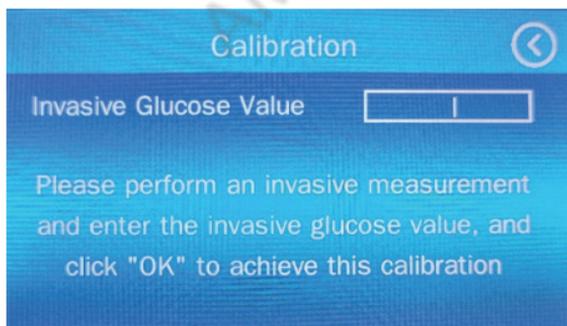
CYL Calibration		
Number	Test Time	Invasive Glucose Value
21	2022/07/07 11:25	-
22	2022/07/07 11:31	-
23	2022/07/07 11:40	-
24	2022/07/07 11:46	-
25	2022/07/07 11:51	-
31	<input type="button" value="Start"/>	16:50:28

Take non-invasive test for 7 times



7 tests as directed

3.1.6 **Step 6:** After 180 minutes of the mealtime, do one invasive test and input the value, then perform non-invasive tests until user gets 30 test results or more.



After **180 minutes** of the mealtime, user needs to do an invasive test and record the result.

CYL		Calibration		Home	Back
Number	Test Time	Invasive Glucose Value			
26	2022/07/07 12:00	-			
27	2022/07/07 12:07	5.83			
28	2022/07/07 12:09	-			
29	2022/07/07 12:15	-			
30	2022/07/07 12:18	-			
31			Start		16:51:13

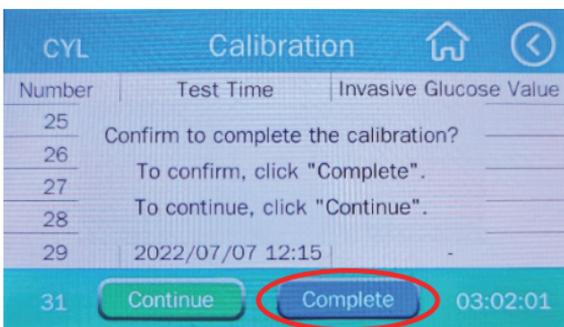
Perform non-invasive tests until user gets 30 testing results



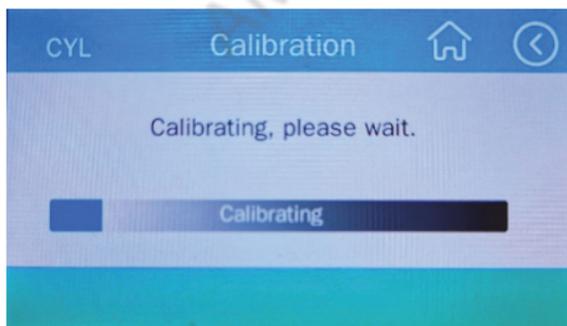
Follow the instructions to do the test

3.1.7 **Step 7:** when user get total 30 or more results of invasive and non-invasive test, the “Continue” and “Complete” button will show up. Click “Complete” to finish the calibration procedure or choose “Continue” to do more non-invasive tests.

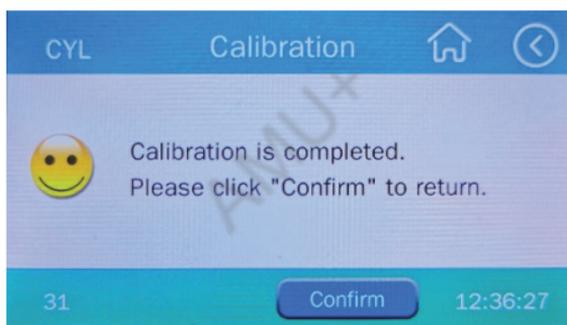
User can do normal test after calibration procedure. If user changes the treatment plan, we strongly suggest user to do the calibration again.



Choose “Complete” to finish the whole procedure

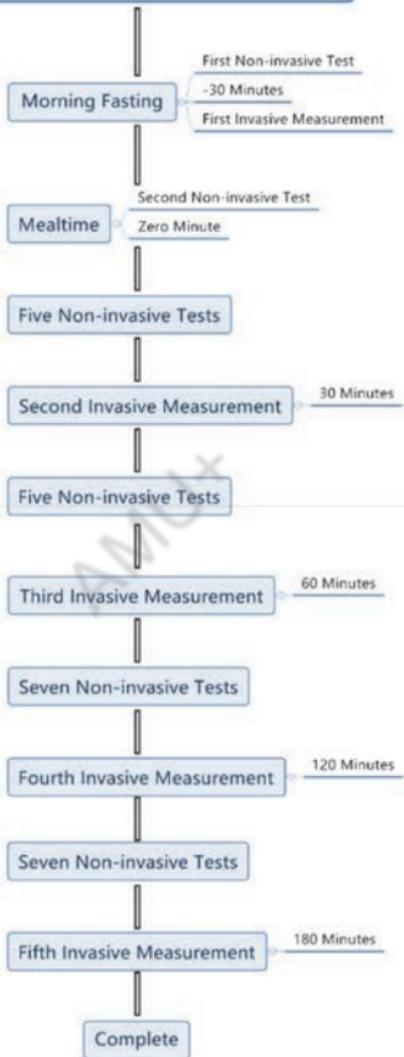


The device will calculate calibration data automatically



Select "Confirm" to return to the normal test page.

Calibration Procedure Chart



4/Technical Information

4.1 Battery Specifications

Li-ion Polymer Battery

Rated Capacity: 1600 mAh (5.92Wh)

Rated Voltage: 3.7V D.C.

4.2 Safety Instructions

- a) Protect the product from water. As soon as water spills or condenses on the product, disconnect the power, turn off the product and contact service.
- b) Keep the product clean and avoid shaking. Use a soft, damp cloth for cleaning and disinfection. DO NOT use steam to disinfect the machine or probe. Protect non-waterproof finger clip probes from any liquids.
- c) DO NOT sterilize at high temperatures or with electron beams or γ rays.
- d) Ensure that the product is not subject to strong electromagnetic interference, such as from radio transmitters or cell phones.
- e) Before use, it is necessary to check for any damage that may endanger personal safety or affect the performance of the device. Monthly or more frequent inspections are recommended. If any

- damage is found, replace the damaged part.
- f) When storing, DO NOT place the product near metal objects to avoid accidental short-circuiting of the built-in battery.
 - g) Keep the product away from shaking, corrosive, and flammable materials and protect it from extremes in temperatures and humidity.
 - h) The product must be maintained by authorized and qualified engineers. DO NOT disassemble it yourself.
 - i) Although the device and its probes are designed to be ruggedly resistant to throwing and shock, DO NOT throw, hit or scratch their surfaces.
 - j) The power wire needs to be connected to a two-wire socket. DO NOT use a defective socket.
 - k) DO NOT change power cords at will. Place wires, conduits, and all cables correctly. DO NOT wrap the wires around the probe after use to avoid their breakage.
 - l) Install the product at a fixed place to avoid injuries and damage caused by its falling
 - m) DO NOT block the product's back to guarantee effective heat dissipation.
 - n) Before testing, it is necessary to ensure the product is working normally and in a suitable environment.
 - o) Regularly check frequently used accessories and cables; replace if necessary and dispose of

damaged parts as electronic waste properly.

- p) DO NOT use in a place with flammable gas, such as oxygen-mixed anesthetic.
- q) DO NOT take out the battery, DO NOT throw the battery into fire; it may explode.
- r) The power adapter should be 5V/1A, meet LPS standards, and have CCC or CE mark.

4.3 Troubleshooting

Abnormal Parameters

- Check if there is any high frequency electrical interference.
- Is there any strong light radiation?
- Does the user have symptoms of anemia, hypothermia, or has he or she taken vasoconstrictive drugs that reduce arterial blood flow to undetectable levels?
- Check if the fingers are placed correctly.
- Are you over-exercising?

If the problem remains unresolved, please contact your local distributor or the manufacturer; the user should not open the product and its probe.

4.4 Cleaning and Maintenance

The outer surface of the product can be wiped with a soft cloth wetted with neutral detergent and warm water. Be careful not to let the liquid enter the product.



Avoid using high pressure disinfection, high pressure antiseptic, and gas sterilization on the product.

DO NOT immerse the product in any liquid.

Use only a small amount of cleaning solvent. Too much solvent may flow inside the product and cause damage to internal parts.

DO NOT use abrasive cleaning materials, tools, brushes, or materials with rough surfaces to touch, press, or scratch the screen. DO NOT allow the screen to encounter any object that could scratch it.

DO NOT use acidic or alkaline solutions to clean the product, as they may corrode the product and cause the breakdown.

4.5 Disposal

	It should be handed over to the applicable collection point for the recycling of electrical and electronic equipment. Disposal must be carried out in accordance with local environmental regulations for waste disposal.
	Please read the guide carefully before using the device.
	Ban the device from the trash.
IP21	Protect the device from water and medium particles