

Model: S68

**"Chiline" Pulse Oximeter and Respiratory Monitoring System
Instruction Manual**

License number of FDA

KXXXXXX

Please read the instruction manual carefully before using the product.

"This product involves the collection, processing and use of personal data, and shall comply with
the regulations of the Personal Data Protection Act."

1. Product Description

This product is a monitoring system for blood oxygen level and respiration. It can simultaneously measure blood oxygen level (SpO₂), heart rate and respiratory rate, and can record and display results.

2. Product Features

1. Integrated design allows real-time results being displayed on the mobile screen for bigger and better viewing.
2. Built-in rechargeable lithium battery enables portable measurement.
3. Lightweight design makes the product easy to be carried.

3. Application

This product uses optical sensor, a non-invasive technology that is suitable for adults, children and infants. Upon recommendations from their physicians, users can operate this product on their own to measure single or continuous blood oxygen level, heart rate and respiratory rate. The results will be displayed in a mobile App, serving as a reference for physicians for diagnosis.

4. Contents

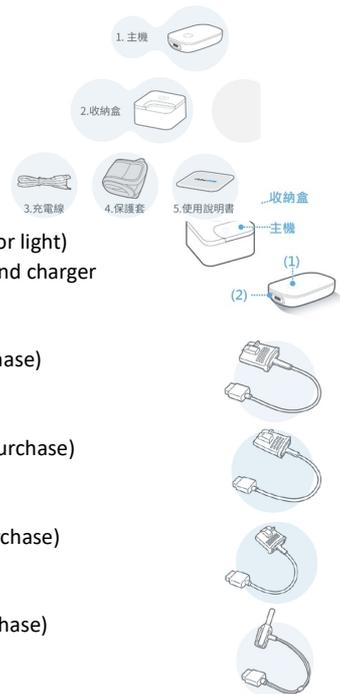
1. Main unit
2. Storage case
3. Charging cable
4. Protective cover
5. Instruction manual

■ Main unit and storage case

- (1) Power button (with LED indicator light)
- (2) Port for pulse oximeter probe and charger

■ Pulse oximeter probe

- (1) Probe for adults (optional purchase)
Model: PA68
- (2) Probe for adults(M) (optional purchase)
Model: PM68
- (3) Probe for children (optional purchase)
Model: PC68
- (4) Probe for infants (optional purchase)
Model: PB68



5. Warnings

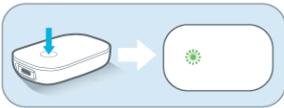
- *If you are using the product for the first time, please carefully read this instruction manual.*

- *Check the product before each use. Do not use the product if the device or the probe has apparent damage.*
- *Do not use this product under bright light as such condition would affect the performance of this product.*
- *Do not use this product in an environment with flammable anesthetic/medication, or hyperbaric oxygen.*
- *When cleaning this product, do not submerge it in water or other liquids. Also, do not use this product in a humid area.*
- *Do not use this product when undergoing an MRI or CT scan.*
- *Do not use this product with a defibrillator or a pacemaker.*
- *It is recommended to use this product when the user is being still. Try to avoid excessive body movements while using the product.*
- *Stay away from other magnetic objects while using the product.*
- *This product is designed to measure the blood oxygen level of people with normal hemoglobin. When used in a person with abnormal hemoglobin, such as methemoglobin, the accuracy might be affected.*
- *Please note that the following conditions may affect accuracy: contrast media, nail polish, artificial nails, anemia, weak pulse signal, or obstruction in blood (e.g., arterial catheter, blood pressure cuff).*
- *If the same measurement site is used for a long time, it is recommended to change it every four hours and check if it has signs of poor circulation.*
- *When the measurement site is cold, the probe may not work properly. Warm or massage the site to improve regional circulation or change to a different site for measurement.*
- *If the measurement site has injuries, is disabled or has other medical conditions, please consult a physician prior to using this product.*
- *When carrying the device, do not pull on the cables. Keep this product away from outside forces.*
- *Do not use a probe that is not designed for this product.*
- *If you experience any discomfort (e.g., allergic reactions, itchiness, swelling), stop using the device immediately. You may try using the device again after the symptoms have disappeared. If symptoms persist, consult a physician for advice.*
- *Results from this product are only a reference for physicians; do not self-diagnose using the results from this product nor thereby alter the treatment plan on your own.*
- *Do not disassemble or repair this product on your own; only certified professionals are authorized to repair the product.*
- *Avoid storing the product in direct sunlight, or at high temperatures or high humidity.*
- *Please follow local regulations when dispose of this product and its parts.*
- *Without permission from the manufacturer, you may not alter frequency, augment power or change any original designs and features.*

6. Instructions

6-1. Before using the product

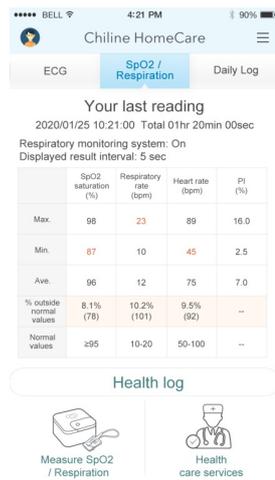
- (1) Charge the device for more than 3 hours before first use.
- (2) Download the free Chiline HomeCare App (scan the QR code on the back of the instruction manual).
- (3) Go to “Settings” in your cellphone to turn on Bluetooth.
- (4) Lightly press on the power button for two seconds in the direction of the blue arrow indicated in the image below. Wait for the alarm to go off for one second and the LED indicator light to flash green, blue and red light. When green light remains on, the device is on.



- (5) When all the above steps have been completed, open the Chiline HomeCare App.

6-2. Begin measuring

- (1) Open the Chiline HomeCare App, then tap “Measure SpO₂/Respiration” (below image).



Chiline HomeCare

SpO₂ / Respiration

Your last reading

2020/01/25 10:21:00 Total 01hr 20min 00sec

Respiratory monitoring system: On
Displayed result interval: 5 sec

	SpO ₂ saturation (%)	Respiratory rate (bpm)	Heart rate (bpm)	PI (%)
Max.	98	23	89	16.0
Min.	87	10	45	2.5
Ave.	96	12	75	7.0
% outside normal values	0.1% (78)	10.2% (101)	9.5% (92)	--
Normal values	≥95	10-20	50-100	--

Health log

Measure SpO₂ / Respiration

Health care services

- (2) The cellphone will search for the pulse oximeter/respiratory monitoring system. A blue light will remain on when the Bluetooth connection is successful (below image). The device is now ready to be used.



6-3. Measurement and data transfer mode

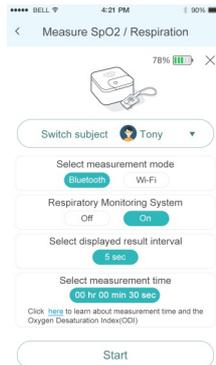
This device supports two modes of measurement and data transfer:

- Bluetooth mode
- Wi-Fi mode

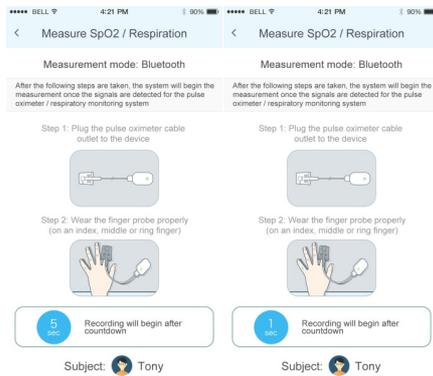
6-3-1. Bluetooth mode

Please follow the instructions in the App:

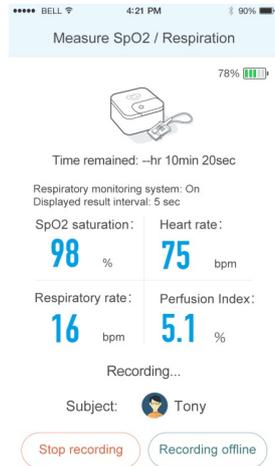
- (1) Plug the probe to the main unit. Place a finger in the finger probe. Select “Bluetooth mode”, then select whether or not to turn on the respiratory monitoring system*, choose a displayed result interval and measurement time. After selecting, tap “Start”.



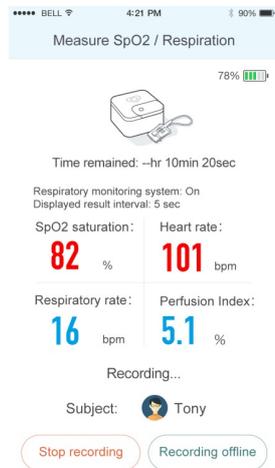
- (2) When the above steps are completed, the system will begin measuring after a five-second countdown once your blood oxygen level is detected (below image).



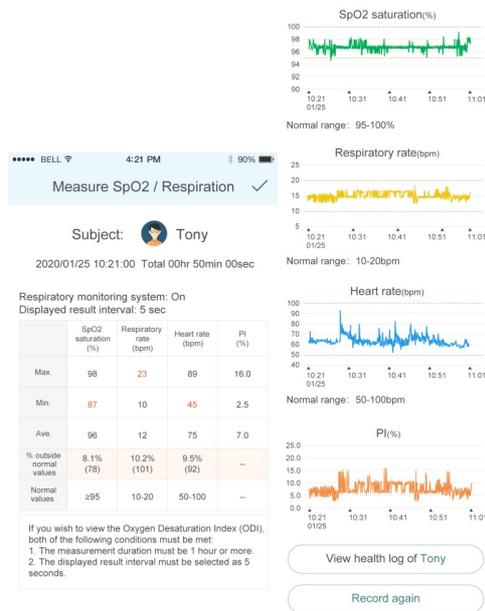
(3) Real-time data is available in the App. (Viewing available in both landscape and portrait orientations.)



(4) If the oxygen level, heart rate or respiratory rate falls outside the alert threshold, a red light will flash on the main unit. The App will also display the alert similar to the below image.



(5) When measuring is completed, the App will display the results (below image).



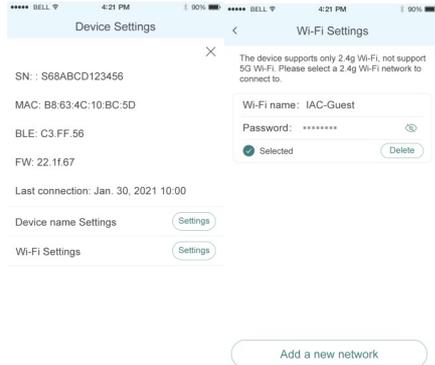
Disclaimer: Data from this product should only be viewed as a reference for diagnosis. All medical procedures should be followed according to the advice of medical professionals.

- (6) If “Measure offline” is tapped or if the Bluetooth connection is off while measuring, the device will automatically switch to offline measuring mode to continue measuring. Data will be saved to the device until the end of measurement.
- (7) When the device is measuring offline, users can reestablish the Bluetooth connection through the App. The device will switch to Bluetooth mode and continue measuring. Real-time data will be shown on the App until the end of measurement.

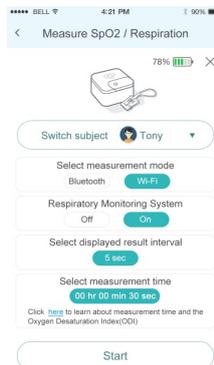
6-3-2. Wi-Fi mode

Please follow the instructions in the App:

- (1) Under settings, select “Device Settings”, then select “Wi-Fi Settings”. Choose a Wi-Fi network and enter a correct password to establish an internet connection. Once a Wi-Fi network has been established, it will be saved in the device.

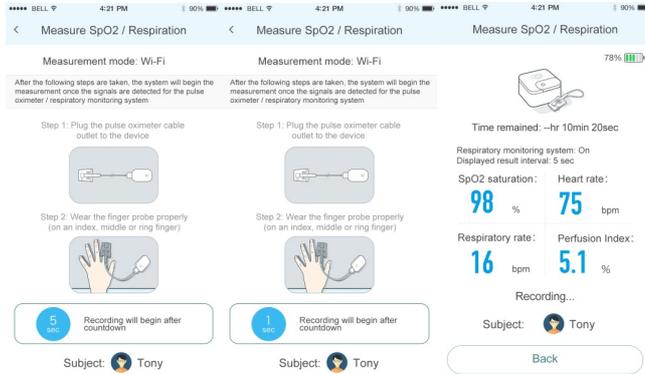


- (2) Plug the probe to the main unit. Place a finger in the finger probe. Select “Wi-Fi mode”, then select whether or not to turn on the “closed App measuring” feature¹ and the respiratory monitoring system², and then choose a displayed result interval and measurement time. After selecting, tap “Start”.

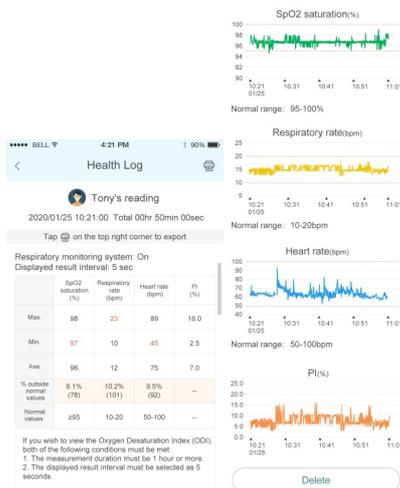


Note 1: If “closed App measuring” is turned on, the monitoring system will automatically use “Wi-Fi mode” to measure when the device is switched on next time. The App will not need to be connected using Bluetooth, so you may skip step 3.

- (3) When the above steps are completed, the system will begin measuring after a five-second countdown once your blood oxygen level is detected. Preview data will also be available in the App to ensure that the system is working properly. Once the user confirms that the system is working properly, tap “Back” to exit preview mode and to start measuring using Wi-Fi.

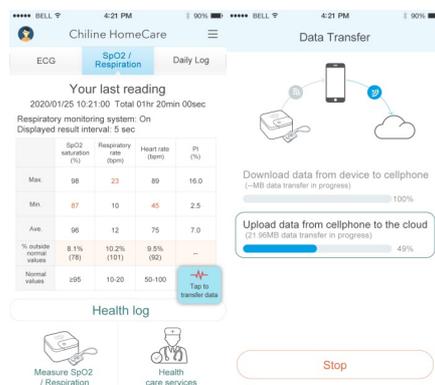


- (4) While measuring, the device will upload real-time data until the end of measurement. Results can be downloaded to the App to view.



Disclaimer: Data from this product should only be viewed as a reference for diagnosis. All medical procedures should be followed according to the advice of medical professionals.

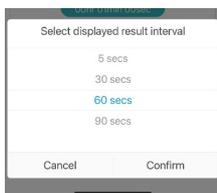
- (5) If the oxygen level, heart rate or respiratory rate falls outside the alert threshold, the LED indicator light on the main unit will flash a red light.
- (6) If the Wi-Fi connection gets cut out, the device will automatically switch to offline measuring mode and will continue measuring. Data will be saved to the device. The device will also try to reestablish Wi-Fi connection.
 - If Wi-Fi is reconnected during measurement, the device will continue to measure with “Wi-Fi mode” until the end of measurement.
 - If the device is not able to reestablish Wi-Fi connection, the system will save the data to the device until the end of measurement.
 - If the user uses Bluetooth to reconnection the App with the device, the App will remind the user that the device has temporarily stored offline measurement data. The user can follow the instructions in the App to download the data to the phone and then upload it to the cloud. (Left image; tap “Tap to transfer data” icon in the main page.)



6-4. Result interval settings

This product supports the below result intervals:

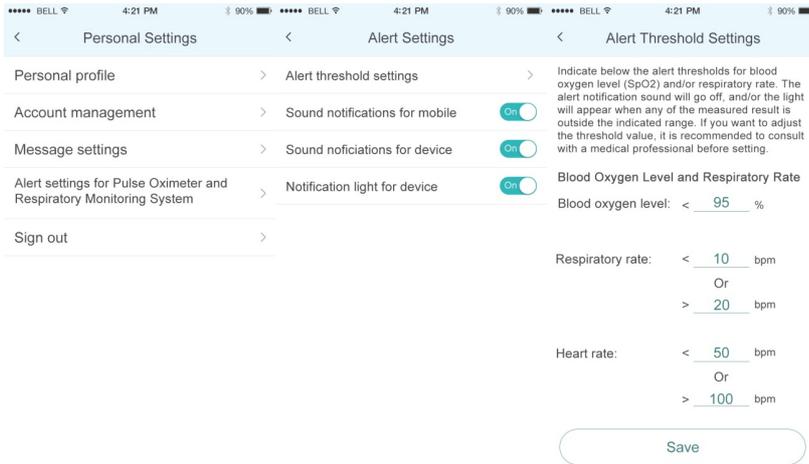
- 5 seconds: The device will capture and save the result every 5 seconds.
- 30 seconds: The device will capture and save the result every 30 seconds.
- 60 seconds: The device will capture and save the result every 60 seconds.
- 90 seconds: The device will capture and save the result every 90 seconds.



6-5. Alert settings

(1) Alert settings

- Select “Alert settings” under “Personal settings”. Turn on or off the alert notification (default is “on”). Alert thresholds can also be modified.
- For details about alerts, read “Indicator light – Alerts” under 8.1.



- (2) Blood oxygen level alert threshold: Below is the default settings which can be modified according to the user’s needs.
- Alert threshold: 95%; interval: 1%
- (3) Respiratory rate alert threshold: Below is the default settings which can be modified according to the user’s needs.
- Upper limit: 20 breaths/minute; interval: 1 breath
 - Lower limit: 10 breaths/minute; interval: 1 breath
- (4) Heart rate alert threshold: Below is the default settings which can be modified according to the user’s needs.
- Upper limit: 100 beats/minute; interval: 1 beat
 - Lower limit: 50 beats/minute; interval: 1 beat

7. Product Specifications

Product Model	S68
Product Size	1. Main unit: 66 mm(L) x 40 mm(W) x 13.4 mm(H) 2. Storage case: 90 mm(L) x 90 mm(W) x 50 mm(H)
Weight	1. Main unit: 32 ±3 g 2. Main unit with storage case: 135 ±5 g
Power Supply	1. Lithium battery (500mAh) 2. Power adapter (5V/2A DC, USB Type-C) Model: ADAPTER TECHNOLOGY CO., LTD. ATM012T-W050VU (optional purchase)
Input Power	1. Power adapter input power supply: 100–240V Input current: 0.32A (max) @100V – 0.19A (max) @240V Output voltage/current: 5V/2A 2. Device input voltage/current: 5V/225 mA
Device Memory Capacity	1. Storage space: 4 GB. Can save up to 720 hours of continuous measurement data. 2. When the storage space is full, any untransferred data will be replaced by new data.
Data Transfer	1. Low-power Bluetooth: Bluetooth Low Energy 5.1 2. Wi-Fi : 802.11b/g/n
Sensor	SpO ₂ sensor
Sampling Frequency	128 Hz
Wavelength	Red light 660 nm @ 8.58 mw (rated) Infrared light 940 nm @ 6.24 mw (rated)
SpO ₂	Range: 0–100% Accuracy: ±1% (70%–100%; not regulated below 70%)
Heart Rate	Range: 30–250 beats/minute Accuracy: ±1 beat/minute
Respiratory Rate	Range: 4–40 breaths/minute Accuracy: ± 1 breath/minute
Dustproof and Waterproof Rating	IP22
Storage/Delivery Conditions	Temperature: -20°C–60°C; Humidity: 10%–95% (non-condensing)
Operation Conditions	Temperature: 0°C–40°C; Humidity: 10%–95% (non-condensing)
Atmospheric Pressure Range	700–1013 hPa
Protection Level	Type BF 

Accessories	<ol style="list-style-type: none">1. Probe for adults (optional purchase), Model: PA68 Probe for adults(M) (optional purchase), Model: PM68 Probe for children (optional purchase), Model: PC68 Probe for infants (optional purchase), Model: PB682. Charging cable (USB Type-C)3. Protective cover4. Instruction manual
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Note: Please use a charger that meets the requirements.

This product uses built-in lithium battery. Users cannot replace the battery on their own.



Please recycle batteries

8. Device Notifications and Solutions

8-1. Indicator light

The indicator light provides three colors for indication: green, blue and red.

Status	Indicator Light
1. Device is on	Green light remains on.
2. Device turning off	Green light is off.
3. Charging	Green light flashes (on for 0.5 second, off for 1 second).
4. Fully charged	Green light remains on.
5. Bluetooth connection	When the App is connecting to the device through Bluetooth, blue light remains on.
6. Measurement and data transfer	<p>Bluetooth mode (includes data syncing): Blue light flashes twice every second then turns off for five seconds. This cycle will repeat until the end of measurement when the blue light will remain on. (Because the Bluetooth connection stays on, you can start measuring anytime. If you have returned to the main menu then the Bluetooth connection will be off, and the green light will remain on (in standby mode).)</p> <p>Wi-Fi mode (includes data syncing): Blue light flashes twice every second then turns off for five seconds. This cycle will repeat until the end of measurement when the green light will remain on (in standby mode).</p> <p>Offline measurement mode (includes data syncing): Blue light flashes once then turns off for five seconds. This cycle will repeat until the end of measurement when the green light will remain on (in standby mode).</p>
7. Alerts	To indicate an alert, red light flashes twice every second.

8-2. Buzzer

Status	Behavior
1. Device is on	When the device is turning on, the alarm will beep once.
2. Device turning off	When the device is turning off, the alarm will beep twice.
3. SpO ₂ , heart rate or respiratory rate outside thresholds	The alarm will beep 10 times then go silent for 8 seconds, and then will beep again. This cycle will continue until the detected value is within normal range. The beeping sound can also be temporarily stopped for 90 seconds by pressing the power button for one second.
4. Issues with Bluetooth, Wi-Fi or probe connections	1. When the Bluetooth connection is cut out during measurement, the alarm will beep twice then go silent for 10 seconds, and then will beep again. This cycle will continue until the connection is restored. The beeping sound can also be stopped by pressing the power button for one second.

Status	Behavior
	<p>2. When the Wi-Fi connection is cut out during measurement, the alarm will beep twice then go silent for 10 seconds, and then will beep again. This cycle will continue until the connection is restored. The beeping sound can also be stopped by pressing the power button for one second.</p> <p>3. When no signal is detected from the pulse oximeter during measurement, the alarm will beep twice and then go silent for 5 seconds, and then will beep again. This cycle will continue until the signal is restored. The beeping sound can also be stopped by pressing the power button for one second.</p>
5. Issues with battery or storage space	<p>1. When the battery falls below 10% during measurement, the alarm will beep once then go silent for 30 seconds, and then will beep again. This cycle will continue for three times. The beeping sound can also be stopped by pressing the power button for one second.</p> <p>2. When less than 20% storage space is left during measurement, the alarm will beep once then go silent for 30 seconds, and then will beep again. This cycle will continue for three times. The beeping sound can also be stopped by pressing the power button for one second.</p>

8-3. Troubleshooting

Please follow the below solutions for each problem.

Displayed message and solutions	Causes
No device found. Please ensure the device is turned on. (If this error persists, please read the manual or contact customer service.)	<ol style="list-style-type: none"> 1. Device is off. 2. Device has been inactive for more than 3 minutes. 3. The distance between device and cellphone is out of range of connection. 4. Bluetooth is off.
Unable to connect to the device (If this error persists, please read the manual or contact customer service.)	
The device has been disconnected. (If this error persists, please read the manual or contact customer service.)	
Wi-Fi connection failed. Please try again.	Possible problems: <ol style="list-style-type: none"> 1. Default Wi-Fi network is not connected. 2. Incorrect password for the default Wi-Fi network.
The device is currently in use by another person in offline mode. If you wish to take a measurement, please restart the device.	The device is in use by another person in offline mode.
Low battery (less than 10%). Please charge the device.	Device battery less than 10%.
Less than 20% storage space left. A data transfer is recommended to avoid data loss.	Less than 20% storage space left in the device.
Signals cannot be detected for the pulse oximeter / respiratory monitoring system. Please ensure	Possible problems:

Displayed message and solutions	Causes
that the probe is properly connected. If signals cannot be detected in three minutes, this measurement will end.	<ol style="list-style-type: none"> 1. Probe improperly worn. Please refer to the instruction manual. 2. Excessive movement detected. Please stay still during the measurement. 3. Sensor site unclean or obstructed (e.g., nail polish). Please clean sensor site. 4. Electromagnetic or bright light interference. Please stay away from source of interference. 5. Probe or cable malfunction. Please contact customer service.
Results (unable to analyze)	<p>Too much noise or signal is too weak. Unable to analyze. Possible problems:</p> <ol style="list-style-type: none"> 1. Probe improperly worn. Please refer to the instruction manual. 2. Excessive movement detected. Please stay still during the measurement. 3. Sensor site unclean or obstructed (e.g., nail polish). Please clean sensor site. 4. Electromagnetic or bright light interference. Please stay away from source of interference. 5. Probe or cable malfunction. Please contact customer service.

8-4. Technical issue

Please follow the below solutions for each technical issue.

Displayed message and solution	Cause
Error: E1 Device error. Contact customer service.	Storage device error. Data cannot be saved.
Error: E2 Device error. Contact customer service.	Probe cannot be detected, or frequent disconnection.

8-5. Reset

When there is a malfunction and the above solutions do not work, press the power button for more than 10 seconds until the LED indicator light is off, and then press the power button for two seconds until the alarm goes off for one second and the green light is on. This indicates that the device has been restarted successfully. If the problem persists after resetting, please contact customer service. Do not disassemble the device on your own.

9. Others

9-1. Pulse oximeter probe

You must use a probe from Chilina. Do not use probes from other brands.

Probe use and warnings:

- (1) Chilina's probe has a mistake-proof design to ensure that the probe is correctly plugged into the main unit.



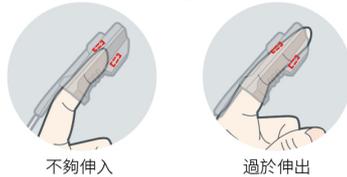
- (2) Recommended measurement site: Chilina's probe is available in three sizes: adult, child and infant. Wearing the probe improperly may affect result accuracy. Users are advised to follow the instructions below when using the probe.

- Adult/Child finger probe: to be worn on an index, middle or ring finger. Please wear the finger probe as illustrated.

- Correctly worn: Place the finger well into the finger probe.



- Incorrectly worn: Finger not inserted enough or inserted too much into the probe.



- Infant probe: to be wrapped around the foot

- Correctly worn: Wrap the sensor around a foot and adjust to fit well
- Incorrectly worn: A fitting that is too tight or too loose will create discomfort or will result in the sensor being dropped, which will affect accuracy.



9-2. Measurement principle

This product measures the percentage of oxygenated hemoglobin (HbO₂) in the blood. Two different wavelengths of light are used to penetrate the skin of the fingertips into the vascular tissue. Oxygenated hemoglobin (HbO₂) and deoxygenated hemoglobin (Hb) absorb light of two different wavelengths differently. A conversion technology will convert that difference into electrical signals. The oxygen saturation (SpO₂) will then be calculated according to the below formula.

$$\text{Oxygen saturation formula: } SpO_2 = \frac{HbO_2}{HbO_2 + Hb} \times 100\%$$

9-3. Device care

Part	Device care
Main unit	Wipe the product surface with dry cloth, 75% alcohol or 1:50 diluted bleach solution.
Storage case	Wipe the product surface with dry cloth, 75% alcohol or 1:50 diluted bleach solution.
Pulse oximeter probe	Wipe the product surface with dry cloth, 75% alcohol or 1:50 diluted bleach solution.
Protective case	Clean with damp, soft cloth and air-dry.

9-4. Battery

- (1) This product has an inbuilt, non-removable lithium battery. Do not replace or repair it on your own, as this may cause other safety concerns.
 - a) Do not open, break, hit or throw the battery into fire or water as the battery will break, explode, or leak dangerous chemicals.
 - b) When the battery is not being charged properly, gives a foul odor, or has a change in shape, stop using the battery and return the device to the manufacturer. Only authorized engineers are permitted to disassemble the device. Rechargeable lithium battery with the same model as the one provided by the original manufacturer must be used.
- (2) It takes about three hours to charge the battery from 0% to 100%.

9-5. Symbol

Symbol	Description
	Carefully read the instruction manual before using the product.
	The product must be connected to the user to use. But it cannot be placed directly on the heart.
IP22	Dustproof and waterproof rating of this product.
	In compliance with the National Communications Commission (NCC) regulations.
	Recycling information. This product contains electronics and electronic components that may harm the environment. Do not dispose of the product with other general waste. Recycle the product following applicable local laws and regulations.

Symbol	Description
	Radiofrequency radiation hazard warning symbol
	Serial number
	Direct current
	Manufacturing date
	Manufacturer

9.6 FCC Statements

FEDERAL COMMUNICATIONS COMMISSION INTERFERENCE STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/ TV technician for help.

CAUTION:

Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

9.7 RF Exposure warning

This device meets the government's requirements for exposure to radio waves. This device is designed and manufactured not to exceed the emission limits for exposure to radio frequency (RF) energy set by the Federal Communications Commission of the U.S. Government.

The exposure standard employs a unit of measurement known as the Specific Absorption Rate, or SAR. The SAR limit set by the FCC is 1.6 W/kg. Tests for SAR are conducted using standard operating positions accepted by the FCC with the EUT transmitting at the specified power level in different channels.

The FCC has granted an Equipment Authorization for this device with all reported SAR levels evaluated as in compliance with the FCC RF exposure guidelines. SAR information on this device is on file with the FCC and can be found under the Display Grant section of <https://apps.fcc.gov/oetcf/eas/reports/GenericSearch.cfm> after searching on FCC ID: POTS68.

System Requirements

This product supports low-power Bluetooth data transfer. Compatible cellphone models include:

Apple iOS system

iPhone SE

iPhone XS Max

iPhone XS

iPhone 8

iPhone 7

iPhone 6S

The iOS version must be iOS 9.3.2 or later.

Android system

Google Pixel 3a

Samsung Note10 Lite

Samsung Note9

Samsung Galaxy A51

ASUS ZenFone Max Pro (M2)

Sony Xperia 10

HTC U19e

HUAWEI P30

HUAWEI Y9 Prime

Xiaomi 9

Redmi Note 8T

OPPO Reno2 Z

OPPO A9

Realme XT

The Android version must be Android 5.0 or later.

Chiline HomeCare App version

iOS: v3.4

Android: v3.4

Visit the official website for a list of compatible cellphone models: www.chilinemd.com.tw

✘ After downloading the Chiline HomeCare App, users must first electronically sign the User Agreement and the Privacy Policy Agreement before using the App.

Data transfer

Bluetooth mode: This product (main unit) will transfer data via Bluetooth to the Chiline HomeCare App. The App will then upload data to the Chiline Health Management Platform (a cloud platform).

Wi-Fi mode: This product (main unit) will transfer data via Wi-Fi directly to the Chiline Health Management Platform (a cloud platform).

✘ It is recommended to use a secure Wi-Fi network (such as WPA2 or above) for internet connection.

✘ The Google Cloud used for the Chiline Health Management Platform has received an ISO/IEC 27001 L2 certification issued by CSA.

Product owner: Inventec Appliances Corp.

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