OPERATOR'S MANUAL *Oxy*Touch

Pulse Oximeter

General Description

The ChoiceMMed Pulse Oximeter is intended for home environments.
The ChoiceMMed Pulse Oximeter is intended for the noninvasive measurement of functional oxygen saturation of arterial hemoglobin (SpO_2) and pulse rate (PR) for healthy adults and children, respiratory rate (RR) for healthy adult during no motion condition.
The **S108 Lite** is for general wellness and health application, including sports, aviation, fitness, and relaxation management. It is not intended to be used in prevention, diagnosis, or treatment of any disease.

Precautions for Use

1. Please read the manual carefully before use.
2. Operation of the pulse oximeter may be affected by the use of an electrosurgical unit (ESU).
3. The use of accessories, transducers and cables other than those specified or provided by the manufacturer of this equipment could result in increased electromagnetic emissions or decreased electromagnetic immunity of this equipment and result in improper operation.
4. Portable and mobile RF communications equipment can affect medical electrical equipment. The portable and mobile RF communications equipment should be used no closer than 30cm (12 inches) to any part of the device, including cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment could result.
5. Use of this equipment adjacent to or stacked with other equipment should be avoided because it could result in improper operation. If such use is necessary, this equipment and the other equipment should be observed to verify that they are operating normally.
6. Do not use the pulse oximeter in situations where alarms are required. The device has no alarms. It is not for continuous monitoring.
7. Do not use the pulse oximeter in an explosive atmosphere.
8. In order to ensure correct sensor alignment and skin integrity, the maximum application time at a single site for our device should be less than half an hour.
9. Do not sterilize the device using autoclaving, ethylene oxide sterilizing, or immersing the device in liquid. The device is not intended for sterilization.
10. Follow local ordinances and recycling instructions regarding disposal or recycling of the device and device components, including batteries.
11. Do not disassemble, repair or modify the equipment without authority.
12. It may be unsafe to:
- use accessories, detachable parts and materials not described in the instructions for use;
- interconnect this equipment with other equipment not described in the instructions for use;
- disassemble, repair or modify the equipment.

13. Stop using and contact local service center if one of the following cases occurs:
- Any of the problems in the Possible Problems and solutions cannot be solved.
- The oximeter cannot be powered on in any case and not the reasons of battery.
- There is a crack on the oximeter or damage on the display resulting readings cannot be identified or the key is unresponsive or unavailable.

14. When the signal is not stable, the reading may be inaccurate. Please do not refer to the measurement.
15. Aging infrared-ray detector or insufficient battery level may affect the equipment performance. Please follow the instructions in the manual to maintain the device.
16. Please contact the manufacturer for any question about the usage or maintenance.
17. Do not use the equipment in an MRI or CT environment.
18. Do not modify this equipment without authorization of the manufacturer.
19. The manufacturer will make available on request circuit diagrams, component part lists, descriptions, calibration instructions, or other information that will assist the user's appropriately trained personnel to repair those parts of the equipment designated by the manufacturer to be repairable.

Inaccurate measurements may be caused by

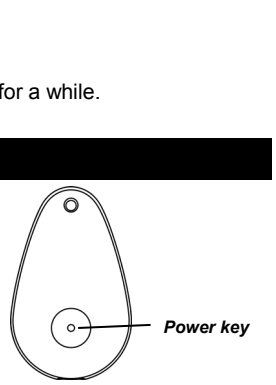
1. Significant levels of dysfunctional hemoglobin (such as carbonyl - hemoglobin or methemoglobin).
2. Intravascular dyes such as indocyanine green or methylene blue.
3. High ambient light. Shield the sensor area if necessary.
4. High-frequency electrosurgical interference and defibrillators.
5. Venous pulsations.
6. Weak pulse quality (low perfusion).
7. Low hemoglobin.
8. Finger press too tightly.

Product Features

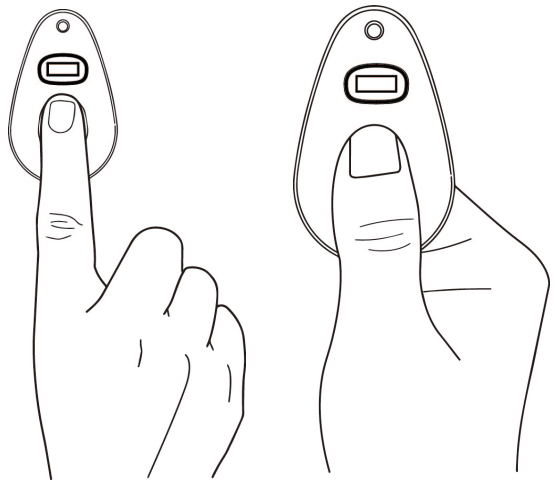
- Simple to operate and convenient to carry.
- Small volume, light weight and low power consumption.
- Wireless Bluetooth for data transmission.
- The device will power off automatically when your finger is off the device for a while.
- Compatible with iOS or Android App.

Operation Instructions

1. Please make sure the device is fully charged before using, and the device can be charged by using USB power and adapter.
2. Please complete the pairing with the iChoice APP for the first time using the device.
3. Press the power button on the back of pulse oximeter to turn on the device, it will start the Bluetooth pairing mode, the LED light will enter the blue light flashing state, please open the iChoice APP at the same time to complete the device addition and pairing.



4. The device LED blue light on that indicates the Bluetooth connected successfully. After the device is successfully paired, enter the blood oxygen module of the iChoice APP, you can check the device connecting status and battery level, and put your finger on the sensor lens to measure.
5. The device will power off automatically when your finger is off the device for a while. After the measurement, the historical data can be viewed in the APP.
6. When Bluetooth is disconnected, the device can take offline measurements. Tap the button on the back of the pulse oximeter to turn on it, and press your finger on the sensor lens of the device（***See the measuring methods as figures right***）, it will display the SpO_2 value on the screen after completing the offline measurement. The offline measurement data will be automatically uploaded after successfully connecting with the iChoice APP.



7. If need to pair other mobile phones, you should to clear the original pairing settings of the device first. Please press the button on the back of the device for three seconds in the non-Bluetooth connection state, and press three more times, then delete the device in the iChoice APP and the Bluetooth pairing device in the mobile phone to cancel the pairing with the original mobile APP.

Data Transmission

The S108 Lite supports data transmission to iChoice APP via Bluetooth.

■ **Installing iChoice APP**

Download iChoice APP from the APP store on your smartphone and install the APP.
NOTE: iChoice is a free Android/iOS APP.

■ **Registering an iChoice account**

Start the APP and register a user account with your email and other information required.
ATTENTION: The network of your smart devices must be available and normal for you to log in the APP.

■ **Pairing oximeter with iChoice via Bluetooth**

1. Select "Device Management" from the APP homepage.
2. Tap "**Add device**", then enter the "Add Devices" page.
3. Tap "**Pulse Oximeter**", choose your oximeter model "**S108 Lite**".
4. Turn on your oximeter. The APP will automatically pair with the oximeter.
5. After the device is successfully connected, the APP displays the "Bluetooth Pairing Request" pop-up window, and tap "**Pair**" to start measurement.

Make sure your smartphone's Bluetooth is enabled.

■ **Uploading measurement data to iChoice**

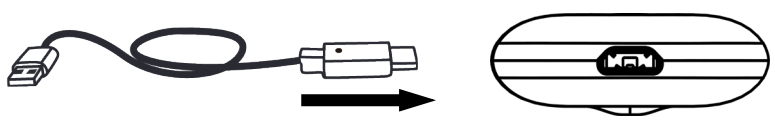
1. When the device is successfully connected with the APP, it will directly upload the measurement data, which includes blood oxygen saturation, pulse rate, respiration rate, PI, time and other information.
2. When the device is disconnected from Bluetooth, it can also perform offline measurements, and the device can store 100 offline spot measurement data. Every historical data contains blood oxygen saturation, pulse rate, respiration rate, PI and time, and the device will be automatically uploaded after successfully connected with the iChoice APP.

Notes:

- ✧ Tap "Device Management", choose "Pulse Oximeter S108 Lite", and read "**How to use**" to get detailed APP guide.
- ✧ The APP is compatible with iOS or Android system.
- ✧ For more details, please refer to the operation guide of iChoice APP.

Battery Charge

Please remember that when the battery is running low, the device cannot work.
Please connect the power adapter to the USB port of the pulse oximeter and then start charging.



Notes:

- ✧ The device LED flashes green to indicate that it is in the charging state.
- ✧ The device LED flashes red to indicate low battery status.
- ✧ When the device LED is always green on, it indicates that the device is fully charged.
- ✧ When the device LED is always red on, it indicates a malfunction of the light emitting tube, all functions fail, and it automatically power off after 8 seconds.

Maintenance and Storage

1. Charge the device immediately when the battery is low.
2. Wipe the surface of the device clean before use.
3. It is best to store the device in -25℃~+70℃ and ≤93% humidity.
4. Keep it in a dry place. Extreme moisture may affect oximeter lifetime and may cause damage.

Clean and disinfect the device

- ✻ It is recommended to clean and disinfect the touching lens of the device with a soft cloth dampened with recommended alcohol of 70% isopropyl or 70% ethanol before and after each use.
- ✻ Do not pour or spray liquids onto the device and do not allow any liquid to enter any openings in the device. Allow the device to dry thoroughly before reuse.
- ✻ *The use life of the device is five years.*

Specifications

1. SpO_2	Measurement range: 70%~100% Accuracy: 70%~100%: ±2%; ≤69% no definition Resolution: 1%
2. Pulse Rate	Measure range: 30bpm~250bpm Accuracy: 30bpm~99bpm, ±2bpm; 100~250bpm, ±2% Resolution: 1bpm
3. Perfusion Index	Measure range: 0.3%~20.0%

4. Respiration Rate Display range: 4rpm~45rpm
Measurement range: 4rpm~45rpm
Resolution: 1rpm
Mean Error: ±1rpm
Arms ≤ 2

5. Probe LED Specifications RED Wavelength: 660±5nm Radiant Power: 58mw
IR Wavelength: 910±5nm Radiant Power: 25mw

(NOTE: The information about wavelength range can be especially useful to clinicians).

6. Power Requirements Lithium battery (DC 3.7V)
Power consumption: Less than 15mA
Battery Life: The device can take 30 times of spot measurements every day; 10 minutes of continuous measurements, and 5 times per day, it could be used for 5 days.

7. Equipment data update period: the average data update period is 12.4 seconds.

8. Environment Requirements Operation Temperature: 5℃~40℃
Storage Temperature: -25℃~+70℃
Ambient Humidity: 15%~93% no condensation in operation;
≤93% no condensation in storage/transport
Atmosphere pressure: 70kPa~106kPa

Notes: *When the ambient temperature is 20°C, it is required 6 hours for the equipment to warm from the minimum storage temperature or 4 hours to cool from the maximum storage temperature between uses until it is ready for its intended use.*

9. Classification
According to the type of protection against electric shock: Internally powered equipment
According to the degree of protection against electric shock: Type BF applied part (applied part: the silica gel pad of the device)
According to the degree of protection against ingress of water: IP22
According to the mode of operation: Continuous operation

10. Bluetooth
Frequency bands: 2400MHz to 2483MHz
Channel Spacing: 2 MHz
Type of modulation: GFSK

Possible Problems and Solutions

Problems	Possible reason	Solution
SpO_2 or PR cannot be shown normally.	1. Finger is pressed too tightly. 2. User's SpO_2 value is too low to be measured.	1. Press the finger correctly and try again. 2. There is excessive illumination. 3. Try some more times.
SpO_2 or PR is shown unstably.	1. The position of the finger pressing on the sensor lens is inaccurate. 2. Excessive movement.	1. Please press fingers correctly with the lens and try again. 2. Please keep your body still.
The oximeter cannot be powered on.	1. Low power. 2. The device might be damaged.	1. Please charge with USB cable in time. 2. Please contact local customer service center.
Indication lamps are suddenly off.	1. The device will power off automatically when your finger is off the device for a while. 2. Low charge to work.	1. Normal. 2. Please charge with USB cable in time.

Electromagnetic Compatibility

Table 1: Guidance and manufacturer's declaration – electromagnetic emissions – for all EQUIPMENT and SYSTEMS

Guidance and manufacturer's declaration – electromagnetic emission		
The pulse oximeter is intended for use in the electromagnetic environment specified below. The customer or the user of the pulse oximeter should assure that it is used in such an environment.		
Emission test	Compliance	Electromagnetic environment – guidance
RF emissions CISPR 11	Group 1	The pulse oximeter uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emission CISPR 11	Class B	The pulse oximeter is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.

Table 2

Immunity Test	Compliance	
Electrostatic Discharge (ESD) IEC 61000-4-2	±8 kV contact ±2 kV, ±4 kV, ±8 kV, ±15 kV air	
Rated power Frequency Magnetic Fields IEC 61000-4-8	30 A/m 50Hz and 60 Hz	
Radiated RF IEC 61000-4-3	80 MHz – 2.7 GHz	10 V/m 80% AM 1kHz
	380 – 390 MHz	27 V/m Pulse mod. 18Hz
	430 – 470 MHz	28 V/m FM±5Hz deviation 1kHz sine
	704 – 787 MHz	9 V/m Pulse mod. 217Hz
	800 – 960 MHz	28 V/m Pulse mod. 18Hz
	1.7 – 1.99 GHz	28 V/m Pulse mod. 217Hz
	2.4 – 2.57 GHz	28 V/m Pulse mod. 217Hz
	5.1 – 5.8 GHz	9 V/m Pulse mod. 217Hz
Note: Electrical Fast Transients (IEC 61000-4-4), Surge (IEC 61000-4-5), Voltage dips (IEC 61000-4-11), Conducted Immunity (IEC 61000-4-6) are not applicable.		

Test frequency	Modulation	Immunity test level (A/m)
30 kHz a)	CW	8
134.2 kHz	Pulse modulation b)	65 c)
	2.1kHz	
13.56 MHz	Pulse modulation b) 50kHz	7.5 c)

a) This test is applicable only to me equipment and me systems intended for use in the home healthcare environment.
b) The carrier shall be modulated using a 50% duty cycle square wave signal.
c) r.m.s., before modulation is applied.

Symbol Definitions

Symbol	Definition	Symbol	Definition
	Type BF applied part		Attention
IP22	Protected against dripping water	**%SpO_2**	Oxygen saturation
PR bpm	Pulse rate (BPM)		Waste electrical and electronic equipment
PI%	Perfusion Index	**RR**	Respiration Rate
	No SpO_2 Alarm	**SN**	Serial No.
	Storage temperature and relative humidity		Follow instruction for use
	Manufacturer's information		Date of Manufacture
	Bluetooth indication	**?**	Indicate the signal is not stable

Box Content

1. Pulse Oximeter……..X1
2. One Hanging Ring…….....X1
3. One Charging Cable……X1
4. One Instruction Manual…...X1

FCC Declaration

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

Applicable Models

S108 Lite

Notes:
1. **The illustrations used in this manual may differ slightly from the appearance of the actual product.**
2. **The specifications are subject to change without prior notice.**

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Version: Ver3.0
Issue Date: April 17, 2025