Biocom 3500 Bluetooth Pulse Wave Sensor

Setup and Operation Guide

1. General Information

The Biocom 3500 Bluetooth Pulse Wave Sensor is a portable wireless pulse oximeter device designed for pulse and blood oxygen measurement and monitoring.

No latex-containing materials are used in the device construction in order to minimize the risk of allergic reactions for both operators and clients.

The Biocom 3500 Bluetooth Pulse Wave Sensor is a photoplethysmogram (PPG) recording device.

The following system requirements must be met for proper operation of Biocom products equipped with the Biocom 3500 Bluetooth Pulse Wave Sensor:

- Operating system: Windows 10 or Windows 11
- Bluetooth interface: Standard Bluetooth LE receiver

2. Setting Up the Biocom 3500 Bluetooth Pulse Wave Sensor

The Biocom 3500 Bluetooth Pulse Wave Sensor is housed in a plastic enclosure having a standard finger-clip form factor.

The top panel of the device the following elements:

Element	Description
LED Display	A large color LED displays the device status and some measured data: - Pulse Rate - SpO2 - Battery level - Bluetooth connection status
Round Button	A physical button turns the device on. The device turns off automatically in 10 seconds after the user pulls their finger off the clip.

3. Technical Specifications

Parameter	Specification
Device type	Pulse oximeter
Connection type	Bluetooth LE
Sensor type	Photoplethysmograph
Power supply	2 x AAA batteries
Outputs	Raw PPG, SpO2, HR
Frequency bandwidth	0.5 - 30 Hz
ADC resolution	32 bit
Sampling rate	200 Hz
Battery operation time	30 h
Enclosure material	ABS plastic
Device weight	50 g
Operating temperature	+10 ^{o}C to +40 ^{o}C

4. Inspection and Maintenance

The components of the BC3500 Bluetooth Pulse Wave Sensor should be inspected on a regular basis and before each use. These inspections are important in order to guarantee the proper working condition of your system.

Perform the following steps to inspect the BC3500 Bluetooth Pulse Wave Sensor:

1. Inspect the physical condition. Check to ensure that the case and controls are clean and in good condition.
2. Make sure that the device batteries have good charge. It is good practice to keep a pair of fresh AAA batteries for replacement.

5. Connecting the Device to a Client

Prepare the client's index or middle finger skin surface for effective signal acquisition. Clean the skin using a soft tissue to remove oils, dirt, etc. Note that for proper sensor placement, never use alcohol, tincture of benzoin, or antiperspirant to prepare the skin. Slightly massage the finger to increase blood flow in it. This will ensure a strong pulse wave signal. Clip the device to the finger to make sure that it suitably fits the finger.

6. After Each Client Use

Perform the following steps after each client session:

1. Clean the device.
2. Check if spare batteries are available for the next use.
3. Put the device in a safe place.

7. Troubleshooting

Since Bluetooth communication is wireless, it may be affected by various sources of electromagnetic interference like EMR or X-ray equipment, the presence of other wireless devices, etc.

If your system was functioning well before all of a sudden stops working, this may occur due to such interference. To restore its function, check for possible sources of interference and turn them off if possible.