

# BioButton™ Instructions for Use

AUGUST 2020

## Table of Contents

|   |                          |   |                                   |
|---|--------------------------|---|-----------------------------------|
| 1 | Indications for Use      | 5 | Replace Your Adhesive             |
| 2 | BioButton Overview       | 5 | Troubleshooting and FAQs          |
| 2 | Package Contents         | 6 | Safety and Regulatory Information |
| 3 | Warnings and Precautions | 8 | Technical Specifications          |
| 4 | Use Instructions         | 9 | Guidance and Declaration          |

## Indications for Use

The BioButton™ system is a remote patient monitoring system that is capable of, through a wearable sensor device, continuously obtaining physiological data from patients in both healthcare settings and in-home settings for up to 90 days.

### The physiological data collected by the BioButton can include:

- Heart rate at rest
- Respiratory rate at rest
- Skin temperature

### There are other non-medical data to be collected and reported by the device, including:

- Activity Level
- Body position
- Sleep Tracking
- Contact Tracing



BioButton

The device is capable of remote transferring of obtained physiological data from the patient's location to clinicians patients for storage, analysis, and review.

The device is intended for use on general care patients who are 18 years of age or older as a general patient monitor, to provide physiological information.

The data from the BioButton System is intended for use by healthcare professionals as an aid to diagnosis and treatment.

The device is not intended for use on critical care patients.

## IN CASE OF EMERGENCY, CALL 911 IMMEDIATELY

Our support line is not for medical emergencies. If you believe you have an emergency, call 911.

## BioButton Overview

The BioButton wearable device is made of medical grade silicone and is adhered with a double-sided fabric adhesive.



## Package Contents

- BioButton Device
- Fabric Skirt Adhesives
- Instructions for Use



## Warnings and Precautions

**DO NOT** wear device over excessive body hair. Excessive body hair should be trimmed using only an electric trimmer, before application.

**DO NOT** place on broken skin including wounds, sores, or abrasions.

**DO NOT** submerge the device in more than 3 feet of water or submerge for longer than 30 minutes at a time. Prolonged exposure to water may cause the device to loosen from the skin.

**DO NOT** continue wearing if severe discomfort or irritation occurs.

**DO NOT** exert excessive force, drop, modify, or attempt to take apart the device. Doing so may cause malfunction or permanent damage.

**DO NOT** wear or use the BioButton during a magnetic resonance imaging (MRI) procedure or in a location where it will be exposed to strong electromagnetic forces.

- Remove the BioButton prior to any defibrillation events. Clinical validation has not been performed for persons who have a defibrillator or pacemaker device.
- Keep the device away from children and pets. The BioButton device may be a choking hazard and may be harmful if swallowed.
- Press the BioButton's button regularly to verify that it is working.

## Use Instructions

### BEFORE YOU START

- Download and install the **BioMobile™** app for iOS or Android phones.  
*We support iOS 13+ and Android 9+*
- Set up BioHub™ unit by **following the instructions in the BioHub box.**

**DO NOT** proceed until BioMobile app or BioHub is set up.

### GET STARTED

- Press and hold the button for **2 SECONDS**. Proceed when the **LIGHT** blinks repeatedly.
- Locate area on **UPPER LEFT CHEST**, two inches below collar bone.
- TRIM ANY BODY HAIR** using only an electric trimmer and **CLEANSE AREA** with a warm, damp cloth.
- Find adhesive. Peel backing from **DEVICE SIDE** of adhesive.
- Place the BioButton **ON** the exposed adhesive. Turn over and **REMOVE** remaining adhesive backing.
- ADHERE** BioBioButton to chest. Apply pressure for 15 seconds

You're done!

### LIGHT PATTERN MEANINGS

Press the BioButton's button and confirm the light blinks 5 times.

| LIGHTS                             | MEANING                                                                  |
|------------------------------------|--------------------------------------------------------------------------|
| 4 regular blinks                   | Actively monitoring                                                      |
| 5 rapid blinks                     | Worn for maximum wear time (up to 90 days)                               |
| 10 rapid blinks (repeated 4 times) | Not monitoring, connect to BioMobile app or BioHub to restart monitoring |
| Solid light or no light            | Error detected, contact support immediately                              |

## Replace Your Adhesive

- When no longer sticky.
- If you experience redness or irritation in the placement area.

**REMOVE** adhesive from bottom of device. Follow steps 4 through 6 to put on a new adhesive and reapply BioButton.

When replacing the adhesive, it is advised to apply the device to a different location within the placement area.

---

## Troubleshooting and FAQs

### Can I shower or exercise with my device?

Yes, the BioButton is water resistant and can be worn during showers and exercise. Do not apply any deodorant or lotion to the placement areas as it will reduce adhesion of the device to the skin.

### Can I swim or bathe with the BioButton?

Yes, the BioButton is water resistant and will continue working as long as it is not submerged more than 3 feet or kept underwater for longer than 30 minutes at a time. Prolonged exposure to water may cause the device to loosen from the skin.

### I'm experiencing some skin irritation, what should I do?

Minor skin irritation and itching may occur while wearing the BioButton. If a severe reaction develops (i.e. hives or blisters), discontinue wearing and immediately contact your physician.

### How long should I wear my device?

Please wear your device for the entire monitoring period, but no longer than 90 days. Each adhesive may be worn for up to 7 continuous days. You may replace the adhesive more often, as needed, to ensure good contact is maintained with the skin.

### How do I know my device is working?

Press and release BioButton's button. The device light will blink 4 times. If the device does not blink or blinks more than 4 times, please immediately contact Customer Support (see front cover).

### I've tried activating the device several times, and the light still won't blink. What do I do?

Contact Customer Support immediately (see front cover). You may be instructed to return the device and may receive a replacement kit if more data is needed for the monitoring period.

## Safety and Regulatory Information

### FCC STATEMENT

Model: BIOST03020  
FCC ID: 2ASE7- BIOST03020

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.

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.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with FCC Radiation Exposure limits set forth for an uncontrolled environment. This device should be installed and operated with a minimum distance of 20 cm between the radiator and your body.

BioIntelliSense and BioButton are trademarks or registered trademarks of BioIntelliSense, Inc.

### RESPONSIBLE PARTY:

**BioIntelliSense, Inc.**  
**570 El Camino Real #200**  
**Redwood City, CA 94063**

### TERMS OF USE STATEMENT

NOTICE: Use of the BioIntelliSense Product(s) is subject to our

- Website and Product User Terms of Use at [www.biointellisense.com/website-and-product-user-terms-of-use](http://www.biointellisense.com/website-and-product-user-terms-of-use)
- Website Privacy Policy at [www.biointellisense.com/website-privacy-policy](http://www.biointellisense.com/website-privacy-policy)
- Product and Data-as-a-Service Privacy Policy at [www.biointellisense.com/product-and-service-privacy-policy](http://www.biointellisense.com/product-and-service-privacy-policy)

By using the Product(s), you indicate you have read these terms and policies and that you agree to them, including the limitations and disclaimers of liability. In particular, you understand and consent that use of the Product(s) measures and records personal information about you, including vital sign and other physiologic measurements. That information may include respiratory rate, heart rate, temperature, activity level, sleep duration, body position, step count, gait analysis, coughing, sneezing and vomit frequency and other symptomatic or biometric data. The Product(s) may also be configured to track and record proximity and duration data in relation to other Product(s). You understand that the Product(s) do not render medical advice or diagnose or prevent any specific disease, including any communicable disease or virus. If you have any concerns about your health, including whether you have been exposed to or have contracted any disease or virus, immediately contact your healthcare provider.

## SYMBOL LIBRARY



MRI unsafe



Don't use if package is damaged



Latex-free



Consult with instructions for use



Type BF applied part



FCC icon



Single-use only



Temperature limitation



Humidity limitation



Apply by date



Lot number



Model number



Warning

## Technical Specifications

|                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Product Name</b>              | BioButton                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Model Number</b>              | BIOST03020                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Battery</b>                   | 140mAh, CR1632                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Heart Rate* Range</b>         | 40 to 125 beats per minute (<± 5 beats per minute)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Respiratory Rate* Range</b>   | 10 to 30 breaths per minute                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Skin Temperature Range</b>    | 86°F to 107.6°F (30°C - 42°C)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Skin Temperature Accuracy</b> | $< 96.4^{\circ}\text{F} \pm 0.5^{\circ}\text{F}$ ( $< 35.8^{\circ}\text{C} \pm 0.3^{\circ}\text{C}$ )<br>$96.4^{\circ}\text{F}$ to $98^{\circ}\text{F} \pm 0.3^{\circ}\text{F}$ ( $35.8^{\circ}\text{C}$ to $37^{\circ}\text{C} \pm 0.2^{\circ}\text{C}$ )<br>$98^{\circ}\text{F}$ to $102^{\circ}\text{F} \pm 0.2^{\circ}\text{F}$ ( $37^{\circ}\text{C}$ to $39^{\circ}\text{C} \pm 0.1^{\circ}\text{C}$ )<br>$102^{\circ}\text{F}$ to $106^{\circ}\text{F} \pm 0.3^{\circ}\text{F}$ ( $39^{\circ}\text{C}$ to $41^{\circ}\text{C} \pm 0.2^{\circ}\text{C}$ )<br>$> 106^{\circ}\text{F} \pm 0.5^{\circ}\text{F}$ ( $> 41^{\circ}\text{C} \pm 0.3^{\circ}\text{C}$ ) |
| <b>Ambient Temperature</b>       | 50°F to 110°F $\pm 1^{\circ}\text{F}$ (10°C to 43°C)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

### STORAGE CONDITIONS

|                          |                               |
|--------------------------|-------------------------------|
| <b>Temperature Range</b> | -4°F to 122°F (-20°C to 50°C) |
| <b>Humidity Range</b>    | 0 - 95% RH                    |

### OPERATING CONDITIONS

|                             |                             |
|-----------------------------|-----------------------------|
| <b>Temperature Range</b>    | 32°F to 122°F (0°C to 50°C) |
| <b>Humidity Range</b>       | 0 - 95% RH                  |
| <b>Atmospheric Pressure</b> | 70 - 102 kPa                |
| <b>Water Resistance</b>     | IP47                        |

### COMMUNICATIONS

|                                 |                                                                        |
|---------------------------------|------------------------------------------------------------------------|
| <b>Communication Technology</b> | Bluetooth (BT4.2)                                                      |
| <b>Distance</b>                 | Max. 10 meters (30 feet) line of sight                                 |
| <b>Radio Modulation GFSK</b>    | Gaussian frequency shift keying                                        |
| <b>Radio Frequency</b>          | 2.4 - 2.5 GHz                                                          |
| <b>Transmit Power</b>           | 0dBm                                                                   |
| <b>Security</b>                 | AES-CTR 128 bit encryption (Advanced encryption standard counter mode) |

\* Measurements are taken at rest



## Guidance and Declaration – Electromagnetic Compatibility

### ELECTROMAGNETIC EMISSION

The BioButton sensor is intended for use in the electromagnetic environment specified below. The user of the device shall ensure that the device is used in such an environment.

| EMISSION TEST METHOD                               | COMPLIANCE LEVEL | ELECTROMAGNETIC ENVIRONMENT & GUIDANCE                                                                                                                                                                                            |
|----------------------------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>RF emissions</b><br>CISPR 11: 2009<br>+ A1:2010 | GROUP 1          | The BioButton sensor 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.                                         |
| <b>RF emissions</b><br>CISPR 11: 2009<br>+ A1:2010 | CLASS B          | The BioButton sensor 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. |

### ELECTROMAGNETIC IMMUNITY

The BioButton sensor is intended for use in the electromagnetic environment specified below. The end user of the device should assure that it is used in such an environment.

| IMMUNITY TEST                                           | IEC 60601 TEST LEVEL          | COMPLIANCE LEVEL              | ELECTROMAGNETIC ENVIRONMENT - GUIDANCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------------------------------------------------|-------------------------------|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Electrostatic discharge (ESD) IEC 61000-4-2             | ± 8 kV contact<br>± 15 kV air | ± 8 kV contact<br>± 15 kV air | Floors should be wood, concrete, or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Power frequency (50/60 Hz) magnetic field IEC 61000-4-8 | 30 A/m                        | 30 A/m                        | Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Radiated RF IEC 61000-4-3                               | 10 V/m<br>80 MHz to 2.7 GHz   | 10 V/m                        | <p>Portable and mobile RF communications equipment should be used no closer to any part of the BioButton sensor than recommended to the frequency of the transmitter.</p> <p>Recommended separation distance:<br/> <math>d = 1.2 \sqrt{P}</math> 80 MHz to 800 MHz<br/> <math>d = 2.3 \sqrt{P}</math> 800 MHz to 2.7 GHz<br/>           where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in meters (m).</p> <p>Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey(a) should be less than the compliance level in each frequency range(b).</p> <p>Interference may occur in the vicinity of equipment marked with the following symbol: </p> |

**NOTE 1:** At 80 MHz and 800 MHz, the higher frequency range applies.

**NOTE 2:** These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects, and people.

- (a) Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radio, AM and FM radio broadcast, and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the BioButton is used exceeds the applicable RF compliance level above, the BioButton should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the BioButton.
- (b) Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

#### IMMUNITY TO RF WIRELESS COMMUNICATIONS EQUIPMENT

| TEST FREQUENCY (MHZ) | BAND <sup>a</sup> (MHZ) | SERVICE <sup>a</sup>                                              | MODULATION <sup>b</sup>                            | MAXIMUM POWER (W) | DISTANCE (M) | IMMUNITY TEST LEVEL (V/M) |
|----------------------|-------------------------|-------------------------------------------------------------------|----------------------------------------------------|-------------------|--------------|---------------------------|
| 385                  | 380-390                 | TETRA 400                                                         | Pulse modulation <sup>b</sup> 18 Hz                | 1.8               | 0.3          | 27                        |
| 450                  | 430-470                 | GMRS 460, FRS 460                                                 | FM <sup>c</sup><br>± 5 kHz deviation<br>1 kHz sine | 2                 | 0.3          | 28                        |
| 710, 745, 780        | 704 – 787               | LTE Band 13, 7                                                    | Pulse modulation <sup>b</sup><br>217 Hz            | 0.2               | 0.3          | 9                         |
| 810, 870, 930        | 800 – 960               | GSM 800/900, TETRA 800, iDEN 820, CDMA 850, LTE Band 5            | Pulse modulation <sup>b</sup><br>18 Hz             | 2                 | 0.3          | 28                        |
| 1720, 1845, 1970     | 1700 – 1990             | GSM 1800; CDMA 1900; GSM 1900; DECT; LTE Band 1, 3, 4, 25; UMTS   | Pulse modulation <sup>b</sup><br>217 Hz            | 2                 | 0.3          | 28                        |
| 2450                 | 2400-2570               | Bluetooth, WLAN, 802.11 b/g/n, RFID 2450, LTE Band 7 <sup>a</sup> | Pulse modulation <sup>b</sup><br>217 Hz            | 2                 | 0.3          | 28                        |
| 5240, 5500, 5785     | 5100 – 5800             | WLAN 802.11 a/n                                                   | Pulse modulation <sup>b</sup><br>217 Hz            | 0.2               | 0.3          | 9                         |

<sup>a</sup> For some services, only the uplink frequencies are included.

<sup>b</sup> The carrier shall be modulated using a 50 % duty cycle square wave signal.

<sup>c</sup> As an alternative to FM modulation, 50% pulse modulation at 18 Hz may be used because while it does not represent actual modulation, it would be worst case.

## RECOMMENDED SEPARATION DISTANCE BETWEEN PORTABLE AND MOBILE RF COMMUNICATIONS EQUIPMENT AND BIOBUTTON

The BioButton is intended for use in the electromagnetic environment in which radiated RF disturbances are controlled. The end user of the device can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the BioButton sensor as recommended below, according to the maximum output power of the communications equipment.

| RATED MAXIMUM OUTPUT<br>POWER OF TRANSMITTER<br>(W) | SEPARATION DISTANCE ACCORDING TO FREQUENCY OF<br>TRANSMITTER (M) |                                          |
|-----------------------------------------------------|------------------------------------------------------------------|------------------------------------------|
|                                                     | 80 MHZ TO 800 MHZ<br>$D = 1.2 \sqrt{P}$                          | 800 MHZ TO 2.7 GHZ<br>$D = 2.3 \sqrt{P}$ |
| 0.01                                                | 0.12                                                             | 0.23                                     |
| 0.1                                                 | 0.38                                                             | 0.73                                     |
| 1                                                   | 1.2                                                              | 2.3                                      |
| 10                                                  | 3.8                                                              | 7.3                                      |
| 100                                                 | 12                                                               | 23                                       |

## Contact Us

For non-urgent support or questions about our product, please call **888.908.8804** or email [support@biointellisense.com](mailto:support@biointellisense.com)

### MANUFACTURED BY

**BioIntelliSense, Inc.**  
570 El Camino Real #200  
Redwood City, CA 94063