Bitbrain

Ring Biosignal GSR BVP

USER GUIDE

Model: FBR

V-RING-01-040326-EN

English

This is the user guide for the Ring Biosignal GSR BVP device from Bitbrain.

This document will provide information for the proper setup and usage of the system.

Bitbrain

Contents

What is included?

This pack includes all the elements necessary for the operation of the Ring biosignal system:

Name/description	Amount
Ring • Powered by an internal battery.	1
8GB Class-10 MicroSD Card with SD Adaptor	1
Cable USB type A - micro USB type B • Charges the Ring.	1

Safety information

Please read the safety information, conditions of use and instructions carefully before using the device. Failure to follow the instructions set out in these documents will lead to the nullification of the product warranty.

Careful usage and handling of the equipment

- Do not handle the device with damp hands, as this could cause a short circuit.
- Do not use the device for other applications than its intended purpose.
- Do not hit, throw, bite open, or burn the device.
- Avoid falls or collisions with other objects.
- Keep the device in a dry place, and do not expose to extreme temperatures.
- This equipment is not suitable for use where children are likely to be present.

Warnings about the equipment

- DO NOT use the device while it is charging.
- DO NOT open the device. If your device does not work properly, contact support@bitbrain.com.
- DO NOT place this device close to life support electronic. and electrical equipment.
- The handling and supervision of the equipment shall mandatorily be performed by an adult when the equipment is used to measure biometric data in children.
- If you notice that the device emits strange smells or noises, or that its temperature is excessive, leave it in a safe place and contact support@bitbrain.com.

Warnings about the battery

- Use the provided cable or other similar connected directly to a USB 5V output to charge the device (the power supply must be covered by the UNE- EN60950-1:2007 normative). Using other kind of power supply may damage the device.
- Disconnect the charging cable once the battery is fully charged. Otherwise, the battery's life cycle could be reduced.
- If you are going to store the device for a long period (more than one week), it is recommended that the battery. should not be 100% charged. This can degrade the battery and result in

Safety information

capacity loss.
- Keep the device in a dry place, between the temperatures of 5ºC and 40ºC. Prolonged exposure to high temperatures can affect the stability of the battery.
- To charge the battery of the device follow the manufacturer's recommendations. Limit of 0,5A. Using a higher amperage charger may seriously damage the battery.

Symbols

⎓ Direct current.

Device disposal

- Do not throw electrical and electronic devices in the trash! In accordance with European Directive 2012/19/UE on Waste Electrical and Electronic Equipment, they should be disposed of at suitable collection points for environmentally responsible recycling.
- Before disposing of appliances at collection points, batteries should be removed and disposed of separately from the electronics to be treated appropriately.
- In order to separate the battery from the electronics in preparation for disposal, open the amplifier using a Torx 6 screwdriver and carefully detach it.

Conformity and CE marking

This device is a radioelectrical IT equipment.

The CE marking indicates compliance with the essential requirements of the RED Directive (2014/53/EU).

The Bluetooth module it incorporates complies with this Directive. It is used according the requirements and instructions specified by its manufacturer.

CE

Important

- Ring is a device designed by Bitbrain to measure biometric data for research purposes.

Conventions and symbols

The Following Conventions and Symbols are Used in this Manual:

Conventions:

- **Note:** used to highlight relevant information.
- **Caution:** used to point out aspects that if not observed, may cause damage to the equipment, injury to persons or deviations in the operation of the equipment with respect to its specifications.
- **Warning:** used to inform of a specific action which, if not observed, may cause damage to the equipment, injury to persons or deviations in the operation of the equipment from its specifications

Symbols:

The following symbols are to be found both in this manual and on the labelling of the equipment or its packaging:

This product contains electrical and electronic components and must not b disposed of using the standard waste collection system. Please refer to your local regulations for the disposal of electrical and electronic equipment.

Product complies with CE Marking regulations. See instructions for use.

Direct current.

Power button.

Conditions for use

- Read the device safety information carefully and keep this manual for future reference.
- Read the “General Terms and Conditions of Sale and Use for Bitbrain Products” carefully. You can find the document at https://downloads.bitbrain.com/documents/terms-and-conditions-eu

Disclaimer

The Hardware equipment included in the Products (EEG, biosensors, indoor positioning systems, eye tracking) are not medical devices, have not been designed or manufactured to offer healthcare services, and are not sold for the purposes of diagnosis, treatment, palliation, medical advice or illness prevention, but for research purposes.

Read the “General Terms and Conditions of Sale and Use for Bitbrain products” before buying a product, in order to understand it fully. You can find the document at https://downloads.bitbrain.com/documents/terms-and-conditions-eu

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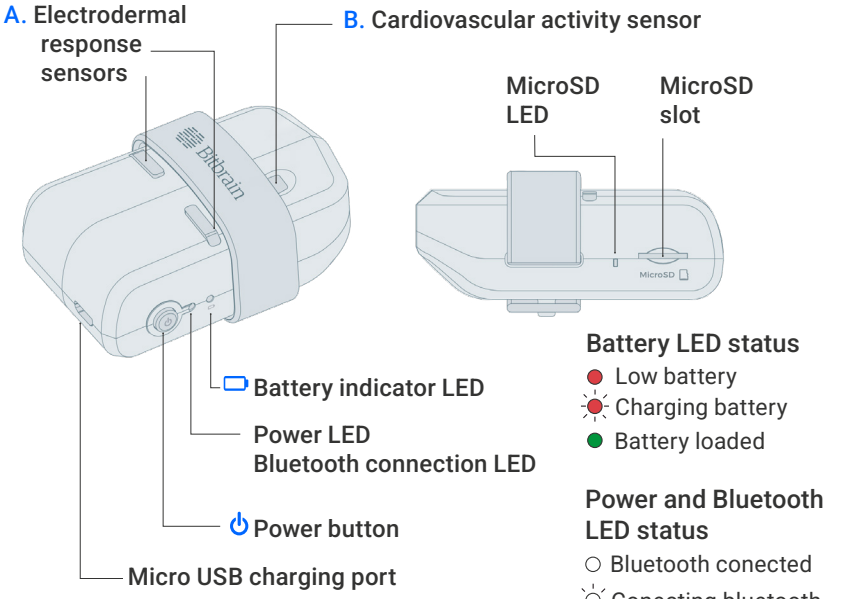
Ring

A wearable and wireless device that measures skin conductivity (electrodermal activity), blood pulse volume (cardiovascular activity), and movement.

These physiological signals provide information on the emotional intensity and impact generated by different stimuli. These physiological signals provide information on the emotional intensity and impact generated by different stimuli in order to be able to studies of advertising, branding, product testing, packaging, UX, or CX studies, among others.



Manufacturer's Information

BIT&BRAIN TECHNOLOGIES, S.L.
C/Sta Teresa de Jesús 32, 50006 Zaragoza, España.

Technical specifications

Nominal voltage	3.7V
Nominal power	260mW
Autonomy	>8h
Charging time	< 3 hours (with USB 2.0 or superior)
Sampling rate	32 SPS at 16 bits
Data transmission and range	Bluetooth 2.1 + EDR with 10 meters in direct sight
Data backup	Yes (removable µSD card. Max 8 GB, class ≥10)
Dimensions	71x43x32mm
Weight	60g
Charging connection	Micro USB type B (Included)
Certifications	CE (Directive 2014/53)

Preparing to record data

1

Turn the device on by pressing the power button (⏻) for a few seconds, until the light blinks.

The wireless connection LED will flash until the connection is established with the software. The LED will then stay on. When the battery device is low, the battery indicator LED (▭) will turn on.

IMPORTANT:
Do not use the device while charging. A low battery can adversely affect the quality of the recorded signal and it is recommended to charge the system before starting a recording.

2

This equipment sends data using Bluetooth wireless technology.

The data can be saved on:

- The computer with which the device is paired. Note that if the device loses Bluetooth connection with the computer, this can lead to a loss of data.
- MicroSD Card. In this mode, the wireless signal will continue being sent, so data can still be seen and recorded in real time on the computer while simultaneously being saved on the memory card.

Pairing

Be sure the computer has a Bluetooth adapter version 2.1 or higher. The first time you use the device, you will need to pair it. This can be done from “Settings > Devices” on Windows.

The name of the device in the list of Bluetooth interfaces corresponds to the serial number (S/N), which you can find printed on the label on the Air amplifier.

Data backup with MicroSD

1. Insert the MicroSD card provided into the slot on the display.
2. Enable the “SD card record” option on the software to save data to the card.

The files saved are recorded in .sdf format. To convert them to .csv format, use the “Import record” function on the software.

IMPORTANT:

We recommend using a Class 10 or above Micro SD card with capacity of 8GB. Using another type of memory card that does not meet these specifications could cause loss of data.

Placement

Remember. Follow the steps described below to set up the device.

1

Disconnect the charging cable from the device.

2

Unfasten the band at the back of the device.

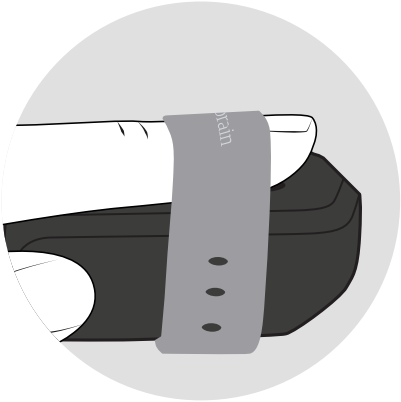
Placement

3

Place the device upwards, so that the sensors face up, as shown in the picture.

4

Place the index fingertip on the cardiovascular activity sensor (B), completely covering it.



Placement

5

Place the index and middle fingers on the device. Ensure that the fingers touch the electrodermal activity sensors (A).

Make sure that the fingers are apart from each other, as shown in the picture.

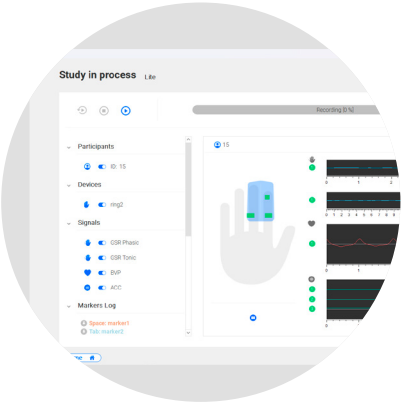
6

Fasten the band. The device must be comfortably fastened to the user's fingers.

Signal acquisition

1

The software screen depicts the physiological signal acquired by the device in real time.



Maintenance

Please remember to clean the device after each use.

Disinfecting and cleaning the device

- If you wish to disinfect the device, use ONLY Clinell© Universal Wipes .
- DO NOT USE! Any other cleaning product or disinfectant not validated by Bitbrain. The use of any other cleaning product not validated by Bitbrain could deteriorate the equipment and affect the signal obtained.
  1. Use the wipes in such a way that all surfaces of the equipment stay damp for 1 minute. Wipe gently without applying excessive pressure – this could release liquid that could cause internal damage to the device.
  2. In the area of the inputs and sensors, always wipe with them face-down.
- Clean and dry the device frequently, especially the sensors. We recommend to slightly dampen a cloth with water

Very important

- Do not use strong or abrasive disinfectants to clean the product. When selecting a disinfectant or cleaning product, confirm its effectiveness and compatibility with the material.

Storage

- Keep the product in its original packaging while not in use.
- If you are storing the device for long period of time (more than one week), it is recommended that the battery is not 100% charged. This can degrade the battery and result in capacity loss.

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