BRAINBIT

USER GUIDE



Version 1.7

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About this guide

The user guide describes the functions and characteristics of the BrainBit device in detail.

For safe operation of the device, the user should be familiar with the contents of this guide.

Symbols and abbreviations used in this guide

This user guide employs the following symbols:

Warning – cases which can cause harm to you or those around you.

Attention – cases that may result in damage to the device or other equipment.

Note – recommendations or additional information.

OS *– operating system:*
PC *– personal computer or laptop.*

Safety precautions

The following precautions are necessary to avoid potential harm to the user or damage to the device.

- *Do not use a damaged charger with a USB cable, or loose sockets.*
- *Avoid bending twisting and damage of the USB cable while charging the battery.*
- *While charging, the USB cable and battery block should not be touched with damp hands.*
- *Do not use the device during thunderstorms, which increases the risk of electrical shock.*
- *Do not place the device inside or on top of heating sources (such as microwaves, stovetops or radiators). When severely overheated the device may explode.*
- *Do not expose the internal components of the device to moisture.*
- *Do not attempt modification or repair of the device. In case of malfunction, contact the manufacturer.*
- *Extreme heat and cold may damage the device, as well as reduce battery life and power output.*
- *Product subject to WEEE regulations concerning separate waste collection.*
- *The device should only be used on healthy, undamaged skin.*

Device information

Purpose of the device

The BrainBit device is designed for use with Life/Health Tracking software on mobile and desktop computers.

BrainBit provides real-time monitoring and recording of electrical biosignals produced by the brain, by eye movements and by mastication muscles.

The device is accompanied by its own software development kit (SDK). The SDK is intended for software developers on Android, iOS, MacOS and Windows operating systems. These development tools facilitate easy creation of apps for:

- biofeedback;
- relaxation and meditation;
- sleep monitoring;
- vehicle operator safety monitoring;
- mental concentration;
- BCI (brain-computer interface);
- neuromarketing;
- sport and fitness;
- industrial safety.

Technical specifications

Connectivity with mobile device or PC	Bluetooth LE 4.0
Range of measured voltages (limits)	± 0.4 V
Amperage of battery charge	100 mA ± 10%
Battery charge time	up to 4 hours
Duration of work in registration mode	not less than 15 hours
Standby time	not less than 50 days

Package contents

Name of component	Quantity
BrainBit headband	1
Textile band with clasp	1
Battery	1
Charger	1
USB cable*	1
Bluetooth adapter**	1
Foam pads on electrodes	4
Brush for cleaning electrodes	1

** Cable type USB A-microUSB.*
*** Optional for PC.*

Power requirements

The battery charger with USB cable plugs into any power source port compatible with USB (5V), that provides a charge current not less than 100 mA.

Markings

Labels and markings on the device contain the following information:

- name of device;
- serial number;
- manufacturer info.

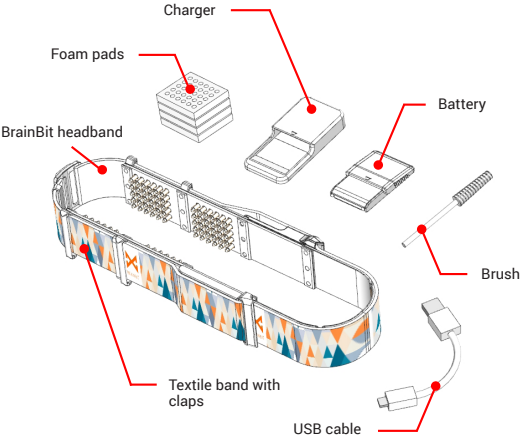
Labels and marking on the packaging contain the following information:

- name and/or trademark of manufacturer;
- name of device;
- graphics and warning symbols.

Device operation

General information about the device

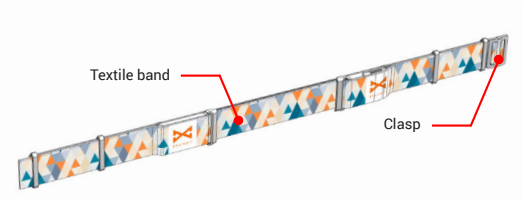
External appearance of device and accessories:

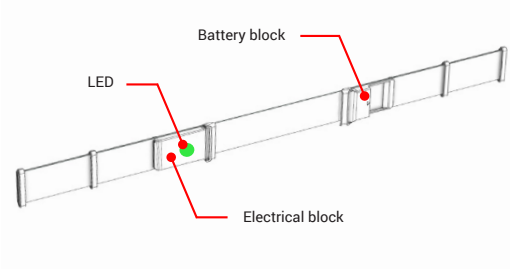


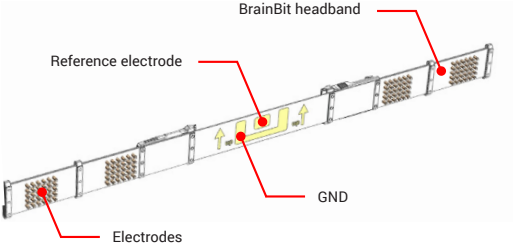
BrainBit is shipped with the battery removed!

BrainBit does not have on/off switches. When the battery is installed, the device is constantly in standby mode (not less than 50 days).

The battery must be removed during long-term storage of the device!


Textile band
Clasp


Battery block
LED
Electrical block


BrainBit headband
Reference electrode
GND
Electrodes

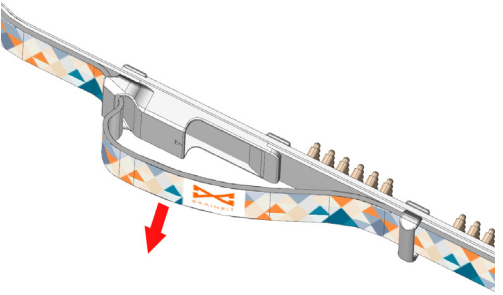
BrainBit and LED indicator operating modes:

- **Standby mode.** Battery is installed, connection not established with mobile phone or computer. Upon battery installation, the LED is lit for 2 seconds, then blinks short once every 2 seconds.
- **Connectivity mode.** Connection established with mobile phone or computer. LED constantly lit.
- **Registration mode.** BrainBit registers the signal. The LED flashes long once every 2 seconds.
- **Power saver mode.** BrainBit enters this mode upon low battery charge. LED is dark. Remove battery and charge it.

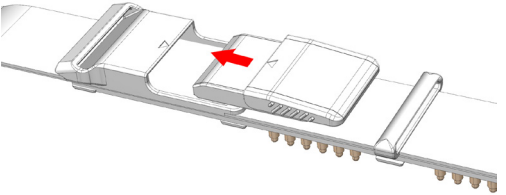
Battery installation

Follow the steps below to install the battery:

1. Slightly pull the textile band away.

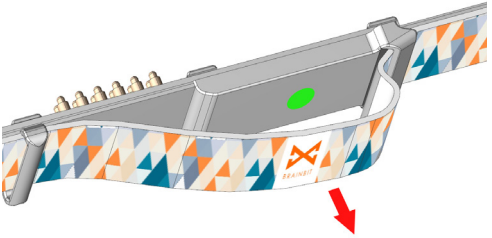


2. Insert the battery.





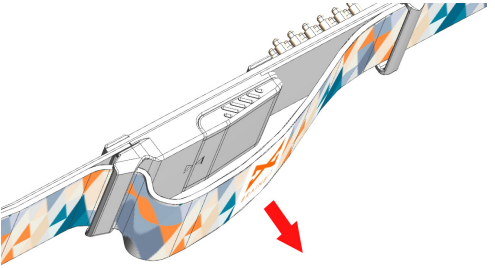
Important! Proper installation of the battery should result in illumination of the LED, located in the electrical block (LED will be lit for 2 seconds). The device's readiness for use is indicated by the periodic illumination of the LED in the electrical block, which blinks once every 2 seconds.



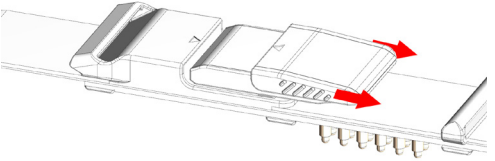
Battery removal

In order to remove the battery, please follow the instruction:

1. Slightly pull the textile band away.



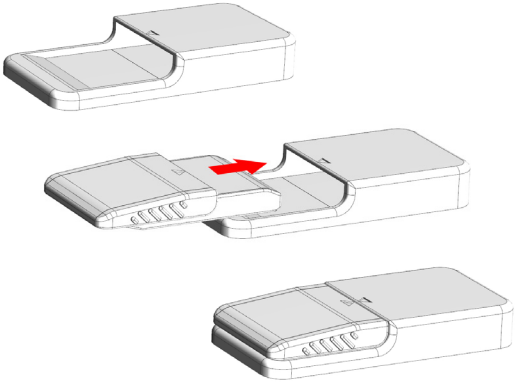
2. Holding the battery by the sides, release the battery.



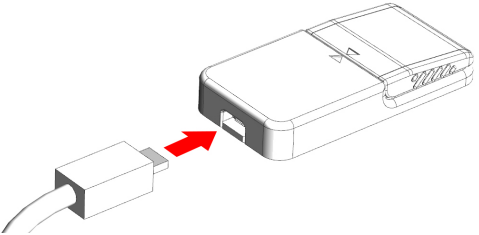
Charging the battery

In order to charge the battery:

1. Insert the battery into the charger.



2. Plug the USB cable with microUSB head into any power source compatible with USB (see also: «Power supply technical characteristics»).



Fully recharging the battery should take up to 4 hours.

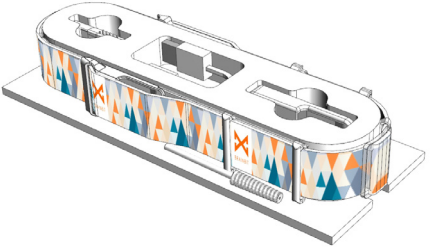
Operating modes of the charger

- LED not lit – charger is not connected to a power source.
- LED glows red – battery is charging.
- LED glows green – battery is charged or battery is not installed in the charger.

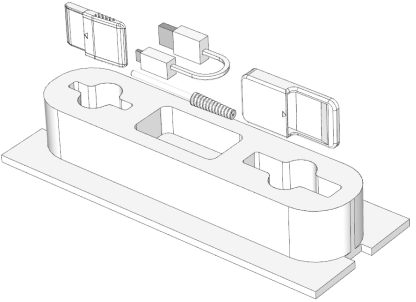
Preparing BrainBit for use

Step-by-step instruction for using BrainBit:

1. Unpack BrainBit.
    - remove BrainBit from the lodge;

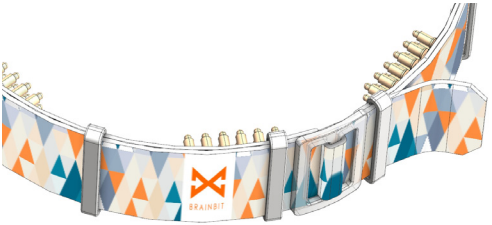


    - remove the accessories.

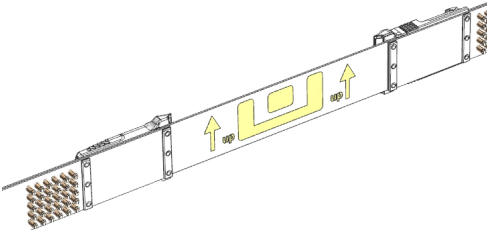


2. Insert battery into BrainBit headband.
3. Confirm that BrainBit is functioning (the LED in the electrical block flashes green

4. Extend the textile band near the clasp.



5. Place BrainBit on the head while remaining attentive to the following:
   - proper placement of reference and common electrodes on the forehead;
   - the direction of the arrows near the common electrode.



BrainBit is recommended for a head volume of 49-62 cm.

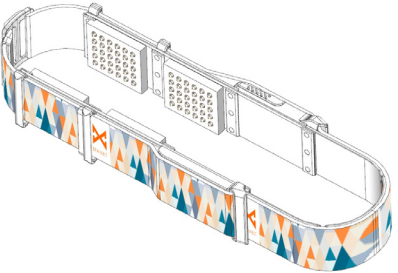
Before using BrainBit, it is recommended to remove skin oil from the forehead (the reference and the common sensors contact area), as well as from the electrodes placed on the headband: this will allow you to get high-quality signal.

6. Ensure that the electrodes near the nape of the neck and behind the ears have sufficient contact with the skin.





7. Apply foam pads (x4) to the electrodes if necessary. It can reduce the pressure of the electrodes on the head.



In order to improve signal quality, slightly wet the reference and common sensors with water and place moist foam pads on the electrodes.

Product care

The duration of the battery full charge up to 4 hours.

The textile band should be periodically washed with soap and warm water.

BrainBit headband can be cleaned with soft cloth damp with water, rubbing alcohol compound or alcohol based sanitizer.
Electrodes should be cleaned with the brush from the kit, damp with rubbing alcohol compound or alcohol based sanitizer, then cleaned with dry soft cloth.

Do not expose the internal components of the device to moisture!

Platform requirements

Operating system	Platform requirements
Android version 5.0 or newer	BLE version 4.0 or newer
iOS version 12	BLE version 4.0 or newer
MacOS version X or newer	BLE version 4.0 or newer
Windows 10 with build version 1803 or newer	BLE version 4.0 or newer

External Bluetooth adapter is to be used when connecting BrainBit with PC.

Manufacturer’s warranty

Warrantied period of operation - 12 months. Warrantied period of storage - 6 months from date of production.

In the event that repair or correction of defects is necessary during the warrantied period, the warranty is extended by the amount of time for which the device is not available for use due to the defect or malfunction. If the device is replaced in its entirety, the warranty period is renewed from the date of the replacement.

Warranty repair of the device is carried out at the cost of the seller/manufacturer. After expiration of the warranty, the cost of repairs is borne by the purchaser of the device.

If a warrantied device ceases to function due to improper operation, then the cost of repairs is borne by the purchaser.

Troubleshooting

Before contacting technical support, attempt the following troubleshooting procedures:

Device does not connect to mobile phone or computer

- The battery may be missing. Install the battery.
- The battery may be fully drained. Remove battery from device and charge it in accordance with «Charging the Battery». Then install the battery and confirm that the device enters Standby Mode (indicated by the LED blinking once every 2 seconds).

Electrical block led does not illuminate

- Confirm that the battery is installed in its housing.
- Check that the battery has been inserted properly.
- Charge battery in accordance with «Charging the Battery».

Manufacture/distributor:
BrainBit Inc.
Address: 125 Wilbur Place,
Suite 170 Bohemia, NY 11716, USA
Phone number: 1.917.388.1578
E-mail: info@brainbit.com