BrainAccess MAXI Electroencephalograph
## Version 2.2

Introduction

Welcome to the user's manual of BrainAccess MAXI electroencephalograph. It overviews the main features and specifications of the device and guides you through the set-up procedure. Should you have any further questions not covered in this guide please visit www.brainaccess.ai where you can find more information or contact us at brainaccess@neurotechnology.com.

Contents

1   Device Overview

The BrainAccess MAXI is a 32 channel electroencephalograph with a common reference channel. While maintaining the same form factor as BrainAccess MIDI device it offers twice more input channels together with Bluetooth connectivity and long battery life. Please, get acquainted with device's main components and connections before use.
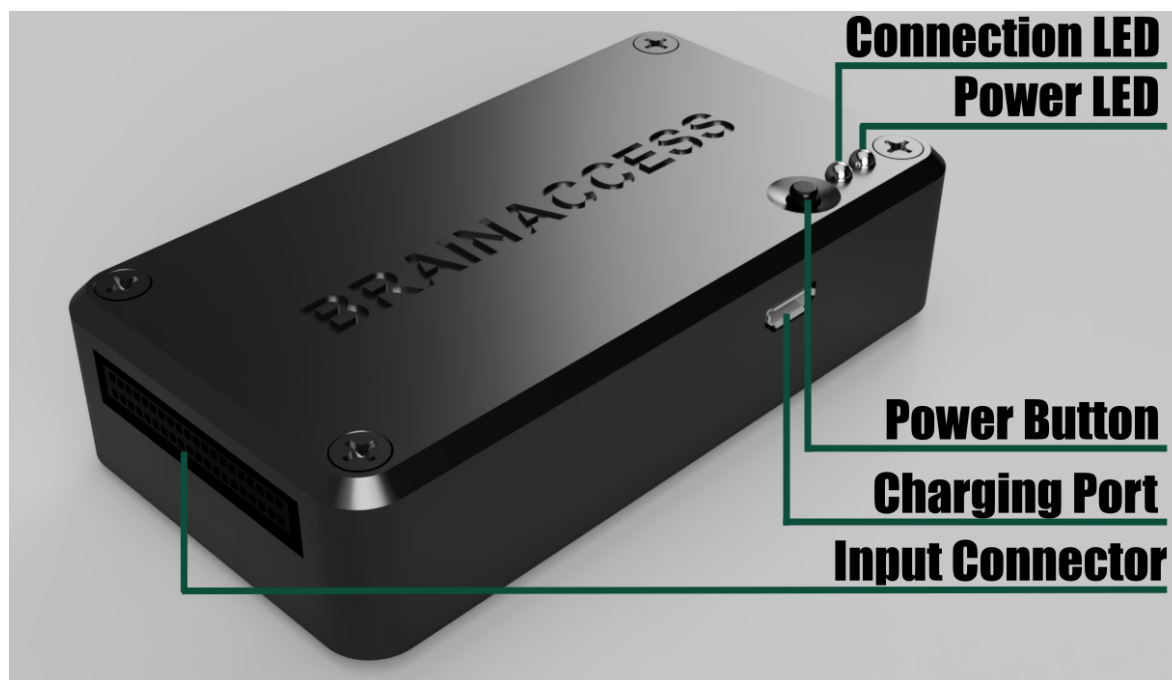
USB Bluetooth adapter. In the package you will find a USB Bluetooth 4.2 adapter, which is used to communicate and stream data to computer from BrainAccess MAXI. If preferred, a different Bluetooth adapter such as an integrated Bluetooth adapter in a laptop may be used instead.

Power switch. Press and hold a push button for a couple of seconds to turn the device on/off. The blue LED will start breathing once the device is on.

Charging port. The device's battery can be charged via micro-USB port using standard 5V chargers such as mobile phone chargers with micro-USB plug. The charger should be capable of providing at least 800 mA of current. Note: device can not be used while charging.

Connection LED. After power up this LED goes into breathing mode. If a Bluetooth connection is established between a computer and the device it turns solid blue.

Power LED. It is a red-coloured LED that indicates the battery and charging status. If the power LED starts blinking, it indicates that the battery level is below <15%. When the device is charging the LED starts breathing and turns solid red when fully charged.

Input connector. It is a convenient connector to quickly connect/disconnect BrainAccess CAP when switching between different size or configuration caps. It is also compatible with both 16 or 32 electrode BrainAccess CAPs.

Accelerometer. The device has also an integrated 3-axis accelerometer. It can be used for example to record any body/head movements when it is attached to the EEG cap.

Hook–and–Loop Fastener Attachment. A Hook-and-Loop fastener can be found at the bottom of the device, that can be used to attach it to the BrainAccess CAP.

2   Specifications

Main specifications of BrainAccess MAXI electroencephalograph are given in the table 2.

Connectivity

type	Bluetooth 4.2 (BLE)
range	up to 10m (using the provided Bluetooth adapter)

EEG Input Channels

number of channels	16 + common reference channel
sampling frequency	250Hz
input resolution	24 bits
analog gain values	1, 2, 4, 6, 8, 12, 24
input voltage range	4500 mV / gain value (w.r.t. reference channel)
input connector	Harting Har-flex 2 x 20 1.27mm pitch

Accelerometer

number of axis	3
sampling frequency	50Hz (resampled to 250Hz in software)
range	±2g
resolution	10 bits

Battery

type	Li-Po
capacity	2200 mAh
operating time	up to 7.5 hours (continuous streaming, all channels turned on)
charging time	3.5 hours
charger input	5V 800 mA min (charger not included)
charger connector	micro-usb

Mechanical

mass	85g
dimensions	92x50x23 mm

Table 1: Specifications of BrainAccess MAXI electroencephalograph.

3   Set–up

Follow the steps below to get start using the BrainAccess MAXI electroencephalograph.

- If not connected, connect the BrainAccess CAP to BrainAccess MAXI input connector.

- Press the power push–button and hold for a couple of seconds, the blue LED should should start breathing indicating that BrainAccess MAXI has turned on.

- Plug in the provided Bluetooth adapter to your computer, the drivers should install automatically. Skip this step if using an integrated or some other installed Bluetooth adapter.

- If you havent done this already, download the BrainAccess Board application. The software can be downloaded from the download centre at `https://www.brainaccess.ai/resources/download`.

- Launch the BrainAccess Board, connect to the MAXI device using Configurator to start the stream. On successful connection a device tab should be added to the connected devices list. You can open an EEG viewer from there to confirm that data is being streamed.

Remember to clean the electrodes from time to time with a disinfection wipes to remove bacteria and grease.

Visit `https://www.brainaccess.ai/tutorials/` for additional information and tutorials.

4   Intended Use

The BrainAccess HALO EEG headband is a biosignal acquisition amplifier developed for applications in research, development, and education. This product is not designed, intended, or certified for medical use.

5   Safety Notice

BrainAccess MAXI electroencephalograph will be referred as 'the device' in this safety notice.

- Do not use the device outside in rainy/snowy conditions.

- Do not use the device near the water or in extremely damp conditions.

- Do not use the device in an explosive atmosphere.

- Use the inputs of the device only for their designated purpose. Do not connect any electrical power sources to the device's inputs.

- Do not connect the device to a person via electrodes when charging it with a charger powered from grid electricity.

- Do not use the device with suspected failures. In cases such as, but not limited to, the device does not operate as expected, physical damage is visible on the casing, the device was dropped into the water/snow, the device was dropped from substantial height, other objects has been dropped on the device, liquid has been spilled on the device, have the device inspected by qualified personnel before further operation.

- The device should be serviced by authorized personnel only.

6   Warranty

Neurotechnology ltd. warrants this product (BrainAccess MAXI electroencephalograph) against defects in materials and workmanship for one (1) year from purchase date under normal consumer use conditions. If the product fails during normal and proper use within the warranty period, Neurotechnology will repair or replace the product. The liability of Neurotechnology does not include any incidental or consequential damages.

This warranty does not include failure caused by improper set-up, operation, maintenance, accident, damage, misuse, modifications not approved by Neurotechnology, normal wear and tear, any event or act outside Neurotechnologys control.

This warranty does not apply if serial number of the product has been altered or removed, the casing of the product has been opened or the product has been tampered or repaired by unauthorized personnel.

7 Support

Please contact Neurotechnology if you have any problems using any of the BrainAccess products.

Neurotechnology ltd.

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