

BrainBit Headband Pro (8-Channel)

Overview

The **BrainBit Headband Pro** is an 8-channel wireless EEG device designed for research labs, Brain-Computer Interface (BCI) prototyping, non-medical neurofeedback, and educational applications. It features a flexible 10-20 electrode placement system, modular dry electrodes, and an extensible headband for fast set-up and stable data acquisition.



1. Key Features

- **8-Channel 10-20 System Coverage:** Measures channels across the frontal, temporal, and occipital lobes (Fp1, Fp2, T3/C3, T4/C4, T5, T6, O1, O2). *T3/T4 can be swapped with C3/C4 using an optional strap.*
- **Modular Dry Electrode System:** Gold-plated pogo pin electrodes require no conductive gel. Pins can be swapped in seconds or adjusted to match varying hair density.
- **Ergonomic & Extensible Frame:** Soft textile band fits various head sizes comfortably without slipping during measurement.
- **Removable Battery:** Provides up to 12 hours of continuous operation on a single charge.
- **Developer-Friendly SDK:** Free SDK supporting multiple programming languages and operating systems.



2. Technical Specifications

Parameter	Details
EEG Channels	8 Channels (Fp1, Fp2, T3/C3, T4/C4, T5, T6, O1, O2)
Sampling Rate	250 Hz
Input Voltage Range	± 0.4 V
Signal Bandwidth	Raw Signal Band: 0 Hz – 100 Hz
Communication	Bluetooth Low Energy (BLE)
Battery Life	Up to 12 hours continuous use (Charge time: max 4 hours)
Certifications & Warranty	FCC, CE Certified / 1-Year Warranty
Supported SDK Languages	Java, Kotlin, Objective-C, Swift, C++, C#, Python, React Native, Unity, Xamarin
Supported Platforms	iOS, Android, Windows, macOS, Linux
Data Signal Output	Delta, Theta, Alpha, Beta, Gamma brainwaves + Artifact detection algorithms

3. Primary Use Cases

- **BCI Research & Rapid Prototyping:** Real-time data extraction for testing algorithms using the open SDK.
- **Cognitive Load & Focus Research:** Analyzes cognitive states via frontal and temporal lobe signals.

- **UX/HCI Research:** Portable and comfortable setup for human–computer interaction studies.
- **Non–Medical Neurofeedback & Education:** Implements focus and relaxation training protocols.

4. Compatible Software (Optional Purchases)

- **NeuroFit PRO:** Professional neurofeedback training software featuring 38 games and detailed reporting.
- **BrainAssistant:** Real–time EEG visualization and brain mapping platform.
- **Divergence Neuro Platform:** Cloud–based neurofeedback coaching and data analytics tool.
- **NeuroRec:** Research–grade multichannel EEG recording and analysis program featuring:
 - Raw EEG acquisition
 - Event markers & annotations
 - Spectral analysis
 - 2D & 3D brain mapping
 - Export formats: CSV, EDF+
- **EEG Waves App:** Mobile application for real–time brainwave waveform and power spectrum visualization.

Disclaimer: The BrainBit Headband Pro is intended exclusively for research, development, and educational purposes. It is **not** a medical device intended for clinical diagnosis or treatment.

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