Bitbrain

Versatile Bio

Mobile and practical real-time biosignal acquisition amplifier, which provides great flexibility to monitor a large number of simultaneous physiological variables.

Versatile Bio

Compact and mobile equipment to simultaneously monitor 21ch (extensible to 35ch) of physiological variables with outstanding signal quality and millisecond synchronization.

- **Mobile and compact**
  Multi-purpose technology that is easy to set up and wear.
- **21+ channels**
  That can monitor up to 35 physiological variables with millisecond sync.

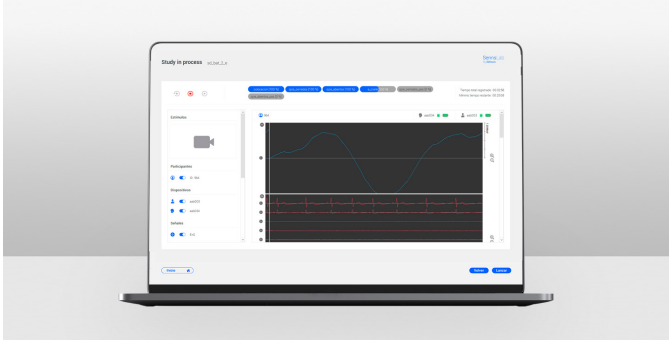
- **Advanced electronics**
  Active shielding with optimized DRL to improve SNR and reduce artifacts.
- **Flexible position**
  The amplifier can be placed on the arm, waist or leg.
- **Connectivity and storage**
  Bluetooth real-time data streaming and local SD storage.
- **Battery**
  8+ hours in streaming and in local SD storage.

Some applications

Explore new research scenarios in **psychology and neuroscience** with a complete physiological human monitoring in or out-of-the lab.

Understand physiological correlates in real world applications such as **sports science, education, UX, or in the professional workplaces.**

Perform **clinical research**, new neurorehabilitation therapies, or assessment/interventions based on physiological responses.



Learn about the physiological correlates of human behaviour in combination **with EEG, biometrics, VR technologies, etc.**

Technical overview

Versatile technology to monitor up to 35 physiological variables simultaneously.

Wireless, mobile, compact and ultralight (172g). Very easy to use.

Reliable biosensing monitoring up to 256Hz and 24 bits during 8+ hours. Bluetooth streaming and/or on-board SD storage.

Minimal maintenance and easy to transport (everything fits in a suitcase).

Hardware specifications

Sensors	
Biosignal channels	9x bipolar ExG + GND 6x Auxiliary analog inputs (analog sensors like GSR, RESP, TEMP, BVP...) 2x Auxiliary digital inputs (sensors like IMU). • Streaming mode: Up to 2 HUB (1 on each input to multiplex up to 8 IMU on each input. • Backup mode: Only 1 HUB to multiplex up to 8 IMU in the selected input. 1x Digital input (3 bits) 1x Digital output (1 bit)
Wireless Amplifier	
Sampling rate	256 SPS at 24 bits
Bandwidth	DC – 100Hz (3º order LPF)
Integrated sensors	Integrated IMU (9 axis): accelerometer, gyroscope and magnetometer
Input range and noise	± 420 mV, < 4 µVRMS (0.5 – 30Hz) @256Hz (Bipolar ExG) ± 2.5 V, < 10 µVRMS (0.5 – 30Hz) @256Hz (Analog AUX)
CMRR / Input impedance	> 100 dB @50Hz, > 50 GΩ
Data streaming and storage	
Data transmission and range	Bluetooth 2.1 + EDR with 10 meters in direct sight.
Data backup / files	Yes (removable micro SD card) / CSV (max 8GB. Class ≥ 10)
Power	
Battery	Rechargeable lipo battery. Charging time <3h
Autonomy	> 8 h
General	
Weight	172gr.
Amplifier maintenance	Not required
Sensor maintenance	Off-the-shelf consumables
Warranty	2 years
Certifications	CE and CB, with EN 60950, EN 55032, EN 55024

Software specifications

Software compatibility (included with equipment)	
Bitbrain real-time SDK	In C/C++ for Windows and Linux.
Bitbrain data acquisition and visualization suite	Live visualization, streaming or SD recording, data export in CSV and raw data visualization.
Third parties real-time I/O	LabStreamingLayer LSL compatibility (Matlab, Python, BCI2000, OpenVibe, NeuroPype, etc).
Third parties data processing	Matlab (EEGLAB, FieldTrip, BCILAB, etc), Python (MNE, etc) and more.

Bitbrain software platforms (optional)	
Bitbrain Viewer Software	Software for data visualization and recording, with large compatibility with real-time I/O and data processing third parties.
Bitbrain Software Development Kit	Software kit consisting of different scripts that allow communication and control of the hardware used. It is a starting point for the development of brain-computer interface applications.
Bitbrain Human Behaviour Research Lab	Practical research platform for experiment design and data acquisition with 30+ sensor modalities seamlessly synchronized and analyzed with a wide range of emotional and cognitive biometrics available.

Bundle includes

- Amplifier
- Power supply
- Instructions
- Suitcase
- Arm and waist adjustable band
- Physiology Kit
- Motion Sensor Kit
- Bitbrain Software Kit

Additional services

Online training
Our team provides a training course that includes the installation of your system and software.

Real-world research and applications

Bitbrain

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