

Versatile EEG family

Versatile and flexible family of mobile
and semi-dry EEG systems
for real-world research.



About Bitbrain

We fusion neuroscience and engineering to develop the latest generation of practical neurotechnology integrated in solutions with high value for our society.

Bitbrain was founded in 2010 as a spin-off company of a research team from the University of Zaragoza (Spain), a pioneer in approaching brain-computer interface applications outside research labs. Its DNA holds all knowledge in neurotechnology, biomedical engineering, artificial intelligence and data science accumulated at the university since 1998.

Today, the company is a reference with over 600 individual institutions in more than 35 countries relying on our products to advance the penetration of neurotech research and development in our society.

Equipment

Innovative and practical EEG, biosignals, eye trackers and other complementary human monitoring technologies to approach real world research.

Bitbrain Viewer Software

Software for data acquisition and visualization, 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.

Human Behaviour Research Lab

Labs for experimental design and data collection with 30+ sensor modalities seamlessly synchronized, and data analysis including a wide range of emotional and cognitive biometrics.



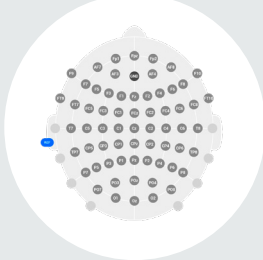
Versatile EEG family

Versatile and reliable family of mobile and semi-dry EEG systems for real-world research.


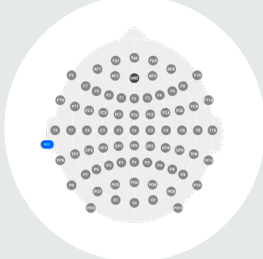
Family of versatile **semi-dry EEG** with 8/16/32/64ch for mobile and wireless EEG monitoring. With a very **quick and easy set-up** for the researcher and comfort and freedom of movement for the user. Following the international 10-10 and 10-20 system, the semi-dry sensors (tap water humidity) can perform 6+ hours of continuous recording with **outstanding signal quality**, even under the most demanding recording circumstances.

The semi-dry EEG family combines all the advantages of the gel-EEG and dry-EEG worlds: the highest EEG quality in the most adverse circumstances as gel-based systems, while retaining the comfort, speed and cleanliness of dry-EEG systems.

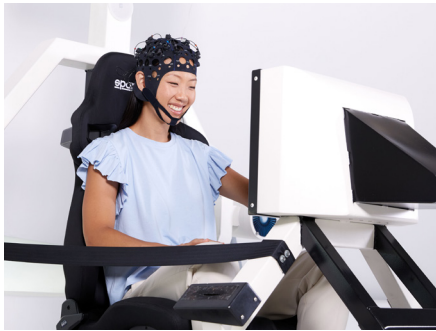
Semi-dry EEG products

	 <p>Versatile 8 / 16 / 32 Mobile semi-dry EEG system with 8/16/32ch for high-quality real-time EEG monitoring. International 10-20 and 10-10 system. P.20</p>
	 <p>Versatile 64 Link together two EEG 32ch systems to record 64ch synchronized, or use them independently. *The figure displays 32ch amplifier.</p>
	 <p>Versatile Kids Mobile semi-dry EEG system with 16/32ch for high-quality real-time EEG monitoring. International 10-20 and 10-10 system. P.20</p>

Compatible with

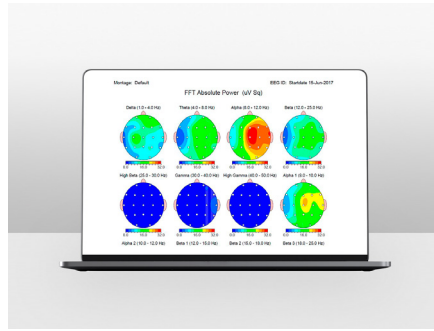
	 <p>VR compatibility Compatible with Oculus Rift and HTC Vive Pro.</p>
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Key features



Freedom in real-world research

Semi-dry EEG family of headsets that can be integrated with Oculus and HTC Vive Pro. Mobile and wireless systems that provide maximum freedom of movement.



Highest standards of EEG quality

Innovative system of semi-dry EEG sensors with a mechanical design that ensures stable contacts. DRL and active shielding to eliminate artifacts even under high movement conditions.



From low to high-density EEG

Systems range from 8 to 64 channels, and can be placed in any position of the international 10-10 and 10-20 system. They cover from the most basic to the most sophisticated neurophysiological recordings.



Very easy and fast set-up

The setup time is 2 minutes on average for the 16ch system. They all have an intuitive operation, and can be easily placed by following the procedures displayed by the system.



Comfort and cleanliness

Design with advanced ergonomics. Does not require the application of gel-based electrolytic substances, which eliminates user reluctance to gels and the need to wash hair.



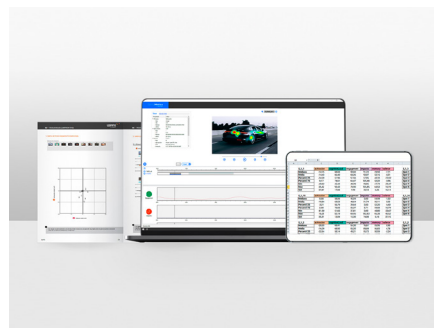
Hygienic with little maintenance

Uses absorbent materials moistened with tap water for 6+ hours of continuous recording before evaporation. No gel or syringes are needed, simplifying the maintenance of the equipment and lab.



Data stream and recording

Real-time streaming of raw data via Bluetooth and on-board SD card recording. Develop applications on Windows and Linux using the SDK, and export data to CSV or EDF.



Third-party compatibility

Compatible with Matlab (EEGLAB, BCILAB, etc), Python (MNE), LabStreamingLayer (BCI2000, OpenVibe, NeuroPype, etc), and with Bitbrain Human Behaviour Lab.



Sync with other biometrics

Seamless integration with more than 30 complementary technologies such as eye trackers, biosignals such as GSR, EMG, etc, indoor/outdoor positioning systems, microphones and cameras, and many more.

Versatile EEG

8 / 16 / 32 / 64ch

Outstanding reliability and signal quality in and out of the lab with advanced wireless semi-dry EEG devices.

- Mobile and wireless**
 Comfortable technology that is fast and easy to set up and wear. Can be integrated with eye tracking, VR, and many other technologies.
- Semi-dry EEG sensors**
 Sensors moistened with tap water. Up to 3+ hours of continuous recording.
- Advanced electronics**
 Active shielding with optimized DRL to improve SNR and reduce artifacts.



- Flexibility**
 Electrodes can be placed anywhere in the International 10-10 / 10-20 system from infants to adults.
- Connectivity and storage**
 Bluetooth real-time EEG streaming and local SD storage.
- Battery**
 8+ hours in streaming and 10+ in local SD storage.

Some applications



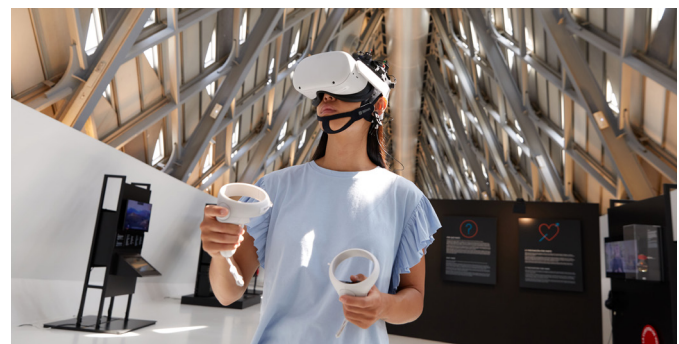
Expand your research scenarios in **psychology** and **neuroscience** by monitoring brain activity out of the lab.



Explore new EEG correlates in real world applications such as **sports science, education, UX** or real-world **professional workspaces**.

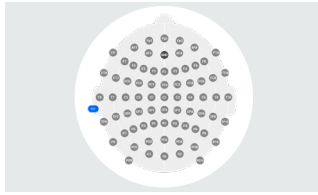


Perform **clinical research**, new neurorehabilitation therapies or assessment of interventions based on EEG patterns.



Combine EEG correlates with other biosignals (GSR, EMG, HR, etc.) and **Virtual Reality** to explore and learn about human behaviour.

Technical overview



Flexible electrode placement within the international 10-20 and 10-10 system.



Wireless, mobile and light hardware. Fast and easy to use.



Reliable semi-dry EEG at 256Hz and 24 bits. Real-time bluetooth streaming and/or on-board SD storage.



Clean technology that works with disposable sensors moistened with tap water. Easy to transport and with minimal maintenance.

Hardware specifications

Sensors and headset	8ch	16ch	32ch
EEG channels	8 x EEG, REF, GND	16 x EEG, REF, GND	32 x EEG, REF, GND
Type of sensors	Semi-dry sensors, active shielding and optimized DRL		
Head perimeter	36cm-66cm (Cap sizes from XS to XL)		
Wireless Amplifier			
Sampling rate / Resolution	256Hz at 24 bits		
Bandwidth	DC – 40Hz (3°LPF)	DC – 70Hz (3°LPF)	
Real-time check impedance	Yes (relative contact impedance)		
Integrated sensors	Integrated IMU (9 axis): accelerometer, gyroscope and magnetometer		
Other inputs	1 x Digital input (1 bit)/optical trigger (photodiode)	1x optical trigger 1x digital input 2x Bipolar ExG	
Input range and noise	± 100 mV, < 1 µVRMS (0.5 – 30Hz) @256Hz ± 400 mV, < 4 µVRMS (0.5 – 30Hz) @256Hz (bipolar ExG)		
CMRR / Input impedance	> 100 dB @50Hz, > 50 GΩ		
Data backup	Yes (removable µSD card) (max 8GB. Class ≥ 10)		
Data streaming and store			
Transm. / range	Bluetooth 2.1 + EDR with 10 meters in direct sight		
Data files	CSV		
Power			
Battery	Rechargeable lipo battery. Charging time <3h		
Autonomy	> 8 h		
General			
Weight (complete)	192g	290g	450g
Maintenance	Gentle soap and disinfectants.		
Warranty	2 years		
Certifications	CE and CB, with EN 60950, EN 55032, EN 55024		

Software specifications

Bitbrain software kit (included with equipment)	
Bitbrain real-time SDK	C/C++ with Python bindings 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), Neuroguide 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

- EEG amplifier
- 1 sensor set (8/16/32 respectively)
- Sensor bases (18/34/66 units)
- Tablet to organize and store sensors
- Battery charger
- 2 caps (M and L size by default)
- Sensor sponges
- Cable fixation tape
- Metric tape
- Instructions
- Carrying case
- Bitbrain Software Kit

Additional services

Installation and Initial Training

Our team provides a training course that includes the installation of your EEG headset and software.

Real-world research and applications



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