



EEG Module

iMotions EEG Module Incorporate EEG data into your research

The EEG module enables users to connect, record, and live visualize EEG data and metrics from a range of different EEG headsets. Full overviews of channels, metrics, signal strength, and impedance tests are integrated.

- Complete experimental suite for EEG, from calibration, to stimuli presentation, to results
- Easily synchronize EEG recordings with other sensors 50+ devices from 20+ partners
- Get automatic calculations of PSD, frequency data, and other metrics



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Watch the video below to see how Professor Marco Palma from Texas A&M uses EEG in iMotions in his research.



iMotions EEG Module Features EEG research made easy

Tight integration with a variety of leading EEG headsets

iMotions provides the ability to integrate EEG headsets from ABM, Neuroelectrics, Brain Products, Emotiv, and OpenBCI. Choose the right equipment for your research needs, experience, and budget.









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Live data and automated analysis tools

Live visualize all incoming data, from raw signals to pre-built metrics. Automatic calculations of frontal asymmetry through Cloud-based analysis allows you to get deep insights both quickly and easily. Export data in suitable formats for further analysis.

Seamlessly integrated with other biosensors

Integrate and synchronize 50+ different sensors from 20+ independent vendors, across 10+ modalities. Add even more sensors through the Lab Streaming Layer. Forward data in real time and import external sensor / software data and loop it back into the platform via the API.



Suite for EEG experiments

iMotions provides all the tools needed for getting up and running with EEG research, from stimuli presentation, to participant block designs. Get EEG experiments started quickly and easily within an intuitive experiment environment.



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Integrated quality assurance tools

Signal strength and electrode impedance information is provided to ensure that experiments are completed to a high standard. Battery level information of wireless devices is also provided to make sure your experiments are never cut short.

Watch the video below to see how Professor Roger Azevedo from North Carolina State University uses EEG and iMotions in his research.



EEG Hardware Options Ideal equipment to meet your needs

iMotions seamlessly integrates a range of EEG headsets, that cover various experience and budget levels. All EEG equipment can be easily synchronized with other biosensors on a modular basis.



ABM B-Alert

The ABM headset is portable (through wireless Bluetooth connectivity), simple to set up, and remains comfortable for the participant to wear during long recording sessions. The wireless design allows for more versatility in setup and use.

The ABM B-Alert is available as 10 or 24 channel headsets. Electrodes can also be used to record ECG signals. Both 10 and 24-channel headsets provide the collection of ABM's peer-reviewed and widely used metrics - engagement, distraction, drowsiness, and workload.

The ABM headsets are suitable for researchers who are looking for rapid, real-world insights into human thought and behavior.



Neuroelectrics ENOBIO

Neuroelectrics provides a range of fully-portable EEG headsets that ensure comfort, quality, and precision in research. Electrodes are available in wet and dry options, as well as Neuroelectric's own "Solidgeltrode", that provides a clear balance between signal fidelity and ease-of-use.

Headsets are available as 8, 20, or 32 channel options, with Bluetooth, WiFi, or wired USB connectivity. The 8-channel headset is specifically designed to provide insights into frontal cortical signals, such as frontal asymmetry (a measure of motivation / approach and avoidance / withdrawal). All headsets are setup within a comfortable neoprene cap, that ensures consistent electrode positions as well as free movement and comfort.

Neuroelectrics headsets are suitable for those who are looking for a good balance between ease-of-use and advanced EEG research.



Brain Products ActiCHamp

Brain Products ActiCHamp is a 32-channel EEG headset, that allows the collection of high-fidelity signals through a wired connection.

The headset is a comfortable EEG cap that provides fixed electrode positions for recording consistency. A high sampling rate ensures signal quality that you can rely on. The headset uses active electrodes that individually reduce noise levels. Auxiliary channels can record a range of data, such as EDA, EOG, EMG, ECG, respiration, acceleration, temperature, and blood pulse.

The ActiCHamp is suitable for researchers who are looking for reliable, high-quality data from static environment recordings, with a streamlined and versatile setup.



OpenBCI Ultracortex

The "Mark IV" Ultracortex from OpenBCI is an opensource, wireless, and budget-friendly 16-channel EEG headset. The headset is available in three head sizes with fixed electrode positions.

Wireless connection can be completed through Bluetooth Low Energy (BLE), or RFDuino communication to a USB Dongle.

The OpenBCI headset is suitable for researchers who are comfortable with the use of EEG headsets, and are looking for a budget-friendly, wireless device.

EEG Hardware Comparison Find out which headset is right for you

iMotions integrates with several EEG devices that meet different needs within EEG research. As always, each device can be synchronized in iMotions with a range of biosensors, providing multimodal data and a deeper understanding of human behavior, thoughts, and actions. The following table outlines some of the more apparent differences between the EEG devices, but talk to your sales representative to discuss your individual requirements.

Headset details	ABM B-Alert	Neuroelectrics ENOBIO	Brain Products Acti- CHamp	OpenBCI Ultracortex	
Electrode count	10/24	8 / 20 / 32	32	16	
Sample rate	256 Hz	500 Hz	100 kHz	250 Hz	
Metrics	Yes	No	No	No	
Wireless?	Yes (Bluetooth)	Yes (Bluetooth or WiFi)	No	Yes (Bluetooth or radio)	
Operating time	6 hours Bluetooth / 16 hours wired	14-16 hours	Unlimited (wired)	24 hours	
Weight (headset only)	110g	65g	300g	260g	

EEG Research Capabilities in iMotions Different solutions for different needs

The capabilities of different headsets can differ in iMotions. View the chart below to see which solution meets your needs the best.

Capabilities within iMotions	ABM B-Alert	Neuroelectrics ENOBIO	Brain Products ActiCHamp	OpenBCI Ultracortex
Record data directly	Yes	Yes	Yes	Yes
Live synchronize with other sensors	Yes	Yes	Yes	Yes
View live datastream	Yes	Yes	Yes	Yes
Impedance check	Yes	No (in native software)	Yes	Yes
PSD calculation	Yes	Yes (cloud-based)	No	No
Frontal asymmetry calculation	Yes	Yes (cloud-based)	No	No
Benchmark procedure required	Yes (to obtain met- rics)	No	No	No
Unlimited use	Yes	Yes	Yes	Yes

JAKE® Multimodal Data Capture System: Insights from an Observational Study of Autism Spectrum Interactions Disorder

EEG research made possible with iMotions

Authors: Ness, S. L., Manyakov, N. V., Bangerter, A. et al. Institutes: Janssen Research and Development, Duke University School of Medicine, Northeastern University, University of California, University of Washington

Selected Publications

View publication

Real-Time Sensing of Trust in Human-Machine

Authors: Hu, W-L., Akash, K., Jain, N., Reid, T. University: Purdue University

View publication

Adding immersive virtual reality to a science lab simulation causes more presence but less learning

Authors: Makransky, G., Terkildsen, T. S., Mayer, R. E. University: University of Copenhagen, University of California Santa Barbara

View publication

The Effects of Self-Control on Subsequent Purchasing Decisions

Authors: Palma, M. A., Segovia, M. S., Kassas, B., Ribera, L. A., Hall, C. R. University: Texas A&M University

View publication

Dynamic Data Driven Approach for Modeling Human Error

Authors: Hu, W-L., Meyer, J. J., Wang, Z., Reid, T., Adams, D. E., Prabnakar, S., Chaturvedi, A. R. Universities: Purdue University, Vanderbildt University

View publication

Mitigating passive fatigue during monotonous drives with thermal stimuli: Insights into the effect of different stimulation durations

Authors: Schmidt, E., Bullinger, A. C. Company / University: BMW, Technical University Chemnitz

View publication

Game Experience and Brain Based Assessment of **Motivational Goal Orientations in Video Games**

Authors: Benlamine, M. S., Dombouya, R., Dufresne, A., Frasson, C. University: University of Montreal

View publication

Reducing Brain Signal Noise in the Prediction of Economic Choices: A Case Study in Neuroeconomics

Authors: Sundararajan, R. R., Palma, M. A., Pourahmadi, M. University: Texas A&M University

View publication

Dale Jolley, Professor, and Director of SMARTLab at Utah Valley University, describes his experience of using iMotions for his EEG research in the video below:





Want to know more?

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