

Neurotechnology Updates BrainAccess HALO Integrated EEG Headband for Research, Neuromarketing and BCI Applications

BrainAccess HALO is an all-in-one dry-contact electroencephalography (EEG) solution, and its second version sees a major upgrade in terms of comfort and looks.

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[Neurotechnology](#), a provider of deep learning-based solutions, biometric and Brain Computer Interface technologies, today announced a major upgrade to the [BrainAccess HALO headband](#). The headband is a dry-contact electroencephalography (EEG) solution that integrates electrodes, electroencephalograph with Bluetooth connectivity and adjustable headwear for different head sizes into a single semi-flexible band. Its applications range from brainwave monitoring to measuring event-related potentials associated with visual stimuli.



The new version of BrainAccess HALO is smaller, lighter and more comfortable. With low-energy Bluetooth connectivity (BLE), it can continuously stream EEG data for up to 9 hours.

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Osvaldas Putkis, Head of Engineering at Neurotechnology

Like its predecessor, the new HALO features a 4-channel EEG acquisition system with a common reference electrode, two electrodes positioned on the forehead and two over the occipital cortex region. The new HALO is also much smaller and lighter with greater mechanical flexibility, allowing for better adaptation to different head shapes. The electrodes in the back have been upgraded and are now semi-flexible, featuring more pins with softer springs.

“The design philosophy behind this version of HALO was to create a lighter, sleeker design that prioritizes user comfort,” said Osvaldas Putkis, Head of Engineering at Neurotechnology. “Coupled with electrode improvements, this is a major upgrade in terms of wearability. It's a more comfortable EEG headband that does not compromise on the quality of EEG information. Most EEG headbands today only have electrodes on the forehead for this same reason, but they can't measure any activity in the occipital region.”

The new HALO version features low-energy Bluetooth connectivity (BLE), which allows for a continuous stream of EEG data for up to 8 hours. With its minimalistic footprint, it is a truly portable solution enabling continuous EEG monitoring for long periods in and out of a lab environment.

BrainAccess offers a range of EEG solutions beyond the BrainAccess HALO. Earlier this year the new [BrainAccess Extended+ Kit](#), a 32 channel/electrode EEG system, was released expanding the BrainAccess Kit line-up. The Extended+ Kit was designed to cater the needs of researchers requiring full brain cortex coverage.

BrainAccess Software

BrainAccess HALO comes with free BrainAccess software. There are two major software options: BrainAccess Board and BrainAccess SDK. The BrainAccess Board is a single-point entry application to communicate with BrainAccess devices, enabling the streaming, viewing and recording of data. It supports Lab Streaming Layer (LSL), which is becoming a



The new BrainAccess HALO adapts to different head shapes and features a 4-channel EEG acquisition system with a common reference electrode, two electrodes positioned on the forehead and two over the occipital cortex region.



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standard for connecting and synchronizing multiple devices, allowing versatile experiment setups. As a result, the BrainAccess Board integrates well with other hardware and software that also support the LSL format. The Board has an application launcher with EEG application examples and data analysis tools.

While BrainAccess Board is more suited for end users, BrainAccess SDK offers direct control and access to devices and can be used by integrators for the development of specific applications. BrainAccess SDK can be accessed via C and Python APIs.

About Neurotechnology

Neurotechnology is a developer of high-precision algorithms and software based on deep neural networks and other AI-related technologies. The company was launched in 1990 in Vilnius, Lithuania, with the key idea of leveraging neural network capabilities for various applications, such as biometric person identification, computer vision, robotics, and artificial intelligence. The company has also been developing electroencephalography (EEG) and hyperscanning solutions for research, brain-computer interface (BCI) and other applications.

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