

# POSEIDON™



Poseidon is the ultimate leap in amplifier technology for brain monitoring that sets a new standard for signal quality, usability and mobility.



Poseidon Mini

Poseidon Mini is miniature, wireless device that enables real-time, high-fidelity EEG to be streamed to any WiFi connected device such as a laptop computer, smart phone or tablet or stored locally on a micro SD card. It boasts true DC recording with extremely high-dynamic range ( $\pm 4.5$  V) and per-channel 24-bit analog-to-digital converters. with user-selectable filters and sampling rates. Experiment designs are no longer limited by noise and mobility issues caused by traditional EEG system bulky, noise-inducing wires and cables and artifacts (amplifier blanking, saturation etc.) A high-density connector provides an ultra-compact & lightweight one-connection interface to EEG caps or ECoG/iEEG grids. Real-time impedance measurements provide monitoring of electrode-contact quality.

Easily switch between WiFi or Logger (local storage) mode. Data is wirelessly transmitted to a computer or smart device for viewing, analysis and storage or stored on a 32 GB removable micro SD card and later transferred to a computer for viewing and analysis. Device can be recharged while it is wireless transmitting to a distant receiver or storing locally.

## Applications

- Neuroscience research
- Epilepsy monitoring (LTM)
  - ✓ Subdural / epidural ECoG/iEEG
  - ✓ Scalp EEG
- ERPs, evoked potentials
- Nerve cuffs
- Sleep (PSG) studies
- Biofeedback
- Neuromarketing
- Brain-Computer Interface (BCI) development

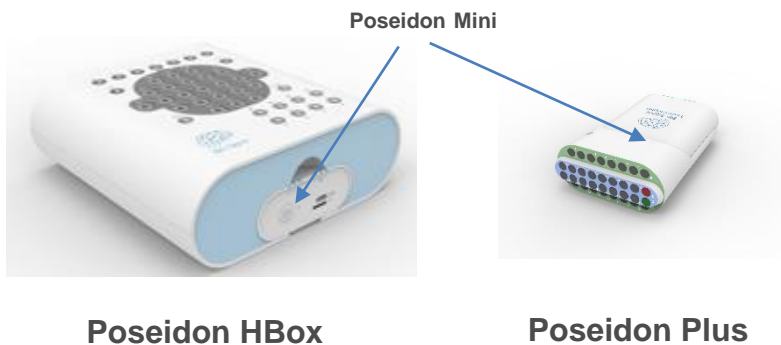
## Features

- 32 EEG channels (referential)
- 8 bipolar channels (ECG, EMG, ENoG)
- True DC recordings
- 3-axis accelerometer
- Wireless and rechargeable
- 10 / 24 hours per charge (WiFi on / off)
- Local micro SD card storage (32 GB)
- WiFi or USB-C connectivity
- Trigger / event channels (8 bits)
- Real-time impedance monitoring
- Compatible with any EEG cap

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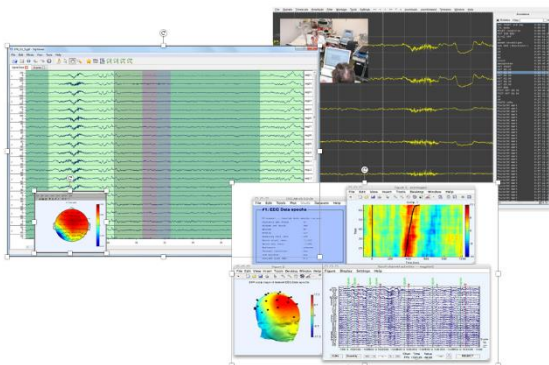
With Poseidon Mini, recording high-quality EEG, ECoG, EMG, and ECG signals are now possible from a device in the subject's pocket. Wireless triggering provides precision event marking and synchronization with 3rd-party video, electrical/photo stimulators or other control systems.



## Specifications

- Analog Inputs: 40 (32 referential, 8 bipolar)
- Sampling: 24 bits up to 4 kHz
- Bandwidth: DC – 500 Hz
- Input Impedance: > 1 GΩ (DC) || 8 pF
- Input-Referred Noise: < 1.8 μV p-p
- CMRR: > 120 dB (50/60 Hz)
- Input Range: +/- 4.5 V
- Digital Inputs: 16-bit (TTL or strobed-word)
- Wireless: Low-power WiFi 802.11n
- Transmission Range: 10 m
- Battery: LiPo (5,000 mAh)
- Battery Life:
  - > 10 hours WiFi on
  - > 24 hours Logger on (WiFi off)
- Local Storage: micro SD card (32 GB)
- H-Box: 150 mm x 90 mm x 50 mm
- Plus: 95 mm x 78 mm x 37 mm
- Mini: 92 mm x 75 mm x 30 mm
- HBox / Plus / Mini Weight: 300g / 63g / 50g

Poseidon HBox is an innovative headbox design with a plug-in slot for Poseidon Mini. It transforms the industry-standard design to one with advanced signal-processing, WiFi connectivity and local data logging. It is equipped with industry-standard touchproof (safety) connectors (DIN 42802-1). Poseidon Plus is an ultra-compact headbox for recording 32-ch EEG/ECoG/iEEG.



Poseidon's intuitive and powerful software allows you to visualize and analyze data including such analyses as correlation, coherence, event related potentials, evoked responses, and event/spike-triggered averaging. Set filters to view alpha, beta, theta, delta, and gamma waves, view power spectra or spectrograms -- all in real time.

Export data to BDF, EDF, CSV, or binary files for importing into 3rd-party applications such as MATLAB, EEGLAB, BCILAB, FieldTrip, SciPy, and EDF Browser. MATLAB & C/C++ SDKs are provided for development of real-time EEG measurement and analysis applications (e.g., Brain-Computer Interfaces or BCIs).