

Cognionics Accessories

Wireless Trigger | ECG Belt | Analog Extension Box

Cognionics Product Family



- ▶ **Sub-millisecond Precise Event Marking without Wires**
- ▶ **8-Channel Auxiliary Channels for Respiration, ExG, GSR and More**
- ▶ **Designed for Mobility and High Data Quality**

 **Cognionics**

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www.cognionics.com



HD-72 High Density Dry Headset

- Up to 72 (64 EEG+ 8 AUX) channels
- Dry electrodes without mess or cleanup
- High signal quality with headset-wide global active shielding
- Wearable design that can be applied with minimal assistance
- Only 350 g



Quick-20 Dry EEG Headset

- Extremely fast and easy setup, 1-2 min with minimal adjustments and assistance
- High signal quality with advanced active electrodes and shielding
- Conformable and comfortable design
- Complete 10-20 sensor array
- Only 250 g



Mobile-72 High Density Cap

- Traditional Ag/AgCl gel electrode cap taken to the next level of mobility
- Actively shielded electrodes
- Head-worn system, no backpacks or separate computers required
- No need for skin abrasion with active shielding
- Only 200 g



MPB-12 Dry EEG Headband

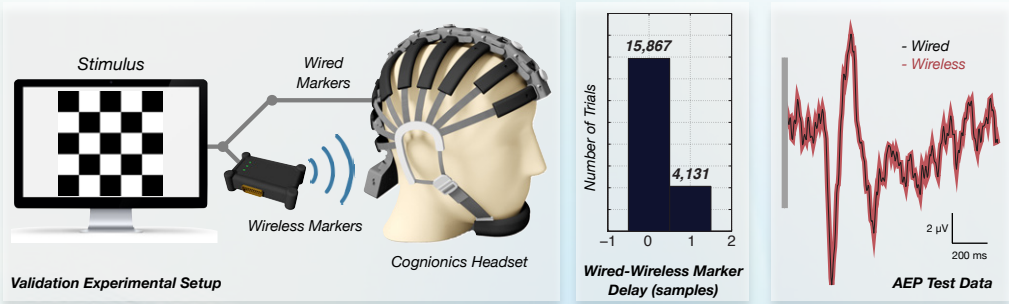
- Flexible dry electrode experimentation platform
- Active electrode lead wires
- Miniature electronics worn on headband
- Sensors repositionable around 12 10-20 standard locations
- Only 150 g

 **Cognionics**
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 **BRAIN VISION LLC**
Solutions for neurophysiological research
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Wireless Triggering System

Accurate time synchronization of events and data acquisition devices is critical for many neurophysiological experiments. Until recently, however, mobile systems have struggled with the inherent latency and jitter encountered in wireless communications. To overcome this limitation, Cognionics has developed a patent-pending wireless synchronization technology for our headset systems without the need for complex software post-correction.



A validation test of the system was conducted by examining the delay between simultaneous transmissions of wired and wireless event markers over many trials. The majority of wireless markers were received on the exact EEG sample point as the wired ones, with a some arriving one sample later (note: a perfect match is unlikely, even between two *wired* paths due to the fact that the various clocks are not in-phase). This translates to a mean latency of only 405 µs with a jitter of 210 µs. As expected, the extracted ERPs using both markers are identical.

Using the Cognionics Wireless Triggerer

The Cognionics wireless triggering systems are designed to be drop-in replacements for existing setups. It is compatible with most stimulus packages including E-Prime, Presentation and any other toolbox capable of outputting serial or TTL signals.



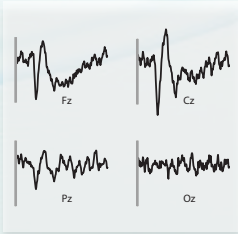
Step 1: Connect trigger to stimulus output on DB-25, DB-9 or USB connectors.



Step 2: Check wireless link quality indicator on headset to guarantee adequate signal and timing.





Step 3: Run experimental protocol, using the same procedures as with your wired devices.



Step 4: Analyze with your preferred software!

Analog Extension Box and Dry ExG Belt

		
Inputs	DB-9 RS232, DB-25 16-bit TTL Parallel Port and USB Virtual Serial Port	USB Virtual Serial Port
Trigger Lines	16-bits, multiplexed between connectors	8-bits
Latency and Jitter	405 µs average delay, 210 µsRMS jitter	6 ms average delay, < 2 msRMS jitter
Operating Frequency	2.4 GHz ISM Band	2.4 GHz ISM Band
Range	10 m, indoors under typical conditions	3 m, indoors typical office environment

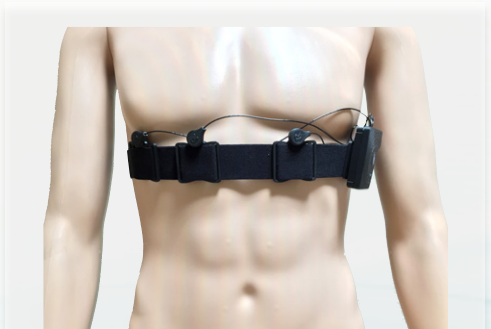


Extension Module

Cognionics systems can be extended with a miniature, wearable (on arm or waist) box for auxiliary sensors.

- 8 analog inputs for *ECG, EMG, GSR, Respiration* and other physiological sensors
- Standard 5-pin powered Binder connector
- Light weight and wearable on arm/ belt
- Custom inputs upon request

Connectors	x8 Binder-5 pin
Input Range	16-bit, ±5 V differential
Power Output	±5 V, 40 mA combined
Battery	2x AAA



Dry ECG/EMG Belt

For ECG/EMG sensing, our belt offers a simple and high-quality dry electrode solution. Belts can work with the headsets or as a standalone system.

- Diagnostic grade signal
- For ambulatory use with dry electrodes
- Adjustable belt, slide-able sensor mounts
- Use as extension from EEG system
- Or use with separate stand-alone wireless electronics

Sensor Mounts	x4 Standard ECG snap
Positions	Slide-able across chest band
Sizing	Adjustable, custom lengths and extensions available