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BIOSEMI

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POTENCIALES EVOCADOS Y dEEG

ACTIVE TWO BASE SYSTEM

The ActiveTwo system sets new standards for multi channel, high resolution biopotential measurement systems for research applications. The system is a further development of our successful ActiveOne system, the first commercially available system with active electrodes. Advances in technology have allowed us to significantly increase the number of channels, digital resolution, input range, and sample rate, without any increase in size, power-consumption or costs. Second generation active electrodes are smaller in size with less cable weight, while offering even better specs in terms of low-frequency noise and input impedance. The new system confirms the solid lead that BioSemi has build over competing designs during the last years.
BATTERY PACK NOT INCLUDED

3 OCTAL MODULES

Not shown

16-CHANNEL ELECTRODE SET

Not Shown

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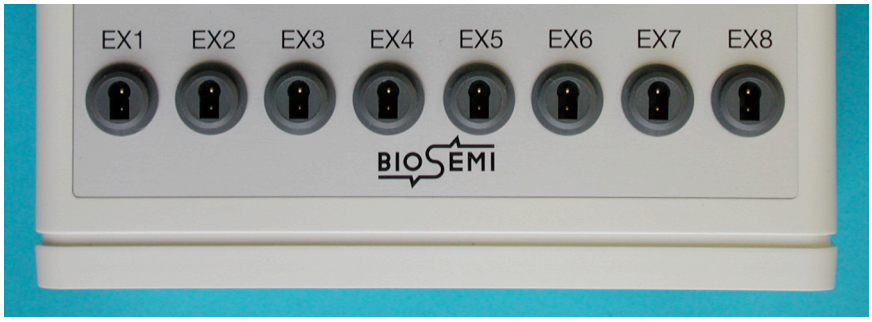
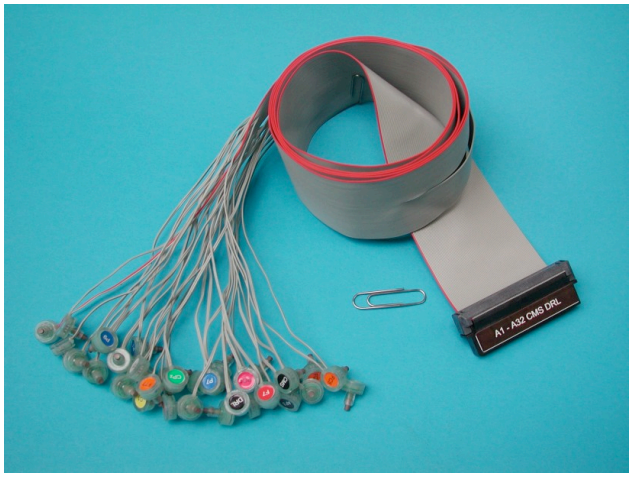
8 FLAT TOUCHPROOF ELECTRODES

The ActiveTwo AD-box forms an ultra compact, low power galvanically isolated front-end (close to the subject) in which up to 256 sensor-signals are digitized with 24 bit resolution. These sensors can be Active electrodes but also BioSemi Bufferboxes with normal passive electrodes, as well as a range of additional active sensors measuring parameters like respiration, temperature, force etc. Each AD-box channel consists of a low noise DC coupled post-amplifier, with a first order anti-aliasing filter, followed by a Delta-Sigma modulator with an oversampling rate of 64, and decimation filter with a steep fifth order sinc response and high resolution 24-bit output. The digital outputs of all the AD converters (up to 256) are digitally multiplexed and sent to the PC via a single optical fiber without any compression or other form of data reduction.



CMS/DRL ELECTRODE SET



The BioSemi "Pin-type" Active electrode has been designed especially for mounting in BioSemi headcap's. The electrode has a sintered Ag-AgCl electrode tip, providing very low noise, low offset voltages and very stable DC performance.
Standard sets have 32 electrodes on a common connector with 140 Centimeter cable length. (Other cable lengths are available on request.)
The electrode is completely resistant to long term water and alcohol submergence enabling easy cleaning and disinfecting. The electrodes are numbered with water-proof stickers for easy channel recognition.

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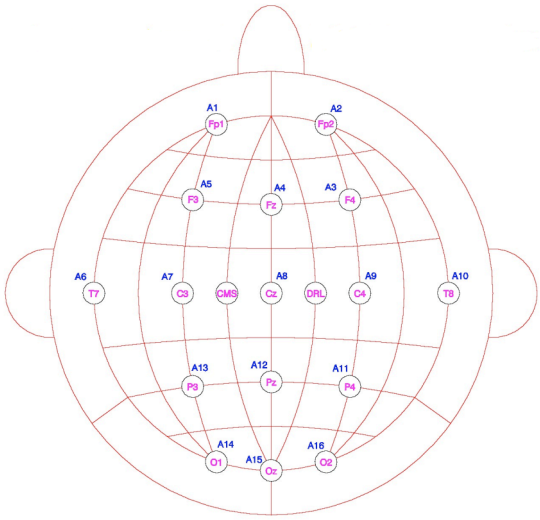
2 HEADCAPS WITH 16 HOLDERS

The BioSemi headcap has been developed in cooperation with Dr. Peter Praamstra at the Behavioral Brain Sciences Center, University of Birmingham, United Kingdom. The headcap consists of an elastic cap with plastic, electrode holders. The cap itself does not contain electrodes. The cap is placed on the subject's head, and the electrode holders are filled with electrode gel with a syringe. Because of the active electrode setup, high electrode impedance's can be tolerated, so no skin preparation is required. Thus, the usual, unpleasant and time consuming scrubbing of the scalp after the paste is applied can be omitted. After the buttons are filled with paste, the active electrodes are plugged in the cap one by one. The procedure is fast and reliable (5-10 minutes for 32 channels), and allows high density EEG measurement with a minimum of preparation time and subject discomfort. The electrode position coordinates of standard BioSemi headcaps are downloadable. **Since the electrode holders make the caps a little bit smaller, please order your caps half a size bigger. (so if you want a Medium cap, please order a Medium/Large cap).** Standard, the caps have ear-slits for easy accessing of the ears. Surgical caps are available on demand. Different electrode layouts are possible on client specification. It is also possible to assemble your own cap layout. Caps are delivered complete with a 5" (12cm) velcro chin strap (7" strap is included starting from ML sizes).



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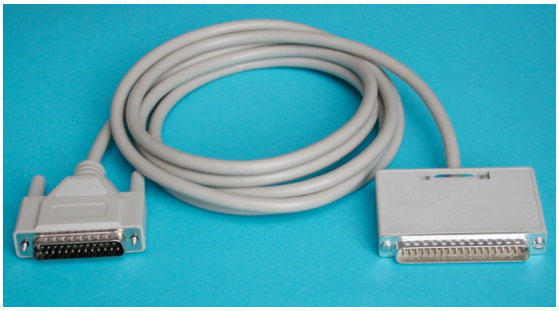
ACCESSORIES SET



Presentation Cable

This cable connects the stimulation PC (parallel port) with the trigger input/output connector (37 pin female sub-D) of the BioSemi USB receiver.

5 Tubes of Gel

Electrode gel, Signa gel by Parker, low impedance highly conductive gel, specially formulated to maximize contact between the body surface and the Active electrodes, bacteriostatic, non-irritating, non-staining, and non-gritty. Sufficient for approximately 20 different 32-channel measurements.

2 Syringes

Special syringe with blunt needle for easy injection of electrode gel in the BioSemi electrode holders.
12cc (enough for a measurement of 32 channels)

500 Adhesive Disks

Double sided adhesive disks for firm placement of the Active electrodes on the skin. Two sizes are available: 20mm x 8mm or 13mm x 5mm (outside x inside).

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Publications

Peer reviewed publications by active electrode (ActiveTwo) users:

Y Tran, P Boord, J Middleton and A Craig.
Levels of brain wave activity (8-13 Hz) in persons with spinal cord injury *Spinal Cord (2004) 42, 73-79. doi:10.1038/sj.sc.3101543*

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Phase synchronization for the recognition of mental tasks in a brain-computer interface *Neural Systems and Rehabilitation Engineering, IEEE Transactions on Rehabilitation Engineering*

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Peter Praamstra, Luc Boutsen, and Glyn W. Humphreys.
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Jeroen J. Stekelenburg, Jean Vroomen, Beatrice de Gelder
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Beneficial effects of ambiguous precues: Parallel motor preparation or reduced premotoric processing time? *Psychophysiology 41 (2004) 231-244*

C.W. Hesse, E. Seiss, R.M. Bracewell, P. Praamstra

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Absence of gaze direction effects on EEG measures of sensorimotor function. *Clinical Neurophysiology 115 (2004) 29-38*

Ellen Seiss, Peter Praamstra

The basal ganglia and inhibitory mechanisms in response selection: evidence from subliminal priming of motor responses in Parkinson's desease. *Brain 127 (2004) 330-339*

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Neurophysiological correlates of error correction in sensorimotor-synchronization. *Neuroimage 20 (2003) 1283-1297*

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Attention and movement-related motor cortex activation: a high-density EEG study of spatial stimulus-response compatibility. *Cognitive Brain Research 16 (2003) 309-322*

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S.I. Goncalves, P.J.W.Pouwels, J.C de Munck, R. Schoonhoven, J.P.A. Kuyer, E.J.W van Someren and R.M. Heethaar

A new method for simultaneous recording of EEG and fMRI. *VU University Medical Centre, Dpt. PMT, De Boelelaan 1117, 1081HV Amsterdam, The Netherlands.*

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