BRAIN VISION engineering actiCHamp Plus

BRAIN VISION
Solutions for neurophysiological research

actiCHamp Plus

the new versatile all-in-one lab amplifier

- Compatible with all our active and passive electrodes
- Scalable for high-density recordings
- Easy synchronization for multiple recording modalities
- Powerful lithium-ion battery pack
- Integration with EEGLAB, MATLAB®, LSL and OpenViBE

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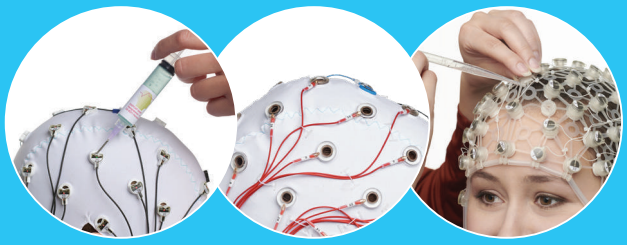

All electrode options to best fit your needs

- Record with easy to prepare active electrodes (actiCAP slim) for best data quality
- Easily switch to passive sponge-based electrodes (R-Net) when high channel counts and quick preparation times are crucial
- Choose gel-based passive electrodes in our fully customizable BrainCaps

Scalable solution

- Modularity for recording 32 to 160 channels
- 8 additional AUX channels for including extra physiological sensors
- Up to 100 kHz sampling rate

Highly integrated for multimodal recordings

- New clock synchronization outputs allow for easy integration with external devices (e.g. TMS, EMG)
- Forward incoming triggers to other signal acquisition systems (e.g. fNIRS)

Powered by lithium-ion technology

- Ensure longer recording times with higher battery capacity
- Long battery life with low self-discharge rate

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BRAINVISION professional R-NET

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Solutions for neurophysiological research

Sponge-based electrode system

- Ultra-fast measurement preparation
- Comfortable high-density EEG recordings
- Highly convenient - no gel residues
- Ag/AgCl sensors with exchangeable sponge tips
- Available with 32, 64, 96 or 128 channels

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Great match for time-restricted recordings

- ✓ If your research requires ultra-fast application, minimal invasiveness and maximum comfort, the R-Net is the perfect match.
- ✓ It is also the only sponge-based electrode system available that follows the international 10-20 positioning system.

New addition to our existing electrode types

- ✓ It expands our wide range of already available electrode cap types, i.e. passive gel, passive solid gel, active gel and active dry.

Fast preparation time

- ✓ It can be prepared with our potassium chloride electrolyte solution, allowing for the fastest preparation time out of all electrode systems.

Compatible with our mobile and stationary amplifiers

- ✓ It is compatible with our mobile LiveAmp systems, as well as our stationary gold standard BrainAmp amplifier series and our new versatile all-in-one lab amplifier, the actiCHamp Plus.

Quick and easy replacement of damaged electrodes

- ✓ Available repair kits allow you to fix a broken electrode yourself without the need to replace the whole R-Net.

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MoBI
Mobile & Wireless EEG

BRAIN VISION
Solutions for neurophysiological research

Take your research out of the lab and into the real world

- Mobile brain/body imaging solutions
- Wireless portable amplifier
- Mobile EEG recording between 8 and 64 channels
- Flexible electrode options and wireless triggering
- Wide software integration

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Compact wireless EEG amplifier

✓ Outstanding signal quality

✓ Ultra lightweight

✓ Stream data or store on SD card

✓ Flexible and expandable (8, 16, 32 or 64 channels)

✓ Ready for hyperscanning

Electrode options for every recording scenario

✓ passive ✓ active ✓ active dry ✓ sponge

Highly integrated

✓ Fully wireless triggering with 8-bit trigger port

✓ Integrated 3-axis accelerometer

✓ Add additional physiological signals to your mobile EEG research (eye-tracking, EOG, EMG, ECG, respiration)

End-to-end software solutions

✓ Synchronize multimodal recordings with LSL

✓ Perform real-time data analyses with all major toolboxes (OpenViBE, BCI2000, BCILAB)

✓ Perform advanced analyses with BrainVision Analyzer 2

LSL

BRAINVISION professional ANALYZER 2

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EEG & Brain Stimulation

BRAIN VISION
Solutions for neurophysiological research

Advanced EEG Solutions

for your brain stimulation lab

- **Combine EEG with TMS or tES**
- **Close coil positioning with ultra slim active electrodes**
- **Fast artifact recovery through advanced amplifier technology**
- **Closed-loop EEG-TMS coupling**
- **Wide software integration**

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Latest generation active electrode technology

- ✓ Robust and durable electrodes compatible with all brain stimulation techniques
- ✓ Slim profile and re-routable cables for flexible close coil positioning
- ✓ High signal-to-noise ratio for each channel
- ✓ Attenuated noise and movement artifacts

State of the art EEG recordings

- ✓ Up to 100 kHz sampling rate
- ✓ Return to baseline in < 0.8 ms after artifact
- ✓ Real-time data access in < 1 ms
- ✓ Modular for high-density recordings

End-to-end software solutions

- ✓ Record data with Brain Vision Recorder
- ✓ Online data analysis using lab streaming layer (LSL)
- ✓ Perform advanced analyses with Brain Vision Analyzer 2

Flexibility and integration

- ✓ Combine with LSL for ultra-fast closed-loop experiments
- ✓ Accurate and fast electrode localization with CapTrak
- ✓ Extend our EEG solutions with fMRI, fNIRS, eye-tracking and extra physiological recordings
- ✓ Integrated with all major manufacturers of brain stimulation hardware

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Baby EEG

BRAIN VISION
Solutions for neurophysiological research

Solutions for infant and child EEG research

- Flexible electrode options providing highest comfort, safety and ease of preparation
- Stationary and mobile amplifiers
- Video EEG with full software integration
- Easy to learn analysis software
- Free scientific and technical support

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Diverse electrode types

✓ Slim, active gel-based electrodes for best signal with fast preparation time

✓ Sponge-based electrodes for fastest application

✓ Up to 64 channel recordings for infants and up to 128 channel recordings for adolescents

✓ Customizable caps with high precision or high comfort fabrics

Amplifier options

✓ Stationary and mobile amplifiers for all electrodes types

✓ Up to 64 channel mobile & 128 channel stationary recordings

✓ Auxiliary channels for additional physiological recordings (e.g. EMG, ECG, EOG, GSR)

Video EEG solution

✓ Fully synchronized video and EEG recordings

Multimodal integration

✓ eye tracking ✓ fNIRS ✓ fMRI ✓ hyperscanning

Comprehensive software solutions

✓ Integration with PST E-Prime and NBS Presentation for event-markers and remote control of EEG recordings

✓ Easy to learn analysis software with automatic and semi-automatic EEG analysis routines

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V101

CGX *A Cognionics Company*

in partnership with

BRAIN VISION
Solutions for neurophysiological research

Quick-20r

MAY 2020 PRODUCT OVERVIEW

CGX. The leader in mobile EEG Solutions for real-world neurophysiological monitoring.

Quick-20r Headset

Fully redesigned wireless headset.

The CGX Quick Series is well regarded for generating research-level data from our active dry and semi-dry polymer electrodes. Our new Quick-20r features electrical, mechanical and structural enhancements for faster set-up, extended wear time, enhanced reliability, and artifact immunity.

Quick Series Headsets

Quick-20r
8 or 20 Channel Systems.

- EEG amplifier and wireless electronics integrated into headset.
- Flexible composite arms create good contact between the sensors and head.
- Fits adolescents through adults. Child-size available.
- Includes one additional ExG lead for ECG, EMG, and EOG.
- 6 hours of uninterrupted data gathering.
- Standard 10-20 montage.
- Multi-modal physiological recording (ExG, GSR, SpO2, Temperature, and Respiration) with AIM Physiological Monitor.
- Multi-input (digital, light, sound) triggering with new Wireless StimTrigger.

Fully mobile, fully wireless.
3 Minute setup.

- Put headset on subject
- Check impedance map (software included)
- Adjust sensors — if required — for comfort and contact
- Begin wireless data acquisition

Quick Series Dry Headsets

Technical Overview

Wireless Amplifier
A/D Resolution: 24-bit simultaneous sampling analog-to-digital converters.
Sampling rate: 500 samples per second.
Bandwidth: 0-131 Hz with true DC coupling.
3-axis accelerometer measures head motion.
Wireless Range: 10 meters.
Noise: <1.0 µV RMS from 1-50 Hz, shorted inputs.
Compatible with optional CGX Wireless StimTrigger.
Compatible with optional AIM Physiological Monitor

Sensors
Active electrodes and active shielding for highest signal quality.
Choose Drypad, Flex, or HydroFlex sensors at any position.

Data Stream
Bluetooth Low Energy.
Full access to raw data via real-time streaming API.

Continuous impedance check with real-time monitoring of all channels simultaneous with EEG.
Export data to BDF, EDF, or CSV.
Compatible with NeuroPype, LabStreaming Layer, EEGLAB, BCILAB, MATLAB, BCI2000, OpenViBE, Neuroguide and more.
Open API allows you to build your own applications.

Power
Two AAA batteries: 6 hours

Cleaning
Hand wipe between sessions

General
Weight: 596g in use
Fits heads sized 52-62 cm
Dimensions: 20 x 18 x 19 cm

Available Systems

Quick-8r
Quick-20r Headset with 8 hot positions (including 1 ExG Channel)
Bluetooth Low Energy Dongle
10 Drypad Sensors
10 Drypad Ear Sensors
10 Flex Sensors
10 HydroFlex Sensors
A1 Earclip
A2 Earclip
3 Active Lead Wires
2 Passive Lead Wires
30 Skintact Sensors
5 Alcohol Wipes
4 Rechargeable AAA Batteries
Battery Charger
Carrying Case
3 Year Warranty

Quick-20r
Quick-20r Headset (including 1 ExG Channel)
Bluetooth Low Energy Dongle
20 Drypad Sensors
10 Drypad Ear Sensors
40 Flex Sensors
20 HydroFlex Sensors
A1 Earclip
A2 Earclip
3 Active Lead Wires
2 Passive Lead Wires
30 Skintact Sensors
5 Alcohol Wipes
4 Rechargeable AAA Batteries
Battery Charger
Carrying Case
3 Year Warranty

Quick-30 Dry Headset

The industry-leader in signal quality.

Designed for researchers requiring the highest signal quality in a standard 10-20 montage. The Quick-30 (v 3.0) incorporates a host of mechanical and structural enhancements for faster set-up and significantly increased durability and wear-time.

Quick-30

- EEG amplifier and wireless electronics integrated into headset.
- Flexible composite arms create good contact between the sensors and head.
- Fits adolescents through adults
- Use the systems in wireless mode, and capture data on-board with a built-in SD card.
- Up to16 hours of uninterrupted data gathering in SD mode.
- Add up to 2 additional ExG leads.
- Millisecond precise event synchronization with optional Wireless StimTrigger.
- Multi-modal physiological recording (ExG, GSR, SpO2, Temperature, and Respiration) with optional AIM Physiological Monitor.

All Quick Series headsets are fully mobile.

Quick Series Dry Headsets

Technical Overview

Wireless Amplifier
A/D Resolution: 24-bit simultaneous sampling analog-to-digital converters.
Sampling rate 500 or 1,000 samples per second.
Bandwidth 0-131 or 262 Hz (depending on sampling rate), with true DC coupling.
Storage through microSD and microSDHC.
3-axis accelerometer measures head motion.
Wireless Range: 10 meters.
Noise: <1.0 µV RMS from 1-50 Hz, shorted inputs.
Compatible with optional CGX Wireless StimTrigger.
Compatible with optional AIM Physiological Monitor.

Sensors
Active electrodes and active shielding for highest signal quality.
Choose Drypad, Flex, or HydroFlex sensors at any position.

Power
Bluetooth.
On-board SD card.
Full access to raw data via real-time streaming API.
Continuous impedance check with real-time monitoring of all channels simultaneous with EEG.
Export data to BDF, EDF, or CSV.
Compatible with NeuroPype, LabStreaming Layer, EEGLAB, BCILAB, MATLAB, BCI2000, OpenViBE, Neuroguide and more.
Open API allows you to build your own applications.

Power
Lithium-ion: 8 hours wireless, 16 hours with microSD card

Cleaning
Hand wipe between sessions.

General
Weight: 610 grams
Fits heads sized 52-62 cm

Available Systems

Quick-30
Quick-30 (V 3.0) Headset plus 2 ExG Channels with Optional Module
Bluetooth Dongle
30 Drypad Sensors
60 Flex Sensors
30 HydroFlex Sensors
3 Earclips
3 Lead Wires
20 Extenders
5 Alcohol Wipes
4 Lithium-ion Batteries
2 Chargers
Carrying Case
3 Year Warranty

Dev Kit

Versatile Development Kit

The Dev Kit includes everything you need to undertake EEG experiments and custom hardware development: a 32-channel amplifier, inputs for CGX dry electrodes ExG's, and a headband for mounting dry electrodes.

Dev Kit

Up to 32 Channel System

- Soft, washable fabric band with reinforced polymers for a snug, artifact-resistant fit.
- Standalone Amp (data acquisition unit) attaches to headband, stores data on an SD card, or streams via Bluetooth low energy.
- Up to 16 hours of battery life.
- Configure loose lead lines to meet your experimentation needs.
- Compatible with CGX sensors.

Use with

- AurisDK In-Ear EEG sensor

Headband holds up to 8 active, shielded dry electrode pods.

Dev Kit

Technical Overview

Wireless Amplifier
A/D Resolution: 24-bit simultaneous sampling analog-to-digital converters.
Sampling rate 500 or 1,000 samples per second.
Bandwidth 0-131 or 262 Hz (depending on sampling rate), with true DC coupling.
3-axis accelerometer measures head motion.
Wireless Range: 10 meters.
Noise: <1.0 µV RMS from 1-50 Hz, shorted inputs.
Compatible with optional CGX Wireless StimTrigger.
Compatible with optional AIM Physiological Monitor.

Data Stream
Bluetooth Low Energy.
On-board SD card.

Full access to raw data via real-time streaming API.
Continuous impedance check with real-time monitoring of all channels simultaneous with EEG.
Export data to BDF, EDF, or CSV.
Compatible with NeuroPype, LabStreaming Layer, EEGLAB, BCILAB, MATLAB, BCI2000, OpenViBE, and more.

Power
Lithium-ion: 8 hour wireless, 16 hours with microSD card.

General
Weight: 100 grams
Dimensions: 89 x 70 x 23 mm

Included

Dev Kit
32-Channel Compact Amplifier
Lead Wire Adaptor (for use with CGX sensors)
Bluetooth Low Energy Dongle
Headband
10 Drypad Sensors
10 Flex Sensors
10 HydroFlex Sensors
10 Sensor Adaptors
30 Skintact Sensors
10 3.5mm Cables
9 Active Pods
1 Ground Pod
USB Charging Cable
Wall Charger
Carrying Case
3 Year Warranty

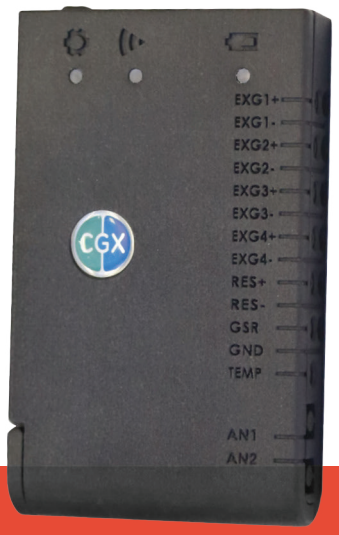
AurisDK
3 Auris Earbuds With Lead Wires 100 Disposable HydroFlex Earbud Sensors

Auris Earbuds

Unique in-ear EEG for researchers. Comfortable and light-weight with excellent signal quality. Plugs into a single channel on the Dev Kit.

AurisDK *Dev Kit Accessory*

- Stays in place during motion
- Kit includes 100 disposable HydroFlex Earbud Sensors
- Replacement sensors available



AIM Physiological Monitor

Combine mobile EEG with advanced physiological monitoring.

Everything you need to measure physiological response. The AIM Physiological Monitor is a compact, sophisticated unit that adds heart rate, temperature, respiration, GSR, PPG/HRV/SpO2 and more to any EEG system.

AIM Physiological Monitor
Physiological accessory

- Stream wirelessly via Bluetooth, or write to an SD Card.
- Bundled with our proprietary physiological sensors.
- Compact design clips onto belt, or sits on surface.
- 6 hours of battery life.

Sensors

PPG/HRV/SpO2

GSR

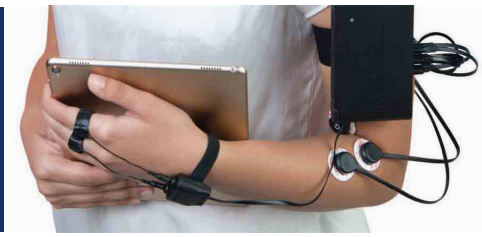
Auto-switching ExG

Temperature

Respiration

3rd Party Sensors

Use with any CGX Headset



Attach to armband. Leads stay neat and organized.

Aim Physiological Monitor

Technical Overview

Wireless Amplifier
A/D Resolution: 24-bit simultaneous sampling analog-to-digital converters.
Sampling rate 500 samples per second.
Bandwidth 0-131 Hz with true DC coupling.
Storage through microSD and microSDHC.
3-axis accelerometer measures head motion.
Wireless Range: 10 meters.
Noise: <1.0 µV RMS from 1-50 Hz, shorted inputs.
Compatible with optional CGX Wireless StimTrigger.

Sensors
4-Channel auto-switching referential or bipolar ExG.
Bioimpedance-based respiration sensor.
PPG/HRV/SpO2.
12-bit solid state temperature.
GSR (EDA).
Third party sensing through 2 BIN-5, bipolar connectors with 5v analog inputs.

Data Stream
Export saved data in EEG or CSV (text).
LabStreaming real-time output.
Stream data using the simple API in C, C++, C#, Java, MATLAB or Python.
Open API allows you to build your own applications.

General
Battery Life: 4 hours wireless, 6 hours microSD
Weight: 130g

Included

AIM Physiological Monitor
AIM Wireless Amplifier
Bluetooth Dongle
8 Sensor Leads
Ground Lead
PPG/HRV/SpO2
GSR
Temperature Sensor
Respiration Sensor Set
30 ECG Electrodes
2 Lithium-ion Batteries
Charger
Carrying Case
3 Year Warranty

Wireless StimTrigger

Co-designed by Cedrus and CGX for sophisticated research projects.

Mark events precisely with this all-in-one wireless trigger. Connect to eye trackers and other recorders without the need for software or algorithmic timing compensation.

Wireless StimTrigger

- Accepts light sensors, audio sensors, RB-x40, microphone, and USB.
- m-pod signal mapping assigns any event marker to any output line.
- Wireless broadcasting sends information to a limitless number of in-range receiving systems for multi-subject group research.
- Compatible with virtually all popular triggering and stimulus presentation packages including E-Prime, Presentation, and more.

Works with all CGX systems.

Wireless StimTrigger

Technical Overview

Inputs
Four (4) light sensors (4th light sensor can be used for microphone)
Microphone for onset of vocal response
Audio in/out pass-through for auditory stimulus
Cedrus RB-x40 response pad
USB Input for event codes
External TTL input

Wireless Output
Resolution: 16-bit simultaneous Event Marker data
Timing and Latency: <2ms
Wireless Protocol: Proprietary 2.4 GHz
Wireless Range: 20 meters
Compatible with all CGX systems

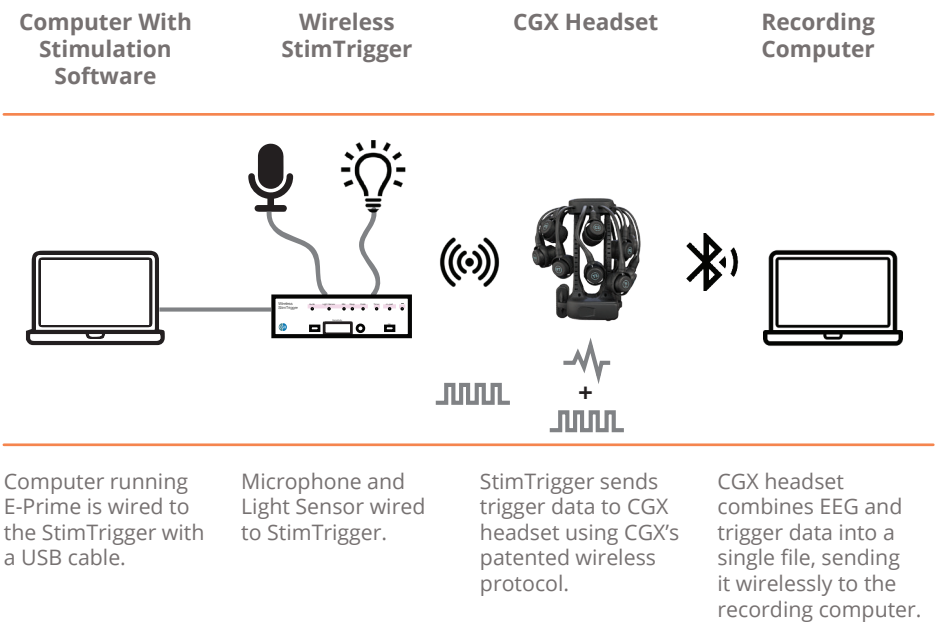
Built-in Outputs
Direct TTL output
Audio in/out pass-through
Time-stamped output via USB
Configurable output
Compatible with over a dozen popular recording devices via Cedrus m-pods with support for up to 3 simultaneous m-pods

Power
Input: 100-240V AC, 50-60hz, 1.0-0.5A
Output: 9V DC, 2.0A

General
Weight: 525g
Dimensions: 17.5 x 13.5 x 6cm

Included

Wireless StimTrigger
Wireless StimTrigger
Two Light Sensors with Replacement Adhesives
Two 3.5mm Audio Cables
mini-USB Cable
Power Adapter
Carrying Case
Manual
1 Year Warranty



Computer running E-Prime is wired to the StimTrigger with a USB cable.

Microphone and Light Sensor wired to StimTrigger.

StimTrigger sends trigger data to CGX headset using CGX's patented wireless protocol.

CGX headset combines EEG and trigger data into a single file, sending it wirelessly to the recording computer.

Warranty

Headsets And Devices

3 year warranty on manufacturing for headsets and devices. 1 year warranty on Wireless StimTrigger. Warranty is void if the device has been opened or tampered with.

Accessories

1 year warranty on manufacturing defects. 90 day warranty on lead wires and lead wire bundles.

Returns

All units returned to CGX for repair and assessment must have an RA number, issued by CGX. CGX will pay outbound shipping costs only.

Ship all returns with an RA number to:
CGX
Attn: Service
8445 Camino Santa Fe, #104
San Diego, CA 92121

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