

## **Introduction to FLEX**

FLEX is a wireless control box (FLEX controller) that works with EMOTIV's Flex Cap system. It combines the wireless technology of EMOTIV's award-winning EPOC X headset with the high-density and flexible sensor placement found in traditional EEG head-cap systems. The sensors can be placed in any of the 74 openings in the head cap in the standard 10-20 positions—allowing configurations for specific experiments or participant characteristics. FLEX 2 features: Choice of gel or saline-based sensor kits — for optimal conductivity and signal quality. Up to 32 EEG channels — provides high-density EEG coverage. Ear clip sensors (gel only) — for referencing signals. Bluetooth 5.2 — Transmits up to 256 SPS uncompressed, 16-bit data per channel. Wireless connectivity — connect seamlessly to your PC or Mac Rechargeable — up to 6 hours of battery life Choice of pre-configured (saline only) or non-configured caps — provides easy set-up or flexible positioning. Choice of Flex Cap sizes — for comfort and conformity.

## **Specifications**

### **EEG sensors**

Up to 32 channels: configurable

2 references: CMS/DRL configurable in any 10-20 location or on ears (compatible ear clips for sensors included)

Available data: raw EEG and frequency band data. Requires PRO License for use.

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### **EEG signals**

Sampling method: Sequential sampling, dual ADCs

Sampling rate: 2048 Hz internal downsampled to 256SPS.

Motion Resolution: 16 bits with 1 LSB =  $0.51\mu\text{V}$

Bandwidth: 0.16 – 43Hz, digital notch filters at 50Hz and 60Hz

Dynamic range (input referred):  $8400\mu\text{V(pp)}$

Coupling mode: AC coupled

No slew rate limits: Time-locked EEG, ECG, EMG & EOG signals

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Electrode count: 32 recording electrodes, 2 reference electrodes

Sensor material: sintered silver-silver chloride, compatible with gel

Size: profile height – 3.5 mm; central opening diameter – 6 mm

Wire length: 36 cm

Manufacturer: EasyCap

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### **Motion sensors\***

IMU part: ICM-20948

Quaternions: normalized, 4D

Accelerometer: 3-axis +/-8g

Magnetometer: 3-axis +/-112 gauss

Transmit full resolution motion data: Up to 64Hz motion sensor data

\*Software support for motion data coming soon.

### **Cap**

Available sizes: 54 cm, 56 cm, 58 cm

Variety of Flex Cap Sizes: Comfort & conformity for optimal EEG data

Openings: 74 in the standard 10-20 positions

Pockets for control box: At approximately Iz (for awake studies) and Cz (for sleep studies)

Manufacturer: EasyCap

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### **Connectivity**

Proprietary USB receiver (included): 2.4GHz band

USB 2.0+ (only available with EMOTIV Extender)

Micro USB-C port & power cable (included): for faster charging

Bluetooth 5.2: Enhanced real-time data transmission

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### **Power**

Battery: Internal Lithium Polymer battery 595mAh

Battery life: up to 6 hours

Power LED: Easily identify Flex Controller's battery life a short description for this tabbed section

Notice: Not supported on Ubuntu & Raspberry Pi