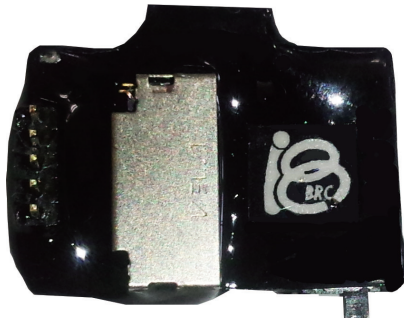


EEG Logger



ELG-2
EEG LOGGRER-2

When you chronically record EEG and/or EMG from mice/rats, the tether connected to the head of the animal can cause a variety of problems, e.g. it can restrict animal behaviour, stress by the twisted tether, animal bites and breaks it, electrical noise comes via long tether, etc. To solve these issues, we developed extra small logger which even can sit on the head of mouse. By the nature of head-mount device, the distance between the electrodes and amplifiers is very close, so no electrical noise comes in. It has two differential biopotential input channels so can record EEG and EMG simultaneously, best suited for sleep research, epilepsy research, etc.

Specifications	
Logger weight	1.5g
Battery weight	Small: 1.2g, Large: 2.9g
Recording time	Small: 26h, Large: 70h
Recording Channels	Differential 2ch (Ch1+, Ch1-, Ch2+, Ch2-, GND)
Sampling rate	100Hz/ch
Input range	± 5mV
Resolution	16bit (± 6.5mV by 0.2μV step, but clipped at 5mV)
Highpass filter	0.1Hz
Lowpass filter	100Hz
Media	micro SD (Samsung EVO Plus 32GB is recommended.)
Data format	Binary, Matlab compatible / incl. EDF & TXT converter

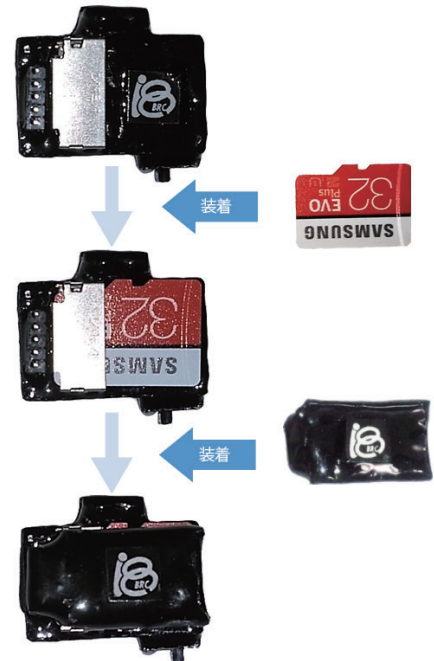
● Battery & Charger

Battery can be recharged by a charger included in the package. Charging will be finished 1–2 hours after connecting. By the supervising function, charging will be automatically terminated after full charge, and indicator LED will be dimmed. The small battery is for mice, and the large battery is for rats. Or we can provide smaller / larger battery on request.



● Simple recording in microSD

First, insert a microSD card in the logger. Next, connect a battery and turn on the switch, then recording starts. After recording, pull out the microSD and simply connect it to PC then you can directly read the data. No dedicted reader is needed.



● Electrode for EEG and EMG

The Input connector is universal 1.27mm pitch 5pin connector. We provide an electrode specially designed for the logger. It has two screws for EEG, two silver wires for EMG and one screw for GND. By default, the length of screw wire is 12mm, the length of EEG wire is 25mm, the screw diameter is 1mm, but we can provide customised version on request. Of course you can use your self-made electrodes.



● EEG logger standard set

Model: ELG-2-set

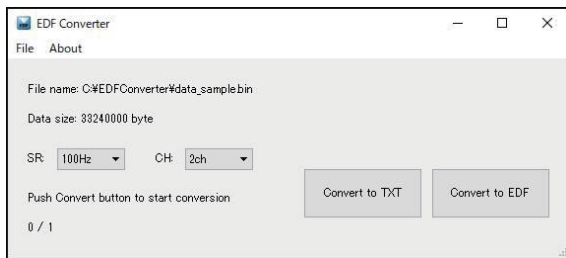
This package includes the following items :

- ELG-2-Head EEG logger x1
- ELG-2-Charger Charger for EEG logger x1
- ELG-Bat-S or L (※) Battery for EEG logger, small or large x2
- EeEm-12-25-12 Electrode for EEG and EMG x1
- ELG-2-Con Male mating connector (incl. 2) x1
- ELG-2-ConF Female connector (incl. 2) x1
- ELG-2-Dummy-S or L (※) Dummy logger x1
- ELG-mSD microSD for EEG logger x1
- ELG-2 Software Data viewer software x1
- EDF Converter EDF & TXT conversion software x1

(※) Please specify the size of battery and dummy logger. S will come without specifying.

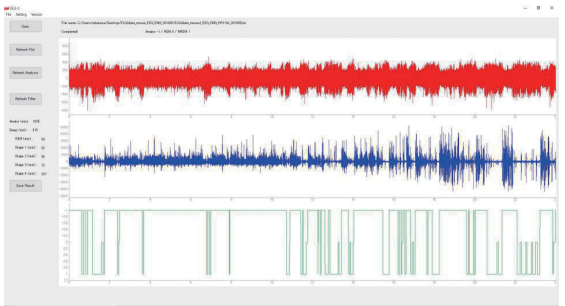
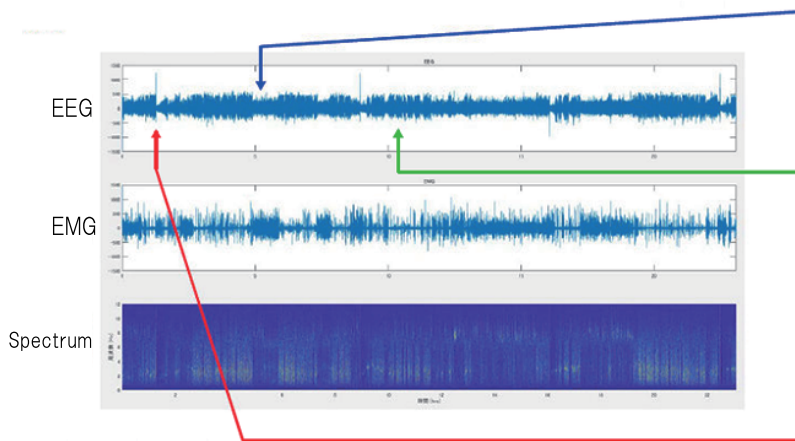
● EDF Converter software

The binary data (.bin) can be converted to European Data Format (.edf) and text format (.txt) by EDF Converter software which is included in the ELG-2-Set package. Many commercial data analysis software is compatible with EDF format, including LabChart from ADI and SleepSign from Kissei.



● Data

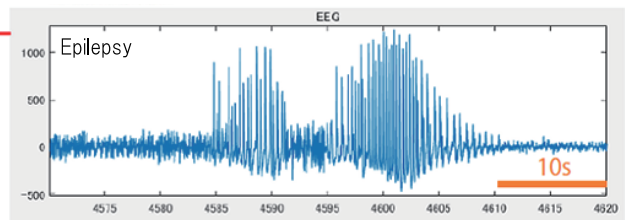
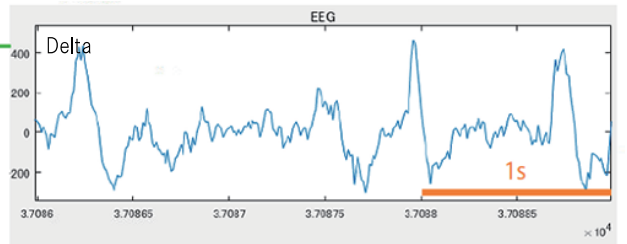
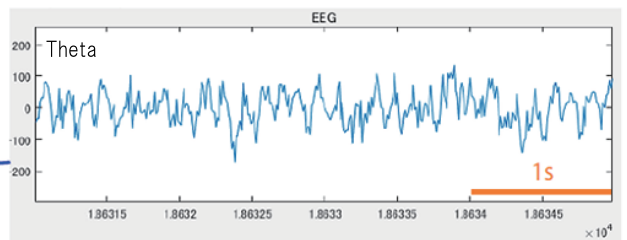
Data format is simple binary, so it is compatible with Matlab, Octave, etc., any software compatible with binary reading. Matlab sample codes are included in the package. The following data shows 24h EEG & EMG recording from a mouse showing epileptic seizures.



● ELG-2 Software

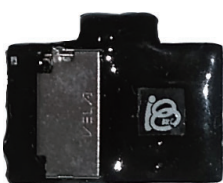
The viewer software ELG-2 is included in the ELG-2-Set package. It enables quick overview of whole data, filtering and simple analysis e.g. FFT based alpha, theta, delta power calculation and hypnogram plot.

*Only the default 100Hz sampling & 2ch logger is compatible.



● Custom Order Examples

We can provide tailor-made EEG logger optimized for your application. Please feel free to ask us anything!



Battery Integrated Logger

We can make the logger more compact and lighter by integrating the battery inside. For making it smaller, we even removed the power switch – it's turned on by inserting the microSD card.

16 hrs recording version: 1.9 g
26 hrs recording version: 2.4 g



5ch and High Speed Logger

For recording EEG from multiple brain area, this version has 5 channel input, 1 channel reference and ground. In addition, 200Hz sampling rate allows gamma band recording.

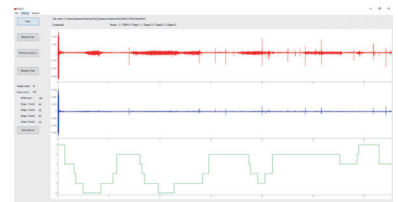
Check out the great work done by the user of this logger!

Narikiyo et al. Nat.Neurosci, 2020

EEG Logger for Human



We put the logger in a rigid plastic box for human use. The logger is small and light enough to record overnight EEG without interrupting sleep depth. The subject can see his/her hypnogram quickly in every morning by the ELG-2 software.



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