



DEVELOPED FOR: NewBehaviour AG
EEG Data Logger



Photo: courtesy of NewBehavior AG

ELECTRONIC DESIGN AND DEVELOPMENT SERVICES

Small and lightweight (only 2.65 grams) the NeuroLogger is a unique and elegant solution for automated, wireless recording of cognitive and behavioral screening of freely moving animals (as small as mice).

Electroencephalography (EEG) Data Logger

A prototype of the EEG-Logger was provided by the customer as the basis for a new design as some of the components were used outside the manufacturer's specification, with the result that the device could not be used for volume production. A 4 lead EEG with additional sensors and a run time of at least 36 hours had to fit into a module of the same size and weight of the prototype as the module has to fit on the head of a mouse and allow normal social behaviour of the mouse.

Solution

The system is built on a rigid-flex print with a thickness of 0.3 mm (rigid part) in order to avoid connectors. The memory component is placed between the two prints and stabilizes the system. The custom made battery holders for the zinc-air batteries also hold the print package together.

Covering a variety of behavioural paradigms in the field of animal models for epilepsy and sleep disorders, the NeuroLogger can also be used together with phenotyping platforms enabling fully automated and perfectly synchronised metabolic, behavioural and physiological monitoring, e.g.

- indirect gas calorimetry
- food and liquid intake
- locomotor activity, exercise, learning and memory
- blood pressure, heart rate and bio-potentials



Photo: courtesy of NewBehavior AG

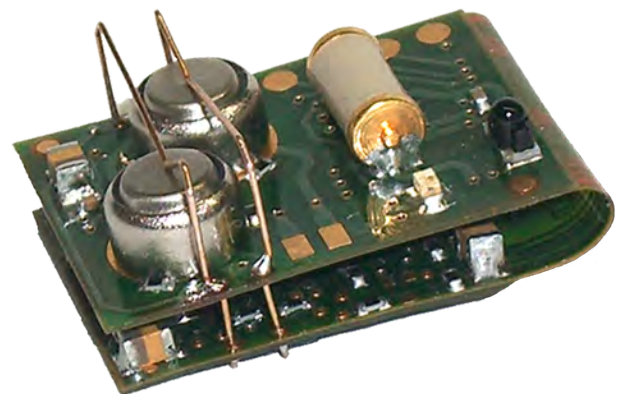
Features

EEG signals are recorded (500 per second over a period of 36 hours) and saved to non-volatile memory (NVM), allowing the data to be recovered for analysis, even when not powered.

- 4 lead EEG & 2 references
- up to 500 samples/s
- 512 MBytes data flash for up to
- 64 Mio. data sets

- size: 15.5 x 21.9 x 10.5 mm³
- weight: 2.65 grams (incl. batteries)
- 36 hours continuous recording time
 - 2 standard zinc-air batteries
 - batteries do not have to be soldered to the module

- suitable for EEG recording during behavioral testing
- long-term recording
- wireless recording of freely moving animals
- additional functionality
 - IR event synchronization
 - movement sensor



Testimonial

"Art of Technology demonstrated competence and efficiency in adapting and expanding the functionality of the prototype logger. I appreciated very much the communication and the co-operation style characterising this company, and I am looking forward to realise other projects."

Prof. Hans-Peter Lipp
Member of the Board, NewBehavior AG

Art of Technology



Art of Technology AG
Technoparkstrasse 1
8005 Zürich
Switzerland

+41 (43) 311 77 00
info@aotag.ch
www.aotag.ch