ADINSTRUMENTS

Upgrade your Epilepsy Research

Take the unpredictability out of seizure detection

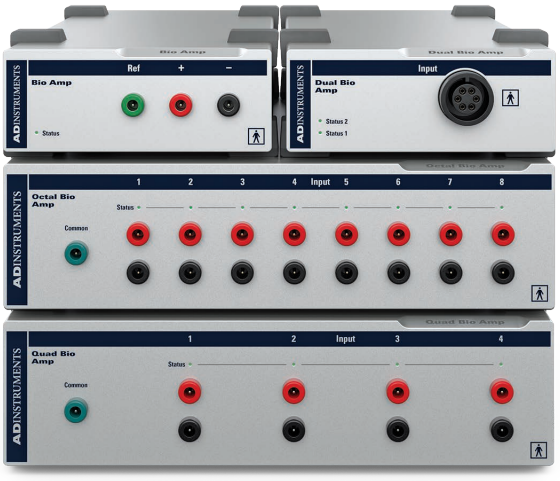
With around a third of epilepsy patients unresponsive to current treatments, research into new treatments is more important than ever.

Seizure disorders are unpredictable. Naturalistic animal models of epilepsy are the gold-standard, and require equipment that reliably captures clear, high-quality, reproducible data.

ADInstruments offer high-quality telemetry systems, biopotential amplifiers, and PowerLab and LabChart data acquisition systems, giving you confidence in your research from the lab through to publication. Boost your productivity and your performance by upgrading to ADInstruments.

Upgrading your tethered system with Bio Amps

All ADInstruments amplifiers are galvanically isolated, and made specifically for the acquisition of biopotential signals such as action potentials and surface voltage fluctuation, powering the acquisition and recording of ECG, EMG, EOG, and EEG. High input impedance and common mode rejection ratio (CMRR) support improved noise reduction over ultra-high bandwidth, increasing the ease of experiment setup and data acquisition.



Right: The complete range of ADInstruments Bio Amplifiers: single, duo, quad, and octal.

"The reason why we use, and continue to use, the Kaha system is because the cleanliness of the data has made it possible to trust our seizure detection algorithms to pick potential signals up and then reliably discard false positives."

Dr Kyle Thomson
Senior Staff Scientist at the Anticonvulsant Drug Development (ADD) Program

PowerLab

High-performance data acquisition hardware

The PowerLab is capable of high-speed sampling and forms the core of many research data acquisition systems - they are compatible with instruments, signal conditioners, and transducers supplied by ADInstruments and many other leading brands.

Any device with an analog output (+/-10 V) can be connected to a PowerLab data acquisition system for synchronization of the event in LabChart, giving you even more flexibility and the ability to integrate your data streams in one place.

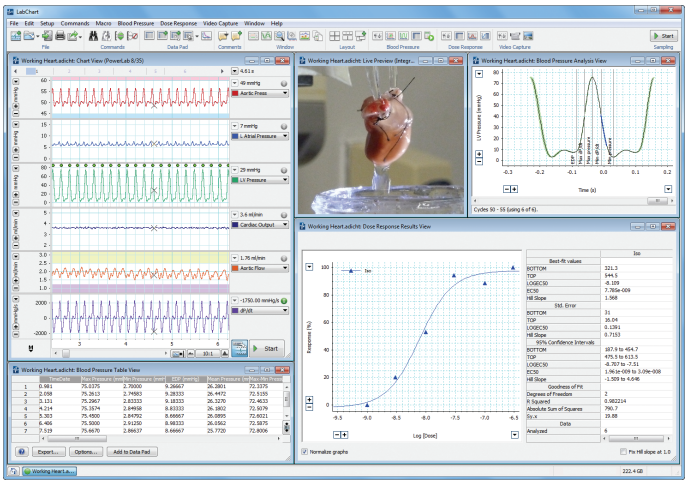
PowerLab C and C Series Interfaces

PowerLab C is a digital data acquisition device that provides adaptive mains filtering, power management for peripheral devices (max 100 W via USB-PD) and sub-µS time synchronization for up to four C Series compatible USB-C devices (currently up to 32 channels).

The C-Series Front End Interface converts analog data from existing (and most legacy) Instrument Front ends, such as Bridge Amps and Bio Amps, so that they can be digitally sampled by the PowerLab C.

LabChart

All your analysis in one place



Above: LabChart working heart blood pressure and dose response analysis with Radnoti glassware.

LabChart 8 and LabChart Lightning offer researchers a powerful data acquisition software package that can integrate with ADInstruments' modular suite of DAQ hardware.

LabChart 8

LabChart 8, our traditional data analysis software, provides a streamlined platform for all of your recording devices to work together, so you can acquire signals from multiple sources simultaneously.

LabChart 8 tracks every recorded action and never modifies your raw data, allowing you to easily analyze your recorded data and apply advanced calculations as your experiments unfold. We've built LabChart 8 to be easily adapted and customized to your needs.

LabChart LIGHTNING

Data acquisition and analysis re-imagined

LabChart Lightning is the latest iteration of our 35-year history of creating easy-to-use data acquisition and analysis software.

LabChart Lightning empowers innovative researchers to make unique scientific discoveries with unlimited freedom and flexibility. The perfect software for ECG, EMG, and EEG data acquisition and analysis, LabChart Lightning is a powerful tool for biosignal recording and both quantitative and qualitative data analysis.

Right: Treadmill v0$_2$ Max heart rate analysis with LabChart Lightning.

KAHA SCIENCES

Upgrading to wireless telemetry

Kaha Telemetry Systems

The use of telemetry in animal research is a recommended industry practice for improved animal welfare. Continuously record data over extended periods with conscious, freely moving animals, and reduced stress artifacts in your research data.

Monitoring pathophysiological activity, such as epileptic seizure, *in vivo* has traditionally been challenging due to the spontaneous nature of the condition. Kaha Sciences' innovative use of wireless power technology has removed the compromise of battery life to allow users to record continuously at a high sampling rate (2 kHz) over long-term experiments.

Power

- Wireless power
- 2 kHz sampling rate
- Continuous recordings
- Unique signal technologies

Quality

- Millar solid-state pressure sensors
- ISO-9001 Certified
- Durable, biocompatible hard-shell casing

Simple and Customizable System Setup

The ability to record continuously ensures that more data is captured and fewer seizure events are missed.

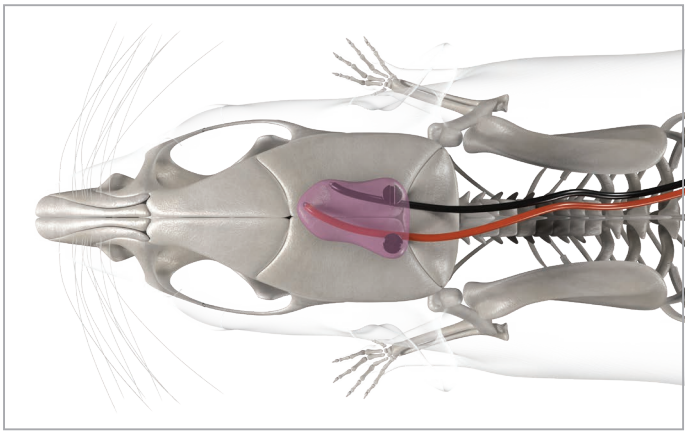
Configure a telemetry system to meet your exact needs. A typical setup requires one telemeter and one SmartPad (rats) or tBase (mice) per animal. Each lab requires one Configurator System for all equipment, paired with PowerLab and either LabChart or LabChart Lightning software. Select from up to 40 independent transmission channels with no interference.

Rat Telemetry

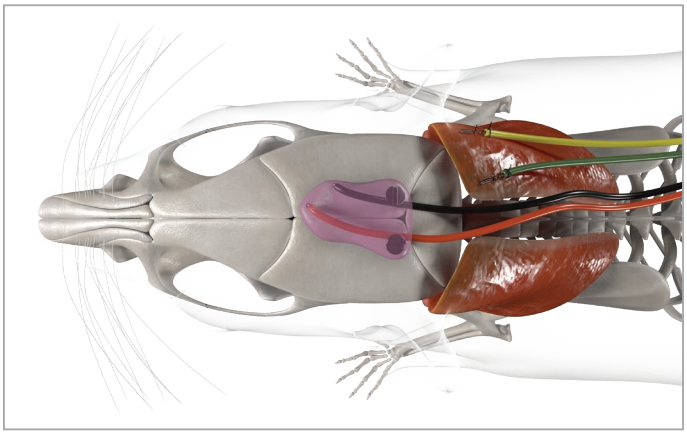
The reusable rat biopotential telemeters give users the option to record a single EEG channel (TR50B) or combine EEG and nuchal EMG recordings (TR50BB). Data transmission range up to 5 m with telemeter battery back-up and *in vivo* recharging. Cohousing feature for two animals in one cage or two implants in one animal (>350 g).

Mouse Telemetry

The mouse telemeters (MT10B) allow the recording of EEG along with activity. Accurately measure biopotential parameters in mice that are traditionally restricted to acute or tethered experiments with a sampling rate up to 2 kHz with unmatched data quality.



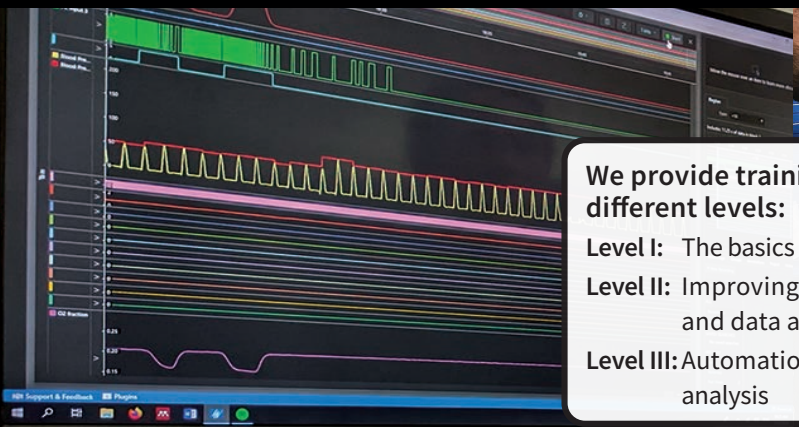
Use a biopotential telemeter to record the EEG activity of seizure events over the course of your experiment.

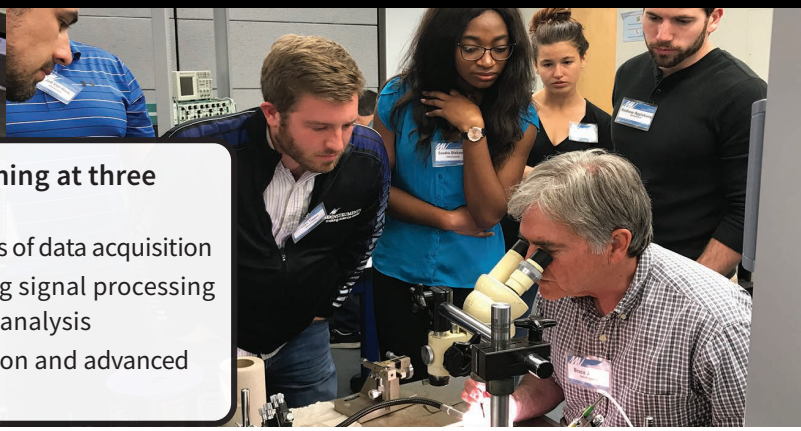


Use a dual biopotential telemeter to record EEG and nuchal EMG to determine when the seizure event begins in the brain and the physical severity.

ADInstruments Training and Support

Our global support and flexible training options mean that there is always help at hand to streamline your experiments and reach your research goals faster. Whether you are already a career scientist or just starting out, we can help you master best practice techniques for your research.





We provide training at three different levels:

Level I: The basics of data acquisition

Level II: Improving signal processing and data analysis

Level III: Automation and advanced analysis

Software Training

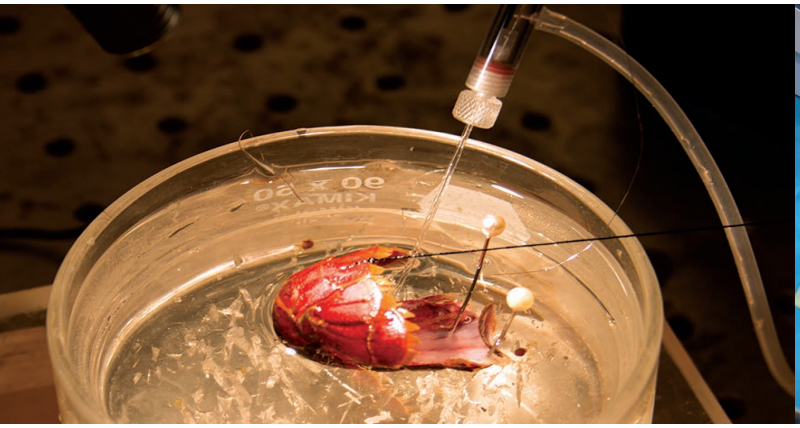
Our software training courses are designed to get you up to speed with relevant, useful skills and knowledge, as quickly as possible.

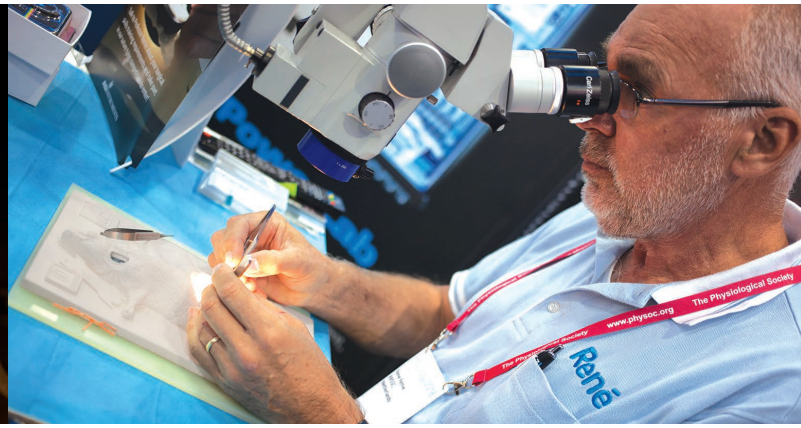
Training courses are hands-on and delivered by our team of experienced scientists and teach professional best practices to immediately improve data accuracy, problem solving, workflow, and efficiency.

Customized Onsite Training

Increase efficiency with tailored training courses, delivered at your facility. We can customize our curriculum to suit your needs, and teach hardware and software best practices for your unique requirements.

Our hands-on training fast-tracks learning, to immediately improve output and efficiency, so you can achieve your research goals sooner.





Application Workshops

ADInstruments partners with world class universities, institutes and leading researchers to develop training directed at specific protocols, techniques and applications.

Our hands-on workshops teach you to use our systems in the most relevant, effective, and efficient way for your needs.

Live Product Demonstrations

Showcasing powerful and flexible solutions for research. Experience how our integrated hardware and software solutions could help enhance your work.

Take the opportunity to talk to one of our expert team about how we could help you reach your specific goals.

Online Support Materials

Our extensive range of on-demand webinars, support videos, articles, and best practice guides are always available on our online support library.

Visit **adinstruments.com** or contact your local ADInstruments representative for more information

Australia | Brazil | Europe | India | Japan | China | Middle East | New Zealand | North America | Pakistan | South America | South East Asia | United Kingdom

adinstruments.com

ADINSTRUMENTS