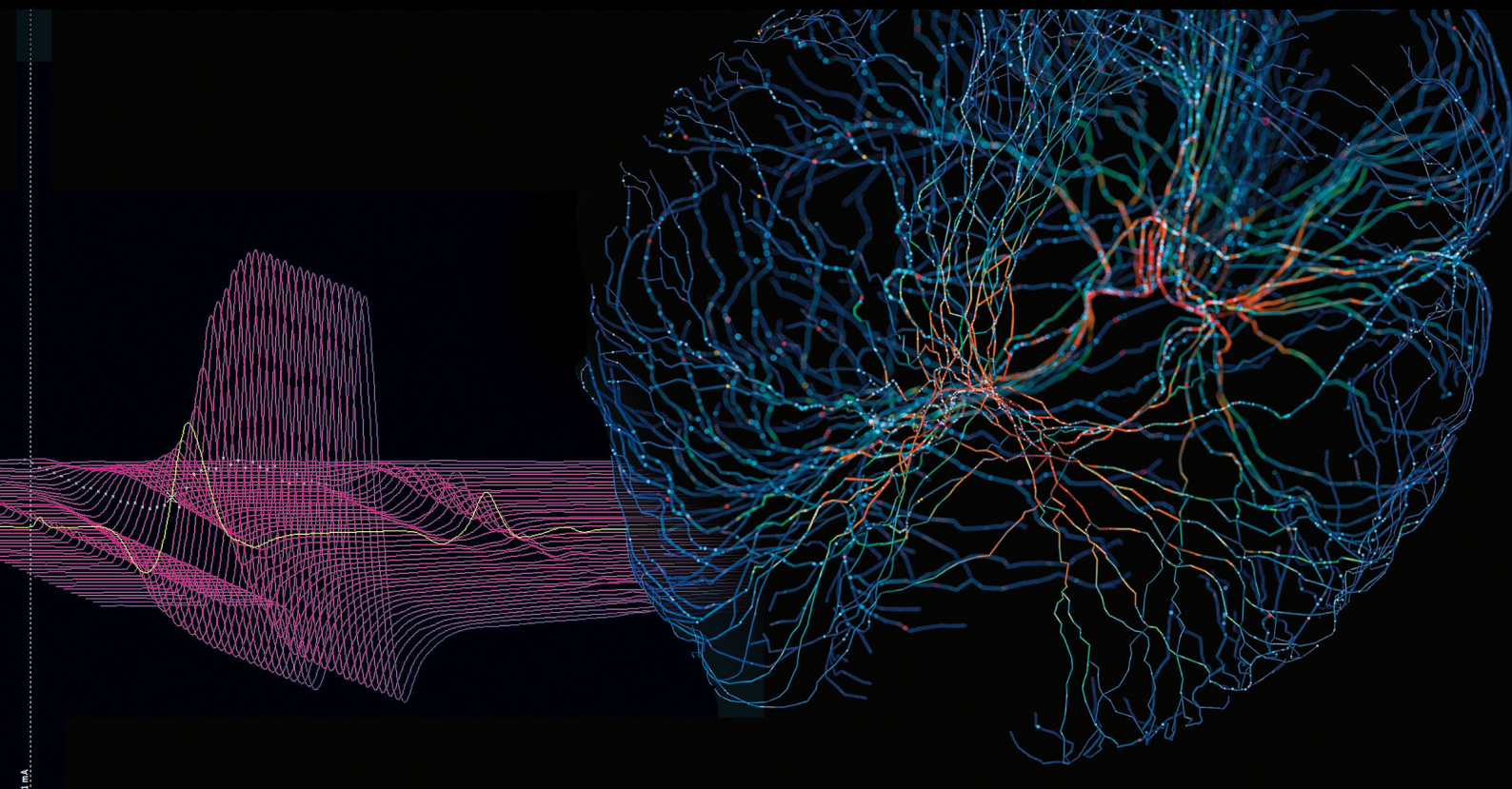




Create customized setups with cutting-edge technology and flexible analysis options for animal autonomic and neuroscience research.

Our PowerLab and LabChart software options integrate seamlessly with a huge range of third-party equipment to provide the flexibility and power you need for your research.

Work with our team of experienced scientists to tailor the perfect solution for your needs. With simple, streamlined software options, specialized support and the highest quality data integrity, ADInstruments provides easily customizable systems for all your animal autonomic and neuroscience needs.

Benefits of Autonomic and Neuroscience research with ADInstruments:

- Blood pressure analysis tailored for our range of high fidelity transducers
- Analyze your ECG and heart rate in real time with Cyclic Measurements
- Compare nerve recordings with physiological function
- Mix and match products for a custom solution
- Integrate multiple data streams in one place
- High quality hardware and software for accurate timing
- Fast and robust averaging and artifact rejection



ADInstruments equipment is used in the top 100 institutions for Life Science worldwide and is cited in more than 30,000 peer-reviewed papers.

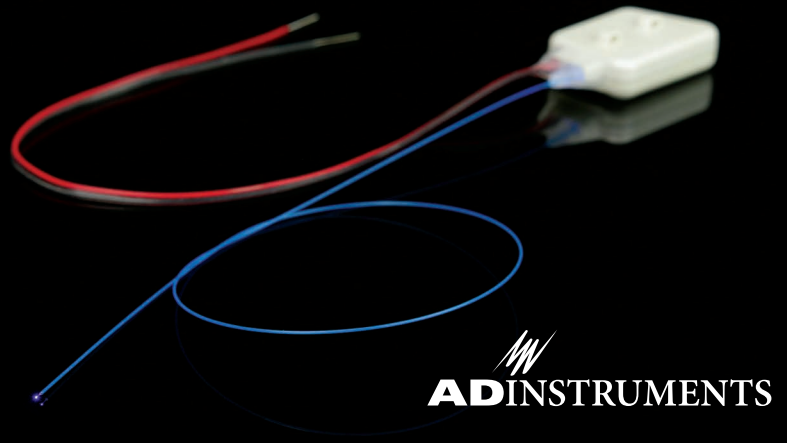
Typical studies:

- Sleep and seizure studies
- Learning and memory
- Classic and operant conditioning
- Baroreflex sensitivity
- Vascular resistance
- Shock
- Stroke
- Heart rate variability
- Exercise and metabolic studies
- Monitoring peripheral circulation
- Neural respiratory control
- Magnetic stimulation
- Peripheral motor neural activity
- Sensory functions

Applications include:

Blood Pressure • ECG • Evoked Responses and Stimulation • Extracellular Recording • HRV

A new standard in quality and power


ADINSTRUMENTS

Small Animal Telemetry

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.

For the wireless recording of a variety of biological signals in small animals, ADInstruments offers our telemetry brand, Kaha Sciences. Kaha systems combine high fidelity digital telemetry with patented wireless power technology to create high-quality solutions for your physiological monitoring needs. Paired with PowerLab and LabChart, this solution sets the new standard in quality and power for implantable, wireless telemetry in rats and mice.



Power

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

Quality

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

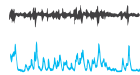
Signal Options



Pressure



Biopotentials
(i.e. ECG, EMG, EEG)



Sympathetic Nerve
Activity (SNA)



Tissue
Oxygen



Temperature
(output in all
telemeters)



Biopotentials
(i.e. ECG, EMG, EEG)



Index of Activity

Rat

Mouse

Simple and Customizable System Setup

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. Pair with PowerLab and LabChart. Select from up to 40 independent transmission channels with no interference.

Rat Telemetry

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).

Cohousing Example Setup

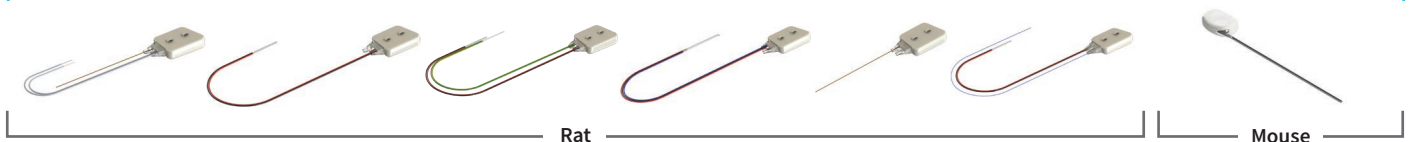


Mouse Telemetry

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.



Your Choice of Telemeters





The ADInstruments Bio Amp range

ECG/EKG

Examine heart rate, heart rate variability, analysis of the waveform morphology, surgical monitoring and other similar functions using surface or needle electrodes. Easily sample ECG along with nerve activity blood pressure or other signals as part of your integrative physiology protocols.

Bio Amps (single, dual and octal)

Our range of isolated, high performance differential biological amplifiers are optimized for measuring biological signals such as ECG, EKG, EMG, EOG, and EEG.



Needle Electrodes



Surface Electrodes

Stimulation

Define and deliver customizable stimulation protocols using our software-controlled, constant-current stimulus generators. Designed to work with PowerLab C (purchased separately) via a Front End Interface.

Stimulus Isolator FE180

Designed for direct stimulation of tissue samples *in vitro*. Electronic isolation means it is also suitable for *in vitro* applications in humans and animals.



Neuro Amp EX FE285

Measure nerve activity using the microneurography technique with the Neuro Amp EX in combination with a PowerLab system. The Neuro Amp EX is a low noise, high gain neural amplifier that is fully isolated and suitable for both animal and human use. It also provides audio output to listen to neurological signals.

Stimulator HC FE155

Designed for direct or field stimulation of tissue samples *in vitro*.



Supplied with:

- Neuro Amp EX Headstage
- Six male Amphenol Connectors for customization of microelectrodes adapters (*microelectrodes not supplied*)

Extracellular Recording

Extracellular recordings measure and characterize the external electrical properties of cells and tissues, particularly neurons and neuronal tissue; and can include single unit, multi unit, field potential or amperometry recordings. We offer high-quality hardware that are paired with LabChart and specialized LabChart Pro software features for these recordings. They include Spectrum, Scope View, Peak Analysis, and Spike Histogram, which provide powerful analysis tools, including ultra fast sampling, a variety of filtering options and artifact rejection.

Extracellular Amplifier

The low noise two-channel differential amplifier with headstages that can be used with metal or glass microelectrodes (purchased separately), provides great signal stability and improved timing response. It also provides capacitance compensation and the option to connect to a compatible external stimulator (purchased separately), which allows switching between stimulation and recording at the recording site. It can connect to LabChart software via a PowerLab C or a C Series Instrument Interface.



Invasive Blood Pressure

The ability to measure continuous arterial and vascular pressure signals directly at the source through invasive blood pressure recordings provides a high level of data accuracy and sensitivity to support your cardiovascular research. Ideal for beat-to-beat monitoring of acute cardiovascular measurements, invasive pressure recordings also allow for assessment of time variance and dynamics of change in data over time.

Typical studies:

- Pulmonary hypertension • Hypertrophy, cardiomyopathy, infarction, and other disease models • Intracranial studies
- Tumor research • Systemic circulation or ventricular studies • Acute or chronic cardiovascular monitoring

Mikro-Tip™ BP Foundation System

The Mikro-Tip™ BP Foundation System provides gold standard measurement of systolic and diastolic blood pressure in small to large animals. Choose from a wide range of Mikro-Tip™ pressure catheters that allow you to place the sensor in an artery or heart to measure blood pressure directly.



PowerLab
COMPATIBLE



+ select your choice of Millar Mikro-Tip™ Pressure Catheters

LARGE ANIMALS

RATS

MICE

Each system includes:

- C Series Front End Interface • Bridge Amp • LabChart Pro software • Applicable interface cables



Non-Invasive Blood Pressure

Non-invasive blood pressure (NIBP) recording allows you to capture intermittent blood pressure data in awake or anaesthetized rats or mice over long sampling periods easily and unobtrusively with a high standard of care.

Typical Studies:

- Drug screening • Hyper / Hypotension • Phenotyping • Endocrinology
- Surgical Monitoring • Nephrology • Sepsis and Toxicology • Obesity

Rodent NIBP CODA® Monitor Sets

ADInstruments Rodent NIBP CODA® Monitor Sets are a streamlined solution using the precision of Kent Scientific's Volume Pressure Recording (VPR) technology to accurately and reliably measure NIBP. Data is streamed directly from the CODA® Monitor into LabChart, automatically detecting systolic, diastolic, mean blood pressure and heart rate.

CODA® Sets Overview



ADInstruments CODA® Monitor (Controller)



CODA® Rodent Cuff Kit (includes Occlusion Cuffs and VPR Cuff Sensors)



2 x Rodent NIBP CODA® RightTemp Sensors



Far Infrared Warming Pad

LabChart

LabChart 8 for Windows (required - sold separately)



CODA® Monitor Device Enabler Software



Infrared Thermometer with LaserSight

Set Accessories (sold separately)

Sets can be expanded with additional tail cuffs to cater to different animal sizes and species (mouse or rat).

For studies on conscious animals, specialised cylindrical rodent holders featuring an adjustable nose piece are also available to safely secure animals during experimentation.



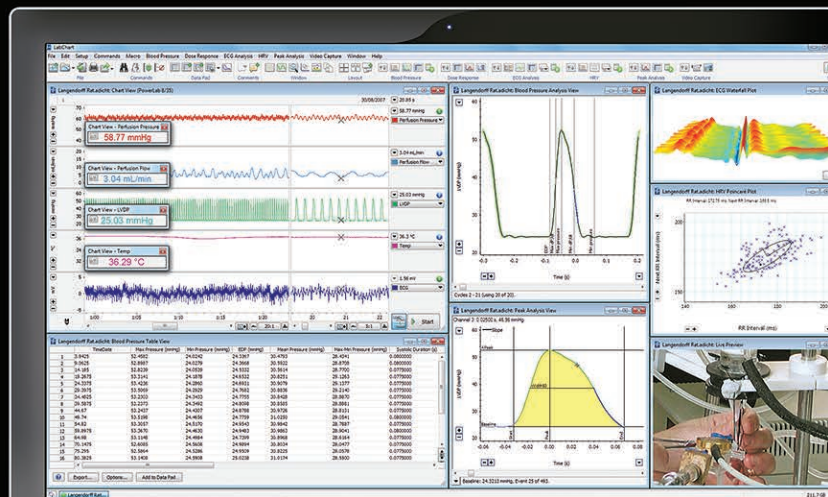
Mouse holders (S, M, L) and rat holders (S, M, L, XL)



Additional VPR Cuff Sensors and Occlusion Cuffs (XS - XL)

LabChart

All your analysis
in one place



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 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.

Simple to use

- Pre-configured settings files for one-touch recording
- Change recording settings in seconds
- Recall data and experimental settings
- Annotate data with comments
- Smart detection of ADI peripheral devices

Customize your workflow

- Scripting and automation
- Custom arithmetic
- Import/export data in various formats
- Manual or event-driven sampling
- Generate customized stimulus outputs

Feature rich

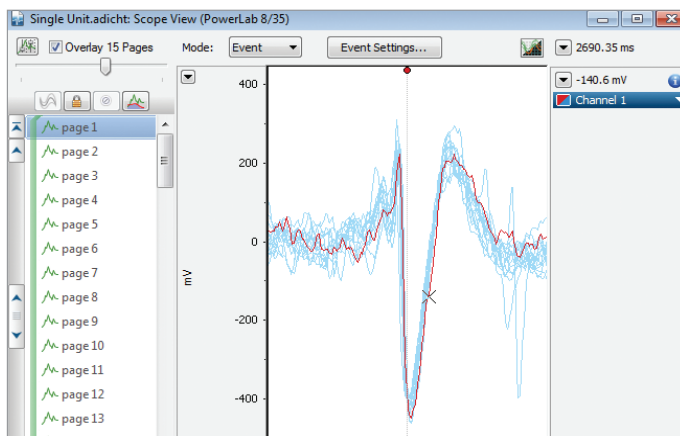
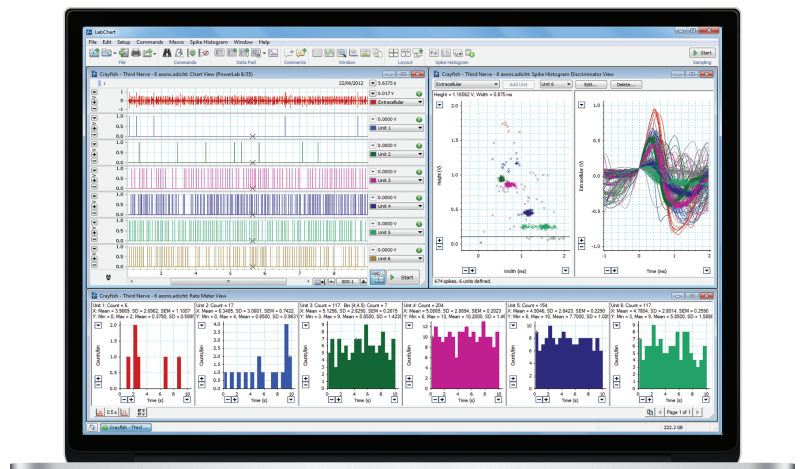
- Wide range of sophisticated add-ons purpose built for life science
 - Extensions eg. Spirometry
 - Modules
 - Device enablers
- Record from multiple PowerLabs or from LabChart compatible devices

Key Features and Modules*

We've built LabChart to be easily adapted and customized to your needs. As your research grows, Add-Ons and customizations allow LabChart to grow with you.

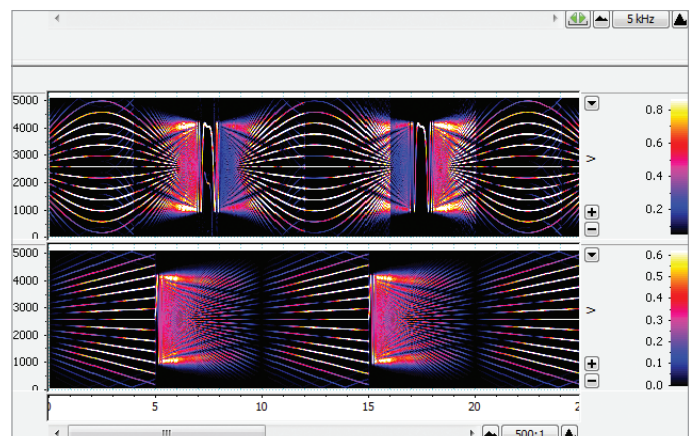
- Spectrum
- Scope View
- Cyclic Measurements
- Peak Analysis*
- Spike Histogram*
- ECG Analysis*
- Blood Pressure*
- Video Capture*
- Cardiac Output*
- Metabolic*
- Dose Response*
- Heart Rate Variability*
- DMT Normalization*
- PV Loop*

* All Modules are included with LabChart Pro, or download and purchase separately.



Scope View

Display, overlay, average and analyze periodic or evoked waveforms in real time. Ideal for finding that time from stimulus to response in repeated evoked potential recordings.

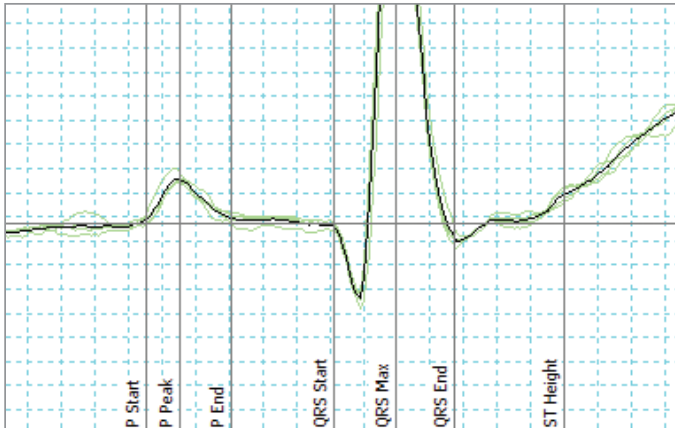


Spectrum

Convert signals into component frequencies that can be extracted directly into data pad, or viewed as a power spectrum density, spectrogram or channel calculation.

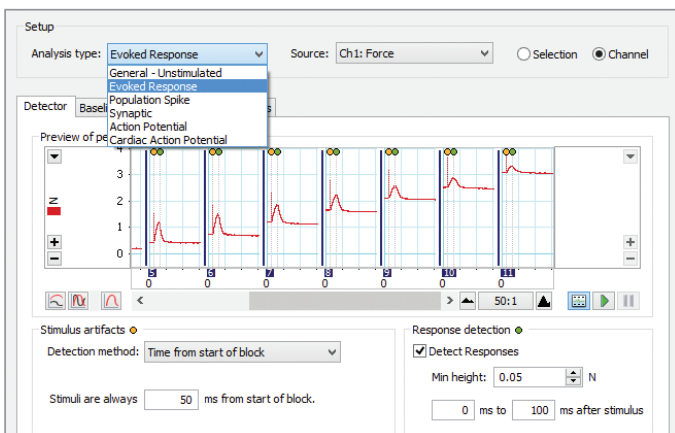
Specialized analysis with LabChart Modules

Modules provide highly specialized data acquisition and analysis features for specific research applications. The full suite of modules are included with a LabChart Pro License, or can be purchased individually as needed. Some modules are not available on Mac.



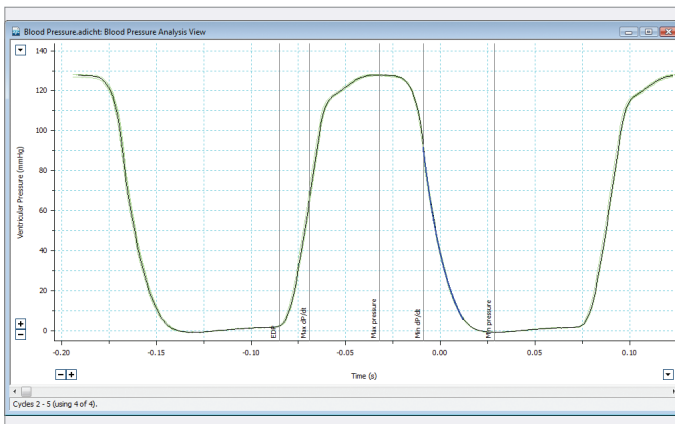
ECG Analysis

PQRST is as easy as ABC with automated waveform detection and classification. Use our presets or customize your own bespoke analysis.



Peak Analysis

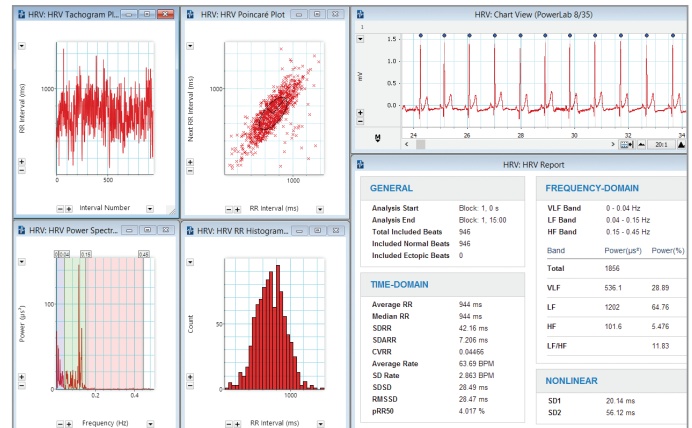
Automatic detection and analysis of multiple (but not overlapping) signal waveforms from a recording.



Blood Pressure

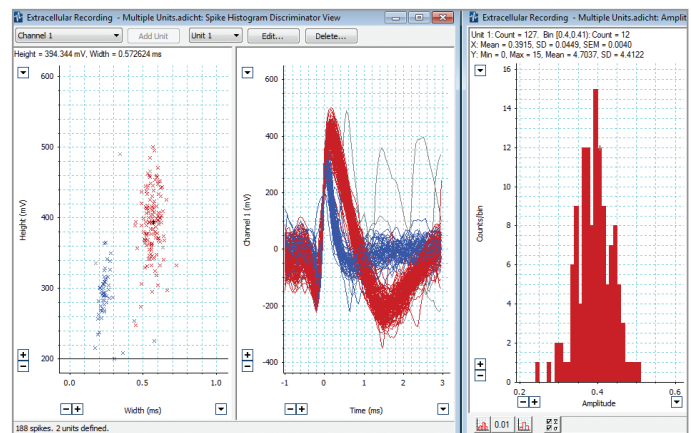
The Blood Pressure Module for LabChart automatically detects, analyses, and derives cardiovascular parameters from arterial or ventricular pressure signals, in real-time or post acquisition.

Find out more about the complete range of LabChart Modules at adi.to/labchart



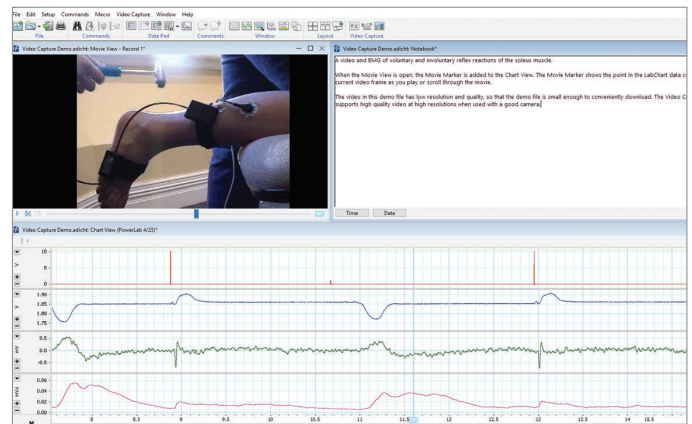
Heart Rate Variability

Derives the latest time and frequency based HRV parameters in an intuitive interface for faster publication.



Spike Histogram

Detects, discriminates and analyzes extracellular spike activity generating a range of plots and statistics.



Video Capture

Allows the synchronized recording and playback of a Windows Media Video and LabChart data file when using a personal video camera.

High-performance data acquisition hardware



PowerLabs are capable of high speed sampling and are compatible with instruments, signal conditioners, and transducers supplied by ADInstruments and many other leading brands.

Developed in 1985, PowerLab has been a reliable data acquisition tool for an entire generation of scientists and educators. PowerLabs have always offered a simple and flexible solution for almost all types of analog physiological data acquisition. The combination of PowerLab C and C Series Interfaces creates a modular data acquisition foundation system that provides unparalleled flexibility for researchers looking to invest in customizable, reliable solutions for both now, and in the future.

PowerLab C

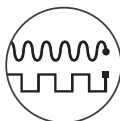
PowerLab C is a digital data acquisition device that provides adaptive mains filtering, power management for peripheral devices (max 100W via USB-PD) and sub- μ S time synchronization for up to four C Series compatible USB-C devices (currently up to 32 channels).



Modular system



Powerful and portable



Analog compatible



Digital framework for the future



PLC01

C Series Interfaces



Front End Interface

Converts analog data from existing (and majority of legacy) ADInstruments Front-Ends such as Bridge Amps and Bio-Amps, so that they can be digitally sampled by the PowerLab C. Up to 8 channels at 50 kHz, or 4 channels at 100 kHz. Comes in 1, 2, 4, and 8 channel variants (with different cables).

Configuration Options

Both C Series interfaces are designed to work with the PowerLab C for adaptive mains filtering and sub- μ S time synchronization with other C Series compatible devices. Alternatively, for simple setup requirements, you can connect them directly to a computer.



Instrument Interface

Provides 4 channels of input capability from any analog instrument to the PowerLab C. Up to 100kHz sampling on 4 channels. 20mV to 10 V range.

PLCF1

PLCI1



Find out more at adi.to/powerlab

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 the 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 Demonstration

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.



A comprehensive range of product, application, and customer webinar videos are available from our online library. Visit adi.to/training to sign up for one of our upcoming live webinars.

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