ADINSTRUMENTS
making science easier

Designed specifically for life science, LabChart provides up to 32 channels for data display and analysis options that are powerful and easy to use.

What is LabChart?

LabChart data acquisition and analysis software creates a platform for all of your recording devices to work together, allowing you to acquire biological signals from multiple sources simultaneously and apply advanced calculations and plots as your experiment unfolds.

Quick to set up and simple to use, LabChart tracks every action you take and never modifies your raw data, ensuring the integrity of your results so you can focus on the true insights of your research.

Use LabChart to:

- Record data via PowerLabs and other compatible data acquisition devices
- Preview and optimize recordings
- Import and export data easily
- Annotate data with comments
- Automate recording and analysis tasks
- Convert raw data into useful units
- Change recording settings in seconds
- Recall data and experimental settings
- Generate customized stimulus outputs
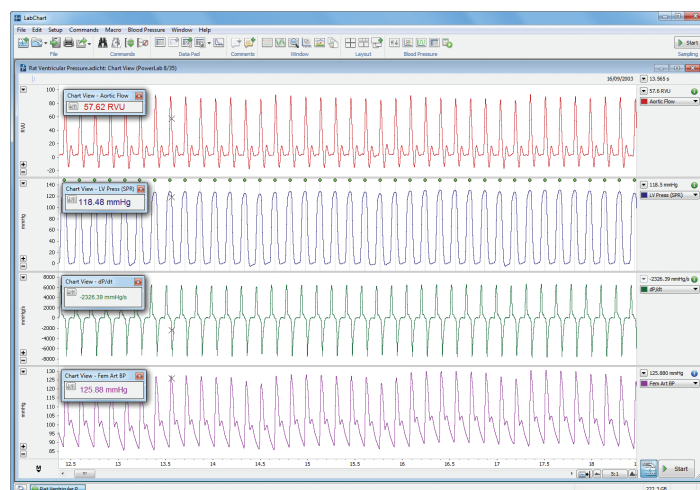
Rat Ventricular Pressure in LabChart

Streamlined Workflow

"Of most importance was the fact that all data was recorded on a time-aligned beat-by-beat basis - this is vital for the calculation of transfer function analysis based on the relationship between cerebral blood flow and blood pressure."

Professor Ainslie
Canada Research Chair
Cerebrovascular Physiology

Signals

LabChart is flexible to the needs of novel research, with the ability to detect, display, and analyze a broad range of signals across many life science applications.

Supported signals include:

Angles	EOG	Intracellular Recordings	Respiratory Gas Analysis
Dissolved Gasses	Extracellular Recordings	NIBP	Sounds
dP/dT	Fluid Flow	pH	SPO_2
ECG	Force	Pressure	Temperature
EEG	Glucose	Pulse	Tissue Perfusion
Electrical Stimulation	GSR	RER	Video
EMG	Heart Rate	Respiratory Flow	Volume

Research Applications

Designed specifically for life science researchers, LabChart provides all the calculations, reports, and plots you will need for human, animal and in vitro applications.

Animal

Autonomic

Behavior, Sleep and Neuroscience

Cardiovascular

Telemetry

Tissue and Circulation

In Vitro

Electrophysiology

Isolated Organ

Human

Autonomic

Cardiovascular

Exercise and Sport

Neurophysiology

Psychophysiology

Respiratory

Sleep

Speech Pathology

Tissue and Circulation

Innovate and extend your studies

Providing the flexibility to extend your studies into new territories, it is easy to add new signals and measurements in LabChart as your research grows and takes on new directions. Looking to stand out from the crowd? LabChart also allows you to create your own advanced calculations and macros to customize your analysis.

If you have a particular research need you would like to discuss, get in touch with our experienced support team. We can work with you to customize an effective solution to record and analyze the specific data that you need.

LabChart Features

LabChart is designed for quick and easy use, allowing full control of your data. Advanced features stay out of the way until you need them, letting you do the basics with minimal fuss.

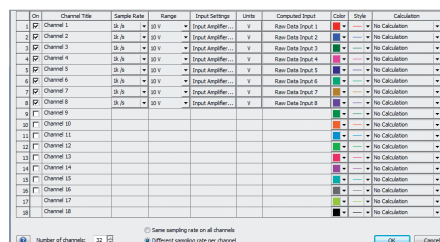*LabChart combined with A-M Systems hardware, displaying Spike Histogram analysis.*
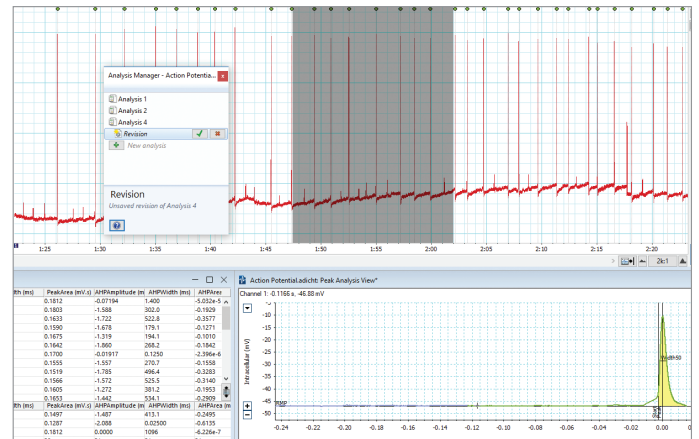
Analysis Manager
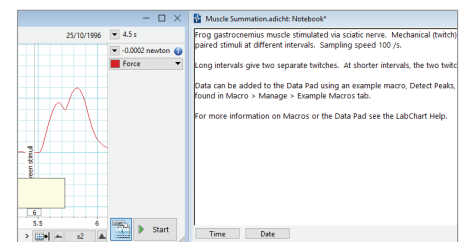Save and label your selections and analysis regions, then recall them with a click when needed again.
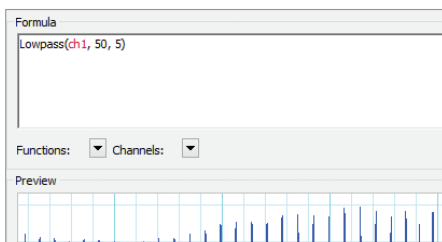
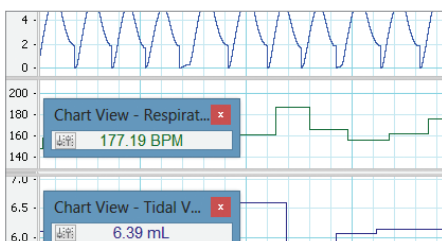## Arithmetic
Build your own customized formulae, detection, and analysis within LabChart.

Channel Settings
Get an overview of, and easily change your recording settings, calculations and channels.

Comments
Seamlessly navigate your data using the annotations feature, either during or post data acquisition.

Cyclic Measurements
Combines flexible and clever cycle detection to create a simple to use analysis for periodic waveforms.
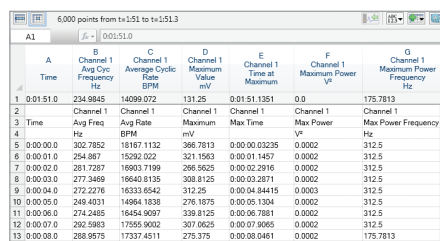
Data Pad
Convert your time based data and calculations from chart view into discrete values for statistical analysis.
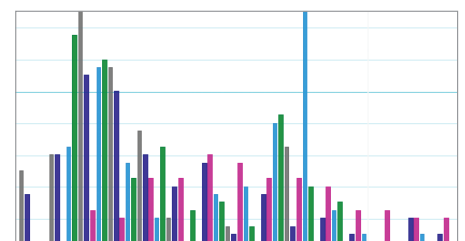
Data Plots
Visualize analysis easily with four different plot types and curve fits (Windows only).
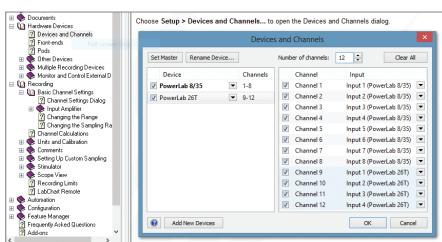
Device and Channel Discovery
Easily manage which devices, inputs and LabChart channels will be acquiring data - all from one panel.
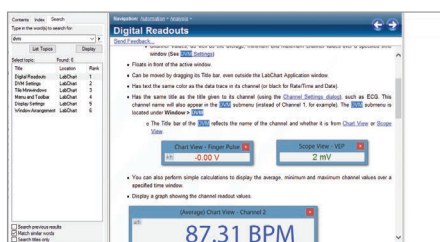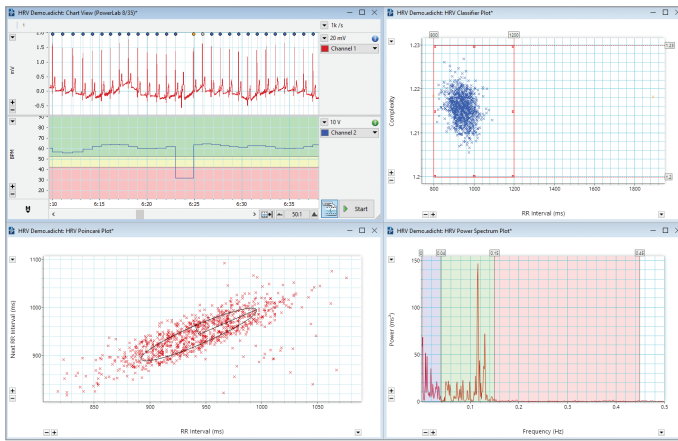

DVM
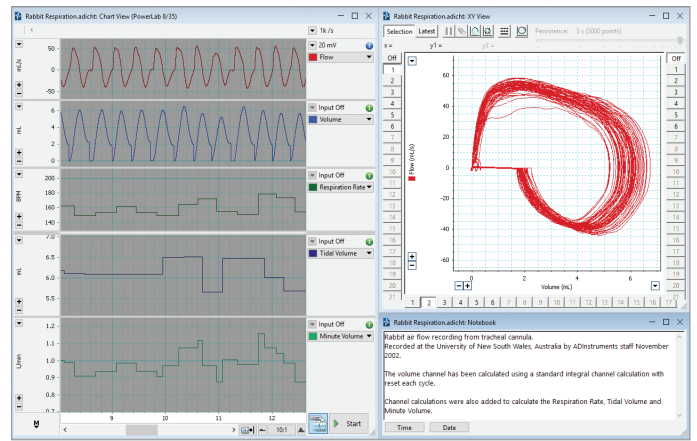Display raw data or calculation signals as a large numerical display.
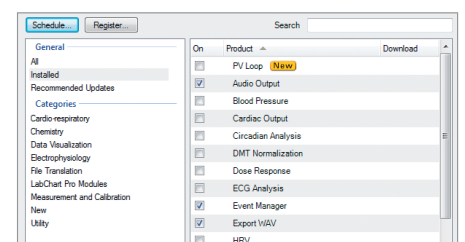
Feature Manager
Discover and install new features and updates, or toggle off features and menus you aren't planning to use right away.
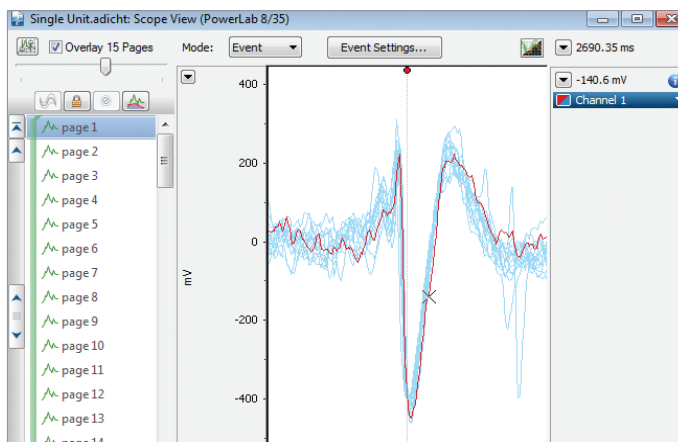
Guide Lines

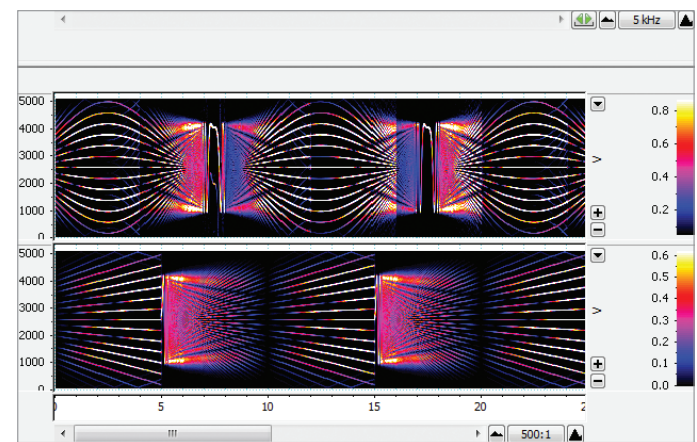Guide Lines provide a quick but powerful way to divide your data amplitude into regions of interest.

Layout

Display your screen the way you want. Smart Tile quickly snaps windows into a neat arrangement, or save your own layout preference.
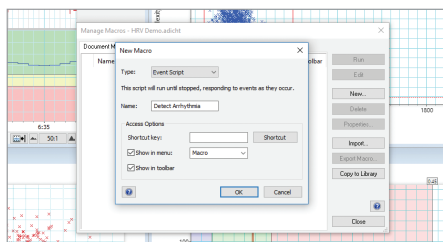

Scope View

Display, overlay, average and analyze periodic or evoked waveforms in real time.

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.

Macros

Record your actions for repetitive operations, or get under the hood and write custom processes in VB Script.
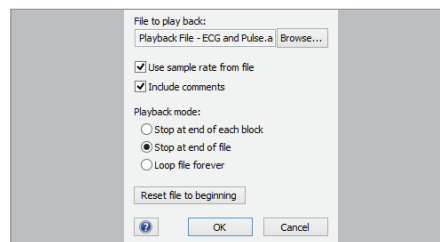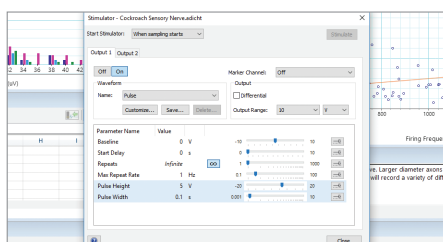

Playback File

Stream pre-recorded data as if the data were coming live from an attached device (Windows only).
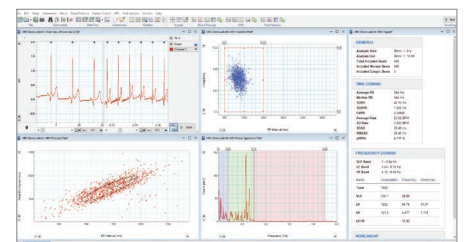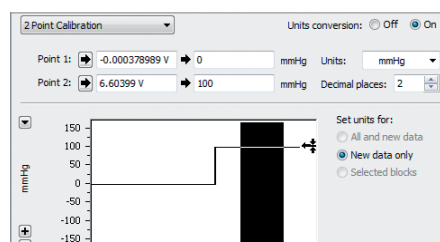

Split Screen

Show traces with two separate x-axis displays, ideal for viewing long term trends alongside latest data.
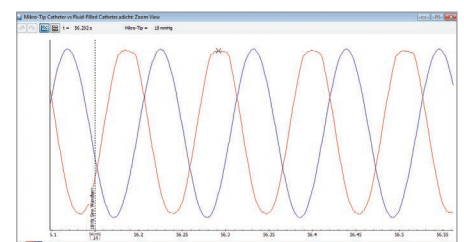

Stimulator

Create a custom protocol to stimulate your preparation directly or to control a stimulus isolator.

Units Conversion

This simple two point calibration tool makes it easy to convert volts into other common units of measurement.
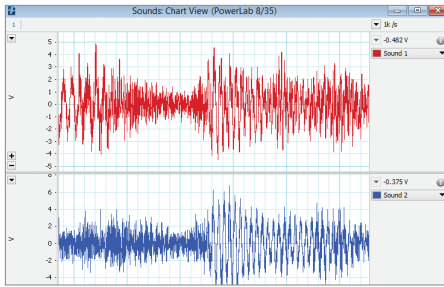

Zoom View

Take a closer look at an event, compare the timing between two overlaid channels, and export your images to publish.
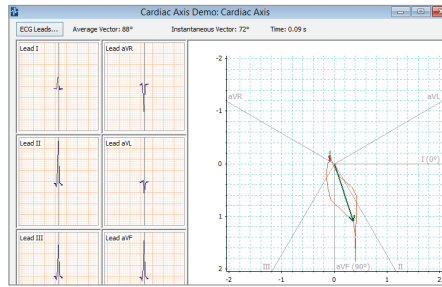
LabChart Extensions

Extensions are optional features available with any version of LabChart and allow additional data formatting, filtering, visualization, measurement and calculation.
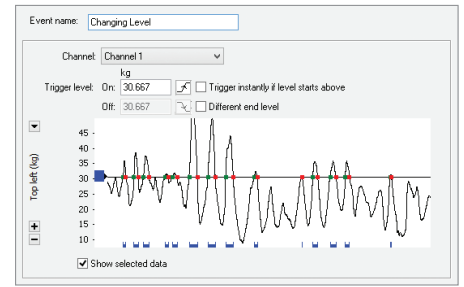

Audio Output
Allows data to be played back as sound. Useful for playing back input such as heart, animal and voice sounds.
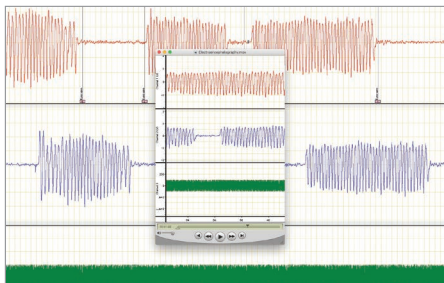

Cardiac Axis
Automate calculations of frontal plane ECGs and animate cardiac vector display.
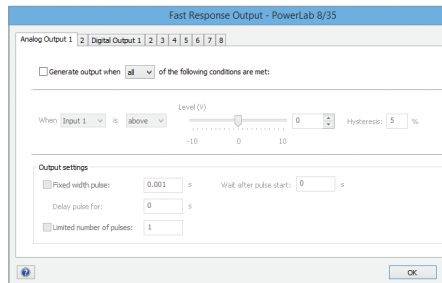

Event Manager
Monitors incoming signals, detects user-defined events and performs user-defined actions.
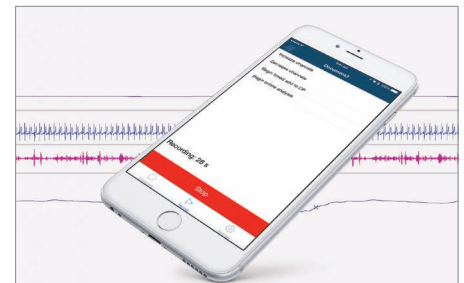

Export QuickTime
Save LabChart data files as QuickTime movies, then view on any supported platform or embed in other media.
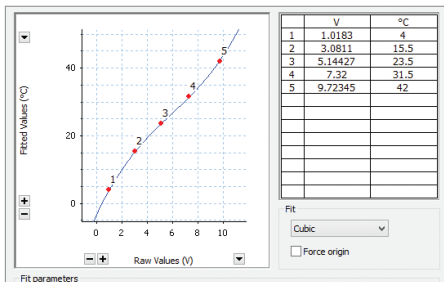

Fast Response Output
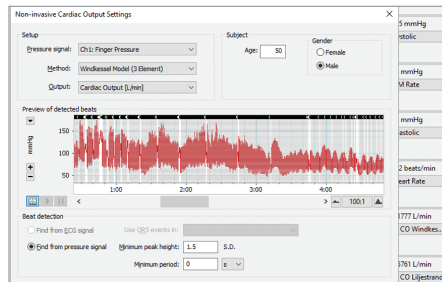Control digital and analog outputs of supported PowerLab units.

LabChart Remote App
Connect your iOS device to your sampling computer and operate certain functions of LabChart remotely via WiFi.
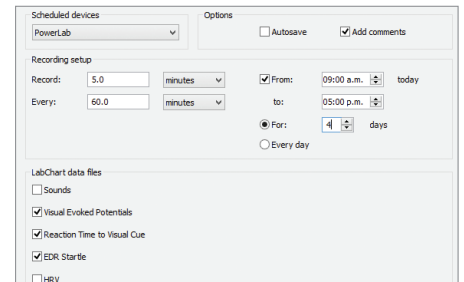

Multipoint Calibration
Convert raw voltage signals from PowerLab into your desired units.
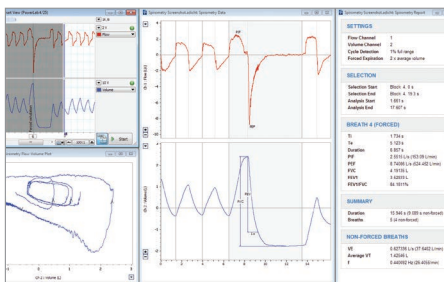

Non-Invasive Cardiac Output
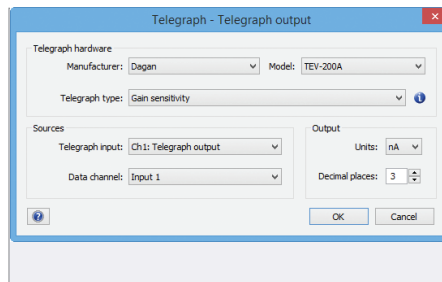Allows a real-time estimation of continuous cardiac output to be calculated from an NIBP trace.

Scheduler
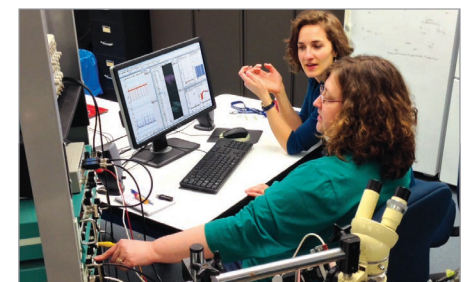Schedule recordings across one or more LabChart data files.

Spirometry
Derive respiratory parameters based on flow and volume such as VE, VT, PIF, PEF, FVC and FEV_1.


Telegraph
Make use of the gain telegraph output from an electrophysiological amplifier.

LabChart makes it easier to go wherever your research leads

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.
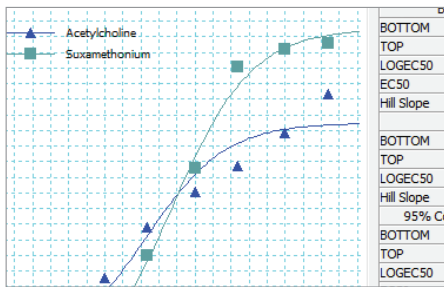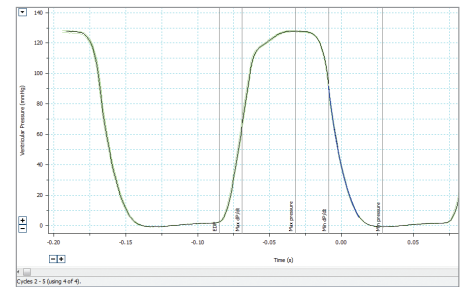

Dose Response
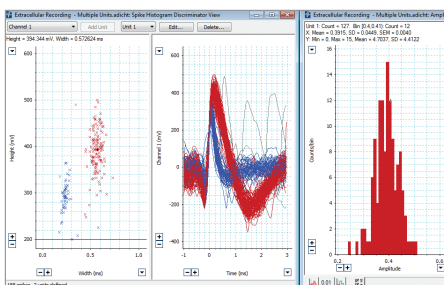Generates dose response curves, EC50 values and additional parameters.
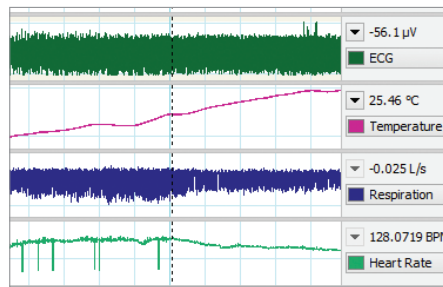
Metabolic
Provides real-time measurements of parameters such as VCO_2, VO_2, VE and RER.
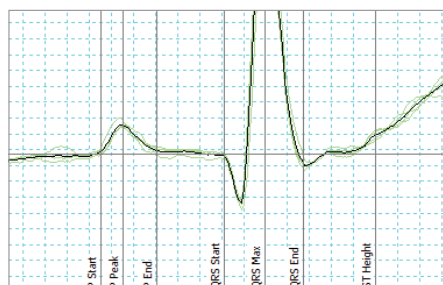

Blood Pressure
Automatically detects, analyzes and reports on parameters from arterial or ventricular pressure recordings.
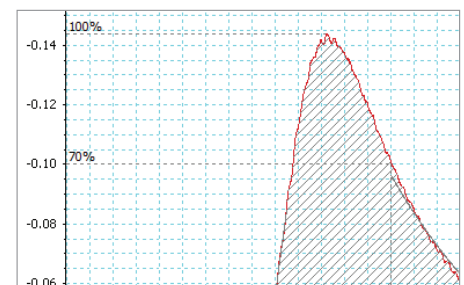

Spike Histogram
Detects, discriminates and analyzes extracellular spike activity generating a range of plots and statistics.

ECG Analysis
Detects and reports the onset, amplitude and interval times of PQRST from human and animal ECG signals.

Cardiac Output
Calculates cardiac output from a LabChart recording of a thermodilution curve measured in animals.
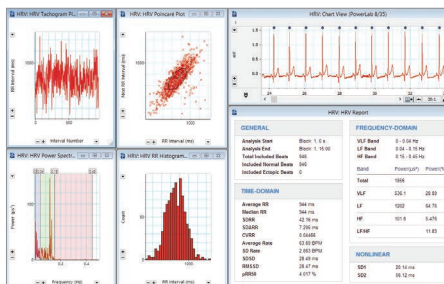
Heart Rate Variability
Displays and analyzes variation in the interval between heartbeats in human and animal ECG.
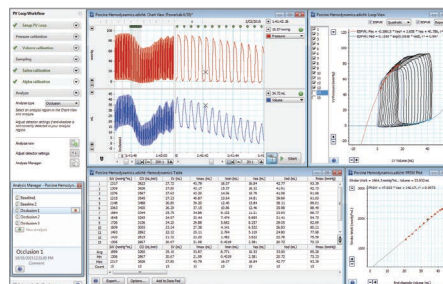
PV Loop
Analyzes left and right ventricular pressure/volume data, calculates loop area plus a wide range of hemodynamic parameters.
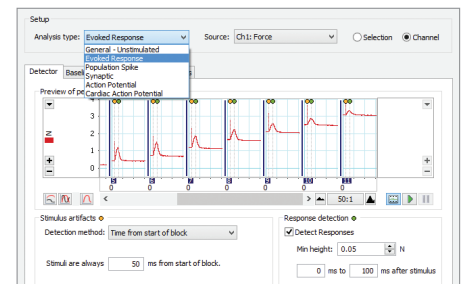
Peak Analysis
Automatic detection and analysis of multiple (but not overlapping) signal waveforms from recording.
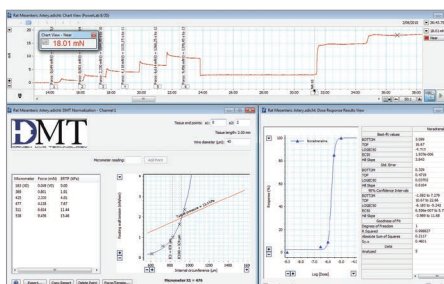
DMT Normalization
Calculates and standardizes optimal vessel pretension conditions using the wire myograph.
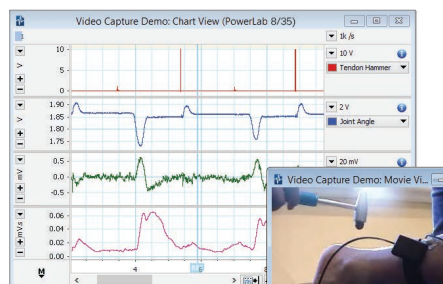
Video Capture
Allows the synchronized recording and playback of a Windows Media Video and LabChart data file.

Diverse Applications
"... the synchronized video is really a complete solution, taking swimming technique analysis to the next level."

Budd Termin
Swimming Coach, TeamTermin

Hardware Compatibility

Signal conditioners and instruments
ADInstruments manufactures a wide range of software-controlled pre-amplifiers and offers auxillary devices for specialized investigations.

Transducers and accessories
We offer an extensive selection of instruments, transducers and accessories made by ADInstruments and world-leading brands.

PowerLabC   PowerLab

PowerLab is a high quality data acquisition device engineered to record precise, reliable, consistent data for research and education.

PowerLabs are capable of high speed sampling and form 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.

- Automatically detected by LabChart
- High speed sampling (up to 200 kHz per channel)
- Built to last with 5 year warranty
- Simple to set up, USB connection to Windows or Mac

PowerLab C + C Series Interfaces

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-µS time synchronization for up to four C Series compatible USB-C devices.

The **C Series Front End Interface** converts analog data from ADInstruments Front-Ends such as Bridge Amps and Bio Amps to allow digital sampling by the PowerLab C. The **C Series Instrument Interface** provides 4 channels of input capability from any analog instrument to PowerLab C.

Research PowerLab Range

PowerLab 2/26 and 4/26
Available in either 2 and 4 channels, maximum sampling rate of 100kHz per channel, independent ADCs for each channel to keep data perfectly in sync.

LabChart Compatible Systems
As well as sampling from a broad range of instruments, signal conditioners and transducers via PowerLab, LabChart can also stream data directly from a range of compatible digital and wireless devices. These are available from manufacturers such as DSI, Oxford, DMT, Equivitial, Delsys and Kent.

Education PowerLab Range

PowerLab 15T and 26T
Economically priced, high quality DAQ unit with built-in, fully isolated, two-channel bio amplifier, isolated stimulator, separate non-isolated analog inputs, and a differential-mode analog output.

LabChart for Education

Research-grade software for recording and analyzing life science data.

LabChart data acquisition and analysis software lets students gather biological signals from multiple sources simultaneously and apply calculations and plots as their experiments unfold.

Access a Range of Teaching Resources
To save you valuable time in creating course materials, we have developed over 150 LabChart exercises for education. Any of these exercises can be customized quickly and set up easily for your laboratory class.

Each lesson includes: Instructor Guides • Settings Files • Student Protocols • Preconfigured Lab Reports

Courses Covered: Human Physiology • Animal Physiology   • Psychophysiology • General Biology and Biochemistry Exercise Physiology • Neuroscience

Versions and Licenses

Data Recording and Analysis

LabChart Pro

Recommended for researchers and educators who want the full range of modules and capability, including automation of specific measurements.

LabChart

Recommended for researchers and educators who want the capabilities without modules and automation of specific measurements.

Analysis only and collaboration

LabChart Pro Student License

Limited 6 month licence for undergraduate students. Provides full analysis, save and export functionality (no sampling). Ideal for students conducting data analysis of existing recordings within a curriculum.

LabChart Reader

Recommended for anyone who wants to view LabChart data on Windows or Mac. LabChart Reader doesn't allow saving of data - export image only. Has data pad for analysis.

Main Features	LabChart Pro	LabChart	LabChart Pro Student License	LabChart Reader *(Free)*
5 years of updates + upgrades to all LabChart software	✓	✗	✗	✗
Open and read LabChart files	✓	✓	✓	✓
Analyze	✓	✓	✓	✓
Save and export	✓	✓	✓	✗
Record data	✓	✓	✗	✗
LabChart Modules	✓	✗ (Purchased separately)	✓	✗
LabChart Extensions	✓	✓	✓	✗
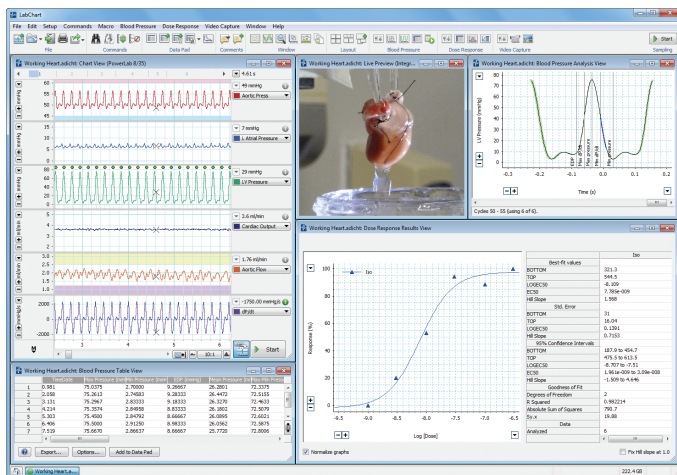
Radnoti Cardiovascular Blood Pressure analysis in LabChart

Maximize your potential

ADInstruments global training and support systems mean that there is always help at hand to support you with your endeavours and help you learn 'best practices' to move your research forward faster.

Data Integrity

"I like the fact that you can store all your data electronically. There is no need to create an auditing trail, because this is automatic. You can't remove bits of information. What is really interesting is that you can really go into the detail of the actual blood pressure trace and perform complex analyses very quickly. You simply export data into a standard template in Excel and have all your answers in seconds. Very smart."

Dr. Kengatharan,
President & COO, Armetheon, Inc.

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

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