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

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

Rat Ventricular Pressure in LabChart
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:

<table>
<thead>
<tr>
<th>Angles</th>
<th>EOG</th>
<th>Intracellular Recordings</th>
<th>Respiratory Gas Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dissolved Gasses</td>
<td>Extracellular Recordings</td>
<td>NIBP</td>
<td>Sounds</td>
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<td>dP/dT</td>
<td>Fluid Flow</td>
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<td>SPO2</td>
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<td>ECG</td>
<td>Force</td>
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<tr>
<td>EEG</td>
<td>Glucose</td>
<td>Pulse</td>
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<tr>
<td>Electrical Stimulation</td>
<td>GSR</td>
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<td>Video</td>
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<tr>
<td>EMG</td>
<td>Heart Rate</td>
<td>Respiratory Flow</td>
<td>Volume</td>
</tr>
</tbody>
</table>

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.

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.

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

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 FEV₁.

Telegraph
Make use of the gain telegraph output from an electrophysiological amplifier.
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 VCO₂, VO₂, VE and RER.

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

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

**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.

**Budd Termin**
Swimming Coach, TeamTermin
Hardware Compatibility

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

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

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

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

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

<table>
<thead>
<tr>
<th>Feature</th>
<th>LabChart Pro</th>
<th>LabChart</th>
<th>LabChart Pro Student License</th>
<th>LabChart Reader</th>
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</thead>
<tbody>
<tr>
<td>5 years of updates + upgrades to all LabChart software</td>
<td>✓</td>
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<td>✓</td>
<td>x</td>
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<tr>
<td>Open and read LabChart files</td>
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<tr>
<td>Analyze</td>
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<td>✓</td>
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<td>Save and export</td>
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<tr>
<td>Record data</td>
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</tbody>
</table>

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.

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.

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

Radnoti Cardiovascular Blood Pressure analysis in LabChart