INSIGHT

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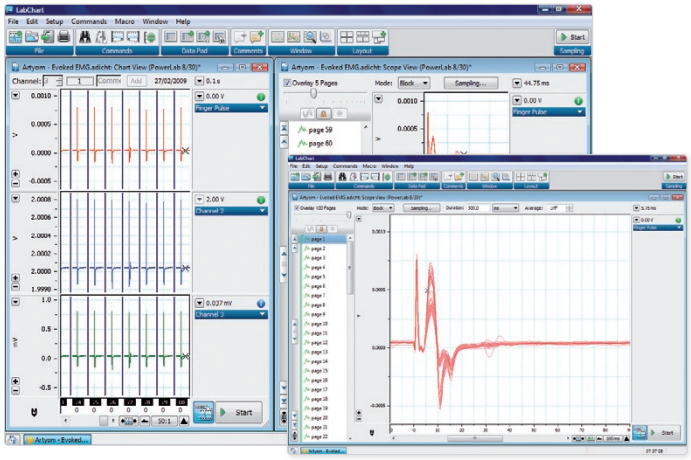
THE ADINSTRUMENTS NEWSLETTER

LabChart 7 – view & analyze data in a brand new way



ADInstruments has released new LabChart 7 and LabChart 7 Pro for Windows and Macintosh with features that increase your recording capabilities, automate your data analysis and manage your files.

A key new feature, Scope View (shown above), provides multi-channel oscilloscope functions.

Other new features include:

- Welcome Centre
- Select/Every option in Timed Add to Data Pad
- ADIPak Files
- Enhanced Help
- Feature Manager
- Cyclic Measurements

Read more on page 3.

News bytes

Artificial heart created

The creation of an artifical heart by Prof. Doris Taylor at the University of Minnesota has revolutionized the field of transplantation. ADInstruments equipment was used to record cardiovascular measurements.

Running & human evolution

Harvard University Prof. Daniel Lieberman's research on running and human evolution was recently featured in the **Evolve: Skin** documentary series on the History Channel. EMG data was recorded using ADInstruments equipment.

The Jackson Laboratory

ADInstruments is proud to announce a partnership with The Jackson Laboratory (TJL), to benefit scientific training.

Scientists can attend workshops that make use of PowerLab systems at TJL Bar Harbor facility, ME, USA. See our Events page for information.

Events & workshops

See our website for more details

Gothenburg, Sweden
13–14 May, LabChart, LabTutor & LabAuthor Training Workshops

NA Training Center, CO, USA
20–21 May, PowerLab Crash Course for Researchers

Sydney, Australia
21 May, LabChart, LabTutor & LabAuthor Training Workshop

Baltimore, MD, USA
23–28 May, Human Anatomy and Physiology Society Meeting

Baltimore, MD, USA
27 May, Practical Laboratory Instruction in the Classroom

Dunedin, New Zealand
26 May, LabChart, LabTutor & LabAuthor Training Workshop

NA Training Center, CO, USA
17–18 Jun, PowerLab Crash Course for Researchers

In this issue

New rental plans!

Now it is even easier to give your students access to PowerLab Teaching Systems.

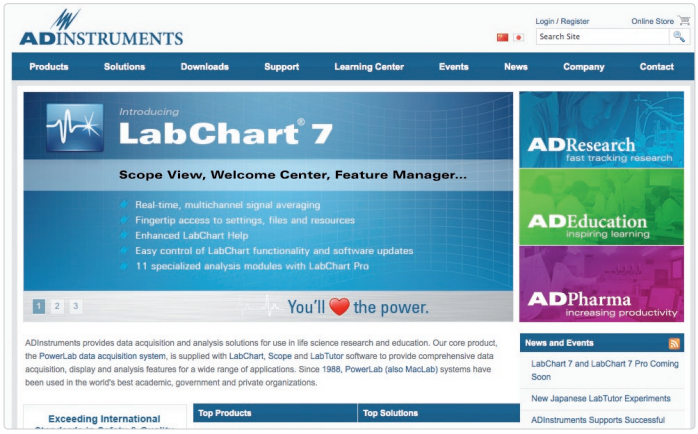
By renting equipment, you may be able to use operating (rather than capital) budgets. This can remove the need for tendering and allow you to get equipment faster.

Our rental plans offer:

- Brand-new systems
- Low entry cost
- Long-term rental options

The option to rent equipment is available in USA, Canada, Australia, NZ, UK, Germany, Japan, Malaysia and Singapore. See www.adinstruments.com/buyorrent for more details.

New-look website with extra resources



Our new-look website presents extra resources for researchers and educators in a fresh format that's easy-to-navigate.

Tell us what you think by clicking on our Site Feedback button – located on the bottom right-hand side of each web page.

Site Feedback

ADINSTRUMENTS
making science easier

Remote wireless monitoring of human biopotentials

The new BioHarness Telemetry System transmits human physiological signals from a lightweight belt-like garment to LabChart software for display and analysis.

The system for research and education feature patented Zephyr technology, that was developed in conjunction with US Special Operations, NASA Ames Research Center and Stanford University.

The BioHarness has built-in sensors that measure a range of human physiological signals including heart rate, breathing wave, posture, skin temperature, and acceleration.

Typical applications of the system include sports medicine, exercise physiology and field exercises.

Features and benefits

- Acquire 17 channels of real-time data (live wireless transmission) or 15 channels in offline mode (in-built data storage)
- Attach comfortable and unobtrusive belt-like garment with patented Smart Fabric sensor technology
- Wirelessly transfer up to 240MB or ~ 480 hours of data storage and memory to LabChart software
- Use up to 32 channels in LabChart for computation and analysis
- Use LabChart 7 Feature Manager to manage software download and installation
- Recharge USB battery to last for up to 8 hours in continuous data-logging mode and 5 hours in data-transmission mode with LabChart

Recordable parameters in LabChart

Recordable signals include:

- Indicative ECG trace (available in live transmission mode)
- Breathing wave
- Instantaneous heart rate (R-R Period)
- Heart rate
- Instantaneous respiration rate
- Skin temperature (via an infrared sensor)
- Posture (angle in degrees)
- Vector magnitude (activity level)
- Peak acceleration
- Activity measurements (6 channels via 3D accelerometer)
- Battery voltage
- Signal quality (available in live transmission mode)

Note: Data acquisition using LabChart is only possible with BioHarness devices purchased from ADInstruments.

BioHarness System contents

Each BioHarness System includes a BioHarness ISM Module, Short Range Dongle, BioHarness Charging Cradle, 3 BioHarness Chest Straps, LabChart and BioHarness Extension.

Contact your ADInstruments representative for more information.

MouseOx® for non-invasive cardiopulmonary studies

ADInstruments is pleased to announce new products in the MouseOx product range for Windows including the CollarClip™ and ThroatClip™ Sensors for multiple non-invasive cardiopulmonary measurements in free-roaming or anesthetized mice.

The MouseOx oximeters record real time changes in:

- Arterial oxygen saturation
- Heart rate
- Respiratory rate
- Pulse distention

A universal connector cable easily connects the CollarClip and ThroatClip Sensors to MouseOx oximeters.

Two types of commutators can be used with the sensors for cable untangling in free roaming mouse studies: the ManualSpin™ Hand Commutator and the AutoSpin™ Low-Torque Electronic Commutator

Sensors available in complete kits

The CollarClip and ThroatClip Sensors are available separately or in kits which include five sensors, commutator, connector cable and MouseOx software.

New sensor for MRI environment

A new MRI Sensor (20 ft) will record multiple non-invasive cardiopulmonary measurements in a Magnetic Resonance Imaging environment. The sensor connects directly to the MouseOx oximeters.

View the complete range of MouseOx Systems at: www.adinstruments.com/mouseox

Record parameters using PowerLab

MouseOx oximeters can be used with PowerLab 30 series systems using the STARR-Link Analog Output Module. Seven analog outputs of the MouseOx cardiopulmonary parameters are recorded by 8 or 16 channel PowerLab Systems for display in LabChart software.

STARR-Link Analog Output Module connects MouseOx Oximeter to PowerLab Systems.

LabChart 7 offers new recording & analysis features

Our most advanced software for PowerLab systems, LabChart 7 and LabChart 7 Pro provide features to make your experiment process even more efficient and effective.

LabChart 7 features include:

- Scope View – Average signals on multiple channels in real time. More information shown below and page 4. (Windows)
- Welcome Center – Access settings, files and resources instantaneously. More information shown below.
- Select/Every Option in Timed Add to Data Pad – Repeatedly extract parameters from whole or partial selections while recording.
- ADIPak Files – Package & share files. Install files in LabChart's Welcome Center. (Windows)
- Enhanced Help – Now includes tutorials. (Windows)
- Cyclic Measurements – Perform cyclic analysis on periodic signals. Now on Mac.
- Advanced scripting – Automate repetitive processes and analyses.
- Smart displays – Split views, smart tile, and customize layouts.
- Feature Manager – Manage software functionality, updates and schedules. *See below.*
- Real-time and offline analysis.
- 32 channels – Display and analyze 32 channels of data.
- Channel calculations – manipulate signals without losing raw data.
- Data Pad – Extract parameters automatically and link (OLE) to Excel.

Upgrade to LabChart Pro

Upgrade to LabChart 7 Pro to get all the LabChart Modules as well as 5 years of full software upgrades.

Modules include: Blood Pressure Analysis, ECG Analysis, Heart Rate Variability, Cardiac Output, Metabolic, Video Capture, Peak Analysis, Circadian Analysis, Spike Histogram, Dose Response and DMT Normalization.

Special introductory offer. Save 25%

Upgrade to LabChart 7 Pro before 30 June, 2009 and you'll save 25% off the full price. Go to www.adinstruments.com/webstore or contact your ADInstruments representative.

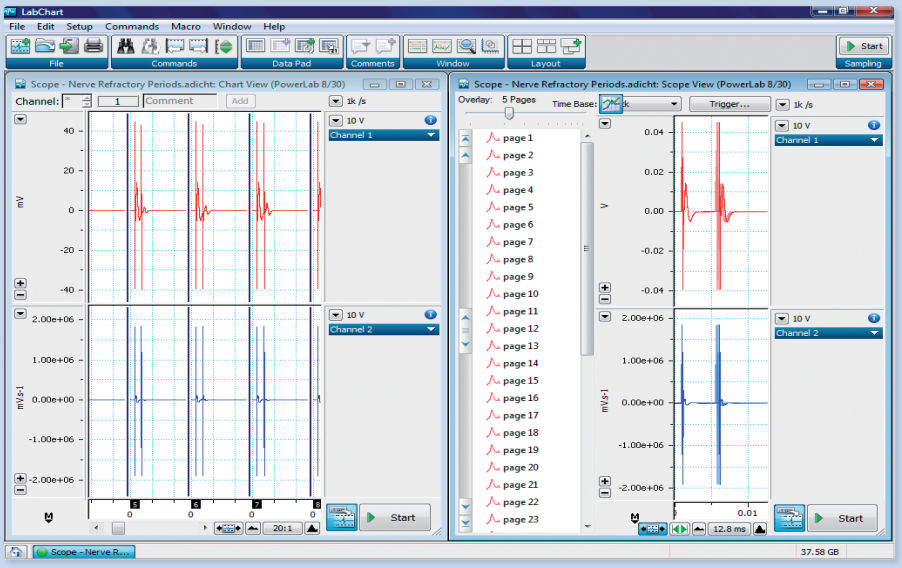
A closer look at LabChart's Scope View & Welcome Center features

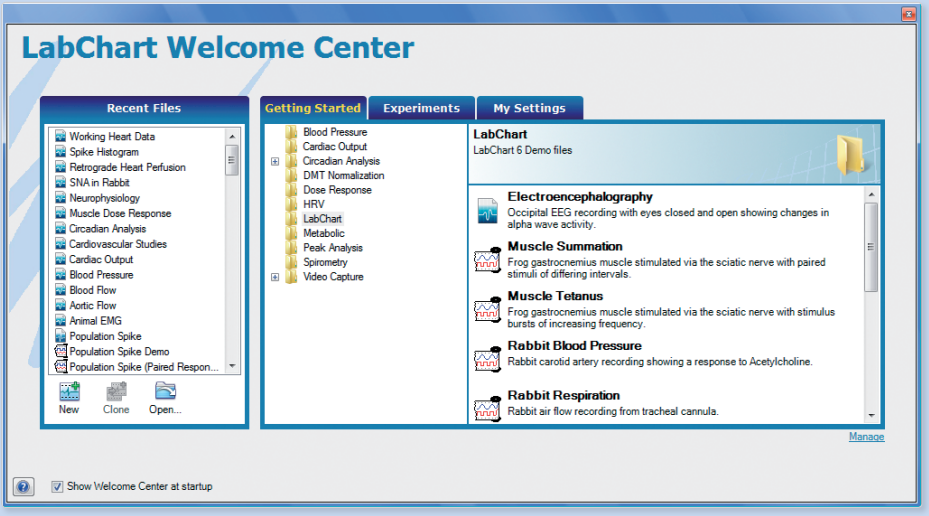
Scope View

Scope View for LabChart for Windows provides:

- Multi-channel signal averaging
- Unlimited sample and page numbers
- Recording of each sweep to a different page that can be averaged and overlaid for analysis
- Data extraction from Scope View using the Data Pad
- Advanced, editable scripting to automate repetitive tasks
- Channel calculations
- Configuration of sampling settings and data recording start/stop

See the Software Tip on the next page for more information.





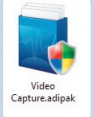
Welcome Center

The Welcome Center provides structured management of experiment resources and materials. The easy-to-navigate Center features Recent Files and customizable Gallery panels.

The Center allows you to:

- Access all LabChart resources in one convenient location,
- Clone document settings
- Find a file location in your computer

You can also ensure files for colleagues and/or students are automatically placed in specified Welcome Center panels by using the ADIPak system.



PowerLab pivotal to successful inquiry-based laboratories

In a recent paper published in Advances in Physiology Education Journal, Dr. Giovanni Casotti and colleagues from West Chester University of Pennsylvania document their successful implementation of inquiry-based physiology laboratories using PowerLab systems with LabChart.

The aims of the new curricular innovations were to improve the teaching of physiological concepts, teach students the scientific approach, and promote creative and analytical thinking in the undergraduate major and non-major courses.

Under the inquiry-based approach, students are required to generate an experimental hypothesis, design and perform their own experiments and present results to their class.

PowerLab was chosen because of its ease of use. It has enabled students to focus on the physiological concepts rather than the equipment.

Excellent results

The inquiry-based approach was comprehensively assessed through formative (laboratory exams, oral presentations, and reports) and summative evaluations (surveys, laboratory notebook, and major project).

Results from both forms of evaluation showed a strong improvement due to the curricular revisions.

The authors noted enhanced student understanding and grasp of physiological concepts, more creative thinking and an improvement in students' critical and analytical-thinking skills.

More PowerLab citations

Information about this paper and more than 7000 additional papers citing PowerLab can be viewed at: www.adinstruments.com

Excerpts from G. Casotti, L. Rieser-Danner & M. T. Knabb, *Advances in Physiology Education* 32:286–296, 2008.

"These changes were made possible with the purchase of PowerLab, a powerful computerized data-acquisition system that enabled students to collect and analyze data easily."

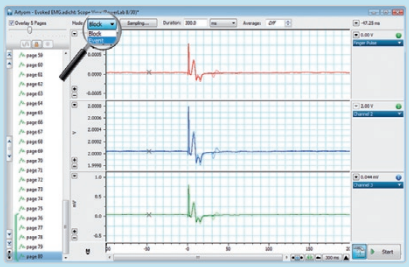
Student feedback

"I felt that I was able to perform my own experiments and get my own results. I thought it was great."

Software tip — Averaging signals in LabChart's Scope View

Scope View is an exciting new feature in LabChart 7 for Windows that provides a new way of displaying your data. Scope View enables you to overlay and average real-time or pre-recorded data on multiple channels, easily and efficiently. Scope View can be selected from the Windows menu in LabChart.

LabChart 7 lets you display and analyze data in either or both Chart and Scope View windows.

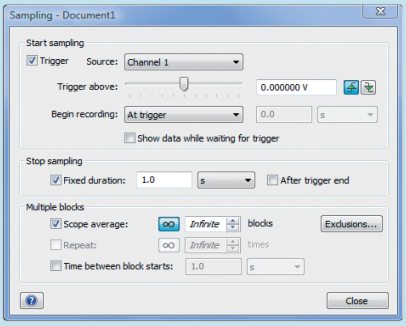


Scope View records data into pages using either data blocks or events.

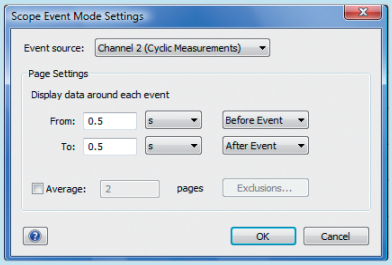
In both modes, page numbers are displayed on the left hand side and averaged data signals are displayed on the right. Pages selected for averaging are marked with a green bracket.

Block mode

Online recordings can be averaged in Scope View using user-specified settings. Parameters can be entered in the Sampling Dialog Box (see below).



Data that has been pre-recorded in blocks can also be averaged in Scope View.



Event mode

Event mode sweeps and averages signals using event detecting tools such as Cyclic Measurements or the Peak Analysis Module. Within the Event settings dialog, users can specify the events source channel and the time around the event.

Upgrade to LabChart 7 with Scope View at www.adinstruments.com/webstore

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