

PowerLab in use: The mettle to test metal

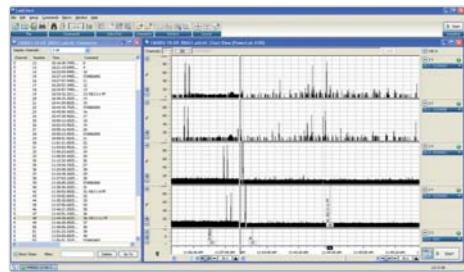


As a leader in independent testing services, Laboratory Testing Inc (LTI) relies on high quality equipment for its calibrations. The precision performance of PowerLab systems make them an ideal choice for ultrasonic testing to industry standard.

It's not life science!

LTI uses ultrasound probes to detect very small imperfections on the surface of specialized metal piping. The calibration standard (a pipe featuring several precisely machined notches which simulate defects), is key to this testing process. Any indication from the test material which exceeds the response from the calibration standard is rejected.

Traditionally, thermal printers produced a hard copy of the material's flaws, while alarms and other cues provided instant feedback on defective materials.



Right pane shows test material in a region with defects—row highlighted. Left pane: Chart View shows defects annotated with Comments.

Why PowerLab?

In 2009, LTI upgraded to PowerLab with LabChart Pro to increase the efficiency and precision of their testing, as well as reduce maintenance and storage expenses.

Today, LTI uses 5 PowerLab systems, each of which records 6 channels of data per pipe, testing pipes anywhere from 1/8" to 6-1/2" in diameter and delivering 3000 pulses per second per channel.

Because PowerLab systems are well equipped to deal with this extraordinarily high-capacity data acquisition and storage, LTI is able to save space by storing data on hard drives instead of in filing cabinets.

Quality service and LabChart Reader

LTI's customers also benefit from the use of PowerLab systems. They are given a DVD containing test data, rather than a stack of thermal paper. Customers can view their files and perform instant data analyses using the free LabChart Reader.

LabChart Reader is a FREE download. Read more on page 3.



One of LTI's testing stations, showing LabChart software, and materials for testing.

"One of the features that initially attracted me to the PowerLab was the ability to insert comments during data acquisition. Being able to enter them with a single keystroke (using the Preset Comments feature) has been very useful to our technicians."

Phil Trach, NDT Technology Coordinator, Laboratory Testing Inc.

INSIGHT

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THE ADINSTRUMENTS NEWSLETTER

Industry-leading wireless solutions for high-fidelity neural data acquisition

In partnership with Triangle BioSystems International Inc. (TBSI), ADInstruments is pleased to offer industry-leading research systems ideal for acquisition of neurological signals from freely moving small animals.

The ADInstruments/TBSI Systems provide unparalleled accuracy and reliability when recording action potentials as well as low frequency field potentials in studies where tethers would limit natural subject behavior (i.e. memory and cognition).

Acquire up to 15 channels of raw data or 32 channels including analysis, with a system that includes the intuitive LabChart software.

PowerLab users can also buy TBSI equipment separately.



Features and benefits:

- Wireless technology limits interference with normal animal behavior
- High sampling rates (up to 200 kHz per channel)
- Minimal hardware and no bulky wires on your benchtop
- Transmission up to 4 m for small animal models
- Headstage Receiver Sets for PowerLab users
- Flexible and powerful LabChart Pro software can be used for neuroscience and multidisciplinary studies

Read more on page 2.

LabChart releases for faster analysis



Extra power and flexibility

Update to LabChart 7.3 (Windows) to enjoy powerful features that enhance data generation, display and analysis, such as:

- The all new **Data Pad** for unrestricted rapid-response data logging, ideal for high experimental throughput
- Easier comparison of power spectra in **Spectrum View**: stack or overlay PSD plots

- The new **Playback File Extension** lets you stream your LabChart files in real time—as if you were recording from a PowerLab
- Remove periodic recurring signals for accurate analysis with **Scope Background Subtraction**

LabChart 7.3 is a complimentary upgrade for LabChart 7, Chart Pro and LabChart Pro.

New LabChart Pro & Reader
To complement this release, LabChart Pro and LabChart Reader have also been updated.

Read more about LabChart releases on page 3.

LabTutor releases



New features, inclusions & Applied Nursing Collection

LabTutor 4.4 includes new features to enhance learning and help educators. LabTutor Online users can access a complementary collection of HD life science documentaries.

Version 4.4 is compatible with all experiment collections to date, including the new Applied Nursing Collection.

Read more on page 2.

3 different ways to keep up to date with your peers

Connect with peers, educators and technical experts at:
www.adinstruments.com/forum/

Read about interesting, recent studies in our new web section:
www.adinstruments.com/news/paper-of-the-week/

See how others are using PowerLab in your application area:
www.adinstruments.com/citations/

Video learning on the web

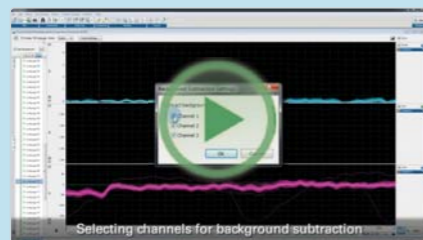
Acquire new skills with video tutorials

LabChart 7.3 videos

The videos for the latest software release, LabChart 7.3 covers 5 key new features:

- Welcome Center enhancements
- Stacked PSD Plots in Spectrum View
- Background Subtraction in Scope View
- Playback File feature
- New Data Pad

Each software video is around 1 to 2 minutes long. Tutorials are given a skills level rating from Introductory to Advanced.



The video: 'Background Subtraction in Scope View' shows you step-by-step how to remove periodic recurring signals using the newly released LabChart 7.3.

More video resources

View a range of more than 20 videos that feature current and past LabChart releases, LabTutor Teaching Suite and hardware products at:

www.adinstruments.com/learning-center/software-videos/

Some instructional and documentary videos are also featured on our YouTube channel:
www.youtube.com/adinstruments/

ADINSTRUMENTS.com

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Events & workshops

See our website for more events

Queensland, Australia
29 Jan – 1 Feb, ANS 2012
Australian Neuroscience

Europe Training Centre, UK
31 Jan – 1 Feb, LabChart Software
Training Course, Levels 1,2,3

NA Training Center, CO, USA
8–9 Feb, PowerLab Crash Course
for the Mac-based Researcher

Branford, CT, USA
17 Feb, Rodent Isolated Heart
Experimental Techniques Workshop

Harrogate, UK
23–24 Feb, RCN Royal College of
Nursing Education Forum

Kyoto, Japan
14–16 March, Annual Meeting, The
Japanese Pharmacological Society

Taipei, Taiwan
17–18 March, The 27th Joint
Annual Conference of Biomedical
Sciences

Washington, DC, USA
24–27 March, AACN — American
Association of Colleges of Nursing
Annual Spring Meeting

In this issue

Neurological research systems with TBSI	1, 2
New LabChart 7.3, LabChart Pro and LabChart Reader	1, 3
New LabTutor 4.4 & Applied Nursing Collection	1, 2
PowerLab's precision for ultrasonic testing	4
Three ways to keep up to date with your peers	4
Video learning on the web	4

ADINSTRUMENTS
making science easier

Precision wireless solutions for neuroscience research that combine ADInstruments & TBSI products

ADInstruments' partnership with TBSI gives researchers a convenient, economical way to start and fast track neural experiments with an integrated solution that includes powerful LabChart Pro software for automated analyses.

TBSI provide small, lightweight headstages with an integrated, rechargeable battery. In combination with a PowerLab unit and LabChart Pro software, researchers can acquire action potential signals from individual neurons (spikes) as well as low frequency field potentials from untethered animals, and perform complex analyses quickly and easily.

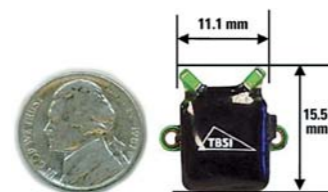
Ideal for small animal models

Because the wireless systems limit interference with normal animal conduct, they are ideal for studies that monitor natural behavior and responses, such as emotion, memory and learning.

The transmission range of 3-4 meters is ideal for small animal models such as rodents. Choose from 5 or 15 channel systems, in single or dual configuration. Suitable electrodes for experiments are available from electrode specialists.

Wireless Neural Recording systems:

- PowerLab data acquisition unit
- LabChart and LabChart Pro Modules
- TBSI Wireless Neural Headstage Receiver Set (see below)
- Interface and testing cables.



5 Channel Headstage shown next to a coin.

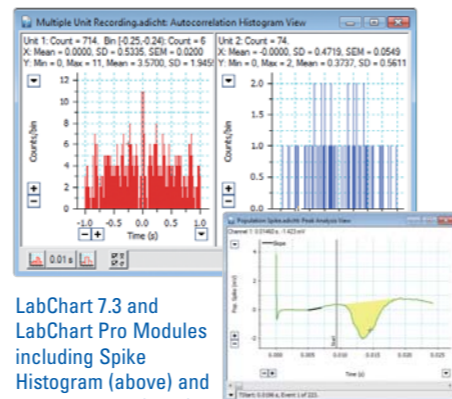
Already using a PowerLab?

Extend the capability of your current system with a 5 or 15 channel **Wireless Headstage Receiver Set**, which includes:

- Wireless Neural Receiver
- Wireless Neural Headstage
- Power supply
- Accessories.

Industry-leading design & manufacture

The headstage design incorporates neural preamplifier circuitry to create an extremely compact and powerful headstage. When combined with PowerLab, the system provides a powerful solution for neurological and multidisciplinary research.



LabChart 7.3 and LabChart Pro Modules including Spike Histogram (above) and Peak Analysis (right) enable automated analysis of neural data.

LabTutor 4.4: New work-flow and archiving features, plus HD documentaries and Applied Nursing Collection

The release of LabTutor 4.4 offers even more for students and educators, including educator control over student access to experiment sections, new archiving options for incomplete student data and the new Applied Nursing Collection.

The new LabTutor Teaching Suite (now with over 100 pre-configured experiments in 9 subject collections) provides new ways to save time and enhance the learning experience.

New features in LabTutor

- Students can connect their own laptop PC to a PowerLab in class and record laboratory data (LabTutor Server)
- Experiment checkpoints for management of student access and work-flow
- New archiving and retrieval options for student data and reports
- Student interactive subpages for hands-on decision based exercises (LabAuthor)
- Experiments in Russian and Turkish
- All videos available through LabTutor Online are now provided in High Definition and can be streamed with virtually no delay.

Get started with LabTutor Online

- All LabTutor Teaching Suites are supplied with a LabTutor Online Starter Kit for free offsite student access to experiments. Unlimited student licenses. Conditions apply.
- Individual licenses can be issued to students with new LabTutor Online scratchcards.



Exclusive multimedia resources

- HD multimedia resources are available to LabTutor Online users including: *Diabetes: In Search of a Miracle* and *Donated to Science*.



LabTutor 4.4 is a FREE upgrade for LabTutor users with earlier versions.

Applied Nursing Collection

This collection of learning modules helps students link bioscience concepts with nursing practice.

Each module integrates video interviews, data and clinical test results from real patients and combines them with related practical sessions. Student exercises include the recording and analysis of related physiological data.

The collection is an easy way to expose nursing students to classic health conditions including high blood pressure, childbirth and ANS dysfunction. Exercises can be completed in the calm environment of the classroom at a time that suits the teaching syllabus.



LabChart 7.3 for Windows: Increased power and flexibility with a re-engineered Data Pad and more



Introducing great new features to enhance the way you generate, log and analyze your data. Includes high-capacity Data Pad, Playback File Extension, and new options in Scope View, Spectrum View and the Welcome Center.

High-speed, unrestricted Data Pad

Available for Windows, the re-engineered Data Pad is a rapid response, high-capacity data logging system ideal for high magnitude experimental throughput within sensitive time constraints (shown below).

	A	B	C	D
	Breath	Period	ECG	Heart Rate
	Mean	Mean	Mean	Mean
	mV	BPM	mV	BPM
1	-1.9565	11.2283	-0.0489	86.8979
2	Mean	Mean	Mean	Mean
3	mV	BPM	mV	BPM
4	Breath	Period	ECG	Heart Rate
5	-3.2099	11.2283	0.0029	87.7157
6	-1.911	11.2283	-0.002	87.8709
7	-1.9565	11.2283	-0.0489	86.8979
8	-2.7272	11.2283	-0.0307	85.2732
9	-3.3355	10.5383	-0.0342	83.3809

New features include:

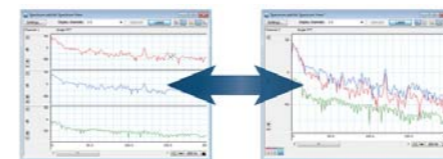
- Parallel processing (multi-reading and multi-core support) for faster calculations and interface response
- Unrestricted rows (limited only by available RAM)
- Full Unicode support for greater compatibility with Windows applications
- OLE linking of data to Microsoft Excel on any Data Pad sheet.

Use the Data Pad to:

- Access frequently used functions from a group of drop-down menus
- Use formulas, add multiple sheets and undo/redo operations
- Save and recall Data Pad settings for future use.

Display options in Spectrum View

Stack and overlay PSD plots for easier comparison of power spectra (below).



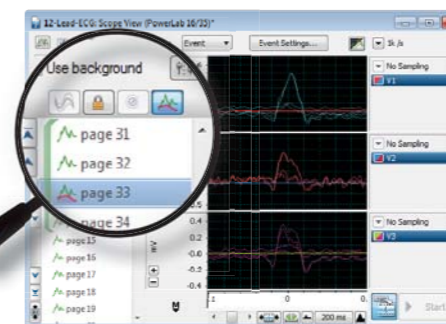
Updates to the Welcome Center

Search up to 100 of your saved files by file name, for convenient access to recent data. In addition, a new group of quick links provides easy access to updates, technical support, and training opportunities.

Background Subtraction in Scope View

Remove periodic recurring signals for unconstrained analysis by specifying a particular Scope View page as 'background' (shown below).

- Choose a subset of channels to which background subtraction is applied
- Toggle the background subtraction on/off without losing current background settings (e.g. the page, channels)
- Extract the background-subtracted numbers to the Data Pad for export.



Playback File extension

Stream data from saved LabChart files to live LabChart channels using this powerful virtual recording device. It provides an easy data aggregation method for research and a cost-effective solution for real-time PowerLab sampling in the classroom.

Stream any file recognized by LabChart:

- EDF
- MATLAB
- WAV
- FLAC
- OGG
- and more!

Files can be streamed at their native sample rate, or resampled at rates commonly used by LabChart.

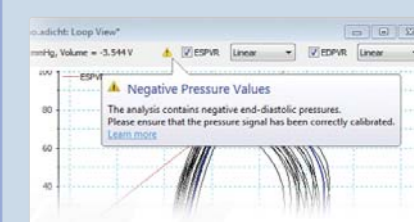


Use LabChart 7, Chart Pro, or LabChart Pro? Upgrade to LabChart 7.3 for FREE.

LabChart Pro

In conjunction with the release of LabChart 7.3, LabChart Pro Modules are being enhanced and updated.

The newly released PV Loop Module integrates cuvette calibration settings with the Analysis Manager, and features alerts to assist analysis (shown below), script commands, and Japanese Help files.

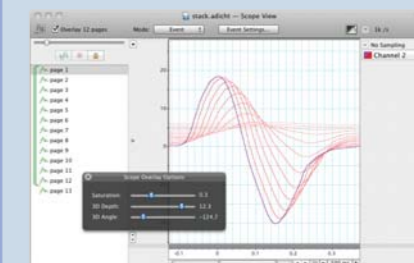


LabChart Pro includes LabChart software and all LabChart Modules for specialized data analysis, plus five years of FREE software upgrades.

LabChart Reader 7.3

Take advantage of new LabChart Reader features including the high-speed Data Pad, Scope View for Mac (below), interactive Help files and improved file compatibility between Mac and Windows operating systems.

Use FREE LabChart Reader to view LabChart files and perform some analyses – anytime, anywhere, from any Windows or Mac device. It is the ideal solution for secure file sharing and presentations.



Download the latest version: www.adinstruments.com/labchartreader