ADINSTRUMENTS
making science easier

Wireless Physiological Monitoring

Application and Solution Overview

Record and analyze data with true freedom of movement using LabChart and wireless physiological monitoring.

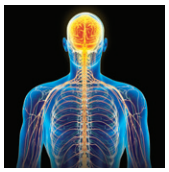
Wireless monitoring gives your subjects unrestricted movement, allowing you to record and analyze their natural activity.

Our wireless devices and systems help you record a wide variety of signals, simultaneously. Connect seamlessly with LabChart software for streamlined data analysis.

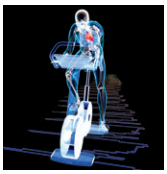
Benefits of Wireless Physiological Monitoring:

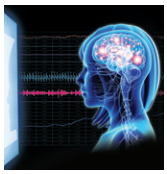
- Record a broad range of physiological signals wirelessly via bluetooth
- Real-time streaming and analysis
- Subject comfort during recording
- Ideal for studies with single or multiple subjects
- Extended recording time with long battery life
- Suitable for close range or distance studies
- Options to record data offline then import time synchronized data for analysis

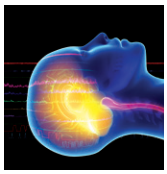
Applications include:


Autonomic


Cardiovascular


Exercise Physiology


Psychophysiology


Sleep

Typical studies:

- Apnea or Hyperapnea
- Autonomic fitness
- Autonomic function
- Breathing rate
- Cardiovascular disease and myocardial dysfunction
- Diabetic neuropathy
- Emotional reactivity
- Heart Rate Variability
- Heat Stress
- HRV / Arrhythmia
- Performance testing
- Pharmacological impact on heart health
- Physiological response
- Respiration and oxygenation during exercise

2019 Wireless PhysioMon Brochure-A4 V2-0

Trigno™ Wireless Foundation System

Wireless EMG in humans

Wireless EMG is ideal for capturing the intricacies of muscle movement and electrical muscle activity in subjects, especially when range of movement and comfort are important.

Whether you are studying motor control for patient rehabilitation or muscle performance, activity, and fatigue in elite athletes, ADInstruments offers streamlined wireless systems that let you record and measure electrical muscle activity simply and easily.

Direct Streaming

We offer a range of LabChart compatible solutions able to stream data directly into LabChart. With Wireless EMG studies, the Delsys Trigno Foundation system comes with both LabChart and a Trigno Device Enabler for direct data streaming.

System highlights

- Quick setup and easy to use
- Compatible with Windows
- Trigno™ Base Station holds up to 16 sensors, allowing easy future sensor additions
- Patent Pending Motion Artifact Suppression
- High resolution and sampling rate up to 2 kHz
- <500 µ s inter-sensor latency
- Real-time feedback of signal strength and battery status
- Real-time analysis options
- Wide range of analysis views and channel calculations

Foundation System Overview

RSB001DSY04

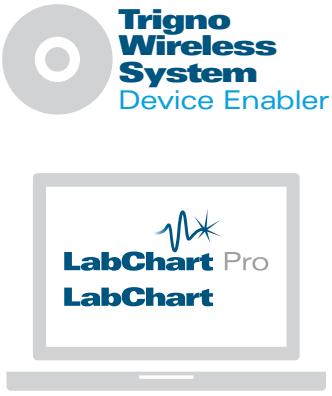
The Trigno™ Wireless Foundation System is the perfect base to build a flexible system for your movement studies.

The Trigno Base Station is equipped with 16 charge pockets which can accommodate Trigno sensors for charging and compiles data received from the active wireless sensors and transfers it over a USB 2.0 compliant connection to a Windows PC.

Contents include:

- 1 x Trigno™ Base Station Receiver (Digital)
- 1 x USB Cable
- 1 x Trigno™ Power Supply with Plug Adapter Kit
- 2 x Trigno™ Sensor Adhesive (4-slot, 90 pack)
- LabChart Pro Software
- Trigno™ Wireless Device Enabler Software

Trigno Base Station, shown with 16 Trigno sensors *(purchased separately)*.

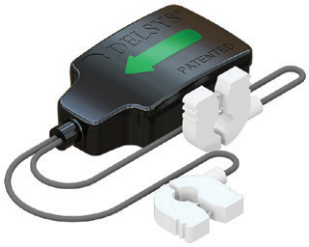


Trigno™ Sensor options

Select up to 16 Delsys Trigno™ sensors (sold separately). Compact and lightweight with a 40 m range, the sensors are designed for freedom of movement, allowing you to record signals directly into LabChart for analysis.

Trigno Avanti EMG + IMU Sensor
For wireless and flexible measurement of a high fidelity surface EMG signal, with a wide bandwidth 10-850 Hz and 11mV range. The gold standard for surface EMG+IMU measurements and mobile data collection.
DSY-SP-W06-14

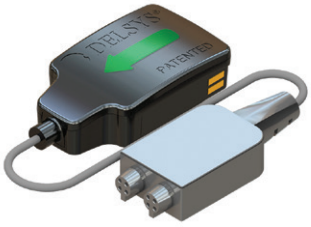
Trigno Mini EMG + XYZ Sensor
The compact Trigno Mini Sensor is ideal for recording surface EMG on small and 'difficult-to-isolate' muscles. Applications include physical therapy, rehabilitation sciences, sports science, ergonomics, and motor control.
DSY-SP-W06-024



Trigno Snap-Lead EMG + XYZ Sensor
Connect to industry-standard 'snap on' electrode with clamp style connector leads for sEMG detection, allowing users to adjust their inter-electrode spacing as they deem suitable from difficult muscle sites.
DSY-SP-W06-018

Trigno EKG Sensor
Record a high quality ECG signal with the freedom of the Trigno system. Connects to industry standard disposable 'snap on' electrodes.
DSY-SP-W06-021

Trigno 4 Contact FSR Sensor
Record 4 independent channels of force data, each servicing an individual FSR (Force Sensitive Resistor) membrane. Ideal for recording foot pressure timing, grip force, or pressure distribution measurements.
DSY-SP-W06-020

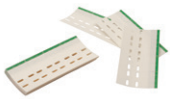


Trigno Goniometer Adapter
For accurately measuring joint angles. Simply connect the goniometer to the adapter, activate, and begin streaming synchronized angle data.
DSY-SP-W06-023

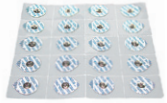
Trigno Analog Adapter
Integrate analog outputs from dynamometers and third-party equipment. Capable of sampling and transmitting up to 4 analog channels.
DSY-SP-W06-025

Note: *All sensors except the Analog Adapter also include a 9 Axis IMU*

Additional Accessories *(purchased separately)*



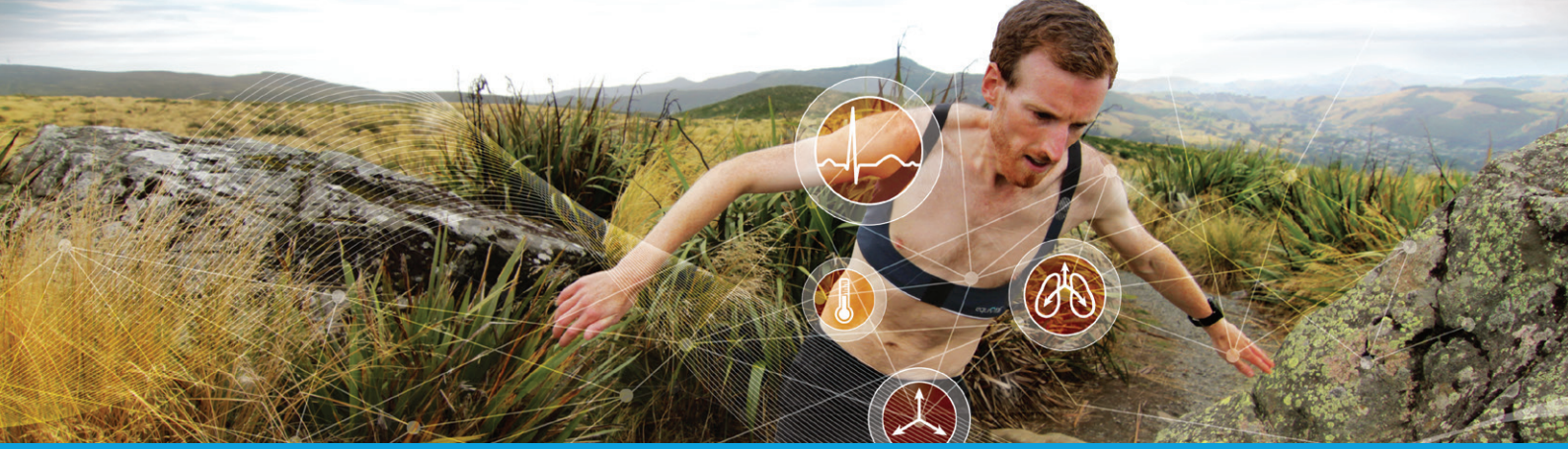
Trigno™ Sensor Adhesive
DSY-SC-F03



Disposable ECG Electrode packs
MLA1010/MLA1010B

Abrasive Gel
MLA1093/MLA1093B

Alcohol Swabs
MLA1094



Equivital Wireless Physiological Systems

Equivital develops wearable tech products that give you accurate and precise data from real people in real environments.

Equivital's compact and comfortable sensor belt and accessories are ideal for exercise research through to sleep studies. Use with LabChart's offline logging function for long sampling periods.

System highlights

- Easy setup and simple use
- High data quality with low data loss rates
- Options for live data streaming and offline data logging
- Noise and movement artifact-free ECG
- Up to 13 hours of battery life (extendable with ancillary pack)
- FDA 510(k) & CE cleared medical device

Starter Pack Overview

RSB-EQ002

Wirelessly record ECG, heart rate, expansion derived breathing rate, skin temperature and XYZ accelerometry data simultaneously into LabChart.

Contents include:

- 1 x Equivital SEM
- 1 x Equivital SEM USB Lead
- 1 x Equivital Bluetooth Dongle
- 1 x Equivital Device Enabler for LabChart (LabChart software sold separately)
- 1 x Equivital Sensor Belt (**RSB-EQ002**)*

or 6 x Equivital Sensor Belt pack, sizes 2-7 (**RSB-EQ001**)

**Choose from 9 different belt sizes*

Equivital SEM

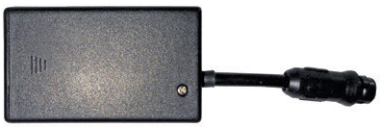
Equivital Wireless ECG Sensor Belt

Equivital SEM USB Lead

Equivital Bluetooth Dongle

Additional Accessories (purchased separately)

- Dermal Temperature Patch **EQ-ACC-048**
- Core Temperature Capsule **EQ-ACC-023**
- Core Temperature Pill / Dermal Patch Activator **EQ-ACC-029**
- Galvanic Skin Response Sensor **EQ-ACC-034**
- Wired SpO_2 Adapter **EQ-ACC-042**
- External Battery Pack **EQ-ACC-BAT-2**
- M-Dock **EQ-ACC-MD-1**
- Additional sensor belts **EQ-02-B3**



External Battery Pack

Dermal Temperature Patch

Core Temperature Capsule

Galvanic Skin Response Sensor

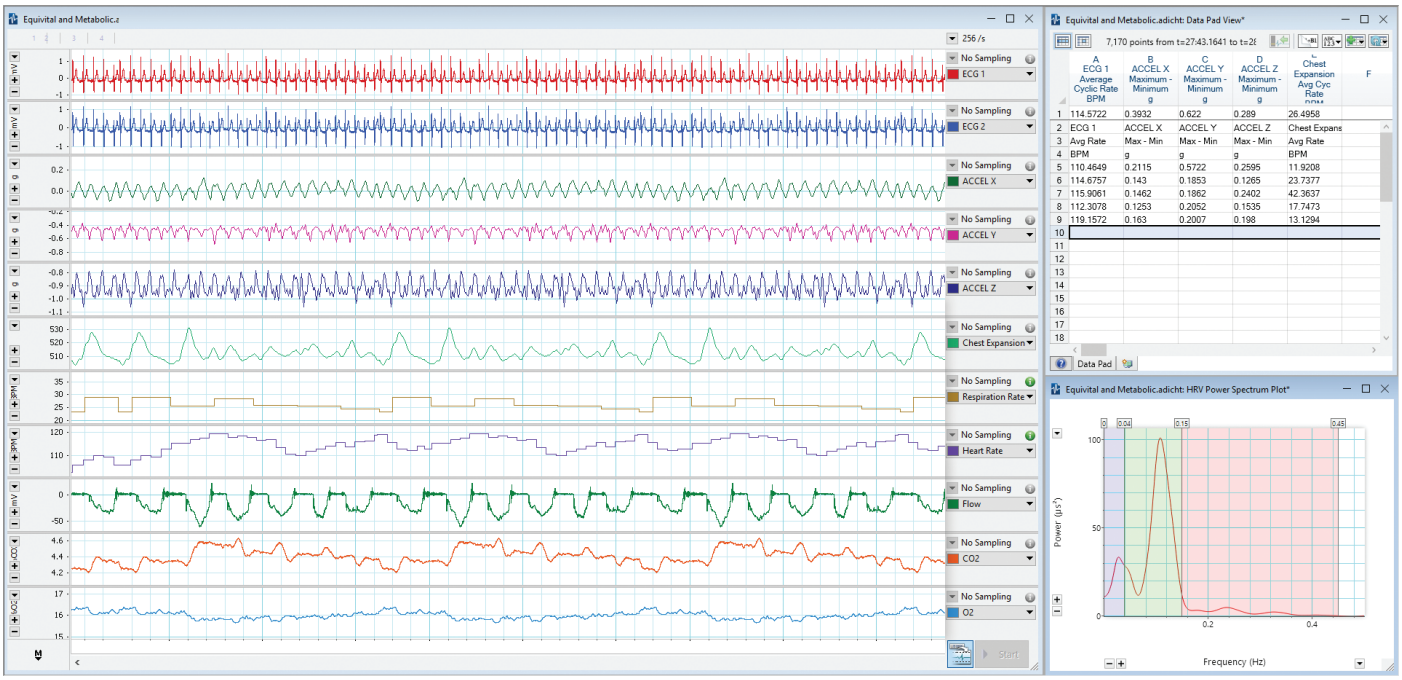
Wired SpO_2 Adapter.

Connects the MLT321 SpO_2 Finger Clip to an Equivital Belt.

All your data in one platform with LabChart

Use Equivital's wearable tech products with LabChart software for a single, streamlined platform that lets you record and analyze multiple data sources, simultaneously.

By combining Equivital products with LabChart, data can be live streamed directly into LabChart via bluetooth. Or, log recordings offline and import them at a later date for complete flexibility.



Signals

Signal	System required	Sample rate
ECG (2 Channels)	Core	256 Hz
Breathing Trace	Core	25.6 Hz
Accelerometer (3 Axis)	Core	25.6 Hz
Skin Temp (SEM)	Core	1/15 s
Skin Temp (Patch)	Core + Dermal Patch	1/15 s
Core Temp	Core + Temperature Pill	1/15 s
GSR	Core + GSR Add-On	2 Hz
SpO_2	Core + Wired SpO_2 Add-On	1 Hz

Typical applications

- Exercise Physiology
- Sport and Performance
- Psychophysiology
- Heart Rate Variability
- Electrocardiogram Analysis
- Sleep
- Autonomic Function

Videos and further information

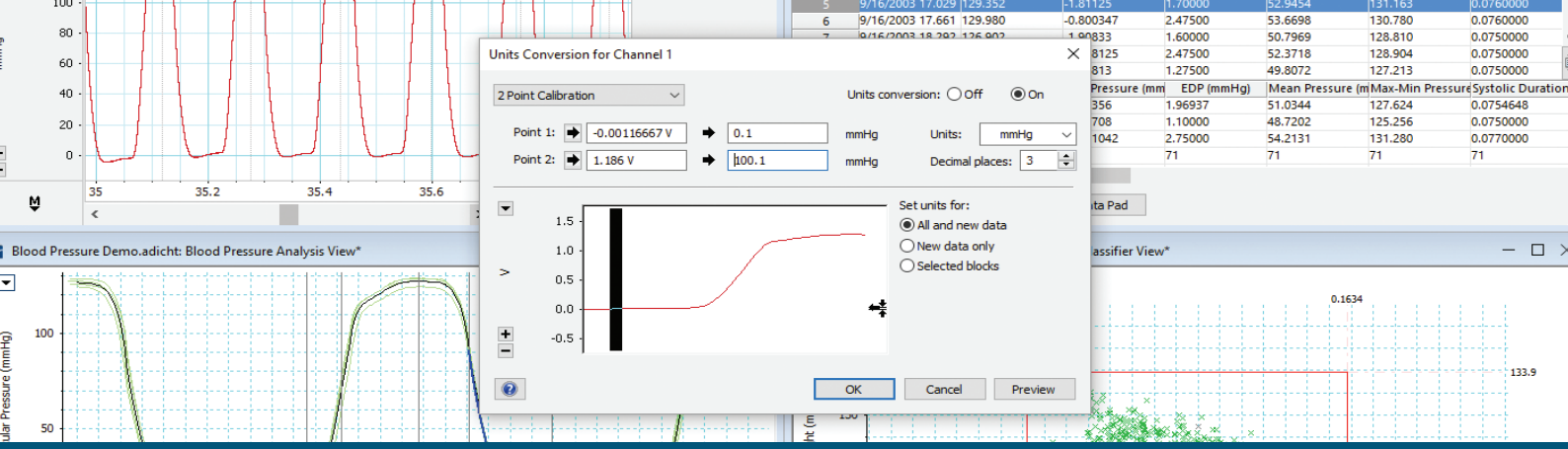
Visit our blog for videos outlining:

- Configuring your SEM
- How to appropriately fit the belt to your subject
- Live streaming direct into LabChart
- LabChart's Analysis Modules and the Data Pad tool to analyze recorded data

Plus:

- Articles covering the basics of live streaming;
- How to use the LabChart logging import tool;
- A webinar exploring the inner workings of Data Pad.

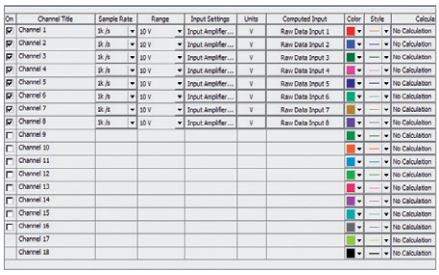
For more information about our Equivital range of products and solutions visit: **adinstruments.com/partners/equivital**



LabChart Data Acquisition and Analysis Software

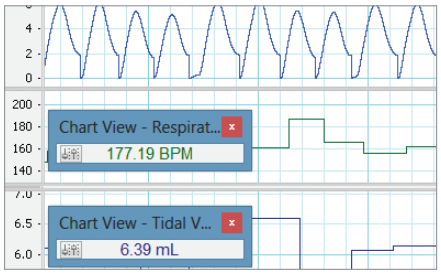
LabChart creates a streamlined platform for all of your recording devices to work together. Acquire signals from multiple sources simultaneously. LabChart tracks every recorded action and never modifies your raw data, allowing you to easily analyze your recorded data and apply advanced calculations as your experiment unfolds.

Key Features



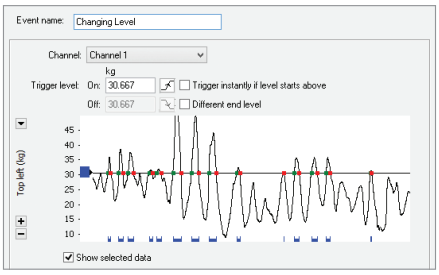
Channel Settings

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



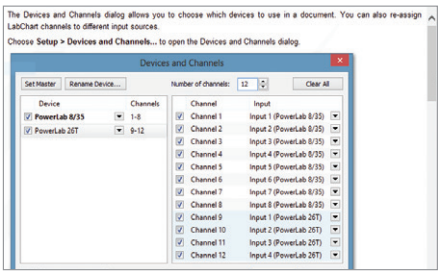
Cyclic Measurements

Easy analysis for periodic waveforms. Find HR, systolic pressure, respiratory rate, integrate a waveform over a cycle.



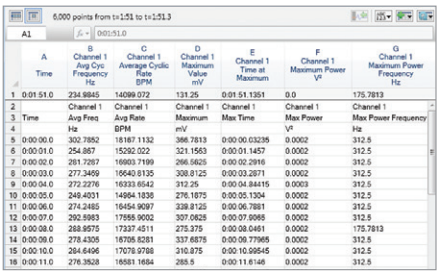
Event Manager

Monitors incoming signals and detects events defined by you in order to perform a specified action.



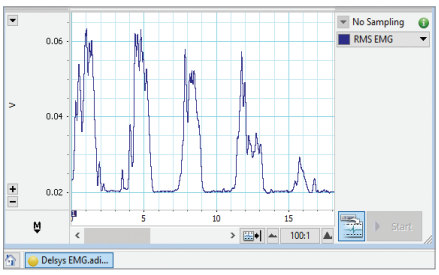
Device and Channel Discovery

Easily manage signal inputs and LabChart channels all from one panel.



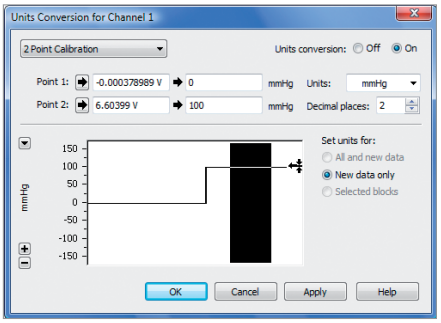
Data Pad

Analyze different segments of your time based data in a tabulated format.



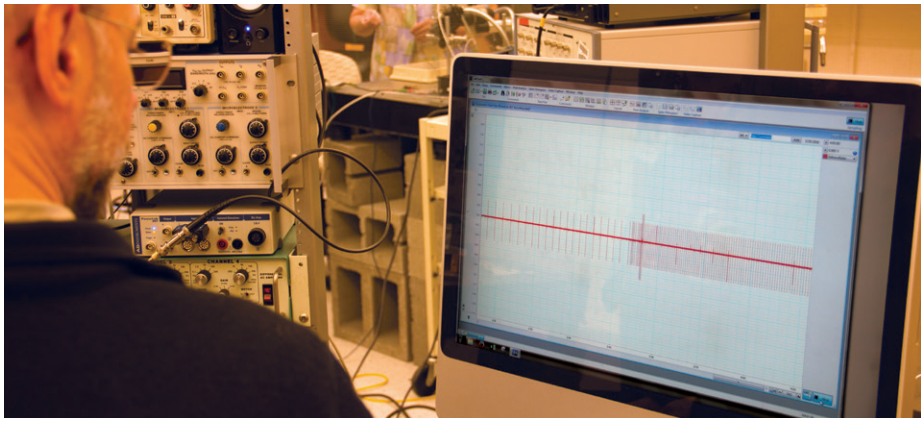
RMS Function

Determine the energy content or intensity of your EMG signal in real time.



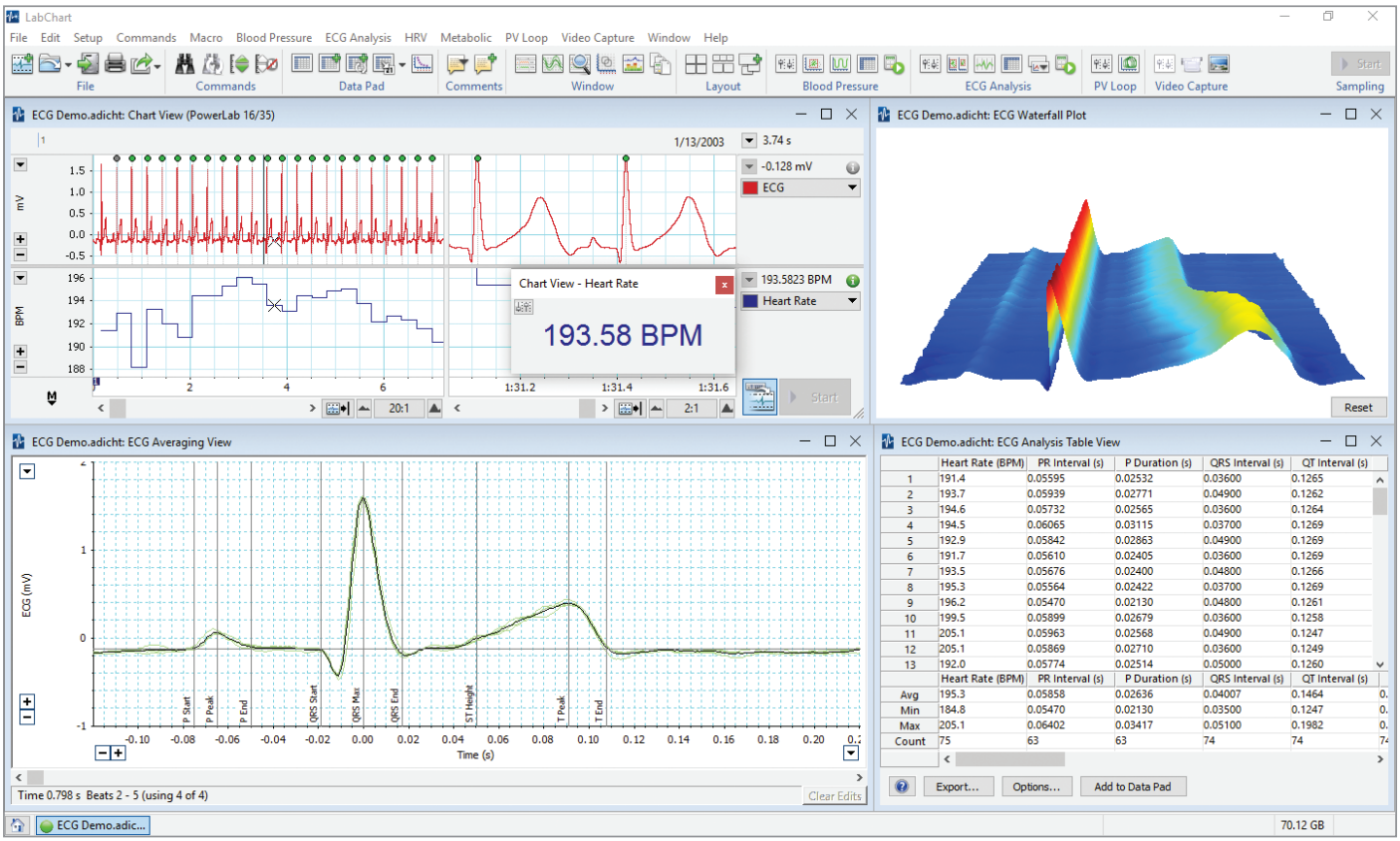
Units Conversion

Calibrate your recorded data to real world units.



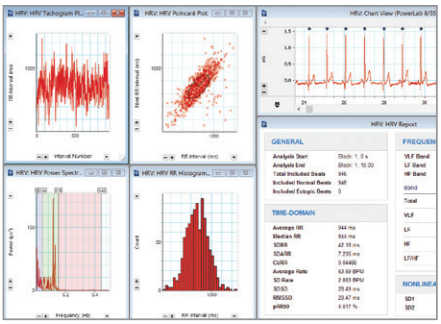
Specialized LabChart Modules*

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



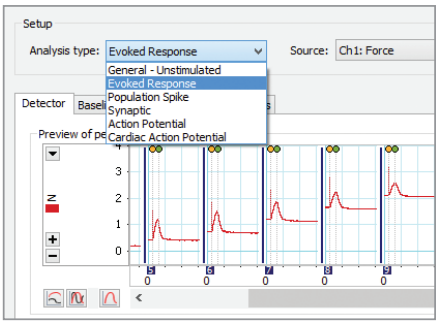
ECG Analysis

Analyze the morphology of your ECG waveform. Automatically detects and reports the PQRST onset, amplitude, and interval in real time, or after recording. The screenshot above shows LabChart's spilt screen view, DVM (large numerical display of heart rate data), ECG Analysis and Cyclic Measurements.



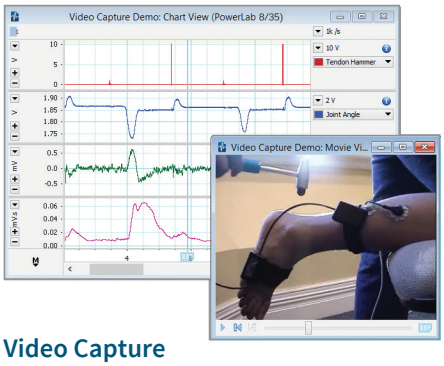
HRV

Analyze beat-to-beat interval variation in your ECG recordings. Can be performed during recording or on a previously recorded file.



Peak Analysis

Automatic detection and analysis of multiple (non-overlapping) signal waveforms from a recording. Use in real-time or with pre-recorded data.



Video Capture

Record and synchronize a movie with your LabChart data file. Compare any data point against the video, or vice versa.

Extend your research into new territories

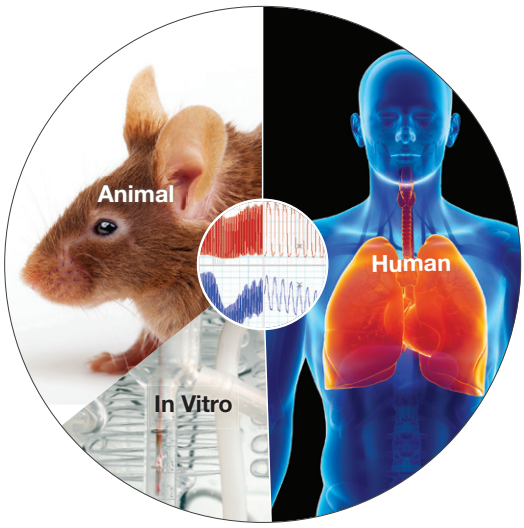
Please contact our expert support team to discuss a customized solution for the following applications.

Animal

Autonomic
Behavior, Sleep and Neuroscience
Cardiovascular
Telemetry
Tissue and Circulation

In Vitro

Electrophysiology
Isolated Organ



Human

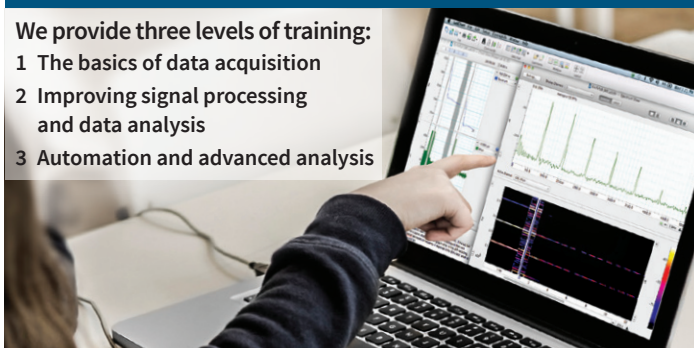
Autonomic
Cardiovascular
Exercise and Sport
Neurophysiology
Psychophysiology
Respiratory
Sleep
Speech Pathology
Tissue and Circulation

Maximize your potential

Join us for in-person training and workshops that help you learn best practice techniques and methods.
Visit adi.to/training to sign up for one of our upcoming live webinars, or access our archive of product demonstrations and application webinars on our website.

SOFTWARE TRAINING

We provide three levels of training:
1 The basics of data acquisition
2 Improving signal processing and data analysis
3 Automation and advanced analysis



PERSONALIZED TRAINING

APPLICATION WORKSHOPS

LIVE PRODUCT DEMONSTRATIONS

Support anywhere, anytime

Our global support system means that our expert team is always ready to help. For more information visit adi.to/support

Visit our website or contact your local ADInstruments representative for more information

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