



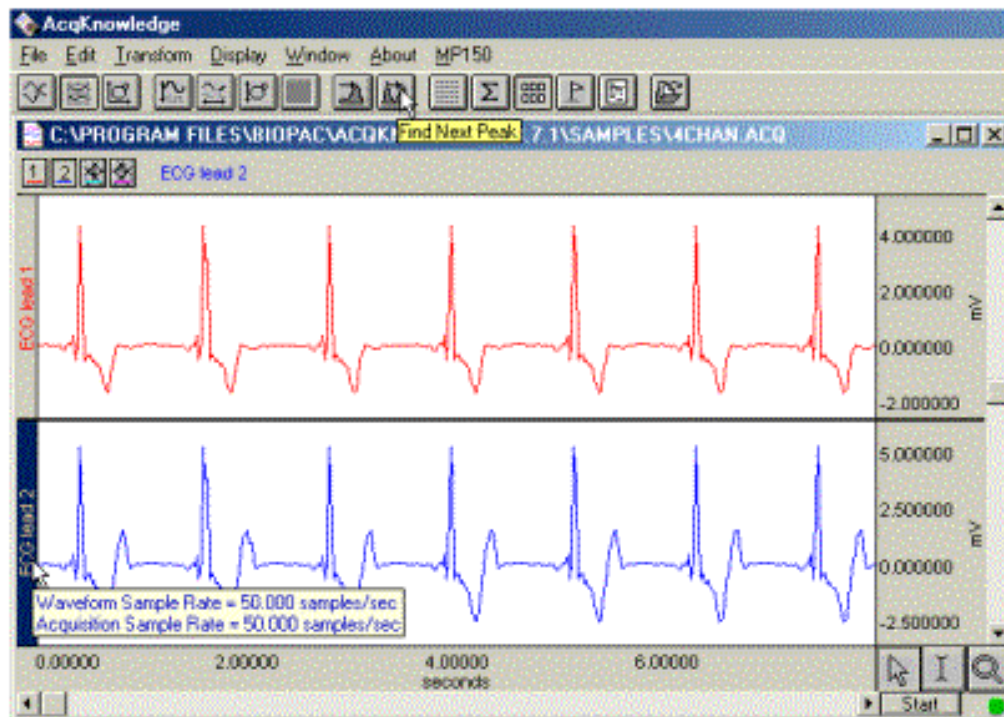
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Application Note AS-210

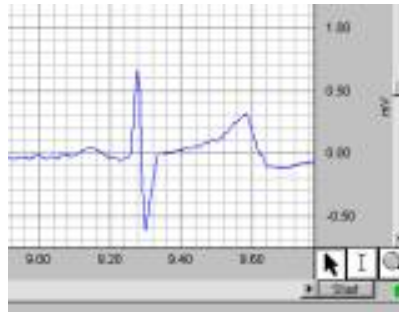
What's NEW for AcqKnowledge v3.7 Macintosh



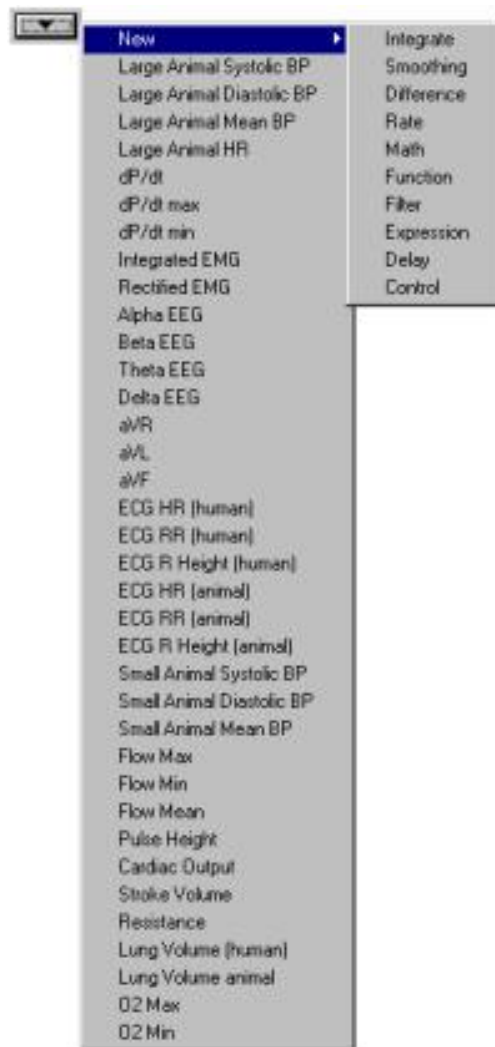
- AcqKnowledge 3.7 runs with the **MP100 or MP150 (high-speed)** acquisition unit.
- **USB** and **Ethernet** options — view and control systems across a network, work outside your lab!
- **Mac OS X Support**
 AcqKnowledge 3.7 can run under Mac OS X 10.0.4, the latest operating system available from Apple. Running under OS X allows AcqKnowledge to take advantage of advanced memory and multi-tasking capabilities provide a stable, responsive platform for advanced signal acquisition.
- **Variable sample rates**
 For analog and calculation channel inputs and stimulator output — record signals with unique sample rates and maximize storage efficiency. The Variable Sampling

Rate feature allows different channels of data to be down-sampled from the acquisition sampling rate. Choosing lower sampling rates for signals where meaningful data falls below the Nyquist frequency of the acquisition sampling rate allows more data to be stored in memory or on disk.

- **Customizable Grid options** help you optimize the display and print features. You can lock, unlock and customize the line style (width, color, solid/dashed).



- **Calculation channel presets**
For simplified setup and application-specific analysis. Presets are like “templates” that establish parameters, including channel-specific settings, for a broad range of analysis functions. They can be used as is or customized for a specific series or protocol—for example, human vs. small animal or stationary vs. exercising measurements.



- **Pause/Append when recording to disk**
Data can now be appended when acquiring to disk. You can also append to existing files—just open them, change the storage mode to “Append to Disk” and Start the acquisition.

- **Off-line Averaging Control Channel**

Average data in one channel, synchronized by another channel. Perform sophisticated averaging protocols (e.g. ERP studies, P300) when the synchronizing channels record the timing of different stimulus types. The SuperLab[®] system presents images and/or sounds during an experiment and simultaneously outputs digital pulses—use the digital channels to identify when different stimuli are presented. Use the Control Channel to identify when the pulse (image or sound) was presented. The Off-line Averaging function provides the average response to different types of stimuli.

- **Peak detection features**

New options for % of peak, mean, tracking threshold reference.

- **Measurement Validation**

You can validate measurements with the **ValidateMeasurements.acq** sample file that was included with the software. Pay attention to the “*Sample data file*” section of the measurement definitions and, where included, note which sample points to use for validation (i.e., use the first four sample points in the validation file to validate the Correlate measurement).

- **Display measurements as a graph.**

Find Peak includes an option to “Display measurements as graph.” As each measurement is calculated, the results are displayed as a new graph channel. This function provides a powerful way to summarize large data files for further analysis.

- **Template Save/Open utility**

Establish the software parameters and display settings required for your experiment, and then save the file as a Graph Template. Next time anyone needs to perform the experiment, they can just open the template file and click Start to repeat your established protocol. See the *Quick Start* template series for an array of existing applications.

- **Quick Start template series** — These ready-to-run experiments include all settings for specific applications...just open the graph template file and click on Start. *Quick Start* template files were installed to the Samples folder.

Quick Start Application	Features
Biomechanics	Gait Analysis, Range of Motion
Cardiovascular Hemodynamics	Noninvasive Cardiac Output Measurement, ECG Analysis, On-line Analysis Blood Pressure, Blood Flow, LVP
EBI Electrical Bioimpedance	Cardiac Output
ECG	On-line ECG Analysis, Einthoven's Triangle & 6-lead ECG, 12-lead ECG Recordings, Heart Sounds
EEG	Real-time EEG Filtering, Evoked Responses, Event-related Potentials
EMG	Integrated (RMS) EMG, EMG and Force

EOG

Nystagmus Investigation, Saccadic Eye Movements

Evoked Response

Event-related Potentials, Nerve Conduction Studies, Auditory Evoked response & Jewett Sequence, Visual Evoked Response, Somatosensory Evoked Response, Extra-cellular Spike Recording

Exercise Physiology

Respiratory Exchange Ratio, Noninvasive Cardiac Output

In vitro Pharmacology

Tissue Bath Monitoring, Pulsatile Tissue Studies, Langendorff & Working Heart Preparations, Isolated Lung Studies

NIBP

Psychophysiology

Plethysmography

Indirect Blood Pressure Recordings

Pulmonary Function

Animal Studies, Lung Volume Measurement

Psychophysiology

Autonomic Nervous System Studies, Sexual Arousal Studies

Remote Monitoring

Biomechanics Measurements

Sleep StudiesReal-time EEG Filtering, Multiple-channel Sleep Recording, On-line ECG Analysis, SpO₂ Analysis

- **Sound feature**

Generate an audio signal as a function of data values from any channel collected using *AcqKnowledge*. Volume level and frequency range are user controllable.

- **Channel identification system** highlights the active channel.

- **Marker summary to journal**

When “Paste Summary to Journal” is selected from the Marker popup menu, the Index, Time (axis info) and Label for all markers in the entire graph will be pasted to the Journal.

- **Sample rate mouse-over** shows the channel sample rate and the acquisition sample rate--which may be different--when Balloon Help is activated.

- **Measurement result display** mouse-overs show the full result precision and units.

- **Tool-tip mouse-overs** provide helpful hints...just move the cursor over a display feature to generate a descriptive tag.

- **Digital User Support System** — System Manual, Hardware Guide, Sample Files, etc. are available on the BIOPAC web site (www.biopac.com) and installed with the software as PDF files (requires the free Acrobat Reader). Open and search these support files while you are running *AcqKnowledge*.

- **Menu customization**

Configure the *AcqKnowledge* menus by turning off unnecessary items and saving the revisions. Application menu customization has a corresponding effect on contextual menus.

- **Zoom restoration**

Repeat Zoom selections without limitation until another Zoom function is performed. Functional for the Zoom tool, Autoscaling, and the Tile, Overlap, and Compare Waveform options.

- **New Keyboard Shortcuts**

Command “T” = Autoplot (toggles)

Command “-” = Zoom back

Command “+” = Zoom forward

- **PC File Compatibility**

Open and create PC-compatible Graph (*.acq) and Graph Template (*.gtl) files.

Variable sampling rate information and hardware settings are retained, and read/write PC Journal files.

- **Calculation Measurement Improvements**

Calculation measurements can be based on any other measurement and can include other Calculation measurements as operands.

- **Interpolated Measurements on Down-sampled Channels**

On a down-sampled channel, the cursor can fall on a point between physical samples. In such cases, some measurements will display interpolated values (using linear interpolation).

- **Multiple File > Open Selection**

Open multiple graph files in a single dialog by holding down the Shift key and selecting multiple files. The Command-A key combination will “Select All” files in the dialog.

- **Balloon Help**

Balloon Help is an online assistance feature to help novice users learn how to use *AcqKnowledge*. “Balloons” will be generated describing the software functionality of the item under the mouse. (MP100 and MP150, not supported on OS X.)

- **Contextual Menus**

When the *Contextual Menu Manager* is installed (usually on Mac OS 8.1 and above), the graph window has contextual menus (similar to right-click functionality on the PC) for Waveforms, Measurements, Marker, and Scroll. Control-click to access these menus.

- **Appearance Manager Compliance**

The *AcqKnowledge 3.7* user interface uses the Appearance Manager, which provides a System 8 Apple Platinum appearance throughout the program (grayscale 3D and grayscale outline), except when run under OS X native, which provides a blue translucent Aqua appearance. Measurement menus are tinted to match the color of the corresponding waveform.

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