

DSI TELEMETRY REVIEW SYSTEM



Powerful Analysis Tools for Dataquest A.R.T. Customers

Data Review is a powerful post-processing tool that allows DSI Dataquest A.R.T. customers collecting telemetry data to now have the ability to integrate with the following Ponemah post acquisition software modules:

- ECG Analysis
- Blood Pressure Analysis
- Left Ventricular Pressure Analysis

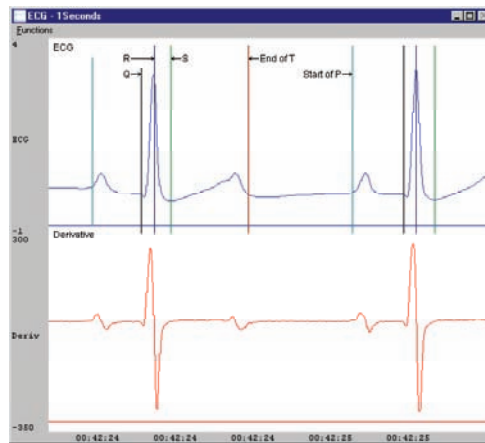
This bundled offering comes complete with the post system, providing customers with the ability to convert Dataquest A.R.T. files into the Ponemah readable format. See the last page for other available Ponemah “add-ons”.

The integrated conversion process is fast and easy to use. It allows you to choose the data you wish to convert and assign a species to it. Necessary protocol and review files are automatically created as part of the conversion process — allowing data analysis to begin once the conversion process is complete. These powerful features ensure analysis and manipulation of waveforms to be *accurate, automated and easy.*

Integrated. Flexible. Compliant.

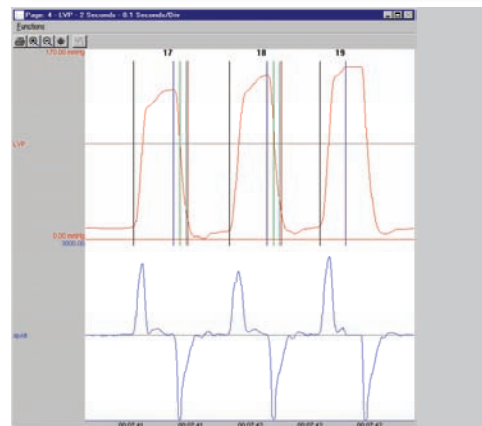
- Automatically Analyze Data
- Sort Numerical Data to Find Outliers
- Add, Move or Delete Validation Marks
- Update Derived / Calculated Data Instantly
- “PARSE” out Data at Desired Time Points
- Zoom/Compress Entire Waveform Data
- Add Notes, Events, jump through data and more
- Synchronize Waveform Data with Numerical Data
- Can use Data Security Option for GLP Studies

- Flexible processing of DSI Dataquest A.R.T. files
- Automated Beat to Beat Analysis
- Intuitive Data Review and Editing capabilities
- Compatible with Multiple Species
- Data ports directly to MS Excel® or MS Access®
- High Resolution Hard Copy Output



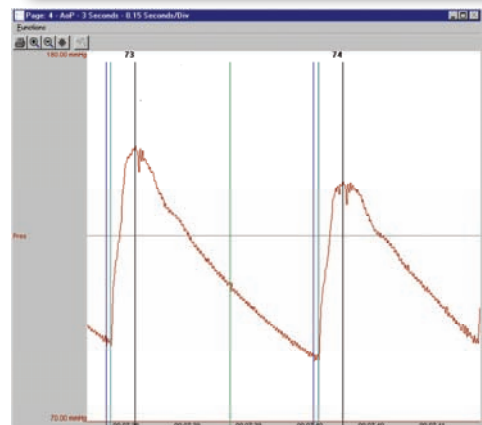
Multiple Lead ECG

Analyzes ECG signals and detects the presence of abnormalities on a beat-to-beat basis. Can analyze a single lead or perform cross-lead comparisons with superior noise detection and elimination.



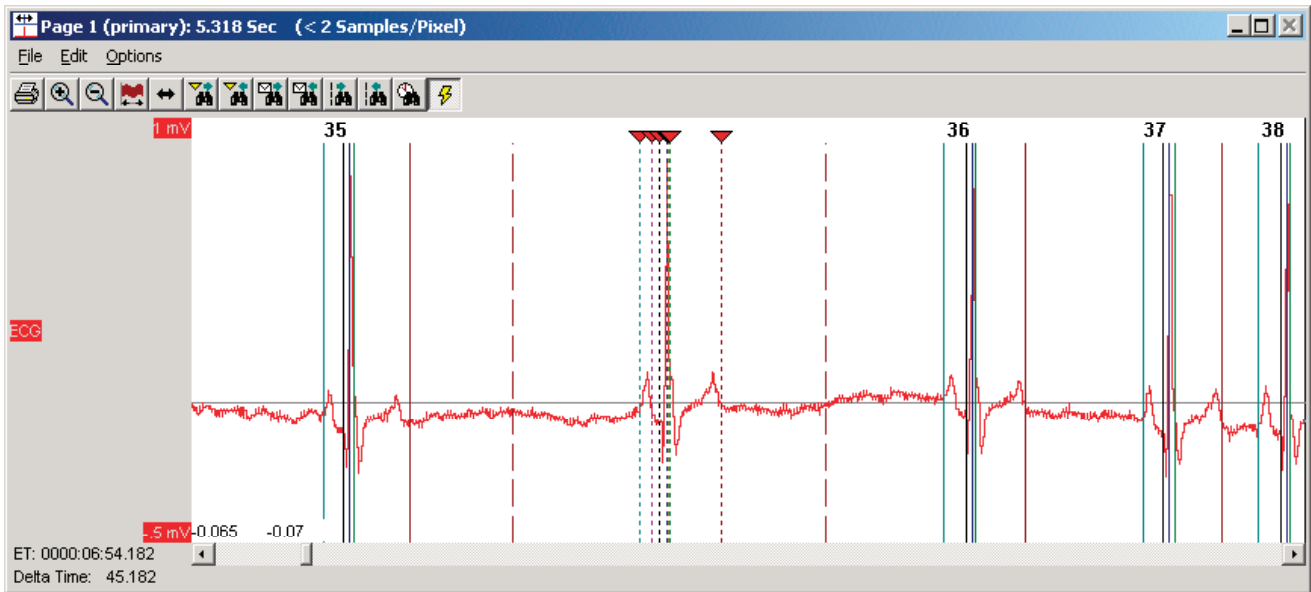
Left Ventricular Pressure

Designed specifically for the LVP morphology, the LVP algorithm analyzes pressure signals from the ventricle.



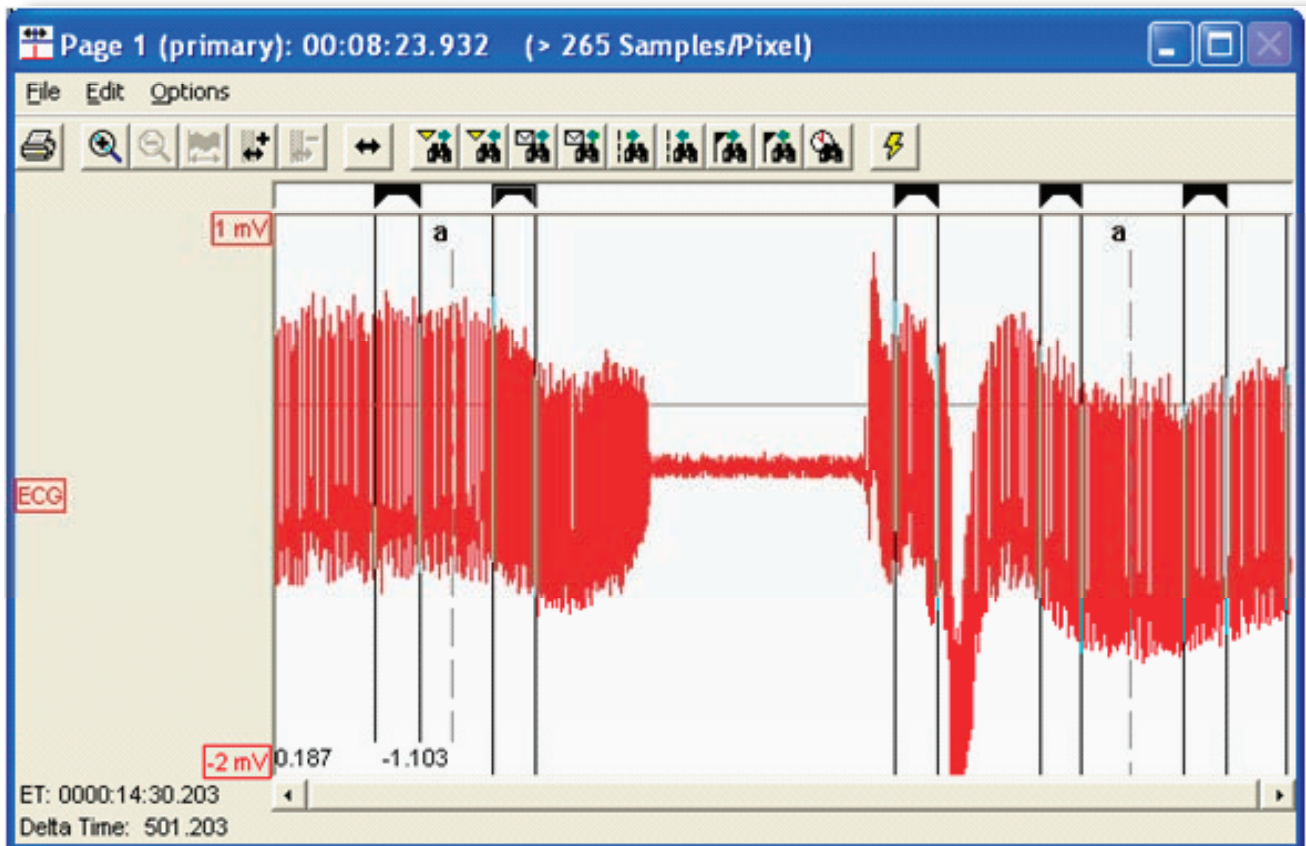
Blood Pressure

Analyzes both arterial and venous pressures and can derive values for the cardiac cycle on a per cycle basis.



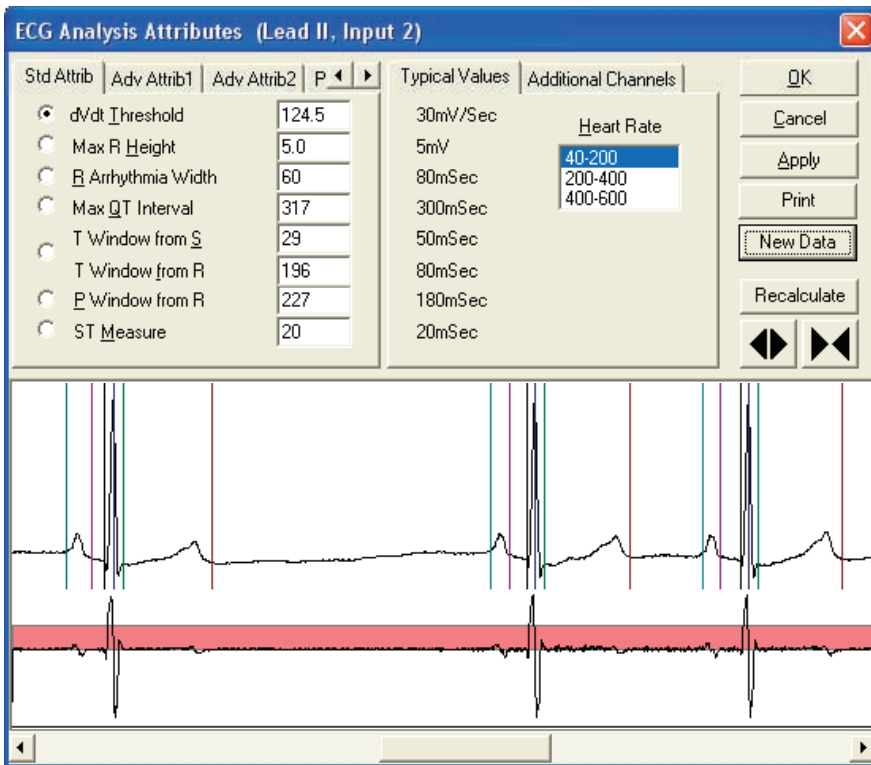
The Data Review feature permits Dataquest A.R.T. users (via Ponemah) to MANUALLY modify the AUTOMATED placement of validation marks on segments of waveform data while relying on the analysis software to calculate derived parameters

based on the edited validation marks. Data Parser further enhances Data Review by providing the capability to selectively “cut out” desired sections of data.



Once segments are selected, Parser View Mode allows the user to view all parsed segments on one graphics screen. Further complementing the graph-

ics, a new spreadsheet containing values (derived/calculated values such as HR, QT-Interval, etc.) only pertinent to the parsed segments is created.



Flexible Data Analysis

Ponemah analysis modules are flexible and are applicable to many animal models. The user can easily adjust the criteria the system utilizes for analyzing signals — which accounts for morphological changes from one animal to the another.

Graphics Displayed Your Way

User-definable graphic display windows are available and can be configured in one of the following formats: Primary, Trend, Scatter, Template Graph and Page View. The user can change the physical size of a window and move a window within the desktop area. Additional features exist in Review to allow for advanced manipulation of data. This includes selecting and dragging desired ranges of the numerical data to the graph page as well as removing outliers from calculations by simply selecting the desired points on a graph and electing to have these cycles removed.

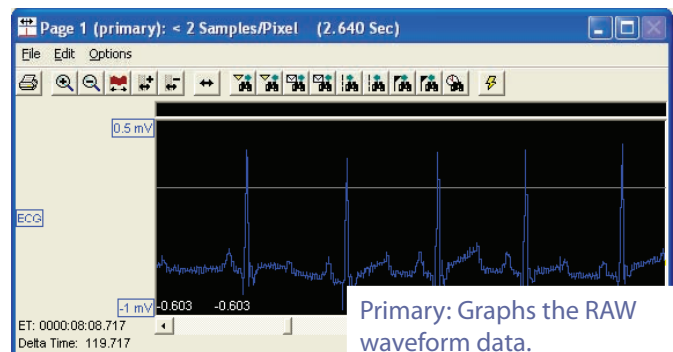
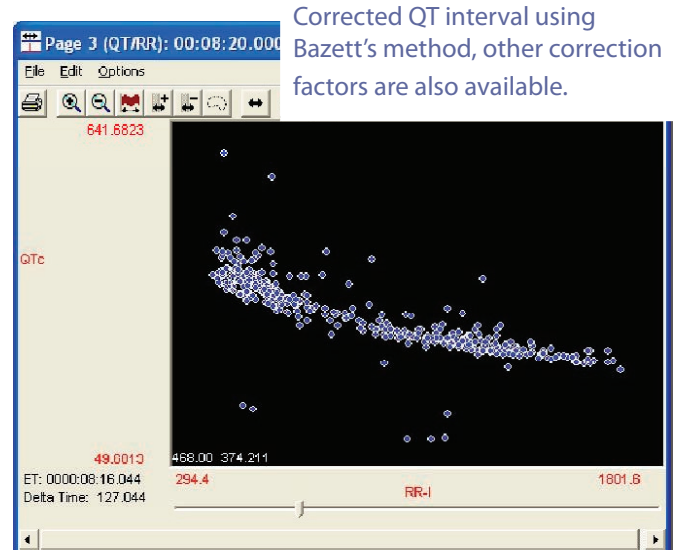
Primary Graphs - Displays the RAW waveform data.

Page View Graphs – The Page View Graph allows one signal to be wrapped across multiple panes allowing for a large number of complexes to be read. This is useful when performing a “qualitative” reading of the ECG signals.

Scatter and Trend Graphs – Displays derived / calculated values over time or plotted against one another.

Scatter: Allows two derived parameters to be plotted against one another. Review also enables outliers to be selected and removed from calculations in Scatter Mode.

Corrected QT interval using Bazett’s method, other correction factors are also available.



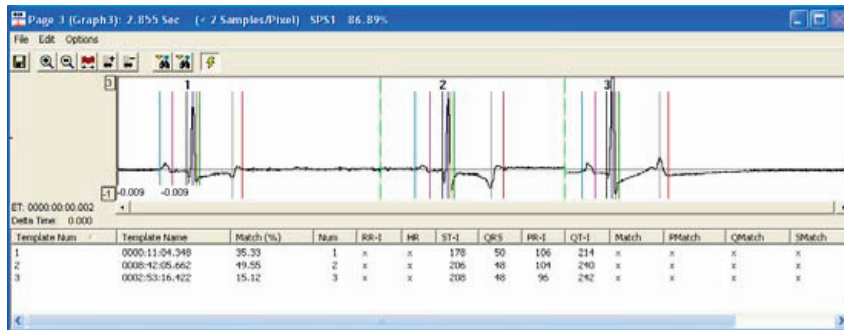
Add-Ons Available for Dataquest A.R.T. Users

ECG Pattern Recognition Option

With ECG PRO, researchers have even more ECG analysis options. Greatly reduce processing time via Ponemah ECG PRO template-based analysis as it allows the selection of one or numerous cardiac cycle templates which is used for precise comparison to other cycles in the dataset.

Take advantage of the speed and flexibility of analyzing regions of an ECG complex individually or in combination with other regions.

Save time because ECG PRO users have the ability to reanalyze only those cycles that did not match the previous round of analysis. Competing software requires the user to reanalyze the entire data set when they add a new template.



ECG PRO template library graph.

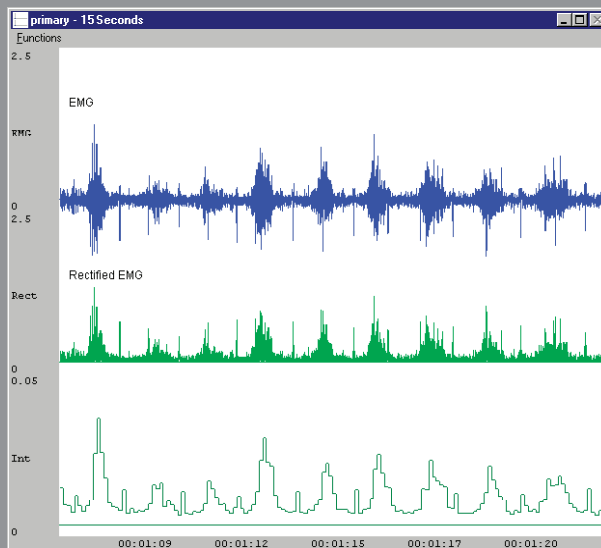
The ECG PRO feature is complemented by a Noise Detection enhancement to the standard ECG analysis. The Noise Detection feature provides a user defined threshold for the determination of "Bad" or "Noisy" data.

Electromyogram Module

The purpose of the Electromyogram Performance Analysis Module is to compute physiologically meaningful parameters from digitized EMG data.

The analysis functions by applying a series of logical tests to the digitized EMG signal using criteria selected by the user.

The graph shown represents a typical EMG signal, the Rectified Signal, and the Integral of the Rectified Signal as they would appear on the monitor. The integration period may be defined by the user.



Data Security Option

The Data Security Option (DSO) for the Ponemah System, allows the system to operate within FDA 21 CFR Part 11 regulations.

The DSO utilizes a Smart Card and Card Reader along with Microsoft® Windows XP and NTFS file structure to provide a high level of system security and data control. A customer assigned as a System Administrator initializes user Smart Cards and defines access levels unique to each Ponemah system. Individual users are then required to define their Personal Identification Number (PIN) and store a public/private key pair to the card. The key pair is required for authenticating authorship of generated data files.

Includes software, manual, card reader and 10 access cards.