WINDAQ Acquisition and Playback Software

DATAQ INSTRUMENTS

Disk Streaming and Real Time Display to over 200kHz

True Multitasking Operation

Record Up to 240 Channels

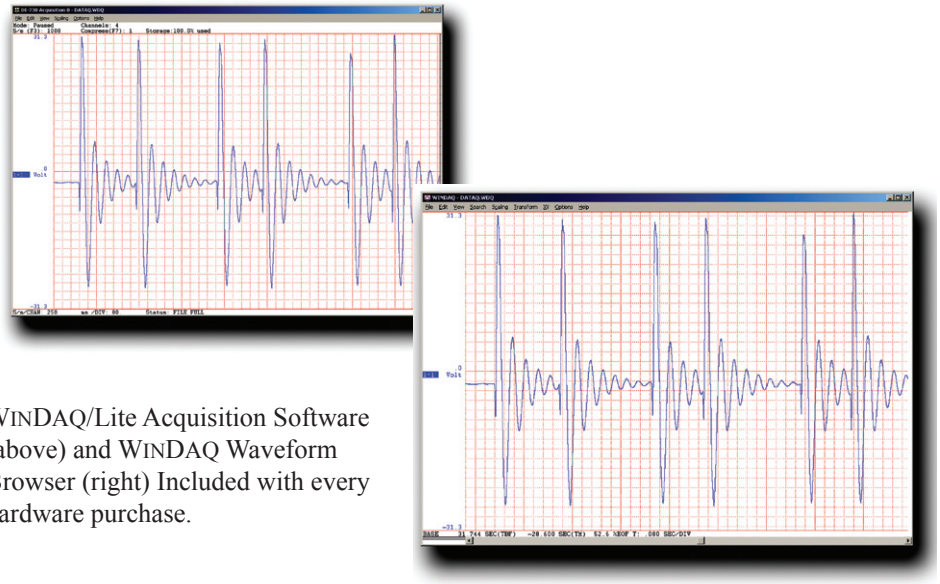
Built-In Data File Translator

Variety of Cursor-Oriented Time and Amplitude Measurements

The WINDAQ software package includes both WINDAQ Data Acquisition software and WINDAQ Waveform Browser playback and analysis software. WINDAQ/Lite (includes WINDAQ Waveform Browser and WINDAQ/Lite Recording Software) is free with any hardware purchase. See pages 2-3 for an explanation of just a few of the many features included in this extremely versatile and powerful software package.

WINDAQ Data Acquisition software offers real time display and disk streaming capabilities. The real-time display can operate in a smooth-scroll or triggered-sweep mode and can be scaled into any unit of measure. Event markers with comments allow annotation of data acquisition sessions with descriptive information while recording to disk. Raise productivity to new heights with WINDAQ's unique multitasking feature. Record waveform data to disk in the background while running any combination of programs in the foreground — even WINDAQ Waveform Browser to review and analyze data as it's being stored! WINDAQ/Pro+ is an enhanced version of WINDAQ/Pro that adds the ability to sample different channels at different rates.

WINDAQ Waveform Browser playback software offers an easy way to review and analyze waveforms acquired by WINDAQ Data Acquisition Software. The software's disk streaming design allows data files of any length to be graphically displayed rapidly, in normal or reverse time directions. Seven standard cursor-based measurements, and frequency domain and statistical analysis functions help simplify waveform analysis and interpretation. A data export feature allows any length of waveform data to be translated and reviewed by other applications, like Excel.



WINDAQ/Lite Acquisition Software (above) and WINDAQ Waveform Browser (right) Included with every hardware purchase.

Features

Exclusive Heads-Up Display

From 1 to 32 channels. Smooth scrolling or triggered sweep with level, slope, and source selections. Zero plot delay for true real time performance. Active to over 200,000 samples per second and during waveform recording to disk. Control plot speed independently of sample rate.

Multitasking Operation

WinDaq fully leverages Windows' (2000 and XP) multitasking capabilities to provide fully automatic foreground/background operation—even while recording data to disk!

Built-In Data File Translator

Exports and imports data files in a variety of data acquisition, spreadsheet, and analysis software formats. Also translates files stored in a variety of foreign formats, including DADiSP and ASCII.

Includes Frequency Analysis, Digital Filtering, X-Y Plotting, and Statistical Analysis

Calculates up to an 8,191 point DFT or 16,384-point FFT with 4 pre-programmed windows and on-screen power spectrum graphics. Allows you to graphically edit power spectrum for high-pass, low-pass, band-pass, and notch filters. Allows you to examine the relationship of one channel to another (X-Y) allowing X-Y excursions, instantaneous rate-of-change, 2-point and linear regression rate of change, and area bounded by curve. Reports more that 10 statistical variables over any waveform length with export capabilities.

Explaining the differences between WINDAQ/Lite/Pro/Pro+ Recording Software

WINDAQ/Lite Recording Software

WINDAQ/Lite is a version of WINDAQ/Pro that works at the full sample rate of the instrument for a single channel (excluding DI-148/158/71x products), but is restricted to a maximum throughput of 240 Hz when recording two or more channels.

WINDAQ/Pro Recording Software

WINDAQ/Pro features a sample rate that is only limited by the maximum sample rate of the hardware.

WINDAQ/Pro+ Recording Software

In addition to WINDAQ/Pro's features, WINDAQ/Pro+ allows you to tailor sample different channels at different rates. This is done by entering a sample rate divisor value (1 to 255) for each channel.

Hardware Supported

WINDAQ Waveform Browser supports all DATAQ Instruments hardware products.

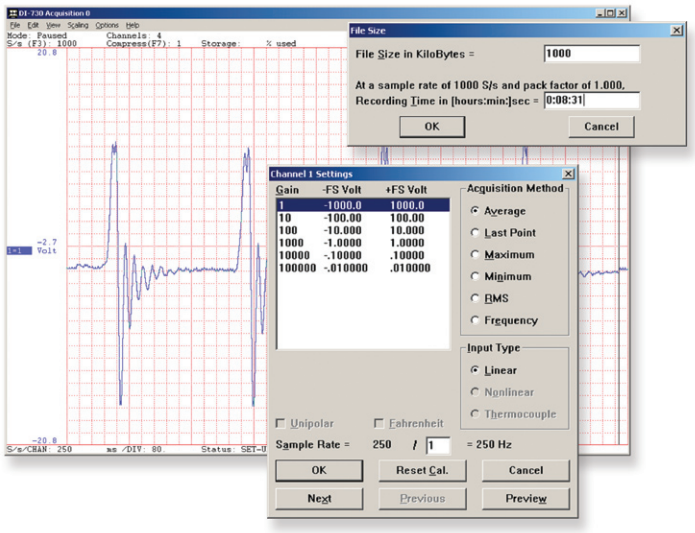
WINDAQ/Lite Recording Software supports all DATAQ Instruments hardware products.

WINDAQ/Pro and Pro+ Recording Software supports all DATAQ Instruments hardware products **except** the following models: DI-194RS, DI-154RS, DI-195B, DI-148, DI-158, and DI-71x products.

WINDAQ Recording Software

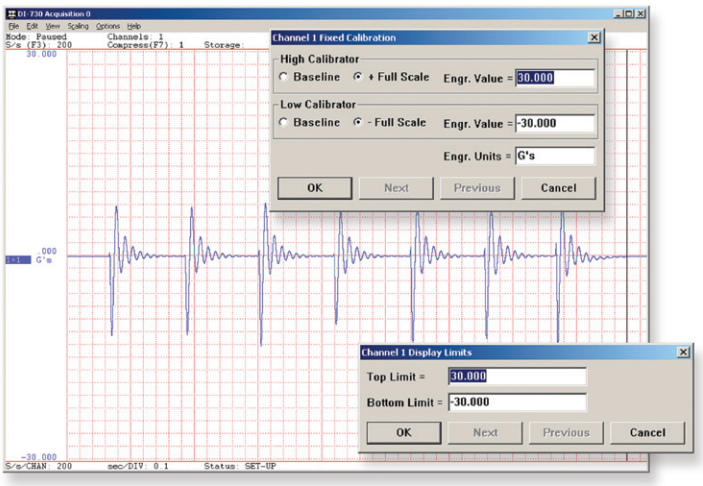
Setup

Double-click and enter the channels you want to acquire into the WINDAQ scan list. Click to select gain, signal averaging, true RMS, frequency, and peak or valley detection per channel. Click to define a single to 32-channel display — either triggered sweep (oscilloscope-like) or scrolling (chart recorder-like). Click again to define a sample rate ranging from less than one to 250,000 per second. With WINDAQ/Pro+ you can even define different sample rates on a per channel basis.



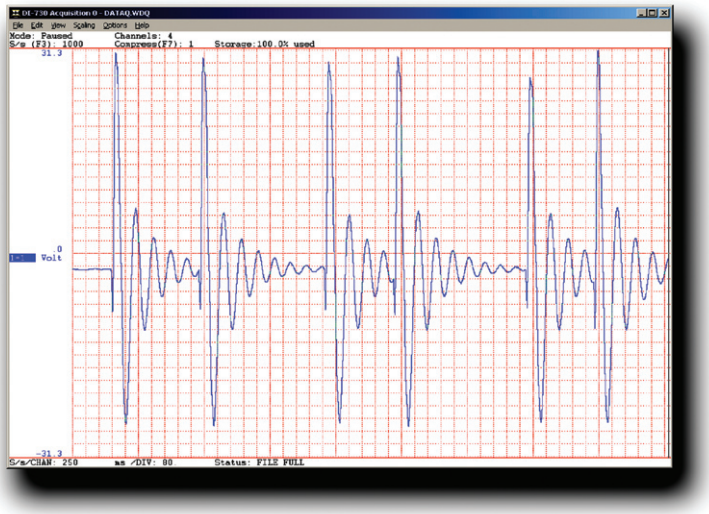
Calibrate

Define calibration per channel to display waveform values in meaningful units such as psi, °F or °C, amps, rpm, watts, horsepower — any unit of measure you need.



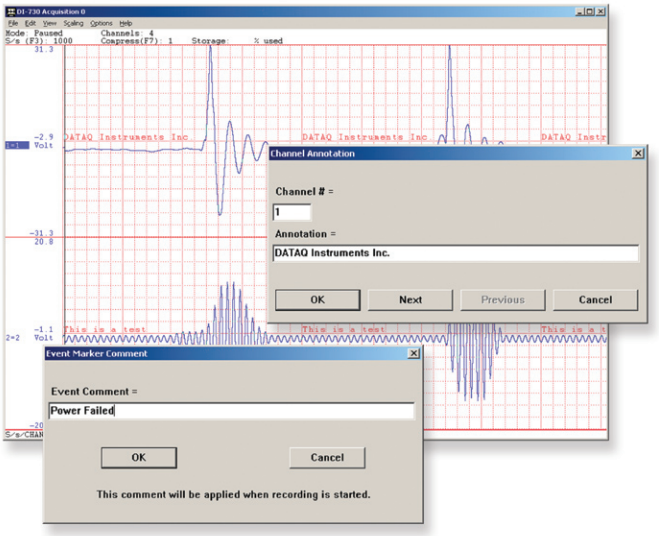
Record

Choose a continuous waveform recording mode or the triggered mode with selectable trigger level, slope, and pre- and post-trigger times. WINDAQ automatically time- and date-stamps, then streams acquired data to disk — record as much data as you need. At the same time, WINDAQ supplies a real-time graphical display of any or all channels so you always know where you are and where you're going.



Annotate

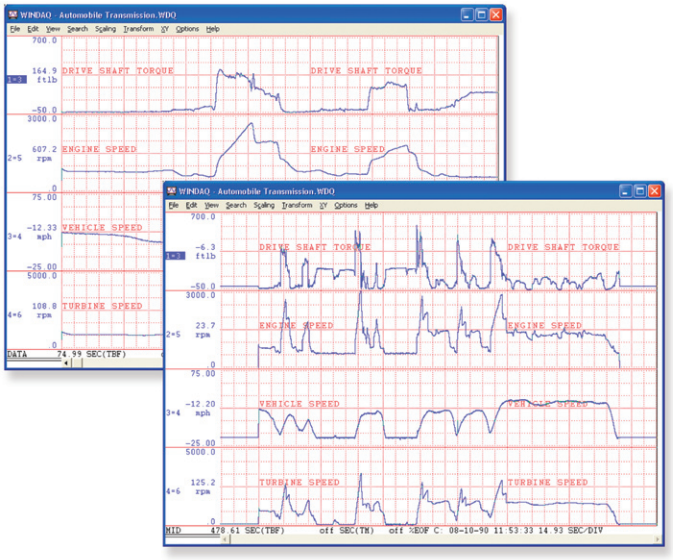
Of course, you can label any channel with text that describes it — "Motor 1," "Engine speed," "Vertical position," etc. But WINDAQ also allows you to supply commented event markers while you record — "Beginning test phase 1," "Small vibrations noticed," "Starting cool-down cycle," etc. Your comments and our acquired data combine to form a complete diary of your data acquisition session.



WINDAQ Playback Software

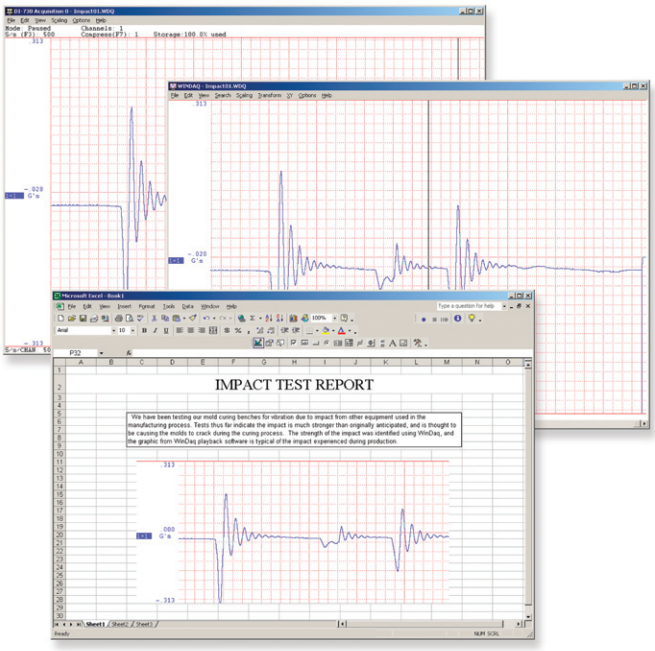
Playback

Recording is only half the solution. WINDAQ's Waveform Browser playback software allows you to graphically manipulate waveforms in ways you've never seen on a PC. Compress an entire recording to one screen-width for a bird's eye view, then expand around an area of interest for a closer look. Use the cursor to measure amplitudes and timing with precision. Move to any event marker with the click of a mouse button.



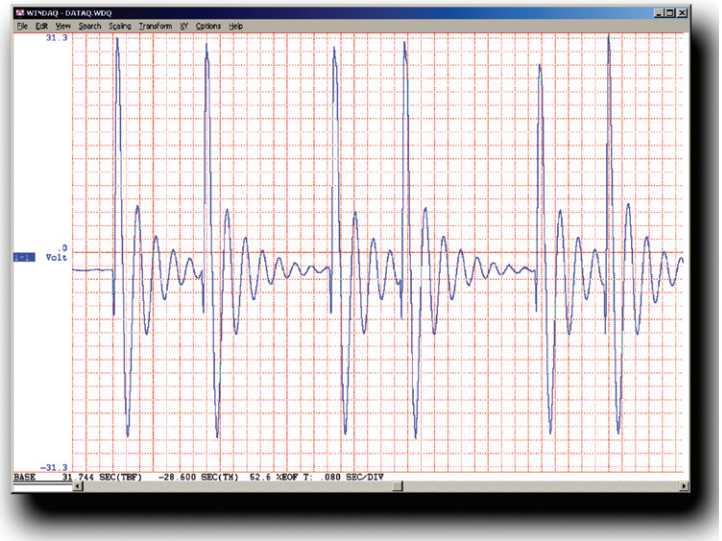
Multitask

Double your productivity and let WINDAQ record while you review last week's results from your spreadsheet, or compose a memo with your word processor. You can even play back data already stored to disk while you're still recording.



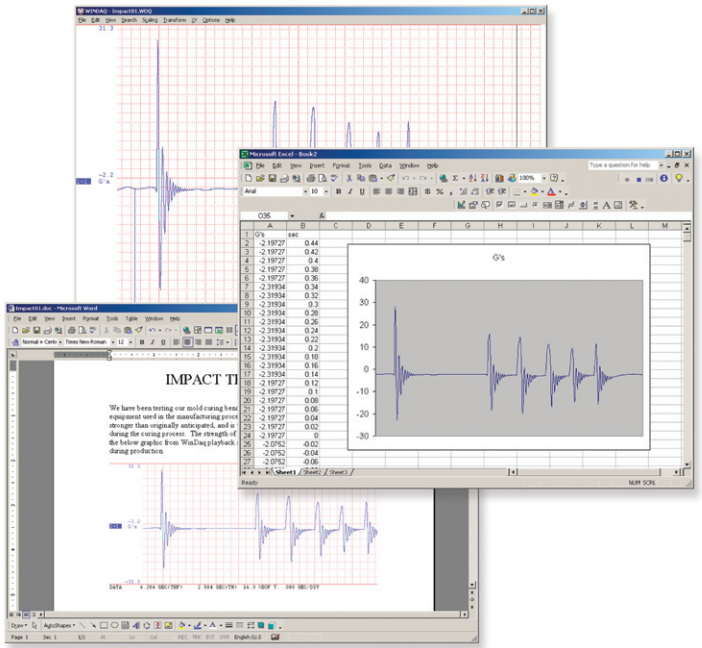
Analyze

Waveform interpretation is easy with our built-in analysis functions. Apply frequency and filtering analysis with the WINDAQ Waveform Browser FFT and DFT functions. Analyze any range of waveform data with the statistics function. Use X-Y plotting to examine the relationship of one channel to another. Extended analysis functions allow waveform peak detection, integration, differentiation, arithmetic operations, and more.



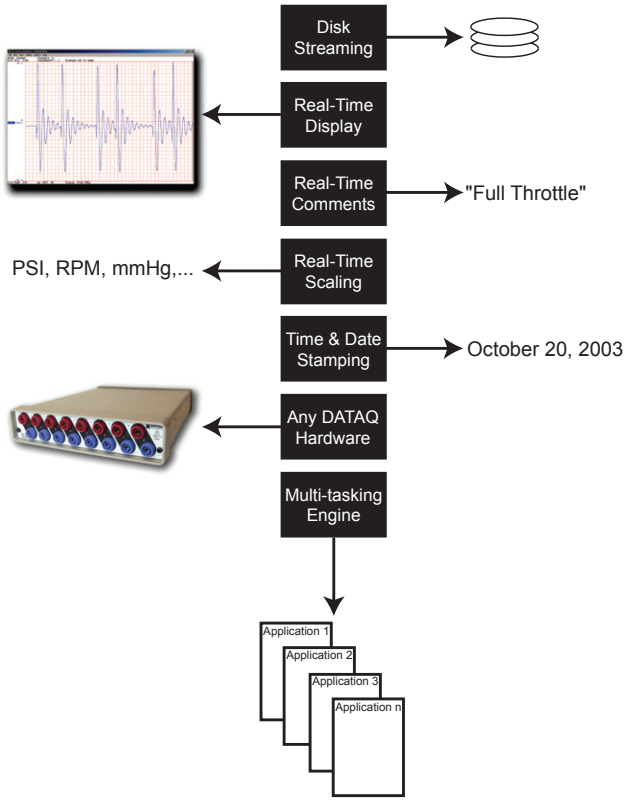
Export

The WINDAQ Waveform Browser can export any range of data to your spreadsheet, or any other analysis or presentation package you use. You can even copy a graphical image displayed by the WINDAQ Waveform Browser and paste it directly into a word processing document. Finally, export any range of waveform graphics to your printer for a hard copy record.

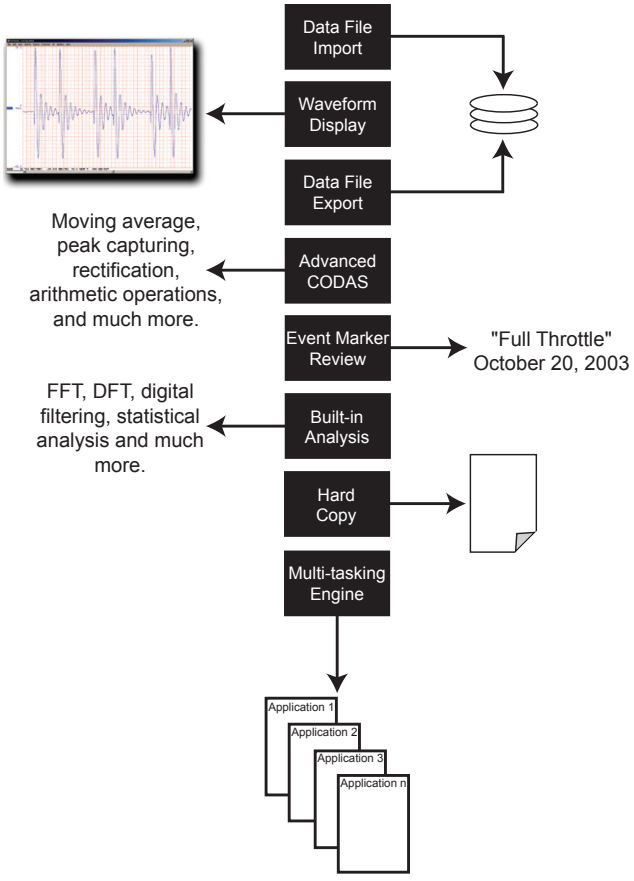


Block Diagrams

WINDAQ Acquisition Software



WINDAQ Playback Software



Specifications

Hardware and Software Requirements	Windows 2000 or XP PC with 300MHz processor and 128 MB RAM.
Help Facilities	Built-in context-sensitive help facility supporting HLP and CHM.

Disk and Display (Acquisition Software)

Maximum continuous throughput to disk:	**WINDAQ/Lite:** 240 Hz throughput for all instruments. To the maximum limit of the hardware for a single channel. **WINDAQ/Pro and Pro+:** The maximum limit of the hardware.
Maximum continuous real-time display throughput:	Hardware Dependent (PC and data acquisition instrument).
Waveform Display Modes:	Continuous smooth-scrolling; freeze; triggered and non-triggered sweep. Dot-joined at all sample rates.
Display Trigger Conditions:	Selectable ±slope, level, and source.
Waveform Compression:	Allows display rate to vary independently of sample rate. Compression factors of 1 (no compression) to 9,000.
Number of displayed channels:	1 to 32
Number of acquired channels:	1 to 240
Display formats:	Overlapping (2 channel max) and non-overlapping.
WINDAQ/Pro+ ONLY:	Allows variable sample rates on a per channel basis.
Maximum Data File Size:	4GB

Waveform Display Scaling (Acquisition Software)

Screen scaling:	Waveform expansion, contraction, and offset per channel.
Engineering Units Conversion:	Scale and offset applied to each channel as y=mx+b.
Software selection of:	Amplifier gain and input configuration (for hardware products supporting programmable gain).
Grid Scaling:	Allows each displayed channel to be scaled between user-defined limits.
Hard Copy (Acquisition Software)	Supports print screen hard copy in the background regardless of disk streaming activity.

Event Marker and Time and Date Stamp (Acquisition Software)

Event Marker Operating Modes:	Asynchronous manual or remote activation with or without comments.

Maximum number of commented event markers per file: 8,184

Time and Data Stamping:	Automatic for acquired data and event markers.

Programmability (Acquisition Software)

Hardware-dependent software selection of:	Amplifier gain, unipolar or bipolar, single-ended, differential, or thermocouple per channel. Additionally, WINDAQ/Pro+ allows software selection of sample rate per channel.
Data Storage Format (Acquisition Software)	16-bit, 2's complement binary data with header and trailer information.
Toolbox (Acquisition Software)	Provides a toolbox of icons used to make setup fast and virtually effortless and to otherwise customize a recording session.
Waveform Search Feature (Playback Software)	Allows you to immediately go to a specific part of the data file based on range or date and time. Specify a range of data for the search and immediately jump to the next or previous data point occurring inside or outside the range. Specify a time and/or date and immediately jump to that position in the file.
Analog Waveform Playback (Playback Software)	Allows you to output previously recorded data in analog form to a speaker, LED, chart recorder, etc. for all hardware products supporting a printer port interface.

Waveform Display (Playback Software)

Number of displayed channels:	1 to 29
Number of supported channels:	240
Display formats:	Overlapping and non-overlapping
Compression:	Allows compressed view of displayed waveforms with compression factors of 1 (no compression) to whatever factor is required to compress the waveform to one screen-width.
Display Modes:	Y vs. t; frequency vs. amplitude.
Event Marker Display:	Displays even marker number, time and date of activation, and supplied comment in special display window (applies only to waveforms recorded with WINDAQ).

Waveform Measurement (Playback Software)

Single-point cursor-oriented measurements (Y vs. t):	Amplitude measurements per channel in calibrated units; elapsed time; time and date at cursor (applies only to waveforms recorded with WINDAQ).
Dual-point cursor-oriented measurements (Y vs. t):	Time measurements on the same or across different channels; D%; Y-value difference; two-point slope (d/dt); number of samples; Hz; cycles per minute.
Cursor-Oriented measurements (freq vs. amplitude):	Frequency vs. db; Frequency vs. magnitude (in engineering units).

Waveform Analysis (Playback Software)

Statistical Calculations:	Min; max; standard deviation; mean; median; sum; sum-of-squares; skewness; rms; least squares differential; area bounded by curve.
Statistical calculation range:	Unlimited.
Fourier transform calculation ranges:	32 to 16,384 points (FFT) 2 to 8,191 points (DFT)
Selectable FFT windows:	$\sin^2$; Hamming; Bartlett; Blackman.
Inverse Fourier Transform Range:	2 to 16,384 points. Time domain waveforms are inserted into display windows as calculated channels.
X-Y plotting calculations:	Area bounded by curve; instantaneous rate of change; 2-point rate of change; regression rate of change; max X and Y excursions; time measurements on the same or across channels; amplitude measurements per channel in calibrated units; elapsed time; time and date at cursor.

File Management (Playback Software)

Maximum data file size:	Unlimited.
Supported data file export translators:	WINDAQ (CODAS) format to any spreadsheet (CSV), DADiSP, general purpose binary, and ASCII.
Supported data file import translators:	Any spreadsheet (CSV), DADiSP, CODAS, ASCII, and binary integer/real to WINDAQ (CODAS) format.
Data file translator range:	Unlimited.
Data file format:	16-bit binary with data file header and trailer.

Waveform Hard Copy (Playback Software)

Type:	Print screens and continuous form.
Continuous form hard copy:	Generates an unlimited length of continuous hard copy of any combination of channels.
Supported printers:	Any supported by Windows.
Supported printer resolution:	Printer-dependent.

Ordering Guide

Description	Order No.
WINDAQ/Lite Acquisition and Playback Software FREE data acquisition and playback software limited to 240 maximum throughput rate.	WINDAQ/Lite
WINDAQ/Pro Acquisition and Playback Software Full-featured data acquisition and playback software.	WINDAQ/Pro
WINDAQ/Pro+ Acquisition and Playback Software Full-featured data acquisition and playback software with added feature of sampling different channels at different rates.	WINDAQ/Pro+

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