

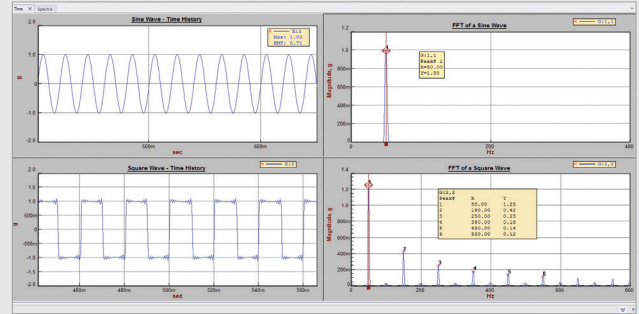
FFT Analysis

DP930-10

The Fast Fourier Transform (FFT) converts dynamic signals from the time domain to the frequency domain, enabling engineers and technicians to analyze and understand signal frequency content

Used extensively in industries such as aerospace, automotive, defense, power & process, and manufacturing, the FFT serves as a primary tool for applications where vibration and other dynamic measurements are made including:

- acceptance testing
- model validation
- vibration surveys
- troubleshooting and diagnostics

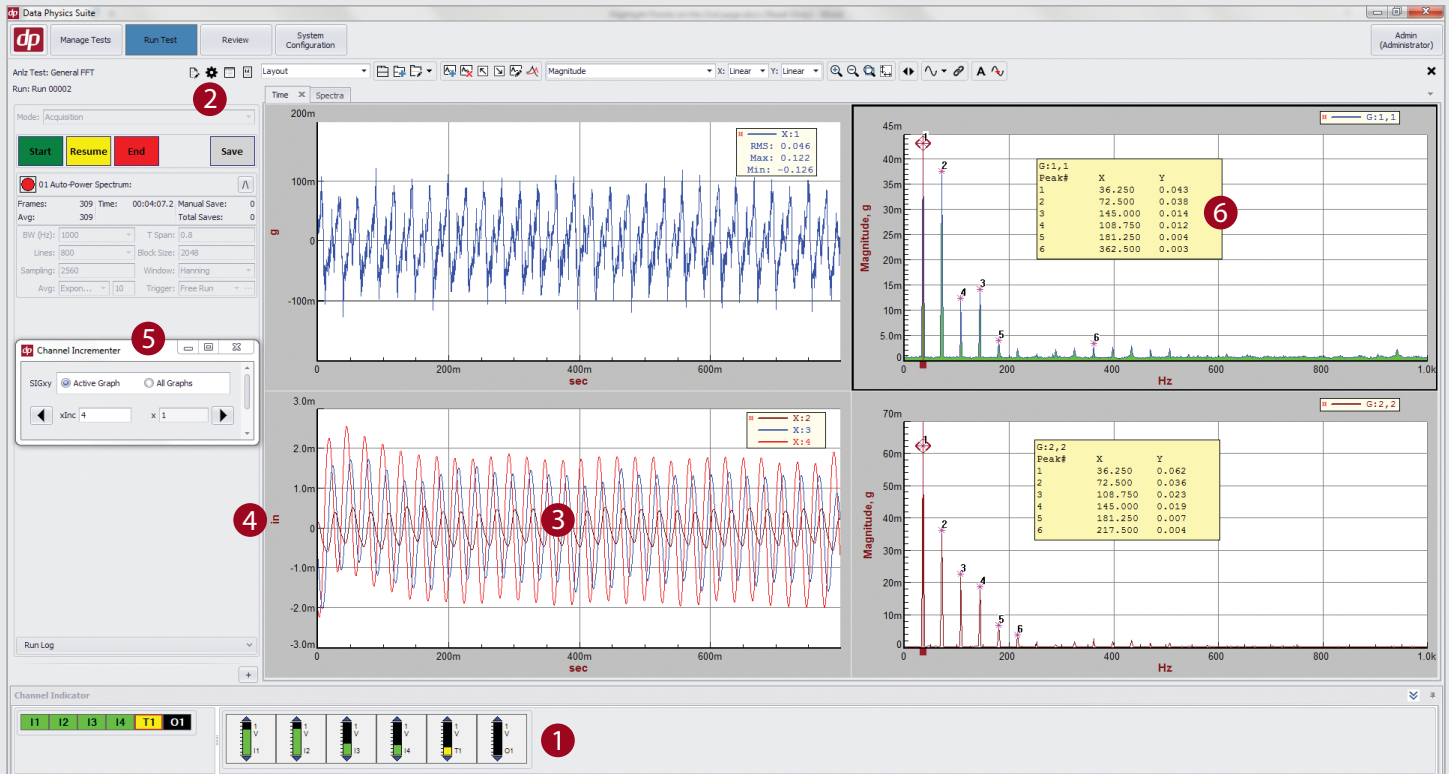


Features and Benefits

Providing a valuable set of fundamental measurement capabilities, the FFT Dynamic Signal Analysis package with 900 Series hardware delivers a powerful range of functions for fast, accurate, and easy-to-use time and frequency domain measurements.

Feature	Benefit
Hardware and Network Connectivity	
Form factor	Rugged, lightweight, and portable for field applications
Standalone operation	Data capture and storage without a PC
Sampling rates up to 216 kSamples/sec	Up to 100 kHz Fmax useable bandwidth
Up to 51,200 lines of resolution	Isolation of closely spaced frequency content values
High dynamic range (up to 140 dB)	Effective measurement of low amplitude (mV) signals
Synchronized acquisition to within 40 nS	Exceptional phase-match for large tests
Real-time data processing	Data sampled, re-sampled, processed, and stored "live"
Measurements	
Time domain acquisition	Waveform capture and storage for each measurement
Linear Spectrum, Auto Power Spectrum, and Power Spectral Density (PSD)	Live and averaged spectral measurements in different formats
Rectangular, Hanning, and Flat Top windows	Minimized spectral leakage as needed for the application
Triggering	Input, source, and tach triggers for versatile data capture
Zoom Analysis	Resolution of closely spaced frequency components
User Signals	Comparative visual reference or limit lines
Synthesized Octave Analysis	Octave bands with A,L weighting
Transfer Function, Coherence, and Export to ME'scope	Complete solution for modal analysis application
Synchronous Average	Isolation of synchronous content such as with rotating machinery
Correlation	Quantified similarity of two signals
Output waveforms	Sine, Random, Burst Random, Swept Sine, Chirp, Pink Noise, and Thump
Convenient Options	
Multi-Measurement (DP930-81)	Simultaneous execution of multiple test setups
Math Channels (DP930-80)	Custom channels for live display of math operation results

Efficient Testing, Analysis, and Reporting



1 Channel Indicators

Easily monitor signal strength across all channels; green indicates good, yellow indicates low, and red indicates overload.

2 Compatible Export Options

Export data to Excel/Ascii, Matlab, UFF, MEscope.

3 Review and Overlay Signals

Compare and contrast signals from different Tests/Runs/Saves; construct Waterfall plots from individual saves in Review mode.

4 Integration and Differentiation

Compute velocity or displacement from acceleration, and vice-versa; optional High-Pass Filter before Integration is available.

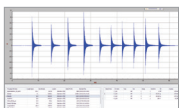
5 Channel Incrementor

Conveniently increment current graph or all graphs to the next set of channels.

6 RMS and Peak Value Displays

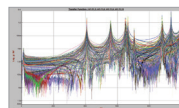
Annotate graphs with important data values; copy all data on the graph or just Peak values to paste into Excel.

Related Applications



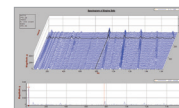
Recording and Playback Analysis DP930-23

Record data up to 200 k samples/second simultaneously with real-time measurement or control



Structural Analysis DP930-10, -11

Acquire and analyze data to characterize a structure in terms of its frequency, damping and mode shapes



Waterfall Analysis DP930-25

Acquire and analyze multiple FFTs with fixed frequency span, paced at delta time intervals to create a three-dimensional view of frequency content variation over time

NOTE: Continued product improvement necessitates that Data Physics reserves the right to modify these specifications without notice.