

900 Series

Dynamic Signal Analyzers

Introducing the New Data Physics 900 Series Dynamic Signal Analyzers

The Data Physics 900 Series Dynamic Signal Analyzers integrate comprehensive signal analysis capabilities with a new distributed real-time signal processing engine to provide extraordinary dynamic testing capabilities. Compact and rugged, the 900 Series hardware is designed for demanding field applications. With a modular, gigabit Ethernet architecture, the 900 Series can be expanded to over 1,000 channels for laboratory use.

The 900 Series Dynamic Signal Analyzer offers signal analysis solutions for a wide range of dynamic testing applications:

- General FFT Analysis
- Data Acquisition and Waterfall Analysis
- Throughput Recording & Playback Analysis
- Structural Analysis
- Acoustic Analysis
- Rotating Machinery Analysis
- Environmental Test Data Analysis



Simplified Test and Analysis

The new SignalCalc 900 Series software makes the process of defining a test, making measurements, analyzing data and generating high-quality reports easier than ever before.

- Manage tests and data using the built-in relational database
- Streamline testing by running multiple simultaneous real-time measurements
- Define custom real-time signal processing functions using mathematical operations, including, integration, differentiation, addition, subtraction, multiplication, division, matrix operations, filters (low pass, high pass and band pass), Fourier Transform, Inverse Fourier Transform
- Generate high-quality custom reports

Modular, Scalable Hardware

The new Abacus 900 Series hardware platform is a powerful, real-time, distributed digital signal processing system. The gigabit Ethernet network architecture allows the systems to be used independently or combined to create larger systems with over 1,000 channels. Systems are comprised of channel cards with up to six channels per card. Two channels on each card are reconfigurable by the user as inputs, outputs or tachometers allowing the system to be configured as needed for each test.

- Up to 216 kSamples/s for 80 kHz of alias-free bandwidth
- 24-bit analog-to-digital conversion with up to 150 dB dynamic range
- Channel-to-channel phase accuracy of better than 0.5 deg at 40 kHz



Model 901

The 901 is an ultra portable system with six input channels that is well-suited for field use. Multiple 901 systems can be combined for larger tests. Passive cooling eliminates fan noise for acoustic applications.

- Up to 6 channels, 2 channels reconfigurable as input, output or tachometer
- Multi-chassis synchronization, up to 100 m between chassis, accuracy to 40 nsec
- Power over Ethernet



Model 906

The 906 is a compact, rugged, system that can be used for both laboratory and field applications. The 906 can be configured with up to 36 channels per chassis and multiple chassis can be combined to create systems with over 1,000 channels.

- Up to 36 channels per chassis (6 card slots), expandable
- Up to 6 channels per card, 2 channels per card reconfigurable as input, output or tachometer
- Multi-chassis synchronization, up to 100 m between chassis, accuracy to 40 nsec

900 Series Specifications

Inputs

- ADC Resolution: 24 bits Sigma Delta
- Sample Resolution (Digital Filtering/Processing): 32 bits floating point
- Maximum Sampling Frequency: 216 kSamples/s
- Coupling: AC/DC, DIFF/SE, ICP, TEDS
- Input Impedance: 1 MOhm + 1MOhm (DIFF), 1MOhm + 50 Ohm (DIFF)
- Digital Anti-Alias Filter: -100 dB (0 to 40 kHz), -90 dB (40 to 90 kHz)
- Analog Anti-Alias: 3 poles
- Dynamic Range: 120 to 150 dB
- Input Ranges (Volts): 0.1, 0.31, 1, 3.1, 10, 31

Outputs

- DAC: 24 bits Sigma Delta
- Sampling: up to 216 kSample/s
- Ranges: 1V, 2V, 5V, 10V; FE: SE
- Output Current: 10 mA
- THD: 90 dB
- Reconstruction Filter: 100dB Stop Band

- CMMR: 60 dB
- Max Voltage: 80 V max/1 MOhm; 5 V max/50 Ohm
- Amplitude Accuracy: +/-2%FS at 1 kHz for 15 deg < T < 55 deg
- Frequency Response: +/- .5% 0 to 40 kHz; +/-1 % 0 to 90 Hz
- Phase Accuracy: 0.5 deg at 40 kHz
- THD+N: 90 dB min @ 1kHz
- Offset: +/- 0.1FS, less than 3 mV
- Crosstalk between inputs: -90 dB
- Crosstalk between inputs: -90 dB; between inputs and outputs: -90 dB
- Frequency Accuracy: 25 ppm

Tachometers

- Input Ranges: .1 V to 31 V Max
- 80 V Max Protected
- FE: AC/DC/DIFF/SE
- Signal Frequency: DC to 500 kHz
- Adjustable: Threshold, Hysteresis, Hold-Off, Pre-Scaler

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