

SRS Analysis

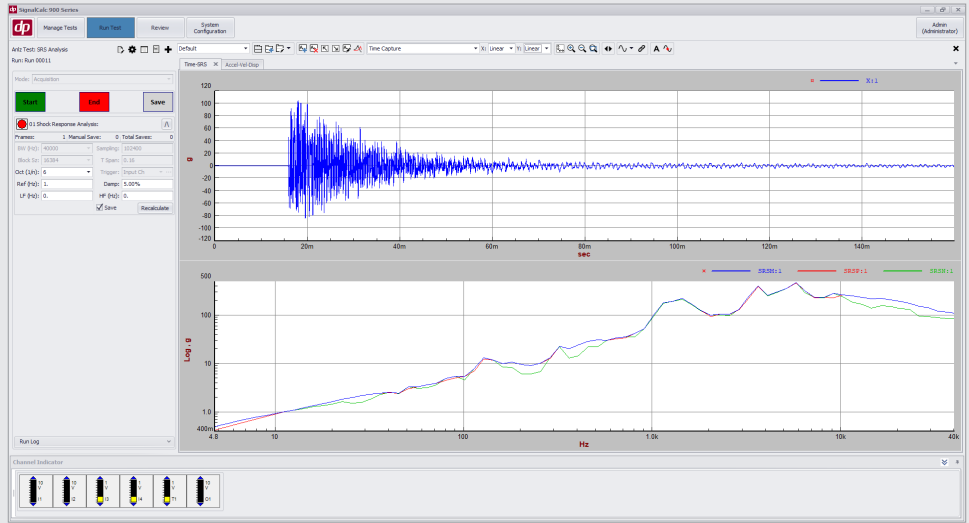
DP930-28

SRS Analysis is typically used to acquire transient data and analyze it using Shock Response Synthesis techniques. This type of spectrum analysis is applied to transient data to ascertain the survivability of equipment subject to transient excitation. It is most commonly used for seismic or pyrotechnic shock analysis.

Shock Response Synthesis characterizes shock data as the equivalent peak response of single degree of freedom (SDOF) systems to a base input. The natural frequencies of these systems are

distributed in a 1/Nth Octave manner (with resolution choice of full Octave to 1/24th Octave), and their equivalent viscous damping factor may be selected to be anywhere between 0.01 and 100 percent of critical damping.

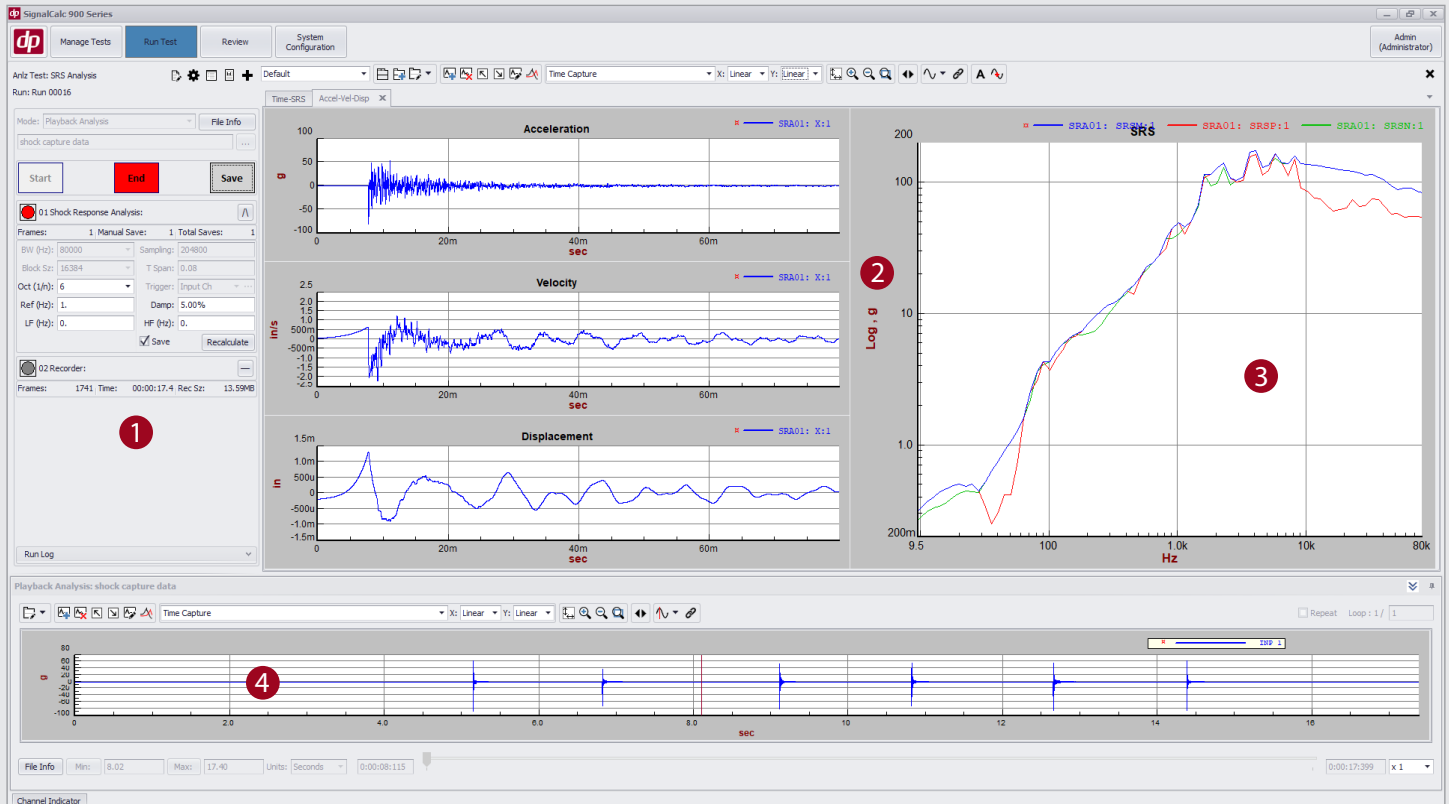
A single transient online capture may be analyzed multiple times using different damping factors, spectral resolution and filter placement, as desired.



Features and Benefits

Feature	Benefit
Sample rates up to 200 kHz	Accurate measurement of high frequency shock events
Input ranges up to 30 volts	Capture high amplitude shock events without clipping the input signal
High quality linear phase filters	Eliminate distortion of transient signals due to filtering
User selectable SRS analysis parameters and SRS type (maxi-max, primary positive, primary negative, residual positive, residual negative, and composite), octave spacing and percent critical damping	Comprehensive SRS analysis capabilities ensure that the required analysis functions are available for a wide range of shock test from seismic to pyrotechnic shock testing
Integration/differentiation of captured signals	Display data in acceleration, velocity and displacement
Recording and Playback Analysis option	Record shock data and individually trigger and analyze individual shock events within the recording
Simultaneous multi measurement option	Combine SRS analysis with other measurement types like auto power spectrum to streamline data acquisition and analysis

Comprehensive Shock Measurement and Analysis Tools



1 Test Control

Set triggering and measurement parameters from the data capture screen. SRS parameters can be changed and recalculated on the fly.

2 Live Data Display

View time and SRS data. Integrate and differentiate to display acceleration, velocity and displacement.

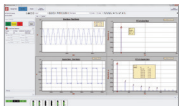
3 SRS Analysis

Positive, Negative, and Maxi-max Shock Response Synthesis signals with user-specified nth octave spacing and % critical damping.

4 Playback Analysis

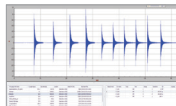
individually trigger and analyze individual shock events within time data recordings.

Related Applications



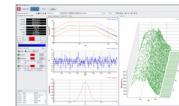
FFT Analysis DP930-10

Acquire and analyze data using auto and cross spectrum, transfer function, auto and cross correlation, histogram, and synchronous averaging



Recording and Playback Analysis DP930-23

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



Multi Measurement DP930-81

Streamline complex testing requirements by combining multiple analyzer measurements or by adding analyzer measurements to a controller test

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