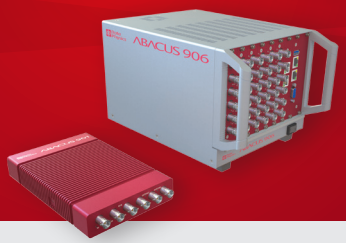
Data Physics



900 Series Software
SignalCalc®

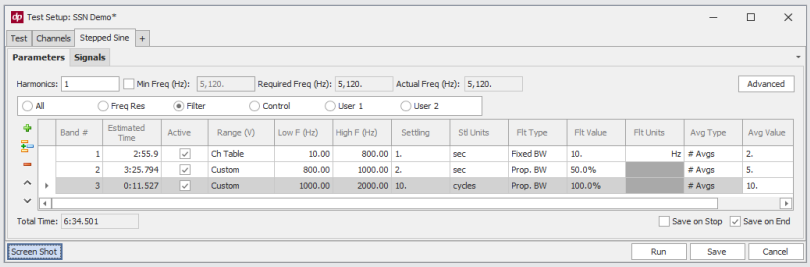
Stepped Sine Analysis

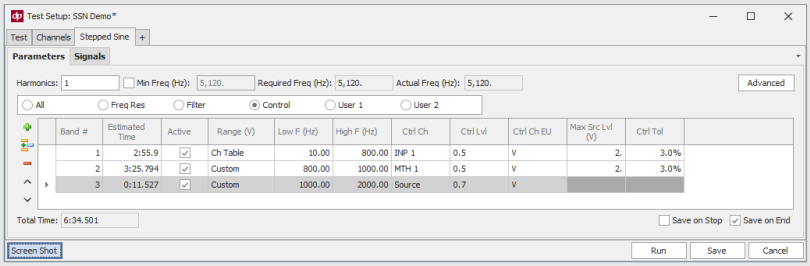
DP930-22

The Stepped Sine Analysis option for the 900 series software offers the ability to accurately classify highly resonant, non-linear, or large dynamic range test articles response to sine excitation. It is also an effective solution for sine testing cases with poor signal-to-noise.

The run schedule is divided into bands where parameters can be set independently, and each band is a series of dwells. Each dwell is allowed a settling time before samples are averaged into a data point. Default outputs include transfer function and coherence with optional THD and harmonic spectrums.

Options for open loop or closed loop control off any input or math channel are available.





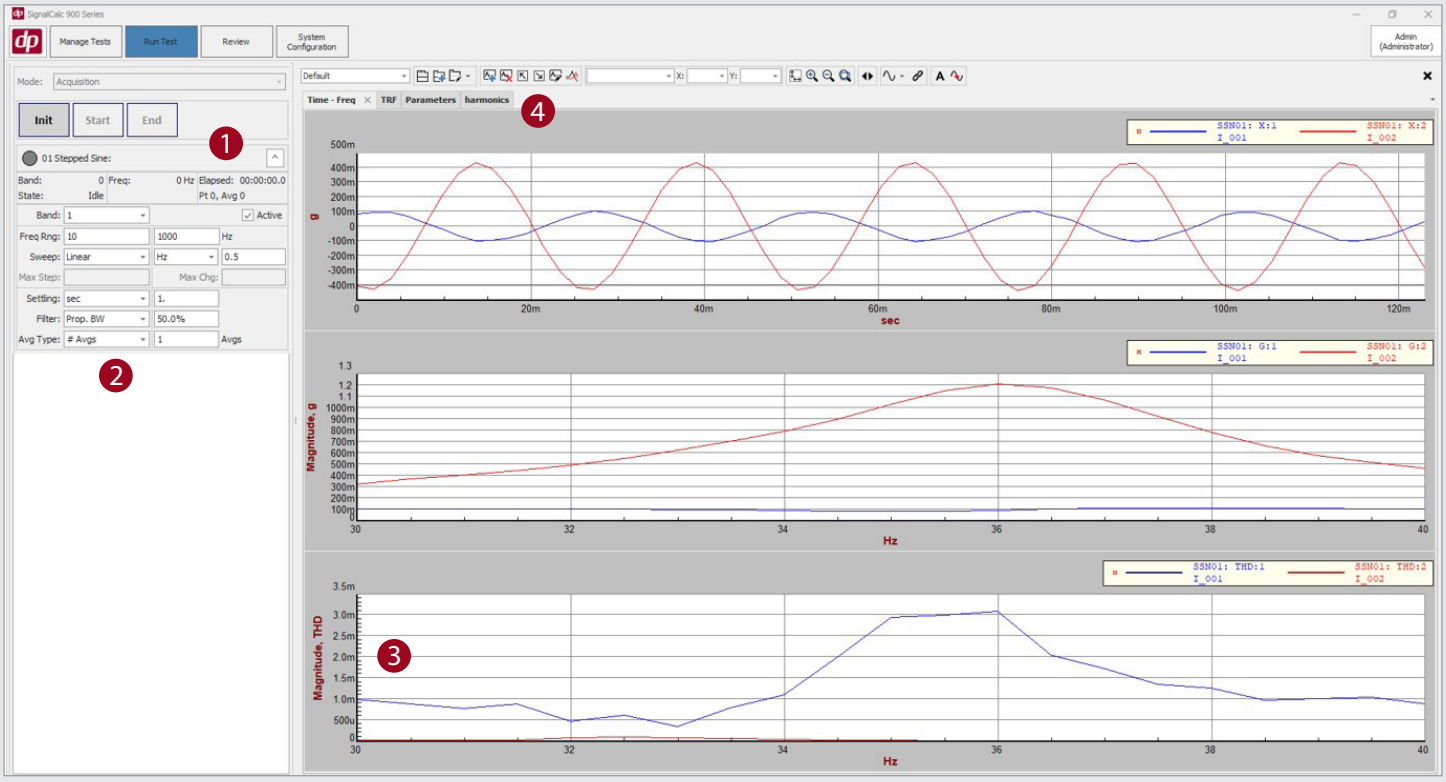
Features and Benefits

The 900 Series Stepped-Sine Analysis package provides a highly adaptable platform to accurately characterize the most challenging test articles.

Feature	Benefit
Open or closed loop control options	Control to a set drive level, system response level, math channel output, or any combination across multiple test bands.
Adjustable sweep type, resolution, level, and units for each band	Flexible test setup to cover a wide range of applications. Capture full bandwidth, accurate system response in one run.
Adjustable settling time or cycle count for each band	Allows time for test article response to stabilize near resonance frequencies and reduce test time elsewhere.
Adjustable filtering and averaging parameters for each band	Ensures validity of collected data across full bandwidth.
Specify order of harmonics tracked	Sampling frequency and plots update automatically to reduce setup time and ensure sampling accuracy.
Optional THD and Harmonic Spectrum measurements	Quickly gather related data that would otherwise require a separate test.
Parameters display page	Track settling time, measurement time, source level and other parameters as they change across each band.

900 Series Software
SignalCalc®

Efficient Testing, Analysis, and Reporting



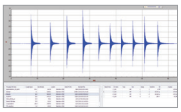
1. Status Display
Shows current bands settings, test status and remaining time. Control buttons also included.

2. Run Schedule Band Parameters Adjustable Live During Test
Allows user to adjust for changing test article responses and maintain test accuracy.

3. Optional THD Measurement
Allows Total Harmonic Distortion to be measured without running a separate test or post-processing.

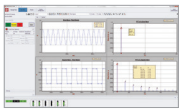
4. Preconfigured Graph pages
Transfer Function, Parameter Tracking and Harmonics Spectrum pages are automatically configured based on test setup to save time.

Related Applications



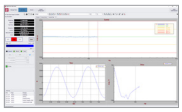
Recording and Playback Analysis
DP930-23

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



FFT Analysis
DP930-10

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



Sine Vibration Control
DP960-20

Control a shaker to run sine sweep or dwells and characterize a test structure's resonances.

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