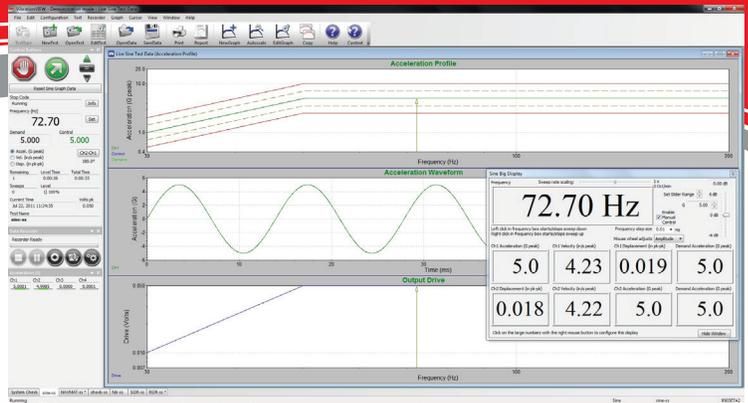


SineVIEW Vibration Control Software



Searching for those resonances have never been easier with our Sine testing module. Sine performs closed loop control of fixed and swept sine vibration. The digital control algorithm provides time and frequency calculations using floating point math calculations, resulting in frequency changes as small as 1 millionth of a Hertz to produce a smooth and continuous sweep. Pretest self-check available with optional Analyzer software module (VR9607).

Features

Easy Test Entry

Enter frequency/amplitude breakpoints in an easy to read table form. Operator can select to control constant or ramped acceleration, velocity, displacement, or any other transducer type. Automatically calculate and enter the frequency of intersection between any combination of constant acceleration, velocity, or displacement lines. Over 1000 separate frequency/amplitude breakpoints can be entered, allowing entry of virtually any test spec.

Control Channels

The control signal can be a single input channel, or configured from 2 to 128 input channels with either multi-channel averaging or multi-channel extremal control.

Sweep Type

Either linear (Hz/minute or minutes/sweep) or logarithmic (octave/minute, decade/minute, minutes/sweep) sweeps can be specified. Sweep rate can be changed in the test while running.

Test Duration

Test duration can be entered in terms of length of time, number of sine wave cycles, or number of sweeps.

Tone Tests

Sequences of fixed-frequency tones of a specified acceleration, velocity, or displacement can be run. Looping functions allow easy entry of repeating tone sequences.

Multi-Channel Extremal

Allows more than one input channel for control in a control strategy where the highest, lowest or an average of accelerometer readings will be used for control of the test.

Frequency Range

Standard frequency range is DC-4,990Hz. The frequency range can be extended up to 50,000Hz with the VR9103 High Frequency option.

Sine Resonance Phase Track & Dwell - SRTD (Optional) VR9105

Transmissibility peaks can be automatically detected from a sine sweep, and then dwell tests run at the detected resonance frequencies for a specified time duration or number of sine wave cycles. In a sine dwell test, the controller can automatically track the resonance frequency to keep the output on resonance even when fatigue damage causes the resonance frequency to shift.

Configurable Safety Limits

The controller can be configured to abort if the controlled acceleration goes above or below the desired level by an operator-configured number of dB. Abort limits can also be enabled for individual monitoring channels. Drive limits can be configured to protect from overdriving your shaker in case of failed accelerometers.

Tracking Filters

Input channels have individually selectable tracking filters to remove harmonics and out-of-band noise from the measurements. The tracking filter bandwidth and signal averaging is user configurable.

Data Storage

All of the test data can be stored to the disk for later retrieval. Data storage can be done manually, or programmed to automatically save at user-defined intervals

Manual Control

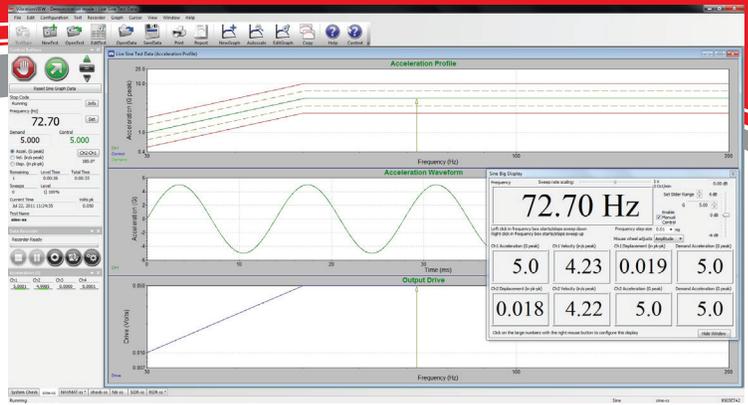
The frequency sweep and amplitude level can be manually controlled through the mouse.

Reference Output-COLA

The second output channel supplies a 1-volt constant amplitude reference signal. The phase of this signal relative to the main output can be fixed at any phase or swept at a configurable rate. This signal may be used to drive a light or other measurement device, or for a lock with the output signal.



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Data plots

A multitude of graphical display options are available, including peak acceleration, peak velocity, peak-to-peak displacement, output drive, channel-to-channel transmissibility, and phase as a function of either frequency or time. Graphs can be easily auto-scaled or zoomed, and cursors displayed. Data and text annotations can be easily placed on the graphs, with data values updated live as the data changes.

Independent Channel Notching Profiles

Assigns maximum limiting breakpoint profiles to individual channels. The drive output will be limited (or 'notched') if necessary to keep the input amplitude for that channel below the defined profile.

Accelerometer Calibration Package (Optional) VR9106

Provides an easy interface to calculate accelerometer sensitivity. This will allow the user to perform a sine sweep, controlling on a reference accelerometer, and produce a calibration report suitable for calibration record keeping. Automatically calculates the accelerometer sensitivity at the chosen frequency.

Technical Specifications	
Test Duration	Can be entered in terms of length of time, number of sine wave cycles or number of sweeps.
Sweep Type	Linear from 0 – 6,000 Hz/min or logarithmic from 0 – 100 octaves/min. Sweep rate can be changed while test is running.
Tone Tests	Sequences of fixed-frequency tones (dwells) of a specified acceleration, velocity or displacement can be run. Looping functions allow easy entry of repeating tone sequences.
Manual Control	The frequency sweep and amplitude level can be manually controlled with the mouse.
Breakpoints	Up to 1,024 amplitudes of A, V, or D, constant or slope changes at defined frequencies.
Large Numerical Readout	A configurable large numeric readout displays the current test frequency and channel amplitudes.
Multi-Channel Extremal	Allows more than one input channel for control in a control strategy where the maximum, minimum or an average of channels will be used for control.
Independent Channel Notching	Assigns maximum limiting breakpoint profiles to individual channels.

Available Options

High Frequency For Sine – VR9103	Extends upper frequency for Sine control from 4,990 Hz to 50,000 Hz, (does not require an export license).
Sine Resonance Phase Track & Dwell Control (SRTD) – VR9105	Automatically generate a table of the top 20 resonance points on your product. The relationship between 2 channels is compared. Also, tracked dwell function is enabled, allowing the controller to automatically vary the frequency to track the resonance.
Constant Output Level Adapter (COLA) – VR9104	Turns on the auxiliary output on the rear of the VR9500 unit, and sends out a selectable voltage sine, square or pulsed reference signal at the frequency of the currently running sine wave. Also allows the frequency or phase to slip off the fundamental frequency, so bending action on a part can be observed with a stroboscope.
Accelerometer Calibration Verification Package – VR9106	Provides an easy interface to calculate accelerometer sensitivity. This will allow the user to perform a sine sweep, control a reference accelerometer and produce a calibration report suitable for record keeping. Automatically calculates the accelerometer sensitivity at the chosen reference frequency.
Step Test Mode – VR9107	Frequency Stepping Test: Cycle on/off for user-specified time at discrete frequencies. Linear or Logarithmic frequency step rates can be used. Stepped frequency sine tests such as those used in MIL-STD-167 are supported.