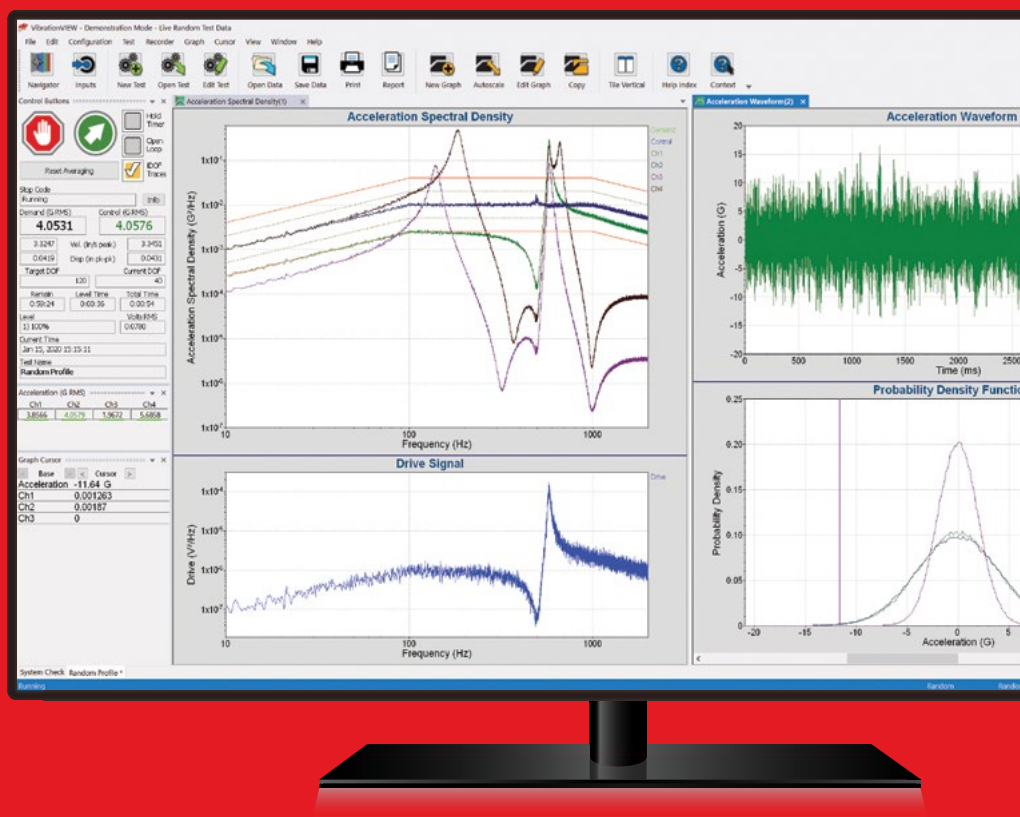
VibrationVIEW®

NEXT GENERATION VIBRATION TESTING SOLUTIONS



THE INNOVATOR IN
SOUND & VIBRATION TECHNOLOGY

VIBRATION RESEARCH

RELIABILITY LOOKS GOOD ON YOU.

Your confidence should never be shaken. When you are testing a product for dependability, durability, and consumer satisfaction, you are also testing us. Your customer expects you to pass that test every time and we will help you succeed.

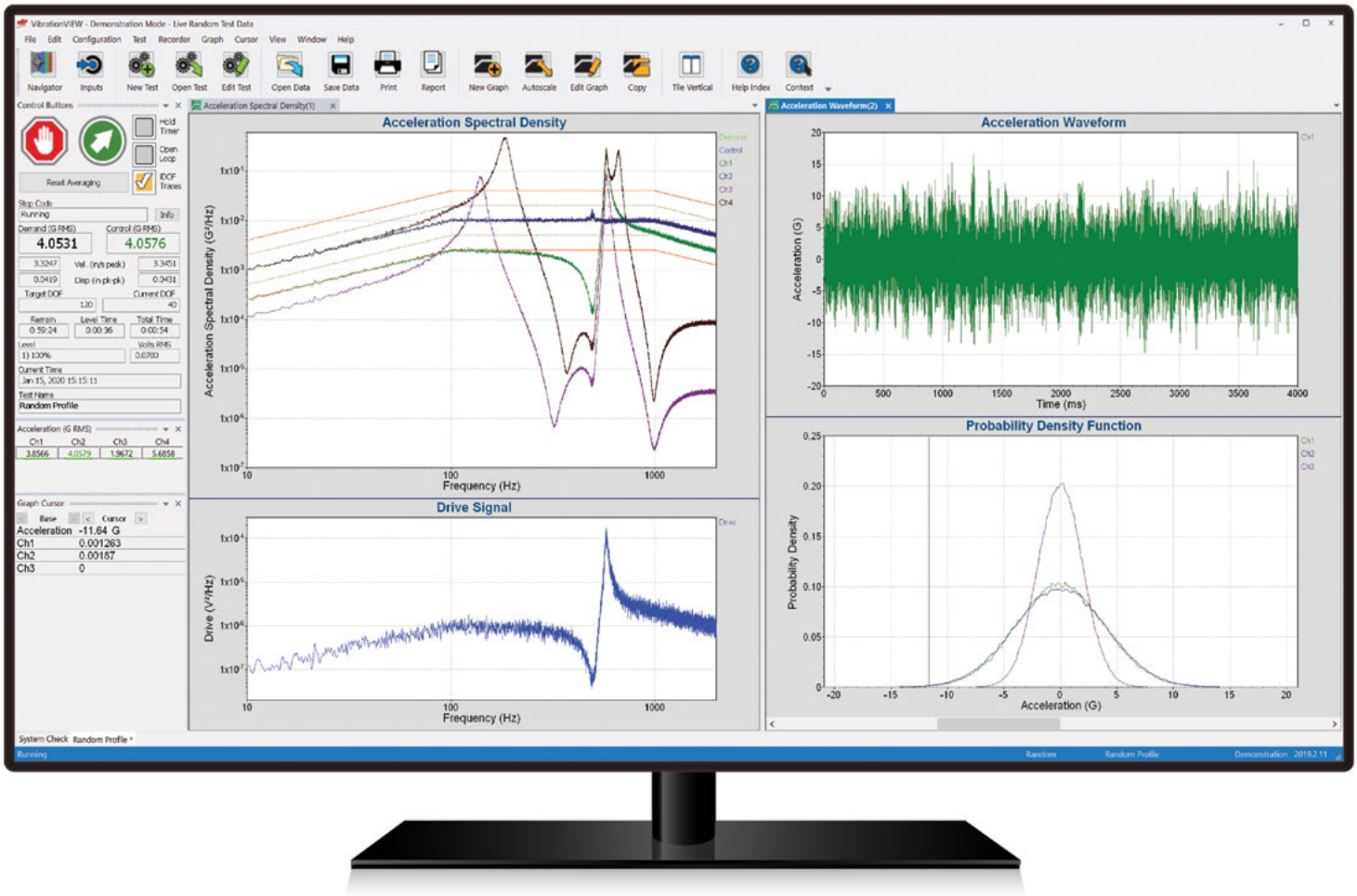
You can rely on us when your set-up is not a walk in the park, your customer requires something out of the ordinary, or your system is not communicating properly. We listen when our customers have feedback or make requests because our priority is to manufacture technology that is easier, more intuitive, and quicker to operate. Our USA-based support team is ready to meet your needs – not outsource them – because we understand that your time is valuable.

Vibration Research is the innovator in vibration control and data acquisition, developing its product line in Michigan, USA since 1995. Its applications help to solve troublesome industry issues such as test equivalency, end-use environment comparisons, and test acceleration. It is the premier choice of vibration testing labs around the globe.

VR recognizes that providing exceptional support significantly contributes to its customers' long-term success. That support is part of a recipe that combines versatile software with dependable hardware. Committed to advancements in technology and continued education, the company strives to innovate at the foundation of everything it does so that its customers can be their best.

INTUITIVE.
FLEXIBLE.
POWERFUL.

Vibration Research systems are compatible with all brands of electrodynamic and servo-hydraulic shakers. Set up and monitor vibration tests using any VR hardware and customize automated reports. This advanced vibration control and analysis software helps to solve troublesome issues in vibration testing.



SOFTWARE FEATURES

PC and Windows Integration
Seamlessly integrate the VR control system with your PC and Windows operating system. Simply connect and load VibrationVIEW, and you are ready to test. Microsoft® Word and Excel are recommended.

Software Functionality
Applications such as Microsoft Excel, LabVIEW, MATLAB, and more can easily interface by way of ActiveX functions.

Ethernet Connection
An Ethernet connection provides important advantages over USB or PCI-based systems, including:

- Galvanic isolation eliminating ground loops
- Cable length up to 100 meters, unlimited with network infrastructure
- No drivers to install

Drag and Drop
Enables customers to quickly transfer data and images into Microsoft Word or Excel.

Customizable Reporting
All control systems include our robust reporting package that automatically produces presentation-ready reports. VibrationVIEW provides default report templates, or you can customize the documents to meet test standards or customer requests. The built-in Report Builder previews changes as you make them, simplifying the customization process. Reports can be exported as a word document, PDF or HTML file, or spreadsheet.

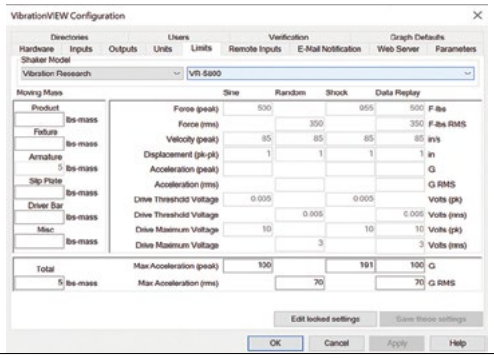
Remote Interface
Our customers can use a handheld device to monitor and control their vibration test in front of their shakers or from anywhere in the world. Test initiation, monitoring, and shutdown can be controlled remotely as well as:

- Start | stop | pause | continue
- Monitor unit under test for failure
- Multiple test selection
- Amplifier control and monitoring

Calibration
Every new VR hardware unit arrives freshly calibrated with a certificate of traceable calibration to the SI. We recalibrate hardware quickly to ensure less downtime than other providers. The VR lab is A2LA certified (ISO/IEC 17025) and offers both accredited calibration and standard factory calibration.

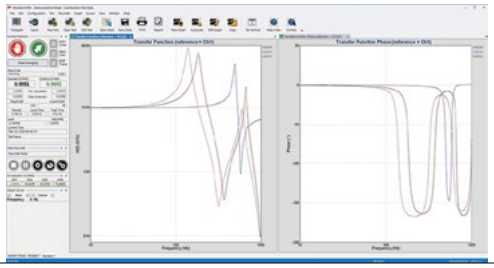
Configurable Safety Limits
To protect a test article and shaker system, an authorized user can set configurable acceleration limits, line limits, system gain limits, and drive limits. The software continuously monitors the input channels for fault conditions. The control input is also verified against shaker acceleration, velocity, and displacement limits.

VibrationVIEW



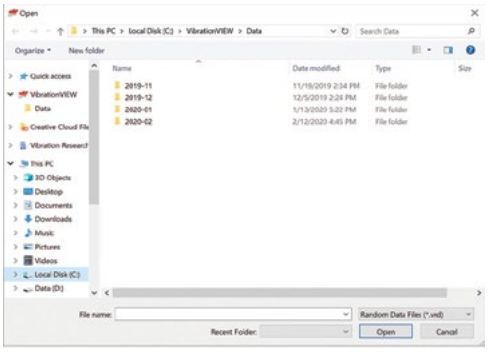
Shaker Compatibility

VibrationVIEW works with any electrodynamic, servo-hydraulic, or servo-electric shaker and includes single-axis, dual-axis, dual-phase, rotational, three-axis, multi-loop/four-post, and seismic control options.



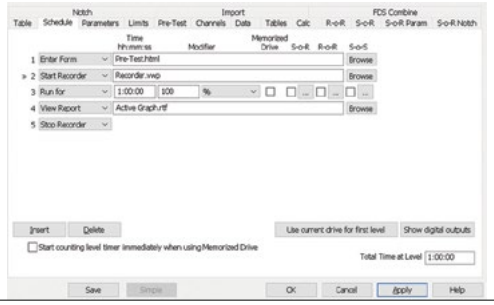
Analyzer Functions

Analyzer includes Coherence, Cross-Spectrum, and Transfer Function plots in both Random and FDR test modes, THD graphs and FFT Spectrum plots in Sine test mode, and scatter plots (channel-to-channel) in all test modes. In addition, this option provides a configurable function generator for outputting user-defined voltage waveforms.



Data Storage

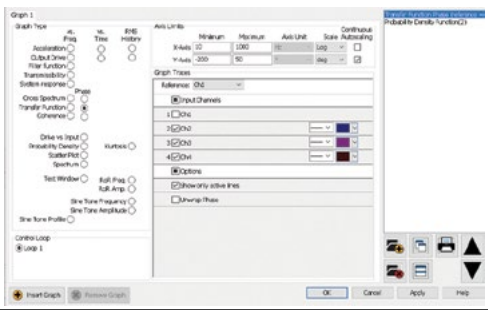
Store test data to any disk or network drive for later retrieval. Data can be stored manually or programmed to automatically save at user-defined intervals.



Test and Level Scheduling

Tests are scheduled to run for a user-defined length of time, and the spectrum level is scaled by a specified dB level, percentage, or amplitude. Tests are programmable to run for various periods at different intensity levels.

Amplitude levels can be changed while the test is running.

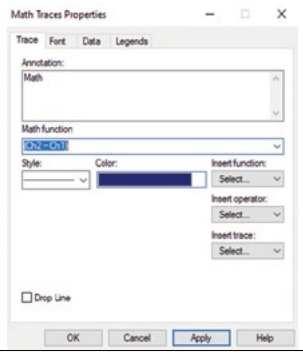


Data Plots

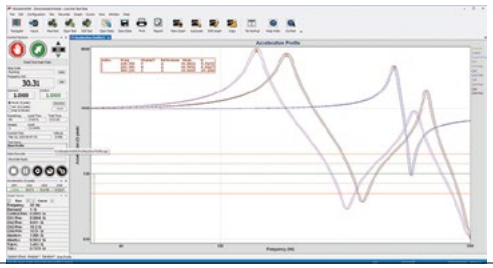
Our software offers many graphical display options:

- Acceleration spectral density
- Output voltage spectral density
- Channel-to-channel transmissibility
- Phase between inputs or outputs
- Lissajous curves
- Historical data logging
- Real-time drive voltage
- Real-time channel acceleration
- Drive vs. input, including system limits

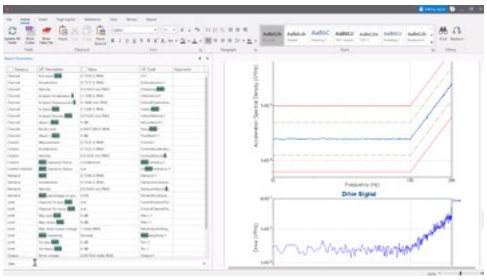
VibrationVIEW



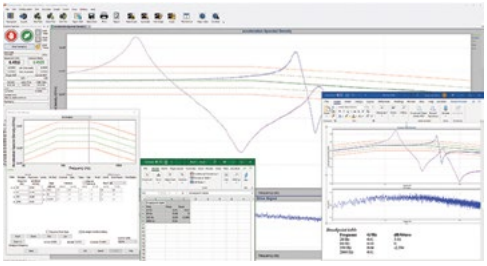
Math Traces and Calculator Functions
Define math functions based on graph traces, test parameters, and/or test results. Plot the result of the calculations as additional graph traces. In addition, define calculators to evaluate a function continuously during the test and plot a time history of the result. Each calculator can have upper and lower limits to stop the test based on the calculation result.



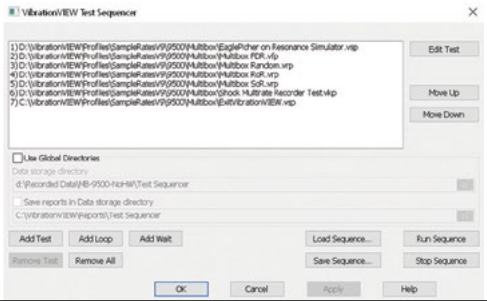
Data Cursors
- Automatically locate and track peaks and valleys
- Highlight data points
- Calculate RMS between frequencies
- Calculate slopes in logarithmic or linear plots
- Find harmonics of resonances



Report Builder
VibrationVIEW's built-in Report Builder makes generating professional and informative reports as easy as ever. Rather than export test data to Microsoft Word or another program, create reports within the VibrationVIEW software using a word processor designed for this purpose.



Graphs
VibrationVIEW has an easy-to-use graphing system that includes auto scaling and zooming capabilities. Graph images and raw data can be copied to any word processor or spreadsheet.

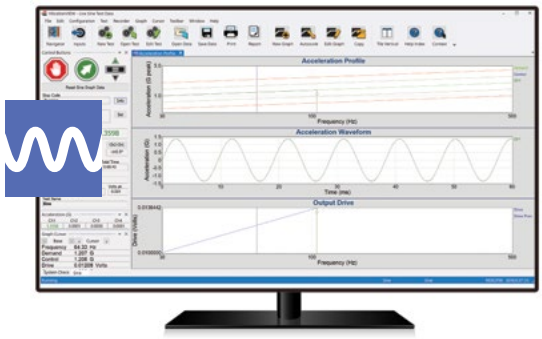


Test Sequencer
Automatically execute a sequence of tests. All the tests can be the same type of application, or switch modes as part of the test sequence.


SRS Response, 4% Damping
Acceleration (G)
Drive
Drive (Volts)

CONFIGURE ON DEMAND.

The VR software packages can be configured for as many or as few test modules as you need (à la carte). You may add more at any time. Test modules are also available to rent for short-term needs and are easily activated via electronic key.



SINE

Perform closed-loop control of fixed and swept sine vibration. The digital control algorithm provides time and frequency calculations using floating point mathematics. This results in frequency changes as small as one millionth of a hertz and produces a smooth, continuous sweep.

- Sine Resonance Track & Dwell
- Sine-on-Sine
- Accelerometer Calibration
- Sine Reduction
- High Frequency
- Recorder

And more...

RANDOM

Generate a more closely matched vibration to your end-use environment with the highest possible control. Random performs real-time, closed-loop control of PSD profiles. All inputs are simultaneous and continuously take data with no “unsampled” periods.

- Random-on-Random
- Sine-on-Random
- Fatigue Damage Spectrum
- Kurtosion®
- Instant Degrees of Freedom® (iDOF)
- Random Import
- High Frequency
- DC Offset
- Recorder
- TruClip®

And more...

SHOCK

Perform closed-loop control of transient waveforms. The entire transient period is sampled simultaneously and without gaps. The drive is calculated between each pulse. All the classical pulse types are supported. The speed and adaptiveness of the SRS control algorithm is second to none.

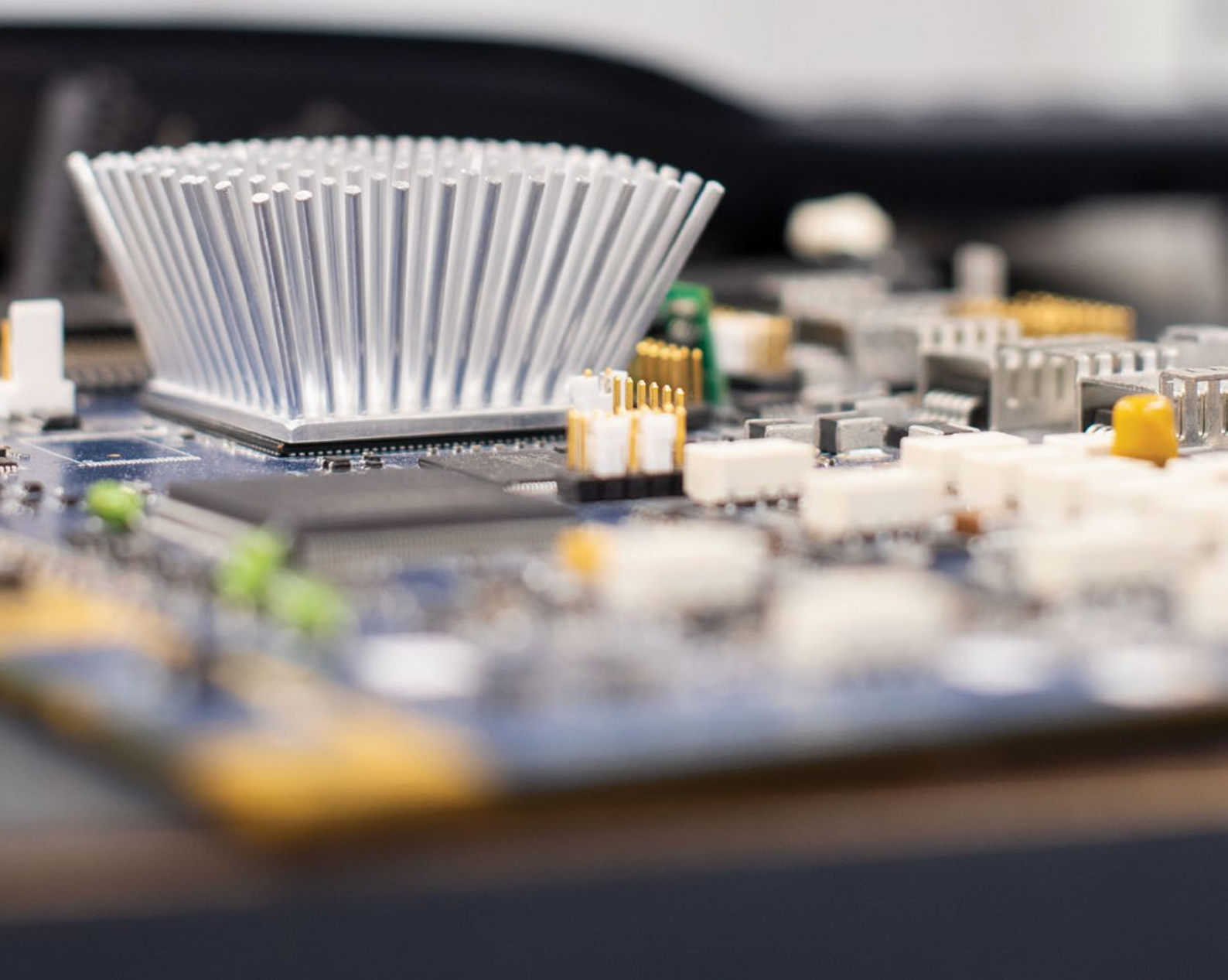
- Shock Response Spectrum
- Transient Capture
- Transient Waveforms Control
- High Frequency
- Chatter Monitor
- Recorder

And more...

Explore each module in detail at vibrationresearch.com/software/vibrationview

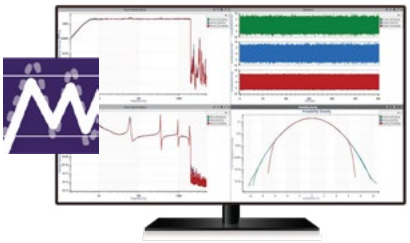
INNOVATION NEVER STOPS.

VR's vision is to make the world's most innovative sound and vibration technology tools, enabling customers to make reliable decisions and trustworthy products. VR launched its proprietary testing software in 1995 and now offers five innovations - including two patents - and we are not done yet.



Explore our innovations at vibrationresearch.com/software/vibrationview

ESTABLISHED 2023



TRUCLIP®

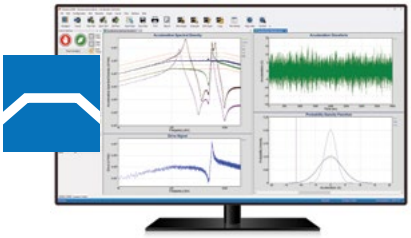
Reduce high peaks on the shaker table during a random test. TruClip predicts the drive signal and removes peak sigma values that would exceed the shaker's acceleration, velocity, or displacement limits.

ESTABLISHED 2020

SINE TRACKING, ANALYSIS AND GENERATION® | STAG®

Create an accelerated sine-on-random test from field data. STAG generates profiles that are a real-world evaluation of environments with dominant sinusoidal components from rotational sources.

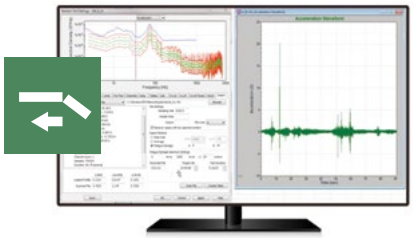
ESTABLISHED 2015



INSTANT DEGREES OF FREEDOM® | iDOF®

iDOF provides the smoothest control lines in the industry, enabling companies to run highly accurate vibration tests in a condensed period. This ensures a product is tested for just the right amount of time.

ESTABLISHED 2010



FATIGUE DAMAGE SPECTRUM | FDS

Reproduce a lifetime of damage in a short period of time. FDS measures a product's environment, characterizes the severity of fatigue, and generates an accelerated test profile to represent a lifetime of fatigue.

ESTABLISHED 2005

KURTOSION®

The greatest damage potential to a product is at extreme levels. An increased kurtosis of the signal lengthens the time spent at peak levels, which makes a test better reflect what is happening in the real world.

ESTABLISHED 1995

FIELD DATA REPLICATION | FDR

Instead of approximating a field environment through standard Random, Sine, or Shock tests, FDR provides the capability to replicate field acceleration measurements and reproduce them on the shaker in the test lab.

DEPENDABILITY FOR EVERY FREQUENCY.

VR serves many industries worldwide, and our customers include engineers and technicians with varying expertise. Explore our connections at **vibrationresearch.com/industries**

- **Aerospace**
- **Automotive**
- **Consumer Goods**
- **Electronics**
- **Medical**
- **Military & Defense**
- **Packaging**
- **Seismic**
- **Testing Labs**
- **Universities**

DARE TO COMPARE— FOR 30 DAYS.

Skeptical that we can't meet your standards? Put us to the test. The VibrationVIEW software package runs on all our hardware platforms. **Whether you need a brand new system or a replacement controller, we will let you try our hardware and software fully enabled for up to 30 days. Once you use it, we think you will be hooked.**

VR9700™ Vibration Controller
Up to 128 channels
Lifetime warranty
Up to 256kHz sample rate

VR10500™ Vibration Controller
Up to 512 channels
Lifetime warranty
Up to 256kHz sample rate

ObserVR1000® Vibration Controller
and Portable Dynamic Signal Analyzer

Up to 128 channels
1-year warranty
Up to 128kHz sample rate
6+ hour battery life

Our express reason for choosing the VR controller over other controllers is the flexibility it gave us with SRS testing. In particular, we appreciate the selection of the various synthesis types and the ability to optimize a synthesis for acceleration, velocity, or displacement. We also find the VR9500 easy and intuitive and we make use of the comprehensive report generation features.

–Vibration Research Customer

HARDWARE

VR9700	VR10500	OBSERVR1000
Up to 128 simultaneous channels for control or monitor usage.	Up to 512 simultaneous channels for control or monitor usage.	Up to 128 available channels for control or as an analyzer & autonomous DAQ.
Each 4-channel I/O unit can run independently on separate shakers or together in a single stack (up to 128 channels). The VR9700 also functions as a DAQ device. This economical solution allows for data acquisition, analysis, and vibration control and creates substantial cost savings for our customers.	Each 16-channel I/O unit can run independently on separate shakers or together in a single stack (up to 512 channels). The VR10500 also functions as a DAQ device. This economical solution allows for data acquisition, analysis, and vibration control and creates substantial cost savings for our customers.	Each 16-channel I/O unit is a portable DAQ device and analyzer (up to 128 channels). The ObserVR1000 also functions as control hardware and can run independently on separate shakers or together in a single stack. This economical solution allows for data acquisition, analysis, and vibration control and creates flexible options for our customers.
HARDWARE WARRANTY		
The VR9700 controller hardware includes a three-year hardware warranty that can be extended to a lifetime warranty with continual renewal (no lapse) of a VR upgrades & support agreement. VR warrants the controller hardware to be free of defects in material and workmanship.	The VR10500 controller hardware includes a three-year hardware warranty that can be extended to a lifetime warranty with continual renewal (no lapse) of a VR upgrades & support agreement. VR warrants the controller hardware to be free of defects in material and workmanship.	The ObserVR1000 hardware includes a one-year hardware warranty. VR warrants the ObserVR1000 hardware to be free of defects in material and workmanship.
GENERAL SPECIFICATIONS		
Up to 128 channels, 4-channel units (mix-n-match) Control sine/random/shock vibration to 50,000Hz 104,000 lines of resolution Total harmonic distortion < -100dB THD+N Remote inputs/outputs including Tachometer Emergency stop Gigabit Ethernet	Up to 512 channels, 16-channel units (mix-n-match) Control sine/random/shock vibration to 50,000Hz 104,000 lines of resolution Total harmonic distortion < -100dB THD+N Remote inputs/outputs including Tachometer Emergency stop Gigabit Ethernet	Up to 128 channels; 16-channel units (mix-n-match) Control sine/random/shock vibration to 20,000Hz 26,000 lines of resolution Total harmonic distortion < -100dB THD+N Digital inputs/outputs including Tachometer Emergency stop Gigabit Ethernet WiFi connection 802.11 b/g/n GPS (optional)
POWER 100VAC to 240VAC, 50/60Hz 1.4A maximum Class II, double-isolated chassis	**POWER** 100VAC to 250VAC, 50/60Hz 2A maximum	**POWER** AC adapter included: 90VAC to 264VAC, 50/60Hz 18VDC @ 2.5A Internal Lithium-Ion battery
OPERATING TEMPERATURE RANGE 35° to 122° Fahrenheit 2° to 50° Celsius	**OPERATING TEMPERATURE RANGE** 35° to 122° Fahrenheit 2° to 50° Celsius	**OPERATING TEMPERATURE RANGE** -4° to 131° Fahrenheit -20° to 55° Celsius
INPUT CHANNELS		
Single-ended with 100kΩ impedance Custom units can be defined for other sensor types Switchable isolation	Single-ended with 100kΩ impedance Custom units can be defined for other sensor types	Single-ended with 100kΩ impedance Custom units can be defined for other sensor types
SOFTWARE SET-UP ALLOWS FOR: Per channel selection of transducer sensitivity Coupling (AC or DC) Accelerometer constant current supply: 4mA IEPE TEDS transducer interface A unique DC offset removal that allows measurement to true DC with constant current type accelerometers with full 10V range	**SOFTWARE SET-UP ALLOWS FOR:** Per channel selection of transducer sensitivity Coupling (AC or DC) Accelerometer constant current supply: 4mA IEPE TEDS transducer interface A unique DC offset removal that allows measurement to true DC with constant current type accelerometers with full 10V range	**SOFTWARE SET-UP ALLOWS FOR:** Per channel selection of transducer sensitivity Coupling (AC or DC) Accelerometer constant current supply: 2.1mA IEPE TEDS transducer interface A unique DC offset removal that allows measurement to true DC with constant current type accelerometers with full 10V range
PROTECTED 200V tolerant inputs protect device from transients	**PROTECTED** 200V tolerant inputs protect device from transients	**PROTECTED** 40V tolerant inputs protect device from transients
SAMPLE RATE 256kHz simultaneous sample rate	**SAMPLE RATE** 256kHz simultaneous sample rate	**SAMPLE RATE** 128kHz simultaneous sample rate
VOLTAGE RANGE ±1V and ±10V: 100kΩ input impedance ±0.5V and ±5V: 10MΩ input impedance	**VOLTAGE RANGE** ±1V, ±10V: 100kΩ input impedance ±0.5V, ±5V: 10MΩ input impedance	**VOLTAGE RANGE** ±1V, ±10V: 100kΩ input impedance ±0.25V, ±2.5V: 22MΩ input impedance
RESOLUTION 24-bit	**RESOLUTION** 24-bit	**RESOLUTION** 24-bit
DYNAMIC RANGE >110dB dynamic range >130dB with tracking filters	**DYNAMIC RANGE** >110dB dynamic range >130dB with tracking filters	**DYNAMIC RANGE** >110dB dynamic range >130dB with tracking filters
NOISE FLOOR <65nV/$\sqrt{Hz}$	**NOISE FLOOR** <50nV/$\sqrt{Hz}$	**NOISE FLOOR** <90nV/$\sqrt{Hz}$
FILTERING Analog multiple pole anti-aliasing filter and digital anti-aliasing filter with >105dB attenuation	**FILTERING** Analog multiple pole anti-aliasing filter and digital anti-aliasing filter with >105dB attenuation	**FILTERING** Analog multiple pole anti-aliasing filter and digital anti-aliasing filter with >95dB attenuation

HARDWARE

VR9700	VR10500	OBSERVR1000
OUTPUT CHANNELS		
FREQUENCY RANGE 50,000Hz 256,000 samples per second	**FREQUENCY RANGE** 50,000Hz 216,000 samples per second	**FREQUENCY RANGE** 20,000Hz 128,000 samples per second
FILTERING Analog multiple pole reconstruction filters	**FILTERING** Analog multiple pole reconstruction filters	**FILTERING** Analog multiple pole reconstruction filters
OUTPUT CHANNELS Two (2) analog, two (2) digital 1 analog output (drive) standard; COLA output is standard with the Sine testing module	**OUTPUT CHANNELS** Four (4) analog, two (2) digital 1 analog output (drive) standard; COLA output is standard with the Sine testing module	**OUTPUT CHANNELS** One (1) analog
VOLTAGE RANGE ±10V	**VOLTAGE RANGE** ±10V	**VOLTAGE RANGE** ±10V
RESOLUTION 32-bit	**RESOLUTION** 32-bit	**RESOLUTION** 24-bit
OTHER Safety relay prevents shaker, amplifier, and product damage from transients Optionally drive a differential input device	**OTHER** Safety relay prevents shaker, amplifier, and product damage from transients Optionally drive a differential input device 4 independent or phase-controlled outputs to drive multiple shakers	**OTHER** Safety relay prevents shaker, amplifier, and product damage from transients
DIMENSIONS		
Width: 12.3in 313mm Depth: 8.7in 220mm Height: 1.75in 44.5mm Weight: 5.4lbs 2.5kg	Width: 17in 432mm Depth: 11in 279mm Height: 1.75in 45mm Weight: 9.25lbs 4.1kg	Width: 6.33in 161mm Depth/Length: 9.82in 250mm Height: 2.18in 55mm Weight: 3.3lbs 1.5kg

FOR EVERY FAILURE,
THERE IS A TEST
THAT WILL FIND THE FAILURE.

BECOME THE GO-TO VIBRATION EXPERT.

Vibration testing is a unique industry. Whether examining basic theory or advanced techniques, a collective resource for vibration test engineers can be valuable. VR is committed to providing content that is useful to engineers in all stages of product development.

MONTHLY WEBINARS
vibrationresearch.com/webinar

Our no-cost webinars are typically hosted once a month with a range of topics from basic to advanced. They are presented by a mix of industry experts and sales engineers. Connection is easy with GoTo Webinar, a third-party app, on a device with a web connection.

SCAN THIS CODE FOR VR LIBRARY

VR UNIVERSITY
vru.vibrationresearch.com

VRU was founded with the goal of disseminating vibration testing theory, insights, and practices within the industry. All courses are free, and additional features such as quizzes are available with an account.

- Enroll in courses, track progress, and get certified
- Access a glossary of terms related to vibration testing

VR LIBRARY
vibrationresearch.com/library

- Articles
- Archived webinars
- Calculators and tools
- Experiments and papers
- Quick tip videos
- Technical notes

WE DO NOT STOP AFTER INSTALLATION.

Our support continues over the lifetime of your product - anytime you need us. We recognize that providing customers with high-quality support contributes significantly to their long-term success.

RESOLVE ISSUES FASTER

VibrationVIEW stores the 50 most recent tests in the navigator menu. With a simple selection, you can email or upload the test settings and results — everything our support team needs to resolve any issue you are facing.

LIFETIME HARDWARE WARRANTY

VR warrants the controller hardware to be free of defects in materials and workmanship for the duration listed below. This warranty covers hardware failure under normal conditions and does not cover damage due to customer neglect or mistreatment.

- VR9700 / VR10500 ships with a 3-year hardware warranty that can be extended for the lifetime of the product through the continual renewal of an upgrades and support agreement.
- ObserVR1000 ships with a 1-year hardware warranty.

UNLIMITED SUPPORT

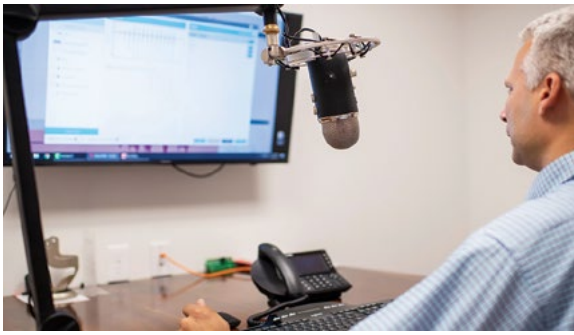
VR support comes straight from our USA headquarters and is available via phone, email, and webinar. We also provide interactive training options such as:

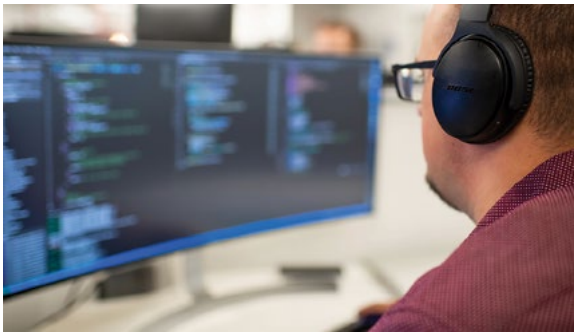
- One-on-one web training
- On-site training and support
- Two-day training seminars

CALIBRATION SOFTWARE

Every new VR hardware unit arrives freshly calibrated with a certificate of traceable calibration to the SI. The VR support agreement provides an Automated Calibration Verification software license and a 50% discount on standard factory calibrations or A2LA-accredited calibrations.

CERTIFICATE #3515.01





FACING A CHALLENGE? TELL US MORE.

Ninety percent of our improvements originate directly from customer suggestions. We are interested in hearing more if you face a challenge that requires new software or hardware development. All information is strictly confidential.

Learn more at vibrationresearch.com/upgrades-support-agreement

ALWAYS HERE.
ALWAYS LISTENING.
ALWAYS READY.

VR designs and assembles products at our headquarters located in Michigan, USA. We invite you to contact a representative in your area to request more information. Be sure to ask about a demo version of our VibrationVIEW software.

WE ARE GLOBALLY AT YOUR SERVICE.

VIBRATION RESEARCH (Headquarters)
1294 Chicago Drive
Jenison, Michigan 49428 USA

+1.616.669.3028
vrsales@vibrationresearch.com
support@vibrationresearch.com

CHINA
Shanghai – Suzhou – Xi'an
+86.512.6843 2851
sales@vibrationresearch.cn

EUROPE (EASTERN)
Blansko, Czech Republic
+420.776.736.271
sales@vibrationresearch.eu

EUROPE (WESTERN)
Föritztal, Germany
+49.36764.81.6363
sales@vibrationresearch.de

INDIA
Hyderabad, Telangana
+91.7997064555
sales@vrc-india.com

UNITED KINGDOM
Fordingbridge, Hampshire
+44.0.1425.656658
sales@vibrationresearch.co.uk

VIBRATION RESEARCH
1294 Chicago Drive
Jenison, Michigan 49428 USA

+1.616.669.3028
vrsales@vibrationresearch.com
support@vibrationresearch.com

Do what other industry leaders have already done.

PUT US TO THE TEST.
DARE TO COMPARE—FOR 30 DAYS.

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