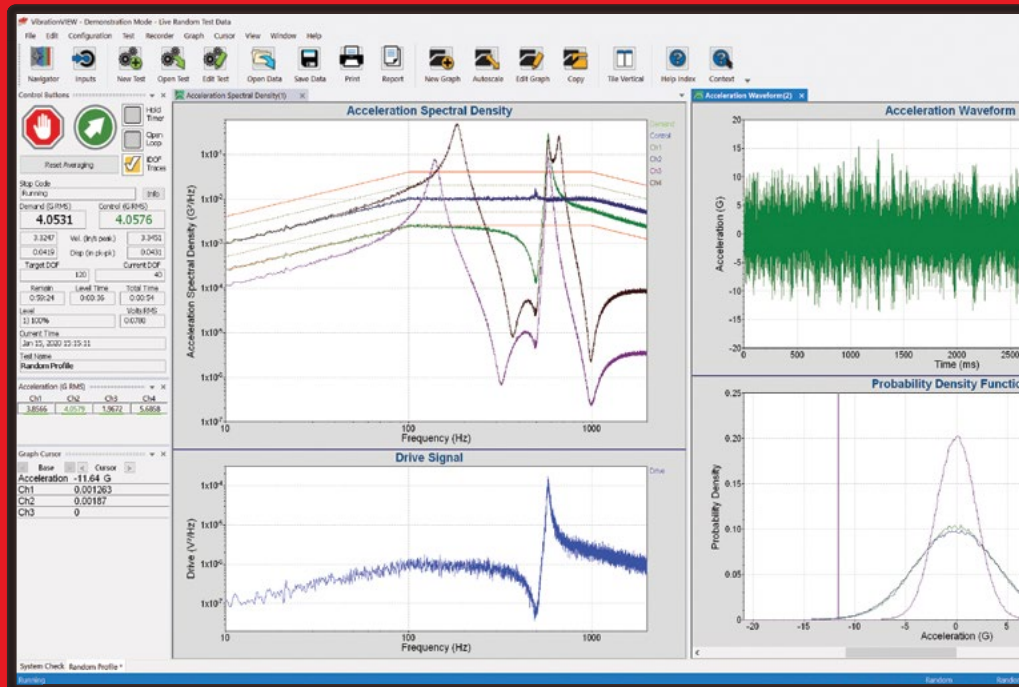


VibrationVIEW®

NEXT GENERATION VIBRATION TESTING SOLUTIONS



THE INNOVATOR IN
**SOUND & VIBRATION
TECHNOLOGY**

YOUR CONFIDENCE SHOULD NEVER BE SHAKEN.

Better performance. Faster results. Ongoing support. That's what you can expect from Vibration Research. When you're testing a product for durability, you're also testing us—and we're committed to passing that test every single time.

WHAT SETS VIBRATION RESEARCH APART?

Innovative

We don't copy technology. We push technology forward. We don't follow trends. We engineer new ones.

Proven

Reputations are earned over time. We've earned ours by creating products that are reliable, durable, and better than the rest.

User-Friendly

We're always listening to our customers in an effort to make our technology easier, more intuitive, and quicker to operate.

Supportive

 Our Michigan-based team is ready to meet your needs — not outsource them. We're proudly based in the U.S.A. It's where all our development and production happens. If you need us, we're ready to respond.

Work hard - Do the right thing - Be the very best
Deliver on promises - Collaborate - Innovate - Don't walk into doors

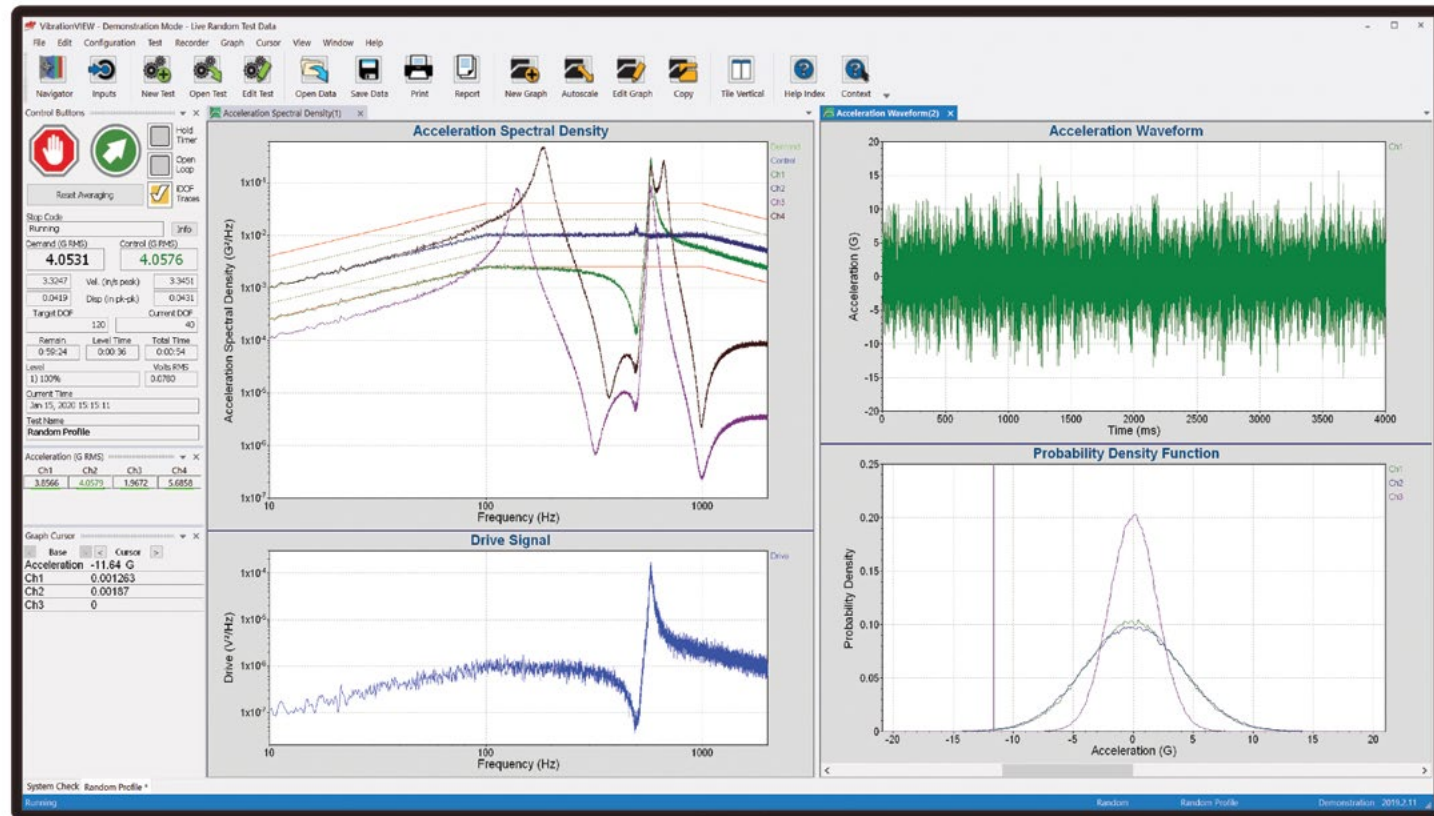
Since 1995, we've been listening to the needs of our customers and delivering dependable products that outperform the competition. Over the years, we've become a pioneer in the industry and the leader in vibration control and dynamic signal analysis.

Our customers include engineers and technicians in aerospace, automotive, medical, military, packaging, transportation, and other sectors around the world. VR's applications solve troublesome industry issues such as test equivalency, end-use environment comparisons, and test acceleration.

VibrationVIEW

INTUITIVE. FLEXIBLE. POWERFUL.

The biggest industry names around the world trust VibrationVIEW for their most demanding real-world simulations. Packed with features, fully tested, and compatible with all shakers, VibrationVIEW is an easy upgrade for your testing operations.



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.

Easy Integration
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 at the end of a testing sequence. The reports can be customized, including the addition of company branding. With our pre-packaged templates, customers can also enter important data such as the technician, customer name, time, date, test parameters, and more. Report templates are available as html, text format, document, and spreadsheet.

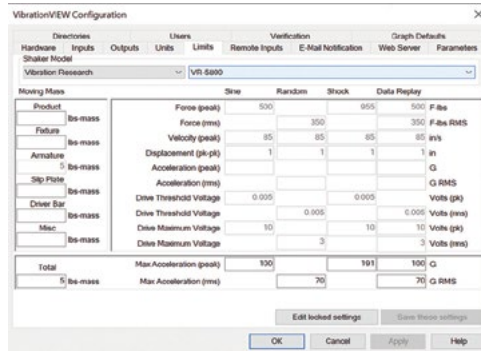
Remote Interface
Our customers can use a handheld device to monitor and control their vibration test in front of their shakers or from anywhere in the world. Test initiation, monitoring, and shut down can be controlled remotely as well as:

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

Calibration
Every new control unit arrives freshly calibrated with an NIST traceable Certificate of Calibration. We recalibrate hardware quickly to ensure less downtime than other providers. The VR lab is A2LA certified (ISO 17025) and offers both accredited calibration and standard factory calibration.

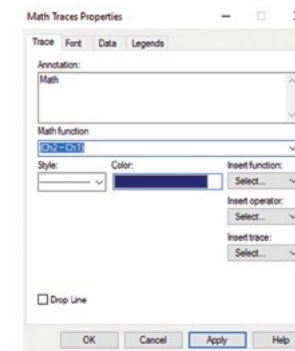
Configurable Safety Limits
To protect a test article and shaker system, an authorized user can set configurable acceleration limits, line limits, system gain limits, and drive limits. The software continuously monitors the input channels for fault conditions. The control input is also verified against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

VibrationVIEW



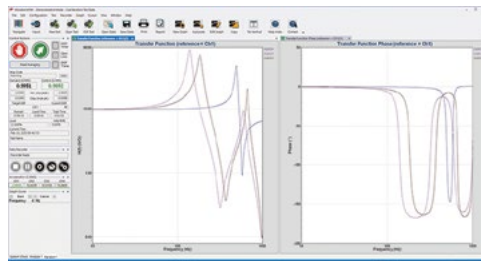
Shaker Compatibility

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.



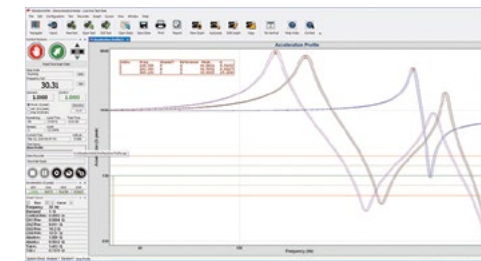
Math Traces and Calculator Functions

Define math functions based on graph traces, test parameters, and/or test results, and 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 assigned to stop the test based on the calculation result.



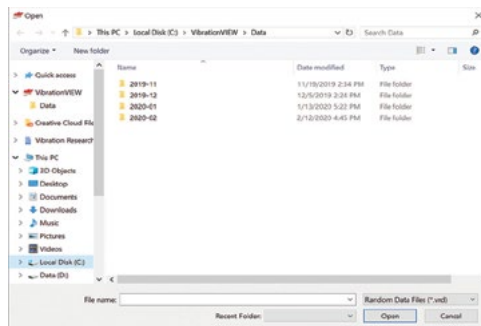
Analyzer Functions

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.



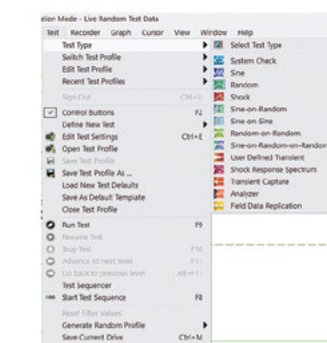
Data Cursors

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



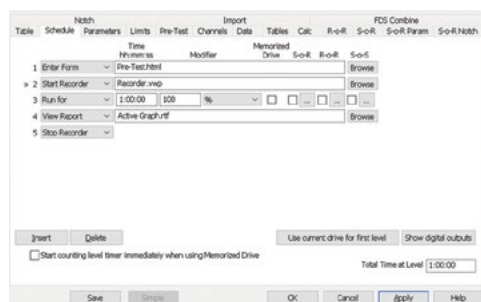
Data Storage

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



System Check

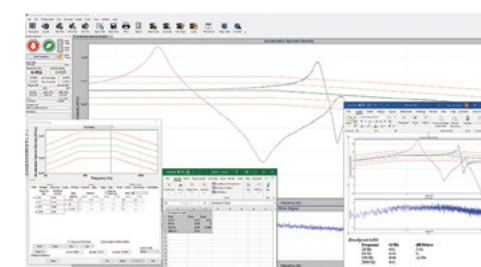
All VibrationVIEW software packages include a system check mode that provides a manually controllable sine wave output and spectrum analysis plots of the accelerometer inputs. Use this test mode to verify operation of the controller, amplifier, shaker, and accelerometers.



Test and Level Scheduling

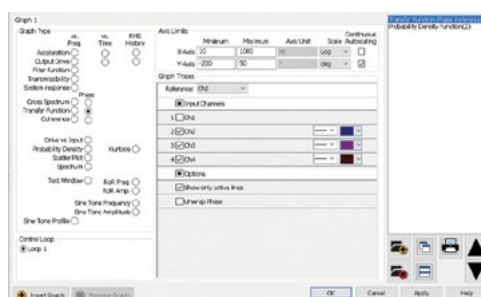
Tests are scheduled to run for a user-defined length of time and the spectrum level is scaled by a specified dB level, percentage, or a specified amplitude. Tests are programmable to run for various periods at different intensity levels.

Amplitude levels can be changed while the test is running.



Graphs

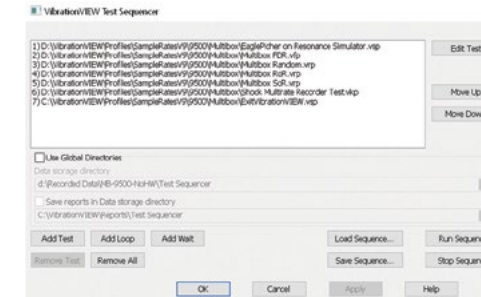
VibrationVIEW has an easy-to-use graphing system that includes auto scaling and zooming capabilities. Graph images and raw data can be copied to any word processor or spreadsheet.



Data Plots

Our software allows for 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



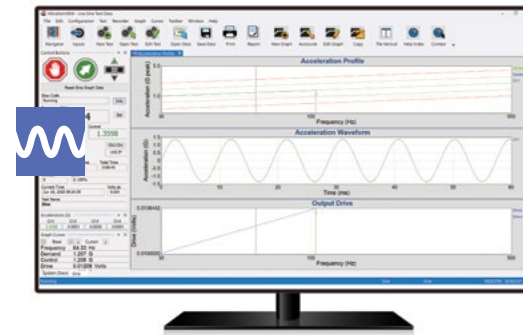
Test Sequencer

Automatically execute a sequence of tests. All the tests may be the same type of application or switch modes as part of the test sequence.









VibrationVIEW Software
CONFIGURE ON DEMAND.

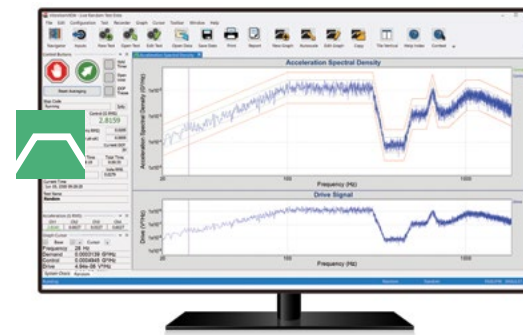
The VR software packages can be configured for as many or as few test modules as you'd like (à la carte). You may add more at any time. Test modules are also available to rent for short-term needs and are easily activated via electronic key.



SINE












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

-  Sine Resonance Track & Dwell
-  High Frequency
-  Sine-on-Sine
-  Recorder
-  Accelerometer Calibration
-  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
-  Random Import
-  Sine-on-Random
-  Chatter Monitor
-  Fatigue Damage Spectrum
-  High Frequency
-  Kurtosis®
-  DC Offset
-  Instant Degrees of Freedom (iDOF®)
-  Recorder
-  And more...



SHOCK

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

-  Shock Response Spectrum
-  High Frequency
-  Transient Capture
-  Recorder
-  Transient Waveforms Control
-  And more...

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

VibrationVIEW

ALWAYS INNOVATING.

The biggest industry names around the world trust VibrationVIEW for their most demanding real-world simulations. Packed with features, fully tested, and 100% compatible with all shakers, VibrationVIEW is an easy upgrade for your testing operations.

Explore our innovations at vibrationresearch.com/software/vibrationview

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.

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.

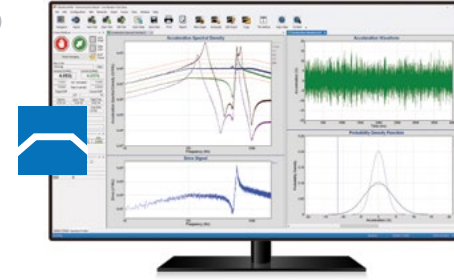
2010



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.

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.

2020



SINE TRACKING, ANALYSIS AND GENERATION (STAG)

Generate Sine on Random tests reflective of environments with dominant rotational tones that are rendered as sine tones on a shaker table. STAG is a real-world evaluation of products that may experience these dominant sinusoidal components, such as engine components.

DEPENDABILITY. FOR EVERY FREQUENCY.

Our hardware just works—period. Vibration Research controllers are designed and engineered to provide superior value, including reliable performance, accurate testing, and user-friendly features. The control software does not require any special boards or special PC drivers. Our customers can simply connect to a PC or laptop in their labs with an Ethernet cable.



EASE OF USE

Our hardware is intuitive and user-friendly.

TIME SAVING

Get your reporting done faster.

SOLID INVESTMENT

Our hardware survives harsh conditions, and performs better, for longer.

WE GUARANTEE YOUR COMPLETE SATISFACTION

Our controllers are meticulously designed and engineered for a high degree of reliability. Each controller:

- Includes a hardware warranty to protect your investment
- Is individually tested before shipping
- Utilizes a common hardware platform and built-in hardware self-diagnostics



QUICK CALIBRATION TURN AROUND

Calibration is all about confidence in the results you're getting. Calibration assures that your measurements are accurate within the specification limits. Every new controller arrives freshly calibrated with a Certificate of Traceable Calibration to NIST. Annual calibration verification is your prescription for the continued health and performance of your controller. VR can even overnight a calibration to ensure very little lab downtime.



DARE TO COMPARE— FOR 30 DAYS.

Skeptical that we can't meet your standards? Put us to the test. We'll let you try our products for 30 days. Once you use them, we think you'll be hooked.

The VibrationVIEW software package runs on all our hardware platforms. Choose between the VR9500 (lower channel count with mix-and-match capabilities), the VR10500 (16 channel minimum enclosure with highest specs), or the ObserVR1000 (all-in-one Dynamic Signal Analyzer that also can serve as a vibration controller).



VR9500®
1 to 128 channels



OBSERVR1000®
4 to 128 channels



VR10500™
16 to 512 channels



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

| VR9500 | VR10500 | OBSERV1000 |
|--|--|--|
| 1 to 128 simultaneous channels for control or monitor usage. | 16 to 512 simultaneous channels for control or monitor usage. | 4 to 128 available channels as an Analyzer & Autonomous DAQ. |
| Scalable from 1 to 128 channels, each 4 channel module can be used independently on separate shakers or together in a single stack for jobs requiring a higher channel count. This economic solution creates substantial cost savings for our customers. | Scalable from 16 to 512 channels, each 16-channel module can be used independently on separate shakers or together in a single stack for jobs requiring a higher channel count. This economic solution creates substantial cost savings for our customers. | For use as a controller in 16 to 128 channels. This hardware option allows for data acquisition and analysis as well as use for basic vibration control, running with VibrationVIEW. |
| HARDWARE WARRANTY | | |
| The VR9500 controller hardware comes with a three-year hardware warranty that can be extended to a lifetime warranty with continual renewal (no lapse) of your Upgrades & Support Agreement. VR warrants the controller hardware to be free of defects in material and craftsmanship. | The VR10500 controller hardware comes with a three-year hardware warranty that can be extended to a lifetime warranty with continual renewal (no lapse) of your Upgrades & Support Agreement. VR warrants the controller hardware to be free of defects in material and craftsmanship. | The ObserVR1000 hardware comes with a one-year hardware warranty. VR warrants the ObserVR1000 hardware to be free of defects in material and craftsmanship. |
| GENERAL SPECIFICATIONS | | |
| <ul style="list-style-type: none"> 1 to 128 channels, 4 channel units (mix-n-match) Control sine, random, or shock vibration to 50,000Hz 26,000 lines of resolution Total harmonic distortion < -100dB THD+N Digital Inputs/Outputs Emergency stop | <ul style="list-style-type: none"> 16 to 512 channels, 16 channel units (mix-n-match) Control sine, random, or shock vibration to 50,000Hz 26,000 lines of resolution Total harmonic distortion < -100dB THD+N Digital Inputs/Outputs Emergency stop | <ul style="list-style-type: none"> 4 to 128 channels Control sine, random, or shock vibration to 50,000Hz 26,000 lines of resolution Total harmonic distortion < -100dB THD+N Digital Inputs/Outputs Emergency stop WiFi connection 802.11 b/g/n Gigabit Ethernet |
| Power 90VAC to 250VAC 50/60Hz 1.2/7Amps | Power 100VAC to 250VAC 50/60Hz 2/1Amps | Power Internal Lithium-Ion battery 18VDC @ 2.5Amps AC adapter included (90VAC to 264VAC, 50/60Hz) |
| 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 | | |
| <ul style="list-style-type: none"> Single-ended with 100k ohm impedance Differential with 200k ohm impedance Custom units can be defined for other sensor types | <ul style="list-style-type: none"> Single-ended with 100k ohm impedance Differential with 200k ohm impedance Custom units can be defined for other sensor types | <ul style="list-style-type: none"> Single-ended with 100k ohm impedance Differential with 200k ohm impedance Custom units can be defined for other sensor types |
| Software set-up allows for: | Software set-up allows for: | Software set-up allows for: |
| <ul style="list-style-type: none"> Per channel selection of transducer sensitivity Coupling (AC or DC) Supports differential inputs 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 | <ul style="list-style-type: none"> Per channel selection of transducer sensitivity Coupling (DC) Supports differential inputs 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 | <ul style="list-style-type: none"> Per channel selection of transducer sensitivity Coupling (DC) Supports differential inputs 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 your device from transients | Protected 200V tolerant inputs protect your device from transients | Protected 40V tolerant inputs protect your device from transients |
| Sample Rate 200kHz simultaneous sample rate | Sample Rate 256kHz simultaneous sample rate | Sample Rate 128kHz simultaneous sample rate |
| Voltage Range ±1V, ±10V, ±20V: 100kΩ 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 <70nV/√Hz spurious free | Noise Floor <70nV/√Hz | Noise Floor 90nV/√Hz |
| Filtering Analog multiple pole anti-aliasing filter and digital anti-aliasing filter with >92dB 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 |

| VR9500 | VR10500 | OBSERV1000 |
|---|--|---|
| OUTPUT CHANNELS | | |
| Frequency Range 50,000Hz 108,000 samples per second | Frequency Range 50,000Hz 216,000 samples per second | Frequency Range 50,000Hz 128,000 samples per second |
| Filtering Analog multiple pole filter plus a digital filter Analog reconstruction filters | Filtering Analog multiple pole filter plus a digital filter Analog reconstruction filters | Filtering Analog multiple pole filter plus a digital filter Analog reconstruction filters |
| Output Channels Two (2) | Output Channels Four (4) | Output Channels One (1) |
| Voltage Range ±1V, ±12V | Voltage Range ±10V | Voltage Range ±10V |
| Resolution 24-bit | Resolution 32-bit | Resolution 24-bit |
| Other <ul style="list-style-type: none"> 1 analog output (drive) standard; COLA output is standard with the sine testing module Optionally drive a differential input device Independent or phase controlled 2nd output optional Safety relay prevents shaker, amplifier, and product damage from transients | Other <ul style="list-style-type: none"> 1 analog output (drive) standard; COLA output is standard with the sine testing module Optionally drive a differential input device Independent or phase controlled 2nd output Optionally drive up to 4 shakers Safety relay prevents shaker, amplifier, and product damage from transients | Other <ul style="list-style-type: none"> 1 analog output (drive) Safety relay prevents shaker, amplifier, and product damage from transients |
| DIMENSIONS | | |
| Length: 15½ in 384mm Width: 10½ in 267mm Height: 1¾ in 45mm Weight: 7.5lbs 3.4kg | Length: 17 in 432mm Width: 11 in 279mm Height: 1¾ in 45mm Weight: 9.25lbs 4.1kg | Length: 9.82 in 250mm Width: 6.33 in 161mm Height: 2.18 in 55mm Weight: 3.3lbs 1.5kg |

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



Welcome to VR University

BECOME THE GO-TO VIBRATION EXPERT.

VRU—our learning platform—was founded with the goal of disseminating vibration testing theory, insights, and practices within the industry. Beyond the products we innovate, we're committed to advancing the industry and helping vibration test engineers elevate their knowledge and skills.

Courses

Enroll in courses, track your progress, and get certified.

Glossary

See an alphabetical list of industry terms—from amplitude to zero-g output.

Knowledge Base

View papers, abstracts, case studies, and more.

VRU.VIBRATIONRESEARCH.COM

WE DON'T STOP AFTER INSTALLATION.

In fact, that's where it begins. Our support continues over the lifetime of your product—anytime you need us. Vibration Research has local sales offices and representatives in many countries throughout the world. Visit vibrationresearch.com for more information.

HELPING YOU RESOLVE ISSUES FASTER

In the spirit of innovation and customer care, we've incorporated a helpful tool right into our software. View the last 50 tests run in the navigator menu of VibrationVIEW. With a simple selection, you can email or upload all the test settings and test results— everything our customer support team needs to resolve any issue you're facing.

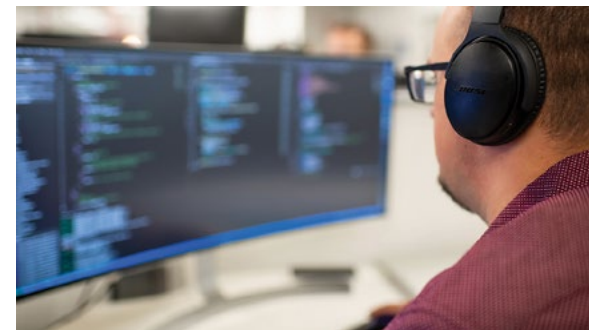


LIFETIME HARDWARE WARRANTY

Vibration Research warrants the controller hardware to be free of defects in materials and workmanship for the lifetime (VR9500 and VR10500) of the product through continual renewal of the Upgrades & Support Agreement.

UNLIMITED TECHNICAL SUPPORT

VR recognizes that providing customers with high-quality support contributes significantly to their long-term success. With that in mind, VR provides unlimited technical support via phone, email, webinar, and more to customers current with the agreement.



Facing a challenge? Tell us more.

Ninety percent of our improvements originate directly from customer suggestions. If you're facing a challenge you believe better software or hardware could solve, we'd be interested to hear more. Contact us anytime on our website. All information is kept strictly confidential.

Vibration Research provides year-round live and on-demand support and training options:

- Topic-specific monthly webinars
- One-on-one web training
- On-site training and support
- Two-day training seminars

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 local area to request more information. Be sure to ask about a demo version of our VibrationVIEW software.

WE'RE GLOBALLY AT YOUR SERVICE.

VIBRATION RESEARCH

1294 Chicago Drive
Jenison, Michigan 49428 USA

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

CHINA - PRC

Leo Zhang
Shanghai - Suzhou - Xi'an
+86.512.6843 2851
sales@vibrationresearch.cn

EUROPE (EASTERN)

Jaroslav Hruby
Blansko, Czech Republic
+420.776.736.271
sales@vibrationresearch.eu

EUROPE (WESTERN)

Holger Boller
Föritzal, Germany
+49.36764.81.6363
sales@vibrationresearch.de

INDIA

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

RUSSIA

Alexander Smirnov
Moscow
+7.910.005.10 07
sales@vibrationresearch.ru

UNITED KINGDOM

Marc Brown
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 already have.

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

VIBRATIONRESEARCH.COM

