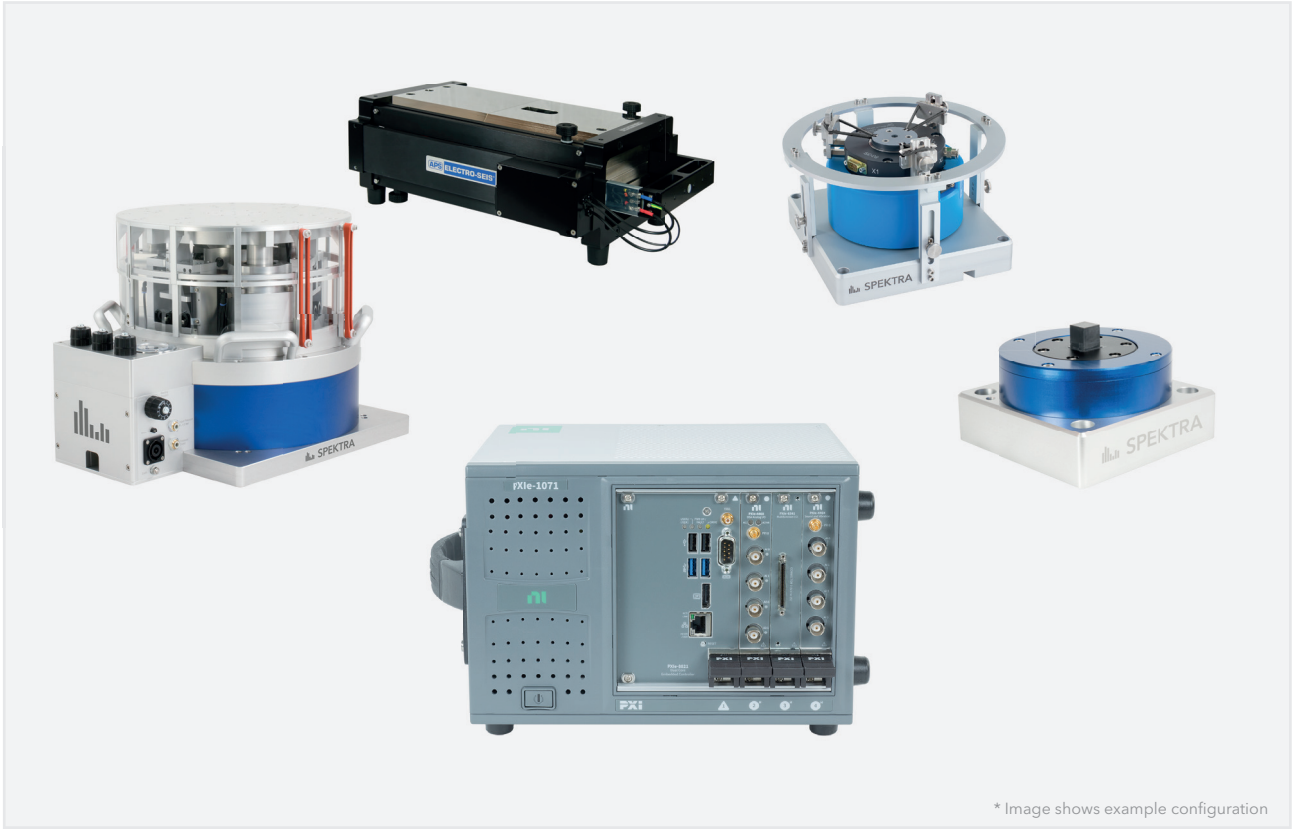
VCS 403

Vibration Control System – powerful, modular, flexible



* Image shows example configuration

Applications

- ✓ Vibration tests
- ✓ Modal excitation
- ✓ Production tests
- ✓ Development and research
- ✓ Micro-structural investigation

Benefits

- ✓ Customized data export
- ✓ Test scripts
- ✓ Digital interface
- ✓ Alarm monitoring
- ✓ Synchronization options
- ✓ Dynamic signal analysis

Features

- ✓ Scaleable, flexible vibration control system with variable number of measurement/ control channels
- ✓ Remote control via Ethernet interface or DLL
- ✓ Real-time data acquisition, transmission and recording
- ✓ Standardized hardware base
- ✓ Controller for vibration test modes: sine, random, shock, time signal replication
- ✓ Control of acceleration, velocity, displacement, pressure, rotation, voltage, also with laser vibrometers

Technical Data

Sine	0.1 Hz...50 (95) kHz (Extensions on request)
Random	1 Hz...50 (95) kHz, 5,000 (10,000) lines
Shock	Half-sine, trapezoid, sawtooth, custom; 0.25 ms...40 ms
Further modes of operation	Sine over random, production, time signal replication, sensor test, others on request

Multi-channel operation

- 1 to 10 control channels for up to 10 vibration exciters
- Synchronous excitation, with adjustable phase shift if required
- Individual excitation of some or all channels
- 1 channel control with up to 18 inputs, average, min., max.
- Extra monitoring channels

Configuration

- NI PXI Real time system in flexible configuration
- Connection to PC via Ethernet
- Powerful PC user interface (National Instruments LabVIEW), extensible by customer if necessary
- 2 to 18 analog inputs 24 Bit, 10 V, with or without IEPE, switchable
- 2 to 10 analog outputs 24 Bit, 10 V
- Optional data acquisition channels e.g. 8 * 16 Bit
- Optional signal conditioning for charge sensors, PR sensors, capacitive sensors

Option for high frequency applications

VCS 404:

- ✓ Based on VCS 403 hardware and software, but featuring 16-bit ADC-DAC cards with up to 10 Msamples/s
- ✓ Sine frequency: 1 Hz...4 MHz
- ✓ Special characteristics include:
  - special support of laser vibrometers, also 3D scanning
  - tracking bandpass and spectral measurement
  - offset correction
  - gapless recording of samples
  - RMS calculation by spectral analysis
  - level control based on spectral input signal
  - MEMS sensor test options



Hardware and software options

Hardware systems		
Product name	**Description**	**Item No.**
VCS 403 base system 2	2 inputs, 1 output, sine, noise 0.1 Hz…50 kHz	1104675
VCS 403 base system 6	6 inputs, 1 output, sine, noise 0.1 Hz…50 kHz	1104676
VCS 403 multi system	4 inputs, 4 outputs, sine, noise 0.1 Hz…50 kHz	1104677
VCS 404 high frequency system	4 inputs, 1 output, sine 1 Hz…1 MHz, noise 20 Hz…500 kHz	1104718

Hardware options	
Product name	**Item No.**
VCS 403 expansion 2/4/6/8 more input and output channels	1104200
VCS 403 extension to 4/8/16 more input channels	1100494
VCS 404 UHF up to 4 MHz sine	on request

Software options		
Product name	**Description**	**Item No.**
VCS 403 software base package – high frequency	sine 0.1 Hz…50 kHz, noise 10 Hz...50 kHz	1104695
VCS 403 software base package – low frequency	sine 0.1 Hz…5 kHz, noise 1 Hz...5 kHz	1104698
VCS 403 software multi control channel package	sine 0.1 Hz…50 kHz, noise 10 Hz...50 kHz	1104712
VCS 404 software package - very high frequency	sine 1 Hz…1 (4) MHz, noise 20 Hz…500 kHz	1104719
VCS 403 shock option	half-sine, trapezoid, sawtooth, custom 0.25…40 ms	1104714
VCS 403 chart option	field data replication, earthquake	1104703
VCS 403 option multi-axis	excitation 6D	1104700
VCS 403 option multi-axis	excitation 12D	1104701
VCS 403 production option	extremely quick production test with sine excitation	1104702
VCS 403 sensor test option	complete EOL sensor test with many options	on request
VCS 403 100k option	frequency range up to 98 kHz	1104717
VCS 403 climate option	vibration tests inside climate chamber	on request
VCS 403 multi sine sweep option	up to 4 sines sweep synchronized or independently	on request

Software options		
Product name	**Description**	**Item No.**
VCS 403 antiklirr smart option	quick frequency test rows with distortion compensation	1104720
VCS 403 option swept narrow bands	narrow noise bands moving on base noise	1104721
VCS403 option phase control	multi channel HF excitation with controlled phases	1104713