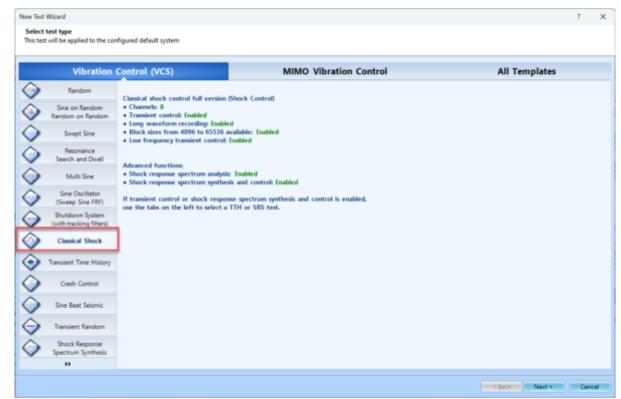
VCS Shock Testing

Create New Test

To create a new test, first open up EDM. On the VCS Start Page, select **Classical Shock** under the **Create a test** tab.

EDM Spider-VCS Start Page			? ×
CRYSTAL Engineerin	ng Data Manage	ement Syste	
v			11.1.0.15
Recent tests	Account login		
Open Test	Account	Admin	
	Password:		
			Please login to VCS.
	🔲 Keep me logged in		Login
Create a test	Spider connection status		n status
Random	Spider-80X (SN: 2597504 (IP: 192.168.1.153)) detected.		
Sine on Random, Random on Random			
SROR Acoustic Control			
MIMO Random MESA RoRSoR MDOF Random			
<u>^</u>			
Swept Sine			
Resonance search and tracked dwell Multi Sine Sine Oscillator Sine Reduction			
Blade Fatigue Test Resonance Search MIMO Sine MDOF Sine	Detect more Spiders		Do not show this start page
Classical Shock	1 Contraction		
Transient Time History Control SRS Earthquake	New Edition	-	
Transient Random Sine Beat Seismic	Spider-80Xi With LCD		
Crash Control MIMO Shock MIMO TTH MIMO SRS	32/64 Channels Dynamic Di	ata Acquisition System	
Time waveform replication MIMO TWR			Contraction -
	0.		

The **New Test Wizard** will now open up. From here, select **Classical Shock** again and then press **Next**.



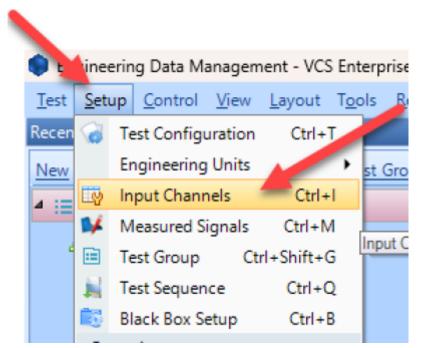
Finally, give the test a name and select the Spider system that will be used to run the test. Once all is complete, press **Create**.

New Test W	Fizard			?	\times
	basic information for t will be able to search for	this test or this test by "Test name" or "Test description".			
Create a ne	w Classical Shock test: I	DemaShock			
Test name:	DemoShock		Append the sequence number		
Test descrip	ption:				
• Use th	e default libraries of the	previous test of the same type. If default libraries	were not applied before the manufacturing settings will be used.		
() Create	test by using a templat	e.			
Select	Template name	Description			
Spider syst					
Test directo	C:\Users\Drew\I	Documents\EDM\.demo\.DemoShock	Choose		
Create n	new run folder for each r	n/n			
			< Back Create to		ncel

Test Configuration

Input Channels

The input channels will now need to be set up. All sensors will to be properly configured before testing. The **Input Channels** menu can be found through **Setup** \rightarrow **Input Channels**.



Channel Type

Control vs. **Monitor**. When running a test, there will need to be at least one control sensor. The control sensor is used to monitor the actual vibration levels that the shaker is producing. It then sends this data to the controller so that it maintains the targeted profile. This sensor should be mounted somewhere on the shaker/slip table itself, not the Device Under Test (DUT). Monitor sensors will show the levels that the DUT itself is experiencing.

On/Off	Channel type	Location ID
🔽 On	Control 🗸	Ch1
🗸 On	Monitor ~	Ch2
Off	Monitor 🗸 🗸	Ch3
Off	Monitor 🗸 🗸	Ch4
Off	Monitor 🗸 🗸	Ch5
Off	Monitor 🗸 🗸	Ch6
Off	Monitor	Ch7
Off	Monitor 🗸 🗸	Ch8

Measurement Quantity

Defines the physical unit that will be measured by the sensor connected to the channel.

Measurement quantity Acceleration Acceleration Velocity Displacement Pressure Force Voltage Current Sound Pressure Time Frequency Angular Acceleratio Angular Velocity MASS Angle Moment Strain Temperature Resistance Humidity

Sensitivity

Sets the proportionality factor for the measurement (millivolts per engineering unit) given as a parameter of the sensor.**Input Mode**

There are five modes in which the inputs can operate:

DC-Differential- In the DC-Differential mode, neither of the input connections is referenced to the local ground. The input is taken as the potential difference between the two input terminals, and any potential in common with both terminals is canceled out. The Common Mode Voltage (CMV) will be rejected as long as the overall input voltage level does not saturate the input gain stage. Beware that very high CMV will cause clipping and may damage the input circuitry. Signals with a nonzero mean (DC component) can be measured in this mode.

DC-Single End- In single-ended mode, one of the input terminals is grounded and the input is taken as the potential difference of the center terminal with respect to this ground. Use this mode when the input needs to be grounded to reduce EMI noise or static buildup. Do not use this mode when the signal source is ground referenced or ground loop interference may result. This mode also allows signals with a non-zero mean to be measured.

AC-Differential- AC-Differential is a differential input mode that applies a low-frequency high-pass (DC-

Running the Test

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blocking) analog filter to the input. It rejects common mode signals and DC components in the input signal. Use this when DC and low-frequency AC voltage measurements are not required or when a DC bias voltage is present. The analog high-pass filter has a cutoff frequency of -3dB at 0.3 Hz, and -0.1dB at 0.7 Hz for the IEPE input mode.

AC-Single End- AC-Single End grounds one of the input terminals and enables the DC-blocking analog filter. Use this mode for non-ground referenced sources where measuring the DC or low-frequency components are not required. It shares the same high-pass filter as that of AC-Differential.

IEPE (ICP)- All Crystal Instruments products support IEPE (Integral Electronic PiezoElectric) constant current output type input channels. IEPE refers to a class of transducers that are packaged with built-in voltage amplifiers powered by a constant current. These circuits are powered by a 4 mA constant current source at roughly 21 Volts.

Charge- Some sensors provide a high-impedance charge output. Usually, these are high-sensitivity piezoelectric units that lack a built-in voltage mode amplifier (i.e. IEPE), allowing them to be used in high-temperature environments. The Spider-81 front-end module has a built-in charge amplifier that allows the system to read the output of these sensors

Sensitivity	Input mode	
100 (mV/g)	IEPE 🗸 🗸	
100 (mV/g)	IEPE ~	
100 (mV/g)	IEPE	
100 (mV/g)	AC-Single End DC-Single End	
100 (mV/g)	AC-Differential DC-Differential	
100 (mV/g)	In-Line Charge Converte	
100 (mV/g)	External Charge Amplifi External Charge Amplifi	
100 (mV/g)	AC-Single End	