

# **EDM 11.0**

## **Engineering Data Management Software Release Notes**

SPIDER VIBRATION CONTROL SYSTEMS (VCS)

MULTIPLE-INPUT MULTIPLE-OUTPUT VIBRATION CONTROL SYSTEMS (MIMO VCS)

DYNAMIC SIGNAL ANALYSIS (DSA)

POST ANALYZER (PA)

EXPERIMENTAL MODAL ANALYSIS (EMA)

REMOTE CONDITION MONITORING (RCM)

TEMPERATURE, HUMIDITY, VIBRATION (THV)

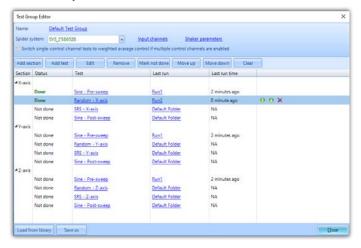


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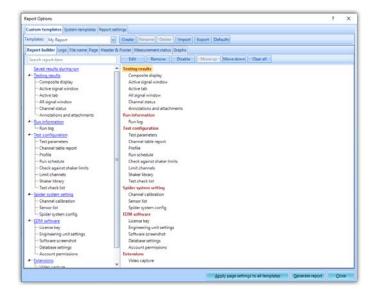
#### **RELEASE HIGHLIGHTS**

#### **Test Group**



- New organization feature for arranging a list of tests to be completed
- Group tests to different sections for different phases or test configurations
- Tests can be marked as completed or not by the operator
- "Input Channel" table and "Shaker Parameter" settings are shared and carried over between subsequent tests, when Test Group is enabled. Any change is applied to all tests in the group.

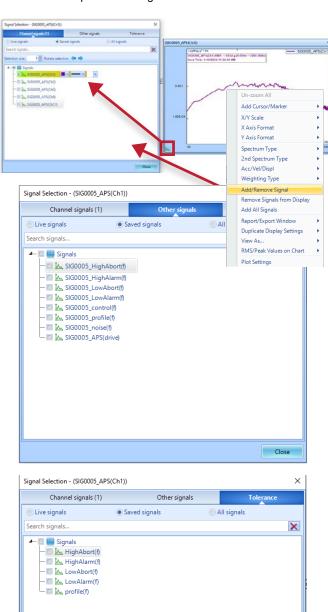
#### Report Builder



- Improved Report template system allowing further customization of report item content.
- The order of report items is customizable.
- Improved "Report this Run" capability to preview and use a preset Report template.
- Ability to report previous signals and test configurations.
- Ability to report saved signals of a selected run and test configurations.
- Click button to generate reports.

#### Signal Selection Redesign

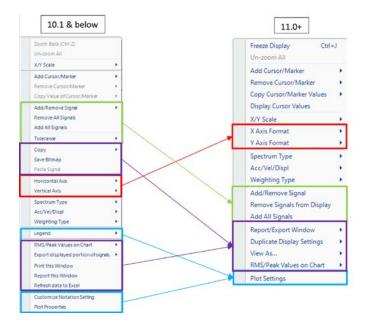
An improved user interface allows users to select and configure signals through a signal selection window instead of a right-click menu. This update is part of the right-click plot menu redesign to declutter and improve UI navigation.



#### Right-click Plot Menu Window Redesign

Improved the right-click Plot menu window by organizing buttons into groups. Users are provided with improved control to select and configure signals and plot settings.

Clos



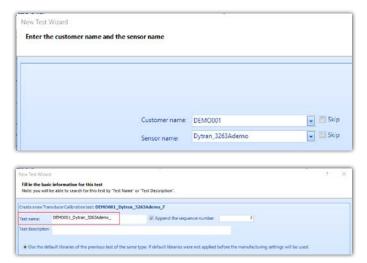
#### **Transducer Calibration Software**

Transducer calibration software is a new EDM application designed for calibrating and testing transducers. It requires a shaker, a controller, and a reference transducer to complete the task. The software allows the user to input a specific vibration profile, after which it compares the output of the transducer under test to the reference. The sensitivity of the transducer can then be adjusted accordingly to ensure that the measurement falls within the desired range and accuracy. The software is compatible with a wide range of transducers, provided the Spider hardware supports it.





• Sensor and customer names can be included in the test name.



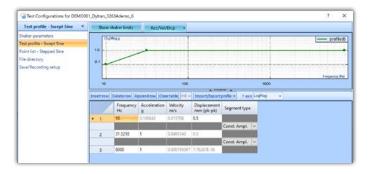
• Easy channel setup. Consistent with all EDM applications.



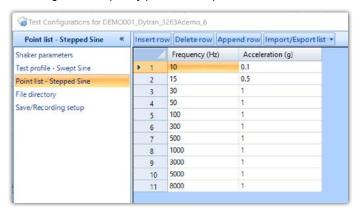
- · Parameters of calibration
- · Calibration Sensitivity setup
- Frequency Response measurement after calibration, available methods are Step Sine and Swept Sine.



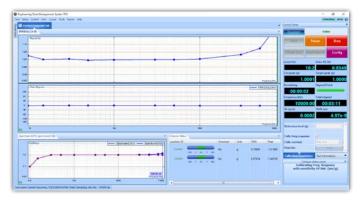
• Configurable profile for Swept Sine FRF measurement



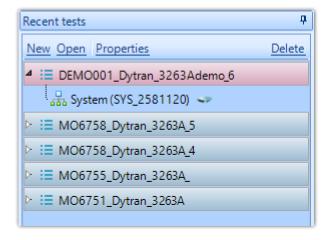
· Configurable frequency points for Step Sine FRF measurement



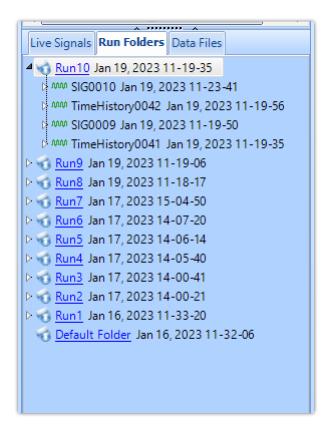
FRF measurement graph



 Multi-test management. Each test can be for different sensor models.



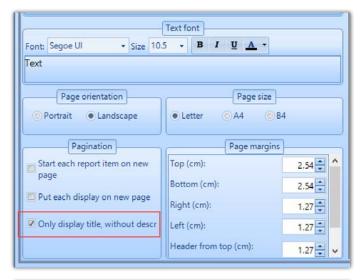
 Multi-run management. Each run can be for a different sensor of the same model.



#### **MAJOR IMPROVEMENTS**

#### **Report Feature Improvements**

Report Headers are customizable. Two new options to hide or display information previously required in reports.





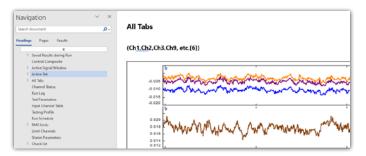
• The variable sampling rate setting is included in reports.



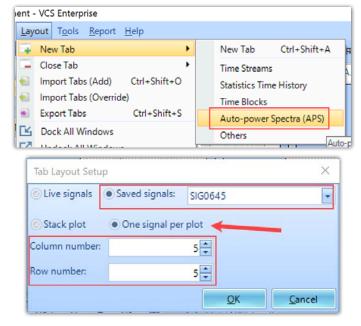
 The option to "Put each display on new page" is now functional for reports generated in Review/Compare mode.



• Changed "All Views" to "All Tabs" for consistency.



# Signal Display Improvements Organized windows into new display tab





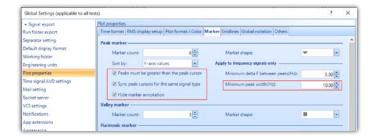
#### Compare 3 sets of signals in Compare Mode

In Compare Mode, pin the selected signal in the display and select another signal. The same signal for up to 3 files or runs can be compared.

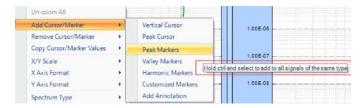


#### Additional Peak Detection Criteria

- Peaks must be greater than the peak/horizontal cursor.
- Hides or displays the marker annotation for a cleaner signal display.
- Set the minimum peak width and minimum distance between peaks.



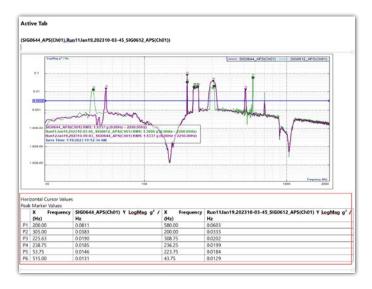
• Peak cursor can be added simultaneously to multiple plots.



· Peak cursor can be moved in sync across multiple plots.

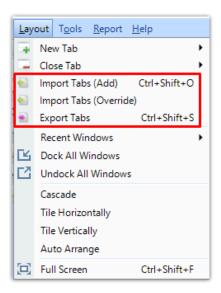


• The peak marker table includes more information in reports.



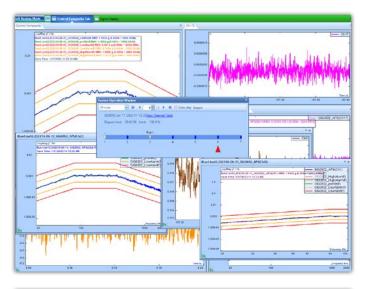
### Layout "Import" & "Export" Tab UI

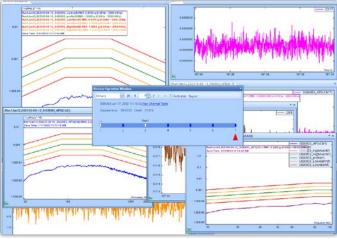
The Layout menu for importing and exporting displayed signal tabs is improved to provide clarification.

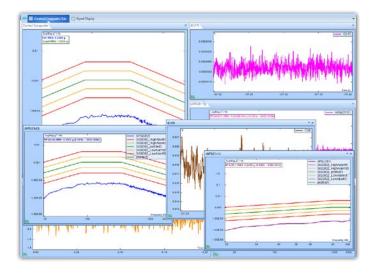


### **Review Mode Layout Improvements**

Improvements to Review mode are consistent with the Normal mode layout. Users can switch between runs when entering and exiting Review mode.

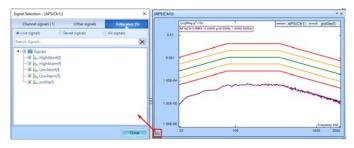






# Removing "Tolerance\_" prefix & Abort and Alarm signals from legend

Removal of the prefix "Tolerance\_" from tolerance signals and the tolerance signals itself from legends to increase available space.



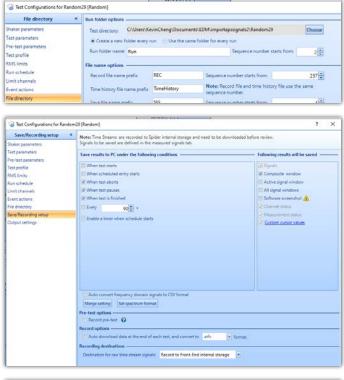
# Display settings remain when entering or exiting Compare mode and switching between tests

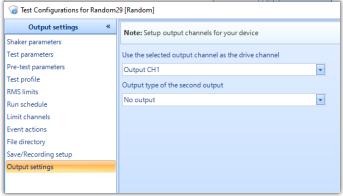
The following display settings will remain when entering or exiting Compare mode and switching between tests. The same settings can be copied and pasted to all identical signal type display windows.

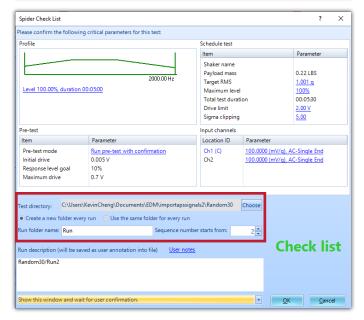
- Range, format, and spectrum type of the horizontal axis and the second horizontal axis
- Range and format of the vertical axis
- Annotations
- Peak markers
- · Positions of vertical cursors, peak cursors, and markers
- Plot signal colors, plot line type
- Display window name and display tab name

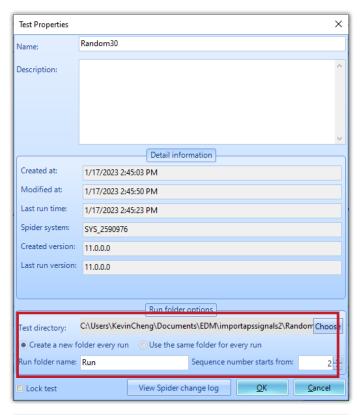
# **EDM Vibration Control Software** *File Directory Save Location UI*

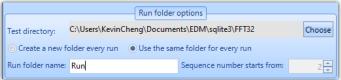
The location of test files and run folders saved in the computer file system is clarified with more control over the run folder label in various areas of EDM. Users can save test results to a folder with a specified label instead of Default Folder.







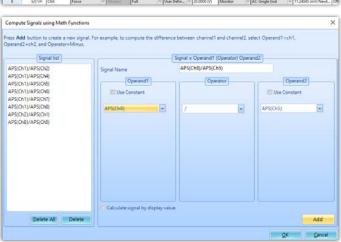


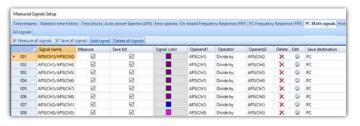


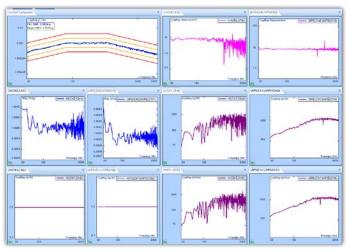
# Allows PC Math Signals to perform Division across different units

Math signals computed in the EDM software can now perform division across different units, such as Acceleration / Voltage, Acceleration / Force, etc.



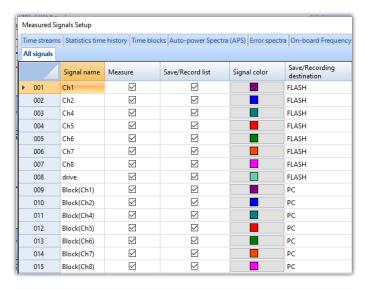






#### Universal rule for Signal colors

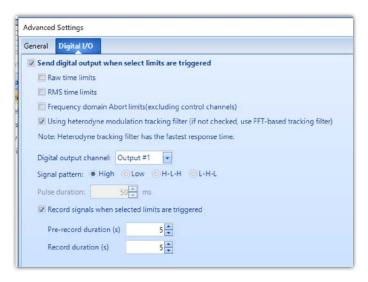
Signal colors are now selected from the Measured Signal or Signal Selection window.





#### Sine Reduction: heterodyne modulation tracking filter

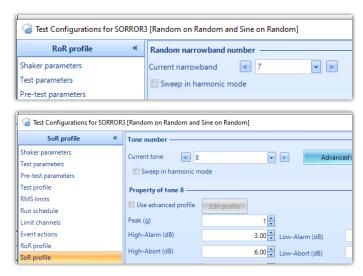
Heterodyne modulation tracking filter is used to trigger a digital output for a shutdown system.



#### Improvements in SoRRoR

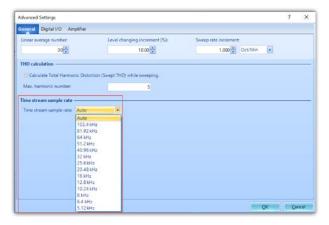
SoR & RoR Profile Next & Previous buttons

"Next" and "Previous" buttons allow users to quickly cycle through SoR & RoR bands.



### Improvements in Sine/RSTD/Multi-sine

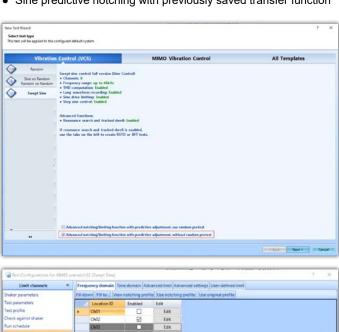
EDM provides sample rate options up to the hardware maximum and down to the 2.27 times of the profile range.

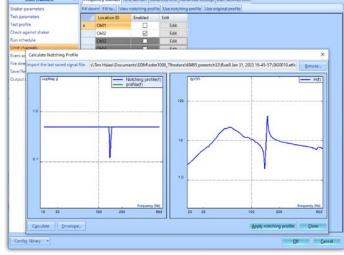


Open loop Random pre-test added to Sine test types



• Sine predictive notching with previously saved transfer function

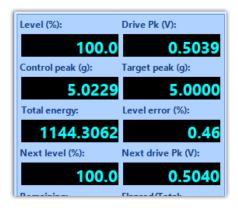




#### Improvements in Shock

Displays Total Energy instead of RMS.

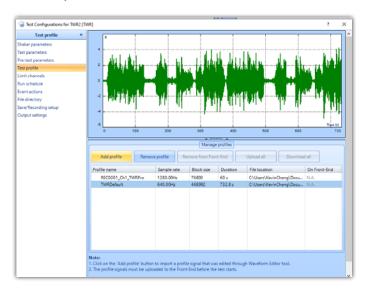
Displays the total energy of the test instead of the RMS measurement for transient process tests.



#### Improvements in TWR

TWR Test Profile UI (buttons relocated)

The buttons in TWR are relocated above the profile tables to provide a vertically consistent interface.



#### **EDM Dynamic Signal Analyzer**

#### Custom time weighting for acoustic octave tests

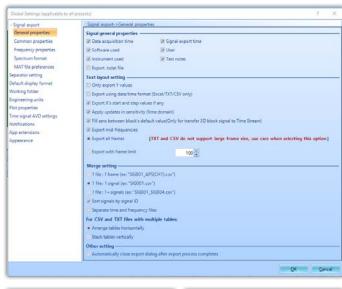
Custom time weighting for acoustic octave tests has a new value input.

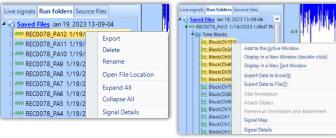


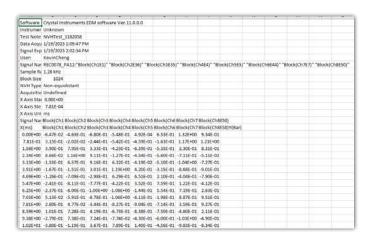
### **Post Analyzer**

#### PA export merge settings

Additional export merge settings allow users to consolidate multiple files into one file.

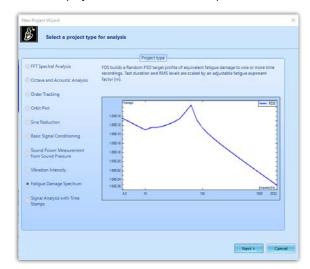






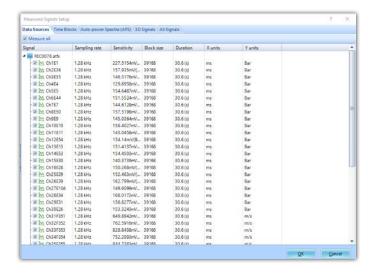
#### Updated FDS new project wizard information

The FDS new project wizard information is updated.



#### Data source tab in PA Measured Signals

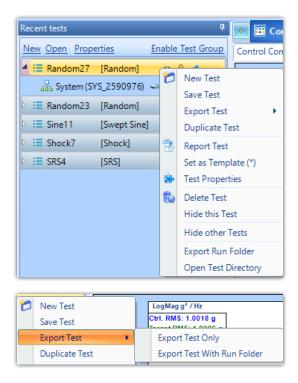
New tab provided in Measured Signals contains a list of all data sources used in a current project that can be enabled or disabled.



## **General Improvements**

### Recent Tests & Test Group right-click menu UI

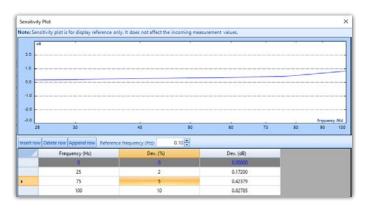
The right-click menu UI in the Recent Tests and Test Group windows now provides options to hide or export recent tests. Exporting a test only creates a new STK file and will not create a test in the database.



### Clarify Sensitivity Plot Function

The sensitivity plot function in the sensor library is clarified as reference only. It does not affect the incoming measurement values.

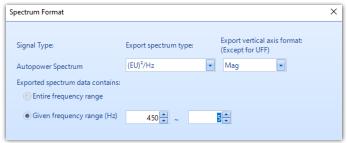




#### Flexible frequency range when exporting to Excel

Flexible frequency range when exporting frequency domain signals to an Excel file, where either input can be the start to end or end to start.





27	X:Frequenc Y:	:Mag (µm)²/Hz
28	25	2.05125E-06
29	50	7.74447E-11
30	75	2.04803E-06
31	100	8.18828E-06
32	125	2.04759E-06
33	150	2.78095E-11
34	175	1.85437E-12
35	200	3.59023E-13
36	225	1.57856E-13
37	250	1.18467E-13
38	275	8.04476E-14
39	300	7.22773E-14
40	325	7.57189E-14
41	350	8.82173E-14
42	375	8.77542E-14
43	400	9.56152E-14
44	425	4.59065E-14
45	450	5.41691E-14

#### Improved file explorer window to select test directory file path

An improved comprehensible file explorer window allows users to easily select a test directory file path.



#### **Cancelling Measured Signals**

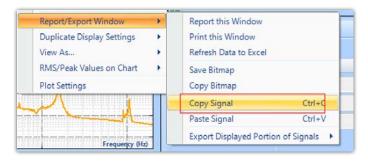
Clicking "Cancel" in Measured Signals will no longer display a user prompt to confirm cancellation.

#### Improved Run History Search Performance

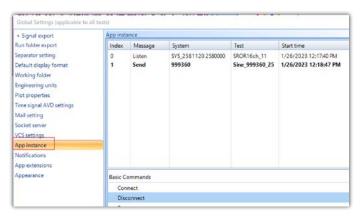
The Run History search function will wait for the Search button to be clicked instead of automatically searching for an entered entry.

 "Copy signal data" (to paste to a file) and "Copy signal" (to paste to a display window) is combined into one "Copy signal" command.

Copied signals from a window can be pasted to a new display window, or their values can be pasted to a text file.



 Settings for multiple VCS instances are moved to an independent tab in Global settings.



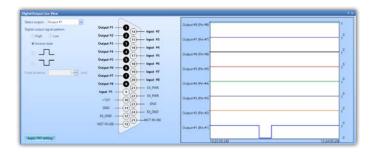
• Supports the latest hardware changes.

# **EDM Temperature, Humidity, Vibration (THV) Control Software**

Digital Output View implemented in THV and DSA.

Digital Outputs now offers a live view in the EDM signal display. This feature allows users to:

- · Display all pin numbers of the DB connector
- Display the current state of each digital output pin
- Display the state of each digital output pin over a given duration
- Manually set the output pulse or state of a digital output pin
- · Set the display duration and color of each digital output signal



• Supports the new TH controller structure: PLC + Spider-101i, which is the fourth generation in the following table.

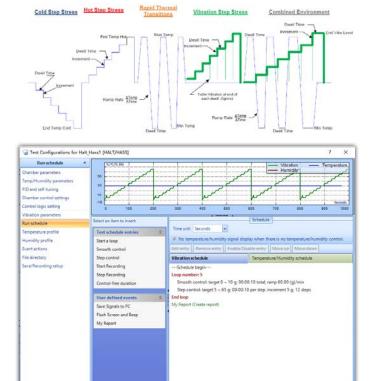
All generations of the TH controllers for STI chambers are listed in the following table.

	UI	Configurations and Data	Control	Chamber system monitoring	Monitoring gauges
1	THV/ EDC	Spider	Spider	UMC PLC	Analog, connected to PLC
2	THV/ EDC	Spider	Spider	Spider	Analog, connected to Spider
3	THV/ EDC	Spider	Spider	Siemens PLC	Digital, connected to PLC
4	THV/ EDC	Spider	Spider / Siemens PLC	Siemens PLC	Analog, connected to PLC

• EDM THV HALT/HASS controller software

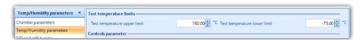






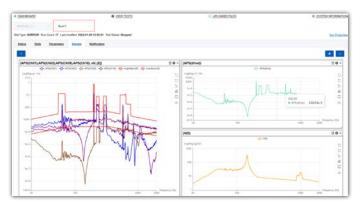


Controller ensures a test will not exceed the temperature limits of the chamber.



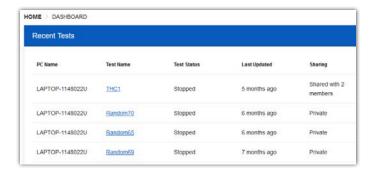
#### **EDM Cloud and EDM Mobile**

Signal display and layout are saved for review. View previous runs and signals.



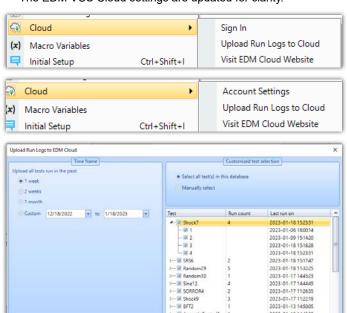
#### • EDM Cloud Recent Test List UI Refactor

The recent test list in EDM Cloud Browser is organized and more concise.



#### • EDM VCS Cloud UI

The EDM VCS Cloud settings are updated for clarity.



BFT2

I— IZ TWR2

2023-01-13 14/42/28 2023-01-13 14/28/02 2023-01-13 14/02/08 2023-01-13 13/51/02

#### SOFTWARE RELEASE HISTORY

Туре	Release	Exact Version	Release Date
Release	EDM 4.2	CI 4.2.0.3	02/28/2014
Patch	EDM 4.2.0	CI 4.2.0.14	07/02/2014
Release	EDM 5.0	CI 5.0.0.2	11/27/2014
Patch	EDM 5.0.1	CI 5.0.1.3	02/27/2015
Release	EDM 5.1	CI 5.1.0.6	08/12/2015
Release	EDM 6.0	CI 6.0.0.1	05/19/2016
Patch	EDM 6.0.2	CI 6.0.2.9	08/09/2016
Release	EDM 6.1	CI 6.1.0.4	02/07/2017
Patch	EDM 6.1	CI 6.1.0.27	08/22/2017
Release	EDM 7.0	CI 7.0.0.6	02/01/2018
Patch	EDM 7.1	CI 7.1.0.7	07/19/2018
Release	EDM 8.0	CI 8.0.0.1	02/02/2019
Release	EDM 8.1	CI 8.1.0.1	11/13/2019
Release	EDM 9.0	CI 9.0.0.4	06/05/2020
Release	EDM 9.1	CI 9.1.0.0	02/03/2021
Release	EDM 10.0	CI 10.0.0.2	10/26/2021
Release	EDM 10.1	CI 10.1.0.1	09/09/2022
Release	EDM 11.0	CI 11.0.0.1	01/19/2023

#### **SYSTEM REQUIREMENTS**

Minimum system requirements:

• Operating system support: Windows 7 SP1 or higher

Operating system type: 32-bit or 64-bit
 Processor speed: 1.5 GHz Dual-Core x86

• RAM: 4 GB

• Available storage space: 10 GB

# Recommended system requirements (minimum for Spider systems higher than 16 channels):

• Ethernet speed: at least 1 Gbps Ethernet port on the computer

• Network cables: provided by Crystal Instruments

Operating system: Windows 10, 64-bit
 Processor: Intel Core i7, 2.0 GHz or Higher

• RAM: 8 GB DDR3 1600 or higher

• Available storage space: 10 GB or higher

• Spider-HUB firmware version: 2.0.5.17 or higher

#### **VERSION COMPATIBILITY**

Product and Software Version	Firmware Versions
Spider-80X/80Xi/80Hi/80Ci	
EDM Testing 11.0.0.x	11.0.0.1
Spider-81 (v7.x)	
EDM Testing 11.0.0.x	11.0.0.1
Spider-81B (v7.x)	
EDM Testing 11.0.0.x	11.0.0.1
Spider-80SG/SGi	
EDM Testing 11.0.0.x	11.0.0.1
Spider-20HE/20i	
EDM Testing 11.0.0.x	11.0.0.1

Product and Software Version	Firmware Versions
CoCo-80X/90X	
EDM Testing 11.0.0.x (EDM CoCo for DSA)	2.0.x or above
CoCo-70X	
EDM Testing 11.0.0.x (EDM CoCo for DSA)	2.0.x or above
Vibration Diagnostic System 1.4.2.x	2.0.x
CoCo-80	
EDM 6.0.2.x	4.0.x

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