# m+p VibControl
Release 2.17

We are pleased to present the new revision 2.17 of our m+p VibControl vibration controllers for advanced environmental testing. The new functions make it easy to conduct high quality vibration testing and improve your user experience, because our ambition is to make your daily work as easy and efficient as possible.
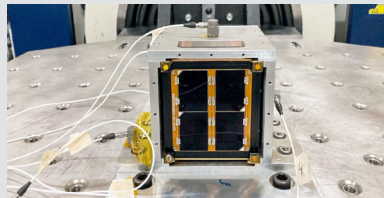
Overview of Release Contents
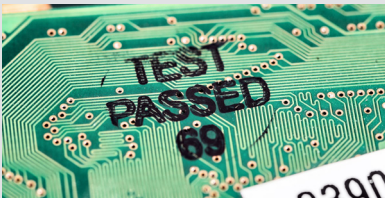
New Application Highlights

- SRS during classical shock - compare with reference
- New notching SoR, notching on sine tones
- Detect structural change automatically and hold or abort test to protect specimen

New Software Enhancements

- Q-factor UI improvements and flexible correction
- VibUtil enhancement: improved control in advance
- New sine dwell types: log and R40
- Increased sampling rates for throughput supporting 102.4 kHz and 204.8 kHz (with suitable hardware)

New Quality of Life Features

- Improved colour dialogues (VibEdit, VibRunner, VibPostTests)
- Transducer calibration date now visible in channel table
- Firmware update tool delivering faster and easier handling
- Improved reporting for RMS time history with visible chart also within limits
- Extended display time elapsed / remaining
- Disable aborts on lower levels
- Automatic store measure

Key Features for Your Testing Success

- Compatibility with wide range of sensors and signals for future-proofing
- Clearest test picture with optimal data visualization for different test types
- Customization to meet your specific requirements
- Secure, fast and efficient data access with high-speed SQL-based data storage
- Import 3rd party files for analysis and integration of all related data for common reporting
- Supports standard hardware (m+p international, NI)
- Proven performance and product evolution for long-term reduced cost of ownership

New Application Highlights
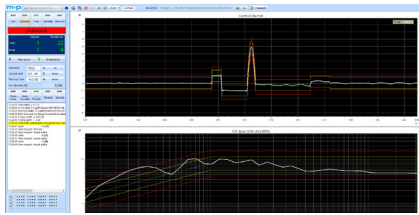

Evaluate SRS during Classical Shock

The SRS results can now be observed during Classical Shock tests, as well as within the result file of VibPostTest (SRS license is necessary). SRS results can be viewed in VibRunner and VibPostTest without the need to transfer Classical Shock data into the SRS-module, improving workflow performance for customers that review SRS even for Classical Shock.
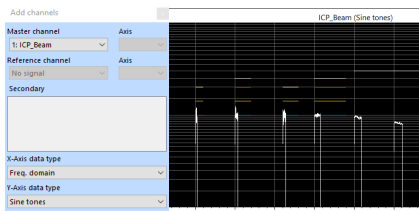

Notching for Sine-on-Random Tones

During Sine-on-Random tests, the sine tones typically pose a higher risk to the test object compared to the lower noise levels. Particularly, implementing notching for the sine tones enhances safety precautions. To set these preferences, access the "Add Channels" dialog by right-clicking on the chart. Choose the x-axis type as "Sine Tones" to visualize both the sine tones and their corresponding notch bands concurrently.
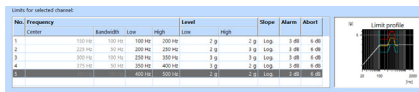
## Detection Mode for Structural Changes

The Limit mode enables you to assess the signal's waveform. In this mode, the watchdog channel operates similarly to a notch channel, with the distinction that it doesn't attenuate the excitation signal; instead, it triggers a test abortion when the specified abort limits are breached. This feature enhances safety during vibration tests by monitoring resonance frequency shifts throughout the test and initiating an abort if they deviate beyond the configured boundaries.

Feature and Automation Enhancements
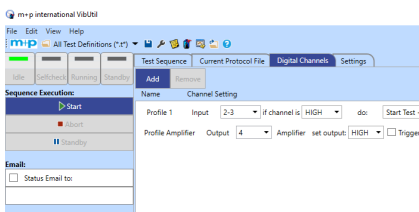
Digital Channels Logic AND Operation

The flexibility of triggering vibration tests with m+p VibUtil using events has been enhanced, allowing digital channels to be combined using a logic AND operation. For instance, a vibration test can now be initiated when a chamber reaches a specific temperature AND an additional safety check relay passes.
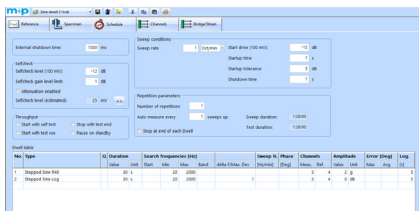

New Sine Dwell Types: Log and R40

Two new sine dwell types add flexibility when designing vibration tests. These additions are particularly valuable for tests covering a wide frequency range. Logarithmically spaced dwell frequencies and those derived from the Renard-Series R40 offer enhanced coverage.
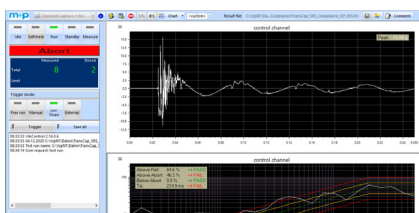
Increased Sampling Rates

Utilizing the entire available frequency range of m+p international measurement hardware provides the flexibility to select appropriate sample frequencies for various applications. When employing m+p VibRunner hardware in conjunction with AI820 data acquisition modules, it becomes possible to achieve a sampling frequency of up to 204.8 kHz, which can be directly streamed to SSD for seamless data throughput.
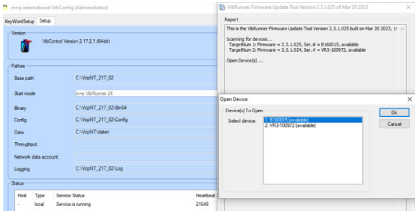
Firmware Update Tool – Faster and Easier Handling

The firmware update for m+p hardware is now seamlessly integrated into VibConfig. Within the 'Devices' window, you can find a comprehensive list of all frontends currently employed in your configuration, along with their respective statuses. If any measurement frontends require a firmware update, they will be clearly identified and can be updated directly from this interface.

## Improved Reporting for RMS Time History

In the case of random tests and sine-on-random tests in mixed mode, RMS over time data is now consistently saved to a throughput file, even if no limit violations are detected. This file is included within the result file dataset and is labeled 'Test duration...'. This enhancement facilitates more comprehensive test documentation and provides proof of successful testing within the specified parameters.
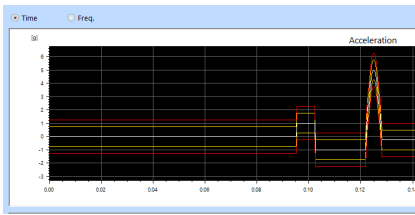
Disable Aborts on Lower Levels

In the Classical Shock repetitive pulse mode, it is now possible to deactivate scaled abort limits for lower-level shocks. In the past, triggering a scaled abort limit while optimizing test settings could cause workflow disruptions. With the ability to disable aborts for lower levels, the system can now be set up seamlessly without unnecessary interruptions.

User Interface Improvements
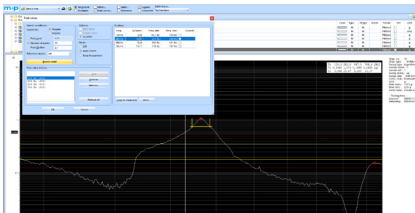
Q-Factor UI Improvements and Flexible Correction

The frequency range used for calculating the Q-factor is now displayed and can be adjusted when dealing with closely spaced resonance peaks. This feature safeguards against unintentional Q-factor calculations for nearby or irregular peaks. The list view for Q-factors presents the set limits and facilitates automatic zooming into each specific Q-factor. Simply choose a Q-factor from the list to zoom in on it.
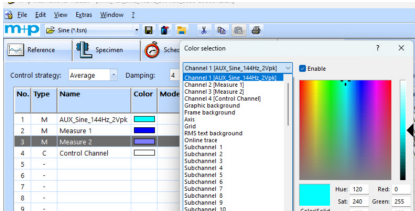
Channel Colour Can be Set in VibEdit

You can now easily designate a specific colour for charts associated with a particular channel by clicking on the channel's colour field in VibEditor. This action will prompt the colour selection dialog to appear. Simply select your preferred colour and enable the 'enabled field.' The chosen colour will be consistently applied across all program components, including testing and post-processing.

Transducer Calibration Date Shown in Channel Table

Sensors that have undergone a valid calibration process guarantee high-quality vibration test results and compliance with test specifications. By displaying the calibration date directly in the transducer table, it becomes easy to quickly assess whether any sensor requires calibration.

Extended Display Time Elapsed / Remaining

The pop-out Control Data dialog window displays now all relevant time information for a vibration test. This includes remaining and elapsed time, for the total test as well as for each level.

m+p VibControl Support

Documentation & Contact

The following datasheets are available for more information:

m+p VibControl Mixed Mode Testing

m+p VibControl Random Vibration Control

m+p VibControl Shock Control

m+p VibControl Sine Vibration Control

m+p VibControl m+p VibUtil/Test Sequencing

m+p VibControl Time Domain Replication/Road Load Simulation

m+p VibControl Shaker Vibration Testing for Launch Qualification

Contact us via info@mpihome.com to:
- Receive a free trial version of the m+p VibControl software
- Discuss your individual requirements and questions
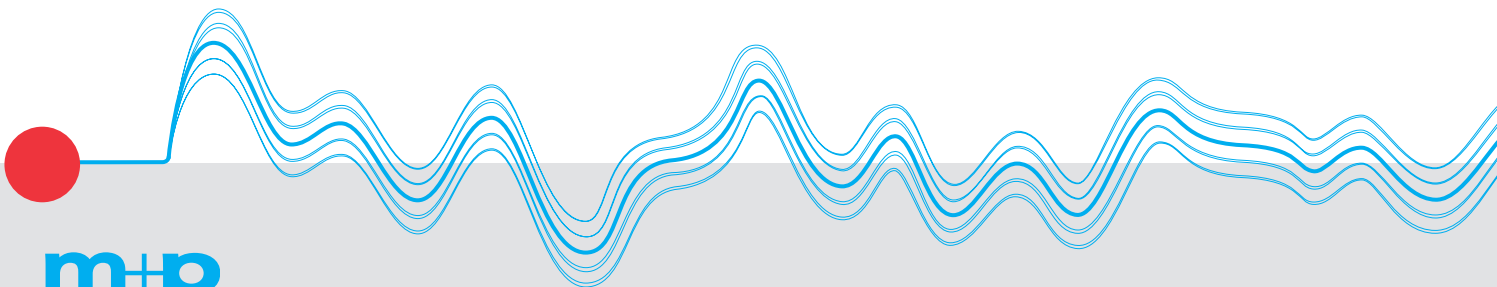
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