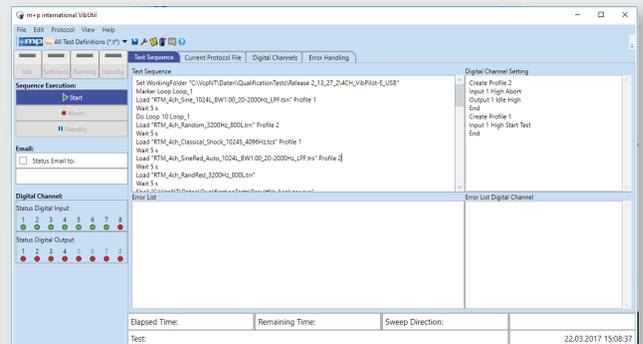
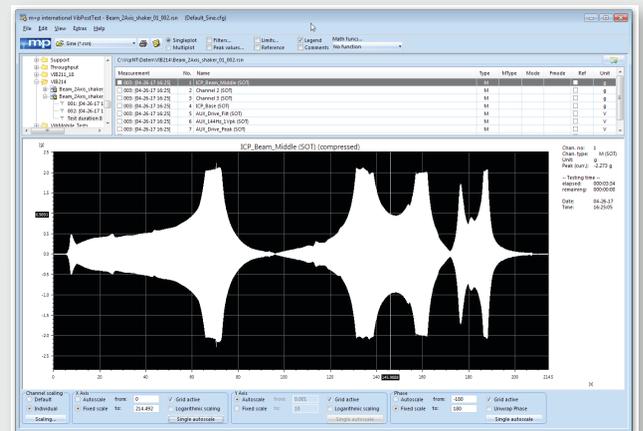
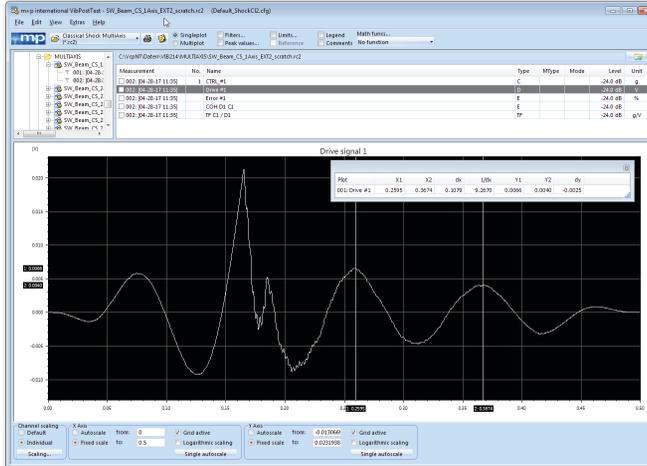


# m+p VibControl Revision 2.14



- Enhanced Double Cursor Analysis Functions
- Effective Transducer Calibration
- Throughput Data Display and Post-Processing in VibPostTest
- More Flexibility in Throughput File Handling
- Strain Measurements with m+p Hardware
- Redesigned m+p VibUtil Tool
- Enhanced Scope Mode
- Next-Generation m+p VibPilot Front-End with Ethernet
- New Multi-Channel m+p VibMobile Front-End

## Enhanced Double Cursor Analysis Functions



Sine test results with two cursors enabled

m+p international now offers double cursor functionality across all m+p VibControl program parts and all test modes providing additional evaluation tools.

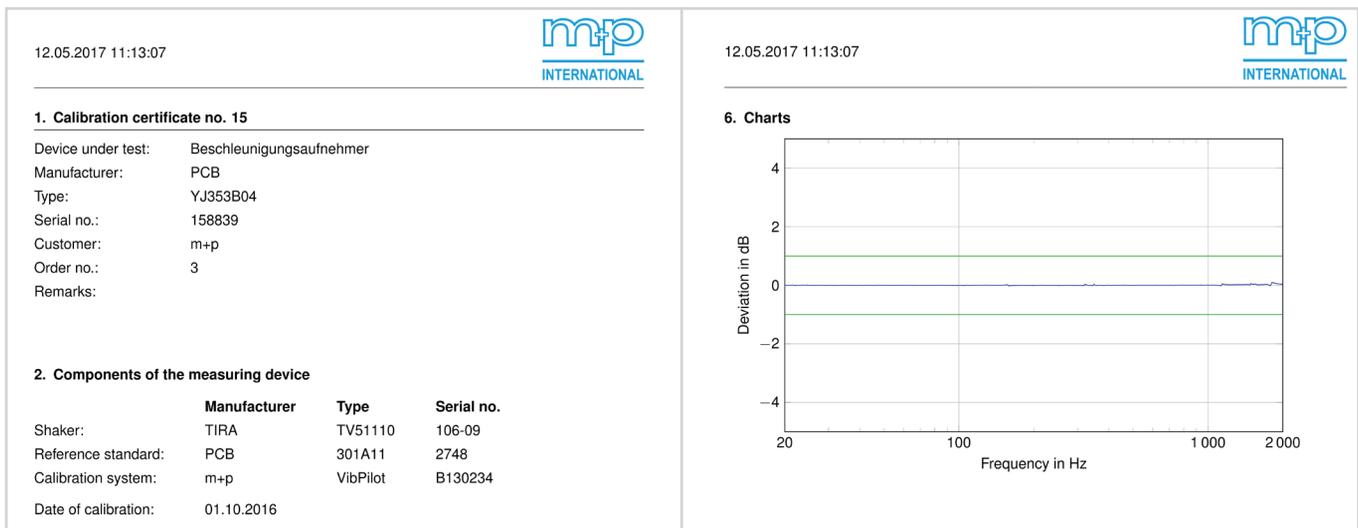
In the VibRunner and VibPostTest program parts, an active second cursor opens a separate legend window displaying the values and the differences in values. For time data, the difference in x-values can be shown as frequency. For frequency data, an RMS value display is provided. A context menu enables you to activate or deactivate the cursors, to link them across several charts and to define the desired display and calculating functions.

In VibPostTest a second cursor can also define a specific area of the data to zoom into. The zooming function is helpful for viewing throughput files which are displayed as compressed data using a min-max decimation. Zooming into the chart in one or several steps will finally display the uncompressed original data.

## Transducer Calibration

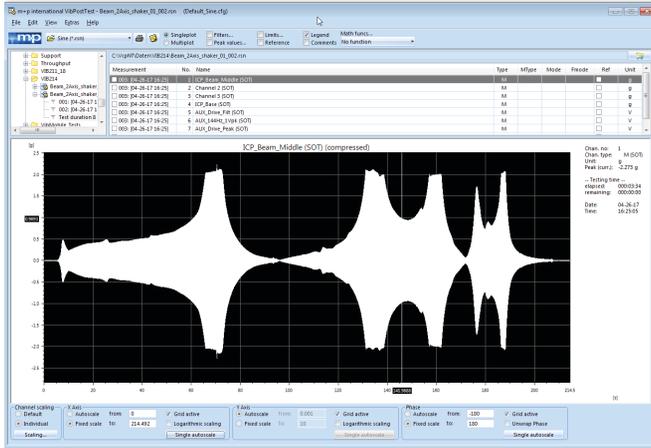
Regular transducer calibrations are vital for generating reliable test results. m+p international provides the optional “SensCal” program which enables users of vibration control systems to calibrate acceleration transducers in a test run. You only need a calibrated transducer serving as reference which is mounted on your shaker. Then, the transducers for calibration are fixed on top of this reference transducer and connected to the measurement front-end. A sine sweep test is started and the test results for the transducer undergoing calibration is compared to those of the reference. After the calculation process a detailed calibration certificate will be created, showing, among other things, the sensitivity and the transmissibility with phase information.

m+p international can offer an entire calibration package consisting of a calibration shaker, the reference transducer and the software upon request.



Calibration protocol for acceleration transducers

## Throughput Data Display and Post-Processing in VibPostTest

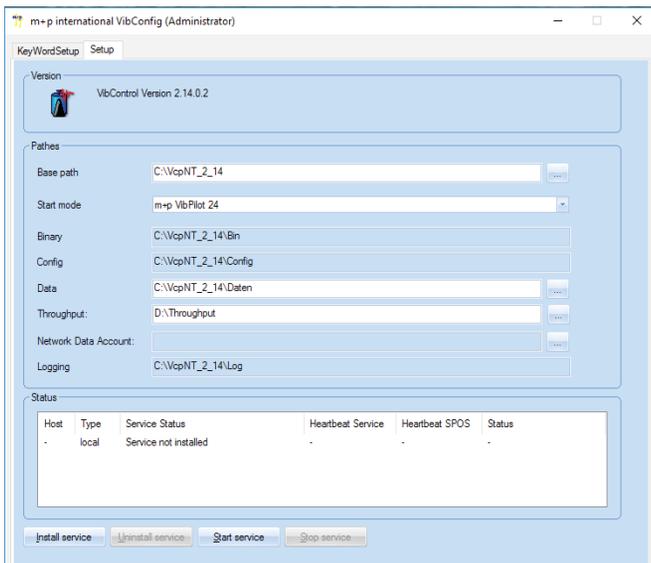


VibPostTest: data display of a sine reduction throughput file

Throughput data in \*.SOT format can now be displayed and evaluated in VibPostTest. All sine reduction, random reduction and transient capture throughput files can be viewed and post-processed directly in m+p VibControl.

In the VibPostTest file structure, each throughput file of a test run will be arranged like an additional measurement file and can be displayed in the VibPostTest chart. Although they might be extensive, the throughput files are shown as compressed data using min-max decimation. Activating a second cursor provides a zoom function which enables you to zoom into the chart until you can see the original, uncompressed data.

## More Flexibility in Throughput File Handling

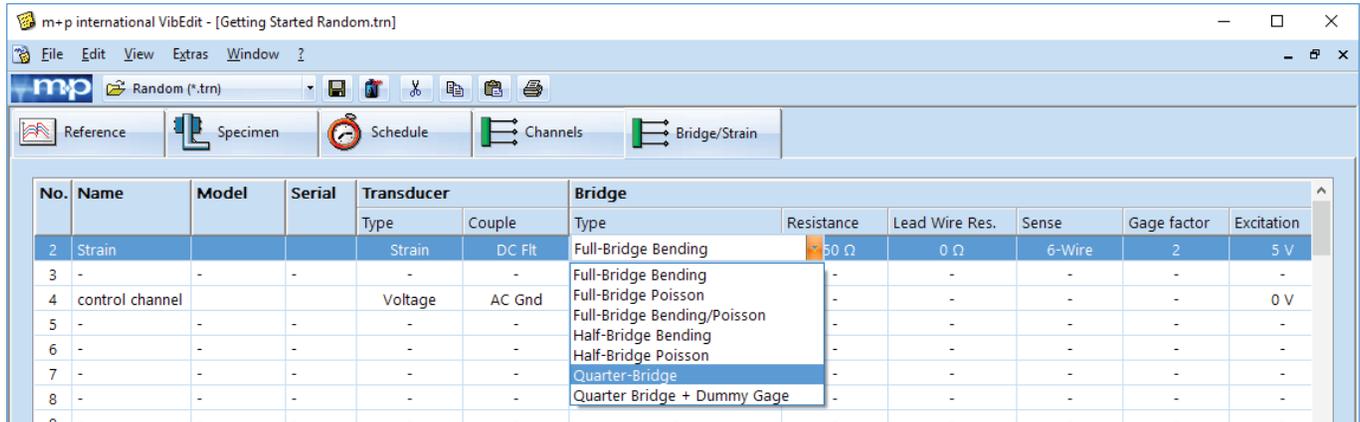


Data path defined for saving throughput files

The new m+p VibControl revision enables you to save throughput files to your preferred directory, so that these large files can be saved to a fast responding SSD memory which speeds up data loading times considerably.

## Strain Measurements with m+p Hardware

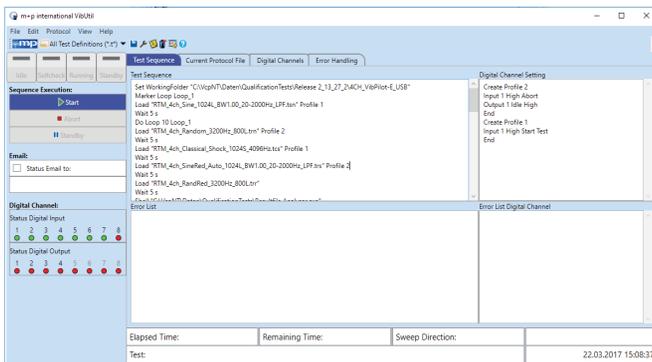
m+p VibControl Rev. 2.14 offers full strain support for our m+p VibMobile and m+p VibRunner hardware. Both front-ends can be equipped with the new 102.4 kSa/s per channel bridge module which is perfect for dynamic strain measurements, experimental stress analysis and fatigue testing of mechanical structures. It enables connection of eight strain gauges in full-, half-, or quarter-bridge configurations.



No.	Name	Model	Serial	Transducer		Bridge					
				Type	Couple	Type	Resistance	Lead Wire Res.	Sense	Gage factor	Excitation
2	Strain			Strain	DC Flt	Full-Bridge Bending	50 Ω	0 Ω	6-Wire	2	5 V
3	-	-	-	-	-	Full-Bridge Bending	-	-	-	-	-
4	control channel			Voltage	AC Gnd	Full-Bridge Poisson	-	-	-	-	0 V
5	-	-	-	-	-	Full-Bridge Bending/Poisson	-	-	-	-	-
6	-	-	-	-	-	Half-Bridge Bending	-	-	-	-	-
7	-	-	-	-	-	Half-Bridge Poisson	-	-	-	-	-
8	-	-	-	-	-	Quarter-Bridge	-	-	-	-	-
9	-	-	-	-	-	Quarter Bridge + Dummy Gage	-	-	-	-	-

Strain measurement definition in VibEdit

## Redesigned m+p VibUtil Tool



Basic test sequence with digital channel setting

The proven m+p VibUtil tool, created to ensure test sequence automation, has been updated and redesigned. It establishes the communication between the m+p VibControl software and the measurement hardware including digital input or output channel setting to carry out the test sequences you defined. m+p VibUtil provides automation of your testing processes across several test modes. A detailed protocol is generated during the sequence and is saved to a protocol file. If any problems occur, an information service immediately sends an e-mail to the given recipient.

## Enhanced Scope Mode

For verifying the correct transducer function before commencing a test, the enhanced scope mode offers a time data display in standby mode, even before you start the selfcheck. It is available for all test modes and can be useful for observing measurement signals to ensure the sensors have reached their steady state, before you start the selfcheck and the test run. Errors due to incorrect channel inputs can also be detected. Furthermore, scope mode is available during the test runs.

## Next-Generation m+p VibPilot Front-End with Ethernet



m+p VibPilot front-ends

Our 4/8-channel m+p VibPilot front-end has proven its excellent, yet affordable performance in numerous vibration testing applications. Now we have further enhanced these performance characteristics: Equipped with 24-bit sigma-delta A/D converters and an increased sampling rate up to 204.8 kHz, the new m+p VibPilot allows for alias-protected measurements in a frequency range up to 80 kHz and with more than 120 dB spurious-free dynamic range. Besides, Ethernet connectivity to a host PC or laptop was added to the existing USB host interface.

m+p VibControl 2.14 supports this latest generation of m+p VibPilot front-ends. For channel expansion it can be operated with several m+p VibPilot devices via Ethernet without influencing the excellent measurement performance.

## New Multi-Channel m+p VibMobile Front-End

m+p VibControl Rev. 2.14 supports our new multi-channel m+p VibMobile measurement front-end. With its robust design, embedded CPU, storage media and optional battery power, m+p VibMobile is designed for portable and laboratory use. A wide choice of m+p proprietary analog I/O boards for high-speed data acquisition, simultaneous sampling, IEPE sensor supply, TEDS support and bridge measurements enables all kind of measurement and signal analysis tasks. Up to four industry-standard CompactPCI® Serial boards can be used additionally in the mainframe allowing for the free selection of industry standard I/O, interface and storage solutions.



m+p VibMobile front-end

64 analog input channels and additional CompactPCI® applications can be connected to one m+p VibMobile. For enhanced measurement requirements, we offer two sigma-delta A/D converters, 102.4 or 204.8 kHz sampling rate, each with 8 channels, configurable input architecture and gain as well as multiple clocking and trigger options. 24-bit resolution, full anti-aliasing protection and more than 120 dB spurious-free dynamic range make these digitizers high-precision instruments for measurements in frequency ranges up to 40 or 80 kHz.

For higher channel counts and distributed measurements, multiple m+p VibMobile front-ends can be synchronized precisely by a daisy-chained master-slave configuration.

## Other New Features

- All charts offer a horizontal cursor
- Selfcheck attenuator: test levels can be attenuated during selfcheck
- Default path definition possible for throughput files (VibConfig)
- Cursor label font can be adapted in VcpNT.ini file
- Sine dwell test mode: VibRunner display shows number of cycles elapsed and remaining
- Sine-on-random test mode provides a sweep table with a flexible sweep rate
- The acoustic microphone calibration feature is now also available for random test modes
- Microphone calibration for progressive wave tube testing
- Shock test mode: control can be disabled using a schedule command
- Shock and transient capture test modes: 65 kHz sample rate and 65,536 block size added
- Shock test mode: online coherence display for test runs in VibRunner
- Multi-axis kurtosis control in random test mode
- Multi-axis decoupled sine control
- Acoustic control (DFAT): test can now be controlled using several control points

This Update Note provides you with an overview of the most significant product enhancements in m+p VibControl Revision 2.14. These together with other smaller improvements make m+p VibControl even more powerful and user-friendly.

The new software revision is primarily a result of close cooperation with you, our valued customers. We strive to continuously optimize our products. If you have any suggestions on how to further improve our product offering, please let us know.

**m+p VibControl 2.14** is available now. Please do not hesitate to contact us for further information.

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