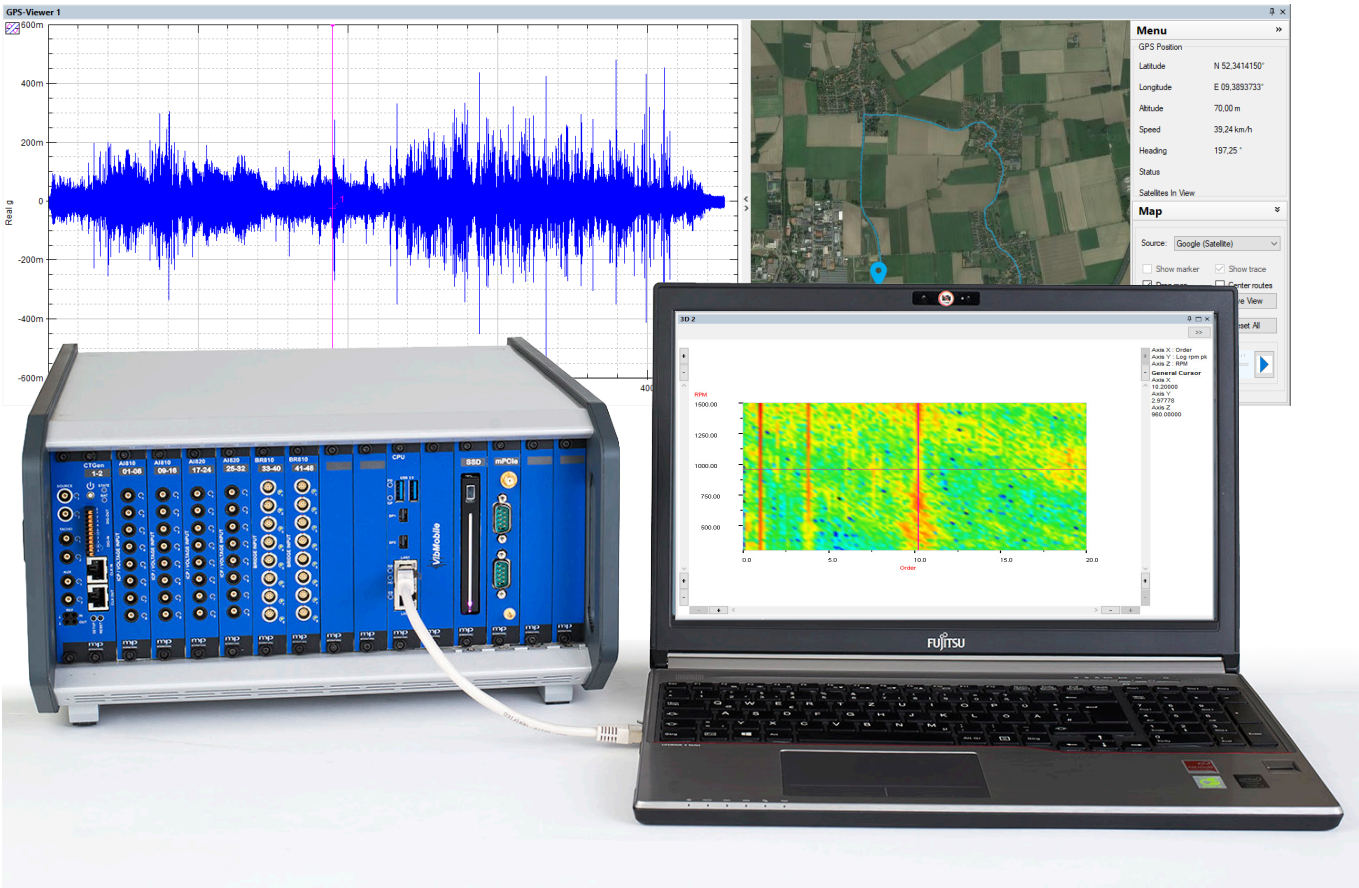
Update Note

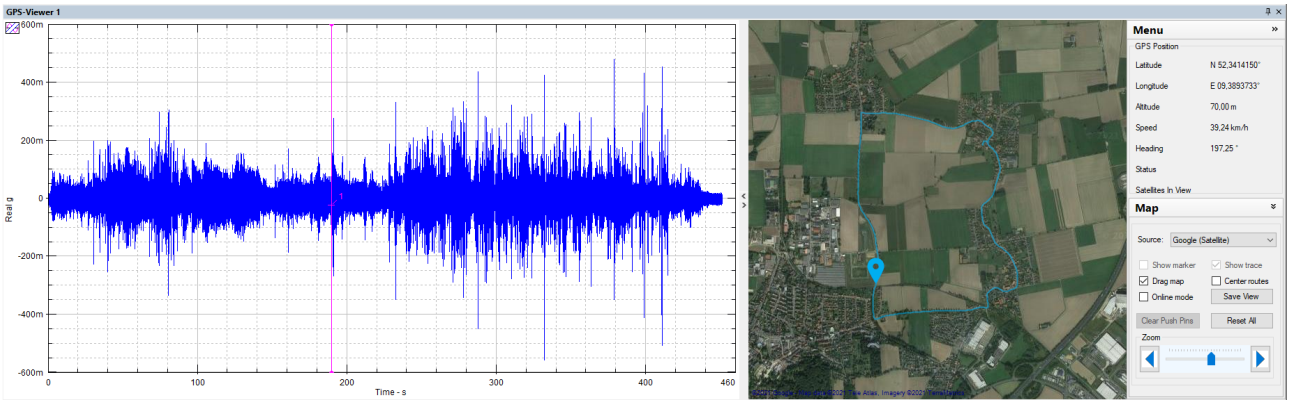
m+p Analyzer | Revision 5.4



Mobile Measurements with GPS Data Recording
Reliable Vehicle Data Evaluation by CAN Bus Support
Stay Within the Optimal Measurement Range Using the Auto-Range Tool
Precise Strain Measurements due to Shunt Calibration
Never Miss an Important Event Definition of Several Trigger Channels
Everything at a Glance with New, Clearer MDOF Tool
Simple, Fast and Intuitive Sound Power According to ISO 3745
Flexible Data Import and Export with ATFX File Format
External Access to Data and Selected m+p Analyzer API
Controlling and Monitoring External Systems via Digital IO
Fast and Automated Test Evaluation Automation Feature
Detailed Analysis of Rotating Systems Torsional Vibration Feature

We are pleased to present the new revision 5.4 of our m+p Analyzer dynamic signal analysis software. Many of the new functions are based on your suggestions and wishes, because our ambition is to make your daily work as easy and efficient as possible.

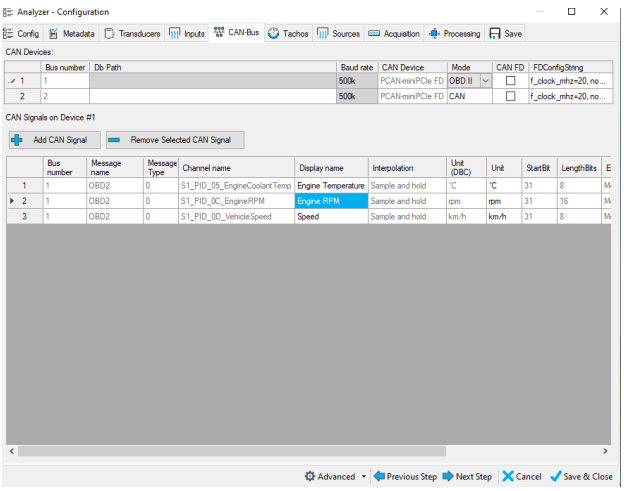
Mobile Measurements with GPS Data Recording



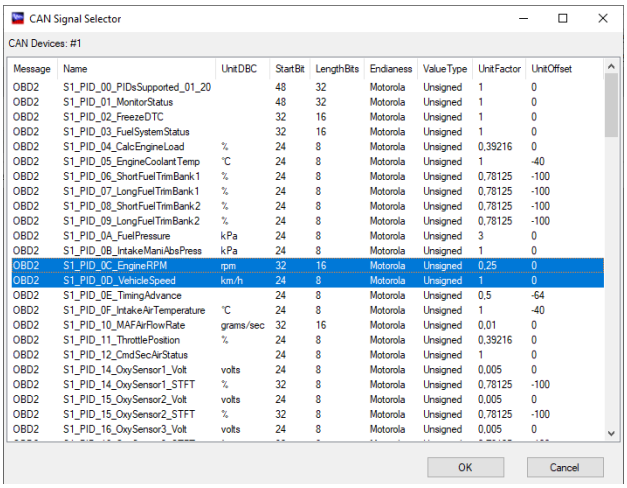
Measurement data and online map displaying GPS data

The m+p Analyzer's GPS module saves all important geodata for outdoor measurements. Position, altitude as well as current speed and direction are saved as GPS tracks or as time histories and correlated with the recorded measurement data. Online available maps are used to show the positions of current measurements as well as of previously recorded measurements. When evaluating the results, you can see exactly where each measurement was taken and query parameters such as the speed at that time. Using the GPS viewer, you review the entire recorded GPS route on the map. In addition, the GPX export function enables further use of the data in external programs and systems.

Reliable Vehicle Data Evaluation by CAN Bus Support



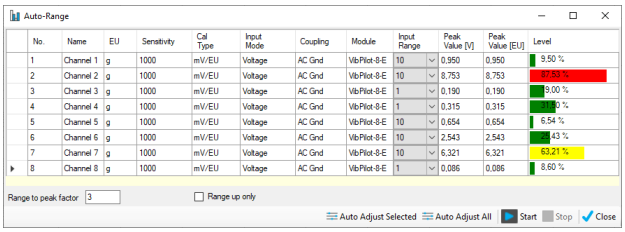
CAN device selection; Adding and deleting CAN signals



Selecting CAN signal on device #1

Whenever you take measurements on a vehicle, regardless of whether it is a car, truck, agricultural or construction machine, the CAN bus transmits valuable additional information. m+p Analyzer stores this information in addition to the analog measurement signals and therefore perfectly acquires NVH data and vehicle data in parallel. Subsequently, it reliably assists you in analyzing this data. The flexible CAN FD format for higher data transmission rates is supported as well as the OBD2 format for the readout of diagnostic data.

Stay within the Optimal Measurement Range Using the Auto-Range Tool

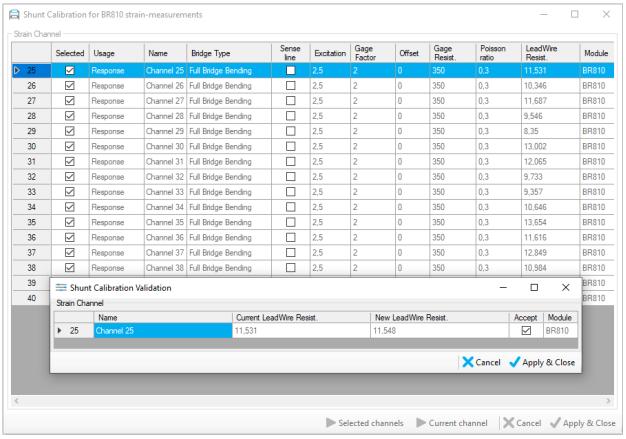


Auto-Range tool

The Auto-Range tool automatically matches the measurement range of the input channels with the signal levels of the connected transducers and thus guarantees the optimal use of the hardware's dynamic range. The measurement range can be adjusted for all channels as well as for selected channels only. The "Range up only" option prevents the measurement range from being set to a value that is too low during calibration.

Especially for acoustic measurements with rather low levels, it is important to find the smallest possible measurement range, so that conclusive results are obtained by using the full dynamic range.

Precise Strain Measurements due to Shunt Calibration

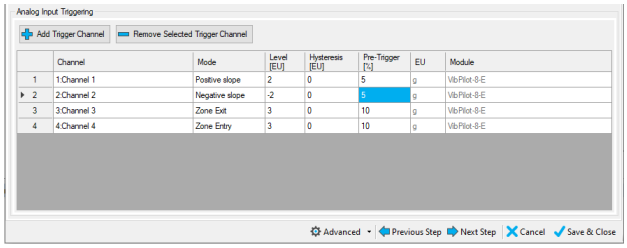


Shunt Calibration tool

For precise strain measurements, especially with large line lengths, it is useful to perform a shunt calibration. By connecting a resistor in parallel, the line resistance of the supply line can be determined. Later, when calculating the strain, it will be compensated in order to achieve the highest possible accuracy. m+p Analyzer Revision 5.4 reliably guides you through the shunt calibration of strain gages which are connected to an m+p BR810 bridge module.

In addition, shunt calibration provides a very simple way to perform a functional test: Very large or negative cable resistances, for example, indicate problems with the supply line, which are localized quickly and easily in this way.

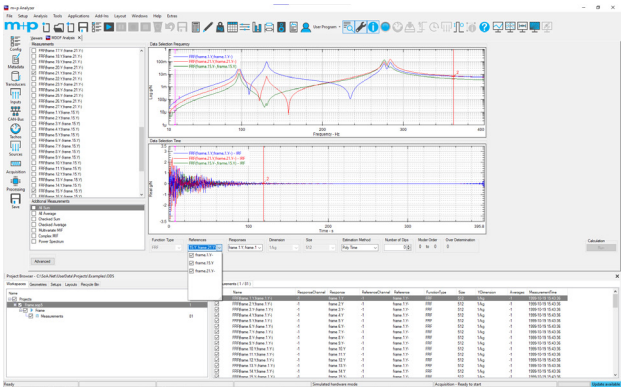
Never Miss an Important Event: Definition of Several Trigger Channels



Configuring several trigger channels

With the new version of the m+p Analyzer, multiple trigger channels can be defined for m+p international and Spectrum hardware with individual trigger levels and pretrigger values for each channel. A measurement starts as soon as the trigger level on one of the trigger channels is exceeded. Placing the appropriate sensors at critical points of the system to be monitored ensures that you never again miss any important events.

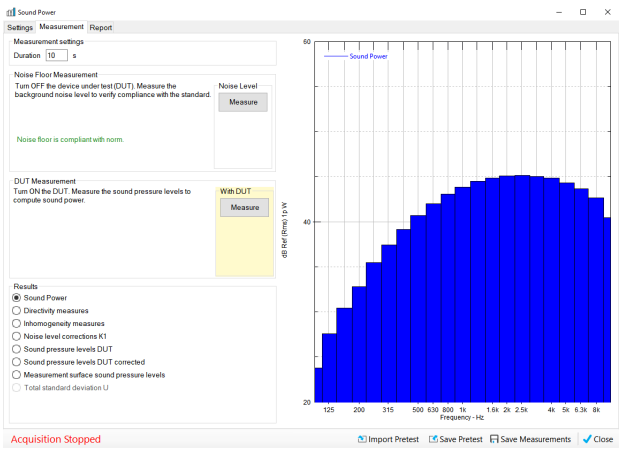
Everything at a Glance with New, Clearer MDOF Tool



MDOF analysis – everything at a glance

The newly designed MDOF tool provides a complete and comprehensive overview. Even for demanding modal analysis tasks such as the detection of repeated or closely adjacent modes, all important functions are available in one window. They are represented clearly and are set up quickly and easily. The design matches the ODS and SDOF tools.

Simple, Fast and Intuitive: Sound Power According to ISO 3745



Sound Power according to ISO 3745

Whenever you measure sound power according to ISO 3745, the m+p Analyzer leads you through a user-guided process to easily and quickly define everything from the pre-test over the measurements to the automatic report. You are guided through all individual steps specified in the standard. Many verifications and plausibility checks ensure the execution of standard-compliant measurements.

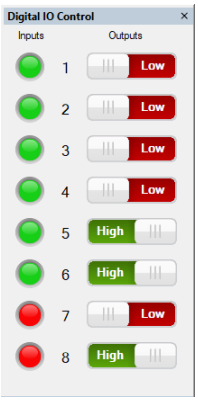
Flexible Data Import and Export with ATFX File Format

m+p Analyzer Revision 5.4 supports the import and export of the xml based ATFX format. This data exchange format of the automotive industry complies with the ODS (Open Data Services) standard of ASAM (Association for Standardization of Automation and Measuring Systems), which maps different data formats in a uniform, adaptable and extensible model. Access is independent of the IT architecture and the data model is highly flexible, yet well-defined for different application scenarios. Thus, data is exchanged reliably between different applications.

External Access to Data and Selected Functions: m+p Analyzer API

The m+p Analyzer API provides access to the data acquired in m+p Analyzer and to selected data acquisition functions using external software. Thus, you can start measurement runs from external software and evaluate and analyze data acquired with the m+p Analyzer.

Controlling and Monitoring External Systems via Digital IO



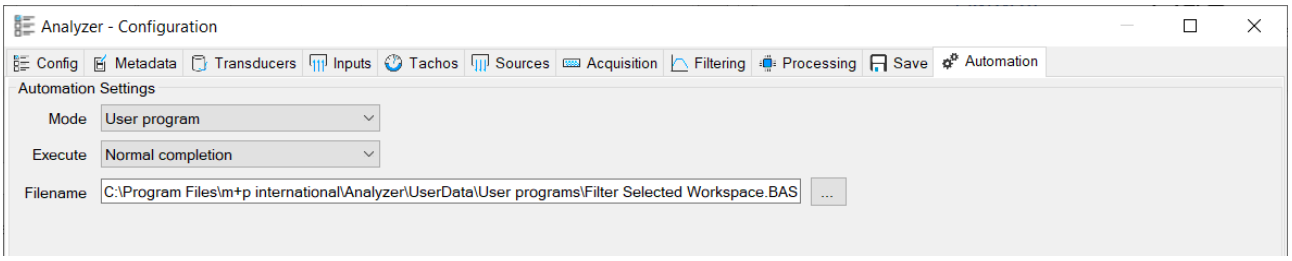
Digital IO control panel

With the clearly arranged Digital IO Control panel, you monitor digital input channels or switch the states of digital output channels.

The statuses of external devices are monitored via the digital input channels. For example, they can indicate whether a device is ready, i.e. in a certain state or not.

The digital output channels can be used to control auxiliary devices, such as motors, temperature chambers or other system components, for example, to start or stop them during the test run.

Fast and Automated Test Evaluation: Automation Feature



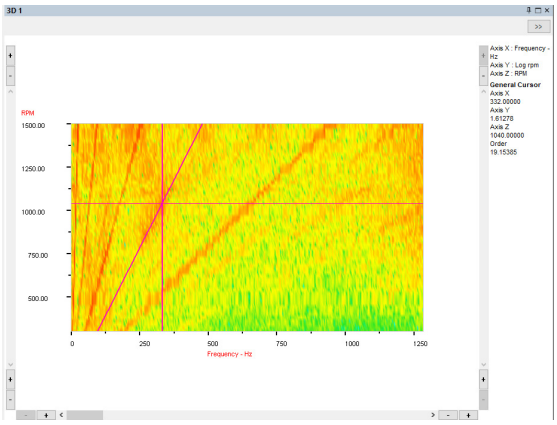
Automation feature definition

Automate data processing and evaluation after a test run. A user program or add-in is linked to the data acquisition so that recurring tasks, such as calculations or evaluations, are performed automatically. This allows, for example, recently recorded data to be evaluated, edited, exported or prepared for the creation of a report. Because the time-consuming execution of recurring steps is no longer necessary, time saved can be spent on other tasks, such as concentrating on analyzing the test results.

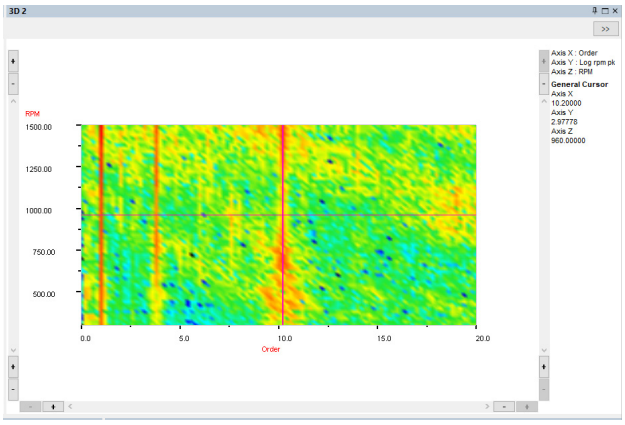
The Automation feature can be linked to different triggers. You can specify whether it is to be executed after every test, only after a normally completed test run, or if the user cancels the test. Thus, you can document specific events in a targeted manner.

Detailed Analysis of Rotating Systems: Torsional Vibration Feature

Superimposed rotational vibrations or torsional vibrations on rotating components are effectively analyzed with the Rotate module of the m+p Analyzer. It offers new procedures and methods for analyzing the torsional vibration behavior of machines. Using high-resolution tacho encoders, you detect unbalanced rotational movements quickly and reliably. A display of the torsional vibrations in the frequency domain provides valuable information about the order of the torsional vibrations in relation to the rotational speed and thus indicates their possible cause.



Spectrum of a tacho encoder signal



Synchronous spectrum of a tacho encoder signal

Other New Features

m+p Analyzer Revision 5.4 also provides:

- Improved export of the WAV format (PCM or Float format)
- Support of additional sample frequencies for m+p hardware
- New filter types and adjustable filter orders

This Update Note provides you with an overview of the most significant product modifications and enhancements in m+p Analyzer Revision 5.4. These together with many other smaller improvements make m+p Analyzer even more powerful and user-friendly.

This new software revision has resulted primarily from the close and valuable cooperation with you, our customers. We optimize m+p Analyzer continuously.

Therefore, if you have any suggestions that could further improve our product offering for your application, please let us know.

m+p Analyzer 5.4 is available now, providing you with even greater efficiency and ease of use.

Please do not hesitate to contact us for further information.

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