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Press release

Order analysis by drag-and-drop

New jBEAM Lab data analysis software: efficient measurement data processing now also for NVH tests

Winterthur, April 2025

The data analysis software jBEAM Lab from Kistler has been updated to offer functions that enable even more efficient analyses without any programming effort. As a result, raw data can be used to create diagrams and spectrograms regardless of the hardware. It can also be flexibly modified with filters and visualization functions to maximize analytical capability, interactivity, and result-driven insights. Plus, it now features special functions to support NVH tests (noise, vibration, and harshness).

Development processes in the aerospace industry, automotive industry, and other sectors are not only becoming increasingly complex but are also accelerating: time-to-market is crucial for manufacturers to succeed with new models and innovations while securing their competitive edge. In challenging development environments in particular, data analysis software becomes a key factor to enable fast analysis and overcome development challenges.

Analyze measurement data in just a few clicks, regardless of the hardware

The new version of the jBEAM Lab universal measurement data analysis software from Kistler combines speed with increased user-friendliness and interactivity. Diagrams, filters, calculations, and much more can be configured with drag-and-drop or just a few clicks and combined to create powerful analyses without having to write a single line of code. Jan Schnabel, jBEAM Product Manager at Kistler, says: “Whereas before, developers would have to write or program complicated scripts, for example in Python, they can now carry out and complete process steps with just a few clicks thanks to jBEAM – including for NVH tests.”

jBEAM Lab imports raw data from over 100 file formats, correlates it with audio and video data, and generates comprehensive visualizations. The graphical processing offers a high degree of flexibility and interactivity: the data analysis software allows users to filter and flexibly combine data to create graphics, dynamically adapt workflows, and directly simulate filters. Once analysis is complete, users have the option to generate reports automatically and precisely.

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New functions specifically for NVH tests

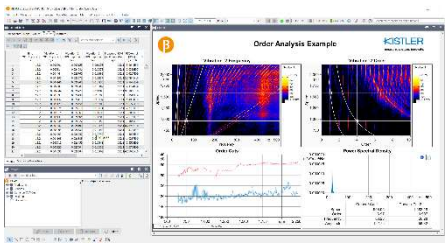
The new jBEAM from Kistler offers enhanced NVH functions specifically for aerospace applications. For example, manufacturers of reaction wheels for attitude determination and control systems (ADCS) on satellites need to carry out strict quality inspections during which they analyze micro-vibrations as part of their end-of-line tests, among other things. The comparison of key indicators such as harmonic orders, harmonic amplitudes, identification of imbalances, and displacement of the structural resonance between different tests and wheels is decisive.

A leading supplier in this field therefore not only uses hardware from Kistler, but also jBEAM data analysis software to analyze micro-vibrations. jBEAM's automatic reporting function cuts the time required for post-processing from around an hour per report to just a few seconds. The new functions for NVH tests were developed specifically for the aerospace industry, but can also be applied in many other fields. These include:

- Spectrogram and order analysis
- Octave analysis
- Simulation of analog filters such as Bessel, Butterworth, and Chebyshev filters

Schnabel continues: "jBEAM measurement data analysis software can be used as a flexible platform to automate the entire analysis workflow. The creation of spectrograms and order analysis, which was previously a relatively complex process made up of many individual steps, can now be carried out via drag-and-drop and with just a few clicks."

Image material (please name the Kistler Group as picture source)



The universal data analysis software jBEAM Lab from Kistler supports fast and flexible evaluation of all kinds of test data while at the same time eliminating the need for complicated programming and reducing development costs.

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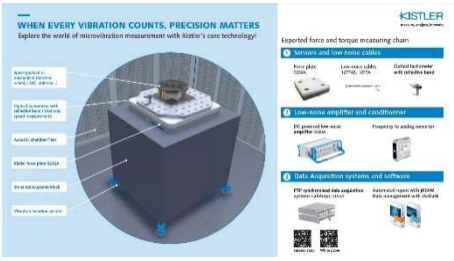
The new functions for NVH tests in jBEAM Lab support aerospace applications such as micro-vibration analysis of reaction wheels for satellites.



Kistler offers complete measuring chains for NVH tests, modal analyses, and similar applications – from sensor through to software – including jBEAM measurement data analysis software for efficient post-processing.

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About the Kistler Group

Kistler is the global market leader for dynamic pressure, force, torque and acceleration measurement technology. Cutting-edge technologies provide the basis for Kistler's modular solutions. Customers in industry and scientific research benefit from Kistler's experience as a development partner, enabling them to optimize their products and processes so as to secure sustainable competitive edge. Unique sensor technology from this Swiss corporation helps to shape future innovations not only in automotive development and industrial automation but also in many newly emerging sectors. Drawing on our extensive application expertise, and always with an absolute commitment to quality, Kistler plays a key part in the ongoing development of the latest megatrends. The focus is on issues such as electrified drive technology, autonomous driving, emission reduction and Industry 4.0. Some 2,000 employees at more than 60 facilities across the globe are dedicated to the development of new solutions, and they offer application-specific services at the local level. Ever since it was founded in 1959, the Kistler Group has grown hand-in-hand with its customers and in 2024, it posted sales of mCHF 448. About 9 percent of this figure is reinvested in research and technology – with the aim of delivering innovative solutions for every customer.