

Structural Dynamics Analyses in a New Dimension: HEAD acoustics Expands Its Portfolio with Qsources Structural Excitation Solution Qlws

HEAD acoustics supplies industry and research customers with user-friendly and efficient software and hardware solutions for analyzing product and environmental noise as well as structural dynamics. Through targeted cooperation with the Belgian company Qsources, an established developer and supplier of air- and structure-borne sound sources for 30 years, users now experience structural dynamics analyses in a new dimension: With a highly specialized miniature shaker, vibration excitations in modal and transfer path analyses, for example, can be effortlessly realized in areas that make it difficult to attach a conventional shaker.

Structural excitation, data acquisition, and analysis software: worldwide one-stop solutions with HEAD acoustics

"We continuously develop our hardware and software to provide our customers with advanced holistic solutions. Thus, expanding our portfolio with a Qsources shaker is a natural step. The Qlws lightweight shaker ensures the efficient and accurate acquisition of transfer functions and supports both modal and transfer path analyses. This more profound understanding of vibration characteristics is the basis for optimizing the sound quality of our customers' products," says Dr.-Ing. Aulis Telle, Managing Director Sound, Vibration and Perception at HEAD acoustics.

"We at Qsources are excited to support HEAD acoustics with this excitation solution. The worldwide contacts and the expertise of HEAD acoustics enable us to reach professionals working on improving the sound of their products. Many kinds of devices, machines, and objects surrounding us could benefit from the diagnostic and optimization techniques based on transfer function data. Working with HEAD acoustics, Qsources can bring accurate and efficient vibration excitation as part of the solution," adds Peter van der Linden, founder and managing director at Qsources.

Small shaker, great capabilities

The Qlws, with its small dimensions of about 25 mm, covers a wide frequency range from 250 to 13,000 Hz. It enables dynamic excitation when conventional vibration exciters cannot be structurally integrated, or impulse hammers cannot be used. As it is mounted directly on the test structure, the shaker requires no additional external support and does not need to be aligned. The internal, patented decoupling of the Qlws Shaker results in a low mass and impedance loading of the test object. Thus, influences on the specimen are minimal so that measurements on lightweight structures are feasible without any problems. The so-called force cups are glued onto the structure, and the shaker bodies are attached to them using a snap connection. In combination with the integrated force sensor, this enables a rapid change of the excitation position and direction with very high repeatability of the measurements, especially compared to excitation with an impulse hammer. The Qlws' features thus significantly improve the efficiency of structural dynamics testing by eliminating the support and alignment work required with conventional vibration exciters.

Thanks to its high force density and compact design, the shaker allows for its use in limited space such as engine compartments, gearboxes, car bodies, compressors, household and garden appliances, air conditioning and ventilation systems, computers, printers, mechatronic and medical equipment.

Highlights of the Qlws lightweight shaker and the associated Qma amplifier:

- Very small, electro-dynamic vibration exciter with integrated force sensor
- Low mass and impedance loading of the test object thanks to patented decoupling system
- No shaker support or alignment required
- Easy mounting under any inclination and in hard-to-reach places
- High force density in a frequency range from 250 to 13,000 Hz
- Fast and reproducible change of the excitation position and direction thanks to force cups
- Very high repeatability, especially compared to impulse hammer excitation
- With protection function to avoid mechanical, electrical, and thermal overloads

For more information about Qsources, please visit: <https://www.qsources.be>

For more information about HEAD acoustics, please visit: <https://www.head-acoustics.com>



About HEAD acoustics

HEAD acoustics GmbH is one of the world's leading companies offering holistic solutions for sound and vibration analysis. In the telecom sector, the company enjoys global recognition due to the expertise and pioneering role in the development of hardware and software for the measurement, analysis and optimization of voice and audio quality as well as customer-specific solutions and services. HEAD acoustics' range of services covers sound engineering for technical products, investigation of environmental noise, speech quality engineering as well as consulting, training and support. The medium-sized company from Herzogenrath near Aachen in Germany has subsidiaries in China, France, Italy, Japan, South Korea, the UK and the USA as well as numerous sales partners worldwide.