DIGITAL INDUSTRIES SOFTWARE

Simcenter Qsources Integral Shaker in-plane excitation adaptor

Simcenter/Q-TRX/3/20221109

Product Information Sheet

Summary

Accurate measurement data is a prerequisite for powerful analyses. The application of standard hammer or more modern shaker measurements are limited when three-dimensional inputs are required for a location. The Simcenter Qsources Integral Shaker enables the frequency response functions (FRF) acquisition over a wide frequency range.

BENEFITS

- Acquires fast and accurate transfer functions in local axis system
- Reduces the excitation preparation
- Obtains accurate driving point information
- Avoids FRF metadata errors

FEATURES

- Integrated 3-axis accelerometer
- 3D prinitng technology for optimized weight -stiffness ratio
- Sixteen fixed angles of attak relative to local mount orientation

The in-plane excitation adaptor, or Q-TRX, is a smart extension of this structural exciter. It enables you to measure driving points accurately and efficiently, and structural and vibro-acoustic FRFs at locations with significant space constraints. In the first stage, the Q-TRX is glued to the excitation location. The interface can be aligned with a dedicated tool and mounted using super glue. The Simcenter Qsources Integral Shaker is mounted at multiple angles and transfer functions are measured consecutively. Additional stinger extensions are included to gain even easier access to the many excitation locations found around today's complex assemblies.

The angled FRF set is validated and can be processed in order to reconstruct the FRFs with desired orthogonal inputs. Typically, the angled FRFs can be decomposed and reconstructed to the local mount axis system or to the global axis system.

The three-directional accelerometer combined with the force sensor in the Simcenter Qsources Integral Shaker forms an impedance head and allows you to obtain driving point information without the dynamic moment generated by offset tools required for impact testing. After testing, the interface can be removed and prepared for the next excitation location using a cleaning tool.

To enable long and reliable use, Siemens PLM Software offers a specific sensitivity measurement service of the internal transducers, including a detailed performance check.

Applications

- Structural transfer functions
- Direct vibrio-acoustic FRF
- Transfer path analysis [TPA]
- Structural modal analysis
- Target setting
- Body benchmarking

Physical Specifications for Q-TRX

- Footprint: Ø20 millimeters (mm)
- Mass: 13 grams
- Test object connection: glue
- Mounting thread: M5
- Sensor connector type: male BNC
- Sensor cable length: 250 centimeters (cm)
- Accelerometer mode: IEPE sensor

Performance

- Frequency range: 20 to 800 hertz (Hz)

Supplied accessories

- Alignment tool
- Cleaning tool
- Tri-axis sensor cable
- Stinger extension elements
- User manual
- Flight case
- Calibration sheets 3D accelerometer

Product requirements

- Simcenter Qsources Integral Shaker [Q-ISH]
- Simcenter Qsources Measurement Amplifier [Q-AMP230V]
- Simcenter Testlab spectral acquisition

Options

- Calibration measurement [Q-SR-SENS]

Simcenter Qsources structural and acoustic exciters

- Low-mid frequency volume source [Q-LMF]
- Mid-high frequency volume source [Q-MHF]
- High-frequency Shaker [Q-HSH]
- Miniature shaker [Q-MSH]
- Thumper shaker [Q-TMP]
- Low-frequency monopole source [Q-MED]