

Sound Absorber Analysis

FX100 Use Case

The manufacturer of an innovative sound absorber was looking for a test instrument that would allow him to executing a detailed assessment of the performance of a new product.



The challenge

A new sound absorber design had to be qualified by using appropriate analysis methods. The goal was to determine the standard wideband as well as spectral absorption factors at several points of the device, and to comparing these points against each other in order to getting a clearer picture of the product behavior.



The solution

After an intensive evaluation, the customer chose the FX100 audio analyzer, because it offered the best combination of a wide range of measurement functions, additional post processing options and ease of operation.

The target of an objective qualification was with a test stand where the sound absorber is exposed to a calibrated* White noise signal that is generated bxy FX100 via a compression driver, while two measurement microphones – one before and the other behind the DUT – pick up the sounds at the corresponding positions.

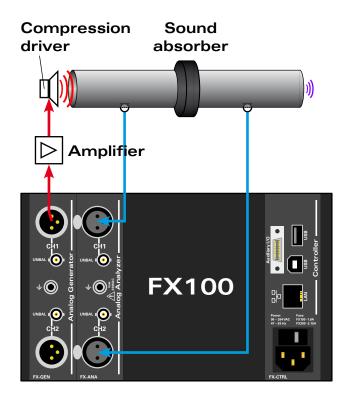
On the analyzer side, an elaborate comparison of the spectra before / behind the sound absorber by means of standard FFT and customized calculation items* allows to thoroughly qualify the performance over the full audio frequency range.

Highlights

- Calibrated White noise test signal
- Simultaneous acquisition and comparison of high-resolution FFT spectra.
- Customized signal analysis via calculation items.

^{*:} calculated by FX-Control





System overview

Hardware

- NTi Audio FX100 2-chn Audio analyzer
- NTi Audio M2010 measurement microphones

Control software

• FX-Control

Test signal

• White noise

Measurements

- FFT
- Level
- Customized result processing

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