

# Acoustic Control



Photo courtesy of NASA, USA

m+p international is considered the market leader for reverberant chamber excitation. Our m+p VibControl performs acoustic testing in reverberant chambers and direct field environments as well as progressive wave tube testing. It is a fully automatic digital control system, providing fast, accurate and repeatable control of high-level noise to a reference octave band spectrum and the overall sound pressure level (OASPL). The control guarantees a high level of product safety.

The m+p VibControl acoustic control system provides features such as support for up to 40 microphones for control and/or measurement, continuous time domain octave analysis in 1/3 and 1/1 octave bands, a control bandwidth up to 10 kHz with multi-horn control, equalizer

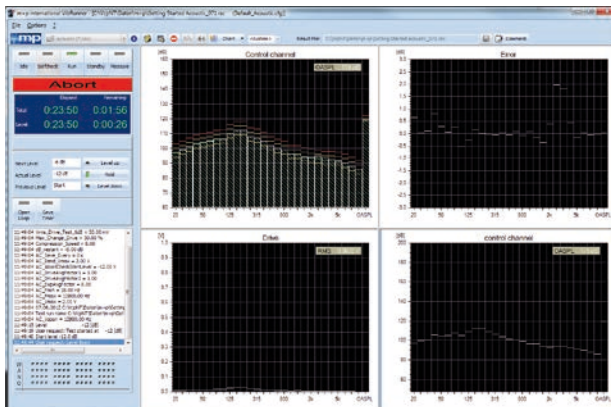
tool, calibration tool, automatic microphone drop-out detection and exclusion from control, extensive octave band and OASPL alarm and abort checks for safe testing as well as comprehensive post-test analysis and reporting functions in 2D and 3D.

In addition to the stored octave spectra, PSD's are calculated and stored for individual measurement channels. They allow monitoring of the mechanical response of the structure to be tested.

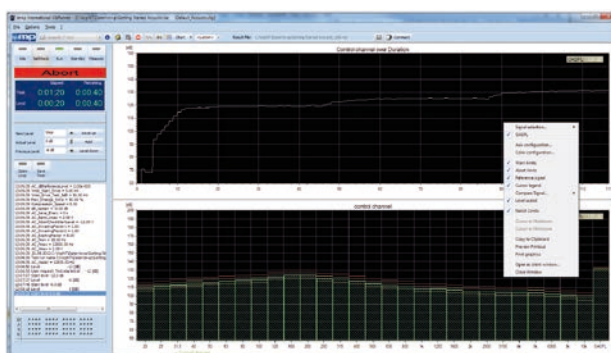
Supporting the same Ethernet-based m+p VibRunner hardware, m+p VibControl for acoustic control can be configured as a shaker control system by simply adding software modules.

## YOUR BENEFITS

- Fully automatic closed-loop acoustic fatigue testing in a reverberant chamber
- 1/1 and 1/3 octave bands usable for control and measurement
- PSD measurements for monitoring mechanical responses during acoustic load
- Protection against open loop/drive runaway
- Easy runtime display configuration
- Display of min, max and average for each octave band over a period of time with a few mouse clicks
- Visual time domain signal verification for each channel
- OASPL over time displays for full test documentation
- Continuous time history recording during test run to stream all raw time data to throughput disc
- Advanced time domain data analysis using m+p Analyzer software
- Direct field acoustic control system for satellite testing
- Progressive wave tube (PWT) testing

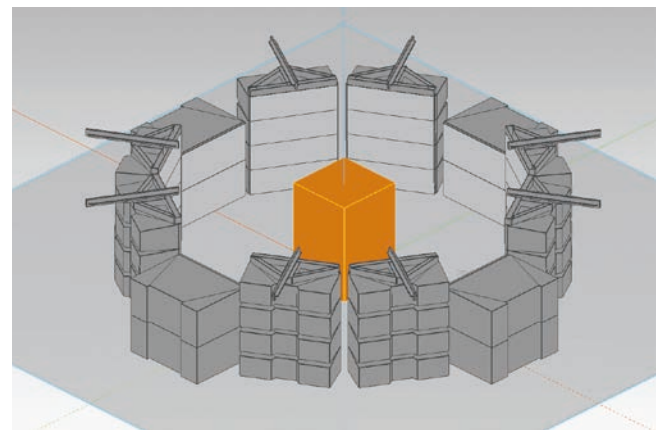


OASPL over time display



Acoustic control test run

Revolutionizing the acoustic testing of minisatellites, m+p international developed a direct field acoustic control system. This high-end system greatly reduces test time and costs. The software controls the complete test procedure and logs all steps of the process. In most cases, the test period during which the satellite is subjected to the 146 dB sound pressure field is only one minute. The satellite test scenario does not require any specially prepared environment or test stand. Considering certain specifications, a multitude of different rooms will instead suffice to ensure significant results that are accepted by experts.



Minisatellite testing: loudspeakers circularly positioned around the specimen to create a sound pressure field

*The m+p acoustic control system in place at NASA Plum Brook, which can drive all of our reverb chamber's 36 noise modulators (23 hydraulic type, and 13 electro-pneumatic type), suits our needs very well. I have been relying on the m+p acoustic control system at NASA, and elsewhere, since 2003 and I have always been given attentive and accurate support from the m+p office.*

Aron Hozman, Vibroacoustic Test Systems Manager at NASA Glenn Research Center, Sandursky, Ohio/USA



## INTERNATIONAL

### **m+p international**

Founded in Hannover, Germany in 1980, m+p international develops and manufactures test and measurement systems for vibration testing, dynamic signal analysis, multi-channel data acquisition and monitoring and test stand engineering. Our product reputation and broad experience coupled with valuable user feedback have led to significant market share in numerous key industries worldwide.

The company has its headquarters in Hannover, Germany with sales/marketing subsidiaries in New Jersey (USA), England, France and China, along with representatives and agents in many countries.

Learn more on the full range of m+p international products and services and their applications. Select the m+p literature library on our website and download the desired product literature.

m+p VibControl, m+p Analyzer, m+p Coda, m+p VibPilot, m+p VibRunner, m+p VibMobile, m+p HFDST-3000-E and m+p ACON are products of m+p international.

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