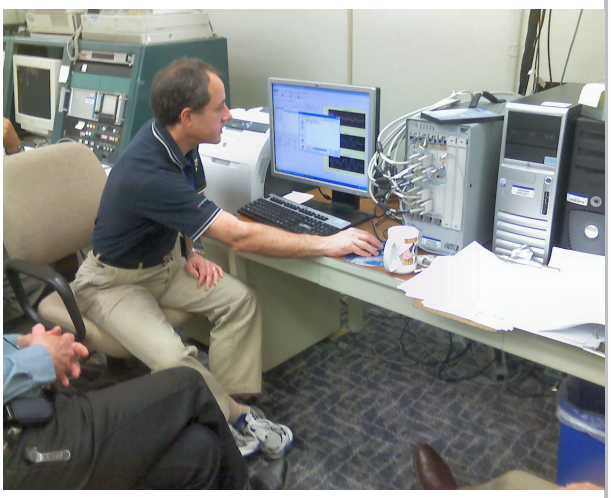
Application Note

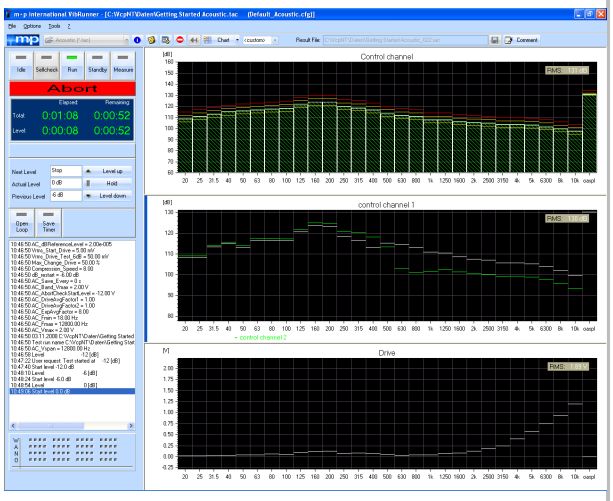
Combined Acoustic/Vibration Controller Solution

Lockheed Missiles and Fire Control Environmental Laboratory, Grand Prairie, TX utilize a unique m+p international solution which meets their requirement for a closed-loop controller for both the vibration and acoustic environments.



Jeff Kirk (shown right), Senior Staff Mechanical Engineer, says: "This is one system that can perform our day to day vibration control work and also meet our needs for a closed-loop acoustic controller operating our reverberant chamber. The common interface reduces my workload and the built-in safety features insure efficient and safe reverberant chamber operation."

This unique solution was developed from the industry-leading VibControl introduced by m+p international in the 1980's. The powerful customer-driven features in the "easiest to use user interface" result in a solution that can scale to meet any requirement, growing with your testing needs. Real-time 1/3 octave closed-loop control for reverberant chambers was developed to meet a special customer need for speed and safety dealing with very expensive test articles in facilities where seconds count and mistakes are not acceptable. Replacing open loop manual control solutions led to more accurate testing, ability to store equalizations and quickly come back to the same condition allowing for equipment and chamber characteristics resulted in repeatable, reliable testing. Many safety checks are built in and help the operator protect the test article while helping get the job done more quickly.



Developing this combined solution on a variety of hardware platforms insures customers can take advantage of existing popular hardware such as VTI Instruments VT1432B/VT143X and the latest addition m+p's 4-16 channel VibPilot.

Lockheed Missiles and Fire Control Environmental Laboratory also take advantage of another m+p solution - the SO Analyzer for portable data acquisition and analysis. The SO Analyzer can also utilize the same hardware as the vibration control and acoustic control solutions as well as the popular National Instruments hardware. Applications include time history recording, sine reduction, modal analysis, operating modal, operating deflection shapes, acoustic intensity and real-time 1/3 octaves, rotating, orbit analysis, stepped sine, shock capture, shock response and GPS based vehicle pass-by-noise. A perfect complement to the closed-loop acoustic and vibration controller.

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