



VIBRO-ACOUSTIC TEST FACILITY

Purpose:

To provide experimentally derived vibro-acoustic loads that simulate the launch and on-orbit environments to which flight hardware is exposed.

The Vibro-Acoustic Test Facility consists of a reverberation chamber, a progressive wave tube, and an anechoic chamber. Vibro-acoustic development and certification testing is performed in a 5,000 cubic ft concrete chamber with the capability of up to 200,000 acoustic watts input, 172 dB Overall (OA) Sound Pressure Level (SPL) in a progressive wave tube and 164 dB OA SPL in a diffuse field. Test articles up to 500 cubic ft can be placed in the diffuse field. Electromagnetic drivers are available for noise levels up to 139 dB OA SPL. An adjacent 3,000 cubic ft anechoic chamber provides the capability for transmissibility and absorption studies, as well as acoustic emission measurements, to exceed NC-40 requirements. Up to eight microphones can be multiplexed for acoustic level control and 32 channels of acceleration response can be analyzed on-line. Control tolerances are $\pm/2$ dB per 1/3 octave and $\pm/2$ dB overall.



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