

INSTITUTE OF ENVIRONMENTAL SCIENCES AND TECHNOLOGY

Design, Test, and Evaluation Division Recommended Practice 040.1

IEST-RP-DTE040.1

High-Intensity Acoustics Testing

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1 SCOPE AND LIMITATIONS

1.1 Scope

This Recommended Practice (RP) focuses on high-intensity acoustics testing (HIAT) within reverberant chambers, although a direct field acoustic test is also briefly described. This RP is intended for use as a high-level guide for practicing engineers and engineering managers for planning and executing an acoustic test program. The user's expected level of knowledge in acoustics and general hardware testing is medium to high. A brief overview of the acoustic environment encountered by aeronautical and aerospace systems and the simulation that can be achieved in a HIAT chamber is followed by test philosophy, the description of a few typical test facilities, the discussion of test articles for various tests, the development of test specifications under different conditions, the requirement of instrumentation and data processing, and the procedures of test operation. A bibliography and references are included.

1.2 Limitations

This Recommended Practice (RP) is limited to high-intensity acoustics testing (HIAT) of aeronautical and aerospace systems within hard-wall reverberant chambers. The effectiveness of HIAT is discussed, but the criteria for deciding when HIAT should or should not be performed are beyond the scope of this RP.

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