



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

NATIONAL TECHNICAL SYSTEMS – HUNTSVILLE
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Huntsville, AL 35806
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ACOUSTICS AND VIBRATION

Valid To: December 31, 2019

Certificate Number: 0214.41

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following Acoustics and Vibration tests:

<u>Test</u>	<u>Test Methods</u>
Acceleration¹ 22ft Radius Centrifuge / 25 G's 3 Foot Radius Centrifuge / 200 G's	MIL-STD-202, 212 MIL-STD-810, 513 RTCA/DO-160, Section 7
Explosive Atmosphere¹ (Site to 50,000 ft simulation)	MIL-STD-202, 109 MIL-STD-810, 511 Procedures I and II RTCA/DO-160, Section 9
Sand and Dust¹ Site Ambient to 160°F Air Velocity to 40 MPH	MIL-STD-202, 110 MIL-STD-810, 510 RTCA/DO-160, Section 12
Temperature/Altitude¹ (-65 to 160) °F 80,000 ft	MIL-STD-202, 105 MIL-STD-810, 500 RTCA/DO-160, Section 4
High Temperature¹ Up to 600 °F	MIL-STD-202, 108 MIL-STD-810, 501 RTCA/DO-160, Sections 4 and 5
Low Temperature¹ Down to -100 °F	MIL-STD-810, 502 RTCA/DO-160, Sections 4 and 5
Temperature Shock¹ (-100 to +300) °F	MIL-STD-202, 107 MIL-STD-810, 503
Thermal Vacuum¹ 1x10 ⁻⁵ torr ± 250 °F	MIL-STD-1540D

Test

Test Methods

Temperature/Humidity
(-100 to +300) °F
(20 to 95) % Humidity

MIL-STD-202, 103 and 106
MIL-STD-810, 507 (*excluding vibration*)
RTCA/DO-160, Section 6

Explosive Decompression
100,000 ft ≤ 100msec

MIL-STD-810, 500 Procedure IV

Rain/Wind

MIL-STD-810, 506

Icing/Freezing Rain

MIL-STD-810, 521

Immersion

MIL-STD-202, 104
MIL-STD-810, 512

Freeze/Thaw

MIL-STD-810, 521

Waterproofness

RTCA/DO-160, Section 10

Salt Fog

ASTM B117
MIL-STD-202, 101
MIL-STD-810, 509
RTCA/DO-160, Section 14

Salt Fog and SO2

MIL-STD-810, 518

Solar Radiation
(Heat Effects only)

MIL-STD-810, 505, Procedure I

Fluid Susceptibility/Exposure to Fluids
(Fluid Compatibility and Resistance to Fluids)

MIL-STD-202, 215
MIL-STD-810, 504
RTCA/DO-160, Section 11

Fungus

MIL-STD-810, 508
RTCA/DO-160, Section 13

Acoustics Reverberation

Up to 165 dB Overall
(10 to 20,000) Hz

MIL-STD-810, 515

Acoustics Progressive Wave Tube

Up to 172 dB Overall
(10 to 20,000) Hz

MIL-STD-810, 515

Thermal Acoustic

Up to 165 dB Overall
(10 to 20,000) Hz
(-65 to 200) °F

MIL-STD-810, 515 with Temperature



Test

Test Methods

Acoustic Emissions

23dBA Noise Floor
(23 to 175) dBA
(10 to 20,000) Hz

MIL-STD-740-1

Vibration Electro Dynamic Shaker

Sine, Random, and Combined
30,000 Pounds Force
(5 to 2,000) Hz
1.0” Double Amplitude
Combined Environment of (-65 to 300) °F

MIL-STD-167-1 5.1, 5.2, 5.3
MIL-STD-202, 201, 204, and 214
MIL-STD-810, 514 and 528
RTCA/DO-160, Section 8

Vibration Servo Hydraulic Shaker

Sine, Random, and Combined
30,000 Pounds Force
(2 to 200) Hz
4.0” Double Amplitude
Combined Environment of (-65 to 300) °F

MIL-STD-810, 514, and 516
RTCA/DO-160, Section 8

Shock Electro Dynamic Shaker

30,000 Pounds Force
1.0” Double Amplitude
1,200 SRS G

MIL-STD-202, 207 and 213
MIL-STD-810, 516 and 519
RTCA/DO-160, Section 7

Transportation (Loose Cargo)

MIL-STD-810, 514

Drop Impact

MIL-STD-202, 203
MIL-STD-810, 516

HALT Testing Guidelines

Qualmark

Earthquake

Resistance (Seismic) Vibration Characteristics of
Materials Acceptance Criteria for Seismic Qualification
by Shake Table Testing of Nonstructural Components
and Systems

IEEE-344;
Telcordia GR-63 (5.4.1)
ICC-ES AC156

¹ This laboratory also uses customer supplied specifications and/or methods directly related to the testing technologies and parameters listed above.





Accredited Laboratory

A2LA has accredited

NATIONAL TECHNICAL SYSTEMS - HUNTSVILLE

Huntsville, AL

for technical competence in the field of

Acoustics and Vibration Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General requirements for the competence of testing and calibration laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).



Presented this 21st day of February 2018.

A handwritten signature in black ink, written over a horizontal line.

President and CEO
For the Accreditation Council
Certificate Number 0214.41
Valid to December 31, 2019

For the tests to which this accreditation applies, please refer to the laboratory's Acoustics and Vibration Scope of Accreditation.