



ENVIRONMENTAL TEST LABORATORY

RTCA/DO-160
Current Capabilities Overview
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Section 4: Temperature and Altitude

Section 5: Temperature Variation

Section 6: Humidity

- All Temperature and Altitudes at or above lab altitude (vacuum only).
- Equipment Available:



- o Cincinnati Sub Zero (CSZ) ZPH-8-1.5-8\AC Humidity and Temperature Environmental Chamber

- Eight (8) cu.ft. capacity
- NIAR Room 102E
- Performs Sections 4, 5, 6
- Temperature Parts of Section 4



- o Tenney 27 STR Temperature, Humidity, and Altitude Chamber

- Twenty Seven (27) cu.ft. capacity
- Altitude to 100,000 ft MSL
- NIAR Room 102E
- Performs Sections 4,5,6



- o Tenney ETCW6RCW-10 Temperature and Humidity Chamber

- Sixteen (16) cu.ft. capacity
- NIAR Room 102E
- Performs Sections 4,5,6
- Temperature parts of Section 4



Section 7: Operational Shocks & Crash Safety

Section 8: Vibration



- o Data Physics Signal Force V5344 3-axis vibration table, air cooled

- Table Size 24 x 24 inches
- 4 inch on-center hole pattern for attaching fixtures
- (3/8 -20 threads)
- MESA Room 103
- Capable of all vibration testing of Section



Section 9: Explosive Atmosphere

- No current capabilities



Section 10: Waterproofness

- Capability on-line in FY11



Section 11: Fluids Susceptibility

- No current capabilities



Section 12: Sand & Dust

- No current capabilities



Section 13: Fungus Resistance

- No current capabilities



Section 14: Salt Fog

- Equipment Available:
 - o Singleton 5CCH22 Salt Fog Chamber
 - Thirty (30) cu.ft. capacity
 - NIAR Room 102B
 - Performs all categories of Section 14



- o Auto Technology Model 15 Salt Fog Chamber
 - Fifteen (15) cu.ft. capacity
 - NIAR Room 102C
 - Performs all categories of Section 14





Section 15: Magnetic Effects

- Capabilities exist using the Indirect Lightning Lab. See Section 22



Section 16: Power Input

Section 17: Voltage Spike

Section 18: Audio Frequency Controlled Susceptibility/ Power Inputs

Section: 19 Induced Signal Susceptibility



o California Instruments Model MX45 45kW AC/DC Programmable Power Supply

- 4 x 12 foot Brass Top Test Bench
- NIAR Room 212
- Capable of all categories EXCEPT:
 - o Category “D” in D0-160F Section 16
 - o Category C



Section 20: Radio Frequency Susceptibility (Radiated & Conducted)

Section 21: Emission of Radio Frequency Energy



o ETS-Lindgren Anechoic Chamber

- 4 x 12 foot copper test bench
- MESA Room 102
- Capable of all categories up to 150 V/M



o ETS-Lindgren Reverb (mode-stir) chamber

- 8 x 8 aluminum test bench
- Amplifier Research Amplifiers
- 10kHz to 18GHz as high as 4kW
- MESA Room 102
- Capable of all categories of Section 20 up to 200V/m



Section 22: Lightning-Induced Transient Susceptibility



- o EMC Partner Equipment Suite
 - 4 x 8 foot brass top test bench
 - 4 x 12 foot brass top test bench
 - NIAR Room 214
 - Capable of Section 22, all categories
 - Capable of Section 17, all categories
 - Capable of Section 25, ESD all categories



Section 23: Lightning Direct Effects

- No current capabilities



Section 24: Icing

- Capabilities exist using Environmental Chambers. See Sections 4-6



Section 25: Electrostatic Discharge

- Capabilities exist using the Indirect Lightning Lab. See Section 22.



Section 26: Fire, Flammability

- No current capabilities