AETECHRON®

APPLICATION NOTE

Military and Aerospace Applications

FOR AE TECHRON AMPLIFIERS AND TEST SYSTEMS

AVIONICS AND EMC QUALIFICATION TESTING

Products: DSR 100 Series, DSR 400 Series, CIS-25 Test Kit

Applications:

- Compliance with **RTCA DO-160 (Sections 16, 18, 19), MIL-STD-461 CS101,** and **MIL-STD-704.**
- Simulation of power input fluctuations, induced signal susceptibility, and RF susceptibility to validate avionics immunity.
- DO-160 Section 16: Power input tolerance to surges, interruptions, and dropouts.
- DO-160 Section 18: Induced signal susceptibility (cable-based EMI).
- DO-160 Section 19: Conducted and radiated RF interference.

Specialized Tools:

- **CIS-25:** Full coverage of DO-160 (Sections 18 & 19) and MIL-STD-461 CS101 for single- and three-phase systems.
- **DSR 400:** Aviation AC/DC power testing to DO-160 (Section 16) and MIL-STD-704, scalable from **80A up to 425 Vp / 400 Ap.**
- Includes all transformers, chattering relays, and waveform generators needed for compliance testing. TAA compliant systems available.

DEFENSE ELECTRONICS & CAPACITOR LIFE TESTING

Products: 8500, 8700, and 9100 Series Switch-Mode Amplifiers

Applications:

- Capacitor endurance and accelerated aging tests under **MIL-PRF-83421/6E.**
- Power delivery up to **100 kW** with bandwidth extending to **250 kHz.**
- Critical for validating military-grade power conversion systems.

SONAR AND NAVAL APPLICATIONS

Products: 9100 Cabinet Power System (10 × 9115 Amplifiers)

Applications:

- **50 kW at 400 Vp / 1500 Ap,** optimized for 16-second **sonar pulses every 160 seconds.**
- Used in naval sonar arrays where high-current, precisely timed bursts are essential for underwater detection and communications.

SPACE SYSTEMS AND TESTBEDS

Products: 7800 Cabinet System, 3110A Standards Waveform Generator

Applications:

- **Lunar power testbed project** for a space agency: **10–20 kVA, ±350 Vp, 200A continuous.**
- Use of 3110A Standards Waveform Generator for producing proprietary waveforms for **geo intelligence, robotics, and satellite systems.**

HIGH-VOLTAGE RIPPLE TESTING (AEROSPACE & DEFENSE)

HVR 1000CS – HV Ripple + LV Immunity

- **1000 VDC, up to 100 Ap, 60 kW.**
- **Aerospace propulsion labs** use it to **simulate ripple disturbances on 700V avionics rails.**
- Standards coverage: ISO 21498-2, MBN LV123, BMW GS95023, VW 80300, Stellantis CS.00245, RTCA DO-160 Sections 16, 18, 19, MIL-STD-461 CS101, and MIL-STD-704.

HVR 1200RG – High-Current Ripple Generator

- Modular ripple injection: **100–600 Ap (1200Ap-p), with DC up to 1200 Vp (2000 Vp bridged).**
- Use cases: heavy power applications such as traction inverters, Power-HIL setups, and battery storage systems.
- Standards coverage: ISO 21498-2, VW 80300/80303, MBN LV123, BMW GS95023, MAN CVS 43, Stellantis CS.00245.

HVR 2000 Series – Next-Gen Ripple Testing

- **2000 VDC, up to 50 Ap ripple, 10 Hz–200 kHz.**
- **Used for MAN CVS 43** compliance on heavy-duty 800–1600 VDC truck and military vehicle platform **component testing.**
- **Standards coverage:** MAN CVS 43, ISO 21498-2, LV123, VW 80300/80303, Stellantis CS.00245.
- Ideal for commercial **EV trucks, large aviation testbeds, and defense vehicle components.**

UAV COMMUNICATIONS IN CONTESTED ENVIRONMENTS

Products: 7224 Linear Amplifier

Applications:

- **Power supply testing** for UAV software platform in GPS-denied environments**.** Platform supports satellite-free navigation, secure communications, and digital video systems for defense UAVs.

STRATEGIC VALUE OF AE TECHRON SOLUTIONS:

- **Full Standards Coverage:** DO-160, MIL-STD-461, MIL-STD-704, ISO 21498-2, MAN CVS 43, and more.
- **Scalable Power:** From 25A immunity testing up to 100 kW sonar and 1200 Ap-p HV ripple systems.
- **Cross-Domain Solutions:** Avionics, sonar, space systems, capacitor reliability, EV truck compliance, UAV communications.
- **Future-Proof:** Modular, standards-driven platforms ensuring compliance and adaptability.
- **Rugged durability, precision, and power:** Industry reputation for reliability and prompt service.