



Independent Radiation and Test Services Laboratory



Our Services:

- ▶ Total Ionizing Dose (TID) Co-60 Gamma Irradiation
- ▶ High Dose Rate (HDR) TID GC-220
- ▶ Low Dose Rate (LDR) Broad Beam TID Irradiation
- ▶ Bruker Biospin EPR Dosimetry System
- ▶ ELDRS Analysis
- ▶ TESEC 881-TT Discrete Test System
- ▶ LTX D10 Mix Signal Test System
- ▶ JDI ATV Digital / PWS Analog Test System
- ▶ Integrated Test Development and Engineering Solutions

VPT Radiation Laboratory and Test Services (VPT Rad®) provides specialized environments and test solutions for evaluating electronics used in aerospace and nuclear applications where ionizing radiation can degrade the service life of the electronic devices.

Our services include radiation test program planning, test execution, results evaluation, and complete DLA slash sheet reporting. We also provide comprehensive custom turn-key test development solutions. VPT Rad optimizes irradiation scheduling, test plan development, and test performance to efficiently and effectively meet customer requirements.

The VPT Rad 7,500 square foot mixed-use facility has in-house Cobalt 60 irradiators optimized for TID and is located just 20 miles north of Boston in Chelmsford, MA. To complement the High Dose Rate ≥ 50 rad(Si)/s (HDR) and Low Dose Rate 10 to 100 mrad(Si)/s (LDR) TID sources, our in-house test capabilities include a TESEC 881 Spektra, an LTX Credence D-10 test system supporting both memory and mixed-signal analysis, a JDI ATV Digital / PWS Analog Test System, a Bruker Biospin Electron Paramagnetic Resonance (EPR) Dosimetry system, as well as customized rack solutions.

Our Low Dose Rate (LDR) TID facility complies with TM 1019 Condition D. This capability, in combination with our High Dose Rate (HDR) TID capability (TM 1019 Condition A), puts us in the unique position to provide a complete Enhanced Low Dose Rate Sensitivity (ELDRS) analysis for our customers.

In addition to our in-house irradiation and test resources, our DLA lab suitability covers support for off-site neutron irradiation testing for Displacement Damage Dose (DDD) under TM 1017 and test support for heavy ion Single Event Effects (SEE) testing under TM 1080 at TAMU, Berkeley, and Brookhaven National Laboratories.

DLA Lab Suitability / ESCC 22900 Compliance / NIST Certification

VPT Rad has commercial laboratory suitability approval from the Defense Logistic Agency (DLA) to perform radiation testing on electronic components for Test Method 1019 Conditions A, C, and D, Test Method 1080 per MIL-STD-750, and Test Method 1017 per MIL-STD-750 and MIL-STD-883. Our DLA Land and Maritime VQ letter of suitability ensures that our facility has been thoroughly audited by DLA Land and Maritime, a division of the U. S. government responsible for oversight of approved test methods.

VPT Rad also services radiation test needs for customers and programs outside of the U.S. using test methods compliant to ESCC 22900. Our LDR TID facility can produce low dose rates from 10 to 100 mrad (Si)/s to match our customers' mission requirements.

Additionally, measurement of absorbed dose at our lab is traceable to the National Institute of Standards and Technology (NIST) standards using certified calibration dosimeters.





Total Ionizing Dose (TID) Gamma Irradiation:

- › NIST Certified EPR Dosimetry System
- › Quality Assurance Program (DLA Approved)
- › ESD Protection Program

Low Dose Rate (LDR) TID:

- › Turn-Key Testing
- › Dose Rates from 10 to 100 mrad(Si)/s
- › DLA Commercial Lab Suitability
- › MIL-STD-750 & 883 Test Method 1019 Condition C and D Compliant
- › TM 1019 Compliant Pb / Al Containers

High Dose Rate (HDR) TID CG-220:

- › Turn-Key Testing
- › Dose Rates up to 140 rad(Si)/s
- › DLA Commercial Lab Suitability
- › MIL-STD-750 & 883 Test Method 1019 Condition A and C Compliant
- › TM 1019 Compliant Pb / Al Boxes

TESEC 88I-TT Discrete Test System:

- › Discrete Component Test Systems for Incoming Inspection
- › Sampling of Small Signal / High Power Transistors, Diodes, FETs, Zeners, IGBTs, SCRs, and Triacs (test for most hi-rel test parameters)
- › 1000 VDC / 75 A capabilities

LTX Credence D10 Mix Signal Test System:

- › Memory ICs
- › Op-AMPS
- › Linear Regulators
- › ADCs / DACs

JDI ATV Digital / PWS Analog Test System:

- › Memory Modules (SRAM, DRAM, FLASH, SDRAM, EEPROM)
- › ASIC, FPGAs, PLDs
- › Microprocessors, DSPs
- › Discrete Components
- › OpAmps / Comparators
- › ADCs, DACs
- › Mixed Signal

Scientific Test Model 5300:

- › Discrete Device Tester
- › Model LC-1000 Low Current Deck Attachment (pA precision)
- › Built-in Curve Tracer

Single Event Effect (SEE) Test Solutions:

- › Design & Development of Test Software / Hardware
- › Optimized Test Planning and Implementation per ESCC 25100 or JESD57
- › Determine Heavy Ion Cross Sections for Both Components and Systems
- › Comprehensive Data Analysis and Reporting

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