

Background

Jeffrey earned a B.S.E.E from Purdue University in 1982 and accepted a position in the Radiation Sciences Branch at NSWC Crane, Indiana. He earned a M.S.E.E. with an emphasis in Material and Failure Analysis Techniques from NTU in 1993. He published his first technical paper in 1986, investigating how diffusion and ion implantation processes impacted a device's radiation tolerance across a wafer. He has published over 80 technical papers, investigating semiconductor radiation effects, which include enhanced low dose rate sensitivity (ELDRS), burn-in effects, hardening techniques, single event gate rupture (SEGR) and single event burnout (SEB). His experience includes discrete electrical, radiation and temperature testing using approved test standards as well as conducting tests at approved radiation test facilities.

In 2017, he retired from NSWC Crane and immediately accepted a position at AMENTUM as a senior radiation effects and test engineer providing support to NSWC Crane and Air Force. In this new position, he helped develop a successful system-level radiation test on an Air Force Missile System.



Inception

In 2021, Jeffrey embarked on a new path as a radiation test consultant to provide quality radiation effects and testing of semiconductor devices and to support program requirements for space, commercial, and military applications.

Experience

After 40 years working at NSWC Crane as a Radiation Scientist, he altered direction to share his passion for semiconductor radiation effects and testing as a consultant. His years of experience provide a process, which is designed to empower your team providing them tools for success.

Approach

Together, we will outline a comprehensive project evaluation to identify radiation requirements, gaps, and opportunities; we will draft project timelines and milestones, cost analysis, and schedules; and then develop a quality radiation program.



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Jeffrey Titus

Radiation Test Consultant



**A Subject Matter Expert
With Forty Years of
Experience**

**Specializing in Radiation
Effects and Testing of
Semiconductor
Devices and Technologies**

Contact Us Today
Let's Discuss Your Radiation
Program Requirements

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Test Processes

Component-Level Radiation and Electrical Test Parameters

- Component Selection
- BOM Reviews
- Test Plans
- Test Boards
 - Design/Layout
- Electrical Parameters
- Radiation Conditions
- Test Procedures
- Test Methods
 - MIL-STD 750/883
 - ASTM
- Test Execution
- Data Analysis
- Test Reports

Radiation Environments

Utilize External Facilities for Radiation Testing and Characterization

- Total Ionizing Dose (TID)
- Prompt Dose
 - Survivability
- Dose Rate/Gamma Dot
 - Latch-up
 - Survivability
- Neutrons
 - Displacement Damage
- Protons
- Heavy Ions
 - SEU
 - SEB
 - SEGR
 - SEL

Hardness Assurance

Program-Level Radiation and Test Requirements

- Radiation Requirements
- Program Reviews
- Test Events
- Rad-Hard Technologies
- Rad-Hard Systems
- Radiation & Electrical Test Training
- Radiation Characterization
- Radiation Qualification
- Radiation Lot Acceptance
- Program/Test Oversight

