

## Vitae

Joel Hatch  
Research Associate, Nuclear Reactor Laboratory  
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### Education and Training:

Institution	Major/Area	Degree	Year Completed
The Ohio State University	Biochemistry	B.S.	1987
The Ohio State University	Mechanical Engineering (Nuclear Instrumentation)	M.S.	1993
Madison University	Engineering Management	Ph.D.	2010

### Research and Professional Experience

- **Research Associate, OSU Nuclear Reactor Laboratory, 2011-Present**  
Design, repair, and develop nuclear instrumentation for Research Reactor. Develop test and maintenance procedures, guidelines, and standards. Perform radiation testing of and analysis of electronic and electro-optic devices. Perform various experiments to measure nuclear physics of reactor.
- **Space Radiation Effects Consulting, 1997-Present**  
Radiation effects on parts, materials, and processes: Serve as lead adviser for parts, materials, and Process Control Board for selection and test of electronic parts/devices for use on spacecraft, rovers, satellites and launch vehicles. Develop test techniques and procedures for evaluating electronic parts and components for use on spacecraft in a variety of cosmic environments – radiation, thermal, and vibration. Analyze, measure, and evaluate electronic parts and associated radiation effects data. Determine component operational behavior / risk associated with circuit performance from Pre-Launch to End-of-Life conditions to ensure mission success.
- **Reliability / Test / Quality Manager, Bell Laboratories / Celiant Corp. / Andrew Corporation, 1999-2007**  
Reviewed, directed and qualified two major Contract Manufacturing companies to meet quality requirements and guidelines. Implemented SPC and 6-Sigma programs to control manufacturing processes across several product lines. Developed various test techniques for environmental stress screening / burn-in of cellular base station amplifiers. Developed and promulgated HALT / ALT guidelines, standards and procedures. Designed flexible, cost effective, test platform to serve across multiple amplifier designs.

## Research and Professional Experience cont.

- **Director of Fiber Optic Test Laboratory, SRICO Inc., 1995-1997**

Coordinated R & D test and production program. Developed test requirements and procedures to comply with NASA, Military and ASTM standards, guidelines and test methods. Assisted in the development of high-speed (>5 GHz) fiber optic based sensor systems.

## Publications:

1. Joel Hatch, *Single Event Effects Testing of TL1431 Voltage Reference*, proprietary report for General Dynamics Mission Systems, Mar 2020
2. Joel Hatch, *Single Event Effects Test Results-Data of (FPGA)*, proprietary report for L3Harris-Mason, Dec 2019
3. Joel Hatch, *Single Event Effects Proton Test of (FPGA)*, proprietary report L3Harris-Mason, Oct-Nov 2019
4. Joel Hatch & Brittany Butterworth (L3H), *Recent Single Event Transients, Upsets, and Latchup Test Results for TPS3307-18, TL1431, INA129, AM26LV31 & 32 Electronic Parts*, RADECS Apr 2019 (preprint)
5. Joel Hatch, *Single Event Effects Testing – Brookhaven NSRL*, proprietary, L3Harris-Cincinnati Electronics, various reports 2016-2019
6. Joel Hatch, *Single Event Effects Testing – Texas A&M*, proprietary, L3Harris-Cincinnati Electronics, various reports 2014-2019
7. Joel Hatch, *Single Event Effects Testing of COTS and MIL Parts*, proprietary reports for ULA, Jan 2015-Nov 2017
8. Joel Hatch, *Single Event Effects Analysis of DDC P456 Transceiver*, proprietary report for Data Device Corporation, Feb 2016
9. Joel Hatch (Consultant) and Andrew Daniel (L3 CE), *Summary of LTC2850 LTC2851 Single Event Latchup (and Transients) Testing*, proprietary report for Cincinnati Electronics, Nov 2015
10. Joel Hatch (Consultant), Andrew Daniel (L3 CE), and Youjia Kung (L3 CE), *Test Report: Single Event Latchup Test Results of GaN RF Power Transistors*, proprietary report for Cincinnati Electronics, Oct 2015

## Synergistic Activities:

1. Research Associate at the OSU Nuclear Reactor Laboratory
2. Consultant
3. Participation in many OSURR facility modifications
4. Member ASTM F1-11 subcommittee (guest JEDEC Space Parts)
5. Member Space Parts Working Group (SPWG) and Radiation Hardness Assurance Committee (SPWG-HAC)
6. IEEE member
7. SPIE member