Tin Thurein

EIT License: 166315 · Electrical Engineer · Hardware Enthusiast

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SUMMARY

Highly motivated electrical engineer with over 7 years of experience in high-speed designs, multi-layer PCB design, and hands-on testing. Expertise in electrical, mechanical, and communication engineering, with a proven track record in PCB bring-up and debugging. Eager to contribute to Cisco's Silicon One team by leveraging technical skills and innovative solutions.

SKILLS

Software Engineering
C, C++, Python, Java, VHDL

Software
Orcad, Allegro PCB Design, Eagle CAD, KiCad, Altium, Mentor Graphics Xpedition, SPICE, HyperLynx, Vivado, National Instrument Circuit Suite, Autodesk Inventor, MATLAB

H/W Engineering
Xilinx FPGA, Analog, Mixed Signal & Power electronics circuit design, Logic Design, Filters & DSP, Circuit & PCB Simulation

Embedded Systems
AVR, STM32, PIC, CAN, I2C, UART, SPI, SpW, JESD204, Sensor interface, Protocol debugging hardware

PROFESSIONAL EXPERIENCE

Sandia National Laboratories August 2023 – January 2025 | Livermore
Sr. R&D Electrical Engineer
- Develop high-speed, high-performance telemetry data acquisition board, evaluating critical components such as JESD204b ADCs, analog front ends, clocking ICs, and rad-hard components.
- Design electrical module systems with improved reliability, scalability, and ease of integration to align with future requirements.
- Lead the design and integration of the Gas Transfer System with vacuum pumps, manometers, gas analyzers, and valving system.
- Collaborate with cross-functional teams of firmware, systems, and electrical engineers to support design review activities.

KLA-Tencor June 2022 – August 2023 | Milpitas
Electrical Design Engineer
- Designed functional test fixtures (FUT) for stage motion controller PCBs, integrating high-speed ADCs, DACs, LVDS transceivers, and digital communication protocols including JESD204b, UART, SPI, and I2C to interface with FPGA.
- Developed embedded firmware and libraries for Functional Test Fixtures (FUT) and FPGA test-mode firmware.
- Authored Interface Control Document (ICD) specifications and maintained Python scripts for automated testing and GUI.
- Conducted SPICE simulations, and Power Integrity/Signal Integrity analyses utilizing HyperLynx.
- Designed high-speed stage motion controller board, managing the entire PCB design cycle from owning schematics capture, reviewing layout, PCB manufacturing, and assembly to hardware bring-up, functional verification, and subsystem integration.

Analog Devices July 2019 – June 2022 | Milpitas
Sr. Reliability Hardware & ESD/Latch-up Engineer
- Responsible for reliability circuit designs and test setup development for accelerated testing of packaged and wafer-level chip-scale packaged devices, ranging from BMS, PMIC, voltage regulator, DAC, and ADC products.
- Developed and implemented reliability test plans for new products, including High-Temperature Operating Life (HTOL), Highly Accelerated Temperature and Humidity Stress Test (HAST), and Early Life Failure Rate (ELFR) tests.
- Resolved and identified root causes of PCB failures during burn-in and HAST cycles by conducting in-depth troubleshooting.
- Defined and developed ESD and Latch-up methodologies for new, existing, and fab-transferred products, ensuring compliance with JEDEC and AECQ standards for characterization of ESD and Latch-up properties.
- Developed and executed ESD and Latch-up device characterization plans, and conducted comprehensive data analysis on ESD/Latch-up related failures to improve product reliability and robustness.

Nordson March October 2017 – July 2019 | Concord
Engineering: R&D Product Development
- Responsible for integrating EFEM (Equipment Front End Module) systems with plasma modules.
- Configured high-power RF generators and RF matching networks, and developed process recipes for various plasma and chemical deposition applications.
- Designed and tested new vacuum chambers and High-Flux Electrode (HFE) configurations.
- Enhanced process cycle time for customers through the development of custom process receipes and optimization of RF power delivery systems , achieving superior plasma treatment, uniformity, and throughput.
- Conducted Factory Acceptance Tests (FAT), trained customers, and performed QA and QC procedures on product shipments.

EDUCATION

University of California, Santa Cruz 2020 – 2022
M.S. in Electrical Engineering
Research Areas: Neuromorphic computing, Memristors, Spiking Neural Networks, Memristive Integrate-and-Fire

University of California, Santa Cruz 2015 – 2017
B.S. in Electrical Engineering