Erich Beyer, PE EE

Email: erich@beyerautomation.com | www.linkedin.com/in/erich-beyer-96502014/ | Reno, NV

PROFESSIONAL SUMMARY

Senior Staff-Level Systems Test Engineer with 15+ years of experience architecting manufacturing and validation test systems for industrial power electronics. Licensed PE with deep expertise in automated test architecture, power electronic design, and cross-functional root cause analysis. Proven technical authority in identifying systemic design risks, preventing field failures, and influencing cross-functional hardware and firmware architecture decisions prior to production release.

RELEVANT EXPERIENCE

Generac Power Systems	Reno, NV
Senior Staff Test Engineer	*Jan 2024 – Present*

- Increased manufacturing First Pass Yield from 70% to 90% and LPY to 95% across 5,200 annual home storage units and 10,000 microinverters by implementing structured root cause analysis, statistical defect tracking, and design-for-test improvements.
- Reduced production test cycle time by 50% through profiling and optimization of I/O transactions, and refactoring Golang automation frameworks.
- Led cross-functional root cause investigations on systemic manufacturing failures, driving corrective actions in hardware design, firmware, supplier components, and test infrastructure.
- Re-architected electrical test platform, reducing hardware complexity and BOM cost by 30% while improving maintainability and reducing tester lead time.
- Mentored and technically led team of 4 software engineers, establishing documentation standards, enforcing code review practices, and promoted scalable automation.
- Architected reusable hardware abstraction layer adopted across 12+ manufacturing testers, standardizing instrument control and accelerating new tester deployment.
- Developed and deployed automated IEEE 1547 production compliance validation suite for 10–20 kW distributed energy storage systems, enabling scalable grid-interconnection verification at manufacturing volumes.
- Served as technical risk authority during product validation, uncovering PCB design defects and manufacturing process integration gaps; influenced cross-functional redesign decisions that prevented field escapes prior to high-volume production.

Server Technology, Inc.	Reno, NV
Senior Test Engineer	*May 2014 – Dec 2023*

- Developed and maintained automated test software for 7 production and validation platforms supporting AC power meters and network-controlled relays.
- Designed and executed system-level validation plans for 4 generations of revenue-grade AC power meters, ensuring electrical accuracy, power quality compliance, and firmware integration robustness.
- Reduced power meter measurement error by 50% while expanding functionality with three additional electrical metrics through algorithm refinement and improved calibration methodology.
- Performed IEC compliance testing for power quality meters, validating conformance to international measurement and safety standards prior to product release.
- Built automated data aggregation and visualization pipelines using Python (Pandas, Matplotlib, SQL), enabling cross-product performance analysis and faster failure diagnosis.
- Designed, expanded, and managed AC power laboratory infrastructure to support increasing product

complexity and company growth.

- Led reliability qualification efforts using HALT, ALT, and HASS methodologies to identify design weaknesses and characterize failure mechanisms prior to production release.
- Partnered with R&D using DFMEA reviews to design targeted validation tests focused on high-risk failure modes.
- Developed electrical fast transient (EFT) robustness test protocols to evaluate system immunity to industrial noise environments, driving hardware filtering and firmware recovery improvements.

Server Technology, Inc.	Reno, NV
Automation Test Engineer	*Jan 2009 – May 2014*

- Reduced end-of-line qualification tooling complexity by 8×, simplifying operator workflow and improving test repeatability.
- Designed and built bed-of-nails PCB test fixtures for 25+ boards, improving manufacturing fault isolation.
- Designed and maintained automated validation systems for IoT-enabled power products, collaborating with international engineering teams to expand test coverage and improve efficiency.
- Partnered with manufacturing engineering to optimize test cycle time and material flow while maintaining coverage requirements.

TECHNICAL SKILLS

Test & Reliability Engineering: HALT, HASS, ALT, Reliability Characterization, Failure Analysis, Environmental Stress Testing
Power & Electrical Systems: AC Power Measurement, Power Electronics, Grid-Tied Systems, IEEE 1547
Automation & Software: Python, Golang, Embedded Systems, Linux, Networking
Standards & Compliance: IEEE 1547, UL, IEC
Data & Analysis: Statistical process control, Pandas, Matplotlib, SQL

EDUCATION

Electrical Engineering — University of Nevada, Reno	May 2009

- Honors: Senator for College of Engineering
- Activities: Completed Death Ride

Professional Engineer – NV Board of Professional Engineers & Land Surveyors (029210)