



Walker Silva

Senior Power and Analog Electrical Engineer

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SUMMARY

Senior electrical engineer with 9 years designing, analyzing, integrating, testing, and supporting **analog electronics**, **power electronics**, power systems, **power conversion**, distribution, and control hardware for aerospace and defense programs. Hands on laboratory work covers AC/DC, DC/DC, DC/AC, switching supplies, PFC, ZVS, resonant circuits, magnetics, EMI control, protection, isolation, fault reporting, and high current distribution. Uses PSpice and MATLAB/Simulink for modeling, simulation, stability review, component stress analysis, and control loop development. Leads small engineering teams through requirements development, design reviews, integration, **production support**, supplier coordination, and technical reporting. Active DoD Secret Security Clearance supports defense hardware development, disciplined verification, and secure program delivery.

EXPERIENCE

Senior Power Electronics Engineer

Northstar Defense Electronics 📅 January 2023 - Present 📍 Lowell, MA

Leads analog and power architecture for defense electronics assemblies, guiding requirements translation, simulation, laboratory verification, documentation, production transition, and supplier coordination.

- Translated system requirements into power conversion, protection, filtering, and control architectures for production hardware.
- Simulated **switching supplies** in PSpice and **MATLAB/Simulink**, exposing transient, stability, and component stress risks.
- Directed laboratory verification, resolving EMI, grounding, synchronization, fault protection, and **high current distribution** issues.
- Guided a small engineering team through design reviews, **technical commitments**, documentation, schedule, and program risk.
- Coordinated procurement, manufacturing, and suppliers around component choices, buildability, and controlled production release.
- Produced requirements traceability, design analyses, **test** reports, and troubleshooting records for program reviews.

Electrical Engineer III

Granite Peak Aerospace Systems 📅 May 2020 - December 2022 📍 Bedford, MA

Designed airborne power distribution and analog control circuitry while connecting simulation, bench evidence, environmental testing, production methods, and technical reporting.

- Designed airborne power distribution with **low voltage** rails, isolation, protection, **fault reporting**, and redundant paths.
- Correlated PSpice converter and filter models with bench measurements, refining component selection and control loop performance.
- Developed **magnetics** and **filters** using harmonic, short circuit, EMI, and stress analyses for design margins.
- Diagnosed **integration** and environmental test anomalies, isolating root causes and implementing controlled design corrections.
- Clarified component test methods and acceptance criteria with production teams during recurring assembly investigations.
- Authored **technical reports** linking requirements, analysis, laboratory evidence, and residual risk for stakeholders.

Power Systems Engineer

Vector Maritime Controls 📅 July 2017 - April 2020 📍 Quincy, MA

Developed shipboard power and control electronics, supporting conversion, distribution, grounding, isolation, laboratory verification, failure analysis, and production documentation.

STRENGTHS

- 🔧 **Laboratory problem solving**
Bench evidence turned ambiguous EMI and fault reports into clear corrective actions, giving integration teams confidence.
- ⚡ **Power architecture**
Conversion, protection, isolation, and distribution choices moved from requirements into buildable defense hardware.
- ♥️ **Simulation discipline**
PSpice and MATLAB models surfaced stress and stability risks early, before costly hardware changes reached production.
- 👥 **Small team leadership**
Design reviews stayed focused on technical commitments, schedule pressure, documentation quality, and practical decisions.
- 🛠️ **Supplier coordination**
Component and manufacturing discussions kept engineering intent aligned with availability, acceptance criteria, and production needs.

SKILLS

Analog electronics

Power electronics Power systems

Power conversion

Requirements development

Laboratory testing

Production support

Technical documentation

Supplier coordination

Circuit simulation Control systems

Power distribution

Hardware verification

Defense hardware Integration

LANGUAGES

English Native

Spanish Intermediate

MY CAREER



● Senior Power Electronics Engineer at Northstar Defense Electronics (3.8 Years)

● Electrical Engineer III at Granite Peak Aerospace Systems (2.6 Years)

● Power Systems Engineer at Vector Maritime Controls (2.8 Years)

- Developed shipboard **AC/DC** and DC/DC circuitry for **line voltage**, high current distribution, grounding, isolation, and protection.
- Analyzed switching supplies and **resonant circuits** through simulation and bench testing, documenting limits and corrective actions.
- Supported servo and motor control electronics with **digital feedback** interfaces and **command generation** circuitry.
- Created repeatable laboratory setups for power and analog boards, improving design verification and production troubleshooting.
- Investigated component failures through schematic review, **stress analysis**, and bench evidence, isolating likely mechanisms.
- Maintained drawings, test procedures, and technical notes through prototype changes and controlled production transition.

Junior Electrical Engineer

Harborline Technology Laboratory 📅 June 2017 - June 2017 📍 Cambridge, MA

Supported supervised prototype development through analog circuit testing, PSPICE **modeling**, component traceability, troubleshooting, laboratory reporting, and controlled documentation.

- Built and tested prototype analog circuits under senior direction, recording voltage, current, and waveform measurements.
- Prepared **PSPICE** models for power supply and filter circuits, comparing simulations with measured prototype behavior.
- Updated component lists and test records after engineering changes, preserving traceability across prototype configurations.
- Reproduced reported circuit conditions at the bench, documenting observations that supported troubleshooting decisions.
- Prepared laboratory summaries connecting test setup, measured results, and engineering conclusions for design review.
- Supported controlled prototype documentation during transition from university study into professional engineering practice.

PROJECTS

Shipboard Power Conversion Modernization 📅 2020

Reworked AC/DC and DC/DC power paths for shipboard control equipment, combining isolation, grounding, protection, simulation, and bench verification.

Defense Power Board Verification 📅 2024

Built a disciplined verification flow for switching supplies and analog boards, connecting requirements, PSPICE models, laboratory evidence, and production records.

LEADERSHIP & AWARDS

- Selected technical lead for defense power electronics design reviews and schedule driven hardware commitments.
- Recognized by program stakeholders for clear technical reports linking requirements, test evidence, and residual risk.
- Advanced into senior engineering leadership after sustained delivery across aerospace, maritime, and defense hardware programs.

EDUCATION

Bachelor of Science in Electrical Engineering

University of Massachusetts Lowell 🎓 GPA: 3.5 📅 2017 📍 Lowell, MA

Coursework: Analog electronics, power systems, control systems, circuit analysis, electromagnetic fields

CERTIFICATIONS

- Active DoD Secret Security Clearance 📅 2026
- Bachelor of Science in Electrical Engineering 📅 2017

TECHNICAL SKILLS

- **Circuit Simulation:** PSPICE, MATLAB, Simulink
- **Power Conversion:** AC/DC, DC/DC, DC/AC
- **Power Supplies:** Switching supplies, linear supplies, PFC
- **Resonant Design:** ZVS, resonant circuits, synchronization
- **Power Distribution:** High current, low voltage, multi phase
- **EMI and Filtering:** EMI control, harmonic control, filters
- **Magnetics Engineering:** Transformers, inductors, magnetic components
- **Protection Systems:** Isolation, protective relays, fault reporting
- **Control Hardware:** Servo control, motor control, digital feedback
- **Engineering Analysis:** Short circuit analysis, stress analysis, modeling
- **Laboratory Testing:** Bench testing, component testing, environmental testing
- **Documentation Systems:** Technical reports, test procedures, traceability

PROFESSIONAL AFFILIATIONS

- Active participant in defense hardware development, production support, supplier coordination, and engineering review activities.
- Electrical engineering community contributor through practical laboratory methods, design documentation, and peer guidance.

ADDITIONAL INFORMATION

Work Status : Authorized to work in United States. No sponsorship required.

REFERENCES

AVAILABLE ON REQUEST