

Walker Silva

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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

January 2023 - Present

Northstar Defense Electronics

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

May 2020 - December 2022

Granite Peak Aerospace Systems

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

July 2017 - April 2020

Vector Maritime Controls

Quincy, MA

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

- 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

June 2017 - June 2017

Harborline Technology Laboratory

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

2017

University of Massachusetts Lowell GPA: 3.5

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

SKILLS

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|----------------------|----------------------------|-------------------------|-------------------------|
| • Analog electronics | • Requirements development | • Supplier coordination | • Hardware verification |
| • Power electronics | • Laboratory testing | • Circuit simulation | • Defense hardware |
| • Power systems | • Production support | • Control systems | • Integration |
| • Power conversion | • Technical documentation | • Power distribution | |

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.

LANGUAGES

- English (Native)
- Spanish (Intermediate)

ADDITIONAL INFORMATION

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

REFERENCES

AVAILABLE ON REQUEST