Erick Alexander

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SUMMARY

Avionics **design and analysis engineer** with five years supporting laboratory integration, flight test, instrumentation, telemetry analysis, and verification of airborne electronic systems. Translates operational and functional requirements into system architectures, interface specifications, test configurations, and validation procedures for sensors, datalinks, mission computing, and weapons related integrations. Operates avionics benches, **engineering test equipment**, signal generation systems, and **real time monitoring** software while isolating hardware, software, and interface faults. Supports flight test missions through live telemetry monitoring and post flight analysis, then communicates clear findings to Agile development teams, aircrew, maintainers, and government engineering stakeholders. Holds a Bachelor of Science in Electrical Engineering, active **U.S. Secret Clearance**, CompTIA Security+, and experience with export controlled program environments.

EXPERIENCE

Avionics Integration Engineer

July 2024 - Present

Redstone Flight Sciences

Huntsville, AL

Leads laboratory integration and verification for tactical aircraft test articles, supporting mission computing, sensors, datalinks, telemetry, and flight readiness decisions. Coordinates technical work across maintainers, software engineers, **flight test engineers**, aircrew, and government stakeholders.

- Led mission computing, sensor, and datalink integration for tactical aircraft test articles before flight.
- Operated avionics benches, bus analysis tools, signal generators, and monitoring software during integration events.
- Converted system requirements into test cases, **instrumentation** needs, and traceable verification procedures for reviews.
- Supported live **telemetry** missions and produced **post flight analysis** packages for engineering teams.
- Reproduced intermittent avionics faults with maintainers and software engineers through controlled **fault isolation**.
- Presented discrepancies, risks, and test findings to **Agile** teams, aircrew, and government stakeholders.

Systems Test Engineer

June 2022 - June 2024

Gulf Vector Test Laboratories

Fort Walton Beach, FL

Executed hardware in the loop integration and validation for airborne sensor and mission system prototypes. Built repeatable laboratory configurations, analyzed recorded data, and translated failed conditions into actionable defects for **flight test** development teams.

- Executed hardware in the loop testing for airborne **sensors** and mission system prototypes.
- Built laboratory configurations linking simulated aircraft interfaces, instrumentation, test equipment, and prototype avionics.
- Analyzed bus, sensor, and **instrumentation** data against **interface specifications** and operational scenarios.
- Authored validation procedures and engineering reports with repeatable steps and objective evidence.
- Isolated failed conditions through signal tracing, configuration review, log analysis, and controlled retesting.
- Coordinated laboratory activities with **flight test engineers**, technicians, and software developers for Agile backlogs.

Associate Flight Test Engineer

June 2021 - May 2022

AeroDyne Instrumentation Group

Mobile, AL

Supported supervised instrumentation and data acquisition for developmental aircraft testing, preparing channels, test cards, configuration checks, and analysis artifacts. Worked with senior engineers and technicians to protect data quality, repeatability, and safe test execution.

- Prepared **instrumentation** channels, test cards, and data quality checks under senior engineer oversight.
- Monitored aircraft and sensor parameters during ground and flight events for engineering review.
- Processed telemetry datasets into plots, event timelines, and concise findings for test comparisons.
- Verified laboratory and aircraft interface configurations using controlled checklists before test execution.
- Troubleshot instrumentation connections with technicians and documented symptoms, corrections, and retest outcomes.
- Maintained test records, configuration notes, and analysis artifacts for engineering reviews and planning.

PROJECTS

Avionics Telemetry Integration Study 2024

Created a focused laboratory study linking telemetry monitoring, sensor data review, and interface verification, giving flight test teams clearer evidence before aircraft events.

Hardware in the Loop Sensor Validation 2023

Built a repeatable simulation based validation effort for airborne sensor interfaces, helping engineering reviewers separate equipment behavior from software integration defects.

LEADERSHIP & AWARDS

- Selected for trusted avionics integration work supporting tactical aircraft laboratory and flight test activities.
- Recognized by engineering stakeholders for clear fault isolation findings and traceable verification evidence.
- Earned expanded coordination responsibilities after reliable support across maintainers, software teams, and aircrew.

EDUCATION

Bachelor of Science in Electrical Engineering 2021

University of South Alabama GPA: 3.5 *Mobile, AL*

Coursework: *Avionics systems, control systems, digital signal processing, engineering mathematics*

CERTIFICATIONS

- U.S. Secret Security Clearance, Active 2025
- CompTIA Security+ 2025

TECHNICAL SKILLS

- **Avionics Systems:** Mission computing, aircraft sensors, datalinks
- **Flight Test Tools:** Telemetry systems, flight test instrumentation, test cards
- **Laboratory Equipment:** Avionics benches, signal generators, engineering test equipment
- **Data Analysis:** Post flight analysis, bus analysis, sensor data review
- **Systems Engineering:** Requirements analysis, system architecture, interface specifications
- **Verification Methods:** Hardware verification, software verification, validation testing
- **Troubleshooting Methods:** Fault isolation, signal tracing, log analysis
- **Simulation Systems:** Hardware in the loop, simulated aircraft interfaces, operational scenarios
- **Development Practices:** DevSecOps, Agile development, configuration control
- **Reporting Systems:** Engineering reports, test evidence, discrepancy tracking

SKILLS

- Flight test
- Laboratory testing
- Data analysis
- Instrumentation
- System integration
- Avionics engineering
- Telemetry analysis
- Requirements analysis
- System architecture
- Interface specifications
- Validation testing
- Fault isolation
- Sensor integration
- Weapons integration
- Simulation

PROFESSIONAL AFFILIATIONS

- Professional member, Institute of Electrical and Electronics Engineers.
- Participant, Society of Flight Test Engineers technical community.

LANGUAGES

- English (Native)
- Spanish (Intermediate)

ADDITIONAL INFORMATION

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

REFERENCES

AVAILABLE ON REQUEST