Mark Jessing

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**Executive Summary**

Senior Electrical RF Systems Engineer with 31 years of experience in radio communication systems and electronics. Expert in RF communications hardware testing, installations, systems integration, requirements development, and managing systems integration labs. Experienced with cellular networks and protocols, site surveys, coverage estimates, field measurements, urban and structural interference, GSM, CDMA, iDEN and wireless networks 802.11b/g/n, 802.11ac.

Prior military with DOD Secret Clearance. Extensive experience performing radio frequency measurements and troubleshooting, writing test plans, DOORS, verification and systems certifications, commercial standards ARINC429, ARINC664/AFDX, CISPR 11, IEC 801, military standard MIL-STD-461, RTCA DO-160G, DO-254, DO-178a/b, technical management, project team leader, support customer technical reviews and mentoring junior engineers.

**Education**

Kennesaw State University – Marietta, Georgia

**Bachelor of Science in Electrical Engineering Technology - Communication Systems Emphasis**

Community College of the Air Force – Keesler AFB, Biloxi Mississippi

**Associate of Science in Electronic Engineering Technology**

**Military Service**

Georgia Air National Guard, 129th Tactical Control Squadron, Dobbins AFB, Kennesaw, Georgia

Wideband Tactical Radio Equipment Specialist

Tennessee Air National Guard, 119th Command and Control Squadron, McGhee Tyson AFB, Alcoa, Tennessee

Tactical Radio Technician

**Professional Experience**

Rockwell Collins – Cedar Rapids, Iowa

Oct 2019 – April 2020

**Systems Integration Engineer (Contract Assignment)**

This was the 5th time that I contracted with Rockwell Collins over the past 12 years. Conducted systems integration testing on flight navigation system for the Mitsubishi Regional Jet (MRJ) aircraft. Wrote software verification procedures in DOORS database, and performed flight scenario tests using engineering mock-up in the lab. Performed software requirements verification tests on cockpit upgrade package, conducted peer reviews of documentation, and demonstrated software functionality.

CUBIC GATR Technologies – Huntsville, Alabama

September 2018 – September 2019

**Principal RF Engineer (Contract Assignment)**

Performed ARSTRAT (Army Strategic Command) MIL STD 188-164B certification testing on portable satcom systems operating on C band, X band, Ku band and Ka band. Qualification testing included phase noise, spectral regrowth, harmonics, broadband thermal noise, maximum linear power, spurious emissions, carrier frequency accuracy, EIRP stability, transmit carrier level control and PIM (passive intermodulation) testing. Determined root cause of test failures and performed acceptance testing on new vendor equipment.

DataPath, Inc. – Duluth, Georgia

June 2017 – August 2018

**Hardware Engineer**

Specified hardware used in Deployable X, Ku, and Ka Earth Terminal SatCom systems. Responsible to design cables for interfaces between monitoring, control, safety, transmitter and receiver redundancy, modem, and power systems used in the design. Confirmed that waveguides, mounting hardware, enclosure designs, electrical layout, and equipment mounting arrangements met operational requirements. Provided documentation under configuration management, inspected equipment received, and performed inspections and operational tests on equipment received from vendors.

Harris Corporation – Melbourne, Florida

August 2016 – June 2017

**Systems Test Engineer (Contract Assignment)**

Performed compatibility and operational testing on NextGen VoIP air traffic control system. Worked directly with FAA customer to develop test procedures that conformed to contractual agreements, demonstrated facility communications system, tracked system defects and verified radio system functionality. Collaborated with engineering team to refine testing processes and accelerate timelines to meet aggressive project milestones.

Rockwell Collins – Portland, Oregon

June 2015 – December 2015

**Sr. Test Engineer (Contract Assignment)**

Performed avionics Heads-Up Display systems verification testing and developed functional test requirements. Executed Python test scripts controlling hardware used to simulate various flight scenarios. Provided formal FAA software test verification data (DO-178b artifacts) for high reliability software functions tested in the lab. Edited systems engineering documents and oversaw formal release of revisions. Maintained DOORS database objects using ARP4754A guidelines. Performed as a member of the Configuration Control Board to track changes in project documentation of requirements.

Gogo LLC – Chicago, Illinois

September 2013 – May 2015

**Wireless Network Integration Engineer (Contract Assignment)**

Integrated UHF datalink hardware onboard commercial aircraft to provide high-speed internet service. Insured that the Wi-Fi system did not interfere with existing VHF & UHF radios, flight management systems or navigational radio equipment. Flew to work sites to train personnel to perform diagnostic testing, verify system RF coverage on new jets and simulate inflight system operations.

Wrote troubleshooting documents, revised operational acceptance test procedures, conducted radio interference tests during flight on aircraft, and revised existing process documents. Conducted performance & reliability studies of UHF antennas used to increase wireless data rates. Configured GOGO Inflight wireless equipment, 802.11b/g/n & 802.11ac interfaces, Ku SATCOM firmware and Linux interface parameters.

Rockwell Collins – Cedar Rapids, Iowa

April 2013 – July 2013

**Quality Control Engineer (Contract Assignment)**

Insured avionics hardware and software products met both Rockwell and FAA quality standards. Confirmed compliance with RTCA software standard DO-178b, and hardware standard DO-160G. Inspected avionics system testing procedures and verified that issues were properly documented & resolved. Investigated product hardware failures that resulted in a warranty repair, approved corrective action documentation, and reviewed engineering change orders.

Sierra Nevada Corporation – Denver, Colorado

January 2013 – March 2013

**Sr. Systems Engineer (Contract Assignment)**

Provided engineering support for modifications of military C4ISR aircraft. Duties included the use of AutoCad LT 2012 to draft electrical drawings of mission equipment. Specified hardware changes, cable types, minimized aircraft weight, as well as documented integration of surveillance equipment.

Sikorsky Helicopter – West Palm Beach, Florida

October 2011 – January 2013

**Avionics Flight Test Engineer (Contract Assignment)**

Flight test operations on the S-76D helicopter flight management systems. FAA certification testing for the new avionics suite and electrical power systems. Wrote flight test cards and plans, conducted test investigations, supported real-time flight telemetry monitoring and post flight data analysis. Evaluated the fully integrated glass-cockpit avionics operations and software modifications, supported aircrews with hardware and software troubleshooting, and analyzed flight test data.

Rockwell Collins – Cedar Rapids, Iowa

April 2010 – September 2011

**Systems Test Engineer (Contract Assignment)**

Conducted systems integration testing of Multi-Functional Display, flight navigation system on the Gulfstream G250/280 aircraft. Wrote software verification procedures using DOORS database, and performed flight scenario tests using engineering mock-up in the lab. Performed software requirements verification tests on cockpit upgrade package, conducted peer reviews of documentation, and demonstrated software functionality to the customer. Tested software interfaces with display functions, air data, EFIS, weather radar, communication radios, and navigation radio systems.

Lockheed Martin, Information Systems & Global Solutions – San Diego, California

March 2009 – April 2010

**Systems Integration Lab Manager**

Lab Manager of the Systems Integration Facility for the Joint Tactical Radio System development. Worked with Executive Leadership Team reporting Earned Value progress to National Director of Engineering to confirm that we were meeting our aggressive delivery schedule. Oversaw the integration of networking systems and power installation for the lab. Delivered the completed integration lab four months ahead of schedule and $1M under budget. Prepared lab procedures to meet the requirements of COMSEC operations certification and managed the construction of the DOD classified conference area.

The Boeing Company, Integrated Defense Systems – Long Beach, California

April 2008 – January 2009

**Sr. Systems Engineer (Contract Assignment)**

Technical support for the installation of communication and navigation equipment on C130 for the Avionics Modernization Program. Developed test procedures, trained field personnel to perform engineering performance tests of radio equipment, and conducted interference investigations on the ARC-210 radio in the test laboratory. Responsible for writing technical publications for the Defensive Systems Development Team, wrote flow charts of system integration and functionality, and provided troubleshooting procedures.

Rockwell Collins – Cedar Rapids, Iowa

July 2007 – April 2008

**Hardware Systems Engineer (Contract Assignment)**

Conducted avionics integration investigations to resolve complex data communications problems on legacy aircraft systems. Evaluated radio interface units and navigation transponders, replicated and resolved reliability issues, and directed equipment modification efforts. Also approved engineering change orders to existing designs, reviewed system requirements and approved production documentation.