

ASIF AL NOOR

RF Hardware Test Engineer

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SUMMARY

I am a passionate systems engineer with over 6 years of experience in designing, integrating, and testing avionics and RF systems for space and aviation applications, such as drones, helicopters, satellites, and rockets.

SKILLS

- Standards: AS50881G, DO-160, DO-254, MIL-810, MIL-883, MIL-461, MIL-704, MIL-3899, MIL-83513.
- Equipment: VNA, Oscilloscope, signal generator, power supply, electrical load.
- RF design: RF simulations, RF system architecture, Link budgets, Ground station, Antenna design.
- RF hardware: RFD900x, Iridium modules, Safran, Ublox GPS, JAVAD GPS, NOVATEL GPS, LimeSDR.
- RF software: CST, HFSS, ADS, COMSOL, MATLAB tools.
- DC systems: Harness design, power budget, hands on testing/debugging.
- Programming: Python, C, MATLAB, ROS 2, Cube IDE, Linux.
- Embedded design: Embedded design with ESP32, STM32 using Altium Circuit Studio.
- CAD design: Solidworks, Solidworks electrical, Fusion 360.

PROFESSIONAL HISTORY

RF Hardware Test Engineer – MDA, Montreal QC

Dec 2023 – Present

- Led test activities for RF components of LEO satellites in a constellation program for mass production.
- Actively owned the test stations, overseeing timeline management, budget maintenance, RFP submissions, supplier relationships, and team collaboration.
- Designed and implemented test stations for RF components, from breadboard to flight version.
- Validated component performance by testing active RF boards using PNA-X, PSU, and oscilloscope, etc.

Systems Integration Engineer – Drone Delivery Canada, Toronto ON

May 2023 – Nov 2023

- Developed the avionics system to modify a lightweight helicopter (Mosquito XE) into an unmanned aircraft based on Integrated Modular Avionics (IMA) architecture.
- Installed, integrated, and tested the avionics system including the autopilot, ECU, C2 modem, power distribution system, wiring harness etc.
- Initiated and implemented systems engineering practices, such as developing system requirements, testing and validation plan, safety analysis using ARP 4754 and 4761.
- Supported and resolved technical issues during field operations of the UAV helicopter.

Senior RF Engineer - SpaceRyde, Toronto ON

Sept 2021 – Feb 2023

- Created and tested the avionics system of a rocket, assembling various components such as flight computers, GNC sensors, power management, data networking, and RF communications. Adhered to system engineering practices and standards during integration, testing, and acceptance phases.
- Architected and implemented the end-to-end RF system to receive rocket telemetry using IRIG-106 standard. Additionally, managed the integration and operation of the ground station utilizing Safran's receiver and dish antenna.
- Created detailed systems requirements and interface control documents for the avionics subsystems.
- Developed comprehensive functional and integration test procedures to ensure proper validation of all avionics components, including MIL-STD-810.
- Designed, assembled, and tested PCBs using Altium Circuit Studio, which incorporated STM32 MCU interfacing with critical flight components over i2C, CAN, and RS232.
- Utilized Solidworks to create avionics enclosures for various subsystems, ensuring optimal performance and protection.
- Interfaced with regulatory authority (ISED) to achieve licensing for rocket launch operation.

Intermediate RF Engineer - SMT Research, Vancouver BC

Apr 2020 – Aug 2021

- Designed and implemented a battery-less RF power harvesting wireless system for structural monitoring. Conducted antenna simulations using CST and HFSS, and developed a wireless range simulator using MATLAB.
- Developed custom RFID passive sensor tags for remote data logging and pinpointing hidden sensor locations. Simulated the prototype circuit in LTSpice and designed the PCB using KiCAD. Conducted rigorous validation tests using test beds in the lab environment as well as in active construction sites.
- Installed sensors and DAQs in active construction sites and provided technical support to technicians.
- Debugged and qualified PCBs before sending them out to customers, implementing IPC-610 for PCB acceptance.
- Validated RF propagation through various roof assemblies using Lime-SDR radio.

RF Engineering Consultant - Direct Kinetic Solutions, Texas (Remote, Part-time) Oct 2019 – Mar 2021

- Produced custom CubeSat electrical and RF system concepts for clients and US DOD grant applications.
- Developed RF solutions for the US Army contract bids and wrote technical proposals. Successfully granted with 2 projects from the US Army.

Lead RF Engineer - Helios Wire, Vancouver BC

July 2017 – July 2019

- Designed, simulated and deployed C, X and S-Band antennas for CubeSat TT&C communication.
- Conceptualized an IoT gateway to interface between Cubesat in space and IoT tags on ground.
- Created and maintained invoices & POs, and negotiated prices & terms of large-volume buying.
- Generated drawings, technical specifications, and internal research papers of designed antennas to present key findings to management.

EDUCATION, TRAINING AND CERTIFICATIONS

- Professional Scrum Master Certification, PSM I Feb 2024
- MSc in EE - University of British Columbia, Kelowna BC Sept 2014 – Oct 2016
Master Thesis: *A broadband fixed-beam leaky-wave antenna based on transformation electromagnetics.*
- BSc in EEE - Islamic University of Technology, Bangladesh Jan 2010 – Oct 2013
Activities: Led the university robotics team during the NASA Lunabotics Annual Competition 2013.