ASIF AL NOOR

Systems Engineer
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SUMMARY

I am a systems engineer with over 6 years of experience in developing RF systems and avionics hardware for space and aviation applications.

SKILLS

- Systems engineering: DO-254, Requirement management using Valispace.
- Standards: IPC-610, IPC-620, AS50881G MIL-810, MIL- 883, MIL-3899, MIL-83513, MIL-24308.
- RF design: RF simulations, RF system architecture, Link budgets, Ground station, Antenna design.
- RF hardware: RFD900x, Iridium modules, Safran, Ublox GPS, JAVAD GPS, LimeSDR.
- RF software: CST, HFSS, ADS, COMSOL, MATLAB tools.
- 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.
- Workshop: Oscilloscope, signal generator, electrical load, network analyser, logic analyser.

PROFESSIONAL HISTORY

Systems Integration Engineer – Drone Delivery Canada, Toronto ON May 2023 - present

- Developed the avionics system to convert a lightweight helicopter into an unmanned aircraft.
- Implemented systems engineering practices, such as developing requirements for ongoing projects.

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 legacy 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 ICDs (electrical and mechanical) 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 April 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 (Part-time, Remote) July 2017 - May 2019

- 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 - May 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 in the ground.
- Created and maintained invoices & POs, and also 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 _____

- MASc 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.