Asif Al Noor

RF Systems Design | System Design (Avionics Hardware) | Assembly, Integration & Test (AIT)

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Summary

I have around 8 years of RF system design experience for IoT, satellites, and rockets. More recently, I had the chance to pick up Systems Engineering experience when I led the design and development of a full-stack (design to assembly) avionics system for an orbital-scale rocket.

Skills

System design: End-to-end RF subsystem, Full-stack hardware subsystem, PCB design, JIRA.

RF design: RF simulations, RF system architecture, Link budgets, Ground station, Antenna design, Filter design.

RF hardware: RFD900x, Iridium, Globalstar, Quasonix, Safran, CCSDS Receivers, Ublox GPS, JAVAD GPS, LimeSDR, uAvionics Transponder.

RF software: CST, HFSS, ADS, COMSOL, MATLAB tools.

Standards: IPC-610, IPC-620, AS50881G MIL-810, MIL-883, MIL-3899, MIL-83513, MIL-24308.

Electronics: Design w/ESP32, STM32; implementing i2C, CAN, RS-232, TTL.

Programming: Python, C, MATLAB, Cube IDE, Linux.

PCB design: LT Spice, Altium, Circuit Studio, KiCAD.

CAD prototyping: Solidworks, Solidworks electrical.

Lab: Oscilloscope, Signal generator, Electrical load, Network Analyzer, Logic analyzer, SMD soldering.

Professional History

Senior RF Specialist - **SpaceRyde**, Toronto ON   Sept 2021 - Present

· Designed, implemented and manufactured the **avionics system of a rocket** including flight computers, GNC, power management, data networking, RF communications on subsystem and component levels.

· Architected and commissioned the **end-to-end RF system** to receive rocket telemetry using legacy COTS design. Scope of responsibilities also included the **ground station** implementation and operation.

· Interfaced with regulatory authority (ISED) regarding **radio licensing** for rocket telemetry spectrum licensing.

· Designed, assembled and tested **PCBs** incorporating MCU, serial devices, and other critical components.

· Spearheaded the development of **test procedures and campaigns** to validate the avionics components.

· Produced **systems requirements** and derived requirements for developing avionics components.

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.

· Pioneered custom **RFID passive sensor** tags for remote data logging and pinpointing hidden sensor locations.

· Installed sensors and DAQs in active construction sites and provided technical support to installation technicians.

RF Engineering Consultant - **Direct Kinetic Solutions**, Texas (Remote)   July 2017 - May 2019

· Produced custom **Cubesat EPS and RF system** concepts for clients and DOD grant applications.

Lead RF Engineer - **Helios Wire**, Vancouver BC   July 2017 - May 2019

· Designed, simulated and successfully deployed **C, X and S-Band antennas** for CubeSat TT&C communication.

· Conceptualized and modeled an iot gateway to interface between Cubesat in space and IoT tags in the ground.

Educational History

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.

Ongoing Personal Projects

Embedded Hardware and Firmware: Developing a development kit using STM32F407 with modular shields.

Computer vision: Implementing a gesture detection-based game on Tx2i Jetson Nano for my toddler.