

# ASIF AL NOOR

RF Systems Design, System Design (Hardware), ASIC design, PCB Design

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Toronto, Canada (Canadian Citizen)

## Summary

I have 8 years of RF system design experience for IoT, cubesats, and rockets. More recently, I had the chance to pick up System 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 (PCB), IPC-620 (Workmanship), AS50881G (Wiring), MIL-810 (Environmental test).

**Electronics:** ASIC w/ESP32, STM32, i2C, CAN, RS-232.

**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 and implemented manufacturing of a **rocket avionics system** 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.