# Asif Al Noor

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

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## Summary

I have been working in the space Industry for over 5 years with a thirst to make an impact with new technologies. 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.
· Designed, simulated and implemented **patch antenna at 915MHz** for remote data logging with RFID tag.
· 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.