

Summary

- Ten years of experience with complex PCBA circuit design, layout, assembly and testing.
- Three years of experience designing, fabricating and testing of analog/RF airborne assemblies.
- Prototyping and final packaging of low volume of multi-channel radar and sonar systems.
- Multiple field campaigns with NSF and NASA deploying radar equipment on land and airborne platforms for cryospheric research.
- Great interpersonal skills working with colleagues in other disciplines of engineering as well as other international institutions within the remote sensing field.

Work Experience

Tomorrow.io, Inc. *Merger with Remote Sensing Solutions, Inc.*

Golden, CO · 4/2021 – Present

Senior Hardware Engineer

- Key hardware designer of prototype flight SDR hardware intended for two LEO exploratory missions.
- Primary manufacturing and verification engineer for all internal R&D space flight hardware.
- Chief technical liaison and manufacturing lead for ARENA legacy product line.
- Owner of onsite laboratory organization and operation.
- Managed onsite engineering and rework technicians.
- Owner of company PCBA manufacturing process, verification and customer product delivery.
- Designed PCBAs as required to fill in where there was a lacking engineering resource.
- Created SOW (Statement of Work) documents for out of house contractors.

Remote Sensing Solutions, Inc.

Denver, CO · 6/2017 – 4/2021

Senior Hardware Engineer

- Lead or assist colleagues in PCBA product development with proficient skills using Altium Designer.
- Schematic capture involved the understanding of the following circuit components:

FPGAs/CLDs	Analog circuits	Digital communications
ADCs	RF circuits	Telemetry sensing
DACs	Power circuits	GPS acquisition circuits
- Mechanically designed a variety of PCB enclosures, antenna mounts and other mechanical parts used in production product units and prototype systems using DDS Solidworks.
- Programmed Verilog code and created FPGA constraints to build unique logic circuitry to enhance functionality to existing PCB circuits.
- Performed product and equipment upgrades on a variety of airborne radar systems for clients.
- Participated as a field engineer in onsite field equipment upgrades and assisted in integrating company deliverables into client systems.
- Created company product SOP (Standard Operating Procedure) documents for full scale systems and individual product assembly and testing.
- Served as lead technician to complete the wiring in critical experiments and airborne systems.
- Assisted in assembly of product and rework of malfunctioning equipment.
- Active role in company manufacturing. Assisted in parts procurement and inventory management of all active product assemblies.

**Center for Remote Sensing of Ice Sheets, University of Kansas
Lawrence, KS · 6/2009 - 6/2017**

Associate Engineer (5/2011-6/2017)

Primary Role: System Level Engineering and Design

- Worked closely with system engineers testing and qualification of RF PCBs, RF components and systems.
- Design and prototype new circuit board assemblies and multi board stack-ups for airborne applications.
- Radar field engineer on the following remote sensing deployments:
 - NASA Projects (2012 - 2016) - Operation Ice Bridge deployments based in Alaska, Chile, Greenland and Antarctica
 - NSF Projects (2011-2016) - Remote sensing deployments in Chile and Canada:

Secondary Role: Aircraft System Integration

- Lead or assist in the installation/removal of remote sensing equipment including external antennas/fairings on the following airborne platforms: NASA DC-8, NASA C-130, NASA P-3, privately owned DC-3, and MBB 105 helicopter.

**Embarq Telecommunications, Information Technology Group
New Century, KS · 10/2007 - 1/2009**

Network Surveillance & Service Assurance Contractor

Managed and assisted in rapid resolutions of outages for mission critical network/computing infrastructure.

Education

Bachelor of Science, *Electrical Engineering*, University of Kansas, 2011.

Collaboration on a senior design project with the Aerospace Engineering Department at the University of Kansas to develop and manufacture a collision avoidance radar for UAV avionics.

Johnson County Community College, metal fabrication coursework in welding and welding technologies, certifying competencies and capabilities to perform welds and inspect them.

Extensive language courses in Brazilian Portuguese, Spanish and Chinese.

Selected Achievements and Publications

Rummer Senior Design Award voted on by student peers for best senior design project. (Graduation 2011)

International Telemetry Conference presenter and co-author on published article titled "Detect Sense and Avoid Radar for UAV Avionics Telemetry" in 2011 ITC conference papers.

IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing (JSTARS) co-author for publication of Multichannel Wide-band Synthetic Aperture Radar for Ice Sheet Remote Sensing: Development and the First Deployment in Antarctica. (2015)

Eagle Scout - Boy Scouts of America

IPC J-STD-001H/S Certified Technician

Skills

Development Tools

DDS SolidWorks, AutoDesk Inventor, Ansys modeling and simulation, CadSoft Eagle PCB, Altium Designer, Cadence SPICE, ADS (Advanced Design System), Agilent Genesys

Computing Skills

MATLAB/Simulink, Octal, Windows, Linux, Perl and C++ programming, Xilinx ISE Design Suite, Microsoft Office Suite.

Extra Summary Items - More than five years of experience with wiring and population of equipment racks within the fields of information technology and airborne remote sensing.