

SUMMARY OF QUALIFICATIONS

- Solid understanding of design and troubleshooting hardware for Analog, Digital, Power, and RF/Microwave applications.
- General knowledge of language coding C/Java/Python/LabVIEW through school courses and small programs for testing.
- Knowledgeable of PCB design software Altium (Renesas), Xpediton, Hyperlynx (SI/PI), Valor (DFM) from Siemens, Pollex (Siemens/Altair), and usage of IPC standards for PCB design and manufacturing.
- Knowledgeable of design software for 2D/3D: AutoCAD, CATIA, SolidWorks, and rules for GD&T for drawings.
- Knowledgeable of Simulation software ADS (Keysight), AWR (Cadence), FEKO (Altair), HFSS/EDT (Ansys), and MATLAB.

PROFESSIONAL EXPERIENCE

Sr. Principal Electronics Engineer - (January 2023 – September 2025)

- Worked in a trade study of a Power Supply concept for Space: design blocks diagram, PCB form factor, parts selections, cost and variations for LEO vs GEO orbit to reduce cost.
- Worked in a trade study of a *Start Trucker* concept: design block diagrams, parts selection (Low Power FPGA vs microcontrollers, discrete components), cost of the Start Trucker and variation for LEO vs GEO orbits.
- Work in a Trade Study of FPGA and Microcontrollers in the market and their resources for LEO/GEO.
- Worked on maturing a Focal Plane Electronics design LEO/GEO:
 - Altium Schematic board using AMD/Xilinx new Space FPGA (**Versal VC1902**), its interfaces circuits and parts for its interfaces (**LVDS, SerDes, RS422, Space Wire, I2C, SPI, DDR4, Fiber Optic, Ethernet, Auxiliary Microcontroller, Power Biasing**, turn on sequencers, and Footprints for the schematics - (Note: layout was frozen).
 - Simulation of the different FPGA voltage circuits, as well as a bill of material for GEO vs LEO orbits.
- Worked in a Test plugging Module design (Schematics/Parts) for the Versal Eval-Board VCK-190 to test some parts.
- Participated in two CoP (Community of Practice) dedicated to the AMD Versal VC1902 FPGA among different sites.

Sr. Principal Electronics Engineer - (June 2021 – January 2022)

- Worked in the hardware of two Boards (Interface CCA and Backplane CCA) in Phase II of a “Class C” project in Altium Software (schematic, PCB layout, fab drawings, signal and power integrity (SI/PI) simulation using Hyperlynx.
- Contribute to the modifications of the Power and Dual FPGA (Kintex KU60) Modules to a Single FPGA with Space VPX connector to fit current project Chassis design.
- Lead the Hardware Electronics team, and supported components derating analysis based on NASA EEE-INST-002 guides.
- Worked in the H/W specifications, block diagrams in VISIO for the “Processing Module” Unit and document’s feedbacks.

Principal Electrical Engineer - (March 2015 – June 2021)

- Designed electronic circuits to stimulate In/Out signals of **several Electronics Avionics LRU** (Line-Replaceable Units) for hardware in the loop testing and system simulation in a large project.
- Worked in Several PCB design using Siemens Xpediton version V1.4 and 2.4 (schematic capture, parts selections, layout and routing for best Signal/Power integrity, and their fab/assembly drawings).
- Worked in supporting the testing, calibration, and verification of Electronic sub-assemblies Units, integration/verification of Test Rack systems using engineering test equipment and small LabVIEW programs created to support the testing.
- Worked in fabrication drawings harnesses (Power and Signals cables using MIL-DTL D39999 avionics connectors).

Repair RF Technician - (May 2014 – March 2015)

- Test, Repaired and Troubleshot to component level, RF avionics instruments of Commercial Airlines such the Honeywell **RTA-4A Weather Radar** (Processing modules, RF TX/ RX circuits), **ILS Unit** (instrument landing system), **VOR Unit** (VHF Omni range), **ADF-75 Receiver Unit** (automatic direction finder), and **ALT-52 Unit** (altimeter).
- Received training from Honeywell factory service in Dallas Texas for 30 days; then, passed the training to RF College’s team.

Electronic Design Engineer - (October. 1996 – August 2013)

Active participation in the products development cycle: Designing, Testing, Validation, Verification, and Evaluation of alternative assembly/components suppliers.

- **System/Board Electronics Design:** design/re-design products and circuits to meet certification for Europe Directives (CE, LVD/EMC) with active and passive parts such op-amps, logic gates, memories, BJTs, SMT capacitors, resistors, inductors, microprocessors, ADC converters, EEproms, filters, Linear and switching transformers.
- **Power Design:** designed and verified low power switching Supplies AC up to 300Vac, and DC/DC converters for 10-40Vdc/24Vac, using boost, buck, and flyback topologies. Designed custom magnetics transformers and filters.

- **Hardware/Firmware Validation/Verification Ethernet Webserver and WIFI devices:** Embedded firmware debugging (functionality and performance) of Ethernet web servers and wireless devices using IEEE standards **IEEE 802.3, IEEE 802.15.4, IEEE 802.11b/g**. Worked in industrial controllers, indicators, and signal conditioners to measure pressure, temperature, humidity with peripherals interfaces such as USB, Modbus, RS232, RS485, RS422, Ethernet circuits. Worked in software/Hardware troubleshooting problems using DVM, oscilloscopes, signal generators, spectrum analyzers, protocol Packets captures/decoders for Ethernet and wireless.
- **Circuit Board Layout:** Worked closely with PCB designers to ensure artwork layout was done properly by directing component placements and routing of critical traces for best Signal Integrity (SI) outcomes.
- **Verification of EMC Emissions, Immunity, and Product Safety:** Worked with UL auditors during the electrical safety certification stages, and performed pre-compliance testing for electromagnetic emission, according to the standards **EN55022/CISPR22, EN55011/CISPR11, EN61000-6-3, EN61000-6-4, EN55024, CISPR24, EN61326, EN61000-6-1, EN61000-6-2, EN301-489-1/17(Wireless), EN61010, and EN60950**.
- **Concurrent Engineering Duties and IT Backup Support responsibilities:** Bearing Responsibilities as the IT manager) in emergencies, time off, vacation, and sick leaves of the main administrator duties which included of server administrations, desktop support, Emails server, LAN connectivity, Firewalls, Data backup/restore, Server Patches.

EDUCATION AND CERTIFICATES

Online Courses and Workshops in PCB Design – (2020 through 2025)

- **IPC certifications** Courses taken (www.IPC.org): PCB design for military and Aerospace, Design for flex/flex-rigid boards, Design for Radio Frequency (RF) Boards, Design advance concepts.
- **Professional PCB design** courses taken from Todd Hubing (www.LearnEMC.com), Rick Hartley and Susy Webb (www.PCB2day.com), Karen Burnham (www.EMCunited.com) for Defense/Aerospace products and others.
- Online Technology workshops from AMD, IEEE, Keysight, Cadence, Rohde & Schwarz, Siemens, TI, Renesas, Altair.
- Online NASA/JP, NEPP workshops for Electronics parts for Space (**NASA-STD-8739.11/IEE-INST-002**).
- **MMIC design techniques** course (RF training, 5 Days) by Besser Associates.

Universities/Community Colleges

CSU Northridge and CSU Fullerton,

Ongoing Open University access courses – (2020 to Present)

- CSU Northridge courses: Fiber optics, and Photonics. Microwave engr, Microwave design, Antennas,
- CSU Fullerton courses: Antennas for wireless, Microwave engineering, Control systems.

Santa Ana community College (SAC) – 3D design certificate – (Graduated).

- AutoCAD, Solid works, CATIA, and GD&T (Dimensioning and Tolerance)

UC San Diego Extension - RF Engineering Certificate – (Graduated).

- 150 hours: RFIC design, RF systems for wireless, RF circuit design, RF PLL, microwave measurements.

California State University Fullerton).

- **Master Science in Computer Engineering Degree (MSCE)** – (Graduated
- Concentration in **CMOS, VLSI, Mix-Signals, IC design**, Communication and Emerging technologies.

California State Polytechnic Pomona

- **Master Science in Electrical Engineering Degree (MSEE).** – (Graduated).
- Option: Communication and Microwave Engineering.**
- Concentration courses in RF and Microwave circuits, Solid State, Satellite, Coding, Communication, Wireless systems.

California State Polytechnic Pomona

- **Bachelor of Science degree in Electrical Engineering Degree (BSEE)** – (Graduated).
- Courses in analog, digital, control, microwave and communications undergraduate courses offered.

Coastline Community College – Program Study IT Networking.

- Cisco Net Academy Program: LAN/WAN design, routing, switching, remote access (**CCNA/CCNP** Cisco certifications).
- Coursework for Microsoft, Novell, Sun, Linux Client/Server, Operating Systems NT 3.51, NT4.0, Win2K, Win3K, Win7/8, Network infrastructure. Linux network security, VMware (virtual OS), and Sun Solaris server administration.

Additional Workshops

- Product safety workshops design UL/EN60950 (IT equipment/Power supplies), UL/EN61010-1 (Industrial).
- **PE and EIT/FE** coursework (completed), **pending NCEES Exams.**

Membership – **IEEE-HKN** (Eta Kappa Nu honor). IEEE member for 20 Years, MTTs (microwave), APS (antenna), EMC, SSCS.

References – Upon Request and Complete Resume with companies (Omitted) – **Due to Privacy and Clearance**