Daniel B. **Johnson**

MSc Electrical Engineer | Hardware · Software · Theory

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Over 16 years of technical leadership in engineering teams. Experienced in large-scale computing solutions, architecture discussions, and electrical systems spanning avionics, satellite connectivity, and automotive body systems with strong process improvement expertise.

Experience

Rivian and Volkswagen Group Technologies

Irvine, California

Staff Electrical Hardware Engineer — *Nov. 2024 - Present*

- Develop electrical vehicle systems and hardware architecture across Body Systems technology domains, utilizing strong fundamental electronics background.
- Lead electrical system design for occupant visibility systems including pumps, heaters, wipers, and SCAM (Steering Column Adjustment Module) systems.
- Own electrical architecture and requirements for interior lighting systems including ICL (Interior Cabin Lighting) and various area lighting solutions.
- Support feature development and decomposition from user stories and vehicle requirements down to system, interface, and component level implementation.
- Develop and execute verification and validation testing plans and procedures for electrical systems.
- Utilize first principles in electrical engineering and physics to solve problems with unique and innovative solutions.
- Analyze and advise on new technology options, conducting trade studies for designs and leveraging experience to define technical direction.

Panasonic Avionics Corporation

Irvine, California

MTS V, Software, Lead System Configuration Engineer — *Jun. 2024 - Nov. 2024*

- Supported the definition, development, and execution of high-value products for the company.
- Designed the configuration architecture for advanced systems, including Astrova and Multi-Orbit (LEO and GEO).
- Architected and implemented automation processes for parts lists, LOPA, seat-end wiring, cable length, DC power pools, and customer-related variables in the system database.

MTS IV, Software, Lead System Configuration Engineer — *Jun. 2018 - Jun. 2024*

- Utilize MBSE techniques to design system architecture to automate configuration database creation steps with shared metadata.
- Designed a robust requirement management system correlating 4000 complex configuration items to software consumers, hardware, and documentation with revision history to improve manufacturing quality.
- Lead a team of 10 engineers to conduct root cause analysis and perform corrective action preventive action which reduced recurrent analogous defects.
- Soley produced all Design Assurance Level (DAL)-D software configuration components for the company. Wrote appropriately rigorous CI/CD unit test in Bats to assure quality before any functional testing.
- Interface internal management and external Aircraft OEM Suppliers to plan and execute improvements, directly resolve issues, and plan strategies to minimize manufacturing gaps.
- Create documentation for group technical training as well as testing procedures to test customer and system requirements. Provide cross-functional OJT training to 60 engineering peers and other technical workers, in regards to process, systems and aircraft.
- Delegate work and ensure accountability for system configuration group, and quote all customer change request planning hours.

Panasonic Avionics Corporation *Lake Forest, California*

MTS III, Lead IFEC Integration and Test Engineer *Mar. 2012 - Jun. 2018*

- Successfully initiated process improvement for Boeing OEM linefit configuration database first pass quality rate from **30% up to 90%**.
- Directly worked with Airbus and Boeing Engineering and Procurement to ensure satisfaction of certification products.
- Subject matter expert to coach junior engineers to complete projects. Created video training for the company learning center which all integration engineers were required to train with. Provided technical direction to members of assigned work teams.
- Lead test, integration, and regression testing activities for assigned LRU and system functionality.
- Developed Automation Testing through scripting and internal tools. Created test procedures based-on system requirements and design.
- Interfaced various KU-band antennas to a network operating center via satellite beams. Experience with L-band modem, Ku-band Antenna, BUC, LNB, OMT/TRF, Bias-T, Wilkinson divider, Reference Oscillators, SATCOM.
- Knowledge of aircraft systems from Airbus and Boeing. International business travel, MRO and aircraft installation experience.
- Extensive involvement in black box, gray box, unit level, integration level, and functional system level regression testing.
- Integrated hardware and software components to meet system and customer requirements. Verification and validation.
- Managed large projects that required integration and troubleshooting on test racks which mimic the system installation on aircraft.
- Created software configuration databases for Presidential and VIP Airbus and Boeing aircraft, which brought more commercial contracts.

ReadyTrace, Inc. *Chino, California*

Digital Design Engineer *Jan. 2009 - Nov. 2011*

- Designed an ISM band RF remote control interface utilizing the Microchip MRF49XA Transceiver and an ISM band RF amplifier with matching networks using: Matlab, Simetrix and Linc2.
- Programmed a DSP power control embedded system to run a 3-terminal SMPS and dimmer based on the Microchip dsPIC33 and Xilinx XC9500 series CPLD chips. Managed time precisely accounting for known leap seconds, and high and low priority interrupts.
- Designed and programmed boards based on the Microchip PIC18F to interface with an in house proprietary ASIC radio chip. Created intelligent analog gain control algorithms.
- Programmed a DSP monitoring and tuning interface for an AM radio signal injector, implemented in 30 clear channel radio stations based on a Texas Instruments TMS320VC33 DSP. This DSP monitoring and tuning interface utilized radix-2 decimation-in-time fast Fourier transforms with N=17 for precise tuning and N=12 for quick monitoring which were time multiplexed with timers. Sampling and data management by FPGA then sent to DSP for processing.

Honors & Awards

Domestic

2022	**10 Year Service Award**, Panasonic Avionics Corporation	*Lake Forest, CA*
2017	**Senior VP Engineering Discretionary Award**, Panasonic Avionics Corporation	*Lake Forest, CA*
2015	**Pride@Boeing Recognition Award**, Boeing Commercial Airplanes	*Seattle, WA*
2009	**3rd Place Project - NMES TENS**, International System-on-Chip (SoC) Conference	*Newport Beach, CA*

Skills

Engineering	Design, wiring schematics, electronic and RF circuits, power systems, signal processing, system architecture, micro-architecture, model-based systems engineering, communication systems, metrology.
Networking	DHCP, DNS, TCP/IP, NAT, Linux iptables, firewall, tcpdump, Wireshark, VLANs, switches, LACP LAGG, FreeBSD pfsense
Programming	C, C++, Assembly, Bootloader, VHDL, Verilog, SystemVerilog, Testbench, Matlab, Python, Perl, PHP, SQL, TEX, LATEX, Bash
DevOps	GitLab, GIT, Docker, CI/CD pipelines, inner-loop and outer-loop processes.
Standards	SAE AS9100D, RTCA DO-254/DO-178C, ARINC429
Other	Elementary Mandarin Chinese, Agile

Education

California State University *Fullerton, California, USA*

Masters of Science Degree in Electrical Engineering *2009 - 2011*

Concentration in Communications Engineering and Control Systems Engineering

Bachelors of Science Degree in Electrical Engineering *2003 - 2009*

Concentration in Control Systems Engineering and Digital Signal Processing