

Brian McConkey, P. Eng.

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PROFILE

A skilled, thorough and accomplished Design and Systems Engineer with experience in all aspects of design from idea to shipping product. I utilize effective problem solving, communication, teamwork and technical leadership. With this background I will help you implement and manage new processes, improve and manage current processes, create new equipment and re-invent older equipment. I will help your organization attain an industry leadership position.

SOME KEY ACCOMPLISHMENTS

- System design, Development and Implementation management for the SMART SBM600 line of interactive whiteboards.
- Creator of three automated communications test systems that are being used by the Canadian and British ground forces all around the world.
- Provided leadership for a small team that successfully designed and built several automated test systems.
- Provided an understanding of the technology within or surrounding many products and services. This insight created better products and services.

SKILLS

Signal Processing, Programming: Assembler, C/C++, VHDL, HTML, CSS, JavaScript, PHP, Tools: AutoCAD, SolidWorks, Mentor Graphics, OrCad, Altium, MS Office Suite, OpenOffice, DOORS, Contour, MySQL, MetroWerks, LabView, NI Drivers, LabWindows, MatLab; MS Windows XP, Vista, Win7; Linux: Ubuntu, Mandriva, Debian; Hardware: DSPs & MCUs, Altera & Xilinx FPGAs, Analog & RF design; Interfaces: USB, Ethernet, GPIB, JTAG, LVDS, RS232, CAN, VGA, HDMI, I2C; Test Equipment: Oscilloscopes, Logic Analyzers, Network Analyzers, Signal and Video Generators, RF Power Meters, Modulation Meters, Deviation Meters, Multimeters, Team Leadership, Team Management, System Integration (electrical and mechanical), New Product Development, Manufacturing Startup, Lean Manufacturing, Six Sigma Design and Manufacturing

PROFESSIONAL EXPERIENCE

McConkey Consulting Calgary, AB
Senior Consulting Engineer

2013 – present

- Initial Concepts and new design work for several clients:
 - Product design and circuit design Underwater Inertial Navigation device for recreational divers.
 - Product design and RF design for a NLJD for use by law enforcement and prison guards.
 - Product design and mechanical design for a Sit / Stand desk for engineers and architects.
 - Entry signaling / alerting and logging device for home use with design targets to upgrade the device for IoT.
 - Personal and photographic Website Development, using a LAMP server and Drupal CMS.

SMART Technology Inc., Calgary, AB
Senior Systems Engineer

2010 - 2013

- Managed the development, implementation and manufacturing startup of the SBM600 product Line. Successfully meeting demanding introduction scheduling.
- Create and manage new product architectures and development. Assigned and directed design tasks to specialist design groups. Liaising among the different disciplines.
- Analyze current product offerings, to obtain insights into system designs.
- Gather data from stakeholders and design system requirements for current and new products.
- Design, implement and manage company wide requirements procedures and processes using Jama's requirements tool called Contour.
- Create and maintain engineering specification documents to guide external subcontractors in the creation of products and services.
- Create test plans for new products, to ensure internal and external implementers are meeting program objectives.
- Conduct system behavioral testing.
- Design and implement custom tests and data gathering using LabView, Audio Precision scripting and Agilent scripting languages.
- Conduct testing and create test reports to validate progress against requirements.
- Create system inter-connectivity designs using standard and extended analog and digital interfaces, for example Ethernet, USB, I2C, RS-232, VGA, HDMI, and others.
- Oversee and manage design progress of internal and external design teams and build teams.
- Provide technical support to product and program managers, technical

- leadership and management for external sub-contractors.
- Work with Asian and Eastern European design and construction companies. (Shanghai China, Suzhou China, Oradea Romania)

GENERAL ELECTRIC OIL AND GAS PII LTD., Calgary, AB 2008 – 2009
Applications Engineer

- Designed new configurations, methods, processes and systems for special customer requests.
- Engineering and Project Management Support for in-line pipeline inspection field operations, using smart in-line instrumentation.
- Evaluations of pipeline parameters and the generation of necessary system configurations for successful pipeline inspections.
- Reverse Engineered a major instrumentation tool (over 10,000 lines of code) that lacked proper documentation and understanding.
- Designed and coded three VHDL test benches for FPGAs that were not functioning as expected, resulting in an earlier release of a new measurement instrument.
- Technology lead for geometry and mapping electronics applications in Canada.
- Designed a new Circuit Card Assembly (CCA)[Altium] to interface two instruments into a new system.

GENERAL DYNAMICS CANADA LTD., Calgary, AB 1997 - 2007
Design / Systems Engineer

- Created and specified the hardware systems design for the ground segment of the new Canadian Maritime Helicopter Program.
- Designed and developed 3 systems for automated testing of military communications equipment.
- Selected as Team Lead for the design and development of an Automated test bed for communications equipment. Provided planning and management to ensure the team created a properly functioning, on time and below cost, (30% below budget) system.
- Provided both architecture and detail design of the analog and digital sections of an automated test signal router.
- Designed and developed signal analysis software, using WIN32 API, for use in qualification of military communications equipment.
- Designed and developed 7 multilayer (from 4 to 12) PWBs for ruggedized military field Test Equipment.
- Implemented and debugged Embedded Micro Controllers in automated test systems. Wrote, compiled, installed, and tested code using Metrowerks development environment in C/C++.
- Designed and developed VHDL / AHDL code for the EPLD controller within automated test systems.
- Design authority for the development of PCB's, Interface connectors,

- mechanical enclosure, power supply selection and overall hardware integration of three rugged front line military automated test systems. PCB's created with Mentor Graphics CAD.
- Analyzed and corrected problems occurring within military communications equipment.
 - Prototyped and debugged new automated test systems, both hardware and software using GD internal scripting language and LabView.
 - Coordinated the procurement and production of prototype and production quantities of a rugged communications automated test system.

GEO-X SYSTEMS LTD., Calgary, AB

1994 - 1997

Software Design Engineer

- Designed and developed:
 - Microcomputer based test oscillators for use in testing remote acquisition modules,
 - Digital signal processing algorithms and implemented them in C language,
 - Software for testing and simulation of remote multi-channel analog to digital converter modules (RAM) and networks of RAM's,
 - Software and hardware for a low cost PC plug-in card, used to acquire data from a network of RAMs,
 - Software for use in loading waveform data to a FLASH memory device within each RAM on a network.
- Analyzed and corrected problems in the production of remote acquisition modules.
- Designed and modified circuitry to enhance the performance of the remote acquisition system.

ELECTRONICS TEST CENTRE, Edmonton, AB

1987 - 1989

Research Technologist, Product Integrity

- Performed equipment testing to standards such as: Mil-Std, CSA, VDE, UL, ISO, DOC, FCC and many others.
- Performed customized equipment testing to specifications written by Ford, Novatel, Northern Telecom and others.
- Collected and compiled test data and conducted data analysis.
- Prepared test reports and recommendations, and worked with clients to increase their equipment's integrity and reliability.
- Produced test program detailed plans and cost estimates.
- Designed and supervised the construction of specialized testing fixtures and other hardware to complete test programs.
- Designed a specialized software tool to conduct safety testing of telecommunications equipment.

DRESSER CANADA INC., ATLAS DIVISION, Edmonton, AB
Maintenance Specialist

1983 - 1986

- Performed troubleshooting and repair of electronic and mechanical systems.
- Developed troubleshooting and repair procedures for use at locations worldwide.
- Calibrated measurement equipment.
- Implemented a new maintenance program consisting of heat testing and electromagnetic interference reduction.
- Developed calibration software for computerized measurement systems.

EDUCATION

University of Calgary - Calgary, Alberta 1993

- Bachelor of Science Degree in Electrical Engineering with a minor in Computer Engineering

Northern Alberta Institute of Technology -Edmonton, Alberta 1983

- Graduated Electronics Engineering Technology (2 year program)

MEMBERSHIPS

- Registered Professional Engineer of the Association of Professional Engineers, Geologists and Geophysicists of Alberta (APEGGA).
- Member of the Institute of Electrical and Electronics Engineers (IEEE).

INTERESTS

Photography, Hiking, Wood Working, Amateur Radio, Programming

REFERENCES

Available upon request.