

## **Martin Fredrickson**

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Mailing address and phone number available on request.

Serious inquiries from recruiters or employers ONLY.

**Objective:** To obtain a position as a test engineer where I can exercise my skills in test hardware and software design, to take a more active role in managing technicians and other engineers.

### **Pertinent Skills:**

- Programming experience in C, C++, Perl, PHP, and Ruby on Rails in Windows and Linux environments
- Possess an understanding of ICT, functional test, flying probe test and DFT with regard to high-density surface-mount designs.
- Familiar with IEEE-1149 JTAG Boundary Scan testing.
- Familiar with TCP/IP, ATM and Frame Relay networking
- Familiar with MPEG2 Video Transport
- Familiar with MySQL database administration and programming
- Experienced with a wide variety of test equipment, including Oscilloscopes, Logic Analyzers, Spectrum Analyzers, Network Analyzers and Modulation Analyzers
- Good written and verbal communication skills
- Understanding of ISO-9001 requirements

### **Work Experience:**

#### **2007 to Present – Motorola Inc., San Diego, CA**

**Engineering Contractor (Part time):** Update JTAG test vector files for product line acquired by Motorola from Copper Mountain Networks. Write functional test software for a 4-port Gigabit Ethernet line card that includes an end-to-end data path test as well as low-level diagnostics. Write test software to configure and test data transport of MPEG2 video transport streams through a QAM line card in the Motorola VSP video server platform. The QAM test solution includes software to serve a test the integrity of an MPEG video transport stream from the test computer to a Gigabit Ethernet line module that is then distributed via DVB-C QAM line module to a test receiver. The test software controls the test receiver to capture and decode the video stream and compare it against the transport stream for an end-to-end verification of the video data path.

### **2005 to Present – California Instruments, San Diego, CA**

**Test Engineer:** Design, develop, and deploy test processes for high-power switching AC and DC power sources. Select test equipment, design and build automated test systems (3 systems built). Write and maintain test software to control ATE systems and product during automated test. Use Protel to verify ICT test points on new and legacy CCA designs. Wrote a variety of pre-processing scripts to convert Protel and PCAD output files to CAD file formats acceptable by Checksum Analyst EMS test system. Specify and order test fixtures for Checksum and Sigma ICT/MDA test platforms. Temporarily served as test department supervisor before a permanent candidate was found, evaluated test department for bottlenecks in test flow and other issues affecting on-time delivery, presented final report to upper management with a series of recommendations to correct deficiencies. Support design engineering with regard to design for testability requirements.

### **1997 to 2005 – Copper Mountain Networks, San Diego, CA**

**Test Engineer:** Designed, developed, and deployed test processes for DSL and high-speed networking products. Specified test equipment, cabling and test infrastructure. Wrote test plans and test work instructions in compliance with ISO-9001 documentation requirements. Wrote test software in C, Perl and Aspect (ProComm scripting language). Wrote troubleshooting guides for technician use. Performed Design for Testability analysis on new designs. Performed sustaining engineering and technical support of test systems deployed at contract manufacturer facilities. Worked with third-party test vendors developing In Circuit and Flying-Probe tests. Supervised and directed activities of technicians tasked with assembling test stations. Attended design reviews and participated in new product development as part of an integrated design team. Developed JTAG Boundary Scan test vectors for complex processor and interface CCA designs. Project lead for two CCA designs (one test fixture, one product). Performed EMI scans of new products. Worked with CCA layout vendor to address testability issues. Used PADS Power PCB to check CCA layout for DFT issues.

### **1996 to 1997 – TV/COM International, San Diego, CA**

**Associate Test Engineer:** Designed manufacturing test process for 45 mbps QPSK modulator for satellite digital video uplink. Developed a test plan and performed Design Verification Testing of an Ethernet IP interface for the modulator. Wrote test software in C. Assisted in implementation of ISO-9001

program by documenting existing processes and converting older documents to new format. Specified and purchased test equipment.

**1993 to 1996 – Systems Engineering and Management Company, Vista, CA**  
**Engineering Technician:** Assembled telemetry test systems ranging from self-contained PC-based systems to large rack-mounted mobile systems. Designed microcontroller-based ISA and VME interface cards for small form-factor telemetry receiver products. Wrote application software in C to control the telemetry receivers. Designed state machine logic for transmitting, receiving and decoding Mil-Std-1553 bus Manchester data streams. Certified as Mil-Std-2000A high-reliability solder instructor. Designed milled housings and sheet metal parts using AutoCAD for receivers, manufactured prototypes in a small machine shop using milling machine, drill press and sheet metal bending tools. Assisted RF design engineer with assembly, test, and integration of prototype receiver components; performed field tests of receiver design. Collected and analyzed telemetry data from the Air Force MSTI-2 satellite program using a mobile telemetry system. Assisted with assembly of a digital video display system used to capture images from satellite infrared camera telemetry. Assisted with integration of a spread-spectrum remote control system for a robotic system designed for law enforcement and hazardous environments.

**1983 to 1992 – General Dynamics Electronics Division, San Diego, CA**  
**Engineering Development Technician:** In addition to duties of Senior Test Technician position, assisted design engineers with test and integration of new hardware and software. Assisted in the integration of prototypes for a flight-line test system for the F16 program. Verified test procedures and other documentation. Wrote change requests against documentation as needed. Worked with mechanical and electronic engineers to improve manufacturability and performance of new test system hardware.

**Senior Test Technician:** Conducted test and integration of automated test systems for the Air Force F16, B1B, C5B, C17 and B2 programs. Performed module-level troubleshooting and fault analysis. Performed system calibration and acceptance test procedures. Performed failure analysis to component level, performed troubleshooting of intermittent or unconfirmed failures. Worked with analog, digital, and raster and stroked video systems, photometric systems, and RF and microwave measurement systems. Modified test software to assist in troubleshooting and failure analysis, wrote test utility programs in ATLAS to assist with initial power up and verification of systems. Created visual aid drawings to simplify test tasks.

**Test Technician:** Held DOD Secret Security Clearance until 1992. Conducted test and integration of automated test systems for the Air Force F16 and B1B programs. Performed module-level troubleshooting and fault analysis. Performed system calibration and acceptance test procedures. Worked with analog, digital, and raster and stroked video systems, and photometric systems. Maintained local copies of schematics, blueprints and procedures. Maintained test log and quality documentation.

**Assembler Group Leader:** Assigned daily tasks to six employees. Ensured availability of tooling, parts and materials by coordinating with material and tool crib departments. Assisted test department with troubleshooting and repairing defective assemblies. Achieved first ever zero-defects assembly of a wiring-harness containing over 6000 wires and 40 connectors.

**Assembler B:** Assembled cables and wiring harnesses. Participated in focus group as part of Total Quality Management program.

**Education:**

**A.S. Computer Science, Southwestern College, Chula Vista, CA:** Awarded June, 1991 with honors.

**References available upon request.**