Edwin Dickinson
Senior Project / Electrical Engineer

Philadelphia, PA - Email me on Indeed:

WORK EXPERIENCE

Senior Project / Electrical Engineer
Linear Corporation   -   Exton, PA - 2009 to 2014

Product Manufacturing Design Support. Provided engineering support for manufacture of access control products, related accessories and PC software applications. Technical support for applications engineering on customer hardware, software and system issues. Activities include:
• Product Transition Manufacturing Support - technical support for offshore factory during product transition phase, including test fixtures/software/procedures and First Article evaluation. Identify technical issues, devise and implement appropriate technical changes.
• OEM Customer Product Support - hardware device variants and branded Windows software. Field issue replication, solution formulation and design change implementation.
• Design Development, Test, Verification and Production Release - establish system requirements, perform circuit design and PC board layout, functional performance testing for design verification. Production release using corporate ECR/ECO process.
• Test Platform Design - specify and implement platform for functional test, based on available COTS components and open source hardware/software. Implemented systems for internal development test and accelerated testing, applications engineering support and factory test applications.
• Manufacturing Support - including test fixtures and procedure issues. Address component obsolescence issues for digital and RF parts, including alternates source identification, component evaluation test and approval.
• Wireless Product Implementation - extended existing production wireless keypad to include additional air protocols and keypad configuration. Upgraded to surface mount design to enhance manufacturability and performance. Implemented automated fixture for in-circuit device programming and functional test, including proper RF control link operation.
• Project Team Support & Management - customer interface and project team guidance, including issue isolation, replication, fix conception and implementation, verification and testing. Implement infrastructure, including version control, collaboration (subversion, TRAC), virtual machine test environment, development and test software tools. Technical adviser for colleagues and contractors, including software, hardware and system design and test activities.

Principal Engineer
Powercast Corporation   -   Pittsburgh, PA - 2008 to 2009

Product Design & Development, Manufacturing. System, circuit and packaging design for proprietary wireless RF power transmission products. Activities include:
• Product Development - design of DC-RF and RF-DC conversion and support circuitry for products and development kits. Printed circuit board layout, verification test and design documentation.
• Design Debug & Verification Testing - functional performance testing for design verification. Identified performance issues and implemented design solutions, including RF communications link, EMI/EMC and system functional details.
• Manufacturing Support - board layouts, mechanical drawings, specifications and test procedures. Manufacturing release packages, engineering change notices. Generated test setup definitions and procedures for wired and radiated RF production testing.

Senior System Engineer
InGrid, Inc - Berwyn, PA - 2005 to 2008

System Design & Development, Manufacturing Support - wireless home security consumer product line, including:
• Product Definition - feasibility, design trade-offs, functional requirements. Competitive product technical review and analysis, including ISM band spectrum coexistence and interoperability.
• Product Design - low power battery powered wireless sensor devices with miniature antennas. Developed power consumption modeling, and small antenna implementations, using EM modeling and pattern testing.
• Design & Compliance Testing - design verification, UL, FCC and industry requirements testing.
• Production Support - test fixtures using wireless near field coupling. On-site support at off-shore contract manufacturer for technical start-up assistance for the initial production run.

President
Dovetail Sciences Corporation - Palm, PA - 1996 to 2008

Engineering and company management. Technical lead for design, development and manufacturing, including:
• Distortion Measurement System - automated NTSC video performance measurements per FCC Part 76.
US patent 6,337,711 granted and product line acquired by cable TV test equipment manufacturer.
• Video Data Encoder - modular system for digital data insertion into active NTSC analog video broadcast signal. Rack mount 8-channel configuration, digital signal processing, redundant hot-swap power modules.
• Field Intensity Meter - portable digital instrument for AM broadcast field strength, with active loop antenna, touch screen LCD for user interface and spectrum display. Ethernet web browser user interface.
• Transmission Impairment Detection System - distortion monitoring system for cable TV return path.

Vice President
Dovetail Surveys Inc - Allentown, PA - 1989 to 1996

Engineering management. Technical direction for product/circuit design, development, prototype, manufacturing and support activities. Provided technical and operational support for aerial signal leakage survey service. Projects included:
• Aerial Signal Leakage Measurement - contract service for FCC part 76 measurements. Operate multiple aircraft in continental US. Data processing, analysis and report software for FCC regulatory requirements.
• Return Signal Switch - module for CATV amplifier OEM. Turnkey design and production, including requirements, board design, documentation, product qualification and automated functional test.
• Cellular Repeater System - strand mount cellular repeater system for aerial utility deployment. FCC Type Accepted design incorporating modular construction, COTS components and custom modules for serviceability.

Communications Systems - data, voice, and video applications, using analog, RF and digital techniques, from 100 KHz to 6 GHz. System and circuit design of receivers and transmitters, modulators and demodulators, tuners, converters, frequency synthesizers, amplifiers, and analog/RF/digital filters. RF modems for broadband and wireless, including cable, ISM band and microwave devices.
Radio Frequency Systems - including wireless, cable, fiber optics, broadcast, sensing and instrumentation systems, for licensed and unlicensed applications. System design and analysis including link budget, path loss, distortion and compliance performance. Low power transmitter/receivers for battery operated and remotely powered devices and RF power systems. Integrated antenna systems including printed, electrically small and active configurations.
Control, Monitoring and Measurement Systems - intelligent wired and wireless systems, utilizing audio, power line, RF and optical links; for status, control, measurement and monitoring applications. Digital circuit designs

including programmable logic (Verilog/VHDL), embedded microcontroller/microprocessor systems with custom software.

System Definition, Specification and Evaluation - formulation of detailed technical documents, including system performance objectives, requirements, and detailed component, sub-system and equipment specifications. Analysis and evaluation of design approach alternatives, including block diagram, circuit and physical level simulation, using CAD/EDA tools (including Mathcad, SystemVue, Matlab, SPICE, NEC, FEKO), and custom software tools.

Circuit and System Testing - design verification, performance and interoperability testing at the circuit and system levels. Performance qualification testing over full outdoor operating temperature range, and accelerated testing using HALT/HASS. Product testing for regulatory compliance, including FCC, UL and industry performance requirements.

Technical Documentation, Presentations and Support - complete documentation packages for engineering and manufacturing requirements, including fabrication and assembly drawings, bills of material, test specifications and procedures and source control documents. Technical presentation documents, technical overviews, and technical program proposals for clients and prospective customers. Direct, develop, implement and support technical content for industry trade shows and public demonstrations.

Technical Management

Product Design and Development - manage engineering groups performing electronic product design and support, including circuit design, board layout, hardware and software development, packaging, testing and product documentation. Multi-disciplinary teams included electrical, mechanical, digital/analog/RF hardware, embedded and application software, engineers, designers, technicians, material management and project management personnel, using a variety of computer CAD/CAM/EDA tools for schematic capture, circuit simulation, board layout, RF circuit design, system simulation, logic design and mechanical design. Project management oversight, including task, resource, milestone and schedule for internal and external resources and deliverables.

Manufacture, Test and Product Support - manage design, fabrication, assembly, and test, utilizing in-house capabilities and outside vendors. Identify, evaluate and approve contract vendors for prototype and production requirements. Coordinate ongoing manufacturing operations and facilitate customer support.

Engineering Consulting - feasibility studies, program review, product design and technical analysis projects. Perform design evaluation, failure analysis, competitive product evaluation and cost reduction analysis programs.

EDUCATION

Master of Engineering
Stevens Institute of Technology

Bachelor of Engineering
Stevens Institute of Technology