

Summary

Electrical Engineering consultant with extensive embedded control, digital design, and wireless communication system experience. Proficient in hardware, software, and systems design and implementation, from initial product conception through development, release, and manufacturing ramp-up. Motivated, personable, and able to bring a unique perspective to your project.

Key Projects

Real-time/Digital/Microcontroller

- IEE488 FPGA-based implementation for test instrument
- Control/communication backbone (FPGA-based) for Analog data acquisition/control card.
- Pressure altitude deviation alert for General Aviation application
- Production line functional tester for multi-line telephone
- PCM highway frame memory to overcome intrinsic product timing limitations
- Minimal component count digital audio delay line for land mobile radio application

Telecom and Wireless

- GSM WAN-enabled telemetry system for remotely tracking ice cream consumption
- Low-cost configurable remote-control coaxial relay switch with state monitoring
- Wireless lamp signal repeater motorcycle safety device
- Front-end security system for modem bank to block unauthorized callers
- Precise tone synthesizer for digital telephone system
- Wearable computer with wireless LAN and bar-code scanner
- CPU, station, and station interface boards for key telephone system

Software

- Web/SNMP interface control system for broadcast satellite uplink converter, power amplifier
- Content management application for data delivery to LED signs via satellite
- Feature extension to portable data capture terminal and companion minicomputer
- Enhancements to power management processor in handheld computer
- Hub/controller for environmental monitoring system, including web interface

Professional Experience

2002-present Innovation Design and Solutions, Inc, Centerport, NY Principal Consultant

- Designed FPGA-based interface and control systems for a family of board-level data capture products. Implementations included both 'from scratch' design and integration of purchased intellectual property.
- Developed Internet interface (web, SNMP, and telnet) for a family of satellite uplink products. A table-driven architecture permitted optimal code reused across the various product family members.
- Created multifunction interface (ADC, clock, GPIO, serial, keyboard I/F) using a single microcontroller, saving six ICs, reducing component cost by 60%. Firmware revision was verified (and auto-upgraded if needed) at system power-on.

- Identified, isolated, and solved an elusive timing problem preventing the shipment of 100 digital audio transport/control boards. An analytical strategy, coupled with focused experiments resolved the issue in a single day, after three weeks had been devoted to the problem by the client.
- Designed a low-cost altitude deviation alert, based on a strain-gauge pressure sensor. A unique architecture permitted use of an on-MCU ADC, reducing cost. (Published in The Atmel Applications Journal, Summer 2003)

1998–2002 Symbol Technologies, Inc., Holtsville, NY
Senior Project Manager

- Managed the development of a prototype wearable computer combining wireless networking, VOIP, and mini-web browser, including coordination of industrial design, mechanical, electrical, and software teams. Conducted focus group surveys and presentations to high-level management including board of directors.
- Responsible for feature enhancements of wearable computing system. Provided dual-radio custom version to key account fulfilling \$4.5M contract – customer satisfaction resulted in add-on sales of \$2.7M.
- Directed development of a vehicular computer system providing parcel delivery verification data via terrestrial and satellite wireless networks. Managed subcontracting design firm during its acquisition simultaneously with delivering 1,500 units to customer, meeting initial rollout requirements.

1995–1998 InterDigital Communications Corp., Melville, NY
Director of Engineering

- Directed engineering staff during the development and beta deployment of a Wireless Local Loop spread-spectrum telecommunications system. The product included digital, RF, and telecom subsystems.
- Led an internal 'Skunk Works' team to rapidly develop and deploy a miniature portable version of a wireless telephony base station intended for exhibition presentations, propagation studies, and demonstrations for investors and technology partners. Met critical trade show deadline by reusing technology from standard version of product.

1992–1995 Periphonics, Inc., Bohemia, NY
Senior Principal Engineer

- Lead engineer for the development of a 96-line telephone interactive voice response system implemented with a combination of DSPs, FPGAs, and conventional processors. Performance requirements demanded major architectural changes, yet compatibility with legacy products was preserved.
- Created PCM frame memory buffer to overcome what was believed to be an intrinsic system performance limitation in a legacy voice processing system. New configurations permitted achieving improved overall system price/performance levels.

Education, Licensing, Professional Organizations

- Bachelor of Electrical Engineering, SUNY at Stony Brook, Stony Brook, NY
- Business Management Certificate, CW Post – Long Island University
- Business Across Borders: Asia Pacific – Berlitz
- Approved developer: Atmel AVR, Netburner
- FCC General Radiotelephone license
- IEEE member since 1983

Personal Interests

- Private Pilot (instrument rated)
- Amateur Radio operator (WA2BUX)
- Recumbent Cyclist