Selected Projects Summary

Esensor4800 DNA Detection System

- Designed hardware and firmware for thermal cycling system used for amplification and detection of DNA sequences
- Arranged for and coordinated prototyping and initial production run, including PCB fabrication, automated assembly, and characterization/qualification of system.

HPGL to Raster Translator & Multi-port Data Compressing Print Buffer

- Accepts HPGL plotter language output from CAD program or other software and generates bit maps for printing on dot matrix and laser printers
- Accepts input from multiple parallel ports, compresses and queues data, and outputs data to printer when available after decompressing
- Custom designed 68000 based hardware engine with DRAM, programmed principally in C using Crosscode compiler

Challenge/Response Security System

- Individual sensors contain logic to provide cryptographic algorithm based response to query from central alarm controller to prevent tampering or bypass of alarm sensors
- Implemented with 8051 based microcontrollers

Industrial/Commercial Automation

- Designed hardware and software for controlling HVAC, refrigeration, and building systems (security, lighting, etc.)
- Networked control nodes optimized energy efficiency, convenience, and security

Recent Contracts

11/99-Present   Motorola (Clinical Micro Sensors division)   Pasadena, CA

- Principal engineer for hardware and software design for Esensor4800, a DNA detection system
- Engineering analysis
- Made arrangements for assembly/manufacturing including contract negotiation, data transfer for automated assembly machinery, and components procurement.

6/96-Present   Advanced Micro Devices, Inc.   Sunnyvale, CA

- Engineering analysis
- CF Flash Card Reference Design (NAND flash project)

6/97-10/98   Intellinet Controls, Inc.   Naples, FL

- Embedded systems programming for network peripherals, hardware design & debug
- Hardware design and firmware for Network Thermostat, Network Digital I/O board-Thermostat, Network Light Sensor, and other related products
- Embedded systems programming for 8051 based bus prediction devices (under auspices of Nextbus.com), Windows NT networking, research and analysis for design specifications for upcoming products; field characterization and testing of hardware; resolution of production issues