
Capabilities

Engineering Experience

- Remote Control Systems / Robotics
- Medical Devices
- Military: electronics, communication, reconnaissance
- Consumer Product Electronics
- Unmanned / RC Vehicles for: air, land, amphibious, hover, water, and underwater
- Electronic Toys (Educational, Entertainment)
- Remote Monitoring and Control
- Communication Protocols: USB, RS232, RS485, I²C / TWI, SPI, Bluetooth, TCP/IP, Ethernet, Wi-Fi,
- Test Data Processing & Analysis
- Production Test Equipment
- Audio and Video Technologies
- Voice Recognition Technologies
- High & Low Volume Designs
- Cost Reduction Designs

System and Product Development

Product Development

- Control Systems: servos, motors, motion, position, velocity, temperature, pressure, flow, fuel injection, etc.
- IR & RF Communication
- Embedded Systems
- Data Acquisition
- Sensors
- Signal Conditioning: linearization, temperature compensation, filtering, compression, etc.
- Power Supplies
- Prototypes
- Re-Engineer / Reverse Engineer
- Custom User Interfaces

System Development

- System Engineering
- System Integration
- Remote Sensing / Observation
- Robotics & Unmanned Vehicle Systems
- Remote Control & Radio Control
- Real-Time Image Processing and Imaging
- Industrial Controls

Electronic Engineering

- Analog & Digital Circuit Design
- Design Reviews
- Programmable Logic: CPLD, FPGA and ASIC Design
- Verilog HDL
- Liquid Crystal Displays (LCD)
- Analog and Digital Signal Processing (DSP)
- Closed Loop Controls
- Fuzzy Logic
- Battery Life Analysis

Circuit / PCB Design and Prototype

- Schematic Capture (Digital Simulation)
- PCB layout
- Single to Multi-layer Boards
- Surface Mount and Through Hole
- Assembly and Testing
- Packaging / Enclosure
- Component Selection – size, assembly, cost, and availability
- Thermal Management
- High-Speed Digital Design
- EMI/EMC – preconcerted quiet design, ground/power plans, shielding

Software / Firmware Engineering

- Real-Time Command and Control
- Real-Time Data and Event Management
- Review and Inspection Procedures
- Custom Communication Protocols

- Designed for Reliability, Availability, and Supportability
- Multi-tasking & Time Critical Programming
- Modular Development
- GUI Design & Construction

Microcontrollers

- Atmel AVR Family
- Sunplus
- King Billion
- Sensory (Voice Recognition)

- Motorola / Freescale
- PIC
- 8051 Core
- 6502 Core

Languages

- Assembly
- C, C++
- Basic Stamp

- Java
- PHP
- HTML

Testing / Quality Assurance

- Design Verification and Validation
- Requirements Based Testing
- Functional Testing of Modules and Integrations
- Evaluation of Functional and Non-functional Features
- Software / Hardware Integration Testing

- Simulator Based Testing
- Testing Documentation and Bug Tracking
- Troubleshooting
- Modification Recommendations
- Custom Test & Assembly Fixtures
- UL, FCC, and FDA Experience

Manufacturing

- Domestic, Malaysia, Taiwan, Hong Kong, & China Locations
- Mass Consumer Product Fabrication
- Prototype Fabrication
- Surface Mount and Thru Hole PCB Assembly
- Cables, Harness and Mechanical Assembly

- Electronics, Wire, Plastics, Carbon Fiber, Stainless, and Metal Casting
- DC Motor Development and Sourcing
- Battery Sourcing
- ISO Compliant and Registered