



Title: Embedded Controls Engineer **Status:** Exempt Full Time
Reports To: VP Engineering and Research & Development
Department: Engineering

Summary of Position: Responsible for the definition, design, development, and continuous improvement of embedded controls software for ultracapacitor module products and supporting equipment including improvements to hardware in existing designs, cost reduction, and development of new designs.

Essential Duties and Responsibilities:

- Work as member of electrical engineering design team to develop reliable and cost effective solutions for power electronics to operate in conjunction with ultracapacitors and ultracapacitor modules.
- Responsible for definition, design, development, and coding firmware for embedded microprocessors in ultracapacitor modules and supporting test equipment.
- Operate computer aided design software for design and simulation of power electronics, control electronics, and circuit board layout.
- Responsible for ensuring electrical designs meet IPC, ESD, EMC, and other applicable standards.
- Involvement in reliability verification and validation of new and existing products.
- Interface with all other team members for system design and integration to design, develop, & improve automated test equipment for production product testing.
- Establish and maintain timelines and resource plans for multiple simultaneous projects.
- Prepare detailed documentation for internal and external review.
- Maintain design responsibility for existing Ioxus products.
- Support warranty evaluation and design responsible defect investigation.
- Observe appropriate environmental, safety and health policies and practices.
- Perform other related duties as assigned by the supervisor.

Education/Experience:

- Bachelor's degree or higher in Electrical Engineering, Mechanical Engineering, Computer Engineering, Computer Science, or a professional license.
- 3+ years of experience with Microchip controllers is preferred, but not required for the right candidate.
- Proficient with development in C programming language and integrated programming environments from Microchip, Texas Instruments, or Atmel.
- Proficient with software development utilizing communication protocols including CAN, RS-232, UART, I2C, SPI, Bluetooth, and WiFi.
- Excellent knowledge of analog and digital electronics such as switches, rectifiers, RLC circuits, relays, transistors, op-amps, flip-flops, voltage references, and microprocessors.
- Proficient with Altium Designer (preferred) or Cadence OrCAD suite (Capture CIS, PCB Editor).
- Comfortable working with and around medium voltage (600V+) power electronics devices. Knowledge of Automotive Core Tools such as DFMEA.



- Capable in test and debug of printed circuit boards using bench top equipment (power supplies, oscilloscopes, spectrum analyzers, etc.)
- Proficient in mixed signal design and microprocessor integration for high-reliability electronics.
- Excellent interpersonal skills to work independently and effectively with others.
- Excellent oral and written communication skills including clear and comprehensive documentation.

		Amount of time spent			
		None	Under 1/3	1/3 to 2/3	Over 2/3
Physical Demands:	Stand		X		
	Walk		X		
	Sit			X	
	Use hands to finger, handle, or feel			X	
	Reach with hands and arms			X	
	Climb or balance	X			
	Stoop, kneel, crouch, or crawl		X		
	Talk or hear			X	
	Taste or smell	X			
Work Environment:	Lifting up to 40 lbs.		X		
	Wet or humid conditions (non-weather)	X			
	Work near moving mechanical parts		X		
	Work in high, precarious places	X			
	Fumes or airborne particles	X			
	Toxic or caustic chemicals	X			
	Outdoor weather conditions	X			
	Extreme cold (non-weather)	X			
	Extreme heat (non-weather)	X			
	Risk of electrical shock			X	
Risk of radiation	X				
Vibration	X				

These requirements are intended to provide a general guideline regarding the nature and level of work being performed, and the qualifications required to successfully perform the job. Final assessment of a candidate's qualification versus these requirements, and the ability to accept deviations from these ideal qualifications, is left to the discretion of the hiring manager, based on business needs at the time of hire.

By signing below, I acknowledge that I have read and understand the above job description.

Employee Approval: _____ Date: _____
 Management Approval: _____ Date: _____
 Human Resources: _____ Date: _____