Title: **Embedded Controls Engineer**   **Status:** Exempt Full Time
Reports To: **Engineering Project Manager**
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.
- Design and development of reliable bootloaders
- 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.
- Minimum 2 years of professional work experience in programming.
- Proficient with development in C programming language and integrated programming environments.
- Proficient with software development utilizing communication protocols including CAN, RS-232, UART, I2C, SPI, Bluetooth, and WiFi.
- Familiarity with analog and digital electronics and circuitry.
- Familiarity with electrical CAD software (e.g. Altium Designer, OrCAD, etc.) preferred.
- Proficient with bare-metal debugging.
- Familiarity with RTOS and/or concurrent/multithreaded programming.
- Familiarity with embedded Linux development preferred.
- Comfortable with Python development and prototyping.
- 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			
	Lifting up to 40 lbs.		X		
Work Environment:	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: _____