



Title: Electrical Design Engineer
Reports To: Engineering Project Manager
Department: Engineering

Status: Exempt
Full Time

Summary of Position: Responsible for the design, development, test and qualification of hardware and controls software of ultra-capacitor module products including improvements in the existing designs, cost reduction, and development of new designs.

Essential Duties and Responsibilities:

- Responsible for design and development of monitoring and power electronics to operate in conjunction with ultracapacitors and ultracapacitor modules.
- Operate computer aided design software for design and simulation of power electronics and circuit board layout.
- Responsible for developing and programming microprocessor control firmware.
- Responsible for ensuring electrical designs meet IPC, ESD and EMC standards. Design and development of electronic filters and protections for PCBA's as required.
- Development of automated test equipment for production product testing.
- Involvement in reliability verification and validation of new and existing products
- Interface with other Ioxus team members for system design and integration.
- 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.
- Domestic and international travel as needed.
- Perform other related duties as assigned by the supervisor.

Education/Experience:

- Bachelor's degree in an applicable engineering field, computer science, or a professional license. 3-5 years engineering experience is preferred, but not required for the right candidate.
- Authorized by appropriate agencies to travel internationally.
- Proficient with the development of C programming language and integrated environments from Microchip, Texas Instruments, and Atmel.
- Proficient with the development with various communication structures including CAN, RS-232, I2C, SPI, Bluetooth, and WiFi protocols.
- Excellent knowledge of analog and digital electronics such as switches, rectifiers, RC circuits, relays, transistors, op-amps, flip-flops, and voltage references.
- Proficient with Altium Designer, Cadence OrCAD suite (Capture CIS, PCB Editor).
- Comfortable working with and around medium voltage (600V+) power electronics devices.
- Capable in test and debug of printed circuit boards using bench top equipment
- Proficient in mixed signal design and microprocessor integration for high-reliability electronics.
- Knowledge of Automotive Core Tools such as DFMEA.
- Excellent interpersonal and communication skills.



Physical Demands:

| | Amount of time spent | | | |
|--------------------------------------|----------------------|-----------|------------|----------|
| | None | Under 1/3 | 1/3 to 2/3 | Over 2/3 |
| 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:

| | Amount of time spent | | | |
|---------------------------------------|----------------------|-----------|------------|----------|
| | None | Under 1/3 | 1/3 to 2/3 | Over 2/3 |
| 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: _____