

JOB DESCRIPTION

Job Title: Development Engineer – Motor Control Hardware
Department: Engineering

JOB PURPOSE

Responsible for complete new product design, component engineering and specification, improvement of existing designs, standards compliance, and documentation of assigned products.

JOB RESPONSIBILITY SUMMARY

- Lead/support development of circuit designs and hardware for new products and product platforms
- Perform and/or oversee design/product performance analysis, testing, and validation
- Work as a team member directly with customers, customer engineers, technicians, sales people, and specialists on developing custom designs
- Review, along with purchasing personnel, the selection and specification of new purchased component parts for product designs
- Create new and improved product designs according to requirements coordinated with sales & marketing
- Continually manage multiple projects to scheduled completion timeline
- Support ongoing component changes and approvals
- Help with technical support and new application of assigned existing products
- Maintain professional, technical, and computer knowledge via educational training/workshops/publications
- Comply with all safety policies, practices, and procedures; report all unsafe activity to supervisor or Human Resources
- Participate in team efforts to achieve departmental and company goals
- Performs other duties as assigned

REQUIRED KNOWLEDGE, SKILLS, & ABILITIES

(To perform this job successfully, an individual must be able to perform each essential duty satisfactorily. The requirements listed below are representative of the knowledge, skills, and ability required.)

**Education/
Licensure/
Credentials** **Required:** Bachelor's degree in electrical engineering or related field
Preferred:

Experience **Required:** Power electronics and motor control circuit design experience
Preferred: Three to five years' industry experience in the following: product specification, hardware design for AC and DC motor drives, power electronics control circuit design, mixed signal circuit design, and product validation/testing

**Special
Knowledge/
Skills** **Required:**

- Understanding of basic analog circuits – OP-AMPS, comparators, analog closed loop control
- Knowledge of basic control systems theory
- Knowledge/understanding of common motor control topologies
- Experience with motor control power stage designs, MOSFET/IGBT, gate drive circuitry, isolation, circuit protection
- Familiarity/understanding of common power supply (AC-DC, DC-DC) topologies ... buck, boost, flyback, forward, half-bridge, full-bridge, push-pull
- Proven experience with PCB design
- Ability to troubleshoot customer applications and recommend improvements
- Computer proficient
- Excellent written and verbal communication skills

Preferred:

- Experience with thermal analyses and heat-sinking requirements for power electronics devices
- Familiarity with agency approval standards/requirements – UL, CE, TUV
- Familiarity/experience with active rectifiers and/or power factor correction topologies

Desired (ideal candidate would also have):

- Embedded microcontroller/DSP software development experience using C or C++
- PC software development – Visual Basic, Visual C, and/or Java
- 3D CAD design – electronics packaging design – Solidworks, E-CAD
- Familiarity or experience with algorithm development & implementation of Field-oriented vector control for Induction AC and/or permanent magnet synchronous motors

Physical Demands

Required: The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations can be made to enable individuals with disabilities to perform the essential functions.

- Standing, walking, or sitting for a majority of the time
- Use of hands and arms to touch, lift, and reach, etc.
- Talking and hearing for a majority of the time
- Typing for portion of time
- Lifting and/or exerting up to 20 lbs. of weight/force frequently and up to 50 lbs. of weight /force occasionally

This job description supersedes all previous job descriptions. The job description is intended to be a tool to describe the primary purpose of the job and the KEY duties and responsibilities. The job description is not to be construed as an exhaustive list of all duties and responsibilities required. Management has the right to add to or change the job responsibilities at any time. All personnel may be required to perform duties outside their normal responsibilities from time to time, as needed.