Hydro Electronic Devices (HED®), Inc.
Hardware Engineer
Hartford, WI

Company Profile:
Hydro Electronic Devices (HED) is a dynamic and growing provider of intelligent electronic controls for mobile equipment applications. HED develops cutting-edge Controller Area Network (CAN) based multiplexing solutions for a variety of markets.

Family-owned, HED is led by a savvy, strategic Electronics Industry veteran with impeccable credentials, very strong leadership skills, and an intrepid entrepreneurial spirit. The company endeavors to fortify its relationships with existing customers while it vigorously pursues growth opportunities within parallel industries. As it grows, it continues to improve functional sophistication, particularly in Engineering and New Product Development, which will result in market-leading efficiency. This efficiency is critical in minimizing cost and time-to-market, representing a significant competitive advantage.

The company provides an energetic, team-based work environment in an attractive new facility.

Reports to: Hardware Engineering Lead

Mission Statement:
• Designs and develops electronic circuits and assemblies to meet or exceed customer (internal/external) established requirements. Creates support documentation from these activities.
• Provide added Value thru Quality, Cost and Delivery efforts unmatched in the industry that position HED as the supplier of choice for electronics.
• Establish and Maintain Standard Library of Verified Circuits/Circuitry.
• Maintain Qualified Components/Parts List.
• Support compliance to APQP (Advanced Product Quality Planning) and Product Development Process.
• Strives for Continuous Improvement.

Essential Job Responsibilities:
• Design and develop electronic circuits and end products utilizing state-of-art microprocessor, micro-controller, digital and analog technology, to meet or exceed design and performance requirements established by internal and/or external customers.
• Knowledge of discrete power components to 10 Amps, desired.
• Assist the establishment of Project Plans and Schedules, Product Requirements, and Product Test Plans.
• Create electronic schematic designs.
• Test and Analyze: individual circuits, new product, and existing product performance with written report of results.
• Recommend design modifications to improve either customer and market acceptance or to accommodate changes in customer requirements.
• Coordinate with engineering staff for support activities required to complete projects as scheduled.
• Maintain proper time reporting, progress reviews and project updates as required.
• Supports Verification and Validation testing of new and existing products.
• Support established Project Plan and schedule to meet and achieve project deliverables as defined by the Project Manager.
• Ensure Product compliance to Industry Standard specifications of electronics hardware, assemblies and/or sub-assemblies, as required.
• Design for Assembly (DFA).
• Design for Manufacturability (DFM).
• Use computer aided engineering/design software tools and equipment to perform engineering tasks, including schematic capture, PCB layout, simulation, and analysis (knowledge of OrCAD or Cadence tools a plus).
• Hold and/or Participate in Design Reviews on new designs.
• Document Designs using analytical means to calculate and predict circuit performance.
• Establish, Maintain & Utilize Best Practices to promote consistency.
• Perform Root Cause Investigation and Analysis of field returns as needed.
• Participate/Contribute to Product/Process improvements.
• Create and maintain product documentation:
  o Bills of Materials (BOM)
  o Procurement Specifications
  o Environmental Testing Requirements
  o Production Testing Requirements
• Ability to read and interpret documents such as assembly drawings, schematic prints, as well as common scientific and technical journals.
• Ability to write reports, letters, comprehensive design proposals and progress reports.
• Ability to effectively present information orally and in writing to technical and managerial personnel and to small groups.
• Participate/Contribute and suggest product cost reduction initiatives.

**Technical Skills/Competence Required:**
• College degree, preferably EE major (BSEE).
• Minimum 3 - 5 years experience in design and/or development role for an industrial / Electronics Company servicing the OEM market.
• Must have proven ability to design microprocessor based controls, assemble prototypes, test the product and generate complete documentation.
• Must have a working knowledge of real-time embedded controls and software programming including assembly and high level programming languages like the “C” language.
• Design experience should include analog and digital electronics in both thru-hole and surface mount PCB technology.
• Knowledge (experiences is a plus) with continuous improvement including:
  o DFMEA
Product issue resolution & Corrective Actions
- Lean Process
- Six Sigma
- APQP
- SIL

- Leadership and good communication skills.
- Ability to lead and participate in cross-functional teams.
- Outstanding communications and interpersonal skills; Demonstrated ability to interface successfully with customers, influence others and excel in a matrix environment is a must.
- Proven excellence in verbal and written communication skills.
- Ability to define problems, collect data, establish facts, and draw valid conclusions. Ability to interpret an extensive variety of technical instructions in mathematical or diagram form and deal with several abstract and concrete variables.
- Establish Design Requirements of multilayer printed circuit boards (PCB layout) with surface mount and/or through-hole components.
- Create software LOW level drivers for PCB firmware functionality and check-out.
- If necessary, will travel to the customer's site, to commission and/or troubleshoot products. This may involve travel by plane and/or automobile, and may include overnight stays.
- Other duties as assigned by the Hardware Engineering Lead.

Relationships:
- Work with and provide direction to PCB designer.
- Work with Test Engineer for circuit and product verification and validation testing.
- Work with Product Validation and Support for Engineering Changes and Deviations.
- Provide assistance to Business Development in developing formal responses to customer requests for product quotations (RFQ).
- Work with Quality Assurance to identify and resolve any product related reliability issues.
- Work with RMA (Return Material) Department to facilitate defect identification, root cause analysis and documentation.
- Work with and direct out sourced vendors as needed.
- Assist with the transition of Prototype hardware to Production.
- Provide assistance and technical expertise as required by Customer.