

**Title: Product Design Engineer**

**Department:** Engineering

**Location:** HQ/Oakdale

**Supervisor:** Chief Executive Officer & President

**Employment Status:**

1. Exempt or Non-Exempt: **Exempt**
2. Regular, Temporary, Seasonal, or Intern: **Regular**
3. Full Time or Part Time: **Full Time**
4. Reg. Hours worked: **40/week**

**Job Summary:**

To research and design new sensor detection (electronic) products and support existing products.

**Responsibilities, Duties, Functions and Tasks:**

**1. Product Design**

- a. Research new methods of sensor detection
- b. Hardware design for sensors and using programmable devices
- c. Implement and design new products and improve existing products
- d. Create and maintain necessary documentation of product development
- e. Maintain necessary documentation, as appropriate, on existing products
- f. Define part specifications
- g. Write VHDL code for FPGA & CPLD for designed hardware
- h. Work with Software Engineer in upgrading the Calibrator Software to support new products
- i. Apply technical/functional expertise to product requirements
- j. Perform Software Testing, along with Writing Test Plans

**2. Support Manufacturing**

- a. Assist with problem solving needs
- b. Train on new products as necessary
- c. Incorporate Design for Manufacturability in all design projects

**3. MTA Quality System**

- a. Participate in audits of engineering
- b. Participate in resolving corrective and preventive actions
- c. Identify improvements for products, testing, or processes
- d. Contribute to the attainment of engineering quality goals
  - a. Support and adhere to quality system requirements

**4. Other tasks as assigned**

**Position Requirements:**

**1. Education**

- a. A minimum of a B.S. in Electrical Engineering, or related engineering degree

**2. Experience**

MTA requires knowledge, with no minimum amount of experience, of the following:

- a. The EtherCAT system.
- b. The TwinCAT PLC software system.
- c. Programming DE0-Nano to produce 25Mbit/s signal and send signal via SPI GPIO to DE2-115.
- d. Applying Altera Quartus II SOPC, TRL, VHDL, Verilog, Block Diagram and Eclipse Nios II.
- e. Instrumentation and controls in a manufacturing setting.
- f. Analog circuitry – filters, op-amps, transformers, comparators.
- g. Gate arrays and programmable devices.
- h. Performing digital simulation.

### 3. Skills

- a. Communication Protocols
- b. VHDL
- c. Quartus
- d. C Programming
- e. CE and other regulatory testing such as UL and CSA
- f. Solid Communication skills, both written and verbal at all levels.
- g. Self Directed.
- h. Problem Solving
- i. Team Player/Team Work
- j. Software:
  - i. Altium Schematic Capture
  - ii. Altera Software
  - iii. MS Office
  - iv. MS Excel
  - v. MS Project

### 4. Physical demands

- a. Must be able to sit and work at a desk the majority of the day and other physical demands customary to a typical office environment.

### 5. MTA Core Values

As an employee of MTA, you are expected to support and reflect the MTA Core Values, which are stated below.

Motion Tech Automation exists to **CREATE VALUE** for our stakeholders. Our stakeholders include our employees, our customers, our owners and our communities. We create value through **COLLABORATION, ENGAGEMENT and EXECUTION** of our strategies and initiatives. We maintain systems to hold each other **ACCOUNTABLE** for delivering outstanding results. Adhering to our core values enables us to develop differentiated motion control and position sensing technology, provide value added engineering and services to our customers, maintain high levels of quality and delivery, and deliver profitable growth to our shareholders.