Job title:
Hardware Engineer

Location:
Fareham, Hampshire

Reports directly to:
Project Manager

Strategic business unit:
Meggitt Sensing Systems is a leading supplier of high-performance sensing, monitoring, power and motion systems.

Meggitt Sensing Systems specialises in designing products to operate under harsh and demanding conditions. Our systems are used in a diverse range of markets and applications, from aircraft and space launchers to gas turbines and heart monitors. This requires Meggitt's smart engineering for extreme environments.

Product groups include Avionics, Inertial Sensing & Ignition, Performance Sensing, Power & Motion and Sensing & monitoring.

Meggitt Sensing Systems' organisation is based on product value streams – groups of products with similar technologies or applications providing customers with more integrated solutions and comprehensive through-life support. Engineering and manufacturing is located in Denmark, France, Switzerland, UK, USA and Vietnam. Our sales and support network extends across North and South America, Asia and Europe.

Purpose:
Develop and implement safety critical hardware solutions to meet programme requirements across the whole development lifecycle in accordance with customer requirements, legislation, human factors and business needs. Be responsible for the control of own work to meet agreed technical, quality, process, cost and schedule requirements.

Hardware engineers are required to work across the full development lifecycle although frequently they may only address part of the lifecycle on any one project due to process requirements for independence across design and verification activity.

Responsibilities:
- To interpret system requirements into clear unambiguous hardware design requirements and to rationalise Hardware Development Plans to identify workflow
- Documenting design activities, ensuring traceability of design to requirements, whilst also ensuring adherence to relevant project, company or regulatory standards
- To design, analyse, commission and verify analogue and digital circuits in accordance with defined requirements specifications including cost and reliability targets
- To plan and manage hardware qualification activities and specify, design, commission and verify equipment test solutions
- Generate, perform and validate results of verification plans, test plans, analysis, test case design and other specific kinds of tests.
- Work collaboratively with systems, software and mechanical engineers to ensure that hardware level requirements have been met and to overcome trade-offs or problems identified in the design.
- Contribute to the development of systems architectures considering alternative concepts and trade analysis in order to determine an evidence led preferred solution.
- Understand and implement the requirements for certification of safety critical products to the specified development assurance level requirements and processes

Primary working relationships & interfaces:
The hardware engineer will work to the design lead's technical direction and the project manager's priority direction. They will be required to work closely with software engineers as well as quality assurance and safety.

Key skills and competencies required:
- Bachelors degree in Electronic Engineering or equivalent
- Electronic hardware design with solid post qualification experience in three of the following:

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- Design of micro-processor circuitry
- Design of digital interface circuitry (eg UART, SPI/I2C, DDR2/DDR3, MIPI, level translation, differential signalling)
- Design of analogue circuitry (eg amplifiers, filters and signal sampling)
- Design for EMC and/or lightning protection
- Low voltage power supply and/or power switching techniques
- Ability to drive and manage PCB layout through sub-contract
- Experience of keeping engineering documentation up to date and under configuration control
- Experience of developing high integrity designs and it essential that they have safety critical experience
- Experience of hardware/software integration
- Experience of working (and tracking/reporting) to cost and timescale constraints

Desirable Skills
- Awareness of RTCA/DO254.
- Awareness of RTCA/DO160 or equivalent.
- Experience using Cadence OrCAD schematic capture, Allegro PCB Editor, LT Spice, pSpice.
- Experience in documenting designs in preparation for formal qualification / certification.
- Experience with TI Hercules (TMS570) family of micro-controllers.
- Experience with NXP i.MX 6 series of processors.
- Experience of design for manufacture.
- Experience of high speed design techniques and associated signal integrity / timing analysis.
- Experience of a formal engineering development lifecycle and demonstrable aptitude to apply rigorous development process.
- Experience with hardware data bus standards such as RS422/232, ARINC429, MIPI, DDR2/3
- Experience of generating test scripts using Python and/or LabView.

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