



Job Description - Senior Hardware Design Engineer

Job title:	Senior Hardware Design Engineer
Department:	Fundamental Technology/Industrial Converter Technology Department
Location:	Birmingham
Hours of work:	37 hours a week
Contract:	Permanent
Salary:	Competitive
Working hours:	Hours: 8:00 – 17:00 Mon -Thurs and 08:00 -14:00 on a Fri (1 hour lunch).
Reference:	10-1

About Zhuzhou CRRC Times Electric UK Innovation Center

Zhuzhou CRRC Times Electric UK Innovation Center (TEIC) is a subsidiary of the CRRC Corporation Limited, the world's leading propulsion and control systems provider in the rolling stock industry. Our mission is to design, develop and produce state of the art power electronics systems and components for automotive electric vehicles, rail, and renewable energy sectors. Please Follow us on LinkedIn or visit <https://teic.crrczic.cc/> for further details.

Overview of the role:

We are looking for a Senior Hardware Design Engineer to join our team at TEIC. This role will be responsible for circuit design, simulation analysis, test verification of power semiconductor devices.

What you will be doing in this role:

- Ensure hardware solutions, detailed technical design, PCB design (schematic and layout) meet technical specifications, including gate driver board and power board
 - Hardware design simulation calculations, including tolerance, worst case, derating, EMC, thermal simulation, etc., define technical specifications and prepare work reports
 - Design and development of control board and gate drive board for power semiconductor devices that rated 1200V or higher
 - Circuit testing, validation and calibration work, and complete test specifications and reports
 - Electronic material management, PCB package library management
 - Summary and validation of design experience/criteria
 - Collaborative reliability engineers to complete reliability testing and coordinate with system engineers for integration testing
 - Hardware circuit analysis, including FMEDAs, FTAs, and diagnostic coverage analysis, DFMEA, DRBFM reliability analysis, etc., define technical specifications and complete work reports
 - Work with project managers and manufacturing departments or contractors to ensure timely and cost-effective prototypes are produced at the expected cost
 - Responsible for electronic circuit test fixture preparation
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We would like you to have:

- First class degree or upper 2nd in Engineering, Electronics, Physics or other relevant field (or equivalent experience)
 - 5 years working experience on power electronics product design
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- Familiar with power electronic semiconductor device applications
 - Experience with high power switching power supply development project
 - Strong PCB designing skills
 - Good at Altium Designer, Cadence, Matlab or similar software
 - Have two-level or three-level driver application experience. The bus voltage of the inverter is 600V or higher. The rated power of the inverter is 200KW or higher.
 - Able to produce schematics of the gate driver board independently, including the design of the power circuit, gate driving circuit, protection circuit and control circuit.
 - Familiar with DSP, FPGA circuit design
 - Hands on experiences with uC resource allocation and Base Software configuration
 - Rich experiences in circuit board debugging and double-pulse testing
 - Previous experience in HALT, quantitative ALT would be desirable
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Benefits

TEIC is a great place to work with opportunities for professional and personal development. Our benefits include:

- 25 days holiday + 8 bank holidays
- Holiday allowance increase with length of service
- Bupa healthcare
- Healthcare vouchers
- Free on-site car parking
- Free EV charging
- Free lunch Monday to Friday
- Contributory Pension
- Life assurance
- Company sick pay
- Professional Membership fees paid e.g. CIPD, IEEE

To find out more about TEIC visit www.teic.crrczic.cc.