

Md. Masud Karim B. Eng (Hon), PgD, AMIRSE, MIET
Design Engineer

Profile:

An enthusiastic and self-motivated design engineer with capability of providing design solutions within the project constraints, managing small to medium size project and working to tight schedules in pressurised environments is one of the key achievements so far. Have the ability to communicate effectively at technical, customer (businesses) and social levels to ensure good teamwork to achieve goals.

Personal information:

Address: 48 Stirling Road, London, E17 6BT, UK
Contacts: +44 7901 715 581, masud.karim@theiet.org
Nationality: Bangladeshi (by birth) and British
Security Clearance: Previously SC cleared
Driving License: Full UK license

Recent Highlights:

- Successfully completed Network Rail's Signalling Design Conversion Programme which includes the following:
 - CAD tools – Microstation (including Plans)
 - Correlation
 - Route Relay Interlocking Design
 - Electrification Engineering Principals
 - Basic Signalling Design
 - MOD 3C – Verification Testing
 - Signalling Control Tables
 - Signalling The Layout
 - CDM for Designers
 - Solid State Interlocking Appreciations
- Currently working on a level 7 (MSc) project – PLC based emergency Interlocking System

Skills:

Technical Management Skills:

- Fully conversant to UK Railway “Fail Safe” Signalling Design to Railway Standards. This includes Aspect Signalling, Route Setting, Train Detection, Train Protection (AWS, TPWS) using Interlocking with RRI technology
- Conversant with UK Railway Regulation and Design Standards
- Proficient in power electronics topologies, design & analyse of SMPSU, UPS, Power Inverters and DC-DC converters
- Fully conversant in analogue, digital and RF electronics from prototype to production
- Excellent fault finding skills at PCB and schematic level
- Conversant with test equipment from bench to ATE
- Sound knowledge on GPIB, RS232 and Ethernet interfaces
- Sound understanding of thermal and EMC issues
- Experienced in writing technical documents (Design Specification, Instructions, Reports etc)
- Accomplished manager of small to medium size projects

Computer Skills:

Conversant with computer hardware assembling and maintenance

- **Programming:** Intel 8085, LabView, Visual C++ and PIC microcontroller (learning)
- **Design & Simulation:** Bentley MicroStation, ISP TOOLS, Cadence PSPICE and Mentor Graphics and LabView
- **Operating System:** Windows 9x – XP and Vista
- **Information Technology:** Microsoft Office 2003, MS Project 2003, MS Visio 2003
- **Networking:** Sound knowledge in Windows Server, TCP/IP, DNS and DHCP configuration

Communication Skills:

- Able to communicate with internal and external customers in written and orally
- Able to support clients with their technical problems.
- Ability to investigate the root cause of field-returned items and make logical recommendations.

Career History:

Signalling Designer

Mar/08 – Working

Network Rail, Croydon, Surrey, UK

Key Achievements:

- Produced Correlation and Signalling Design Specification for five TPWS incorporation project for Anglia Region (UK)
- Produced Scheme Design Works for TPWS Programme
- Produced TPWS detailed circuit design for five different locations (Signals)
- Designed Points conversion with split detections and Signals conversion for East Kent resignalling programme
- Actively provided design support for Basingstoke resignalling programme
- Designed Test emulator for Faversham Stage-1 resignalling
- Successfully completed PGDip in Railway Infrastructure Engineering from Sheffield Hallam University, UK

Summary of Responsibilities:

1. Analyse development remits, to help maintain a robust challenge to sponsoring engineers and managers, and take part as required in value management and risk identification/ analysis activities.
2. Manage and undertake the development of suitable engineering options for a proposal giving full consideration to safety, reliability, operational capacity modelling, maintainability, ease of construction, and environmental/whole life issues.
Engineering excellence is to be supported by:
 - a. Secure all relevant base data.
 - b. Review compliance with appropriate standards.
 - c. Using risk ID and evaluation methods as suitable, to evaluate and compare options.
 - d. Using feedback from all relevant past projects across the UK rail network, lessons learned etc.
3. Maintain strict change control on scope development; evaluate cost, time and performance impacts in conjunction with development management.
4. Participate in the selection of a single option for further development. Prepare or monitor preparation of reports, papers etc as necessary.
5. Prepare the full engineering data package required for commencement of the detailed design, and participate in answering clarifications/queries as needed.

6. Manage the engineering interfaces of allocated proposals with concurrent work in other disciplines, or within other programmes.
7. Assist with training and mentorship of junior engineers and trainees.

Test Equipment Project Engineer

Feb/07 – Feb/08

Goodrich Power Systems, Pitstone Green, Bucks, UK

Key Achievements:

- Proposed new Falcon ATE & raised £130k capital expenditure
- Identified all test requirement specifications Falcon Programme and written incomplete ones
- Recommended in writing alternative test techniques that will save the Operation £3000 per ship t in comparisons to the current tests
- Currently undertaken design activities that involves designing high current (1kA @28Vdc) switching hardware based on Solid-State topology

Summary of Responsibilities:

Working alongside Test Development engineers and Operations to develop a realistic production readiness plan for the introduction of all production test equipment

Develop an improvement plan to increase test efficiency. Develop unit specific test opportunities which can be implemented through the Supply Chain Improvement team.

Ensuring Verification & Validation (V&V) of production test equipment meet project milestones. Generate suitable project plans detailing input, output and intermediate milestones that are realistic and achievable

Test Equipment Development Engineer

Jun/04 – Sept/06

Elekta (former Phillips) Medical Systems, West Sussex, UK

Key Achievements:

- Designed Multi-leaf Collimation (MLC) test system using MOSFET topology
- Designed and build halogen lamp ageing test equipment within given deadline
- Investigated on Dose measurement module facility (Ion chamber) and recommended the possible cause which has already shown significant improvement
- Tested (including fault finding) of 6MV, 10MV, 15MV and 25MV XRAY linear accelerator system
- Tested (including fault finding) of 4MeV to 18MeV energy Electron system

High Powered RF Test Team Leader

Jul/03 – Apr/04

Thales Communications Ltd, West Sussex, UK

Key Achievements:

- Acquired various products knowledge including high power Transceivers (Up to 5kW RF power) which are widely used in Air Traffic Control and Naval Communications
- Developed a production test process that already achieved significant test efficiency against last years
- Developed Skills matrix, Work to do List and Test Faults register database
- Key Performance Indicators (KPI) on Delivery accuracy, Test efficiency and Test fault analysis

Radio Frequency (RF) Development Engineer

Sep/01 – Feb/03

Nokia Networks, Surrey, UK

Key Achievements:

- GSM900, 1800 and 1900, Edge and WCDMA Transceivers verified from design & manufacturing point of view within the given time scale
- Sixteen externally manufactured EDGE duplex filters verified within three weeks deadline
- Investigated into potential yield improvement and presented the findings to the plant management and Nokia Finland. The recommendations were implemented immediately into action to the production line

Radar Sub-Systems Integration Engineer

Jan/01 – Aug/01

TMD Technologies Ltd, Middlesex, UK

Key Achievements:

- Tested -15kVdc switch mode power supply unit from component level and systems level
- Integrated X-band Travelling Wave Tube (TWT) with -15kVdc PSU in CW and Pulsar mode
- Engineered an altitude test controller prototype for altitude tester, which was used as interlocks and monitoring purpose. The prototype was reduced significant test time and increased safety

Test Equipment Development Engineer

Jun/95 – Aug/96

GEC Henley Ltd, Kent, UK

Key Achievements:

- Assigned to manage a project which involves developing an Impulse Generator.
- Designed and built an Impulse Generator to BS7657
- Successfully commissioned and validated
- Liaised and negotiated directly with supplier to purchase parts and components

Education:

Sheffield Hallam University, Sheffield, UK

Jan 2009

Post Graduate Diploma (PgD) in Railway Signalling Design Engineering

Summary of Design Modules:

Railway Signalling Principles, Signalling Layout, Typical Circuit Design, Route Relay Interlocking (RRI) Design, Scheme Layout Design, Control Table Design, Electrification (Overhead and 3rd Rail) and Railway Signalling Test Assistant.

Oxford University, Oxford, UK

Jun 2005

Practical RF/Microwave Design Engineering

Summary of Design Topics:

Transmission lines (Micro-strips, Strip-lines), Couplers, Mixers, Matching Networks, Reflective Switches, Filter, Oscillator, Phase Lock Loop (PLL), Power Amplifier, Low Noise Amplifier (LNA) and Antennas Design.

Brunel University, Middlesex, UK

Jul 2000

B.Eng (Honour) Electrical & Electronic Engineering

Modules:

Power Electronics & Systems, Control Systems & Theory, Digital Signal Processing and Design of Intelligent Systems.

Final Year Project:

Microprocessor Controlled Solar Powered Inverter for Renewable Energy.

Designed and built DC-AC converter (Inverter) using half-bridge MOSFET topology, driven and controlled by Intel 8085 microcontroller.

HNC Electrical & Electronic Engineering

Modules:

Electrical & Electronic Principles, Systems Modelling, Safety & Reliability Systems.

Reference:

Available on request