**HIMANSHU RAI**

21, TEMPLE PLACE, HUNTINGDON, PE29 3RT

EMAIL: [himanshurai1@hotmail.com](mailto:himanshurai1@hotmail.com)

MOBILE: +44-7535682102

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| **PROFESSIONAL SUMMARY** |

I am a versatile, multi-skilled Engineering professional with a background in Electronics and Electrical Design Engineering, ranging from small RF transceiver modules to full-scale industrial printing and automation machinery systems. Having worked on all aspects of a Product Development lifecycle, I am quite flexible at working on multiple projects and doing multi-functional engineering roles within any organisation or team.

I enjoy working hands-on to deliver cutting edge technology, new innovations in products, and research and development projects working on “next-generation” systems into the marketplace.

I have managed Engineering teams ranging from 2 to 12 people, covering all aspects of Product Development (Electronics / Electrical / Embedded Software / Application Software / Mechatronics / Product Testing and Validation / Product Certification and Regulatory Compliance), and have strong knowledge of all the areas that I have managed teams and worked in for previous employers.

I have experience in managing projects of budgets ranging from ~£10K to ~£2M and driving / engaging multi-functional project teams to deliver products to defined scope(s) and timescale(s). I can also offer significant experience of managing risk within projects and working with business executive teams to define strategic and tactical roadmaps to help deliver company goals.

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| **ENGINEERING SKILLS** |

**ELECTRONICS ENGINEERING**

* **Analogue Circuit Design**
  + Filters for noise / sensitivity / RF suppression / EMI and EMC Compliance
  + Transducers / Sensors for Pressure / Temperature / Conductivity / Fluid Flow
  + Signal Conditioning for sampling and measurement with ADCs
  + Op-Amp based circuits for signal conditioning and filtering of signals for multi-stage circuits.
* **Digital Circuit Design**
  + Microcontroller based systems (CYPRESS / PIC / STM8 / STM32 / ATMEL / RENESAS / NXP / TI)
  + FPGA/ASIC based systems (ALTERA / ACTEL)
  + Communication interfaces like Ethernet (1G/100M/10M), USB (2.0 / 3.0), SPI, I2C, 1-WIRE SENSORS, TWI (Two-Wire Interface), UART (RS232 / RS422 / RS485)
* **Switch Mode Power Supply Design**
  + AC/DC converters ranging from 1W to 1KW
  + 1-phase and 3-phase SMPS design with various topologies (Flyback / SEPIC / Synchronous / Zero-Voltage Crossing).
  + DC/DC converters ranging from <1W to 100W / 12V-72V DC Input / 1.8V – 48V DC Output (Buck / Boost / Synchronous / Asynchronous / LDO topology designs).
  + DC/AC convertors ranging from < 1W to 100W power output / 12V-48V DC Input / 12-100V DC Output.
  + Li-Ion Battery Charger circuitry for AC / DC / USB-powered designs.
  + Designing Transformers for Power Supplies with multi winding outputs and meeting IEC/EN Safety requirements.
* **Schematic Capture / PCB Layout**
  + Schematic Capture for complex designs using latest CAD tools
  + PCB layout for 1 layer to 12-layer PCB designs using latest CAD tools
  + High-speed communications and signals layout to minimise EMI/EMC issues and ensure performance reliability
  + Thermal Management of designs for high-power / high density PCBs
  + EMI/EMC best-practice designs for PCBs and Products to ensure compliance to IEC/EN/UL/FCC standards
  + Safety best-practice designs for PCBs and Products to ensure compliance to IEC/EN/UL/CSA safety standards

**ELECTRICAL ENGINEERING**

* **Electrical Circuit Design**
  + Designing circuits for safety / protection of complex electromechanical assemblies using RCDs / RCBOs / MCBs / MCCBs / Fuses etc.
  + Designing electrical circuits for Industrial PLCs and bespoke control units.
  + Sensors and Actuators interfacing and design for standalone machinery and complex industrial machinery lines.
  + Power Supply Design and Circuit Protection for Industrial Control Panels
  + Safety Systems design using Safety Relays, Controllers and PLCs for implementation in Industrial Control Panels / stand-alone Machinery / complete Industrial Machinery lines.
  + Control and Protection circuitry design for single-phase and 3-phase motors (Servo / AC / BLDC types)
  + Temperature and Pressure control / monitoring / safety circuitry design for heating and cooling applications.
  + High-precision sensing and imaging systems using sensors, encoders and image acquisition systems from Keyence.
  + Wiring / Cabling selection for circuitry to ensure EMI/EMC compliance.
  + Wiring / Cabling selection for derating power cables and cables carrying high currents to meet IEC/EN/UL/CSA compliance standards.
  + Flexible electrical designs to meet global standards for field-wiring requirements and regulations.
* **Industrial Control Panel Design**
  + Using CAD tools to layout Industrial Control Panel designs
  + Producing detailed drawings for build and manufacture of Panels
  + Verification and Validation of complex electromechanical panel designs.
  + Regulatory compliance for Control Panels and complex Machinery systems to IEC/EN/UL/CSA standards.
* **Machine Design**
  + Defining complex architectures and system level interfaces for complex machinery systems
  + Designing cable and system interconnections for machinery
  + Producing detailed Runouts / wiring schedules / Bill of Materials for machinery builds
  + Validation of complex machinery systems and complete production line assemblies
* **Programming**
  + Complex PLC programming using Ladder Logic and Structured Text
  + Detailed knowledge of Allen Bradley CompactLogix/ControlLogix PLCs
  + Working knowledge of Siemens PLCs
  + Creating user-friendly and intuitive HMI systems to control complex machinery and line assemblies
  + Debugging complex PLC programs and fault-finding issues with systems down to component levels
  + Programming FANUC robots for bespoke industrial applications

**SOFTWARE ENGINEERING**

* **Embedded Programming**
  + Extensive experience of programming microcontrollers with C/C++
  + Coding for communications interfaces – SPI / I2C / UART / 1-Wire / Two-Wire / USB / Ethernet
  + Interfacing to RF communications modules for Bluetooth / Zigbee / ISM-band
  + Knowledge of various IDEs – PSOC Creator / Keil / Eclipse / MPLAB / Atmel Studio / STM Cube / Cosmic / Rowley CrossWorks
  + Writing and debugging peripheral drivers / middleware for complex products in C/C++
  + High-level application code for embedded systems using C/C++
  + JTAG debugging
  + Creating applications for System-on-Chip type devices like PSOC 3/5 from Cypress Semiconductors
  + Basic experience with VHDL, but self-learning and increasing knowledge and exposure currently.
  + Experience of debugging VHDL code for Altera and Actel FPGAs
  + Working knowledge of Quartus IDE for FPGAs
* **Application Software Programming**
  + Leading (and defining) Sprints and working within Scrum teams.
  + Able to work in both Agile and Waterfall methodologies of software development.
  + Creating applications for .NET framework using C# / C++ / Visual Basic in Visual Studio
  + WinForms and WPF applications development using Visual Studio tools and Blend for Visual Studio (XAML)
  + Automation Testing and Scripting using Python for PC and Raspberry Pi based test rigs.
  + Basic GUI development for Python Applications using TkInter.
  + Software architectural design patterns implementation (MVVM / MVC)
  + Using MVVM Light / Prism / Caliburn.Micro for WPF frameworks implementation and MVP framework for WinForms applications.
  + JSON / XML for data interchange in applications
  + Testing/debugging applications for features down to line-level code.
  + Database integration using SQL / MongoDB for CRUD operations.
  + Multi-threaded code safety for applications
  + Use of ReSharper to maintain code structure and code quality
  + Version control and source code management using Subversion and GitHub
  + Setup and administration of build servers like Jenkins for automated build generation and testing.
  + Functional testing of software against use-cases and using tools like JIRA/Bugzilla/Trac/Trello to report bugs and successful test results to engineering teams

**MECHANICAL DESIGN**

* Good Mechanical knowledge and design skills to create enclosures and assemblies using Solidworks or DesignSpark Mechanical.
* Using 3D printers for rapid prototyping of concepts and ideas to validate and improve designs as needed.
* Detailed drawings for components and assemblies for manufacturing for low volume.
* Reviewing mechanical drawings and designs from an electro-mechanical perspective.

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| **PROFESSIONAL TOOLS KNOWLEDGE AND SKILLSET** |

* **FOR ELECTRONICS ENGINEERING**
  + ALTIUM DESIGNER – Schematic Capture / PCB Layout / Library Management
  + Designspark PCB - Schematic Capture / PCB Layout / Library Management
  + P-CAD 2004 - Schematic Capture / PCB Layout / Library Management
  + LTSpice / Simetrix – Circuit Simulation
  + Oscilloscopes / Multimeters / assorted Laboratory equipment
  + Able to solder components down to 0402 level by hand
  + Vector Network Analysers and Spectrum Analysers for RF validation and debugging
  + EMC / EMI test and measurement tools
* **FOR ELECTRICAL ENGINEERING**
  + Solidworks Electrical – Circuit Design / Schematics Capture / Wiring Design
  + Designspark Electrical – Circuit Design / Schematics Capture / Wiring Design
* **FOR SOFTWARE ENGINEERING**
  + Keil uVision IDE – for embedded C/C++ for Microcontrollers
  + MPLAB IDE – for embedded C/C++ for Microcontrollers
  + STM Cube – for embedded C/C++ for Microcontrollers
  + Atmel Studio IDE – for embedded C/C++ for Microcontrollers
  + Quartus IDE – for VHDL and Altera FPGA based development
  + Rowley Crossworks IDE – for embedded C/C++ for Microcontrollers
  + Microsoft Visual Studio IDE – for C# / C++ / VB.Net based Applications for Windows
  + PyCharm / Ninja / VSCode IDE – for Python Scripting and Application development
  + Blend for Visual Studio – for XAML based UI design
  + SQL Server 2018 – for SQL based database management
  + ReSharper – Code Quality and Maintenance tool
  + Jenkins – Automated Build Server
  + GitHub – Source Code Control
  + Subversion – Source Code Control
  + Zendesk / Bugzilla / Trac – various platforms for bug reporting / feature tracking for development tasks
* **FOR MECHANICAL ENGINEERING**
  + Solidworks Mechanical 2018 – for CAD modelling of enclosures / assemblies, and ECAD/MCAD integration for Electrical Panels and PCB designs.
  + Designspark Mechanical – for Industrial Control Panel layouts / electronics and electrical assembly integration.
* **GENERAL IT TOOLS**
  + MS OFFICE – WORD / EXCEL / POWERPOINT / PROJECT / VISIO
  + SMARTDRAW
* **DATABASE MANAGEMENT / ERP TOOLS**
  + SAP / Datawright / Advitium / Infor Syteline

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| **EMPLOYMENT HISTORY** |

* **Design Engineer / Self-Employed** at **DEVARC Engineering Limited UK**
  + From July 2019 – January 2020
  + Client Name – Beryl Limited (London)
* **Engineering Manager (Electronics / Electrical / Software / Testing)** at **Tonejet Limited, UK**
  + From September 2016 – June 2019
* **Senior Electronics Engineer** at **Tonejet Limited, UK**
  + From April 2016 to September 2016
  + Promoted to Engineering Manager role after 6 months
* **Hardware Team Leader, R&D** at **Cyan Technology Ltd, Swavesey, UK**
  + From July 2014 to April 2016
* **Senior Design Engineer** at **Itron Metering Solutions, Felixstowe, UK**
  + From May 2013 to July 2014
* **Design Engineer** at **Danaher ICG UK (West Control Solutions), Brighton, UK**
  + From June 2010 to May 2013
* **Engineer - Emergency Services** at **Petards Joyce-Loebl plc, Newcastle, UK**
  + From September 2008 to February 2010

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| **PROJECTS / DESIGN EXPERIENCE** |

* **TFL Bike Integrated Lighting and Tracking Module – Project for Beryl Limited (London)**
  + Design of Dynamo powered On-Bike Module to provide safety lighting and GPS tracking capability for London TFL Boris Bike Scheme
  + Multiple Buck DC/DC supply design for module to power Digital MCUs (Cypress PSOC6 and Atmel AtTiny family) and LED light modules.
  + 4.2V Li-Ion Battery Charger Circuit design
  + UBLOX GSM and GPS module circuit and power supply design (LDO topology).
  + Laser Driver circuit design for constant current driver for module (Buck topology).
  + 6 – layer PCB Layout for design, including controlled impedances for USB 2.0 and RF circuitry
  + Design Validation and Debugging using lab equipment and RF test equipment
  + Product Certification to Radio Equipment Directive for Bluetooth LE / GSM / GPS operation.
  + Design for Manufacture reviews with Mechanical and Production Engineering to guide mould tooling and test processes.
* **TFL ATE Test Rig for PCB Design – Project for Beryl Limited (London)**
  + Design of self-contained ATE test rig for validating PCB for TFL Bike Module in factory.
  + Design based around CODA test jig and ancillary equipment.
  + Electrical Design for test rig done with DesignSpark Electrical to integrate PSU / DAQ / USB Hubs / Raspberry Pi module / Arduino NFC Reader module
  + Test Rig Software development based on Raspberry Pi 3+ Module using Python
  + Test Interface PCB design to allow for modular test rig plug-play solution in factory
* **Cyclone C4 Can Printer – Tonejet Limited**
  + Complete electrical/electronic system design for machine to print on beverage cans using Tonejet printing technology.
  + PLC programming / HMI design / system architecture design
  + Creating CAM profiles and complex control architecture for integrating Rockwell Automation’ ITRAK technology within machine
  + Software / Hardware integration and validation of systems for running machine
  + Integration of Keyence Vision system for image inspection
  + Multiple Servo motor control and integration for machine operation
  + Panel Layout and design
* **Cyclone Can Primer – Tonejet Limited**
  + Complete electrical/electronic system design for machine to prepare cans for feeding into Cyclone C4 printer for printing
  + PLC programming / HMI design / system architecture design
  + Controls validation and machine debugging
  + Panel Layout and Design
  + Wiring runout/schematics for Production
* **Vacuum Can Transfer System – Tonejet Limited**
  + Integration of FANUC 6-axis Robot with own electrical/electronic design to transfer cans between conveyor systems using vacuum pick-up systems.
  + PLC / FANUC Robot programming
  + Robot Cell safety system design
  + System Validation and Debugging
* **Incoming Can Inspection – Tonejet Limited**
  + Integration of bespoke scroll and conveyor system with PLC control system and Keyence Vision System camera to inspect cans for deformities before being passed in to printing line.
  + Complete electrical/electronic system design for machine to prepare cans for feeding into Cyclone C4 printer for printing
  + PLC programming / HMI design / system architecture design
  + Controls validation and machine debugging
  + Panel Layout and Design
  + Wiring runout/schematics for Production
* **Tonejet High-Voltage Power Supply PCB Design – Tonejet Limited**
  + Re-design of existing HV Power Supply PCB to provide more power and better stability and monitoring of power supply rails.
  + 6-layer PCB design
  + DC-DC convertor topology taking 48V DC input and generates multiple isolated voltage rails.
  + Conversion of DC voltages from 48V to 12V (12W) / 3.3V (1W)
  + Conversion of DC voltages from 48V to 300V (200W) and 48V to 1500V (1W) level
  + Electronics design / schematic capture / PCB Layout / design validation
* **Tonejet Gen3 Module Controller PCB – Tonejet Limited**
  + New design of module control PCB to provide analogue / digital circuitry interfaces for Tonejet Print Module operation.
  + Interfaces for ADCs / Op-amp circuits to filter pressure sensor signals / control of voice-coil drivers / communications interfaces via USB and Ethernet
  + High-voltage current monitoring and circuit protection system on PCB.
  + Based on Cyclone 5 LP FPGA from Altera (Intel)
  + 4-layer PCB design / schematics capture / concept generation
* **Tonejet Datafeed Interface PCB – Tonejet Limited**
  + New Design for 8 heads to be controlled by existing Datafeed system.
  + 8 x Optical SFP Transceivers for high-speed 1Gig Ethernet on PCB
  + High-Speed Mezzanine Connector (HSMC) for interface to Altera proprietary FPGA development Kit using Arria 2 FPGA.
  + Controlled Impedances and matched traces for high-speed communications.
  + 4-layer PCB design / schematics capture / debugging and validation
* **CyLec Connect RF Modem – Cyan Technology**
  + Standalone sub-GHz RF modem design with non-isolated AC/DC power supply, RS232 communications port, based on STM32 Microcontroller with a dedicated internal PCB antenna.
  + Product Architecture definition to allow for modular design and flexibility for variant adaptation.
  + STM32 Microcontroller Circuit Design / Testing
  + Writing STM32 Code for Product Debugging / Testing / Hardware Layer Drivers (using Keil uVision and Embedded C)
  + Product Mechanical Enclosure concept and design/development (managing an external contractor to the design, based on own design concepts)
  + Switch Mode Power Supply Design (design reviews and managing contractor doing the hardware design)
  + PCB Layout for SMPS / RF Module / Microcontroller using Altium
  + Board bring-up/de-bugging
  + Project Management and Progression in conjunction with Operations / Purchasing / Sales & Marketing
  + Design of various test PCBs and harnesses to aid in debugging of product / Writing associated code in C/C#
  + Design of Test Rig for Automated “bed-of-nails” testing of PCB, and writing Test Applications in Visual C#
  + Regulatory Compliance testing for EMC / Safety /Radio Approvals
  + Managing Mechanical Moulding / Tooling process with Far-East Vendors in conjunction with Operations
  + Generating Product Specifications/ Documentations / Test-Specifications and other related articles.
* **CyLec Connect Installation Tool – Cyan Technology**
  + Hand-held battery powered / DC powered Installation tool used to perform field-installs for the CyLec Connect RF Modem in the field. Based on USB-Serial converters, and with a Rechargeable Battery Power Supply / USB Power Supply design.
  + Battery Charger Circuit Design
  + DC/DC Converter Circuit Design
  + USB-Serial Converter circuit design, including safety isolation for all accessible ports on product.
  + PCB Layout for design using Altium
  + Product Mechanical Enclosure concept and design/development (managing an external contractor to the design, based on own design concepts)
  + Board Bring-up/Debugging
  + Writing test applications and harnesses for product in Visual Studio C#.
* **SPA2 RF Module for India / South Africa – Cyan Technology**
  + Next-generation RF Node for Cyan RF Mesh solutions based on Atmel MCU, with dedicated sub-GHz RF Transceiver.
  + Managing Line-report responsible for work on project.
  + Validation of Product in-house for emissions, receiver sensitivity and other related parameters
  + External Compliance Testing for Radio Approvals at TRAC
  + Creating Channel Plans for new country deployments like South Africa, and then writing the embedded C code for channel plans for the product.
  + Testing / Validation of new channel plans and existing Channel Plans on new hardware
  + Generating Test Specifications / Product Documentation
* **GPRS Data Concentrator Unit (DCU B3) – Cyan Technology**
  + Next-generation Data Concentrator Unit for Cyan RF Mesh solutions, based on an Atmel MCU, running a Linux OS, with back-haul options of GPRS / 2G Modem / Ethernet / USB, and on-board NAND Flash Storage
  + Circuit Design for GPRS Modem Power Supply capable of handling 2A Transmission Current spikes
  + Re-design of board Power supply architecture to add robustness to ESD / Surges / EFT etc.
  + Re-layout of PCB to reduce emissions from SDRAM data/clock lines and reduce crosstalk between RF Nodes on PCB.
  + Board bring-up / Validation / Debugging (also managing contractor doing design test & validation)
  + Generating Test Specifications / defining test processes and implementations / driving software resources to implement Test Rig and Test Applications.
  + Writing test applications and harnesses for product in Visual Studio C#.
* **UK Electricity Smart-Meter Product – Itron UK**
  + New Meter design for UK Household metering market, encompassing compliance with the new SMETS 2.0 Smart Meter specification from the DECC.
  + Design / Validation of offline Flyback AC/DC PSU for 10W Power Supply
  + Design / Validation of DC-DC Buck converter for Power Supply
  + Design / Validation / Prototyping Proof-of-Concept designs
  + Re-design of Digital Circuitry to eliminate cost from legacy Design Blocks inherited in product
  + Review / Guidance to PCB Designer for PCB Layout
  + Creating Prototype PCBs to debug/validate Design Blocks prior to Product Implementation
  + Bill of Materials Management, liaising with Supply-Chain / Manufacturing Engineering to ensure product met Total Manufacturing Cost (TMC)
  + Lead Engineer, responsible for Project management of Hardware design phase.
  + Microcontrollers used – PIC24F / STM32F (32-Bit Microcontrollers)
  + Generating Documentation for Firmware implementation
  + Working with Mechanical and Firmware teams to ensure product met Market and Regulatory requirements for the UK.
* **Germany Electricity Smart-Meter Product – Itron UK**
  + New Meter design for Germany Domestic metering market.
  + Design / Validation of 128-node RS485 Bus serial interface for Meter
  + Design / Validation of DC-DC Regulator for Power Supply
  + Design / Validation / Prototyping Proof-of-Concept designs
  + Review / Guidance to PCB Designer for PCB Layout
  + Creating Prototype PCBs to debug/validate Design Blocks prior to Product Implementation
  + Bill of Materials Management, liaising with Supply-Chain / Manufacturing Engineering to ensure product met Total Manufacturing Cost (TMC)
  + Working with Lead Engineer responsible for Project management of Hardware design phase to ensure project timelines were met.
  + Generating Documentation for Firmware implementation of RS485 interface from STM32F Microcontroller.
* **DYNISCO 1480 Pressure Indicator – West Controls Solutions UK**
  + Custom Product designed for the Far East and European Plastics Industry.
  + Design of internal electronics circuitry and PCB layout to interface with Pressure Transducers and Temperature Sensors (RTD, Thermocouples, Linear Inputs)
  + Developing Embedded C Firmware to drive functionality of Controller, including parts of real-time PID control algorithm.
  + Project management including commercial guidance on the product/project planning, defining product specifications, design of product circuitry and PCBs, testing/validation of product internally and with customer, full regulatory compliance of Product.
  + Transfer to Manufacturing and Operations of Product Design and Launching of Product successfully on-time and at target cost.
  + Writing test applications and harnesses for product in Visual Studio C#.
* **DYNISCO 1490 Pressure Indicator – West Controls Solutions UK**
  + Custom Product designed for the UK/USA/European Plastics Industry with improved Pressure/Temperature Sampling
  + Re-design of internal digital and analogue circuitry to implement the increased sampling, higher display resolution, and additional feature requests.
  + Developing Embedded C Firmware to drive functionality of Controller, including parts of real-time PID control algorithm.
  + Managing on-site contractor responsible for PCB layout
  + Reviewing design work to ensure customer requirements and regulatory standards compliance.
  + Writing Embedded C Firmware for clients’ end-customer specific applications like Homogenizers.
  + Writing test applications and harnesses for product in Visual Studio C#.
* **DYNISCO UPR/ATC Pressure Controller – West Controls Solutions UK**
  + Custom Product designed for UK/USA/European Plastics Industry with 2 Pressure / Temperature Inputs, and Graphics LCD display.
  + Product concepts and circuitry for the design, prior to off-loading design work to off-shore Contract Company
  + Reviewing and managing the design work done by External Contract Company.
  + Project-managing Alpha and Beta testing (internally and externally)
  + Liaising with the customer for project completion
  + Providing Commercial Team with guidance on the product/project progression.
  + Manufacturing and Operations product roll-out to the Factory.
  + Working with Test-houses to get the product approved for EMC/Safety in US / Europe.
* **FRIGOSYSTEMS P4300 Temperature + Pressure Controller – West Controls Solutions UK**
  + Custom Product designed for European Chillers Industry, with 2 Temperature Inputs, and Pump Motor Controller Function.
  + Digital and analogue hardware / PCB Layout for Controller
  + Porting of existing firmware from older ATMEL 8-Bit 8051 Microcontroller to ST 16-Bit Microcontroller, including the real-time PID temperate/pressure control algorithm for product, in Embedded C.
  + Managing a team of 4 contractors working on the project (2 on-site / 2 off-site) to ensure that the porting of firmware was done correctly and to schedule.
  + Writing test applications and harnesses for product in Visual Studio C#.
  + Testing and validation of Product at Alpha and Beta stages (internally and with Customer)
  + Ensuring the product met the required EMC and LVD regulatory standards for CE Compliance.
* **CAL3200 / 3300 / 9300 / 9400 VAVE Project – West Controls Solutions UK**
  + Project focussed on reducing the “cost of product” and reducing “complexity of manufacturing” from a Legacy Low-Cost High-Volume Products design.
  + Implemented AC/DC 3-Watt PSU Design on product, to increase efficiency of product, and reduce Power Supply Failures being reported in legacy product from customers.
  + Reduce / Re-design electronics circuitry to maximise cost reduction / reduce number of unique components.
  + Re-layout of PCB from double-sided to single-sided to reduce manufacturing time per product by 30% and Bill of Materials cost reduction by 25% across the range of products.
  + Design / roll-out of new Tester, in conjunction with Manufacturing Engineering, to ensure better First Pass Yield / lower test failures rate due to legacy tester issues.
  + CE compliance (EMC/LVD), UL approval to the UL873 Standard, and safety approvals from CSA (Canadian Standards Agency) and FM (Factory Mutual) Approvals.
* **BINDER LED Controller – West Controls Solutions UK**
  + Custom Product designed for incubator and heater-dryer oven applications for a European customer, with an RTD analogue input, and custom PCB Layout.
  + Co-Project Manager liaising between the Design Contractors in UK, and Firmware Design Team in Kassel, Germany to ensure the Product was designed to meet the specification from the customer.
  + Product approval for CE and Safety standard UL61010 as applicable to US / Europe.
  + Project managing Factory Rollout, including Manufacturing Support.
* **BLICKMAN 3 WIFI/ETHERNET Controller – West Controls Solutions UK**
  + Upgrading an existing Temperature Controller to add Wireless Connectivity to enable data/temperature to be logged and monitored over a WiFi link, and to allow multiple units to be connected and monitored in real-time.
  + Designed Circuitry and PCB for integrating the Wi-Fi Module.
  + Design Validation to ensure that the product met the required specifications and functionality.
  + Getting the product through CE compliance (EMC/LVD) and UL Approval
* **ARIZANT DC70 Project – West Controls Solutions UK**
  + Upgrading a Legacy Controller to meet update UL/IEC 60601 and UL/IEC 61010 Approvals requirements.
  + Implementing Design changes to meet the UL61010/60601 latest requirements.
  + Getting the product through CE compliance (EMC/LVD) and UL approval(s) to the UL61010/60601 Standards.
* **Provida 4000 – Petards Joyce-Loebl UK**
  + An in-vehicle Mobile Speed Enforcement Device. Own role was to design and develop the Speed Measurement Module (SMM), which would calculate Speed, using Distance-Time method, and transmit data to a Modular Unit, which would then record and store the data.
* **SCOUT – Petards Joyce-Loebl UK**
  + Mobile ANPR Solution, integrating a Mini-ITX PC with various peripherals, to allow Police Forces to monitor number plates at any location, simply by placing the SCOUT and required ANPR Cameras (also designed and supplied by Petards).

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| **EDUCATIONAL BACKGROUND** |

* **M.E. (Electronics & Communications Systems Engineering)**, University of Wales, Swansea, UK (2007) Grade: 2.1 (Honours)
  + NOTE: This was an Integrated B.E. and M.E. (Hons.) Course from September 2004 to May 2007
* **BTEC Higher National Diploma (Electrical & Electronics)**, EDEXCEL, UK & British Council (2004) Grade: Distinction

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| **REFERENCES** |

Sacha Manson-Smith, Chief Technology Officer

Beryl Limited UK

The Green House, 244-254 Cambridge Heath Road, London E2 9DA

Tel: +44 (0) 203 003 5044 / Email: [sacha@beryl.cc](mailto:sacha@beryl.cc)

Richard Pellant, Project Manager

Beryl Limited UK

The Green House, 244-254 Cambridge Heath Road, London E2 9DA

Tel: +44 (0) 203 003 5044 / Email: [richard.pellant@beryl.cc](mailto:richard.pellant@beryl.cc)

Andrew Lee, Operation Manager

Tonejet Limited UK

Ash House, Melbourn Science Park, Melbourn SG8 6EE

Tel: +44 (0) 1763 266 566 / Email: [Andrew.Lee@tonejet.com](mailto:Andrew.Lee@tonejet.com)

Phillip Green, Printhead Development Manager

Tonejet Limited UK

Ash House, Melbourn Science Park, Melbourn SG8 6EE

Tel: +44 (0) 1763 266 566 / Email: [Phillip.Green@tonejet.com](mailto:Phillip.Green@tonejet.com)

George Alexander, Test Team Leader

CyanConnode UK Limited

Merlin Place, Milton Road, Cambridge CB4 0DP

Tel: +44 (0) 1223 225 060 / Email: [George.Alexander@cyantechnology.com](mailto:George.Alexander@cyantechnology.com)

Stephan Sommer, Global R&D Director

West Controls Solutions, Hyde Business Park, Lower Bevendean, Brighton BN2 4JU

Tel: +44 (0) 1273 810 124 / Email: [Stephan.sommer@west-cs.com](mailto:Stephan.sommer@west-cs.com)

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| **ADDITIONAL INFORMATION** |

Date of Birth: 25th August 1984

Languages Spoken: English, Hindi

Nationality: British