



Summary

Chris is a successful Chartered Engineer, Project Manager and Company Director. He has over 30 years' experience of electrical, electronic, micro-electronic and software design.

He is an acknowledged expert in all aspects of high volume product manufacture (contracts, industrial design, materials, design methods, testing, distribution, and outsourcing). He has extensive experience of forensic engineering of software, electronic & electrical systems. He has experience of the management of high-value, multi-disciplinary, international technical projects, forming and directing international joint-

venture companies and experience of Far-East high-volume electronic manufacturing and outsourcing.

He is qualified and extensively experienced as an Expert Witness in the UK, Europe and USA and is a qualified and experienced International Arbitrator and Mediator. In short, he has a unique combination of high-level business, technical and dispute resolution skills.

Education

Bachelor of Science, BSc (hons). Computer Engineering.

Master Degree in Business Administration, MBA.

Doctor of Philosophy, PhD. Microelectronics.

Diploma in Arbitration. Chartered Institute of Arbitrators.

Arbitration Pupillage. Worshipful Company of Arbitrators Pupillage Scheme.

Professional Qualifications

Engineering & Business

- Chartered Engineer
- Fellow of The Institution of Electrical Engineering Technology (formerly IEE)
- IET President's List, (Arbitration, Mediation, Expert Witness)
- Member of Institute of Directors
- Freeman of The City of London

Legal

- Member (current Chairman) of The Academy of Experts
- Qualified Commercial Mediator (QDR)
- Fellow of Chartered Institute of Arbitrators
- CIArb Presidential Panel (Mediation)
- British Marine Federation. Accredited Mediator
- Liveryman of The Worshipful Company of Arbitrators
- Member of London Court of International Arbitration

Pro-bono Activity

Chris is the current Chairman of The Academy of Experts and also manages the Pupillage Scheme of the Worshipful Company of Arbitrators. His other recent pro-bono activity includes: Member of the Electronics Leadership Council and Electronics Innovation and Growth Teams (Government Advisors on the UK Electronics Industry), Member of the IET Information Technology Sector Panel, Chair of TechUK Electronic Design and Innovation Group, Member of Semiconductor Businesses Association Executive Committee, Executive Committee Member of Asia Pacific Electronics Businesses Association and Pacific Rim Electronic Businesses Association.

Professional Experience

1999 –
date

Innotec Ltd. *Technology & Business Consultancy* *Great Sampford, Essex. **Managing Director***

In 1999 Chris formed Innotec and became its Managing Director. Innotec has become a major force in the provision of consulting services in electronic technologies and business.

His assignments have included Joint-venture Formation, Corporate Restructuring, ADR and Expert Witness, Forensic Engineering, Design Trouble-Shooting, Business Development, Manufacturing Evaluation, Product Evaluation, Intellectual Property Appraisal, Major Project Management, Due Diligence and Government Technology-Promotion assignments throughout the world. Further details may be found at www.innotec-uk.com.

Major clients include Samsung, Hynix, Nanya, Micron, Marconi, BBC, BT, Pace, QinetiQ, NG Transco, Cyan, LG, TWI, SEI, UK Broadband, Patientline, Crown Prosecution Service, DTI (BERR), UK Foreign Office, Invest NI, Yorkshire Forward, Aberdeen Asset Management, MTI Managers, and many of the leading law firms in the UK, USA and Far East including Clifford Chance, Freshfields, Weil Gotshal & Manges, DLA Piper, O'Melveny & Myers, Slaughter & May, Eversheds, Orrick and Simmons & Simmons. A case list for his dispute resolution assignments may be found at the end of this document

1990 -
1999

Plextek Ltd. *Electronic Product Design Consultancy* *Great Chesterford, Essex. **Director of Digital Engineering***

Unico Communications Sdn Bhd. *Telecoms & RF Equipment Manufacturer* *Penang, Malaysia. **Technical Director***

During his employment with Plextek Chris held two directorships.

Plextek specialises in the development of electronic equipment and software. It counts among its clients such blue-chip companies as Hewlett Packard, NTT, Olivetti, LSI Logic, Rockwell, Fujitsu, Nortel, BT, Tracker and GPS and government departments such as The Home Office and the Department of Trade and Industry. As Director of Digital Engineering at Plextek, Chris was key in the strategic development of the company and its profitable growth from the six people that it was when he joined to the 90 that it was when he left. In addition to corporate management responsibilities, he was responsible for the establishment and growth of the ASIC, Digital Design and Digital Signal Processing specialties within the company and was responsible for the technical, line and commercial management of the Digital Engineering Group.

Chris was one of a two-man team from Plextek who negotiated and set-up Unico Communications Sdn Bhd. This was a joint-venture company of Plextek and Unico Technology, a high-volume manufacturer based in Penang, Malaysia. The joint-venture agreement was signed in the presence of the Malaysian Prime Minister. Chris was appointed Technical Director of the new company which went on to develop and introduce to manufacture a wide range of high-volume, domestic telecommunications products and continued to develop and introduce a number of OEM products in the automotive, industrial and consumer markets.

1983 -
1990

McDonnell Douglas Computer Systems. *Computer Manufacturer* *Hemel Hempstead, Herts. **Design Engineer to Project/Group Manager***

During his time at MDCS, Chris worked on the design of a range of high-performance digital products, CPUs (discrete and integrated), computer network and peripheral controllers and complete computer systems. He was responsible for the introduction of ASIC technology to MDCS. He recruited and managed the ASIC development team and was responsible for the purchase of CAE equipment and commercial negotiations for the supply of silicon. The team completed a large number of high-performance, large ASIC designs, and had an unbroken record of 'right first time' design.

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Chris also led a software development group responsible for the development of diagnostic software and controller firmware.

He project managed large multi-disciplinary international projects and was responsible for all aspects of those projects from development to introduction to manufacture in both the UK and USA. He was also involved in system integration projects using those computers in distributed business applications.

1980- **Honeywell Information Systems. Computer Manufacturer**
1983 *Hemel Hempstead, Herts. Design Engineer.*

At Honeywell, Chris designed digital communications and network equipment for the DPS6 range of computers which were used in resilient data processing and industrial control applications. This involved design with microprocessors, discrete logic and fibre-optic components. He also wrote diagnostic and driver software.

Chris was later involved in the installation and commissioning of the first resilient fibre optic link at its customer site (a police command and control system). This involved system design and integration, customer training and the training of support and commissioning engineers.

He was also responsible in the design of communications product for use in power station control and monitoring systems.

Case List

Type & Venue of Case	Brief Description
Expert Witness Cases	
Alleged Breach of Contract (UK Courts)	Expert witness assignment in a dispute regarding the design and implementation of a smart-card based security system and supporting IT infrastructure. (CPSL versus GB Electronics).
Alleged Negligence in Design (UK Courts)	Technical testimony and court appearance at the High Court in London regarding alleged negligence in the design of a microcontroller based high-volume security product.
Alleged IP / Antitrust Action (USA Courts)	Technical reports and briefing of large (40+ lawyers) international legal team regarding IT equipment and memory architectures. (Rambus versus Micron)
Alleged Breach of Contract (UK Courts)	Expert witness assignment regarding the design and implementation of an Application Specific Integrated Circuit (ASIC) for use in a helicopter launched sonobuoy. (Ultra Electronics versus Rood Technology versus ST Microelectronics)
Alleged Breach of Contract (UK Courts)	Expert witness assignment involving forensic engineering, product testing and expert report on the design of a medical electronics (electro-mechanical) product. (Sharpaway versus Morgan Instruments)
Patent Dispute (European Patent Court)	Expert witness assignment regarding patent dispute over the interface between microcontrollers and peripheral devices in electronic games consoles.
Alleged Breach of Contract (UK Courts)	Single joint expert in case involving a distributed, database-driven control system using smart cards. (AC Controls versus BBC)

Type & Venue of Case	Brief Description
Alleged Breach of Contract (UK Courts)	Expert witness assignment relating to alleged negligence in the design of microcontroller and ASIC electronics of a piece of very high volume domestic utility metering equipment.
Alleged Breach of Contract (3 cases) (International Arbitration and UK Courts)	Expert witness assignment in relation to the design and installation of electronic systems in trains, involving forensic engineering, reliability analysis and environmental testing of the electronic equipment.
Alleged Breach of Contract (International Arbitration)	Expert witness assignment involving technical and commercial expert opinion in case involving the design of a Video Codec for high volume consumer applications. (ON2 Technology versus Beijing E World)
Insurance Dispute (UK Courts)	Expert witness assignment involving forensic engineering in case regarding alleged damage by storm and mains supply fluctuations to computer-controlled factory machines in a materials packaging plant.
Antitrust and Patent Disputes (Multiple related cases) (USA and European Courts and Patent Offices)	Expert witness for semiconductor manufacturers Hynix, Samsung, Micron, and Nanya in a series of interrelated cases in multiple jurisdictions. Analysis of DRAM patents and delivery of multiple expert reports, depositions and courtroom testimony analysing the market effects of patent enforcement on the Information Technology and Embedded Electronics industries and the specific costs of various design, manufacturing and test techniques for high-volume semiconductors.
Insurance Dispute (UK Courts)	Expert witness assignment in relation to smoke damage and replacement costs of IT equipment due to alleged negligence in the design and installation of an Uninterruptable Power Supply (UPS) system in a computer server suite
Alleged breach of contract (International Arbitration)	Expert witness assignment involving forensic engineering and expert opinion regarding Fax transmission technology in relation to an international supply contract. Testimony concerning whether a particular Fax had been sent and received.
Alleged Negligence in the Design of a Power Station Control System (District Court of Berlin)	Expert witness assignment involving forensic engineering and expert opinion in relation to computer-based control systems following a power station explosion in the former Soviet Union.
Alleged breach of contract (UK Courts)	Expert witness assignment in relation to architecture, system-design and installation of a multi-server, multi-site, fault-tolerant computer system in a mission-critical banking application.
Alleged breach of contract (UK Courts)	Expert witness assignment in relation to alleged negligence in the design and layout of printed circuit boards for an automotive engine-management application in racing cars.
Alleged breach of contract (pre-action)	Expert report in relation to architecture, design and manufacture of radio-frequency modems for use in a wide-area RF broadband system.
Alleged VAT Fraud (UK Courts)	Expert witness assignment and forensic investigation of Fax transmissions relating to a case of alleged VAT fraud to establish if several faxes originated from the same machine.
Insurance Dispute (UK Courts)	Expert witness assignment, forensic engineering and opinion on possible damage allegedly caused to computer equipment by a power surge at a computer repair facility.

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Type & Venue of Case	Brief Description
Alleged breach of contract (International Arbitration)	Appointed by the arbitrator as Assessor to give technical opinion and independent report. Arbitration related to the design, manufacture and supply of electronic transducers and transmitters used in industrial applications.
Alleged breach of contract (Spanish Courts)	Expert witness assignment related to the cancellation of a manufacturing contract for electronic learning aids in a Chinese sub-contract manufacturing plant. (KARCE Electronic Toys Ltd vs Catalana de Investigacion y Desarrollo de Electronica SRL)
Shipping insurance dispute. (Maritime Courts & International Arbitration)	Expert witness assignment involving forensic engineering, testing and opinion on electronic systems active in controlling the container ship Safamarin Agulhas when it ran aground and broke up off South Africa.
Patent Dispute	Expert witness assignment involving investigation of Patents in relation to specific aspects of domestic Hi Fi systems.
Insurance Dispute	Expert witness assignment involving valuation of computer equipment involved in an accidental damage incident.
Alleged IP theft by ex-employees (UK Courts)	Single Joint Expert. Investigation and report on alleged similarities between electronic systems used in industrial welding equipment.
Alleged IP theft by ex-employees (UK Courts)	Expert witness assignment involving investigation, testing and opinion on electronic systems used in a perimeter security systems.
Alleged breach of contract (Israeli Courts)	Expert witness assignment involving investigation and forensic engineering related to alleged breaches of specification in satellite TV systems installed in Israel.
Insurance Dispute (UK Courts)	Investigation, forensic engineering and opinion on circumstances of an alleged control system malfunction leading to the serious injury of an equipment operator.
ITC investigation (USA International Trade Commission)	Review of published material and printed circuit layouts in relation to an investigation of integrated circuit packaging.
Operation Osmium. Alleged terrorist support activities in UK. (UK Courts)	Expert witness assignment involving investigation, forensic engineering and opinion related to the design and manufacture of electronic circuit boards and embedded software allegedly used for terrorist purposes.
Lockerbie bombing (Scottish Courts)	Appeal of Abdelbaset ali Mohamed al-Megrahi. Investigation, forensic engineering and opinion on electronic equipment allegedly used in the 1988 bombing of Pan Am flight 103 over Lockerbie.
Alleged breach of contract (UK Courts)	Expert witness assignment involving investigation of alleged negligence in the design of automated control equipment in utilities plants.
Alleged breach of contract (UK Courts)	Expert witness assignment involving investigation of alleged failures in an electronic web-based vehicle and plant tracking and mapping system installed at a major London airport.

Type & Venue of Case	Brief Description
Alleged breach of contract (UK Courts)	Expert witness assignment investigating alleged defects in the design and installation of an audio-visual system.
Alleged breach of contract (Scottish Courts)	Expert witness assignment involving investigation of alleged faulty battery charging equipment supplied to power electro-mechanical lifting aids for the elderly.
Alleged breach of anti-pollution laws (UK Courts)	Expert witness assignment involving investigation and forensic engineering of possible control & monitoring system malfunctions during a pollution incident at a sewage treatment plant.
Alleged breach of contract (UK Courts)	Expert witness assignment involving investigation, product testing and expert report relating to alleged malfunctions in a GPS/Cellular based child-tracking system.
Alleged breach of copyright (UK Courts)	Expert witness assignment involving analysis of source code and design documentation related to alleged copying and reverse engineering of a commercial software system.
Alleged breach of company law (UK Courts)	Expert witness assignment involving analysis of counterfeit electronic products containing PIC microcontroller and associated software.
Patent Dispute (UK Courts)	Expert witness assignment in IP dispute related to flash memory products
Alleged breach of contract (UK Courts)	Expert witness assignment in relation to alleged malfunction of networked computer printers
Dispute relating to a CPO (Upper Tribunal. Land Chamber. UK)	Expert witness assignment in relation to identifying the requirements of premises in which to perform electronics manufacturing in relation to a Compulsory Purchase Order.
Alleged breach of contract (UK Courts)	Expert witness and forensic engineering assignment in relation to alleged defects in the design of automated vending machines.
Alleged breach of contract (UK Courts)	Expert witness assignment in relation to alleged defects in a software development using SAGE accounting and CRM systems in a clinical waste company
Alleged breach of contract (UK Courts)	Expert witness assignment in relation to alleged defects in the design of a DGPS navigation system for shipping in UK waters
Alleged breach of contract (UK Courts)	Expert witness assignment in relation to alleged defects in the development of a software system for hedge-fund trading
Alleged breach of contract (International Arbitration)	Expert Witness assignment in relation to alleged defects in a web based software system for airline bookings

Type & Venue of Case	Brief Description
Alleged breach of contract (International Arbitration)	Expert Witness assignment in relation to alleged defects in hardware and software in an active towed-array sonar system installed on navy frigates. (Government of Pakistan v Thales)
Alleged breach of contract (German Courts)	Expert witness assignment involving investigation of alleged failures in an electronic, web-based vehicle and plant tracking and mapping system installed at a major European airport.
Alleged breach of contract (UK Courts)	Expert witness assignment relating to alleged poor performance of a Storage Area Network (SAN) in a large outsourced IT system
Alleged breach of contract (UK Courts)	Pre-action investigation of safety and performance of a large electronic advertising display adjacent to a major motorway
Alleged breach of contract (Hong Kong Courts)	Expert witness assignment in relation to electronic systems in a large construction project.
Patent Dispute (UK & USA Courts)	Pre-action investigation in relation to a high-volume consumer electromechanical device
Alleged breach of contract. (UK Courts)	Expert Witness assignment in relation to the design and installation of an electronic trading and risk-management system.
Alleged breach of contract (UK Courts)	Expert witness assignment in relation to alleged design and maintenance faults in an outdoor electronic advertising display
Alleged Antitrust (European Courts)	Expert witness assignment in relation to electronic integrated circuits
Mediation Cases	
Mediation: Dispute between construction company and property developer	Mediator in dispute related to quality of building work. Case settled.(Central London County Court)
Mediation: Partnership dispute in medical practice	Mediator in dispute between partners in a GP practice. Case settled. (Central London County Court)
Mediation: Dispute between glazing company and sales representative	Mediator in dispute related to sales-commission payments. Case settled. (Central London County Court)
Mediation: Dispute between construction company and client	Mediator in dispute related to quality of building work. Case settled. (Central London County Court)
Mediation: Dispute between contractor and client	Mediator in dispute related to payments made by an allegedly frail elderly lady. Case settled. Colchester County Court
Mediation: Dispute between landscaping contractor and client	Mediator in a construction-related dispute. Case settled. Southend County Court

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Type & Venue of Case	Brief Description
Mediation: Dispute between landlord and commercial tenant	Mediator in dispute related to dilapidation of leased commercial retail property. Case settled. High Court of Justice. Queen's Bench
Mediation: Dispute between building contractor and client	Mediator in dispute related to quality of building work. Basildon County Court
Mediation: Dispute between doctor and medical practice	Mediator in dispute related to contract between doctor and medical practice. Case settled. Southend County Court
Mediation: Dispute between building contractor and client	Mediator in dispute related to quality of building work. Southend County Court
Mediation: Dispute between commercial tenant and landlord	Mediator in dispute related to dilapidation of commercial factory premises. Case settled. Southend County Court
Mediation: Dispute between building contractor and client	Mediator in dispute related to the building of a conservatory. Case settled. Southend County Court
Mediation: Dispute between car dealership and customer	Mediator in dispute related to the quality of a car. Case settled. Cambridge County Court
Mediation: Dispute between building contractor and client	Mediator in dispute related to a building Contract. Case settled. Bury St Edmunds County Court
Mediation: Dispute between building materials supplier and customer	Mediator in dispute between a major builders merchant and customer in relation to quantities and quality of delivered materials. Central London County Court
Mediation: Dispute between building contractor and client	Mediator in dispute between building contractor and client in relation to a cellar conversion. Case settled. Central London County Court
Mediation: Dispute between office fitting contractor and client	Mediator in dispute relating to refitting of an office building. Mediation cancelled prior to meeting. Cambridge County Court
Mediation: Boundary dispute	Mediator in boundary dispute between neighbours. Case settled subject to minor boundary work. Southend County Court
Mediation: Banking dispute	Mediator in dispute related to identity fraud and misuse of bank accounts. Mayor's & City of London Court
Mediation: Professional Negligence	Mediator in dispute relating to alleged professional negligence by a law firm. Case settled. Mayor's & City of London Court
Mediation: IT Dispute	Observer in high-value Information Technology dispute relating to alleged misuse of sensitive data. Case settled ICC Rules
Arbitration Cases	
Alleged breach of contract (International Arbitration)	Appointed as Assessor to Arbitrator (Neil Kaplan QC) to give technical opinion and independent report. Arbitration related to the design, manufacture and supply of electronic transducers and transmitters used in industrial applications. (Stockholm Chamber of Commerce)

Type & Venue of Case	Brief Description
Alleged breach of Contract (International Arbitration)	Pupil arbitrator under the supervision of Dr Robert Gaitskell QC. Dispute relating to the jurisdiction of the tribunal. (ICC)
Alleged breach of Contract (International Arbitration)	Pupil arbitrator under the supervision of Dr Robert Gaitskell QC. Dispute relating to the construction of a manufacturing plant in Africa. (ICC)
Alleged breach of Contract (UK arbitration under RICS rules)	Pupil arbitrator under the supervision of Dr Robert Gaitskell QC. Dispute relating to the construction of a very large composite panel roof. (RICS)
Alleged breach of Contract (International Arbitration)	Pupil arbitrator under the supervision of Dr Robert Gaitskell QC. Costs hearing relating to an international construction dispute. (ICC)
Alleged breach of Contract/Duty (Domestic Arbitrations)	Sole Arbitrator. 20 Arbitrations under the CEDR/RECC Arbitration Scheme Disputes related to design and installation of renewable energy systems.
Alleged breach of Contract (Domestic Arbitration)	Sole Arbitrator. 30 Arbitrations under the CEDR/ABTA Arbitration Scheme Disputes related to the provision of a holidays & travel.
Alleged breach of Contract (Domestic Arbitration)	Sole Arbitrator. 2 Arbitrations under the FAS Arbitration Scheme Disputes related to the provision of funeral services.