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## **SUMMARY**

Interested in a position that will utilize my broad range of skills and enthusiasm and allow me to grow and contribute to a team. Skills include Electrical Engineering, Software Engineering and Management. Significant component level and system level experience with a wide range of contemporary embedded controllers, peripherals and associated signal conditioning.

Excellent written and oral communications. Able to translate complex “engineer speak” for a wider audience. Ability to understand needs of audience outside of the engineering arena. “Roll yer sleeves up, get the job done” attitude along with an appropriate sense of urgency. BSEE equiv. NZ Permanent Resident.

Made significant contributions to US patents 6211940, 5757465, 5710752, 5608805 & 5544140. My team received a technical Oscar from “The Academy of Motion Picture Arts and Sciences” for work on Dolby Digital sound on film project. Also a technical Emmy from the “Academy of Television Arts and Sciences” for work on the Dolby Digital on DVD project. Won a ‘STAR’ new product award at National Association of Broadcasters 2002 for component level design of a base band (1.5GB/s) HDTV monitor product (10 awards are presented yearly from 5000 products).

## **EXPERIENCE**

### **EDAC Ltd, Christchurch, NZ, Senior Engineer / Manager (1/05 to present)**

Technical lead involved with all aspect of product design and development (down to component selection) for a small, diverse engineering design group involved in the wireless and telemetry arena. Activities include Software, Hardware, RF and Mechanical design. Provided technical/management and technical/marketing interfaces along with mentoring.

### **Aceeca Ltd, Christchurch, NZ, Senior Design Engineer (03/04 to 12/04)**

Detailed design and implementation of a low power hand held FFT analyser. Based around a Rugged Palm, this plug in module housed a 75MHz ADSP2189 DSP, Compact Flash, ADC, Analogue signal conditioning, PLL clock synthesis and Control interface to the Palm. Designed all Hardware, DSP software (assembler) and Palm Software (C, PalmOS).

### **Wohler Technologies, South San Francisco CA: Senior Engineer (06/00 to 03/04)**

Involved with product definition, detailed design and implementation of complex multi-processor software and hardware systems (professional digital audio and video monitor systems.) Transfer of products from Engineering into Manufacturing along with product roll out and initial customer interface. Preparation and sign-off of design documentation. Designed and introduced two significant new product ranges and developed one new technology including an Embedded TCP/IP based audio alarm system and an Embedded multi-channel audio monitor with HD-SDI (SMPTE 299) sub-systems.

### **Dolby Laboratories Inc., San Francisco CA: Senior Digital Broadcast Engineer (02/98 - 04/00)**

Provided technical leadership in the development of ATSC compliant MPEG2 / Dolby Digital test streams for testing latest generation consumer HDTV receivers. Specified, procured and

configured \$250k test equipment as part of a new department. Located and initiated contract with an external software house to prepare required test material.

Dolby Laboratories Inc., San Francisco CA: Senior Engineer (promotion) (10/96 - 02/98)

Prepared product definition and managed a multi US\$ million audio hard disk recorder project. Managed and provided detailed technical leadership for a team of six software and hardware engineers to develop product. Target system was a multi-processor Motorola DSP farm with multiple user interfaces. Initial product definition remained intact through to product release in 2000, where it is now the main mastering system used in the authoring of Dolby Digital movie soundtracks worldwide.

Dolby Laboratories Inc., San Francisco CA: Project Engineer A (05/94 - 10/96)

Prepared product definition, designed hardware, software and project managed three software and hardware engineers for the reference professional Dolby Digital decoder (DP562). Prepared product definition, designed hardware and project managed (software and hardware) for the reference professional Dolby Digital DVD decoder (DP524). Dolby Laboratories received a technical Emmy for the Dolby Digital on DVD project and my team attended the award ceremony in New York in 1999.

Dolby Laboratories Inc., San Francisco CA: Project Engineer 'A' (promotion) (04/90 - 05/94)

Architect for the Dolby Digital (film) project. Involved with almost all aspects of the system. Designed most of the initial hardware for the system along with driver software and graphical user interfaces (GUIs) for the mastering and camera systems (around 10,000 lines of 'C' each). Five Patents were awarded by the US patent office for this work. Dolby received a technical Oscar for this project and my team attended the award ceremony in Los Angeles in 1997.

See: US Patent [5,544,140](#) - Storage medium and apparatus ... by oversampling

See: US Patent [5,608,805](#) - Dynamic loader

See: US Patent [5,710,752](#) - Apparatus using one optical sensor to recover...

See: US Patent [5,757,465](#) - Storage medium ... in two dimensions

See: US Patent [6,211,940](#) - Selecting analog or digital motion picture sound tracks

Dolby Laboratories Inc., London, England: Engineer (02/88 - 04/90)

Designed and implemented software and hardware for the company's first auto aligning Dolby Noise Reduction system (MT24). Designed and Developed a single threaded cooperative multitasking environment as part of this project. Project complexity around 10,000 lines of 'C' and Assembler code. Product sales exceeded US\$1.5M during its lifetime.

Fisher Controls, London, England: Section Leader (promotion) (05/87 - 02/88)

Provided technical leadership developing software and hardware for a safety critical Nuclear Reactor system. Led a team of four software and hardware design engineers with this very first deliverable software project for the company contracted by Rolls Royce and Associates.

Fisher Controls, London, England: Senior Engineer (promotion) (02/85 - 05/87)

Provided technical leadership and support to the Nuclear Reactor design and test group. See above for more details.

Muirhead Data Communications, London, England: Design Engineer (05/84 - 02/85)

Participated in the design of software and hardware for a multi-processor wirephoto system. The host system was a PDP11/23 attached to a 12 processor image acquisition subsystem each with a 6809 microprocessor. Data transfer was via a high speed 16 bit DMA channel.

Ministry Of Defence, Kent, England: Professional Technology Officer, Grade 4,(09/79 - 05/84)

Designed and constructed custom microprocessor controlled test equipment. Mainly 8080 assembler using Intel ISIS II O/S. Managed two technicians.

Ministry of Defense, Kent, England: Technical Apprentice (09/75 - 09/79)

Competed for and won an elite four year indentured electronic & technical apprenticeship (120 applicants, 20 positions). The four years were split equally between practical training at the apprentice centre and academic studies at Bromley College of Technology.

**SUMMARY of TECHNICAL EXPERIENCE**

Software Methods: Yourdon, Jackson. Languages: C, Assembler, VB. Tools: IAR, HiTech, Microsoft, Metrowerks CodeWarrior, GNU Compilers, Assemblers, Linkers, Librarians, In Circuit Emulation, Simulation etc. Protocols: Embedded TCP/IP.

Processors Atmel ATmega series, Analog Devices ADSP218x, Intel 808x, MicroChip PIC16F and PIC18F families (including TCP/IP stack), Motorola 68HC11, DSP56k, 6805, 6800, 68000, DragonBall NEC 78C10, Rabbit2000 (including TCP/IP stack), Zilog Z8, Z80, Z8000. Experience designing software and hardware for each.

Analogue Design and Implementation of many and varied signal conditioning sub-systems relating to Audio processing and Data acquisition.

Tools In Circuit Emulation and Simulation for most processors, HP logic analyser (re-wrote real time dis-assembler for 78C10 implementation on an HP1650). ORCAD 9, Protel 99. Familiar with Gerber 274x and PCB fabrication and specification requirements.

FPGA: CUPL, Verilog (interest only). Misc PALs, PLDs and ACTEL 1010 FPGA.

**KEYWORDS**

Product, Definition, Design, Integration, Project, Management, Embedded Software, Hardware, DSP, C, Pascal, Assembler, Analogue Signal Conditioning, Instrumentation, Team Player, Industry Awards, Patents.

**REFERENCES**

NZ, US and UK, personal and professional references available upon request.

**EDUCATION - summary**

**BSEE equivalent** - Bachelor's Degree in Electrical Engineering Technology 1986. Certified by Professor Paul Diament (IRS approved work experience evaluation professional). This equivalence was required as part of my 'Green Card' work permit application processed by the US Immigration and Naturalization service in 1991. This was also accepted by NZQA as part of a 2 years work visa application in Feb 2004.

**Bromley College of Technology, Bromley, Kent, England.**

Four year part time college education interleaved with indentured technical apprenticeship at the Ministry of Defence, Aquila.

**Edgebury school for Boys, Chislehurst, Kent, England. 1970 through 1975**

Five CSE Grade I, two CSE Grade II

**Personal stuff**

I am a social animal, and adore smart, funny people (like my wife). I regularly seem to be setting single friends up on dates and similar sorts of mischief. I have many and varied hobbies: I have been helping at the Ferrymead Radio Preservation Society that supports a volunteer run Museum and Radio Station.

While living in the USA, I supported National Public Radio and contributed by helping with live on-air fund raising. I currently have about 40 hours live on-air experience. KALW has a regular audience size of about 100,000 of which 10,000 are paid up supporters; this is a tiny station by local [San Francisco] standards. I am told I have a good on-air persona, but I doubt that I will ever be rich enough to be able to afford a career in broadcast radio.

I have done several projects with the [San Francisco] Parks Service leading tours of a historic WWII Nike Missile site. I have also given the occasional lectures at the local [San Francisco] technical college on the subject of real world software engineering.

Amateur radio has played a significant part of my upbringing and have made many life-long friends through this hobby. The last 10 years have seen a sad decline if the hobby (mainly due to the Internet and Cellular telephony).

I have made recent contributions to the New Zealand satellite “KiwiSAT” including the complete design and implementation of the UHF telemetry / traffic receiver for the spacecraft, along with initial work on Imaging and significant refinements of the VHF downlink transmitter.

I really want to make the time to build another two-person hovercraft so I can get back into this amphibious hobby. I loved SCUBA diving [while I lived in the UK] and managed to make it to a junior teaching/training grade.

I am told that I am a flexible person, and my general view of the work world is “keep the customer happy, do good stuff, have fun doing it”.