



## **Profile**

RF/Electronic design engineer with over 25 years experience in circuit and system design. Design skills from establishing requirements, through clean sheet design to product qualification and release for production. Extensive experience in testing and system integration. Additional experience in FPGA implementation, microprocessor controller design, and high speed digital circuits.

## **Key Skills**

- RF circuit design to component level especially HF/VHF/UHF circuits
- System design of receiver and transmitter chains to 30 GHz
- PCB layout supervision and verification
- Design of high power RF amplifiers
- System design down to circuit block specification level
- Qualification against requirement and type approval specifications
- FPGA coding
- Adaptability to new technologies and techniques
- Ability to work in remote and isolated areas

## Work History

### **BAE Systems Australia**

Satcom Group  
RF Systems Engineer

Date: May 2011 – Present

I came to visit my relatives for Easter and was promptly approached by several companies regarding doing work for them. I took this job for 6 weeks doing system design and circuit verification for a satellite tracking downconverter.

### **BAE Systems Australia**

Satcom Group  
Senior RF Systems Engineer

Date: January 2010 – November 2010

- System design of satellite ground station receiver and transmitter chains
- Writing of technical notes and analyses
- Writing of specifications
- Writing of test procedures for compliance, acceptance testing, and engineering characterisation.
- Evaluation of sub-contractor test methods and results

### **Indra Australia Pty. Ltd.**

Senior Engineer

Date: August 2009 – October 2009

- 3 month contract
- Initially produced draft test procedures for new system modules
- Quickly moved to FPGA coding in VHDL due to good understanding of operation of complete system
- Worked with production to resolve production yield issues and fault diagnosis

## **Médecins Sans Frontières**

Aweil Hospital, Southern Sudan  
Hospital Logistician

Date: November 2008 - April 2009

- Volunteer Position
- In charge of all non-medical work at the hospital
- Improved project visibility and control
- Manage up to 80 staff, including optimisation / restructure of teams
- Manage, oversee and provide guidance for:
  - Construction of buildings, latrines, showers.
  - Electrical installations
  - Food supplies and distribution (5 tonnes per week)
  - Cooking for and feeding of patients and caretakers
  - General hospital supplies
- Provide solutions to lack of facilities, resources and medical equipment
- Repair equipment

## **Codan Limited**

HF Engineering Group  
Senior RF Engineer

Date: June 2007 - October 2008

- Investigation of Class D and C Switching FET based amplifier topologies
- High Level Mixer investigation and development
- Receiver noise / gain system design
- Basic FPGA coding in VHDL
- Software Qualification / Testing

## **Australian Antarctic Division**

Space and Atmospheric Sciences  
Engineer

Date: August 2005 - April 2007

- Directly responsible for the continued operation of 16 experiments
- Improvements to the VHF atmospheric radar
- Upgrade and system improvements to the digisonde
- Writing and updating of operating procedures
- Two trips to the Russian Vostok station to install, repair, upgrade and maintain Geo-electric field equipment
- Only science person on a winter traverse to the Larsemann Hills
- Organisation and trip leader of a 'deep field' Automatic Weather Station installation and retrieval involving 10 people, and 3 helicopters.
- Search and Rescue first and second responder.
- Station Photographer

## **Inspiration Technology Pty. Ltd.**

Contract Engineer

Date: April 2005 - June 2005

- 3 month contract position
- Interface modem low IF to 'L band' IF (1.5 GHz)

## **DSpace Pty. Ltd.**

Senior Hardware Engineer

Date: April 2004 - April 2005

- Sole RF engineer
- General hardware design / implementation advisor
- Design and implementation of baseband to RF interface to suit customer equipment
- FPGA coding
- Input to company standards and procedures

## **Atmospheric Radar Systems Pty. Ltd. (ATRAD)**

Senior RF Engineer

Date: January 2003 - March 2004

- Design of high power RF pulse power amplifiers
- System level design of atmospheric radar systems
- Design and implementation of Controller and DDS circuits
- Mentoring and training of staff
- Investigation of Class E amplifier topologies
- Input to mechanical design

## **Inspiration Technology Pty. Ltd.**

Research Engineer

Date: July 2000 - Jan 2003

- Research into DSP techniques for High Speed QAM Microwave Modems
- FPGA implementation of modem design (working from theoretical [mathematical] models)
- Design of interfaces from digital to RF interface of microwave transceiver
- Tendering for contract design services
- Contract and Consulting services to third party companies
  - Solved EMC problems
  - Developed fault diagnosis and repair procedures for radio equipment
  - Implementation of complex functions in FPGA / CPLD
  - Design and debugging of microprocessor circuits
  - Implementation of ethernet over backplane system
- Supervision of sub-contractors

## **Codan Pty. Ltd.**

Engineering Group  
RF / Analogue Design Engineer

Date: February 1995 - July 2000

- Research and design of high level mixers
- Design and implementation of a high performance receiver chain
- Design and implementation of the transmitter exciter chain
- Initial design investigation of a man pack transceiver, including RF system design, power budgeting, antenna selection, mechanical concept design
- Technical contact for the external design of a high level mixer IC
- Qualification of transceiver products (to company and international standards)
- Mechanical design of the transceiver enclosures and mounting cradles

## **NEC Australia Pty. Ltd.**

Integrated Communications Products Group  
Design Engineer

Date: February 1993 - February 1995

- RF Design of cellular telephone products
- Receiver front end design
- Tx/Rx initial block design
- Assist with general design
- Mechanical design
- Extended trips to Japan for design test and qualification
- Austel Approvals Liaison Engineer for radio products
- Representative on Austel Working Groups 4/1 and 4/2

## **Action Controls Pty. Ltd.**

Development Engineer

Date: April 1991 - February 1993

- Sole hardware engineer
- Design of 80188, 8051, and TMS7000 microprocessor modules
- Design of digital and analogue I/O modules
- Established an in house manufacturing facility
- Design of Modem / PSTN interfaces
- Radio system design

## **Philips Radio Communication Systems**

RF Design Engineer

Date: November 1987 - December 1990

- Design of VCOs for VHF and UHF radios
- Design of RF Power Amplifiers (1-25W) for VHF and UHF
- Design of a temperature compensated reference oscillator

## **Telecom Australia**

Radio Spectrum and Design Section  
Engineer Class 1 / 2

Date: November 1984 - November 1987

- Field Trial analysis of microwave trunk radio equipment performance
- Design of hardware for a new data acquisition system
- Evaluation of equipment against tender requirements
- Writing of radio system design software
- Investigation, design and implementation of a spread spectrum channel sounder
- Writing of software for field trial data analysis
- Testing of line transmission equipment
- Writing of commissioning documents
- System design and installation of a microwave radio trunk