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Trio Datacom

Wireless Data Communication Solutions



Company

Trio Datacom specialise in the design and manufacture of wireless data communication products and systems.

Since our inception in 1991, we have become one of Australia's 100 fastest growing private companies.

Trio Datacom has positioned itself as a leader in the field of wireless data by providing the most cost effective, reliable, advanced products and services. This is achieved by employing innovative design techniques, together with advanced technologies and processes.

We commit around 20% of turnover towards Research and Development annually, to ensure that we remain at the forefront of the marketplace.

With a highly motivated and dedicated team who have an extensive background in the design, manufacture and commissioning of digital radio communications systems, Trio Datacom has achieved an enviable reputation as a quality supplier to a worldwide market.

Our main focus is on narrow bandwidth UHF point-to-point and point-to-multipoint systems.



Markets

The main target markets for the narrow band systems can generally be described as Supervisory Control And Data Acquisition (SCADA) and Distributed Information Systems (DIS).

A diverse range of industries now utilise SCADA or DIS and are increasingly turning to wireless technology to interconnect their systems, as opposed to installing costly and inflexible wire based circuits. Industries utilising these systems include:-

Utilities (Water, Electricity, Gas,)

Telecommunications

Petro-Chemical

Environmental Protection

Mining and Exploration

Materials Handling & Storage

Public Transport, Traffic and Parking

Security

Wireless data links can usually provide either temporary or permanent data connections far more cost effectively than wired services, especially where wired facilities do not already exist or are impractical. Thousands of Trio Datacom's wireless products, including complex systems involving hundreds of units, have been successfully installed throughout Australia as well as in various other countries and, indeed, even in the harsh environment of Antarctica.



Philosophy

Trio Datacom is very proud of its strong engineering tradition. We have a wealth of accumulated experienced staff who possess expertise in all the areas necessary for successful design and realisation of VHF and UHF digital radio technology. As an engineering driven company Trio Datacom, by necessity, has an engineering philosophy;

“To do something well, requires that we understand it thoroughly. Re-inventing wheels is costly and time consuming, so Trio Datacom has the policy of researching and understanding the problem with it’s related issues. Only then can we make an informed decision to employ existing ideas or new concepts.”

Development of our own technology and intellectual property base is important to Trio Datacom. We are a genuine research and development organisation, who have often opted to design specialised components to gain performance advantages over commercially available products. Only a full understanding of the theory and technology allows us to produce innovative, high quality products repeatedly.

Right Tools

The right tools are an essential part of doing our job every day. Significant consideration is given to selecting appropriate tools with which to complement the skills and abilities of our people. These tools include:

- Full 3D mechanical design system.
- Microwave test and measurement equipment
- CPLD / FPGA / PLD design and simulation systems.
- DSP development tools for CPLD as well as DSP processor systems.
- Non-linear and linear circuit simulation software.
- Extensive in-house development synthesis and simulation software.
- Embedded microprocessor firmware development in C and assembler.
- Software tools development systems for Visual BASIC, C/C++, JAVA and assembler.
- Schematic capture and PCB layout, including multi-layer capability.
- Environmental testing from -30 to 85°C.

People

People are the greatest asset a business can have. In the case of Trio Datacom we have balanced the years of experience our senior staff have accumulated with energy, enthusiasm and up-to-date knowledge of bright young graduates. Our core engineering staff has an accumulated experience of over 100 years. The Trio Datacom engineering team has been involved in a vast range of projects, most recently associated with digital radio and digital data transmission at VHF, UHF and microwave frequencies.

Our recent design output includes:

- 10Mbps DSP modem in CPLD technology.
- Ethernet bridge for IP transport over radio.
- 450 MHz and 900 MHz digital radios.
- Innovative stripline and inter-digital filters and duplexers.
- High reliability digital radio base station equipment.
- DSP based modems for digital radios with integrated packet engine.
- Sophisticated stream routing equipment for digital radio networks.
- Specialised signal processing and signal generation test equipment.
- Digital voice compression for narrow-band radio systems.

Facilities

Modern, climate controlled laboratory space is an essential part of our operation. Another essential aspect of our philosophy is that our people produce effectively if they are happy and comfortable where they work. To this end, our facilities are light and airy, well equipped with up-to-date computers and software. Additional meeting facility space is set out, along with a comprehensive reference library.

To provide the widest capability for prototyping and production control, we have a large screened room, microwave test equipment to 40GHz, microstrip PCB lathe, an environmental chamber and a well equipped mechanical workshop.





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Activities

Research and design work currently in hand includes:

- Researching high order modulation schemes for improving spectral efficiency of digital radios by using innovative DSP techniques.
- Development of new DSP based low cost narrow bandwidth radios.
- Development of a new range of high reliability and high uptime digital radio base stations for network infrastructure.
- Research into low cost methods of microwave power generation for new digital radios, employing low cost technologies.
- Development of high linearity power amplifiers for a variety of digital radio applications.

Capabilities

Specifically targeting our operations towards the narrow and broadband digital radio and data transmission market has meant the development of a wide-ranging set of skills and capabilities.

Trio Datacom design, manufacture and supply complete data radio products, together with a team of staff and worldwide agents who can provide a full installation and commissioning facility.

Turnkey projects can be taken from inception through to completion including system and link path design, integration, installation and commissioning. Where appropriate, complimentary products are sourced to meet a range of customers needs.

Product & Service

The product and service philosophy of Trio Datacom is simple. We supply solutions based on easy-to-use hardware and software.

Trio Datacom has developed a broad range of highly versatile radio transceiver / modem products, plus ancillaries, for wireless data communications.

The narrow band radio products operate in the 450 MHz and 900 MHz frequency bands for point-to-point (PTP) and point-to-multipoint (PTMP) systems.



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