**Menu structure:**

5 ‘pages’… (?), with subheadings;

* A main page,
* Products (page),
  + Electrical Test Equipment
  + Passive Forward Scatter Radar
* Services (page),
  + Concept-to-product design services
  + Antenna / RF / Electromagnetic design
  + Signal, Image & Control processing consulting
  + Laser system and electro-optic component design
* Resources (page),
  + Wide bandwidth 4G antenna
  + Satellite Orbit determination
  + Flexible cross-correlation
  + Replica lighthouse flasher
* Client Login (hyperlink only),
* Contact Us (page)

**(Draft) text content:**

* Main page,

Platypus Instruments is a supplier of specialist engineering products and services to clients across the commercial, industrial, research and Defence sectors. Our expertise is the application of multiple technical disciplines to create a tangible system or product to meet an entrepreneurial vision or functional specification.

Our staff have skills across mathematics, physics, electrical, mechanical and software engineering. We also have significant experience in applied research – conducting cutting edge R&D in the course of both developing a new capability and assisting in constraining the scope of complex technical projects.

* Products (page),

We have several products undergoing development with announcements of their commercial availability to be made soon!

* + Electrical Test Equipment

Test equipment currently in development include a patented portable power supply and measurement equipment to characterise fixed-wiring installations for the electrical trade industry. The prototypes have been field trialled for a few years, and we’re busy incorporating user feedback into the next generation of products.

[Appropriate images: R0011367.jpg , WP\_001762.jpg]

* + Passive Forward Scatter Radar

Developed in collaboration with HFE Technology (link: <http://hfetechnology.com.au/>), this radar system is being designed to address the problem of cost-effectively tracking objects in Earth orbit at widely geographically separated sites. The radar combines scalable RF hardware with contemporary signal processing to be able to distinguish target echoes from the signals-of-opportunity used to minimise system costs.

[Appropriate images: optus10 2.JPG , spectra.png]

* Services (page),

Platypus Instruments has been supplying engineering services to clients in the Canberra region since 1995. We pride ourselves in having met the technical challenges and complexities of every project undertaken and our transparent reporting and process.

* + Concept-to-product design services

Our strength is in low-volume prototyping, bringing together multiple disciplines in the creation of a demonstrable product or system. Design-for-manufacture is intrinsically embedded in our engineering processes, and we can supplement our designs with comprehensive technical documentation to assist in the handover to third-party manufacturers as required.

Previously contracted product examples include:

* An electromechanical prophylaxis for the treatment of Deep Vein Thrombosis,
* Industrial inkjet printer control systems,
* Ingestible telemetry modules for bovine research,
* Agricultural telemetry systems,
* Programmable engine control units for recreational vehicles,
* High-speed (1000 fps) CMOS camera streaming controller,
* Remote servo systems for the television industry etc. etc. …
  + Antenna / RF / Electromagnetic design

Radio Frequency (RF) systems underpin the wireless connectivity the modern world is reliant upon, placing ever increasing demands on interoperability, miniaturisation and bandwidth. We design antennas and RF transmitter/receiver systems using a mixture of empirical, analytic and numerical techniques to achieve desired performance objectives.

Our antennas and systems have been used over frequencies of MHz to beyond 20 GHz for:

* Radio direction finding,
* Jamming of communication systems,
* Innovative radionavigation products,
* Wireless network penetration testing tools, and
* Satellite telemetry and communications.
  + Signal, Image & Control processing consulting

The remarkable improvement in computing power observed in the past few decades has opened the door to both enhancing traditional signal processing and economically embedding previously impractical algorithms within commercial systems. Combined with a similar rise in ADC/DAC capability, many tasks once the sole domain of high-speed analogue design can now be hybridised with appropriate digital circuity to reduce system complexities and cost while improving reliability and flexibility.

Complex optimal control tasks (beyond traditional proportional-integral-derivative PID approaches) may now also be approached deterministically. As control and signal processing are often important subsystems within a larger system, we have considerable experience in optimally dividing a given problem across the appropriate analogue/digital/algorithmic solution domains.

* + Laser system and electro-optic component design

Many of our client’s systems have made unique use of lasers and powered optics for precision metrology, range-finding and the exploration of fundamental science. Consequently, we have developed a deep understanding of many optical processes ranging from good alignment practice to the quantum nature of light.

We have developed beam profiling software, optical resonators and assemblies, class-leading quantum noise-limited photodetectors and telescope imaging systems.

* Resources (page),

In the course of our internal research and development, we frequently create subsystems that are useful to a number of applications beyond what they were originally developed for. This page lists a few such subsystems that could be packaged into a minimal form suitable for external release.

They are offered without any kind of warranty or support on the hope that they might serve useful – or interesting at the very least!

* + Wide bandwidth 4G antenna

[Text to come. Pictures – all “Optus-\*\*\*.jpg” photos]

* + Satellite Orbit determination

[Pics and text to come]

* + Flexible cross-correlation

[Pics and text to come]

* + Replica lighthouse flasher

[Pics and text to come]

* Client Login (hyperlink only),

To access our client area, please login with the credentials supplied to you by Platypus Instruments.

* Contact Us (page)

We are located at 3/164 Gladstone Street, Fyshwick, ACT Australia.

[Google map of address]

Please feel free to drop by the office for a chat about your project or technical problem but do call first as our staff are often remotely placed within client premises.

We may be contacted during business hours at either +61 419 198 884 or +61 432 440 324.

Please direct email enquiries to:

[contact@platypusinstruments.com.au](mailto:contact@platypusinstruments.com.au)

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Image suggestions:

All of the attached images, plus:

Smith Chart: <https://commons.wikimedia.org/wiki/File:Smith_chart_gen.svg>