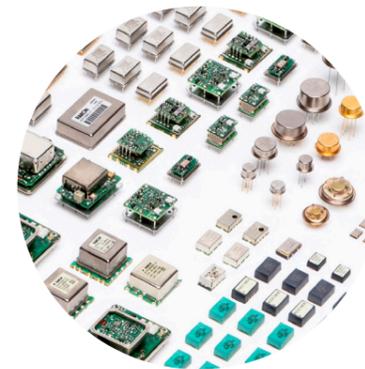


THINKING BIG IN AN EXTRA- ORDINARY SPACE

For a Kiwi company founded in a garage in Auckland two years before the Apollo 11 moon landing in 1969, it's a pretty big achievement to have your tech on the Rosetta space probe mission to Jupiter – a mission that resulted in the first-ever landing on a comet.

Rakon is a world leader in the rarefied domain of high-precision frequency control products (FCP), a supplier to the world's largest telcos, space agencies, aircraft manufacturers, and innovators in autonomous vehicles.

"Each has its own challenges," says CEO, Brent Robinson – someone who thrives on the constant pace of the technology cycles and loves nothing better than winning the global race to find a solution.



The European Space Agency lander module that touched down on the comet 67P/Churyumov-Gerasimenko (67P) on 12 November 2014 is a measure of the credentials of the Rakon team, who are deeply connected with the needs of their customers.

Brent attests to the absolute importance of understanding your niche, including your customers' ecosystems and technology standards – in many cases involved in shaping evolving frameworks.

While Rakon has people based in England, France and India, New Zealand is a good country to operate from if you "want to be the best in the world", he says. There is still the heart of that family business formed back in 1967, and the values that they cherish as part of an international competitive advantage.

This is a team dreaming big – about the opportunities in remote medical procedures performed by surgeons on the other side of the globe, driverless cars that react in real-time to road conditions and hazards. . . and, in the words of Buzz Lightyear, this thinking extends "to infinity and beyond".



"THE SMALL PIECES OF EXTREMELY PRECISE, TAILORED TECHNOLOGY FROM THIS NEW ZEALAND COMPANY ARE FINDING THEIR WAY INTO AN INCREASING RANGE OF APPLICATIONS."

When the RAK ticker went live in May 2006 the opportunities were in global positioning systems (GPS), and that heritage is still inherent to this ingenuity success story that's setting itself apart by designing solutions to problems even their customers don't know about.

Brent says: "To be first, you really need to intimately understand what the challenges are".

The company's drive to research and understand knowledge gaps within their niche is fundamental. Being one of the first companies to learn early on the attributes needed in the frequency control of GPS – including environmental conditions, led to the development of high-reliability products used in the autopilot capability featured in many Boeing and Airbus models today.

Tackling autonomous cars head on, Rakon is drawing from its experience with frequency control in driverless tractors, trucks and defence applications – to design products that enable synchronised information from sensors in real time with control functions in the vehicle. The intricate detailing of these systems will detect obstacles, reacting with speed and accuracy to ensure safety.

Advancement in 5G will open a world of opportunity in fields such as robotic surgeries, evolution of IoT (Internet of Things) and gaming. Sitting at the pinnacle of telecommunications, Rakon is one of the key FCP suppliers to this sector globally with their components embedded in these expanding networks. Network latency has been reduced 90% over the past ten years to two milliseconds – but Brent and his team are already focussed on the next benchmark in performance.

With each of the four Rakon components for the Rosetta space mission requiring 2,500 hours of testing – and accompanied by hundreds of pages of technical documentation – this was an important milestone to celebrate. Then, once the cheering's done, this team of just 950 is back to "being the first". This could be solving how to provide the precise timing to enable satellites and spacecraft to operate perfectly in the extreme conditions of space, or adding its advanced processes to tonnes of sliced and diced quartz crystal such as unlocking the future of oscillator technology, Quartz XMEMS™.

Being a little fish in a big pond doesn't faze Rakon. Brent is a big believer in making the pool smaller and being the smartest fish in the school – a strategy creating unlimited opportunities for a Kiwi company that's quietly getting on with transforming the way we live, work and play.



Brent Robinson
Chief Executive
Rakon