

rakon

2019 REVIEW

Enabling the
Connected Future





Derek Read
Engineering Project Manager
Harlow, UK

“It is a very exciting time for everyone in the UK advanced technology team. I'm fortunate to get involved from inception to delivery in the superb new technologies we are developing. We are working closely with customers, suppliers and colleagues from around the world to design and deliver Rakon's unique next generation ASIC-based products.

We must meet the demanding challenges of new technologies and applications such as 5G, emergency locator beacons and electric and autonomous vehicles.

Our ASIC technology is being designed into many 5G systems by our Tier One customers. In 2018 we released a new TCXO ASIC, which is designed to satisfy the requirements of emerging applications. In R&D, the future is now.”



Rakon has built a world-class design and manufacturing platform coupled with a customer portfolio of global leaders. Rakon provides products and solutions designed into present and future generations of communications and positioning technologies.

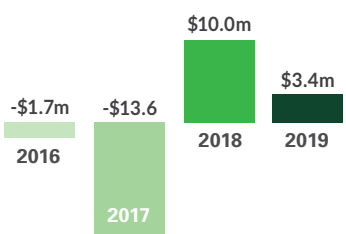
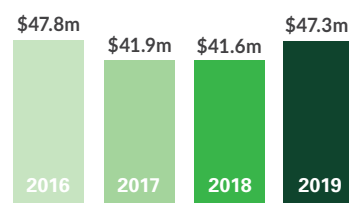
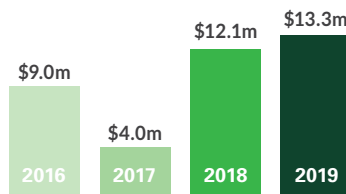
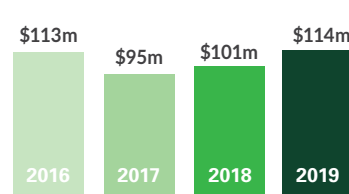


Performance Snapshot Financial Year 2019

12 months ended 31 March 2019.



All amounts in this document are in NZ\$ unless otherwise specified.



Global Team Size

NZ(HQ) 296 India 533 France 95 UK 19 USA 8 Asia 15
Approximate figures as at 31 March 2019.



Connectivity, Anytime, Anywhere

Rakon is a global high technology company that designs and manufactures world leading frequency control and timing solutions.

Its products help set the frequencies that all communications transmit and receive on. They also hold time and provide a stable timing reference for electronic equipment around the world. This enables synchronised time globally, and the efficient and reliable transfer of data at ever-increasing precision and speed.

Rakon products enable connectivity for a wide range of applications. Rakon's core markets are telecommunications, space & defence and global positioning.



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Chair's and CEO's Report



Reuben Schuitemaker
Graduate Engineer
Equipment Development
Group (EDG)
Auckland, NZ

“Impressive new technologies are constantly emerging. It's always exciting to see the innovative manufacturing solutions Rakon has developed to maintain our flexible product platforms, which include the manufacturing equipment and processes.

At Rakon, having this flexibility enables us to cater for new products.”

Welcome to the 2019 Annual Review of your company Rakon Limited ('Rakon' or the 'Group').

Steady growth in core business led to an improvement in underlying financial performance for the year ended 31 March 2019 (FY2019). Underlying EBITDA³ was \$13.3m, compared with \$12.1m in FY2018 and in line with our earlier guidance of \$12 – \$14m. Net Profit After Tax (NPAT) was \$3.4m, compared with \$10m in FY2018. The prior year's \$10m NPAT included \$8.8m of gains recognised in relation to the sale of property in Argenteuil, France and the dilution gain and sale of shares in Thinxtra Pty Limited ('Thinxtra').

Rakon India Private Limited ('Rakon India') was fully consolidated into the Group from May 2018 and made a positive earnings contribution. At this time, Rakon completed the buy-out of the remaining 51% ownership from its joint venture partner Centum Electronics Limited ('Centum') for US\$5.5m.

It was pleasing to see the year-on-year growth in core net profit (i.e. after one-off gains were excluded) on the basis of stronger 4.5G and 5G telecommunications infrastructure demand and continuing growth in the defence segment. Revenue was up \$12.9m to \$114m, with \$13.1m growth from the telecommunications market and \$3.6m growth from space & defence, offset by a \$5.5m decline in the global positioning market.

With most of our sales being in US\$ and our financial performance reported in NZ\$, there are always exchange variations. These are considered under our treasury policy.

Gross margin improved with growth in our core business, predominantly from the flow-through of higher revenue in the telecommunications segment. Gross margin percentage improved to 45%, compared with 43% in FY2018. This was mainly from a change in mix toward higher margin telecommunications and defence business and away from the lower margin global positioning business.

Operating costs rose with the inclusion of Rakon

India on a fully consolidated basis, and one-off costs relating to integrating that business into the wider Group. Net debt of \$7.7m, compared with a net cash position of \$7.4m in FY2018, reflected the impact of higher working capital requirements to support growing revenue, the acquisition of Rakon India and investment in additional manufacturing capacity during the year.

Operating cash flow of -\$1.8m reflected an increase in inventory to support the higher telecommunications demand and the launch of new telecommunication products out of New Zealand. Capital expenditure was also higher, with capacity expansion in the Rakon India plant and additional spending on infrastructure to enable Rakon India to operate independently from our previous joint venture partner Centum.

With a solid global executive team now in place we are positioned well for future growth and sustainability.

Operational Overview

In FY2019 we have seen the growth in demand for our products supporting the upgrade of existing 4G networks to deliver 5G to end users. Demand is expected to continue for a number of years as spectrum is released, technology is developed and end user cases are enabled.

In the near term, 'fixed wireless access' to the home is one example of an application that will be

enabled. This is where 5G, with its greater speed and increased bandwidth, enables internet access to homes through wireless mobile networks instead of physical fibre broadband lines. In the longer term, there will be the eventual adoption of widespread Machine-to-Machine (M2M) applications such as autonomous vehicles and industrial robotics. We are expecting the roll-out of 5G to be quite drawn-out, in comparison to the equivalent roll-out for 4G, as the various waves of technology are released and there is uptake by the market.

In the meantime there has been a significant revenue and volume increase for our products for 5G out of New Zealand and India. Rakon products are being designed into many Tier One Customers' solutions. Rakon has continued its investment in the development of new products to meet the future needs of 5G applications.

Capacity constraints at Rakon India caused delivery issues during FY2019, although monthly outputs more than doubled. Market shortages of material also affected working capital as we put additional inventory in place.

Rakon India

With Rakon now having full decision-making control of the low cost manufacturing operation in India, it was pleasing to see that business' positive contribution to the Group's full-year result.

Rakon has a key competitive advantage where we are able to make very exacting high performance products.

Rakon India's facilities were expanded during FY2019 to fulfil growing demand, with 76% year-on-year growth in OCXO⁴ volumes. This was from new design wins and an increased share of Tier One customers' business. Additional floor area was leased within the existing building, the layout was streamlined and there was significant investment in new manufacturing equipment.

Growth also occurred in the domestic space and defence business in India. The Group is also starting to leverage the R&D engineering resources in India, with closer collaboration between our India-based engineering team and other global engineering teams for new product developments.

Rakon India's integration into the wider Rakon Group is mostly complete⁵ and it is now able to operate independently from Centum. A new management structure was put in place, investment in infrastructure made and enterprise resource planning software (SAP) implemented.

Please also refer to page 11, which provides further information on key achievements at Rakon India.

Related Party Update

Rakon's manufacturing partner and major shareholder, Taiwan-based Siward Crystal Technology Co. Limited ('Siward'), was successfully qualified for major Rakon Tier One customers. This will enable more Rakon products to be manufactured at Siward, allowing Rakon to grow market share in this segment.

Market Update

Telecommunications

The roll-out of 5G continues to provide our biggest opportunity and our biggest challenge. Rakon is well positioned, with a good share of business awarded by Tier One customers. The challenge for Rakon is to meet existing demand and continue to bring new products to market that meet the higher specifications demanded by 5G applications.

Rakon had 25% growth in revenue in this market (on a US\$ basis). Rakon India is delivering a significant portion of the growth, with Rakon increasing its share in Tier One Original Equipment Manufacturers (OEMs) for 4G and 4.5G mobile base stations. Rakon New Zealand has also had good growth in this market and is now starting to generate revenue from new products designed into the beginning of the 5G roll-out. Early deployments have begun in South Korea, China and the United States.

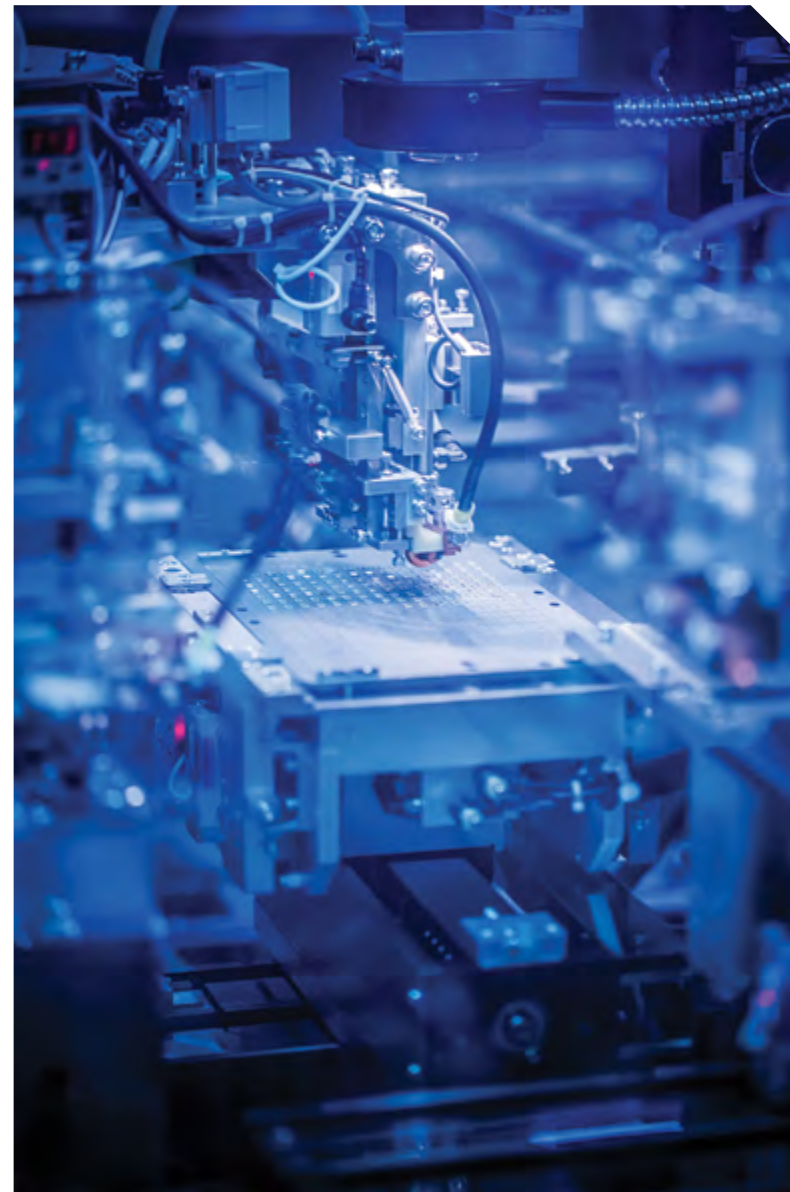
Outlook

Rakon expects to maintain and grow market share as 5G deployment gathers momentum globally, with the industry predicting a roll-out of at least five years as the technology is released in various phases. Core network equipment will need to be upgraded to support the 5G synchronisation standards.

4G and 4.5G equipment demand is expected to remain firm in the coming years as applications requiring 5G come to market.

Global Positioning

Global positioning revenue was down 15% overall. Our high volume Global Navigation Satellite System (GNSS) business was lower due to transfers of production into the Siward factory and the build up of inventory by a key customer in the prior year. Industrial high precision GNSS was down, particularly from the US agricultural and mining equipment sector, due to global trade uncertainty. The emergency locator beacon market returned to long-term average levels after the bubble in FY2018 due to frequency and band changes.



³ Refer to the footnote on page 19 for the definition of Underlying EBITDA as a measure of non-GAAP financial information, referred to in this document.

⁴ Product acronyms and definitions are explained in the Glossary on page 19.

⁵ The Rakon India integration was on target to complete at the time of final due date of this published document (30 June 2019).

Chair's and CEO's Report



Sowmya Injeti
Product Line Manager
Auckland, NZ

“Siward is a leading manufacturer of high volume frequency control products. Partnering with them has enabled Rakon to deliver even higher volume, lower cost solutions to our customers. Siward has a highly competent team with vast experience and capability in large scale manufacturing. The partnership is now well established and is opening up many new opportunities for Rakon, through an expanded product offering targeting wider markets and applications.”

Outlook

A key design win was achieved with an autonomous electric car manufacturer requiring high specification Rakon products. This looks likely to open up further opportunities for us in the near future. We believe Rakon has a key competitive advantage in this area, given our ability to design and manufacture exacting high performance products that can manage environmental differences.

Competition in the lower-end GNSS module market in Asia is expected to increase price pressure in this high volume market. Nevertheless, with Siward ready to fulfil requirements for this type of application, Rakon has strong competitive positioning for future growth. Partnering with Siward is enabling Rakon to provide a wider frequency control product offering to our customers and meet the demand for high volume, low cost production.

Space and Defence

The higher margin space and defence business experienced moderate growth, with higher defence spending in North America and Europe offset by lower spending in Asia. Defence revenue (on a US\$ basis) maintained the higher levels of FY2018 (up by 35% in that period).

Rakon's space revenue grew 15% overall (on a US\$ basis), with the inclusion of Rakon India's domestic space business. The European space business was lower as the market transitions to new Low Earth Orbit (LEO) satellite technology and away from traditional, larger, geosynchronous orbit (GSO) satellites. A key design win has been achieved in a new LEO deployment project (LEO deployments are part of a new industry segment called 'New Space').

Outlook

In the space market, demand is expected to be down for products supplied into the traditional GSO satellites as the market transitions to smaller LEO satellites. The potential for the New Space market is significant given the increased volume of satellites expected. With Rakon's existing customer relationships, market reputation, and proven technology, Rakon is well placed to develop new products to capture future revenue in this market.

Rakon India is well positioned to continue growing its local Indian space and defence business, its market share being low in this large market.

Defence spending is expected to remain strong, with current orders and forecasts supporting this outlook.

Corporate Governance

There were changes to the Board during the year including the retirement of our Chair, Bryan Mogridge. Rakon extends its appreciation to Bryan for his valuable contribution and long service to the company. A new Chair was appointed and Keith Watson joined Rakon as a Director. Keith's management and governance experience in the technology and engineering sectors complements the skills, expertise and experience of our existing Board members.

The Board is committed to maintaining the highest standards of corporate behaviour and accountability. The Board again reviewed Rakon's corporate governance framework. Consistent with its undertakings in the 2018 Corporate Governance Report, new policies were added covering diversity and inclusion, Directors' and executives' remuneration and employee disclosure protection. We also reviewed existing practices and guidance documentation to strengthen the governance framework and its alignment with the recommendations in the NZX Corporate Governance Code.

For a detailed explanation of Rakon's corporate governance practices please refer to the Corporate Governance Report in the Rakon Limited Annual Report 2019.

Summary

Rakon performed well, with growth in its core business leading to Underlying EBITDA growth of \$1.2m. The Rakon India acquisition completed and the

Bruce Irvine
Chair



Brent Robinson
CEO / Managing Director

Financial Year 2019 Performance Summary

- Revenue of \$114.0m vs. \$101.1m in FY2018.
 - Steady growth in core business drove the improved result.
- Underlying EBITDA of \$13.3m vs. \$12.1m in FY2018.
- Net profit after tax of \$3.4m vs. \$10.0m in FY2018.⁶
- Net debt was \$7.7m vs. a net cash position of \$7.4m in FY2018.⁷

integration of the renamed Rakon India business into the wider Group is mostly complete, with immediate benefits being realised through positive earnings contributions to the Group.

Revenue growth came from the telecommunications market with 4.5G and 5G demand, and from growth in the defence market.

The roll-out of 5G is expected to support revenue growth, with Rakon products already designed in by many Tier One customers.

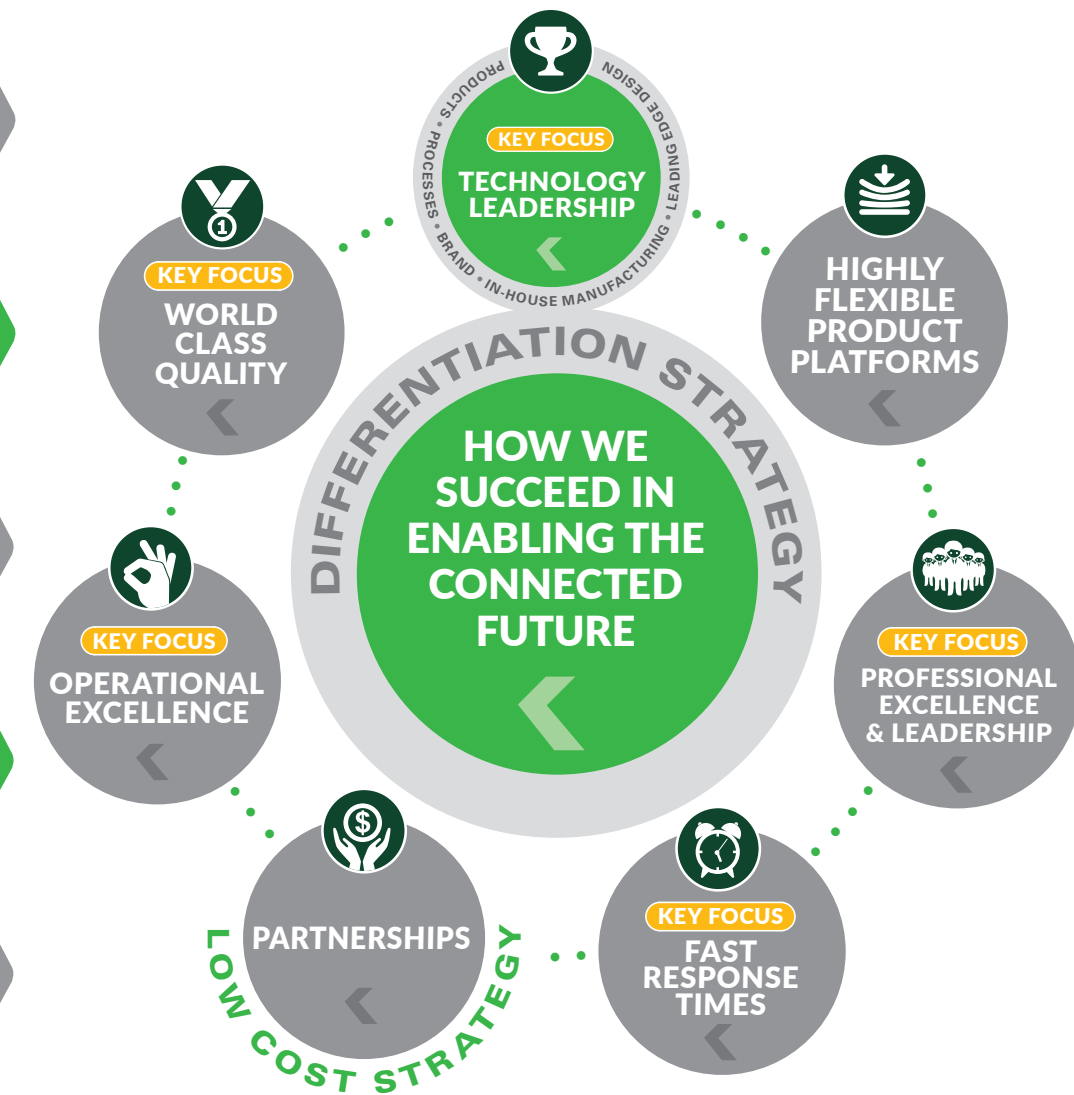
The key focus ahead is on delivery to meet existing demand. In addition, Rakon is focused on the development and release of new products and specifications to meet the ever-increasing requirements for higher speed data and New Space applications.

We look forward to bringing you further updates including FY2020 performance, at our Annual Shareholders' Meeting (ASM) on 9 August 2019.

Business and Strategic Focus

INPUTS

- 950+ global team
- Strong ecosystem partnerships & customer relationships
- Investment in R&D
- Our trusted brand
- Deep application expertise



- Enabling applications that change the way we live our lives
- Enabling our customers to advance technology
- Improved service and efficiencies for our customers
- Increased shareholder value
- Growth of our people

OUTPUTS

⁶ In FY2018 net profit after tax included \$8.8m of gains recognised in relation to the sale of property in Argenteuil, France. It also included the dilution gain and sale of shares in Thinxtra.
⁷ Movement due to the impact of higher working capital requirements to support growing revenue, the acquisition of Rakon India and the investment in additional manufacturing capacity.

Board of Directors



Mirela Munteanu
Quality Manager
Telecommunications
Business Unit
Gennevilliers, France

“World-class quality indicates a standard of excellence. As a world leader in frequency control products, Rakon must deliver excellence and be the 'best of the best' in terms of product design, product performance, customer satisfaction and value.

To be a world leader in an evolving competitive market, focus is always on achieving world-class quality.

We must continually do better and better. It requires the company to be agile enough to adjust its processes, tools and quality reporting measures to accommodate changes in a constantly changing business environment.”



Bruce Irvine

Chair and Independent Director
Appointed to Board in 2005.

Bruce was Managing Partner of Deloitte Christchurch from 1995 until his retirement in 2007 to focus on his director roles.

Bruce is a professional Director with extensive experience across a wide range of industries. He is a Chartered Fellow of the Institute of Directors, as well as an Accredited Fellow of Chartered Accountants Australia and New Zealand (CAANZ).

He is currently Chair of Heartland Bank Limited, Market Gardeners Limited and Skope Industries Limited. He is also a Director of Scenic Hotel Group Limited, House of Travel Holdings Limited and Gough Group Holdings Limited.

Bruce is involved in a voluntary capacity as a Trustee of Christchurch Symphony Trust.



Brent Robinson

Executive Director
Appointed to Board in 2005.

Brent has 40 years at Rakon, which includes establishing global operations and markets and 33 years as CEO / Managing Director.

Under Brent's leadership Rakon has grown into a global business and a recognised leader in the frequency control product industry.

Brent is an Honorary Fellow of the Institution of Professional Engineers New Zealand. He was awarded the New Zealand Hi-Tech Trust – Flying Kiwi Award in 2011.



Lorraine Witten

Independent Director
Appointed to Board in 2017.

Lorraine is a professional Director with extensive experience in technology and Information Communications Technology (ICT) sectors, as well as competence in strategy and entrepreneurship.

She is a chartered fellow of the New Zealand Institute of Directors and has 25 years' experience in senior management and finance roles, including as past General Manager of Telecom Mobile from 1997 to 2001.

Lorraine is Chair of Simply Security Limited, a company she founded in 2007, and Chair of vWork Limited. She is also a member of the Corrections Department Audit & Risk committee and a Director of TIL Logistics Group Limited and Horizon Energy Group.

Lorraine is a past Chair of Kordia Group Limited and a past Board member of New Zealand Trade & Enterprise, among others. She is a member of Chartered Accountants Australia and New Zealand (CAANZ).

Lorraine holds a Bachelor of Management Studies with First Class Honours from the University of Waikato.



Yin Tang Tseng

Non-Executive Director
Appointed to Board in 2017.

Yin Tang (Tony) is the current Chair of Siward Crystal Technology Co. Limited, a substantial shareholder (16.6%) in Rakon.

Tony has over 30 years of experience in the frequency control product industry, having founded Siward in 1988 and grown the company to become one of the leaders in the industry globally, with revenue of US\$100+ million. Tony is a Director of Securitag Assembly Group Limited.



Keith Oliver

Independent Director
Appointed to Board in 2017.

Keith is a professional Director and a business advisor with ALTO Capital Limited, where he is also a Director. He is a past Director of a range of NZ technology companies operating in international markets in Asia, Europe and the Americas, several of which he has been a founder and investor in.

Keith is the Executive Chair of Blackhawk Tracking Systems Limited, Chair of Health Vision (NZ) Limited and a Director of Wellington Drive Technologies Limited.

Keith holds a Bachelor of Engineering (Electrical) with First Class Honours from the University of Auckland.



Keith Watson

Independent Director
Appointed to Board in 2018.

Keith is a professional Director with substantial experience in the technology and engineering sectors.

He is a Chartered Member of the Institute of Directors in New Zealand and has over 30 years' experience in senior VP and executive roles, including positions with Hewlett Packard in North America, Asia and New Zealand. He was Managing Director of Hewlett Packard New Zealand from 2004 to 2016. Keith has governance, management and leadership experience in companies across the Asia Pacific region, the Americas, Central Europe, the UK, Australia and New Zealand.

He has previously chaired Opus International Consultants Limited and is a past Board member of the New Zealand Technology Industry Association (NZTech) and the University of Auckland Business School.

Keith is currently a Director of the New Zealand Institute of Economic Research (NZIER), Acumen Republic Limited and Complete 3D.

Achievements FY2019

Enabling applications that change the way we live our lives



Some of the R&D technology developments:

- Next generation (half the size) crystal technology for miniature OCXOs⁹ (*Telecommunications – 5G*)
- Improved environmental sensitivity crystals which are three times smaller (*Telecommunications – 5G*)
- New VCXO platform (*Telecommunications – 5G; Defence*)
- Next generation Application Specific Integrated Circuit (ASIC) development for OCXOs (*Telecommunications*)
- Development of reduced size, surface mount OCXO platform (*Telecommunications – 5G*)
- Next generation ASIC for TCXOs (*Telecommunications – 5G*)
- Next generation Space OCXO platform (*Space*)



Enabling our customers to advance technology



New products introduced¹⁰ in FY2019:

- XO's and VCXOs for New Space satellite constellations
- OCXOs for New Space satellite constellations
- XO's for avionics and high reliability applications
- Space crystal resonators following the guidelines of high reliability standards
- 5G Ultra-Stable TCXOs
- High temperature global positioning TCXOs
- ASIC OCXOs for radio equipment
- ASIC OCXOs for network equipment
- Digital OCXOs for 5G equipment
- VCOs for radar applications
- Low phase noise OCXOs for high reliability applications
- Lower cost OCXOs for 4G and 5G equipment

Improved service and efficiencies for our customers



- Rakon India was integrated into the global business.¹¹ Rakon India is a high quality low-cost operating platform which will enable Rakon to meet customer demand and grow local business.
For a full list of achievements in FY2019 please refer to the Rakon India Update on page 11.
- Recertification of all business units to the latest versions of Quality Management System (QMS) standards was completed.
- A global quality cost reporting system that is immediately focused on improving quality in Rakon's manufacturing operations was established. This will enable it to establish targets and identify opportunities and priorities for manufacturing cost reductions across the global organisation.
- The Qualification and Reliability Test Laboratory in NZ was doubled in size. This has increased the capability to execute new product qualifications and enhanced on-going reliability testing (for products coming out of NZ). It also provides additional test capability and support for the global organisation.
- Siward's manufacturing process for major Rakon Tier One customers was successfully qualified. This work has established the upgraded process and capabilities at Siward to manufacture more of Rakon's products to meet Tier One customer expectations.
- The Delivery In Full, On Time and In Specification (DIFOTIS) measure was adopted across the global business.



Growth of our people



A strategic focus on strengthening professional excellence and leadership through acquisition and development.

- Rakon's global team was strengthened through the integration of Rakon India into the Rakon Group.
- Four new leadership positions were created and appointed: Company Secretary, Head of Global Engineering, Head of Global Product Management and Managing Director, India.
- Growth of Rakon people continued; 27% of open positions in FY2019 were filled through internal promotions.



Shareholder value

Business more profitable. Underlying EBITDA up on increased revenue.

⁸ Icons represent Rakon's areas of strategic focus. Refer to graphic on page 7.

⁹ Product acronyms and definitions are explained in the Glossary on page 19.

¹⁰ New products introduced by Rakon to the market are defined as products which have begun sampling.

¹¹ The Rakon India integration was on target to complete at the time of final due date of this published document (30 June 2019).

Global Executive Team



Roy Cann
Head of Global Engineering
Auckland, NZ

“Rakon is leveraging its global R&D capabilities to retain its position as a leading provider of new technologies in frequency control.”

We are investing in new manufacturing approaches to address market needs for ever-smaller devices, developing new ASICs and architectures to facilitate leading edge oscillator performance, and creating advanced multi-physics simulations to reduce time to market.”



Brent Robinson
CEO / Managing Director &
Chief Technology Officer

Brent joined Rakon in the 1970s as a radio and electronics apprentice. As a member of Rakon's engineering team, he developed various key product and production technologies and in 1986 he was appointed Managing Director and Chief Executive Officer. Under Brent's leadership Rakon has grown into a global business and a recognised leader in the frequency control product industry.

In his capacity as Chief Technology Officer, Brent drives the business's technology and innovation.



Darren Robinson
Sales and Marketing Director

Darren has been Marketing Director since 1990, having earlier held various roles with the company in New Zealand and overseas. He leads the sales and marketing

activities for Rakon globally and has been instrumental in the company's expansion into new markets, its commercialisation of new applications and its development of business relationships with many Fortune 500 companies.

Through Darren's in-depth understanding of the markets Rakon competes in, he also plays an integral part in steering its R&D efforts. He guides product development teams to meet new requirements in emerging applications and to solve problems for customers. Darren is also a strong advocate for Rakon's commitment to fostering local engineering talent.



Dr. Sinan Altug
Managing Director, Europe

Sinan joined Rakon in 2002. In his role as Managing Director, Europe, he is responsible for all aspects of Rakon's European business units including manufacturing operations,

engineering, R&D and sales, which contribute significantly to Rakon's turnover.

Prior to his current role, Sinan was the Global Business Development Director, driving Rakon's entry and growth in multiple strategic business segments. Before joining Rakon Sinan held various management positions in the frequency control product industry. As well as his PhD in Electrical Engineering he has an MBA.



Anand Rambhai
Chief Financial Officer

Anand joined Rakon in January 2012 and was appointed CFO in November 2018. Anand brings strong leadership, commercial skills and in-depth Rakon business knowledge to

the company. In his current role he is responsible for Rakon's finance, information systems and investor relations functions.

Anand has gained broad financial and commercial experience in previous roles, including as GM of Finance and General Manager. His previous experience includes tenures at Sony, British Telecom and Deloitte. Anand is a member of Chartered Accountants Australia and New Zealand (CAANZ).



Margo Thomas
Global General Manager, People and Capability

Margo has been the General Manager of People and Capability since January 2016. She is responsible for global Human Resources (HR) strategy, policy, organisational alignment, talent acquisition and management, remuneration, recognition, leadership development, change management, employment relations, consultancy advice, and health and safety.

Margo has held senior HR positions in a range of industries, with Crowe Horwath, Spark, Westpac and New Zealand Post.



Scott Stemper
Global Quality Manager

Scott joined Rakon in January 2015. He leads the development and improvement of quality processes and systems to enhance Rakon's drive to be the leading provider of world-class frequency control products.

Scott's background includes ten years as Global Quality Manager with Raltron Electronics Corporation and 20 years with CTS Frequency Controls in oscillator product engineering and quality management roles. He has also held senior quality management positions with L3 Technologies and D&S Consultants Incorporated.



Cliff Hand
Senior Programme Manager, Global Integration

Cliff joined Rakon in January 2018. He is responsible for integration of the global business and driving operational improvements in productivity and efficiency to increase profitability. Prior to joining Rakon, Cliff held the position of General Manager for the Fairview Group's Glass Relate business. He has held cross-functional responsibility for finance, supply chain, sales and customer services, and for operations across two sites.

Cliff has held a number of senior positions in a variety of manufacturing environments, including as CEO for Patchell Industries Ltd and nine years at Fletcher Building.



Dr. Roy Cann
Head of Global Engineering

Roy joined Rakon in May 2018 as Head of Global Engineering. He is responsible for driving new product developments and further integrating Rakon's global engineering teams to leverage the benefits of a collaborative R&D team. Prior to joining Rakon, Roy held the position of Electronic Controls Design Manager at Fisher and Paykel Technologies, where he was responsible for the design and supply chain management of high volume microprocessor-based motor controllers across New Zealand and China.

Prior to this, Roy was an Engineering Director at Trimble for five years. He has held a number of other senior roles with multi-site responsibilities, including positions with Avery Weightronic (UK), Rolls-Royce Aerospace (UK), Meissner Power Systems (South Africa), and Connetics (NZ). Roy holds a PhD in Electrical Engineering.



Maureen Shaddick
Company Secretary

Maureen joined Rakon in November 2018. She provides legal, company secretarial and regulatory advice and support. She has over 25 years' experience as a commercial lawyer and governance adviser in private practice, corporates and not-for-profit organisations in New Zealand, London and Dubai.

Maureen was the General Counsel and Company Secretary of Genesis Energy from 2003 to 2016. She is the Chair of Cancer Research Trust New Zealand and has been a Trustee since 2003. She has also held a number of other not-for-profit governance roles.



Borja Thomas (Thomas)
Head of Global Product Management

Thomas joined Rakon in April 2015. In his current role he is responsible for generating and growing profit for the business through the existing and future product offering.

Thomas works closely with the Chief Technology Officer and the engineering and sales teams to prioritise R&D and bring to market new products that fulfil customer and market requirements, and are in line with the business's vision. He is also responsible for setting strategies and roadmaps that determine Rakon's product offering.

Prior to joining Rakon, Thomas was a Product Line Manager for Nexans (formerly Alcatel) in France and led the launch of two new product lines addressing the smart grid and electric vehicle markets.

Rakon India Update

Rakon acquired 100% ownership of Rakon India to allow the company to leverage the full potential of what is a high quality, low-cost operating platform suitable for growth. The acquisition also provided the unconstrained ability to align the business with its international operations, and it has given Rakon direct access to the growing market in India.

Rakon Senior Programme Manager – Global Integration Cliff Hand has been based at Bengaluru, India since April 2018 and has led the integration programme.

“The integration programme was successful overall. We are now operating independently from Centum and this was achieved four months ahead of schedule,” he says.

Rakon India Managing Director Arun Parasnis says the investment into the Bengaluru facility has enabled scalability of the operations in a short time span.

“We have been able to scale up quickly to meet an increased market demand.”

He says Rakon India is also now well equipped for anticipated future growth.

“Rakon India is in a very good position to meet growth in the local space, defence and aeronautics sector in India. We have a 20 member R&D team equipped to design, develop and qualify frequency control products for our local market. Rakon also has an established sales and business development team. We are working closely with our local industry and participate in the 'Make in India' government programme.”

Arun says Rakon India is also gearing up to be ready for anticipated global business growth.

“We have a dedicated team with the right skills and capabilities to enable Rakon India to ramp up production further. Rakon India is a world-class manufacturing facility, and has the flexibility and scalability to facilitate future growth while optimising cost.”

Appointment of Managing Director



Arun Parasnis
Managing Director, Rakon India

Arun joined Rakon in October 2018. He is responsible for the Rakon India business, including financial results, business growth, R&D and the general management of all business functions.

Arun has had 30 years of experience in the electronics industry, overseeing functions including engineering, operations, business development and profit and loss management. His experience across the electronics industry includes electronic components, consumer electronics and Electronics Manufacturing Services (EMS).

Prior to joining Rakon, Arun was the Vice President of Cyient Limited. He has also held senior positions at Radiall India Private limited, Jabil Circuit India Private Limited and Vishay Components India Private Limited (formerly the Philips Electronics Passive Components division).



Rakon has invested in and upgraded its world-class manufacturing and research and development facility at Bengaluru, India.

Key Achievements FY2019

- Doubled monthly capacity from pre-acquisition levels
- Growth in revenue (up 65%) compared with FY2018
- Establishment of senior leadership team reporting to the newly appointed Managing Director
- Successful implementation of Enterprise Resource Planning (ERP) software (SAP)
- Implemented Rakon key performance metrics including Delivery In Full, On Time and In Specification (DIFOTIS)
- Began embedding Integrated Business Planning (IBP) process to further achieve operational excellence and customer satisfaction
- Recruitment of 149 new team members

Areas of focus in FY2020

- Ramping up production volumes to meet demand and utilise increased capacity
- Continuous improvement initiatives to ensure operational excellence
- Full embedding of Integrated Business Planning (IBP) process and alignment with global business
- Further business development in the space, aeronautics and defence markets
- People and organisational development (to achieve professional excellence and leadership)
- Creation of a cohesive culture in line with Rakon values
- Optimisation of new ERP system

Financial Summary



Eden Rima
Inventory Administrator
Supply Chain
Auckland, NZ

“Operational excellence is a key focus in the daily operations at Rakon. This is because the operational strategies implemented are focused on delivering end products that fulfil our customer requirements.”

This financial summary provides partially summarised financial information only regarding the financial performance of Rakon Limited for the year ended 31 March 2019. Please refer to the Rakon Limited Annual Report 2019, for the full financial statements and accompanying notes.

¹² Refer to the footnote on page 19 for explanation of Underlying EBITDA.

Summary of Revenue and Profit For the year ended 31 March 2019	2019 \$000s	2018 \$000s
Revenue	113,985	101,127
Underlying EBITDA¹²	13,270	12,094
Depreciation and amortisation	(5,802)	(4,342)
Net dilution gain on Thinxtra shares	–	4,815
One-off cash gains realised on derivatives closed out	–	1,096
Interest	(534)	(501)
Adjustment for associates and joint venture share of interest, tax and depreciation	(1,120)	(1,751)
Impairment	–	(120)
Other non-cash items	(340)	(294)
Income tax expense	(2,110)	(998)
Net profit after tax	3,364	9,999
Summary of Statement of Cash Flows For the year ended 31 March 2019	2019 \$000s	2018 \$000s
Net cash flow		
– Operating activities	(1,768)	7,904
– Investing activities	(12,674)	3,856
– Financing activities	(24)	(4,542)
Net (decrease)/increase in cash and cash equivalents	(14,466)	7,218
Foreign currency translation adjustment	144	246
Cash and cash equivalents at the beginning of the period	7,540	76
Cash and cash equivalents at the end of the period	(6,782)	7,540

Balance Sheet As at 31 March 2019	2019 \$000s	2018 \$000s
Assets		
Current assets		
Cash and cash equivalents	4,719	10,364
Trade and other receivables	38,220	28,395
Financial asset at fair value through profit and loss	19	211
Derivative financial instruments	307	1,078
Inventories	39,310	24,171
Current income tax asset	561	146
Total current assets	83,136	64,365
Non-current assets		
Trade and other receivables	2,267	2,716
Derivative financial instruments	258	334
Financial asset at fair value through other comprehensive income	4,549	–
Property, plant and equipment	19,394	13,481
Intangible assets	9,149	9,115
Investment in associate	10,399	14,640
Interest in joint venture	–	2,876
Deferred tax asset	7,352	5,906
Total non-current assets	53,368	49,068
Total assets	136,504	113,433

Balance Sheet As at 31 March 2019	2019 \$000s	2018 \$000s
Liabilities		
Current liabilities		
Bank overdraft	11,501	2,824
Borrowings	474	98
Trade and other payables	26,398	19,107
Derivative financial instruments	945	235
Provisions	471	961
Deferred consideration on acquisition	1,885	–
Deferred revenue	–	101
Total current liabilities	41,674	23,326
Non-current liabilities		
Derivative financial instruments	343	78
Borrowings	412	–
Provisions	2,990	2,734
Deferred tax liabilities	1,069	244
Total non-current liabilities	4,814	3,056
Total liabilities	46,488	26,382
Net assets	90,016	87,051
Equity		
Share capital	181,024	181,024
Other reserves	(21,153)	(20,754)
Retained earnings	(69,855)	(73,219)
Total equity	90,016	87,051
Total equity and liabilities	136,504	113,433



Products and Markets



Sara Hoey
Customer Service
Representative
California, USA

“At Rakon, we understand how important fast response times are to our customers. In a very competitive market fast and accurate responses are as important as pricing, lead time and quality.

Customers can count on our efficient and knowledgeable team to respond to any enquiry. From conception to finished products, fast response times are critical in our ever-evolving industry.

At Rakon we strive to be one step ahead, meeting and exceeding our customers' needs. Rakon's global network of bright individuals functions as a well-tuned machine, prepared to develop, support and deliver quality service and products on time.”



Telecommunications

The equipment that enables communications networks to operate. Includes small cells, 4G / 5G mobile base stations, microwave, backhaul networks as well as data centres, switches, routers and optical transmission equipment.

47%



Space & Defence

Applications where reliability, precision, and performance are all critical. Includes New Space, avionics, radars and other high reliability applications.

28%

Sub-systems, OCSOs, USOs, VCSOs, OCXOs, TCXOs, VCXOs, XOs, VCOs and Crystals



Global Positioning

Includes all Global Navigation Satellite System (GNSS) equipment and other positioning systems. Applications include Personal Navigation Devices (PNDs), high precision positioning (surveying, mining, and agriculture), emergency locator beacons, aviation, drones, automotive, asset tracking, and sport and recreation products.

18%

TCXOs, XOs and Crystals



Emerging and Other

Many applications including wireless control, test and measurement, smart grids and metering, Machine-to-Machine (M2M), the Internet of Things (IoT), as well as other emerging markets.

7%

OCSOs, OCXOs, TCXOs, VCXOs, XOs and Crystals

% Share of Revenue

New Products Introduced¹³ in FY2019

Space crystal resonators following the guidelines of high reliability standards

VCOs for radar applications

XOs and VCXOs for New Space satellite constellations

High temperature global positioning TCXOs

XOs for avionics and high reliability applications

5G Ultra-Stable TCXOs

ASIC OCXOs for telecommunications equipment

OCXOs for New Space satellite constellations

OCXOs for 4G and 5G equipment

Long holdover and Digital OCXOs for 5G equipment

Data centres all over the world require synchronised timing solutions.

¹³ New products introduced by Rakon to the market are defined as products which have begun sampling.

Why Customers Choose Rakon

Rakon's Strengths	Why Customers Choose Rakon
Technology leaders	► Readiness for growth markets
Deep application expertise In-house R&D teams	► Enabling next generation technologies
Global footprint	► Localised customer support and faster response times
Broad product offering	► Reduced Approved Vendor List (AVL)
Highly flexible product platforms	► Faster time to market
Global manufacturing platform	► Optimised performance and cost
World-class quality	► Product reliability
Strong ecosystem partnerships and customer relationships 50+ years heritage	► Trusted brand

What Rakon's Customers Say¹⁴

- “Rakon has consistently provided support, responsiveness, engineering technical expertise and on-time delivery of production and sample components.”
- “We have very good cooperation with Rakon, and are satisfied with Rakon's support from technology, application and communications aspects.”
- “Rakon's service and quality are the best, however, we also need good prices to compete with our competitors.”
- “Rakon is the most preferred OCXO and TCXO supplier for 4G & 5G systems at our company. Thus we need Rakon's cooperation to accomplish our 6 billion dollar target for calendar year 2019.”

Cities where Rakon's OEM Customers are Based



¹⁴ Quotes have been taken from customer satisfaction surveys received. They have been edited for grammar.

Rakon Everywhere

Rakon products are embedded in electronic systems everywhere. Whether it be within wired or wireless networks, radar, navigation systems or satellites in space . . . Rakon products enable connectivity.



Nelson Chen
Regional Sales Manager
Taipei, Taiwan

“Time synchronisation is becoming critical today as cellular networks start to deploy advanced radio features.

Rakon is an innovator of frequency control solutions and delivers significant value for its customers.

We provide market-leading, advanced technology for next-generation mobile networks.”

FY2019 has been fruitful for Rakon in terms of new opportunities in the space and defence market. We received the first order for our New Space OCXO for a new LEO constellation. We won new customers for our ultra-low noise OCSOs in America, Europe and Asia. We also won a government-funded contract to develop new OCSOs which will enable Rakon access to more applications.

Fabrice Goulven
Strategic Marketing Manager, Space & Defence
Mougins, France

Acronyms
Augmented Reality & Virtual Reality (AR/VR)
Digital Subscriber Line (DSL)
Long Term Evolution-Advanced (LTE-A)
Ultra-Reliable Low-Latency Communication (URLLC)
Very Small Aperture Terminal (VSAT)
Wide Area Network (WAN)



Rakon's superior products are enabled by its state-of-the-art crystal technologies, unique ASIC solutions and vast know-how of oscillators applied with digital processing techniques.

Rakon is distinguished as the primary partner for frequency control products amongst the major equipment makers of the world. Its innovative, cost effective and foresighted solutions solve the complex requirements of next generation networks and applications.

Ullas Kumar
Business Development Manager,
Carrier & Enterprise Networking
Singapore





Arun Parasnis
Managing Director
Rakon India
Bengaluru, India

“When operating within a high-technology, competitive market environment there is constant pressure to enhance organisational performance. Great leadership and professional excellence are required to deliver products that fulfil customer requirements.

In Rakon we endeavour to meet customer requirements through technology vision and business excellence management. Our readiness of products for 5G technology and the acquisition of Centum Rakon [now Rakon India] to address global product demand, are outcomes of visionary leadership and professional excellence.”

Culture & Corporate Social Responsibility



Culture

Rakon's people are passionate about what they do and are highly engaged in enabling new technology possibilities. Its customers are global leaders in their respective fields and enabling next generation technologies requires agility and excellence in all areas of the business. Rakon recruits highly skilled people and leaders globally. It works at a fast pace and evolves constantly so that it can quickly bring to market leading products and solutions for its customers.

Rakon has built a world-class design and manufacturing platform and a team with depth of knowledge and experience across a wide range of roles and functions. Focus is around working in unity as one team and doing things better each day. Its engineering and R&D teams collaborate closely on projects to benefit from the advantages a truly diverse, global team provides.

Corporate Social Responsibility

Rakon is committed to conducting its business in accordance with all applicable laws and regulations of the countries in which it operates and acts in accordance with the highest standards of business conduct and ethics. The company is committed to a sustainability policy which includes the respect for universally recognised standards for the environment, human rights, labour and ethics. Rakon's Board is committed to conducting business in the right way and maintaining the highest standards of corporate behaviour and accountability. The Corporate Governance Report in the Rakon Limited Annual Report 2019, includes the Board's commitment with regard to the areas of health and safety, ethical behaviour and diversity.

Environment

Rakon has been part of the Carbon Disclosure Project (CDP) since 2011 and reports on its global CO₂ emissions. The company complies with applicable regulatory environmental requirements and has ISO14001 certification at its facilities in New Zealand and India. This is an international standard that sets out the requirements

Some of the initiatives Rakon supported by way of donation, sponsorship or voluntary time and expertise in FY2019.



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Image: Courtesy of the
Auckland Rescue
Helicopter Trust.

Rakon is a supporter of the Auckland Rescue Helicopter Trust.

for an organisation's environmental management system. Across the global business initiatives are on-going to reduce waste and become more efficient in its use of energy and natural resources. The company encourages the creation of environmentally friendly products through its design and development processes.

Social Contributions

In FY2019 Rakon made a number of small donations to selected charities, largely where its headquarters are based. Rakon's social focus is to support initiatives that aim to improve wellbeing and the quality of life for our next generation. A special circumstance involved Rakon donating to Victim Support for the families affected by the Christchurch shooting in March 2019.

As part of a wellness initiative, the team in New Zealand participated in 'StepSeptember' – a challenge of walking 10,000 steps per day in September. The team raised over ten thousand dollars for The Cerebral Palsy Society of New Zealand. Rakon New Zealand also awards scholarships and graduate programmes to top talent to strengthen the industry's Science, Technology, Engineering and Mathematics (STEM) base. Rakon recognises the importance of being socially responsible and will continue to make advances in this area.

The Future of Connectivity has Begun

In this ever-changing world where data is being transferred everywhere at any time, all the markets Rakon serves point to an increasing demand for timing and frequency control solutions. The enabling of new applications will bring together a wirelessly connected world of everything.

Applications continue to follow the demand of the end user, but are limited to the bandwidth that exists. As data infrastructure evolves and is rolled out, new applications are enabled, such as virtual reality and autonomous vehicles; applications which will radically enhance and change the way we live.

In the telecommunications market, mobile networks and technology have been evolving through 2G, 3G and 4G, with the transition to 5G happening now. The roadmap to full 5G

deployment is staggered.

The initial phase uses existing infrastructure with new 5G radios (4.5G and 5G NR) to immediately boost the mobile network customer experience. This is complemented by software defined networks, where digital systems are used to coordinate and improve the radio network. In later phases, deployments of new dedicated 5G radio equipment (5G standalone) will take place, paving the way for a fully upgraded 5G network. Full 5G deployment will enable much faster speeds than

4G, and much wider bandwidth, enabling massive connectivity, better reliability and spectrum efficiency.

In the space and defence market, the need for data everywhere increases the need for satellite constellations for communications and Earth observation. In the global positioning market, GNSS and communication requirements are becoming ubiquitous for precision farming, recreation devices and emergency locator beacons.

At the core of Rakon's markets is the need to send, receive or transfer data as quickly and accurately as possible. Whatever the application may be, within every node, within every network, a stable and reliable timing and frequency reference is required for the successful transfer of data. Rakon solutions provide this timing, enabling the connectivity for today's applications as well as the technological possibilities of the future.



Definition of Underlying EBITDA

Rakon has used 'Underlying EBITDA' as a measure of non-GAAP financial information in this 2019 Review document. Underlying EBITDA is defined as 'Earnings before interest, tax, depreciation, amortisation, impairment, employee share schemes, non-controlling interests, adjustments for associate's and joint venture's share of interest, tax and depreciation, loss on disposal of assets and other cash and non-cash items (Underlying EBITDA)'.

Underlying EBITDA is a non-GAAP measure that has not been presented in accordance with GAAP. The Directors present Underlying EBITDA as a useful non-GAAP measure to investors, in order to understand the underlying operating performance of the Group and each operating segment, before the adjustment of specific cash and non-cash items and before cash impacts relating to the capital structure and tax position. Underlying EBITDA is considered by the Directors to be the closest measure of how each operating segment within the Group is performing. Management uses the non-GAAP measure of Underlying EBITDA internally, to assess the underlying operating performance of the Group and each operating segment.

Underlying EBITDA as non-GAAP financial information has been extracted from the financial statements for the year. Except for Underlying EBITDA, other information provided to the chief operating decision maker is measured in a manner consistent with GAAP. The Directors provide a reconciliation of Underlying EBITDA to net profit for the year, refer note B1 c) of the Rakon Limited Annual Report 2019.

rakon

Glossary

Crystal Oscillator (XO)

An XO is a quartz crystal combined with oscillation circuitry to generate a repeating electric signal.

Crystal Resonator (Xtal)

At the heart of XOs, VCXOs, TCXOs and OCXOs are quartz crystals, which are designed to resonate with electrical stimulation using the piezoelectric effect.

Oscillator

A circuit or device that generates a repetitive electric signal and consists of a resonator and electronic components.

Oven Controlled Crystal Oscillator (OCXO)

A crystal oscillator that uses a miniaturised oven to keep its internal temperature constant.

Oven Controlled SAW Oscillator (OCSO)

An oven controlled oscillator using Surface Acoustic Wave (SAW) technology instead of a quartz crystal.

Sub-System

A fully programmable system solution used to upgrade an existing radar, improve performance and extend its life.

Surface Acoustic Wave resonator (SAW)

At the heart of SAW oscillators are SAW resonators that use the piezoelectric effect to generate electrically stimulated acoustic waves at a resonant frequency.

Temperature Compensated Crystal Oscillator (TCXO)

A crystal oscillator with additional circuitry to remove frequency variations due to temperature change.

Ultra Stable Oscillator (USO)

An extremely stable oscillator used in high-end space and instrumentation applications.

Voltage Controlled Crystal Oscillator (VCXO)

A crystal oscillator with an adjustable output frequency.

Voltage Controlled Oscillator (VCO)

A purely electronic oscillator circuit with an adjustable output frequency, without the use of a crystal or SAW resonator.

Voltage Controlled SAW Oscillator (VCSO)

A SAW oscillator with an adjustable output frequency.



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rakon

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Managing Your Shareholding Online

To change your address, update
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