



# ABOUT THIS REVIEW

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#### Welcome to our 2021 Annual Review.

This document reports on operational and financial performance for the year to 31 March 2021 and should be read in conjunction with Rakon's Annual Report 2021, which can be accessed on our website with the QR code below right.

The information provided in these documents has been compiled in line with NZX Listing Rules and recommendations for investor reporting.

Financial information has been prepared in accordance with appropriate accounting standards and Rakon's Annual Report has been independently audited by PricewaterhouseCoopers.

Throughout this document we have focused on what we believe matters most to our stakeholders and our business. We have endeavoured to ensure all information is accurate, including performing internal verification.

# **Enabling connectivity** anytime, anywhere

Rakon is a world leader in the design and manufacture of advanced frequency control and timing solutions.

With ever-increasing amounts of data being transferred around the planet at any time, Rakon plays a critical role in enabling the networks and applications that bring together a wirelessly connected world.

#### Please note:

All amounts in this document are in NZ\$ unless otherwise specified. Product acronyms and definitions are explained in the Glossary on page 31.

To view Rakon's Annual Report 2021: www.rakon.com/investors/reports-presentations-events





# FINANCIAL SNAPSHOT

Financial Year 2021 12 months ended 31 March 2021

**TOTAL REVENUE** 

\$128.3m

\$77.1m

**NET PROFIT AFTER TAX** (NPAT)

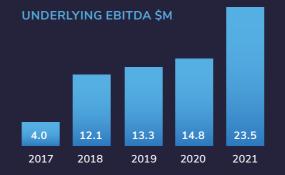
\$9.6m

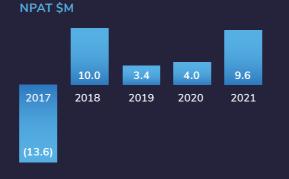
UNDERLYING EBITDA<sup>1</sup>





2017 2018 2019 2020 2021





# CHAIR'S & CEO'S REPORT

In a year impacted by Covid-19, through the resilience and commitment of our global team, Rakon has delivered a strong result for Financial Year 2021 (FY2021). We have delivered continued growth in revenue and earnings as we experienced sustained demand from the global telecommunications sector for our industry-leading products. We have also built on the solid operating improvements made in recent years.

We have improved market share, strengthened partnerships and won key contracts with new product designs. These successes have occurred while adapting and upscaling our operations and with a well-managed supply chain through Covid-19 disruption. Our achievements are highlighted on page 7.

#### Financial overview

Revenue rose 8% to \$128.3 million compared with \$119.0 million for the year to 31 March 2020 (FY2020).

Gross margin improvements contributed strongly to a 59% increase in Underlying EBITDA to \$23.5 million (2020: \$14.8 million), ahead of the company's guidance of \$20 – 22 million. NPAT rose 142% to \$9.6 million from \$4.0 million for the same period a year ago.

Revenue was up strongly with sustained growth from Telecommunications driven by increased 5G momentum. Our global business was initially impacted significantly by Covid-19, however demand returned strongly as key customers continued to upgrade their core networks and progress their 5G roll-out plans.

Rakon's core market segments contributed to 95% of total revenue, comprising of: \$77 million from Telecommunications (up 18%), \$30 million from Space & Defence (up 7%), and \$14 million from Positioning (down \$4.9m).

Gross profit was \$58.9 million, up \$6.9 million from the prior year. Gross margin was also higher in percentage terms (45.9% vs. 43.7% in FY2020) as the product mix changed towards the higher margin segments. Operating expenses for the year were \$49.0m, up \$0.9m on the prior year. This increase was mainly due to higher spend on Research and Development (R&D), with key developments being accelerated.

Operating cash flow was 113% higher at \$20.1m. Cash generation was strong on the back of earnings, as well as customer deposits received. The increased cash flows strengthened the balance sheet, moving the company from a net debt position of \$7.9m to a positive cash position of \$5.0m at year-end.

Inventory was managed carefully through global supply chain disruptions, with year-end inventories at a similar level to the prior year. Rakon's total assets grew 3% to \$154 million, and the company's increased earnings contributed to a 13% improvement in equity.

The company will continue to maintain a conservative balance sheet as we manage ongoing uncertainties and risks, and look to consolidate our financial position. Accordingly the directors have determined not to declare a dividend for the period to 31 March 2021.



The initial impact of the pandemic was severe, affecting all of Rakon's global operations. Manufacturing at plants in New Zealand and India was initially heavily constrained. Prompt mitigation actions were taken including health and safety measures and cost reductions to protect our people and the business.

Covid-19 government assistance received in New Zealand, France and the United Kingdom ensured continued employment of staff until production levels resumed.





# CHAIR'S & CEO'S REPORT

The operation in each country adapted to local lockdown conditions enabling the continued delivery of essential products, while stringent protection measures ensured the ongoing safety of our people. Pages 14 –15 provide more information about our response, including an update on the situation at Rakon India since year-end.

#### Market segment performance

On pages 11–13 of this document we provide an overview of Rakon's performance in its core markets of Telecommunications, Space & Defence and Positioning.

Highlights for the year include seizing new market growth opportunities in Telecommunications, data centres and NewSpace<sup>2</sup>, as well as responding to an unexpected and substantial opportunity that arose from global chip shortages as a result of October 2020's factory fire at Asahi Kasei Microdevices (AKM) in Japan.

The adoption of our new leading-edge XMEMS® technology also progressed with strategic design-in wins with key Tier 13 customers. XMEMS® is also now a registered trademark in key regions.

#### Governance

The Board acknowledges and thanks Rakon's more than 950-strong global team for its tremendous efforts throughout the year. Despite the challenges and disruptions, Rakon's FY2021 performance demonstrated the capability, resilience and commitment of our people, and the agility and responsiveness of our business. As Covid-19 took hold and restrictions were imposed, the Rakon Board moved into a phase of weekly meetings which continued into the first six weeks of FY2021 to support and oversee management's response to the

crisis and to keep abreast of issues as they arose<sup>4</sup>. While in New Zealand we have been able to resume a level of normality. Covid-19 has continued to affect our teams elsewhere. We were very saddened by the recent loss in India of one of our long-serving employees and the Board extends its condolences to their family and our team at Rakon India.

A deep and extensive review of Rakon's strategy gave the Board confidence that Rakon is well placed to respond to both the risks and opportunities in front of it. The exercise identified efficiencies that deliver to the bottom-line. It also provided assurance that the company will gain from the roll-out of 5G by network equipment providers across the world and the new opportunities on the horizon for further diversification and growth.

At the Annual Meeting in August 2020 we advised shareholders that the Board and management would review Rakon's investor communications. This review has seen new initiatives introduced including the option for shareholders to receive direct email notifications of investor news and more regular investor updates, as well as the launch of a new refreshed website in May 2021.

#### Summary and outlook

Our strong FY2021 result was delivered through a world-wide team effort, building on the progress made in recent years and by playing to our strengths.

Covid-19 has highlighted Rakon's agility and while challenges continue, at the same time new opportunities have emerged that have accelerated technological change.

Rakon has solid foundations. Our global platform of R&D, manufacturing and sales; our agility to scale up

and down to meet market demand; and our conservative financial management all position us well to capture evolving growth opportunities, while prudently managing risk.

The company expects solid revenue growth in FY2022<sup>5</sup>, driven by significant orders stemming from current global TCXO shortages and continued expansion in the 5G, data centre and NewSpace segments. While the TCXO shortage is expected to abate, Rakon is confident it will retain a good share of this business as customers diversify their supplier base for continuity of supply. Covid-19's impact on our supply chain and manufacturing continues to be managed closely to ensure delivery of FY2022 orders.

Rakon confirms its Underlying EBITDA<sup>6</sup> guidance range of \$27 – 32 million for the year to 31 March 2022.

Beyond FY2022 Rakon is cautiously optimistic. The roll-out of 5G is expected to continue for a number of years. The guantum of Low Earth Orbit (LEO) satellites is expected to increase and the demand for industrial applications like autonomous tractors and automated factories is continuing to rise. This, combined with Rakon's development pipeline and new XMEMS® manufacturing technology provides a positive outlook.

Bruce Irvine

Managing Director & CEO

## **KEY ACHIEVEMENTS**



# Strong FY2021 result

We delivered continued growth in revenue and earnings through sustained demand and solid operating improvements.



# **Effective Covid-19 response**

The commitment and resilience of our global team ensured we continued operating with minimal downtime and supply chain disruption.



# New business and market opportunities captured

We rapidly deployed new product designs and increased capacity to meet the rise in demand because of worldwide chip shortages.



## XMEMS® wins

A year on from officially launching this proprietary technology, we're designed into strategic customers' applications.

<sup>2</sup> NewSpace refers to a globally emerging private/commercial spaceflight industry. This includes aerospace companies and ventures working to develop faster, better and cheaper access to space and space technologies. It includes Low Earth Orbit satellites.

<sup>&</sup>lt;sup>3</sup> Refers to recognised key players within their respective industries and which make up a significant market share.

<sup>&</sup>lt;sup>4</sup> Refer to Principle 2 of the Corporate Governance Report in the Annual Report 2021, where the number of Board meetings is recorded.

<sup>&</sup>lt;sup>5</sup> Refers to the year to 31 March 2022 (FY2022).

<sup>6</sup> Refer to the footnote on page 31 for the definition of Underlying EBITDA as a non-GAAP financial measure, referred to in this document.

# FINANCIAL SUMMARY

| Summary of Profit & Loss For the year ended 31 March 2021          | 2021<br>\$000s | 2020<br>\$000s |
|--|----------------|----------------|
| Revenue  | 128,260        | 118,980        |
| Underlying EBITDA <sup>7</sup>                                     | 23,484         | 14,787         |
| Depreciation and amortisation                                      | (8,692)        | (8,823)        |
| Interest   | (1,599)        | (1,055)        |
| Adjustment for associate's share of interest, tax and depreciation | (1,848)        | (1,447)        |
| Other non-cash items   | (180)          | (178)          |
| Income tax expense   | (1,527)        | 696            |
| Net profit after tax   | 9,638          | 3,980          |
| Summary of Cash Flows For the year ended 31 March 2021             | 2021<br>\$000s | 2020<br>\$000s |
| Net cash flow  |                |                |
| – Operating activities   | 20,059         | 9,401          |
| – Investing activities   | (5,076)        | (6,631)        |
| – Financing activities   | 3,488          | (3,078)        |
| Net increase/(decrease) in cash and cash equivalents               | 18,471         | (308)          |
| Foreign currency translation adjustment                            | 765            | (672)          |
| Cash and cash equivalents at the beginning of the period           | (7,762)        | (6,782)        |
| Cash and cash equivalents at the end of the period <sup>8</sup>    | 11,474         | (7,762)        |

This financial summary provides partially summarised financial information only, regarding the financial performance of Rakon Limited for the year ended 31 March 2021. Please refer to the Rakon Limited Annual Report 2021 for the full financial statements and accompanying notes.

| Balance Sheet<br>As at 31 March 2021                             | 2021<br>\$000s | 2020<br>\$000s |
|--|----------------|----------------|
| Assets Current assets  |                |                |
| Cash and cash equivalents  | 15,073         | 5,086          |
| Trade and other receivables                                      | 38,906         | 42,379         |
| Financial asset at fair value through profit and loss            | 333            | 2              |
| Derivative financial instruments                                 | 2,521          | 27             |
| Inventories  | 37,699         | 37,624         |
| Current income tax asset   | 478            | 889            |
| Total current assets   | 95,010         | 86,007         |
| Non-current assets   |                |                |
| Trade and other receivables                                      | 3,843          | 2,702          |
| Derivative financial instruments                                 | 587            | -              |
| Financial asset at fair value through other comprehensive income | 3,120          | 2,918          |
| Property, plant and equipment                                    | 18,296         | 18,924         |
| Intangible assets  | 7,584          | 9,003          |
| Investment in associates   | 12,333         | 11,714         |
| Deferred tax asset   | 6,398          | 9,246          |
| Right-of-use assets  | 7,195          | 9,730          |
| Total non-current assets   | 59,356         | 64,237         |
| Total assets   | 154,366        | 150,244        |

| Balance Sheet As at 31 March 2021 | 2021<br>\$000s | 2020<br>\$000s |
|-----------------------------------|----------------|----------------|
| Liabilities                       |                |                |
| Current liabilities               |                |                |
| Bank overdraft                    | 3,599          | 12,848         |
| Borrowings                        | 6,433          | 145            |
| Trade and other payables          | 26,026         | 22,252         |
| Derivative financial instruments  | 29             | 5,040          |
| Lease liabilities                 | 2,272          | 2,741          |
| Provisions                        | 330            | 714            |
| Deferred income                   | 2,806          | 2,000          |
| Total current liabilities         | 41,495         | 45,740         |
| Non-current liabilities           |                |                |
| Derivative financial instruments  | 260            | 2,840          |
| Provisions                        | 3,134          | 2,918          |
| Deferred tax liabilities          | 132            | 186            |
| Lease liabilities                 | 5,418          | 6,704          |
| Total non-current liabilities     | 8,944          | 12,648         |
| Total liabilities                 | 50,439         | 58,388         |
| Net assets                        | 103,927        | 91,856         |
| Equity                            |                |                |
| Share capital                     | 181,024        | 181,024        |
| Other reserves                    | (20,860)       | (23,293)       |
| Retained earnings                 | (56,237)       | (65,875        |
| Total equity                      | 103,927        | 91,856         |



 $<sup>^{7}</sup>$  Refer to the footnote on page 31 for the definition of Underlying EBITDA as a non-GAAP financial measure, referred to in this document.

<sup>&</sup>lt;sup>8</sup> This is made up of cash and cash equivalents less bank overdrafts.

# **TELECOMMUNICATIONS**

## **Telecommunications**



The telecommunications nfrastructure market encompasses the equipment that enables communications networks to operate. This includes 4G/5G small cells, mobile base stations. microwave, backhaul networks as well as data centres (e.g. cloud computing), transport switches, routers and optical transmission equipment.

Rakon products: OCXOs, TCXOs, VCXOs, XOs and Crystals

# Positioning



Our products provide the accuracy required for applications including Global Navigation Satellite System (GNSS) equipment, Personal Navigation Devices (PNDs), high precision positioning (surveying, mining, and agriculture), emergency locator beacons, aviation, drones, automotive, asset tracking, and sport and recreation products.

Rakon products: OCXOs, TCXOs, VCXOs, XOs and Crystals

# **Space & Defence**



From traditional satellites, NewSpace, deep space exploration, avionics to radar, our products go into applications where high-reliability, precision and performance are all critical.

Rakon products: System Solutions, OCSOs. USOs, VCSOs, VCOs, OCXOs, TCXOs, VCXOs, XOs, Crystal Filters and Crystals

# IoT, Emerging & Other



For more information on the products and solutions listed please visit: www.rakon.com/#products

Definitions are provided on page 31.

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

Rakon products: OCSOs, OCXOs, TCXOs, VCXOs, XOs and Crystals

# Increased 5G demand driving revenue growth

Revenue: \$77m, up 18% on FY2020

In Telecommunications there was increased demand for Rakon's 5G products, including solutions based on our Mercury+™ chip, as network operators advanced the deployment of new 5G networks and enhanced existing networks. Increased design wins also occurred for Rakon's proprietary chip (Pluto®) products amidst global chip shortages.

Strong data centre growth was driven by precise timing requirements for many applications, including distributed processing, security and financial transactions. Additionally, a major new cloud computing customer was secured. In the second half of the year Rakon's proprietary 5G millimetre wave technologies were designed into 5G networks by Tier 1 customers.

#### Opportunities and outlook

Increased demand for Rakon's 5G technologies is expected to continue as 5G deployments accelerate in line with increasing global expectations for highly reliable, high-speed communications and data transfer.



# POSITIONING

# Momentum building in NewSpace

#### Revenue \$30m, up 7% on FY2020

The increase in revenue from Space & Defence was primarily due to growth in Rakon's French and Indian space businesses while Defence segment growth from the prior year consolidated. Initial deliveries were made for a major LEO satellite constellation and the company was also delighted to celebrate Rakon-designed and manufactured products being on board NASA's Mars Perseverance Rover during its successful mission to Mars9.

#### Opportunities and outlook

A strong order book for Space & Defence is expected to deliver continued growth over the next year including further LEO orders expected. The Defence business remains robust and design-in opportunities leveraging our XMEMS® technology are progressing.

> Concept image of NASA's Perseverance Rover on the surface of Mars.



# Mixed segment performance but strong FY2022 outlook

#### Revenue \$14m, down \$4.9m on FY2020

Revenue from the Positioning segment was lower from the aeronautical and emergency locator beacon markets as global travel was suppressed, and from the anticipated decline in low-margin commoditised products. Steady growth was achieved in the higher-margin, precision industrial applications used in autonomous agriculture and mining equipment.

#### Opportunities and outlook

Solid revenue growth is expected in the Positioning segment over FY2022, with significant orders received for TCXO products (a key component in a range of applications including consumer devices) due to global shortages. Electric and autonomous vehicle market segment growth is continuing to put pressure on component supply. The autonomous vehicle industry is driving the need for higher performance and higher reliability frequency control products. Additionally, demand in the aeronautical and emergency locator beacon sub-segments is expected to recover as local and global travel resumes. Further growth in autonomous equipment is also anticipated in line with the increasing standardisation of automation.





# Effective response by global team

Our crisis management team implemented comprehensive health and safety plans effective for all levels of the Covid-19 pandemic. Different measures were put in place at different times and varied across countries, consistent with the guidelines and requirements of the authorities in the countries in which Rakon operates.

When the coronavirus pandemic hit in early FY2021. Rakon's crisis management team acted swiftly, deploying plans worldwide for all levels of the crisis. With different lockdown conditions being imposed in different countries, our operations in all regions adapted quickly to ensure the ongoing provision of essential services, while prioritising the protection of our staff from transmission.

Strong actions were taken across Rakon's global operations to protect the business and mitigate the impacts of lost orders. These included temporary agreed reductions in staff salaries, directors' fees and rents: some of our UK team on furlough; cutting discretionary expenditure and obtaining government assistance where eligible. Supply chain risk was, and continues

to be, managed through ongoing business reviews, assessments and actions.

All operations recovered well, and in the second half-year, our plants mostly operated at pre-Covid production levels - even in the significantly Covid-affected regions of France and India. At our UK R&D facility, our team worked from home where possible. It has been a phenomenal effort by our team globally, to ensure our company has been able to continue to deliver essential products and services to our customers despite the lockdowns, manufacturing restrictions and challenging circumstances.

Our thoughts remain with our people globally who continue to endure the challenges of the pandemic and follow strict restrictions.

## **Examples of some of the most stringent measures include:**

- Daily temperature testing prior to arrival on site, thorough stringent check-in and sign out process
- Double masking of staff
- Daily deep sanitisation clean of premises
- Provision of company transport to prevent use of public transport (vehicle deep cleaned after each use)
- Registered nurse on site
- Bi-weekly doctor visits
- Anti-microbial film covering on door handles, push plates and switches.



# Rakon India update

Since the financial year-end, Rakon India has continued to be impacted by Covid-19 because of a further outbreak in India.

As mentioned in our Chair's and CEO's report. sadly, we lost one of our staff members recently due to Covid-19. Those at Rakon India are deeply saddened by the loss of a valued colleague with 22 years of service in the company. Rakon India is providing support to his family.

Unfortunately around 18 staff suffered varying levels of Covid infection with a small number hospitalised. Medical support has been provided to those in need on a continuous basis. We are pleased to report that most of our 500 team members have remained healthy and Covid-free. Rakon India is also covering the cost for all of our team in India to get vaccinated.

While our manufacturing facility has remained in operation following all necessary stringent health and safety protocols, production has been curtailed to some extent due to restrictions including commuting to work from outside of the local area.



An R&D engineer at Rakon's Auckland facility

# THE RAKON STORY

# More than 50 years of innovation

Timing has been a core fundamental technology for a very long time. For example mechanical clocks and compasses were used by early navigators on their sailing ships for location and navigation. Without accurate time, navigation would have been impossible.

Rakon was founded in 1967. From the late 1960s and through the 1970s, Rakon developed and manufactured channel crystals for radio telephones used in boats, taxis and commercial vehicles. As technology changed, so did we.

Throughout the decades we have led the way in helping our customers to advance their technology and enable new applications to evolve. In the 1980s we developed an oscillator that met the narrow channel spacing requirements for cellular phones to operate on.

In the 1990s we pioneered oscillators (TCXOs) for Global Positioning System (GPS) applications, and soon became the gold standard in the GPS industry with major US GPS and defence manufacturers ordering large volumes from us.

During the 2000s Rakon TCXO technology reached new levels, with the launch of Ultra Stable TCXO platforms for the Telecommunications, Defence and Positioning markets. Rakon's Application Specific Integrated Circuit (ASIC) technology soon led the industry and captured new markets such as emergency locator beacons.

In the 2010s our Ultra Stable Oscillator (USO) resulted in the best possible performance by any space USO globally. During this decade we also released the world's smallest ASIC-based OCXO which led the way in offering the highest performance, while drastically reducing customers' design footprints and we pioneered new crystal and sensor technology.

Rakon has now released XMEMS® technology delivering unprecedented resonator and oscillator performance in terms of stability and noise. This proprietary technology coupled with our own oscillator ASICs forms the foundation of Rakon's industry-leading 5G product offering.

> In the 1960s and 1970s Rakon developed and manufactured channel crystals for radio telephones.

We are continuing to develop this technology for broader applications.

Rakon continues to focus on achieving and exceeding the upper limits of performance specifications today . . .







Auckland which opened in 1971.

# WHAT OUR PRODUCTS DO

# Our products are at the heart of connectivity everywhere

All modern positioning and communication systems operate over wired or wireless networks. There is a constant need for accurate and precise timing solutions. Customers rely on our products for an accurate and stable frequency reference for transmitting and receiving electrical signals. As wireless and wired systems advance, the need to support large volumes of data and faster communication systems increases. Rakon's products provide the accurate frequency reference that is needed for these evolutionary systems to operate.

A key benefactor is the telecommunications industry, especially for 5G. Our high reliability solutions have the ability to accurately hold time to within a microsecond (1 millionth of a second) up to a 24 hour period, to retain network synchronisation when the primary timing reference is unavailable. This enables time to be synchronised globally. Another important feature of our products is the ability for them to filter out unwanted frequencies.

This is very important for telecommunication networks to be able to achieve superior data reliability at higher data rates. Rakon's solutions are enablers for these in the telecommunications industry.

In the positioning and communications markets, our solutions are exposed to harsher environments (such as vibration or shock) where the products are expected to sustain a precise and accurate frequency reference. This is required in applications such as agriculture, emergency locator beacons, defence and automotive. Additionally, these requirements are heightened when our products are exposed to high reliability scenarios such as electromagnetic radiation in space.

Whatever the end use may be, our products enable a more stable communication medium between people, systems and equipment. Precise timing is required for demanding applications in Rakon's core markets of Telecommunications, Positioning and Space & Defence and we're a preferred supplier to the top tier players within them.



# OUR GLOBAL FOOTPRINT

# EUROPE NORTH AMERICA Selling into 60+ countries 3 Manufacturing sites 6 R&D centres Manufacturing sites R&D centres **16** Customer support locations Customer support OCEANIA 950+ People Quality assurance 40+ Nationalities represented Key manufacturing partners **RAKON ANNUAL REVIEW FY2021**

# STRATEGIC FOCUS

# How we create value

Central to everything that we do at Rakon is our purpose: enabling the connected future.

We solve difficult problems and develop solutions for our customers that are changing the way we live, work and play - now and into the future.

Our technology equips high-precision applications which are becoming more and more commonplace, such as remote medical procedures, autonomous transport and more.

We have executed our core strategy to deliver sustained earnings growth over the last five years. We will continue to focus on our seven key areas to succeed in creating future value for our stakeholders.

# **INPUTS**

950+ global team Global platform

Strong ecosystem partnerships & ustomer relationships

> Investment in R&D

50+ year

Deep application expertise

trusted brand

QUALITY

OPERATIONAL EXCELLENCE

**EXAMPLE 2** PARTNERSHIPS

TECHNOLOGY LEADERSHIP

**HOW WE** 

WORLD CLASS

SUCCEED IN **ENABLING THE** CONNECTED

**FUTURE PROFESSIONA EXCELLENCE &** LEADERSHIP

HIGHLY

FLEXIBLE PRODUCT

**PLATFORMS** 

FAST RESPONSE TIMES

**OUTPUTS** 

**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



Our company will continue to focus on seven key areas: technology leadership, world class quality, operational excellence, professional excellence and leadership, highly flexible product platforms, partnerships (low cost strategy) and fast response times.

# WHY CUSTOMERS CHOOSE US

It's no small feat to have some of the world's leading technology companies as customers. It's an even bigger feat to turn these into loyal, long-standing partnerships.

In our ever-changing industry, the ability to win and retain customers, and steadily expand our global footprint requires excellence in every discipline. Over five decades Rakon has been doing just that.



## Innovation and technology leadership

Our innovation success is based on our ability to understand the strategic goals of our long-term customers and ecosystem partners, and work with them to develop fit-for-purpose solutions to get there.

Rakon enables its customers to deliver leading-edge technologies. We do this by continually pushing the boundaries of the highest-performance specifications and being first to market. Our continued investment in R&D, as well as the expertise of our people through every step of the design and manufacturing process, consistently makes us the partner of choice.



# Trusted and respected brand

In high-tech industries, change is the only constant. Our customers have the highest expectations and trust in our capabilities.

Rakon has built strong ecosystem partnerships and well-established strategic customer relationships over 50+ years. As technology has changed and evolved, so too has Rakon to continue providing industryleading solutions for its partners' applications and high-precision requirements.



# Global footprint

Rakon's three manufacturing facilities, six R&D and 16 support locations are spread over four continents. Operational excellence at our manufacturing facilities is mandatory to achieve stringent quality certifications. Our global footprint delivers high performance products while also offering cost-effective solutions. Our sales team locations provide localised support and fast response times.

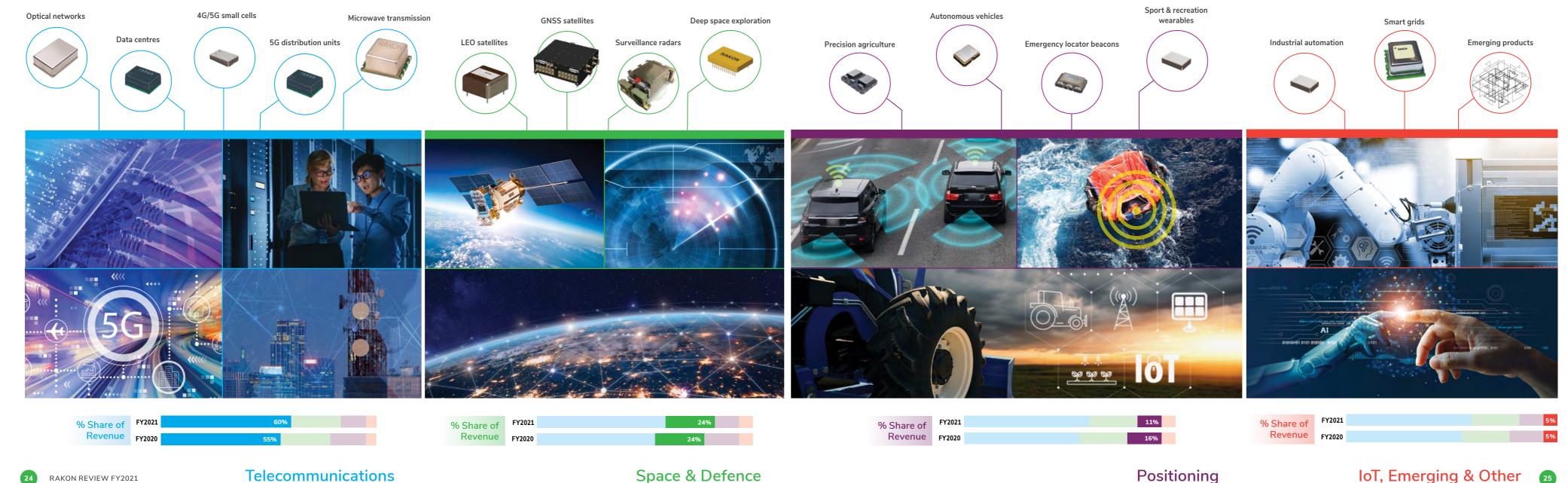
We work very closely with our key supply partners and are in regular contact with critical vendors globally. Having second-source options, using multiple carriers and extending our manufacturing base further with contract manufacturers, also ensures continuity of delivery, lowers supply chain risk for our customers and supports growth.

With facilities in New Zealand, the UK, France and India, Rakon is able to offer a broad frequency control product portfolio. Rakon has a long history in each of the markets it serves. Having the depth of technical expertise across the globe provides us with the advantage of understanding market requirements and the ability to leverage the benefits that a highly technical team provides. Sometimes technology for a particular market becomes important in another and we are able to transfer this over to other applications, pushing performance limits further for our customers.



# RAKON EVERYWHERE





# OUR PATH TO SUSTAINABILITY

# What we're doing to look after each other, our planet and future generations

Our core purpose is enabling the connected future. Our connected planet includes all living things and our surroundings: infrastructure, buildings, equipment, systems and processes, which are all linked together within our global ecosystem.

At Rakon we are aware of the importance of doing what we can now, so that the needs of our future generations are met. We know this is also important to our customers, employees, suppliers, investors and our local communities. We are committed to playing our part by making ongoing improvements in the way we operate.

## Governance and corporate responsibility

Our corporate policies<sup>10</sup>, procedures and practices address how we support our people, respect communities, act in the interests of our investors, conduct our business and protect the environment. This includes our requirements in relation to the following: health and safety, ethical behaviour, diversity, data protection and privacy, protected disclosures, financial records and reporting, continuous disclosure, preventing insider trading, and business continuity and risk management.

We are committed to operating in accordance with all the applicable laws and regulations of the countries in which we operate and observing sound business and ethical conduct. Our Business Code of Conduct sets out our expectations of ourselves and our suppliers in relation to how we operate and do business. It includes respecting universally recognised standards for the environment, human rights, labour and ethics. Compliance with this code is embedded within our total supply chain.

## Our people

We are proud to have the depth of talent across our global team. Leadership and professional excellence continues to be a core strategic focus, as we continue to upskill our people and promote employees internally. Where necessary high calibre individuals are recruited to strengthen our core talent base and add to our succession plans.

During this year our emphasis has been on the health, safety and wellness of our global team, with a focus on mental

health as our people have endured extended periods away from our sites.

With a diverse team of over 40 nationalities represented across the globe, we continue to be humbled by our people's choice to stay with us as their employer. For example in New Zealand staff on average have 10.5+ years' service within Rakon.

## Social contributions

As described on page 14 (Covid-19 response) the need to look after our people has never been highlighted more than over the past year. Our social focus is to support initiatives that aim to improve wellbeing and the quality of life for our

During FY2021 our Rakon India team supported a local ward initiative by donating items for food kits and helping to distribute them. The kits went to those affected financially during Covid-19 and contained daily grocery needs like rice, dahl, wheat flour and oil. In February, Rakon India also gave a donation in support of an athletics day, to a local polytechnic college for electrical engineering students.

Closer to home in New Zealand, donations are also made annually. Selected charities during the period included Kidney Kids, the New Zealand Down Syndrome Association, the Special Children's Christmas Party and the Rotary Club of Newmarket. For ten years we've also been a supporter of the Auckland Rescue Helicopter Trust. The Auckland based Westpac Rescue Helicopter is staffed by a flight team consisting of pilots, paramedics and crew, and operates 24 hours a day, every day.

## **Environment**

#### **WE'RE EMS CERTIFIED**

Rakon has ISO14001 certification at our manufacturing facilities in New Zealand and India. This standard sets out the requirements for an organisation's Environmental Management System (EMS).

#### WE FOLLOW ENVIRONMENTAL BEST PRACTICE

- Our EMS strives to deliver continuous environmental improvement
- We seek to minimise, reuse, recycle and/or use appropriate methods to dispose of and treat our waste to prevent pollution
- We endeavour to be efficient in our use of energy and natural resources
- We encourage the creation of environmentally friendly products and technologies through our design and development processes. We don't use materials or minerals from conflict-affected areas.

#### CDP REPORTING

Rakon has been reporting to CDP (formerly known as the Carbon Disclosure Project) since 2010 and we measure our environmental impact.

The information we measure and provide across our global operations includes:

- Carbon dioxide consumption
- Electricity consumption
- Refrigerant use
- Fuel consumption
- Natural gas consumption.

#### **EXAMPLES OF OUR IMPROVEMENTS**

- Replacing lights with LED panels and sensor lighting which has reduced energy consumption at our Auckland facilities
- Our products are becoming smaller and higher performing and use less power such as our Mercury+™ products which are the world's smallest OCXOs
- Our scrap units in New Zealand are sent to Japan for waste recovery of metals and our glue scrap is sent to a refining company where the silver is recovered, rather than it going to landfill
- The measurement of general waste in New Zealand is ongoing. We weigh our waste bins monthly and an initiative is underway to reduce waste to landfill by investigating alternative packaging materials.











# BOARD OF DIRECTORS





BRUCE IRVINE
Chair and Independent Dir

Chair and Independent Director Appointed 2005 and re-elected 2018

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 a number of other private companies.



#### **BRENT ROBINSON**

Executive Director
Appointed 1991 and re-elected 2019

Brent has 42 years at Rakon, which includes establishing global operations and markets and 35 years as Managing Director/CEO.

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 2017 and re-elected 2020

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 a member of Chartered Accountants Australia and New Zealand (CAANZ).

Lorraine is Chair of Simply Security Limited, a company she founded in 2007, and Chair of vWork Limited. She is also a director of TIL Logistics Group Limited, Horizon Energy Group and Pushpay Holdings Limited.



#### YIN TANG TSENG (TONY TSENG)

Non-Executive Director
Appointed 2017 and re-elected 2020

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

He has more than 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 2017 and re-elected 2020

Keith is a professional director and a business advisor with Alto Capital, 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 currently the Executive Chair of Blackhawk Tracking Systems Limited and a director of Wellington Drive Technologies Limited.

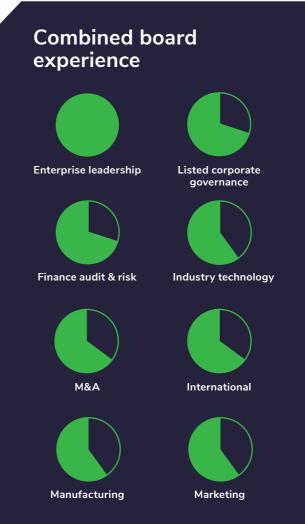


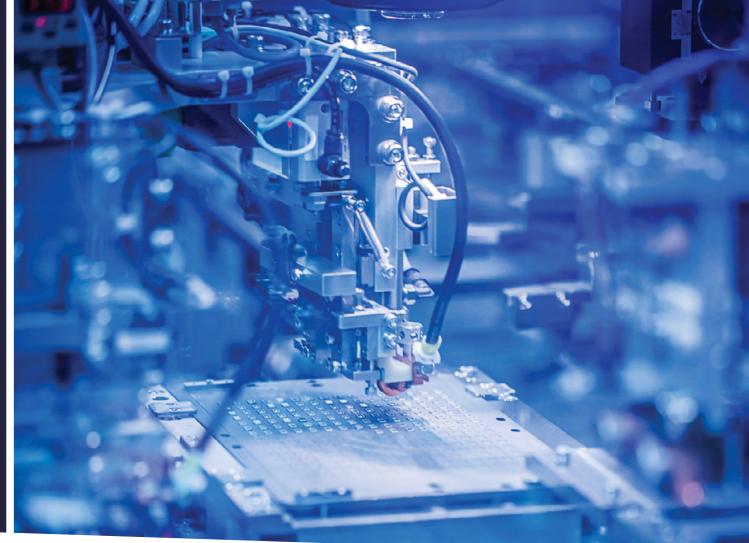
## **KEITH WATSON**

Independent Director
Appointed 2018 and re-elected 2019

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. Keith has governance, management and leadership experience in companies across the Asia Pacific region, the Americas, Central Europe, the UK, Australia and New Zealand.

Keith is currently the Chair of the New Zealand Institute of Economic Research (NZIER) and a director of Acumen Trust Limited, Acumen Republic Limited, Counties Power Limited, ECL Group Limited and Complete 3D.







# GLOBAL EXECUTIVE TEAM





BRENT ROBINSON Managing Director, CEO and Chief Technology Officer

Brent was appointed Managing Director and Chief Executive Officer in 1986.

Under Brent's leadership, Rakon has grown into a global company and recognised leader in the frequency control product industry with revenue of \$128.3m in FY2021.

In his capacity as Chief Technology Officer. Brent oversees the business's technology and innovation. He has 42 years' experience at Rakon in the design and manufacture of crystals and oscillators, which has included leading the development of Rakon's core business.



SCOTT STEMPER ilobal Quality Manager

Scott joined Rakon in January 2015. He leads the development and improvemen 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



DR. SINAN ALTUG Chief Operating Officer

Sinan joined Rakon in 2002 and commenced as COO in January 2020. In this position he leads, aligns and drives the company's global operations to best meet customer demand and create profitable growth.

Other senior positions held by Sinan include Managing Director of Rakon's European businesses and Global Business Development Director, Sinan has held various management positions in the frequency control product industry before joining Rakon, including Director of European Operations for Champion Technologies. He has a PhD in Electrical Engineering and an MBA.



DR. ROY CANN

Roy joined Rakon in May 2018 as Head of Global Engineering. He is responsible for driving new product developments and leveraging the benefits of a collaborative global 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 Weightronix (UK), Rolls-Royce Aerospace (UK), Meissner Power Systems (South Africa), and Connetics (NZ). Roy holds a PhD in Electrical Engineering.



DARREN ROBINSON Chief Marketing Officer

Darren has led sales and marketing since 1990, having earlier held various roles with the company in New Zealand and overseas. He has been instrumental in the company's expansion into new markets, its commercialisation of new applications and its development of business relationships

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 solve problems for customers.

with many Fortune 500 companies.



MAUREEN SHADDICK Company Secretary

Maureen joined Rakon in November 2018. She provides legal, company secretarial and regulatory advice and support. She has more than 25 years' experience as a commercial lawyer and governance adviser product offering. 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.



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 commercial and financial experience in previous roles with organisations including Sony, British Telecom and Deloitte. Anand is a member of Chartered Accountants Australia and New Zealand (CAANZ).



BORJA THOMAS SCHUHMACHER 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 its existing and future

His previous senior positions at Rakon include Head of Product Management New Zealand and Senior Product Line Manager.

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.

Thomas has also spent time in Europe in product consultancy roles in France and began his career as an R&D Engineer in the UK.



MARGO THOMAS General Manager, Global People and Capability

Margo joined Rakon in January 2016. In her current role she is responsible for all global Human Resources (HR) strategy, policies and processes including organisational alignment, talent acquisition, leadership development, change management, employment relations and health and safety.

Prior to this, she held the position of General Manager of People and Capability New Zealand, Margo has more than 20 years' experience working in HR including senior HR positions in a range of industries with Crowe Horwath, Spark, Westpac and New Zealand Post.



ARUN PARASNIS Managing Director,

Arun joined Rakon in October 2018 and is responsible for overseeing all business functions at Rakon India.

Arun has more than 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).

# **GLOSSARY**

#### Crystal Filter

A filter that allows only the desired frequency to pass through to the output.

#### Crystal Micro-Electro-Mechanical System (XMEMS®)

Rakon's advanced quartz-based resonator technology. It is made using Rakon's NanoQuartz™microfabrication process, delivering unprecedented resonator and oscillator performance.

#### Crystal Oscillator (XO)

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 fixed frequency 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.

#### System Solutions

Refers to Rakon's solutions that include high performance products, equipment and consulting services for Space & Defence.

#### Surface Acoustic Wave (SAW) Resonator

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 TCXO

Using unique technology these TCXOs can achieve stabilities of 50 parts per billion (ppb) over temperature.

#### 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.

# Definition of Underlying EBITDA

Rakon has used 'Underlying EBITDA' as a non-gap financial measure in this 2021 Annual Review document. Underlying EBITDA is defined as 'Earnings before interest, tax, depreciation, amortisation, impairment, employee share schemes, non-controlling interests, adjustments for associate's share of interest, tax and depreciation, loss on disposal of assets and other cash and non-cash items'.

Refer to note 5 of the Rakon Limited Annual Report 2021 for additional information including a reconciliation to Net Profit After Tax (NPAT).

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# DIRECTORY



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**Bankers** 

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**Share Registrar** 

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Managing Your Shareholding Online

To change your address, update your payment instructions or view your investment portfolio, including transactions, please visit:

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