Fact Sheet

About Rakon

Enabling Global Connectivity

Rakon is a global high technology company and a world leader in its field. It designs and manufactures advanced frequency control and timing solutions. Rakon has four manufacturing plants including two joint ventures plants and five research and development centres. Customer support centres are located in ten offices worldwide.

All communication and location systems require precise electronic 'heart beats'. Rakon makes advanced clocking solutions. Rakon products provide extremely accurate electric signals, which are then used to generate precise electrical, radio or optical signals in networks and systems around the globe. Rakon products enable the accurate and efficient transfer of data, time and frequency, at ever increasing speeds.

Whether it be within wired, wireless and fibre telecommunications networks, navigation devices or satellites in space – Rakon products enable connectivity.

Rakon is proud of its New Zealand heritage; it was founded in Auckland in 1967. It is a public company listed on the New Zealand stock exchange, NZSX, ticker code RAK.

Strategic Focus

Rakon is a global company, optimally focussed on generating shareholder value. Its core focus is on delivering higher margin, technologically advanced products. Rakon has a customer portfolio of global leaders in their respective markets, as a result of its ability to offer disruptive technologies coupled with comprehensive application knowledge. Focus is on enabling next generation technologies as well as retaining or securing 'preferred supplier' status with leading Tier One companies in the telecommunications, global positioning and space & defence markets.

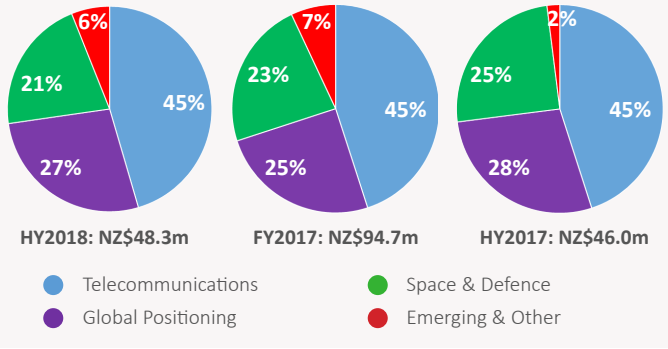
In December 2016, it was announced that Taiwanese company Siward Crystal Technology Company Limited will invest in Rakon, taking a 16.6 percent share in the company. The investment completed on 15 February 2017. The investment forms a strategic partnership with a well-established and highly successful crystal manufacturer and gives both companies a broader range of products and alternative channels, into new and existing markets.

In December 2015 Rakon announced a diversification of its business through its investment with Thinxtra – an Internet of Things (IoT) business. Thinxtra began deploying the network in Australasia in the second quarter of 2016. The business is bringing a network, products, services and solutions to customers that have Machine-to-Machine (M2M) communication requirements. In HY2018 Thinxtra completed a successful Series B capital raising. The current investment (a shareholding of around 18% once all options are exercised) enables Rakon to leverage future IoT opportunities. Rakon is also positioned well with its current technology base and ability to develop new products for the IoT market.

Group Financial Results

NZD Millions	HY2018	FY2017	HY2017	FY2016
Revenue	48.3	94.7	46.0	112.7
Underlying EBITDA[1]	3.8	4.0	0.6	9.0
Depreciation and amortisation	2.3	5.6	2.8	6.6
Net profit/(loss) after tax	0.9	(13.6)	(5.7)	(1.7)
Earnings per share (cents)	0.4	(6.0)	(3.0)	0.9
Operating cash flow	4.9	9.5	(0.6)	7.3
Capital expenditure	1.1	(3.8)	1.7	5.5
Net debt	0.3	4.5	19.7	12.6
Net debt to equity	0.4%	6.0%	26.4%	15.1%
ROE	1.2%	-18.2%	-7.6%	-2.07%

Revenue Mix



[1]**Disclosure of Non-GAAP Financial Information**

Rakon has used 'Underlying EBITDA' as a measure of non-GAAP financial information in this announcement and it is defined as:

"Earnings before interest, tax, depreciation, amortisation, impairment, loss on disposal of assets, employee share schemes, non-controlling interests, adjustments for associates and joint ventures share of interest, tax & depreciation, and other cash & non-cash items."

'Underlying EBITDA' is a non-GAAP measure, with its presentation not being 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 non-cash charges 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.

The use of Underlying EBITDA in this document for HY2017 and HY2018 has been extracted from unaudited financial statements. The use of 'Underlying EBITDA' in this document for FY2017 and FY2016 has been extracted from audited financial statements.

Company Information

Share Listing

Share price as at 19 December 2017: NZ$0.210
Shares on issue as at 19 December 2017: 229,055,272
Market capitalisation: NZ$48,102,000
Financial year: 31 March 2018
Industry sector: Electronic Equipment, Instruments & Components
S&P/NZX All Index
S&P/NZX SmallCap Index
S&P/NZX SciTech Index

Share Registry

Computershare Investor Services Limited
Private Bag 92119
Victoria Street West
Auckland 1142
New Zealand
Tel: +64 9 488 8777
Fax: + 64 9 488 8787
enquiry@computershare.co.nz
www.computershare.co.nz

Company Advisers

Auditors: PricewaterhouseCoopers
Principal Lawyers: Bell Gully
Bankers: ASB Bank

Company Information

Rakon Limited
8 Sylvia Park Road, Mt Wellington,
Auckland 1060, New Zealand
Telephone: +64 9 573 5554
Fax: +64 9 573 5559
www.rakon.com

Products and Markets




	Telecommunications	Global Positioning	Space & Defence	Emerging & Other
MARKET DEFINITION	The equipment which enables communications networks to operate. Includes base stations, microwave transmission, fibre-optics, small cells and network timing.	Includes all Global Navigation Satellite System (GNSS) equipment and other location and positioning systems. Applications include Personal Navigation Devices (PNDs), high precision positioning (surveying, mining, and agriculture), rescue beacons, aviation, drones, automotive and sport and recreation products.	Applications where reliability as well as precision and performance are critical. This market also includes aviation and other high reliability applications.	There are many applications including the following: wireless control, test and measurement, smart grids and metering, Machine to Machine (M2M) and the Internet of Things (IoT), as well as other emerging markets.
PRODUCTS	OCXOs, TCXOs, VCXOs and XOs.	TCXOs, XOs and Crystals	DPCSSs, OCSOs, OCXOs, TCXOs, VCXOs, XOs and Crystals.	OCSOs, OCXOs, TCXOs, VCXOs, XOs and Crystals.
PRINCIPAL MANUFACTURING LOCATIONS	India, NZ	NZ	France, NZ	France, NZ, China
RESEARCH AND DEVELOPMENT	France, NZ, UK	NZ, UK	France, NZ	France, NZ, UK
SHARE OF REVENUE HY2018	45%	27%	21%	6%
KEY POINTS FROM HY2018	• The company has continued to position itself for the future with strong sampling of two new product platforms that can lead customers' next generation technology requirements. • Mobile base station revenue continued on from the final quarter of FY2017 with a stronger run rate in the first quarter of the current year; however this eased in Q2. • Data centre demand, in particular the growing requirement for time synchronisation in data centres, contributed strongly to an improved peformance in HY2018. As applications move into the cloud, the need for extremely accurate timing increases. Rakon's telecom OCXOs are accurate to within 1.5 microseconds (1 second = 1 million microseconds).	• Revenue from global positioning was up 13% from HY2017. The high volume GNSS module business remained strong with good volumes, especially in Europe. Growth also continued in the higher margin industrial markets such as agriculture, surveying and avionics. • Current run rates and forecasts support the view that this market is returning to growth after years of decline, resulting from smartphones cannibalising the market for traditional personal navigation devices.	• Overall space and defence revenue is up 8% from the prior period, largely driven by improved sales of New Zealand-manufactured products into the US defence market. • Delivery of open orders from France will generate higher revenue from the defence market in the second half of the current year. • In the space market, US demand is expected to drive further growth – in particular, strong interest has been expressed in a new ultra-miniature, light-weight, ultra-stable OCXO.	• Rakon is constantly looking for new and emerging markets that utilise its value added technology. New and emerging markets offer key opportunities and are a hotbed for Rakon's new products and technology. • The IoT is a rapidly growing market with opportunities for end point/node/IoT module timing requirements. • Rakon is leveraging its investment and relationship with Thinxtra by developing timing solutions for the IoT. As at 19 December 2018 Rakon holds an 18.3% shareholding in Thinxtra. • New applications for the IoT continue to drive considerable activity in this market; however, volumes remain small. As trials conclude and deployment increases, demand is expected to grow, but this is unlikely to occur to any great extent in the current year.

Strategy and Vision

Our Vision	To be the provider of choice for all frequency control and timing solution requirements enabling connectivity.						
Strategic Focus	**Focus on Markets for Growth & Profitability**				**Technology Development**		**Operational Excellence**	
	Telecom	Global Positioning	Space & Defence	Emerging Markets: IoT	Products & Applications	R&D	Operating Platforms & Efficiency	People
FY2018 Strategic Priorities	• Grow by partnership with Tier 1 Telecom equipment providers. • Contribute to development of international standards to enable next generation technologies (5G,...). • Lead the market in solutions for small cells.	• Focus on emerging specialised requirements needing technologically advanced solutions (e.g. agriculture, mining, surveying, commercial drones, asset tracking). • Address mainstream applications with standard products and automation (PND, fitness, consumer).	• Continue growing in Asia by winning new projects. • Further penetrate North America defence and space market with OCSO & space OCXO. • Reinforce our position by winning more projects with OCSO and radar sub-systems.	• Identify and support the future leaders in the emerging IoT market. • Develop disruptive solutions to problems worth solving.	• Develop application specific technology and next generation products. • Develop solutions for future emerging markets. • Expansion of product lines with new partnership (Siward).	• Focus on delivering the technology roadmap. • Continue the development of disruptive technologies. • Build on best practice 'select-to-launch' process. • Leverage strength of site specific experience and expertise and integrate globally.	• Continue to leverage the value from newly formed partnerships (e.g. Siward). • Standardise Rakon global quality systems to ensure best in class quality and processes.	• Ongoing global effort and accountability to deliver the strategic plan. • Continue to grow and develop our people and leverage off our aligned, innovative, engaged and highly skilled global team.
Overarching Objective	We will focus on shareholder value creation and our objective is to achieve an overall ROE > 12%.							

Governance and Leadership

Bryan Mogridge – Independent Chairman
Appointed Chairman in 2005. Bryan has been a public company Director since 1984. Formerly CEO of Corporate Investments and Montana Wines. Current directorships: BUPA Australia PTY Limited (Director), Mainfreight (Director) Adherium (NZ) Limited (Director) and Thinxtra Pty Limited. Bryan is also a Trustee of the Starship Foundation.

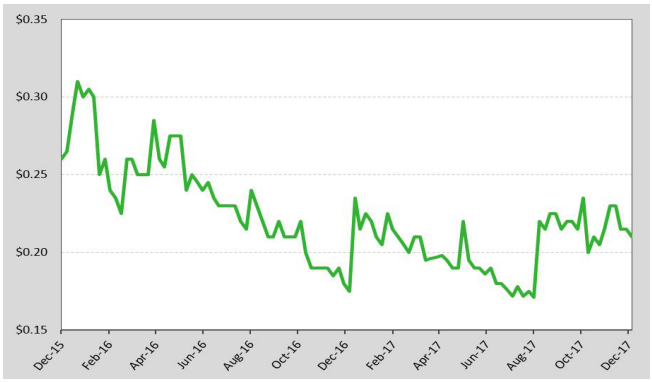
Board of Directors
Bryan Mogridge (Independent Chairman), Brent Robinson (Executive Director), Bruce Irvine (Independent Director), Yin Tang Tseng (Non-Executive Director), Keith Oliver (Independent Director) and Lorraine Witten (Independent Director).

Brent Robinson – Executive Director (Managing Director and CEO)
Appointed to the Board in 2005. 38 years at Rakon; 31 years as Managing Director/CEO. Under Brent's leadership Rakon has grown into a global and diversified business. Brent also acts as Rakon's Chief Technology Officer, driving the business's technology and innovation. Awarded the New Zealand Hi-Tech Trust – Flying Kiwi Award in 2011.

Simon Bosley CA – Chief Financial Officer and Company Secretary
Simon joined Rakon in November 2012 and was appointed as Chief Financial Officer in February 2013. Simon has had a lead role in Rakon's diversified investment in Thinxtra and the structural change undertaken by the company in recent years. In his current role he is responsible for Rakon's finance, information systems and investor relations functions. Simon is also Rakon's Company Secretary. He previously spent ten years with Sony in executive management positions in New Zealand and Australia. Simon is a member of Chartered Accountants Australia and New Zealand (CAANZ).

Group Executive
Brent Robinson (Managing Director/CEO), Simon Bosley (Chief Financial Officer), Darren Robinson (Sales and Marketing Director), Dr. Sinan Altug (Managing Director, Europe), Margo Thomas (General Manager – People & Capability), Scott Stemper (Global Quality Manager).

Rakon Share Price



Source: https://nz.finance.yahoo.com

Financial Calendar

Date	Event
17 May 2018	Preliminary FY2018 Results
21 June 2018	FY2018 Annual Report
7 August 2018	Annual Shareholders' Meeting
15 November 2018	Preliminary HY2019 Results
13 December 2018	HY2019 Interim Report

Dividend Policy

Rakon maintains a dividend policy such that it will pay a dividend of up to 50% of the after tax profit, if considered fiscally appropriate.

Glossary

Crystal (Xtal)
At the heart of XOs, VCXOs, TCXOs and OCXOs are quartz crystals. They are used in various data communication applications.

Crystal Oscillator (XO)
An XO is a quartz crystal combined with basic oscillation circuitry. XOs can offer high frequencies with low noise performance. They are typically used in telecommunications networks and other communications applications.

Digital Pulse Compression Sub-System (DPCSS)
A DPCSS is fully programmable and is used to upgrade an existing radar and to extend its life. DPCSSs have high speed digital processing capability, enabling remarkable increases in the overall system performance of radars.

Oven Controlled Crystal Oscillator (OCXO)
Crystal oscillators where the internal temperature is kept constant, using a miniature oven. They're used in space and telecommunications applications where precision is paramount. Stabilities can be better than 10 parts per billion (ppb).

Oven Controlled SAW Oscillator (OCSO)
An OCSO is an oven controlled oscillator using Surface Acoustic Wave (SAW) technology. SAW technology enables high frequency outputs (320 MHz up to 2 GHz) and ultra low phase noise performance. They are commonly used in test and measurement equipment, high speed converters, radar systems and other precise communication applications.

Temperature Compensated Crystal Oscillator (TCXO)
A TCXO is a quartz crystal combined with electronic circuitry. The circuitry is used to generate a stable frequency output, and to remove frequency variations due to temperature change.

Highlights

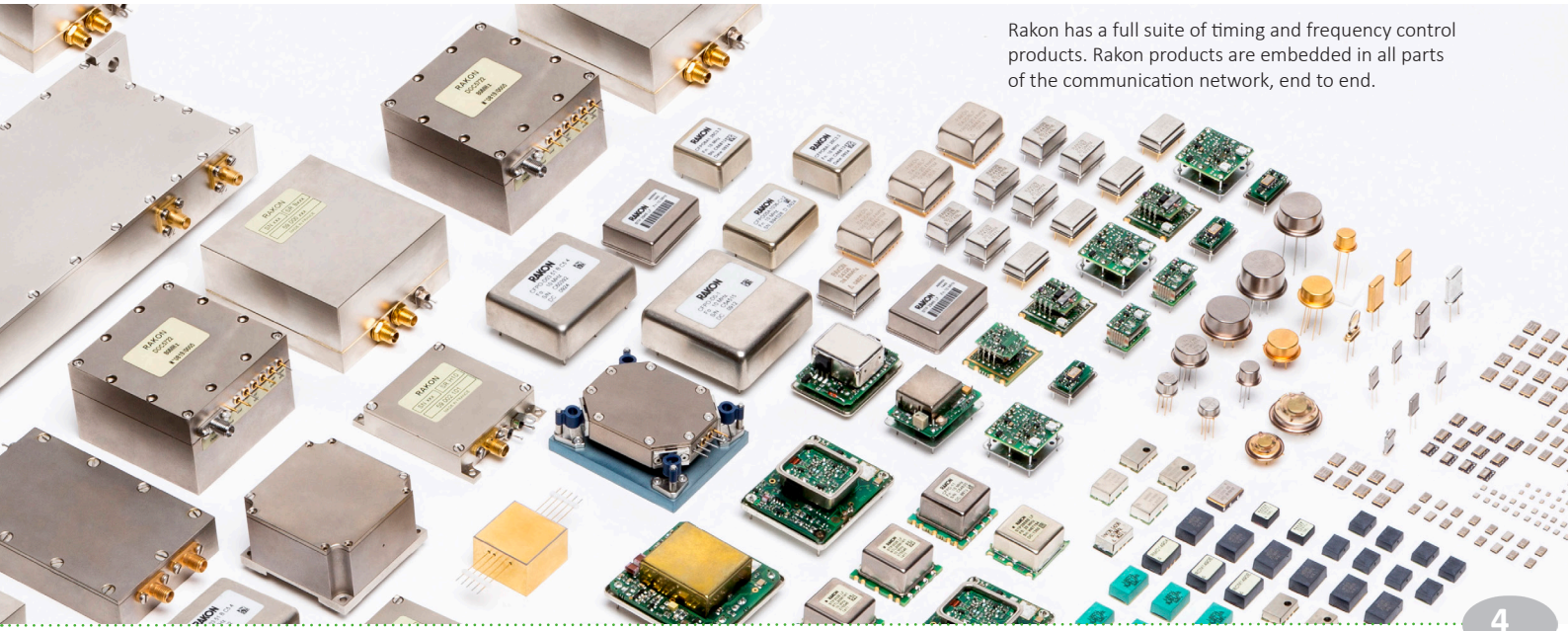
Innovating Since 1967
A proud history of delivering industry 'firsts' including: miniature GNSS TCXO, stratum 3 TCXO, high *g*-shock TCXO and lowest *g*-sensitivity Surface Mount Device (SMD) TCXO, emergency beacon TCXO, Long Term Evolution (LTE) small cell TCXO, Application Specific Integrated Circuit (ASIC) based OCXO, high stability OCXO, ultra low phase noise OCSO and DPCSS for radars.

In-House ASIC and Test Equipment Teams – Key Differentiator
Rakon designs its own oscillator ASICs and develops its own production test equipment. This is a unique capability in the Frequency Control Product (FCP) domain – enabling next generation echnologies.

High Performance and Competitive Pricing
Five Rakon R&D centres worldwide with a 50+ year history. Rakon's experience and in-depth knowledge of system requirements, enables the development of innovative solutions, tailored to suit its customers' ecosystems. Manufacturing operations in India and China deliver competitiveness.

Winner of Prestigious Industry Awards
Awards include the coveted Queen's Award for Enterprise – International Trade, New Zealand's 'Hi-Tech Company of the Year' and 'Hi-Tech Company of the Decade', 'Supreme Award' and 'Hi-Tech Exporter of the Year Award' as well as a number of supplier awards.

Voltage Controlled Crystal Oscillator (VCXO)
A VCXO is an oscillator that, by varying a control voltage, has its oscillation frequency adjusted. Commonly used in communications infratructure, VCXOs can offer much higher frequencies and very low phase noise performance.



Rakon has a full suite of timing and frequency control products. Rakon products are embedded in all parts of the communication network, end to end.