# We will answer society's call with "Trust"

This is our policy

We, DAISHINKU CORP., have been committed to maintaining the following three types of trust since our founding: trusted people, trusted products, and trusted company.

Under this policy, we will continue to be a company that meets the expectations of society in terms of harmony with the environment, provision of new services, and continuous profit generation.

# On Publishing the Integrated Report

Since 2016, we have issued the CSR Report to share with stakeholders our initiatives to enhance corporate value and realize a sustainable society. Yet, starting in 2023, we have decided to issue the Integrated Report instead to share with you our value creation story based on the 10-year Long-term Business Plan "OCEAN+2 Strategy" along with our initiatives to address social issues through our business activities, covering both financial and non-financial information.

It is our hope that this Integrated Report will help you understand the details of our initiatives, including the environment surrounding the Company, our future vision, and the value we will create.

# Cautionary note on forward-looking statements

This report includes forecasts and other forward-looking statements about DAISHINKU's corporate plans, strategies, and financial performance, based on information available to the Company as of the publication date. Therefore, these forward-looking statements entails risks and uncertainties. Readers should be aware that fluctuations in various factors could result in outcomes that differ materially from those presented in these statements.

# Reportable organizations

DAISHINKU CORP. and its consolidated subsidiaries in Japan and overseas.

# Reporting period

April 1, 2022 to March 31, 2023 (including some information outside of this reporting period)

### **Published**

November 2023

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# **Our Vision**

# Evolving from management philosophy to corporate philosophy

We have so far been engaged in our business under the management philosophy of "Reliance is the policy we offer for all our customers worldwide." From this fiscal year ended March 31, 2023 onward, we have evolved this management philosophy into the corporate philosophy of "We will answer society's call with trust" with the aim of contributing not only to our customers but also our employees and the rest of our stakeholders, as well as the sustainability of our planet and society. We will work toward achieving various visions as a sustainable company, placing this new corporate philosophy at the top of the "pyramid of trust."

# **Pyramid of Trust**



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Corporate Philosophy

**Our Purpose** 

Helping "Connect" through our products and technologies that are indispensable to society

Through the stable supply of our products and technologies that are indispensable to the digital society, we strive to develop trust-based relationships with our customers and all other stakeholders and help realize a safer, more affluent, sustainable society where everything—people, products, and services—is connected.

Management Vision

With "trust" as our slogan, we aim to become a company in which all employees work with hope while nurturing the spirit of valuing "connections between people."

Long-term Vision

To become a leading company always needed by customers with high standard of technologies and strong corporate capabilities, thereby achieving a 10 billion yen operating profit

# Three Types of Trust

- We always create the best products and services.
- We provide new value and help realize a safe, affluent society.

- Trusted people
- We work with a sincere attitude in consideration of our connection with society.
- We always have a dream and continue to take on challenges.



- We work to be in harmony with the environment and enhance corporate governance.
- We aim to contribute to society in a sustainable manner by continuously generating profits.

# The Three Blues



# "Challenge" Blue

Kindness and boldness we create new waves with.



# "Growth" Blue

Deep blue ocean we embark into that is uncharted.



# "Trust" Blue

Skies we go beyond to reach out to the world.

We categorize our corporate color blue into three distinct attributes: Challenge Blue, Growth Blue, and Trust Blue, collectively designating them as the Three Blues.

Our initiatives for value creation based on the 10-year Long-term Business Plan "Ocean+2 Strategy" outlined in this report are linked to these Three Blues. Each initiative is marked with the corresponding icon presented above.



Kazuo Hasegawa, the Founder of the Company





Calligraphy written by the Founder

# **Our History of Change**

Net sales (Millions of yen)

50,000

40,000

Monument commemorating the place of establishment / Kakogawa, Hyogo

Plaza Accord

10,000

20.000

# CB radio boom

Absence of a leader in the quartz crystal device industry

1965

1970

1975

1980

1985

1990

1995

Asian

Release of quartz crystal clocks and watches on the market

Widespread adoption of video devices, home video game consoles, and other consumer equipment

Founded as Daiwa Shinku Kogyosho

1965 Started mass production of crystal resonator parts

1974 Established Ichikawa Plant (current Kanzaki Plant) to start mass production of synthetic quartz crystals

Established DAISHINKU (AMERICA) CORP. to start the Company's first overseas sales

Established PT. KDS INDONESIA to start the Company's first overseas production

Early mass-produced crystal resonators



Model: 18/U



Model: 6/W



Team members involved in the production startup of synthetic quartz crystals

To be in which all employees work with hope

\*The figures from 1982 onward are presented on a consolidated basis.

Information technology bubble

currency crisis

2000

**Collapse of Lehman Brothers** 

2010

**Emergence of Chinese/Taiwanese manufacturers Commoditization of quartz crystal devices**  Formulated the 10-year Long-term Business Plan "OCEAN+2 Strategy"

2005

Enhanced presence of mobile phones/digital products > Widespread adoption of smartphones > Toward a "connected" society

Expanded the floor space of the Tottori Production Division to fully launch the telecommunication business

•2003 Increased sales of optical low-pass filters and crystal resonator DSX321G

Started domestic production by the photolithography metho

2020

Developed the Arkh.3G series



Formulated the 10-year Long-term Business Plan "OCEAN+2 Strategy"

Mass-produced synthetic quartz crystals for 6-inch wafers



Synthetic quartz crystals for 6-inch wafers



Tottori Production Division

# Risks, Opportunities and Material Issues

To ensure our growth as a sustainable company, we will leverage our strengths to address material issues, striking a balance between stable supply in our business domain and environmental initiatives in the environmental domain. For example, the Arkh series, which enables fully-automatic production, and enlarged quartz crystal wafers, which significantly improve production efficiency, along with other inherent strengths of the Company, contribute to addressing various challenges arising from the shortage of workforce.

As these initiatives are linked to the 10-year Long-term Business Plan "OCEAN+2 Strategy" and our conventional businesses, the Company's growth will lead to the realization of our management vision and long-term vision.

### **External environment**

# Risks and opportunities

# DAISHINKU's

### Megatrends

- Decreasing population/aging society with declining birthrate
- Work-style change
- Climate change/resource scarcity
- Geopolitical risks
- Pandemics

### Electronics industry trends

- Advancement of DX/robotics/Al
- Development of new technologies
- Expansion of the wireless communication market through the IoT

### Timing device industry trends

- Commoditization of technology
- Increase in the number of pieces used per unit
- Development of new technologies

Shortage of talents

Outflow of talents

Difficulties in procuring parts and materials

Increase in environmental impact

Measures against cost increase

Changes in the market environment

Catch-up by overseas competitors

Threat of substitutes

Advancement of equipment/devices

New materials/new businesses

Supply chain

Information security

Our original products "Arkh series"



Increasing the size of synthetic quartz crystals and crystal wafers



Spirit of taking on challenges



The Three Blues (Shallange)

Oui

Helping "Connect" through our products and

Corporati

We will answer society's

# strengths and initiatives

# Material issues

# Future we aspire to

# OCEAN+2 Strategy 7 basic strategies

Single supplier

C os

Challenge to lower cost area

Ε

lement Core technology:

growth and cutting/polishing of crystal

ΑI

Iliance Alliance

ich

Advantage of being a survivor

.٦

New crystals

+2

New devices

Sustainability in the business domain

- Technological innovation and value creation
- Sound supply chain

# Stable supply

Sustainability in the environmental domain

 Response to environmental (reduction of CO₂) concerns

## **Environmental initiatives**

Fundamentals of corporate activities

- Ingraining our corporate philosophy and purpose
- Maximization of human capital

Sustainable growth

# Long-term Vision

To become a leading company always needed by customers with high standard of technologies and strong corporate capabilities, thereby achieving a 10 billion yen operating profit

# Management Vision

With "trust" as our slogan, we aim to become a company in which all employees work with hope while nurturing the spirit of valuing "connections between people."

# Conventional businesses

Work with pleasure
Work with









Purpose

technologies that are indispensable to society

Philosophy

call with "Trust"

# **Company Profile**

Net sales

**¥38,430** million **¥4,210** million

Operating profit

Profit attributable to owners of parent

**¥3,208** million

Operating profit to net sales

11.0%

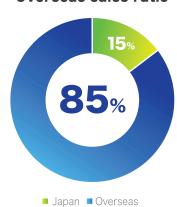
ROE

9.3%

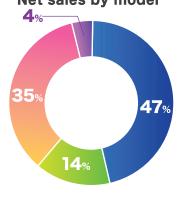
ROIC

4.1%

# **Overseas sales ratio**



Net sales by model



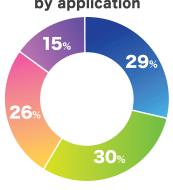
■ Crystal resonators ■ Tuning fork

Other

Crystal applied products

crystal resonators

# Percentage of sales by application



■ Telecommunications ■ Automotive

Consumer

■ Industrial

# Status by region

### **Europe**

Net sales: ¥3,654 million Segment profit: ¥52 million Sales subsidiary: DAISHINKU (DEUTSCHLAND) GmbH Number of employees: 21

### China

Net sales: ¥13,042 million Segment profit: ¥538 million

Sales subsidiaries: SHANGHAI DAISHINKU INTERNATIONAL

TRADING CO., LTD. DAISHINKU (HK) LTD.

Production subsidiaries: TIANJIN KDS CORP.

HARMONY ELECTRONICS CORP. (Dong Guan)

HARMONY ELECTRONICS CORP. (Shenzhen)

Number of employees: 649

### **North America**

Net sales: ¥1,755 million Segment profit: ¥2 million

Sales subsidiary: DAISHINKU (AMERICA) CORP.

Number of employees: 8

# Asia

Net sales: ¥2,777 million Segment profit: ¥220 million Sales subsidiaries: DAISHINKU (SINGAPORE) PTE. LTD. DAISHINKU (THAILAND) CO., LTD Production subsidiaries: PT. KDS INDONESIA HARMONY ELECTRONICS (THAILAND) CO., LTD. Number of employees: 1,115

# Taiwan

Net sales: ¥9,066 million Segment profit: ¥658 million Sales/production subsidiary: HARMONY ELECTRONICS CORP.

Number of employees: 840

### Japan

Net sales: ¥8,134 million Segment profit: ¥2,780 million Number of service offices: 3 offices Number of production bases: 4 bases Production subsidiary: Kyushu Daishinku Corp. Number of employees: 717



# Roles and applications of crystal devices

A crystal device refers to a type of timing device, which is:

- · Primarily made of artificial crystals, which can be manufactured in large, industrially stable quantities, and
- · Able to continue emitting the same signal (frequency) stably even if the ambient temperature changes.

Due to these material and physical characteristics, crystal devices are most commonly used as timing devices.

The role of timing devices is to create stable reference signals required by semiconductors (and ICs). The accurate and stable reference signals provided by crystal devices enable smooth data transmission and accurate time display. Crystal devices are used in various applications that require digital control, from everyday items to industrial equipment, such as smartphones, automobiles, medical equipment, and industrial robots. Semiconductors are called the "rice of industry" because they are indispensable for the digital society, whereas crystal devices are called the "salt of industry" because they support our lives. We will continue to build our presence in the crystal device market, supporting the future of our customers and society with people, services, and digital technology.

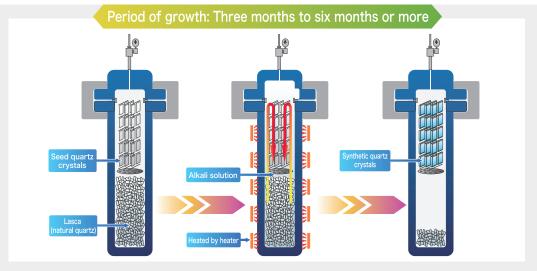
# What if quartz crystal devices no longer existed?

For general automobiles, not only will all functions such as automatic driving and other driver assistance systems, smart keys, and navigation systems, be turned off, but you will not be able to even start the engine to move the automobile. Smartphones will no longer be able to make calls or get location information, wireless earphones will no longer be able to hear sounds, and batteries will quickly run out, making our lives extremely inconvenient. Quartz crystal devices are an essential reference signal source for our lives.



# **Company Profile**

# How a crystal device is made



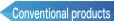
# Growing synthetic quartz crystals

The process of growing synthetic quartz crystals involves

- (i) placing lasca (pieces of natural quartz) into an autoclave, a colossal steel vessel more than ten meters high,
- (ii) melting them at high temperature and pressure, and
- (iii) recrystallizing them on seed quartz crystals hanging from the top.

Synthetic quartz crystals are controlled so that they grow about 0.5 mm per day. Some of them take as long as two to three months and six months or more.

# Arkh.3G





# Processing of one crystal wafer\*

Photolithography is applied to a crystal wafer to form outlines and electrodes.



### Processing of one crystal blank\*

The synthetic crystal is cut at an angle suited to a specific purpose or application. It is then polished to obtain a desired frequency.



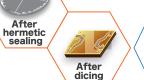
### Hermetic sealing

After adjusting for periodicity in a vacuum atmosphere, three crystal wafers are bonded, sealed and diced.



### **Bonding the crystal blank**

The crystal blank with electrodes is fixed in a package of ceramic or other similar material with a conductive adhesive, whose humidity and time of application are strictly controlled.



# Sealing Following the

Following the final frequency adjustment, the packages are sealed in a vacuum or nitrogen atmosphere.

# Inspecting, packaging and shipping products

The crystal devices are inspected to check their conformity to all the required specifications, which number several dozens of items. Only the products that have passed this most stringent inspection are packaged and shipped.

## \*What is a crystal wafer?

A crystal wafer is a substrate (thin quartz crystal plate) cut out from a quartz crystal gemstone and used primarily in photolithography.

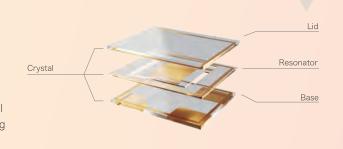
## \*What is a crystal blank?

A crystal blank is a quartz crystal chip processed to a size that can be mounted on a package.

# **Product Introduction**

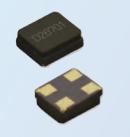
# Arkh.3G

This device has a new, unprecedented structure developed as a third-generation device following the lead-type and surface-mounting-type products. It is an ultra-compact and thin device realized by wafer-level packaging (WLP) technology. It has a three-layer structure consisting of a lid, resonator, and base made of crystal as a mother body, in contrast to the conventional structure in which crystal blank is held in a ceramic package using a conductive adhesive.



# Crystal Resonators

A MHz band crystal resonator with good temperature features. Available in various package types and sizes for a wide range of applications.



# Tuning fork crystal resonators

A low power consumption kHz band crystal resonator.
Used for sleeping clocks and clock functions.





### **Crystal Oscillators**





A driver IC-equipped device. Available in a variety of types: simple packaged crystal oscillator (SPXO), voltage controlled crystal oscillator (VCXO), temperature compensated crystal oscillator (TCXO), oven controlled crystal oscillator (OCXO), etc.

### Monolithic Crystal Filters





A device featuring a frequency selective function that enables particular frequency components to pass through. Most commonly used for radio communication equipment.

### **Mold Oscillators**





A crystal oscillator mold-packaged with a crystal resonator and IC, which can reduce the external procurement ratio and enable stable supply.

# \*What is a mold package?

A mold package is a product that covers a quartz crystal device with an outer shell made of insulating material such as resin. The Arkh series is highly flexible in package design. Using the series as a core enables to design various package sizes.

# What size is a quartz crystal device?

A quarts crystal device is a very small product used in automobiles, smartphones, personal computers, wireless earphones, and many other applications.

Although the size varies by application or model, our most miniature product is 1.0 mm  $\times$  0.8 mm. As shown on the right, it is smaller than a grain of rice and is the world's smallest and thinnest quartz crystal device.

Our product Rice grain (real size)