



# Murata

## value report

### 2020

***muRata***

INNOVATOR IN ELECTRONICS

ENG

# A future woven by Murata's DNA

“A company is generally defined as an entity set up primarily for the purpose of making profit. In today’s society, many companies are looking beyond just the profits and working together with like-minded companies to help the world’s culture advance and develop. Given the current situations we see, one would have a narrow view of life if they did not feel the need to contribute to society. Likewise, a company cannot grow without contributing to its local community and society at large.

Such a thought led me to believe that a company can have its raison d'être only if it contributes to its society, and it should earn profit proportional to the degree of its contribution. I thus established our founding spirit that we shall find joy and pride in contributing to our society.

Contributing to society means devoting yourself to somehow improve society and one’s community. Working for Murata must directly mean devoting yourself to society and people.”

February 1953 **Akira Murata**



## Murata Philosophy

We contribute to the advancement of society  
by  
enhancing technologies and skills  
applying scientific approach  
creating innovative products and solutions  
being trustworthy  
and, together with all our stakeholders,  
thankful for the increase in prosperity.

The Murata Philosophy was established in 1954 by our founder, Akira Murata, so that all employees can walk toward the future with a common spirit. The philosophy is the culmination of his effort to put together and summarize what he had in mind and his passion from the time of Murata’s foundation until 1953.

What am I working for?  
What should Murata be in the future?

A compass that helps all employees, including executives, rethink their own actions and face the direction in which they should move in times of rapid change. This is the meaning of the Murata Philosophy.

Each employee takes on challenges for change as a reformer

“To innovate is to pioneer.  
We must always proactively drive things forward with a pioneering spirit.”

This was a message Akira gave to all employees in 1961. The pioneer spirit is what has enabled Murata to overcome all kinds of hardship. Innovation in electronics has almost infinite potential. Therefore, we hope that each one of us will take on challenges for change as a reformer and working for Murata will bring about positive changes for our society.

Innovator  
in  
Electronics

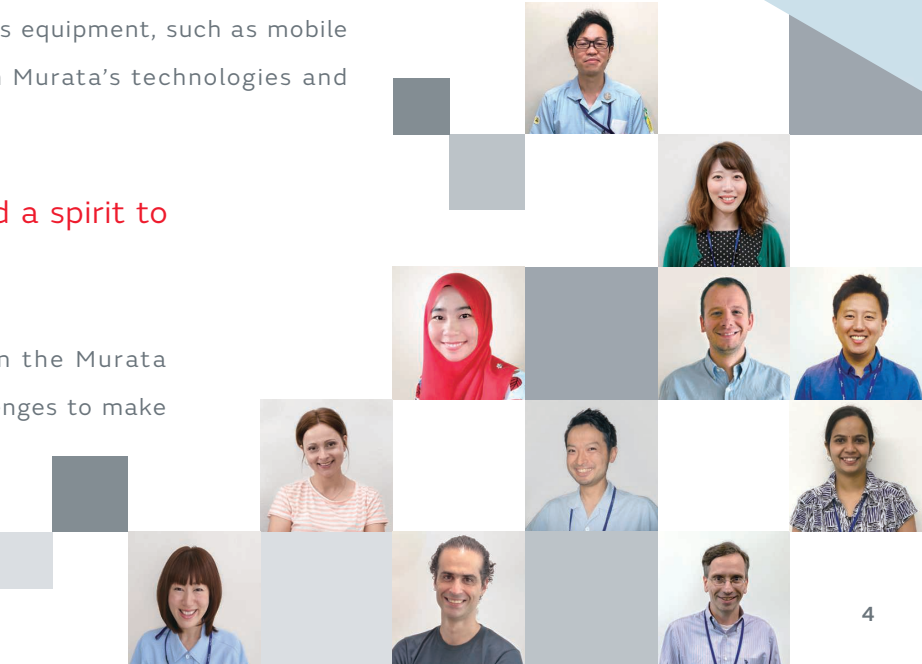
Murata’s identity “Innovator in Electronics” is shared among all Murata employees around the world. This slogan reflects our aim to become a leading innovator in the electronics industry.

Into the future

Let’s take mobile phones as an example. In 1992, the “Communications” was first included in our reportable product categories. Murata has continually responded to society’s evolving needs by providing the required design enhancements, such as small, high-performance components to the fast-growing mobile phone market. What made this possible was the passion to do what is good “for society and people” as a reformer, which has been carried on since the foundation of Murata. Communications equipment, such as mobile phones and smartphones, are filled with Murata’s technologies and passion.

Weaving the future with ideas and a spirit to take on challenges

We will inherit the passion embodied in the Murata Philosophy and continue to take on challenges to make our future better.





Amid significant change in the electronics market, Tsuneo Murata assumed office as Murata’s Chairman of the Board and Norio Nakajima assumed office as President in June 2020.

In order for us to continue to grow sustainably together with our society, we must consciously operate businesses that harmonize with our stakeholders, while incorporating into our business strategies the solutions for social issues that only Murata can offer.

With all employees working together to preserve and pass down the spirit of the Murata Philosophy that has been inherited from the founder, we at Murata aim to contribute to the development of our culture by continuing our efforts to put into practice the slogan of “Innovator in Electronics,” which reflects our wish to become a leading innovator in the electronics industry.

Chairman of the Board  
Tsuneo Murata

President  
Norio Nakajima

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Editorial policy

Murata Manufacturing Co., Ltd. published its Environmental Report in 2002, and has been disseminating the company’s information since 2010 in the Murata Report, a brochure that combines its Company Guide, CSR Report (Corporate Social Responsibility Report) and Annual Report (Financial Data).

With stakeholder dialogue being an important consideration, Murata decided to publish an “Integrated Report” from 2018 to better convey Murata’s activities to improve corporate value over the medium to long term. In addition to the growth strategies to realize the future envisioned by Murata, CSR (Corporate Social Responsibilities) activities that the company has been continuously implementing are described as resource strategies in this report.

We created and edited this report by summarizing the main points with the aim of communicating Murata’s activities in a concise manner. Detailed financial data and information on CSR activities that cannot be included in this report, as well as environmental data from each business site, are posted on the Murata website. Please refer to the tool map below to obtain the required information.

Term of this report

Between April 1, 2019 and March 31, 2020  
\* Some activities taking place in or before 2019 or in or after April 2020 are covered in the report as well.

Organizations reported on

Murata Manufacturing Group (Murata Manufacturing Co., Ltd. and 90 subsidiaries inside and outside of Japan)

Reference guidelines

ISO26000, The International Integrated Reporting Council (IIRC) “The International Integrated Reporting Framework,” Ministry of Economy, Trade and Industry “Guidance for Collaborative Value Creation”

CSR-related policy list

CSR Charter/Corporate Ethics Policy and Code of Conduct/Human Rights and Labor Policies/EHS Disaster Prevention Policy/Purchasing Policies/Quality Policy/Disclosure Policy/Basic Policies for Activities to Contribute to Society and Local Communities/Basic Policy for Prevention of Cartels and Bribery/Global Tax Policy

Future forecasts, plans and targets

In addition to past and current performance, this report contains future forecasts, predictions, plans, and other information. Such forecasts, predictions, and plans are assumptions or judgments based on information available at the time of publication, and hence include uncertainties. Accordingly, the results of future operating activities and future phenomena may differ from forecasts, predictions, and plans in this report.

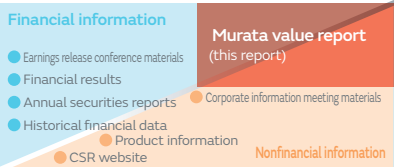
\* In this report, “Murata” refers to the Murata Manufacturing Group as a whole, and “Murata Manufacturing Co., Ltd.” to Murata Manufacturing as a standalone company.

Tool map

Murata disseminates a variety of information using various tools to communicate with its stakeholders.

In addition to the information contained in this report, a variety of information on Murata’s products and environmental activities can be found on our website. We will continue to proactively disclose information to allow our stakeholders to better understand Murata.

Main disclosure tools



Corporate website

- Top page  
<https://corporate.murata.com/en-global>
- Financial information  
<https://corporate.murata.com/en-global/ir>
- Nonfinancial information  
<https://corporate.murata.com/en-global/csr>



# History of value provision

The evolution of electronics has been enriching people's lives and realizing various dreams.

Murata has contributed to the evolution of products and the expansion of the electronics market by foreseeing the future and tenaciously refining its technologies under the motto, "good electronic equipment starts with good electronic components and good electronic components start with good materials."

1940s

**Establishment**  
The spread of communications equipment after the start of commercial radio broadcasting

- 1944 Murata Manufacturing Co., Ltd. founded
- 1949 Japan's first mass production of temperature compensation type barium titanate ceramic capacitors for radios



Barium titanate ceramic capacitor

1950s

**Emergence of the transistor radio**  
Beginning of the miniaturization and weight reduction of equipment

- 1950 Murata Manufacturing Co., Ltd. established
- 1953 Began manufacturing ceramic disc capacitors
- 1955-56 Established Murata Technology Research Laboratory Co. and moved thereto
- 1959 Launch of ceramic semiconductors PTC thermistors



PTC thermistors "POSISTOR"

1960s

**Launch of color television broadcasting and increased demand for electronic components as the Tokyo Olympics drove economic growth**

- 1962 Commercialization of ceramic filters for communications equipment
- 1966 Launch of multilayer ceramic capacitors
- 1967-69 Establishment of a mass production system for multilayer ceramic capacitors



Multilayer ceramic capacitors

1970s-1980s

**Emergence of car phones, mobile music players with stereo headphones, and CDs**  
Contributing to making information personal and portable

- 1975 Launch of GIGAFIL dielectric microwave filter
- 1977 Commercialization of ceramic resonator CERALOCK
- Around 1986 Commercialization of chip ferrite beads
- 1989 Commercialization of multilayer LC filters



GIGAFIL dielectric for microwave filters

1990s-2000s

**Arrival of the age of the Internet owing to the miniaturization of mobile phones and the spread of personal computers**

- Around 1997 Commercialization of SWITCHPLEXER
- Around 2000 Commercialization of Bluetooth® modules
- 2004 Development of multilayer ceramic capacitor in 0402 (0.4×0.2mm) size
- 2005 Commercialization of MEMS gyro sensors

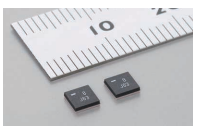
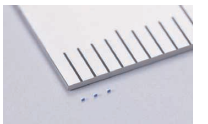


Bluetooth® modules

2010s

**Multi-functionalization of smartphones**  
Changes in the way we communicate.

- 2012 Development of multilayer ceramic capacitor in 0201 (0.25×0.125mm) size
- 2016 Development of the world's first inductor in 0201 size
- 2017 Commercialization of hybrid multiplexer for smartphone wireless circuits



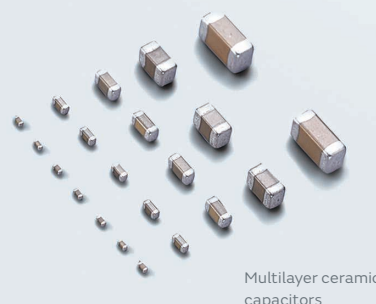
2020s-

**Arrival of the 5G era and progress in vehicle electrification**

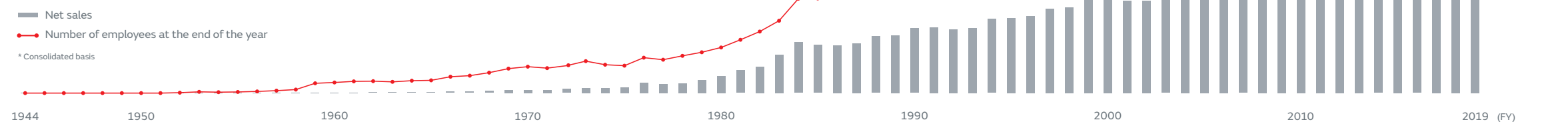
Murata will continue to contribute to the growing trend toward multi-functionalization of electronic devices and the development of society as a result of such trends.

## TOPICS

Compared to mobile phones used in the 1990s, the thickness, volume, and weight of smartphones used in 2017 are 1/3, 1/2.5, and 1/2, respectively; however, the number of components used has tripled. Murata has supported the evolution of smartphones, which have become lighter, thinner, and more functional, by realizing further miniaturization, increased functionality, and high-density mounting of components. Representative products include multilayer ceramic capacitors and inductors for high-frequency circuits. Murata has also developed communication modules that combine multiple components in anticipation of the trend toward space-saving and multi-functionalization.



Multilayer ceramic capacitors

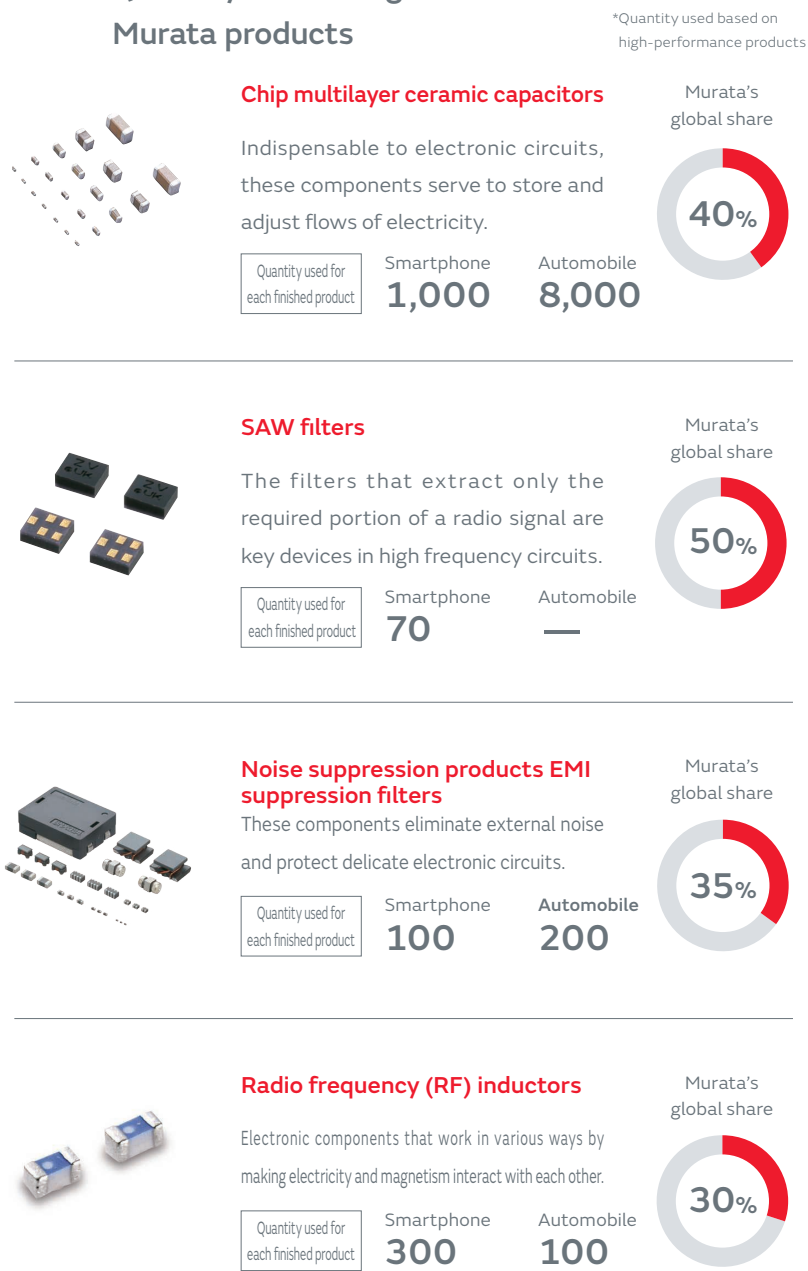


\*Bluetooth is a trademark of Bluetooth SIG, Inc.

# Murata products

Murata electronic components contribute to enriching people's lives through their use in all sorts of electronic devices in everyday life, including televisions, PCs, and smartphones. Murata will also continue offering new value as an innovator in the growing electronics fields such as automobiles with mobility features and electric based propulsion energy, IoT, healthcare and medical.

## Quantity used and global share of Murata products



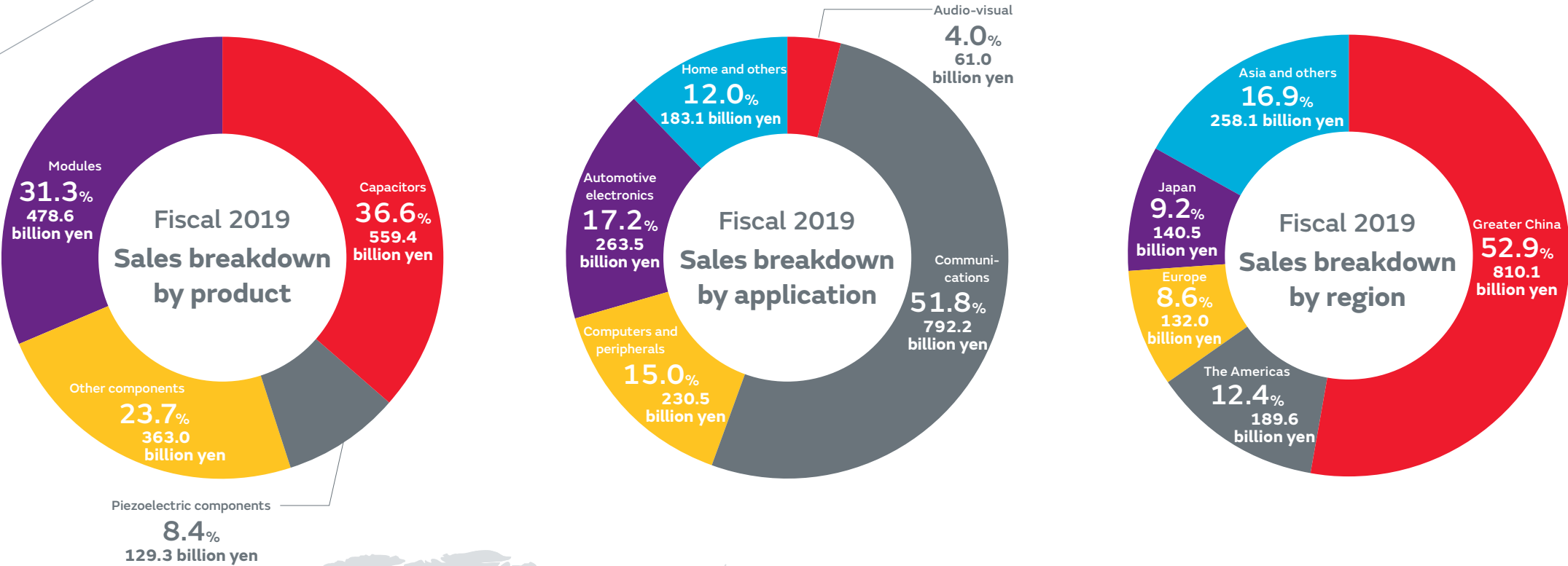


# Murata's profile

Murata products are playing pivotal roles all around the world. Since our sales exceed one trillion yen and are generated from products with high shares in global markets, we have opportunities to communicate with many customers in a wide range of industries, which allows us to stay ahead of and anticipate customer needs.

## A diverse range of products for a diverse range of applications

Murata holds a large market share in a wide range of products, from our mainstay capacitors to filters, inductors (coils), sensors, batteries, and other components, and modules comprised of these components. The market areas where our products are valued have expanded beyond our core markets, such as smartphones, computers, AV equipment, and home appliances, and are now experiencing increasing demand from other areas such as 5G wireless communications, mobility enabled automobiles, EV (Electric Vehicles), IoT, automobiles, healthcare, and energy.

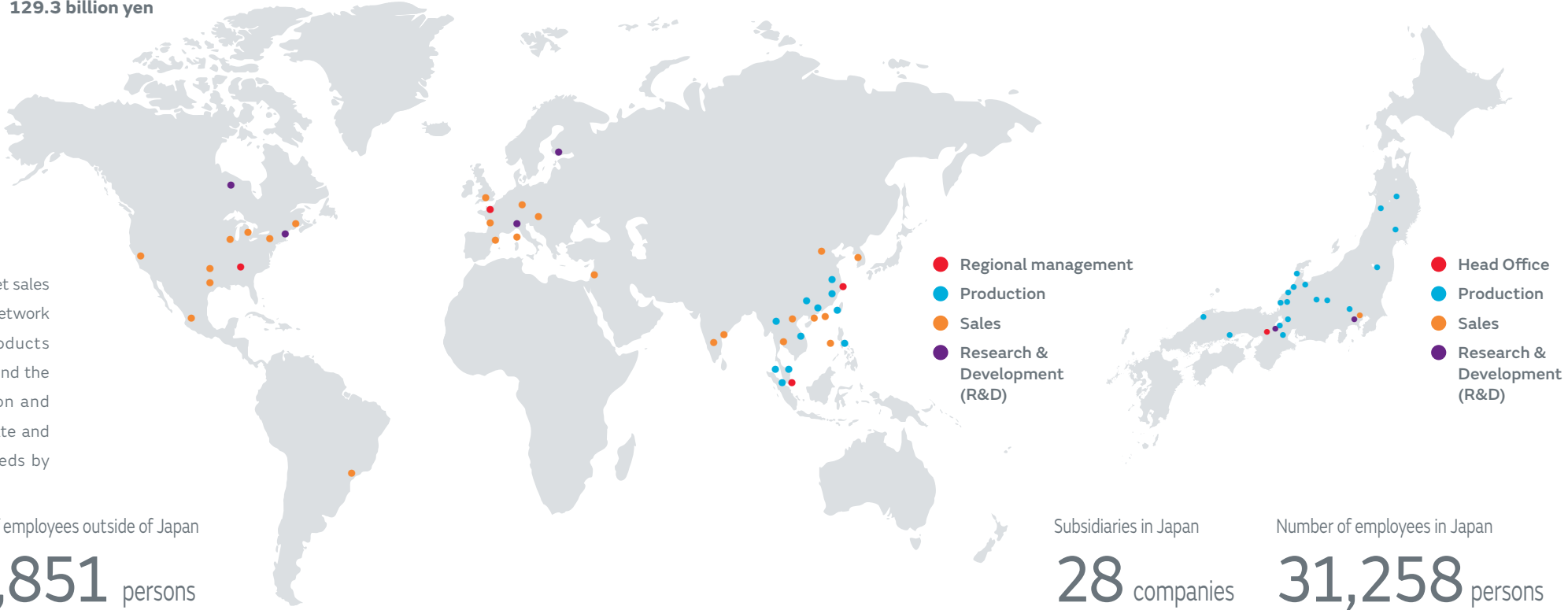


## Global expansion and development

Murata's ratio of sales outside of Japan to net sales exceeds 90%. Murata's strength lies in our network that enables us to offer high-quality products and excellent services in locations all around the world through global business expansion and development and in our ability to anticipate and elicit a wide range of our customers' needs by leveraging our network.

Subsidiaries outside of Japan  
**62** companies

Number of employees outside of Japan  
**42,851** persons



We will continue to lead innovation in the electronics industry with an eye on technological development over the medium to long term.

**I will inherit the founder's spirit and strive to improve our corporate value.**

I am Norio Nakajima. I was appointed President after the resolution adopted at the General Meeting of Shareholders and the Board of Directors meeting held in June of this year. First, I would like to express my sincere gratitude to all our shareholders for your continued understanding and support for the Group.

Last November, I was called by former President Tsuneo Murata after a meeting of the Nomination Advisory Committee. He told me that he wanted to pass the baton of management to me. To be honest, I was surprised to receive this offer at that time because Mr. Murata was still full of energy. However, now that I have become President, I am keenly aware of the gravity of my responsibility and I am also feeling an unparalleled sense of fulfillment in meeting the expectations of our stakeholders through the creation of new social value as the leader of the Group.

I am the first president to be selected from outside the founding Murata family. However, the noble philosophy established by our founder Akira Murata, "we contribute to the advancement of society by creating innovative products and solutions," will never change. The Murata Philosophy, which represents our founder's spirit, is what the Group should continue to inherit, and this will also become a guiding principle when I need direction. We will continue to take on the challenge of creating new value in a manner that is unique to Murata, and faithfully strive to improve our corporate value under the Murata Philosophy.

President

Norio Nakajima

**Achieving growth by taking advantage of management that grasps the big picture of technological trends as our strength**

Nowadays, the electronics market is undergoing major changes. We are entering a new growth stage against the backdrop of 5G (the 5th generation of mobile communication systems) in the telecommunications industry and electrification and automation in the automotive industry. By constantly creating new value, Murata will continue to fulfill its mission as an innovator in the electronics industry. Moreover, we are determined to firmly meet the expectations of our stakeholders through the development of competitive and unique products.

The origin of Murata's technology lies in ceramics, inorganic materials with various electrical properties, leading us to refer to them as "Wonder Stone." Based on this, we have created a wide range of electronic components including capacitors. In particular, we hold the world's top market share of multilayer ceramic capacitors (MLCCs) owing to our technology and quality.

If components such as capacitors and inductors comprise the first page of our business portfolio, the second page consists of modules. In the 1990s, Murata developed RF components for 2G (the 2nd generation of mobile communication systems), which led to the creation of a communication module business combining electronic components. At the time, we made an effort to develop technologies based on a development roadmap with our sights set on the next 10 to 20 years.

Moreover, our sales engineers conducted business meetings with our customers by taking advantage of our abundant technological expertise and strove to resolve customers' issues by leveraging our competitiveness in prompt decision-making. Diverse human resources engaged in monozukuri (manufacturing) at each factory, along with our sales engineers engaged in resolving customers' issues from the management perspective, have created a foundation for the timely and stable supply of products required by customers, eventually allowing Murata to expand globally.

In the face of the new trends of 5G and the electrification and automation of automobiles, Murata is looking ahead of the times to be fully prepared, while enhancing its confidence in timely provision of products needed in the future market.

I believe there is no limit to technology. For example, the MLCC is considered to have been

miniaturized to the maximum extent possible; however, I do not think it has reached its limit. Murata's true value lies in its constant effort to challenge the limit and create new technologies. Since its foundation, Murata has been focusing on creating inimitable products by utilizing "Wonder Stone" as a material. And currently, we are realizing high profitability while focusing on technological development with the aim of achieving the net sales of new products that comprise 40% of the total net sales.

Looking back on Murata's 75-year history, we have gone through rough seas numerous times and have faced challenging business results in the short term. However, our strength lies in our management's ability to grasp the big picture of technological trends rather than taking a short-sighted approach. Based on this, our unique management system, called "matrix management," is supporting our competitive advantage in monozukuri (manufacturing). In this fiscal year, the business environment is expected to be challenging due to the impact of the COVID-19 pandemic, causing concerns to our shareholders and investors. However, we have a clear picture of what we should do in the long term. In this regard, we promise to surely meet your expectations over the medium to long term.

**We will be fully prepared to capture the demand for 5G.**

As for the market environment in the current fiscal year, we expect a significant decline in the demand for products used in automobiles due to the impact of the COVID-19 pandemic and other factors. Meanwhile, there are also concerns about a decline in the demand for products used in consumer devices; however, we expect that the demand will pick up as the spread of the COVID-19 pandemic is brought under control.

In terms of business operations, a Business Continuity Plan (BCP) has been properly carried out in our entire supply chain, despite disruptions in operations at some production sites. By leveraging lessons learned from previous hardships such as the Great East Japan Earthquake and the Heavy Rain Event of July 2018 in western Japan, we have focused on maintaining and improving our supply chain. And I believe that such efforts have borne fruit. Moreover, in order to ensure the safety of our employees, we have implemented various measures





in a focused manner in terms of both tangible and intangible aspects (please see p.56).

In addition to these efforts, Murata is also working on BCP (Business Continuity Planning) at its production sites. Traditionally, it has been considered difficult to automate the manufacturing process for ceramic products because the process is extremely complicated. However, Murata has been steadily promoting the use of smart factories in its own way. In this process, we are actively working on the use of the latest technologies, such as artificial intelligence (AI). Through these efforts, we will surely fulfill our mission of maintaining a stable supply of products no matter what happens.

As for the latest business opportunities, we place importance on products compatible with 5G. We are in the stage where actual demand is rapidly increasing, mainly for smartphones and base stations. The current climate of the 2020 Tokyo Olympics, which was supposed to drive a new trend in the telecommunications industry, is uncertain. However, Murata strives to be fully prepared to meet the demand of the market.

Regarding the potential of 5G, I would like to make a point that it is not limited to an increase in the communication speed of smartphones. Particularly, we are focusing our attention on the merit of low latency. I expect that if communication latency is minimized to the maximum extent, the data can be called up from the cloud in real time, and accordingly, the form of smartphones and other communication devices will change dramatically in the future.

At the same time, all kinds of electronic devices in our lives and several industries will be connected through the network after the launch of 5G. In this regard, when it comes to Murata's business, we expect to see more commercial opportunities in the fields of modules and solutions, in addition to components. Moreover, we are also steadily preparing to enter the domain of software in the communication infrastructure field and we will meet the demand of the market by developing our business with an eye on 5G and even 6G.

This includes the multilayer resin substrate "MetroCirc™", which uses liquid crystal polymer that combines our unique multilayer technology with organic materials. As RF technology approaches the domain of optical communication technology, I expect that it will have an even stronger presence in the future. In addition to the above, Murata offers numerous other elemental technologies that are designed to differentiate us from our competitors, and, in this rapidly changing era, we are determined to respond promptly and accurately to our customers' issues by taking advantage of our abundant technologies as our strength.

### **We are steadily preparing for growth in the next ten years.**

In order to achieve sustainable growth over the medium to long term, we are working to add the third page of our business portfolio called "solutions" to the two existing business portfolios, namely, components and modules. This aims to create a new business model that includes the domain of software.

Specifically, we are envisioning businesses related to various big data, including traffic information such as congestion of automobiles, operational information related to preventive maintenance at factories, and biological information related to health management. Murata has a variety of sensors in its lineup, capable of providing consistent services ranging from data sensing to data processing and analysis by combining such sensors with components, modules, and software. We are currently proceeding with the development of technologies to make this solution field a new pillar of our business.

However, a new business cannot be established overnight; it is a preparation with an eye on the future in the next ten years. To develop such a field, it is essential to train engineers who will sustain the future of Murata. I myself would like to utilize internal social networking sites and other means and refer to a variety of opinions through direct discussions with young engineers with an eye toward fostering engineers and further refine our vision for the future. Based on monozukuri (manufacturing), which is the foundation of Murata's business, we will also aim to generate revenue in the domains of system maintenance and services.

In addition to positive efforts to create the third business in our portfolio, I believe it is also important for me to closely examine a wide range of our businesses as a mission of the new president. For example, as for projects that are not contributing to earnings despite research and development activities over a long period of time, I am planning to develop an exit strategy after determining certain criteria and milestones. Some may feel this is a negative effort, however, this is an issue I cannot avoid as a corporate manager. Going forward, I will discuss the matter at the Board of Directors' meetings and the Management Executive Committee meetings to find the best course of action.

No one knows what society will be like in the next 10 or 20 years. However, in terms of technology, I am confident that we are going in the right direction. With an eye toward what the future of technology looks like, we will apply a backcasting approach and solemnly do what we should do now. By doing this, I am confident that we will achieve our goals in the future.

At Murata, the ratio of R&D expenses to sales has remained at around 7%. It may sound expensive when compared to other companies in the industry,

however, we believe it is a meaningful investment from the perspective of an advance investment to achieve our vision in the future. Meanwhile, Murata operates its business while placing importance on return on invested capital (ROIC) based on the belief that we are entrusted with the precious funds of our shareholders and investors (please see p. 17). We will continue to deliver inimitable and valuable products to the market through active research and development activities while maintaining a sound financial base from a long-term perspective.

### **We will move on to a new growth stage by strengthening the human resources base and ensuring the management transparency.**

We understand that further promotion of the management based on the Environmental, Social and Governance (ESG) criteria is important to achieve sustainable growth in the long term. Among other things, the most important thing is to strengthen our human resources base. Since its foundation, the source of Murata's strength has been management that values and develops people. Our corporate culture is characterized by the fact that the development of subordinates is considered the main mission of their superiors.

Based on the above, in the process of building their careers, employees are able to acquire multiple skills, starting with six months of training at a factory after joining the company and then gaining various work experience at each group company. This is beneficial not only in terms of gaining business skills, but also in fostering diverse perspectives. We can say that such job rotation has led to the ongoing development of management personnel. In the future, as we carry on our corporate culture of cherishing and fostering human resources, I am planning to consider how to ensure that human resources development is compatible with changes in the times and the scale of our business.

At the same time, as our business becomes increasingly globalized, we consider that it is also important for us to promote diversity and inclusion. Our corporate culture, which respects the diversity and creativity of each and every employee, will become the foundation for growth in the next era. Going forward, we will accelerate internal discussions to create a work environment in which all employees can positively engage in their work, regardless of gender, nationality, or disability.

Moreover, as for corporate governance, Tsuneo Murata, who has been appointed Chairman of the Board, will take the lead in strengthening the system (please see p.39). In particular, we believe it is important to further increase the transparency of management, and we will enhance the monitoring function of management, including further revitalization of the Board of Directors. As a matter of course, we will focus on communicating information to our shareholders and investors and engaging in dialogue with them more than ever in an effort to build trusting relationships.

In its 75-year history, Murata Manufacturing Co., Ltd. has received tremendous support from various stakeholders and has been able to achieve prosperity that it enjoys today. Moreover, the three strengths that have been developed by former President Tsuneo Murata, namely, the ability to improve at work sites, our engineers' curiosity, and the ability to deliver solutions, have also become a driving force for our growth. I consider it is my job to further enhance these strengths. While demonstrating these strengths and pursuing a decentralized autonomous organization, we will aim to become a corporate group that can always engage in the resolution of issues faced by our customers and provide optimal solutions in a prompt and timely manner. We hope you will look forward to seeing Murata's continuous challenge to create new value.





Member of the Board of Directors  
and Executive Vice President  
Director of Corporate Planning  
& Administration Unit

Yoshito Takemura

#### Message from the Director of Corporate Planning & Administration Unit

**In order to ensure that we live up to the stakeholders' expectations,  
we will focus efforts on enhancing our corporate value  
from both financial and nonfinancial angles.**

#### **Commitment to Murata Philosophy is the core of our Business & Management Foundation**

My name is Yoshito Takemura, and I am in charge of the Corporate Planning & Administration Unit. I would like to express my sincere gratitude for your support for our Group. I would like to discuss Murata's financial policy and initiatives and our views on business management and issues we face amid increasing interest in nonfinancial value in recent years.

First, what underlies the accounting system of Murata Manufacturing Co., Ltd.? It is the Murata Philosophy established by our founder, Akira Murata. At Murata, we have been emphatically told to always make a point of explaining anything quantitatively and constantly think about the essence of what numbers represent, based on the idea of "scientific approach," a phrase from the Murata Philosophy. We tally accounting information from different angles,

use the results to improve management operations, read what they indicate, and make decisions based on them. What supports this process is Murata's management accounting system.

The Murata Philosophy also includes the phrase, "being trustworthy." What it calls for is for us to win the trust of our stakeholders, including shareholders, clients, and suppliers. To this day, the Murata Philosophy has remained at the base of Murata's Business & Management Foundation.

#### **Transparency of profit drives growth**

At Murata, we have a three-dimensional matrix organizational structure in which businesses such as capacitors and RF modules are categorized in the vertical axis and process-based organizations that conduct location (entity) operations, including production activities, are categorized in the horizontal axis, and which includes functional staff

that support these organizations on the ground (staff of Head Office, development, sales, etc.). This organizational structure combines with the management accounting system to constitute Murata's unique matrix management system.

The aim of the matrix management system is to finely break down business management units using the matrix (combination) by product and process to identify costs and create a system in which business performance is managed by profit/loss unit. In particular, grasping consolidated business performance each month is very important for adjusting management policies in response to the wildly fluctuating management environment. Results of business activities appear in numbers on the statement of income of each department and make individuals in charge of profit and loss management aware of their responsibility, helping them enhance their sense of business management.

Murata has unique systems to support this management accounting system, including an elaborate system of accounting line items unified across global operations, internal interest rate system, standardized cost calculation system, internal price transfer system and investment economy calculation system to support decision making. We have an organizational culture in which opinions expressed openly and freely from different angles are brought together, while placing importance on the business axis, and in which departments share information on their respective issues and cooperate with each other using objective data, even when there is a conflict between departments, to resolve these issues.

In addition, Murata was early to introduce a structure to make not just executives but heads of business units aware of capital costs. By setting internal interest rates at the same level as capital costs, the concept of engaging in business operation while being conscious of capital costs has been instilled among staff on the manufacturing floor as well, which has led to the evaluation of operations based on return on invested capital (ROIC) as we practice today.

Through these numerous efforts, we have built an ample amount of capital required for growth investment and to become able to raise funds smoothly by winning the confidence of financial institutions and the capital market. This has resulted in a virtuous cycle of investment and investment recovery during the period of a rapid increase in the number of mobile phone users. In the 2000s, we stepped up an aggressive management policy under

which we took risks backed by our solid financial position, which enabled us to capture huge business opportunities related to smartphones and other devices, leading to continuous growth today.

#### **Solid "Business & Management Foundation" and healthy growth riding on business opportunities**

We expect demand for Murata's electronic components will increase over the medium to long term along with the multi-functionalization and increased functionality of electronic devices as well as advancement in the electrification of automobiles. In order to capture opportunistic gains for business expansion, we have aggressively made investments over the past few years. On the other hand, various risks have materialized in relation to opportunities for business expansion, including deteriorated cost structures as a result of higher standards of technical requirements in response to new technologies, including 5G, and investment recovery not being achieved as expected amid increased volatility of demand fluctuation as we expand operations globally. Taking these issues into consideration, we established our Mid-term Direction 2021, which is currently in the second fiscal year after introduction.

Mid-term Direction 2021 has a slogan: "Murata focuses on strengthening 'Business & Management Foundation' in order to seize expanding business opportunities and realize Healthy & Sustainable Growth." I would like to call your attention to the word, "healthy." A healthy state for a company is a situation in which its work structures and organization are evolving in pace with the growth speed and diversification of its business operations so that the company can successfully respond to changing business opportunities, and in which the company is contributing to the sustainable development of society and winning the trust of the public by meeting its expectations and requirements from society, not just complying with laws and regulations, while maintaining high profitability. In order to achieve this state, we have introduced three initiatives (please see pp.29-30).

And we set medium-term financial targets of minimum 20% in ROIC (before tax) and minimum 17% in the ratio of operating income to net sales. For net sales, we set 2 trillion yen as a guideline. The reason for using ROIC based on pre-tax operating income as the target is that it makes it easy to allocate figures to profit and loss units based on product, business division, operational location, etc. in the above-mentioned management accounting system.

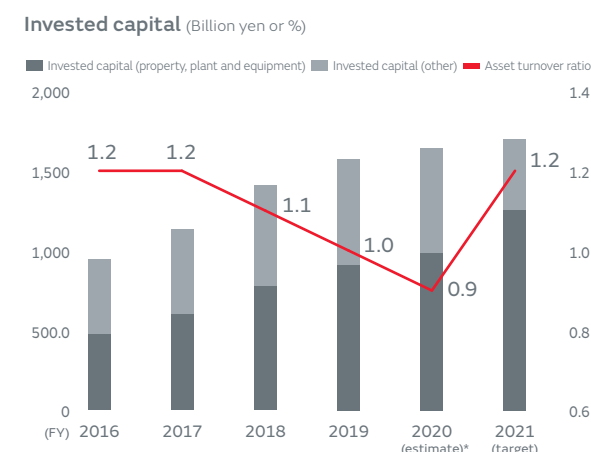
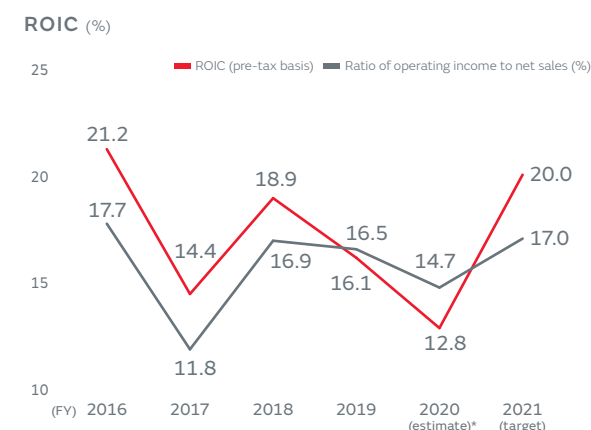




As our new President, Norio Nakajima discusses in his message, one of the key issues in Mid-term Direction 2021 is to closely examine the profitability of each business from the viewpoint of portfolio management. Some of our businesses are in “healthy” deficit, so to speak, having a potential to contribute to our future growth. For such businesses, we do not just terminate them categorically. Instead, we make a judgement in the course of monitoring their business performance.

Today, a large wave of change in the business environment is coming to the communication and automotive markets. Furthermore, we expect the pace of change to further accelerate as demand related to IoT (Internet of Things) technologies, including contactless and remote-control technologies, has emerged all at once due to the impact of COVID-19. In addition, we need to work to resolve social issues, including climate change and sustainable use of resources, in order to achieve a sustainable society.

Murata aims to steadily capture business opportunities, provide value that satisfies customers, achieve sustainable growth, and work to resolve social issues through our business. For this, we are working to strengthen our Business & Management Foundation, including organizational structures and work structures in line with expansion of the scale of our business.



## Use of human capital and information capital essential for healthy growth

A company’s real ability is not necessarily represented only by its financial statements. Nonfinancial factors, including its human resources and information, can also form part of its power or capital that creates value. I believe that the mission of Murata’s management team is to make Murata a company where each and every employee can have an opportunity to play an active role and seek to achieve healthy growth as a person with a sense of fulfillment.

In today’s rapidly changing environment, there are many cases where it is difficult to foresee the future. Therefore, it is also important that employees can become a driving force in such cases by reading a sign of change and finding a new direction by themselves. Even if we draw up an excellent business strategy, the business environment changes every moment. Unless we adjust our strategy flexibly in accordance with changes in the environment, we may fall off the pace. Accordingly, we will need people who can see signs of change and flexibly change direction.

For Mid-term Direction 2021, we will work on this under the theme of “Harmony among people, organization, and society.” (please see pp. 29–30)

In the age of IoT, companies who control information will control their market share. Under Mid-term Direction 2021, each department including factories in various locations has been actively engaged in efforts to improve productivity through utilization of data and to promote smart factories under the theme of “Establishment of advanced supply system & exponential productivity enhancement.” In addition, just as we accumulate our inimitable monozukuri (manufacturing) technologies, our indirect divisions are stepping up their unique initiatives. I believe that information can transform into management resources by giving significance to simple data and it will exert its power as so-called invisible capital (please see pp. 29–30).

Accordingly, in addition to the capital employed as recorded in financial statements, human resources and information that does not appear on financial statements are also the source of competitive advantage, and they are important capital that drives value creation.

## Financial strategy to achieve sustained growth for the future

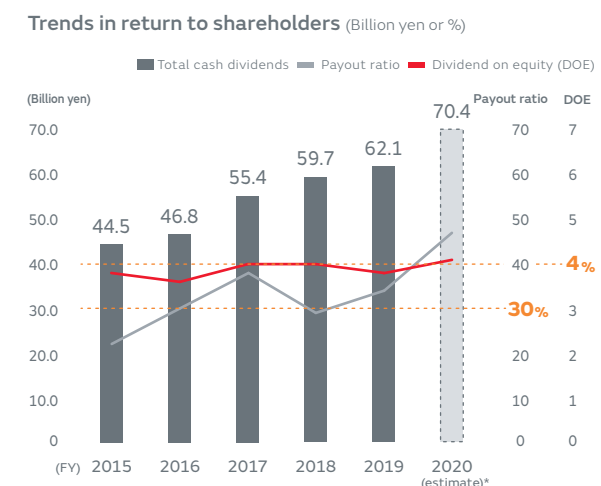
Now, in the second year under Mid-term Direction 2021, it is unclear whether we can achieve net sales of two trillion yen due to impacts from the spread of COVID-19 and the intensified U.S.-China trade friction. Yet we continue our efforts to improve the ratio of operating income to net sales and ROIC and steadily build the Business & Management Foundation to achieve sustained growth for the future, based on our efforts to create

added value through our operation and enhance capital by increasing profits. Since its foundation, Murata has continued to believe that enhancement of equity capital as a robust financial strength is essential amid abrupt changes in demand and rapid advancement in technologies. It is often thought that securing of financial base is contrary to asset efficiency, but we believe it is important for achieving the permanent growth of our company. When business conditions have deteriorated, we cannot expect to achieve sustained growth unless we have enough funds to keep spending to achieve our vision in the future. We also believe that as a company we can adapt flexibly to changes only if we have a stable financial base.

Enhancement of cash reserves is also an important theme as the market outlook remains uncertain. For this, we are prepared to deal with unexpected situations, we have three months’ worth of cash reserves, which we think is an adequate level, and have secured credit lines from financial institutions. In addition, we have successfully diversified means of raising funds because we were able to issue bonds under favorable terms in the last fiscal year and a year earlier. We did not do this in anticipation of the spread of COVID-19; it simply proves that our effort in always foreseeing one step ahead has worked very well.

In terms of shareholder returns, our basic policy is to pay dividends to investors from a portion of profit earned through business activity, while expanding corporate value over the long term and reinforcing financial position. In addition, we will strive to stably increase dividends by increasing earnings per share.

In terms of our dividend policy, we kept increasing payouts for eight consecutive fiscal years since 2013. More recently, we have decided to adopt dividend on equity (DOE), which is less susceptible to the impact of business results in a single year, as an indicator for shareholder returns in order to present to shareholders and investors stable payout levels over the long term. In the fiscal year ending March 2021, we are planning to pay an annual dividend per share of 110 yen, up 13 yen from a year earlier, on the assumption that we can achieve earnings



forecasts released in this past April. Based on this, the targets for DOE and payout ratio are 4.1% and 47%, respectively.\* We will also purchase treasury stocks as a measure of shareholder returns in a timely manner, with an aim to improve capital efficiency. While we aim to secure funds necessary for achieving future business growth, we will utilize extra funds as financial resources to purchase treasury stocks in a timely manner.

## Enhancing management transparency and our relationship of mutual trust with you

In our dialogue with shareholders and investors, we believe it is of primary importance for us to fulfill operational responsibility and accountability pertaining to business results, as a matter of course. The electronics market grew significantly over a period from the 1970s to the early 1990s. However, lacking adequate funds to capture the opportunity for growth, Murata issued convertible bonds on several occasions and raised large amounts of funds directly from the financial market. We have always respected the standpoint of investors and were able to significantly increase our corporate value thanks to the funds thus raised, although on occasions we were forced to cancel issuance due to abrupt changes in the financial market climate. We are grateful for many of our supportive investors who bought multiple convertible bonds, converted them to shares, and have held them for many years. We would like to continue to respect the spirit of “being trustworthy,” as called for in the Murata Philosophy, that we have built with our shareholders and investors. As our businesses and organizations continue to grow globally, we will remain focused on fostering a relationship of trust with you by stepping up efforts to secure management transparency and disclose information.

We think provision of information to employees is also important, in the sense of information disclosure to stakeholders. It is our wish that all our employees, regardless of their positions, can come together to think about management issues and face shareholders and investors with the investor relations division playing an intermediary role.

Building the trust of stakeholders and contributing to the development of the world through manufacturing of electronic components: this is the ideal vision of management Murata aims for. My wish is that our shareholders and investors will empathize with Murata’s management philosophy and feel proud of holding its shares. We will focus on further improving our corporate value in both financial and nonfinancial aspects as an innovator that can sensitively detect business opportunities and risks, proactively initiate changes to respond to them, and further strengthen the relationship of trust with you while sincerely working to meet your expectations.

\*From earnings forecast announced on April 30, 2020

## Consolidated financial and nonfinancial highlights

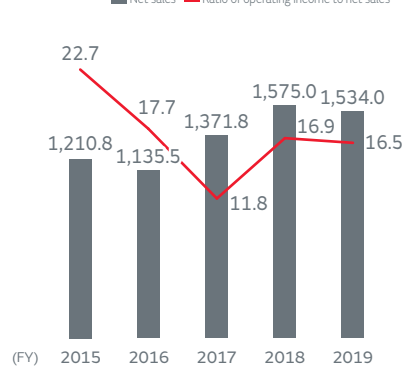
(FY)	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Operating results</b>											
Net sales (Millions of yen)	530,819	617,954	584,662	681,021	846,716	1,043,542	1,210,841	1,135,524	1,371,842	1,575,026	1,534,045
Operating income (Millions of yen)	26,730	77,485	44,973	58,636	125,891	214,535	275,406	201,215	163,254	266,807	253,247
Operating income / net sales (%)	5.0	12.5	7.7	8.6	14.9	20.6	22.7	17.7	11.8	16.9	16.5
Income before income taxes (Millions of yen)	34,658	82,062	50,931	59,534	132,336	238,400	279,173	200,418	167,801	267,316	254,032
Net income attributable to Murata Corporation (Millions of yen)	24,757	53,492	30,807	42,386	93,191	167,711	203,776	156,060	146,086	206,930	183,012
Shareholders' equity (Millions of yen)	800,857	821,144	808,542	860,963	955,760	1,123,090	1,229,159	1,354,819	1,456,600	1,603,976	1,694,104
Total assets (Millions of yen)	928,790	988,508	1,000,885	1,087,144	1,243,687	1,431,303	1,517,784	1,634,999	1,797,013	2,048,893	2,250,230
Net cash provided by operating activities (Millions of yen)	107,303	105,610	57,589	88,537	185,751	259,936	252,451	243,920	225,249	279,842	350,334
Net cash used in investing activities (Millions of yen)	(93,261)	(133,999)	(46,487)	(56,173)	(117,150)	(91,379)	(205,316)	(202,697)	(194,165)	(303,741)	(284,431)
Net cash provided by (used in) financing activities (Millions of yen)	(22,379)	(14,561)	(9,148)	(9,655)	(40,899)	(66,966)	(56,614)	(11,729)	(83,585)	51,546	17,650
Cash and cash equivalents at end of year (Millions of yen)	108,777	63,020	65,302	90,068	118,884	212,936	212,570	239,184	187,910	217,805	302,320
Average exchange rate (Yen/U.S. dollar)	92.85	85.72	79.07	83.11	100.24	109.94	120.14	108.42	110.86	110.91	108.75
<b>Indices</b>											
Shareholders' equity ratio (%)	86.2	83.1	80.8	79.2	76.8	78.5	81.0	82.9	81.1	78.3	75.3
Basic earnings attributable to Murata Corporation per share (yen)	38.45	83.08	48.12	66.94	146.88	264.06	320.85	244.62	228.62	323.45	286.05
Return on equity (ROE) (%)	3.1	6.6	3.8	5.1	10.3	16.1	17.3	12.1	10.4	13.5	11.1
Shareholders' equity per share (yen)	1,243.78	1,275.27	1,276.85	1,359.65	1,504.84	1,768.33	1,935.35	2,122.83	2,276.82	2,507.11	2,647.88
Cash dividends per share (yen)	23.33	33.33	33.33	33.33	43.33	60.00	70.00	73.33	86.67	93.33	97.00
Capital expenditures (Millions of yen)	22,868	56,752	68,445	77,662	68,197	101,184	172,540	158,579	306,608	291,581	281,599
Depreciation and amortization (Millions of yen)	69,896	61,795	61,008	72,323	76,884	84,935	99,105	113,523	141,625	124,419	140,267
Research and development expenses (Millions of yen)	41,649	39,778	40,978	48,766	54,649	64,990	77,982	81,809	94,181	101,589	102,486

The consolidated financial statements are prepared in conformity with accounting principles generally accepted in the United States.

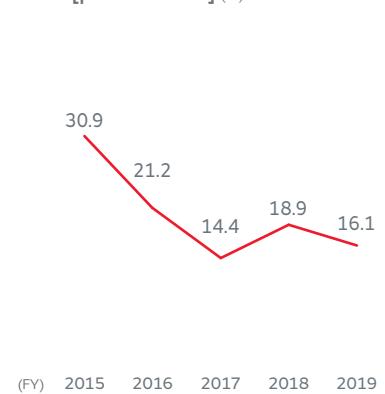
The company implemented a three-for-one common stock split, effective April 1, 2019. Information per share was calculated on the assumption that the relevant stock split had been implemented at the beginning of fiscal 2008.

### Net sales and ratio of operating income to net sales

(Billion yen or %)

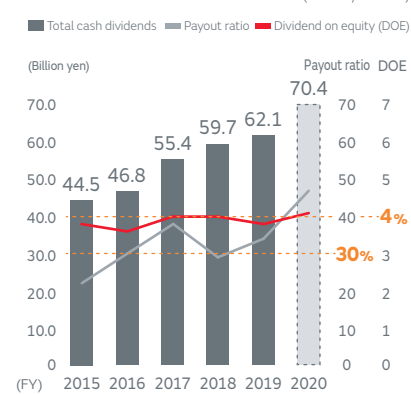


### ROIC [pre-tax basis] (%)



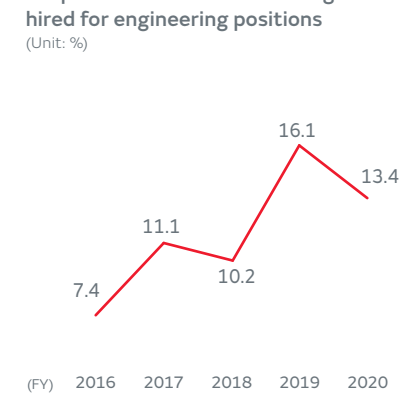
ROIC [pre-tax basis]: Operating income / Invested capital  
(Property, plant and equipment + Inventories + Trade accounts receivable - Trade accounts payable)

### Trends in return to shareholders (Billion yen or %)



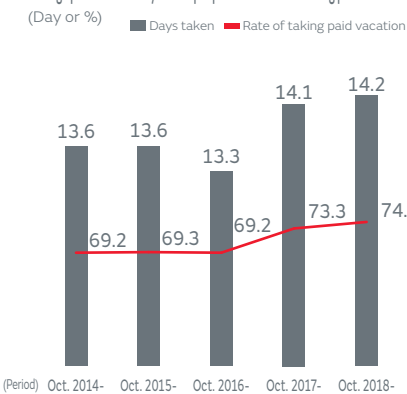
\*From earnings forecast announced on April 30, 2020

### Proportion of women recent graduates hired for engineering positions



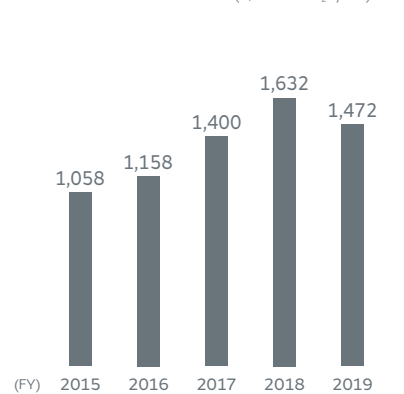
\* Murata Manufacturing Co., Ltd. on a non-consolidated basis

### Average paid vacation days taken per person and rate of taking paid vacation



\* Murata Manufacturing Co., Ltd. on a non-consolidated basis

### Total GHG emissions (1,000 t-CO<sub>2</sub>/year)



For other nonfinancial data, please see:  
ESG data collection  
[https://corporate.murata.com/en-global/csr/esg\\_data](https://corporate.murata.com/en-global/csr/esg_data)



Process of value creation

Treasure Murata Philosophy and pursue the unique qualities of Murata

We continue to value the Murata Philosophy, even in a changing business environment. Employees around the world sharing the Murata Philosophy will create innovation and new value by trusting and cooperating with each other to demonstrate collective strength.

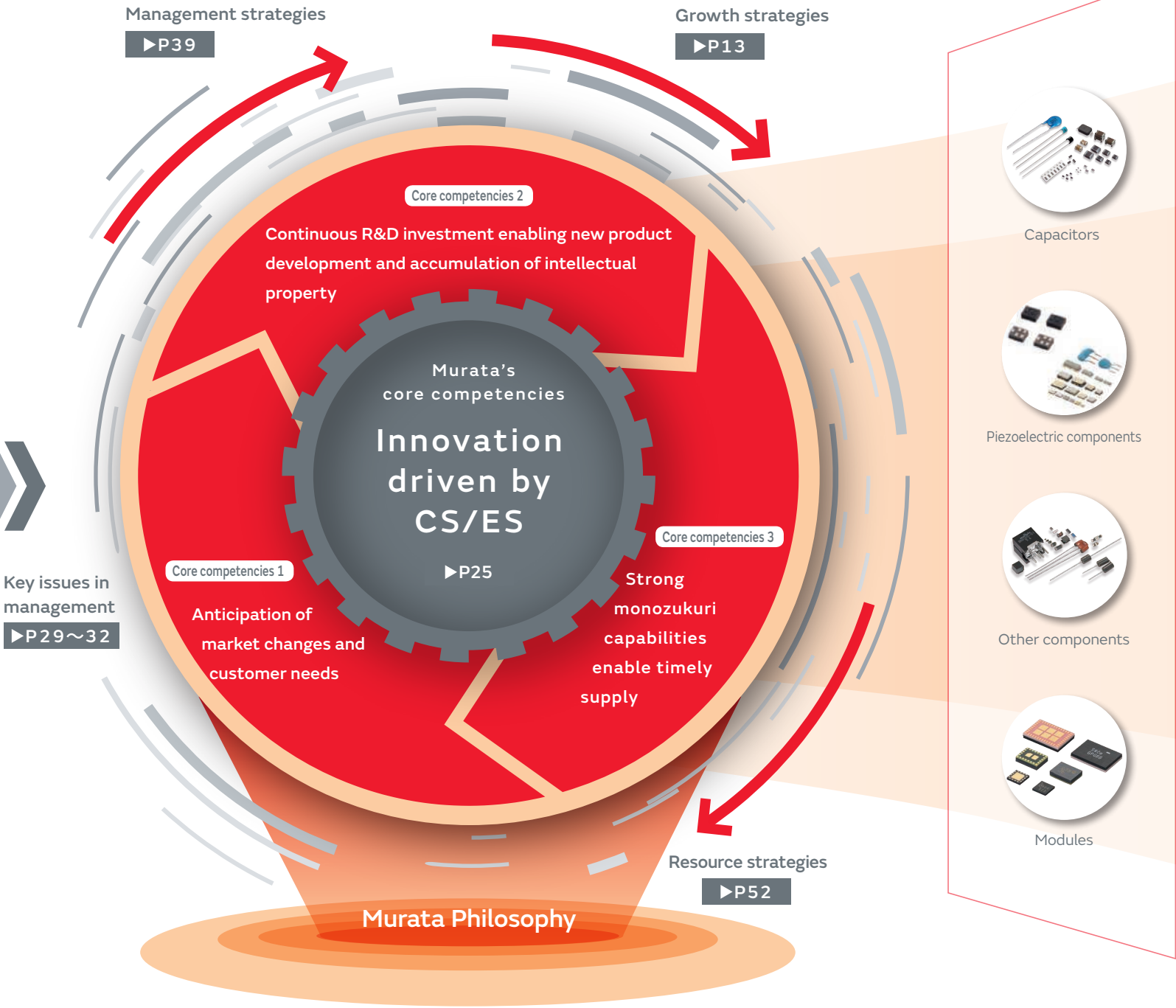
External environment

- Digitization of all types of objects
- The rise of IoT, AI, and big data utilization
- Higher functioning and faster communication equipment
- Electric vehicles, ADAS (Advanced Driver Assistance System), and automated driving
- Enhancement of Data Security

Global social issues

- Climate change
- Resource depletion
- Human rights issues, etc.

Global social issues representing Sustainable Development Goals (SDGs)



Key markets

Communications market

Murata's vision for the future

Smartphones are ubiquitous. We will contribute to fulfilling the advanced needs of our customers through our technological capabilities and product appeal. We will also set our sights on providing integrated solutions for antennas and filters combined with RF modules in addition to our standard capacitors and noise suppression products in order to meet advanced demand arising from higher functionalities, multi-functionalization, and compatibility with the next-generation communications technology, 5G (the 5th generation of mobile communication systems) for equipment, whereby aiming to achieve further growth.

Applying Murata's strengths

- Preference toward smaller and thinner components and high density mounting of consumer MLCCs
- Higher frequency, superior composite performance, and miniaturization in response to the evolution of communications technology for piezoelectric components
- Low power consumption, high-speed data communication, and higher reliability toward an IoT society in connectivity modules

Automotive market

Murata's vision for the future

We aim to establish a society where everyone can move freely with confidence while protecting the environment. To this end, we are now addressing several themes such as the advancement of electrification and automated driving, sensors for safe driving, and wireless modules for data communication between cars and the outside world. Sharing the value of "higher reliability" that brings our customers peace of mind, we will sustain our growth with a diverse lineup that leverages Murata's strengths in areas such as sensing, communication, miniaturization, and noise suppression.

Applying Murata's strengths

- Higher reliability and high-temperature/high-humidity resistance in automotive MLCCs
- Utilization of sensors automotive safety and creation of comfortable space

Murata market challenges over the medium to long term

We will continue to meet challenges in Energy and Medical/Healthcare markets in a long-term perspective. In addition, we are seeing an expansion of customer needs in relation to the IoT (Internet of Things) society. In response to these expanding needs, we are working to realize the provision of new value that integrates sensor and communication technologies.

What Murata wants to be

Murata's purpose is to explore our originality with intelligence, build a wider and deeper foundation for an electronics society, and contribute to enriching people's lives in the truest sense.

Innovator in Electronics

We continue to contribute to the advancement of society by creating innovative products and solutions

For that reason, we express what we should be by the slogan, "Innovator in Electronics." We are committed to being a leading innovator in the electronics industry and taking the initiative in working toward a better environment and society.

Murata's core competencies

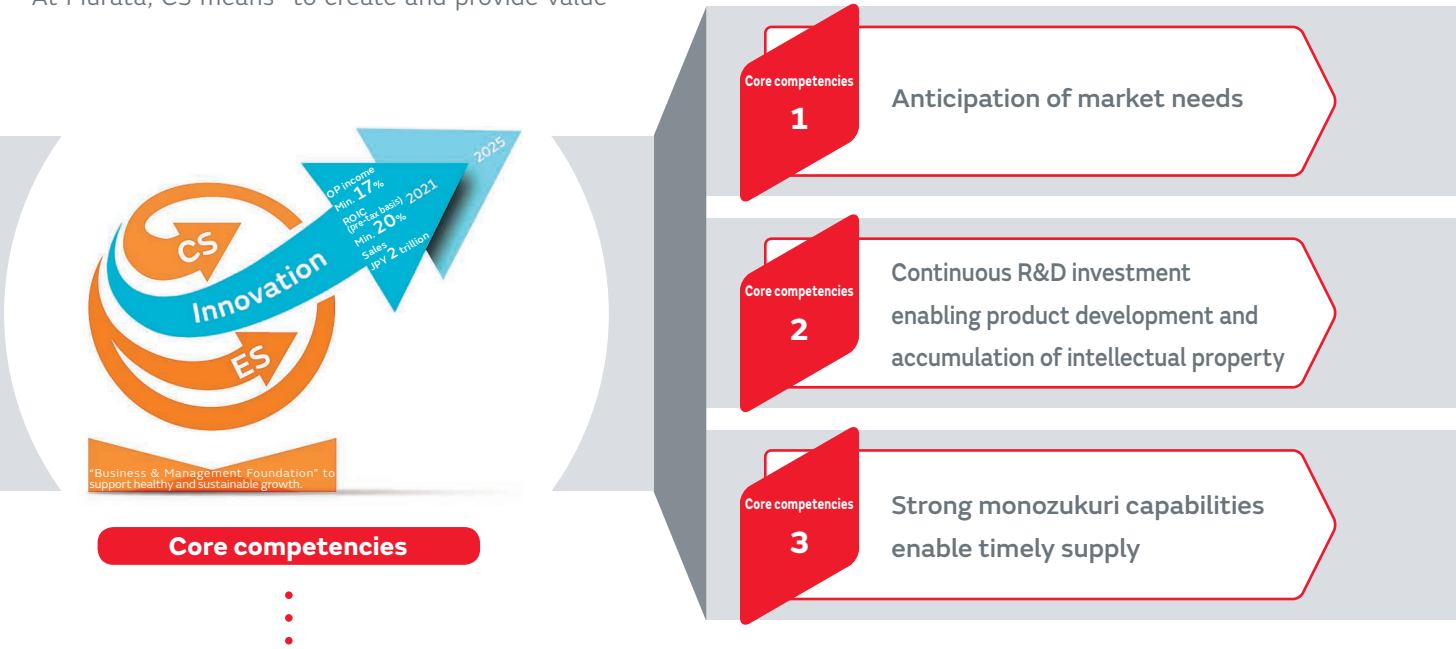
We will increase our collective strength by enhancing and connecting respective strengths together.

Since most of our sales are generated from products with high shares in global markets, we have opportunities to communicate with many customers in a wide range of industries, which allows us to stay ahead of and anticipate customer needs. Murata's strengths are in our global sales network, technological development capabilities, monozukuri (manufacturing) capabilities, and supply capabilities. We will increase our collective strength by combining these elements.

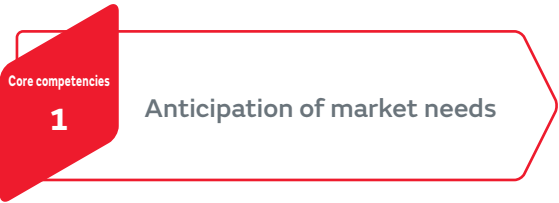
Core competencies Innovation driven by CS/ES

Murata's mission is to "contribute to the advancement of society," and we believe that Murata exists for this purpose. In order to realize this mission through the efforts of all employees, the values of "CS and ES" are regarded as critical aspects in our management. At Murata, CS means "to create and provide value

that customers appreciate," and ES means "each and every employee feels rewarded and continues to grow through his or her work." We practice these values based on our desire to be a company that can realize them in our daily business.



Initiatives involving corporate culture after establishing the Murata Philosophy



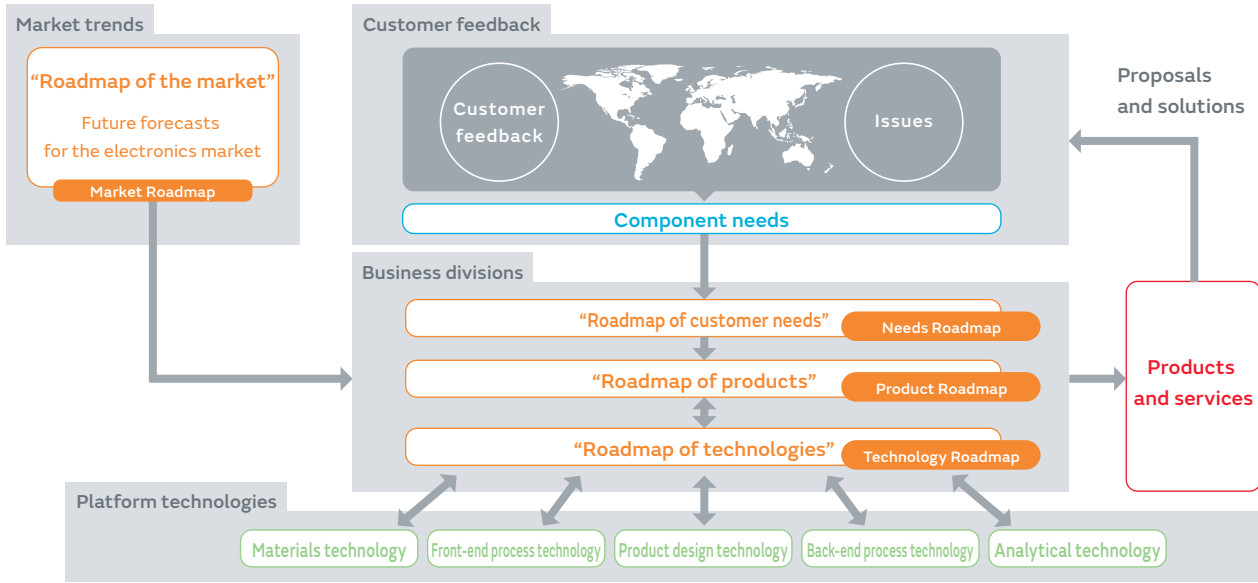
A network is in place to provide Murata's services and products anywhere around the world, including in Japan, Asia, the Americas, and Europe. Using "marketing by everyone" as our motto, we leverage our global network to anticipate customer needs ahead of any other company, and each employee maximizes value offered to customers.

Formulation of roadmaps leveraging marketing capabilities

New technologies such as IoT, automated driving, and AI in the 5G era will change not only individual electronic devices, but also transportation systems, cities, and society as a whole. We have strengthened our efforts to look to the future and provide optimal solutions to our customers by boosting cooperation among sales, marketing, development, and production in order to continue to provide value to our customers in this vastly changing business environment.

As one of those activities, we have formulated four roadmaps. The Sales & Marketing Unit evaluated general trends in the market and produced the Market Roadmap, and the sales and marketing departments in each area and the sales promotion

department of the business divisions integrated this Market Roadmap with customer needs over the medium to long term, whereby composing the Needs Roadmap. These are connected to the Product Roadmap and the Technology Roadmap by the development department. Roadmaps are revised every year and reconnected to R&D and product development. Based on the roadmaps, product technologies that offer the highest level of technical services to customers play the role of finalizing the services as a product as they respond to customers on the frontline during the new product development phase and provide feedback on detailed needs to the development department.

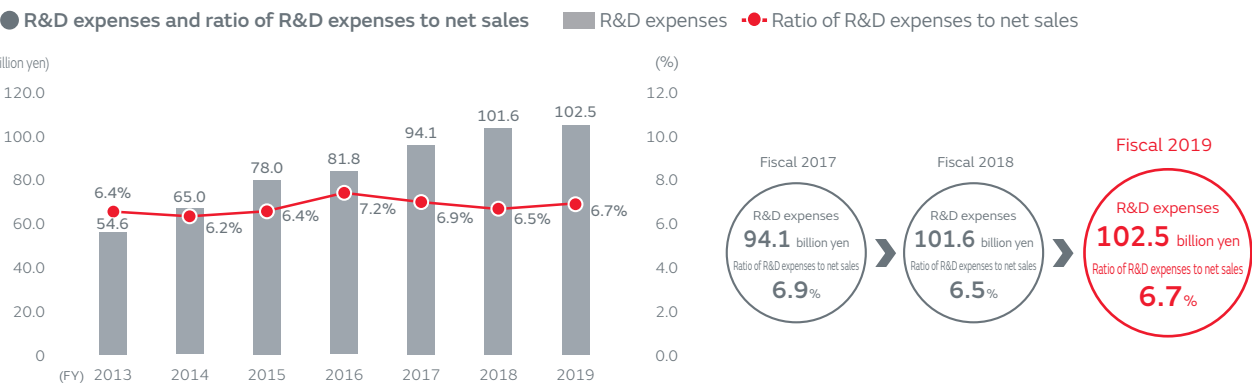
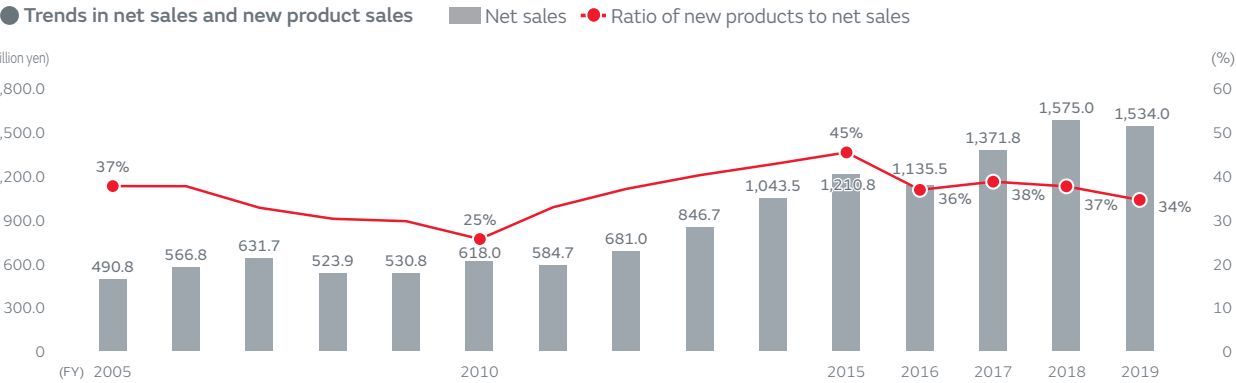




Murata's core competencies

Core competencies  
2  
Continuous R&D investment enabling product development and accumulation of intellectual property

Murata has built an integrated system of manufacturing, from raw materials to finished products, and we have independently developed technologies in the application of materials and other such core areas of our operation, obtaining a level of expertise that many other companies have not been able to reach. Through continuous investment in innovation, we have sought to differentiate our products, and this has become one of major factors in Murata's strengths.



Accumulation of intellectual property

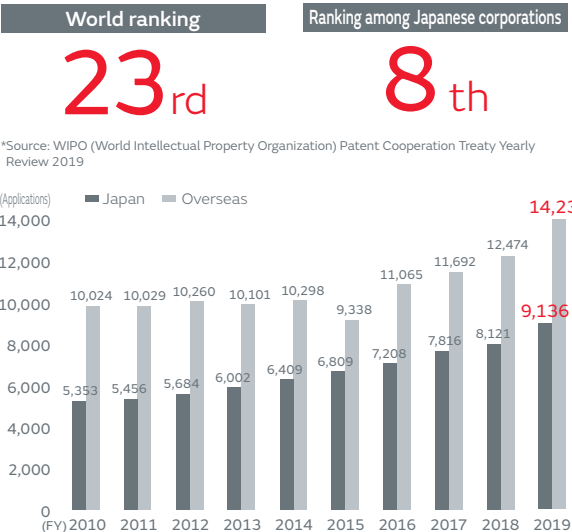
Murata sees the strengthening of its intellectual property (IP) as a critical part of our product development efforts and overall business plan, and we are proceeding with IP strategies and activities accordingly. Each business division and product development department has a representative and a patent leader, both of whom promote IP activities in their respective areas in cooperation and alignment with the corporate IP Department; those representatives and patent leaders play a central role in managing and encouraging IP activities. We also cultivate a company-wide sense of awareness of the value of our IP through various events such as education for all levels of employees, workshops, and patent forums.



Trends in the number of patents owned by Murata

The number of patents owned by Murata is increasing year by year. This is due to an increasing number of applications resulting from expansion in various technological fields as a result of mergers and acquisitions (M&As), and the inclusion of the number of patents that have been transferred. The reason for an increase in the number of foreign applications is that our ratio of sales outside of Japan has increased, and we have been proactive in filing new applications. When moving forward with international applications, we utilize a Patent Cooperation Treaty (PCT) to ascertain appropriate countries where we should file with consideration for optimizing cost effectiveness.

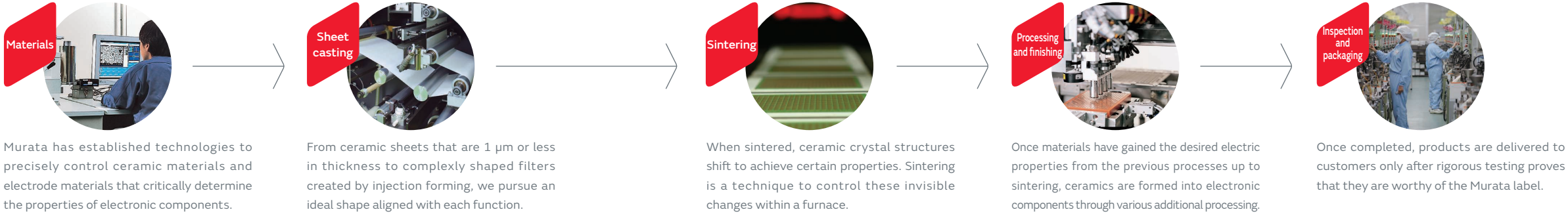
Ranking in PCT applications filed



Core competencies  
3  
Strong monozukuri capabilities enable timely supply

Murata's technologies are directly aligned with our strategic markets and customers. Murata internally develops materials, processes, products and production technology. By vertically integrating our manufacturing operation and conducting global and decentralized production, we have optimized the value we can deliver to customers in a swift and timely manner, while leveraging the largest production capacity in the industry.

Murata's monozukuri (manufacturing)



## Long-term vision (Vision 2025) and Mid-term Business Plan (Mid-term Direction 2021)

Murata has prepared the “Mid-term Direction” that includes actions to be taken over a three-year period for achieving our long-term vision and sustainable growth. Here, we will introduce details of our current Mid-term Direction and our progress.

### Long-term vision (Vision 2025)

Theme	Murata focuses on strengthening “Business & Management Foundation” in order to seize expanding business opportunities and realize Healthy & Sustainable Growth.
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#### Where Murata wants to be in 2025

##### ■ Innovation driven by CS/ES (Customer Satisfaction/Employee Satisfaction)

All Murata employees collaborate with one another, innovate, and create new value.

##### ■ Global No.1 Component & Module Supplier

Murata aims to become the first-choice supplier in the target segments of each of our businesses while expanding the scope of our offering and value proposition from parts to solutions.

##### ■ Foundational markets, challenging markets, next new markets

Acquire and enhance core competencies, and achieve the following:


- ① Establish Automotive market as a foundational market of our business and a pillar of growth, following the Communication market.
- ② Continue to challenge in Energy and Medical/Healthcare markets.
- ③ Explore promising NEXT NEW markets.

### Mid-term Direction 2021 (fiscals 2019 to 2021)

In the communications and automotive markets, a large wave of environmental change is just around the corner.

In order to secure business opportunities from these markets and achieve sustainable growth, it is necessary to strengthen the foundations of the organization and work structures in accordance with the expanding size of the company.

In the growing markets, we will aim for healthy growth so that we can provide the value that satisfies Murata’s customers and allow each and every employee to feel rewarded as they continue to grow.

Numerical target of Mid-term Direction 2021			
Mar. 2020	Ratio of operating income to net sales	16.5%	
	ROIC (pre-tax basis)	16.1%	
	Net sales	1.5 trillion yen	
			
Mar. 2022	Ratio of operating income to net sales	Min. 17%	
	ROIC (pre-tax basis)	Min. 20%	
	Net sales	2 trillion yen	

### Progress of Mid-term Direction 2021

We will introduce our initiatives under three corporate-wide policies for the fiscal year ended on March 31, 2020, the first year of the mid-term direction.

#### ■ Implementation of portfolio management

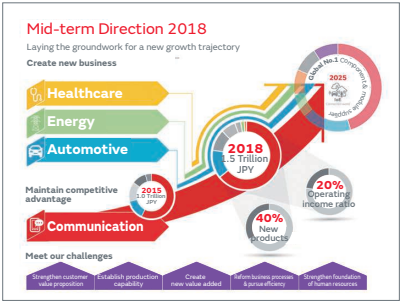
It is necessary to establish a mechanism for more efficient allocation of resources from the perspective of corporate-wide optimization, and we are working on introducing feasibility assessment models as a measure.

#### ■ Establishment of advanced supply system & exponential productivity enhancement

In addition to the active use of the Internet of Things (IoT), we are making comprehensive efforts to achieve optimization and standardization, in order to enhance the efficiency of monozukuri (manufacturing) while eliminating constraints and waste.

#### ■ Harmony among people, organization and society

We will set targets for issues of materiality (key issues) originating from social issues and accelerate our efforts while maintaining harmony with our business. In addition, as the first step in establishing an organizational culture and business processes that enable trust and respect, we will conduct a global survey to increase the number of employees who feel “rewarded and see opportunities for growth.”



	FY2017	FY2018	FY2019
Net sales	1,371.8 billion yen	1,575.0 billion yen	1,534.0 billion yen
Ratio of operating income to net sales	11.8%	16.9%	16.5%
ROIC	14.4%	18.9%	16.1%

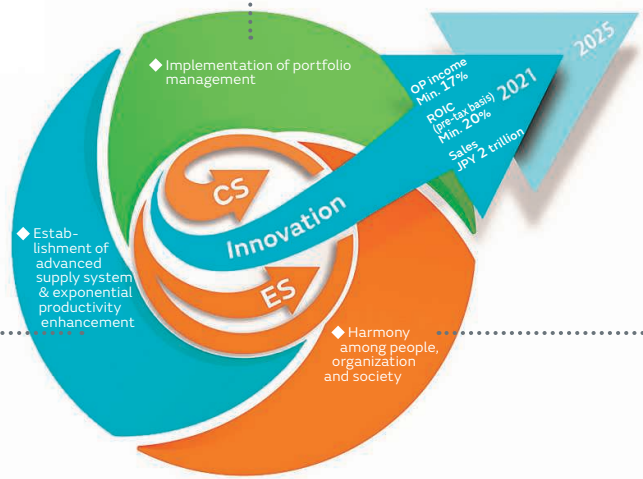
### Three corporate-wide issues and mid-term basic policies for seizing expanding business opportunities and realizing Healthy & Sustainable Growth

#### Implementation of portfolio management

“Murata’s business portfolio is composed of ‘Global No.1’ products and we create additional customer value by designing and proposing specific technologies and products.”

#### Basic policy

1. In order to respond to changes in the market environment, the key requirements are to identify promising businesses, develop necessary management resources and conduct optimal allocation. From a market perspective, Murata concentrates management resources on the Communication and Automotive markets.
2. Murata tackles new business creation with a long-term perspective. In the Energy and Medical/Healthcare markets, Murata continues to address the challenge in the identified business/product domains.
3. Murata acquires and strengthens core competencies that enable sustainable growth.



#### Harmony among people, organization and society

“Murata earns the trust of society and is able to respond to changing business opportunities by improving its systems and organization by adapting as our employees grow and as our business grows.”

#### Basic policy

1. Murata places great emphasis on Employee Satisfaction, a key ingredient to support our growth and strengthen the organization.
2. Murata renovates its organizational culture and business processes to enable engendering of “trust and respect.”
3. Murata complies with all applicable regulations and laws. In addition, Murata operates its businesses in harmony with society.

#### Establishment of advanced supply system & exponential productivity enhancement

“While satisfying each customer’s QCDS (quality, cost, delivery, and safety), Murata achieves dramatic improvements in capital and labor productivity and a stable supply system that responds to demand fluctuation.”

#### Basic policy

1. Murata enhances direct/indirect labor efficiency, utilizing all appropriate methods, including AI and RPA.
2. Murata learns best practices from internal organizations and other companies, and expands on them.
3. Murata prepares systems for development and production ahead of demand fluctuations.
4. Murata flexibly responds to demand fluctuation by ascertaining in a timely manner the flow of information and goods throughout the supply chain and organizations and sites.
5. Autonomous overseas factories collaborate, and we strengthen all Murata monozukuri (manufacturing) capabilities.



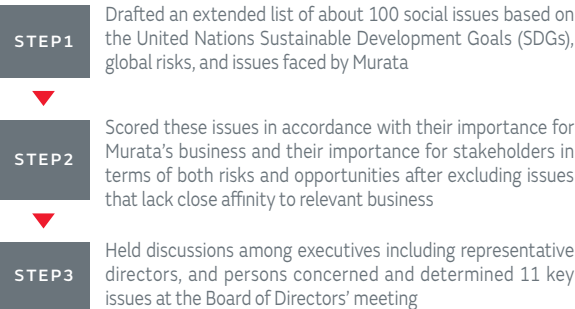
Murata’s key issues originating from social issues

Our slogan, “Innovator in Electronics,” has been advocated as a common identity to be shared among all employees. Not only does this slogan indicate our mission for Murata to become a leading innovator in the electronics industry, it also advocates that excellent innovators take the initiative in working toward a better environment and society and think seriously about how to make things better rather than doing things just because they are obliged to do so by laws and regulations. Murata values this spirit and has always taken it seriously. To take our efforts one step further, we newly established the Sustainability Promotion Department in April 2020 to promote the awareness resolution of social issues and integration with management.

Murata’s key issues originating from social issues and the mid-term target

We defined the areas to focus on as issues of materiality and divided them into two categories, namely, resolution of social issues through business (opportunities) and initiatives for social issues in business processes (risks), and we established 11 items of materiality (key issues) in July 2019.

The process of identifying key issues



Key areas	Key issues	Identified risks and opportunities	The fiscal 2019-2021 mid-term target
Work on societal issues in our business processes			
Environment	Strengthening Murata's response to climate change ▶P59	<ul style="list-style-type: none"><li>Impact on the business due to an increase in natural disasters associated with climate change</li><li>Improvement of global energy efficiency and promotion of the use of renewable energy</li></ul>	<ul style="list-style-type: none"><li>To formulate methods to survey the current status of suppliers and request them to set targets, in order to promote the setting of the greenhouse gas reduction target based on the Science Based Targets (SBT<sup>*1</sup>) approach to suppliers.</li><li>To reduce greenhouse gas emissions to 1.4 million t-CO<sub>2</sub> or less in fiscal 2021.</li><li>To reduce greenhouse gas emissions from domestic logistics to 2.0 kg/million yen or less in unit of real production.</li><li>To expand the scope of surveys on greenhouse gas emissions from logistics</li></ul>
	Use of Sustainable Resources ▶P63	<ul style="list-style-type: none"><li>Impact on business operations due to the reduction in available water and mineral resources</li><li>Expansion of circular economy, including regulations on waste plastics</li><li>Growing momentum for sustainable procurement</li></ul>	<ul style="list-style-type: none"><li>To improve waste emissions per unit of production by 7% in fiscal 2021 (compared to the average of fiscal 2016-2018).</li><li>To improve water use per unit of production by 6% in fiscal 2021 (compared to the average of fiscal 2016-2018).</li><li>To investigate the regulations and industry trends for the Use of Sustainable Resources.</li><li>To establish a feasible plastic recycling program and examine the economic benefits of the scheme.</li></ul>
	Pollution Prevention and Chemical Substance Management ▶P64	<ul style="list-style-type: none"><li>Possibility of leakage and spillage of hazardous chemical substances and contamination of products with hazardous chemical substances</li></ul>	<ul style="list-style-type: none"><li>To apply green procurement based on the Murata Standards<sup>*2</sup> to the raw materials, parts and products delivered to Murata.</li><li>To manage environmentally hazardous substances contained in Murata products and materials in accordance with the Murata Standards.</li><li>To reflect internal and external requirements (legal requirements, customer requirements, and Murata Standards) in product specifications regarding chemical substances contained in products</li><li>To grasp social trends and revisions to laws and regulations, and take actions in advance.</li><li>To establish a global management system for volatile organic compound (VOC) emissions</li></ul>
	Strengthening Murata's response to climate change Pollution Prevention and Chemical Substance Management Use of Sustainable Resources	The same as the above	<ul style="list-style-type: none"><li>To introduce a mechanism that saves resources and suppresses emissions of environmentally hazardous substances in advance on a trial basis by considering the environment at the product planning and design stage.</li></ul>

Key areas	Key issues	Identified risks and opportunities	The fiscal 2019-2021 mid-term target
Work on societal issues in our business processes			
Social	Safe and Worry-free Workplaces and Health Management ▶P56	<ul style="list-style-type: none"><li>The possibility of occurrence of industrial accidents resulting from a rapid increase in the number of employees due to business growth</li><li>Increased health and safety awareness among employees and business partners due to the spread of infectious diseases</li></ul>	<ul style="list-style-type: none"><li>[Reduction of Work Accidents]<ul style="list-style-type: none"><li>To avoid causing serious industrial accidents that result in death or permanent disability</li><li>To reduce the annual work-related accident rate per 1,000 people to 1.6 or less.</li></ul></li><li>[Promotion of Health Management]<ul style="list-style-type: none"><li>To establish a health and productivity management promotion system.</li><li>To reduce risks in the health care field in business operations.</li><li>To implement health and productivity management initiatives for individual employees.</li></ul></li></ul>
	Respect for Human Rights and Diversity ▶P55	<ul style="list-style-type: none"><li>Increased human rights risks due to an increase in the number of global workers and the expansion of areas where the business is operated</li><li>Decline in competitiveness as diverse human resources cannot fully demonstrate their abilities</li></ul>	<ul style="list-style-type: none"><li>To firmly establish “Management System on Human Rights and Labor” and effectively implement Plan-Do-Check-Act (PDCA) cycles, in order to make improvements</li><li>To expand and enhance education to improve sensitivity of employees towards human rights, labor, and harassment.</li><li>To promote diversity and inclusion.</li><li>To create an environment in which people with diverse backgrounds can fully demonstrate their abilities and contribute to the organization.</li><li>To achieve a minimum of 10% female ratio in the recruitment of new graduates for career-track positions in technical fields</li><li>To implement initiatives to increase the number of women in management roles.</li><li>To provide opportunities for people with disabilities to work while feeling rewarded and develop a system in which they can be employed continuously</li></ul>
	Coexistence with Local Communities ▶P68	<ul style="list-style-type: none"><li>Increasing expectations from local communities in the areas where the business is operated</li></ul>	<ul style="list-style-type: none"><li>To realize our founder's philosophy of “Wishing the presence of Murata to be pride and a source of joy in local communities” on a global level with the aim of achieving “harmony among people, organization and society.”</li></ul>
Governance	Appropriate Business Transactions ▶P51	<ul style="list-style-type: none"><li>Increasing global insistence for the prevention of cartels and bribery</li><li>Damage to corporate value resulting from deviation from laws and social norms</li></ul>	<ul style="list-style-type: none"><li>To deploy PDCA cycles for global compliance activities including monitoring and education of control processes at all subsidiaries, in order to globally implement the “Basic Policy for Prevention of Cartels and Bribery”</li></ul>
	Business Continuity Management (BCM) ▶P49	<ul style="list-style-type: none"><li>Occurrence of major disasters</li><li>Global pandemic of infectious diseases</li></ul>	<ul style="list-style-type: none"><li>To achieve a situation where the PDCA cycles for risk management at the global level is functioning effectively, and the concept of risk management has become a part of our daily operations.</li><li>To promote the development of a Business Continuity Plan (BCP) that responds to possible risks, to prevent risks that could disrupt the Company's business continuity, and to mitigate losses in the event that these risks materialize.</li></ul>
	Data Security ▶P50	<ul style="list-style-type: none"><li>Increasing sophistication and volume of cyber attacks</li><li>Leakage of information such as important technical and personal information</li></ul>	<ul style="list-style-type: none"><li>To achieve a situation where the PDCA cycles for Data Security measures at the global level is functioning effectively, and the concept of Data Security has become a part of our daily operations.</li></ul>
Solving Societal Problems through Business			
Highly efficient components contributing to a stronger response to climate change		<ul style="list-style-type: none"><li>An increase in natural disasters associated with climate change</li><li>Improvement of global energy efficiency and promotion of the use of renewable energy</li><li>Expansion of the markets for energy-saving, renewable energy, and energy storage businesses</li><li>The reduction in available water and mineral resources</li></ul>	<ul style="list-style-type: none"><li>To organize the value of the business from a non-financial perspective.</li><li>To develop a commercialization process from a non-financial perspective.</li><li>To explore business opportunities based on social issues.</li><li>To quantify the non-financial value of light, compact and high efficient products.</li></ul>

\*1: SBT (Science Based Targets) refers to scientific targets that quantitatively conform to long-term scenarios for reducing greenhouse gases.  
\*2: Murata Standards refer to standards that identify materials that are subject to control by Murata among environmentally hazardous substances contained in Murata's products and materials and establish regulatory conditions and ranks for each substance.

### Contributing to society through technological development and product supply

Based on materiality (key issues), Murata has been working on addressing social issues in its business processes and has aimed to resolve social issues through the business operations. One of our efforts has been to supply products to a wide range of markets while pursuing miniaturization and convenience. Especially in the communications area, the importance of which has been increasing in various markets such as 5G and Society 5.0, we have been supplying large quantities of ultra-compact, energy-saving electronic components and high efficiency RF modules continuously. In particular, the changes in the volumetric capacitance (μF/mm<sup>3</sup>) of MLCCs (multilayer ceramic capacitors) is one of the results of our efforts to meet the needs of society through the development of technologies to manufacture light and compact products and to contribute to the enhancement of the convenience of people's lives and sustainable use of resources through our customers' products. We will make constant progress in technology and continue to further contribute to society.

Fiscal Year	Volumetric capacitance (μF/mm <sup>3</sup> )
FY1996	1
2000	2
2004	4
2008	10
2012	20
2016	40
2020	160

## Strategy by product: Components

Net sales **1,051.7** billion yen YoY change Down **4.8** %

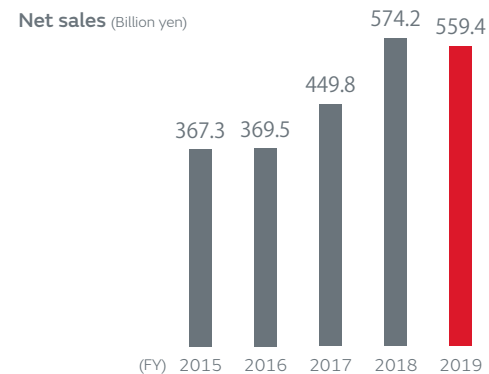
## Capacitors

Main  
products

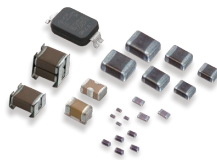
Multilayer ceramic capacitors, Polymer aluminum electrolytic capacitors, Silicon capacitors, High temperature film capacitors for automotive, etc.

## Operating results

Sales of multilayer ceramic capacitors increased for cellular phone base stations, driven by moves to introduce 5G systems, and from uses in car electronics, but declined year on year overall due to weakness in demand for wide-ranging uses, affected by moves to adjust production of electronics devices and inventory of electronic components.



## Multilayer ceramic capacitors



## Business Opportunities

- New demand for communication infrastructures driven by growing use of 5G and demand for small-size, large-capacity products for communication devices
- Increased demand for automotive uses driven by growing use of advanced driver assistance systems (ADAS) and self-driving vehicles, and the introduction of electric vehicles

## Risks

- Responses to short-term demand fluctuations amid an uncertain market outlook
- Medium-term slowdown in the overall electronics market in case of a medium- to long-term slump in the global economy

## Initiatives in the capacitor business

As demand for chip multilayer ceramic capacitors (MLCC) continued to grow globally over a few years through fiscal 2018, Murata worked to expand production capacity, reviewed product portfolios and increased supply volumes.

Unfortunately, net sales slumped due to uncertainty over the global economic outlook in fiscal 2019. The market recovery has proven to be weaker than we had expected in fiscal 2020 as consumption

and production remain in the slump, affected by the spread of COVID-19. Accordingly, we expect net sales to remain at these levels for a short term. Still, there has been an increase in demand for MLCCs in some markets in the first half of fiscal 2020, against the backdrop of demand related to people working remotely or staying at home. Murata, which operates in diverse markets and has business with a broad range of customers, has been working to support supply to customers and put its production capacity to maximum utilization by adjusting product and customer mixes.

In the meantime, over the medium-term, we are expecting to see new demand for applications in communications infrastructure along with the spread of 5G, in addition to increased demand for compact large-capacity products for use in communications devices and highly reliable products for use in automobiles. We are allocating management resources to products that address such demand and developing new products, while also implementing initiatives to enhance productivity by promoting the use of smart factories. In addition, we will enhance our range of capacitors to address the diverse needs of our customers, add non-ceramic products such as film capacitors, silicon capacitors to our portfolio, and offer new solutions with high reliability suitable for usage environments in the automotive and healthcare/medical markets.

## Chip multilayer ceramic capacitors for consumer

The chip multilayer ceramic capacitor (MLCC) is an electronic component with external electrodes electrically and mechanically bonded to a substrate, attached to repeatedly stacked internal electrodes and ceramic dielectrics such as titanium oxide and barium titanate. It is a highly reliable nonpolar capacitor with high withstanding voltage and insulation resistance, superior frequency and heat-resisting characteristics, and long service life.

MLCCs are employed in mobile equipment and home appliances as well as IT devices and network infrastructure equipment, they can temporarily store and discharge electricity, absorb noise in signals, extract signals with certain frequencies, and block direct current and pass alternating current only. MLCCs are also used for applications for which high reliability is required, including automotive, medical, and aerospace equipment. In particular, 600 to 1,000 MLCCs are used in one high-end smart phone. Even low-end or midrange models use 300 to 600 MLCCs per unit.

Regarding MLCCs for consumer devices, to meet market demands particularly for those smaller in size, various products have been developed and have become highly competitive capacitors. Recently, the main product size has shifted from 1005M (1.0×0.5 mm) to 0603M (0.6×0.3 mm) and for wearable devices and small modules, consideration for adoption of 0201M (0.25×0.125 mm), the smallest size commercialized in 2014, has been increasing. Since market needs are expected to grow further for smaller components and high-density mounting, Murata will continue to improve its ceramic material pulverization and multilayer technology and propose new product design and easier-to-use solutions.

## Chip multilayer ceramic capacitor for automotive

For MLCCs used in automotive application, stricter regulations have been set than those of consumer product MLCCs in the areas of product material selection, design standards, product performance, and process management to achieve higher

reliability and longer product life, even though materials and processes are generally the same as those in consumer MLCCs.

MLCCs have been increasingly adopted for safety applications such as airbags and antilock braking systems (ABS), in addition to hybrid and electric vehicles. Moreover, components employed by many customers are becoming smaller and the main size is shifting to 1005M (1.0×0.5 mm) from 1608M (1.6×0.8 mm). Also, these satisfy requirements of temperature cycling tests and high-temperature and high-humidity load tests at 150°C, a step up from the previous guarantee of 125°C. Furthermore, more products meet requirements specific to in-vehicle applications regarding static electricity and surge tests (ISO7637-2). Recently, products that can be used in higher temperature environments are in demand.

To respond to tough market demands as stated above, Murata has developed more reliable materials, ensured product design margins, and established strict inspection standards for the production process to realize highly reliable products suited to use environments. In 2017, Murata succeeded in commercialization of lead-type resin-coated MLCCs resistant to 200°C, and customers are considering adoption. Furthermore, various types of MLCCs according to the use environments have been commercialized, such as water-repellent products and MLCCs with metal terminals jointed.

Also in automotive MLCCs, Murata will continue to create new value for society by developing ceramic materials and improving process and inspection technologies toward creating smaller, more highly reliable, and higher-performance components.

Moreover, there is a strong desire in the in-vehicle system market for the stable supply of Murata's highly reliable components, and to respond to such expectations as the market leader, we are making a maximum equipment investment at domestic and overseas plants. Murata will continue to deliver products with safety and security by identifying customers' product and supply needs as a continuously trusted company.

## TOPICS

## Measures to prevent COVID-19 in the capacitor business

Since the risk of COVID-19 infections has emerged, Murata has worked to implement infection prevention measures for employees as the top priority. Although there were confirmed cases of infection at some business sites, causing concern for many people including local residents, we prioritized safety of employees and suspended operation for a few days, thoroughly sanitizing the facilities and implementing infection prevention measures.

Because our main plants are located in Japan, China, the Philippines and Singapore, infection risks differ from country to country and the governments of these countries have different policies against infection, we have adopted a policy to allow the management of each local operation to make judgment and take measures they believe are optimum in accordance with changing situations. We have also worked to maintain favorable relations with the local community by donating face masks and hazmat suits via local governments.

On the other hand, as capacitors are components used in wide-ranging electronic devices, Murata takes it as our responsibility to prevent disruption in supply of products as much as possible for society and our customers. We aim to conduct production activities while seeking to strike the right balance and taking the required precautions against the risk of infection while operating our facilities to meet our commitments to our customers and our employees.

We temporarily experienced restrictions on purchase of materials and components and shipment of our products due to an impact on logistic networks but have maintained or restarted production activities with help from partner companies and collaborating with them.

We aim to continue to take measures to reduce infection risk for everyone involved in Murata's capacitor business, prioritize safety, and continue to provide necessary support to customers, while at the same time doing all we can to prevent disruption to production activities (please see p.56).

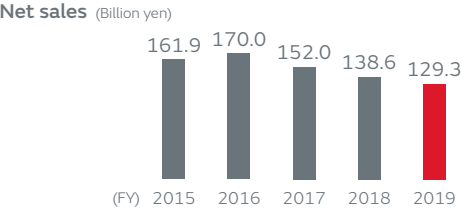


Piezoelectric components

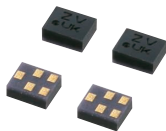
Main products SAW filters, Ultrasonic sensors, Resonators, Piezoelectric sensors, Ceramic filters, etc.

Operating results

Net sales dropped year on year as sales of SAW filters for smart phones fell due to falling prices.



SAW filters



Business Opportunities
<ul style="list-style-type: none"><li>Emergence and expansion of new applications and communication devices for 5G</li><li>Increasing demand for higher frequency and smaller filters with superior composite performance</li></ul>
Risks
<ul style="list-style-type: none"><li>Intensified competition with other manufactures and entry by Chinese manufacturers into the SAW filter market</li><li>Potential moves by customers and component suppliers due to U.S.-China trade friction</li></ul>

SAW filters are an essential component for eliminating communications noise to provide a smooth experience for enjoying online content on a smart phone. Murata's SAW filters, with state-of-the-art technologies, are actively working inside various communication terminals including smart phones. Murata has led the industry for a long time by making use of the R&D structures that can create unique technologies, and distribution channels

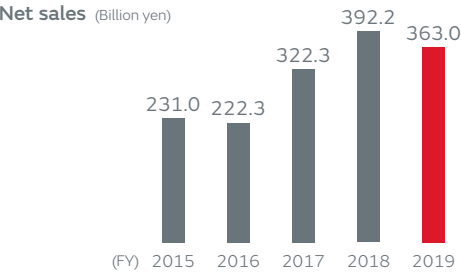
seamlessly supporting the entire world. At present, Murata holds the largest production capacity in the industry, and has secured a global share of 50% of the SAW filter market for communications applications. 5G services with transmission speed more than 100 times faster than current 4G technologies are expected to be commercialized in earnest in 2020, raising expectations for the birth and expansion of new applications and communications devices. Increasingly smaller and higher-frequency SAW filters with superior composite performance will be a requirement. In response to these market needs, Murata will accelerate efforts to create compact products with superior features by utilizing proprietary I.H.P. technologies, TC-SAW technologies, while working to strengthen alliances in new technologies. Murata aims to contribute to the development of society and industry by working to differentiate our future product line-up from those of competitors, striving to maintain or build optimum supply structures corresponding to supply-demand balances amid a wildly fluctuating economy.

Other components

Main products Inductors (coils), EMI suppression filters, Connectors, MEMS sensors, Thermistors, Lithium-ion batteries, etc.

Operating results

Although sales of inductors (coils) for smart phones and PCs increased, sales of lithium-ion batteries for smart phones and power tools were sluggish, resulting in a year-on-year decline in sales.



Inductor (coil)



Business Opportunities
<ul style="list-style-type: none"><li>Increased demand and higher performance due to the introduction of 5G-compatible smart phones</li><li>Electrification of automobiles and electrification through ADAS and automated driving</li></ul>
Risks
<ul style="list-style-type: none"><li>Stable supply to meet increasing demand due to the introduction of 5G</li></ul>

A chip inductor is one of the passive components that make up an electronic circuit, along with a capacitor and a resistor. Major products include power inductors used for the power supply circuit and RF inductors used for the high-frequency circuit. Power inductors are largely related to power conversion efficiency, which is an important performance of dc-dc converters, and the required performance differs depending on the property of the relevant converter to be used. In addition to traditional processes such as ferrite windings and ferrite multilayer, Murata has added the Metal Alloy process owned by Saitama Murata Manufacturing Co., Ltd. (formerly: TOKO, INC.), which became our wholly owned subsidiary in 2016, to its product lineup to achieve further miniaturization and increased performance as well as well-balanced performance at high currents, which is a characteristic of metal alloy technology, and stable performance during operation. By taking advantage

of such higher performance of power inductors and Murata's monozukuri (manufacturing) capabilities as our strength, we are growing our business areas while expanding our sales channels not only into the communications market but also into the in-vehicle system market. RF inductors are expected to be used as an inductor for high-frequency circuits for 5G communications. The product series that uses the film manufacturing method, which is Murata's unique process, has been highly regarded due to their unparalleled characteristics, which are compact and have a high Q (quality factor) value, and adopted in many high-frequency circuits. As for 5G communications, the market is expected to expand for RF inductors through their use not only in conventional smartphones but also in new applications such as IoT, and it is considered that the quantity of RF inductors used will increase. Meanwhile, the market for RF inductors is also expanding in the automotive field due to the shift toward electrification such as the introduction of electric vehicles and ADAS and the addition of advanced communication functions of automobiles such as telematics and V2X. As for RF inductors, which are characterized by compactness and high performance, Murata is expanding its lineup of highly reliable designs for automotive applications. With the demand for inductors significantly increasing, we will strive to grasp the market trends and promote the expansion of our production capacity in order to provide a stable supply to meet the demand of our customers.

Lithium-ion batteries



Business Opportunities
<ul style="list-style-type: none"><li>Trends toward cordless power tools and gardening tools, and shift from gasoline engines to batteries and motors</li><li>Small batteries for automotive, medical and wearable applications</li><li>Utilization of natural energy, in-house consumption of electricity, and backup power supplies such as data centers</li></ul>
Risks
<ul style="list-style-type: none"><li>Entry of South Korean and Chinese competitors into Murata's target markets</li></ul>

Murata's lithium-ion batteries are classified into three types: laminated, cylindrical, and coin type batteries. Laminated type batteries are employed in mobile equipment including smartphones, tablets, wearables, and gaming devices; sizes can be freely changed owing to the laminate film exterior material. Murata's gel electrolytes have safety characteristics because they are leakage-free and do not easily swell compared to liquid electrolytes used by other companies. On the other hand, cylindrical type batteries have advantages particularly in high output applications and are used for a wide range of purposes such as gardening tools, power tools,

electric bicycles, and cleaners. Moreover, the use of coin type batteries for wristwatch and automotive applications and in fields such as the medical field is increasing due to their compactness and high reliability. The fiercely competitive environment is expected to continue in the lithium-ion battery market but Murata will address market and customers' needs by supplying Murata's products that combine safety and high output. In addition, by integrating storage battery modules equipped with cylindrical cells with power converter technology, etc. to provide an energy management system centered on the housing and industrial markets, we will promote utilization of natural energy. In the future, we are planning mass production of fully solid-state batteries, which are expected to act as next-generation batteries. We shall develop our business primarily around applications in areas such as wireless earphones and wearables, by applying the manufacturing technologies that we developed for multilayer ceramic capacitors. In the lithium-ion battery market, the demand is expected to grow continuously. We will provide batteries that can satisfy our customers and society by leveraging the competitive advantages of our batteries, such as high safety and high input/output characteristics.

Strategies by product: Modules

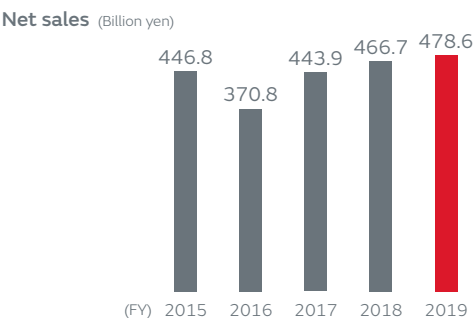
Net sales **478.6** billion yen YoY change Up **2.6**%

Modules

Main products Connectivity modules, MetroCirc™, RF modules, Power supply modules, etc.

Operating results

Sales increased year on year as RF modules for smart phones significantly grew despite a decrease in MetroCirc™ and connectivity modules for high-end smart phones.



Connectivity modules

Business Opportunities
<ul style="list-style-type: none"><li>• Spread of 5G</li><li>• Full-fledged consideration of Beyond 5G</li><li>• In an IoT society, automobiles and various types of devices will have wireless communication functions.</li></ul>
Risks
<ul style="list-style-type: none"><li>• Intensified competition among competitors</li><li>• Saturation of the demand for smart phones</li></ul>

Connectivity modules are essential compound components that wirelessly connect various devices. These are mounted on familiar home appliances used in our daily lives, such as smart phones, tablet PCs, digital cameras and air conditioners, in-vehicle devices such as car navigation systems and in various settings, including enabling users to download and upload photos and music from the Internet, and hands-free calling while driving.

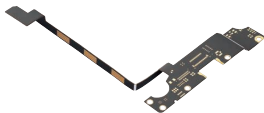
With the rapid progress of the IoT society where all types of objects around us are connected to the Internet, new wireless communication standards such as WiFi® 11ax, Cellular LPWA (Low Power Wide Area) and UWB (Ultra Wide Band) are also expected to spread. In the automotive market, the installation of wireless communication functions and the evolution of communication functions are advancing

every year under the keyword CASE (Connected Autonomous Shared & Services Electric).

5G services launched this year. 5G includes communications using millimeter wave bands, namely 28GHz and 39GHz, and Murata can offer high-property communication modules that use proprietary multilayer resin substrates to keep transmission loss low. Discussions regarding Beyond 5G (6G) standards have already started and we can expect that a world in which everything can be connected through higher-speed communications will be further expanding.

The growth of smart phones, which has been significantly rapid so far, is expected to slow down in the future, at the same time, competition among competitors is intensifying. Under such circumstance, Murata’s connectivity modules continue to provide value in response to various changes, such as 5G and new communication standards, by taking advantage of our strengths including proprietary multilayer resin substrates technology, and design technologies to realize compactness, higher-performance, high-reliability, and software technologies to enhance connectivity, we will build a partnership that makes us the customers’ number one choice by promptly supplying products that comply with all wireless communication standards. We will contribute to the development of an IoT society as our mission in creating the future of electronics.

MetroCirc™



Business Opportunities
<ul style="list-style-type: none"><li>• Expansion of the high-frequency communications market as represented by 5G</li><li>• Resolution of customers’ issues by utilizing the characteristics of MetroCirc™, such as low water absorption and shape retention property</li></ul>
Risks
<ul style="list-style-type: none"><li>• Intensified competition</li><li>• Changes in the demand due to changes in customers’ design</li></ul>

MetroCirc™ is a thinner multilayer resin substrate comprising LCP (liquid crystal polymer) sheets.

It is characterized by exceptional RF characteristics, low water absorption, and the ability to handle a flexible bending process because it does not require an adhesive layer, and high multiple layers are possible by using Murata’s multilayer technology.

It is possible to design circuits by inserting copper foil sheets between LCP sheets, and these circuits are used as transmission wires, coils, and other functional components in smart phones, wearable devices, and other applications, contributing to smaller, thinner, and higher performance devices.

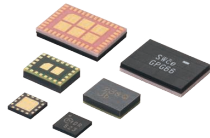
Millimeter waves and other high-frequency waves are used in 5G, which has widely spread, so it may be expected that MetroCirc™ will be further used in substrates for millimeter wave modules, millimeter wave transmission lines, and other applications that utilize the low transmission loss properties at high frequencies that is a feature of MetroCirc™.

In addition, we believe that there will be more opportunities for a wide range of customers to favor MetroCirc™ in the future as the frequencies used become higher, because this will further highlight MetroCirc™’s competitive superiority in terms of transmission loss compared with competing technologies, and we believe that we can take the lead even in an increasingly competitive environment.

Looking ahead, it is likely that customers will face more issues related to high-frequency communications as the number of devices using 5G increases; however, by using MetroCirc™, which has the strengths mentioned above, we can make a variety of proposals depending on customers’ designs and issues.

We will further contribute to resolving customers’ issues, through the combination of high-performance materials and Murata’s unique ideas, developed based on our multilayer technology.

RF modules



Business Opportunities
<ul style="list-style-type: none"><li>• Spread of 5G</li><li>• Modularization of electric components</li></ul>
Risks
<ul style="list-style-type: none"><li>• Potential moves by customers and component suppliers due to U.S.-China trade friction</li><li>• Entry of low-price module manufacturers into the market</li></ul>

RF modules are multifunctional and high-performance electronic component units that realize an analogue high-frequency circuit that controls communications among wireless devices by integrating various key devices.

This module is comprised of passive devices such as SAW filters that demultiplex high frequencies and LC filters, high power amplifiers in transmission, low distortion amplifiers in reception, antenna changeover switches, and other semiconductor devices, and is actively used for various types of wireless devices including smart phones and tablet PCs.

Murata, which internally develops various key devices that form the basis for module configuration and package technologies for modularization, is able to carry out integrated production. As a result, Murata has a strong competitive advantage in terms of business speed, production capability, and quality, in addition to performance.

With the arrival of 5G, which enables “high-speed large-capacity communication,” “multiple

concurrent connection communication” and “low latency real-time communication,” RF modules for realizing further high frequency, expansion of frequency bands and dual connectivity, in addition to multiple frequency bands and carrier aggregation for communication systems up to 4G, will become necessary. In addition, the modularization of electronic components is expected to advance in line with the miniaturization and increased functionalities of wireless devices.

It is expected that the unique benefits of 5G are to promote the diversification of IoT devices and bring many conveniences to life and work. We consider that the expansion of IoT devices brought about by 5G will expand business opportunities not only with customers specializing in the communications market, such as smart phones and tablet PCs, but also with customers in new markets that we have not been involved with before.

In the 6G era, which is also called Beyond 5G, “ultra-low power consumption” and “ultra-reliable communication” are required. In order to survive in the global competition, we will continue to strengthen our “high technological capabilities” and “high-quality monozukuri (manufacturing)” that are the pride as a Japanese company that Murata has cultivated over the years.

Murata will promptly identify future market and customer needs, while also leveraging our competitive advantages to propose RF modules most suitable to customers, as we aim to be a company selected by customers.



Corporate  
governance

Message from the Chairman of the Board

To be a company trusted and supported by all stakeholders

This past June at the General Meeting of Shareholders and the Board of Directors, the appointment of a new president was approved. Hereafter, the new President Norio Nakajima will lead the company's management, while I will provide supervision and advice in the capacity of Chairman of the Board.

In order to fulfill our social responsibility, which has been increasingly called for in recent times, strengthening of our governance will become more important. We will also need to build a governance structure that can adapt to a changing business environment surrounding the company. In our endeavor to achieve these objectives, I believe my responsibility is to be involved in the management from a broad perspective while focusing on my role as Chairman, fulfill my obligation to monitor and supervise execution and, in particular, lead the operation of the company in the right direction from the governance viewpoint.

Murata Manufacturing Co., Ltd. shifted its governance structure to The Company with an Audit and Supervisory Committee in 2016, delegated authorities for executing individual duties to lower ranks, and introduced changes to allow the Board of Directors to focus more on discussions and monitoring of the company's management policies and business strategies.

While doing so, we have endeavored to reinforce measures to introduce and ensure an independent viewpoint and improve transparency of management.

We started to appoint outside executives relatively early, in 1971, and have heeded their opinions and advice, believing in the importance of incorporating the viewpoint of people outside the company. In 2016, when we shifted to the Audit and Supervisory Committee structure, Outside Directors came to represent more than one-third



Chairman of the Board

Tsuneo Murata

of the Board. We have attached importance to how to have effective discussions, not just numbers. As Chairman of the Board, I make a point of creating an atmosphere in which everyone, both internal and outside directors alike, can express views freely in the Board meetings, and actually feel that discussions are conducted and opinions are exchanged in an open, free and constructive manner. The outside directors have always offered us valuable opinions and specific advice from a medium- to long-term perspective and sometimes given us critical opinions. We have been able to reflect their views in the execution of our management policies and business strategies. From the viewpoint of diversification, we have appointed individuals with diverse backgrounds or expertise as Outside Director, which has made it possible for us to discuss management policies and business strategies from wide-ranging perspectives.

Going forward, I hope to provide solid support to President Nakajima in his pursuit of the two themes of creating a self-governing, decentralized organizational structure and improving management transparency, by enhancing the monitoring function on management policies and business strategies and working to improve the effectiveness of the Board of Directors, while trying to bring out and adopt input from Outside Directors who have diverse backgrounds and expertise.

I believe governance is one of the most important management challenges for us to be able to continue developing and growing in a sound manner, while putting the Murata Philosophy into action. We will continue to work to achieve sustainable growth of the company and improve its corporate value by reinforcing governance while squarely facing and addressing challenges, in order to remain to be a company trusted and supported by all stakeholders.

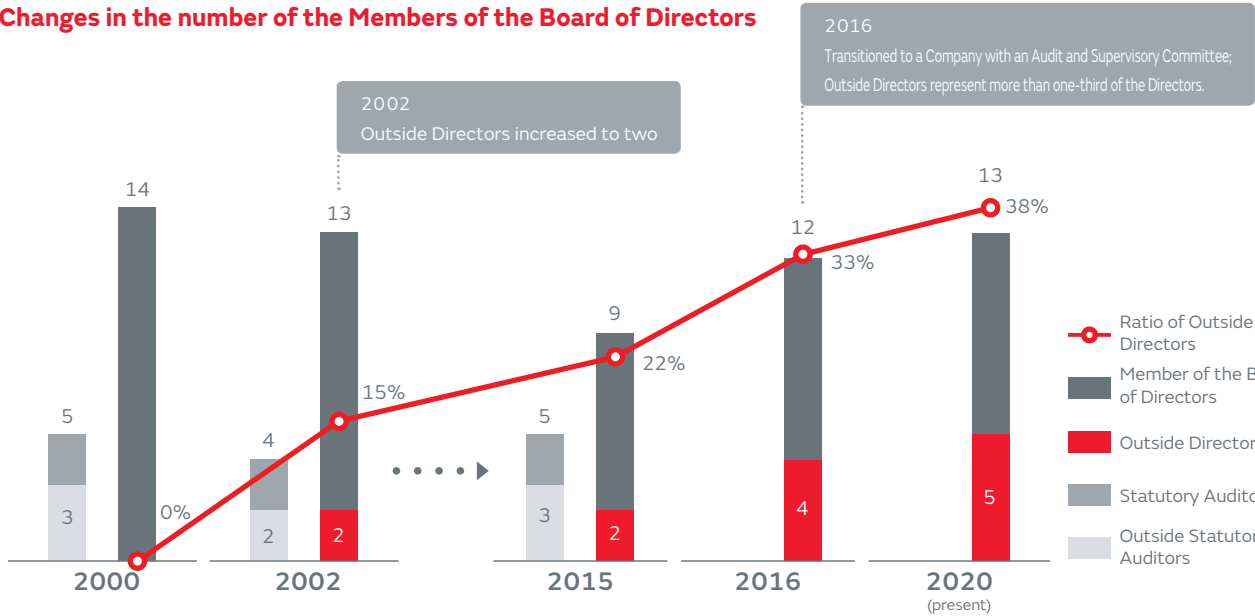
Our basic views on corporate governance and history of initiatives for reinforcement

Murata considers corporate governance to be one of the highest priorities in management, and we work constantly to establish and operate optimal management systems that will realize sound corporate growth and development while taking into consideration every stakeholder.

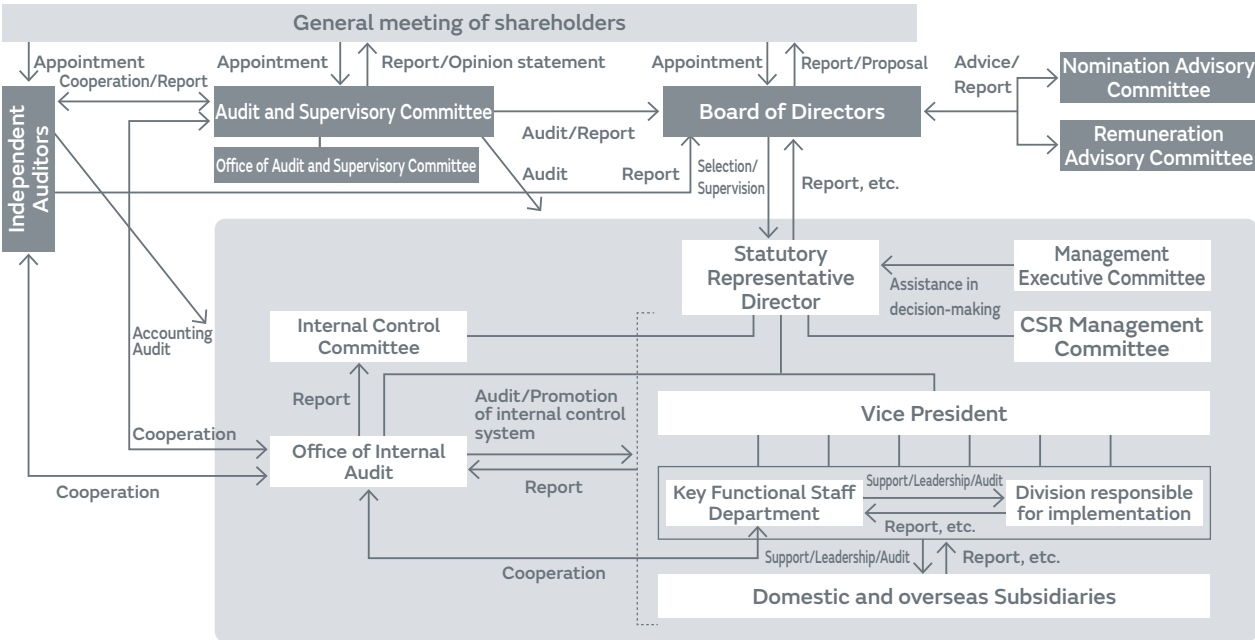
In addition to appointing outside executives, we have been making efforts to strengthen our corporate governance by steadily taking measures as below, in order to strengthen executive and supervisory functions and increase the transparency of management.

2000	● Established a Vice President system and declared the appointment of Outside Directors ● Established the Management Executive Committee
2001	● First appointed Outside Directors *In 2002, the number of Outside Directors was increased to two. *In 1971, we first appointed Outside Statutory Auditors. (We have had full-time Outside Statutory Auditors in the past.)
2002	● Established the Corporate Ethics Policy and Code of Conduct
2004	● Abolished the Directors' retirement benefits system ● Established the Remuneration Advisory Committee ● Established the Internal Control Committee and the Audit Office (currently Office of Internal Audit)
2006	● Established the basic policy on the internal control system
2007	● Established the Corporate Social Responsibility (CSR) Management Office
2008	● Established the CSR Committee (currently the CSR Management Committee)
2015	● Established the Corporate Governance Guidelines ● Established the Nomination Advisory Committee
2016	● Transitioned to a Company with an Audit and Supervisory Committee *Outside Directors represent more than one-third of the Directors.
2017	● Introduced a restricted share remuneration plan

Changes in the number of the Members of the Board of Directors



Structure of corporate governance system



- Board of Directors

The Board of Directors decides on our basic management direction and particularly important matters for execution, and supervises duties implemented by Member of the Board of Directors.
- Audit and Supervisory Committee

The Audit and Supervisory Committee audits duties implemented by Members of the Board of Directors and may state their opinions in relation to appointment and remuneration of Member of the Board of Directors at General Meetings of Shareholders. Three of the Members of the Board of Directors who are Audit and Supervisory Committee Members possess a considerable degree of knowledge in the areas of finance and accounting. The Committee has one full-time member who shares information concerning the status of operations and corporate finances with part-time members.
- Nomination Advisory Committee/Remuneration Advisory Committee

These Committees have been established as advisory bodies for the Board of Directors in order to enhance its independence, objectivity, and accountability in relation to the nomination and remuneration of executives. The members of these committees are selected by the Board of Directors from among Members of the Board of Directors, and include multiple Independent Outside Directors.
- Management Executive Committee

The Management Executive Committee has been established as a deliberative body to assist the Board of Directors and the Representative Director in making decisions. It is made up of executive Member of the Board of Directors and Member of the Board of Directors who concurrently serve as Vice Presidents, creating a system for deliberation on management issues specified by the Company regulations.
- CSR Management Committee

The CSR Management Committee has been established to promote CSR management continuously and systematically and further entrench CSR within the company and serves as a main office to handle issues outside the company.
- Internal Control Committee

The Internal Control Committee is responsible for the maintenance and continual improvement of the system to secure the appropriateness of the company's operation (the internal control system) and evaluates the status of maintenance and operation of the system.
- Vice President

In order to realize more rapid management judgments and more flexible execution, a Vice President system has been introduced, and our Vice Presidents execute their duties with authority and responsibilities.

Adoption of “Company with an Audit and Supervisory Committee” as a governance system

Murata Manufacturing Co., Ltd. adopted the Company with an Audit and Supervisory Committee structure as a corporate governance system.

In a company with an Audit and Supervisory Committee, a Board of Directors may delegate decisions on important matters for execution to Executive Directors. Delegating decisions on individual matters for execution to Executive Directors enables swift management decisions and flexible execution of duties. We believe this arrangement also helps strengthen the Board of Directors’ functions where as it enables the Board to focus more on discussion and monitoring of the company’s management policies and business strategies.

In addition, Members of the Board of Directors who are Audit and Supervisory Committee Members hold voting rights on agendas at the Board of Directors and rights to express their opinions as the Audit and Supervisory Committee concerning appointment and remuneration of Members of the Board of Directors at General Meetings of Shareholders. We believe that this ensures strong supervisory functions by Executive Directors.

Composition of the Board of Directors, etc. (as of June 26, 2020) ●: Chairman/committee chairperson ○: Member  
\*Independent outside directors are indicated in red

Position	Name	Board of Directors	Audit and Supervisory Committee	Nomination Advisory Committee	Remuneration Advisory Committee
Chairman of the Board	Tsuneo Murata	●		●	○
President	Norio Nakajima	○		○	
Member of the Board of Directors	Hiroshi Iwatsubo	○			
Member of the Board of Directors	Yoshito Takemura	○			
Member of the Board of Directors	Masahiro Ishitani	○			
Member of the Board of Directors	Ryuji Miyamoto	○			○
Member of the Board of Directors	Masanori Minamide	○			
Member of the Board of Directors	Takashi Shigematsu	○		○	
Member of the Board of Directors	Yuko Yasuda	○		○	●
Member of the Board of Directors (Audit and Supervisory Committee Member; full-time)	Yoshiro Ozawa	○	●		
Member of the Board of Directors (Audit and Supervisory Committee Member)	Hyo Kambayashi	○	○		○
Member of the Board of Directors (Audit and Supervisory Committee Member)	Takatoshi Yamamoto	○	○	○	
Member of the Board of Directors (Audit and Supervisory Committee Member)	Naoko Munakata	○	○		

Internal control system

The Board of Directors of Murata Manufacturing Co., Ltd. has defined a basic policy regarding the maintenance of a system to secure the appropriateness of company operations (internal control system). Based on this, the company works to maintain and operate the internal control system appropriately.

The Murata Group shares the Murata Philosophy, which acts as a fundamental management policy, and in order to embody it, we have defined a fundamental policy and code of conduct, which have been distributed across the Group. The Group has also established common rules and procedures on decision making which are applicable across the Murata Group members, including domestic and overseas subsidiaries. Business operation of subsidiaries is discussed based on these rules and procedures, and information on business operation of the Murata Group is shared. Matters that satisfy specified criteria are submitted to the Management Executive Committee or the Board of Directors for deliberation and discussion.

Divisions that supervise the various business functions (general administration, personnel, accounting, etc.) of the Murata Group define frameworks, processing procedures, and judgment standards for duties to ensure that duties within the Murata Group are performed appropriately and efficiently, in addition to providing appropriate direction to subsidiaries as required. As an independent body, the Internal Audit Department (Office of Internal Audit) evaluates and monitors whether duties within the Murata Group are conducted appropriately and efficiently, adhering to laws and regulations and the internal regulations, etc. of the company.



Analysis and evaluation of effectiveness of the Board of Directors

The company endeavors to improve the effectiveness of the Board of Directors by conducting an analysis and evaluation of the effectiveness of the Board of Directors as a whole once a year and discloses an overview of the procedure and results.

- Analysis and evaluation process
 A questionnaire for all Members of the Board of Directors and interviews with Outside Directors were conducted and the analysis and evaluation were conducted through multiple discussions in the Board of Directors, making reference to the results of the questionnaire and interviews.
 Through conducting the questionnaire and interviews, various confirmations were carried out regarding the composition of the Board of Directors, agenda items submitted to meetings, status of deliberation, personal participation of the Director, and other matters regarding the operation of the Board of Directors. Implementation, tallying, analysis, etc. of the questionnaire was carried out by a third party.

- Results of analysis/evaluation; future issues
 Based on the questionnaire results and the analysis and report on the content of interviews, we have determined the company's Board of Directors is functioning effectively in light of its roles and responsibilities. In particular, we judged that an atmosphere that enables free expression of opinion is being cultivated and broadminded and constructive discussions and exchanges of opinion are taking place.

- On the other hand, we recognized that we need to step up efforts to address the following aspects:
- Ensuring thorough monitoring of the execution of duties related to management policies and business strategies
  - Enhancing discussions on risk management related to business operation
  - Enhancing discussions on Environmental, Social and Governance (ESG) initiatives and actions for SDGs
  - Enhancing supervision on internal control systems at overseas Group companies

Based on these evaluation results and issues to be discussed, the Company will continue working to further improve the effectiveness of the Board of Directors.

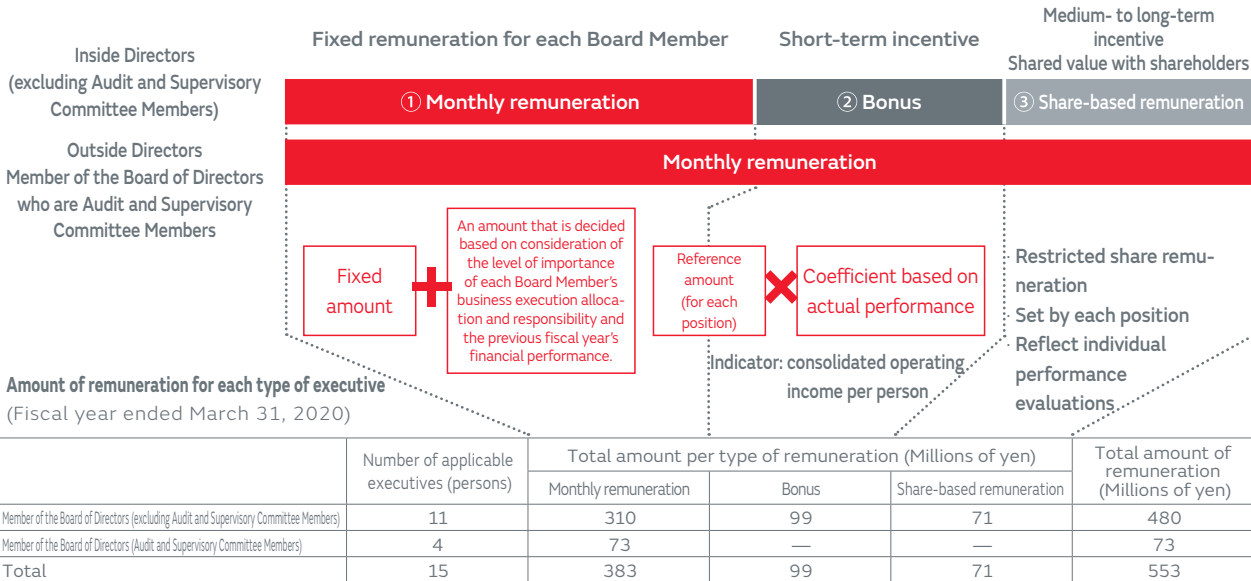
Nomination of candidates for Members of the Board of Directors

- Nomination policies
 In consideration of the business content, scale, and management environment, etc., of Murata, we nominate personnel with knowledge, experience, and qualities that can contribute to enabling the Board of Directors to function (determination of basic management principles and important business execution, as well as supervision of execution of duties of Members of the Board of Directors) as candidates for Members of the Board of Directors. In nominating the candidates, we take into account the balance and diversity in the expertise, experience, and capabilities of the Board of Directors as a whole.
 Additionally, in nominating candidates for Outside Directors, the company seeks personnel across a wide and diverse range and works to secure candidates who satisfy the independence standards of the Tokyo Stock Exchange and Murata Manufacturing Co., Ltd.
 In particular, with regard to candidates for Members of the Board of Directors who will be Audit and Supervisory Committee Members, as noted above, the company nominates personnel with a wealth of knowledge and experience regarding management administration and business operations who have qualities that can contribute to improvement in the soundness and transparency of management and audit the business execution of Members of the Board of Directors from a fair and objective standpoint. At least half of the candidates for Members of the Board of Directors who are Audit and Supervisory Committee Members nominated by the company are Outside Directors.

- Nomination procedures
 The Nomination Advisory Committee deliberates on criteria for the nomination of candidates for Members of the Board of Directors, independence standards for Independent Outside Directors, nomination of candidates for Members of the Board of Directors nomination of candidates for Representative Directors and executive Members of the Board of Directors, and succession plans for President, and reports its findings to the Board of Directors.
 The Board of Directors determines the nomination of candidates for Members of the Board of Directors based on the reported findings of the Nomination Advisory Committee. Nominations for candidates for Members of the Board of Directors who will be Audit and Supervisory Committee members are subject to approval by the Audit and Supervisory Committee.

Remuneration for Member of the Board of Directors

- Policies regarding remuneration
 With respect to remuneration for Member of the Board of Directors, Murata Manufacturing Co., Ltd. makes it a basic policy to provide a system and level of remuneration that is considered suitable for executive-level managers of a globally competitive electronic equipment and component manufacturer in order to ensure recruitment of human talent considered to be excellent based on a comparison with same-industry competitors, to raise the morale and motivation to improve financial results, and to contribute to the maximization of corporate value.
 Remuneration for Members of the Board of Directors who are not Audit and Supervisory Committee Members is made up of (i) monthly remuneration, (ii) bonus with the aim of giving a short-term incentive, and (iii) share-based remuneration with the aim of making them further share values with our shareholders by giving a medium- to long- term incentive.
 The remuneration paid to Outside Directors who are not Audit and Supervisory Committee Members and to Member of the Board of Directors who are Audit and Supervisory Committee Members is monthly remuneration only.
- Procedures for determining remuneration
 The Remuneration Advisory Committee deliberates on the remuneration system and levels for Member of the Board of Directors and reports its findings to the Board of Directors. The Board of Directors decides on the standards regarding remuneration for Member of the Board of Directors based on the report from the Remuneration Advisory Committee.
 Specific remuneration amounts are calculated in accordance with the remuneration standards. Individual remuneration of Members of the Board of Directors who are not Audit and Supervisory Committee Members is decided upon consultation with the Remuneration Advisory Committee.
 Remuneration for each Member of the Board of Directors who is an Audit and Supervisory Committee Member is decided as a fixed individual remuneration through discussion by the Members of the Board of Directors who are Audit and Supervisory Committee Members.



(Notes) 1. The above number includes one Member of the Board of Directors (who is not an Audit and Supervisory Committee Member) who retired during the fiscal year ended March 31, 2020.  
 2. Out of the total shown above, total compensation, etc., provided to six Outside Directors, is 86 million yen.

- (i) Monthly remuneration: The monthly remuneration is a fixed remuneration of an amount individually decided for each Member of the Board of Directors based on a fixed amount for service as Member of the Board of Directors, and an amount that is decided based on consideration of the level of importance of each Member of the Board of Directors' business execution allocation and responsibility and the previous fiscal year's financial performance.
- (ii) Bonus: The total amount of bonus is decided according to the Company's financial performance. The important indicator used as a standard for bonus calculation is consolidated operating income per person taking capital cost into account, which measures the growth and productivity increase of the corporation. The bonus calculation is not premised on a set target value, but is calculated by multiplying a reference amount for each position by a coefficient based on actual performance.
- (iii) Share-based remuneration: Restricted share remuneration leading to improved corporate value over the medium to long term. The share-based remuneration is set by position of each Member of the Board of Directors. It reflects their individual performance evaluations.

Summary of the Criteria for Independence

- The person is not an executive of the company or its current subsidiary or a company that was a subsidiary within the past three years.
- The person is not currently a major shareholder or an executive of a major shareholder.
- The person is not an executive of a company, etc., that is currently a significant client or supplier or was a significant client or supplier within the past three years with the company or its current subsidiary.
 \* "Significant client or supplier" refers to one with which the company has transactions of 2% or more of consolidated net sales of the company or of the client or supplier.
- The person is not an executive of an organization that has received within the past three years a donation or grant of over 10.00 million yen per annum from the company or its current subsidiary.

- The person is not an executive of a company or a subsidiary of that company, that employs or has employed within the past three years a Board Member, Statutory Auditor, or Vice President of the company or its current subsidiary.
- The person does not have any significant transaction relationship with the company, such as a consulting or advisory agreement, and has not had a significant transaction relationship in the past.
- The person is not an executive of the Independent Auditor of the company.
- The person is not the spouse or a relative within the second degree of kinship, etc., of a Board Member, Statutory Auditor, or Vice President of the company or its current subsidiary.
- The person does not have the risk of constantly creating a substantial conflict of interest with the company's general shareholders as a whole for reasons other than those considered in (1) through (8) above.



Executives



Members of the Board of Directors

Masanori Minamide

Member of the Board of Directors  
Masanori Minamide has been involved in accounting, financial and corporate planning duties, and business management in Southeast Asia, accumulating a wealth of experience and a solid record of achievement.

Ryuji Miyamoto

Member of the Board of Directors  
Remuneration Advisory Committee Member  
Ryuji Miyamoto has been involved in legal, human resources, and other administrative duties, accumulating a wealth of experience and a solid record of achievement.

Masahiro Ishitani

Member of the Board of Directors  
Masahiro Ishitani has been involved in accounting, financial and corporate planning duties, and business management, accumulating a wealth of experience and a solid record of achievement.

Yoshiro Ozawa

Member of the Board of Directors  
Audit and Supervisory Committee Member (Full-time/Committee Chairperson)  
Yoshiro Ozawa has been involved in accounting, finance, and personnel affairs in and outside of Japan, and has extensive experience and insight in these fields.

Hyo Kambayashi

Outside Director  
Audit and Supervisory Committee Member  
Remuneration Advisory Committee Member  
Hyo Kambayashi has been engaged in affairs concerning financial auditing, internal control advising, risk management, and strengthening governance for many years as a certified public accountant and executive and has extensive experience and insight in corporate accounting, auditing and internal control.

Takatoshi Yamamoto

Outside Director  
Audit and Supervisory Committee Member  
Nomination Advisory Committee Member  
Takatoshi Yamamoto has extensive experience of corporate analysis of companies in and outside of Japan as a securities analyst, particularly in regard to the electronics industry, and has specialized insight in finance and accounting, in addition to a wealth of experience related to global corporate management.

Naoko Munakata

Outside Director  
Audit and Supervisory Committee Member  
Naoko Munakata has extensive experience and knowledge about administrative fields including economics, international trade, and intellectual property.

Yoshito Takemura

Member of the Board of Directors  
Yoshito Takemura has been involved in accounting and financial duties, planning, and business management in the United States and Greater China, accumulating a wealth of experience and a solid record of achievement.

Hiroshi Iwatsubo

Member of the Board of Directors  
Hiroshi Iwatsubo has been involved in technology development and business management, planning, and sales, accumulating a wealth of experience and a solid record of achievement.

Norio Nakajima

President  
Nomination Advisory Committee Member  
Norio Nakajima has been involved in technology development and business management, accumulating a wealth of experience and a solid record of achievement.

Tsuneo Murata

Chairman of the Board  
Nomination Advisory Committee Member (Committee Chairperson)  
Remuneration Advisory Committee Member  
Tsuneo Murata has been involved in the running and management of business and sales divisions in and outside of Japan, accumulating a wealth of experience and a solid record of achievement.

Takashi Shigematsu

Outside Director  
Nomination Advisory Committee Member  
Takashi Shigematsu has extensive experience and insight as an executive in the manufacturing industry and the automotive industry in particular.

Yuko Yasuda

Outside Director  
Nomination Advisory Committee Member  
Remuneration Advisory Committee Member (Committee Chairperson)  
Yuko Yasuda has engaged in introducing, assessing, and developing CEOs and evaluating the effectiveness of the Board of Directors for many years as a Japan Director at companies that search for corporate executive candidates, she has extensive experience and insight in fields concerning executive personnel assessment, development and corporate governance.

Vice President

22, of whom five concurrently serve as Member of the Board of Directors

Senior Executive Vice President

Hiroshi Iwatsubo

Executive Vice President

Satoshi Sonoda  
Yoshito Takemura

Senior Vice President

Norio Sakai  
Masahiro Ishitani

Senior Vice President

Kenichi Mizuno  
Ryuji Miyamoto  
Nagato Omori

Vice President

Ken Tonegawa  
Masanori Minamide

Vice President

Toshikazu Sasaki  
Shinji Nomura  
Takaharu Sakai

Vice President

Noriyuki Kubodera  
Hiroichi Kawahira  
Toshihiko Okamoto

Vice President

Yoshihiro Yamada  
Toshinobu Yamazaki  
Tatsuo Bizen

Vice President

Harunobu Sano  
Shogo Hashimoto  
Yoshitaka Tanino



Corporate governance

Messages from Outside Directors

As many companies around the world are suffering significant falls in earnings amid the spread of COVID-19 infections, Murata, a global electronics component company, has been showing an early recovery from a slowdown by taking advantage of its products that have a broad range of uses and a thorough customer-centric approach. The company is expected to grow further, driven by its aggressive portfolio management and corporate culture centered on the Murata Philosophy. The company sees the need to create new products in the next-generation automotive field, not just in the existing component business, and has set the goals of expanding business by going beyond the boundaries of electronic components and developing specialized human resources in that field. For this, I will offer advice using the knowledge based on my experience and supervise the direction of execution of duties and speed of execution as Outside Director.

Takashi Shigematsu    Outside Director

Outside Director and Audit and Supervisory Committee Member, Bando Chemical Industries, Ltd.  
Outside Director, Ashimori Industry Co., Ltd.  
Outside Director of Murata since June 2015  
Length of service: five years

Attendance at Board of Directors' meetings in fiscal 2019  
Board of Directors' meetings: 11 meetings out of 11  
Attendance rate: 100%

I have been given opportunities to express my frank opinions in discussions of topics including corporate governance and development of corporate managers. Murata has aggressively developed and polished its own unique products and technologies in the business field. I believe it has the same passion in addressing its governance. Frank and open discussion at Board meetings is a traditional characteristic of Murata. Over the two years since my appointment as Member of the Board of Directors in 2018, I have witnessed the company's sincere attitude in working to make its governance even sounder. I believe that the fact that the process of presidential succession, which is the essence of maintaining sound governance, was carried out reliably and securely and corporate management was handed over to new President Nakajima this year embodies how the Company's governance should look like. A challenge ahead is to nurture business portfolios with future competitive potential, in addition to existing business areas where it has established a strong position. I believe the key is to develop the next generation of human resources that enable sustainable growth.

Yuko Yasuda    Outside Director

Senior Partner, Board Advisors Japan, Inc.  
Outside Director, Idemitsu Kosan Co., Ltd.  
Outside Director, Nippon Suisan Kaisha, Ltd.  
Outside Director and Audit and Supervisory Committee Member of Murata since June 2018  
Outside Director of Murata since June 2020  
Length of service: two years

Attendance at Board of Directors and Audit and Supervisory Committee meetings in fiscal 2019  
Board of Directors meetings: 10 meetings out of 11  
Attendance rate: 91%  
Audit and Supervisory Committee meetings: 9 meetings out of 10  
Attendance rate: 90%



A shift from “low” carbon to “post” carbon society has been accelerating, and a paradigm shift in civilization, which is sometimes called the end of the fossil civilization, is taking place. Now that we are entering an era where our past experience and existing knowledge may not necessarily work, an important theme of the Board of Directors is the discussion of what we should change and what we shouldn't. To further leverage its strengths and minimize its weaknesses, Murata needs to appropriately address complex risks, including ESG risks, which present both opportunities and threats, DX\* risks and human resources risks. To help Murata live up to wide-ranging expectations of its society through creation, maintenance and realization of corporate value, I hope to contribute to increasing Murata's value from a new risk management perspective for value creation so that the company can proceed in the right direction.

\*DX: digital transformation, or use of digital technologies to improve people's lives

Hyo Kambayashi    Outside Director and Audit and Supervisory Committee Member

Chairman and Senior Managing Director, Protiviti LLC  
Outside Audit & Supervisory Board Member, Sojitz Corporation  
Outside Director and Audit and Supervisory Committee Member of Murata since June 2018    Length of service: two years

Attendance at Board of Directors and Audit and Supervisory Committee meetings in fiscal 2019  
Board of Directors meetings: 11 meetings out of 11  
Attendance rate: 100%  
Audit and Supervisory Committee meetings: 10 meetings out of 10  
Attendance rate: 100%

Complex international relations and global environmental problems in need of urgent measures, coupled with COVID-19, have made it difficult for businesses to navigate their course. Murata has always continued to demonstrate its organizational capabilities and ability to coordinate efforts, while contributing to cultural development through its value creation driven by unique and innovation-led development, global network capabilities, development and provision of unique products, and efforts to conserve energy. While continuing to improve such capabilities, I believe, Murata can become a true global leader by stepping up efforts on its aggressive ESG activities and a sustainable value creation cycle in harmony with all stakeholders. The key to making it happen is to further strengthen the core competencies and governance it has developed since its foundation, develop new products and technologies, develop global human resources with diversity, and improve quality of proactive information disclosure. I will provide my supervision from an unbiased, objective standpoint to ensure that such measures can be designed and executed in a sound, transparent and swift manner.

Takatoshi Yamamoto    Outside Director and Audit and Supervisory Committee Member

Outside Director, Hitachi, Ltd.  
Outside Director of Murata since June 2019  
Outside Director and Audit and Supervisory Committee Member of Murata since June 2020  
Length of service: one year

Attendance at Board of Directors meetings in fiscal 2019  
Board of Directors meetings: 9 meetings out of 9  
Attendance rate: 100%

We are facing increasing uncertainties amid the spread of COVID-19 and rapid advancement in digitalization and changing mindset of people, as well as a series of natural disasters and heightened geopolitical risks. There is a possibility that the so-called once-in-a-century major industrial revolution may accelerate at a pace that goes beyond our prediction. I witnessed the evolution of an international economic order and a substantial shift in industry while working as a government administrative official mainly at the Ministry of Economy, Trade and Industry. From a broad perspective, I would like to raise various issues Murata should address in order for it to be able to continuously increase its corporate value amid a time of major shift. As an Outside Director and Audit and Supervisory Committee Member, I will contribute to Murata's further growth by listening to the voice of employees at work sites as much as possible to deepen my understanding of the company's real situations and putting my past experience and knowledge gained in public administration to good use.

Naoko Munakata    Outside Director and Audit and Supervisory Committee Member (newly appointed)

Adviser, Dai-ichi Life Research Institute Inc.  
Outside Director and Audit and Supervisory Committee Member of Murata since June 2020  
Length of service: -





Risk management

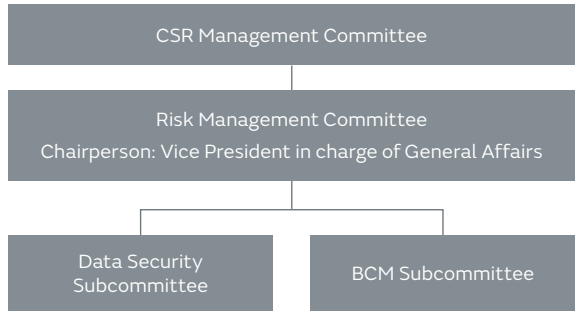
Basic view

In order to minimize losses by emergence of risks and improve sustainable corporate value of the entire Group by managing various internal and external risks related to business activities, Murata periodically carries out initiatives to classify and evaluate risks, take preventive measures for each risk, and reduce losses in case of emergency.

Promotion structure

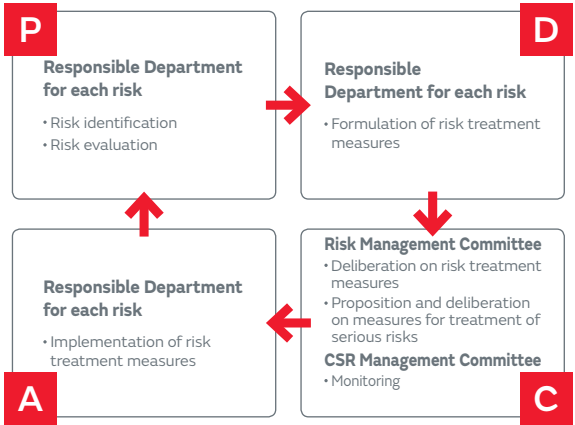
Murata has established a Risk Management Committee as a subordinate body of the CSR Management Committee chaired by the President. This committee is chaired by a Vice President and comprises Directors from departments including General Affairs, Personnel & Industrial Relations, Corporate Communications, Intellectual Property, Environmental Affairs, Quality Assurance, Sales, Information Systems, and Legal Affairs. Together, the committee members study ways to address risks company-wide. We have also established the Data Security Subcommittee and BCM\* Subcommittee as subordinate organizations to study and take measures to address particular risks.

\*BCM (Business Continuity Management)  
Management activities that are operated on an ongoing basis to formulate, maintain, and renew the BCP (Business Continuity Plan), to allocate budget and resources for business continuity, to take preventive measures, and to conduct, check, and continually improve education and training for permeating initiatives.



Understanding risks

The responsible department for each risk identifies and evaluates risks that Murata currently faces or may face in the near future and formulates treatment measures twice a year. The Risk Management Committee deliberates those contents, and, if necessary, instructs additional measures. Each risk is classified in accordance with its frequency and impact so that management understands more important and urgent risks to take appropriate risk treatment measures.



Risks associated with business, etc.

Factors that may potentially have significant influence on investor decisions (as of June 26, 2020, the date of submission of the Annual Securities Report) include the following:

1	Risks of fluctuation in demand for our products
2	Risks of product price competition
3	Risks related to stable procurement
4	Risks of reliance on certain suppliers or products
5	Risks associated with development of new technologies or products
6	Risks associated with business expansion in overseas markets
7	Risks related to M&A, business tie-ups or strategic investments
8	Customer credit risk
9	Foreign exchange risk
10	Risks related to funding
11	Risks related to public regulations and compliance
12	Risks related to quality issues
13	Risks regarding environmental regulations
14	Risks due to climate change
15	Risks related to Data Security
16	Risks related to intellectual property
17	Risks related to taxes
18	Risks related to hiring or retaining personnel
19	Risks of suspension of business activities due to natural disasters, infections, etc.

Our initiatives

● Data Security

For Murata to continue to grow, we believe it is essential to protect information that is a company asset, which includes technological expertise and other confidential corporate information.

For this, Murata conducts Data Security management by studying recent risk trends and introducing relevant domestic and international guidelines, using an international standard (ISO27001) as a guide. The company has established rules, including the Data Security Policy and the Data Security Management Regulations, and is working to develop Data Security measures and implement such measures across the company. We also review the measures on an ongoing basis and are working to enhance them by conducting internal and external audits and diagnosis.

Human aspect

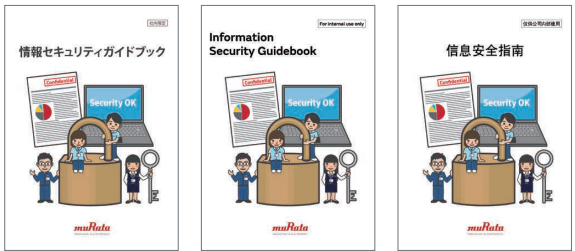
In order to ensure all executives and employees understand Data Security and handle information appropriately, we distribute the Data Security Guidebook published in Japanese, English and Chinese, conduct training programs for all employees and those designed for each job level, and engage in educational activity, including issuance of an email newsletter.

Technological aspect

In order to prevent leaks of corporate and personal information from Murata and disruption to the company's business activity due to cyberattacks, we have stepped up measures, including countermeasures against malware, checks and access control on communication over the Internet, diagnosis of vulnerabilities and measures taken against them and monitoring of devices. We are also taking measures against cyberattacks that change from day to day by collecting data logs from operations globally to monitor them and introducing measures against potential incidents that may lead to material security accidents.

Physical aspect

Our business sites and affiliates constantly manage entry and exit of people and vehicles at the boundaries of their premises. Each of them has security zones in its premises and implements access control using ID cards, etc. in zones where highly confidential information is located, preventing unauthorized access from both inside and outside the Company in multilayered measures.



Japanese, English and Chinese versions of the Data Security Guidebook

● Business Continuity Plan (BCP)

Major natural disasters give rise to the risk of halting the company's operation for a long period. In order to fulfil its responsibility to stably provide products to customers, Murata has measures in place to ensure damage is minimized and its business remains in operation by designing a Business Continuity Plan (BCP), ensuring earthquake resistance and safety of buildings and production facilities, maintaining backups for communication and information systems, and maintaining extra inventory to prevent supply disruption.

In the procurement of materials, we operate databases on source locations of materials so that our procurement activity will not be disrupted when risks materialize from natural disasters and are working to develop ways to quickly implement responses by designing initial response frameworks based on risk scenarios and work-flows. For important materials, we have implemented measures such as maintaining levels of inventory that takes into account expected lengths of time required for recovery in the event of materialization of risks, in addition to diversifying suppliers and confirming the status of BCP measures taken by suppliers, to ensure stable procurement.

In addition, we are working to confirm that planned initial responses are effective, continuously enhance them, improve crisis-response capability and grasp what needs to be improved in our BCP by carrying out counter-disaster and business continuity drills on a regular basis.



BCP drills based on earthquake scenario

● Initiatives to combat COVID-19

Amid the global spread of COVID-19, Murata has set the top priorities of ensuring that employees and suppliers stay safe and healthy and local communities feel secure, and maintaining an uninterrupted supply of Murata products globally, which we believe is our responsibility as a company in global supply chains. At Murata, the Crisis Response Team set up at headquarters has decided and carried out various measures to prevent infection, control spread of infection and ensure business continuity. Specifically, we have introduced measures to prevent employees from being infected, including introduction of telecommuting and staggered working hours, restrictions on business trips, keeping logs of employee movement in company properties, partitions set up in canteens and workplaces, and requesting employees to use self-restraint in their private behavior, and designed BCPs to be prepared for potential infection of employees. We thus have worked to minimize potential impacts on employee health and our business activities from COVID-19 (please see p.56).

## Compliance

### Corporate Ethics Policy and Code of Conduct

Murata Manufacturing Co., Ltd. established the Corporate Ethics Policy and Code of Conduct in July 2002 and has since revised it from the CSR perspective. Murata pledged and declared its intention to work as one in doing what is needed to be done for stakeholders and society.

This revised edition of the Corporate Ethics Policy and Code of Conduct has been distributed to Murata Manufacturing Co., Ltd. and its affiliates in Japan. We have also created English and Chinese versions, which were distributed to all our locations outside of Japan in September 2007, adjusted to take into account laws and regulations and social systems of their respective locations, and which have been distributed to all our employees.

### Construction of a global compliance system

In May 2014, Murata Manufacturing Co., Ltd. established the “Basic Policy for Prevention of Cartels and Bribery.”

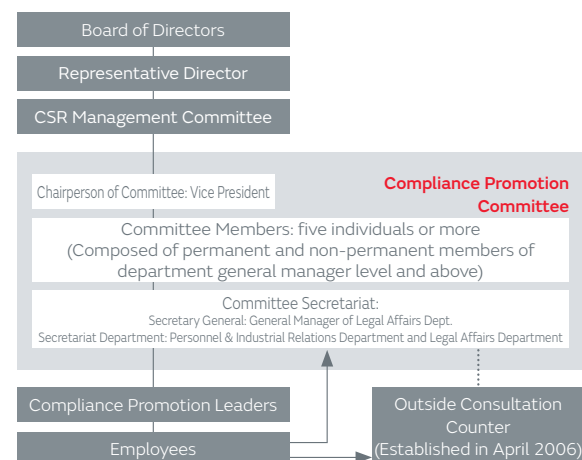
Although cartels and bribery are also prohibited in the “Corporate Ethics Policy and Code of Conduct,” as a company that develops its business globally, we again disseminated Murata’s basic stance on cartels and bribery throughout the Group.

In addition, we have established internal procedures for applying for permission to contact individuals from rival companies and reporting on such contacts when doing so is necessary and applying for permission to entertain people outside the company or offer gifts to such people as a way to prevent formation of cartels and bribery.

### Compliance Promotion

Murata Manufacturing Co., Ltd. has established a Compliance Promotion Committee, a subordinate body of the CSR Management Committee chaired by the President. We are deliberating on, and making decisions regarding, the basic direction for revisions to the Corporate Ethics Policy and Code of Conduct and for the draft and implementation of publicity activities. The decisions made by the Committee are deployed to the entire Group through compliance promotion managers assigned at affiliated companies in and outside of Japan. In addition, each department assigns a Compliance Promotion Leader for the role of ensuring employee awareness for the Corporate Ethics Policy and Code of Conduct. These leaders communicate knowledge learned in an e-learning program through compliance-promotion meetings, etc. at their respective departments. In April 2020, the President sent a message to employees to raise their awareness about the importance of compliance for Murata’s sustainable growth.

### Compliance promotion system (As of April 1, 2020)



### Whistle-blowing system and consultation hotlines

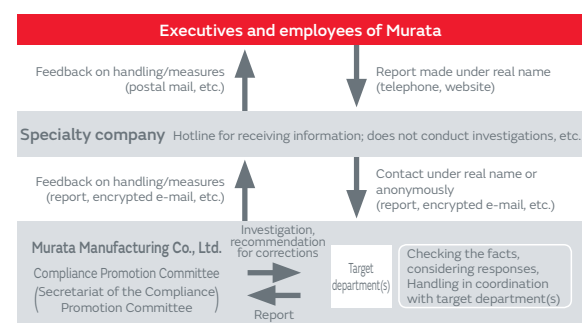
Murata has established an internal hotline to take whistle-blowing reports and consultations if an act within Murata that violates or could violate the Corporate Ethics Policy and Code of Conduct is discovered. In addition, we have established an environment that makes whistle-blowing easier by also setting up an outside hotline to take these kinds of whistle-blowing reports and consultations for the prevention, early detection, and prompt handling of compliance violations.

### Taking whistle-blowing reports and Consultations; Checking, Investigating, and Responding

When a whistle-blowing report or consultation about compliance is received by the internal or outside hotline, the Compliance Promotion Committee, the Chairperson of the Committee, and the Secretariat of the Committee lead the response. Coordinating with relevant departments as necessary, they check and investigate as far as possible all the facts and the relevant laws and regulations. On that basis, the existence or nonexistence of a compliance violation is recognized and response measures such as recommendations for correction are taken as necessary.

In this process, care is taken to ensure that the privacy of the whistle-blower is protected and the whistle-blower does not suffer unreasonable disadvantages as a result of making the report. When reports are received under a real name, feedback on the progress and results of checking and investigating are given appropriately.

### Process of receiving whistle-blowing reports and providing feedback



## Technologies

Member of the Board of Directors and Senior Executive Vice President  
Director of Corporate Technology & Business Development Unit  
Executive in Charge of Medical Products Business

Hiroshi Iwatsubo

### Message from the Director of Corporate Technology & Business Development Unit

We are actively working to strengthen the foundation for research and development, aiming to ensure sustainable growth over the next 10 to 20 years.

Aiming to expand the range of new technologies further to ensure the “seeds first” principle is delivered

In recent years, it is increasingly said that the outlook for the electronics market is uncertain. Last year, the U.S.-China trade friction had a significant impact, and this year, the spread of COVID-19 has thrown the market into confusion. For example, although major trends, such as introduction of 5G (fifth-generation mobile communication system) and electrification and automation of vehicles, have emerged, it is still not necessarily clear when demand stimulated by such trends may increase in earnest.

Looking back, we remember the times when miniaturization was the keyword in the electronics component industry. Everyone was pursuing it and knew what had to be done. Currently, by contrast, we are facing the requirement to enhance and diversify technology.

At the same time, there is the issue of the emergence of destructive technologies amid advances in technological innovation. Today’s market has an aspect where no one knows who may initiate what and when against the background of innovation. This has become a risk when thinking about business.

What does Murata do in the face of such a situation? The company has a framework in place that allows it to respond precisely without floundering to whatever may happen, as it has an ample range of new technologies supported by its solid foundation of research and development. We are confident that no one else in the world can beat us on this point. It is my conviction that we can answer customer needs only if we have a wealth of technology seeds in the company. We are thus working to bolster initiatives on the belief that research and development toward “seeds first” is key.

Accelerating efforts to build a materials cluster to form the foundation for a competitive advantage, going beyond the boundaries of ceramics

In the past, Murata pursued unique ways of monozukuri (manufacturing) as the “Murata of ceramics.” Today, however, we are accelerating research and development efforts on materials other than ceramics.

This involves development of technologies that may reject the value of ceramics. As an example, it becomes possible to completely eliminate electricity transmission losses by embedding capacitors directly below a semiconductor chip, but we do not necessarily have to insist on using ceramics. This technology could emerge over the medium to long term as a threat to the multilayer ceramic capacitor, Murata’s mainstay product. However, we are fearlessly working on its research and development, seeing it as an innovation. In the meantime, we continue to take challenges in our endeavor to establish technologies for the next generation that cannot be replicated by competitors.

At Murata, efforts to bring about innovation did not start just today or yesterday. As Akira Murata, our founder, once said, “good electronic equipment starts with good electronic components and good electronic components starts with good materials.” Materials technology has been, and will be, what Murata must attach the greatest importance to.

In recent years, our focus is particularly on building up a cluster of new materials. In the past, Murata’s strength was mainly in the area of ceramics. But we have commercialized a group of products that use materials other than ceramics, including SAW filters and MetroCirc™, using an “effusion” approach in which a technological field is expanded gradually.

Furthermore, with a view to the future, there is a materials cluster for which we are working on research and development in a clear departure from ceramics. This includes glass-based materials, metal magnetic powder, and high-performance resin materials.



These are areas we are working on, aiming to make them blossom in 10 years. We have already identified promising materials, and have focused efforts on developing basic technologies, aiming to construct an integrated production system encompassing source materials to products, just as we have done.

We are promoting Murata-style open innovation, carrying out technology scouting.

In addition to the pursuit of departure from the “Murata of ceramics,” another new policy in research and development is a shift away from the focus on in-house technology, which brought success to Murata in the past. Needless to say, it remains important for each department to develop technology in secrecy, but we have entered an age in which it is essential to take advantage of external resources in the aspect of innovation. For this, Murata has stepped up efforts on open innovation in a style unique to Murata.

Our new business creation department is focused on developing human resources that can identify innovative technologies outside the company. We are scouting across the globe for innovative technologies that make us say, “This is it!” through these members.

In recent years, Murata has organized technology proposition meeting in regions where rivals have yet to set up operation, including Eastern Europe, as part of efforts to scout for prominent local talent. In the Middle Eastern country of Israel, we had a similar initiative earlier, built relationships of trust, and are beginning to see achievements.

In such endeavors, we attach importance to accumulating elemental technologies and establishing production processes, including development of equipment, rather than relying entirely on external technologies. By doing so, we aim to build competitive advantages that cannot be replicated by our competitors in the age of open innovation. We believe this will help Murata greatly exert its comprehensive abilities, which encompass processes from creating products from elemental technologies to installing them in the customer’s circuits.

Aiming to create “solution business” through collaboration with external entities

One of the major challenges over a medium to long term in research and development is to build a “solution business,” or a business model in the service field. We aim to provide solutions that address issues faced by society, using the seeds that we have developed through research and development of hardware, such as components and modules, as the foundation and combining software and communication networks with them. This is a way to create businesses for achieving the next generation of growth only Murata, which achieved remarkable success in electronic components, can realize.

It has been five years since we launched this initiative, which has given birth to a series of innovative technologies. One such technology is PIECLEX, a plant-derived fiber we developed jointly with Teijin Frontier Co., Ltd. It is the world’s first fabric with antimicrobial performance through the power of electricity. Using piezoelectric technology, a Murata specialty, the product realizes antimicrobial and deodorizing performance by converting expansion and contraction of fibers caused by bodily motions into electricity.

Murata’s goal goes beyond just creating PIECLEX. We envision a technology in which a sheet is formed using the fibers and used as a wearable device worn on the body, so that very weak signals produced by muscles can be collected and analyzed, using sensor technology, another of Murata’s specialties. The data can be used in the healthcare field, for example, for preventing locomotive syndrome. We have already launched a joint project with a Japanese local government that is expected to contribute to promoting the health of the elderly and, ultimately, reducing medical costs.

In India, we have launched a project in which we utilize a sensor that can visualize soil conditions to improve the farming environment. In the future, we plan to take advantage of Murata’s unique sensing and wireless technologies to help solve issues faced by society, including those targeted by the United Nations SDGs, through joint research projects with research entities around the world.

In terms of sensing technology, we have begun testing an “emotion and stress analysis service” for manufacturing workplaces, using our wearable device to collect biological information, in a joint project with an overseas startup and other partners. Through this technology, we hope to contribute to improving employee health in the workplace.

In addition, we have developed a technology to detect the influenza virus at an earlier stage by using a field-effect transistor (FET) biosensor that uses graphene, a new carbon material in a joint industry-academia team including university researchers.

Thus, research and development efforts to create a solution business are under way at Murata at a rapid pace. The business is aimed at offering solutions for issues to be faced by a future society. Through this, our objective is to construct a business model as a service. We aim to build a pillar for a new business, aiming to support the company’s sustainable growth, taking advantage of the solid business foundation we have established through the development of components and module technologies.

Going forward, Murata aims to create new markets and innovations by developing technologies and products in anticipation of the future, in order to shape the future of electronics. For that, I would like to ask our stakeholders for continued support.

Platform technologies and core technologies

In order for Murata to continue to create new value, we need our technologies to evolve constantly. Murata, which has an integrated production structure encompassing materials to products, has developed technologies into platforms so that technologies forming the basis can be independently researched, developed, accumulated and applied in product development.

Murata has five platform technology domains, and each platform technology is comprised of several core technologies. Each core technology has been refined over a long period within Murata, and has become a source to differentiate us from competitors and create innovations.

Platforms	
Materials technology	<div><div>Materials design</div><div>Materials processing</div></div> <p>Materials technology is the technology to simulate and model material composition, crystal structures, and electrical properties, as well as to disperse and combine these materials while controlling ceramic particle sizes and crystal structures.</p>
Front-end process technology	<div><div>Laminating &amp; stacking</div><div>Printing</div><div>Sintering</div><div>Nano &amp; thin film fabrication</div><div>Surface finishing</div><div>Precision mechanical processing</div></div> <p>Front-end process technology includes, mainly, the technology to laminate and align crystal particles by forming them into dielectric sheets, technology to thinly and accurately form internal electrodes and wirings on ceramic sheets, and technology to form thin films on a submicron level using lithography and etching.</p>
Product design technology	<div><div>High frequency design</div><div>Device design</div><div>Embedded</div><div>High reliability design</div><div>Circuit design</div><div>Simulation</div></div> <p>Product design technology includes, mainly, the technology to design RF components and modules, to achieve high performance and small devices using software, etc., to achieve high reliability under harsh environmental conditions, and simulation to analyze electromagnetic fields, heat, and stress.</p>
Back-end process technology	<div><div>Packaging</div><div>Measurement</div><div>Automation</div><div>Industrial engineering</div></div> <p>Back-end process technology mainly includes the technology to achieve miniaturization and high reliability of devices through high-heat resistance connections and air-tight sealing, and technology to design equipment that transports extremely small products in different shapes at high speed and with low damage.</p>
Analytical technology	<div><div>Materials characterization</div><div>Failure analysis</div></div> <p>Analytical technology includes the technology to physically and electronically evaluate material compositions through non-destructive analysis, heat analysis, organic and inorganic analysis, and surface analysis, and technology to identify the cause of failures that occurred in materials and products through the abovementioned analytical methods.</p>

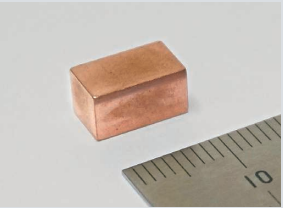
Close Up!

Awarded the Prime Minister's Prize in the 49th Japan Industrial Technology Awards:  
High-density, compact, oxide full solid-state battery with the industry's highest level of capacity (secondary battery)

Murata has developed a solid-state battery with industry’s highest level\* of energy capacity by integrating a process technology used in Murata’s main products, such as multilayer ceramic capacitors and multilayer devices, and diverse materials technology amassed through the development of cutting-edge electronic components. The battery employs an oxide ceramic electrolyte instead of the electrolytic solution utilized in conventional batteries, making it noncombustible and strongly heat-resistant. The invention won the Prime Minister’s Prize, the highest award, in the 49th Japan Industrial Technology Awards in recognition of its creativity and innovativeness.

The product, which packs high energy density in a compact size and achieves high performance in harsh

environmental conditions, is expected to contribute to reducing sizes and improving reliability of wearable devices, which has been difficult to achieve. As the battery excels in safety and durability performance compared to conventional lithium-ion batteries, it is expected to find uses in hearable devices, including wireless earphones, which require high safety standards and are used over a long time, and address wide-ranging needs in the expanding IoT society, helping to create an improving society.



\*As of August 2020, according to our own research



Human  
resources

We aim to become a company where employees can work together while learning from each other by respecting each individual's characteristics with no bias against anyone for personal attributes, and where opportunities for growth suited to each individual's endowments are offered in an equitable manner and employees with diverse backgrounds are highly motivated to work, while value is created in innovative ways as an organization.

## Respect for Human Rights and Diversity

We aim to provide a foundation on which diverse employees work autonomously and work in teams, including with people from business partners, so that Murata's collective strength can be demonstrated.

## Revision to Human Rights and Labor Policies

In 2012, we established the Human Rights and Labor Policies,\* which complements the CSR Charter established in fiscal 2009. In January 2019, we made substantial revisions to it.

As a result of its business expansion, Murata's influence on society has increased and expectations of society for Murata have also increased. In light of this situation, after discussing how Murata's rapid business expansion has influenced people, organizations, and local communities and once again analyzing what is expected of Murata, we have revised the policies to align them with declarations by the United Nations, the International Labor Organization, Responsible Business Alliance, etc.

We substantially revised the policies to once again clarify our policy of respecting, protecting, and not violating the basic human rights of each employee and reflect the human rights awareness imbued in the Murata Philosophy and the company's history. Using these Human Rights and Labor Policies, we aim to ask not just Murata employees but, throughout Murata's supply chains, those of our business partners to pursue realization of society where these policies are respected and support their efforts and objectives.



Amid the new coronavirus pandemic, we invited an external lecturer for an executive discussion camp and remotely held a human rights seminar and discussion.

\*Human Rights and Labor Policies  
[https://corporate.murata.com/en-global/csr/people/human\\_rights](https://corporate.murata.com/en-global/csr/people/human_rights)

## Efforts on human rights

We have established a management manual for the Human Rights and Labor Policies, which clearly stipulates specific processes, systems and authorities for respecting and protecting the basic human rights of every individual working for Murata, as well as goal setting and educational systems.

In conjunction with the revision of the Human Rights and Labor Policies, we reformed our system for education on harassment. We had been previously conducting a lecture-style training program, but now include all employees as trainees via e-learning. The e-learning program was introduced in fiscal 2019 and has reached approximately an 80% participation rate. In fiscal 2020, we are expanding the program to include group company employees, aiming to increase the percentage to at least 90%.

We will also promote efforts on LGBT issues and implement online seminars, etc.

## Promotion of women's advancement

As part of efforts to promote respect for diversity, we are also focusing on promoting women's advancement. Especially in Japan, ensuring of equal opportunities for women is a major issue, and we are working to provide opportunities for growth suited to individuals' endowments in an equitable manner as part of efforts to promote diversity and inclusion.

We have set a female ratio target for recruiting new graduates for career-track positions, and are conducting a variety of recruitment activities specifically targeting female recruits, such as conducting "Seminars for Rikejo [Rikejo is a woman who majors in science]."

Furthermore, we have introduced various systems that are more favorable to employees than required by law, including spouse childbirth/childcare leave and temporary school closure leave. We will continue to work to help each employee achieve a good balance between work and family and create value in a condition sound in both mind and body.

## Creating an environment in which employees can work comfortably

COVID-19 has dramatically altered the environment surrounding health and safety. At Murata, we see it as a great opportunity to take various efforts further.

## Measures for COVID-19

Murata has set up a Crisis Management Team headed by the President and established policies to address COVID-19 that call for prioritizing the safety of employees in thinking about business continuity, prioritizing measures to ensure employee mental health, not just physical measures to protect them against infection, but also taking measures against the disease on the assumption this situation will remain for an extended period. Based on these objectives, our various functions have coordinated to implement infection prevention measures aimed at ensuring employee health and safety and maintaining business operation. At a manufacturing location in China, which was our first facility to be addressed, we quickly introduced measures including taking employees' temperatures, urging them to sanitize hands, sanitizing workplaces, and creating infection prevention manuals. These measures served as guides for other operational locations. In Europe and the United States, we introduced telecommuting and sent messages at regular intervals to employees to help mitigate the feeling of isolation. In the Philippines, we ran educational sessions for employees, in addition to taking physical infection prevention measures.

In Japan, we changed office layouts to support avoidance of the three Cs: closed spaces, crowded places, and close-contact settings; encouraged telecommuting; introduced a QR code registration system at employee canteens to keep track of their movements; required employees with signs of health issues to keep away from workplaces (with subsidies); and granted special paid leave for employees during closure of their children's schools, among other measures. At the same time, we set a focus on maintaining the mental and physical health of employees, and handed out a collection of ideas for maintaining health while working from home and a booklet offering specific advice on communication and labor management, etc., under emergencies to individuals in managerial positions. Healthcare specialists at operational locations have provided individualized support to employees who had health issues or signs that their conditions may turn serious. The top management also sent messages to employees to express appreciation and thanks for their efforts and urge them to be careful about health.

After the state of emergency declaration was lifted, we regard the present time as a period of "life with corona," in which we seek to achieve a balance between ensuring the safety of employees and reducing their stress, and have sent messages on how workplaces should be operated based on medical knowledge.

## Safety and health

In fiscal 2020, we launched a fresh effort on safety and health under the concept of "Safety depends on health" by integrating the safety and health function and the health-promotion function into the same entity. One of the issues that has become apparent

during the period of "life with corona" is the need to regard employees' homes as a workplace and work environment as a result of an increase in the number of employees working from home and the prolongation of this situation.

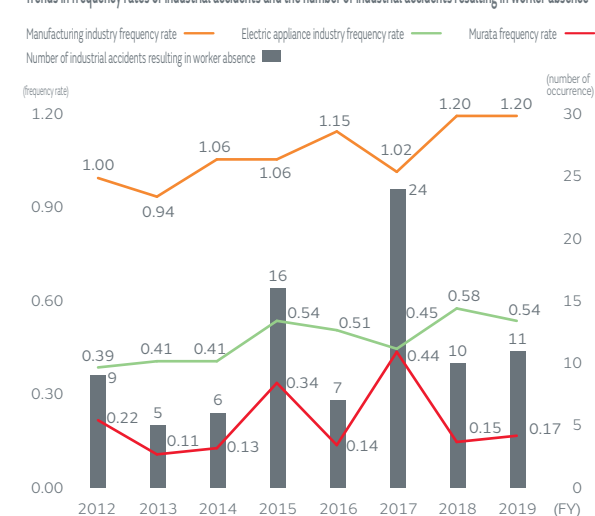
To ensure the safety of remotely working employees, we have created and distributed a self-assessment tool on the home working environment and employee health conditions. We linked it with the human resources function. When an employee works remotely, the person is required to confirm safety and health after conducting an assessment based on this tool.

The number of industrial accidents resulting in worker absence was 24 in 2017, decreasing to 10 in 2018 and 11 in 2019 and is remaining stable at that level. The analysis of the industrial accidents that occurred in 2019 found that more than 70% of all cases lacked preliminary risk identification in the risk assessment process. Furthermore, more than 70% of the causes of all accidents were due to unsafe behavior.

In response to these results, we set the goal of improving safety and health management and building a culture of safety and launched new initiatives under this goal. Specifically, these initiatives were aimed at improving risk management by reviewing the existing risk assessment process, developing a safety management method that uses a health and productivity management approach, external resources, and IoT systems. We will also work to build a culture of safety by improving safety and health education systems and fostering personnel in charge of safety and health in the next generation.

We thus aim to develop a work environment where safety is respected as the top priority and to enhance safety and health literacy among employees through a two-track approach comprising the obligation of the entire management team to ensure safety of employees and the obligation of employees to maintain their own health by implementing measures from a variety of angles.

Trends in frequency rates of industrial accidents and the number of industrial accidents resulting in worker absence



Health and productivity management

In order to sincerely engage in nurturing employees' health, we established the Murata Health Management Plan in fiscal 2019 as a medium-term policy. We have decided to revise this plan in view of consolidation of health insurance cooperatives and enhancement to databases, as well as a significant change in employees' awareness of health and safety due to COVID-19. We will work to improve it into a plan that better reflects the current situation by resetting issues under the concept of "down-to-earth health and productivity management."

Developing human resources globally

Murata has the basic human resources development policy, "Increase individuals' power to grow, supervisors' and workplaces' power to nurture, and the company's power to make individuals grow." We carry out initiatives to create a culture where individuals can grow and stimulate each other to grow in accordance with this policy.

Rotation of human resources on a global level

Murata has increased hiring of workers at many locations in preparation of further business expansion in global markets. We have aggressively sought to hire such human resources and in fiscal 2007, launched a rotation system that aims to promote hiring of individuals to positions suited to their skills on the global level. The system enables personnel to leave their current Murata location to work at another Murata facility in another country. We rotated a total of 876 individuals by the end of fiscal 2019.

For example, a total of 110 individuals from our Thai production subsidiary (Murata Electronics (Thailand), Ltd.) took the opportunity to work in one of our Japan locations by the end of fiscal 2019, since the introduction of the rotation system. After returning to Thailand, many of the participants in the program play active roles by taking advantage of (1) experience and skills learned systematically in Japan, (2) ways of working and thinking in accordance with the Murata Philosophy, and (3) not only the Japanese language but communication networks established with business divisions and plants in Japan. There are also individuals who were assigned to positions that had traditionally been held by expats from Japan, gained experience in Japan, and, after returning home, assumed important positions as candidates to succeed expats from Japan.

This system has not only helped motivate and train employees but also contributed to laying the foundation on which Murata's operations across the globe can work together to address management challenges.



For example, in "enhancing stress management," one of the plan's themes, we aim to revise the content from the viewpoint of how we may go about coping with the significant, unprecedented stress caused by COVID-19 and which group may be affected particularly significantly. Specifically, we introduced an online self-care training program for new employees at operational locations with a high percentage of staff working from home. The program provides an opportunity to learn techniques to cope with stressors, ways to take advantage of consultation, and methods of self-care through group work. Going forward, we plan to upgrade the content and methods by measuring the program's impact.

Improvement facilitators playing active roles globally

The improvement facilitator is an internal qualification that recognizes employees who acquire skills required by individuals working in manufacturing workplaces through lectures and in practice and engage in activities to implement improvements. There are about 1,200 improvement facilitators. There are many improvement facilitators in our operations outside of Japan, including local hires and support personnel dispatched from HQ locations.

In addition to on-the-job training held at each operational location, the Takaoka Training Center opened at Toyama Murata Manufacturing Co., Ltd. is equipped with an environment for training programs that combine lectures and hands-on content to support training. Murata employees around the world are participating in training programs and engaging in practices, aiming to become improvement facilitators.

Before improvement facilitators were widely used, specialists were utilized from headquarters to assist improvement activities, but now we are working to establish improvement activities in which things decided by individuals are carried out by them under the philosophy that "people on the ground know affairs on the ground best."

In addition, improvement facilitators have become indispensable for start-up of mass production, transfer of production operations, introduction of smart factories, in addition to improvement activities at many of our manufacturing facilities.

On such occasions, improvement facilitators play the role of communicating what underlies Murata's *monozukuri* (manufacturing) that is not apparent in manuals.

Improvement in work processes cannot be done by an improvement facilitator working alone. The key is how to put experience and knowledge to effective use and get individuals around him involved. They nurture Murata's manufacturing by voluntarily thinking and working with individuals around them and sharing the joy of working together.

Culture of leveraging diverse individual strengths and collaboratively working together

Murata regards diversity and inclusion as accepting and leveraging not only visible diversity such as gender, age and race, but also qualities and strengths such as thoughts, knowledge, experiences, and viewpoints. We are implementing initiatives to develop a culture focused on mutual trust and cooperation.

Promoting philosophy education backed by history

We opened the Murata Innovation Museum a training facility for employees, inside the Nagaoka Division in 2019.

Here, visitors can learn about the background to the Murata Philosophy and passion behind it, the path Murata has followed while treasuring it, and Murata's global expansion. With this facility, we aim to share our management philosophy and help shape and guide the next generation of our workforce by getting to know Murata's history of challenges and looking toward the future.



First step in disseminating philosophy

Last year, we held study meetings of mainly individuals in charge of education and those who are putting, or plan to put, effort into disseminating the philosophy in each department, with an initial purpose of increasing instructors. We expect these individuals will lead efforts to plan and carry out philosophy and history education programs at their respective workplaces. To enable people who cannot directly visit the museum to feel its atmosphere, we have made it possible to view parts of the museum's materials by opening a virtual reality (VR) museum.

Future expectations for Murata Innovation Museum

We plan to use the museum as a place to promote dissemination of the philosophy to a broader audience by incorporating it into job grade-specific training programs, conducting follow-ups for new hires, conducting training for employees in each region, etc.

POINT! Future of business seen through the Murata Philosophy

Murata Innovation Museum has a key role in efforts to promote the dissemination of the Murata Philosophy throughout operations. We have set up a training room adjacent to the museum to hold workshops using what was learned. For example, there is a business division that, in working out medium-term policies, allows staff members to think about future business after learning anew about the Murata Philosophy and the history of Murata. There are individuals with diverse background in the company, including mid-career hires, employees hired through M&A, and assignees from overseas operations. As a result, we have experienced increasing challenges in sharing the passion behind the policy as we have failed to clearly articulate the characteristics unique to Murata, the passion toward the Murata Philosophy that Murata has treasured and shared among employees which perhaps has been taken for granted.

We learn the Murata Philosophy, which underlies Murata's DNA and the company's footsteps that it walked with the philosophy and think about what should be changed and what should be inherited.





## Environment

In recent years, companies have been asked to contribute to the world's efforts in transitioning into a circular use of resources and a decarbonized society in order to address serious environmental issues in different parts of the world. In particular, with climate change, companies are facing not only closer scrutiny but also stronger demand for information disclosure. It has become a major issue for companies to disclose how they grasp and manage risks and opportunities posed by climate change. Murata has set reinforcing responses to climate change and sustainable use of resources as priority issues for the Company to manage and is continuously working towards being able to respond accurately to society's wide-ranging requirements.

### TCFD measures

Murata endorsed recommendations by the TCFD<sup>\*2</sup> established by the FSB<sup>\*1</sup>. We will analyze risks and opportunities brought on by climate change and work to disclose information related to governance and strategies in accordance with the TCFD recommendations.



\*1: Financial Stability Board

\*2: Task Force on Climate-related Financial Disclosures

The followings outlined Murata's efforts in the four thematic areas specified in the TCFD recommendations, namely, governance, strategy, risk management, and metrics and targets.

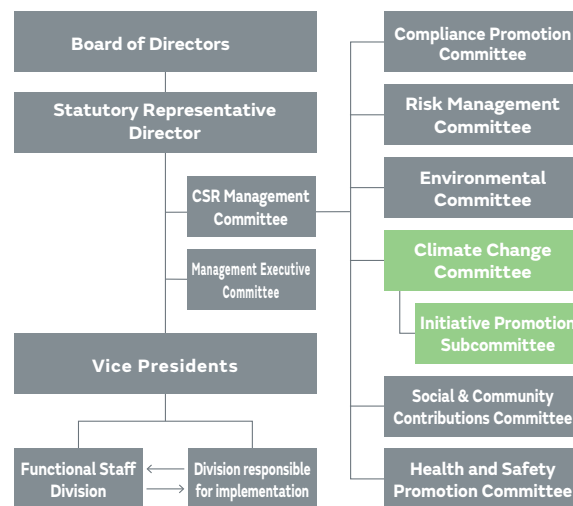
#### Governance

Murata has set up a Climate Change Committee, which meets at least once every six months, to bolster measures for managing risks brought on by climate change across the entire Group. The Climate Change Committee reports to the CSR Management Committee, which is chaired by the President and in turn reports to the Board of Directors. A Vice President in charge and a Director serve as chairperson and vice chairperson, respectively, of the Climate Change Committee, which comprises representatives from related divisions, including production plants, business divisions, and development divisions.

The Climate Change Committee oversees Murata's greenhouse gas ("GHG"<sup>\*3</sup>) emissions and develops systems, including relaxation criteria for capital expenditure on energy conservation, to ensure energy conservation measures are taken throughout the company and to promote the introduction of renewable energy. The Climate Change Committee plans to step up efforts in reducing the environmental impact of Murata's products, particularly in the design phase of production processes.

In 2019, Murata launched an Initiative Promotion Subcommittee, under the Climate Change Committee, comprising managers of relevant divisions, with an aim to reinforce responses to climate change and better serve societal needs.

\*3: Greenhouse gas: gases that cause the greenhouse effect.



#### Strategy

We expect demand for Murata's products to continue growing as more products are computerized; communications equipment acquires more sophisticated functionality and higher speed; and vehicles acquire self-driving functions and are electrified. At the same time, the world faces grave challenges, such as climate change, depletion of resources and increasing income gaps, as highlighted in the international framework of the United Nations' Sustainable Development Goals (SDGs). Murata has identified these issues as material to our business and as a starting point for us to contribute to resolving these societal issues through our business activities.

In assessing the potential impact of climate change on Murata's business, we classify opportunities and risks by type and timeframe, and analyze them under different scenarios.

- Abnormal weather phenomena, including typhoons and torrential rains, are among the physical risks that can affect our manufacturing plants and supply chain. For example, floods and blackouts can completely halt operation of key plants, while abnormal weather can cause disruption in the supply of materials. We will need to take additional measures as abnormal weather events increase amid climate change; however, this is where Murata's technology can be utilized. For example, Murata acquired a lithium-ion battery business in 2017 and subsequently developed all-in-one energy storage batteries and high voltage direct current (HVDC) storage battery units. We believe this new solution, which uses cutting-edge technology, will aid in enhancing resilience of plants affected by blackouts or power shortages.
- The risk of rising energy costs due to factors such as the introduction of carbon tax in regions where Murata operates is a potential transition risk that should be accounted for in financial planning and capital expenditure decisions. The Climate Change Committee is robustly promoting energy-conserving measures and the introduction of renewable energy. This includes efforts to ensure the introduction of energy-conserving measures across the company and a review of the criteria for investment decisions with impact on overall energy conservation. The Climate Change Committee is also discussing a plan to introduce an internal carbon pricing system.<sup>\*4</sup> We believe we can reduce transition risk by continuing these activities.

- We expect demand for Murata's compact and energy-efficient electronic components to increase over the medium- to long-term amid rising attention to climate change and the tightening of related regulations. The reduction of Murata products' carbon footprint is a key agenda for the Climate Change Committee and the Initiative Promotion Subcommittee.

- We conducted analysis under RCP 2.6<sup>\*5</sup> climate scenario to consider our climate change strategies. The analysis revealed that we would not be able to achieve the reduction goal through energy-conservation measures alone. We thus have been introducing solar power systems at plants and purchasing renewable energy-derived power and certificates. The amount of renewable energy we used in fiscal 2019 totaled about 35 million kWh.

In February 2020, Murata committed to setting emissions reduction targets in accordance with the latest standard by the SBT initiative<sup>\*6</sup>. Going forward, we aim to look into other climate scenarios and assess potential impact on our business and assets under these scenarios.

\*4: Carbon pricing system: a measure to attribute prices to CO<sub>2</sub> emissions in a company to give monetary value to reduction in CO<sub>2</sub> emissions and promote reduction in CO<sub>2</sub> emissions by the company.

\*5: Representative Concentration Pathways (RCP) 2.6: a scenario developed under the goal of limiting the future rise of atmospheric temperature below 2°C by 2100.

\*6: Science Based Targets (SBT) initiative: a joint international initiative by CDP, an international non-governmental organization committed to environmental issues, including climate change, United Nations Global Compact (UNGC), World Resources Institute (WRI) and World Wide Fund (WWF). It certifies CO<sub>2</sub> emissions reduction targets set by businesses in line with scientifically sound reduction scenarios, in order to achieve the Paris climate agreement's goal of keeping a global temperature rise below 2°C above pre-industrial levels.

#### Risk management

Murata recognizes the importance of managing risks associated with climate change. We believe this requires working out appropriate strategies to identify latent risk factors in a timely manner and enhance the resilience of our businesses against risks that may materialize. When evaluating Murata's exposure to climate risks, we will:

- Classify risks into physical and transition types
- Consider time horizon in the short-, medium- and long-term
- Keep watch on regulatory changes in countries and regions where we have operations

In assessing potential impact of risks, we take into consideration both the possibility of being affected and potential degree of impact. The Climate Change Committee reports outcomes of the assessment to the CSR Management Committee and works with other committees, including the Board of Directors and the Risk Management Committee, as necessary.

Currently, we collect information on social developments that may lead to risks, such as moves to tighten regulations, at regular intervals through industry groups. Going forward, we plan to launch a program for exchanging views with stakeholders, to strengthen Murata's climate change strategies and information disclosure. We believe this new program will help us improve effective assessment of climate change-related risks and the planning of strategies against them.

#### Metrics and targets

At Murata, we estimate the amount of GHG emissions in accordance with the Greenhouse Gas Protocol, a globally used greenhouse gas calculation standards. We obtain certification on our data from an independent verification body to ensure their reliability.

Our total GHG emissions (Scope 1+2) was 1.47 million t-CO<sub>2</sub>, down about 0.16 million t-CO<sub>2</sub> year on year, in fiscal 2019.

GHG emissions (thousand t-CO <sub>2</sub> /year)	Periods		
	Fiscal 2017	Fiscal 2018	Fiscal 2019
Total emissions	1,400	1,632	1,472
Scope 1 <sup>*1</sup>	251	312	307
Scope 2 <sup>*2</sup>	1,149	1,320	1,165

Our GHG emissions had steadily increased in recent years as we increased production output to keep pace with business expansion as well as M&As and new business activities, but we were able to reverse the upward trend in fiscal 2019 through efforts such as energy conservation activities and introduction of renewable energy throughout the year. Through the activities of the Climate Change Committee, we aim to achieve our reduction target of keeping emissions to 1.40 million t-CO<sub>2</sub> in 2021.

\*1: Scope 1: direct emissions of greenhouse gases from sources owned or managed by a business operator

\*2: Scope 2: Indirect emissions of greenhouse gases associated with use of electricity, steam or heat.



Responses to climate change

Progress of Responses to climate change

Murata has identified the strengthening of climate change measures as material to how we operate our business and as a starting point for us to contribute to this important issue to the wider society. The measures we have taken included introducing unique criteria to assessing capital expenditure regarding energy conservation and actively making energy-conserving capital investment. Our efforts were well-received by external stakeholders, including our rating of the CDP<sup>\*1</sup> climate change survey, the acquisition of a Independent certification on our GHG emissions and active information disclosure. However, our GHG emissions rose sharply in recent years as we increased our production output to keep pace with business expansion. In order to reverse the upward trend and further reduce GHG emissions, we are discussing how to set GHG emissions reduction targets in accordance with the standards of the SBT initiative and adhere to the TCFD recommendations in disclosure of related information. These efforts are led by the Climate Change Committee, which will

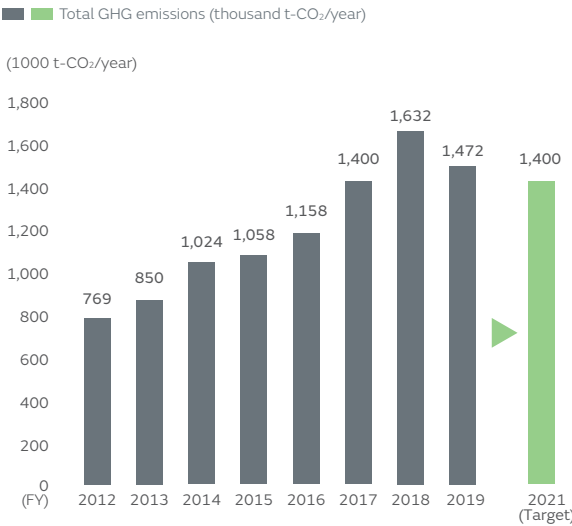
continue to augment our efforts on further reduction of GHG emissions.

We have also started efforts to optimize energy use in production by developing a new energy management system that combines proprietary sensing and IoT technologies, in addition to existing energy conservation efforts centered on capital expenditures.

In addition, we have joined the Japan Climate Leaders' Partnership (JCLP), a Japanese group actively committed to the issue of climate change, to leverage exterbak expertise to accelerate our activities and to consider the possibility of launching a business that can contribute to global efforts to combat climate change in collaboration with other participating companies.

<sup>\*1</sup>: Carbon Disclosure Project. An international nongovernmental organization (NGO) that surveys and evaluates the environmental initiatives of entities such as companies and cities and publishes the results.

Trend of total GHG emissions



Our GHG emissions had steadily increased in recent years as we increased production output to keep pace with business expansion and due to M&As and new business activities, but we were able to reverse the upward trend in fiscal 2019 through efforts such as energy-conservation activities and introduction of renewable energy throughout the year. Murata's total GHG emissions was 1.47 million t-CO<sub>2</sub> in fiscal 2019, down about 0.16 million t-CO<sub>2</sub> year on year.

We will consider a variety of measures to help ensure that we achieve the target of keeping emissions to 1.4 million t-CO<sub>2</sub> in 2021. These measures include not just energy conservation but also the use of renewable energy and carbon pricing systems for the entire company, including new plants acquired through M&A.

Independent certification of climate change measures<sup>\*2</sup>

Murata believes that managing GHG emissions using the right data and disclosing highly reliable data is the first step towards tackling climate change. We obtained Independent certification on our GHG emissions every year and certification on the amount of our renewable energy-derived power as Murata is actively introducing solar power.

<sup>\*2</sup>: For further information on Independent certification, visit [https://corporate.murata.com/en-global/csr/environment\\_murata/climate\\_change](https://corporate.murata.com/en-global/csr/environment_murata/climate_change)

Scope	Type of greenhouse gas	Emissions [ton-CO <sub>2</sub> ] (fiscal 2019)
Scope1	CO <sub>2</sub>	171,718
	CH <sub>4</sub>	0
	N <sub>2</sub> O	0
	HFCs	1,314
	PFCs	133,907
	SF <sub>6</sub>	0
	Other	0
Scope2	CO <sub>2</sub> (Due to power)	1,165,203

Scope	Category	Description	Actual emissions (t-CO <sub>2</sub> ) (fiscal 2019)
Scope3	Category 1	Purchased goods and services	3,262,165
	Category 2	Capital goods	692,734
	Category 3	Fuel- and energy-related activities (not included in Scope 1 or 2)	178,261
	Category 4	Transportation and distribution (upstream)	173,679
	Category 5	Waste generated in operations	20,397
	Category 6	Business travel	9,634
	Category 7	Employee commuting	33,336
	Category 8	Leased assets (upstream)	Outside scope
	Category 9	Transportation and distribution (downstream)	
	Category 10	Processing of sold products	
	Category 11	Use of sold products	
	Category 12	End-of-life treatment of sold products	316
	Category 13	Leased assets (downstream)	Outside scope
	Category 14	Franchises	
	Category 15	Investments	
		Other	

Introduction of renewable energy

At Murata, we are working to expand the use of renewable energy for power consumed in our business operations as part of our efforts to reinforce climate change measures. As a global company, we have actively introduced solar power in Japan, China and other locations.

In fiscal 2019, consumption of power derived from renewable energy, including electricity from solar power equipment, totaled about 35 million kWh, contributing to the avoidance of about 20,000 t-CO<sub>2</sub>. We will continue to evaluate the feasibility of introducing renewable energy at both Japan and other countries operations, to help reduce environmental load.

As an example of our efforts to introduce renewable energy in fiscal 2019, we built one of Japan's largest parking lot-style mega solar systems on a company parking lot with a capacity for 1,200 vehicles owned by Okayama Murata Manufacturing Co., Ltd. (located in Setouchi City, Okayama Prefecture); we started generating power in March 2020. This system increases energy generation efficiency per unit of installed area of solar panels by using double-sided generation panels instead of the more common single-sided panels, enabling light to

be absorbed on the back surface in addition to direct sunlight hitting the front. It, therefore, can generate power from light reflected from parked cars and the ground surface as well. We estimate that energy generated by this system is equivalent to average annual power consumption of 600 households, reducing 1,698 tons of CO<sub>2</sub> emissions in a year.

In 2021, we plan to add double-sided solar panels to a parking lot area for 500-car parking lot.



Parking lot-style mega solar system at Okayama Murata Manufacturing Co., Ltd.

ACTIVITY TOPICS

Aiming to correctly serve the needs of society

The breadth of what businesses are required to do for climate change has expanded. Murata set up the Initiative Promotion Subcommittee, a body under the Climate Change Committee, to respond to these requirements and drive our competitive edge in the industry. The Subcommittee's role is to collect information on social trends, discuss and implement measures, as well as strengthen collaboration with

relevant departments. It regularly reports to the Climate Change Committee.

Recently, the Subcommittee has been working with relevant departments to set targets in accordance with the criteria of the SBT initiative, acquire certification to ascertain the reliability of our emissions data, and enhance information disclosure in accordance with the TCFD framework.

Use of Sustainable Resources

Resource recycling initiatives

In recent years, there has been a call for efforts on Use of Sustainable Resources regarding plastics in response to tighter control on import of waste in China and other Asian countries and environmental issues, such as marine contamination. In Japan, especially, the amount of waste that is buried in the ground, instead of being recycled, has increased

Waste management

Murata’s waste management processes are based on “compliance,” “control of the production of waste,” and “zero emissions” as fundamental principles.

To help achieve the medium-term target for fiscal 2019 to 2021 of improving the amount of waste per production output by 7% from the fiscal 2016-2018 average, we worked in fiscal 2019 toward a single-year target of keeping the amount of waste no larger than the basic unit value in the previous fiscal year. The amount of waste increased in fiscal 2016 to fiscal 2018 due mainly to increased production output, but we were able to significantly achieve the single-year target of keeping the amount no larger than the basic unit value in the previous fiscal year, as a result of reduction measures taken in fiscal 2019, including the introduction of an in-house waste liquid processing facility and concentrating of plating waste liquid.

We are also working to put resources to effective use by, for example, reusing or recycling

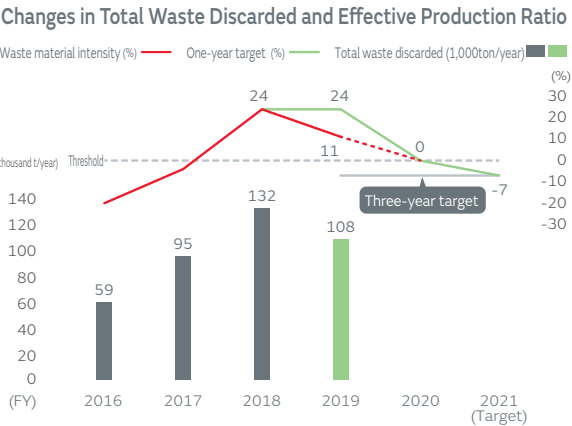
Water resource management

Murata is promoting effective use of water resources used in business activity. We take measures for water risk that can affect our corporate activity.

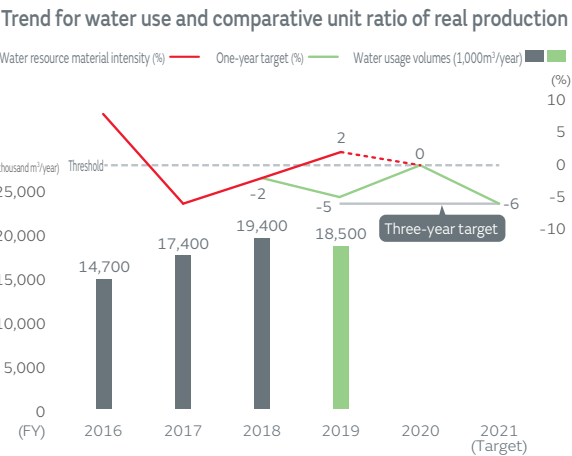
To help achieve the medium-term target for fiscal 2019 to fiscal 2021 of reducing water usage per production output by 6% from the fiscal 2016fiscal 2018 average in fiscal 2021, we worked toward the target of improving the usage by 5% from the fiscal 2016fiscal 2018 average basic unit in fiscal 2019, but the result was a 2% increase. This is attributed to a delay in the start of operation of equipment for processing wastewater to be reused in production processes, which was planned to be introduced at Toyama Murata Manufacturing Co., Ltd. in fiscal 2019. Another factor of deteriorated basic unit was that infrastructure-related water, such as cooling water used in cooling towers, represented about half the total water usage while production output dropped. This was due to deterioration in the basic unit as a result of a smaller denominator in relative terms, as water consumption did not decrease because conditions such as airconditioning, one of production conditions, remained constant whereas the production output, which is the denominator used in calculating a basic unit, decreased. In

sharply due to China’s tighter control on import of waste. Under such circumstances, Murata is studying ways to recycle waste into materials with a higher quality than typical levels by regularly exchanging information with materials makers in order to maintain “zero emissions.”

some packaging materials. We expect to be able to achieve the medium-term goal for fiscal 2019 to fiscal 2021, driven by the introduction of another in-house waste liquid processing facility and reduction in defect rates.



particular, an increase in infrastructure demand for air-conditioning use, etc. in excess of contribution to production increases, which was due partly to construction of new buildings at plants in fiscal 2019, also led to a deteriorated basic unit, as described above. We plan to achieve the medium-term target for fiscal 2019 to fiscal 2021 by reviewing measures to reduce water usage at plants in fiscal 2020.



Pollution Prevention and Chemical Substance Management

Efforts to prevent pollution

In fiscal 2019, we set “Pollution Prevention” as a key issue (materiality) in relation to issues facing society.

Murata recognizes contamination by chemical substances as a material environmental risk, and has been working to prevent it. In particular, regarding equipment related to storage or intra-plant transportation of liquid chemical substances, such as fuels, organic solvents, acids, alkaline fresh liquids and waste liquids, we are implementing measures by setting four voluntary standards, to prevent accidents.

There were no major environmental accidents or violation of environmental laws and regulations in fiscal 2019.

Voluntary standards for prevention of environmental accidents and pollution (equipment-related)

- **Prohibition of underground storage tanks**  
Storage tanks for liquid chemical substances and raw water tanks for wastewater processing must be installed above ground, in principle. If there is no choice but to install a tank underground, it must be double-layered.
- **Permeation barrier coatings**  
Use anti-seepage coating or place stainless steel pans in places where liquid chemical substances are handled.
- **Prohibition of underground piping**  
Piping for carrying liquid chemical substances and wastewater from production processes must be set up aerial.
- **Emergency containment structures**  
Operational areas in which new liquids are received from tanker trucks, etc. or waste liquids are discharged will be provided with a structure that allows immediate containment of any leakage outside the area if an accident occurs.

Chemical Substance Management

In its pursuit of sustainable society, Murata strives to provide products that have low impacts on the global environment.

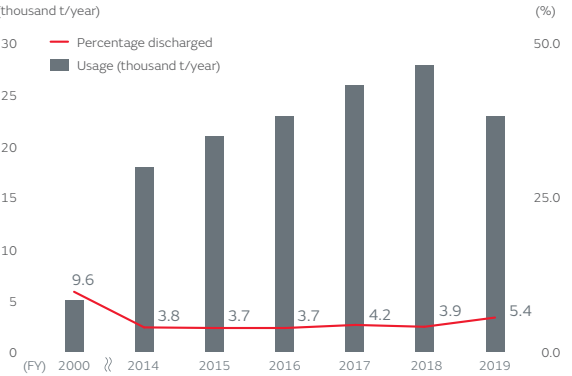
In addition to efforts to comply with laws and regulations such as the RoHS Directive and the REACH regulations, we have established voluntary standards that take account of global trends regarding environmentally hazardous substances and customer requests, and actively work to comply with reduction requirements and bans on such substances in our products under the management structure as illustrated in the right figure. Furthermore, Murata has been taking proactive actions to address any revisions in laws related to environmentally hazardous substances.

The current RoHS restricts use of ten types of chemical substances in electronic or electric equipment sold in European Union countries. Of these, restrictions on the use of four specified types of phthalic esters were added in the July 22, 2019 amendment. In July 2017, Murata banned the use of these phthalic esters in new products to be developed, in advance of the enforcement of the

Control of emissions of air polluting substances

We take voluntary measures to control discharge of volatile organic compounds (VOCs), an air pollutant. Worksites that handle large amounts of VOCs have regenerative thermal oxidizers (RTOs) installed to treat exhaust gas. Usage of VOCs has increased as our production output grew, but the voluntary measure has eliminated 95% our usage.

Trends in volume of VOC use and rate of discharge into the atmosphere (Japan)



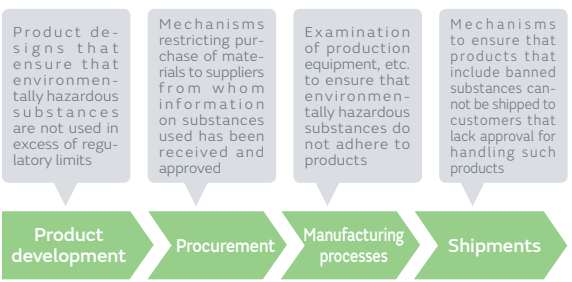
Soil and groundwater contamination surveys and decontamination

We investigate contamination of soil and underground water found to have been caused by our past business activity as early as possible. We use the latest purification technology and take active measures, aiming to complete purification processes as early as possible.

amended RoHS Directive. To prevent contamination through contact, we also included packing materials and tools that come into contact with products in production or logistics processes in the scope of the control.

Accordingly, Murata places top priority on the safety of society, local communities and customers in reducing environmentally hazardous substances.

Management of environmentally hazardous substances at Murata



Supply chain  
management

To remain a company needed in its society, Murata respects relations with not only customers but also suppliers and members of local communities and works to strengthen our partnership with them. We will work to solidify relationships of trust by communicating Murata's views to companies across the supply chain.

## Promoting CSR approach to procurement with a focus on partnership with suppliers

With honesty, fairness, and transparency as the guiding principles of its procurement activities, Murata has always sought to build partnerships with its suppliers, working to realize mutually satisfying and prosperous relationships based on the Procurement Policy<sup>\*1</sup>. Going forward, we will seek to further enhance this principle in order to realize prosperity with all of our stakeholders, without changing these ideas. We will actively work to reduce supply chain CSR risks in relation to procurement, such as prohibition of child labor, forced labor, and gender or religious discrimination, and responsible procurement of minerals.

Murata is currently focusing efforts on the following three areas in its CSR procurement:

- (i) We have formulated a Murata CSR Charter, which rests on the foundation of the Murata Philosophy, and, based on this, a statement of "Our Expectations of Suppliers"<sup>\*2</sup>, and we request that our suppliers comply with both.
- (ii) When we establish an account with a supplier, we conclude a CSR Agreement, and we request the supplier to agree to pursue their business activities in conformity with the Code of Conduct of the Responsible Business Alliance (RBA).
- (iii) Since 2017, we have been employing a "CSR Compliance Checklist." In addition to enabling our suppliers to self-assess their level of compliance with our CSR requirements, these checklists also make issues visible. By sharing the results of CSR compliance checks with Murata, our suppliers are able to engage in two-way consultations regarding issues and corrective measures, enabling them to realize more efficient and fundamental solutions to any issues that have been discovered.

We periodically conduct assessments based on these checklists each year. In the last fiscal year, compliance checks were carried out on about 110 key suppliers, with 100% of them submitting their self-assessment results and no critical risk identified at the time of the survey.

We believe that in order to effectively put these initiatives into practice, it is important for us to work

together with our suppliers based on the partnerships that we have built up with them rather than simply making unilateral demands on our suppliers.

In recent years, we have been required to expand the scope of these CSR activities from companies with which we are directly involved to our entire supply chain. Based firmly on the spirit of the Murata Philosophy, we will continue with our efforts to realize mutually satisfying and prosperous relationships with our suppliers, working to build long-lasting trust and solid partnerships, expanding the scope and increasing the sophistication of our CSR procurement as we strive to realize a supply chain that all of our stakeholders can have confidence in.

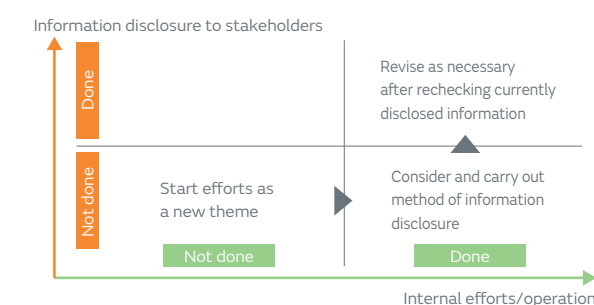
In addition, Murata has been working on a company-wide project based on materiality (key issues) originating from social issues on the belief that we should incorporate nonfinancial issues as represented by CSR and ESG into management strategies. From the procurement viewpoint, we are pursuing this project with an aim to expand the applicable scope of key issues to the entire supply chain. Furthermore, we have adopted the slogan of "realizing CSR procurement that takes into account ESG" as a medium-term policy for procurement divisions and will remain committed to carrying out this policy by incorporating issues from not only our viewpoint but also that of stakeholders.

Specifically, we have set about 30 issues based on survey points of ESG indices and inquiries from shareholders/investors and customers and clarified their positioning by using a matrix created from the two viewpoints of whether internal efforts are carried out and whether information is disclosed to stakeholders. Furthermore, we have worked out promotion plans by classifying ways to work on the issues into three categories of "Start efforts as a new theme," "Consider and carry out method of information disclosure," and "Revise as necessary after rechecking currently disclosed information," based on the matrix. In the current fiscal year, we have positioned creation of a code of conduct for suppliers and execution of CSR audits on suppliers as particular areas of focus and are working on them.

We will work to disclose information to shareholders, investors, and other stakeholders by working to resolve issues in collaboration with suppliers in accordance with plans and regularly revising the matrix according to progress.

\*1: Procurement Policy  
<https://corporate.murata.com/en-global/about/procurement/policy>  
 \*2: Our Expectations of Suppliers  
<https://corporate.murata.com/en-global/about/procurement/expectations>

## Approach to issues



## Promoting "Responsible Minerals Procurement"

Serious violations of human rights have become a social problem in mineral procurement, and interests in responsible mineral procurement are rising.

Murata regards the respect of human rights as part of our corporate social responsibility (CSR) efforts and conducts surveys and provides information in compliance with the industry standards based on our responsive policies. Furthermore, as an internal framework, the CSR Management Committee, chaired by the President, shares information with top management on activities, progress, and any issues regarding responsible mineral procurement, and makes any resulting decisions.

Murata has been working to realize sustainable procurement in line with human rights due diligence, aiming to address serious violation of human rights in supply chains, such as forced labor and child labor under harsh working environments. For example, we have revised policies to expand the scope of risk assessment on responsible minerals procurement to include risks covered in OECD Annex II and the regional scope risk assessment to the conflict-affected and high-risk areas (CAHRAs), reformed the structure of regular assessment of minerals supply chain risks on suppliers, and opened a consultation desk on potential issues in minerals procurement.

In response to requests from our customers for our supply chain information, we provide information using the Conflict Minerals Reporting Template (CMRT) issued by the Responsible Minerals Initiative (RMI). Last year we started to provide information on cobalt using the Cobalt Reporting Template (CRT). We also regularly conduct surveys on our suppliers to keep the information updated. Through 3TG supply chain surveys, we have confirmed that products including multilayer ceramic capacitors, which are our mainstay, inductors, thermistors and piezoelectric components are conflict free. In terms of lithium ion batteries, which

contain large amounts of cobalt, we have been actively committed to efforts to ensure our products are conflict free, which has included acquisition of responses from about 80% of our suppliers and encouraging smelters among them that were yet to take part in the responsible minerals assurance process (RMAP) to undergo audits. In order to ensure the safety of our minerals supply chains into the future, we will continue surveys and promote initiatives that can lead to mitigating human rights and other risks in supply chains on an ongoing basis by assessing reported information under internal standards aligned with the OECD Due Diligence Guidance (please see p. 67) and working with suppliers to achieve improvements.

Murata is also a member company of the Responsible Minerals Trade Working Group of the Japan Electronics and Information Technology Industries Association (JEITA), and of the RMI. By joining organizations that take the initiative in the industry, we are proactively working on issues that are difficult to solve as an individual company, such as creating industry-wide frameworks. We also participate in the JEITA-sponsored Responsible Minerals Sourcing Inquiry Briefings as a lecturer and have engaged in an activity to encourage smelters and refiners that are yet to participate in the RMAP to undergo audits as a member of JEITA's smelter-supporting team.

Going forward, Murata will continue to actively work to expand the scope of minerals to include mica, lithium, and graphite and address increases in risks. Furthermore, we will work to ensure transparency of supply chains by working closely with customers, suppliers, and other companies in the industry and remain committed to CSR procurement that takes account of human rights and other risks.

By pursuing and realizing these activities, we will work to ensure safety and peace of mind for our stakeholders.



## Efforts in accordance with five steps of OECD Due Diligence Guidance

Murata is working on the initiatives outlined below in accordance with the OECD Due Diligence Guidance, in order to mitigate Annex II risks, such as human rights violations in CAHRAs, in relation to 3TG, cobalt, etc. contained in our products.

### Five steps of the OECD Due Diligence Guidance

Step 1	Establish strong management systems
Step 2	Identify and assess risks in the supply chain
Step 3	Design and implement a strategy to respond to identified risks
Step 4	Carry out independent third-party audits of due diligence practices at smelters/refiners
Step 5	Report annually on supply chain due diligence

#### Step 1 Establish strong management systems

- Murata has established “Responsible mineral procurement policy” and developed a framework to manage Annex II risks in CAHRAs in relation to specified minerals included in our products.
- We make decisions regarding details and issues in responsible minerals procurement by regularly sharing information with the top management through the CSR Management Committee.
- We release our policy for this endeavor publicly on our website, etc. and obtain agreement on our efforts based on Murata’s policy from our business partners.
- In order to identify smelters/refiners in supply chains, we conduct surveys on Japan and other countries suppliers in accordance with industry standards (RMAP).
- We annually send to suppliers an invitation to the JEITA-sponsored Responsible Minerals Sourcing Inquiry Briefing. They participate in study sessions on latest industry developments and current issues.

#### Step 2 Identify and assess risks in the supply chain

- We conduct surveys on smelters and refiners using RMI’s CMRT and CRT at regular intervals.
- We request our suppliers to use smelters or refiners certified under audit programs by independent entities.
- In surveys, we check 3TG and cobalt content and country of origin, and identify smelters or refiners.
- We conduct risk assessments on information on smelters or refiners provided by suppliers and management frameworks regarding responsible minerals procurement in accordance with our internal standards.
- We ascertain whether there is any information that can lead to risks regarding identified smelters or refiners, using RMI audit reports, websites, etc., as necessary.

#### Step 3 Design and implement a strategy to respond to identified risks

- We ask our suppliers to engage in efforts to mitigate human rights and conflict risks in accordance with Murata’s responsive policies for responsible minerals procurement. If a supplier uses high-risk smelters or refiners, we provide information on the risks and discuss with the supplier appropriate measures to improve the situation.
- We consider terminating agreements with a supplier if it is clearly found to have a relationship with companies that have Annex II risks, including relationships with armed groups and violations of human rights.

#### Step 4 Carry out independent third-party audit of due diligence practices at smelters/refiners

- Murata, as a member of the RMI and JEITA’s Responsible Minerals Trade Working Group, addresses issues that are difficult to solve as an individual company, by joining forces with industry peers. For example, we provide lecturers for briefings organized by an industry group and encourage smelters and refiners that have yet to participate in RMAP to undergo audits.

#### Step 5 Report annually on supply chain due diligence

- We post reports on Murata’s activities publicly for responsible minerals procurement on our website and integrated reports. Responsibility to and actions concerning suppliers  
<https://corporate.murata.com/en-global/csr/people/suppliers>

### Responsible mineral procurement policy

- 1 Working within the framework of CSR procurement activities based on the Murata Manufacturing CSR Charter.
- 2 Building a management framework for specified minerals contained in our products in accordance with the OECD Due Diligence Guidance.
- 3 Using the above mechanisms, we continue our efforts to use low-risk components and materials to promote responsible procurement of minerals used by Murata, so as to prevent financing of armed groups through our minerals supply chain including gold, tin, tantalum, tungsten, and cobalt, and to protect human rights and promote fair trade.  
Also, we refuse to conduct procurement from companies that are clearly involved in conflicts or human rights violations.
- 4 Conducting sensible and efficient procurement in a sincere manner, based on industry standards and in close collaboration with industry organizations.
- 5 Sharing information regarding minerals obtained through our supply chains with partner companies as quickly as possible.

Murata desires to “be a company whose presence in local communities is a source of pride and joy to those communities.” Making effective use of its resources (employees, expertise, facilities and funds), Murata constantly makes contributions to society and local communities.

### Working toward the realization of harmony among people, organization, and society

Murata has made efforts to build trusting relationships with the people of the region while gaining their understanding toward Murata’s business and initiatives. We are grateful that it has become an invisible and important asset, which has enabled us to continue our business activities until today. Under the Mid-term Direction 2021, we have identified the achievement of “harmony among people, organization, and society” as one of the issues for us to realize healthy growth, and we

continue to engage in activities that can lead to the resolution of the issues of the region in which we conduct business operations. Specifically, we will engage in social and regional contribution activities that place even greater importance on our relationships with a wide range of stakeholders including local residents, mainly focusing on activities to support for the development of the next generation, local community support, environmental protection, academic support and cultural support.

### Introduction of examples of activities conducted in FY2019

#### Supporting the programming education through the visiting class to experience programming “Control the Teacher Robot!!”

Murata has been holding visiting classes since fiscal 2006, with the aim of having children enjoy and take an interest in engineering jobs that will support monozukuri (manufacturing). In fiscal 2019, we began to offer visiting classes that provide education through experience, which will help students “acquire a programming mindset ability to think logically,” which is a performance goal set in the government curriculum guidelines for elementary schools. The program was implemented at a total of eight elementary schools in Tokyo, Kyoto, Shimane, and Okayama and attended by a total of 411 students. We will gradually expand our efforts in Japan in coordination with the education sector.



#### Supporting scientific and technological innovation activities of Chinese university students

Supporting scientific and technological innovation activities of Chinese university students  
The three Chinese companies, Wuxi Murata Electronics Co., Ltd., Murata Energy Device Wuxi Co., Ltd., and Shenzhen Murata Technology Co., Ltd. held the Murata Cup 2019, a contest for science- and technology-related ideas and works, for the first time at Nanjing University of Science and Technology and Xi’an University of Science and Technology. We supported the scientific and technological innovation activities conducted by university students that China is promoting as part of its policy through a performance conducted by the Murata Cheerleaders and a lecture given by an engineer titled “the development of a robot by Murata Manufacturing Co., Ltd.”

#### Supporting the activities of a foundation that provides support to local children in the UK

Employees at the UK Branch of Murata Electronics Europe B.V. helped the refurbishment of a musical academy located in Aldershot (sponsored by the Starburst Foundation), a place where local children with special needs can have a rich experience through dancing, singing, and acting.



#### Academic support

The Murata Science Foundation was established in 1985 to contribute to the advancement of science and technology through academic promotion. The Foundation provides grants to research activities contributing to the improvement and development of science and technology and the solutions to various problems in the humanities and social sciences and encourages international exchange among researchers. In fiscal 2017, the Foundation began providing grants to overseas universities.

During fiscal 2019, the Foundation provided a total of ¥360 million in grants in Japan, comprising 141 research project grants, 35 study group grants, and 94 cases of dispatch assistance outside of Japan, and provided a total of 10 million yen outside of Japan for 20 research project grants. The cumulative grants since the establishment of the Foundation amount to ¥3.90 billion.

Visit our website to learn more about our other activities. ▶ <https://corporate.murata.com/en-global/csr/people/society>



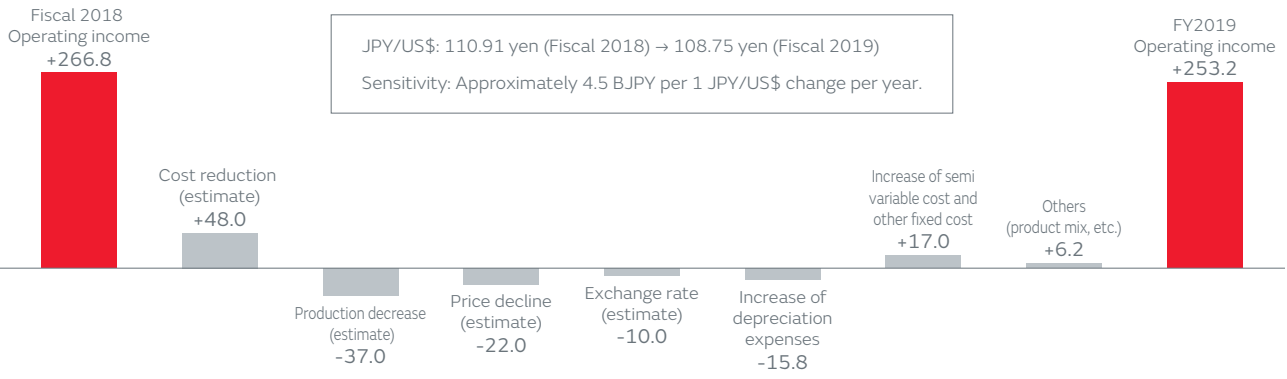
Analysis of operating results and financial situation

Review of fiscal 2019

In fiscal 2019, the demand for products related to 5G technology (5th Generation Mobile Communication System) has increased; however, the demand for components of wide-ranging uses indicated weakness, due partly to the adjustment of electronic equipment production and electronic component inventory. As for electronic components used for car electronics, while the number of automobiles sold decreased, the upward trend in the number of components installed per end product continued thanks to improvement in vehicle environmental friendliness and safety. Given such a background, net sales for fiscal 2019 decreased by 2.6% year on year to 1,534 billion yen, as a result of a decrease in the sales of multilayer resin substrates, lithium ion batteries and multilayer ceramic capacitors for smartphones, despite an increase in the sales of multilayer ceramic capacitors used for cellular phone base stations and car electronics.

Operating income was 253.2 billion yen, down 5.1%, income before income taxes was 254 billion yen, down 5.0%, and net income attributable to shareholders of the company was 183 billion yen, down 11.6% from the previous fiscal year. The decrease in profit was mainly caused by — despite the contribution to income made by cost reduction activities — negative factors including a drop in operating rates, a decrease in product prices, a rise in depreciation and amortization, and stoppages at our overseas production facilities due to the spread of COVID-19. ROIC (Return on Invested Capital) (pre-tax) is established as a priority management index in “Midterm Direction 2021.” ROIC (pre-tax) for fiscal 2019 was 16.1%, down 2.8 percentage points from the previous fiscal year. The decrease in ROIC (pre-tax) was due to a decrease in operating income, in addition to an increase in invested capital, with capital expenditures to expand buildings and production capacity in anticipation of higher demand for electronic components in the medium- to long-term.

Actual increases and decreases in operating income (Billion yen)



Sales by product (Billion yen)				
	FY2018 results	FY2019 results	Increase/decrease	Reasons for increase/decrease
Capacitors	574.2	559.4	-14.8 (-2.6%)	Sales of multilayer ceramic capacitors increased for uses in cellular phone base stations, driven by moves to introduce 5G systems and for uses in car electronics, but declined year on year overall due to weakness in demand for wide-ranging uses, affected by the adjustment of electronic equipment production and electronic component inventory.
Piezoelectric components	138.6	129.3	-9.3 (-6.7%)	Net sales dropped year on year as sales of SAW filters for smartphones fell due to falling prices.
Other components	392.2	363.0	-29.2 (-7.4%)	Although sales of inductors (coils) for smartphones and PCs increased, sales of lithium ion batteries for smartphones and power tools were sluggish, resulting in a year-on-year decline in sales.
Modules	466.7	478.6	+11.9 (+2.6%)	Sales increased year on year as RF modules for smartphones significantly grew despite a decrease in multilayer resin substrates and connectivity modules for high-end smartphones.

Sales by application (Billion yen)

	FY2018 results	FY2019 results	Increase/decrease	Reasons for increase/decrease
Audiovisual	69.5	61.0	-8.5 (-12.2%)	Sales decreased compared to the previous fiscal year due to a decline in sales of connectivity modules and lithium ion batteries for digital cameras.
Communication	760.7	792.2	+31.5 (+4.1%)	Sales of multilayer ceramic capacitors for base station increased substantially. In addition, sales increased compared to the previous fiscal year due to an increase in sales of RF modules despite a decline in sales of multilayer resin substrates, lithium ion batteries and multilayer ceramic capacitors for smartphones.
Computers and peripherals	249.2	230.5	-18.7 (-7.5%)	Sales decreased compared to the previous fiscal year due to a decline in sales of lithium ion batteries and multilayer resin substrates for tablet PCs and sales of power supply modules for printers.
Automotive Electronics	257.1	263.5	+6.4 (+2.5%)	Sales increased compared to the previous fiscal year due to an increase in sales of multilayer ceramic capacitors for automobiles as the growing trend in the number of components continued, despite a decrease in the number of automobiles sold.
Home appliance and others	235.2	183.1	-52.1 (-22.1%)	Sales decreased compared to the previous fiscal year due to sluggish demand for multilayer ceramic capacitors owing to the effects of the inventory adjustments in electronic components, and sluggish sales of lithium ion batteries for power tools.

(Note) The above figures are based on our estimates.

Overview of Financial Conditions (Billion yen)

	FY2018 results	FY2019 results	Increase/decrease	Reasons for increase/decrease
Assets	2,048.9	2,250.2	+201.3 (+9.8%)	Our total assets increased from the end of the previous fiscal year due to an increase in property, plant and equipment, due primarily to investment in buildings and investment aimed at boosting production capacity primarily for multilayer ceramic capacitors.
Liabilities	444.4	555.4	+111.1 (+25.0%)	Our total liabilities increased from the end of the previous fiscal year mainly due to the issuance of corporate bonds to raise funds for capital expenditures in anticipation of higher demand for electronic components in the medium- to long-term and the recording of the operating lease liabilities.
Equity	1,604.5	1,694.8	+90.3 (+5.6%)	Equity increased from the end of the previous fiscal year, mainly due to an increase in retained earnings. Shareholders' equity ratio decreased by 3.0 percentage points to 75.3%.

Cash Flows (Billion yen)

	FY2018 results	FY2019 results	Increase/decrease	Reasons for increase/decrease
Net cash provided by operating activities	279.8	350.3	+70.5 (+25.2%)	Net cash provided by operating activities was 350.3 billion yen. Negative factors — an increase of 14.5 billion yen in trade notes and accounts payable and a decrease of 9.6 billion yen in income taxes payable — were more than offset by net income as a source of cash flow of 183 billion yen and depreciation and amortization of 140.3 billion yen.
Net cash used in investing activities	-303.7	-284.4	+19.3 (+6.4%)	Net cash used in investing activities was 284.4 billion yen. There were cash outflows due to 285.9 billion yen in payment for purchases of property capital expenditures, mainly for buildings and investments aimed at boosting production capacity, and 27 billion yen in payment for purchases of marketable securities, investments and other.
Net cash used in financing activities	51.5	17.7	-33.9 (-65.8%)	Net cash provided by financing activities was a positive 17.7 billion yen. Dividend payments of 59.9 billion yen were more than offset by increases in the issuance of corporate bonds to fund capital expenditures and short-term borrowing.

Overview of Segment Information (Billion yen)

		FY2018 results	FY2019 results	Increase/decrease	Reasons for increase/decrease
Components	Net sales	1,140.0	1,098.3	-41.7 (-3.7%)	Net sales and segment income both decreased due to a decline in sales of multilayer ceramic capacitors, lithium ion batteries and SAW filters as well as an impairment loss on lithium ion batteries that was recorded in the second quarter.
	Segment income	312.1	249.7	-62.5 (-20.0%)	
Modules	Net sales	466.7	478.6	+11.9 (+2.6%)	Net sales and segment income both increased due to an increase in sales of products such as RF modules, despite a decline in sales of multilayer resin substrates and connectivity modules.
	Segment income	14.5	49.4	+35.0 (+241.6%)	
Others	Net sales	102.4	59.2	-43.2 (-42.2%)	—
	Segment income	10.6	5.7	-4.9 (-46.0%)	
Corporate and eliminations	Net sales	-134.1	-102.1	+31.9 (—)	—
	Corporate expenses	-70.4	-51.6	+18.8 (—)	
Consolidated	Net sales	1,575.0	1,534.0	-41.0 (-2.6%)	—
	Operating income	266.8	253.2	-13.6 (-5.1%)	





## Consolidated Balance Sheets

(Millions of yen)

	End of FY2018 March 31, 2019	End of FY2019 March 31, 2020
<b>Assets</b>		
Current assets	933,941	1,027,227
Cash	181,956	239,656
Short-term investments	69,781	106,950
Marketable securities	27,364	29,554
Trade notes receivable	4,053	100
Trade accounts receivable	271,566	281,958
Allowance for doubtful notes and accounts	(1,510)	(1,026)
Inventories	349,315	334,408
Prepaid expenses and other	31,416	35,627
Property, plant and equipment	856,453	1,002,210
Land	68,133	72,707
Buildings	536,781	633,041
Machinery and equipment	1,250,288	1,310,534
Construction in progress	109,057	133,148
Accumulated depreciation	(1,107,806)	(1,182,318)
Operating lease right-of-use assets	—	35,098
Investments and other assets	258,499	220,793
Investments	66,697	49,059
Intangible assets	47,526	38,576
Goodwill	78,389	73,032
Deferred income taxes	42,065	42,220
Other	23,822	17,906
<b>Total assets</b>	<b>2,048,893</b>	<b>2,250,230</b>
<b>Liabilities</b>		
Current liabilities	259,771	284,300
Short-term borrowing	23,007	51,000
Trade accounts payable	75,491	79,330
Accrued payroll and bonuses	43,485	45,374
Income taxes payable	38,315	28,294
Accrued expenses and other	79,473	73,611
Current operating lease liabilities	—	6,691
Long-term liabilities	184,582	271,123
Bonds	99,813	149,764
Long-term debt	594	207
Termination and retirement benefits	75,789	84,602
Deferred income taxes	6,673	5,644
Noncurrent operating lease liabilities	—	28,408
Other	1,713	2,498
<b>Total liabilities</b>	<b>444,353</b>	<b>555,423</b>
<b>Equity</b>		
Murata Corporation's Shareholders' equity	1,603,976	1,694,104
Common stock	69,444	69,444
Capital surplus	120,702	120,775
Retained earnings	1,493,697	1,616,783
Accumulated other comprehensive loss	(26,273)	(59,335)
Unrealized gains on securities	46	(61)
Pension liability adjustments	(21,574)	(25,999)
Foreign currency translation adjustments	(4,745)	(33,275)
Treasury stock, at cost	(53,594)	(53,563)
Noncontrolling interests	564	703
<b>Total equity</b>	<b>1,604,540</b>	<b>1,694,807</b>
<b>Total liabilities and equity</b>	<b>2,048,893</b>	<b>2,250,230</b>



## Consolidated Statements of Income

(Millions of yen)

	FY2018 April 1, 2018 - March 31, 2019	FY2019 April 1, 2019 - March 31, 2020
Net sales	1,575,026	1,534,045
Cost of sales	974,808	952,583
Selling, general and administrative	231,822	229,587
Research and development	101,589	102,486
Impairment losses on goodwill	—	3,934
Other operating income	—	7,792
<b>Operating income</b>	<b>266,807</b>	<b>253,247</b>
Interest and dividend income	3,519	4,017
Interest expense	(422)	(512)
Foreign currency exchange loss	(2,401)	(3,614)
Other - net	(187)	894
<b>Income before income taxes</b>	<b>267,316</b>	<b>254,032</b>
Income taxes	60,357	71,050
<Current income tax>	<65,036>	<69,127>
<Deferred income tax>	<(4,679)>	<1,923>
<b>Net income</b>	<b>206,959</b>	<b>182,982</b>
Less: Net income (loss) attributable to noncontrolling interests	29	(30)
<b>Net income attributable to shareholders of the company</b>	<b>206,930</b>	<b>183,012</b>



## Consolidated Statements of Comprehensive Income

(Millions of yen)

	FY2018 April 1, 2018 - March 31, 2019	FY2019 April 1, 2019 - March 31, 2020
Net income	206,959	182,982
Other comprehensive income (loss), net of tax		
Unrealized gains on securities	320	(107)
Pension liability adjustments	(4,579)	(4,425)
Foreign currency translation adjustments	1,874	(28,588)
<b>Other comprehensive income (loss)</b>	<b>(2,385)</b>	<b>(33,120)</b>
<b>Comprehensive income</b>	<b>204,574</b>	<b>149,862</b>
Less: Comprehensive income (loss) attributable to noncontrolling interests	15	(88)
<b>Comprehensive income attributable to Murata Corporation</b>	<b>204,559</b>	<b>149,950</b>



Consolidated Statements of Cash Flows

(Millions of yen)

	FY2018 April 1, 2018 - March 31, 2019	FY2019 April 1, 2019 - March 31, 2020
Operating activities		
Net income	206,959	182,982
Adjustments to reconcile net income to net cash provided by operating activities		
Depreciation and amortization	124,419	140,267
Losses on sales and disposals of property, plant and equipment	3,284	2,477
Impairment losses on long-lived assets	25,511	23,756
Impairment losses on goodwill	—	3,934
Provision for termination and retirement benefits, less payments	(504)	2,719
Deferred income taxes	(4,679)	1,923
Changes in assets and liabilities		
(Increase) decrease in trade notes and accounts receivable	(16,852)	(14,481)
(Increase) decrease in inventories	(59,250)	8,680
(Increase) decrease in prepaid expenses and other	10,120	(4,185)
Increase (decrease) in trade notes and accounts payable	(24,140)	4,492
Increase (decrease) in accrued payroll and bonuses	5,474	2,209
Increase (decrease) in income taxes payable	13,521	(9,631)
Increase (decrease) in accrued expenses and other	(4,108)	(690)
Other - net	87	5,882
Net cash provided by operating activities	279,842	350,334
Investing activities		
Capital expenditures	(291,581)	(285,935)
Payment for purchases of marketable securities, investments, and other	(25,792)	(27,018)
Maturities and sales of marketable securities, investments, and other	28,853	30,666
(Increase) decrease in long-term deposits and loans	(1,169)	5,913
(Increase) decrease in short-term investments	(16,417)	(10,781)
Acquisition of businesses, net of cash acquired	(563)	(479)
Other - net	2,928	3,203
Net cash used in investing activities	(303,741)	(284,431)
Financing activities		
Net increase (decrease) in short-term borrowing	9,507	27,993
Proceeds from long-term debt	42	98
Repayment of long-term debt	(259)	(211)
Proceeds from issuance of bonds	99,813	49,889
Dividends paid	(57,579)	(59,926)
Other - net	22	(193)
Net cash used in financing activities	51,546	17,650
Effect of exchange rate changes on cash and cash equivalents	2,248	962
Net increase (decrease) in cash and cash equivalents	29,895	84,515
Cash and cash equivalents at beginning of year	187,910	217,805
Cash and cash equivalents at end of year	217,805	302,320
Additional cash and cash equivalents information		
Cash	181,956	239,656
Short-term investments	69,781	106,950
Short-term investments with the original maturities over three months	(33,932)	(44,286)
Cash and cash equivalents at end of year	217,805	302,320



Company overview

Trade name	Murata Manufacturing Co., Ltd.
Date of incorporation	December 23, 1950 (established in October 1944)
Common stock	69,444 million yen
Locations	Head Office 10-1, Higashikotari 1-chome, Nagaokakyo-shi, Kyoto 617-8555 Branch Tokyo Branch, Shibuya-ku, Tokyo
Subsidiaries in Japan	28 companies
Subsidiaries outside of Japan	62 companies



Stock information (as of March 31, 2020)

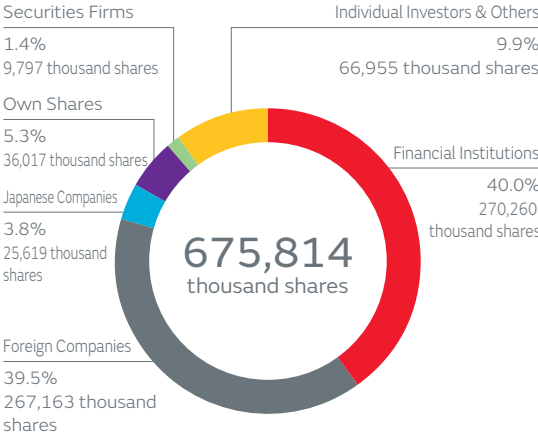
Stock data

Number of shares outstanding	675,814 thousand shares
Number of shareholders	94,712 persons

Stock exchange listing

Japan	Tokyo Stock Exchange First Section
Overseas	Singapore Exchange

Ownership breakdown



Major shareholders

Name	Number of shares (unit: one thousand)	Ownership (%)
The Master Trust Bank of Japan, Ltd. (Trust Account)	42,353	6.6
Japan Trustee Services Bank, Ltd. (Trust Account)	40,526	6.3
Nippon Life Insurance Company	22,083	3.5
SSBTC CLIENT OMNIBUS ACCOUNT	16,552	2.6
The Bank of Kyoto, Ltd.	15,780	2.5
Meiji Yasuda Life Insurance Company	15,722	2.5
JP MORGAN CHASE BANK 385151	12,002	1.9
Japan Trustee Services Bank, Ltd. (Trust Account 5)	11,968	1.9
Japan Trustee Services Bank, Ltd. (Trust Account 7)	11,850	1.9
JP MORGAN CHASE BANK 385632	10,741	1.7

(Note) The Company holds 36,017 thousand shares of its own stock. As these shares do not confer voting rights, they are excluded from the above table.

Other significant matters concerning shares

The Company implemented a three-for-one common stock split, effective April 1, 2019, and number of shares outstanding increased to 675,814 thousand shares.



Status of incorporation into ESG indices

The company has been incorporated into multiple indices as a company proactively engaged in ESG. We will continue our proactive initiatives and information disclosure going forward.



2019 Constituent  
MSCI Japan ESG  
Select Leaders Index



FTSE Blossom  
Japan



FTSE4Good





In fiscal 2019, under our new Mid-term Direction 2021, we positioned the telecommunications and automotive markets as our focus markets and strengthened our efforts to make these markets the pillars of our medium- to long-term earnings. In addition, in order to achieve one of the themes of our Mid-term Direction, "harmony among people, organization and society," we worked on creating the foundation for sustainable growth through our efforts to reduce water consumption at our plants and the implementation of measures against climate change.

## Product-related news

Launch of worker safety monitoring systems utilizing sensor technologies and IoT  
~Contributing to workers' health management by monitoring biological information and the working environment~



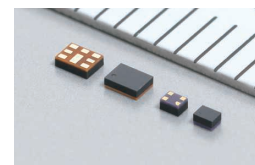
Development of solid-state battery with industry's highest energy density (secondary battery)

[https://www.murata.com/en-global/products/info/batteries/solid\\_state/2019/0626](https://www.murata.com/en-global/products/info/batteries/solid_state/2019/0626)



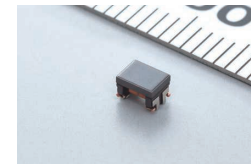
Development and commencement of volume production of world's smallest SAW duplexers, filters  
~Contributing to denser circuit design and enhanced smartphone functionality~

[https://www.murata.com/en-global/products/info/saw/saw\\_mobile/2019/0716](https://www.murata.com/en-global/products/info/saw/saw_mobile/2019/0716)



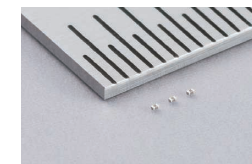
Commercialization of the world's first common mode choke coil for automotive ethernet that can withstand temperatures up to 150°C

<https://www.murata.com/en-global/products/info/emc/emifl/2019/1125>



Development of the world's first multilayer ceramic capacitor to feature a maximum capacitance of 0.1µF in the world's smallest size (008004 inch size).

<https://www.murata.com/en-global/products/info/capacitor/mlcc/2019/1205>



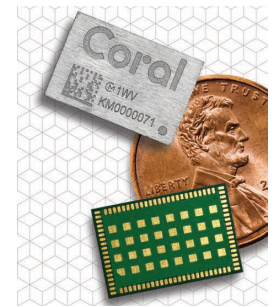
Commencement of mass production of the world's smallest PTC thermistor in the 0201 inch size  
~Contributing to improving the safety of multifunctional smartphones and small wearables~

<https://www.murata.com/en-global/products/info/thermistor/ptc/2020/0120>



Murata and Google team develop the world's smallest AI module with Coral intelligence

<https://www.murata.com/en-us/products/info/other/other/2020/0106>



April 2019

May

June

July

August

September

October

November

December

January 2020

February

March

## Corporate news

Launch of class visitations to provide programming education to foster logical thinking in May 2019  
~Education to experience programming "Move, teacher Robot"~

<https://corporate.murata.com/en-global/about/newsroom/news/company/csrtopic/2019/0417>

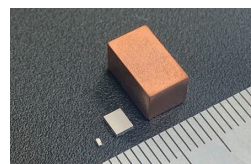
The lessons are aimed at helping children acquire the ability to think logically, ahead of the adoption of compulsory programming education in elementary curricula in the 2020 academic year.

Inclusion in the FTSE4Good Index Series and the FTSE Blossom Japan Index

<https://corporate.murata.com/en-global/about/newsroom/news/irnews/irnews/2019/0821>

Murata has been selected for inclusion in the FTSE4Good Index Series and the FTSE Blossom Japan Index, which are widely used for developing and assessing sustainable investment funds and other financial products and are globally recognized indexes for socially responsible investing (SRI).

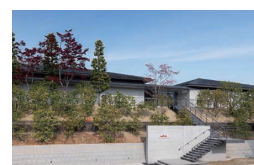
The solid-state battery with industry's highest capacity (secondary battery) received the Minister of Economy, Trade and Industry Award at the CEATEC AWARD 2019.



Combining compact size and high energy density, the solid-state battery will deliver excellent performance even in harsh environments. The award has been given in expectation for contribution to the realization of an improved society through further miniaturization and improved reliability of wearable devices, which have been difficult to achieve to this point.

Opening of the Murata Innovation Museum, a training and education facility for employees of the Murata Group

<https://corporate.murata.com/en-global/about/newsroom/news/company/general/2019/1001>



Established to mark the 75th anniversary of Murata's foundation, the Murata Innovation Museum is a place for Group employees to learn about Murata's history, corporate philosophy, and values that we have carefully preserved since its foundation in order to facilitate employees' transition into their roles and the Murata culture of continuous innovation. The facility is a net-zero energy building (Net-ZEB).

Acquisition of MIRAISENS, a 3DHaptics Company  
"Haptic Applications for Various Production Sectors"

<https://corporate.murata.com/en-global/about/newsroom/news/company/general/2019/1225>

The development of 3DHaptics technology based on "Illusionary Haptics," the world's first haptic technology established on a neuroscientific basis has been promoted in the entertainment sector, in which realistic gaming experiences are expected and the medical sector, which requires tactile feedback for patients during remote treatment.

Ranked as an A- Company by "CDP Water Security 2019"

<https://corporate.murata.com/en-global/about/newsroom/news/company/general/2020/0306>

We have been listed as an A- company in the CDP Water Security 2019 survey, which evaluates conservation efforts such as attempts to reduce the amount of water used at factories.

Prime Minister Prize awarded in 49th Japan Industrial Technology Awards. High-density, compact, oxide solid-state battery with industry's highest capacity (secondary battery)



The solid-state battery with the industry's highest capacity received the Prime Minister Prize, the highest award, in the 49th Japan Industrial Technology Awards. The award was given in recognition of the creativity and innovativeness of the solid-state battery and its contribution to the industry and society.

Announcement of change of President and Representative Director

<https://corporate.murata.com/-/media/corporate/about/newsroom/news/irnews/irnews/2020/0313/20200313-e.ashx?la=en&cvid=20200313060146000000>

The Company announced that Norio Nakajima was appointed as new President and Tsuneo Murata was appointed as Chairman of the Board in order to strengthen management foundations and enhance corporate value under a new management structure.

Installation of one of Japan's largest parking-lot-based mega solar systems (equivalent to parking lot for 1,200 cars) by Okayama Murata Manufacturing Co., Ltd.

<https://corporate.murata.com/en-global/about/newsroom/news/company/general/2020/0327>



We have used a company parking lot for 1,200 cars to install one of Japan's largest parking-lot-based mega solar systems, in order to promote the use of renewable energy through the installation of solar power generation equipment and to promote our efforts to take measures against climate change.



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