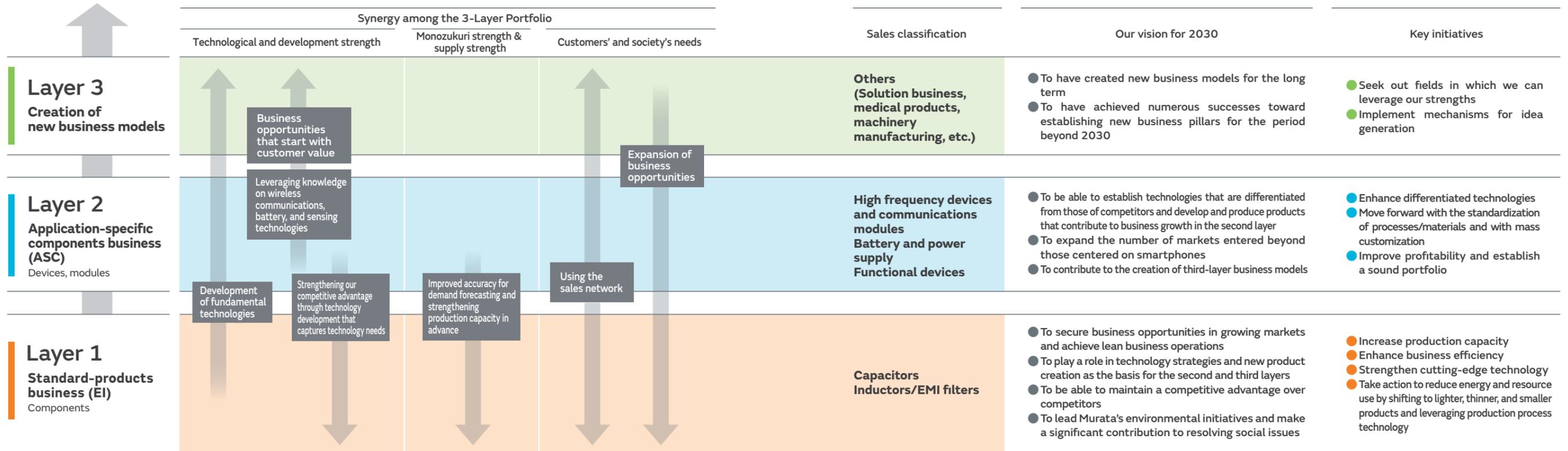


# 3-layer portfolio management and strategies for each business

Synergy between layers 1 and 2 has supported Murata's competitive advantage as well as product and technology innovation. As the value sought by customers undergoes tremendous change, we will achieve further growth through the synergy among the three layers.

## Innovator in Electronics



## Four business opportunities recognized by Murata

### Core fields



#### Communications

##### Improved accuracy for demand forecasting and strengthening production capacity in advance

As communications systems change to 5G and then to 6G, business opportunities will expand even further. We will correctly grasp the diversifying applications, changing customer structure and continue to offer value, taking an overwhelming lead with technological innovation that ensures we continue winning, even in an increasingly competitive environment.

##### Recognized business opportunities

- Increase in demand for components
- Rising demand for components due to increasing number of connected devices and greater processing power
- Increasing requirements for high performance and reliability to support network connectivity
- Shift of added value to hardware plus software/solutions as applications with embedded communications functions diversify and data-driven solutions and services emerge



#### Mobility

##### Automobile industry entering an age of once-in-a-century revolution

We will redefine the market in a broader sense as "mobility." In addition to contributing to the evolution of the automobile (in-car) as the global No. 1 component manufacturer, we will aim to capture business opportunities in the broader sense of mobility (out-car). We will deepen our understanding of diversifying customer requirements in the mobility field and steadily produce results and build reputation.

##### Recognized business opportunities

- Shift of added value to hardware plus software/solutions as applications with embedded communications functions diversify and data-driven solutions and services emerge
- Expansion of services centered on movement itself, as typified by MaaS (Mobility as a Service), and a resultant increase in new opportunities to leverage our knowledge in the communications field to provide new value, such as by offering software and solutions

### Challenge fields



#### Environment

##### Markets where promises have been made to become a sustainable society

Murata aims to create innovation bringing together our business and solutions to the energy issue and other environmental issues. We will take initiatives to respond to the environment to secure a competitive advantage as well as firmly catch hold of the growing opportunities, starting with the battery and power supply business, and take on the challenge of creating new businesses.

##### Recognized business opportunities

- Accelerating initiatives to transition to a decarbonized society
- Advancing the circular economy, which places value on product repair, reuse, and resource recycling
- Advancing the development of environmental technology (clean tech) in all industry segments



#### Wellness

##### Pursuing new prosperity for an age when people's expected lifespan reaches 100 years

We will use Murata's technology and our know-how in the electronics field to help the development of the medical field and seek to provide value in terms of preventing sickness and promoting health. We will also produce innovations to achieve new kinds of prosperity including mental health and good interpersonal relations, thereby realizing a society where people can live a healthy and prosperous life.

##### Recognized business opportunities

- Transforming the medical and healthcare domain using digital technology
- Expanding initiatives in preventive medicine and health promotion in line with the acceleration of the population aging
- Changing health concepts, including balanced mental and social health in addition to physical health, and the pursuit of people's own happiness

# Capacitors



## Multilayer ceramic capacitors (MLCCs)

Employed in mobile equipment, home appliances, IoT devices, and more, MLCCs 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.

### Business opportunities

- Increased demand for components due to 5G and advancements in automobile electrification

### Strengths

- Extensive product lineup / high market share
- Technological capabilities and monozukuri strength that enable small, high-performance products, ensure reliability and high quality
- Worldwide sales network and the largest supply capacity in the industry
- Profitability based on integrated manufacturing systems from materials to finished products

- Samsung Electro-Mechanics (South Korea), TAIYO YUDEN (Japan), TDK (Japan), Yageo (Taiwan), etc.

### Competitors

- Deterioration in market conditions due to global economic stagnation and increasing geopolitical risks, and the resulting fluctuations in demand for electronics products
- Changes in the business environment due to intensified competition with competitors

### Risks

## Growth strategies

### 1 Increase production capacity to meet growing demand for components

Demand for components is expected to continue to increase in the communications and mobility markets. We will further expand the scale of our operations by leveraging our competitive advantage of having the largest production capacity in the industry.

### 2 Plan and execute growth scenarios based on risks such as the rise of competitors

In the MLCC market, which is expected to grow in the future, competition with existing competitors is expected to intensify. We aim to achieve sustainable business growth by paying attention to the competitive environment.

### 3 Continue to maintain the top market share through continuous innovation and our global sales network

Murata's share of the MLCC market is 40%, with a high share of 50% in the automotive market, which is expected to grow in the future. We will maintain and improve our market position by further strengthening the competitive advantages we have cultivated to date.

Progress with growth strategies

## Establishment of joint venture with Ishihara Sangyo Kaisha, Ltd. and Fuji Titanium Industry Co., Ltd.

We have set up a three-way joint venture with Fuji Titanium Industry Co., Ltd., one of our suppliers of barium titanate, a material used on MLCCs, and its parent company, Ishihara Sangyo Kaisha, Ltd. Demand for MLCCs is expected to continue to grow against the backdrop of rapid advances in IT devices and the

electrification of automobiles, and we believe that a stable supply structure, starting from materials, is essential. As such, we have positioned the launch of this joint venture as a key measure for stabilizing our supply chain.

# Inductors/EMI filters



## Inductors (coils)

Inductors work by making electricity and magnetism interact with each other to convert voltage and stabilize current, etc. Together with capacitors and resistors, they are the basic

components of electronic circuits. Like capacitors, they are electronic components commonly used in many different electronic devices.

### Business opportunities

- Increased demand for components due to 5G and advancements in automobile electrification
- Growing need for higher performance and reliability of RF inductors and power inductors

### Strengths

- Extensive product lineup / high market share
- Optimal product design using various manufacturing methods
- High quality, high customer support, and the evaluation and analysis technology to support it
- High supply capacity to meet strong demand

- TDK (Japan), TAIYO YUDEN (Japan), Cynotec (Taiwan), Sunlord (China), etc.

### Competitors

- Deterioration in market conditions due to global economic stagnation and increasing geopolitical risks, and the resulting fluctuations in demand for electronics products
- Intensifying competition with competitors

### Risks

## Growth strategies

### 1 Provide new customer value in response to market changes

In the future, technologies and applications in the in-vehicle system market and telecommunication market will undergo major changes. In the in-vehicle system market, demand for power inductors and inductors for interfaces will grow, and in the telecommunication market, as modules inside smartphones become smaller, RF inductors will become more compact and have higher Q\*. We are working to provide new customer value by firmly grasping changes in the market and customers, releasing new products such as new power inductors for automotive applications and compact, high-Q RF inductors.

### 2 Provide products that meet market demands by integrating development capabilities and basic technologies

Murata creates roadmaps of markets, products, and technologies for the next five to ten years, and quickly commercializes products demanded by customers through product development that anticipates future needs. Murata also possesses multiple

methods and processes for development and monozukuri technologies, including multilayer, winding, and film. By integrating advanced material development, product development, process development and basic technologies (simulation, reliability evaluation, mounting technology, application), we will provide products that meet market demands.

### 3 Expand global support system for customers

The need for noise suppression is further increasing in the in-vehicle system market due to the advancement of automobile electrification and the expansion of 5G in the telecommunication market. By deepening relationships with customers and pursuing cutting-edge technologies through customer support for noise suppression and the provision of new products and solutions using EMC labs in eight locations not only in Japan but also in Europe, the United States, China, and other parts of the world, we will become the "No. 1 EMC Solution Provider."

\*Q stands for Quality Factor. The higher the Q value, the higher the inductor characteristics

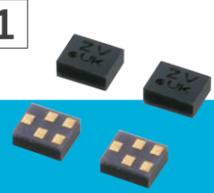
Progress with growth strategies

## Initiatives to elevate our position in the in-vehicle market

We are focusing on the power inductor business to improve our position in the in-vehicle market. Power inductors are important electronic components that support energy conversion in power circuits involving, for example, DC-DC converters. The number of DC-DC converters installed in automobiles is increasing due to the advance of vehicle electrification, and there is a growing need for power inductors that are smaller and have superior electrical

characteristics. We are therefore expanding our supply capacity and accelerating the development of new products. Going forward, we will be continuously releasing new products, such as metal power inductors offering some of the best electrical characteristics in the industry while being compact in size, and by responding to customer needs, we will be looking to expand our sales and market share in the in-vehicle market.

# High frequency devices and communications modules 1



## Surface acoustic wave (SAW) filters

A SAW filter is a filter that can pick out electric signals in a particular frequency band, using the surface acoustic wave that propagates along the surface of the piezoelectric substrate. Ensuring smooth wireless communication between devices

requires high-functioning filters that can let through electric signals in a particular frequency band, while eliminating noises of unnecessary frequency bands.

### Business opportunities

- Expansion of the communications market through the advancement of 5G
- Addition of wireless communications functions to IoT devices
- Advancement of technological trends such as higher frequency and smaller filters with superior composite performance

### Strengths

- Extensive product lineup / high market share
- Superior characteristics (high frequency / broadband / high attenuation / low insertion loss / small size) required in the future communications market
- Reliable quality
- Largest production capacity in the industry and reliable supply capability

- TAIYO YUDEN (Japan), Qualcomm (U.S.), Qorvo (U.S.), Wisol (South Korea), Shoulder (China), etc.

### Competitors

- Deterioration of market environment due to global economic stagnation and heightened geopolitical risks
- Intensified competition with competitors and entry by low-cost manufacturers

### Risks

## Growth strategies

### 1 Secure profit-earning opportunities by differentiation in high-value-added products and strengthening cost competitiveness

In addition to our proprietary I.H.P. and TC-SAW technologies, we will strengthen alliances for new technologies and strive to enhance cost competitiveness by improving productivity to respond to the rise of other manufacturers in the sector.

### 2 Mass production of filters using XBAR technology

With the spread of 5G and next-generation Wi-Fi standards, the need for high-performance, high-frequency filters with a broad bandwidth is expected to increase. XBAR technology has advanced characteristics at high frequencies and in

a broad bandwidth, as well as high compatibility with the SAW filter manufacturing process. This will strengthen our business as a differentiating technology for filters.

### 3 Explore new applications and customers by leveraging Murata's strengths in the expanding communications market with 5G

With the spread of IoT devices other than smartphones, wireless communications functions is added to various applications. In addition, with the introduction of 5G, the combination of incorporated frequency bands is becoming more complex, and the technical requirements for filters are becoming more challenging. Murata will expand its business in new markets by leveraging its technological strengths.

Progress with growth strategies

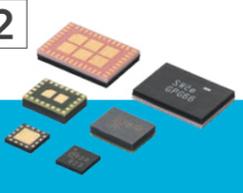
## Strategy for the surface acoustic wave (SAW) filter business that reflects changes in the competitive landscape

Since the beginning of 2023, smartphone production has slumped and middle- and low-end handsets are accounting for a greater share of the market. Demand for SAW filters has been similarly sluggish, and competition among rival players is intensifying. On the other hand, the proportion of high-end handsets equipped with modules is rising amid the ongoing trend toward higher functionality and denser implementations, and the need for compact SAW filters with superior characteristics for use in

modules is also increasing.

In view of these circumstances, we will establish technological superiority by accelerating the development of products with differentiated technologies, such as compact products and XBAR, while strengthening our cost competitiveness in product lines for which the competitive environment is becoming harsher. Through these initiatives, we will maintain the top market share in the industry.

# High frequency devices and communications modules 2



## RF modules

RF modules are electronic component units that realize an analogue high-frequency circuit that controls communications among wireless devices by integrating various key devices in a small package. This module is comprised of passive devices such as SAW filters, high-power amplifiers (PA) in transmission

circuits, low-noise amplifiers (LNA) in reception circuits, antenna changeover switches and other semiconductor devices. RF modules are used for various types of wireless devices including smartphones and tablet PCs.

### Business opportunities

- Expansion of frequency bands, advancement of communications technologies driven by growing adoption of 5G
- Advancement in modularization and miniaturization of electronic components

### Strengths

- In-house production of key devices such as filters and packaging technologies
- Identification of customer trends and capability to propose products utilizing sales and technical support network
- Business speed, reliable quality and stable supply enabled by integrated production

- Skyworks Solutions (U.S.), Qorvo (U.S.), Qualcomm (U.S.), Broadcom (U.S.), etc.

### Competitors

- Potential moves by customers and component suppliers due to heightened geopolitical risks
- Entry of low-cost module manufacturers into the market

### Risks

## Growth strategies

### 1 Realize business growth by investing resources in differentiating technologies

In the current competitive environment, the level of technology of competitors is very high. We will establish a competitive advantage by fostering or acquiring differentiated technologies.

### 2 Empower Digital Envelope Tracking Technology

We will differentiate ourselves from our competitors and capture business opportunities through the "Digital Envelope Tracking Technology" of Eta Wireless Inc., which we acquired in September 2021.

### 3 Enhance fundamental capabilities to improve position in growing markets

In the 5G and 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 the high technological capabilities and high-quality monozukuri that Murata has cultivated over the years.

Progress with growth strategies

## Making production progress visible to improve the manufacturing frontline's ability to respond to changes

Komoro Murata Manufacturing (Nagano Prefecture), which produces high-frequency modules, is actively pursuing factory smartification. The advantages of the company's high-frequency modules lie in the fact that the company employs differentiated technology to provide customized products that are optimized for each customer following discussions with them. However, a disadvantage is that this calls for the production of numerous different products, which means that it is difficult to gauge

production status. This makes it essential to meticulously manage progress to respond to sudden fluctuations in demand. To address this issue, the company introduced a system that monitors the production line using heat map. This is resulted in not only improved production efficiency but also in enhanced ability to respond to demand fluctuations. We intend to roll out this success story from Komoro Murata Manufacturing to other plants to increase production efficiency throughout the Group.

## High frequency devices and communications modules 3

### Multilayer resin substrates (Multilayer LCP Product)

Multilayer LCP Product is a thinner multilayer resin substrate comprising LCP (liquid crystal polymer) sheets. It features exceptional RF characteristics and realizes a substrate with a stable performance due to low water absorption. It is also characterized by the ability to handle a flexible bending process because it does not require an adhesive layer. In addition,

high multiple layers are possible by using Murata's multilayer technology, enabling high flexibility in design. Multilayer LCP Product is used in smartphones, wearable devices, and other applications, contributing to smaller, thinner, and higher performance devices with low energy consumption.

#### Business opportunities

- Expansion of high-frequency communication markets such as 5G and UWB (Ultra Wide Band)
- Resolution of customers' issues by utilizing characteristics, such as low water absorption and shape retention property

#### Strengths

- Superiority in low transmission loss properties in the high-frequency band
- High multi layers, low water absorption, flexibility that can handle complex bending process
- Extensive mass production experience for LCPs

- ZDT (Taiwan), Flexium Interconnect (Taiwan), etc.

#### Competitors

- Intensifying competition with competitors
- Changes in the demand due to changes in customers' designs

#### Risks

### Growth strategies

#### 1 Extend sales activities in new business areas and to new customers

In addition to earnings in existing business areas, we will expand our customer base and diversify revenue sources, including strengthening internal synergies.

#### 2 Further enhance differentiated technologies

We will further strengthen our competitive advantage in terms of characteristics in the 5G millimeter wave bands and UWB areas.

#### 3 Improve productivity through the promotion of smart factories and the development of cost reduction technologies

We will strengthen our monozukuri strength and cost competitiveness by continuing productivity improvement activities.

Progress with growth strategies

## Preparing for market expansion in the 5G millimeter wave bands

Millimeter wave, which are frequency bands used in 5G, has been slow to spread globally due to lags in infrastructure development, lack of services, and difficulties in area deployment. However, millimeter wave is a technology with great potential. Millimeter wave has features such as high radio wave linearity and wide bandwidth (allowing a large amount of data to be sent at one time). Millimeter wave will enable high-speed, large-capacity communications, and we can expect to see the birth of new applications that take advantage of these characteristics and the expansion of the electronics market.

Multilayer LCP Product demonstrates advantages in applications such as millimeter-wave transmission lines, which leverage its low transmission loss performance at ultra-high frequencies. In addition, as the frequencies used become higher, Multilayer LCP Product will be able to show its competitive superiority in terms of transmission loss compared with competing technologies. Since the millimeter wave market is expected to expand significantly in the future, we will steadily implement our growth strategy for this business to take advantage of opportunities in this growing market.

## High frequency devices and communications modules 4

### Connectivity modules

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 smartphones, tablet PCs, digital cameras and air conditioners,

and in-vehicle devices such as car navigation systems. They are also used in various other settings, enabling users to download and upload photos and music from the internet and perform hands-free calling while driving.

#### Business opportunities

- Growing adoption of 5G
- Full-fledged consideration of Beyond 5G
- Expansion of wireless communication functions in automobiles and various types of devices following the development of an IoT society

#### Strengths

- Millimeter wave modules using Murata's unique multilayer resin substrates (Multilayer LCP Product)
- Technologies that enable miniaturization and high performance as well as ensure reliability
- Software technologies that improve connectivity
- Product proposal capabilities and partnerships with customers by leveraging our knowledge of communications cultivated through our smartphone business

- Quectel (China), Azurewave (Taiwan), etc.

#### Competitors

- Intensifying competition with competitors
- Delays in new product releases due to delays in the start-up of new applications such as autonomous driving
- Deterioration of market environment due to heightened geopolitical risks

#### Risks

### Growth strategies

#### 1 Execute portfolio review

We will review our business structure, which is centered on smartphones, and aim to expand our business in diverse areas centered on mobility and IoT, which are expected to grow in the future.

#### 2 Cultivate new markets and develop and expand sales of new products

We will sow the seeds of the future in response to expanding business opportunities resulting from changes in communications systems.

#### 3 Strengthen the structure with a view to further market expansion in the area of communications

We will pursue a production system that can efficiently respond to diverse customer requirements by realizing a thick and short value chain through further strengthening of the cooperation between development and manufacturing.

Progress with growth strategies

## Shift into IoT/mobility markets and progress with development and mass production of new products

We are pivoting our business portfolio from one centered on the smartphone market as the proportion of our sales coming from the IoT and mobility markets expands. To meet the diverse needs of customers in these markets, we are also strengthening our factory production structure to respond to demand for various product types and quantities. At the same time, we are improving our customer support structure by deploying web-based tools.

We also aim to grow our business by developing and mass-producing modules that support the millimeter wave, UWB, Radar, and V2X communications standards, which are expected to proliferate in the connectivity field going forward, as well as edge AI module products, which are ideal with the IoT world, in which all devices are connected.

# Battery and power supply



## Lithium-ion secondary batteries

Murata's lithium-ion secondary batteries are classified into three types: cylindrical, laminated, and small lithium primary batteries. The cylindrical type, on which we are particularly focusing, has the advantages of high output, safety, long-term storage, and high temperature characteristics.

We will leverage these strengths to expand our business in the expanding markets for small drive systems and storage batteries to contribute to the enrichment of society by responding to the need for decarbonization, renewable energy, energy conservation, and so on.

### Business opportunities

#### Lithium-ion secondary batteries: cylindrical type

- Trends toward cordless power tools, gardening tools, and cleaners, as well as shift to decarbonization (from gasoline engines to batteries and motors)
- Utilization of natural energy, in-house consumption of electricity, and backup power supplies during power outage

#### Lithium primary batteries: small type

- Greater demand for small batteries for automotive and medical applications

### Strengths

- High-quality, high-output technology
- Packaging technology that enables impact resistance and miniaturization

### Competitors

- Samsung SDI (South Korea), LGES (South Korea), Panasonic (Japan), TDK (Japan), EVE (China), etc.

### Risks

- Market entry and expansion by competitors in our target markets
- Rising resource prices due to increased resource depletion risk and geopolitical risk
- Global environmental regulations and trend towards local production for local consumption

## Growth strategies

### 1 Further enhance differentiated technologies

We will strengthen Murata's technological strengths based on our superior materials technology and expand our business in growing markets.

### 2 Establish business foundation as Murata's environmental contribution business

We aim to capture business opportunities on the environmental front such as through storage batteries using Murata's unique FORTELION lithium-ion secondary battery, which uses olivine-

type lithium iron phosphate as the cathode material and has a long service life and high safety characteristics.

### 3 Build a strong business foundation through timely investment and strengthening of monozukuri

We will focus on markets where we can leverage our strengths to achieve stable future growth, while also strengthening our monozukuri strength to maximize our differentiated technologies.

## Progress with growth strategies

### Enhancing productivity and strengthening our business foundation through collaboration within the Group

In fiscal 2023, we are facing a challenging business environment, as the slump in the power tool market has led to a decline in capacity utilization at our plants. Yet even under such circumstances, we are working to strengthen our business foundation to realize future growth. As part of these efforts, we will be endeavoring to improve productivity, an issue we were unable to give adequate attention to in the past as we were responding to growing demand. We are also promoting exchanges

between personnel at plants for other businesses and personnel at battery factories. This initiative has led to the development of on-site supervisors at battery factories and the creation of safe and secure workplaces, thereby improving our frontline capabilities. By deepening exchanges among Group personnel and applying Murata's technologies and monozukuri strength to the battery business, we are aiming to build a competitive business foundation.

# Functional devices



## Sensors

Sensors are electronic components that convert the various forms of energy around us into signals and data that are easy for humans and machines to handle. Murata has a diverse product lineup ranging from high-performance, high-reliability

devices using ceramic material technology, microfabrication technology such as MEMS, and devices and modules using magnetoresistive elements.

### Business opportunities

- Increased demand for high-performance sensors driven by growing use of advanced driver assistance systems (ADAS) and autonomous driving
- Increased demand for components due to the advancement of automobile electrification
- Need for sensor nodes due to expansion of AI and cloud-based services
- Creating new demand through value co-creation with external partners

### Strengths

- Low noise, high sensitivity, high accuracy, robustness, and reliability achieved by Murata's MEMS designing, processing and packaging technologies
- Extensive sensor technology and a diverse product lineup
- Creating and proposing value to customers with differentiated elements through the use of various materials

### Competitors

- Bosch (Germany), Analog Devices (U.S.), STMicroelectronics (Switzerland), Panasonic (Japan), TDK (Japan), Nippon Ceramic (Japan), etc.

### Risks

- Intensifying competition with competitors
- Delays in releasing new products in response to needs arising from changes in the external environment
- Acquisition of technology to meet diverse market needs

## Growth strategies

### 1 Create core technologies and invest resources in applications that leverage our strengths

The growth of the mobility, IoT, and wellness markets is expected to lead to a significant increase in the number of functions requiring sensors. We aim to expand our sensor business by focusing on areas where we can leverage Murata's strengths in response to expanding business opportunities.

### 2 Differentiate technologies and create new value with partners

We will further refine our technological capabilities, which is

one of our strengths, and at the same time, we will aim to co-create value with our partners and tackle business challenges with new ideas that are not bound by existing areas.

### 3 Establish SCM to maximize product value

Sensors are characterized by high-mix low-volume production, and we will build a production process that provides value to customers while differentiating our products and accommodating high-mix production.

## Progress with growth strategies

### Expansion of sensor line-up and strengthening of production capacity for the autonomous driving market

We supply various products such as ultrasonic sensors and MEMS inertial sensors for the autonomous driving market. In the area of ultrasonic sensors, in June 2023 we were able to launch mass production of a product for ADAS that can estimate the distance of close-proximity objects with a precision of 15 cm (down from 30 cm previously). And regarding MEMS inertial sensors, which our customers are showing a lot of interest in, we are boosting production capacity expansion at our subsidiary in Finland and at Kanazawa Murata Manufacturing (Ishikawa Prefecture). This

will not only enable us to respond to increasing demand, but also to emphasize the value of reliable supply to customers in the automotive industry, who place importance on BCP, as our production sites will be more decentralized. We will be aiming to leverage these strengths to grow the sensor business.

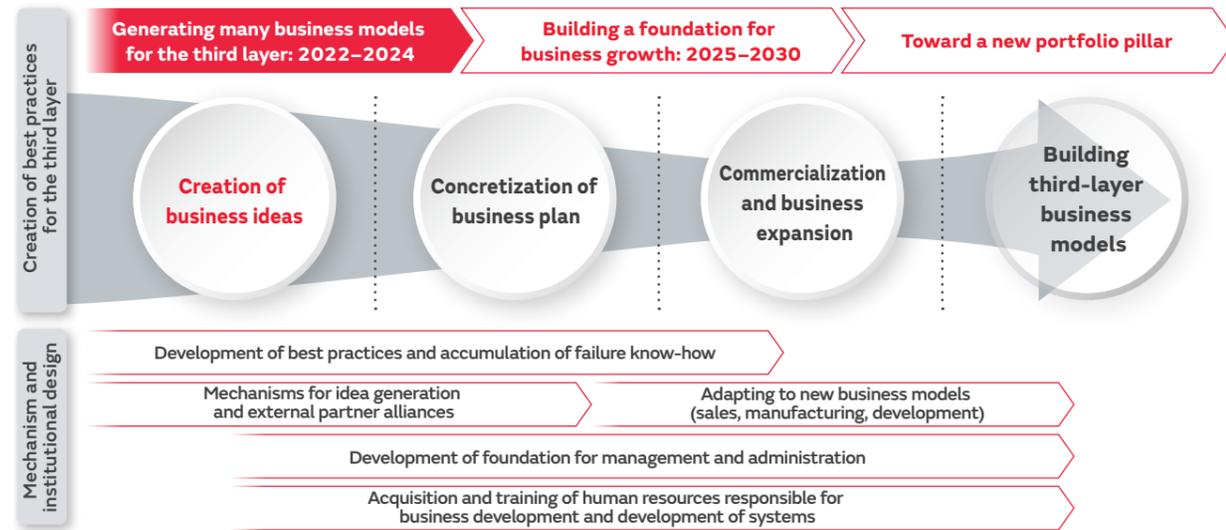


MEMS inertial sensors (SHCA600)

# Creation of new business models for the third layer

Under Medium-term Direction 2024, we will identify areas where Murata can leverage its strengths while building on quick successes and small successes as the first step toward making third layer businesses a pillar of our portfolio in 2030 and beyond. Furthermore, in order to create new businesses for the

third layer, we will implement a concrete strategy that includes human resources and organizational structure to address issues that cannot be addressed within the existing internal framework.



## Implement mechanisms for idea generation

As mechanisms for promoting innovation for the development of third-layer businesses, we are creating “technology displays” to showcase our technology to customers and partners and are actively pursuing “knowledge collaboration” with external

parties. By turning the ideas generated through these various initiatives into actual commercial ventures, we will develop businesses for the third layer.

Initiatives	Overview	Aims
<b>KUMIHIMO Tech Camp with Murata</b>	A project administered jointly with our partner companies. Involves providing Murata’s products to start-ups, solicit ideas for new products and services, and providing support for everything from prototype production to mass production and sales, in order to bring these ideas to commercialization. 	<ul style="list-style-type: none"> <li>● Increase awareness of Murata’s highly reliable, high-precision sensor devices and other products</li> <li>● Work together with start-ups to provide support for the market launches of new products and services</li> </ul>
<b>Murata Mirai Mobility</b>	An experience-based facility for introducing Murata’s solutions and technologies for the in-vehicle system market. 	<ul style="list-style-type: none"> <li>● Reinforce external collaborations, such as technology exchanges</li> <li>● Reinforce collaborations with research and development sites</li> <li>● Create industry-leading innovative products and technologies</li> </ul>
<b>Murata Interactive Communication Space</b>	A facility that promotes knowledge collaboration. Visitors can experience Murata technologies and products that could lead to the technologies and applications of the future.	
<b>Explore new technologies and business areas to develop through VC (venture capital) investment</b>	VC investment in Japan and overseas. Involves collecting information about start-ups, markets, and technologies around the world.	<ul style="list-style-type: none"> <li>● New commercialization of Murata technologies</li> <li>● Seize opportunities for co-creation</li> <li>● Take on the challenge of developing business fields</li> </ul>

## Showcasing initiatives at our plants

Factory showcasing is designed to generate business opportunities by bringing our wares to our plants and allowing customers to come in and view them, handle them, and try them out.

As one of our third-layer businesses, we aim to provide solutions for social issues. There are a myriad of social issues, but ones such as human (employee) safety and health, decarbonization, and disaster prevention are also faced by the Group’s business and production sites. Our factories

can thus serve as excellent models where the effectiveness of our products in addressing issues has been verified and data has been accumulated, enabling us to demonstrate the convenience and value of our solutions to customers.

We therefore intend to develop our third-layer businesses by proactively turning our plants into showcases and also presenting the data required for deploying our solutions in society.

### Case study 1 Clean energy park at Kanazu Murata Manufacturing

Here, we have installed a renewable energy system that utilizes our proprietary control technology (efinnos). It combines large solar panels and storage battery units with our proprietary energy management system that allows for real-time optimization of energy use through integrated management of information such as production plans, electricity consumption, weather conditions, and power generation projections.

The Hokuriku region, where Kanazu Murata Manufacturing (Fukui Prefecture) is located, is an area of low solar radiation and heavy snowfall. We utilize knowledge and data obtained under these harsh conditions to improve our products and operations. We are also able to offer customers optimal effectiveness simulations using this empirical data.



For more information on our integrated renewable energy control solution (efinnos), please see here. 

### Case study 2 Smart manufacturing support tool for manufacturing sites (JIGlet)

JIGlet is a tool to support frontline visualization and operational improvement. It enables even personnel on the manufacturing frontline who lack IT knowledge to easily record and accumulate data on the status of equipment and personnel, visualize process variation and waste with graphs, and utilize the gained insights in various ways to make improvements and solve problems. The device is simple to deploy, as it can be retrofitted to existing equipment, eliminating the need for large-scale equipment installations and investment.

By showcasing our own factories as settings where these products are installed, we first verify their effectiveness internally, and then aim to provide optimal solutions to the various issues faced by our customers.



For more information on JIGlet, please see here. 