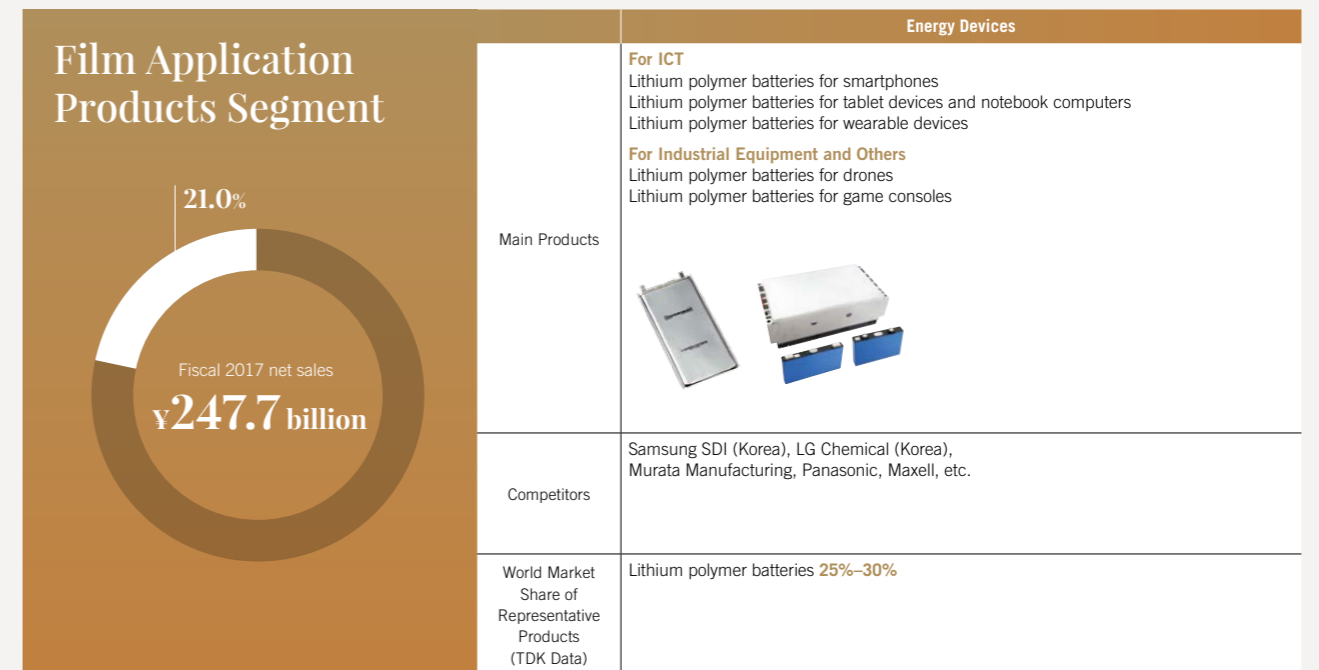
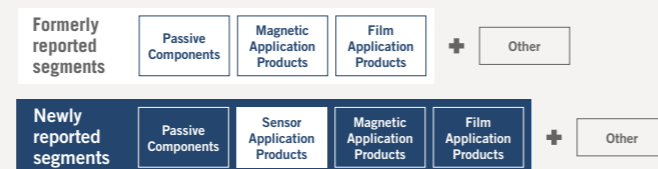


Note: TDK is the only manufacturer in the world specializing in HDD magnetic heads. Currently, the production of such heads is concentrated in three companies: TDK, Seagate Technology, and Western Digital Technologies.



About Segment Changes

On April 1, 2017, TDK established Sensor Systems Business Company to target the sensor business, a market where significant expansion is expected. Businesses comprising the sensor application products segment have been rearranged from their previous segments. The businesses targeted by this reorganization include, from formerly reported segments, temperature and pressure sensors from the Passive Components segment; magnetic sensors from the Magnetic Application Products segment; and the MEMS microphone business from the Other segment.



Business Environment Surrounding TDK

Market environment and opportunities	Factors affecting the market
For Automotive • Trend toward lighter weight and electrification of automotive equipment, driven by customers' increased fuel economy awareness • Development of new technologies such as ADAS and autonomous driving	• New environment-related legislation in various countries • Intensified measures by various governments aimed at saving energy and costs • Strong pressure on prices due to commoditization of existing products leading to price wars • Development of new technologies and products by competitors • Higher prices for raw materials due to increased demand • Fluctuations in sales figures and raw material procurement costs due to exchange rate fluctuations • General consumer trends in electronics products
For ICT • Increased demand in the Chinese and Indian markets and other emerging economies • Market entry of new terminals • Mobile terminals with lower profile, more functions, higher performance	
For Industrial and Energy • Emergence of smart cities in various locations with smart grid (next-generation power distribution network) as energy infrastructure • Increased demand for renewable energy systems such as wind power and solar power installations	

Passive Components Segment

The Passive Components segment is TDK's mainstay, generating about half of total net sales. It comprises the capacitor business, which includes ceramic capacitors, aluminum electrolytic capacitors, and film capacitors; the inductive device business, including coils; as well as other passive components, including high-frequency components, piezoelectric material components, and circuit protection components. As mobile devices become more powerful and incorporate a variety of functions, and as automobiles rely ever more heavily on electric and electronic equipment, the demand for passive components will continue to expand, and growth is expected to remain strong going forward.

A Brief Guide to Passive Components

Passive Components Support Electronics Society

Electronic components include IC, LSI, and other active components, and capacitors, inductors, resistors, and other passive components that store, discharge, and consume electric power. Active components only function with help from passive components.

Installed on the circuit boards of mobile devices, electrical home appliances, office equipment, automobiles, robots, industrial equipment, and other devices are memory and CPUs—consisting of an aggregation of many semiconductor devices—as well as a wide variety of passive components. To sustain the ceaseless evolution of electronic equipment and automobiles, TDK is working to make these passive components smaller, lighter, lower in profile, and more modular.

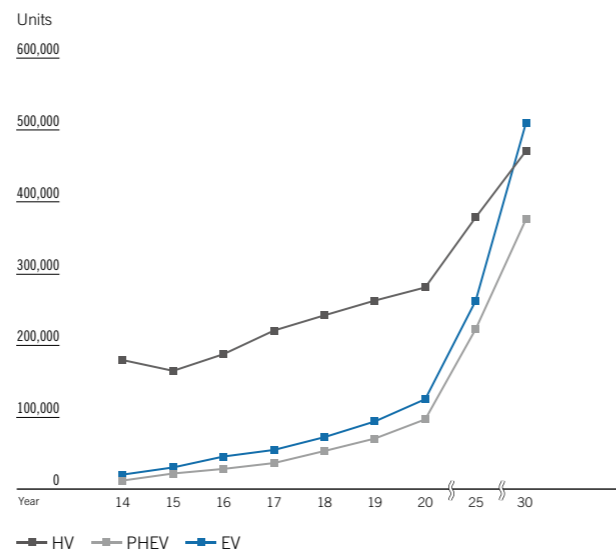


Business Strategy

- Strengthen *Monozukuri* (manufacturing excellence) power and enhance QDC competitiveness (□□ P.59 Manufacturing)
- Maximize cooperation with Qualcomm and achieve high-value-added products through a "First-to-Market" approach
- Continue endless pursuit of compact, low-profile design (thin-film and SESUB technology)

Market Data

Spread of Electric Vehicles (HV, PHEV, EV)



Source: Sogo Planning 2017 Latest Trends in and Forecasts for Electric Vehicle-related Markets.

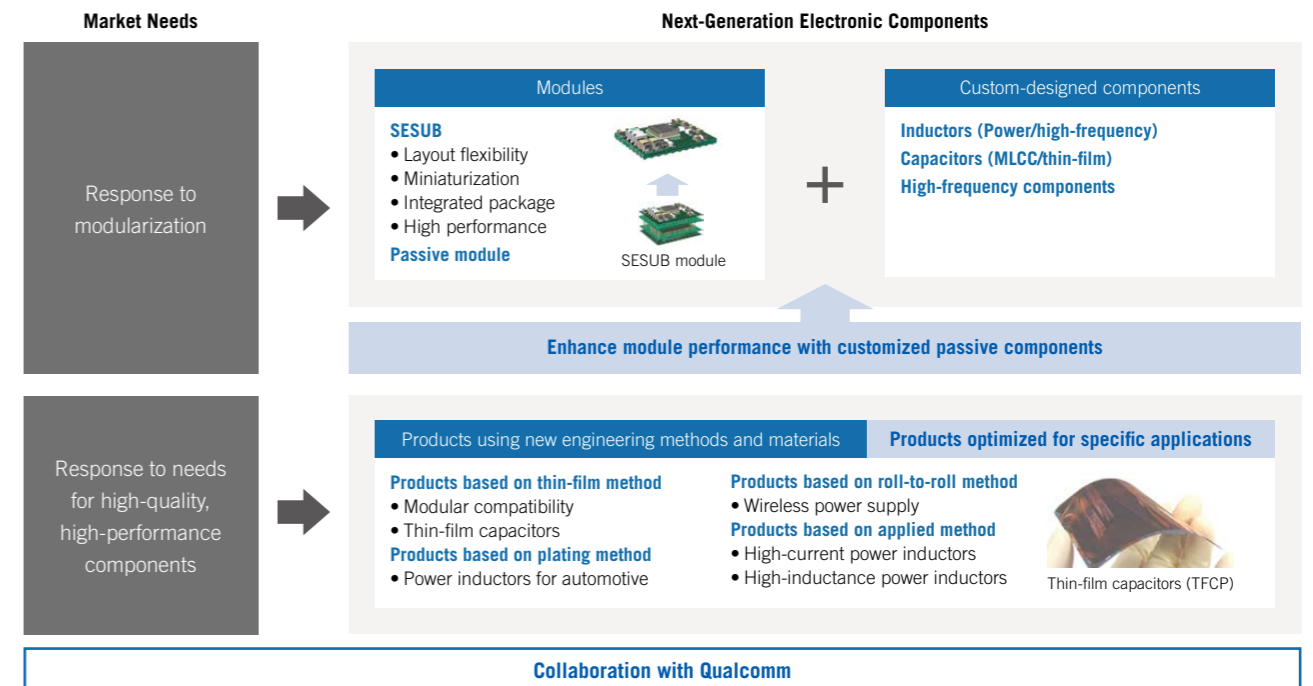
Topics

01 Developments in Next-Generation Electronic Components

Social and Market Needs

- Demand for more compact, lower-profile (thinner) components as electronic devices grow more compact and more powerful
- Demand for modularization compatible with the shift to lower-priced, more powerful end products

As mobile devices grow more powerful and incorporate a wider variety of functions, there will be even further advances in the shift to high-density mounting of electronic components. 5G (fifth-generation mobile communications systems) service, scheduled to begin in 2020, will require a degree of high-density mounting on a completely different level from before. To respond to the need for modularization—one solution for achieving this—TDK is pushing to develop compact, high-performance modules using advanced semiconductor embedded substrate (SESUB) technology, which merges our materials, thin-film, and other technologies. We will also work to strengthen customization and enhance module characteristics by leveraging IC reference designs based on our collaboration with Qualcomm. We are also engaged in the development and deployment of innovative engineering methods intended to strengthen the competitiveness of individual passive components.



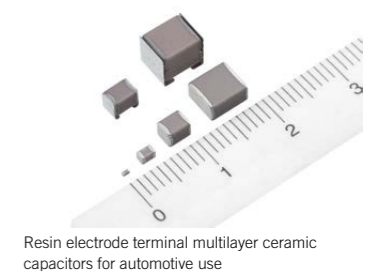
02 A Full Line of Passive Components to Support Automotive Evolution

Social and Market Needs

- Enhancing reliability and offering comprehensive solutions in response to automotive electronic equipment needs

Automobiles today are equipped with a wide variety of electronic components, to the point they have become known as "electronic devices on wheels." The xEV (HEV, PHEV, EV, etc.) market is expanding rapidly worldwide, and the use of advanced driver-assistance systems (ADASs) is spreading, with the commercialization of autonomous-driving technology also in sight.

To strengthen our lineup of passive components that offer comprehensive support for these evolving technologies, TDK is focused on developing and commercializing electronic components that meet the needs and performance requirements of automotive electronic equipment. These include highly vibration- and heat impact-resistant resin electrode terminal multilayer ceramic chip capacitors, high temperature-resistant surface-mount device (SMD) inductors, and others.



Resin electrode terminal multilayer ceramic capacitors for automotive use

Sensor Application Products Segment

By positioning sensors as its primary strategic growth products, and by deploying an aggressive program of acquisitions, TDK has added a wide variety of sensors to its existing line of magnetic, temperature, and other sensor products, while also building a world-class lineup of non-optical sensor products in a very short time.

Under our newly established Sensor Systems Business Company, which has merged the TDK Group's various sensor businesses, we are also working with IC manufacturers to push forward with development of multi-functional, modularized sensors and even more advanced sensor fusion, as we aim to become the world's No. 1 provider of sensor solutions.

A Brief Guide to Sensors

Closing in on One-Trillion-Sensor Age

Sensors detect information concerning our five senses, including sight, hearing, and touch, as well as physical sensations such as temperature, humidity, barometric pressure, acceleration, and inertia, and even properties such as magnetism and ultrasound that cannot be detected by human senses, and convert that information into electric signals. They are installed in a wide array of electric and electronic devices all around us, including mobile devices such as smartphones as well as automobiles and others, providing unseen support for everyday life, business, and industry.

With the explosive growth of a variety of IoT devices, annual production of sensors is expected to exceed one trillion units by the 2020s. With non-optical sensor technology accumulated through M&A and an overwhelmingly strong product lineup, TDK aims to lead the world in the age of IoT.

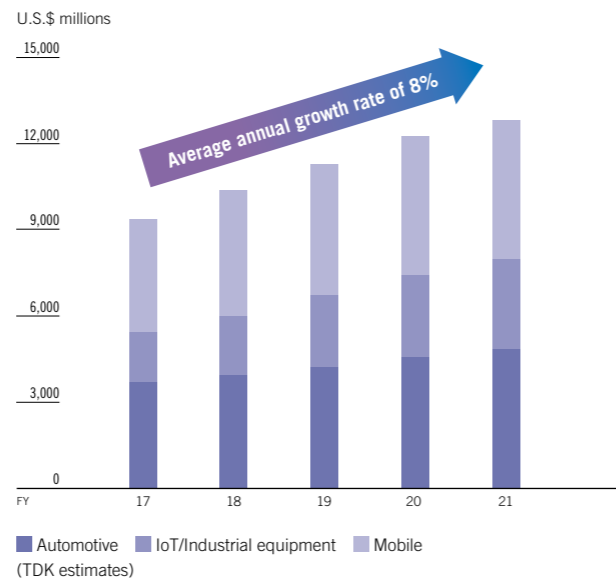


Business Strategy

- Integrate a previously dispersed organization, and achieve a borderless marketing and R&D structure
- Merge core sensing and materials technologies with IC and packaging technologies to offer highly functional, high-value-added sensor solutions (P.36-37 Special Feature)
- Expand customer base for existing sensor products

Market Data

Outlook for Global Sensor Demand (Non-Optical) By market



Topics

01 Expanding the Customer Base for Existing Sensor Products

Utilizing our global No. 1 lineup of non-optical sensors, TDK is working to develop its customer base, expanded through acquisitions. This we will achieve by offering solutions that add compound functionality and software, targeting customer bases that either had no previous need for individual products or which we were unable to break into before.

02 Achieving Outstanding Operations

Alongside our business expansion, we are also working to generate synergies with the companies we have acquired in terms of streamlining operations. Aside from certain processes, InvenSense runs an entirely fabless operation. Our goal is to maximize operational efficiency by utilizing TDK factories to produce specialized MEMS products and wafers, while continuing to outsource production of application-specific integrated circuits (ASICs) and other products where there is little room for differentiation. By utilizing our ceramics-based packaging technology, as well as our semiconductor embedded substrate (SESUB) technology and others, we will work to strengthen the competitiveness of TDK sensor elements and compound sensors.



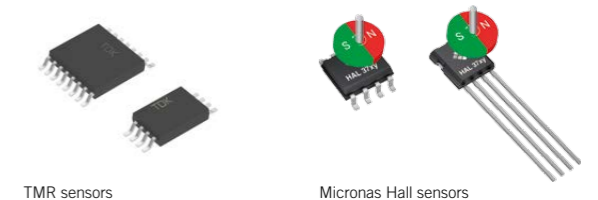
InvenSense MEMS sensor

03 Generating a Stream of Synergies with Acquired Companies

Compound sensors that combine TDK's tunnel magneto resistance (TMR) sensor technology and expertise with Hall sensor technology from Micronas allow detection of both dynamic and static magnetic fields, enabling ideal measurement of position and angle. Combining sensors of differing principles and structures also enhances sensor functional stability and redundancy, important in autopilot and other systems.

TDK's newly developed digital output TMR sensors are warranted for accuracy within an angle tolerance of ± 0.2 degrees, and in room temperature environments, have achieved an angle tolerance of ± 0.05 degrees, top class in the industry* for the automotive market. ASIC is a new product that embodies the synergies being achieved in the TDK Group's sensor business through the adoption of design technology from ICsense.

*As of June 2017; based on TDK research.



TMR sensors

Micronas Hall sensors

Magnetic Application Products Segment

TDK's Magnetic Application Products segment is divided into the recording devices business, comprising HDD magnetic heads and HDD suspensions, and the other magnetic application products business, including power supplies and magnets.

The segment mainly comprises HDD magnetic heads, a field where we hold high worldwide market share. HDD magnetic heads handle the task of writing information to the magnetic media and reading the recorded information. Our mastery of thin-film process technology at the nanometer level has brought about an amazing increase in storage capacity. High-efficiency power supplies incorporating outstanding low-loss ferrite and transformer technology, and high-performance magnets utilizing our materials technology, also contribute significantly to the conservation of power and resources.

A Brief Guide to Magnets

Modern People Would Be Helpless without Them

Magnets, which retain their magnetic force without a supply of energy, are fundamental to sustaining modern society. For example, automobiles are equipped with about 100 compact motors that use ferrite magnets. Powerful neodymium magnets are also used in xEV drive motors.

Going forward, demand for high-performance magnets is expected to grow even further, including magnets for industrial equipment and robot motors, and for power generators used in wind power generating systems. Since its founding, TDK has spent more than 80 years refining the magnetic materials technology that is part of its DNA, and will contribute to society by continuing to refine that technology.

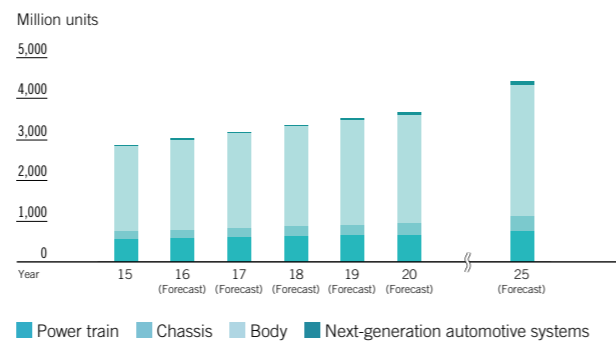


Business Strategy

- Completely rebuild the magnetics business, the starting point of the materials business
- Lead change and technological innovation in the HDD industry

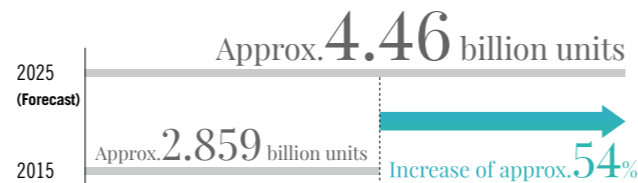
Market Data

Global Market Forecast for In-Vehicle Motors by System Area



Note 1: Based on number of vehicles produced.
 Note 2: Forecast figures for 2016 and beyond (as of August 2016).
 Source: Yano Research Institute Ltd. *In-Vehicle Motors Market 2016*

Global In-Vehicle Motors Market Size



Note 1: Based on number of vehicles produced.
 Note 2: Forecast figures for 2025 and beyond (as of August 2016).
 Source: Yano Research Institute Ltd. *In-Vehicle Motors Market 2016*

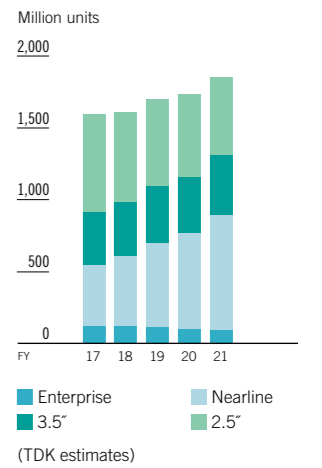
Topics

01 Leading Change and Technological Innovation in the HDD Industry

While demand for HDDs for consumer products is expected to decline, the explosive growth in the amount of data generated, backed by the development of cloud computing and IoT, means that the number of magnetic heads installed on each HDD for nearline applications used in data center servers is expected to increase.

TDK is working to contribute to the right-sizing of the industry through vertical collaboration in development and manufacturing, and by promoting a horizontal division of labor to avoid overlapping investments. At the same time, by leading in technological innovation, we will achieve an ongoing increase in HDD memory capacity for nearline applications, thus contributing to market growth.

Forecast Demand for HDD Magnetic Recording Heads



02 Improving Fuel Economy in Next-Generation Eco-Cars and Contributing to Reducing a Variety of Environmental Burdens

In recent years, Europe, China, and other regions have announced policies promoting a shift to electric vehicles, and it is expected to accelerate the spread of electric vehicles worldwide. In anticipation of the growing popularity of next-generation eco-cars, which are effective in reducing hazardous substances in exhaust emissions and CO₂ emissions levels, TDK is working to further the evolution of automotive DC-DC converters and on-board chargers, utilizing the circuit and design technologies gained through development of switching power supplies for consumer product and industrial equipment use.



Automotive DC-DC converter



On-board charger

Automotive DC-DC Converter (Generation 5) and On-Board Charger (Generation 2)

- Merges TDK proprietary materials technology (ferrite core), circuit technology (high efficiency), and simulation technology (magnetic field and heat analysis) to achieve even more compact, lightweight, high-efficiency design with greater reliability
- Enhanced efficiency improves vehicle fuel economy
- Significantly enhances output power per unit volume

Film Application Products Segment

The Film Application Products segment covers a variety of energy devices, primarily rechargeable batteries for ICT devices such as smartphones, tablets, and notebook PCs, as well as for automotive use and use in industrial equipment.

ATL, which develops and produces lithium polymer batteries, has established a position as the leading company in the lithium polymer battery field. Drones and other new areas of application are also beginning to expand.

A Brief Guide to Batteries

Significant Potential Lies in Rechargeable Lithium Polymer Batteries

Rechargeable lithium polymer batteries are a type of lithium-ion rechargeable battery, use of which has expanded in mobile devices, but which use a polymer electrolyte in gel form.

In addition to making compact, lightweight design easier, high freedom of form factor, further boosted by increasingly thinner smart devices, has increased demand for lithium polymer batteries dramatically over the past 10 years. Going forward, demand is expected to increase as an alternative to square cell batteries in notebook PCs and smartphones, and increase in IoT devices requiring compact, high-capacity batteries. Adoption is also progressing in drones and virtual reality devices, as well as in robots, automated guided vehicles (AGVs), and other applications in the industrial equipment and energy sector.

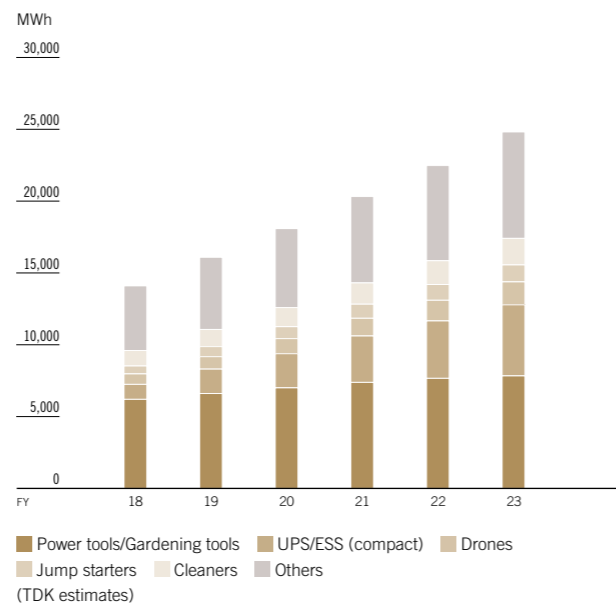


Business Strategy

- Provide the highest level of performance and reliability as the leading manufacturer of batteries for consumer products
- Use vertical integration strengths in materials and components to expand energy-related product line (□ P.38–39 Special Feature)
- Begin putting in place structures aimed at future business expansion

Market Data

Forecast Worldwide Demand for Rechargeable Batteries (Non-ICT Market)



Topic

01 Providing the Highest Level of Performance and Reliability as a Leading Manufacturer

Building around its acquisition of ATL in 2005, TDK has established a position as a leading company in the market for lithium polymer batteries for consumer product use, which carries enormous potential.

Under the current Medium-Term Plan, TDK is taking a more aggressive approach to investments needed to respond to growing demand. In China, where particular growth in demand is foreseen, we are building a new R&D center in addition to boosting production capacity.

Going forward, in addition to further enhancing our strengths—including the business speed that has been a driver of growth to date, the flexible responsiveness that exemplifies our outstanding customer service, our leading-edge technology, and our excellent operational functionality—we will continue to invest in technology aimed at ensuring high reliability and safety. As we capture demand for an alternative to square cell batteries for smartphones and notebook PCs, we will also seize on growing demand outside of the ICT market, in robots, drones, AGVs, and energy storage systems (ESS) for solar and wind power generation.

Investments Aimed at Business Expansion

- Expansion of ATL production capacity
- Construction of a new R&D center in China
- Begin preparation for construction of new domestic production site with an eye toward start of mass production in fiscal 2020 for domestic growth sectors including robots and medical devices, etc.

Other Segment

Main Product Portfolio

Mechatronics (production equipment)

TDK is supplying the market with the most advanced factory automation equipment, including flip-chip bonders that make use of mechatronics technology.



Radio wave anechoic chamber

High-performance antennas and automated measurement systems with dedicated software improve the efficiency of EMC measurements. TDK offers EMC solutions comprising highly accurate EMC measurement services to support effective noise countermeasures in electronic devices.



Flash memory application devices

TDK supplies solid state drives (SSDs) with proprietary memory control chips and CompactFlash cards for industrial use.

