

For the year ended March 31, 2015

**ANNUAL REPORT 2015** 

## Profile

Sanken Electric Co., Ltd. began operations as a spin off from a research institute in 1946 conducting R&D activities in semiconductors, which was then a new field of electronics. Technology gained through these activities was used to manufacture a growing line of power supply products.

Having grown in tandem with the electronics industry since then, today Sanken Electric has forged a commanding presence as a manufacturer in the field of power electronics. This reputation enables the Company to offer customers high-quality solutions in power supplies and peripheral business domains that meet their diverse needs. Along with a focus on growth in its core business of semiconductor devices, Sanken Electric is determined to enhance the competitiveness of products for the fast-growing fields of automotive electronics and energy-saving consumer products. Underpinned by an extensive track record and expertise gained over the years, Sanken Electric will strive to supply products that are more original and advanced than ever before, and consistently rise to meet any challenge by remaining a consummate innovator in power electronics.

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#### **Forward-Looking Statements**

This annual Report contains forecasts and other forward-looking statements concerning the Sanken Group's future plans and results. Such statements reflect assumptions and beliefs based on information available to the Group at the time of this report's writing. The Group's actual performance may be affected by numerous factors, including new competition in the electronics industry, risks and uncertainties related to market demand and conditions in global stock and foreign exchange markets. Readers are therefore reminded that actual results may differ from forward-looking statements in this report.

## **Financial Performance**

Sanken Electric Co., Ltd. and Consolidated Subsidiaries Years ended March 31, 2015, 2014, 2013, 2012, and 2011

Net Sales





Operating Income (Loss)

Years ended March 31

Vears ended March 31



Capital Expenditures/ Depreciation Expenses Years ended March 31



**R&D Expenses** Years ended March 31



Total Assets As of March 31



**Total Net Assets** As of March 31







ROA/ROE





## Dear Fellow Shareholders



## FY 2014 Business Environment and Operating Results.

## Significant improvements in earnings, coupled with increased volume of sales.

The business environment for FY2014 in general transitioned toward gradual upward trend. The economic conditions in the United States showed a positive expansion, whereas the economy in Europe indicated a bottoming out and recovery moves. The economic trend in China has proved to be held up and going strong, while the basic economic conditions in Japan were of steady but gradual recovery.

Amidst such surroundings our company pressed forward the fundamental strategic directions

of "sales growth" and "overseas expansion", with our consolidated business performance achieving a significant increase, both in sales and profits, that continued from the previous fiscal year. Our sales increased by 11.3% over the previous year to reach ¥160.7 billion and the operating income increased by 44.0% to reach ¥11.1 billion, whereas the net profit increased by 57.9% to reach ¥7.9 billion.

We believe that the principal factor behind this favorable business performance was the concentration of our management resources into the "semiconductor device business", which was implemented steadily over a number of years, in such specific initiatives as aggressive capital expenditure to upgrade the infrastructure of both product development and manufacturing organizations, in addition to

## Address by New President

I would like to express my sincere gratitude to all of our stakeholders, including our shareholders and investors, customers and suppliers, our associates and the community in general, for their continued support.

I assumed the post of President at Sanken Electric on April 1, 2015, and I would like to asure everyone of the stakeholders that I am fully committed to take charge of every aspect of our business to lead the company up to the next level of innovation-oriented driving force in power semiconductor industry.

Our company, including our affiliates, underwent extensive structural reforms to upgrade profitability following the Global Financial Crisis, implemented a dynamic shift in our strategic focus more towards the "eco-friendly and energy saving" markets, realigned the growth path aiming at rebuiliding our semiconductor device business, and set the stage for progress in our stand-alone subsidiary in the United States, thereby paving the way for the next chapter of our advance in the years to come.

Based on this foundation we reformulated a new strategy and visions for the new phase of evolution in our company and affiliates. The direction in which these new management plans are to follow is basically the extension of our managemant actions conducted in the recent past, and will be developed further as we strive for the ultimate objective of reaching a "hoped-for state of corporate stature" in ten years.

Please join us as we move forward to the next stage of new steps to be taken by our corporate group.

penetrate actively into new markets, both domestic and abroard, with the key concepts of the value of our products to be "eco-friendly and energy saving" along with "clean and green energy."

### Semiconductor device business scored significant growth in both domestic and overseas markets, over the past three years.

Looking back at the achievements of our actions during the past three years from FY2012 to FY2014, when the predecessor Medium-term Management Plan was in effect, we could record measurable results in the "semiconductor device business" where we concentrated our management resources, and in our "overseas business operations" with the accelerated implementation of sales and manufacturing network expansion.

Consequently, consolidated net sales for the "semiconductor device business" increased by 32.8% over the three year period, as compared with FY2011.

This growth was the result of a shift of our business focus more toward "automotive" and "white goods" sectors and aggressive pursuit of penetration and expansion into these two markets. Consolidated sales for our automotive business increased by 43.3%, due in part to the favorable results at Allegro MicroSystems LLC, while our parent-only business results for white goods increased by 82.8%.

Consolidated overseas sales, on the other hand, increased by 34.4% over the three year period compared with FY2011, to reach ¥93.8 billion. About 80% of the corporate-wide consolidated sales

## Dear Fellow Shareholders

increase is explained by the increases overseas and thus the expansion of our overseas business is in all practicality driving the growth of our company in general.

## Our all new "FY2015 Medium-Term Management Plan."

## Our ultimate goal is to become a ¥300 billion company in ten years.

We formulated the "FY2015 Medium-Term Management Plan" as the fundamental business plan over the next three years starting with FY2015. In our discussions running up to the plan we first envisioned the desired state of our company and its affiliates in ten years. This led us to reach the conclusion that unless we can grow to become a corporate group with annual sales of at least "¥300 billion" in ten years, we will not be able to sustain our independence in the electronics industry, where competitive environment continues to heat up and rapid changes in industry dynamics are constantly in progress. This conviction has been put in simplified form in the the plan, as "aiming for a ¥300 billion company in ten years." Every organization in our company and its affiliates is expected to share this single common corporate goal, and everyone in our company and its affiliates is expected to become united when advancing their own work toward this common goal.

## The next three years will be a period for laying out the foundation for a ¥300 billion company.

In our "FY2015 Medium-Term Management Plan", the next three years are positioned as a period for "laying out a foundation to aim for a ¥300 billion company in ten years." Based on such a notion we will take specific actions aligned with basic management thrusts for "sales growth" and "generation of cash flow through leaner production," and in three years will achieve net sales of ¥200 billion and an operating margin of 10%, our highest ever, by the final year of the plan, FY2017.

We will focus on the six strategic markets

and allocate more of managemant resources to gain "sales growth"; automotive, motion control, white goods, industrial machinery, communication and new energy sources. In order to capture the opportunities and introduce newly developed products to these strategic markets in a timely manner, we made an organizational change in the "Engineering Division." Present-day markets are undergoing tremendous changes at incredibly high speed at all times and all of a sudden a completely new area of business emerges, such as an area which spans two or more of our internal organizations, or an area which extends far beyond the areas covered by an existing set of our internal organizations. In order to respond to such situations in a quick and agile manner, it is essential for us to acquire a combination of two distinctively different skill sets; one being a cross-divisional product development function and the other being marketing functions to detect the earlier signs of change in the marketplace. The latest organizational change in the Engineering Division was intended to jump start both of these functions.

For the "generation of cash flow through leaner production," we will work primarily on the "capacity increases" in response to the "sales growth," and on the "improvements on productivity," intended to raise profit margins.

The former shall consist of upgrading and expanding the entire system of production, primarily for products intended for "strategic markets," with more aggressive capital expenditure programs in the near future. The latter consists of implementing actions to drastically improve productivity through fundamental reviews that go back even to the drawing board for production line design, in addition to improved efficiency of the entire chain of supply, production and shipment, with the migration to the brand-new enterprise IT system, cut over and became on-line in May 2015.

## Keep on making aggressive capital expenditure, both in domestic and overseas facilities.

We put in place aggressive capital expenditure pro-

grams in the past, based on our strong belief that "we cannot achieve any growth without initiating our own action first." We believe that a significant increase in our net sales and profits for two consecutive years were brought about by the investments we made, primarily in our core business of "semiconductor devices", to support our basic management focus on "sales growth" and "overseas expansion".

The aggregate total of our capital investments for the last three years through FY2014 was ¥33.3 billion, which led to the expanded production capacity at our front-end wafer fabrication processes and back-end assembly and test processes, in addition to a build up of our global production platform in conformity to our basic Business Continuity Plan (the BCP). The outcome was, for instance, significantly expanded 8-inch wafer outputs, three times to be exact, as compared with the figures for FY2011, at Yamagata Sanken Co., Ltd., and Polar Semiconductor LLC combined.

Capital expenditure for FY2015 is planned to reach as high as ¥15.0 billion, equivalent to the previous highest, recorded in FY2014. With regards to the front-end processes, we will continue to increase the eight-inch wafer fabrication capacity at Yamagata Sanken Co., Ltd., and Polar Semiconductor LLC, whereas the back-end assembly and test production lines at Ishikawa Sanken Co., Ltd., and Dalian Sanken Electric Co., Ltd. will be expanded to accomodate the growing demand for our products for automotive and white goods markets. Furthermore, a new assembly and test facility for Allegro MicroSystems LLC in Thailand is planned to ramp up, and the capacity to respond to increasing demand will be gradually enlarged.

#### Sustainable growth through relentless pursuit of "eco-friendly and energy saving" measures.

There is an array of movement to address the issues related to the sustainable earth. For instance, the international community is heading towards an agreement for a new framework to battle against global warming to be adopted at a global negotiating forum for nations, "the COP21", scheduled to be held in December 2015 in Paris. The world's manufacturers of electric motors and the likes will be required in the near future to satisfy the "Top Runner Standards" as stipulated by the Japanese Energy Conservation Law. Automobile manufacturers will be obliged to market vehicles with zero emission, and the percentage of those pure zero emission vehicles shall be at least as high as 2% of the entire fleet, according to the Zero Emission Vehicle (ZEV) Program. Furthermore, the retail distribution of electric power in Japan will be entirely liberalized in 2016 and this move is expected to accelerate the emergence of the market for the energy management systems (the EMS).

Given these changes scheduled in the near future, the electrification of automobiles will be even more accelerated, while the adoption of inverters in household appliances will progress even more, leading to a wider acceptance in the society of the "eco-friendly and energy saving" products. Moreover, the move to upgrade the eco-friendly and energy saving features through the use of advanced IT and communication technologies will be doubly significant, and the emerging trend of newer applications associated with the Internet of Things (the IoT) will certainly spread into the automobiles and white goods markets, in which case our company is better positioned with a set of well-established competitive advantages in both technological sophistication and marketing prowess.

Our company, together with its affiliated companies, will continue to offer proprietary and comprehensive solutions for "power devices" and "power systems" that are vital for "eco-friendly and energy saving" features of end products, and respond quickly and exactly to the imminent needs for energy efficiency and conservation, thereby trying to achieve a fast but sustainable growth in the future.

To our stakeholders, we request your continued support for our company and its affiliates and we hope that you are as excited as we are about the growth potential of our business in the years to come.

## Special Features: FY2015 Medium-Term Management Plan

Medium-Term Management Plan: Basic Concept

## Aim to become a ¥300 billion corporation in ten years.

Formulate a three-year plan to build foundation.

Basic Policy 1

## Sales growth

#### **Basic Strategies**

- Consider the following six markets as our "strategic markets".
  - Automotive market
  - Motion control devices market
  - · White goods market
  - Industrial machinery market
  - Telecommunications market
  - New energy market
- Timely market introduction of new products through strategic marketing
- Enhancement of global market response capabilities

#### Measures

- Development is accelerated by distributing roles of marketing and product development as well as by making selective concentrations.
- Management speed is accelerated through enhanced promotion of business alliances both inside and outside the corporate group.
- Expansion of sales channels is promoted as well as training and selection of locally recruited personnel

### Basic Policy 2

## Creation of cash flow through maintenance of optimized production

**Basic Strategies** 

Measures

- Expansion of supply capacity through substantiation of production bases
- Establishment of production organization that can respond to rapid changes in demands
- Enhancement of productiity and cost competitiveness

- Pursuit of optimum balance between internal investments and outsourcing
- Maximized use of a new enterprise system (operation starting in May 2015)
- Enhancement of technical capabilities
  - Elemental technologies
  - Manufacturing technologies
  - Production technologies



#### 

## Special Features: FY2015 Medium-Term Management Plan

### **Technical Roadmap** Technical roadmap of power semiconductors Microcomputers specializing in power management High-speed A/D, Ultra-high resolution PWM and ntegration of functions Software automated design of parameters 32bit CPUs and Flash memories (securing functional safety) Systemization of power management Single chip incorporation, microprocessing and technologies high breakdown voltage Large current, high breakdown voltage and high tolerance gate drivers High-precision analog technologies and trimming High density packaging Collection of functions Modularization > Higher breakdown voltage Larger current Discrete devices ( single function ) semiconductors ) Large chip technologies New structure power devices Chemical compound power devices Time axis

## Technical roadmap of power systems



Technologies, related to "power semiconductors" and "power systems" for which our Group is seeking to introduce highly unique total solutions, are about to evolve from clusters of various functions (modules) into a syntheses of diverse functions through intelligification and software conversions. The advent of an era in which the total innovation of energy, also about to take place for "power systems", is set against the backdrop of electric power deregulation. Our Group will advance aggressive technical developments with such a technical roadmap in our sights.

	Growth strategies	
Market	Background of growth	Product development
Automotive market	<ul> <li>Enhancement of fuel consumption and environmental regulations</li> <li>Improvement of safety</li> <li>Extension of comfort and convenience</li> </ul>	<ul> <li>ISG</li> <li>Next-generation igniter ICs (5GI &amp; 6GI)</li> <li>MOS-FET for INJ and EPS</li> <li>Automotive three-phase motor drivers</li> <li>Linear and solenoid driver ICs</li> <li>LED drivers</li> </ul>
Motion control devices market	<ul> <li>Enhancement of global energy conservation regulations</li> <li>Increase in demand for high performance and high value added requirements</li> </ul>	<ul> <li>Large-current BLDC motor driver ICs</li> <li>Next-generation semiconductor (SiC &amp; GaN) devices</li> <li>High-voltage motor driver using large-current BLDC motor driver ICs</li> <li>Ultra-high speed rotation controls.</li> <li>Large-current BLDC motor driver ICs:</li> </ul>
Power supply market	<ul> <li>Enhancement of global energy conservation regulations</li> <li>Shortage of analog engineers</li> <li>Increased demands for high breakdown voltage in new emerging markets</li> </ul>	<ul> <li>FS-IGBT, SJ-MOS and SiC devices</li> <li>Power modules</li> <li>Compact high-efficiency power supply ICs using next-generation semiconductor (SiC &amp; GaN) devices</li> <li>Analog and digital technology fusion ICs</li> </ul>
LED market	<ul> <li>Rapid expansion of automobiles</li> <li>Growth of industrial and special purpose LED lighting fixtures</li> </ul>	<ul> <li>Special color LEDs</li> <li>Ultra-high color rendering LEDs</li> <li>Highly thermal conductive next-generation packages</li> <li>LED modules</li> </ul>
PM & PS market	<ul> <li>Increased communication infrastructure investments for IoT</li> <li>Further pursuit of eco-friendly and energy saving for entire suppy chains of electric power</li> <li>Political substantiation of social infrastructure</li> <li>Growth of automotive board business</li> </ul>	<ul> <li>Small cell and micro cell power supplies</li> <li>System POL</li> <li>Large next-generation UPS units</li> <li>Composite HVDC rectifier</li> <li>Electricity storage system</li> <li>Lightning surge high tolerance AC adapters</li> </ul>
Allegro	<ul> <li>Medium-term expansion of global market</li> <li>Further acceleration of electrification on automobiles</li> <li>Progress with technical innovations for "automatic driving"</li> </ul>	<ul> <li>Rotational velocity sensor</li> <li>Automotive regulators and LED drivers</li> <li>System on chip (SOC) solutions</li> <li>Drivers for brushless DC motors</li> <li>Angular sensors and current sensors</li> </ul>

## Global Network

Sanken Electric and its affiliated companies in total have sales and production facilities in 11 countries and regions including Japan, and are trying to expand their business on a global scale through application of their unique proprietary technologies.

With the exercise of appropriate management decision-making on a global basis for both the development and production aspects of business, Sanken always strives to choose "the best available decision from "the overall group-wide perspective." This management philosophy is best represented in the arrangement in the semiconductor segment, where Sanken and its group companies are trying to shorten the development cycle time for highly sophisticated multi-functional products through a collabo-





Sanken Electric Co., Ltd.



Yamagata Sanken Co., Ltd.







Fukushima Sanken Co., Ltd.



Ishikawa Sanken Co., Ltd.



Sanken Optoproducts Co., Ltd.

rative trilateral arrangement combining Sanken Electric's power semiconductor technology including packaging technology, Allegro MicroSystems, LLC's (AMI) digital and high integration technologies, and Polar Semiconductor, LLC's (PSI) wafer processing technology.

In addition to the combination and collaboration of technologies, Sanken and its affiliates are aggressively

expanding production capacity in response to the high growth potential of the "eco-friendly and energy saving" market, and in particular improving the wafer supply system and raising cost competitiveness by expanding the front-end wafer processing capacity at PSI.



P.T. Sanken Indonesia

Polar Semiconductor, Inc.



Allegro MicroSystems, Inc.

Allegro MicroSystems

Thailand, Inc.

## Sanken at a Glance

As the market for "eco-friendly and energy-saving" products spreads to every corner of the world, stages upon which Sanken's advanced proprietary technology on power electronics and time-proven application-specific expertise do thrive will widen rapidly.

As the worldwide trend for achieving a lowcarbon society gathers momentum, it is becoming increasingly clear that the "ecofriendly and energy-saving" solutions long pursued by Sanken Electric are in ever greater demand from various markets.

For automobiles, for instance, noteworthy moves are surfacing as the use of electronic components is expanding, internal combustion cars are pressing for lower fuel consumption, and hybrid and electric vehicles are steadily on the rise. In white goods, inverters are finally making inroads, particularly in air conditioners. Furthermore, the use of natural energy, such as solar and wind power, as well as concepts such as the "Smart City," are spreading worldwide.

To bring to real life the potential of these novel ideas, the power electronics technology and expertise of Sanken and its affiliates are indispensible. Sanken has more than half a century of experience in development, production and marketing of products that meet the "eco-friendly and energy-saving" needs of the market, and is now actively engaged in technological research and product development to achieve growth on a global scale.

### Power solution technologies that are essential to the "eco-friendly and energy-saving" concept

- Process technologies
   (Power semiconductors, control ICs)
- Package technologies
- Circuit technologies
- Device technologies, etc.

## Composition of consolidated net sales by business segment (FY 2014)



## **Review of Operations** Semiconductor Devices Business

Semiconductor devices sit at the center of Sanken's entire business, and our products in this core business segment range from power ICs to high-voltage largecurrent transistors and diodes, as well as Hall-effect sensor ICs. Most of our semiconductor devices belong to an engineering field known as power electronics and deal with conversion and management of electric power. They are used as key components in various consumer and commercial products, including automobiles, home appliances, industrial machinery, AV equipment (IT and mobile equipment), telecommunications equipment and LED lighting fixtures.

Sanken Electric and its US subsidiary, Allegro MicroSystems, LLC, strive to accelerate product development with our ample reservoir of proprietary technologies, and offer to the market products best suited to satisfy the specific needs of our customers.

### Market Conditions

Activities intended to cope with the restrictions on the environment and resources, which have currently become issues of common concern all over the world, are intensifying. The international society is heading towards agreeing to a new framework for global warming countermeasures with implementation from 2020 to be established at the "COP21", scheduled to be held in Paris in December of 2015. This "Paris Agreement" is expected to further accelerate activities for the creation of a low carbon society.

The key to all this is encouragement for extending the use of "electric power" that does not involve the use of any fossil fuels, as well as "conserving electric power", which is "eco-friendly and energy saving". According to an estimate roughly 46% of the electric power consumed around the world is power used to run motors. The conservation of energy used by motors can therefore be considered one of most important issues.

The number of motors used in automobiles has rapidly increased, against a background of increasing electrification rates, as well as a growing number of hybrid and electric automobiles. The role of automotive power semiconductors, which control such electrical devices, is becoming increasingly important. In the field of white goods, furthermore, the progress of "conversion to inverter", which has significant energy saving effects, has extended beyond air conditioners to refrigerators and washing machines, leading to their rapid spread in China and the Southeast Asian bloc, which was falling behind with implementation.

The global economy generally transitioned in a gradual growth in FY2014 and demand for power semiconductors grew against a backdrop of progress in the electrification of automobiles, which has been associated with an increase in the number of automobiles sold, as well as a soaring number of white goods sold, primarily in the Asian region, along with an expanding rate of conversion to inverters.

## Fiscal 2014 Results

Our corporate group considered semiconductor devices as our mainstay business and therefore business operations were aggressively expanded based on the determination of such fields as automobiles, white goods, industrial machinery, with new energy markets and sensors as the growing markets, along with the key words "eco-friendly and energy saving". We pushed the expansion of sales by continually promoting an early market entry for new products, capturing









## Review of Operations Semiconductor Devices Business

the market needs ahead of the competition by enhancing our technical marketing and overseas sales organizations and encouraging sales promotions in line with the realities of the markets.

In the automotive field, which comprises more than 50% of the sales of our semiconductor device business, we developed new applications in response to the expanding use of motor controls, in addition to further miniaturizing and improving the performance of products for existing applications. For instance we introduced a new device for controlling the "start and stop system" of automobiles that comply with the "Euro6" standards (started in 2014), which is an exhaust gas emissions regulation in Europe, with a certain level of success achieved.

We continued to promote the sale of our products intended for white goods and we achieved significant growth in FY2014 as well, primarily in the Asian region. We are definitely expanding the breadth of implementation for our products, which encompass air conditioners, refrigerators, washing machines and the like. Price competition continues to be severe in the Asian region but our corporate group has been able to secure a high competitive advantage through further reductions to costs and by introducing products with a high value, added through the utilization of our proprietary technologies.

Other than the above the business performance of this division has generally been maintained in a favorably increasing trend through the increased sale of LED lighting, which was made possible with our light controlling technology, the strength of our corporate group.

All this resulted in an increase of ¥14.611 billion (13.1% increase), over the previous fiscal year for consolidated sales in the semiconductor business, thereby reaching ¥126.549 billion, whereas the consolidated operating income increased by ¥2.02 billion (18.9% increase) when compared to the previ-

ous fiscal year, to reach ¥12.737 billion.

## Agenda for the Future

Our corporate group will continue to consider "semiconductor devices" as our mainstay business and we will continue to aggressively strive to increase sales and achieve global expansion with the key words "eco-friendly and energy saving", targeting such markets as automotive, white goods, industrial machinery and telecommunication equipment, which are considered to be our strategic markets.

In terms of development, we have executed structural reforms throughout our organization by separating marketing from development in order to enhance both of these functions, thereby further accelerating the speed of our developments. This was intended to introduce our new products to the market in a timelier manner. In terms of production we will continue to concentrate investments, primarily in our semiconductor device business, implement strategies in our strategic markets and expand our supply capacity, to make it comparable to demand in the future through an enhanced production organization for semiconductors by increasing the production capacity in preprocesses and enhancing assembling and other operations in post processes.

In terms of individual markets, firstly the automotive field, we will implement business expansion measures in response to accelerating conversions to electronics. We will promote the development and supply of products in response to the needs of our customers by focusing on "motor controls", which are shared by all types of automobiles, including automobiles driven by an internal combustion engine, as well as hybrid automobiles and electric automobiles. The market size in this area is therefore considered to be the greatest and



### Focus Market: White Goods



#### Focus Market: OA & Industrial Years ended March 31



\*Non-consolidated

it is considered to be the primary target at Sanken Electric. Furthermore, activities will be focused on enhancing developments, targeting fields in response to such market needs as improving products that deal with fuel and environmental constraints, improving safety and convenience through such devices as the next-generation igniter IC related to new ignition systems, which comply with environmental regulations, as well as a power management switch IC and LED driver that supports safe driving during the night. At Allegro MicroSystems LCC, on the other hand, efforts will be focused on advancing action in response to expanding applications in automotive sensors to secure and improve the number one share of the global market, while creating technical innovations for popularizing "automatic driving" in the future, along with making inroads into the expansion of synergic effects with power semiconductors. Activities will also concentrate on penetrating new emerging markets in Asia, where the popularization of automobiles is accelerating, while utilizing the manufacturing plant in Thailand, which will start operations in August 2015.

In the white goods market the conversion of motors to inverters is accelerating for household appliances ranging in size from large to small, as energy saving regulations continue to become stricter around the world. In the industrial machinery market energy conservation is progressing with the implementation of brushless DC motors that deliver large electric currents. In response to such trends of the motion control devices market our corporate group will develop products that support a wide range of electric current regions, including motor driver ICs that handle larger electric currents, motor driver ICs that control ultra-high speed rotations, as well as motor drivers that use next-generation semiconductor devices made from SiC or GaN, in fields where further miniaturization and improved efficiency are required.

Other than these we will also expand our contributions for solutions that are rated top class in Japan by enhancing our activities relating to digitally controlled power supplies with consideration for developments intended to cater to the Internet of Things (IoT) in the future, as well as by developing ICs arising from a fusion of analog and digital technologies, which fully utilize our strengths.

#### Descriptions of activities by markets

Automotivo	Sanken Electric	<ul> <li>Continued market expansion with existin applications</li> <li>Cultivation of market with new applications that cater to market needs</li> </ul>					
Automotive market Allegro		<ul> <li>Development of next-generation sensors (highly sensitive &amp; compact)</li> <li>Cultivation of market with new applica- tion and pursuit of synergy with power semiconductors</li> </ul>					
Motion White control goods devices market		<ul> <li>Support household appliances ranging in size from large to small</li> <li>Capture business opportunities for conversion of products to inverters in Korea and China</li> </ul>					
market	Industrial machinery	<ul> <li>Support for brushless DC motors with larger electric currents</li> </ul>					
Power supply market		Activities relating to digitally controlled power supplies with consideration for developments intended for IoT					

Note: We discontinued the CCFL business last year, following the implementation of a strategy for a balanced reduction in the CCFL business over the three previous fiscal years.

## **Review of Operations** Power Module Business

The power module business illustrates Sanken's advantage gained from the combination of its superior semiconductor technologies and power-supply circuitry technologies. This domain is shifting away from the traditional structure centered on television, and we are seeing it broaden to encompass products such as the high efficiency adapters required for FPD-TV, printers and telecommunications and networks and to power supplies for industrial machinery and servers, and in the future we will expand to encompass even the automotive board business.

### Fiscal 2014 Results

The majority of trading in the power module (PM) business was comprised of the business operations of the power supply board for flat screen television sets up to FY2012 however this came to an end in FY2013, due to significant changes that occurred in the television industry. A year of organizational restructure continued from FY2013 to FY2014 for the business. Undertakings were dedicated to increasing the sale of new modules, including adapter products intended for our new markets of flat screen television sets, printers, copiers, telecommunication devices and the like. We were also able to achieve a degree of success in the business of boards for automotive.

As a result of all this the sale of adapter products intended for the flat screen television market did grow especially overseas, but the growth was sluggish with the sale of products intended for other markets and the consolidated sales for the PM business declined by ¥235 million (1.5% decrease) to ¥15.555 billion, in comparison with the previous year. In terms of profits there was a consolidated operating

loss of ¥594 million (consolidated operating loss of ¥1.251 billion compared with the previous fiscal year), due to a significant reduction in the product inventory revaluation loss, which was allocated in the previous fiscal year, due to the termination of the business for power supply boards intended for television sets, which did not occur this year.

## Agenda for the Future

The environment surrounding the PM business has a potential for future growth that is about to become significant. The installation of low output base stations (small cells and microcells), for mobile communications using smartphones and the like, is expected to progress rapidly, as investments for telecommunication infrastructure continues in an increasing trend as the industry gears towards the IoT. Furthermore, our board business for automotive is expected to grow also, with a rapid rise in electrification rates for automobiles.

Activities have been to establish a profit generating organization for our PM business by enhancing our capacities to cater to new applications and new markets, through a reclassification of serviced markets and product makeup. Even though we continue to endeavor to expand our volume markets for flat screen television sets, printers, telecommunication and network devices and the like, we will also proceed with penetrating into new domains that are expected to have accelerated expansion in the future, such as power supply boards for small cells and microcells, as well as system POL, while also seeking to accelerate the development of our business of boards for automotive. The mass production of boards for speed sensors and power windows has already begun from the newly established production line for automotive products at P.T. Sanken Indonesia.





## Power Module Sales by Use



## **Review of Operations** Power System Business

The power system business is the origin of our company and the source of our "excellence in manufacturing" tradition. This segment's products, such as large DC power supplies, high-intensity aircraft warning lights, or "strobes," uninterruptible power supplies, and general purpose inverters for industrial motors, have earned customer trust and a reputation for excellence in socially critical facilities where power interruptions are absolutely unacceptable, such as airport control towers, telecommunications systems, power transmission substations and highway tunnels and toll systems.

### Fiscal 2014 Results

Although the conditions continued to remain severe for capital investments in the private sector, including those of electric power companies, our power system (PS) business was able to increase the sale of products intended for telecommunication facilities, during the first half of the fiscal year. A strong and steady trend continued with the sale of products that cater to the maintenance and improvement of infrastructures implemented by government agencies, due to demand for reconstruction in the recovery from the Great East Japan Earthquake and the National Resilience Plan.

All this resulted in an increase in consolidated sales for the PS business by ¥2.025 billion (12.2% increase) over the previous fiscal year to reach ¥18.619 billion. Furthermore, this resulted in an increase of consolidated operating income for the PS business by ¥178 million (15.5% increase) over the previous fiscal year to reach ¥1.326 billion.

## Agenda for the Future

We proceeded with the development of larger nextgeneration UPS units for our telecommunications market, to continue securing highly stable business with government agencies, while expanding business with private telecommunications carriers, in view of increases in investments for telecommunication infrastructure in the future.

The pursuit of eco-friendly and energy saving measures has been accelerating from the aspects of power generation, transmission, distribution and storage, with the total deregulation of electric power sales in Japan being initiated in 2016. Such demand is expected to intensify further, pushed along by government enhancement programs for social infrastructure associated with the Tokyo Olympic Games in 2020 and the National Resilience Plan being promoted by the Central Government of Japan. Our corporate group will respond to the energy saving needs of major electric power users, through such means as the development of composite HVDC rectifier units. In terms of the reusable energy market, we will also take on challenges to pave the way for global markets by utilizing our broad experience and business performance in such areas as solar power generation and wind power generation, with the key words "Green Energy". In particular we will proceed with increasing the sale of power conditioners and storage systems for solar power generation (ESS: Energy Storage System) in the domestic market, while enhancing our penetration into the market of the energy management systems (EMS) for a variety of facilities, such as public facilities, buildings, condominiums and residential houses based on an alliance relationship with battery manufacturers and major developers.



#### Operating Income Years ended March 31



#### Power System Sales by Use Years ended March 31



## **R&D** and Intellectual Property



### R&D Expenses





### **Research and Development Policy**

Sanken has defined its business domain to be "Power Electronics," and is pursuing its research and development activities by focusing on the most promising growth stages in this sector.

We are conducting our research and development under the following two guidelines as our basic policy.

- (1) Achieve a growth strategy with the concepts "eco-friendly and energy sav ing market" and "green energy market" positioned as its core.
- (2) Facilitate new product development based on the establishment of tech nological marketing and efficient development management.

## Key Research and Development Goals and Sanken's Strengths

Currently, the Company is advancing its research and development efforts in two directions. The first is to put "eco-friendly" features into our products by raising "efficiency" in our electric power conversion and motion control devices and to bring out smaller and Currently, the Company is advancing its research and development efforts in two directions. The first is to put "ecofriendly" features into our products by raising "efficiency" in our electric power conversion and motion control devices and to bring out smaller and lighter products. The second is to offer "energy-saving" features by reducing power

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consumption while the machine is in a stand-by or lower than full power mode.

The Company itself is a globally unique existence which keeps within itself the comprehensive set of elemental technologies related to electric power supply, ranging from development and manufacture of semiconductor devices, circuit design and manufacture of power supply boards. And this whole range of technological assets give the Company a great advantage in trying to make real the concepts of "eco-friendly" and "energy-saving."

This Company has also accelerated the development of next-generation power devices, such as SiC (silicon carbide) and GaN (gallium nitride), through the achievement of market introductions. Furthermore, our Company is also advancing the development and commercialization of next-generation power management products, utilizing digital control technologies acquired through the transfer of business in 2014.

Sanken has ascertained sectors, such as automotive, white goods, telecommunications, industrial machinery, LED lighting, new energy and sensors, as its immediate target markets for going forward and will undertake focused research and development activities that are aimed to capture these target markets.

### Research and Development Achievements in Fiscal 2014

In the semiconductor devices business, Sanken is concentrating on the development of products to lead its shift to growth markets, through the introduction of technological marketing in product development, and measures that include aggressively tackling issues such as more rapid completion of development projects, and thus enhancements to development process management, and the creation of standard products for newly developing countries that are exhibiting remarkable growth.

The increased use of motors has gathered even further momentum with automobiles, which comprise a principal market of our corporate group. The number of devices used for power management and motion control is also increasing rapidly as a result, shifting the needs for the products of our corporate group towards larger modules and surface mounted applications. In such situations in FY2014, we were able to cater to demand for reducing the number of parts arising from incorporating high precision air lamps, for instance the adoption of high heat radiating packages and the integration of power MOSFET into a single package, while also dealing with a severe environment with our power supply ICs for automotive. Also, we succeeded in integrating four chips into a single package for the discreet circuitry of direct injection drivers, comprised of two MOSFET chips and two FRD chips, while additionally developing a product that enables space saving.

The proportion of brushless motors used is rapidly increasing in addition to the conversion of equipment to inverters, as time shifts into an era



## R&D and Intellectual Property



where energy conservation, comfort and efficiency are emphasized, not only for automobiles and household appliances, but also for industrial machinery as well. Brushless motors require no maintenance, offer extra stability to rotating speeds and provide an extremely broad range of velocity control, while being thinner and producing greater power in comparison with DC motors that have brushes. Sophisticated control technologies are required to control brushless motors, however, because their controls are exceptionally complicated in comparison with DC motors. Our corporate group has an extremely large advantage in this respect. In FY2014, for instance, we succeeded in densifying parts that are incorporated in high voltage three-phase motor driver ICs for inverter controls, which led to a reduction in package sizes and circuit board pattern areas, as well as developed products that can also be used in medium to small capacity refrigerators. Also, we developed products into a single package that is optimally suited for refrigerators and air conditioners by integrating output switching elements, pre-drive ICs for drive mechanisms and boot strap diodes with limiting resistors.

In terms of power supply related products we developed a mixed signal microcomputer for digital power supplies, which incorporates flash memory loaded with ample analog functions and digital circuitry, an IC for AC/DC non-insulated power supplies that facilitate the simplification of circuit designs thereby saving space and reducing power supply system costs, as well as an IC for AC/DC power supplies that comply with stricter energy conservation regulations implemented by various nations, through improvements made with reduced non-loaded electric power consumption, light load efficiency and rated load efficiency.

In terms of LED related products the semiconductors we developed include controller ICs for LED backlights that can produce highly efficient and highly accurate LED drives with a small number of parts, as well as driver ICs for LED lighting that facilitate the configuration of a power supply system with a smaller number of component parts through the integration of power MOS-



#### Expansion of power device development areas

FITs and control ICs into a single package. In terms of LED lighting products we developed a lighting apparatus that incorporates an inverter and a system to enable light controls along the Kruithof comfort curve, as well as a light-weight LED base light with significantly improved workability, while featuring a slimness and lightness that puts it at the top of its class in the industry.

### **Research and Development Organization**

The R&D organization formed around Sanken's Engineering Headquarters, which is located at the Company's head office, undertakes worldwide cooperative development activities aimed at the efficient creation of new technologies, based on mutually complementary development between two companies – Sanken's headquarters in Japan and Sanken North America, Inc. Sanken's most important overseas subsidiaries are Allegro Microsystems, LLC (AML), which specializes in the design of products such as sensors and motor drivers, and Polar Semiconductor, LLC (PSL), which manages a design center for handling new circuit development. These two companies are playing an important role in Sanken's worldwide cooperation and development under the direction of Sanken North America, Inc.

The organization of the Engineering Headquarters at the Company's head office is comprised of three operating divisions for "AMBD" (Automotive Devices Business Development), "MCBD" (Motion Control Devices Business Development) and "PCBD" (Power Conversion Devices Business Development). The Company has so far been set up in such a way that each of these three operating divisions has their own marketing and development functions. In order to respond to the technical trends that undergo changes at amazing rates, we decided that it would be essential to further enhance the functions, as well as the development functions and separate both of these functions. Marketing functions are carried out by the three respective operating divisions, which are supervised by the "Device Marketing Supervisory Department". The development functions, on the other hand, have been integrated into a newly established "Development Supervisory Department", in response to the expanding technical domain, which appeared to be broadening so fast that operating divisions were unable to keep up.

The "Power Systems Group" was also newly established for the purpose of advancing business expansions and earning capacity enhancements for the future of the PM and PS business operations.



## R&D and Intellectual Property



### Intellectual Property

It is of utmost importance to protect effectively the intellectual property rights that are related to our core technologies, side by side with creating innovative, high value added products through continuous research and development, in order to remain competitive in the semiconductor market place. To this end, Sanken has taken steps, not only to create intellectual property and legalize the respective rights, and to make effective use of this intellectual property, but also has laid out a system to accelerate development of new products and technologies through sharing of information between the research and development and the intellectual property organizations from the initial stages of development. By these actions the Company is able to improve the quality and increase the quantity of the patents it holds.

The total number of inventions and patent rights owned have both reached the highest quantity in the Company's history, as a result of the development activities for the promotion of inventions in a unified effort with the research and development organization, in addition to the aggressive application and acquisition of patents in the United States, as well as the emerging nations of Asia, in order to respond to the globalization of business operations.

Sanken has set its patent strategy to secure a cluster of patents covering both basic and improved inventions, while strengthening our position to keep the competition at a distance. Vigorous motivational activities for acquiring patents have taken root and intellectual property seminars for engineers have led to activities for verifying and analyzing the patents of other companies carried out by the engineers themselves, which in turn enabled us to broaden our inventions and avoid patent risks. Furthermore, we are actively making progress in replacing older patents with newer ones, to create an intellectual property portfolio which keeps pace with the latest changes in the business environment.

The severity of the competition in the global market is increasing steadily, with intellectual property strategies becoming increasingly important. Further increases to our patent ownership rate will be sought primarily in emerging nations, such as China, which is a nation with a massive consumption, as well as in the enforcement conscious nation of the United States, through the implementation of surveys on intellectual property rights, along with avoiding and preventing intellectual property risks implemented from a global perspective, in order to respond in an appropriate manner to intellectual property issues that can potentially arise around the world.

Contributing to the stable growth of business is also an important role played by our intellectual property organization. Efforts will be made to advance the creation of differentiating patents that encapsulate the needs of customers and technical trends ahead of the competition, through close coordination with the research and development organization. In addition, our technical know-how will be thoroughly packaged into black boxes in order to protect our differentiating technologies through bilateral efforts for patents and know-how.

## **CSR** Initiatives

## CSR Policies and System for Advancing CSR

Sanken Electric and the Sanken Group of companies clearly define the role of Corporate Social Responsibility ("CSR") as "social contribution through practice of our Management Philosophy," and are engaged in various aspects of CSR initiatives based on the following fundamental policies.

### **Fundamental CSR Policies**

**1.** Fair and just conduct in compliance with ethics and laws and ordinances

An enterprise is a member of society. As such, the Company will respond to society's trust with honest conduct of its business.

2. Energy-saving products developed and marketed through integrated application of technological capabilities

To move closer to the ultimate goal to realize a sustain-

### The CSR Committee

Sanken seeks to continually improve its over-all corporate value by pursuing responsible business activities. As a special corporate-wide, cross-functional organization, the CSR Committee works to promote dissemination of the CSR concept and encourage CSR actions at all Group companies.

- Basic Directions of the CSR Committee -
- 1. To align CSR activities with the management philosophy and business plans.
- 2. To exercise appropriate control of economic, legal, and ethical risks.
- 3. To disclose the outcomes of our CSR activities, and maintain dialogue with the various parties involved.

### **CSR Promotion Forum**

Sanken adopts a company-wide, grass-root approach to motivate its employees to participate in its wide array of CSR activities.

The Company created an organization called the CSR Promotion Forum, comprised of the so-called "CSR advocates" selected from among younger generation asable society, the Company will use its portfolio of proprietary technologies and strive to solve environmental problems.

#### 3. Good relationships with all stakeholders

The Company will conduct necessary dialogue and cooperate with individuals, groups, and communities with which it has various forms of relationships.

The CSR Committee is an organization whose members include the heads of each headquarters, and is responsible for monitoring the CSR efforts conducted at Group companies.



sociates, taking into account the diversity of gender and national origin. They regularly meet and discuss such topics as what is included in a CSR awareness raising programs, how to implement specific CSR activities including comminity works and school visits, and what the future of Sanken's CSR should be.

## CSR Initiatives

## Corporate Governance

To raise the Company's corporate value and fulfill its social responsibilities, Sanken constructs and aims to continually enhance "a framework for corporate governance" to ensure the appropriate formulation of its management goals and implementation of those goals.

### **Basic Approach to Corporate Governance**

Sanken is striding forward to enhance accountability and ensure appropriate strategic decision-making by the Board of Directors, and strengthen the board's supervisory role, in order to boost efficiency, improve transparency and maintain sound management. At the same time, the Company is working to strengthen its corporate governance system through the activities of its CSR Office and IR Group. Ad-

### **Corporate Governance Structure**

The Company, a global business enterprise, believes that it must select "a corporate governance system that is best suited for the current unique nature of the Company," taking into consideration such factors as the need to open wide channels of communication with various stakeholders including overseas investors. Based on this thinking, the Company has adopted an Audit and Supervisory Board system comprised of the seven-member Board of Directors (including one Independent Outside Director) and a four-member Audit and Supervisory Board (including two Outside Statutory Auditors).

Furthermore, the adoption of the corporate officer

ditionally, we have set the term of office of directors at one year with the aim of ensuring that the Board of Directors is more responsive to changes in the business environment and to clarify that the performance of the duties of the Board of Directors is evaluated each year corresponding to the Company's fiscal period.

system has enabled the Company to effectively separate business execution from strategic decision-making and supervisory functions. This system is also designed to facilitate rapid responses to changes in the business environment. As of the end of March 2015, Sanken had 16 corporate officers, five of whom are serving concurrently as directors.

The Company believes the independence of both the Outside Director and the two Outside Statutory Auditors has been established, and that there is no concern of a conflict of interest arising with the general shareholders.

### Internal Audits, Audits by Statutory Audits, and Financial Audits

For internal audits, Sanken has an internal audit group within the CSR Office that is staffed by ten individuals. The CSR Office is involved in on-site and off-site auditing and evaluating all corporate activities performed by employees, formulating proposals for improvements and providing execution support, and holding compliance education and training sessions.

The Statutory Auditors sit on the Board of Statutory Auditors, and meet to set audit policies and audit plans, and to decide other matters as prescribed by law, as well as to share audit information among Statutory Auditors. In accordance with the division of duties determined by the Board of Statutory Auditors, the Statutory Auditors attend Board of Directors' meetings, management committee meetings and other important meetings, as well as inspect important documents. The findings of their audits are reported to the Board of Statutory Auditors. The Statutory Auditors also meet regularly for discussions with directors, the head of the CSR Office and the Accounting Auditors to improve the efficacy of audits performed. Furthermore, strict monitoring is performed through auditing visits at the Group's business locations both in Japan and overseas, with the results reported to the Board of Statuary Auditors.

The Statuary Auditors are responsible for assessing the status of the Company's operations and assets, as well as the execution of other inspection duties. To this end, the Statuary Auditors, in their efforts to carry out effective audits, maintain close contacts with those in charge of monitoring functions within the Internal Auditing Group of the CSR Office and other units involved in internal control systems.

The independence of the two Outside Statutory Auditors has been reviewed, and the Company concludes that no conflict of interest exists between the Outside Statutory Auditors and the Company's general shareholders.

### Internal Control System and Compliance System

The Company has compiled Conduct Guidelines, which are a practicable form of the code of conduct based on the Company's statement of Management Philosophy. The Company also strives to construct and operate a highly effective system for internal control through such efforts as organizational adjustments, the introduction of a new framework of operations and the enactment of rules and regulations, in order to ensure compliance with laws and regulations by both management and employees, to improve the efficiency of operations, and to maintain the reliability of financial reports. To place its compliance organization on a solid footing, Sanken also is working to enhance its rules and systems through measures such as setting up the "Helpline System," a whistleblowing mechanism, which serves as an internal information reporting channel and consultation desk for employees.

The Company sends its Corporate Officers to Group companies as necessary as directors, in order to facilitate close communication of the Group's strategies, stay actively involved in important operational decision-making and work to implement effective management processes in general. Moreover, the Company enacted a set of policies such as the Affiliated Company Management Regulations and the Management Guidelines to clarify the duties and authority of each company in the Group. The Company has assigned from among its departments a unit that is principally responsible for overseeing group companies, and works to maintain close sharing of information and remain engaged in management guidance and performance control.

### **Risk Management System and Related Activities**

Sanken has established a Risk Management Committee, which reports directly to the President, to strengthen overall risk management for the entire Group and promote risk-event preparedness. In addition to measures to cope with natural disasters, the Committee studies, evaluates and analyzes a wide range of risks encountered by the Group during the course of business operations, and proposes and implements business continuity management plans to ensure integrated and cross-divisional risk management across the entire Group.

With respect to crisis management, the Group has taken specific measures that assume the occurrence of a seri-

ous disaster. These include the identification of the major risks associated with disasters such as earthquakes or fires, the establishment of a system to verify the safety of employees, and the formulation and use of a "Disaster Prevention Manual" and a "Business Continuity Plan," which describe how to minimize damage and injuries if a disaster were to occur, as well as a process for recovery.

Furthermore, for management of the safety of its employees at overseas offices, the Company has prepared an "International Crisis Response Manual" and taken steps to expedite its actions in an emergency.

### **Disclosure System**

The General Affairs Section continuously collects, confirms and examines information on material decision-making and material facts, and makes timely disclosures without delay after authorization by the decision-making body or occurrence

of the relevant facts in accordance with applicable laws and regulations. The IR Group, meanwhile, actively provides corporate information, including financial results, to shareholders, investors, analysts, the media and other parties, carries out public relations activities, operates the Company's website and holds financial result presentation

**General Meeting of Shareholders** Elect Elect Elect Report Audit Accounting Auditor ard of Directors Board of Statutory Auditors Supervise Audit Audit ident Appoint **CSR Committee** Corporate Officers **Management Committee** Engineering Headguarters CSR Offic Production Headquarters Quality Assurance Headquarters Related to promote Corporate Governance Sales Headquarters Related to upgrade Business Operations Sanken Group Companies

sessions. This group also implements debt investor relations in the form of IR activities provided for financial institutions, bond holders and other investors, and conducts mid-term explanatory briefings.



Information security is an issue that applies to all corporate secrets, including the terms and conditions of contracts with customers, technical information and manufacturing requirements. To strengthen its protection and control of information assets, Sanken has prepared Information Management Rules that it has fully implemented throughout the entire Group. Moreover, from time to time the Company prepared manuals defining the scope of information that must be protected, as well as control procedures, in accordance with the Act on the Protection of Personal Information and Unfair Competition Prevention Act.

## **Environmental Initiatives**

Sanken and its Group companies have placed as a critical part of our CSR activities the basic philosophy of a union between business and environmental activities. Accordingly, we are actively promoting "eco-friendly and energy-saving" activities as a management strategy, with the goal to create a low-carbon, recycling-oriented society that lives in harmony with nature.

### The Sanken Group Environmental Charter and Action Plan

Together with introducing an environmental management system (EMS) in fiscal 1998, Sanken Electric enacted The SG Environmental Charter in 2000 as an environmental vision for the Sanken Group, and has pledged to act in an environmentally friendly manner, with sincerity and ingenuity, in every aspect of its corporate activities. In addition, the

### **Environmental Management Organization**

To efficiently and accurately promote environmental management, Sanken has established a CSR Committee as a parent entity reporting directly to the Company's president, and created a Group-wide, cross-functional environmental protection organization.

Sanken currently has established environmental management systems for its production bases at thirteen domestic locations and eight overseas offices, all of which have obtained ISO14001 certification.

### **Conservation Activities**

To improve its environmental activities, the Company conducts its own environmental audit annually to determine, for example, whether it is in compliance with all relevant regulations and has made sufficient progress on its yearly plan. In addition, annual inspections by third-party organizations are conducted each year to verify the effectiveness of the Company's environmental management system.

The Company also has drawn up a Chemical Agents Control Manual, and by working to properly control chemicals strives to comply with all laws and statutes, protect the global environment, prevent accidents, maintain worker safety and health and ensure safe products. For chemicals management Company formulates and implements an SG Environmental Action Plan each year as its specific program for action. Each Group company also establishes an Environmental Policy and undertakes ongoing measures to reduce its negative environmental impact, while taking into consideration its business attributes and regional characteristics.



we put into place controls on environmental risk, which include reports to the central government on materials handled in amounts annually at each office of one ton or more for Class 1 Designated Chemical Substances, and in amounts of 0.5 tons or more for Specified Class 1 Designated Chemical Substances, based on the Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof (the "PRTR Law"). Yamagata Sanken began implementing measures to prevent substances leaking from the designated toxic substance storage facilities in order to comply with the "Water Pollution Control Act", which was revised in June 2012, with construction work completed in May 2014.

The Energy Conservation Committee was established in 2007 with the goal of bolstering activities to reduce CO<sub>2</sub> emissions at the Company's business sites. In addition to resolving issues confronting various divisions working to improve and identifying solutions that can be disseminated to other divisions, the committee conducts patrols once a year to verify the status of operations and identify points for further improvement. Activities for "eco-factory conversions" are also being promoted. A system for regenerating electric power, which was being released into the atmosphere entirely as heat energy in the inspection process of the large uninterruptable power

Implementation of "Eco and Energy Conservation Demae Jigyo (dispatched class)"

The "Saitama Environmental Learning Assistance Team" was formed to provide and assist in providing environmental learning programs for elementary, junior high and high schools in Saitama Prefecture, where the Company is headquartered. Our proprietary "Demae Jigyo" or dispatched classes are being provided in response to requests received

### **Environmental Responsiveness of Products**

In order to respond to international regulations governing hazardous substances, the Company has been implementing such measures as the promotion of environmentally friendly designs of products and green procurements. In response to the European Union's RoHS Directive (law restricting the use of six substances, including cadmium and lead), the enforcement for which started in July 2006, our Company, in collaboration with all companies of our corporate group, implemented positive steps towards a transition to lead-free solder use since 2000. Since FY2003, furthermore, restrictions on the use of six substances have been through efforts implemented to strengthen controls on products containing hazardous substances, mainly through the enforcement of "green procurement", with the shipping of products that company with the RoHS Directive ongoing since January 2005. As a result of such efforts, we were certified as a green procurement source by many of our customers who are leading environmental businesses and we completed the establishment of a framework in response to the RoHS Directive early on.

In terms of activities for electric power and resource conservation, the pillar of product development at our corporate group has been focused on "eco-friendly and energysaving", with all our product development efforts leading to source of the PS Division in 2012 and a system for maintaining the input electric power at a certain level, even when sudden changes in the electric power load occurred, was through the utilization of fly wheel power storage developed in 2013 as a further developed system.

Activities intended to reduce the electric power consumption at Yamagata Sanken, through a review of systems for pure manufacturing equipment, as well as by replacing the lighting in facilities with LED lighting, were positively evaluated and were awarded the Director-General Prize from Tohoku Bureau of Economy, Trade and Industry for their "Superior Energy Management Manufacturing Plant" in February of 2015.

from the prefecture. Female and young employees of our corporate group are also selected and appointed to provide "Eco and Energy Conservation Demae Jigyo" class services as our "CSR Promoters" at various locations, utilizing our technologies and our products (LEDs).

electric power and resources conservation. Products that comply with the "Euro6" standard, an exhaust gas emissions regulation in Europe, have been developed for our core market the automotive industry, as well as the development of products that comply with the "Top Runner Standards" for motor related markets, primarily for white goods, as our ongoing contribution to environmental measures.





## Financial Highlights

Sanken Electric Co., Ltd. and Consolidated Subsidiaries Years ended March 31, 2015, 2014, 2013, 2012, 2011 and 2010

	Millions of yen					
	2015	2014	2013	2012	2011	2010
Statements of income						
Net sales	¥ 160,724	¥ 144,467	¥ 126,386	¥ 131,803	¥ 144,882	¥ 134,134
Cost of sales	116,834	108,656	98,211	104,820	114,741	117,626
Gross profit	43,889	35,810	28,174	26,982	30,141	16,508
Selling, general and administrative expenses	32,689	28,033	23,549	22,934	23,991	21,990
Operating income (loss)	11,199	7,777	4,625	4,048	6,149	(5,482)
Other income (expenses), net	634	(2,308)	(526)	(1,502)	(5,004)	(12,684)
Income (loss) before income taxes and minority interests.	11,575	5,468	4,099	2,545	1,144	(18,166)
Net income (loss)	7,942	5,029	2,272	436	(922)	(18,950)
Balance sheets						
Total current assets	¥ 116,183	¥ 100,764	¥ 92,077	¥ 84,280	¥ 84,414	¥ 83,725
Total investments and long-term receivables	5,317	5,404	3,803	3,624	3,724	4,309
Property, plant and equipment, net	65,795	54,975	50,945	47,301	43,430	43,029
Other assets	5,971	3,618	1,691	922	813	842
Total assets	193,267	164,762	148,517	136,130	132,384	131,908
Total current liabilities	87,353	71,376	76,948	65,930	68,469	61,233
Total long-term liabilities	43,009	44,277	32,132	36,906	30,394	32,913
Total net assets	62,904	49,108	39,436	33,293	33,520	37,761
Total liabilities and net assets	193,267	164,762	148,517	136,130	132,384	131,908

	%					
Financial indicators						
Return on assets	5.35	4.84	2.84	2.25	3.76	(4.33)
Return on equity	14.35	11.44	6.30	1.32	(2.62)	(40.09)
Return on sales	6.43	3.48	1.80	0.33	(0.63)	(14.13)
Equity ratio	32.3	29.6	26.4	24.3	25.1	28.2
Current ratio	133.0	141.2	119.7	127.8	123.3	136.7

	Yen					
Per share						
Total net assets per share	¥ 515.25	¥ 401.75	¥ 322.92	¥ 272.21	¥ 274.05	¥ 306.54
Net income (loss) per share	65.50	41.47	18.73	3.60	(7.60)	(156.05)
Cash dividends per share	6.50	6.00	6.00	3.00	6.00	0.00

# **Financial Section**

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## Management's Discussion and Analysis

Sanken Electric Co., Ltd. and Consolidated Subsidiaries Years ended March 31, 2015 and 2014

### **OVERVIEW**

#### Management Strategy

Our corporate group is advancing business operations globally through the implementation of proprietary technologies, while striving to achieve innovations with technological and creative capabilities, according to the "Management Philosophy", which states our mission as providing optimum solutions for power electronics and peripheral domains, with semiconductors as its core business. We are also striving to secure a strong management base to maximize the value of the corporate group through steady endeavors when responding to the demands of society, while achieving harmony with the environment.

Our medium-term management strategy calls for action to be taken according to the medium-term management plan for a period of three years from the fiscal term ending in March of 2013 to the fiscal term ending in March of 2015, which covers five topics consisting of (1) transform the corporate culture of the Company to enable us to become a truly global company; (2) realize growth strategies that focus on eco-friendly, energysaving and green energy markets; (3) promote the development of new products through the formation of forward-looking technical marketing organizations and efficient management of development processes; (4) pursue innovative products and increase competitiveness by enhancing FAE functions; and (5) maximize the use of the Company's resources and improve financial conditions.

Aggressive efforts have been made to press on with activities intended for implementing "eco-friendly, energy-saving and green energy markets", "global market place" and "standard products", according to the basic policies of "sales growth" and "overseas expansion", during the three year period leading up to the current term (term ending in March 2015). Such activities were supported by aggressive investments to increase production at our domestic and overseas semiconductor production facilities, as well as enhancing quality control systems that were advanced to deal with production aspects, along with technical developments in response to the needs of our customers, which were to improve new product creating capabilities through the establishment of a technology center that works closely with customers, as well as new product creating capabilities, improved by technical innovations to deal with technology development aspects.

#### Fund procurement and liquidity

The methods used to procure funds for the corporate group include the issuing of corporate bonds and commercial papers, the signing of committed lines of credit agreements and bank loans. The balance of accounts as of March 31, 2015 was ¥26.57 billion for short-term loans, ¥22.5 billion for commercial papers, ¥30 billion for corporate bonds and ¥7.5 billion for longterm loans. Funds for working capital and capital investments were basically procured from internal resources, however, the procurement of funds necessary for a working capital and capital investments required to sustain the growth of the corporate group were derived from the capacity to create cash flow and considered possible through sales activities, as well as from ¥7.5 billion of unused commercial paper issuance facilities, ¥16.6 billion for unused overdrafts and about ¥13 billion in committed lines of credit agreements.

#### **Dividend policy**

The Company considers the returning of profits to shareholders as the basic policy for distributing profits and it recognizes this as one of the most important management priorities. It is therefore the intention of the corporate group to provide stable and steady dividends by improving our earning capabilities and strengthening our financial position, while maintaining the internal reserves necessary to develop our businesses and strengthen our management foundation for the future.

The distribution of capital surplus to shareholders is performed twice each year, by way of interim and year-end dividends, as our basic policy. The decision making bodies for dividends are the Board of Directors for interim dividends and the General Meeting of Shareholders for year-end dividends.

Based on the business performance for the current term that was marked by increases in income and profit, which secured a certain level of profits, the per share interim dividend was set to ¥3, whereas the year-end dividend was set to ¥3.5, leading to an annual dividend of ¥3.5, which was an increase of ¥0.5 compared to the previous fiscal year.

### **RESULTS OF OPERATIONS**

#### Summary

Demand in the electronics industry, to which our corporate group belongs, followed an expanding trend, due to the sustained favorable sales of automobiles on a global scale, particularly in the United States, whereas the number of white goods increased primarily in the Asian region, which prompted inverter conversion rates to increase.

Under such an environment, our corporate group focused its efforts on the "eco-friendly, energy-saving" and "green energy" markets, as well as the development of new markets, primarily in new emerging nations, according to the basic policies of "sales growth" and "overseas expansion".

In terms of consolidated business performance for the current term, the net sales were ¥160.724 billion, up 11.3% from the previous year, due to a steady trend in sales for semiconductor device products and PS products, as well as a continued a depreciating trend for the yen in the currency exchange market. In terms of earnings, the operating income was ¥11.199 billion, an increase of 44.0% compared to the previous term, due in part to the improved profitability associated with improvements to the product makeup and increased production, the continued suppression of fixed expenses, as well as the product inventory revaluation loss, which was allocated in the previous fiscal year, due to the termination of the business for the power supply boards intended for television sets, which did not operate this year. The net income for the current term was ¥7.942 billion, an increase of 57.9% compared to the previous term, due in part to the extraordinary income derived from the sale of fixed assets and investments in securities, regardless of the fact that the tax effects of our subsidiary in the United States, accounted for in the previous fiscal year, did not occur this term.

### **Results of Operations by Business Segment**

#### Semiconductor Devices Business

Consolidated sales for the semiconductor device segment were ¥126.549 billion, which was an increase by ¥14.611 billion (13.1%) compared to the previous term.

The sale of products for AV appliances, such as television sets and audio systems, declined however the number of automobiles sold increased primarily in the United States, while progress made with the electrification of automobiles sustained a favorable sales trend in products for automotive. The sales of white goods products for white goods, such as air conditioners,

refrigerators, washing machines and the like also increased significantly, as the inverter conversions progressed with the increase in the number of white goods sold, primarily in the Asian region.

All this resulted in an operating income of ¥12.737 billion from this business operation, which was an increase by ¥2.02 billion (18.9%) compared to the previous term.

Note: No description is provided for the CCFL business operation, as the decision to pull out of the CCFL business was determined during the previous term.

#### **Power Module Business**

Net sales for the power module business were ¥15.555 billion. which was a decrease of ¥235 million (1.5%) compared to the previous term.

The sale of adapter products for the global television market increased in comparison with the previous term, but the sale of products for audio systems and industrial machinery declined, while the sale of products for printers and copiers also declined during the fiscal year, even though the declining trend stopped during the second half of the fiscal year.

In terms of profits, there was an operating loss of ¥594 million (operating loss of ¥1.251 billion was recorded for the previous term), due to a significant reduction in the amount of loss, as the product inventory revaluation loss, which was allocated in the previous fiscal year, due to the termination of business for power supply boards intended for television sets, which did not occur this year.

#### **Power System Business**

Net sales for the power system business were ¥18.619 billion, an increase of ¥2.025 billion (12.2%) compared to the previous term.

Even though the conditions continued to remain

### Net Sales



### Operating Income



## Net Income





## Management's Discussion and Analysis

severe for capital investments in the private sector, including those of the electric power companies, the sale of products for telecommunication carriers grew during the first half of the fiscal year. A strong and steady trend continued with the sale of products that cater to the maintenance and improvement of infrastructures implemented by government agencies, due to reconstruction needs in the recovery of the Great East Japan Earthquake and the National Resilience Plan.

All this resulted in an operating income from this business operation of ¥1.326 billion, which was an increase by ¥178 million (15.5%) compared to the previous term.

#### Other Income (Expenses) and Extraordinary Items

Other income (expenses) amounted to ¥2.309 billion for the previous term, however for the current term this will result in an income of ¥376 million. In addition to the absence of liquidation and consolidation losses, relating to the withdrawal from the CCFL business that was incorporated into the accounting of the previous term for the amount of ¥2.079 billion, there was profit made from the sale of fixed assets in the amount of ¥488 million, as well as from the sale of investments on securities in the amount of ¥776 million.

### **FINANCIAL POSITION**

#### Assets

Total assets as of the end of the current fiscal year were ¥193.267 billion, an increase of ¥28.504 billion compared to the end of the previous term. The current assets are ¥116.183 billion, an increase of ¥15.419 billion compared to the end of the previous term. This was due primarily to an increase in cash and deposits by ¥2.5 billion, notes and accounts receivable by

¥352 million and inventories by ¥7.79 billion. Investments and long-term receivables were ¥5.317 billion, which was a decrease of ¥87 million compared to the end of the previous term. This was due primarily to decreases with investments in securities, although on the other hand assets relating to accrued employees' retirement benefits increased. Tangible fixed assets (net property, plant and equipment) were ¥65.795 billion, an increase of ¥10.82 billion compared to the end of the previous term. This was due primarily to increases in buildings and structures, as well as machinery and equipment.

#### Liabilities

The current liabilities at the end of the current term were ¥87.353 billion, an increase of ¥15.977 billion compared to the end of the previous term. This was due primarily to the increases of notes and accounts payable by ¥2.564 billion, the current portion of long-term debts scheduled for reimbursement within a year by ¥4.1 billion and the issuance of commercial papers by ¥7.5 billion, although short-term bank loans decreased by ¥460 million. The fixed liabilities (long-term liabilities) at the end of the current term were ¥42.892 billion, a decrease of ¥1.385 billion compared to the end of the previous term. This was due primarily to the decrease of long-term debts by ¥1.6 billion.

#### **Net Assets**

(Millions of ven)

Total assets as of the end of the current fiscal year were ¥63.021 billion, an increase of ¥13.913 billion compared to the end of the previous term. The shareholders' equity (net assets minus stock acquisition rights and minority interests) were ¥55.331 billion, which was an increase by ¥7.021 billion compared to the end of the previous term. This was due to a decrease of ¥727 million for the capital surplus, an increase of















¥7.774 billion for retained earnings, an increase of ¥7.394 billion for foreign currency translation adjustments and a reduction in the adjustment related to re-measurements of defined benefit plans by ¥458 million. Furthermore, the equity ratio at the end of the current term was 32.4%, which was an increase of 2.8 percentage points compared to the end of the previous term.

#### Cash Flows

The funding situation of our corporate group in terms of cash flow from operating activities resulted in an income of ¥9.973 billion (income reduction of ¥684 billion compared to the previous term) due to an increase in the income before income taxes and minority interests, as well as inventories. Cash flow from investing activities resulted in an expenditure of ¥14.234 billion (increase of expenditure by ¥3,058 compared to the previous term), due in part to an increase in expenditure arising from the acquisition of fixed assets (purchases of property, plant and equipment). The cash flow from financing activities resulted in an income of ¥5.692 billion (increase of income by ¥2,977 compared to the previous term), due in part to an increase in income from the issuance of commercial papers. As a result of the above, the balance of cash and cash equivalents at the end of the current term was ¥17.225 billion, an increase of ¥2.404 billion compared to the end of the previous term.

#### **Capital Expenditures**

The total amount of capital investments made by our corporate group during the current term totaled ¥15.074 billion and primarily consisted of purchases for production, testing and research equipment.

In the semiconductor business, the corporate group's capital expenditure was ¥221 million for the purchase of production, testing and research facilities, while capital expenditure to enhance facilities for consolidated subsidiaries, including Ishikawa Sanken Co., Ltd., Yamagata Sanken Co., Ltd., Fukushima Sanken Co., Ltd., Dalian Sanken Electric Co., Ltd., Allegro MicroSystems, Inc., as well as Polar Semiconductor, Inc., was ¥14.03 billion.

In the PM business, our Company's capital expenditure was ¥25 million for items such as product molds, while the capital expenditure for consolidated subsidiaries, including P.T. Sanken Indonesia, was ¥388 million for production facilities, as well as for the purchase of molds and the like.

In the PS business the Company's capital expenditure was ¥102 million for the purchase of items such as product molds and the capital expenditure for consolidated subsidiaries, including Sanken L.D. Electric (Jiang Yin) Co., Ltd., was ¥128 million, including the purchase of production facilities.

Funds for capital expenditure have been provided principally from internal funds and loans.

### **BUSINESS RISKS**

Management has identified the following issues as posing potential risks to the Company's business performance and financial condition. Concerning risks to business strategy, forecasts regarding the future presented here are judgments made as of the end of the consolidated fiscal year under review (March 31, 2014). It is important to keep in mind that actual outcomes may deviate considerably from these forecasts due to inherent uncertainties.

#### Strategy risk

#### New product development

Sanken has to develop and introduce products that correspond

#### R&D Expenses



Asset Turnover Years ended March 31 (%) 1.6 0.8 0.4 2011 2012 2013 2014 2015

## Management's Discussion and Analysis

to market needs in the electronics industry, which is characterized by drastic changes in the pace of technical progress and product life cycles. Although the Company conducts R&D while continually monitoring market trends, its profitability, earnings, and financial condition could suffer if the Company fails to introduce products in a timely manner or its products fail to win acceptance in the marketplace.

#### **Price competition**

Price competition in the electronics industry is escalating. The emergence of competitors using production bases in Southeast Asia, and particularly China, has had a major impact on the determination of prices for the Company's products. While price competition is expected to continue escalating, the Company is responding by working to further reduce its cost of goods sold and to introduce high-value-added products that leverage its inherent technologies. However, the Company's profitability, earnings, and financial condition could suffer due to the emergence of products made by companies with a greater ability to respond to price reductions or to changes in demand by its customers.

#### **Fund procurement**

The Company procures funds necessary for capital investment and R&D through the issue of corporate bonds, the issue of commercial paper, and through commitment lines of credit and bank loans. In the event the Company's credit standing is judged to have declined by the bond market or by financial institutions, there may be restrictions on fund procurement methods or an increase in procurement costs, which could adversely affect the earnings and financial condition of the Company.

#### Intellectual property

The Company takes steps to differentiate its products from those of competitors by using proprietary technologies and know-how. Although the Company files and registers intellectual property rights as necessary to protect these technologies, such protections are inadequate in some nations and regions. As such, in some cases it may be impossible to effectively prohibit third parties from manufacturing analogous products that use the Company's intellectual property. Should a third party gain intellectual property rights related to the Company's business or possess such intellectual property rights without the Company's knowledge, the Company may be requested to pay royalties, prohibited from using the applicable intellectual property rights, or have a lawsuit brought against it by a third party asserting infringement of intellectual property rights. Such actions could give rise to an increase in costs and may limit the development and sales of products.

#### **External risk**

#### **Economic environment**

In addition to Japan, the Company produces products in several other nations and regions, including Asia, North America, and Europe. Overseas production value accounted for 45.4% of consolidated production value for the year ended March 31, 2013, 50.5% for the year ended March 31, 2015. Overseas sales on a consolidated basis as a proportion of total sales were 52.1% for the year ended March 31, 2013, 56.0% for the year ended March 31, 2013, 50.1% for the year ended March 31, 2013, 56.0% for the year ended March 31, 2014 and 58.3% for the year ended March 31, 2015 respectively. As a consequence, the Company's earnings and financial condition could be adversely affected by changes in the operating environment, including economic trends, in the relevant areas.

#### **Exchange rates**

The Company derives a portion of its earnings from production and sales in nations and regions outside of Japan, and related accounts are settled in U.S. dollars or the local currencies of the corresponding nations or regions. Consequently, exchange rates prevailing at the time of conversion into Japanese yen may affect earnings.

Exports as a share of the Company's sales were 33.9% for the year ended March 31, 2013, 36.8% for the year ended March 31, 2014 and 39.0% for the year ended March 31, 2015. Of these exports, the proportion denominated in foreign currencies were 89.9% for the year ended March 31, 2013, 91.2% for the year ended March 31, 2015. To manage the exchange risk associated with transactions, the Company engages in risk hedging, including through the hedging of the balances of payables, receivables, and turnover, by expanding overseas procurement of products and raw materials and through the use of forward currency contracts. By doing so, the Company aims to minimize the impact of short-term fluctuations in the exchange rates of major currencies, including the U.S. dollar and the Japanese yen.

Additionally, appreciation of the currencies in the regions and nations where the Company has production bases may drive up manufacturing and procurement costs. Higher costs would have the impact of lower margins and diminished price competitiveness, which may adversely affect earnings.
## Internal risk

### Legal restraints

The Company has production and sales bases in 14 regions and nations, including Japan, and establishes businesses subject to the application of various laws, ordinances, and regulations (hereinafter "legal restraints") specified in each region or nation. In addition, with respect to the export and import of technology, products, and materials necessary for sales and production by the Company around the world, business activities are subject to legal restraints relating to tariffs, trade, foreign currency, strategic materials, specific technologies, antitrust, patents, the environment, and other areas in each region and nation. Failure to comply with these legal restraints could result in restrictions on the Company's business activities or undermine public confidence, which may adversely affect the Company's earnings and financial condition.

#### Quality issues

The Company provides a variety of products that satisfy its own internal quality standards, as well as those of its customers. To sustain and improve its quality control system, the Company has acquired ISO 9001 certification, an international standard for quality management and, when necessary, acquires certification for product safety based on relevant standards, including those of Underwriters Laboratories Inc. However, these efforts do not guarantee that any or all products will not be defective, recalled, or require repair. Large-scale recalls, repairs, or product defects that result in liability for damage could potentially lead to substantial costs and diminished public confidence, which in turn could adversely affect the Company's earnings and financial condition.

#### **Environmental problems**

The Company complies with all legal restraints pertaining to the prevention of environmental damage and pollution in the nations and regions where it has production bases. As part of its own environmental activities, the Company pursues ISO 14001 certification, an international standard for environmental management systems. Also, the Company works to better understand and reduce the use of substances that carry environmental burdens and that are used in its production processes or contained in its products. Failure to comply with these restraints, the occurrence of an accident that results in the discharge of a large volume of hazardous substances, or the accidental residue of prohibited substances in products could result in substantial costs to rectify these situations. In addition, this could result in restrictions on business activities, liability for reparations to customers,

and loss of public confidence, all of which could adversely affect the Company's earnings and financial position.

In addition to the risks described above, there is a possibility that demand for the Company's products will decrease because of a sudden change in the trend of electronics products, technologies used in the Company's products or in the market environment. Furthermore, in addition to a sharp increase in the cost of raw materials and the possible occurrence of a calamity such as natural disaster or fire at a production plant or materials supplier or damage to social or telecommunications infrastructure, there may be unforeseeable country risks such as a war, terrorist attack, epidemic of infectious disease, or significant changes to laws or the taxation system in a particular country or region.

Alternatively, there is the risk of legal action or the obligation to make compensation payments that could arise from a product defect causing the loss of life or impacting society, the environment, or business activities. Other risks include potential changes to the compulsory corporate contribution to retirement benefits and the increasing risk of improper or illegal use of company information, including personal information, as the use of information systems expand.

If any one or more of these potential risks occurs, and such an occurrence results in a lowering of public trust, suspension of business operations, or significant financial loss, there could be a detrimental impact on business performance.

# Consolidated Balance Sheets

Sanken Electric Co., Ltd. and Consolidated Subsidiaries

			As o	f March 31,		
		2015	2014		2015	
Assets		(Millions	(Thousands of U.S. dollars) (Note 3)			
Current assets:						
Cash and deposits (Notes 4 and 6)	¥	17,443	¥	14,943	\$	145,023
Notes and accounts receivable (Notes 5 and 6):						
Trade and other		41,264		36,777		343,069
Less allowance for doubtful receivables		(19)		(61)		(165)
		41,244		36,716		342,903
Inventories (Note 9)		53,901		46,110		448,129
Deferred tax assets (Note 17)		1,201		1,614		9,985
Other current assets		2,393		1,379		19,897
Total current assets		116,183		100,764		965,940

## Investments and long-term receivables:

Total investments and long-term receivables	5,317	5,404	44,207
Less allowance for doubtful receivables	(242)	(242)	(2,011)
Other long-term receivables	2,852	2,493	23,718
Deferred tax assets (Note 17)	286	888	2,380
Assets for retirement benefits (Note 16)	1,022	_	8,502
Investments in other securities (Notes 6 and 7)	1,397	2,265	11,617

## Property, plant and equipment, at cost (Note 10):

Property, plant and equipment, net	65,795	54,975	547,021
Less accumulated depreciation and impairment losses	(144,620)	(133,510)	(1,202,364)
	210,416	188,486	1,749,385
Construction in progress	10,308	5,699	85,707
Machinery and equipment	132,861	117,644	1,104,601
Buildings	61,982	59,958	515,319
Land	5,263	5,183	43,756

Other assets (Note 10)		5,971		3,618	49,646
Total assets	¥	193,267	¥	164,762	\$ 1,606,814

		As of March 31,		
	2015	2014	2015	
Liabilities and net assets	(M	(Thousands of U.S. dollars) (Note 3)		
Current liabilities:				
Short-term bank loans (Notes 6 and 10)	¥ 21,57	<b>'0</b> ¥ 19,530	\$ 179,338	
Current portion of long-term debt (Notes 6 and 10)	9,10	0 7,500	75,656	
Commercial paper (Note 6)	22,50	0 15,000	187,063	
Notes and accounts payable (Note 6):				
Trade and other	20,84	7 18,311	173,323	
Construction	6	<b>2</b> 33	520	
	20,90	9 18,345	173,843	
Accrued expenses	9,92		82,527	
Lease obligations	1,23		10,254	
Income taxes payable	18		1,550	
Deferred tax liabilities (Note 17)		0 1	4	
Other current liabilities	1,92		16.013	
Total current liabilities	87,35		726,253	
Long-term liabilities:	00.40	25.000	077 695	
Long-term debt (Notes 6 and 10)	33,40		277,685	
Lease obligations.	1,25		10,424	
Accrued retirement benefits for directors	2	<b>18</b>	212	
Asset retirement obligations	-	- 60	_	
Liabilities for retirement benefits (Note 16)	2,99		24,888	
Deferred tax liabilities (Note 17)	1,93		16,051	
Other long-term liabilities	3,28		27,339	
Total long-term liabilities	42,89	<b>2</b> 44,277	356,601	
Net assets (Note 18):				
Shareholders' equity:				
Common stock:				
Authorized – 257,000,000 shares				
Issued and outstanding: 2015 – 125,490,302 shares	20,89	6 —	173,734	
2014 - 125,490,302 shares	-	- 20,896	—	
Capital surplus	10,30	11,028	85,644	
Retained earnings	28,11	4 20,340	233,744	
Less treasury stock, at cost: 4,253,173 shares				
in 2015 and 4,223,339 shares in 2014	(3,98	(3,954)	(33,097)	
Total shareholders' equity (Note 22)	55,33	48,310	460,025	
Accumulated other comprehensive income:				
Net unrealized gain on securities	37	<b>'1</b> 461	3,088	
Translation adjustments	5,77	(1,615)	48,045	
Retirement benefit liability adjustments	1,10		9,166	
Total accumulated other comprehensive income (loss)	7,25	<b>2</b> 407	60,300	
Minority interests	43	390	3,634	
Total net assets	63,02	49,108	523,960	

# Consolidated Statements of Income

Sanken Electric Co., Ltd. and Consolidated Subsidiaries

		For	the ye	ar ended Marc	h 31,
		2015		2014	2015
_		(Million	(Thousands of U.S. dollars) (Note 3)		
Net sales	¥	160,724	¥	144,467	\$ 1,336,248
Cost of sales (Notes 16, 19 and 21)		116,834		108,656	971,355
Gross profit		43,889		35,810	364,892
Selling, general and administrative expenses					
(Notes 12, 16, 19 and 21)		32,689		28,033	271,778
Operating income		11,199		7,777	93,113

## Other income (expenses):

Interest expense	(783)	(784)	(6,517)
Interest and dividend income	52	39	435
Foreign exchange gain	251	161	2,088
Depreciation of idle assets	(7)	—	(63)
Gain on sales of fixed assets (Note 13)	488	0	4,060
Gain on sales of securities (Note 7)	776	—	6,453
Loss on termination of business (Note 14)	—	(2,079)	_
Other, net	(400)	353	(3,331)
	375	(2,308)	3,125

Income before income taxes and minority interests		11,575		5,468	96,238
Income taxes (Note 17):					
Current		2,509		415	20,867
Deferred		1,113		1	9,253
Income before minority interests		7,952		5,051	66,117
Minority interests in income		10		21	88
Net income (Note 22)	¥	7,942	¥	5,029	\$ 66,029

# Consolidated Statements of Comprehensive Income

Sanken Electric Co., Ltd. and Consolidated Subsidiaries

	For the year ended March					1 31,		
		2015		2014	2015			
		(Millions	s of yen)		`U.	ousands of S. dollars) (Note 3)		
Income before minority interests	¥	7,952	¥	5,051	\$	66,117		
Other comprehensive income:								
Net unrealized gain (loss) on securities		(90)		320		(750)		
Translation adjustments		7,433		3,443		61,804		
Retirement benefit liability adjustments		(458)		_		(3,813)		
Total other comprehensive income		6,884		3,764		57,240		
Comprehensive income (Note 15)	¥	14,837	¥	8,815	\$	123,357		
Breakdown:								
Comprehensive income attributable to shareholders of the Sanken Electric Co., Ltd	¥	14,787	¥	8,738	\$	122,940		
Comprehensive income attributable to minority interests		50		76		417		

# Consolidated Statements of Changes in Net Assets

Sanken Electric Co., Ltd. and Consolidated Subsidiaries

		For the y	vear ended March	n 31, 2015						
	Shareholders' equity									
	Common Capital stock surplus		Retained earnings	Treasury stock, at cost	Total shareholders' equity					
			(Millions of yen)							
Balance at April 1, 2014	¥ 20,896	¥ 11,028	¥ 20,340	¥ (3,954)	¥ 48,310					
Cumulative effect of changes in accounting principle			(158)		(158)					
Restated balance at April 1, 2014	20,896	11,028	20,181	(3,954)	48,152					
Changes during the year										
Effect of change of the fiscal year-end of consolidated subsidiaries			(8)		(8)					
Cash dividends paid (other capital surplus)		(727)			(727)					
Net income			7,942		7,942					
Acquisition of treasury stock				(26)	(26)					
Disposition of treasury stock		0		0	0					
Net changes in items other than shareholders' equity					_					
Total changes during the year		(727)	7,933	(26)	7,179					
Balance at March 31, 2015	¥ 20,896	¥ 10,301	¥ 28,114	¥ (3,981)	¥ 55,331					

				I	For the	e year ende	ed Ma	rch 31, 201	5			
		Accu	mula	ted other c	ompre	ehensive in	come					
	hold	nrealized ing gain ecurities	c tra	Foreign urrency anslation ustments	bene	tirement efit liability ustments	com	Total cumulated other prehensive income	inte cons	nority rests in olidated sidiaries	n	Total et assets
						(Millions	s of ye	en)				
Balance at April 1, 2014	¥	461	¥	(1,615)	¥	1,561	¥	407	¥	390	¥	49,108
Cumulative effect of changes in accounting principle								_				(158)
Restated balance at April 1, 2014		461		(1,615)		1,561		407		390		48,950
Changes during the year												
Effect of change of the fiscal year-end of consolidated subsidiaries								_				(8)
Cash dividends paid (other capital surplus)								_				(727)
Net income								_				7,942
Acquisition of treasury stock								_				(27)
Disposition of treasury stock								_				0
Net changes in items other than shareholders' equity		(90)		7,394		(458)		6,845		46		6,892
Total changes during the year		(90)		7,394		(458)		6,845		46		14,071
Balance at March 31, 2015	¥	371	¥	5,778	¥	1,102	¥	7,252	¥	437	¥	63,021

	For the year ended March 31, 2015									
		S	hareholders' equ	uity						
	Common stock	Capital surplus	Retained earnings	Treasury stock, at cost	Total shareholders' equity					
		(Thousan	ds of U.S. dollar	s) (Note 3)						
Balance at April 1, 2014	\$ 173,734	\$ 91,693	\$ 169,105	\$ (32,879)	\$ 401,653					
Cumulative effect of changes in accounting principle			(1,318)		(1,318)					
Restated balance at April 1, 2014	173,734	91,693	167,786	(32,879)	400,334					
Changes during the year										
Effect of change of the fiscal year-end of consolidated subsidiaries			(71)		(71)					
Cash dividends paid (other capital surplus)		(6,048)			(6,048)					
Net income			66,029		66,029					
Acquisition of treasury stock				(221)	(221)					
Disposition of treasury stock		0		2	2					
Net changes in items other than shareholders' equity					_					
Total changes during the year		(6,048)	65,958	(219)	59,691					
Balance at March 31, 2015	\$ 173,734	\$ 85,644	\$ 233,744	\$ (33,097)	\$ 460,025					

				For th	ne year ende	d Ma	arch 31, 201	5		
		Accu	mulated other	compi	rehensive in	come	9			
	hol	unrealized ding gain securities	Foreign currency translation adjustments	ber	etirement nefit liability ljustments	con	Total cumulated other prehensive income	inte con	linority erests in solidated osidiaries	Total net assets
				(Thou	isands of U.S	S. do	llars) (Note 3	)		
Balance at April 1, 2014	\$	3,838	\$ (13,429)	\$	12,980	\$	3,389	\$	3,243	\$ 408,285
Cumulative effect of changes in accounting principle							_			(1,318)
Restated balance at April 1, 2014		3,838	(13,429)		12,980		3,389		3,243	406,966
Changes during the year										
Effect of change of the fiscal year-end of consolidated subsidiaries							_			(71)
Cash dividends paid (other capital surplus)							_			(6,048)
Net income										66,029
Acquisition of treasury stock							_			(221)
Disposition of treasury stock							_			2
Net changes in items other than shareholders' equity		(750)	61,475		(3,813)		56,912		390	57,302
Total changes during the year		(750)	61,475		(3,813)		56,912		390	116,993
Balance at March 31, 2015	\$	3,088	\$ 48,045	\$	9,166	\$	60,300	\$	3,634	\$ 523,960

				For the y	/ear en	ded March	n 31, 2	2014		
				S	hareh	olders' equ	iity			
	0	Common stock		Capital surplus		etained arnings		sury stock, at cost	sha	Total ireholders' equity
					(Millio	ons of yen)				
Balance at April 1, 2013	¥	20,896	¥	17,573	¥	9,493	¥	(3,926)	¥	44,037
Changes during the year										
Deficit disposition				(5,816)		5,816				_
Cash dividends paid (other capital surplus)				(727)						(727)
Net income						5,029				5,029
Acquisition of treasury stock								(27)		(27)
Disposition of treasury stock				(0)				0		0
Net changes in items other than shareholders' equity										_
Total changes during the year		_		(6,544)		10,846		(27)		4,273
Balance at March 31, 2014	¥	20,896	¥	11,028	¥	20,340	¥	(3,954)	¥	48,310

				I	For the	e year ende	ed Ma	rch 31, 201	4			
		Accu	mula	ted other c	ompre	ehensive in	come					
	hold	nrealized ing gain ecurities	c tra	Foreign urrency anslation ustments	bene	tirement efit liability ustments	com	Total cumulated other prehensive income	Minority interests in consolidated subsidiaries		n	Total et assets
						(Million	s of ye	en)				
Balance at April 1, 2013	¥	141	¥	(5,004)	¥	_	¥	(4,862)	¥	262	¥	39,436
Changes during the year												
Deficit disposition								_				_
Cash dividends paid (other capital surplus)								_				(727)
Net income								_				5,029
Acquisition of treasury stock								_				(27)
Disposition of treasury stock								_				0
Net changes in items other than shareholders' equity		320		3,388		1,561		5,270		128		5,398
Total changes during the year		320		3,388		1,561		5,270		128		9,672
Balance at March 31, 2014	¥	461	¥	(1,615)	¥	1,561	¥	407	¥	390	¥	49,108

# Consolidated Statements of Cash Flows

Sanken Electric Co., Ltd. and Consolidated Subsidiaries

	For	n 31,	
	2015	2014	2015
	(Millions	s of yen)	(Thousands of U.S. dollars) (Note 3)
Operating activities			
Income before income taxes and minority interests	¥ 11,575	¥ 5,468	\$ 96,238
Depreciation and amortization	9,130	8,432	75,910
Decrease in allowance for doubtful receivables	(46)	(6)	(384)
Decrease in provision for retirement benefits for employees	(1,300)	(543)	(10,816)
Interest and dividend income	(52)	(39)	(435)
nterest expense	783	784	6,517
Gain on sales of property, plant and equipment	(488)	_	(4,060)
Gain on sales of investment securities	(776)	_	(6,453)
ncrease in notes and accounts receivable	(1,703)	(870)	(14,164)
ncrease in inventories	(4,685)	(483)	(38,958)
Decrease in notes and accounts payable	654	1,056	5,437
Other	122	(1,547)	1,016
Subtotal	13,212	12,248	109,846
Interest and dividends received	52	41	435
Interest paid	(785)	(716)	(6,533)
Income taxes paid	(2,505)	(914)	(20,826)
Net cash provided by operating activities	9,973	10,658	82,923
nvesting activities			
Purchases of property, plant and equipment	(14,801)	(10,052)	(123,062)
Proceeds from sales of property, plant and equipment	908	88	7,556
Purchases of intangible assets	(1,736)	(889)	(14,434)
Proceeds from sales of investment securities	1,476	()	12,276
Increase in loans receivable	(11)	(8)	(94)
Proceeds from loans receivable	6	14	58
Other	(77)	(328)	(645)
Net cash used in investing activities	(14,234)	(11,176)	(118,346)
Financing activities			
Increase in short-term bank loans	238	2,802	1,979
ncrease in commercial paper	7,500	2,000	62,354
Proceeds from issuance of long-term debt	7,500	_	62,354
Repayment of long-term debt	(7,500)	_	(62,354)
Proceeds from issuance of corporate bonds	_	19,908	_
Redemption of corporate bonds	_	(20,000)	_
Repayment of finance lease obligations	(1,293)	(1,290)	(10,752)
Proceeds from share issuance to minority shareholders	0	48	0
Purchase of treasury stock	(26)	(27)	(218)
Cash dividends paid	(726)	(726)	(6,040)
Net cash provided by financing activities	5,692	2,714	47,323
Effect of exchange rate changes on cash and cash equivalents	1,051	586	8,741
Net increase in cash and cash equivalents	2,482	2,783	20,642
Cash and cash equivalents at beginning of the year	14,820	12,036	123,215
Effect of change of the fiscal year-end of consolidated subsidiaries	(77)	-2,000	(647)
Cash and cash equivalents at end of the year (Note 4)	¥ 17,225	¥ 14,820	\$ 143,209
	+ 17,225	+ 14,020	φ 140,20

## **Notes to Consolidated Financial Statements**

Sanken Electric Co., Ltd. and Consolidated Subsidiaries March 31, 2015

#### Summary of Significant Accounting Policies

#### (a) Basis of Presentation

The accompanying consolidated financial statements of Sanken Electric Co., Ltd. (the "Company") and consolidated subsidiaries (collectively, the "Group") have been prepared in accordance with accounting principles generally accepted in Japan, which are different in certain respects as to the application and disclosure requirements of International Financial Reporting Standards, and are compiled from the consolidated financial statements prepared by the Company as required by the Financial Instruments and Exchange Law of Japan.

The accompanying consolidated financial statements for the year ended March 31, 2015 have been prepared by using the accounts of foreign consolidated subsidiaries prepared in accordance with either International Financial Reporting Standards (IFRS) or accounting principles generally accepted in the United States as adjusted for certain items including goodwill, actuarial differences and capitalized development costs.

Certain amounts in the prior year's financial statements have been reclassified to conform to the current year's presentation.

As permitted by the Financial Instruments and Exchange Law, amounts of less than one million yen have been omitted. As a result, the totals shown in the accompanying consolidated financial statements (both in yen and in U.S. dollars) do not necessarily agree with the sums of the individual amounts.

#### (b) Principles of Consolidation

The accompanying consolidated financial statements include the accounts of the Company and all its subsidiaries. As of March 31, 2015, the number of consolidated subsidiaries was 33 (30 in 2014). Significant intercompany transactions and account balances have been eliminated in consolidation. Generally, the differences, if significant in amounts, between the cost and the equity in the underlying net assets at fair value of consolidated subsidiaries at the date acquired are capitalized in the year of acquisition and amortized principally over a five-year period. Allegro MicroSystems Europe, Ltd., newly established two subsidiaries and acquired one company during the fiscal year ended March 31, 2015 all of which were newly included in the scope of consolidation.

#### (c) Securities

The accounting standard for financial instruments requires that securities be classified into three categories: trading, held-tomaturity or other securities. Trading securities are carried at fair value and held-to-maturity securities are carried at amortized cost. Marketable securities classified as other securities are carried at fair market value with any changes in unrealized gain or loss, net of the applicable income taxes, included directly in net assets. Non-marketable securities classified as other securities are carried at cost. The cost of securities sold is determined by the moving average method.

#### (d) Inventories

Inventories held for sale in the ordinary course of business are stated at the lower of cost and net realizable value. Cost is determined principally by the first-in, first-out method.

#### (e) Property, Plant and Equipment; Intangible Assets; Leased Assets; and Depreciation and Amortization

Property, plant and equipment are recorded at cost. Depreciation at the Company and its subsidiaries is computed principally by the straight-line method over the estimated useful lives of the respective assets. The estimated useful lives are as follows:

Buildings		8 – 60 years	
Machinery a	and equipment	3 – 12 years	

Intangible assets are amortized over a period of 5 years by the straight-line method.

Leased assets under finance lease transactions that stipulate the transfer of ownership of the leased assets to the lessee are depreciated principally over the estimated useful lives of similar-owned assets by the straight-line method.

Leased assets under finance lease transactions that do not stipulate the transfer of ownership of the leased assets to the lessee are depreciated over their lease periods by the straight-line method with a residual value of zero.

#### (f) Allowance for Doubtful Receivables

Estimated uncollectible amounts are calculated using historical data for trade receivables and individually considering the probability of collection of doubtful receivables.

#### (g) Accrued Bonuses for Directors and Corporate Auditors

Accrued bonuses for directors and corporate auditors are calculated based on estimated bonus payments attributable to the fiscal year.

#### (h) Bond Issuance Costs

Bond issuance costs are charged to income when incurred.

#### (i) Employees' Retirement Benefits

The retirement benefit obligation for employees is attributed to each period by the benefit formula method.

Prior service cost is amortized from the year in which the gain or loss is recognized primarily by the declining-balance method over various periods (principally 10 through 18 years) which are shorter than the average remaining years of service of the

#### employees.

Net unrecognized actuarial gain or loss is amortized from the year following the year in which the gain or loss is recognized primarily by the declining-balance method over various periods (principally 10 through 18 years) which are shorter than the average remaining years of service of the employees.

Certain consolidated subsidiary uses a simplified method for calculating retirement benefit expenses and liabilities based on the assumption that the benefits payable approximates the retirement benefit obligation at year-end.

#### (j) Retirement Benefits for Directors

To prepare for the payment of retirement benefits to directors and corporate auditors, a reserve for retirement benefits has been provided at the estimated amounts required at the year-end based on the Company's internal rules.

The retirement benefits system for directors and corporate auditors of the Company was abolished in June 23, 2006.

#### (k) Foreign Currency Translation

All monetary assets and liabilities of the Company denominated in foreign currencies are translated into yen at the exchange rates prevailing as of the fiscal year end, and the resulting gain or loss is credited or charged to income.

Assets and liabilities of overseas consolidated subsidiaries are translated into yen at the fiscal year-end exchange rates. Income statements of overseas consolidated subsidiaries are translated into yen at average exchange rates. Differences arising from the translation are presented as translation adjustments and minority interests as components of net assets in its consolidated financial statements.

#### (I) Derivatives

The Company has entered into various derivatives transactions in order to manage its risk exposure arising from adverse fluctuation in foreign currency exchange rates and interest rates. Derivatives positions are carried at fair value with any changes in unrealized gain or loss charged or credited to income.

#### (m) Cash Equivalents

All highly liquid investments, generally with a maturity of three months or less when purchased, which are readily convertible into known amounts of cash and are so near maturity that they represent only an insignificant risk of any change in value attributable to changes in interest rates, are considered cash equivalents.

#### (n) Consumption Taxes

Transactions subject to consumption taxes are recorded at amounts exclusive of consumption taxes.

#### (o) Consolidated Taxation System

The Company and its domestic consolidated subsidiaries have applied the consolidated taxation system.

#### 2. Accounting Changes

The Company and its domestic subsidiaries adopted Section 35 of "Accounting Standard for Retirement Benefits" (ASBJ Statement No. 26 of May 17, 2012) and the main clause of Section 67 of "Guidance on Accounting Standard for Retirement Benefits" (ASBJ Guidance No. 25 of March 26, 2015) effective from April 1, 2014. As a result, the methods for calculating the retirement benefit obligation and service cost have been revised in the following respects: the method for attributing projected benefits to each period has been changed from the point method to the benefit formula method, and the method for determining the discount rate has been changed to use multiple discount rates reflecting the expected timing and amount of benefit payments.

The cumulative effect of changing the methods for calculating the retirement benefit obligation and service cost was recognized by adjusting retained earnings at April 1, 2014, in accordance with the transitional treatment provided in Paragraph 37 of Accounting Standard for Retirement Benefits.

This change did not have a material effect on the Company's consolidated financial statements as of and for the year ended March 31, 2015.

#### 3. U.S. Dollar Amounts

The translation of yen amounts into U.S. dollar amounts is included solely for convenience and has been made, as a matter of arithmetic computation only, at ¥120.28 = U.S.\$1.00, the approximate exchange rate prevailing on March 31, 2015. This translation should not be construed as a representation that yen have been, could have been, or could in the future be, converted into U.S. dollars at that or any other rate.

#### Supplementary Cash Flow Information

The following table represents a reconciliation of cash and deposits with cash and cash equivalents as of March 31, 2015 and 2014:

	As of March 31,							
		2015		2015				
		(Millions of yen)				nousands of .S. dollars)		
Cash and deposits	¥	17,443	¥	14,943	\$	145,023		
Restricted cash		(218)		(122)		(1,813)		
Cash and cash equivalents	¥	17,225	¥	14,820	\$	143,209		

The following table represents significant non-cash transactions as of March 31, 2015 and 2014:

			As of N	March 31,		
		2015	2	2014		2015
		(Millions	s of yen)		•	usands of . dollars)
Assets and obligations relating to finance lease transactions	¥	168	¥	373	\$	1,404

#### 5. Notes and Accounts Receivable

The retroactively adjusted liability upon transfer of export receivables was ¥183 million (\$1,527 thousand) and ¥317 million at March 31, 2015 and 2014, respectively.

#### 6. Financial Instruments

#### a. Summary of financial instruments

(1) Policy for financial instruments

The Group raises funds necessary for capital investments, R&D, etc. by bond issuances and bank loans. It manages temporary surplus funds through highly secure financial instruments, and also raises short-term operating funds by issuing commercial paper and obtaining bank loans. The Group follows a policy of using derivatives to hedge foreign currency exchange fluctuation risks and avoids any speculative dealings.

(2) Financial instruments and their risks

Receivables resulting from the ordinary course of business, such as notes and accounts receivable-trade, are exposed to credit risk of customers. Receivables denominated in foreign currencies derived from global business operations are also exposed to foreign currency exchange fluctuation risks. The Group hedges these risks mainly through the use of forward exchange contracts against positions after netting payables denominated in the same foreign currencies, in principle. Investment securities are mainly composed of the shares of corporations with which the Group has business relationships and therefore are exposed to the risk of market price fluctuations.

Payables from the ordinary course of business such as notes and accounts payable-trade are mostly to be settled in one year. As some of them are denominated in foreign currencies due to importing materials and exposed to foreign currency exchange fluctuation risks, they are constantly maintained within the range of receivables in the same currencies. Short-term bank loans and commercial paper are used for financing mainly in relation to operating funds, while long-term bank loans and bonds are used for the purpose of financing capital investments. Some have floating interest rates and are therefore exposed to the risk of interest rate fluctuation.

Forward exchange contracts are derivative transactions that are entered into in order to hedge foreign currency exchange fluctuation risks associated with foreign currency denominated receivables and payables arising from the ordinary course of business.

- (3) Risk management for financial instruments
  - <1> Management of credit risk (risk of customer default)
    - The sales division of the Group regularly monitors the financial position of main customers and manages due dates and outstanding balances due from each customer in accordance with provisions of credit management regulations to minimize the risk of defaults resulting from the deterioration of a customer's financial position.
  - <2> Management of market risk (foreign exchange risk, interest rate risk and others) For receivables and payables denominated in foreign currencies, the Group identifies the foreign currency exchange

fluctuation risks by currency each month and enters into forward exchange contracts to hedge such risk. Regarding the market price risk of investment securities, the Group regularly monitors the fair value of such securities as well as financial positions of the issuers. The Group also continuously reviews the status of possessing such securities taking into consideration business relationships with the issuers. When borrowing a bank loan with a floating interest rate, the Group reduces the risk by limiting the loan term to within three years in principle, monitoring the remaining term until the interest rate renewal date, monitoring the interest rate fluctuation trends, and responding in consideration of the balances between short-term loans and long-term loans or between fixed interest rates and floating interest rates.

In regard to derivative transactions, the finance division enters into contracts, confirms balances and keeps accounts based on the corporate policy. The status of derivative transactions is reported monthly to the management meeting.

<3> Management of liquidity risk (risk of failure to repay obligations)

The finance division manages liquidity risk in a timely manner by updating the cash-flow budget based on reports from each business division.

(4) Supplemental explanation of the fair value of financial instruments

Fair values of financial instruments are measured based on the quoted market price, if available, or are reasonably estimated if a quoted market price is not available. The fair value of financial instruments for which a quoted market price is not available is calculated based on certain assumptions, and the fair value might differ if different assumptions are used.

In addition, the contract amounts of the derivative transactions described below in "b. Fair value of financial instruments" do not represent the market risk of the derivative transactions.

#### b. Fair value of financial instruments

The carrying amounts on the consolidated balance sheets, fair value, and difference as of March 31, 2015 and 2014 are as follows. Financial instruments, for which it is extremely difficult to measure the fair value, are not included. (Please see "Note 2: Financial instruments for which the fair value is extremely difficult to measure," below)

	As of March 31, 2015												
		Carrying amount Fair value		Dif	ference	Carrying amount	Fair value	Di	fference				
			(Milli	ons of yen)			(Thou	sands of U.S. do	llars)				
Assets													
(1) Cash and deposits	¥	17,443	¥	17,443	¥	_	\$ 145,023	\$ 145,023	\$	_			
(2) Notes and accounts receivable- trade		37,489		37,489		_	311,682	311,682		_			
(3) Investment securities Other securities		1,313		1,313		_	10,921	10,921		_			
Total	¥	56,246	¥	56,246	¥	_	\$467,627	\$467,627	\$	_			
Liabilities													
(1) Notes and accounts payable- trade	¥	20,909	¥	20,909	¥		\$173,843	\$173,843	\$	_			
(2) Short-term bank loans and current portion of long-term debt		21,570		21,570			179,338	179,338		_			
(3) Commercial paper		22,500		22,500		_	187,063	187,063		_			
(4) Bonds		30,000		30,294		(294)	249,418	251,867		(2,449)			
(5) Long-term debt (except for bonds)		12,500		12,501		(1)	103,924	103,936		(12)			
(6) Lease obligations		2,487		2,447		39	20,678	20,352		326			
Total	¥1	09,967	¥	110,224	¥	(256)	\$914,266	\$916,402	\$	(2,135)			
Derivative transactions (*)	¥	(599)	¥	(599)	¥	_	\$ (4,987)	\$ (4,987)	\$	_			

(\*) Derivative transactions are shown at the net value of the assets and liabilities arising from the transactions.

			As of N	larch 31, 2014		
	Carrying amount		F	air value	Di	fference
			(Mill	ions of yen)		
Assets						
(1) Cash and deposits	¥	14,943	¥	14,943	¥	—
(2) Notes and accounts receivable-trade		33,986		33,986		—
(3) Investment securities Other securities		2,171		2,171		_
Total	¥	51,101	¥	51,101	¥	_
Liabilities						
(1) Notes and accounts payable-trade	¥	18,345	¥	18,345	¥	_
(2) Short-term bank loans and current portion of long-term debt		27,030		27,030		
(3) Commercial paper		15,000		15,000		
(4) Bonds		30,000		30,306		(306)
(5) Long-term debt (except for bonds)		5,000		5,008		(8)
(6) Lease obligations		3,545		3,486		58
Total	¥	98,921	¥	99,178	¥	(256)
Derivative transactions (*)	¥	(246)	¥	(246)	¥	_

(\*) Derivative transactions are shown at the net value of the assets and liabilities arising from the transactions.

Note 1: Methods to measure the fair value of financial instruments, investment securities, and derivative transactions Assets

(1) Cash and deposits, and (2) Notes and accounts receivable-trade

The carrying amount approximates fair value because of the short maturities of these instruments.

(3) Investment securities

The fair value of equity securities equals quoted market prices, if available. Information on investment securities classified by holding purpose is described in "Note 7. Securities."

Liabilities

(1) Notes and accounts payable-trade, (2) Short-term bank loans and current portion of long-term debt, and (3) Commercial paper The carrying amount approximates fair value because of the short maturities of these instruments.

(4) Bonds

The fair value equals quoted market prices.

(5) Long-term debt (except for bonds)

The fair value of long-term debt on floating interest rates is nearly equal to the carrying value as market rate is reflected in a short period. The fair value of long-term debt on fixed interest rates is based on the present value of the total amount of principal and interest discounted by the interest rates that would presumably apply to similar debt.

(6) Lease obligations

The fair value of lease obligations is based on the present value of the total amount of payments discounted by the interest rates that would presumably apply to similar lease contract.

Derivative transactions

Contract amounts and estimated fair value are described in "Note 8. Derivatives"

Note 2: Financial instruments for which the fair value is extremely difficult to measure

			As of N	larch 31,		
				2015 ng amount		
		(Million	s of yen)	of yen)		isands of dollars)
Unlisted equity securities and others	¥	83	¥	93	\$	695

The above are not included in "Assets (3) Investment securities" because no quoted market price is available and it is extremely difficult to measure the fair value.

## Note 3: The redemption schedule for receivables and investment securities with maturities subsequent to the consolidated closing date

				As of Marc	h 31, 2015	i		
	Wit	thin 1 year		r 1 year 1 5 years		5 years 10 years	Over	10 years
				(Millions	s of yen)			
Cash and deposits	¥	17,443	¥	_	¥	_	¥	_
Notes and accounts receivable-trade		37,489		_		_		_
Investment securities								
Other securities with maturities		_		_		_		_
Total	¥	54,932	¥	_	¥	_	¥	

				As of Marc	h 31, 2015	5		
	W	Over 1 ye Within 1 year within 5 ye		,	Over 5 years within 10 years		Over <sup>-</sup>	10 years
				(Thousands c	f U.S. doll	ars)		
Cash and deposits	\$	145,023	\$	—	\$	_	\$	_
Notes and accounts receivable-trade		311,682		_		_		_
Investment securities								
Other securities with maturities		_		_		_		_
Total	\$	456,705	\$	_	\$	_	\$	_

	As of March 31, 2014										
	Wi	Within 1 year		Over 1 year within 5 years		5 years 10 years	Over	10 years			
				(Million	s of yen)						
Cash and deposits	¥	14,943	¥	_	¥	_	¥	_			
Notes and accounts receivable-trade		33,986		_		_		_			
Investment securities											
Other securities with maturities		10		_		_		_			
Total	¥	48,939	¥	_	¥	_	¥				

						As of Marc	h 31, 2	015						
		ue in 1 year or less		Due after ear through 2 years	2 yea	ue after ars through 3 years	3 year	e after s through years	ough 4 years through			e after /ears		
			(Millions of yen)											
Short-term bank loans	¥	21,570	¥	_	¥	_	¥	_	¥	_	¥	_		
Commercial paper		22,500		_		_		_				—		
Bonds		4,100		25,900		_		_				—		
Long-term debt (except for bonds)		5,000		_		7,500		_				—		
Lease obligations		1,233		924		208		87		9		23		
Total	¥	54,404	¥	26,824	¥	7,708	¥	87	¥	9	¥	23		

## Note 4: The redemption schedule for bonds, long-term debt and lease obligations and other liabilities with maturities subsequent to the consolidated closing date

				A	As of Marc	h 31, 2	015			
	Due in 1 year or less	, , , ,		2 year	e after s through years	3 year	e after s through years	Due after Igh 4 years through 5 years		 e after years
				(Tho	ousands o	f U.S. c	Iollars)			 
Short-term bank loans	\$179,338	\$	_	\$	_	\$	_	\$	_	\$ 
Commercial paper	187,063		_		_		_			_
Bonds	34,087	215	<b>,330</b>		_		_			_
Long-term debt (except for bonds)	41,569			(	62,354		_			_
Lease obligations	10,254	7	,683		1,736		731		75	196
Total	\$452,313	\$223	3,014	\$ 6	64,091	\$	731	\$	75	\$ 196

						As of Marc	h 31, 2	2014						
		Due in 1 Year 1 or Less						1 Year through		rough 3 Years through 4 Years throu		s through		after ears
			(Millions of yen)											
Short-term bank loans	¥	27,030	¥	_	¥		¥	_	¥	_	¥	_		
Commercial paper		15,000		_		_		_		_		_		
Bonds		_		4,100		25,900				_		_		
Long-term debt (except for bonds)		_		5,000		_		_		_		_		
Lease obligations		1,248		1,203		906		168		15		1		
Total	¥	43,279	¥	10,303	¥	26,806	¥	168	¥	15	¥	1		

## 7. Securities

#### (1) Other securities

Marketable securities classified as other securities at March 31, 2015 and 2014 are summarized as follows:

						As of Marc	h 31, 2015						
		arrying Imount		luisition cost		lized gain loss)	Carrying amount	Ac	quisition cost		unrealized iin (loss)		
			(Millio	ns of yen	)		(Thousands of U.S. dollars)						
Securities whose carrying amount exceeds their acquisition cost: Equity securities Securities whose acquisition cost exceeds their carrying amount:	¥	1,305	¥	757	¥	548	\$ 10,856	\$	6,298	\$	4,557		
Equity securities		7		9		(1)	65		75		(10)		
	¥	1,313	¥	766	¥	546	\$ 10,921	\$	6,374	\$	4,547		

	As of March 31, 2014								
		arrying mount	Ac	quisition cost		nrealized n (loss)			
			(Millio	ons of yen)					
Securities whose carrying amount exceeds their acquisition cost: Equity securities	¥	2,171	¥	1,457	¥	714			
Securities whose acquisition cost exceeds their carrying amount:		,							
Equity securities		—		—		—			
	¥	2,171	¥	1,457	¥	714			

(2) Sales of other securities

Sales of securities classified as other securities for the year ended March 31, 2015 are summarized as follows:

				As	s of Marc	h 31,	, 2015				
Proceeds fro sales		Gain	on sales	Loss c	on sales	Pro	ceeds from sales		n on sales	Loss	on sales
	(N	Millior	ns of yen)				(Tho	usand	s of U.S. d	ollars)	
¥ 1,46	8	¥	776	¥	_	\$	12,209	\$	6,453	\$	_
	sales	(1	salesGain(Million	sales Gain on sales (Millions of yen)	Proceeds from sales Gain on sales Loss of (Millions of yen)	Proceeds from sales Gain on sales Loss on sales (Millions of yen)	Proceeds from Pro sales Gain on sales Loss on sales (Millions of yen)	sales Gain on sales Loss on sales sales   (Millions of yen) (Though the sales)	Proceeds from sales Gain on sales Loss on sales Sales Gain (Millions of yen) (Thousand	Proceeds from sales Proceeds from Gain on sales Proceeds from Loss on sales Proceeds from sales Gain on sales   (Millions of yen) (Thousands of U.S. determine)	Proceeds from Sales Gain on sales (Millions of yen) Proceeds from Sales Gain on sales Loss on sales (Thousands of U.S. dollars)

## 8. Derivatives

Summarized below are the contract amounts and estimated fair value of the Company's open derivatives positions at March 31, 2015 and 2014, for which deferral hedge accounting has not been applied:

	20	15	2014			2015			
	Contract amount						timated ir value	Contract amount	Estimated fair value
			(Millions	of yen)	· ·	ands of Iollars)			
Forward foreign exchange contracts:									
Sell U.S. dollars	¥ 14,522	¥	(599)	¥ 11,78	86 ¥	(246)	\$120,742	\$ (4,987)	

#### 9. Inventories

Inventories at March 31, 2015 and 2014 were as follows:

		2015		2014	2015
		(Millions	s of yen	)	(Thousands of U.S. dollars)
Finished products	¥	16,963	¥	13,760	\$ 141,036
Work in process		24,351		20,885	202,455
Raw materials and supplies		12,585		11,464	104,637
	¥	53,901	¥	46,110	\$ 448,129

The book values of inventories were written down to reflect the decline in profitability by ¥347 million (\$2,891 thousand) and ¥190 million for the years ended March 31, 2015 and 2014, respectively. The inventory write-downs were included in "Cost of sales."

#### 10. Short-Term Borrowings and Long-Term Debt

Short-term bank loans generally represent notes and overdrafts. The related weighted average interest rates at March 31, 2015 and 2014 were approximately 0.74% and 0.78%, respectively. The weighted average interest rates applicable to the current portion of long-term debt (excluding lease obligations) at March 31, 2015 and 2014 were approximately 1.36% and 0.67%, respectively. The weighted average interest rates applicable to commercial paper at March 31, 2015 and 2014 were approximately 0.28% and 0.30%, respectively. The weighted average interest rates applicable to the current portion of lease obligations at March 31, 2015 and 2.30%, respectively. The weighted average interest rates applicable to the current portion of lease obligations at March 31, 2015 and 2.30%, respectively.

Long-term debt at March 31, 2015 and 2014 is summarized as follows:

	2015	2014	2015
	(Million	s of yen)	(Thousands of U.S. dollars)
Loans payable in yen with a weighted average rate of 0.84% at March 31, 2015 and 0.96% at March 31, 2014	¥ 12,500	¥ 12,500	\$ 103,924
1.80% bonds due 2015	4,100	4,100	34,087
0.60% bonds due 2017	5,900	5,900	49,052
1.81% bonds due 2016	10,000	10,000	83,139
1.10% bonds due 2016	10,000	10,000	83,139
Lease obligations with a weighted average rate of 2.39% at March 31, 2015 and 1.87% at March 31, 2014	2,487	3,545	20,678
	44,987	46,045	374,020
Less current portion	(10,333)	(8,748)	(85,911)
	¥ 34,653	¥ 37,296	\$ 288,109

As is customary in Japan, both short-term and long-term bank loans are made under general agreements which provide that collateral and guarantees (or additional collateral or guarantees as appropriate) for present and future indebtedness be given at the request of the bank, and that the bank has the right, as the obligations become due, or in the event of default thereon, to offset cash deposits against any such obligations due to the bank. Under certain loan agreements relating to long-term debt, the creditors may require the Company to submit proposals for appropriations of retained earnings (including the payment of dividends) for the creditors' review and approval prior to their presentation to the shareholders. None of the creditors has ever exercised these rights.

At March 31, 2015 and 2014, the assets pledged as collateral for short-term bank loans and long-term debts were as follows:

		2015	2014			2015	
		(Million:	s of yen)			ousands of 6. dollars)	
Land	¥	638	¥	638	\$	5,306	
Buildings		2,741		2,599		22,792	
Other assets		10		9		87	
	¥	3,390	¥	3,247	\$	28,186	

At March 31, 2015 and 2014, short-term bank loans and long-term debt secured by collateral were as follows:

		2015	2014		2015
		(Million	ousands of 6. dollars)		
Short-term bank loans and current portion of long-term debt	¥	5,096	¥	86	\$ 42,375
Long-term debt		_		5,000	_
	¥	5,096	¥	5,086	\$ 42,375

## 11. Lines of Credit

The Company and certain overseas subsidiaries have committed line-of-credit agreements and have entered into overdraft agreements with certain financial institutions in order to raise operating funds efficiently. The balances of credit available at March 31, 2015 and 2014 are summarized as follows:

	2015		2014		2015
	(Millions of yen)				(Thousands of U.S. dollars)
Total committed lines of credit and overdraft	¥	41,541	¥	39,948	\$ 345,369
Outstanding balance		11,886		11,264	98,825
Remaining balance	¥	29,654	¥	28,684	\$ 246,544

## 12. Selling, General and Administrative Expenses

The principal components of selling, general and administrative expenses for the years ended March 31, 2015 and 2014 are summarized as follows:

	2015	2014	2015
	(Millions	s of yen)	(Thousands of U.S. dollars)
Salaries and bonuses	¥ 13,016	¥ 11,456	\$ 108,215
Packing and shipping expenses	838	718	6,973
Outside services	2,984	2,514	24,814
Provision for doubtful receivables	(19)	2	(163)
Provision for directors' bonuses	30	_	249
Provision for directors' retirement benefits	6	6	53
Retirement benefit expenses	(117)	248	(978)

## 13. Gain on Sales of Fixed Assets

Gain on sales of fixed assets for the years ended March 31, 2015 and 2014 primarily resulted from the sales of land in the amounts of ¥488 million (\$4,060 thousand) and 0 million, respectively.

#### 14. Loss on Termination of Business

Loss on termination of business for the year ended March 31, 2014 relates to the decision to discontinue the CCFL business, and mainly consists of the inventory write-downs.

## 15. Reclassification Adjustments and Tax Effect Relating to Other Comprehensive Income

Reclassification adjustments and tax effect relating to other comprehensive income for the years ended March 31, 2015 and 2014 are summarized as follows:

		2015		2014		2015	
	(Millions of yen)				(Thousands of U.S. dollars)		
Net unrealized gain on securities							
Change during the year	¥	608	¥	495	\$	5,060	
Reclassification adjustments		(776)		_		(6,453)	
Amount before tax effect		(167)		495		(1,393)	
Tax effect		77		(175)		643	
Net unrealized gain on securities	¥	(90)	¥	320	\$	(750)	
Translation adjustments							
Change during the year	¥	7,433	¥	3,443	\$	61,804	
Translation adjustments	¥	7,433	¥	3,443	\$	61,804	
Retirement benefit liability adjustments							
Change during the year	¥	(281)	¥	_	\$	(2,343)	
Reclassification adjustments		(251)		_		(2,093)	
Amount before tax effect		(533)		_		(4,437)	
Tax effect		74		_		623	
Retirement benefit liability adjustments	¥	(458)		_	\$	(3,813)	
Total other comprehensive income	¥	6,884	¥	3,764	\$	57,240	

#### 16. Retirement Benefit Plans

The Company and its domestic consolidated subsidiaries have defined benefit pension plans and lump-sum payment plans, covering substantially all employees who are entitled to lump-sum or annuity payments, the amounts of which are determined by reference to their basic rates of pay, length of service, and the conditions under which termination occurs. The Company and certain domestic subsidiaries have a defined contribution plan and an advance payment plan. The Company and certain domestic subsidiaries have adopted a cash balance plan.

The overseas consolidated subsidiaries principally have defined contribution pension plans.

Certain consolidated subsidiary uses a simplified method for calculating retirement benefit expenses and liabilities.

#### Defined benefit plans

The changes in the retirement benefit obligation during the years ended March 31, 2015 and 2014 are as follows (excluding plans for which the simplified method is applied):

	2015			2014	2015
		(Millions	s of yen	)	(Thousands of U.S. dollars)
Balance at the beginning of the year		26,790	¥	26,249	\$ 222,730
Cumulative effect of change in accounting principle		158		—	1,320
Restated balance at the beginning of the year		26,948		26,249	224,050
Service cost		1,261		1,268	10,485
Interest cost		437		436	3,636
Actuarial loss		1,292		175	10,747
Retirement benefit paid		(1,120)		(1,339)	(9,317)
Other		157		(0)	1,305
Balance at the end of the year	¥	28,976	¥	26,790	\$ 240,907

The changes in plan assets during the years ended March 31, 2015 and 2014 are as follows (excluding plans for which the simplified method is applied):

	2015	2014	2015
	(Millions	s of yen)	(Thousands of U.S. dollars)
Balance at the beginning of the year	¥ 23,775	¥ 21,434	\$ 197,663
Expected return on plan assets	1,872	702	15,569
Actuarial gain	993	1,515	8,256
Contributions by the Company	1,454	1,453	12,092
Retirement benefit paid	(1,114)	(1,329)	(9,269)
Other	124	(2)	1,033
Balance at the end of the year	¥ 27,104	¥ 23,775	\$ 225,347

The following table sets forth the funded and accrued status of the plans, and the amounts recognized in the accompanying consolidated balance sheet at March 31, 2015 and 2014 for the Company's and the consolidated subsidiaries' defined benefit plans:

	2015		2014			2015
-		(Millions	s of yen)		· · ·	ousands of 6. dollars)
Retirement benefit obligation		28,406	¥	26,423	\$	236,172
Plan assets at fair value		(27,104)		(23,775)	(	225,347)
		1,302		2,648		10,825
Unfunded retirement benefit obligation		668		438		5,560
Net liability for retirement benefits in the balance sheet	¥	1,970	¥	3,087	\$	16,385
Liability for retirement benefits		2,993		3,087		24,888
Asset for retirement benefits		(1,022)		_		(8,502)
Net liability for retirement benefits in the balance sheet	¥	1,970	¥	3,087	\$	16,385

The components of retirement benefit expense for the years ended March 31, 2015 and 2014 are outlined as follows:

2015		2014			2015	
	(Millions	of yen)		· · ·	ousands of 6. dollars)	
¥	1,261	¥	1,268	\$	10,485	
	437		436		3,636	
	(1,872)		(702)		(15,569)	
	118		362		982	
	(370)		(435)		(3,076)	
	17		14		146	
¥	(408)	¥	943	\$	(3,394)	
	¥	(Millions) ¥ 1,261 437 (1,872) 118 (370) 17	(Millions of yen) ¥ 1,261 ¥ 437 (1,872) 118 (370) 17	(Millions of yen)     ¥   1,261   ¥   1,268     437   436   (1,872)   (702)     118   362   (370)   (435)     17   14	(Millions of yen)   (The U.S     ¥   1,261   ¥   1,268   \$     437   436   (1,872)   (702)     118   362   (370)   (435)     17   14   (435)   (435)	

The components of retirement benefit liability adjustments included in other comprehensive income (before tax effect) for the years ended March 31, 2015 and 2014 are outlined as follows:

	2015		2015		2015		2015		5 2		2014			2015
		(Millions	of yen)		•	usands of 6. dollars)								
Prior service cost	¥	(368)	¥	_	\$	(3,062)								
Actuarial gain and loss		(165)		—		(1,374)								
Total	¥	(533)	¥	—	\$	(4,437)								

The components of retirement benefit liability adjustments included in accumulated other comprehensive income (before tax effect) as of March 31, 2015 and 2014 are outlined as follows:

	2015		2014			2015
		(Millions	s of yen)		•	ousands of 6. dollars)
Unrecognized prior service cost	¥	(2,040)	¥	(2,409)	\$	(16,967)
Unrecognized actuarial gain and loss		1,026		860		8,530
Total	¥	(1,014)	¥	(1,548)	\$	(8,436)

The fair values of plan assets, by major categories, as percentages of total plan assets as of March 31, 2015 and 2014 are as follows:

	2015	2014
Bonds	<b>42%</b>	34%
Stocks	<b>26%</b>	38%
General accounts of life insurance companies	9%	10%
Other	23%	18%
Total	100%	100%

The expected return on plan assets has been estimated based on the anticipated allocation to each asset class and the expected long-term returns on assets held in each category.

The weighted-average actuarial assumptions used in accounting for the above plans were as follows:

	2015	2014
Discount rate	1.3%	1.7%
Expected rate of return on plan assets	7.8%	3.2%

#### Defined benefit plans accounted for using simplified method

The changes in the retirement benefit obligation calculated by the simplified method during the years ended March 31, 2015 and 2014 are as follows:

	2	<b>2015</b> 20		014	20	
		(Millions	s of yen)			sands of dollars)
Balance at the beginning of the year	¥	72	¥	56	\$	604
Retirement benefit expenses		17		14		146
Retirement benefit paid		—		(5)		_
Other		8		7		74
Balance at the end of the year	¥	99	¥	72	\$	825

#### **Defined Contribution plans**

For the years ended March 31, 2015 and 2014, contributions to the defined contribution pension plan and the advance payment plan, which are recognized as expenses, totaled ¥641 million (\$5,336 thousand) and ¥578 million, respectively.

#### 17. Income Taxes

Income taxes applicable to the Company comprise corporation, enterprise and inhabitants' taxes, which, in the aggregate, resulted in statutory tax rates of approximately 35.4% and 37.8% for the years ended March 31, 2015 and 2014, respectively.

The reconciliation between the effective tax rates reflected in the consolidated statements of operations and effective statutory tax rates for the years ended March 31, 2015 and 2014 were as follows:

_	2015	2014
Effective statutory tax rates	35.4%	37.8%
Effect of:		
Non – deductible expenses for income tax purposes	5.7	5.8
Non – taxable dividend income	(13.1)	(13.7)
Inhabitants' per capita taxes	0.3	0.6
Foreign tax rate difference	4.7	2.4
Changes in valuation allowance	(2.2)	(24.4)
Other, net	0.5	(0.9)
Effective tax rates	31.3%	7.6%

The "Act for Partial Revision of the Income Tax Act etc." (Act No. 9 of 2015) and the "Act for Partial Revision of the Local Tax Act etc." (Act No. 2 of 2015) were promulgated on March 31, 2015, as a result, the rate of corporate tax etc. will be reduced for fiscal years beginning on or after April 1, 2015.

As a result, the effective statutory tax rate used to measure the Company's deferred tax assets and liabilities was changed from 35.4% to 32.8% and 32.1% for the temporary differences expected to be realized or settled in the fiscal year beginning April 1, 2015 and for the temporary differences expected to be realized or settled from April 1, 2016, respectively. The effect of the announced reduction of the effective statutory tax rate was not material as of and for the year ended March 31, 2015.

The significant components of the Company's deferred tax assets and liabilities as of March 31, 2015 and 2014 were as follows:

	2015	2014	2015
	(Millions	(Thousands of U.S. dollars)	
Deferred tax assets:			
Net operating loss carryforwards	¥ 12,133	¥ 14,400	\$ 100,876
Liabilities for retirement benefits	939	1,596	7,808
Inventories	2,905	2,938	24,154
Accrued bonuses	895	879	7,447
Net unrealized holding gain	344	396	2,863
Tax credit carryforwards	213	686	1,771
Impairment losses	611	577	5,087
Other	1,514	1,155	12,590
Gross deferred tax assets	19,557	22,632	162,598
Valuation allowance	(18,145)	(19,866)	(150,863)
Total deferred tax assets	1,411	2,765	11,734
Deferred tax liabilities:			
Fixed assets	(1,518)	(1,691)	(12,626)
Reserve for special depreciation	(5)	(14)	(46)
Net unrealized gains on securities	(175)	(252)	(1,458)
Other	(155)	(257)	(1,291)
Total deferred tax liabilities	(1,855)	(2,216)	(15,423)
Net deferred tax assets (liabilities)	¥ (443)	¥ 549	\$ (3,689)

Note: Net deferred tax assets (liabilities) as of March 31, 2015 and 2014 are reflected in the following accounts in the consolidated balance sheet:

		2015		2014		2015
		(Millions	s of yen)			usands of . dollars)
Current assets – deferred tax assets	¥	1,201	¥	1,614	\$	9,985
Investments and other assets – deferred tax assets		286		888		2,380
Current liabilities – deferred tax liabilities		(0)		(1)		(4)
Long-term liabilities – deferred tax liabilities		(1,930)		(1,951)		(16,051)

#### 18. Shareholders' Equity

The Japanese Corporate Law ("the Law") became effective on May 1, 2006, replacing the Japanese Commercial Code ("the Code"). The Law is generally applicable to events and transactions occurring after April 30, 2006 and for fiscal years ending after that date.

Under Japanese laws and regulations, the entire amount paid for new shares is required to be designated as common stock. However, a company may, by a resolution of the Board of Directors, designate an amount not exceeding one-half of the prices of the new shares as additional paid-in capital, which is included in capital surplus.

Under the Law, in cases where a dividend distribution of surplus is made, the smaller of an amount equal to 10% of the dividend and the excess, if any, of 25% of common stock over the total of additional paid-in capital and the legal earnings reserve must be set aside as additional paid-in capital or a legal earnings reserve. The legal earnings reserve is included in retained earnings in the accompanying consolidated balance sheets.

Under the Code, companies were required to set aside an amount equal to at least 10% of the aggregate amount of cash dividends and other cash appropriations as a legal earnings reserve until the total of the legal earnings reserve and additional paid-in capital equaled 25% of common stock.

Under the Code, the legal earnings reserve and additional paid-in capital could be used to eliminate or reduce a deficit by a resolution of the shareholders' meeting or could be capitalized by a resolution of the Board of Directors. Under the Law, both of these appropriations generally require a resolution of the shareholders' meeting.

Additional paid-in capital and the legal earnings reserve may not be distributed as dividends. Under the Code, however, on the condition that the total amount of the legal earnings reserve and additional paid-in capital remained equal to or exceeded 25% of common stock; they were available for distribution by resolution of the shareholders' meeting.

Under the Law, all additional paid-in capital and all legal earnings reserves may be transferred to other capital surplus and retained earnings, respectively, which are potentially available for dividends.

The maximum amount that the Company can distribute as dividends is calculated based on the non-consolidated financial statements of the Company in accordance with the Law.

At the annual shareholders' meeting held on June 26, 2015, the shareholders resolved cash dividends amounting to ¥788 million (\$6,552 thousand). Such appropriations have not been accrued in the consolidated financial statements as of March 31, 2015 and are recognized in the period in which they are resolved.

At the annual shareholders' meeting held on June 20, 2014, the shareholders resolved cash dividends amounting to ¥727 million by using capital surplus.

#### 9. Research and Development Expenses

Research and development expenses for the years ended March 31, 2015 and 2014 were ¥16,667 million (\$138,573 thousand) and ¥14,596 million, respectively.

#### 20. Leases

Future minimum lease payments subsequent to March 31, 2015 and 2014	for no	oncancellable	e operat	ing leases	are as fo	ollows:
		2015		2014		2015
		(Millions	of yen)		•	usands of 6. dollars)
Due in 1 year or less	¥	613	¥	481	\$	5,103
Due after 1 year		1,833		1,706		15,241
	¥	2,447	¥	2,188	\$	20,344

#### 21. Segment Information

#### a. Outline of reportable segments

The reportable segments of the Company are the business units for which the Company is able to obtain respective financial information separately in order for the Board of Directors to conduct periodic analysis to determine the distribution of management resources and evaluate their business results.

The Company has its business units identified by products. Each business unit plans its comprehensive domestic and overseas strategy for its products, and operates its business activities. Therefore, the Company consists of its business units, identified by principal products, which are the three reportable segments of the "Semiconductor Devices Business," the "Power Module Business" and the "Power System Business."

The Semiconductor Devices Business mainly manufactures and sells power ICs, control ICs, Hall-effect ICs, bipolar transistors, MOSFET, IGBT, thyristors, rectifier diodes and light emitting diodes (LEDs). The Power Module Business mainly manufactures and sells switching mode power supply units and transformers. The Power System Business mainly manufactures and sells uninterruptible power supplies (UPS), inverters, DC power supplies, airway beacon systems and general purpose power supplies.

The Company determined to discontinue the operations of its CCFL Business during the year ended March 31, 2014, as a result, the Company organized the three reportable segments as follows: the "Semiconductor Devices Business," the "Power Module Business" and the "Power System Business."

#### b. Calculation methods of the reportable segment sales, income (loss), assets, and other items

The accounting methods applied for reportable segments are the same as the basis of preparation for the consolidated financial statements. Intersegment sales and transfers are based on the prices in arm's-length transactions.

As described in "Note 2. Accounting Changes," the methods for calculating the retirement benefit obligation and service cost have been revised from the year ended March 31, 2015.

This change did not have a material effect on segment income (loss).

## c. Information about sales and segment income (loss) by reportable segments

	Semiconductor Devices Business	P	ower Module Business	P	ower System Business		Total	A	Adjustments		Consolidated
					(Million	s of y	en)				
As of and for the year ended March 31, 2015											
Sales:											
(1) Sales to customers	¥ 126,549	¥	15,555	¥	18,619	¥	160,724	¥	_	¥	160,724
(2) Intersegment sales											
and transfers	1,041		598		1		1,641		(1,641)		_
Total sales	127,590		16,153		18,621		162,365		(1,641)		160,724
Segment income (loss)	¥ 12,737	¥	(594)	¥	1,326	¥	13,469	¥	(2,270)	¥	11,199
Segment assets	¥ 145,168	¥	19,077	¥	12,891	¥	177,136	¥	16,131	¥	193,267
Others:											
Depreciation and											
amortization	8,722		69		118		8,910		329		9,239
Impairment losses	—		181		—		181		_		181
Increase in property,											
plant, equipment and											
intangible assets	15,040		417		267		15,725		1,738		17,463
					(Thousands o	of U.S	. dollars)				
As of and for the year ended March 31, 2015											
Sales:											
(1) Sales to customers	\$ 1,052,124	\$	129,324	\$	154,799	\$	1,336,248	\$	_	\$	1,336,248
(2) Intersegment sales											
and transfers	8,656		4,974		14		13,645		(13,645)		_
Total sales	1,060,780		134,299		154,814		1,349,894		(13,645)		1,336,248
Segment income (loss)	\$ 105,898	\$	(4,943)	\$	11,032	\$	111,986	\$	(18,872)	\$	93,113
Segment assets	\$ 1,206,917	\$	158,604	\$	107,175	\$	1,472,697	\$	134,117	\$	1,606,814
Others:											
Depreciation and											
amortization	72,518		579		983		74,081		2,739		76,820
Impairment losses	_		1,509		—		1,509		_		1,509
Increase in property,											
plant, equipment and intangible assets	125,047		3,466		2,226		130,741		14,453		145,194
	120,041		0,-100		_,0		100,141		1-1,-100		140,104

Notes:

1. Adjustments for segment income (loss) of ¥(2,270) million (\$(18,872) thousand) include corporate expenses. They are mainly general and administrative expenses, which are not allocable to the reportable segments.

2. Adjustments for segment assets of ¥16,131 million (\$134,117 thousand) include corporate assets, which are not allocable to the reportable segments. The corporate assets are mainly surplus operating capital (cash and deposits), long-term investments (investment securities) and assets related to administrative departments of the Company.

3. Adjustments for depreciation and amortization of ¥329 million (\$2,739 thousand) are mainly administrative expenses.

4. Adjustments for increase in property, plant, equipment and intangible assets of ¥1,738 million (\$14,453 thousand) are assets related to administrative departments of the Company.

	Reportable segments										
	Semiconductor Devices Business		CCFL usiness		Power Module Business		Power System Business	Total	A	djustments	Consolidated
						(Mil	lions of yen)				
As of and for the year ended March 31, 2014											
Sales:											
(1) Sales to customers	¥111,937	¥	144	¥	15,791	¥	16,593	¥144,467	¥	_	¥ 144,467
(2) Intersegment sales and transfers	1,419		_		677		5	2,102		(2,102)	_
Total sales	113,357		144		16,468		16,598	146,569		(2,102)	144,467
Segment income (loss)	¥ 10,716	¥	(720)	¥	(1,251)	¥	1,148	¥ 9,893	¥	(2,116)	¥ 7,777
Segment assets	¥121,977	¥	368	¥	16,478	¥	11,331	¥150,156	¥	14,606	¥164,762
Others:											
Depreciation and amortization	7,868		72		56		118	8,115		316	8,432
Impairment losses	_		_		122		_	122		_	122
Increase in property, plant, equipment and intangible assets	10,354		1		224		160	10,741		1,760	12,501

Notes:

- 1. Adjustments for segment income (loss) of ¥(2,116) million include corporate expenses. They are mainly general and administrative expenses, which are not allocable to the reportable segments.
- 2. Adjustments for segment assets of ¥14,606 million include corporate assets, which are not allocable to the reportable segments. The corporate assets are mainly surplus operating capital (cash and deposits), long-term investments (investment securities) and assets related to administrative departments of the Company.

3. Adjustments for depreciation and amortization of ¥316 million are mainly administrative expenses.

4. Adjustments for increase in property, plant, equipment and intangible assets of ¥1,760 million are assets related to administrative departments of the Company.

#### d. Related information

Information about geographical area

As of and for the year ended March 31, 2015

(1) Sales

	Japan		Asia	Nor	th America		Europe	Others			Total
					(Millions	s of yen)					
¥	66,955	¥	58,811	¥	18,623	¥	16,216	¥	116	¥	160,724
					(Thousands o	f U.S. do	lars)				
\$	556,660	\$	488,958	\$	154,834	\$	134,825	\$	969	\$	1,336,248
(2) Prc	perty, plant an	d equip	ment								

. ,										
	Japan		th America		Asia	0	thers		Total	
				(Millio	ons of yen)					_
¥	25,705	¥	30,642	¥	9,044	¥	403	¥	65,795	
				(Thousand	s of U.S. dollars	)				
\$	213,714	\$	254,761	\$	75,194	\$	3,350	\$	547,021	

#### As of and for the year ended March 31, 2014

#### (1) Sales

	Japan		Asia	Nort	th America	E	Europe	Others			Total
					(Millions	of yen)					
¥	63,584	¥	49,561	¥	16,664	¥	14,545	¥	111	¥	144,467
(2) Pro	perty, plant an	ıd equipi	ment								
	Japan	Nor	th America		Asia	(	Others		Total		
				(Milli	ons of yen)						
¥	25,774	¥	23,773	¥	5,035	¥	390	¥	54,975		

## 22. Amounts per Share

Amounts per share as of and for the years ended March 31, 2015 and 2014 were as follows:

		2015		2014		2015
		(Y	en)		(U.S	. dollars)
Net income – basic	¥	65.50	¥	41.47	\$	0.54
Net assets		516.22		401.75		4.29

Diluted net income per share for the years ended March 31, 2015 and 2014 are not disclosed as there were no dilutive shares.

Net income per share was calculated on the following basis:

		2015		2014		2015
		(Millions) except numb		ares)	dolla	sands of U.S. ars, except er of shares)
Net income	¥	7,942	¥	5,029	\$	66,029
Amounts not available to shareholders of						
common stock		_		_		_
Net income attributable to shareholders of						
common stock		7,942		5,029		66,029
Average number of shares outstanding						
during the year (Thousands of shares)		121,252		121,293		—

Net assets per share were calculated on the following basis:

		2015	2015		
		(Millions) except numb	(Thousands of U.S. dollars, except number of shares)		
Net assets	¥	63,021	¥	49,108	\$ 523,960
Amounts deducted from net assets:		437		390	3,634
Stock acquisition rights		_		—	—
Minority interests		(437)		(390)	(3,634)
Net assets attributable to shareholders		62,584		48,718	520,326
Number of shares outstanding at the end of the year					
(Thousands of shares)		121,237		121,266	_

## 23. Significant Subsequent Events

The Company decided to issue unsecured straight corporate bonds on June 10, 2015 based on the terms and conditions of the issuance resolved at a meeting of the Board of Directors held on March 24, 2015. The bonds were issued on June 17, 2015. Details are as follows:

9th series of unsecured straight bonds

- 1. Total issue amount: ¥15,000 million (\$124,709 thousand)
- 2. Issue price: ¥100 (\$0.83) per face value of ¥100 (\$0.83)
- 3. Interest rate: 0.80% per annum
- 4. Payment date: June 17, 2015
- 5. Maturity date: June 17, 2020
- 6. Use of proceeds: To be appropriated as funds to repay commercial paper

## Independent Auditor's Report

The Board of Directors Sanken Electric Co., Ltd.

We have audited the accompanying consolidated financial statements of Sanken Electric Co., Ltd. and its consolidated subsidiaries, which comprise the consolidated balance sheet as at March 31, 2015, and the consolidated statements of operations, comprehensive income, changes in net assets, and cash flows for the year then ended and a summary of significant accounting policies and other explanatory information, all expressed in Japanese yen.

#### Management's Responsibility for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of these consolidated financial statements in accordance with accounting principles generally accepted in Japan, and for designing and operating such internal control as management determines is necessary to enable the preparation and fair presentation of the consolidated financial statements that are free from material misstatement, whether due to fraud or error.

#### Auditor's Responsibility

Our responsibility is to express an opinion on these consolidated financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in Japan. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. The purpose of an audit of the consolidated financial statements is not to express an opinion on the effectiveness of the entity's internal control, but in making these risk assessments the auditor considers internal controls relevant to the entity's preparation and fair presentation of the consolidated financial statements in order to design audit procedures that are appropriate in the circumstances. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

#### Opinion

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the consolidated financial position of Sanken Electric Co., Ltd. and its consolidated subsidiaries as at March 31, 2015, and their consolidated financial performance and cash flows for the year then ended in conformity with accounting principles generally accepted in Japan.

#### Convenience Translation

We have reviewed the translation of these consolidated financial statements into U.S. dollars, presented for the convenience of readers, and, in our opinion, the accompanying consolidated financial statements have been properly translated on the basis described in Note 3.

Cronsto & young Shin nihon LLC

June 26, 2015 Tokyo, Japan

# Board of Directors

As of June 20, 2015

### **Directors and Auditors**

Director, President	Takashi Wada	
Directors	Akira Ota	Masao Hoshino
	Yoshihiro Suzuki	Kazunori Suzuki
	Takeshi Soroji	
Outside Director	Richard R. Lury	
Standing Statutory Auditor	Tatsuo Okino	
Statutory Auditors	Noboru Suzuki	Mikihiko Wada
	Jin Takeda	

## **Corporate Officers**

Executive Vice President	Akira Ota	
Senior Vice Presidents	Masao Hoshino	Yoshihiro Suzuki
Senior Corporate Officers	Kazunori Suzuki	Hiroyuki Ouchi
	Takeshi Soroji	
Corporate Officers	Masahiro Sasaki	Yukiyasu Taniyama
	Kiyoshi Murakami	Shigeru Ito
	Kiyonori Orito	Hideki Nakamichi
	Hideo Takani	Masaki Kanazawa
	Makoto Iwata	Myungjun Lee

# Investor Information

As of March 31, 2015

Company name	Sanken Electric Co., Ltd.	Distribution by type of shareholders		
Founded	September 5, 1946	Financial Institutions	36.00%	
Headquarter	3-6-3 Kitano, Niiza-shi, Saitama-ken 352-8666, Japan	Individuals	19.50%	
	Phone : +81-48-472-1111	Foreigners	34.89%	
	Facsimile : +81-48-471-6249	Other	9.61%	
Employees	10,454	Distribution by number of shares owned		
Common stock	Authorized : 257,000,000 shares	1,000,000 or more	51.84%	
	Issued : 125,490,302 shares	100,000 or more	25.25%	
Shareholders	11,197	10,000 or more	8.67%	
		Less than 10,000	14.24%	

#### **Principal Shareholders**

Shareholders	Number of shares held (in thousands)	Percentage of ownership
The Master Trust Bank of Japan, Ltd. (Trust Account)	11,472	9.14%
Japan Trustee Services Bank, Ltd. (Trust Account)	10,153	8.09%
Saitama Resona Bank, Limited	6,011	4.79%
The Chase Manhattan Bank 385036	3,343	2.66%
Juniper	3,045	2.42%
Chase Manhattan Bank GTS Clients Account Escrow	2,893	2.30%
Northern Trust Co. (AVFC) Re Fidelity Funds	2,738	2.18%
CBNY - Government of Norway	2,340	1.86%
Japan Re Fidelity	1,762	1.40%
The Hachijuni Bank, Ltd.	1,556	1.24%

Note : The Company holds 4,253,173 (3.38%) shares of treasury stock but is excluded from the principal shareholders listed above.

#### Bonds

Type of bonds	Date of issue	Balance of bonds (in Yen)
The 5th unsecured bonds	December 14, 2012	4,100,000,000
The 6th unsecured bonds	March 25, 2013	5,900,000,000
The 7th unsecured bonds	June 17, 2013	10,000,000,000
The 8th unsecured bonds	December 13, 2013	10,000,000,000





**Sanken Electric Co., Ltd.** 3-6-3, Kitano, Niiza-shi, Saitama-ken 352-8666, Japan Tel : 81-48-472-1111 Fax: 81-48-471-6249 http://www.sanken-ele.co.jp/en/