

**ADVANTEST**<sup>®</sup>

Corporate Report  
2017

# Technology Support on the Leading Edge

The background of the page is a dynamic, abstract composition of various colored lines and shapes. These elements, including shades of yellow, orange, red, purple, blue, teal, and grey, are oriented diagonally, creating a sense of movement and forward momentum. The lines vary in thickness and some have a slight gradient, contributing to a modern and technological aesthetic.

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# Message from the CEO

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## **Advantest contributes to worldwide safety and security by supporting innovation in the semiconductor industry**

Since our founding in 1954, Advantest has continued to hone our electronic measurement technologies, and has grown organically in step with the global electronics industry. Semiconductor test systems, our flagship products, test semiconductors for use in a variety of electronic devices and equipment to ensure they perform as designed, and without malfunction. This contribution is central to our mission to support worldwide safety and security through measurement technology.

Currently, the digital revolution is embedding innovations such as IoT, AI, deep learning, self-driving cars, and more into our daily lives. Demand for massive data storage, advanced processing capacity and ultra-high speed communications, and their relevance, continue to increase. In the future, semiconductors will have even higher performance, while being smaller and consuming less power. Higher reliability will be more important than ever and Advantest will ceaselessly continue to support innovation in the semiconductor industry.

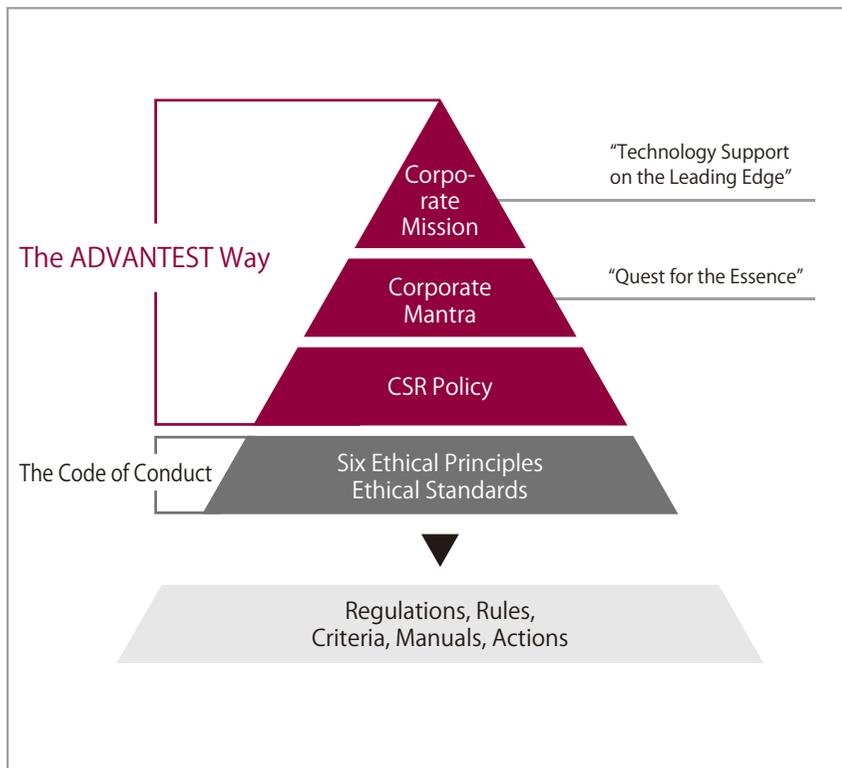
We take pride not only in our industry-leading electronic measurement technologies, but also in the diverse human resources that support the global development of our business. I hope to leverage these strengths to grow with customers around the world and continuously increase our corporate value. Together with our stakeholders, I look forward to a bright future of shared prosperity and ongoing innovation.



Representative Director, President & CEO **Yoshiaki Yoshida**

# The ADVANTEST Way

The ADVANTEST Way and the Code of Conduct provide a set of rules and standards of behavior that all executives and employees must observe when carrying out the Group's global corporate activities. At Advantest, we take a global perspective when implementing our company management and our social and environmental activities so that we may use our cutting-edge measurement and testing technologies to fulfill the expectations that our customers and all of our stakeholders throughout the world hold for us.



## Corporate Mission

### Technology Support on the Leading Edge

We will continuously improve ourselves so that we can offer technology, products and services that will satisfy our customers worldwide, and contribute to development of society through development of the most advanced technology.

## Corporate Mantra

### Quest for the Essence

We will invariably pursue the sources of phenomena and seek their essence, so that we can find correct solutions.

## Corporate Social Responsibility (CSR) Policy

In line with our Corporate Mission and Corporate Mantra, we at Advantest aim to achieve a sustainable level of business development while enhancing our corporate value. ADVANTEST respects each of its stakeholders and strives to maintain harmony with society in all its operations while contributing to the goal of a sustainable society.

- We work in harmony with society to preserve the environment and reduce our footprint.
- We strive to consistently deliver high-quality products and services to our customers.
- We appropriately return profits to our shareholders and disclose information appropriately to our investors.
- We are committed to cooperation with our suppliers in the interests of mutual prosperity.
- We treat our employees fairly, and constantly endeavor to improve their working environment.

# ADVANTEST at a Glance

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## 60 Years of Measurement

In the more than 60 years since Advantest was founded in 1954, we have developed a range of businesses around our electronic measurement technologies, which are the foundation of our growth. These businesses now support the performance of essentials from smartphones and PCs to automobiles.



## An Outstanding Record in ATE

Our solid track record in the semiconductor industry underscores Advantest's commitment to strong partnerships with industry-leading companies. More than 20,000 test systems installed at customer facilities worldwide, as well as more than 6,000 test handlers, play a crucial role in the semiconductor supply chain.



## Customer Satisfaction First

For 29 consecutive years, Advantest has ranked in the top 10 for customer satisfaction, as recorded by the annual Customer Satisfaction Survey conducted by market research firm VLSIresearch.



0.000 000 01 ( $10^{-8}$ ) meters  
(=10 nanometers)

## Contributing to Process Shrink

Advantest's nanotechnology tools support leading-edge semiconductor processes at the 1Xnm node. By enabling etching and measurement at this extraordinarily small scale, Advantest contributes to ongoing advances in semiconductor functionality and miniaturization.



ECO PRODUCTS

## A Leader in Ecological Manufacturing

A commitment to recyclability, energy efficiency, and resource conservation influences our product design and production. With ISO14001-certified facilities in eight countries, Advantest actively strives to reduce its environmental footprint through ecologically sound manufacturing practices worldwide.



Countries  
(As of March 2017)

## Global Diversity of Ideas

Advantest has approximately 4,400 employees of fifty different nationalities. The multiplicity of ideas stemming from our diverse workforce is a source of our competitive strength.

# ADVANTEST in our Lives



You live it. We measure it. Life, tested by Advantest.



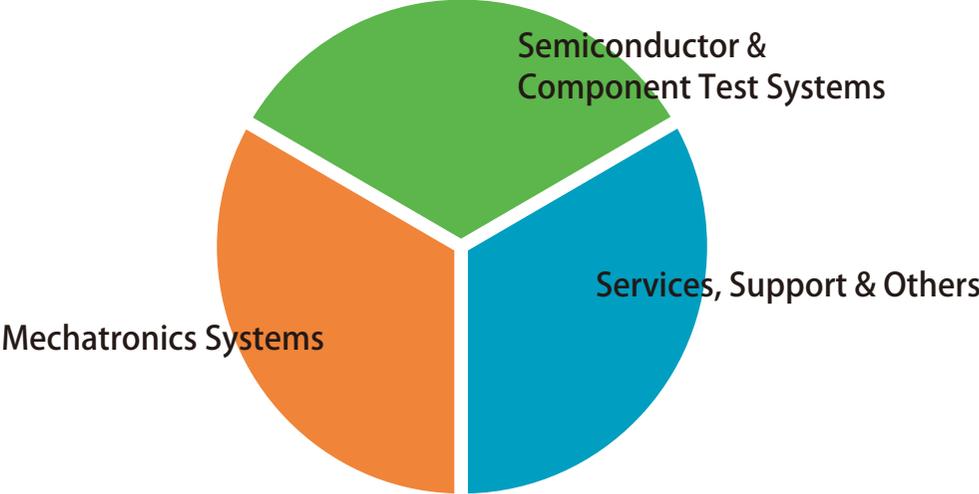
# Business Segments

## Technology Support on the Leading Edge

Since 1954, Advantest's measurement technologies have contributed to the safety and security of end users around the globe. To provide the advanced solutions and services that meet the needs of our customers, we strive continuously to improve. Our commitment to ongoing innovation keeps us on the leading edge of technological progress.

## Semiconductor and Component Test Systems

Advantest provides test systems that are used to assure the quality of diverse semiconductors utilized in smartphones, PCs, automobiles, and many other electronic products we use every day.



## Mechatronics Systems

Advantest's mechatronics products support our customers in the semiconductor industry across a broad range of needs. Our test handlers and device interfaces are essential to efficient test processes, while our nanotechnology products, including wafer / mask measurement tools and lithography systems, contribute to leading-edge device development.

## Services, Support & Others

From installation and maintenance to high-added-value solutions, such as applications that maximize utilization rates, Advantest's global service and support network helps our customers to get the most out of our products. In our New Business Segments, our measurement technologies are finding new applications, and opening up new markets with ground-breaking products.

# Semiconductor & Component Test Systems

## ■ Semiconductor Test Systems

Advantest's test systems input signals to the semiconductor and measure their output signals to determine whether the semiconductors are good or defective. Providing productivity gains and broad coverage of various devices, Advantest's test technology is highly valued by customers around the world, whose support has brought the company a globally dominant market position.

### SoC Test Systems

These test systems employ modular configurations so that their performance boards can easily be exchanged to flexibly support the requirements of testing diverse SoC devices, such as micro-processors, applications processors, communications ICs, power management ICs, and others.

Advantest also supplies test systems for display driver ICs, which control the displays of smartphones, flat-screen televisions, and other products. With a worldwide installed base of more than 1,500 units, our display driver IC test systems are the global standard in this market.

### Memory Test Systems

Our memory test systems contribute to customer productivity by testing DRAM, NAND, and other memory devices with high-quality, high-speed, highly parallel capabilities unmatched in the sector.



V93000



T2000



T6391



T5503HS



T5830

## ■ EVA

Advantest's groundbreaking new Evolutionary Value Added Measurement System (EVA) provides all-in-one support for analog IC, sensor, mixed signal IC, and other semiconductor devices, from R&D through to volume production. EVA's superior measurement precision and system scalability, and an intuitive user interface that does not require the use of programming languages, make it a measurement system that combines the benefits of a semiconductor test system and an electronic measurement instrument.



EVA100

## ■ Burn-In Systems

Burn-in systems apply thermal and electrical stress to semiconductors, screening out faulty devices at an early stage in the manufacturing process.



B6700

# Mechatronics Systems

## Test handlers

Handlers deliver packaged devices to test systems at high speed, and automatically sort them into pass / fail trays based on test results. Advantest's handlers also provide precision placement control and manage the temperature requirements of devices under test at high speed and with great precision, which enables the handling of extremely small devices with stringent requirements for contact placement and temperature management.



M6245 [LINK](#)

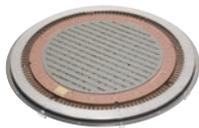


M4871 [LINK](#)

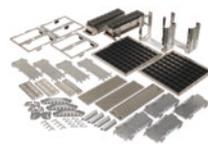
## Device Interfaces

Semiconductors differ in size, shape and specification, requiring specialized device interfaces when being tested. Advantest's DI products connect devices to test systems electronically and mechanically, with industry-leading precision. Expert teams around the world can provide support for a diverse range of devices, contributing to swift customer device production ramps.

[LINK](#)



Probe Card [LINK](#)



Change Kit [LINK](#)

## MVM-SEM®

[LINK](#)

Utilizing electron beams, Advantest's scanning electron microscopes measure circuit patterns on wafers and photomasks, providing real-time data on width, height, and side-wall measurement. Based on proprietary technology, these MVM-SEM (Multi Vision Metrology Scanning Electron Microscope) tools are steadily increasing their market following, thanks to their unique level of support for extremely small and 3D devices.



E3310 [LINK](#)



E3640 [LINK](#)

\*MVM-SEM® = Multi Vision Metrology Scanning Electron Microscope

※ MVM-SEM is either a registered trademark or a trademark of Advantest Corporation in Japan, the United States and other countries.

## EB Lithography Systems

[LINK](#)

Advantest's EB lithography tools also utilize electron beams to etch circuit patterns directly on substrates such as wafers with the nanoscale precision required at the 1Xnm node. Amid growing challenges for traditional nanoscale lithography methods, EB lithography is gaining attention for its ability to support the most advanced nanoscale processes.



F7000 [LINK](#)

## Test Cells

Advantest has long been the industry's only ATE provider to design and manufacture its own fully integrated suite of production test-cell solutions comprised of testers, handlers, device interfaces, and software. These components assure the industry's highest levels of test quality and sufficiency, and have been widely adopted by global customers.

Test Handler

Device interface

Test head



Test system mainframe

# Services, Support & Others

## New Businesses

Targeting a new level of sustainable growth, Advantest is incubating a range of new businesses. These groundbreaking enterprises build seamlessly on our amassed measurement technology, offering innovative solutions for measurement scenarios that have not been addressable with existing technology.

### Terahertz Spectroscopy and Imaging Analysis Systems [LINK](#)

Utilizing terahertz waves, Advantest's terahertz systems enable non-destructive analysis of samples that cannot be analyzed with existing technologies such as ultrasound and infrared. They offer a new evaluation solution for diverse applications, including pharmaceutical coating thickness and tablet density measurement, and analysis of failures in electronic circuits.

TAS7500 Series [LINK](#)



### Mobile System Level Test

W2BI, Inc. is a member of the Advantest Group offering wireless device test automation products for the world's top mobile operators and suppliers. Our system level test solutions ensure interoperability across regions and carriers, assisting customers worldwide to significantly improve their device quality and time-to-market.

Click to view a video introducing W2BI.



### Hadatomo™ Photoacoustic Microscope

Combining the benefits of optical and ultrasound measurement, this new photoacoustic microscope non-destructively images blood vessels within the dermis to a depth of 3mm—without the use of contrast agents—a feat impossible with existing technologies. It offers new insights to researchers and practitioners in dermatology and regenerative medicine.

Hadatomo™ WEL5100 [LINK](#)



**2010** Launched sales of 3D analysis systems utilizing terahertz technology

**2013** Entered the mobile system level test business

**2015** Launched sales of the Hadatomo™

Launched Cloud Testing Service, Inc. **2012**

Launched sales of SSD test system **2014** Launched sales of the AirLogger™

### CloudTesting™ Service\*

This on-demand test service, offered by Advantest subsidiary Cloud Testing Service, Inc., gives customers the ability to download test software from the cloud and run it on our compact test terminals (available for lease). CTS's unique monthly fee structure brings world-class test IP within easy reach, making the service optimal for educators and researchers.



CloudTesting™ Station [LINK](#)

### SSD Test Systems

Advantest's SSD test systems offer system-level test of solid state drives, which are used in high-end data servers for enterprise memory storage, and client storage solutions, which are becoming a key technology for the IoT era.

[LINK](#)



MPT3000 [LINK](#)

### AirLogger™

This unique data logger measures temperatures at multiple points and transmits measurements wirelessly, massively improving efficiency by doing away with cabling. It also enables easy measurement of temperatures in small, enclosed spaces and rotating objects such as wheels.



AirLogger™ temperature measurement unit. [LINK](#)



Measurement of temperature of a rotating object.

# Global Teamwork



Advantest's always-available support staff respond to customers' evolving needs with superlative technological skills and manufacturing know-how. Our globally dispersed R&D, production, and service teams work together to deliver optimal solutions to customers around the world.

## The Power to Develop Solutions

Engineers at Advantest's R&D facilities in Japan, the USA, Germany, China, Singapore, and India bring unique strengths to our global R&D network. Working as a single team, they deliver the solutions customers need now, while developing basic and component technologies for future generations of Advantest products.



## The Power to Deliver On Time

Advantest continuously applies the principle of kaizen improvement to improve product quality and productivity. In 2014, we consolidated our test system production operations at a single factory in Japan's Gunma prefecture, dramatically reducing manufacturing lead times.



## The Power to Support Optimal Solution Value

With a presence in 15 countries and regions around the world, Advantest is always in place to support customers' global supply chains. From system engineers who install and optimize new products in the shortest time possible, to field service engineers who maximize utilization rates, our service professionals further enhance the value of our solutions.



# CSR Highlights

Advantest values and respects all stakeholders, and strives to be a constructive presence in the communities where we operate. We proactively sponsor CSR activities that further our objectives of sustainable growth and corporate value enhancement.

## Advantest's Biotope

[LINK](#)



At our Gunma R&D Center in Japan, a 17,000m<sup>2</sup> biotope supports many indigenous species of trees, shrubs, and grasses, which form a habitat for endangered animals. We also hold open days when local schoolchildren can experience the natural diversity of the biotope.



## Biotope Quarterly

Our new quarterly journal tracks the wildlife and plant life of the biotope through stunning photographs and informative write-ups. The Quarterly is accessible through

<https://www.advantest.com/csr-2015/environment/biotope/diary>.



## Eco-Friendly Manufacturing

[LINK](#)

Advantest strives to minimize the environmental impact of our operations and products. At our Cheonan factory in South Korea, solar panels on the roof provide 20% of the factory's electricity. Additionally, our "Green Products" meet strict in-house criteria for environmental friendliness, with more products earning this distinction all the time.



## Green Product Development Flow

[LINK](#)



## Contributing Our Communities

[LINK](#)

### Science Craft Days for Schoolchildren

In Japan, Advantest holds "Science Craft Days" for schoolchildren living near our facilities, where children are encouraged to discover the joy of making things with their own hands.



### Rebuilding Together

Advantest America, Inc. has participated for 10 years in the "Rebuilding Together Silicon Valley" project, which organizes volunteers to repair the homes of elderly and disabled residents.



### A Great Place to Work

Advantest Europe GmbH has been recognized as one of Germany's best employers by the internationally-renowned consulting firm Great Place to Work®. Advantest is proud to be recognized for its high-trust, high-performance workplace culture.

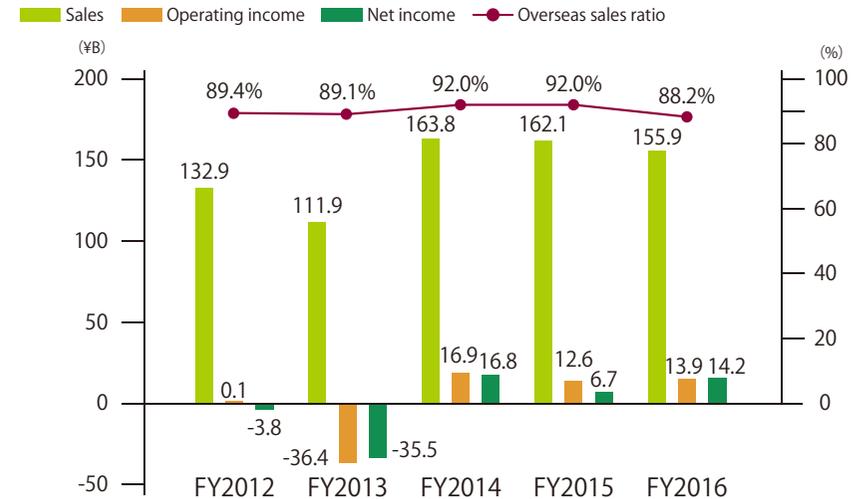


# Corporate Overview

## Corporate Overview

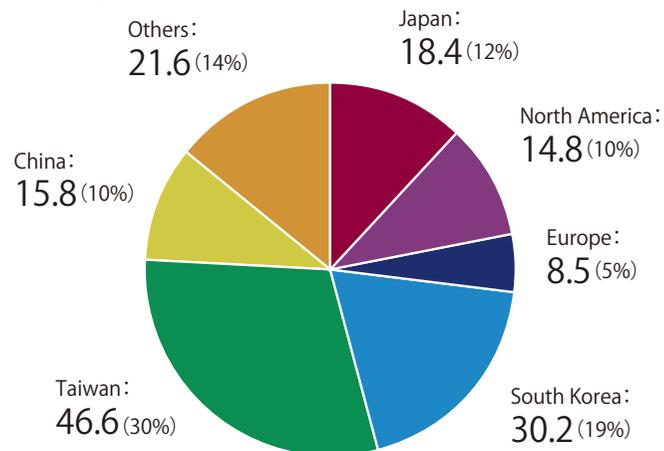
Registered Name	ADVANTEST CORPORATION
Head Office Address	Shin Marunouchi Center Bldg., 1-6-2, Marunouchi, Chiyoda-ku, Tokyo 100-0005, Japan
Established	1954
Stock Exchange Listings	Tokyo Stock Exchange, 1st Section (Code: 6857)
Capital	32,363 million yen (As of March 31, 2017)
Consolidated Sales	155,916 million yen (FY2016)
No. of Employees	Consolidated: 4,414 (As of March 31, 2017)
Business Description	Semiconductor and Component Test System Business, Mechatronics System Business, Services, Support and Others

## Financial Results ※NOTE: FY2012~FY2013: US GAAP, FY2014~FY2016: IFRS



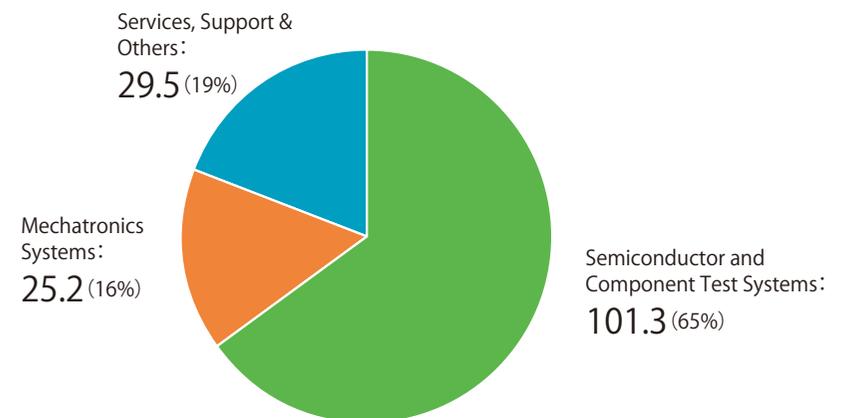
## FY2016 Sales by regions

(Unit:¥B)



## FY2016 Sales by segments

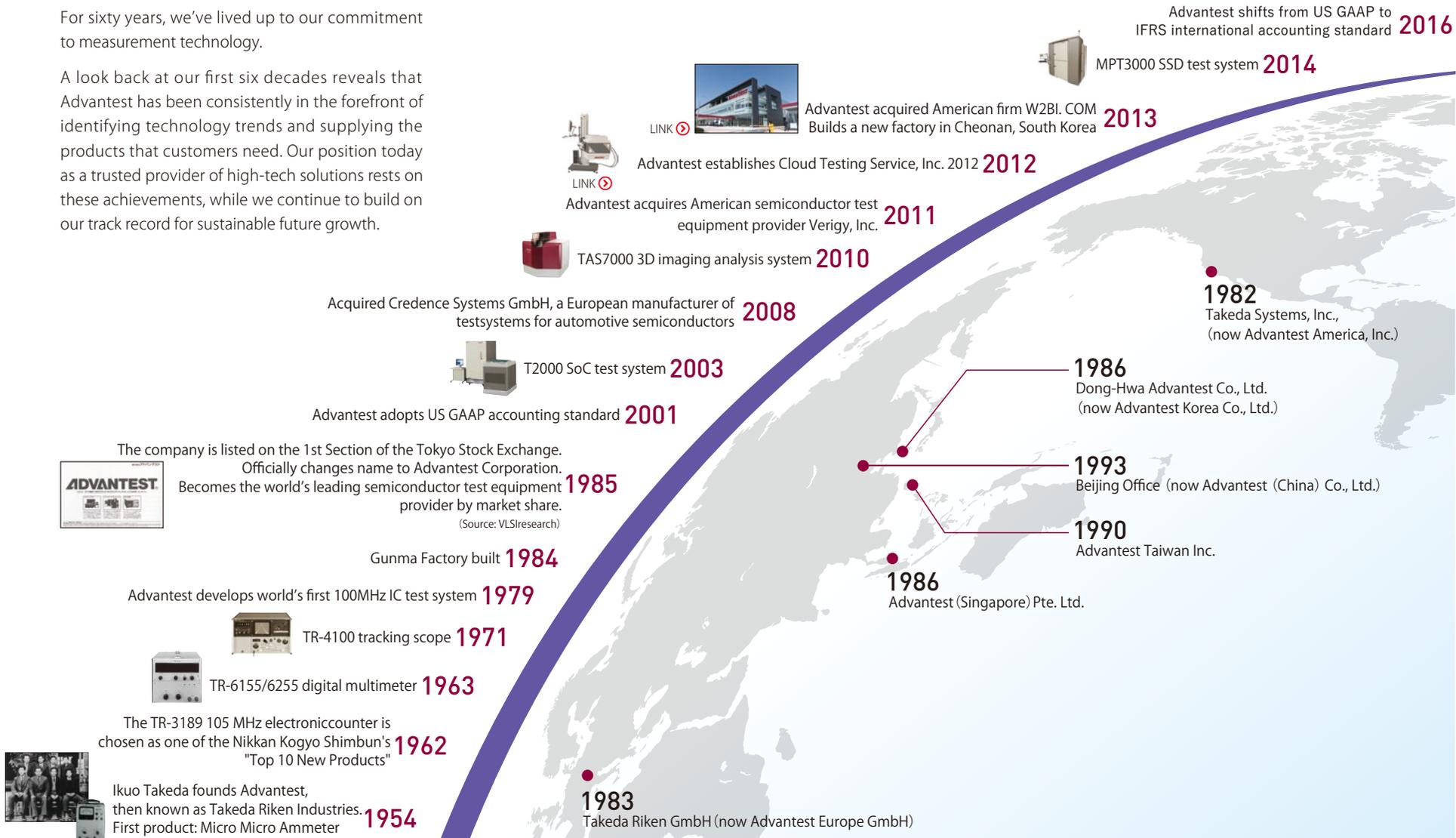
(Unit:¥B)



# Timeline

For sixty years, we've lived up to our commitment to measurement technology.

A look back at our first six decades reveals that Advantest has been consistently in the forefront of identifying technology trends and supplying the products that customers need. Our position today as a trusted provider of high-tech solutions rests on these achievements, while we continue to build on our track record for sustainable future growth.



# Management



## Directors (As of June 27, 2017)



Representative Director  
**Yoshiaki Yoshida**



Director  
**Osamu Karatsu**



Director  
**Seiichi Yoshikawa**



Director  
**Sae Bum Myung**



Director  
**Hans-Juergen Wagner**



Director  
**Soichi Tsukakoshi**



Director  
Audit and Supervisory  
Committee Member  
**Yuichi Kurita**



Director  
Audit and Supervisory  
Committee Member  
**Megumi Yamamuro**



Director  
Audit and Supervisory  
Committee Member  
**Yasushige Hagio**

## Executive Officers (As of June 27, 2017)

- President and CEO  
**Yoshiaki Yoshida**
- Senior Executive Officer  
**Sae Bum Myung**
- Managing Executive Officer  
**Hans-Juergen Wagner**  
**Soichi Tsukakoshi**  
**Satoru Nagumo**  
**Koichi Tsukui**  
**Keith Hardwick**  
**Douglas Lefever**  
**Shunsuke Kato**  
**Atsushi Fujita**
- Executive Officer  
**Toshiyuki Okayasu**  
**CH Wu**  
**Kazuhiro Yamashita**  
**Masuhiko Yamada**  
**Isao Sasaki**  
**Kimiya Sakamoto**  
**Yong Xu**  
**Michael Stichlmair**  
**Juergen Serrer**  
**Toshio Goto**  
**Jinhee Lee**  
**Ricky Sim**  
**Yasuo Mihashi**

# Corporate Governance

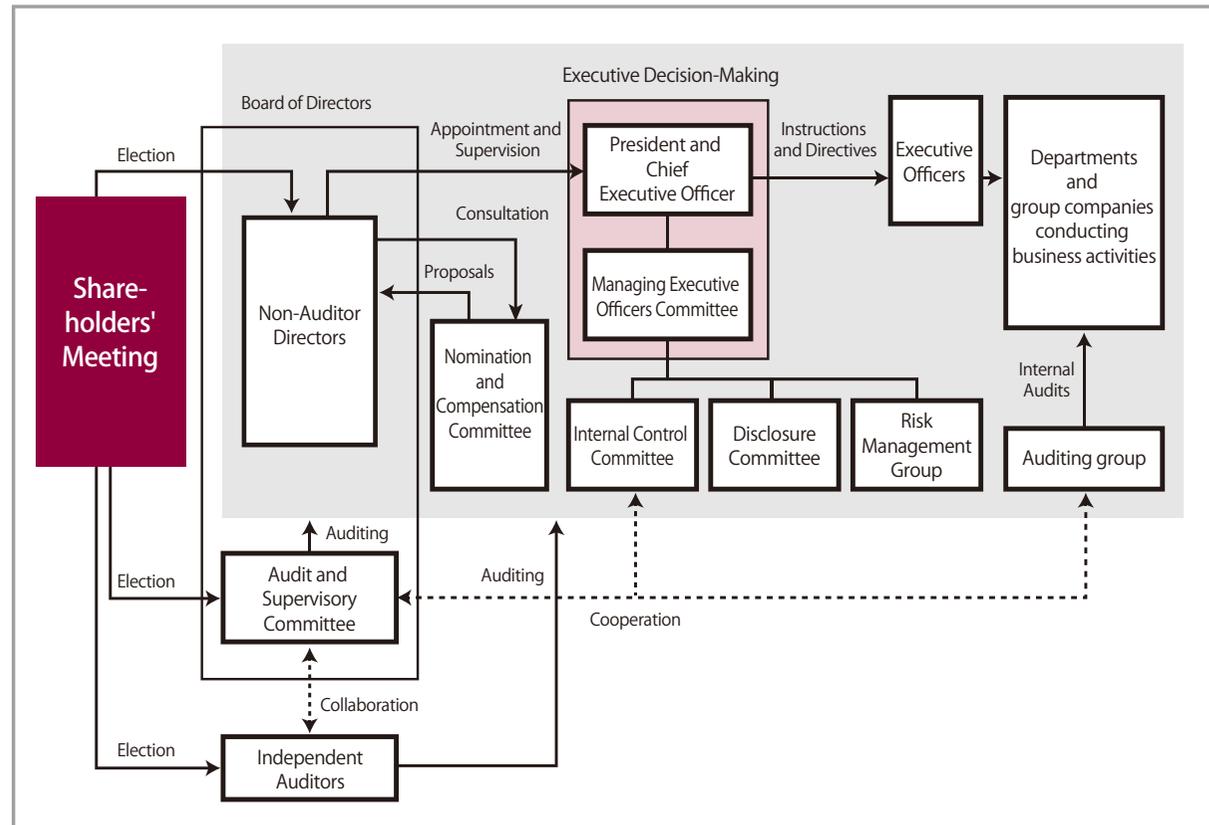
## The Advantest Approach to Corporate Governance

Advantest strives to increase operational transparency, achieve sustainable growth, and increase our corporate value in line with the basic management principles set forth in The ADVANTEST Way and the Advantest Code of Conduct, a set of rules and standards of behavior that all executives and employees must observe. We clearly separate decision-making and audit functions from executive functions, enhancing management efficiency and transparency. These policies are the foundation of our corporate governance.

## Management Structure

The global business environment is changing more rapidly than ever before. To continuously increase our corporate value and competitiveness in today's world, we emphasize speedy decision-making and prompt execution. We also place an emphasis on sound, highly transparent business operations in compliance with laws and regulations. In order to meet these challenges, we set clear limits to the authority derived from each management function, and ensure that responsibilities are also clearly delineated, while carefully selecting the right person for each job.

On June 24th, 2015, Advantest transitioned its governance structure to the "company with an audit and supervisory committee" format introduced under Japan's Law for Partial Amendment to the Companies Act, which took effect on May 1st, 2015, reinforcing our audit functions, and further enhancing our corporate value. Our new governance structure includes a new Audit and Supervisory Committee, which works with the board of directors and the accounting auditor to oversee management functions. This structure adds to the governance functions of our executive officer system, which we established in 2003 to boost our ability to respond swiftly to dramatic changes in our business environment.

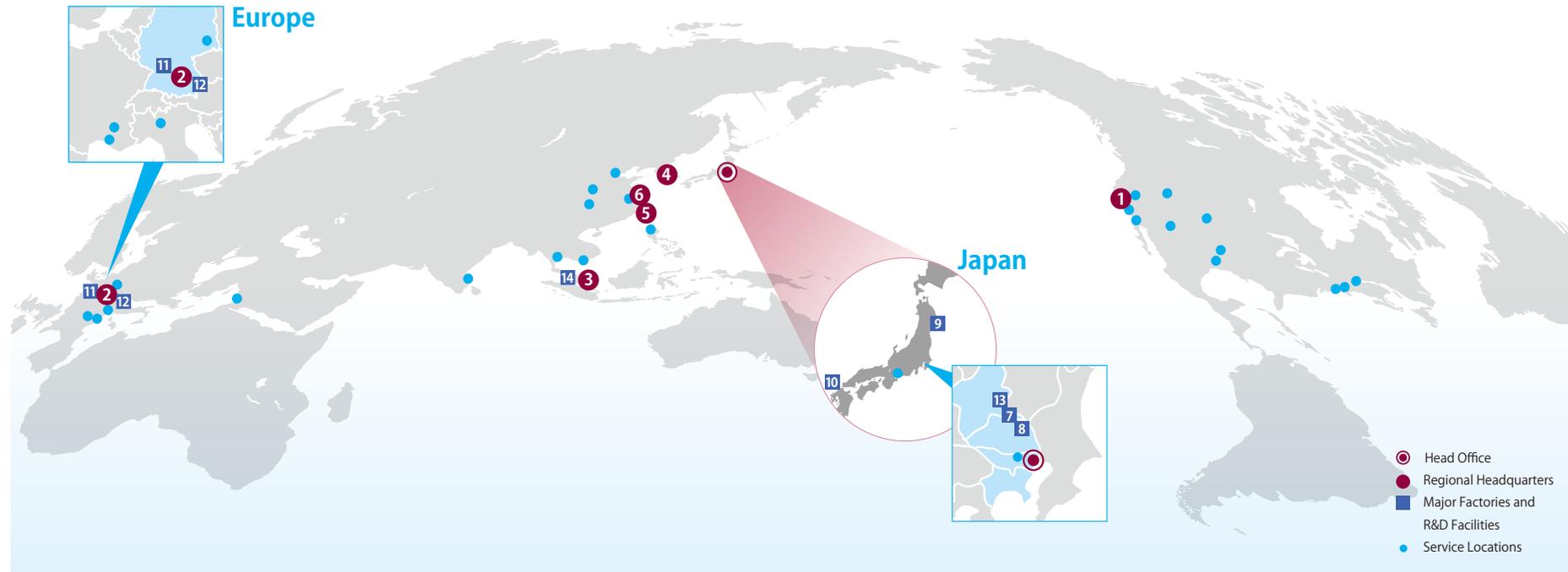


## Internal Auditing

Advantest's audit teams at our headquarters and in Singapore work together as a global auditing team, which ensures that Advantest's daily operations conform properly with laws and regulations in each region and are carried out effectively and efficiently. The global audit team employs audits of operations, compliance, and internal controls, evaluates the efficacy of our

internal controls system, and when necessary, provides hands-on support for improvements. All members of the global audit team are certified public accountants, certified internal auditor, qualified internal auditor, or hold similar qualifications. They strive constantly to improve the quality of our auditing.

# Global Network



## Head Office

Shin Marunouchi Center Bldg., 1-6-2,  
Marunouchi, Chiyoda-ku, Tokyo 100-0005  
TEL: +81-3-3214-7500

## Regional Headquarters

- 1 Advantest America, Inc.**  
3061 Zanker Rd., San Jose, CA 95134, U.S.A.  
TEL: +1-408-456-3600
- 2 Advantest Europe GmbH**  
Stefan-George-Ring 2, 81929 Munich, Germany  
TEL: +49-89-993-12-0
- 3 Advantest (Singapore) Pte. Ltd.**  
8 Admiralty Street #02-08 Admirax  
Singapore 757438  
TEL: +65-6755-2033

## 4 Advantest Korea Co., Ltd.

140, 3gongdan 6-ro, Seobuk-gu, Cheonan-si,  
Chungcheongnam-do, 31085, South Korea  
TEL: +82-41-901-3900

## 5 Advantest Taiwan Inc.

No.15, Guangfu Rd., Hsinchu Industrial Park,  
Hukou Township, Hsinchu County 30351, Taiwan (R.O.C.)  
TEL: +886-3-597-5888

## 6 Advantest (China) Co., Ltd.

C Block, Bldg.3, 168 Huatuo Road, Zhangjiang  
Hi-Tech Park, Shanghai, China (P.R.C.), 201203  
TEL: +86-21-6163-0000

## Major R&D Facilities

- 7** Gunma
- 8** Saitama
- 9** Advantest Laboratories Ltd.
- 10** Kitakyushu
- 11** San Jose
- 11** Boeblingen
- 12** Amerang

## Major Factories

- 13** Gunma
- 9** Sendai
- 4** Cheonan
- 14** Penang