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# **FY2017 3Q Information Meeting**

**January 30th, 2018  
Advantest Corporation**

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## NOTE

### ◆ Accounting Standards

Our results and outlook, described in this presentation, have been prepared in accordance with IFRS.

### ◆ Cautionary Statement with Respect to Forward-Looking Statements

This presentation contains “forward-looking statements” that are based on Advantest’s current expectations, estimates and projections. These statements include, among other things, a discussion of Advantest’s business strategy, outlook and expectations as to market and business developments, production and capacity plans. These forward-looking statements can be identified by use of forward-looking terminology are subject to known and unknown risks, uncertainties and other factors that may cause Advantest’s actual results, levels of activity, performance or achievements to be materially different from those expressed or implied by such forward-looking statements.

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# **Financial Results**

## **for 3<sup>rd</sup> Quarter of FY2017**

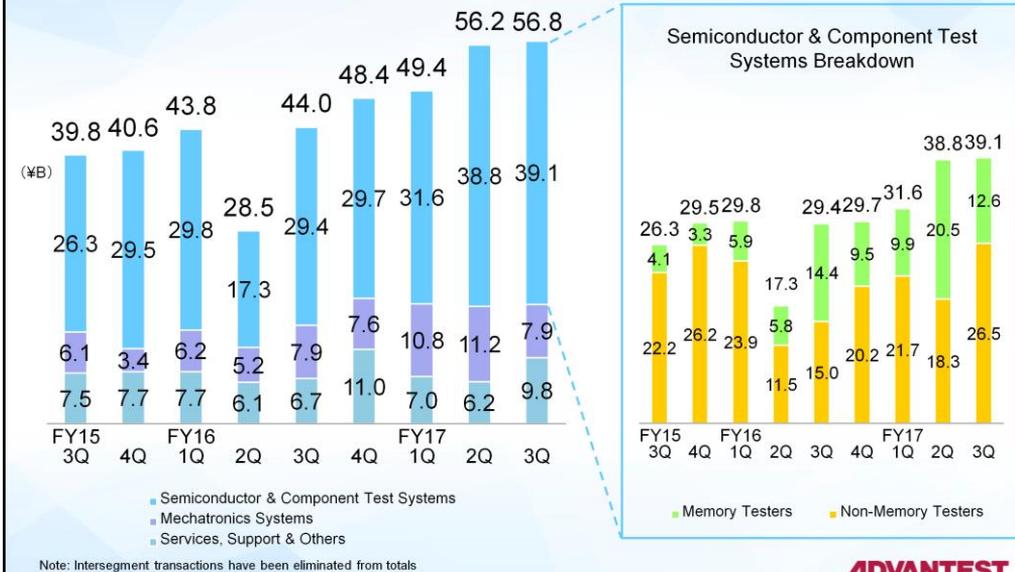
**(Period ended December 31st, 2017)**

**Advantest Corporation**  
**Atsushi Fujita**  
**Managing Executive Officer**

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## FY2017 3Q Orders by Segment



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### ○ FY2017 3Q Orders by Segment

### ○ Semiconductor & Component Test Systems

- ¥39.1 billion flat QoQ  
of which, non-memory testers ¥26.5 billion  
memory testers ¥12.6 billion
- In the non-memory tester segment, high-end smartphone-related demand grew more than anticipated, and MCU and automotive semiconductor tester demand continued to be strong.
- Memory testers remained strong, although tester demand for both NAND flash memory and DRAM rebounded to the downside.

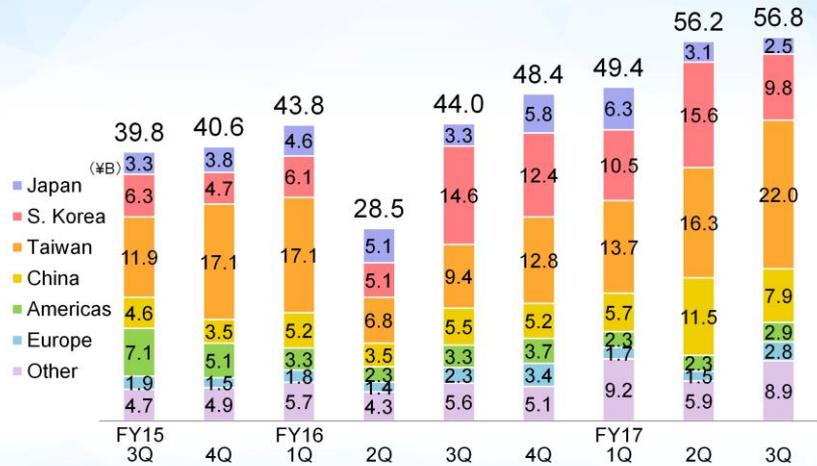
### ○ Mechatronics Systems

- ¥7.9 billion -30% QoQ
- Following the trend of tester orders, orders for peripherals used in conjunction with memory testers decreased.

### ○ Services, Support and Others

- ¥9.8 billion +56% QoQ
- Maintenance contracts recovered and orders for SSD testers increased.

## FY2017 3Q Orders by Region



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### ○ FY2017 3Q Orders by Region

- Regions where orders fluctuated notably QoQ:

#### Taiwan

Demand for memory testers declined, but high-end smartphone-related demand for non-memory testers picked up and more than compensated for the decline in memory tester demand.

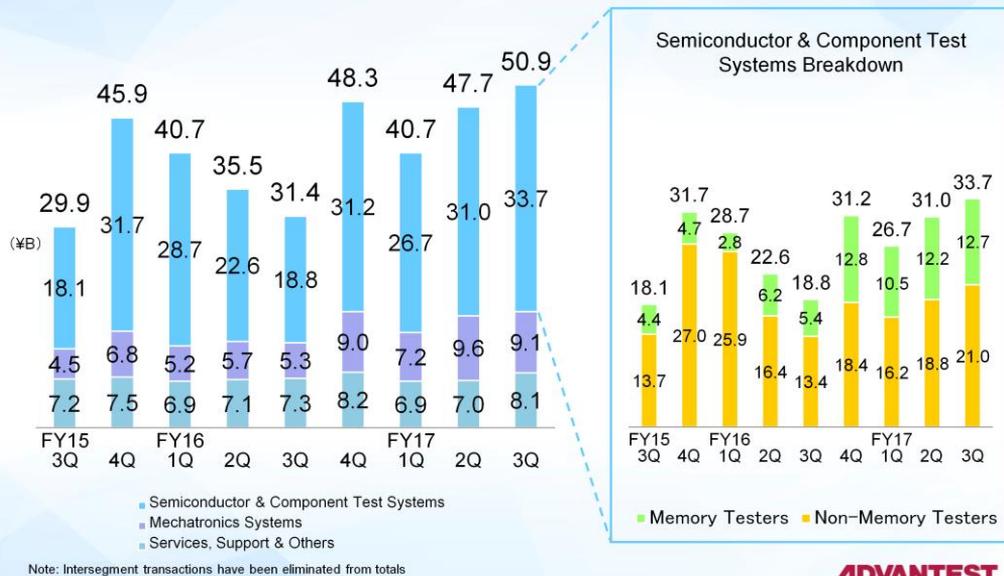
#### Other Regions

Automotive IC tester demand increased, mostly in SE Asia.

#### South Korea, China

Despite a temporary slowdown in memory testers, which saw large orders in 2Q, demand continued at a high level.

## FY2017 3Q Sales by Segment



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### ○ FY2017 3Q Sales by Segment

### ○ Semiconductor & Component Test Systems

- ¥33.7 billion +9% QoQ  
of which, non-memory testers ¥21.0 billion  
memory testers ¥12.7 billion
- Sales of non-memory testers rose, thanks to continued automotive-related demand and a recovery in smartphone-related demand.
- The solid performance of memory testers continued, with sales topping ¥10.0 billion for a fourth straight period.

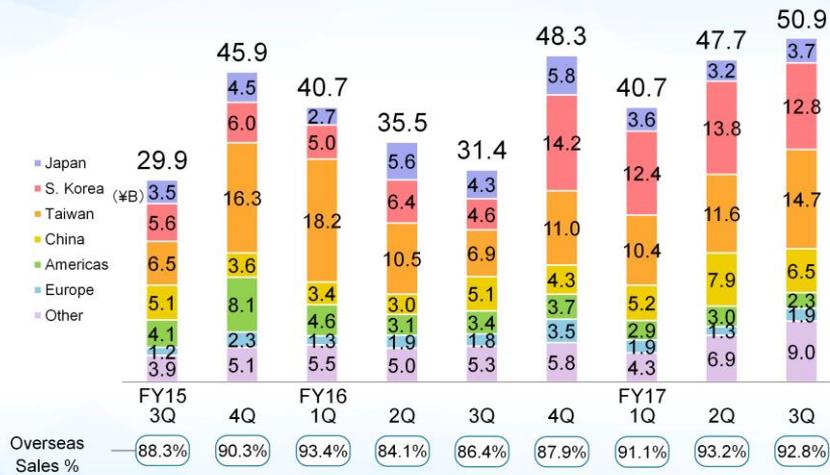
### ○ Mechatronics Systems

- ¥9.1 billion -6% QoQ

### ○ Service, Support and Others

- ¥8.1 billion +14% QoQ
- Field services sales grew.

## FY2017 3Q Sales by Region



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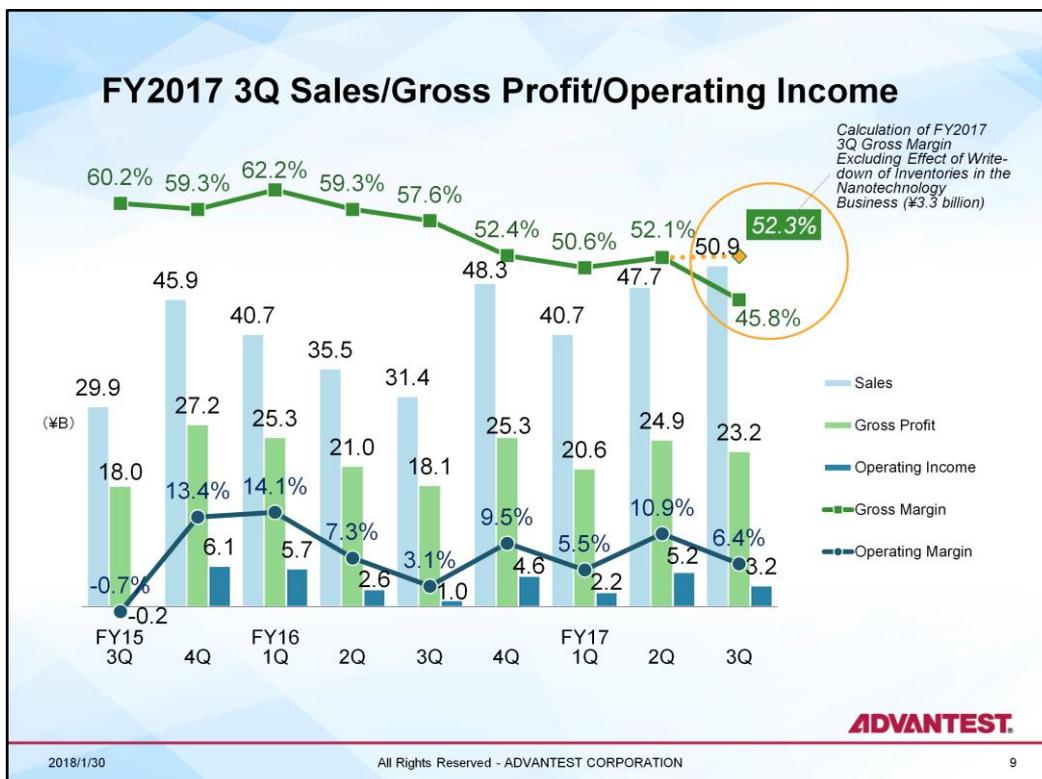
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### ○ FY2017 3Q Sales by Region

- There were no notable regional fluctuations.
- In each region, increases or decreases in sales occurred for the same reasons as increases or decreases in orders.
- In Taiwan, sales of testers for semiconductors used in high-end smartphones grew.
- In other regions, sales for automotive semiconductors increased.

As a result, Advantest's overseas sales ratio in 3Q was 92.8%.

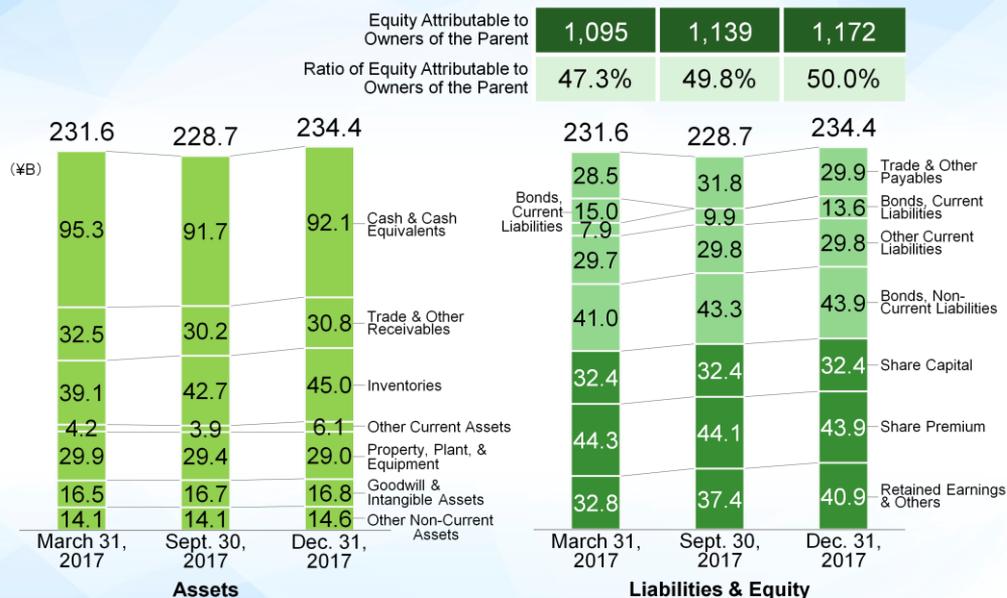


#### ○ FY2017 3Q Sales/Gross Profit/Operating Income

- Gross Profit -¥1.6 billion QoQ    ¥23.2 billion
  - The decrease was caused by a ¥3.3 billion write-down of inventories in the nanotechnology business.
- Gross Margin -6.3 points QoQ    45.8%
  - Excluding the effect of the write-down in the nanotechnology business, 52.3%.
- SG&A +¥0.4 billion QoQ    ¥20.0 billion
  - SG&A increased proportionally to sales.
- Operating Income -¥2.0 billion QoQ    ¥3.2 billion
- Operating Margin -4.5 points QoQ    6.4%
- We will explain the background of the write-down of inventories.
- The write-down of nanotechnology inventories occurred because we terminated an ongoing project to enable the mass production of high throughput EB lithography system. The project was intended to grow our business, but technical difficulties and an extended project roadmap informed the decision to terminate it instead of continuing.
- As a result, we recorded a ¥3.3 billion write-down for components for production that we no longer expect to use.



## FY2017 3Q Balance Sheet



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# Business Outlook

Advantest Corporation  
Yoshiaki Yoshida  
Representative Director, President & CEO

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## Market Forecast for CY2018

	CY17 estimate	CY18 estimate	YoY change
Non-memory tester market	ca. \$2,200M	ca. \$2,200~2,300M	ca. +0% to +5%
Memory tester market	ca. \$750M	ca. \$850~900M	ca. +10% to +20%

- ✓ We expect the brisk pace of the semiconductor tester market to continue in 2018
- ✓ In addition to steady non-memory tester demand from the automotive and display-related sectors, chip-makers will increase their investments in miniaturization and functionality improvements of logic ICs
- ✓ Demand for memory testers is also expected to continue at a high level

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### ○ Tester market forecast for calendar year 2018

- This is our forecast for the tester market in 2018. Market growth in 2017 exceeded our forecast. We expect further growth in 2018.
- The non-memory tester market in 2017 grew by about 10% on 2016. We are expecting a further 5% growth in 2018. In 2017, tester demand for smartphone-related ICs was sluggish, but growth in non-smartphone-related sectors, e.g. automotive and display, offset this weakness.
- While there was a report today expressing concern for major smartphone model sales, there is no change to our forecast. At this point, we consider the non-memory tester market to be equal to or better than 2017.
- With regard to the 2018 outlook for applications, demand for automotive ICs and display driver ICs, which grew in 2017, will continue strong.
- In addition, high-functionality logic ICs used in smartphones and AI servers will see further miniaturization and functionality improvements. We expect increased investment in testers for these applications.
- The memory tester market in 2017 grew by approximately 70% YoY. We are expecting the market to be around \$850M-\$900M.
- We expect high demand levels to continue, thanks to memory production volume growth and longer test times driven by increasing density.
- Steady investment is forecast to continue in each area, for non-volatile memory such as NAND flash, NOR flash and storage class memory, and also for DRAM.

## FY2017 Financial Results Forecast

	FY2016	FY2017 Forecast (October)	FY2017 Forecast (January)	vs. FY2016 (Δ) (%)	
Orders	164.7	188.0	220.0	+55.3	+33.6%
Sales	155.9	180.0	195.0	+39.1	+25.1%
Semiconductor & Component Test systems	101.3	118.5	133.0	+31.7	+31.3%
Mechatronics	25.2	30.5	33.0	+7.8	+31.0%
Services, Support & Others	29.5	31.0	29.0	-0.5	-1.7%
Operating Income	13.9	18.0	20.0	+6.1	+43.8%
Operating Income Margin	8.9%	10.0%	10.3%	+1.4pts	
Income Before Tax	15.0	17.0	19.0	+4.0	+26.5%
Net Income	14.2	14.5	15.0	+0.8	+5.6%
Net Income Margin	9.1%	8.1%	7.7%	-1.4pts	
Backlog	42.2	50.2	67.2	+25.0	+59.2%
Annual Dividend Per Share	¥25	¥26	¥26	+¥1	
Exchange Rate	1 US\$	¥108	¥110	¥111	¥3 Depreciation
	1 Euro	¥119	¥130	¥129	¥10 Depreciation

Note: Intersegment transactions have been eliminated from totals

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### ○ FY2017 Financial Forecast

- Our full-year forecast for FY2017 is as follows:
  - Orders                    ¥220.0 billion
  - Sales                     ¥195.0 billion
  - Operating income    ¥20.0 billion
  - Net Income             ¥15.0 billion
- We expect that Advantest will finish the period with a large backlog of over ¥60.0 billion. The tester market will continue to grow in the next fiscal year, so we would like to bring sales up a notch. There is enough room to achieve it. We expect to achieve more than ¥200.0 billion in sales — a level last seen 12 years ago.
- Due to factors such as the ¥3.3 billion write-down in inventories recorded in the third quarter, we expect that operating income margin gains will remain small this year. We will take various measures to increase our operating income margin further next fiscal year.
- Regarding net income in FY2016, our tax burden was rather low due to the effect of deferred tax assets.
- These two factors will result in a small YoY growth in profit this year.
- Dividends are based on semi-annual business performance with a target semi-annual payout ratio of 30%.
- Our dividend forecast for FY2017 remains unchanged. We expect to pay an annual dividend of 26 yen for the year. This is an increase of 1 yen per share compared to the previous fiscal year. The dividend at the end of the interim period was 9 yen, so the year-end dividend is forecast to be 17 yen.

## FY2017 4Q Financial Results Forecast

Calculation of FY2017 3Q  
Gross Margin Excluding  
Effect of Write-down of  
Inventories in the  
Nanotechnology Business  
(¥3.3 billion)



	FY2017 3Q	FY2017 4Q Forecast
Orders	56.8	57.6
Sales	50.9	55.7
Semiconductor & Component Test systems	33.7	41.6
Mechatronics	9.1	7.1
Services, Support & Others	8.1	7.0
Operating Income	3.2	9.4
Operating Income Margin	6.4%	16.8%
Income Before Tax	3.4	9.2
Net Income	2.6	7.5
Net Income Margin	5.0%	13.5%
Exchange Rate	1 US\$	¥112
	1 Euro	¥132

Forex sensitivity towards FY2017 4Q operating income:  
for US\$ is ¥100 million, for Euro is ¥30 million, in the case of a ¥1 depreciation

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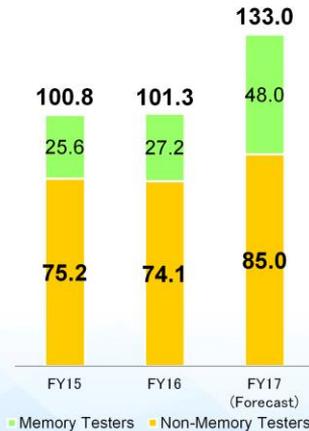
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### ○ FY2017 4Q Financial Forecast

- Our forecast for 4Q is as follows. The trend of increasing sales is expected to continue.
  - Orders ¥57.6 billion
  - Sales ¥55.7 billion
  - Operating income ¥9.4 billion
  - Net Income ¥7.5 billion
- Regarding 4Q orders, the tester market will continue to be robust, so we expect orders to remain at a high level.
- The increase in 3Q non-memory tester orders contributed to sales, and total sales is expected to surpass ¥55.0 billion.
- Sales of memory testers in 4Q are expected to be more or less flat with recent quarters, staying at above ¥10.0 billion.
- Sales in Mechatronics and Services, Support & Others are expected to decrease slightly QoQ.
- Our 4Q operating margin is forecast to be 16.8%, the highest in 10 years.

# Outlook by Segment

Semiconductor & Component Test System Sales trends (¥B)



## ■ Semiconductor & Component Test Systems

### Non-Memory Testers

- ✓ Customers continue to invest aggressively in automotive and display driver IC testers
- ✓ Demand for high-end smartphone IC testers has been recovering since 3Q
- ✓ High-speed logic ICs, used in high-performance computing, are also expected to drive more robust tester demand at the start of the year

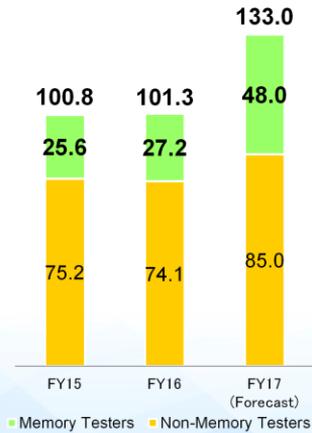
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## ○ Outlook by Segment: Semiconductor & Component Test System Segment

- First, the outlook for non-memory testers:
- Our outlook for non-memory tester sales this year is ¥85.0 billion, an increase of ¥14.5 billion over our previous forecast. Previously, we expected a recovery in this business in 3Q, but this has been delayed slightly into 4Q, when we expect to post about ¥30.0 billion in sales.
- Customers continue to invest aggressively in testers for automotive semiconductors and OLED display drivers, supporting non-memory tester sales this fiscal year.
- In addition, volume in the China smartphone-related business, which we had described previously as growing in the 2nd half, will jump more than expected and contribute to the expected surge in 4Q.
- Although we do not expect sales of smartphones themselves to grow particularly strongly, we believe that more testers will be needed as tests run longer and increase in complexity in step with further miniaturization and functionality improvements in logic ICs for high-end smartphones.
- In addition, there is strong demand for testers for logic ICs for applications other than smartphones. High-performance computing also requires high-speed logic ICs such as GPUs. These are also expected to drive more robust tester demand at the start of the year.

# Outlook by Segment

Semiconductor & Component Test System Sales trends (¥B)



## ■ Semiconductor & Component Test Systems

### Memory Testers

- ✓ As makers of NAND flash memory stack more and more layers into their chips, test time will increase and aggressive investment in testers will continue
- ✓ Enhancements in burn-in testing will advance in step with growing demand for 3D NAND reliability guarantees
- ✓ Investment in high-speed DRAM back-end testers will be strong
- ✓ Customers will also continue replacing older DRAM testers to improve their production capacity

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## ○ Outlook by Segment: Semiconductor & Component Test System Segment

- Next, the outlook for memory testers:
- Our memory tester sales forecast is unchanged at ¥48.0 billion.
- The memory tester market in 2016 was \$470M. I believe our share has significantly increased as the market has grown 70% since then.
- Customers in Taiwan and China also continue to drive strong demand for NOR flash memory test.
- In the DRAM segment, we expect an increase in demand for testers for LPDDR4 and other high-speed memory, while customers also continue to invest in productivity improvements by replacing older DRAM back-end testers.

## Outlook by Segment

Mechatronics Sales Trends (¥B)



### ■ Mechatronics

- ✓ Demand for device interfaces will rise apace with memory tester demand
- ✓ Demand for automotive and high-end SoC handlers is also on the rise
- ✓ Demand for nanotechnology products will fall YoY in a cyclical decrease

Services, Support, & Others Sales Trends (¥B)



### ■ Services, Support, & Others

- ✓ Amidst a second-hand tester shortage as a result of the booming semiconductor market, we are lowering our used tester business forecast

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## ○ Outlook by Segment: Mechatronics Segment and Services, Support, & Other Segment

- Our sales outlook for the Mechatronics segment is ¥33.0 billion, up ¥2.5 billion from our previous forecast.
- Our previous forecast had been adjusted upwards by ¥3.5 billion, but demand for device interfaces linked to memory tester demand continues to surge.
- Handlers are also performing well. Our handlers are being widely adopted where temperature control is essential for testing automotive ICs and SoCs. This was achieved by reinforcing our turnkey solutions combining testers and handlers.
- In nanotechnology, as previously explained, we have terminated our project that was to enable mass production of high throughput EB lithography systems, but we are not considering an exit from this business.
- We have been successful in maintaining a demand of several systems per year for these EB lithography systems, mainly for semiconductor development / evaluation. For EB metrology products such as CD-SEM, we expect demand to recover from next fiscal year, when major IC makers will accelerate miniaturization.
- The project that resulted in the write-down of ¥3.3 billion was a bid to enter the in-line lithography system market, which unfortunately did not succeed. The decision to cancel was made based on the extremely high technical hurdles, the long time to deliver to customers, and balancing our resources with our successful tester business. However, our EB control technology has been very well received by the industry. We will streamline our organization to expand our nanotechnology business.
- Finally, our full-year sales forecast for the Service, Support, & Others segment is ¥29.0 billion, down ¥2.0 billion from the previous forecast.
- The main reason for this downwards revision is that our used tester business did not grow as much as expected, owing to the boom in the semiconductor market, which has produced a shortage of second-hand testers.

# Key Measures

## ■ Preparing for business expansion

### <Preparation for sustained growth>

Reinforcing development and support for high-potential applications such as AI, 5G communication, and ADAS

### <Increasing production capacity>

Expanding production capacity to keep up with the pace of market growth

## ■ Outlook for investments in FY17: Unchanged

- ✓ R&D expenses: ¥34.0B (FY2016 actual: ¥31.2B)
- ✓ Capex: ¥ 6.5B (FY2016 actual: ¥4.8B)
- ✓ Depreciation and amortization: ¥ 5.0B (FY2016 actual: ¥5.2B)

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## ○ Key points for the second half of FY2017

- Key measures to grow Advantest's business in the short and medium term remain unchanged from three months ago.
- Semiconductors used in innovations such as AI, 5G communication and ADAS require more precise testing. Reinforcing our sales and support frameworks will be essential to sustain growth.
- Regarding our the short-term priority of expanding production capacity, as you can see by looking at our order trend over the last 12 months, tester demand has continued to grow rapidly. We have not been able to completely catch up with demand.
- Component supply chain issues are an industry-wide problem, especially in the electrical equipment and machinery sectors, and a full solution will take time. We will continue to make every effort to expand our production capacity.
- As we forecast further growth of the market, it is time to intensify R&D and capex investment. We aim to secure future growth by making necessary investments.

# Summary

- ✓ We expect brisk demand in the semiconductor tester market to continue in 2018
- ✓ The non-memory tester market is taking a favorable turn at present. Going forward, we expect overall high levels of demand for logic, automotive, and display driver ICs
- ✓ The memory tester market will similarly benefit from strong demand for non-volatile memory and DRAM test
- ✓ We are doing our utmost to increase our production capacity amid greater-than-expected increases in demand
- ✓ We will move forward on a continuing basis with foundational enhancements to address high-potential applications such as AI, 5G communication, and ADAS

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## ○ Summary

- This concludes my presentation of the outlook for the tester market and the business outlook for Advantest.