**ADVANTEST** 

# FY2018 1Q

(Three months ended June 30th, 2018)

# **Information Meeting**

July 25th, 2018 Advantest Corporation

# **Agenda**

■ Financial Results for FY2018 1Q

Atsushi Fujita Managing Executive Officer

**■** FY2018 Business Outlook

Yoshiaki Yoshida Representative Director, President & CEO

**ADVANTEST**,

2018/7/25

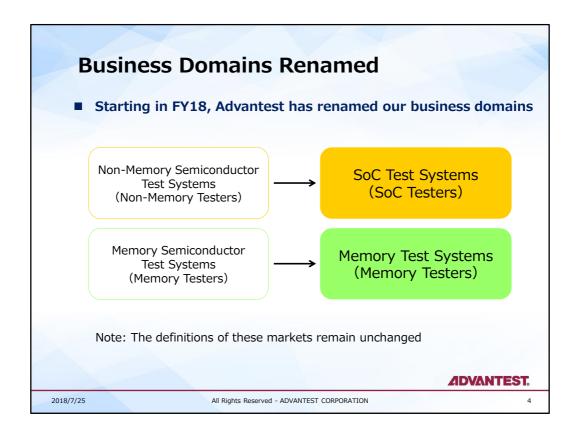
All Rights Reserved - ADVANTEST CORPORATION

2

									(¥B)		
			FY			FY18	Qo	Q	Yo	1	
		1Q	2Q	3Q	4Q	1Q	(Δ)	(%)	(Δ)	(%)	
Orders		49.4	56.2	56.8	85.4	70.6	<b>▲</b> 14.8	▲17.3%	21.2	43.09	
Sales		40.7	47.7	50.9	67.9	70.9	3.0	4.4%	30.2	74.39	
Gross Profit Gross Profit Margin		20.6 50.6%	24.9 52.1%	23.2 45.8%	37.9 55.7%	38.2 53.9%	0.4 ▲1.8pts	1.0%	17.6 3.3pts	85.69	
Operating Incon Operating Income		2.2 5.5%	5.2 10.9%	3.2 6.4%	13.9 20.4%	15.8 22.3%	2.0 1.9pts	14.3%	13.6 16.8pts	x7.	
Income Before	Гах	1.6	4.8	3.4	14.5	16.5	2.0	14.0%	15.0	x10.	
Net Income Net Income Margin		1.0 2.4%	3.9 8.2%	2.6 5.0%	10.6 15.6%	13.9 19.6%	3.3 4.0pts	30.7%	12.9 17.2pts	x14.	
Adjusted initial backlog following implementation of IFRS15						▲3.0					
Backlog		50.9	59.4	65.3	82.8	79.5	▲3.3	▲4.0%	28.6	56.29	
Exchange Rate	1 US\$	¥112	¥111	¥112	¥111	¥108	¥3 Appreciation ¥		¥4 Appre	¥4 Appreciation	
Exchange Rate	1 Euro	¥121	¥128	¥132	¥134	¥131	¥3 Appre	ciation	¥10 Depre	ciation	

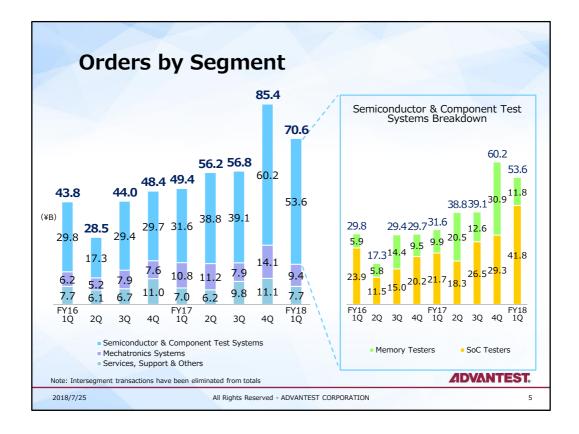
#### FY2018 1Q Results Summary

- In 1Q, the semiconductor market continued to expand across a wide range of fields, and performance improvement trends, especially in high-end products, also progressed rapidly. Against this backdrop, semiconductor manufacturers continued to actively invest in testers, creating a favorable business environment for Advantest.
- Our strength is our customer base. We continued to receive many orders from a wide range of customers in 1Q.
- We achieved ¥70.6 billion in orders. Although this is a decrease of ¥14.8 billion QoQ, the result is very strong. Excluding the previous quarter, this is the first time since FY2005 3Q that we have surpassed ¥70 billion.
- Sales was ¥70.9 billion, increasing for a fifth consecutive quarter.
- Gross margin was 53.9%. While this was a 1.8% decrease QoQ, it remains strong.
- We controlled SG&A to achieve ¥15.8 billion in operating income. The operating margin exceeded 20% for a second consecutive quarter.
- Our income before tax was ¥16.5 billion, net income was ¥13.9 billion, and net income margin was about 20%.
- Advantest adopted IFRS15 "Revenue from Contracts with Customers" in FY2018.
- · Adjustments were applied at the beginning of the fiscal year.
- The impact on our backlog was -3.0 billion yen. As a result, the backlog as of the end of 1Q is ¥79.5 billion.
- Foreign exchange rates were ¥108 to the US dollar and ¥131 to the Euro.



#### O Business Domains Renamed

- Until now, we roughly divided our semiconductor test equipment business into two
  domains based on the type of device supported: non-memory and memory.
- We renamed these domains in FY2018: SoC and memory.
- There is no change to the target markets for our SoC tester products and memory tester products respectively.
- In the narrow sense, SoC refers to "System on Chip" devices integrating various types of IP, but we will use it as a synonym for "non-memory."
- In Advantest's usage, SoC is more broadly defined to include logic ICs such as MPUs and GPUs, communication devices such as baseband processors, MCUs, analog ICs, sensors, optical devices, display drivers, etc.
- Memory testers specialize in testing DRAM and non-volatile memory such as NAND.



- FY2018 1Q Orders by Segment
- Semiconductor & Component Test Systems

  - SoC testers posted record high quarterly orders.
  - The background to this achievement is the qualitative and quantitative changes in the semiconductor market.
  - Particularly in application processors, which are core components of smartphones, miniaturization and incorporation of AI chips is driving performance evolution. This leads to enhanced test complexity and longer test times, boosting demand for testers.
  - Orders for SoC testers were also driven by customer investment in a wide range of areas including automotive, industrial equipment, and consumer products.
  - Memory tester orders appear to have shrunk due to a large number of advance orders posted in the previous quarter. There was no sense of deceleration in reality, and we received solid orders for both DRAM and non-volatile memory.

#### Mechatronics Systems

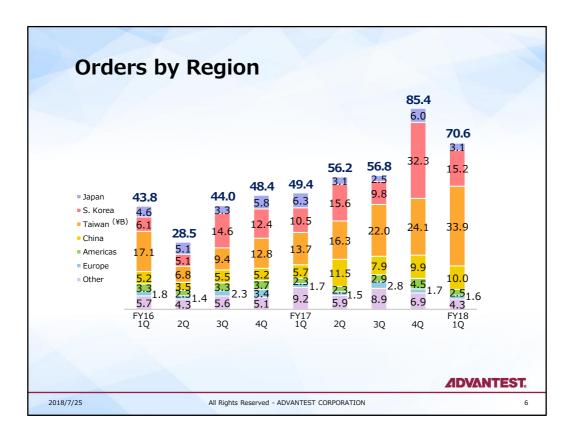
• ¥9.4 billion -34% QoQ

 Device interface orders fell in step with memory testers, and nanotechnology product enquiries were sluggish.

#### Services, Support & Others

• ¥7.7 billion -31% QoQ

 As many maintenance contracts were renewed at the end of the previous fiscal year, this quarter saw a decline in contrast.

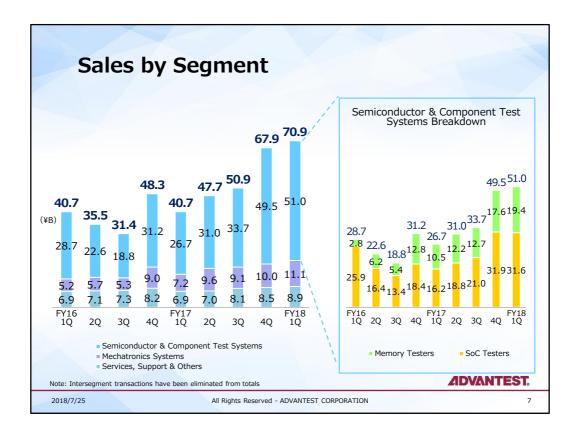


### O FY2018 1Q Orders by Region

Regions posting significant increases / decreases QoQ

Taiwan up ¥9.8 billion to ¥33.9 billion
Test demand for application processors used in smartphones increased.

South Korea down ¥17.1 billion to ¥15.2 billion There was a decline in memory tester orders in reaction to the large number of advance orders received in the previous quarter.



#### O FY2018 1Q Sales by Segment

 While the trend is for 1Q sales to fall below the previous quarter, this 1Q showed great strength as sales increased QoQ.

#### O Semiconductor & Component Test Systems

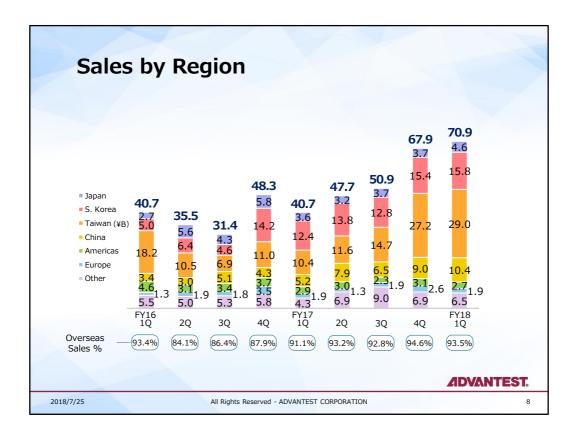
- SoC testers maintained the high level of sales of the previous quarter, principally in the application processor and high-end logic IC segments.
- Memory tester sales increased overall. In addition to continued high DRAM tester sales, sales of non-volatile memory testers increased even further from the previous quarter.

#### Mechatronics Systems

¥11.1 billion +11% QoQ

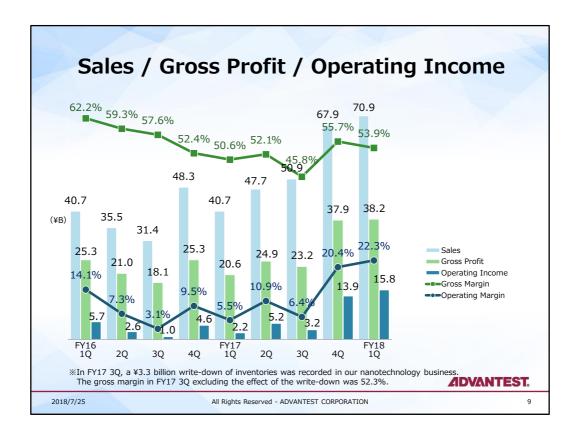
#### O Services, Support, & Others

• ¥8.9 billion +5% QoQ



#### O FY2018 1Q Sales by Region

- Sales were high, primarily in Asia, where semiconductor volume production processes are concentrated.
- As a result, Advantest's overseas sales ratio in 1Q was 93.5%.

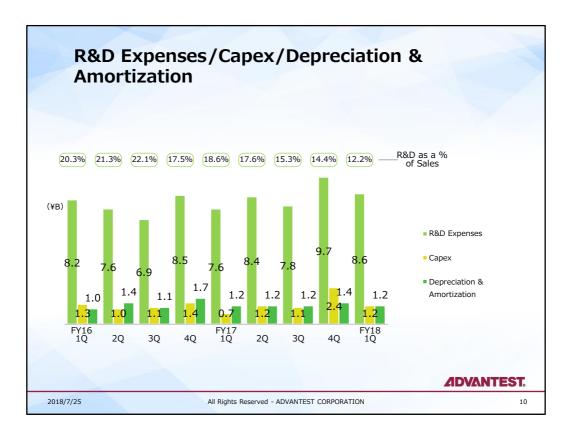


#### O FY2018 1Q Sales / Gross Profit / Operating Income

- SG&A

   ¥1.6 billion QoQ
   ¥22.4 billion

   Administrative expenses such as R&D expenses were low because this is the beginning of the fiscal year.
- Operating Income +¥2.0 billion QoQ ¥15.8 billion
- Operating Margin +1.9 points QoQ 22.3%
   Decrease in SG&A compensated for the decline in gross margin.

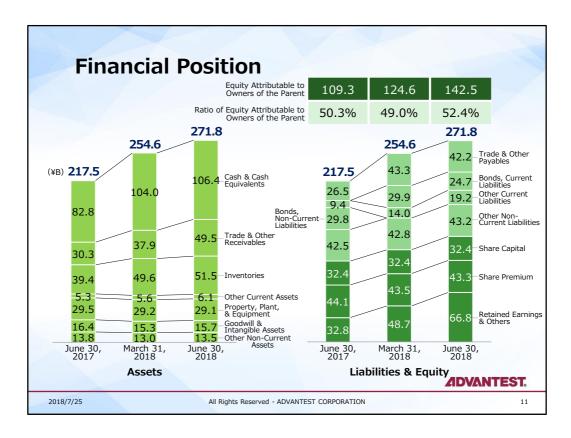


#### O FY2018 1Q R&D Expenses/Capex/Depreciation and Amortization

 R&D Expenses ¥8.6 billion R&D to sales ratio 12.2%

Capex ¥1.2 billion

Depreciation and Amortization ¥1.2 billion



#### O Balance Sheet for Period Ending June 30th, 2018

- Total Assets: ¥271.8 billion
- Cash and cash equivalents ¥106.4 billion
   ¥2.5 billion increase from the end of the previous fiscal year
- Bonds, Current Liabilities: down ¥5.3 billion to ¥24.7 billion
   Conversion of convertible bonds maturing in February 2019
   progressed, and the conversion rate as of the end of June was 17%.
- Equity Attributable to Owners of the Parent: ¥142.5 billion
- Ratio of Equity Attributable to Owners of the Parent: 52.4%
   Increased by 3.4 points from the end of the previous fiscal year

# **Agenda**

**■** Financial Results for FY2018 1Q

Atsushi Fujita Managing Executive Officer

**■** FY2018 Business Outlook

Yoshiaki Yoshida Representative Director, President & CEO

**ADVANTEST**,

2018/7/25

All Rights Reserved - ADVANTEST CORPORATION

12

### **CY18 Market Forecast**

	CY17	CY18 estimate	YoY Change
SoC tester market	Approx. \$2,200M	Approx. \$2,200~\$2,300M	+0%~5%
Memory tester market	Approx. \$750M	Approx. \$900M	Approx. +20%

- ✓ We maintain our market outlook of 3 months ago. We expect tester investment development in line with our existing outlook
- ✓ SoC tester demand in CY2H will center on smartphones and displayrelated devices
- Our outlook for memory tester demand expansion remains unchanged

ADVANTEST.

2018/7/25 All Rights Reserved - ADVANTEST CORPORATION

13

#### O CY 2018 Market Forecast

- Firstly, regarding the tester market, which is the foundation of our business, our figures from three months ago remain unchanged.
- Half of the calendar year is over, and semiconductor demand is steady. We estimate that there will be no significant change in customer investment schedules.
- While the media has shown concern for modulation in semiconductor equipment investment, we believe that tester investment as originally anticipated will materialize within the year.
- The SoC tester market in the first half of the calendar year saw booming demand for testers for high-end logic ICs used in Al servers and testers for smartphone processors.
- SoC tester demand typically declines somewhat in the second half of the calendar year. We expect to see the same seasonal trend this year, but SoC tester investment is expected to hold steady in areas such as smartphones, industrial equipment, automotive, and display-related devices.
- Our outlook for memory manufacturers' investment ranges and schedules is not greatly different from what it was three months ago. Demand for premium DRAM and non-volatile memory used in servers is solid, and we expect investment in testers will be carried out accordingly.
- Although we cannot yet predict the size of the tester market in 2019, we expect the 5G smartphone market to start ramping up.
- Regarding 5G smartphones, baseband processors and RF components that manage communication processing will be enhanced.
- The impact of 5G also goes beyond that. In order to handle massive high-speed data
  processing and data generation inside the smartphone, all semiconductors used in 5G
  smartphones will need to cope with higher speeds and shorter latencies and there will
  need to be more semiconductors in each device.
- In addition to SoC semiconductors, memory device will also need to have greater capacities and higher speeds.
- We see the possibility of a new wave of demand in the tester market from 2019 to 2020.

			(¥B)		
	FY17	FY18 Forecast	vs. FY17 (Δ) (%)		
Orders	247.8	220.0	▲27.8	▲11.2%	
Sales	207.2	230.0	22.8	11.0%	
Semiconductor & Component Test systems	140.9	160.0	19.1	13.5%	
Mechatronics Systems	35.9	38.0	2.1	5.9%	
Services, Support & Others	30.5	32.0	1.5	5.0%	
Operating Income Operating Income Margin	24.5 11.8%	34.5 15.0%	10.0 3.2pts	40.9%	
Income Before Tax	24.3	34.8	10.5	43.2%	
Net Income Net Income Margin	18.1 8.7%	27.8 12.1%	9.7 3.4pts	53.6%	
Adjusted initial backlog following mplementation of IFRS15		▲3.0			
Backlog	82.8	69.8	<b>▲</b> 13.0	<b>▲</b> 15.7%	
Exchange Rate 1 US\$ 1 Euro	¥111 ¥129	¥105 ¥135	¥6 Appre ¥6 Depre		

#### o FY2018 Forecast

- As stated in our new mid/long-term management policy announced in April, higher demand for semiconductors that require better performance and higher reliability, amid an overall expansion of the semiconductor market, presents an opportunity for Advantest.
- We believe that the progress of our orders and sales is a sign that the tester market is moving in line with our predictions under the mid/long-term management policy.
- In 1Q, we progressed towards our full-year forecast as follows:

 Orders
 32.1%

 Sales
 30.8%

 Operating Income
 45.8%

 Net Income
 50.0%

- If these trends are sustained, we believe our 2018 market share may improve considerably year-on-year.
- However, there are certain factors that could have a chilling effect on the global economy, such as trade friction between the US and China, so we need to keep an eye on these trends.
- For now, we are keeping our earnings forecasts unchanged.
- There is certainly some lack of visibility, but for the present our business environment is vibrant. If the world economy and the semiconductor industry do not undergo significant shocks in the future, we think it is possible that we achieve our current forecasts for the year.
- We will aim for further business growth with the goal of revising our forecasts upward.

### **FY18** Key Measures

#### Towards Business Expansion

<Reinforce product supply capability>

 We will strive to continue to ensure a stable parts supply that tracks tester demand

<Measures aimed at mid-term growth>

- ✓ In June 2018, we globally integrated our semiconductor test equipment business
- ✓ The new organization will enhance our competitiveness in promising areas such as AI, 5G comms and ADAS

#### ■ FY18 Investment Outlook: Unchanged from Initial Plan

✓ R&D Expenses: ¥35.0 B (FY17 actual: ¥33.5 B)

√ Capex: ¥7.0 B (FY17 actual: ¥5.4 B)

✓ Depreciation and amortization: ¥5.5 B (FY17 actual: ¥5.0 B)

**ADVANTEST.** 

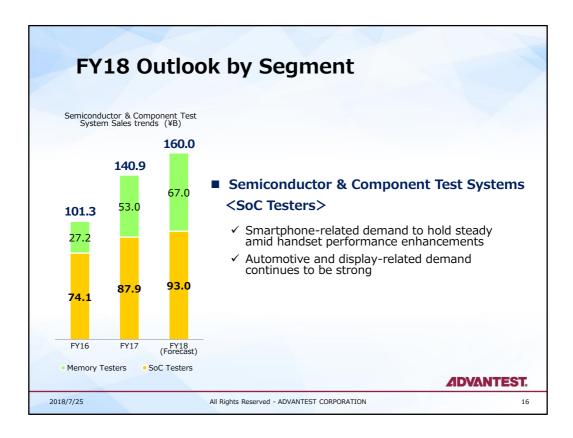
2018/7/25

All Rights Reserved - ADVANTEST CORPORATION

1.5

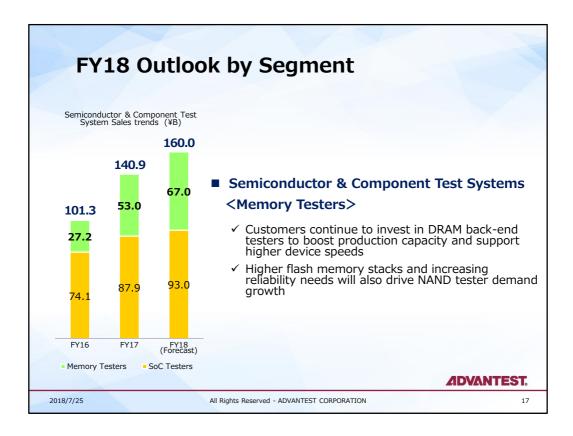
#### FY2018 Key Measures

- Although our product supply capability has been improved considerably compared to one year ago, we are still in a situation where we cannot deliver products as fast as customers would wish.
- We will continue to make efforts to secure enough components.
- As a mid/long-term growth initiative, our businesses related to semiconductor testers were completely integrated after the general shareholders' meeting in June, forming one global organization.
- Looking into the future, new devices going beyond conventional concepts, combining various technologies such as memory, SoC, AI and software will be launched. We will make a companywide effort in providing test technologies to complement such trends. By taking this bold move with our development resources around the globe, we have built a framework to provide new solutions. This framework will be the foundation of our growth over the next decade.
- Our investment outlook remains unchanged from our initial plan.

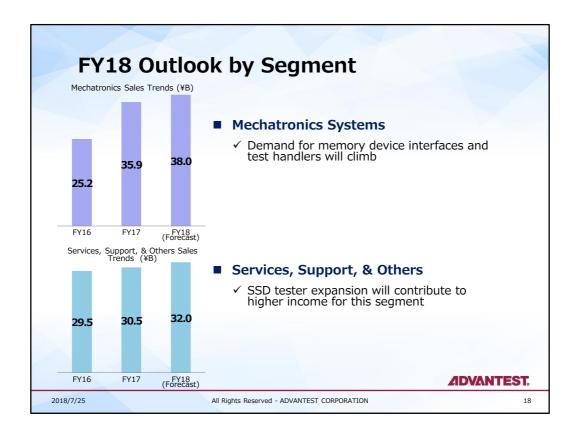


#### FY2018 Outlook by Segment: SoC Testers

- In 2018, semiconductors used in smartphones and AI servers are gaining higher performance and becoming more miniaturized, extending test times and making test more complicated. This is boosting demand for SoC testers.
- Although smartphone unit growth has slowed, handset performance is consistently improving in all segments, from high-end to low-end. Along with that, performance evolution of the semiconductors used in smartphones and increase in the number of semiconductors per device continues.
- To emphasize this point again, Advantest's strength is our base of customers in every tier involved in the semiconductor market. Regarding smartphones, we are in a position to capture tester demand regardless of which products take off.
- This has led to record orders for SoC testers since the fourth quarter of the previous fiscal year, and will continue to deliver results in the future.
- The environment is also favorable for automotive and display-related semiconductors.
- Especially in the display-related segment, in addition to higher panel definition, testing is becoming more complicated as display driver ICs continue to incorporate touch sensors; these factors contribute to maintaining the momentum of the massive wave of demand.



- FY2018 Outlook by Segment: Memory Testers
  - Sales prospects for memory testers remain unchanged.
  - In DRAM, due to strong demand for server DRAM, demand for back-end DRAM testers is increasing and investment is expected to hold steady.
  - Tester investment for volume production of 3D NAND for 64-layer and 72-layer flash, and investment in burn-in testers to ensure the reliability of NAND, are also expected to hold steady.
  - Even if there should be adjustments in memory tester investment, we believe these adjustments will be short-term and growth will return in the medium to long term.



#### O FY2018 Outlook by Segment: Mechatronics, Services & Others

- In our mechatronics business, demand for memory handlers and device interfaces with high correlation to memory testers is expected to increase.
- In our services, support and other businesses, the leasing / second-hand sales business will decline due to a shortage of second-hand testers and abundance of customers with ample funds; however, we anticipate that the growth of SSD testers can compensate for this.

## **Summary**

- ✓ In 2018, Advantest aims for further business expansion amid growth in the tester market
- We will strive to continue to ensure a stable parts supply that tracks tester demand
- ✓ In June 2018, we globally integrated our semiconductor test equipment business. The new organization will enhance our competitiveness in promising areas such as AI, 5G comms and ADAS
- ✓ We are closely watching the risk of global economic stagnation due to Sino-American trade friction

ADVANTEST,

2018/7/25

All Rights Reserved - ADVANTEST CORPORATION

19

#### o Summary

- We have discussed the tester market outlook for 2018 and our future business prospects.
- Technology will not stagnate. In addition to 5G, many other events likely to expand the semiconductor tester market are anticipated in the future. Semiconductor applications are also expanding.
- Even if the tester market should hit a stagnation phase in the future, we have confidence that the adjustment will not be prolonged, and that Advantest will continue to grow as semiconductors become more complicated and sophisticated and the semiconductor supply chain evolves.
- While our 1Q results were favorable, to capitalize on the above growth opportunities, we will continue to execute necessary measures with short-term, medium-term and long-term perspectives.
- However, we believe that it is also necessary to be aware of the rise of protectionism and trade friction between the US and China and other countries, and we will continue to be poised to react to rapid market fluctuations.

#### 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, the discussion of Advantest's business strategy, outlook and expectations as to market
  and business developments, production and capacity plans. Generally, these forward-looking
  statements can be identified by the use of forward-looking terminology such as "anticipate,"
  "believe," "estimate," "expect," "intend," "project," "should" and similar expressions.
  Forward-looking statements 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 forwardlooking statements.
- ▶ Use of These Materials

  The information contained in this presentation is protected under intellectual property laws, such as copyright law, patent law, trademark law and design law, and other laws and statutes of each country and various treaties. Any use (modification, copying, diversion, etc.) of this information that goes beyond that which is clearly authorized by law and statutes, and is not approved in writing by our company in advance, is forbidden.

ADVANTEST,

2018/7/25

All Rights Reserved - ADVANTEST CORPORATION