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# **INFORMATION MEETING** 2004



Murata Manufacturing Co., Ltd.

### Electronic Equipment Market



- Mobile Phone Market
  - Trend toward sophisticated and diversified functions, such as color LCDs, cameras and GPS
  - Sales are increasing in China, Russia and India
  - 3G mobile phone services are spreading
- Personal Computer Market
  - Demand for note PCs and companies' upgrading is increasing
  - Trend toward higher-frequency MPUs, high-speed interface, wireless LAN, and large-capacity HDDs

<	Demand Assumptions (	(N	(illion Units)		
		FY2003	FY2004	Growth ratio	
	Mobile Phones	Sales Volume	486	550	+13%
		Component Demand	530	600	+13%
	Personal Computers	Sales Volume	144	160	+11%
		Component Demand	147	162	+10%

### Electronic Equipment Market



- Digital AV Equipment Market
  - Demand for DVD recorders, PDP and LCD TV sets,
    Digital still cameras is increasing remarkably

Production Assumptions>	(Million Units)		
	FY2003	FY2004	
DVD Recorders	5	8	
PDP-TV sets	1	2	
LCD-TV sets	3	5	
Digital Still Cameras	45	60	
	PDP-TV sets LCD-TV sets	FY2003DVD Recorders5PDP-TV sets1LCD-TV sets3	

\*Murata's estimation

#### • Automotive Electronic Equipment Market

Promising market should provide further growth
 ECU(Electronic Control Unit), RKE(Remote Keyless Entry),
 TPMS(Tire Pressure Monitoring System), CAN-BUS,
 Car navigation systems, ETC(Electronic Toll Collection)

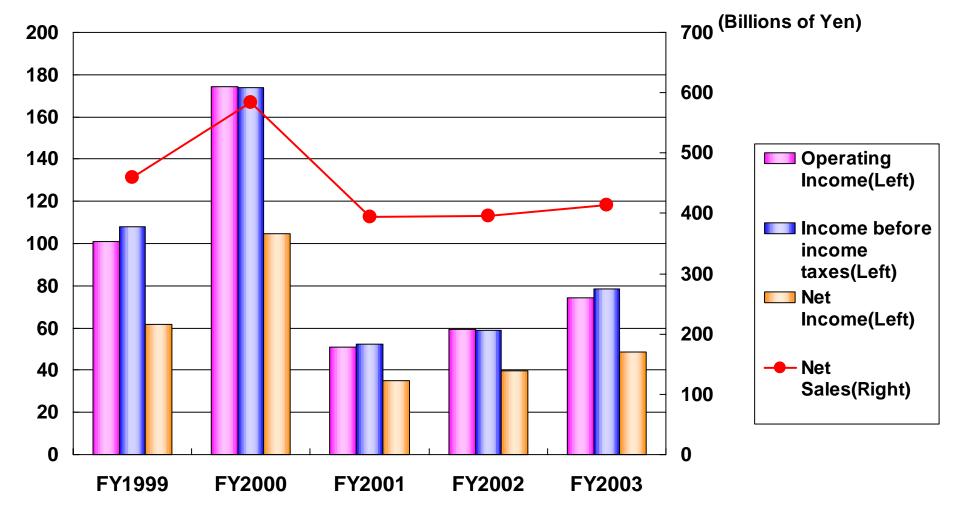
### Electronic Equipment Market



• The worldwide electronic equipment market has returned upward since the summer of 2003

Mobile Phone Market Personal Computer Market Digital AV Equipment Market Automotive Electronic Equipment Market

**Demand for electronic components steadily expands** 



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#### **Financial Data**

	FY2002		FY200	)3	Growth against the previous term	
	Billions of yen	% (*)	Billions of yen	% (*)	Billions of yen	Ratio(%)
Net sales	395.0	100.0	414.2	100.0	19.3	4.9
Operating income	59.2	15.0	74.2	17.9	15.0	25.4
Income before						
income taxes	59.1	15.0	78.7	19.0	19.6	33.2
Net income	39.5	10.0	48.5	11.7	9.1	23.0

#### <Excluding the influence of the Termination and Retirement Plan>

	FY2002		FY200	)3	Growth against the previous term	
	Billions of yen	% (*)	Billions of yen	% (*)	Billions of yen	Ratio(%)
Operating income	59.2	15.0	62.5	15.1	3.3	5.6
Income before						
income taxes	59.1	15.0	67.0	16.2	7.9	13.4

\* Ratio to Net sales



#### **Financial Data**

	FY2003	Q1	FY2003	Q2	FY2003	Q3	FY2003	Q4
	Billions of yen	% (*)						
Net sales	93.5	100.0	105.2	100.0	107.3	100.0	108.2	100.0
Gross income on								
sales	35.6	38.1	39.3	37.4	41.2	38.4	40.6	37.5
Operating income	11.6	12.4	14.4	13.7	16.4	15.3	31.8	29.4
Income before								
income taxes	12.5	13.3	16.1	15.3	17.1	15.9	33.1	30.6
Net income	7.8	8.4	10.2	9.7	10.8	10.1	19.7	18.2

#### <Excluding the influence of the Termination and Retirement Plan>

	FY2003	Q1	)1 FY2003 Q		FY2003 Q3		FY2003 Q4	
	Billions of yen	% (*)						
Gross income on								
sales	35.6	38.1	39.3	37.4	41.2	38.4	43.1	39.8
Operating income	11.6	12.4	14.4	13.7	16.4	15.3	20.1	18.6

\* Ratio to Net sales



#### **Gain related to the Termination and Retirement Plans**

#### Net gain of 11.7 billion yen at the operating income level

	(Unit: Millions of yen)
(a) Subsidy from the government	18,000
(b) Derecognition of previously accrued salary progression	4,380
(c) Settlement loss	-10,687
Net amount recognized periodic cost (b+c)	-6,307
(Included in Cost of sales)	(-2,489)
(Included in SG&A expenses)	(-2,405)
(Included in R&D expenses)	(-1,413)
Net amount effect on operating income (a+b+c)	11,693

### Business Performance Forecast for FY 2004 muRata



	1H FY2004		2H FY20	004	FY2004	
	Billions of yen	% (*1)	Billions of yen	% (*1)	Billions of yen	% (*1)
Net sales	222.0	11.7	218.0	1.1	440.0	6.2
Operating income	40.0	53.8	38.0	(21.2)	78.0	5.1
Income before						
income taxes	41.0	43.6	39.0	(22.2)	80.0	1.7
Net income	26.0	44.4	25.0	(18.1)	51.0	5.1

#### <Excluding the influence of the Termination and Retirement Plan>

	1H FY20	004	2H FY2004 FY2		FY200	)4
	Billions of yen	% (*1)	Billions of yen	% (*1)	Billions of yen	% (*1)
Operating income	40.0	53.8	38.0	4.1	78.0	24.8
Income before						
income taxes	41.0	43.6	39.0	1.4	80.0	19.4

\*1 Growth ratio against the same term of the previous year

\*2 Figures in parentheses show negative figures

\*3 Sales forcast by quarter [1Q:112, 2Q:110, 3Q:110, 4Q:108] (unit:billions of yen)

### Business Performance Forecast for FY 2004 muRata



Sales by Product	Growth Ratio Against FY2003	Sales by Application	Growth Ratio Against FY2003	
	Ayallist F12003	Application	Ayamst F 12005	
Capacitors	+10%	Telecom Equipment	+5~10%	
		(Mobile Phones)	(+5%)	
Resistors	±0%	EDP, Others	0~+5%	
Piezoelectric				
	±0%	Consumer Elec	+5%	
Components			1070	
Microwave Devices	+5~10%	Home and Others	+5~10%	
Deviees		Tatal		
Module Products	+5%	Total	+6.2%	
Other Products	+10~15%			
Total	+6.2%			

### Business Performance Forecast for FY 2004 muRata



< Assumptions >	FY2003		<u>FY2004</u>
Exchange rate	1US\$=Yen113 1EUR=Yen133	=>	1US\$=Yen105 1EUR=Yen125
Selling price decline	13.4%	=>	Around 10%
Depreciation and amortization	Yen 44.6bn	=>	Yen 44.5bn
R&D expenses(*)	Yen 32.8bn	=>	Yen 33.0bn
Capital expenditure	Yen 33.1bn	=>	Yen 50.0bn

\* R&D expense in FY2003 excludes 1,413 million yen related to the Termination and Retirement Plan

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## **Capital Expenditure**



<Recent years>

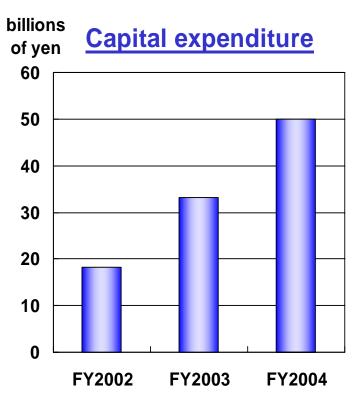
Capital expenditures were mainly for

- Cost reduction
- Production of new products
- R&D

#### <FY2004 Plan>

Besides the above purposes,

 Intensifying production capacity for key products



### 50 billion yen,

1.5 times more than the previous term

### **Small capacitors**

• "0603"size

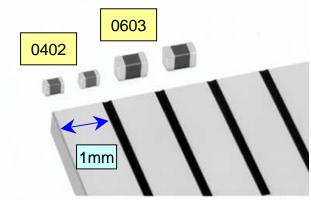
Capacitors

Sales quantity in FY2003 were <u>twice</u> as large as that in the previous term

• "0402"size

**Commercialized in November 2003** 

- less than half the surface area and 30% of the volume of "0603"size
- Expect to be incorporated into mobile phone main boards in the future





0.4x0.2mm, 0.6x0.3mm Size Ceramic Capacitors



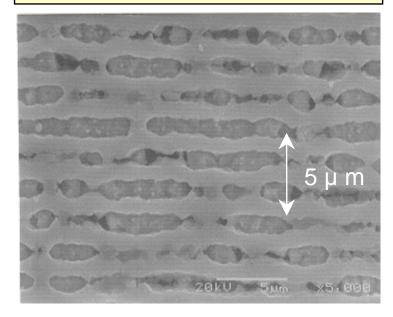


### **Large-capacitance capacitors**

- Developed 1.0µm thin-layer dielectrics
  - Commercialized "2012"size
    MLCCs with 22 µ F capacitance
  - Commercialized the world's smallest "1608"size MLCCs with 10 µ F capacitance

Intensifying the product line-up of the compact large-capacitance capacitors

#### 1.0 $\mu$ m thin-layer dielectrics



- Promoting the shift from electrolytic capacitors to MLCCs
- Demand for mobile equipment, PCs, Digital AV equipment trends toward miniaturization and functional sophistication,



### **Application specific capacitors**

Low-ESL capacitors

Capacitors

- Respond to higher-frequency MPUs
- We secure a leading position due to superior technology and the establishing of an efficient supply system

#### Other capacitors

- Chip capacitor arrays
  - (Mainly selling for mobile phones and digital still cameras)
- Capacitors for automobiles
- Capacitors for power supplies

### Multi-layered Ceramic Module



- R&D activities from the design stage
  - Satisfying customers' need for modules to keep up with the trend toward more sophisticated and diversified mobile phone functions
  - Expanding the business scope from GSM to PDC and W-CDMA
  - Promoting the functional improvement of module products to provide added value

### Switchplexers

- Products incorporating SAW filters are now increasing
- We consider the integration of all frond-end functions including the power amplifier into a single module in the future
- Efforts to raise the profit ratio of module products
  - Increasing the products used internally manufactured materials
  - Using our chip components on board

# Bluetooth<sup>®</sup> Module

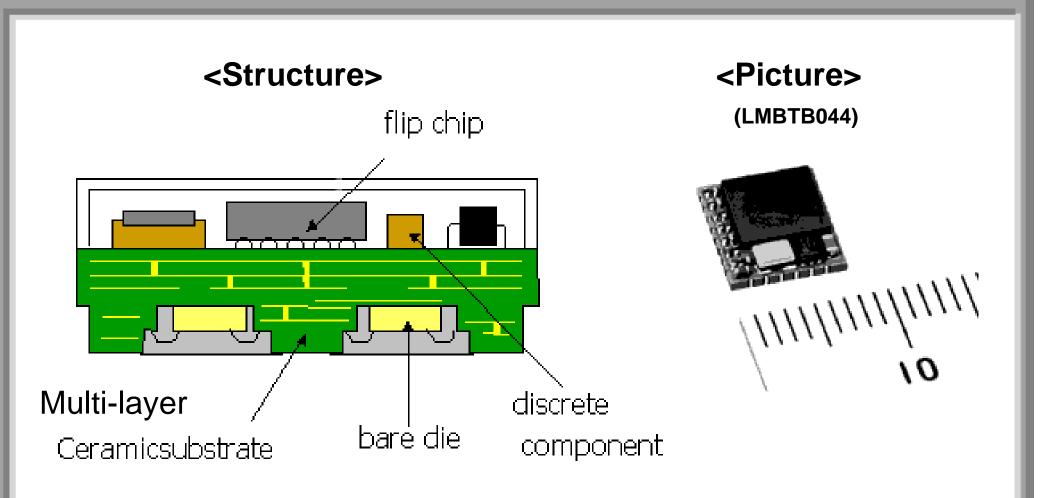


### • Bluetooth<sup>®</sup> Market

- Introduced in Europe as a combination of Bluetooth<sup>®</sup>equipped mobile phones and wireless headsets
- To be incorporated into mobile phones more due to the expansion of automotive hands-free systems in the future
- Bluetooth<sup>®</sup> Module
  - Our main market is that for mobile phones
  - Expanding the business of Bluetooth<sup>®</sup> modules using LTCC, low temperature co-fired ceramics, technology which enables miniaturization





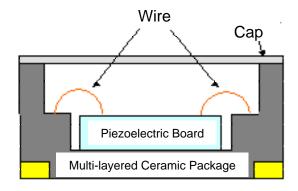


### SAW Filters

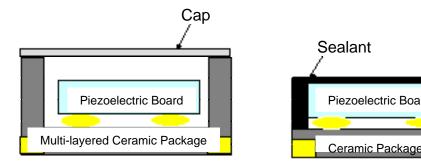


Miniaturization and functional integration of SAW filters for diversified and sophisticated mobile phones

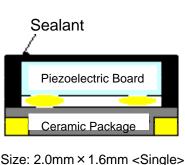
- **Miniaturization**  $\bullet$ 
  - Established the flip-chip bonding process (Directly bonding the bump of the ceramic package to the piezoelectric substrate)
  - Commercialized SAW filters using chip-size packaging technology



Size: larger than 3.0mm × 3.0mm Multi-layered Ceramic Package / Wire bonding type



Size: 2.5mm × 2.0mm < Single> Multi-layered Ceramic Package / Flip-chip type



Chip-size Package / Flip-chip type

### SAW Filters



#### Functional integration

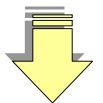
- Commercialized and started the mass-production of SAW duplexers for CDMA800/TDMA and 2GHz-band W-CDMA (Duplexers incorporate two RF filters for mobile phone transmission and reception signals in a single package)
- Expansion of our technology and product line-up
  - Acquired intellectual property rights and human resources by taking over the SAW duplexer business from Oki Electric Industry Co., in June 2003

Noise suppression components



Most of electronic equipment trend toward more integrated ICs and higher signal frequencies due to their digitalization and functional sophistication

Various problems such as erroneous operations, reception disturbance, and increased noise interference



Demand for noise suppression components is rapidly increasing

## Noise suppression components



### **Noise suppression component products**

- Chip inductors (BLM)
  - Promoting the miniaturization and the cost competitiveness in this field by expanding the material technologies and production technologies that have been cultivated for MLCCs
- Chip common-mode choke coils (DCC)

   Eliminating noise from high-speed
  - interfaces effectively



**DLP/DLW31S Series** 



**BLM Series** 

## Noise suppression components



### **Noise suppression component products**

- Chip three-terminal capacitors (NFM)
  - -Effective in suppressing noise from power lines where noise interference is increasing as the speed of ICs in digital AV equipment increases
- Chip coil (LQW/LQG/LQP)
  - Demand for high-frequency circuit applications in mobile phones and low-profile requirements in power supply circuits



## **Power Supplies**



- Commercialized energy-saving, high-efficient, small, lowprofile power supply products by using our circuit design technologies and production technologies
- Concentrated on power supplies for facsimiles and copying machines previously
- Expanded the scope of our power supply business to digital AV equipment, such as PDP and LCD TV sets

Expanding our power supply business with anticipating increasing demand for digital AV equipment

### **Sensor-Related Products**



### • GYROSTAR

- Sales for digital video cameras to correct hand-shaking are increasing remarkably
- Recently adopted for use in high-grade model of digital still cameras

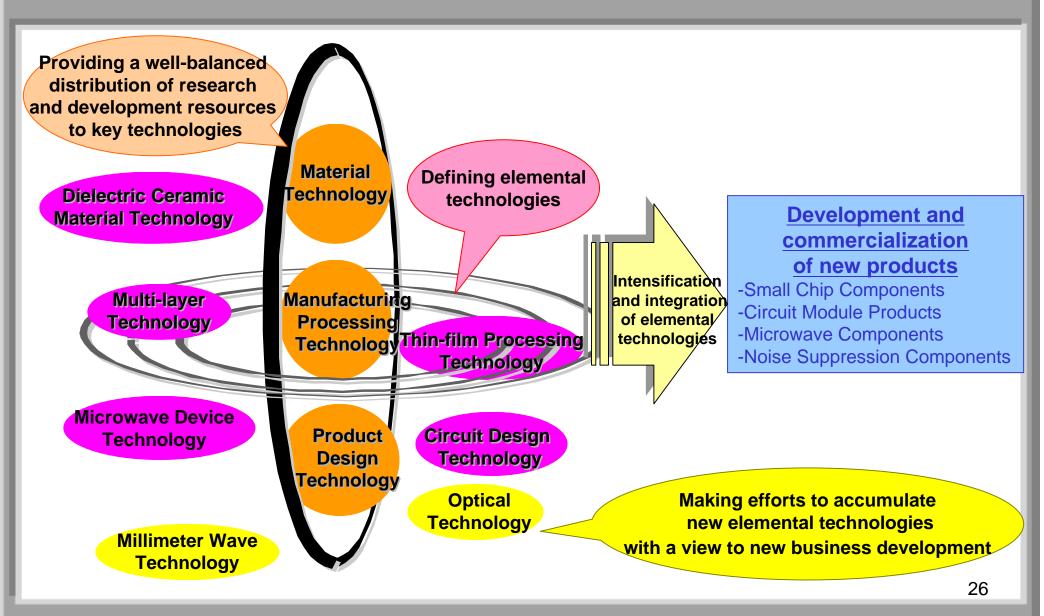
#### Shock sensors

- Steady demand for air bag sensors
- Sales for HDD vibration detection are increasing remarkably (for HDD in PCs, DVD recorders and portable music players)

Developing original sensor related products using our piezoelectric, magnetic and pyroelectric ceramic material technologies

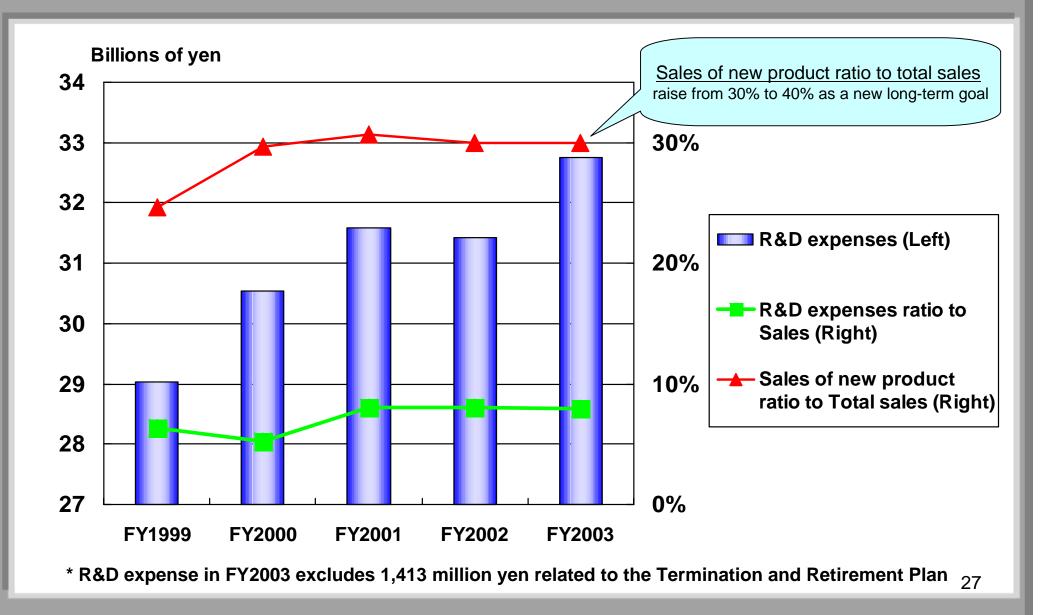
### **R&D** Activities





### **R&D** Expenses





## Production and sales by region



- Production
  - Increasing the production capacity in Japan and China
  - Closed the manufacturing operation in the U.S. and Germany
- Sales and marketing
  - Intensifying the sales and marketing function in East Asia where we can expect increasing demand



Promoting the optimization of management resource distribution from a global view point

### Effective use of external resources

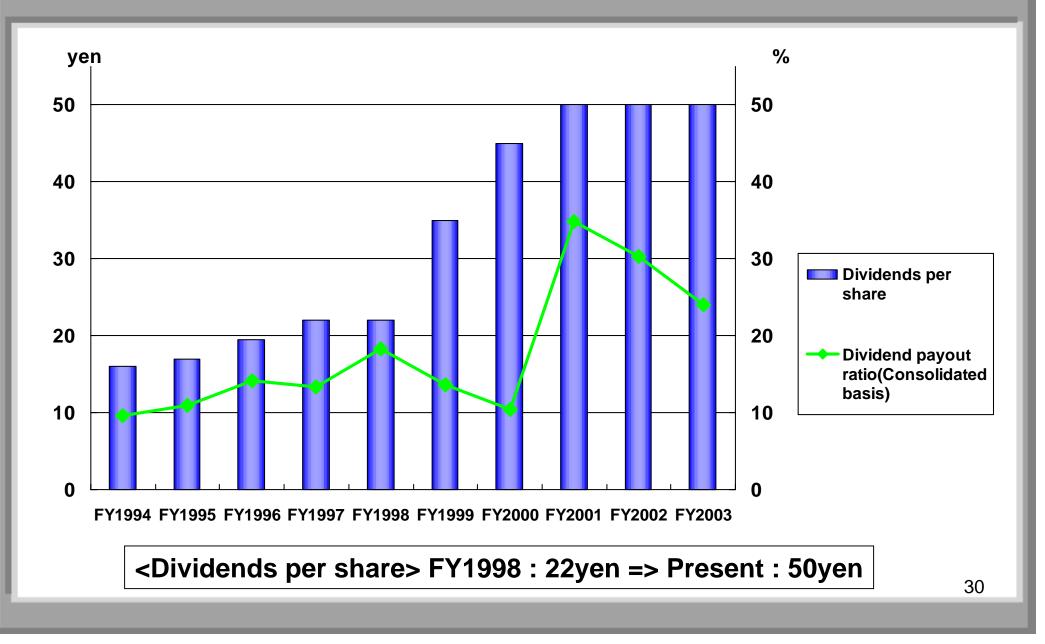


- Target for M&A
  - Technologies where synergies can be expected with our existing technologies
  - Business fields where our distribution channels can be used effectively
- Took over the LTCC multi-layer substrate business from Sumitomo Metal Electro Device Inc.
  - Acquired characteristic LTCC technologies such as "Ceramic material technology", "shrinkless sintering technology" and "cavity-forming technology"
  - Acquired the ceramic substrates for automobile engine control
    - Expanding automotive electronic equipment business
    - Developing new products applying the LTCC technology

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### Share Buy-Back



Total number of shares and purchase costs
 (Pursuant to the provisions of Article 210 of the Japanese Commercial Low)
 <u>Number of Shares</u> Purchase Costs

From June 2002 to June 2003 From June 2003 to June 2004

Number of SharesPurchase Costs10,000,000 shares53,263,621,000 yen5,061,100 shares30,016,286,000 yen

Canceled 10,000,000 shares in September 2003

- Changed the procedure for determining the share buy-back maximum amount
  - According to the revision of the Japanese Commercial Low
    < Before > Decision in the shareholders' regular meeting
    < Present > Decision in the board of directors

From now on, we decide the share buy-back as necessary, considering the stock price and cash flow plan

## **Cautionary Statement**



- These statements with respect to Murata's estimates, strategies, beliefs and other statements that are not historical facts are based on management's assumptions and beliefs in light of the information currently available to it and involve uncertainties. Therefore, you should not place undue reliance on them.
- Murata undertakes no obligation to update the information contained in any portion of these statements.



