## Information Meeting 2010

December 3 2010 Murata Manufacturing Co., Ltd.





## **Medium-term Business Plan**



## **Smartphones**

**Expansion of wireless** communication market

## Core markets

- Communications
- Computers
- Audio and Visual

New devices such as 3D-TV and Tablet PC

# Emerging markets

China, India and others

# New markets

- Energy/Environment
- Healthcare
- Automobile

Surge in middleincome population **Growth of EV/HEV** 

## **Medium-term Trends**



- Expansion of wireless communication market
- More and more advanced functions in electronic devices
- Soaring demand in emerging countries
- ◆New products and markets

## **Expansion of Wireless Communication** Market



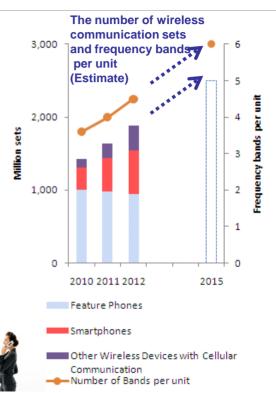
## Smartphones

Composition rate of smartphones is expected to reach 40% in 2012.

#### ■Penetration of 3G and LTE

- Further multiband and multimode
- The demand for base stations is also expected to expand.
- Rapid growth of other wireless devices with cellular cummunication

Datacards, Tablet PCs, Mobile Wi-Fi routers, E-books, and M2M devices





# **Expansion of Wireless Communication Market**



#### More advanced functions

- ✓Increasing number of components
- ✓ Strong demand for high-capacitance capacitors and EMI suppression products

The number of MLCCs used in a smartphone is much larger than that in a 2G handset.



✓ Strong demand for ultra-compact components and RF modules



## Further multiband and multimode

✓ Expansion of demand for SAW filters and duplexers

A smartphone uses more than triple as many SAW devices as a 2G handset.

#### More complicated RF circuit design

- ✓Our RF modules reduce customers' design time and time to market.
- ✓Integration of our SAW devices into our RF modules

Wireless communication market is growing drastically and a great opportunity for Murata, which can offer in-house total solutions to customers.

# **More and More Advanced Functions in Electronic Devices**



The more advanced functions are incorporated in electronic devices, the more MLCCs, especially high-value-added ones, are required.

# Mobile phone

## 2G handset

100-200 pcs/unit

## **Smartphone**

400-500 pcs/unit

## PC

## Netbook

300-400 pcs/unit

Notebook

(Current platform model)

600-700 pcs/unit

## **Tablet PC**

500-600 pcs/unit

Notebook (New platform model)

700 000 n as/wsi

700-800 pcs/unit

## **LCD-TV**

700-800 pcs/unit

## 3D-TV\*

1,000-1,100 pcs/unit
\*3D-LCD TV with LED-backlight
and refresh rate at 240Hz

**FPD-TV** 

## More and More Advanced Functions in Electronic Devices



The more advanced functions are incorporated in electronic devices, the more MLCCs, especially high-value-added ones, are required.

## **■**Higher-capacitance

- The demand for 1µF or higher capacitance capacitors has been expanding rapidly.
- The potential market size for replacement from non-ceramic capacitors such as tantalum and aluminum capacitors is expected to be about 50 billion yen per annum.

## **■**Ultra-compact

The demand for ultra-compact capacitors such as 0402(0.4x0.2x0.2mm) and 0603(0.6x0.3x0.3mm) sizes is increasing drastically in the smartphone market.

## **Soaring Demand in Emerging Countries**



# ■ Economic growth of emerging countries in Asia

 The middle-income population\* in emerging countries in Asia such as China and India is expected to be more than double from 0.94 billion in 2010 to 2 billion in 2020.

\*Disposal household income from US\$5,000 to 35,000 per annum

# ■ Demand expansion of electronic components in Asia

- Our customers continue to shift their design, procurement and production sites to Asia including EMSs.
- Demand is shifting from low/middle-end to high-end electronic devices.

Capturing demand expansion in emerging markets accelerates our growth.

## **Broadening activities outside Japan**

## ■ Expansion of production outside Japan

- √The rate of production outside Japan is expected to be increased from 15% at present to 30% by the end of March 2013.
- ✓ Production will expand in China, Thailand and Malaysia.

## New sales and customer support activities

**July 2010** 

Established an electromagnetic anechoic chamber building in Shanghai (Murata EMC-LAB). Oct 2010

Established a sales company in India and a sales agent company in Vietnam.

Considering establishing subsidiaries in inland China.

## **New Products and Markets**



## New Products



Microblower



Micro DC-DC converter

### **Microblower**

- Using ultrasonic vibration of a piezoelectric ceramic material, a microblower functions as an air pump discharging high pressure air from the unit.
- It is extremely compact and thin so that it can be installed in ultra-compact devices such as smartphones for effective cooling.

### **Micro DC-DC Converter**

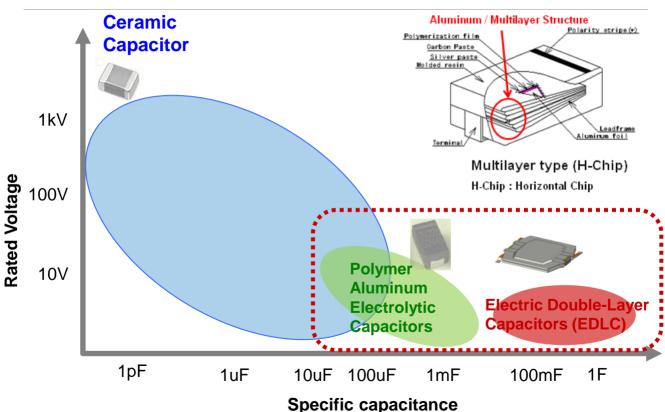
- Ultra-small DC-DC converters with low EMI for mobile phones and other compact mobile devices
- The new converter has an on-board footprint that is 60% less than a discrete converter.

## "Capacitor House"

- Polymer aluminum electrolytic capacitors
- Electric double-layer capacitors (EDLC)

## **Concept of "Capacitor House"**





## **New Products and Markets**



New Markets

## **Energy/Environmental market**

- Lithium-ion rechargeable battery for industrial instruments
- •Silver paste for crystalline solar cell electrode

#### **Healthcare** market

- UV sensor devices
- Vital sign sensor to measure pulse rate, blood pressure, blood glucose level, body temperature etc.



#### **Automotive market**

- Highly efficient and reliable MLCCs for high-power applications contribute to significant energy saving of EVs and HEVs through downsizing of inverters and electrification of ancillary units.
- RF modules and sensors for wireless automotive communications

## **Profit Distribution**





Our basic policy of profit distribution to shareholders is to prioritize the sharing of gains through payment of dividends, and to steadily raise them by increasing profit per share.



This report contains forward-looking statements concerning Murata Manufacturing Co., Ltd. and its Group companies' projections, plans, policies, strategies, schedules, and decisions. These forward-looking statements are not historical facts; rather, they represent the assumptions of the Murata Group based on information currently available and certain assumptions we deem as reasonable. Actual results may differ materially from expectations due to various risks and uncertainties. Readers are therefore requested not to rely on these forward-looking statements as the sole basis for evaluating the Group. The Company has no obligation to revise any of the forward-looking statements as a result of new information, future events or otherwise.

Risks and uncertainties that may affect actual results include, but are not limited to, the following: (1) economic conditions of the Company's business environment, and trends, supply-demand balance, and price fluctuations in the markets for electronic equipment and components; (2) price fluctuations and insufficient supply of raw materials; (3) exchange rate fluctuations; (4) the Group's ability to provide a stable supply of new products that are compatible with the rapid technical innovation of the electronic components market and to continue to design and develop products and services that satisfy customers; (5) changes in the market value of the Group's financial assets; (6) drastic legal, political, and social changes in the Group's business environment; and (7) other uncertainties and contingencies.



