# Murata Strengthens its On-board MEMS Sensor Business—Exhibition of VTI's MEMS sensors at 2012 AUTOMOTIVE ENGINEERING EXPOSITION—

Murata Manufacturing

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Murata Manufacturing Co., Ltd.
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Accelerometers

Gyro/accelerometer combo sensors

Pressure sensors

## Overview

Murata Manufacturing Co., Ltd. completed the acquisition of VTI Technologies Oy (hereinafter "VTI" ) in January of this year, and integration is proceeding with the aim of making use of the synergies between the two companies. VTI's MEMS sensor products will be exhibited as part of the Murata Group for the first time at the 2012 AUTOMOTIVE ENGINEERING EXHIBITION to be held at the PACIFICO Yokohama from May 23 to May 25. At this exhibition, Murata will introduce VTI's acceleration sensors, gyro/accelerometer combo sensors, and pressure sensors.

## Summary

VTI is a MEMS (Micro Electro Mechanical Systems) technology-based sensor manufacturer. MEMS technology is key for reducing device size, increasing accuracy and reliability, extending service life, increasing robustness, achieving lower prices, and reducing power consumption. By integrating MEMS technology into its own product lines, Murata aims to strengthen its development and sales abilities and ensure continued future growth for the expanding MEMS market, including a wide range of industrial and consumer applications such as automotive, information and communications equipment, energy, life care, and biotechnology.

# Summary of Exhibited Products

## Accelerometers

### Features

VTI's accelerometers comply with the AEC Q100 Grade 1 (temperature range: -40°C to 125°C) automotive quality standard. These digital output accelerometers for automotive applications offer high reliability and performance, and are designed and manufactured for use in vehicle safety systems and electronic systems for vehicle body control.

### Applications

- Electronic stability control (ESC)
- Electronic parking brake (EPB) *1
- Anti-lock braking system (ABS)
- Hill start assistance (HAS) *2
- Electronically controlled suspension (ECS) *3
- Anti-roll control (ARC) *4
- Roll over sensors (ROV) *5
- Anti-vibration*6

### Production

VTI Technologies Oy

Click here for detailed information of the Accelerometers [1]

## Gyro/accelerometer combo sensors

### Features

VTI's new SCC1300 series of gyro/accelerometer combo sensors (integrated gyro sensor + accelerometer) feature high bias stability*7, high vibration resistance, and low noise characteristics. This makes them ideal for automotive and industrial applications that require reliable, high-performance sensors.

### Applications

- Electronic stability control (ESC)
- Anti-lock braking system (ABS)
- Anti-roll control (ARC) *4
- Roll over sensors (ROV) *5
- GPS navigation systems
- Inertial measurement units*8
- Platform control*9

- Motion analysis control
- Robotic technology control systems[*10]

**Production**

VTI Technologies Oy

Click here for detailed information of the Gyro/accelerometer combo sensors [2]

## Pressure sensors

**Features**

VTI's pressure sensors are low-noise, high-sensitivity MEMS element-type pressure sensors that use bulk MEMS technology[*11]. These sensors are manufactured under the same process and control conditions as VTI's MEMS elements, which have a solid record of over a decade of use for on-board applications.

**Applications**

- Medical devices
- Flow meters
- Barometers
- Altimeters

**Production**

VTI Technologies Oy

**Part number**

- SCB10H series

**External Size**

1.4 (w) x 1.4 (l) x 0.85 (h) mm

# Terminology

- *1 Electronic parking brake (EPB)
  This system adjusts the braking strength according to the angle of inclination in the longitudinal direction of the vehicle. The brake is locked simply by pressing a button on the instrument panel, and releases automatically when starting and accelerating the vehicle.
- *2 Hill start assistance (HAS)
  This system automatically controls the brake pressure to prevent the vehicle from rolling backwards when starting on inclines.
- *3 Electronically controlled suspension (ECS)

ECS adjusts the suspension according to the driving conditions, taking into account the speed, the road surface condition, cornering, and acceleration and deceleration. The aim is to increase steering stability and driving comfort for the driver.

- *4 Anti-roll control (ARC)
  This function prevents the vehicle from swaying heavily in the roll direction.
- *5 Roll over sensor (ROV)
  These sensors detect vehicle body roll-over (roll-over in the roll direction) for airbag controllers.
- *6 Anti-vibration
  This function detects and reduces engine vibration with the aim of reducing fuel consumption.
- *7 High bias stability
  Extremely stable sensor output
- *8 Inertial measurement unit
  A measuring instrument equipped with a three-axis gyro sensor and a three-axis accelerometer for monitoring the motion of an object.
- *9 Platform control
  A system that controls a dynamic horizontal platform to always remain level.
- *10 Robotic technology control system
  A control system for robots and devices that perform robotic operations.
- *11 Bulk MEMS technology
  A MEMS manufacturing technology. This is the general term for technology used to manufacture MEMS devices by processing a substrate or thick film (thickness: several ten µm or more).

## Venue Information

### 2012 AUTOMOTIVE ENGINEERING EXPOSITION

| | |
|---|---|
| Dates | Wednesday, May 23 to Friday, May 25 |
| Venue | PACIFICO Yokohama |
| Murata booth No. | P76 |

## Related News Releases

Exhibition at 2012 AUTOMOTIVE ENGINEERING EXPOSITION [3]

Murata closed the purchase of VTI Technologies [4]

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http://www.ecnmag.com/news/2012/05/murata-strengthens-its-board-mems-sensor-business%E2%80%94exhibition-vtis-mems-sensors-2012-automotive-engineering-exposition%E2%80%94

**Links:**

[1] http://www.murata.com/JavaScript:SubWin_xl('/new/news_release/2012/0517/accelerometers.html');
[2] http://www.murata.com/JavaScript:SubWin_xl('/new/news_release/2012/0517/gyroscopes.html');
[3] http://www.murata.com/new/news_release/2012/0507/index.html
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