# Apple Became the Second-Largest Buyer of Consumer MEMS Sensors in 2010

Apple in 2010 rose one rank to become the worldâ€™s second largest buyer of microelectromechanical system (MEMS) sensors for consumer electronics products and cell phones, as it snapped up parts for products including the iPhone 4 and iPod Touch, new IHS iSuppli research indicates.

The companyâ€™s purchases of consumer/cell phone MEMS sensors rose by 116.7 percent in 2010, the highest rate of any major buyer. Appleâ€™s purchases rose to $195 million in 2010, up from $90 million in 2009, as presented in the attached table.

This strong increase propelled Apple past Nintendo. Apple in 2010 also came within a hairâ€™s breadth of taking the No. 1 spot, trailing leading purchaser Samsung Electronics Co. Ltd. by just $5 million.

**MEMS differentiate Apple products**

â€œConsumers in 2010 happily bought up Apple products including the iPhone 4, the iPad and iPod Touch,â€ noted JÃ©rÃ©mie Bouchaud, principal analyst for MEMS at iSuppli. â€œMuch of the appeal of these products lies in their sophisticated user interfaces, which rely heavily on MEMS sensors, specifically accelerometers, gyroscopes and microphones. This caused Appleâ€™s purchasing to boom in 2010.â€

MEMS sensors bought by Apple last year included 3-axis gyroscopes from STMicroelectronics for the iPhone 4, iPod Touch, andâ€”toward the end of 2010â€”the iPad 2 tablet. Apple also bought accelerometers for the above three devices as well as for the iPod nano and MacBook computer. Furthermore, the company procured bulk acoustic wave (BAW) duplexers from TriQuint Semiconductor for the iPhone and iPad 3G. Analog Devices Inc., Knowles Electronics and AAC Inc.â€”using die from Infineon Technologiesâ€”provided Apple with MEMS microphones for the iPod nano 5th Generation, iPhone 4 and Apple headsets and the iPad 2.

**Appleâ€™s MEMS influence**

While Appleâ€™ procurement activities are extensive, the companyâ€™s influence on the MEMS sensor market transcends its own purchasing. â€œApple is responsible for creating new MEMS markets for consumer electronics and cell phones far beyond its own consumption,â€ Bouchaud said.

The first iPhone made it popular for handsets to use accelerometersâ€”devices that provide auto-screen rotation and gesture-based command functions. The iPhone 4

also employed gaming-helpful gyroscopes. Likewise, the MEMS industry owes a tremendous debt of gratitude to Apple for single-handedly reviving the tablet, a hotbed for MEMS projected to be worth more than $200 million by 2015.

**Samsung surges to No. 1**

Samsung in 2010 recaptured the top spot from Nintendo Co. as the largest buyer of MEMS sensors for mobile phones and other consumer electronics like tablets. The companyâ€™s purchases rose 46 percent from $195 million in 2010, allowing it to surpass Nintendo to take the No. 1 spot. Samsung had been the market leader in 2008. Samsungâ€™s shopping bag included BAW filters from Avago Technologies and TriQuint, followed by accelerometers from Bosch Sensortec, Kionix and STMicroelectronics.

Other important MEMS items purchased by Samsung last year included microphones from Knowles, gyroscopes from STMicroelectronics, and Digital Light Processing (DLP) chips for pico projectors from Texas Instruments.

**Nintendo falls to third**

Nintendoâ€™s purchases declined to $123 million in 2010, down 11.5 percent from $139 million in 2009. As a result, the company fell from the top spot in 2009 to third place in 2010. â€œNintendoâ€™s MEMS sensor orders declined primarily because of the market saturation of Wii video game controllers, which use accelerometers,â€ Bouchaud said.

Nintendo MEMS expenditures were for single- and dual axis and also 3-axis gyroscopes from InvenSense, intended for both the Wii Motion Plus remote controller as well as for Nintendoâ€™s newly released 3DS handheld device featuring 3-D gaming. The company also bought single-axis gyroscopes from Epson Toyocom, plus accelerometers from STMicroelectronics and Bosch Sensortec for the Wii and 3DS.

**Other MEMS buyers**

LG Electronics, staying put in fourth place this year, purchased MEMS mostly for its handsets. The company also obtained BAW filters from Avago; microphones from Knowles; accelerometers from Bosch Sensortec, Kionix, Freescale Semiconductor and STMicroelectronics; and toward the end of the year 3-axis gyroscopes from InvenSense and STMicroelectronics.

Sonyâ€™s one step move up from sixth rank in 2009 placed it second, after Apple, in yearly MEMS expenditure growth, with revenue of $95 million, up 55.7 percent from $61 million in 2009. Sony bought gyroscopes as the companyâ€™s highest MEMS spend, sourced from various players and fitted to the Sony Move remote controller for the PlayStation 3 game console. Suppliers to Sony included STMicroelectronics for single-, dual and 3-axis gyroscopes; Sony itself for the dual axis version; and Murata, Epson Toyocom and STMicroelectronics for the single-axis gyroscope in the Dualshock controller for the PlayStation 3. Accelerometers also

were needed for the Sony Move and Dualshock from Kionix, with STMicroelectronics serving as a second source.

Learn more about this topic with the IHS report entitled: Consumer MEMSâ€"The Sky is the Limit at http://www.isuppli.com/MEMS-and-Sensors/Pages/Consumer-MEMS-The-Sky-is-the-Limit.aspx?PRX [1]

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