VOLUME 6 ISSUE 9

The Databeans Monthly

September 29, 2008

Consumer Segment Drives Growth in Accelerometers

"Have you ever noticed that anybody driving slower than you is an idiot, and anyone going faster than you is a maniac?"
– George Carlin (American Comedian 1937-2008)

Accelerometers constitute a technology that has now existed for several decades, and one that has traditionally been driven by advances in the automotive industry. The incorporation of airbags in vehicles, for example, was a principal market driver. This began in 1991, with Analog Devices' MEMS ADXL50, which was the first commercially available accelerometer for widespread use in the automotive industry. In this case, accelerometers were being used to detect rapid vehicle deceleration and deploy an airbag whenever necessary. Another common use for accelerometers was in electronic stability control systems in vehicles, which utilized a lateral accelerometer to measure equilibrium in cornering and help adjust weight accordingly. Automobiles remain the largest market for accelerometers, with $1.1 billion in revenue for 2008.

However, recent trends have helped reshape the role of accelerometers in mobile phones and consumer electronics applications. Nintendo's Wii video game console has witnessed sales of over 30 million units since its introduction in September 2006, which has led to growth of 19 percent annually in the video game segment. Currently every Wii remote controller contains an accelerometer device, as does the Wii "Nunchuk," some supplied by Analog Devices, and some supplied by STMicroelectronics among others. Sales in this segment are also the result of the popularity of Red Octane's Guitar Hero franchise, which utilizes Freescale's accelerometer to sense player movement. Strong sales of next-generation console controllers will drive the video game accelerometer market to reach $288 million by 2013.

Worldwide Accelerometer Forecast by Application Area

$M	2005	2006	2007	2008	2009	2010	2011	2012	2013	08-13 CAGR%
Automotive	831	908	917	1,103	1,212	1,332	1,589	1,708	1,866	11%
Computers	154	187	203	232	248	286	291	327	324	7%
Video Games	26	34	87	122	148	205	202	267	288	19%
MP3	0	45	114	159	234	348	522	589	666	33%
Other Consumer	97	90	98	87	110	149	133	162	184	16%
Mobile Phones	0	0	62	144	217	317	402	564	688	37%
Industrial	541	630	722	704	818	691	835	749	818	3%
Total	1,649	1,894	2,203	2,551	2,987	3,328	3,974	4,366	4,834	14%

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Over the last couple of years, cell phone manufacturers have begun to incorporate MEMS accelerometers into handset designs. Overseas manufacturers such as Nokia, LG, and Samsung have already introduced these handsets in Korea and Japan, where much of the world's cutting edge mobile technology originates. However, it was the introduction of Apple's iPhone that introduced this technology to American consumers. The accelerometer inside the iPhone determines which way the phone is being held and adjusts its screen to either portrait (vertical) or landscape (horizontal) that allows the user to watch movies or view web pages in whichever format they choose. This feature has helped the iPhone become one of the fastest selling mobile phones ever, and will become a feature in many other handset designs in the future. Databeans predicts that this market will grow at a brisk 37 percent per year to reach $688 million by 2013.

Another high potential area for accelerometers is the Mp3 player market. Freescale has typically supplied MEMS for Mp3 player OEMs that incorporate them for shock protection in the case of accidental drops. However, Apple's 4G iPod Nano, which was released in September 2008, has pioneered a new application for accelerometers. This device, which utilizes a STMicroelectronics 3-axis MEMS accelerometer, has a similar function to the iPhone, which allows the user to tilt the iPod to browse through albums or view movies in widescreen format. It also utilizes an inventive application which allows the consumer to shake the device to randomly shuffle the song playing. These features have already made the new generation of iPod Nanos a hot item in the consumer market. Databeans predicts these features will be incorporated into competitors' products as well, thus increasing demand for accelerometers overall, leading to growth of 33 percent annually.

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