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NAND Flash Suppliers Score Big Gains in 2005

Samsung, Toshiba, Hynix, ST displayed strongest growth

Scottsdale, Arizona — March 28, 2006 — Driven by demand from consumer and communications applications, the flash memory market enjoyed another solid year of growth in 2005. According to the *March Update* of IC Insights' *McClean Report,* flash memory sales totaled $18.6 billion in 2005, a 19% increase from $15.6 billion in 2004. Within the flash market, however, the NOR and NAND segments headed in opposite directions. The NOR market declined 13% to $8.0 billion, while the NAND segment grew 64% to $10.6 billion! In 2005, unit shipments of NOR flash increased 9% to 4.1 billion, while shipments of NAND devices increased an impressive 88% to 1.2 billion!

IC Insights' final 2005 ranking of flash memory suppliers shows that most vendors who provided NAND flash memory benefited from strong product demand. Topping the list of flash memory suppliers for 2005 was Samsung, a position it has held for the past few years (Figure 1). Samsung's flash sales (including internal transfers) grew 47% to nearly $6.6 billion, representing 35% marketshare. An agreement with Apple to supply flash memory for the iPod nano accelerated Samsung's second half sales and unit output.

Toshiba, also a provider of NAND flash memory, retained the number two position with flash sales that increased 13% to $2.5 billion. Toshiba's flash marketshare was 13% in 2005, down one point from 2004.

Intel, AMD/Spansion, and STMicroelectronics ranked three, four, and five, respectively, in flash sales for 2005. All three suppliers are predominantly makers of NOR flash memory. However, both Intel (with Micron to form IM Flash Technology) and STMicroelectronics (with Hynix to form Hynix ST Semiconductors) took steps to become actively involved in the hot NAND flash segment in 2006 and beyond.

Hynix Semiconductor enjoyed one of the fastest flash sales growth rates in 2005. Its sales jumped to $1.26 billion, an increase of nearly six fold from $220 million in 2004. Its flash memory sales accounted for 40% of its total quarterly revenue in 4Q05. Although it still has quite a way to go before reaching the flash sales level achieved at rival Samsung, Hynix could very well pose a threat to Toshiba as the second-largest supplier of NAND flash memory in 2006.

Leading Flash Memory Suppliers ($M)

2005 Rank	Company	2004	2005	Percent Change	Percent Marketshare	Emphasis
1	**Samsung**	**4,475**	**6,580**	47%	35%	NAND
2	**Toshiba**	**2,206**	**2,500**	13%	13%	NAND
3	**Intel**	**2,285**	**2,278**	0%	12%	NOR
4	**AMD/Spansion**	**2,343**	**1,912**	-18%	10%	NOR
5	**ST**	**1,169**	**1,320**	13%	7%	NOR*
6	**Hynix**	**220**	**1,260**	473%	7%	NAND
7	**Sharp**	**895**	**850**	-5%	5%	NOR
8	**Renesas**	**865**	**831**	-4%	4%	NAND
9	**SST**	**405**	**394**	-3%	2%	NOR
10	**Micron**	**15**	**275**	1733%	1%	NAND

Source: IC Insights, company reports

*Flash sales were approximately 85% NOR, 15% NAND.

Figure 1

IC Insights' *March Update* to *The McClean Report* includes rankings of companies in various IC product segments including DRAM, MPU, MCU, DSP, and analog devices. Additionally, it includes updated sales rankings for the top 50 semiconductor, top 50 IC, top 40 fabless, and leading foundry company rankings.

The McClean Report is available for $2,190 in either a three-ring binder or CD-ROM format. Additional individual copies of the disk or binder sell for $495 each. The report is also available under a multi-user corporate license for $5,490.

About IC Insights

IC Insights, Inc., based in Scottsdale, Arizona USA, is dedicated to providing high-quality, cost-effective market research for the integrated circuit industry. Founded in 1997, IC Insights offers coverage of global economic trends, the IC market forecast, capital spending and fab capacity trends, product market details, and technology trends, as well as complete IC company profiles and evaluations of end-use applications driving demand for ICs. For more information, contact +1-480-348-1133 or info@icinsights.com, or visit www.icinsights.com.