Elpida develops next-generation mobile DRAM product

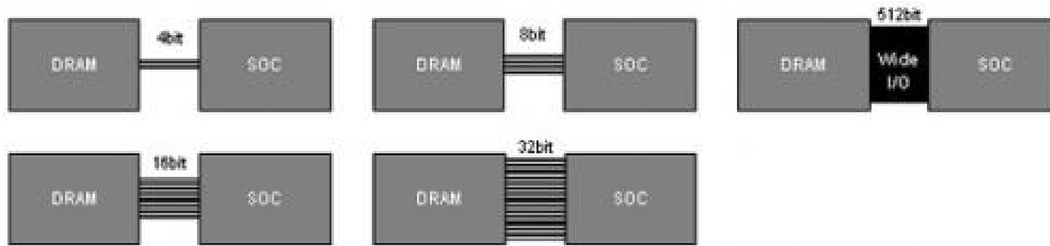
November 18 2011

Elpida Memory, the third largest Dynamic Random Access Memory (DRAM) manufacturer in the world, today announced that it had developed the industry's first 4-gigabit next-generation mobile memory chips for smart phones, tablet PCs and other mobile devices. The new DRAM achieves compliance with the cutting-edge "Wide IO" international standard for mobile memory and has a data transfer rate that is four times faster than current mobile memory chips. Hence, it supports dramatic improvement in video and audio functionality.

The new Wide IO Mobile RAMTM uses a 30 nanometer (nm) manufacturing process. Sample shipments will begin in December 2011 and volume production is likely to start in 2012. Also, sample shipments of a four-layer 16-gigabit product are scheduled to begin in March next year.

The most important feature of the newly developed DRAM is that it

achieves a data transfer rate of 12.8 gigabytes per second (12.8 GB/s) that is four times faster than LPDDR2, the current leading DRAM preference for mobile devices. When compared with LPDDR2 based on equivalent data transfer rates, the new DRAM consumes roughly 50% less power.



Wide IO Mobile RAM has around 1200 interface pins, including 512 I/O (Input/Output) pins, to enable SoC (System on Chip) connections. Through Silicon Via (TSV) technology that can stack together multiple chips in a vertical configuration is necessary to meet the demand for higher memory density. In June this year Elpida began shipments of the industry's first 8-gigabit DRAM (four layers of 2-gigabit DDR3), a product manufactured using TSV technology.

At present Elpida is developing a 16-gigabit DRAM based on stacking four 4-gigabit Wide IO Mobile RAM chips. Compared with existing PoP (Package on Package) products, the 16-gigabit DRAM is expected to be thinner and smaller by using TSV. The current memory package for mobile devices (SoC plus a 4-layer PoP) has a height of 1.4mm. However, Elpida's TSV technology package (SoC plus a 4-layer TSV) has a height of 1.0mm, which makes it about 30% thinner.

By combining its advanced low-power consumption technology with its high-end package technology, Elpida is working to promote Wide IO Mobile RAM as next generation standard choice for mobile applications.

Provided by Elpida Memory

Citation: Elpida develops next-generation mobile DRAM product (2011, November 18) retrieved 27 April 2024 from
https://phys.org/news/2011-11-elpida-next-generation-mobile-dram-product.html

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