

Samsung Develops Industry's First Ultra-Fast GDDR4 Graphics DRAM

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Samsung Electronics has developed the industry's fastest computer graphics memory and has shipped it to major graphics card manufacturers for testing. The GDDR4 (Graphics Double Data Rate 4th Generation) memory processes gaming and video images at 2.5-gigabits per second (Gbps) or a staggering 10-gigabytes per second, the equivalent of transmitting 10 hours of DVD quality video, the full series of Harry Potter movies. The first GDDR4 developed is a 256Mb chip that runs at 2.5Gbps.

Graphics DRAM is a high-bandwidth DRAM memory chip capable of simultaneously processing high volumes of video exceptionally fast compared to the speed of the main computer memory – DRAM (dynamic random access memory).

As games and video become increasingly high-resolution and encompass more content, graphics-DRAM data processing needs to improve at a similar pace. But due to an inherent transmission delay when data travels between the graphics chip and the resident system, the fastest graphics memory to this point has been limited to a speed of 1.6Gbps.

Samsung Electronics has used cutting-edge technologies called DBI (Data Bus Inversion) and Multi-Preamble, for the first time anywhere, in the development of GDDR4, eliminating all data transmission delay. The result is a transmission speed 56% faster than graphics products on the market today.

While GDDR4 offers unprecedented speed, it retains a design virtually identical to that of GDDR3, today's graphics DRAM of choice. This minimizes inconvenience to graphics card and chipset manufacturers in developing new products.

Since introducing the first 128 megabit (Mb) GDDR2 in 2002, Samsung Electronics has maintained leadership in the graphics DRAM market. Samsung plans to introduce samples of 2.8 Gbps GDDR4 by the end of this year with mass produced to follow by the second quarter of 2006, allowing Samsung to maintain leadership of the high-performance graphics card market, which is expected to grow significantly in the second half of 2006.

Source: Samsung

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