

Hybrid Memory Cube performance doubles

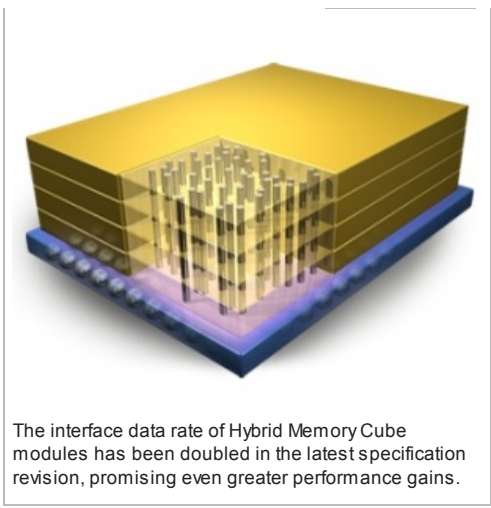
Published on 26th February 2014 by Gareth Halfacree

The Hybrid Memory Cube Consortium has announced its second-generation specification, promising to double the throughput of its innovative three-dimensional memory technology.

The Consortium, led by Samsung and Micron and joined in 2012 by Microsoft, has been pushing its HMC technology for some time. Designed to stack memory wafers using through-silicon via technology to create a three-dimensional cube, HMC promises much: the original first-generation designs, which began shipping in September last year, offered a peak transfer rate around ten times greater than the fastest DDR3 memory in a compact footprint and with a power draw some 70 per cent lower than its traditional planar competition.

Now, the Consortium has announced the second generation of the HMC specification, which further increases the throughput. According to figures released by Micron, co-founder of the Consortium, the short-reach performance has been boosted from a previous peak of 15Gb/s to 30Gb/s - a doubling which will significantly increase overall performance of the parts. 'The HMC Gen2 specification doubles the interface data rate, which enables system designers to more easily realize performance gains with next-generation 20nm and 14nm FPGAs and SoCs,' explained Patrick Dorsey, senior director of product marketing at HMC Consortium member and FPGA specialist Altera. 'Our early start in delivering evaluation boards and the demonstrated interoperability between Hybrid Memory Cube devices and FPGAs enables customers to immediately start evaluating and developing HMC-based, high-performance systems.'

Although it will be some time before second-generation parts hit mass production, early adoption of the first-generation Hybrid Memory Cube modules has shown promising gains over planar RAM - leading to the possibility that the technology will trickle down to the desktop in the not-too-distant future.



The interface data rate of Hybrid Memory Cube modules has been doubled in the latest specification revision, promising even greater performance gains.

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maverik-sg1 26th February 2014, 21:09

Nvidia stated they would be using the cubes for Maxwell, I assume AMD will do the same - looks like V2 could even make it in time for a Maxwell refresh later in the product life cycle.

Will be interesting to see how much all this additional bandwidth improves performance.

thogil 27th February 2014, 10:23

Memory can quite easily be a bottleneck in a GPU, especially in GPGPU applications.

jon 28th February 2014, 13:21



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I'm quite ignorant of the technology, here ... so forgive if this is a foolish question: can this tech be used to replace L2 or L3 cache on a chip, and if so, wouldn't that give some awesome performance gains for CPU / GPGPU tech? Or is this only relevant to DIMM-type memory?

Alecto 1st March 2014, 10:19



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