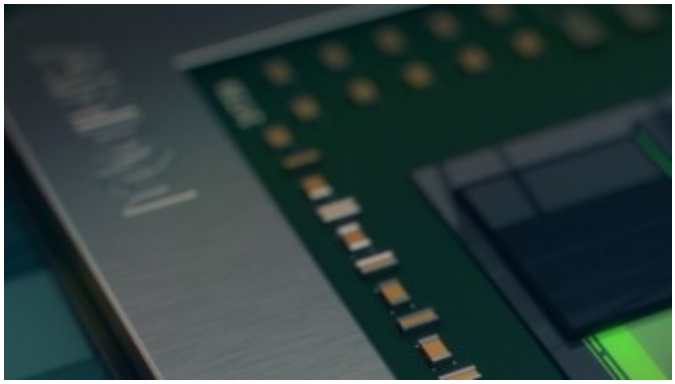
AMD hopes its graphics card products will have an extra edge over Nvidia equivalents through the addition of high bandwidth memory (HBM), a potentially superior replacement to conventional GDDR5 memory.



According to the company, GDDR5 RAM is not becoming any smaller-- on the contrary, it requires "significant board real estate," as well as greater amounts of power in order to meet the demands of increasingly faster GPUs. Enter HBM, a means to stack memory cells vertically instead of next to each other.

As AMD puts it, the memory stacks communicate with each other and the core GPU using "silicon vias" interconnects, essentially tiny holes drilled through the physical cells buffered by "microbumps." An "interposer" interconnect links all components together. The result? More dense memory providing superior performance at lower bandwidth per watt costs.

The technology also allows for smaller graphics cards, since a 1GB HBM stack takes just 7x5mm of space, while 1GB of GDDR5 take 28x24mm, or more powerful current-sized cards.

"The highest performance and fastest graphics cards on the market will be smaller and with more integrated designs for mobile PCs," AMD says. "That’s all enabled by a smaller memory footprint."

Mind, AMD is not the only company working on stacked memory-- Nvidia has been working on a similar technology, dubbed "Volta," since 2003. However Volta-enabled graphics card will only be available sometime on 2016, while AMD should be first to the finishing line with initial HBM

cards hitting the market "within a few months."

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