

## **First Draft of Hybrid Memory Cube Interface Specification Released**

### ***Industry Leaders on Track to Complete Final Specification by Year End***

**BOISE, Idaho and San Jose, CA, August 14, 2012** – The Hybrid Memory Cube Consortium (HMCC), led by Micron Technology, Inc., and Samsung Electronics Co., Ltd., today announced that its developer members have released the initial draft of the Hybrid Memory Cube (HMC) interface specification to a rapidly growing number of industry adopters. Issuance of the draft puts the consortium on schedule to release the final version by the end of this year. The industry specification will enable adopters to fully develop designs that leverage HMC's innovative technology, which has the potential to boost performance in a wide range of applications.

The initial specification draft consists of an interface protocol and short-reach interconnection across physical layers (PHYs) targeted for high-performance networking, industrial, and test and measurement applications. The next step in development of the specification calls for the consortium's adopters and developers to refine the specification and define an ultra short-reach PHY for applications requiring tightly coupled or close proximity memory support for FPGAs, ASICs and ASSPs.

“With the draft standard now available for final input and modification by adopter members, we're excited to move one step closer to enabling the Hybrid Memory Cube and the latest generation of 28-nanometer (nm) FPGAs to be easily integrated into high-performance systems,” said Rob Sturgill, architect, at Altera. “The steady progress among the consortium's member companies for defining a new standard bodes well for businesses who would like to achieve unprecedented system performance and bandwidth by incorporating the Hybrid Memory Cube into their product strategies.”

The interface specification reflects a focused collaboration among several of the world's leading technology providers. Micron and Samsung, the initial developing members of the HMCC, are working closely with Altera Corporation, ARM, HP, IBM, Microsoft Corporation, Open-Silicon, Inc., SK hynix Co., and Xilinx, Inc., to allow HMC to pave the way for a wide range of advances in electronics.

“As system designers face the simultaneous challenges of meeting exploding bandwidth requirements while staying within their power budgets, Xilinx is committed to technologies that allow them to address the bottlenecks in their systems while maintaining an acceptable level of power consumption,” said Hugh Durdan, Vice President, Portfolio & Solutions Marketing at Xilinx. “The progress that's been made on the HMC specification is extremely exciting to Xilinx because of

the increasingly important role that our 28nm high-performance, low-power FPGAs is playing in high-performance systems.”

As envisioned, HMC capabilities will leap beyond current and near-term memory architectures in the areas of performance, packaging and power efficiencies, offering a major shift from present memory technology.

One of the primary challenges facing the industry -- and a key motivation for forming the HMCC -- is that the memory bandwidth required by high-performance computers and next-generation networking equipment has increased beyond what conventional memory architectures can efficiently provide.

The term “memory wall” has been used to describe this challenge. Breaking through the memory wall requires an architecture such as HMC that can provide increased density and bandwidth with significantly lower power consumption.

Adopter membership in the HMCC is available to any company interested in participating in development of the specification. The HMCC already has responded to interest from more than 115 prospective adopters. The final interface specification is scheduled for completion and release by the end of 2012.

Additional information, technical support specifications and other tools for adopting the technology can be found at [www.hybridmemorycube.org](http://www.hybridmemorycube.org).

### **About the HMCC**

Founded by leading members of the world’s semiconductor community, the Hybrid Memory Cube Consortium (HMCC) is dedicated to the development and establishment of an industry-standard interface specification for the Hybrid Memory Cube technology. Members of the consortium include Altera Corporation, ARM, HP, IBM, Micron Technology, Microsoft Corporation, Open-Silicon, Inc., Samsung Electronics Co., Ltd., SK hynix Co., and Xilinx, Inc. More than 115 prospective adopters are exploring consortium membership. To learn more about the HMCC, visit [www.hybridmemorycube.org](http://www.hybridmemorycube.org).

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