

FBDIMM

Unleashing Server
Memory Capacity



Engineered for Servers, Micron's Fully Buffered DIMMs Increase Speed, Capacity, and Reliability

New Architecture Means No More Tradeoffs Between Speed and Capacity

Micron Technology's fully buffered DIMMs (FBDIMMs) enable higher speeds, increased capacity, and greater reliability. Typical DRAM memory subsystems use a stub bus topology, which requires the data signals from the memory controller to be electrically connected to the data lines of every DRAM module on the bus. With as many as 72 connections in today's systems, the signals degrade where the bus and DRAM devices meet, causing errors especially as speeds increase. Until now, designers had only two choices: limit the amount of memory so fewer errors occur at higher speeds, or accept slower speeds—and excess errors—to gain the density required. But when capacity, reliability, and performance are critical, neither choice will do.

Advanced memory buffer. Micron's FBDIMMs feature an advanced memory buffer (AMB) chip that overcomes these limitations. Using a point-to-point architecture, it transmits signals among the controller, memory devices, and other modules without sacrificing signal integrity. So, designers can put more memory into their servers and still keep errors low.

Serial data path. Even so, you won't have to give up speed. Unlike modules with a parallel path (stub bus) architecture, FBDIMMs move data serially between the AMB and memory controller. Their simplified structure means FBDIMMs boast a lower pin count and faster

transmission rates compared to conventional architectures. Plus, they can perform reads and writes simultaneously, while eliminating the read-to-read delay between data transfers. With speeds up to 4.8 Gb/s, Micron's FBDIMMs permit fast buffering that optimizes server performance.

Improved Error Detection Dramatically Reduces Soft Errors

Address/command soft errors can disrupt server performance and reliability. To help lessen their occurrences, Micron's FBDIMMs incorporate an enhanced cyclic redundancy check (CRC) that provides greater data and address/command protection than traditional server modules. Designers can also configure it to suit their particular applications. Providing an even greater defense, the bit lane fail-over correction feature identifies bad data paths and removes them from the operation. Combined, these error detection methods dramatically reduce address/command soft errors.

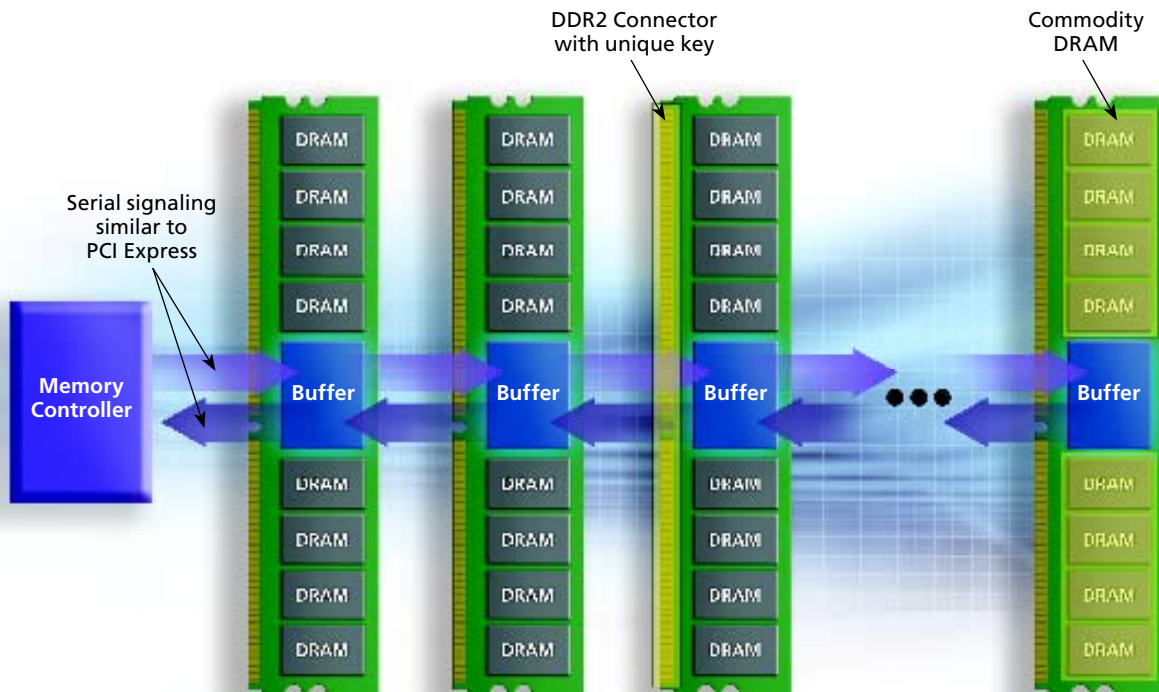
Call Today to Start Designing Better Servers

Find out what more Micron's high-speed, high-density FBDIMMs can do for your servers. Call us at 208-368-3900 or visit our Web site at www.micron.com/dram. Samples are available upon request.



FBDIMMs – Unleashing Server Memory Capacity

FBDIMM Solution Details



- | FBDIMMs eliminate memory capacity limits
- | New advanced FBDIMM channel features vastly improve performance (e.g., buffer latency, reliability)
- | FBDIMMs are *the* cost-effective, high-speed, high-density system memory solution for servers, workstations, networking equipment, and high-end desktop computers

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