



## **QDR™ RAM DESIGN COMPLETE; SILICON MOVES INTO MANUFACTURING**

### **High-Bandwidth Networking SRAMs to Sample this Quarter**

SAN JOSE, Calif., January 10, 2000 — The QDR™ SRAM Consortium, consisting of Cypress Semiconductor (NYSE: CY); IDT (Nasdaq: IDTI); and Micron Technology Inc. (NYSE: MU), today announced that the initial design is complete for the first products based on the new SRAM standard for future high-performance communications applications. Silicon for the first Quad Data Rate SRAM, a 512K x 18 device, is now in the manufacturing process, and customer samples are slated for the first calendar quarter of 2000. QDR SRAMs target the next generation of switches and routers that operate at data rates above 200 MHz. The first products will be capable of performance up to 333 MHz data rates.

The three companies also announced an extension of their collaboration on the QDR SRAM standard. In order to assure customers of multiple, compatible sources, the three companies have defined initial roadmaps and migration paths spanning to the 128-Mbit density. The group has also standardized on the space-saving 13-mm x 15-mm fBGA package. The consortium plans to publish the device specification after silicon verification.

In order to create true multiple sources quickly in the marketplace, the consortium has partnered beyond simple data sheet compliance by exchanging design simulations, test vectors, test methodologies, characterization plans and common packaging support. The group will continue this close partnership into silicon verification and qualification.

#### **About QDR RAMs**

Demand is growing rapidly for memories optimized for high bandwidth. The relentlessly expanding amount of information that travels over the Internet is creating the need for more and faster systems capable of routing and switching data across the globe. Higher-bandwidth memory is a requirement for these systems, and the QDR standard is specifically designed to address this need.

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The development of the unique QDR SRAM architecture included extensive input from networking industry leaders. The devices are designed to greatly increase memory bandwidth compared to existing SRAM solutions in applications such as switches and routers, and will typically be used for look-up tables, linked lists and controller buffer memory.

The popular Zero Bus Turnaround™ (ZBT®) and No Bus Latency (NoBL™) products meet the needs of today's communications systems operating between 66 MHz and 200 MHz. Targeting emerging systems operating beyond 333 MHz data rates, QDR SRAMs have dedicated input and output ports that independently run at double data rate (DDR), resulting in four data items per clock cycle. Depending upon the application, the QDR SRAMs more than double the SRAM bandwidth. The dedicated input and output ports free designers from grappling with bus contention issues.

Each vendor designs and manufactures the devices in its own technology and fabrication facilities, and will deliver products according to its own internal development schedules. All expect to make specific product availability announcements in 2000. More information on the QDR SRAM technology can be obtained at [www.QDRSRAM.com](http://www.QDRSRAM.com).

### **About Cypress**

Cypress Semiconductor provides high-performance integrated circuit solutions “By Engineers. For Engineers™.” for fast-growing companies in fast-growing markets, including data communications, telecommunications, computation, consumer products, and industrial-control. With a focus on emerging communications applications, Cypress's product lines include networking-optimized and micropower static RAMs; high-bandwidth multi-port and FIFO memories; high-density programmable logic devices; timing technology for PCs and other digital systems; and controllers for Universal Serial Bus (USB). Cypress is No. 1 in the USB and clock chip markets. Its shares are listed on the New York Stock Exchange under the symbol CY and its worldwide web site is <http://www.cypress.com>.

### **About IDT**

IDT enables a digitally connected world by providing semiconductor solutions to leading edge designers in communications. IDT's broad product mix consists of communications memories, networking devices, RISC microprocessors, high-speed SRAMs and high-performance logic and clock management products. IDT stock is traded on the Nasdaq stock market under the symbol “IDTI.” Additional information about IDT is easily accessible through the Web at [www.idt.com](http://www.idt.com) and CD-ROM by calling 800/345-7015.

**About Micron**

Micron Technology, Inc., and its subsidiaries manufacture and market DRAMs, very fast SRAMs, Flash, other semiconductor components, memory modules, and personal computer systems. Micron’s common stock is traded on the New York Stock Exchange (NYSE) under the symbol, MU, and its web site is <http://www.micron.com>.

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QDR SRAMs and Quad Data Rate comprise a new family of products developed by Cypress Semiconductor, Integrated Device Technology (IDT), and Micron Technology. ZBT and Zero Bus Turnaround are trademarks of Integrated Device Technology, Inc. and the architecture is supported by Micron Technology, Inc. and Motorola Inc. NoBL is a trademark of Cypress.