

## **QDR™ CO-DEVELOPMENT TEAM ANNOUNCES NEXT-GENERATION PRODUCT ARCHITECTURES**

### **Next generation architecture boosts the overall QDR and DDR performance to 333 MHz clock speeds**

Boise, Idaho, June 14, 2001 - Cypress Semiconductor Corp. (NYSE: CY), IDT, Inc. (NASDAQ: IDTI), Micron Technology Inc. (NYSE: MU), NEC Corporation (NASDAQ: NIPNY), and Samsung Electronics Co., Ltd. (KSE: 05930) today disclosed additional quad data rate™ (QDR™) architectures, QDRII and Double Data Rate (DDR) II. Developed with some of the industry's top system architects, these architectures are the latest additions to the co-development team's QDR/DDR family of high-performance networking and communication SRAM products. The addition of QDRII and DDRII's enhanced features boost the overall QDR and DDR performance to 333 MHz clock speeds.

Initial silicon of an 18Mbit QDR SRAM device incorporating the latest QDRII/DDRII enhancements is under evaluation. The 18Mbit samples, in several configurations and speed grades, are anticipated in fourth calendar quarter of 2001.

"This milestone of producing first silicon, reinforces the co-development team's commitment to meet the roadmap schedules, published at [www.qdrsram.com](http://www.qdrsram.com)," said Mario Martinez, Director of Strategic Marketing for Cypress's Memory Products Division.

The QDRII SRAM architecture promotes the latest innovations in high-performance memory for the communications marketplace. "Unprecedented cooperative development efforts between the co-development team members enabled this group to develop and produce a high-performance SRAM with the capability to operate at a 333MHz clock speed," said Mike Pearson, Director, Solution Enabling, Samsung Semiconductor, Inc.

"One of the greatest values of QDRII/DDRII for our customers is in the ability of our 333 MHz devices to provide an expected data valid window of 65-percent of the clock cycle," said J. Thomas Pawlowski, Senior Fellow, Micron Technology, Inc. "This is significant!"

Beyond performance, the QDR co-development team chose an optimum packaging strategy. The 13mm x 15mm FBGA package has a 165-pin ball grid array, and is defined for density migration through 18, 36, and 72Mbit densities. "Our packaging strategy focused on meeting three key objectives our customers require: space savings, performance migration, and cost reduction," explains Mike Black, Micron's Strategic SRAM Marketing Manager. "The 165-pin FBGA provides customers the flexibility to design for future density and performance migrations while achieving a 40-percent space savings gained over traditional 209 ball, 14mm x 22mm BGA or 100 pin TQFP packages. Equally important, the new FBGA is designed for clamshell applications."

The QDR co-development team consists of the industry's leading SRAM manufacturers. These manufacturers recently presented the QDR product family to JEDEC for standardization, and will certainly drive this architecture as the next industry-standard SRAM memory.

JEDEC is the world's leading semiconductor standards setting body. JEDEC is a sector of the Electronic Industries Alliance (EIA). Since 1958, JEDEC has been the leading developer of standards for the solid-state industry.

The QDR co-development effort began in 1999 to define this new SRAM architecture for high-performance communications applications. Initial product availability was announced in

third calendar quarter of 2000. To learn more about QDR SRAM product offerings visit [www.qdrsram.com](http://www.qdrsram.com). The participating companies work closely together to ensure multiple sources for new QDR SRAMs by developing pin- and function-compatible products. Each member provides system expertise and product direction, delivering to customers the collective benefit of the members' wide range of market experience and innovative technology. Additional information on QDR SRAM is available at [www.qdrsram.com](http://www.qdrsram.com).

### **About Cypress**

Cypress Semiconductor is "Driving the Communications Revolution"™ by providing high-performance integrated circuit solutions to fast-growing markets, including data communications, telecommunications, computation, consumer products, and industrial control. With a focus on emerging communications applications, Cypress's product portfolios 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). Its shares are listed on the New York Stock Exchange under the symbol CY and its Web site is [www.cypress.com](http://www.cypress.com).

### **About Micron**

Micron Technology, Inc., and its subsidiaries manufacture and market DRAMs, very fast SRAMs, Flash Memory, other semiconductor components, and memory modules. Micron's common stock is traded on the New York Stock Exchange (NYSE) under the MU symbol. To learn more about Micron Technology, Inc., visit its web site at [www.micron.com](http://www.micron.com).

### **About IDT**

IDT enhances the global network with semiconductor solutions for communications companies that lead innovation and drive convergence in voice, data and wireless networks. Communications-industry leaders choose IDT for its high-performance products that accelerate time to market and boost bandwidth in the network infrastructure. IDT's communications ASSPs include telecom products, ATM switches and SARs, high-speed PHYs, communications processors, and IP co-processors; the company offers the broadest selection of FIFOs and multi-ports; and the product mix also incorporates high-performance logic, clock management products, and high-speed SRAMs.

Headquartered in Santa Clara, Calif., the company employs approximately 4,000 people worldwide and has manufacturing facilities in California, Oregon, the Philippines and Malaysia. IDT stock is traded on the Nasdaq stock market under the symbol "IDTI." Additional information about IDT is easily accessible at [www.idt.com](http://www.idt.com) or CD-ROM by calling (800) 345-7015. The investor hotline is (408) 654-6420.

### **About NEC**

NEC Corporation (NASDAQ: NIPNY) (FTSE:6701q.l) (TYSE:6701) is a leading provider of Internet solutions, dedicated to meeting the specialized needs of its customers in the key computer, network and electron device fields through its three market-focused in-house companies: NEC Solutions, NEC Networks and NEC Electron Devices. NEC Corporation, with its in-house companies, employs more than 150,000 people worldwide and saw net sales of 5,409 billion Yen (approx. US\$50 billion) in fiscal year 2000-2001. For further information, please visit the NEC home page at: <http://www.nec.com>.

### **About Samsung**

Samsung Electronics Co., Ltd., with 2000 sales revenue of US\$30 billion, is a world leader

in the electronics industry. The Korea-based concern has operations in about 50 countries with 54,000 employees worldwide. The company consists of three main business units: Digital Media, Semiconductors and Information & Communications Businesses. For more information, please visit the Samsung website, <http://samsungelectronics.com>.

QDR RAMs and Quad Data Rate RAMs comprise a new family of products developed by Cypress Semiconductor, IDT and Micron Technology, Inc.