

# Numonyx Introduces New Line-up of NAND Flash Memories for Wireless, Embedded and Storage Applications

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GENEVA Dec. 17, 2008 – Continuing to deliver a comprehensive portfolio of NOR, NAND, RAM and PCM (phase change memory) solutions, Numonyx B.V. today launched a series of new NAND flash memory devices for use in wireless, embedded and data storage applications. These include up to 32 Gb (gigabits) multi-level cell (MLC) NAND, 32 GB (gigabytes) eMMC\* and up to 8 GB microSD\* products fabricated on the advanced 41nm process technology. The new products will provide manufacturers of mobile phones, personal navigation devices, and other consumer electronics with easy-to-manage and simple-to-design memory solutions and will give consumers significantly more room on their devices to store pictures, videos, songs and operate popular multimedia applications.

NAND memory continues to be one of the largest segments of the semiconductor industry, driven primarily by the high levels of digital content found in everything from set-top boxes to mobile phones. The new products announced today allows Numonyx to add leading MLC and SLC NAND, managed NAND, and NAND cards to its breadth of memory subsystem solutions – multi-chip packages, software and firmware elements – for a distinct competitive advantage.

"We have accelerated our Numonyx NAND offerings to industry-leading levels," said Fabio Gualandris, vice president and general manager of the Data Business Group at Numonyx. "With the new 41nm technology NAND products, Numonyx will bring further value to our wireless and embedded customers, as well as eventually enter new segments specifically dedicated to data storage, with leading technology and high density memory. When combined with Numonyx NOR and cost-effective DRAM, the Numonyx NAND portfolio bolsters Numonyx into a unique position to offer the right mix of technologies at the right densities for the right application."

## Numonyx NAND: A Broad Portfolio Now Using Advanced Technology

With today's news, Numonyx brings the advantages of the advanced 41nm technology to popular product solutions and densities many customers require. These include stand-alone and multi-chip package MLC products at densities of 16Gb to 32Gb; e-MMC managed NAND products from 2GB up to 32GB; and microSD removable cards from 2GB to 8GB. Numonyx also introduced a 48nm SLC 1Gb NAND product to better provide its embedded and wireless customers with higher performing, more secure and longer lasting memory solutions.

#### Meeting Needs for High-Density Managed NAND

To meet the needs of the managed NAND segment – memories with a controller function that manages basic control functions for NAND applications – Numonyx is introducing 41nm managed NAND flash memory devices. The new products are well suited for global positioning systems and other applications requiring large amounts of easy-to-manage storage. Current wireless customers making feature rich mobile phones will also benefit from the combination of managed NAND and RAM in a multi-chip package solution.

Among comparable solutions, the 32GB eMMC from Numonyx is the highest density available in the industry and is fully compliant with JEDEC eMMC version 4.3 standards, simplifying development and design for manufacturers. The eMMC 32GB can store up 16,000 high resolution digital photos, 8,000 songs, and up 20 hours of high definition videos. The new 32GB embedded devices combine eight 32Gbit NAND chips which are integrated with a dedicated controller. To meet the requirements of wireless and other battery-operated mobile devices, the device supports a temperature range of -25 °C up to +85 °C and dual voltage power supply at 1.7V-1.95V and 2.7V-3.6V. Samples of the 32GB density will be available in January 2009.

### Added Data Storage Options with Numonyx microSD Solutions

The requirements for more and more digital content have spurred many mobile phone makers to include a microSD card for added storage. To meet this need, Numonyx will offer microSD cards to its mobile phone customers in densities from 2GB to 8GB. MicroSD cards are designed for slot-equipped legacy mobile phones and can hold a maximum capacity of 2GB. Today's microSDHC<sup>™</sup> cards are available in 4GB and 8GB (SDA Speed Class 6), and are ideal for newer mobile phone models, most of which are compatible with these higher capacity cards.

#### Numonyx 48nm 1Gb SLC NAND for Added Security, Performance and Longer Life

To help protect data from malicious attack or applications from being modified unintentionally, the Numonyx 48nm 1Gb SLC NAND includes an extra 128 Kbytes One-Time Programmable (OTP) block to help ensure that data stored on it cannot be modified or corrupted. In addition, the Numonyx 1Gb SLC NAND significantly improves memory performance, doubling the speed at which the device reads data from 13MB per seconds to 26MB per second. At 48nm, Numonyx 1Gb SLC NAND program operations move four times faster and erase operations are eight times faster than 90nm devices – resulting in more powerful applications and a better user experience.

Lastly, to help extend memory life, the Numonyx 48nm 1Gb SLC NAND delivers the standard ECC option of 1 bit per each 528 bytes of address space, allowing easy migration for applications requiring 1 bit ECC without software upgrades or hardware changes. The Numonyx 48nm 1Gb NAND device is produced on 300mm processes, providing its customer base with a long-life supply. Samples of the product are currently available.

#### **About Numonyx**

Numonyx designs and manufactures a full complement of integrated NOR, NAND, RAM and phase change non-volatile memory technologies and products to meet the increasingly sophisticated needs of customers in the cellular, data and embedded markets. Numonyx combines the technology and manufacturing expertise of the flash memory divisions of Intel Corporation and STMicroelectronics, and is dedicated to providing high density, low power memory technologies and packaging solutions to a global base of customers. Additional information about Numonyx is available at

## www.numonyx.com

\* Other names and brands may be claimed as property of others

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