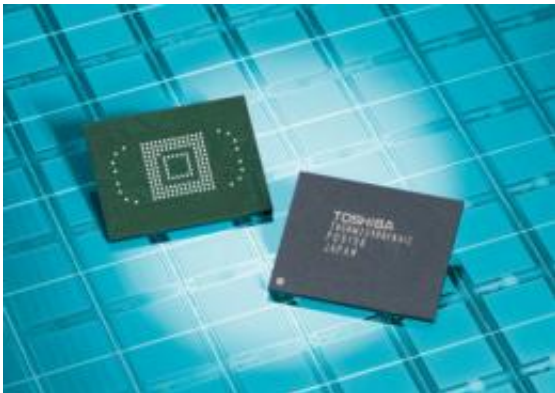


Toshiba Launches Highest Density Embedded NAND Flash Memory Modules

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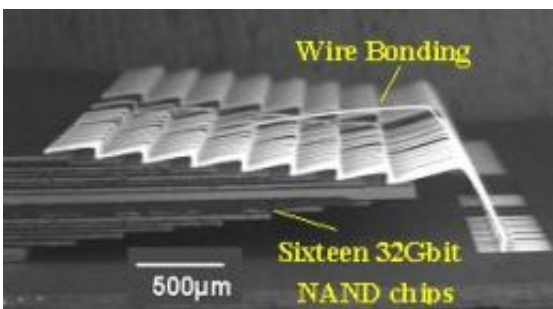
Toshiba Corporation today announced the launch of a 64 gigabyte (GB) embedded NAND flash memory module, the highest capacity yet achieved in the industry.

The chip is the flagship device in a new line-up of six embedded NAND flash [memory modules](#) that offer full compliance with the latest e•MMCTM standard, and that are designed for application in a wide range of digital consumer products, including smartphones, mobile phones, netbooks and digital video cameras. Samples of the 64GB module are available from today, and [mass production](#) will start in the first quarter of 2010.

The new 64GB embedded device combines sixteen 32Gbit (equal to 4GB) NAND chips fabricated with Toshiba's cutting-edge 32nm process technology, and also integrates a dedicated controller. Toshiba is the first company to succeed in combining sixteen 32Gbit NAND chips, and applied advanced chip thinning and layering technologies to realize individual chips that are only 30 micrometers thick. Full compliance with the JEDEC/MMCA Version 4.4(V4.4) standard for embedded MultiMediaCards supports standard interfacing and simplified embedding in products, reducing development burdens on product manufacturers.

Toshiba offers a comprehensive line-up of single-package embedded NAND Flash memories in densities ranging from 2GB to 64GB. All integrate a controller to manage basic control functions for NAND applications, and are compatible with the latest e•MMCTM standard and its new features, including defining multiple storage areas and enhanced security features.

Demand continues to grow for embedded memories with a controller function that minimizes development requirements and eases integration into system designs. Toshiba has established itself as an innovator in this key area. The company was first to announce a 32GB e•MMCTM compliant device, and is now reinforcing its leadership by being first to market with a 64GB generation module.



The internal structure of the 64GB module

Key Features

- 1.The JEDEC/MMCA V4.4 compliant interface handles essential functions, including writing block management, error correction and driver software. It simplifies system development, allowing manufacturers to minimize development costs and speed up time to market for new and upgraded products.
- 2.A wide product line-up supports capacities from 2 to 64GB. The high-capacity 64GB embedded devices can record up to 1,070 hours of music at a 128Kbps bit rate, 8.3 hours of full spec high definition video and 19.2 hours of standard definition video.
- 3.The 64GB device stacks sixteen 32Gbit chips fabricated with leading-edge 32nm process technology. Application of advanced chip thinning, layering and wire bonding technologies allowed [Toshiba](#) to achieve individual chips only 30 micrometers thick, and to layer and bond them in a small package. The result is the highest density embedded [NAND flash memory](#) module in the industry.
- 4.The new 64GB product is sealed in a small FBGA package which is D14 x W18 x H1.4mm and has a signal layout compliant with the JEDEC/MMCA V4.4.

Source: Toshiba

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