

# Samsung Introduces High-speed 512GB SSD Utilizing New Toggle-mode DDR NAND Memory

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Samsung Electronics today introduced the first solid state drive (SSD) utilizing high-performance toggle-mode DDR NAND. The new 512 gigabyte (GB) SSD provides electronic data processing application designers with advanced performance and reliability for notebooks with premium value.

“The highly advanced features and characteristics of our new SSD were obtained as a direct result of an aggressive push for further development of our [NAND](#) flash technology, our SSD controller and our supportive SSD firmware,” said Dong-Soo Jun, executive vice president, memory marketing, [Samsung Electronics](#). “Early introduction of this state-of-the-art toggle DDR solution will enable Samsung to play a major role in securing faster market acceptance of the new wave of high-end SSD technology,” he added.

The new 512GB SSD makes use of a 30 nanometer-class 32 gigabit chip that the company began producing last November. The toggle-mode DDR structure together with the SATA 3.0Gbps interface generates a maximum sequential read speed of 250 Megabyte per second (MBps) and a 220MBps sequential write speed, both of which provide three-fold the performance of a typical [hard disk drive](#). At these speeds, two standard length DVD movies (approximately 4GB each) can be stored in just a minute.

Samsung provides further gains in [power efficiency](#) by having developed a low-power controller specifically for toggle-mode DDR NAND. The resulting power throttling capability enables the drive's high-performance levels without any increase in [power consumption](#) over a 40nm-class 16Gb NAND-based 256GB SSD. The controller also analyzes frequency of use and preferences of the user to automatically activate a low-power mode that can extend a notebook's battery life for an hour or more.

The Samsung 512GB SSD makes use of reinforced 256bit AES (advanced encryption standard) encryption to ensure higher security, protecting personal data against online hackers or undesired access when its host PC is misplaced and lost.

Samsung also provides streamlined boot time and application access with this new SSD, showing an approximately nine-fold improvement in random performance over HDDs. Also, an intelligent operation management function optimizes the SSD's background working environment. Coupled with the popular Windows 7 TRIM feature the operation management function secures the reliability of the drive in write mode.

Samsung plans to begin volume production of the 512GB SSD next month. The new capacity extends Samsung's range of [SSD](#) densities from 64GB to 512GB.

Source: Samsung

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