

# Toshiba launches two hybrid drives

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Toshiba today announced that it will launch two 2.5-inch form factor Hybrid Drives that bring new levels of high speed read and write performance to notebook and desktop PCs. The new drives, which integrate high capacity hard disk drives and NAND flash memory in a single unit, will be available in two capacities, 1 terabyte (TB) and 750 gigabytes (GB). Sample shipments started today.

The new drives—the 1TB MQ01ABD100H and the 750GB

MQ01ABD075H—use hard disks to deliver high level capacity and 8GB NAND [flash memory](#) as a cache memory to support [high speed data](#) throughput. As a result, read and write times are about three times faster than in Toshiba hard disk drives with equivalent capacities. In PCs, the new Hybrid Drive reduces application boot times by about 40%. With a 2.5-inch form factor and high capacity, the new drives are ideally positioned as a high performance alternative for portable and desktop PCs.

In operation, data is allocated to one of the Hybrid Drive's three memory layers: DRAM [buffer memory](#), NAND flash memory or the magnetic disk media. This process is enhanced by an algorithm that dynamically learns the user's data access pattern and stores data accordingly to the appropriate tier. High speed access is achieved by storing frequently accessed data in the NAND flash memory.

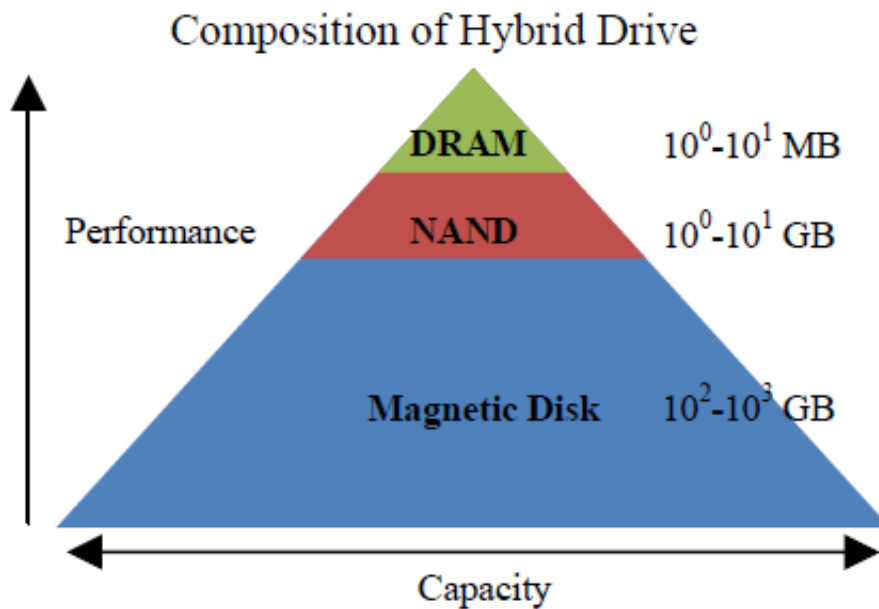
Today's PCs must meet increasingly strong demands for storage capacities that can handle multiple HD videos and other data-rich sources and a read/write performance that can meet the demands of ever faster CPU and [graphics chips](#). Through the synergy of state-of-the-art NAND flash memory manufactured with the latest generation of process technology and by leading-edge miniaturizing technique and high speed, high capacity HDD, Toshiba now offers business and consumers the solution of the Hybrid Drive, a large capacity drive that matches the capacity of HDD with data access speeds like the [SSD](#).

## Key Features

### 1. Self-learning caching algorithm

Toshiba's Hybrid Dive technology integrates NAND flash memory (8GB of 32nm SLC) and a self-learning caching algorithm for data writing. The three tiers of memory, DRAM, NAND flash memory and hard disk

media all have different read/write speeds, and data is allocated into them as appropriately by the algorithm, as it learns the user's data access pattern when the system is in operation. High speed access is achieved by storing frequently accessed data to the [NAND flash memory](#).



## 2. 1TB high capacity

MQ01ABD100H achieves a surface recording density of 1,153.4Mbit/mm<sup>2</sup> (744.1Gbit/in<sup>2</sup>) and 1TB capacity with two disks and a product height of 9.5mm. MQ01ABD075H achieves a surface recording density of 858.1Mbit/mm<sup>2</sup> and a 750GB capacity.

## 3. 6Gb/s high speed SATA I/F

High-speed data transfers are secured by adoption of state-of-the-art

SATA I/F Revision 3.0(ATA-8) capable of a 6Gb/s transfer rate.

Source: Toshiba Corporation

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