

Hitachi Releases Industry's First ATA-5 Compliant Flash Card with Ultra DMA Transfer Mode Offering Industry's Fastest Flash Card Speed

— Provided with an Ultra DMA transfer mode for silicon disk and cache disk use, and achieving a random write speed of 6 Mbytes/sec (Max.) —

Tokyo, March 14, 2002—Hitachi, Ltd. (TSE: 6501) today announced the industry's fastest flash card with Ultra DMA transfer mode*¹, offering ATA-5*² compatibility for the first time in the industry, for silicon disk use in industrial applications and cache disk use in communication/image systems. Two models, the 896-Mbyte HB28A896IA1 and the 512-Mbyte HB28A512IA1, are being released at this time, with sample shipments beginning in April 2002 in Japan.

This is a new flash card employing high speed interface for applications requiring high speed and high reliability. Through the use of an Ultra DMA transfer mode, the 896-Mbyte model achieves the industry's fastest random write speed of 6 Mbytes/sec (Max.) and random sector read speed of 14 Mbytes/sec (Max.).

The card size is 85.6 mm (D) × 54.0 mm (W) × 5.0 mm (H), conforming to PC Card Standard*³ Type-II, allowing compact systems to be created.

[Background]

In industrial fields that have previously used small-capacity HDDs, there is a growing trend away from HDDs to silicon disks comprising flash memory and a controller, because of their small size, low power consumption, and excellent vibration tolerance, as well as the small system maintenance load they entail. As well as high reliability, silicon disks offer an extremely short interval between command input and data reading since there is no head seek time as incurred in HDDs, and for this reason they are beginning to be employed as cache disks for system cache use in communication applications such as routers. Hitachi currently provides for such applications with ATA-1 compliant CompactFlash™*⁴ and PC-ATA cards, but there is a demand for higher speeds. At the same time there is a need for high-performance flash cards offering greater space-saving for use in small, high-performance computer systems.

To meet these needs, Hitachi has developed a high-speed flash card featuring the same PC Card Standard Type-II package size as a PC-ATA card and employing an Ultra DMA transfer mode.

(more)

[About this Product]

The flash card with Ultra DMA transfer mode achieves high speed through the incorporation of a Hitachi HN29W210H01FE-1 ATA-5 compliant flash memory controller. The 896-Mbyte HB28A896IA1 and 512-Mbyte HB28A512IA1 incorporate, respectively, 14 and eight Hitachi HN29W51214WT (512-Mbit) AND-type flash memory chips that offer excellent data storage characteristics.

Major features of this card are summarized below.

(1) Industry's Highest Speed

Using an Ultra DMA transfer mode, the 896-Mbyte model achieves the industry's fastest flash card random write speed of 6 Mbytes/sec (Max.) and random sector read speed of 14 Mbytes/sec (Max.). Random writes are approximately 3 times faster, and random reads approximately 7 times faster, than with Hitachi's HB28B512C6 512-Mbyte CompactFlash product, enabling faster image systems and network systems to be implemented.

(2) ATA-5 Compliance in a Small Package

Compliance with the ATA-5 and ATA-4 standards means that interface and software changes are unnecessary when converting a system using a conventional HDD to flash disk use. In addition, the use of a 64-pin package compliant with PC Card Standard Type-II, the same package size as a PC-ATA card, enables space-saving systems to be created.

Future plans call for extension of the product lineup with the development of models offering even higher reliability and speed.

- Notes: 1. Ultra DMA transfer mode: A data transfer method defined from ATA-4 onward, offering higher speed and a lighter host system load than conventional PIO transfer.
2. ATA-5: An ATA (AT Attachment) interface standard established by ANSI (American National Standards Institute).
3. PC Card Standard: A standard established by the PCMCIA (Personal Computer Memory Card International Association) and JEITA (Japan Electronics and Information Technology Industries Association).
4. CompactFlash is a trademark of SanDisk Corporation of the United States and is licensed to the CFA (CompactFlash Association). Hitachi, Ltd. is a member of the CFA.

< Typical Applications >

- Systems requiring high-speed random access of recording devices
 - Cache disks in systems performing high-speed data communication
 - Systems requiring multiple simultaneously writes such as transmission equipment etc.
- Systems requiring vibration tolerance in recording devices
 - Systems running in adverse industrial operating environments
- Systems requiring low power consumption for recording devices
 - Independent systems at remote sites

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< Prices in Japan >(For Reference)

Product Code	Capacity	Price
HB28A896IA1	896 Mbytes	Case by case
HB28A512IA1	512 Mbytes	Case by case

< Specifications >

Item	HB28A896IA1	HB28A512IA1
Capacity	896 Mbytes	512 Mbytes
Interface (ATA-5)	PIO	Mode 4 (16.6 Mbytes/sec)
	Multiword DMA	Mode 2 (16.6 Mbytes/sec)
	Ultra DMA	Mode 4 (66.6 Mbytes/sec)
Random write speed (Ultra DMA transfer mode)	6 Mbytes/sec	4 Mbytes/sec
Random read speed (Ultra DMA transfer mode)	14 Mbytes/sec	14 Mbytes/sec
Operating voltage	5.0 V \pm 10 %	
Card size	PC Card Standard Type-II (68 pins) 85.6 mm (D) \times 54.0 mm (W) \times 5.0 mm (H)	
Installed flash memory	Hitachi AND-type flash memory HN29W51214WT	
Installed controller	Hitachi ATA-5 compliant controller HN29W210H01FE-1	