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BiTMICRO E-Disk more than a storage solution

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From a nonmemory expert's point-of-view, a solid state disk (SSD) would probably be a hard disk drive (HDD) or a tape drive that reads, writes and stores data. Little did the "nonexperts" realize that a solid state disk is more than a storage solution; it is actually a direct drop-in replacement for two conventional rotating media: the hard disk drive and the tape drive.

With the present information boom, BiTMICRO Networks Inc. believes that there is need for a faster and higher performance storage solution, and so they went out and designed one. The company extended its R&D efforts when they unleashed their latest storage gizmo - the E-Disk solid state disk - which addressed high-speed networking, broadband communications, mobile computing, military, aerospace and industrial applications.

The BiTMICRO solid-state Flash-based E-Disk technology is a nonvolatile storage solution in an industry standard 2.5-inch and 3.5-inch form factor.

What is an SSD?

SSD are devices that are built using all-semiconductor memory components to store digital data. The memory components are the same ones used for the different types of computer memory: work-, cache-, and embedded-memory.

"SSD is more than a disk in a way. It has a system, a CPU," stated Stephen Uriarte, VP Corp. Dev. and General Counsel, BiTMICRO. Most solid state disks have a HDD-compatible form factor, system interconnect and electric interconnect. This enables SSDs to be added to the system very much like the magnetic or optical disk drives.

SSD is regarded as a replacement for HDD for the reason that the addressable sectors are at the block level rather than at the byte level. "We basically have a system in our hard drive or flash disk that allows us to use flash as a mass storage. In addition, our product has a built-in cache of 128MB which is much larger compared to HDD with a typical 8MB," Uriarte noted.

Further, Uriarte said that the E-Disk SSD has its own proprietary memory controller that is designed specifically for flash. Flash memory has a read access time that is comparable to that of DRAMs, however, the write cycle time is significantly longer. The write operation needs to be performed in conjunction with an erase operation, simultaneously for a group of locations, called page or sector. This complicates the write process and the associated circuitry. Flash memory cell size is smaller than that of DRAM and can be reduced at a faster pace. This creates the premise for lower storage cost. From a system perspective, the main advantage of F-SSD is the nonvolatile nature of its storage cell, which puts it at par with magnetic and optical

disk drives.

Target market

BiTMICRO sees a bright future for the E-Disk solid state disk solution in the military, industrial and enterprise markets since HDs and tape drives are not only prone to short production life, but often fail in mobile computing and industrial environments where variables such as temperature fluctuations, shocks, vibrations, dust, moisture, or magnetic fields are at extremes.

The E-Disk SSD provides all the requirements for today's national security and defense needs. Additionally, the product offers a user-customizable securErase data security feature, which guarantees device sanitization of sensitive data that is performed beyond retrieval. The E-Disk SSD also has a PowerGuard feature, which ensures that the securErase is activated within 6h of losing power for better security measures.

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