



Flash Memory Backgrounder

Flash Memory Summit Description

The Flash Memory Summit program is designed to provide attendees with practical information on the current state of flash memory and its applications. Summit themes will include: Using Flash Storage in Consumer Applications, Flash as a Disk Replacement, Flash as Nonvolatile Rugged Memory. The Summit Program consists of an all-day tutorial, panel discussions, keynotes, paper sessions, workshops and special sessions.

Flash Memory Defined

Flash Memory Defined Flash Memory is a type of constantly powered nonvolatile memory that can be erased and rewritten in units called blocks. Flash is rugged, small, low-cost, low-power, and fast; it allows for compact systems with simple startup and low power consumption. It is ideal for consumer applications such as cellphones, digital cameras, and music players, and is also useful in computers, communications systems, and military/defense applications. It can replace hard disks for storage in applications where its higher cost is balanced by its smaller size, greater ruggedness, and lower power consumption. An MP3 song occupies about 1.5 MB (3 minutes). A 90-minute feature film consumes about 2GB.

Types of Flash Memory Cards

CompactFlash (CF) cards are the size of a matchbook, incorporate a controller, and use an IDE interface similar to the one used in PCs. Memory Stick is a proprietary format devised by Sony. Memory Stick Duo is a newer version. MultiMedia cards are the size of a postage stamp or smaller and are intended for digital cameras, mobile phones, and pagers. Secure Digital (SD) cards are derived from MultiMediaCards but incorporate cryptographic security protection for copyrighted materials such as music. SD cards have a lock switch similar to the one found on floppy diskettes to prevent writing. XD is a format used in Olympus cameras .

Market Size

\$10.8 billion in 2005 (up 63% from 2004); estimated to be \$16.8 billion in 2006 and \$26.2 billion in 2009 (iSuppli); 179.6% compound annual growth rate between 2000 and 2005 (three times the 51.2% CAGR for DRAMs) (Denali Software); \$35 billion by 2008 (Semico Research) According to iSuppli, the NAND flash market in Q4 2005 was \$3.5 billion. Samsung had 50% of it, followed by Toshiba, Hynix, and ST Microelectronics (2.5%, \$89 million).