

SM2232EN

2-channel CompactFlash Card Controller

The SM2232EN CompactFlash card controller offers ultra high performance and extreme low power consumption for CompactFlash cards. The SM2232EN is compliant with CF 6.0 specification and supports DMA mode up to UDMA 7. With 8 chip enable pins per channel, the controller is able to connect up to 16 flash devices.

Equipped with powerful Error Correction Coding (ECC) and flash interface, the SM2232EN can support new generation flash including SDR, DDR, Toggle, and ONFI NAND flash. The SM2232EN offers advanced technology to transfer data to the host via a high efficiency DMA engine and utilizes the internal memory buffer in a sufficient way. With Silicon Motion's optimized wear leveling, bad block management, and flash management technologies, the SM2232EN delivers the extraordinary performance in data read/write speed and data reliability for industrial CF and PATA SSD applications.

Applications

- CompactFlash Card
- PATA Solid State Disk
- High-Speed NAND Storage

Package

- 128-pin TQFP package
- Lead-free and RoHS Compliant

Key Features

■ Host interface

- Supports CompactFlash specification revision 6.0
- Supports PIO Mode 0 - 6
- Supports Multiword DMA Mode 0 - 4
- Supports Ultra DMA Mode 0 - 7
- Supports PCMCIA Extended Memory Mode (Cycle time: 250, 120, 100, 80 ns)
- Supports PCMCIA Ultra DMA Mode 0 - 7
- TRIM command support
- External device termination resistors for Ultra DMA

■ Flash Memory Support

- Supports SLC/MLC NAND flash
- Supports 1.8V and 3.3V flash
- Supports page size: 2KB, 4KB, 8KB, 16KB
- Supports one-plane and simultaneous two-plane operations
- Supports two-way and four-way interleaving to enhance read/write performance

■ Flash interface and firmware

- Supports ONFI 2.1/2.2 Synchronous/Asynchronous Interface
- Supports Toggle Synchronous Interface
- Dual channel 8-bit flash interface
- Channel support of up to 8 flash chips
- Total memory capacity of up to 16 flash chips
- In-System Programming (ISP) provides flexibility for new Flash and device compatibility support

■ Operating temperature

- 0°C ~ 70°C for the commercial version
- -40°C ~ 85°C for the industrial version