

SM2704

SD 4.0 UHS-II Controller

The SM2704 is the state-of-the-art SD memory card controller that complies with the latest SD 4.0x specifications. The SM2704 is targeted for portable, stationary and embedded applications by supporting full coverage of card capacity including Standard Capacity SD Memory Card (SDSC), High Capacity SD Memory Card (SDHC) and Extended Capacity SD Memory Card (SDXC, more than 32GB and up to 256GB). The advanced security and partitioning functions just fit the requirements for mobile devices, including smartphone, navigation devices, and portable multimedia players.

The SM2704 supports the high speed NAND interface, including ONFI 3.x and Toggle 2.0, to achieve the maximum data transfer rate for ever higher performance. With Silicon Motion's enhanced flash technologies and powerful BCH ECC engine, the SM2704 provides superior security, flexibility and performance for mainstream products in the market.

Highlights

- Ultra High Performance
 - Read: up to 280*MB/s
 - Writer: up to 260*MB/s
 - *with 20nm SLC NAND
- UHS-II Mode
 - FD156/HD312
 - Backwards-compatible with SD 2.x/3.x (UHS-I UHS104)
- UHS Speed Class 3
 - Supports 4K, Full HD and 3D video recording
- Varieties of NAND Support
 - 1x/1y/1z nm SLC/MLC/TLC NAND from all major NAND suppliers

Key Features

- **SD 4.0x Interface**
 - Complies to SD specifications version 2.x/3.0x (UHS-I UHS104)/4.0x (UHS-II UHS156)
 - Supports dual voltage 3.3V and 1.8V host interface power supply
 - Supports password protection of cards
 - Supports Content Protection for Recordable Media (CPRM)
 - Switch function command supports Bus Speed Mode, Command System and future functions
 - Bus Speed Mode
 - DS: Default Speed up to 25MHz 3.3V signaling
 - HS: High Speed up to 50MHz 3.3V signaling
 - SDR12: SDR up to 25MHz 1.8V signaling
 - SDR25: SDR up to 50MHz 1.8V signaling
 - SDR50: SDR up to 100MHz 1.8V signaling
 - SDR104: SDR up to 208MHz 1.8V signaling
 - DDR50: DDR up to 50MHz 1.8V signaling
 - UHS-II Interface Mode
 - FD156: Full Duplex mode up to 156MB/s at 52MHz in Range B (x30 Multiplier)
 - HD312: Half Duplex with 2 Lanes mode up to 312MB/s at 52MHz in Range B (x30 Multiplier)
- **Flash Interface**
 - Single channel 8-bit flash interface
 - Supports up to 8 CE pin function
 - Global Wear Leveling
 - Configurable BCH ECC engine
 - Zero overhead in the error correction pipeline to read performance
 - Supports Samsung/SanDisk/Toshiba/SK Hynix/Micron/Intel NAND Flash
 - Supports 1x/1y/1z nm SLC/MLC/TLC
 - Supports 1.8V/3.3V NAND interface
 - Supports Toggle 2.0 NAND
 - Supports the ONFI 3.x NAND
 - Supports 2/4-way interleave operation
 - Supports 2-plane/4-plane operation
 - Supports 128/192/256/512 page blocks
- **Package**
 - 58-pin LGA (10 mm x 3.8 mm)
 - Die Form

