

## SM2702

### SD Controller

The SM2702 is the state-of-the-art SD memory card controller that complies with the latest SD 3.0x specifications. The SM2702 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 128GB). The advanced security and partitioning functions just fit the requirements for mobile devices, including SmartPhone, navigation devices, and MP3/MP4 media players.

The SM2702 supports the high speed NAND interface, including ONFI 2.x and Toggle mode, to achieve the maximum data transfer rate for ever higher performance. With Silicon Motion's enhanced flash technologies, and the powerful, configurable BCH ECC engine, the SM2702 provides superior security, flexibility and performance for mainstream products in the market.

### Applications

- SD cards of all form factors, including SD/miniSD/microSD
- Embedded system flash controller

### General Features

- Adaptive power management control
- Built-in Power-on Reset (POR), Oscillator (OSC), Voltage Detector (VDT) and Voltage Regulators

### Key Features

#### ■ SD 3.0x Interface

- Complies to SD specifications version 2.x/3.0x (UHS104)
- Supports dual voltage 3.3V and 1.8V host interface power supply
- Password protection of cards
- Switch function command supports Bus Speed Mode, Command System and future functions
- Bus Speed Mode:
  - DS: Default Speed mode: 3.3V signaling, frequency up to 25 MHz, up to 12.5 MB/sec
  - HS: High Speed mode: 3.3V signaling, frequency up to 50 MHz, up to 25 MB/sec
  - SD: 1.8V signaling, frequency up to 25 MHz, up to 12.5 MB/sec
  - SDR25: 1.8V signaling, frequency up to 50 MHz, up to 25 MB/sec
  - SDR50: 1.8V signaling, frequency up to 100 MHz, up to 50 MB/sec
  - SDR104: 1.8V signaling, frequency up to 208 MHz, up to 104 MB/sec
  - DDR50: 1.8V signaling, frequency up to 50 MHz, sampled on both clock edges, up to 50 MB/sec

#### ■ Flash Interface

- Supports the ONFI 2.x Interface specification and standard command set
- Supports Toggle Mode NAND
- Dual channel 8-bit flash interface
- 8 CE pins support 8/16 flash chips (dies)
- Supports 1- or 2--way interleave operation per channel
- Global Wear Leveling
- Configurable BCH ECC engine
- Supports 128/256/384/512/768 page blocks
- Supports 3.3V/1.8V flash for all flash vendors including Hynix, Micron/Intel, Samsung and Toshiba/SanDisk
- Supports various MLC/TLC flash types:
  - Hynix 32/26/2ynm MLC/TLC flash
  - Micron/Intel 32/25/2ynm MLC/TLC flash
  - Samsung 27nm and 2ynm MLC/TLC flash
  - Toshiba/SanDisk 43 and 32/2ynm MLC flash

