

## SM2703

### SD 3.0 UHS-I Controller

The SM2703 is the state-of-the-art SD memory card controller that complies with the latest SD 3.0x specifications. The SM2703 is targeted for portable, stationary and embedded applications by supporting full coverage of card capacity including 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 SM2703 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 SM2703 provides superior security, flexibility and performance for mainstream products in the market.

#### Highlights

- The most cost-effective UHS-I controller in the marketplace with unparalleled TLC NAND flash support, offering read speed of up to 95MB/s
- Superior full HD video recording performance in both Class 4 and Class 6 devices using only one TLC die or chip
- Enables consumers to have a better experience in utilizing more advanced imaging capabilities, including high megapixel image capture, as well as full HD video and 3D video recording and playback on their mobile devices
- Powerful configurable ECC engine that can significantly improve device endurance
- Strong ESD protection meeting the criteria of +/- 6KV in contact discharge measurement
- Ultra low standby and operating power consumption (as measure at 85°C)

#### Key Features

##### SD 3.0x Interface

- Complies to SD specifications version 2.x/3.0x (UHS104)
- Supports 3.3V host interface power supply
- Supports 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
  - SDR12: 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

- Single channel 8-bit flash interface
- Supports up to 4 CE pin function
- Global Wear Leveling
- Configurable BCH ECC engine
  - Zero overhead in the error correction pipeline to read performance
  - Internal data shaping support to increase data endurance
- Supports Samsung/SanDisk/Toshiba/SK Hynix/Micron/Intel NAND Flash
- Supports 2xnm/2ynm/1xnm/1ynm MLC/TLC
- Supports 3.3V NAND interface only
- Supports Toggle NAND
- Supports the ONFI 2.x NAND
- Supports 1/2/4-way interleave operation
- Supports 2-plane/4-plane operation
- Supports 128/192/256/512 page blocks

