

## SM2706E

### SD 6.1 UHS-I Controller

The SM2706E is the state-of-the-art SD memory card controller that complies with the latest SD 6.1 specifications. The SM2706E 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). The advanced security and partitioning functions just fit the requirements for mobile computing devices, including smartphones, digital cameras, tablets, drones and VR devices.

The SM2706E supports up to 8 CE pin function and 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, the powerful, LDPC ECC engine and the industrial temperature support, the SM2706E provides superior security, flexibility and ultra-high performance for mainstream products in the industrial market.

#### Highlights

- Powerful LDPC ECC to enhance flash reliability and endurance
- Fully support SD 6.1
  - Application Performance Class (A2), Random IOPS Read/Write >4K/2K
  - Low Voltage Signal (LVS)
  - Non-CPRM
- Video Speed Class (Up to V30)
- UHS Speed Class (Up to U3)
  - Supports 4K, Full HD and 3D video recording
- 3D NAND support from all major NAND suppliers
- Smart function
- Temperature Support: i-temp: -40°C to 85°C

#### Key Features

- **SD 6.1 Interface**
  - Supports Application Performance Class for A2 (Target Random IOPS Read/Write 4K/2K)
  - Supports Cache/Command Queue
  - Supports Low Voltage Signal (LVS)
  - Supports Self Maintenance
  - Supports Non-CPRM
- **SD 5.1 Interface**
  - Supports Application Performance Class for A1 (Target Random IOPS Read/Write 1500/500)
  - Supports Discard and Full User Area Logical Erase Command
  - Supports Card Ownership Protection feature for Card Lock/Unlock
- **SD 5.0/4.x/3.0x Interface**
  - Supports Video Speed Class (Up to V30)
  - Supports UHS Speed Class (Up to U3)
  - Supports UHS-I Bus Mode: SDR104/SDR50/DDR50
  - Bus Speed Mode
    - DS: SDR up to 25MHz 3.3V signaling
    - HS: SDR 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
  - Supports password protection of cards
  - Supports Content Protection for Recordable Media (CPRM)
- **NAND Flash Support**
  - Supports Samsung/SanDisk/Toshiba/SK hynix/Intel/Micron/YMTC NAND Flash
  - Supports 3D/2D NAND Flash
  - Supports 1.2V/1.8V VCCQ NAND interface
  - Supports 2.5V/3.3V VCC NAND power supply
  - Supports Toggle 2.0 NAND
  - Supports ONFI 3.x NAND
  - Supports 2/3/4-way interleave operation
  - Supports 2-plane/4-plane operation (up to 16KB/page)
- **Flash Interface**
  - LDPC ECC engine
  - Single channel 8-bit flash interface
  - Supports up to 8 CE pin function
  - Global Wear Leveling
- **Package**
  - 46-pin LGA (7.6mm x 3mm)
  - Die Form
  - Lead-free and RoHS Compliant