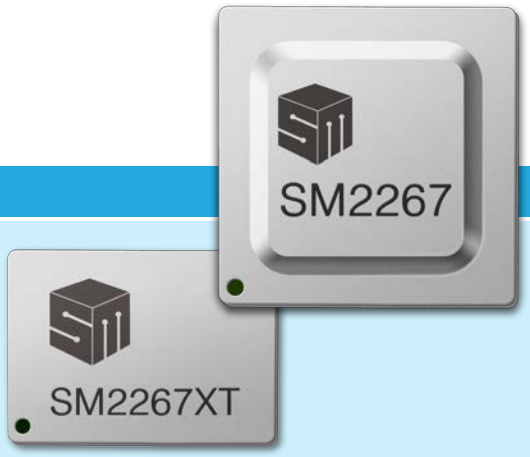
SiliconMotion



SM2267 / SM2267XT

High Performance PCIe Gen4 x4 NVMe 1.4 SSD Controllers

The SM2267 and SM2267XT are the new generation PCIe NVMe Gen4 x4 SSD controllers designed for next generation SSD applications from mainstream client to emerging small form factor SSDs. The SM2267 features best-in-class sequential and random performance for mainstream client SSDs and the DRAM-less SM2267XT features HMB (Host Memory Buffer) technology which enables small form factor SSDs without compromising the performance. The SM2267 and SM2267XT feature PCIe Genx4 at 16GT/s x4 lanes (PCIe Gen4 x4) coupled with four NAND flash channels up to 1,200 MT/s per channel. Inheriting Silicon Motion's widely adopted PCIe NVMe solutions, SM2267 and SM2267XT further optimize the hardware and software architecture to take full advantage of PCIe 4.0 and NVMe 1.4 SSD specifications, to provide high performance, extended reliability, and cost-effective PCIe NVMe SSD solutions.

The SM2267 and SM2267XT are complete merchant ASIC/firmware solutions supporting 3D NAND from all major NAND suppliers. Leveraging Silicon Motion's proprietary NANDXtend® error-correcting code (ECC) technology, the SM2267 and SM2267XT enhance the endurance and retention of 3D NAND and provide a comprehensive data protection through SRAM ECC and End to End data path protection.

KEY FEATURES

- **High Performance**
  - PCIe Gen4 x4
  - 4 NAND channels
- **Best-in-class Low Power**
  - PS3: 50mW
  - PS4 (L1.2): <2mW
- **Datapath Protection**
  - End to end data protection
  - SRAM ECC
- **NANDXtend™ ECC Technology**
  - 2KB codeword LDPC
  - Embedded programmable RAID

SPECIFICATIONS

	SM2267	SM2267XT
Host Interface	PCIe Gen4 x4	PCIe Gen4 x4
PCIe Protocol	NVMe 1.4	NVMe 1.4
NAND Flash Channel	4	4
CE/Channel	8	4
Max Performance	Sequential Read: 3,900 MB/s Sequential Write: 3,500 MB/s Random Read: 500K IOPS Random Write: 500K IOPS	Sequential Read: 3,900 MB/s Sequential Write: 3,500 MB/s Random Read: 500K IOPS (HMB) 200K IOPS (no HMB) Random Write: 500K IOPS
DRAM Interface	Supports DDR3, DDR3L, LPDDR3 and DDR4/LPDDR4 16-bit data bus width 2 chip enable pins	DRAM-less
NAND Flash Support	ONFI4.0/3.0 and Toggle3.0/2.0 NV-DDR4 up to 1,200 MT/s	
Security	Real time full drive encryption with AES TCG Opal protocol Hardware SHA 256 and TRNG	
Temperature Support	c-temp: 0°C to 70°C i-temp: -40°C to 85°C	
Package	484-ball FCBGA (12mm x 12mm)	247-ball FCCSP (7.7mm x 11mm)