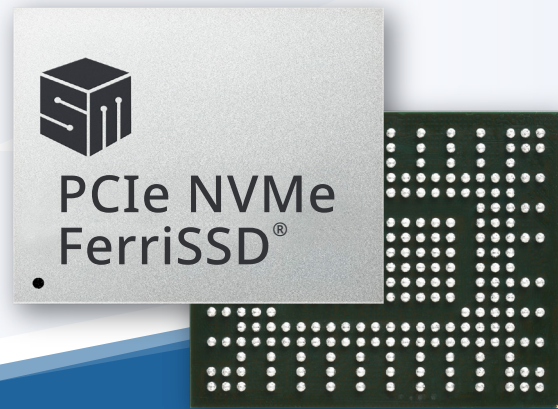


PCIe NVMe FerriSSD®

Single-Chip SSD



PCIe Gen4 NVMe Single-Chip SSD Cx Series

The FerriSSD® is designed optimally for a wide range of embedded applications which requires faster access speed, small flexible form factor, and reliable PCIe NVMe storage. By combining industry proven controller technology, NAND flash and passive components into a small single BGA package, FerriSSD® simplified design efforts, reduces time-to-market while protecting from NAND technology migration concerns.

The new generation FerriSSD Cx series is armed with the latest PCIe Gen 4 x4 and 3D NAND Flash and leverages Silicon Motion's advanced technologies, including IntelligentScan™, DataRefresh™, NANDXtend® ECC engine, and end-to-end data path protection to provide unsurpassed data integrity in a non-volatile storage device. The FerriSSD stands for the ultimate storage solution for embedded computing devices such as navigation, thin-client, POS, MFP, telecommunications, factory automation, as well as varieties of server applications.

Key Features

Dual ARM Cortex R8 CPU

Data Reliability

- Performance-optimized LDPC engine provides maximum error correction capability
- End-to-end data path protection with CRC parity
- SRAM ECC error handling and prevention
- RAID engine provides multi-page protection for NAND flash data

Robust Data Protection

- Advanced system level protection against unstable power supply
- Enterprise level LDPC with meta data provides high reliability detection and correction
- StaticDataRefresh and EarlyRetirement technologies ensure data integrity and prevent read disturbance
- Early weak block retirement feature
- PowerShield and DataPhoenix technologies support power-down data protection and recovery

Data Integrity and Security

- Built-in AES-128/256 Encryption
- TCG Opal v2.01 compliant
- Built-in hardware SHA384 and True Random Number Generator (TRNG)

SSD Status Monitoring

- Supports SMART/Telemetry of Get Log Page command to monitor SSD Status
- Supports proprietary FerriSSD IntelligentLog for efficient event tracing

Key Features

Advanced Global Wear Leveling

- Fully utilizes each cell to even program/erase count across management units/die(s)
- Maximizes product lifespan with minimal wear leveling and write amplification overhead

Digitally signed firmware with eFuse for enhanced security (option)

Power and Thermal Management

- Supports Host Controlled Thermal Management (HCTM) to configure thermal throttling temperatures
- Supports Device Self-Thermal Management
- Supports different power states (PS0, PS1, PS2, PS3, PS4)

Compact Design

- Small footprint for space-limited design

Why PCIe NVMe FerriSSD®

- Firmware and hardware customization available
- Intelligent data protection
- Scalable proven MP setup
- Security: Hardware encryption for user data and digital signature for secured boot
- 100% screened for low DPPM
- Design service to MP support

Specifications

SM681Gxx-Cx

Host Interface	PCIe Gen4 x4 Lane
PCIe Protocol	NVMe 2.0 with NVMe MI Appendix C Specification
Density	120~960GB 3D TLC ; 40~320GB 3D SLCMode
HMB support	DRAM-less with optional HMB
Form Factor	20mm x 16mm BGA
Green Product	Compliant to RoHS (Restriction to Hazardous Substances Directive) 2.0 / Halogen Free
Temperature Support	Commercial (0°C to + 70°C) Industrial (-40°C to + 85°C) Automotive (-40°C to + 105°C)