

## Product Detail Page: FerriSSD SATA Module

PART NUMBER	DESCRIPTION
ME619GXCLDG3T	64GB Ferri-SATA BGA SSD, WD BICS5 3D TLC, FerriSSD, C-temp, TLC Mode, M.2 2280
ME619GXDLDG3T	128GB Ferri-SATA BGA SSD, WD BICS5 3D TLC, FerriSSD, C-temp, TLC Mode, M.2 2280
ME619GXELEG3T	256GB Ferri-SATA BGA SSD, WD BICS5 3D TLC, FerriSSD, C-temp, TLC Mode, M.2 2280
ME619GXFLEG3T	512GB Ferri-SATA BGA SSD, WD BICS5 3D TLC, FerriSSD, C-temp, TLC Mode, M.2 2280
ME619GXCLDG3S	64GB Ferri-SATA BGA SSD, WD BICS5 3D TLC, FerriSSD, C-temp, TLC Mode, M.2 2280
ME619GXDLDG3S	128GB Ferri-SATA BGA SSD, WD BICS5 3D TLC, FerriSSD, C-temp, TLC Mode, M.2 2280
ME619GXELEG3S	256GB Ferri-SATA BGA SSD, WD BICS5 3D TLC, FerriSSD, C-temp, TLC Mode, M.2 2280
ME619GXFLEG3S	512GB Ferri-SATA BGA SSD, WD BICS5 3D TLC, FerriSSD, C-temp, TLC Mode, M.2 2280

PART NUMBER	DESCRIPTION
MD619GXCLDG3T	64GB Ferri-SATA BGA SSD, WD BICS5 3D TLC, FerriSSD, C-temp, TLC Mode, M.2 2242
MD619GXDLDG3T	128GB Ferri-SATA BGA SSD, WD BICS5 3D TLC, FerriSSD, C-temp, TLC Mode, M.2 2242
MD619GXELEG3T	256GB Ferri-SATA BGA SSD, WD BICS5 3D TLC, FerriSSD, C-temp, TLC Mode, M.2 2242
MD619GXFLEG3T	512GB Ferri-SATA BGA SSD, WD BICS5 3D TLC, FerriSSD, C-temp, TLC Mode, M.2 2242
MD619GXCLDG3S	64GB Ferri-SATA BGA SSD, WD BICS5 3D TLC, FerriSSD, C-temp, TLC Mode, M.2 2242
MD619GXDLDG3S	128GB Ferri-SATA BGA SSD, WD BICS5 3D TLC, FerriSSD, C-temp, TLC Mode, M.2 2242
MD619GXELEG3S	256GB Ferri-SATA BGA SSD, WD BICS5 3D TLC, FerriSSD, C-temp, TLC Mode, M.2 2242
MD619GXFLEG3S	512GB Ferri-SATA BGA SSD, WD BICS5 3D TLC, FerriSSD, C-temp, TLC Mode, M.2 2242

### Product specifications

Silicon Motion's FerriSSD is optimally designed for a wide range of embedded applications that require faster access speed, a small, flexible form factor, and reliable serial SATA storage. By combining industry-proven controller technology with advanced firmware features, FerriSSD® Modules simplify design efforts and reduce time-to-market while protecting from NAND technology migration concerns. FerriSSD® is available in both commercial (0°C~ +70°C) and industrial temperature ranges (-40°C~ +85°C)

Adopting FerriSSD Modules will accelerate development time, enable upgradability, replace the ability of the storage systems, enhance overall performance, eliminate potential downtime, and reduce the total cost of ownership.



## Why FerriSSD® Module

### Lower total cost of ownership & Easy to use

- Plug and Play: Only requires format/fdisk prior to use
- Rugged & Reliable: No moving parts
- Cost saving with low density FerriSSD: HDD are typically > 160GB capacity

### Eliminate down time

- IntelligentScan™/DataRefresh™ : Supports self-scanning w/ proactive data protection
- IntelligentLog™ : Enables self-monitoring, analysis and AER (Advance Error Warning)
- Field programmable firmware available

### Full design service from design to after sales support

- SSD life simulation and validation
- Fixed BOM and firmware from ordering part number
- Dedicated technical support team

## Key Features

### High-Efficiency Error Correction

- Advanced Hardware LDPC (ECC) Engine
- StaticDataRefresh™ and EarlyRetirement™ technologies ensure the data reliability

### Power Efficiency

- Dynamic power management technology enables multiple power saving modes

### Advanced Global Wear Leveling to Enhance Reliability

- Even distribution of program / erase cycles across all NAND flash chips
- Maximizes the lifespan with low Write Amplification Index (WAI)

### Robust Data Protection

- Advanced system level protection against unstable power

- Software / hardware write protect option
- Multiple user data security zones
- Software / hardware secure erase function
- PowerShield and DataPhoenix technologies support power-down data protection

For industrial, commercial and automotive applications that require high-performance, customized single-chip SSDs for small footprint equipment operating in demanding environments.

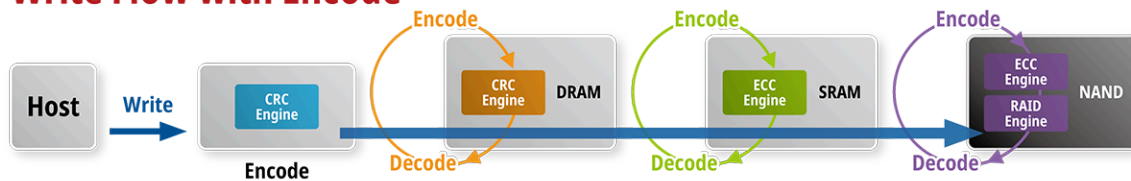


## Technologies

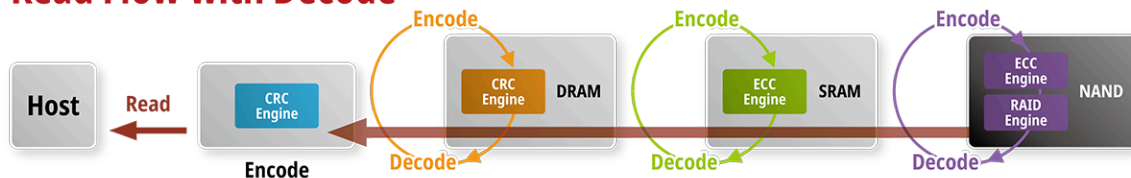
### FerriSSD®: End to End Data Path Protection to Guarantee Data Integrity

Silicon Motion's FerriSSDs incorporate full data error detection with recovery engines to provide enhanced data integrity throughout the entire Host-to-NAND-to-Host data path. The FerriSSD® data recovery algorithm can effectively detect any error in the SSD data path, including hardware (i.e. ASIC) errors, firmware errors, and memory errors arising in SRAM, DRAM, or NAND.

#### Write Flow with Encode

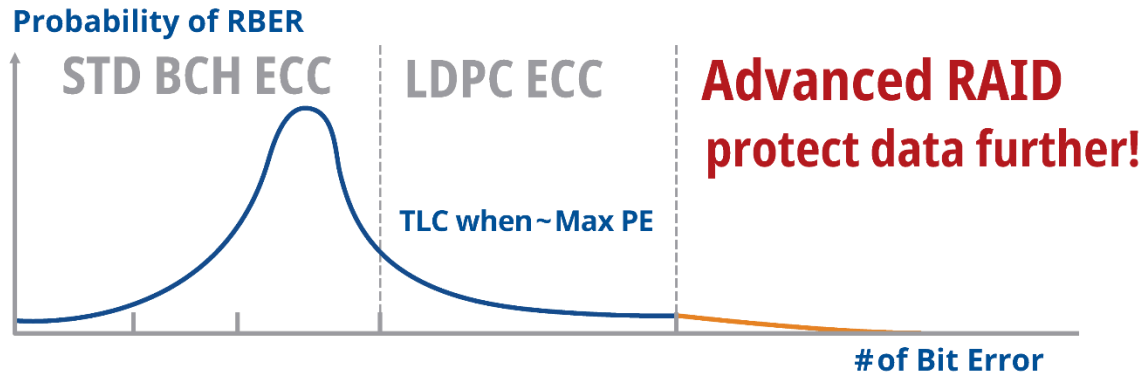


#### Read Flow with Decode



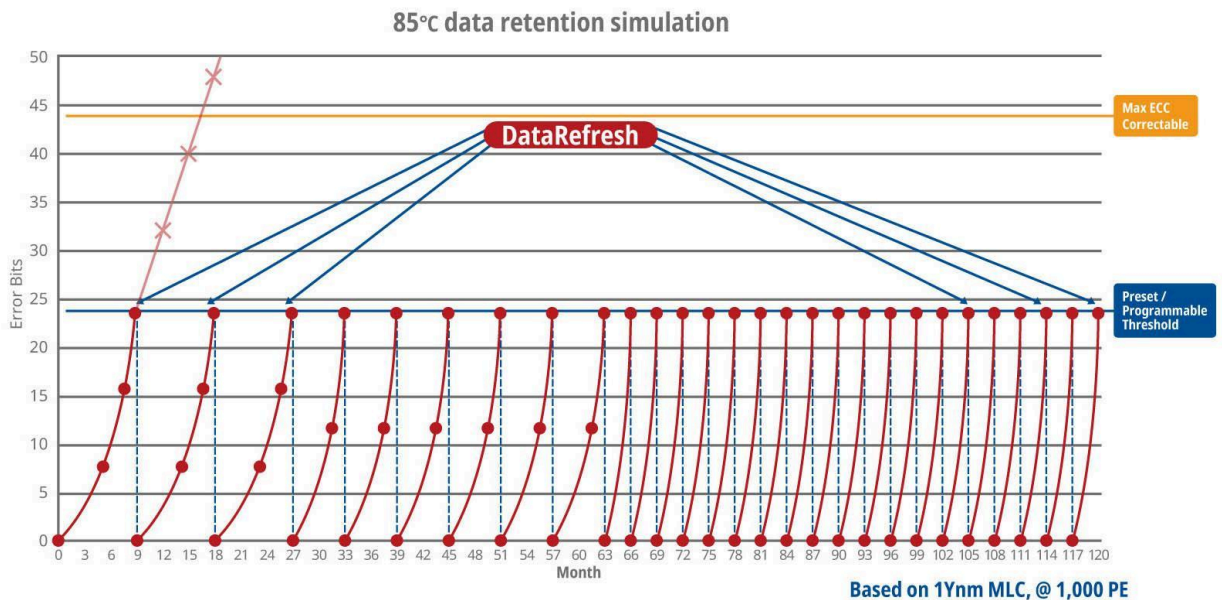
## FerriSSD®: NANDXtend® ECC technology to Extend Operating Lifetime

Conventional SSDs employ standard BCH and RS ECC (error correction coding) engines to initiate first-level correction using NAND shift-read-retries. In addition to this first-level error correction, FerriSSDs also implement a highly efficient second-level correction scheme using an LDPC (low-density parity-check) code and an advanced RAID algorithm (a highly efficient redundant backup) to reduce potential dPPM at customer site while extending the service life of SSD.



## IntelligentScan™ and DataRefresh™ to Enhance Data Retention in High Temperature Environment

Silicon Motion's proprietary IntelligentScan function will activate automatically to scan recharge, repair or retire the cell block (DataRefresh) according to the host behavior and working environment (eg. ambient temperature). As a result of the combination of IntelligentScan and DataRefresh, Ferri-UFS® can effectively prolong its service life much beyond typical NAND specifications.



Not to scale, for illustration purpose

## Ferri Family Enabling the NAND Flash Storage in Comprehensive Applications

## Why Ferri Family

- FW & HW Customization
- Scalable Proven MP Setup
- 100% Screened for Low DPPM
- Design Service to MP Support
- Wide Temperature Support
  - Industrial Temperature
  - Commercial Temperature
  - AEC-Q100 Grade 3 / 2

# Ferri

PCle NVMe  
FerriSSD®

Ferri-UFS®

Ferri-eMMC®

## Applications

 Telecom & Server	 Automotive	 Medical Device
 POS & Kiosk	 HMI & Thin Client	 Digital Signage
 MEP	 Gaming	 Surveillance

## Video



## Documents

- [FerriSSD® Selection Guide-Dx series SATA Module SATA/PATA FerriSSD®](#)
- [FerriSSD® for Server Applications](#)
- [FerriSSD® for Embedded Computing Applications](#)
- [FerriSSD® Modules](#)
- [Silicon Motion's Ferri Family: AEC-Q100 Qualified Embedded Storage](#)

[Silicon Motion's FerriSSD Offers the Stability and Data Security Required in Medical Equipment](#)  
[Silicon Motion's PCIe NVMe FerriSSD Enables High Speed and High Reliability for Digital Signage](#)  
[Silicon Motion's PCIe FerriSSD® Designed Specifically for Industrial/Embedded Applications](#)  
[Silicon Motion's Ferri Family Optimizes Embedded Flash-based Storage for Automotive Use](#)  
[Silicon Motion's New FerriSSD® Boosts Server Performance in a BGA-SSD](#)  
[Silicon Motion FerriSSD® for Embedded Boot Load Applications](#)

## **Video**

[Ferri Family Overview:](#)

[Automotive storage solution](#)