

powersafe™

swissbit®

Product Fact Sheet

## Industrial M.2 PCIe SSD

**N3202 M.2 Series**  
PCIe 4.0, 3D TLC

Industrial Temperature Grade

Date: June 10, 2024  
Revision: 1.00



## Product Summary

- **Capacities:** 240 GBytes, 480 GBytes, 960 GBytes, 1920 GBytes
- **Form Factor:** PCI Express M.2 2280 (80 mm x 22 mm x 3.8 mm)
- **Compliance<sup>1</sup>:** PCI Express (PCIe) Base Specification Revision 4.0
- **Interface:** Gen4 x 4 Lanes
  - Drive operates in x1 mode in x1 M.2 PCIe slots
  - Drive operates in x2 mode in x2 M.2 PCIe slots
  - Drive operates in x4 mode in x4 M.2 PCIe slots
- **Command Sets:** Supports NVMe 1.4
- **Target Performance:**
  - Read Performance: Sequential Read up to 3,850 MBytes/s, Random Read 4K up to 461,300 IOPS
  - Write Performance: Sequential Write up to 3,360 MBytes/s, Random Write 4K up to 380,000 IOPS
- **Operating Temperature Range<sup>2</sup>:**
  - Commercial: 0 °C to 70 °C
- **Storage Temperature Range:** -40 °C to 85 °C
- **Power:**
  - Power States P50, P51, P52, P53 and P54
  - Thermal Throttling supported
- **Data Retention<sup>3</sup>:** 3 Years @ Life Begin; 4 Months @ Life End, @40°C
- **Shock/Vibration:** 1,500 g / 50 g
- **High-Performance Processor with Integrated, Parallel Flash Interface Engines:**
  - Triple-Level Cell (TLC) 3D NAND Flash
  - DDR4 DRAM based Controller architecture
  - 240 bit LDPC correction per 2 KByte
- **High Reliability:**
  - Mean Time Between Failure (MTBF): > 3,000,000 hours
  - Data Reliability: < 1 non-recoverable error per 10<sup>16</sup> bits read

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<sup>1</sup> To check the compatibility of the customer system and the storage device is part of the customer's responsibility. Swissbit can provide guidance and support on request.

<sup>2</sup> Adequate airflow is required to ensure the temperature, as reported in the S.M.A.R.T. data, does not exceed 90°C (commercial temperature drive).

<sup>3</sup> NAND Flash suppliers refer to JEDEC JESD47 and JESD22 for Data Retention testing. Based on the information provided by the NAND Flash suppliers, Data Retention is targeted as shown

## Product Features

- Diagnostic features
- Life end read only mode
- RAID engine
- Drive self-test
- Data Care Management
  - Active: Adaptive Read Refresh
  - Passive: Background Media Scan
- Active State Power Management (ASPM) Support
- In-Field Firmware Update<sup>4</sup>
- Adaptive Thermal control
- DRAM-Buffer
- Self-Monitoring, Analysis, and Reporting Technology (S.M.A.R.T., Telemetry)
- SMBus<sup>5</sup> (NVMe Management Interface Basic Management Command, NVMe-MI v1.2)
- 30 µinch (0.8 µm) Gold-Plated Connector (IPC-6012C Class 2 Compliant)
- End-to-End (E2E) Data Protection
- powersafe™ Functionality (Power Loss Protection Level 3)
- Controlled "Locked" BOM
- RoHS / REACH Compliant
- Swissbit Device Manager Tool (SBDM)

## Security features

- AES256 encryption
- TCG OPAL 2.0
- Secure Boot (on request)
- Crypto erase
- IEEE 1667



### Why Swissbit?

Swissbit is focused on the design, development, manufacture, and support of leading edge memory and storage solutions for the worldwide OEM/ODM marketplace. As a global supplier, Swissbit recognizes and addresses the higher level of application requirements of today's industrial, Netcom, and automotive customers by providing best-in-class products and services, with uncompromised attention to driving overall value and quality.

<sup>4</sup> The support of In-Field FW update capabilities on host systems is recommended.

<sup>5</sup> SMBus commands are only processed in operational power states.

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Revision: 1.00

Template: Doc-4991

File: N3202\_fact\_sheet\_M2\_Rev100

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