

powersafe™

swissbit®

Product Fact Sheet

**Industrial
M.2 PCIe SSD**

N3002 Series
PCIe 4.0, 3D TLC

Industrial Temperature Grade

Date: October 28, 2024
Revision: 1.01



Made in Germany

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:** 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 455,900 IOPS
 - Write Performance: Sequential Write up to 3,340 MBytes/s, Random Write 4K up to 457,000 IOPS
- **Operating Temperature Range²:**
 - Industrial: -40 °C to 85 °C
- **Storage Temperature Range:**
 - Industrial: -40 °C to 85 °C
- **Power:**
 - Power States P0, P1, P2, P3 and P4
 - Thermal Throttling supported
- **Data Retention³:** 10 Years @ Life Begin; 1 Year @ 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 10¹⁶ bits read

¹ 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.

² Adequate airflow is required to ensure the temperature, as reported in the S.M.A.R.T. data, does not exceed 110°C (industrial temperature drive).

³ 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 Update⁴
- Adaptive Thermal control
- DRAM-Buffer
- Self-Monitoring, Analysis, and Reporting Technology (S.M.A.R.T., Telemetry)
- SMBus⁵ (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
- 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.

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

⁵ SMBus commands are not supported in P54 power state.