MEMKOR

BLUE Series - Maximized Capacity

Rugged 2.5″ SATA SSD's

2.5″ BLUE Series SSD with HiVibe©

OVERVIEW

The most popular height of 2.5″ SATA SSD is 0.276″ (7 mm) or 0.374″ (9.5 mm). Memkor BLUE Series 2.5″ SSDs extend the maximum height to 0.945″ (25 mm) allowing to scale capacity to 24 TB (or to 16 TB in 0.591″ (15 mm)) using industrial grade MLC NAND.

The use of a large capacity SSD, as opposed to an equivalent higher number of smaller SSDs minimizes power consumption per GB of storage. This benefits long duration missions where power is limited.

Optional 20,000 insertion HiVibe© SATA connector allows the SSD to be used as a removable storage and may simplify storage cartridge design by eliminating the need for multiple SSDs and backplanes.

Memkor BLUE Series provides an excellent level of ruggedization allowing deployment in most challenging environments.

MEMKOR M[+] SECURITY - CUTTING-EDGE DATA PROTECTION

Memkor's BLUE Series SSDs ensure Data at Rest (DAR) protection through the embedded FIPS 197 validated encryption engine and architecture shared with ORANGE Series U.2/PCIe models validated under FIPS 140-2, Level 2 program. The encryption management are either based on FIPS validated procedures or TCG OPAL method. Both use the concept of Shadow MBR thus allowing for pre-boot authentication and the use of the SSD as a boot drive.

Data protection includes a Write Protect function option which ensures data integrity and prevents malicious or accidental Data alteration. The Write Protect function can be enabled and disabled by the user through software or hardware triggering.

RELIABILITY

Through the use of the highest reliability MLC and SLC NAND, combined with the state of the art flash management techniques, strong ECC/CRC, end-to-end data protection strategy and sudden power loss safeguards integrated in software and hardware, Memkor's BLUE Series SSDs provide the highest level of reliability, durability and endurance.

CLIENT or ENTERPRISE CLASS OPERATIONS

Designed for extreme temperatures, Memkor's BLUE Series U.2 SSDs can be optimized for Client operations such as boot drives or Enterprise class operations to maximize performance and reduce latencies.

SUMMARY

- □ Rugged 2.5″
- □ Increased capacity through increased height
- □ SATA 6G, 3G, 1.5G
- □ Client and Enterprise versions

2.5″ FORM FACTOR (FF) APPLICATIONS

- □ Provides highest capacity per SATA port
- □ High speed high capacity ruggedized Data recorder
- □ Best FF where SSD shock/vibration resilience is required
- □ Best FF where high performance in extreme temperature is required
- □ Removable high capacity storage

MEMKOR BLUE SERIES ADDED VALUE

- □ Extra capacity
- □ All models FIPS 197 validated
- □ FIPS 140-2 compliant architecture and build
- □ Optional TCG OPAL
- □ HiVibe© SATA connector to provide virtually unlimited insertion number
- □ HW or SW triggered Crypto and Secure Erase
- □ HW or SW enabled Write Protect
- □ Use of high reliability components
- □ End-to-end Data protection
- □ End-to-end operation monitoring
- □ Sudden power loss safeguards
- □ Standard conformal coating on Industrial/ Defense grade SSDs
- □ Each SSD thoroughly tested
- □ Locked BOM
- □ Obsolescence management
- □ Custom features when required
- □ 5 year/TBW warranty

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ABOUT BLUE SERIES

Memkor's 3rd generation BLUE Series SSDs aim to maximize storage capacity by tailoring standard form factor dimensions or by using proprietary form factors. Memkor builds the BLUE Series SSD using high quality industrial grade MLC, pSLC NAND or the most reliable SLC NAND available today. With carefully selected BOM and mature firmware, it is backed by 5 year limited warranty. The product line supports SATA, PCIe/NVMe, USB or Ethernet interface. All Memkor products are available with locked BOM configurations and Supply Chain component management for long-term deployment applications.

MEMKOR—PART OF YOUR PROJECT

☐   We will support your design process

☐   Each SSD undergoes ESS test

☐   We offer Locked BOM Management

☐   We offer obsolescence management

MEMKOR U.2 PCIe/NVMe ORANGE SERIES SSD SPECIFICATION[3]

Standard Form Factor	• Standard 2.5" (SFF-8201) with increased height, special form factors
Interface	• SATA 6G, 3G, 1.5G
Data throughput	• SATA 6G: up to 500/550 MB/s Write/Read • SATA 3G: up to 250/250 MB/s Write/Read (lower power consumption than 6G)
Maximum Capacity	• up to 16 TB MLC NAND in 2.5" 15 mm H or 24 TB in 24 mm H • up to 8 TB SLC NAND in 2.5" 15mm H
Temperature Range	• -40°C to 85°C Industrial/Military • 0°C to 70°C Commercial
Vibration/shock	• 16.3 GRMS 10-2000Hz / 50G 11 ms
Data Reliability	• Flash managed by static and dynamic wear leveling and powerful ECC/CRC • End-to-end Data Protection • End-to-end operation monitoring and recording • Uncorrectable bit error rate (UBER): less than 10^{-16}
Data Retention	• 1 year at 30°C when power off and TBW reached[4]
Endurance[1]	• 25,000 TBW (16 TB MLC NAND) • 120,000 TBW (8 TB SLC NAND)
Data Security	• FIPS 197 AES 256 • FIPS 140-2 compliant architecture • Optional TCG OPAL V2.0 Self Encrypted Drive (SED) • HW/SW triggered military grade Crypto Erase and Data Elimination • HW and/or SW Write Protect
Component reliability	• MTBF: >1,000,000[2]
Health monitoring	• S.M.A.R.T. to report system health • Thermal performance monitoring and management

(1) Per JEDEC219. Contact Memkor for TBW for other capacities and specific workloads.
(2) Contact Memkor for MTBF prediction for specific environmental conditions and field MTBF data.
(3) Refer also to Industrial TLC/QLC NAND based WHITE Series 2.5"/U.2" SSD specifications
(4) Per JESD47/JEP122. Contact Memkor for Data Retention prediction for your application.

DISCLAIMER: Memkor, Inc. reserves the right to change products, specifications and information without notice.

Memkor® is an American engineering company dedicated to providing flash solid state storage solutions for defense, industrial and enterprise applications. We create secure, reliable, robust and innovative solutions with rich feature sets, tailored, as required, to meet your technology investment objectives. We are dedicated to delivering on our promises. We simply believe that your satisfaction enables the continuous success of our company.

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MANAGEMENT SYSTEMS
CERTIFICATION BODY

PRG
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FIPS VALIDATED 140-2