



MEMKOR
Solid Advantage



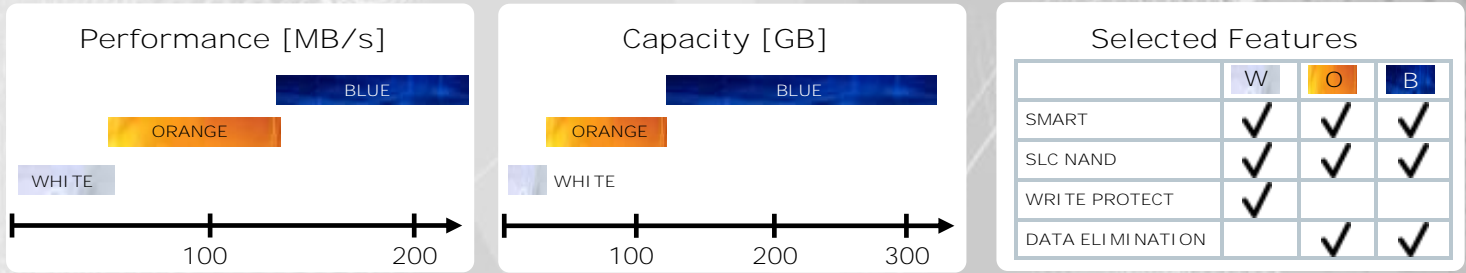
Flash Solid State Storage
Defense
Industrial
Enterprise

Flash SSD: "one size does not fit all"

Flash SSD applications span from boot drives to portable computers to high performance servers to data recorders.

As compared to the traditional mechanical drives, the SSDs are deployed, for their superior reliability and for the resilience to challenging environments. Some SSD applications require extreme performance and some others minimum power consumption, which may come at the expense of performance. User data protection and/or elimination functions are becoming very important in Military applications. There is no one SSD that can meet all, often conflicting requirements.

One size does not fit all.



WHITE Series SSD

Memkor White Series SSDs address requirements of traditional flash SSD applications, such as boot drives, or industrial data logging. Built using industrial grade parts⁽¹⁾ for superior reliability, equipped with the true static wear-leveling and the ECC mechanisms implemented for industrial grade requirements, they offer data integrity that most likely would outlast the lifespan of the equipment. The White Series SSDs include features such as Write Protect, the ability to create multiple partitions, and Access Control ensuring data security. The SMART feature can be used to **monitor flash health**. The Memkor White Series are offered in standard 1.8", 2.5" and 3.5" formats and also as Drive on Module (DoM) and Compact Flash (CF). The White Series SSDs support PATA, SATA and SCSI in 1 to 16GB capacity range and achieve up to 50 MB/s (sustained) read and up to 40 MB/s (sustained) write performance.

PATA and SATA

(1) SATA and PATA SSDs

Standard Form Factor	1.8" (PATA only), 2.5" and 3.5"
Fast boot time and application response	<ul style="list-style-type: none"> • 50 MB/s max sustained read rate • 40 MB/s max sustained write rate
High speed interfaces	<ul style="list-style-type: none"> • Ultra DMA Mode-4 • Multiword DMA Mode-2 • PIO Mode-4
Capacity range	• 1 GB – 16 GB
Industrial Temperature Range is standard	<ul style="list-style-type: none"> • -40°C to 85°C operating • -40°C to 90°C storage
Operating voltage	• 5V±10%
High Data Reliability	<ul style="list-style-type: none"> • SLC NAND managed by static wear leveling and ECC/EDC • 27+ years write endurance when overwriting disk 10 times per day • 10 years data retention
Unmatched Data Integrity	• Up to 8 read-only partitions to prevent accidental/malicious data alteration
Unmatched Data Security	• Password control implementation prevents unauthorized access
Unique Flash Health monitoring	• S.M.A.R.T. to report flash usage
High level of ruggedization	<ul style="list-style-type: none"> • Humidity (non-condensing): 95% • Shock 1500g: (20Hz–2000Hz) • Vibration: 16.5g
Dimensions (L x W x D)	• 3.92" x 2.75" x 0.37" (9.5 mm) for 2.5"; 5.77" x 4" x 1.02" for 3.5"



1.8" and 2.5" White Series PATA SSD

SCSI

Standard Form Factor	3.5" (50-pin)
Performance	<ul style="list-style-type: none"> • 20 MB/s max FAST—20 • 5 MB/s (Asynchronous) <ul style="list-style-type: none"> • 10 MB/s max FAST SCSI • 5 MB/s (Synchronous)
Interface	• Single-Ended NARROW SCSI
Capacity range	• 1GB – 8GB
Temperature Range	• 0°C to 60°C operating; -20°C to 65°C storage
Operating voltage	• 5V±10%
High Data Reliability	<ul style="list-style-type: none"> • SLC NAND managed by dynamic wear leveling and ECC/EDC • 27+ years write endurance when overwriting disk 10 times per day • 10 years data retention
High level of ruggedization	<ul style="list-style-type: none"> • Humidity (non-condensing): 95% • Shock 1500g: (20Hz–2000Hz); Vibration: 16.5g
Dimensions (L x W x D)	• 5.77" x 4" x 1.02" for 3.5"



3.5" White Series SCSI SSD

ORANGE Series SSD

Memkor Orange Series SSDs are designed as a replacement for traditional mechanical drives where different levels of ruggedization and/or extra performance are required in portable computers, desktops, or servers. The state of the art static wear-leveling ensures even flash use across the entire drive, regardless of the capacity or the application. The Orange Series SSDs achieve up to 120MB/s sustained read and 100MB/s sustained write performance and are offered in 16-128 GB capacity range. The Orange Series SSDs are built to meet both Commercial and Industrial environment requirements. They support SMART for flash health monitoring and optionally can include s/w or h/w triggered pre-programmed Data Elimination procedures. The Orange Series SSDs support PATA and SATA interfaces.

PATA and SATA

Standard Form Factor	1.8" (PATA only), 2.5" and 3.5"
Fast boot time and application response	<ul style="list-style-type: none"> • 120 MB/s max sustained read rate • 100 MB/s max sustained write rate
High speed interfaces	<ul style="list-style-type: none"> • Ultra DMA Mode-6 • Multiword DMA Mode-2 • PIO Mode-4
Capacity range	• 16 GB – 128 GB
Operating Temperature Range	<ul style="list-style-type: none"> • -40°C to 85°C Industrial • 0°C to 70°C Commercial
Operating voltage	• 5V±10%
High Data Reliability	<ul style="list-style-type: none"> • SLC NAND managed by static wear leveling and ECC/EDC • 27+ years write endurance when overwriting disk 10 times per day • 10 years data retention
Unique Flash Health monitoring	• S.M.A.R.T. to report flash usage
High level of ruggedization	<ul style="list-style-type: none"> • Humidity (non-condensing): 95% • Shock 1500g: (20Hz—2000Hz) • Vibration: 16.5g
Dimensions (L x W x D)	• 3.92" x 2.75" x 0.37" (9.5 mm) for 2.5"; 5.748" x 4" x 0.583" for 3.5"



Orange Series: 1.8" PATA and 2.5" and 3.5" SATA

BLUE Series SSD

Memkor Blue Series SSDs offer an exceptional performance of up to 190MB/s sustained read, up to 170MB/s sustained write performance and an exceptional capacity of 256GB in 2.5" form factor. The Blue Series SSDs can optionally include pre-programmed Data Elimination procedures such as Clear and Purge. If storage density is a driving factor, the Blue Series SSD can be optimized for capacity—as opposed to performance—and reach up to 320GB.

SATA

Standard Form Factor	2.5" and 3.5"
Fast boot time and application response	<ul style="list-style-type: none"> • 190 MB/s max sustained read rate • 170 MB/s max sustained write rate
High speed interfaces	<ul style="list-style-type: none"> • Ultra DMA Mode-6 • Multiword DMA Mode-2 • PIO Mode-4
Capacity range	• 128 GB – 256 GB
Operating Temperature Range	<ul style="list-style-type: none"> • 0°C to 70°C Commercial (contact us for Industrial version)
Operating voltage	• 5V±10%
High Data Reliability	<ul style="list-style-type: none"> • SLC NAND managed by static wear leveling and ECC/EDC • 27+ years write endurance when overwriting disk 10 times per day • 10 years data retention
Unique Flash Health monitoring	• S.M.A.R.T. to report flash usage
High level of ruggedization	<ul style="list-style-type: none"> • Humidity (non-condensing): 95% • Shock 1500g: (20Hz—2000Hz) • Vibration: 16.5g
Dimensions (L x W x D)	• 3.92" x 2.75" x 1" (25.4 mm) for 256GB 2.5" SSD



Blue Series: 2.5" SATA
The "Brick"

Data Elimination

Memkor Orange and Blues series SSDs can optionally be equipped with two security levels of Data Elimination: CLEAR and PURGE. CLEAR eliminates the data from the flash by performing a single erase of the drive and its execution takes 10 to 20 seconds. PURGE eliminates the data and also the data remanence effects that can be used to re-construct the data in the lab. PURGE procedures require multiple media erase and overwrite cycles defined by various standards. PURGE duration can be estimated assuming 80MB/s erase/overwrite rate.

Supported Procedures

DoD	NISPOM 8-306 DoD 5220.22-M 1995
DoD	DOD 5220.22-M NISPOM Supplement 1
NSA	NSA 130-2
Army	AR 380-19
Navy	NAVSOP-5239-26
AF	AFSSI-5020

Compact Flash and Drive on Module

Memkor Industrial grade Compact Flash (CF) and Drive on Module (DoM) are an extension to the White Series SSD family of products. Built using industrial grade parts for superior reliability, equipped with the true static wear-leveling and the ECC mechanisms implemented for industrial grade requirements, they offer data integrity that most likely would outlast the lifespan of the equipment. Memkor CF and DoM include features such as Password Controlled Access, Write Protect and the ability to create multiple partitions. The unique for Compact Flash SMART feature can be used to monitor flash health.

Optionally, Memkor CF supports CLEAR and selected PURGE Data Elimination procedures.

Compact Flash - Industrial

Standard Form Factor	Compact Flash Type I
Fast boot time and application response	<ul style="list-style-type: none"> • 25 MB/s max sustained read rate • 11 MB/s max sustained write rate
High speed interfaces	<ul style="list-style-type: none"> • Ultra DMA Mode-4 • Multiword DMA Mode-2 • PIO Mode-4
Capacity range	• 1 GB - 8 GB
Industrial Temperature Range is standard	<ul style="list-style-type: none"> • -40°C to 85°C operating • -40°C to 90°C storage
Operating voltage	• 5V±10%; 3.3V±5%
High Data Reliability	<ul style="list-style-type: none"> • SLC NAND managed by static wear leveling and ECC/EDC • 27+ years write endurance when overwriting disk 10 times per day • 10 years data retention
Unmatched Data Integrity	• Up to 8 read-only partitions to prevent accidental/malicious data alteration
Unmatched Data Security	• Password control implementation prevents unauthorized access
Unique Flash Health monitoring	• S.M.A.R.T. to report flash usage
High level of ruggedization	<ul style="list-style-type: none"> • Humidity (non-condensing): 95% • Shock 1500g: (20Hz—2000Hz) • Vibration: 16.5g
Dimensions (L x W x D)	• 1.685" x 1.43" x 0.13"



Compact Flash

Drive on Module

Interface	• 40-pin and 44-pin PATA: Straight, Angle and Reverse Angle
Performance	• 25 / 11 MB/s max sustained read / write rate
High speed interfaces	• Ultra DMA Mode-4; Multiword DMA Mode-2; PIO Mode-4
Capacity range	• 1GB - 8GB
Industrial Temperature Range is standard	<ul style="list-style-type: none"> • -40°C to 85°C operating • -40°C to 90°C storage
Operating voltage	• 5V±10%
High Data Reliability	<ul style="list-style-type: none"> • Data stored on SLC NAND managed by static wear leveling and ECC/EDC • 27+ years write endurance when overwriting disk 10 times per day • 10 years data retention
Unmatched Data Integrity	Up to 8 read-only partitions to prevent accidental/malicious data alteration
Unmatched Data Security	• Password control implementation prevents unauthorized access
Unique Flash Health monitoring	• S.M.A.R.T. to report flash usage
High level of ruggedization	<ul style="list-style-type: none"> • Humidity (non-condensing): 95% • Shock 1500g: (20Hz—2000Hz) • Vibration: 16.5g
Dimensions (L x W x D)	<ul style="list-style-type: none"> • 40-pin plane: 2.33" x 0.27" x 1.07" • 44-pin plane: 1.96" x 0.26" x 1.30" • 44-pin angle: 1.99" x 1.28" x 0.30" • 44-pin reverse: 1.99" x 1.28" x 0.27"



40-pin Straight DoM and 44-pin Angle DoM

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