



MEMKOR
Solid Advantage



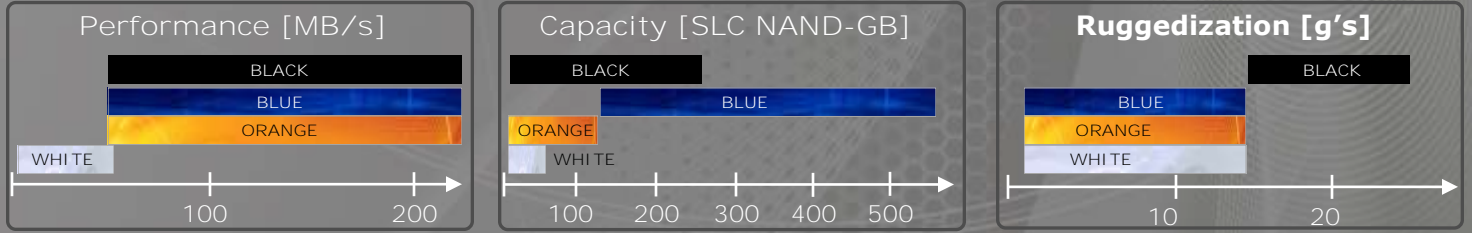
Fast
Secure
Flexible
Ruggedized
SOLID STATE

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 mechanical drives, SSDs are deployed for their superior reliability and resilience to extreme environments. Certain SSD applications require extreme performance. Others aim to minimize power consumption, potentially sacrificing performance. Special features enhancing user data integrity, protection, and secure data elimination are becoming very important in Defense and Security markets. There is no one SSD that can meet all, often conflicting requirements. One size does not fit all.

Memkor introduces *WHITE*, *ORANGE*, *BLUE* and *BLACK* Series SSDs.



WHITE Series SSD



CFAST, Data Elimination on selected models, and low power consumption

Memkor White Series SSDs address requirements of traditional flash SSD applications, such as industrial boot drives and data logging devices. Built using industrial grade parts⁽¹⁾ for superior reliability, they offer data integrity that will outlast the lifespan of your equipment. White Series SSDs include features such as Write Protect, the ability to create multiple partitions, Access Control and Data Elimination⁽²⁾ ensuring data security. The SMART feature can be used to monitor flash health. Memkor White Series SSDs are offered in CompactFlash[®] and CFAST[®], **1.8", 2.5" and 3.5"** form factors as well as various forms of Drive on Module (DoM). White Series SSDs are built with PATA, SATA and SCSI interfaces.

(1) SATA and PATA SSDs
(2) Most models

PATA and SATA

Standard Form Factor	<ul style="list-style-type: none"> • CF (PATA) and CFAST (SATA) • 1.8" (PATA only), 2.5" and 3.5" • 40-pin and 44-pin PATA: Straight, Angle and Reverse Angle
Fast boot time and application response	<ul style="list-style-type: none"> • Up to 40 MB/s (90 MB/s CFAST) sustained read rate • Up to 25 MB/s (50 MB/s CFAST) 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	<ul style="list-style-type: none"> • 1 GB to 8 GB to 32 GB depending on form factor and interface
Industrial Temperature Range is standard	<ul style="list-style-type: none"> • -40°C to 85°C operating • -40°C to 90°C storage
High Data Reliability	<ul style="list-style-type: none"> • SLC NAND managed by dynamic or static wear leveling and ECC/EDC • 27+ years write endurance when overwriting disk 10 times per day • 10 years data retention
Unmatched Data Integrity	<ul style="list-style-type: none"> • Up to 8 read-only partitions to prevent accidental/malicious data alteration⁽²⁾
Unmatched Data Security	<ul style="list-style-type: none"> • Password control implementation prevents unauthorized access • Data Elimination (Fast Erase and Purge)⁽²⁾
Unique Flash Health monitoring	<ul style="list-style-type: none"> • S.M.A.R.T. to report flash usage
High level of ruggedization	<ul style="list-style-type: none"> • Humidity (non-condensing): 95% • Shock: 50g, 11ms, half sine; Vibration: 16.3g (20Hz—2000Hz); operating
Dimensions (L x W x D)	<ul style="list-style-type: none"> • 3.92" x 2.75" x 0.37" (9.5 mm) for 2.5"; 5.77" x 4" x 1.02" for 3.5" • 1.685" x 1.43" x 0.13" for CF/CFAST • 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"



CFAST, Compact Flash and DoMs



1.8" and 2.5" White Series PATA SSD



3.5" White Series SCSI 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	<ul style="list-style-type: none"> • Single-Ended NARROW SCSI • Ask us about other SCSI modes and interfaces 	
Capacity range	<ul style="list-style-type: none"> • 1GB - 8GB 	
Temperature Range	<ul style="list-style-type: none"> • 0°C to 60°C operating; -20°C to 65°C storage • Ask us about other operating temperature ranges 	
Operating voltage	<ul style="list-style-type: none"> • 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: 50g, 11ms, half sine; Vibration: 16.3g (20Hz—2000Hz) operating 	
Dimensions (L x W x D)	<ul style="list-style-type: none"> • 5.77" x 4" x 1.02" for 3.5" 	

ORANGE Series SSD



1.8" μ SATA, doubled performance, 2nd generation Data Elimination, Write Protect.

Memkor Orange Series SSDs are designed as a replacement for traditional mechanical drives where superior 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 drive capacity or the application. Drastically improved small block and random access performance and bandwidth throughput of up to 230MB/s sustained read and 170MB/s sustained write performance make Memkor Orange Series one of the fastest SSDs. Memkor Orange Series SSDs are offered in 16-128 GB capacity range using SLC NAND. Memkor Orange Series SSDs are built to meet both Commercial and Industrial environmental requirements. The conformal coating is standard on all the Industrial grade models. Memkor Orange Series SSDs support SMART for flash health monitoring. They can optionally include Write Protect and one of the fastest on the market Data Elimination function (Fast Erase and Purge). Orange Series SSDs support PATA and SATA interfaces.

PATA and SATA/ μ SATA

Standard Form Factor	1.8", 2.5" and 3.5"
Fast boot time and application response	<ul style="list-style-type: none"> • 230 MB/s max sustained read rate (SATA SLC NAND) • 170 MB/s max sustained write rate (SATA SLC NAND) • 120 MB/s max sustained read rate (PATA SLC NAND) • 90 MB/s max sustained write rate (PATA SLC NAND)
High speed interfaces	<ul style="list-style-type: none"> • Ultra DMA Mode-6 • Multiword DMA Mode-2 • PIO Mode-4
Capacity range	<ul style="list-style-type: none"> • 16 GB – 128 GB (SLC NAND) • Ask us about the impact of using Industrial MLC NAND
Operating Temperature Range	<ul style="list-style-type: none"> • -40°C to 85°C Industrial • 0°C to 70°C Commercial
Operating voltage	• 5V \pm 10%
High Data Reliability	<ul style="list-style-type: none"> • Flash managed by static wear leveling and ECC/EDC • 27+ years write endurance when overwriting disk 10 times per day • 10 years data retention
Data Integrity	• HW Write Protect
Data Security	• Data Elimination (Fast Erase and Purge) ⁽³⁾
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: 50g, 11ms, half sine; Vibration: 16.3g (20Hz—2000Hz); operating
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



Orange Series: 1.8" μ SATA

(3) HW trigger offered on selected models

BLUE Series SSD



Industrial Grade, 2nd generation Data Elimination, doubled density, doubled capacity.

Memkor Blue Series SSDs offer an exceptional capacity of up to 512GB (SLC NAND) in 2.5" form factor and 1.1" height. While not a standard product, the capacity can be easily scaled up to 768GB, or even 1024GB, if device height of 1.6"-2.0" can be accommodated. With the outstanding sustained read/write performance of up to 230/150 MB/s, combined with one of the fastest Data Elimination function (Fast Erase and choice among multiple Purge algorithms), Memkor Blue Series SSDs are geared towards high performance data recorders. The conformal coating is standard on all the Industrial grade models. Memkor Blue Series SSDs support SMART for health monitoring and can optionally include Write Protect function.

SATA

Standard Form Factor	<ul style="list-style-type: none"> • 2.5" • Ask us about 3.5"
Fast boot time and application response	<ul style="list-style-type: none"> • 230 MB/s max sustained read rate • 150 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	<ul style="list-style-type: none"> • Up to 512 GB SLC NAND • Ask us if you need higher capacity, or about the use of Industrial MLC NAND
Operating Temperature Range	<ul style="list-style-type: none"> • 0°C to 70°C Commercial • -40°C to 85°C Industrial
Operating voltage	• 5V \pm 10%
High Data Reliability	<ul style="list-style-type: none"> • Flash managed by static wear leveling and ECC/EDC • 27+ years write endurance when overwriting disk 10 times per day • 10 years data retention
Data Security	• Data Elimination (Fast Erase and Purge)
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: 50g, 11ms, half sine; Vibration: 16.3g (20Hz—2000Hz); operating
Dimensions (L x W x D)	<ul style="list-style-type: none"> • 3.92" x 2.75" x 0.6" (15.3 mm) for 256 SLC • 3.92" x 2.75" x 1.1" (27.9 mm) for 512 SLC



Blue Series: 2.5" SATA 256 GB



Blue Series: 2.5" SATA 512 GB. The "Brick"



Memkor Black Series is a new addition to our family of SSDs. Leveraging Memkor Orange and Blue Series SSD capabilities, and combining with the innovative mechanical design, Memkor Black Series SSDs provide exceptional resilience to the extreme shock and vibration levels well beyond those required by the most stringent cases of the MIL-810F standard. With the capacity ranging from 16GB to 256GB using SLC NAND, as well as features such as Write Protect and Data Elimination, the Black Series considerably expands deployment flexibility of the Memkor family of SSDs.

SATA

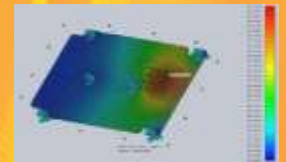
Standard Form Factor	<ul style="list-style-type: none"> • 2.5" • Ask us about 3.5"
Fast boot time and application response	<ul style="list-style-type: none"> • 230 MB/s max sustained read rate • 150 MB/s max sustained write rate
High speed interfaces	<ul style="list-style-type: none"> • Ultra DMA Mode-6 • Multiword DMA Mode-2 • PIO Mode-4
Capacity range	<ul style="list-style-type: none"> • Up to 256 GB SLC NAND • Ask us if you need higher capacity, or about the use of Industrial MLC NAND
Operating Temperature Range	<ul style="list-style-type: none"> • 0°C to 70°C Commercial • -40°C to 85°C Industrial
Operating voltage	• 5V±10%
High Data Reliability	<ul style="list-style-type: none"> • Flash managed by static wear leveling and ECC/EDC • 27+ years write endurance when overwriting disk 10 times per day • 10 years data retention
Data Security	• Data Elimination (Fast Erase and Purge)
Unique Flash Health monitoring	• S.M.A.R.T. to report flash usage
High level of ruggedization	• Please contact us for more details
Dimensions (L x W x D)	<ul style="list-style-type: none"> • 3.92" x 2.75" x 0.374" (9.5 mm) for 128 GB SLC NAND • 3.92" x 2.75" x 0.6" (15.3 mm) for 256 GB SLC NAND



Black Series, 2.5" SATA
128GB, Data Elimination
Extreme Ruggedization



Black Series, 2.5" SATA
256GB, Data Elimination
Extreme Ruggedization



Data Elimination

Memkor SSDs can optionally include Data Elimination function: FAST ERASE and PURGE. FAST ERASE eliminates the data from all physical media locations by performing a single erase. Its execution (for Orange, Blue and Black Series) takes 4-8 seconds. PURGE eliminates both the data and the data remanence effects that could otherwise be used to re-construct the storage content in the lab. PURGE requires multiple media erase and overwrite cycles, and in some cases partial or complete verification, as defined by different government standards. PURGE duration varies between 5-15minutes depending on the procedure. SW and/or HW trigger (selected models) are available. The SSDs are reusable immediately after the procedure.

Supported Purge Procedures

DoD	DoD 5220.22-M NISPOM 8-306 1995
DoD	DOD 5220.22-M NISPOM Supplement 1
NSA	NSA 130-2
NSA	NSA 9-12
Army	AR 380-19
Navy	NAVSOP-5239-26
AF	AFSSI-5020

About Memkor

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 set, 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.

US Headquarters:

Memkor, Inc
3103 E. Chambers St.
Phoenix, AZ 85040
USA
Tel: 602.424.6246
Fax: 480.657.0298
Web: <http://www.memkor.com>
email: sales@memkor.com

Canada Office:

Memkor, Inc
48 Chauncey Ave.
Toronto, ON M8Z 2Z4
Canada
Tel: 416.800.8795
Fax 845.698.7330
Web: <http://www.memkor.com>
email: sales@memkor.com