

TCS Space & Component Technology

Proteus Plus Embedded Module – Solid State Drive



Features

- Support for SATA 2.6 at 1.5 and 3.0 Gb/s
- 64MB cache enables high IO/s for small block random operations
- Available with and without secure erase capabilities
- Available in a 2.5" form factor bare PCB, or in industry standard JEDEC MO-297 and MO-300 form factors
- Completely SATA compatible, no device driver development required

Applications

- Military and Defense – Ground, Sea and Air
- Ruggedized computers and notebooks, including small form factors like Netbooks
- Data recorders for extreme environments
- Portable and handheld devices
- Unmanned vehicles including UAVs, robotics and mine detection
- Radar/Guidance Systems and Telemetry/Tracking
- Extreme operating environments including oil & gas exploration and drilling
- Anywhere your SSD absolutely, positively has to work!

The speed and ruggedness of the TCS' Proteus Plus Solid State Drives is now available in bare board form factors for embedded use. Available in capacities from 32GB to 256 GB, these drives provide another option for delivering extreme ruggedness and reliability to applications where an industry standard drive form factor is too large.

Like all Proteus Plus SSDs, these boards support the SATA revision 2.6 interface standard at up to 3.0 Gb/s. With a high speed controller and 64MB of on-board cache, Proteus Plus SSDs deliver sustained reads up to 250 MB/s and sustained writes up to 205 MB/s. Robust data integrity is ensured by integrated hardware support for on-the-fly error detection and correction, resulting in a Bit Error Rate of less than one in 10^{14} .

These drives are rigorously tested and independently verified to MIL-STD-810 to survive in the harshest environments. Industrial grade SLC NAND technology provides data retention of over 10 years and write endurance of over 100,000 writes.

Designed and manufactured in the USA at AS9100-certified facilities, these Proteus Plus embedded drives set a new standard in reliability and ruggedness for embedded SSD boards.

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Your Established Partner

TCS brings proven, technology problem-solving expertise to its professional service offerings for the public sector. From continuity of operations and information assurance, to cyber security and integrated logistics support, TCS solves the toughest technical challenges, under conditions that demand the highest level of reliability, availability, and security. As an ISO 9000-certified provider with many consultants holding active security clearances, TCS has an established track record over the past decade as a trusted partner providing mission continuity for the Department of Defense, Special Operations and intelligence communities, the Department of Homeland Security, and the Department of State.

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Specifications

	2.5" PCBA	MO-297A SlimSATA	MO-300B mSATA
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Performance

Raw Capacity	32, 64, 128, 256 GB	16, 32, 64 GB	16, 32, 64 GB
Sustained Read	Up to 250 MB/s	Up to 136 MB/s	Up to 136 MB/s
Sustained Write	Up to 205 MB/s	Up to 132 MB/s	Up to 132 MB/s
Random Read (4K blocks)	> 7500 IOPS	> 7500 IOPS	> 7500 IOPS
Random Write (4K blocks)	> 1700 IOPS	> 1700 IOPS	> 1700 IOPS

Erase Methods

Fast Erase, DoD NISPOM 5220.22-M, DoD NISPOM 5220.22-M Sup 1, NSA/CSS 9-12, NSA 130-1, Army AR 380-19, Navy NAVSO P-5239-26, Air Force AFSSI-5020, RCC-TG IRIG 106-7

Power

Input Voltage	+5Vdc ± 10%	+5.0Vdc ± 10%	+3.3Vdc ± 10%
Read Max	1.30 W	1.60 W	1.60 W
Write Max	2.00 W	1.50 W	1.50 W
Idle Power		0.4 W	0.4 W

Reliability

Bit Error Rate	< 1 non-recoverable error in 10 ¹⁴ bits read
Data Retention	> 10 years
Endurance	> 100,000 writes
Wear-leveling	Proprietary static and dynamic algorithms

Environment

Operating Temperature	-40°C to +85°C
Storage Temperature	-50°C to +95°C
Altitude	80,000 feet
Humidity	5% to 95% relative humidity, non-condensing
Shock	1,500G at 0.5ms
Vibration	16.3Grms minimum

Mechanical

Dimensions	63.35mm x 100.45mm x 4.69mm	39mm x 54mm x 4.5mm	29.85mm x 50.80mm x 4.85mm
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