Proteus Secure IDE Solid State Drive

Overview

The low-power, Proteus IDE / PATA SSD with secure erase capability, delivers ultra-high-reliability mass storage in an industry-standard 2.5 inch package. It offers direct replacement of rotating disk drives with capacities ranging from 32GB to 128GB.

Secure erase functionality features NSA/CSS Manual 9-12 and RCC-TG IRIG 106-07 Chapter 10 erasure standards as well as a fast erasure technique. Software command or an external jumper intitiate erasure.

This Proteus SSD supports the AT Attachment with Packet Interface-7 standard. With a high speed controller and 64MB of on-board cache, the Proteus 128GB SSD delivers sustained reads up to 107MB/s and sustained writes up to 115MB/s. Unlike other IDE (or parallel ATA) SSDs, the Proteus SSD's read/write cache architecture is optimized to support file defragmentation with OS TRIM utilities. This eliminates performance degradation due to file fragmentation — a problem for older SSD designs.

The SSD provides a solid data path with integrated hardware support for on-the-fly, per sector error detection and correction. The resulting Bit Error Rate is less than one in 10^{14}.

Rigorously tested and independently verified to MIL-STD-810, the ultra-rugged Proteus SSD survives the harshest environments. The drives have a conservatively calculated MTBF of over 1.24 million hours. 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, the Proteus is the unquestioned reliability leader among high-performance, rugged SSDs.

Features

- Conforms with ATA / ATAPI-7
- 64MB cache enables high IOPS for small block random operations
- Support for NSA 9-12 and IRIG 106-07 erasure standards
- Fast erasure clears 128GB in less than 8 seconds
- Write Protect by software and jumper
- Ruggedized design; tested to MIL-STD-810
- Precision machined, anodized aluminum alloy case
- Enhanced reliability options include conformal coating, staking and component encapsulation
- No device driver development required (completely compatible with standard IDE / PATA)

Applications

- Military and Defense — Ground, Sea and Air
- Ruggedized computers / notebooks — mobile and system-based
- Radar / Guidance Systems and Telemetry / Tracking
- Aerospace avionics, cockpit instrumentation both commercial and defense
- Unmanned vehicles including UAVs, robotics and mine detection
- Homeland Security / Surveillance / Mapping / Reconnaissance / Remote Sensing
- Vehicle Management / Information Systems
- Extreme operating environments including down-hole drilling and transportation
- Where your SSD absolutely, positively has to work!

Trident Space & Defense
19951 Mariner Avenue, Building 157, Torrance, CA 90503
Tel: 310-214-5500

Web: ***http://www.tridentsd.com***
Email: sales@tridentsd.com

Proteus IDE Secure SSD Specifications

Performance

Capacity	32GB, 64GB, 128GB
Cache Size / Sector Size	64MB / 512 Byte standard
Sustained Read (64GB SSD)	Up to 107 MB/s
Sustained Write (64GB SSD)	Up to 115 MB/s
Random Read, 4KB blocks (64GB SSD)	> 6450 IOPS
Random Write, 4KB blocks (64GB SSD)	> 470 IOPS

Erasure

Fast Erase	< 3 s (32GB);	< 4 s (64GB);	< 8 s (128GB)
NSA/CSS Manual 9-12	< 2 min (32GB);	< 4 min (64GB);	< 9 min (128GB)
RCC-TG IRIG 106-07 Chapter 10	< 4 min (32GB);	< 7 min (64GB);	< 17 min (128GB)

Power

Input Voltage	+5VDC ± 10%
Read Max (64GB SSD)	1.10 W
Write Max (64GB SSD)	1.90 W
Max In-rush current (128GB SSD)	< 1 Amp

Reliability

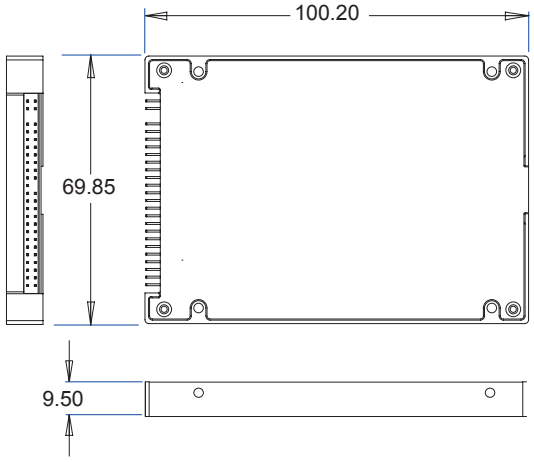
MTBF	> 1.24 million hours, Telcordia 25°C, 32GB SSD
Data Reliability	< 1 non-recoverable error in 10^{14} bits read
Data Retention	> 10 years
Endurance	> 100,000 writes
Wear-leveling	Proprietary static and dynamic algorithms

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	16.3G minimum RMS
MIL-STD-810 Test Options	Thermal Cycling, Thermal Shock, Shock, Vibration, Gunfire Vibration, Low Pressure, Sand & Dust, Fungus, Explosive Atmosphere, Salt Fog.

Mechanical

Dimensions (mm)	ATA Standard



Jumper locations:
1 Write Protect
2 Fast Erase
3 NSA/CSS Manual 9-12 erase
4 IRIG 106-7 Chapter 10 erase
5 Not Active

Entire enclosure is machined, anodized aluminum

Packaging options:
- Conformal coat
- Silicone gel fill
- Epoxy staking

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Proteus Standard IDE Solid State Drive

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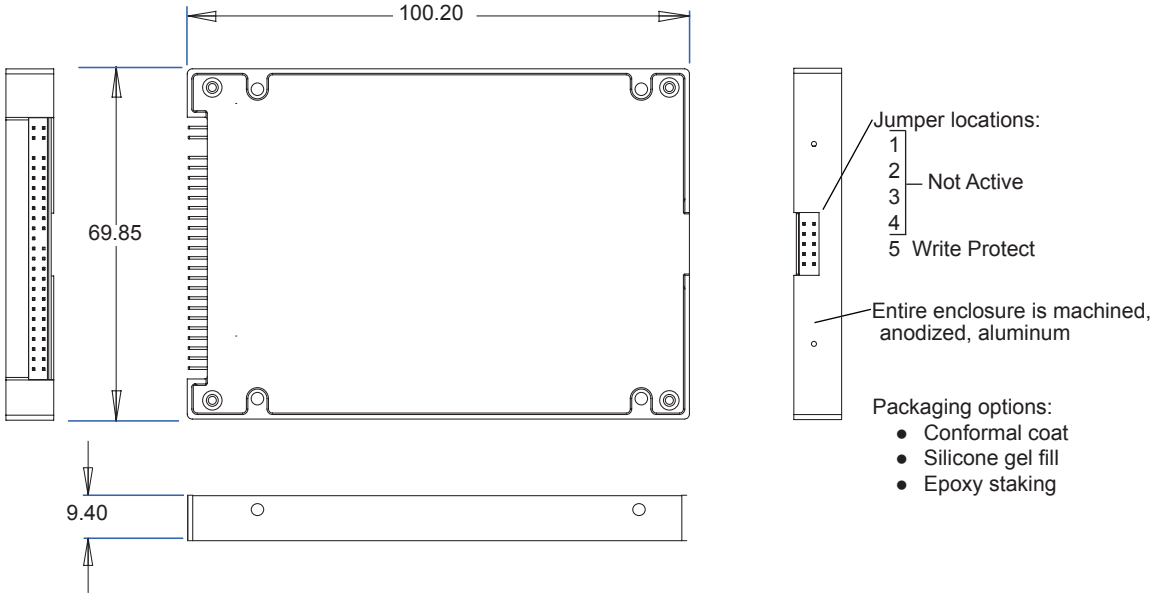

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