



MACH4 Solid State Drive

Industrial-Grade 1-inch Storage Solutions

Introducing MACH4, the World's smallest, fastest and lowest power solid state drive solution optimized for embedded OEM applications.

MACH4's unique blend of performance, size, and low power makes it an ideal solution for blade servers, industrial PCs, and small format devices requiring the highest throughput in the smallest package. As more technology is packed into tighter designs, the need for smaller solid state storage formats will increase. Many of these applications including GPS/navigation solutions, automotive entertainment systems, interactive kiosks, and even ultra-compact thin clients require the smallest possible storage solutions that, until now, lacked the performance required to make them true hard disk replacements. MACH4 solves this dilemma with a high performance, multi-channel design providing SATA or Ultra DMA performance to deliver the fastest, highest capacity, and smallest storage solution available in the industry today.

Revolutionizing the way solid state storage is used: the MACH4 1-inch SSD helps OEMs embrace NAND as a replacement for small form factor HDD as it comes as a cohesive unit (reliability and performance are all built-in). The drive enables wider usage of solid state storage by removing the difficulties associated with designing-in NAND-based memory and delivers unprecedented speed, with unrivaled reliability, ease of integration all in small form factor. For the numerous applications that are challenged by the severe limitations of the 1-inch HDD, STEC MACH4 1-inch SSD offers a more cost-effective, higher capacity and higher reliability alternative in an easy-to-implement solution.

MACH4 Features

- Ultra-compact footprint for highly space constrained applications – 1-inch Form Factor
- 4 independent flash channels for ultra-high performance
- SATA and ATA support
- SATA-I, Ultra DMA, MWDMA, and PIO mode support
- Capacities up to 32GB
- Support for newest flash technologies to provide long product lifecycle
- Built-in Wear Leveling and Block Management for ultra-high endurance
- Full data-path protection with built-in 8-bit ECC engine for highest reliability
- Built-in power-down data protection
- Optional security features including AES encryption, write-protect, and data purge
- Commercial and Industrial Operating Temperature Range
- Lower power, reduced latency, and faster boot times compared to traditional hard disks
- Full RoHS 6/6 compliance

Specifications

Capacity	8GB to 32GB
<hr/>	
Interface	
Type	SATA 1 / ATA-7 PCMCIA / CompactFlash
Transfer modes:	UDMA 0-6, MWDMA 0-4, PIO 0-6 PC Card Memory, PC Card I/O, True IDE and Ultra DMA
<hr/>	
Performance	
To/From Host	
Sustained Read	Up to 90MB/sec
Sustained Write	Up to 55MB/sec
<hr/>	
Electrical	
DC Input Voltage	5V (± 5%) or 3.3V (± 5%)
<hr/>	
Power consumption	
Idle Mode	50 mA (max)
Operating Mode	210 mA (max)
<hr/>	
Environmental	
Operating Temperature	
Commercial	0° to 70°C
Industrial	-40° to 85°C
Storage Temperature	-65° to 150°C
Humidity	5% to 95% non-condensing
Operating Vibration	20G; 10-2000 Hz @147 meter/sec ²
Operating Shock	1500G; 4903.3 meter/sec ²
<hr/>	
Reliability	
MTBF (Mean Time Between Failure)	greater than 8,000,000 hours
Endurance	Varies with usage
Non-Recoverable Error Rate	less than 1 in 10 ¹⁴ bits read
<hr/>	
PHYSICAL DIMENSIONS	
	1.43 in (L) x 1.68 in (W) x 0.13 in (H) 36.4mm (L) x 42.8mm (W) x 3.3mm (H)
<hr/>	
Compliance	
RoHS-6, UL 60950, FCC – Class B for Information Technology, CE – EN 55022/55024 CFA 4.1 Compatible, PCMCIA 7.0 Compatible	

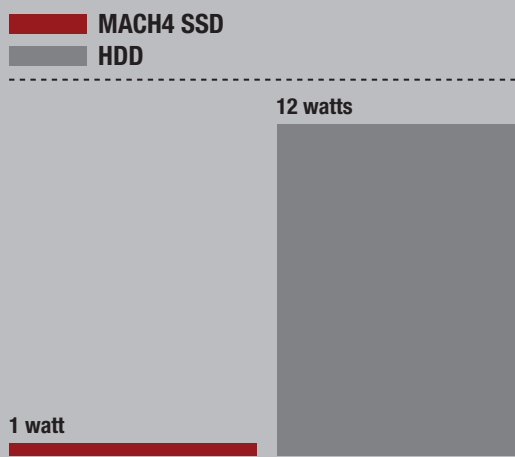
Related Applications

- Communications Equipment/Networking
- Enterprise Computing
- Embedded/Industrial
- Professional Media
- Military / Aerospace
- Automotive

Related Applications

- Life Cycle Management
- Flash Management
- TotalDriveProtection
- Power-down Data Protection
- Flash Controller Technology

MACH4 CF vs. HDD Comparison



Power Consumption Chart

Product Key

Part #: SLCFxGM4U(I)

- x = Capacity (8, 16, 32 GB)
- G = Gigabyte
- U = RoHS-6 Compliant
- I = Industrial Temperature

Examples:

SLCF8GM4U(I) = 8GB MACH4 SSD Card
Industrial Temperature

Worldwide Headquarters

STEC, Inc.
3001 Daimler Street
Santa Ana, California 92705 USA
Tel: (949) 476-1180
Fax: (949) 476-1209
Web: www.stec-inc.com

STEC Europe

Donau-City-Strasse 1
1220 Vienna, Austria
Tel: +43-1-263-38-08
Fax: +43-1-263-37-65

STEC Japan

Arents Daikanyama 114
11-1 Hachiyama-cho
Shibuya-ku, Tokyo
150-0035 Japan
Tel: +81 (0) 3-5428-2231
Tel: +81 (0) 3-5489-0230

STEC Malaysia

STEC Technology Sdn Bhd
Plot 107 Bayan Lepas Industrial Park
Phase 4, 11900 Penang, Malaysia
Phone: +60 (4) 6198888

STEC China

RM1805, 18F Bund Centre
222 Yan An Rd. East
HuangPu District Shanghai, 200002
P.R. China
Tel: +81 21 6132 3892 ext. 629