



Security with Versatility

Phison PS3117-S17TI (Phison S17TI) is a mature and reliable DRAM-less SATA SSD controller IC solution widely adopted in industrial applications and embedded IPC devices. Its sturdy build ensures durability in critical environments while the form factor selections accommodate diverse deployment scenarios. With advanced data protection features from Phison, the S17TI is a reliable option for read-intensive applications in need of data security including finance and surveillance systems.

Application

IPC System Boot Device
Surveillance Device
Medical Imaging Applications
Financial Transaction Systems



Product Features

Deployment Versatility

Meant for storage in diverse applications from the SATA III era, the S17TI is enabled on multiple form factors for flexible utility and adaptability. With options available from generic M.2 and 2.5" modules to compact designs in half slim, mSATA, and Cfast cards, the S17TI will fit in perfectly for any solution use cases.

Flexible Security Options

The S17TI is well-equipped for the implementation of multiple security functions compliant to industry standards. Along with Phison's proprietary End-to-End Data Path Protection design, the S17TI comes with full protection from malware and hacking to eliminate risk of security breaches.

Wide-range Temperature Durability

Paired with selected premium NAND flash and dexterous firmware mechanisms, the S17TI operates smoothly in extreme temperatures from -40°C to 85°C. Its reliable performance in demanding environments makes it a dependable choice for applications that require an all-in-one package of ruggedness, consistency, and reliability.

Ultra-reliable Design

Comprehensive quality assurance measures ensure consistent performance and minimal risk of device breakdowns. Built for mission-critical applications such as data archiving, communication systems, video surveillance systems, and other high-stakes settings, the S17TI provides peace of mind with excellent reliability and durability.

CONTROLLER

PS3117-S17TI

Features	Specifications
Host Interface	<ul style="list-style-type: none">- SATA III interface- Backward compatible with existing SATA generation transfer rates- Compliance with SATA Revision 3.2
Processor	<ul style="list-style-type: none">- Single-CPU architecture with built-in Arm Cortex-R5- UMC 28nm process technology
Flash Controller	<ul style="list-style-type: none">- Up to 2 Channels with 16 Chip Enable (CE) counts- Flash transfer rate up to 1.4GT/s Toggle/ONFI interface- Capacity up to 2TB- Support 3D TLC NAND flash memory- Flash I/O operating voltage supply 1.2V/1.8V
Data Reliability	<ul style="list-style-type: none">- Phison LDPC ECC & RAID ECC- End-To-End Data Path Protection
Security	<ul style="list-style-type: none">- TCG Opal- AES 256
Performance	<ul style="list-style-type: none">- Sequential Read up to 550MB/s- Sequential Write up to 510MB/s- 4K Random Read up to 95K IOPS- 4K Random Write up to 85K IOPS
Temperature Range	<ul style="list-style-type: none">- Operating range: 0~70 °C- Storage range: -40~85 °C
Package	<ul style="list-style-type: none">- 169-ball LFBGA, 9 mm x 9 mm
Peripheral	<ul style="list-style-type: none">- Built-in internal thermal sensor- GPIO pins- Built-in UART function- SPI for external ROM

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Solutions

PS3117-S17TI

Product Serie	MST360						
Interface	SATA III Revision 3.1						
Form Factor	2.5"	M.2 2280	M.2 2242	mSATA	mSATA mini	Cfast	Half Slim
NAND Flash	3D TLC	3D TLC	3D TLC	3D TLC	3D TLC	3D TLC	3D TLC
Capacity ⁽¹⁾	64GB - 2TB	64GB - 2TB	64 GB - 1 TB	64 GB - 2 TB	64 GB - 1 TB	64 GB - 1 TB	64 GB - 256 GB
Performance ^(2,3)							
Sequential Read	550 MB/s	550 MB/s	550 MB/s	550 MB/s	550 MB/s	550 MB/s	540 MB/s
Sequential Write	510 MB/s	510 MB/s	500 MB/s	510 MB/s	500 MB/s	500 MB/s	485 MB/s
4K Random Read	94K IOPS	94K IOPS	90K IOPS	94K IOPS	94K IOPS	90K IOPS	72K IOPS
4K Random Write	85K IOPS	85K IOPS	83.5K IOPS	85K IOPS	84K IOPS	83.5K IOPS	82.5K IOPS
Power Consumption ⁽⁴⁾							
Supply Voltage	+ 5V ± 5%	+ 3.3V ± 5%	+ 3.3V ± 5%	+ 3.3V ± 5%	+ 3.3V ± 5%	+ 3.3V ± 5%	+ 5V ± 5%
Active (Average)	1.45W	1.75W	1.4W	1.75W	1.2W	1.4W	1.3W
Idle	215mW	210mW	195mW	210mW	195mW	180mW	180mW
Low Power PS4 (L1.2) (Optional)	5 mW	5 mW	5 mW	5 mW	5 mW	5 mW	5 mW
Environmental							
Operating Temperature	0°C - 70°C (Normal Temp.) -40°C - 85°C (Wide Temp.)						
Non-Operating Temperature	-40°C - 85°C						
Certification	RoHS						
Reliability & Warranty							
TBW (Max) ⁽⁶⁾	2900 TB	2900 TB	1080 TB	2900 TB	1080 TB	1080 TB	220 TB
Warranty	3 years						
MTBF	> 2.5 million hours						
UBER	<10 ⁻¹⁶ bits						
Advanced Features							
<div>- End-to-End Data Protection</div> <div>- Self Encrypting Function (Optional): AES 256, TCG Opal 2.0</div> <div>- SamrECC™: LDPC + RAID ECC</div> <div>- Cross Die Bad Block Management</div> <div>- Thermal Protection Mechanism</div> <div>- Security Function (Optional): Write Protect, Secure Erase, Crypto Erase, Physical Presence SID (PSID), GPIO Quick Erase</div> <div>- Firmware Upgrade</div> <div>- Low Power Management: DEVSLP Mode (Optional), DIPM/HIPM Mode</div>							

(1) 1 GB = 1,000,000,000 bytes

(2) Sequential Performance was measured with CrystalDiskMark 6.0 x64 with SATA 6Gbps host

(3) Random Performance is based on IOMeter, 1GB range, 4K data size, QD32T8

(4) Power consumption is measured during the sequential read and write operations performed by CrystalDiskMark with the conditions described in (2)

(5) TBW is Total Bytes Written and the results are obtained in compliance with JEDEC219A Standards



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