s1100 Series
PCIe Accelerator

Enterprise-Class Solid-State Device

When today's "new normal" requires doing more with less, the HGST® s1100 Series PCIe Accelerator more than meets the challenge.

Enterprise data centers and cloud computing environments demand highdensity, high-performance servers to ensure consistent high levels of application performance and compliance with Service Level Agreements. The s1100 Series PCIe Accelerator delivers unprecedented server consolidation for virtualized environments and higher transaction rates supporting enterprise applications and designs while reducing footprint and power consumption.

In addition to its low latency and high-performance capabilities, the s1100 Series PCIe Accelerator integrates HGST's industry-leading CellCare™, Secure Array of Flash Elements™ (SAFE) and PowerSafe™ technologies into an ASIC-based SSD controller to provide an unparalleled combination of endurance and data protection for mission-critical enterprise and cloud computing applications.

Maximize Server Consolidation – Minimize Data Center Sprawl

The s1100 Series PCIe Accelerator is custom-engineered to meet the demands of enterprise data centers and cloud computing applications. Time is money in these service-intensive environments, and the s1100 Series PCIe Accelerator speeds up server performance without consuming server CPU and memory resources. This enables data centers to deploy fewer and lowercost servers for unparalleled application-level acceleration and data center consolidation.

Features and Benefits

Feature / Function	Benefits
Fast Access to Data	Provides faster responses to host requests and accelerates enterprise applications
HGST integrated ASIC	Integrates flash subsystem and PCIe technology into the most power-efficient, lowest-cost, single-ASIC solution to provide high application performance while reducing server CPU and memory footprints
Data Protection	PowerSafe Technology provides instant backup and recovery in the event of an unplanned power failure
High Reliability	Secure Array of Flash Elements (SAFE) Technology provides ability to recover from NAND flash page, block, die and chip failures, and maximizes the Mean Time Between Failure (MTBF) and Mean Time To Data Loss (MTTDL)
High Endurance	CellCare Technology extends the life of flash media to deliver enterprise-class endurance through advanced signal processing and adaptive flash management algorithms
Low-profile PCIe form factor	Packs the highest density per available form factor for remarkable savings in data center space requirements
Low-power design	Lower total power consumption for extraordinary savings in data center power and energy requirements

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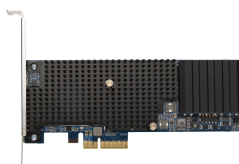
Enterprise-Class Solid-State Device

HGST s1120 PCIe Accelerators improve access to data in server and storage applications —including virtualized environments, Web serving and hosting, and database deployments such as SQL server, Oracle and In-Memory Computing. This accelerates performance in enterprise data centers and cloud computing applications, as well as Web 2.0 and social media environments. Built on fourth-generation SSD controller technology, HGST s1120 PCIe Accelerators are an enterprise-class solution that delivers low latency, high performance and enterprise-class reliability.

Information and Technical Support
www.hgst.com (Main Web site)
www.hgst.com/partners (Partner Web site)

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Program Support
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Specifications

Models				
	s1120			
	s1122			

Interface				
Host Interface	PCIe Gen 2.0 (x4)			
Form Factor	Half-Height, Half-Length add-in card			
Dimensions	68.9 mm (H) x 167 mm (L)			
Weight	6.24 Oz (176g)			

Performance (High Performance)				
Available Capacities*	**200GB**	**400GB**	**800GB**	**1.6TB**
Sustained Read Throughput	1.5 GB/s	1.4 GB/s	1.4 GB/s	1.4 GB/s
Sustained Write Throughput	1.1 GB/s	600 MB/s	1.1 GB/s	1.1 GB/s
Max 100% Read IOPS	145,000	145,000	155,000	155,000
Max 100% Write IOPS	150,000	165,000	165,000	165,000
Random Read IOPS (8k steady state)	100,000	85,000	85,000	85,000
Random Write IOPS (8k steady state)	50,000	35,000	54,000	54,000
Latency 512B	18μs	23μs	23μs	23μs

Performance (High Capacity)				
Available Capacities*	**240GB**	**480GB**	**1TB**	**2TB**
Sustained Read Throughput	1.5 GB/s	1.4 GB/s	1.4 GB/s	1.4 GB/s
Sustained Write Throughput	1.1 GB/s	600 MB/s	1.1 GB/s	1.1 GB/s
Max 100% Read IOPS	145,000	145,000	145,000	145,000
Max 100% Write IOPS	150,000	145,000	145,000	145,000
Random Read IOPS (8k steady state)	100,000	85,000	85,000	85,000
Endurance (via CellCare™)	up to 55PB	up to 33PB	up to 66PB	up to 90PB**

Environmental				
Power Consumption - Max	Max <25watts			
Operating Temperature	0° to 55° C ambient @ 300lfm (Commercial)			
Non-Operating Temperature	-40° to 85° C			
JEDEC Compliance	3-Month retention at 40c at EOL			

Operating Systems	
	64 Bit Windows Server 2008 R2;Windows Server 2012, OEL 6.2,RHEL 5.6/6.0/6.1/6.2/6.3/6.4;Centos 6.3, SLES 11, SP1, SP2;Solaris 11;VMware ESX 4.1,ESXi4.1,VMware Vshpere 5.0, Vmware ESX 5.1

Software	
(SDM) HGST Device Manager	CLI and GUI Interface

[1] One GB is equal to one billion bytes when referring to hard drive capacity. Accessible capacity will vary depending on the operating environment and formatting.
[2] Portion of buffer capacity used for drive firmware
[3] MB is equal to MillionBytes
[4] Excludes command overhead
[5] MTBF target is based on a sample population and is estimated by statistical measurements and acceleration algorithms under median operating conditions. MTBF ratings are not intended to predict an individual drive's reliability. MTBF does not constitute a warranty.

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