NS5700 HLSSD

Redefining Flash Storage from the inside out

- PCIe Gen2 x4 host interface
- SFF-8639 (SATA/SAS/PCIe combo) 2.5" standard connector
- Breakthrough capacity and scalability—up to 8TB SSD in 2.5" form factor with a single SSD controller
- Revolutionary HyperLink NAND (HLNAND) technology—no practical limit on number of devices per channel with ring architecture
- Excellent performance—point-to-point connection provides excellent signal integrity—1800MB/s for sequential Read/Write, up to 360K IOPS for random Read/Write
- Low power—single controller, low voltage IO, un-terminated bus, data truncation, hierarchical MCP
- Reduced system cost—single controller, small footprint, reduced networking infrastructure—lower data center TCO
- Ultimate endurance—optimized for random write workloads up to 10 full drive writes per day (DWPD, JESD219 workload)
- Ultra-high capacity Tier-0 to Tier-2 enterprise solid state storage solution
- Supported sector size: 512, 4096 Bytes
- Hardware-based AES-256 encryption engine
- Self-encrypting models conform to TCG/Opal 2.0 enterprise specification
- Hot-pluggable removal and insertion providing in-service replacement options
- Sudden power off recovery—securing data responded to host with internal power back-up solution
- Power and thermal throttling—auto peak power control by monitoring on-board temperature sensor
- Chip-level RAID—data protection beyond ECC and single die failure recovery
- 4TB/8TB capacity available in 7mm / 15mm z-heights for space-constrained rack units in data centers

EXPRESS SERIES

As enterprises and data centers are increasingly investing in “Big Data” and other memory-intensive applications, they are adopting SSD (solid state drive) technology to power these initiatives. Novachips’ Express-series HLSSD is a unique solid state drive designed to deliver a massive storage capacity and performance revolution for enterprise applications. Express does this by combining unique HyperLink NAND flash memory technology with comprehensive endurance management firmware and power loss data protection techniques. The result is extended reliability, endurance, and sustained performance over the life of the SSD. The Novachips’ SSD family will enhance data center performance, conserve power and cooling resources and maximize space efficiency. Since Novachips brings proven SSD expertise in MLC SATA and PCIe design, firmware, reliability, customer qualification and system integration, the Novachips’ Express-series HLSSD family breaks the capacity bottlenecks associated with the conventional NAND flash IO constraints. Scale up your data center storage with the Novachips’ Express-series HLSSD family’s capacity and performance.

Specifications	2.5", (7mm z-Height)		2.5", (15mm z-Height)	
	2TB[1]	4TB[1]	4TB[1]	8TB[1]
Model Number	NS57P02TMC1-I	NS57P04TMC1-I	NS57P04TMC2-I	NS57P08TMC2-I
Interface	PCIe Gen2 x4	PCIe Gen2 x4	PCIe Gen2 x4	PCIe Gen2 x4
NAND Flash Type	MLC	MLC	MLC	MLC
Performance[3]				
Seq. Read/Write 128KB (MB/s)	Up to 1800 / 1800	Up to 1800 / 1800	Up to 1800 / 1800	Up to 1800 / 1800
Random Read/Write 4KB (IOPS)	Up to 360K / 360K	Up to 360K / 360K	Up to 360K / 360K	Up to 360K / 360K
Avg. Latency Read/Write	40µs/40µs	40µs/40µs	40µs/40µs	40µs/40µs
Reliability				
UBER	1 in 10^{17}	1 in 10^{17}	1 in 10^{17}	1 in 10^{17}
MTBF[2]	2,000,000 hours	2,000,000 hours	2,000,000 hours	2,000,000 hours
Data Integrity	End-to-end Data Protection			
DWPD	10	10	10	10
Warranty	5 years			
Encryption	AES-256, TCG/Opal 2.0			
Power & Environmental				
Power consumption (Active/Idle)	5.6/1.0 W	6.8/1.0 W	6.8/1.0 W	7.6/1.0 W
Operating Temperature	-40 to 85°C	-40 to 85°C	-40 to 85°C	-40 to 85°C
Non-Operating Temperature	-55 to 95°C	-55 to 95°C	-55 to 95°C	-55 to 95°C
Shock, 0.5ms (Gs)	1500	1500	1500	1500
Physical				
Depth x Width x Height	100.45mm x 69.85mm x 7.0mm		100.45mm x 69.85mm x 15.0mm	
Weight	78g	88g	140g	165g

1. *One gigabyte (GB) is equal to one billion bytes, one terabyte (TB) equals 1,000GB (one trillion bytes), and one petabyte (PB) equals 1,000TB (one quadrillion bytes) when referring to hard drive or solid state drive capacity. Accessible capacity will vary from the stated capacity due to formatting and partitioning of the drive, the computer's operating system, and other factors.*
2. *MTBF target is based on a sample population and is estimated by statistical measurements and acceleration algorithms under nominal operating conditions. MTBF ratings are not intended to predict an individual drive's reliability. MTBF does not constitute a warranty.*
3. *Based on internal testing, performance may be lower depending upon host device, OS and application.*

Powered by HL NAND