DERA
For Data Vitality

PCIe 5.0 NVMe SSD
D8436/ D8456

Highlights

- NVMe 2.0 compliant
- Support U.2 Form Factor
- Data integrity of enterprise class
- 3.2TB-15.36TB capacity options
- Seq.R Bandwidth Up to 14.2GB/s
- Seq.W Bandwidth Up to 10.5GB/s
- Rand.R IOPS Up to 3400K
- Rand.W IOPS Up to 1150K
- Support hot-plug
- Support Power Loss Data Protection

- Support NVMe-MI Management interface
- Support Telemetry Log Collection
- Support Firmware Online Update (NVMe-MI over MCTP)
- Support UEFI/Legacy BIOS Bootable
- Support Secure Erase
- Support advanced device self-test
- Support for mainstream operating system native drivers

Applications & Workloads

- Database
- Cloud Computing
- Streaming, CDN
- Big Data Analytics
- AI/ ML/ DL Training
- Software Defined Storage
- Banking & Telecom

PCIe 5.0 Architecture

DERA D8436/D8456 NVMe SSD adopt a new architecture of domestically produced PCIe 5.0 controller, which supports NVMe 2.0 protocol and various important enterprise level functions including hardware security, data path protection, power down protection, secure erase, advanced device self-test, firmware online update, etc.

D8436/D8456 offer endurance and capacity options of 1 DWPD (5 years) 3.84TB/7.68TB/ 15.36TB, and 3 DWPD (5 years) 3.2TB/6.4TB/12.8TB, to meet the business needs of different enterprise level application scenarios.

Enterprise-Class Data Integrity

DERA D8436/D8456 NVMe SSD achieves an organic combination of out of band management, adaptive dynamic RAID protection, end-to-end data protection, unexpected power-losses and processing technologies, providing users with comprehensive data security protection. The D8436/D8456 NVMe SSD monitors the health status of the device in real-time during operation and takes corresponding actions in a timely manner. The upper level management software can monitor the device status and accurately predict and handle potential faults.

Ultra Low Latency and High Performance

DERA D8436/D8456 NVMe SSD has the advantages of high performance, low latency, and stable performance. The steady-state random write can reach up to 1150K IOPS, and the random read/write latency is as low as 55/5us, providing users with a high-speed processing and low latency user experience for data center business. Meanwhile, due to the innovation of SSD controller architecture, firmware management algorithms intelligently schedule and control different types of I/O requests, ensuring that device performance remains stable under extreme conditions of high pressure and variable workloads. D8436/D8456 NVMe SSD deliver a performance consistency above 95% in significantly heavy random I/O workloads.

Product Series	D8436			D8456		
Capacity （TB）	3.84	7.68	15.36	3.2	6.4	12.8
Form Factor	U.2					
Host Interface	PCIe 5.0 x4					
NVMe Compliance	NVMe 2.0					
NAND	3D TLC NAND					
Seq. Read/Write[1]	Up to 14.2/10.5 GB/s			Up to 14.2/10.5 GB/s		
Ran. Read/Write[2]	Up to 3400K/580K IOPS			Up to 3400K/1150K IOPS		
Ran. R/W Latency(μs)[3]	55/5					
Power[4] Max	20W					
Power[4] Idle	6W					
DWPD (5 years)	1 DWPD			3 DWPD		
UBER	$< 10^{-18}$					
MTBF	2.5 million hours					
Temperature	0-77°C					
Feature	Hot-Plug，On-line Firmware update, NVMe-MI over MCTP，E2E Data Protection, Variable Sector Size，Advanced Device self-test, Secure Erase, EUI64/NGUID					

[1] 100% LBA，Seq. Read/Write 128KB block size;

[2] 100% LBA，Ran. Read/Write 4KB block size;

[3] 100% LBA，Ran. Read/Write 4KB block size，TC=1，QD=1；TC(Number of threads)，QD(queue depth);

[4] 100% LBA，Seq. Read/Write 128KB block size, Ran. Read/Write 4KB block size，Sampling interval time 100ms.

* Performances measured by FIO tool on Linux, result may differ according to testing platform. 1MB/s = 1,000,000 bytes/second.

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