DERA
For Data Vitality

# PCIe 5.0 NVMe SSD

# D8437/ D8457


## Highlights

- NVMe 2.0 compliant
- Support U.2 Form Factor
- Data integrity of enterprise class
- 3.2TB-15.36TB capacity options
- Up to 13.5/10.0 GB/s sequential read/write
- Up to 3200K/870K random read/write IOPS
- Support for mainstream operating system native drivers
- Support hot-plug
- Support Power Loss Data Protection
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- 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 TCG Opal SSC v2.01
- Supports AES256/SHA2 - 512/RSA - 4096 encryption

## Applications & Workloads

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

### PCIe 5.0 Architecture

DERA D8437/D8457 NVMe SSDs adopt a new PCIe 5.0 controller architecture and support various data center functions including hardware security, advanced telemetry, visualization, data path protection, power loss protection and so on. The D8437/D8457 provides two durability levels and multiple capacity options: 1 DWPD (5 years) with 3.84/7.68/15.36TB and 3 DWPD (5 years) with 3.2/6.4/12.8TB, meeting the business needs of different enterprise-level application scenarios.

### Enterprise-Class Data Integrity

DERA D8437/D8457 NVMe SSD integrates technologies such as out-of-band management, adaptive dynamic RAID protection, end-to-end protection, and unexpected power loss detection/handling. It supports encryption algorithms including AES256, SHA2-512, and RSA-4096 to provide users with comprehensive data security safeguards. During operation, the D8437/D8457 NVMe SSD continuously monitors device health in real time and takes prompt corresponding actions, while upper-layer management software can monitor device status and accurately predict and address potential faults.

### Ultra Low Latency and High Performance

DERA D8437/D8457 NVMe SSD has the advantages of high performance, low latency, and stable performance. The steady-state random write can reach up to 870K IOPS, and the random read/write latency is as low as 75/10us, 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. D8437/D8457 NVMe SSD deliver a performance consistency above 95% in significantly heavy random I/O workloads.

| Product Series | | D8437 | | | D8457 | | |
|---|---|---|---|---|---|---|---|
| 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 & OCP Datacenter NVMe SSD 2.0 | | | | | |
| NAND | | 3D TLC NAND | | | | | |
| Seq. Read/Write[1] | | Up to 13.5/ 10.0 GB/s | | | Up to 13.5/ 10.0 GB/s | | |
| Ran. Read/Write[2] | | Up to 3200K/ 470K IOPS | | | Up to 3100K/ 870K IOPS | | |
| Ran. R/W Latency(μs)[3] | | 75/10 | | | | | |
| Power [4] | Max | 22W | | | | | |
| | Idle | 5W | | | | | |
| DWPD (5 years) | | 1 DWPD | | | 3 DWPD | | |
| UBER | | $< 10^{-17}$ | | | | | |
| MTBF | | 2.5 million hours | | | | | |
| Temperature | | 0-70°C | | | | | |
| Feature | | On-line Firmware update、Weight Round Robin、NVMe-MI over MCTP、AES256/SHA2-512/ RSA-4096 encryption、E2E Data Protection、Variable Sector Size、TCG Opal SSC v2.01 | | | | | |

[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.