



ENTERPRISE D-SERIES

D100 PCIe Gen4 Data Center High-Speed Storage in M.2 and E1.S Form Factors

The D100 has enterprise SSD firmware optimized for data center applications that supports a high Quality of Service (QoS) in command execution completion times. Phison's business model is to customize the D100 Series SSD platform to our customers' unique application and brand requirements making the Enterprise SSD truly unique to each partner.



Product Features

Phison 4th Generation LDPC ECC Engine

While flash memory cells deteriorate with use and can generate stored data bit errors, the D100 utilizes Phison's proprietary Low Density Parity Check error-correcting code algorithm to ensure robust data entry and extraction, as well as protection from internal corruption.

Market-leading Performance

Manufactured using TSMC's 12nm process technology, the D100 is optimized for a PCIe Gen4x4 interface, enabling SSDs with maximized bandwidths and link efficiency. Paired with state-of-the-art 3D NAND flash memory chips, the D100 handles application payloads immaculately with minimal latency.

PCIe Gen4x4 and Backward Compatibility

The D100 SSD is designed with the PCIe Gen4x4 interface and the NVMe 1.4 command specification, making it an excellent performance upgrade for PCIe Gen3 and Gen4 M.2 2280 slots.

Security Features

The D100 supports the latest security and encryption standards defined by Pyrite, AES256, SHA512, and RSA4096.

Solutions - D100P

| M.2 2280 | | | | | |
|---|--|-----------------------|---|-----------|-----------|
| | Capacity ⁽¹⁾ | 480GB | 960GB | 1920GB | - |
| Performance ^(2,3) | Sequential Read | 6000 MB/s | 6000 MB/s | 6000 MB/s | - |
| | Sequential Write | 700 MB/s | 1400 MB/s | 2000 MB/s | - |
| | 4K Random Read | 450K IOPS | 750K IOPS | 800K IOPS | - |
| | 4K Random Write | 25K IOPS | 50K IOPS | 60K IOPS | - |
| Power Consumption ⁽⁴⁾ | Max | 8.5 W | 9.5 W | 11.0 W | - |
| | Idle | 4 W | 4 W | 4.2 W | - |
| Latency | 4K Random Read | 75 us | 75 us | 75 us | - |
| | 4K Random Write | 40 us | 35 us | 35 us | - |
| M.2 22110 | | | | | |
| | Capacity ⁽¹⁾ | 480GB | 960GB | 1920GB | 3840GB |
| Performance ^(2,3) (Est.) | Sequential Read | 6000 MB/s | 6000 MB/s | 6000 MB/s | 4500 MB/s |
| | Sequential Write | 700 MB/s | 1400 MB/s | 2000 MB/s | 1700 MB/s |
| | 4K Random Read | 450K IOPS | 750K IOPS | 800K IOPS | 400K IOPS |
| | 4K Random Write | 25K IOPS | 50K IOPS | 60K IOPS | 50K IOPS |
| Power Consumption ⁽⁴⁾ (Est.) | Max | 8.5 W | 9.5 W | 11.0 W | 11.55 W |
| | Idle | 4 W | 4 W | 4.2 W | 4.2 W |
| Latency (Est.) | 4K Random Read | 75 us | 75 us | 75 us | 80 us |
| | 4K Random Write | 40 us | 35 us | 35 us | 15 us |
| E1.S | | | | | |
| | Capacity ⁽¹⁾ | 480GB | 960GB | 1920GB | 3840GB |
| Performance ^(2,3) | Sequential Read | 6500 MB/s | 6800 MB/s | 6800 MB/s | 6800 MB/s |
| | Sequential Write | 700 MB/s | 1400 MB/s | 2000 MB/s | 1700 MB/s |
| | 4K Random Read | 450K IOPS | 800K IOPS | 900K IOPS | 650K IOPS |
| | 4K Random Write | 25K IOPS | 50K IOPS | 60K IOPS | 70K IOPS |
| Power Consumption ⁽⁴⁾ | Max | 9.5 W | 10.5 W | 13.5 W | 12.5 W |
| | Idle | 4 W | 4 W | 4.2 W | 4.2 W |
| Latency (Est.) | 4K Random Read | 75 us | 75 us | 75 us | 80 us |
| | 4K Random Write | 40 us | 30 us | 25 us | 20 us |
| Features | | | | | |
| | Interface | PCIe 4.0 x4 | | | |
| | NAND Flash | 3D TLC | | | |
| | DWPD ⁽⁵⁾ | 1 | | | |
| | UBER | 1 in 10 ¹⁷ | | | |
| | Operating Temperature | 0°C - 70°C | | | |
| | Non-Operating Temperature | -40°C - 85°C | | | |
| Key Features | | | | | |
| | <ul style="list-style-type: none"> LDPC NVMe 1.4 End-to-End Data Protection | | <ul style="list-style-type: none"> TCG Opal 2.0⁽⁶⁾ Sanitize⁽⁶⁾ NVMe-MI⁽⁶⁾ | | |

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

(2) Sequential Performance is based on FIO on Linux, 128K, with QD=32, 1 worker, and test drive set as secondary.

(3) Random Performance is based on FIO on Linux, 4K data size, QD=32, 1 worker, 4K aligned.

(4) FIO with QD32 and worker 1 for 128KB sequential read/write 1min & QD32 and worker 8 for 4KB random read/write 1min test to measure the power of active read/write. (5) The results of DWPD are obtained in compliance with JESD219A Standards.

(6) Supported by a separate firmware setting. Further information available upon request.



The data within this specification is subject to change by Phison without notice. Performance numbers may vary based on system configuration and testing conditions. Copyright © 2024 Phison Electronics. All rights reserved.