

ENTERPRISE D-SERIES

MP-D100 PCIE GEN4 DATA CENTER HIGH-SPEED STORAGE IN M.2 AND E1.S FORM FACTORS

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

KEY FEATURES

Interface	PCIe 4.0 x4 (single port x4 lanes/dual port x2 lanes)
NAND Flash	3D TLC
DWPD	1
UBER	<1 sector per 10 bits
Operating Temperature	0°C - 70°C
Non-Operating Temperature	-40°C - 85°C
MTBF (million years)	2



PRODUCT FEATURES

MiPhi 4th Generation LDPC ECC Engine

While flash memory cells deteriorate with use and can generate stored data bit errors, the MP-D100 utilizes MiPhi'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 MP-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 MP-D100 handles application payloads immaculately with minimal latency.

PCIe Gen4x4 and Backward Compatibility

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

MP-D100P Specifications

E1.S					
	Capacity	480GB	960GB	1920GB	3840GB
Performance	Seq Read	6,500 MB/s	6,800 MB/s	6,800 MB/s	6,800 MB/s
	Seq Write	700 MB/s	1,400 MB/s	2,000 MB/s	1,700 MB/s
	Random Read	450K IOPS	800K IOPS	900K IOPS	650K IOPS
	Random Write	25K IOPS	50K IOPS	60K IOPS	70K IOPS
Power Consumption	Max	8.4 W	10.1 W	11.9 W	11.8 W
	Idle	4 W	4 W	4.2 W	4.2 W
Latency	Read Latency	75 us	75 us	75 us	80 us
	Write Latency	40 us	30 us	25 us	25 us

KEY FEATURES	
Enterprise Features Support List: <ul style="list-style-type: none">• Namespace• Dual port• Reservation• Metadata protection• Powerloss protection• Hardware AES-XTS 256-bit encryption• Support SMBbus	Compliance Support List <ul style="list-style-type: none">• PCIe 4.0• NVMe 1.4• Management Interface• Rev 1.1 TCG Opal 2.0(6)• Sanitize(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) Power consumption is measured during the sequential read/write and random read/write operations performed by iometer with the conditions described in (2)(3).
(5) The results of DWPD are obtained in compliance with JESD219A Standards.



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MP-D100P Specifications

U.2				
	Capacity	480GB	960GB	1920GB
Performance	Seq Read	6,500 MB/s	6,800 MB/s	6,800 MB/s
	Seq Write	700 MB/s	1,400 MB/s	2,000 MB/s
	Random Read	450K IOPS	800K IOPS	900K IOPS
	Random Write	25K IOPS	50K IOPS	60K IOPS
Power Consumption	Max	8.4 W	9.0W	11.7 W
	Idle	4 W	4 W	4.2 W
Latency	Read Latency	75 us	75 us	75 us
	Write Latency	35 us	20 us	20 us

KEY FEATURES	
Enterprise Features Support List: <ul style="list-style-type: none">• Namespace• Dual port• Reservation• Metadata protection• Powerloss protection• Hardware AES-XTS 256-bit encryption• Support SMBbus	Compliance Support List <ul style="list-style-type: none">• PCIe 4.0• NVMe 1.4• Management Interface• Rev 1.1 TCG Opal 2.0(6)• Sanitize(6)

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MP-D100P Specifications

M.2 2280				
	Capacity	480GB	960GB	1920GB
Performance	Seq Read	6,000 MB/s	6,000 MB/s	6,000 MB/s
	Seq Write	700 MB/s	1,400 MB/s	1,800 MB/s
	Random Read	450K IOPS	750K IOPS	800K IOPS
	Random Write	25K IOPS	50K IOPS	60K IOPS
Power Consumption	Max	8.0 W	9.3 W	11 W
	Idle	3.5 W	3.5 W	3.5 W
Latency	Read Latency	75 us	75 us	75 us
	Write Latency	40 us	35 us	35 us

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Enterprise Features Support List: <ul style="list-style-type: none">• Namespace• Dual port• Reservation• Metadata protection• Powerloss protection• Hardware AES-XTS 256-bit encryption• Support SMBbus	Compliance Support List <ul style="list-style-type: none">• PCIe 4.0• NVMe 1.4• Management Interface• Rev 1.1 TCG Opal 2.0(6)• Sanitize(6)

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MP-D100P Specifications

M.2 22110					
	Capacity	480GB	960GB	1920GB	3840GB
Performance	Seq Read	6,000 MB/s	6,000 MB/s	6,000 MB/s	3,700 MB/s
	Seq Write	700 MB/s	1,400 MB/s	1,800 MB/s	1,700 MB/s
	Random Read	450K IOPS	750K IOPS	800K IOPS	400K IOPS
	Random Write	25K IOPS	50K IOPS	60K IOPS	40K IOPS
Power Consumption	Max	8.1 W	8.9 W	10.3 W	8.7 W
	Idle	4 W	4 W	4.2 W	4.2 W
Latency	Read Latency	75 us	75 us	75 us	80 us
	Write Latency	40 us	35 us	35 us	25 us

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