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ENTERPRISE X-SERIES

Feature-Rich PCIe Gen 5 Enterprise Storage Solutions

The Miphi X200 exists to support your diverse requirements in a single series. X200 delivers both single-port and dual-port modes while shipping in U.2 2.5" and E3.S form factors to give your data center reliable, and predictable performance that exceeds industry standards.

Product Features

- PCIe 5.0 1x4 / 2x2 (Dual port)
- NVMe 2.0
- Capacity up to 30.72TB
- Form Factor: U.2 / E3.S
- DWPD: 1 / 3
- 128 Namespaces
- Power Loss Protection (PLP)
- ISE, TCG Opal 2.0 Support
- AES-XTS 256-bit Encryption
- End-to-End Data Path Protection
- Metadata Protection
- SECDED
- Sanitize
- NVMe-MI (Management Interface)
- SMBus

Sequential Performance
Read 14,800 MB/s
Read 8,700K MB/s

Random Performance
Read 3,000K IOPS
Write 900K IOPS

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Solution MP-X200E

Form Factor	U.2				
Capacity[1]	1.6TB	3.2TB	6.4TB	12.8TB	25.6TB
Interface	PCIe 5.0 1x4, 2x2	PCIe 5.0 1x4, 2x2	PCIe 5.0 1x4, 2x2	PCIe 5.0 1x4, 2x2	PCIe 5.0 1x4, 2x2
NVMe	2.0	2.0	2.0	2.0	2.0
NAND Flash	3D TLC	3D TLC	3D TLC	3D TLC	3D TLC
Performance[2,3,4,6]					
Sequential Read(MB/s)	14,800	14,800	14,800	14,800	14,000 (Est.)
Sequential Write(MB/s)	4,300	8,600	8,700	8,350	7,500 (Est.)
4K Random Read(IOPS)	2400K	3,000K	3,000K	3,000K	2,300K (Est.)
16K Random Write(IOPS)	400K	800K	900K	900K	630K (Est.)
Read Latency (Typ., µs)	60	60	60	60	60
Write Latency (Typ., µs)	10	10	10	10	10
Power Consumption[5,6]					
Active (W)	<25	<25	<25	<25	<25
Idle (W)	5	5	5	5	5
Endurance/Reliability					
DWPD	3	3	3	3	3
UBER	< 1 sector per 10^{18} bits read	< 1 sector per 10^{18} bits read	< 1 sector per 10^{18} bits read	< 1 sector per 10^{18} bits read	< 1 sector per 10^{18} bits read
MTBF (million hours)	2.5	2.5	2.5	2.5	2.5
Limited Warranty (years)	5	5	5	5	5
Temperature					
Operating Temp. (°C)	0 - 70	0 - 70	0 - 70	0 - 70	0 - 70
Non-Operating Temp. (°C)	-40 - 85	-40 - 85	-40 - 85	-40 - 85	-40 - 85
Physical Dimension					
Length (mm)	100.10	100.10	100.10	100.10	100.10
Width (mm)	69.85	69.85	69.85	69.85	69.85
Height (mm)	15.00	15.00	15.00	15.00	15.00
Weight (g)	188	199	201	168	<250

(1) The product is still in the early development stage, all values provided are based on estimation.
(2) 1 TB = 1012 bytes.
(3) Sequential Performance is based on FIO on Linux, 128KB, with QD=32, 1 worker , and test drive set as secondary.
(4) Random Performance is based on FIO on Linux, 4KB data size, QD=32, 16 workers.
(5) Latency is measured with random workloads based on FIO on Linux, 4KB data size, QD=1, 1 worker.
(6) Power consumption (Maximum RMS) is measured during the sequential read/write and random read/write operations performed by iometer with the conditions described in (2)(3).
(7) The results of DWPD are obtained in compliance with JESD219A Standards.

Find more information and resources at: miphi.net

Solution MP-X200E

Form Factor	E3.S			
Capacity(1)	1.6TB	3.2TB	6.4TB	12.8TB
Interface	PCIe 5.0 1x4, 2x2	PCIe 5.0 1x4, 2x2	PCIe 5.0 1x4, 2x2	PCIe 5.0 1x4, 2x2
NVMe	2.0	2.0	2.0	2.0
NAND Flash	3D TLC	3D TLC	3D TLC	3D TLC
Performance[2,3,4,6]				
Sequential Read(MB/s)	14,800	14,800	14,800	14,800
Sequential Write(MB/s)	4,300	8,600	8,700	8,350
4K Random Read(IOPS)	2,400K	3,000K	3,000K	3,000K
16K Random Write(IOPS)	400K	800K	900K	900K
Read Latency (Typ., μs)	60	60	60	60
Write Latency (Typ., μs)	10	10	10	10
Power Consumption[5,6]				
Active (W)	<25	<25	<25	<25
Idle (W)	5	5	5	5
Endurance/Reliability				
DWPD(7)	3	3	3	3
UBER	< 1 sector per 10^{18} bits read	< 1 sector per 10^{18} bits read	< 1 sector per 10^{18} bits read	< 1 sector per 10^{18} bits read
MTBF (million hours)	2.5	2.5	2.5	2.5
Limited Warranty (years)	5	5	5	5
Temperature				
Operating Temp. (°C)	0 - 70	0 - 70	0 - 70	0 - 70
Non-Operating Temp. (°C)	-40 - 85	-40 - 85	-40 - 85	-40 - 85
Physical Dimension				
Length (mm)	112.75	112.75	112.75	112.75
Width (mm)	76.00	76.00	76.00	76.00
Height (mm)	7.50	7.50	7.50	7.50
Weight (g)	TBD	TBD	TBD	TBD

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(4) Random Performance is based on FIO on Linux, 4KB data size, QD=32, 16 workers.
(5) Latency is measured with random workloads based on FIO on Linux, 4KB data size, QD=1, 1 worker.
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Solution MP-X200P

Form Factor	U.2				
Capacity(1)	1.92TB	3.84TB	7.68TB	15.36TB	30.72TB
Interface	PCIe 5.0 1x4, 2x2	PCIe 5.0 1x4, 2x2	PCIe 5.0 1x4, 2x2	PCIe 5.0 1x4, 2x2	PCIe 5.0 1x4, 2x2
NVMe	2.0	2.0	2.0	2.0	2.0
NAND Flash	3D TLC	3D TLC	3D TLC	3D TLC	3D TLC
Performance[2,3,4,6]					
Sequential Read(MB/s)	14,800	14,800	14,800	14,800	14,000 (Est.)
Sequential Write(MB/s)	4,300	8,600	8,700	8,350	7,500 (Est.)
4K Random Read(IOPS)	2,400K	3,000K	3,000K	3,000K	2,300K (Est.)
16K Random Write(IOPS)	170K	380K	500K	500K	283K (Est.)
Read Latency (Typ., µs)	60	60	60	60	60
Write Latency (Typ., µs)	10	10	10	10	10
Power Consumption[5,6]					
Active (W)	<25	<25	<25	<25	<25
Idle (W)	5	5	5	5	5
Endurance/Reliability					
DWPD(7)	1	1	1	1	1
UBER	< 1 sector per 10^{18} bits read	< 1 sector per 10^{18} bits read	< 1 sector per 10^{18} bits read	< 1 sector per 10^{18} bits read	< 1 sector per 10^{18} bits read
MTBF (million hours)	2.5	2.5	2.5	2.5	2.5
Limited Warranty (years)	5	5	5	5	5
Temperature					
Operating Temp. (°C)	0 - 70	0 - 70	0 - 70	0 - 70	0 - 70
Non-Operating Temp. (°C)	-40 - 85	-40 - 85	-40 - 85	-40 - 85	-40 - 85
Physical Dimension					
Length (mm)	100.10	100.10	100.10	100.10	100.10
Width (mm)	69.85	69.85	69.85	69.85	69.85
Height (mm)	15.00	15.00	15.00	15.00	15.00
Weight (g)	188	199	201	168	<250

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Solution MP-X200P

Form Factor	E3.S			
Capacity[1]	1.92TB	3.84TB	7.68TB	15.36TB
Interface	PCIe 5.0 1x4, 2x2	PCIe 5.0 1x4, 2x2	PCIe 5.0 1x4, 2x2	PCIe 5.0 1x4, 2x2
NVMe	2.0	2.0	2.0	2.0
NAND Flash	3D TLC	3D TLC	3D TLC	3D TLC
Performance[2,3,4,6]				
Sequential Read(MB/s)	14,800	14,800	14,800	14,800
Sequential Write(MB/s)	4,300	8,600	8,700	8,350
4K Random Read(IOPS)	2,400K	3,000K	3,000K	3,000K
16K Random Write(IOPS)	170K	380K	500K	500K
Read Latency (Typ., µs)	60	60	60	60
Write Latency (Typ., µs)	10	10	10	10
Power Consumption[5,6]				
Active (W)	<25	<25	<25	<25
Idle (W)	5	5	5	5
Endurance/Reliability				
DWPD[7]	1	1	1	1
UBER	< 1 sector per 10^{18} bits read	< 1 sector per 10^{18} bits read	< 1 sector per 10^{18} bits read	< 1 sector per 10^{18} bits read
MTBF (million hours)	2.5	2.5	2.5	2.5
Limited Warranty (years)	5	5	5	5
Temperature				
Operating Temp. (°C)	0 - 70	0 - 70	0 - 70	0 - 70
Non-Operating Temp. (°C)	-40 - 85	-40 - 85	-40 - 85	-40 - 85
Physical Dimension				
Length (mm)	112.75	112.75	112.75	112.75
Width (mm)	76.00	76.00	76.00	76.00
Height (mm)	7.50	7.50	7.50	7.50
Weight (g)	TBD	TBD	TBD	TBD

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