PASCARI

ENTERPRISE X-SERIES

Feature-Rich PCIe Gen5 Enterprise SSD

PASCARI X200

Sequential Read

Up to 14,800 MB/s

Sequential Write

Up to 8,700 MB/s

Random Read

Up to 3,300K IOPS

Random Write

Up to 900K IOPS

Interface

PCIe 5.0 1x4 (Single port), 2x2 (Dual port)

Capacity

Up to 30.72TB

Form Factor

U.2, E3.S

DWPD

1, 3

Product Features

- NVMe 2.0
- 128 Namespaces
- Power Loss Protection (PLP)
- ISE, TCG Opal 2.0 support
- AES-XTS 256-bit Encryption
- Data Integrity and Protection
- End-to-End Data Path Protection
- Metadata Protection
- SECDED
- Sanitize
- NVMe-MI (Management Interface)
- SMBus

PHISON

Solution - 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]					
Sequential Read (MB/s)	14,800	14,800	14,800	14,800	14,000
Sequential Write (MB/s)	4,300	8,600	8,700	8,500	7,400
4K Random Read (IOPS)	2,400K	3,300K	3,200K	2,800K	2,300K
4K Random Write (IOPS)	390K	790K	880K	900K	615K
Read Latency (Typ., µs)	60	60	60	60	60
Write Latency (Typ., µs)	10	10	10	10	10
Power Consumption [5]					
Active (W)	16	22	23	24	25
Idle (W)	5	5	5	5	5
Endurance/Reliability					
DWPD[6]	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
Part Number					
Single Port ISE FW	XP208H021T60E322T0410	XP208H023T20E324T0910	XP208H026T40E328T1910	XP208H0212T8E3116T310	XP208H0225T6E3132T710
Single Port SED FW	XP208H021T60E222T0410	XP208H023T20E224T0910	XP208H026T40E228T1910	XP208H0212T8E2116T310	XP208H0225T6E2132T710
Dual Port ISE FW	XX208H021T60E322T0410	XX208H023T20E324T0910	XX208H026T40E328T1910	XX208H0212T8E3116T310	XX208H0225T6E3132T710
Dual Port SED FW	XX208H021T60E222T0410	XX208H023T20E224T0910	XX208H026T40E228T1910	XX208H0212T8E2116T310	XX208H0225T6E2132T710

(1) 1 TB = 10^{12} bytes.
(2) Sequential Performance is based on FIO on Linux, 512K, with QD=32, 1 job.
(3) Random Performance is based on FIO on Linux, 4K data size, QD=128, 8 jobs.
(4) Latency is measured with random workloads based on FIO on Linux, 4KB data size, QD=1, 1job.
(5) Power consumption (Average RMS) is measured during the sequential read/write and random read/write operations performed by iometer with the conditions described in (2)(3).
(6) The results of DWPD are obtained in compliance with JESD219A Standards.

PHISON

Solution - 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]				
Sequential Read (MB/s)	14,800	14,800	14,800	14,800
Sequential Write (MB/s)	4,300	8,600	8,700	8,500
4K Random Read (IOPS)	2,400K	3,300K	3,200K	2,600K
4K Random Write (IOPS)	390K	790K	900K	900K
Read Latency (Typ., µs)	60	60	60	60
Write Latency (Typ., µs)	10	10	10	10
Power Consumption [5]				
Active (W)	17	22	23	24
Idle (W)	5	5	5	5
Endurance/Reliability				
DWPD[6]	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)	106	114	117	119
Part Number				
Single Port ISE FW	XP20DH021T60E3 12T0410	XP20DH023T20E3 14T0910	XP20DH026T40E3 18T1910	XP20DH0312T8E3 116T310
Single Port SED FW	XP20DH021T60E2 12T0410	XP20DH023T20E2 14T0910	XP20DH026T40E2 18T1910	XP20DH0312T8E2 116T310
Dual Port ISE FW	XX20DH021T60E3 12T0410	XX20DH023T20E3 14T0910	XX20DH026T40E3 18T1910	XX20DH0312T8E3 116T310
Dual Port SED FW	XX20DH021T60E2 12T0410	XX20DH023T20E2 14T0910	XX20DH026T40E2 18T1910	XX20DH0312T8E2 116T310

(1) 1 TB = 10^{12} bytes.
(2) Sequential Performance is based on FIO on Linux, 512K, with QD=32, 1 job.
(3) Random Performance is based on FIO on Linux, 4K data size, QD=128, 8 jobs.
(4) Latency is measured with random workloads based on FIO on Linux, 4KB data size, QD=1, 1 job.
(5) Power consumption (Average RMS) is measured during the sequential read/write and random read/write operations performed by iometer with the conditions described in (2)(3).
(6) The results of DWPD are obtained in compliance with JESD219A Standards.

PHISON

Solution - 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]					
Sequential Read (MB/s)	14,800	14,800	14,800	14,800	14,000
Sequential Write (MB/s)	4,300	8,600	8,700	8,500	7,400
4K Random Read (IOPS)	2,400K	3,300K	3,200K	2,800K	2,300K
4K Random Write (IOPS)	140K	320K	390K	420K	265K
Read Latency (Typ., µs)	60	60	60	60	60
Write Latency (Typ., µs)	10	10	10	10	10
Power Consumption [5]					
Active (W)	16	22	23	24	25
Idle (W)	5	5	5	5	5
Endurance/Reliability					
DWPD[6]	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
Part Number					
Single Port ISE FW	XP208H021T92P3 22T0410	XP208H023T84P3 24T0910	XP208H027T68P3 28T1910	XP208H0215T3P3 116T310	XP208H0230T7P3 132T710
Single Port SED FW	XP208H021T92P2 22T0410	XP208H023T84P2 24T0910	XP208H027T68P2 28T1910	XP208H0215T3P2 116T310	XP208H0230T7P2 132T710
Dual Port ISE FW	XX208H021T92P3 22T0410	XX208H023T84P3 24T0910	XX208H027T68P3 28T1910	XX208H0215T3P31 16T310	XX208H0230T7P31 32T710
Dual Port SED FW	XX208H021T92P2 22T0410	XX208H023T84P2 24T0910	XX208H027T68P2 28T1910	XX208H0215T3P21 16T310	XX208H0230T7P21 32T710

(1) 1 TB = 10^{12} bytes.
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(4) Latency is measured with random workloads based on FIO on Linux, 4KB data size, QD=1, 1 job.
(5) Power consumption (Average RMS) is measured during the sequential read/write and random read/write operations performed by iometer with the conditions described in (2)(3).
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PHISON

Solution - 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]				
Sequential Read (MB/s)	14,800	14,800	14,800	14,800
Sequential Write (MB/s)	4,300	8,600	8,700	8,500
4K Random Read (IOPS)	2,400K	3,300K	3,200K	2,600K
4K Random Write (IOPS)	140K	320K	460K	420K
Read Latency (Typ., µs)	60	60	60	60
Write Latency (Typ., µs)	10	10	10	10
Power Consumption [5]				
Active (W)	16	22	25	25
Idle (W)	5	5	5	5
Endurance/Reliability				
DWPD[6]	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)	106	114	117	119
Part Number				
Single Port ISE FW	XP20DH021T92P3 12T0410	XP20DH023T84P3 14T0910	XP20DH027T68P3 18T1910	XP20DH0315T3P3 116T310
Single Port SED FW	XP20DH021T92P2 12T0410	XP20DH023T84P2 14T0910	XP20DH027T68P2 18T1910	XP20DH0315T3P2 116T310
Dual Port ISE FW	XX20DH021T92P3 12T0410	XX20DH023T84P3 14T0910	XX20DH027T68P3 18T1910	XX20DH0315T3P3 116T310
Dual Port SED FW	XX20DH021T92P2 12T0410	XX20DH023T84P2 14T0910	XX20DH027T68P2 18T1910	XX20DH0315T3P2 116T310

(1) 1 TB = 10^{12} bytes.
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