PASCARI

ENTERPRISE X-SERIES

Engineered for the World's Fastest Data

PASCARI X201

Sequential Read

Up to 14,800 MB/s

Sequential Write

Up to 11,800 MB/s

Random Read

Up to 3,300K IOPS

Random Write

Up to 1,080K 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 2.0d
- OCP Datacenter NVMe® SSD Specification V2.0
- OCP V2.6 Telemetry features
- 128 Namespaces
- Power Loss Protection (PLP)
- ISE, TCG Opal 2.02 support
- AES-XTS 256-bit Encryption
- Data Integrity and Protection
- End-to-End Data Path Protection
- SECDED
- Sanitize
- NVMe-MI (Management Interface) Rev 1.2
- SMBus

PHISON

Solution – X201E

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	2.0d	2.0d	2.0d	2.0d	2.0d
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	14,800
Sequential Write (MB/s)	2,300	4,600	9,200	11,800	10,000
4K Random Read (IOPS)	1,400K	2,700K	3,300K	3,250K	2,800K
4K Random Write (IOPS)	210K	490K	985K	1,080K	1,000K
Random Read Latency (Typ., µs)	55	55	55	55	55
Random Write Latency (Typ., µs)	8	8	8	8	8
Power Consumption [5]					
Active (W)	≤25	≤25	≤25	≤25	≤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)	≤190	≤190	≤190	≤190	≤200
Part Number					
Single Port ISE FW	XP208H081T60E322T0410	XP208H083T20E324T0910	XP208H086T40E328T1910	XP208H0812T8E3216T310	XP208H0825T6E3232T710
Single Port SED FW	XP208H081T60E222T0410	XP208H083T20E224T0910	XP208H086T40E228T1910	XP208H0812T8E2216T310	XP208H0825T6E2232T710
Single Port Non-SED FW	XP208H081T60E022T0410	XP208H083T20E024T0910	XP208H086T40E028T1910	XP208H0812T8E0216T310	XP208H0825T6E0232T710
Dual Port ISE FW	XX208H081T60E322T0410	XX208H083T20E324T0910	XX208H086T40E328T1910	XX208H0812T8E3216T310	XX208H0825T6E3232T710
Dual Port SED FW	XX208H081T60E222T0410	XX208H083T20E224T0910	XX208H086T40E228T1910	XX208H0812T8E2216T310	XX208H0825T6E2232T710
Dual Port Non-SED FW	XX208H081T60E022T0410	XX208H083T20E024T0910	XX208H086T40E028T1910	XX208H0812T8E0216T310	XX208H0825T6E0232T710

(1) 1 TB = 10^{12} bytes.
(2) Sequential Performance is based on FIO on Linux, 512KB data size, with QD=32, 1 job.
(3) Random Performance is based on FIO on Linux, 4KB 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) and (3).
(6) The results of DWPD are obtained in compliance with JESD219A standards.

PHISON

Solution – X201E

Form Factor E3.S				
Capacity[1]	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
NVMe	2.0d	2.0d	2.0d	2.0d
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)	4,600	9,200	11,000	10,000
4K Random Read (IOPS)	2,700K	3,300K	3,000K	2,800K
4K Random Write (IOPS)	480K	980K	1,050K	1,000K
Random Read Latency (Typ., µs)	55	55	55	55
Random Write Latency (Typ., µs)	8	8	8	8
Power Consumption [5]				
Active (W)	≤25	≤25	≤25	≤25
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)	≤110	≤110	≤110	≤120
Part Number				
Single Port ISE FW	XP20DH083T20E314T0910	XP20DH086T40E318T1910	XP20DH0812T8E3116T310	XP20DH0825T6E3132T710
Single Port SED FW	XP20DH083T20E214T0910	XP20DH086T40E218T1910	XP20DH0812T8E2116T310	XP20DH0825T6E2132T710
Single Port Non-SED FW	XP20DH083T20E014T0910	XP20DH086T40E018T1910	XP20DH0812T8E0116T310	XP20DH0825T6E0132T710
Dual Port ISE FW	XX20DH083T20E314T0910	XX20DH086T40E318T1910	XX20DH0812T8E3116T310	XX20DH0825T6E3132T710
Dual Port SED FW	XX20DH083T20E214T0910	XX20DH086T40E218T1910	XX20DH0812T8E2116T310	XX20DH0825T6E2132T710
Dual Port Non-SED FW	XX20DH083T20E014T0910	XX20DH086T40E018T1910	XX20DH0812T8E0116T310	XX20DH0825T6E0132T710

(1) 1 TB = 10^{12} bytes.
(2) Sequential Performance is based on FIO on Linux, 512KB data size, with QD=32, 1 job.
(3) Random Performance is based on FIO on Linux, 4KB 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) and (3).
(6) The results of DWPD are obtained in compliance with JESD219A standards.

PHISON

Solution – X201P

Form Factor U.2					
Capacity[1]	1.92TB	3.84TB	7.68TB	15.36 TB	30.72 TB
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	2.0d	2.0d	2.0d	2.0d	2.0d
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	14,800
Sequential Write (MB/s)	2,300	4,600	9,200	11,800	10,000
4K Random Read (IOPS)	1,400K	2,700K	3,300K	3,250K	2,800K
4K Random Write (IOPS)	75K	230K	480K	600K	490K
Random Read Latency (Typ., µs)	55	55	55	55	55
Random Write Latency (Typ., µs)	14	8	8	8	8
Power Consumption [5]					
Active (W)	≤25	≤25	≤25	≤25	≤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)	≤190	≤190	≤190	≤190	≤200
Part Number					
Single Port ISE FW	XP208H081T92P322T0410	XP208H083T84P324T0910	XP208H087T68P328T1910	XP208H0815T3P3216T310	XP208H0830T7P3232T710
Single Port SED FW	XP208H081T92P222T0410	XP208H083T84P224T0910	XP208H087T68P228T1910	XP208H0815T3P2216T310	XP208H0830T7P2232T710
Single Port Non-SED FW	XP208H081T92P022T0410	XP208H083T84P024T0910	XP208H087T68P028T1910	XP208H0815T3P0216T310	XP208H0830T7P0232T710
Dual Port ISE FW	XX208H081T92P322T0410	XX208H083T84P324T0910	XX208H087T68P328T1910	XX208H0815T3P3216T310	XX208H0830T7P3232T710
Dual Port SED FW	XX208H081T92P222T0410	XX208H083T84P224T0910	XX208H087T68P228T1910	XX208H0815T3P2216T310	XX208H0830T7P2232T710
Dual Port Non-SED FW	XX208H081T92P022T0410	XX208H083T84P024T0910	XX208H087T68P028T1910	XX208H0815T3P0216T310	XX208H0830T7P0232T710

(1) 1 TB = 10^{12} bytes.
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(3) Random Performance is based on FIO on Linux, 4KB 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) and (3).
(6) The results of DWPD are obtained in compliance with JESD219A standards.

PHISON

Solution – X201P

Form Factor E3.S				
Capacity[1]	3.84TB	7.68TB	15.36 TB	30.72 TB
Interface	PCIe 5.0 1x4, 2x2	PCIe 5.0 1x4, 2x2	PCIe 5.0 1x4, 2x2	PCIe 5.0 1x4, 2x2
NVMe	2.0d	2.0d	2.0d	2.0d
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)	4,600	9,200	11,000	10,000
4K Random Read (IOPS)	2,700K	3,300K	3,000K	2,800K
4K Random Write (IOPS)	220K	480K	570K	480K
Random Read Latency (Typ., µs)	55	55	55	55
Random Write Latency (Typ., µs)	8	8	8	8
Power Consumption [5]				
Active (W)	≤25	≤25	≤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)	≤110	≤110	≤110	≤120
Part Number				
Single Port ISE FW	XP20DH083T84P314T0910	XP20DH087T68P318T1910	XP20DH0815T3P3116T310	XP20DH0830T7P3132T710
Single Port SED FW	XP20DH083T84P214T0910	XP20DH087T68P218T1910	XP20DH0815T3P2116T310	XP20DH0830T7P2132T710
Single Port Non-SED FW	XP20DH083T84P014T0910	XP20DH087T68P018T1910	XP20DH0815T3P0116T310	XP20DH0830T7P0132T710
Dual Port ISE FW	XX20DH083T84P314T0910	XX20DH087T68P318T1910	XX20DH0815T3P3116T310	XX20DH0830T7P3132T710
Dual Port SED FW	XX20DH083T84P214T0910	XX20DH087T68P218T1910	XX20DH0815T3P2116T310	XX20DH0830T7P2132T710
Dual Port Non-SED FW	XX20DH083T84P014T0910	XX20DH087T68P018T1910	XX20DH0815T3P0116T310	XX20DH0830T7P0132T710

(1) 1 TB = 10^{12} bytes.
(2) Sequential Performance is based on FIO on Linux, 512KB data size, with QD=32, 1 job.
(3) Random Performance is based on FIO on Linux, 4KB 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) and (3).
(6) The results of DWPD are obtained in compliance with JESD219A standards.

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