Controller   **PS5021-E21T**

Features	Specifications
Host Interface	• PCIe Gen 4 x4 • Compliant with NVMe 1.4
Processor	• Single-CPU architecture with built-in ARM Cortex-R5 • TSMC 12nm process technology
Flash Controller	• Up to 4 Channels with 16 chips enable (CE) • Flash Transfer rate up to 1600MT/s • Capacity up to 4TB • Support 3D TLC, and QLC NAND flash memory • Compliance with Toggle 4.0 and ONFi 4.2 • Flash IO operating voltage supply 1.2V
DRAM Controller	• DRAM-less
Data Reliability	• Phison 4th generation LDPC ECC • End-To-End Data Path Protection • Smart ECC 2.0 (RAID ECC)
Security	• TCG OPAL2.0/Pyrite, AES256, SHA512, RSA4096
Performance	• Sequential Read up to 5000MB/s • Sequential Write up to 4500MB/s • 4K Random Read up to 780K IOPS • 4K Random Write up to 800K IOPS
Power Management	• L1.2 < 2.7mW
Temperature Range	• Operating range: 0~70°C • Storage range: -40~85°C
Package	• 198-ball FCCSP, 7.5 mm x 12 mm
Peripheral	• GPIO pins • Built-in UART function • I2C and SPI for external ROM • SMbus support

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Solutions   **PS5021-E21T**

Capacity[1]	512GB	1024GB	2048GB	4096GB
Interface	PCIe Gen 4x4 NVMe 1.4			
Form Factor	M.22280/2230			
NAND Flash	Micron N48R (QLC)			
Performance (Up to)[2, 3, 4]				
Sequential Read	4500 MB/s	4800 MB/s	4800 MB/s	4800 MB/s
Sequential Write	1650 MB/s	3300 MB/s	4500 MB/s	4500 MB/s
4K Random Read	250K IOPS	500K IOPS	780K IOPS	780K IOPS
4K Random Write	350K IOPS	700K IOPS	800K IOPS	800K IOPS
Power				
Supply Voltage	3.3V ± 5%			
Active (Average)[5]	4.6W			
Idle				
Low Power PS4 (L1.2)	<2mW			
Temperature				
Operating	0°C - 70°C			
Non-Operating	0°C - 85°C			
Advanced Features	• End-to-End Data Protection • HMB Support • Thermal Monitoring			

[1] 1GB = 1,000,000,000 bytes
[2] 1MB/s = 1,000,000 bytes/second
[3] Sequential performance is based on Crystal Disk Mark 6.0.0, test size 1GB, and test drive set as secondary
[4] Random performance is based on IOMeter, 1GB range, 4K data size, OD = 128
[5] Measured with Crystal Disk Mark
[6] Customer sample ready Q3 2021, MP in Q4 2021

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