SE3, PE3

Exascend Enterprise Product Series

Storage devices in high-end server use case has always been the performance bottleneck, leaving engineers to constantly search for higher IOPS (input/output operations per second), and lower latency. To achieve consistent and stable system performance, QoS (Quality of Service) and latency are the most important aspects impacting overall server performance.

Exascend Enterprise Series utilize Marvell controller, with Exascend in-house developed firmware. Offering high QoS (low latency) with customizable capacity, form factor, and tailored performance tuning for specific usage scenario.

In case of most unfortunate event where the drive is experiencing physical damage, Exascend offers exclusive Factory Data Recovery Service to repair the SSD and recover the data contents (optional).

Target Applications

* 5G Telecommunication
- Edge Computing
- Business Intelligence
- Machine Learning
- Transactional Database
- Streaming Media

Key Features

- Hardware Power Loss Protection For Extended Endurance/Lifespan
- Enterprise Performance, High QoS, Low Latency
- Fix Major BOM (Controller/Flash/Firmware)
- Highly Customizable (Hardware/Firmware Configuration and Testing)
- Accelerated boot improve drive boot and system response time after SPOR event
- Supports TRIM, NCQ, SMART, ATA Security
- AES256bit, TCG OPAL 2.0
- RAID ECC Protection within SSD
- Firmware Encryption with Tamper Proof Cryptographic Signature

ENGINEERING INSPIRATION TO INNOVATION

Optional Value Added Features

- Adjustable TBW/DWPD for long life support (DWPD=0.6, 1,1.5,3, or specified value)
- Integrated LED light indication for production monitoring
- Write protect or read-only mode for security purpose
- Exclusive factory data recovery service
- Optional leaded production process
- Self-define form factor or interface
- Support integration of life monitoring software
- Flexible non-standard capacity support, for example, 3TB, 5TB, 6TB.

Specification

Product Series	SE3				PE3			
Sub-Series	**Streaming**	**Boot**	**Pro**	**Max**	**Streaming**	**Boot**	**Pro**	**Max**
Physical Information								
Form Factor	2.5" ; M.2 2280, 2260, 2242				M.2; U.2			
Interface	SATAIII, 6.0Gbps				PCIe 3.0 (NVMe 1.2)			
Capacity	480GB~3840GB	240GB, 480GB	480GB~1920GB	240GB~960GB	480GB~7680GB	240GB, 480GB	240GB~3840GB	240GB~1920GB
Flash Type	3D TLC							
Input Voltage	5V±5%; 3.3V±5%				3.3V±5%; 12V±5%			
Power Consumption	Active<5W; Idle<0.5W				Active<8W; Idle<0.5W			
Performance								
Maximum Sequencial Read (MB/s)	540	540	540	540	3100	3100	3100	3100
Maximum Sequencial Write (MB/s)	520	410	520	520	2000	2000	2000	2000
Max. 4K Random Read (IOPS)	95,000	80,000	95,000	95,000	340,000	340,000	340,000	340,000
Max. 4K Random Write (IOPS)	16,000	18,000	30,000	50,000	32,000	30,000	65,000	65,000
Latency (Read/Write)	120µs / 80µs				100µs / 27µs			
QoS (Read/Write)	200µs / 300µs (@99.99)				160µ/200µ (@99.99)			
Reliability/ Endurance								
Operational Temperature (°C)	0 - 75°							
Storage Temperature (°C)	-40 - 85°							
UBER	1 sector per 10^{17} bits read							
DWPD (max.)** JESD218	0.6	1	1.5	5	0.6	1	1.5	5
MTBF (hours)	2,000,000							
Warranty (years)	5	5	5	5	5	5	5	5
Planned Schedule	MP	Upon Request			MP	Upon Request		

■ M.2 2280 ■ 2.5"

Product Series	Streaming	Boot	Pro	Max	Streaming	Boot	Pro	Max
240GB		■ ■		■ ■		■ ■	■ ■	■ ■
480GB	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■
960GB	■ ■		■ ■	■	■ ■		■ ■	■
1920GB	■ ■		■		■ ■		■ ■	
3840GB	■				■ ■		■	
7680GB					■			

- Warranty is until the sataed warranty years or reached the guaranteed TBW
- 「—」 Usage does not typically request such information
- DWPD stands for Drive Writes Per Day. TBW = DWPD * capacity * warranty * 365 / 1000
- ** TBW and DWPD are JESD47 Compliant