



# SE1

**(SATA, MLC, Enterprise)**

**Product Datasheet**

Enterprise Series

SATA3 – 6Gb/s

Commercial Temperature Grade 0°C - 70°C

# SE1 Series - SATA Enterprise Solid State Drive

## Product Specification

### ■ Capacity

- SE1 2.5-inch: 480GB~1920GB
- SE1 M.2: 480GB~960GB

### ■ Components

- Controller: Marvell 88SS1074
- Flash: 15nm MLC
- DRAM: 30nm DDR3

### ■ Compliance

- SATA 3.2 compatible with 6/3/1.5 Gb/s rates
- ATA/ATAPI ACS3 command set compliant
- NCQ: Up to 32 Queue Depth
- Enhance SMART ATA feature set
- Data set management TRIM command
- OS aware host hot plug / removal

### ■ Performance (up to) \*

- Sequential Read: 540 MB/s
- Sequential Write: 520 MB/s
- Random 4K Write: 35,000 IOPS
- Random 4K Read: 80,000 IOPS
- Random 8K Write: 15,000 IOPS
- Random 8K Read: 40,000 IOPS

### ■ Power Management

- DIPM / HIPM
- Auto idle
- SATA link power management
- Temperature monitoring and throttling

### ■ Security

- AES 256-bit encryption
- Security erase
- Cryptographic firmware image signing

### ■ Reliability

- Advanced LDPC error correction
- Global static and dynamic wear leveling
- On drive RAID data protection
- Enhanced power loss protection
- End-to-End data protection
- UBER: 1 sector per  $10^{17}$  bits read
- MTBF: 2.0 Million Hours

### ■ Latency (QD1)

- Read: 140us (average) / 180us (99.99%)
- Write: 30us (average) / 550us (99.99%)

### ■ Endurance (up to)

- DWPD (sequential workload): 2 DWPD
- DWPD (random workload)\*\*: 0.6 DWPD

### ■ Data Retention

- JESD47 Compliant

### ■ Compatibility

- Windows 10/8.1/7
- Windows Server 2016/2012 R2/2012
- CentOS, Fedora, FreeBSD, openSUSE, Red Hat, Ubuntu
- VMware ESXi, Citrix, KVM

### ■ Mechanical Form Factor

- 2.5-inch: 100 mm x 69.85 mm x 7 mm
- M.2: 80 mm x 22 mm x 3.6 mm

### ■ Power Consumption (TYP)

- Active: < 5.0W
- Idle: < 0.9W

### ■ Environment

- Operating temperature: 0°C ~ 70°C
- Storage temperature: -40°C ~ 85°C

### ■ Shock & Vibration

- Operating:  
50G (11ms duration, half sine wave)
- Non-Operating:  
1500G (0.5ms duration, half sine wave)
- Vibration: 10G (Peak, 10~2000Hz)

### ■ Warranty

- 5 years