**SMART**® 
Modular Technologies

# S5E SSD

SMART Modular Technologies' S5E 2.5" SATA solid state drives (SSDs) deliver high performance, high capacity storage solutions optimized for defense, aerospace and other applications requiring durable, rugged and secure storage.

Powered by a flexible, custom flash controller, S5E SSDs provide sustained read\write performance to meet the needs of high throughput applications such as flight data recorders and sensor data capture. S5E SSDs are also well suited for high-reliability telemetry, surveillance, and mission-critical applications.

S5E SSDs offer up to 480GB of storage using highly reliable single-level cell (SLC) NAND flash. They are more reliable, offer superior performance, and require less power and cooling than traditional hard disk drives (HDDs). Conforming to SMART's "true" industrial grade standards, they are superior to typical SSDs and HDDs in terms of ruggedness, vibration and shock resistance, and environmental resilience.

## Secure Your Data (Optional)

Designed to meet the needs of defense applications, Secure Data Elimination Technology (SDET) complies with current military data elimination standards, providing multiple levels of secure erase techniques.

➤ The first step of any SDET operation is the deletion of the encryption key which takes less than 1 second and secures all user data since it can no longer be decrypted.

➤ SDET Clear provides a fast data elimination function that enables erasing of data in seconds.

➤ SDET Sanitize uses US Government agency defined or unique customer defined sanitization procedures, allowing full media declassification.

In addition, access control features include write protection for added data security.

### Features

➤ **SDET technology meets current military data declassification standards (Optional)**

➤ **AES-XTS 256-bit encryption automatically protects all data written to the drive**

➤ **Passes MIL-STD-810G**

➤ **OPAL 2.0 compliant (Optional)**

➤ **True industrial grade storage solution for "no-compromise" applications**

➤ **Advanced flash management for enhanced reliability and durability**

➤ **Self-Monitoring Analysis and Reporting Technology (S.M.A.R.T.) support**

➤ **100% 8 hour burn-in over Temperature (-40°C to +85°C, I-Temp Version)**

### S5E SATA Product Family

| Capacity | Sustained Performance | Random Performance |
|---|---|---|
| 60, 120, 240, 480GB | 530MB/s Read 530MB/s Write | 80,000 IOPS Read 50,000 IOPS Write |

One gigabyte, or GB, equals one billion bytes when referring to drive capacity. Accessible capacity may vary based on the operating environment and drive formatting.

**S5E** 
2.5" SATA 
INDUSTRIAL GRADE FLASH STORAGE

SMART® RUGGED EXTREME MEMORY

CE   FC 

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**SMART RUGGED**™ 
EXTREME MEMORY

## S5E Specifications

| | 2.5" SATA |
|---|---|
| **Performance** | |
| Burst | 600MB/s |
| Sustained | 530MB/s Read<br>530MB/s Write |
| Random | 80,000 IOPs Read<br>50,000 IOPs Write |
| **Capacity** | |
| SLC | 60, 120, 240, 480GB[1] |
| **Reliability** | |
| MTBF | > 2M hours, Telcordia 25℃[2] |
| Data Reliability | 1 in $10^{17}$ bits read |
| Data Retention | > 10 years @ 25℃ |
| Endurance | 40,000 Total Drive Writes[3] |
| Warranty | 3 Years |
| **Power** | |
| Input Voltage | 5 V +/- 5% |
| Idle (typical) | 1 W |
| Operational (typical) | 5 W |
| **Environmental** | |
| Operating Shock | 50 g half-sine, 11 ms, 3 shocks along each axis,<br>X, Y, Z, in each direction[4,5] |
| Vibration | 16.4 g rms[4,5,6] |
| Altitude | 24,384m [80,000 ft.][4] |
| Relative Humidity | 5% to 95% non-condensing[4] |
| Conformal Coating | Optional |
| Operating Temp | Industrial (-40° C to 85° C)<br>Commercial (0° C to 70° C) |
| Storage Temp | -55° C to 95° C |
| **Mechanical** | |
| Length | 100.2mm |
| Width | 69.85mm |
| Height | 7.0mm |
| Connector | 6 Gb/s SATA |

(1) One gigabyte, or GB, equals one billion bytes when referring to drive capacity. Accessible capacity may vary based on the operating environment and drive formatting
(2) Based on 120GB drive
(3) Under typical conditions
(4) Based on MIL-STD-810G
(5) Tested on 120GB Drive
(6) 10-2000 Hz random, 3-axes

## S5E Data Security Features

| | 2.5" SATA |
|---|---|
| Encryption | AES-XTS 256-bit (FIPS 197 compliant) |
| Protection | Write-protect feature |
| Elimination (Optional) | ATA-8 Security Erase<br>ATA-8 Sanitize Device Feature Set Clear<br>DoD NISPOM 5220.22-M<br>DoD NISPOM 5220.22-M-Sup 1<br>NSA/CSS Manual 130-2<br>NSA/CSS Manual 9-12<br>Army AR 380-19<br>Navy NAVSO P-5239-26<br>Air Force AFSSI-5020<br>Two external triggers |

## S5E Ordering Information

| Part Number |
|---|
| **I-Temp** |
| HRCA2XccccAI001 |
| **Secure (+OPAL) I-Temp** |
| HRCA2PccccAI001 |
| **C-Temp** |
| HRCA2XccccAC001 |
| **Secure (+OPAL) C-Temp** |
| HRCA2PccccAC001 |

**cccc = Capacity**
0060 = 60GB
0120 = 120GB
0240 = 240GB
0480 = 480GB

**Conformal Coat Option**
Replace "001" with "CC1"

## Contact information

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