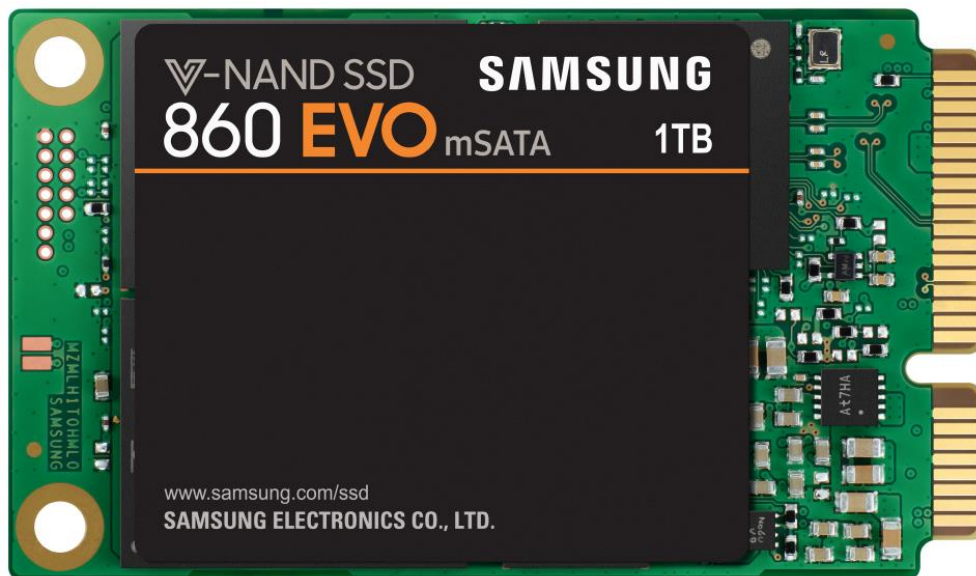


Samsung V-NAND SSD 860 EVO mSATA

2018 Data Sheet

Revision 1.0



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Revision History

Revision Number	Description	Revision Date
001	Initial Release	January 2018

THE SAMSUNG SSD 860 EVO

The Samsung SSD 860 EVO Series is the newest of Samsung's Client-PC SATA SSDs, specially designed for mainstream desktops and laptops. Building on the reputation of the Samsung SSD 850 EVO, the world's first line of consumer SSDs with V-NAND 3bit MLC technology, the new Samsung SSD 860 EVO drives achieve industry-leading performance for SATA SSDs, offering improvements in speed, reliability, compatibility and capacity. The 860 EVO comes equipped with Samsung's newly designed MJX controller along with the latest V-NAND architecture.

Enhanced Computing Experiences

The legacy Serial-ATA (SATA) interface faces the theoretical bandwidth limitation of 600MB/s which many SSD manufacturers have tried to reach over the years. Among them, Samsung, which first brought V-NAND technology to the market, continuously strives to improve product reliability and performance, even with the SATA interface limitations. Powered by Samsung's latest V-NAND technology, the 860 EVO delivers top-notch sequential read (up to 550 MB/s) and write (up to 520 MB/s) speeds and along with high sustainable performance for everyday computing experiences.

As the amount of data processing continuously increases, the need for faster data transfers and sustainable high performance over longer periods of time has become paramount in importance for users. To address these needs, Samsung has introduced Intelligent TurboWrite technology. With this, the 860 EVO mSATA provides significantly accelerated write performance which is up to 3.5 times longer than that of the previous 850 EVO mSATA. Intelligent TurboWrite automatically decides how much space to allocate to the TurboWrite region in accordance with your system workload. So in a heavy workload situation, the TurboWrite region will expand by up to 3.5 times versus that of the previous version of TurboWrite, helping to avoid sudden write performance drops which sometimes occur when performing large file transfers and ensuring that consumers enjoy the best write performance for longer than ever.

Worry-Free Reliability

The 860 EVO mSATA offers guaranteed endurance and unmatched reliability, with up to 4 times higher Total Bytes Written (TBW) than the previous 850 EVO and an industry-leading 5-year limited warranty. Up to 600 TB TBW powered by the latest V-NAND technology will give you absolute confidence in your SSD.*

*All documented endurance test results are obtained in compliance with JESD218 standards. Please visit www.jedec.org for detailed standard information.

Furthermore, the 860 EVO mSATA assures long-term dependable performance with minimal performance degradation. The 860 EVO mSATA provides up to 51% better sustained performance compared to that of its predecessor. This means you can fully experience the performance of the SSD even with heavy daily workload.

Expanded Compatibility with a Refined Controller

The 860 EVO delivers expanded system compatibility. The refined ECC algorithm and revamped controller generate strong sustainable performance near SATA's limits, and the improved queued trim provides for better Linux compatibility. The 860 EVO mSATA may be suitable for mini note PCs and PCs with mSATA slot*

* Please check the specification of your motherboard and the interface supported by the motherboard before installation.

Advanced Data Encryption

The 860 EVO provides multiple advanced data encryption features. Self-Encrypting Drive (SED) security technology will help keep data safe at all times. The 860 EVO includes an AES 256-bit hardware-based encryption engine to ensure that your personal files remain secure. Being hardware-based, the encryption engine secures your data without the performance degradation that you may experience with software-based encryption. Also, the 860 EVO is compliant with various advanced security management solutions (TCG Opal and Encrypted Drive-IEEE1667).

Samsung Data Migration and Magician Software

The 860 EVO comes with Samsung Data Migration and Samsung Magician Software, which is easy to install and makes management of your SSD simple.* Samsung Data Migration software is uncomplicated to use – yet provides a very powerful "Custom Cloning" feature that makes migration effortless even when the source data is greater than the SSD's capacity. Magician provides personalized firmware checks and additional functions tailored for individual users' drives. It even updates the firmware automatically to make sure that the drives' performance stays optimized.

*To download Samsung Data Migration and Magician, please visit www.samsung.com/samsungssd

TECHINCAL SPECIFICATIONS

Samsung SSD 860 EVO mSATA

Usage Application	Client PCs			
Interface	SATA 6 Gbps Interface, compatible with SATA 3 Gbps & 1.5 Gbps interfaces			
Hardware Information	Capacity ¹⁾	250GB	500GB	1TB
	Controller	Samsung MJX Controller		
	NAND Flash Memory	Samsung V-NAND 3bit MLC		
	DRAM Cache Memory	512MB LPDDR4	1GB LPDDR4	
	Dimensions	(29.85±0.15) x (50.80±0.15) x Max. 3.85 (mm)		
	Form Factor	mSATA		
Performance (Up to.) ²⁾	Sequential Read	550 MB/s		
	Sequential Write ³⁾	520 MB/s		
	4KB Ran. Read (QD1)	10,000 IOPS		
	4KB Ran. Write (QD1)	42,000 IOPS		
	4KB Ran. Read (QD32)	97,000 IOPS		
	4KB Ran. Write (QD32)	88,000 IOPS		
Power Consumption ⁴⁾	Idle	DIPM on	50 mW	50 mW
	Active (Avg.)	Read/Write	2.2 W	2.5 W
	Devslp		2 mW	2 mW
Reliability ⁴⁾	Temp.	Operating	0°C to 70°C	
		Non-Operating	-45°C to 85°C	
	Humidity		5% to 95% non-condensing	
	Shock	Non-Operating	1,500G, duration: 0.5ms, 3 axis	
	Vibration	Non-Operating	20~2,000Hz, 20G	
	MTBF		1.5 million hours	
Warranty	TBW ⁵⁾	150TB	300TB	600TB
	Period	5 year limited		
Supporting Features	TRIM (Required OS support), Garbage Collection, S.M.A.R.T			
Data Security	AES 256-bit Full Disk Encryption, TCG/Opal V2.0, Encrypted Drive(IEEE1667)			

1) GB: 1GB = 1,000,000,000 bytes. A certain portion of capacity may be used for system files and maintenance use, thus the actual available capacity may differ from the labeled total capacity.

2) Sequential performance measurements are based on CrystalDiskMark v.5.0.2. Random performance measurements are based on IOmeter1.1.0. Performance may vary based on SSD's firmware version, system hardware & configuration. Test system configuration: Intel® Core i5-3550 [CPU@3.3 GHz](#), DDR3 1333MHz 4GB, OS-Windows 7 Ultimate 64bit, Chipset-ASUS P8H77-V

3) Sequential Write performance measurements are based on Intelligent TurboWrite technology. The sequential performance measurements after Intelligent TurboWrite region are 300MB/s (250/500GB), or 500MB/s (1TB).

4) Power consumption is measured with IOmeter1.1.0 version with Intel Core i7-7700K@4.2GHz, SAMSUNG DDR4 16GB, Gigabyte GA-Z270X, OS – Windows 10 PRO K x64

5) All documented endurance test results are obtained in compliance with JESD218 Standards. Please visit www.jedec.org for detailed information on JESD218 Standards

6) TBW means Total Bytes Written.

7) Please refer to the detailed warranty statement here at <http://samsung.com/samsungssd>

8) Warranty provides coverage for the stated time period or the TBW, whichever comes first.

PRODUCT LINEUP

Density	Model Name	Box Contents	Model Name
250GB*	MZ-M6E250	Samsung SSD 860 EVO mSATA 250GB Warranty Statement	MZ-M6E250BW
500GB*	MZ-M6E500	Samsung SSD 860 EVO mSATA 500GB Warranty Statement	MZ-M6E500BW
1TB (1,000GB*)	MZ-M6E1T0	Samsung SSD 860 EVO mSATA 1TB Warranty Statement	MZ-M6E1T0BW

* GB: 1GB = 1,000,000,000 bytes by IDEMA. The actual usable capacity may be less than the labeled capacity. For more information, including but not limited to the warranty provided for this product, please visit www.samsung.com/ssd and www.samsungssd.com.