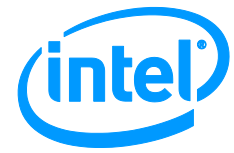


PRODUCT BRIEF

Intel® Solid-State Drive 311 Series, Optimized for Intel® Smart Response Technology
Non-Volatile Memory Storage Solutions from Intel



SSD Performance + HDD Capacity = Simple

Speed Meets Capacity

Want Solid-State Drive (SSD)-like storage performance, with Hard Disk Drive (HDD) capacity, at a lower cost than a large SSD? Combine an Intel® Solid-State Drive 311 Series, a HDD, and Intel® Smart Response Technology for a simple way to accelerate storage performance. Intel Smart Response Technology—enabled by systems utilizing the Intel® Z68 Express Chipset with Intel® Rapid Storage Technology version 10.5 and second generation Intel® Core processors—seamlessly combines responsiveness similar to a high-performance SSD with the capacity and low cost of a hard drive. The two technologies appear as a single C:\ driver letter that provides you with the familiar storage identifier.

The system automatically learns which files are accessed frequently and copies them from the HDD to the SSD. The next time you access these files, the system loads them from the fast SSD rather than the slower hard drive. When you request infrequently-used files, the system loads them from the hard drive when you need them. Systems boot fast, applications load fast, and the system feels snappy, like an SSD.

Performance and Endurance

The Intel SSD 311 Series utilizes Intel 34nm Single Level Cell (SLC) NAND to offer high performance and longer endurance over Multi-Level Cell (MLC) NAND, which is typically used in other SSDs. Changing the NAND components from MLC to SLC increases the

performance and longevity of Intel Smart Response Technology.

With powerful Native Command Queuing that enables up to 32 concurrent operations and proven Intel architecture; the Intel SSD 311 Series drastically outperforms traditional hard disk drives.

World-Class Reliability

As a member of the Intel SSD generation that changed the industry with its overall performance, value, and reliability; the Intel SSD 311 Series draws from decades of Intel memory engineering experience, and compute-quality Intel 34nm NAND Flash memory manufacturing processes.

The Intel SSD 311 Series also features low write amplification and a unique wear-leveling design for higher reliability, which means Intel SSDs not only perform better, they last longer.

Flexible Form-Factor

Accelerate storage performance using Intel SSD 311 Series 2.5" or mSATA form-factors. The 2.5" form factor Intel SSD 311 Series can be added to an Intel Z68 Express Chipset desktop system by using one of the multiple standard hard drive bays.



For Small Form-Factor (SFF) and All-In-One (AOI) systems, the mSATA Intel SSD 311 Series saves space by

mounting the device on the motherboard and not utilizing a hard drive bay. The mSATA form factor is up to eight (8) times smaller than a 2.5" hard drive, and weighs less than 10 grams. Small systems can come alive too!



Scalable Storage

Replacing an HDD with a single large SSD requires purchasing enough SSD capacity to allow for file accumulation (more and more applications, pictures, audio, and video). When full capacity is reached, you can migrate the data to external storage or you can replace the SSD with a larger capacity SSD. However, Intel Smart Response Technology helps preserve your Intel SSD 311 Series investment by focusing file accumulation on the less expensive HDD. As storage capacity requirements increase, the HDD can be upgraded to larger capacity at HDD replacement cost. The Intel SSD 311 Series, holding frequently used files, remains.

Increase your PC's performance without giving up storage capacity by combining Intel Smart Response Technology, your favorite hard disk drive, and an Intel SSD 311 Series. Performance made Simple!

Intel Solid-State Drive 311 Series

Technical Specifications		
Model Name	Intel® Solid-State Drive 311 Series – Optimized for Intel® Smart Response Technology	
Capacity	20GB	
NAND Flash Memory	34nm Intel NAND Flash Memory Single Level Cell (SLC) Compute-Quality Components	
Bandwidth ¹	Sustained Sequential Reads: up to 200 MB/s	Sustained Sequential Writes: up to 105 MB/s
Read Latency ²	65 µs Typical	
Write Latency ²	75 µs Typical	
Random I/O Operations per Second (4kB IOPS) ³	Reads: up to 37,000 IOPS	Writes: up to 3,300 IOPS
Interface	SATA 3Gb/s, compatible with SATA 1.5Gb/s	
Form Factor, Height and Weight	Form Factor	Height / Weight
	2.5 inch	9.5mm / up to 80 grams
	mSATA	3.6mm / up to 10 grams
Life Expectancy	1.2 million hours Mean Time Between Failures (MTBF)	
Power Consumption	Active: 150 mW Typical ⁴	Idle: 70 mW Typical ⁵
Operating Temperature	0°C to 70°C	
RoHS Compliance	Meets the requirements of European Union (EU) RoHS Compliance Directives	
Product Health Monitoring and Data Migration	<ul style="list-style-type: none">Intel® Solid-State Drive Toolbox with Intel® SSD Optimizer at www.intel.com/go/ssdtoolboxSelf-Monitoring, Analysis and Reporting Technology (S.M.A.R.T.) commands	

¹ Performance measured using Iometer* with queue depth equal to 32. Sequential performance measurements assume 1MB/s equals 1,048,576 bytes/seconds.

² Device measured using Iometer; Read/Write latency measure on sequential 4KB (4,096 bytes) transfers with queue depth set to 1. Write Cache enabled.

³ Performance measured using Iometer with queue depth set to 32; measurements are performed on 8GB of logical block address (LBA) range. Write Cache enabled. 4KB equals 4,096 bytes

⁴ Active power measured during execution of BAPCo MobileMark* 2007 Workload with Device Initiated Power Management (DIPM) enabled.

⁵ Idle power defined as SSD in idle mode with Device Initiated Power Management (DIPM) enabled.

Solid-State Computing Starts with Intel Inside® For more information, visit www.intel.com/go/ssd

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