



SanDisk®

SanDisk® X110 SSD (Solid State Drive)

Introducing SATA 6Gb/s high performance, reliable, and low power for an enhanced user experience.



SanDisk X110 Key Features:

- SATA 6Gb/s compliant; backwards compliant to SATA 3Gb/s & SATA 1.5Gb/s
- ATA command set ACS-2
- NCQ support up to queue depth = 32
- Support for TRIM
- S.M.A.R.T. feature supported
- Advanced Flash Management:
 - nCache™ - Non volatile write cache
 - Dynamic and static wear-leveling
 - Bad block management
 - Background garbage collection
- Advanced features:
 - Tiered caching - volatile and non-volatile cache
 - Supports multi stream
 - Minimal write amplification - increases endurance and performance
- Support for thermal throttling
- Windows 8 WHCK Certified

SanDisk® X110 SSD, based on 19nm MLC NAND flash, brings all the benefits of high performance SSDs to ultrabooks, notebooks and desktops at a competitive price.

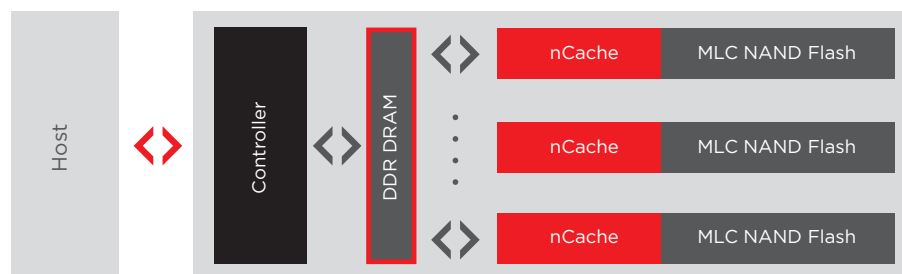
The storage device can be used as either a standalone or as a caching solution in a dual drive configuration. In both situations X110 SSD provides superior performance over the standalone hard disk drive, meeting Intel® Ultrabook™ performance requirements.

The SanDisk X110 SSD is offered in a 2.5" and customized form factors taking full advantage of the SATA 6Gb/s high performance interface.

High performance. Enhanced user experience.

SanDisk X110 SSD has high read/write performance to support daily computing uses that require enhanced multitasking capabilities. Lacking such capabilities may significantly impact the user experience. Applications such as email, Web browsing, music, and virus scans utilize a high mixture of sequential and random read/write patterns, which require advanced multitasking capabilities from the storage device.

The X110 SSD addresses these issues by implementing a tiered caching technology, a hierarchical three storage layer architecture that directs data pattern streams to one of the three most suitable layers: volatile cache (DDR DRAM), nCache™ (a non-volatile flash write cache), or mass storage (MLC NAND flash). The data pattern streams are then monitored and



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www.sandisk.com/ssd

- 1 gigabyte (GB) = 1 billion bytes. 1 terabyte (TB) = 1 trillion bytes. Some capacity not available for data storage.
- Test Platform: Dell Optiplex 990, RAM 4GB, Microsoft Windows 7 Ultimate 64-bit, Processor: Intel® Core™ i7-2600 CPU @ 3.40GHz, Intel driver: 10.6.0.1022
- CrystalDiskMark, 5GB span, 3 iterations
- CrystalDiskMark, 5GB span, 3 iterations
- MTBF - Mean Time Between Failures based on part stress analysis.
- Approximations based on an industry metric, introduced by SanDisk, that quantifies how much data can be written to a SSD in its lifespan expressed in terabytes written (TBW). Data is written using typical PC transfer size, written at a constant rate over the life of the SSD and data is retained for at least 1 year upon TBW exhaustion. Based on SanDisk internal measurements, a typical client PC user writes 4 GB/day.
- While running MobileMark 2007, using a FLUKE 187, 1 sec interval, Active Power is the typical of the average measurements. Performed on Dell D630 Notebook platform
- Dimensions and weight vary based on form factor and capacity.

rearranged by a proprietary innovative multi-streaming feature that reduces fragmentation and improves locality of data. This enables fast user response, no stuttering, better multitasking capabilities, and significantly improves the drive's long-term data endurance⁶, ensuring an enhanced user experience.

Low power consumption. Longer battery life.

The SanDisk X110 SSD employs a low power architecture that significantly reduces the power consumed by the device in low power modes, allowing users to extend the charge cycles of the battery which is highly-desired by mobility applications.

Moreover, SanDisk X110 SSD supports Power Classes, which provide the ability to limit the SSD performance and in turn, reduce peak power consumption. This allows for optimized flexibility between power and performance to enable OEMs to take advantage of numerous SanDisk X110

SSD benefits even when maximum performance is not required.

SanDisk SSD - A trusted partner.

Supported by vertical integration and over 25 years of experience in the flash memory business, SanDisk continues to deliver ground breaking solutions that repeatedly revolutionize the world of computing and beyond. SanDisk storage solutions empower global manufactures to deliver products that are aligned with market needs. SanDisk is a leader in flash memory innovation and a trusted partner that you can count on to guide you into the future.

SanDisk® X110 SSD product features and specifications

Device	SanDisk X110 SSD
Form Factor	Cased 2.5" 7mm
Interface	SATA Revision 3.0 (6 Gb/s) backward compatible to SATA Revision 2.0 (3 Gb/s) and SATA Revision 1.0 (1.5 Gb/s)
Capacity (GB) ¹	64, 128, 256
Performance	
PCMark Vantage Score	75K
PCMark 7 Score	Up to 5,200
Sequential Read/Write ³	Up to 505 MB/s / 445 MB/s
Random Read/Write ⁴	Up to 81,000 / 44,000 IOPS
MTBF ⁵	Up to 2,000,000 hours
Endurance ⁶	>80 TBW
Size	Cased 2.5": 7.0mm x 69.85mm x 100.5mm
Weight ⁸	Cased 2.5": Up to 39.5 g
Low Power Consumption	
DC Supply	Cased 2.5": +5.0V, ±5%
Standby Mode (Typical) ²	75mW (@ 3.3V)
Active Power (Typical) ⁷	120mW (@ 3.3V)
Environmental Specifications	
Operating Temperatures	0°C to 70°C
Storage Temperatures	-55°C to 85°C
Acoustic Noise	0dB
Certifications	
FCC, CE, UL, ULc, TUV, KC, BSMI, ACA, VCCI	

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