Enable Smarter Performance

The Intel® H97 Chipset and the 4th Generation and 5th Generation Intel® Core™ Processors

Make your performance smarter with the Intel® H97 chipset and the 4th generation and 5th generation Intel® Core™ processors.

Smart Performance

The Intel H97 chipset with 4th and 5th gen Intel Core processors deliver excellent performance for an unparalleled PC experience. From slaying your PC game opponents to editing your favorite videos, the Intel H97 chipset and 4th and 5th gen Intel Core processors provide maximum power and performance for whatever you do. Smart features such as Intel® Turbo Boost Technology 2.0[1] and Intel® Hyper-Threading Technology[2] activate full processing power exactly where and when you need it.

Easy Access to Your Digital Life

The Intel H97 chipset offers responsiveness capabilities to help you stay in sync and manage your digital content. Instantly access your data by allowing your content to be refreshed in the standby power state with Intel® Smart Connect Technology.[3] While on the go, you can access your PC remotely with Intel® Remote Wake Technology[4]—even when the PC is off. In addition to fast boot and resume times, Intel® Rapid Start Technology[5] provides energy efficiency without sacrificing user experience. Intel® Smart Response Technology[6] enables you to utilize high-capacity hard disk drives (HDDs) and a minimal Solid-State Drive (SSD) volume for a low-cost solution that delivers faster application loading for the most demanding enthusiasts.

Stunning Visuals with Intel® Processor Graphics

The 4th and 5th gen Intel Core processors add a new dimension to your PC experience with smart performance and built-in 3-D visual and graphics support.[7] Intel® Quick Sync Video technology, our built-in hardware accelerator in all 4th and 5th gen Intel Core processors, delivers astonishing video transcoding performance, enabling your PC to edit, burn, and share your content quickly—without the need for added hardware. Intel® InTru™ 3D[8] delivers 3-D movie playback and enables a smooth 3-D experience without interruption. The Intel H97 chipset and 4th and 5th gen Intel Core processors also come with built-in Intel® Wireless Display (Intel® WiDi),[9] allowing users to view content from their desktop PC on an Intel WiDi-enabled TV screen. Up to three independent displays[10] are also supported when the Intel H97 chipset is paired with the 4th and 5th gen Intel Core processor families.

Advanced Storage Capabilities

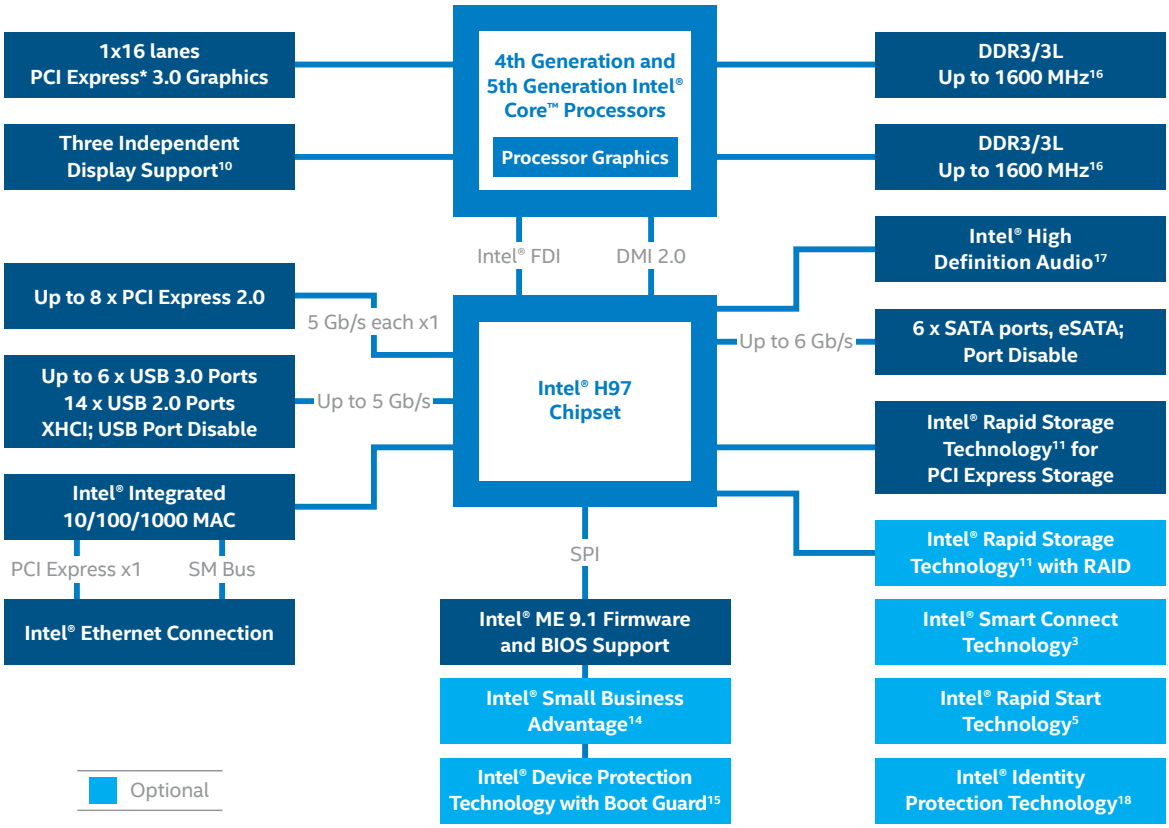
The Intel H97 chipset integrates several new capabilities to provide flexibility for connecting I/O devices.

Integrated USB 3.0 support helps you connect to your devices faster. In addition to enabling RAID arrays with Serial ATA (SATA) interface speeds up to 6 Gb/s, the Intel H97 chipset and Intel® Rapid Storage Technology[11] support next-generation PCI Express* SSDs up to 67 percent faster[12] than SATA. Intel® Rapid Recover Technology helps provide a fast, easy-to-use method for the end user to recover their data and return their system to an operational status. In addition, the Intel H97 chipset drives lower power through enhanced link power management of the Advanced Host Controller Interface (AHCI), enables easy expandability with support for native hot plug, and helps boost boot and multitasking performance with Native Command Queuing (NCQ). Dynamic Storage Accelerator unleashes the performance of your SSDs. It maximizes storage I/O performance by dynamically adjusting system power management policies to deliver up to a 15 percent[13] performance boost compared to default power management.

Increased Manageability and Security

Intel H97 chipsets enable support for Intel® Small Business Advantage (Intel® SBA).[14] This out-of-the-box small business feature allows you to monitor critical software below the operating system level to maintain your PC security, and helps ensure your data is safe from theft by blocking unwanted USB devices (e.g., flash drives) from being recognized on your PC. Providing increased manageability, Intel SBA allows small businesses to run virus scan and data backups after hours—even when the PC is off. PCs can also be configured to power on or off at set times in order to enable your small business with increased energy savings. The Intel H97 chipset and new 4th and 5th gen Intel Core processors also enable Intel® Device Protection Technology with Boot Guard.[15] This new feature helps block viruses and other malicious software from infecting your PC's pre-OS environment. With these advanced capabilities, the Intel H97 chipset gives you the ability to securely manage your PC experience.

Intel® H97 Chipset Block Diagram



INTEL® H97 CHIPSET FEATURES AT A GLANCE

FEATURES	BENEFITS
Support for the 4th and 5th gen Intel® Core™ processors	Supports the 4th and 5th gen Intel® Core™ processors with Intel® Turbo Boost Technology 2.0,[1] Intel® Pentium® processors, and Intel® Celeron® processors.
Intel® Rapid Storage Technology[11]	With additional hard drives added, helps provide quicker access to digital photo, video, and data files, and greater data protection against a hard disk drive failure with RAID 0, 5, and 10. Support for external SATA (eSATA) enables the full SATA interface speed outside the chassis, up to 3 Gb/s.
Intel Rapid Storage Technology for PCI Express* Storage	Enables Intel® Rapid Storage Technology features with PCIe*-based SSDs.
Intel® Rapid Recover Technology	Intel's latest data protection technology helps provide a recovery point that can be used to quickly recover a system should a hard drive fail, or there is data corruption. The clone can also be mounted as a read-only volume to allow a user to recover individual files.
Intel® High Definition Audio[17]	Integrated audio support enables premium digital surround sound and delivers advanced features such as multiple audio streams and jack re-tasking.
Intel® Smart Response Technology[6]	Implements storage I/O caching for faster response times of application startup and quicker access to user data.
Intel® Smart Connect Technology[3]	Provides fast application refresh by allowing applications to be updated in a low-power state.
Intel® Remote Wake Technology[4]	Allows the PC to be accessed remotely by a software application—even when the PC is off.
Intel® Rapid Start Technology[5]	Allows quick system resume from the hibernate state.
Universal Serial Bus 3.0	Integrated USB 3.0 support provides excellent performance with a design data rate of up to 5 Gb/s with up to six USB 3.0 ports.
Universal Serial Bus 2.0	High-Speed USB 2.0 support with a design data rate of up to 480 Mb/s with up to 14 USB 2.0 ports.
Intel® Small Business Advantage (Intel® SBA)[14]	Provides small businesses with out-of-the-box features to help enhance the security and productivity of their small business.
Intel® Device Protection Technology with Boot Guard[15]	Helps protect the system's pre-OS environment from viruses and malicious software attacks.
Serial ATA (SATA) 6 Gb/s	Next-generation high-speed storage interface supporting up to 6 Gb/s transfer rates for optimal data access with up to six SATA ports.
Serial ATA (SATA) 3 Gb/s	High-speed storage interface supporting up to six SATA ports.
eSATA	SATA interface designed for use with external SATA devices. Provides a link for 3 Gb/s data speeds to eliminate bottlenecks found with current external storage solutions.
SATA Port Disable	Enables individual SATA ports to be enabled or disabled as needed. This feature provides added protection of data by preventing malicious removal or insertion of data through SATA ports. Especially targeted for eSATA ports.
PCI Express 2.0 Interface	Offers up to 5 GT/s for fast access to peripheral devices and networking with up to eight PCI Express 2.0 x1 ports, configurable as x2, x4, and x8 depending on desktop motherboard designs.
USB Port Disable	Enables individual USB ports to be enabled or disabled as needed. This feature helps provide added protection of data by preventing malicious removal or insertion of data through USB ports.
Intel® Integrated 10/100/1000 MAC	Support for the Intel® Ethernet Connection I217-V.
Green Technology	Manufactured with lead-free and halogen-free[19] component packages.

For more information, visit **www.intel.com/content/www/us/en/chipsets/mainstream-chipsets/laptop-desktop-mainstream-chipsets.html**

[1] Requires a system with Intel® Turbo Boost Technology. Intel Turbo Boost Technology and Intel Turbo Boost Technology 2.0 are only available on select Intel® processors. Consult your system manufacturer. Performance varies depending on hardware, software, and system configuration. For more information, visit http://www.intel.com/go/turbo

[2] Available on select Intel® Core™ processors. Requires an Intel® HT Technology-enabled system. Consult your PC manufacturer. Performance will vary depending on the specific hardware and software used. For more information including details on which processors support HT Technology, visit http://www.intel.com/info/hyperthreading

[3] Intel® Smart Connect Technology requires a select Intel® processor, Intel® software and BIOS update, Intel® Wireless adapter, and Internet connectivity. Solid-state memory or drive equivalent may be required. Depending on system configuration, your results may vary. Contact your system manufacturer for more information.

[4] Intel® Remote Wake Technology requires a select Intel® processor, Intel® LAN component, Intel® software and BIOS update, and Internet connectivity. Depending on system configuration, your results may vary. Contact your system manufacturer for more information.

[5] Requires a select Intel® processor, Intel® software and BIOS update, and a Solid-State Drive (SSD) or hybrid drive. Depending on system configuration, your results may vary. Contact your system manufacturer for more information.

[6] Intel® Smart Response Technology requires an Intel® Core™ processor, select Intel® chipset, Intel® Rapid Storage Technology software version 12.5 or higher, and a solid state hybrid drive reporting at least 16 GB capacity and supporting SATA-IO hybrid information feature. Depending on system configuration, your results may vary. Contact your system manufacturer for more information.

[7] Built-in visual features are not enabled on all PCs and optimized software may be required. Check with your system manufacturer. Learn more at http://www.intel.com/go/biv

[8] Viewing stereo 3-D content requires 3-D glasses and a 3-D-capable display. Physical risk factors may be present when viewing 3-D material.

[9] Requires an Intel® Wireless Display-enabled system, compatible adapter, and TV. 1080p and Blu-Ray* or other protected content playback only available on select Intel® processor-based systems with built-in visuals enabled, a compatible adapter and media player, and supporting Intel® WiDi software and graphics driver installed. Consult your PC manufacturer. For more information, see www.intel.com/go/widi

[10] Requires the use of a 4th generation or 5th generation Intel® Core™ processor. This feature is dependent on your system configuration.

[11] Requires a select Intel® processor, enabled chipset, and Intel® Rapid Storage Technology (Intel® RST) software.

[12] Results have been estimated based on internal Intel analysis and are provided for informational purposes only. The percentage was derived from the measurement of theoretical interface speed comparison of Serial ATA and PCI Express*. Any difference in system hardware or software design or configuration may affect actual performance. Hardware and/or software constraints may cause performance to be lower.

[13] Dynamic Storage Accelerator performance is dependent upon several factors including workload, storage configuration, operating system, and CPU C-state transition efficiency. Intel analysis has found that Dynamic Storage Accelerator performance mode, 2 SSD RAID 0 provides up to a 15 percent performance gain as compared to default power management. Test configuration: 3 GHz processor, 2 x 2 GB @ 1333 MHz RST 12.0.0.1075OS HDD: Western Digital Black WD2002FAEX 2 TB; Intel® SSD 320 Series; OS Tested: RAID 0, Two Disk; Windows* 7 SP1 build 7601; Benchmark software: PCMark* Vantage 1.0.2 patch 1901.

[14] Requires an Intel® Small Business Advantage-enabled system and proper configuration. Availability of features will depend upon the setup and configuration by your PC manufacturer. Consult your system manufacturer.

[15] No computer system can provide absolute security. Requires an enabled Intel® processor, enabled chipset, firmware, software and may require a subscription with a capable service provider (may not be available in all countries). Intel assumes no liability for lost or stolen data and/or systems or any other damages resulting thereof. Consult your Service Provider for availability and functionality. For more information, visit http://www.intel.com/go/anti-theft. Consult your system manufacturer and/or software vendor for more information.

[16] DDR3L memory supported at 1.5V only.

[17] Requires an Intel® HD Audio-enabled system. Consult your PC manufacturer for more information. Sound quality will depend on equipment and actual implementation. For more information about Intel® HD Audio, refer to http://www.intel.com/design/chipsets/hdaudio.htm

[18] No computer system can provide absolute security. Requires an Intel® Identity Protection Technology-enabled system, including an enabled Intel® processor, enabled chipset, firmware, software, and Intel integrated graphics (in some cases) and participating website/service. Intel assumes no liability for lost or stolen data and/or systems or any resulting damages. For more information, visit http://ipt.intel.com/. Consult your system manufacturer and/or software vendor for more information.

[19] Applies only to brominated and chlorinated flame retardants (BFRs/CFRs) and PVC in the final product. Intel components as well as purchased components on the finished assembly meet JS-709A requirements, and the PCB/Substrate meet IEC 61249-2-21 requirements. The replacement of halogenated flame retardants and/or PVC may not be better for the environment.