



The Intel® 975X Express Chipset with PCI Express* graphics and Intel advanced performance architecture

Platforms based on the Intel® 975X Express Chipset and Intel® Pentium® processor Extreme Edition deliver incredible high-performance for gaming, multimedia entertainment and demanding business applications of today and tomorrow. The Intel 975X Express Chipset enables Intel's highest-performance platforms, with support for the latest Intel dual-core processors, adding intelligence to help manage and prioritize multiple (quad) threads received from the processor.



In addition to multiple thread support, the Intel 975X Express Chipset enables key performance-optimized capabilities such as support for multiple 2x8 graphics cards, Intel® Memory Pipeline Technology (Intel® MPT), 8GB memory addressability to enable 64-bit computing, and ECC memory support.

PCI Express* with Flexible I/O

The PCI Express architecture enables increased bi-directional bandwidth to the graphics and I/O interfaces. With multiple PCI Express controllers to support flexible I/O, the dual x8 and/or single x16 graphics ports deliver outstanding system performance for high-end gamers, power users, and multimedia creation enthusiasts.

Memory Architecture

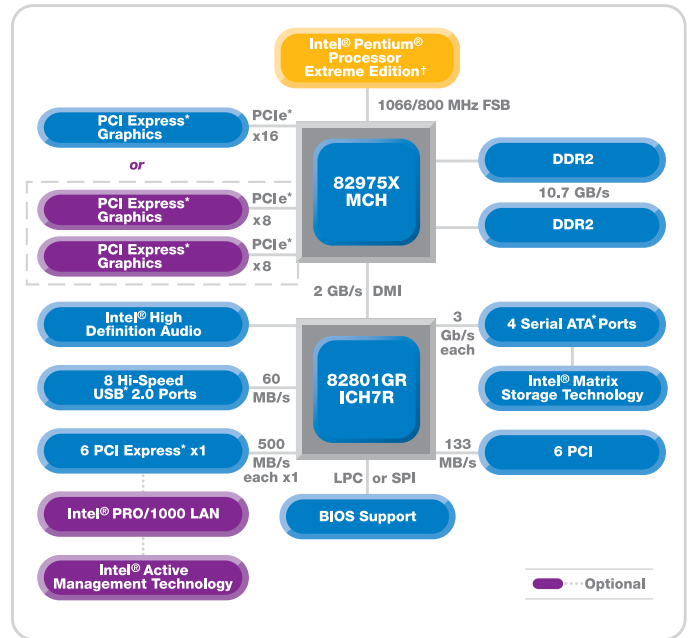
The Intel 975X Express Chipset's high-performance architecture delivers additional system-level performance via Intel Memory Pipeline Technology. Intel MPT delivers enhanced memory pipelining to enable a higher utilization of each memory channel resulting in higher system performance through accelerated transfers between the processor and system memory.

To support faster memory, increased graphics requirements, and I/O bandwidth, the Intel 975X Express Chipset incorporates a Memory Controller Hub (MCH) backbone architecture. This design includes wider internal data buses that supports dual-channel DDR2 memory technology at up to 667 MHz or up to 10.7 GB/s of peak memory bandwidth, for improved platform performance and flexible memory support. Intel® Flex Memory Technology offers easier upgrades by allowing different memory sizes to be populated and still remain in dual-channel mode. The new architecture also supports both asynchronous and isochronous data traffic, with dedicated internal pipelines and specialized arbitration. In addition, this chipset has improved electricals with optimized ball-out for better latency. These enhancements enable the Intel 975X Express Chipset to take full advantage of the performance of these high-speed interfaces.

I/O Controller Hub (Intel® ICH7/R)

The Intel 975X Express Chipset integrates Intel® High Definition Audio (Intel® HD Audio), enabling premium 7.1 surround sound and multiple channel support for voice applications such as online chat and VoIP.

The Intel 975X Express Chipset elevates storage performance with next-generation Serial ATA* (SATA*) and Intel® Matrix Storage Technology. This chipset has four integrated SATA ports for transfer rates up to 3 Gb/s (300 MB/s) to SATA hard drives or optical devices. Support for RAID 0, 1, 5 and 10 allows different RAID usages to address specific needs and usages. For instance, critical data can be stored on one array designed for high reliability, while performance-intensive applications like games can reside on a separate array designed for maximum performance. The Advanced Host Controller Interface (AHCI) provides native hot plug capability and boosts performance with Native Command Queuing (NCQ) for faster boot times and file transfers.



Intel 975X Express Chipset Block Diagram

Intel® 975X Express Chipset major features at a glance

Features	Benefits
1066-/800-MHz System Bus	Supports Intel® Pentium® processor Extreme Edition and Intel® Pentium® D processor to deliver higher performance for games and applications.
Intel® Memory Pipeline Technology	Enhanced memory pipelining that enables a higher utilization of each memory channel, accelerating data transfers between the processor and system memory, resulting in higher system performance.
Intel® High Definition Audio	Integrated audio support for new consumer electronic formats, increased audio quality, and multiple audio streaming capability for premium digital sound.
PCI Express* Interface	16 lanes of PCI Express in the Memory Controller Hub (MCH) capable of delivering greater than 3.5 times the performance over the traditional AGP 8X interface, supporting the latest graphics cards for demanding games and applications. 6 PCI x1 lanes in the I/O controller hub support a broad array of I/O cards and applications.
PCI Express configuration flexibility	2 PCI Express controllers in the MCH enable either 1 x 16 or 2 x 8 operation for the 16 PCI Express lanes.
Intel® Matrix Storage Technology	Provides quicker access to digital photo, video, and business files with RAID 0, 5, and 10, and data protection against a hard drive failure with RAID 1, 5, and 10.
Serial ATA (SATA) 3Gbps	High speed storage improves transfer rate for improved data access
Dual-Channel DDR2 Memory Support	Up to 10.7GB/s of bandwidth and 8GB addressability for faster system response.
Intel® Flex Memory Technology	Facilitates easier upgrades by allowing different memory sizes to be populated and remain in dual-channel mode.



* The Intel® 975X Express Chipset supports the Intel® Pentium® processor Extreme Edition, Intel® Pentium® D processor, and all other Intel® Pentium® processors in the LGA775 socket, with scalability for future processor innovations.

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