INTEL® 845GE CHIPSET
PRODUCT BRIEF

A platform today with innovative feature integration, outstanding graphics, and system performance to support tomorrow's technology and Internet innovations.

The Intel® 845GE chipset unleashes the power and performance in the Intel® Pentium® 4 processor.

Intel® 845GE
CHIPSET
Supporting
Hyper-Threading Technology

The Intel® 845GE chipset.

The Intel® 845GE chipset is the newest integrated graphics chipset for the Intel® Pentium® 4 processor family. The features and performance of the popular Intel® 845G chipset have been extended to the 845GE chipset, enabling a highly flexible platform. The Intel 845GE chipset also includes the extremely stable and innovative Intel® Extreme Graphics technology, running at 266-MHz core speed, which enables even better performance than previous generation chipsets.

Added support for DDR333 main memory further improves both graphics and system performance. These awesome new features, coupled with 533-MHz or 400-MHz system bus support and integrated Hi-Speed USB 2.0[1] connectivity, ensure your computing usage requirements are performance-enabled for years to come.

The Intel 845GE chipset has been designed and optimized to support the Intel Pentium 4 Processor supporting Hyper-Threading Technology[2], adding intelligence to help manage and prioritize multiple threads received from the processor. HT Technology is Intel's latest ground breaking innovation, and allows the processor to execute instruction threads in parallel so that the processor can complete more tasks in a given amount of time. This maximizes the efficiency of the processor, and improves system performance and responsiveness.

The combination of an Intel Pentium 4 processor supporting Hyper-Threading Technology[2], an Intel® chipset that supports HT Technology, an operating system that includes optimizations for HT Technology, and a BIOS that supports HT Technology and has it enabled delivers unmatched system performance. With systems based on the Intel Pentium 4 Processor with HT Technology[3], users can perform multiple complex tasks simultaneously, such as accessing instant messaging while playing their favorite online game and downloading music while managing their digital photos.

We designed two controller hubs into the 845GE chipset. The 82845GE Graphics Memory Controller Hub (GMCH) features Intel® Dynamic Video Memory Technology and Zone Rendering Technology, which optimize system performance by balancing memory usage between graphics and other subsystems.

The 82801DB I/O Controller Hub (ICH4) incorporates advancements that include the integration of six Hi-Speed USB 2.0 ports. These can run up to 40 times faster than the original USB 1.1 specification, while maintaining ease-of-use and backward compatibility. The convenience of the USB 2.0 plug and play capability, coupled with the incredible performance advances of the 845GE chipset, allows the Pentium 4 processor-based platforms to reach new heights for multimedia streaming. The Intel® Application Accelerator adds new capabilities in acoustic and power management, as well as support for large disk drives to accelerate boot times and application launches.

The 845GE chipset utilizes these features to deliver a compelling solution for both corporate and consumer market segments:

- Innovative architecture enhancements such as wider data paths and flexible memory refresh technology enable optimum DDR SDRAM memory performance.
- Advanced packaging technology and industry-leading electrical design innovations ensure long-term system reliability over a wide range of operating conditions.
- Intel® Stable Image Technology simplifies software image management by extensively testing Intel® software drivers from the start.
- Support for higher-bandwidth DDR333 SDRAM memory provides exceptional performance across the full range of multimedia and 3D-intensive applications while offering the cost benefits and reliability of DDR266 SDRAM architecture.
- Optimized for the Intel Pentium 4 Processor supporting Hyper-Threading Technology[2], the 845GE chipset delivers faster system performance and responsiveness.
- LAN Connect Interface (LCI) provides flexible network solutions including home phone line, 10/100-Mbps Ethernet, and 10/100-Mbps Ethernet with LAN manageability.
- Intel® SingleDriver™ technology supports all three network options, which simplifies network connectivity and eases deployment.

[1] Separate license may be required; contact vendor for details.

[2] Hyper-Threading Technology requires a computer system with an Intel® Pentium® 4 processor at 3.06 GHz or higher, a chipset and BIOS that utilize this technology, and an operating system that includes optimizations for this technology. Performance will vary depending on the specific hardware and software you use. See www.intel.com/info/hyperthreading for information.

[3] Look for systems with the Intel® Pentium® 4 Processor with HT Technology logo which your system vendor has verified utilize Hyper-Threading Technology. Performance will vary depending on the specific hardware and software you use. See www.intel.com/info/hyperthreading for information.

FEATURES	BENEFITS
533-MHz and 400-MHz System Bus	Supports platform longevity with high processor frequencies. Increases system bandwidth for greater responsiveness.
Hyper-Threading Technology Support	Delivers increased system responsiveness and performance.
478-pin Processor Package Compatibility	Supports the high performance Intel® desktop processors with the flexibility to support other 478-pin Intel® processors.
Intel® Extreme Graphics Technology	Revolutionary third-generation graphics architecture supports the latest APIs, allowing software developers to create real-life environments and characters.
Intel® Hub Architecture	Dedicated data paths deliver maximum bandwidth for I/O-intensive applications.
DDR333/266 SDRAM	Supports up to DDR333 SDRAM memory for higher system performance.
Intel® Dynamic Video Output Interface	Single motherboard offers maximum display (digital CRT or TV) flexibility through the standard AGP connector.
AGP4x Interface	High-bandwidth interface enables upgradability to latest graphics cards and is compatible with universal AGP8x graphics cards (1.5V)
Alert on LAN* 2.0	Emits an alert in case of software failures or system intrusion, even when the O/S is not present or the system is suspended.
Integrated Hi-Speed USB 2.0	Six ports offer up to 40x greater bandwidth over USB 1.1 for demanding I/O peripherals.
Ultra ATA/100	Takes advantage of industry innovations in hard disk drive features and performance.
Intel Application Accelerator	Software that helps to accelerate boot time and application launch times.
AC'97 Controller	Supports Dolby* Digital 5.1 surround sound[1], delivering six channels of enhanced sound quality.
Communications Network Riser Card	Allows flexibility for multiple configurations on a single card to extend USB, LAN, and audio.
Low-power sleep mode	Saves energy.

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PRODUCT PACKAGE

Intel® Pentium® 4 Processor	478 Flip Chip Pin Grid Array (FCPGA)
Intel® 82845GE GMCH	760 Flip Chip Pin Grid Array (FCBGA)
Intel® 82801DB ICH4	421 Micro Ball Grid Array (MBGA)

INTEL ACCESS

Developer Site	developer.intel.com
Intel® Chipsets Home Page	developer.intel.com/design/chipsets/
Other Intel Support	http://support.intel.com
Intel Literature Center	(800) 548-4725 7 a.m. to 7 p.m. CST *(U.S. and Canada)* *International locations please contact your local sales office.*
General Information Hotline	(800) 628-8686 or (916) 356-3104 5 a.m. to 5 p.m. PST
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