Product Brief

Intel® 945G and 945GC Express Chipsets

Embedded Computing

Intel® 945G Express and Intel® 945GC Express Chipsets for Embedded Computing

Product Overview

The Intel® 945G Express and Intel® 945GC Express chipsets deliver innovative features for interactive clients and many other embedded computing solutions requiring enhanced graphics capabilities.

These advancements include dual-channel DDR2-667 memory technology, Intel® Graphics Media Accelerator 950 (Intel® GMA 950), enhanced manageability and storage security technologies with Intel® Active Management Technology[1] (Intel® AMT), and Intel® Matrix Storage Technology.

Designed for, and validated with Intel® Pentium® 4 processors 551[Δ] and 651[Δ] with Hyper-Threading Technology[2] (HT Technology), and Intel® Celeron® D processors 352[Δ] and 341[Δ] – all with Intel® 64 Architecture[3] – these platforms provide scalable performance and are ideal price/performance solutions for embedded computing applications.

These chipsets consist of a Graphics and Memory Controller Hub (GMCH) and Intel® ICH7/ ICH7R I/O Controller Hub (ICH). They deliver outstanding system performance through high-bandwidth interfaces such as PCI Express* x16 graphics or I/O, PCI Express x1 I/O ports, next-generation Serial ATA (SATA II), and Hi-Speed USB 2.0 connectivity.

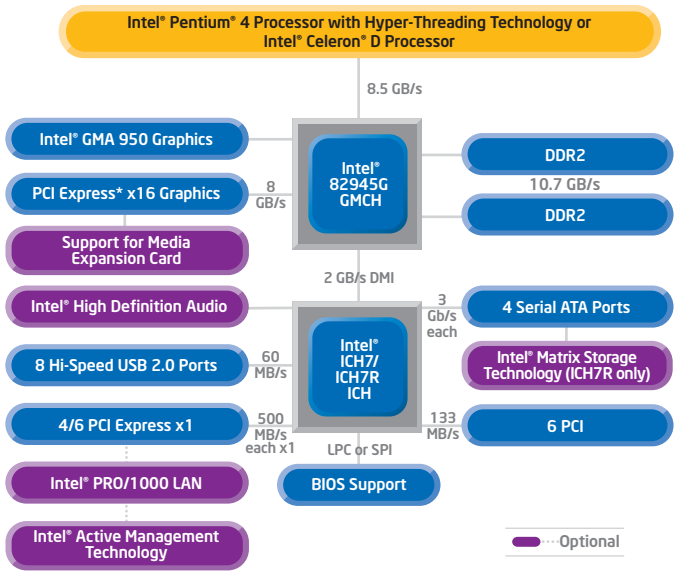
The new graphics core, combined with a high-performance dual-channel memory interface, can deliver significant graphics performance over previous Intel® platforms. With support for dual independent display, enhanced modes for widescreen flat panels, and optimized 3D, embedded platforms based on the Intel 945G Express or Intel 945GC Express chipset can deliver an intense, realistic visual experience without requiring a separate graphics card.

Product Highlights

- 533/800/1066 MHz system bus on the Intel 945G Express chipset, and 533/800 MHz system bus on the Intel 945GC Express chipset provide scalability to higher performance Intel Pentium 4 processors with HT Technology and Intel Celeron D processors
- Dual-channel DDR2-400/533/667 delivers up to 10.7 GB/second of bandwidth and 4 GB memory addressability for faster system responsiveness and support for 64-bit computing
- Intel® Flex Memory Technology facilitates easier upgrades by allowing different memory sizes to be populated and remain in dual-channel mode
- Dual independent display support through the integrated Intel GMA 950 graphics engine and sDVO outputs
- PCI Express x16 GFx can deliver up to greater than 3.5 times the bandwidth of previous discrete graphics solutions; PCI Express x16 interface can also operate as x1 general-purpose I/O
- Both ADD2 and Media Expansion Cards (MECs) allow users to take advantage of several video output options (DVI, dual independent display, component, composite, HDTV, and LVDS) in a single-card solution. In addition, MECs enable video input capability and personal video recorder (PVR) functionality, and can support a wide range of display types and configurations.
- Intel Matrix Storage Technology provides protection and faster access to digital photo, video, and data content through RAID 0, 1, 5, and 10
- Advanced Host Controller Interface[4] provides native command queuing for faster boot time and file transfers
- Direct Media Interface (DMI) delivers 2.0 GB/second concurrent bandwidth to maximize throughput between the core chipset components
- Six PCI masters provide generous system expansion capability
- ICH7 supports up to four PCI Express ports configurable as one single x4 or four single x1

Product Highlights continued

- ICH7R supports up to six PCI Express ports configurable as one single x4 and two x1 ports, or six x1 ports
- Up to four next-generation SATA II, delivering 3.0 Gb/s of bandwidth each
- Intel AMT enables remote, down-the-wire management of out-of-band networked systems, regardless of system state
- Flexible wired LAN options with or without Intel AMT
- Eight integrated USB 2.0 ports
- Intel® High Definition Audio features eight independent DMA audio engines or AC'97
- Intel® Stable Image Platform support
- Embedded lifecycle support
- Along with a strong ecosystem of hardware and software vendors, including members of the Intel® Embedded and Communications Alliance (intel.com/go/eca), Intel helps cost-effectively meet development challenges and speed time-to-market



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Product	Product Code	Package	Features
Intel® 82945G Graphics and Memory Controller Hub	QG82945G	1202 FCBGA	533/800/1066 MHz system bus; DDR2-533/667; Intel® GMA 950 graphics; High-bandwidth DMI
Intel® 82945GC Graphics and Memory Controller Hub	QG82945GC	1202 FCBGA	533/800 MHz system bus; DDR2-533/667; Intel® GMA 950 graphics; High-bandwidth DMI
Intel® ICH7R or ICH7 I/O Controller Hub	NH82801GR NH82801GB	652 PBGA 652 PBGA	Six PCI masters and four or six[4] PCI Express* x1 channels; Serial and Parallel ATA interfaces; USB 2.0, (eight ports); Intel® High Definition Audio or AC'97
Intel® PRO/1000 LAN (optional)	82573E	609 µBGA	196 TBGA; GbE (10/100/1000 Mbps) LAN connection; Intel® Active Management Technology[1]

Intel in Embedded and Communications: intel.com/embedded

[Δ] Intel® processor numbers are not a measure of performance. Processor numbers differentiate features within each processor series, not across different processor sequences. See http://www.intel.com/products/processor_number for details.

[1] Intel® Active Management Technology requires the computer system to have an Intel® AMT-enabled chipset, network hardware and software, as well as connection with a power source and a corporate network connection. Setup requires configuration by the purchaser and may require scripting with the management console or further integration into existing security frameworks to enable certain functionality. It may also require modifications of implementation of new business processes. With regard to notebooks, Intel AMT may not be available or certain capabilities may be limited over a host OS-based VPN or when connecting wirelessly, on battery power, sleeping, hibernating or powered off. For more information, see www.intel.com/technology/platform-technology/intel-amt.

[2] Hyper-Threading Technology requires a computer system with an Intel processor supporting Hyper-Threading Technology and an HT Technology enabled chipset, BIOS and operating system. Performance will vary depending on the specific hardware and software you use. See http://www.intel.com/info/hyperthreading/ for more information including details on which processors support HT Technology.

[3] 64-bit computing on Intel architecture requires a computer system with a processor, chipset, BIOS, operating system, device drivers and applications enabled for Intel® 64 architecture. Processors will not operate (including 32-bit operation) without an Intel 64 architecture-enabled BIOS. Performance will vary depending on your hardware and software configurations. Consult with your system vendor for more information.

[4] Valid for ICH7R only.

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- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
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- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits,General Dynamics и др.);

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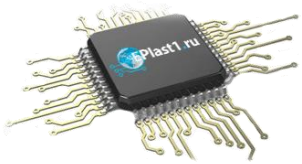
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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