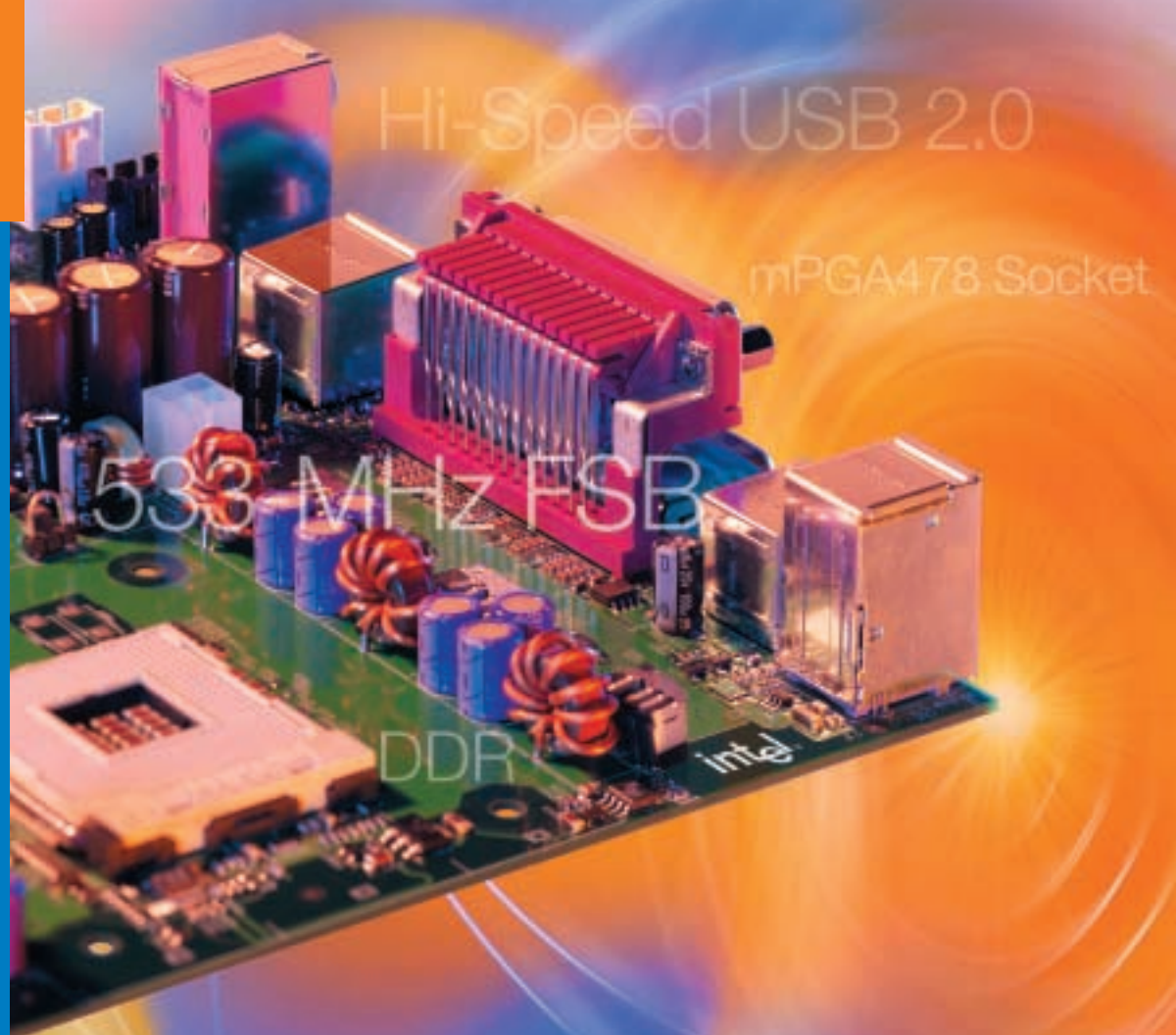




Product  
Brief



## Intel® Desktop Boards D845EPT2 and D845EBG2

for the Intel® Pentium® 4 Processor

### Performance for Today's Versatile Computing Environment

Intel® Desktop Boards D845EPT2 and D845EBG2 bring the latest advancements in desktop board technology for the Intel® Pentium® 4 processor-based platform family with 533 MHz FSB support and six high-speed USB 2.0 ports. Featuring the Intel® 845E chipset, these desktop boards deliver powerful productivity and bandwidth for today's desktop computing environment.

Intel is firmly established as an industry leader in the development of groundbreaking desktop board technologies. Desktop Boards D845EPT2 and D845EBG2 continue this tradition with support for the latest Pentium 4 processor with 533-MHz FSB to deliver new levels of productivity.



Additional platform enhancements include:

- **Designed to support up to 2GB\*\* DDR266 memory**—double the bandwidth of PC133 SDRAM memory
- **High speed USB 2.0 technology\*\*\***—up to six ports, each with up to 40 times the bandwidth of USB 1.1
- **AC'97 audio with SoundMAX\* with SPX**—delivers exceptional audio performance and excellent value
- **Intel, Rapid BIOS Boot**—accelerates Power on Self Test (POST) for faster system access
- **Intel® Active Monitor**—monitors system temperatures, power supply voltages, and fan speeds
- **Advanced hardware Management ASIC†**—configurable closed-loop fan control for quieter systems
- **Intel® Integrator Toolkit†**—automatically configure BIOS and verify system bill of material (BOM)
- **Instantly Available PC (suspend-to-RAM)**—enables advanced power saving features and fast recovery from standby mode. Intel's robust implementation requires no jumpers to set up.

## Feature-rich Products for Maximum Flexibility

With Desktop Boards D845EPT2 and D845EBG2, system integrators can design and build custom configurations to meet their customers' specific technology requirements while maintaining the flexibility to alter or upgrade later. Desktop Boards D845EPT2 and D845EBG2 offer the choice of a Communications and Networking Riser (CNR) or Intel® PRO/100 network connection. Three PCI slots on Desktop Board D845EPT2 (microATX) and six PCI slots on Desktop Board D845EBG2 (ATX) allow further expansion of the boards' capabilities, and an AGP slot enables customized

graphics solutions. A high performance audio solution featuring SoundMAX\* with SPX delivers exceptional sound and the flexibility to upgrade to multi-channel playback using CNR cards. User satisfaction and expanded system performance are enhanced through Intel® Rapid BIOS Boot, six USB 2.0 ports (four on the back panel and two to the front panel), and Ultra ATA/100 disk support.

## Complete Solutions in the Box

From e-Commerce to creating personal music libraries, business and personal users are driving demand for a variety of complex applications. To ensure that today's PCs are ready for the digital world, Intel desktop boards now come with a full suite of software including Norton® Internet Security\* for virus protection and Internet security, NTI CD-Maker\* for creating music and video CDs, SoundMAX\* with SPX for robust audio functionality, and RealONE\* for amazing audio and brilliant full screen video with broadband connections. Additionally, Intel® Integrator Toolkit offers OEMs the ability to streamline manufacturing and customize fan control settings.

In addition to the full software suite, boxed Intel Desktop Boards D845EPT2 and D845EBG2 are unique in that they include key system integration components. These include integrated retention mechanisms for AGP 4X cards and processor thermal solutions, IDE and floppy cables, back panel I/O shield, and configuration labels. And every boxed Intel desktop board is backed by a three-year limited warranty and comprehensive support that Intel customers rely on†.

### Intel® Desktop Board D845EPT2

REFERENCE CODE	KEY FEATURES
D845EPT2	microATX, 4X/2X AGP, AC'97 audio, 3-PCI slots, 6 USB 2.0 ports, and CNR
D845EPT2L	microATX, 4X/2X AGP, AC'97 audio, 3-PCI slots, 6 USB 2.0 ports, and LAN
D845EPT2LS1	microATX, 4X/2X AGP, AC'97 audio, 3-PCI slots, 6 USB 2.0 ports, LAN, and CNR

### Intel® Desktop Board D845EBG2

REFERENCE CODE	KEY FEATURES
D845EBG2	ATX, 4X/2X AGP, AC'97 audio, 6-PCI slots, 6 USB 2.0 ports, and CNR
D845EBG2L	ATX, 4X/2X AGP, AC'97 audio, 6-PCI slots, 6 USB 2.0 ports, and LAN

## Features

Support for the Intel® Pentium® 4 Processor with 533-MHz FSB

Intel® 845E chipset featuring support for double-data-rate (DDR) SDRAM memory

Intel® Rapid BIOS Boot

1.5V 4X/2X AGP connector

Two DDR SDRAM DIMM sockets

Ultra ATA/100

Three PCI slots (Intel® Desktop Board D845EPT2), or six PCI slots (Intel® Desktop Board D845EBG2)

Six USB 2.0 ports

Communication and Networking Riser (CNR) support (optional)

Integrated Intel® PRO/100 network connection, utilizing Intel® 82562ET LAN (optional)

AC'97 Audio with SoundMAX® with SPX

Instantly available PC (suspend-to-RAM)

Hardware management ASIC

Three-year limited warranty<sup>††</sup>

## Benefits

Supports Pentium 4 processors in the mPGA478-pin package and Intel® NetBurst™ microarchitecture, including 533-MHz or 400-MHz system bus

Increased memory bandwidth over PC133 SDRAM memory

Reduced boot time enables faster system access

Supports the latest graphics technology

Designed to support up to 2GB\*\* of Double-Data-Rate SDRAM memory

Enables fastest IDE interface for transfers to storage devices

Expansion slots for custom system configurations and future add-in card upgrades

Two dual-port rear connectors, header for two front panel ports

Plug-and-play technology designed to support integrated LAN, HPNA, modem or audio cards for overall system cost savings and flexibility

On-board 10/100 Mbps Ethernet LAN connectivity

Exceptional audio performance and excellent value

Power-management mode reduces PC power consumption and provides immediate PC access using advanced wake-up logic

Configurable closed-loop fan control for quieter system operation<sup>†</sup>  
Enables remote monitoring of system conditions for lower total cost of ownership

Expanded investment protection

## Boxed Intel® Desktop Boards D845EPT2 and D845EBG2 Solution includes:

- Desktop Board, including
  - Pre-installed retention mechanism for processor thermal solution
  - AGP connector with integrated retention mechanism
- ATX-compliant I/O shield
- Floppy and IDE cables
- Board and back-panel I/O layout stickers
- QuickStart Guide
- CD-ROM featuring:
  - Intel® Express Installer
  - Norton® Internet Security\*
  - Intel® Active Monitor
  - SoundMAX® with SPX
  - RealONE® with Power Technology DFX\*
  - NTI CD-Maker\*
  - MacroMedia® Shockwave\*
  - Software Drivers
  - Product Guide
  - Window XP® Ready
- Desktop Board Three-year Limited Warranty<sup>††</sup>



# Intel® Desktop Boards D845EPT2 and D845EBG2 Technical Specifications

## Processor

<b>Processors Supported</b> (via mPGA478 connector)	Intel® Pentium® 4 processors with Intel® NetBurst™ microarchitecture including a 533-MHz or 400-MHz system bus in the mPGA478-pin package
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## Chipset

<b>Intel® 845E Chipset</b>	Intel® 82845SE Memory Controller Hub (MCH) with Accelerated Hub Architecture bus Intel® 82801DB I/O Controller Hub (ICH4) with Accelerated Hub Architecture bus Intel® 82802AB Firmware Hub (FWH)
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<b>Memory Controller Hub (MCH)</b>	Designed to support up to 2GB** (with 512Mb technology) of DDR266 or DDR200 SDRAM memory
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<b>Intel® ICH4 I/O Controller Hub</b>	Ultra ATA/66/100 Ultra DMA/33 Six PCI request-grant pairs for support of six PCI bus masters
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## External Interfaces

<b>I/O and Expansion Capabilities</b>	Integrated super I/O LPC bus controller Three (Desktop Board D845EPT2) or six (Desktop Board D845EBG2) PCI bus add-in card connectors (PCI local bus Specification Revision 2.2) One Communication and Networking Riser (CNR) connector shared with PCI slot 3 (Desktop Board D845EPT2) or PCI slot 6 (Desktop Board D845EBG2) One 1.5V 4X/2X AGP port connector Power management support for ACPI 1.0 PC 99 and PC 99A compliance
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<b>Six USB 2.0 Ports</b>	Integrated Intel ICH4 controllers <ul style="list-style-type: none"><li>• Four back-panel ports (two dual stacks)</li><li>• Two front panel ports (header requiring cable to front panel)</li></ul>
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## Firmware Hub

<b>System BIOS</b>	4-Mb Flash EEPROM with Intel/AMI® BIOS featuring plug-and-play, IDE drive auto-configure Advanced configuration and power interface V1.0b, DMI 2.0, multilingual support
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<b>Intel® Rapid BIOS Boot</b>	Optimized POST for faster access to PC from power-on
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## System Memory

<b>Memory Capacity</b>	Two 184-pin DIMM connectors supporting up to two double-sided DIMMS
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<b>Memory Type</b>	Double Data Rate (DDR266 or DDR200) SDRAM in 64Mb, 128Mb, 256Mb and 512Mb technologies
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<b>Memory Voltage</b>	2.5V
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## Hardware Management Features

Voltage and temperature sense Fan-sensor inputs used to monitor fan activity Configurable automatic closed-loop fan control†
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## Wake-Up From Network

Wired for Management (WfM) 2.0 compliant Support for system wake up using an add-in network interface card with remote wake-up capability or PCI
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## Jumpers and Front Panel Connectors

<b>Jumpers</b>	Single configuration jumper design Jumper access for BIOS configuration mode
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<b>Front Panel Connector</b>	Reset, HD LED, Power LEDs, power on/off, standby header, Aux LED
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## Mechanical

<b>Board Style</b>	Desktop Board D845EPT2—MicroATX 1.0 compliant Desktop Board D845EBG2—ATX 2.03 compliant
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<b>Board Size</b>	Desktop Board D845EPT2—9.6" x 8.2" (240mm x 206mm) Desktop Board D845EBG2—12.0" x 8.2" (300mm x 206mm)
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## Power Requirements

Desktop Board D845EPT2—ATX12V or SFX12V Desktop Board D845EBG2—ATX12V
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## Environment

<b>Operating Temperature</b>	0° C to +55° C
<b>Storage Temperature</b>	-40° C to +70° C

## Regulations

<b>Safety Regulations</b>	
U.S. and Canada	UL 1950—CSA 950-95
U.S. and Canadian recognition component marks	
Europe	UL classified to IEC 950

**EMI/RFI regulations:** *Intended for use in systems meeting the following EMI/RFI regulations:*

US	FCC Class B (DofC – Cover off testing)
Canada	IC Class B
Europe	EU Class B (Res, Com, Light Industry)
Japan	VCCI, Class B (ITE)

Power requirements vary. Complies with US CRF via EN55022 + 6db in system configurations with an open chassis and EU Directive 89/336/EEC and use via EN55022 and EN50082-1 in a representative chassis.

**Ordering Information—See Intel's Web site at [www.intel.com](http://www.intel.com)**

**For the most current product information available visit Intel's Web site at:**

**[developer.intel.com/design/motherbd](http://developer.intel.com/design/motherbd)**

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The Intel® Desktop Boards D845EPT2 and D845EBG2 may contain design defects or errors known as errata, which may cause the product to deviate from published specifications. Current characterized errata are available on request.

All products, dates, and figures specified are preliminary based on current expectations, provided for planning purposes only, and are subject to change without notice. Availability in different channels may vary.

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\* Other names and brands may be claimed as the property of others.

\*\* Designed to support up to 2GB DDR266 SDRAM memory using 512Mb technology. Currently validated to 1GB using 256Mb technology. Visit <http://developer.intel.com/support/motherboards/desktop/> for latest validated memory support.

\*\*\* USB 2.0 ports are fully backwards compatible with USB 1.1 devices. Drivers for USB 2.0 are available for Windows® 2000 and Windows XP® operating systems; devices used on systems with other operating systems will operate at USB 1.1 speeds.

† Intel® Integrator Toolkit is required to configure settings for closed-loop fan control and is available to OEMs upon request

‡ Branded Desktop Boards available through distributors all include a 3-year limited warranty. Boards available to direct customers include a 1-year limited warranty.

