



Experience a Total Multimedia Solution

PRODUCT BRIEF



Intel® Desktop Board
D865PERL for the
Intel® Pentium® 4 Processor





The all new Intel® Desktop Board D865PERL harnesses the advanced computing power of the latest Intel® Pentium® 4 processor supporting Hyper-Threading Technology¹. Designed for the Intel® 865PE chipset, the Desktop Board D865PERL brings exciting new levels of performance and features to the desktop by combining support for an 800-MHz system bus with dual-channel DDR400² and native Serial ATA 150 featuring Intel® RAID Technology³ (optional). Because the Desktop Board D865PERL includes the latest technologies and high-quality integrated components, system builders can realize significant cost savings without sacrificing performance. The features of this new board support an optimal user experience in a broad range of usage models for today's computer enthusiasts:

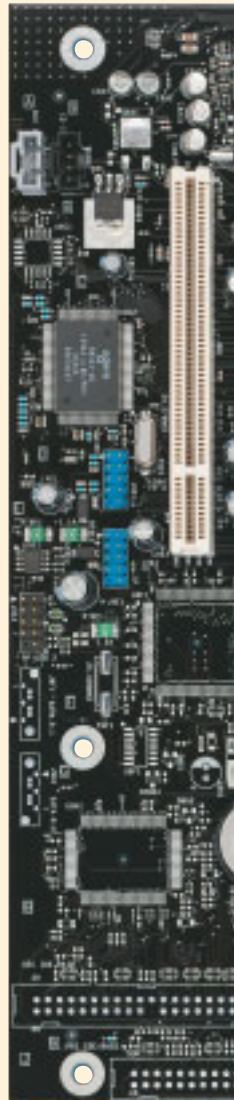
- Gaming: Exceptional gaming experience with Dual-Channel DDR400² support, multi-channel digital surround sound, Serial ATA RAID 0 performance capability, stereo microphone input for Voice over IP (VoIP), and up to eight USB 2.0 ports for the latest high-speed external peripherals.
- Digital music and video: Enhance music and movies with surround sound, and optimize file transfer with Serial ATA RAID 0 featuring Intel® RAID Technology³ (optional) while building media libraries or editing video. Further improve your sound experience with Sonic Focus[®] media enhancement technology.
- Digital photography: Download photos quickly with USB 2.0 or 1394a (optional) and save them quickly using Serial ATA RAID, the latest in hard drive technology.
- Online communication: Realize the true benefits of Internet telephony or VoIP with stereo microphone input and SoundMAX[®] 4XL.

Intel® Desktop Board D865PERL

FEATURES AND BENEFITS

- 1 Support for the Intel® Pentium® 4 processor:** Supports Pentium 4 processor mPGA478 (478 pin) packaging supporting Hyper-Threading Technology¹, including an 800-MHz, 533-MHz, or 400-MHz system bus
- 2 Intel® 865PE chipset featuring dual-channel DDR400² non-ECC support:** Designed to take full advantage of the power of the Pentium 4 processor, delivers enhanced features and increased bandwidth for maximum performance
- 3 Four DDR DIMM* Sockets:** Supports DDR400²/333^{4/5}/266 memory in a dual-channel configuration from 128 MB to 4 GB⁶
- 4 AGP 8X/4X 1.5V connector:** Supports the latest graphics technology
- 5 Serial ATA 150 (1.5Gb/s) (2 ports) featuring Intel® RAID Technology³ (optional):** Enables faster disk I/O for transfers to storage devices
- 6 Integrated Intel® PRO/1000 network connection via CSA (Communication Streaming Architecture) bus or Intel® PRO/100 LAN connection (optional):** On board Gigabit Ethernet LAN connectivity via the CSA bus solutions
- 7 Five PCI slots:** Expansion slots for custom system configurations and future add-in card upgrades
- 8 Eight Hi-Speed USB 2.0 ports:** Two dual-stack rear connectors and header for four front panel USB connectors
- 9 Intel® Precision Cooling Technology:** In coordination with Intel® Active Monitor, allows user to monitor vital system levels like temperature and voltages for advanced warning of component failure
- 10 1394a Connector (optional):** Enables data transfer from consumer electronic devices like digital camcorders or MP3 players
- 11 Intel® Rapid BIOS boot:** Reduced boot time enables faster system access
- 12 AC'97 6-Channel Audio:** SoundMAX[®] 4XL AudioESP (Audio Enumeration and Sensing Process) enabling either 6-channel or 2-channel audio

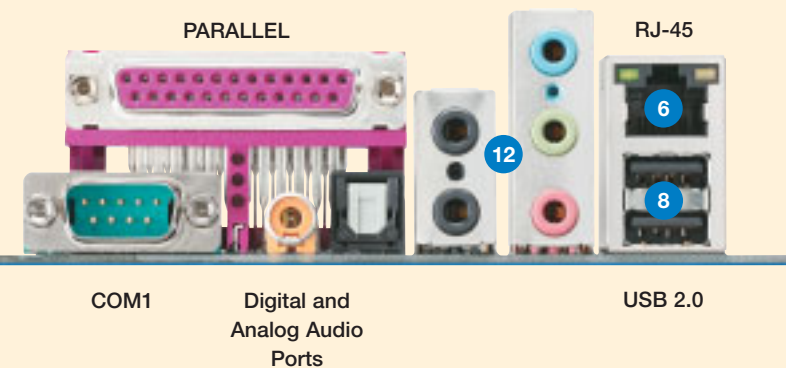
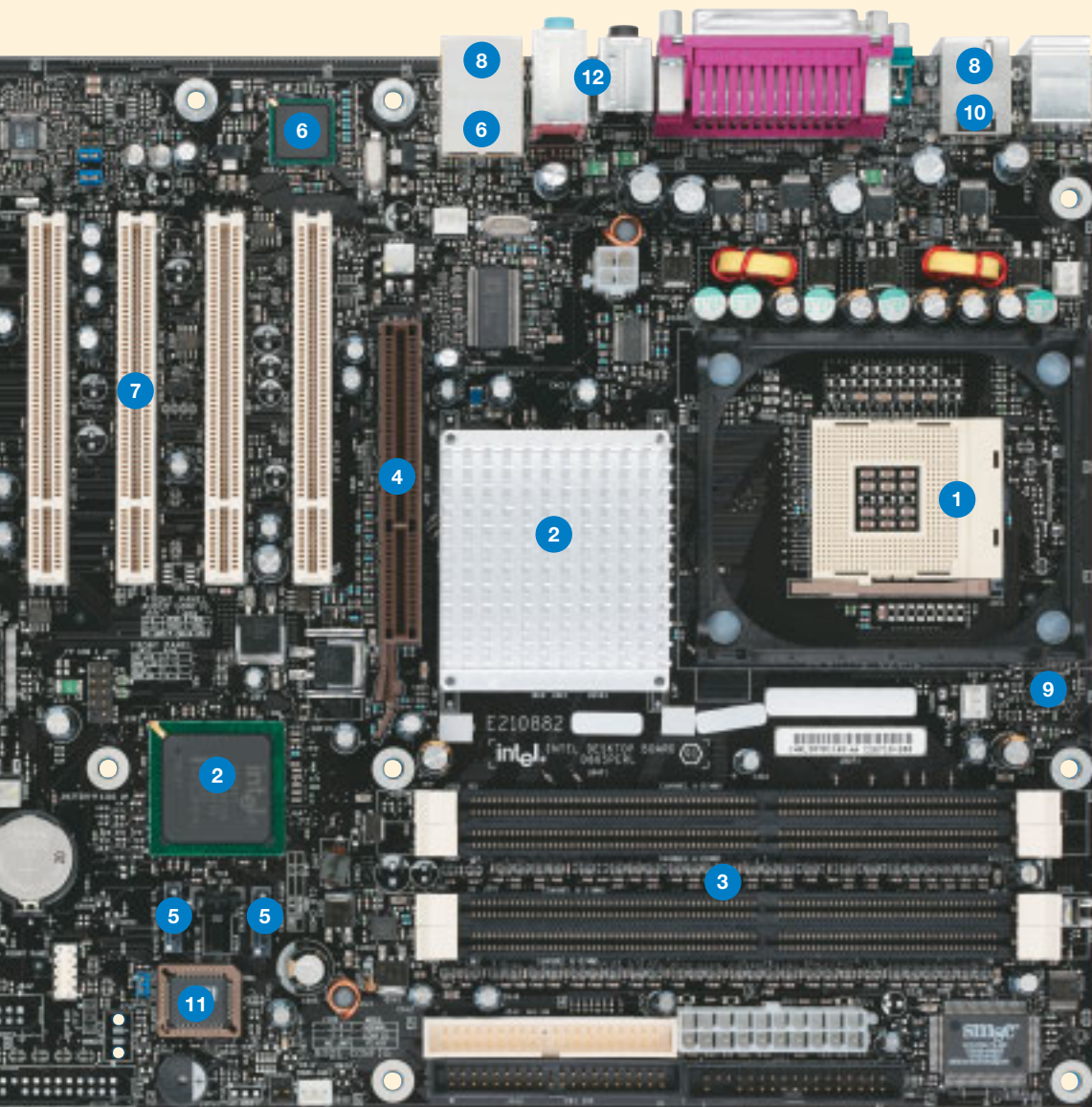
Instantly available PC (suspend-to-RAM): Power-management mode reduces PC power consumption and provides immediate PC access (Not Pictured)



PS/2 1394a



USB 2.0



THE BOXED INTEL® DESKTOP BOARD D865PERL SOLUTION INCLUDE:

- Intel® Desktop Board
- ATX-compliant I/O shield
- Integrated Retention mechanism for processor thermal solution
- Floppy and IDE cables
- Rear Panel USB 2.0 Adapter (optional)
- Integrated AGP retention mechanism
- Board and back-panel I/O layout stickers
- Quick Start Guide
- Intel® Express Installer CD features:
 - Norton® Internet Security*
 - SoundMAX® XL
 - Intel® Active Monitor
 - RealOne® Player
 - NTI CD-Maker*
 - RestoreIT!® Lite
 - Diskeeper® Lite
 - WinDVR® Lite
 - Sonic Focus*
 - Software Drivers
 - Product Guide
 - Desktop Board Three-year Limited Warranty

Intel® Desktop Board D865PERL Technical Specifications

Processor

Processors Supported	<ul style="list-style-type: none"> Intel® Pentium® 4 processors supporting Hyper-Threading Technology¹ including 800-MHz and 533-MHz system bus in the mPGA478-pin package Intel® Pentium® 4 processors (1.60a, 1.80a, 2a, 2.20 GHz or higher) with 533-MHz or 400-MHz system bus in the mPGA478-pin package Intel® Celeron® processors (2 GHz or higher) in the mPGA478-pin package
-----------------------------	--

Chipset

Intel® 865PE Chipset	<ul style="list-style-type: none"> Intel® 82865PE Memory Controller Hub (MCH) with Accelerated Hub Architecture bus (optional) Intel® 82801EB I/O Controller Hub (ICH5) with Accelerated Hub Architecture bus (optional) (optional) Intel® 82801ER I/O Controller Hub (ICH5-R) with Accelerated Hub Architecture bus
-----------------------------	---

Intel® 82875P Memory Controller	Designed to support up to 4 GB* (with 512-Mb technology) of single or dual-channel DDR400 ² , DDR333 ³ , or DDR266 SDRAM memory
--	---

Hub (MCH)	<ul style="list-style-type: none"> AGP8x, 4x Communication Streaming Architecture (CSA)
------------------	---

Intel® ICH5 I/O Controller Hub	<ul style="list-style-type: none"> Two Serial ATA 150 ports, Ultra ATA/66/100, and Ultra DMA/33 Six PCI request-grant pairs for support of six PCI bus masters SMBus (to PCI slot #2)
---------------------------------------	--

External Interfaces

I/O and Expansion Capabilities	<ul style="list-style-type: none"> Integrated super I/O LPC bus controller Five PCI bus add-in card connectors (PCI local bus Specification Revision 2.2) One 0.8V/1.5V 8X/4X AGP port connector Power management support for ACPI 1.0
---------------------------------------	--

Eight USB 2.0 Ports	<ul style="list-style-type: none"> Integrated Intel® ICH5/ICH5-R USB 2.0 host controllers <ul style="list-style-type: none"> Four back-panel ports Four ports routed to two onboard headers
----------------------------	---

Integrated Intel® PRO/1000 CT (optional)	On board 1,000-Mbps Ethernet LAN connectivity over CSA utilizing Intel® 82547EI LAN
---	---

Integrated Intel® PRO/100 (optional)	On board 10/100-Mbps Ethernet LAN connectivity utilizing Intel® 82652ET LAN
---	---

Firmware Hub

System BIOS	<ul style="list-style-type: none"> 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
--------------------	---

Intel® Rapid BIOS Boot	Optimized POST for faster access to PC from power-on
-------------------------------	--

System Memory

Memory Capacity	<ul style="list-style-type: none"> Four 184-pin DIMM connectors supporting up to four double-sided DIMMs Designed to support up to 4 GB (with 512-Mb technology) of dual-channel DDR400, DDR333, or DDR266 SDRAM memory
------------------------	---

Memory Type	Dual-Channel, Non-ECC, Double Data Rate (DDR400 or DDR333, DDR266) SDRAM in 128-Mb, 256-Mb and 512-Mb technologies
--------------------	--

Memory Voltage	• 2.5V
-----------------------	--------

Hardware Management and Fan Control Features

- Voltage and temperature sense
- Fan-sensor inputs used to monitor fan activity
- Temperature-dependent closed-loop fan control

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

Jumpers and Front-Panel Connectors

Jumpers	<ul style="list-style-type: none"> • Single configuration jumper design • Jumper access for BIOS configuration mode
----------------	---

Front-Panel Connectors	Reset, HD LED, power LED, power on/off, aux LED
-------------------------------	---

Mechanical

Board Style	ATX 2.03 compliant
--------------------	--------------------

Board Size	12.0" x 9.6" (300 mm x 240 mm)
-------------------	--------------------------------

Power Requirements

Requirements	ATX12V
---------------------	--------

Environment

Operating Temperature	0° C to +55° C
------------------------------	----------------

Storage Temperature	-40° C to +70° C
----------------------------	------------------

Regulations

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

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

<i>U.S.</i>	FCC Class B (DoF—Cover off testing)
<i>Canada</i>	IC Class B
<i>Europe</i>	EU Class B (Res, Com, Light Industry)
<i>Japan</i>	VCCI, Class B (ITE)

Power requirements vary. Complies with US CRF via EN55022 +6 db in system configurations with an open chassis and EU Directive 89/336/EEC and use via EN55022 and EN55082-1 in a representative chassis.

ORDERING INFORMATION

See Intel's Web site at www.intel.com

For the most current product information available, visit Intel's Web site at: www.intel.com/reseller or <http://developer.intel.com/design/motherbd>

INFORMATION IN THIS DOCUMENT IS PROVIDED IN CONNECTION WITH INTEL® PRODUCTS. NO LICENSE, EXPRESS OR IMPLIED, BY ESTOPPEL OR OTHERWISE, TO ANY INTELLECTUAL PROPERTY RIGHTS IS GRANTED BY THIS DOCUMENT. EXCEPT AS PROVIDED IN INTEL'S TERMS AND CONDITIONS OF SALE FOR SUCH PRODUCTS, INTEL ASSUMES NO LIABILITY WHATSOEVER, AND INTEL DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTY, RELATING TO SALE AND/OR USE OF INTEL PRODUCTS INCLUDING LIABILITY OR WARRANTIES RELATING TO FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT. INTEL PRODUCTS ARE NOT INTENDED FOR USE IN MEDICAL, LIFE-SAVING, OR LIFE-SUSTAINING APPLICATIONS. INTEL MAY MAKE CHANGES TO SPECIFICATIONS AND PRODUCT DESCRIPTIONS AT ANY TIME, WITHOUT NOTICE.

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. Intel, Pentium, Intel NetBurst, and the Intel logo are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.

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

¹ Hyper-Threading requires a computer system with an Intel® Pentium® 4 processor supporting this technology, 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.

² DDR400 memory only supported in combination with Intel® Pentium® 4 processor with 800-MHz system bus.

³ May not support all operating systems, Windows® XP driver included

⁴ When using an 800-MHz FSB CPU, DDR333 memory is clocked at 320 MHz. This minimizes system latencies to optimize system performance.

⁵ DDR333 memory not supported in combination with Intel® Pentium® 4 processor with 400-MHz system bus.

⁶ Desktop Board D865PERL is designed to support up to 4 GB total system memory using DIMMs based on 512-Mbit technology, but this technology has not been validated on the Intel® desktop board. For more information about the latest list of tested memory, refer to the Intel World Wide Web site at: <http://support.intel.com/support/motherboards/desktop/>

Copyright © 2003 Intel Corporation. All rights reserved. 0603/MS/RN

Order Number: 252622-003





Intel® Desktop Board D865PERL

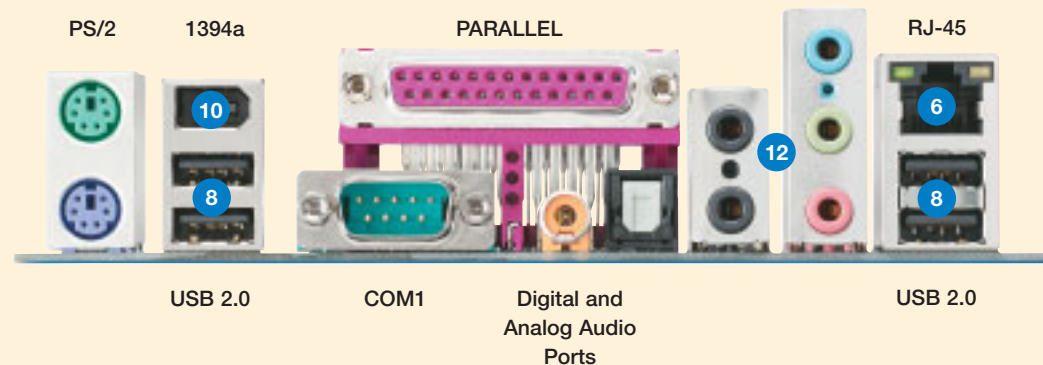
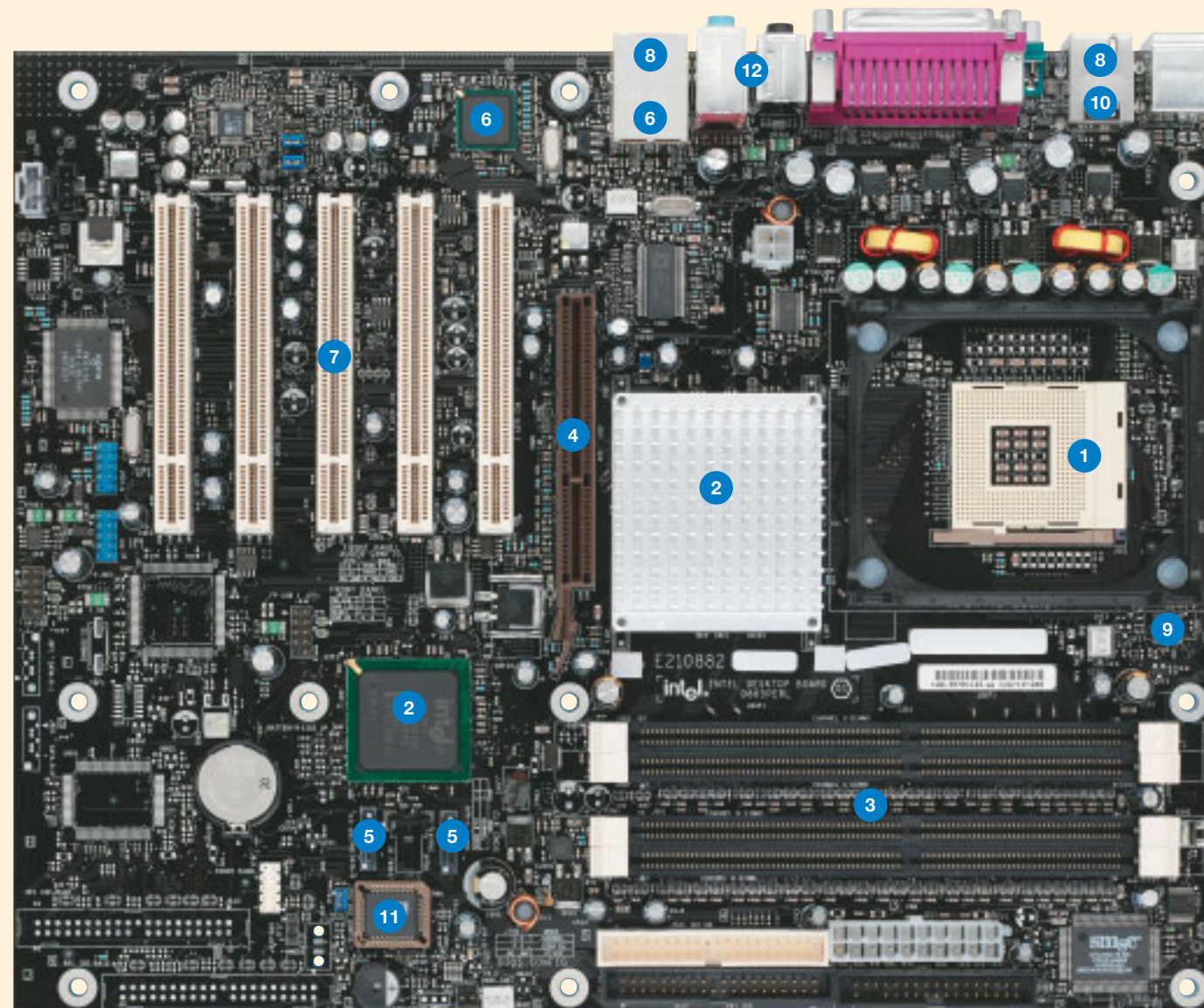
FEATURES AND BENEFITS

The all new Intel® Desktop Board D865PERL harnesses the advanced computing power of the latest Intel® Pentium® 4 processor supporting Hyper-Threading Technology¹. Designed for the Intel® 865PE chipset, the Desktop Board D865PERL brings exciting new levels of performance and features to the desktop by combining support for an 800-MHz system bus with dual-channel DDR400² and native Serial ATA 150 featuring Intel® RAID Technology³ (optional). Because the Desktop Board D865PERL includes the latest technologies and high-quality integrated components, system builders can realize significant cost savings without sacrificing performance. The features of this new board support an optimal user experience in a broad range of usage models for today's computer enthusiasts:

- Gaming: Exceptional gaming experience with Dual-Channel DDR400² support, multi-channel digital surround sound, Serial ATA RAID 0 performance capability, stereo microphone input for Voice over IP (VoIP), and up to eight USB 2.0 ports for the latest high-speed external peripherals.
- Digital music and video: Enhance music and movies with surround sound, and optimize file transfer with Serial ATA RAID 0 featuring Intel® RAID Technology³ (optional) while building media libraries or editing video. Further improve your sound experience with Sonic Focus⁴ media enhancement technology.
- Digital photography: Download photos quickly with USB 2.0 or 1394a (optional) and save them quickly using Serial ATA RAID, the latest in hard drive technology.
- Online communication: Realize the true benefits of Internet telephony or VoIP with stereo microphone input and SoundMAX⁴ 4XL.

- 1 Support for the Intel® Pentium® 4 processor:** Supports Pentium 4 processor mPGA478 (478 pin) packaging supporting Hyper-Threading Technology¹, including an 800-MHz, 533-MHz, or 400-MHz system bus
- 2 Intel® 865PE chipset featuring dual-channel DDR400² non-ECC support:** Designed to take full advantage of the power of the Pentium 4 processor, delivers enhanced features and increased bandwidth for maximum performance
- 3 Four DDR DIMM* Sockets:** Supports DDR400²/333^{4/5}/266 memory in a dual-channel configuration from 128 MB to 4 GB⁶
- 4 AGP 8X/4X 1.5V connector:** Supports the latest graphics technology
- 5 Serial ATA 150 (1.5Gb/s) (2 ports) featuring Intel® RAID Technology³ (optional):** Enables faster disk I/O for transfers to storage devices
- 6 Integrated Intel® PRO/1000 network connection via CSA (Communication Streaming Architecture) bus or Intel® PRO/100 LAN connection (optional):** On board Gigabit Ethernet LAN connectivity via the CSA bus solutions
- 7 Five PCI slots:** Expansion slots for custom system configurations and future add-in card upgrades
- 8 Eight Hi-Speed USB 2.0 ports:** Two dual-stack rear connectors and header for four front panel USB connectors
- 9 Intel® Precision Cooling Technology:** In coordination with Intel® Active Monitor, allows user to monitor vital system levels like temperature and voltages for advanced warning of component failure
- 10 1394a Connector (optional):** Enables data transfer from consumer electronic devices like digital camcorders or MP3 players
- 11 Intel® Rapid BIOS boot:** Reduced boot time enables faster system access
- 12 AC'97 6-Channel Audio:** SoundMAX⁴ 4XL AudioESP (Audio Enumeration and Sensing Process) enabling either 6-channel or 2-channel audio

Instantly available PC (suspend-to-RAM): Power-management mode reduces PC power consumption and provides immediate PC access (Not Pictured)



THE BOXED INTEL® DESKTOP BOARD D865PERL SOLUTION INCLUDE:

- Intel® Desktop Board
- ATX-compliant I/O shield
- Integrated Retention mechanism for processor thermal solution
- Floppy and IDE cables
- Rear Panel USB 2.0 Adapter (optional)
- Integrated AGP retention mechanism
- Board and back-panel I/O layout stickers
- Quick Start Guide
- Intel® Express Installer CD features:
 - Norton® Internet Security*
 - SoundMAX⁴ XL
 - Intel® Active Monitor
 - RealOne⁴ Player
 - NTI CD-Maker*
 - RestoreIT!⁴ Lite
 - Diskeeper⁴ Lite
 - WinDVR⁴ Lite
 - Sonic Focus⁴
 - Software Drivers
 - Product Guide
 - Desktop Board Three-year Limited Warranty