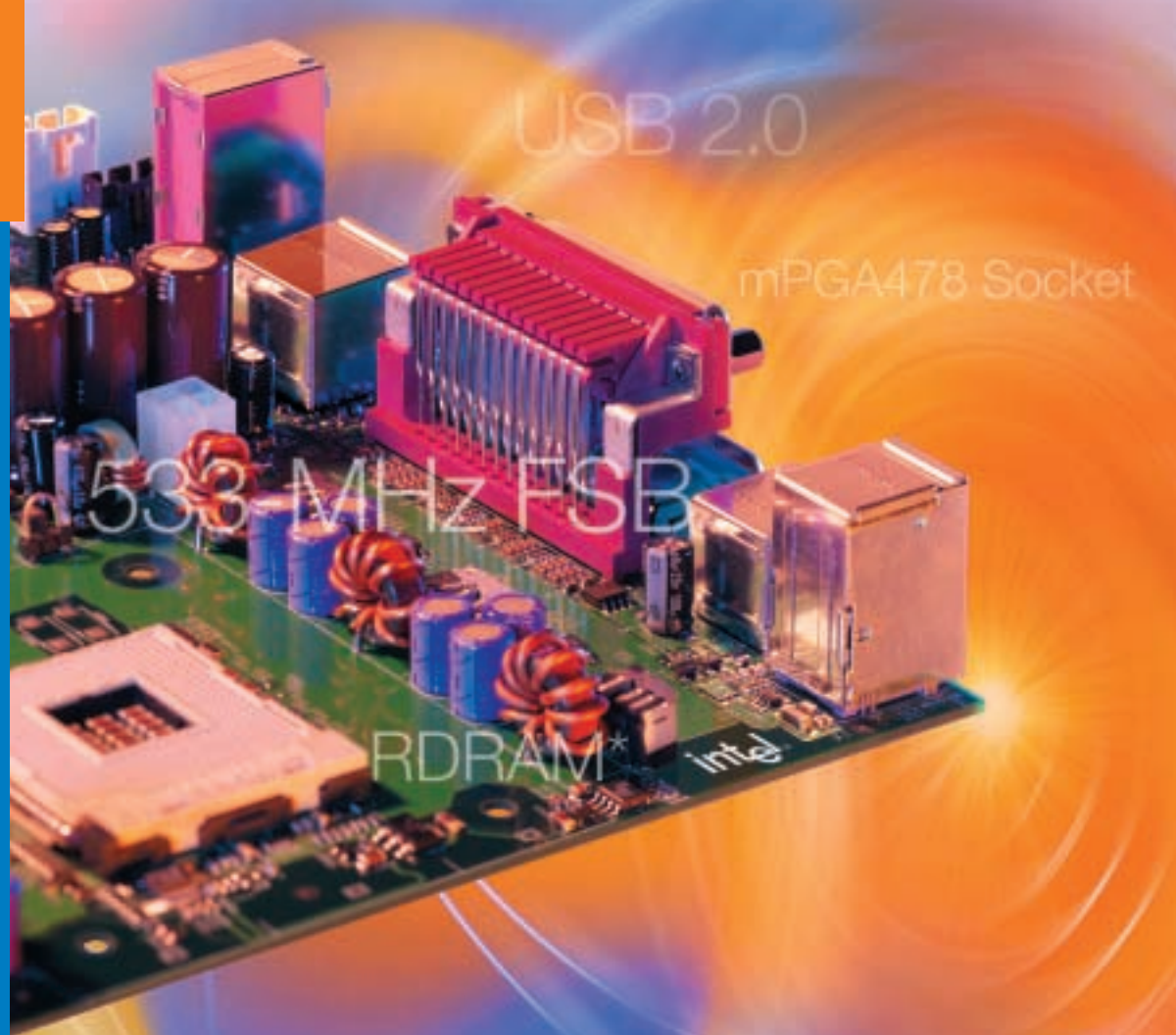




Product  
Brief



## Intel® Desktop Boards D850EMD2 and D850EMV2

for the Intel® Pentium® 4 Processor

### Intel's Highest Performance Desktop Platforms

The Intel® Desktop Boards D850EMD2 and D850EMV2 harness the advanced computing power of the Intel Pentium® 4 processor. Designed for the Intel® 850E chipset, the Desktop Boards D850EMD2 and D850EMV2 utilize the full bandwidth and performance in the Pentium 4 processor with dual RAMBUS\* channels and bring Hi-Speed USB 2.0 connectivity to the desktop. Desktop Boards D850EMD2 and D850EMV2 offer Intel's highest performance platform solution on the mPGA478-pin package and support the latest Pentium 4 processors. This provides unprecedented system efficiency and responsiveness for those who wish to stay on the cutting edge of the business world.

When combined with the Pentium 4 processor, the Desktop Boards D850EMD2 and D850EMV2 provide businesses with the performance headroom needed for today's demanding computing requirements and operating systems, like Windows\* XP. In addition, the increased headroom and scalability maximize the life of the business owner's PC investment, which allow an enterprise to stay on the cutting edge of software and OS developments.



### Advanced Performance to unleash the full power of the Pentium® 4 Processor

Desktop Boards D850EMD2 and D850EMV2 support Intel® NetBurst™ microarchitecture with dual RDRAM\* channels, providing 3.2 GB/s memory bus bandwidth to match the system bus capabilities in the Pentium 4 processor. The Intel 850E chipset supports system bus speeds of 533 and 400 MHz, delivering performance improvements in the high-bandwidth and feature enriched applications required for today's exciting Web technologies. The Desktop Boards D850EMD2 and D850EMV2 deliver scalability to users through a multiple array of performance platforms by supporting PC800 RDRAM configurations with system memory configurations ranging from 128MB to 2GB.

Desktop Boards D850EMD2 and D850EMV2 are also designed to enhance overall system performance with features such as Intel® Rapid BIOS Boot to accelerate the Power on Self Test (POST), Ultra ATA/100 disk support, support for up to 5 USB ports, an optional Communications and Networking Riser (CNR) card, AC'97 integrated audio, and an optional Integrated Intel® PRO/100 Network Connection. The Desktop Board D850EMD2 is a uATX form factor with three PCI slots, and the Desktop Board D850EMV2 is a full size ATX form factor with five PCI slots.

### Complete Solution 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.

To easily integrate a high-performance system, the Desktop Boards D850EMD2 and D850EMV2 come with the critical items needed to build a complete system, including the I/O shield, hard drive cables, and an integrated heat sink retention mechanism base solution. Customers will benefit from Intel's extensive compatibility and validation testing that ensures consistent and reliable performance. Every Boxed Intel desktop board comes with a three-year limited warranty as well as the comprehensive support that Intel customers expect.



## The Boxed Intel® Desktop Board D850EMD2 and D850EMV2 Solutions include:

- Intel® Desktop Board
- ATX-compliant I/O shield
- Integrated Retention mechanism for processor thermal solution
- Floppy and IDE cables
- Integrated AGP retention mechanism
- Board and back-panel I/O layout stickers
- Quick Start Guide
- Intel® Express Installer CD features:
  - Norton\* Internet Security\*
- Intel® Active Monitor
- SoundMAX\* with SPX\*\*\*
- RealOne\* with DFX\*
- NTI CD-Maker\*
- MacroMedia\* Shockwave\*
- Power Technology DFX\*
- Software Drivers
- Product Guide
- Window XP\* Ready
- Desktop Board Three-year Limited Warranty

### Features

### Benefits

<b>Support for the Intel® Pentium® 4 processor</b>	Supports Pentium® 4 processor in mPGA478 (478 pin) package and Intel® NetBurst™ microarchitecture, including a 533-MHz or 400-MHz system bus
<b>Intel® 850E chipset featuring dual RDRAM* channel support</b>	Designed to take full advantage of the power of the Pentium 4 processor, delivers enhanced features and 3.2 GBs bandwidth for maximum performance
<b>Intel® Rapid BIOS boot</b>	Reduced boot time enables faster system access
<b>4X AGP 1.5V connector</b>	Supports the latest graphics technology
<b>Four RDRAM RIMM* Sockets</b>	Supports fast PC800 RDRAM memory from 128MB to 2GB
<b>Ultra ATA/100</b>	Enables faster disk I/O for transfers to storage devices
<b>Three PCI slots (Desktop Board D850EMD2) or five PCI slots (Desktop Board D850EMV2)</b>	Expansion slots for custom system configurations and future add-in card upgrades
<b>Supports up to five USB ports</b>	One dual-stack rear connector, header for two front panel USB connectors and optional CNR connector
<b>Communication and Networking Riser (CNR) card (optional) support</b>	Plug-and-play technology that supports integrated LAN, HPNA, modem or audio cards for overall system cost savings and customization
<b>Integrated Intel® PRO/100 network connection with support for optional Intel® 82562ET LAN</b>	On-board 10/100 Ethernet LAN connectivity
<b>ADI* 1885 AC'97 Audio</b>	Exceptional audio performance and excellent value with SoundMAX* with SPX*** support
<b>Instantly available PC (suspend-to-RAM)</b>	Power-management mode reduces PC power consumption and provides immediate PC access
<b>Hardware management ASIC</b>	In coordination with Intel® Active Monitor, allows user to monitor vital system levels like temperature and voltages for advanced warning of component failure
<b>Three-year limited warranty</b>	Expanded investment protection

# Intel® Desktop Boards D850EMD2 and D850EMV2 Technical Specifications

## Processor

<b>Processors Supported (via mPGA478 socket)</b>	Intel® Pentium® 4 processors with Intel® NetBurst™ microarchitecture, including 500 and 400-MHz system bus in the mPGA478 socket and supports frequencies starting at 1.4 GHz
--	---

<b>Intel® 850E Chipset</b>	Intel® 82850 Memory Controller Hub (MCH) with Accelerated Hub Architecture bus Intel® 82801BA I/O Controller Hub (ICH2) with Accelerated Hub Architecture bus Intel® 82802AB Firmware Hub (FWH)
----------------------------	---

<b>Memory Controller Hub (MCH)</b>	Integrated dual Direct RAMBUS* memory technology Support for 128MB to 2GB main system memory
------------------------------------	---

<b>I/O Controller Hub (ICH2)</b>	Ultra ATA/66/100
<b>ICH2 I/O Controller Hub</b>	Ultra DMA/33 SMBus (to PCI slot #2) AC'97 controller Up to 8 PCI interrupts

<b>I/O Features</b>	Integrated super I/O LPC bus controller Three PCI slots for D850EMD2 and five PCI local bus slots for D850EMV2 Communication and Networking Riser (CNR) card (optional) Power management support for both ACPI 1.0 and APM 1.2 PC 2001 Compliance **
---------------------	--

<b>USB 2.0</b>	Integrated NEC mPD720100 USB 2.0 host controller <ul style="list-style-type: none"> <li>• Two USB 2.0 back panel (one dual stack)</li> <li>• Two USB 2.0 front panel (requires USB 2.0 daughter card and cable to front panel USB header)</li> <li>• One port routed to CNR card (optional)</li> </ul>
----------------	--

## Firmware Hub

<b>System BIOS</b>	4Mb Flash EEPROM with Intel/AMI* BIOS featuring plug-and-play, IDE drive auto-configure Advanced Power Management (APM) 1.2, ACPI 1.0, DMI 2.0, multilingual support
--------------------	---

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

## System Memory

<b>Memory Capacity</b>	Four 168-pin unbuffered RIMM sockets for 128MB (min) to 2GB (max) RDRAM
------------------------	---

<b>Memory Type</b>	PC800 dual-channel RDRAM
--------------------	--------------------------

<b>Memory Voltage</b>	2.5 V
-----------------------	-------

## Hardware Management Features

Voltage sense to detect out of range values  
Fan-sensor inputs used to monitor fan activity  
Temperature Monitoring

## 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

## Expansion Capabilities

Three PCI bus add-in card connectors for Desktop Board D850EMD2 (PCI local bus specification revision 2.2)  
Five PCI bus add-in card connectors for Desktop Board D850EMV2 (PCI local bus specification revision 2.2)  
One Communication and Networking Riser (CNR) connector shared with PCI slot 3 for Desktop Board D850EMD2 (optional)  
One Communication and Networking Riser (CNR) connector shared with PCI slot 5 for Desktop Board D850EMV2 (optional)  
One 1.5V 4X/2X AGP port connector

## Jumpers and Front Panel Connectors

<b>Jumpers</b>	Three-pin jumper block to set configuration mode for the BIOS Setup program
----------------	---

<b>Front Panel Connector</b>	Reset, HD LED, power LEDs, Power on/off, Aux LED
------------------------------	--

## Mechanical

<b>Board Style</b>	Desktop Board D850EMD2—µATX 1.0 compliant board size Desktop Board D850EMV2—ATX 2.03 compliant board size
--------------------	--

<b>Board Size</b>	Desktop Board D850EMD2—9.6"x9.6" Desktop Board D850EMV2—12.0"x9.6"
-------------------	---

## Baseboard Power

<b>Requirements</b>	Desktop Board D850EMD2—ATX12V or SFX12V Desktop Board D850EMV2—ATX12V
---------------------	--

## Environment

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

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

## Regulations

### Safety Regulations

US and Canada	UL 1950—CSA 950-95
US and Canadian recognition component marks	
Europe	Classified to IEC 950

### EMI/RFI reg: 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 configuration 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: [www.intel.com/reseller](http://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.

\*\* Check PC 2001 specifications for full details.

\*\*\* Not supported by all operating systems. See product guide for details.

