Intel® Desktop Boards D850MD and D850MV
for the Intel® Pentium® 4 Processor

Product Brief

Intel's Highest Performance Desktop Platforms

The Intel® Desktop Boards D850MD and D850MV harness the advanced computing power of the Intel® Pentium® 4 processor. Designed for the Intel® 850 chipset, the Desktop Boards D850MD and D850MV utilize the full bandwidth and performance in the Pentium 4 processor with dual RAMBUS* channels and support for Intel® NetBurst™ microarchitecture. Desktop Boards D850MD and D850MV offer the highest performance platform solution on the new mPGA478 socket, supporting Pentium 4 processors with frequencies extending beyond 2 GHz. This provides unprecedented system efficiency and responsiveness for those who wish to stay on the cutting edge of the digital world.

When combined with the Pentium 4 processor, the Desktop Boards D850MD and D850MV provide businesses with the performance headroom needed for automatic e-Business processes, while helping it utilize and manage the information explosion that characterize today's busy work environments. In addition, the increased headroom and scalability maximize the life of the business owner's PC investment, while allowing the enterprise to stay on the cutting edge of software and OS developments.

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Advanced Performance to unleash the full power of the Pentium® 4 Processor
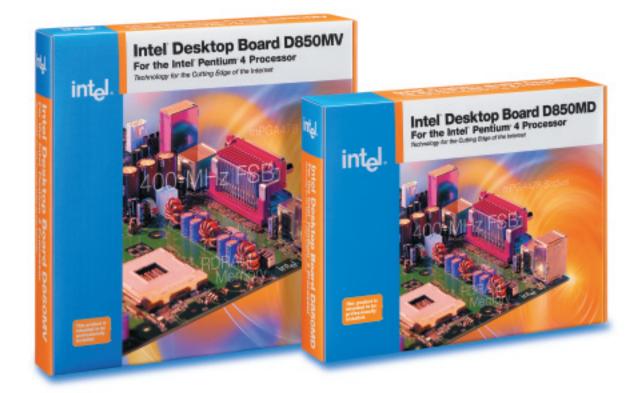
Desktop Boards D850MD and D850MV support Intel NetBurst microarchitecture with dual RDRAM* channels, providing 3.2GB/s memory bus bandwidth to match the system bus capabilities in the Pentium 4 processor. The Intel 850 chipset supports system bus speeds of 400 MHz, delivering performance improvements in the high-bandwidth and concurrent applications required for today's emerging Web technologies. The Desktop Boards D850MD and D850MV deliver scalability to users through a multiple array of performance platforms by supporting PC600 and PC800 RDRAM configurations with system memory configurations ranging from 128MB to 2GB.

Desktop Boards D850MD and D850MV 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 seven 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 D850MD is a uATX form factor with three PCI slots, and the Desktop Board D850MV is a full size ATX form factor with five PCI slots.

Complete Solution within 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 2000* for creating full-featured CDs, SoundMAX* with SPX for robust audio functionality, RealPlayer* basic to enable streaming audio and video, and RealJukebox* basic for recording and listening to MP3 audio.

To easily integrate a high-performance system, the Desktop Boards D850MD and D850MV come with critical, required items including the I/O shield, hard drive cables, and the heat sink retention mechanism base solution with native pushpins. System integrators 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.

Features	Benefits
Support for the Intel® Pentium® 4 processor	Supports 478-pin Pentium® 4 processor in mPGA package and Intel® NetBurst™ microarchitecture, including a 400-MHz system bus
Intel® 850 chipset featuring dual RDRAM* channel support	Designed in tandem with the new Pentium 4 processor, delivering enhanced features and 3.2GBs bandwidth for maximum performance
Intel® Rapid BIOS boot	Reduced boot time enables faster system access
AGP 4X/2X 1.5V connector	Supports the latest graphics technology
Four RDRAM RIMM Sockets	Supports fast PC800, PC600 RDRAM memory from 128MB to 2GB
Ultra ATA/100	Enables faster disk I/O for transfers to storage devices
Three PCI slots (Desktop Board D850MD) or five PCI slots (Desktop Board D850MV)	Expansion slots for custom system configurations and future add-in card upgrades
Supports up to seven USB ports	Two dual-stack rear connectors, header for two front panel USB connectors, CNR optional connector
Communication and Networking Riser (CNR) card support (optional)	Plug-and-play technology that supports integrated LAN, HPNA, modem or audio cards for overall system cost savings and customization
Integrated Intel® PRO/100 network connection utilizing Intel® 82562ET LAN (optional)	On-board 10/100 Ethernet LAN connectivity
ADI 1885 AC'97 Audio	Exceptional audio performance and excellent value with SoundMAX* with SPX support
Instantly available PC (suspend-to-RAM)	Power-management mode reduces PC power consumption and provides immediate PC access
Hardware management ASIC	In coordination with Intel® Active Monitor, allows user to monitor vital system levels like temperature and voltages for advanced warning of component failure
Three-year limited warranty**	Expanded investment protection

The Boxed Intel® Desktop Board D850MD and D850MV Solutions include:

- Desktop Board
- ATX compliant I/O shield
- Two CRIMMS
- Retention mechanism base for processor thermal solution
- Floppy and IDE cables
- AGP retention mechanism
- Board and back panel I/O layout stickers
- Quick Reference Guide

- CD-ROM featuring:
  - Intel® Express Installer
  - Norton* Internet Security*
  - Intel® Active Monitor
  - SoundMAX* with SPX
  - RealPlayer* Basic and RealJukebox* Basic
  - NTI CD-Maker 2000*
  - Software Drivers
  - Product Guide

Intel® Desktop Boards D850MD and D850MV Technical Specifications

Processor

Processors Supported (via mPGA478 socket)	Intel® Pentium® 4 processors with Intel® NetBurst™ microarchitecture, including 400-MHz system bus in the mPGA478 socket and supports frequencies starting at 1.4 GHz
Intel® 850 Chipset	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)
Memory Controller Hub (MCH)	Integrated dual Direct RAMBUS* memory technology Support for 128MB to 2GB main system memory
I/O Controller Hub (ICH2) ICH2 I/O Controller Hub	Ultra ATA/66/100 Ultra DMA/33 SMBus (to PCI slot #2) AC'97 controller Up to 8 PCI interrupts
I/O Features	Integrated super I/O LPC bus controller Three PCI slots for D850MD and five PCI local bus slots for D850MV Communication and Networking Riser (CNR) (optional) Power management support for both ACPI 1.0 and APM 1.2 PC 2001 Compliance***
USB	Integrated ICH2 controllers with an additional SIO hub • Four back panel ports (two dual stacks) • Two front panel ports (header requiring cable to front panel) • One port routed to CNR card (optional)

Firmware Hub

System BIOS	4Mb Flash EEPROM with Intel/AMI* BIOS featuring plug-and-play, IDE drive auto-configure Advanced PowerManagement (APM) 1.2, ACPI 1.0, DMI 2.0, multilingual support
Intel® Rapid BIOS Boot	Optimized POST for faster access to PC from power-on

System Memory

Memory Capacity	Four 168-pin unbuffered RIMM sockets for 128MB (min) to 2GB (max) RDRAM
Memory Type	PC600 or PC800 dual-channel RDRAM
Memory Voltage	2.5V

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 D850MD (PCI local bus specification revision 2.2) Five PCI bus add-in card connectors for Desktop Board D850MV (PCI local bus specification revision 2.2) One Communication and Networking Riser (CNR) connector shared with PCI slot 3 for Desktop Board D850MD (optional) One Communication and Networking Riser (CNR) connector shared with PCI slot 5 for Desktop Board D850MV (optional) One 1.5V 4X/2X AGP port connector

Jumpers and Front Panel Connectors

Jumpers	Three-pin jumper block to set configuration mode for the BIOS Setup program
Front Panel Connector	Reset, HD LED, power LEDs, Power on/off, Aux LED

Mechanical

Board Style	Desktop Board D850MD—uATX 1.0 compliant board size Desktop Board D850MV—ATX 2.03 compliant board size
Board Size	Desktop Board D850MD—9.6"x9.6" Desktop Board D850MV—12.0"x9.6"

Baseboard Power

Requirements	Desktop Board D850MD—ATX12V or SFX12V Desktop Board D850MV—ATX12V

Environment

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

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

http://program.intel.com/shared/products/boards

or http://developer.intel.com/design/motherbd

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