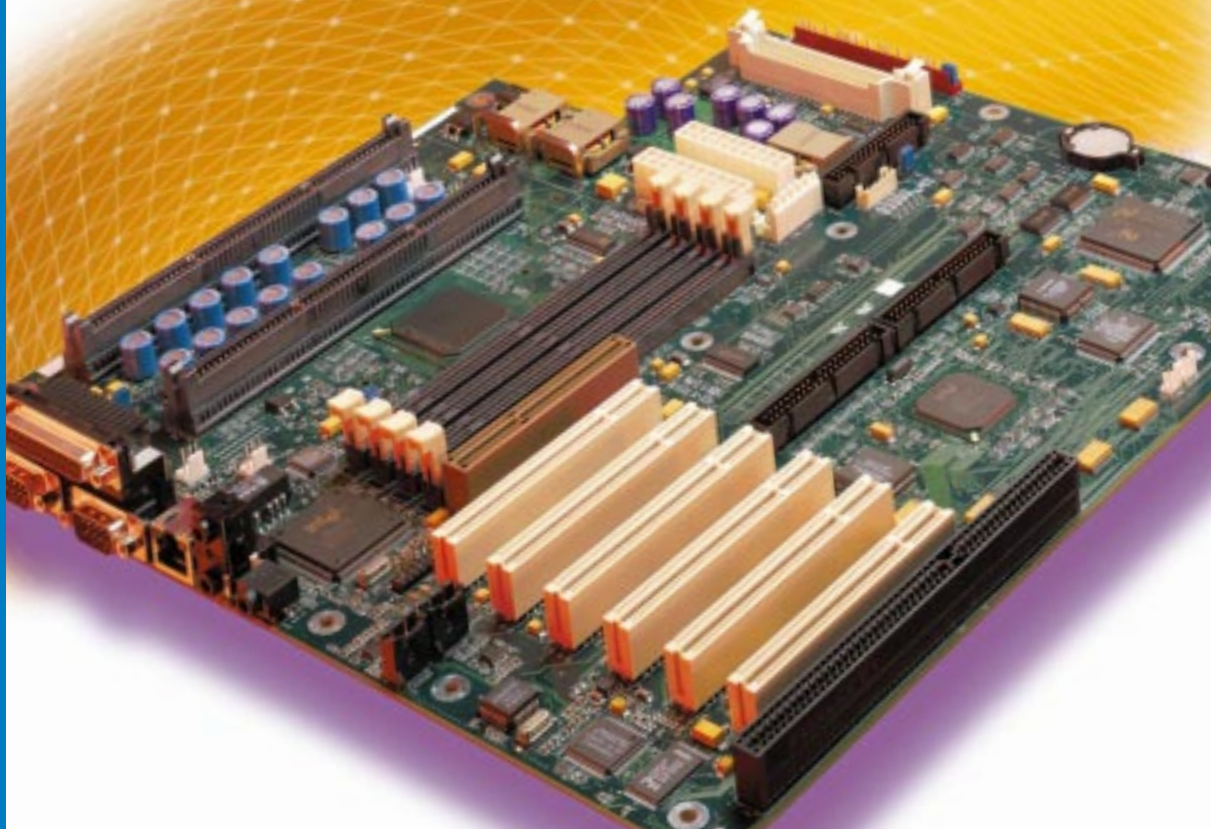


# MS440GX Motherboard for Intel® Pentium® II Xeon™ Processors

Specifically Designed for the Workstation Environment

The Intel® MS440GX motherboard extends Intel Architecture to new levels of enterprise and technical computing. With support for dual Intel Pentium® II Xeon™ processors, the MS440GX motherboard delivers workstation users a compelling alternative to proprietary RISC-based workstation solutions. Intel's 82440GX AGPset delivers high-performance AGP (Accelerated Graphics Port) graphics and support for up to 2 GB of system memory. The result is a powerful solution optimized for such demanding workstation activities as MCAD, ECAD, software development, animation and rendering as well as Digital Content Creation (DCC). And, because it's designed to operate with Windows\* NT, an MS440GX based workstation fits easily into your existing network infrastructure.

PRODUCT  
BRIEF



intel®

## A New Processor for Workstation Users

The Pentium II Xeon processor is the first in a new family of Intel processors designed to meet the demands of workstation users by integrating several features: Dual Independent Bus (DIB) architecture found in the Pentium II processor; a system bus running at 100 MHz; and 512 KB or 1 MB of L2 cache running at full processor speed. As a result, the Pentium II Xeon processor has the superior performance, manageability, and critical reliability that workstation users demand.

## High-Performance System Architecture

The MS440GX motherboard architecture is crafted around the Intel 82440GX AGPset. The chipset features Intel's Quad Port Acceleration (QPA) to provide the necessary bandwidth between the Pentium II Xeon processors, the AGP bus, 2 GB of 100-MHz ECC SDRAM and the PCI bus. The result is superior performance.

## Lower Cost of Ownership

To reduce the total cost of owning a workstation, the MS440GX motherboard is compliant with the Wired for Management (WfM) industry initiative to improve the manageability of desktop computer systems. The product design includes an integrated Intel LAN 82558 controller, a hardware management ASIC, facilities to perform service boot routines and Remote Wake-ups, and advanced power management.



## Features

Supports dual Pentium® II Xeon™ processors

440GX AGPset

AGP

Up to six PCI slots available (five PCI, one PCI/ISA shared)

On-board HW management with WfM 1.0 Compliance

## Benefits

Highest-performance Intel architecture for the workstation market today

Dual processing delivers tremendous performance increases over single-processor systems

Faster data throughput with support for 100-MHz system bus

Higher system memory capacity than AGPsets targeted at the desktop PC market

2 GB Memory Capacity

Delivers affordable high-performance graphics essential for the workstation market

Plenty of headroom for dynamic system configurations

Ready for remote monitoring of system conditions and remote access and service for lower total cost of ownership

## The boxed Intel MS440GX motherboard includes:

- MS440GX motherboard
- Dual-Retention Mechanism for the Pentium II Xeon processor
- VRM for dual-processing configurations
- Processor Termination Card for uni-processing configurations
- CD-ROM with drivers, manual, installation video and warranty
- Quick Reference Guide (hard copy)

## The MS440GX motherboard is available with a Suncheer\* minitower chassis†, including:

- Standoffs custom to the MS440GX motherboard mounting hole placement
- 300W power supply with 720 mA @ 5V standby current
- I/O shield with MS440GX back panel connector cutouts
- Two system fans and hardware kit

† Chassis included with single-pack MS440GX motherboard only.

Intel® MS440GX—  
Dual Pentium® II Xeon™  
processor-based motherboard

Four DIMM banks  
for SDRAM support

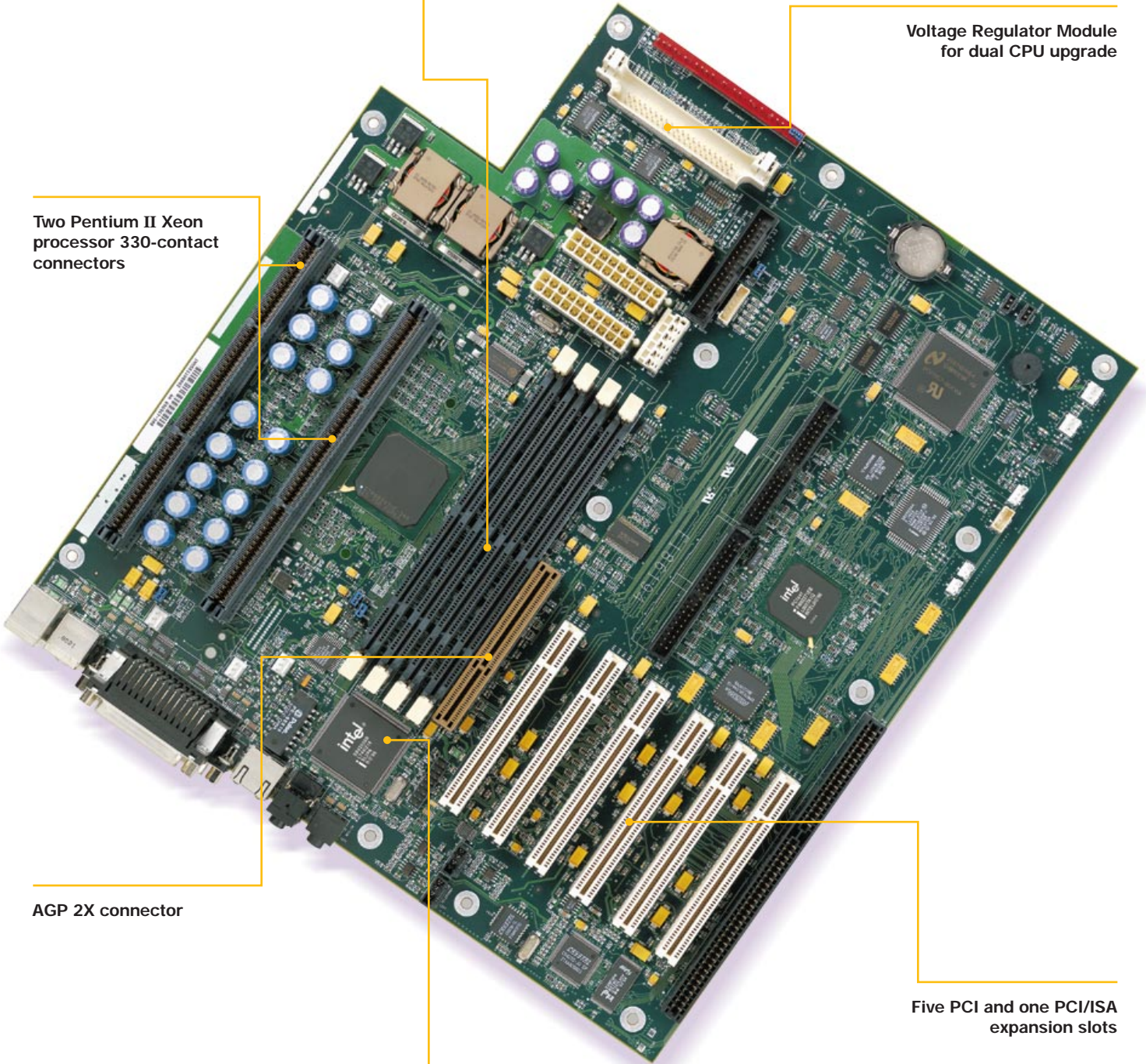
Voltage Regulator Module  
for dual CPU upgrade

Two Pentium II Xeon  
processor 330-contact  
connectors

AGP 2X connector

Intel82585 PCI  
LAN controller

Five PCI and one PCI/ISA  
expansion slots



## Intel® MS440GX Motherboard

**Processor/Cache** Support for single or dual Intel® Pentium® II Xeon™ processors at 400 MHz with 512 KB or 1 MB of integrated L2 cache

**Intel 440GX Chipset** Intel 82440GX AGPset, including the Intel 82443GX PCI/AGP controller (PAC) and the Intel 82371EB PCI/ISA IDE Xcelerator (PIIX4E)

### System Memory

**Memory Capacity** Four 168-pin sockets for gold-lead DIMMs

**Memory Size** Up to 2 GB of ECC SDRAM (32-MB minimum)

**DIMM Sizes** 16 MB, 32 MB, 64 MB, 128 MB, 256 MB and 512 MB

**Memory Types** Supports unbuffered or registered (not mixed) 100 MHz (PC100 compliant) ECC SDRAM.

**Memory Voltage** 3.3V only

### EtherExpress™ PRO/100 PCI LAN Subsystem

**Controller** Intel 82558 LAN controller

**Performance** 10/100 MB/s data transfer rates

**Manageability** WfM compliant, Wake-On-LAN support

### Accelerated Graphics Port (AGP)

Runs at data-transfer rates of 133 MHz (with AC timing) to achieve data throughput rates of up to 528 MB/sec

### Integrated Audio

Crystal® CS4235 ISA, fully Plug and Play, enhanced stereo full-duplex operation with 16-bit addressing

### Integrated PCI/ISA IDE Xcelerator

**IDE** Two independent channels for four IDE devices  
PIO Mode 0, PIO Mode 3, PIO Mode 4, Ultra DMA and CD-ROM support

**USB** Two stacked USB connectors

### Integrated Super I/O

**Controller** National Semiconductor 97307 I/O controller

**Serial Ports** Two FIFO serial ports, RS-232C, PC16450/16550A compatible

**Parallel Ports** Compatible, bidirectional, ECP and EPP modes

**Floppy Controller** 1.44 MB, 2.88 MB, 3-Mode support

**Keyboard/Mouse** 8042A Compatible Controller

**RealTime Clock** Century Reg. ± 13 min/yr accuracy

**IR Interface** Serial Port 2 can be configured to support an IrDA module connected to the front panel infrared connector

### System BIOS

**BIOS Type** Intel E28F004BXT80 4-Mbit flash component with Intel/Phoenix BIOS

**Special Features** Plug and Play, IDE drive auto configure, Advanced Power Management (APM) 1.2, ACPI 1.0, DMI 2.0, ECC/Parity support, LS120 support

### Jumpers and Front Panel Connectors

**Connectors** Keyboard, Mouse, USB 1 & 2, Parallel, Serial A, Serial B, LAN, Audio Line In, Audio Line Out, Microphone Input

**Jumpers** Single jumper to set configuration mode for the BIOS Setup Program. Single jumper for LAN enable/disable.

### Hardware Monitor

**Features** Management Level 4 functionality  
System Management Bus interface (SMBus)

Processor temperature sensing

Two fan-speed sensors

Power-supply voltage monitoring

Intrusion detect for security

Remote reset

Watchdog comparisons of all monitored values

### Expansion Slots

**Description** One dedicated AGP slot  
Five dedicated PCI slots  
One shared PCI/ISA slot

### Mechanical

**Board Style & Size** Custom ATX form factor. Standard ATX slot and external connector placement. Overall board dimensions are 12"x13" with a 2.25"x3.1" notch with four non-ATX mounting holes

### Baseboard Power Requirements

**+3.3V** Tolerance ± 5% 29.0A

**+5V** Tolerance ± 5% 26.0A

**+5VSB** Tolerance ± 5% 0.85A

**-5V** Tolerance ± 10% 0.2A

**+12V** Tolerance ± 5% 5.50A (6.6A peak)

**-12V** Tolerance ± 10% 0.25A

### Environment

**Operating Temp.** 0°C to +55°C

**Storage Temp** -40°C to +70°C

### Regulations

**U.S. and Canada** FCC and Industry Canada Class A  
UL 1950—CSA 950-95, U.S. and Canadian recognition component marks

**Europe** UL Classified to IEC 950 and EN60-950, EN55022 Class B and EN50082-1

For the most current product information, visit Intel's Web site at <http://channel.intel.com/business/ibp/kit.htm>



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The Intel MS440GX motherboard 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.

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