

# Intel® Workstation Board OR840 For the Intel® Pentium® III Processor

Designed for High-Performance, Dual-Processor Workstations

## Product Brief

The Intel® Workstation Board OR840 provides a solid foundation for Intel Architecture-based workstations. With support for dual Intel® Pentium® III processors, it delivers a powerful platform for demanding workstation environments. New technologies, such as the Intel® 840 chipset, RDRAM\*, 133-MHz system bus and AGP 4X/AGP Pro 50, ensure that your system has the bandwidth to handle both today's and tomorrow's workstation applications. Plus, the Workstation Board OR840 is flexible, so it can be used in a wide variety of entry-level and mid-range workstation configurations. And because it comes from Intel, it delivers the compatibility and reliability you require.



**Delivering Both Performance and Flexibility** Designing the right workstation is an art. It requires understanding the tasks to be performed and matching them with the right system components. The Workstation Board OR840 was designed to put the widest range of options at your disposal, giving you the freedom to select the optimal workstation configuration.

An Intel Architecture-based workstation gives you an incredible array of component and software choices. And the Workstation Board OR840 is engineered for maximum flexibility and performance.

**Processor** With two Intel Pentium III processors installed, the OR840 platform is an extremely powerful workstation foundation. For additional design flexibility, the boxed Intel Workstation Board OR840 comes with components needed to run in a single-processor configuration. From entry-level to high-performance workstations, the Workstation Board OR840 is ready to support your design needs.

**System Bus** The Workstation Board OR840 supports 133-MHz system bus frequency, giving you a choice of powerful Pentium III processors to choose from.

**Memory** RDRAM provides two to three times as much memory bandwidth as PC100 SDRAM-based systems on the market today. It supports the horsepower needed for today's sophisticated applications and the headroom for future workstation tasks. Plus, with four RDRAM memory slots, the Workstation Board OR840 allows for a variety of memory configuration choices.

For entry-level systems, the Workstation Board OR840 supports 600-MHz RDRAM, and the use of lower-density memory. For performance workstations, the Workstation Board OR840 supports 800-MHz RDRAM and up to 2 GB of high-density system memory. Regardless of which configuration you choose, the dual-memory channels of the Intel 840 chipset establish new performance standards for IA workstation memory subsystems.

**Graphics** The AGP Pro connector on the Workstation Board OR840 is compatible with AGP 4X graphics cards, which are well suited for entry-level workstations. It also supports AGP Pro 50 cards for high-end graphics processing. Both configurations provide 1 GB/sec of dedicated AGP graphics bandwidth.



**LAN** The Workstation Board OR840 comes with integrated Intel® 82559 LAN that supports both 10 Mbps and 100 Mbps networks.

**Hard Drive & Storage** The Workstation Board OR840 includes two ATA/66 IDE ports. The ATA/66 IDE interface supports double the bandwidth of older ATA/33 devices and delivers high-performance for entry-level workstations. For more advanced disk features, install your favorite RAID or SCSI add in card.

**Form Factor** The Workstation Board OR840 comes in the standard ATX form factor, giving you maximum flexibility for choosing chassis and power supplies.

Whether you've recently outgrown desktops or you're a workstation expert, you'll find the Intel Workstation Board OR840 is an ideal foundation for all your Pentium III processor-based workstation solutions.

Features	Benefits
<b>Supports dual Intel® Pentium® III processors at 133-MHz or system bus frequency</b>	Dual processing delivers tremendous performance increases over single-processor systems High-performance Intel® architecture
<b>Intel® 840 chipset</b>	Faster data throughput with support for 133-MHz system bus Higher system memory capacity than chipsets targeted at the desktop PC market 2 GB memory capacity
<b>Integrated LAN</b>	Integrated 10/100 LAN (Intel® 82559)
<b>Connector for AGP 4X or AGP Pro 50 graphics cards</b>	AGP Pro 50 supports high-end graphics processing essential for digital content creation and computer-aided design AGP 4X delivers affordable high-performance graphics
<b>4 RIMM* Sockets for up to 2 GB of Direct RDRAM* Memory</b>	RDRAM provides two to three times as much memory bandwidth as PC100 SDRAM-based systems on the market today
<b>Standard ATX form factor</b>	Fits in multiple industry-standard chassis
<b>Five PCI slots available</b>	Plenty of headroom for dynamic system configurations
<b>On-board HW management with WfM 1.0 Compliance</b>	Ready for remote monitoring of system conditions and remote access and service for lower total cost of ownership
<b>Ultra ATA/66 IDE</b>	Supports double the bandwidth of older ATA/33 devices Delivers high-performance for entry-level workstations

**The boxed Intel® Workstation Board OR840 includes:**

- Workstation Board OR840
- ATX 2.01 compliant I/O shield
- Two RDRAM\* Memory Continuity Cards
- One Processor Termination Card
- Two Intel® Pentium® III Processor Retention Mechanisms
- IDE and Floppy cables
- Quick Start Guide
- CD-ROM with software drivers and product guide
- Board and back panel I/O layout stickers

# Intel® Workstation Board OR840 Specifications

## Processor/Cache

Support for single or dual Intel® Pentium® III processors at 533 MHz and higher with a 133-MHz system bus.

## Intel® 840 Chipset

Intel 840 chipset, including the Intel® 82840 MCH, the Intel® 82801AA ICH and the 82802AB FWH

## System Memory

Memory Capacity Four RIMM\* connectors on two memory channels  
Memory Size Designed to support up to 2 GB of ECC RDRAM\*  
RIMM Sizes 64 MB, 128 MB, 256 MB and 512 MB  
Memory Types Supports ECC and non-ECC Direct RDRAM at 600 MHz and 800 MHz

## PRO/100 PCI LAN Subsystem

Controller Intel® 82559 LAN controller  
Performance 10/100 MB/s data transfer rates  
Manageability WfM compliant, Wake-On-LAN support

## Accelerated Graphics Port (AGP) 4X and Pro 50

Runs at data-transfer rates of 266 MHz (with AC timing) to achieve data throughput rates of up to 1 GB/sec. Up to 50 watts of power available to the graphics card.

## Integrated PCI/ISA IDE Xcelerator

ATA/66 IDE Two independent channels for four IDE devices  
PIO Mode 0, PIO Mode 3, PIO Mode 4, Ultra  
DMA 66 and CD-ROM support  
USB Two stacked USB connectors

## Integrated Super I/O

Controller SMSC 47B272 I/O controller  
Serial Port FIFO serial port, RS-232C, PC16450/16550A compatible  
Parallel Port Compatible, bidirectional, ECP and EPP modes  
Floppy Controller 1.44 MB, 2.88 MB, 3-Mode support  
Keyboard/Mouse 8042A Compatible Controller  
Real Time Clock Century Reg. +/- 13 min/yr accuracy

## System BIOS

BIOS Type Intel® 82802AC 8-Mbit flash component with Intel® 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 Connectors

Connectors Keyboard, Mouse, USB 1 & 2, Parallel, Serial A, LAN  
Jumpers Single jumper to set configuration mode for the BIOS Setup Program. Single jumper for LAN enable/disable.

## Hardware Monitor

Features Management Level 5 functionality  
System Management Bus interface (SMBus)  
Fan-speed sensing  
Power-supply voltage monitoring  
Processor Temperature Sensing  
Remote reset  
Watchdog comparisons of all monitored values

## Expansion Slots

Description One dedicated AGP Pro slot (also supports AGP 4X)  
Five dedicated PCI slots

## Mechanical

Board Style & Size Standard ATX form factor. Standard ATX slot and external connector placement. Overall board dimensions are 9.6"x12"

## Baseboard Power Requirements

+3.3 V	Tolerance +/-5% 25.0A
+5 V	Tolerance +/-5% 29.0A
+5 VSB	Tolerance +/-5% 1.2A
+12 V	Tolerance +/-5% 11.0A
-12 V	Tolerance +/-10% 0.25A

## Environment

Operating Temperature 0° C to +55° C  
Storage Temperature -40° C to +70° C

## Regulations

U.S. and Canada	FCC & Industry Canada Class B 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://program.intel.com/ibp/products/boards/or840/>



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The Intel Workstation Board OR840 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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