Olympus IV
User's Guide

MAN-876
03/24/05

© Copyright 1985-2010 American Megatrends, Inc.
All rights reserved.
American Megatrends, Inc.
5555 Oakbrook Parkway, Building 200,
Norcross, GA 30093

This publication contains proprietary information which is protected by copyright. No part of this publication can be reproduced, transcribed, stored in a retrieval system, translated into any language or computer language, or transmitted in any form whatsoever without the prior written consent of the publisher, American Megatrends, Inc. American Megatrends, Inc. acknowledges the following trademarks:

Intel is a registered trademark of the Intel Corporation.
MS-DOS and Microsoft are registered trademarks of the Microsoft Corporation.
Microsoft Windows is a trademark of the Microsoft Corporation.
IBM, AT, VGA, PS/2, and OS/2 are registered trademarks and XT and CGA are trademarks of the International Business Machines Corporation.

Other trademarks and trade names may be used in this document to refer to either the entities claiming the marks and names or their products. American Megatrends, Inc. disclaims any proprietary interest in trademarks and trade names other than its own.

Revision History

01/31/05	Initial release.
03/24/05	Updated FCC statement from Class A to Class B.

Table of Contents

Chapter 1 Hardware Specifications 1

Overview 1
Specifications 1

Chapter 2 Hardware Installation 3

Overview 3
Motherboard Installation 3
Motherboard Layout 4
Step 1 Unpack the Motherboard 5
Avoid Electro-Static Discharge (ESD) 5
J43 BIOS Recovery Header 6
J44 Clear CMOS 7
Step 2 Install Memory 8
Memory Overview 8
Supported Memory 9
Memory Configuration 9
Highest Throughput Level (RECOMMENDED) 10
Second Highest Throughput Level 10
Second Lowest Throughput Level 11
Lowest Throughput Level 11
Inserting DIMM Modules 12
Removing DIMM Modules 12
Step 3 Install CPU and Connect Heatsink and Fan 13
Supported Processors 13
Processor Installation 14
Step 4 Install the Motherboard 19
Step 5 Attach Internal Cables 20
J10 and J34 ATX Power Supply Connectors 21
J28 Intrusion Sensor Connector 23
J12 External Serial Port B Connector 24
J40 Floppy Drive Connector 25
J39 Parallel ATA (IDE) Connector 26
J9 S/PDIF (Sony/Philips Digital Interface) Header 27
J15 CD Audio In Header 27
J30 USB Front Panel Header 28
J41 Alternate Three Pin Power LED Header 28
Ultra ATA-66/100 29
J31, J32, J36, and J37 Serial ATA Connectors 30
J35 Front Panel Header 31
J35 Hard Disk Activity LED Header 32
J35 Power LED Header 32
J35 Reset Button Header 32
J35 ATX Power Supply Soft ON/OFF Header 32
Fan Headers 33
J11 Rear Chassis Fan Header 33
J20 CPU Cooling Fan Header 33
J38 Front Chassis Fan Header 33

Table of Contents

Step 6 Install Expansion Boards 34
PCI Express 1x16 Slot 34
PCI Slots 34
Step 7 Connecting External Cables 35
Step 8 Install Drivers 36
Step 9 Test and Configure 36

Chapter 3 AMIBIOS Setup 37

Overview 37
Starting AMIBIOS Setup 37
AMIBIOS Setup Menu 38
Section 1 Main Setup 39
Section 2 Advanced Setup 40
CPU Configuration 40
Max CPUID Value Limit 41
Hardware Prefetch 41
Adjacent Cache Line Prefetch 41
Hyper Threading Technology 41
IDE Configuration 42
S-ATA Running Enhanced Mode 42
P-ATA Channel Selection 43
Combined Mode 43
S-ATA Ports Definition 43
Configure S-ATA as RAID 43
Hard Disk Write Protect 43
IDE Detect Time Out (Sec) 44
ATAPI 80 Pin Cable Detection 44
Primary Master : Hard Disk Drive 45
Primary IDE Master : ATAPI CD ROM 46
Type 46
LBA/Large Mode 47
Block (Multi-Sector Transfer) 47
PIO Mode 47
DMA Mode 48
S.M.A.R.T. for Hard Disk Drives 48
32Bit Data Transfer 49
ARMD Emulation Type 49
Third and Forth IDE Slave 49
Floppy Configuration 49
Floppy A 50
Floppy B 50
SuperIO Configuration 50
Onboard Floppy Controller 50
Serial Port1 Address 51
Serial Port2 Address 51
Serial Port2 Mode 52
IR Duplex Mode 52
IR Receiver Pin 52
Parallel Port Address 53
Parallel Port IRQ 53
ACPI Configuration 54

Table of Contents

Advanced ACPI Configuration 54
ACPI 2.0 Support 55
ACPI APIC Support 55
AMI OEMB Table 55
Headless Mode 55
Event Logging 56
MPS Configuration 59
MPS Revision 59
PCI Express Configuration 60
Remote Access Configuration 61
Remote Access 61
Serial Port Number 62
Serial Port Mode 62
Flow Control 62
Redirection After BIOS POST 62
Terminal Type 62
VT-UTF8 Type Combo Key Support 63
Sredir Memory Display Delay 63
USB Configuration 63
USB Function 64
Legacy USB Support 64
USB 2.0 Controller 64
USB 2.0 Controller Mode 64
Section 3 PCI/PnP Setup 65
Plug and Play O/S 65
PCI Latency Timer 65
Allocate IRQ to VGA 66
Palette Snooping 66
PCI IDE BusMaster 66
Offboard PCI IDE Card 67
IRQ 3, 4, 5, 9, 10, 11, 14, and 15 67
DMA Channel 0, 1, 3, 5, 6, and 7 67
Reserved Memory Size 68
Section 4 Boot Setup 69
Boot Settings Configuration 69
Quick Boot 70
Quiet Boot 70
AddOn ROM Display Mode 70
Bootup Num-Lock 70
PS/2 Mouse Support 70
Wait For 'F1' If Error 70
Hit 'DEL' Message Display 71
Interrupt 19 Capture 71
Boot Device Priority 71
1st Boot Device 72
2nd Boot Device 72
3rd Boot Device 72
Hard Disk Drives Boot Priority 73
Removable Drives Boot Priority 74
CD/DVD Drives Boot Priority 75

Table of Contents

Section 5 Security Setup 76
Setting Up a Supervisor Password 76
Clearing the Password (via BIOS) 79
Clearing the CMOS (via Hardware Jumper) 82
Section 6 Chipset Setup 82
NorthBridge Chipset Configuration 83
DRAM Frequency 83
Configure DRAM Timing by SPD 83
Memory Hole 84
Boots Primary Graphics Adapter [PEG/PCI] 84
Aperture Size Select 84
Video Function Configuration 85
South Bridge Chipset Configuration 85
Onboard AC'97 Audio 85
Section 7 Power Management 86
Power Management/APM 86
Video Power Down Mode 87
Hard Disk Power Down Mode 87
Standby Time Out 87
Suspend Time Out (Minute) 88
Throttle Slow Clock Ratio 88
Keyboard & PS/2 Mouse 88
FDC/LPT/COM Ports 88
Primary Master IDE 88
Primary Slave IDE 88
System Thermal 89
System Thermal Active Temperature 89
Thermal Slow Clock Ratio 90
Power Button Mode 90
Restore on AC Power Loss 90
Resume on Ring, LAN, PME#, and RTC Alarm 91
Section 8 Exit 91
Exit Saving Changes 92
Exit Discarding Changes 92
Discard Changes 93
Load Optimal Defaults 93
Load Failsafe Defaults 94

Chapter 4 Programming Flash ROM 95

A) Programming the Flash EPROM Using <Ctrl> <Home> 95
Bootblock Actions 95
S876P.ROM 96
Beep Codes 96
B) Programming the Flash EPROM Using the AMIFlash Utility 97
Bootblock Code Checkpoint Codes 100

Chapter 5 Deleting a Password 101

Overview 101
Erase Old Password 101

Table of Contents

Appendix A Battery Replacement 103
Battery 103
Appendix B AMIBIOS Beep Codes 105
Troubleshooting AMIBIOS Beep Codes 105
Index 107

Limited Warranty

> ***Warning***
>
> *Read the documentation that came with your processor and the CPU installation section of this guide prior to performing the processor installation. The LGA775 Socket requires special attention. Damaging the LGA775 Socket will **VOID** your warranty.*

The buyer agrees that if this product proves to be defective, American Megatrends is only obligated to repair or replace this product at American Megatrends' discretion according to the terms and conditions of the warranty registration card that accompanies this product. American Megatrends shall not be liable in tort or contract for any loss or damage, direct, incidental or consequential resulting from the use of this product. Please see the *Warranty Registration Card* shipped with this product for full warranty details.

Technical Support

AMI provides technical support for AMI products purchased directly from AMI or from an AMI-authorized reseller only.

If…	Then…
You purchased this product from AMI or from a certified AMI reseller,	Call AMI technical support at 770-246-8645. Please be prepared to specify the serial number of the product.
This AMI product was installed as part of a system manufactured by a company other than AMI or you purchased an AMI product from an unauthorized reseller,	Call the technical support department of the computer manufacturer or the unauthorized reseller. AMI does not provide direct technical support in this case.

If your American Megatrends Olympus IV motherboard fails to operate as described or you are in doubt about a configuration option, please call technical support at 770-246-8645.

> ***Warning***
>
> *You must save the plastic LGA775 Socket protection cover. The plastic LGA775 Socket protection cover must be correctly attached to the LGA775 socket prior to shipping the Olympus IV motherboard to AMI for repair. An Olympus IV motherboard received for repair without the plastic LGA775 Socket protection cover properly attached will **VOID** your warranty.*

Web Site

We invite you to access the American Megatrends World Wide Web site at:

http://www.ami.com/

Disclaimer

This manual describes the operation of the American Megatrends Olympus IV motherboard. Although efforts have been made to assure the accuracy of the information contained here, American Megatrends expressly disclaims liability for any error in this information, and for damages, whether direct, indirect, special, exemplary, consequential or otherwise, that may result from such error, including but not limited to the loss of profits resulting from the use or misuse of the manual or information contained therein (even if American Megatrends has been advised of the possibility of such damages). Any questions or comments regarding this document or its contents should be addressed to American Megatrends at the address shown on the inside of the front cover.

American Megatrends provides this publication "as is" without warranty of any kind, either expressed or implied, including, but not limited to, the implied warranties of merchantability or fitness for a specific purpose.

Some states do not allow disclaimer of express or implied warranties or the limitation or exclusion of liability for indirect, special, exemplary, incidental or consequential damages in certain transactions; therefore, this statement may not apply to you. Also, you may have other rights which vary from jurisdiction to jurisdiction.

This publication could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. American Megatrends may make improvements and/or revisions in the product(s) and/or the program(s) described in this publication at any time.

Requests for technical information about American Megatrends products should be made to your American Megatrends authorized reseller or marketing representative.

Retail Packing List

You should have received the following:

- an Olympus IV motherboard
- one ATA-66/100 cable
- one floppy cable
- one serial port header cable
- an I/O shield
- a warranty card
- this *Olympus IV User's Guide* (located on the *Olympus IV CD*)
- an *Olympus IV Quick Installation Guide*
- an *Olympus IV CD*

Note: Your Olympus IV (series 876) motherboard may or may not ship with everything listed in the *Retail Packing List*. Contact your AMI authorized reseller to find out what is shipped with your motherboard.

FCC Class B (USA)

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to
- which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Chapter 1 Hardware Specifications

Overview

The AMI Olympus IV motherboard utilizes the Intel I915G chipset. It offers support for the latest Intel LGA775 socketed processors. The Olympus IV offers support for a single PCI Express x 16 card and three PCI cards.

The Olympus IV has many integrated features including an onboard VGA, four SATA (RAID), Gigabit LAN, surround sound, and eight USB 2.0 (six ports on rear IO shield and two ports for the front of the chassis).

With all these features the AMI Olympus IV motherboard is the perfect fit for small network attached appliances and workstations.

Specifications

Item	Description
CPU	• Single Intel® Pentium® 4 processor in an LGA775 socket • 800 MHz or 533 MHz FSB
Intel® I915G Chipset	• 82915G Graphics Memory Controller Hub (GMCH) • 82801FB I/O Controller Hub (ICH6) • 4 Mbit Firmware Hub Flash Interface (FWH)
Memory	• Four 240-pin DDR2 SDRAM DIMM sockets • Supports up to 4 GB of total system memory • Supports Dual Channel DDR2 533 MHz or DDR2 400 MHz DIMM modules • ECC and registered DIMMs are not supported
Slots	• One PCI Express x 16 Slot • Three 32-Bit 33 MHz PCI 2.2 Slots
On-Board Video	• GMA900 on-chip video controller (resident in the GMCH) • Standard 15-pin VGA port located on the rear IO shield • 32 bits per pixel (bpp) graphics engine • 333 MHz core frequency • 256-bit 2-D engine • 32-bit 3-D engine • Pixel Shader 2.0 • 4-pixel pipes • DirectX 9.0 • Software Vertex Shader • Up to 2048 x 1536 at 75 Hz refresh rate • Direct Video Memory Technology (DVMT) supports up to 224 MB can be allocated when there is more than 512 MB of system memory

Cont'd

Specifications, Continued

Item	Description
On-Board LAN	• Marvel Yukon 88E8052 PCI Express 10/100/1000 Ethernet Controller • Supports IEEE 802.1p and 802.1q • IEEE 802.3 compliant • Supports 802.3x flow control • Supports Jumbo frame • Offloads TCP, IP, UDP checksum • Automatic MDI/MDIX crossover detection and configuration • Supports Wake On LAN technology power management • Supports PCI Express Active State Power Management • Supports ASF 2.0 • One RJ45 Port for External Connection with two LEDs that give you link status, activity, and speed information at a glance
USB 2.0	• Six USB 2.0 ports located on the rear IO shield • Two USB 2.0 headers for USB connectors that can be chassis front mounted
Serial/ Parallel ATA	• Four Serial ATA connectors (one device per connector) • One Parallel ATA-66/100 connector (two devices per connector)
Standard I/O	• One floppy drive connector • A pair of PS/2 mouse and keyboard ports located on the rear IO shield • Two Serial ports, one located on the rear IO shield and one Serial port header • One Parallel port located on the rear IO shield (ECP and EPP support)
Audio	• Realtek ALC880 audio codec • Supports surround sound (front right left, rear right left, center, line-out, line-in, and mic in) • Internal 4-pin CD audio header • S/PDIF header (optional)

Health Monitoring and Hardware Control	• Supports CPU core, Chipset, PCI Slots, and Power Supply Voltage monitoring
	• Supports Thermal monitoring of the CPU and Ambient temperatures
	• Supports one chassis intrusion detection hardware and monitoring
	• Monitors two chassis fan and one CPU cooling fan with the ability to control the RPM of the fans including on/off.
	• General Purpose Non Volatile (GPNV) Storage
	• Located in the FWH, used to store event logs:
	  • BIOS POST Code
	  • System Boot Log
	  • CPU Temperature, FAN, ECC History
	  • Chassis Fan, Temperature History

AMIBIOS	• AMIBIOS8™ resident in the 4 Mbit FWH • AMI Desktop BIOS • PnP, DMI, and ACPI • Coin cell battery (CR2032) used to power real-time clock (RTC) and hold CMOS memory
Physical Size	• Micro ATX Form Factor • 9.6 inches x 9.6 inches (244 mm x 244 mm)
Environmental Specifications	• Storage Temperature: -20 degrees to 80 Degrees C • Relative Humidity: 5 to 95% Non-Condensing @40 Degrees • Operating Temperature: 0 to 45 Degrees C • Vibration: 2.5G Acceleration Over 2000 Hz Sine Wave, 2oct/Mian Sine Sweep • Shock: 30G; 11 Msec Duration, Half-Sine Shock Sweep

Chapter 2 Hardware Installation

Overview

This chapter covers the basic hardware installation of the Olympus IV motherboard.

> ⚠ ***Warning***
>
> *Read the documentation that came with your processor and the CPU installation section of this guide prior to performing the processor installation. The LGA775 Socket requires special attention. Damaging the LGA775 Socket will **VOID** your warranty.*

> ⚠ **Caution**
>
> Do **NOT** touch the LGA775 Socket pin contacts. The LGA775 Socket pin contacts are very fragile and can be easily damaged. Leave the plastic LGA775 Socket protection cover on the LGA775 Socket until you are ready to install the processor. Physically damaging the LGA775 Socket pin contacts will **VOID** your warranty.

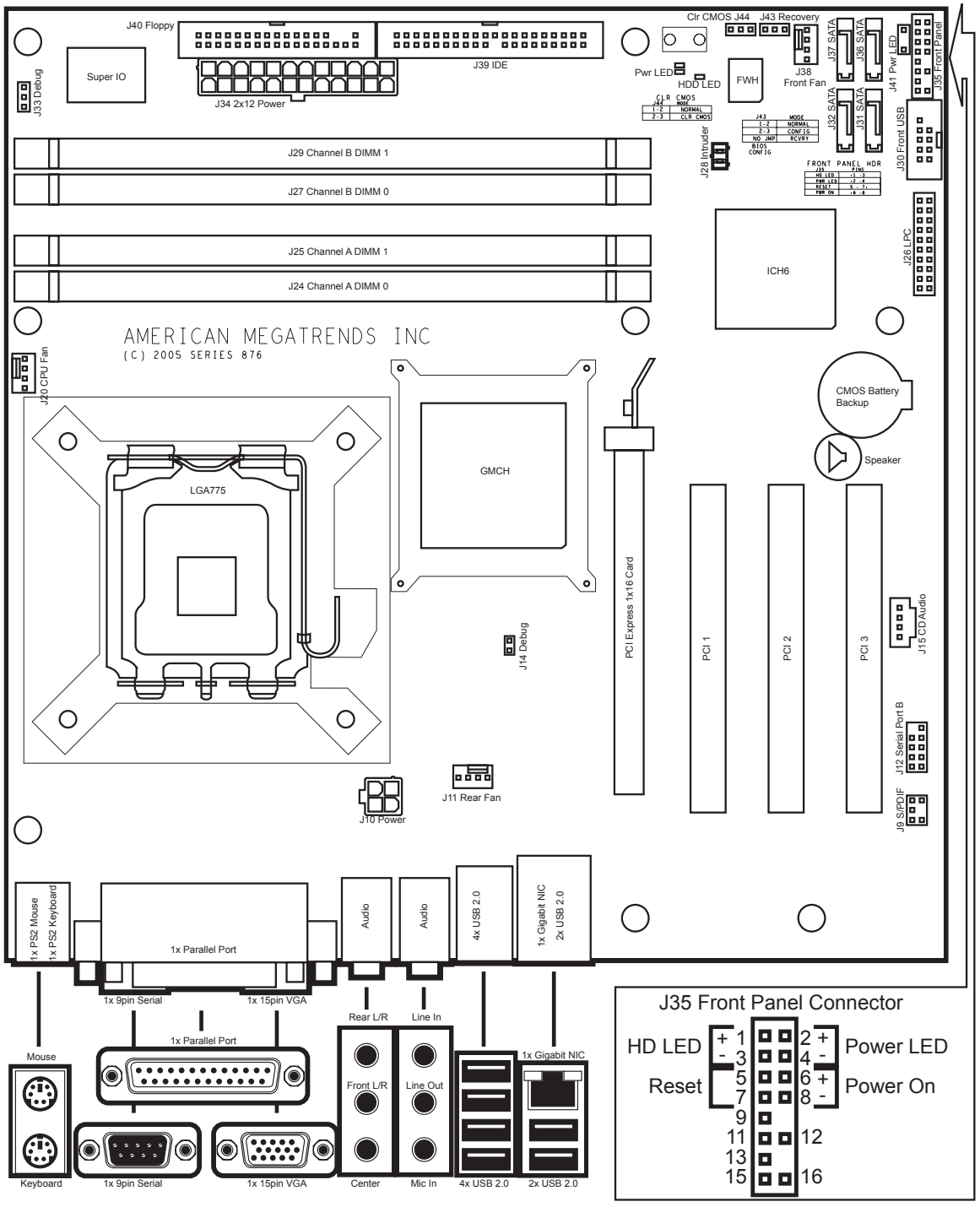
> ⚠ ***Warning***
>
> *You must save the plastic LGA775 Socket protection cover. The plastic LGA775 Socket protection cover must be correctly attached to the LGA775 socket prior to shipping the Olympus IV motherboard to AMI for repair. An Olympus IV motherboard received for repair without the plastic LGA775 Socket protection cover properly attached will **VOID** your warranty.*

Motherboard Installation

Use the following steps to install the motherboard, memory, CPU, and connectors.

Step	Action
1	Unpack the Motherboard (*and check jumper settings*) and visually inspect
2	Install Memory
3	Install CPU and Connect CPU Heatsink and Fan
4	Install the Motherboard (*and I/O shield*)
5	Attach Internal Cables
6	Installing Expansion Boards
7	Connect External Cables
8	Install Drivers
9	Test and Configure

Motherboard Layout



Step 1 Unpack the Motherboard

⚠Caution

Do **NOT** touch the LGA775 Socket pin contacts. The LGA775 Socket pin contacts are very fragile and can be easily damaged. Leave the plastic LGA775 Socket protection cover on the LGA775 Socket until you are ready to install the processor. Physically damaging the LGA775 Socket pin contacts will **VOID** your warranty.

Step	Action
1	Inspect the cardboard carton for obvious damage. If damaged, call 770-246-8600. Leave the motherboard in its original packing.
2	Perform all unpacking and installation procedures on a ground-connected anti-static mat. Wear an anti-static wristband grounded at the same point as the anti-static mat. Or use a sheet of conductive aluminum foil grounded through a 1-megohm resistor instead of the anti-static mat. Similarly, a strip of conductive aluminum foil wrapped around the wrist and grounded through a 1 megaohm resistor serves the same purpose as the wristband.
3	Inside the carton, the motherboard is packed in an anti-static bag, and sandwiched between sheets of packaging sponge. Remove the sponge and the anti-static bag. Place the motherboard on a grounded anti-static surface component side up. Save the original packing material.
4	Inspect the motherboard for damage. Do not apply power to the motherboard if it has been damaged.
5	Visually inspect the LGA775 CPU socket to ensure socket load lever and load plate are secured. **Note:** Do **NOT** open the socket at this time.
6	If the motherboard is undamaged, it is ready to be installed.

Avoid Electro-Static Discharge (ESD)

Electro-Static Discharge (ESD) will damage the motherboard and other system components. Keep the motherboard in the anti-static bag until it is to be installed. Wear an anti-static wrist-grounding strap before handling the motherboard. Make sure you stand on an anti-static mat when handling the motherboard.

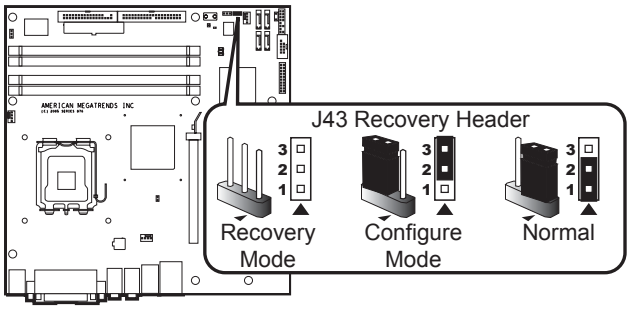
Avoid contact with any component or connector on any adapter card, printed circuit board, or memory module. Handle these components by the mounting bracket.

Cont'd

Set Jumpers

Set all jumpers and install the CPU before placing the motherboard in the chassis.

J43 BIOS Recovery Header



Pin	Description
1	FWH GP14
2	Recovery Configure Pull Up
3	Speaker

Verify that this jumper is set to pins 1 and 2. This header is for debugging use only. This header may or may not be mounted on your Olympus IV motherboard.

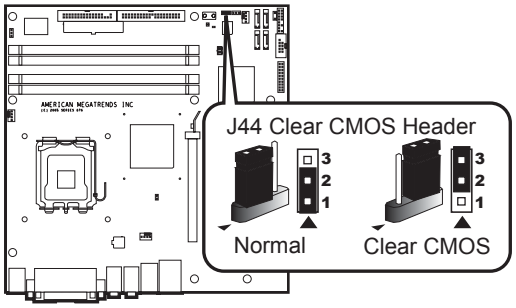
Jumpered	Mode
1-2	Normal Mode (Default)
2-3	Configure Mode
Jumper Removed	Recovery Mode

Cont'd

J44 Clear CMOS

J44 is a 3-pin berg that can be used to erase the contents of CMOS RAM, where all system configuration information is stored.

Before you change J44 from the default setting (1-2), turn off the power supply using the mechanical switch (not the soft-off power button.) This switch is normally located on the power supply. If there is no switch, remove the AC cord going to the power supplies.



To drain CMOS RAM power, perform the following steps:

Step	Action
1	Turn off power to the computer.
2	Remove the computer cover.
3	Remove the jumper from pins 1-2 of J44.
4	Place a shorting bridge on pins 2-3 of J44.
5	Wait for five seconds.
6	Remove the shorting bridge from pins 2-3 of J44.
7	Put the shorting bridge back on pins 1-2 of J44.
8	Turn on computer power again. Since you drained power from CMOS RAM, all system configuration information has been erased. You must now re-enter the system configuration information by running AMIBIOS Setup.

You must then reboot the computer, run AMIBIOS Setup, and restore all system configuration information. The J44 settings are:

CMOS Drain	Jumper Setting
Normal operation (factory setting).	1-2
The contents of CMOS RAM are destroyed.	2-3

Step 2 Install Memory

Memory Overview

The AMI Olympus IV motherboard has four DIMM sockets and supports the following memory features:

- 1.8 V 240-pin DDR2 SDRAM DIMMs
- Unbuffered, single-sided or double-sided DIMMs
- Double-sided DIMMs with 16 chips are not supported
- A maximum of 4 GB of total system memory
- A minimum of 128 MB of total system memory
- Non-ECC DIMMs supported
- Serial Presence Detect (SPD)
- DDR2 533 and DDR2 400 SDRAM DIMMs

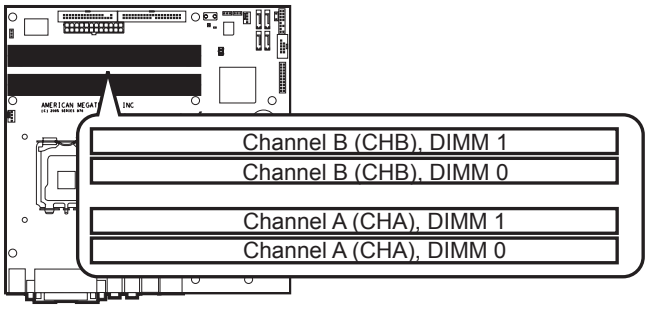
The following table lists the supported processor/FSB and memory speed combinations.

Processor/FSB	use
Intel® Pentium® 4 processors with 800 MHz FSB	DDR2 533 or DDR2 400
Intel® Celeron® D processors with 533 MHz FSB	DDR2 533 only

Note: For the best performance and reliability, use DIMM modules that have a Serial Presence Detect (SPD) chip. The SPD information is used by the AMIBIOS to accurately configure the chipset to work with the memory.

Note: Remove the PCI Express 1x16 card prior to the removal of DIMM modules.

The AMI Olympus IV motherboard has four DIMM sockets and supports the following memory features:



Cont'd

Step 2 Install Memory, Continued

Supported Memory

The following table is a list of SDRAM types that are supported per bank:

DIMM Capacity	Configuration	DDR2 SDRAM Density	DDR2 SDRAM Organization Front-side	DDR2 SDRAM Organization Back-side	Number of DDR2 SDRAM Devices
128 MB	Single-Sided	256 Mbit	16 M x 16	empty	4
256 MB	Single-Sided	256 Mbit	32 M x 8	empty	8
256 MB	Single-Sided	512 Mbit	32 M x 16	empty	4
512 MB	Double-Sided	256 Mbit	32 M x 8	32 M x 8	16
512 MB	Single-Sided	512 Mbit	64 M x 8	empty	8
512 MB	Single-Sided	1 Gbit	64 M x 16	empty	4
1024 MB	Double-Sided	512 Mbit	64 M x 8	64 M x 8	16
1024 MB	Single-Sided	1 Gbit	128 M x 8	empty	8
2048 MB	Double-Sided	1 Gbit	128 M x 8	128 M x 8	16

Memory Configuration

The AMI Olympus IV motherboard has two memory channels (Channel A and Channel B), each with two DIMM sockets. The Olympus IV supports *Dual Channel mode* and *Single Channel mode* memory configurations. See the following table for more information:

Mode	Description
Dual Channel	Dual Channel mode is enabled when two identical DIMM modules (of the same size) are installed in both Channel A (CHA) and Channel B (CHB).
Single Channel	Single Channel mode is enabled when one DIMM is installed. Single Channel mode is also enabled when two non-identical DIMM modules of the different sizes are installed.

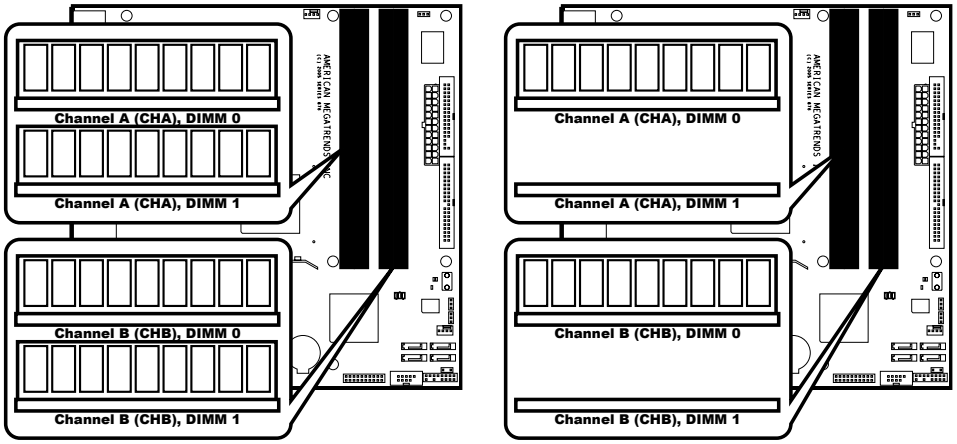
The Olympus IV supports Dynamic Addressing Mode. Dynamic mode minimizes overhead by reducing memory accesses. Characteristics of Dual and Single Channel Configuration with and without Dynamic Mode:

Throughput Level	Configuration	Characteristics
Highest	Dual Channel with Dynamic Mode	All DIMMs matched
Higher	Dual Channel without Dynamic Mode	• DIMMs matched from Channel A (CHA) to Channel B (CHB) • DIMMs not matched within channels
Lower	Single Channel with Dynamic Mode	Single DIMM or DIMMs matched within a channel
Lowest	Single Channel without Dynamic Mode	DIMMs not matched

Cont'd

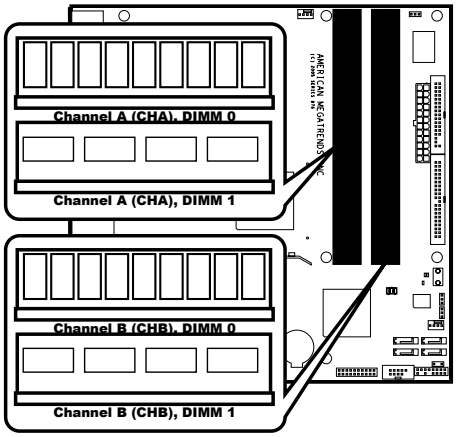
Step 2 Install Memory, Continued

Highest Throughput Level (RECOMMENDED)



Throughput Level	Configuration	Characteristics
Highest	Dual Channel with Dynamic Mode	All DIMMs matched

Second Highest Throughput Level

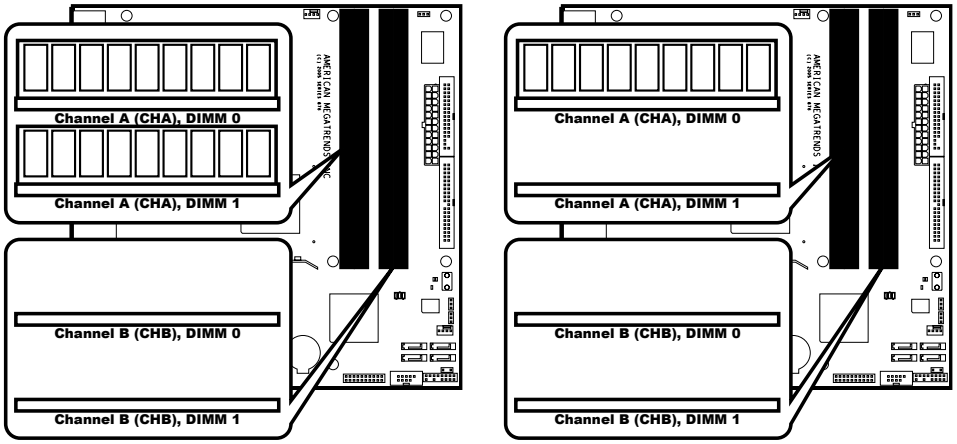


Throughput Level	Configuration	Characteristics
Higher	Dual Channel without Dynamic Mode	• DIMMs matched from Channel A to Channel B • DIMMs not matched within channels

Cont'd

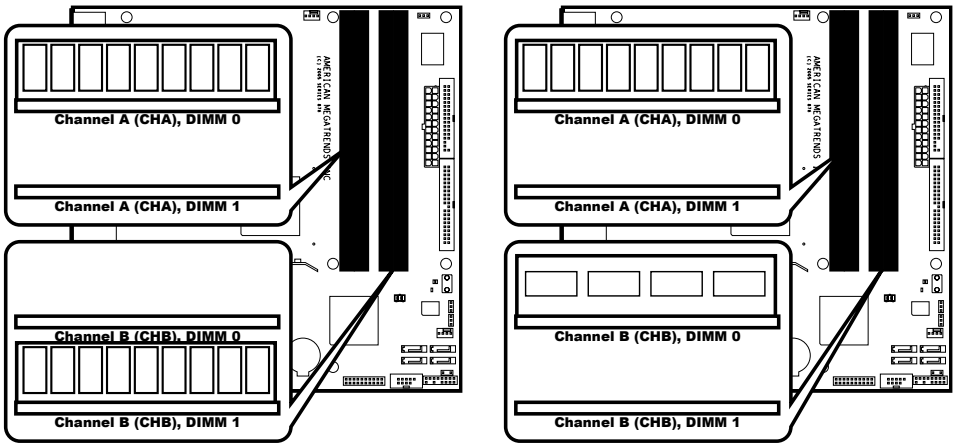
Step 2 Install Memory, Continued

Second Lowest Throughput Level



Throughput Level	Configuration	Characteristics
Lower	Single Channel with Dynamic Mode	Single DIMM or DIMMs matched within a channel

Lowest Throughput Level



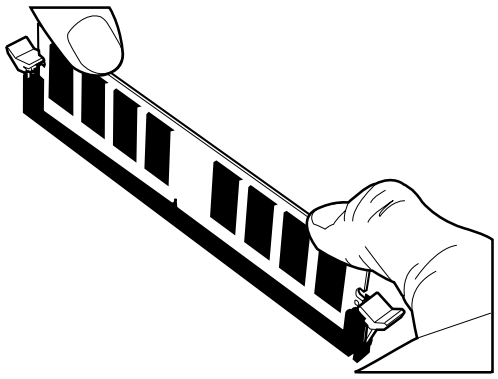
Throughput Level	Configuration	Characteristics
Lowest	Single Channel without Dynamic Mode	DIMMs not matched

Cont'd

Inserting DIMM Modules

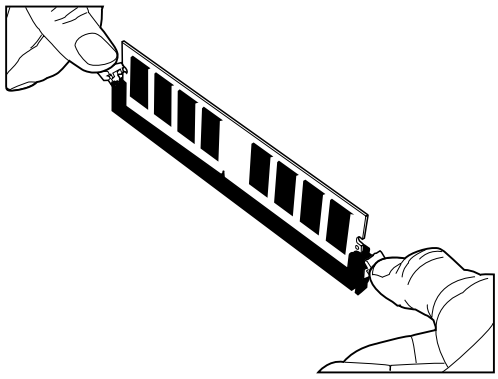
Locate the DIMM slot(s) you will be using. See the *Memory Configuration* section located on the previous pages.

Match the DIMM module and DIMM slot so that the notches align properly. Insert the module by sliding it straight down into the slot. Using your thumbs, press down on the module until the tabs lock in place.



Removing DIMM Modules

To remove the module, press down on the tabs. This will eject the module.



Cont'd

Step 2 Install Memory, Continued

Memory Display

System memory is reported by AMIBIOS as it boots and again when the AMIBIOS System Configuration Screen is displayed just before the operating system boots. The memory displayed by AMIBIOS on the System Configuration Screen is 384 KB less than the total memory installed.

Step 3 Install CPU and Connect Heatsink and Fan

Supported Processors

The AMI Olympus IV motherboard is designed to support Intel Pentium 4 processors in an LGA775 processor socket with an 800 or 533 MHz system bus. Currently, the following processors are supported:

Processor	Number	Speed	Bus Frequency	L2 Cache
Intel® Pentium® 4 Extreme Edition processor	None	3.4 GHz	800 MHz	512 KB (2 MB L3 Cache)
Intel® Pentium® 4 processor	570J	3.8 GHz	800 MHz	1 MB
	560J	3.6 GHz	800 MHz	1 MB
	560	3.6 GHz	800 MHz	1 MB
	550J	3.4 GHz	800 MHz	1 MB
	550	3.4 GHz	800 MHz	1 MB
	540J	3.2 GHz	800 MHz	1 MB
	540	3.2 GHz	800 MHz	1 MB
	530J	3 GHz	800 MHz	1 MB
	530	3 GHz	800 MHz	1 MB
	520J	2.8 GHz	800 MHz	1 MB
	520	2.8 GHz	800 MHz	1 MB
Intel® Celeron® D processor	340J	2.93 GHz	533 MHz	256 KB
	335J	2.8 GHz	533 MHz	256 KB
	330J	2.66 GHz	533 MHz	256 KB
	325J	2.53 GHz	533 MHz	256 KB

Cont'd

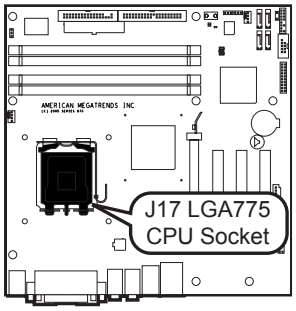
Step 3 Install CPU and Connect Heatsink and Fan, Continued

Processor Installation

> ***⚠Warning***
>
> *Read the documentation that came with your processor and the CPU installation section of this guide prior to performing the processor installation. The LGA775 Socket requires special attention. Damaging the LGA775 Socket will **VOID** your warranty.*

> **⚠Caution**
>
> Do **NOT** touch the LGA775 Socket pin contacts. The LGA775 Socket pin contacts are very fragile and can be easily damaged. Leave the plastic LGA775 Socket protection cover on the LGA775 Socket until you are ready to install the processor. Physically damaging the LGA775 Socket pin contacts will **VOID** your warranty.

> ***⚠Warning***
>
> *You must save the plastic LGA775 Socket protection cover. The plastic LGA775 Socket protection cover must be correctly attached to the LGA775 socket prior to shipping the Olympus IV motherboard to AMI for repair. An Olympus IV motherboard received for repair without the plastic LGA775 Socket protection cover properly attached will **VOID** your warranty.*



The Olympus IV motherboard is equipped with an LGA775 Socket. The CPU socket is located in the shaded are diagramed below along with its CPU cooling fan connector location (J20 CPU Fan header).

> ***⚠Warning***
>
> *Do not attach chassis fans to the CPU Cooling Fan Header. Only attach a CPU cooling fan to the J20 CPU Cooling Fan Header.*

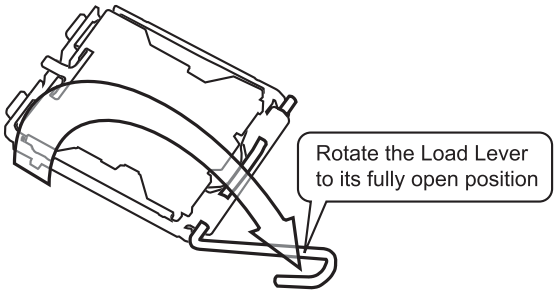
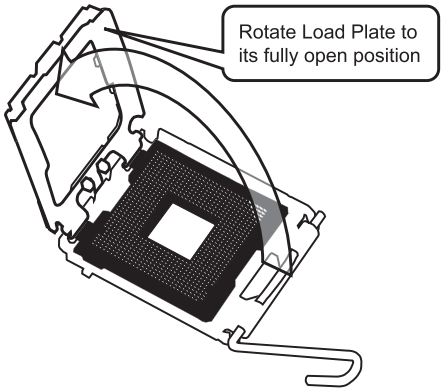
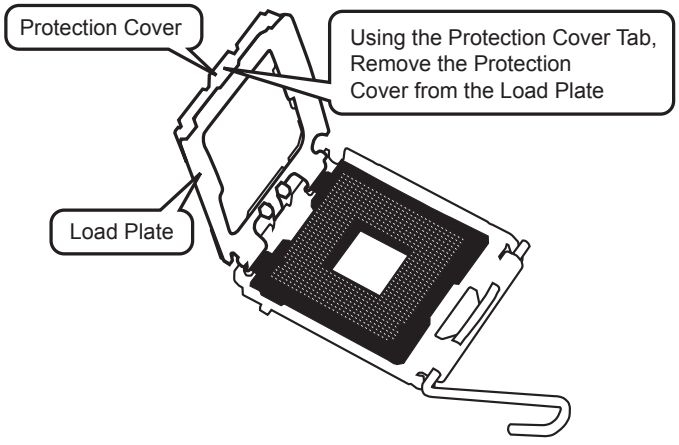
Notes:

- Do **NOT** touch the processor contacts. AMI recommends that you leave the protective cover on the processor until it is ready to be installed.
- Do **NOT** use a vacuum wand when installing the processor.
- Do **NOT** repeatedly remove and install processors on the Olympus IV motherboard. The LGA775 Socket is rated for 20 processor insertions. After 20 processor insertions, the LGA775 socket can fail.

Cont'd

Step 3 Install CPU and Connect Heatsink and Fan, Continued

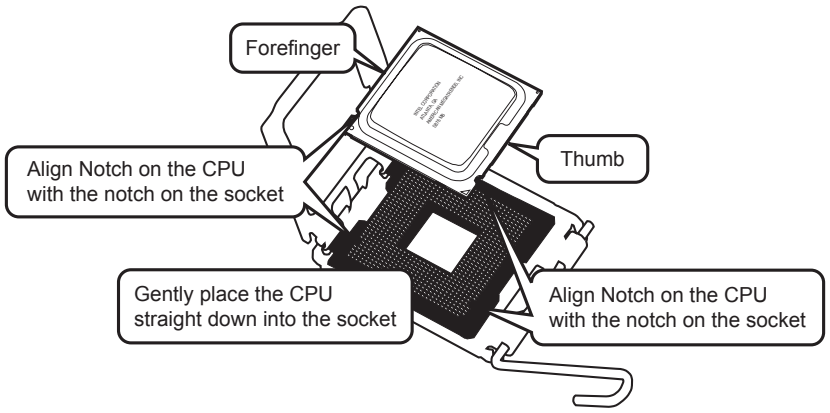
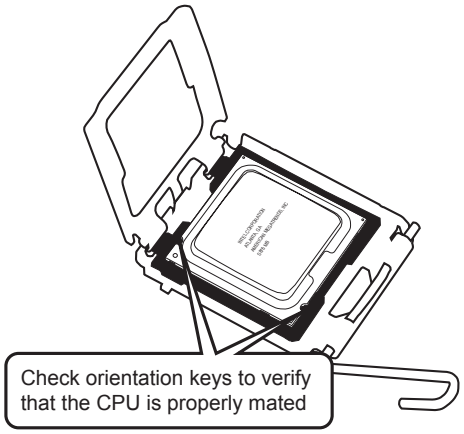
Processor Installation, Continued

Step	Action
1	Read and understand all ***Warning***, **Caution**, and **Notes** listed on the previous page.
2	Disengage the Load Lever by pressing it down and then out from under the retention tab. Rotate the Load Lever to its fully open position. 
3	Rotate the Load Plate to its fully open position. 
4	Remove the plastic LGA775 Socket protection cover from the Load Plate. Leave the Load Plate in its fully open position. 

Cont'd

Step 3 Install CPU and Connect Heatsink and Fan, Continued

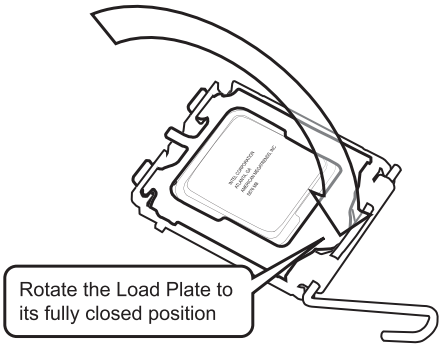
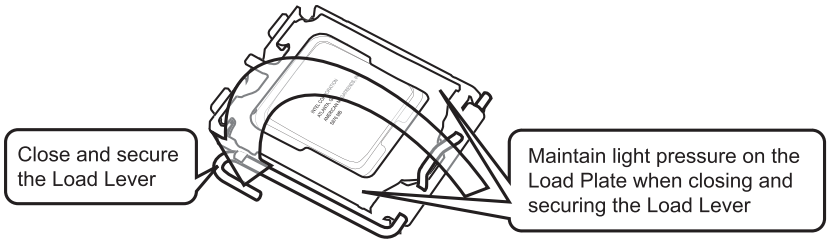
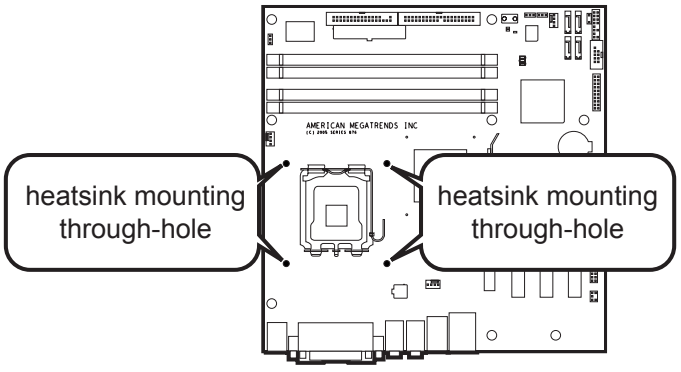
Processor Installation, Continued

Step	Action
5	Visually inspect the LGA775 socket for bent LGA775 Socket pin contacts. If there are bent LGA775 Socket pin contacts, stop here. Contact your motherboard vendor for an RMA.
6	Prepare your processor for installation by removing the protective cover on the processor. See the processor handling instructions that came with your processor for more information on this procedure.
7	Grasp the processor using only your thumb and index fingers at the edges of the processor. The LGA775 Socket has been designed to allow room for your fingers to fit into. Carefully place the processor straight down into the socket body using a purely vertical motion. Do **NOT** tilt or shift the processor into place. 
8	Verify that processor is within the LGA775 Socket and properly mated to the orientation keys. 

Cont'd

Step 3 Install CPU and Connect Heatsink and Fan, Continued

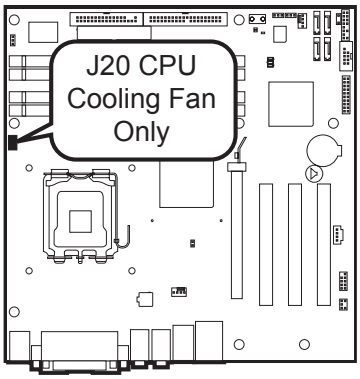
Processor Installation, Continued

Step	Action
9	Rotate the Load Plate to its fully closed position. 
10	Maintain light pressure on the Load Plate when closing and securing the Load Lever. 
11	Apply thermal paste to the exposed top of the processor. **Note:** Most heatsinks ship with pre-applied thermal interface material (TIM). *You can skip this step if your new heatsink has pre-applied TIM **AND** you are installing the heatsink for the first time.* You must use thermal paste on previously installed heatsinks and heatsinks without pre-applied TIM.
12	The Olympus IV motherboard has four heatsink mounting through-holes. Install the processor heatsink and cooling fan using these mounting through-holes. Consult your heatsink and cooling fan installation documentation for proper installation procedures. 

Cont'd

Step 3 Install CPU and Connect Heatsink and Fan, Continued

Processor Installation, Continued

Step	Action
13	Connect the power cable for your CPU cooling fan into the J20 CPU Fan header. The J20 CPU Fan header accepts both 3-pin and 4-pin power connectors.  **Note:** Do not attach chassis fans to the CPU Cooling Fan Header. Only attach a CPU cooling fan to the J20 CPU Cooling Fan Header. Make sure to secure the power cable for the CPU cooling fan so that it does not get caught in the fan blades.
14	At this point, you can verify that the motherboard can properly boot.

Step 4 Install the Motherboard

Note: We encourage integrators to choose a chassis that complies with the ATX 2.01 (or later) specification.

Step	Action
1	Place the chassis on an anti-static mat. Connect the chassis to ground to avoid static damage during installation. Connect an alligator clip with a wire lead to any unpainted part of the chassis. Ground the other end of the lead at the same point as the mat and the wristband.
2	Rotate the chassis so the front is to the right, and the rear is to the left. The side facing you is where the motherboard is mounted. The power supply is mounted at the far end of the chassis.
3	Hold the motherboard with the component-side facing up. The audio, printer, serial, VGA, LAN, and USB ports should be to the left.
4	Remove the I/O shield that is currently installed in the chassis if applicable. Locate the I/O shield that came with the Olympus IV and remove the extra metal plates that cover the openings (if applicable). Locate the I/O shield label and remove the protective backing. Attach it to the I/O shield. Install the Olympus IV I/O shield into the chassis.
5	Carefully slide the motherboard into the chassis. Make certain the edge connectors fit the I/O shield port openings in the rear of the chassis. The motherboard should rest level with the chassis.
6	Place the mounting screws in the holes provided and tighten them. If necessary, shift the motherboard slightly to align the mounting holes on the motherboard with the holes on the chassis.

Warning

If using metallic screws, make sure you use them only in the plated mounting holes.

If using metallic screws, make sure the head of the screw fits completely inside the plated mounting holes.

Cont'd

Step 5 Attach Internal Cables

Connectors

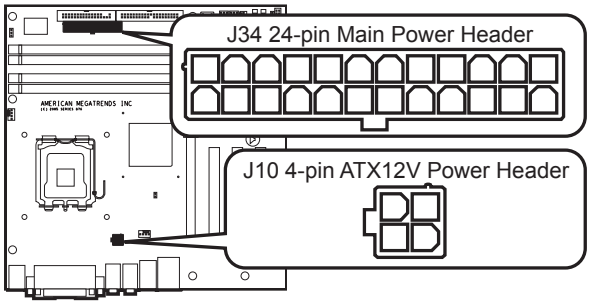
The Olympus IV motherboard includes many connectors. Connection instructions, illustrations of connectors, and pin-out locations are supplied in the following pages. A list of all connectors described in this manual are as follows:

Location	Connector	Turn to page
J09	S/PDIF Header (Optional)	27
J10	4-pin ATX12V Power Header	21
J11	Rear Chassis Fan Header	33
J12	External Serial Port B Header	24
J15	CD Audio In Header	27
J20	CPU Cooling Fan Header	14 and 33
J28	Intruder Header	23
J30	USB 2.0 Front Panel Header	28
J31	Serial ATA 2 Connector	30
J32	Serial ATA 3 Connector	30
J34	24-pin Main Power Header	21
J35	Front Panel Connector	31
J36	Serial ATA 0 Connector	30
J37	Serial ATA 1 Connector	30
J38	Front Chassis Fan Header	33
J39	Parallel ATA Header	26
J40	Floppy Drive Header	25
J41	Alternate Power LED Header	28
J43	BIOS Recovery Header	6
J44	Clear CMOS Header	7

Cont'd

Step 5 Attach Internal Cables, Continued

J10 and J34 ATX Power Supply Connectors



Attach the power cables from the power supply to the connectors located at J10 and J34. The socket is keyed so that the ATX power supply connector can only mount one way.

Note: Do not use a standard ATX power supply. The Olympus IV motherboard will not boot with a standard ATX power supply. Use only ATX12V-compliant or Server System Infrastructure (SSI) Entry-Level Power Supply (EPS) EPS12V power supplies with the Olympus IV motherboard. ATX12V and EPS12V power supplies have an additional power lead that provides required supplemental power for the Intel Pentium 4 processor. The Olympus IV motherboard will not boot if the ATX12V power supply is not connected to both the J10 4-pin and J34 20-pin (or 24-pin) power connectors.

For more information on ATX12V power supplies, see the **formfactor.org** website. For more information on SSI EPS12V power supplies, see the **ssiforum.org** website.

The main power connector pinout is:

Pin	Signal Name	Pin	Signal Name
1	3.3 V	13	3.3 V
2	3.3 V	14	-12 V
3	Ground	15	Ground
4	+5 V	16	Power Supply On
5	Ground	17	Ground
6	+5 V	18	Ground
7	Ground	19	Ground
8	Power OK	20	-5 V
9	5 VSB	21	+5 V
10	+12 V	22	+5 V
11	+12 V	23	+5 V
12	+3.3 V	24	GND

Cont'd

Step 5 Attach Internal Cables, Continued

J10 and J34 ATX Power Supply Connectors, Continued

The ATX12V/SSI EPS12V power connector pinout is:

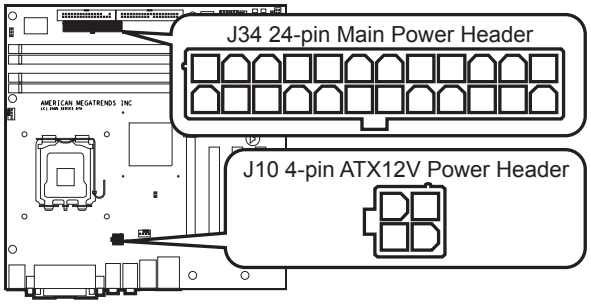
Pin	Signal Name	Pin	Signal Name
1	Ground	3	+12V
2	Ground	4	+12V

The power supply should match the physical configuration of the chassis. Make sure the power switch is *Off* before assembly.

Before attaching all components, make sure the proper voltage has been selected. Power supplies often can run on a wide range of voltages and must be set (usually via a switch) to the proper range. Use at least a 300-watt ATX power supply, which should have built-in filters to suppress radiated emissions. Power supply voltage depends upon system load. For example, +12V rating should be matched to the amount of the external load.

Attach the cables from the power supply to the power connector(s) on the motherboard. ATX-compatible power supplies can have either one or two 20-pin (or 24-pin) connectors. You can use either one or both power connectors.

For 24-pin Main Power /4-pin ATX12V Power supplies, plug the connectors into J10 and J34 as illustrated in the following diagram:



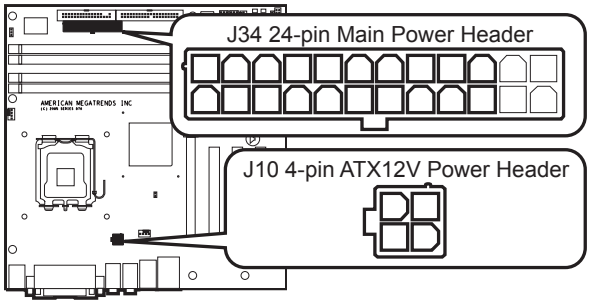
Note: You must use a 2x12 (24-pin) power supply that has a 4-pin ATX12V Power connector if you are going to install a PCI Express 1x16 card. Some PCI Express 1x16 cards require more power. Refer to the documentation that came with your PCI Express 1x16 card for more information concerning power requirements.

Cont'd

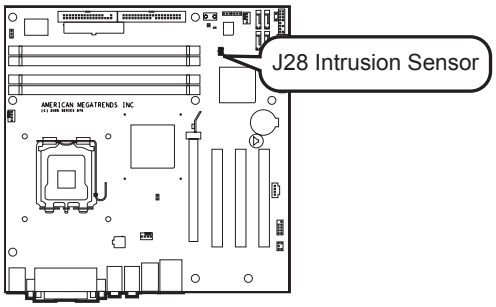
Step 5 Attach Internal Cables, Continued

J10 and J34 ATX Power Supply Connectors, Continued

For 20-pin Main Power /4-pin ATX12V Power supplies, plug the connectors into pin one first as illustrated in the following diagram:



J28 Intrusion Sensor Connector

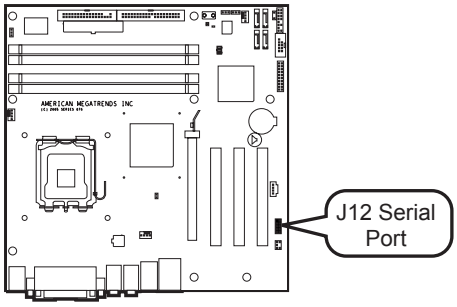


Attach your chassis intrusion sensor/trigger to this section of the header.

Pin	Signal Name
1	ICH Intruder Header
2	Ground

Cont'd

J12 External Serial Port B Connector

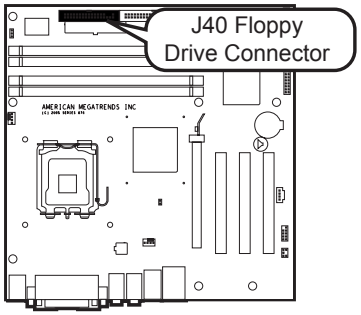


Attach the external nine-pin serial cable with a D-type connector to jumper J12.

Pin	Signal Name	Pin	Signal Name
1	DSRB	2	DCDB
3	RTSB	4	RXDB
5	CTSB	6	TXDB
7	RIB	8	DTRB
9	NC	10	GND(Connect L28,C479)

Cont'd

J40 Floppy Drive Connector

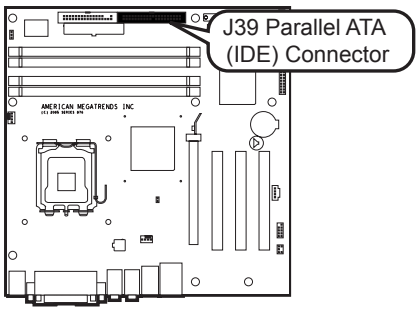


Attach your floppy disk drive to this connector.

Pin	Signal Name	Pin	Signal Name
1	Ground	2	DENSEL
3	Ground	4	Reserved
5	Key	6	FDEDIN
7	Ground	8	FDINDX# (Index)
9	Ground	10	FDM00# (Motor Enabled A)
11	Ground	12	No Connect
13	Ground	14	FDDS0# (Drive Select A)
15	Ground	16	No Connect
17	No Connect	18	FDDIR# (Stepper Motor Direction)
19	Ground	20	FDSTEP# (Step Pulse)
21	Ground	22	FDWD# (Write Data)
23	Ground	24	FDWE# (Write Enable)
25	Ground	26	FDTRK0# (Track 0)
27	No Connect	28	FDWPD# (Write Protect)
29	Ground	30	FDRDATA# (Read Data)
31	Ground	32	FDHEAD# (Side 1 Select)
33	Ground	34	DSKCHG# (Diskette Change)

Cont'd

J39 Parallel ATA (IDE) Connector



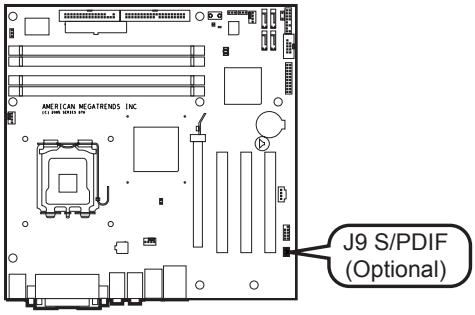
Pin	Signal Name	Pin	Signal Name
1	Reset IDE	2	Ground
3	Data 7	4	Data 8
5	Data 6	6	Data 9
7	Data 5	8	Data 10
9	Data 4	10	Data 11
11	Data 3	12	Data 12
13	Data 2	14	Data 13
15	Data 1	16	Data 14
17	Data 0	18	Data 15
19	Ground	20	Key
21	DDRQ0	22	Ground
23	I/O Write#	24	Ground
25	I/O Read#	26	Ground
27	IOCHRDY	28	P ALE (Cable Select Pull-up)
29	DDACK0#	30	Ground
31	IRQ 14	32	Reserved
33	DAG1 (Address 1)	34	ATA 6 Detect
35	DAG0 (Address 0)	36	DAG2 (Address 2)
37	Chip Select 1P#	38	Chip Select 3P#
39	Activity#	40	Ground

J39 is the primary IDE (Integrated Drive Electronics) hard disk drive connector. Both the primary master and the primary slave IDE drives must be connected by cable to J39.

Cont'd

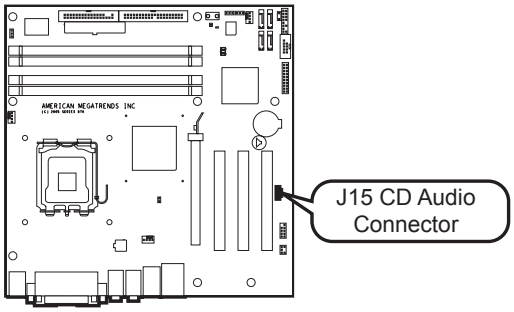
Step 5 Attach Internal Cables, Continued

J9 S/PDIF (Sony/Philips Digital Interface) Header



Pin	Description
1	Ground
2	Audio SPDIF Out C
3	Not Connected
4	VCC
5	Ground
6	Audio SPDIF In C

J15 CD Audio In Header

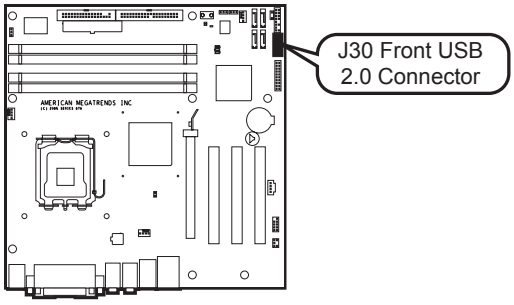


Pin	Description
1	Audio CD In Right Channel
2	Audio CD In Ground
3	Audio CD In Ground
4	Audio CD In Left Channel

Cont'd

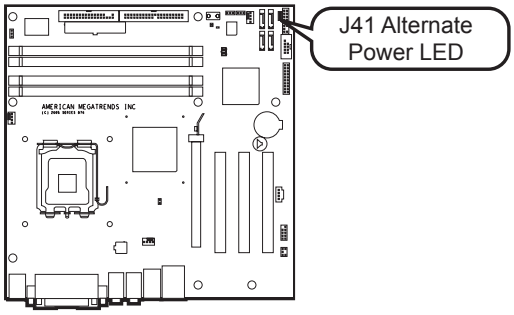
Step 5 Attach Internal Cables, Continued

J30 USB Front Panel Header



Pin	Description
1	USB Front 2 Power (+5v)
2	USB Front 1 Power (+5V)
3	USB Front 2 D-
4	USB Front 1 D-
5	USB Front 2 D+
6	USB Front 1 D+
7	Ground
8	Ground
9	Not Connected
10	Ground

J41 Alternate Three Pin Power LED Header



Pin	Description
1	GPIO Green Blink Header
2	Not Connected
3	GPIO Yellow Blink Header

Cont'd

Step 5 Attach Internal Cables, Continued

J39 is a 40-pin dual-inline berg that connects an IDE drive to the primary onboard IDE connector. This motherboard supports the following:

	Data Transfer Rate (max.)	Cable	Conductors	CRC
DMA Mode 1	11.1 MBs	40-pin IDE	40-pin	no
Multi-word DMA Mode 1	13.3 MBs	40-pin IDE	40-pin	no
Multi-word DMA Mode 2	16.6 MBs	40-pin IDE	40-pin	no
Ultra ATA Mode 2 ATA-33	33.3 MBs	40-pin IDE	40-pin	yes
Ultra ATA Mode 4 ATA-66	66.6 MBs	40-pin IDE	80-pin	yes
Ultra ATA Mode 4 ATA-100	99.9 MBs	40-pin IDE	80-pin	yes
Ultra ATA Mode 4 ATA-133	133.3 MBs	40-pin IDE	80-pin	yes

These IDE features can be configured in the AMIBIOS Setup utility from the *IDE Configurations* submenu in the *Advanced* section.

The IDE cable that is included with the Olympus IV motherboard is a color-coded, 80 conductor/40 pin, ATA-66/100 IDE cable. Connect the blue connector to J39 and the black connector to the primary master IDE device.

Ultra ATA-66/100

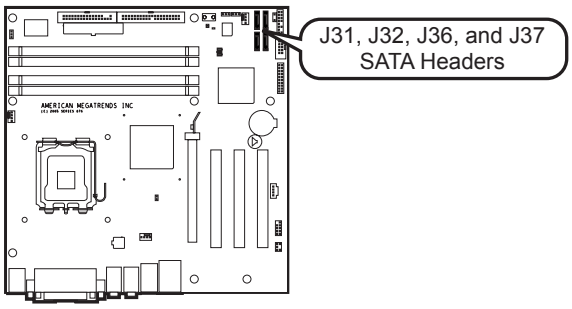
The Olympus IV motherboard supports Ultra DMA-66/100. In order to take advantage of this feature, you must have the following:

- DMA-aware operating system
- Ultra ATA-66/100 compatible IDE device
- 40-pin 80-conductor cable (included)

Note: Some IDE devices that are ATA-33 (and lower) cannot be used with the Ultra ATA-66/100 cable. This is very rare. If the device is not recognized, you must use a standard IDE cable. The Olympus IV motherboard does not include a standard IDE cable.

Cont'd

J31, J32, J36, and J37 Serial ATA Connectors



The Olympus IV motherboard has four independent Serial ATA ports. Serial ATA has a theoretical maximum transfer rate of 150 MBs per Serial ATA port. One Serial ATA device can be installed on each Serial ATA port for a maximum of four Serial ATA devices.

For compatibility, the underlying Serial ATA functionality is transparent to the operating system. The Serial ATA controller can operate in both legacy and native Serial ATA modes. In legacy mode, standard resources are assigned, such as IRQ 14 and IRQ 15. In Native Serial ATA mode, standard PCI resource steering is used. Native Serial ATA mode is recommended for use with the Microsoft® Windows XP and Microsoft® Windows 2000/2003 operating systems.

Pin	Signal Name
1	Ground
2	TXP
3	TXN
4	Ground
5	RXN
6	RXP
7	Ground

Note: Serial ATA hard disk drives use new low-voltage power connectors and require adapters or power supplies equipped with low-voltage power connectors. See **`serialata.org`** for more information.

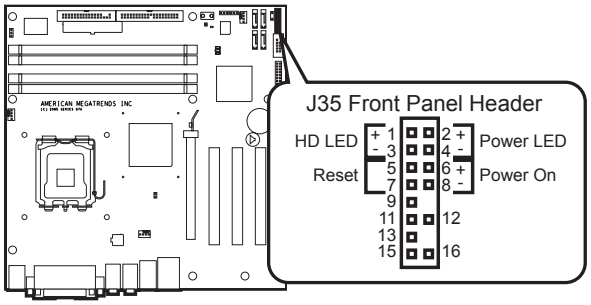
Cont'd

J35 Front Panel Header

The *J35 Front Panel Header* provides front panel chassis connections for the following connectors:

Connector	Pins
HDD LED	1 and 3
Power LED	2 and 4
Reset Button	5 and 7
Power On (Soft ON/OFF)	6 and 8

The following is a diagram of the J35 header:



Pin	Description
1	VCC HD LED Power
2	GPIO Green Blink Header (show the main power)
3	HD LED#
4	GPIO Yellow Blink Header (show stand by power)
5	Ground
6	Power Switch On#
7	Front Panel Reset
8	Ground
9	VCC
10	Not Connected
11	Super I/O IRRX2
12	Ground
13	Ground
14	Not Connected
15	Super I/O IRTX2
16	VCC

Cont'd

J35 Hard Disk Activity LED Header

Attach your chassis HDD activity LED to this section of the header. Check for the correct polarity.

Pin	Signal Name
1	VCC HD LED Power
3	HD LED#

J35 Power LED Header

Attach your chassis power LED to this section of the header. Check for the correct polarity.

Pin	Signal Name
2	GPIO Green Blink Header (show the main power)
4	GPIO Yellow Blink Header (show stand by power)

J35 Reset Button Header

Attach your chassis reset button/switch to this section of the header.

Pin	Signal Name
5	Ground
7	Front Panel Reset

J35 ATX Power Supply Soft ON/OFF Header

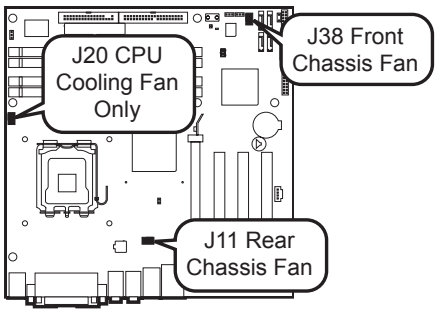
Attach your chassis power on/off button/switch to this section of the header.

Pin	Signal Name
6	Power Switch On#
8	Ground

Cont'd

Step 5 Attach Internal Cables, Continued

Fan Headers



J11 Rear Chassis Fan Header

If your chassis has rear chassis-cooling fan, you can attach the chassis-cooling fan to J11 header.

Pin	Signal Name
1	Rear Chassis Fan Driver
2	+12V
3	Rear Chassis Fan Tach Out
4	Rear Chassis Fan Ctrl

J20 CPU Cooling Fan Header

Attach the CPU cooling fan to the J20 header.

Pin	Signal Name
1	CPU Driver
2	+12V
3	CPU Tach Out
4	CPU Fan Ctrl

⚠Warning

Do not attach chassis fans to the CPU Cooling Fan Header. Only attach a CPU cooling fan to the J20 CPU Cooling Fan Header.

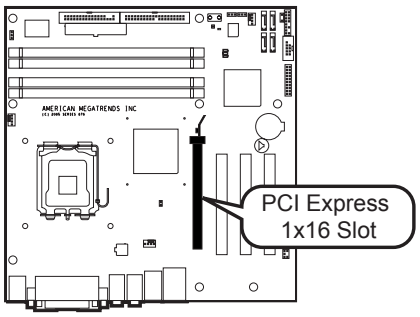
J38 Front Chassis Fan Header

If your chassis has front chassis-cooling fan, you can attach the chassis-cooling fan to J38 header.

Pin	Signal Name
1	Front Driver
2	+12V
3	Front Chassis Fan Tach Out
4	Front Chassis Fan Ctrl

Step 6 Install Expansion Boards

PCI Express 1x16 Slot

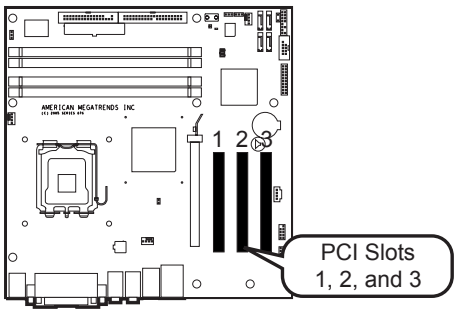


The Olympus IV incorporates one PCI Express 1x16 slot. PCI Express 1x16 supports the following capabilities:

- Supports simultaneous transfer speeds of up to 8 GBps
- Support for the PCI Express enhanced configuration mechanism
- Automatic discovery, link training, and initialization
- Support for Active State Power Management (ASPM)
- SMBus 2.0 support
- Wake# signal supporting wake events from ACPI S1, S3, S4, or S5
- Software compatible with the PCI Power Management Event (PME) mechanism defined in the PCI Power Management Specification Rev

Note: You must use a 2x12 (24-pin) power supply that has a 4-pin ATX12V Power connector if you are going to install a PCI Express 1x16 card. Some PCI Express 1x16 cards require more power. Refer to the documentation that came with your PCI Express 1x16 card for more information concerning power requirements.

PCI Slots

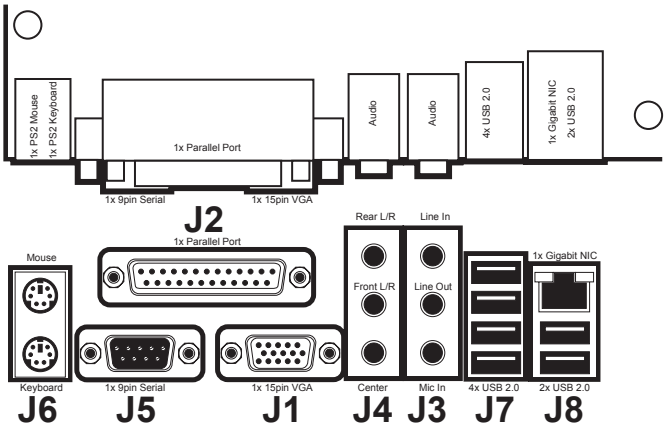


The Olympus IV incorporates three standard PCI slots (or PCI Conventional) for various expansion boards. The Olympus IV PCI slots can accept standard 32 bit PCI expansion boards. All of the PCI bus connectors are bus master capable.

Note: Read the documentation for the expansion board before installing it into the system.

Step 7 Connecting External Cables

Connectors



The Olympus IV motherboard includes many external connectors. External device connection instructions and illustrations of the external connectors are supplied in the following pages. A list of all external connectors described in this manual are as follows:

Location	Connector
J1	VGA Connector
J2	Parallel Port Connector
J3	3x Audio Connectors
J4	3x Audio Connectors
J5	Serial Port A Connector
J6	PS2 Mouse and Keyboard Connector
J7	4x USB 2.0 Connectors
J8	Gigabit NIC and 2x USB 2.0 Connectors

⚠Caution

Only the back panel I/O connectors of the motherboard have overcurrent protection. The internal motherboard connectors are not overcurrent protected, and should connect only to devices inside the system chassis, such as fans and internal peripherals. Do not use these connectors for powering devices external to the system chassis. A fault in the load presented by the external devices could cause damage to the system, the interconnecting cable, and the external devices themselves.

Step 8 Install Drivers

Install the software drivers.

Step 9 Test and Configure

Test the board and make sure the configurations are correct.

Chapter 3 AMIBIOS Setup

Overview

In PCI servers, the system parameters (such as amount of memory, type of disk drives and video displays, and many other elements) are stored in CMOS RAM. Unlike the system memory that is used for standard system memory, CMOS RAM requires very little power. When the server is powered off, a back-up battery provides power to CMOS RAM that retains the system parameters. Every time the server is powered on, the server is configured with the values stored in CMOS RAM by the system BIOS, which gains control when the server is powered on.

The system parameters are configured by a system BIOS Setup utility. Historically, BIOS setup utilities have been character-based, required keyboard input, and have had user interfaces that were not very intuitive. The BIOS chips acts as an interface between the processor and the rest of the server board's components. This chapter describes the parameters in the *AMIBIOS Setup Utility* and explains how to modify the settings for the configuration of your Olympus IV motherboard.

Caution

The default settings are sufficient for most system operations. Changes to the default settings can affect the performance/reliability/stability of your Olympus IV motherboard.

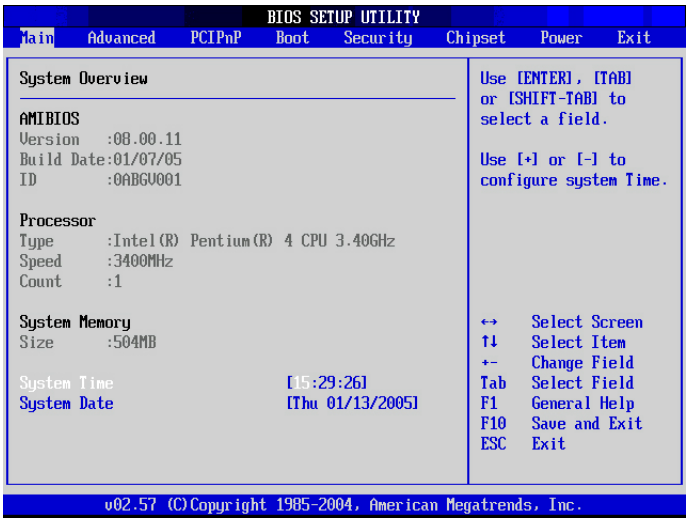
Starting AMIBIOS Setup

As POST executes, press the <DEL> key to enter the *AMIBIOS Setup Utility*.

Cont'd

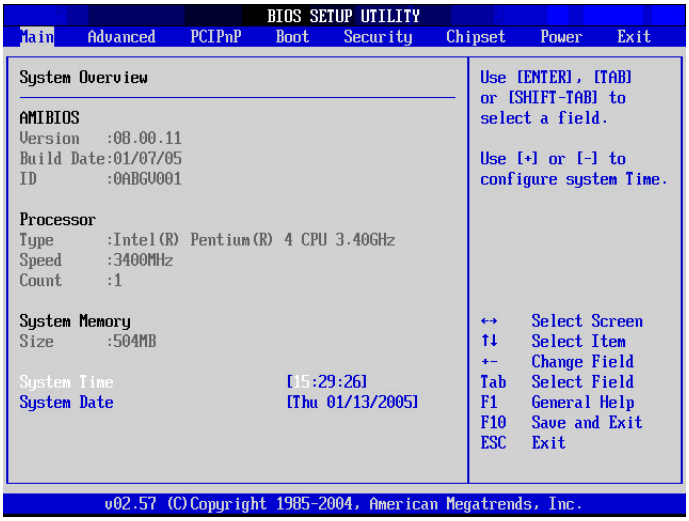
AMIBIOS Setup Menu

The *AMIBIOS Setup Utility* appears as shown below. Each menu item is described in this chapter.



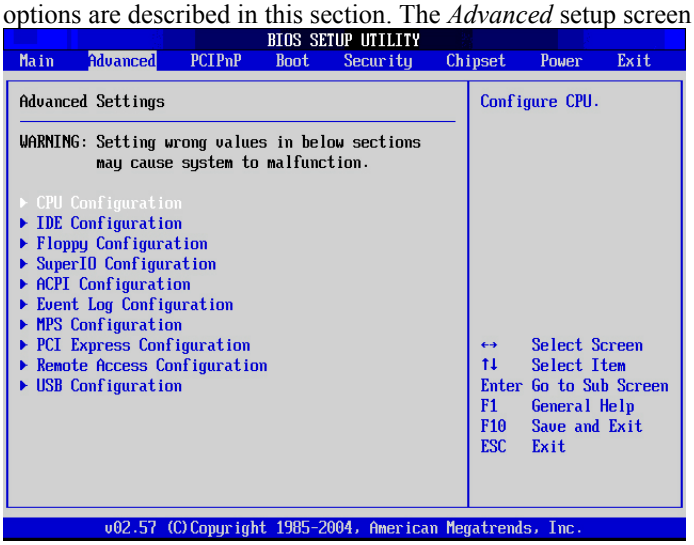
Section 1 Main Setup

Select *Main* from the main menu of the *AMIBIOS Setup Utility*. All *Main* setup options are described in this section. The *Main* setup screen is displayed below:

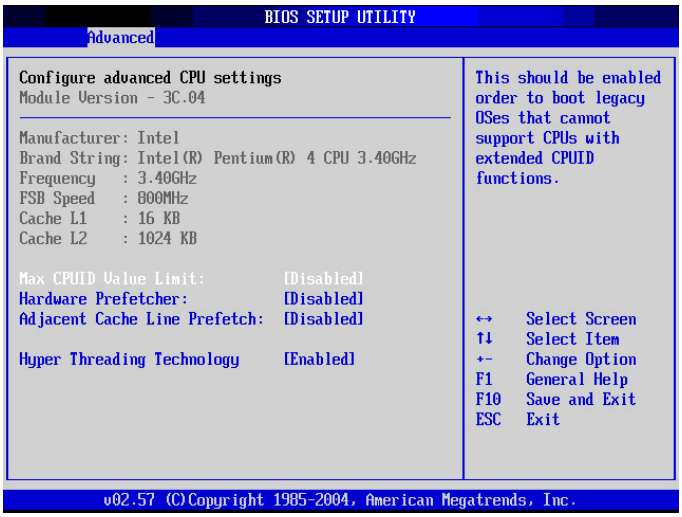


Field	Description
AMIBIOS Version	This field displays the AMIBIOS version number. This field cannot be modified and is grayed out.
BIOS Build Date	This field displays the AMIBIOS build date. This field cannot be modified and is grayed out.
BIOS ID	This field displays the AMIBIOS identification number. This field cannot be modified and is grayed out.
Processor Type	This field displays the processor manufacturer information. This field cannot be modified and is grayed out.
Processor Speed	This field displays the speed of the processor. This field cannot be modified and is grayed out.
Processor Count	This field displays the number of physical processors are on the motherboard. This field cannot be modified and is grayed out.
System Memory	This field displays the amount of system memory that is physically installed in the Olympus IV motherboard. This field cannot be modified and is grayed out.
System Time	Use this option to change the system time. Highlight *Time* using the arrow keys. Enter new values through the keyboard. Press the <TAB> key or the arrow keys to move between fields. The time is entered in HH:MM:SS format. The time is in 24-hour format. For example, 5:30 a.m. appears as 05:30:00, and 5:30 p.m. as 17:30:00. Press <PgUp> or <PgDn> after you have selected an option to display the complete list of valid settings in the bottom section of the screen.
System Date	Use this option to change the system date. Highlight *Date* using the arrow keys. Enter new values through the keyboard. Press the <TAB> key or the arrow keys to move between fields. The date must be entered in MM/DD/YYYY format. Press <PgUp> or <PgDn> after you have selected an option to display the complete list of valid settings in the bottom section of the screen.

Select *Advanced* from the main menu of the *AMIBIOS Setup Utility*. All *Advanced* setup options are described in this section. The *Advanced* setup screen is displayed below:



CPU Configuration



Field	Description
Manufacturer	This field displays the manufacturer of the processor that is installed on the motherboard.
Brand String	This field displays the hard coded text string the is contained in the processor.
Frequency	This field displays the operating frequency of the processor.
FSB Speed	This field displays the front side bus speed of the processor.
Cache L1	This field displays the level one cache that is reported by the processor. Typically, the higher this number the greater the performance.
Cache L2	This field displays the level two cache that is reported by the processor. Typically, the higher this number the greater the performance.

Cont'd

CPU Configuration, Continued

Field	Description
Cache L3	This field displays the level three cache that is reported by the processor. Typically, the higher this number the greater the performance.
Ratio Status	This field displays the current setting of the CPU clock multiplier ratio. Typically this setting is locked by the processor and cannot be changed. However, over-clocking the processor is very common and it is very desirable to change this setting.
Ratio Actual Value	This field displays the CPU clock multiplier ratio.
Ratio CMOS Settings	This field displays the CPU Ratio in CMOS. If an invalid ratio is set in CMOS, then actual and setpoint values may differ.
VID CMOS Settings	This field displays the CPU Voltage Identification code (VID) configuration as set in the CMOS.

Max CPUID Value Limit

Option	Description
Disabled	This field disables the maximum CPUID value limit. This is the default setting.
Enabled	This field enables the maximum CPUID value limit.

Hardware Prefetch

Similar to the Intel Pentium 3 SSE instructions that enabled software to load data into the L1 and L2 cache of the CPU before it is requested by the processor core. Under the right conditions, enabling this setting can benefit your hard disk drive access times. This is beneficial on large storage arrays.

Option	Description
Disabled	Set this value to turn off hardware prefetch in the processor. This is the default value.
Enabled	Set this value to turn on hardware prefetch.

Adjacent Cache Line Prefetch

Adjacent Cache Line Prefetch allows the processor to load the next cache line(s) in the queue.

Option	Description
Disabled	Set this value to turn off Adjacent Cache Line prefetch. This is the default value.
Enabled	Set this value to turn on Adjacent Cache Line prefetch.

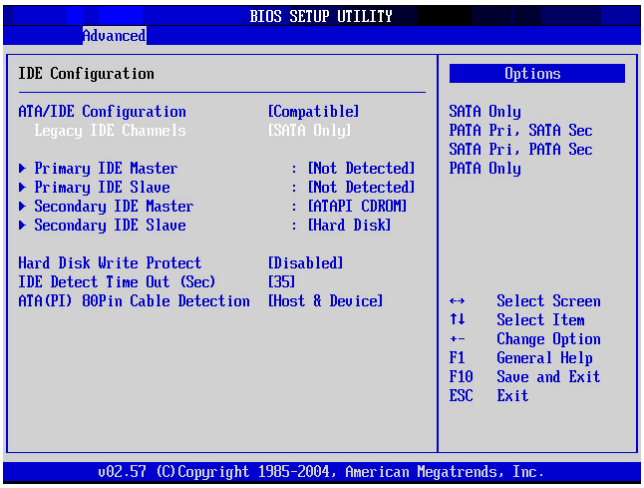
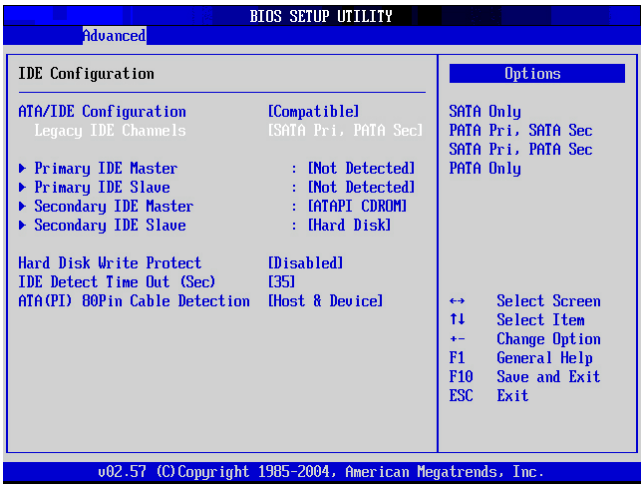
Hyper Threading Technology

Hyper Threading Technology is the technology being built into many of Intel® Pentium® 4 processors. It allows a single processor to act as two independent processors.

Option	Description
Disabled	Set this value to turn off Hyper Threading technology in your processor.
Enabled	Set this value to turn on Hyper Threading technology in your processor. This is the default setting.

Cont'd

IDE Configuration

Option	Description
Disabled	This option turns off all onboard ATA support in the BIOS.
PATA Only	This option turns on parallel ATA support only in the BIOS.
SATA Only	This option turns on serial ATA support only in the BIOS. 
PATA Pri, SATA Pri	This option turns on both parallel and serial ATA support in the BIOS. 
SATA Pri, PATA Pri	This option turns on both parallel and serial ATA support in the BIOS.

S-ATA Running Enhanced Mode

Option	Description
Yes	This value turns on Native mode support for your serial ATA controller. This is the default value.
No	This value turns off Native mode support for your serial ATA controller.

Cont'd

P-ATA Channel Selection

Option	Description
Primary	This value turns on parallel ATA support only on the Primary IDE connector and not the Secondary connector.
Both	This value turns on parallel ATA support on the Primary IDE connector and the Secondary connector. This is the default value.

Combined Mode

Option	Description
P-ATA 1st Channel	This setting allows the motherboard to boot off the parallel ATA connectors first. This is the default value.
S-ATA 1st Channel	This setting allows the motherboard to boot off the serial ATA connectors first.

S-ATA Ports Definition

This setting allows you to assign the serial ATA port locations.

Option	Description
P0-3rd./P1-4th.	This setting assigns CN4 (SATA 0) as the third hard disk location and CN5 (SATA 1) as the forth hard disk location. For the location of these two connectors, see the *Board Layout* diagram in *Chapter One, Hardware Specifications and Supported Features*. This is the default value.
P0-4th./P1-3rd.	This setting assigns CN5 (SATA 1) as the third hard disk location and CN4 (SATA 0) as the forth hard disk location. For the location of these two connectors, see the *Board Layout* diagram in *Chapter One, Hardware Specifications and Supported Features*.

Configure S-ATA as RAID

Option	Description
No	This value turns off the BIOS level RAID level 0 boot support on the serial ATA connectors located at CN4 (SATA 0) and CN5 (SATA 1). This is the default value.
Yes	This value turns on the BIOS level RAID level 0 boot support on the serial ATA connectors located at CN4 (SATA 0) and CN5 (SATA 1).

Hard Disk Write Protect

Option	Description
Disabled	This value allows you to write to the hard disk drive. This is the default value.
Enabled	This value prevents you from making any changes to the hard disk drive. Essentially, the hard disk drive acts as a CD-ROM disc would.

Cont'd

IDE Detect Time Out (Sec)

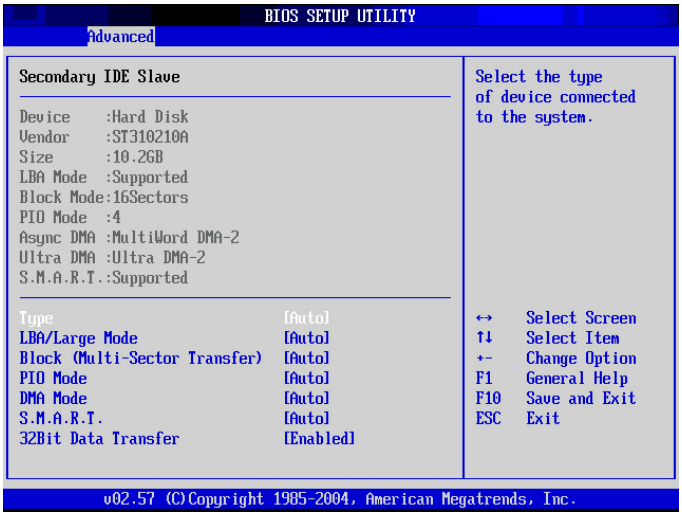
Option	Description
0	This value prevents the system from waiting any amount of time when trying to detect the hard disk drives.
5	This value allows the system to wait five seconds when trying to detect the hard disk drives.
10	This value allows the system to wait ten seconds when trying to detect the hard disk drives.
15	This value allows the system to wait fifteen seconds when trying to detect the hard disk drives.
20	This value allows the system to wait twenty seconds when trying to detect the hard disk drives.
25	This value allows the system to wait twenty-five seconds when trying to detect the hard disk drives.
30	This value allows the system to wait thirty seconds when trying to detect the hard disk drives.
35	This value allows the system to wait thirty-five seconds when trying to detect the hard disk drives. This is the default value.

ATAPI 80 Pin Cable Detection

Option	Description
Host & Device	This setting allows the parallel ATA controller and ATA device to detect the type of ATA cable being used. This is the default value.
Host	This setting allows the parallel ATA controller to detect the type of ATA cable being used.
Device	This setting allows the ATA device to detect the type of ATA cable being used.

Cont'd

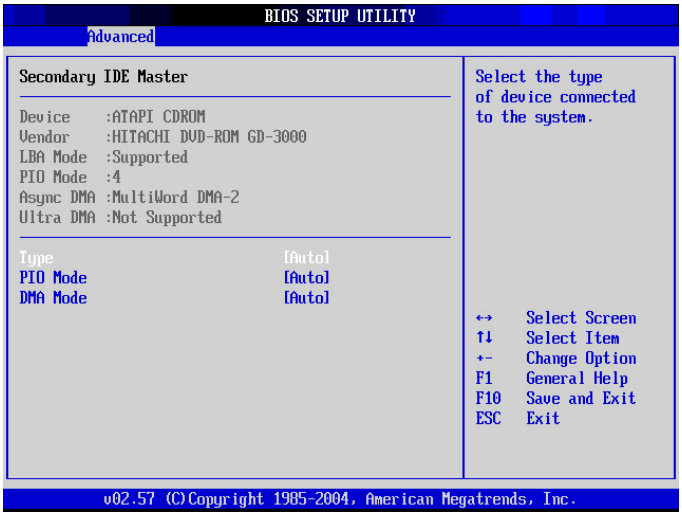
Primary IDE Master : Hard Disk Drive



Field	Description
Device	Type of device, such as hard disk drive.
Vendor	Manufacturer of the device.
Size	The size of the device.
LBA Mode	LBA (Logical Block Addressing) is a method of addressing data on a disk drive. In LBA mode, the maximum drive capacity is 137 GB. For drive capacities over 137 GB, your AMIBIOS is equipped with 48-bit LBA mode addressing.
Block Mode	Block mode boosts IDE drive performance by increasing the amount of data transferred. Only 512 bytes of data can be transferred per interrupt if block mode is not used. Block mode allows transfers of up to 64 KB per interrupt.
PIO Mode	IDE PIO mode programs timing cycles between the IDE drive and the programmable IDE controller. As the PIO mode increases, the cycle time decreases.
Async DMA	This indicates the highest Asynchronous DMA Mode that is supported.
Ultra DMA	This indicates the highest Synchronous DMA Mode that is supported.
SMART	Self-Monitoring Analysis and Reporting Technology protocol used by IDE drives of some manufacturers to predict drive failures.

Cont'd

Primary IDE Master : ATAPI CD ROM



Field	Description
Device	Type of device, such as hard disk drive.
Vendor	Manufacturer of the device.
LBA Mode	LBA (Logical Block Addressing) is a method of addressing data on a drive.
PIO Mode	IDE PIO mode programs timing cycles between the IDE drive and the programmable IDE controller. As the PIO mode increases, the cycle time decreases.
Async DMA	This indicates the highest Asynchronous DMA Mode that is supported.
Ultra DMA	This indicates the highest Synchronous DMA Mode that is supported.

Type

This option sets the type of device that the AMIBIOS attempts to boot from after the Power-On Self-Test (POST) has completed. The Optimal and Fail-Safe default setting is *Auto.*

Option	Description
Not Installed	Set this value to prevent the BIOS from searching for an IDE disk drive on the specified channel.
Auto	Set this value to allow the BIOS auto detect the IDE disk drive type attached to the specified channel. This setting should be used if an IDE hard disk drive is attached to the specified channel. This is the default setting.
CDROM	This option specifies that an IDE CD-ROM drive is attached to the specified IDE channel. The BIOS will not attempt to search for other types of IDE disk drives on the specified channel.
ARMD	This option specifies an ATAPI Removable Media Device. This includes, but is not limited to: • ZIP • LS-120

Cont'd

LBA/Large Mode

LBA (Logical Block Addressing) is a method of addressing data on a disk drive. In LBA mode, the maximum drive capacity is 137 GB. The Optimal and Fail-Safe default setting is *Auto.*

Note: For hard disk drive capacities over 137 GB, your AMIBIOS is equipped with 48-bit LBA mode addressing.

Option	Description
Disabled	Set this value to prevent the BIOS from using Large Block Addressing mode control on the specified channel.
Auto	Set this value to allow the BIOS to auto detect the Large Block Addressing mode control on the specified channel. This is the default setting.

Block (Multi-Sector Transfer)

This option sets the block mode multi sector transfers option. The Optimal and Fail-Safe default setting is *Auto.*

Option	Description
Disabled	Set this value to prevent the BIOS from using Multi-Sector Transfer on the specified channel. The data to and from the device will occur one sector at a time.
Auto	Set this value to allow the BIOS to auto detect device support for Multi-Sector Transfers on the specified channel. If supported, set this value to allow the BIOS to auto detect the number of sectors per block for transfer from the hard disk drive to the memory. The data transfer to and from the device will occur multiple sectors at a time. This is the default setting.

PIO Mode

IDE PIO (Programmable I/O) mode programs timing cycles between the IDE drive and the programmable IDE controller. As the PIO mode increases, the cycle time decreases. The Optimal and Fail-Safe default setting is *Auto*.

Option	Description
Auto	Set this value to allow the BIOS to auto detect the PIO mode. Use this value if the IDE disk drive support cannot be determined. This is the default setting.
0	Set this value to allow the BIOS to use PIO mode 0. It has a data transfer rate of 3.3 MBs.
1	Set this value to allow the BIOS to use PIO mode 1. It has a data transfer rate of 5.2 MBs.
2	Set this value to allow the BIOS to use PIO mode 2. It has a data transfer rate of 8.3 MBs.
3	Set this value to allow the BIOS to use PIO mode 3. It has a data transfer rate of 11.1 MBs.
4	Set this value to allow the BIOS to use PIO mode 4. It has a data transfer rate of 16.6 MBs. This setting generally works with all hard disk drives manufactured after 1999. For other disk drive, such as IDE CD-ROM drives, check the specifications of the drive.

Cont'd

DMA Mode

This setting allows you to adjust the DMA mode options. The Optimal and Fail-Safe default setting is *Auto*.

Option	Description
Auto	Set this value to allow the BIOS to auto detect the DMA mode. Use this value if the IDE disk drive support cannot be determined. This is the default setting.
SWDMA0	Set this value to allow the BIOS to use Single Word DMA mode 0. It has a data transfer rate of 2.1 MBs.
SWDMA1	Set this value to allow the BIOS to use Single Word DMA mode 1. It has a data transfer rate of 4.2 MBs.
SWDMA2	Set this value to allow the BIOS to use Single Word DMA mode 2. It has a data transfer rate of 8.3 MBs.
MWDMA0	Set this value to allow the BIOS to use Multi Word DMA mode 0. It has a data transfer rate of 4.2 MBs.
MWDMA1	Set this value to allow the BIOS to use Multi Word DMA mode 1. It has a data transfer rate of 13.3 MBs.
MWDMA2	Set this value to allow the BIOS to use Multi Word DMA mode 2. It has a data transfer rate of 16.6 MBs.
UDMA0	Set this value to allow the BIOS to use Ultra DMA mode 0. It has a data transfer rate of 16.6 MBs. It has the same transfer rate as PIO mode 4 and Multi Word DMA mode 2.
UDMA1	Set this value to allow the BIOS to use Ultra DMA mode 1. It has a data transfer rate of 25 MBs.
UDMA2	Set this value to allow the BIOS to use Ultra DMA mode 2. It has a data transfer rate of 33.3 MBs.
UDMA3	Set this value to allow the BIOS to use Ultra DMA mode 3. It has a data transfer rate of 44.4 MBs.
UDMA4	Set this value to allow the BIOS to use Ultra DMA mode 4. It has a data transfer rate of 66.6 MBs.
UDMA5	Set this value to allow the BIOS to use Ultra DMA mode 5. It has a data transfer rate of 99.9 MBs.
UDMA6	Set this value to allow the BIOS to use Ultra DMA mode 6. It has a data transfer rate of 133.3 MBs.

S.M.A.R.T. for Hard Disk Drives

Self-Monitoring Analysis and Reporting Technology (SMART) feature can help predict impending drive failures. The Optimal and Fail-Safe default setting is *Auto*.

Option	Description
Auto	Set this value to allow the BIOS to auto detect hard disk drive support. Use this setting if the IDE disk drive support cannot be determined. This is the default setting.
Disabled	Set this value to prevent the BIOS from using the SMART feature.
Enabled	Set this value to allow the BIOS to use the SMART feature on all supported hard disk drives.

Cont'd

32Bit Data Transfer

This option sets the 32-bit data transfer option. The Optimal and Fail-Safe default setting is *Enabled*.

Option	Description
Disabled	Set this value to prevent the BIOS from using 32-bit data transfers.
Enabled	Set this value to allow the BIOS to use 32-bit data transfers on supported hard disk drives. This is the default setting.

ARMD Emulation Type

ATAPI Removable Media Device (ARMD) is a device that uses removable media, such as the LS120, MO (Magneto-Optical), or Iomega Zip drives. If you want to boot up from media on an ARMD, it is required that you emulate boot up from a floppy or hard disk drive. This is especially necessary when trying to boot to DOS. You can select the type of emulation used if you are booting from such a device. The Optimal and Fail-Safe default setting is *Auto*.

Note: This option only appears when an ARMD device is installed.

Option	Description
Auto	Set this value to allow the BIOS to automatically set the emulation used by ARMD. This is the default setting.
Floppy	Set this value for ARMD to emulate a floppy disk drive during boot up.
Hard Disk	Set this value for ARMD to emulate a hard disk drive during boot up.

Third and Forth IDE Slave

Not supported by the Olympus IV hardware.

Floppy Configuration

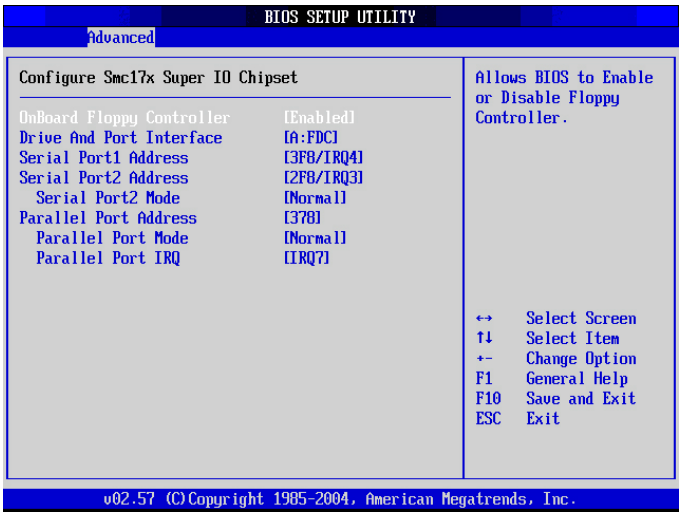
Cont'd

Floppy A
Floppy B

Floppy disk drives are slowly being phased out of most systems. Since it is a relatively slow and low storage medium, most do not find a need to install it. However, the Olympus IV motherboard still retains this legacy feature. It is especially useful when you are trying to boot to DOS. The Optimal and Fail-Safe default setting is *Disabled*.

Option	Description
Disabled	Set this value to prevent the system from using the selected Floppy Drive location.
360 KB 5.25"	Set this value to allow the system to address the selected Floppy Drive location as a 360 KB 5.25" floppy drive.
1.2 MB 5.25"	Set this value to allow the system to address the selected Floppy Drive location as a 1.2 MB 5.25" floppy drive.
720 KB 3.5"	Set this value to allow the system to address the selected Floppy Drive location as a 720 KB 3.5" floppy drive.
1.44 MB 3.5"	Set this value to allow the system to address the selected Floppy Drive location as a 1.44 MB 3.5" floppy drive.
2.88 MB 3.5"	Set this value to allow the system to address the selected Floppy Drive location as a 2.88 MB 3.5" floppy drive.

SuperIO Configuration



Onboard Floppy Controller

This field allows you to enable or disable the floppy disk drive controller on the Olympus IV motherboard. The default value for this setting is *Enabled*.

Option	Description
Enabled	Set this value to allow the system to use the onboard floppy disk drive controller. This is the default value.
Disabled	Set this value to prevent the system from using the onboard floppy disk drive controller.

Cont'd

Serial Port1 Address

This option specifies the base I/O port address and Interrupt Request address of serial port 1. The Optimal setting is *3F8/IRQ4*. The Fail-Safe default setting is *Disabled.*

Option	Description
Disabled	This option prevents the serial port from accessing any system resources. It is not made available.
3F8/IRQ4	This option allows the serial port to use 3F8 as its I/O port address and IRQ 4 for the interrupt address. This is the default setting. The majority of serial port 1 or COM1 ports on computer systems use IRQ4 and I/O Port 3F8 as the standard setting. The most common serial device connected to this port is a mouse. If the system will not use a serial device, it is best to set this port to *Disabled*.
3E8/IRQ4	This option allows the serial port to use 3E8 as its I/O port address and IRQ 4 for the interrupt address. If the system will not use a serial device, it is best to set this port to *Disabled*.
2E8/IRQ3	This option allows the serial port to use 2E8 as its I/O port address and IRQ 3 for the interrupt address. If the system will not use a serial device, it is best to set this port to *Disabled*.

Serial Port2 Address

This option specifies the base I/O port address and Interrupt Request address of serial port 2. The Optimal setting is *2F8/IRQ3*. The Fail-Safe setting is *Disabled.*

Option	Description
Disabled	This option prevents the serial port from accessing any system resources. It is not made available.
2F8/IRQ3	This option allows the serial port to use 2F8 as its I/O port address and IRQ 3 for the interrupt address. This is the default setting. The majority of serial port 2 or COM2 ports on computer systems use IRQ3 and I/O Port 2F8 as the standard setting. If the system will not use a serial device, it is best to set this port to *Disabled*.
3E8/IRQ4	This option allows the serial port to use 3E8 as its I/O port address and IRQ 4 for the interrupt address. If the system will not use a serial device, it is best to set this port to *Disabled*.
2E8/IRQ3	This option allows the serial port to use 2E8 as its I/O port address and IRQ 3 for the interrupt address. If the system will not use a serial device, it is best to set this port to *Disabled*.

Cont'd

Serial Port2 Mode

This option specifies the mode of the secondary onboard serial port I/O port. The Optimal and Fail-Safe setting is *Normal.* When selecting settings other than *Normal*, more choices become available under it. The options are all related to Infrared settings.

IrDA (Infrared Data Association) has about the same transfer rate as that of a parallel port.

Option	Description
Normal	This option allows the motherboard to set the secondary onboard serial port to standard serial port.
Sharp IR	Sharp IR or ASK IR is a protocol developed by Sharp for use with its range of electronic organizers. Sharp was a manufacturing partner for the Apple MessagePad and released a similar model at the same time. Apple adopted the Sharp protocol, and included an application in the Newton OS 1.x to connect via infrared to Sharp organizers and exchange data. This Infrared protocol is widely used in Japan.
SIR	SIR or Serial IR operates at higher rates. It is meant for long-range transmission where you need more than a few characters to pass through.
Consumer	Consumer IR can be used in long distance, but the transfer rate is very slow.

IR Duplex Mode

This option specifies the Infrared transfer used when any infrared option is enabled on serial port 2. The Optimal and Fail-Safe settings hide this option completely. The default setting is *Full Duplex*.

Option	Description
Full Duplex	This option allows the Infrared port to send and receive at the same time.
Half Duplex	This option allows the Infrared port to send or receive information, then send or receive information after the infrared port is clear. It cannot perform both a send and receive at the same time.

IR Receiver Pin

This option allows you to specify the receiver pin used to receive IR signals.

Option	Description
IRRX1	This option allows you to specify the IRRX1 pin to be used for receiving IR signals.
IRRX2	This option allows you to specify the IRRX2 pin to be used for receiving IR signals.

Cont'd

Parallel Port Address

This option specifies the I/O address used by the parallel port. The Optimal setting is *378*. The Fail-Safe setting is *Disabled*.

Option	Description
Disabled	This option prevents the parallel port from accessing any system resources. It is not made available.
378	This option allows the serial port to use 378 as its I/O port address. This is the default setting. The majority of parallel ports on computer systems use IRQ7 and I/O Port 378H as the standard setting.
278	This option allows the serial port to use 278 as its I/O port address.
3BC	This option allows the serial port to use 3BC as its I/O port address.

Parallel Port Mode

This option specifies the parallel port mode. The Optimal setting is *Normal*. The Fail-Safe setting is *Disabled*.

Option	Description
Normal	This option allows the standard parallel port mode to be used. This is the default setting.
Bi-Directional	This option allows data to be sent to and received from the parallel port.
EPP	The parallel port can be used with devices that adhere to the Enhanced Parallel Port (EPP) specification. EPP uses the existing parallel port signals to provide asymmetric bi-directional data transfer driven by the host device. When EPP is selected, you can select the EPP Version as either 1.7 or 1.9.
ECP	The parallel port can be used with devices that adhere to the Extended Capabilities Port (ECP) specification. ECP uses the DMA protocol to achieve data transfer rates up to 2.5 Megabits per second. ECP provides symmetric bi-directional communication. When ECP is selected, you can change the value of the ECP Mode DMA Channel. It can be set to 0, 1, or 3.

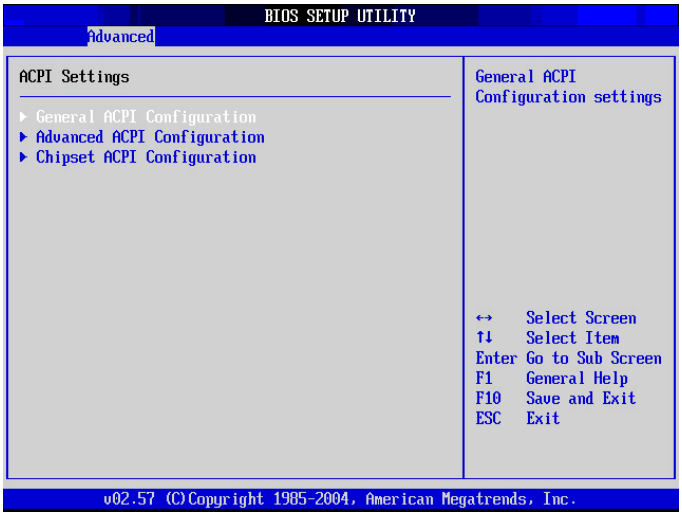
Parallel Port IRQ

This option specifies the IRQ used by the parallel port. The Optimal and Fail-Safe default setting is *7*.

Option	Description
5	This option allows the serial port to use Interrupt 3.
7	This option allows the serial port to use Interrupt 7. This is the default setting. The majority of parallel ports on computer systems use IRQ7 and I/O Port 378H as the standard setting.

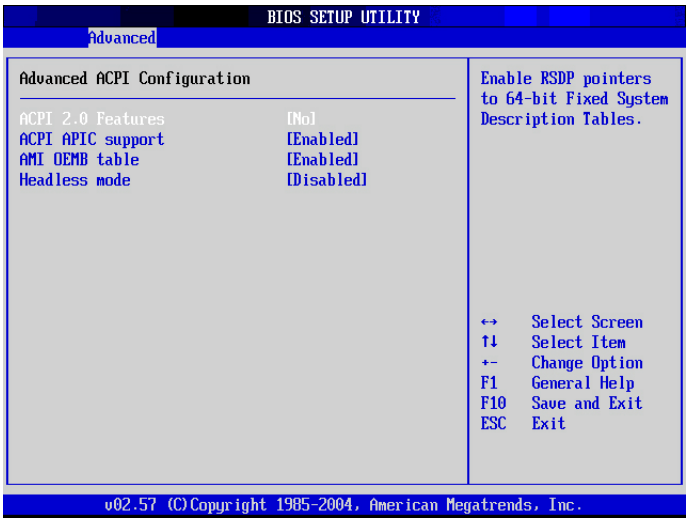
Cont'd

ACPI Configuration



Option	Description
General ACPI Configuration	This option allows you to configure *Suspend Mode* settings and enable or disable *Repost Video on S3 Resume*.
Advanced ACPI Configuration	This option allows you to enable or disable various ACPI (Advanced Configuration and Power Interface) support.

Advanced ACPI Configuration



Cont'd

ACPI 2.0 Support

This option allows you to enable or disable ACPI (Advanced Configuration and Power Interface) 2.0 support.

Option	Description
No	This option turns off ACPI 2.0 support and is the default setting.
Yes	This option turns on ACPI 2.0 support.

ACPI APIC Support

This option allows you to enable or disable ACPI APIC (Advanced Programmable Interrupt Controller) support.

Option	Description
Disabled	This option turns off ACPI APIC support.
Enabled	This option turns on ACPI APIC support and is the default setting.

AMI OEMB Table

This option allows you to enable or disable the BIOS-->AML ACPI table function.

Option	Description
Disabled	This option turns off the AMI OEMB table function.
Enabled	This option turns on the AMI OEMB table function and is the default setting.

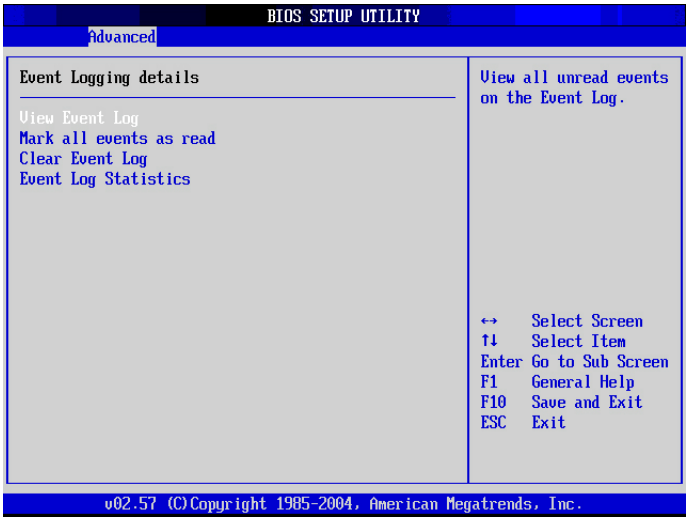
Headless Mode

This option allows you to enable or disable headless operation mode through ACPI.

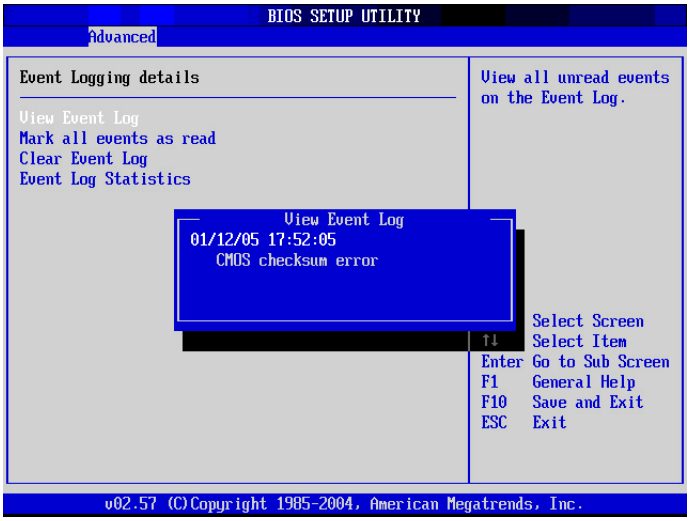
Option	Description
Disabled	This option turns off headless operation mode through ACPI and is the default setting.
Enabled	This option turns on headless operation mode through ACPI.

Cont'd

Event Logging

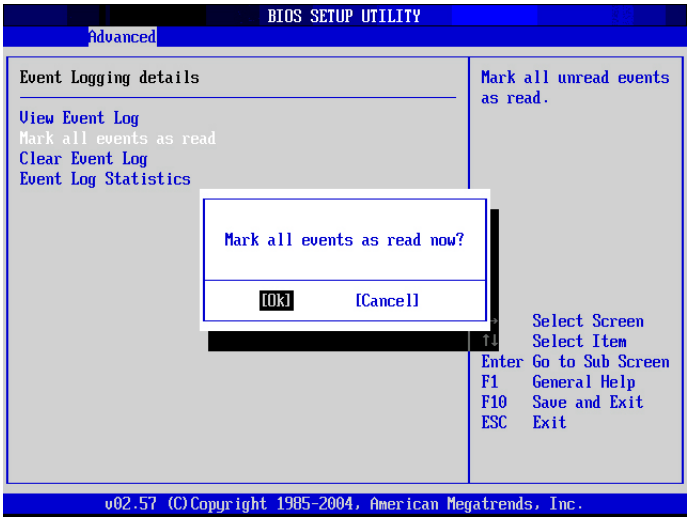
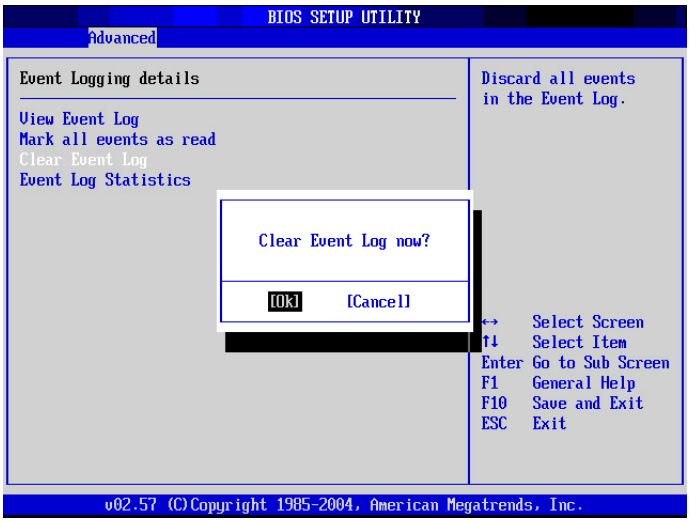


Field	Description
View Event Logging	This option allows you to read all comments stored in CMOS.



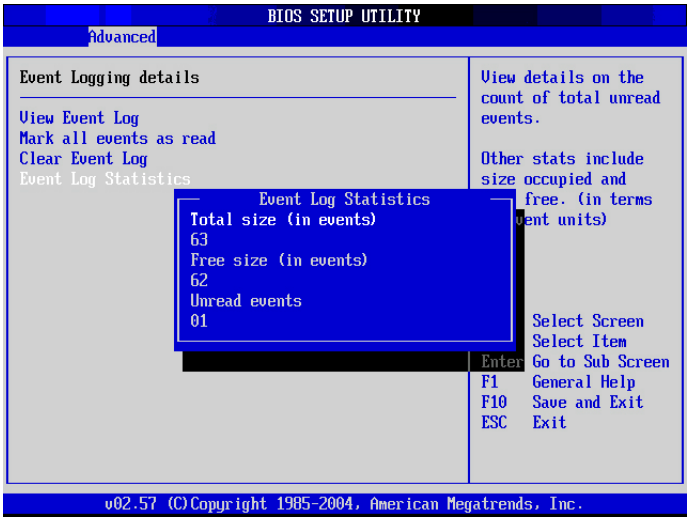
Cont'd

DMI Event Logging, Continued

Field	Description
Mark All Events As Read	This option allows you to designate that all comments in the CMOS have been read even though they have not. 
Clear Event Logs	This option allows you to delete all comments stored in your CMOS. Press the <ENTER> key to delete all events stored in CMOS. 

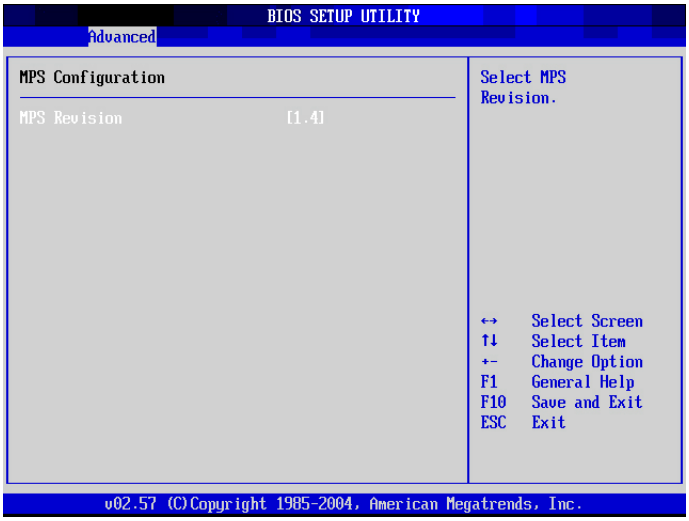
Cont'd

DMI Event Logging, Continued

Field	Description
Event Log Statistics	This option allows you to view the event log statistics such as Total Size, Free Size, and Unread Events. 

Cont'd

MPS Configuration



MPS Revision

The AMIBIOS Setup allows you to select whether to use Multi-Processor Specification (MPS) 1.1 or 1.4. The MPS is a specification by which PC manufacturers design and build Intel architecture (IA) systems with two or more processors.

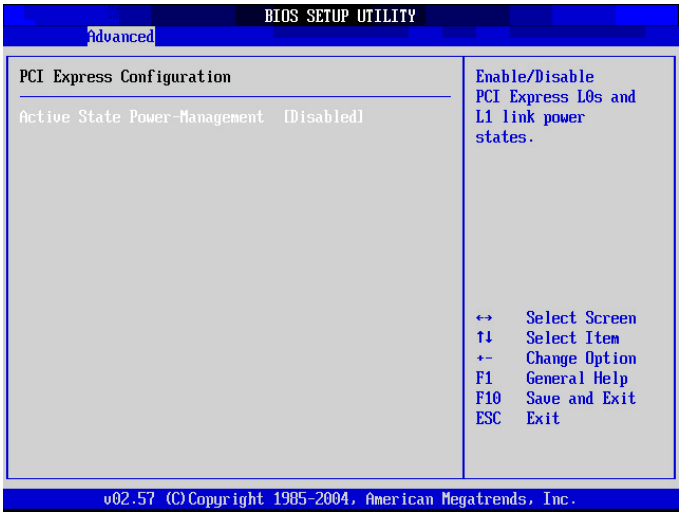
MPS version 1.4 added extended configuration tables to improve support for multiple PCI bus configurations and improve future expandability. Most newer versions of server operating systems support MPS 1.4 and, as such, you should not change the BIOS Setup default of 1.4 to 1.1 if your operating system supports the 1.4 version.

Check with the vendor of your operating system to find out which version to use if you are unsure. Some operating systems may require version 1.1 for compatibility reasons.

Option	Description
1.4	This option allows the BIOS to use MultiProcessor Specification version 1.4. This is the default setting.
1.1	This option allows the BIOS to use MultiProcessor Specification version 1.1.

Cont'd

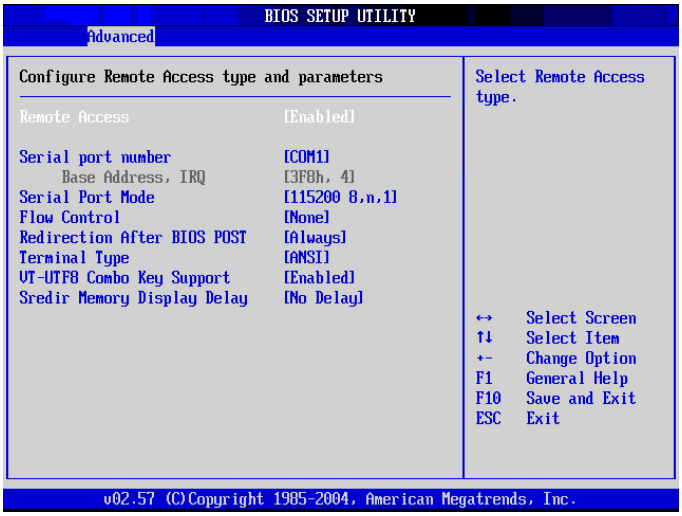
PCI Express Configuration



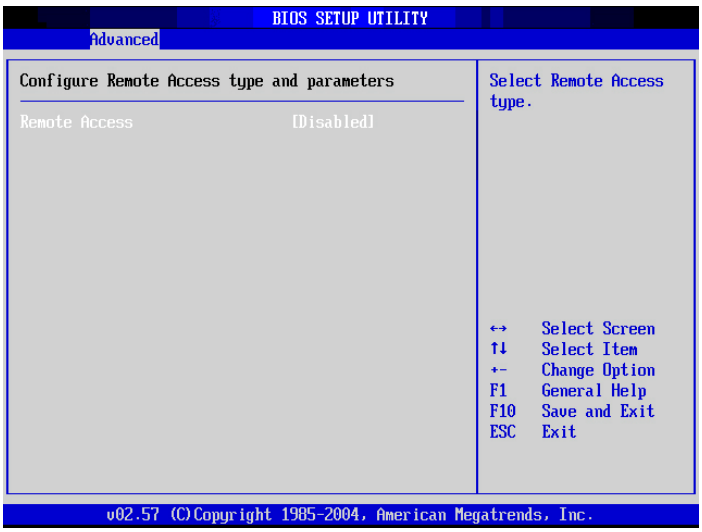
Option	Description
Enable	This option turns on Active State Power Management.
Disable	This option turns off Active State Power Management.

Cont'd

Remote Access Configuration



Remote Access

Option	Description
Disabled	This option turns off remote access support in the BIOS. 
Enabled	This option turns on remote access support in the BIOS and is the default setting. The remote access feature requires the use of the serial port connector located at the rear of the Olympus IV motherboard or serial port 2 located at J12.

Cont'd

Serial Port Number

Option	Description
COM1	This setting allows you to use the serial port connector located at the rear of the Olympus IV motherboard. This is the default value.
COM2	This setting allows you to use the internal serial port connector located at J12 on the Olympus IV motherboard.

Serial Port Mode

You can use any mode you want. Just keep in mind that the bits per second, data bits, parity, and stop bits must match your terminal setting.

Option	Description
115200 8,n,1	This value allows the serial port to transfer data at 115200 bits per second using eight data bits, no parity bit, and one stop bit.
57600 8,n,1	This value allows the serial port to transfer data at 57600 bits per second using eight data bits, no parity bit, and one stop bit.
19200 8,n,1	This value allows the serial port to transfer data at 19200 bits per second using eight data bits, no parity bit, and one stop bit. This is the default value.

Flow Control

Option	Description
None	This value turns off data flow control (handshaking). Flow control is not used. This is the default value.
Software	This value allows software handshaking to be used to control data flow.
Hardware	This value allows hardware handshaking to be used to control data flow.

Redirection After BIOS POST

Option	Description
Disabled	This value turns off redirection after POST. This is the default value.
Boot Loader	This value turns on redirection during POST and during the time when the operating system is booting.
Always	This value allows redirection to be on at all times. Some operating systems may not work if this value is used.

Terminal Type

Option	Description
ANSI	Use this value if your target terminal uses a standard US (United States) ANSI keyboard. This is the default value.
VT-UTF8	Use this value if your target terminal uses VT-UTF8 combination keys.

Cont'd

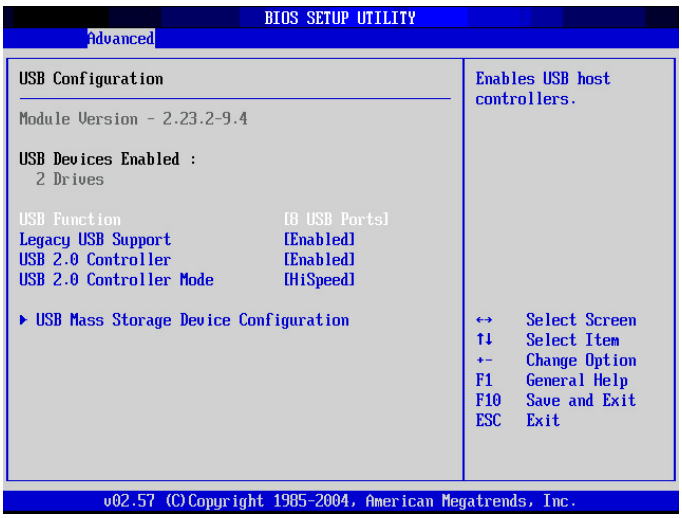
VT-UTF8 Type Combo Key Support

Option	Description
Disabled	This option turns off VT-UTF8 combination key support for ANSI/VT100 terminals.
Enabled	This option turns on VT-UTF8 combination key support for ANSI/VT100 terminals. This is the default value.

Sredir Memory Display Delay

Option	Description
No Delay	This setting does not pause the memory display during redirection. This is the default setting.
Delay 1 Sec	This option allows you to pause the memory display during redirection for one second.
Delay 2 Sec	This option allows you to pause the memory display during redirection for two second.
Delay 4 Sec	This option allows you to pause the memory display during redirection for four second.

USB Configuration



Field	Description
Module Version	This field displays the version of the USB module.
USB Devices Enabled	This field lists all USB devices that are attached and functioning properly on the Olympus IV motherboard.

Cont'd

USB Function

Option	Description
Disabled	Set this value to prevent the system from using any of the onboard USB ports.
2 USB Ports	Set this value to allow the system to address up to two USB ports.
4 USB Ports	Set this value to allow the system to address up to four USB ports.
6 USB Ports	Set this value to allow the system to address up to six USB ports.
8 USB Ports	Set this value to allow the system to address up to eight USB ports. This is the default value.

Legacy USB Support

Option	Description
Enabled	Set this value to allow the system to use legacy USB devices such as a USB keyboard and a USB mouse. This is the default value.
Disabled	Set this value to prevent the system from using legacy USB devices such as a USB keyboard and a USB mouse.
Auto	Set this value to allow the BIOS to automatically detect the correct settings.

USB 2.0 Controller

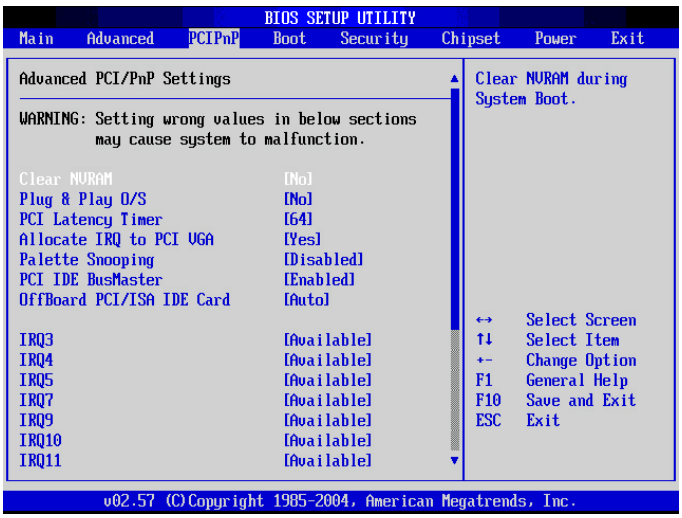
Option	Description
Enabled	Set this value to allow the system to use the onboard USB 2.0 controller. This is the default value.
Disabled	Set this value to prevent the system from using the onboard USB 2.0 controller.

USB 2.0 Controller Mode

Option	Description
FullSpeed	Set this value to force the BIOS to use the onboard USB 2.0 controller at the USB 1.1 speeds.
HiSpeed	Set this value to force the BIOS to use the onboard USB 2.0 controller at full USB 2.0 speeds. This is the default value.

Section 3 PCI/PnP Setup

Choose PCI/PnP Setup from the AMIBIOS Setup main menu. All PCI/PnP Setup options are described in this section. The PCI/PnP Setup screen is shown below:



Plug and Play O/S

Option	Description
No	This value allows the BIOS to configure the devices in the system. This is the default value.
Yes	This value allows the operating system to configure all Plug and Play devices not required during boot. Use this setting if your operating system supports plug and play devices.

PCI Latency Timer

This option allows the PCI Latency Timer to be adjusted. Basically, it allows you to set a delay to allow the BIOS to find all PCI devices. This option sets the latency of all PCI devices on the PCI bus. The settings are in units equal to PCI clocks. The Optimal and Fail-Safe default settings is *64*.

Option	Description
32	This option sets the PCI latency to 32 PCI clocks.
64	This option sets the PCI latency to 64 PCI clocks. This is the default setting.
96	This option sets the PCI latency to 96 PCI clocks.
128	This option sets the PCI latency to 128 PCI clocks.
160	This option sets the PCI latency to 160 PCI clocks.
192	This option sets the PCI latency to 192 PCI clocks.
224	This option sets the PCI latency to 224 PCI clocks.
248	This option sets the PCI latency to 248 PCI clocks.

Cont'd

Allocate IRQ to VGA

This option allows the system to adjust the Allocate IRQ to VGA setting. The Optimal and Fail-Safe default settings is *Yes.*

Option	Description
Yes	This option allows the allocation of an IRQ to a VGA adapter card that uses the PCI local bus. This is the default setting.
No	This option prevents the allocation of an IRQ to a VGA adapter card that uses the PCI local bus.

Palette Snooping

This option allows the system to modify the Palette Snooping settings. The Optimal and Fail-Safe default settings is *Disabled*.

Option	Description
Disabled	This is the default setting and should not be changed unless the VGA card manufacturer requires Palette Snooping to be Enabled.
Enabled	This setting informs the PCI devices that an ISA based Graphics device is installed in the system so the card will function correctly. This does not necessarily indicate a physical ISA adapter card. The graphics chipset can be mounted on a PCI card. Always check with your adapter card manuals first, before modifying the default settings in the BIOS.

PCI IDE BusMaster

This option allows the PCI IDE busmastering to be set. The Optimal and Fail-Safe default settings is *Disabled*.

Option	Description
Disabled	This option prevents PCI busmastering. This is the default setting.
Enabled	This option specifies that the IDE controller on the PCI local bus has mastering capabilities.

Cont'd

Offboard PCI IDE Card

This option allows you to select which physical PCI slot a PCI IDE expansion board is installed. Some PCI IDE expansion boards require this. The Optimal and Fail-Safe default settings is *Auto*.

Option	Description
Auto	This value allows the BIOS to locate any PCI IDE expansion boards installed on the motherboard. This is the default value.
PCI Slot 1	Use this value if you have installed a PCI IDE expansion board in PCI slot labeled PCI0 on your motherboard.
PCI Slot 2	Use this value if you have installed a PCI IDE expansion board in PCI slot labeled PCI1 on your motherboard.
PCI Slot 3	Use this value if you have installed a PCI IDE expansion board in PCI slot labeled PCI2 on your motherboard.
PCI Slot 4	Use this value if you have installed a PCI IDE expansion board in PCI slot labeled PCI3 on your motherboard.
PCI Slot 5	Use this value if you have installed a PCI IDE expansion board in PCI slot labeled PCI4 on your motherboard.

IRQ 3, 4, 5, 9, 10, 11, 14, and 15

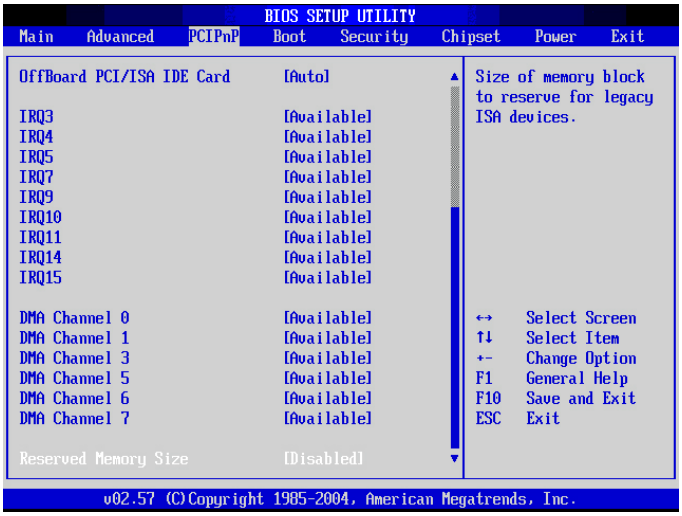
Option	Description
Available	This setting specifies that this IRQ is available to be used by PCI/PnP devices. This is the default value.
Reserved	This setting specifies that this IRQ is reserved to be used by legacy ISA devices.

DMA Channel 0, 1, 3, 5, 6, and 7

Option	Description
Available	This setting specifies that this DMA is available to be used by PCI/PnP devices. This is the default value.
Reserved	This setting specifies that this DMA is reserved to be used by legacy ISA devices.

Cont'd

Reserved Memory Size



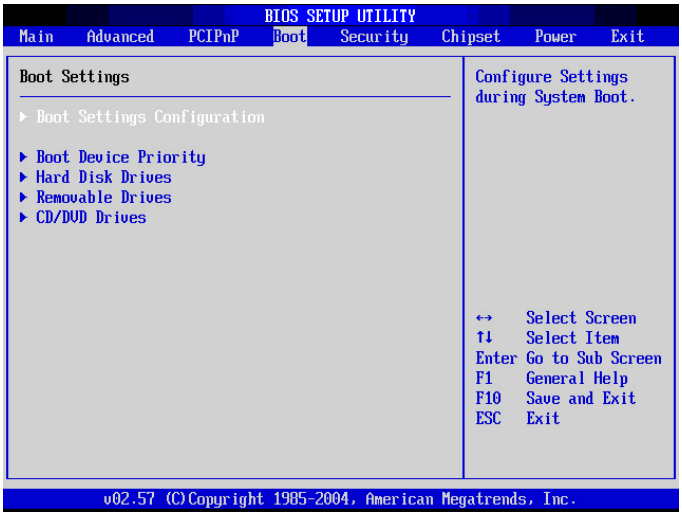
Option	Description
Disabled	This value prevents the BIOS from reserving any memory for legacy ISA devices. This is the default value.
16K	Set this value to reserve a 16K block of memory for use with legacy ISA devices.
32K	Set this value to reserve a 32K block of memory for use with legacy ISA devices.
64K	Set this value to reserve a 64K block of memory for use with legacy ISA devices.

Section 4 Boot Setup

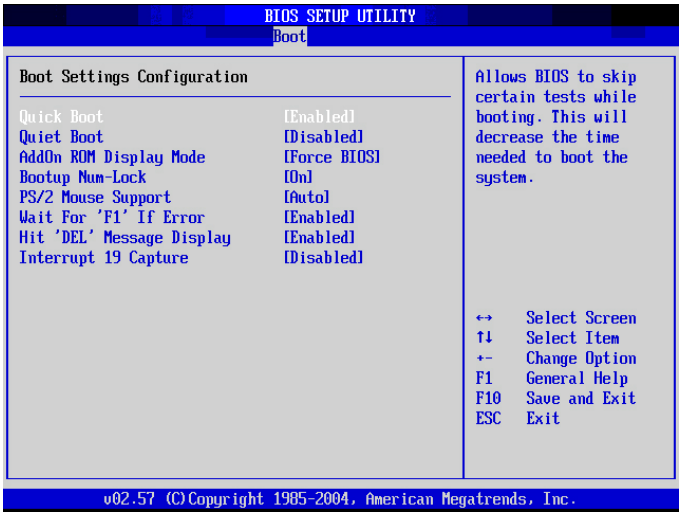
Choose Boot Setup from the AMIBIOS Setup main menu. All Boot Setup options are described in this section. Select an item on the Boot Setup screen to access the sub screen for:

- Boot Settings Configuration
- Boot Device Priority
- Hard Disk Drives
- Removable Devices
- CD/DVD Drives

The Boot Setup screen is shown below:



Boot Settings Configuration



Cont'd

Quick Boot

Option	Description
Enabled	This value allows the BIOS to skip some POST tests to speed up the boot process. This is the default value.
Disabled	This value runs all BIOS POST tests.

Quiet Boot

Option	Description
Enabled	This value displays an OEM logo instead of the BIOS boot screens during POST.
Disabled	This value displays the BIOS boot screens during POST. This is the default value.

AddOn ROM Display Mode

Option	Description
Force BIOS	This value displays the option ROM even if the option ROM is set to not display during boot. This is the default value.
Keep Current	This value allows the option ROM to determine whether or not it is displayed.

Bootup Num-Lock

Option	Description
On	This value turns on the NUM-LOCK at boot. This is the default value.
Off	This value turns off the NUM-LOCK at boot. The number lock can be instated at anytime after the motherboard is powered on by simply pressing the NUM LOCK key (if applicable).

PS/2 Mouse Support

Option	Description
Disabled	This value turns off PS/2 mouse support at the BIOS level.
Enabled	This value turns on PS/2 mouse support at the BIOS level.
Auto	This value allows the BIOS to determine if a PS/2 mouse is being used. If a PS/2 mouse is detected, the BIOS enables the PS/2 mouse support. This is the default value.

Wait For 'F1' If Error

Option	Description
Disabled	This value prevents the system from waiting for you to press the <F1> key if the BIOS detects an error during POST.
Enabled	This value allows the system to halt on errors while it waits for you to press the <F1> key if the BIOS detects an error during POST. This is the default value.

Cont'd

Hit 'DEL' Message Display

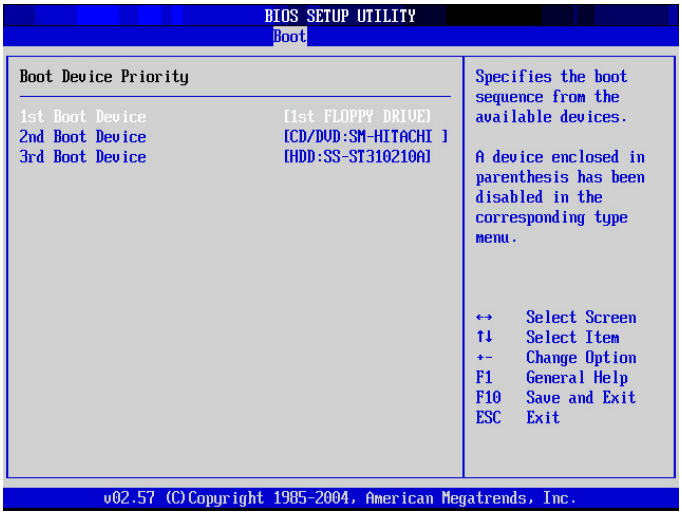
Option	Description
Disabled	This value turns off the *Press DEL to run Setup* message.
Enabled	This value turns on the *Press DEL to run Setup* message. This is the default value.

Interrupt 19 Capture

Option	Description
Disabled	This value prevents option ROMs to trap IRQ 19. This is the default value.
Enabled	This value allows option ROMs to trap IRQ 19.

Boot Device Priority

Use this screen to specify the order in the system checks for the device to boot from. To access this screen, select Boot Device Priority on the Boot Setup screen and press <Enter>. The following screen displays:

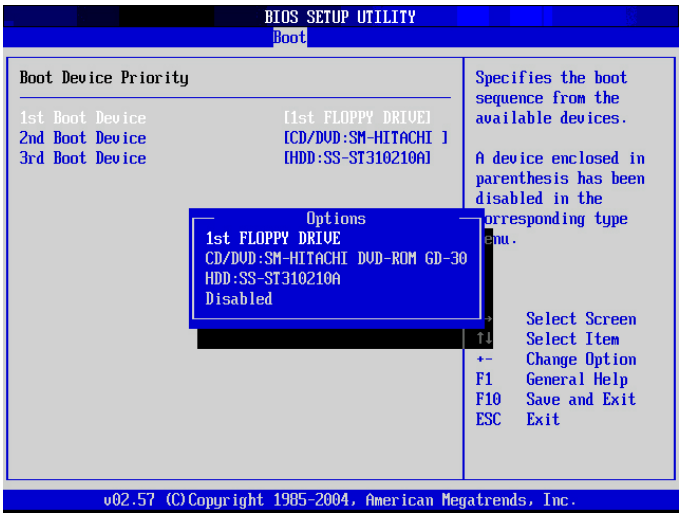


Cont'd

1st Boot Device
2nd Boot Device
3rd Boot Device

Set the boot device options to determine the sequence in which the computer checks which device to boot from. The settings are *Removable Dev., Hard Drive, or CD/DVD.* The Optimal and Fail-Safe settings are:

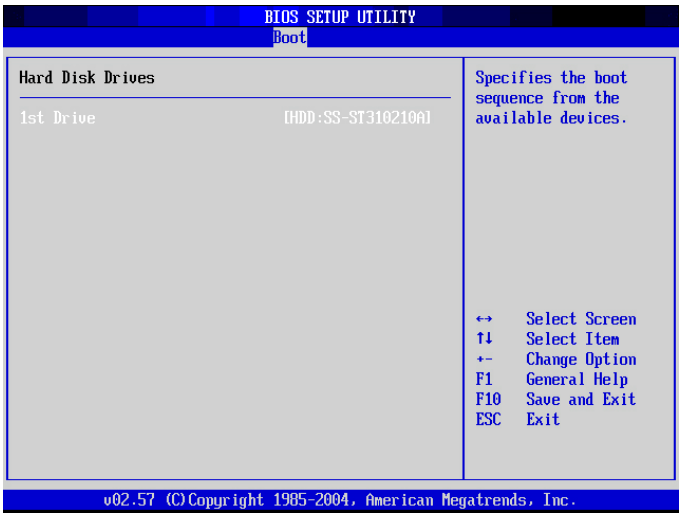
- 1st boot device – *1st Removable Device*
- 2nd boot device – *CD/DVD*
- 3rd boot device – *1st HDD*
- 4th boot device – *Network*

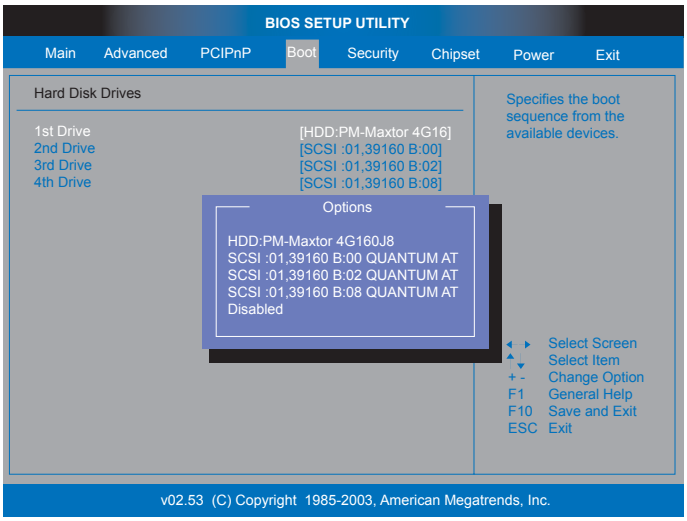


Cont'd

Hard Disk Drives Boot Priority

Use this screen to view the hard disk drives in the system. To access this screen, select Hard Disk Drives on the Boot Setup screen and press <Enter>. The following screen displays examples of hard disk drives:

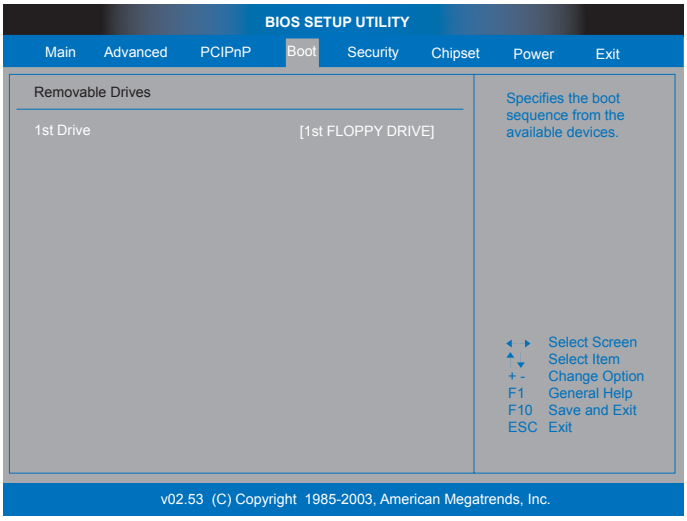


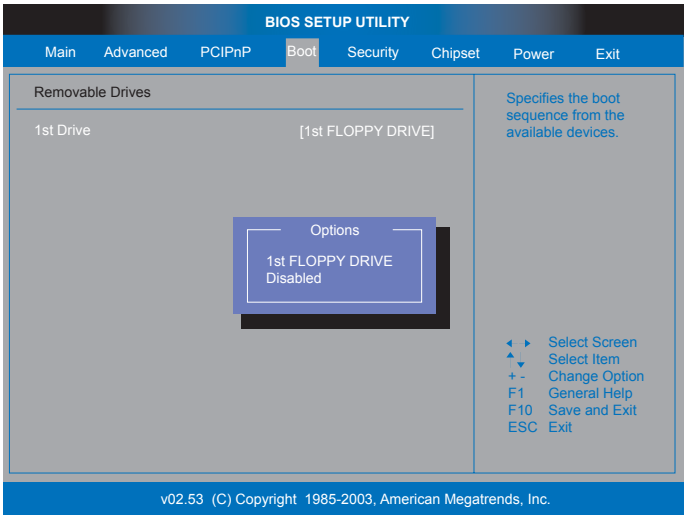


Cont'd

Removable Drives Boot Priority

Use this screen to view the removable drives in the system. To access this screen, select Removable Devices on the Boot Setup screen and press <Enter>. The following screen displays examples of removable devices:

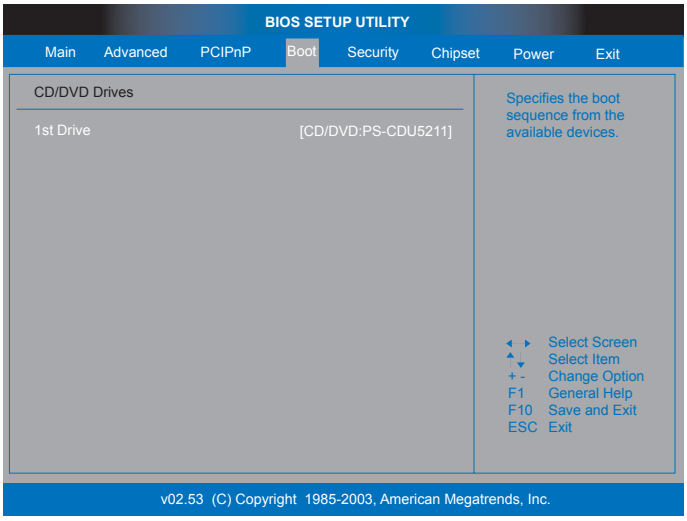


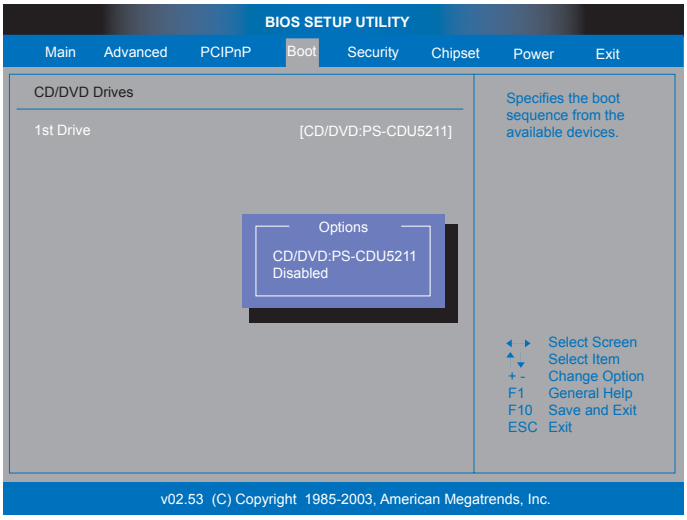


Cont'd

CD/DVD Drives Boot Priority

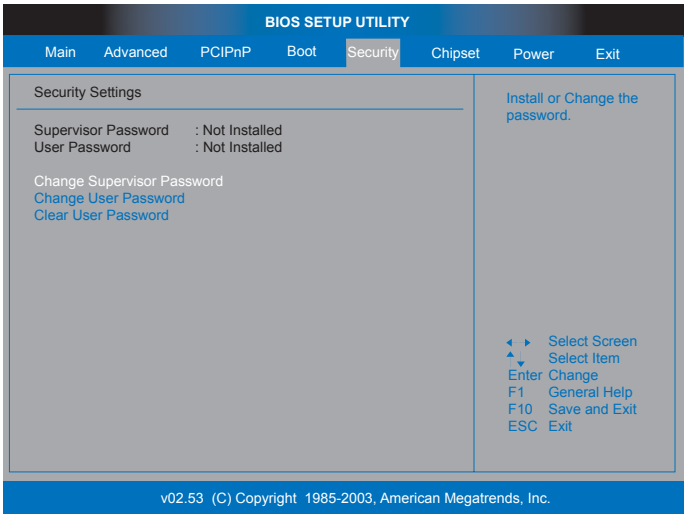
Use this screen to view the ATAPI DVD and CD-ROM drives in the system. To access this screen, select CD/DVD Drives on the Boot Setup screen and press <Enter>. The following screen displays examples of ATAPI CD-ROM and DVD Drives screen:





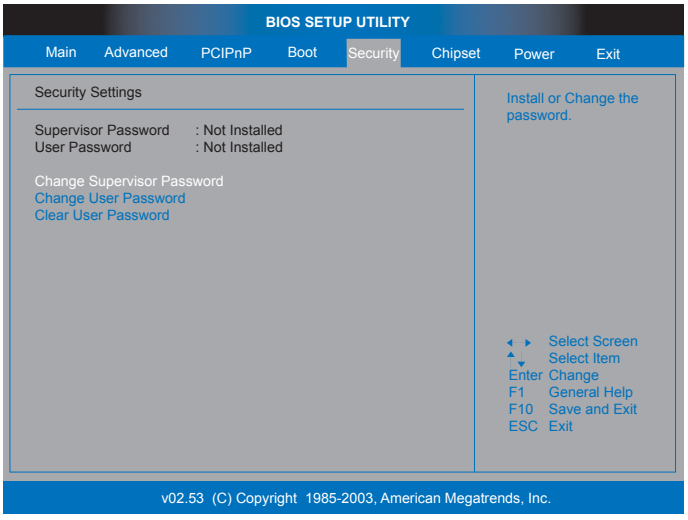
Section 5 Security Setup

Select *Security* from the main menu of the *AMIBIOS Setup Utility*. The *Security* setup screen is displayed below:



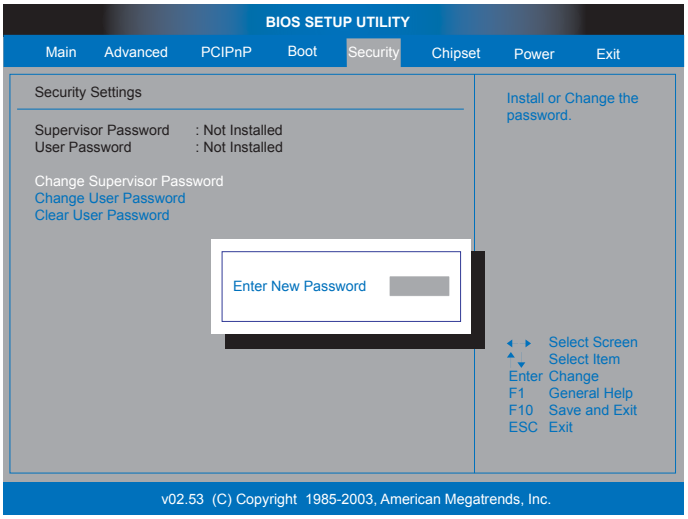
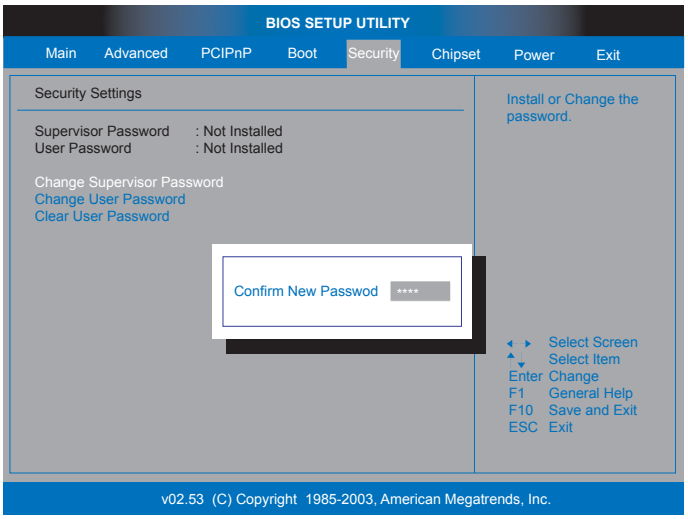
Setting Up a Supervisor Password

Follow the instructions below to setup a supervisor level password on your Olympus IV motherboard.

Step	Action
1	Navigate to the *Security* tab.  The *Change Supervisor Password* option is highlighted in white. Press the <ENTER> key to enable the password.

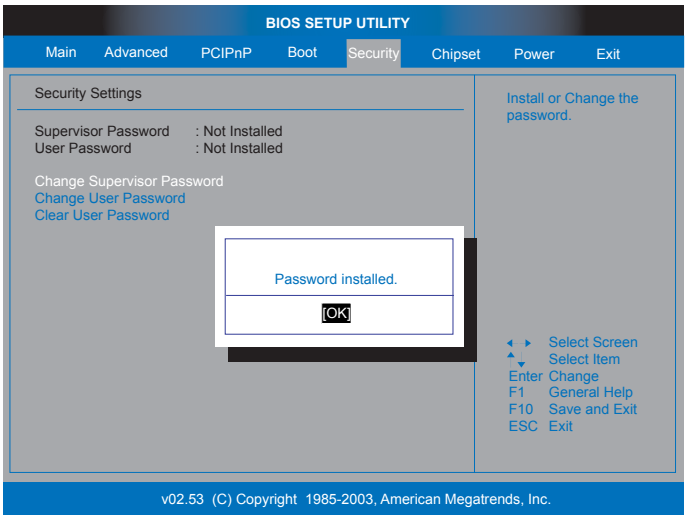
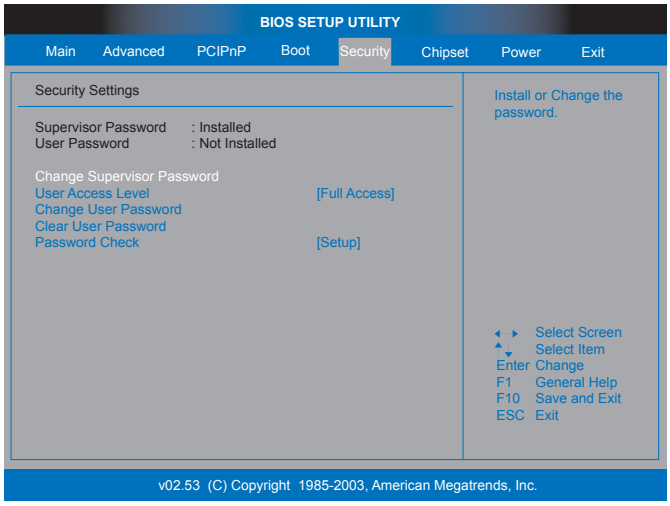
Cont'd

Setting Up a Supervisor Password, Continued

Step	Action
2	The *Enter New Password* prompt appears. Type in your password and press the <ENTER> key. The password can be up to six characters long. The password is not case-sensitive. 
3	The *Confirm New Password* prompt appears. Type in your password again to confirm it and press the <ENTER> key. 

Cont'd

Setting Up a Supervisor Password, Continued

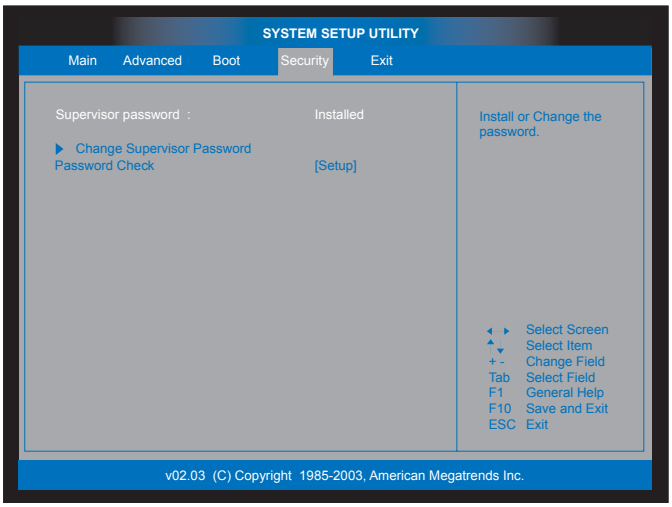
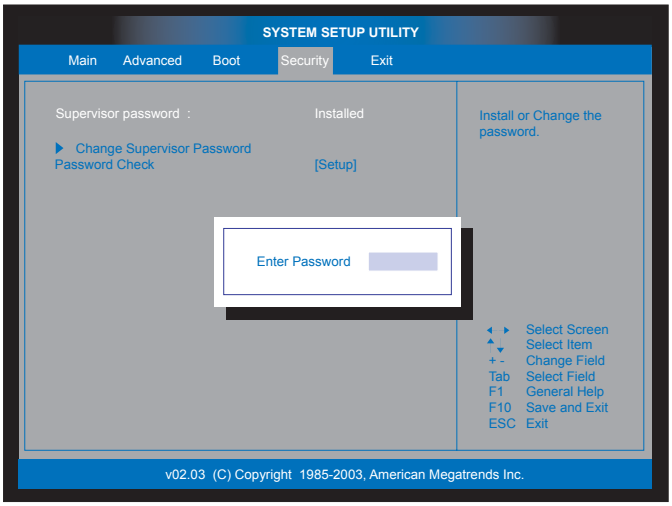
Step	Action
4	The *Password Installed* prompt appears. Press the <ENTER> key to return to the *Security* setup screen. 
5	The Security setup screen now displays that the *Supervisor password* is *Installed*.  You can now set the *Password Check* option. There are two values. They are as follows:
6	Congratulations! You have successfully configured the password on your Olympus IV motherboard.

Field	Description
Setup	Set this value if you want to be prompted for the password when entering the AMIBIOS setup. This is the default value.
Always	Set this value if you want to be prompted for the password when entering the AMIBIOS setup and upon every boot.

Cont'd

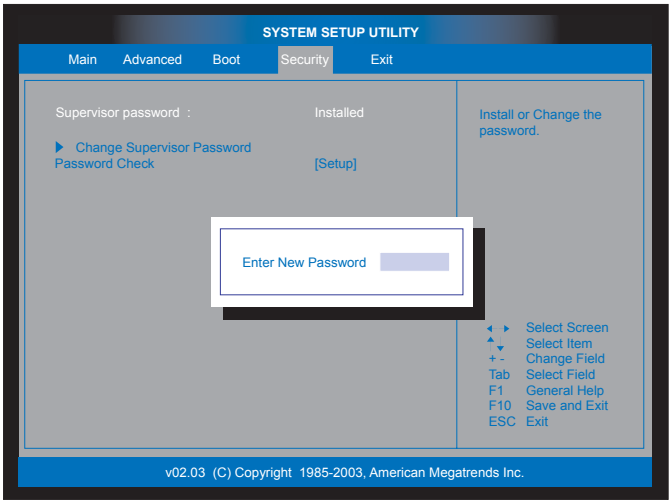
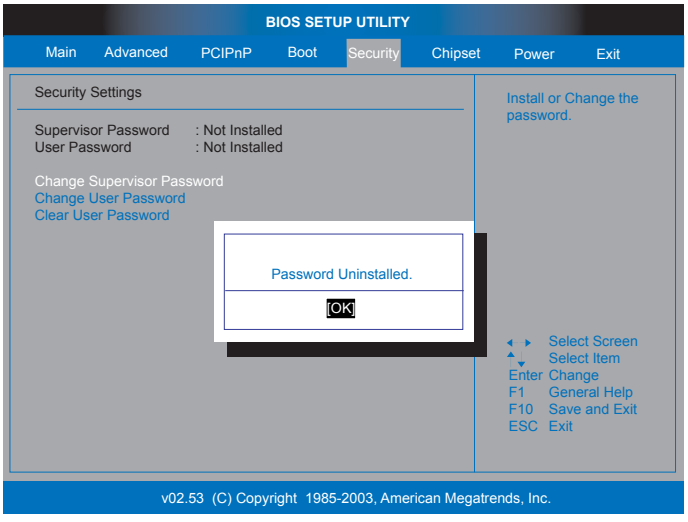
Clearing the Password (via BIOS)

Follow the instructions below to clear the supervisor level password from your Olympus IV motherboard.

Step	Action
1	Navigate to the *Security* tab.  The *Change Supervisor Password* option is highlighted in white. Press the <ENTER> key to proceed.
2	The *Enter Password* prompt appears. Type in your current password and press the <ENTER> key. 

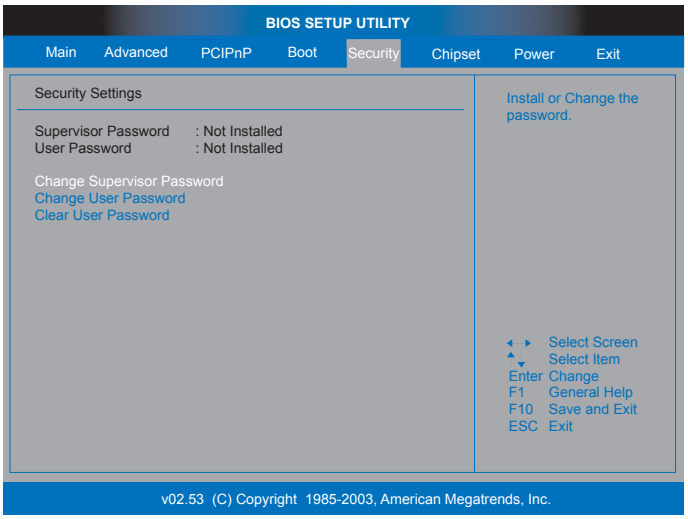
Cont'd

Clearing the Password (via BIOS), Continued

Step	Action
3	The *Enter New Password* prompt appears. Do not enter any password, but instead press the <ENTER> key. 
4	The *Password Uninstalled* prompt appears. Press the <ENTER> key to return to the *Security* setup screen. 

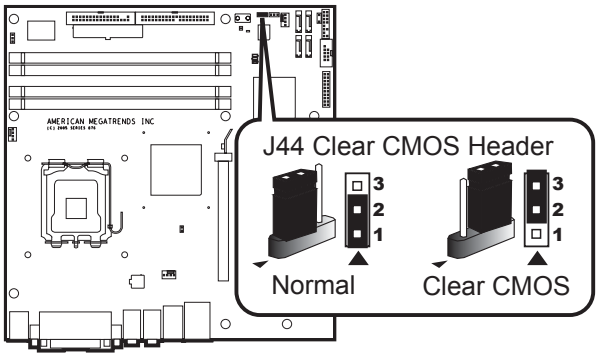
Cont'd

Clearing the Password (via BIOS), Continued

Step	Action
5	The Security setup screen now displays that the *Supervisor password* is *Not Installed*. 
6	Congratulations! You have successfully removed the password from your Olympus IV motherboard.

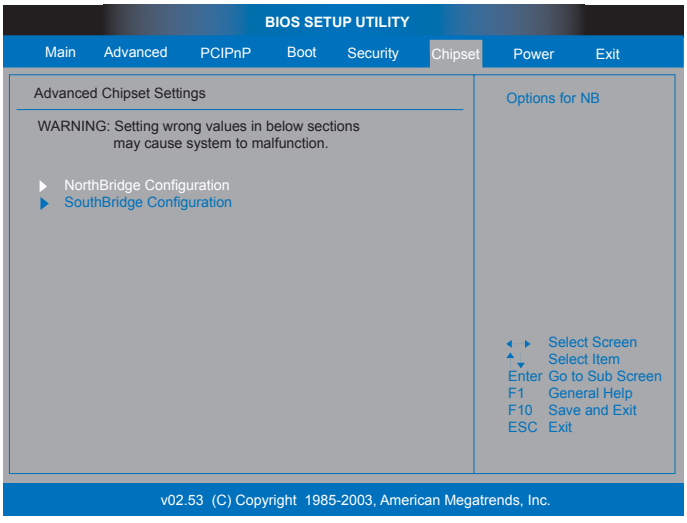
Cont'd

Clearing the CMOS (via Hardware Jumper)

Jumper	Pins	Description
J44	2-3	Short pins two and three from one to five seconds to clear the CMOS.  **Note:** You must completely power off the system before opening the chassis. You must also physically remove the power cord from the rear of the chassis.

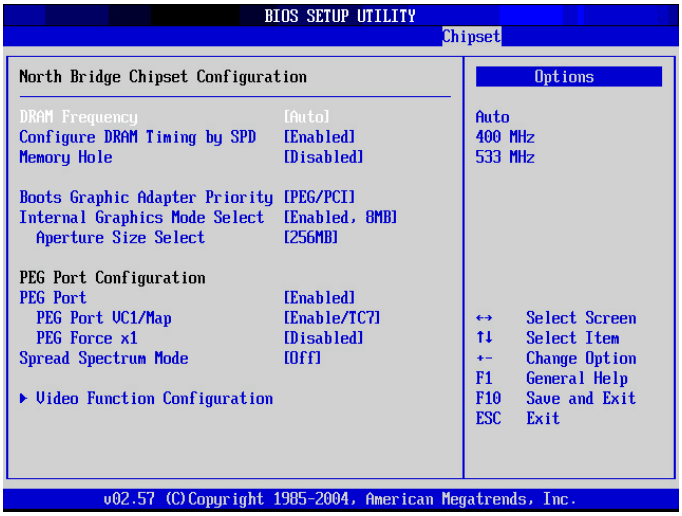
Section 6 Chipset Setup

Choose Chipset Setup from the AMIBIOS Setup Utility main menu. The screen is shown below. All Chipset Setup options are described following the screen. This menu allows you to configure the NorthBridge or SouthBridge chipset.



Cont'd

NorthBridge Chipset Configuration



DRAM Frequency

The value represents the performance parameters of the installed memory chips (DRAM). Do not change the value from the factory setting unless you install new memory that has a different performance rating.

Option	Description
400 MHz	This value changes the DRAM frequency to 400 MHz.
533 MHz	This value changes the DRAM frequency to 533 MHz.
Auto	This value allows the BIOS to auto detect the DRAM frequency. This is the default value.

Configure DRAM Timing by SPD

SPD (Serial Presence Detect) is located on the memory module. The BIOS can read information coded in SPD during system boot up.

Option	Description
Disabled	This value prevents the SDRAM Timing to be set by the SPD.
Enabled	This value allows the SDRAM Timing to be set by the SPD. This is the default value.

Cont'd

Memory Hole

Option	Description
Disabled	This value prevents a memory hole being reserved in system memory between 15 MB – 16 MB for ISA adapter ROMs. This is the default value.
15 MB – 16 MB	This value reserves the area of system memory between 15 MB – 16 MB for ISA adapter ROMs. When this area is reserved, it cannot be cached.

Boots Primary Graphics Adapter [PEG/PCI]

Option	Description
AGP	This value allows the monitor connected to the AGP graphics card to be the first monitor to display in multiple monitor situations.
PCI	This value allows the monitor connected to the PCI graphics card to be the first monitor to display in multiple monitor situations.

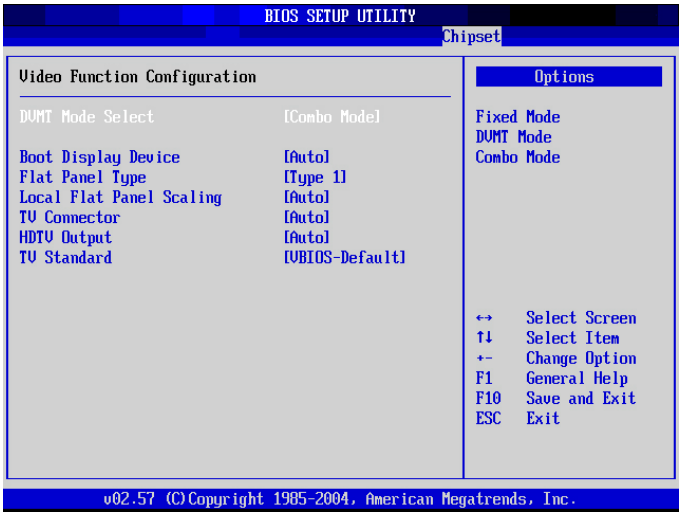
Aperture Size Select

Memory mapped and graphics data structures can reside in a Graphics Aperture. This area is similar to a buffer. The BIOS will automatically report the starting address of this buffer to the operating system.

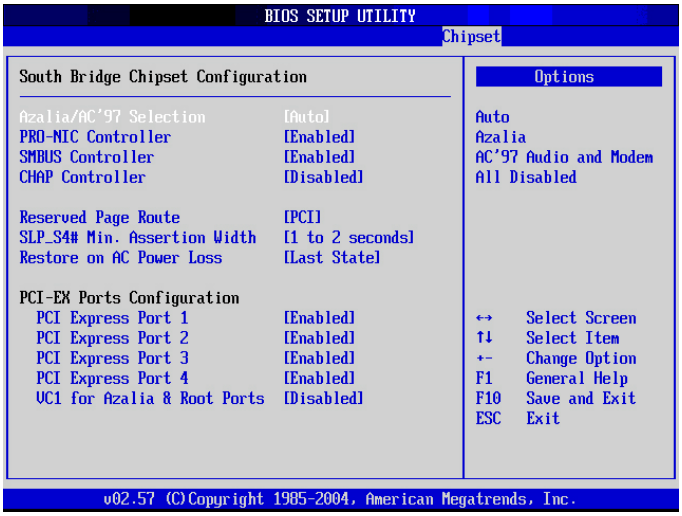
Option	Description
128MB	This value allows 128 MB of memory to be mapped and graphics data structures stored in the Graphics Aperture.
256MB	This value allows 256 MB of memory to be mapped and graphics data structures stored in the Graphics Aperture.

Cont'd

Video Function Configuration



South Bridge Chipset Configuration

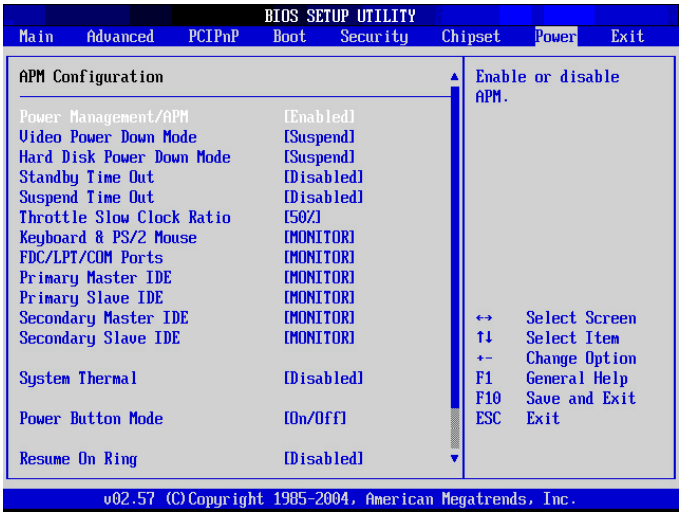


Onboard AC'97 Audio

Option	Description
Disabled	This option prevents the use of the onboard audio.
Auto	This option allows the BIOS to determine if the onboard audio is enabled or disabled.

Section 7 Power Management

Choose Power from the AMIBIOS Setup main menu. All Power Management Setup options are described in this section.



Power Management/APM

This option allows Power Management/APM support. The Optimal and Fail-Safe default settings is *Enabled.*

Option	Description
Disabled	This option prevents the chipset power management and APM (Advanced Power Management) features.
Enabled	This option allows the chipset power management and APM (Advanced Power Management) features. This is the default setting.

Cont'd

Video Power Down Mode

This option specifies the power state that the video subsystem enters when the BIOS places it in a power saving state after the specified period of display inactivity has expired. The Optimal and Fail-Safe settings is *Suspend*.

Option	Description
Disabled	This setting prevents the BIOS from initiating any power saving modes concerned with the video display or monitor.
Standby	This option places the monitor into standby mode after the specified period of display inactivity has expired. This means the monitor is not off. The screen will appear blacked out. The standards do not cite specific power ratings because they vary from monitor to monitor.
Suspend	This option places the monitor into suspend mode after the specified period of display inactivity has expired. This means the monitor is not off. The screen will appear blacked out. The standards do not cite specific power ratings because they vary from monitor to monitor, but this setting uses less power than Standby mode. This is the default setting.

Hard Disk Power Down Mode

This option specifies the power conserving state that the hard disk drive enters after the specified period of hard drive inactivity has expired. The Optimal and Fail-Safe settings is *Suspend*.

Option	Description
Disabled	This setting prevents hard disk power down mode.
Standby	This option stops the hard disk drives from spinning during a system standby.
Suspend	This option cuts the power to the hard disk drives during a system suspend. This is the default setting.

Standby Time Out

This option specifies the length of time the length of time the system needs to be inactive before it enters standby mode. The Optimal and Fail-Safe default settings is *Disabled.*

Option	Description
Disabled	This option prevents the computer system from entering standby mode. This is the default setting.
1Min	This option allows the computer system to enter standby mode after being inactive for 1 minute.
5Min	This option allows the computer system to enter standby mode after being inactive for 5 minutes.
10Min	This option allows the computer system to enter standby mode after being inactive for 10 minutes.

Cont'd

Suspend Time Out (Minute)

This option specifies the length of time the length of time the system needs to be inactive before it enters suspend mode. The Optimal and Fail-Safe default settings is *Disabled.*

Option	Description
Disabled	This setting prevents the system from entering suspend mode. This is the default setting.
1Min	This option allows the computer system to enter suspend mode after being inactive for 1 minute.
5Min	This option allows the computer system to enter suspend mode after being inactive for 5 minutes.
10Min	This option allows the computer system to enter suspend mode after being inactive for 10 minutes.

Throttle Slow Clock Ratio

In power management state, BIOS can throttle the CPU clock to reduce power consumption. For example, a throttle ratio of *50%* means the clock is turned off 50 percent of the time. The Optimal and Fail-Safe default settings is *50%.*

Option	Description
87.5%	This setting allows the BIOS to throttle back the CPU clock to operate 87.5 percent of the time.
75.0%	This setting allows the BIOS to throttle back the CPU clock to operate 75 percent of the time.
62.5%	This setting allows the BIOS to throttle back the CPU clock to operate 62.5 percent of the time.
50%	This setting allows the BIOS to throttle back the CPU clock to operate 50 percent of the time. This is the default setting.
37.5%	This setting allows the BIOS to throttle back the CPU clock to operate 37.5 percent of the time.
25%	This setting allows the BIOS to throttle back the CPU clock to operate 25 percent of the time.
12.5%	This setting allows the BIOS to throttle back the CPU clock to operate 12.5 percent of the time.

Keyboard & PS/2 Mouse
FDC/LPT/COM Ports
Primary Master IDE
Primary Slave IDE

Option	Description
Monitor	This value allows the Olympus IV motherboard to wake up when one of the device selected is used. This is the default value.
Ignore	This value prevents the Olympus IV motherboard from waking up when the selected device is used.

Cont'd

System Thermal

Option	Description
Enabled	This value allows an out-of-threshold thermal reading to generate a power management event.
Disabled	This value prevents an out-of-threshold thermal reading to generate a power management event.

System Thermal Active Temperature

Option	Description
40C/104F	A temperature reading higher that 40 degrees C and 104 degrees F will generate a power management event. The CPU clock will throttle back a certain percentage as dictated by the value in the Thermal Slow Clock Ratio field.
45C/113F	A temperature reading higher that 45 degrees C and 113 degrees F will generate a power management event. The CPU clock will throttle back a certain percentage as dictated by the value in the Thermal Slow Clock Ratio field.
50C/122F	A temperature reading higher that 50 degrees C and 122 degrees F will generate a power management event. The CPU clock will throttle back a certain percentage as dictated by the value in the Thermal Slow Clock Ratio field.
55C/131F	A temperature reading higher that 55 degrees C and 131 degrees F will generate a power management event. The CPU clock will throttle back a certain percentage as dictated by the value in the Thermal Slow Clock Ratio field.
60C/140F	A temperature reading higher that 60 degrees C and 140 degrees F will generate a power management event. The CPU clock will throttle back a certain percentage as dictated by the value in the Thermal Slow Clock Ratio field. This is the default value.
65C/149F	A temperature reading higher that 65 degrees C and 149 degrees F will generate a power management event. The CPU clock will throttle back a certain percentage as dictated by the value in the Thermal Slow Clock Ratio field.
70C/158F	A temperature reading higher that 70 degrees C and 158 degrees F will generate a power management event. The CPU clock will throttle back a certain percentage as dictated by the value in the Thermal Slow Clock Ratio field.
75C/167F	A temperature reading higher that 75 degrees C and 167 degrees F will generate a power management event. The CPU clock will throttle back a certain percentage as dictated by the value in the Thermal Slow Clock Ratio field.

Cont'd

Thermal Slow Clock Ratio

This option allows the Thermal Throttle Ratio to be selected. This type of throttling is used to lower power consumption and reduce thermals. The Optimal and Fail-Safe default settings is *50%*.

Option	Description
87.5%	This setting allows the BIOS to throttle back the CPU clock to operate 87.5 percent of the time.
75.0%	This setting allows the BIOS to throttle back the CPU clock to operate 75 percent of the time.
62.5%	This setting allows the BIOS to throttle back the CPU clock to operate 62.5 percent of the time.
50%	This setting allows the BIOS to throttle back the CPU clock to operate 50 percent of the time. This is the default setting.
37.5%	This setting allows the BIOS to throttle back the CPU clock to operate 37.5 percent of the time.
25%	This setting allows the BIOS to throttle back the CPU clock to operate 25 percent of the time.
12.5%	This setting allows the BIOS to throttle back the CPU clock to operate 12.5 percent of the time.

Power Button Mode

This option specifies how the power button mounted externally on the computer chassis is used. The Optimal and Fail-Safe default settings is *On/Off*.

Option	Description
On/Off	Pushing the power button turns the computer on or off. This is the default setting. This is the default setting.
Suspend	Pushing the power button places the computer in Suspend mode or Full On power mode.

Restore on AC Power Loss

This function allows you to set whether or not to restart the system after power interruptions.

Option	Description
Power Off	Use this value if you want the system to always power off after a power interruption.
Power On	Use this value if you want the system to always power on after a power interruption.
Last State	Use this value if you want the system to power on if the system was on before a power interruption. If the system was not on, it will stay off when power is restored. This is the default value.

Cont'd

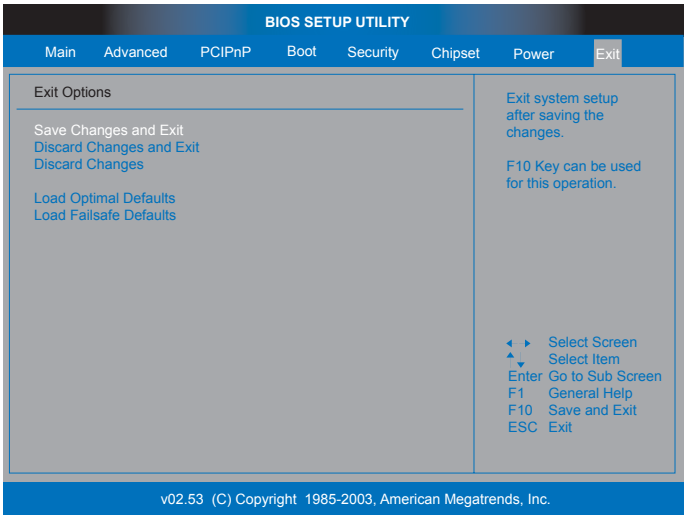
Section 7 Power Management, Continued

Resume on Ring, LAN, PME#, and RTC Alarm

Option	Description
Enabled	This value allows the selected signal to generate a wake event.
Disabled	This value prevents the selected signal to generate a wake event. This is the default value.

Section 8 Exit

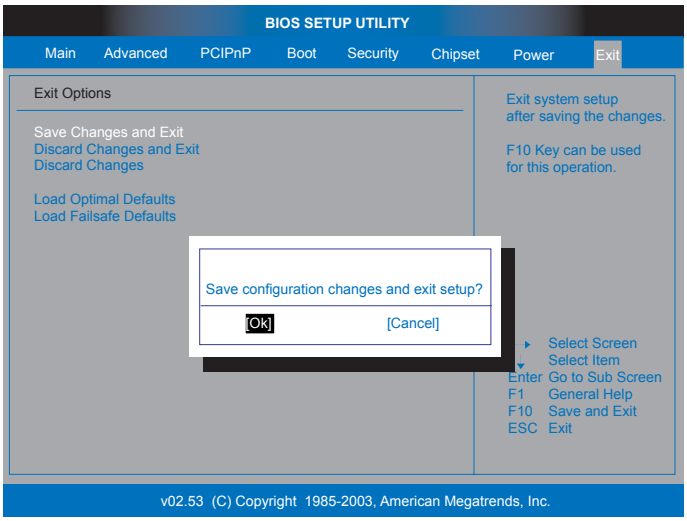
Select *Exit* from the main menu of the *AMIBIOS Setup Utility*. All *Exiting* options are described in this section. The *Exit* screen is displayed below:



Cont'd

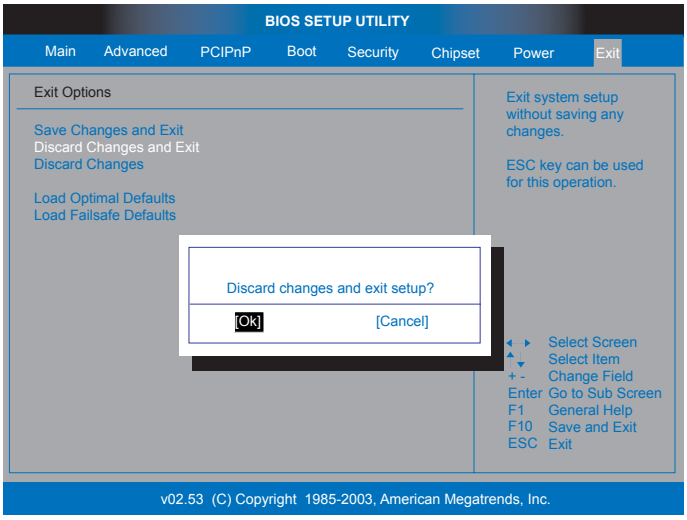
Exit Saving Changes

When you have completed the system configuration changes, select this option to leave the *AMIBIOS Setup Utility* and reboot the Olympus IV motherboard so the new configuration parameters can take effect. Select *Exit Saving Changes* from the *Exit* menu and press the <ENTER> key.



Exit Discarding Changes

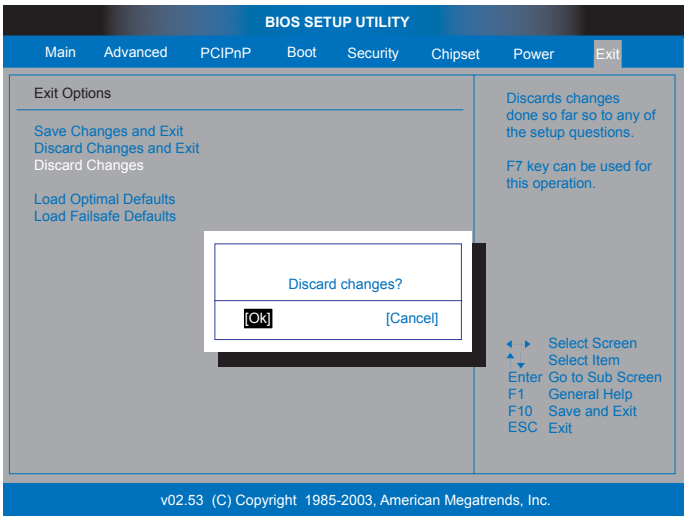
Select this option to quit the *AMIBIOS Setup Utility* without making any permanent changes to the configuration. Select *Exit Discarding Changes* from the *Exit* menu and press the <ENTER> key.



Cont'd

Discard Changes

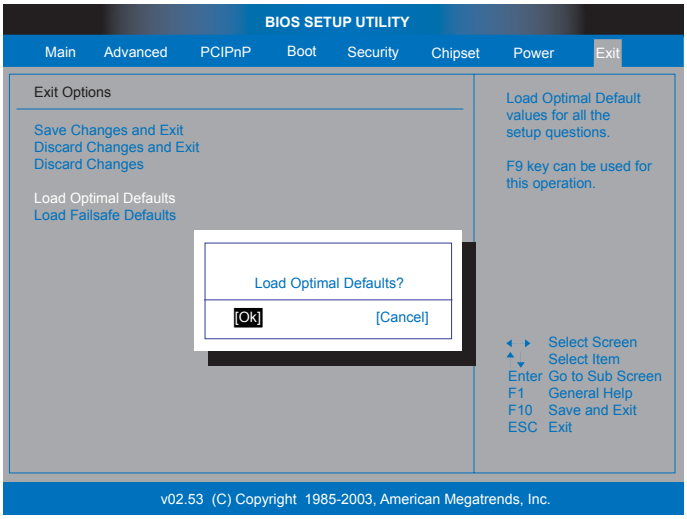
Select *Discard Changes* from the *Exit* menu and press the <ENTER> key.



Load Optimal Defaults

The *AMIBIOS Setup Utility* automatically sets all options to a complete set of default settings when you select this option. The Optimal settings are designed for maximum system performance, but may not work best for all applications. In particular, do not use the Optimal options if your Olympus IV motherboard is experiencing system configuration problems.

Select *Load Optimal Defaults* from the *Exit* menu and press the <ENTER> key.

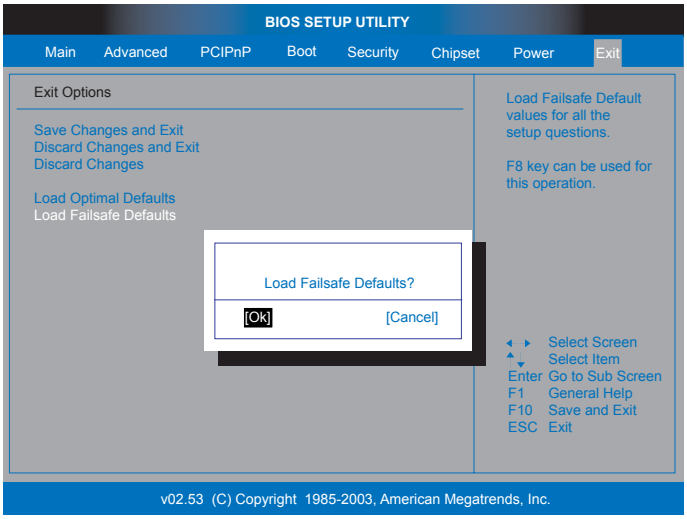


Cont'd

Load Failsafe Defaults

AMIBIOS automatically sets all AMIBIOS Setup options to a complete set of default settings when you choose this option. The Fail-Safe settings are designed for maximum system stability, but not maximum performance. Choose the Fail-Safe AMIBIOS Setup options if your computer is experiencing system configuration problems.
Select Load Fail-Safe Defaults from the Exit menu and press <Enter>.

Click on *Ok* to load Fail-Safe defaults.



Chapter 4 Programming Flash ROM

All versions of the AMIBIOS use Flash EPROM to store the system BIOS. The advantage of Flash EPROM is the EPROM chip does not have to be replaced to update the BIOS. The end user can actually reprogram the BIOS, using a ROM file supplied by American Megatrends.
This chapter contains two procedures for programming Flash ROM:

- A) Using the <Ctrl> <Home> keys
- B) Using the AMIFlash utility

A) Programming the Flash EPROM Using <Ctrl> <Home>

Step	Action
1	Turn power off.
2	Insert the floppy disk with the **S876P.ROM** file in the root directory into drive A:.
3	Press and hold the <Ctrl> and <Home> keys down while turning the power on. Continue to hold the <Ctrl> and <Home> keys down until the access light on the floppy drive comes on. It may take 10 seconds or more before this light turns on. Since AMIBIOS uses a 4 megabit BIOS, the flashing process may take up to 3 minutes.
4	Release the <Ctrl> and <Home> keys. AMIBIOS issues a series of beep codes that indicate that the system BIOS ROM file is being updated.
5	When the flash ROM has successfully been programmed, the motherboard will reboot.
6	When the motherboard reboots, check the BIOS Release text at the bottom of the first boot screen to make sure that the correct BIOS has been used. **Note:** Use the <TAB> key to switch between the POST screen and the boot logo.
7	The error message: **CMOS Checksum Bad** will appear during the first boot after a successful BIOS ROM update. This message indicates that the NVRAM area in the system BIOS has been cleared. AMIBIOS will reconstruct the NVRAM area before the system boots completely, so you can safely ignore this message.
8	Load the optional default and save.

Bootblock Actions

When you reprogram from system boot, the bootblock code performs the following:

Step	Action
1	Reads **S876P.ROM** from the root directory of the floppy disk in drive A:.
2	Erases the Flash EPROM.
3	Programs the Flash EPROM with the data read from the floppy disk in drive A:.
4	Generates a CPU reset, rebooting the system.

The bootblock part of the Flash EPROM is not programmed. Should you inadvertently open the disk drive door or turn power off to the system while programming the Flash EPROM, the bootblock will be unaffected. Simply turn power back on and begin the Flash ROM programming process again.

Cont'd

S876P.ROM

S876P.ROM resides on a floppy disk and contains the updated main BIOS code. American Megatrends will provide this file when the AMIBIOS for the AMIBIOS must be updated.
S876P.ROM must be present in the root directory of the floppy disk before the onboard Flash EPROM can be reprogrammed. The file that has the main BIOS code must be named **S876P.ROM**.

Beep Codes

The bootblock code produces a series of beeps during Flash ROM programming to: signify completion of a step (as shown on the previous page), or to signal an error. Error beeps are arranged in a coded sequence and have different meanings depending on when they occur. The error beep codes and when they can occur are:

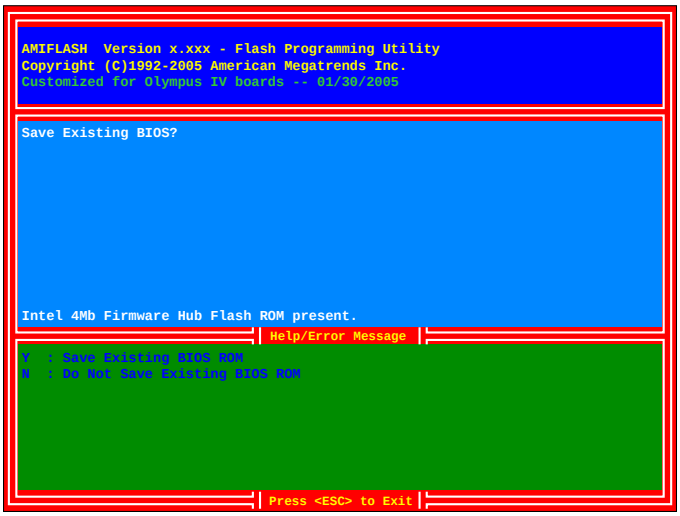
Number of Beeps	Description
1	Insert diskette in floppy drive A:.
2	The **S876P.ROM** file was not found in the root directory of the diskette in floppy drive A:.
3	Base memory error.
4	Flash program successful.
5	Floppy read error.
6	Keyboard controller BAT command failed.
7	No Flash EPROM detected.
8	Floppy controller failure.
9	Boot Block BIOS checksum error.
10	Flash erase error.
11	Flash Program error.
12	**S876P.ROM** file size error.

Cont'd

B) Programming the Flash EPROM Using the AMIFlash Utility

AMIFlash utility runs in DOS only.

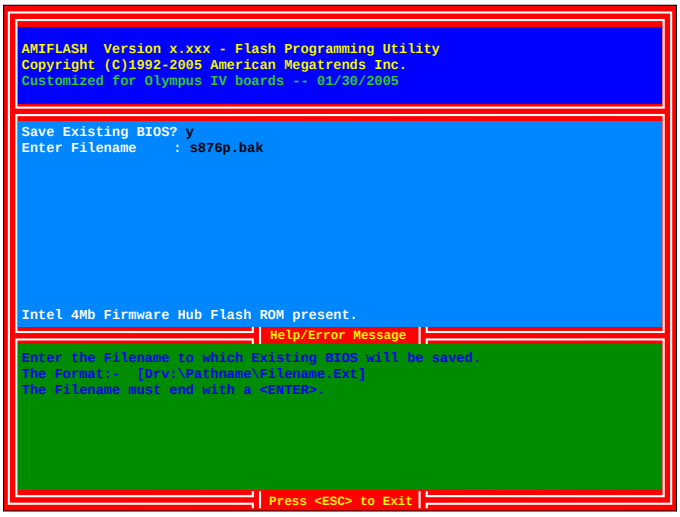
The main menu screen is shown below. You are prompted to save or delete the existing BIOS. Enter *Y* if you want to save the existing BIOS ROM, or *N* if you do not.



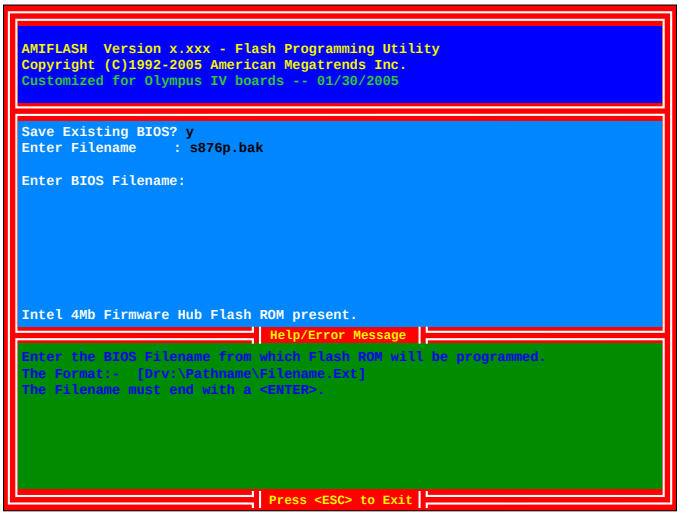
Cont'd

B) Programming the Flash EPROM Using the AMIFlash Utility, cont'd

Enter the filename, **S876P.ROM**, that you want to save the existing BIOS to and press <Enter>.



Enter the BIOS filename from which the Flash ROM will be programmed and press <Enter>.



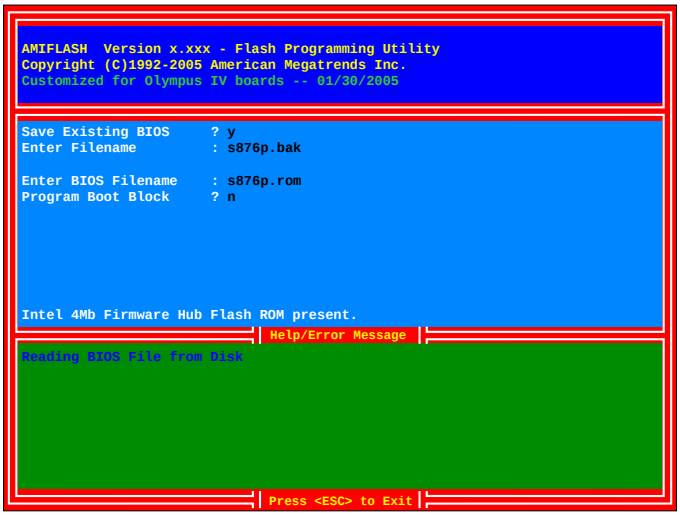
Cont'd

B) Programming the Flash EPROM Using the AMIFlash Utility, cont'd

To enable this program to update bootblock code, perform the following procedure:

Step	Action
1	Turn the system off.
2	Turn the system on.
3	Boot to DOS using a bootable DOS disk or go to DOS mode directly from the operating system.
4	Run AMIFlash.
5	At the prompt "`Program Boot Block?`", type `Y` and press <Enter>.
6	After the boot block is programmed, reboot the system.
7	Turn the power off.

Enter *Y* if you want to program the boot block or *N* if you do not want to program the boot block.



Bootblock Code Checkpoint Codes

Code	Description
E0h	Verify the Boot Block BIOS checksum. Disable the internal cache, DMA, and interrupt controllers. Initialize the system timer. Start memory refresh.
E1h	Initialize the chipset registers. Set the BIOS size to 128K. Make the 512 KB base memory available.
E2h	Test the base 64 KB of system memory. Send the BAT command to the keyboard controller. Make sure that <Ctrl> <Home> was pressed. Verify the main system BIOS checksum.
E3h	The main system BIOS is good. Transfer control to the main system BIOS.
E4h	Start the memory test.
E5h	The memory test is over. Initialize the interrupt vector table.
E6h	Initialize the DMA and interrupt controllers.
E7h	Determine the CPU internal clock frequency.
E8h	Initialize the I/O chipset, if any.
E9h	Program the CPU clock-dependent chip set parameters.
EAh	Enable the timer and the floppy diskette interrupt. Enable the internal cache. Copy the boot block BIOS and pass control to the boot block BIOS in the 0000h segment.
EDh	Initialize the floppy drive.
EEh	Look for a diskette in drive A:. Read the first sector of the diskette.
EFh	Floppy read error.
F0h	Search for **S876P.ROM** in the root directory of the floppy diskette in drive A:.
F1h	The **S876P.ROM** file is not in the root directory.
F2h	Read the FAT table. Analyze the FAT to find the clusters occupied by the **S876P.ROM**.
F3h	Start reading the **S876P.ROM** file, cluster by cluster.
F4h	The **S876P.ROM** file is not the correct size.
F5h	Disable the internal cache. Raise the Vpp. Enable Flash write and reset the Flash ROM.
FBh	Detect the flash type.
FCh	Start erasing flash blocks.
FDh	Program the Flash ROM in the E0000-EFFFFh region.
FEh	Start programming Flash at F0000-FFFFF region.
FFh	Flash programming is successful. The system reboots.

Chapter 5 Deleting a Password

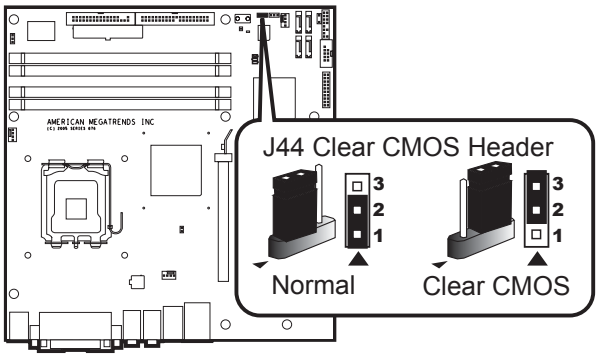
Overview

If you forget the passwords you setup through AMIBIOS Setup, the only way you can restart the system is to erase the system configuration information where the passwords are stored. System configuration data is stored in CMOS RAM, a type of memory that consumes very little power.

Erase Old Password

You can drain CMOS RAM power via J44 on the motherboard. J44 is a 3-pin berg with a default setting of pins 1 and 2 shorted by a jumper. Perform the following steps to erase the old password.

> ***Important***
>
> *Make sure you are properly grounded before performing the following procedure. You must be certain that no electrostatic discharge (ESD) occurs. ESD can ruin your motherboard. Wear an antistatic wristband attached to a ground. See "Avoid Static Electricity" on the following page.*

Step	Action
1	Turn the system power off and remove the system cover.
2	Short pins two and three on J44 from one to five seconds to clear the CMOS. 
3	Turn on system power again. Since you drained power from CMOS RAM, all system configuration information has been erased. You must now re-enter the system configuration information by running AMIBIOS Setup.

Appendix A Battery Replacement

Battery

The Olympus IV motherboard BIOS retains CMOS settings when powered off. It does this by power supplied from a Lithium battery. The operating life of the battery ranges from two (2) to five (5) years, depending on how you use the system.

American Megatrends suggests that you replace this battery with a coin-type CR2032 Lithium Manganese Dioxide battery.

Caution

Danger of explosion if the battery is incorrectly replaced. Replace only with a coin-type CR2032 Lithium Manganese Dioxide battery. Dispose of the battery according to the battery manufacturer's instructions.

Appendix B AMIBIOS Beep Codes

Number of Beeps	Error Type
1	Refresh Failure
2	Parity Error
3	Base 64K Memory Failure
4	Timer Not Operational
5	Processor Error
6	Not Available. Usually, 8042 – Gate A20 Failure
7	Processor Exception Interrupt Error
8	Display Memory Read/Write failure
9	ROM Checksum Error
10	CMOS Shutdown Register Read/Write
11	Cache Memory Bad

Except for beep code #8, these codes are always fatal.

Troubleshooting AMIBIOS Beep Codes

- For 1 beep, 2 beeps, or 3 beeps try reseating the memory first. If the error still occurs, replace the memory with known good chips.
- For 4 beeps, 5 beeps, 7 beeps, or 10 beeps the system board must be sent in for repair.
- 8 beeps indicate a memory error on the video adapter. Replace the video card or the memory on the video card.
- 9 beeps indicate faulty BIOS chip(s). It is not likely that this error can be corrected by reseating the chips. Consult the motherboard supplier or an AMI product distributor for replacement part(s).

Cont'd

- If no beeps are heard and no display is on the screen, The first thing to check is the power supply. Connect an LED to the POWER LED connection on the motherboard. If this LED lights and the drive(s) spin up then the power supply will usually be good.
- Next, inspect the motherboard for loose components. A loose or missing CPU, BIOS chip, or Chipset chip will cause the motherboard not to function.
- Next, eliminate the possibility of interference by bad or improperly setup I/O cables by removing all cards and cables except the video debug cable. The system should at least power up and wait for a drive time-out. Insert the card and cables back into the system one at a time until the problem happens again. When the system does nothing, the problem will be with the last expansion card or cable that was put in.
- If the above suggestions fail to cause any change in the dysfunction of the system, the motherboard must be returned for repair.

Index

1

1st Boot Device, 72

2

2nd Boot Device, 72

3

32Bit Data Transfer, 49
3rd Boot Device, 72

A

A) Programming the Flash EPROM Using <Ctrl> <Home>, 95
ACPI 2.0 Support, 55
ACPI APIC Support, 55
ACPI Configuration, 54
AddOn ROM Display Mode, 70
Adjacent Cache Line Prefetch, 41
Advanced ACPI Configuration, 54
Allocate IRQ to VGA, 66
AMI OEMB Table, 55
AMIBIOS Beep Codes, 105
AMIBIOS Setup Menu, 38
Aperture Size Select, 84
ARMD Emulation Type, 49
ATAPI 80 Pin Cable Detection, 44
Avoid Electro-Static Discharge (ESD), 5

B

B) Programming the Flash EPROM Using the AMIFlash Utility, 97, 98, 99
Battery Replacement, 103
Beep Codes, 96
Block (Multi-Sector Transfer), 47
Boot Device Priority, 69, 71
Boot Settings Configuration, 69
Bootblock Actions, 95
Bootblock Code Checkpoint Codes, 100
Boots Primary Graphics Adapter [PEG/PCI], 84
Bootup Num-Lock, 70

C

CD/DVD Drives Boot Priority, 75
Clearing the CMOS (via Hardware Jumper), 82
Clearing the Password (via BIOS), 79, 80, 81
Combined Mode, 43
Configure DRAM Timing by SPD, 83
Configure S-ATA as RAID, 43
CPU Configuration, 40, 41

D

Discard Changes, 93
DMA Channel 0, 1, 3, 5, 6, and 7, 67
DMA Mode, 29, 45, 46, 48
DRAM Frequency, 83

E

Erase Old Password, 101
Event Logging, 56, 57, 58
Exit Discarding Changes, 92
Exit Saving Changes, 92

F

Fan Headers, 33
FDC/LPT/COM Ports, 88
Floppy A, 50
Floppy B, 50
Floppy Configuration, 49
Flow Control, 62

H

Hard Disk Drives Boot Priority, 73
Hard Disk Power Down Mode, 87
Hard Disk Write Protect, 43
Hardware Prefetch, 41
Headless Mode, 55
Highest Throughput Level (RECOMMENDED), 10
Hit 'DEL' Message Display, 71
Hyper Threading Technology, 41

I

IDE Configuration, 29, 42
IDE Detect Time Out (Sec), 44
Inserting DIMM Modules, 12
Interrupt 19 Capture, 71
IR Duplex Mode, 52
IR Receiver Pin, 52
IRQ 3, 4, 5, 9, 10, 11, 14, and 15, 67

J

J10 and J34 ATX Power Supply Connectors, 21, 22, 23
J11 Rear Chassis Fan Header, 33
J12 External Serial Port B Connector, 24
J15 CD Audio In Header, 27
J20 CPU Cooling Fan Header, 14, 18, 33
J28 Intrusion Sensor Connector, 23

J30 USB Front Panel Header, 28
J31, J32, J36, and J37 Serial ATA Connectors, 30
J35 ATX Power Supply Soft ON/OFF Header, 32
J35 Front Panel Header, 31
J35 Hard Disk Activity LED Header, 32
J35 Power LED Header, 32
J35 Reset Button Header, 32
J38 Front Chassis Fan Header, 33
J39 Parallel ATA (IDE) Connector, 26
J40 Floppy Drive Connector, 25
J41 Alternate Three Pin Power LED Header, 28
J43 BIOS Recovery Header, 6
J44 Clear CMOS, 7
J9 S/PDIF (Sony/Philips Digital Interface) Header, 27

K

Keyboard & PS/2 Mouse, 88

L

LBA/Large Mode, 47
Legacy USB Support, 64
Load Failsafe Defaults, 94
Load Optimal Defaults, 93
Lowest Throughput Level, 11

M

Max CPUID Value Limit, 41
Memory Configuration, 9, 12
Memory Hole, 84
Memory Overview, 8
Motherboard Installation, 3
Motherboard Layout, 4
MPS Configuration, 59
MPS Revision, 59

N

NorthBridge Chipset Configuration, 83

O

Offboard PCI IDE Card, 67
Onboard AC'97 Audio, 85
Onboard Floppy Controller, 50
Overview, 1, 3, 37, 101

P

Palette Snooping, 66
Parallel Port Address, 53
Parallel Port IRQ, 53
P-ATA Channel Selection, 43
PCI Express 1x16 Slot, 34
PCI Express Configuration, 60
PCI IDE BusMaster, 66
PCI Latency Timer, 65
PCI Slots, 2, 34
PIO Mode, 45, 46, 47
Plug and Play O/S, 65
Power Button Mode, 90
Power Management/APM, 86
Primary IDE Master
ATAPI CD ROM, 46
Primary Master IDE, 88
Primary Slave IDE, 88
Processor Installation, 14, 15, 16, 17, 18
PS/2 Mouse Support, 70

Q

Quick Boot, 70
Quiet Boot, 70

R

Redirection After BIOS POST, 62
Remote Access, 61
Remote Access Configuration, 61
Removable Drives Boot Priority, 74
Removing DIMM Modules, 12
Reserved Memory Size, 68
Restore on AC Power Loss, 90
Resume on Ring, LAN, PME#, and RTC Alarm, 91

S

S.M.A.R.T. for Hard Disk Drives, 48
S876P.ROM, 95, 96, 98, 100
S-ATA Ports Definition, 43
S-ATA Running Enhanced Mode, 42
Second Highest Throughput Level, 10
Second Lowest Throughput Level, 11
Section 1 Main Setup, 39
Section 2 Advanced Setup, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64
Section 3 PCI/PnP Setup, 65, 66, 67, 68
Section 4 Boot Setup, 69, 70, 71, 72, 73, 74, 75
Section 5 Security Setup, 76, 77, 78, 79, 80, 81, 82
Section 6 Chipset Setup, 82, 83, 84, 85
Section 7 Power Management, 86, 87, 88, 89, 90, 91
Section 8 Exit, 91, 92, 93, 94
Serial Port Mode, 62
Serial Port Number, 62
Serial Port1 Address, 51
Serial Port2 Address, 51
Serial Port2 Mode, 52
Setting Up a Supervisor Password, 76, 77, 78
South Bridge Chipset Configuration, 85
Sredir Memory Display Delay, 63
Standby Time Out, 87
Starting AMIBIOS Setup, 37, 38
Step 1 Unpack the Motherboard, 5, 6, 7

Step 2 Install Memory, 8, 9, 10, 11, 12, 13
Step 3 Install CPU and Connect Heatsink and Fan, 13, 14, 15, 16, 17, 18
Step 4 Install the Motherboard, 19
Step 5 Attach Internal Cables, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33
Step 6 Install Expansion Boards, 34
Step 7 Connecting External Cables, 35
Step 8 Install Drivers, 36
Step 9 Test and Configure, 36
SuperIO Configuration, 50
Supported Memory, 9
Supported Processors, 13
Suspend Time Out (Minute), 88
System Thermal, 89
System Thermal Active Temperature, 89

T

Terminal Type, 62
Thermal Slow Clock Ratio, 89, 90
Third and Forth IDE Slave, 49
Throttle Slow Clock Ratio, 88
Troubleshooting AMIBIOS Beep Codes, 105, 106

U

Ultra ATA-66/100, 29
USB 2.0 Controller, 64
USB 2.0 Controller Mode, 64
USB Configuration, 63
USB Function, 64

V

Video Function Configuration, 85
Video Power Down Mode, 87
VT-UTF8 Type Combo Key Support, 63

W

Wait For 'F1' If Error, 70