

ICPMB-7660

**SOCKET 478 PENTIUM 4 with
Ethernet & USB 2.0**

Version 1.0

NOV 10, 2004



@Copyright 2004 All Rights Reserved.

Copyright Notice

The information in this document is subject to change without prior notice in order to improve reliability, design and function and does not represent a commitment on the part of the manufacturer.

In no event will the manufacturer be liable for direct, indirect, special, incidental, or consequential damages arising out of the use or inability to use the product or documentation, even if advised of the possibility of such damages.

This document contains proprietary information protected by copyright. All rights are reserved. No part of this manual may be reproduced by any mechanical, electronic, or other means in any form without prior written permission of the manufacturer.

Trademarks

ICPMB-7660 is registered trademarks of ICP Electronics Inc.; IBM PC is a registered trademark of International Business Machines Corporation. INTEL is a registered trademark of INTEL Corporation. AML is registered trademarks of American Megatrends Inc., Other product names mentioned herein are used for identification purposes only and may be trademarks and/or registered trademarks of their respective companies.

Support

Any questions regarding the content of this manual or related issues can be e-mailed to us directly at: SUPPORT@IEI.COM.TW

Table of Contents

Chapter 1	Introduction.....	6
1.1	Specifications	7
Chapter 2	Installation.....	9
2.1	Layout & Dimensions	10
2.2	Clear CMOS Setup.....	11
2.3	Compact Flash Master/Slave Function Setting.....	11
2.4	COM3 RS232 or RS422/485 Selection.....	11
2.5	LCD Power Select.....	12
2.6	Audio Setting.....	12
2.7	Pentium 4/Mobile P4/Mobile P4-M Select.....	12
Chapter 3	CONNECTION.....	13
3.1	PCI E-IDE Disk Drive Connector.....	14
3.2	Serial ATA Connector.....	14
3.3	Compact Flash Storage Card Socket.....	15
3.4	Floppy Connector.....	16
3.5	Parallel Port Connector	17
3.6	VGA Connector.....	17
3.7	Serial Port	18
3.8	IrDA Infrared Interface Port.....	18
3.9	Keyboard/Mouse Connector.....	19

3.10 Fan Connector.....	19
3.11 USB Port Connector.....	20
3.12 LAN Connector.....	21
3.13 Audio Connector	21
3.14 Digital I/O connector	23
3.15 I button connector.....	23
3.16 RS422/485 connector.....	23
3.17 External Switches and Indicators	24
3.18 ATX +12V Power connector.....	24
3.19 ATX Power connector	25

Chapter 4 AMI BIOS Setup 26

4.1 Introduction.....	26
4.2 Starting Setup	26
4.3 Using Setup	27
4.4 Getting Help.....	28
4.5 BIOS Menu Bar.....	28
4.6 Main Menu.....	29
4.7 Advanced	30
4.8 PCI/PnP Configuration Setup	47
4.9 Boot Configuration Setup.....	49
4.10 Security Configuration Setup.....	53
4.11 Chipset Configuration Setup.....	54
4.12 Power Configuration Setup.....	59

4.13 Exit Options.....	62
Appendix A. Watchdog Timer	65
Appendix B. Address Mapping.....	67

Chapter 1 Introduction

Welcome to the ICPMB-7660 SOCKET 478 PENTIUM 4/4-M Single Board Computer. The ICPMB-7660 board is an AGP/PCI form factor board, which comes equipped with high performance Processor and advanced high performance multi-mode I/O, designed for the system manufacturers, integrators, or VARs that want to provide all the performance, reliability, and quality at a reasonable price.

It's AGP interface supports 1.5V signaling with 4X data transfers ,but it's not support any 3.3V AGP-card.

The integrated graphics controller provides 3D, 2D, and display capabilities.

ICPMB-7660 is supports 64-bit DDR data interface(72-bit with ECC). Available bandwidth up to 2.7GB/s.

For the application that needs high speed serial transmission, the ICPMB-7660 provides USB2.0 for your choice. The high speed USB2.0 host controller implements an ECHI interface that provides 480Mb/s bandwidth.

ICPMB-7660 is equipped with a high speed SATA disk interface.

Besides its better performance than traditional IDE interface, it can also reduce the cabling of hard disk and supports longer cable.

1.1 Specifications

CPU(uPGA 478)	Intel Pentium 4 Processor/Pentium 4-Mobile, supports 400/533 MHz PSB
Bus interface	AGP/PCI bus
Bus speed	PCI: 33MHz
DMA channels	7
Interrupt levels	15
Chipset	INTEL 852GME / ICH5
RAM memory	Two 184-pin DIMM sockets support DDR200/266/333 SDRAM .Support one 72-bit wide DDR data channel. The max. Memory is up to 2GB.Support ECC Function.
Ultra DMA 100 IDE interface	Up to four PCI Enhanced IDE hard drives. The Ultra DMA 100 IDE can handle data transfer up to 100MB/s. Compatible with existing ATA IDE specifications its best advantage, so there is no need to do any changes for users' current accessories.
Floppy disk drive interface	Supports up to two floppy disk drives, 5.25" (360KB and 1.2MB) and/or 3.5" (720KB, 1.44MB, and 2.88MB)
Serial ports	Six RS-232 ports with 16C550 UART (or compatible) with 16-byte FIFO buffer. Support up to 115.2Kbps. Ports can be individually configured to COM1,2,3,4,5,6 or disabled. COM3 Support RS-232/422/485
Bi-directional parallel port	Configurable to LPT1, LPT2, LPT3 or disabled. Supports EPP/ECP/SPP
Hardware monitor	Built-in to monitor power supply voltage and fan speed status
IrDA port	Supports Serial Infrared(SIR) and Amplitude Shift Keyed IR(ASKIR) interface

USB 2.0/1.1 port	Supports 8 USB 2.0/1.1 ports for future expansion
Watchdog timer	Software Programmable Reset generated when CPU does not periodically trigger the timer.
Serial ATA	Supports Two independent serial ATA channels. Serial ATA generation 1 transfer rate of 150MB/s <i>(Note)</i>
Ethernet	The PCI interface connectors ICH5 with a INTEL 82540EM or Realtek RTL8110S Gigabit Ethernet controller. It's to Support full 10,100 and 1000-bas-T Ethernet
Keyboard and PS/2 mouse connector	A connector is located on the mounting bracket for easy connection to a keyboard or PS/2 mouse. For alternative application.
Audio	AC'97 Audio CODEC
Compact flash	It can be used with a passive adapter (True IDE Mode) in a Type I/II Socket.
Power consumption	PENTIUM4: 3.06GHz, 512MB DDR333 DDR-SDRAM +5V @ 2.5A ,+12V @8A . Recommended : 350-watt power supply or higher
Operating temperature	0° ~ 60° C (*CPU needs Cooler & silicone heatsink paste*)

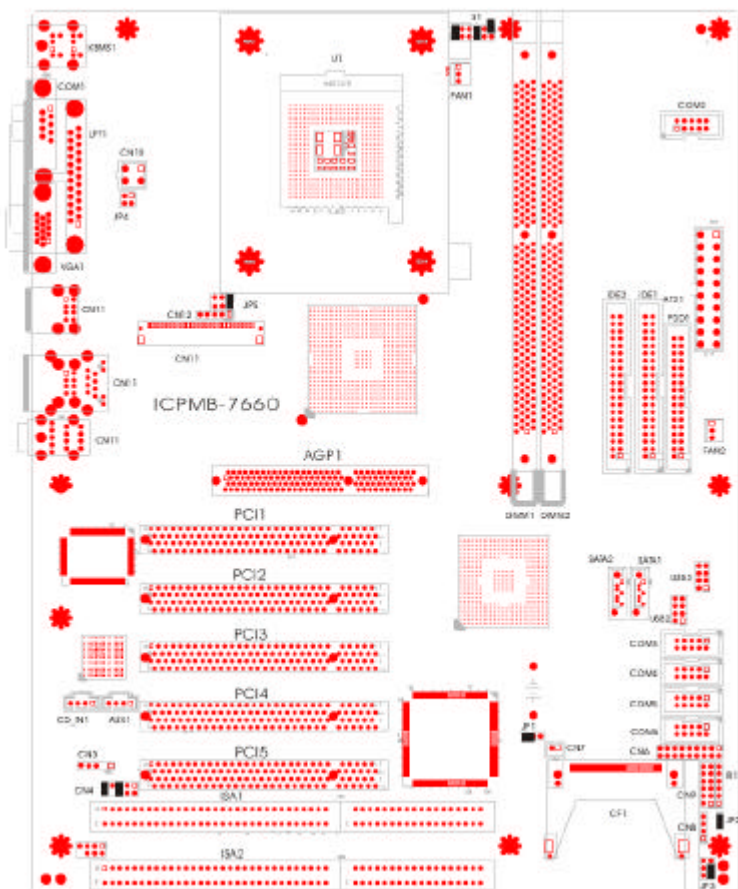
- WARNING :**
1. Never run the processor without the heatsink (Cooler) .
 2. Please use ATX-12V Power Connector (CN10) to provide power to the CPU.

Chapter 2 Installation

This chapter describes how to install the ICPMB-7660. First a layout diagram of the ICPMB-7660 is shown, followed by unpacking information that should be carefully followed. The jumpers and switch settings for the ICPMB-7660 configuration, such as CPU type selection, system clock setting, and watchdog timer, are also listed.

(This space is intentionally left blank.
Please refer to the next page.)

2.1 Layout & Dimensions



2.2 Clear CMOS Setup

To clear the CMOS Setup (for example if you have forgotten the password, you should clear the CMOS and then re-set the password), you should close the JP1 (2-3) for about 3 seconds, then open it once more. This will set back to normal operation mode.

- **JP1 : Clear CMOS Setup**

JP1	DESCRIPTION
1-2 (default)*	Keep CMOS Setup (Normal Operation)
Short 2-3	Clear CMOS Setup

2.3 Compact Flash Master/Slave Function Setting

- **JP2 : Compact Flash Master/Slave Function Setting**
Short 1 - 2 pin , Compact Flash is Master

JP2	DESCRIPTION
Short	Master
Open	Slave

2.4 COM3 RS232 or RS422/485 Selection

- **JP3: COM3-RS232 or RS422/485 Selection**

JP3	Description
1-3 Short (default)*	RS232
3-5 Short	RS422/RS485

2.5 LCD Power Select

- JP5 : LCD Power Select

JP5	DESCRIPTION
1-2	+3.3V
3-4	+5V
5-6	+12V

2.6 Audio Setting

- CN4 :

CN4	DESCRIPTION
5-6,9-10	Short

2.7 Pentium 4/Mobile P4/Mobile P4-M Select

- S1 : Pentium 4/Mobile P4/Mobile Pentium 4-M Select

S1						DESCRIPTION
11-12	9-10	7-8	5-6	3-4	1-2	
Short	Short	Open	Open	Short	Short	Mobile - P4 (3.06G/3.2G) High-Speed
Short	Short	Open	Open	Short	Open	Mobile - P4 (2.4G-2.8G) High- Speed
Short	Open	Short	Open	Open	Short	P4-Mobile High-Speed
Short	Open	Open	Short	Open	Short	Mobile P4/P4-M Low-Speed
Open	X	x	x	x	x	Pentium 4-Auto

Chapter 3 CONNECTION

This chapter describes how to connect peripherals, switches and indicators to the ICPMB-7660 board.

Label	Function
IDE1 & IDE2	Ultra ATA100 Primary & Secondary IDE connectors
FDD1	Floppy connector
LPT1	Parallel port connector
COM1,2,3,4,5,6	Serial port connectors
CF1	Compact Flash Storage Card Type II connector
IR1	IRDA infrared interface port
USB1	USB dual port connector
USB2	USB dual port connector
USB3	USB dual port connector
KBMS1	Keyboard & Mouse connector
FAN1 & FAN2	FAN connector
SATA1 & SATA2	Serial ATA connectors
VGA1	VGA connectors
CN2	Audio connector
CN1	USB dual port connector & LAN RJ45 connector
AUX1	AUX in connector
CD_IN1	Audio CD in connector
CN10	ATX +12V Power connector
CN5	5.1 Channel Audio connector
CN4	Front Panel Audio connector
CN3	S/PDIF connector
CN7	I button connector
CN6	Digital I/O connector
CN9	External switches and indicators
CN8	RS422/485 connector
PCI1,2,3,4,5	PCI slots
ISA1,2	ISA slots
AGP1	AGP Slot
ATX1	ATX Power connector

3.1 PCI E-IDE Disk Drive Connector

You can attach up to four IDE(Integrated Device Electronics) devices.

- **IDE1 : Primary IDE Connector (Blue)**
- **IDE2 : Secondary IDE Connector (White)**

PIN	DESCRIPTION	PIN	DESCRIPTION
1	RESET#	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	N/C
21	DRQ	22	GROUND
23	IOW#	24	GROUND
25	IOR#	26	GROUND
27	CHRDY	28	REV. PULL LOW
29	DACK	30	GROUND-DEFAULT
31	INTERRUPT	32	N/C
33	SA1	34	N/C
35	SA0	36	SA2
37	HDC CS0#	38	HDC CS1#
39	HDD ACTIVE#	40	GROUND

3.2 Serial ATA Connector

The ICPMB-7660 provide 2 Serial ATA ports to connect with Serial ATA devices.

- **SATA1, SATA2 : Serial ATA Connector**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	S_TXP	3	S_RXN
2	S_TXN	4	S_RXP

3.3 Compact Flash Storage Card Socket

The ICPMB-7660 configures Compact Flash Storage Card in IDE Mode. This type II Socket is compatible with IBM Micro Drive.

• **CF1 : Compact Flash Storage Card Socket pin assignment**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GROUND	26	PULL DOWN
2	D3	27	D11
3	D4	28	D12
4	D5	29	D13
5	D6	30	D14
6	D7	31	D15
7	CS1#	32	CS3#
8	N/C	33	N/C
9	GROUND	34	IOR#
10	N/C	35	IOW#
11	N/C	36	VCC
12	N/C	37	IRQ15
13	VCC	38	VCC
14	N/C	39	MASTER/SLAVE
15	N/C	40	N/C
16	N/C	41	RESET#
17	N/C	42	IORDY
18	A2	43	DREQ
19	A1	44	DACK#
20	A0	45	ACTIVE#
21	D0	46	PDIAG#
22	D1	47	D8
23	D2	48	D9
24	N/C	49	D10
25	PULL DOWN	50	GROUND

3.4 Floppy Connector

The ICPMB-7660 board is equipped with a 34-pin daisy-chain drive connector cable.

- **FDD1 : Floppy Connector**

PIN	DESCRIPTION	PIN	DESCRIPTION
1	GROUND	2	RWC0-
3	GROUND	4	NC
5	GROUND	6	RWC1-
7	GROUND	8	INDEX-
9	GROUND	10	MO-A
11	GROUND	12	DS-B
13	GROUND	14	DS-A
15	GROUND	16	MO-B
17	GROUND	18	DIR-
19	GROUND	20	STEP-
21	GROUND	22	WD-
23	GROUND	24	WGATE-
25	GROUND	26	TRK0-
27	GROUND	28	WP-
29	GROUND	30	RDATA-
31	GROUND	32	HEAD-
33	GROUND	34	DSKCHG-

3.5 Parallel Port Connector

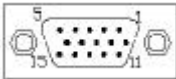
Usually, a printer is connected to the parallel port. The ICPMB-7660 includes an on-board parallel port

- **LPT1 : Parallel Port Connector**

PIN	DESCRIPTION	PIN	DESCRIPTION
1	STROBE#	2	DATA 0
3	DATA 1	4	DATA 2
5	DATA 3	6	DATA 4
7	DATA 5	8	DATA 6
9	DATA 7	10	ACKNOWLEDGE
11	BUSY	12	PAPER EMPTY
13	PRINTER SELECT	14	AUTO FORM FEED #
15	ERROR#	16	INITIALIZE
17	PRINTER SELECT IN#	18	GROUND
19	GROUND	20	GROUND
21	GROUND	22	GROUND
23	GROUND	24	GROUND
25	GROUND		

3.6 VGA Connector

- **VGA1: 15-pin Female Connector**

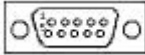


PIN	DESCRIPTION	PIN	DESCRIPTION
1	RED	2	GREEN
3	BLUE	4	NC
5	GROUND	6	GROUND
7	GROUND	8	GROUND
9	VCC / NC	10	GROUND
11	NC	12	DDC DAT
13	HSYNC	14	VSYNC
15	DDCCLK		

3.7 Serial Port

The ICPMB-7660 offers Six high speed NS16C550 compatible UART' s with 16-byte Read/Receive FIFO serial ports.

- **COM1: D-SUB Serial Port Connector**



PIN	DESCRIPTION	PIN	DESCRIPTION
1	(DCD3)	6	(DSR1)
2	(RXD3)	7	(RTS1)
3	(TXD3)	8	(CTS1)
4	(DTR3)	9	(RI1)
5	GROUND		

- **COM2,3,4,5,6: Serial Port Connector**



PIN	DESCRIPTION	PIN	DESCRIPTION
1	(DCD4)	2	(DSR4)
3	(RXD4)	4	(RTS4)
5	(TXD4)	6	(CTS4)
7	(DTR4)	8	(RI4)
9	GROUND	10	GROUND

3.8 IrDA Infrared Interface Port

The ICPMB-7660 comes with an integrated IrDA port which supports either a Serial Infrared(SIR) or an Amplitude Shift Keyed IR(ASKIR) interface.

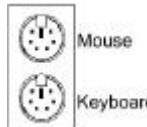
- **IR1: IrDA connector**

PIN	DESCRIPTION
1	VCC
2	NC
3	IR-RX
4	Ground
5	IR-TX
6	CIRRX

3.9 Keyboard/Mouse Connector

The ICPMB-7660 has a keyboard/mouse connector

- **KBMS1 : Keyboard/Mouse Connector**



PIN	DESCRIPTION	PIN	DESCRIPTION
1	KB DATA	7	MS DATA
2	NC	8	NC
3	GROUND	9	GROUND
4	KB VCC	10	MS VCC
5	KB CLOCK	11	MS CLOCK
6	NC	12	NC

3.10 Fan Connector

The ICPMB-7660 also has a CPU with cooling fan connector and chassis fan connector, which can supply 12V/500mA to the cooling fan. There is a “rotation” pin in the fan connector, which transfers the fan’s rotation signal to the system BIOS in order to recognize the fan speed. Please note that only specific fans offer a rotation signal.

- **FAN1,FAN2 : CPU Fan Connector**

PIN	DESCRIPTION
1	Ground
2	+12V
3	Rotation Signal

3.11 USB Port Connector

The ICPMB-7660 is equipped with Eight USB(Version. 2.0) ports for the future new I/O bus expansion.

- **USB1 : 2 ports USB Connector**



PIN	DESCRIPTION	PIN	DESCRIPTION
1	USB Power	5	USB Power
2	DATA4-	6	DATA5-
3	DATA4+	7	DATA5+
4	GROUND	8	GROUND

- **USB2/3 : 2 ports USB Connector**



PIN	DESCRIPTION	PIN	DESCRIPTION
1	USB Power	2	GROUND
3	DATA3-	4	DATA2+
5	DATA3+	6	DATA2-
7	GROUND	8	USB Power

- **CN1 : 2 ports USB Connector**

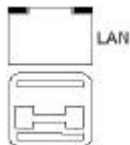


PIN	DESCRIPTION	PIN	DESCRIPTION
1	VCC	5	VCC
2	DATA6-	6	DATA7-
3	DATA6+	7	DATA7+
4	GROUND	8	GROUND

3.12 LAN Connector

The ICPMB-7660 is equipped with Ethernet Controllers 10/100/1000Mbps, which are connected to the LAN via an RJ45 LAN connector. The pin assignments are as follows:

- **CN1 : RJ45 Connector (10/100/1000)**

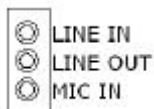


PIN	DESCRIPTION	PIN	DESCRIPTION
L1	TX0+	L7	TX3+
L2	TX0-	L8	TX3-
L3	TX1+	L9	LINK +(Green)
L4	TX2+	L10	LINK -
L5	TX2-	L11	Active+(Yellow)
L6	TX1-	L12	Active-

3.13 Audio Connector

The onboard AC'97 CODEC supports several audio functions. The audio connectors are described below.

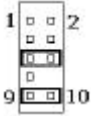
- **CN2 : Audio connector**
(Line in, Line out, MIC in)



- **CN3 : S/PDIF connector**

PIN	DESCRIPTION
1.	5V
3.	S/PDIF OUT
4.	GROUND
5.	S/PDIF IN

• **CN4 : Front Panel Audio connector**



PIN	DESCRIPTION	PIN	DESCRIPTION
1	MIC IN	2	GROUND
3	MIC BIAS	4	5V
5	LINE OUT(R)	6	LINE OUT (R) Return
7	NC		
9	LINE OUT(L)	10	LINE OUT (L) Return

• **CN5 : 5.1Channel Audio connector**



PIN	DESCRIPTION	PIN	DESCRIPTION
1	SUR OUT(L)	2	CEN OUT
3	GROUND	4	GROUND
5	SUR OUT(R)	6	LFE OUT
7	GROUND		

• **AUX1 : AUX In connector**



PIN	DESCRIPTION
1.	AUX (LEFT)
2.	GROUND
3.	GROUND
4.	AUX (RIGHT)

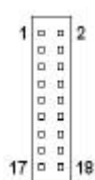
• **CD_IN1 : Audio CD In connector**



PIN	DESCRIPTION
1.	CD SIGNAL (LEFT)
2.	GROUND
3.	GROUND
4.	CD SIGNAL (RIGHT)

3.14 Digital I/O connector

- CN6: Digital I/O connector



PIN	DESCRIPTION	PIN	DESCRIPTION
1	DGPI0	2	DGPO0
3	DGPI1	4	DGPO1
5	DGPI2	6	DGPO2
7	DGPI3	8	DGPO3
9	DGPI4	10	DGPO4
11	DGPI5	12	DGPO5
13	DGPI6	14	DGPO6
15	DGPI7	16	DGPO7
17	GROUND	18	VCC

3.15 I button connector

- CN7: I button connector

PIN	DESCRIPTION	PIN	DESCRIPTION
1	I Button OUT/IN	2	GROUND

3.16 RS422/485 connector

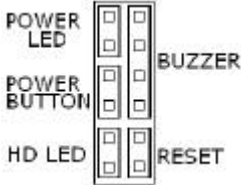
- CN8: RS422/485 connector

PIN	DESCRIPTION
1.	TX+
2.	TX-
3.	RX+
4.	RX-

3.17 External Switches and Indicators

There are several external switches and indicators for monitoring and controlling your CPU board. All functions are in the CN11connector.

- **CN9 : Pin Assignment and Functions**



FUNCTION	PIN	DESCRIPTION
BUZZER	2	BUZZER-
	4	NC
	6	NC
	8	VCC
RESET	10	RESET
	12	GROUND
HDD LED	9	IDE_LED+
	11	IDE_LED-
POWER LED	1	LED+
	3	LED-(GROUND)
POWER BUTTON	5	POWER BUTTON+
	7	POWER BUTTON-

3.18 ATX +12V Power connector

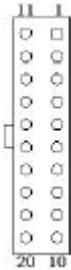
- **CN10: ATX +12V Power connector**

PIN	DESCRIPTION
1.	GROUND
2.	GROUND

3.	+12V
4.	+12V

3.19 ATX Power connector

- ATX1: ATX Power connector



PIN	DESCRIPTION	PIN	DESCRIPTION
1	+3.3V	11	+3.3V
2	+3.3V	12	-12V
3	GROUND	13	GROUND
4	+5V	14	PS-ON
5	GROUND	15	GROUND
6	+5V	16	GROUND
7	GROUND	17	GROUND
8	POWER GOOD	18	NC
9	5VSB	19	+5V
10	+12V	20	+5V

Chapter 4 AMI BIOS Setup

4.1 Introduction

This chapter discusses the Setup program written in the BIOS. It will give you a step-by-step guidance to configure your system. The user-defined configuration is then stored in battery-backed CMOS RAM, which retains the customized information while the power is off.

4.2 Starting Setup

The BIOS is immediately active when you turn on the computer. While the BIOS is in control, the Setup program can be activated in one of two ways:

1. By pressing immediately after switching the system on, or
2. By pressing the key when the following message appears at the bottom of the screen during POST (Power On Self-Test):

Press DEL to run Setup

If the message disappears before you respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the "RESET" button on the system case. You may also restart by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys. If you do not press the keys at the correct time and the system does not boot, an error message will be displayed and you will again be asked to...

CMOS Settings Wrong

CMOS Date/Time Not Set

Press F1 to Run SETUP

Press F2 to load default values and continue

4.3 Using Setup

In general, you can use the arrow keys to highlight items, press <Enter> to select, use the Up and Down keys to change entries, press <F1> for help and press <Esc> to quit. The following table provides more details about how to navigate in the Setup program using the keyboard.

Key	Function
Up/down Arrow	Select Item
Right/Left Arrow	Select Screen
Esc key	Exit
Enter	Go to Sub-Screen
PgUp	Next Page
PgDn	Previous Page
Home	Go to Top of Screen
End	Go to Bottom of Screen
+/- key	Change Option/Field
F1 key	General help on Setup navigation keys
F2/F3 key	Change Colors
F7 key	Discard Changes
F8 key	Load the failsafe defaults
F9 key	Load the optimal defaults
F10 key	Save all the CMOS changes and exit

4.4 Getting Help

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window press <Esc> or the **F1** key again.

If, after making and saving system changes with Setup, you discover that your computer no longer is able to boot, the AMI BIOS supports an override to the CMOS settings which resets your system to its defaults.

The best advice is to only alter settings which you thoroughly understand. To this end, we strongly recommend that you avoid making any changes to the chipset defaults. These defaults have been carefully chosen by both AMI and your systems manufacturer to provide the absolute maximum performance and reliability. Even a seemingly small change to the chipset setup has the potential for causing you to use the override.

4.5 BIOS Menu Bar

The **menu bar** on top of the screen has the following main items:

- Main** For changing the basic system configuration.
- Advanced** For changing the advanced system settings.
- PCI PnP** This entry appears if your system supports PnP / PCI.
- Boot** For changing the system boot configuration.
- Security** Use this menu to set User and Supervisor Passwords.
- Chipset** For changing the chipset setting.
- Power** For changing the advanced power management configuration.
- Exit** For selecting the exit options and loading default settings.

4.6 Main Menu

When you enter the BIOS Setup program, the Main menu screen appears giving you an overview of the basic system information.

BIOS SETUP UTILITY	
Main	Advanced PCIPnP Boot Security Chipset Power Exit
<p>System Overview</p> <hr/> <p>AMIBIOS Version : 08.00.10 Build Date: 11/15/04 ID : 1AAAA000</p> <p>Processor Type : Intel(R) Pentium(R) 4 CPU 3.06GHz Speed : 3066MHz Count : 1</p> <p>System Memory Size : 504MB</p> <p>System Time : [17:05:51] System Date : [Mon 11/15/2004]</p>	<p>Use [ENTER], [TAB] or [SHIFT-TAB] to select a field.</p> <p>Use [+] or [-] to configure system Time.</p> <p>↔ Select Screen ↑↓ Select Item +- Change Field Tab Select Field F1 General Help F10 Save and Exit ESC Exit</p>
v02.53 (C) Copyright 1985-2002, American Megatrends, Inc.	

AMI BIOS This item displays the auto-detected BIOS information.

Processor This item displays the auto-detected CPU specification.

System Memory This item displays the auto-detected system memory.

System Time [xx:xx:xx] This item allows you to set the system time.

System Date [Day xx/xx/xxxx] This item allows you to set the system date.

4.7 Advanced

The Advanced menu items allow you to change the settings for the CPU and other system devices.

BIOS SETUP UTILITY							
Main	Advanced	PCIPnP	Boot	Security	Chipset	Power	Exit
Advanced Settings <hr/> <p>WARNING: Setting wrong values in below sections may cause system to malfunction.</p> <ul style="list-style-type: none">▶ CPU Configuration▶ IDE Configuration▶ Floppy Configuration▶ SuperIO Configuration▶ Hardware Health Configuration▶ ACPI Configuration▶ MPS Configuration▶ Remote Access Configuration▶ USB Configuration		Configure CPU. ↔ Select Screen ↑↓ Select Item Enter Go to Sub Screen F1 General Help F10 Save and Exit ESC Exit					
v02.53 (C) Copyright 1985-2002, American Megatrends, Inc.							

4.7.1 CPU Configuration

The items in this menu show the CPU-related information auto-detected by BIOS

BIOS SETUP UTILITY	
Advanced	
<pre> Configure advanced CPU settings ----- Manufacturer: Intel Brand String: Intel(R) Pentium(R) 4 CPU 3.06GHz Frequency : 3.06GHz FSB Speed : 533MHz Cache L1 : 8 KB Cache L2 : 512 KB Ratio Status : Locked Ratio Actual Value: 23 Ratio CMOS Setting: [8] VID CMOS Setting : [62] Max CPUID Value Limit: [Disabled] Hyper Threading Technology [Disabled] P4-M Support [By Hardware] </pre>	<pre> Sets the ratio between CPU Core Clock and the FSB Frequency. NOTE: If an invalid ratio is set in CMOS then actual and setpoint values may differ. Ratio of zero allows external ratio control. ↔ Select Screen ↑↓ Select Item Enter Update F1 General Help F10 Save and Exit ESC Exit </pre>
v02.53 (C) Copyright 1985-2002, American Megatrends, Inc.	

Hyper-Threading Technology [Enabled]

This item allows you to enable or disable the processor Hyper-Threading Technology.

Configuration options: [Disabled] [Enabled]

P4M SUPPORT [By Hardware]

This item allows you to enable or disable the P4-M CPU support.

Configuration options: [By Hardware] [Disabled] [Enabled]

4.7.2 IDE Configuration

The items in this menu allow you to set or change the configurations for the IDE devices installed in the system. Select an item then press Enter if you wish to configure the item.

BIOS SETUP UTILITY

Advanced

IDE Configuration	Select IDE Mode.
IDE Configuration [P-ATA Only]	
S-ATA Running Enhanced Mode [Yes]	
P-ATA Channel Selection [Both]	
S-ATA Ports Definition [P0-3rd./P1-4th.]	
Configure S-ATA as RAID [No]	
▶ Primary IDE Master : [Hard Disk]	
▶ Primary IDE Slave : [Not Detected]	
▶ Secondary IDE Master : [Not Detected]	
▶ Secondary IDE Slave : [ATAPI CDROM]	
▶ Third IDE Master : [Not Detected]	
▶ Fourth IDE Master : [Not Detected]	
Hard Disk Write Protect [Disabled]	
IDE Detect Time Out (Sec) [35]	
ATA (PI) 80Pin Cable Detection [Host & Device]	
	↔ Select Screen
	↑↓ Select Item
	+− Change Option
	F1 General Help
	F10 Save and Exit
	ESC Exit

v02.53 (C) Copyright 1985-2002, American Megatrends, Inc.

IDE Configuration [P-ATA/RAID]

This item allows you to select the IDE mode

Configuration options:

[Disabled] [P-ATA/RAID] [S-ATA Only] [P-ATA/S-ATA]

Primary and Secondary IDE Master/Slave

Third and Fourth IDE Master

The values opposite the dimmed items (Device, Vendor, Size, LBA Mode, Block Mode, PIO Mode, Async DMA, Ultra DMA, and SMART monitoring) are auto-detected by BIOS and are not user-configurable. These items show N/A if no IDE device is installed in the system.

Type [Auto]

Selects the type of IDE drive. Setting to Auto allows automatic selection of the appropriate IDE device type. Select CDROM if you are specifically configuring a CD-ROM drive. Select ARMD (ATAPI Removable Media Device) if your device is either a ZIP, LS-120, or MO drive.

Configuration options: [Not Installed] [Auto] [CDROM] [ARMD].

LBA/Large Mode [Auto]

Enables or disables the LBA mode. Setting to Auto enables the LBA mode if the device supports this mode, and if the device was not previously formatted with LBA mode disabled.

Configuration options: [Disabled] [Auto]

Block (Multi-sector Transfer) [Auto]

Enables or disables data multi-sectors transfers. When set to Auto, the data transfer from and to the device occurs multiple sectors at a time if the device supports multi-sector transfer feature. When set to Disabled, the data transfer from and to the device occurs one sector at a time.

Configuration options: [Disabled] [Auto]

PIO Mode [Auto]

Selects the PIO mode.

Configuration options: [Auto] [0] [1] [2] [3] [4]

DMA Mode [Auto]

Selects the DMA mode.

Configuration options: [Auto] [SWDMA0] [SWDMA1] [SWDMA2] [MWDMA0] [MWDMA1] [MWDMA2] [UDMA0] [UDMA1] [UDMA2] [UDMA3] [UDMA4] [UDMA5]

SMART Monitoring [Auto]

Sets the Smart Monitoring, Analysis, and Reporting Technology.

Configuration options: [Auto] [Disabled] [Enabled]

32Bit Data Transfer [Disabled]

Enables or disables 32-bit data transfer.

Configuration options: [Disabled] [Enabled]

Hard Disk Write protect [Disabled]

This item allows you to enable or disable the hard disk write protect

Configuration options: [Disabled] [Enabled]

IDE Detect Time Out (Sec) [35]

Selects the time out value for detecting ATA/ATAPI devices.

Configuration options: [0] [5] [10] [15] [20] [25] [30] [35]

ATA(PI) 80Pin Cable Detection [Host & Device]

Configuration options: [Host & Device] [Host] [Device]

4.7.3 Floppy Configuration

Sets the type of floppy drive installed.

Configuration options: [Disabled][360K, 5.25 in.][1.2M , 5.25 in.][720K , 3.5 in.]
[1.44M, 3.5 in.] [2.88M,3.5in.]

BIOS SETUP UTILITY

Advanced

Floppy Configuration		Select the type of floppy drive connected to the system.
Floppy A	[1.44 MB 3½"]	
Floppy B	[Disabled]	

↔ Select Screen
↑↓ Select Item
+- Change Option
F1 General Help
F10 Save and Exit
ESC Exit

v02.53 (C) Copyright 1985-2002, American Megatrends, Inc.

Allows you to select the Serial Port2 base address.

Configuration options: [Disabled] [2F8/IRQ3] [3E8/IRQ4] [2E8/IRQ3]

Parallel Port Address [378]

Allows you to select the Parallel Port base addresses.

Configuration options: [Disabled] [378] [278] [3BC]

Parallel Port Mode [Normal]

Allows you to select the Parallel Port mode.

Configuration options: [Normal] [Bi-directional] [EPP] [ECP]

Parallel Port IRQ [IRQ7]

Configuration options: [IRQ5] [IRQ7]

Digital I/O Address [280h]

Allows you to select the Digital I/O base address.

The base address is Digital output.

The base address+1 is Digital input.

The base address+2 is iButton.

Configuration options: [280h] [2A0h] [2B0h] [2C0h] [2D0h]

Serial Port3 Address [3F8]

Allows you to select the Serial Port3 base address.

Configuration options: [Disabled] [3E8] [2E8] [2F0] [2E0]

Serial Port3 IRQ [11]

Allows you to select the Serial Port3 IRQ.

Configuration options: [3] [4] [10] [11]

Serial Port4 Address [2E8]

Allows you to select the Serial Port4 base address.

Configuration options: [Disabled] [3E8] [2E8] [2F0] [2E0]

Serial Port4 IRQ [10]

Allows you to select the Serial Port4 IRQ.

Configuration options: [3] [4] [10] [11]

Serial Port5 Address [2F0]

Allows you to select the Serial Port5 base address.

Configuration options: [Disabled] [3E8] [2E8] [2F0] [2E0]

Serial Port5 IRQ [11]

Allows you to select the Serial Port5 IRQ.

Configuration options: [3] [4] [10] [11]

Serial Port6 Address [2E0]

Allows you to select the Serial Port6 base address.

Configuration options: [Disabled] [3E8] [2E8] [2F0] [2E0]

Serial Port6 IRQ [10]

Allows you to select the Serial Port6 IRQ.

Configuration options: [3] [4] [10] [11]

4.7.5 Hardware Health Configuration

This Screen is the information of Hardware Health

BIOS SETUP UTILITY

Advanced

Hardware Health Configuration		Enables Hardware Health Monitoring Device.
H/W Health Function	[Enabled]	
Hardware Health Event Monitoring		
CPU Temperature	:38°C/100°F	
System Temperature	:30°C/86°F	
Fan1 Speed	:4856 RPM	
CPU Vcore	:1.500 V	
+1.5 Vin	:1.516 V	↔ Select Screen
+3.3 Vin	:3.435 V	↑↓ Select Item
+5 Vin	:5.175 V	+/- Change Option
+12 Vin	:11.951 V	F1 General Help
-12 Vin	:-12.048 V	F10 Save and Exit
		ESC Exit

v02.53 (C) Copyright 1985-2002, American Megatrends, Inc.

4.7.6.1 General ACPI Configuration

Allows you to select the ACPI state to be used for system suspend.

BIOS SETUP UTILITY

Advanced

General ACPI Configuration		Select the ACPI state used for System Suspend.
Suspend mode	[S1 (POS)]	
		↔ Select Screen ↑↓ Select Item +- Change Option F1 General Help F10 Save and Exit ESC Exit

v02.53 (C) Copyright 1985-2002, American Megatrends, Inc.

Suspend mode [S1 (POS)]

Allows you to select the ACPI state to be used for system suspend.

Configuration options: [S1 (POS) Only]

4.7.6.2 advance ACPI Configuration

Use this section to configure additional ACPI options.

BIOS SETUP UTILITY

Advanced

Advanced ACPI Configuration		Add additional tables as per ACPI 2.0 specifications.
ACPI 2.0 Support	[No]	
ACPI APIC support	[Enabled]	
APIC ACPI SCI IRQ	[Disabled]	
BIOS-->AML ACPI table	[Enabled]	
Headless mode	[Disabled]	
		↔ Select Screen
		↑↓ Select Item
		+− Change Option
		F1 General Help
		F10 Save and Exit
		ESC Exit

v02.53 (C) Copyright 1985-2002, American Megatrends, Inc.

ACPI 2.0 Features [No]

Allows you to add more tables for ACPI 2.0 specifications.

Configuration options: [No] [Yes]

ACPI APIC support [Enabled]

Allows you to enable or disable the ACPI support in the ASIC. When set to

Configuration options: [Disabled] [Enabled]

4.7.9 USB Configuration

The items in this menu allows you to change the USB-related features. Select an item then press Enter to display the configuration options

BIOS SETUP UTILITY	
Advanced	
USB Configuration	Enables USB host controllers.
Module Version - 2.23.2-7.4	
USB Devices Enabled : None	
USB Function [8 USB Ports]	
Legacy USB Support [Enabled]	
USB 2.0 Controller [Enabled]	
	↔ Select Screen ↑↓ Select Item +- Change Option F1 General Help F10 Save and Exit ESC Exit
v02.53 (C) Copyright 1985-2002, American Megatrends, Inc.	

USB Function [8 USB Ports]

Allows you to set the number of USB ports to activate.

Configuration options: [Disabled] [2 USB Ports] [4 USB Ports] [6 USB Ports] [8 USB Ports]

Legacy USB Support [Enable]

Enable support for legacy USB.

Configuration options: [Disabled] [Enabled]

USB 2.0 Controller [Enabled]

Allows you to enable or disable the USB 2.0 controller.

Configuration options: [Disabled] [Enabled]

4.7.9.1 USB Mass Storage Device Configuration

BIOS SETUP UTILITY

Advanced

USB Mass Storage Device Configuration		Number of seconds POST waits for the USB mass storage device after start unit command.
USB Mass Storage Reset Delay	[20 Sec]	
Device #1	Generic	
Emulation Type	[Auto]	
Device #2	USB Protected Drive	
Emulation Type	[Auto]	
		↔ Select Screen
		↑↓ Select Item
		+ - Change Option
		F1 General Help
		F10 Save and Exit
		ESC Exit

v02.53 (C) Copyright 1985-2002, American Megatrends, Inc.

4.8 PCI/PnP Configuration Setup

The PCI PnP menu items allow you to change the advanced settings for PCI/PnP devices. The menu includes setting IRQ and DMA Channel memory size block for legacy ISA devices.

BIOS SETUP UTILITY

Main Advanced **PCIPnP** Boot Security Chipset Power Exit

Advanced PCI/PnP Settings		▲ NO: lets the BIOS configure all the devices in the system. YES: lets the operating system configure Plug and Play (PnP) devices not required for boot if your system has a Plug and Play operating system. ↔ Select Screen ↑↓ Select Item +− Change Option F1 General Help F10 Save and Exit ESC Exit
WARNING: Setting wrong values in below sections may cause system to malfunction.		
Plug & Play O/S	[No]	
PCI Latency Timer	[32]	
Allocate IRQ to PCI VGA	[Yes]	
Palette Snooping	[Disabled]	
PCI IDE BusMaster	[Disabled]	
OffBoard PCI/ISA IDE Card	[Auto]	
IRQ3	[Available]	
IRQ4	[Available]	
IRQ5	[Available]	
IRQ7	[Available]	
IRQ9	[Available]	
IRQ10	[Available]	
IRQ11	[Available]	
IRQ14	[Available]	

v02.53 (C) Copyright 1985-2002, American Megatrends, Inc.

Plug & Play O/S [NO]

When set to [No], BIOS configures all the devices in the system. When set to [Yes] and if you installed a Plug & Play operating system, the operating system configures the Plug & Play devices not required for boot.
 Configuration options: [No] [Yes]

PCI Latency Timer [32]

Allows you to select the value in units of PCI clocks for the PCI device latency timer register.
 Configuration options: [32] [64] [96] [128] [160] [192] [224] [248].

Allocate IRQ to PCI VGA [Yes]

When set to [Yes], BIOS assigns an IRQ to PCI VGA card if the card requests for an IRQ. When set to [No], BIOS does not assign an IRQ to the PCI VGA card even if requested.
 Configuration options: [No] [Yes]

Palette Snooping [Disabled]

When set to [Enabled], the palette snooping feature informs the PCI devices that an ISA graphics device is installed in the system so that the latter can function correctly. Setting to [Disabled] deactivates this feature. Configuration options: [Disabled] [Enabled]

PCI IDE Bus Master [Disabled]

Allows BIOS to use PCI bus mastering when reading/writing to IDE devices. Configuration options: [Disabled] [Enabled]

Off Board PCI/ISA IDE Card [Auto]

Some PCI IDE cards may require this to be set to the PCI slot number that is holding the card.

IRQ xx [Available]

When set to [Available], the specific IRQ is free for use of PCI/PnP devices. When set to [Reserved], the IRQ is reserved for legacy ISA devices. Configuration options: [Available] [Reserved]

4.9 Boot Configuration Setup

The Boot menu items allow you to change the system boot options. Select an item then press Enter to display the sub-menu

BIOS SETUP UTILITY

Main Advanced PCI/PnP **Boot** Security Chipset Power Exit

Boot Settings

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

Configure Settings during System Boot.

↔ Select Screen
↑↓ Select Item
Enter Go to Sub Screen
F1 General Help
F10 Save and Exit
ESC Exit

v02.53 (C) Copyright 1985-2002, American Megatrends, Inc.

4.9.1 Boot Settings Configuration

configure settings during system boot.

BIOS SETUP UTILITY

Boot

Boot Settings Configuration		Allows BIOS to skip certain tests while booting. This will decrease the time needed to boot the system.
Quick Boot	[Enabled]	
Boot From LAN Support	[Disabled]	
AddOn ROM Display Mode	[Force BIOS]	
Bootup Num-Lock	[On]	
PS/2 Mouse Support	[Auto]	
Wait For 'F1' If Error	[Enabled]	
Hit 'DEL' Message Display	[Enabled]	
Interrupt 19 Capture	[Disabled]	

↔	Select Screen
↑↓	Select Item
+ -	Change Option
F1	General Help
F10	Save and Exit
ESC	Exit

u02.53 (C) Copyright 1985-2002, American Megatrends, Inc.

Quick Boot [Enabled]

Enabling this item allows BIOS to skip some power on self tests (POST) while booting to decrease the time needed to boot the system. When set to [Disabled], BIOS performs all the POST items.

Configuration options: [Disabled] [Enabled]

Quiet Boot [Disabled]

This allows you to enable or disable the full screen logo display feature.

Configuration options: [Disabled] [Enabled]

Add On ROM Display Mode [Force BIOS]

Sets the display mode for option ROM.

Configuration options: [Force BIOS] [Keep Current]

Bootup Num-Lock [On]

Allows you to select the power-on state for the NumLock.

Configuration options: [Off] [On]

PS/2 Mouse Support [Auto]

Allows you to enable or disable support for PS/2 mouse.

Configuration options: [Disabled] [Enabled] [Auto]

Wait for ' F1' If Error [Enabled]

When set to Enabled, the system waits for F1 key to be pressed when error occurs.

Configuration options: [Disabled] [Enabled]

Hit ' DEL' Message Display [Enabled]

When set to Enabled, the system displays the message ' Press DEL to run Setup' during POST.

Configuration options: [Disabled] [Enabled]

Interrupt 19 Capture [Disabled]

When set to [Enabled], this function allows the option ROMs to trap Interrupt 19.

Configuration options: [Disabled] [Enabled]

4.9.2 Boot Device Priority

Specifies the boot device priority sequence.

BIOS SETUP UTILITY

Boot

Boot Device Priority		Specifies the boot sequence from the available devices. A device enclosed in parenthesis has been disabled in the corresponding type menu.
1st Boot Device	[PM-ST380021A]	
2nd Boot Device	[SS-ATAPI-CD ROM-DR]	
3rd Boot Device	[Generic]	

↔ Select Screen
↑↓ Select Item
+- Change Option
F1 General Help
F10 Save and Exit
ESC Exit

v02.53 (C) Copyright 1985-2002, American Megatrends, Inc.

1ST ~ XXTH BOOT DEVICE

These items specify the boot device priority sequence from the available hard disk drives. The number of items that appear on the screen depends on the number of hard disk drives installed in the system.

Configuration options: [xxxxx Drive] [Disabled]

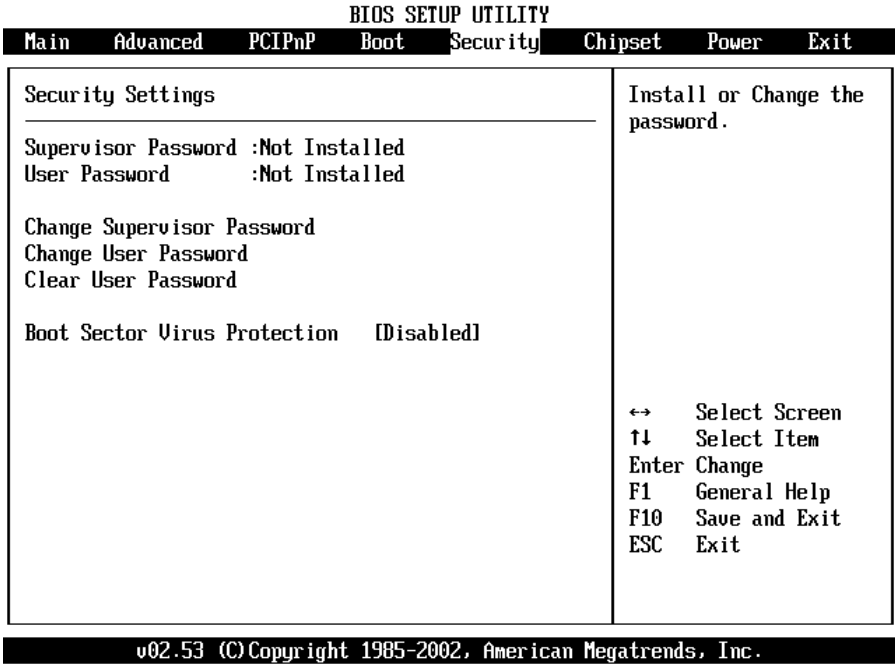
Removable Drives

Specifies the boot device priority sequence from available removable drives.

4.10 Security Configuration Setup

The Security menu items allow you to change the system security settings.

Select an item then press Enter to display the configuration options.



Change Supervisor Password

Select this item to set or change the supervisor password. The Supervisor Password item on top of the screen shows the default Not Installed. After you have set a password, this item shows Installed.

Change User Password

Select this item to set or change the user password. The User Password item on top of the screen shows the default Not Installed. After you have set a password, this item shows Installed.

Boot Sector Virus Protection [Disabled]

Allows you to enable or disable the boot sector virus protection.
Configuration options: [Disabled] [Enabled]

4.11 Chipset Configuration Setup

The Chipset menu items allow you to change the advanced chipset

settings. Select an item then press Enter to display the sub-menu.

BIOS SETUP UTILITY							
Main	Advanced	PCIPnP	Boot	Security	Chipset	Power	Exit
Advanced Chipset Settings			Options for NB				
<p>WARNING: Setting wrong values in below sections may cause system to malfunction.</p> <ul style="list-style-type: none">▶ NorthBridge Configuration▶ SouthBridge Configuration			<p>↔ Select Screen ↑↓ Select Item Enter Go to Sub Screen F1 General Help F10 Save and Exit ESC Exit</p>				
<p>v02.53 (C) Copyright 1985-2002, American Megatrends, Inc.</p>							

4.11.1 North Bridge Configuration

NorthBridge Chipset Configuration

Chipset

DRAM Frequency [Auto] Configure DRAM Timing by SPD [Enabled]	[Auto] [Enabled]	↔ Select Screen ↑↓ Select Item +- Change Option F1 General Help F10 Save and Exit ESC Exit
Memory Hole [Disabled] Init. Graphic Adapter Priority [AGP/Int-VGA] Internal Graphics Mode Select [Enabled, 8MB] Graphics Aperture Size [64MB]	[Disabled] [AGP/Int-VGA] [Enabled, 8MB] [64MB]	
Boot Display Device [CRT+LFP] Flat Panel Type [800x600]	[CRT+LFP] [800x600]	

v02.53 (C) Copyright 1985-2002, American Megatrends, Inc.

Configure DRAM Timing by SPD [Enabled]

When this item is enabled, the DRAM timing parameters are set according to the DRAM SPD (Serial Presence Detect). When disabled, you can manually set the DRAM timing parameters through the DRAM sub-items.

Configuration options: [Disabled] [Enabled]

Memory Hole [Disabled]

Configuration options: [Disabled] [15MB-16MB]

Init. Graphic Adapter Priority [Internal VGA]

Allows selection of the graphics controller to use as primary boot device.

Configuration options: [Internal VGA] [PCI/Int-VGA]

Internal Graphics Mode Select [Enable, 8MB]

Select the amount of system memory used by the internal graphics device.

Configuration options: [Enable, 1MB] [Enable, 4MB] [Enable, 8MB] [Enable,

16MB]
[Enable, 32MB]

Graphics Aperture Size [64MB]

Allows you to select the size of mapped memory for AGP graphic data.
Configuration options: [4MB] [8MB] [16MB] [32MB] [64MB] [128MB] [256MB]

Boot Display Device?

Support [CRT] [LFP] [CRT+LFP]

Flat Panel Type?

Support [640*480] [800*600] [1024*768 24bits] [1080*1024] [1400*1050]
[1024*768 18bits] [1600*1200 48bits] [1280*1024 48bits] [800*600 24bits]
[800*600 18bits] [1024*768 36bits]

4.11.2 South Bridge Configuration

South Bridge Chipset Configuration

Chipset

<p>OnBoard LAN [Enabled] OnBoard AC'97 Audio [Auto] Spread Spectrum Mode [Disabled]</p>	<p>Disable/Enable OnBoard LAN.</p> <p>↔ Select Screen ↑↓ Select Item +- Change Option F1 General Help F10 Save and Exit ESC Exit</p>
---	--

v02.53 (C) Copyright 1985-2002, American Megatrends, Inc.

On Board LAN [Enable]

Allows you to enable or disable the OnBoard LAN.
 Configuration options: [Auto] [Disabled]

On Board AC'97 Audio [Auto]

Allows you to enable or disable the AC'97 Audio.
 Configuration options: [Auto] [Disabled]

Clock Spread Spectrum Mode [Disabled]

Configuration options: [Disabled] [Enabled]

4.12 Power Configuration Setup

BIOS SETUP UTILITY

Main Advanced PCI/PnP Boot Security Chipset Power Exit

APM Configuration		▲	Enable or disable APM.
Power Management/APM	[Enabled]		
Video Power Down Mode	[Suspend]		
Hard Disk Power Down Mode	[Suspend]		
Standby Time Out	[Disabled]		
Suspend Time Out	[Disabled]		
Throttle Slow Clock Ratio	[50%]		
Keyboard & PS/2 Mouse	[MONITOR]		
FDC/LPT/COM Ports	[MONITOR]		
Primary Master IDE	[MONITOR]		
Primary Slave IDE	[MONITOR]		
Secondary Master IDE	[MONITOR]	↔	Select Screen
Secondary Slave IDE	[MONITOR]	↑↓	Select Item
		+ -	Change Option
System Thermal	[Disabled]	F1	General Help
		F10	Save and Exit
Power Button Mode	[On/Off]	ESC	Exit
Restore on AC Power Loss	[Last State]		

v02.53 (C) Copyright 1985-2002, American Megatrends, Inc.

BIOS SETUP UTILITY

Main Advanced PCIPnP Boot Security Chipset Power Exit

Video Power Down Mode	[Suspend]	▲	Disable/Enable
Hard Disk Power Down Mode	[Suspend]		RTC to generate
Standby Time Out	[Disabled]		a wake event.
Suspend Time Out	[Disabled]		
Throttle Slow Clock Ratio	[50%]		
Keyboard & PS/2 Mouse	[MONITOR]		
FDC/LPT/COM Ports	[MONITOR]		
Primary Master IDE	[MONITOR]		
Primary Slave IDE	[MONITOR]		
Secondary Master IDE	[MONITOR]		
Secondary Slave IDE	[MONITOR]		
System Thermal	[Disabled]		↔ Select Screen
Power Button Mode	[On/Off]		↑↓ Select Item
Restore on AC Power Loss	[Last State]		+ - Change Option
Resume On Ring	[Disabled]		F1 General Help
Resume On PME#/LAN	[Disabled]		F10 Save and Exit
Resume On RTC Alarm	[Disabled]	▼	ESC Exit

v02.53 (C) Copyright 1985-2002, American Megatrends, Inc.

Power Management/APM [Enabled]

Allows you to enable or disable the Advanced Power Management (APM) feature. Configuration options: [Disabled] [Enabled]

Video Power Down Mode [Suspend]

Allows you to select the video power down mode. Configuration options: [Disabled] [Standby] [Suspend]

Hard Disk Power Down Mode [Suspend]

Allows you to select the hard disk power down mode. Configuration options: [Disabled] [Standby] [Suspend]

Standby Time Out [Disabled]

Allows you to select the specified time at which the system goes on standby. Configuration options:[Disabled] [1 Min] [2 Min] [4 Min] [8 Min] [10 Min] [20 Min] [30 Min] [40 Min] [50 Min] [60 Min]

Suspend Time Out [Disabled]

Allows you to select the specified time at which the system goes on suspend.

Configuration options: [Disabled] [1 Min] [2 Min] [4 Min] [8 Min] [10 Min] [20 Min] [30 Min] [40 Min] [50 Min] [60 Min]

Throttle Slow Clock Ratio [50%]

Allows you to select the duty cycle in throttle mode.

Configuration options: [87.5%] [75.0%] [62.5%] [50%] [37.5%] [25%] [12.5%]

System Thermal [Disabled]

power management event.

Configuration options: [Disabled] [Enabled]

Power Button Mode [On/Off]

Allows the system to go into On/Off mode or suspend mode when the power button is pressed.

Configuration options: [On/Off] [Suspend]

Resume On Ring [Disabled]

Allows you to enable or disable RI to generate a wake event.

Configuration options: [Disabled] [Enabled]

Resume On PME#/ LAN [Disabled]

Allows you to enable or disable PCI PME# to generate a wake event.

Configuration options: [Disabled] [Enabled]

Resume On RTC Alarm [Disabled]

Allows you to enable or disable RTC to generate a wake event. When this item is set to Enabled, the items RTC Alarm Date, RTC Alarm Hour, RTC Alarm Minute, and RTC Alarm Second appear with set values.

Configuration options: [Disabled] [Enabled]

4.13 Exit Options

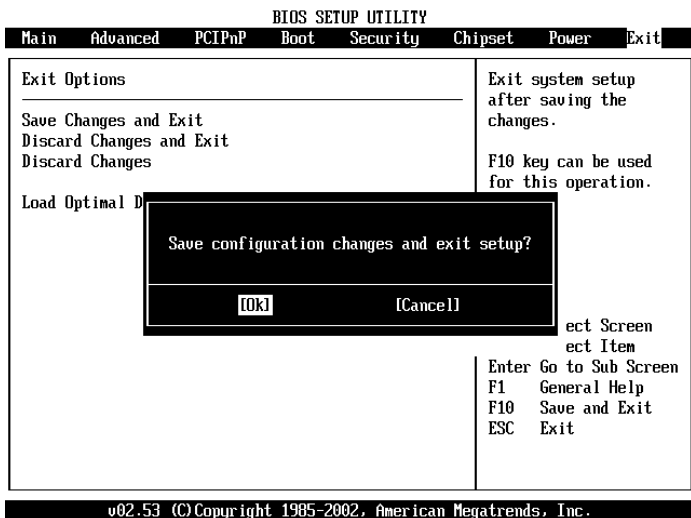
The Exit menu items allow you to load the optimal or failsafe default values for the BIOS items, and save or discard your changes to the BIOS items.

BIOS SETUP UTILITY

Main Advanced PCIPnP Boot Security Chipset Power **Exit**

<p>Exit Options</p> <hr/> <p>Save Changes and Exit Discard Changes and Exit Discard Changes</p> <p>Load Optimal Defaults</p>	<p>Exit system setup after saving the changes.</p> <p>F10 key can be used for this operation.</p> <p>↔ Select Screen ↑↓ Select Item Enter Go to Sub Screen F1 General Help F10 Save and Exit ESC Exit</p>
--	--

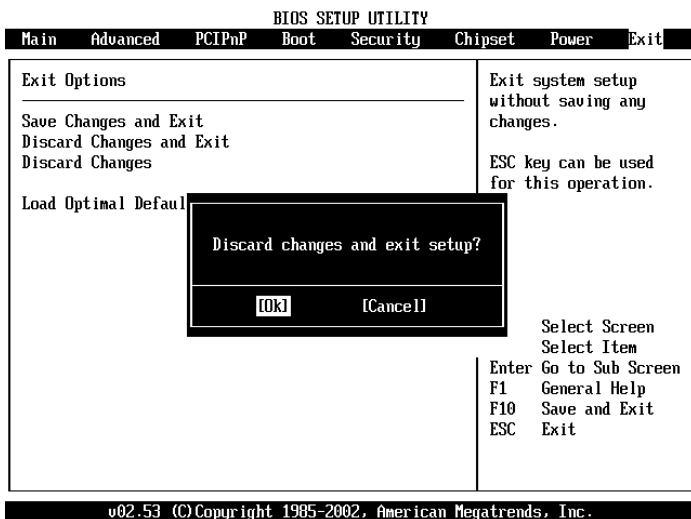
02.53 (C) Copyright 1985-2002, American Megatrends, Inc.



Save Changes and Exit

Once you are finished making your selections, choose this option from the Exit menu to ensure the values you selected are saved to the CMOS RAM. The CMOS RAM is sustained by an onboard backup battery and stays on even when the PC is turned off. When you select this option, a confirmation window appears.

Select [Yes] to save changes and exit.

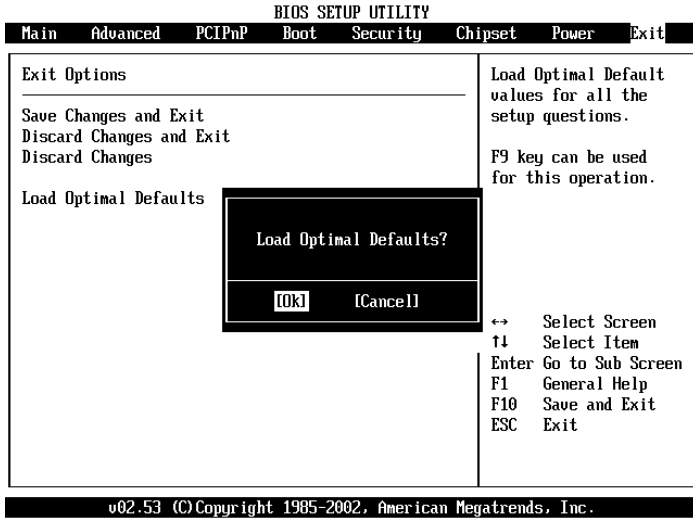


Discard Changes and Exit

Select this option only if you do not want to save the changes that you made to the Setup program. If you made changes to fields other than system date, system time, and password, the BIOS asks for a confirmation before exiting.

Discard Changes

This option allows you to discard the selections you made and restore the previously saved values. After selecting this option, a confirmation appears. Select [Yes] to discard any changes and load the previously saved values.



Load Optimal Defaults

This option allows you to load optimal default values for each of the parameters on the Setup menus. **F9 key can be used for this operation.**

Appendix A. Watchdog Timer

The WatchDog Timer is a device to ensure that standalone systems can always recover from catastrophic conditions that cause the CPU to crash. This condition may have occurred by external EMI or a software bug. When the CPU stops working normally, hardware on the board will perform hardware reset (cold boot) to bring the system back to a known state.

Three I/O ports control the WatchDog Timer.

443	Write	Set Watch-Dog Time period
443 (hex)	Read	Enable/Disable the refresh the Watch-Dog Timer.

Prior to enable the Watch-Dog Timer, user has to define Timer first. The output data is a value of time interval and the range of the value is from 01(hex) to FF(hex) and time interval 1 sec to 255 sec.

Data	Time Interval
01	1 sec
02	2 sec
03	3 sec
04	4 sec
.	.
.	.
.	.
FF	255 sec

This will enable and activate the countdown timer which will eventually time out and reset the CPU to ensure that this reset condition does not occur, the Watch-Dog Timer must be periodically

refreshed by reading the same I/O port 443H. This must be done within the time out period that is selected by software, please refer to the example program.

A tolerance of at least 5% must be maintained to avoid unknown routines within the operating system (DOS), such as disk I/O that can be very time consuming. Therefore if the time out period has been set to 10 seconds, the I/O port 443H must be read within 7 seconds.

Note: when exiting a program it is necessary to disable the Watch-Dog Timer, otherwise the system will reset.

Example assembly program:

```
TIMER_PORT = 443H  
TIMER_STOP = 443H
```

```
::INITIAL TIME PERIOD COUNTER  
MOV DX, TIME_PORT  
MOV AL, 8: ;;8 SECONDS  
OUT DX,AL  
OUT DX,AL
```

```
::ADD YOUR APPLICATION HERE  
MOV DX, TIMER_STOP  
MOV AL, 0  
OUT DX,AL
```

Appendix B. Address Mapping

IO Address Map

I/O address Range	Description
000-01F	DMA Controller
020-021	Interrupt Controller
040-05F	System time
060-06F	Keyboard Controller
070-07F	System CMOS/Real time Clock
080-09F	DMA Controller
0A0-0A1	Interrupt Controller
0C0-0DF	DMA Controller
0F0-0FF	Numeric data processor
1F0-1F7	Primary IDE Channel
280-282	DIO PORT
2E0-2E7	Serial Port 4 (COM6)
2E8-2EF	Serial Port 4 (COM4)
2F0-2F7	Serial Port 4 (COM5)
2F8-2FF	Serial Port 2 (COM2)
378-37F	Parallel Printer Port 1 (LPT1)
3B0-3BB	Intel(R) 852GME Graphics Controller
3C0-3DF	Intel(R) 852GME Graphics Controller
3E8-3EF	Serial Port 3 (COM3)
3F6-3F6	Secondary IDE Channel
3F7-3F7	Standard floppy disk controller
3F8-3FF	Serial Port 1 (COM1)
443	Watchdog Time

1st MB Memory Address Map

Memory address	Description
00000-9FFFF	System memory
A0000-BFFFF	VGA buffer
C0000-CCFFF	VGA BIOS
XXX	Legacy USB Keyboard
XXX	LAN Boot ROM
F0000-FFFFF	System BIOS
1000000-	Extend BIOS

*Default setting

IRQ Mapping Table

IRQ0	System Timer	IRQ8	RTC clock
IRQ1	Keyboard	IRQ9	ACPI-compliant system
IRQ2	Slave Controller INTR Output	IRQ10	COM4/COM6
IRQ3	COM2	IRQ11	COM3/COM5
IRQ4	COM1	IRQ12	PS/2 mouse
IRQ5	VGA/USB/AUDIO/LAN	IRQ13	FPU
IRQ6	FDC	IRQ14	Primary IDE
IRQ7	LPT	IRQ15	Secondary IDE

DMA Channel Assignments

Channel	Function
0	Available
1	Available
2	Floppy disk (8-bit transfer)
3	Available
4	Cascade for DMA controller 1
5	Available
6	Available
7	Available

