

**ICPMB-7880**

**INTEL LGA 775 CPU  
915G CHIPSET  
ON BOARD PCI EXPRESS MaveII GIGABIT LAN**

**User Manual Version 1.0**

November 29, 2004



© Copyright 2004 by ICP Electronics Inc. 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-7880 is a registered trademark of ICP Electronics Inc., IBM PC is a registered trademark of International Business Machines Corporation. Intel is a registered trademark of Intel Corporation. AMIBIOS 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](mailto:support@iei.com.tw).

## Table of Contents

<b>CHAPTER 1 INTRODUCTION</b> .....	<b>4</b>
1.1 Specifications .....	5
1.2 Package Contents .....	6
<b>CHAPTER 2 INSTALLATION</b> .....	<b>7</b>
2.1 ICPMB-7880 Placement .....	7
2.2 Clear CMOS Setup.....	7
2.3 Compact Flash Card Master/Slave Mode Setting.....	7
2.4 RS-232/485 Setup .....	8
2.5 Wake On Ring .....	8
<b>CHAPTER 3 CONNECTION</b> .....	<b>9</b>
3.1 PCI IDE Disk Drive Connector .....	9
3.2 Fan Connector .....	10
3.3 Serial Ports .....	11
3.4 Power Connector.....	11
3.5 3IN1 Connector .....	12
3.6 IrDA Infrared Interface Port .....	13
3.7 USB Port Connector.....	13
3.8 Audio Connector .....	14
3.9 SERIAL ATA PORT .....	14
3.10 GPIO Connector .....	14
3.11 Gigabit RJ45 Connector .....	15
3.12 PCI EXPRESS 16X Connector .....	15
3.13 PCI EXPRESS 1X Connector.....	17
3.14 PS/2 Keyboard & Mouse Connector .....	17
3.15 DDRI SDRAM SOCKET .....	18
3.16 System Panel Connector .....	18
<b>CHAPTER 4 AMI BIOS SETUP</b> .....	<b>19</b>
4.1 Introduction .....	19
4.2 Starting Setup.....	19
4.3 Using Setup .....	19
4.4 Getting Help.....	20
4.5 BIOS menu bar.....	20
4.6 Main.....	21
4.7 Advanced .....	21
4.8 PCI PnP .....	31
4.9 Boot.....	32
4.10 Security.....	34
4.11 Chipset.....	35
4.12 Power.....	37
4.13 Exit.....	38
<b>APPENDIX A ADDRESS MAPPING</b> .....	<b>40</b>
<b>APPENDIX B HOW TO USE WAKE-UP FUNCTION</b> .....	<b>42</b>
<b>APPENDIX C DIGITAL I/O</b> .....	<b>43</b>

## Chapter 1 Introduction

Thank you for choosing ICPMB-7880 Intel LGA 775 CPU Single Board Computer. ICPMB-7880 is a Micro ATX form factor board, which comes equipped with high performance Intel LGA 775 CPU 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.

In addition, the ICPMB-7880 provides Integrated Memory controller , graphics accelerator and PCI Express 16X in a single chip (Intel 82915G).

An advanced high performance south bridge chip – Intel 82801FB (ICH6) and super I/O ITE8712F are also integrated in the ICPMB-7880 board. Four on-board UARTs are compatible with the NS16C550. The parallel port and IDE interface are compatible with IBM PC/AT architecture's.

ICPMB-7880 uses a Mavell 88E8053 fast Ethernet Multifunction PCI Express 1X Controller as LAN controller. The Mavell 88E8053 is a fully integrated Gigabit LAN solution with high performance networking functions and low power features.

## 1.1 Specifications

CPU	Intel LGA 775 Socket
FSB	533 MHz / 800 MHz
DMA Channels	7
Interrupt Levels	15
Chipset	Intel 82915G + Intel 82801FB (ICH6)
RAM Memory	2 Channel DDR SDRAM DDR333/DDR400
IDE Interface	One IDE hard drives connector.
Four High Speed Serial Ports	NS16C550 compatible UARTs, with 3 RS232, 1 RS232/422/485.
Bi-directional Parallel Port	Compatible with ECP and EPP.
Hardware Monitoring	ITE8712H to monitor power supply voltage and fan speed status.
IrDA Port	Support Serial Infrared (SIR) and Amplitude Shift Keyed IR (ASKIR) interface.
USB Port	Support 8 USB 2.0 ports for future expansion.
Watchdog Timer	Software-programmable. Reset generated when CPU does not periodically trigger the timer. You can use BIOS routine INT15 to control the watchdog and generate a system reset.
Mavell 88E8053 Fast Ethernet LAN 1X PCI Express Controller	<ul style="list-style-type: none"> <li>• Fast back-to-back transmission support with minimum interframe spacing.</li> <li>• Connected to your LAN through RJ45 connector.</li> </ul>
Keyboard and PS/2 mouse connector	Easy connection to a keyboard or PS/2 mouse.
Audio Connector	Support Line-IN, Line-Out and Microphone-In
SATA Connector	Support 4 port Serial ATA
Compact flash	It can be used with a passive adapter (True IDE Mode) in a Type I/II Socket.
Power Consumption	+12V/6.51A +5V/3.63A
Operating Temperature	0° ~ 60° C

## 1.2 Package Contents

In addition to this *User's Manual*, the ICPMB-7880 package includes the following items:

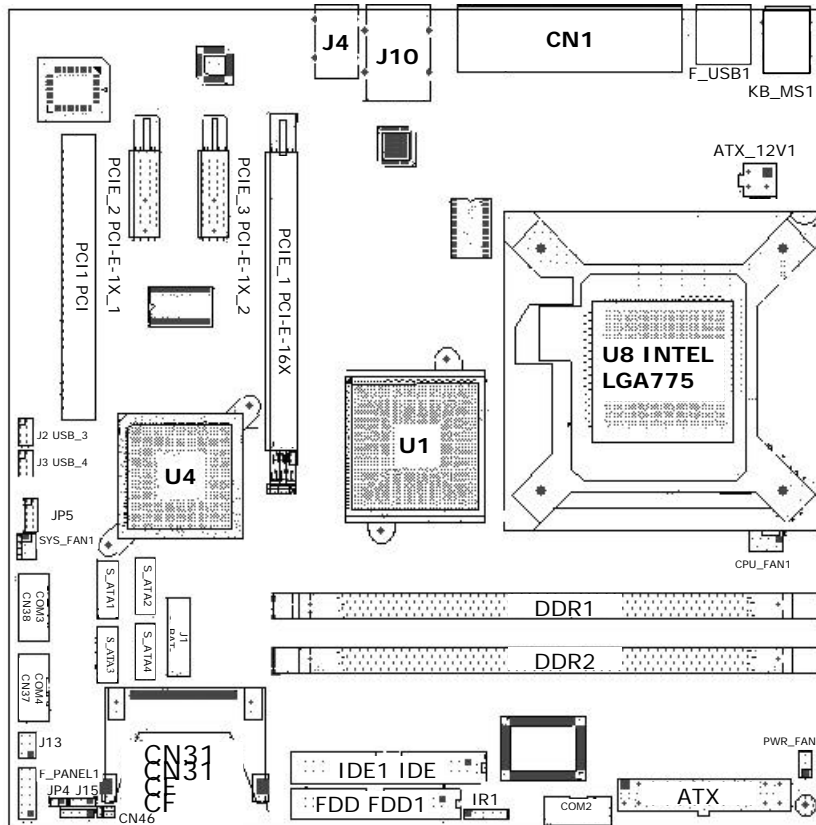
- One IDE Cable (32200-000052)
- One COM Cable(W/Bracket) (32200-004101)
- One COM Cable for COM2(W/Bracket) (32200-029400)
- One RS422/485 Cable(W/Bracket) (19800-000017)
- One FDD Cable (32200-000017)
- One Anti-Dust Pad (45002-0808C0-00)
- Four Serial ATA With lock Cable (32000-050300)
- Two Serial ATA Power Cable (32100-088600)
- Two USB Cable (CB-USB02A)
- Ten Mini Jumper P : 2.54 (33100-000079)
- One CD-ROM Driver (7B000-000009)
- One QIG

If any of these items is missing or damaged, contact the dealer from whom you purchased the product. Save the shipping materials and carton in case you want to ship or store the product in the future.

## Chapter 2 Installation

### 2.1 ICPMB-7880 Placement

TOP



### 2.2 Clear CMOS Setup

If you want to clear the CMOS Setup (for example forgot the password you should clear the setup and then set the password again.), you should close the JP5 about 3 seconds, then open again. Set back to normal operation mode.

- **JP1: Clear CMOS Setup**

JP1	Description
1-2	Keep CMOS Setup (Normal Operation)
2-3	Clear CMOS Setup

### 2.3 Compact Flash Card Master/Slave Mode Setting

- **JP4: Master/Slave Mode Setting**

<b>JP4</b>	<b>Description</b>
<b>OPEN</b>	<b>SLAVE</b>
SHORT	MASTER

## 2.4 RS-232/485 Setup

- J15 : RS-232/485 Setup(for COM2)

<b>J15</b>	<b>DESCRIPTION</b>
<b>1-2</b>	<b>RS232</b>
2-3	RS-485

## 2.5 Wake On Ring

- J13 : Wake on Modem(for COM2 default On)

<b>J13</b>	<b>DESCRIPTION</b>
<b>2-4</b>	<b>-XRI 2</b>



## Chapter 3 Connection

This chapter describes how to connect peripherals, switches and indicators to the ICPMB-7880 board.

### 3.1 PCI IDE Disk Drive Connector

You can attach two IDE (Integrated Device Electronics) hard disk drives on one channels.

- **IDE1: Primary IDE Connector (Pitch 2.54 mm)**

PIN NO.	DESCRIPTION	PIN NO.	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	IDE DRQ	22	GROUND
23	IOW#	24	GROUND
25	IOR#	26	GROUND
27	IDE CHRDY	28	GROUND
29	IDE 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

ICPMB -7880 includes a slot for a Compact Flash Storage Card in IDE Mode(Using IDE1).

- **CN31: Compact Flash Storage Card Socket**

<b>PIN</b>	<b>Description</b>	<b>PIN</b>	<b>Description</b>
1	GROUND	26	CARD DETECT1
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	OBLIGATORY TO PULL HIGH
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	N/C
19	A1	44	N/C
20	A0	45	ACTIVE#
21	D0	46	PDIAG#
22	D1	47	D8
23	D2	48	D9
24	N/C	49	D10
25	CARD DETECT2	50	GROUND

### 3.2 Fan Connector

ICPMB-7880 provides a CPU cooling fan connector. This connector can supply 12V/0.8A(MAX) to the cooling fan. In the connector there have a "SENSE" pin. The SENSE pin is to get the fan's rotation signal to system. So the system BIOS could recognize the fan speed . When the CPU hot, system BIOS can through "CONTROL" pin speed up the fan speed.

- **CPU\_FAN1: CPU FAN Connector**

<b>PIN</b>	<b>Description</b>
1	GND
2	+12V
3	SENSE
4	CONTROL

- **PWR\_FAN1: POWER FAN Connector**

<b>PIN</b>	<b>Description</b>
1	GND
2	+12V
3	CONTROL

- **SYS\_FAN1: SYSTEM FAN Connector**

PIN	Description
1	GND
2	+12V
3	CONTROL

### 3.3 Serial Ports

- The ICPMB-7880 offers four high speed NS16C550 compatible UARTs with Read/Receive 16 byte FIFO.
- COM2 : COM2 (RS-232/485)**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	DCD4	2	DSR4
3	RX4	4	RTS4
5	TX4	6	CTS4
7	DTR4	8	RI4
9	GND	10	

- CN46 : (RS-422/485 ONLY)**

PIN NO.	DESCRIPTION
1	+XTX2
2	-XTX2
3	XR2+
4	XR2-

- CN38,CN37: COM3,COM4(RS-232 ONLY)**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	NRLSD3	2	NDSR3
3	NRX3	4	NRTS3
5	NTX3	6	NCTS3
7	NDTR3	8	-XRI3
9	GND	10	

### 3.4 Power Connector

The pin assignments are as following:

- ATX: Micro ATX Power Connector 24 PIN**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	3.3V	13	3.3V
2	3.3V	14	-12V
3	GND	15	GND
4	5V	16	PSON
5	GND	17	GND
6	5V	18	GND
7	GND	19	GND
8	PWR OK	20	-5V
9	5VSB	21	5V
10	12V	22	5V
11	12V	23	5V
12	3.3V	24	GND

- **ATX\_12V1: MICRO ATX Power connector 4 PIN**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	3	12V
2	GND	4	12V

### 3.5 3IN1 Connector

The 3 IN 1 Connector include the COM port, CRT port and LPT port.

- **CN1A: LPT (25-pin Female Connector)**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	-STB	14	-AFD
2	PD0	15	-ERR
3	PD1	16	-INIT
4	PD2	17	-SLIN
5	PD3	18	GND
6	PD4	19	GND
7	PD5	20	GND
8	PD6	21	GND
9	PD7	22	GND
10	-ACK	23	GND
11	BUSY	24	GND
12	PE	25	GND
13	SLCT		

- **CN1B: COM1 (9-pin Male Connector)**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	-NDCDA	2	-NDSRA
3	NSINA	4	-NRTSA
5	NSOUTA	6	-NCTSA
7	-NDTRA	8	-XRI1
9	GND		

#### **CN1C: CRT (15-pin Female Connector)**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	RED	9	NC
2	GREEN	10	GND
3	BLUE	11	NC
4	NC	12	DDCDAT
5	GND	13	HSYNC
6	GND	14	VSYNC
7	GND	15	DDCCLK

### 3.6 IrDA Infrared Interface Port

ICPMB-7880 built-in an IrDA port which support Serial Infrared (SIR) or Amplitude Shift Keyed IR (ASKIR) interface. When use the IrDA port have to set SIR or ASKIR mode in the BIOS's Peripheral Setup's COM2. Then the normal RS-232 COM2 will be disabled.

- **IR1: IrDA connector**

PIN	Description
1	+5V
2	NC
3	RX
4	GND
5	TX

### 3.7 USB Port Connector

ICPMB-7880 built-in eight USB ports for the future new I/O bus expansion. It complies with USB 2.0. port 4,5,6,7 are provided in 2x4 pin header and port 0,1,2,3 are provided with USB STD A Connector.

- **F\_USB1 : USB Connector(USB 0,1)**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	FUSEVCC	5	FUSEVCC
2	-FUSB0	6	-FUSB1
3	+FUSB0	7	+FUSB1
4	GND	8	GND

- **J10B : USB Connector(USB 2,3)**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	FUSEVCC1	5	FUSEVCC1
2	-USB2	6	-USB3
3	+USB2	7	+USB3
4	GND	8	GND

- **J2 J3: USB 4,5,6,7 (2\*4 Pin header)**

J2

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	FUSEVCC2	8	GND
2	-P4	7	P5+
3	P4+	6	P5-

4	GND	5	FUSEVCC2
---	-----	---	----------

**J3**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	FUSEVCC3	8	GND
2	-P6	7	P7+
3	P6+	6	P7-
4	GND	5	FUSEVCC3

### 3.8 Audio Connector

The pin assignments are as following.

- **J4: Audio Connector**

PIN NO.	DESCRIPTION
1	Line-in R
2	GND
3	GND
4	Line-in L
5	Line-out R
6	GND
7	GND
8	Line-out L
9	Microphone in
10	GND
11	GND
12	GND
13	Microphone in

### 3.9 SERIAL ATA PORT

- **S\_ATA1 , S\_ATA2 , S\_ATA3 , S\_ATA4 : Serial ATA Port**

PIN NO.	DESCRIPTION
1	GND
2	TXP
3	TXN
4	GND
5	RXN
6	RXP
7	GND

### 3.10 GPIO Connector

ICPMB-7880 provide built-in 8 GPIO Pins that can be choose at the BIOS setup to select the GPIO to be Input or Output Pins.

- **JP5 : 8 BIT GPIO Connector**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	GND	2	VCC5
3	GPI24	4	GPO19
5	GPI27	6	GPO21
7	GPI28	8	GPO23
9	GPI32	10	GPO33

### 3.11 Gigabit RJ45 Connector

- **J10A: Gigabit-LAN RJ45 Connector**

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	2.5VCC	12	LINK 100 LED
2	MD0+	13	LINK LED
3	MD0-	14	LED ACT
4	MD1+	15	GND
5	MD1-	16	GND
6	MD2+	17	GND
7	MD2-	18	GND
8	MD3+	19	GND
9	MD3-	20	GND
10	GND	21	GND
11	LINK 1000 LED	22	GND

### 3.12 PCI EXPRESS 16X Connector

ICPMB-7880 has a PCI EXPRESS 16X connector for PCI EXPRESS 16X VGA card use. The PCI Express port is compatible with the PCI Express Base Specification revision 1.0a.

The 16X port operates at a frequency of 2.5 Gb/s on each lane while employing 8b/10b encoding, and supports a maximum theoretical bandwidth of 4 Gb/s each direction.

- **PCIE\_1: PC/104-Plus Connector (164-pin PCI EXPRESS 16X bus)**

PIN	DESCRIPTION	PIN	DESCRIPTION
A1	NC	B1	12V
A2	12V	B2	12V
A3	12V	B3	RSVD1
A4	GND	B4	GND
A5	NC	B5	SMCLK
A6	NC	B6	SMDAT
A7	NC	B7	GND
A8	NC	B8	3.3V
A9	3.3V	B9	NC
A10	3.3V	B10	3.3VAUX
A11	PWRGD	B11	WAKE#
A12	GND	B12	RSVD2
A13	REFCLK+	B13	GND
A14	REFCLK-	B14	HSOP0
A15	GND	B15	HSO00
A16	HSIP0	B16	GND

A17	HSIN0	B17	DVO_CLK
A18	GND	B18	GND
A19	RSVD5	B19	HSOP1
A20	GND	B20	HSOP1
A21	HSIP1	B21	GND
A22	HSIN1	B22	GND
A23	GND	B23	HSOP2
A24	GND	B24	HSOP2
A25	HSIP2	B25	GND
A26	HSIN2	B26	GND
A27	GND	B27	HSOP3
A28	GND	B28	HSOP3
A29	HSIP3	B29	GND
A30	HSIN3	B30	RSVD3
A31	GND	B31	DVO_DATA
A32	RSVD6	B32	GND
A33	RSVD7	B33	HSOP4
A34	GND	B34	HSOP4
A35	HSIP4	B35	GND
A36	HSIN4	B36	GND
A37	GND	B37	HSOP5
A38	GND	B38	HSOP5
A39	HSIP5	B39	GND
A40	HSIN5	B40	GND
A41	GND	B41	HSOP6
A42	GND	B42	HSOP6
A43	HSIP6	B43	GND
A44	HSIN6	B44	GND
A45	GND	B45	HSOP7
A46	GND	B46	HSOP7
A47	HSIP7	B47	GND
A48	HSIN7	B48	NC
A49	GND	B49	GND
A50	RSVD8	B50	HSOP8
A51	GND	B51	HSOP8
A52	HSIP8	B52	GND
A53	HSIN8	B53	GND
A54	GND	B54	HSOP9
A55	GND	B55	HSOP9
A56	HSIP9	B56	GND
A57	HSIN9	B57	GND
A58	GND	B58	HSOP10
A59	GND	B59	HSOP10
A60	HSIP10	B60	GND
A61	HSIN10	B61	GND
A62	GND	B62	HSOP11
A63	GND	B63	HSOP11
A64	HSIP11	B64	GND
A65	HSIN11	B65	GND
A66	GND	B66	HSOP12
A67	GND	B67	HSOP12
A68	HSIP12	B68	GND
A69	HSIN12	B69	GND
A70	GND	B70	HSOP13
A71	GND	B71	HSOP13
A72	HSIP13	B72	GND



A73	HSIN13	B73	GND
A74	GND	B74	HSOP14
A75	GND	B75	HSOP14
A76	HSIP14	B76	GND
A77	HSIN14	B77	GND
A78	GND	B78	HSOP15
A79	GND	B79	HSOP15
A80	HSIP15	B80	GND
A81	HSIN15	B81	NC
A82	GND	B82	RSVD4

### 3.13 PCI EXPRESS 1X Connector

- **PCIE\_2 PCIE\_3 : PCI EXPRESS 1X Connector (36-pin PCI EXPRESS 1X BUS)**

PIN	DESCRIPTION	PIN	DESCRIPTION
A1	NC	B1	12V
A2	12V	B2	12V
A3	12V	B3	RSVD
A4	GND	B4	GND
A5	JTAG2	B5	SMCLK
A6	JTAG3	B6	SMDATA
A7	JTAG4	B7	GND
A8	JTAG5	B8	3.3V
A9	3.3V	B9	JTAG1
A10	3.3V	B10	3.3VAUX
A11	PWRGD	B11	WAKE#
A12	GND	B12	RVSD
A13	REFCLK+	B13	GND
A14	REFCLK-	B14	HSOP0
A15	GND	B15	HSOP0-
A16	HSIP0	B16	GND
A17	HSIN0	B17	NC
A18	GND	B18	GND

### 3.14 PS/2 Keyboard & Mouse Connector

- **J16: PS/2 Keyboard & Mouse Connector**

PIN NO.	DESCRIPTION
1	KEYBOARD DATA
2	NC
3	GND
4	FUSEVCC3
5	KEYBOARD CLK
6	NC
7	MOUSE DATA
8	NC
9	GND
10	FUSEVCC3
11	MOUSE CLK
12	NC

### 3.15 DDRI SDRAM SOCKET

- DDR1: 184 PIN DDRI SDRAM SOCKET
- DDR2: 184 PIN DDRI SDRAM SOCKET

### 3.16 System Panel Connector

- J18: System Panel Connector

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1	VCC	2	BUZZER
3	GND	4	GND
5	GND	6	SLP_BTN
7	PWRBT_SW	8	VCC
9	VCC	10	RESET_SW
11	HDDLED	12	GND

# Chapter 4 AMI BIOS Setup

## 4.1 Introduction

This manual discusses AMI's Setup program built into the ROM BIOS. The Setup program allows users to modify the basic system configuration. This special information is then stored in battery-backed RAM so that it retains the Setup information when the power is turned off.

## 4.2 Starting Setup

The AMI BIOS is immediately activated when you first power on the computer. The BIOS reads the system information contained in the CMOS and begins the process of checking out the system and configuring it. When it finishes, the BIOS will seek an operating system on one of the disks and then launch and turn control over to the operating system.

While the BIOS is in control, the Setup program can be activated in one of two ways:

1. By pressing <Del> immediately after switching the system on, or
2. by pressing the <Del> key when the following message appears briefly at the bottom of the screen during the POST.

**Press DEL to enter 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...

## 4.3 Using Setup

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

Up arrow	Move to previous item
Down arrow	Move to next item
Left arrow	Move to the item in the left hand
Right arrow	Move to the item in the right hand
Esc key	Main Menu -- Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu -- Exit current page and return to Main Menu
Page Up key	Increase the numeric value or make changes
Page Dn key	Decrease the numeric value or make changes
F1 key	General help, only for Status Page Setup Menu and Option Page Setup Menu
F2 /F3 key	Change color from total 16 colors. F2 to select color forward.
F10 key	Save all the CMOS changes, only for Main Menu

## 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.

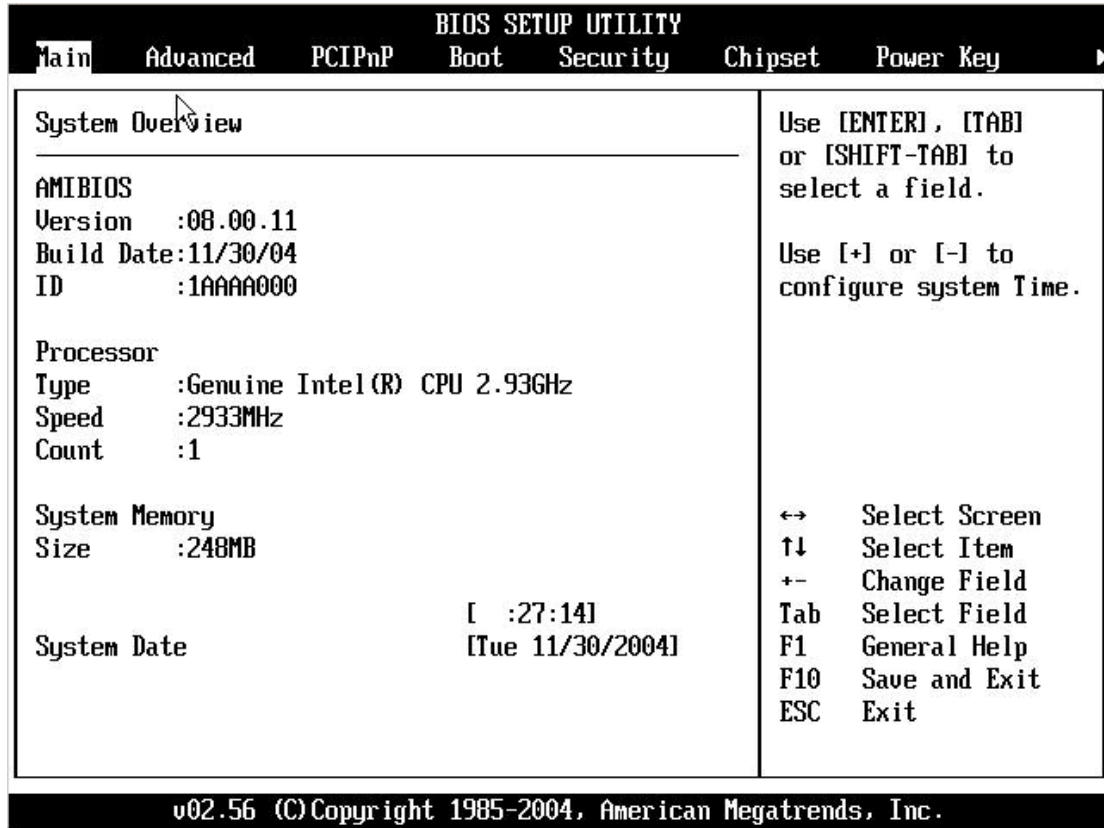
## 4.5 BIOS menu bar

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

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

## 4.6 Main

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



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

<p>Advanced Settings</p> <hr/> <p>WARNING: Setting wrong values in below sections may cause system to malfunction.</p> <ul style="list-style-type: none"> <li>▶ CPU Configuration</li> <li>▶ IDE Configuration</li> <li>▶ Floppy Configuration</li> <li>▶ SuperIO Configuration</li> <li>▶ Hardware Health Configuration</li> <li>▶ ACPI Configuration</li> <li>▶ MPS Configuration</li> <li>▶ Remote Access Configuration</li> <li>▶ USB Configuration</li> </ul>	<p>Configure CPU.</p>       <p>↔ Select Screen          ↑↓ Select Item          Enter Go to Sub Screen          F1 General Help          F10 Save and Exit          ESC Exit</p>
--	---

v02.56 (C) Copyright 1985-2004, 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**

<p>Configure advanced CPU settings Module Version - 3C.06</p> <hr/> <p>Manufacturer: Intel          Brand String: Genuine Intel(R) CPU 3.06GHz          Frequency : 3.06GHz          FSB Speed : 533MHz          Cache L1 : 16 KB          Cache L2 : 256 KB          Ratio Status : Unlocked (Max:23, Min:14)          Ratio Actual Value: 23</p> <p>Max CPUID Value Limit: [Disabled]          Hardware Prefetcher: [Disabled]          Adjacent Cache Line Prefetch: [Disabled]</p> <p>Hyper Threading Technology [Enabled]</p>	<p>Sets the ratio between CPU Core Clock and the FSB Frequency. NOTE: If a invalid ratio has been entered to this field, BIOS will restore it to previous state.</p>       <p>↔ Select Screen          ↑↓ Select Item          Enter Update          F1 General Help          F10 Save and Exit          ESC Exit</p>
--	--

v02.56 (C) Copyright 1985-2004, American Megatrends, Inc.

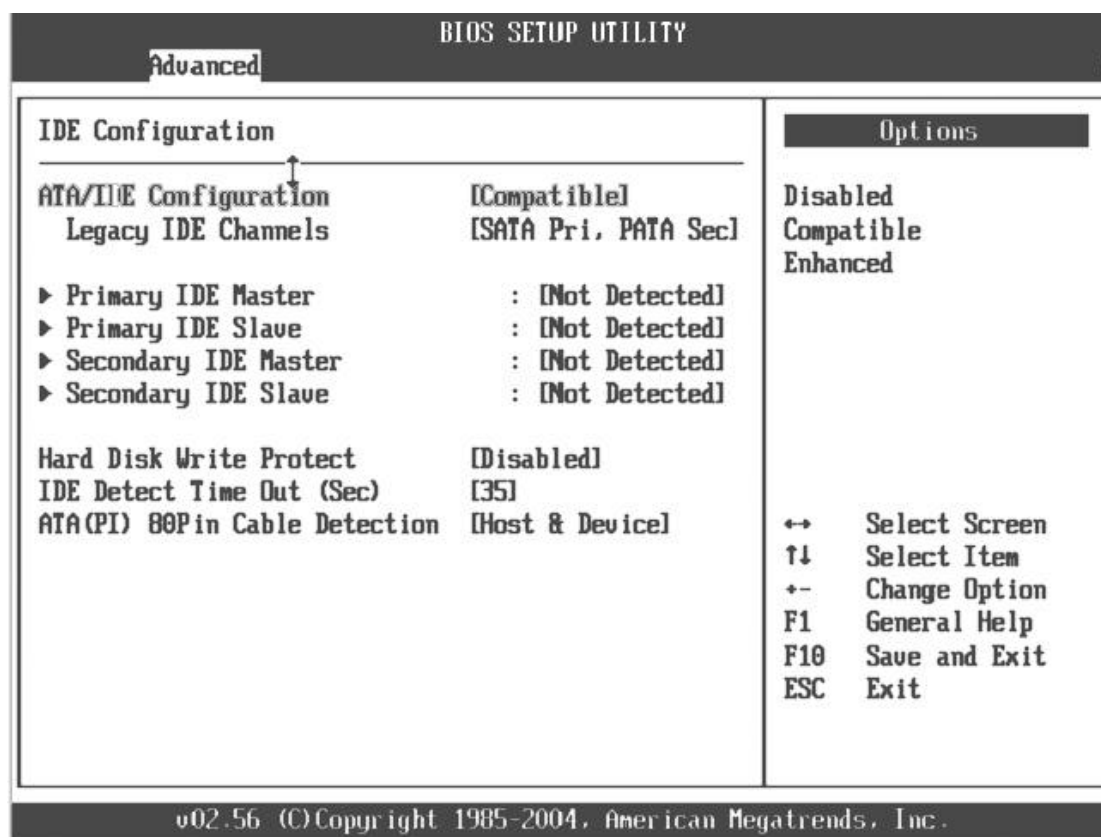
#### Hyper-Threading Technology [Enabled]

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

Configuration options: [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.



### ATA/IDE Configuration [Compatible]

Configuration options: [Compatible] [Disable] [Enhance]

### Legacy IDE Channels [SATA Pri , PATA Sec]

Configuration options: [SATA Only] [SATA Pri , PATA Sec] [PATA Pri , SATA Sec] [PATA Only]

**Primary IDE Master** : [Not Detected]

**Primary IDE Slave** : [Not Detected]

**Secondary IDE Master** : [Not Detected]

**Secondary IDE Slave** : [Not Detected]

While entering setup, BIOS auto detects the presence of IDE device. This displays status of auto detection of IDE device

### 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

<p><b>Floppy Configuration</b></p> <hr/> <p>Floppy A                    [1.44 MB 3½"]          Floppy B                    [Disabled]</p>	<p>Select the type of floppy drive connected to the system.</p>          <p>↔    Select Screen          ↑↓   Select Item          +-   Change Option          F1   General Help          F10 Save and Exit          ESC Exit</p>
---	--

v02.56 (C) Copyright 1985-2004, American Megatrends, Inc.

### 4.7.4 Super IO Configuration

BIOS SETUP UTILITY

Advanced

<p><b>Configure ITE8712 Super IO Chipset</b></p> <hr/> <p>OnBoard Floppy Controller    [Enabled]          Floppy Drive Swap            [Disabled]          Digital I/O Address           [2D9h]          Serial Port1 Address         [3F8/IRQ4]              Serial Port1 Mode         [Normal]          Serial Port2 Address         [2F8/IRQ3]              Serial Port2 Mode         [Normal]          Parallel Port Address         [378]              Parallel Port Mode         [Normal]              Parallel Port IRQ         [IRQ7]          Serial Port3 Address         [3E8]              Serial Port3 IRQ           [11]          Serial Port4 Address         [2E8]              Serial Port4 IRQ           [10]</p>	<p>Allows BIOS to Enable or Disable Floppy Controller.</p>          <p>↔    Select Screen          ↑↓   Select Item          +-   Change Option          F1   General Help          F10 Save and Exit          ESC Exit</p>
---	---

v02.56 (C) Copyright 1985-2004, American Megatrends, Inc.

#### **On Board Floppy Controller [Enabled]**

Allows you to enable or disable the floppy disk controller.

Configuration options: [Disabled] [ Enabled]

#### **Floppy Device Swap[Disabled]**

Configuration options: [Disabled] [ Enabled]

#### **Digital I/O Address[2D9H]**



**Address Option : 2D1H 2C9H 2C1H**

**Serial Port1 Address [3F8/IRQ4]**

Allows you to select the Serial Port1 base address.

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

**Serial Port2 Address [2F8/IRQ3]**

Allows you to select the Serial Port2 base address.

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

**Serial Port3 Address [3E8/IRQ11]**

Allows you to select the Serial Port1 base address.

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

**Serial Port4 Address [2E8/IRQ10]**

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]

**4.7.5 Hardware Health Configuration**

BIOS SETUP UTILITY	
Advanced	
<b>Hardware Health Configuration</b>	
Enables Hardware Health Monitoring Device.	
System Temperature	:32°C/89°F
CPU Temperature	:25°C/77°F
CPU Fan Speed	:3835 RPM
Power Fan Speed	:N/A
System Fan Speed	:N/A
CPU Core	:1.312 V
+2.50V	:2.544 V
+3.30V	:3.312 V
+5.00V	:5.116 V
+12.0V	:12.070 V
+1.50V	:1.497 V
5VSB	:4.952 V
VBAT	:3.184 V
↔	Select Screen
↑↓	Select Item
+ -	Change Option
F1	General Help
F10	Save and Exit
ESC	Exit
v02.56 (C) Copyright 1985-2004, American Megatrends, Inc.	

**4.7.6 ACPI Configuration**

Allows you to change the settings for the Advanced Power Management (APM). Select an item then press Enter to display the configuration options.

BIOS SETUP UTILITY	
Advanced	
<b>ACPI Settings</b> <hr/> <ul style="list-style-type: none"> <li>▶ General ACPI Configuration</li> <li>▶ Advanced ACPI Configuration</li> <li>▶ Chipset ACPI Configuration</li> </ul>	<b>General ACPI Configuration settings</b>          ↔ Select Screen ↑↓ Select Item Enter Go to Sub Screen F1 General Help F10 Save and Exit ESC Exit
v02.56 (C) Copyright 1985-2004, American Megatrends, Inc.	

**General ACPI Configuration**

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

Configuration options: [S1 (POS)]

**Advanced ACPI Configuration**

Use this section to configure additional ACPI options.

BIOS SETUP UTILITY	
Advanced	
<b>Advanced ACPI Configuration</b> <hr/> ACPI 2.0 Features                    [No] ACPI APIC support                   [Enabled] AMI OEMB table                      [Enabled] Headless mode                       [Disabled]	Enable RSDP pointers to 64-bit Fixed System Description Tables.          ↔ Select Screen ↑↓ Select Item +- Change Option F1 General Help F10 Save and Exit ESC Exit
v02.56 (C) Copyright 1985-2004, 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 Enabled, the ACPI APIC table pointer is included in the RSDT pointer list.

Configuration options: [Disabled] [Enabled]

**AMI OEMB table [Enabled]**

Allows you to enable or disable the inclusion of the BIOS ->AML exchange pointer to (X)RSDT pointer list.

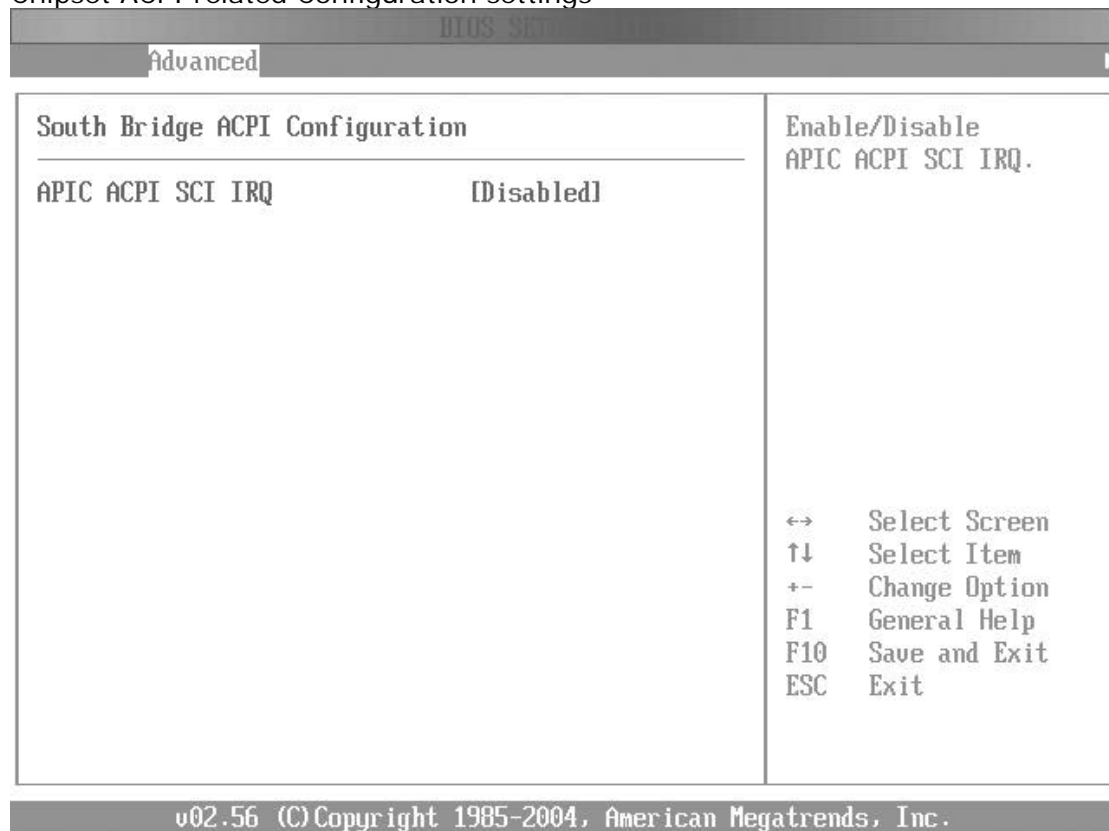
Configuration options: [Disabled] [Enabled]

**Headless mode [Disabled]**

Enable/Disable headless operation mode through ACPI.

**Chipset ACPI Configuration**

Chipset ACPI related Configuration settings



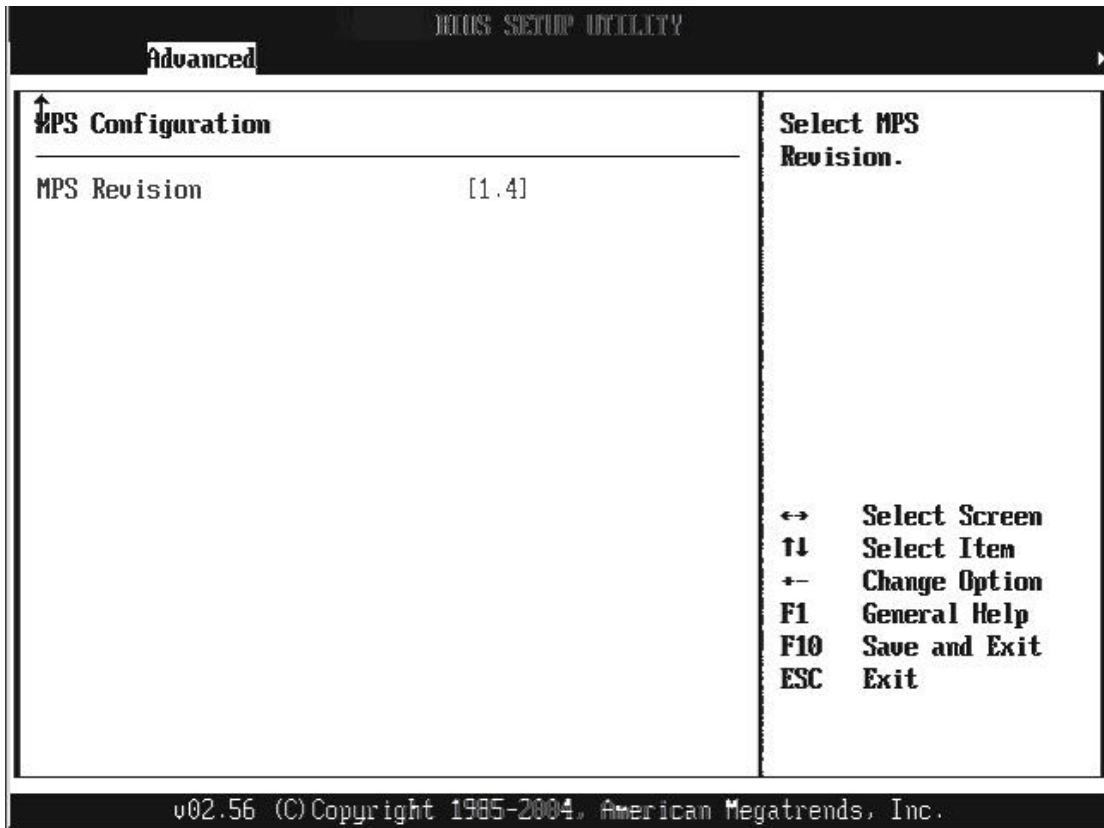
**APIC ACPI SCI Configuration : [Disable]**

Configuration options: [Disabled] [Enabled]

---

**4.7.7 MPS Configuration**

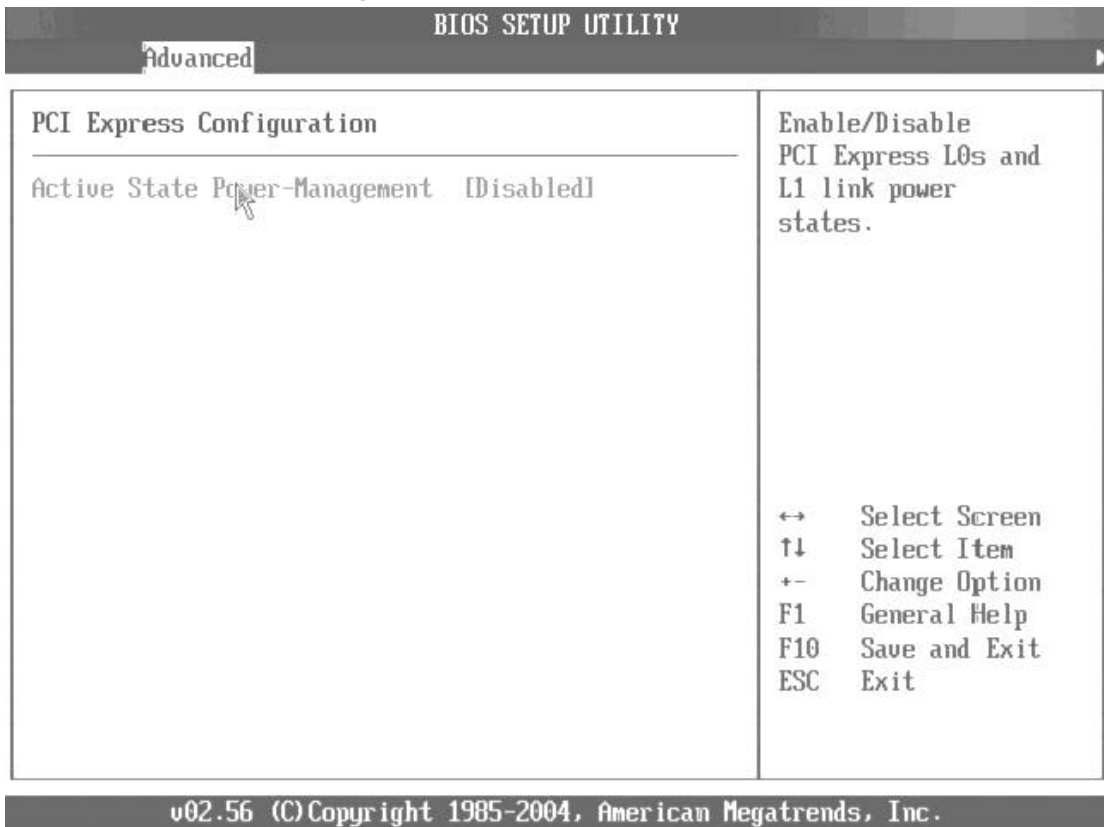
Configure the Multi-Processor table



**MPS Revision [1.4]**

Configuration options: [1.1] [1.4]

**4.7.8 PCI Express Configuration**

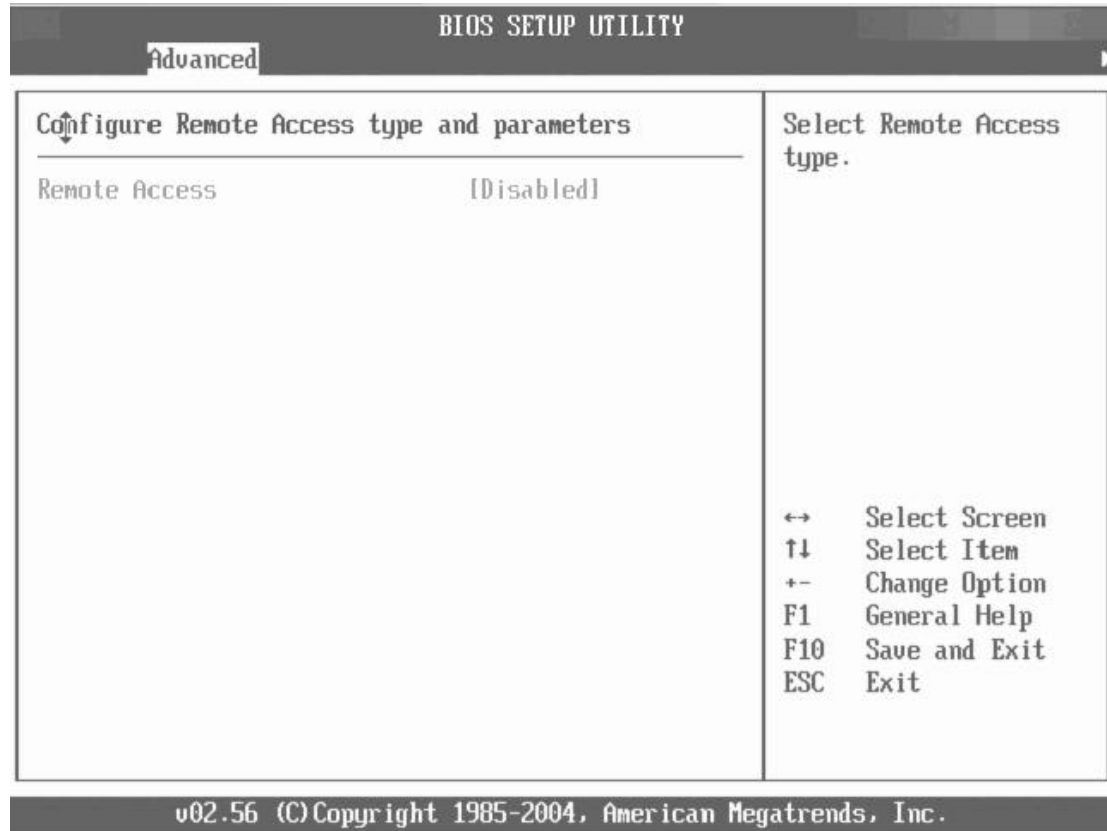


Enable/Disable PCI Express L0s and L1 Link power states

## Active State Power Management [Disabled]

Configuration options: [Disabled] [Enabled]

### 4.7.9 Remote Access Configuration

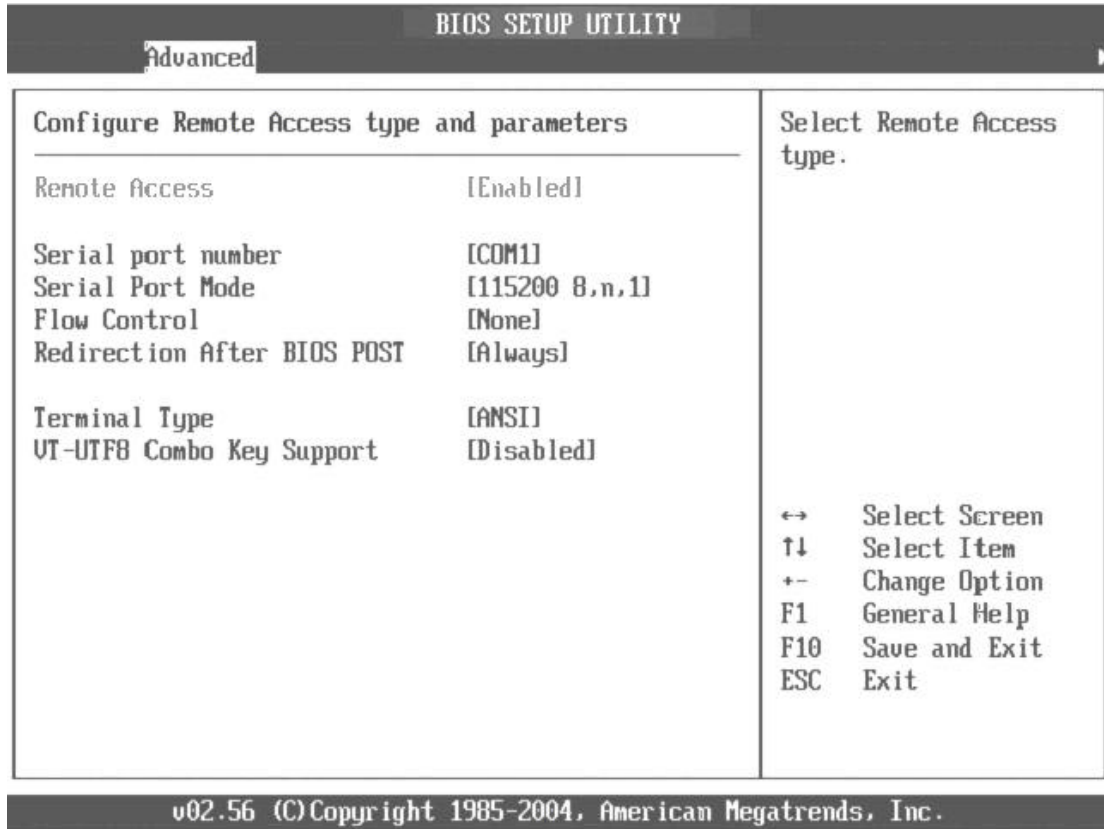


Configure Remote Access.

#### **Remote Access [Disabled]**

Configuration options: [Disabled] [Enabled]

If the Remote Access is set to Enable, end user can use the other PC through Hyper-temerinal or others AP software can monitor this system



**Serial port number [COM1]**

Configuration options: [COM1] [COM2]

**Serial port Mode [115200 8 , n , 1]**

Configuration options: [115200 8 , n , 1] [57600 8 , n , 1] [38400 8 , n , 1] [19200 8 , n , 1] [9600 8 , n , 1]

**Flow Control [None]**

Configuration options: [None] [Software] [Hardware]

**Redirection After BIOS POST [Always]**

Configuration options: [Always] [Boot Loader] [Disable]

**Terminal Type[ANSI]**

Configuration options: [ANSI] [VT100] [VT-VTFB]

**Redirection After BIOS POST [Always]**

Configuration options: [Always] [Boot Loader] [Disable]

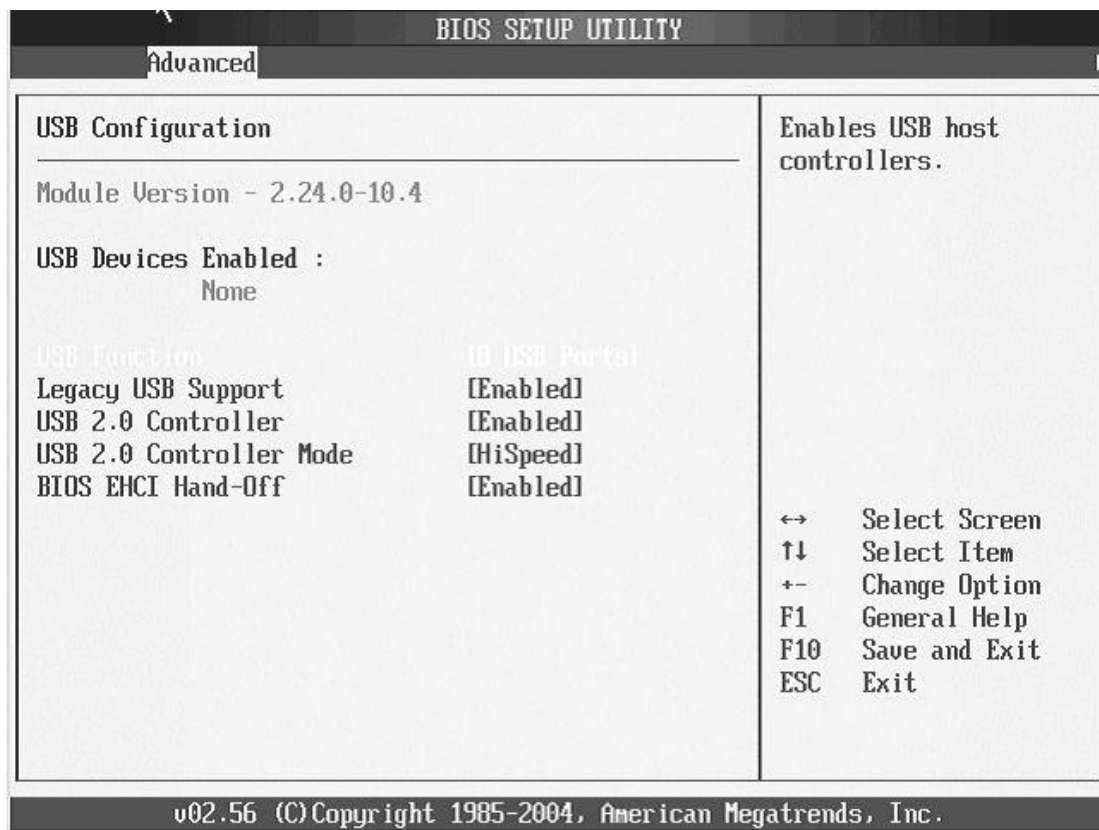
**VT-VTFB Combo Key Support [Enable]**

Configuration options: [Enable] [Disable]

---

**4.7.10 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.



#### **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]

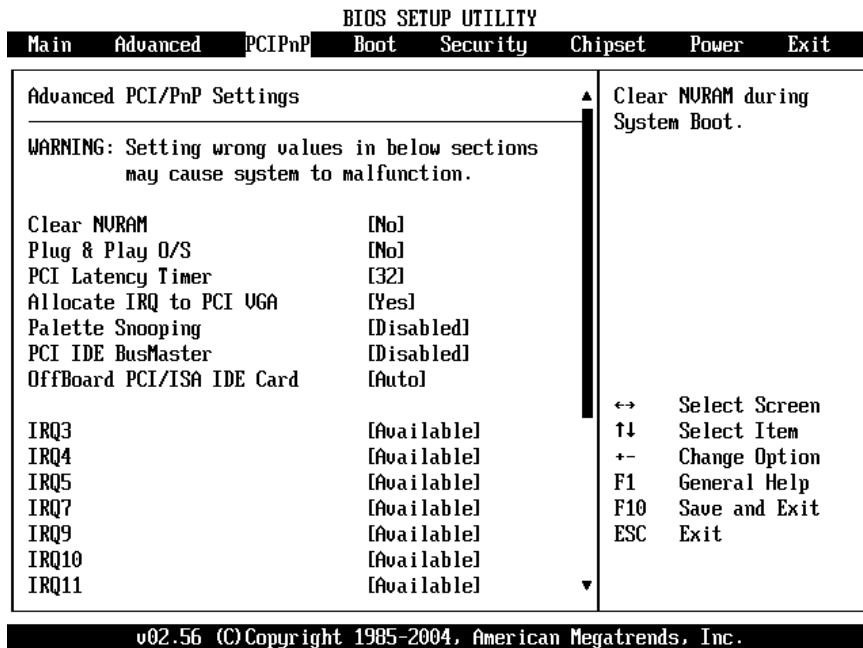
#### **USB 2.0 Controller Mode [HiSpeed]**

Allows you to configure the USB 2.0 controller in HiSpeed (480 Mbps) or Full Speed (12 Mbps).

Configuration options: [HiSpeed] [Full Speed]

## **4.8 PCI PnP**

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.



**Clear NVRAM [NO]**

Clear NVRAM during system boot.

**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**

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 <hr/> ▶ Boot Settings Configuration  ▶ Boot Device Priority ▶ Removable Drives			Configure Settings during System Boot.           ↔ Select Screen ↑↓ Select Item Enter Go to Sub Screen F1 General Help F10 Save and Exit ESC Exit				
v02.56 (C) Copyright 1985-2004, American Megatrends, Inc.							

#### 4.9.1 Boot Settings Configuration

configure settings during system boot.

##### **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.

### 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: [xxxxxx Drive] [Disabled]

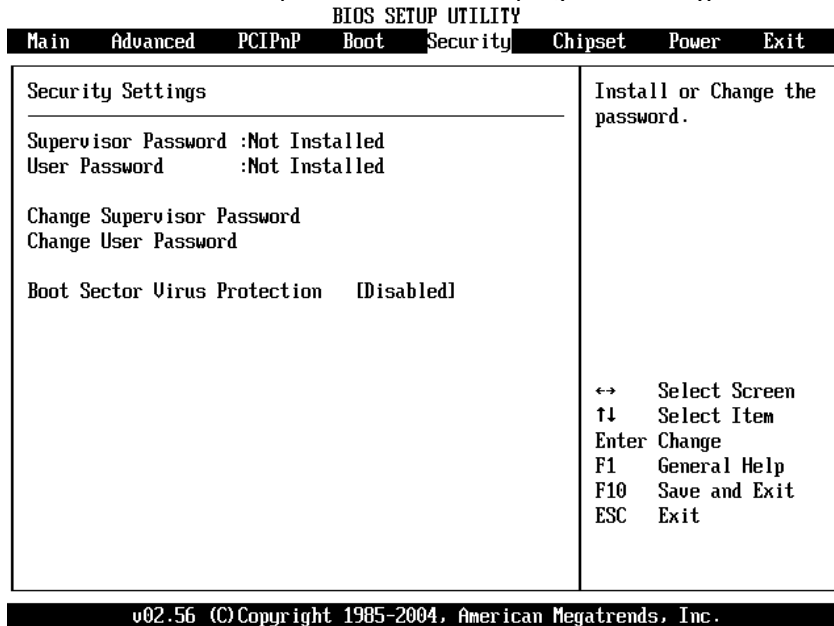
### Removable Drives

Specifies the boot device priority sequence from available removable drives.

## 4.10 Security

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.

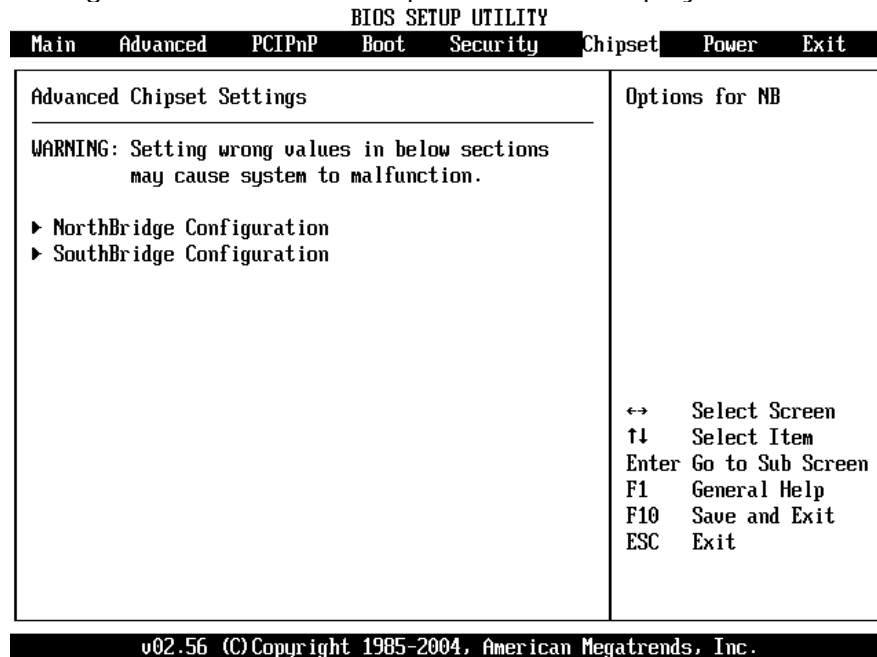
### Boot Sector Virus Protection [Disabled]

Allows you to enable or disable the boot sector virus protection.

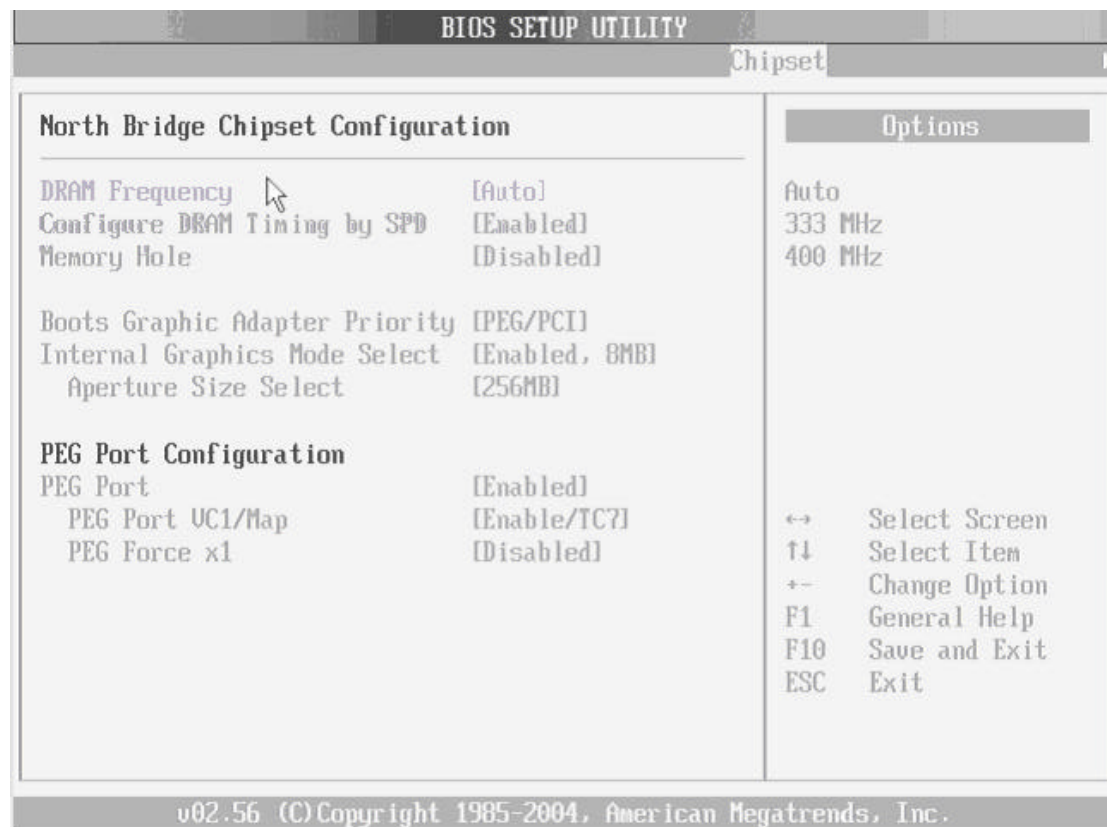
Configuration options: [Disabled] [Enabled]

## 4.11 Chipset

The Chipset menu items allow you to change the advanced chipset settings. Select an item then press Enter to display the sub-menu.



### 4.11.1 North Bridge Configuration



#### DRAM Frequency [Auto]

When this item is enabled, the system bios will auto detect the system memory

#### 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]

**Internal Graphics Mode Select [Enable, 8MB]**

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

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

**Aperture Size Select [256MB]**

Allows you to select the size of mapped memory for AGP graphic data.

Configuration options: [128MB] [256MB]

**PEG Port Configuration**

**PEG Port [Enable]**

**PEG Port VC1/Map [Enable/TC7]**

[Disable] [Enable/TC1] [Enable/TC2] [Enable/TC3] [Enable/TC4]

[Enable/TC5] [Enable/TC6] [Enable/TC7]

**PEG Force x1 [Disable]**

[Enable/TC1] [Enable/TC2] [Enable/TC3] [Enable/TC4] [Enable/TC5]

[Enable/TC6] [Enable/TC7]

**4.11.2 South Bridge Configuration**

BIOS SETUP UTILITY		Chipset
<b>South Bridge Chipset Configuration</b>		<b>Options</b>
<b>Azalia/AC'97 Selection</b>	[Enabled]	Enabled Disabled
SMBUS Controller	[Enabled]	
CHAP Controller	[Disabled]	
Spread Spectrum Mode	[Disabled]	
Reserved Page Route	[PCI]	
SLP_S4# Min. Assertion Width	[1 to 2 seconds]	
Restore on AC Power Loss	[Power Off]	
<b>PCI-EX Ports Configuration</b>		
PCI Express Port 1	[Enabled]	↔ Select Screen
PCI Express Port 2	[Enabled]	↑↓ Select Item
PCI Express Port 3	[Enabled]	+− Change Option
PCI Express Port 4	[Enabled]	F1 General Help
UC1 for Azalia & Root Ports	[Disabled]	F10 Save and Exit
		ESC Exit
v02.56 (C) Copyright 1985-2004, American Megatrends, Inc.		

**On Board AC'97 Audio [Auto]**

Allows you to enable or disable the AC'97 Audio.

Configuration options: [Auto] [Disabled]

**SMBUS Controller[Enable]**

Allows you to enable or disable the SMBUS Controller.

Configuration options: [Enable] [Disabled]

**CHAP Controller[Enable]**

Configuration options: [Enable] [Disabled]

**Reserved Page Route [PCI]**

Configuration options: [PCI] [LPC]

**SLP\_S4# Min. Assertion Width [1 to 2 seconds]**

Configuration options: [1 to 2 seconds] [2 to 3 seconds] [3 to 4 seconds] [4 to 5 seconds]

**Restore on AC Power Loss [Last State]**

Configuration options: [Last State] [Power On] [Power Off]

**PCI Express Port 1 [Enable]**

Configuration options: [Enable] [Disable]

**PCI Express Port 2: [Enable]**

Configuration options: [Enable] [Disable]

**PCI Express Port 3: [Enable]**

Configuration options: [Enable] [Disable]

**PCI Express Port 4: [Enable]**

Configuration options: [Enable] [Disable]

**VC1 for Azalia & Route Port: [Disable]**

Configuration options: [Enable] [disable]

**4.12 Power**

BIOS SETUP UTILITY	
Main	Advanced
PCIPnP	Boot
Security	Chipset
Power Key	
APM Configuration	
Power Management/APM	[Enabled]
Video Power Down Mode	[Suspend]
Hard Disk Power Down Mode	[Suspend]
Standby Time Out	[Disabled]
Suspend Time Out	[Disabled]
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]
Power Button Mode	[On/Off]
Resume On Ring	[Disabled]
Resume On RTC Alarm	[Disabled]
Enable or disable APM.  ↔ Select Screen ↑↓ Select Item +- Change Option F1 General Help F10 Save and Exit ESC Exit	
v02.56 (C) Copyright 1985-2004, 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# [Disabled]**

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

Configuration options: [Disabled] [Enabled]

### 4.13 Exit

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
Exit Options <hr/> Save Changes and Exit Discard Changes and Exit Discard Changes  Load Optimal Defaults Load Failsafe Defaults		Exit system setup after saving the changes.  F10 key can be used for this operation.   ↔ Select Screen ↑↓ Select Item Enter Go to Sub Screen F1 General Help F10 Save and Exit ESC Exit					
v02.56 (C) Copyright 1985-2004, 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.**

**Load Failsafe Defaults**

This option allows you to load failsafe default values for each of the parameters on the Setup menus. **F8 key can be used for this operation.**

## Appendix A Address Mapping

- **I/O Address Map**

<b>I/O Address Map</b>	<b>Description</b>
000-01F	DMA Controller #1
020-021	Interrupt Controller # 1, Master
040-05F	System Timer
060-06F	Standard 101/102 keyboard Controller
070-07F	Real time Clock, NMI Controller
080-0BF	DMA Page Register
0A0-0BF	Interrupt Controller # 2
0C0-0DF	DMA Controller # 2
0F0-0F0	Clear Math Coprocessor Busy
0F1-0F1	Reset Math Coprocessor
0F8-0FF	Math Coprocessor
170-1F7	BUS Master PCI IDE Controller
278-27F	Parallel Printer Port 2
2E8-2EF	Serial Port 4
2F8-2FF	Serial Port 2
376-376	BUS Master PCI IDE Controller
378-37F	Parallel Printer Port 1
3B0-3DF	AGP Graphic Adapter
3E8-3EF	Serial Port 3
3F0-3F7	Floppy Disk Controller
3F8-3FF	Serial Port 1
0A61	Watchdog timer enable
480-48F	PCI BUS
043	Watchdog timer disable

- **1<sup>st</sup> MB Memory Address Map**

Memory address	Description
00000-9FFFF	SYSTEM MEMORY
A0000-BFFFF	VGA BUFFER
C0000-CFFFF	VGA BIOS
E0000-FFFFFF	SYSTEM BIOS
100000	EXTEND MEMORY



- **IRQ Mapping Chart**

IRQ0	System Timer	IRQ8	RTC CMOS clock
IRQ1	Keyboard	IRQ9	ACPI STEERING
IRQ2	IRQ Controller	IRQ10	COM4
IRQ3	COM2	IRQ11	COM3
IRQ4	COM1	IRQ12	PS/2 mouse
IRQ5	USB	IRQ13	FPU
IRQ6	FDC	IRQ14	Primary IDE
IRQ7	Printer	IRQ15	Secondary IDE

- **DMA Channel Assignment**

<b>Channel</b>	<b>Function</b>
0	Available
1	Available
2	Floppy disk
3	Available
4	Cascade for DMA controller 1
5	Available
6	Available
7	Available

## Appendix B How to use Wake-Up Function

The ICPMB-7880 provides two kind of Wake up Function. This page describes how to use Modem Wake-Up and LAN Wake-Up function. Wake-Up function is working while you use ATX power supply,

### ***Wake - Up On Modem(Ring):***

You must set the option **Resume on Ring/LAN** of CMOS SETUP to be enabled. The ATX power supply will be switched on when there is a ring signal detected on pin "RI" of serial port.

### **Wake-Up On LAN:**

When your computer is in power-down status in Windows OS , you can see LAN Link/Active LED is flashing. This status indicates that the LAN chip has entered standby mode and waits for Wake-Up signal. You can use other computers to wake up your computer by sending ID to it.

ID: ID is the address of your system LAN. Every LAN chip has a factory-set ID, which you can find it from network information in WINDOWS.

ID's format is xxxxxxxxxxxxxx

**Example ID:** 009027388320

## Appendix C Digital I/O

One of digital circuit's characteristics is its fast response to high or low signal. This kind of response is highly needed for harsh and critical industrial operating environment. Therefore, ICPMB-7880 is designed with 8-bit digital Inputs/Outputs.

There are two kinds of signals (Input and Output) used by the Digital I/O function. These signals are used to control external devices that need On/Off circuit or TTL devices. User must set the Onboard Digital I/O of Peripheral Setup on BIOS setup to one of the address available to use the Digital I/O function, and select the type of the Digital I/O as Inputs/Outputs.

When one of the signals has been selected, users can read or write data to the system through the Digital I/O function.

### **Example of a debug program:**

Onboard Digital I/O set to 2D9h

Onboard Digital Mode set to Output.

```
-o 2D9 0F
```

```
;;GPO(bit0~3) =00001111b
```