User Manual
Version 1.0B

MB-73200
Intel® Atom™ Z5xx Series w/ US15W SCH PC/104+ Module

Table of Contents

Chapter 1. General Information

1.1 Introduction

WIN Enterprises, Inc.,a world-leading technology solution provider in the Industrial PC (IPC) market and a member of the Intel® Embedded and Communications Alliance, announces the launch of MB-73200, an ultra low power and compact PC/104+ module product. MB-73200 is built on a highly integrated two-chip solution, the Intel Atom processor Z5xx series and Intel® System Controller Hub US15W, with total TDP less than 5 watts.

MB-73200 supports SO-DIMM memory slot for DDR2 SDRAM up to 2GB, and comes with 2 x SATA connectors on module. Other I/O functions like 2 COM ports, four USB 2.0 ports, one Parallel port, one Compact Flash socket, 8-bit GPIO, 24bits LVDS and two 10/100 Ethernet（Intel 82551QM） interface. Besides, MB-73200 supports both PCI and ISA signals. With only 96 mm x 116 mm board size, PM-7100 is the best solution for compact, fan-less industrial embedded applications devices.

For more product information, please visit our website www.win-ent.com or contact our sales representative at sales@win-ent.com.

1.2 Specifications

■ *System*

CPU	Intel® Atom™ processor Z5xx series Onboard Z530 SC 1.6GHz FSB 533MHz Z510 SC 1.1GHz FSB 400MHz
BIOS	AMI® 1MB SPI BIOS
System Chipset	Intel® System Controller Hub US15W
System Memory	1 x 200-pin socket supports DDR2 533/400* MHz max. up to 2GB w/o ECC registered *DDR2 533MHz for Z530 CPU, DDR2 400MHz for Z510 CPU*
SSD	50-pin CompactFlash™ type I/II
Watchdog Timer	255 levels timer interval, (1 ~ 255 seconds), setup by software. Jumper set up for system reset or IRQ
Expansion Interface	PC/104+ for both PCI & ISA signal* *LPC DMA not supported*
Battery	Lithium 3V/200mAH

■ *I/O*

I/O Chipset	Winbond® 83627EHG
I/O Interface	2 x SATA, 1 x CF, 1 x PS/2 KB/Mouse, 1 x RS-232, 1 x RS-232/422/485, 1 x LPT, 1 x IrDA
USB	4 x USB ports, USB 2.0 compliant
Audio (optional)	High definition audio interface (Optional IP-90340 daughter board)
GPIO	8-bit general purpose input/output

■ *Ethernet*

Chipset	Intel® 82551QM
Speed	10/100Mbps
Interface	2 x RJ-45
Standard	IEEE 802.3u (100Base-T) protocol compatible

■ *Display*

Chipset	Intel® System Controller Hub US15W
Memory Size	Max. up to 256MB sharing system memory
Resolution	CRT display mode: 2048 x 1536 x 32bpp (60 Hz); 1920 x 1440 x 32bpp (85Hz); 1600 x 1200 x 32bpp (100Hz) LCD display mode: 1024 x 768@16bpp (60Hz)
LCD/ LVDS Interface	18/24-bitTFT LCD
Dual Simultaneous Display	VGA + LCD

■ *Mechanical and Environment*

Dimensions (L x W)	96mm (L) x 116mm (W) (3.8" L x 4.6" W) PC/104+ Form Factor
Operating Temperature	0°C ~ 60°C (32°F ~ 140°F)
Operating Humidity	10% ~ 85% relative humidity, non-condensing
Storage Temperature	-20°C ~ 85°C (-4°F ~ 185°F)
Storage Humidity	5% ~ 95% relative humidity, non-condensing

■ *Power*

Power Supply Voltage	AT or ATX power, +5V ± 5%, +12V ± 5%
Power Consumption	8~12W

■ *Packing List*

- 1 x MB-73200
- 1 x CD
- 1 x Dual RJ45 connectors adaptor card   (p/n: IP-90380)
- 1 x LAN cable   (p/n: CB-ILAN04-00)
- 1 x ATX power cable   (p/n: CB-IPOW37-00)
- 1 x CB- ICOM01-00 (RS-232 cable)
- 1 x CB-IVGA04-00 (VGA cable)
- 1 x CB-IUSB01-00 (USB cable)
- 1 x CB-IPS266-00 (KB/MS cable)

1.3 Precautions

Please make sure you properly ground yourself before handling the MB-73200 board or other system components.   Electrostatic discharge can be easily damage the MB-73200 board.

Do not remove the anti-static packing until you are ready to install the MB-73200 board.

Ground yourself before removing any system component from it protective anti-static packaging.   To ground yourself, grasp the expansion slot covers or other unpainted parts of the computer chassis.

Handle the MB-73200 board by its edges and avoid touching its components.

1.4 Board Layout

1.5 Board Dimensions
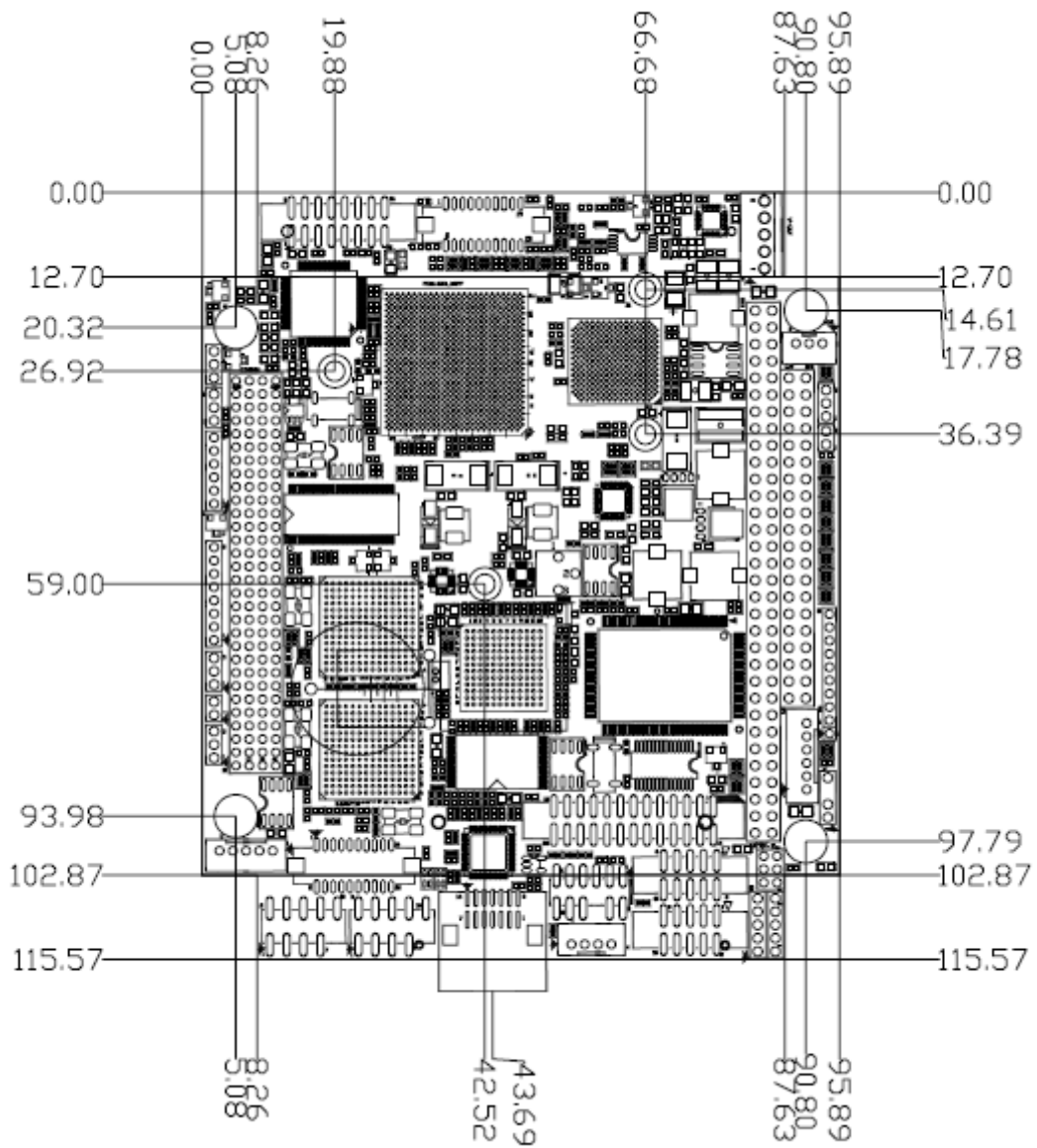
Component Side, m/m

Chapter 2.   Connector/Jumper Configuration

2.1 Location of Connectors
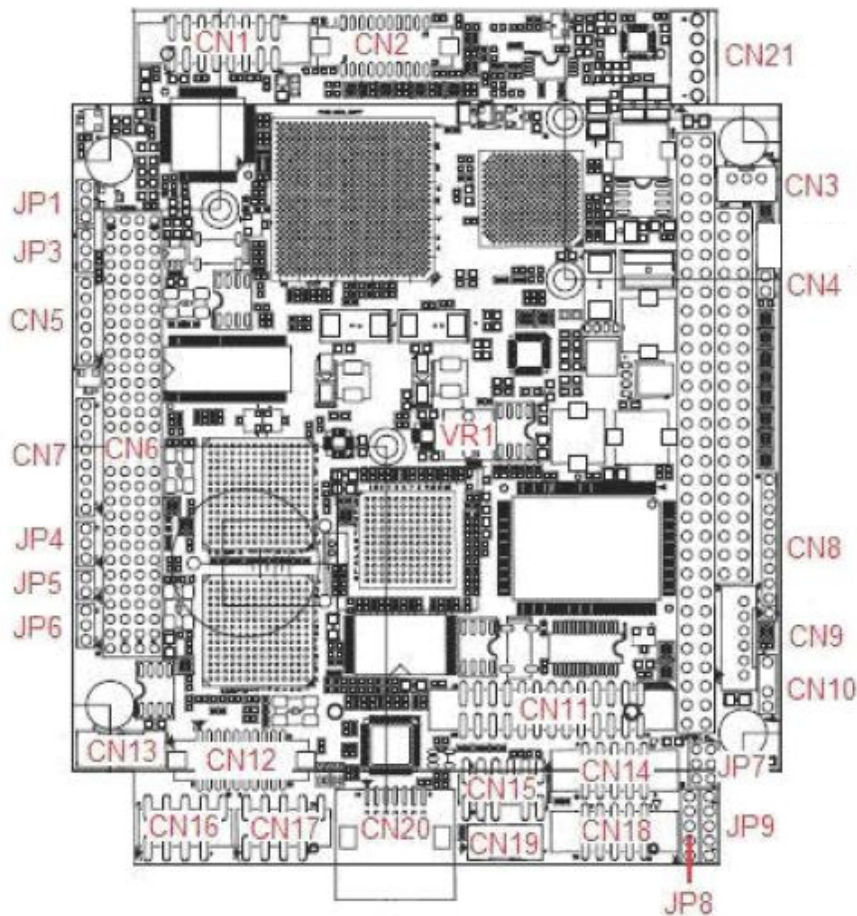
Connector	Define	Connector	Define
CN1	VGA connector	CN16	USB port 1/2
CN2	LVDS connector	CN17	USB port 3/4
CN3	ATX power connector	CN18	COM1 RS232
CN4	PS_ON Pin header	CN19	COM2 RS422/RS485
CN5	CPLD Pin header (reserved)	CN20	Dual SATA connector
CN6	PCI/104	CN21	Power connector
CN7	Power/HDD LED & Speaker	CN22	SO-DIMM
CN8	GPI/GPO Pin header	CN23	CF socket
CN9	KB/Mouse connector	CN24	Battery connector (reserved)
CN10	-5V/-12V power pin header	PC/104	PC/104 connector
CN11	LPT connector	VR1	LCD VR
CN12	Dual LAN connector		
CN13	LCD Inverter connector		

CN14	COM2 RS232		
CN15	HDA connector		

2.2 Connector Pin Assignment and Jumper Settings

CN21: Power Connector

Pin	Assignment
1	+5V
2	+5V
3	Ground
4	Ground
5	+12V

CN3: ATX Power Connector

Pin	Assignment
1	5V Standby
2	Ground
3	PS_On

CN4: ATX Power Button

Pin	Assignment
1	Power Button +
2	Power Button -

CN2: LVDS CONNECTOR
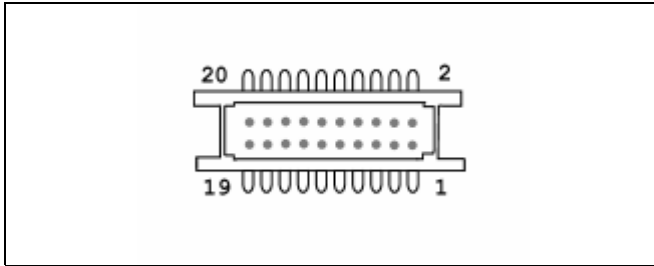
Pin	Define	Pin	Define
1	LVDS0_D0+	2	LVDS0_D0-
3	GND	4	GND
5	LVDS0_D1+	6	LVDS0_D1-
7	GND	8	PANEL POWER
9	LVDS0_D2+	10	LVDS0_D2-
11	LVDS0_CLK+	12	LVDS0_CLK-
13	GND	14	GND
15	LVDS0_D3+	16	LVDS0_D3-
17	NC	18	PANEL POWER
19	LCD_SDA	20	LCD_SCL
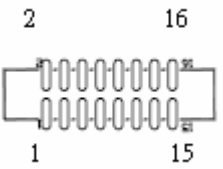
CN9: Keyboard/Mouse Connector

Pin	Assignment
1	KBCLK#
2	KBDATA#
3	MSCLK#
4	Ground
5	+5V
6	MSDATA#

CN18/CN14: COM1/COM2 RS232 Box Header

Pin	Assignment	Pin	Assignment
1	DCD	2	DSR
3	RXD	4	RTS
5	TXD	6	CTS
7	DTR	8	RI
9	Ground	10	NC
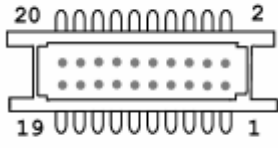
CN1: VGA Connector (Box Header)

Pin	Signal	Pin	Signal
1	RED	2	GREEN
3	BLUE	4	+5V
5	Ground	6	Ground
7	Ground	8	Ground
9	+5V	10	Ground
11	+5V	12	DDC Data
13	H-SYNC	14	V-SYNC
15	DDC Clock	16	NC
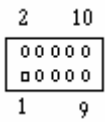
CN13: Flat Panel Inverter Connector

Pin	Assignment
1	+12V
2	Ground
3	FPBKLEN
4	VR
5	+5V

CN12: Dual LAN Connector
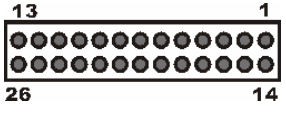
Pin	Signal	Pin	Signal
1	Lan1-Speed	2	Lan2-Speed
3	Lan1-Act	4	Lan2-Act
5	Lan1-Link	6	Lan2-Link
7	+3.3V	8	Ground
9	Lan-Ground	10	Lan-Ground
11	Lan1-TX+	12	Lan1-RX+
13	Lan1-TX-	14	Lan1-RX-
15	Ground	16	Ground
17	Lan2-TX+	18	Lan2-RX+
19	Lan2-TX-	20	Lan2-RX-

CN16/CN17: USB1&2/USB3&4 Connector (Pin Header)

Pin	Assignment	Pin	Assignment
1	+5V	2	+5V
3	Data0-	4	Data1-
5	Data0+	6	Data1+
7	Ground	8	Ground
9	Key Pin	10	Ground

CN11: Parallel Port Connector

Pin	Assignment	Pin	Assignment
1	STRPBE	14	AUTOFD
2	PD0	15	ERR
3	PD1	16	INIT
4	PD2	17	SLCTIN
5	PD3	18	Ground
6	PD4	19	Ground
7	PD5	20	Ground
8	PD6	21	Ground
9	PD7	22	Ground
10	ACK#	23	Ground
11	BUSY	24	Ground
12	PE	25	Ground
13	SLCT	26	Ground

```
13                    1
26                    14
```

CN19: COM2 –RS422/RS485 Connector(Pin Header)

Pin	Assignment
1	485RXD-
2	485RXD+
3	485TXD+
4	485TXD-

CN6: PC/104 Plus Connector

Signal	Pin	Signal	Pin	Signal	Pin	Signal	Pin
Ground	A1	NC	B1	+5V	C1	AD00	D1
VIO	A2	AD02	B2	AD01	C2	+5V	D2
AD05	A3	Ground	B3	AD04	C3	AD03	D3
C/BE0#	A4	AD07	B4	Ground	C4	AD06	D4
Ground	A5	AD09	B5	AD08	C5	Ground	D5
AD11	A6	VIO	B6	AD10	C6	M66EN	D6
AD14	A7	AD13	B7	Ground	C7	AD12	D7
+3.3V	A8	C/BE1#	B8	AD15	C8	+3.3V	D8
SERR#	A9	Ground	B9	SBO#	C9	PAR	D9
Ground	A10	PERR#	B10	+3.3V	C10	SDONE	D10
STOP#	A11	+3.3V	B11	LOCK#	C11	Ground	D11
+3.3V	A12	TRDY#	B12	Ground	C12	DEVSEL#	D12
FRAME#	A13	Ground	B13	IRDY#	C13	+3.3V	D13
Ground	A14	AD16	B14	+3.3V	C14	C/BE2#	D14
AD18	A15	+3.3V	B15	AD17	C15	Ground	D15
AD21	A16	AD20	B16	Ground	C16	AD19	D16
+3.3V	A17	AD23	B17	AD22	C17	+3.3V	D17
IDSEL0	A18	Ground	B18	IDSEL1	C18	IDSEL2	D18
AD24	A19	C/BE3#	B19	VIO	C19	IDSEL3	D19
Ground	A20	AD26	B20	AD25	C20	Ground	D20
AD29	A21	+5V	B21	AD28	C21	AD27	D21
+5V	A22	AD30	B22	Ground	C22	AD31	D22
REQ0#	A23	Ground	B23	REQ1#	C23	VIO	D23
Ground	A24	REQ2#	B24	+5V	C24	GNT0#	D24
GNT1#	A25	VIO	B25	GNT2#	C25	Ground	D25
+5V	A26	CLK0	B26	Ground	C26	CLK1	D26
CLK2	A27	+5V	B27	CLK3	C27	Ground	D27
Ground	A28	INTD#	B28	+5V	C28	RST#	D28
+12V	A29	INTA#	B29	INTB#	C29	INTC#	D29
-12V	A30	NC	B30	NC	C30	Ground	D30
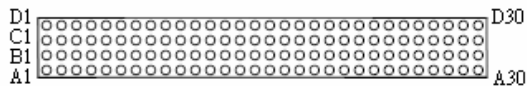
PC/104 Connector:

It is a standard PC/104 bus connector, and it is fully occupied with the signals of the "ISA" (PC/AT) bus.   It offers full architecture, hardware and software compatibility with the ISA bus and can accept ultra-compact (3.6" x 3.8") stackable modules.

Signal	Pin	Signal	Pin	Signal	Pin	Signal	Pin
Ground	C0	Ground	D0	IOCHCHK	A1	Ground	B1
SBHE*	C1	MEMCS16*	D1	SD7	A2	RESET	B2
LA23	C2	IOSC16*	D2	SD6	A3	+5V	B3
LA22	C3	IRQ10	D3	SD5	A4	IRQ9	B4
LA21	C4	IRQ11	D4	SD4	A5	-5V	B5
LA20	C5	IRQ12	D5	SD3	A6	NC	B6
LA19	C6	IRQ15	D6	SD2	A7	-12V	B7
LA18	C7	IRQ14	D7	SD1	A8	0 wait state	B8
LA17	C8	NC	D8	SD0	A9	+12V	B9
MEMR*	C9	NC	D9	IOCHRDY	A10	NC	B10
MEMW*	C10	NC	D10	AEN	A11	SMEMW#	B11
SD8	C11	NC	D11	SA19	A12	SMEMR*	B12
SD9	C12	NC	D12	SA18	A13	IOW*	B13
SD10	C13	NC	D13	SA17	A14	IOR*	B14
SD11	C14	NC	D14	SA16	A15	NC	B15
SD12	C15	NC	D15	SA15	A16	NC	B16
SD13	C16	+5V	D16	SA14	A17	NC	B17
SD14	C17	MASTER*	D17	SA13	A18	NC	B18
SD15	C18	Ground	D18	SA12	A19	REFRESH*	B19
NC	C19	Ground	D19	SA11	A20	SYSCLK	B20
				SA10	A21	IRQ7	B21
				SA9	A22	IRQ6	B22
				SA8	A23	IRQ5	B23
				SA7	A24	IRQ4	B24
				SA6	A25	IRQ3	B25
				SA5	A26	NC	B26
				SA4	A27	TC	B27
				SA3	A28	BALE	B28
				SA2	A29	+5V	B29
				SA1	A30	OSC	B30
				SA0	A31	Ground	B31
				Ground	A32	Ground	B32

CF Socket:

CompactFlash™ is a very small removable mass storage device; it provides complete PCMCIA-ATA functionality and compatibility pluse TrueIDE functionality compatible with ATA/ATAPI-4.
CompactFlash storage products are solid state, meaning they contain no moving parts, and provide users with much greater protection of their data than conventional magnetic disk device.

Pin	Assignment	Pin	Assignment	Pin	Assignment	Pin	Assignment	Pin	Assignment
1	Ground	11	Ground	21	D00	31	D15	41	RESET
2	D03	12	Ground	22	D01	32	CS	42	ORDY
3	D04	13	VCC	23	D02	33	NC	43	NC
4	D05	14	Ground	24	WP	34	IOR	44	REG
5	D06	15	Ground	25	NC	35	IOW	45	LED
6	D07	16	Ground	26	NC	36	WE	46	BVD
7	CS	17	Ground	27	D11	37	RDY/BSY	47	D08
8	Ground	18	A02	28	D12	38	VCC	48	D09
9	Ground	19	A01	29	D13	39	SCSE;	49	D10
10	Ground	20	A00	30	D14	40	NC	50	Ground
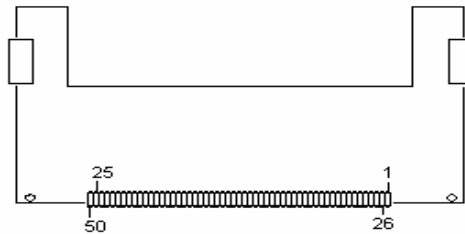
2.3 Location of Jumpers
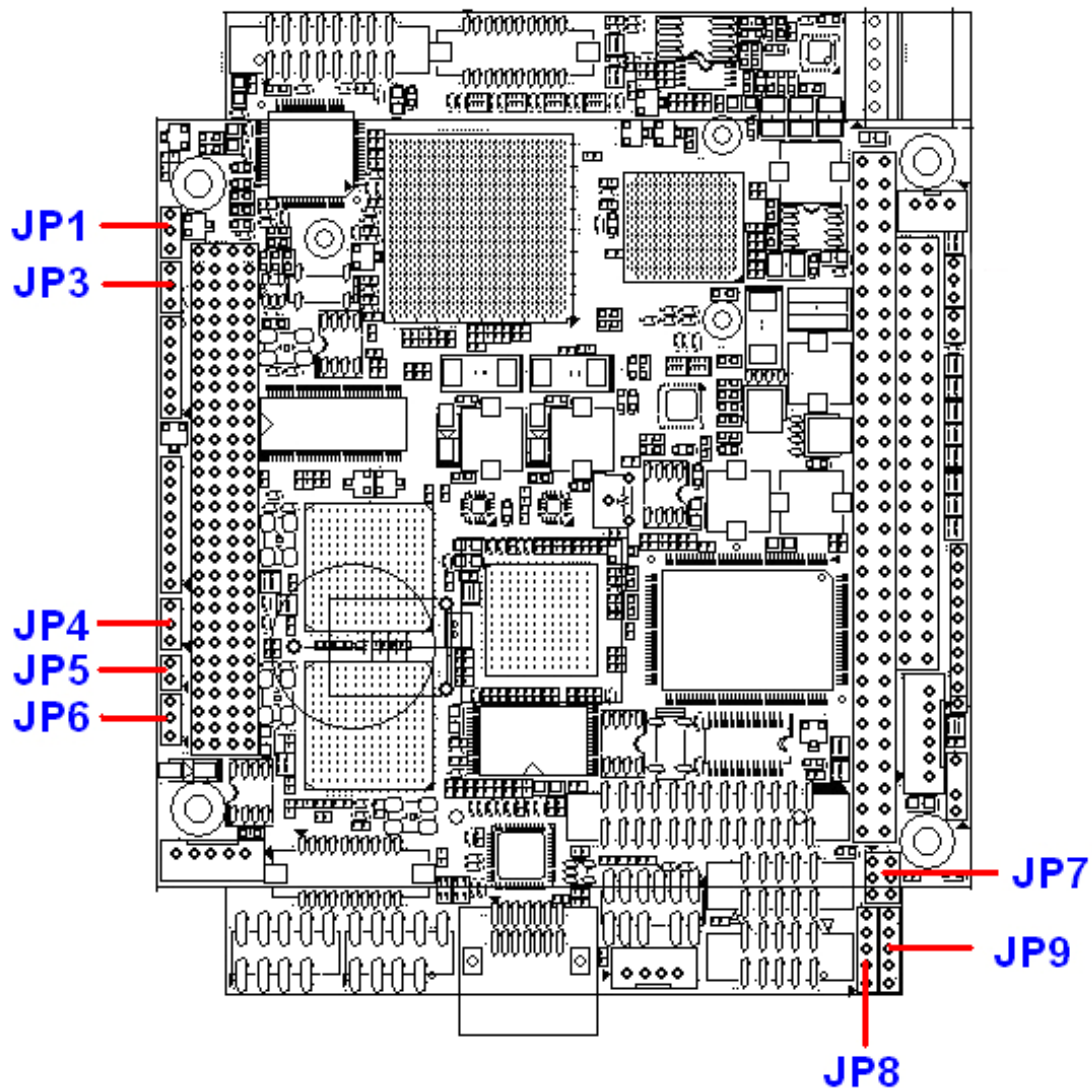
Connector	Define
JP1	LVDS VCC Select
JP3	CMOS Clear
JP4	WatchDog Timer Mode Select
JP5	CF Master/Slave Mode Select
JP6	PCI VIO Select
JP7	COM2 RS232/422/485 Select
JP8	COM1 RI/Voltage Select

JP1: LVDS VCC Select.
1-2 : +3.3V (Default)
2-3 : +5V

JP3: CMOS Clear
1-2 : Hold CMOS(Default)
2-3 : Clear CMOS

JP4: WatchDog Timer Mode Select
1-2 : IRQ11
2-3 : Reset(Default)

JP5: CF Master/Slave Mode Select
1-2 : Master(Default)
Open: Slave

JP6: PCI VIO Select
1-2 : +3.3V(Default)
2-3 : +5V

JP7: COM2 RS232/422/485 Select
1-2 : RS232(Default)
3-4 : RS422
5-6 : RS485

JP8: COM1 RI/Voltage Select
1-2 : Ring(Default)
2-3 : +5V
3-4 : +5V
4-5 : +12V

JP9: COM2 RI/Voltage Select
1-2 : Ring(Default)
2-3 : +5V
3-4 : +5V
4-5 : +12V

Chapter 3.   BIOS Setup

3.1 Entering the CMOS Setup Program

Use the CMOS Setup program to modify the system parameters to reflect the options installed in your system and to customize your system.   For example, you should run the Setup program after you:

1. Received an error code at startup
2. Install another disk drive
3. Use your system after not having used it for a long time
4. Find the original setup missing
5. Replace the battery
6. Change to a different type of CPU
7. Run the Flash program to update the system BIOS

Run the CMOS Setup program after you turn on the system.   On-screen instructions explain how to use the program.

Enter the CMOS Setup program's main menu as follows:
1. Turn on or reboot the system. After the BIOS performs a series of diagnostic checks, the following message appears:
    "Press DEL to enter SETUP"
2. Press the <DEL> key to enter CMOS Setup program.   The main menu appears:

```
                          BIOS SETUP UTILITY
 Main    Advanced    PCIPnP    Boot    Security    Chipset    Exit

 System Overview                              Use [ENTER], [TAB]
 _____             or [SHIFT-TAB] to
 AMIBIOS                                       select a field.
 Version    :08.00.15
 Build Date:09/11/09                          Use [+] or [-] to
 ID         :71100009                         configure system Time.

 Processor


 Speed      :255MHz
 Count      :255

 System Memory                                ←     Select Screen
 Size       :1019MB                           ↑↓    Select Item
                                              +-    Change Field
 System Time               [14:12:57]         Tab   Select Field
 System Date               [Fri 09/11/2009]   F1    General Help
                                              F10   Save and Exit
 CMC Lo-Module:0D2.025x,  Hi-Module:0D2.017x  ESC   Exit


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```

3. Choose a setup option with the arrow keys and press <Enter>. See the following sections for a brief description of each setup option.

   AMIBIOS: Displays the auto-detected BIOS information.
   Processor: Displays the auto-detected CPU specification.
   System Memory: Displays the auto-detected system memory.
   SystemTime: [hour:min:sec]
   This item allows you to set the system time.
   System Date: [Day mm/dd/yyyy]
   This item allows you to set the system date.

In the main menu, press F10 ("Save Changes and Exit") to save your changes and reboot the system. Choosing "Discard Changes and Exit" ignores your changes and exits the program. Pressing <ESC> anywhere in the program returns you to the main menu.

3.2 Menu Options

The main menu options of the CMOS Setup program are described in the following and the following sections of this chapter.

Main: For changing the basic system configurations.

Advanced: For changing the advanced system settings.

PCIPnP: For changing the advanced PCI/PnP Settings.

Boot: For changing the system boot configurations.

Security: Use this menu to set User and Supervisor Passwords.

Chipset: For changing the chipset settings.

Exit: For selecting the exit options and loading default settings.

3.3 Advanced Menu

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

⇓ **Use the Advanced Setup option as follows:**

1. Choose "Advanced" from the main menu.   The following screen appears:

```
                         BIOS SETUP UTILITY
   Main    Advanced    PCIPnP    Boot    Security    Chipset    Power    Exit

   Advanced Settings                                Configure CPU.

   WARNING: Setting wrong values in below sections
            may cause system to malfunction.

   ▶ CPU Configuration
   ▶ IDE Configuration
   ▶ SuperIO Configuration
   ▶ Hardware Health Configuration
   ▶ ACPI Configuration
   ▶ Event Log Configuration
   ▶ MPS Configuration
   ▶ PCI Express Configuration        ↔     Select Screen
   ▶ Remote Access Configuration      ↑↓    Select Item
   ▶ USB Configuration                Enter Go to Sub Screen
                                      F1    General Help
                                      F10   Save and Exit
                                      ESC   Exit


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```

2. Use the arrow keys to move between fields.   Modify the selected field using the PgUP/PgDN/+/- keys.   Some fields let you enter numeric values directly.

3. After you have finished with the Advanced setup, press the <ESC> key to return to the main menu.

3.3.1 CPU Configuration
This sub menu shows the CPU-related information which is automatically detected by BIOS.

```
                        BIOS SETUP UTILITY
    Advanced

  Configure advanced CPU settings              Disabled for WindowsXP
  Module Version:3F.11

  Manufacturer:Intel

  Frequency    :1.59GHz
  FSB Speed    :533MHz
  Cache L1     :0 KB
  Cache L2     :0 KB
  Ratio Actual Value:12

  Max CPUID Value Limit        [Disabled]
  Intel(R) Virtualization Tech [Enabled]       ←      Select Screen
  Execute-Disable Bit Capability [Enabled]     ↑↓     Select Item
  Hyper Threading Technology   [Enabled]       +-     Change Option
  Intel(R) SpeedStep(tm) tech  [Enabled]       F1     General Help
  Intel(R) C-STATE tech        [Disabled]      F10    Save and Exit
                                               ESC    Exit


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```

3.3.2 IDE Configuration
This sub menu allows you to set or change the configurations for the IDE devices installed in the system.

```
                        BIOS SETUP UTILITY
  Advanced

  IDE Configuration                              │        Options

  ATA/IDE Configuration        [Compatible]      │  Disabled
                                                 │  Compatible
  ▶ Primary IDE Master         : [Not Detected]
  ▶ Primary IDE Slave          : [Not Detected]

  Hard Disk Write Protect      [Disabled]
  IDE Detect Time Out (Sec)    [35]
  ATA(PI) 80Pin Cable Detection [Device]
  JMicron 36x ATA Controller   [IDE Mode]

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


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```

Primary * IDE Master
This information is auto-detected by BIOS and is not user-configurable. It will show "Not Detected" if no IDE device is installed in the system.

Primary IDE Slave
This information is auto-detected by BIOS and is not user-configurable. It will show "Not Detected" if no IDE device is installed in the system.

Following screens allow you to setup the parameters of IDE devices.

BIOS SETUP UTILITY

Advanced

Primary IDE Master

Device   :Not Detected

Type   [Auto]
LBA/Large Mode   [Auto]
Block (Multi-Sector Transfer)   [Auto]
PIO Mode   [Auto]
DMA Mode   [Auto]
S.M.A.R.T.   [Auto]
32Bit Data Transfer   [Enabled]

Select the type
of device connected
to the system.

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

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BIOS SETUP UTILITY

Advanced

Primary IDE Slave

Device   :Not Detected

Type   [Auto]
LBA/Large Mode   [Auto]
Block (Multi-Sector Transfer)   [Auto]
PIO Mode   [Auto]
DMA Mode   [Auto]
S.M.A.R.T.   [Auto]
32Bit Data Transfer   [Enabled]

Select the type
of device connected
to the system.

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

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3.3.3 Super IO Configuration

```
                    BIOS SETUP UTILITY
  Advanced

 Configure Win627EHF Super IO Chipset         Allows BIOS to Select
                                              Serial Port1 Base
 Serial Port1 Address        [3F8/IRQ4]       Addresses.
 Serial Port2 Address        [2F8/IRQ3]
   Serial Port2 Mode         [Normal]
 Parallel Port Address       [378]
   Parallel Port Mode        [Normal]
   Parallel Port IRQ         [IRQ7]


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



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```

Serial Port1 Address: [3F8/IRQ4]
Selects the Serial Port1 base address and IRQ.

Serial Port2 Address: [2F8/IRQ3]
Selects the Serial Port2 base address and IRQ.

Parallel Port Address: [378]
Selects the Parallel Port base addresses.
   Parallel Port Mode: [Normal]
   Selects the Parallel Port mode.
   Parallel Port IRQ: [IRQ7]
   Selects the Parallel Port IRQ.

3.3.4 Hardware Health Configuration
This screen shows you the CPU core voltage, System voltage, System temperature.

```
                          BIOS SETUP UTILITY
     Advanced

   Hardware Health Configuration

   System Temperature            :51°C/123°F


   Vcore                         :1.128 V
   +3.3V                         :3.312 V
   +12V                          :12.302 V
   +1.5V                         :1.520 V
   +5V                           :4.812 V



                                             ←     Select Screen
                                             ↑↓    Select Item
                                             F1    General Help
                                             F10   Save and Exit
                                             ESC   Exit




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```
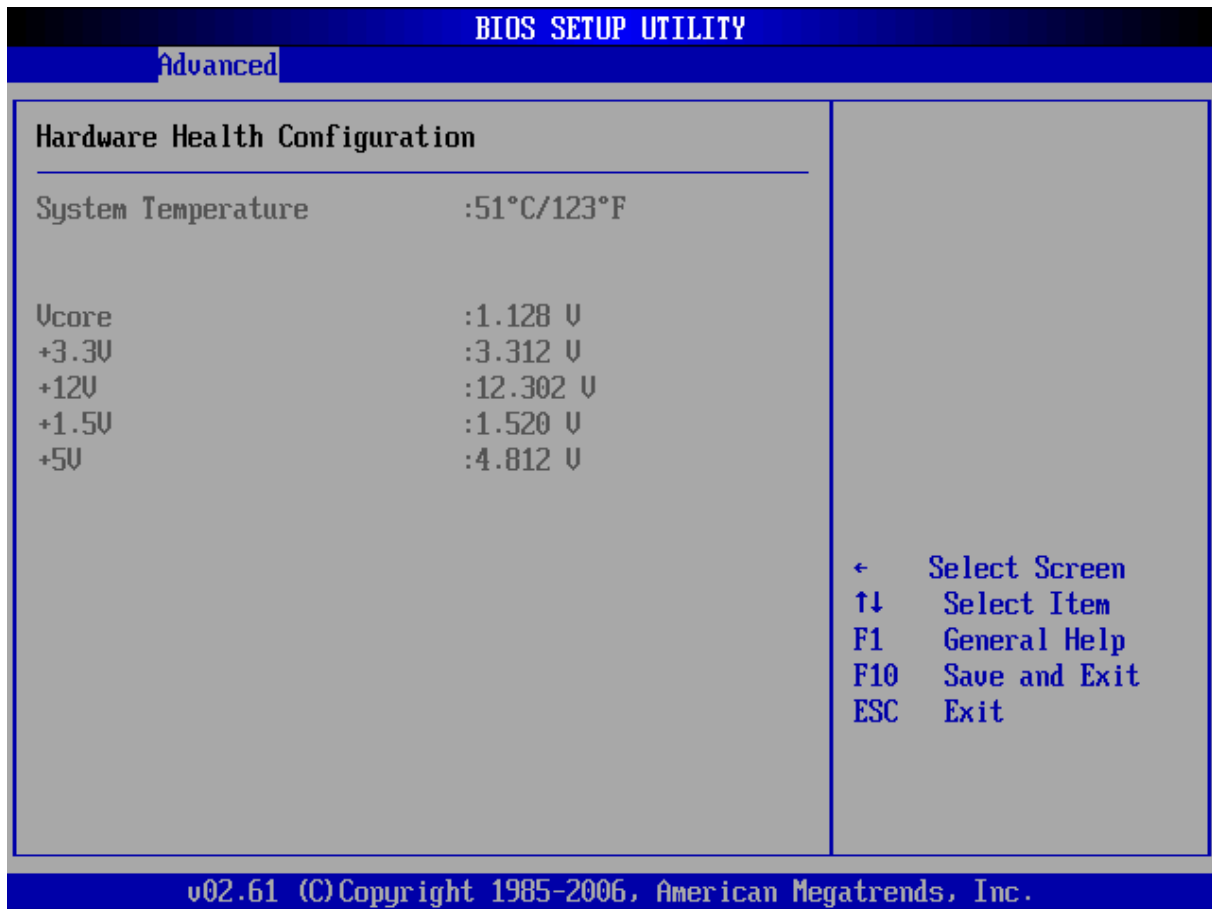
3.3.5 ACPI Configuration
This sub menu is used to change the settings for the ACPI.

```
                        BIOS SETUP UTILITY
   Advanced

 ACPI Settings                                   Enable / Disable
                                                 ACPI support for
 ACPI Aware O/S                [Yes]             Operating System.

 ▶ General ACPI Configuration                    ENABLE: If OS
 ▶ Advanced ACPI Configuration                   supports ACPI.
 ▶ Chipset ACPI Configuration
                                                 DISABLE: If OS
                                                 does not support
                                                 ACPI.


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



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```
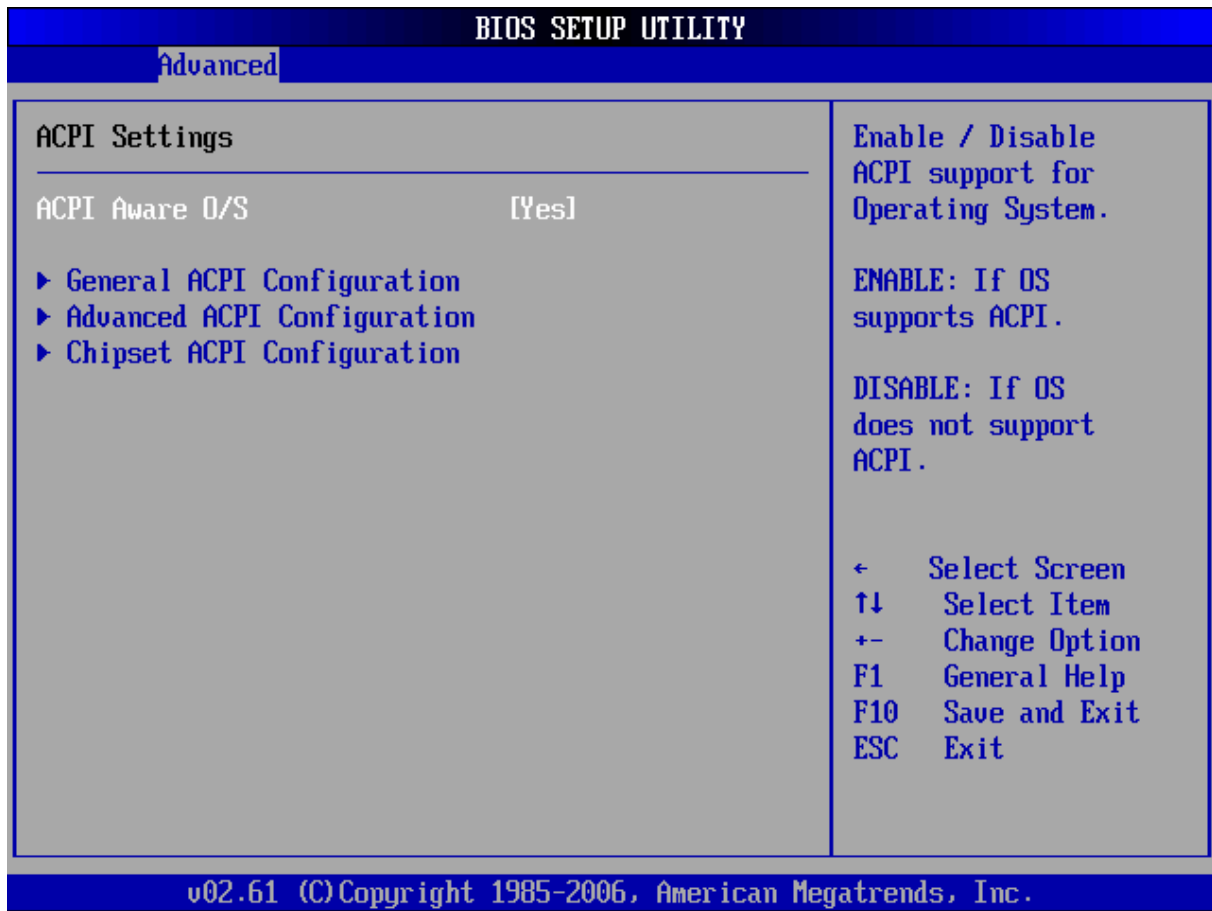
This sub menu is used to change the settings for the ACPI.

```
                        BIOS SETUP UTILITY
     Advanced

  General ACPI Configuration                          Select the ACPI
                                                      state used for
  Suspend mode               [S3 (STR)]               System Suspend.
  Repost Video on S3 Resume  [No]




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


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```

```
                        BIOS SETUP UTILITY
     Advanced

  Advanced ACPI Configuration                    Enable RSDP pointers
                                                 to 64-bit Fixed System
                                                 Description Tables. Di
  ACPI Version Features       [ACPI v3.0]        ACPI version has some
  ACPI APIC support           [Enabled]
  AMI OEMB table              [Enabled]
  Headless mode               [Disabled]


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


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```

Advanced ACPI Configuration:
This sub menu configures additional ACPI options. It contains below sub-menus:

ACPI Version Features: [ACPI v1.0]
This item allows you to enable or disable RSPD pointers to 64-bit Fixed System Description Tables.

ACPI APIC support: [Enabled]
This item allows you to enable or disable APIC features.

AMI OEMB table: [Enabled]
This item allows you to enable or disable OEMB features.

Headless mode: [Disabled]
This item allows you to enable or disable headless features.

```
                        BIOS SETUP UTILITY
    Advanced

 South Bridge ACPI Configuration                    Enable/Disable
 ──────────────────────────────────                 APIC ACPI SCI IRQ.
 APIC ACPI SCI IRQ              [Disabled]
 USB Device Wakeup From S3/S4   [Disabled]




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



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```
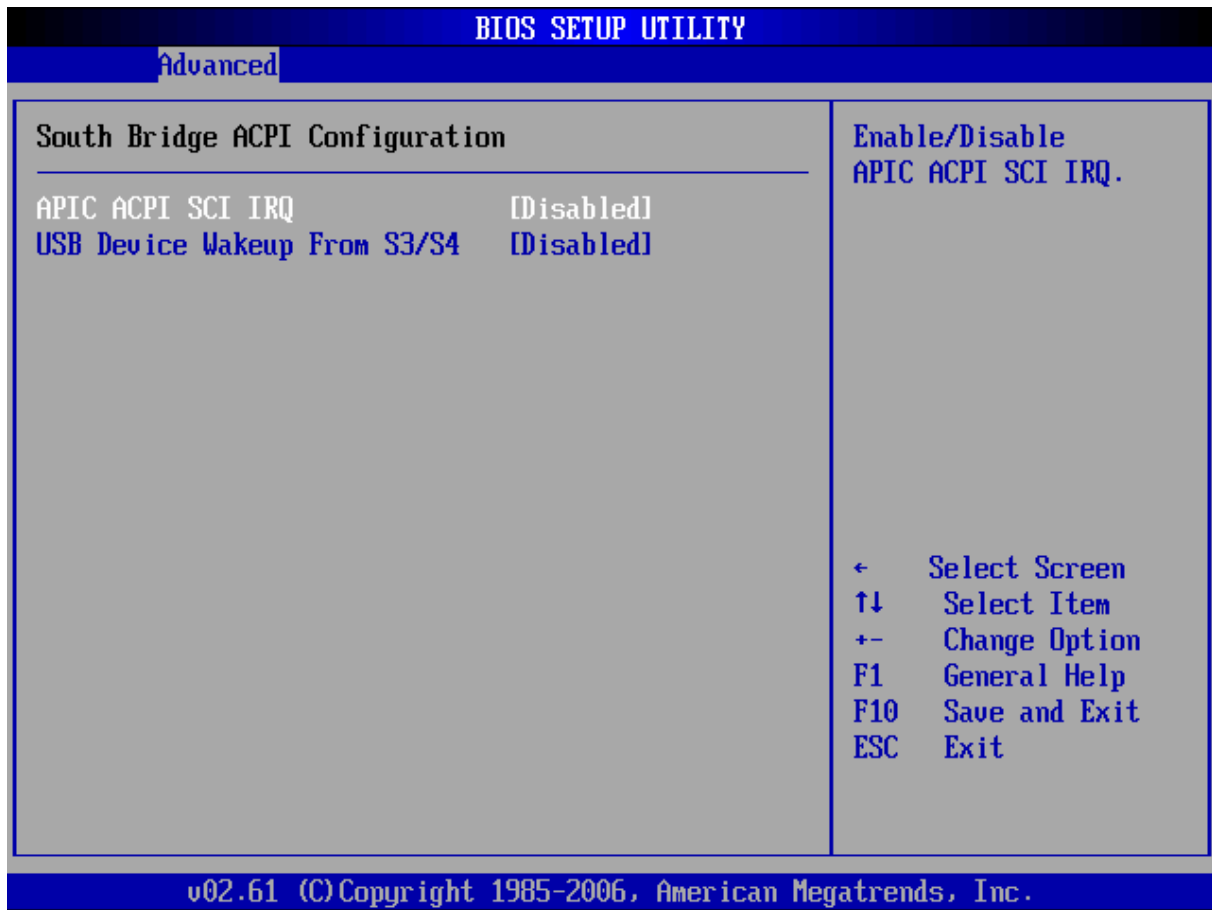
This sub menu is used to change the bridge settings for the ACPI.

3.3.6 H/W Health Function

This sub menu shows the CPU temperature:

```
                        BIOS SETUP UTILITY
      Advanced

H/W Health Function              [Enabled]          Enables Hardware
                                                    Health Monitoring
                                                    Device.
CPU Temperature Reading          :59°C/138°F




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


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```
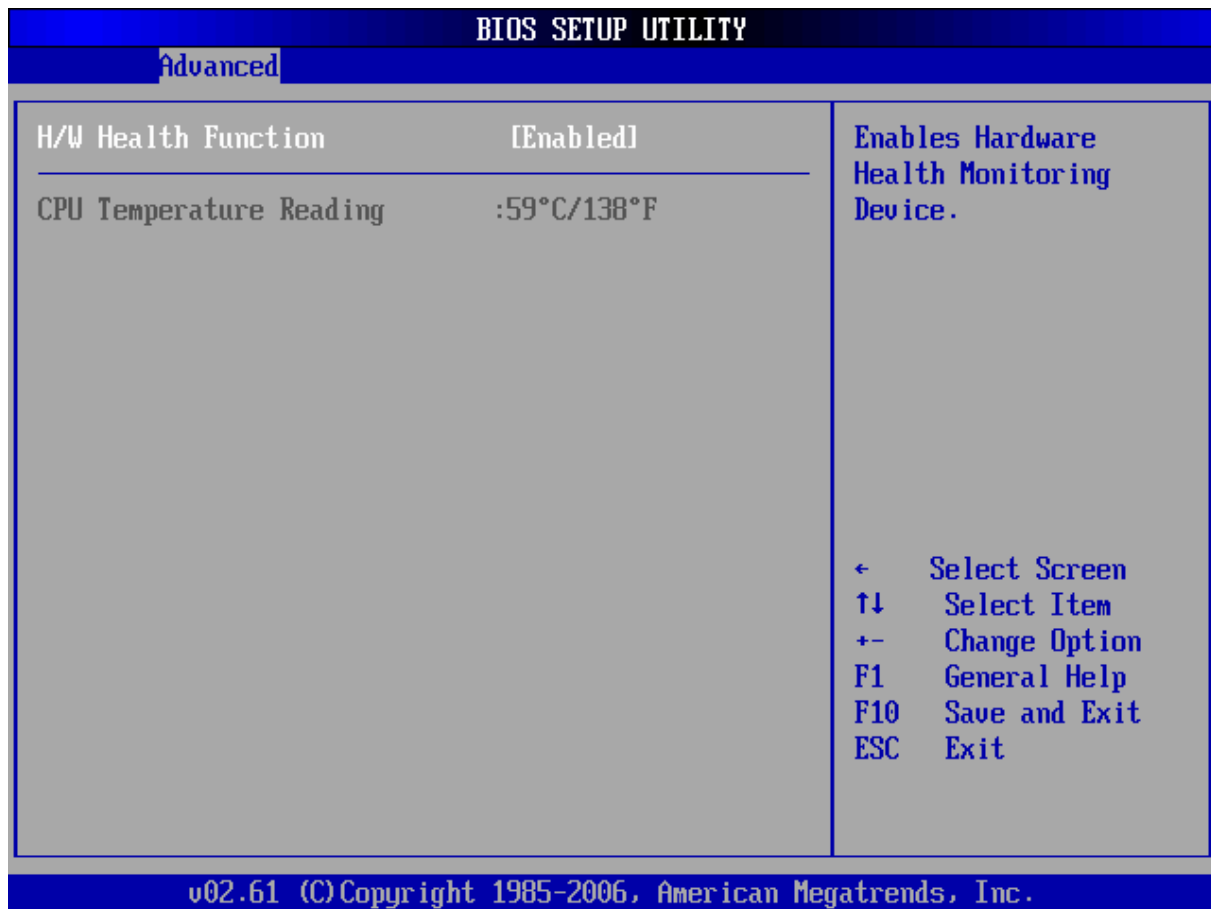
3.3.7 MPS Configuration

This sub menu allows you to select MPS Revision.

```
                       BIOS SETUP UTILITY
    Advanced

 MPS Configuration                              Select MPS
 ───────────────────────────                    Revision.
 MPS Revision              [1.4]




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



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```
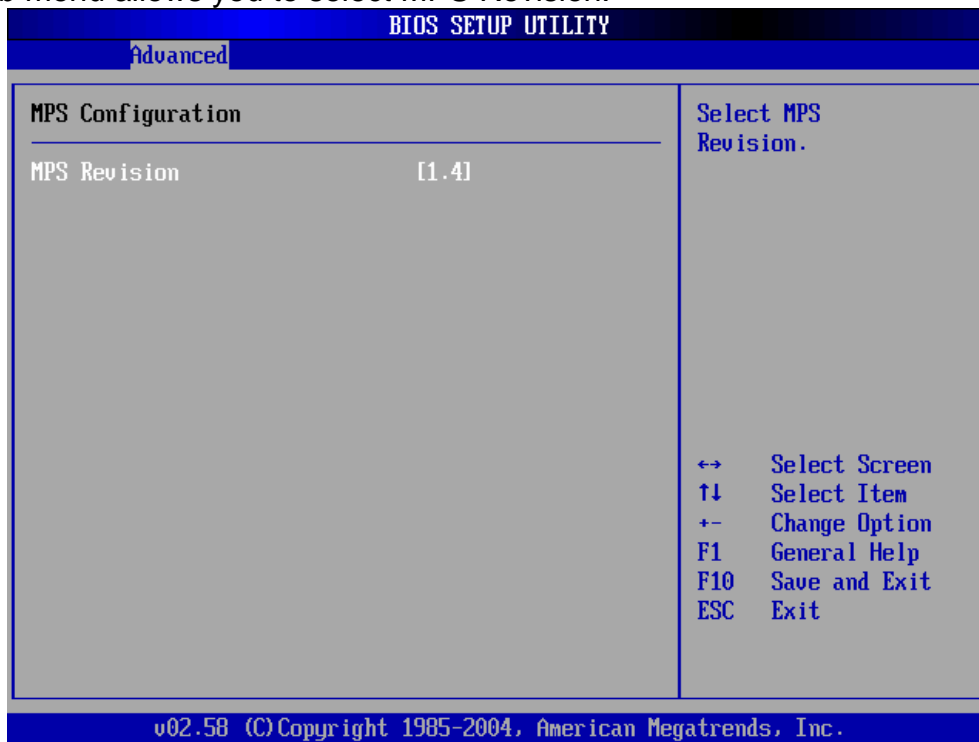
3.3.8 PCI Express Configuration
This sub menu allows you to enable or disable Active State Power-Management :

```
                      BIOS SETUP UTILITY
   Advanced

  PCI Express Configuration                    Enable/Disable
  ──────────────────────────────────          PCI Express L0s and
  Active State Power-Management   [Enabled]    L1 link power
                                               states.




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


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```
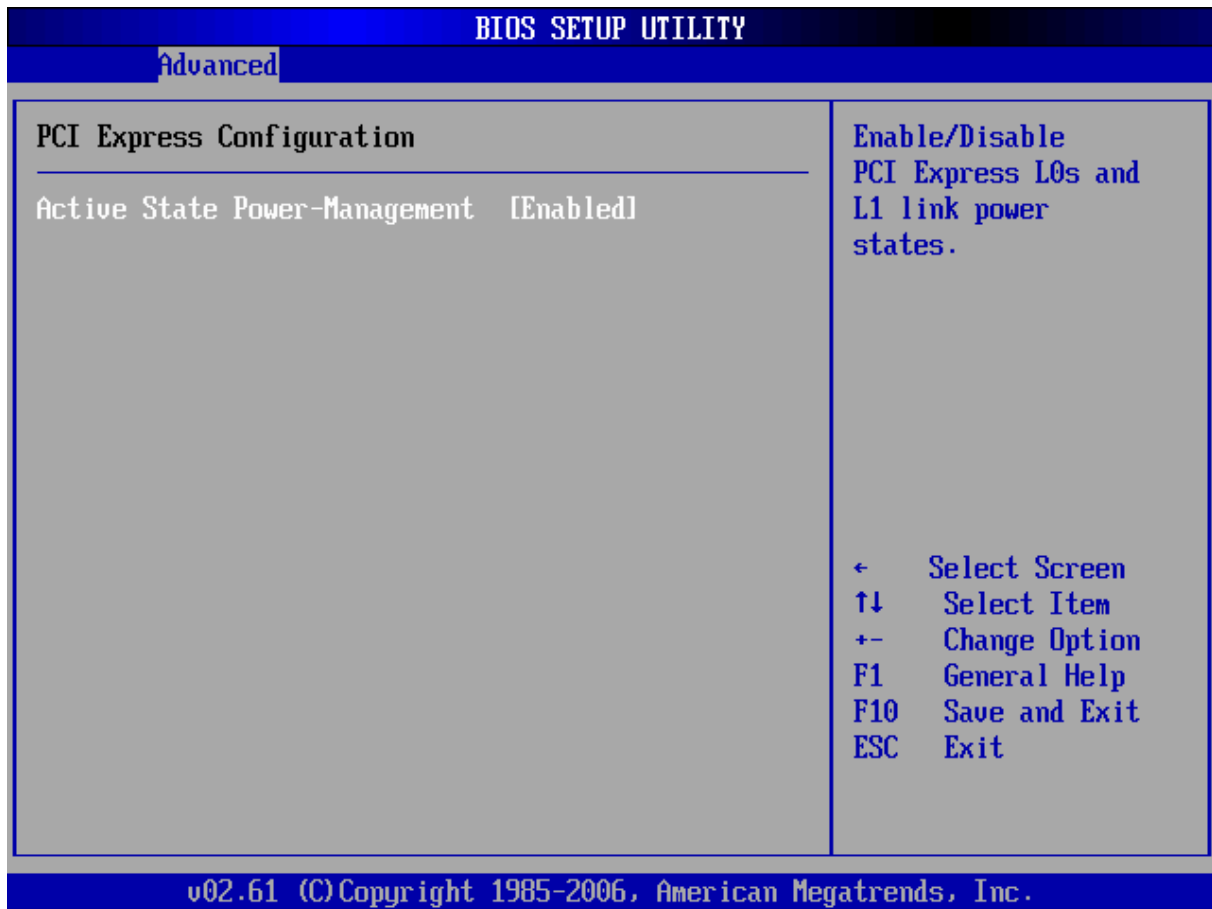
3.3.9 Smbios Configuration

This sub menu allows you to enable or disable Smbios :

3.3.10 USB Configuration

This sub menu allows you to change the USB-related features.

```
                        BIOS SETUP UTILITY
  Advanced

  USB Configuration                              Enables support for
  ─────────────────────────                      legacy USB. AUTO
  Module Version - 2.24.3-13.4                   option disables
                                                 legacy support if
  USB Devices Enabled :                          no USB devices are
   4 Drives                                      connected.

  Legacy USB Support            [Enabled]
  USB 2.0 Controller Mode       [HiSpeed]
  BIOS EHCI Hand-Off            [Enabled]

  ▶ USB Mass Storage Device Configuration
                                                 ←      Select Screen
                                                 ↑↓     Select Item
                                                 +-     Change Option
                                                 F1     General Help
                                                 F10    Save and Exit
                                                 ESC    Exit


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```
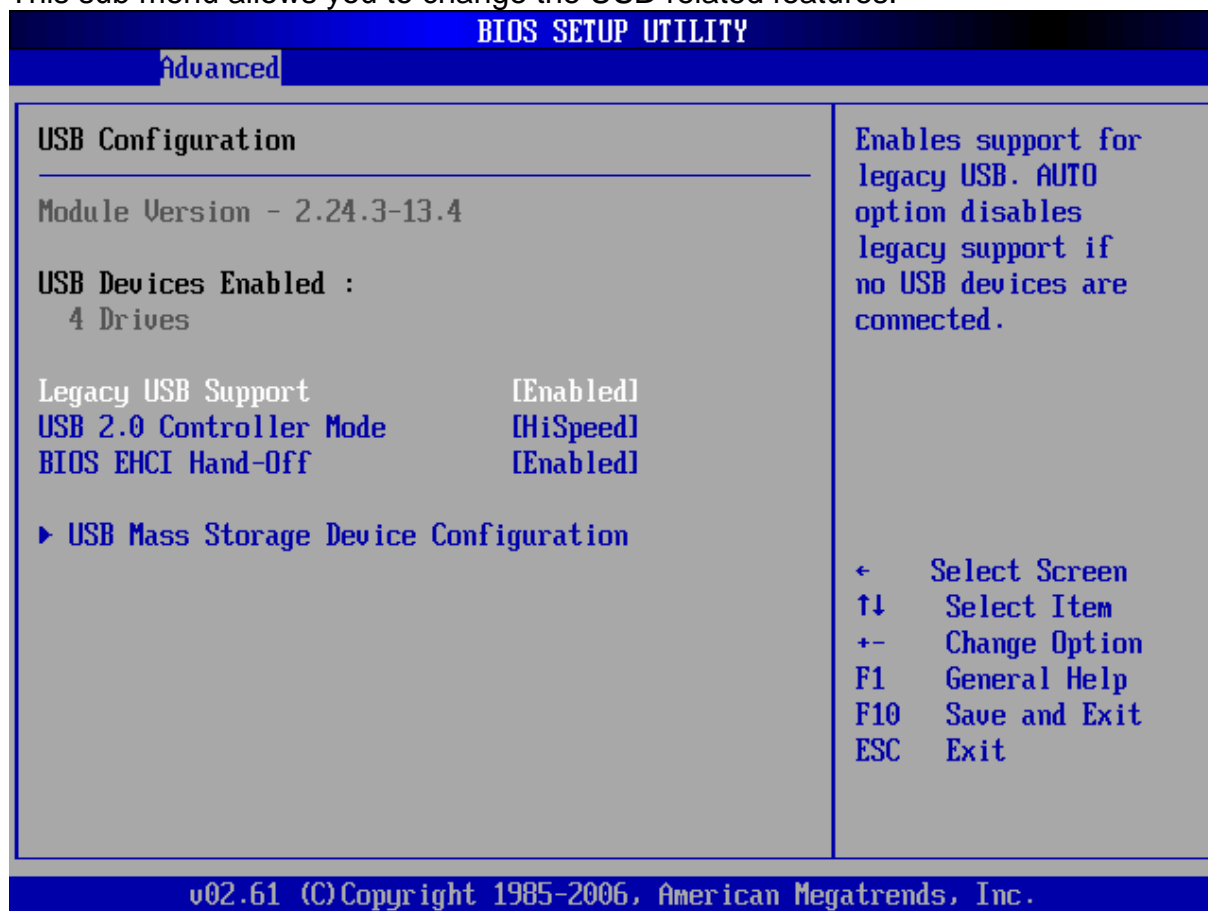
Legacy USB Support: [Enabled]
Enables support for legacy USB. AUTO option disables legacy support if no USB devices are connected.

USB 2.0 Controller Mode: [FullSpeed]
This item allows you to configure the USB 2.0 controller in HiSpeed(480Mbps) or FullSpeed(12Mbps).

BIOS EHCI Hand-Off
This item allows you to Enable/Disable BIOS EHCI Hand-Off

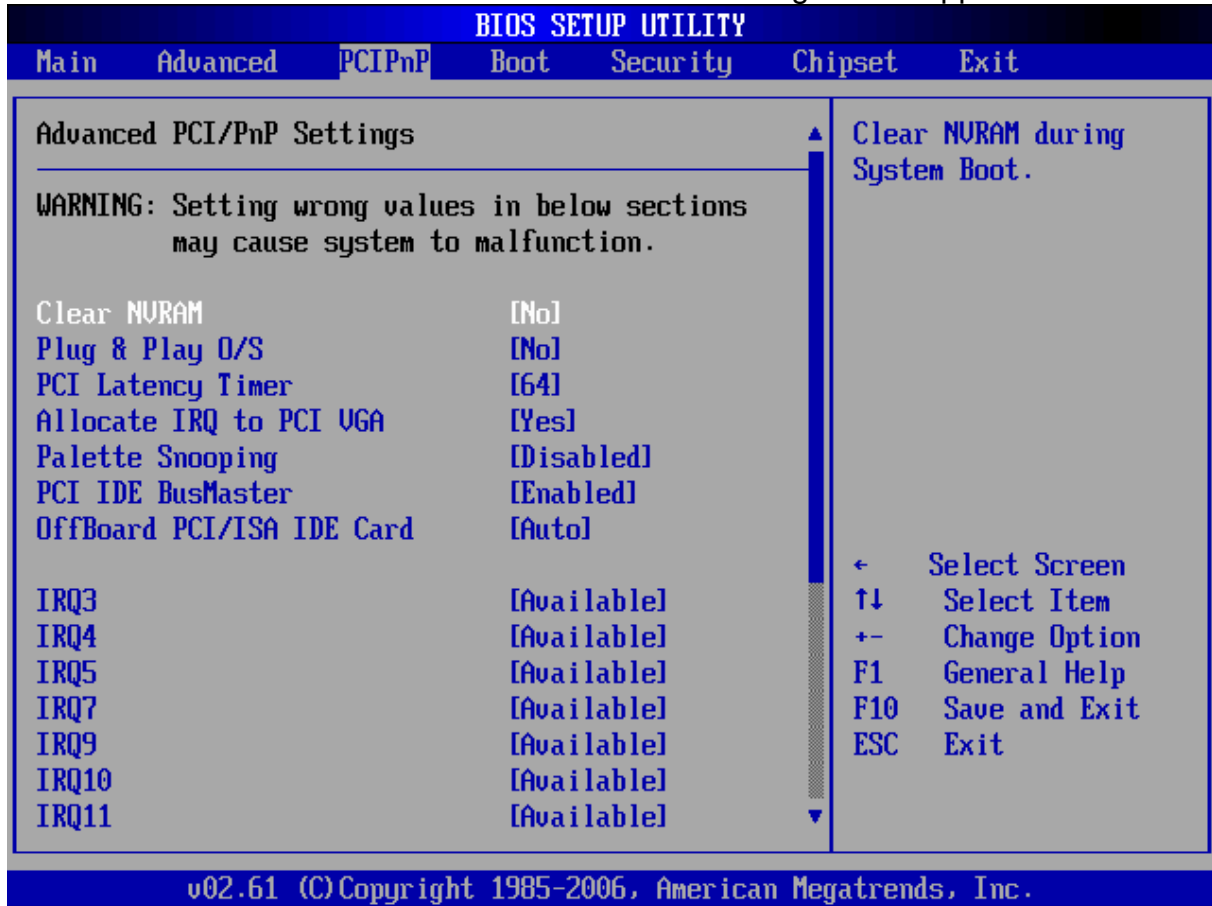**USB Mass Storage Device Configuration**
This item allows you to configure USB Mass Storage Device

3.4 PCIPnP Menu

This PCIPnP menu items allow you to change the settings for the advanced PCI/PnP.

⇩ **Use the PCIPnP Setup option as follows:**
Ⅰ. Choose "PCIPnP" from the main menu. The following screen appears:

```
                    BIOS SETUP UTILITY
  Main    Advanced    PCIPnP    Boot    Security    Chipset    Exit

  Advanced PCI/PnP Settings                    ▲    Clear NVRAM during
                                                    System Boot.
  WARNING: Setting wrong values in below sections
           may cause system to malfunction.

  Clear NVRAM                  [No]
  Plug & Play O/S              [No]
  PCI Latency Timer            [64]
  Allocate IRQ to PCI VGA      [Yes]
  Palette Snooping             [Disabled]
  PCI IDE BusMaster            [Enabled]
  OffBoard PCI/ISA IDE Card    [Auto]
                                                    ←      Select Screen
  IRQ3                         [Available]          ↑↓     Select Item
  IRQ4                         [Available]          +-     Change Option
  IRQ5                         [Available]          F1     General Help
  IRQ7                         [Available]          F10    Save and Exit
  IRQ9                         [Available]          ESC    Exit
  IRQ10                        [Available]
  IRQ11                        [Available]   ▼

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```

2. Use the arrow keys to move between items and to select values. Modify the selected fields using the PgUP/PgDN keys. Press the <F1> "Help" key for information on the available options:

3. After you have finished with the PCIPnP Setup, press the <ESC> key to return to the main menu.

Clear NVRAM
This item allows you to clear the BIOS setting

Plug & Play O/S: [No]
No: lets the BIOS configure all the devices in the system.
Yes: lets the OS configure Plug & Play devices not required for boot if your system has a Plug & Play operating system.

PCI Latency Timer: [64]
This item allows you to select the value in units of PCI clocks for the PCI device latency timer register. This setting controls how many PCI clocks each PCI device can

hold the bus before another PCI device takes over.

Allocate IRQ to PCI VGA: [Yes]
BIOS assigns an IRQ to PCI VGA card if the card requests for an IRQ.

Palette Snooping: [Disabled]
This item allows you to enable or disable the feature. 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 device can function correctly.

PCI IDE BusMaster: [Enabled]
This item allows you to enable or disable the feature.
Enable: BIOS uses PCI bus mastering for reading/writing to IDE devices.

OffBoard PCI/ISA IDE Card
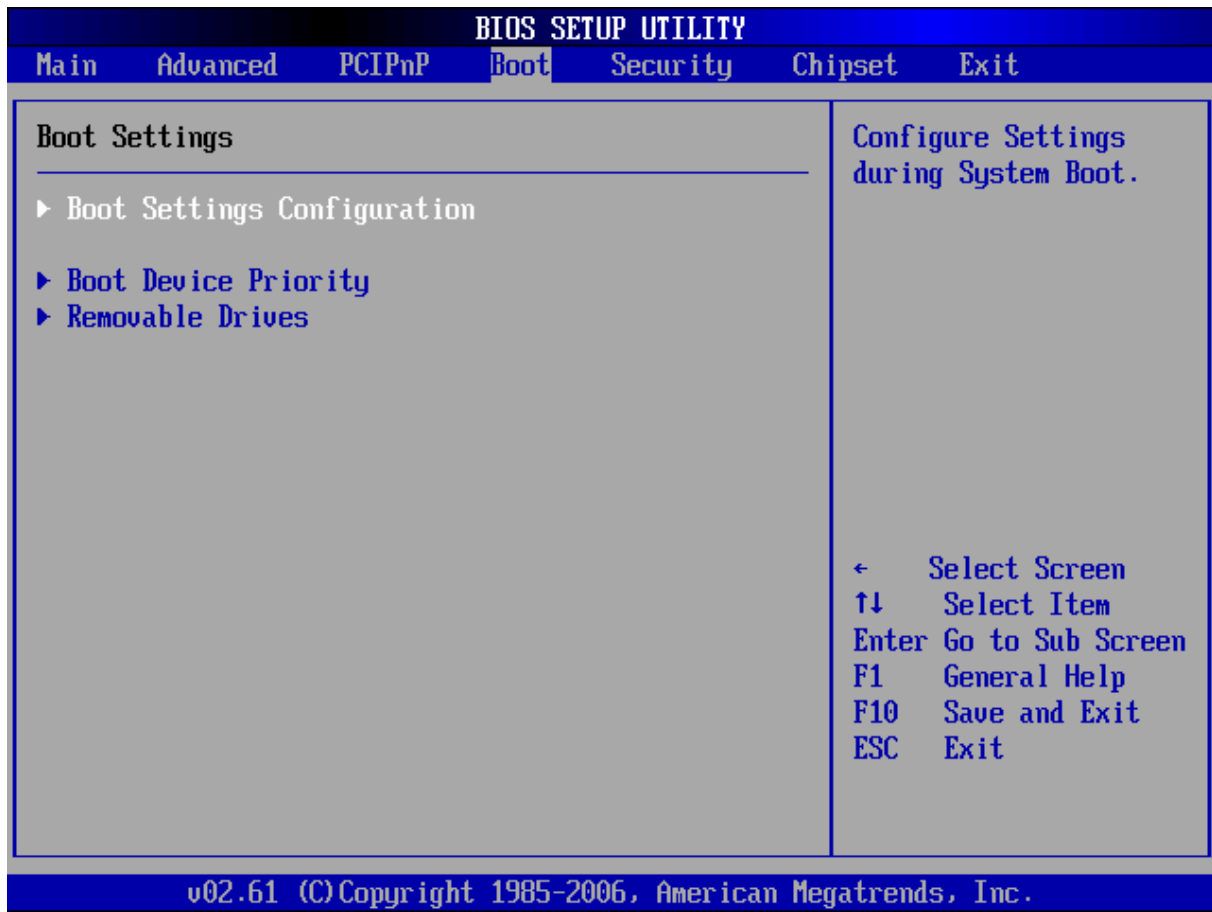This item allows you to configure the setting of OffBoard PCI/ISA IDE Card.

Reserved Memory Size: [Disabled]
This item allows you to select the reserved memory for legacy ISA devices.

3.5 Boot Menu

⇩ Use the Boot Setup option as follows:
    1. Choose "Boot" from the main menu.   The following screen appears:

```
                        BIOS SETUP UTILITY
  Main    Advanced    PCIPnP    Boot    Security    Chipset    Exit

  Boot Settings                                  Configure Settings
 ───────────────────────────────────            during System Boot.

 ▶ Boot Settings Configuration

 ▶ Boot Device Priority
 ▶ Removable Drives




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


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```
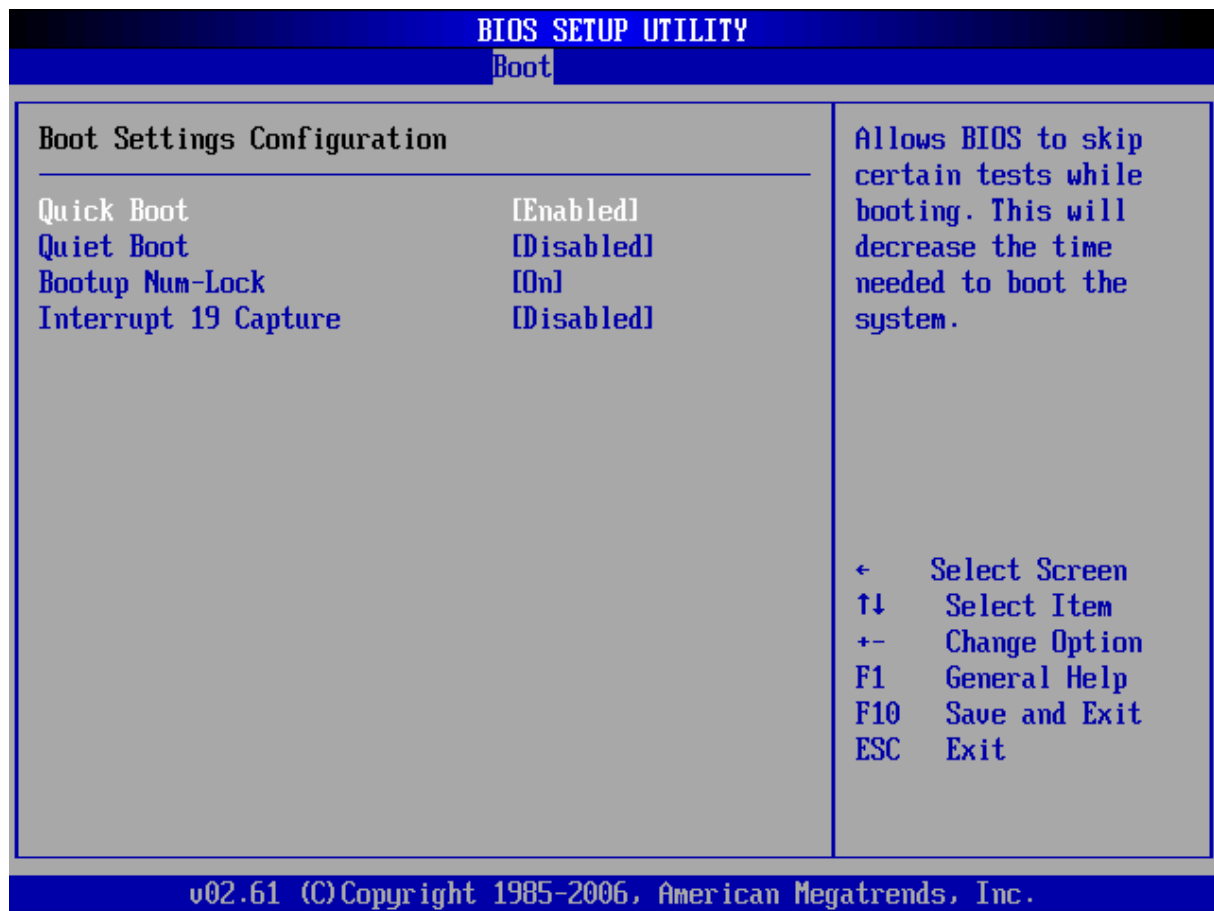
2. Move between items and select values by using the arrow keys. Modify the selected fields using the PnUP/PgDN Keys.   For information on the various options, press <F1> key .

3. After you have finished with the Boot setup, press the <ESC> key to return to the main menu.

3.5.1 Boot Settings Configuration
This item is used to configure system boot setting with below sub menus:

```
                    BIOS SETUP UTILITY
                         Boot

 Boot Settings Configuration              Allows BIOS to skip
 ─────────────────────────────           certain tests while
                                          booting. This will
 Quick Boot              [Enabled]        decrease the time
 Quiet Boot              [Disabled]       needed to boot the
 Bootup Num-Lock         [On]             system.
 Interrupt 19 Capture    [Disabled]




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



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```

Quick Boot: [Enabled]
This item allows BIOS to skip certain tests (POST, Power On Self Tests) while booting.
This will decrease the time needed to boot the system.

Quiet Boot: [Disabled]
This item allows you to enable or disable the full screen logo display feature.
Disabed: displays normal POST messages.

Bootup Num-Lock: [On]
Allows you to select the Power-on state for the Num-Lock.

Interrupt 19 Capture: [Disabled]
This item allows the option ROMs to trap Interrupt 19.

3.6 Security Menu

⇩ **Use the Security Setup option as follows:**
1. Choose "Security" from the main menu. The following screen appears:

```
                          BIOS SETUP UTILITY
  Main     Advanced    PCIPnP    Boot    Security    Chipset    Exit

  Security Settings                            Install or Change the
  _____         password.

  Supervisor Password :Not Installed
  User Password       :Not Installed

  Change Supervisor Password
  Change User Password
  Clear User Password

  Boot Sector Virus Protection   [Disabled]

                                               ←      Select Screen
                                               ↑↓     Select Item
                                               Enter  Change
                                               F1     General Help
                                               F10    Save and Exit
                                               ESC    Exit


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```

2. Move between items and select values by using the arrow keys. Modify the selected fields using the PgUP/PgDN keys. Please press the <F1> key for information on the various options.

3. After you have finished with the Security setup, press the <ESC> key to return to the main menu.

Change Supervisor Password:
This item allows you 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:
This item allows you 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.

Clear User Password:
This item allows you to clear the user password.

Boot Sector Virus Protection: [Disabled]
This item allows you to enable or disable the boot sector virus protection. If enabled, AMI BIOS will issue a warning when a virus or program attempts to write to the hard disk's boot sector or attempts to execute disk format command.
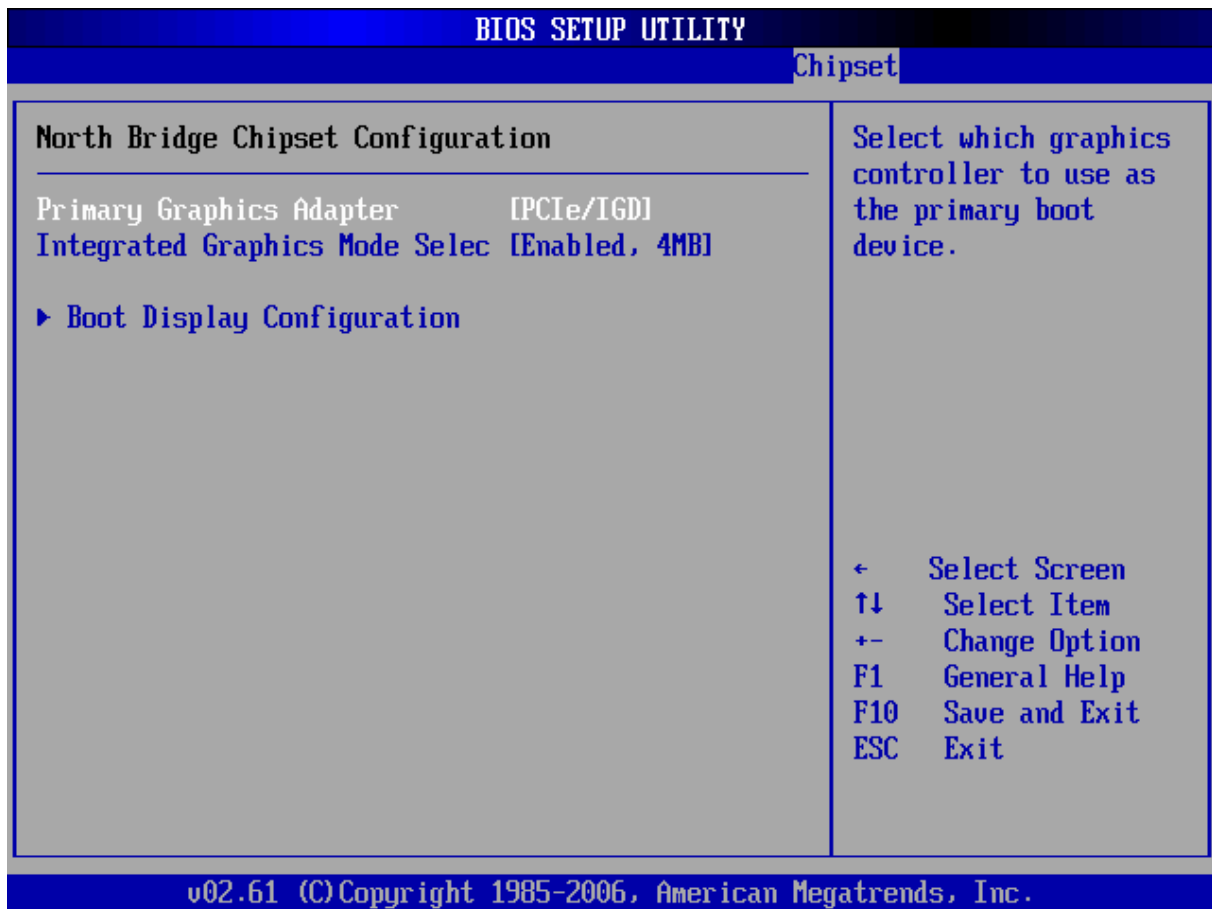
3.7 Chipset Menu

⇩ **Use the Chipset Setup option as follows:**

1. Choose "Chipset" from the main menu. The following screen appears.

```
                            BIOS SETUP UTILITY
  Main    Advanced    PCIPnP    Boot    Security   Chipset    Power    Exit

  Advanced Chipset Settings                        Configure North Bridge
                                                   features.
  WARNING: Setting wrong values in below sections
           may cause system to malfunction.

  ▶ North Bridge Configuration
  ▶ South Bridge Configuration




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




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```

2. Move between items and select values by using the arrow keys. Modify the selected field the PgUP/PgDN keys. For information on the various options, press <F1> key.

3. After you have finished with the Chipset Setup, press the <ESC> key to return to the main menu.

3.7.1 North Bridge Configuration

```
                         BIOS SETUP UTILITY
                                          Chipset

 North Bridge Chipset Configuration              Select which graphics
                                                 controller to use as
                                                 the primary boot
 Primary Graphics Adapter       [PCIe/IGD]       device.
 Integrated Graphics Mode Selec [Enabled, 4MB]

 ▶ Boot Display Configuration



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


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```

Primary Graphics Adapter: [PCIe/IGD]
This item allows you to set the graphic adapter.

Internal Graphics Mode Select : [Enabled, 4MB]
Select the amount of system memory used by the internal graphics device.

Boot Display Configuration
This item allows you to configure Boot Display Function.

3.7.2 South Bridge Configuration

```
                          BIOS SETUP UTILITY
                                          Chipset

 South Bridge Chipset Configuration                  Number of UCHI
 ──────────────────────────────────                  ports in system
 USB Functions              [6 USB Ports]             ECHI ONLY is
 USB 2.0 Controller         [Enabled]                 automatically
 USB Client Controller      [Disabled]                added.
 SDIO Controller            [Enabled]
 Audio Controller Codec     [Auto]

 Reserved Page Route        [LPC]
 SLP_S4# Min. Assertion Width  [1 to 2 seconds]
 Restore on AC Power Loss   [Last State]
 Serial IRQ Mode            [Quiet]
                                            ←    Select Screen
 PCIE Ports Configuration                   ↑↓   Select Item
   PCIE Port 0              [Auto]           +-   Change Option
   PCIE Port 1              [Auto]           F1   General Help
                                            F10  Save and Exit
                                            ESC  Exit



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```

USB Functions: [6 USB Ports]
This item allows you to setup the USB ports.

USB 2.0 Controller: [Enabled]
This item allows you to enable or disable the USB 2.0 controller.

USB Client Controller: [Disabled]
This item allows you to enable or disable the USB Client controller.

SDIO Controller: [Enabled]
This item allows you to enable or disable the SDIO controller.

Audio Controller Codec: [Auto]
This item allows you to enable or disable the Audio controller.

Reserved Page Route: [LPC]
This item allows you to setup the reserved page route.

Restore on AC Power Loss: [Last State]
This item allows you to setup the restore on AC power loss.

Serial IRQ Mode: [Quiet]

This item allows you to setup the serial IRQ mode.
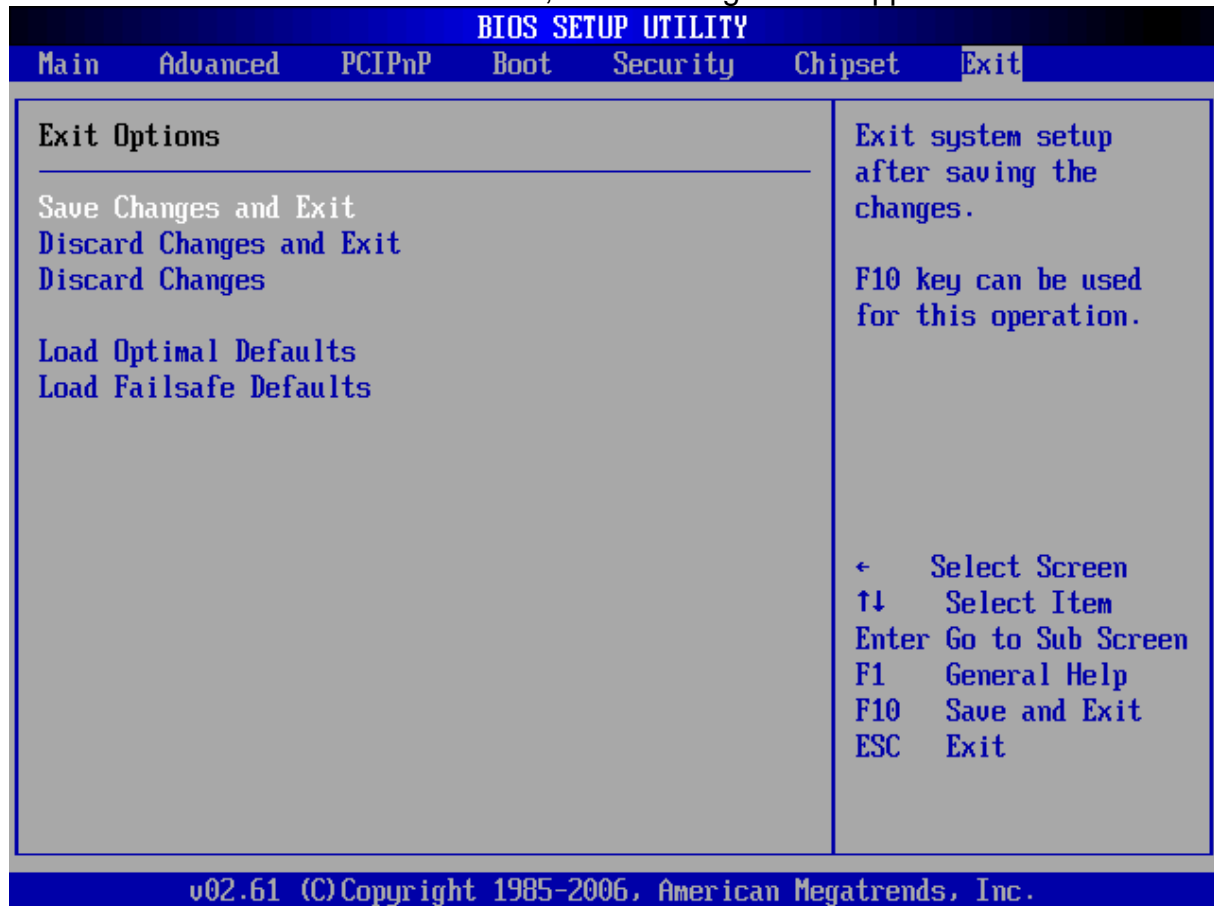
PCIE Ports Configuration
This item allows you to setup the PCIE ports.

3.8 Exit

The item allows you to save or discard your changes to the BIOS items, and load the optimal defaults or failsafe defaults for the BIOS items.

⇓ **Use the Exit option as follows:**

1. Choose "Exit" from the main menu, the following screen appears.

```
                        BIOS SETUP UTILITY
  Main    Advanced    PCIPnP    Boot    Security    Chipset    Exit

  Exit Options                                    Exit system setup
                                                  after saving the
  Save Changes and Exit                           changes.
  Discard Changes and Exit
  Discard Changes                                 F10 key can be used
                                                  for this operation.
  Load Optimal Defaults
  Load Failsafe Defaults




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



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```

2. Move between items and select values by using the arrow keys. Modify the selected fields using the PgUP/PgDN keys. For information on the various options, please press <F1> key.

3. Please press the <ESC> key to return the main menu after finishing with the Exit Options.

Save Changes and Exit:
Save changes of values to CMOS and exit the CMOS setup program. F10 key can be used for this operation.

Discard Changes and Exit:
Discard all CMOS changes and exit the CMOS setup program. ESC key can be used for this operation.

Discard Changes:
Discard all CMOS changes and load the previously saved values. F7 key can be used

for this operation.

Load Optimal Defaults:

This item allows you to load optimal defaults for each of the parameters on the Setup menus, which will provide the best performance settings for your system. F9 key can be used for this operation.

Load Failsafe Defaults:

This item allows you to load failsafe defaults for each of the parameters on the Setup menus, which will provide the most stable performance settings. F8 key can be used for this operation.

Appendix A: Programming the Watchdog Timer

The MB-73200 provides a watchdog timer that resets the CPU or generates an interrupt if processing comes to a stop. This function ensures greater system reliability in industrial stand-alone and unmanned environments.

In order to enable the watchdog timer, you have to output the value of the watchdog timer interval to the controller. The value range is from 01H to FFH, and the related time watchdog timer interval is 1 sec to 255 sec.

Data	Timer interval
00	Disabled
01	1 sec
02	2 sec
*	*
*	*
FF	255 sec

If you want to disable the watchdog timer, just set the timer interval value to 00H.

After setting the timer interval value, the watchdog timer begins to count down. You have to refresh the watchdog timer, so that the watchdog timer will return to its initial value; otherwise, your system will reset after a time-out. The following program shows how to set the watchdog timer:

ASSEMBLY LANGUAGE   DOS DEBUG

Program 1: Initializing the watchdog controller

MOV DX,2EH	O 2E 87
MOV AL,87H	O 2E 87
OUT DX,AL	
OUT DX,AL	

MOV DX,2EH	O 2E 07
MOV AL,07H	O 2F 08
OUT DX,AL	
MOV DX,2FH	
MOV AL,08H	
OUT DX,AL	
MOV DX,2EH	O 2E 30
MOV AL,30H	O 2F 01
OUT DX,AL	
MOV DX,2FH	
MOV AL,01H	
OUT DX,AL	

Program 2: Writing a watchdog timer interval value

MOV DX,2EH ;Set timer interval value to xx seconds	O 2E F6
MOV AL,F6H	O 2F XX
OUT DX,AL	O 2E AA
MOV DX,2FH	
MOV AL,XXH ; Timer interval *** *see note* ***	
OUT DX,AL	
MOV DX,2EH	
MOV AL,AAH	
OUT DX,AL	

Program 3: Disable the watchdog timer

MOV DX,2EH	O 2E 87
MOV AL,87H	O 2E 87
OUT DX,AL	
OUT DX,AL	
MOV DX,2EH ;Set timer interval value to 0 seconds	O 2E F6
MOV AL,F6H	O 2F 00
OUT DX,AL	O 2E AA
MOV DX,2FH	
MOV AL,00H ; Timer interval 00H,(= disable)	
OUT DX,AL	
MOV DX,2EH	
MOV AL,AAH	
OUT DX,AL	

Note: This XX value range is from 01H to FFH, and the related watchdog timer interval is 1 sec. to 255 sec. (as in the previous description).

Using the Demo Program

Update the System BIOS as follows:
1. Run Program 1
2. Run Program 2 (load the timer interval of 1EH, 30 seconds)
3. Run your Application Program #1 (**Be sure your Application Program will finish within 30 seconds)**
    4. Run Program 3 (Load the timer interval of 00H, and disable the watchdog timer function)

Appendix B: System Resource

Interrupt Controller:

The MB-73200 is a fully PC compatible control board, it consists of 16 ISA interrupt request lines and most of them already in used by other part of the board.   Both of ISA and PCI expansion cards may need to use IRQs, please make sure that the IRQs do not conflict if you would like to use extra add-on cards.

System IRQs are available to cards installed in the ISA expansion Bus first.   Any remaining IRQs then may be assigned to this PCI Bus.   You are able to use the AMI Diagnostic utility to see their map.

IRQ	Assignment
IRQ0	Timer
IRQ1	Keyboard
IRQ2	Interrupt rerouting from IRQ8 through IRQ15
IRQ3	COM2
IRQ4	COM1
IRQ5	USB Controller
IRQ6	FDD Controller
IRQ7	LPT1
IRQ8	Real Time Clock
IRQ9	Reserved
IRQ10	VGA Adapter
IRQ11	PCI-PCI Bridge
IRQ12	Reserved
IRQ13	Math Coprocessor
IRQ14	IDE Controller
IRQ15	IDE Controller

DMA Channel Assignment:
Channel 4 is by default used to cascade to two controllers

Channel	Assignment
DMA0	Free
DMA1	Free
DMA2	FDD Controller
DMA3	Free
DMA4	Cascade
DMA5	Free
DMA6	Free
DMA7	Free

Memory Map:

The following table indicates memory of MB-73200.   The address ranges specify the runtime code length.

Memory below 1MB (1MB ~ 640KB)

Address Range	Type	Owner
A0000 ~ AFFFF	ISA	VGA Adapter
B0000 ~ BFFFF	ISA	VGA Adapter
C0000 ~ CE5FF	ISA	Adapter ROM
F0000 ~ FFFFF	ISA	System BIOS

Memory above 1MB (1MB ~ 65535KB)

Address Range	Type	Owner
CFC00000~CFCFFFFF	PCI	PCI-PCI Bridge
CFD00000~CFDFFFFF	PCI	PCI-PCI Bridge
D0000000~D7FFFFFF	PCI	VGA Adapter
DFF5B000~DFF5B0FF	PCI	PCI System Device
DFF5B400~DFF5B4FF	PCI	PCI System Device
DFF5B800~DFF5B8FF	PCI	PCI System Device
DFF60000~DFF7FFFF	PCI	VGA Adapter
DFF80000~DFFFFFFF	PCI	VGA Adapter

System Memory Map

Start High	Start Low	Size High	Size	Type
00000000	00000000	00000000	0009FC00	Available
00000000	0009FC00	00000000	00000400	Reserved
00000000	000E0000	00000000	00020000	Reserved
00000000	00100000	00000000	3F980000	Availabe
00000000	3FA80000	00000000	00010000	Reserved
00000000	3FA90000	00000000	0000E000	ACPI Space
00000000	3FA9E000	00000000	00032000	NVS Space
00000000	3FAD0000	00000000	00010000	Reserved
00000000	3FAE8000	00000000	00018000	Reserved
00000000	3FB00000	00000000	00100000	Reserved
00000000	FEE00000	00000000	00001000	Reserved
00000000	FFF00000	00000000	00100000	Reserved

I/O Map

The addresses shown in the table are typical locations.

I/O Port	Assignment
20 ~ 21	AT Interrupt Controller
40 ~ 43	82C54 Compatible Programmable Timer
60	8042 Compatible keyboard Controller
61	AT Style Speaker
64	8042 Compatible keyboard Controller
70 ~ 71	AT Real Time Clock
72 ~ 75	Motherboard Resource
A0 ~ A1	AT Interrupt Controller
F0 ~ FF	Math Coprocessor
170 ~ 177	IDE Controller
1F0 ~ 1F7	IDE Controller
2F8 ~ 2FF	COM2
376	IDE Controller
377	IDE Controller
378 ~ 37A	LPT1
3B0 ~ 3BB	VGA Adapter
3C0 ~ 3DF	VGA Adapter
3F0 ~ 3F5	FDD Controller
3F6	IDE Controller
3F7	FDD Controller
3F8 ~ 3FF	COM1
480 ~ 4BF	Motherboard Resource
4D0 ~ 4D1	Motherboard Resource
8F0 ~ 8FF	Motherboard Resource
900 ~ 90F	Motherboard Resource
910 ~ 91F	Motherboard Resource
9C0 ~ 9DF	Motherboard Resource
A00 ~ A0F	Motherboard Resource
CF8 ~ CFF	Motherboard Resource
C000 ~ CFFF	PCI-PCI Bridge
D000 ~ DFFF	PCI-PCI Bridge
E080 ~ E09E	USB Controller
E480 ~ E49E	USB Controller
E880 ~ E886	VGA Adapter
EF00 ~ EF1E	USB Controller
FFA0 ~ FFAE	IDE Controller

Appendix C: Cable List

Part No.	Cable Description	Connector
Standard		
CB-ICOM01-00	COM port CABLE 13cm (2mm)/ RoHS	CN14/CN18
CB -IPOW37-00	ATX Power cable	CN3/CN10/CN21
CB -IPS266-00	6+6 KB/MS CABLE 17cm (2mm)	CN9
CB -IUSB01-00	USB Cables 25cm	CN16/CN17
CB -IVGA04-00	VGA Cable (2mm)	CN1
CB -ILAN04-00	LAN Cable 20cm for R051	CN12
IP-90380	Dual LAN connectors adapter card	

MB-73200 Cables & Adapter card

CB-ICOM01-00

CB -IPOW37-00

CB -IPS266-00

CB -IUSB01-00

CB -IVGA04-00

CB -ILAN04-00

IP-90380 Dual LAN connectors adapter card

# Part No.	Cable Description	Connector
Optional		
IP-90340	HD Audio Adaptor Card	CN15
CB-ILPT01-00	PRINTER CABLE (2mm) 26cm/ ROHS	CN11
CB-ICOM15-00	RS-485 CABLE (2mm) 8CM/ RoHS	CN19

MB-73200 Optional Cables & Adapter card

CB-ILPT01-00   CB-ICOM15-00   IP-90340 HD Audio adaptor card

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