XTX-PNV

Intel Pineview XTX Module

User's Manual

1st Ed – 27 December 2010

Part No. E2047275400R

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THIS DEVICE COMPLIES WITH PART 15 FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS:

(1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE.

(2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRED OPERATION.

THIS EQUIPMENT HAS BEEN TESTED AND FOUND TO COMPLY WITH THE LIMITS FOR A CLASS "A" DIGITAL DEVICE, PURSUANT TO PART 15 OF THE FCC RULES.

THESE LIMITS ARE DESIGNED TO PROVIDE REASONABLE PROTECTION AGAINST HARMFUL INTERFERENCE WHEN THE EQUIPMENT IS OPERATED IN A COMMERCIAL ENVIRONMENT. THIS EQUIPMENT GENERATES, USES, AND CAN RADIATE RADIO FREQUENCY ENERGY AND, IF NOT INSTALLED AND USED IN ACCORDANCE WITH THE INSTRUCTION MANUAL, MAY CAUSE HARMFUL INTERFERENCE TO RADIO COMMUNICATIONS.

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5. Write the RMA number visibly on the outside of the package and ship it prepaid to your dealer.

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1. Getting Started

1.1 Safety Precautions

Warning!

Always completely disconnect the power cord from your chassis whenever you work with the hardware. Do not make connections while the power is on. Sensitive electronic components can be damaged by sudden power surges. Only experienced electronics personnel should open the PC chassis.

Caution!

Always ground yourself to remove any static charge before touching the CPU card. Modern electronic devices are very sensitive to static electric charges. As a safety precaution, use a grounding wrist strap at all times. Place all electronic components in a static-dissipative surface or static-shielded bag when they are not in the chassis.

1.2 Packing List

Before you begin installing your single board, please make sure that the following materials have been shipped:

- 1 x XTX-PNV Intel Pineview XTX Module
- 1 x Quick Installation Guide
- 1 x DVD-ROM contains the followings:
  - User's Manual (this manual in PDF file)
  - Ethernet driver and utilities
  - VGA drivers and utilities
  - Audio drivers and utilities

If any of the above items is damaged or missing, contact your retailer.

1.3 Document Amendment History

Revision	Date	Comment
1st	December 2010	Initial Release

1.4 Manual Objectives

This manual describes in detail the Avalue Technology XTX-PNV Single Board.

We have tried to include as much information as possible but we have not duplicated information that is provided in the standard IBM Technical References, unless it proved to be necessary to aid in the understanding of this board.

We strongly recommend that you study this manual carefully before attempting to interface with XTX-PNV series or change the standard configurations. Whilst all the necessary information is available in this manual we would recommend that unless you are confident, you contact your supplier for guidance.

Please be aware that it is possible to create configurations within the CMOS RAM that make booting impossible. If this should happen, clear the CMOS settings, (see the description of the Jumper Settings for details).

If you have any suggestions or find any errors concerning this manual and want to inform us of these, please contact our Customer Service department with the relevant details.

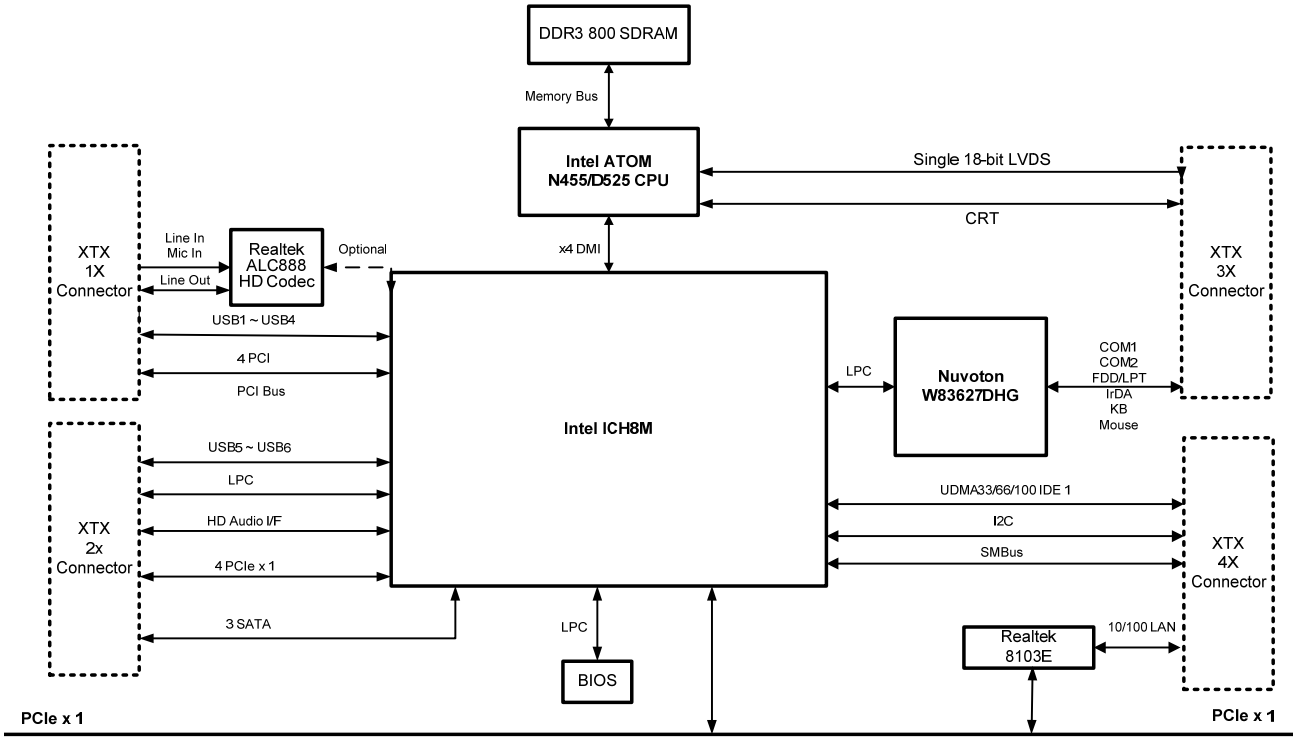
1.5 System Specifications

System	
CPU	Onboard Intel PNV-M N455 1.66GHz Onboard Intel PNV-D D525 1.8GHz (Optional)
BIOS	AMI 8Mbit
System Chipset	Intel ICH8-M Chipset
I/O Chip	Winbond W83627DHG-P
System Memory	One 204-pin SODIMM socket supports up to 2GB DDR3 SDRAM, supports 800/1066 MHz
Watchdog Timer	Reset: 1 ~ 255 min. and 1 sec. or 1 min./step
H/W Status Monitor	Monitoring system temperature, voltage, and cooling fan status. Auto trotting control when CPU overheats
Expansion	4 PCIex1, 4 PCI, 1 LPC Bus, I^2C Bus
I/O	
MIO	1 x EIDE, 3 x SATA, 1 x FDD/LPT, 2 x TTL Serial, 1 x K/B & Mouse
USB	6 x USB 2.0 ports
IrDA	115k bps, IrDA 1.0 Compliant
Display	
Chipset	Intel Pineview integrated, Gen3.5 + GFX Core @ 400MHz (PNV-D) Intel Pineview integrated, Gen3.5 + GFX Core @ 200MHz (PNV-M)
Resolution	VGA mode : up to 2048 x 1536 @ 60 Hz (PNV-D) VGA mode : up to 1400 x 1050 @ 60 Hz (PNV-M)
Multiple Display	VGA + LVDS
LCD Interface	Dual-Channel 18/24-bit LVDS (from Scaler)
Audio	
AC97 Codec	Realtek ALC888
Audio Interface	Line in, Line out & Mic in AC97 Rev2.2 Compatible, Digital High Definition Audio Interface with support for multiple audio codecs
Ethernet	
LAN	Realtek 8103EL
Ethernet Interface	10/100Base-Tx Fast Ethernet compatible

Mechanical & Environmental	
Power Requirement	+5V, 5Vsb (for ATX only)
ACPI	ACPI 3.0 Compliant
Power Type	AT/ ATX
Operation Temperature	0 ~ 60°C (32~140°F)
Storage Temp.	-20~80°C
Operating Humidity	0% ~ 90% Relative Humidity, Non-condensing
Size (L x W)	4.5" x 3.7" (114mm x 95mm)
Weight	0.44lbs (0.2kg)

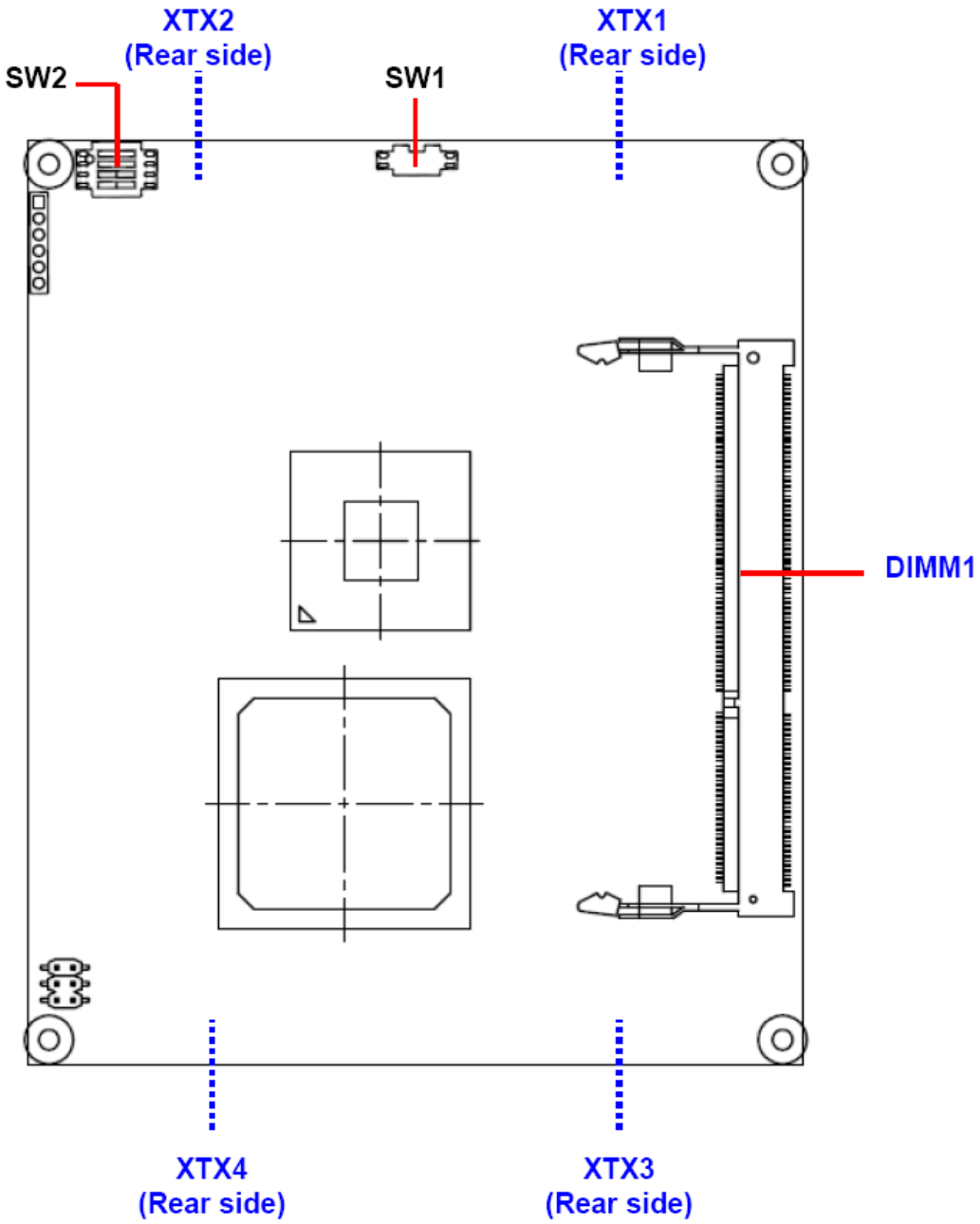
1.6 Architecture Overview – Block Diagram

The following block diagram shows the architecture and main components of XTX-PNV



2. Hardware Configuration

2.1 Product Overview



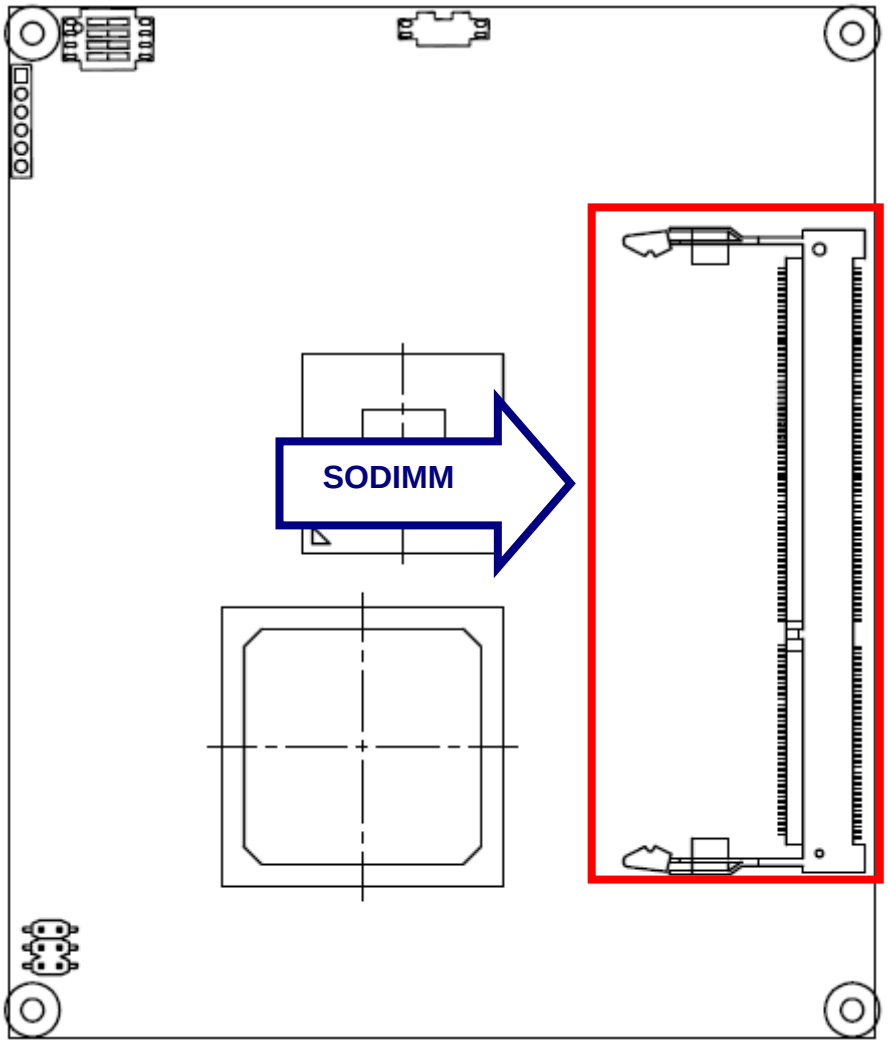
2.2 Installation Procedure

This chapter explains you the instructions of how to setup your system.

1. Turn off the power supply.
2. Insert the SODIMM module (be careful with the orientation).
3. Insert all external cables for hard disk, floppy, keyboard, mouse, USB etc. except for flat panel. A CRT monitor must be connected in order to change CMOS settings to support flat panel.
4. Connect power supply to the board via the ATXPWR.
5. Turn on the power.
6. Enter the BIOS setup by pressing the delete key during boot up. Use the “LOAD BIOS DEFAULTS” feature. The ***Integrated Peripheral Setup*** and the ***Standard CMOS Setup*** Window must be entered and configured correctly to match the particular system configuration.
7. If TFT panel display is to be utilized, make sure the panel voltage is correctly set before connecting the display cable and turning on the power.

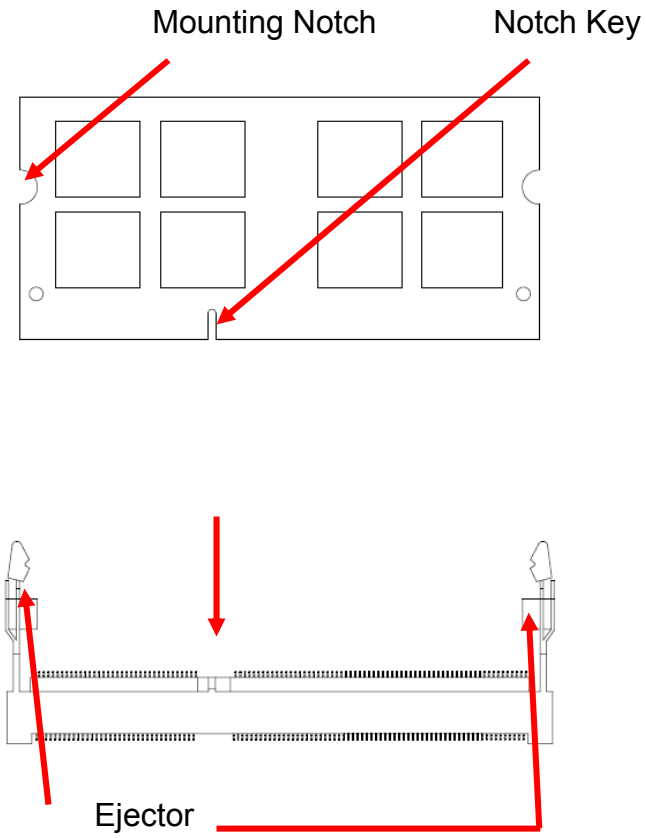
2.2.1 Main Memory

XTX-PNV provides one 204-pin SODIMM sockets to support DDR3 SDRAM. The total maximum memory size is 2GB.



Make sure to unplug the power supply before adding or removing SODIMMs or other system components. Failure to do so may cause severe damage to both the board and the components.

- Locate the SODIMM socket on the board.
- Hold two edges of the SODIMM module carefully. Keep away of touching its connectors.
- Align the notch key on the module with the rib on the slot.
- Firmly press the module into the socket which automatically snaps into the mounting notch. Do not force the SODIMM module in with extra force as the SODIMM module only fits in one direction.



204-pin DDR3 SODIMM

- To remove the SODIMM modules, push the two ejector tabs on the slot outward simultaneously, and then pull out the SODIMM module.

Note:

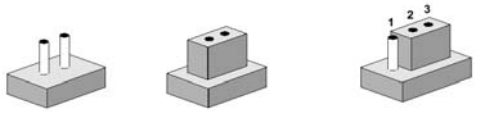
(1) Please do not change any DDR3 SDRAM parameter in BIOS setup to increase your system's performance without acquiring technical information in advance.

(2) Static electricity can damage the electronic components of the computer or optional boards. Before starting these procedures, ensure that you are discharged of static electricity by touching a grounded metal object briefly.

2.3 Jumper and Connector List

You can configure your board to match the needs of your application by setting jumpers. A jumper is the simplest kind of electric switch.

It consists of two metal pins and a small metal clip (often protected by a plastic cover) that slides over the pins to connect them. To "close" a jumper you connect the pins with the clip. To "open" a jumper you remove the clip. Sometimes a jumper will have three pins, labeled 1, 2, and 3. In this case, you would connect either two pins.



Open Closed Closed 2-3

The jumper settings are schematically depicted in this manual as follows:

Open Closed Closed 2-3

A pair of needle-nose pliers may be helpful when working with jumpers.

Connectors on the board are linked to external devices such as hard disk drives, a keyboard, or floppy drives. In addition, the board has a number of jumpers that allow you to configure your system to suit your application.

If you have any doubts about the best hardware configuration for your application, contact your local distributor or sales representative before you make any changes.

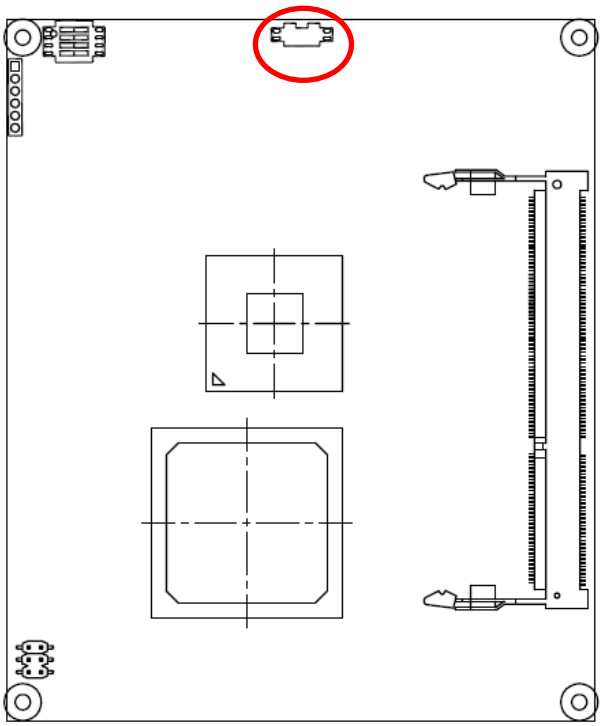
The following tables list the function of each of the board's jumpers and connectors.

Connectors

Label	Function	Note
SW1	AT/ATX mode/ AT/ATX power select	
SW2	Bypass / scaler Mode selection for LCD mode PIN	
XTX1	XTX connector 1	
XTX2	XTX connector 2	
XTX3	XTX connector 3	
XTX4	XTX connector 4	
DIMM1	204-pin DDR3 SDRAM DIMM socket	

2.4 Setting Jumpers & Connectors

2.4.1 AT/ATX mode/ AT/ATX power selection (SW1)



*Default

1 2 on

AT/ATX Power

AT power

OFF	1			ON
	2		⇨	

ATX power*

OFF	1			ON
	2	⇦		

AT/ATX mode

AT mode

OFF	1		⇨	ON
	2			

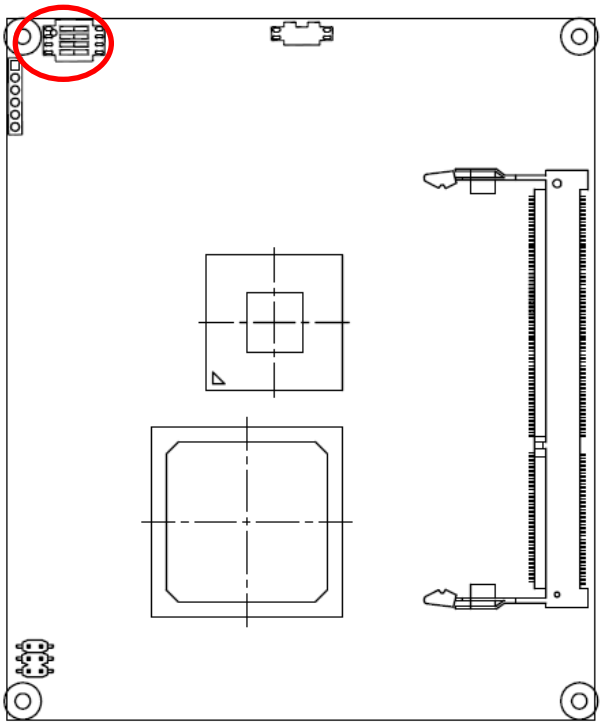
ATX mode*

OFF	1	⇦		ON
	2			

2.4.1.1 Signal Description –AT/ATX mode/ AT/ATX power selection

AT/ATX power / AT/ATX mode	Description
AT mode/ AT power 1 2 on	Use AT power input, and set the board in AT mode.
AT mode/ ATX power 1 2 on	Use ATX power input, and set the board in AT mode.
ATX mode/ AT power 1 2 on	Use AT power input, and set the board in ATX mode.
ATX mode/ ATX power 1 2 on	Use ATX power input, and set the board in ATX mode.

2.4.2 Bypass / scaler Mode selection for LCD Mode (SW2)



*Default

Bypass Mode selection

	X	X	4	
ON		⇨	3	OFF
		⇨	2	
		⇨	1	

Scaler Mode selection

	X	X	4	
ON		⇨	3	OFF
	⇦		2	
		⇨	1	

Scaler Mode selection*

	X	X	4	
ON	⇦		3	OFF
		⇨	2	
		⇨	1	

2.4.2.1 Signal description- Bypass / scaler Mode selection

Bypass / scaler enable	Description
Bypass Mode is enabled	Enable 1 LCD/48bit
Scaler Mode is enabled	Enable 2 LCD/24bit
Scaler Mode is enabled	Enable 2 LCD/18bit

3. BIOS Setup

3.1 Introduction

The BIOS setup program allows users to modify the basic system configuration. In this following chapter will describe how to access the BIOS setup program and the configuration options that may be changed.

3.2 Starting Setup

The AMIBIOS™ 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:
By pressing <Del> immediately after switching the system on, or
By pressing the <Del> key when the following message appears briefly at the bottom of the screen during the POST (Power On Self Test).

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.

Press F1 to Continue, DEL to enter SETUP

3.3 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.

Button	Description
↑↓	Select item
←	Select screen
+/-	Change Option /Field
Enter	Go to Sub Screen
PgUp key	Previous page
PgDn key	Next page
Home	Go to top of screen
End	Go to bottom of Screen
F2 , F3 key	Change colors
F7 key	Discard changes
F8 key	Load Failsafe Defaults
F9 key	Load Optimal Defauls
F10 key	Save and Exit
Esc key	Exit current page and return to Main Menu

- **Navigating Through The Menu Bar**
  Use the left and right arrow keys to choose the menu you want to be in.

Note: Some of the navigation keys differ from one screen to another.

- **To Display a Sub Menu**
  Use the arrow keys to move the cursor to the sub menu you want. Then press <Enter>. A "➢" pointer marks all sub menus.

3.4 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.

3.5 In Case of Problems

If, after making and saving system changes with Setup, you discover that your computer no longer is able to boot, the AMIBIOS™ 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 Award 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.

3.6 Main Menu

Once you enter the AMIBIOS™ CMOS Setup Utility, the Main Menu will appear on the screen. The Main Menu allows you to select from several setup functions and two exit choices. Use the arrow keys to select among the items and press <Enter> to accept and enter the sub-menu.

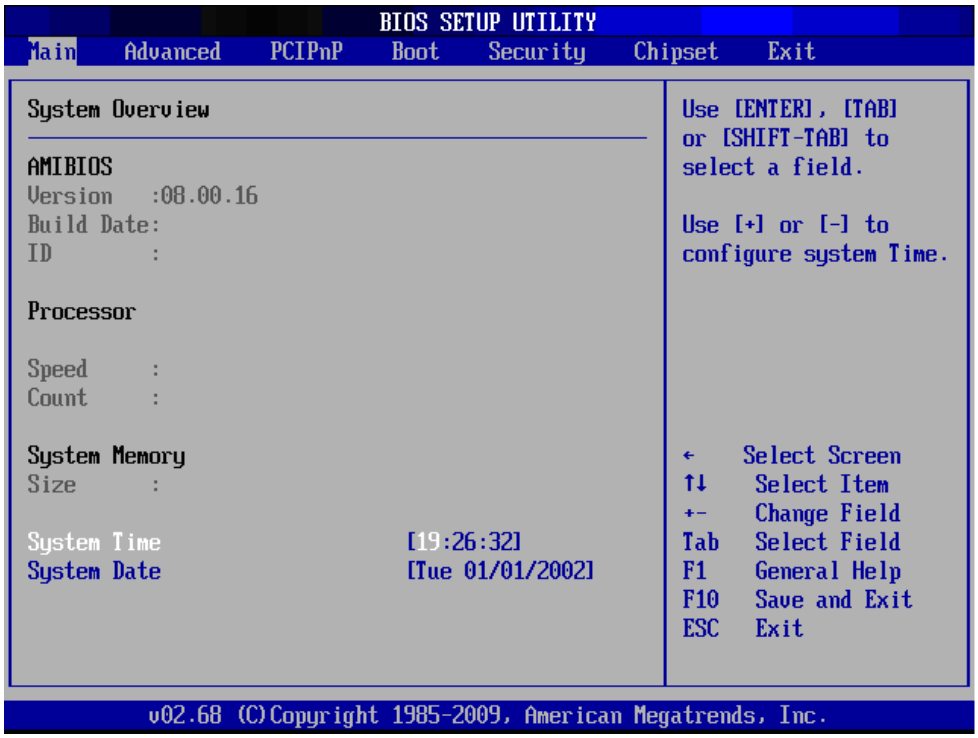
Note that a brief description of each highlighted selection appears at the bottom of the screen.

Note: The BIOS setup screens shown in this chapter are for reference purposes only, and may not exactly match what you see on your screen.

Visit the Avalue website (www.avalue.com.tw) to download the latest product and BIOS information.

3.6.1 Main Menu and System information

This section shows information about the BIOS, processor, System Memory as well as time and date.



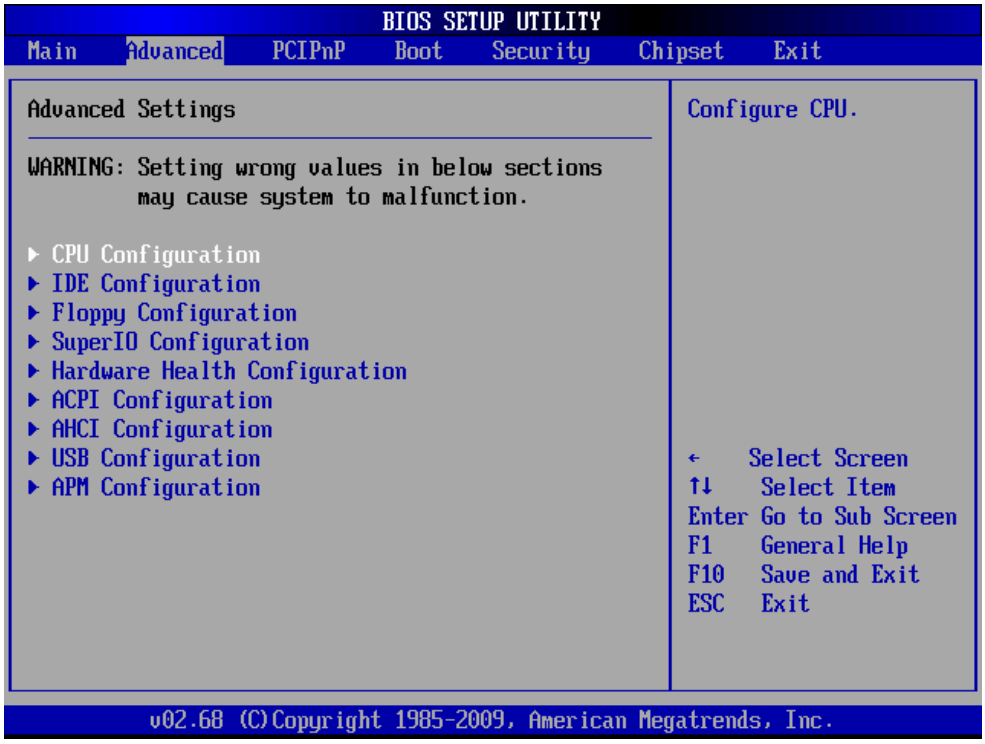
3.6.1.1 Main Menu Selection

This reference table shows the selections that you may make on the Main Menu.

Item	Options	Description
Time	HH : MM : SS	Set the system time
Date	Day/ Month/ year	Set the system date

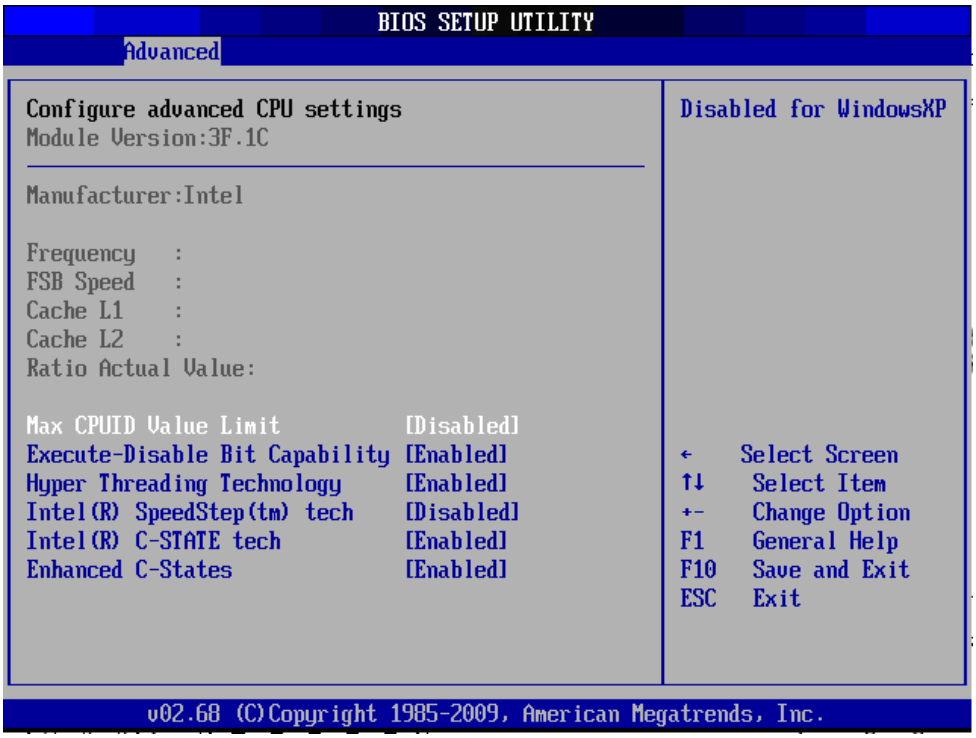
3.6.2 Advanced BIOS Settings

This section allows you to configure your CPU and other system devices for basic operation through the following sub-menus.



3.6.2.1 Configure advanced CPU settings

Use the **CPU Configuration** menu to view detailed CPU specifications and configuration.



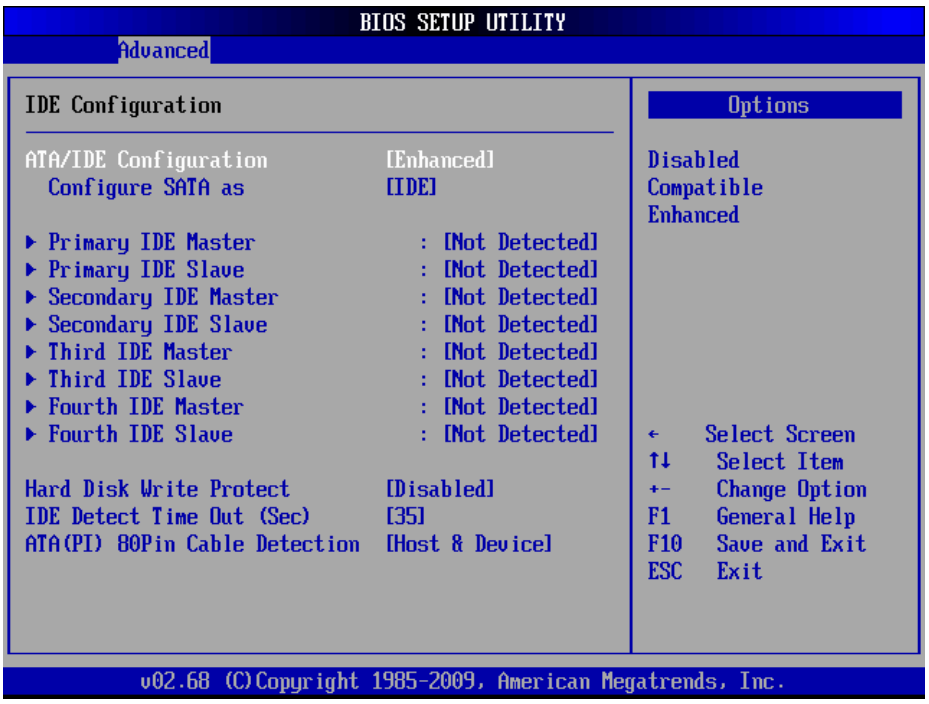
XTX-PNV

This item allows you to setup the CPU thermal management function.

Item	Options	Description
Max CPUID Value Limit	Disabled, Enabled	In order to mask the physical CPUID for Proscott core when running WinNT, Award BIOS provides "Limit CPUID MaxVal" feature. Enabling this feature will make the main board BIOS respond "suitable", "virtual" CPUID to OS kernel. So WinNT or the legacy OS can use the masked CPUID to work well with the new CPU design.
Execute-Disable Bit Capability	Disabled, Enabled	It can help prevent certain classes of malicious buffer overflow attacks when combined with a supporting operating system.
Hyper Threading Technology	Disabled, Enabled	To enable or disable Intel® Hyper Threading technology. This item allows you improve parallelization of computations
Intel ® SpeedStep ™ tech	Disabled, Enabled	This item allows you to enable or disable Intel ® SpeedStep ™ tech for high performance and power-conservation
Intel ® C-STATE tech	Disabled, Enabled	This item allows you to enable or disable Intel ® C-STATE tech in order for the software to independently manage each core while the actual power management adheres to the platform and CPU shared resources
Enhanced C-States	Disabled, Enabled	This item allows you to enable or disable Enhanced C-States

3.6.2.2 IDE Configuration

Use the **IDE Configuration** menu to change and/or configure installed IDE devices

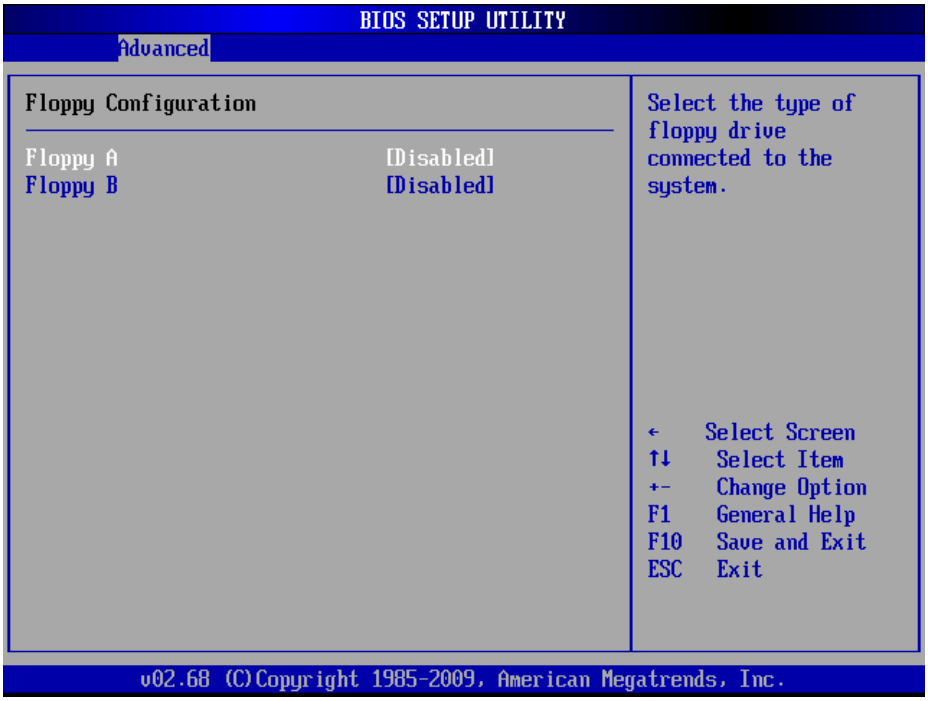


This item allows you to set the boot priority of the hard drives installed in the system.

Item	Options	Description
ATA/ IDE Configuration	Disabled, Compatible, Enhanced	This can be configured as Disabled, Compatible or Enhanced.
Configure SATA as	IDE, AHCI	Use this option to configure the SATA port as an IDE drive or a SATA drive (AHCI mode)
Primary/ Secondary/ Third/ Fourth IDE Master	Not detected	Use the IDE Master and IDE Slave configuration menu to view both primary and secondary IDE device details and configure the IDE devices connected to the system.
Primary/ Secondary/ Third/ Fourth IDE Slave	Not detected	Use the IDE Master and IDE Slave configuration menu to view both primary and secondary IDE device details and configure the IDE devices connected to the system.
Hard Disk Write Protect	Disabled, Enabled	Disable/ Enable device write protection. This will effective only if device is accessed through BIOS.
IDE Detect Time Out (Sec)	0/ 5/ 10/ 15/ 20/ 25/ 30/ 35	This allows you to select the time out value for detecting ATA/ ATAPI devices.
ATA (PI) 80Pin Cable Detection	Host & Device, Host, Device	This item allows you to select ATA cable detection mode.

3.6.2.3 Floppy Configuration

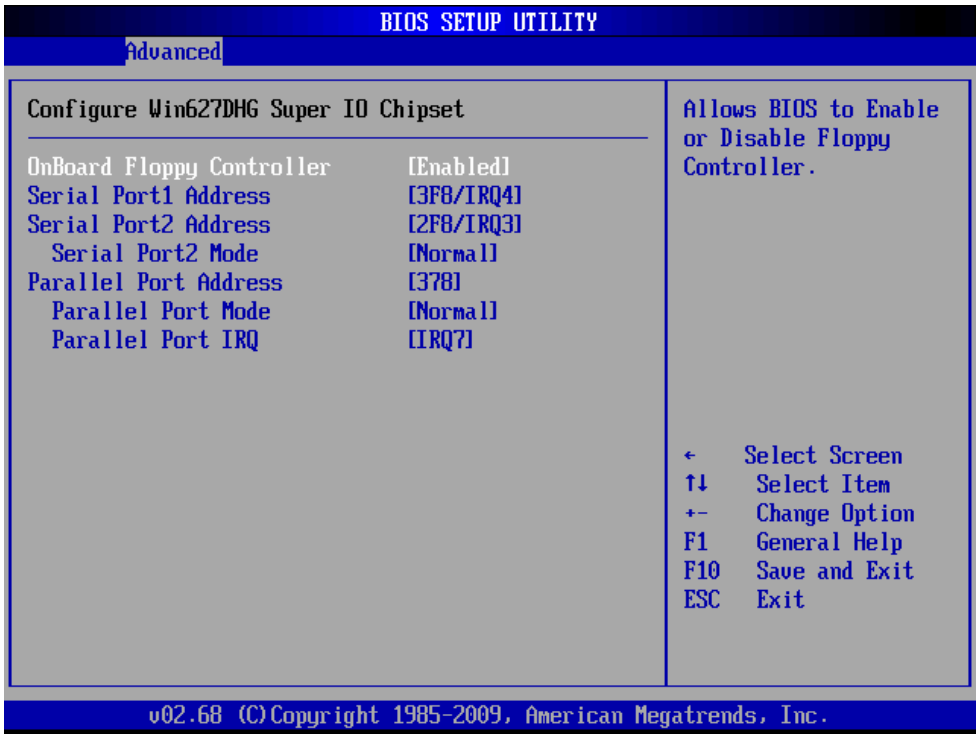
Use the **Floppy Configuration** menu to set or change the configurations for floppy disk drives.



Item	Options	Description
Floppy A [Disabled]	Disabled (default) 360 KB 5¼" 1.2 MB 5¼" 720 KB 3 ½" 1.44 MB 3½" 2.88 MB 3½"	The **Floppy A** configuration option determines the type of installed floppy drives. The following configuration options are available.
Floppy B [Disabled]	Disabled (default) 360 KB 5¼" 1.2 MB 5¼" 720 KB 3 ½" 1.44 MB 3½" 2.88 MB 3½"	The **Floppy B** configuration option determines the type of installed floppy drives. The following configuration options are available.

3.6.2.4 Super I/O configuration

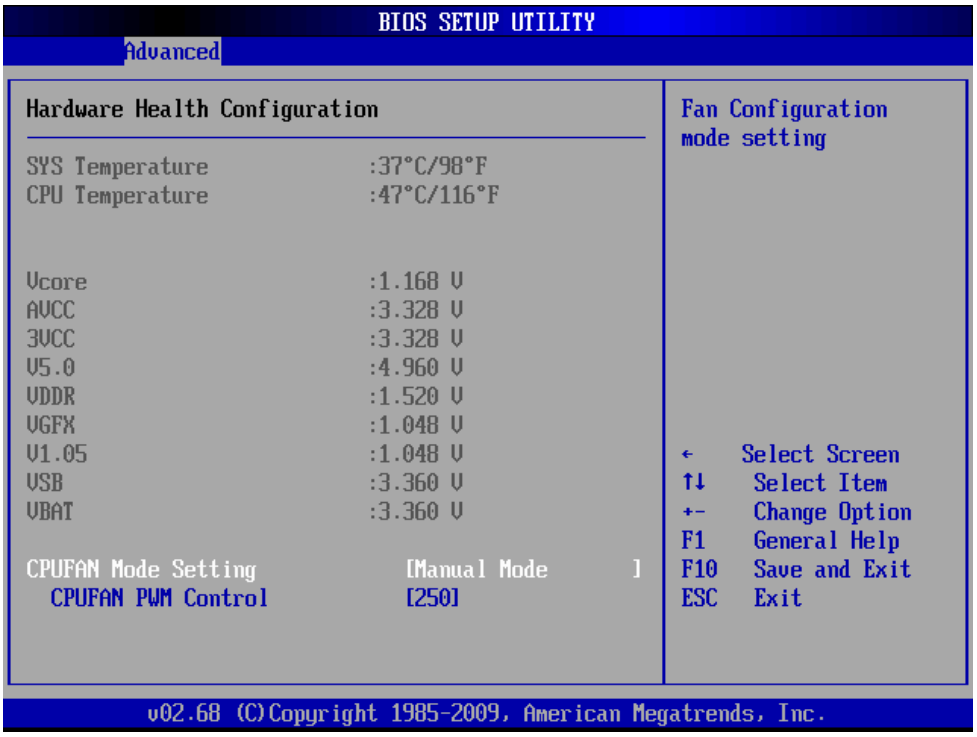
Use the **Super IO Configuration** menu for FDD controllers, parallel ports and serial ports.



Item	Options	Description
On Board Floppy Controller [Enabled]	Disabled Enabled (DEFAULT)	Allows BIOS to disable the floppy controller
Serial Port1 Address [3F8/IRQ4]	Disabled 3F8/IRQ4 (DEFAULT) 3E8/IRQ4 2E8/IRQ3	Use the **Serial Port1 Address** option to select the Serial Port 1 base address.
Serial Port2 Address [2F8/IRQ3]	Disabled 2F8/IRQ3 (DEFAULT) 3E8/IRQ4 2E8/IRQ3	Use the **Serial Port2 Address** option to select the Serial Port 2 base address.
Serial Port2 Mode [Normal]	Normal (DEFAULT) IrDA ASK IR	Use the **Serial Port2 Mode** option to select the Serial Port2 operational mode.
Parallel Port Address [378]	Disabled 378 (DEFAULT) 278 3BC FDD	Use the **Parallel Port Address** option to select the parallel port base address.
Parallel Port Mode [Normal]	Normal (DEFAULT) Bi-directional ECP EPP ECP & EPP	Use the **Parallel Port Mode** option to select the mode the parallel port operates in.
Parallel Port IRQ [IRQ7]	IRQ5 IRQ7 (DEFAULT)	Use the **Parallel Port IRQ** selection to set the parallel port interrupt address.

3.6.2.5 Hardware Health configuration

This section shows the operating temperature, fan speed and system voltage.



The following system temperature, fan speed and voltage are monitored.

System Temperature:

- System Temperature
- CPU Temperature

Voltage:

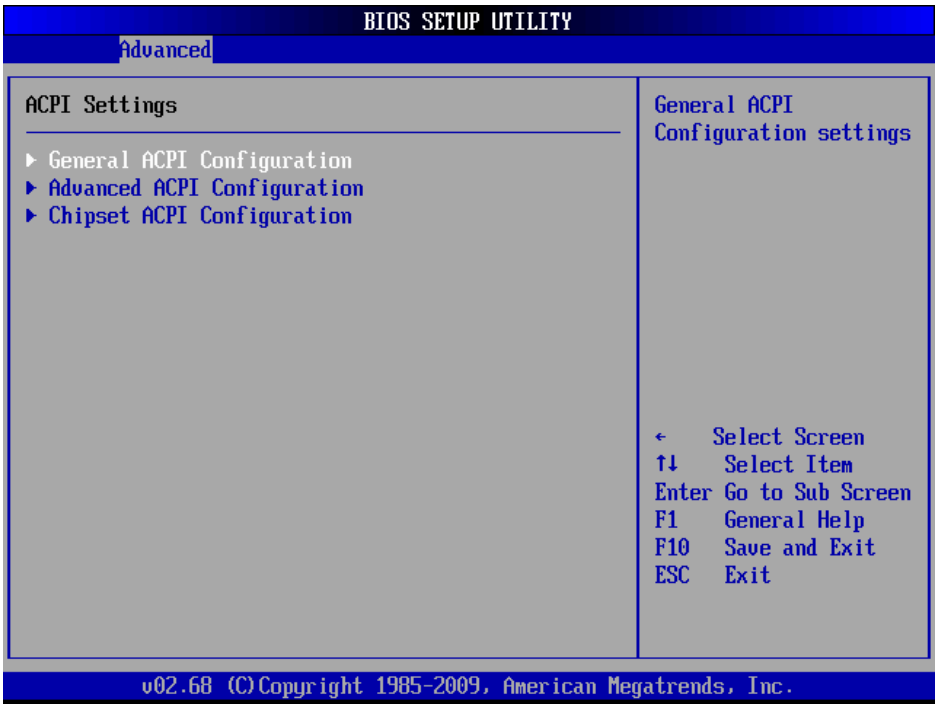
- Vcore
- AVCC
- 3VCC
- V5.0
- VDDR
- VGFX
- V1.05
- USB
- VBAT

CPUFAN mode setting: Configures CPUFAN for CPU temperature monitoring

CPUFAN PWM Control: Configures Voltage control function

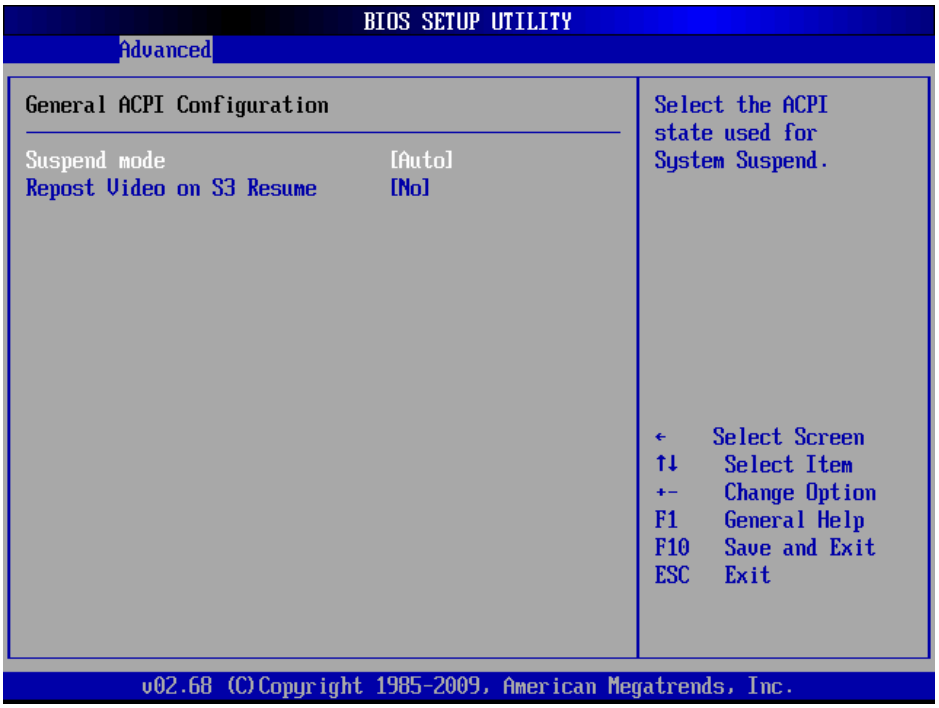
3.6.2.6 ACPI configuration

The **ACPI Configuration** menu configures Advanced Configuration and Power Interface (ACPI) options.



3.6.2.6.1 General ACPI settings

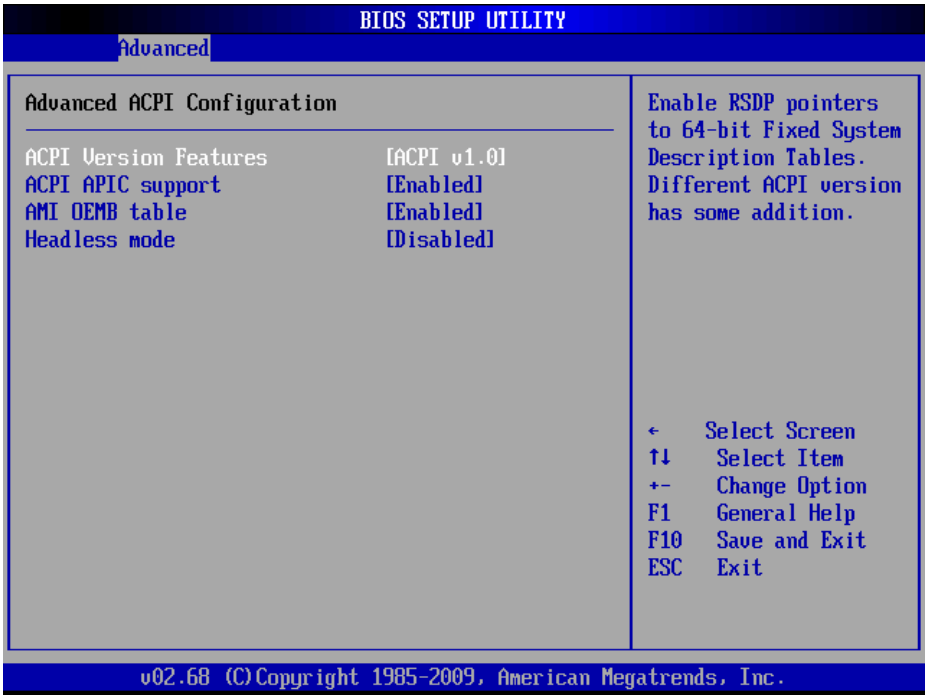
Use this option to select the ACPI state when the system is suspended.



Item	Options	Description
Suspend Mode [Auto]	S1 (POS), S3 (STR), Auto (**DEFAULT**)	Use the Suspend Mode option to specify the sleep state the system enters when it is not being used.
Repost Video on S3 Resume [No]	No (**DEFAULT**) Yes	This item allows you to invoke VA BIOS POST on S3/ STR resume.

3.6.2.6.2 Advanced ACPI Configuration

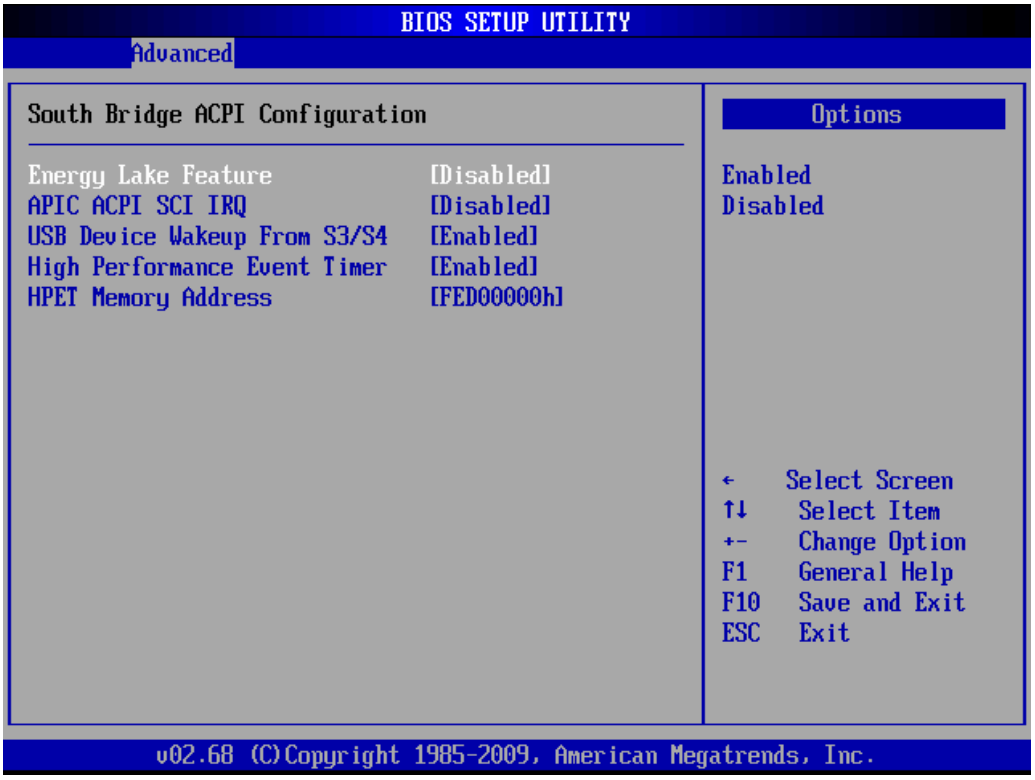
Use this menu to select ACPI state when system is suspended.



Item	Options	Description
ACPI Version Features [ACPI v1.0]	ACPI v1.0 (**DEFAULT**) ACPI v2.0, ACPI v3.0, ACPI v4.0	This item allows you to enable RSDP pointers to 64-bit fixed system description tables.
ACPI APIC support [Enabled]	Enabled (**DEFAULT**) Disabled	to add a pointer to an ACPI APIC table in the RSDT (Root System Description Table)
AMI OEMB table [Enabled]	Enabled (**DEFAULT**) Disabled	to add a pointer to an OEMB table in the RSDT table and the Extended System Description Table (XSDT).
Headless mode [Disabled]	Disabled (**DEFAULT**) Enabled	Enable/ Disable Headless operation mode through ACPI.

3.6.2.6.3 South Bridge ACPI configuration

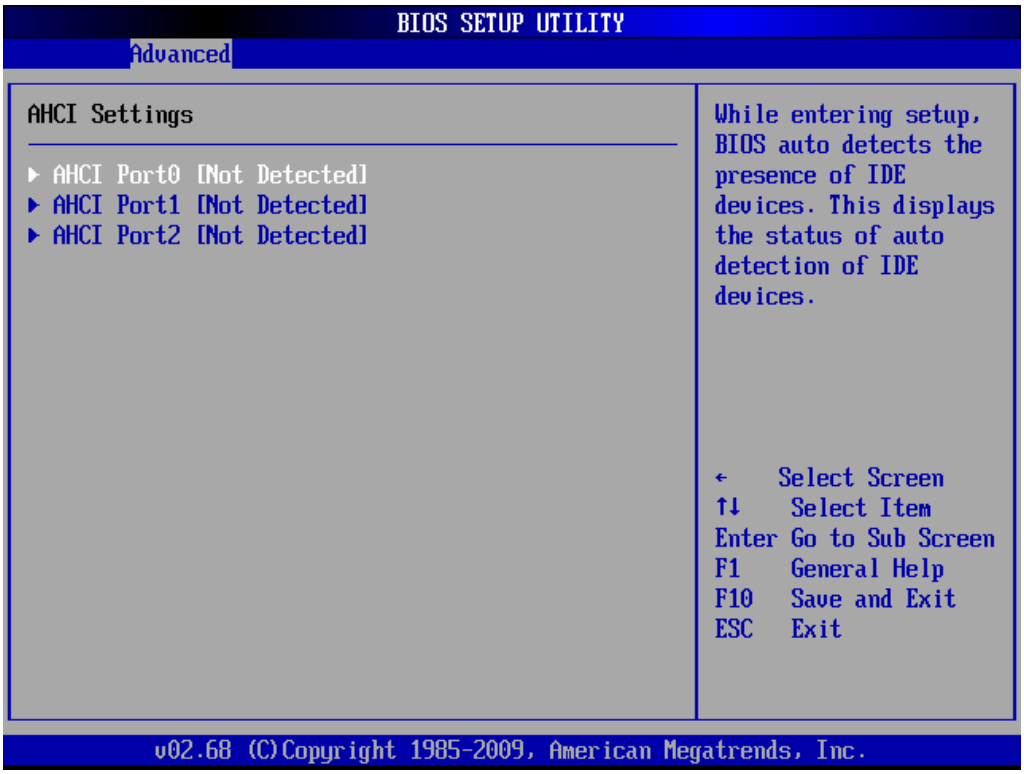
Use the **South Bridge ACPI Configuration** menu to select the ACPI state when system is suspended.



Item	Options	Description
Energy Lake Feature [Disabled]	Disabled (**DEFAULT**) Enabled	This item allows energy lake feature mode selection.
APIC ACPI SCI IRQ [Disabled]	Disabled (**DEFAULT**) Enabled	To enable/ disable APIC ACPI SCI IRQ.
USB device Wakeup From S3/S4	Disabled, Enabled (**DEFAULT**)	To enable/disable USB device Wake up From S3/S4
High Performance Event Timer [Enabled]	Disabled, Enabled (**DEFAULT**)	This section helps to set high performance event timer.
HPET Memory Address [FED00000h]	FED00000h (**DEFAULT**) FED01000h, FED02000h FED03000h	This item is for HPET memory address selection

3.6.2.7 AHCI Settings

This option is a system memory structure for data exchange between host system memory and attached storage devices.

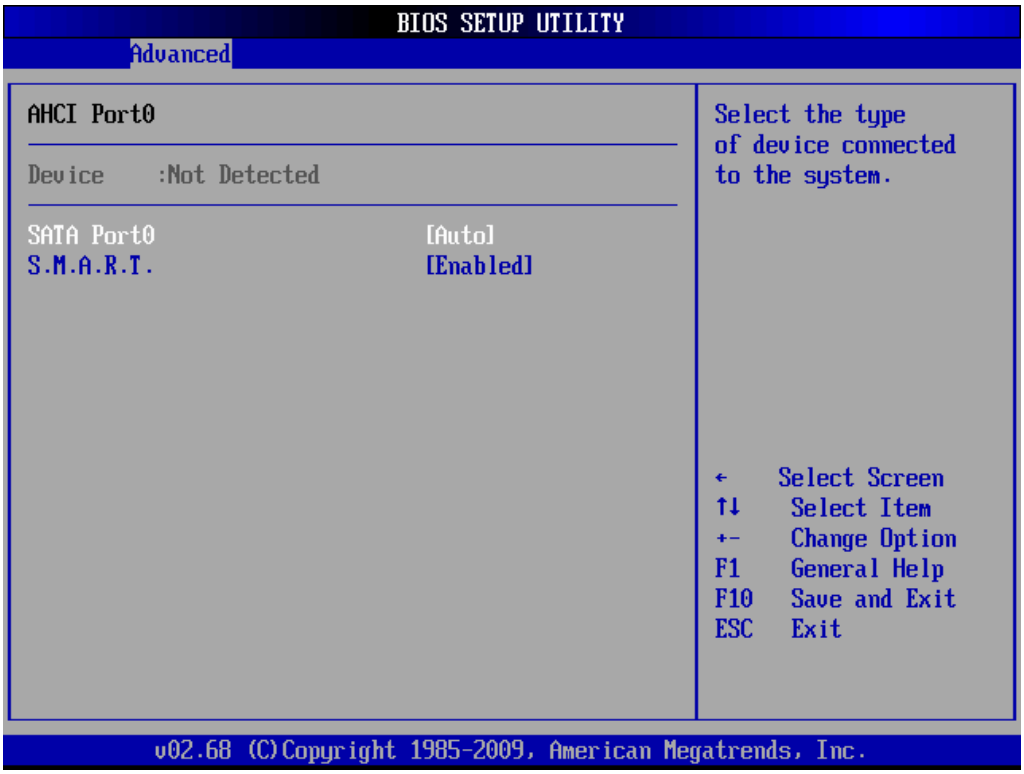


Note:

If SATA was set as "AHCI" instead of "IDE" in 3.6.2.2, "Hard Disk" would be shown for "AHCI Port". Therefore, "AHCI Port" shows not detected.

3.6.2.7.1 AHCI Port0

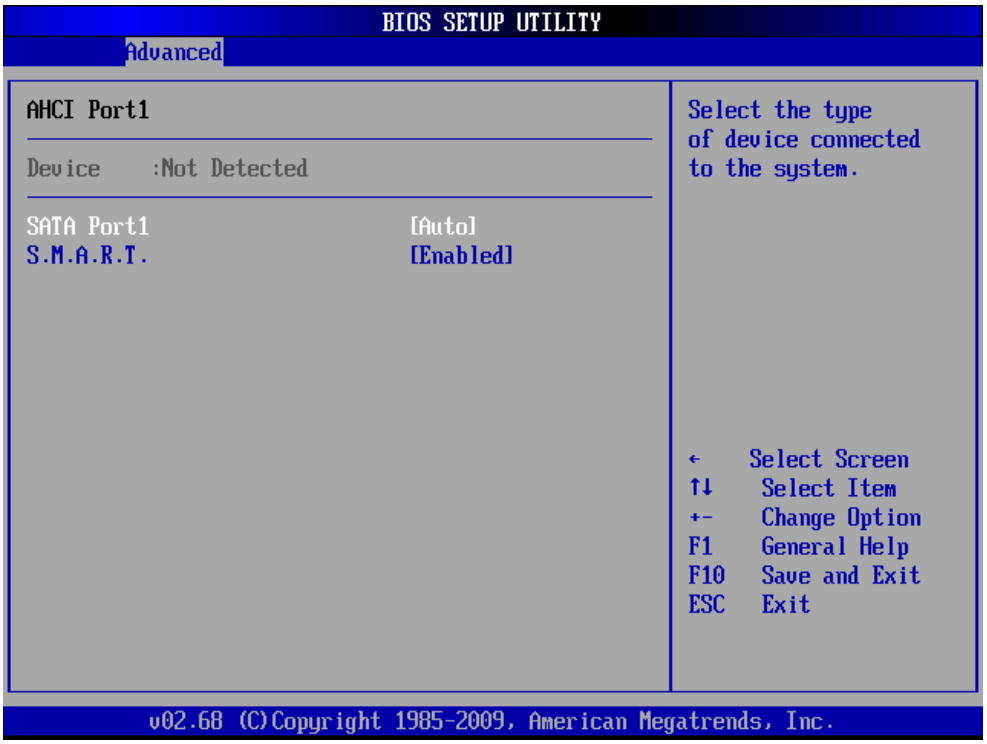
This option helps select the type of connected device



Item	Options	Description
SATA Port0 [Auto]	Auto (**DEFAULT**) Not Installed	Serial port 0 mode selection.
S.M.A.R.T. [Enabled]	Disabled, Enabled (**DEFAULT**)	Select the smart monitoring, analysis, and reporting technology.

3.6.2.7.2 AHCI Port1

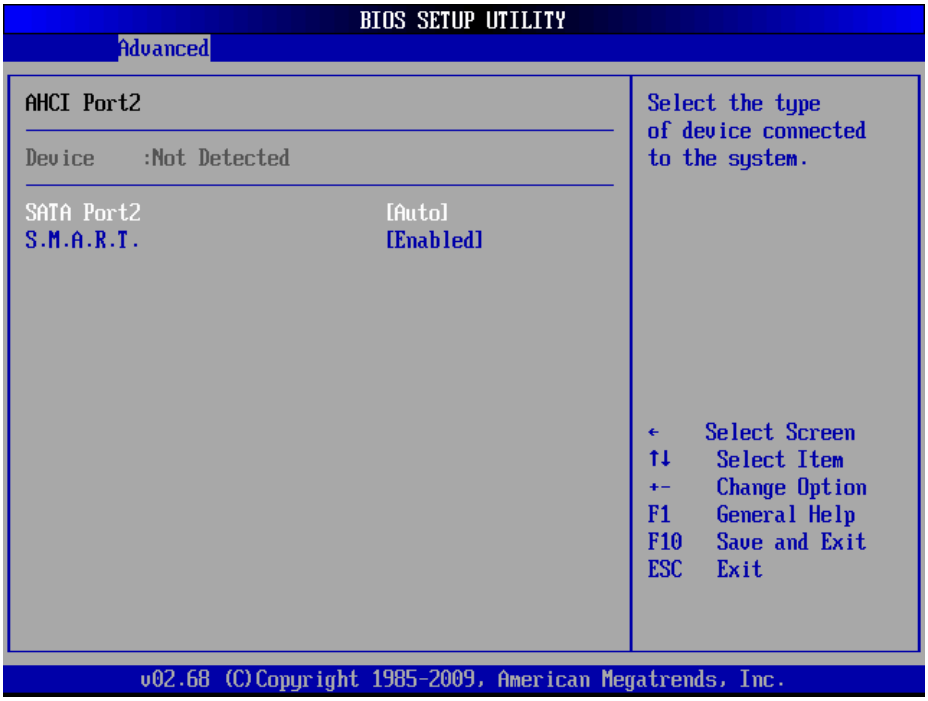
This option helps select the type of connected device



Item	Options	Description
SATA Port1 [Auto]	Auto (**DEFAULT**) Not Installed	Serial port 1 mode selection.
S.M.A.R.T. [Enabled]	Disabled, Enabled (**DEFAULT**)	Select the smart monitoring, analysis, and reporting technology.

3.6.2.7.3 AHCI Port2

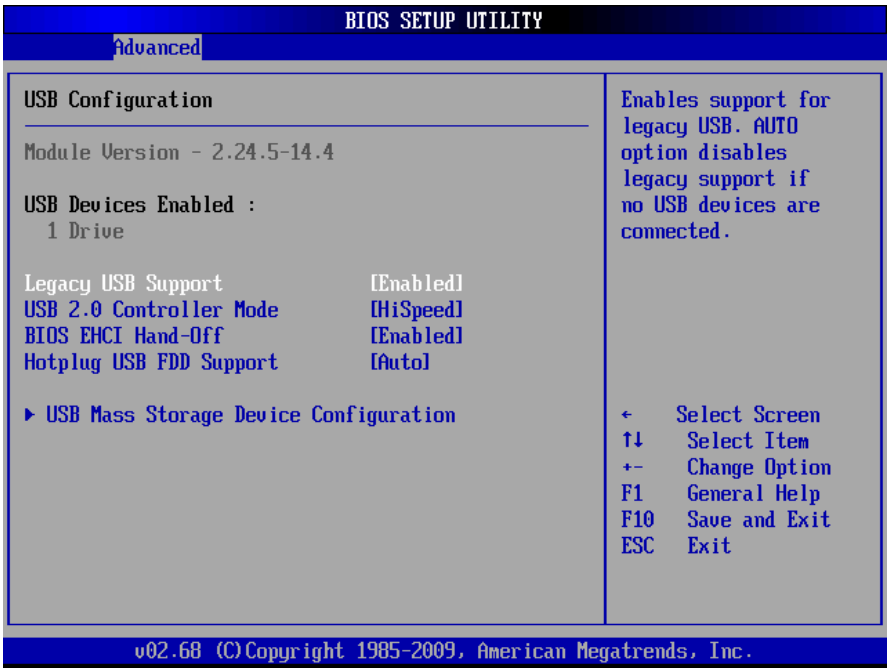
This option helps select the type of connected device



Item	Options	Description
SATA Port2 [Auto]	Auto (**DEFAULT**) Not Installed	Serial port 2 mode selection.
S.M.A.R.T. [Enabled]	Disabled, Enabled (**DEFAULT**)	Select the smart monitoring, analysis, and reporting technology.

3.6.2.8 USB configuration

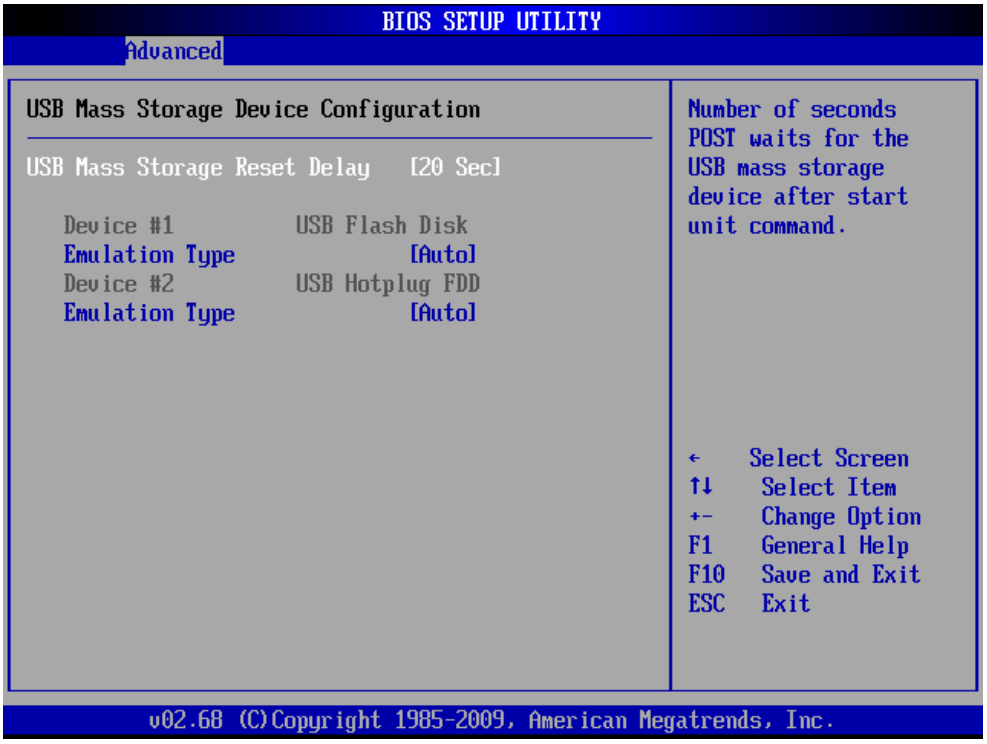
Use the **USB Configuration** menu to read USB information and configure settings.



Item	Options	Description
Legacy USB Support [Enabled]	Enabled (**DEFAULT**) Disabled, Auto	Use this option to enable USB mouse and USB keyboard support. Normally if this option is not enabled, attached USB mouse or USB keyboard is not available until a USB compatible operating system is fully booted with all USB drivers loaded. When this option is enabled, any attached USB mouse or USB keyboard can control the system even when there is no USB driver loaded onto the system.
USB 2.0 Controller Mode [Hi speed]	HiSpeed (480Mbps) (**DEFAULT**) FullSpeed (12Mpbs)	This item allows you to select HiSpeed (480Mbps) or FullSpeed (12Mpbs).
BIOS EHCI Hand-Off [Enabled]	Enabled (**DEFAULT**) Disabled	This is a workaround for OSs without EHCI hand-off support. The EHCI ownership change should be claimed by EHCI driver.
Hotplug USB FDD Support	Auto (**DEFAULT**)	The USB FDD is a slim type floppy disk drive (FDD) with a Universal Serial Bus (USB) interface.

3.6.2.8.1 USB mass storage configuration

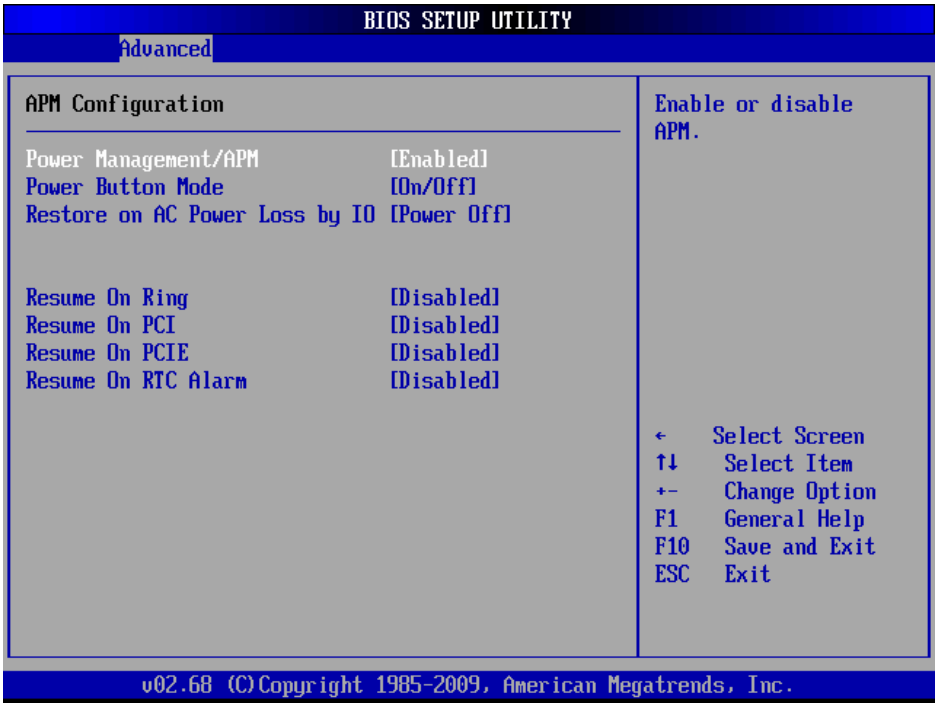
This Screen appears if a USB drive is connected to one of the USB ports or connectors. If this option is selected the below menu appears.



Item	Options	Description
USB Mass Storage Reset Delay	10, 20 30, 40	Time the BIOS will wait for the USB flash drive to initialize
Device #1 **Emulation Type [Auto]**	Auto, Floppy, Forced FDD, Hard-Disk, CD-ROM.	This item allows you to set up mass storage devices.
Device #2 **Emulation Type [Auto]**	Auto, Floppy, Forced FDD, Hard-Disk, CD-ROM.	This item allows you to set up mass storage devices.
Emulation type	If Auto, USB devices less than 530MB will be emulated as a floppy drive and the remaining as hard drive. Force FDD option can be used to force a FDD formatted drive to boot as FDD (Ex. ZIP drive).	

3.6.2.9 APM configuration

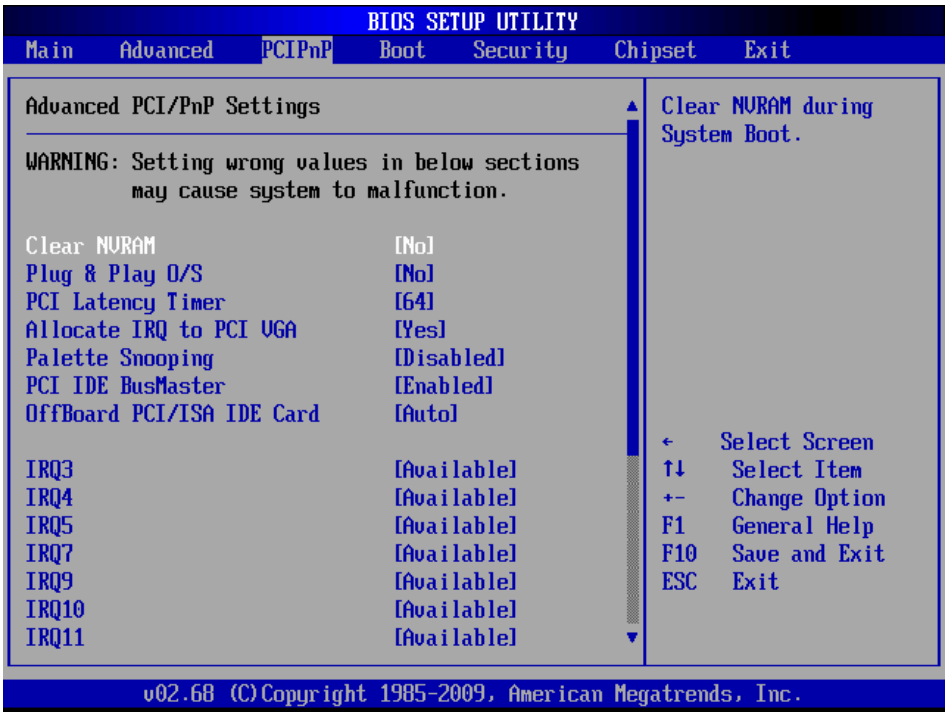
The **APM** menu configures the advanced power management options.



Item	Options	Description
Power Management/ APM [Enabled]	Enabled (**DEFAULT**) Disabled	This item helps to select power management mode.
Power Button Mode	On/ Off, Suspend	This section allows you to select power button mode.
Restore on AC Power Loss by IO [Power off]	Power On, Power Off (**DEFAULT**) Last State	Use this to set up the system response after a power failure.
Resume On Ring [Disabled]	Disabled (**DEFAULT**) Enabled	Use this option to enable activity on the RI (ring in) modem line to arouse the system from a suspended or standby state.
Resume on PCI [Disabled]	Disabled (**DEFAULT**) Enabled	Use this option to enable activity on the PCI signal to arouse the system from a suspended or standby state.
Resume On PCIE [Disabled]	Disabled (**DEFAULT**) Enabled	Use this option to enable activity on the PCIE signal to arouse the system from a suspended or standby state.
Resume On RTC Alarm [Disabled]	Disabled (**DEFAULT**) Enabled	Use this option to specify the time the system should be roused from a suspend state.

3.6.3 Advanced PCIPnP Settings

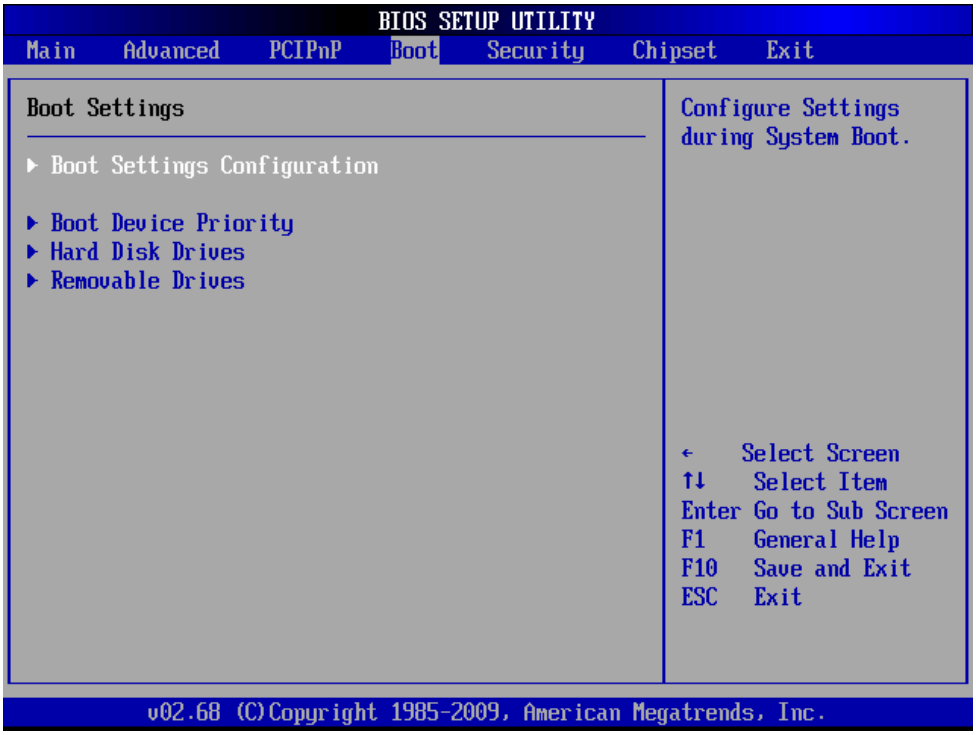
The settings in this section specifically deal with the PCI bus and Plug and Play (PnP).



Item	Options	Description
Clear NVRAM [No]	No (**DEFAULT**) Yes	Set this value to force the BIOS clear Non-volatile Random Access Memory (NVRAM). The Original and Fail-Safe default setting is No.
Plug & Play O/S [No]	No (**DEFAULT**) Yes	Choose No to let the BIOS configure all devices in the system. This setting is appropriate when using a Plug and Play operating system.
PCI latency timer [64]	32, 64, 96, 128, 160, 192, 224, 248	This feature controls how long a PCI device can hold the PCI bus before another takes over. It is set to 64 clock cycles.
Allocate IRQ to PCI VGA [yes]	No, Yes (**DEFAULT**)	If this item is enabled, an IRQ will be assigned to the PCI VGA graphics system. You set this value to No to free up an IRQ.
Palette Snooping [Disabled]	Enabled/Disabled (**DEFAULT**)	This item is designed to solve problems caused by some non-standard VGA card.
PCI IDE BusMaster [Enabled]	Enabled(**DEFAULT**)/ Disabled	When set to enabled, BIOS uses PCI bus mastering for reading/writing to IDE drives.
Off board PCI/ISA IDE Card [Auto]	Auto (**DEFAULT**) PCI Slot 1/ 2/ 3/ 4/ 5/ 6	Some PCI IDE cards may require this to be set to the PCI slot number that is holding the card. When set to auto will works for most PCI IDE cards.
IRQ3/ 4/ 5/ 7/ 9/ 10/ 11/12/13/14/15 [Available]	Available (**DEFAULT**) Reserved	Use the IRQ# address to specify what IRQs can be assigned to a particular peripheral device.
DMA Channel 0/1/3/5/6/7	Available (**DEFAULT**) Reserved	Use this selection to adjust DMA mode options. Use Default value if the IDE disk drive support cannot be determined.
Reserved Memory size	Disabled 16K, 32K, 64K	Use this option to specify the amount of memory that should be reserved for legacy ISA devices.

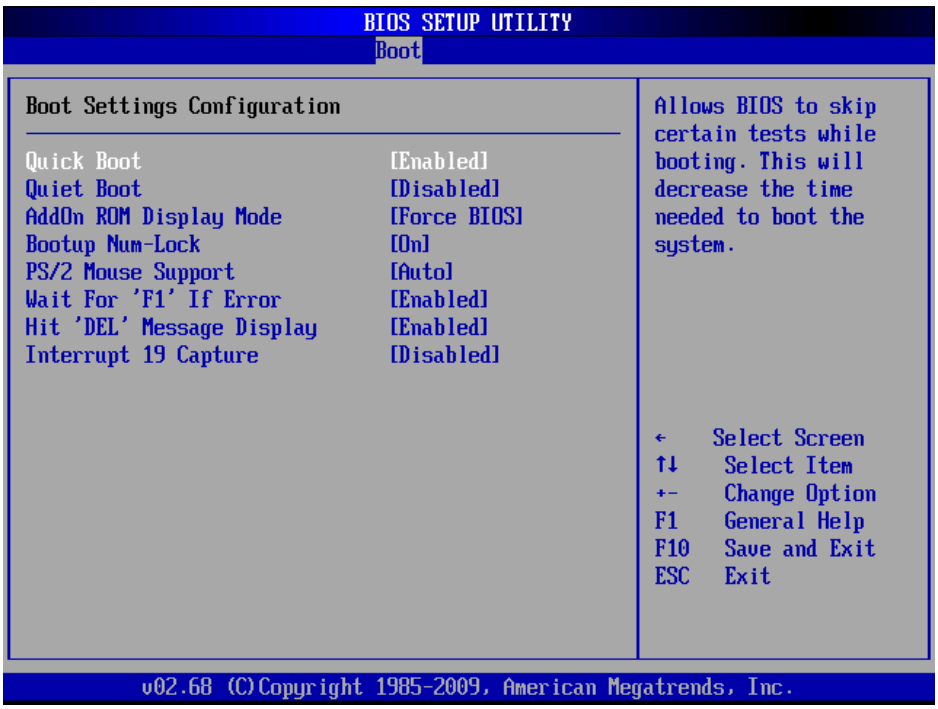
3.6.4 Boot settings

Use the Boot menu to configure system boot options.



3.6.4.1 Boot settings configuration

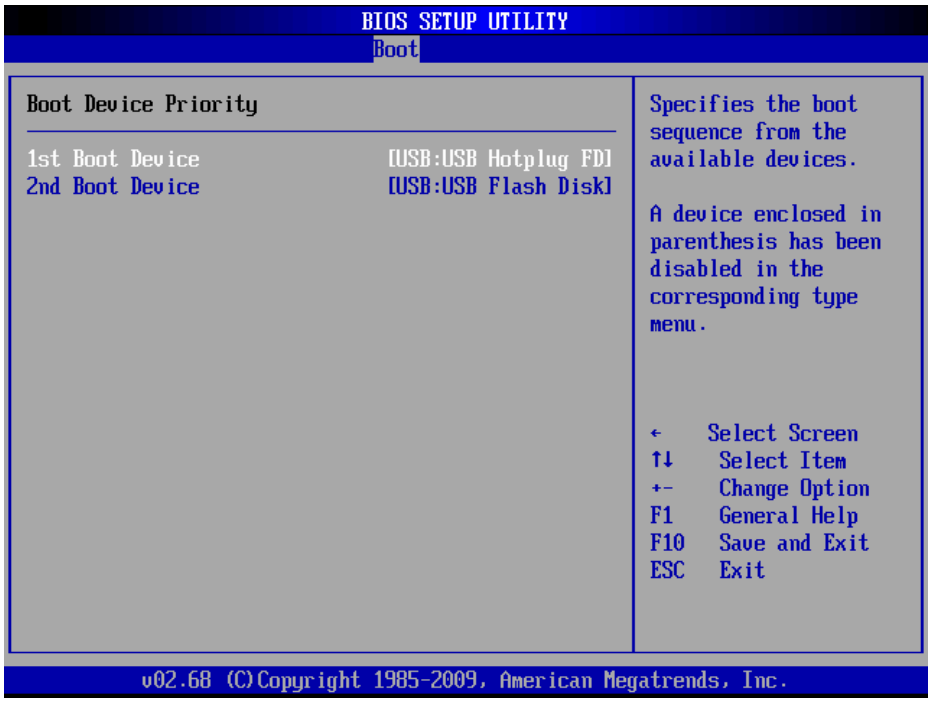
Use **Boot Settings Configuration** menu to configure advanced boot options.



Item	Options	Description
Quick Boot [Enabled]	Disabled, Enabled (**DEFAULT**)	This item allows BIOS to skip certain tests while booting. This will decrease the time needed to boot the system.
Quiet Boot [Disabled]	Disabled (**DEFAULT**) Enabled	If set to Disabled, the BIOS displays normal POST messages. If Enabled, an OEM Logo is shown instead of POST messages.
AddOn ROM Display Mode [Force BIOS]	Force BIOS (**DEFAULT**) Keep Current	This option allows add-on ROM (read-only memory) messages to be displayed.
Bootup Num-Lock [On]	On (**DEFAULT**) Off	This option allows the number Lock setting to be modified during boot up.
PS/2 Mouse support [Auto]	Auto (**DEFAULT**) Disabled, Enabled	This interface utilizes a bidirectional serial protocol to communicate with the computer's auxiliary device controller
Wait For "F1" If Error [Enabled]	Disabled, Enabled (**DEFAULT**)	When set to enable, the system waits for the F1 key to be pressed when error occurs.
Hit "DEL" Message Display [Enabled]	Disabled, Enabled (**DEFAULT**)	This BIOS feature allows you to control the display of the Hit "DEL" to enter setup message during memory initialization.
Interrupt 19 capture [Disabled]	Disabled (**DEFAULT**) Enabled	This item allows options for ROMs to trap interrupt 19.

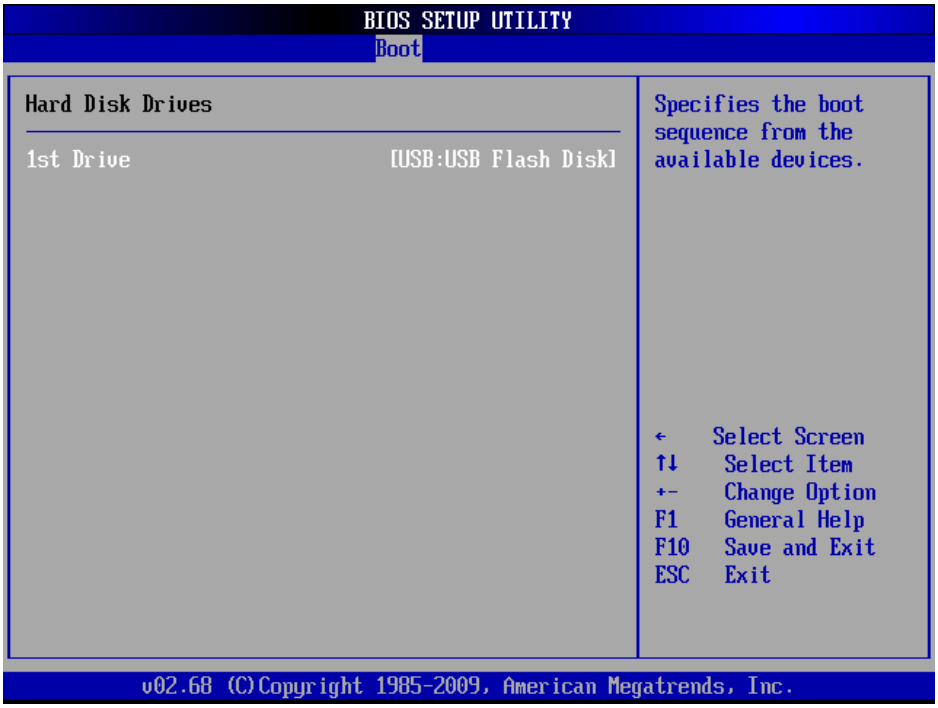
3.6.4.2 Boot device Priority

Use the Boot Device Priority to specify the boot sequence from the available devices.



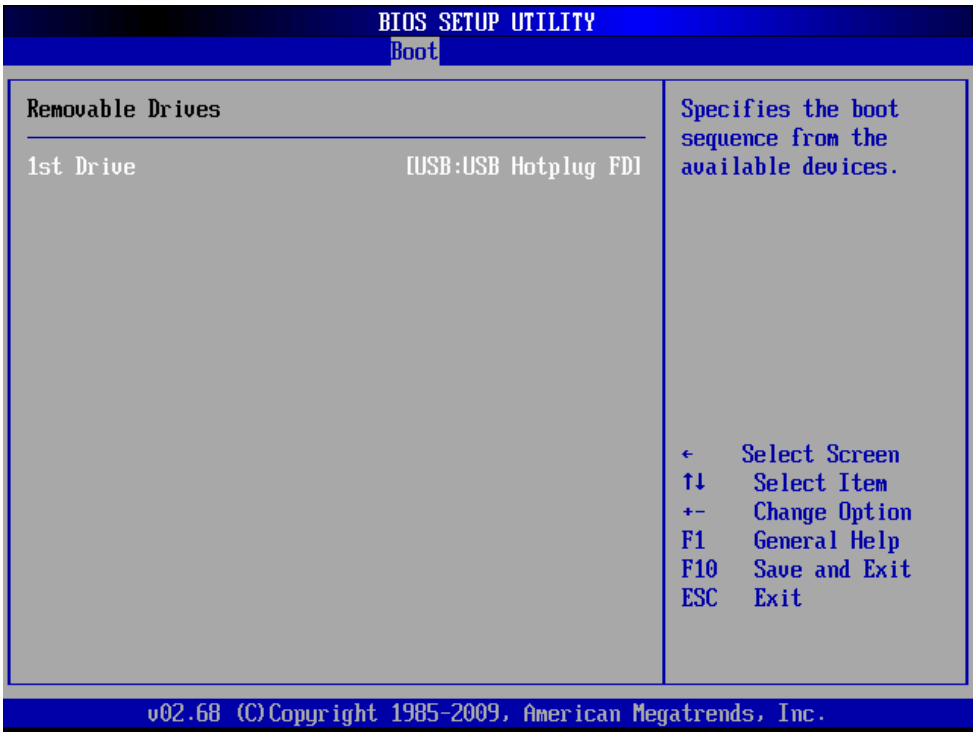
3.6.4.3 Hard Disk Drives

This option specifies boot sequence from the available devices



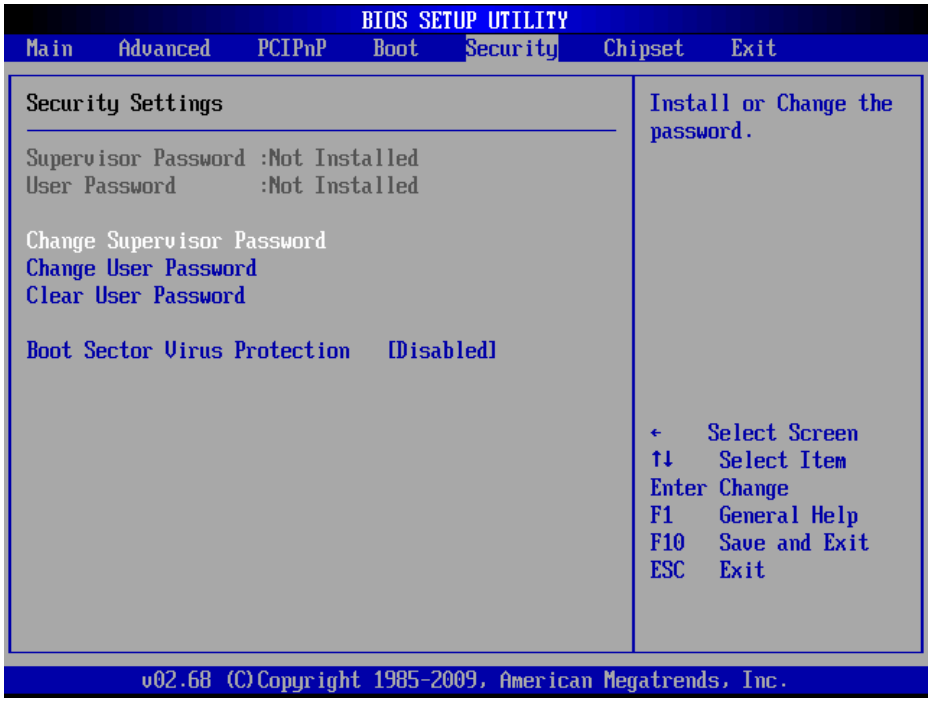
3.6.4.4 Removable Drives

This option specifies boot sequence from the available devices



3.6.5 Security settings

Security Setup options such as password protection and virus protection are described in this section.



Change Supervisor / User Password

Use the Change User/ Supervisor Password to set or change a User/supervisor password. The default for this option is Not Installed. If a User/ supervisor password must be installed, select this field and enter the password. After the password has been added, Install appears next to Change User/ Supervisor Password.

Clear User password

Use Clear User Password to delete a user password.

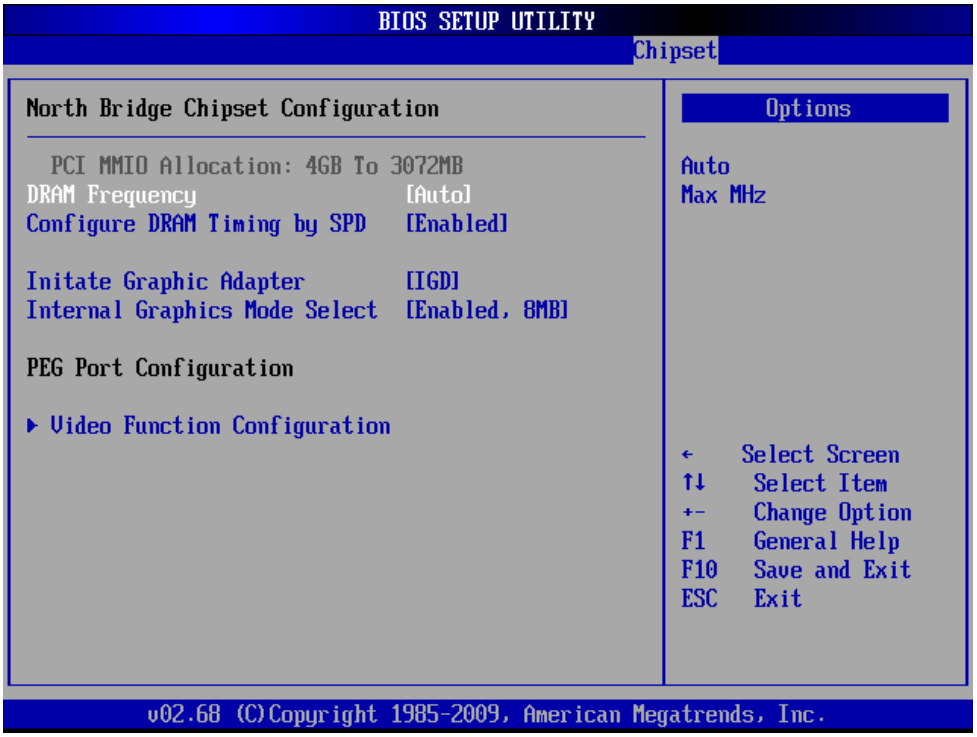
Item	Options	Description
Boot Sector Virus protection [Disabled]	Disabled **(Default)** Enabled	The boot sector virus protection will warn if any program tries to write to the boot sector.

3.6.6 Advanced Chipset Settings

Use **Advanced Chipset Settings** menu to access Northbridge and Southbridge Configuration menus

3.6.6.1 North bridge Chipset configuration

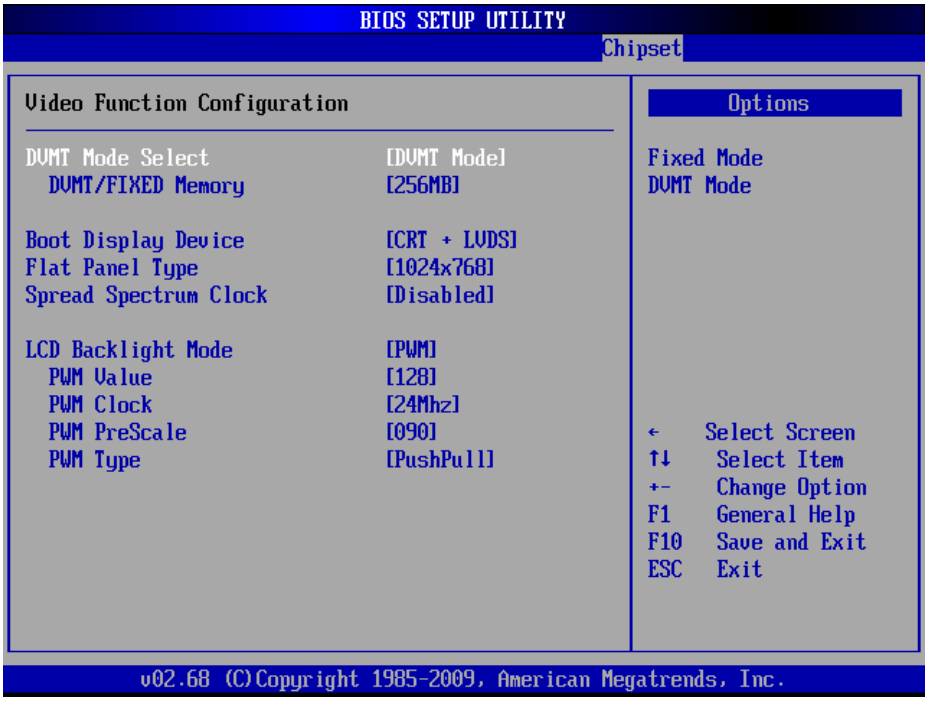
Use the Northbridge chipset configuration menu to configure the Northbridge chipset.



Item	Option	Description
DRAM Frequency [Auto]	Auto **(Default)** Max MHz	This item allows you to manually change DRAM frequency.
Configure DRAM Timing by SPD [Enabled]	Disabled, Enabled **(Default)**	This item allows you to enable or disable by DRAM SPD.
Initiate Graphic Adapter [IGD]	IGD, PCI/IGD, PCI/PEG, PEG/IGD, PEG/PCI	This item allows you to select which graphics controller to use as the primary boot device.
Internal Graphics Mode Select [Enabled]	Enabled 8MB	This option determines the amount of system memory that can be used by the internal graphics device.

3.6.6.2 Video Function configuration

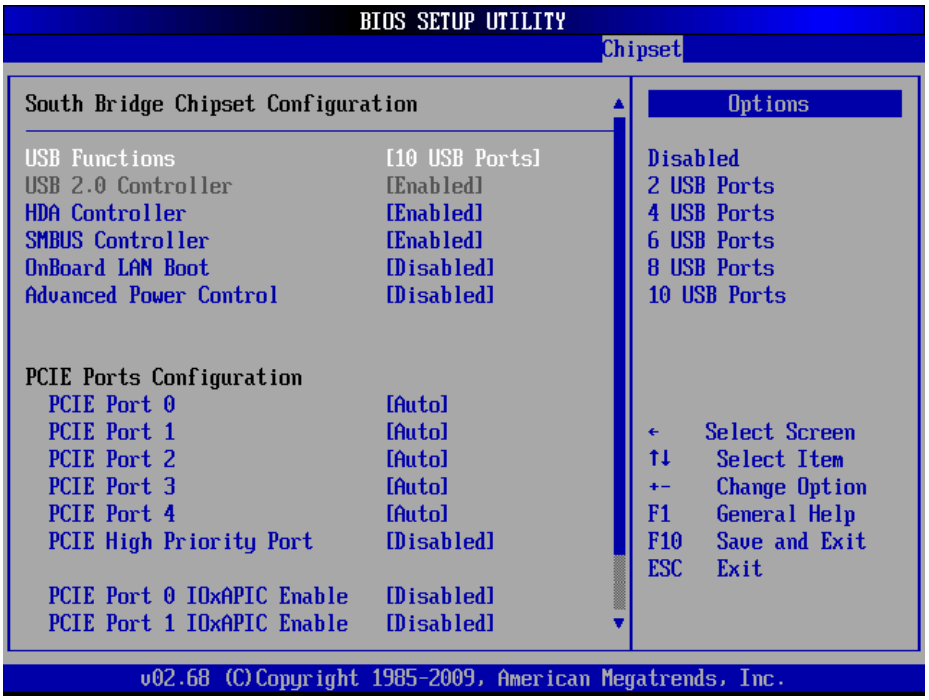
Use this menu to configure Video display and LCD backlight.



Item	Option	Description
DVMT Mode Select	Fixed Mode, DVMT Mode	Displays the active system memory mode.
DVMT/ FIXED Memory	64MB, 128MB, Maximum DVMT	Specifies the amount of DVMT/ FIXED system memory to allocate for video memory.
Boot Display Device	VBIOS-DEFAULT CRT, LVDS, CRT+LVDS (**Default)**	This option selects the display device the system uses when it boots.
Flat Panel Type	640 x 480, 800 x 600, 1024 x 768, 1024 x 600, 1024 x 576, 800 x 480, 1280 x 720, 1280 x 768, 800 x 600, 1024 x 600, 1024 x 768 1024 x 768, 1024 x 768, 1280 x 800, 1280 x 600, 1366 x 768	This item specifies the flat panel PC type being used.
Spread Spectrum Clock [Disabled]	Disabled **(Default)** Enabled	This item allows you to enable or disable spread spectrum clock.
LCD Backlight Mode	PWM mode	This item configures the settings for Backlight control
PWM value [128]	0 ~ 255	
PWM clock [24Mhz]	24M or 180khz	
PWM PreScale	090	
PWM type	Pushpull **(Default)** OpenDrain	

3.6.6.3 South bridge Chipset configuration

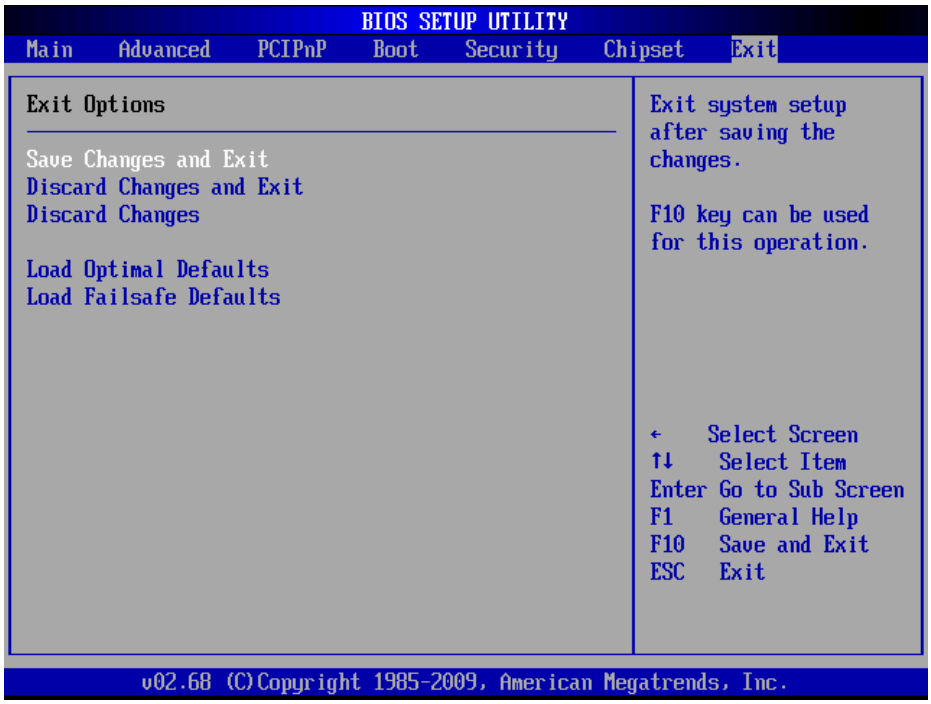
Use the Southbridge chipset configuration menu to configure Southbridge chipset



Item	Option	Description
USB Functions	Disables, 2/ 4/ 6/ 8/ 10 USB Ports	Enables the number of desired ports or disables USB function.
USB 2.0 Controller [Enabled]	Disabled, Enabled	This option is disabled by default.
HAD Controller [Enabled]	Disabled, Enabled	Enable the Southbridge high definition audio controller.
SMBUS Controller [Enabled]	Disabled, Enabled	This option is enabled by default.
OnBoard LAN Boot [Disabled]	Disabled, Enabled	This item helps to set onboard LAN boot mode.
Advanced Power control [Disabled]	Disabled 0/ 3/ 6/ 10	This option disables access to Advanced Power control
PCIE Port 0/ 1/ 2/ 3/ 4 [Auto]	Disabled, Enabled, Auto	This section allows selecting PCIE port 0/ 1/ 2/ 3/ 4 mode.
PCIE High Priority Port [Disabled]	Disabled, Enabled, Auto	This item helps to set PCIE high priority port.
PCIE Port 0/ 1/ 2/ 3/ 4 IOxAPIC Enable [Disabled]	Disabled, Enabled	This helps to enable or disable PCIE port 0/ 1/ 2/ 3/ 4 IOxAPIC.

3.6.7 Exit Options

Use the Exit menu to load default BIOS values, optional failsafe values and to save configuration changes.



3.6.7.1 Save Changes and Exit

Use the save changes and reset option to save the changes made to the BIOS options and to exit the BIOS configuration setup program.

3.6.7.2 Discard Changes and Exit

Use the Discard changes and Exit option to exit the system without saving the changes made to the BIOS configuration setup program.

3.6.7.3 Discard Changes

Use the Discard Changes option to discard the changes and remain in the BIOS configuration setup program.

3.6.7.4 Load Optimal Defaults

Use the Load Optimal Defaults option to load the optimal default values for each of the parameters on the setup menus. F9 key can be used for this operation.

3.6.7.5 Load Failsafe Defaults

Select this option to replace most of the current BIOS settings with predefined settings (coded into the BIOS) that are intended to put the system into as stable a state as possible

4. Drivers Installation

Note: Installation procedures and screen shots in this section are for your reference and may not be exactly the same as shown on your screen.

4.1 Install Chipset Driver (For Intel ICH8M)

Insert the Supporting DVD-ROM to DVD-ROM drive, and it should show the index page of Avalue's products automatically. If not, locate Index.htm and choose the product from the menu left, or link to **\Driver_Chipset\ Intel\ ICH8M**.

Note: The installation procedures and screen shots in this section are based on Windows XP operation system. If the warning message appears while the installation process, click Continue to go on.

Step1. Welcome to setup and click next

Step 2. Click **Next** to accept license agreement

Step 3. Click **Next**.

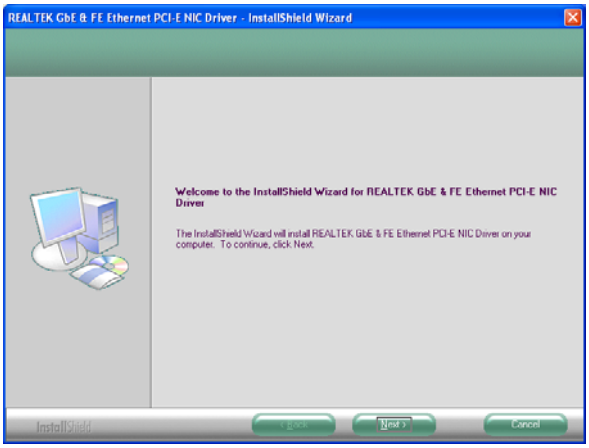
Step 4. Click **Next**

Step 5. Click **Finish** to complete setup.

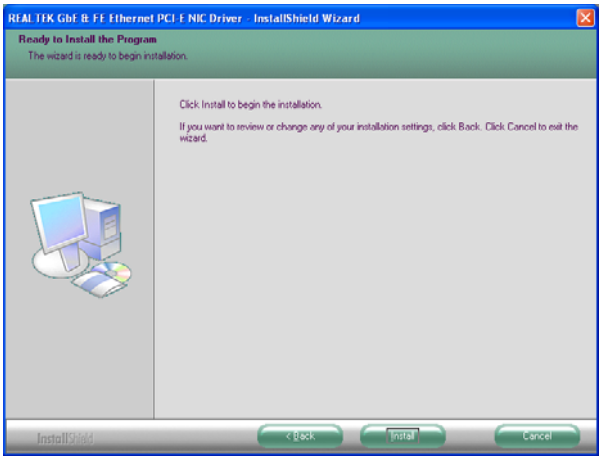
4.2 Install Ethernet Driver (For Realtek 8103EL)

Insert the Supporting DVD-ROM to DVD-ROM drive, and it should show the index page of Avalue's products automatically. If not, locate Index.htm and choose the product from the menu left, or link to **\Driver_Network\Realtek\RTL8103E**.

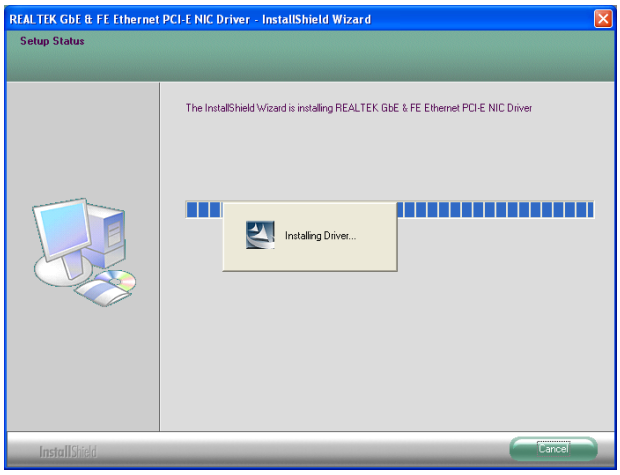
Note: The installation procedures and screen shots in this section are based on Windows XP operation system.



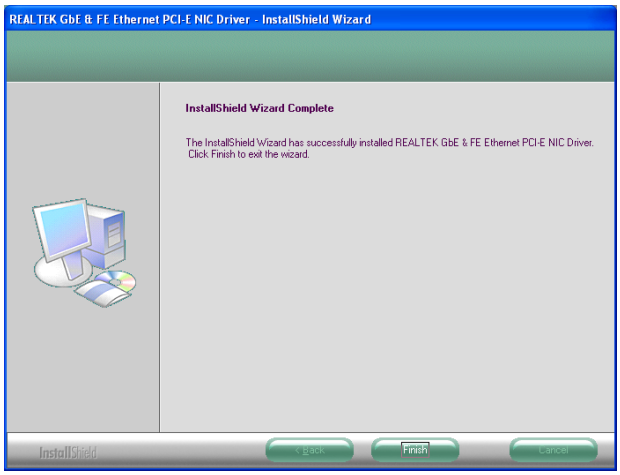
Step 1. welcome to the Install Shield, **click Next**



Step 2. Click **Install** to begin



Step 3. Installing driver...



Step 4. Click **Finish** to complete

4.3 Install Audio Driver (For Realtek ALC888)

Insert the Supporting CD-ROM to CD-ROM drive, and it should show the index page of Avalue's products automatically. If not, locate Index.htm and choose the product from the menu left, or link to **\Driver_Audio\ Realtek\ ALC888.**

Note: The installation procedures and screen shots in this section are based on Windows 2000 operation system.

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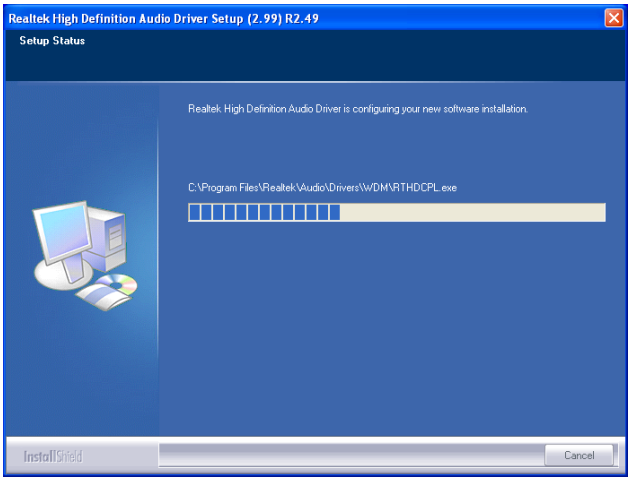
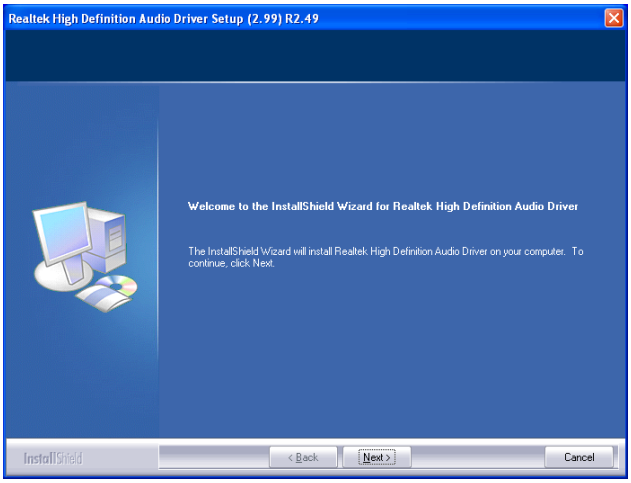
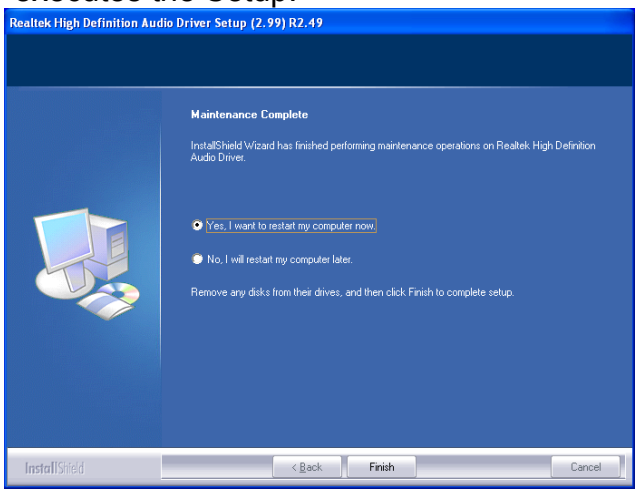


Step 2. The program automatically executes the Setup.



Step 1. welcome to the Install Shield, **click Next**

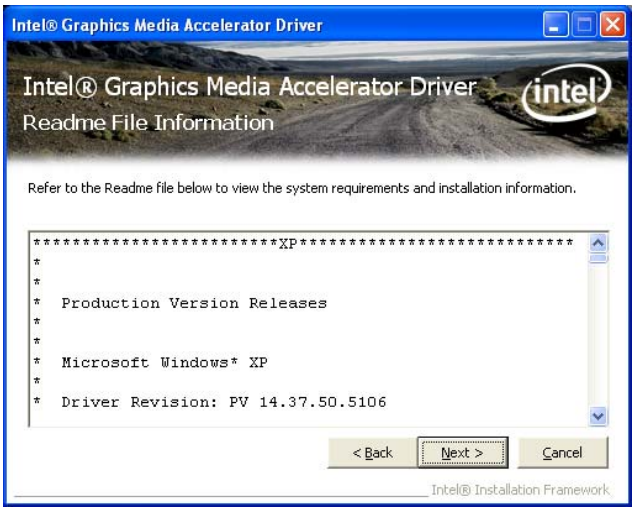


Step 3. Click **Finish** to complete the setup

4.4 Install VGA Driver (For Pineview)

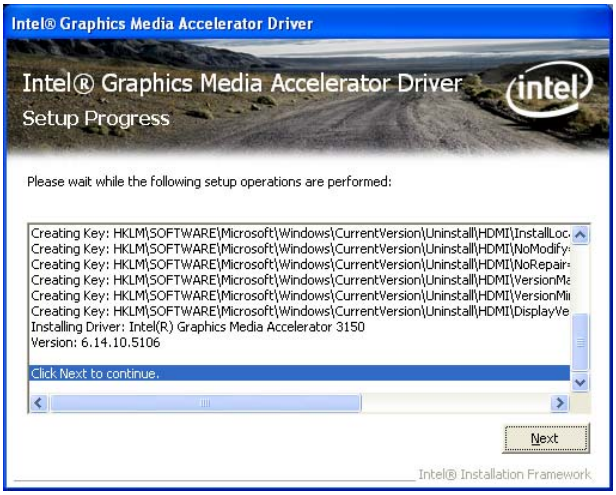
Insert the Supporting CD-ROM to CD-ROM drive, and it should show the index page of Avalue's products automatically. If not, locate Index.htm and choose the product from the menu left, or link to **\Driver_Video\ Intel\ Pineview.**

Note: The installation procedures and screen shots in this section are based on Windows 2000 operation system.

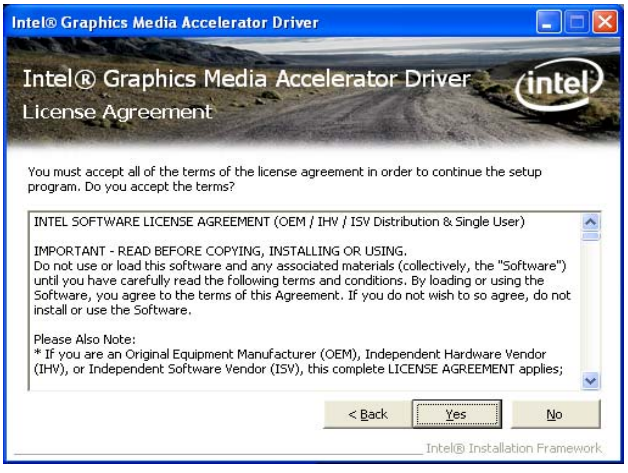


Step 3. Click **Next**

Step 1. welcome to Setup program , **click Next**



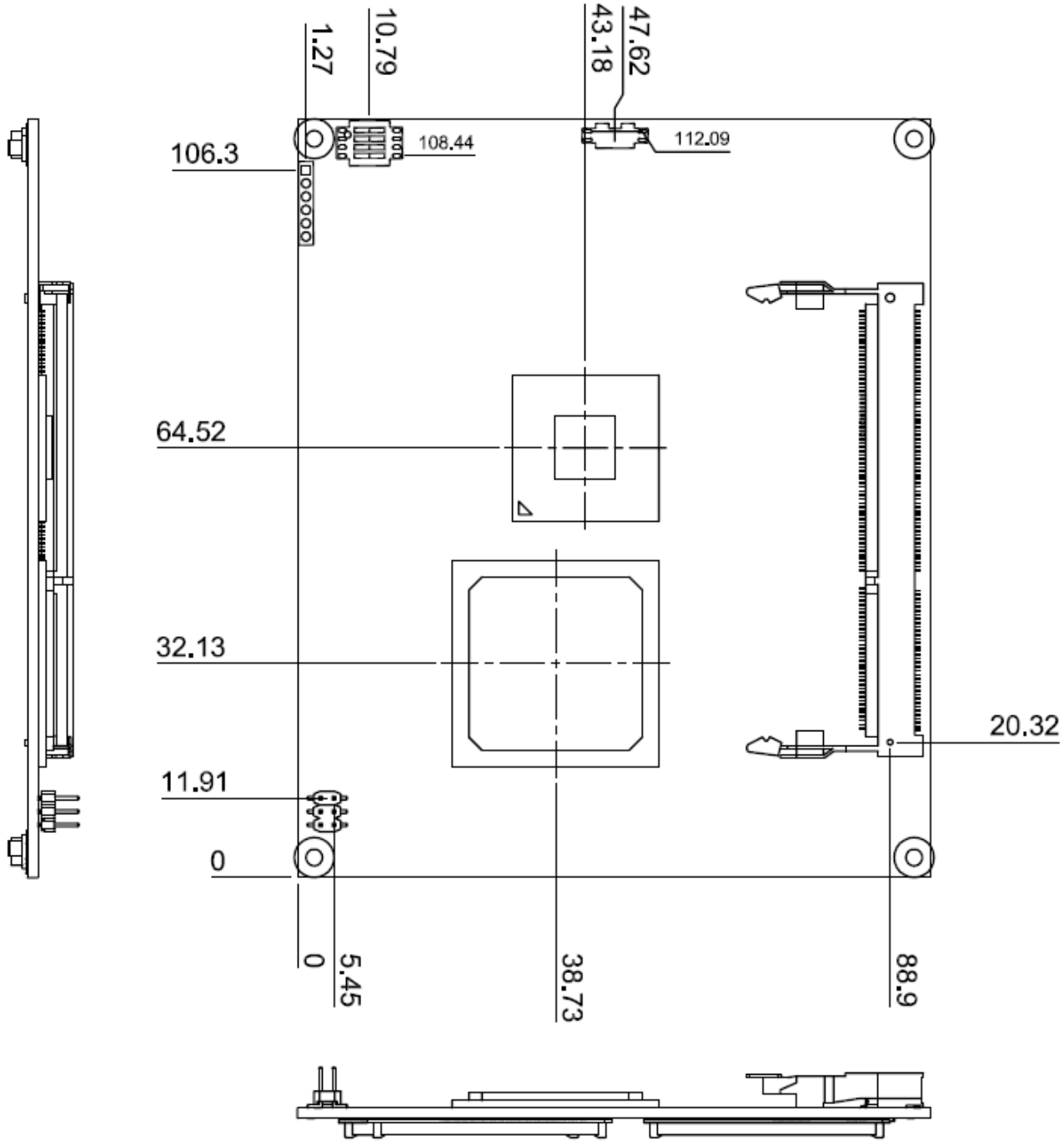
Step 4. Click **Next** to continue setup



Step 2. click yes to accept agreement

Step 5. Click **Finish** to complete setup

5. Mechanical Drawing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47.62
106.3
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112.09
64.52
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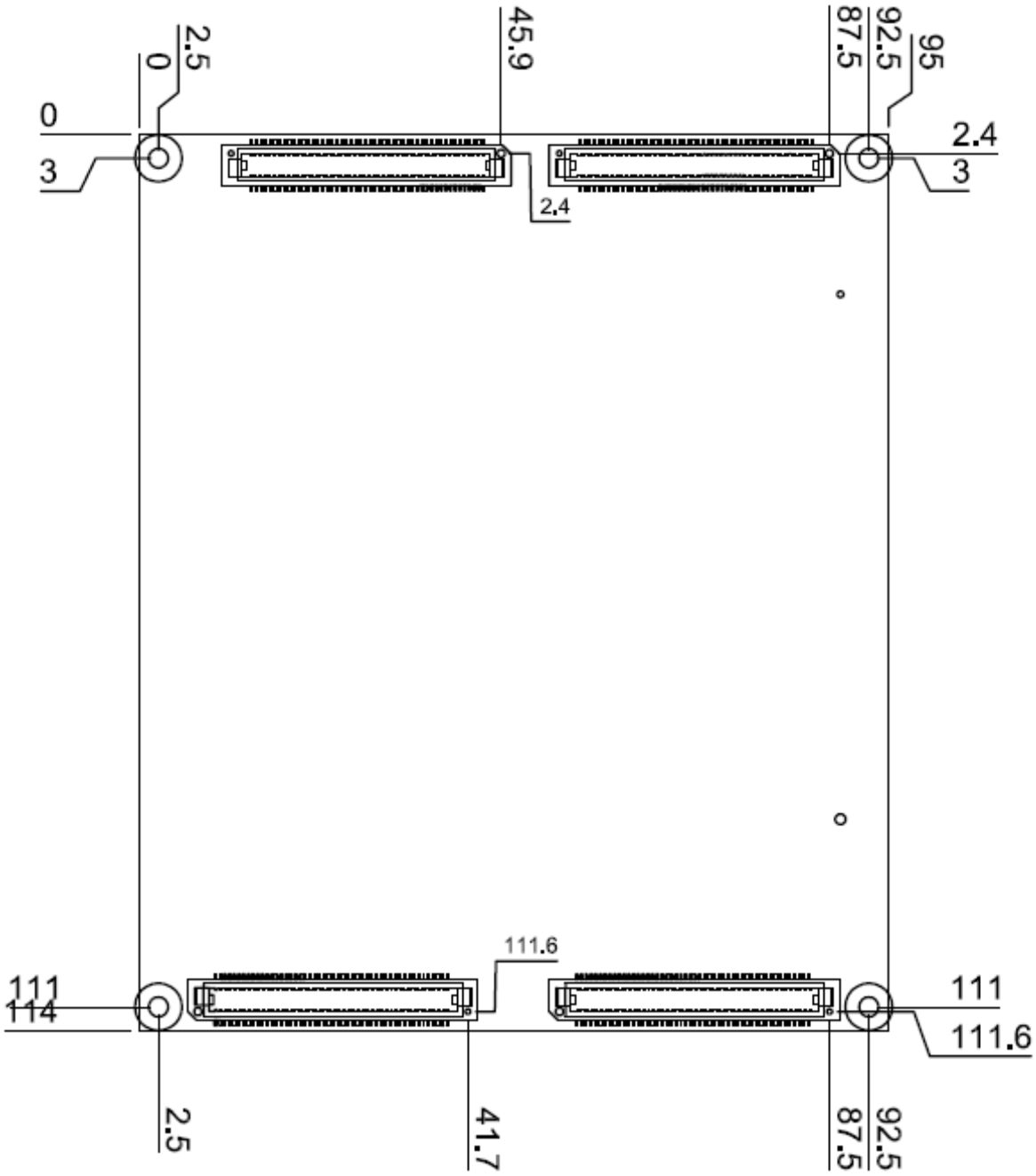
20.32
11.91
0
0
5.45
38.73
88.9

Unit: mm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3
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45.9
2.4
87.5
92.5
95
2.4
3
111.6
111
114
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111.6
2.5
41.7
87.5
92.5