PL-10600
Networking Appliance

1U Rack-mount Intel® 915GME/910GMLE Network Appliance with 8 x GbE, 1 x FE, CF, SATA, LCM

User's Manual

Version 1.0

sales@win-ent.com +1 (978) 688-2000

Manual Edition 1.0, Apr., 2009

Trademarks

Limitation of Liability

While reasonable efforts have been made to ensure the accuracy of this document, the manufacturer and distributor assume no liability resulting from errors or omissions in this document, or from the use of the information contained herein.

For more information on PL-10600 or other WIN products, please visit our website

http://www.win-ent.com

For technical supports or free catalog, please send your inquiry to consultants@win-ent.com

Table of Contents

Chapter 1. General Information

1.1 Introduction

The PL-10600 is a 1U rack-mounted hardware platform designed for network service applications. Built with Intel Embedded IA components warranteed for longevity, the PL-10600 supports Intel® Celeron M processor with the Intel 915GME/910GMLE chipset and ICH6-M I/O controller.

The platform supports high bandwidth DDRII SODIMM slot with memory up to 2GB. In order to provide the best network performance and best utilization, the powerful storage interfaces include one 3.5" SATA HDD and CompactFlash™. The optional onboard Cavium Nitrox Lite cn5xx security co-processor supports multi-security protocol commands which can offload the CPU thus increasing overall system throughput performance.

This platform affords four GbE Copper and max to 12 GbE Ethernet ports via PCI-E by 1 or by 4 on front-panel. The front panel also has one FE management port, one USB 2.0 port, one RJ-45 console port and LED indicators that monitor power and storage device activities for local system management, maintenance and diagnostics. In addition, the PL-10600 supports one PCI-E by4 slot, and is RoHS, FCC and CE compliant.

1.2 Specification

Processor System	CPU	Intel® Pentium® M, Celeron® M Processors
	Chipset	Intel® 915GME/ 910GMLE + ICH6-M
	Front Side Bus	533/400MHz FSB
	BIOS	AMI® 512KB Flash BIOS
Memory	Technology	Un-buffered and Non-ECC DDR2 533/400 MHz memory
	Capacity	Up to 1GB with one SO-DIMM sockets
Expansion	Expansion Slots	one PCI-E x8 slot for expansion module
Ethernet	GbE Ethernet	four RJ45 GbE ports, Intel 82574L, PCI-E x1 one RJ45 FE port, Intel 82562 PHY four RJ45 GbE ports, Intel 82573L, PCI-E x1 (optional expansion module)
	LAN bypass	N/A
Storage	HDD	one internal 3.5" SATA HDD bay
	Compact Flash Socket	one CompactFlash™ Type I/II

I/O	USB	one USB2.0 host connector one internal 5x2 pin header (2-ports USB 2.0)
	Serial	one RJ45 Console port (COM1) one internal 5x2 pin header (COM2)
Power Supply	Watt	AC open frame power supply
Mechanical and Environment	Form Factor	1U rack-mount
	LCD Module	one 16x2 LCM
	Keypad	four buttons keypad
	LED	one Power LED (Green) one HDD LED (Yellow) one Status LED (Green/Yellow via programmable GPIO)
	Dimension(W x D x H)	440mm (W) x 270mm (D) x 44mm (H) (17.3"W x 10.7"D x 1.7"H)
	Operating Temperature	Operating: 0 ~ 40°C (32 ~ 104°F)
	Humidity	5 ~ 95% relative humidity, non-operating, non-condensing
Weight	1pc/CTN, 4.5kgs, 55cm(W) x 40cm(D) x 20cm(H)	
Certification	CE/FCC	

1.3 Ordering Information

We offer some accessories for PL-10600 appliance for customer need.

PL-10600A-A	1U Rackmount Intel® 915GME Network System, support Socket 479 CPU, 8x GbE, 1x FE, CF, SATA, PCI-E x8, LCM
PL-10600B-060-A	1U Rackmount Intel® 910GMLE Network System, Celeron M 600MHz CPU onboard, 4x GbE, 1x FE, CF, SATA, LCM
PL-10600C-060-A	1U Rackmount Intel® 910GMLE Network System, Celeron M 600MHz CPU onboard, 4x GbE, 1x FE, CF, SATA, Cavium CN505, LCM
R137A	Expansion module with 4 RJ45 GbE ports, Intel 82573L
DK002	Cable development kit

1.4 Packaging

Check that the following items have been included in the package before installation.

1. PL-10600 Appliance
2. Quick Installation Guide (Optional)
3. Cables (Optional)
4. CD-ROM that contains the following folders:

(1) Manual
(2) System Driver
(3) Ethernet Driver
(4) Utility Tools

If any of the above items are missing or damaged, please contact your dealer or retailer from whom you purchased the PL-10600. Keep the box and carton when you probably ship or store PL-10600 in near future. After you unpack the goods, inspect and make sure the packaging is intact. Do not plug the power adapter to the appliance of PL-10600 if it appears damaged.

Note: Keep the PL-10600 in the original packaging until you start installation.

1.5 Precautions

Please make sure you properly ground yourself before handling the PL-10600 appliance or other system components. Electrostatic discharge can be easily damage the PL-10600 appliance.

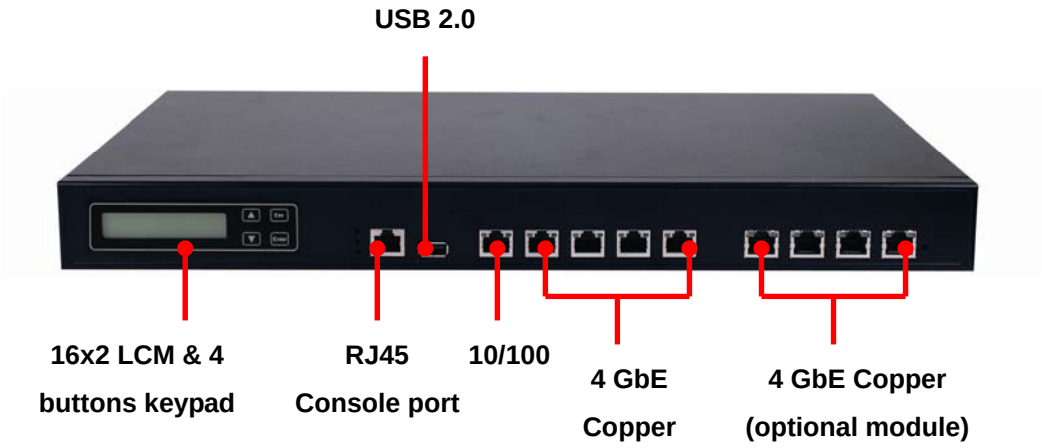
Do not remove the antistatic packing until you are ready to install the PL-10600 appliance.

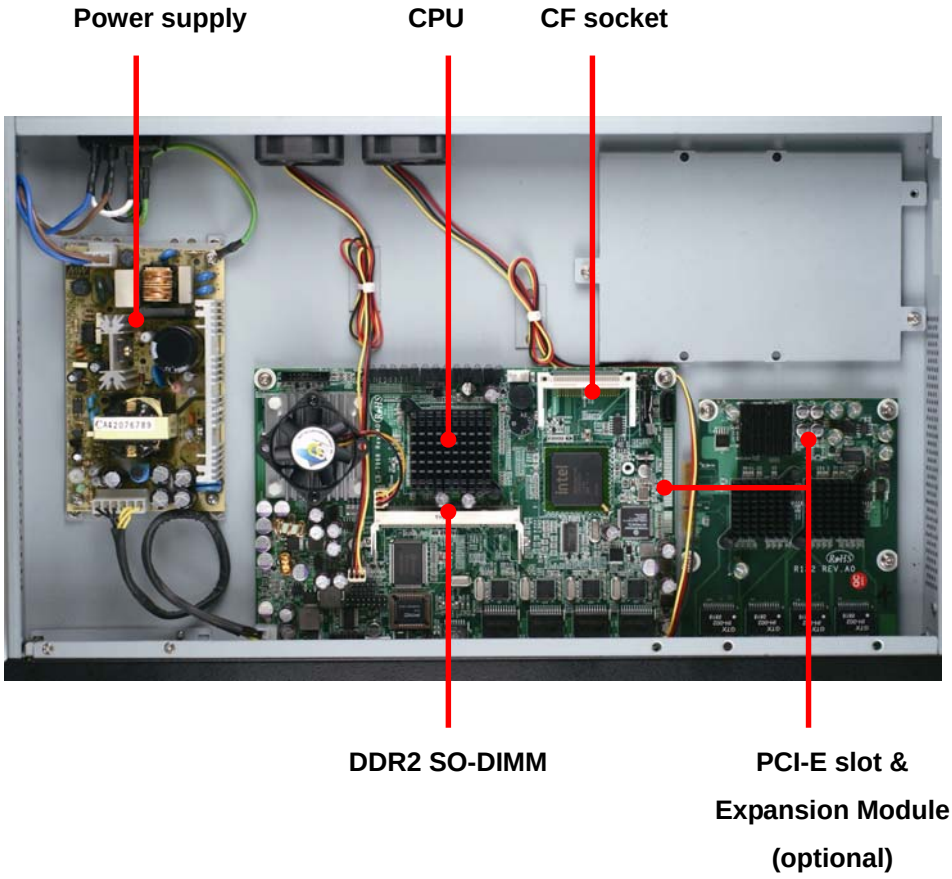
Ground yourself before removing any system component from its protective antistatic packaging. To ground yourself, grasp the expansion slot covers or other unpainted parts of the computer chassis.

Handle the PL-10600 appliance by its edges and avoid touching its components.

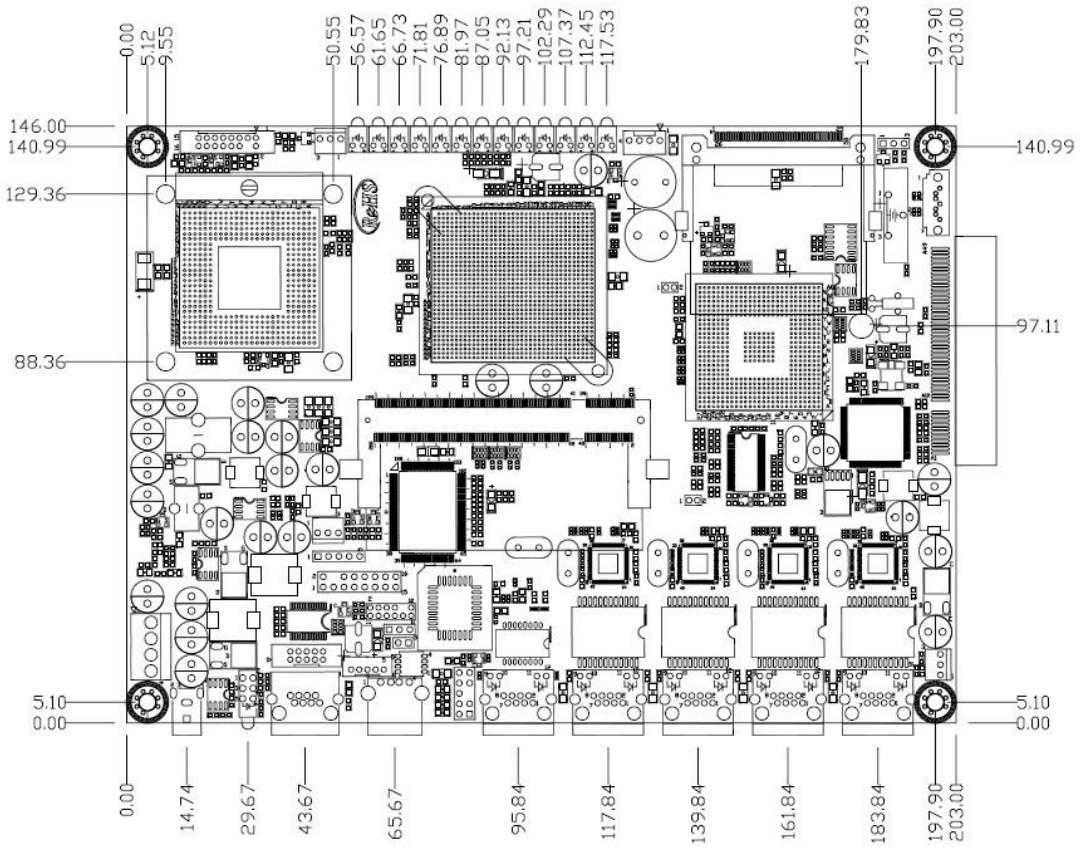
1.6 System Layout

PL-10600 Front Side



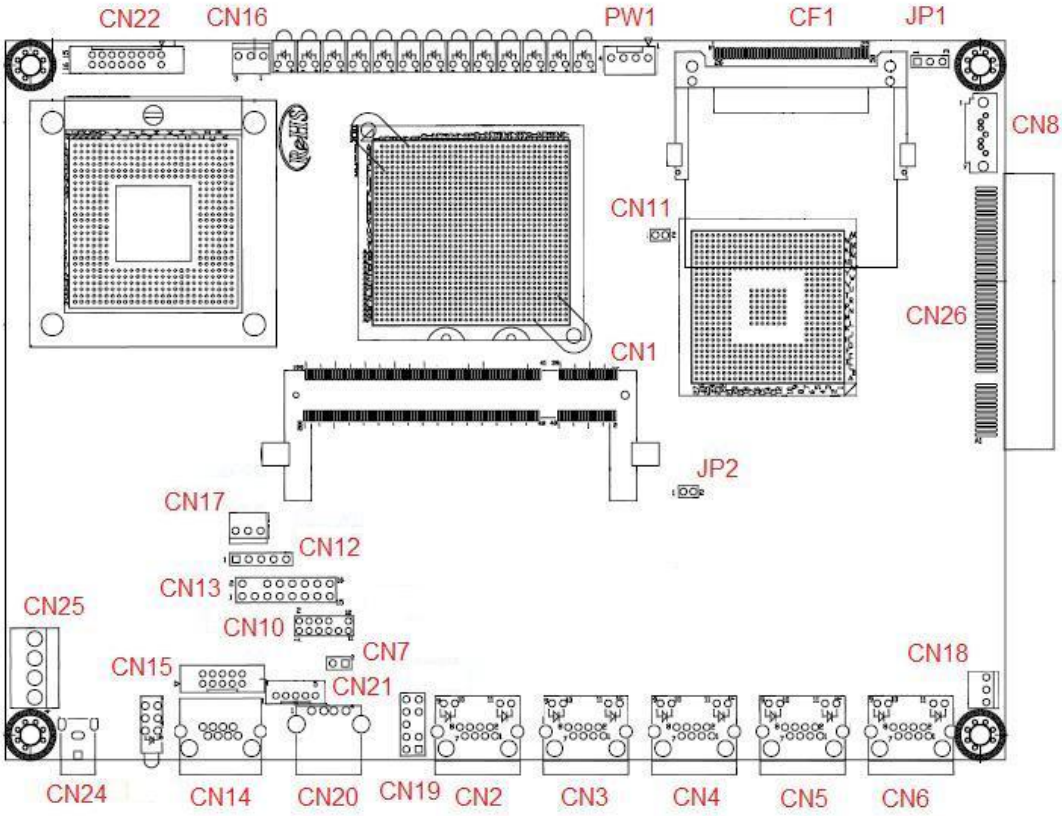


1.7 Board Dimensions



Chapter 2. Connector/Jumper Configuration

2.1 Connector/Jumper Location and Definition



Connectors Location:

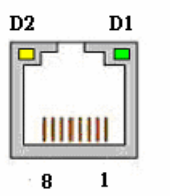
Connector	Description	Connector	Description
CN1	DDRII SO-DIMM	CN2	LAN Port 1 (RJ45)
CN3	LAN Port 2 (RJ45)	CN4	LAN Port 3 (RJ45)
CN5	LAN Port 4 (RJ45)	CN6	LAN Port 5 (RJ45)
CN7	Reset Pin Header	CN8	SATA Connector
CN9	None	CN10	LPC Connector
CN11	Test Pin Header *(reserved for manufacture)*	CN12	LCM Control Pin Header
CN13	LCM Connector	CN14	COM1 Connector (RJ45)
CN15	COM2 Pin Header	CN16	FAN Connector
CN17	FAN Connector	CN18	FAN Connector
CN19	KB/MS Pin Header	CN20	USB Connector (Port 0)
CN21	USB Pin Header (Port 1)	CN22	VGA Pin Header
CN23	None	CN24	Power Jack (+12V)
CN25	Power Connector (2P or 4P)	CN26	PCI-Ex8 Connector *(CB-7968A Only)*
PW1	SATA HDD Power Connector	CF1	CF Socket

Connectors Location:

Jumper	Description	Jumper	Description
JP1	Default (1-2) Clear CMOS (2-3)	JP2 *(CB-7968A Only)*	FSB 400 MHz (OPEN) FSB 533 MHz (CLOSE)

2.2 Connector and Jumper Setting

CN2/3/4/5/6: LAN RJ-45 Connector

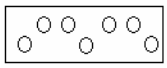


Pin	Define
1	TX+
2	TX-
3	RX+
4	Chassis Ground
5	Chassis Ground
6	RX-
7	Chassis Ground
8	Chassis Ground
D2: Speed indicated LED	
1 Gbps	GREEN
100 Mbps	YELLOW
D1 :Link/Activity LED	
Link	GREEN
Activity	BLINKING

CN7: Reset Pin Header

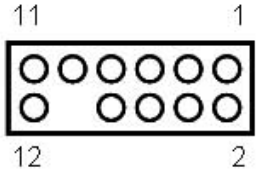
Pin	Define
1	Reset #
2	GND

CN8: SATA Connector



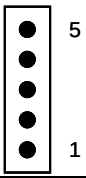
Pin	Signal
1	Ground
2	TXP
3	TXN
4	Ground
5	RXN
6	RXP
7	Ground

CN10: LPC Connector



Pin	Define	Pin	Define
1	+3.3V	2	AD 0
3	AD 1	4	AD 2
5	AD 3	6	Frame#
7	PCIRST#	8	+5V
9	CLOCK	10	NC
11	Ground	12	Ground

CN12: LCM Control Pin Header



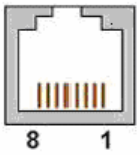
Pin	Define
1	ACK#
2	BUSY
3	PE
4	SLCT
5	Ground

CN13: LCM Connector

Pin	Define	Pin	Define
1	+5V	2	Ground
3	AFD#	4	NONE
5	INIT#	6	SLIN#
7	PD1	8	PD0
9	PD3	10	PD2
11	PD5	12	PD4
13	PD7	14	PD6
15	BLN	16	BLP

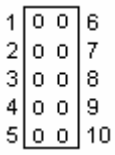
BLN & BLP: Backlight control via GPIO24

CN14: COM1 Connector (RJ45)



Pin	Define
1	CTS#
2	DTR#
3	TXD#
4	GPIO
5	Ground
6	RXD#
7	DSR#
8	RTS#

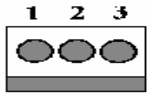
CN15: COM2 pin header



Pin	Define	Pin	Define
1	DCD#	6	DSR#
2	RXD#	7	RTS#
3	TXD#	8	CTS#

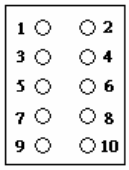
4	DTR#	9	RI#2
5	Ground	10	NC

CN16/17/18: FAN Connector



Pin	Define
1	Ground
2	+12V
3	Speed Detect

CN19: PS/2 KB/MS Connector



Pin	Define	Pin	Define
1	KCLK	2	MCLK
3	KDAT	4	MDAT
5	Reserved	6	Not used
7	GND	8	GND
9	+5V	10	+5V

CN20: USB Connector (Port 0)

Pin	Define
1	USBVCC
2	USBN0
3	USBP0
4	GND

CN21: USB Pin Header (Port 1)

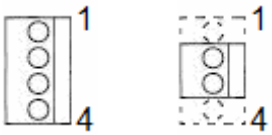
Pin	Define
1	USBVCC
2	USBP1N
3	USBP1P
4	Ground
5	Ground

CN22:VGA Pin Header

Pin	Define	Pin	Define
1	RED	2	GREEN
3	BLUE	4	+5V
5	Ground	6	Ground
7	Ground	8	Ground
9	+5V	10	Ground
11	+5V	12	SDA
13	HSYNC	14	VSYNC
15	SCL	16	NC

CN25: Power Connector (2P or 4P)

4P connector 2P connector



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

CN26: PCI-E x8 Connector (WIN proprietary connector)

Pin	Define	Pin	Define
B1	+12V	A1	GND
B2	+12V	A2	+12V
B3	+12V	A3	+12V
B4	GND	A4	GND
B5	SMCLK	A5	+3.3V
B6	SMDAT	A6	+3.3V

B7	GND	A7	Pull High to 3.3V
B8	+3.3V	A8	+3.3V
B9	NC	A9	+3.3V
B10	+3.3V	A10	+3.3V
B11	WAKE#	A11	PE_RESET#
B12	Power good	A12	GND
B13	Gnd	A13	CLK
B14	TXP0	A14	CLK#
B15	TXN0	A15	GND
B16	GND	A16	RXP0
B17	+5V	A17	RXN0
B18	GND	A18	GND
B19	TXP1	A19	+5V
B20	TXN1	A20	GND
B21	GND	A21	RXP1
B22	GND	A22	RXN1
B23	TXP2	A23	GND
B24	TXN2	A24	GND
B25	GND	A25	RXP2
B26	GND	A26	RXN2
B27	TXP3	A27	GND
B28	TXN3	A28	GND
B29	GND	A29	RXP3
B30	BY PASS	A30	RXN3
B31	GPIO33	A31	GND
B32	GND	A32	GPIO34
B33	TXP4	A33	None
B34	TXN4	A34	GND
B35	GND	A35	RXP4
B36	GND	A36	RXN4
B37	TXP5	A37	GND
B38	TXN5	A38	GND
B39	GND	A39	RXP5
B40	GND	A40	RXN5
B41	TXP6	A41	GND
B42	TXN6	A42	GND

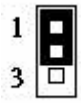
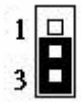
B43	GND	A43	RXP6
B44	GND	A44	RXN6
B45	TXP7	A45	GND
B46	TXN7	A46	GND
B47	GND	A47	RXP7
B48	GPI13	A48	RXN7
B49	GND	A49	GND

PW1: SATA HDD Power Connector

Pin	Signal
1	+12V
2	GND
3	GND
4	+5V

Jumper Setting

JP1: Clear CMOS

Pin		Setting
	1-2	Normal (Default)
	2-3	Clear CMOS

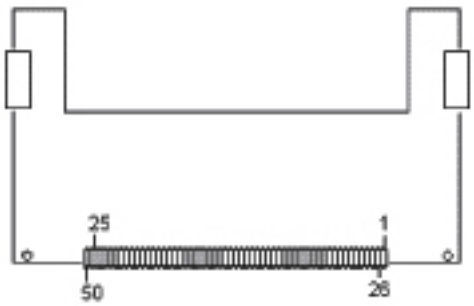
JP2: FSB CLOCK Select *(for CB-7968A only)*

Pin		Setting
	OPEN	400MHz (Default)
	CLOSE	533MHz

2.3 CompactFlash™ Card Socket Pin Define

CompactFlash™ card is a small removable mass storage device. It can provide complete PCMCIA-ATA functionality and compatibility plus True IDE functionality compatible with ATA/ATAPI-4.
CompactFlash™ storage products are solid state form factor, it means they contain no moving parts. Thus, it provides users with much greater protection of the 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	DREG
4	D05	14	Ground	24	WP	34	IOR	44	DACK
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



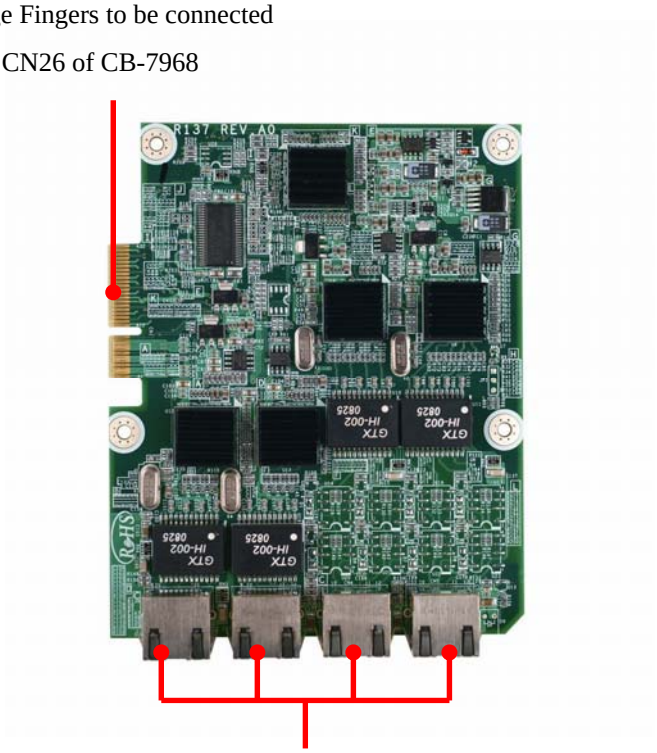
Chapter 3. Optional GbE Module & Riser Card Setting

The PL-10600 can offer various GbE module combinations to match various applications and market demand.

3.1 R-137: Ethernet module with four GbE Copper

R-137A is a four GbE Copper module and designed reserved one pair bypass function for Option. The golden edge fingers must be connected with CN26 proprietary connector of CB-7968 board.

Golden Edge Fingers to be connected with CN26 of CB-7968



4 x GbE Copper ports

Chapter 4. BIOS Setup

The ROM chip of your PL-10600 board is configured with a customized Basic Input/Output System (BIOS) from AMI BIOS. The BIOS is a set of permanently recorded program routines that give the system its fundamental operational characteristics. It also tests the computer and determines how the computer reacts to instructions that are part of programs.

The BIOS is made up of code and programs that provide the device-level control for the major I/O devices in the system. It contains a set of routines (called POST, for Power-On Self Test) that check out the system when you turn it on. The BIOS also includes CMOS Setup program, so no disk-based setup program is required CMOS RAM stores information for:

- Date and time
- Memory capacity of the appliance
- Type of display adapter installed
- Number and type of disk drives

The CMOS memory is maintained by battery installed on the PL-10600 board. By using the battery, all memory in CMOS can be retained when the system power switch is turned off. The system BIOS also supports easy way to reload the CMOS data when you replace the battery of the battery power lose.

4.1 Quick Setup

In most cases, you can quickly configure the system by choosing the following main menu options:

1. Choose "Exit" ➔ "Load Optimal Defaults" from the main menu. This loads the setup default values from the BIOS Features Setup and Chipset Features Setup screens.
2. Choose "Main" & "Advanced" from the main menu. This option lets you configure the date and time, hard disk type, floppy disk drive type, primary display and more.
3. In the main menu, press F10 ("Save Changes and Exit") to save your changes and reboot the system.

4.2 Entering the CMOS Setup Program

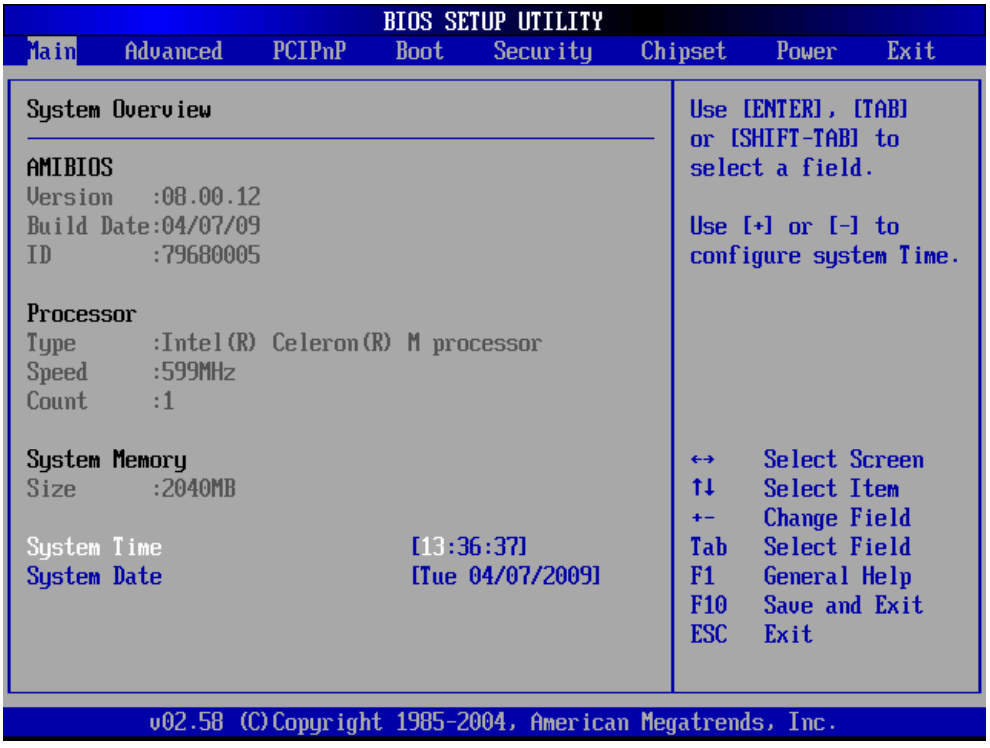
Use the CMOS Setup program to modify the system parameters to reflect the options installed in your system and to customize your system. For example, you should run the Setup program after you:

- Received an error code at startup
- Install another disk drive
- Use your system after not having used it for a long time
- Find the original setup missing
- Replace the battery
- Change to a different type of CPU
- Run the AMI 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:



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.

4.3 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.

Power: For changing the power management settings.

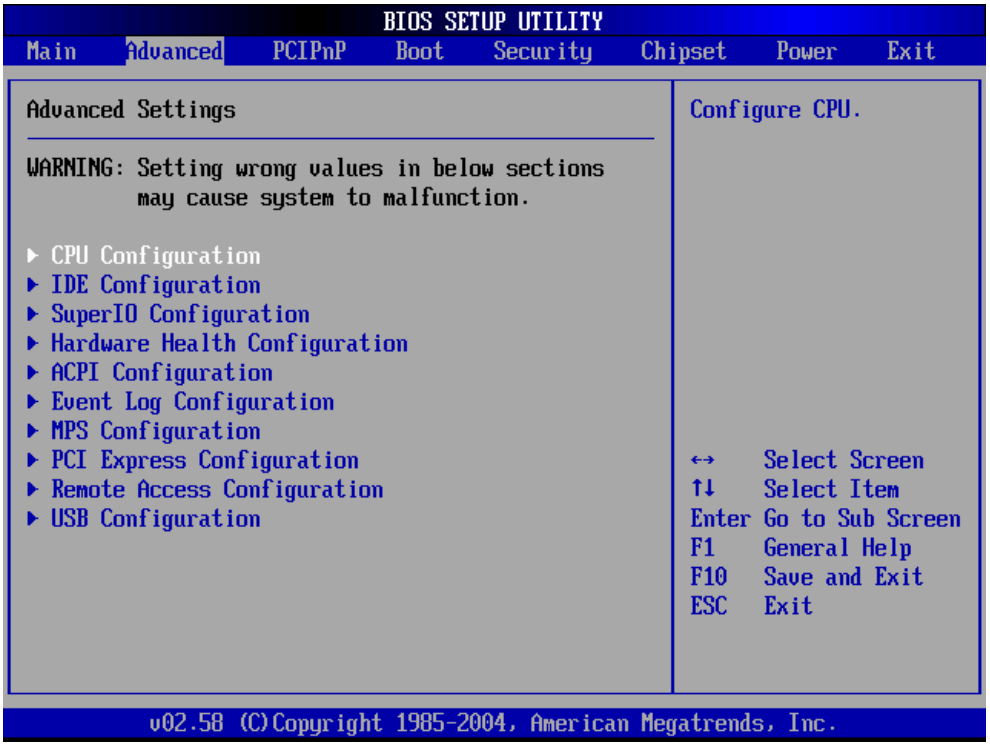
Exit: For selecting the exit options and loading default settings.

4.4 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:

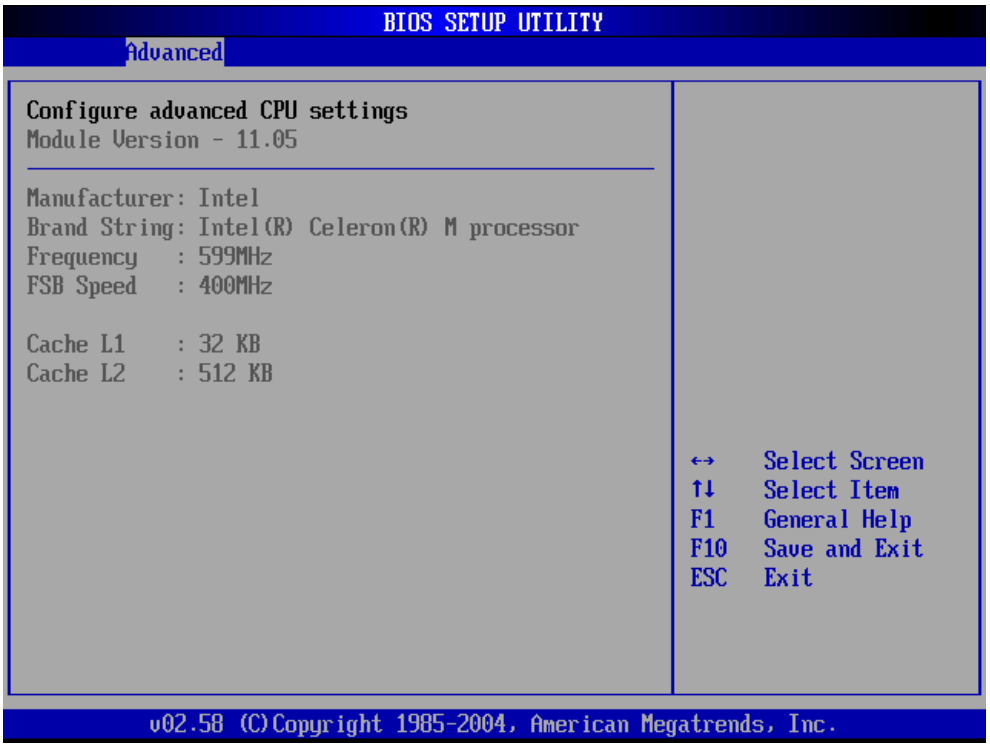


2. Use the arrow keys to move between fields. Modify the selected field using the PgUP/PgDN/+/- keys. Some fields let you enter numeric values directly.

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

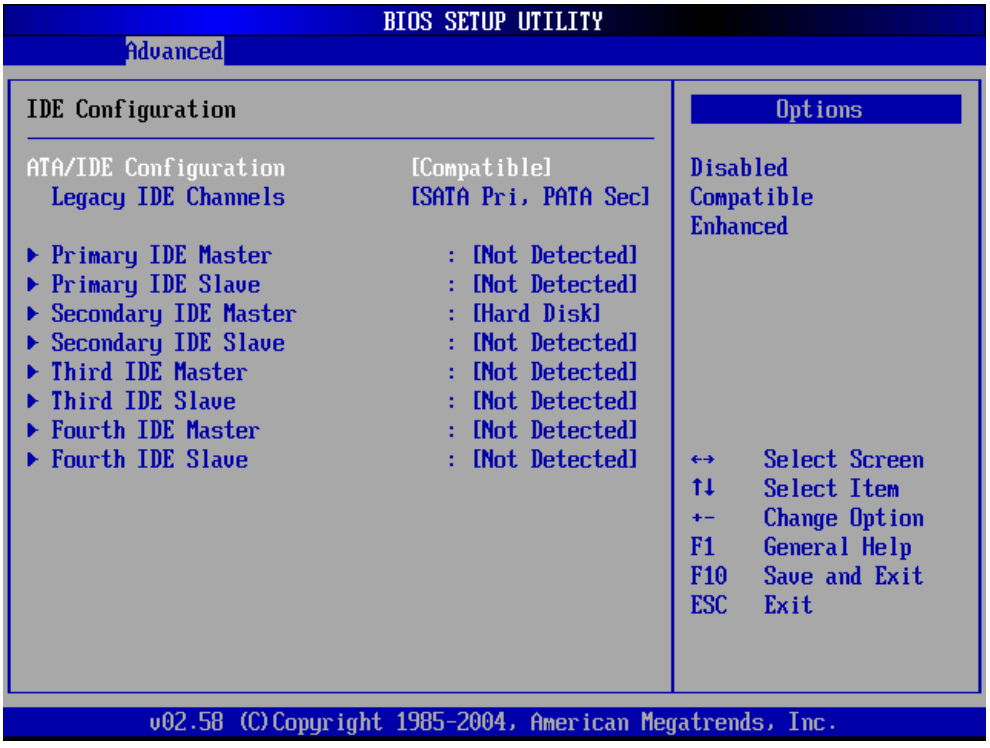
4.4.1 CPU Configuration

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



4.4.2 IDE Configuration

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



Primary * IDE Master and 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.

Secondary IDE Master and Secondary 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.

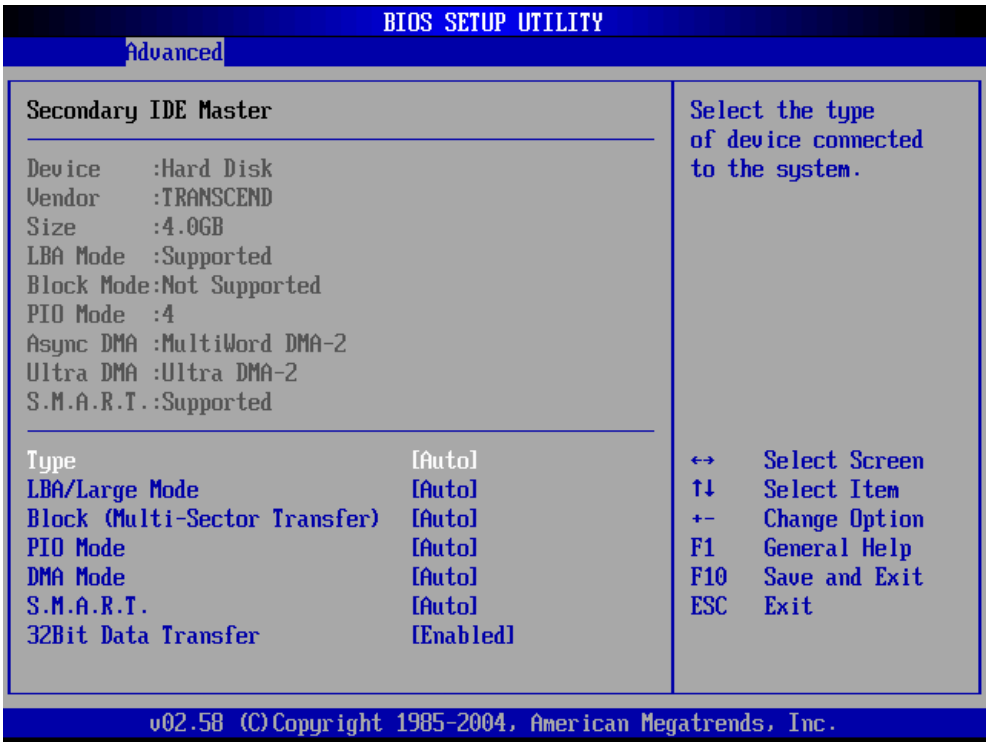
Third IDE Master and Third IDE Slave

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.

Fourth IDE Master and Fourth 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.

*** IDE Master**



Type: [Auto]

Selects the type of IDE device. Setting to Auto allows automatic selection of the appropriate IDE device type.

LBA/Large Mode: [Auto]

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

Block (Multi-Sector Transfer): [Auto]

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

PIO Mode: [Auto]

Selects the PIO mode for the device.

DMA Mode: [Auto]

Selects the DMA mode for the device.

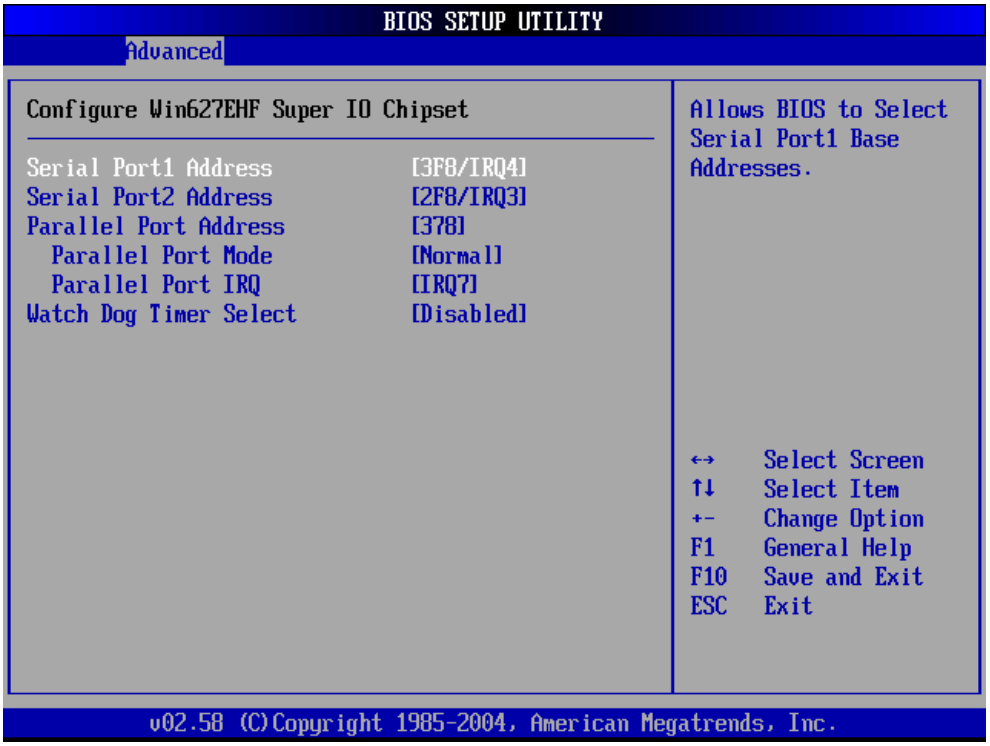
S.M.A.R.T.: [Auto]

S.M.A.R.T.(Self-Monitoring, Analysis, and Reporting Technology) . It allows system to use the SMART protocol to monitor your hard disk status.

32Bit Data Transfer: [Enabled]

Enables or disables 32-bit data transfer. If the host controller does not support 32-bit data transfer, this menu must be set to [Disabled].

4.4.3 Super IO Configuration



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]

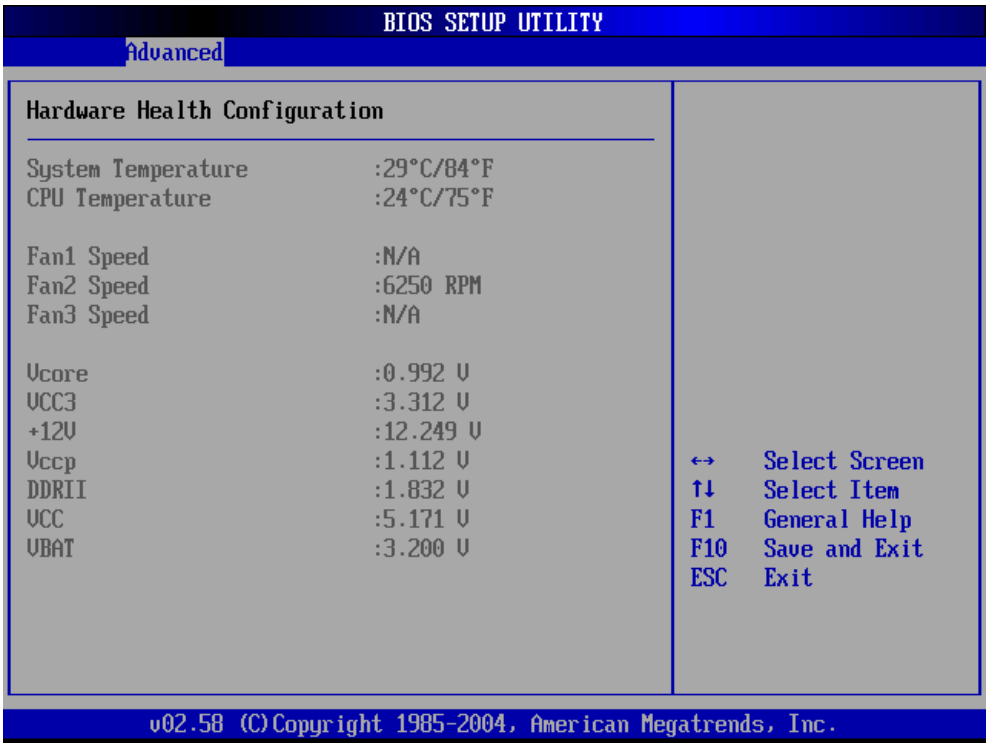
Selects the Parallel Port IRQ.

Watch Dog Timer Select: [Disabled]

Enables or disables the WatchDog Time-out.

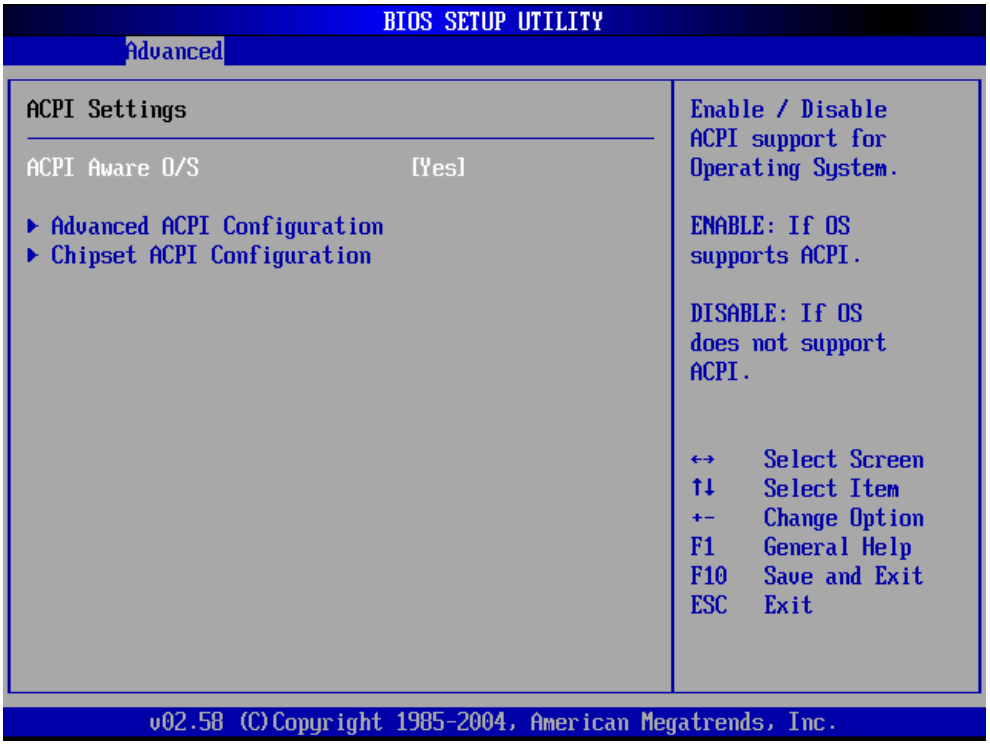
4.4.4 Hardware Health Configuration

This screen shows you the CPU core voltage, System voltage, System temperature and CPU temperature.



4.4.5 ACPI Configuration

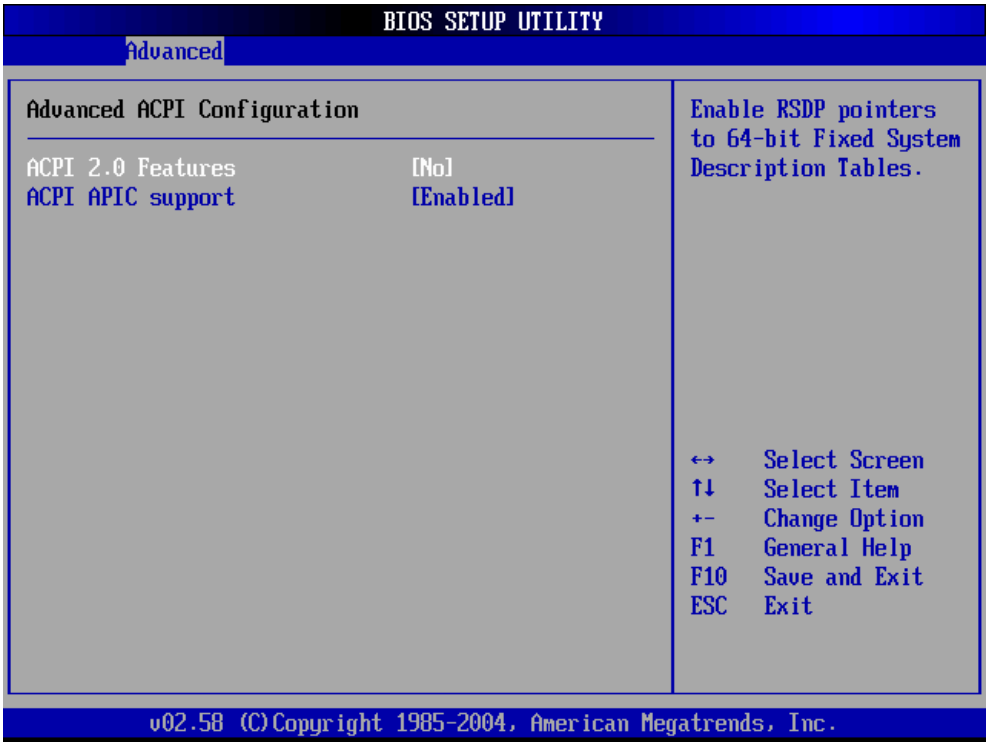
This sub menu is used to change the settings for the ACPI.



ACPI Aware O/S: Enables or disables ACPI support for Operating System.

Advanced ACPI Configuration:

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



ACPI 2.0 Features: [No]

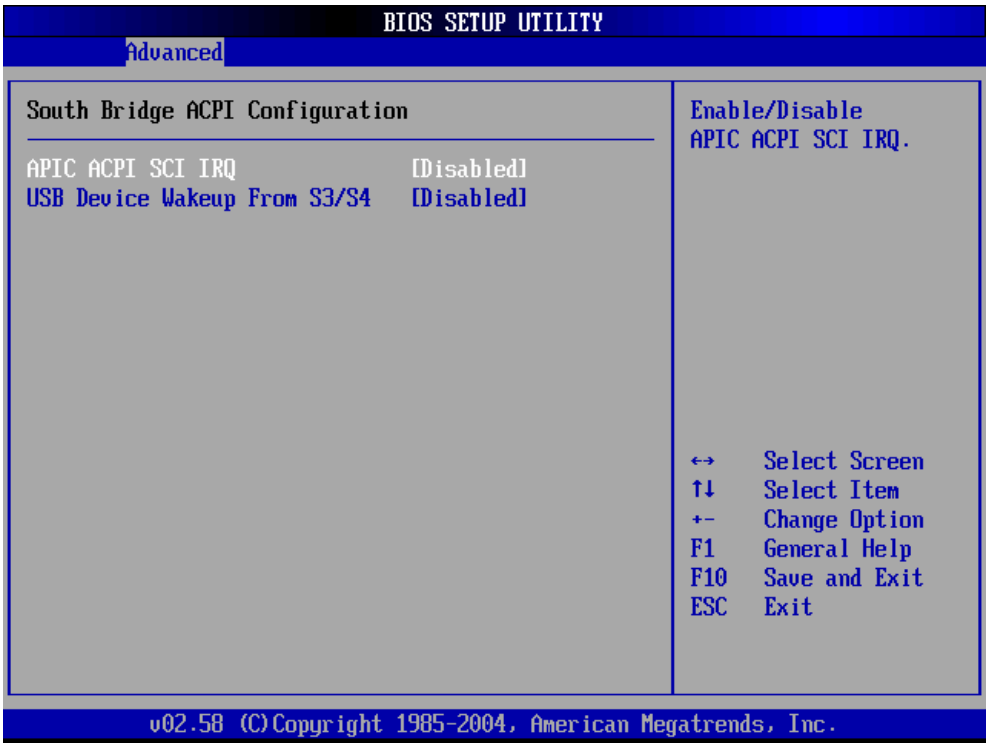
This item allows you to enable or disable RSPD pointers to 64-bit Fixed System Description Tables.

ACPI APIC support: [Enabled]

This item allows you to enable or disable APIC features.

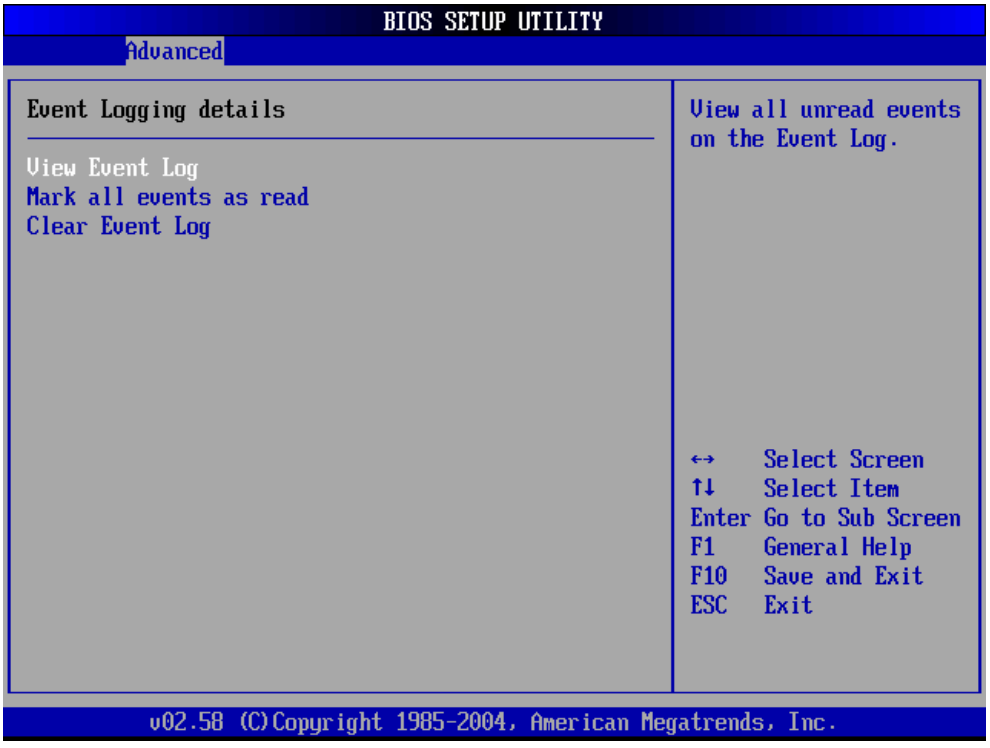
Chipset ACPI Configuration:

This sub menu configures the south bridge ACPI configuration. It contains below sub-menus:



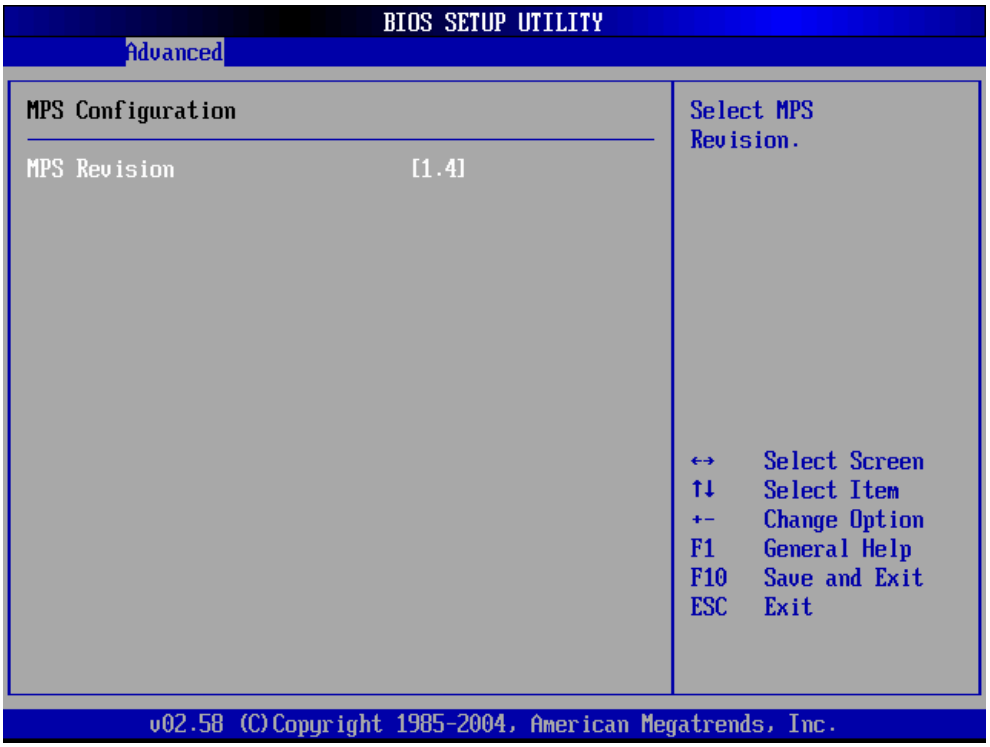
4.4.6 Event Log Configuration

This sub menu allows you to view the event logging details.



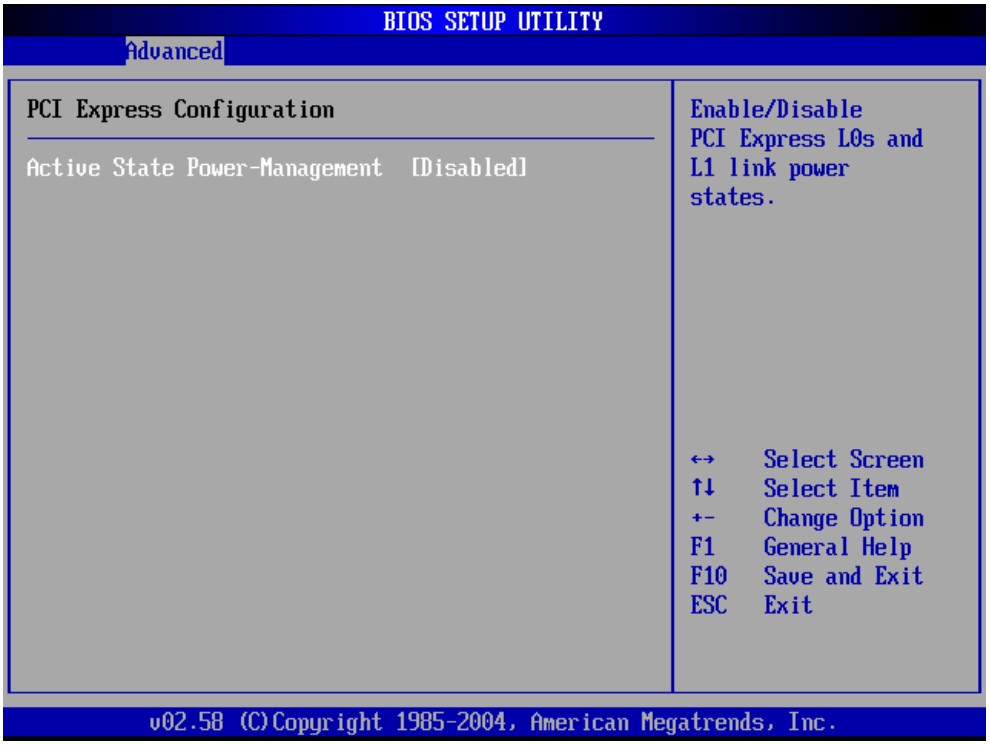
4.4.7 MPS Configuration

This sub menu allows you to select MPS Revision.



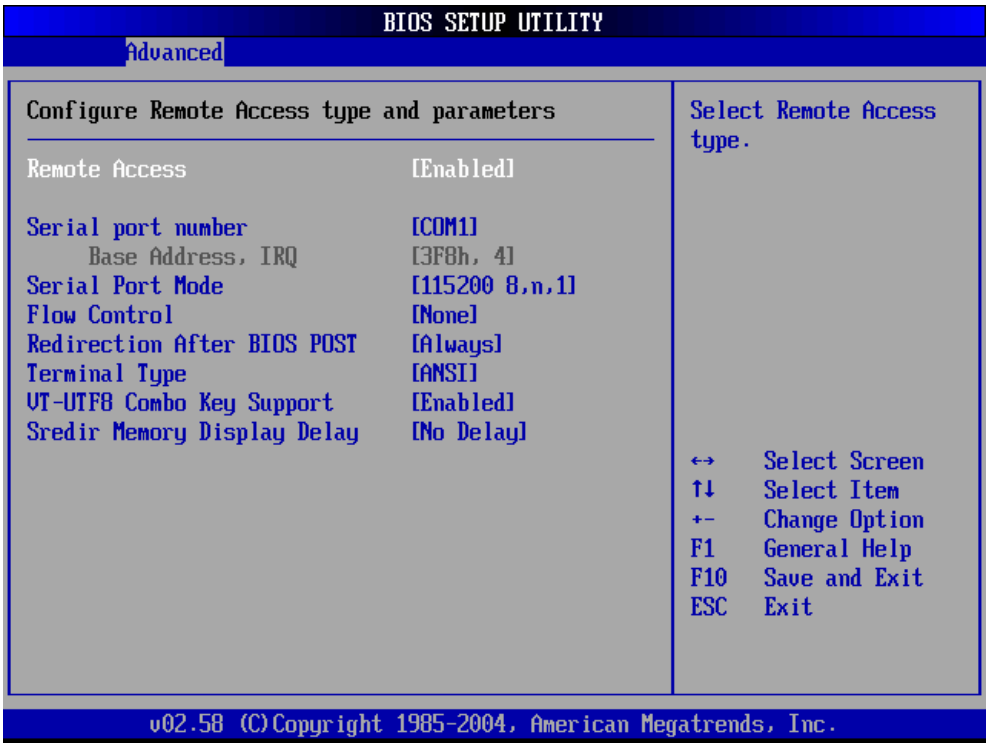
4.4.8 PCI Express Configuration

This sub menu allows you to enable or disable the PCI Express link power state.



4.4.9 Remote Access Configuration

This sub menu allows you to enable or disable Remote access. If you select [Enabled], below items will show up:



Serial port number: [COM1]

This item allows you to select the serial port for console redirection. Make sure the selected port is enabled.

Serial Port Mode: [115200 8,n,1]

This item allows you to select serial port settings.

Flow Control: [None]

This item allows you to select flow control for console redirection.

Redirection After BIOS POST: [Always]

This item allows you to set Redirection configuration after BIOS POST.

[Always]: The console redirection is always active.

[Boot Loader]: The console redirection is active during POST and Boot Loader.

[Disabled]: Turns off the console redirection after POST.

Terminal Type: [ANSI]

This item allows you to select the target terminal type.

VT-UTF8 Combo Key Support: [Enabled]

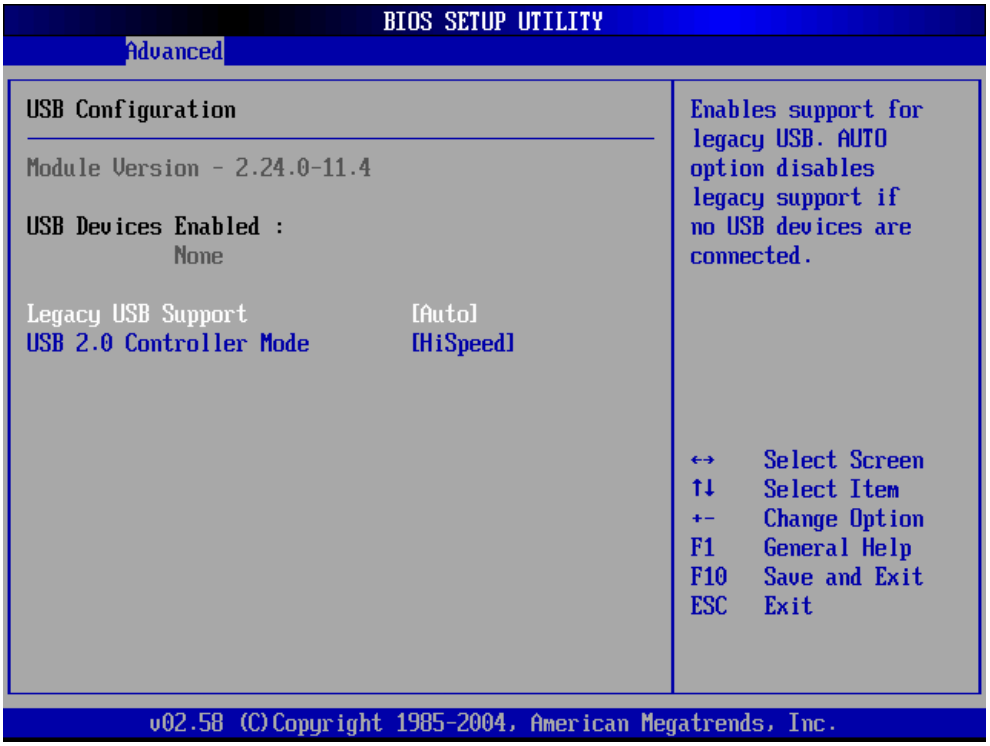
This item allows you to enable or disable VT-UTF8 combination key support for ANSI/VT100 terminals.

Sredir Memory Display Delay: [No Delay]

This item allows you to set the delay in seconds to display memory information.

4.4.10 USB Configuration

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



Legacy USB Support: [Auto]

Enables support for legacy USB. AUTO option disables legacy support if no USB devices are connected.

USB 2.0 Controller Mode: [HiSpeed]

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

4.5 PCIPnP Menu

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

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

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

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.

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.

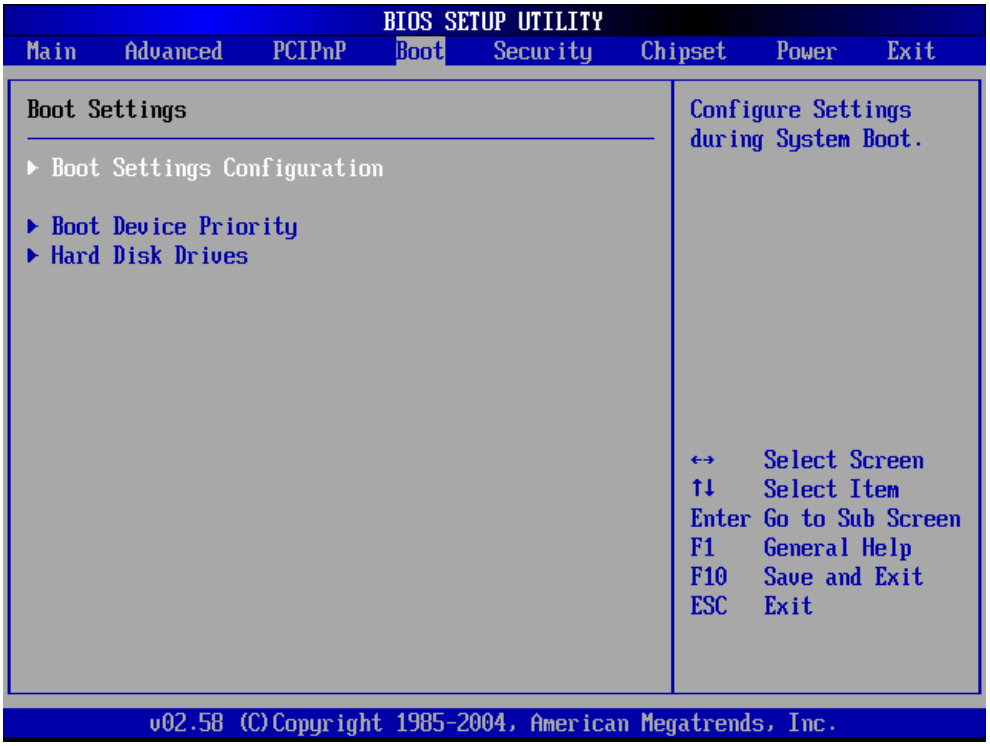
Reserved Memory Size: [32K]
This is to set the size of memory block to be reserved for legacy USB devices.

Reserved Memory Address: [C0000]
This item allows you to select the reserved memory address for legacy ISA devices.

4.6 Boot Menu

⇩Use the Boot Setup option as follows:

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

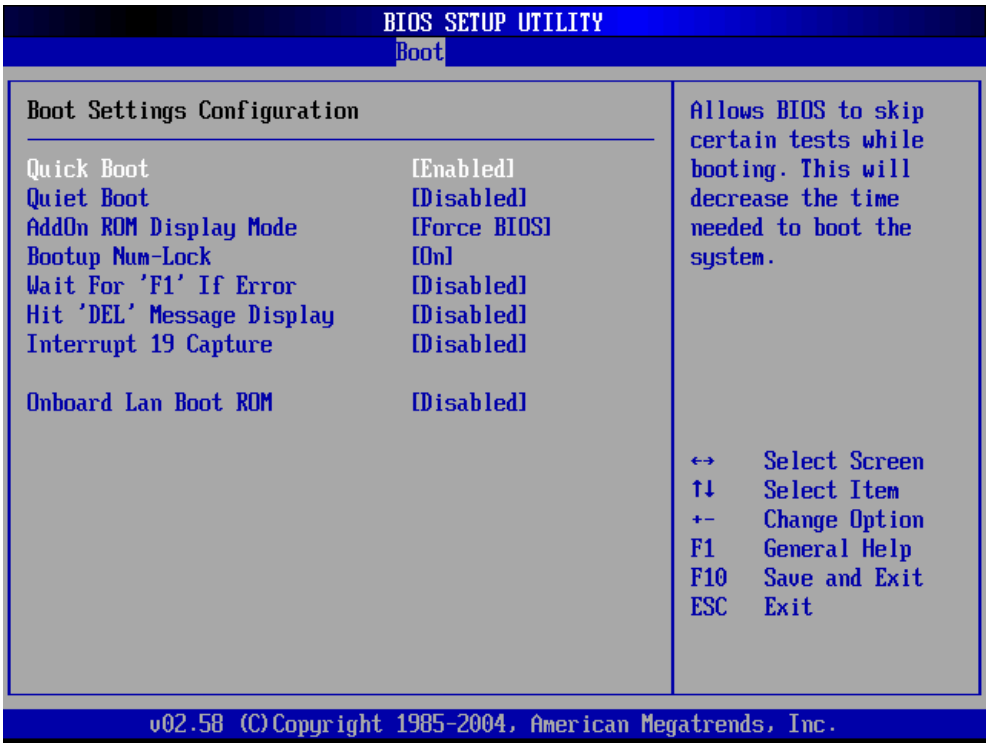


2. Move between items and select values by using the arrow keys. Modify the selected fields using the PnUP/PgDN Keys. For information on the various options, press <F1> key .

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

4.6.1 Boot Settings Configuration

This item is used to configure system boot setting with below sub menus:



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.

AddOn ROM Display Mode: [Force BIOS]

Allows you to set the display mode for option ROM.

Bootup Num-Lock: [On]

Allows you to select the Power-on state for the Num-Lock.

Wait For 'F1' If Error: [Enabled]

Waits for F1 key to be pressed if error occurs.

Hit 'DEL' Message Display: [Enabled]

Displays "Press DEL to run Setup" in POST.

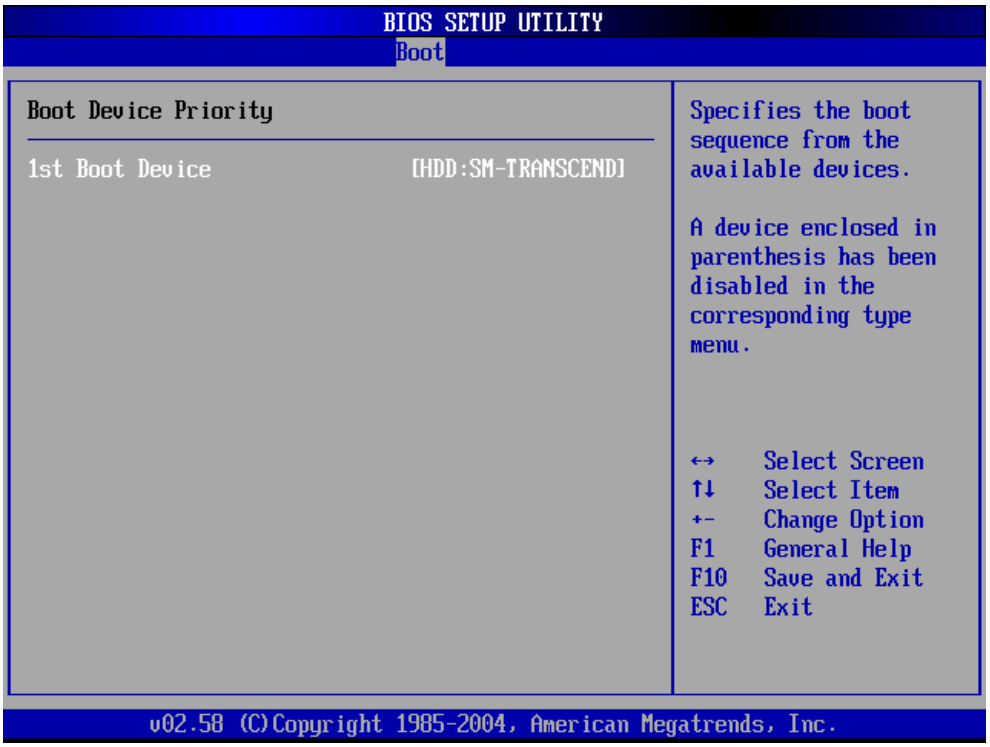
Interrupt 19 Capture: [Disabled]

This item allows the option ROMs to trap Interrupt 19.

Onboard Lan Boot ROM: [Disabled]

This item allows you to enable or disable the Onboard Lan Boot function.

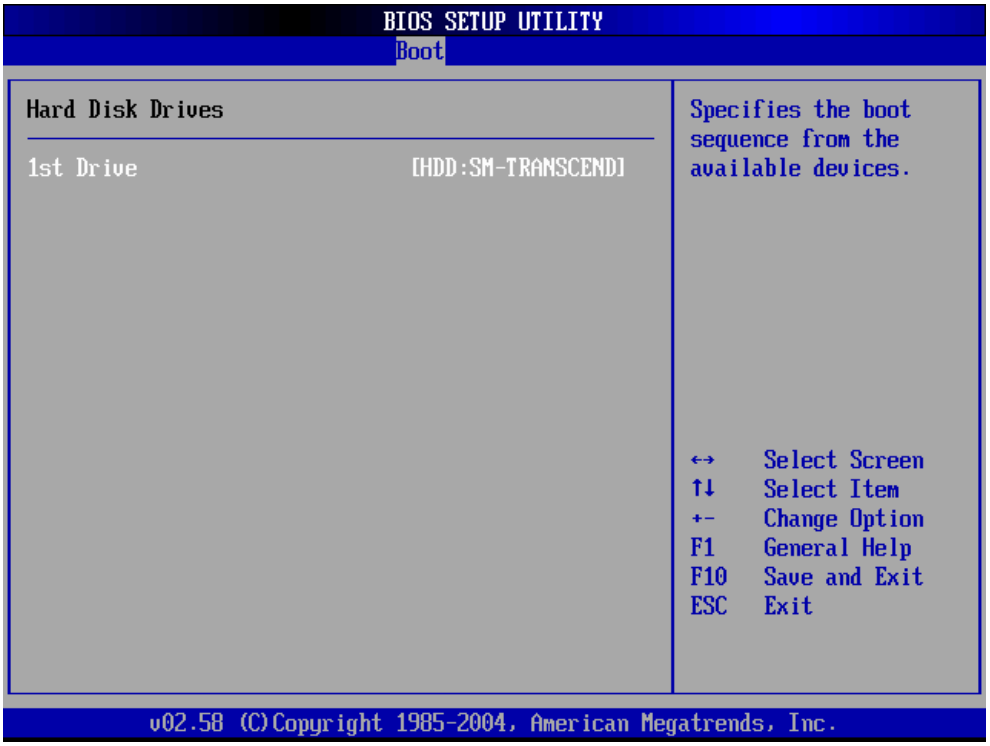
4.6.2 Boot Device Priority



1st Boot Device: [HDD: SM-TRANSCEND]

This item allows you to set the boot priority. Specifies the boot sequence from the available devices. A device enclosed in parenthesis has been disabled in the corresponding type menu.

4.6.3 Hard Disk Drives



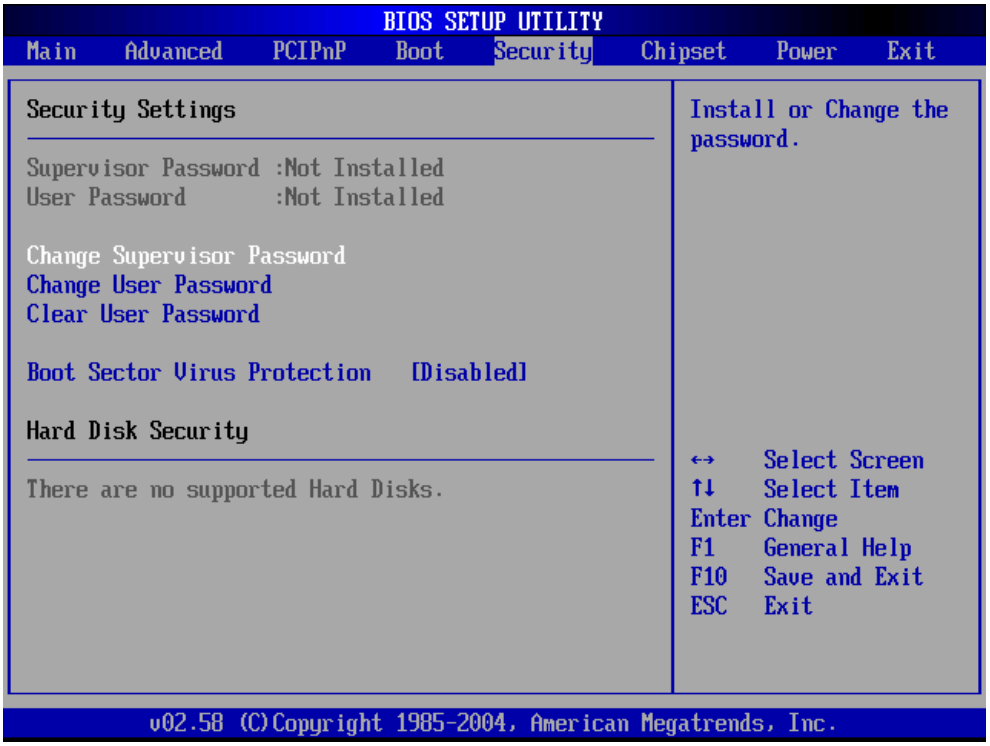
1st Drive: [HDD: SM-TRANSCEND]

This item is used to specify the boot sequence from available devices.

4.7 Security Menu

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

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



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.

4.8 Chipset Menu

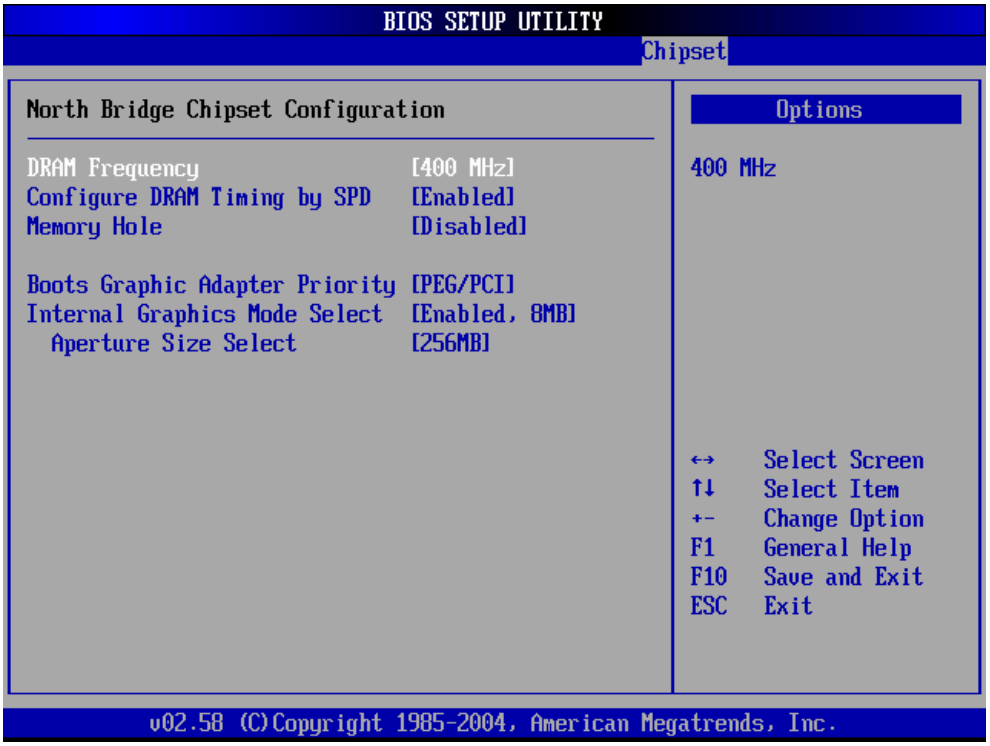
⇩**Use the Chipset Setup option as follows:**

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

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.

4.8.1 North Bridge Configuration



DRAM Frequency: [Auto]

This item allows you to configure the clock frequency of the installed DRAM. If [Auto] is selected, the BIOS will detect the memory modules installed and assigns appropriate frequency automatically.

Configure DRAM Timing by SPD: [Enabled]

This item allows you to enable or disable the feature.

[Enabled]: The DRAM timing parameters are set according to the DRAM SPD.

[Disabled]: You can manually set the DRAM timing parameters.

Memory Hole: [Disabled]

This item allows you to enable or disable the memory hole.

Boots Graphic Adapter Priority: [PEG/PCI]

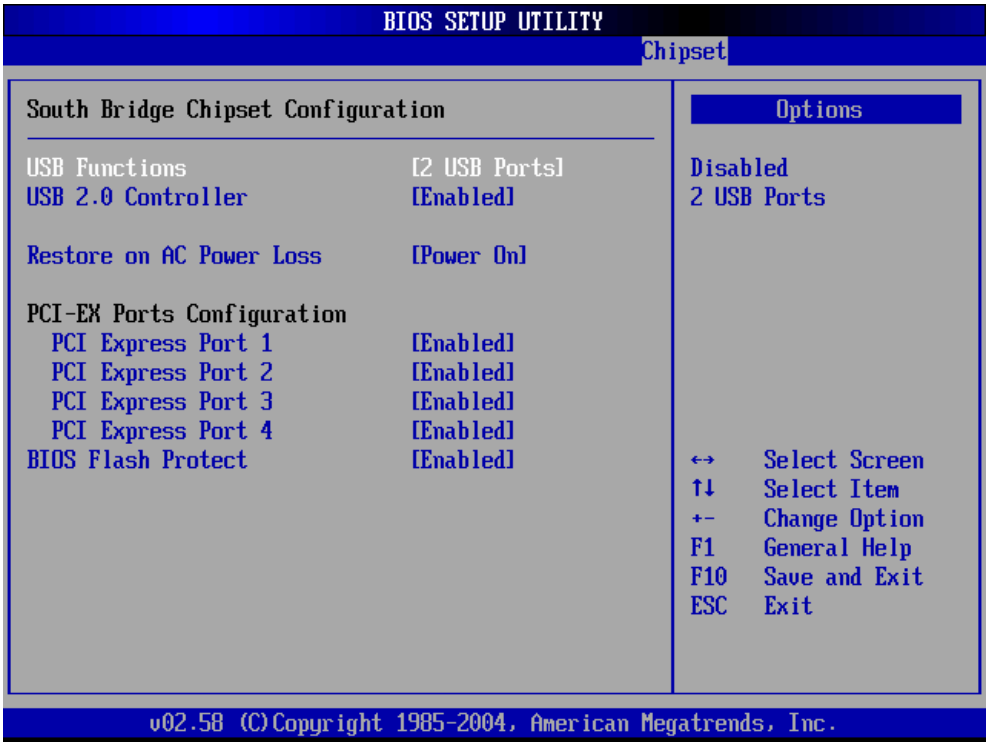
This item shows the primary graphic adapter.

Internal Graphics Mode Select : [Enabled, 8MB]

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

Aperture Size Select: [256MB]

4.8.2 South Bridge Configuration



USB Functions: [2 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.

Restore on AC Power Loss: [Power On]

This item allows you to setup the Power On state control for AC power loss recovery. When set to Power On, the system goes on after an AC power loss. When set to Power Off, the system goes into off state after an AC power loss. When set to Last State, the system goes into either on or off state whatever was the system state before the AC power loss.

PCI-EX Ports Configuration:

PCI Express Port 1: [Enable]

PCI Express Port 2: [Enable]

PCI Express Port 3: [Enable]

PCI Express Port 4: [Enable]

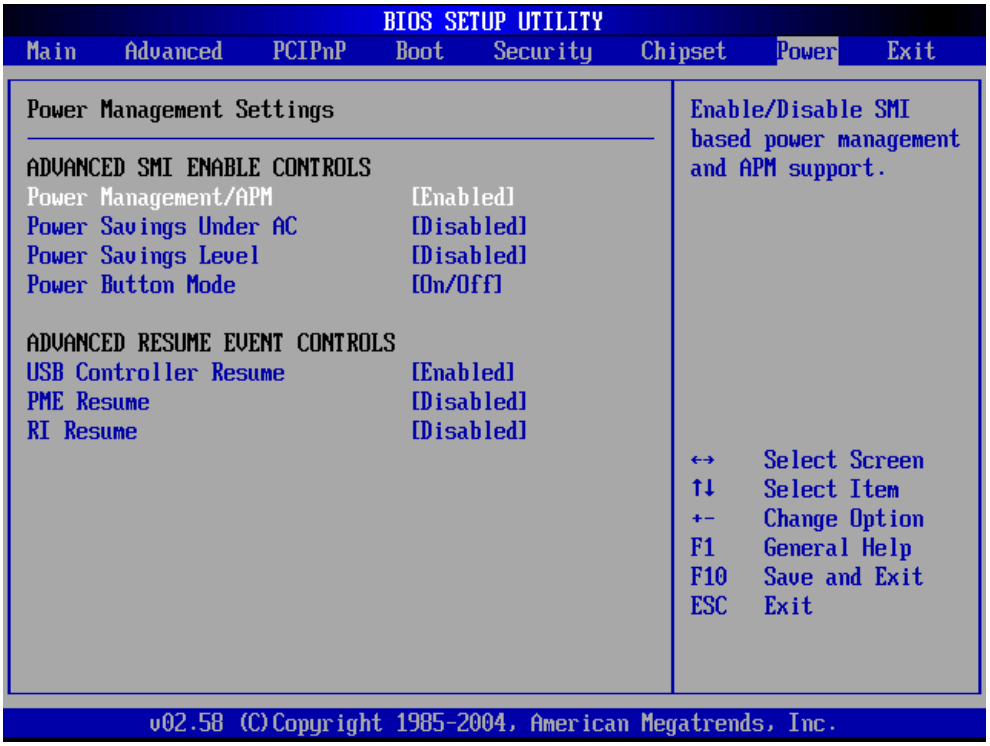
BIOS Flash Protect: [Enabled]

This item allows you to enable or disable the write BIOS protect.

4.9 Power Menu

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

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



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 Power setup, press the <ESC> key to return to the main menu.

Power Management/APM: [Enabled]

This item allows you to enable or disable the APM (Advanced Power Management) feature.

Power Savings Under AC: [Disabled]

This item allows you to enable or disable the Power Savings Under AC.

Power Savings Level: [Disabled]

This item allows you to enable or disable the Power Savings Level.

Power Button Mode: [On/Off]

This item allows you to setup the Power Button Mode. Allows the systems to go into On/Off mode or suspend mode when the power button is pressed.

USB Controller Resume: [Enabled]

This item allows you to enable or disable the USB Controller Resume. This function allows you press any key (USB keyboard) to wake up the system from S3 state.

PME Resume: [Disabled]

Allows you to enable or disable the PME(Power Management Event) Resume. When setting to [Enabled], this setting allows your system to be awakened from the power saving modes through any event on PCI PME.

RI Resume: [Disabled]

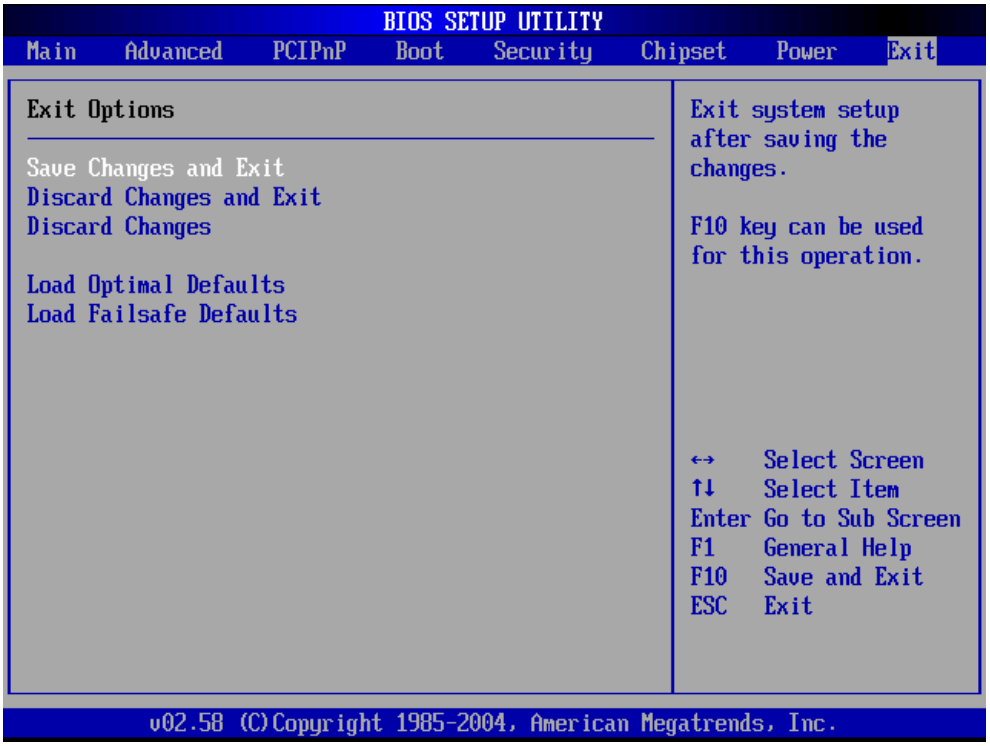
Allows you to enable or disable the RI (Ring Indicator) Resume..

4.10 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.



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.

Chapter 5. Utility & Driver Installation

Please install the GbE modules properly before you install the OS, driver or other software.

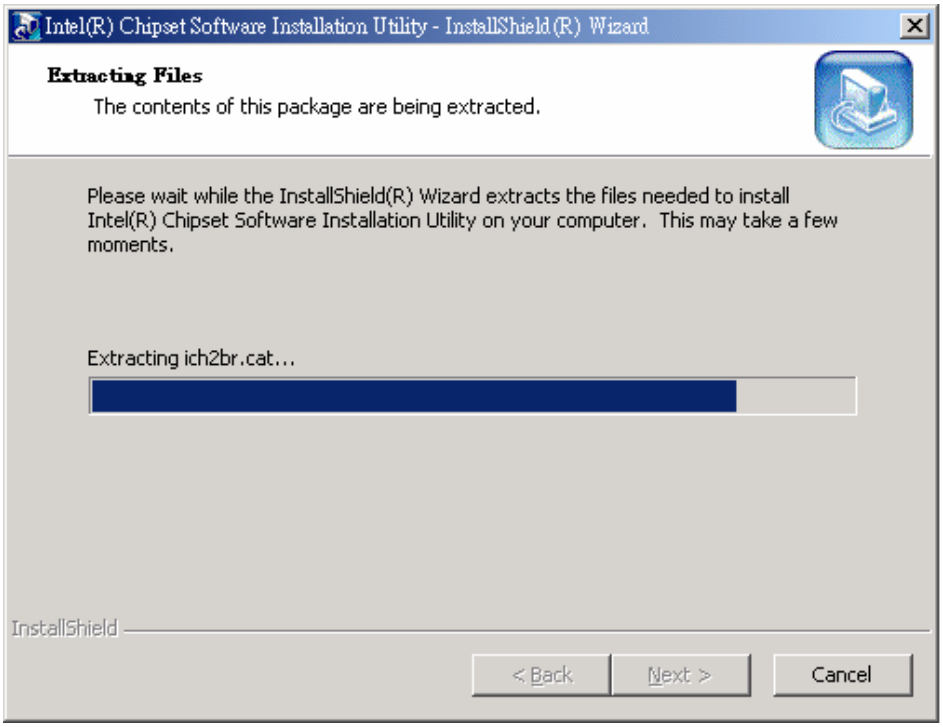
5.1 Operation System Supporting

PL-10600 can support Windows® and Linux® operation system as follows. Before installation, please check your OS version. If your OS is not in the following list, please upgrade your OS version.

OS	Version
DOS	DOS 6.22
Windows®	Windows® XP Professional SP2/SP3
Linux®	Kernel 2.6.21.1.3794. Fedora Core 7

5.2 System Driver Installation

PL-10600 offers the system driver in the setup CD. Please install the driver following the procedures.



5.3 LAN Driver Installation

PL-10600 offers the LAN driver in the setup CD. Please click the Autorun file and install the driver following the procedures.

1. Insert the setup CD of PL-10600 into your CD-ROM drive.
2. Choose the Drivers file to click the Autorun icon.
3. Follow the procedures to finish the installation.

Appendix A: Programming the Watchdog Timer

The PL-10600 provides a watchdog timer that resets the CPU or enable LAN by-pass mode. 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 Resources

Interrupt Controller

The PL-10600 is a fully PC compatible appliance. If you would like to use extra add-on cards, please make sure that the IRQs do not conflict.

Any remaining IRQs then may be assigned to this PCI Bus. You are able to use Microsoft's Diagnostic (MDS.EXE) utility included in Windows directory to see their map.

IRQ	Assignment
IRQ0	Timer
IRQ1	Keyboard
IRQ2	Interrupt rerouting from IRQ8 through IRQ15
IRQ3	COM2
IRQ4	COM1
IRQ5	Sound Card
IRQ6	FDD Controller
IRQ7	LPT1
IRQ8	RTC
IRQ9	USB Controller
IRQ10	Multimedia Audio
IRQ11	VGA Adapter
IRQ12	Mouse
IRQ13	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	Sound Card
DMA2	FDD Controller
DMA3	Free
DMA4	Cascade
DMA5	Free
DMA6	Free
DMA7	Free

Memory Map

The following table indicates memory of PL-10600. 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 ~ C79FF	ISA	Adapter ROM
F0000 ~ FFFFF	ISA	System BIOS

Memory above 1MB (1MB ~ 259904KB)

Address Range	Type	Owner
D0000000~D3FFFFF7	PCI	Host Bridge
D4000000~D5FFFFFF	PCI	PCI-PCI Bridge
D6000000~D6FFFFFF	PCI	PCI-PCI Bridge

System Memory Map

Start High	Start Low	Size High	Size	Type
00000000	00000000	00000000	0009FC00	Available
00000000	0009FC00	00000000	00000400	Reserved
00000000	000F0000	00000000	00010000	Reserved
00000000	FEC00000	00000000	01400000	Reserved
00000000	00100000	00000000	07EF0000	Available
00000000	07FF3000	00000000	0000D000	ACPI Space
00000000	07FF0000	00000000	00003000	NVS Space

I/O Map

The addresses shown in the table are typical locations

I/O Port	Assignment
0 ~ F	AT DMA controller
20 ~ 21	AT interrupt controller
40 ~ 43	8254 Compatible Programmable Timer
60	IBM Enhanced keyboard controller
61	AT Style Speaker
64	IBM Enhanced keyboard controller
70 ~ 71	Real Time Clock
81 ~ 83	AT DMA controller
87	AT DMA controller
89 ~ 8B	AT DMA controller
8F ~ 91	AT DMA controller
A0 ~ A1	AT interrupt controller
C0 ~ DF	AT DMA controller
F0 ~ FF	Math Coprocessor
170 ~ 177	IDE Controller
1F0 ~ 1F7	IDE Controller
200 ~ 207	Game port
220 ~ 22E	Sound Card
2F8 ~ 2FF	COM2
376	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 ~ 48F	MB Resource
4D0 ~ 4D1	MB Resource
CF8 ~ CFF	MB Resource
4000 ~ 407F	MB Resource
4080 ~ 40FF	MB Resource
5000 ~ 501F	MB Resource

6000 ~ 607F	MB Resource
D000 ~ D00E	IDE Controller
D400 ~ D41E	USB Controller
D800 ~ D81E	USB Controller
DC00~ DCFE	Multimedia Audio
EC00~ E002	Multimedia Audio
E400 ~ E402	Multimedia Audio

Appendix C: Cable Development Kit

The PL-10600 offers some cables for development use.

DK002

Item & Description	Part No.	Qty
Ethernet Cat.5 Cable 2M/ RoHS	CB-EC5200-00	1
Cross Over 2M Color/ RoHS	CB-CO5202/4-00	1
RJ45 to DB9 2M Cable/ RoHS	CB -RJDB91-00	1
2m null modem cable/ RoHS	CB -DB9200-01	1
VGA CABLE (2mm) 15CM/ RoHS	CB -IVGA01-00	1
KB/MS CABLE 15CM/ RoHS	CB -IPS200-00	1
USB CABLE w/ Bracket/ RoHS	CB -IUSB2B-00	1

CB -EC5200-00

CB -CO5202/4-00

CB -RJDB91-00

CB -DB9200-00

CB -IVGA01-00

CB -IPS200-00

CB -IUSB2B-00