PL-80240

Networking Appliance

Desktop VIA® VX800 Network System with 5 x GbE, SATA, CF, bypass function, mini-PCI & PCI

User's Manual

Version 1.0, 6/10

Manual Edition 1.0, June, 2010

For more information on PL-80240 or other WIN ENTERPRISES products, please visit our website http://www.win-ent.com.

For technical support send your inquiries to info@win-ent.com.

Table of Contents

Chapter 1. General Information 4
1.1 Introducing 4
1.2 Specifications 4
1.3 Order Information 5
1.4 Packaging 6
1.5 Precautions 6
1.6 System Layout 7
1.7 Board Dimensions 7
Chapter 2. Connector/Jumper Configuration 9
2.1 Connector/Jumper Location and Definition 9
2.2 Connector and Jumper Setting 11
2.3 CompactFlash™ Card Socket Pin Define 19
Chapter 3. BIOS Setup 19
3.1 Quick Setup 19
3.2 Entering the BIOS Setup Utility 21
3.3 Menu Options 231
3.4 Advanced Menu 242
3.5 Boot Menu 32
3.6 Security Menu 396
3.7 Chipset Menu 418
3.8 Exit Menu 42
Chapter 4. Utility & Driver Installation 47
4.1 Operation System Supporting 47
4.2 System Driver Installation 474
4.3 LAN Driver Installation 485
Appendix A: Watchdog Timer Programming Guide 49
Appendix B: LAN Bypass Programming Guide 51
Appendix C: System Resources 57
Appendix D: Cable Development Kit 61

Chapter 1. General Information

1.1 Description

The PL-80240 is a compact network security platform specifically designed for Internet security applications. It is suitable for SOHO (Small Office, Home Office), SMB (Small Medium Business), and ROBO (Remote Office, Branch Office) segments. It is designed with VIA® VX800 chipset and supports the low power VIA® Nano, C7, Eden processor. Both CompactFlash™ and DDR2 SO-DIMM socket can be accessed and replaced to make software upgrades through an easily removable cover. The PL-80240 supports five Intel® 82574L GbE Ethernet ports with bypass function on two ports or four GbE Ethernet ports & four 10/100 Switch ports. Each Ethernet interface has LED indicators for activity and transfer rate status. For easy access, the back panel has dual USB 2.0 ports and a console port for local system management, maintenance and diagnostics. The PL-80240 provides space for an optional slim-type 2.5" SATA HDD. It is FCC and CE compliant.

1.2 Specifications

Processor System	CPU	VIA® Nano, C7™, Eden™ Processors
	Chipset	VIA® VX800
	BIOS	AMI® Flash BIOS
Memory	Technology	Un-buffered and Non-ECC DDR2 667 MHz memory
	Capacity	Up to 2GB with one SO-DIMM socket
Expansion	Expansion Slots	one mini-PCI socket one PCI slot ** Each of them can't be used in the same time.*
Ethernet	GbE Ethernet	Five RJ45 GbE ports, Realtek® RTL8111D, PCI-E x1, co-layout Intel® 82574L & 82583V(Pin to pin) with one pair bypass function (optional) 4 switch 10/100 ports (optional expansion module)
Storage	HDD	One internal 2.5" SATA HDD bracket

	Compact Flash Socket	One CompactFlash™ Type I/II
I/O	USB	One external USB2.0
		One internal 5x2 pin header (2x USB 2.0)
	Serial	One RJ45 Console port (COM1)
		One internal header for second console (COM2)
Power Supply	Watt	60W power supply, AC to DC12V
Mechanical and	Form Factor	Desktop
Environment	LCD Module	N/A
	Keypad	N/A
	LED	One Bypass LED (Green)
		One Power LED (Green)
		One HDD LED(Yellow)
	Dimension（W x D x H）	232mm (W) x 153.3mm (D) x 44mm (H)
		(9.1"W x 6"D x 1.7"H)
	Operating Temperature	Operating: 0 ~ 40°C (32 ~ 104°F)
	Storage Temperature	-20 ~ 75°C (-4 ~ 167°F)
	Humidity	10 ~ 85% relative humidity,
		non-operating, non-condensing
Weight	1pc/box, 4kgs,	
	14cm(W) x 38cm(D) x 23.2cm(H)	
	5boxes/CTN, 20kgs,	
	40cm(W) x 72.4cm(D) x 26.4cm(H)	
Certification	CE/FCC	

1.3 Ordering Information

We offer some accessories for PL-80240 appliance for customer need.

PL-8024A	Desktop VIA® Nano LV 1.3+GHz CPU, 5 GbE (82574L), CF, SATA, Bypass
PL-8024B	Desktop VIA® Eden™ ULV 1.0GHz CPU, 5 GbE (82574L), CF, SATA
PL-8024C	Desktop VIA® Eden™ ULV 500MHz CPU, 5 GbE (82574L), CF, SATA
PL-8024D	Desktop VIA® Eden™ ULV 500MHz CPU, 5 GbE (RTL8111D), CF, SATA
DK001	Cable development kit

1.4 Packaging

Please make sure that the following items have been included in the package before installation.

1. PL-80240 Appliance
2. Quick Installation Guide (Optional)
3. Cables (Optional)
4. CD-ROM that contains the following folders:

(1) Manual
(2) Quick Installation Guide
(3) System Driver
(4) Ethernet Driver
(5) Utility Tools

If any of the above items are missing or damaged contact sales@win-ent.com. Keep the box and carton for safe shipping and storage. After you unpack the items, inspect them and make sure everything is intact. Do not plug in the power adapter if you find the unit appears damaged.

Note: Keep the PL-80240 in the original packaging until you start installation.

1.5 Precautions

Please make sure you properly ground yourself before handling the PL-80240 appliance or system components. Electrostatic discharge can easily damage the PL-80240 appliance.

Do not remove the anti-static packing until you are ready to install the PL-80240 appliance.

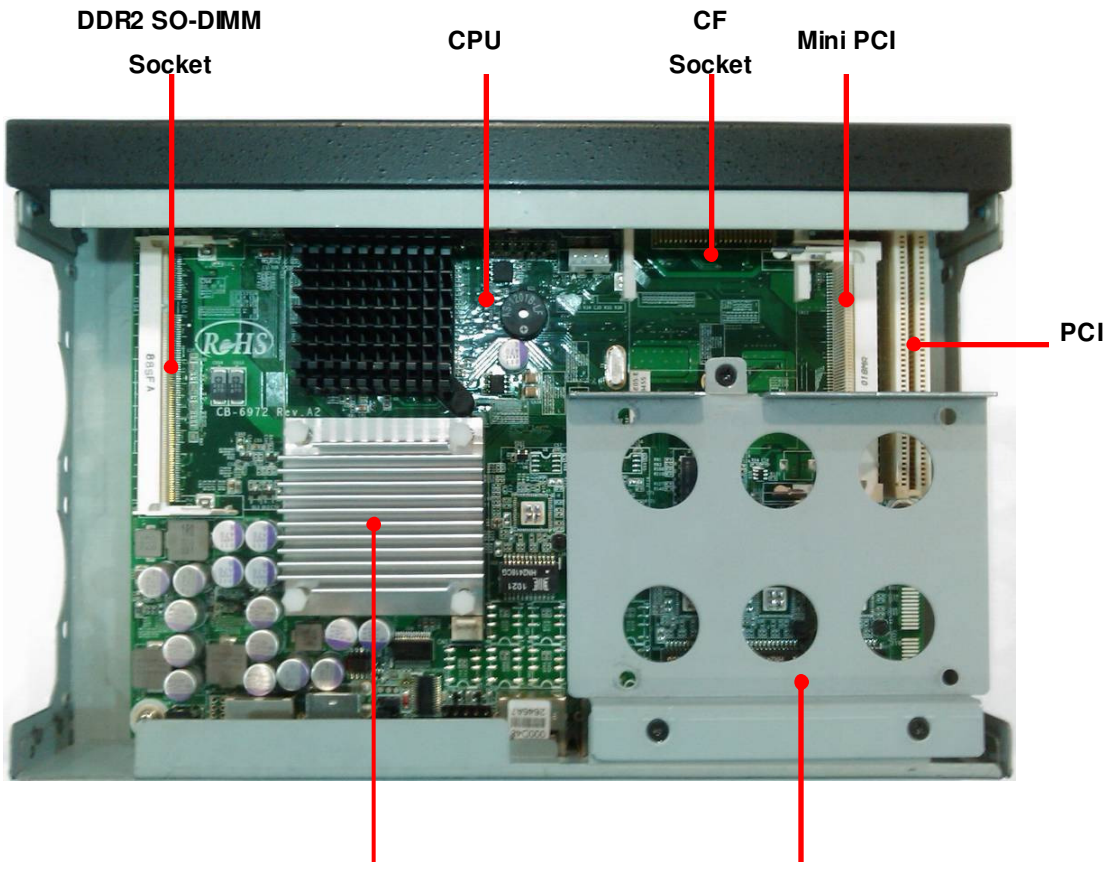
Ground yourself before removing any system component from protective anti-static packaging. To ground yourself, grasp the expansion slot covers or other unpainted parts of the computer chassis.

Handle the PL-80240 appliance by its edges and avoid touching its components.

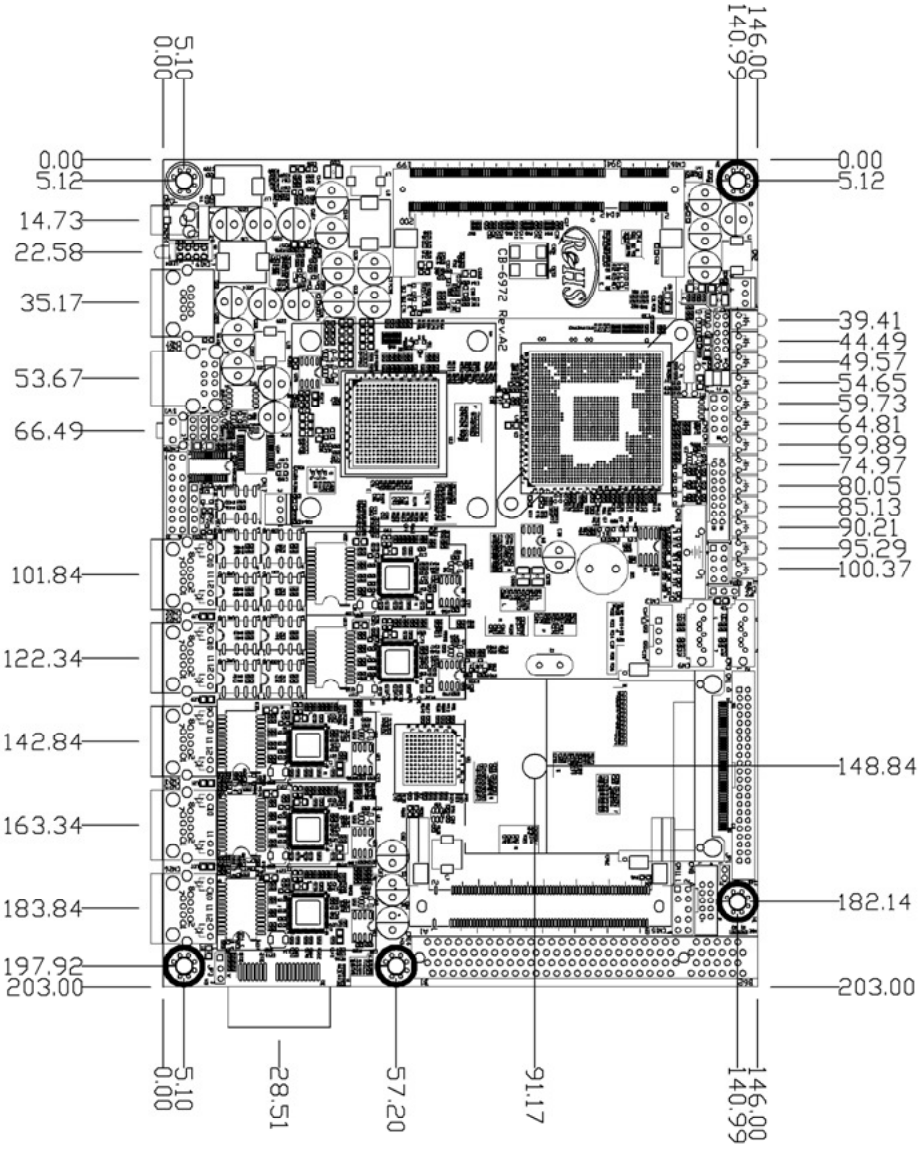
1.6 System Layout

PL-80240 Front Side

PL-80240 Rear Side

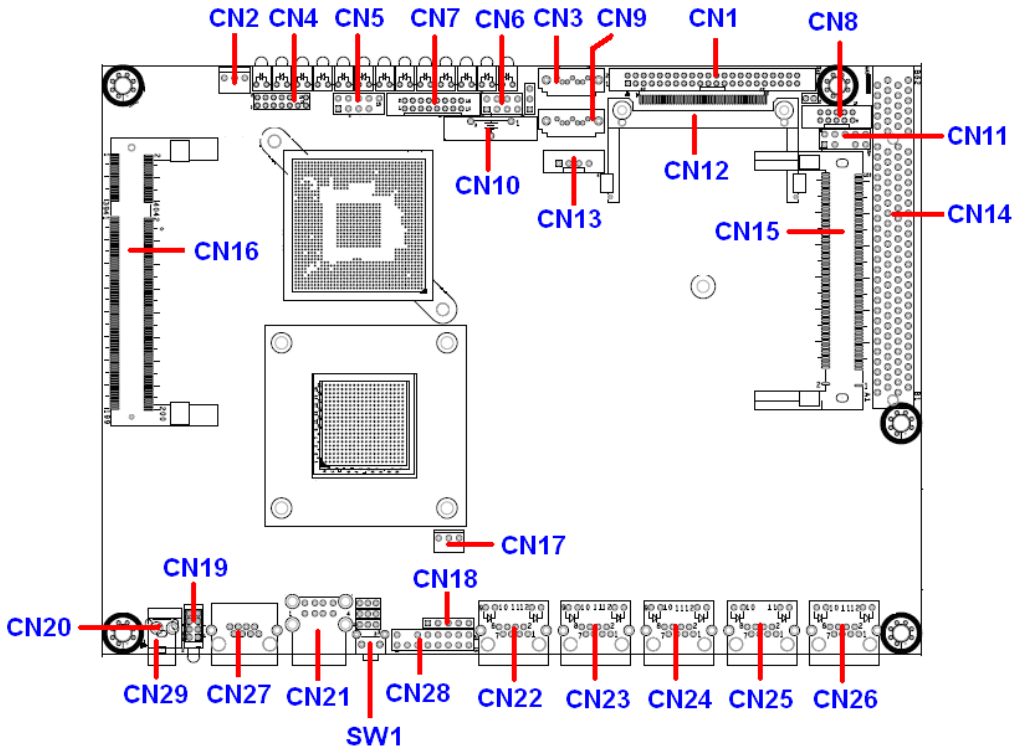


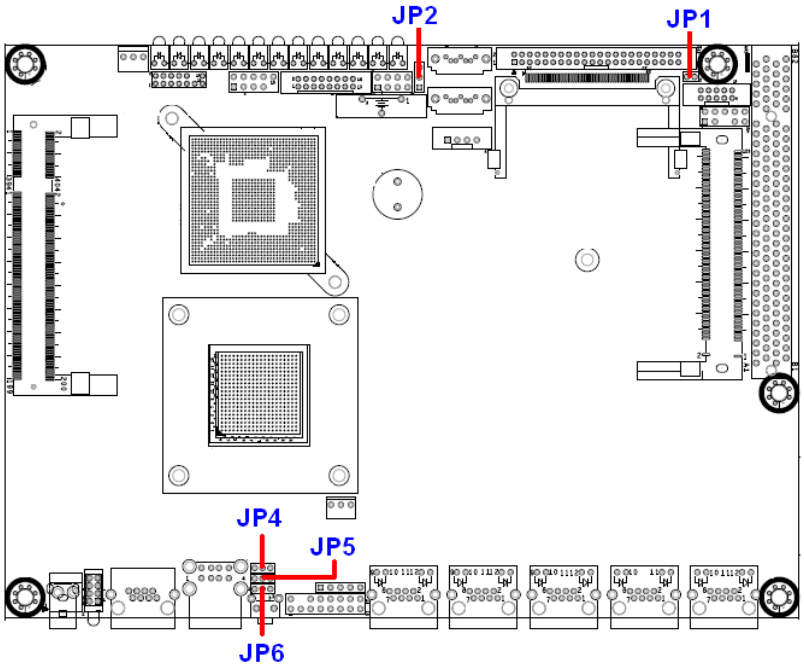
1.7 Board Dimensions



Chapter 2. Connector/Jumper Configuration

2.1 Connectors/Jumper Locations and Definitions

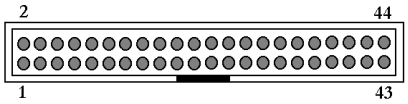




Connector	Define	Connector	Define
CN1	IDE 44 Pins Connector	CN22	Gigabit Ethernet RJ-45 (LAN1)
CN2	System Fan Connector	CN23	Gigabit Ethernet RJ-45 (LAN2)
CN3	SATA Port 0 Connector	CN24	Gigabit Ethernet RJ-45 (LAN3)
CN4	LPC Pin Header	CN25	Gigabit Ethernet RJ-45 (LAN4)
CN5	USB Port 2/3 Pin Header	CN26	Gigabit Ethernet RJ-45 (LAN5)
CN7	VGA Pin Header	CN27	COM1 RJ-45 Connector
CN8	COM2 Pin Header	CN28	LCM Pin Header
CN9	SATA Port 1 Connector	CN29	Power Jack
CN11	PS2 KB/MS Pin Header	JP1	CF Master/Slave Selection
CN13	SATA Power Connector	JP2	Clear CMOS
CN17	CPU Fan Connector	JP4	LAN1/2 Bypass Selection
CN18	LCM Keypad Pin Header	JP5	GPI or H/W Reset Selection
CN19	Back Panel LED (Reserved)	JP6	Watchdog Function Selection
CN21	USB Port 0/1 Connector	SW1	GPI or H/W Reset Button

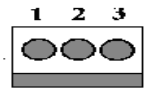
2.2 Connector and Jumper Setting

CN1: IDE 44 Pins Connector (2.0mm pitch)



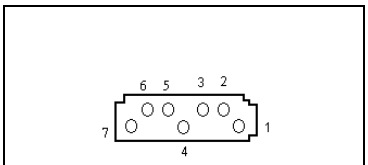
Pin	Define	Pin	Define
1	RSTPIDE#	2	Ground
3	PDD7	4	PDD8
5	PDD6	6	PDD9
7	PDD5	8	PDD10
9	PDD4	10	PDD11
11	PDD3	12	PDD12
13	PDD2	14	PDD13
15	PDD1	16	PDD14
17	PDD0	18	PDD15
19	Ground	20	NC
21	PDDREQ	22	Ground
23	PDIOW#	24	Ground
25	PDIOR#	26	Ground
27	PDIORDY	28	Ground
29	PDDACK#	30	Ground
31	IRQ14	32	V5P0
33	PDA1	34	PD66#
35	PDA0	36	PDA2
37	PDCS#1	38	PDCS#3
39	PIDELED	40	Ground
41	V5P0	42	V5P0
43	Ground	44	N/C

CN2: System FAN Connector



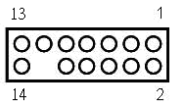
Pin	Define
1	Ground
2	+12V
3	Speed Detect

CN3:SATA Port 0 Connector
CN9:SATA Port 1 Connector



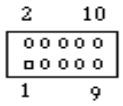
Pin	Define
1	GND
2	TXP
3	TXN
4	GND
5	RXN
6	RXP
7	GND

CN4: LPC Connector



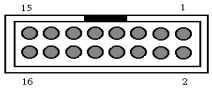
Pin	Define	Pin	Define
1	+3.3V	2	AD 0
3	AD 1	4	AD 2
5	AD 3	6	Frame#
7	PCIERST#	8	+5V
9	CLOCK	10	PME#
11	GND	12	
13	SERIRQ	14	LDRQ

CN5: USB Port 2/3 Pin Header



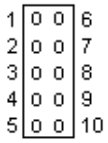
Pin	Define	Pin	Define
1	+5V	2	+5V
3	USB1N	4	USB2N-
5	USB1P	6	USB2P
7	Ground	8	Ground
9	N/A	10	Ground

CN7: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

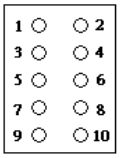
CN8: COM2 Pin Header



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

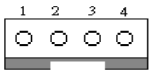
4	DTR#	9	RI#2
5	Ground	10	NC

CN11: PS/2 KB/MS Pin Header



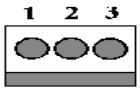
Pin	Define	Pin	Define
1	KCLK	2	MCLK
3	KDAT	4	MDAT
5	N/A	6	N/A
7	PS2_GND	8	PS2_GND
9	PS2_VCC	10	PS2_VCC

CN13: SATA Power Connector



Pin	Define
1	+12V
2	GND
3	GND
4	VCC5

CN17: CPU FAN Connector



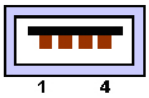
Pin	Define
1	Ground
2	+12V

3	Speed Detect

CN18: LCM Keypad Pin Header

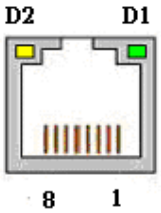
Pin	Define
1	ACK#
2	BUSY
3	PE
4	SLCT
5	Ground

CN21: USB Connector



Pin	Define
1	+5V
2	DATA0-
3	DATA0+
4	GND

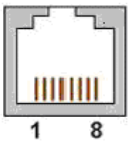
CN22/CN23/CN24/CN25/CN26: Gigabit Ethernet RJ-45 Connector



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

CN27:COM1 RJ-45 Connector



Pin	Define(STD)
1	CTS#
2	DTR#
3	TXD#
4	GND
5	Ground
6	RXD#
7	DSR#
8	RTS#

CN28: LCM Pin Header

Pin	Define	Pin	Define
1	+5V	2	Ground
3	AFD#	4	N/A
5	INIT#	6	SLIN#
7	PD1	8	PD0
9	PD3	10	PD2
11	PD5	12	PD4
13	PD7	14	PD6
15	BLN	16	BLP

JP1: CF Master/Slave Selection

	
Short Open	Master Slave

JP2: Clear CMOS

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

JP4: LAN 1/2 Bypass Selection

Pin		Setting
	1-2	Normal (Default)
	2-3	Bypass Always Disable

JP5: GPI or H/W Reset Selection for SW1 Button

Pin		Setting
	1-2	GPI
	2-3	RESET

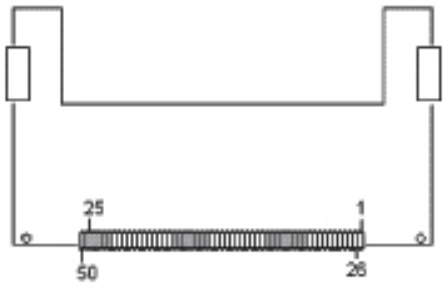
JP6: Watchdog Function Selection

Pin		Setting
	1-2	H/W Reset
	2-3	Lan Bypass

2.3 CompactFlash™ Card Socket Pin Definitions

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 factors, meaning they contain no moving parts. Thus, they provide 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. BIOS Setup

The ROM chip of your PL-80240 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 sub-sets 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 BIOS Setup Utility, 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-80240 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.

3.1 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.

3.2 Entering the BIOS Setup Utility

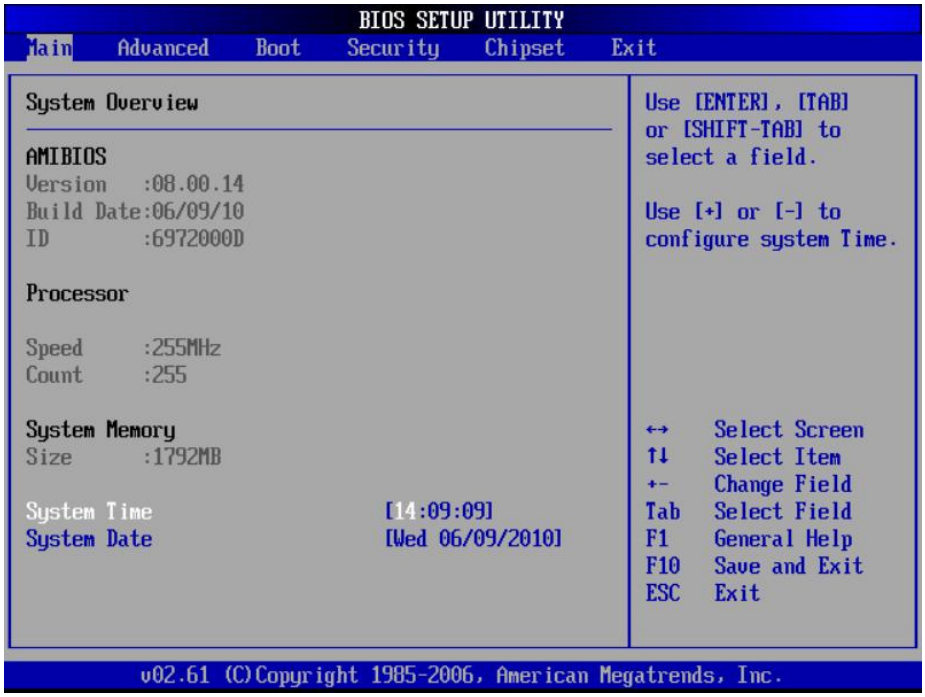
Use the BIOS Setup Utility to modify the system parameters to reflect the options installed in your system and to customize your system. For example, you should run the Setup program after you:

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

⇩ **Enter the BIOS Setup Utility'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 BIOS Setup Utility. 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.

3.3 Menu Options

The main menu options of the BIOS Setup Utility 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.

Boot: For changing the system boot configurations.

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

Chipset: For changing the chipset settings.

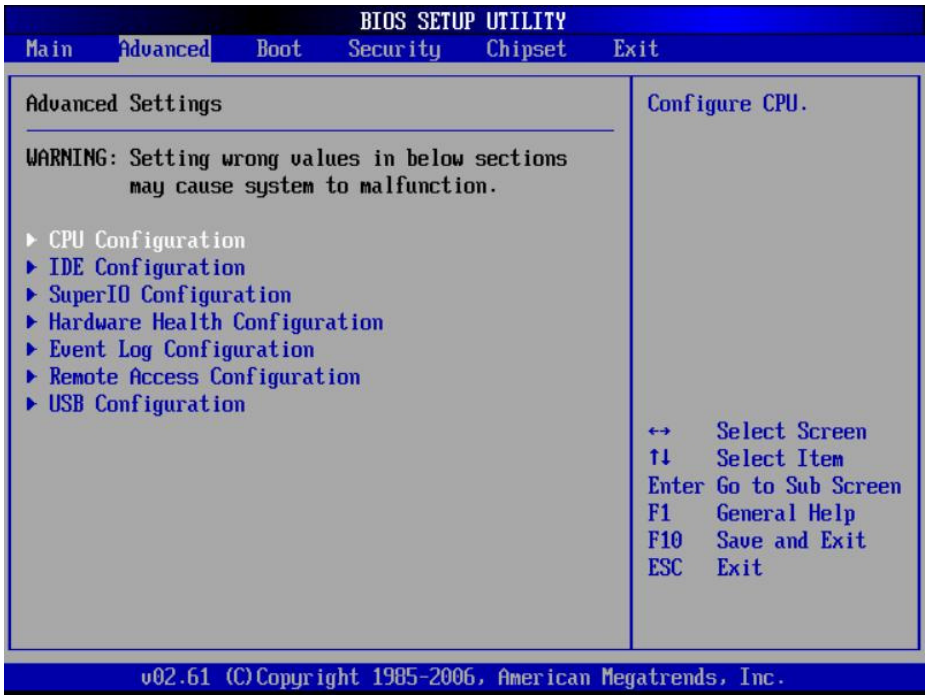
Exit: For selecting the exit options and loading default settings.

3.4 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:

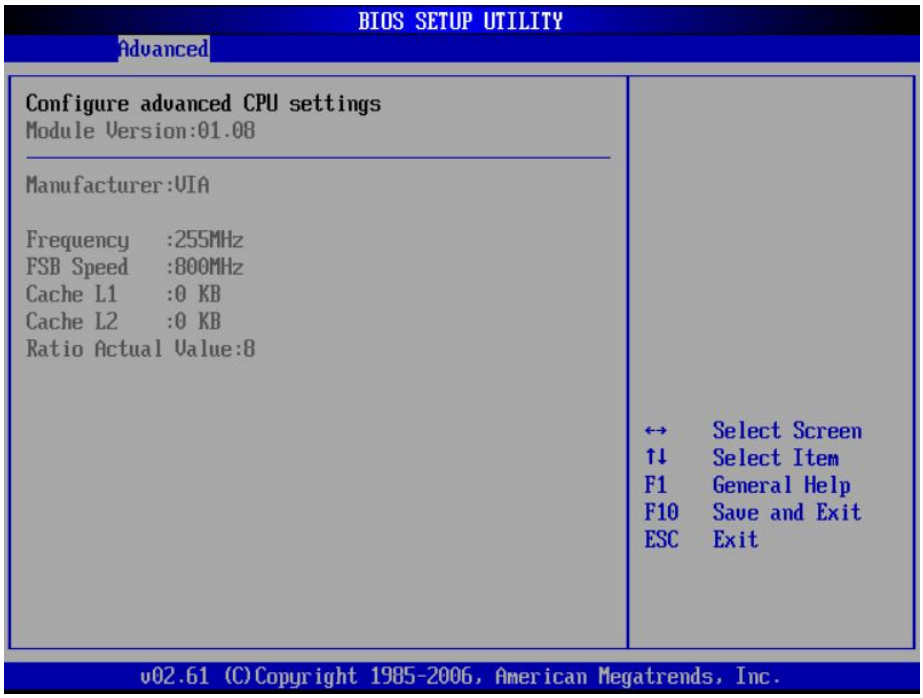


2. Use the arrow keys to move between fields. Modify the selected field using the PgUP/PgDN/+/- keys. Some fields let you enter numeric values directly.

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

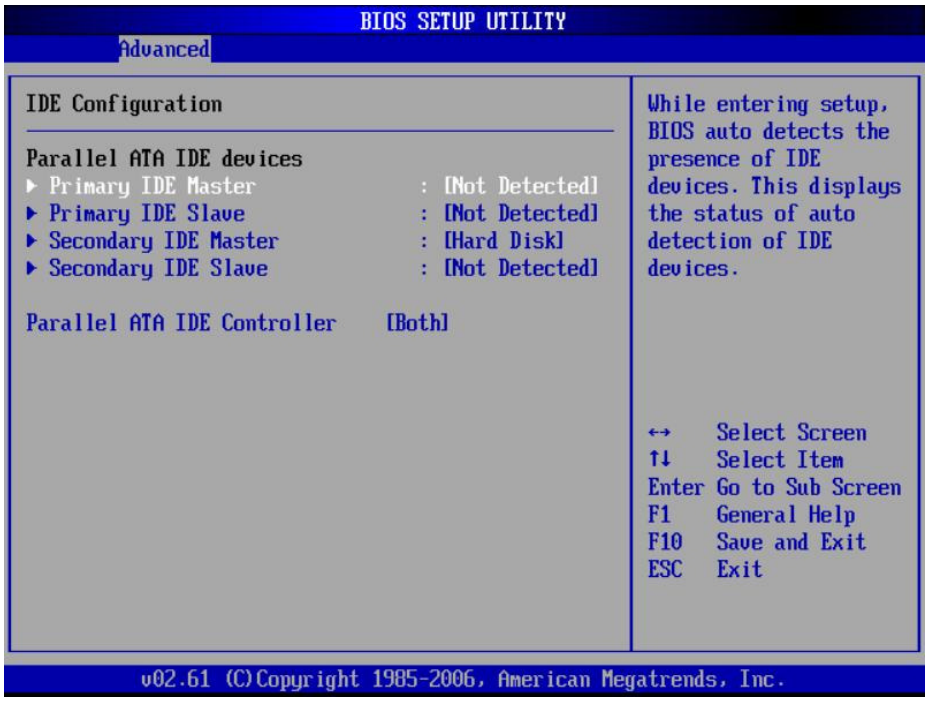
3.4.1 CPU Configuration

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



3.4.2 IDE Configuration

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



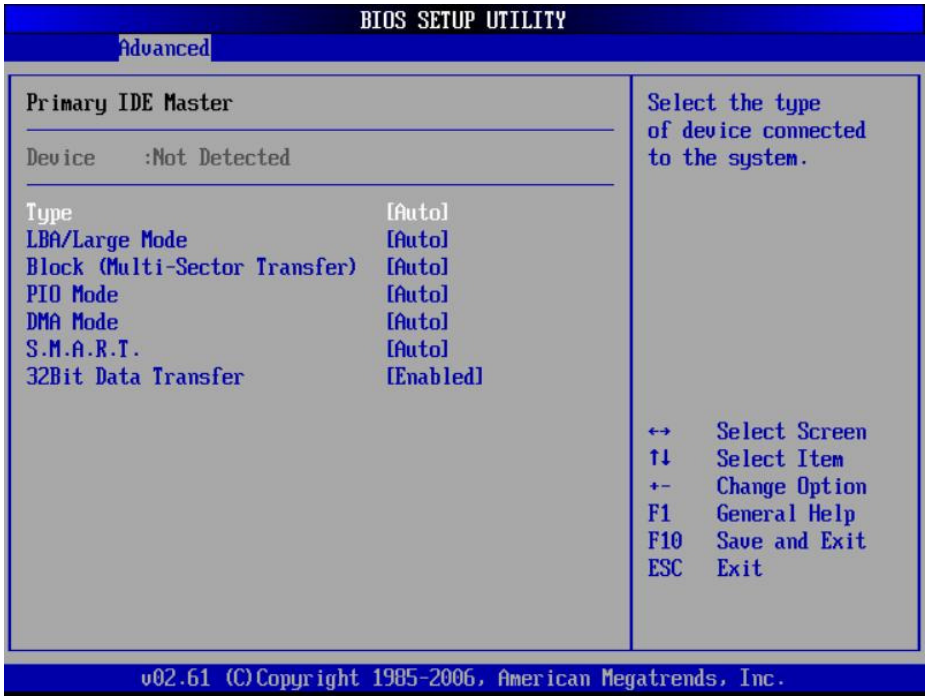
*** Primary/Secondary IDE Master**

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

*** Primary/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.

*** Primary IDE Master (Secondary IDE Master & Primary/Secondary IDE Slaver are as same as this item.)**



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]

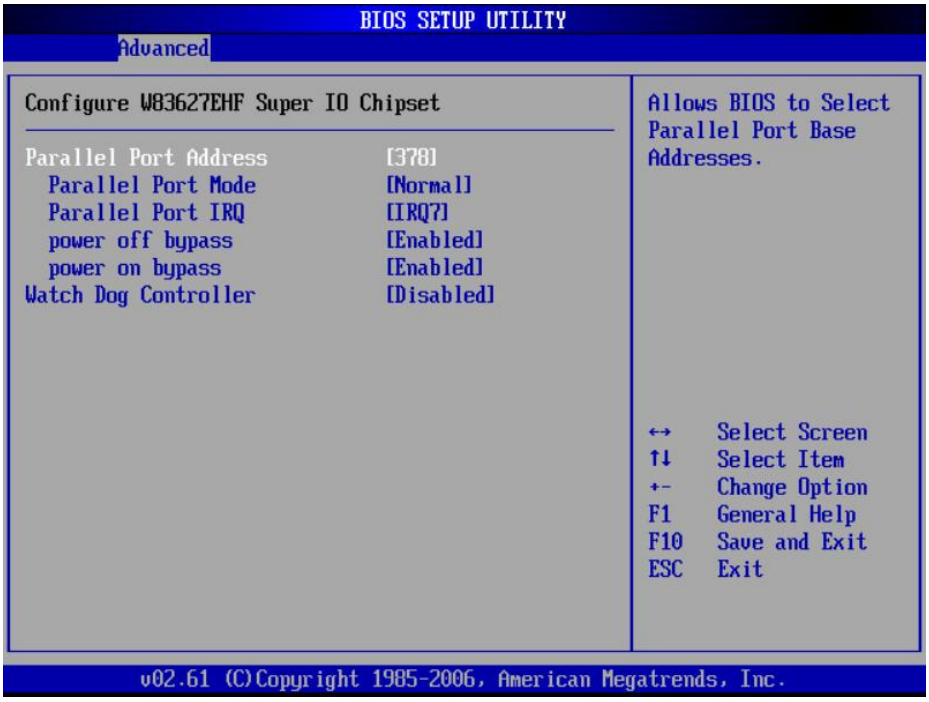
S.M.A.R.T.(Self-Monitoring, Analysis, and Reporting Technology) . It allows system to use the SMART protocol to monitor your hard disk status.

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].

3.4.3 Super IO Configuration

This sub-menu allows you to set or change the configurations for Super I/O function.



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.

Power Off Bypass: [Enabled]

This item allows you to enable or disable the LAN bypass function when Power Off.

Power On Bypass: [Disabled]

This item allows you to enable or disable the LAN bypass function when Power On.

Please refer to the Appendix B for LAN Bypass Programming Guide.

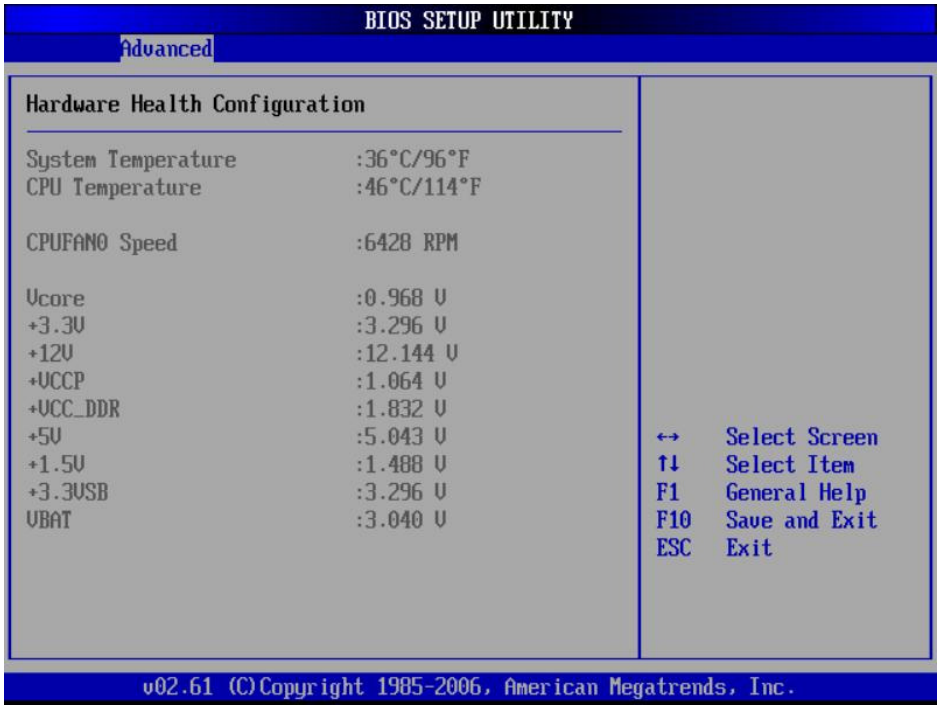
Watch Dog Controller: [Disable]

This item allows you to enables or disables Watch Dog Controller.

Please refer to the Appendix A for Watchdog Timer Programming Guide.

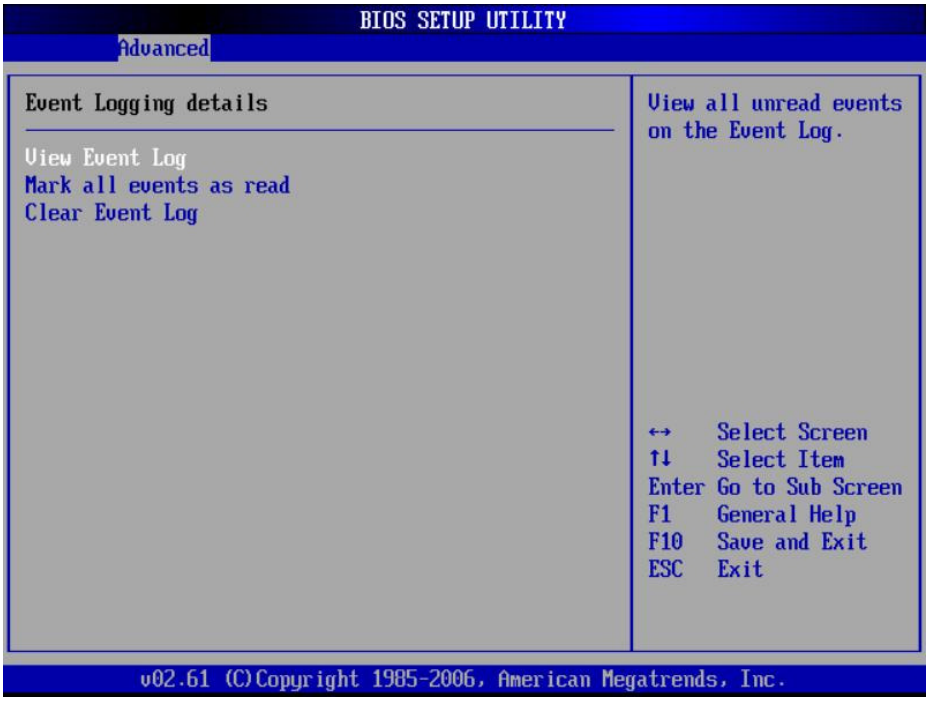
3.4.4 Hardware Health Configuration

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



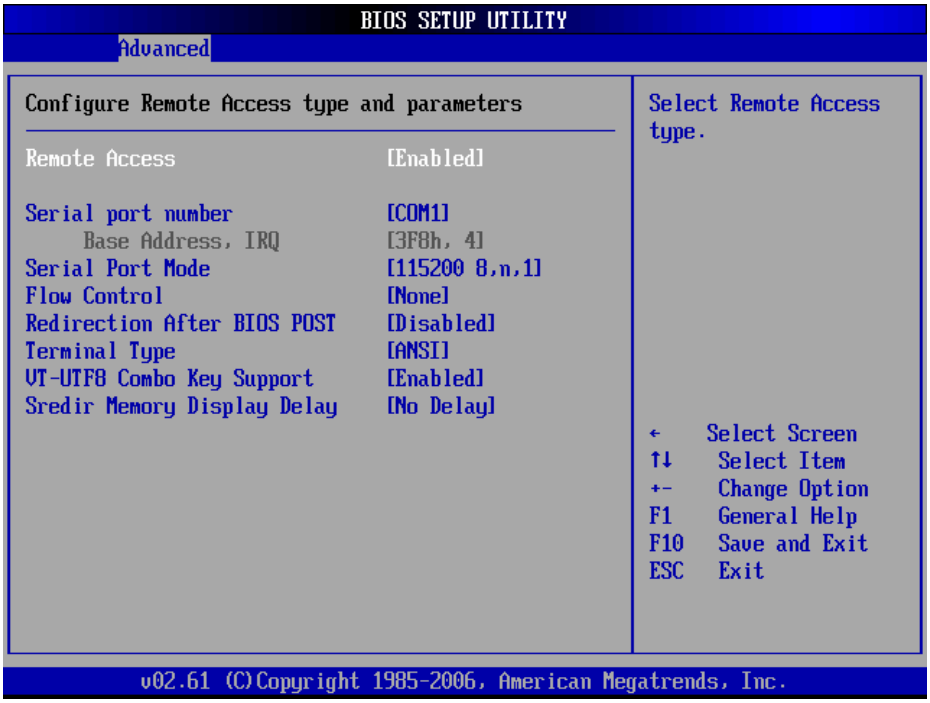
3.4.5 Event Log Configuration

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



3.4.6 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.

Base Address. IRQ : [3F8h. 4]

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: [Disabled]

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]

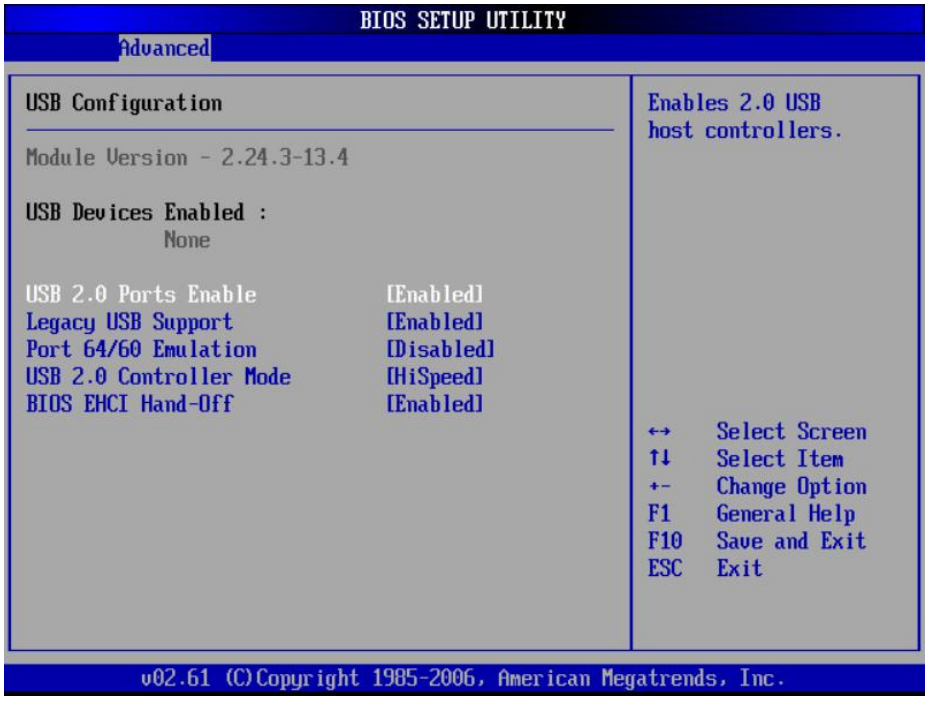
This item allows you to enable or disable VT-UTF8 combination key support for ANSI/VT100 terminals.

Sredir Memory Display Delay: [No Delay]

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

3.4.7 USB Configuration

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



USB 2.0 Ports Enable:

This item allows you to enables or disables USB 2.0 ports.

Legacy USB Support: [Enabled]

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

Port 64/60 Emulation: [Disabled]

This item allows you to enable emulation of I/O ports 64h and 60h so that there is full PS/2 legacy support for USB keyboards and mice. It is also useful in providing USB keyboard and mouse support in Windows NT which does not natively support USB.

USB 2.0 Controller Mode: [HiSpeed]

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

BIOS EHCI Hand-Off: [Enabled]

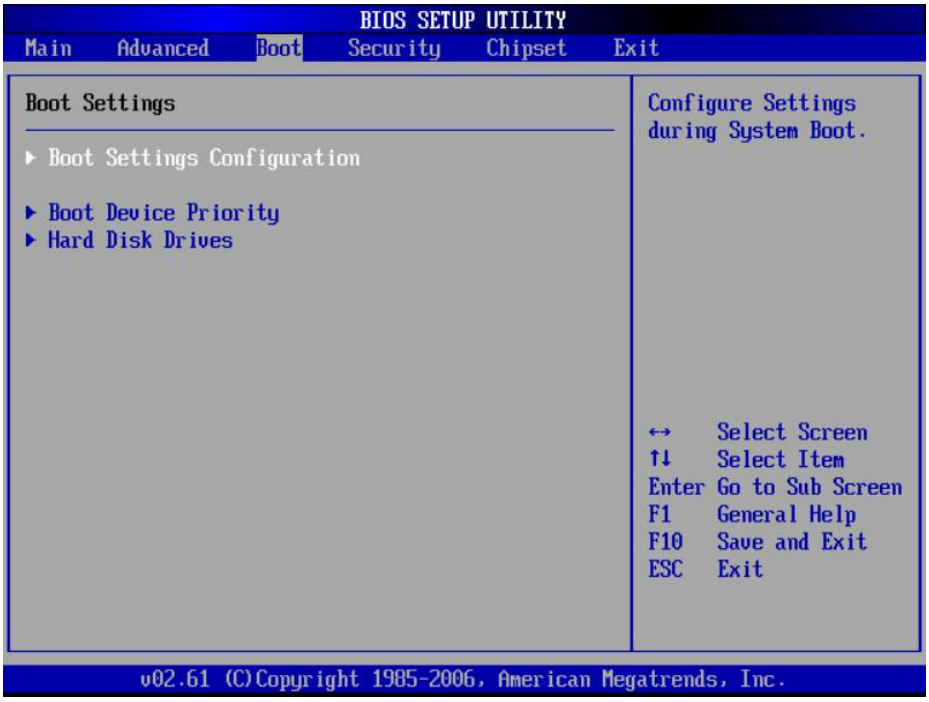
This item allows you to enable support for operating systems without an EHCI hand-off feature.

3.5 Boot Menu

The Boot menu items allow you to change the settings for the system boot devices.

⇩Use the Boot Setup option as follows:

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

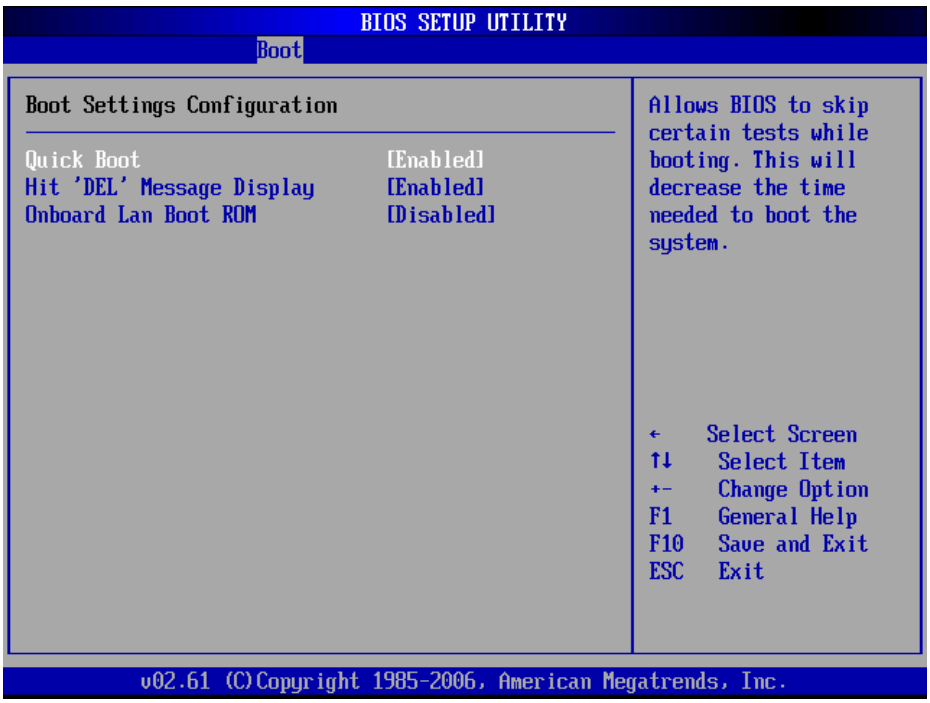


2. Move between items and select values by using the arrow keys. Modify the selected fields using the PnUP/PgDN Keys. For information on the various options, press <F1> key.

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

3.5.1 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.

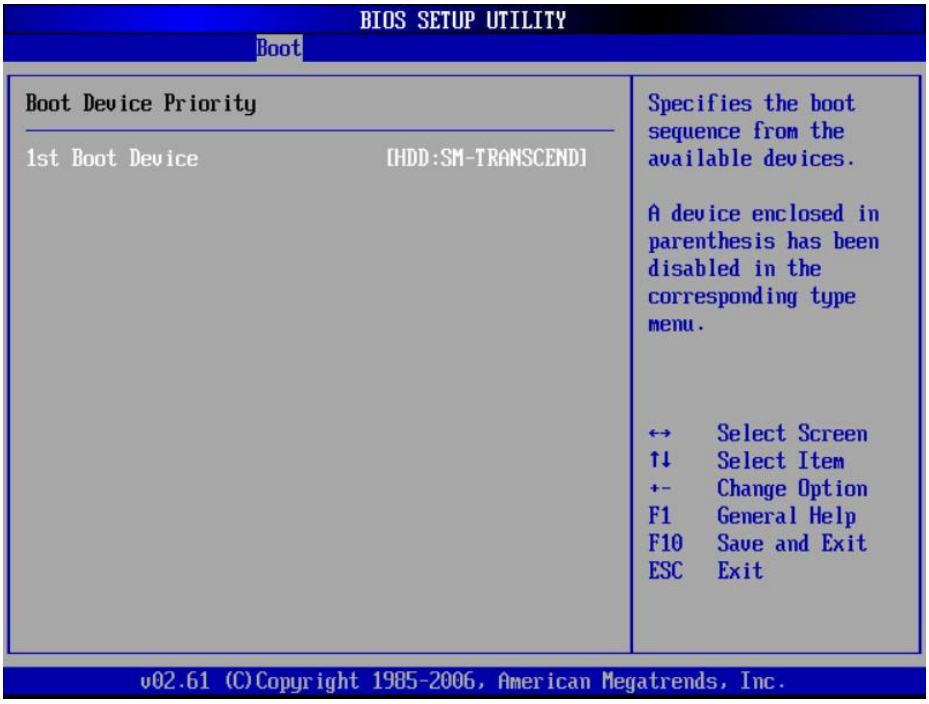
Hit 'DEL' Message Display: [Enabled]

Displays "Press DEL to run Setup" in POST.

Onboard Lan Boot ROM: [Disabled]

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

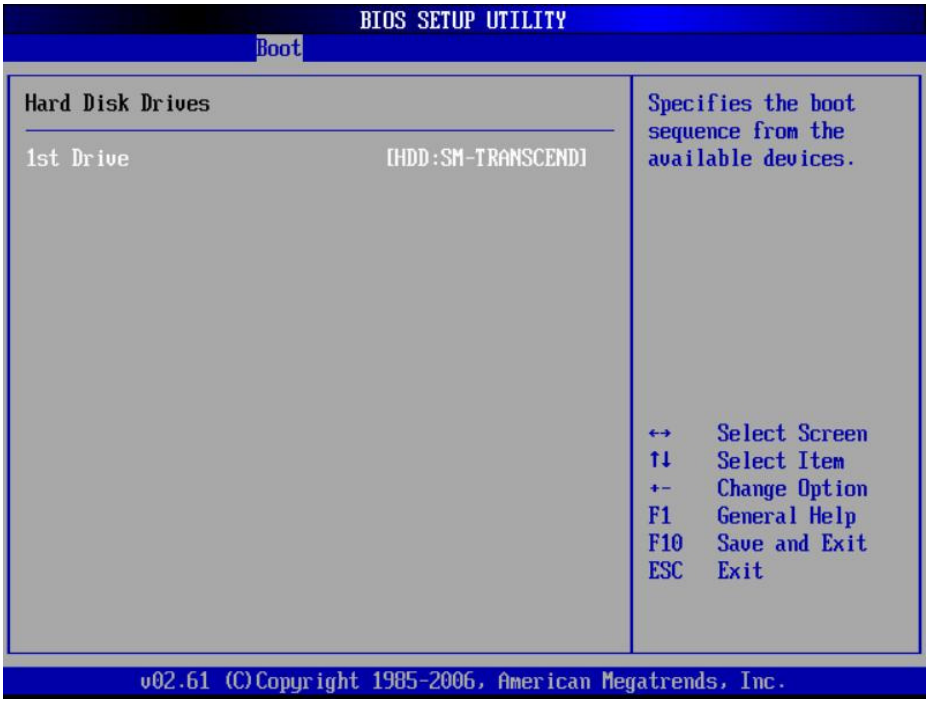
3.5.2 Boot Device Priority



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.

3.5.3 Hard Disk Drives



1st Drive: [HDD: SM-TRANSCEND]

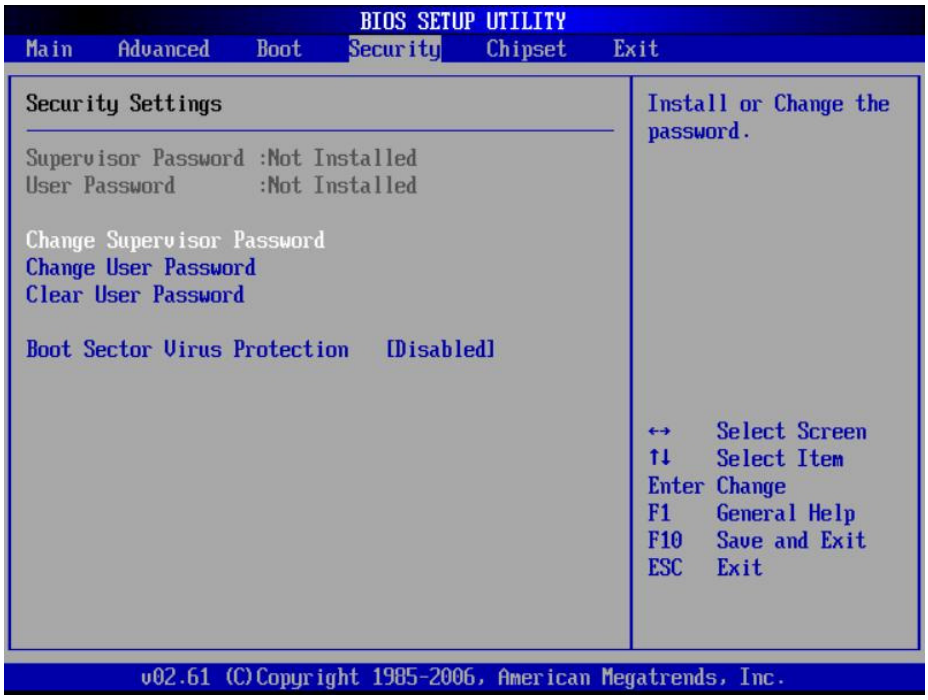
This item is used to specify the boot sequence from available devices.

3.6 Security Menu

The Security menu items allow you to set and change the password for BIOS security.

⇩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]

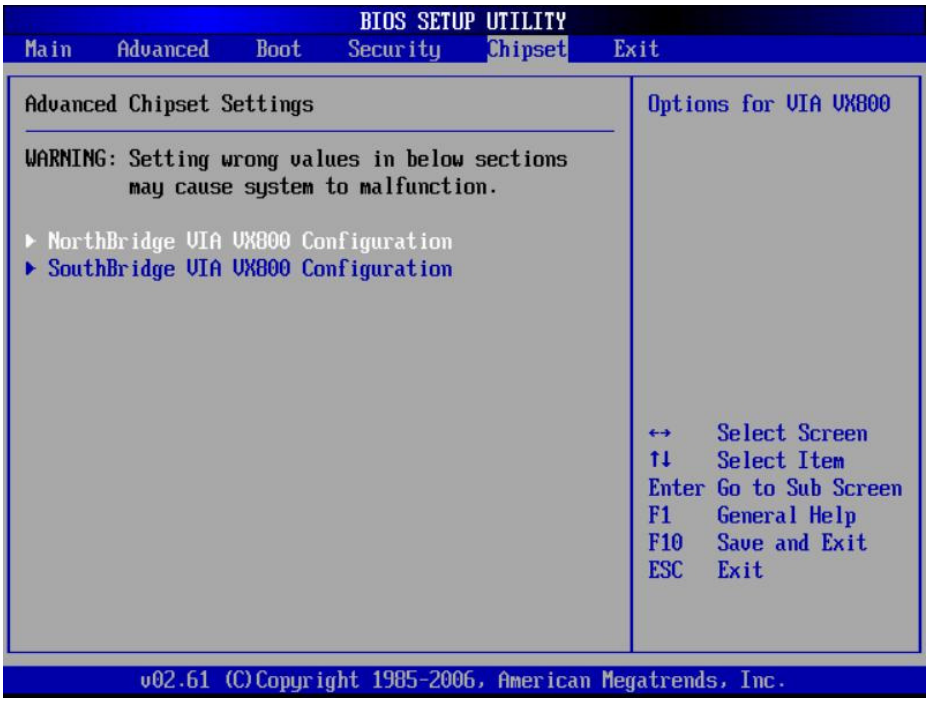
This item allows you to enable or disable the boot sector virus protection. If enabled, AMI BIOS will issue a warning when a virus or program attempts to write to the hard disk's boot sector or attempts to execute disk format command.

3.7 Chipset Menu

The Chipset menu items allow you to change the settings for the VGA and SATA devices.

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

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

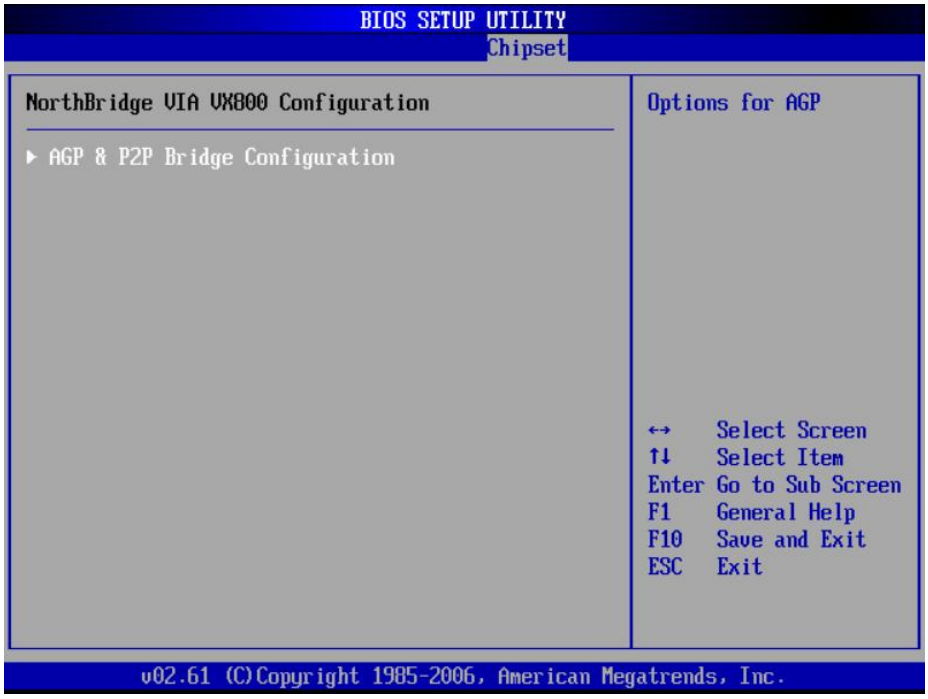


2. Move between items and select values by using the arrow keys. Modify the selected field the PgUP/PgDN keys. For information on the various options, press <F1> key.

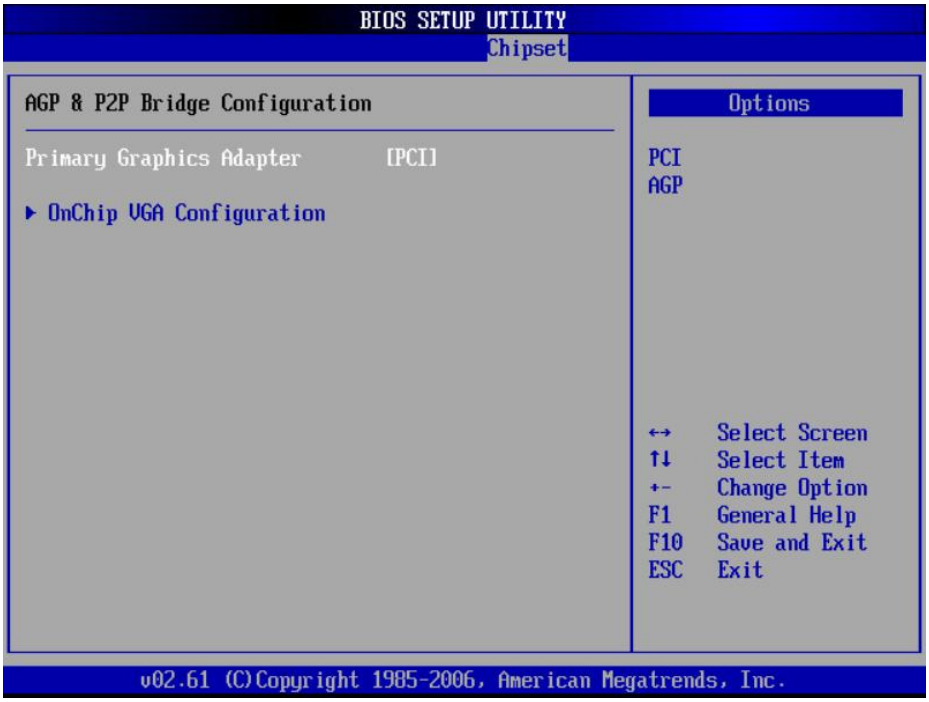
3. After you have finished with the Chipset Setup, press the <ESC> key to return to the main menu.

3.7.1 NorthBridge VIA VX800 Configuration

This sub-menu allows you to change the AGP & P2P features.



3.7.1.1 AGP & P2P Bridge Configuration



Primary Graphic Adapter: [PCI]

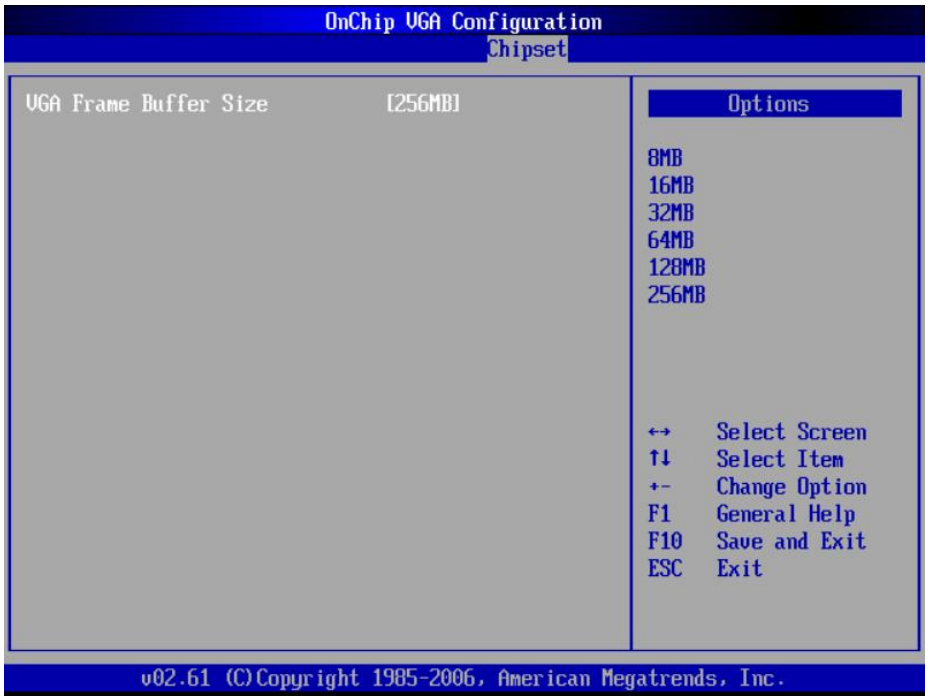
This item allows you to configure the Primary Graphic Adapter in PCI or AGP.

[PCI]: If you install a graphic adapter on PCI or mini-PCI slot, you can select this item.

[AGP]: This item is to use the internal graphic controller (OnChip VGA) of North Bridge to be primary graphic adapter.

3.7.1.1.1 OnChip VGA Configuration

This sub-menu allows you to change the OnChip VGA features.

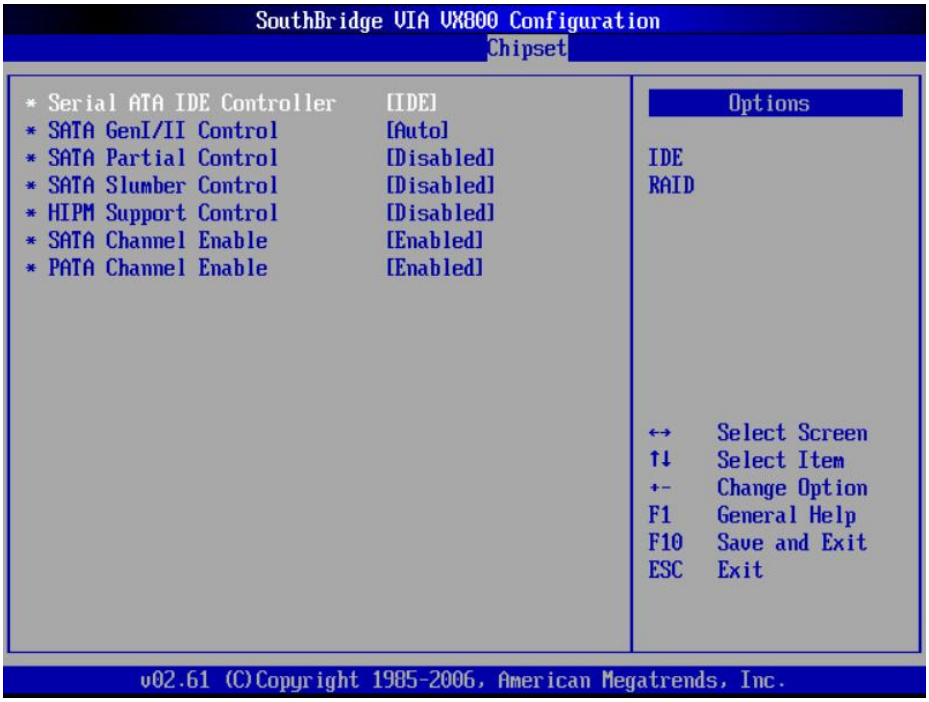


VGA Frame Buffer Size: [256MB]

This item allows you to set the maximum memory size assigned to the internal graphic controller (OnChip VGA).

3.7.2 SouthBridge VIA VX800 Configuration

This sub-menu allows you to change the South Bridge features.



Serial SATA IDE Controller: [IDE]

This item allows you to configure the SATA IDE controller in IDE or RAID mode.

SATA GenI/II Control:[Auto]

This item allows you to configure the SATA GenI/II control in automatic or Gen I / II.

SATA Partial Control:[Disabled]

This item allows you to enable or disable the SATA Partial Control.

SATA Slumber Control:[Disabled]

This item allows you to enable or disable the SATA Slumber Control.

HIPM Support Control:[Disabled]

This item allows you to enable or disable the HIPM Support Control.

SATA Channel Enable:[Enabled]

This item allows you to enable or disable the SATA Channel function.

PATA Channel Enable:[Enabled]

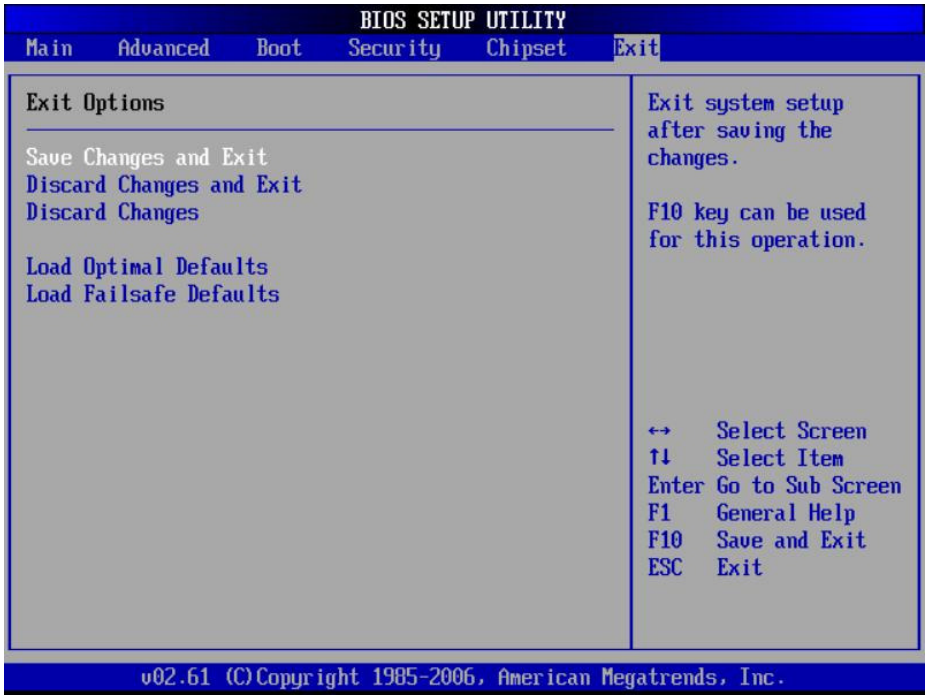
This item allows you to enable or disable the PATA Channel function.

3.7 Exit Menu

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 field the PgUP/PgDN keys. For information on the various options, press <F1> key.

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

Save Changes and Exit:

Save the changes to the system and exit the BIOS setup program. F10 key can be used for this operation.

Discard Changes and Exit:

Exit the BIOS setup program without saving the changes to the system. ESC key can be used for this operation.

Discard Changes:

Discard the changes and load the previous saved settings. F7 key can be used for this operation.

Load Optimal Defaults:

This item allows you to load optimal defaults for all settings on the BIOS Setup menus, and it will provide the best performance settings for system. F9 key can be used for this operation.

Load Failsafe Defaults:

This item allows you to load failsafe defaults for all settings on the BIOS Setup menus, , and it will provide the most stable performance settings for system. F8 key can be used for this operation.

Chapter 4. Utility & Driver Installation

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

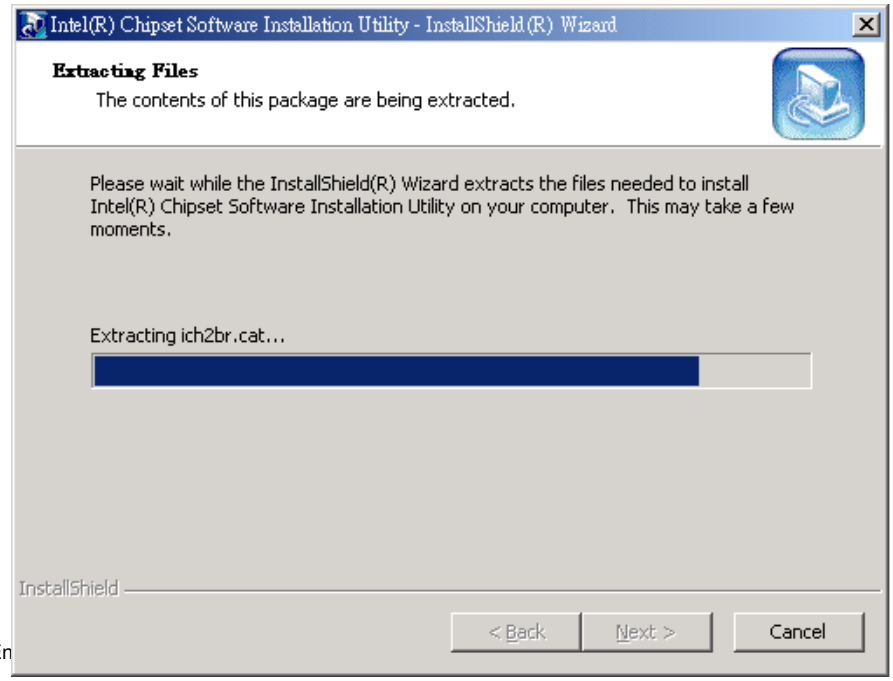
4.1 Operation System Supporting

PL-80240 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
Windows®	Windows XP SP2 Windows XP SP3 Windows Server 2003 Windows Server 2008 Windows 7
Linux & Unix Like	RedHat Fedora, RedHat Enterprise, CentOS and other Linux Distribution base on Linux kerner 2.6.23.1-42 or above.

4.2 System Driver Installation

PL-80240 offers the system driver in the setup CD. Please install the drivers for your OS that has installed in system.



4.3 LAN Driver Installation

PL-80240 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-80240 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: Watchdog Timer Programming Guide

Watchdog timer overview

As systems continually become more complex, the likelihood that a platform will suffer a hard hang, an operating system (OS) software lockup, or an application lockup is also becoming more likely. Watchdog timer can be used to monitor system software operation and take corrective action if the software fails to function after the programmed period. This section describes the operation of the watchdog timer and how to program it.

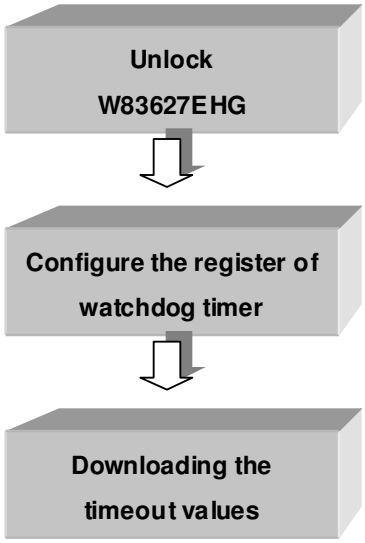
1. Programming the Watchdog Timer

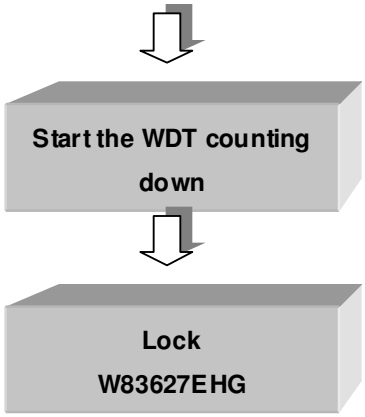
The WIN ENTERPRISES PL-80240 provides a watchdog timer that can reset the system or activate LAN bypass function. It provides the following function for user programming:

- Can be enabled and disabled by user's program
- Timer can be set from 1 to 255 seconds or 1 to 255 minutes
- Generates a KBRST# (P60) or activate WDTO# (P77) signal if the software fails to reset the timer when timeout.

2. Watchdog Timer Control Register

The I/O port address of the watchdog timer is 2EH and 2FH, 2EH is the address port, 2FH is the data port. You must first assign the address of register by writing address value into address port 2EH, then write/read data to/from the assigned register through data port 2FH.





Watchdog Timer Registers		
Address of register (2EH)	**R/W**	**Value (2FH) and Description**
87H	----	Write this address to I/O address port 2EH twice to unlock the W83627EHG
07H	W	Write 08h to point to logical device 8 and select the register of watchdog timer.
30H	R/W	Write 01h to activate WDTO#. Disabled is set as default.
CRF5, Bit 3	R/W	Select WDTO# count mode. 0: Second Mode 1: Minute Mode
CRF5, Bit 1	R/W	Enable / Disable the WDTO# output low pulse to KBRST# 0: Disable 1: Enable
CRF6	R/W	Watchdog time-out value. 0: stop timer [default] 01~FFh: Writing a non-zero value to this register causes the counter to load the value to watchdog counter and start counting down. The amount of the count, in seconds or minutes, depends on the value set in register CRF5, bit 3. This number decides how long the watchdog timer waits for strobe before generating an interrupt or reset signal. Writing a new value to this register can reset the timer to

		count with the new value
AAH	-----	Write this address to I/O port 2EH to lock watchdog timer.

3. Example program 1

Enable watchdog timer and set 10 seconds as timeout interval and issue KBRST# as the time-out event occur.

```
;--------------------------------------------------------------------
;Enter the extended function mode, interruptible double-write
;--------------------------------------------------------------------
MOV DX,2EH   ; Unlock W83627EHG
MOV AL,87H
OUT DX,AL
OUT DX,AL
;--------------------------------------------------------------------
; Configure logical device 8
;--------------------------------------------------------------------
MOV AL,07H
OUT DX,AL      ; Point to Logical Device Number Reg.
INC DX
MOV AL,08H
OUT DX,AL      ; Select logical device 8
;--------------------------------------------------------------------
; Set second as counting unit and KBRST# time-out event
;--------------------------------------------------------------------
DEC DX
MOV AL,F5H
OUT DX,AL      ; Select CRF5
INC DX
IN AL,DX
AND AL,F5H     ; Set Watchdog time-our to second mode
OR AL,02H
OUT DX,AL      ; Enable the WDTO# output low pulse to KBRST#
;-----------------------------------------------------------------------
; Load 10 seconds to Watchdog Counter and start counting down
```

```
;------------------------------------------------------------------------
DEC DX
MOV AL,F6H
OUT DX,AL       ; Select CRF6
INC DX
MOV AL,0AH
OUT DX,AL       ; Time-out occurs after 10 seconds
;------------------------------------------------------------------------
; Exit extended function mode
;------------------------------------------------------------------------
DEC DX
MOV AL,AAH
OUT DX,AL
```

4. Example program 2

Enable watchdog timer and set 2 minutes as timeout interval and set WDTO# signal as the time-out event to control LAN by-pass or activate hardware reset through JP6. Please refer to jumper setting section for more detail information.

```
;------------------------------------------------------------------------
;Enter the extended function mode, interruptible double-write
;------------------------------------------------------------------------
MOV DX,2EH   ; Unlock W83627EHG
MOV AL,87H
OUT DX,AL
OUT DX,AL
;------------------------------------------------------------------------
; Configure logical device 8
;------------------------------------------------------------------------
MOV AL,07H
OUT DX,AL       ; Point to Logical Device Number Reg.
INC DX
MOV AL,08H
OUT DX,AL       ; Select logical device 8
```

```
;-------------------------------------------------------------------------
; Set minute as counting unit
;-------------------------------------------------------------------------
DEC DX
MOV AL,F5H
OUT DX,AL       ; Select CRF5
INC DX
MOV AL,08H
OUT DX,AL       ; Set Watchdog time-our to minute mode
;-------------------------------------------------------------------------
; Load 2 minutes to Watchdog Counter and start counting down
;-------------------------------------------------------------------------
DEC DX
MOV AL,F6H
OUT DX,AL       ; Select CRF6
INC DX
MOV AL,02H
OUT DX,AL       ; Time-out occurs after 2 minutes
;-------------------------------------------------------------------------
; Exit extended function mode
;-------------------------------------------------------------------------
DEC DX
MOV AL,AAH
OUT DX,AL
```

Appendix B: LAN Bypass Programming Guide

WIN ENTERPRISES PL-80240 provides LAN bypass functionality to ensure that data can still pass through the device, even when it is powered off. This feature helps ensure the continuous flow of data through the device in the event of a hardware failure. For network security appliances deployed at the gateway, for example, it is crucial that they provide LAN bypass functionality to ensure that hardware failure on these appliances will not bring down the entire network. Related BIOS settings are in the "Super IO Configuration" section.

The PL-80240 provides one pair bypass function on two LAN 1 & 2 ports (Refer to Page 10, CN22 & CN23 on moyherboard). The BIOS "Power on/off Bypass" settings control the bypass function through GPIO pins.

1. LAN Bypass Definition

There are two bypass settings in BIOS setup.

Power off Bypass: Enable/Disable

Power on Bypass: Enable/Disable

Note: If "Power off Bypass" set to "Disable", the "Power on Bypass" also set to "Disable" and it can not allow to be changed or selected.

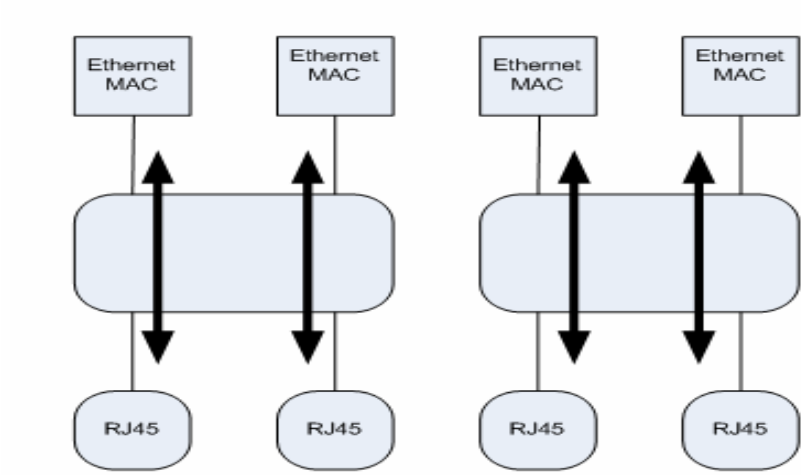
The table and figures below are the explanation for the behavior of LAN Bypass function.

Power status	BIOS Bypass setting	Bypass Behavior
ON	Power off Bypass: Disable Power on Bypass: Disable	A
	Power off Bypass: Enable Power on Bypass: Disable	A
	Power off Bypass: Enable Power on Bypass: Enable ***Note**	B
OFF	Power off Bypass: Disable Power on Bypass: Disable	A
	Power off Bypass: Enable Power on Bypass: Disable	B

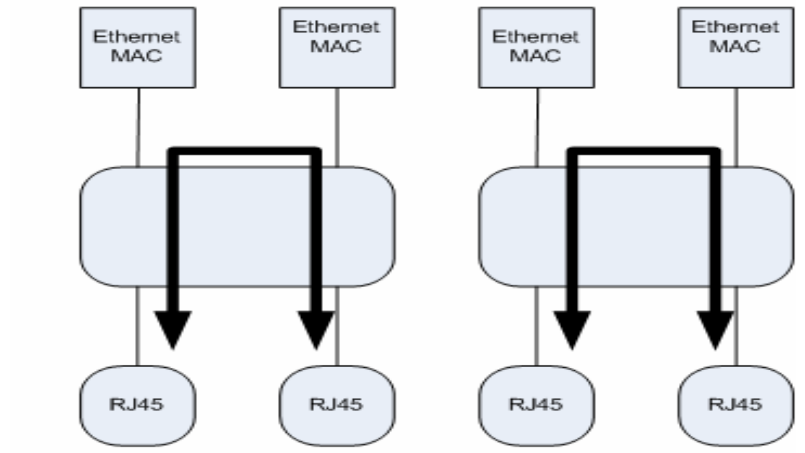
	Power off Bypass: Enable Power on Bypass: Enable ***Note**	B

Note: Before you want to set this item, the "Power off Bypass" must set to "Enable".

Bypass Behavior A:



Bypass Behavior B:



2. How to control bypass function by watchdog timer

Please follow below steps to set the LAN bypass function control by watchdog timer.

(1). Setup jumper JP6 to 2-3 shorted to enable bypass function when watchdog timer time-out.

(2). Refer to watchdog timer section to set timer interval value and enable watchdog timer.

Note: Once the watchdog timer time-out you need to restart the system to reset

the timer.

3. How to control LAN bypass function by GPIO during power on state

The bypass function can be enabled or disabled through Super I/O W83627EHG GPIO1 during power on state. Below is the I/O port address and control bit.

Bypass Control Register							
Logical Device 7, CR 30h							
Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
X	X	X	X	X	R/W	R/W	R/W

R/W: Read/Write, X: Not used

Bit [2:0]:

101 – Set bypass to disable when power on

010 – Set bypass to enable when power on

Please follow below steps to set the LAN bypass function control by GPIO.

(1). Set jumper JP6 to 1-2 to and bypass function can be controlled by GPI1.

(2). Refer to below program code and set LAN bypass enable or disable.

Bypass disabled when power on

```
==============================
MOV DX, 02EH
MOV AL, 07H          ;Logic Device 7
OUT DX, AL
INC  DX
OUT DX, AL           ;select Logic device 7

DEC DX
MOV AL, 30H
OUT DX, AL
INC  DX
MOV AL, 01H
OUT DX, AL           ;Enable GPIO1

DEC DX
```

```
MOV AL, 0F1H
OUT DX, AL
INC  DX
IN    AL, DX          ;Read register F1 Data

AND AL, 11111000B      ;Mask Bit 0 1 2 to use Bypass
OR   AL, 00000101B     ;set disable bypass bit
OUT DX, AL             ;out setting
==============================
```

Bypass enabled when power on

```
==============================
MOV DX, 02EH
MOVAL, 07H             ;Logic Device 7
OUT DX, AL
INC  DX
OUT DX, AL             ;select Logic device 7

DEC DX
MOV AL, 30H
OUT DX, AL
INC  DX
MOV AL, 01H
OUT DX, AL             ;Enable GPIO1

DEC DX
MOV AL, 0F1H
OUT DX, AL
INC  DX
IN    AL, DX           ;Read register F1 Data

AND AL, 11111000B      ;Mask Bit 0 1 2 to use Bypass
OR   AL, 00000010B     ;set Power on byapss bit
OUT DX, AL             ;out setting
==============================
```

4. How to control LAN bypass function by GPIO during power off state

The power off bypass function can be enabled or disabled through W83627EHG GPIO1. Below is the I/O port address and control bit.

Bypass Control Register							
Logical Device 7, CR 30h							
Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
X	X	X	X	X	R/W	R/W	R/W

R/W: Read/Write, X: Not used

Bit [2:0]:

101 – Set bypass to disable when power off

110 – Set bypass to enable when power off

Refer to below program code and set LAN bypass enable or disable when power off.

Bypass disabled when power off

```
==============================
MOV DX, 02EH
MOV AL, 07H          ;Logic Device 7
OUT DX, AL
INC  DX
OUT DX, AL           ;select Logic device 7

DEC DX
MOV AL, 30H
OUT DX, AL
INC  DX
MOV AL, 01H
OUT DX, AL           ;Enable GPIO1

DEC DX
MOV AL, 0F1H
OUT DX, AL
```

```
INC  DX
IN    AL, DX          ;Read register F1 Data

AND AL, 11111000B      ;Mask Bit 0 1 2 to use Bypass
OR   AL, 00000101B     ;set disable bypass bit
OUT DX, AL             ;out setting
==============================
```

Bypass enabled when power off

```
==============================
MOV DX, 02EH
MOV AL, 07H            ;Logic Device 7
OUT DX, AL
INC  DX
OUT DX, AL             ;select Logic device 7

DEC DX
MOV AL, 30H
OUT DX, AL
INC  DX
MOV AL, 01H
OUT DX, AL             ;Enable GPIO1

DEC DX
MOV AL, 0F1H
OUT DX, AL
INC  DX
IN    AL, DX           ;Read register F1 Data

AND AL, 11111000B      ;Mask Bit 0 1 2 to use Bypass
OR   AL, 00000110B     ;set Power on byapss bit
OUT DX, AL             ;out setting
==============================
```

Appendix C: System Resources

Interrupt Controller:

The PL-80240 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	Flash Controller
IRQ6	FDD Controller
IRQ7	LPT1
IRQ8	RTC
IRQ9	ISA/free
IRQ10	PCI-PCI Bridge
IRQ11	PCI System Device
IRQ12	ISA/free
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	ISA/Free
DMA1	ISA/Free
DMA2	FDD Controller

DMA3	ISA/Free
DMA4	AT DMA controller /Cascade
DMA5	ISA/Free
DMA6	ISA/Free
DMA7	ISA/Free

Memory Map:

The following table indicates memory of PL-80240. 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 ~ C91FF	ISA	Adapter ROM
E0000 ~ EFFFF	ISA	Mapped RAM
F0000 ~ FFFFF	ISA	System BIOS

Memory above 1MB (1MB ~ 1833984 KB)

Address Range	Type	Owner
D0000000~DFFFFFF7	PCI	VGA Adapter
F8000000~FBFFFFFF	PCI	VGA Adapter
FD000000~FDFFFFFF	PCI	VGA Adapter
FE5E0000~FE5EFFFF	PCI	VGA Adapter
FE5FEC00~FE5FECFF	PCI	PCI System Device
FE5FF000~FE5FF7FF	PCI	Flash Controller
FE5FF800~FE5FF8FF	PCI	PCI System Device
FE600000~FE6FFFFF	PCI	PCI-PCI Bridge
FE700000~FE7FFFFF	PCI	PCI-PCI Bridge
FE800000~FE8FFFFF	PCI	PCI-PCI Bridge
FE900000~FEBFFFFF	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	000E0000	00000000	00020000	Reserved
00000000	00100000	00000000	6FEF0000	Available
00000000	6FEF0000	00000000	00010000	Reserved
00000000	FEC00000	00000000	00001000	Reserved
00000000	FECC0000	00000000	00001000	Reserved
00000000	FEE00000	00000000	00001000	Reserved

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
2E ~ 2F	Motherboard Resource
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
80 ~ 90	AT DMA controller
94 ~ 9F	AT DMA controller
A0 ~ A1	AT interrupt controller
C0 ~ DE	AT DMA controller
F0 ~ FF	Math Coprocessor
170~177	IDE controller
1F0~1F7	IDE controller
2F8 ~ 2FF	COM2
376	IDE controller
378 ~ 37A	LPT1
3B0 ~ 3BB	VGA Adapter
3C0 ~ 3DF	VGA Adapter
3F6	IDE controller
3F8 ~ 3FF	COM1

4D0 ~ 4D1	Motherboard Resource
800 ~ 8FE	Motherboard Resource
A00 ~ A0F	Motherboard Resource
A10 ~ A1F	Motherboard Resource
CF8 ~ CFF	Motherboard Resource
8480 ~ 8486	Flash Controller
8800 ~ 881E	USB Controller
8880 ~ 889E	USB Controller
8C00 ~ 8C1E	USB Controller
9000 ~ 9FFF	PCI-PCI Bridge
A000 ~ AFFF	PCI-PCI Bridge
B000 ~ BFFF	PCI-PCI Bridge
C000 ~ EFFF	PCI-PCI Bridge
FC00 ~ FC0E	IDE Controller

Custom Embedded Solutions

Appendix D: Cable Development Kit

The PL-80240 offers some cables for development use .

DK001

Item & Description	Part No.	Qty
Ethernet Cat.5 Cable 2M/ RoHS	CB-EC5200-00	1
Cross Over 2M Color/ RoHS	CB-CO5204-00	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-IUSB01-00	1

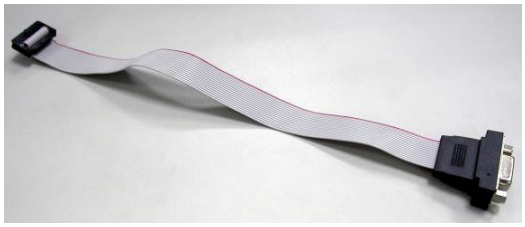
CB-EC5200-00

CB-CO5204-00

CB-RJDB91-00

CB-DB9200-00

CB-IVGA01-00



CB-IPS200-00

CB-IUSB01-00