User's Manual

Version 1.2

PC/104-*PLUS* Module

Model Number MB-73030

AMD Geode LX800 Low Power PC/104+ SBC with VGA/LCD, Two 10/100 LAN, Audio & SSD

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Chapter 1. General Information

1-1. Introduction

The MB-73030 is a full function of the PC/104+ embedded format SBC board using the AMD CS5536 chipset, it supports the AMD LX800 500 MHz processor. The MB-73030 supports CRT, 24-bit TFT panels, one Ultra ATA-66 IDE devices, one CF socket, the Dual Intel® 82551ER Ethernet chipset and an AC-97 Audio Interface.

The onboard features include one RS-232 and one RS-232/422/485 serial port, one bi-directional parallel port, four USB 2.0 ports, also a watchdog timer and PC/104+ (both PCI & ISA) connector for flexible expansion capabilities. In addition, the onboard SSD interface supports a 50-pin CompactFlash™ socket for TypeI/II CompactFlash Cards and a memory support 200-pin DDR SO-DIM.

1-2. Specification

Specifications	
General Functions	
CPU	AMD Geode LX800 processor
BIOS	Insyde® 512KB Flash BIOS
Chipset	AMD CS5536
I/O Chipset	Winbond 83627HG
Memory	One 200-pin DDR SO-DIMM socket support up to 1GB DDR 333/400 Memory
Enhanced IDE	Support up to one Ultra ATA-66 IDE devices
Parallel port	Support SPP/ECP/EPP
Serial port	One RS-232 and one RS-232/422/485 serial ports.
IR interface	Support one IrDA Tx/Rx header
KB/Mouse connector	keyboard/ mouse pin-header
USB connectors	Support four USB 2.0 ports(two on external Connector, two on Pin-header)
Battery	Lithium battery for data retention up to 10 years(in normal condition)
Watchdog Timer	Software programmable, 1-255 level
PC/104+ Connector	PC/104+ connectors for both PCI & ISA
Power management	APM 1.2 compliant
Flat Panel/CRT Interface	
VGA Chipset	AMD Geode LX-800
Display memory	Share system memory 2~254MB
Display type	Simultaneous supports CRT and 24-bit TFT LCD
Resolution	CRT Resolution support up to 1920 x 1440 @ 32bpp or 1660 x1200 @ 32bpp CRT & LCD simultaneous: up to 1024 x 768 @ 18bpp (60Hz)

Ethernet Interface	
Chipset	Dual Intel 82551ER
Ethernet interface	PCI 100/10 Mbps Ethernet controller
SSD Interface	One 50-pin CompactFlash™ socket
Sound Adaptor (optional R-031)	
Chipset	Optional AC 97 codec
Audio controller	SoundBlaster Pro Hardware and Direct Sound Ready AC97 Digital Audio
Audio interface	Mic in and Speaker out
Software Driver	Supports for Windows 95, Windows 98 and windows NT
Mechanical and Environmental	
Power supply voltage	VCC (4.75V to 5.25V),
Max. power requirements	+5 V @2.2A,
Operating temperature	32 to 140°F (0 to 60°C)
Board size	95.9mm x115.6mm
Weight	0.6 lb. (0.3 Kg) Net Weight

1-3. MB-73030 Package

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

- MB-73030 PC/104+ Embedded SBC board
- Quick Installation Guide
- Cables
  - IDE Cable
  - COM Cable
  - Power Cable(ATX 20P)
  - KB/Mouse Cable
  - USB Cable
  - VGA Cable
  - Dual LAN Adaptor R051
  - LAN Cable between R051 & MB-73030
- CD-ROM which contains the following folders:
  - Manual (in PDF format)
  - LAN Driver
  - VGA Driver
  - Audio Driver
  - BIOS Utility

If any of these items are missing or damaged, please contact your dealer at once. Save the shipping materials and carton for shipping or storage the board. After you unpack the board, inspect it to assure an intact shipment. Press down all the integrated circuits to make sure they are properly seated in their sockets. Do not apply power to the board if it appears to have been damaged.

Leave the board in its original packing until you are ready to install

Precautions

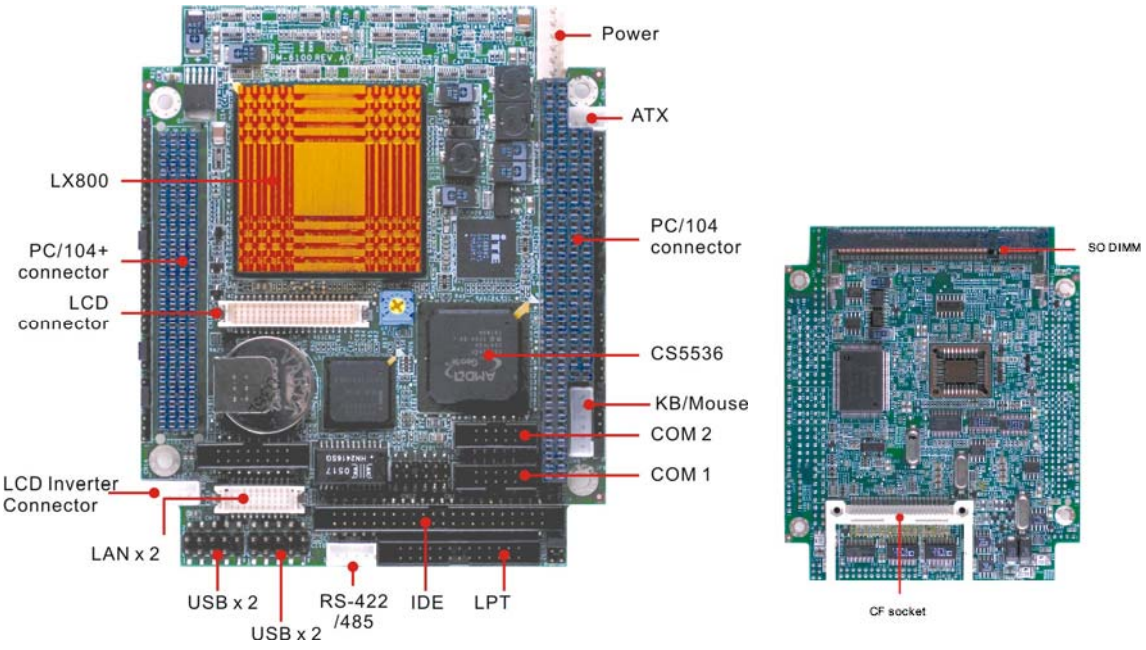
Please make sure you properly ground yourself before handling the MB-73030 board or other system components. Electrostatic discharge can be easily damage the MB-73030 board.

Do not remove the anti-static packing until you are ready to install the MB-73030 board.

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

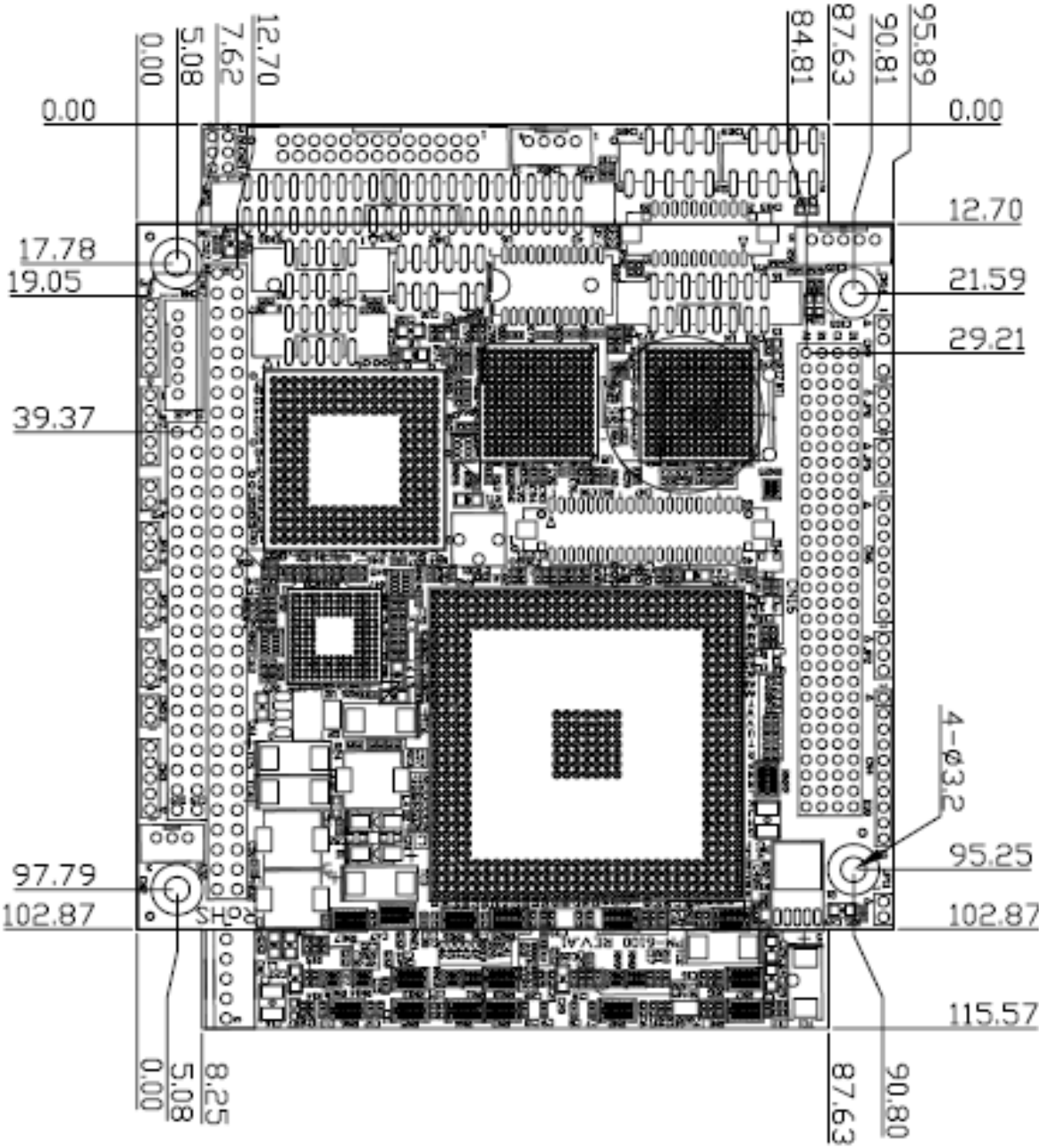
Handle the MB-73030 board by its edges and avoid touching its component.

1-4. Board Layout

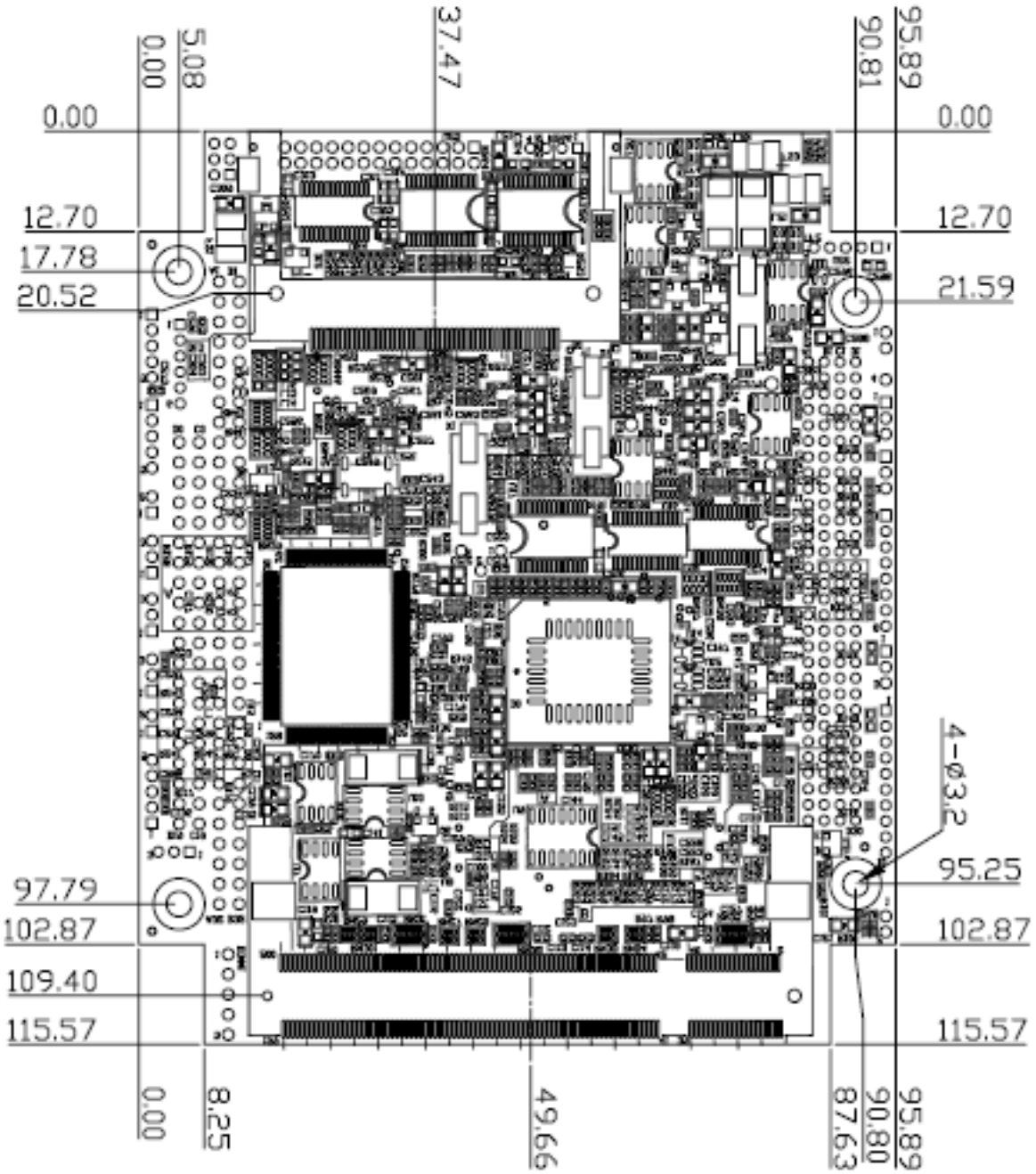


1-5. Board Dimension

Board Dimension (mm) (Component Side)

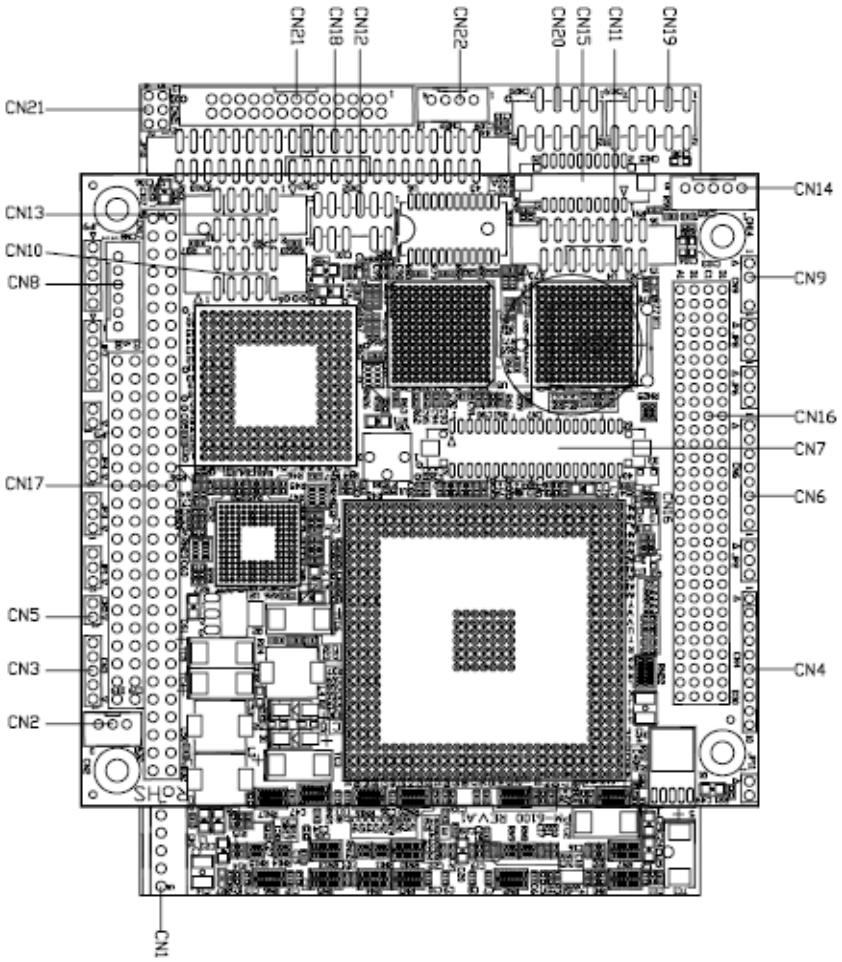


Board Dimension (mm) (Solder Side)



Chapter 2. Installation

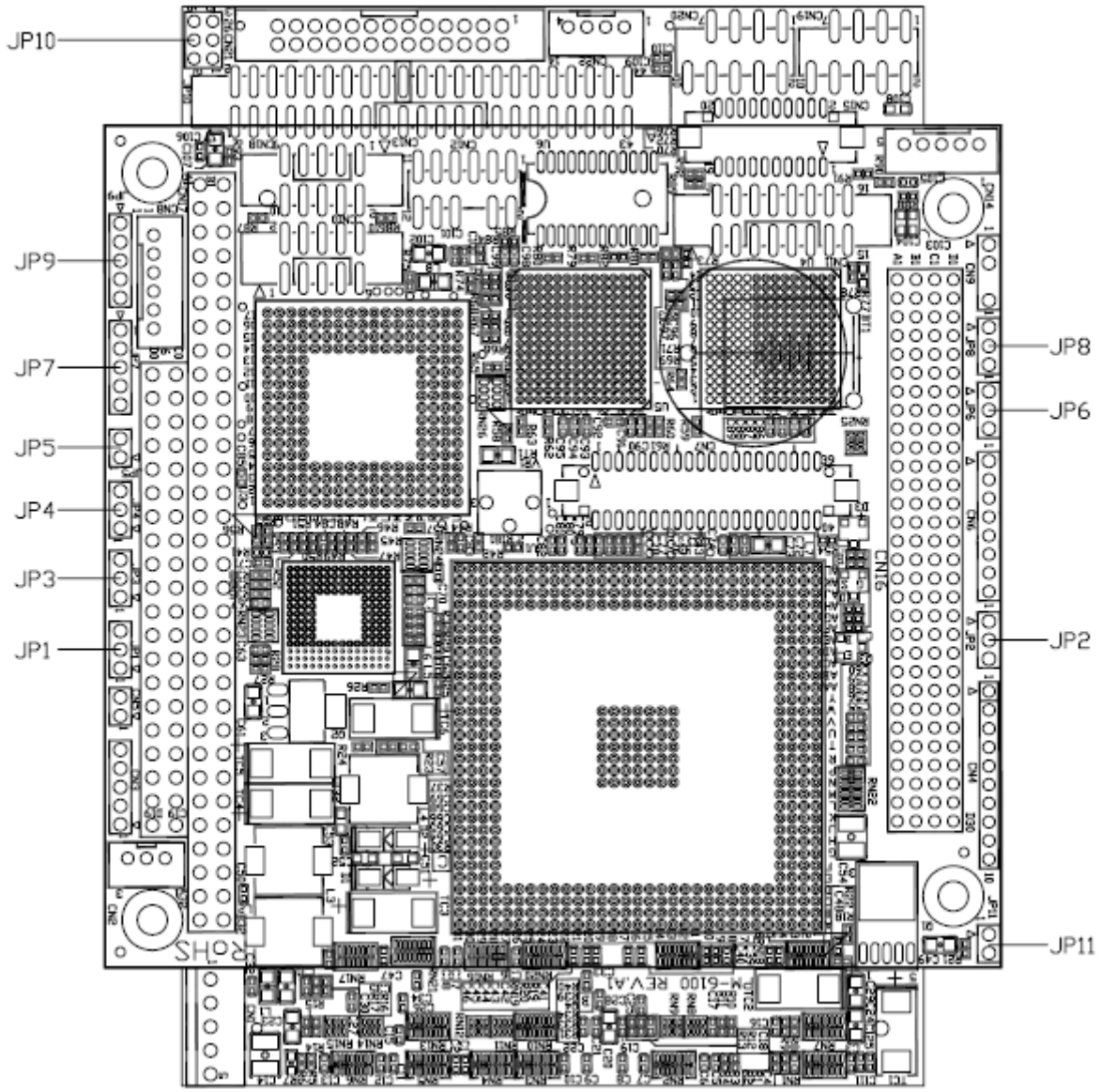
2-1. Location of Connectors



2-2. List of Connectors

Connectors	Description	Connectors	Description
CN1	Main Power Connector	CN12	AC 97 Audio Connector
CN2	ATX Power Connector	CN13	COM1 Connector (Pin Header)
CN3	IR Connector	CN14	Flat Panel Inverter Connector
CN4	GPIO Connector	CN15	LAN Connector
CN5	ATX Power Control Connector	CN16	PC/104 Plus Connector(PCI)
CN6	Power LED /HDD LED/Reset/Speak Out Connector	CN17	PC/104 Connector
CN7	Flat Panel Connector	CN18	IDE Connector 44pin
CN8	KB/Mouse Connector	CN19	USB 1/2 Connector(Pin Header)
CN9	Auxiliary Power Connector	CN20	USB 3/4 Connector(Pin Header)
CN10	COM2 Connector (Pin Header)	CN21	Parallel Connector(Pin Header)
CN11	VGA Connector (Pin Header)	CN22	COM2 –RS422/RS485 Connector (Pin Header)

2-3. Location of Jumpers



2-4. List of Jumpers

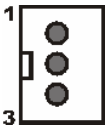
Pin	Define	Pin	Define
JP1	Memory Speed Selection	JP6	Watchdog Select
JP2	LCD Panel Voltage Select	JP7	COM2 RI/Voltage Select
JP3	AT/ATX Power Select(5VSB)	JP8	Clear CMOS
JP4	AT/ATX Power Select	JP9	COM1 RI/Voltage Select
JP5	CF Slave/Master	JP10	COM2 RS-232/422/485 Selec
JP11	DDR 2.6V/2.5V Voltage Select		

2-5.Connector Pin Assignment and Jumper Settings

CN1: Main Power Connector

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

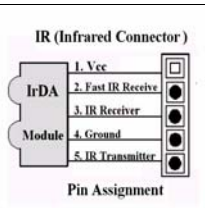
CN2: ATX Power Connector



Pin	Assignment
1	5V Standby
2	Ground
3	PS_On

CN3: IR Connector

The IrDA connector (CN24) can be configured to support a wireless infrared module. With this module and application software such as Laplink or a WIN95/98 direct cable connection, you can transfer files to or from Loptops, Notebooks, PDAs, and printers. This connector supports HPSIR (115.2kbps, 2 meters) and ASK-IR (56Kbps). Connect an infrared module to the IrDA connector and enable the infrared function in the BIOS setup.

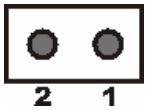


Pin	Assignment
1	Vcc
2	NC
3	IR Receiver
4	Ground
5	IR Transmitter

CN4 GPIO Connector

Pin	Assignment
1	+5V
2	GPI1
3	GPI2
4	GPI3
5	GPI4
6	GPO1
7	GPO2
8	GPO3
9	GPO4
10	Ground

CN5: ATX Power Control Connector

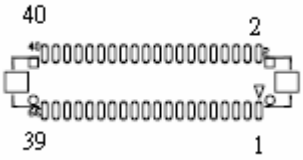


Pin	Assignment
1	PANSW-
2	PANSW+

CN6: Power LED /HDD LED/Reset/Speak Out Connector

Pin	Assignment
1	Power LED+
2	Power LED-
3	HDD LED+
4	HDD LED-
5	Reset +
6	Reset -
7	Speak Out+
8	Speak Out-

CN7: Flat Panel Connector



Pin	Signal	Pin	Signal
1	+12V	2	+12V
3	Ground	4	Ground
5	Vcc LCD	6	Vcc LCD
7	PRST#	8	Ground
9	LCD-B0	10	LCD_B1
11	LCD_B2	12	LCD_B3
13	LCD_B4	14	LCD_B5
15	LCD_B6	16	LCD_B7
17	LCD_G0	18	LCD_G1
19	LCD_G2	20	LCD_G3
21	LCD_G4	22	LCD_G5
23	LCD_G6	24	LCD_G7
25	LCD_R0	26	LCD_R1
27	LCD_R2	28	LCD_R3
29	LCD_R4	30	LCD_R5
31	LCD_R6	32	LCD_R7
33	Ground	34	Ground
35	DOTCLK	36	FPVSYNC
37	DE	38	FPHSYNC
39	VDDEN	40	FPBKLEN

CN8: Keyboard/Mouse Connector

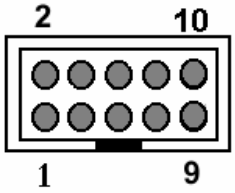
Pin	Assignment
1	KBCLK#
2	KBDATA#
3	MSCLK#
4	Ground
5	+5V
6	MSDATA#

CN9: Auxiliary Power Connector

The MB-73030 supports an auxiliary power connector that includes –5V and –12V voltages. It supports some PCI add-on cards or PC/104 modules that needs these voltages. Please connect the auxiliary power cable to CN9 and the power supply DC connector.

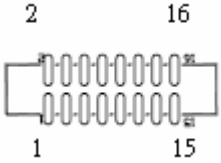
Pin	Assignment
1	-5V
2	Ground
3	Key pin
4	-12V

CN13, CN10: COM1, COM2 RS-232 Pin-Header



Pin	Assignment	Pin	Assignment
1	DCD	2	DSR
3	RXD	4	RTS
5	TXD	6	CTS
7	DTR	8	RI
9	Ground	10	NC

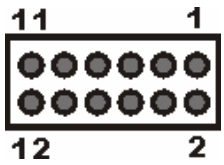
CN11: VGA Connector (Pin Header)



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

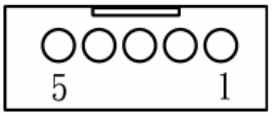
CN12: Audio Connector

This connector is used to connect a CD Audio cable, depending on the type of installed CD-ROM drive, connect the CD-ROM drive cable to one of these 12-pin connectors.



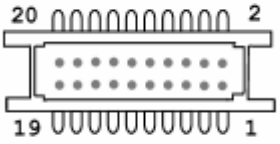
Pin	Assignment	Pin	Assignment
1	+5V	2	Ground
3	Ground	4	CLKBIT
5	+3.3V	6	Key Pin
7	SDTAIN	8	SYNC
9	Ground	10	PRST#
11	SDATAOUT	12	NC

CN14: Flat Panel Inverter Connector



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

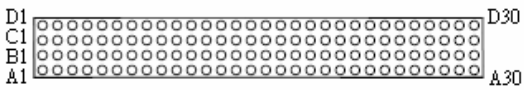
CN15: LAN Connector



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

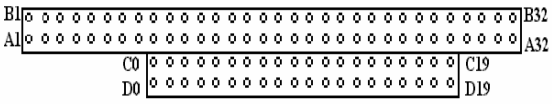
CN16: PC/104 Plus Connector

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



CN17: PC/104 Connector

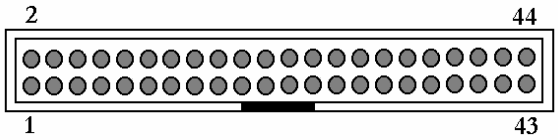
CN17 is a standard PC/104 bus connector, and it is fully occupied with the signals of the "ISA" (PC/AT) bus. It offers full architecture, hardware and software compatibility with the ISA bus and can accept ultra-compact (3.6" x 3.8") stackable modules.

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

CN18: IDE Connector

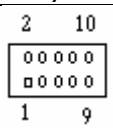
You are able to configure two hard disks to Master mode by using one ribbon cable on the primary IDE connector and another on the secondary IDE connector.

	Pin	Signal	Pin	Signal
	1	Reset	2	Ground
	3	Data7	4	Data8
	5	Data6	6	Data9
	7	Data5	8	Data10



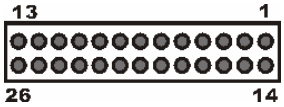
9	Data4	10	Data11
11	Data3	12	Data12
13	Data2	14	Data13
15	Data1	16	Data14
17	Data0	18	Data15
19	Ground	20	NC
21	DREQ	22	Ground
23	IOW#	24	Ground
25	IOR#	26	Ground
27	IRDY	28	Ground
29	DACK#	30	Ground
31	IRQ14	32	NC
33	Address 1	34	Detect
35	Address 0	36	Address 2
37	Select 0	38	Select 1
39	Active	40	Ground
41	+5V	42	+5V
43	Ground	44	NC

CN19, CN20: USB1/2, USB3/4 Connector(Pin Header)



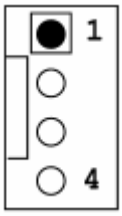
Pin	Assignment	Pin	Assignment
1	+5V	2	+5V
3	Data0-	4	Data1-
5	Data0+	6	Data1+
7	Ground	8	Ground
9	Key Pin	10	Ground

CN21: Parallel Port Connector



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

CN22: COM2 –RS422/RS485 Connector(Pin Header)



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

JP1: Memory Speed Selection

Setting		Define
	1-2	400
	2-3	333(Default)

JP2: LCD Panel Voltage Select

Setting		Define
	1-2	+3.3V(Default)
	2-3	+5V

JP3: AT/ATX Power Select(5VSB)

Setting		Define
	1-2	AT
	2-3	ATX(Default)

JP4: AT/ATX Power Select

Setting		Define
	1-2	AT
	2-3	ATX(Default)

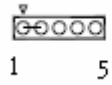
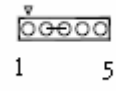
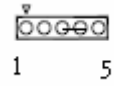
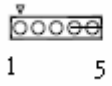
JP5: CF Master/Slave Select

Setting		Define
	1-2	Master(Default)
	NC	Slave

JP6: Watchdog Time Mode Select

Setting		Define
	1-2	IRQ11
	2-3	Reset Switch (Default)

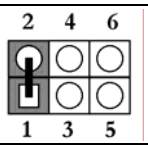
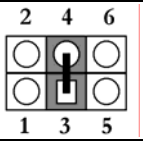
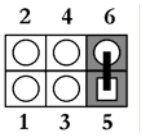
JP7/9: COM2/1 RI/Voltage Select

Setting		Define
	1-2	Ring(Default)
 	2-3/3-4	+5V
	4-5	+12V

JP8: CMOS Clear

Setting		Define
	1-2	Normal Status(Default)
	2-3	Clear CMOS

JP10: COM2 RS-232/422/485 Selector (Default: RS-232)

Setting		COM Ports
	1-2	RS-232(Default)
	3-4	RS-422
	5-6	RS-485

JP11: DDR 2.6V/2.5V Voltage Select

Setting		Define
	1-2	2.6V_DDR400
	NC	2.5V_DDR333(Default)

Chapter 3. BIOS Setup

The ROM chip of your MB-73030 board is configured with a customized Basic Input/Output System (BIOS) from Phoenix-Award 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:

1. Date and time
2. Memory capacity of the main board
3. Type of display adapter installed
4. Number and type of disk drives

The CMOS memory is maintained by battery installed on the MB-73030 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 “Load Optimized Defaults” from the main menu. This loads the setup default values from the BIOS Features Setup and Chipset Features Setup screens.
2. Choose “Standard COS Features” 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 & Exit Setup”) to save your changes and reboot the system.

3.2 Entering the CMOS Setup Program

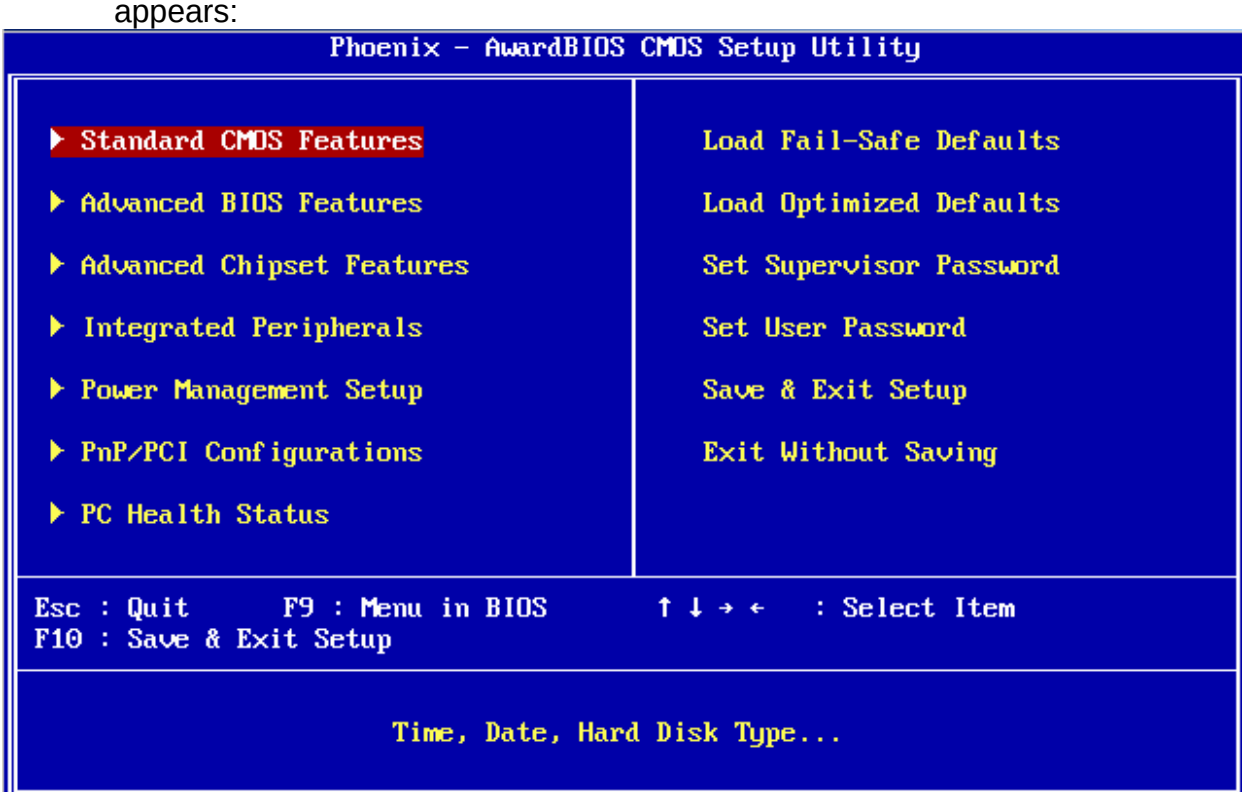
Use the CMOS Setup program to modify the system parameters to reflect the options installed in your system and to customized your system. For example, you should run the Setup program after you:

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

In the main menu, press F10 ("Save & Exit Setup) to save your changes and reboot the system. Choosing "EXIT WITHOUT SAVING" ignores your changes and exits the program. Pressing <ESC> anywhere in the program returns you to the main menu.

3.3 Menu Options

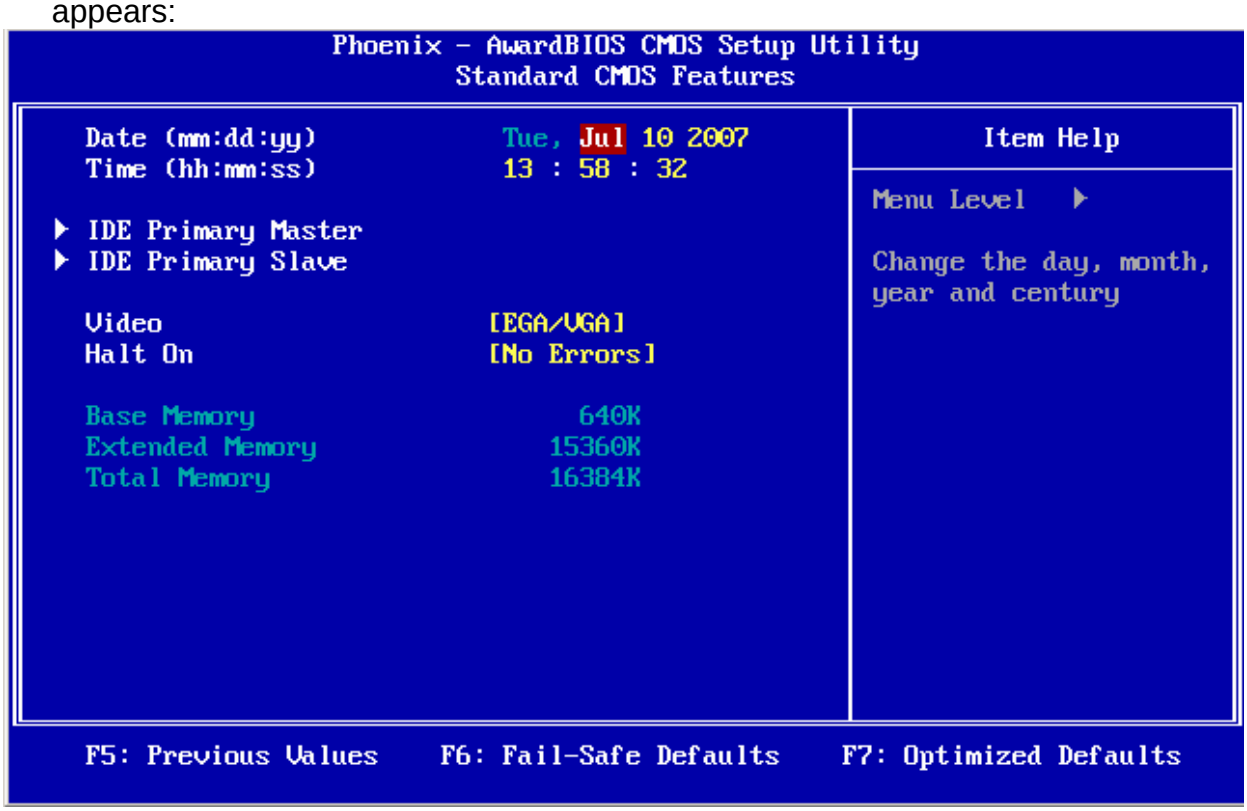
The main menu options of the CMOS Setup program are described in the following and the following sections of this chapter.

Option	Function
Standard CMOS Features	This setup page includes all the items in standard compatible BIOS
Advanced BIOS features	This setup page includes all the item of Award special enhanced features.
Advanced Chipset Features	This setup page includes all the items of chipset special features.
Integrated Peripherals	This setup page includes all onboard peripherals.

Power Management Setup	This setup page includes all the items of Green function features.
PnP/PCI Configurations	This setup page includes all the configurations of PCI & PnP ISA resources.
PC Health Status	This setup page is the System auto detect including temperature, voltage, fan, speed .
Load Fail-Safe Defaults	Fail-Safe Defaults are the BIOS default values for the minimal/stable performance for your system to operate.
Load Optimized Defaults	Optimized Defaults are the factory setting for optimal performance system operations.
Set Supervisor password	Change, set, or disable password, It allows you to limit access to the system and Setup,or just to Setup.
Set User password	Change, Set, or disable password, It allows you to limit access to the system.
Save & Exit Setup	Save CMOS value setting to CMOS and exit setup.
Exit Without Saving	Abandon all CMOS value changes and exit setup.

Use the Standard CMOS Setup option as follows:

1. Choose “Standard CMOS Features” 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.

Date/Time Configuration:

The BIOS determines the day of the week from the other data information. This field is for information only. The time format is based on 24-hour military time clock. For example, 1 p.m is 13:00:00.

Press the left or arrow key to move to the desired field (month, date, year). Press the PU/PD key to increment the setting or type the desired value into the field.

IDE Primary Master/Slave:

Choose from “Auto”, “User” or “None”. If your drive is not one of the predefined types, choose “User” and enter the following drive specifications:

- Capacitor: Approximate hard disk drive capacity
- Cylinders: Number of cylinders
- Heads: Number of heads
- Precomp: Write pre-compensation cylinder
- L-Zone: Landing Zone
- Sectors: Number of sectors

Refer to your drive’s documentation, please change the value to None if no device installed.

Drive:

Select this field to type of floppy disk drive installation in your system, the choices are: None; 360K, 5.25 in; 1.2M, 5.25 in; 720K, 3.5 in; 1.44MB, 3.5 in; 2.88M, 3.5 in

Video:

Choose: MONO, CGA 40, CGA 80 or EGA/VGA

- Mono: Monochrome Adapter, includes high resolution monchrome adapter
- CGA40: Color Graphics Adapter, power up in 40 column mode
- CGA80: Color Graphics Adapter, power up in 80 column mode
- EGA/VGA: Enhanced Graphics Adapter/Video Graphics Array, for EGA, VGA, SVGA or PGA

Halt On:

During the Power-On Self-Test (POST), the computer stops if BIOS detect a hardware error. This setting determines which type of error will cause the system to halt during booting. The options:

- All Errors (Default): Whenever the BIOS detects a non-fatal error, the system will be stopped and you will be prompted.
- No Errors: The system boot will not stop for any error that may e detected.
- All, But Keyboard: The system boot will not stop for a keyboard error, but it will stop for all others.
- All, But Diskette: The system boot will not stop for a diskette error but it will stop for all others
- All, But Disk/Key: The system boot will not stop for a disk and keyboard error but it will stop for all others.

Base/Extended/Total Memory:
This category is display-only. The contents are determined by POST of the BIOS. You cannot make changes to these fields.

Base Memory: Also called conventional memory. The DOS operating system and conventional application use this area.

Extended Memory: The POST of the BIOS will determine the amount of extended memory installed in the system.

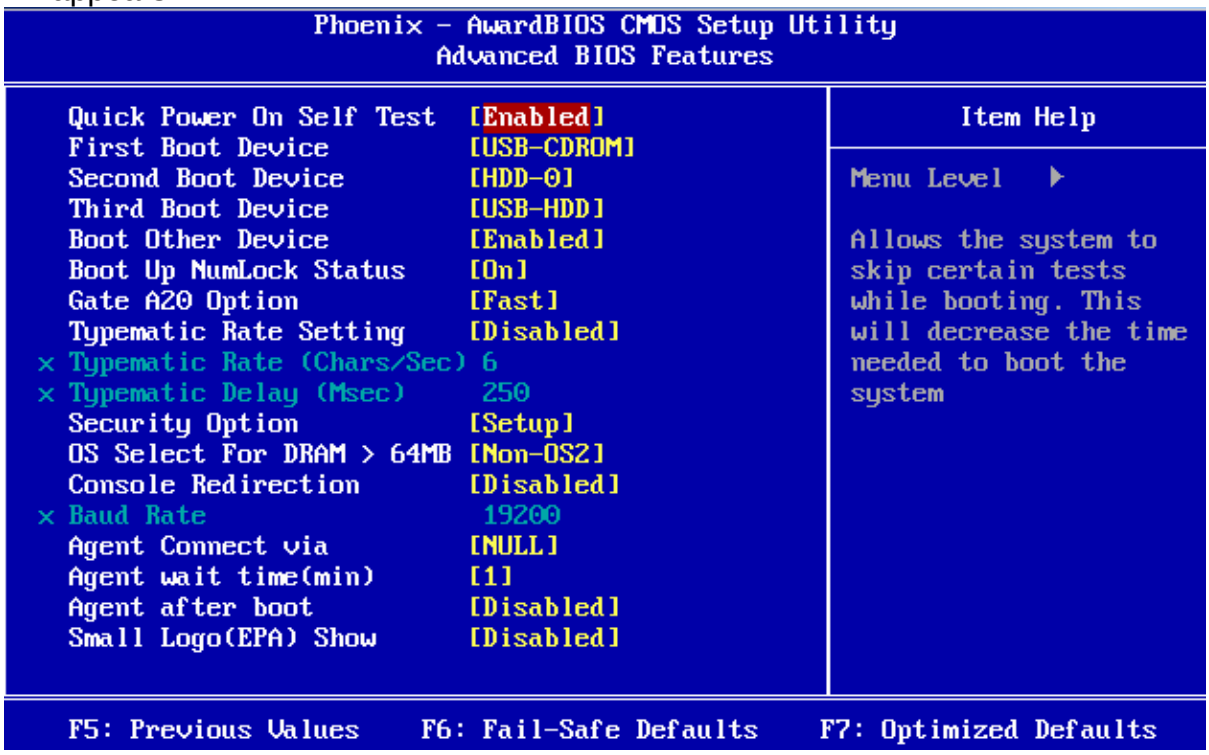
Total memory: This option shows system memory capacity.

3. After you have finished with the Standard CMOS Features program, press the <ESC> key to return to the main menu.

3.4 Advanced BIOS Features Setup

⇩ **Use the Advanced BIOS Feature Setup option as follows:**

1. Choose “BIOS Features Setup” 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:

First/Second/Third Boot Device:
BIOS attempts to load the operation system from the devices in the sequence selected. The available choices: USB, Floppy, LS/ZIP, HDD-0~3, SCSI, CDROM, Disable, LAN.

Boot Other Device:
Enabled: select your boot device priority function.

Disabled : Disabled this function .

OS Select for DRAM > 64MB:
Non- OS2 :Using non-OS2 operating system.
OS2 :Using OS2 operating system and RAM > 64MB

Console Redirection:
Enable to redirect console via COM port

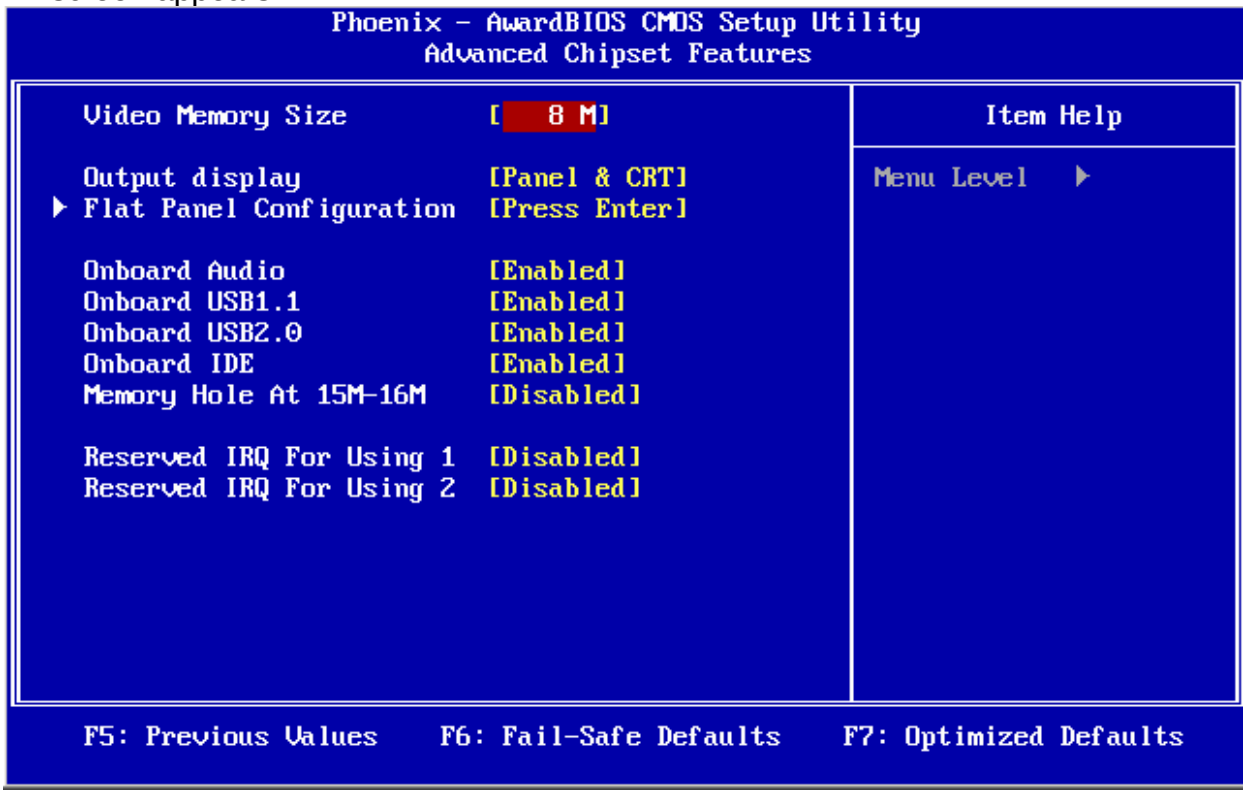
Small Logo (EPA) Show:
Enable or disable the small EPA logo when booting

Onboard LAN Boot ROM:
Enable or disable the Boot ROM of Onboard LAN Chip

3.5 Advanced Chipset Features Setup

Use the Advanced Chipset Feature Setup option as follows:

1. Choose “Advanced Chipset Features Setup” 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.

Video Memory Size (MB):
This item defines the size of the graphics memory. The available choices are: 8M, 16M, 32M, 64M, 128M , 254M. and Disable

Output Display:
The available choices are Flat Panel, CRT, and “Panel & CRT”; Once choose Flat Panel or “Panel & CRT”, you can get in to Flat Panel configuration for detailing setup.

Onboard Audio/ USB1.1/ USB2.0/ IDE/ Memory Hole at 15-16M:
The available choices are Enable or Disable

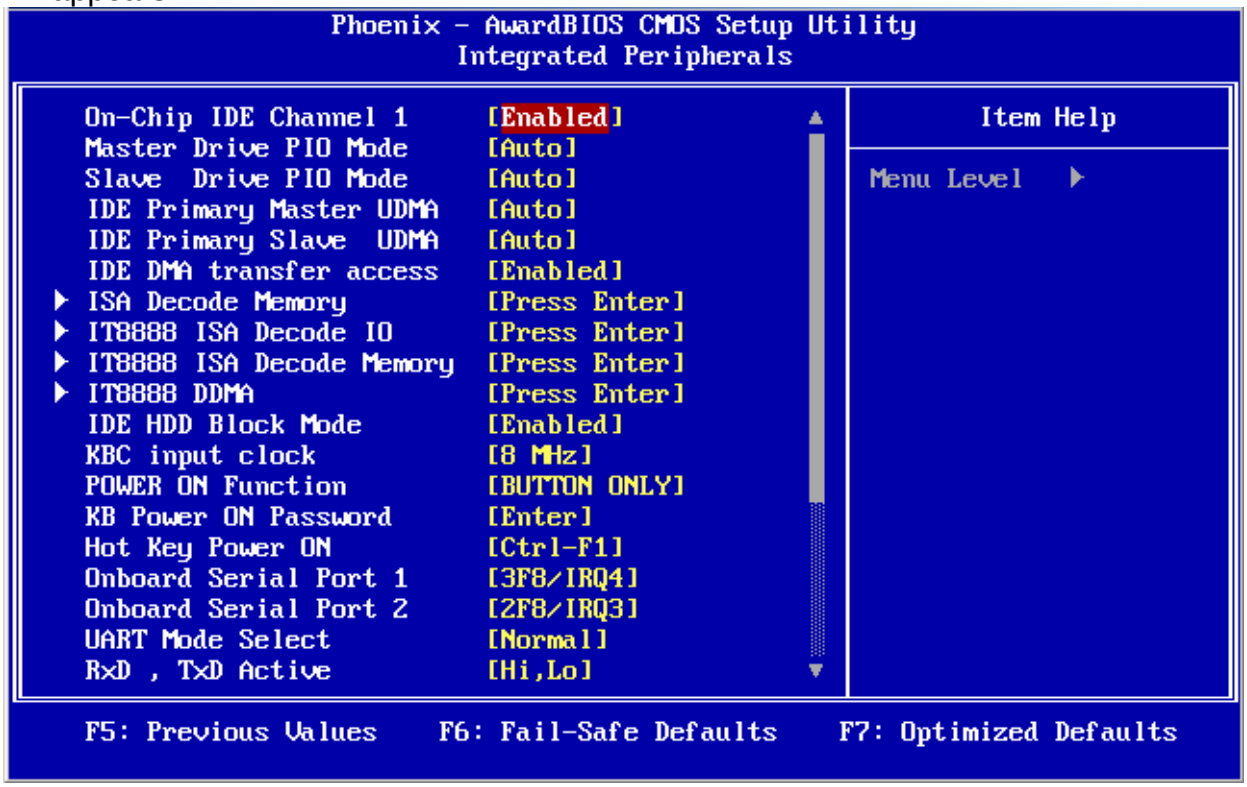
3.6 Integrated Peripherals Setup

Some Application may like to reserve the specific IRQ to use. Here are some choices available.

After you have finished with the Advanced Chipset Features program, press the <ESC> key to return to the main menu.

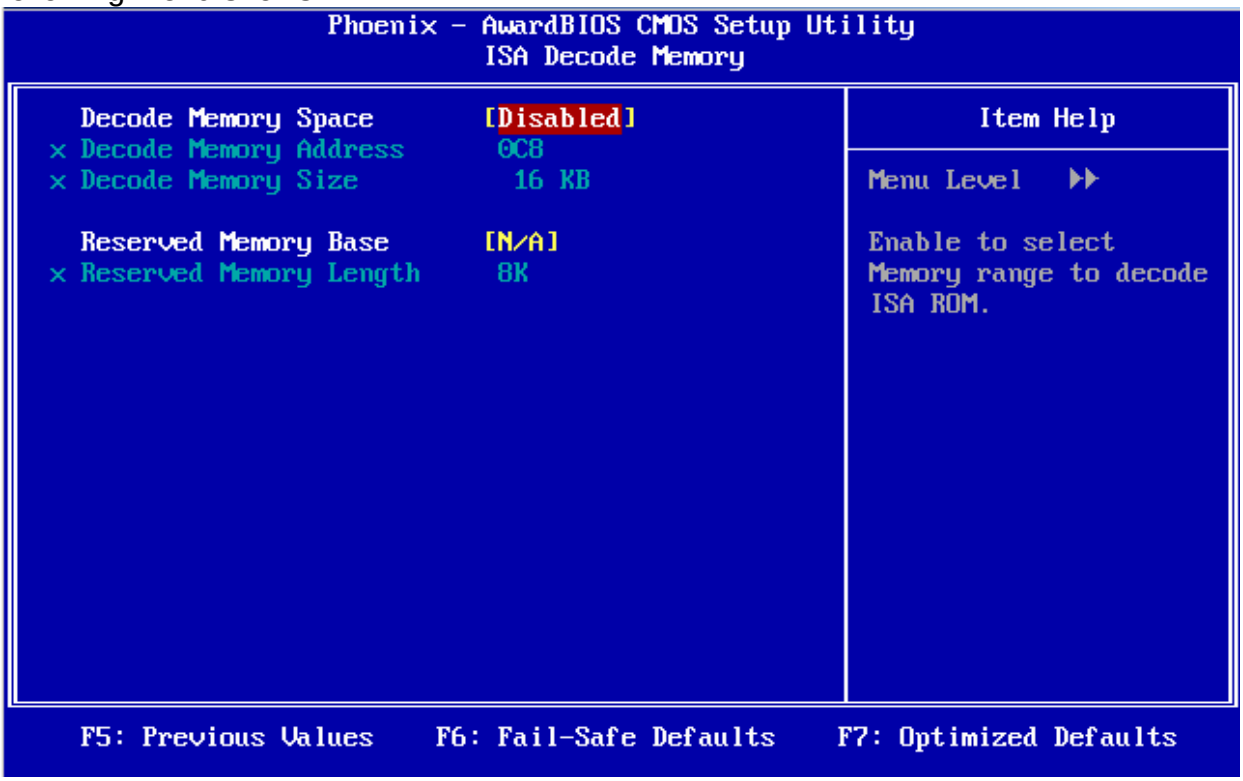
Use the Integrated Peripherals Setup option as follows:

1⇩ Choose “Integrated Peripherals Setup” from the main menu. The following screen appears:



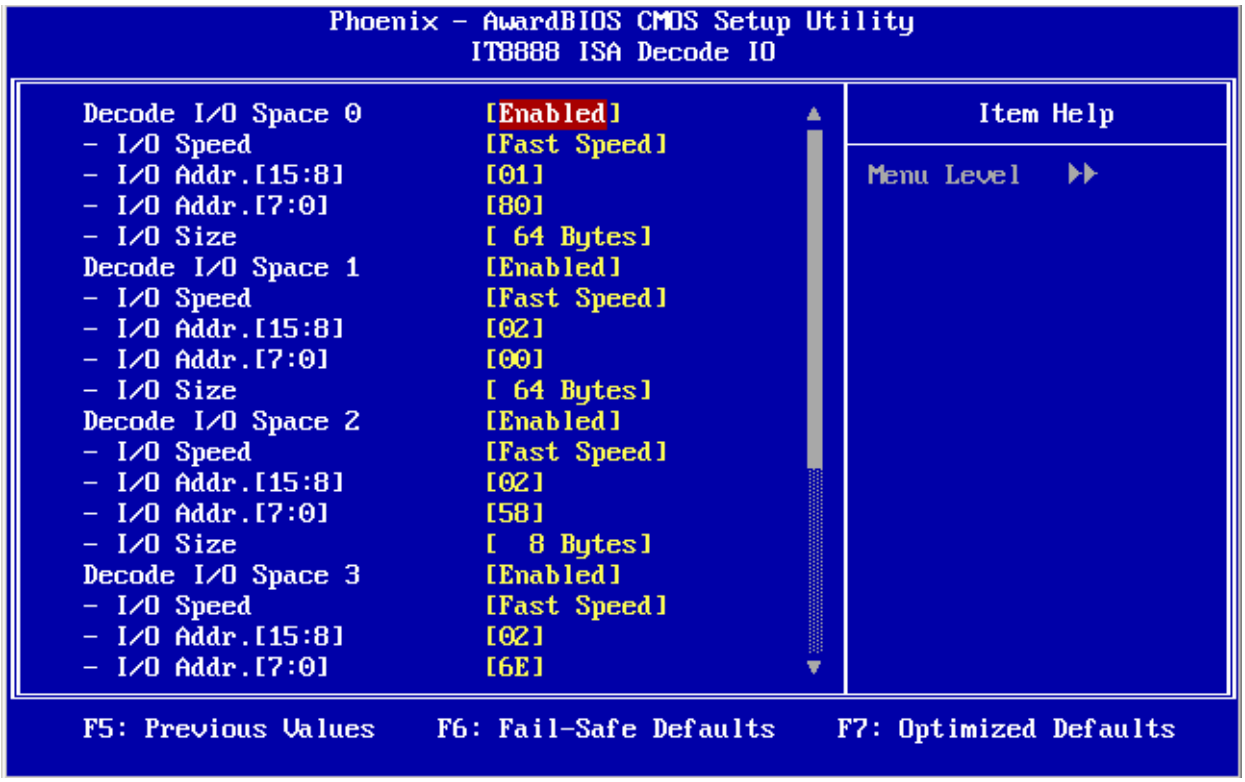
ISA Decode Memory

1. Select this item to setup the IDE device features. When you select this item, the following menu shows:

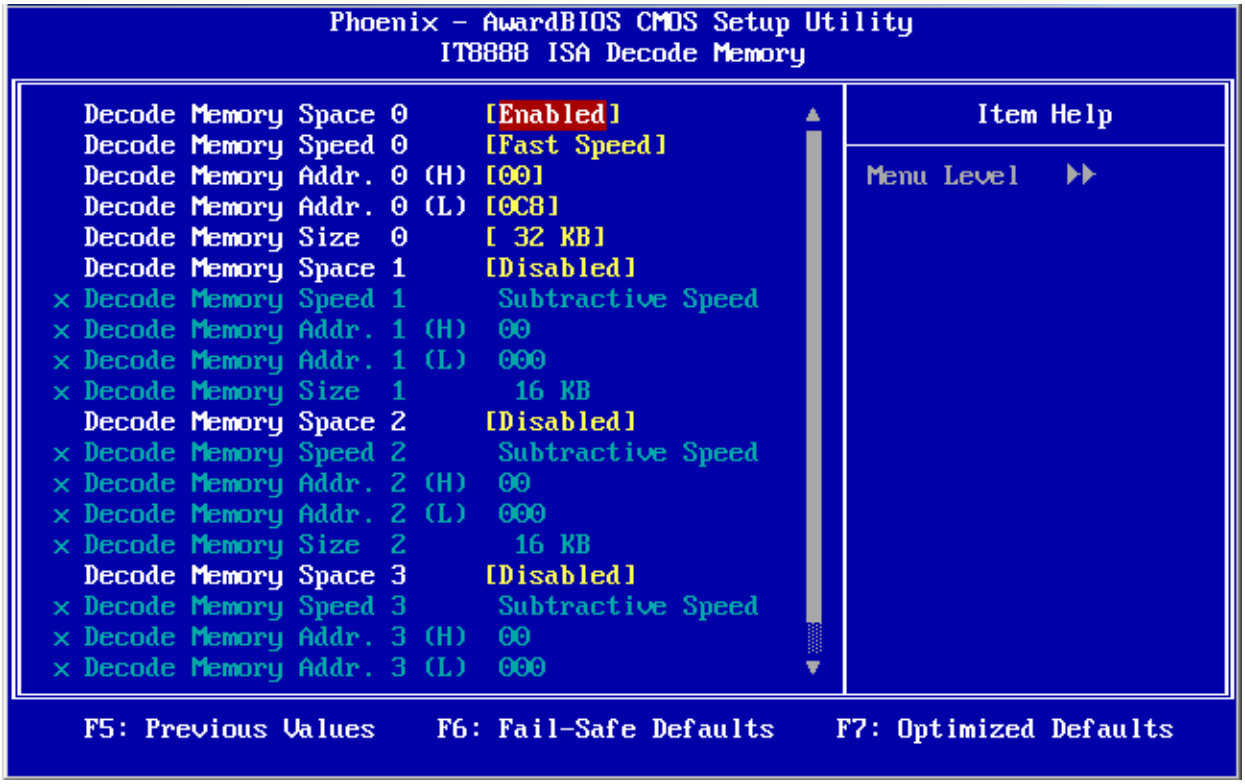


2. Move between items and select values by using the arrow keys. Modify the selected fields using the PgUP/PgDN keys. Please press the <F1> key for information on the various options.

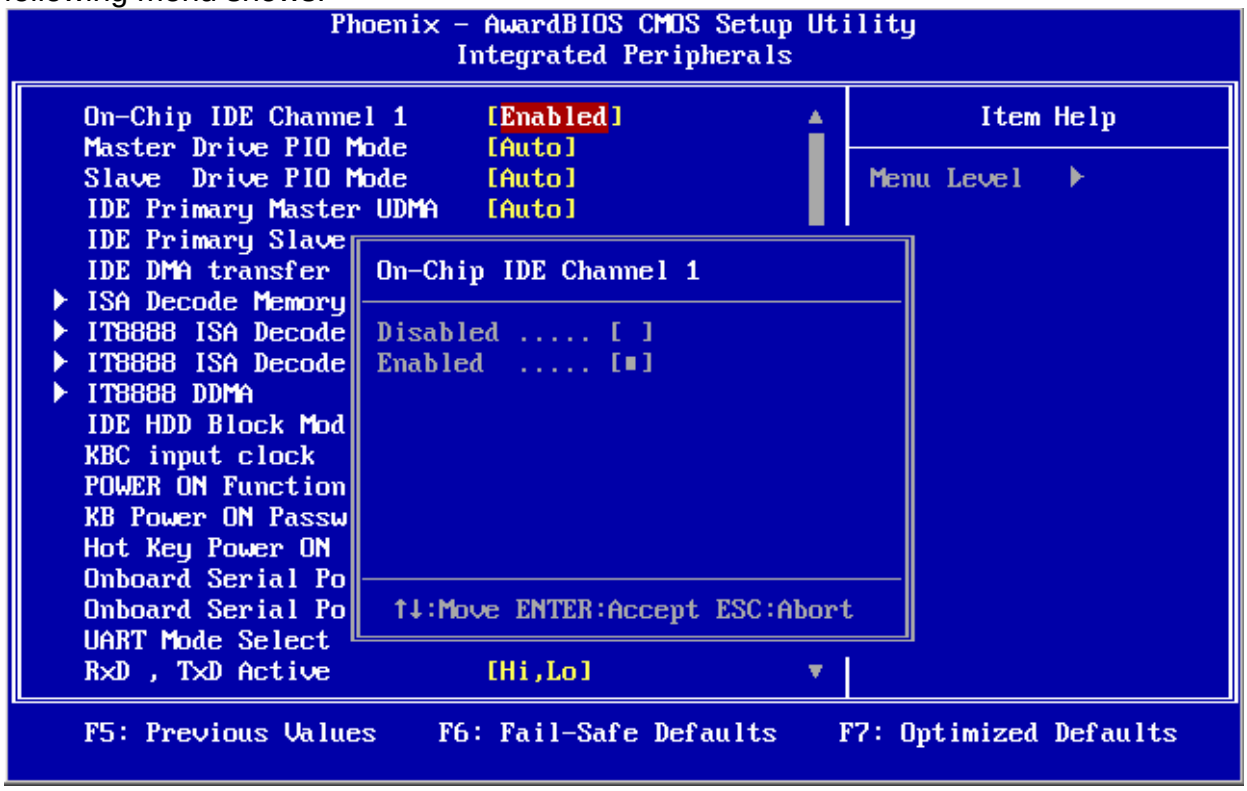
IT8888 ISA Decode I/O：



IT8888 ISA Decode Memory：



OnChip IDE Device:
Select this item to setup the IDE device features. When you select this item, the following menu shows:



IDE Primary Master/Slave PIO:
The four IDE PIC (Programmable Input/Output) fields let you set a PIC mode (0-1) for

each of the four IDE devices that the onboard IDE interface supports. Modes 1 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device. The choices are: Mode 0, Mode 1, Mode 2, Mode 3 and Mode 4.

IDE Primary Master/Slave UDMA:
Ultra DMA implementation is possible only if your IDE hard drive supports it and the operating environment includes a DMA drive (Windows 95 OSR2 or a third-party IDE bus master drive). If your hard drive and your system software both support Ultra DMA, select Auto to enable BIOS support. The choices are Auto and Disabled.

ISA Decode Memory:
Enable to select memory range to decode ISA ROM

IT8888 ISA Decode IO:
Select IT8888 ISA IO Resource

IT8888 ISA Decode Memory:
Select IT8888 ISA memory Resource

IDE HDD Block Mode:
Block mode is also called block transfer, multiple commands, or multiple sector read/write. If your IDE hard drive supports block mode (most new drives do), select Enabled for automatic detection of the optional number of block read/write per sector the drive can support. The available choices are Enabled, Disabled.

Onboard Serial Port 1/2/3/4:
This feature allows you to manually select the I/O address and IRQ for the first and second serial ports. If is recommended that you leave it as Auto so that the BIOS can select the best settings for it. But if you need a particular I/O port or IRQ that's been taken up by this serial port, you can manually select an alternative I/O port or IRQ for it. You can also disable this serial port if you do not need to use it. Doing so frees up the I/O port and IRQ used by this serial port. Those resources can then be reallocated for other devices to use.

UART Mode Select:
Select an operating mode for the serial port, the choices are: Normal, IrDA, ASKIR, SCR.

UR2 Duplex Mode:
In an Infrared port mode, this field appears. Full-duplex mode permits simultaneous two-direction transmission. Half-duplex mode permits transmission in one direction only at a time. Select the value required by the IR device connected to the IR port.

Onboard Parallel Port:
This feature allows you to select the I/O address and IRQ for the onboard parallel port. The default I/O address of 378H and IRQ7 should work well in most cases. Unless you have a problem with the parallel port, you should leave it at the default settings. The

choices are: 378/IRQ7

Parallel Port Mode:
Select an operating mode for the onboard parallel (printer) port. There are four options: SPP (Standard Parallel Port), EPP (Enhanced Parallel Port), ECP (Extended Capabilities Port) and ECP+EPP.

EPP Mode Select:
When the onboard parallel port is set to EPP mode,

ECP Mode Use DMA:
When the onboard parallel port is set to ECP mode, the parallel port can use DMA3 or DMA1.

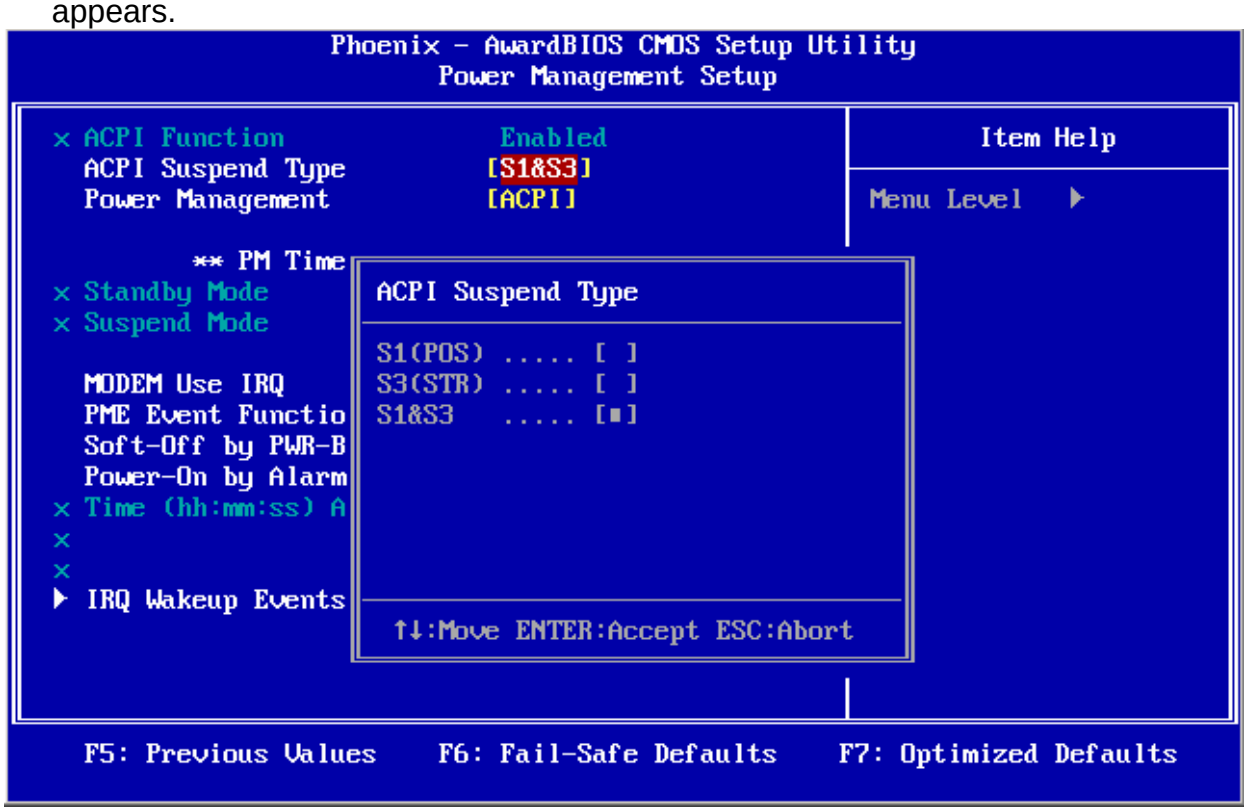
Watchdog Timer select:
Disable or select 10 Sec, 20 Sec, 30 Sec, 40 Sec, 1 Min, 2 Min& 4 Min.

3.7 Power Management Setup

The Power Management Setup controls the board's "green" features. To save energy these features shut down the video display and hard disk drive.

⇩ Use the Power Management Setup option as follows:

1. Choose "Power Management Setup" 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.

ACPI Function:
The ACPI standard (Advanced Configuration and Interface power) allows the operating system directly to check the functions of energy saving and the PnP (Plug and Play) functionality. The ACPI functions are normally activated by the BIOS. The choices: Enabled and Disabled.

ACPI Suspend Type:
This option specifies what technology must be used for the state of hibernation. The choices are: S1 (POS) Power on Suspend; S3 (STR) Suspend to RAM; S1 & S3

Power Management:
This category allows you to select the type (or degree) of power saving and is directly related to the following modes: Disable, ACPI, APM & Legacy

MODEM Use IRQ:
This determines the IRQ in which the MODEM can use. The choices: 3, 4, 5, 7, 9, 10, 11 and NA.

PME Event Function:
When the system enters a Soft-off mode (Standby power exist but system is not working), it will wake up system when specific signals occurred. The BIOS monitors the system for “activity” to determine when to enable power management.
If you enable this feature, the computer specifies that any signal noticed on the PCI (Peripheral Component Interconnect) bus channel must make go out from the hibernation state. The choices: Enabled and Disabled.

Soft-Off by PWR-BTTN:
This function can turn the system off with the on/off button places the system in a very low-power-usage state, with only enough circuitry receiving power to detect power button activity or Resume by Ring activity. The choices are Delay 4 seconds and Instant-Off.

Power On by Alarm:
Power On by alarm presetting time during one day

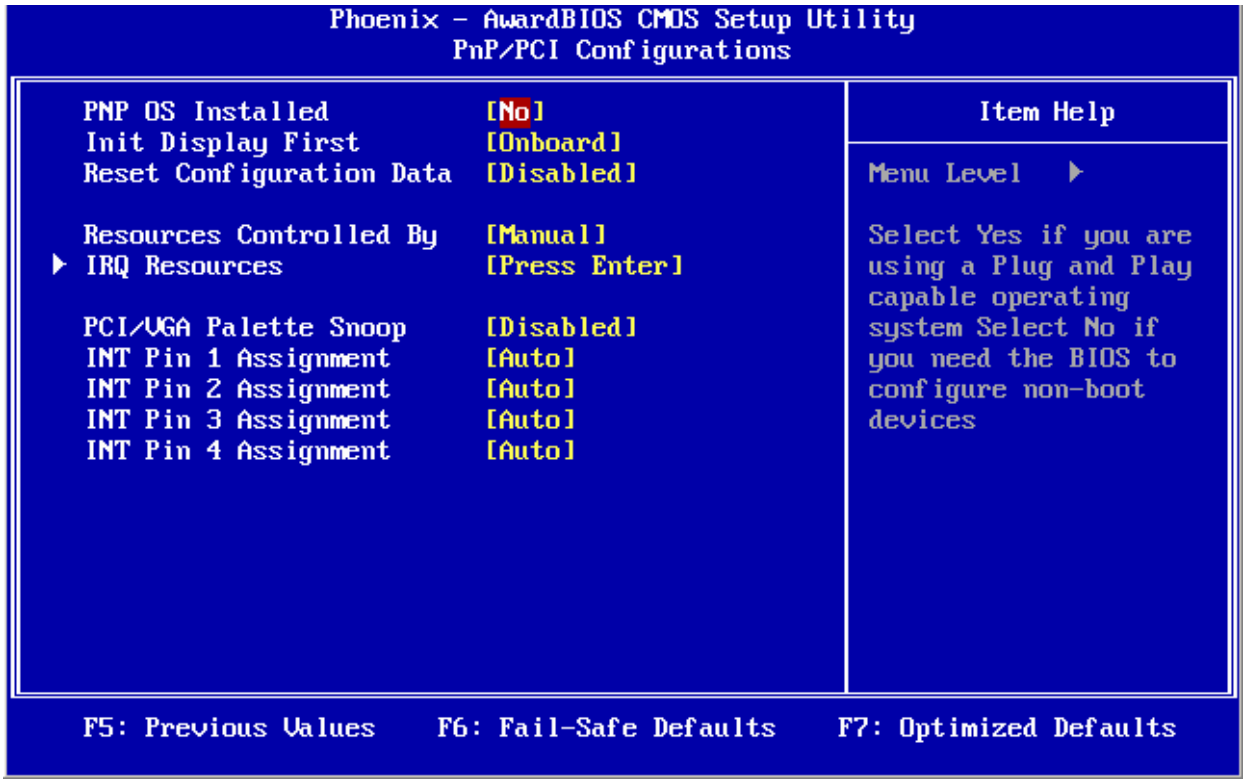
IRQ Wake up Events:
Wake up system by each IRQ
After you have finished with the Power Management Setup, press the <ESC> key to return to the main menu.

3.8 PNP/PCI Configuration

This setup is used to configure Plug “n” Play IRQ assignments and route PCI interrupts to designated ISA interrupts.

Use the PNP/PCI Configuration Setup option as follows:

1. Choose “PNP/PCI Configuration Setup” from the main menu, the following screen appears.

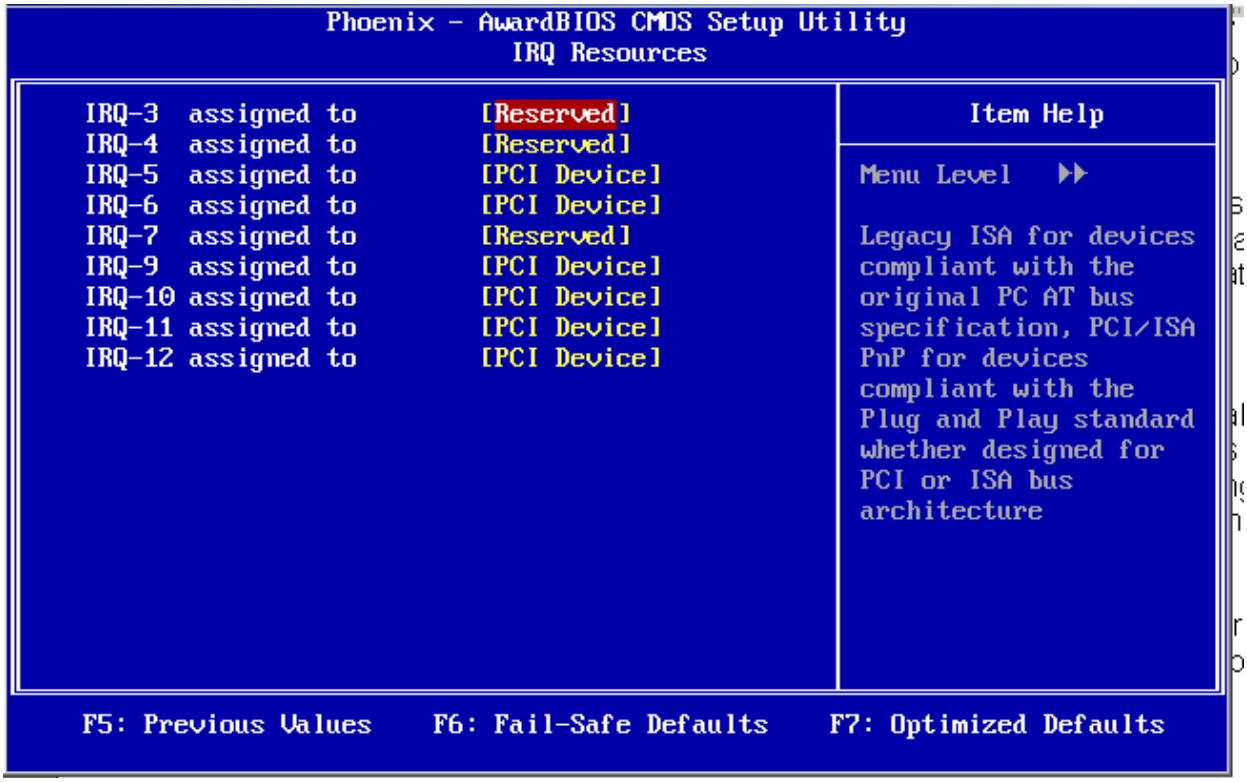


2. Move between items and select values by using the arrow keys. Modify the selected fields using the PgUP/PgDN keys. For information on the various options, please press <F1> key.

Reset Configuration Date:
Normally, you leave this field Disabled, select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on Card and the system reconfiguration has caused such as serious conflict that the operating system can not boot. The choices: Enabled and Disable.

Resources Controlled By:
The Award Plug and Play BIOS has the capacity to automatically configure all of the boots and Plus and Play compatible devices. However, this capability means absolutely nothing unless you are using a Plug and Play operating system such as going into each of the submenus that follows this field. The choice are Auto (ESCD) and Manual.

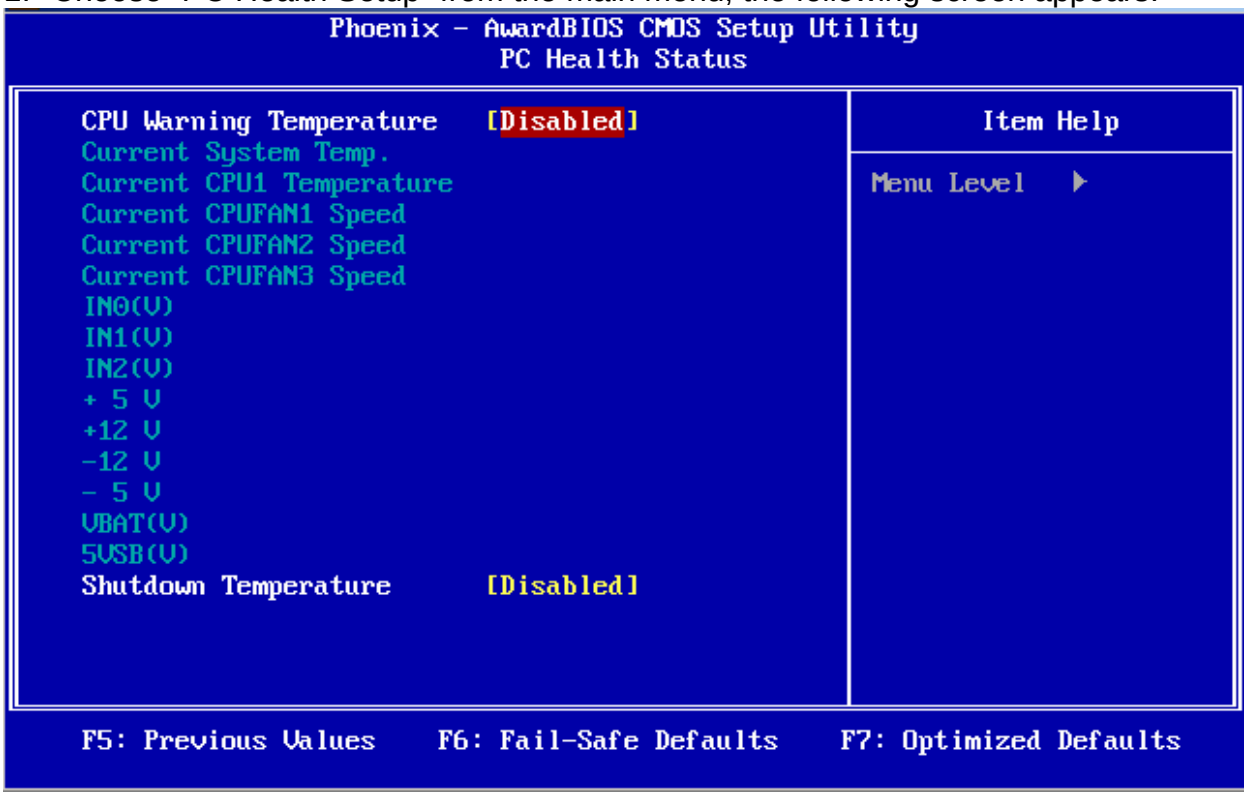
IRQ Resources:
When user select manual for Resource Controlled, this setting allow the user to specify what IRQ will be assigned to PCI devices in the chosen slot. Optional available: Auto, 3, 4, 5, 7, 9, 10, 11, 12, 14 and 15.



3.9 PC Health Status

Use the PC Health Setup option as follows:

1. Choose “PC Health Setup” from the main menu, the following screen appears.



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

CPU Warning Temperature :
Choose 70 ./158 ,50 /122 ,53 /127 ,56 /133 ,60 /140 ,63 /145 ,66 /151 or Disable the CPU Warring Temperature setting ,the board will generate a beep alarm.

Current CPU Temp:
Displays the current Socket 370 temp.

Fan1,Fan2,Speed
Displays the running speeds of FAN1 and FAN2,respectively. If “0” appears, the fan is either defective , not connected ,or does not meet standard specification.

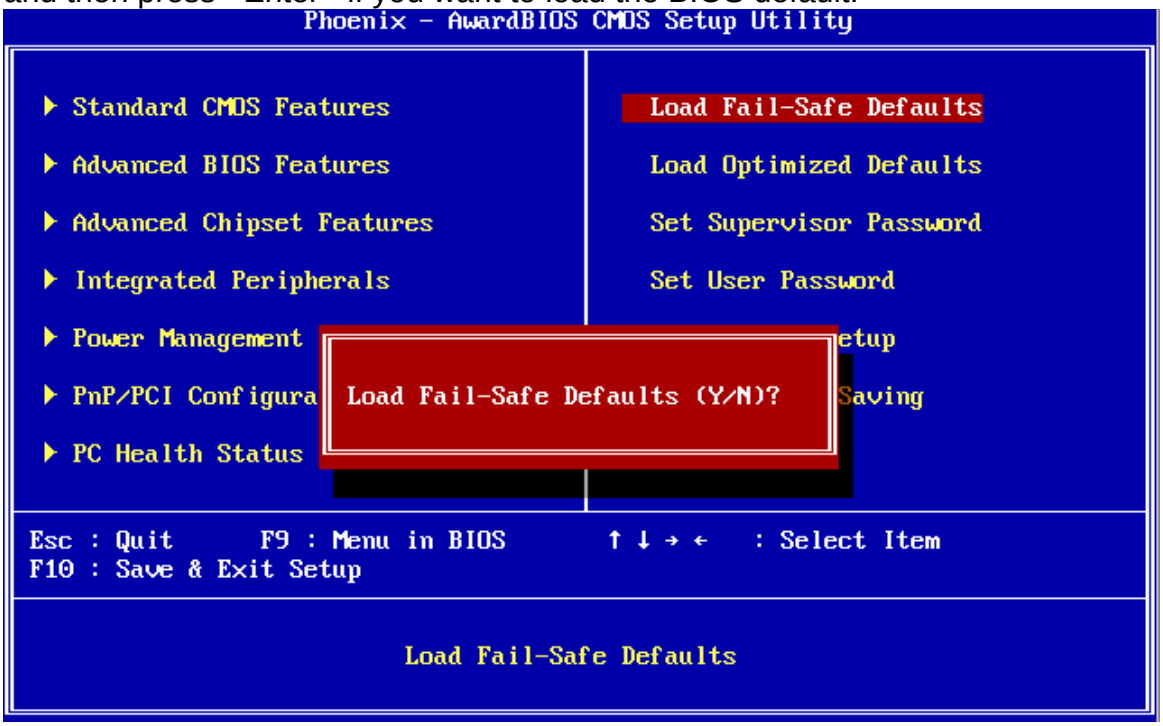
Voltage Indicators:
Displays voltage values detected by the Winbond W83627HF system monitor IC.

Shut Down Temperature :
Choose 75 , 70 ,65 , 60 or Disable

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

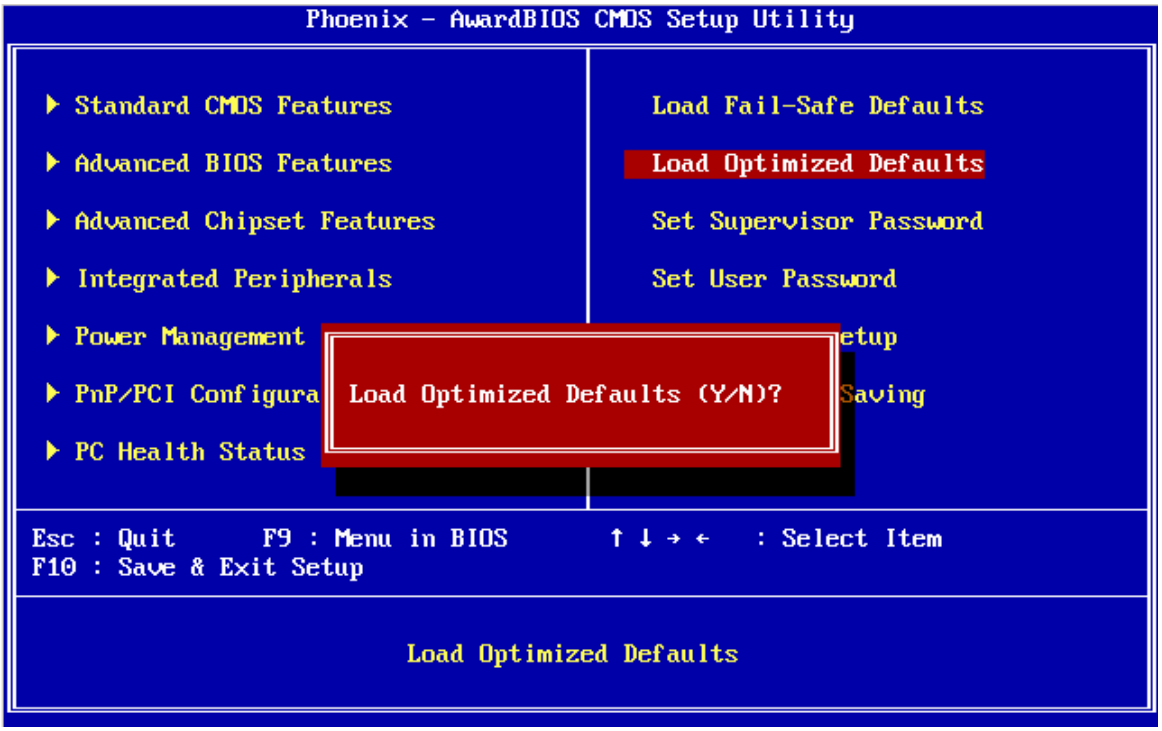
3.10 Load Fail-Safe Defaults

This option loads the troubleshooting default values permanently stored in the BIOS ROM. This is useful if you are having problems with the main board and need to debug or troubleshoot the system. The loaded default settings do not affect the Standard CMOS Setup screen.
To use this feature , highlight it on the main screen and press <Enter> . A line will appear on the screen asking if you want to load the Fail-Safe default values. Press the <Y> key and then press <Enter> if you want to load the BIOS default.



3.11 Load Optimized Defaults

This option loads optimized settings stored in the BIOS ROM. The auto-configured settings do not affect the Standard CMOS Setup screen.
To use this feature, highlight it on the main screen and press <Enter>. A line will appear on the screen asking if you want to load the Optimized Default Values. Press the <Y> key and then press <Enter> if you want to load the SETUP default.

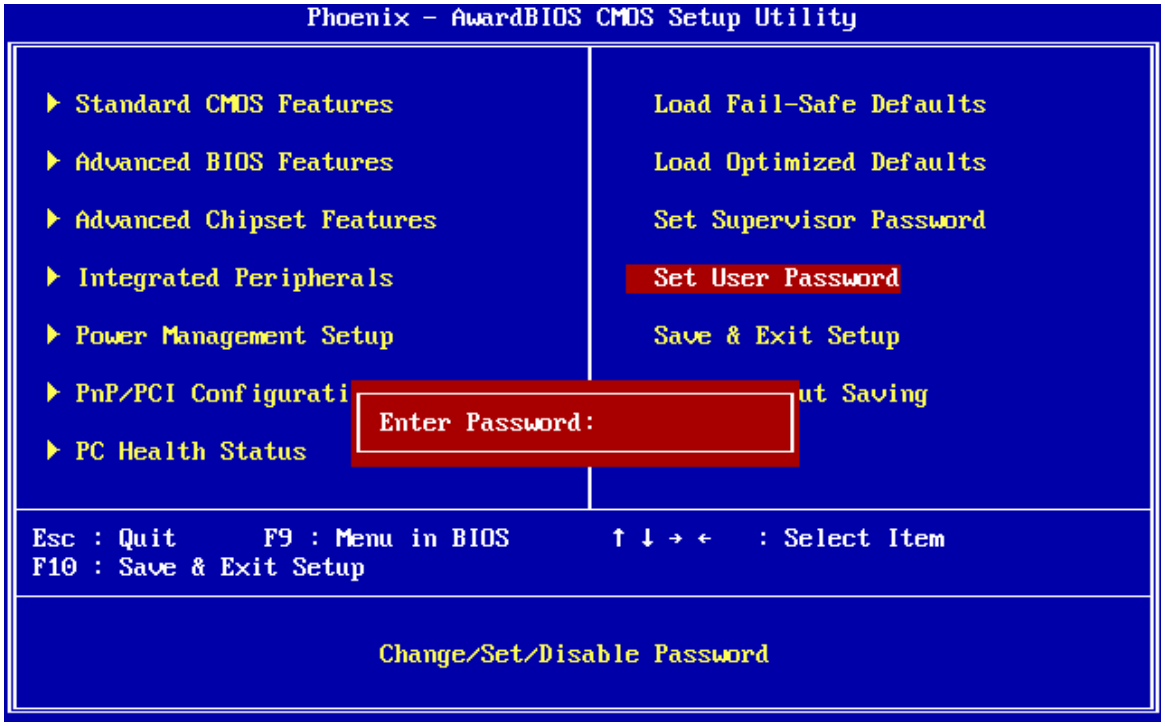


3.12 Supervisor/User Password

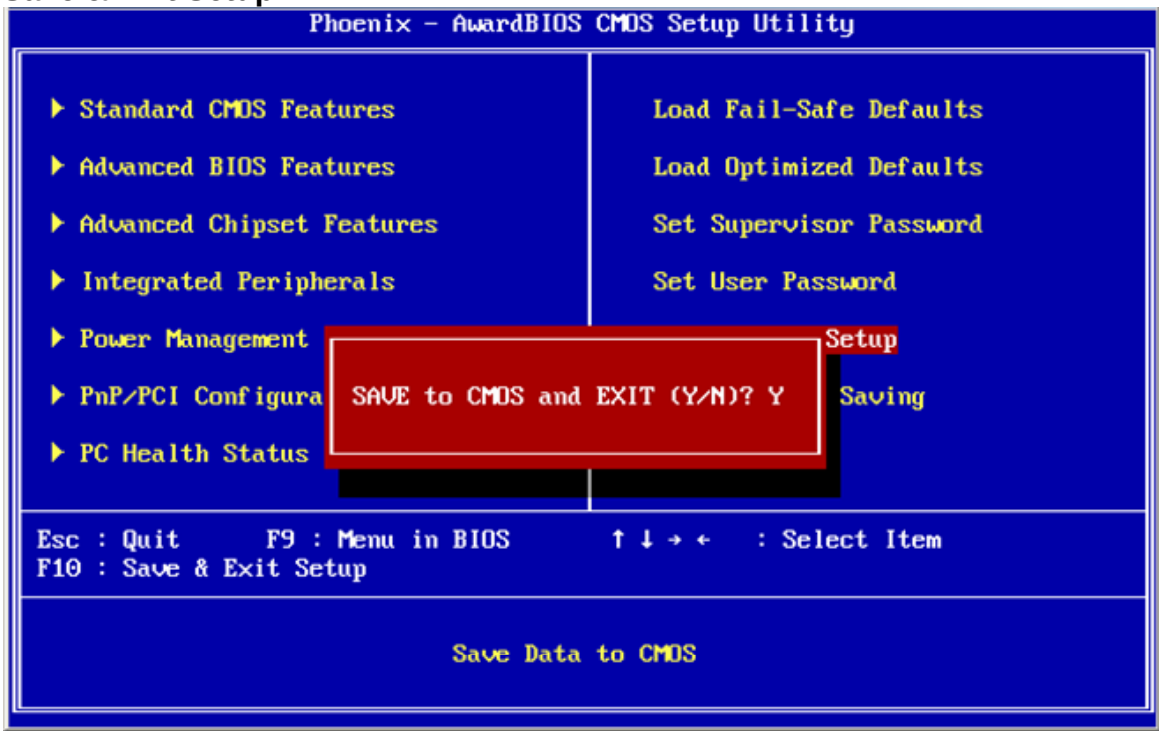
The password options let you prevent unauthorized system boot-up or unauthorized use of CMOS setup. The Supervisor Password allows both system and CMOS Setup program access; the User Password allows access to the system and the CMOS Setup Utility main menu.

The password functions are disabled by default. You can use these options to enable a password function or, if a password function is already enabled, change the password.

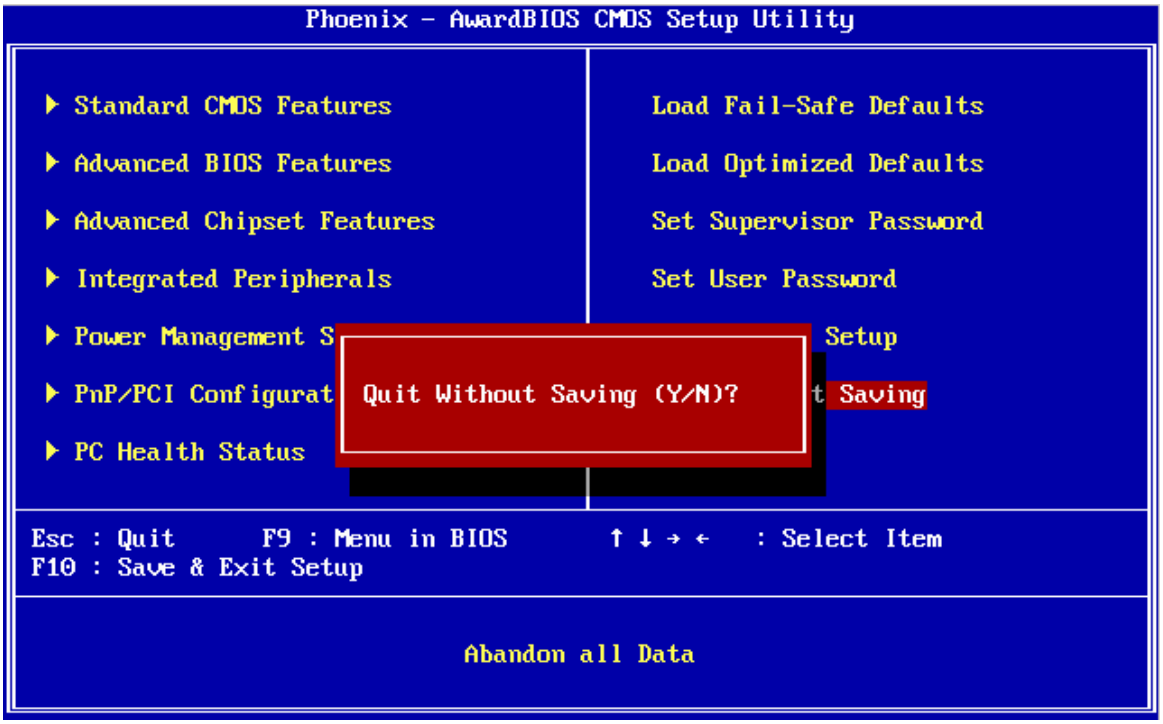
To change a password, first choose a password option from the main menu and enter the current password. Then type your new password at the prompt. The password is case sensitive and you can use up to 8 alphanumeric characters. Press <Enter> after entering the password. At the Next Prompt, confirm the new password by typing it and pressing <Enter> again.



Save & Exit Setup



Exit Without Saving



Appendix A: Programming the Watchdog Timer

The MB-73030 provides a watchdog timer that resets the CPU or generates an interrupt if processing comes to a stop. This function ensures greater system reliability in industrial stand-alone and unmanned environments.

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

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

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

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

Program 1: Initializing the watchdog controller

ASSEMBLY LANGUAGE	DOS DEBUG
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,2E ; Set timer interval value to 16 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	

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).

Appendix B: System Resource

Interrupt Controller

The MB-73030 is a fully PC compatible control board, it consists of 16 ISA interrupt request lines and most of them already in used by other part of the board. Both of ISA and PCI expansion cards may need to use IRQs, please make sure that the IRQs do not conflict if you would like to use extra add-on cards.

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

IRQ	Assignment
IRQ0	System Timer Output
IRQ1	Keyboard
IRQ2	Interrupt rerouting from IRQ8 through IRQ15
IRQ3	Serial Port 2
IRQ4	Serial Port 1
IRQ5	PC/104+_1
IRQ6	Reserved
IRQ7	Printer Port
IRQ8	Real Time Clock
IRQ9	ACPI
IRQ10	LAN2, PC/104+_0
IRQ11	LAN1, PC/104+_2, PC/104+_3
IRQ12	PS/2
IRQ13	Math Coprocessor
IRQ14	Primary IDE Controller
IRQ15	Reserved

I/O Map

The addresses shown in the table are typical locations.

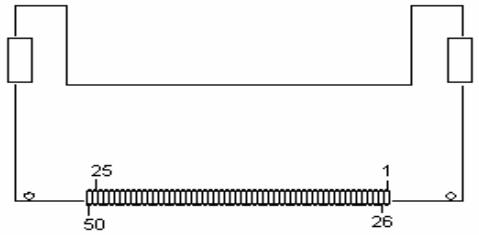
I/O Port	Assignment
0 ~ F	AT DMA Controller
20 ~ 21	AT Interrupt Controller
40 ~ 43	82C54 Compatible Programmable Timer
60	8042 Compatible keyboard Controller
61	AT Style Speaker
64	8042 Compatible keyboard Controller
70 ~ 71	Real Time Clock
81 ~ 83	AT DMA Controller
87	AT DMA Controller
89 ~ 8B	AT DMA Controller
8F ~ 91	AT DMA Controller
A0 ~ A1	AT Interrupt Controller
C0 ~ DF	AT DMA Controller
F0 ~ FF	Math Coprocessor
1F0 ~ 1F7	IDE Controller

200 ~ 207	In Used
220 ~ 22F	Reserved for optional R-031 Sound Card
2E8~ 2EF	Communication Port (COM4)
2F8 ~ 2FF	Communication Port (COM2)
330 ~ 337	In Used
376	Printer Port
3B0 ~ 3B7	VGA Adapter
3C0 ~ 3DF	VGA Adapter
3E8 ~ 3EF	Communication Port (COM3)
3F0 ~ 3F7	FDD Controller
3F8 ~ 3FF	Communication Port (COM1)
4D0 ~ 4D1	PCI Bus

Appendix C: Installing CompactFlash Memory

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

Pin	Assignment	Pin	Assignment	Pin	Assignment	Pin	Assignment	Pin	Assignment
1	Ground	11	Ground	21	D00	31	D15	41	RESET
2	D03	12	Ground	22	D01	32	CS	42	ORDY
3	D04	13	VCC	23	D02	33	NC	43	NC
4	D05	14	Ground	24	WP	34	IOR	44	REG
5	D06	15	Ground	25	NC	35	IOW	45	LED
6	D07	16	Ground	26	NC	36	WE	46	BVD
7	CS	17	Ground	27	D11	37	RDY/BSY	47	D08
8	Ground	18	A02	28	D12	38	VCC	48	D09
9	Ground	19	A01	29	D13	39	SCSE;	49	D10
10	Ground	20	A00	30	D14	40	NC	50	Ground



Appendix D: Cable List

Part No.	Cable Description	Connector
Standard		
CB-IPCIDC-00	IDE CABLE (45cm)	CN18
CB-ICOM01-00	COM port CABLE 13cm (2mm)/ RoHS	CN10/13
CB-IPOW37-00	ATX Power cable	CN1/2/9
CB-IPS266-00	6+6 KB/MS CABLE 17cm (2mm)	CN8
CB-IUSB01-00	USB Cables 25cm	CN19/20
CB-IVGA04-00	VGA Cable (2mm)	CN11
CB-ILAN04-00	LAN Cable 20cm for R051	CN15
MB-90340	RJ-45 LAN connector Card for Intel	

MB-73030 Cables

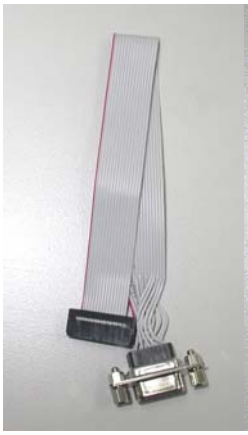
CB-IPCIDC-00

CB-ICOM01-00

CB-IPOW37-00

CB-IPS266-00

CB-IUSB01-00



CB-IVGA04-00

CB-ILAN04-00

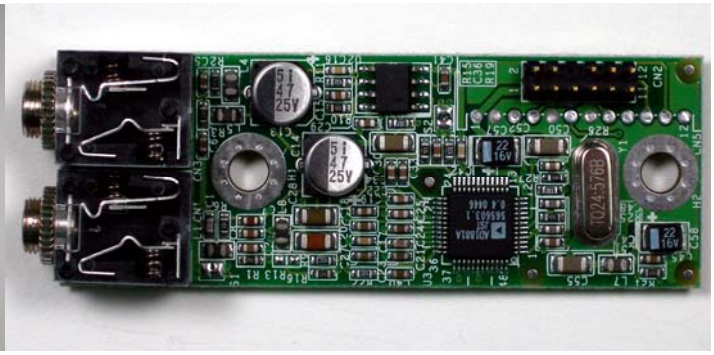
MB-90340
RJ-45 LAN connector Card for Intel

# Part No.	Cable Description	Connector
Optional		
DK-10230	Audio Adaptor Card	CN12
CB-ILPT01-00	PRINTER CABLE (2mm) 26cm/ ROHS	CN21
CB-ICOM15-00	RS-485 CABLE (2mm) 8CM/ RoHS	CN22

MB-73030 Optional Cables

CB-ILPT01-00

CB-ICOM15-00



DK-10230 Audio Adaptor Card

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