PISA-E11

Intel® Core™2 Duo 945GME PISA SBC

User's Manual

Version 1.0

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Introduction

This manual is designed to give you information on the PISA-E11 Single Board Computer card. The topics covered in this manual are as follows:

- ✓ **Features**
- ✓ **Specification**
- ✓ **Jumper setting and Connectors**
- ✓ **BIOS Setup**
- ✓ **Appendix**

Chapter 1
Features & Specifications

Features

- Support Intel Core 2 Duo, Core Duo, Pentium-M, Celeron-M or ULV CPU for either High Performance or Low Power demand.
- Support DDR2 SO-DIMM 667MHz memory up to 2GB.
- Standard PISA form factor with Rich I/O functions.
- Multiple I/O functions: 6 x USB2.0, 4x COM ports, 2x SATA, IRDA, 1x PIDE, 1x CF, 1x LPT.
- Multiple display technology: CRT, DVI, Dual 18/24-bits LVDS. Dual Independent display and rotation supported by drivers.
- Dual GbE LAN design maximized the communication bandwidth for both internet and intranet connection. Root Boot and Wake Up on LAN supported.
- Power Input connector on board to support stand-alone operation.
- High-Definition Audio Codec support Line-out, Line-in and Microphone.
- Dedicate LCD inverter connector. Support LCD Brightness control with Software ready for Windows XP/2K OS.
- One Mini-PCI socket on board to support WLAN, Modem and CANBUS module.

Specifications

- **Processor Support:**
  - Intel Core 2 Duo, Core Duo, Core Solo, Celeron-M CPU.
  - Support Front Side Bus speed 533MHz or 667MHz
  - Micro-FCPGA478 Socket-M.
- **Major Chipset:**
  - Intel 945GME and ICH7M chipset.
  - RealTek RTL8111C LAN chip.
  - Winbond 83627HF Super I/O.
  - ALC888 High-Definetion Audio chip.
- **System Memory:**
  - One DDR2 SO-DIMM Sockets
  - Support DDR2 533/667 unregistered non-ECC memory up to 2.0 GB.
- **Video Controller:**
  - Intel 945GME Integrated GMA950 graphic engine.
  - One 15-Pins D-Sub Female connector for CRT displays.
  - One 40-pins 1.25mm pitch connector for Dual 18/24-bits LVDS LCD displays.
  - One 20-pins 1.25mm pitch connector for DVI displays.
  - One 5-pins JST connector for Inverter power and brightness control.
- **Super I/O:**
  - Winbond 83627HF LPC I/F Super I/O chip.
  - Four Serial ports as COM1~COM4. COM2 is RS232/422/485 selectable by jumpers
  - COM1~COM4 are pin-header (2x5 pin-header/ 2mm pitch) for internal connections.
  - 1 x Parallel port supports SPP/ECP/EPP mode. (2x16 pin-header/ 2mm pitch).
  - 1 x IrDA port; (5-pins pin-header with +5V powered).
  - Six USB2.0 ports for internal or front panel connection. (2x5 pin-header/ 2mm pitch).
  - One Mini-DIN 6-pins connector on I/O ports to support PS2 Keyboard/Mouse.
- **Hardware Monitor:**
  - 83627HF integrated hardware monitor chip to monitor Voltages, temperatures and FAN speed.

- Temperature Monitor: One sensor close to CPU socket for CPU temperature detection. One sensor close to 83627HF chip for board temperature detection.
- One CPU FAN for CPU cooler and one SYS FAN for chassis FAN. All FAN speeds are monitored.

- **10/100M/1000M Ethernet:**
  - Two Realtek RT8111C chips on board for dual GbE LAN support.
  - Support Wake-on-LAN.
  - Remote Boot Agent is supported with PXE or RTL protocol.
- **PIDE and SATA:**
  - PIDE controller build in ICH7M support up to UltraDMA mode 5 or ATA100 speed.
  - One standard 44-pins Box header to support 2.5" HDD or DOM Flash Disk.
  - One Compact Flash-II socket shared with PIDE Channel. One jumper to select as Master or Slave device.
  - Two SATA connectors from ICH7M support SATA-I and SATA-II devices.
- **Watchdog Timer:**
  - The WatchDog timer can be disable/enable through BIOS setup.
  - The timeout interval 1~255 seconds can be programmed through I/O address 842h/843h. The timeout event will generate the RESET.
- **CMOS:**
  - On-board RTC with 242 bytes of Battery-back CMOS RAM.
  - One 3-pins Jumper for users to clear CMOS data.
- **Audio:**
  - RealTek ALC888 High-Definition Audio chip on-board.
  - One 10-pins pin-header to provide Line-out, Line-in and Microphone functions.
- **DIO:**
  - 8-bits Digital I/O control. Support 8-In, 8-out or 4-In/4-out.
- **BIOS:**
  - Award Standard PnP Flash BIOS 6.0.
  - 8Mbit FlashROM with BootBlock for Fail-safe.
  - BIOS utility for field update.
  - VBIOS and LAN remote Boot Agent integrated.
- **PCI/ISA Interface:**
  - PISA bus version 1.7 complaint interface.
  - Support Standard ISA interface except DMA mode operation

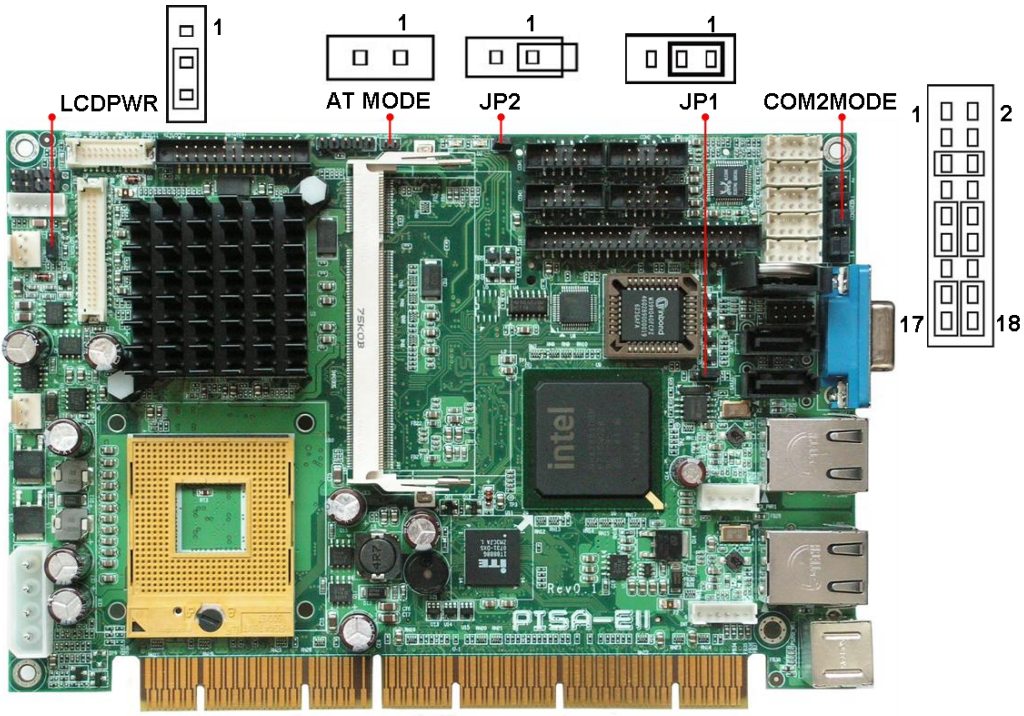
due to the limitation of Intel chipset.
  - Support Standard PCI interface add-on Cards.
  - One Mini-PCI Socket (124pins/Type-B) on board to support WLAN, Modem and Canbus modules.
- **Power Connector:**
  - One 4-pins power input connector for standalone operation.
  - Support both AT and ATX mode operation.
  - One 4-pins auxiliary power connector to support ATX mode operation.
- **Software Compatibility:**
  - Microsoft windows: Win2K, Win XP 32/64-bits, Vista 32/64-bits.
  - Linux: RedHat, SUSE.
  - DOS 6.0 and 6.22.
  - QNX v6.2, WinCE 5.0.
- **Cooling:**
  - Two cooling FAN connectors close to CPU for CPU cooler and System FAN.
  - Flat Heat-sink on top of 945GME and ICH7M chipset.
  - Screw holes and backplane to support Standard Pentium-M CPU Cooler.
- **Others:**
  - One Buzzer (9mm) on-board for beep message.
- **Operating Temperature:**
  - 0~60°C Operation Range.
  - Relative Humility: 5~95%, non-condensing.
- **Dimensions:**
  - 185mm(W) x 122mm(L)
  - 4 screw holes on four corners for standalone operation.

Chapter 2
Jumper setting & Connectors

2.1 Jumpers on the PISA-E11

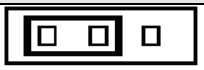
The jumpers on the PISA-E11 allow you to configure your Single Board Computer card according to the needs of your applications. If you have doubts about the best jumper configuration for your needs, contact your dealer or sales representative.
The following table lists the jumpers on PISA-E11 and their respective functions.

Jumper Locations on the PISA-E11



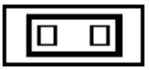
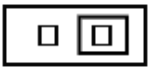
JP1: Clear CMOS RAM Data

This 3-pin Jumper allows the user to disconnect the built-in 3V battery power to clear the information stored in the CMOS RAM.
To clear the CMOS data:
(1) Turn off the system power.
(2) Remove Jumper cap from pin1&2.
(3) Short the pin2 and pin3 for three seconds.
(4) Put Jumper cap back to pin1 & 2.
(5) Turn on your computer.
(6) Hold Down <Delete> during boot up and enter BIOS setup to enter your preferences.

Clear CMOS	Normal
	
1	1

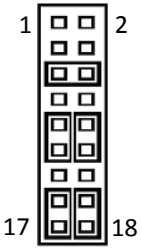
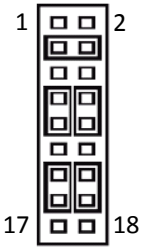
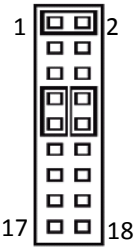
JP2: CF Card Mode Selection

This Jumper is to select the CF works as Secondary Channel Master device or Slave device.

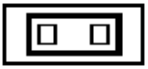
Master	Slave
	
1	1

COM2MODE: RS232/RS422/RS485

COM2 support multi-protocols include RS232, RS422 and RS485, while COM1, COM3 and COM4 support diffused RS232 protocol. The Protocols of COM2 can be set up through jumpers.
COM2MODE: COM2 Protocols selection.
The pin-out for each mode is illustrated on next chapter.

COM2MODE1	I/F TYPE
	**RS-232**
	**RS-422**
	**RS-485**

ATMODE: AT Mode Selection

AT Mode	ATX Mode
 1	 1

LCDPWR: LCD PANEL Power Selection

LCDPWR can be used to select the Panel LCD supple power: +3.3V or +5V.The default setting is on +3.3V.User need to check the LCD panel spec and adjust this jumper to make Panel work in specified power rail.

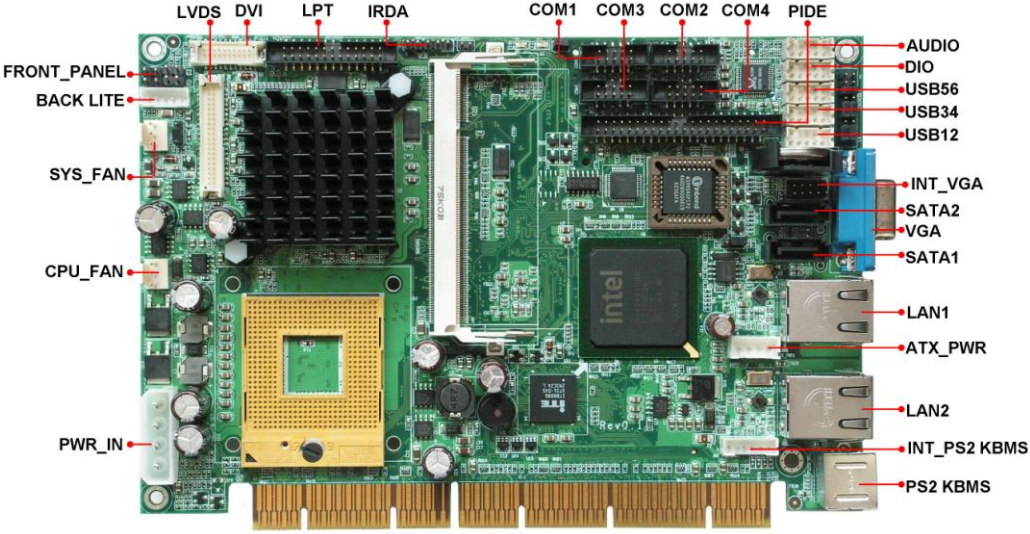
This Jumper serves LVDS LCD connector.

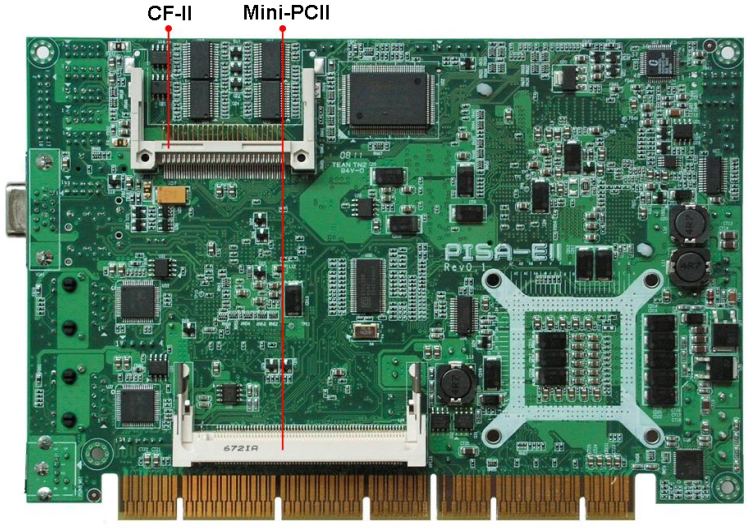
+5V	+3.3V	LCDPWR
 1	 1	 1

2.2 Connectors on the PISA-E11

The connectors on the PISA-E11 allow you to connect external devices such as keyboard, floppy disk drives, hard disk drives, printers and etc. The following table lists the connectors on PISA-E11 and their respective page number.

Connector Locations on the PISA-E11





INT_AUDIO Connector

Signal Name	Pin #	Pin #	Signal Name
JD0	1	2	NC
MIC1-IN-L	3	4	MIC1-IN-R
GND	5	6	GND
LINEOUT-L	7	8	LINE-IN-L
LINEOUT-R	9	10	LINE-IN-R

DIO Connector

DIO ports support 8 digital I/O bits. Each bit can be configured as Input or output individually. All bits are 5V tolerant.

Signal Name	Pin #	Pin #	Signal Name
GND	1	2	+5V
DIO_0	3	4	DIO_4
DIO_1	5	6	DIO_5
DIO_2	7	8	DIO_6
DIO_3	9	10	DIO_7

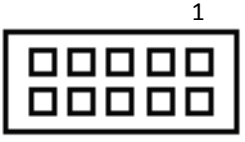
USB12, 34, 56 Connectors

The following table shows the pin outs of the USB12, USB34, USB56 connectors.

Signal Name	Pin #	Pin #	Signal Name
N.C.	1	2	VCC
GND	3	4	USB-
USB+	5	6	USB+
USB-	7	8	GND
VCC	9	10	N.C.

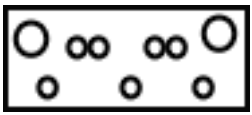
INT_VGA Connector

NT_VGA is for internal Video A/D board connection. The pin out is listed as below:



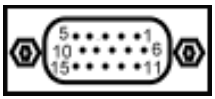
Signal Name	Pin #	Pin #	Signal Name
RED	1	2	GND
GREEN	3	4	GND
BLUE	5	6	GND
HSYNC	7	8	DDC_DATA
VSYNC	9	10	DDC_CLK

SATA1.2 Connectors



Pin #	Signal Name
1	GND
2	SATARX+
3	SATARX-
4	GND
5	SATATX-
6	SATATX+
7	GND

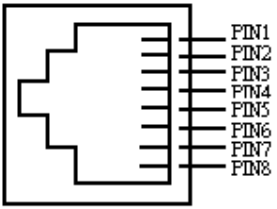
VGA Connector



Signal Name	Pin #	Pin #	Signal Name
Red	1	2	Green
Blue	3	4	N.C.
GND	5	6	GND
GND	7	8	GND
N.C.	9	10	GND
N.C.	11	12	DDC_DATA
HSYNC	13	14	VSYNC
DDC_CLK	15		

LAN1, 2 GbE Connectors

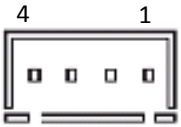
This connector is for the 10/100/1000Mbps Ethernet capability. The figure below shows the pin out assignments of this connector and its corresponding input jack.



Pin #	Signal Name
1	MDI0+
2	MDI0-
3	MDI1+
4	MDI1-
5	MDI2+
6	MDI2-
7	MDI3+
8	MDI3-

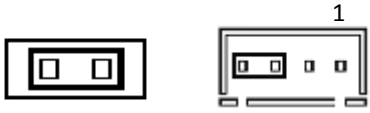
ATX_PWR Connector

This is a four-pin connector to supports the ATX power and corresponding back-plane. When your back-plane is configured to perform ATX power supply Soft-on/off function, you have to connect the control signals and stand-by power on this connector to your back-plane by a corresponding cable.



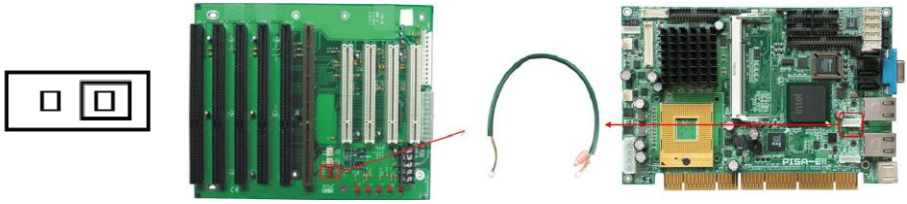
Pin #	Signal Name
1	PWR_GD
2	5V_SB (standby +5V)
3	PS-ON (soft on/off)
4	GND

When PWRMODE are chosen as AT Mode, please make sure short Pin3 & Pin4 of ATX-PWR. The setting is illustrated as below :



AT-MODE ATX-PWR

When PWRMODE are chosen as ATX Mode, you will need a cable to connect control signal and 5VSB standby power from backplane to ATX-PWR connector on PISA-E11.



ATX-MODE BACKPLANE CABLE PISA-E11

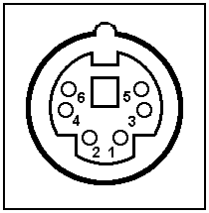
INT_KBMS Connector

INT_KBMS is for internal input devices or MSR connection. The pin out is listed as below:

Signal Name	Pin #	Pin #	Signal Name
KBCLK	1	2	KBDAT
MSCLK	3	4	MSDAT
VCC	5	6	GND

PS/2 Keyboard & Mouse Connector

The following table describes the pin assignment of PS/2 Keyboard and Mouse connector, which is mount on button of bracket. To attach PS/2 Keyboard and mouse, users need to connect trough a PS/2 1-to-2 Y-cable and plug into this Mini-Din connector. All the PISA-E11 boards come with a Y-cable. Contact with your dealer if the Y-cable is missing.



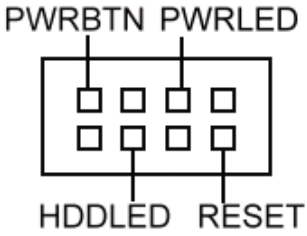
Pin #	Signal Name
1	Keyboard data
2	Mouse data
3	GND
4	5V
5	Keyboard clock
6	Mouse clock

PWR_IN Connector

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

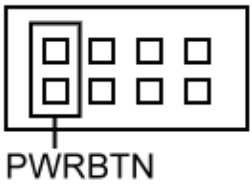
FRONT_PANEL Connector

The front panel of the case has a control panel, which provides light indication of the computer activities and switches to change the computer status.



- **ATX Power ON/OFF Button**

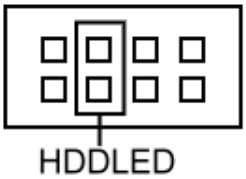
This 2-pin connector acts as the "Power Supply On/Off Switch" on the E11 main board. When pressed, the switch will force the Main board to power on. When pressed again, it will force the main board to power off.



PWR BTN Pin #	Signal Name
1	PWR-BTN
5	GND

- **IDE Hard Disk LED Connector**

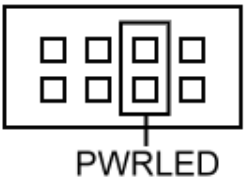
This connector connects to the hard drive activity LED on control panel. This LED will flash when the HDD is being accessed.



IDE LED Pin #	Signal Name
2	VCC
6	HDDLED

➢ **Power-On LED**

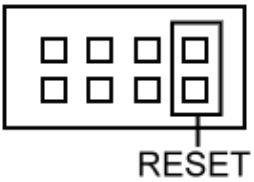
This connector allows users to connect to Front Panel Power indicator.



PWR LED Pin #	Signal Name
3	VCC
7	Ground

➢ **RESET Switch**

The reset switch allows the user to reset the system without turning the main power switch off and then on. Orientation is not required when making a connection to this header.



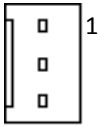
RESET Pin #	Signal Name
4	Reset
8	Ground

BACK LITE Connector

Pin #	Signal Name
1	+12V
2	GND
3	Brightness
4	ON/OFF
5	GND

System FAN Connector

This is a 3-pin header for the system fan.



Pin #	Signal Name
1	Ground
2	+12V
3	SYSPWM

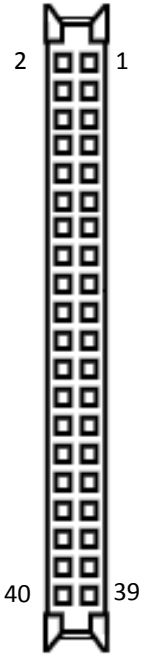
CPU FAN Connector

This is a 3-pin header for the CPU fan.

Pin #	Signal Name
1	Ground
2	+12V
3	CPUPWM

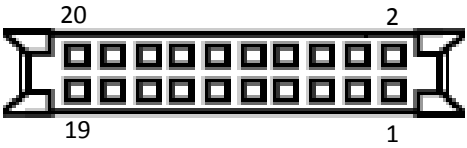
LVDS LCD Connector

The LCD panel, inverter for LCD LAMP, Touch-screen Serial Interface must be connected to this LVDS header, using the below described connector:



Signal Name	Pin #	Pin #	Signal Name
+12V	2	1	+12V
GND	4	3	GND
LCDVDD 5V/3.3V	6	5	LCDVDD 5V/3.3V
GND	8	7	GND
BCKLITE_ON	10	9	BRIGHTNES
LVDS_GND	12	11	LVDS_GND
CHB_TX0+	14	13	CHA_TX0+
CHB_TX0-	16	15	CHA_TX0-
LVDS_GND	18	17	LVDS_GND
CHB_TX1+	20	19	CHA_TX1+
CHB_TX1-	22	21	CHA_TX1-
LVDS_GND	24	23	LVDS_GND
CHB_TX2+	26	25	CHA_TX2+
CHB_TX2-	28	27	CHA_TX2-
LVDS_GND	30	29	LVDS_GND
CHB_TXC+	32	31	CHA_TXC+
CHB_TXC-	34	33	CHA_TXC-
LVDS_GND	36	35	LVDS_GND
CHB_TX3+	38	37	CHA_TX3+
CHB_TX3-	40	39	CHA_TX3-

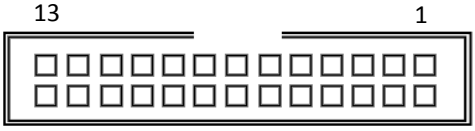
DVI Connector



Signal Name	Pin #	Pin #	Signal Name
TCLK+	2	1	TDC1+
TCLK-	4	3	TDC1-
GND	6	5	GND
TDC0+	8	7	TDC2+
TDC0-	10	9	TDC2-
GND	12	11	GND
NC	14	13	NC
CLOCK	16	15	DATA
DVI_PLUG	18	17	GND
VCC	20	19	VCC

LPT Port

The LPT parallel port is a standard DSUB 26-pins Female connector. It can be configured as EPP or ECP or SPP mode.



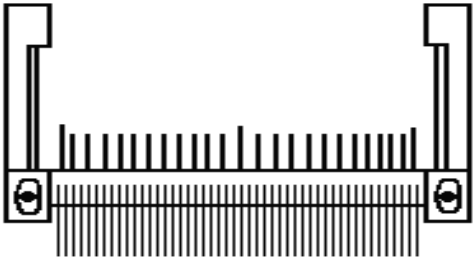
Signal Name	Pin #	Pin #	Signal Name
Strobe	1	14	AUTOFD
DATA0	2	15	ERROR
DATA1	3	16	INIT
DATA2	4	17	SLIN
DATA3	5	18	GND
DATA4	6	19	GND
DATA5	7	20	GND
DATA6	8	21	GND
DATA7	9	22	GND
ACK	10	23	GND
BUSY	11	24	GND
PE	12	25	GND
SLCT	13	26	GND

IRDA Connector

This connector is used for an IrDA connector for wireless communication.

IRDA Pin #	Signal Name
1	+5V
2	FIR
3	IR-RX
4	Ground
5	IR-TX

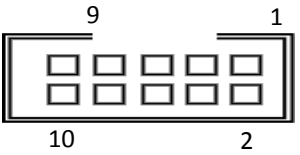
CF-II Connector



Signal Name	Pin #	Pin #	Signal Name
GND	1	2	PDD3
PDD4	3	4	PDD5
PDD6	5	6	PDD7
PCS1-	7	8	GND
GND	9	10	GND
GND	11	12	GND
VCC	13	14	GND
GND	15	16	GND
GND	17	18	PDA2
PDA1	19	20	PDA0
PDD0	21	22	PDD1
PDD2	23	24	N.C.
N.C.	25	26	N.C.
PDD11	27	28	PDD12
PDD13	29	30	PDD14
PDD15	31	32	PCS3-
N.C.	33	34	PDIOR-
PDIOW-	35	36	VCC
IRQ14	37	38	VCC
MST#_SLV	39	40	N.C.
PST1-	41	42	PIORDY
PDDREQ	43	44	PDDACK-
CF_LED-	45	46	N.C.
PDD8	47	48	PDD9
PDD10	49	50	GND

COM1, 3, 4 Serial Ports

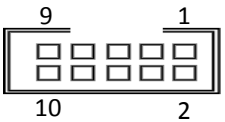
COM1, COM2, COM3, COM4 a 10-pin header connector, is the onboard COM1, COM2, COM3, COM4 serial port of the E11.
The following table shows its pin assignments.



Pin #	RS232 Mode Signal Name
1	DCD, Data carrier detect
2	RXD, Receive data
3	TXD, Transmit data
4	DTR, Data terminal ready
5	GND, ground
6	DSR, Data set ready
7	RTS, Request to send
8	CTS, Clear to send
9	Ring-IN
10	N.C.

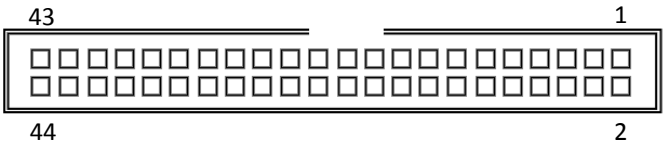
COM2 Serial Port

COM2, a 10-pins box-header connector, is the onboard COM2 serial port of the E11. The following table shows its pin assignments.



Pin #	RS232 Mode Signal Name	RS422/RS485 Mode Signal Name
1	DCD, Data carrier detect	TX- (422/485)
2	RXD, Receive data	TX+ (422/485)
3	TXD, Transmit data	RX+ (422)
4	DTR, Data terminal ready	RX- (422)
5	GND, ground	GND
6	DSR, Data set ready	N.C.
7	RTS, Request to send	N.C.
8	CTS, Clear to send	N.C.
9	+5V,Ring-IN or +12V	N.C.
10	N.C.	N.C.

IDE Connector



Signal Name	Pin #	Pin #	Signal Name
Reset IDE	1	2	Ground
Host data 7	3	4	Host data 8
Host data 6	5	6	Host data 9
Host data 5	7	8	Host data 10
Host data 4	9	10	Host data 11
Host data 3	11	12	Host data 12
Host data 2	13	14	Host data 13
Host data 1	15	16	Host data 14
Host data 0	17	18	Host data 15
Ground	19	20	Key
DRQ	21	22	Ground
Host IOW	23	24	Ground
Host IOR	25	26	Ground
IOCHRDY	27	28	Host PU 0
DACK	29	30	Ground
IRQ14	31	32	No connect
Address 1	33	34	P66DET
Address 0	35	36	Address 2
Chip select 1	37	38	Chip select 3
Activity LED	39	40	GND
VCC	41	42	VCC
GND	43	44	NC

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Chapter 3 BIOS Setup

This chapter describes the different settings available in the Award BIOS that comes with the PISA-E11 CPU card. The topics covered in this chapter are as follows:

BIOS Introduction

This manual describes AMI's Setup program, which is built into the ROM BIOS. The Setup program allows users to modify the basic system configuration. This special information is then stored in battery-backed RAM so that it retains the Setup information when the power is turned off.

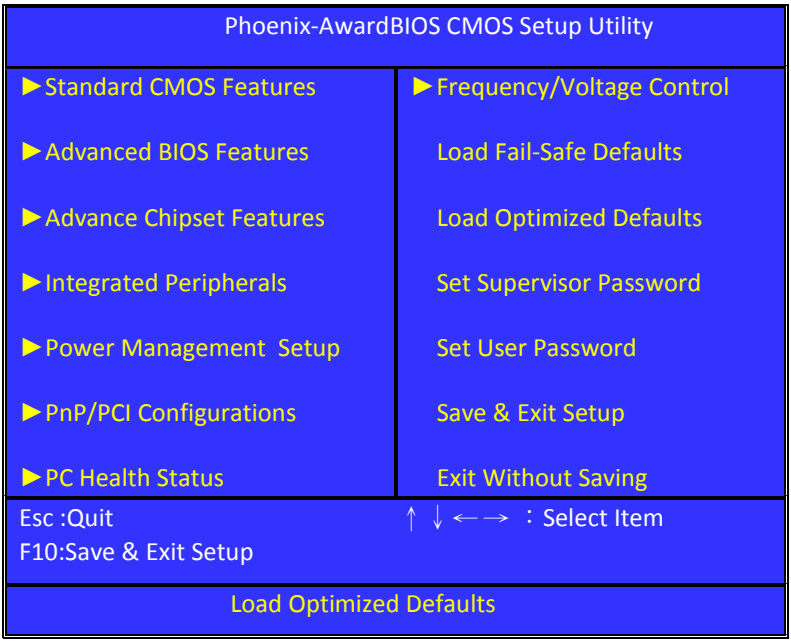
Starting Setup

The following pages are meant to give you a better insight into the options you have to setup your system. Many options depend on the choice of type of memory, memory speed, peripherals and the programs that you will be running. The effective of these settings are related to system performance that can destabilize operation. We urge you to proceed with caution.

When the system is powered on, use the bios set program when you start up your system, reconfiguring your system, or press “Delete” promptly to run setup. This section will explain how to configure your system using this utility. And this change will be recognized and record them in the CMOS RAM of the SPI chip.

When you start up the computer, the system provides you the opportunity to set the program. Press the “del” during the P.O.S.T (Power-on Self-Test) to enter the program setting. And the POST will continue with the test routines. And the firmware chip will store the setup utility on the board. However, if you want to enter the setup after the POST, you can press Ctrl + Alt + Del simultaneously or turn off the power then back on.

3.1 Main Menu



(Figure 1)

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

Setup Items

The main menu includes the following main setup categories.

➢Standard CMOS Features

Use this menu for basic system configuration.

➢ Advanced BIOS Features

Use this menu to set the Advanced Features available on your system.

➢ Advance Chipset Features

Use this menu to change the values in the chipset registers and optimize your system's performance.

➢ Integrated Peripherals

Use this menu to specify your settings for integrated peripherals.

➢ Power Management Setup

Use this menu to specify your settings for power management.

➢ PnP/PCI Configurations

Use this menu to set up the PnP/PCI configuration.

➢ PC Health Status

Use this menu to display the CPU temperature, FAN speed and voltages.

➢ Frequency/Voltage Control

Use this menu to specify your settings for frequency/voltage control.

➢ Load Fail-Safe Defaults

Use this menu to load the BIOS default values for the minimal/stable performance for your system to operate.

➢ Load Optimized Defaults

Use this menu to load the BIOS default values that are factory settings for optimal performance system operations. While Award has designed the custom BIOS to maximize performance, the factory has the right to change these defaults to meet their needs.

➢ Set Supervisor/ User Password

Use this menu to set User and Supervisor Passwords.

➢ Save & Exit Setup

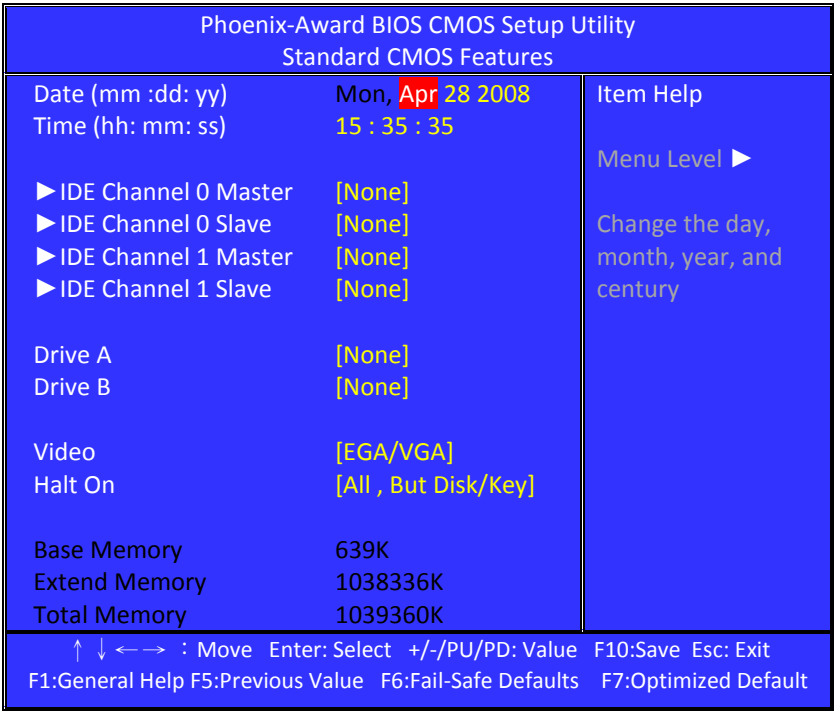
Save CMOS value changes to CMOS and exit setup.

➢ Exit Without Saving

Abandon all CMOS value changes and exit setup.

3.2 Standard CMOS Features

The items in Standard CMOS Setup Menu are divided into 10 categories. Each category includes no, one or more than one setup items. Use the arrow keys to highlight the item and then use the <PgUp> or <Pg Dn> keys to select the value you want in each item.



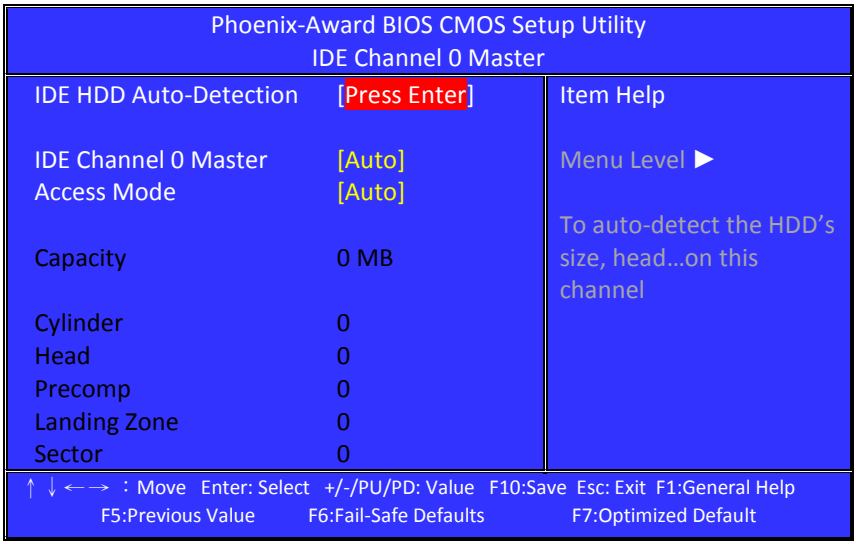
(Figure 2)

This table shows the selections that you can make on the Standard CMOS Menu

Item	Options	Description
Date	Month DD YYYY	Set the system date. Note that the 'Day' automatically changes when you set the date
Time	HH : MM : SS	Set the system time
IDE Channel 0 Master	Options are in its sub menu	Press <Enter> to enter the sub menu of detailed options
IDE Channel 0 Slave	Options are in its sub menu	Press <Enter> to enter the sub menu of detailed options
IDE Channel 1 Master	Options are in its sub menu	Press <Enter> to enter the sub menu of detailed options
IDE Channel 1 Slave	Options are in its sub menu	Press <Enter> to enter the sub menu of detailed options
Drive A Drive B	None 360K, 5.25 in 1.2M, 5.25 in 720K, 3.5 in 1.44M, 3.5 in 2.88M, 3.5 in	Select the type of floppy disk drive installed in your system
Video	EGA/VGA CGA 40 CGA 80 MONO	Select the default video device
Halt On	All Errors No Errors All, but Keyboard All, but Diskette All, but Disk/Key	Select the situation in which you want the BIOS to stop the POST process and notify you
Base Memory	N/A	Displays the amount of conventional memory detected during boot up
Extended Memory	N/A	Displays the amount of extended memory detected during boot up
Total Memory	N/A	Displays the total memory available in the system

IDE Channel 0, 1 Master/ Slave

The IDE adapters control the hard disk drive. Use a separate sub menu to configure each hard disk drive. Figure 3 shows the IDE Channel 0 / Channel 1 master sub menu.



(Figure 3)

Use the legend keys to navigate through this menu and exit to the main menu. Use the Table listed below to configure the hard disk.

Item	Options	Description
IDE HDD Auto-detection	Press Enter	Press Enter to auto-detect the HDD on this channel. If detection is successful, it fills the remaining fields on this menu.
IDE Channel 0 Master	None Auto Manual	Selecting 'manual' lets you set the remaining fields on this screen. Selects the type of fixed disk. "User Type" will let you select the number of cylinders, heads, etc. Note: PRECOMP=65535 means NONE !
Access Mode	CHS LBA Large Auto	Choose the access mode for this hard disk
Capacity	Auto Display your disk drive size	Disk drive capacity (Approximated). Note that this size is usually slightly greater than the size of a formatted disk given by a disk checking program.
The following options are selectable only if the 'IDE Channel 0 Master' item is set to 'Manual'		
Cylinder	Min = 0 Max = 65535	Set the number of cylinders for this hard disk.
Head	Min = 0 Max = 255	Set the number of read/write heads
Precomp	Min = 0 Max = 65535	**** Warning: Setting a value of 65535 means no hard disk
Landing zone	Min = 0 Max = 65535	****
Sector	Min = 0 Max = 255	Number of sectors per track

Drive A/B

These fields identify the types of floppy disk drive A or drive B that has been installed in the computer. The available specifications are:

None**(default)**	360K	1.2M	720K	1.44M	2.88M
	5.25 in.	5.25 in.	3.5 in.	3.5 in.	3.5 in.

Video

This field selects the type of video display card installed in your system. You can choose the following video display cards:

EGA/VGA	For EGA, VGA, SEGA, SVGA or PGA monitor adapters. **(default)**
CGA 40	Power up in 40 column mode.
CGA 80	Power up in 80 column mode.
MONO	For Hercules or MDA adapters.

Halt On

This field determines whether the system will halt if an error is detected during power up.

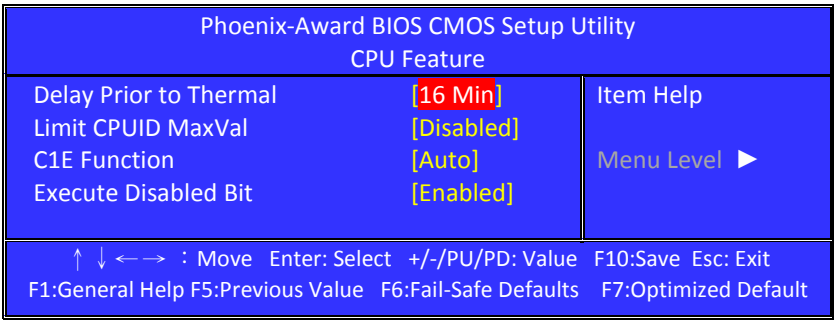
All errors	Whenever the BIOS detects a non-fatal error, the system will stop and you will be prompted.
No errors	The system boot will not be halted for any error that may be detected.
All, But Keyboard	The system boot will not be halted for a keyboard error; it will stop for all other errors
All, But Diskette	The system boot will not be halted for a disk error; it will stop for all other errors.
All, But Disk/Key	The system boot will not be halted for a key-board or disk error; it will stop for all others. **(default)**

3.3 Advanced BIOS Features

This section allows you to configure your system for basic operation. You have the opportunity to select the system's default speed, boot-up sequence, keyboard operation, shadowing and security.

(Figure 4)

➢CPU Feature



(Figure 5)

Delay Prior to Thermal

Delay Prior To Thermal is set at 16 minutes as default, which means the board will wait 16 minutes before it activates the processor's integrated thermal control circuit.
The choice: 4 Min , 8 Min, 16 Min **(default)**, 32 Min.

Limit CPUID Max Val

The choice: Enabled, Disabled **(default).**

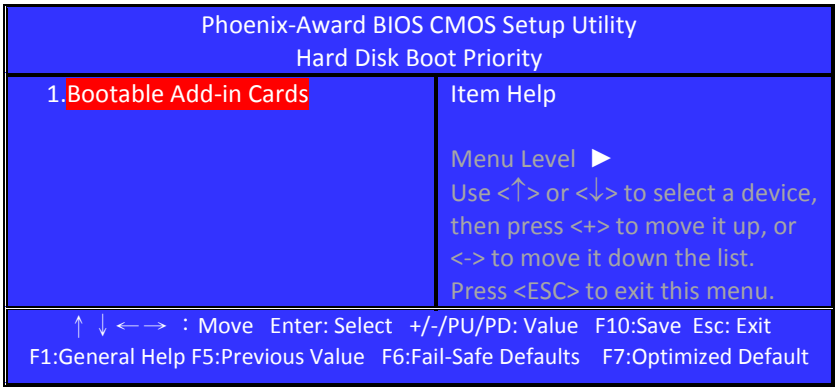
C1E Function

The choice: Auto **(default)**, Disabled.

Execute Disabled Bit

The choice: Enabled **(default)**, Disabled.

➢Hard Disk Boot Priority



(Figure 6)

Bootable Add-in Cards

This is for setting the priority of the hard disk boot order when the "Hard Disk" option is selected in the "[First/Second/Third] Boot Device "menu item.

Virus Warning

Allows you to choose the VIRUS Warning feature for IDE Hard Disk boot sector protection.
If this function is enabled and someone attempt to write data into this area, BIOS will show a warning message on screen and alarm beep.

Enabled	Activates automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector or hard disk partition table.
Disabled	No warning message will appear when anything attempts to access the boot sector or hard disk partition table. **(default)**

CPU L1 & L2 Cache

These two categories speed up memory access.
However, it depends on CPU/chipset design.

Enabled	Enable cache **(default).**
Disabled	Disable cache.

CPU L3 Cache

This field is used to enable or disable the CPU's L3 cache.
The choice: Enabled **(default)**, Disabled.

Quick Power On Self Test

Allows the system to skip certain tests while booting.
This will decrease the time needed to boot the system.

Enabled	Enable quick POST **(default).**
Disabled	Normal POST.

First/Second/Third Boot Device

The BIOS attempts to load the operating system from the devices in the sequence selected in these items.

The Choice: Floppy, LS120, Hard-Disk, ZIP100, CDROM, Disabled, USB-FDD, USB-ZIP, USB-CDROM, Legacy LAN.

Item	Default
First Boot Device	Hard-Disk
Second Boot Device	CDROM
Third Boot Device	LS120

Boot Other Device

When enabled, BIOS will try to load the operating system from other device when it failed to load from the three devices above.
The choice: Enabled **(default)**, Disabled.

Swap Floppy Drive

If the system has two floppy drives, choose "Enabled" to assign physical drive B to logical drive A and vice-versa.
The choice: Enabled, Disabled **(default)**.

Boot Up Floppy Seek

Selection of the command “Disabled” will speed the boot up.
Selection of “Enabled” Searches disk drives during boot up.
The choice: Enabled **(default)**, Disabled.

Boot Up Num Lock Status

Selects power on state for Num Lock.
The choice: On, Off **(default)**.

Gate A20 Option

The choice:

Normal	A pin in the keyboard controller controls GateA20.
Fast	Lets chipset control GateA20 **(default)**.

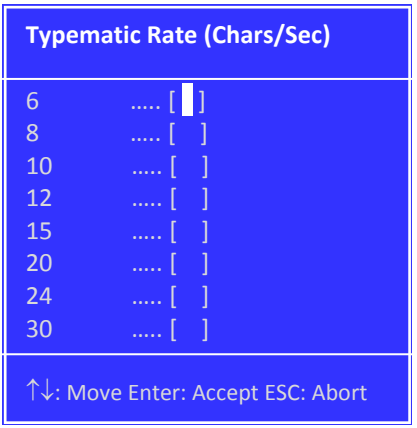
Typematic Rate Setting

Keystrokes repeat at a rate determined by the keyboard controller. When enabled, the typematic rate and typematic delay can be selected.
The choice: Enabled, Disabled **(default)**.

If Typematic Rate Setting is Enabled,You can choice Rate and Delay:

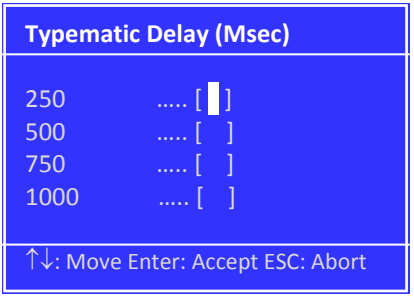
Typematic Rate (Chars/Sec)

Sets the number of times a second to repeat a keystroke when you hold the key down.
The choice: 6 **(default)**, 8, 10, 12, 15, 20, 24, and 30.



Typematic Delay (Msec)

Sets the delay time after the key is held down before it begins to repeat the keystroke.
The choice: 250 **(default)**, 500, 750, and 1000.



Security Option

Select whether the password is required every time the system boots or only when you enter setup.

System	The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt.
Setup	The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt. **(default)**

Note: To disable security, select PASSWORD SETTING at Main Menu and then you will be asked to enter password. Do not type anything and just press <Enter>, it will disable security. Once the security is disabled, the system will boot and you can enter Setup freely.

APIC Mode

This setting allows to enable the APIC mode.
The choice: Enabled **(default)**, Disabled.

MPS Version Control For OS

The BIOS supports version 1.1 and 1.4 of the Intel multiprocessor specification.
Select version supported by the operation system running on this computer.
The choice: 1.1, 1.4 **(default)**.

OS Select For DRAM > 64MB

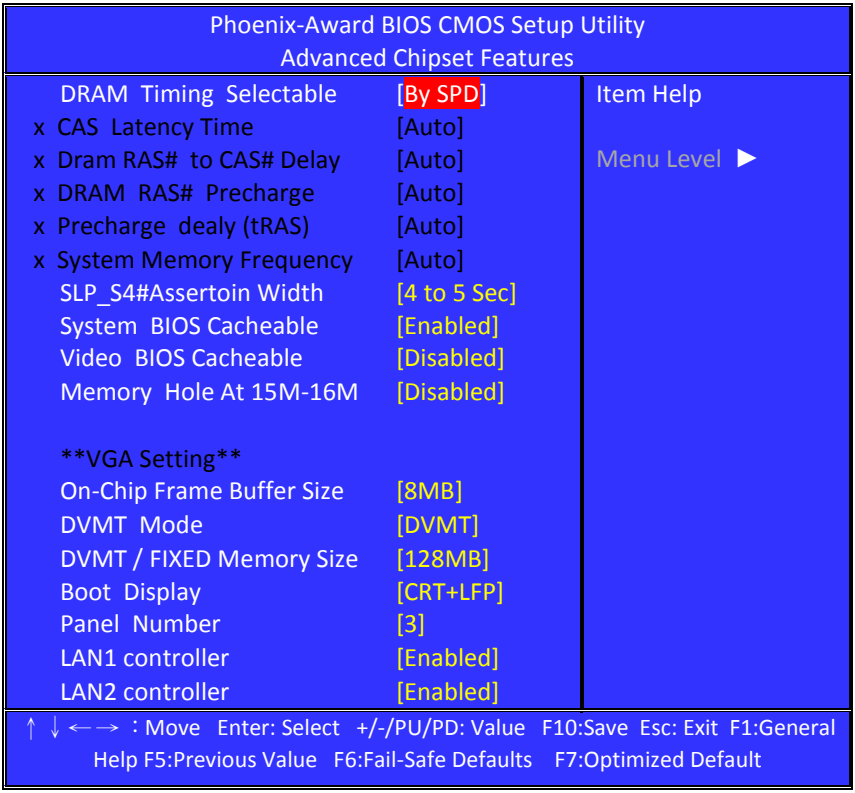
Select OS2 only if you are running OS/2 operating system with greater than 64MB of RAM on the system.
The choice: Non-OS2 **(default)**, OS2.

Report No FDD For WIN 95

The choice: No **(default)**, Yes.

3.4 Advanced Chipset Features

This section allows you to configure the system based on the specific features of the installed chipset. This chipset manages bus speeds and access to system memory resources, such as DRAM and the external cache. It also coordinates communications between the conventional ISA bus and the PCI bus. It must be stated that these items should never need to be altered. The default settings have been chosen because they provide the best operating conditions for your system. The only time you might consider making any changes would be if you discovered that data was being lost while using your system.



(Figure 7)

DRAM Timing Selectable

The choice: Manual, By SPD **(default)**.

If DRAM Timing Selectable is Manual, You can choice these items:

►CAS Latency Time
►Dram RAS# to CAS# Delay
►DRAM RAS# Precharge
►Precharge dealy (tRAS)
►System Memory Frequency

CAS Latency Time

This controls the latency between DDR RAM read command and the time that the data actually becomes available.
Leave this on the default setting.
The choice: 5, 4, 3, 6, Auto **(default)**.

Dram RAS# to CAS# Delay

In order to improve performance, certain space in memory is reserved for PISA cards.
This memory must be mapped into the memory space below 16MB.
The choice: 2, 3, 4, 5, 6, Auto **(default)**.

DRAM RAS# Precharge

This controls the idle clocks after issuing a precharge command to DRAM.
Leave this on the default setting.
The choice: Auto **(default)**, 2, 3,4,5,6.

Precharge dealy (tRAS)

The choice: Auto **(default)**, 4,5,6,7,8,9,10,11,12,13,14,15.

System Memory Frequency

The choice: Auto **(default)**, 533MHz, 667MHz.

SLP_S4#Assertoin Width

Set SLP_S4# pin.
The choice: 4 to5 Sec **(default)**, 3 to 4Sec, 2to 3Sec, 1to2Sec.

System BIOS Cacheable

Selecting the “Enabled” option allows caching of the system BIOS ROM at F0000h-FFFFFh, which is able to improve the system performance. However, any programs that attempts to write to this memory block will cause conflicts and result in system errors.
The choice: Enabled (**default)**, Disabled.

Video BIOS Cacheable

Selecting Enabled allows caching of the video BIOS, resulting in better system performance. However, if any program writes to this memory area, a system error may occur.
The choice: Enabled, Disabled **(default).**

Memory Hole At 15M-16M

Enabling this feature reserves 15 MB to 16 MB memory address space for ISA expansion cards that specifically require this setting. This makes memory from 15 MB and up unavailable to the system. Expansion cards can only access memory up to 16 MB.
The choice: Enabled, Disabled **(default).**

On-Chip Frame Buffer Size

User can select frame buffer size.
The choice: 1MB, 8MB **(default)**.

DVMT Mode

This field shows the current DVMT mode.
The choice: FIXED, DVMT **(default)**, BOTH.

DVMT / FIXED Memory Size

This field is used to select the graphics memory size used by DVMT/ Fixed mode.
The choice: 64MB, 128MB **(default)**, 224MB.

Boot Display

This field is used to select the type of display to use when the system boots.
The choice:

Auto	CRT	TV	EFP
LFP	CRT+LFP **(default)**	EFP+LFP	

Panel Number

The choice: 1,2,3 **(default)**,4,5,6,7,8,9,10,11,12,13,14,15,16.

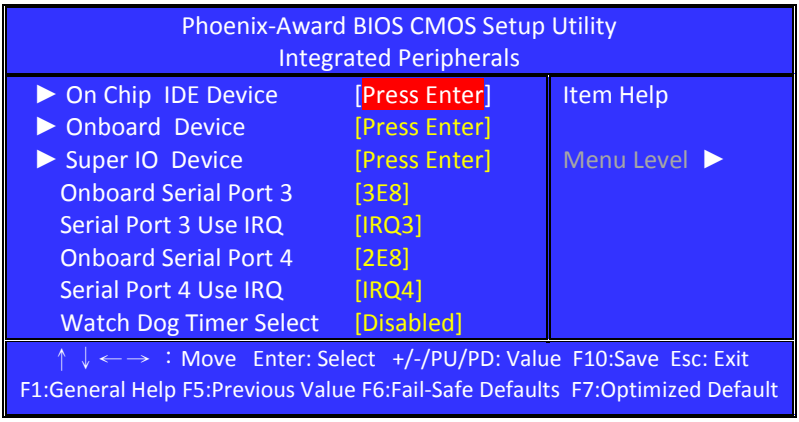
LAN1 controller

The choice: Enabled (**default)**, Disabled.

LAN2 controller

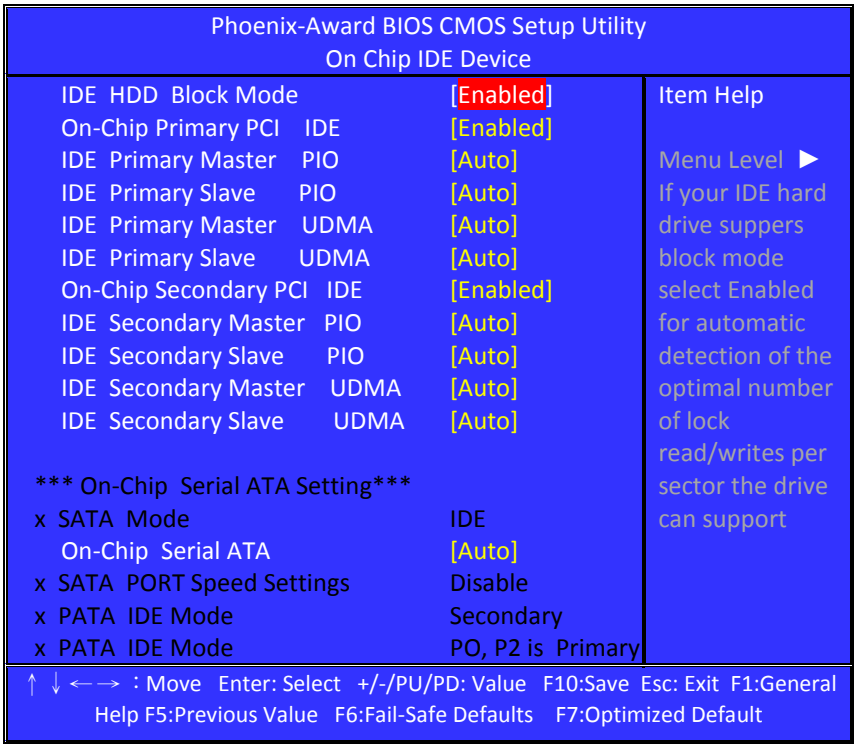
The choice: Enabled (**default)**, Disabled.

3.5 Integrated Peripherals



(Figure 8)

➢On Chip IDE Device



(Figure9)

IDE HDD Block Mode

Block mode is also called block transfer, multiple commands, or multiple sectors read / write.

If your IDE hard drive supports block mode (most new drives do), select Enabled for automatic detection of the optimal number of block mode (most new drives do), select

Enabled for automatic detection of the optimal number of block read /write per sector where the drive can support.

The choice: Enabled **(default)**, Disabled.

On-Chip Primary PCI IDE

This field allows you to enable or disable the primary and secondary IDE controller.
Select disabled if you want to add a different hard drive controller.
The choice: Enabled **(default)**, Disabled.

IDE Primary/ Secondary Master/ Slave PIO/UDMA

The choice: Auto **(default)**, Mode0, Mode1, Mode2, Mode3, Mode4

 Caution: Do not use the wrong setting or you will have drive errors
PIO means Programmed Input/output.
Rather than have the BIOS issue a series of commands to effect a transfer to or from the disk drive, PIO allows the BIOS to tell the controller what it wants and then let the controller and the CPU perform the complete task by themselves.
Your system supports five modes, 0 (default) to 4, which primarily differ in timing.
When Auto is selected, the BIOS will select the best available mode after checking your drive.

Auto	The BIOS will automatically set the system according to your hard disk drive's timing.
Mode 0-4	You can select a mode that matches your hard disk drive's timing

IDE Primary Master/ Slave UDMA

The choice: Disabled, Auto **(default)**

On-Chip Secondary PCI IDE

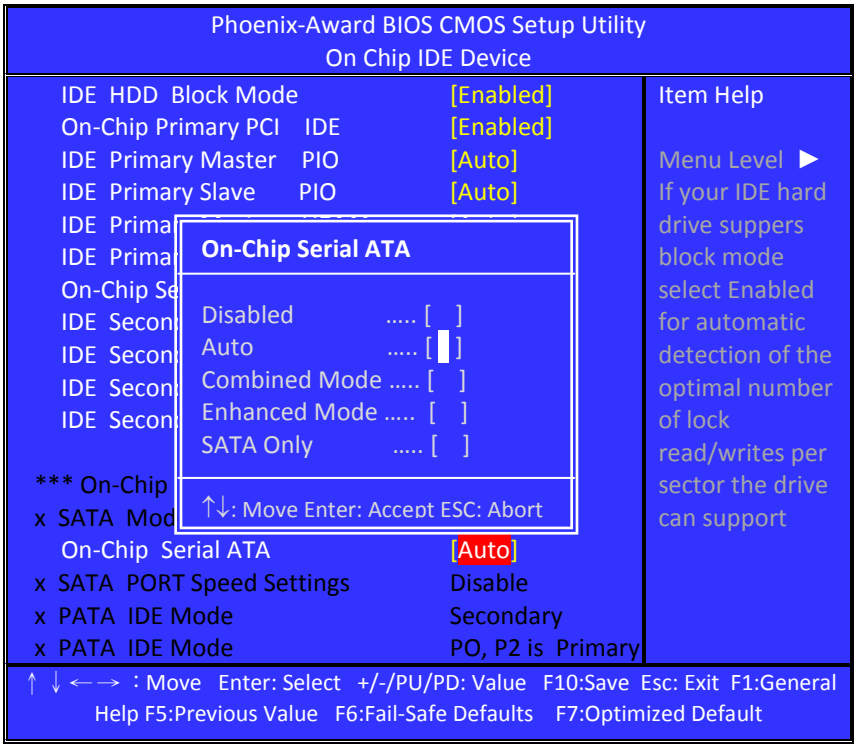
These fields allow you to enable or disable the primary and secondary IDE controller.
Select disabled if you want to add a different hard drive controller.
The choice: Enabled **(default)**, Disabled.

On-Chip Serial ATA

Choose the status of serial ATA, the default setting is "Auto" which let system to arrange all parallel and serial ATA resource automatically.

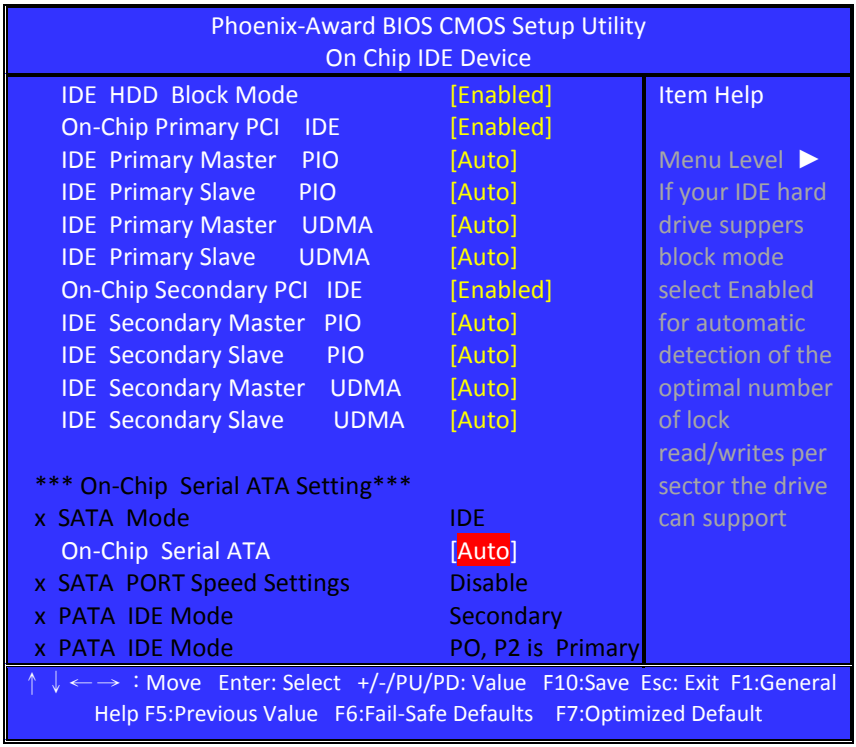
Disabled	Will disable SATA controller. **(Figure11)**
Combined Mode	Will combine PATA and SATA, and max of 2 IDE drives in each channel. **(Figure 12)**
Enhanced Mode	Will enable both SATA and PATA, and max of 6 IDE drives is supported. **(Figure 13)**
SATA Only	Means SATA is operating in legacy mode.**(Figure 14)**

The choice: Disabled, Auto **(default)**, Combined Mode, Enhanced Mode, SATA Only



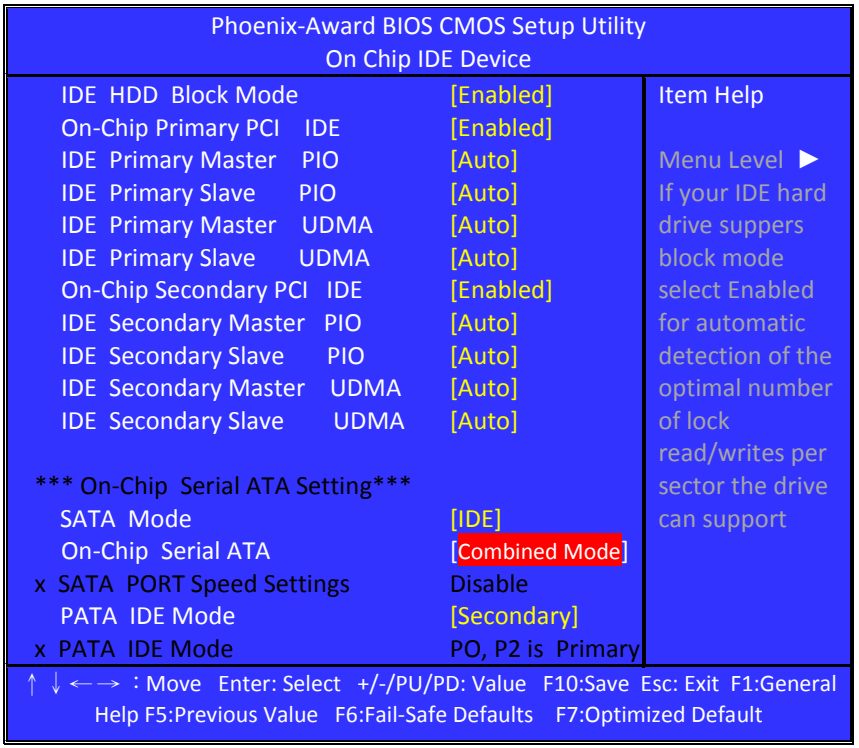
(Figure 10)

When you press [Disabled] or [Auto] on this item will show:
[Auto] is the default choice.



(Figure11)

When you press [Combined Mode] on this item will show:



(Figure 12)

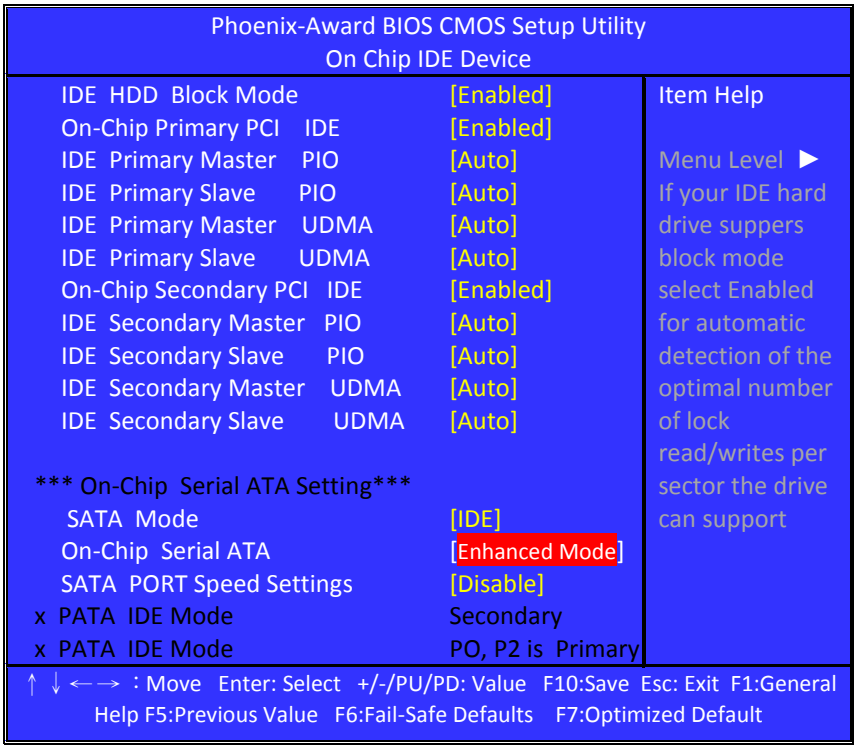
SATA Mode

Controls the SATA controller's operating mode.
The choice: IDE **(default)**, RAID, AHCI.

PATA IDE Mode

This field is used to select the function mode of the IDE connector.
The only choice:
Secondary: IDE serves as Secondary Master and Secondary Slave channel. SATA 1 and SATA 2 serve as Primary Master and Primary Slave channel.

When you press [Enhanced Mode] on this item will show:



(Figure 13)

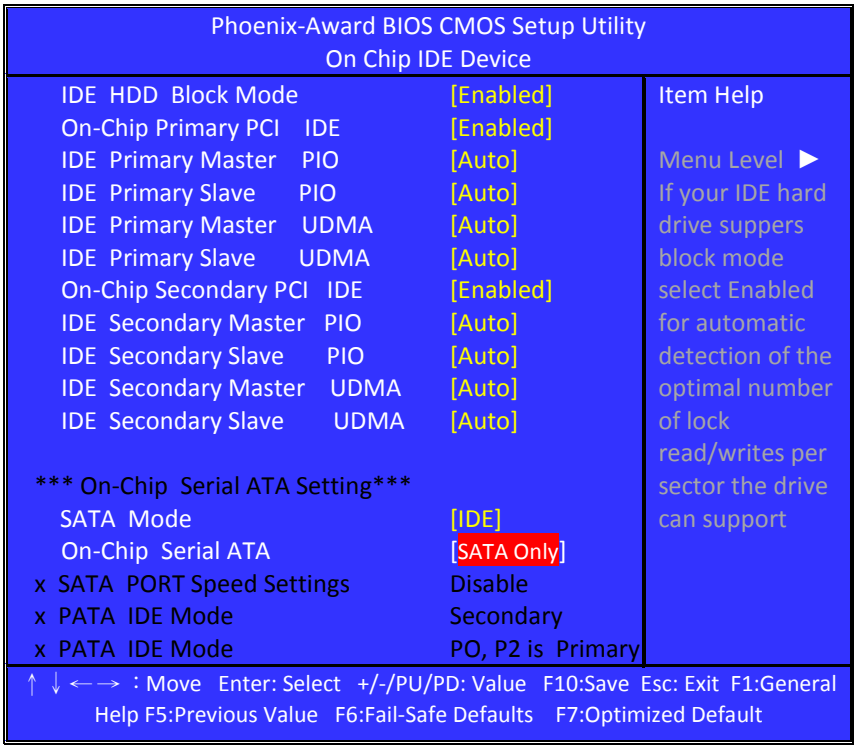
SATA Mode

Controls the SATA controller's operating mode.
The choice: IDE **(default)**, RAID, AHCI.

SATA Port Speed Settings

Select SATA speed.
The choice: Disabled **(default)**, Force GEN I, Force GEN II.

When you press [SATA Only] on this item will show:

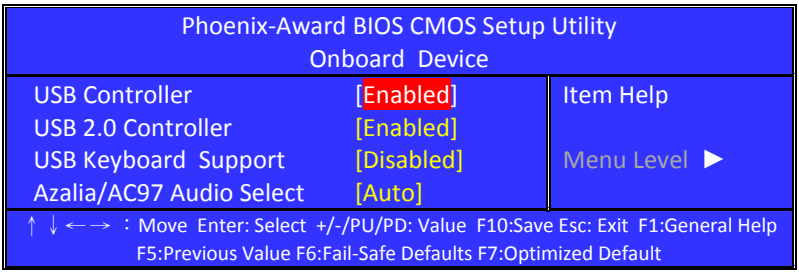


(Figure 14)

SATA Mode

Controls the SATA controller's operating mode.
The choice: IDE **(default)**, RAID, AHCI.

➢On board Device



USB Controller

Select enabled if your system contains a Universal Serial Bus (USB) controller and you have USB peripherals.
The choice: Enabled **(default)**, Disabled.

USB 2.0 Controller

This entry is for disable/enable USB2.0 controller only. The BIOS itself may/may not have high speed USB support. If the BIOS has high speed USB support built in, the support will be automatically turn on when high speed device were attached.
The choice: Enabled **(default)**, Disabled.

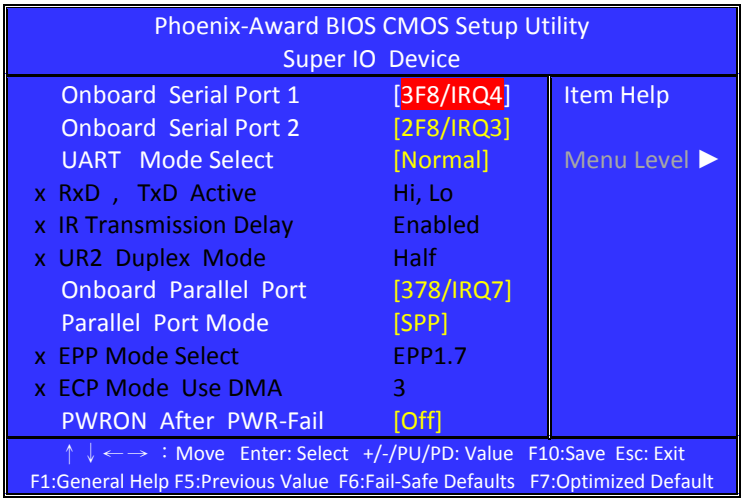
USB Keyboard Support

Select enabled if user plan to use an USB keyboard.
The choice: Enabled, Disabled **(default)**.

Azalia/AC97 Audio Select

The choice: Auto **(default)**, Azalia, AC97 Audio and Modem, AC97 Audio only, AC97 Modem only, ALL Disabled.

➢Super IO Device



Onboard Serial Port 1

Select an address and corresponding interrupt for the first serial ports.
The choice: Disable, 3F8/IRQ4 **(default)**, 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3, Auto.

Onboard Serial Port 2

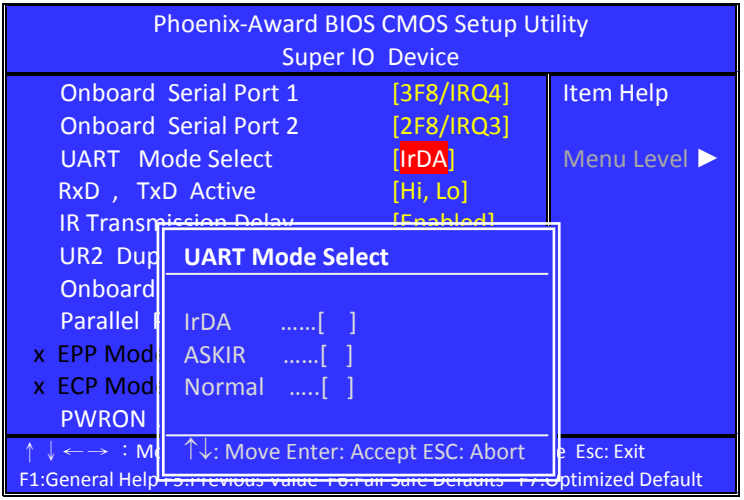
Select an address and corresponding interrupt for the second serial ports.
The choice: Disable, 3F8/IRQ4, 2F8/IRQ3 **(default)**, 3E8/IRQ4, 2E8/IRQ3, Auto.

UART Mode Select

This item allows you to select which mode for the Onboard Serial Port 2.

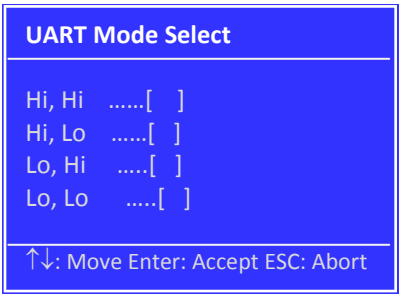
The choice: IrDA, ASKIR, Normal **(default)**

If UART Mode Select is IrDA and ASKIR will show:



RxD, TxD Active

The choice:



IR Transmission Delay

The choice: Disabled, Enabled **(default)**.

UR2 Duplex Mode

The choice: Full, Half **(default)**.

Onboard Parallel Port

This item allows you to determine onboard parallel port controller I/O address setting.
The choice: 378/IRQ7 **(default)**, 278/IRQ5, 3BC/IRQ7, Disabled.

Parallel Port Mode

The choice: SPP **(default)**, EPP, ECP, ECP+EPP, Normal.

SPP	Sets the parallel port to function as a Standard Parallel Port. This is the default (and slowest) option.
EPP	Sets the parallel port to Enhanced Parallel Port mode. Sometimes also called "Bi-directional"
ECP	Sets the parallel port up as an Enhanced Capabilities Port. This setting requires the use of a DMA channel

EPP Mode Select

Select EPP port type 1.7 or 1.9.
The choice: 1.7 **(default)**, 1.9

ECP Mode Use DMA

If your system supports ECP parallel port mode and you have the port set to use ECP, you must use this setting to assign a DMA channel for use by the port.
The choice: DMA1, DMA3 **(default)**.

PWRON After PWR-Fail

When power fails, you can select power ON or Off or Former status.
The choice: Off **(default)**, On, Former-Sts.

Onboard Serial Port 3

This is used to select an I/O address for the onboard serial port 3.
The choice: Disabled, 3F8, 2F8, 3E8 **(default)**, 2E8.

Serial Port 3 Use IRQ

This is used to select an IRQ for the onboard serial port 3.
The choice: IRQ3 **(default)**, IRQ4, IRQ5, IRQ7, IRQ10, IRQ11.

Onboard Serial Port 4

This is used to select an I/O address for the onboard serial port 4.
The choice: Disabled, 3F8, 2F8, 3E8, 2E8 **(default).**

Serial Port 4 Use IRQ

This is used to select an IRQ for the onboard serial port 4.
The choice: IRQ3, IRQ4 **(default)**, IRQ5, IRQ7, IRQ10, IRQ11.

Watch Dog Timer Select

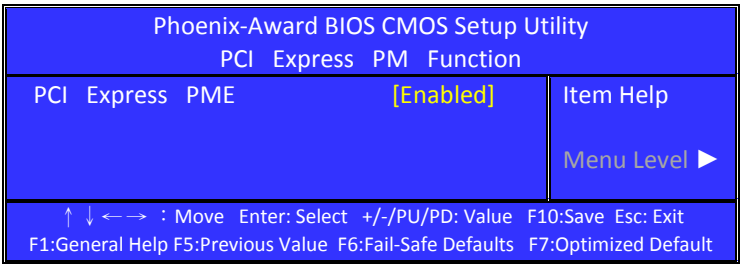
The choice: Disabled **(default)**, Enabled.

3.6 Power Management Setup

The Power Management Setup allows you to configure you system to most effectively save energy while operating in a manner consistent with your own style of computer use.

Phoenix-Award BIOS CMOS Setup Utility Power Management Setup		
►PCI Express PM Function	[Press Enter]	Item Help
Power-Supply Type	[AT]	
ACPI Function	[Enabled]	Menu Level ►
Power Management	[User Define]	
Video Off Method	[DPMS]	
Video Off In Suspend	[Yes]	
Suspend Type	[Stop Grant]	
MODEM Use IRQ	[3]	
Suspend Mode	[Disabled]	
HDD Power Down	[Disabled]	
Soft-Off by PWR-BTTN	[Instant-Off]	
CPU THRM-Throttling	[50.0%]	
Wake-Up by PCI card	[Enabled]	
Power On by Ring	[Enabled]	
Resume by Alarm	[Disabled]	
x Data(of Month)Alarm	0	
x Time(hh: mm: ss)Alarm	0 : 0 : 0	
Reload Global Timer Events		
Primary IDE 0	[Disabled]	
Primary IDE 1	[Disabled]	
Secondary IDE 0	[Disabled]	
Secondary IDE 1	[Disabled]	
FDD , COM , LPT Port	[Disabled]	
PCI PIRQ[A-D]#	[Disabled]	
↑ ↓ ←→ : Move Enter: Select +/-/PU/PD: Value F10:Save Esc: Exit F1:General Help F5:Previous Value F6:Fail-Safe Defaults F7:Optimized Default		

➢PCI Express PM Function



PCI Express PME

The choice: Enabled **(default)**, Disabled.

Power-Supply Type

The choice: AT **(default)**, ATX.

ACPI Function

This item allows you to enable/disable the Advanced Configuration and Power Management (ACPI).
The choice: Enabled **(default)**, Disabled.

Power Management

The choice: User Define **(default)**, Min Saving, Max Saving.

Max Saving	Maximum power savings. Only Available for SL CPUs. Inactivity period is 1 minute in each mode.
User Define	Set each mode individually. Select time-out periods in the section for each mode, below.
Min Saving	Minimum power savings. Inactivity period is 1 hour in each mode (except the hard drive).

Video off Method

This determines the manner in which the monitor is blanked.
This specifies the power saving state that the VGA video subsystem enters after the specified period of display inactivity has expired.
The choice: Blank Screen, V/H SYNC+ Blank, DPMS **(default).**

Blank Screen	The BIOS will only black the screen when the system gets into power management mode and writes blanks to the video buffer.
V/H SYNC + Blank	Writes blanks to the video buffer, and turns off the vertical and horizontal scanning.
DPMS	Allows the BIOS to control the video display card if it supports the DPMS feature **(default).**

Video Off In Suspend

This field is used to activate the video off feature when the system enters the Suspend mode.
The choice: No, Yes **(default)**.

Suspend Type

The choice: Stop Grant **(default)**,PwrOn Suspend

MODEM Use IRQ

This field is used to set an IRQ channel for the modem installed in your system.
The choice: NA, 3 **(default)**, 4, 5, 7, 9, 10, 11.

Suspend Mode

This field specifies the length of time of system inactivity while in full power on state before the computer enters suspend mode and motivates the enable 'Wake Up Events In Doze & Standby' / 'PM Events'.
The choice: 1Min, 2Min, 4Min, 8Min, 12Min, 20Min, 30Min, 40Min,1Hour, Disable **(default)**.

HDD Power Down

When enable and after the set time of system inactivity, the hard disk drive will be powered down while all other devices remain active.
The choice: 1Min, 2Min, 3Min, 4Min, 5Min, 6Min, 7Min, 8Min, 9Min, 10Min, 11Min, 12Min, 13Min, 14Min, 15Min, Disable **(default)**.

Soft-Off by PWR-BTTN

This field defines the power off mode when using an ATX power supply.
The choice: Instant-Off, Delay 4 Sec.

Instant-Off	Press power button then Power off instantly .**(default)**
Delay 4 Sec	Press power button 4 sec. to Power off. Enter suspend if button is pressed less than 4 sec.

CPU THRM-Throttling

This field allows you to select the CPU THRM-Throttling rate.
The choice: 75.0%, 50.0% **(default)**, 25.0%.

Wake-Up by PCI card

Enable/Disable PCI PME wake up function.
The choice: Enabled **(default)**, Disabled.

Power On by Ring

Enable/Disable Power On By Ring function.
The choice: Enabled **(default)**, Disabled.

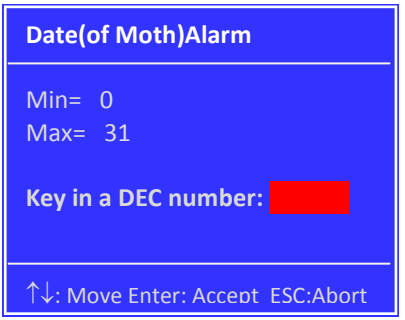
Resume by Alarm

You can set "Resume by Alarm" item to enabled and key in
Date/time to power on system.
The choice: Enabled, Disabled **(default).**

If Resume by Alarm is Enabled,
You can choice Date Alarm and Time Alarm:

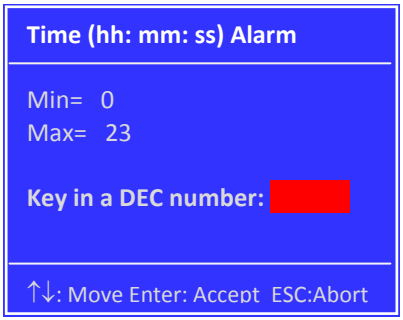
Date (of Month) Alarm

Every day, 1~31



Time (hh: mm: ss) Alarm

(0~23): (0~59): (0~59)



Primary/ Secondary IDE 0/1

When Enabled, the system will resume from suspend mode if Primary IDE 0 (1) or Secondary IDE 0 (1) is active.
The choice: Enabled, Disabled **(default).**

FDD, COM, LPT Port

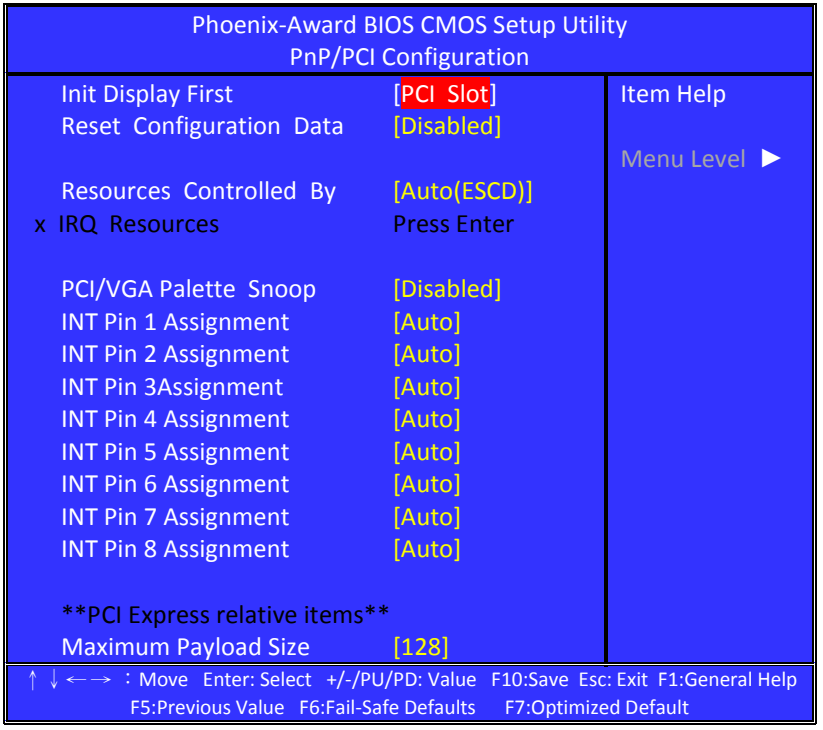
When Enabled, the system will resume from suspend mode if FDD, COM port, or LPT port is active.
The choice: Enabled, Disabled **(default)**.

PCI PIRQ [A-D]

When Enabled, the system will resume from suspend mode if interrupt occurs.
The choice: Enabled, Disabled **(default)**.

3.7 PnP/PCI Configuration

This section describes configuring the PCI bus system. PCI, or Personal Computer Interconnect, is a system which allows I/O devices to operate at speeds nearing the speed the CPU itself uses when communicating with its own special components. This section covers some very technical items and it is strongly recommended that only experienced users should make any changes to the default settings.



Init Display First

This item allows you to choose which one to activate first, PCI Slot or onchip VGA.
The choice: PCI Slot **(default)**, Onboard, PCIEx.

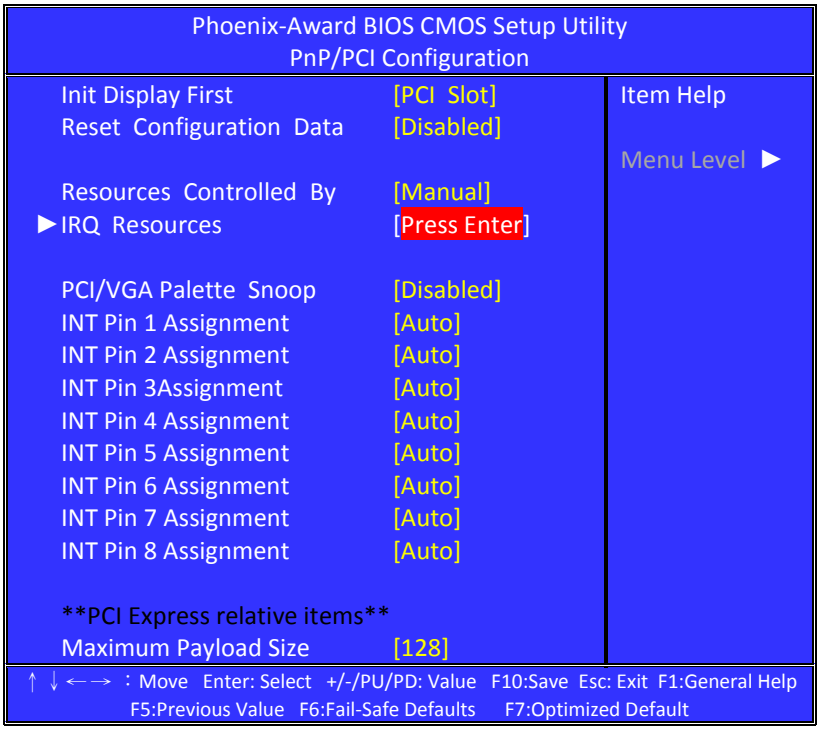
Reset Configuration Data

Default is disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the OS cannot boot.
The choice: Enabled, Disabled **(default)**.

Resources Controlled By

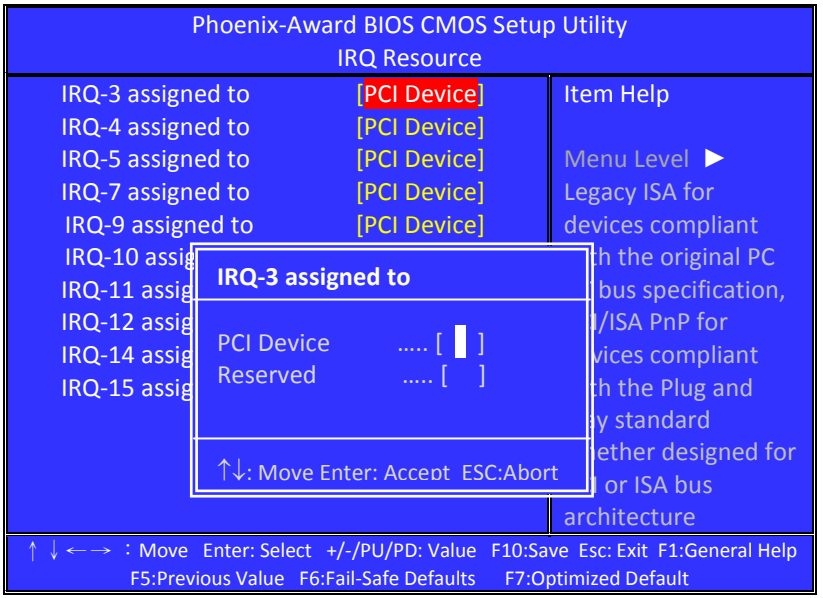
BIOS can automatically configure all the boot and Plug and Play compatible devices. If you choose Auto, you cannot select IRQ DMA and memory base address fields, since BIOS automatically assigns them.
The choice: Auto (ESCD) **(default)**, Manual.

If Resources Controlled By is Manual, you can choice IRQ Resource:



➢IRQ Resource

When resources are controlled manually, assign each system interrupt a type, depending on the type of device using the interrupt. This item allows you to determine the IRQ assigned to the ISA bus and is not available to any PCI slot.



IRQ-3,4,5,7,9,10,11,12,14,15 assigned to

The choice: PCI Device, Reserved.

PCI/VGA Palette Snoop

This BIOS feature determines if your graphics card should allow VGA palette snooping by a fixed function display card.
The choice: Enabled, Disabled **(default).**

INT Pin 1/2/3/4/5/6/7/8 Assignment

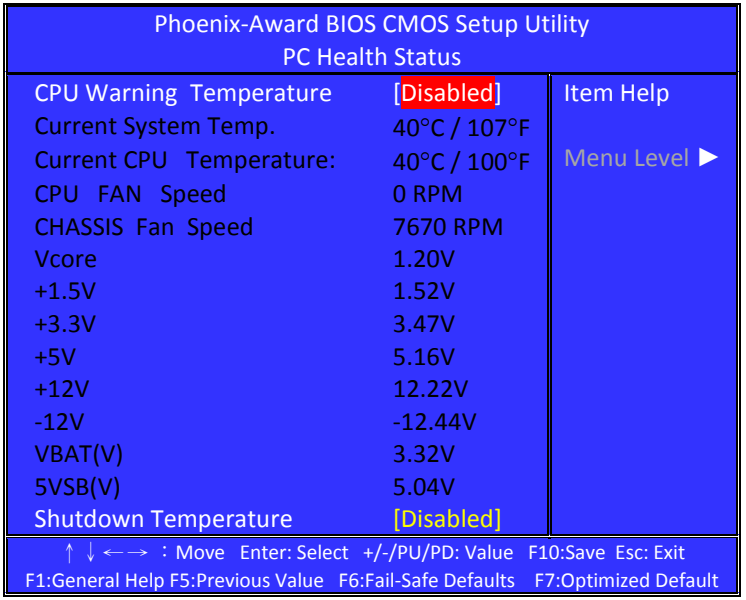
The choice: Auto **(default)**,3,4,5,7,9,10,11,12,14,15.

Maximum Payload Size

The choice: 128 (**default)**, 256,512,1024,2048,4096.

3.8 PC Health Status

This section helps you to get more information about your system including CPU temperature, FAN speed and voltages. It is recommended that you contact with your motherboard supplier to get proper value about your setting of the CPU temperature.



CPU Warning Temperature

Select the CPU over-heated warning temperature.
The choice: Disabled **(default)**, 50°C/122°F, 53°C/127°F, 56°C/133°F, 60°C/140°F, 63°C/145°F, 66°C/151°F, and 70°C/158°F.

Current System Temp

Show System Temperature.

Current CPU Temperature

Shows Board Temperature

CPU FAN Speed

Shows CPU FAN speed.

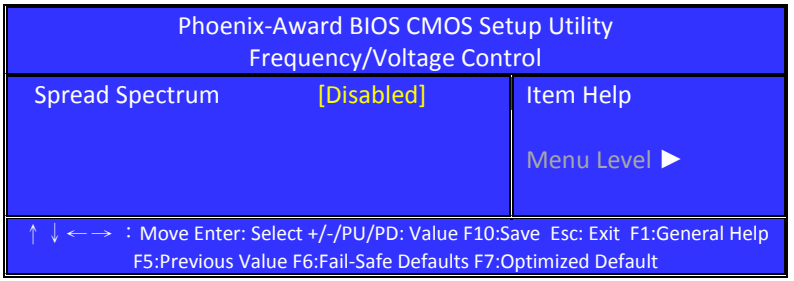
CHASSIS Fan Speed

Shows CHASSIS Fan speed

Shutdown Temperature

Select the CPU over-heated Shutdown temperature.
The choice: Disabled **(default)**, 60°C/140°F, 65°C/149°F, 70°C/158°F, 75°C/167°F

3.9 Frequency/Voltage Control

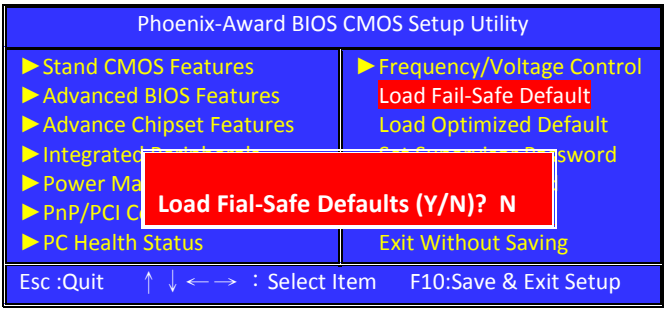


Spread Spectrum

Leave this field in its default setting. Do not alter this setting unless advised by an engineer or technician.
The choice: Disabled **(default)**, +/-0.1%, +/-0.2%, +/-0.3%, +/-0.4%, +/-0.5%,+/-0.6%,+/-0.7%,+/-0.8%,+/-0.9%.

3.10 Load Fail-Safe Defaults

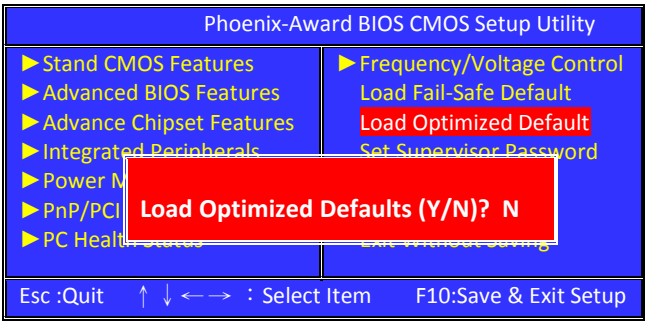
When you press <Enter> on this item you get a confirmation dialog box with a message similar to:



Pressing '**Y**' loads the BIOS default values for the most stable, minimal-performance system operations.

3.11 Load Optimized Defaults

When you press <Enter> on this item you get a confirmation dialog box with a message similar to:



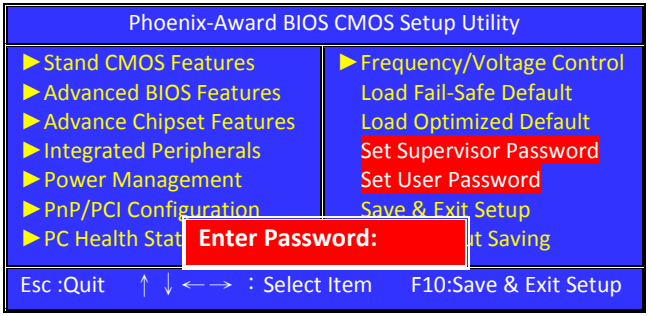
Pressing '**Y**' loads the default values that are factory settings for optimal performance system operations.

3.12 Set Supervisor/ User Password

You can set either supervisor or user password, or both of then. The differences between are:

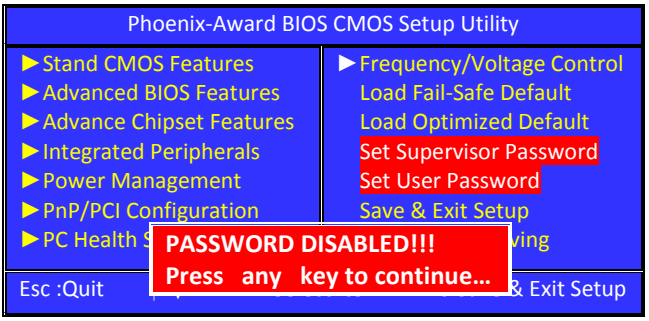
Supervisor password: can enter and change the options of the setup menus.

User password: just can only enter but do not have the right to change the options of the setup menus. When you select this function, the following message will appear at the center of the screen to assist you in creating a password.



ENTER PASSWORD:
Type the password, up to eight characters in length, and press <Enter>. The password typed now will clear any previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a password.

To disable a password, just press <Enter> when you are prompted to enter the password. A message will confirm the password will be disabled. Once the password is disabled, the system will boot and you can enter Setup freely.



PASSWORD DISABLED:

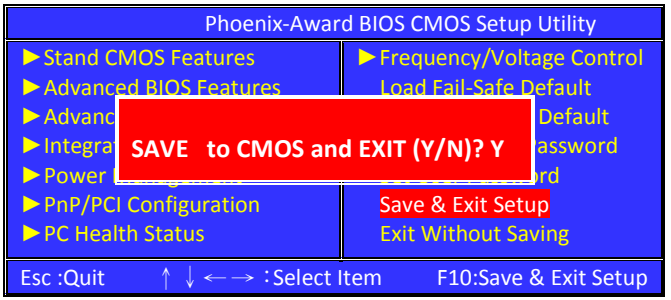
When a password has been enabled, you will be prompted to enter it every time you try to enter Setup. This prevents an unauthorized person from changing any part of your system configuration.

Additionally, when a password is enabled, you can also require the BIOS to request a password every time your system is rebooted. This would prevent unauthorized use of your computer.

You determine when the password is required within the BIOS Features Setup Menu and its Security option. If the Security option is set to “System”, the password will be required both at boot and at entry to Setup. If set to “Setup”, prompting only occurs when trying to enter Setup.

3.13 Save & Exit Setup

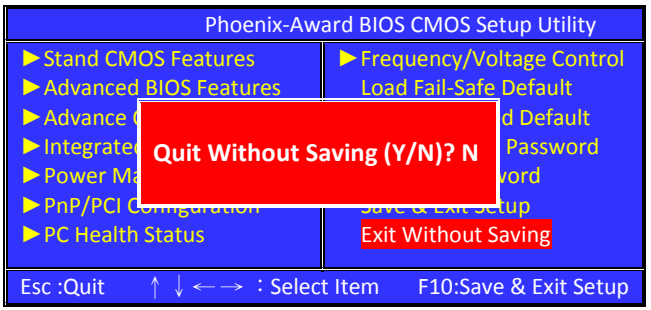
Pressing <Enter> on this item asks for confirmation:



Pressing "**Y**" stores the selections made in the menus in CMOS – a special section of memory that stays on after you turn your system off. The next time you boot your computer, the BIOS configures your system according to the Setup selections stored in CMOS. After saving the values the system is restarted again.

3.14 Exit Without Saving

Pressing <Enter> on this item asks for confirmation:



This allows you to exit Setup without storing in CMOS any change. The previous selections remain in effect. This exits the Setup utility and restarts your computer.

CHAPTER 4 Appendix

A. I/O Port Address Map

Each peripheral device in the system is assigned a set of I/O port addresses which also becomes the identity of the device. There are a total of 1K port address spaces available. The following table lists the I/O port addresses used on the Industrial CPU Card.

Address	Device Description
000h - 01Fh	DMA Controller #1
020h - 03Fh	Interrupt Controller #1
040h - 05Fh	Timer
060h - 06Fh	Keyboard Controller
070h - 07Fh	Real Time Clock, NMI
080h - 09Fh	DMA Page Register
0A0h - 0BFh	Interrupt Controller #2
0C0h - 0DFh	DMA Controller #2
0F0h	Clear Math Coprocessor Busy Signal
0F1h	Reset Math Coprocessor
1F0h - 1F7h	IDE Interface
278 - 27F	Parallel Port #2(LPT2)
2F8h - 2FFh	Serial Port #2(COM2)
2B0 - 2DF	Graphics adapter Controller
378h - 3FFh	Parallel Port #1(LPT1)
360 - 36F	Network Ports
3B0 - 3BF	Monochrome & Printer adapter
3C0 - 3CF	EGA adapter
3D0 - 3DF	CGA adapter
3F0h - 3F7h	Floppy Disk Controller
3F8h - 3FFh	Serial Port #1(COM1)

B. Interrupt Request Lines (IRQ)

There are a total of 15 IRQ lines available on the Industrial CPU Card. Peripheral devices use interrupt request lines to notify CPU for the service required. The following table shows the IRQ used by the devices on the Industrial CPU Card.

Level	Function
IRQ0	System Timer Output
IRQ1	Keyboard
IRQ2	Interrupt Cascade
IRQ3	Serial Port #2
IRQ4	Serial Port #1
IRQ5	Reserved
IRQ6	Floppy Disk Controller
IRQ7	Parallel Port #1
IRQ8	Real Time Clock
IRQ9	Software Redirected to Int0Ah
IRQ10	Reserved
IRQ11	Reserved
IRQ12	PS/2 Mouse
IRQ13	80287
IRQ14	Primary IDE
IRQ15	Secondary IDE

C. POST Beep

Currently there are two kinds of beep codes in BIOS. This code indicates that a **video error** has occurred and the BIOS cannot initialize the video screen to display any additional information. This beep code consists of a single long beep followed by two short beeps.

The other code indicates that your **DRAM error** has occurred. This beep code consists of a single long beep repeatedly.