ISA-E10

Intel® Atom N270 945GSE ISA SBC

User's Manual

Version 1.0

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Introduction

This manual is designed to give you information on the ISA-E10 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

- Intel Atom Processor N270 on board.

- Supports DDR2 533MHz memory up to 2GB.

- One PC104 16-bits socket on board.

- Multiple I/O functions: 6 x USB2.0, 4 x COM ports, 2 x SATA, 1 x IRDA, 1x PIDE, 1x CF, 1x LPT,1x FDD.

- Multiple display technology: CRT, TVOUT, Dual 24-bits LVDS LCD. Dual Independent display supported.

- Support stand-alone operation with power input and screw holes.

- One GbE LAN maximize the transfer bandwidth.

Specifications

Processor Support
- Intel Atom processor N270 on board.
- 1.6GHz Core Speed with Hyper-threading support.
- 533MHz front side bus speed.

BIOS
- Award Standard PnP Flash BIOS 6.0.
- 8Mbit FlashROM with BootBlock for Fail-safe.

System Memory
- One DDR2 SO-DIMM Socket supports up to 2.0GB memory
- Supports DDR2-533 non-ECC memory up to 2.0 GB.

Chipset
- Intel 945GSE and ICH7M chipset.

Video
- Intel 945GSE Integrated GMA950 graphic engine.
- One D-Sub Female connector for CRT displays.
- One 40-pins connector for Dual 18/24-bits LVDS LCD displays.
- One 4-pins connector for TVOUT displays.
- Support dual Independent display, Display devices can be selectable by BIOS or graphic drivers.

10/100M/1000M Ethernet
- One Realtek RT8111C on board for GbE LAN support.
- Support WOL and Remote Boot with PXE or RPL protocol.

On Board I/O
- Winbond 83627HF LPC I/F Super I/O chip.
- Four serial ports as COM1~COM4. COM2 is RS232/422/485 selectable by jumper.
- One Parallel port supports SPP/ECP/EPP mode.
- One IrDA port. One Floppy port.
- Six USB 2.0 ports support USB KB/MS and storage devices.
- PS2 Keyboard and Mouse.
- One 8-bits digital I/O ports with configurable input and output.

PIDE and SATA
- PIDE controller built in ICH7M supports up to ATA100.
- One standard 44-pins box header to support 2.5" HDD or DOM Flash Disk.
- Two SATA connectors from ICH7M support SATA-I and SATA-II devices.
- One 50-pins CF-II socket for Compact Flash Card.

Watchdog Timer
- Programmable watchdog timer for 1~255 seconds.

CMOS
- On-board RTC with 242 bytes of Battery-back CMOS RAM.

Audio
- RealTek ALC888 High-Definition Audio chip on-board.
- Support Audio Line-In, Line-OUT and MIC.

ISA/PC104
- ISA BUS compliant interface support standard ISA bus backplane.
- One PC104 16bits socket.

Power
- Support ATX and AT mode.
- 4-pins power connector on board for stand-alone operation.

Software Compatibility
- Microsoft windows: Win2K, Win XP 32/64-bits, Vista 32/64-bits, Windows 7 32/64-bits.
- Linux 32-bits/64-bits and DOS 6.22.

Cooling
- Two cooling FAN connectors for CPU cooler and System FAN.

Dimensions
- 185mm (W) x 127mm (L). ISA Half-size Card Standard form factor.
- 4 screw holes on corners for stand-alone operation.

Operating Temperature
- 0 to 60 °C operating Range.
- -40 °C to 70 °C storage.
- Relative Humility: 5~95%, non-condensing.

Chapter 2
Jumper setting & Connectors

Jumpers on the ISA-E10

The jumpers on the ISA-E10 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 ISA-E10 and their respective functions.

Jumper Locations on the ISA-E10

JP1: Clear CMOS RAM Data

This 3-pins 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.

JP1	Setting	Function
□ □ □	Pin 1-2 Short/Closed	Normal Operation (default)
□ □ □	Pin 2-3 Short/Closed	Clear CMOS Content

JP2: CF Card Mode Selection

This Jumper is to select the CF works as Primary Channel Master device or Slave device. The default setting is Master mode.

Master	Slave
□ □	□ □
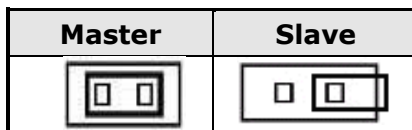
JP3: COM1 Power Selection

JP3 can be used to select the COM1 supply power: +5V, Ring-IN or +12V.

+5V	RI	+12V
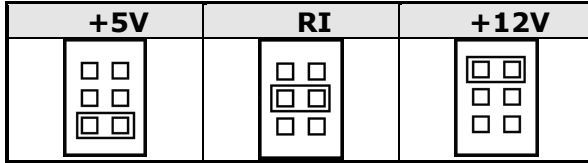
COM2MODE: RS232/RS422/RS485

COM2 support multi-protocols include RS232, RS422 and RS485, while COM3, COM4. COM6 and COM6 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.
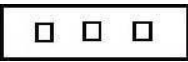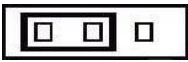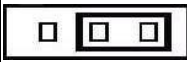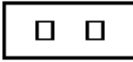
COM2MODE	I/F TYPE
17 1 18 2	RS-232
17 1 18 2	RS-422
17 1 18 2	RS-485

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.

LCDPWR	+3.3V	+5V
1	1	1
□ □ □	□ □ □	□ □ □

AT MODE: AT Mode Selection

AT Mode	ATX Mode
□ □	□ □
1	1

Connectors on the ISA-E10

The connectors on the ISA-E10 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 ISA-E10 and their respective

Connector Locations on the ISA-E10

BACKLIGHT Connector

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

COM2, COM 3, COM 4 Serial Ports
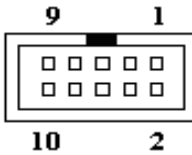
Pin #	RS232 Mode Signal Name
1	DCD, Data carrier detect
2	RXD, Receive data
3	TXD, Transmit data
4	DTR, Data terminal ready
5	GND, ground
6	DSR, Data set ready
7	RTS, Request to send
8	CTS, Clear to send
9	Ring-IN
10	N.C.

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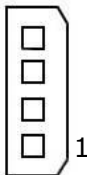
Signal Name	Pin #	Pin #	Signal Name
+12V	1	2	GND
GND	3	4	+5V

LVDS Connector

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

40   2

39   1
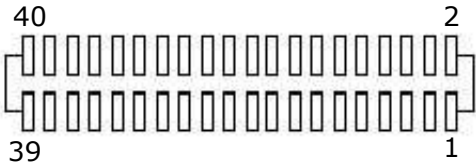
Signal Name	Pin #	Pin #	Signal Name
+12V	2	1	+12V
GND	4	3	GND
LCDVDD 5V/3.3V	6	5	LCDVDD 5V/3.3V
VSYNC	8	7	HSYNC
DE	10	9	CLK
GND	12	11	GND
UD	14	13	LR
B0	16	15	B1
B2	18	17	B3
B4	20	19	B5
GND	22	21	GND
ADJ	24	23	DMS
G0	26	25	G1
G2	28	27	G3
G4	30	29	G5
GND	32	31	GND
GND	34	33	GND
R0	36	35	R1
R2	38	37	R3
R4	40	39	R5

TV-OUT Connector

Pin #	Signal Name
1	LUMA
2	CHOMA
3	GND
4	CVBS

COM1 Serial Port

COM1 is a 9-pin D-Sub male connector. The following table shows its pin assignments.
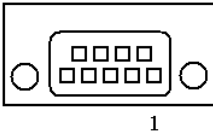
Pin #	RS232 Mode Signal Name
1	DCD, Data carrier detect
2	RXD, Receive data
3	TXD, Transmit data
4	DTR, Data terminal ready
5	GND, ground
6	DSR, Data set ready
7	RTS, Request to send
8	CTS, Clear to send
9	+5V,Ring-IN or +12V

INT_VGA Connector

INT_VGA is for internal Video A/D board connection. The pin out is listed as below:
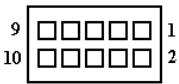
Signal Name	Pin #	Pin #	Signal Name
RED	1	2	GND
GREEN	3	4	GND
BLUE	5	6	GND
HSYNC	7	8	DDC_DATA
VSYNC	9	10	DDC_CLK

VGA Connector

The pin assignments of VGA CRT connector are as follows:
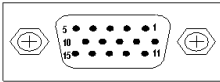
Signal Name	Pin #	Pin #	Signal Name
Red	1	2	Green
Blue	3	4	N.C.
GND	5	6	GND
GND	7	8	GND
N.C.	9	10	GND
N.C.	11	12	DDC_DATA
HSYNC	13	14	VSYNC
DDC_CLK	15		

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 ISA-E10 boards come with a Y-cable. Contact with your dealer if the Y-cable is missing.
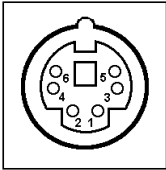
Pin #	Signal Name
1	Keyboard data
2	Mouse data
3	GND
4	5V
5	Keyboard clock
6	Mouse clock

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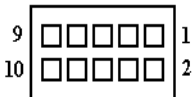
Signal Name	Pin #	Pin #	Signal Name
GND	1	2	+5V
DIO_0	3	4	DIO_4
DIO_1	5	6	DIO_5
DIO_2	7	8	DIO_6
DIO_3	9	10	DIO_7

CPU Fan Connector

This is a 3-pin header for the CPU fan.
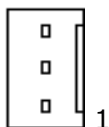
Pin #	Signal Name
1	Ground
2	+12V
3	CPUPWM

CF-II (BOT) 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

1

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.

```
                    □ □ ┬─ PWRBTN
      HDDLED ─┬─ □ □
                    □ □ ┬─ PWRLED
      RESET ─┬─ □ □
```
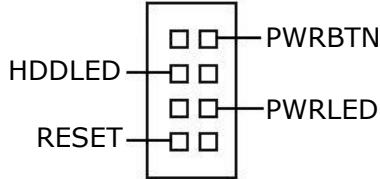
➢ **ATX Power ON/OFF Button**
This 2-pin connector acts as the "Power Supply On/Off Switch" on the M6 main board. When pressed, the switch will force the Main board to power on. When pressed again, it will force the main board to power off.
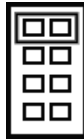
PWRBTN Pin #	Signal Name
1	PWR-BTN
6	GND

➢ **HDD LED**
This connector allows users to connect to Front Panel Power indicator.
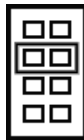
HDDLED Pin #	Signal Name
3	+5V
4	Ground

➢ **Power-On LED**
This connector allows users to connect to Front Panel Power indicator.
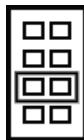
PWR LED Pin #	Signal Name
3	VCC
8	GND

➢ 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.
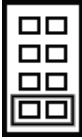
RESET Pin #	Signal Name
4	Reset
9	GND

IRDA Connector

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

1

IrDA Pin #	Signal Name
1	+5V
2	NC
3	Ir TX
4	Ground
5	Ir RX
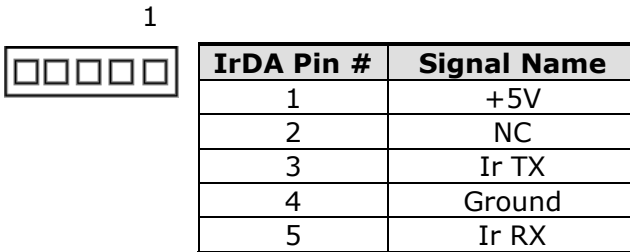
INT_KBMS Connector

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

Signal Name	Pin #	Pin #	Signal Name
KB-CLOCK	1	2	KB-DATA
MS-CLOCK	3	4	MS-DATA
KBVCC	5	6	GND

PIDE Connector

```
43                          1
□□□□□□□□□□□□□□□□□□□□□□
□□□□□□□□□□□□□□□□□□□□□□
44                          2
```
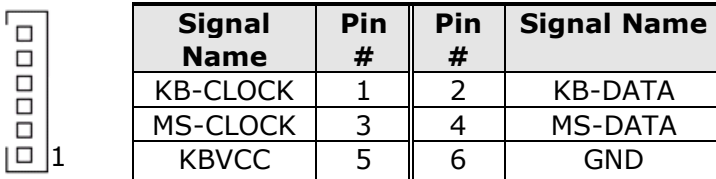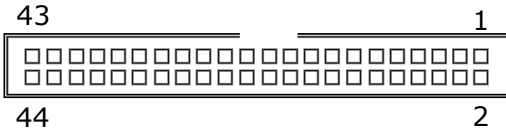
Signal Name	Pin #	Pin #	Signal Name
Reset IDE	1	2	Ground
Host data 7	3	4	Host data 8
Host data 6	5	6	Host data 9
Host data 5	7	8	Host data 10
Host data 4	9	10	Host data 11
Host data 3	11	12	Host data 12
Host data 2	13	14	Host data 13
Host data 1	15	16	Host data 14
Host data 0	17	18	Host data 15
Ground	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	39	40	Ground
+5V	41	42	+5V
GND	43	44	No connect

System FAN Power Connector

This is a 3-pin header for the system fan.
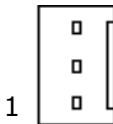
Pin #	Signal Name
1	Ground
2	+12V
3	SYSPWM

LPT Connector

The LPT parallel port is a standard DSUB 26-pins Female connector. It can be configured as EPP or ECP or SPP mode.
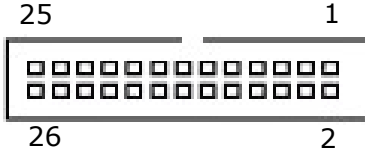
Signal Name	Pin #	Pin #	Signal Name
Strobe	1	2	DATA0
DATA1	3	4	DATA2
DATA3	5	6	DATA4
DATA5	7	8	DATA6
DATA7	9	10	/ACK
BUSY	11	12	PE
SLCT	13	14	/AUTOFD
/ERROR	15	16	/INIT
SELIN	17	18	GND
GND	19	20	GND
GND	21	22	GND
GND	23	24	GND
GND	25	26	

LAN Connector

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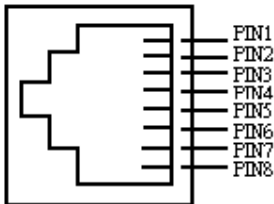
Pin #	Signal Name
1	MDI0+
2	MDI0-
3	MDI1+
4	MDI1-
5	MDI2+
6	MDI2-
7	MDI3+
8	MDI3-

USB12, USB34, USB56 Connectors

The following table shows the pin outs of the USB12 USB34 connectors.
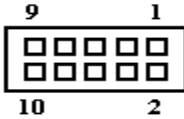
Signal Name	Pin #	Pin #	Signal Name
N.C.	1	2	VCC
GND	3	4	USB-
USB+	5	6	USB+
USB-	7	8	GND
VCC	9	10	N.C.

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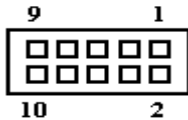
Pin #	Signal Name
1	JD0
2	NC
3	MIC1-IN-L
4	MIC1-IN-R
5	GND
6	GND
7	LINE-OUT-L
8	LINE-IN-L
9	LINE-OUT-R
10	LINE-IN-R

SATA1, SATA2 Connectors
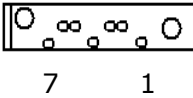
Pin #	Signal Name
1	GND
2	SATATX+
3	SATATX-
4	GND
5	SATARX-
6	SATARX+
7	GND

7   1

Floppy Drive Connector

Floppy connector is a 34-pin header and will support up to 2.88MB floppy drives.

33   1

34   2
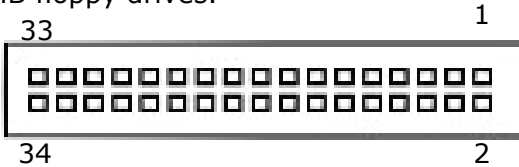
Signal Name	Pin #	Pin #	Signal Name
Ground	1	2	RM/LC
Ground	3	4	No connect
Ground	5	6	No connect
Ground	7	8	Index
Ground	9	10	Motor enable 0
Ground	11	12	Drive select 1
Ground	13	14	Drive select 0
Ground	15	16	Motor enable 1
Ground	17	18	Direction
Ground	19	20	Step
Ground	21	22	Write data
Ground	23	24	Write gate
Ground	25	26	Track 00
Ground	27	28	Write protect
Ground	29	30	Read data
Ground	31	32	Side 1 select
Ground	33	34	Diskette change

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	PWOK
2	5VSB
3	PS_ON-
4	GND

When PWRMODE are chosen as AT Mode, please make sure short of AT-MODE Jumper. The setting is illustrated as below :

AT-MODE Jumper

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 ISA-E10,Please remove AT-MODE Jumper.
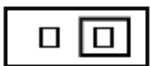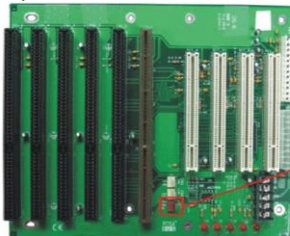
AT-MODE   BACKPLANE   CABLE   ISA-E10
Jumper

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Chapter 3 BIOS Setup

This chapter describes the different settings available in the Award BIOS that comes with the M6 CPU card. The topics covered in this chapter are as follows:

BIOS Introduction

This Chapter discusses Award™ Setup program built into the M6 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.
The AwardBIOS™ installed in M6 is a custom version of an industry standard BIOS. This means that it supports Intel Core 2 Duo in a standard IBM-AT compatible input/output system. The BIOS provides critical low-level support for standard devices such as disk drives and serial and parallel ports.
It also adds non-standard, features such as virus and password protection as well as special support for detailed fine-tuning of the chipset controlling the entire system.
The rest of this chapter is intended to guide you through the process of configuring your system using Setup.

Starting Setup

The AwardBIOS™ is immediately activated when you first power on the computer. The BIOS reads the system information contained in the CMOS and begins the process of checking out the system and configuring it. When it finishes, the BIOS will seek an operating system on one of the disks and then launch and turn control over to the operating system.

While the BIOS is in control, the Setup program can be activated in one of two ways:

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

Press DEL to enter SETUP.

If the message disappears before you respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the "RESET" button on the system case. You may also restart by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys. If you
do not press the keys at the correct time and the system does not boot, an error message will be displayed and you will again be asked to...

PRESS F1 TO CONTINUE, DEL TO ENTER SETUP

Using Setup

In general, you use the arrow keys to highlight items,
press <Enter> to select, use the PageUp and PageDown
keys to change entries, press <F1> for help and press
<Esc> to quit. The following table provides more detail
about how to navigate in the Setup program using the
keyboard.

Key	Function
Up Arrow	Move to the previous item
Down Arrow	Move to the next item
Left Arrow	Move to the item on the left (menu bar)
Right Arrow	Move to the item on the right (menu bar)
Esc	Main Menu: Quit without saving changes Submenus: Exit Current page to the next higher level menu
Move Enter	Move to the item you desired
PgUp key	Increase the numeric value or make changes
PgDn key	Decrease the numeric value or make changes
+ key	Increase the numeric value or make changes
- key	Decrease the numeric value or make changes
Esc key	Main Menu -- Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu -- Exit current page and return to Main Menu
F1 key	General help on Setup navigation keys
F5 key	Load previous values from CMOS
F6 key	Load the fail-safe defaults from BIOS default table
F7 key	Load the optimized defaults
F10 key	Save all the CMOS changes and exit

Navigating through the menu bar
Use the left and right arrow keys to choose the menu you want to be in.

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

Getting Help

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window press <Esc> or the F1 key again.

In Case of Problems

If, after making and saving system changes with Setup, you discover that your computer no longer is able to boot, the AwardBIOS™ supports an override to the CMOS settings which resets your system to its defaults.
The best advice is to only alter settings that you thoroughly understand. To this end, we strongly recommend that you avoid making any changes to the chipset defaults. These defaults have been carefully chosen by both Award and M6 manufacturer to provide the absolute maximum performance and reliability.
Even a seemingly small change to the chipset setup has the potential for causing you to use the override.

3.1 Main Menu

<table>
<tr><td colspan="2">Phoenix-AwardBIOS CMOS Setup Utility</td></tr>
<tr><td>►Standard CMOS Features</td><td>►Frequency/Voltage Control</td></tr>
<tr><td>►Advanced BIOS Features</td><td>Load Fail-Safe Defaults</td></tr>
<tr><td>►Advance Chipset Features</td><td>Load Optimized Defaults</td></tr>
<tr><td>►Integrated Peripherals</td><td>Set Supervisor Password</td></tr>
<tr><td>►Power Management Setup</td><td>Set User Password</td></tr>
<tr><td>►PnP/PCI Configurations</td><td>Save & Exit Setup</td></tr>
<tr><td>►PC Health Status</td><td>Exit Without Saving</td></tr>
<tr><td colspan="2">Esc :Quit   ↑ ↓ ← → : Select Item
F10:Save & Exit Setup</td></tr>
<tr><td colspan="2">Load Optimized Defaults</td></tr>
</table>

(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.

```
                Phoenix-Award BIOS CMOS Setup Utility
                      Standard CMOS Features
 Date (mm :dd: yy)        Mon, Apr 28 2008      Item Help
 Time (hh: mm: ss)        15 : 35 : 35
                                                Menu Level ►
  ►IDE Channel 0 Master   [None]
  ►IDE Channel 0 Slave    [None]                Change the day,
  ►IDE Channel 1 Master   [None]                month, year, and
  ►IDE Channel 1 Slave    [None]                century

  Drive A                 [None]
  Drive B                 [None]

  Video                   [EGA/VGA]
  Halt On                 [All , But Disk/Key]

  Base Memory             639K
  Extend Memory           1038336K
  Total Memory            1039360K
 ↑↓←→ : Move  Enter: Select  +/-/PU/PD: Value  F10:Save  Esc: Exit  F1:General Help
 F5:Previous Value   F6:Fail-Safe Defaults    F7:Optimized Default
```

(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.

Phoenix-Award BIOS CMOS Setup Utility	
IDE Channel 0 Master	
IDE HDD Auto-Detection [Press Enter]	Item Help
	Menu Level ▶
IDE Channel 0 Master [Auto]	To auto-detect the HDD's
Access Mode [Auto]	size, head…on this channel
Capacity 0 MB	
Cylinder 0	
Head 0	
Precomp 0	
Landing Zone 0	
Sector 0	
↑↓←→ : Move Enter: Select +/-/PU/PD: Value F10:Save Esc: Exit F1:General Help	
F5:Previous Value F6:Fail-Safe Defaults F7:Optimized Default	

(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.

Phoenix-Award BIOS CMOS Setup Utility Advanced BIOS Features		
►CPU Features	[Press Enter]	Item Help
►Hard Disk Boot Priority	[Press Enter]	Menu Level ►
Virus Warning	[Disabled]	
CPU L1 & L2 Cache	[Enabled]	
CPU L3 Cache	[Enabled]	
Quick Power On Self Test	[Enabled]	
First Boot Device	[Hard Disk]	
Second Boot Device	[CDROM]	
Third Boot Device	[LS120]	
Boot Other Device	[Enabled]	
Swap Floppy Drive	[Disabled]	
Boot Up Floppy Seek	[Enabled]	
Boot UP Num Lock Status	[Off]	
Gate A20 Option	[Fast]	
Typematic Rate Setting	[Disabled]	
x Typematic Rate (Chars/Sec)	6	
x Typematic Delay (Msec)	250	
Security Option	[Setup]	
x APIC Mode	Enabled	
MPS Version Control For OS	[1.4]	
OS Select For DRAM > 64MB	[Non-OS2]	
Report No FDD For WIN 95	[No]	
↑↓←→ : Move Enter: Select +/-/PU/PD: Value F10:Save Esc: Exit F1:General Help F5:Previous Value F6:Fail-Safe Defaults F7:Optimized Default		

(Figure 4)

➢CPU Feature

```
Phoenix-Award BIOS CMOS Setup Utility
              CPU Feature
Delay Prior to Thermal    [16 Min]      Item Help
Limit CPUID MaxVal        [Disabled]
C1E Function              [Auto]        Menu Level  ►
Execute Disabled Bit      [Enabled]

↑↓←→ : Move   Enter: Select   +/-/PU/PD: Value   F10:Save  Esc: Exit  F1:General
Help F5:Previous Value   F6:Fail-Safe Defaults    F7:Optimized Default
```

(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

Phoenix-Award BIOS CMOS Setup Utility Hard Disk Boot Priority	
1.Bootable Add-in Cards	Item Help Menu Level ▶ Use <↑> or <↓> to select a device, then press <+> to move it up, or <-> to move it down the list. Press <ESC> to exit this menu.
↑↓←→ : Move Enter: Select +/-/PU/PD: Value F10:Save Esc: Exit F1:General Help F5:Previous Value F6:Fail-Safe Defaults F7:Optimized Default	
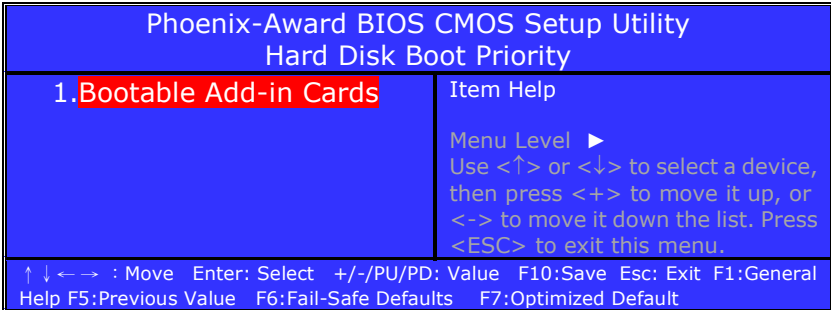
(Figure 6)

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 **(default)**: Lets chipset control GateA20.

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]
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, 30

Typematic Rate (Chars/Sec)
6 ….. [▉]
8 ….. [ ]
10 ….. [ ]
12 ….. [ ]
15 ….. [ ]
20 ….. [ ]
24 ….. [ ]
30 ….. [ ]
↑↓: Move Enter: Accept ESC:Abort

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.

Typematic Delay (Msec)
250 ….. [▉]
500 ….. [ ]
750 ….. [ ]
1000 ….. [ ]
↑↓: Move Enter: Accept ESC:

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.

Phoenix-Award BIOS CMOS Setup Utility		
Advanced Chipset Features		
DRAM Timing Selectable	[By SPD]	Item Help
x CAS Latency Time	[Auto]	
x Dram RAS# to CAS# Delay	[Auto]	Menu Level ►
x DRAM RAS# Precharge	[Auto]	
x Precharge dealy (tRAS)	[Auto]	
x System Memory Frequency	[Auto]	
SLP_S4#Assertoin Width	[4 to 5 Sec]	
System BIOS Cacheable	[Enabled]	
Video BIOS Cacheable	[Disabled]	
Memory Hole At 15M-16M	[Disabled]	
VGA Setting		
On-Chip Frame Buffer Size	[8MB]	
DVMT Mode	[DVMT]	
DVMT / FIXED Memory Size	[128MB]	
Boot Display	[CRT+LFP]	
Panel Number	[3]	
TV Standard	[Off]	
Video Connector	[Automatic]	
TV Format	[Auto]	
Lan1 Chip Control	[Enabled]	
↑↓←→ : Move Enter: Select +/-/PU/PD: Value F10:Save Esc: Exit F1:General Help		
F5:Previous Value F6:Fail-Safe Defaults F7:Optimized Default		

(Figure 7)

DRAM Timing Selectable

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

If DRAM Timing Selectable is [Manual], 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

TV Standard

The choice: Off **(default)**, NTSC, PAL, SECAM.

Video Connector

The choice: Automatic **(default)**, Composite, Component, Both.

TV Format

The choice:

Auto**(default)**	NTSC_M	NTSC_M_J
NTSC_433	NTSC_N	PAL_B
PAL_G	PAL_D	PAL_H
PAL_I	PAL_M	PAL_N
PAL_60	SECAM_L	SECAM_L1
SECAN_B	SECAN_D	SECAN_G
SECAN_H	SECAN_K	SECAN_K1

Lan1 Chip Control

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

3.5 Integrated Peripherals

```
                Phoenix-Award BIOS CMOS Setup Utility
                       Integrated Peripherals
┌─────────────────────────────────────────────────────────────────────┐
│  ► On Chip  IDE Device      [Press Enter]      Item Help              │
│  ► Onboard  Device          [Press Enter]                             │
│  ► Super IO  Device         [Press Enter]      Menu Level  ►          │
│    Onboard Serial Port 3    [3E8]                                     │
│    Serial Port 3 Use IRQ    [IRQ3]                                    │
│    Onboard Serial Port 4    [2E8]                                     │
│    Serial Port 4 Use IRQ    [IRQ4]                                    │
│  Watch Dog Timer Select     [Disabled]                               │
├─────────────────────────────────────────────────────────────────────┤
│ ↑ ↓ ← → : Move  Enter: Select  +/-/PU/PD: Value  F10:Save  Esc: Exit  F1:General Help │
│ F5:Previous Value F6:Fail-Safe Defaults  F7:Optimized Default        │
└─────────────────────────────────────────────────────────────────────┘
```

(Figure 8)

➢On Chip IDE Device

Phoenix-Award BIOS CMOS Setup Utility
On Chip IDE Device

		Item Help
IDE HDD Block Mode	[Enabled]	Menu
On-Chip Primary PCI IDE	[Enabled]	Level ►
IDE Primary Master PIO	[Auto]	If your IDE
IDE Primary Slave PIO	[Auto]	hard drive
IDE Primary Master UDMA	[Auto]	suppers
IDE Primary Slave UDMA	[Auto]	block
On-Chip Secondary PCI IDE	[Enabled]	mode
IDE Secondary Master PIO	[Auto]	select
IDE Secondary Slave PIO	[Auto]	Enabled
IDE Secondary Master UDMA	[Auto]	for
IDE Secondary Slave UDMA	[Auto]	automatic
		detection
*** On-Chip Serial ATA Setting***		of the
x SATA Mode	IDE	optimal
On-Chip Serial ATA	[Auto]	number of
x SATA PORT Speed Settings	Disable	lock
x PATA IDE Mode	Secondary	read/writes
x SATA Port	PO, P2 is Primary	per

↑↓←→ : Move Enter: Select +/-/PU/PD: Value F10:Save Esc: Exit F1:General Help
F5:Previous Value   F6:Fail-Safe Defaults   F7:Optimized Default

(Figure 9)

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

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 **(default)**.
Mode 0-4	You can select a mode that matches your hard disk drive's timing.

IDE Primary/Secondary, 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

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)**
Auto	This is the default setting.

ATA resource automatically.
The choice: Disabled, Auto **(default)**, Combined Mode, Enhanced Mode, SATA Only.

Phoenix-Award BIOS CMOS Setup Utility
On Chip IDE Device

		Item Help
IDE HDD Block Mode	[Enabled]	
On-Chip Primary PCI IDE	[Enabled]	Menu Level ►
IDE Primary Master PIO	[Auto]	If your
IDE Primary Slave PIO	[Auto]	IDE hard
IDE Primary Master UDMA	[Auto]	drive
IDE Pri **On-Chip Serial ATA**	o]	suppers block
On-Chip	bled]	mode
IDE Se Disabled ….. [ ]	o]	select Enabled
IDE Se Auto ….. [■]	o]	for
IDE Se Combined Mode ….. [ ]	o]	automatic
IDE Se Enhanced Mode ….. [ ]	o]	detection
SATA Only ….. [ ]		of the
*** On-C		optimal
x SATA ↑↓: Move Enter: Accept		number of lock
On-Chip Serial ATA	[Auto]	read/writes per
x SATA PORT Speed Settings	Disable	sector
x PATA IDE Mode	Secondary	the drive
x SATA Port	PO, P2 is Primary	can support

↑ ↓ ← → : Move Enter: Select +/-/PU/PD: Value F10:Save Esc: Exit F1:General Help
F5:Previous Value   F6:Fail-Safe Defaults   F7:Optimized Default

(Figure 10)

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

Phoenix-Award BIOS CMOS Setup Utility		
On Chip IDE Device		
IDE HDD Block Mode	[Enabled]	**Item Help**
On-Chip Primary PCI IDE	[Enabled]	
IDE Primary Master PIO	[Auto]	Menu Level ▶
IDE Primary Slave PIO	[Auto]	If your IDE
IDE Primary Master UDMA	[Auto]	hard drive
IDE Primary Slave UDMA	[Auto]	suppers block
On-Chip Secondary PCI IDE	[Enabled]	mode select
IDE Secondary Master PIO	[Auto]	Enabled for
IDE Secondary Slave PIO	[Auto]	automatic
IDE Secondary Master UDMA	[Auto]	detection of
IDE Secondary Slave UDMA	[Auto]	the optimal
		number of lock
*** On-Chip Serial ATA Setting***		read/writes
x SATA Mode	IDE	per sector the
On-Chip Serial ATA	[Auto]	drive can
x SATA PORT Speed Settings	Disable	support
x PATA IDE Mode	Secondary	
x SATA Port	PO, P2 is Primary	
↑↓←→ : Move Enter: Select +/-/PU/PD: Value F10:Save Esc: Exit F1:General Help		
F5:Previous Value F6:Fail-Safe Defaults F7:Optimized Default		

(Figure11)

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

<table>
<tr><td colspan="3">Phoenix-Award BIOS CMOS Setup Utility
On Chip IDE Device</td></tr>
<tr><td>IDE HDD Block Mode</td><td>[Enabled]</td><td>Item Help</td></tr>
<tr><td>On-Chip Primary PCI IDE</td><td>[Enabled]</td><td>Menu Level ▶</td></tr>
<tr><td>IDE Primary Master PIO</td><td>[Auto]</td><td>If your IDE hard drive suppers block mode select Enabled for automatic detection of the optimal number of lock read/writes per sector the drive can support</td></tr>
<tr><td>IDE Primary Slave PIO</td><td>[Auto]</td><td></td></tr>
<tr><td>IDE Primary Master UDMA</td><td>[Auto]</td><td></td></tr>
<tr><td>IDE Primary Slave UDMA</td><td>[Auto]</td><td></td></tr>
<tr><td>On-Chip Secondary PCI IDE</td><td>[Enabled]</td><td></td></tr>
<tr><td>IDE Secondary Master PIO</td><td>[Auto]</td><td></td></tr>
<tr><td>IDE Secondary Slave PIO</td><td>[Auto]</td><td></td></tr>
<tr><td>IDE Secondary Master UDMA</td><td>[Auto]</td><td></td></tr>
<tr><td>IDE Secondary Slave UDMA</td><td>[Auto]</td><td></td></tr>
<tr><td colspan="2">*** On-Chip Serial ATA Setting***</td><td></td></tr>
<tr><td>SATA Mode</td><td>[IDE]</td><td></td></tr>
<tr><td>On-Chip Serial ATA</td><td>[CombinedMod]</td><td></td></tr>
<tr><td>x SATA PORT Speed Settings</td><td>Disable</td><td></td></tr>
<tr><td>PATA IDE Mode</td><td>[Secondary]</td><td></td></tr>
<tr><td>x SATA Port</td><td>PO, P2 is Primary</td><td></td></tr>
<tr><td colspan="3">↑↓←→ : Move   Enter: Select   +/-/PU/PD: Value   F10:Save Esc: Exit F1:General Help
F5:Previous Value   F6:Fail-Safe Defaults   F7:Optimized Default</td></tr>
</table>

(Figure12)

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:

```
        Phoenix-Award BIOS CMOS Setup Utility
                  On Chip IDE Device
  IDE  HDD  Block Mode          [Enabled]        Item Help
  On-Chip Primary PCI IDE       [Enabled]
  IDE  Primary Master PIO       [Auto]           Menu Level
  IDE  Primary Slave PIO        [Auto]           ►
  IDE  Primary Master UDMA      [Auto]           If your IDE
  IDE  Primary Slave UDMA       [Auto]           hard drive
  On-Chip Secondary PCI IDE     [Enabled]        suppers
  IDE  Secondary Master PIO     [Auto]           block mode
  IDE  Secondary Slave PIO      [Auto]           select
  IDE  Secondary Master UDMA    [Auto]           Enabled for
  IDE  Secondary Slave UDMA     [Auto]           automatic
                                                 detection of
                                                 the optimal
  *** On-Chip  Serial ATA Setting***             number of
   SATA  Mode                [IDE]               lock
   On-Chip  Serial ATA       [Enhanced Mode]     read/writes
   SATA  PORT Speed Settings  [Disable]          per sector
  x  PATA  IDE Mode           Secondary          the drive can
  x  SATA Port                PO, P2 is  Primary support
↑↓←→ : Move   Enter: Select   +/-/PU/PD: Value   F10:Save  Esc: Exit  F1:General Help
F5:Previous Value   F6:Fail-Safe Defaults    F7:Optimized Default
```

(Figure13)

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:

Phoenix-Award BIOS CMOS Setup Utility	
On Chip IDE Device	

		Item Help
IDE HDD Block Mode	[Enabled]	Menu Level ►
On-Chip Primary PCI IDE	[Enabled]	If your IDE hard drive suppers block mode select Enabled for automatic detection of the optimal number of lock read/writes per sector the drive can support
IDE Primary Master PIO	[Auto]	
IDE Primary Slave PIO	[Auto]	
IDE Primary Master UDMA	[Auto]	
IDE Primary Slave UDMA	[Auto]	
On-Chip Secondary PCI IDE	[Enabled]	
IDE Secondary Master PIO	[Auto]	
IDE Secondary Slave PIO	[Auto]	
IDE Secondary Master UDMA	[Auto]	
IDE Secondary Slave UDMA	[Auto]	
*** On-Chip Serial ATA Setting***		
SATA Mode	[IDE]	
On-Chip Serial ATA	[SATA Only]	
x SATA PORT Speed Settings	Disable	
x PATA IDE Mode	Secondary	
x SATA Port	PO, P2 is Primary	

↑↓←→ : Move Enter: Select +/-/PU/PD: Value F10:Save Esc: Exit F1:General Help
F5:Previous Value   F6:Fail-Safe Defaults   F7:Optimized Default

(Figure14)

SATA Mode

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

➢On board Device

<table>
<tr><td colspan="3">Phoenix-Award BIOS CMOS Setup Utility
Onboard   Device</td></tr>
<tr><td>USB Controller</td><td>[Enabled]</td><td>Item Help</td></tr>
<tr><td>USB 2.0 Controller</td><td>[Enabled]</td><td rowspan="3">Menu Level ▶</td></tr>
<tr><td>USB Keyboard Support</td><td>[Disabled]</td></tr>
<tr><td>Azalia/AC97 Audio Select</td><td>[Auto]</td></tr>
<tr><td colspan="3">↑↓←→ : Move Enter: Select +/-/PU/PD: Value F10:Save Esc: Exit F1:General Help F5:Previous Value F6:Fail-Safe Defaults F7:Optimized Default</td></tr>
</table>

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

Phoenix-Award BIOS CMOS Setup Utility		
Super IO Device		
Onboard FDC Controller	[Enabled]	Item Help
Onboard Serial Port 1	[3F8/IRQ4]	Menu Level ►
Onboard Serial Port 2	[2F8/IRQ3]	
UART Mode Select	[Normal]	
x RxD , TxD Active	Hi, Lo	
x IR Transmission Delay	Enabled	
x UR2 Duplex Mode	Half	
Onboard Parallel Port	[378/IRQ7]	
Parallel Port Mode	[SPP]	
x EPP Mode Select	EPP1.7	
x ECP Mode Use DMA	3	
PWRON After PWR-Fail	[Off]	
↑↓←→ : Move Enter: Select +/-/PU/PD: Value F10:Save Esc: Exit		
F1:General Help F5:Previous Value F6:Fail-Safe Defaults F7:Optimized Default		

Onboard FDC Controller
The choice: Enabled **(default)**, Disabled.

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:

```
          Phoenix-Award BIOS CMOS Setup Utility
                    Super IO  Device
    Onboard  Serial Port 1      [3F8/IRQ4]    Item Help
    Onboard  Serial Port 2      [2F8/IRQ3]
    UART   Mode Select          [IrDA]        Menu Level
     RxD  ,  TxD  Active        [Hi, Lo]      ►
     IR Transmission Delay      [Enabled]
     UR2  Duplex  Mode          [Half]
     Onboard  Parallel  Port    [378/IRQ7]
     Parallel  Port Mode        [SPP]
  x  EPP Mode Select            EPP1.7
  x  ECP Mode  Use DMA          3
     PWRON  After  PWR-Fail     [Off]
↑↓←→ : Move   Enter: Select   +/-/PU/PD: Value   F10:Save   Esc: Exit
F1:General Help F5:Previous Value  F6:Fail-Safe Defaults   F7:Optimized Default
```

RxD, TxD Active

The choice:

```
  UART Mode Select

  Hi, Hi    ……[    ]
  Hi, Lo    ……[    ]
  Lo, Hi    …..[    ]
  Lo, Lo     …..[    ]

  ↑↓: Move Enter: Accept ESC:
```

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

If Parallel Port Mode Select is [SPP] and [Normal] will show:

```
            Phoenix-Award BIOS CMOS Setup Utility
                     Super IO  Device
   Onboard  Serial Port 1      [3F8/IRQ4]     Item Help
   Onboard  Serial Port 2      [2F8/IRQ3]
   UART   Mode Select          [IrDA]         Menu Level ►
   RxD  ,   TxD  Active         [Hi, Lo]
    IR Transmission Delay       [Enabled]
    UR2  Duplex  Mode           [Half]
   Onboard  Parallel  Port     [378/IRQ7]
   Parallel  Port Mode         [SPP]
 x  EPP Mode Select            EPP1.7
 x  ECP Mode  Use DMA          3
   PWRON  After  PWR-Fail      [Off]
 ↑↓←→ : Move   Enter: Select   +/-/PU/PD: Value   F10:Save  Esc: Exit
 F1:General Help F5:Previous Value  F6:Fail-Safe Defaults   F7:Optimized Default
```

If Parallel Port Mode Select is [EPP] will show:

Phoenix-Award BIOS CMOS Setup Utility		
Super IO Device		
Onboard Serial Port 1	[3F8/IRQ4]	Item Help
Onboard Serial Port 2	[2F8/IRQ3]	Menu Level ►
UART Mode Select	[IrDA]	
RxD , TxD Active	[Hi, Lo]	
IR Transmission Delay	[Enabled]	
UR2 Duplex Mode	[Half]	
Onboard Parallel Port	[378/IRQ7]	
Parallel Port Mode	[EPP]	
EPP Mode Select	[1.7]	
x ECP Mode Use DMA	3	
PWRON After PWR-Fail	[Off]	
↑ ↓ ← → : Move Enter: Select +/-/PU/PD: Value F10:Save Esc: Exit		
F1:General Help F5:Previous Value F6:Fail-Safe Defaults F7:Optimized Default		

EPP Mode Select

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

If Parallel Port Mode Select is [ECP] will show:

Phoenix-Award BIOS CMOS Setup Utility		
Super IO Device		
Onboard Serial Port 1	[3F8/IRQ4]	Item Help
Onboard Serial Port 2	[2F8/IRQ3]	Menu Level ▶
UART Mode Select	[IrDA]	
RxD , TxD Active	[Hi, Lo]	
IR Transmission Delay	[Enabled]	
UR2 Duplex Mode	[Half]	
Onboard Parallel Port	[378/IRQ7]	
Parallel Port Mode	[ECP]	
x EPP Mode Select	1.7	
ECP Mode Use DMA	[3]	
PWRON After PWR-Fail	[Off]	
↑↓←→ : Move Enter: Select +/-/PU/PD: Value F10:Save Esc: Exit F1:General Help F5:Previous Value F6:Fail-Safe Defaults F7:Optimized Default		

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)**.

If Parallel Port Mode Select is [ECP+EPP] will show:

```
            Phoenix-Award BIOS CMOS Setup Utility
                       Super IO  Device
    Onboard  Serial Port 1         [3F8/IRQ4]     Item Help
    Onboard  Serial Port 2         [2F8/IRQ3]     Menu Level ▶
    UART   Mode Select             [IrDA]
     RxD ,  TxD  Active            [Hi, Lo]
     IR Transmission Delay         [Enabled]
     UR2  Duplex  Mode             [Half]
    Onboard  Parallel  Port        [378/IRQ7]
    Parallel  Port Mode            [ECP+EPP]
     EPP Mode Select               [1.7]
     ECP Mode  Use DMA             [3]
    PWRON  After  PWR-Fail         [Off]
↑ ↓ ← →  : Move   Enter: Select  +/-/PU/PD: Value  F10:Save  Esc: Exit  F1:General Help
F5:Previous Value  F6:Fail-Safe Defaults   F7:Optimized Default
```

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)**, Enable

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]	Menu Level ►
ACPI Function	[Enabled]	
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	[Enabled]	Item Help
		Menu Level ▶

↑↓←→ : 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   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], can choice Date Alarm and Time Alarm:

Date (of Month) Alarm

Every day, 1~31

```
Date(of Moth)Alarm

Min=   0
Max=   31

Key in a DEC number:

↑↓: Move Enter: Accept  ESC:Abort
```

Time (hh: mm: ss) Alarm

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

```
Time (hh: mm: ss) Alarm

Min=   0
Max=   23

Key in a DEC number:

↑↓: Move Enter: Accept  ESC:Abort
```

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.

Phoenix-Award BIOS CMOS Setup Utility PnP/PCI Configuration		
Init Display First	[PCI Slot]	Item Help
Reset Configuration Data	[Disabled]	Menu Level ►
Resources Controlled By	[Auto(ESCD)]	
x IRQ Resources	Press Enter	
PCI/VGA Palette Snoop	[Disabled]	
INT Pin 1 Assignment	[Auto]	
INT Pin 2 Assignment	[Auto]	
INT Pin 3Assignment	[Auto]	
INT Pin 4 Assignment	[Auto]	
INT Pin 5 Assignment	[Auto]	
INT Pin 6 Assignment	[Auto]	
INT Pin 7 Assignment	[Auto]	
INT Pin 8 Assignment	[Auto]	
PCI Express relative items		
Maximum Payload Size	[4096]	
↑↓←→ :Move Enter: Select +/-/PU/PD: Value F10:Save Esc: Exit F1:General Help F5:Previous Value F6:Fail-Safe Defaults F7:Optimized Default		

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], can choice IRQ Resource:

```
                 Phoenix-Award BIOS CMOS Setup Utility
                        PnP/PCI Configuration

    Init Display First            [PCI  Slot]        Item Help
    Reset  Configuration  Data    [Disabled]
                                                     Menu Level  ▶
    Resources  Controlled  By     [Manual]
  ▶IRQ  Resources                 [Press Enter]

    PCI/VGA Palette  Snoop        [Disabled]
    INT Pin 1 Assignment          [Auto]
    INT Pin 2 Assignment          [Auto]
    INT Pin 3Assignment           [Auto]
    INT Pin 4 Assignment          [Auto]
    INT Pin 5 Assignment          [Auto]
    INT Pin 6 Assignment          [Auto]
    INT Pin 7 Assignment          [Auto]
    INT Pin 8 Assignment          [Auto]

    **PCI Express relative items**
    Maximum Payload Size      [4096]

↑↓←→ : Move  Enter: Select  +/-/PU/PD: Value  F10:Save  Esc: Exit  F1:General Help
        F5:Previous Value   F6:Fail-Safe Defaults     F7:Optimized Default
```

➢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.

Phoenix-Award BIOS CMOS Setup Utility	
IRQ Resource	
IRQ-3 assigned to [PCI Device]	Item Help
IRQ-4 assigned to [PCI Device]	Menu Level ►
IRQ-5 assigned to [PCI Device]	Legacy ISA for devices
IRQ-7 assigned to [PCI Device]	compliant with the original
IRQ-9 assigned to [PCI Device]	PC AT bus specification,
IRQ-10 assigned to [PCI Device]	PCI/ISA PnP for devices
IRQ-11 assigned to [PCI Device]	compliant with the Plug
IRQ-12 assigned to [PCI Device]	and Play standard whether
IRQ-14 assigned to [PCI Device]	designed for PCI or ISA
IRQ-15 assigned to [PCI Device]	bus architecture
↑↓←→ : Move Enter: Select +/-/PU/PD: Value F10:Save Esc: Exit F1:General Help	
F5:Previous Value F6:Fail-Safe Defaults F7:Optimized Default	

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

IRQ-3 assigned to
PCI Device   ….. [█]
Reserved   ….. [   ]
↑↓: Move Enter: Accept

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.

Phoenix-Award BIOS CMOS Setup Utility		
PC Health Status		
CPU Warning Temperature	[Disabled]	Item Help
Current System Temp.	40°C / 107°F	Menu Level ▶
Current CPU Temperature:	40°C / 100°F	
CPU FAN Speed	0 RPM	
CHASSIS Fan Speed	7670 RPM	
Vcore	1.20V	
+1.5V	1.52V	
+3.3V	3.47V	
+5V	5.16V	
+12V	12.22V	
-12V	-12.44V	
VBAT(V)	3.32V	
5VSB(V)	5.04V	
Shutdown Temperature	[Disabled]	
↑↓←→ : Move Enter: Select +/-/PU/PD: Value F10:Save Esc: Exit F1:General Help F5:Previous Value F6:Fail-Safe Defaults F7:Optimized Default		

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, 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

Phoenix-Award BIOS CMOS Setup Utility Frequency/Voltage Control	
Spread Spectrum [Disabled]	Item Help Menu Level ►
↑↓←→ : Move Enter: Select +/-/PU/PD: Value F10:Save Esc: Exit F1:General Help F5:Previous Value F6:Fail-Safe Defaults F7:Optimized Default	
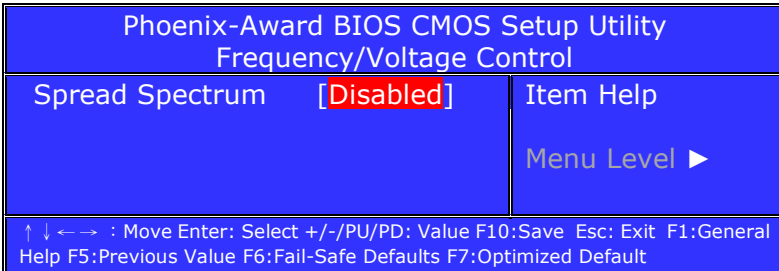
Spread Spectrum

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:

Phoenix-Award BIOS CMOS Setup Utility	
►Stand CMOS Features ►Advanced BIOS Features ►Advance Chipset Features ►Integrated Peripherals ►Power M ►PnP/PCI ►PC Health Status	►Frequency/Voltage Control Load Fail-Safe Default Load Optimized Default Set Supervisor Password rd p Exit without Saving

Load Fial-Safe Defaults (Y/N)? N

| Esc :Quit   ↑↓←→ : Select Item   F10:Save & Exit Setup | |
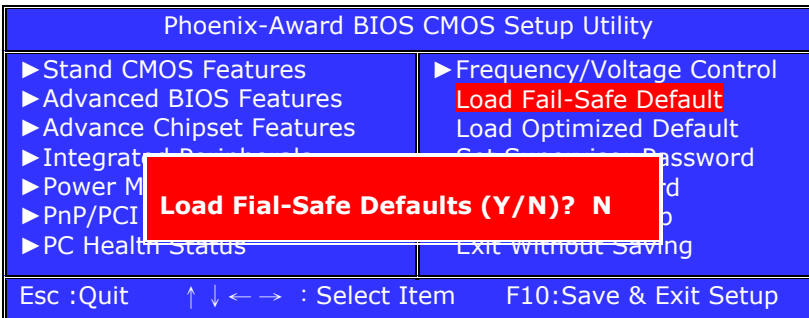
Pressing '**Y**' loads the BIOS default values for the most stable, minimal-performance system operations.

3.11 Load Optimized Defaults

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

Phoenix-Award BIOS CMOS Setup Utility	
►Stand CMOS Features	►Frequency/Voltage Control
►Advanced BIOS Features	Load Fail-Safe Default
►Advance Chipset Features	Load Optimized Default
►Integrated Peripherals	Set Supervisor Password
►Power Ma **Load Optimized Defaults (Y/N)? N** word	
►PnP/PCI C	etup
►PC Health Status	Exit Without Saving
Esc :Quit ↑ ↓ ← → : Select Item F10:Save & Exit Setup	
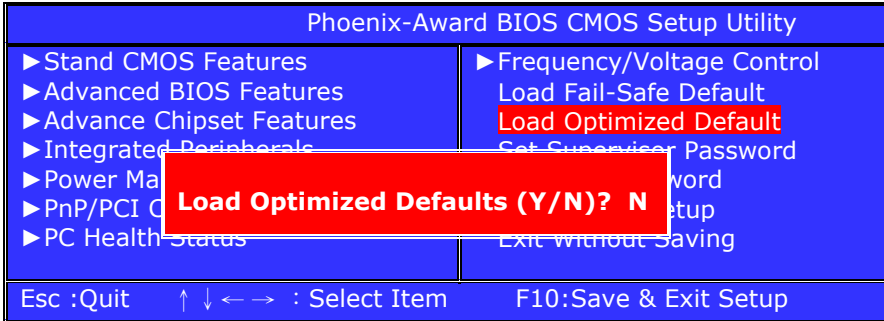
Pressing '**Y**' loads the default values that are factory settings for optimal performance system operations.

3.12 Set Supervisor/User Password

You can set either supervisor or user password, or both of them. 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.

Phoenix-Award BIOS CMOS Setup Utility	
►Stand CMOS Features	►Frequency/Voltage Control
►Advanced BIOS Features	Load Fail-Safe Default
►Advance Chipset Features	Load Optimized Default
►Integrated Peripherals	Set Supervisor Password
►Power Management	Set User Password
►PnP/PCI Con **Enter Password:**	Exit Setup
►PC Health Status	Exit Without Saving
Esc :Quit ↑ ↓ ← → : Select Item F10:Save & Exit Setup	

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.

Phoenix-Award BIOS CMOS Setup Utility	
►Stand CMOS Features	►Frequency/Voltage Control
►Advanced BIOS Features	Load Fail-Safe Default
►Advance Chipset Features	Load Optimized Default
►Integrated Peripherals	Set Supervisor Password
►Power Ma **PASSWORD DISABLED!!!** sword	
►PnP/PCI **Press any key to continue...** Setup	
►PC Health Status	Exit Without Saving
Esc :Quit ↑ ↓ ← → : Select Item F10:Save & Exit Setup	
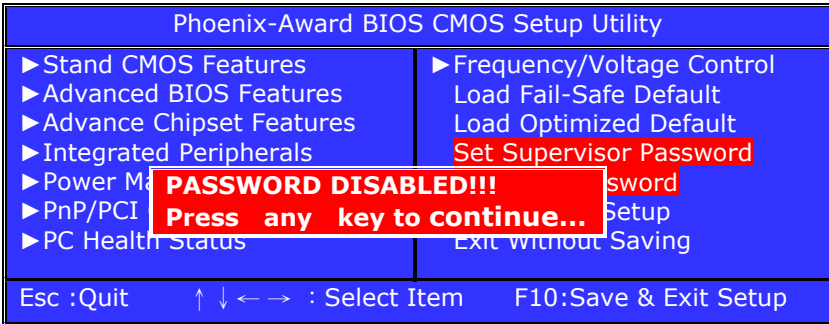
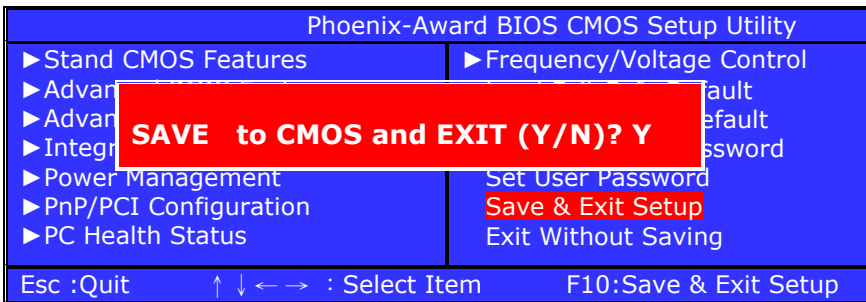**PASSWORD DISABLED:**

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:

Phoenix-Award BIOS CMOS Setup Utility	
►Stand CMOS Features	►Frequency/Voltage Control
►Advan	ault
►Advan **SAVE to CMOS and EXIT (Y/N)? Y**	efault
►Integr	ssword
►Power Management	Set User Password
►PnP/PCI Configuration	Save & Exit Setup
►PC Health Status	Exit Without Saving
Esc :Quit ↑↓←→ : Select Item F10:Save & Exit Setup	

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:

Phoenix-Award BIOS CMOS Setup Utility	
►Stand CMOS Features	►Frequency/Voltage Control
►Advanced BIOS Features	Load Fail-Safe Default
►Advance	Default
►Integrat **Quit Without Saving (Y/N)? N**	assword
►Power M	rd
►PnP/PCI Configuration	Save & Exit Setup
►PC Health Status	Exit Without Saving
Esc :Quit ↑ ↓ ← → : Select Item F10:Save & Exit Setup	
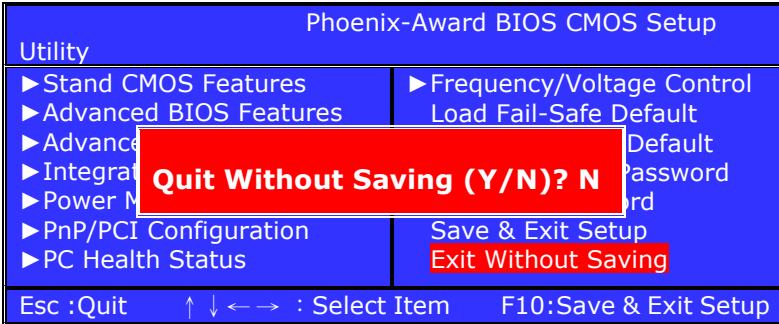
This allows you to exit Setup without storing in CMOS any change. The previous selections remain in effect. This exits the Setup utility and restarts your computer.

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 is a total of 1K port address space 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 Int 0Ah
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.