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## **Chapter 3**

# Award BIOS

This chapter tells how to configure the system parameters. You may update your BIOS via AWARD Flash Utility.

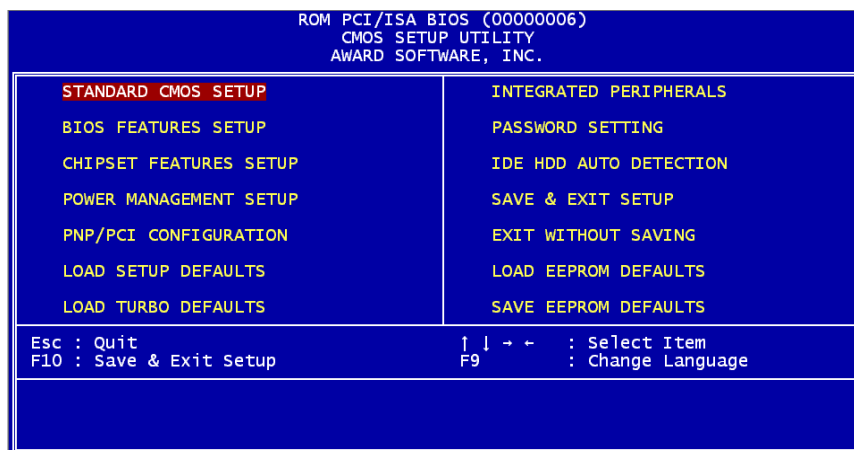


**Important:** *Because the BIOS code is the most often changed part of the mainboard design, the BIOS information contained in this chapter (especially the Chipset Setup parameters) may be a little different compared to the actual BIOS that came with your mainboard.*

# AWARD BIOS

## 3.1 Entering the Award BIOS Setup Menu

The BIOS setup utility is a segment of codes/routines residing in the BIOS Flash ROM. This routine allows you to configure the system parameters and save the configuration into the 128 byte CMOS area, (normally in the RTC chip or directly in the main chipset). To enter the BIOS Setup, press **[DEL]** during POST (Power-On Self Test). The BIOS Setup Main Menu appears as follows.



**Tip:** Choose "Load Setup Defaults" for recommended optimal performance. Choose "Load Turbo Defaults" for best performance with light system loading. Refer to section 3.7.

The section at the bottom of the screen tells how to control the screen. Use the arrow keys to move between items, **[SHIFT] [F2]** to color scheme of the display, **[ESC]** to exit, and **[F10]** to save the changes before exit. Another section at the bottom of the screen displays a brief description of the highlighted item.

After selecting an item, press **[ENTER]** to select or enter a submenu.

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## 3.2 Standard CMOS Setup

The "Standard CMOS Setup" sets the basic system parameters such as the date, time, and the hard disk type. Use the arrow keys to highlight an item and **[PGUP]** or **[PGDN]** to select the value for each item.

```
ROM PCI/ISA BIOS (00000006)
STANDARD CMOS SETUP
AWARD SOFTWARE, INC.

Date (mm:dd:yy) : Thu, Jan 8 1998
Time (hh:mm:ss) : 18 : 38 : 34

HARD DISKS      TYPE      SIZE  CYLS HEAD PRECOMP LANDZ SECTOR  MODE
-----
Primary Master  : None      0      0  0      0      0      0  -----
Primary Slave   : None      0      0  0      0      0      0  -----
Secondary Master : None      0      0  0      0      0      0  -----
Secondary Slave  : None      0      0  0      0      0      0  -----

Drive A : None
Drive B : None

Video : EGA/VGA
Halt On : All Errors

Base Memory: 0K
Extended Memory: 0K
Other Memory: 512K
-----
Total Memory: 512K

ESC : Quit          ↑ ↓ → ← : Select Item      PU/PD/+/- : Modify
F1  : Help          (Shift)F2 : Change Color
```

### Standard CMOS → Date

To set the date, highlight the Date parameter. Press **[PGUP]** or **[PGDN]** to set the current date. The date format is month, date, and year.

### Standard CMOS → Time

To set the time, highlight the Time parameter. Press **[PGUP]** or **[PGDN]** to set the current time in hour, minute, and second format. The time is based on the 24 hour military clock.

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**Standard CMOS → Primary Master → Type**

**Standard CMOS → Primary Slave → Type**

**Standard CMOS → Secondary Master → Type**

**Standard CMOS → Secondary Slave → Type**

Type
Auto
User
None
1
2
...
45

This item lets you select the IDE hard disk parameters that your system supports. These parameters are Size, Number of Cylinder, Number of Head, Start Cylinder for Pre-compensation, Cylinder number of Head Landing Zone and Number of Sector per Track. The default setting is **Auto**, which enables BIOS to automatically detect the parameters of installed HDD at POST (Power-On Self Test). If you prefer to enter HDD parameters manually, select User. Select None if no HDD is connected to the system.

The IDE CDROM is always automatically detected.



***Tip:** For an IDE hard disk, we recommend that you use the "IDE HDD Auto Detection" to enter the drive specifications automatically. See the section "IDE HDD Auto Detection".*

**Standard CMOS → Primary Master → Mode**

**Standard CMOS → Primary Slave → Mode**

**Standard CMOS → Secondary Master → Mode**

**Standard CMOS → Secondary Slave → Mode**

Mode
Auto
Normal
LBA
Large

The enhanced IDE feature allows the system to use a hard disk with a capacity of more than 528MB. This is made possible through the Logical Block Address (LBA) mode translation. The LBA is now considered as a standard feature of current IDE hard disk on the market because of its capability to support capacity larger than 528MB. Note that if HDD is formatted with LBA On, it will not be able to boot with LBA Off.

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### Standard CMOS → Drive A

### Standard CMOS → Drive B

#### Drive A

None  
360KB 5.25"  
1.2MB 5.25"  
720KB 3.5"  
1.44MB 3.5"  
2.88MB 3.5"

These items select floppy drive type. The available settings and types supported by the mainboard are listed on the left.

### Standard CMOS → Video

#### Video

EGA/VGA  
CGA40  
CGA80  
Mono

This item specifies the type of video card in use. The default setting is VGA/EGA. Since current PCs use VGA only, this function is almost useless and may be disregarded in the future.

### Standard CMOS → Halt On

#### Halt On

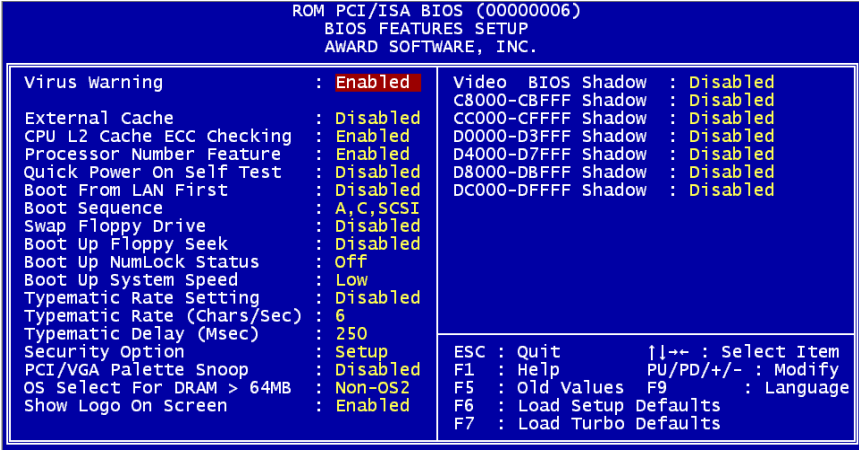
No Errors  
All Errors  
All, But Keyboard  
All, But Diskette  
All, But Disk/Key

This parameter enables you to control the system stops in case of Power-On Self Test (POST) error.

# AWARD BIOS

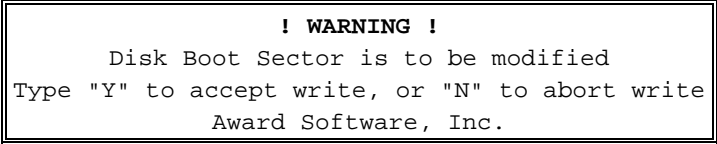
## 3.3 BIOS Features Setup

This screen appears when you select the option "BIOS Features Setup" from the main menu.



### BIOS Features → Virus Warning

<b>Virus Warning</b>	Set this parameter to Enabled to activate the warning message. This feature protects the boot sector and partition table of your hard disk from virus intrusion. Any attempt during boot up to write to the boot sector of the hard disk drive stops the system and the following warning message appears on the screen. Run an anti-virus program to locate the problem.
Enabled	
Disabled	



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### BIOS Features → External Cache

<b><u>External Cache</u></b>
------------------------------

Enabled
Disabled

Enabling this parameter activates the secondary cache (currently, PBSRAM cache). Disabling the parameter slows down the system. Therefore, we recommend that you leave it enabled unless you are troubleshooting a problem.

### BIOS Features → CPU L2 Cache ECC Checking

<b><u>CPU L2 Cache ECC Checking</u></b>
---

Enabled
Disabled

This item lets you enable or disable L2 Cache ECC checking.

### BIOS Features → Processor Number Feature

<b><u>Processor Number Feature</u></b>
--

Enabled
Disabled

This item is used to enable or disable Pentium III CPU Number Feature.

### BIOS Features → Quick Power On Self Test

<b><u>Quick Power on Self test</u></b>
--

Enabled
Disabled

This parameter speeds up POST by skipping some items that are normally checked.

### BIOS Features → Boot From LAN First

<b><u>Boot From LAN First</u></b>
---------------------------------------

Enabled
Disabled

This item is used to boot the system from a network server.

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## BIOS Features → Boot Sequence

<b><u>Boot Sequence</u></b>	This parameter allows you to specify the system boot up search sequence. The hard disk ID are listed below:
A,C,SCSI	C: Primary master
C,A,SCSI	D: Primary slave
C,CDROM,A	E: Secondary master
CDROM,A,C	F: Secondary slave
CDROM,C,A	LS: LS120
D,A,SCSI	Zip: IOMEGA ZIP Drive
E,A,SCSI	
F,A,SCSI	
SCSI,A,C	
SCSI,C,A	
C only	
LS/ZIP,C	

## BIOS Features → Swap Floppy Drive

<b><u>Swap Floppy Drive</u></b>	This item allows you to swap floppy drives. For example, if you have two floppy drives (A and B), you can assign the first drive as drive B and the second drive as drive A or vice-versa.
Enabled	
Disabled	

## BIOS Features → Boot Up Floppy Seek

<b><u>Boot Up Floppy Seek</u></b>	Setting this item to force the system to seek the status in detail and detects any errors in both floppy drives during POST.
Enabled	
Disabled	

## BIOS Features → Boot Up NumLock Status

<b><u>Boot Up NumLock Status</u></b>	Setting this parameter to On enables the numeric function of the numeric keypad. Set this parameter to Off to disregard the function. Disabling the numeric function allows you to use the numeric keypad for cursor control.
On	
Off	



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### BIOS Features → Boot Up System Speed

<b><u>Boot Up System Speed</u></b>
--

High
Low

Select High or Low system speed after boot.

### BIOS Features → Typematic Rate Setting

<b><u>Typematic Rate Setting</u></b>
--

Enabled
Disabled

Set this parameter to Enable/Disable the keyboard repeat function. When enabled, continually holding down a key on the keyboard will generate repeatedly keystrokes.

### BIOS Features → Typematic Rate (Chars/Sec)

<b><u>Typematic Rate</u></b>
------------------------------

6
8
10
12
15
20
24
30

This item allows you to control the speed of repeated keystrokes. The default is 30 characters/sec.

### BIOS Features → Typematic Delay (Msec)

<b><u>Typematic Delay</u></b>
-------------------------------

250
500
750
1000

This parameter allows you to control the delay time between the first and the second keystroke (where the repeated keystrokes begin). The typematic delay settings are 250, 500, 750, and 1000 msec.

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## BIOS Features → Security Option

<b><u>Security Option</u></b> Setup System	<p>The <b>System</b> option limits access to both the System boot and BIOS setup. A prompt asking you to enter your password appears on the screen every time you boot the system.</p> <p>The <b>Setup</b> option limits access only to BIOS setup.</p> <p>To disable the security option, select Password Setting from the main menu, don't type anything and just press &lt;Enter&gt;.</p>
--	--

## BIOS Features → PCI/VGA Palette Snoop

<b><u>PCI/VGA Palette Snoop</u></b> Enabled Disabled	<p>Enabling this item informs the PCI VGA card to keep silent (and to prevent conflict) when palette register is updated (i.e., accepts data without responding any communication signals). This is useful only when two display cards use the same palette address and plugged in the PCI bus at the same time (such as MPEQ or Video capture). In such case, PCI VGA is silent while MPEQ/Video capture is set to function normally.</p>
--	--

## BIOS Features → OS Select for DRAM > 64MB

<b><u>OS Select for DRAM &gt; 64MB</u></b> OS/2 Non-OS/2	<p>Set to OS/2 if your system is utilizing an OS/2 operating system and has a memory size of more than 64 MB.</p>
--	---

## BIOS Features → Show Logo On Screen

<b><u>Show Logo On Screen</u></b> Enabled Disabled	<p>This item lets you show or hide AOpen logo on the POST screen.</p>
--	---

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### BIOS Features → Video BIOS Shadow

#### Video BIOS

##### Shadow

Enabled

Disabled

VGA BIOS Shadowing means to copy video display card BIOS into the DRAM area. This enhances system performance because DRAM access time is faster than ROM.

### BIOS Features → C800-CBFF Shadow

### BIOS Features → CC00-CFFF Shadow

### BIOS Features → D000-D3FF Shadow

### BIOS Features → D400-D7FF Shadow

### BIOS Features → D800-DBFF Shadow

### BIOS Features → DC00-DFFF Shadow

#### C8000-CBFFF

##### Shadow

Enabled

Disabled

These six items are for shadowing ROM code on other expansion cards. Before you set these parameters, you need to know the specific addresses of that ROM code. If you do not know this information, enable all the ROM shadow settings.



**Note:** The F000 and E000 segments are always shadowed because BIOS code occupies these areas.

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## 3.4 Chipset Features Setup

The "Chipset Features Setup" includes settings for the chipset dependent features. These features are related to system performance.

ROM PCI/ISA BIOS (00000006) CHIPSET FEATURES SETUP AWARD SOFTWARE, INC.	
SDRAM CAS Latency : 2 T	***** Jumperless Setup *****
SDRAM RAS# to CAS# Delay : 2 T	Manufacture Freq Default :
SDRAM RAS# Precharge : 2 T	Clock Spread Spectrum : Off
SDRAM Precharge Control : Disabled	CPU Speed Detected : 0 MHz
DRAM ECC Function : Disabled	CPU Clock Frequency : 68.5 MHz
System BIOS Cacheable : Disabled	CPU Clock Ratio : 2.0
Video BIOS Cacheable : Disabled	CPU Speed Setting : 137.0 MHz
Video RAM Cacheable : Disabled	Y2K CMOS Update : Disabled
8 Bit I/O Recovery Time : NA	
16 Bit I/O Recovery Time : NA	
Memory Hole At 15M-16M : Disabled	
Passive Release : Disabled	
Delayed Transaction : Disabled	
AGP Aperture Size (MB) : 4	
Pentium II Micro Codes : Disabled	
ESC : Quit                      +- : Select Item	
F1 : Help                    PU/PD/+/- : Modify	
F5 : Old Values            F9 : Language	
F6 : Load Setup Defaults	
F7 : Load Turbo Defaults	



**Caution:** Make sure you fully understand the items contained in this menu before you try to change anything. You may change the parameter settings to improve system performance. However, it may cause system unstable if the setting are not correct for your system configuration.

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### Chipset Features → SDRAMCAS Latency

#### SDRAM CAS Latency

2T  
3T

This SDRAM timing is calculated by clocks. Adjust its value affects SDRAM performance, the default setting is 2 clocks. If your system has unstable problem, change 2T to 3T.

### Chipset Features → SDRAM RAS# to CAS# Delay

#### SDRAM RAS# to CAS# Delay

2T  
3T  
Auto

These are timing of SDRAM CAS Latency and RAS to CAS Delay, calculated by clocks. They are important parameters affects SDRAM performance, default is **Auto**. If you install DIMMs with SPD and set this item to Auto, BIOS will automatically detect your DIMMs and then set to a appropriate timing; If you use DIMMs without SPD and set this item to Auto, BIOS will set it to 3/3. To make sure all of these settings in BIOS are correct, it is recommended to use DIMMs with SPD.

### Chipset Features → SDRAM RAS# Precharge

#### SDRAM RAS# Precharge

2T  
3T  
Auto

The RAS Precharge means the timing to inactive RAS and the timing for DRAM to do precharge before next RAS can be issued. RAS is the address latch control signal of DRAM row address. The default setting is **Auto**.

### Chipset Features → SDRAM Precharge Control

#### SDRAM Precharge Control

Enabled  
Disabled

Enable : SDRAM Precharge only the bank targeted by the page miss cycle.  
Disable: Issue SDRAM precharge all command.

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## Chipset Features → DRAM ECC Function

### DRAM ECC

#### Function

Auto

Disabled

This lets you enable or disable DRAM ECC function. The ECC algorithm has the ability to detect double bit error and automatically correct single bit error.

## Chipset Features → System BIOS Cacheable

### System BIOS

#### Cacheable

Enabled

Disabled

Setting it to Enabled allows the system BIOS data at F0000h-FFFFFh (in main memory, 64K in all) to be cacheable for a better system performance.

However, if any program writes to this memory range, a system error may result.

## Chipset Features → Video BIOS Cacheable

### Video BIOS

#### Cacheable

Enabled

Disabled

Allows the video BIOS to be cached to allow faster video performance.

## Chipset Features → Video RAM Cacheable

### Video RAM

#### Cacheable

Enabled

Disabled

This item lets you cache Video RAM A000 and B000.

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### Chipset Features → 8 Bit I/O Recovery Time

<u>8 Bit I/O Recovery Time</u>
1
2
3
4
5
6
7
8
NA

For some old I/O chips, after the execution of an I/O command, the device requires a certain amount of time (recovery time) before the execution of the next I/O command. Because of new generation CPU and mainboard chipset, the assertion of I/O command is faster, and sometimes shorter than specified I/O recovery time of old I/O devices. This item lets you specify the delay of 8-bit I/O command by count of ISA bus clock. If you find any unstable 8-bit I/O card, you may try to extend the I/O recovery time via this item. The BIOS default value is **4 ISA clock**. If set to NA, the chipset will insert 3.5 system clocks.

### Chipset Features → 16 Bit I/O Recovery Time

<u>16 Bit I/O Recovery Time</u>
1
2
3
4
NA

The same as 16-bit I/O recovery time. This item lets you specify the recovery time for the execution of 16-bit I/O commands by count of ISA bus clock. If you find any of the installed 16-bit I/O cards unstable, try extending the I/O recovery time via this item. The BIOS default value is **1 ISA clocks**. If set to NA, the chipset will automatically insert 3.5 system clocks.

### Chipset Features → Memory Hole At 15M-16M

<u>Memory Hole At 15M-16M</u>
Enabled
Disabled

This option lets you reserve system memory area for special ISA cards. The chipset accesses code/data of these areas from the ISA bus directly. Normally, these areas are reserved for memory mapped I/O card.

### Chipset Features → Passive Release

<u>Passive Release</u>
Enabled
Disabled

This item lets you control the Passive Release function of the PIIX4E chipset (Intel PCI to ISA bridge). This function is used to meet latency of ISA bus master. Try to enable or disable it, if you have ISA card compatibility problem.

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### Chipset Features → Delayed Transaction

<b><u>Delayed Transaction</u></b>	This item lets you control the Delayed Transaction function of the PIIX4E chipset (Intel PCI to ISA bridge). This function is used to meet latency of PCI cycles to or from ISA bus. Try to enable or disable it, if you have ISA card compatibility problem.
Enabled	
Disabled	

### Chipset Features → AGP Aperture Size (MB)

<b><u>AGP Aperture Size (MB)</u></b>	This item lets you determine the effective size of the AGP Graphic Aperture.
4	
8	
16	
32	
64	
128	
256	

### Chipset Features → Pentium II Micro Codes

<b><u>Pentium II Micro Codes</u></b>	The micro codes are used to fix bugs of Pentium II CPU, we strongly recommend to enable this item for system reliability reason. However, this microcode may slightly reduce CPU performance. We provide this option for your convenience if you like to test it.
Enabled	
Disabled	

### Chipset Features → Manufacture Frequency Default

<b><u>Manufacture Frequency Default</u></b>	This item only reminds you of the actual CPU frequency while clearing CMOS or pressing "Home" key. The default setting is 233 Mhz, you can modify it to match the actual CPU frequency by using the utility - flash.exe.
Depends on the CPU type	



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## Chipset Features → Clock Spread Spectrum

<b><u>Clock Spread Spectrum</u></b>
On
Off

This item is used to set clock spread spectrum for EMI testing. Normally, you don't need to change the default setting.

## Chipset Features → Clock Speed Detected

<b><u>Clock Speed Detected</u></b>

This column shows you present CPU Speed.

## Chipset Features → CPU Clock Frequency

<b><u>CPU Clock Frequency</u></b>
66.8 Mhz
68.5 Mhz
75.0 Mhz
83.3 Mhz
100 Mhz
103 Mhz
112 Mhz
133.3 Mhz

This item lets you set external clock (bus clock). The correct setting may vary because of different CPU products, refer to your CPU specification for more details.

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### Chipset Features → CPU Clock Ratio

<u>CPU Clock Ratio</u>	Intel Pentium II is designed to have different Internal (Core) and External (Bus) frequency. This item lets you select the ratio of Core/Bus frequency. The default value is 3.5x.
1.5	
2.0	
2.5	
3.0	
3.5	
4.0	
4.5	
5.0	
5.5	
6.0	
6.5	
7.0	
7.5	
8.0	

### Chipset Features → CPU Speed Setting

<u>CPU Speed Setting</u>	The item is used to select the CPU clock speed.
FSB clock: 68.5, 66.8, 75, 83.3, 100,103,,112, and 133.3 MHz.	CPU Clock = FSB clock x Clock Ratio..
Clock Ratio: x2, x2.5, x 3, x 3.5, x 4, x 4.5, x 5, x 5.5, x 6, x 6.5, x 7, x 7.5, and x8	

### Chipset Features → Y2K CMOS Update

<u>Y2K CMOS Update</u>	This item is designed for some Y2K testing programs, for example, Check It 98. If you are using this kind of program to test your system and fails, enable this item and redo the test again.
Enabled	
Disabled	



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## 3.5 Power Management Setup

The Power Management Setup screen enables you to control the mainboard green features. See the following screen.

ROM PCI/ISA BIOS (00000006) POWER MANAGEMENT SETUP AWARD SOFTWARE, INC.		
ACPI function	: Enabled	AC PWR Loss Recovery : Enabled
Power Management	: Disabled	** Break Event From Suspend **
PM Control by APM	: No	IRQ 8 Break Suspend : Disabled
Video Off Method	: Blank Screen	** Reload Global Timer Events **
Video Off After	: NA	IRQ[3-7,9-15],NMI : Disabled
Doze Mode	: Disabled	Primary IDE 0 : Disabled
Standby Mode	: Disabled	Primary IDE 1 : Disabled
Suspend Mode	: Disabled	Secondary IDE 0 : Disabled
HDD Power Down	: Disabled	Secondary IDE 1 : Disabled
OV Wake On Modem	: Disabled	Floppy Disk : Disabled
Wake On Lan	: Disabled	Serial Port : Disabled
Suspend Mode Option	: PowerOn Suspend	Parallel Port : Disabled
Throttle Duty Cycle	: 12.5%	
VGA Active Monitor	: Disabled	
Soft-Off by PWR-BTTN	: Instant-Off	ESC : Quit           ↑↓→← : Select Item
Wake On RTC Timer	: By Date	F1 : Help            PU/PD/+/- : Modify
Date (of Month)	: 0	F5 : Old Values   F9 : Language
Time (hh:mm:ss)	: 0: 0: 0	F6 : Load Setup Defaults
		F7 : Load Turbo Defaults

### Power Management → ACPI function

ACPI function	
Enabled	If your OS is ACPI enabled you have to set this item to Enabled, or there may be unexpected errors.
Disabled	If your OS is APM mode, you can remain the Disabled setting.

## Power Management → Power Management

### Power Management

Max Saving  
Mix Saving  
User Define  
Disabled

This function allows you to set the default parameters of power-saving modes. Set to **Disable** to turn off power management function. Set to User Define to choose your own parameters.

Mode	Doze	Standby	Suspend	HDD Power Down
Min Saving	1 hour	1 hour	1 hour	15 min
Max Saving	1 min	1 min	1 min	1 min

## Power Management → PM Controlled by APM

### PM Controlled by APM

Yes  
No

If "Max Saving" is selected, you can turn on this item, transfer power management control to APM (Advanced Power Management) and enhance power saving function. For example, stop CPU internal clock.

## Power Management → Video Off Method

### Video Off Method

V/H SYNC + Blank  
DPMS  
Blank Screen

This determines the way that monitor is off. Blank Screen writes blanks to video buffer. V/H SYNC+Blank allows BIOS to control VSYNC and HSYNC signals. This function applies only for DPMS (Display Power Management Standard) monitor. The DPMS mode uses DPMS function provided by VGA card.

## Power Management → Video Off After

### Video Off After

N/A  
Doze  
Standby  
Suspend

To turn off video monitor at which power down mode.

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## Power Management → Doze Mode

<u>Doze Mode</u>
Disabled
1 Min
2 Min
4 Min
8 Min
12 Min
20 Min
30 Min
40 Min
1 Hour

This item lets you set the period of time after which the system enters into Doze mode. The system activity (or event) is detected by monitoring the IRQ signals or other events (such as I/O).

## Power Management → Standby Mode

<u>Standby Mode</u>
Disabled
1 Min
2 Min
4 Min
8 Min
12 Min
20 Min
30 Min
40 Min
1 Hour

This item lets you set the period of time after which the system enters into Standby mode. In this mode, the monitor power-saving feature activates. Any activity detected returns the system to full power. The system activity (or event) is detected by monitoring the IRQ signals or other events (such as I/O).

## Power Management → Suspend Mode

<u>Suspend Mode</u>
Disabled
1 Min
2 Min
4 Min
8 Min
12 Min
20 Min
30 Min
40 Min
1 Hour

This item lets you set the period of time after which the system enters into Suspend mode. The Suspend mode can be Power On Suspend or Suspend to Hard Drive, selected by "Suspend Mode Option".

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### Power Management → HDD Power Down

#### HDD Power Down

Disabled  
1 Min  
.....  
15 Min

This option lets you specify the IDE HDD idle time before the device enters the power down state. This item is independent from the power states previously described in this section (Standby and Suspend).

### Power Management → 0V Wake On Modem

#### 0V Wake On Modem

Enabled  
Disabled

This option lets you specify enable or disable Wake On Modem function.

### Power Management → Wake On LAN

#### Wake On LAN

Enabled  
Disabled

This option lets you specify enable or disable Wake On LAN function.

### Power Management → Suspend Mode Option

#### Suspend Modem Option

PowerOn Suspend  
Suspend to Disk

You can select suspend mode by this item. **Power On Suspend** is the traditional Green PC suspend mode, the CPU clock is stop, all other devices are shut off. But power must be kept On to detect activities from modem, keyboard/mouse and returns the system to full power. The system activities is detected by monitoring the IRQ signals or I/O. **Suspend to Hard Drive** saves system status, memory and screen image into hard disk, then the power can be totally Off. Next time, when power is turned On, the system goes back to your original work within just few seconds, which depending on your memory size. You need utility AOZVHDD to reserve disk space.

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### Power Management → Throttle Duty Cycle

<u>Throttle Duty Cycle</u>
12.5 %
25.0 %
37.5 %
50.0 %
62.5 %
75.0 %

Clock Throttling means at the Doze/Standby state, the CPU clock count in a given time (not the frequency) is reduced to the ratio specified in this parameter. Actually, the period per CPU clock is not changed. For example, a 66MHz CPU clock remains the same 30ns clock period when system goes into Doze/Suspend. The chipset generates the STPCLK (stop clock) signal periodically to prevent CPU for accepting clock from clock generator. For full power on, the CPU can receive 66M count in one second. If the Slow Clock Ratio is set to 50%, the CPU will only receive 33M clock count in one second. This will effectively reduce CPU speed as well as CPU power.

### Power Management → VGA Active Monitor

<u>VGA Active Monitor</u>
Enabled
Disabled

To enable or disable the detection of VGA activity for power down state transition.

### Power Management → Soft-Off by PWR-BTTN

<u>Soft-Off by PWR-BTTN</u>
Delay 4 sec.
Instant-Off

This is a specification of ACPI and supported by hardware. When **Delay 4 sec.** is selected, the soft power switch on the front panel can be used to control power On, Suspend and Off. If the switch is pressed less than 4 sec during power On, the system will go into Suspend mode. If the switch is pressed longer than 4 sec, the system will be turned Off. The default setting is **Instant-Off**, soft power switch is only used to control On and Off, there is no need to press 4 sec, and there is no Suspend.

### Power Management → Wake On RTC Timer

<u>Wake On RTC Timer</u>
Disabled
By Date
By Week

This option lets you enable or disable the RTC Wake Up function.



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### Power Management → Date (of Month)

<b><u>Date (of Month)</u></b>
0
1
.....
31

This item is displayed when you enable the Wake On RTC Timer option. Here you can specify what date you want to wake up the system. For Example, setting to 15 will wake up the system on the 15th day of every month.



**Note:** Setting this item to 0 will wake up the system on the specified time (which can be set in the WakeUp Time item) every day.

### Power Management → Time (hh:mm:ss)

<b><u>Time (hh:mm:ss)</u></b>
hh:mm:ss

This item is displayed when you enable the Wake On RTC Timer option. Here you can specify what time you want to wake up the system.

### Power Management → AC PWR Loss Recovery

<b><u>AC PWR Loss</u></b>
<b><u>Recovery</u></b>
Enabled
Disabled

Set this item to Enabled will recover the system's original status (power on/power off) after power is resumed. For a server in LAN or WAN, it is very useful to avoid network disconnecting caused by power failure.

### Power Management → IRQ 8 Break Suspend

<b><u>IRQ 8 Break</u></b>
<b><u>Suspend</u></b>
Enabled
Disabled

To enable or disable the detection of IRQ8 (RTC) event for power down state transition. OS2 has periodically IRQ8 (RTC) interruptions, If IRQ8 is not set to **Disabled**, OS/2 may fail to go into Doze/Standby/Suspend mode.

### Power Management → IRQ [3-7,9-15],NMI

<b><u>IRQ [3-7,9-15],NMI</u></b>
Enabled
Disabled

To enable or disable the detection of IRQ3-7, IRQ9-15 or NMI interrupt events for power down state transition.

## AWARD BIOS

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Power Management → Primary IDE 0  
Power Management → Primary IDE 1  
Power Management → Secondary IDE 0  
Power Management → Secondary IDE 1  
Power Management → Floppy Disk  
Power Management → Serial Port  
Power Management → Parallel Port

<u>Primary IDE 0</u>
Enabled
Disabled

These items enable or disable the detection of IDE, floppy, serial and parallel port activities for power down state transition. Actually it detects the read/write to/from I/O port.

## AWARD BIOS

### 3.6 PNP/PCI Configuration Setup

The PNP/PCI Configuration Setup allows you to configure the ISA and PCI devices installed in your system. The following screen appears if you select the option "PNP/PCI Configuration Setup" from the main menu.

ROM PCI/ISA BIOS (00000006) PNP/PCI CONFIGURATION AWARD SOFTWARE, INC.	
PNP OS Installed : No	PCI IDE IRQ Map To : PCI-AUTO
Resources Controlled By : Manual	Primary IDE INT# : A
	Secondary IDE INT# : A
IRQ-3 assigned to : PCI/ISA PnP	Assign IRQ For USB : Disabled
IRQ-4 assigned to : PCI/ISA PnP	Assign IRQ For VGA : Disabled
IRQ-5 assigned to : PCI/ISA PnP	MODEM Use IRQ : NA
IRQ-7 assigned to : PCI/ISA PnP	Used MEM base addr : N/A
IRQ-9 assigned to : PCI/ISA PnP	
IRQ-10 assigned to : PCI/ISA PnP	PCI Slot 1 IRQ (Right) : Auto
IRQ-11 assigned to : PCI/ISA PnP	PCI Slot 2 IRQ : Auto
IRQ-12 assigned to : PCI/ISA PnP	PCI Slot 3 IRQ : Auto
IRQ-14 assigned to : PCI/ISA PnP	PCI Slot 4 IRQ (Left) : Auto
IRQ-15 assigned to : PCI/ISA PnP	
DMA-0 assigned to : PCI/ISA PnP	ESC : Quit
DMA-1 assigned to : PCI/ISA PnP	↑↓←→ : Select Item
DMA-3 assigned to : PCI/ISA PnP	F1 : Help
DMA-5 assigned to : PCI/ISA PnP	PU/PD/+/- : Modify
DMA-6 assigned to : PCI/ISA PnP	F5 : Old Values
DMA-7 assigned to : PCI/ISA PnP	F9 : Language
	F6 : Load Setup Defaults
	F7 : Load Turbo Defaults

#### PNP/PCI Configuration → PnP OS Installed

<b><u>PnP OS Installed</u></b>	Normally, the PnP resources are allocated by BIOS during POST (Power-On Self Test). If you are using a PnP operating system (such as Windows 95), set this item to <b>Yes</b> to inform BIOS to configure only the resources needed for booting (VGA/IDE or SCSI). The rest of system resources will be allocated by PnP operating system.
Yes	
No	

#### PNP/PCI Configuration → Resources Controlled By

<b><u>Resources Controlled by</u></b>	Setting this option to Manual allows you to individually assign the IRQs and DMAs to the ISA and PCI devices. Set this to <b>Auto</b> to enable the auto-configuration function.
Auto	
Manual	

## AWARD BIOS

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PNP/PCI Configuration → **IRQ3** (COM2)  
PNP/PCI Configuration → **IRQ4** (COM1)  
PNP/PCI Configuration → **IRQ5** (Network/Sound or Others)  
PNP/PCI Configuration → **IRQ7** (Printer or Others)  
PNP/PCI Configuration → **IRQ9** (Video or Others)  
PNP/PCI Configuration → **IRQ10** (SCSI or Others)  
PNP/PCI Configuration → **IRQ11** (SCSI or Others)  
PNP/PCI Configuration → **IRQ12** (PS/2 Mouse)  
PNP/PCI Configuration → **IRQ14** (IDE1)  
PNP/PCI Configuration → **IRQ15** (IDE2)

### IRQ 3

Legacy ISA  
PCI/ISA PnP

If your ISA card is not PnP compatible and requires a special IRQ to support its function, set the selected IRQ to **Legacy ISA**. This setting informs the PnP BIOS to reserve the selected IRQ for the installed legacy ISA card. The default is **PCI/ISA PnP**. Take note that PCI cards are always PnP compatible (except old PCI IDE card).

PNP/PCI Configuration → **DMA 0**  
PNP/PCI Configuration → **DMA 1**  
PNP/PCI Configuration → **DMA 3**  
PNP/PCI Configuration → **DMA 5**  
PNP/PCI Configuration → **DMA 6**  
PNP/PCI Configuration → **DMA 7**

### DMA 0

Legacy ISA  
PCI/ISA PnP

If your ISA card is not PnP compatible and requires a special DMA channel to support its function, set the selected DMA channel to **Legacy ISA**. This setting informs the PnP BIOS to reserve the selected DMA channel for the installed legacy ISA card. The default is **PCI/ISA PnP**. Take note that PCI card does not require DMA channel.

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### PNP/PCI Configuration → PCI IDE IRQ Map To

#### PCI IDE IRQ Map

##### To

ISA  
PCI-Slot1  
PCI-Slot2  
PCI-Slot3  
PCI-Slot4  
PCI-Auto

Some old PCI IDE add-on cards are not fully PnP compatible. These cards require you to specify the slot in use to enable BIOS to properly configure the PnP resources. This function allows you to select the PCI slot for any PCI IDE add-on card present in your system. Set this item to **Auto** to allow BIOS to automatically configure the installed PCI IDE card(s).

### PNP/PCI Configuration → Primary IDE INT#

### PNP/PCI Configuration → Secondary IDE INT#

#### Primary IDE INT#

A  
B  
C  
D

These two items, in conjunction with item "PCI IDE IRQ Map To", specify the IRQ routing of the primary or secondary channel of the PCI IDE add-on card (not the onboard IDE). Each PCI slot has four PCI interrupts aligned as listed in the table below. You must specify the slot in the "PCI IDE IRQ Map To", and set the PCI interrupt (INTx) here according to the interrupt connection on the card.

PCI Slot	Location 1 (pin A6)	Location 2 (pin B7)	Location 3 (pin A7)	Location 4 (pin B8)
Slot 1	INTA	INTB	INTC	INTD
Slot 2	INTB	INTC	INTD	INTA
Slot 3	INTC	INTD	INTA	INTB
Slot 4	INTD	INTA	INTB	INTC
Slot 5 (if any)	INTD	INTA	INTB	INTC

### PNP/PCI Configuration → Assign IRQ For USB

#### Assign IRQ For USB

Enabled  
Disabled

This item lets you set an IRQ for USB.

## AWARD BIOS

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### PNP/PCI Configuration → Assign IRQ For VGA

<u>Assign IRQ For VGA</u>
---------------------------

Enabled
Disabled

This item lets you set an IRQ for VGA.

### PNP/PCI Configuration → MODEM Use IRQ

<u>MODEM Use IRQ</u>
----------------------

3, 4, 5, 7, 9, 10, 11, N/A
-------------------------------

This item lets you set an IRQ for the modem.

### PNP/PCI Configuration → Used MEM Base Addr

<u>Used MEM base addr</u>
-------------------------------

N/A
C800
CC00
D000
D400
D800
DC00

This item, in conjunction with the "Used MEM Length", lets you set a memory space for non-PnP compatible ISA card. This item specifies the memory base (start address) of the reserved memory space. The memory size is specified in the "Used MEM Length" .

## AWARD BIOS

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**PNP/PCI Configuration → PCI Slot1 IRQ (Right)**

**PNP/PCI Configuration → PCI Slot2 IRQ**

**PNP/PCI Configuration → PCI Slot3 IRQ**

**PNP/PCI Configuration → PCI Slot4 IRQ (Left)**

<u>PCI Slot1 IRQ</u>
3
4
5
7
9
10
11
12
14
15
Auto

This item is reserved for engineering purpose to let you assign an IRQ manually to the add-on card on each PCI slot. If you select Auto, system will automatically assign an available value to the device.

It is suggested to use default setting, which is Auto, in order to comply with PnP specification completely.

# AWARD BIOS

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## 3.7 Load Setup Defaults

The "Load Setup Defaults" option loads optimized settings for optimum system performance. Optimal settings are relatively safer than the Turbo settings. We recommend you to use the Optimal settings if your system has large memory size and fully loaded with add-on card (for example, a file server using double-sided 8MB DIMM x4 and SCSI plus Network card occupying the PCI and ISA slots).

Optimal is not the slowest setting for this mainboard. If you need to verify a unstable problem, you may manually set the parameter in the "BIOS Features Setup" and "Chipset Features Setup" to get slowest and safer setting.

## 3.8 Load Turbo Defaults

The "Load Turbo Defaults" option gives better performance than Optimal values. However, Turbo values may not be the best setting of this mainboard but these values are qualified by the AOpen RD and QA department as the reliable settings especially if you have limited loading of add-on card and memory size (for example, a system that contains only a VGA/Sound card and two DIMMs).

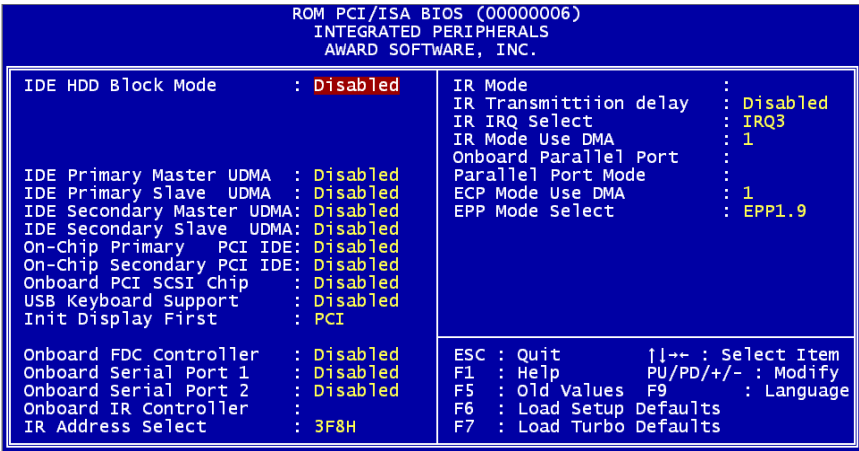
To attain the best system performance, you may manually set the parameters in the "Chipset Features Setup" to get proprietary setting. Make sure that you know and understand the functions of every item in Chipset Setup menu. The performance difference of Turbo from Optimal is normally around 3% to 10%, depending on the chipset and the application.



# AWARD BIOS

## 3.9 Integrated Peripherals

The following screen appears if you select the option "Integrated Peripherals" from the main menu. This option allows you to configure the I/O features.



### Integrated Peripherals → IDE HDD Block Mode

<b>IDE HDD Block Mode</b>
<b>Mode</b>
Enabled
Disabled

This feature enhances disk performance by allowing multisector data transfers and eliminates the interrupt handling time for each sector. Most IDE drives, except with old designs, can support this feature.

## AWARD BIOS

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**Integrated Peripherals → IDE Primary Master UDMA**

**Integrated Peripherals → IDE Primary Slave UDMA**

**Integrated Peripherals → IDE Secondary Master UDMA**

**Integrated Peripherals → IDE Secondary Slave UDMA**

**IDE Primary Master  
UDMA**

Auto

Disabled

This item allows you to set the Ultra DMA/33 mode supported by the hard disk drive connected to your primary IDE connector.

**Integrated Peripherals → On-Chip Primary PCI IDE**

**Integrated Peripherals → On-Chip Secondary PCI IDE**

**On-Chip Primary  
PCI IDE**

Enabled

Disabled

This parameter lets you enable or disable the IDE device connected to the primary IDE connector.

**Integrated Peripherals → Onboard PCI SCSI Chip**

**Onboard PCI SCSI  
Chip**

Enabled

Disabled

This item lets you enable or disable the Onboard AHA7880 SCSI Controller.

**Integrated Peripherals → USB Keyboard Support**

**USB Keyboard  
Support**

Enabled

Disabled

This item lets you enable or disable the USB keyboard driver within the onboard BIOS. The keyboard driver simulates legacy keyboard command and let you use USB keyboard during POST or after boot if you don't have USB driver in the operating system.



**Note:** You cannot use both USB driver and USB legacy keyboard at the same time. Disable "USB Keyboard Support" if you have USB driver in the operating system.

## AWARD BIOS

### Integrated Peripherals → Init Display First

#### Init Display First

PCI  
AGP

If you installed a PCI VGA card and an AGP card at the same time, this item lets you decide which one is the initial display card.

### Integrated Peripherals → Onboard FDC Controller

#### Onboard FDC Controller

Enabled  
Disabled

Setting this parameter to **Enabled** allows you to connect your floppy disk drives to the onboard floppy disk connector instead of a separate controller card. Change the setting to Disabled if you want to use a separate controller card.

### Integrated Peripherals → Onboard Serial Port 1

### Integrated Peripherals → Onboard Serial Port 2

#### Onboard Serial Port

1  
Auto  
3F8/IRQ4  
2F8/IRQ3  
3E8/IRQ4  
2E8/IRQ3  
Disabled

This item allow you to assign address and interrupt for the board serial port. Default is **Auto**.



**Note:** If you are using an network card, make sure that the interrupt does not conflict.

### Integrated Peripherals → Onboard IR Controller

#### Onboard IR Controller

Enabled  
Disable

To enable or disable onboard wireless Infrared controller.



---

### Integrated Peripherals → IR Address Select

<u>IR Address Select</u>	This item selects the address of IR controller.
2E0H	
2E8H	
2F8H	
3E0H	
3E8H	
3F8H	

### Integrated Peripherals → IR Mode

<u>IR Mode</u>	This item selects the mode of onboard wireless Infrared controller. The IrDA standard includes both HPSIR and FIR, the driver in the Win95 will automatically change to different mode according to different chip.
ASKIR	
IrDA	

- **ASKIR** – Select this setting if you installed an Infrared module via IrDA connector (refer to section 2.3 "Connectors"). This ASKIR setting allows infrared serial communication at a maximum baud rate of 56K baud.
- **HPSIR** – Select this setting if you installed an Infrared module in your system via IrDA connector (refer to section 2.3 "Connectors"). The HPSIR setting allows infrared serial communication at a maximum baud rate of 115K baud.
- **FIR** – Select this setting if you installed an Infrared module via IrDA connector (refer to section 2.3 "Connectors"). This FIR (Fast IR) setting allows infrared serial communication at a maximum baud rate of 4M baud.

### Integrated Peripherals → IR Transmission Delay

<u>IR Transmission delay</u>	If Enabled is selected, there will be a 4 character delay when SIR is changed from TX mode to RX mode.
Enabled	
Disabled	

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## Integrated Peripherals → IR IRQ Select

<b><u>IR IRQ Selection</u></b> IRQ3 IRQ4 IRQ10 IRQ11
--

This item selects the IRQ of IR port.



**Note:** If you are using a network card, make sure that the interrupt does not conflict.

## Integrated Peripherals → IR Mode Use DMA

<b><u>IR Mode Use DMA</u></b> 3 1 Disabled
---

This item lets you set the DMA channel of ECP mode.

## Integrated Peripherals → Onboard Parallel Port

<b><u>Onboard Parallel Port</u></b> 3BC/IRQ7 378/IRQ7 278/IRQ5 Disabled
---

This item controls the onboard parallel port address and interrupt.



**Note:** If you are using an I/O card with a parallel port, make sure that the addresses and IRQ do not conflict.

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### Integrated Peripherals → Parallel Port Mode

#### Parallel Port Mode

SPP  
EPP  
ECP  
ECP + EPP

This item lets you set the parallel port mode. The mode options are SPP (Standard and Bidirection Parallel Port), EPP (Enhanced Parallel Port) and ECP (Extended Parallel Port). SPP is the IBM AT and PS/2 compatible mode. EPP enhances the parallel port throughput by directly writing/reading data to/from parallel port without latch. ECP supports DMA and RLE (Run Length Encoded) compression and decompression.

### Integrated Peripherals → ECP Mode Use DMA

#### ECP Mode Use DMA

3  
1

This item lets you set the DMA channel of ECP mode.

### Integrated Peripherals → EPP Mode Select

#### EPP Mode Select

EPP1.7  
EPP1.9

This item lets you select EPP mode protocol.

# AWARD BIOS

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## 3.10 Password Setting

Password prevents unauthorized use of your computer. If you set a password, the system prompts for the correct password before boot or access to Setup.

To set a password:

1. At the prompt, type your password. Your password can be up to 8 alphanumeric characters. When you type the characters, they appear as asterisks on the password screen box.
2. After typing the password, press **Enter**.
3. At the next prompt, re-type your password and press **Enter** again to confirm the new password. After the password entry, the screen automatically reverts to the main screen.

To disable the password, press **Enter** when prompted to enter the password. The screen displays a message confirming that the password has been disabled.

## 3.11 IDE HDD Auto Detection

If your system has an IDE hard drive, you can use this function to detect its parameters and enter them into the "Standard CMOS Setup" automatically.

This routine only detects one set of parameters for your IDE hard drive. Some IDE drives can use more than one set of parameters. If your hard disk is formatted using different parameters than those detected, you have to enter the parameters manually. If the parameters listed do not match the ones used to format the disk, the information on that disk will not be accessible. If the auto-detected parameters displayed do not match those that used for your drive, ignore them. Type **N** to reject the values and enter the correct ones manually from the Standard CMOS Setup screen.

## 3.12 Save & Exit Setup

This function automatically saves all CMOS values before leaving Setup.



### **3.13 Load EEPROM Default**

Except "Load Setup Default" and "Load Turbo Default", you may also use "Save EEPROM Default " to save your own settings into EEPROM, and reload by using this item.

### **3.14 Save EEPROM Default**

You may use this item to save your own settings into EEPROM. Then, if the data in CMOS is lost or you forget the previous settings, you may use "Load EEPROM Default " to reload.

### **3.15 Exit without Saving**

Use this function to exit Setup without saving the CMOS value changes. Do not use this option if you want to save the new configuration.

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### 3.16 BIOS Flash Utility

The BIOS Flash utility allows you to upgrade the system BIOS. To get the AOpen Flash utility and the upgrade BIOS file, contact your local distributor or visit our homepage at <http://www.aopen.com.tw>. Please make sure that you have the correct BIOS ready, the BIOS filename is normally like AP5TR110.BIN, which means model AP5T BIOS revision 1.10.

There are two useful programs, Checksum utility CHECKSUM.EXE and AOpen Flash utility AOFLASH.EXE. Follow the procedures below to upgrade your BIOS.

#### [CHECKSUM.EXE]

This utility will help you to determine if the BIOS has been downloaded correctly or not.

1. Execute  
C:> CHECKSUM Biosfile.bin  
Biosfile.bin is the filename of the BIOS code.
2. The utility will show "Checksum is ssss".
3. Compare the "ssss" with original checksum posted on Web or BBS. If they are different, please do not proceed any further and try to download the BIOS again.

#### [AOFLASH.EXE]

This utility will try to check the mainboard model, BIOS version and Super/Ultra IO chip model. To ensure the correct BIOS file for the correct mainboard and IO chip. This utility will permanently replace your original BIOS content after flashing.

1. Bootup the system from floppy without loading any memory handler (HIMEM, EMM386, QEMM386, ...) or device driver.
2. Execute  
A:> AOFLASH Biosfile.bin  
Biosfile.bin is the filename of the BIOS code.

## AWARD BIOS

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3. After loading the new BIOS code, the utility will prompt you to save original BIOS code into your HDD or floppy. Please press "Y" to store it as "BIOS.OLD".
4. After the old BIOS has been successfully saved, press "Y" to replace BIOS.
5. DO NOT turn off the power during "FLASHING".
6. Reboot the system by turn off the power after "FLASHING".
7. Press "DEL" key to enter BIOS setup during POST.
8. Reload the "BIOS SETUP DEFAULT" and reconfigure other items as previous set.
9. Save & Exit. Done!



**Warning:** DO NOT turn off the power during "FLASHING". If the BIOS programming is not successfully finished, the system will not be boot again, and you may need to physically replace the BIOS chip.



**Tip:** You may load back original BIOS "BIOS.OLD" by the same procedure.