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 ⬛⬛⬛ during POST (Power-On Self Test). The BIOS Setup Main Menu appears as follows.
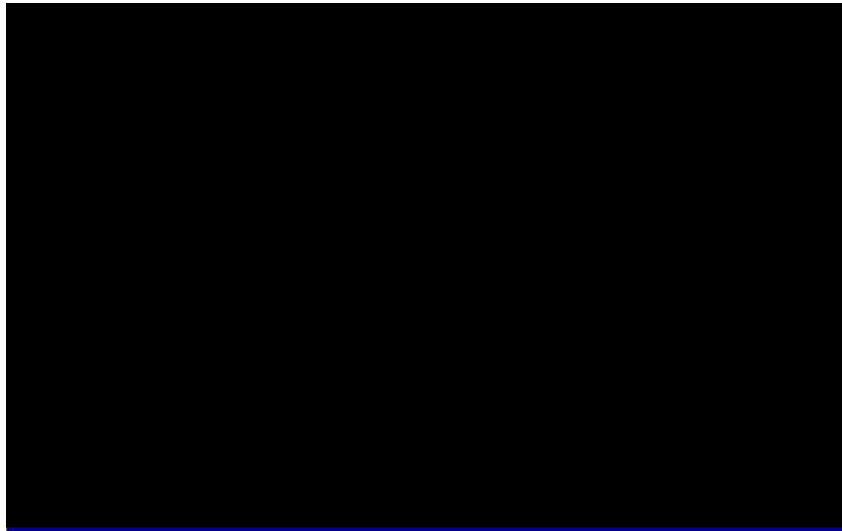
> **Tip**: Choose "Load Setup Defaults" for recommended optimal performance. Choose "Load Turbo Defaults" for best performance with light system loading. Refer to section 3.7.

The section at the bottom of the screen tells how to control the screen. Use the arrow keys to move between items, F9 to change language, ESC to exit, and F10 to save the changes before exiting. 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.

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 ▭▭▭ or PGDN to select the value for each item.
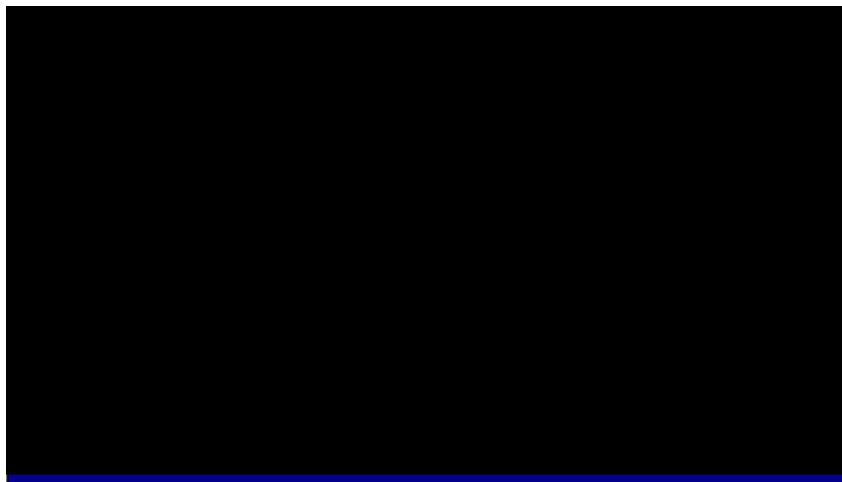
Standard CMOS à Date

To set the date, highlight the Date parameter. Press ▭▭▭ or ▭▭▭ to set the current date. The date format is month, date, and year.

Standard CMOS à Time

To set the time, highlight the Time parameter. Press ▭▭▭ or ▭▭▭ 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 à **Primary Master** à **Type**
Standard CMOS à **Primary Slave** à **Type**
Standard CMOS à **Secondary Master** à **Type**
Standard CMOS à **Secondary Slave** à **Type**

Type
Auto
User
None

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 (Hard Disk Drive) 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 à **Primary Master** à **Mode**
Standard CMOS à **Primary Slave** à **Mode**
Standard CMOS à **Secondary Master** à **Mode**
Standard CMOS à **Secondary Slave** à **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 a standard feature of current IDE hard disk on the market because of its capability to support capacity larger than 528MB. Note that if a HDD is formatted with LBA On, it will not be able to boot with LBA Off.

Standard CMOS à **Drive A**
Standard CMOS à **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 the floppy drive type. The available settings and types supported by the mainboard are listed to the left.

Standard CMOS à **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 à **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.

3.3   BIOS Features Setup

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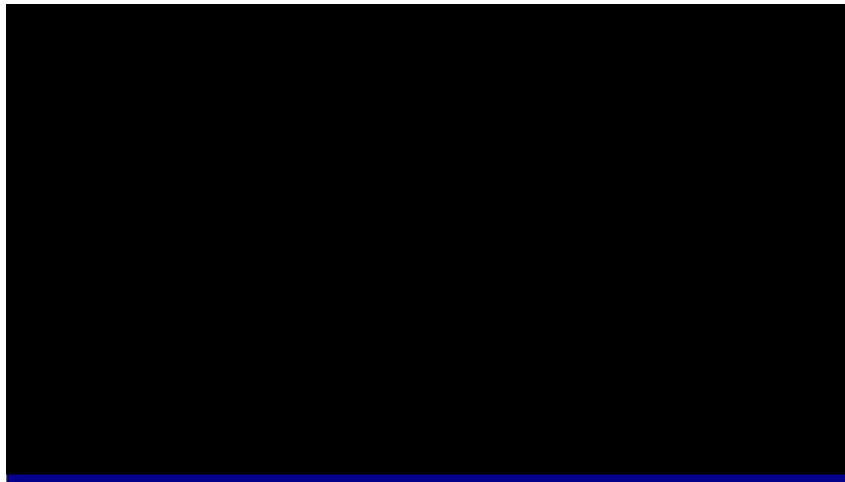
BIOS Features à Virus Warning

Virus Warning
Enabled
Disabled

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.

```
                    ! WARNING !
         Disk Boot Sector is to be modified
Type "Y" to accept write, or "N" to abort write
               Award Software, Inc.
```

BIOS Features à **External Cache**

External Cache	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.
Enabled	
Disabled	

BIOS Features à **CPU L2 Cache ECC Checking**

CPU L2 Cache ECC Checking	This item lets you enable or disable L2 Cache ECC checking.
Enabled	
Disabled	

BIOS Features à **Processor Number Feature**

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

BIOS Features à **Quick Power On Self Test**

Quick Power on Self test	This parameter speeds up POST by skipping some items that are normally checked.
Enable	
Disabled	

BIOS Features à **Boot From LAN First**

Boot From LAN First	This item is used to boot the system from a network server.
Enable	
Disabled	

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BIOS Features à Boot Sequence

Boot Sequence
A,C,SCSI
C,A,SCSI
C,CDROM,A
CDROM,C,A
CDROM,A,C
D,A,SCSI
E,A,SCSI
F,A,SCSI
SCSI,A,C
SCSI,C,A
C only
LS/ZIP,C

This parameter allows you to specify the system boot up search sequence. The hard disk ID are listed below:

C: Primary master

D: Primary slave

E: Secondary master

F: Secondary slave

LS: LS120

Zip: IOMEGA ZIP Drive

BIOS Features à Swap Floppy Drive

Swap Floppy Drive
Enabled
Disabled

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.

BIOS Features à Boot Up NumLock Status

Boot Up NumLock Status
On
Off

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.

BIOS Features à Boot Up System Speed

Boot Up System Speed
High
Low

Select High or Low system speed after boot.

BIOS Features à Typematic Rate Setting

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

BIOS Features à Typematic Rate (Chars/Sec)

Typematic Rate	This item allows you to control the speed of repeated keystrokes. The default is 30 characters/sec.
6	
8	
10	
12	
15	
20	
24	
30	

BIOS Features à Typematic Delay (Msec)

Typematic Delay	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.
250	
500	
750	
1000	

BIOS Features à Security Option

Security Option	The **System** 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.
Setup	
System	The **Setup** option limits access only to BIOS setup.
	To disable the security option, select Password Setting from the main menu, don't type anything and just press <Enter>.

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BIOS Features à PCI/VGA Palette Snoop

PCI/VGA Palette Snoop Enabled Disabled	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.

BIOS Features à OS Select for DRAM > 64MB

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

BIOS Features à Show Logo On Screen

Show Logo On Screen Enabled Disabled	This item lets you show or hide AOpen logo on the POST screen.

BIOS Features à 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 à **C800-CBFF Shadow**
BIOS Features à **CC00-CFFF Shadow**
BIOS Features à **D000-D3FF Shadow**
BIOS Features à **D400-D7FF Shadow**
BIOS Features à **D800-DBFF Shadow**
BIOS Features à **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.*

3.4   Chipset Features Setup

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

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 your system to be unstable if the setting is not correct for your system configuration.

Chipset Features à **SDRAM CAS Latency**
Chipset Features à **SDRAM RAS# to CAS# Delay**

SDRAM CAS Latency
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 à **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 à **System BIOS Cacheable**

System BIOS Cacheable
Enabled
Disabled

Enabling this item allows you to cache the system BIOS to further enhance system performance.

Chipset Features à **Video BIOS Cacheable**

Video BIOS Cacheable
Enabled
Disabled

This item lets you cache Video RAM C000.

Chipset Features à **Video RAM Cacheable**

Video RAM Cacheable
Enabled
Disabled

This item lets you cache Video RAM A000 and B000.

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Chipset Features à 8 Bit I/O Recovery Time

8 Bit I/O Recovery Time
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 à 16 Bit I/O Recovery Time

16 Bit I/O Recovery Time
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 à Memory Hole At 15M-16M

Memory Hole At 15M-16M
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 à Passive Release

Passive Release
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.

Chipset Features à Delayed Transaction

Delayed Transaction
Enabled
Disabled

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.

Chipset Features à AGP Aperture Size (MB)

AGP Aperture Size (MB)
4
8
16
32
64
128
256

This item lets you determine the effective size of the AGP Graphic Aperture.

Chipset Features à Pentium II Micro Codes

Pentium II Micro Codes
Enabled
Disabled

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.

Chipset Features à Manufacture Frequency Default

Manufacture Frequency Default
Depends on the CPU type

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.

Chipset Features à Clock Spread Spectrum

Clock Spread Spectrum
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 à **CPU Clock Frequency**

CPU Clock Frequency
66.8 MHz
68.5 MHz
75.0 MHz
83.3 MHz
100 MHz
103 MHz
112 MHz
117 MHz
124 MHz
129 MHz
133.3 MHz
138 MHz
143 MHz
148 MHz
153 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.

Chipset Features à **CPU Clock Ratio**

CPU Clock Ratio
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

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.

Chipset Features à **Setup CPU Speed**

Setup CPU Speed

The CPU Speed is derived from the product of "CPU Clock Frequency" and "CPU Clock Ratio".

Chipset Features à Y2K CMOS Update

Y2K CMOS Update
Enabled
Disabled

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.

3.5   Power Management Setup

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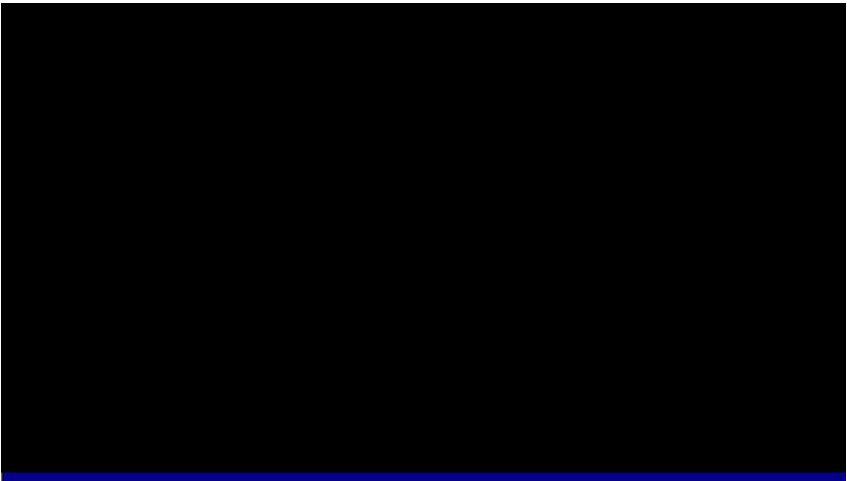
Power Management à ACPI Function

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

Power Management à 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 the 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 à PM Controlled by APM

PM Controlled by APM	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.
Yes	
No	

Power Management à Video Off Method

Video Off Method	This determines the way that the 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 functions provided by the VGA card.
V/H SYNC + Blank	
DPMS	
Blank Screen	

Power Management à Video Off After

Video Off After	To turn off video monitor at which power down mode.
N/A	
Doze	
Standby	
Suspend	

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Power Management à Standby Mode

Standby Mode
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 à Suspend Mode

Suspend Mode
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".

Power Management à 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 à 0V Wake On Modem

0V Wake On Modem
Enabled
Disabled

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

Power Management à Wake On LAN

Wake On LAN
Enabled
Disabled

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

Power Management à Suspend Mode Option

Suspend Mode 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.

Power Management à Throttle Duty Cycle

Throttle Duty Cycle
12.5 %
25.0 %
37.5 %
50.0 %
62.5 %
75.0 %
87.5 %

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.

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Power Management à VGA Active Monitor

VGA Active Monitor
Enabled
Disabled

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

Power Management à Soft-Off by PWR-BTTN

Soft-Off by PWR-BTTN
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 for less than 4 seconds during power On, the system will go into Suspend mode. If the switch is pressed for longer than 4 seconds, the system will be turned Off. The default setting is **Instant-Off**. If **Instant-Off** is selected the soft power switch is only used to control On and Off, so there is no need to press it for 4 seconds, and there is no Suspend.

Power Management à Wake On RTC Timer

Wake On RTC Timer
By Date
By Week
Disabled

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

Power Management à Date (of Month)

Date (of Month)
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 Wake On RTC Timer) every day.*

Power Management à **Time (hh:mm:ss)**

Time (hh:mm:ss) 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 à **IRQ 8 Clock Event**

IRQ 8 Clock Event 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 à **IRQ [3-7,9-15],NMI**

IRQ [3-7,9-15],NMI Enabled Disabled

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

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

Primary IDE 0 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.
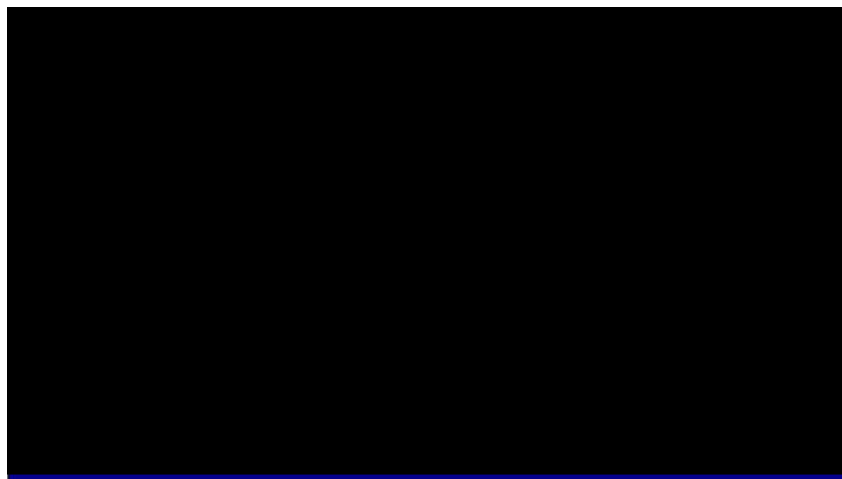
PNP/PCI Configuration à PnP OS Installed

PnP OS Installed
Yes
No

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 Yes 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.

PNP/PCI Configuration à Resources Controlled By

Resources Controlled by
Auto
Manual

Setting this option to Manual allows you to individually assign the IRQs and DMAs to the ISA and PCI devices. Set this to **Auto** to enable the auto-configuration function.

PNP/PCI Configuration à **Reset Configuration Data**

Reset Configuration Data
Enabled
Disabled

In case conflict occurs after you assign the IRQs or after you configure your system, you can enable this function, allow your system to automatically reset your configuration and reassign the IRQs, DMAs, and I/O address.

PNP/PCI Configuration à **IRQ3** (COM2)
PNP/PCI Configuration à **IRQ4** (COM1)
PNP/PCI Configuration à **IRQ5** (Network/Sound or Others)
PNP/PCI Configuration à **IRQ7** (Printer or Others)
PNP/PCI Configuration à **IRQ9** (Video or Others)
PNP/PCI Configuration à **IRQ10** (SCSI or Others)
PNP/PCI Configuration à **IRQ11** (SCSI or Others)
PNP/PCI Configuration à **IRQ12** (PS/2 Mouse)
PNP/PCI Configuration à **IRQ14** (IDE1)
PNP/PCI Configuration à **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 à **DMA 0**
PNP/PCI Configuration à **DMA 1**
PNP/PCI Configuration à **DMA 3**
PNP/PCI Configuration à **DMA 5**
PNP/PCI Configuration à **DMA 6**
PNP/PCI Configuration à **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 à 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 à Primary IDE INT#
PNP/PCI Configuration à 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 à **Modem Use IRQ**

Modem Use IRQ
N/A
3
4
5
7
9
10
11

This item lets you set an IRQ for the modem.

PNP/PCI Configuration à **Used MEM Base Addr**

Used MEM Base Addr
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"**.**

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PNP/PCI Configuration à **Used MEM Length**

Used MEM Length
8K
16K
32K
64K

If your ISA card is not PnP compatible and requires special memory space to support its function, specify the memory size in this parameter to inform the PnP BIOS to reserve the specified memory space for installed legacy ISA card.

PNP/PCI Configuration à **PCI Slot1 IRQ (Right)**
PNP/PCI Configuration à **PCI Slot2 IRQ**
PNP/PCI Configuration à **PCI Slot3 IRQ**

PCI Slot1 IRQ
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.

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. All the product verification, compatibility/reliability test report and manufacture quality control are based on "Load Setup Defaults". We recommend you to use this settings for normal operation. "Load Setup Defaults" is not the slowest setting for this motherboard. If you need to verify an 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 "Load Setup Defaults". It is provided for the convenience of power user who wants to push the motherboard to get better performance. Turbo setting does not go though all the detail reliability and compatibility test, it is tested only with limited configuration and loading (for example, a system that contains only a VGA card and two DIMMs). Use Turbo setting only when you fully understand the items in Chipset Setup menu. The performance improvement of Turbo setting is normally around 3% to 5%, depending on the chipset and the application.

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.

```
                ROM PCI/ISA BIOS (00000006)
                   INTEGRATED PERIPHERALS
                    AWARD SOFTWARE, INC.

 IDE HDD Block Mode       : Disabled   Onboard FDC Controller   :
 IDE Primary Master PIO   : Auto       Onboard Serial Port 1    : 3F8/IRQ4
 IDE Primary Slave  PIO   : Auto       Onboard Serial Port 2    :
 IDE Secondary Master PIO : Auto       UART Mode Select         :
 IDE Secondary Slave  PIO : Auto       RxD , TxD Active         : Hi,Lo
 IDE Primary Master UDMA  : Auto       IR Transmission delay    : Enabled
 IDE Primary Slave  UDMA  : Auto       Onboard Parallel Port    :
 IDE Secondary Master UDMA: Auto       Parallel Port Mode       :
 IDE Secondary Slave  UDMA: Auto       ECP Mode Use DMA         : 3
 On-Chip Primary  PCI IDE: Enabled     EPP Mode Select          : EPP1.9
 On-Chip Secondary PCI IDE: Enabled    Onboard Sound Chip       : Enabled
 USB Keyboard Support     : Disabled
 Init Display First       : AGP

 POWER ON Function        :
 KB Power ON Password     : Enter       ESC : Quit        ↑↓→← : Select Item
 Hot Key Power ON         : Ctrl-F1     F1  : Help        PU/PD/+/- : Modify
 AC PWR Auto Recovery     : On          F5  : Old Values  F9     : Language
                                        F6  : Load Setup Defaults
                                        F7  : Load Turbo Defaults
```

Integrated Peripherals à IDE HDD Block Mode

IDE HDD Block Mode	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.
Enabled	
Disabled	

Integrated Peripherals à **IDE Primary Master UDMA**
Integrated Peripherals à **IDE Primary Slave UDMA**
Integrated Peripherals à **IDE Secondary Master UDMA**
Integrated Peripherals à **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 à **On-Chip Primary PCI IDE**
Integrated Peripherals à **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 à **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.

Caution: You can not 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.

Integrated Peripherals à **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.

AWARD BIOS

Integrated Peripherals à Power On Function

Power On Function
Button Only
Keyboard 98
Password
Hot Key
Mouse Left
Mouse Right

This item is used to select Wake on Keyboard/Mouse mode.

Button Only: Disable Wake on KB/MS function. You can boot up your system by power button only.

Keyboard 98: If selecting this option, you can boot up the system by power button and the "Wake" key on keyboard which complies to Keyboard 98 standard.

Password: Disable the function of power button and let the system can only be powered on through the preset keys (like a password).

Hot Key: If selecting this option, you also need to specify the hot key from "Hot Key Power On" item.

Mouse Left: This function allows you wake up the system by clicking left mouse button twice successively. Note that the mouse can't be moved while double clicking.

Mouse Right: This function allows you wake up the system by clicking right mouse button twice successively. Note that the mouse can't be moved while double clicking.

Caution: Whenever you change this item, it will only take effect after you restart the system and successfully boot the Windows or DOS.

Caution: To implement Wake On Keyboard/Mouse function, you must set JP28 to Enabled.

Caution: Wake On Mouse function applies to PS/2 mouse only.

Caution: If you set a Password but forget it, please clear CMOS.

Caution: If you want to use Wake On Mouse function in DOS, it is necessary to install the DOS driver of the mouse.

Integrated Peripherals à **KB Power On Password**

KB Power On Password	You can specify 1-5 keys as a password.

Note: *Before setting a password you have to make sure JP28 has been enabled, or your system cannot be boot up properly any more. Under this situation, the only solution is to clear CMOS.*

Integrated Peripherals à **Hot Key Power On**

Hot Key Power On	If you select "Hot Key" option in "Power On Function" Item, you need to specify a hot key here.
Ctrl-F1	
Ctrl-F2	
Ctrl-F3	
Ctrl-F4	
Ctrl-F5	
Ctrl-F6	
Ctrl-F7	
Ctrl-F8	
Ctrl-F9	
Ctrl-F10	
Ctrl-F11	
Ctrl-F12	

AWARD BIOS

Power Management à AC PWR Auto Recovery

AC PWR Auto Recovey	A traditional ATX system should remain at power off stage when AC power resumes from power failure. This design is inconvenient for a network server or workstation, without an UPS, that needs to keep power-on. This item is used to solve this problem. Selecting On lets the system can automatically power-on after AC power resumes; in the other hand, the system will power-off if you select Off. If Former-Sts option is selected, the system will power-on or power-off based on the original state.
Former-Sts	
On	
Off	

Integrated Peripherals à Onboard FDC Controller

Onboard FDC Controller	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.
Enabled	
Disabled	

Integrated Peripherals à Onboard Serial Port 1
Integrated Peripherals à Onboard Serial Port 2

Onboard Serial Port 1	This item allow you to assign address and interrupt for the board serial port. Default is **Auto**.
Auto	
3F8/IRQ4	
2F8/IRQ3	
3E8/IRQ4	
2E8/IRQ3	
Disabled	

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

Integrated Peripherals à UART Mode Select

UART Mode Select
Standard
HPSIR
ASKIR

This item is configurable only if the "Onboard UART 2" is enabled. This allows you to specify the mode of serial port2. The available mode selections are:

- **Standard** – Sets serial port 2 to operate in normal mode. This is the default setting.

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

- **ASKIR** – Select this setting if you installed an Infrared module via IrDA connector (refer to section 2.3 "Connectors"). This setting allows infrared serial communication at a maximum baud rate of 19.2K baud.

Integrated Peripherals à RxD, TxD Active

RxD, TxD Active
Hi, Hi
Hi, Lo,
Lo, Hi
Lo, Lo

This item is used to select RxD (Receive Data) and TxD (Transmit Data) mode for UART, for instance, IR device, modem, etc. Normally, we suggest you keep the default setting. Please see the documentation that comes with your device.

Integrated Peripherals à IR Transmission Delay

IR Transmission Delay
Enabled
Disabled

If Enabled is selected, there will be a 4 character delay when SIR is changed from TX mode to RX mode.

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Integrated Peripherals à **Onboard Parallel Port**

Onboard Parallel Port
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.*

Integrated Peripherals à **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 à **ECP Mode Use DMA**

ECP Mode Use DMA
3
1

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

Integrated Peripherals à **EPP Mode Select**

EPP Mode Select
EPP1.7
EPP1.9

This item lets you select EPP mode.

Integrated Peripherals à Onboard Sound Chip

Onboard Sound Chip Enabled Disabled	This item lets you enable or disable the onboard sound chip.

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.

3.   At the next prompt, re-type your password and press again to confirm the new password. After the password entry, the screen automatically reverts to the main screen.

To disable the password, press 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. Note that you must make sure you've already executed "Save EEPROM Default" before choosing this command, otherwise, the system is likely to boot improperly.

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.

3.16 NCR SCSI BIOS and Drivers

The NCR 53C810 SCSI BIOS resides in the same flash memory chip as the system BIOS. The onboard NCR SCSI BIOS is used to support NCR 53C810 SCSI control card without BIOS code.

The NCR SCSI BIOS directly supports DOS, Windows 3.1 and OS/2. For better system performance, you may use the drivers that come with the NCR SCSI card or with your operating system. For details, refer to the installation manual of your NCR 53C810 SCSI card.

3.17 How to Upgrade the BIOS

AOpen Easy Flash is more user friendly than traditional flash method. The BIOS binary file and flash routine are combined together and you simply run a single file to complete the flash process.

1. Get new BIOS upgrade program from AOpen's web site. For example, 6BCEZ200.EXE. It is recommended to save it to a bootable DOS floppy diskette for error recovery.
2. Reboot the system to DOS mode without loading any memory handler (such as EMM386) or device driver. It needs around 520K free memory space.
3. Execute A:> 6BCEZ200
   DO NOT turn off the power during FLASH PROCESS.
4. Reboot the system by turn off the power after flash is completed.
5. Reload the "BIOS SETUP DEFAULT" and reconfigure other items as previous set. Save & Exit. Done!

Note: If you encounter BIOS flash fail, use PCI VGA card to check if it can be boot from floppy and flash again.

Note: The upgrade of new BIOS will permanently replace your original BIOS content after flashing. The original BIOS setting and Win95/Win98 PnP information will be refreshed and you probably need to re-configure your system.