
Chapter 3

Award BIOS

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

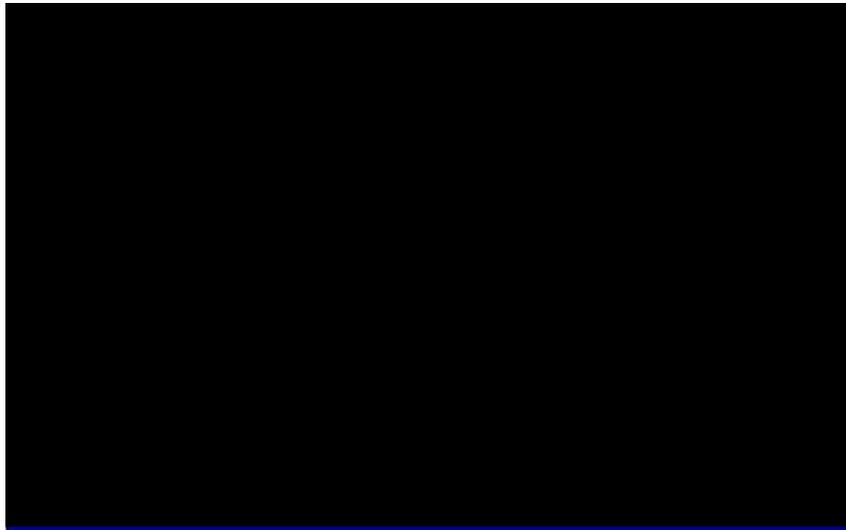


Important: Because the BIOS code is the most often changed part of the mainboard design, the BIOS information contained in this chapter (especially the Chipset Setup parameters) may be a little different compared to the actual BIOS that came with your mainboard.

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, **ESC** **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.

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

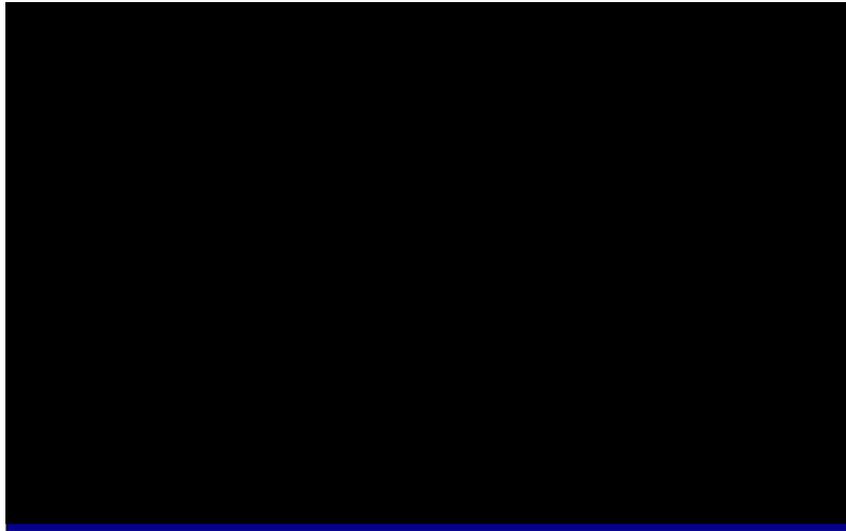
No Errors
All Errors
All, But Keyboard
All, But Diskette
All, But Disk/Key

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

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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

<u>Virus Warning</u>	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	

<p style="text-align: center;">! WARNING ! Disk Boot Sector is to be modified Type "Y" to accept write, or "N" to abort write Award Software, Inc.</p>

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BIOS Features à External Cache

External Cache 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.
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BIOS Features à CPU L2 Cache ECC Checking

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

BIOS Features à Quick Power On Self Test

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

Boot Sequence A,C,SCSI C,A,SCSI C,CDROM,A CDROM,C,A 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
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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.
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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.
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BIOS Features à Boot Up System Speed

Boot Up System Speed High Low	Select High or Low system speed after boot.
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BIOS Features à Typematic Rate Setting

Typematic Rate Setting 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.
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BIOS Features à Typematic Rate (Chars/Sec)

Typematic Rate 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.
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BIOS Features à Typematic Delay (Msec)

Typematic Delay 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 à Security Option

Security Option Setup System	<p>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.</p> <p>The Setup 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 <Enter>.</p>
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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.
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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.
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BIOS Features à Video BIOS Shadow

<u>Video BIOS Shadow</u>

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

<u>C800-CBFF Shadow</u>

Enabled
Disabled

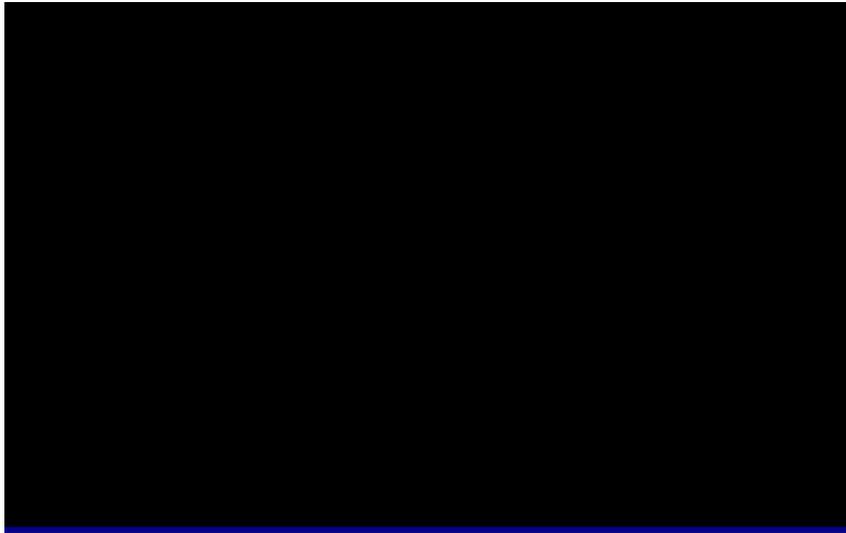
These six items are for shadowing ROM code on other expansion cards. Before you set these parameters, you need to know the specific addresses of that ROM code. If you do not know this information, enable all the ROM shadow settings.



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 system unstable if the setting are not correct for your system configuration.

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Chipset Features à Auto Configuration

<u>Auto Configuration</u> Enabled Disabled	When Enabled , the DRAM and cache related timing are set to pre-defined value according to CPU type and clock. Select Disable if you want to specify your own DRAM timing.
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Chipset Features à DRAM Speed Selection

<u>DRAM Speed Selection</u> 50 ns 60 ns	There are two sets of DRAM timing parameters can be automatically set by BIOS, 50ns and 60ns.
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Chipset Features à MA Wait State

<u>MA Wait State</u> Slow Fast	To enable or disable one additional MA (DRAM memory address) wait state. The default setting is Slow . Set it to Fast if you have heavy loading (many chip count) or lower speed DRAM.
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Chipset Features à EDO RAS# to CAS# Delay

<u>EDO RAS# to CAS# Delay</u> 2 3	This option allows you to set the wait state between row address strobe (RAS) and column address strobe (CAS) signals.
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Chipset Features à EDO RAS# Precharge Time

<u>EDO RAS# Precharge Time</u> 3 4	This parameter specifies the number of clocks required to deassert the RAS signal to prevent DRAM from losing data after performing a read. This operation is called Precharge.
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Chipset Features à EDO DRAM Read Burst

<u>EDO DRAM Read Burst</u> x333 x222	Read Burst means to read four continuous memory cycles on four predefined addresses from the DRAM. The default value is x222 for 60ns EDO DRAM. Which means the 2nd,3rd and 4th memory cycles are 2 CPU clocks for EDO. The value of x is the timing of first memory cycle.
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Chipset Features à EDO DRAM Write Burst

<u>EDO DRAM Write Burst</u> x333 x222	Write Burst means to write four continuous memory cycles on four predefined addresses to the DRAM. The default value is x222 for 60ns EDO DRAM. Which means the 2nd,3rd and 4th memory cycles are 2 CPU clocks for EDO. The value of x is the timing of first memory cycle.
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Chipset Features à SDRAM(CAS Lat/RAS-to-CAS)

<u>SDRAM(CAS Lat/RAS-to-CAS)</u> 2/2 3/3	These are timing of SDRAM CAS Latency and RAS to CAS Delay, calculated by clocks. They are important parameters affects SDRAM performance, default is 2 clocks. If your SDRAM has unstable problem, change 2/2 to 3/3.
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Chipset Features à SDRAM RAS Precharge Time

<u>SDRAM RAS Precharge Time</u> 2T 3T	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 3 clocks .
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Chipset Features à DRAM ECC Function

<u>DRAM ECC Function</u>	This item 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.
Enabled	
Disabled	

Chipset Features à CPU-to-PCI IDE Posting

<u>CPU-to-PCI IDE Posting</u>	To enable or disable CPU to PCI IDE post write cycle. The IDE write cycles will be queued in the FIFO or buffer, and CPU can be released to do next job. Disable it, if you find any IDE compatibility problem.
Enabled	
Disabled	

Chipset Features à Video BIOS Cacheable

<u>Video BIOS Cacheable</u>	Allows the video BIOS to be cached to allow faster video performance.
Enabled	
Disabled	

Chipset Features à Video RAM Cacheable

<u>Video RAM Cacheable</u>	This item lets you cache Video RAM A000 and B000.
Enabled	
Disabled	

Chipset Features à 8 Bit I/O Recovery Time

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

Chipset Features à 16 Bit I/O Recovery Time

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

Chipset Features à Memory Hole At 15M-16M

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

Chipset Features à Passive Release

<u>Passive Release</u>	This item lets you control the Passive Release function of the PIIX4 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.
Enabled	
Disabled	

Chipset Features à Delayed Transaction

<u>Delayed Transaction</u>	This item lets you control the Delayed Transaction function of the PIIX4 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	

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Chipset Features à AGP Aperture Size (MB)

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

Chipset Features à Pentium II Micro Codes

<u>Pentium II Micro Codes</u>	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 à Manufacture Frequency Default

<u>Manufacture Frequency Default</u>	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	

Chipset Features à System Frequency

<u>System Frequency</u>	This item lets you set CPU frequency. If you want to set other value, please choose "Manual " to set CPU clock frequency and clock ratio manually.
233 Mhz	
266 Mhz	
300 Mhz	
333 Mhz	
Manual	

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Chipset Features à CPU Clock Frequency

<u>CPU Clock Frequency</u> 66.8 Mhz 68.5 Mhz 75.0 Mhz 83.3 Mhz	This item lets you set external clock (bus clock). The possible settings of current Klamath CPU available on the market are 66.8 Mhz, the correct setting may vary because of new CPU product, refer to your CPU specification for more details.
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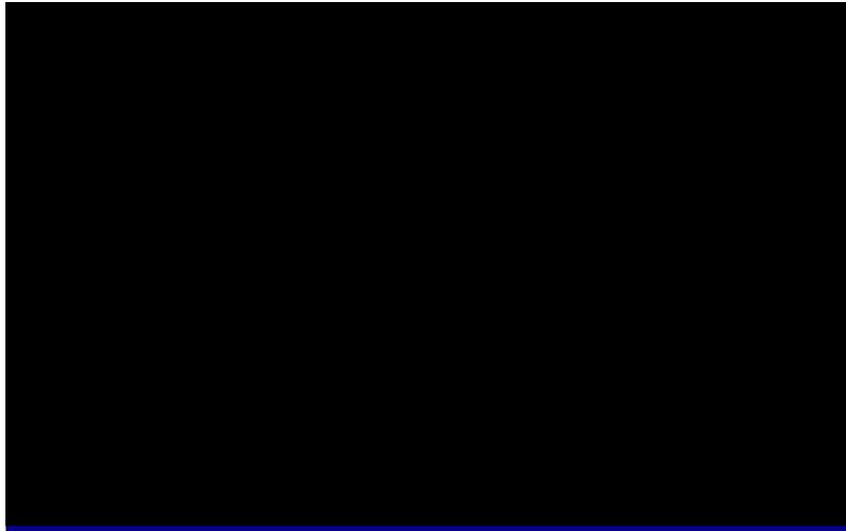
Chipset Features à CPU Clock Ratio

<u>CPU Clock Ratio</u> 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 (Klamath) 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.
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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.



Power Management à Power Management

Power Management	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.
Max Saving	
Mix Saving	
User Define	
Disabled	

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

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Power Management à PM Controlled by APM

<u>PM Controlled by APM</u> 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.
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Power Management à Video Off After

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

Power Management à 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).
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Power Management à 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 à 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".

Power Management à HDD Power Down

<u>HDD Power Down</u>
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).

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Power Management à Modem Wake Up

Modem Wake Up Enabled Disabled	This option lets you specify enable or disable Modem Wake Up function.
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Power Management à LAN Wake Up

LAN Wake Up Enabled Disabled	This option lets you specify enable or disable LAN Wake Up function.
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Power Management à 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 à VGA Active Monitor

VGA Active Monitor Enabled Disabled	To enable or disable the detection of VGA activity for power down state transition.
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Power Management à Power Button Override

<u>Power Button Override</u> Enabled Disabled

This is a specification of ACPI and supported by hardware. When **Enabled**, 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 **Disabled**, 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 à RTC Wake Up Timer

<u>RTC Wake Up Timer</u> Enabled Disabled

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

Power Management à WakeUp Date (of Month)

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

This item is displayed when you enable the RTC Wake Up 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.

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

WakeUp Time (hh:mm:ss) hh:mm:ss	This item is displayed when you enable the RTC Wake Up Timer option. Here you can specify what time you want to wake up the system.
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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.
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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.
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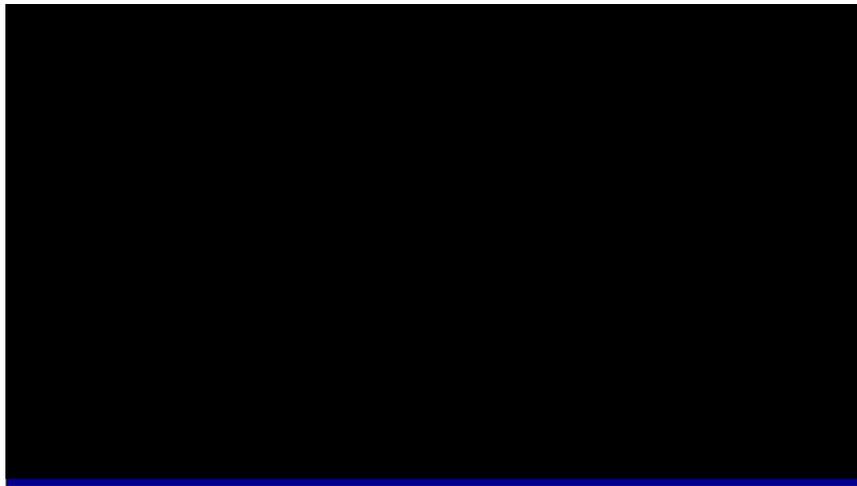
- Power Management à Primary IDE 0
- Power Management à Primary IDE 1
- Power Management à Secondary IDE 0
- Power Management à Secondary IDE 1
- Power Management à Floppy Disk
- Power Management à Serial Port
- Power Management à Parallel Port

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.
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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

<u>PnP OS Installed</u>	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 <i>Yes</i> 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	

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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).

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- 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.

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.

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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 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".

PNP/PCI Configuration à Used MEM Length

<u>Used MEM Length</u>
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.

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PNP/PCI Configuration à PCI Slot1 IRQ (Right)

PNP/PCI Configuration à PCI Slot2 IRQ

<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.

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 SIMM 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

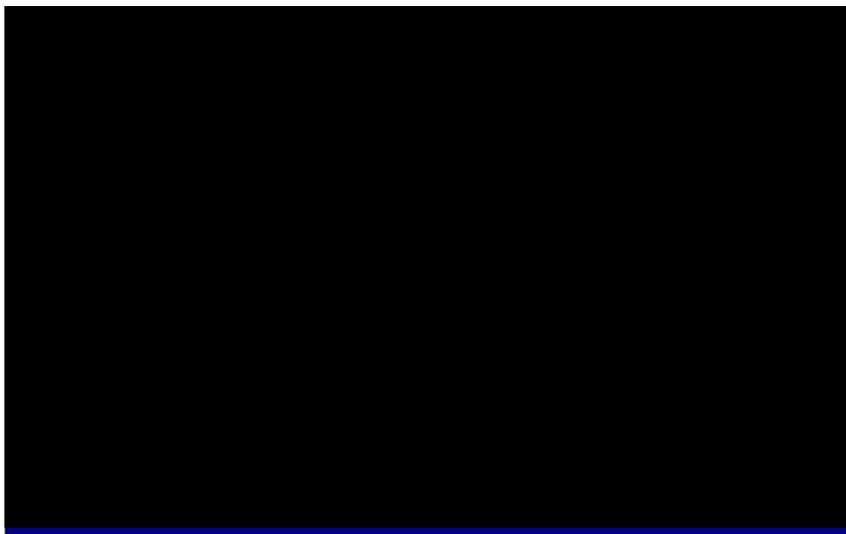
The "Load Turbo Defaults" option gives better performance than Optimal values. However, Turbo values may not be the best setting of this mainboard but these values are qualified by the AOpen RD and QA department as the reliable settings especially if you have limited loading of add-on card and memory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

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 à IDE HDD Block Mode

<u>IDE HDD Block Mode</u>
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.

- Integrated Peripherals à IDE Primary Master PIO**
- Integrated Peripherals à IDE Primary Slave PIO**
- Integrated Peripherals à IDE Secondary Master PIO**
- Integrated Peripherals à IDE Secondary Slave PIO**

<u>IDE Primary Master PIO</u>
Auto
Mode 1
Mode 2
Mode 3
Mode 4

Setting this item to **Auto** activates the HDD speed auto-detect function. The PIO mode specifies the data transfer rate of HDD. For example: mode 0 data transfer rate is 3.3MB/s, mode 1 is 5.2MB/s, mode 2 is 8.3MB/s, mode 3 is 11.1MB/s and mode 4 is 16.6MB/s. If your hard disk performance becomes unstable, you may manually try the slower mode.



Caution: *It is recommended that you connect the first IDE device of each channel to the endmost connector of the IDE cable. Refer to section "Connectors" for details on how to connect IDE device(s).*

- 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**

<u>IDE Primary Master UDMA</u>
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**

<u>On-Chip Primary PCI IDE</u>
Enabled
Disabled

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

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Integrated Peripherals à USB Legacy Support

USB Legacy 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 Legacy Support" if you have USB driver in the operating system.

Integrated Peripherals à USB IRQ Released

USB IRQ Released Yes No

USB device is default to use PCI INTD#, the same as PCI slot4. If you installed PCI card on slot4 and require to use INTD#, set this item to Yes. The USB device will then be disabled.



Note: Normally, PCI VGA does not need PCI interrupt, you may put PCI VGA on slot4.

Integrated Peripherals à 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.

AWARD BIOS

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

Onboard Serial Port <u>1</u> 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 à Onboard UART 2 Mode

Onboard UART 2 Mode 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.

AWARD BIOS

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.

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.

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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.

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 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 "sss" 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
C:> AOFLASH Biosfile.bin
Biosfile.bin is the filename of the BIOS code.

AWARD BIOS

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.