
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. These changes are implemented to further enhance system performance.

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.

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

Date (mm:dd:yy) : Wed. Mar 6 1996								
Time (hh:mm:ss) : 00:00:00								
HARD DISK	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTORS	MODE
Primary Master	: Auto	0	0	0	0	0	0	AUTO
Primary Slave	: Auto	0	0	0	0	0	0	AUTO
Secondary Master	: Auto	0	0	0	0	0	0	AUTO
Secondary Slave	: Auto	0	0	0	0	0	0	AUTO
Drive A : 1.44M, 3.5 in								
Drive B : None								
Video : EGA/VGA								
Halt On : All Errors								
		Base Memory : 640 K						
		Extended Memory : 15360 K						
		Other Memory : 384 K						
		Total Memory : 16384 K						
ESC : Quit			↑ ↓ → ← : Select Item					
F10 : Save & Exit Setup			(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

<u>Type</u>
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

<u>Mode</u>
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.

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3.3 BIOS Features Setup

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

ROM PCI/ISA BIOS (XXXXXXXX)
BIOS FEATURES SETUP
AWARD SOFTWARE, INC.

Virus Warning	: Disabled	Video BIOS Shadow	: Enabled
External Cache	: Enabled	C8000-CBFFF Shadow	: Disabled
Quick Power On Self Test	: Enabled	CC000-CFFFF Shadow	: Disabled
Boot Sequence	: A,C,SCSI	D0000-D3FFF Shadow	: Disabled
Swap Floppy Drive	: Disabled	D4000-D7FFF Shadow	: Disabled
Boot Up Floppy Seek	: Disabled	D8000-DBFFF Shadow	: Disabled
Boot Up NumLock Status	: ON	DC000-DFFFF Shadow	: Disabled
Boot Up System Speed	: High		
Typematic Rate Setting	: Disabled		
Typematic Rate (Chars/Sec)	: 6	ESC: Quit	↑↓→← : Select Item
Typematic Delay (Msec)	: 250	F1 : Help	PU/PD/+/- : Modify
Security Option	: Setup	F5 : Old Values (Shift) F2 : Color	
PCI/VGA Palette Snoop	: Disabled	F6 : Load Setup Defaults	
OS Select for DRAM > 64MB	: Non-OS/2	F7 : Load Turbo Defaults	

BIOS Features → 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 → External Cache

<u>External Cache</u> Enabled Disabled	Enabling this parameter activates the secondary cache (currently, PBRAM cache). Disabling the parameter slows down the system. Therefore, we recommend that you leave it enabled unless you are troubleshooting a problem.
---	--

BIOS Features → Power-On Self-Test

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

BIOS Features → Boot Sequence

<u>Boot Sequence</u> 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	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
---	---

BIOS Features → Swap Floppy Drive

<u>Swap Floppy Drive</u> 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 → Boot-up Floppy Seek

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Boot-up Floppy Seek

Enabled
Disabled

When enabled, the BIOS issues the seek command to the floppy drive during POST to move floppy drive head forward and backward.

BIOS Features → 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 → Boot-up System Speed

Boot-up System Speed

High
Low

Select High or Low system speed after boot.

BIOS Features → 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.

BIOS Features → Typematic Rate

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 → Typematic Delay

<u>Typematic Delay</u>

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.

BIOS Features → Security Option

<u>Security Option</u>

Setup
System

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.

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>.

BIOS Features → PCI/VGA Palette Snoop

<u>PCI/VGA Palette Snoop</u>

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 → OS Select for DRAM > 64MB

<u>OS Select for DRAM > 64MB</u>
--

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 → Video BIOS Shadow

<u>Video BIOS</u>

<u>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 → 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

<u>C800-CBFF</u>

<u>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.

ROM PCI/ISA BIOS (XXXXXXXX)
CHIPSET FEATURES SETUP
AWARD SOFTWARE, INC.

Auto Configuration	: Enabled	
Refresh Cycle time (us)	: 15.6	
RAS Pulse Width (Refresh)	: 3T	
RAS Precharge Time	: 3T	
RAS to CAS Delay	: 3T	
ISA Bus Clock Frequency	: PCICLK/4	
System BIOS Cacheable	: Enabled	
Video BIOS Cacheable	: Enabled	
Memory Hole At 15M-16M	: Disabled	
		ESC: Quit ↑↓→← : Select Item F1 : Help PU/PD/+/- : Modify F5 : Old Values (Shift) F2 : Color 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.

Chipset Features → Auto Configuration

Auto Configuration	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.
Enabled	
Disabled	

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Chipset Features → Refresh Cycle Time (us)

<u>Refresh Cycle Time (us)</u>

15.6
62.4
124.8
187.2

This option lets you set the cycle time for the chipset to refresh DRAM to avoid losing data.

Chipset Features → RAS Pulse Width (Refresh)

<u>RAS Pulse Width (Refresh)</u>

3T
4T
5T
6T

This parameter specifies the number of clocks required to assert the DRAM row address strobe (RAS) signal for refresh cycles.

Chipset Features → RAS Precharge Time

<u>RAS Precharge Time</u>

2T
3T
4T

This parameter specifies the number of clocks required to deassert the RAS signal to prevent DRAM from losing data after performing a read.

Chipset Features → RAS to CAS Delay

<u>RAS to CAS Delay</u>

2T
3T
4T

This option allows you to set the wait state between the start of RAS and column address strobe (CAS) signals. The available settings are. To calculate the exact ISA bus clock, take the PCICLK/3 setting as an example. For a 66MHz CPU with 33MHz PCI bus clock, the ISA bus clock is calculated as follows: $33\text{MHz}/4 = 8.25\text{MHz}$.

Chipset Features → System BIOS Cacheable

<u>System BIOS Cacheable</u>

Enabled
Disabled

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

Chipset Features → Video BIOS Cacheable

<u>Video BIOS Cacheable</u>
--

Enabled
Disabled

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

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.

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3.5 Power Management Setup

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

ROM PCI/ISA BIOS (XXXXXXXX)
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.

Power Management : Disabled	IRQ3 (COM2) : Enabled
PM Control by APM : Yes	IRQ4 (COM1) : Enabled
Video Off Option : Susp,Stdby->Off	IRQ5 (LPT2) : Enabled
Video Off Method : V/H SYNC+Blank	IRQ6 (Floppy Disk): Enabled
Doze Speed (div by) : 2	IRQ7 (LPT1) : Enabled
Stdby Speed (div by) : 3	IRQ8 (RTC Alarm) : Disabled
Modem Use IRQ : 3	IRQ9 (IRQ2 Redir) : Enabled
	IRQ10 (Reserved) : Enabled
PM Timers	IRQ11 (Reserved) : Enabled
HDD Off After : Disabled	IRQ12 (PS/2 Mouse) : Enabled
Doze Mode : Disabled	IRQ13 (Coprocessor): Enabled
Standby Mode : Disabled	IRQ14 (Hard Disk) : Enabled
Suspend Mode : Disabled	IRQ15 (Reserved) : Enabled
PM Events	
COM Ports Activity : Enabled	ESC: Quit ↑↓→← : Select Item
LPT Port Activity : Enabled	F1 : Help PU/PD/+/- : Modify
HDD Port Activity : Enabled	F5 : Old Values (Shift) F2 : Color
VGA Activity : Disabled	F6 : Load TURBO Defaults
	F7 : Load Setup Defaults

Power Management → Power Management

Power Management

Max Saving
Mix Saving
User Defined
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 Defined to choose your own parameters.

Mode	Doze	Standby	Suspend
Min Saving	40 min	40 min	40 min
Max Saving	20 sec	20 sec	20 sec

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 Option

Video Off Option

Always On
All Modes → Off
Suspend → Off
Susp, Standby → Off

To turn off video monitor at which power down mode.

Power Management → Video Off Method

Video Off Method

Blank Screen
V/H SYNC+Blank
DPMS

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 → Doze Speed (div by)

Power Management → Stdby Speed (div by)

Doze Speed (div by)

1
2
3
4
5
6
7
8

These items let you set the system speed divisor to specify the rate at which the system speed will slow down once it enters the **Doze Mode** or **Standby Mode**. The options are from 1 to 8. To determine the exact rate of the system in Doze mode, take 2 as the divisor and 133MHz as the normal system speed. $133\text{MHz}/2 = 66\text{MHz}$ - this is the system speed in Doze mode.

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Power Management → Modem Use IRQ

<u>Modem Use IRQ</u>
NA
3
4
5
6
7
9
10
11

This item tells BIOS/Chipset the IRQ of your modem. This allows BIOS/Chipset to monitor the activities of the modem connected to your system.

Power Management → HDD Off After

<u>HDD Off After</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 described in this section (Standby and Suspend).

Power Management → Doze Mode

<u>Doze Mode</u>
Disabled
20 Sec
1 Min
5 Min
10 Min
15 Min
20 Min
30 Min
40 Min

This item lets you set the period of time after which the system enters into Doze mode. In this mode, the CPU clock slows down. The ratio is specified in the "Throttle Duty Cycle". Any activity detected returns the system to full power. The system activity (or event) is detected by monitoring the IRQ signals.

Power Management → Standby Mode

Standby Mode

Disabled
20 Sec
1 Min
5 Min
10 Min
15 Min
20 Min
30 Min
40 Min

This item lets you set the period of time after which the system enters into Standby mode. In this mode, CPU clock slows down, hard disk will be shut off and 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.

Power Management → Suspend Mode**Suspend Mode**

Disabled
20 Sec
1 Min
5 Min
10 Min
15 Min
20 Min
30 Min
40 Min

This item lets you set the period of time after which the system enters into Suspend mode. In this mode, CPU clock stops, all other devices will be shut off. Any activity detected returns the system to full power. The system activity(or event) is detected by monitoring the IRQ signals.

Power Management → COM Ports Activity**Power Management → LPT Ports Activity****Power Management → HDD Ports Activity****Power Management → VGA Activity****COM Ports Activity**

Enabled
Disabled

To enable or disable the detection of COM port, LPT, HDD, VGA activities for power down state transition.

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Power Management → IRQ3 (COM2)
Power Management → IRQ4 (COM1)
Power Management → IRQ5 (LPT2)
Power Management → IRQ6 (Floppy Disk)
Power Management → IRQ8 (RTC Alarm)
Power Management → IRQ9 (IRQ2 Redir)
Power Management → IRQ10 (Reserved)
Power Management → IRQ11 (Reserved)
Power Management → IRQ12 (PS/2 Mouse)
Power Management → IRQ13 (Coprocessor)
Power Management → IRQ14 (Hard Disk)
Power Management → IRQ15 (Reserved)

<u>IRQ2 (COM2)</u>

Enabled
Disabled

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

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 (XXXXXXXX)
PNP/PCI CONFIGURATION SETUP
AWARD SOFTWARE, INC.

Resources Controlled By : Manual	PCI IDE IRQ Map To : PCI-Auto
Reset Configuration Data : Disabled	Primary IDE INT# : A
IRQ 3 assigned to : PCI/ISA PnP	Secondary IDE INT# : B
IRQ 4 assigned to : PCI/ISA PnP	Used MEM base addr : N/A
IRQ 5 assigned to : PCI/ISA PnP	Used MEM Length : 8K
IRQ 7 assigned to : PCI/ISA PnP	
IRQ 9 assigned to : PCI/ISA PnP	
IRQ 10 assigned to : PCI/ISA PnP	
IRQ 11 assigned to : PCI/ISA PnP	
IRQ 12 assigned to : PCI/ISA PnP	
IRQ 14 assigned to : PCI/ISA PnP	
IRQ 15 assigned to : PCI/ISA PnP	
DMA 0 assigned to : PCI/ISA PnP	ESC: Quit ↑↓→← : Select Item
DMA 1 assigned to : PCI/ISA PnP	F1 : Help PU/PD/+/- : Modify
DMA 3 assigned to : PCI/ISA PnP	F5 : Old Values (Shift) F2 : Color
DMA 5 assigned to : PCI/ISA PnP	F6 : Load Setup Defaults
DMA 6 assigned to : PCI/ISA PnP	F7 : Load Turbo Defaults
DMA 7 assigned to : PCI/ISA PnP	

PNP/PCI Configuration→ 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.

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PNP/PCI Configuration→ Reset Configuration Data

<u>Reset Configuration Data</u>
--

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.

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

<u>IRQ 3 assigned to</u>

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 assigned to
PNP/PCI Configuration→ DMA 1 assigned to
PNP/PCI Configuration→ DMA 3 assigned to
PNP/PCI Configuration→ DMA 5 assigned to
PNP/PCI Configuration→ DMA 6 assigned to
PNP/PCI Configuration→ DMA 7 assigned to

<u>DMA 0 assigned to</u>

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→ PCI IRQ Activated By

PCI IRQ Activated By

Level
Edge

This option lets the user set when to activate the PCI IRQ. The available settings are Edge and Level. The Edge is the start of the signal and Level is the point at which the signal is high. The default is Level.

PNP/PCI Configuration→ PCI IDE 2nd Channel

PCI IDE 2nd Channel

Enabled
Disabled

Enable this option if you installed an IDE controller board into one of the PCI slots on the system board, and assign it as your secondary IDE controller. Otherwise, set this parameter to Disabled.

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.

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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

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.

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 (XXXXXXXX)
 INTEGRATED PERIPHERALS
 AWARD SOFTWARE, INC.

Internal PCI/IDE	: Enabled	
IDE Primary Master PIO	: Auto	
IDE Primary Slave PIO	: Auto	
IDE Secondary Master PIO	: Auto	
IDE Secondary Slave PIO	: Auto	
IDE HDD Block Mode:	: Enabled	
USB Legacy Support	: Disabled	
USB IRQ Released	: No	
Onboard FDC Controller	: Enabled	
Onboard UART 1	: AUTO	
Onboard UART 2	: AUTO	
Onboard UART 2 Mode	: Standard	
IR Duplex Mode	: Half	
Onboard Parallel Port	: 378/IRQ7	
Parallel Port Mode	: Normal	
ECP Mode Use DMA	: 3	
Parallel Port Type	: EPP1.7	
		ESC: Quit ↑↓→← : Select Item F1 : Help PU/PD/+/- : Modify F5 : Old Values (Shift) F2 : Color F6 : Load Setup Defaults F7 : Load Turbo Defaults

Integrated Peripherals → Internal PCI IDE

Internal PCI IDE

Disabled
 Primary
 Secondary
 Both

This parameter lets you enable or disable the on-chip primary or secondary IDE device.

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Integrated Peripherals→ IDE Primary Master PIO

Integrated Peripherals→ IDE Primary Slave PIO

Integrated Peripherals→ IDE Secondary Master PIO

Integrated Peripherals→ IDE Secondary Slave PIO

**IDE Primary Master
PIO**

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 2.3 "Connectors" for details on how to connect IDE device(s).*

Integrated Peripherals→ IDE HDD Block Mode

**IDE HDD Block
Mode**

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→ 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 → 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 → 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 UART 1

Integrated Peripherals → Onboard UART 2

Onboard UART 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**.

Award BIOS



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

Integrated Peripherals→ 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 2.3.2.3 "Connectors "). This setting allows infrared serial communication at a maximum baud rate of 19.2K baud.

Integrated Peripherals→ IR Duplex Mode

IR Duplex Mode

Full
Half

This item lets you set the duplex mode for the IR communication. Full - Allows IR communication in bidirectional mode. Half - Allows IR communication in single direction only.



Note: This option appears only if the IR function is activated and the Onboard UART 2 Mode parameter is NOT set to Standard.

Integrated Peripherals→ Onboard Parallel Port

Onboard Parallel Port
3BC/IRQ7
378/IRQ7
278/IRQ7
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 → Parallel Port Mode

Parallel Port Mode
Normal
EPP
ECP
ECP + EPP

This item lets you set the parallel port mode. The mode options are **Normal** (Standard and Bidirection Parallel Port), EPP (Enhanced Parallel Port) and ECP (Extended Parallel Port). Normal 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 → ECP Mode Use Type

Parallel Port Type
EPP1.7
EPP1.9

This item selects the EPP protocol.

Award BIOS

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 HDD Low-level Format

The HDD Low-level Format function is designed as a tool to save your time formatting your hard disk. This automatically sets the necessary information of the selected drive. It also searches for the bad tracks and lists them for your reference.

HDD Low-level Format→ Select Drive

Select an installed hard disk drive (either C, D, E, or F). The bottom of the screen displays the drive automatically detected by the BIOS.

HDD Low-level Format→ Bad Track List

The following options are available for this function:

- Auto scan bad track - Automatically scans and lists the bad tracks in the window located at the right side of the screen.
- Add bad track - Allows you to manually enter the information of the known bad track in the window located at the right side of the screen.
- Modify bad track - Allows you to modify the information of the added bad track in the window located at the right side of the screen.
- Delete bad track - Deletes the added bad tracks.
- Clear bad track table - Clears the whole bad track list in the window located at the right side of the screen.

HDD Low-level Format→ Preformat

The following options are available for this function:

- Interleave - Allows you to manually set the interleave number of the hard disk drive selected for low-level formatting. You may enter any number from 1 to 8. Before setting, check the documentation that comes with the drive for the correct interleave number, or select 0 for automatic detection.

Award BIOS

- Auto scan bad track - Allows the utility to scan first then format. Formatting is done by tracks.
- Start - Allows you to begin the low-level format by typing Y.

3.13 Save & Exit Setup

This function automatically saves all CMOS values before leaving Setup.

3.14 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.

3.15 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.

3.16 AWARD BIOS Flash Utility

The AWARD Flash utility allows you to upgrade the system BIOS. To get the AWARD Flash utility and the upgrade BIOS file, contact your local distributor or visit our homepage at <http://www.aopen.com.tw> The filename of the AWARD Flash utility is AWDFLASH.EXE. Run this program under DOS and follow the instructions on the screen. After running the program, reboot your system for the new BIOS to take effect