

## **CHAPTER 3    AWARD BIOS SETUP**

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# **Chapter 3**

## **AWARD BIOS SETUP**

Award's BIOS ROM has a built-in Setup program that allows users to modify the basic system configuration. This type of information is stored in battery-backed RAM (CMOS RAM), so that it retains the Setup information when the power is turned off.

## **CHAPTER 3    AWARD BIOS SETUP**

---

### **3.1 Entering Setup**

Power on the computer and press <Del> immediately to allow you to enter Setup.

PRESS <DEL> TO ENTER SETUP

### **3.2 Getting Help**

#### **Main Menu**

The on-line description of the highlighted setup function is displayed at the bottom of the screen.

#### **Status Page Setup Menu/Option Page Setup Menu**

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

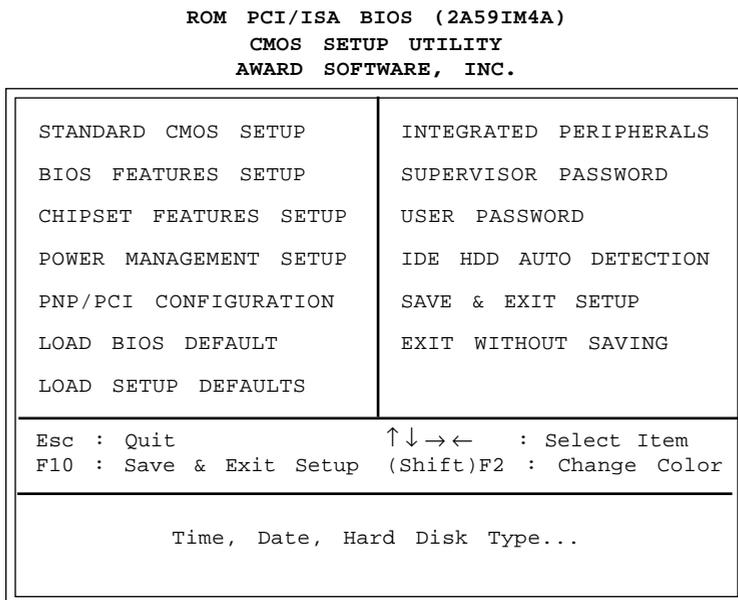
# CHAPTER 3 AWARD BIOS SETUP

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## 3.3 The Main Menu

Once you enter Award BIOS CMOS Setup Utility, the Main Menu (Figure 1) will appear on the screen. The Main Menu allows you to select from ten setup functions and two exit choices. Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.

**Figure 1 Main Menu**



## **CHAPTER 3    AWARD BIOS SETUP**

---

### **Standard CMOS Setup**

This setup page includes all the items in a standard compatible BIOS.

### **BIOS Features Setup**

This setup page includes all the items of Award special enhanced features.

### **Chipset Features Setup**

This setup page includes all the items of chipset special features.

### **Power Management Setup**

This category determines the power consumption for system after setting the specified items. Default value is Disable.

### **PCI Configuration Setup**

This category specifies the value (in units of PCI bus clocks) of the latency timer for this PCI bus master and the IRQ level for PCI device.

### **Supervisor Password/User Password**

Change, set or disable password. This function allows the user access to the system and setup or just setup.

### **Load BIOS Default**

BIOS default indicates the values required by the system for maximum performance.

### **Load Setup Defaults**

Chipset defaults indicates the values required by the system for the maximum performance.

## **CHAPTER 3    AWARD BIOS SETUP**

---

### **IDE HDD Auto Detection**

Automatically configure hard disk parameters.

### **Save & Exit Setup**

Save CMOS value changes to CMOS and exit setup.

### **Exit Without Save**

Abandon all CMOS value changes and exit setup.

# CHAPTER 3 AWARD BIOS SETUP

## 3.4 Standard CMOS Setup

The items in Standard CMOS Setup Menu are divided into 10 categories. Each category includes none, one or more than one setup items. Use the arrow keys to highlight the item and then use the <PgUp> or <PgDn> keys to select the value you want in each item.

**Figure 2 Standard CMOS Setup Menu (Support Enhanced IDE)**

ROM PCI/ISA BIOS (2A59IM4A)  
STANDARD CMOS SETUP  
AWARD SOFTWARE, INC.

Date(mm:dd:yy): Thur, March 27,1997							
Time(hh:mm:ss): 00:00:00							
HARD DISKS	TYPE	SIZE	CYLS	HEADS	PRECOMP	LANDZONE	SECTOR MODE
Primary Master:	Auto	0	0	0	0	0	AUTO
Primary Slave :	Auto	0	0	0	0	0	AUTO
Secondary Master :	Auto	0	0	0	0	0	AUTO
Secondary Slave :	Auto	0	0	0	0	0	AUTO
Drive A :	1.44M,3.5in.			Base Memory:	640K		
Drive B :	None			Extended Base Memory:	15360K		
Video :	EGA/VGA			Other Memory:	384K		
Halt On :	All, but Keyboard			Total Memory:	16384K		
ESC : Quit	↑↓→←	: Select Item		PU/PD/+/-	: Modify		
F1 : Help	(Shift)F2	: Change Color					

## CHAPTER 3 AWARD BIOS SETUP

---

### Date

The date format is <day><month> <date> <year>.

<b>Day</b>	Day of the week, from Sun to Sat, determine. By BIOS, read only
<b>month</b>	The month Jan. through Dec.
<b>date</b>	The date from 1 to 31 can be keyed by numeric function keys
<b>year</b>	The year, depends on the year of the BIOS

### Time

The time format is <hour> <minute> <second>. Which accepts both function key or numerical key.

### PrimaryMaster/PrimarySlave SecondaryMaster/Secondary Slave

The categories identify the types of 2 channels that have been installed in the computer. There are 45 pre-defined types and 4 user definable types are for Enhanced IDE BIOS. Type 1 to Type 45 are pre-defined. Type User is user-definable.

Press PgUp/<+> or PgDn/<-> to select a numbered hard disk type or type the number and press <Enter>. Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information for this category. If your hard disk drive type is not matched or listed, you can use Type User to define your own drive type manually.

If you select Type User, related information is asked to be entered to the following items. Enter the information directly from the keyboard and press <Enter>. This information should be provided in the documentation from your hard disk vendor or the system manufacturer.

## **CHAPTER 3    AWARD BIOS SETUP**

---

If the controller of HDD interface is ESDI, the selection shall be  
“Type 1”.

If the controller of HDD interface is SCSI, the selection shall be  
“None”.

If the controller of HDD interface is CD-ROM, the selection shall be  
“None”.

<b>CYLS.</b>	number of cylinders
<b>HEADS</b>	number of heads
<b>PRECOMP</b>	write precom
<b>LANDZONE</b>	landing zone
<b>SECTORS</b>	number of sectors
<b>MODEHDD</b>	access mode

# CHAPTER 3 AWARD BIOS SETUP

## 3.5 BIOS Features Setup

ROM PCI/ISA BIOS (2A59IM4A)  
BIOS FEATURES SETUP  
AWARD SOFTWARE, INC.

Virus Warning	: Disabled	Video BIOS Shadow	: Enabled
CPU Internal Cache	: Enabled	C8000-CBFFF Shadow	: Disabled
External Cache	: Enabled	CC000-CFFFF Shadow	: Disabled
Quick power on Self Test	: Disabled	D0000-D3FFF Shadow	: Disabled
Boot Sequence	: A,C,SCSI	D4000-D7FFF Shadow	: Disabled
Swap Floppy Drive	: Disabled	D8000-DBFFF Shadow	: Disabled
Boot up Floppy Seek	: Enabled	DC000-DFFFF Shadow	: Disabled
Boot up NumLock status	: On		
Boot up System Speed	: High		
Gate A20 Option	: Fast		
Typematic Rate Setting	: Disabled		
Typematic Rate(char/sec)	: 6		
Typematic Delay(Msec)	: 250		
Security Option	: Setup		
PCI/VGA palette snoop	: Disabled		
OS select for DRAM>64MB	: Non-OS2		
		Esc : Quit    ↑↓→← : Select item	
		F1 : Help      PU/PD/+/- : modify	
		F5 : Old Value(Shift) F2 : Color	
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

### Virus Warning

This category flashes on the screen. During and after the system boots up, any attempt to write to the boot sector or partition table of the hard disk drive will halt the system and the following error message will appear, in the meantime, you can 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.

## CHAPTER 3 AWARD BIOS SETUP

---

**Disabled** (default) No warning message to appear when anything attempts to access the boot sector or hard disk partition table.

**Enabled** Activates automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector of hard disk partition table.

**Note:** *This function is available only for DOS and other OS that do not trap INT13.*

### CPU Internal Cache

The default value is Enabled. If your CPU is without Internal Cache, then this item “CPU Internal Cache” will not be shown.

**Enabled** (default) Enable cache

**Disabled** Disable cache

**Note:** The internal cache is a built in the processor.

### CPU External Cache

Choose Enabled or Disabled. This option enables the level 2 cache memory.

### Quick Power On Self Test

This category speeds up Power On Self Test (POST) after you power on the computer. If it is set to Enable, BIOS will shorten or skip some check items during POST.

**Enabled** Enable quick POST

**Disabled** (default) Normal POST

## CHAPTER 3 AWARD BIOS SETUP

---

### Boot Sequence

This category determines which drive the computer searches first for the disk operating system. The settings are A,C,SCSI/C,A,SCSI/C,CD-ROM,A/CD-ROM,C,A/D,A,SCSI/E,A,SCSI/F,A,SCSI/SCSI,A,C/SCSI,C,A/C only. Default value is A,C,SCSI.

### Swap Floppy Drive

Switches the floppy disk drives between being designated as A and B. Default is Disabled.

### Boot Up Floppy Seek

During POST, BIOS will determine if the floppy disk drive installed is 40 or 80 tracks. 360K type is 40 tracks while 720K, 1.2M and 1.44M are all 80 tracks.

<b>Enabled</b> (default)	BIOS searches for floppy disk drive to determine if it is 40 or 80 tracks. Note that BIOS can not tell from 720K, 1.2M or 1.44M drive type as they are all 80 tracks.
<b>Disabled</b>	BIOS will not search for the type of floppy disk drive by track number. Note that there will not be any warning message if the drive installed is 360K.

### Boot Up NumLock Status

The default value is On.

<b>On</b> (default)	Keypad is number keys
<b>Off</b>	Keypad is arrow keys

## CHAPTER 3    AWARD BIOS SETUP

---

### Boot Up System Speed

It selects the default system speed - the speed that the system will run at immediately after power up.

<b>High</b> (default)	Set the speed to high
<b>Low</b>	Set the speed to low

### Gate A20 Option

<b>Normal</b>	The A20 signal is controlled by keyboard controller or chipset hardware.
<b>Fast</b> (default)	Default : Fast. The A20 signal is controlled by Port 92 or chipset specific method.

### Typematic Rate Setting

This determines the typematic rate.

<b>Enabled</b>	Enable typematic rate and typematic delay programming
<b>Disabled</b> (default)	Disable typematic rate and typematic delay programming. The system BIOS will use default value of this 2 items and the default is controlled by keyboard.

### Typematic Rate (Chars/Sec)

6 (default)	6 characters per second
8	8 characters per second
10	10 characters per second
12	12 characters per second
15	15 characters per second
20	20 characters per second
24	24 characters per second
30	30 characters per second

## CHAPTER 3    AWARD BIOS SETUP

---

### Typematic Delay

Choose the length of delay from the time you press a key and the character starts repeating. (Units are mil-secs)

### Security Option

This category allows you to limit access to the system and Setup, or just to Setup.

<b>System</b>	The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt.
<b>Setup(default)</b>	The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt.

**Note:** To disable security, select PASSWORD SETTING at Main Menu and then you will be asked to enter the password twice. Do not type anything and just press <Enter>, it will disable security. Once the security is disabled, the system will boot and you can enter Setup freely.

### PCI VGA Palette Snooping

Some graphic controllers which are not VGA compatible, take the output from a VGA controller and map it to their display as a way to provide the boot information and the VGA compatibility.

However, the color information coming from the VGA controller is drawn from the palette table inside the VGA controller to generate the proper colors, and the graphic controller needs to know what is in the palette of the VGA controller. To do this, the non-VGA graphic controller watches for the Write access to the VGA palette and registers the snoop data. In PCI based systems, where the VGA controller is on the PCI bus and a non-VGA graphic controller is on an ISA bus, the Write Access to the palette will not show up on the ISA bus if the PCI VGA controller responds to the Writes.

## CHAPTER 3    AWARD BIOS SETUP

---

In this case, the PCI VGA controller should not respond to the Write, it should only snoop the data and permit the access to be forwarded to the ISA bus. The non-VGA ISA graphic controller can then snoop the data on the ISA bus. Unless you have the above situation, you should disable this option.

<b>Disabled</b> (default)	Disables the function
<b>Enabled</b>	Enables the function

### OS Selection for DRAM > 64MB

Allows OS2 to be used with > 64 MB of DRAM. Settings are Non-OS/2 (default) and OS2. Set to OS/2 if using more than 64MB and running OS/2.

### Video BIOS Shadow

Determines whether video BIOS will be copied to RAM for faster execution. Video shadow will increase the video performance.

<b>Enabled</b> (default)	Video shadow is enabled
<b>Disabled</b>	Video shadow is disabled

### C8000 - CFFFF Shadow/E8000 - EFFFF Shadow

Determines whether the optional RAM will be copied to RAM for faster execution.

<b>Enabled</b>	Optional shadow is enabled
<b>Disabled</b> (default)	Optional shadow is disabled

**Note:** For C8000-DFFFF option-ROM on PCI BIOS, BIOS will automatically enable the shadow RAM. User does not have to select the item.

# CHAPTER 3 AWARD BIOS SETUP

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## 3.6 Chipset Features Setup

The Chipset Features Setup option is used to change the values of the chipset registers. These registers control most of the system options in the computer.

Choose the “CHIPSET FEATURES SETUP” from the Main Menu and the following screen will appear.

ROM PCI/ISA BIOS(2A59IM4A)  
CMOS SETUP UTILITY  
CHIPSET FEATURES SETUP

Auto Configuration	: Enabled	8 Bit I/O Recovery Time	:1
DRAM Speed Selection	:70ns	16 Bit I/O Recovery Time	:1
DRAM RAS# Precharge Time	:Enabled	Memory Hole At 15M-16M	:Disabled
MA Additional Wait State	:Enabled	DRAM Fast Leadoff	:Disabled
RAS# to CAS# Delay	:Enabled	Passive Release	:Enabled
DRAM Read Burst (B/E/F)	:x2/2/3	Delayed Transaction	:Enabled
DRAM Write Burst (B/E/F)	:x2/2/3		
ISA Bus Clock	:PCICLK/4		
DRAM Refresh Queue	:Enabled		
DRAM RAS Only Referesh	:Enabled		
DRAM ECC/PARITY Select	:Disabled		
Fast Dram Refresh	:Disabled		
Read-Around-Write	:Disabled		
PCI Burst Write Compbine	:Enabled		
PCI-TO-DRAM Pipeline	:Enabled	Esc : Quit	↑ ↓ → ← : Select item
CPU-TO-PCI Write Post	:Disabled	F1 : Help	PU/PD/+/- : modify
CPU-TO-PCI IDE Posting	:Enabled	F5 : Old Value(Shift)	F2 : Color
System BIOS Cacheable	:Disabled	F6 : Load BIOS Defaults	
Video RAM Cacheable	:Disabled	F7 : Load Setup Defaults	

**Note:** Change these settings only if you are familiar with the chipset.

## **CHAPTER 3    AWARD BIOS SETUP**

---

### **Auto Configuration**

Choosing Enabled (default) will automatically configure chipset features using default settings. Choose Disable to customize setup.

### **DRAM Speed Selection**

Sets the DRAM speed at 70ns (default) or 60ns. It will set the speed of the EDO/FP DRAM.

### **DRAM RAS# Pre-charge Time**

Choose 4(default) or 3. Example: For 60MHz Bus speed ( 4 is about [4 clock x 16.6 ns/clock] 66.4ns), (3 is about [3 clock x 16.6 ns/clock] 49.8ns). And for 66.6MHz Bus speed (4 is about [4 clock x 15 ns/clock] 60ns) and 3 is about 45ns.

### **MA Additional Wait State**

Choose Enable to insert 3 clock delay between the RAS# and CAS#. There will be 2 clock delay if disabled(default) is chosen.

### **RAS# to CAS# Delay**

Choosing Enabled will insert one clock delay between the RAS# and CAS#. And if you choose Disabled(default), no clock delay will be inserted.

## CHAPTER 3 AWARD BIOS SETUP

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### DRAM Read Burst (B/E/F)

Under Autoconfig the BIOS will identify which type of DRAM is being used. Choose the setting accordingly. To customize, use this option which sets the Read Burst time for accessing the DRAM. The timing used depends on the type of DRAM and access time being used. The settings are x2/3/4, x2/2/3, x1/2/3 or x3/4/4.

**Note:** B stands for BEDO (Burst Extended Data Output) DRAM.  
E stands for EDO (Extended Data Output) DRAM.  
F stands for FP (Fast Page) DRAM.

Example: If the user chooses DRAM Read Burst (B/E/F):  
x2/3/4 it signifies that:  
2 is used by BEDO  
3 is used by EDO  
4 is used by FP.

Slower rates may be required to support slower memory.

### DRAM Write Burst Timing

This option chooses the Write Burst Timing for accessing DRAM. See: DRAM Read Burst Option. Choose x3/3/4, x3/3/3, x2/2/3 or x4/4/4.

### ISA Bus Clock

### DRAM Refresh Queue

If Enabled, the system chipset's internal 4-deep refresh queue will be enabled, with 4th request being the priority request and all refresh requests are queued. If Disabled, the refresh queue will be disabled and all refresh will be priority requests.

### DRAM Enhanced Paging

Choose Enable(default) or Disable.

## **CHAPTER 3    AWARD BIOS SETUP**

---

### **DRAM RAS Only Refresh**

This setting provides the RAS only refresh or CAS before RAS (CBR) refresh. Disable(default) will utilize the CBR mode and the system will have better performance.

### **DRAM ECC/PARITY Select**

Set this option to Enabled to ECC(Error Checking and Correction)DRAM integrity mode. The settings are Enabled or Disabled. The default settings are Disabled.

**Note:** To enable this function, you have to use SIMM/DIMM with Parity.

### **Fast DRAM Refresh**

Choosing Disabled(default) will select the normal mode, where the refresh rate is every 15ns. Choosing Enabled will call for a refresh cycle every 32 host clocks, and the system will implement a refresh cycle every 531ns/480ns for 60 MHz and 66 MHz respectively.

### **Read-Around-Write**

Choosing Disabled(default) will retire all the DBX(Data Bus Accelerator) before a CPU or PCI read access is serviced. If Enabled , the DBX won't retire before a CPU or PCI read access is serviced.

### **PCI Burst Write Combine**

Choosing Enabled(default) allows the DBX to do back to back sequential CPU to PCI writes (Dword or larger) within a single PCI write Burst. When Disabled, back to back sequential CPU to PCI writes (Dword or larger) will be split into several single PCI write cycles.

## CHAPTER 3    AWARD BIOS SETUP

---

### PCI-To-DRAM Pipeline

Choosing Disabled will restrict pipelining of PCI DRAM write cycles. Enabled is the default.

### CPU-To-PCI Write Post

Choosing Enabled will enable CPU to PCI posting.

### CPU-To-PCI IDE Posting

Choosing Disabled will allow the I/O Write port and the 1F0h and 170h to be treated as normal I/O Write Transactions. During Enabled (default), I/O Write cycles will be posted.

### System BIOS Cacheable

By choosing Disabled (default) the system BIOS will be shadowed into DRAM only. Enabled will have the system BIOS shadowed and cacheable.

### Video RAM Cacheable

Same as system BIOS Cacheable

8-bit I/O recovery time: 1/2/3/4/5/6/7/NA

16-bit I/O recovery time: 1/2/3/NA

Choose the recovery time for 8-bit and 16-bit I/O cycles respectively.

**Note:** NA is not available and so the recovery time of 3.5 SYSCLK is inserted.

## **CHAPTER 3    AWARD BIOS SETUP**

---

### **8-bit recovery time**

Choose the recovery time for 8-bit I/O cycle . The settings are 1, 2, 3, 4, 5, 6, 7, or NA.

### **16-bit recovery time**

Choose the recovery time for 16-bit I/O cycle. The settings are 1, 2, 3, or NA.

### **Memory Hole At 15M-16M**

Choosing Enabled will enable a memory hole in the DRAM space. The CPU cycle matching the enabled hole will be passed on to the PCI. PCI cycles matching an enabled hole are ignored. Disabled (default) will disable this function.

**Note:** A selected (Enabled) hole is not remapped.

### **DRAM Fast Leadoff**

Choose Enabled, one additional wait state is added to the DRAM leadoff timing for page/row miss cycles. The leadoff controls the MA setup to the first CAS# assertion.

### **Passive Release/Delayed Transaction**

The Settings are Enable or Disable. During Enable those PCI add-on cards with PCI 2.1 compliance will perform better. But some PCI card does not meet PCI 2.1 compliance, so the default setting is Disabled.

# CHAPTER 3 AWARD BIOS SETUP

---

## 3.7 Power Management Setup

The Power Management Setup will appear on your screen like this:

ROM PCI/ISA BIOS (2A59IM4A)  
POWER MANAGEMENT SETUP  
AWARD SOFTWARE, INC.

Power Management	: Disabled	** Power Down & Resume Events **
PM Control by APM	: Yes	IRQ3 (COM 2) : ON
Video Off Method	: DPMS	IRQ4 (COM 1) : ON
MODEM Use IRQ	: 3	IRQ5 (LPT 2) : OFF
		IRQ6 (Floppy Disk) : OFF
Doze Mode	: Disabled	IRQ7 (LPT 1) : ON
Standby Mode	: Disabled	IRQ9 (IRQ2 Redir) : OFF
Suspend Mode	: Disabled	IRQ10 (Reserved) : OFF
HDD Power Down	: Disabled	IRQ11 (Reserved) : OFF
		IRQ12 (PS/2 Mouse) : ON
**Wake Up Events in Doze & Standby**		IRQ13 (CoProcessor) : ON
IRQ3 (Wake-Up Event)	: ON	IRQ14 (Hard Disk) : ON
IRQ4 (Wake-Up Event)	: ON	IRQ15 (Reserved) : OFF
IRQ12 (Wake-Up Event)	: ON	
		Esc : Quit    ↑↓→← : Select item
		F1 : Help    PU/PD/+/- : modify
		F5 : Old Value(Shift) F2 : Color
		F6 : Load BIOS Defaults
		F7 : Load Setup Defaults

### Power Management

This category determines the power consumption for system after selecting below items. Default value is Disable. The following pages tell you the options of each item & describe the meanings of each options.

## CHAPTER 3    AWARD BIOS SETUP

---

### Power Management

<b>Disable</b>	Global Power Management will be disabled.
<b>User Define</b>	Users can configure their own power management.
<b>Min Saving</b>	Pre-defined timer values are used such that all timers are in their MAX value.
<b>Max Saving</b>	Pre-defined timer values are used such that all timers MIN value.

### PM Control by APM

<b>No</b>	System BIOS will ignore APM when power managing the system.
<b>Yes</b>	System BIOS will wait for APM's prompt before it enter any PM mode

**Note:** Enable this for OS with APM like Windows™95, Windows™ NT, etc.

### Video Off Method

<b>Blank Screen</b>	The system BIOS will only blanks off the screen when disabling video.
<b>V/H SYNC C+Blank</b>	In addition to (1), BIOS will also turn off the V-SYNC & H-SYNC signals from VGA card to monitor.
<b>DPMS</b>	This function is enabled only for VGA card supporting DPMS.

**Note:** Green monitors detect the V/H SYNC signals to turn off its electron gun.

## CHAPTER 3 AWARD BIOS SETUP

---

### MODEM Use IRQ

This indicates which IRQ No. will be used by the MODEM ( if there is a MODEM). The settings are 3, 4, 5, 7, 9, 10, or NA. The default setting is 3.

### Doze Mode

**Disable**

**1 Min/2 Min/**

**4 Min/6 Min/**

**8 Min/10 Min/**

**20 Min/30 Min/**

**40 Min/1 Hr**

System will never enter DOZE mode.

Defines the continuous idle time before the system entering DOZE mode.

If any item defined in the options of “Power Down and Resume events” is enabled & active, DOZE timer will be reloaded. When the system have entered Doze mode, any of the items enabled in “Wake Up Events in Doze and Standby” will trigger the system to wake up.

### Standby Mode

**Disable**

**1 Min/2 Min/**

**4 Min/6 Min/**

**8 Min/10 Min/**

**20 Min/30 Min/**

**40 Min/1 Hr**

System will never enter STANDBY mode.

Defines the continuous idle time before the system entering STANDBY mode.

If any item defined in the options of “Power Down and Resume events” is enabled & active, STANDBY timer will be reloaded. When the system has entered Standby mode , any of the items that are enabled in “Wake Up Events of Doze and Standby” will trigger the system to wake up.

## CHAPTER 3    AWARD BIOS SETUP

---

### Suspend Mode

**Disable**

**1 Min/2 Min/**

**4 Min/6 Min/**

**8 Min/10 Min/**

**20 Min/30 Min/**

**40 Min/1 Hr**

System will never enter SUSPEND mode.

Defines the continuous idle time before the system entering SUSPEND mode.

If any item defined in the options of “Power Down & Resume Events” is enabled & active, SUSPEND timer will be reloaded. When the system has entered SUSPEND mode, any of the items enabled in the “Power Down & Resume Events” will trigger the system to wake up.

### HDD Power Down

**Disable**

**1 Min/2 Min/**

**3 Min/4 Min/**

**5 Min/6 Min/**

**7 Min/8 Min/**

**9 Min/10 Min/**

**11 Min/12 Min/**

**13 Min/14 Min/**

**15 Min**

HDD’s motor will not shut off.

Defines the continuous HDD idle time before the HDD enters the power saving mode (motor off). BIOS will turn off the HDD’s motor when time is out.

## **CHAPTER 3    AWARD BIOS SETUP**

---

### **IRQ3/IRQ4/IRQ12**

During Enabled, if any interrupt event happened the system will turn on from the suspend mode. And during Disabled, the system will not monitor any interrupt event.

### **IRQ3/IRQ4/IRQ5/IRQ6/IRQ7/IRQ8/IRQ9/IRQ10/IRQ11/ IRQ12/IRQ13/IRQ14/IRQ15**

When set to Monitor, these options enable event monitoring on the specified hardware interrupt request line. If set to Monitor and the computer is in a power saving state, AWARD BIOS watches for activity on the specified IRQ line. The computer enters the full on power state if any activity occurs.

AWARD BIOS reloads the Standby and Suspend timeout timers if activity occurs on the specified IRQ line.

The settings for each of these options are Monitor or Ignore. The Optimal and Fail-Safe default settings are Disabled for all the above options except IRQ3, IRQ4, IRQ7, IRQ12, IRQ14 or IRQ15. The Optimal default settings for these options is Monitor.

# CHAPTER 3 AWARD BIOS SETUP

## 3.8 PNP/PCI Configuration Setup

You can manually configure the PCI Device's IRQ. The following pages tell you the options of each item & describe the meanings of each options.

ROM PCI/ISA BIOS (2A69HM4D)  
PNP/PCI CONFIGURATION SETUP  
AWARD SOFTWARE, INC.

PnP OS Installed	:No	PCI IRQ Activated By	: Level
Resources Controlled By	:Manual	PCI IDE IRQ Map To	: PCI-Auto
Reset Configuration Data	:Disabled	Primary IDE INT#	: A
		Secondary IDE INT#	: B
IRQ-3 assigned to	:Legacy ISA	Assign IRQ for VGA	: Disabled
IRQ-4 assigned to	:Legacy ISA	Used MEM base addr	: C800
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		
DMA-1 assigned to	:PCI/ISA PnP	Esc : Quit	↑↓←→ : Select item
DMA-3 assigned to	:PCI/ISA PnP	F1 : Help	PU/PD/+/- : modify
DMA-5 assigned to	:PCI/ISA PnP	F5 : Old Value(Shift)	F2 : Color
DMA-6 assigned to	:PCI/ISA PnP	F6 : Load BIOS Defaults	
DMA-7 assigned to	:PCI/ISA PnP	F7 : Load Setup Defaults	

### PnP OS Installed

When set to YES, BIOS will only initialize the PnP cards used for booting (VGA, IDE, SCSI). The rest of the cards will be initialized by the PnP operating system like Windows™ 95. When set to NO, BIOS will initialize all the PnP cards. So, for non-PnP operating system (DOS, Netware), this option must set to NO.

## CHAPTER 3    AWARD BIOS SETUP

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### Resources Controlled By

By Choosing “Auto” the system BIOS will detect the system resource and automatically assign the relative IRQ and DMA Channel for each peripheral.

By Choosing “Manual”(default), the user will need to assign IRQ & DMA for add-on cards. Be sure that there is no conflict for IRQ/DMA and I/O ports.

**Note:** When choosing “Auto” you must be sure that all of the system add-on cards are PnP type.

### Reset Configuration Data

The system BIOS supports the PnP feature so the system needs to record which resource is assigned and protect resources from conflict. Every peripheral device has a node which is called ESCD. This node records which resources are assigned to it. The system needs to record and update ESCD to the memory locations. These locations (4K) are reserved at the system BIOS.

If Disabled (default) is chosen the system’s ESCD will update only when the new configuration varies from the last one.

If Enabled is chosen the system will be forced to update ESCDs if the system configuration has changed and then auto set this option to the “Disabled” mode.

IRQ-3 assigned to : Legacy ISA  
IRQ-4 assigned to : Legacy ISA  
IRQ-5 assigned to : PCI/ISA PnP  
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

## **CHAPTER 3    AWARD BIOS SETUP**

---

IRQ-15 assigned to : PCI/ISA PnP  
DMA-0 assigned to : PCI/ISA PnP  
DMA-1 assigned to : PCI/ISA PnP  
DMA-3 assigned to : PCI/ISA PnP  
DMA-5 assigned to : PCI/ISA PnP  
DMA-6 assigned to : PCI/ISA PnP  
DMA-7 assigned to : PCI/ISA PnP

The above settings will be shown on the screen only if “Manual” is chosen for the *Resources Controlled By* function.

Legacy is the term which signifies that a resource is assigned to the ISA Bus and provides for non PnP ISA add-on card. PCI/ISA PnP signifies that a resource is assigned to the PCI Bus or provides for ISA PnP add-on cards and peripherals.

### **PCI IRQ Activated By**

This sets the method by which the PCI bus recognizes that an IRQ service is being requested by a device. Under all circumstances, you should retain the default configuration unless advised otherwise by your system manufacturer. The settings are Level(default) and Edge.

## **CHAPTER 3    AWARD BIOS SETUP**

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### **PCI IDE IRQ Map To**

- PCI-Auto:**                    This setting is for off-board PCI IDE card and is fully compatible with PCI specifications.
- PCI-Slot 1-4:**                This setting is used if off-board PCI IDE card is not fully compatible with PCI specifications. You must specify which PCI slot the PCI IDE Card is installed in.
- ISA:**                            This setting is used if the off-board PCI IDE card uses an edge trigger and IRQ routes directly to the ISA Bus.

**Note:** The user will need to disable the on-board on-chipset PCI IDE controller when installing off-board PCI IDE add-on cards. (See the INTEGRATED PERIPHERALS SETUP) These two options choose the primary and secondary IDE Channel interrupts when the user installs off-board PCI IDE add-on cards.

### **Assign IRQ for VGA**

Lets the user choose which IRQ to assign for VGA use.

### **Used MEM base addr**

Lets the user choose the Legacy ISA addr. The settings are NA#, C800, CC00, D000, D400, D800 OR DC00.

### **Used MEM Length**

Choose 8K, 16K, 32K, or 64K.

## CHAPTER 3    AWARD BIOS SETUP

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### 3.9 Load BIOS/Setup Defaults

This Main Menu item loads the default system values. If the CMOS is corrupted the defaults are loaded automatically. Choose this item and the following message appears:

“Load Setup Defaults (Y / N) ? N “

To use the Setup defaults, change the prompt to “Y” and press <Enter >

**Note:** The Setup defaults can be customized to increase performance. However the BIOS defaults can always be used as a back up if there is some problem with the system board operation.

# CHAPTER 3 AWARD BIOS SETUP

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## 3.10 Integrated Peripherals

ROM PCI/ISA BIOS (2A69HM4D)  
INTEGRATED PERIPHERALS  
AWARD SOFTWARE, INC.

IDE HDD Block Mode : Enabled	USB Controller : Disabled
IDE Primary Master PIO : Auto	USB Keyboard Support : Disabled
IDE Primary Slave PIO : Auto	
IDE Secondary Master PIO : Auto	
IDE Secondary Slave PIO : Auto	
On-Chip Primary PCI IDE : Enabled	
On-Chip Primary PCI IDE : Enabled	
PCI Slot IDE 2nd Channel : Enabled	
Onboard FDD controller : Enabled	
FDC Write Protect : Disabled	
Onboard Serial Port 1 : 3F8/IRQ4	
Onboard Serial Port 2 : 2F8/IRQ3	
UART 2 Mode : ASKIR	
IR Function Duplex : Half	
RxD , TxD Active : Hi , Hi	Esc : Quit ↑↓→← : Select item
Onboard Parallel Port : 378H/IRQ7	F1 : Help PU/PD/+/- : modify
Onboard Parallel Mode : ECP/EPP	F5 : Old Value(Shift) F2 : Color
ECP Mode Use DMA : 3	F6 : Load BIOS Defaults
Parallel Port EPP Type : EPP1	F7 : Load Setup Defaults

### IDE HDD Block Mode

**Enabled/Disabled** Enabled allows the Block mode access for the IDE HDD.

### IDE Primary Master PIO

**Auto/Mode0/Mode1-4**

### IDE Primary Slave PIO

**Auto/Mode0/Mode1-4**

## **CHAPTER 3    AWARD BIOS SETUP**

---

### **IDE Secondary Master PIO**

**Auto/Mode0/Mode1-4**

### **IDE Secondary Slave PIO**

**Auto/Mode0/Mode1-4**

For these 4 IDE option choose “Auto” to have the system BIOS auto detect the IDE HDD operation mode for PIO access.

**Note:** Some IDE HDD can not operate at the responding HDD’s mode. When the user has selected “Auto” and the system BIOS has accepted the HDD response mode the user may degrade the HDD’s operation mode. Ex: IF the HDD reported it can operate in mode 4 but it is not operating properly the user will have to manually change the operation mode to mode 3.

Choosing Mode 1-4 will have the system ignore the HDD’s reported operation mode and use the selected mode instead.

**Note:** According to ATA specs. Mode 4 transfer rate is > Mode 3 > Mode 2 > Mode 1 > Mode 0. If the user’s HDD can operate at Mode 3 the user can also select a slower Mode (i.e. Mode 0-2) but not a faster Mode (ie Mode 4).

### **On-Chip Primary PCI IDE**

**Enabled/Disabled**

## **CHAPTER 3    AWARD BIOS SETUP**

---

### **On-Chip Secondary PCI IDE**

**Enabled/Disabled**    The system provides for a On-Board On-Chipset PCI IDE controller that supports Dual Channel IDE (Primary and Secondary). A maximum of 4 IDE devices can be supported. If the user install the Off-Board PCI IDE controller (i.e. add-on cards), the user must choose which channels will be disabled. This will depend on which channel will be used for the Off-Board PCI IDE add-on card.

### **PCI Slot IDE 2nd Channel**

**Enabled/Disabled**    Choosing Enabled will allow the system to access the 2nd IDE channel without a device driver. If the Off-Board PCI IDE add-on card is installed the 2nd IDE channel will need to be used.

### **Onboard FDD Controller**

**Enabled/Disabled**    The system has an on-board Super I/O chip with a FDD controller that supports 2 FDDs for 360K/720K/1.2M/1.44M/2.8M. Choose “Enabled” to use the on-board FDD controller for accessing the FDD. Otherwise choose “Disabled” to use the off-board FDD controller.

### **FDC Write Protect**

**Enabled/Disabled**    Choosing Enabled will write protect the Disk that is being use. And during Disabled the Disk will not be write protected.

## CHAPTER 3    AWARD BIOS SETUP

---

### Onboard Serial Port 2/Onboard Serial Port 1

**Disabled/(3F8/IRQ4)/(2F8/IRQ3)/(3E8/IRQ4)/(2E8/IRQ3)**

The system has an On-board Super I/O chipset with 2 serial ports. The On-board serial ports can be selected as:

**Disabled**

3F8/IRQ4	COMM1 uses IRQ4
2F8/IRQ3	COMM2 uses IRQ3
3E8/IRQ4	COMM3 uses IRQ4
2E8/IRQ3	COMM4 uses IRQ4

**Note:** Because the ISA Bus Interrupt accepts low to high edge trigger, the interrupt request line can not be shared by multiple sources. If an off-board ISA add-on card with a serial port is installed the user may have to disable the on-board serial port because it will conflict with IRQ request line for the off-board serial port.

### UART 2 MODE

**Standard/ASKIR/  
HPSIR(i.e. IRDA)**

The system's built-in IR (Infra Red) is on the on-board Super I/O chipset and is shared with serial port 2 with UART 2. Only one option can be selected for serial port 2, either the IR or UART. Selecting the IR mode will prompt the following message:

### IR Function Duplex

**Half/Full**

Users can choose between operating the IR in Half duplex or Full duplex mode. Half duplex designates one IR as a receiver and one as a transmitter simultaneously. Full duplex mode designates that the two IRs receive and transmit data together simultaneously.

## CHAPTER 3    AWARD BIOS SETUP

---

### RxD , TxD Active

**Hi-Hi/Hi-Lo/  
Lo-Hi/Lo-Lo**                      The user can choose between the preceding RxD (Receive Data), TxD (Transmit Data) activity levels.

### Onboard Parallel Port

**Disabled/  
(3BCH/IRQ7)/  
(278H/IRQ5)/  
(378H/IRQ5)**                      There is a built-in parallel port on the on-board Super I/O chipset that provides Standard, ECP, and EPP features. It has the following options:

**Disable**  
3BCH/IRQ7    Line Printer port 0  
278H/IRQ5    Line Printer port 2  
378H/IRQ5    Line Printer port 1

### Onboard Parallel Mode

SPP : Standard Parallel Port  
EPP : Enhanced Parallel Port  
ECP : Extended Capability Port

**SPP/(EPP/SPP)/  
ECP(ECP/EPP)**                      To operate the onboard parallel port as Standard Parallel Port only choose “SPP.” To operate the onboard parallel port in the ECP and SPP modes simultaneously choose “ECP/SPP.” By choosing “ECP” the onboard parallel port will operate in ECP mode only. Choosing “ECP/EPP” will allow the onboard parallel port to support both the ECP and EPP modes simultaneously. The ECP mode has to use the DMA channel so choose the onboard parallel port with the ECP feature. After selecting it, the following

## CHAPTER 3    AWARD BIOS SETUP

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message will appear: “ECP Mode Use DMA” At this time the user can choose between DMA channels 3 or 1. The onboard parallel port is EPP Spec. compliant so after the user chooses the onboard parallel port with the EPP function, the following message will be displayed on the screen: “Parallel Port EPP Type.” At this time either EPP 1.7 spec. or EPP 1.9 spec. can be chosen.

### USB Controller

**Enabled/Disabled**    Choosing Enabled, will enable on board USB port.

### USB Keyboard Support

**Enabled/Disabled**    Choosing Enabled, will enable the USB keyboard support.

## **CHAPTER 3    AWARD BIOS SETUP**

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### **3.11 Supervisor/User Password Setting**

This Main Menu item lets you configure the system so that a password is required each time the system boots or an attempt is made to enter the Setup program. Supervisor Password allows you to change all CMOS settings but the User Password setting doesn't have this function. The way to set up the passwords for both Supervisor and User are as follow:

1. Choose "Change Password" in the Main Menu and press <Enter>. The following message appears:

"Enter Password:"

2. The first time you run this option, enter your password up to only 8 characters and press <Enter>. The screen does not display the entered characters. For no password just press <Enter>.
3. After you enter the password, the following message appears prompting you to confirm the password:

"Confirm Password:"

4. Enter exact the same password you just typed again to confirm the password and press <Enter>.
5. Move the cursor to Save & Exit Setup to save the password.
6. If you need to delete the password you entered before, choose the Supervisor Password and press <Enter>. It will delete the password that you had before.
7. Move the cursor to Save & Exit Setup to save the option you did, otherwise the old password will still be there when you turn on your machine next time.

# CHAPTER 3    AWARD BIOS SETUP

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## 3.12 IDE HDD Auto Detection

You can use this utility to automatically detect the characteristics of most hard drives.

When you enter this utility, the screen asks you to select a specific hard disk for Primary Master. If you accept a hard disk detected by the BIOS, you can enter “Y” to confirm and then press <Enter> to check next hard disk. This function allows you to check four hard disks and you may press the <Esc> after the <Enter> to skip this function and go back to the Main Menu.

**ROM ISA BIOS  
CMOS SETUP UTILITY  
AWARD SOFTWARE, INC.**

HARD DISKS	TYPE	SIZE	CYLS	HEADS	PRECOMP	LANDZONE	SECTOR MODE
Primary Master:	Auto	0	0	0	0	0	AUTO
Primary Slave :	Auto	0	0	0	0	0	AUTO
Secondary Master :	Auto	0	0	0	0	0	AUTO
Secondary Slave :	Auto	0	0	0	0	0	AUTO

Select Primary Master				Option (N=Skip) : N			
OPTIONS	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR MODE	
2	2112	1023	64	0	4094	63	LBA
1	2113	4095	16	65535	4094	63	NORMAL
3	2113	2047	32	65535	4094	63	LARGE

[ESC: Skip]