

## **Chapter 3**

### **AWARD® BIOS SETUP**

Award® 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.

## **3.1 Entering Setup**

Power on the computer and press <Del> immediately to allow you to enter Setup. The other way to enter Setup is to power on the computer. When the below message appears briefly at the bottom of the screen during the POST (Power On Self Test), press <Del> key or simultaneously press <Ctrl>, <Alt>, and <Esc> keys.

PRESS <DEL> TO ENTER SETUP, <ESC> TO SKIP MEMORY TEST

If the message disappears before you respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the “RESET” button on the system case. You may also restart by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys. If you do not press the keys at the correct time and the system does not boot, an error message will be displayed and you will again be asked to:

PRESS <F1> TO CONTINUE, <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>.

### 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 eleven setup functions and two exit choices. Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.

ROM PCI/ISA BIOS (2A5LEM4F)  
CMOS SETUP UTILITY  
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	SPECIAL FEATURES SETUP
BIOS FEATURES SETUP	INTEGRATED PERIPHERALS
CHIPSET FEATURES SETUP	SUPERVISOR PASSWORD
POWER MANAGEMENT SETUP	USER PASSWORD
PNP/PCI CONFIGURATION	IDE HDD AUTO DETECTION
LOAD SETUP DEFAULTS	SAVE & EXIT SETUP
	EXIT WITHOUT SAVING

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Esc : Quit                      ↑↓→← : Select Item  
F10 : Save & Exit Setup        (Shift)F2 : Change Color

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Time, Date, Hard Disk Type...

## 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 IRQ level for PCI and ISA devices.

**Load Setup Defaults**

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

**Special Features Setup**

This function is reserved for System Hardware Monitor.

**Integrated Peripherals**

Change, set, or disable onboard I/O, IRQ, and DMA assignment.

**Supervisor Password/User Password**

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

**IDE HDD Auto Detection**

Automatically configure hard disk parameters.

**Save & Exit Setup**

Save CMOS value changes to CMOS and exit setup.

**Exit Without Saving**

Abandon all CMOS value changes and exit setup.

3.4 Standard CMOS Setup

The items in Standard CMOS Setup Menu are divided into 10 categories. Each category includes no, 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.

ROM PCI/ISA BIOS (2A5LEM4F)  
STANDARD CMOS SETUP  
AWARD SOFTWARE, INC.

Date(mm:dd:yy): Fri, Feb 28,1997  
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	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,3.5in.  
Drive B : None  
  
Video : EGA/VGA  
Halt On : All, but Keyboard

Base Memory: 640K  
Extended Base Memory:15360K  
Other Memory: 384K

Total Memory: 16384K

ESC : Quit  
F1 : Help

↑↓→← : Select Item  
(Shift)F2 : Change Color

PU/PD/+/- : Modify

3-5

**Date**

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

<b>Day</b>	Day of the week, from Sun to Sat, determined by BIOS. Read-only.
<b>month</b>	The month from 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>.

**PrimaryMaster/PrimarySlave  
SecondaryMaster/Secondary Slave**

These 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 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.

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

### 3.5 BIOS Features Setup

ROM PCI/ISA BIOS (2A5LEM4F)  
BIOS FEATURES SETUP  
AWARD SOFTWARE, INC.

Anti-Virus Protection : Disabled CPU Internal Cache : Enabled External Cache : Enabled Quick Power on Self Test : Disabled Boot Sequence : A,C,SCSI Swap Floppy Drive : Disabled Boot up Floppy Seek : Enabled Boot up NumLock status : On Gate A20 Option : Fast Memory Parity/ECC Check : Enabled Security Option : Setup PCI/VGA palette snoop : Disabled OS select for DRAM>64MB : Non-OS2 Report No FDD For WIN 95 : Yes	Video BIOS Shadow : Enabled C8000-CBFFF Shadow : Disabled CC000-CFFFF Shadow : Disabled D0000-D3FFF Shadow : Disabled D4000-D7FFF Shadow : Disabled D8000-DBFFF Shadow : Disabled DC000-DFFFF Shadow : Disabled
	Esc : Quit      ↑↓→← : Select item F1 : Help PU/PD/+/- : modify F5 : Old Value(Shift) F2 : Color F7 : Load Setup Defaults

## Anti-Virus Protection

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. For the meantime, you can run an anti-virus program to locate the problem. The settings are Enabled or Disabled.

**!WARNING!**

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



**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 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 this is set to Enabled, BIOS will shorten or skip some check items during POST.

**Enabled** Enable quick POST  
**Disabled** (default) Normal POST

### **Boot Sequence**

This category determines which drive the computer searches first for the disk operating system (i.e., DOS). 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, LS/ZIP,C. 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.

**Enabled**(default) BIOS searches for floppy disk drive to determine if it is 40 or 80 tracks. Take note that BIOS can not tell from 720K, 1.2M , or 1.44M drive type as they are all 80 tracks.

**Disabled** BIOS will not search for the type of floppy disk drive by track number. There will be no warning message if the drive installed is 360K.

### **Boot Up NumLock Status**

The default value is On.

**On** (default) Keypad is numeric keys.

**Off** Keypad is arrow keys.

### **Gate A20 Option**

**Normal** The A20 signal is controlled by keyboard controller or chipset hardware.

**Fast** (default) The A20 signal is controlled by port 92 or chipset specific method.

### **Memory Parity/ECC Check**

Set this option to Enabled, to use the Parity/ECC function. This is used with DIMM module. The default setting is Disabled.

### **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.

### **PCI VGA Palette Snooping**

Choose Disabled or Enabled. 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.

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 (default)</b>	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®.

**Report No FDD For WIN 95**

This function is only used when you are testing SCT for Windows® 95 Logo.

**Video BIOS Shadow**

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

**Enabled** (default)

Video shadow is enabled

**Disabled**

Video shadow is disabled

**C8000 - CFFFF Shadow/E8000 - EFFFF Shadow**

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

**Enabled**

Optional shadow is enabled

**Disabled** (default)

Optional shadow is disabled

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

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(2A5LEM4F)		
CMOS SETUP UTILITY		
CHIPSET FEATURES SETUP		
Bank 0/1 DRAM Timing	: FP/EDO70ns	Auto Detect DIMM/PCI Clk : Enabled
Bank 2/3 DRAM Timing	: FP/EDO70ns	Spread Spectrum : Disabled
Bank 4/5 DRAM Timing	: FP/EDP70ns	
SDRAM Cycle Length	: 3	
DRAM Read Pipeline	: Enabled	
Cache Rd+CPU WtPipeline	: Enabled	
Cache Timing	: Fast	
Video BIOS Cacheable	: Enabled	
System BIOS Cacheable	: Enabled	
Memory Hole at 15MB Addr	: Disabled	
AGP Aperture Size	: 64M	
Onchip USB	: Enabled	
USB Keyboard Support	: Disabled	
		Esc : Quit    ↑↓→← : Select item
		F1 : Help PU/PD/+/- : modify
		F5 : Old Value(Shift) F2 : Color
		F7 : Load Setup Defaults

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

**Bank 0/1 DRAM Timing****Bank 2/3 DRAM Timing****Bank 4/5 DRAM Timing**

The DRAM timing is controlled by the DRAM Timing Registers. The Timings programmed into this register are dependent on the system design. Slower rates may be required in certain system designs to support loose layouts or slower memory.

**SDRAM Cycle Length**

This item allows you to select the SDRAM cycle length. The settings are 2 or 3.

**DRAM Read Pipeline**

This item sets the timing for pipeline burst mode read from DRAM. The default setting is Enabled.

**Cache Rd+CPU wt Pipeline**

This item can enabled the pipelining of Cache read and CPU write cycle. The default setting is Enabled.

**Cache Timing**

This field allows you to determine the Cache burst mode timing.

**Fast** Cache burst mode timing are 31112111.

**Fastest** Cache burst mode timing are 31111111.

**Video BIOS Cacheable**

Select Enabled allows caching of the system BIOS ROM at C0000h-F7FFFh, resulting in better video performance. However, if any program writes to this memory area, a system error may result.

**Enabled** Video BIOS access cached

**Disabled** Video BIOS access not cached

### **System BIOS Cacheable**

Select Enabled allows caching of the system BIOS ROM at F000h-FFFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

<b>Enabled</b>	BIOS access cached
<b>Disabled</b>	BIOS access not cached

### **Memory Hole At 15Mb Addr**

In order to improve performance, certain space in memory can be reserved for ISA cards. This memory must be mapped into the memory space below 16 MB.

Enabled	Memory hole supported.
Disabled	Memory hole not supported.

### **AGP Aperture Size (MB)**

Select the size of the Accelerated Graphics Port (AGP) aperture. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation.

### **Onchip USB**

Set this option to Enable or Disable the onchip USB controller. The default setting is Enabled.

### **USB Keyboard Support**

Set this option to Enable or Disable the USB keyboard/mouse support. The default setting is Enabled.

### **Auto Detect DIMM/PCI Clk**

This item allows the clock generator to auto-detect the interface of DIMM/PCI. If there's no DIMM/PCI card present, then the clock will be shut down. The default setting is Enabled.

### **Spread Spectrum**

This item allows you to select the clock generator Spread Spectrum function. When overclocking the processor, always set this item to Disabled. The default is enabled.



3.7 Power Management Setup

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

ROM PCI/ISA BIOS (2A5LEM4F)			
POWER MANAGEMENT SETUP			
AWARD SOFTWARE, INC.			
ACPI Function :Enabled		Primary INTR :ON	
Power Management :User Define		IRQ3(COM2) :Primary	
PM Control by APM :Yes		IRQ4(COM1) :Primary	
Video Off Option :Suspend>Off		IRQ5(LPT2) :Primary	
Video Off Method :V/H SYNC+blank		IRQ6(Floppy Disk) :Disabled	
Soft-Off by PWR-BTTN :Delay 4sec		IRQ7(LPT1) :Primary	
***PM Timers***		IRQ8(RTC Alarm) :Disabled	
HDD Power Down :Disabled		IRQ9(IRQ2 Redir) :Primary	
Doze Mode :Disabled		IRQ10(reserved) :Primary	
Suspend Mode :Disabled		Reserved :Primary	
***PM Events***		IRQ12(PS/2 mouse) :Primary	
VGA :OFF		IRQ13(Coprocessor) :Primary	
LPT&COM :LPT/COM		IRQ14(Hard Disk) :Primary	
HDD&FDD :OFF		IRQ15(Reserved) :Disabled	
DMA/master :OFF			
Modem Ring Resume :Disabled			
RTC Alarm Resume :Disabled			
		Esc : Quit    ↑↓→← : Select item	
		F1 : Help PU/PD/+/- : modify	
		F5 : Old Value(Shift) F2 : Color	
		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.

**ACPI Function**

During Enabled, this will support ACPI function.

**Power Management**

<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 are in their 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 O.S. with APM like Windows® 95/98, Windows® NT, etc.

**Video Off Option**

This option allows you to determine when to activate the video off feature to monitor the power management. The settings are Video Off after Suspend/All modes/Always On.

**Video Off Method**

<b>Blank Screen</b>	The system BIOS will only blank off the screen when disabling video.
<b>V/H SYNC+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.

**Soft-off by PWRBTN**

This field is for the soft-off function setting. When the board utilizes an ATX power supply, two types of settings are offered: Delay 4 sec. and Instant-off. When the setting is Delay 4 sec., users can power off the system by pressing POWER-ON button for 4 seconds. However, if users press POWER-ON button for less than 4 seconds, the system will enter suspend mode only. When the setting is Instant-off, pressing the POWER-ON button once will power off the system, and pressing again will power on the system.

**HDD Power Down**

**Disable** HDD's motor will not shut off.

**1 Min/2 Min/** Defines the continuous HDD idle time before  
**3 Min/4 Min/** the HDD enters the power saving mode (motor  
**5 Min/6 Min/** off). BIOS will turn off the HDD's motor when  
**7 Min/8 Min/** time is out.  
**9 Min/10 Min/**  
**11 Min/12 Min/**  
**13 Min/14 Min/**  
**15 Min**

**Doze Mode**

**Disable** System will never enter DOZE mode.

**10/20/30/40sec/** Defines the continuous idle time before the  
**1 Min/2 Min/** system enters DOZE mode.  
**4 Min/8 Min/** If any item defined in the options of "Power  
**12 Min/20 Min/** Down and Resume events" is enabled & active,  
**30 Min/40 Min/** DOZE timer will be reloaded. When the system  
**1 Hr** have entered Doze mode, any of the items  
 enabled in "Wake Up Events in Doze and  
 Standby" will trigger the system to wake up.

**Suspend Mode**

<b>Disable</b>	System will never enter SUSPEND mode.
<b>10/20/30/40sec/ 1 Min/2 Min/ 4 Min/6 Min/ 8 Min/10 Min/ 20 Min/30 Min/ 40 Min/1 Hr</b>	Defines the continuous idle time before the system enters 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.

**PM Events**

Award BIOS defines 7 PM events in the power management mode (Doze & suspend). The user can initialize any PM Events to be Enable or Disable. When the system detects all of the enabled events do not have any activity, it will start the system Doze timer first if the Power Management is not Disabled. Once the system Doze timer is timed out, it will process doze power saving procedure by starting the system suspend timer. When the suspend timer times out, all of the CPU clock will stop by dropping system clock down to zero and remains this way until any one of the enabled events occurs.

<b>VGA</b>	<b>ON/OFF</b>
<b>LPT &amp; COM</b>	<b>NONE/LPT/COM/LPT&amp;COM</b>
<b>HDD &amp; FDD</b>	<b>ON/OFF</b>
<b>DMA/Master</b>	<b>ON/OFF</b>

**Modem Ring Resume**

During Disabled, the system will ignore any incoming call from the modem or LAN. During Enabled, the system will boot up if there's an incoming call from the modem or LAN.

**Note:** If you have change the setting, you must let the system boot up until it goes to the operating system, before this function will work.

**RTC Alarm Resume**

This function is for setting date and time for your computer to boot up. During Disabled, you cannot use this function. During Enabled, choose the Date and Time Alarm:

- |                             |   |
|-----------------------------|---|
| <b>Date(of month) Alarm</b> | You can choose which day of the month the system will boot up. Set to 0, to boot every day. |
| <b>Time(hh:mm:ss) Alarm</b> | You can choose what hour, minute and second the system will boot up.                        |

**Note:** If you have change the setting, you must let the system boot up until it goes to the operating system, before this function will work.

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 (2A5LEM4F)  
PNP/PCI CONFIGURATION SETUP  
AWARD SOFTWARE, INC.

PnP OS Installed	:No	CPU to PCI Write Buffer	:Enabled
Resources Controlled By	:Manual	PCI Dynamic Bursting	:Enabled
Reset Configuration Data	:Disabled	PCI Master 0 WS Write	:Enabled
ACPI I/O Device Mode	:Enabled	PCI Delay Transaction	:Enabled
		PCI Master Read Prefetch	:Enabled
IRQ-3 assigned to	:Legacy ISA	PCI#2 Access#1 Retry	:Enabled
IRQ-4 assigned to	:Legacy ISA	AGP Master 1 WS Write	:Enabled
IRQ-5 assigned to	:PCI/ISA PnP	AGP Master 1 WS Read	:Disabled
IRQ-7 assigned to	:PCI/ISA PnP		
IRQ-9 assigned to	:PCI/ISA PnP	PCI IRQ Activd By	:Level
IRQ-10 assigned to	:PCI/ISA PnP	Assign IRQ for USB	:Enabled
IRQ-11 assigned to	:PCI/ISA PnP	Assign IRQ for VGA	:Enabled
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	F7 : Load Setup Defaults	
DMA-7 assigned to	:PCI/ISA PnP		

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 or 98. 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.

### **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 the system’s ESCD. Then, this option will be auto-set to Disable.

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

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.

### **CPU to PCI Write Buffer**

This item allows you to Enabled or Disabled the CPU to PCI Write Buffer. The default setting is Enabled.

### **PCI Dynamic Bursting**

This setting allows you to Enabled or Disabled PCI Dynamic Bursting function. The default setting is Enabled.

### **PCI Master 0 WS Write**

**Enabled**        zero wait state response.

**Disabled**      one wait state response.

The default setting is Enabled.

### **PCI Delay Transaction**

This item allows you to Enabled to Disabled the PCI Delay Transaction.

### **PCI Master Read Prefetch**

This item allows you to Enabled or Disabled the PCI Master Read Prefetch.



**PCI#2 Access #1 Retry**

- |                 |   |
|-----------------|---|
| <b>Enabled</b>  | PCI#2 will be disconnected, if max retries are attempted without success. |
| <b>Disabled</b> | PCI#2 will not be disconnected until access is finish.                    |

**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's manufacturer. The settings are level or edge.

**Assign IRQ for USB**

Set to Enabled when USB port will be used. Set to Disable if the USB port will not be used.

**Assign IRQ for VGA**

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

### **3.9 Load 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 mainboard operation.

3.10 Special Features Setup (optional)

This Special Features Setup is used by System Hardware Monitor chipset. You can manually change the value of each option.

ROM PCI/ISA BIOS (2A5LEM4F)  
INTEGRATED PERIPHERALS  
AWARD SOFTWARE, INC.

***** POST SHOWING *****		***** SYSTEM MONITOR *****	
CPU Fan Detected	:Enabled	CPU Fan RPM	: 6367
Voltage Detected	:Enabled	System Temperature	: 26°C/78°F
Vcore Voltage Detected	:Enabled	CPU Temperature	: 28°C/82°F
Vio Voltage Detected	:Enabled	CPU Critical Temp	: Disabled
+3.3V Voltage Detected	:Enabled	Shutdown Temp	: Disabled
+5.0V Voltage Detected	:Enabled		
+ 12V Voltage Detected	:Enabled		
- 12V Voltage Detected	:Enabled		
-5.0V Voltage Detected	:Enabled		
		Esc : Quit    ↑↓→← : Select item	
		F1 : Help PU/PD/+/- : modify	
		F5 : Old Value(Shift) F2 : Color	
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

CPU Fan Detected/Voltage Detected/Vcore Voltage Detected/Vio Voltage Detected/+3.3V Voltage Detected/+5.0 Voltage Detected/+12V Voltage Detected/-12V Voltage Detected/-5.0 Voltage Detected

During Enabled, this will show the CPU/FAN voltage chart during system boot up. During Disabled, this will not show.

**CPU Fan RPM**

During Enabled, this will monitor the RPM of your CPU fan.

**System Temperature/CPU Temperature**

This will show the System and CPU temperature.

**CPU Critical Temp**

This option is for setting the critical temperature level for the processor. When the processor reach the temperature you set, this will reduce the load on the processor.

**Shutdown Temp**

This option is for setting the Shutdown temperature level for the processor. When the processor reach the temperature you set, this will shutdown the system. This function only works with Windows® 95 operating system.

3.11 Integrated Peripherals

ROM PCI/ISA BIOS (2A5LEM4F)  
INTEGRATED PERIPHERALS  
AWARD SOFTWARE, INC.

Onchip IDE First Channel :Enabled	Onboard Parallel Mode :378/IRQ7
Onchip IDE Second Channel:Enabled	Parallel Port Mode :ECP/EPP
IDE Prefetch Mode :Enabled	ECP Mode Use DMA :3
IDE HDD Block Mode :Enabled	EPP Mode Select :EPP1.9
IDE Primary Master PIO :Auto	
IDE Primary Slave PIO :Auto	
IDE Secondary Master PIO :Auto	
IDE Secondary Slave PIO :Auto	
IDE Primary Master UDMA :Auto	
IDE Primary Slave UDMA :Auto	
IDE Secondary Master UDMA:Auto	
IDE Secondary Slave UDMA :Auto	
Init Display First :PCI Slot	
Onboard FDD controller :Enabled	
Onboard Serial Port 1 :Auto	Esc : Quit ↑↓→←: Select item
Onboard Serial Port 2 :Auto	F1 : Help PU/PD/+/- : modify
UART2 Mode :Standard	F5 : Old Value(Shift) F2 : Color
	F7 : Load Setup Defaults

Onchip IDE First Channel  
Enabled/Disabled

Onchip IDE Second Channel  
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.

**IDE Prefetch Mode**  
**Enabled/Disabled**

**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**

**IDE Secondary Master PIO**  
**Auto/Mode0/Mode1-4**

**IDE Secondary Slave PIO**  
**Auto/Mode0/Mode1-4**

For these 4 IDE options, 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).

### Init Display First

This item allows you to determine whether AGP or PCI slot will show display first. This option is only used with Windows® 98 support for multiple displays.

### 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.

### Onboard Serial Port 1

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

### Onboard Serial Port 2

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	COM 1 uses IRQ4
2F8/IRQ3	COM 2 uses IRQ3
3E8/IRQ4	COM 3 uses IRQ4
2E8/IRQ3	COM 4 uses IRQ4

**Note:** Because the ISA Bus Interrupt accepts low to high edge trigger, the interrupt request line cannot 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.

## **UART2 Mode**

This item allow you to determine which Infra Red (IR) function of onboard I/O chip. If you choose IR function, the COM 2 will not function.

## **Onboard Parallel Port**

### **Disabled**

**(3BCH/IRQ7)/**

**(278H/IRQ5)/**

**(378H/IRQ7)**

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/IRQ7    Line Printer port 1

## **Onboard Parallel Mode**

SPP : Standard Parallel Port

EPP : Enhanced Parallel Port

ECP : Extended Capability Port

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 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: “EPP Mode Select.” At this time either EPP 1.7 spec. or EPP 1.9 spec. can be chosen.

## **3.12 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 exactly the same password you just typed in 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.

3.13 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]