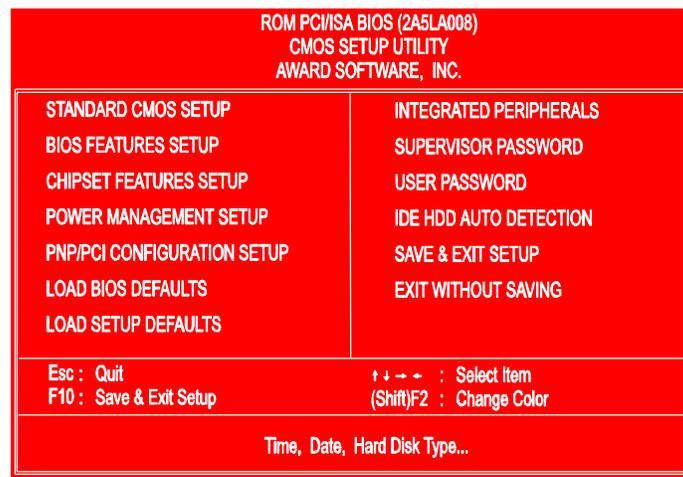


## **Award BIOS Setup**

(25-10804-11 )

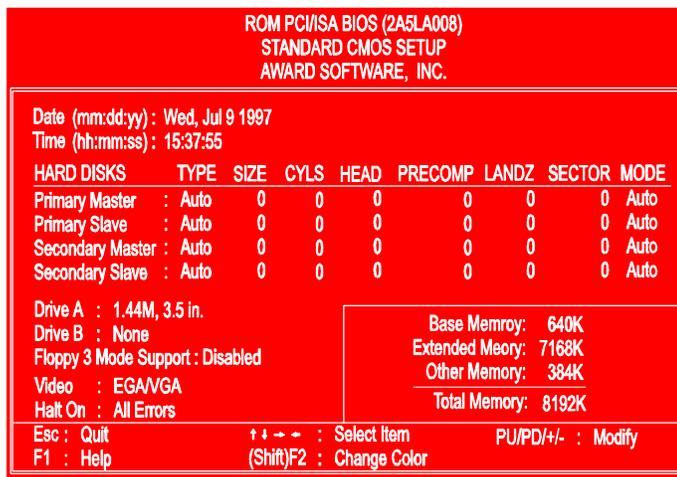
**The mainboard may come with a newly updated Award BIOS which CMOS Setup Utility Display as follows.** This section explains the information contained in the Setup program and tells you how to modify the settings according to your system configuration.

### **CMOS Setup Utility**



A Setup program, built into the system BIOS, is stored in the CMOS RAM. This Setup utility program allows changes to the mainboard configuration settings. It is executed when the user changes system configuration; user changes system backup battery; or the system detects a configuration error and asks the user to run the Setup program. Use the arrow keys to select and press Enter to run the selected program.

## Standard CMOS Setup



The Standard CMOS Setup screen is displayed above. Each item may have one or more option settings. The system BIOS automatically detects memory size, thus no changes are necessary. 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.

## Hard Disk Configurations

**TYPE:**

Select from 1 to 45 to fill remaining fields with predefined values of disk drives. Select User to fill the remaining fields. Select Auto to detect the HDD type automatically.

**SIZE:**

The hard disk size. The unit is Mega Bytes.

**CYLS:**

The cylinder number of the hard disk.

**HEAD:**

The read/write head number of hard disk.

**PRECOMP:**

The cylinder number at which the disk drive changes the write timing.

**LANDZ:**

The cylinder number that the disk drive heads (read/write) are seated when the disk drive is parked.

**SECTOR:**

The sector number of each track defined on the hard disk.

**MODE:**

Select Auto to detect the mode type automatically. If your hard disk supports the LBA mode, select LBA or Large. However, if your hard disk cylinder is more than 1024 and does not support the LBA function, you have to set at Large. Select Normal if your hard disk supporting cylinders is below 1024.

**Floppy 3 Mode Support**

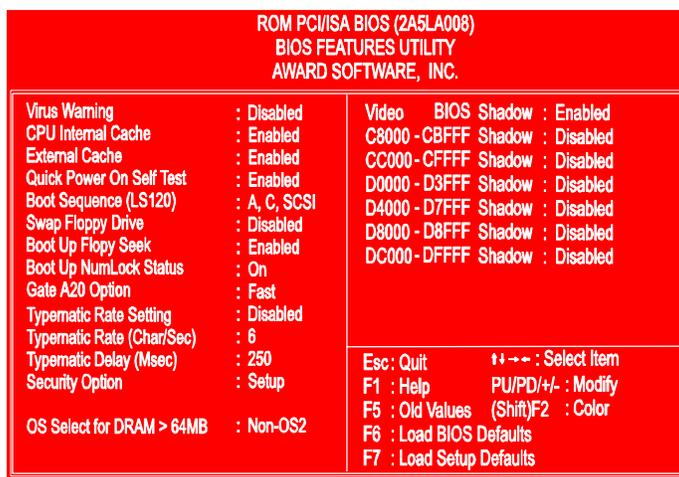
This feature allows you to install a 3.5" (1-2MB) NEC 9801 floppy drive.

The options are: Both , Disabled (Default), Drive A, Drive B.

**Software Turbo Speed**

The BIOS supports Software Turbo Speed feature. Instead of pressing the Turbo Speed Button on the front panel, simply press the **Alt, Ctrl, and +** keys at the same time to enable the Turbo Speed feature; and press the **Alt, Ctrl, and -** keys at the same time to disable the feature.

## BIOS Features Setup



### Virus Warning

When enabled, assigns the BIOS to monitor the master boot sector and the DOS boot sector of the first hard disk drive. The options are: Enabled, Disabled (Default).

### CPU Internal Cache

When enabled, improves the system performance. Disable this item when testing or trouble-shooting. The options are: Enabled (Default), Disabled.

### External Cache

When enabled, supports an optional cache SRAM. The options are: Enabled (Default), Disabled.

### Quick Power On Self Test

When enabled, allows the BIOS to bypass the extensive memory test. The options are: Enabled (Default), Disabled.

### Boot Sequence (LS120)

Allows the system BIOS to first try to boot the operating system from the selected disk drive. The options are: A, C, SCSI (Default); 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; LS120, C.

### Swap Floppy Drive

Allows you to switch the order in which the operating system accesses the floppy drives during boot up. The options are: Enabled, Disabled (Default).

### Boot Up Floppy Seek

When enabled, assigns the BIOS to perform floppy diskette drive tests by issuing the time-consuming seek commands. The options are: Enabled (Default), Disabled.

### Boot Up Numlock Status

When set to On, allows the BIOS to automatically enable the Num Lock Function when the system boots up. The options are: On (Default), Off.

### Gate A20 Option

When set at Fast, allows a faster access response under Protected mode. The options are: Fast (Default), Normal.

### Typematic Rate Setting

The term typematic means that when a keyboard key is held down, the character is repeatedly entered until the key is released. When this item is enabled, you may change the typematic repeat rate. The options are: Disabled (Default), Enabled.

### Typematic Rate (Chars/Sec)

Sets the rate of a character repeat when the key is held down. The options are: 6 (Default), 8, 10, 12, 15, 20, 24, 30.

### Typematic Delay (Msec)

Sets the delay time before a character is repeated. The options are: 250 (Default), 500, 750, 1000 millisecond.

### Security Option

Allows you to set the security level of the system. The options are: Setup (Default), System.

### OS Select For DRAM > 64MB

If your operating system (OS) is OS2, MS Windows NT, or MS Windows 95, select the option OS2. Otherwise, stay with the default setting Non-OS2. The options are: Non-OS2 (Default), OS2.

## Award BIOS Setup

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### Video BIOS Shadow

Allows the BIOS to copy the video ROM code of the add-on video card to the system memory for faster access. The options are: Enabled (Default), Disabled.

### C8000-CBFFF to DC000-DFFFF Shadow

Allows the BIOS to copy the BIOS ROM code of the add-on card to system memory for faster access. It may improve the performance of the add-on card.

Some add-on cards will not function properly if its BIOS ROM code is shadowed. To use these options correctly, you need to know the memory address range used by the BIOS ROM of each add-on card.

The options are: Enabled, Disabled (Default).

## Chipset Features Setup



### Video BIOS Cacheable

When enabled, allows the system to use the video BIOS codes from SRAMs. The options are: Enabled (Default), Disabled.

### System BIOS Cacheable

When enabled, allows the ROM area F000H-FFFFH to be cacheable when cache controller is activated. The options are: Disabled (Default), Enabled.

#### Memory Hole At 15MB Addr.

When enabled, the memory hole at the 15MB address will be relocated to the 15~16MB address range of the ISA cycle when the processor accesses the 15~16MB address area. When disabled, the memory hole at the 15MB address will be treated as a DRAM cycle when the processor accesses the 15~16MB address. The options are: Enabled, Disabled (Default).

#### 2 Bank PBSRAM

Allows you to select the system memory access rate. The option 2-1-1-1 will be faster. The unit is system clock.  
The options: 3-1-1-1 (Default), 2-1-1-1.

#### Sustained 3T Write

When enabled, allows the CPU to complete the memory writes in 3 clocks.  
The options: Enabled (Default), Disabled.

#### CPU Pipeline

When enabled, allows the CPU to execute the pipeline function.  
The options: Enabled (Default), Disabled.

#### Memory ECC Check

Allows to select different error check mode provided by your memory modules.  
The options: Disabled (Default), Enabled.

#### DRAM Auto Configuration

When set at Enabled, it allows you to configure the features that from the third one, Fast RAS To CAS Delay, to the eighth one, Refresh RAS# Assertion. The options are: Enabled, Disabled (Default).

#### DRAM Timing Control

Allows you to select the speed of data access to EDO DRAM.  
The options are: Fast (Default), Turbo, Normal.

#### SDRAM Single/Burst Write

When set at Burst (write), the data will be written into the SDRAM by the memory controller on the consecutive clock cycles.  
The options are: Burst (Default), Single.

### SDRAM Cycle Length

This feature appears only when SDRAM DIMM/s is installed (BIOS auto detection). If the CAS latency of your SDRAM DIMM is 2, set at 2 to enhance the system performance. If the CAS latency of your SDRAM DIMM is 3, stay with the default setting, 3.

The options are: 2, 3 (Default).

### SDRAM Bank Interleave

This feature appears only when SDRAM DIMM/s is installed (BIOS auto detection). When the bank interleave function of the SDRAM is enabled, its the data transacting performance is better than when it is disabled.

The options are: 2 Bank, 4 Bank, Disabled (Default).

### CPU to PCI Write Buffer

When enabled, allows data and address access to the internal buffer of 82C586 so the processor can be released from the waiting state.

The options are: Enabled (Default), Disabled.

### PCI Dynamic Bursting

When enabled, the PCI controller allows Bursting PCI transfer if the consecutive PCI cycles come with the address falling in same 1KB space. This improves the PCI bus throughput.

The options are: Enabled (Default), Disabled.

### PCI Burst

When enabled, data transfer on PCI Buses will improve. Disable this item during trouble-shooting.

The options are: Disabled, Enabled (Default).

### PCI Master 0 WS Write

When enabled, allows a zero-wait-state-cycle delay when the PCI master drive writes data to DRAM.

The options are: Enabled (Default), Disabled.

### Quick Frame Generation

When enabled, allows the system to start the PCI Bus (by asserting frame) as soon as possible when the bus cycle is going to forward to the PCI Bus.

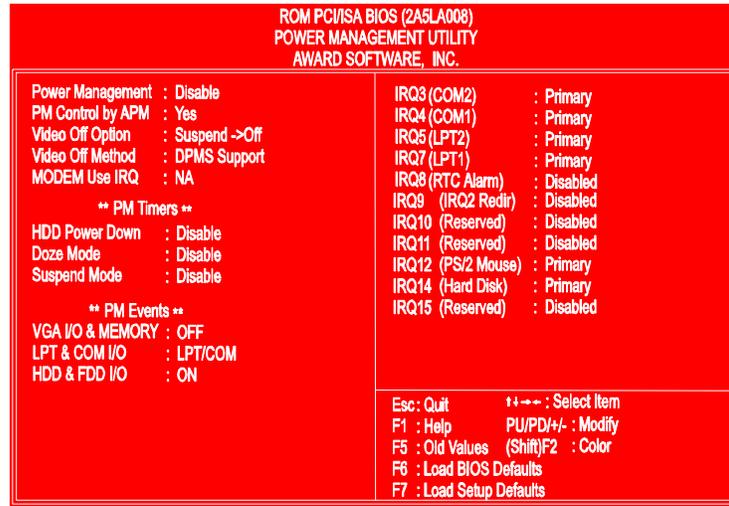
The options are: Disabled, Enabled (Default).

### PCI Peer Concurrency

Enable this item to allow the processor to continue its operation while another PCI Bus is active.

The options are: Enabled (Default), Disabled.

## Power Management Setup



### Power Management

This item allows you to adjust the power management features. Select Disable for disabling global power management features. Select User Defined for configuring your own power management features. MIN Saving initiates all predefined timers in their minimum values. MAX Saving, on the other hand, initiates maximum values.

The options are: Disable (Default), User Defined, MIN Saving, MAX Saving.

### PM Control by APM

The option No allows the BIOS to ignore the APM (Advanced Power Management) specification. Selecting Yes will allow the BIOS wait for APM's prompt before it enters Doze mode, Standby mode, or Suspend mode. If the APM is installed, it will prompt the BIOS to set the system into power saving mode when all tasks are done.

The options are: No, Yes (Default).

### Video Off Option

This feature provides the selections of the video display power saving mode. The option Suspend - Off allows the video display to go blank if the system enters Suspend mode. The option All Modes - Off allows the video display to go blank if the system enters Doze mode or Suspend mode. The option Always On allows the video display to stay in Standby mode even when the system enters Doze or Suspend mode.

The options are: Suspend - Off (Default), All Modes - Off, Always On.

### Video Off Method

The option V/H SYNC+Blank allows the BIOS to blank off screen display by turning off the V-Sync and H-Sync signals sent from add-on VGA card. DPMS Supported allows the BIOS to blank off screen display by your add-on VGA card which supports DPMS (Display Power Management Signaling function). Blank Screen allows the BIOS to blank off screen display by turning off the red-green-blue signals.

The options are: V/H SYNC+Blank, DPMS Support (Default), Blank Screen.

### MODEM Use IRQ

This feature allows you to select the IRQ# to meet your modem's IRQ#.

The options are: NA, 3, 4, 5, 7, 9, 10, 11.

### HDD Power Management

Selecting Disabled will turn off the hard disk drive (HDD) motor. Selecting 1 Min..15Min allows you to define the HDD idle time before the HDD enters Power Saving Mode. The option When Suspend lets the BIOS turn the HDD motor off when the system is in Suspend mode.

The options 1 Min..15Min and When Suspend will not work concurrently. When HDD is in Power Saving Mode, any access to the HDD will wake the HDD up.

The options are: Disabled (Default), 1 Min..15 Min, When Suspend.

### Doze Mode

When disabled, the system will not enter Doze mode. The specified time option defines the idle time the system takes before it enters Doze mode.

The options are: Disabled (Default), 10, 20, 30, 40 sec, 1, 2, 4, 6, 8, 10, 20, 30, 40 min, 1h.

### Suspend Mode

When disabled, the system will not enter Suspend mode. The specified time option defines the idle time the system takes before it enters Suspend mode.

The options are: Disabled (Default), 10, 20, 30, 40 sec, 1, 2, 4, 6, 8, 10, 20, 30, 40 min, 1h.

### VGA I/O & MEMORY

Selecting ON will enable the power management timers when a no activity events is detected in the VGA. Selecting OFF to disable the PM timer even if a no activity event is detected.

The options are: OFF (Default), ON.

### LPT & COM I/O

Selecting LPT & COM will enable the power management timers when a no activity event is detected in the LPT and COM ports. Selecting LPT (COM) will enable the power management timers when a no activity event is detected in the LPT (COM) ports. Selecting NONE to disable the PM timer even if a no activity event is detected.

The options are: LPT & COM (Default), LPT, COM, NONE.

### HDD & FDD I/O

Selecting ON will enable the power management timers when a no activity event is detected in the hard disk drive and floppy disk drive. Selecting OFF to disable the PM timer even if a no activity event is detected.

The options are: OFF, ON (Default).

### IRQ# Activity

After the time period which you set at in Suspend Mode Feature, the system advances from Doze Mode to Suspend Mode in which the CPU clock stops and the screen display is off. At this moment, if the IRQ activity which is defined as Primary occurs, the system goes back to Full-on Mode directly.

If the IRQ activity which is defined as Secondary takes place, the system enters another low power state, Dream Mode, in which the system will act as Full-on Mode except that the screen display remains off until the corresponding IRQ handler finishes, then back to Suspend Mode.

For instance, if the system connects to a LAN and receives an interruption from its file server, the system will enter the dreaming mode to execute the corresponding calling routine.

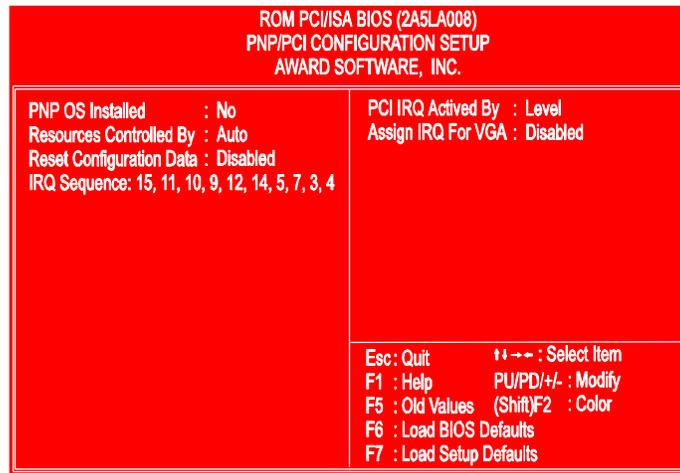
The options are: Primary, Secondary, Disabled.

The default values of IRQ3, 4, 5, 7, 12, 14 are: Primary.

The default value of IRQ8, 9, 10, 11, 15 are: Disabled.

**NOTE** : Under certain operating system such as Windows NT 4.0 (Build 1381), the CD auto-insertion feature might have some effect on the power management. It is recommended that the CD-ROM drive to use the secondary channel, and set the following features in the feature Power Management Setup. - HDD & FDD : Off ; IRQ15 (Reserved) : Secondary.

## PNP/PCI Configuration Setup



### PNP OS Installed

If your operating system is a Plug-and-Play one, such as Windows NT, Windows 95, select Yes. The options are: No (Default), Yes.

### Resources Controlled By

If set at Auto, the BIOS arranges all system resources. If there exists conflict, select Manual. The options are: Auto (default), Manual. The manual options of IRQ- / DMA- assigned to are: Legacy ISA, PCI/ISA PnP.

### Reset Configuration Data

When enabled, allows the system to clear the last BIOS configuration data and reset with the default data. The options are: Enabled, Disabled (default).

### IRQ Sequence

This feature allows you to select the PCI IRQ sequence.

The options are: 15, 11, 10, 9, 12, 14, 5, 7, 3, 4 (Default); 9, 10, 11, 5, 7, 4, 3, 12, 15, 14.

### PCI IRQ Activated By

We suggest that you set this to its default configuration unless you are a qualified technician. The options are: Level (Default), Edge.

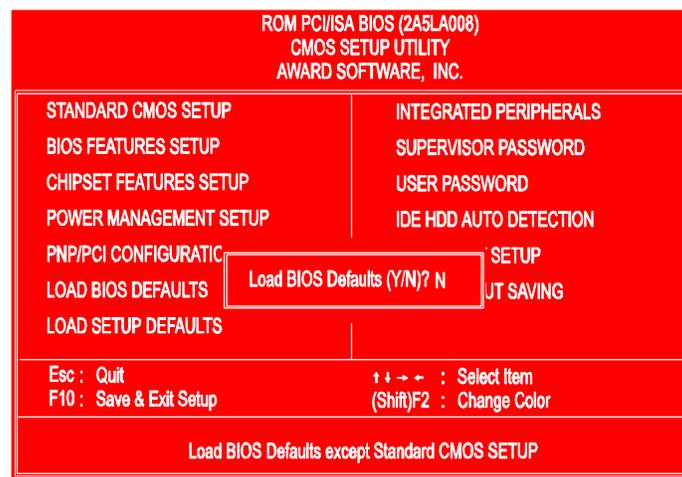
## Award BIOS Setup

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### Assign IRQ For VGA

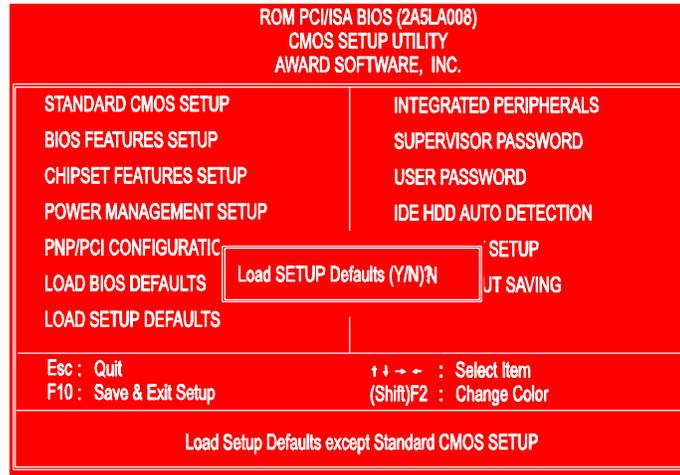
If your PCI VGA card does not need an IRQ, select Disabled; therefore, an IRQ can be released for the system use. The options are: Enabled, Disabled (Default).

### Load BIOS Defaults



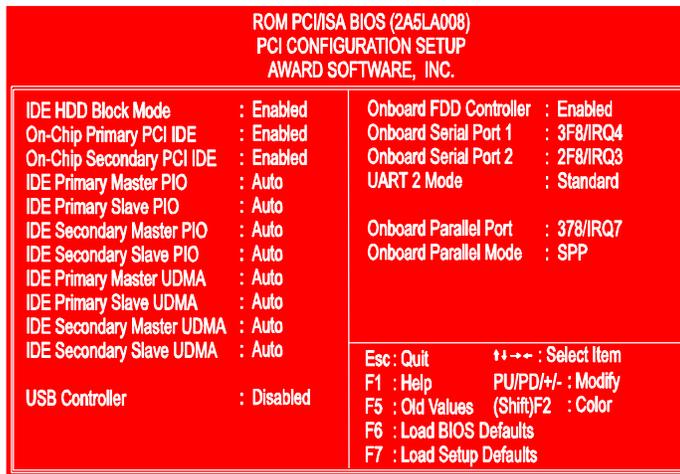
BIOS defaults contain the most appropriate values of the system parameters that allow minimum system performance. The OEM manufacturer may change the defaults through MODBIN before the binary image burns into the ROM.

## Load Setup Defaults



Selecting this field loads the factory defaults for BIOS and Chipset Features which the system automatically detects.

## Integrated Peripherals



### IDE HDD Block Mode

When enabled, the system executes read/write requests to hard disk in block mode. The options are: Enabled (Default), Disabled.

### On-Chip Primary PCI IDE

When enabled, allows you to use the onboard primary PCI IDE. The options are: Enabled (Default), Disabled.

### On-Chip Secondary PCI IDE

When enabled, allows you to use the onboard secondary PCI IDE. The options are: Enabled (Default), Disabled.

### IDE Primary Master PIO

Allows an automatic or a manual configuration of the PCI primary IDE hard disk (master) mode. The options are: Auto (Default), Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

### IDE Primary Slave PIO

Allows an automatic or a manual configuration of the PCI primary IDE hard disk (slave) mode. The options are: Auto (Default), Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

### IDE Secondary Master PIO

Allows an automatic or a manual configuration of the PCI secondary IDE hard disk (master) mode. The options are: Auto (Default), Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

### IDE Secondary Slave PIO

Allows an automatic or a manual configuration of the PCI secondary IDE hard disk (slave) mode. The options are: Auto (Default), Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

### IDE Primary Master UDMA

Allows you to select the first PCI IDE channel of the first master hard disk mode or to detect it by the BIOS if the hard disk supports UDMA (Ultra DMA, faster than DMA). The options are: Auto (Default), Disabled.



### IDE Primary Slave UDMA

Allows you to select the first PCI IDE channel of the first slave hard disk mode or to detect it by the BIOS if the hard disk supports UDMA (Ultra DMA, faster than DMA).

The options are: Auto (Default), Disabled.

### IDE Secondary Master UDMA

Allows you to select the second PCI IDE channel of the secondary master hard disk mode or to detect it by the BIOS if the hard disk supports UDMA (Ultra DMA, faster than DMA).

The options are: Auto (Default), Disabled.

### IDE Secondary Slave UDMA

Allows you to select the second PCI IDE channel of the secondary slave hard disk mode or to detect it by the BIOS if the hard disk supports UDMA (Ultra DMA, faster than DMA).

The options are: Auto (Default), Disabled.

### USB Controller

If you do not use the onboard USB feature, it allows you to disable it.

The options are: Enabled, Disabled (Default).

### BIOS Support USB Keyboard

If Enabled is selected in the above feature, this feature will appear.

If your USB devices cannot be detected automatically by the system BIOS or some driver diskettes came with your USB devices, please set at DOS for allowing you to install the driver. The options are: Setup (Default), DOS.

### Onboard FDD Controller

When enabled, the floppy diskette drive (FDD) controller is activated.

The options are: Enabled (Default), Disabled.

### Onboard Serial Port 1

If the serial port 1 uses the onboard I/O controller, you can modify your serial port parameters. If an I/O card needs to be installed, COM3 and COM4 may be needed. The options are: 3F8/IRQ4 (Default), 3E8/IRQ4, 2F8/IRQ3, 2E8/IRQ3, Disabled.

### Onboard Serial Port 2

If the serial port 2 uses the onboard I/O controller, you can modify your serial port parameters. If an I/O card needs to be installed, COM3 and

COM4 may be needed. The options are: 2F8/IRQ3 (Default), 3E8/IRQ4, 2E8/IRQ3, 3F8/IRQ4, Disabled.

#### UART 2 Mode

Allows you to select the IR modes if the serial port 2 is used as an IR port. Set at Standard, if you use COM2 as the serial port as the serial port, instead as an IR port.

The options are: HPSIR, ASKIR, Standard (Default).

#### IR Function Duplex

If the option ASKIR of UART 2 Mode is selected, this feature will be shown in your monitor for allowing you to select the infrared transaction modes.

The options are: Half (Default), Full.

#### RxD, TxD Active

The feature allows you to select the active signals of the reception end and the transmission end. This is for technician use only.

The options are: Hi, Hi (Default); Hi, Lo; Lo, HI; Lo, Lo.

#### Onboard Parallel Port

Allows you to select from a given set of parameters if the parallel port uses the onboard I/O controller.

The options are: 378/IRQ7 (Default), 278/IRQ5, 3BC/IRQ7, Disabled.

#### Onboard Parallel Mode

Allows you to connect with an advanced printer.

The options are: SPP (Default), EPP Mode, ECP Mode, ECP+EPP Mode.

#### ECP Mode Use DMA

If you select ECP mode to be the parallel port mode, this feature allows you to select Direct Memory Access (DMA) channel.

The options are: 3 (Default), 1.

#### Parallel Port EPP Type

If you select EPP/SPP mode to be the parallel port mode, this feature allows you to select the EPP type version.

The options are: EPP1.9, EPP1.7 (Default).

### Supervisor/User Password

To enable the Supervisor/User passwords, select the item from the Standard CMOS Setup. You will be prompted to create your own password. Type your password up to eight characters and press Enter. You will be asked to confirm the password. Type the password again and press Enter. You may also press Esc to abort the selection and not enter a password. To disable password, press Enter when you are prompted to enter password. A message appears, confirming the password is disabled.

Under the BIOS Feature Setup, if System is selected under the Security Option field and the Supervisor Password is enabled, you will be prompted for the Supervisor Password every time you try to enter the CMOS Setup Utility. If System is selected and the User Password is enabled, you will be requested to enter the User Password every time you reboot the system. If Setup is selected under the Security Option field and the User Password is enabled, you will be prompted only when you reboot the system.

### Clear Password

If you forget your password, turn off the system power first and remove the system unit cover. Locate Jumper CPW and cap it. Remove Jumper CPW and reset the system. At this point, you will not be asked for the password to enter Setup.

### IDE HDD Auto Detection

The IDE Hard Disk Drive Auto Detection feature automatically configures your new hard disk. Use it for a quick configuration of new hard drives. This feature allows you to set the parameters of up to four IDE HDDs. The option with **(Y)** are recommended by the system BIOS. You may also keys in your own parameters instead of setting by the system BIOS. After all settings, press Esc key to return the main menu. For confirmation, enter the Standard CMOS Setup feature.

### **Save and Exit Setup**

After you have made changes under Setup, press Esc to return to the main menu. Move cursor to Save and Exit Setup or press F10 and then press Y to change the CMOS Setup. If you did not change anything, press Esc again or move cursor to Exit Without Saving and press Y to retain the Setup settings. The following message will appear at the center of the screen to allow you to save data to CMOS and exit the setup utility:

**SAVE to CMOS and EXIT (Y/N)?**

### **Exit without Saving**

If you select this feature, the following message will appear at the center of the screen to allow you to exit the setup utility without saving CMOS modifications:

**Quit Without Saving (Y/N)?**

<b>NOTE</b> : Default values of the various Setup items on this chapter may not necessarily be the same ones.
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## BIOS Update Instruction

**CAUTION** : End users are not encouraged to flash the BIOS file; since it may adversely affect system performance.

The mainboard provides a Flash BIOS. If you have any question about the BIOS upgrade, please contact your local dealer for more information. The following instructions are introduced when the upgrade is needed.

1. Create a Bootable Floppy (in DOS) - with a non-formatted diskette, type **format a:/s**. With a formatted diskette, type **sys a:**
2. Download the BIOS File - Download the correct BIOS file via FTP, by clicking on the file name of the BIOS you wish to download. Save the BIOS file and the Flash Utility file in the boot disk you have created.

Unzip the BIOS file and the Flash Utility file.

*There are two files after extraction: Flash BIOS utility, (e.g. flash531.exe), and BIOS file (e.g. 615J900.bin). Use the standard Flash BIOS utility (flash531.exe), unless otherwise specified. Place the bootable floppy disk containing the BIOS file and the Flash Utility in drive a:, and reboot the system in MS-DOS, preferably V. 6.22*

At the A: > prompt, type the corresponding Flash BIOS utility and the BIOS file with its extension. For example, **flash531 615j900.bin**

From the Flash Memory Write menu, select **Y** to **Do you want to save BIOS?** If you want to save your current BIOS, then type the current BIOS name and the extension after **FILE NAME TO SAVE:**. e.g. 613J900.bin  
Alternatively, select **N** if you do not want to save your current BIOS.

Select **Y** to **Are you sure to program?**

Wait until it displays **Message: Power Off or Reset the system.**

Once the BIOS has been loaded successfully, remove the floppy diskette and reboot the system holding the END key prior to power on until you enter CMOS setup. If you do not do this the first time booting up after upgrading the BIOS, the system will hang.

**NOTE** : Do not turn off or reset the computer during the flash process. It will corrupt the BIOS data.