



# User's Manual

A Socket 370 Processor based  
mainboard (133/100/66 MHz)

Supports PC133/VC133 Memory Modules

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Section 1  
INTRODUCTION

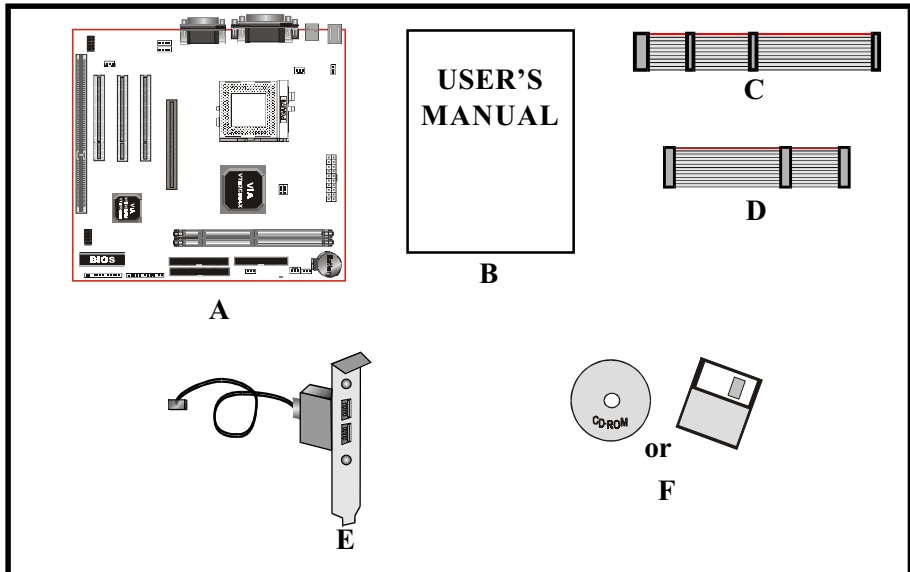
Components Checklist

**Package Contents**

**Optional Item**

- A. (1) Mainboard
- B. (1) User's manual
- C. (1) Floppy ribbon cable
- D. (1) ATA-66 Hard drive ribbon cable
- F. (1) Driver and utility

- E. (1) USB Cable



# Introduction

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## Mainboard Form-Factor

The is designed with Micro ATX form factor - the new industry standard of chassis. Micro ATX form factor is essentially a Baby-AT baseboard rotated 90 degrees within the chassis enclosure and a new mounting configuration for the power supply. With these changes the processor is relocated away from the expansion slots, allowing them all to hold full length add-in cards. Micro ATX defines a double height aperture to the rear of the chassis which can be used to host a wide range of onboard I/O. Only the size and position of this aperture is defined, allowing PC manufacturers to add new I/O features (e.g.; TV input, TV output, joystick, modem, LAN, etc.) to systems. This will help systems integrators differentiate their products in the marketplace, and better meet your needs.

- By integrating more I/O down onto the board and better positioning the hard drive and floppy connectors material cost of cables and add-in cards is reduced.
- By reducing the number of cables and components in the system, manufacturing time and inventory holding costs are reduced and reliability will increase.
- By using an optimized power supply, it's possible to reduce cooling costs and lower acoustical noise. Micro ATX power supply, which has a side-mounted fan, allows direct cooling of the processor and add-in cards making a secondary fan or active heatsink unnecessary in most system applications.

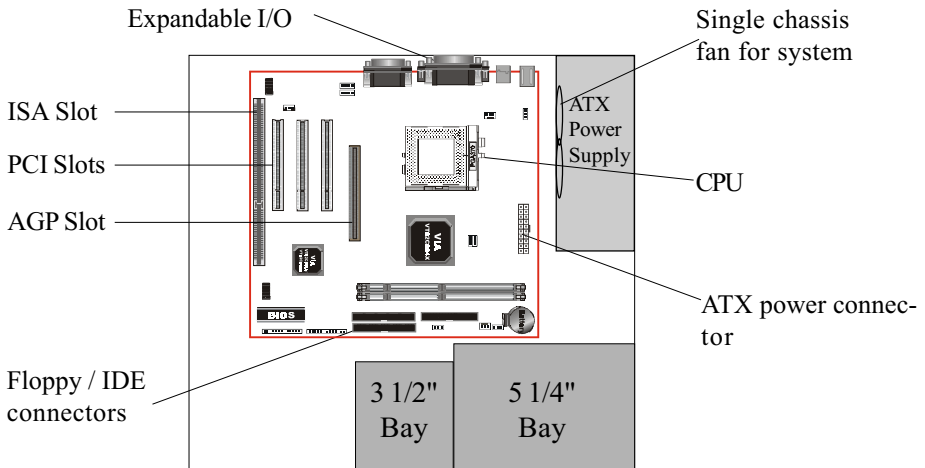


Figure 2: Summary of ATX chassis features

## I/O Shield Connector

The board is equipped with an I/O back panel. Please use the appropriate I/O shield (figure 3).

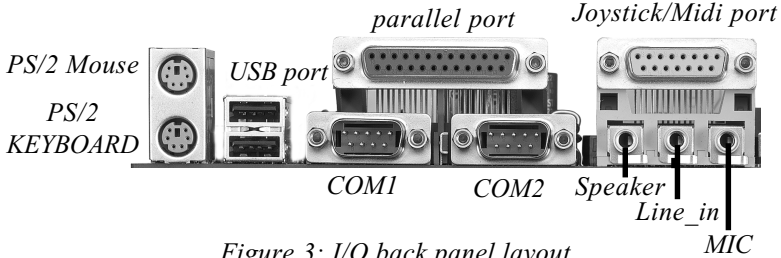


Figure 3: I/O back panel layout

## Power-On/Off (Remote)

The board has a single 20-pin connector for ATX power supplies. For ATX power supplies that support the **Remote On/Off** feature, this should be connected to the systems front panel for system Power On/Off button. The systems power On/Off button should be a momentary button that is normally open.

The board has been designed with "Soft Off" functions. You can turn Off the system from one of two sources: The first is the front panel Power On/Off button, and the other is the "Soft Off" function (coming from the onboard circuit controller) that can be controlled by the operating system such as Windows® 95/98/SE/ME or Windows®2000.

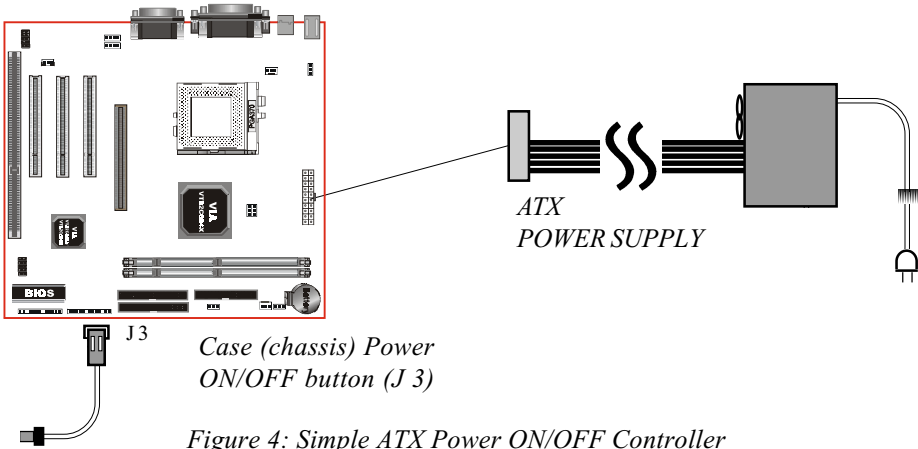


Figure 4: Simple ATX Power ON/OFF Controller

# Introduction

## System Block Diagram

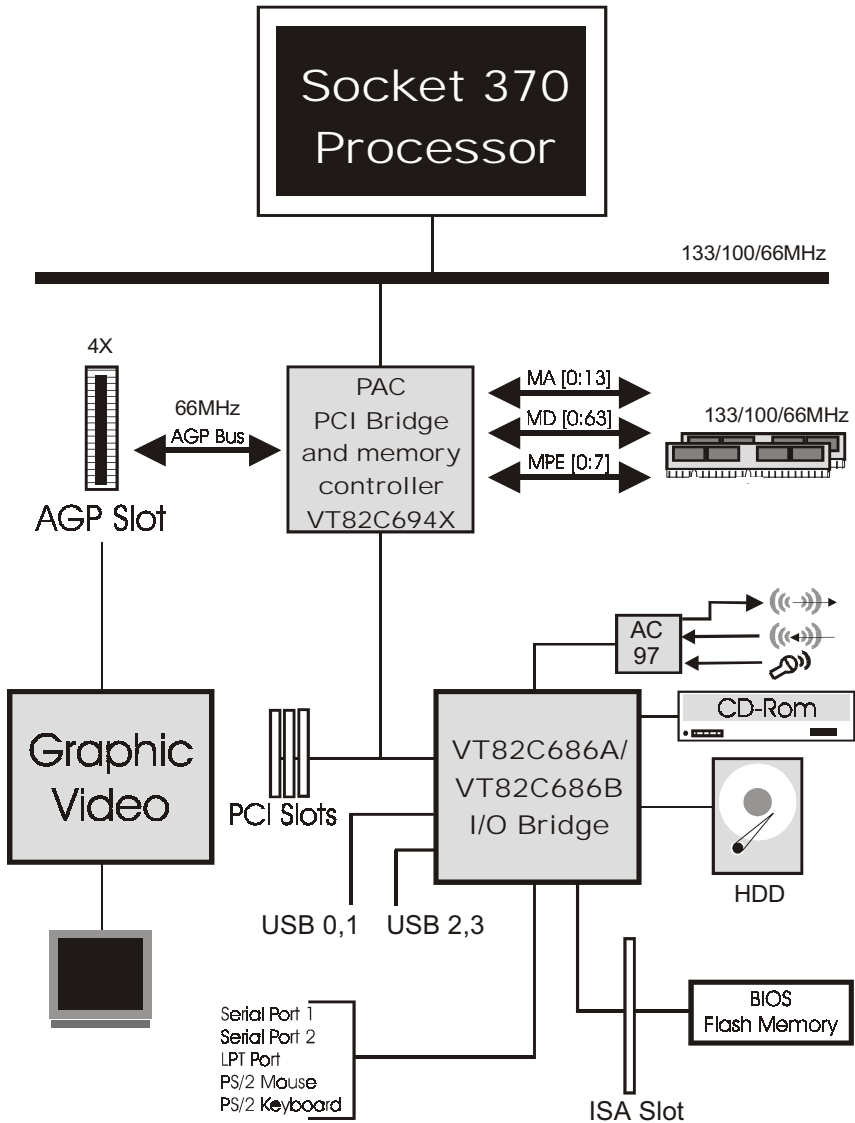


Figure 5: System Block Diagram



### Mainboard Features:

#### ◆ PROCESSOR

- Intel Celeron™ Processors with PPGA / FC-PGA socket 370 packing, operating at 433 ~ 766MHz
- Intel Pentium® III /Coppermine™ Processor with FC-PGA socket 370 packing, operating at 500MHz ~ 1GHz
- VIA Cyrix III Processor with PPGA socket370 packing, operating at 500 ~ 600MHz

#### ◆ CHIPSET

- VIA Apollo Pro133A AGPset (694X + 686A or 694X + 686B)

#### ◆ DRAM MODULE

- 168pin DIMM x 2 for PC133/VC133 Memory
- DRAM Size: 32MB to 512MB

#### ◆ EXPANSION SLOT

- ISA x 1, PCI x 3, 4X AGP x 1

#### ◆ ONBOARD I/O

- On-Chip Multi I/O integrated with K/B, mouse, FDD, Parallel and Serial, Fast IR and Power-ON controllers

#### ◆ ONBOARD PCI / IDE

- PCI Bus IDE Port with PIO / Ultra DMA-66/100 x 2 (Up to 4 Devices), if uses VT82C686A chipset, it supports Ultra DMA-66 only.

## Features

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### ◆ I/O CONNECTOR

- PS/2 Mouse and PS/2 style Keyboard

### ◆ USB

- USB connector x 4 (2 for Opt.)

### ◆ BIOS

- Award Plug & Play BIOS

### ◆ Built-in AC97 Digital Audio

- Dual full-duplex Direct Sound channels
- H/W Sound Blaster Pro for DOS legacy compatibility
- FM synthesis for legacy compatibility
- Supports game and MIDI port

### ◆ EXTENDED FUNCTION

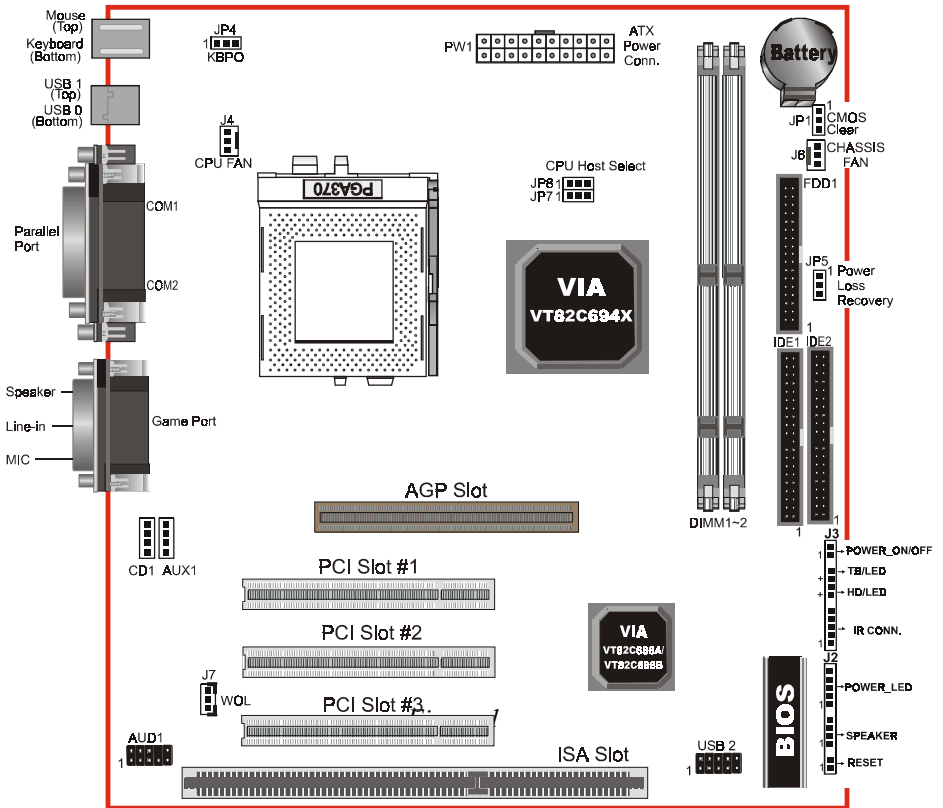
- Supports exclusive USDM(Unified System Diagnostic Manager) and Hardware Monitoring Function by VT82C686A or VT82C686B
- Supports exclusive KBPO (KeyBoard Power On)
- Supports CPU Clock setting via Jumper & BIOS
- Supports Wake-On-LAN Function
- Supports Front Panel Audio Connector (2\*5 pins)

### ◆ FORM FACTOR

- 245mm x 215mm Micro ATX Size

Section 3  
INSTALLATION

Mainboard Detailed Layout



# Installation

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## Easy Installation Procedure

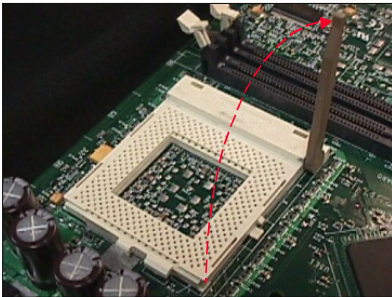
The following must be completed before powering on your new system:

- 3-1. **CPU Insertion**
- 3-2. **Jumper Settings**
- 3-3. **System memory Configuration**
- 3-4. **Device Connectors**
- 3-5. **External Modem Ring-in Power ON and Keyboard Power ON Functions (KBPO)**

### Section 3-1 CPU Insertion

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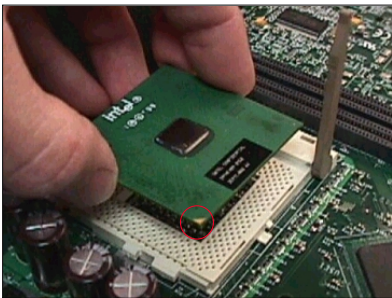
#### CPU Insertion



*Figure 2*

#### **Step 1**

Open the socket by raising the actuation lever.



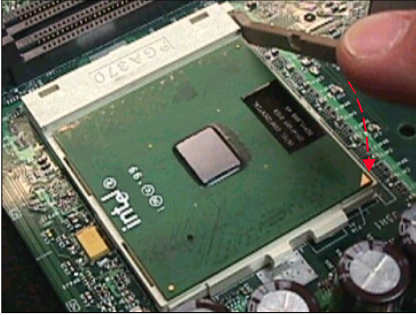
*Figure 3*

#### **Step 2**

Insert the processor.

Ensure proper pin 1 orientation by aligning the FC-PGA corner marking with the socket corner closest to the actuation arm tip. The pin field is keyed to prevent mis-oriented insertion.

Don't force processor into socket. If it does not go in easily, check for mis-orientation and debris. Make sure the processor is fully inserted into the socket on all sides.

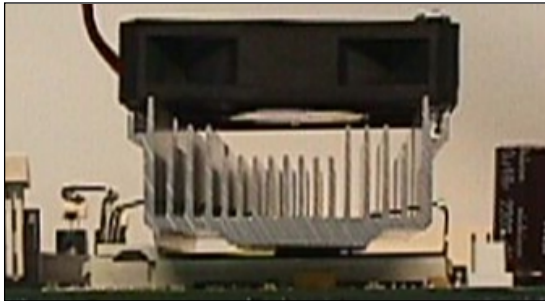


*Figure 4*

### Step 3

Close the socket by lowering and locking the actuation lever.

Note: Intel's reference design thermal solution is an active heatsink; an extruded aluminum heatsink based and a fan attached to the top on the fin array. (See Figure 5)



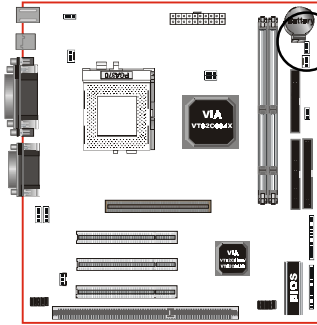
*Figure 5*

# Installation

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## Section 3-2 Jumper Settings

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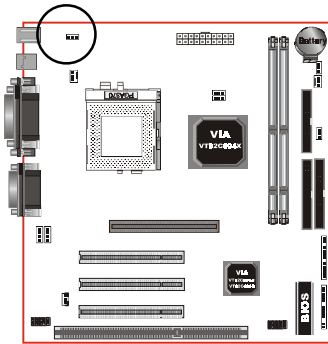
JP1



CMOS Clear

JP1 =1-2 Normal (Default)

=2-3 Clear CMOS



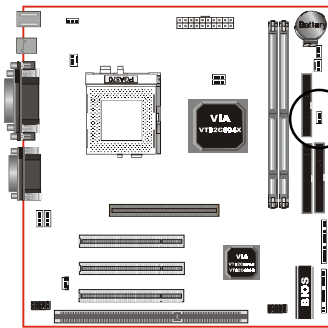
JP4



Keyboard Power-ON Function

JP4 =1-2 Disabled (Default)

=2-3 Enabled



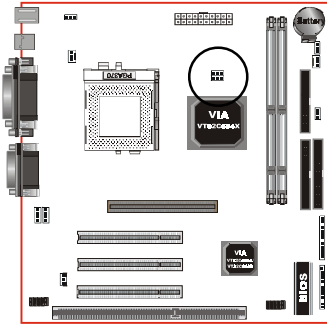
JP5



Power Loss Recovery

JP5 =1-2 Disabled (Default)

=2-3 Enabled



JP8  
JP7



## CPU Host Clock Select

JP7	JP8	CPU Clock Select
1-2	1-2	AUTO
2-3	2-3	66MHz
None	2-3	100MHz
None	None	133MHz

(Default)

# Installation

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## Section 3-3 System Memory Configuration

### Memory Layout

The board supports (2) PC133/VC133 168-pin DIMMs (Dual In-line Memory Module). The DIMMs is for SDRAM (Synchronous DRAM) .

- DIMM SDRAM may be 83MHz (12ns), 100MHz (10ns), 125MHz (8ns) or 133MHz (7.5ns) bus speed.
- When using Synchronous DRAM we recommend using the 4 clock variety over the 2 clock.

Figure 6 and Table 1 show several possible memory configuration.



Figure 6

Total Memory	DIMM 1 (Bank 0/1)	DIMM 2 (Bank 2/3)
= 256MB Maximum	SDRAM* 32MB, 64MB, 128MB, 256MB X 1	None
= 512MB Maximum	SDRAM* 32MB, 64MB, 128MB, 256MB X 1	SDRAM* 32MB, 64MB, 128MB, 256MB X 1

Table 1

\* SDRAM supports 32, 64, 128, 256MB DIMM modules.

\* We recommend to use PC100/VC100 Memory Module for bus speed between 66MHz and 100MHz and PC133/VC133 Memory for bus speed over 100MHz.

\* Using non-compliant memory with higher bus speed (over clocking) may severely compromise the integrity of the system.



## DIMM Module Installation

Figure 7 displays the notch marks and what they should look like on your DIMM memory module.

DIMMs have 168-pins and two notches that will match with the onboard DIMM socket. DIMM modules are installed by placing the chip firmly into the socket at a 90 degree angle and pressing straight down (figure 8) until it fits tightly into the DIMM socket (figure 9).

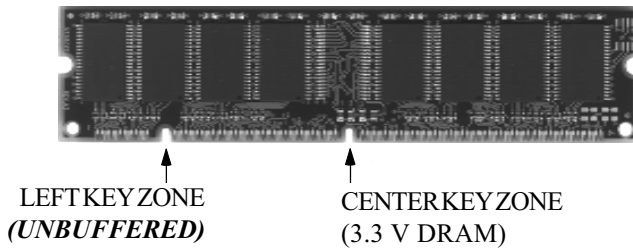


Figure 7

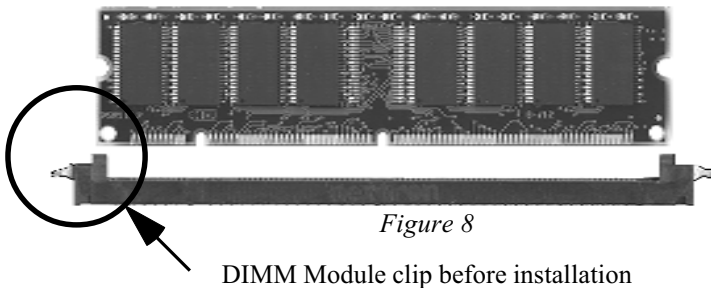


Figure 8

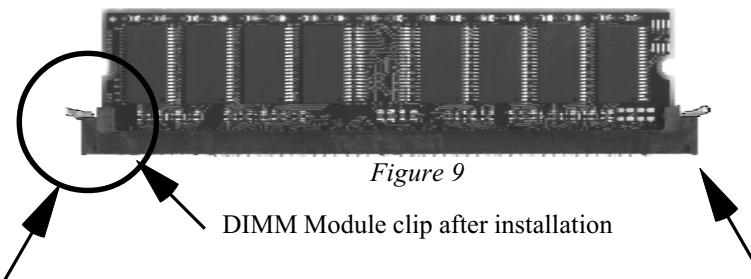
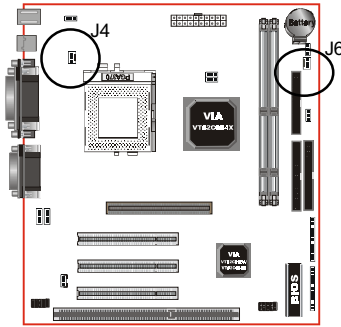
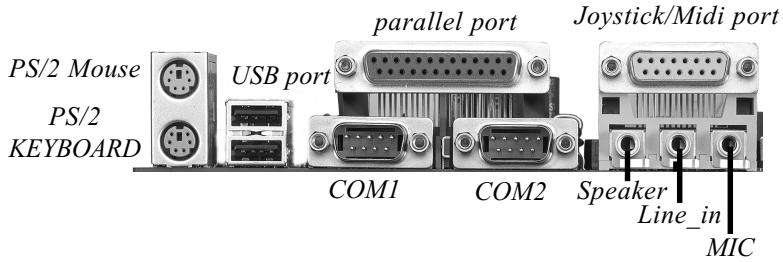


Figure 9

To remove the DIMM module simply press down both of the white clips on either side and the module will be released from the socket.

# Installation

## Section 3-4 Device Connectors

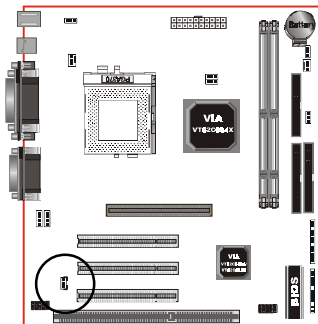
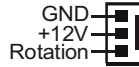


### J4/J6: CPU/Chassis Fan

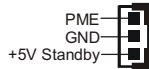
- A plug-in for the CPU/Chassis Fan Power

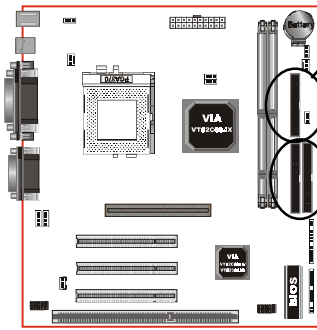
CPU Fan

Chassis Fan



### J7: WOL (Wake On LAN) Connector

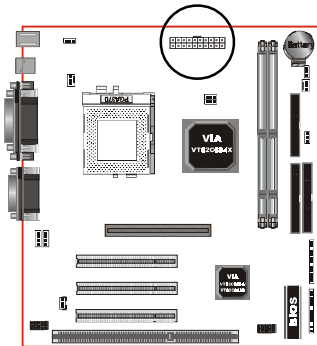




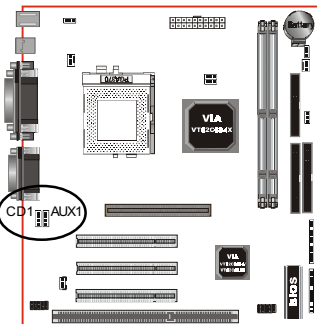
**FDD1:** Floppy Controller Connector (Black color)

**IDE1:** Ultra ATA-66/100 Primary IDE Connector (Blue color)  
(uses VT82C686A chipset, support ATA-66 only, White color)

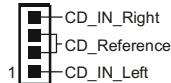
**IDE2:** Ultra ATA-66/100 Secondary IDE Connector (Blue color)  
(uses VT82C686A chipset, support ATA-66 only, Black color)



**PW1:** ATX Power Connector  
• 20-pin power connector



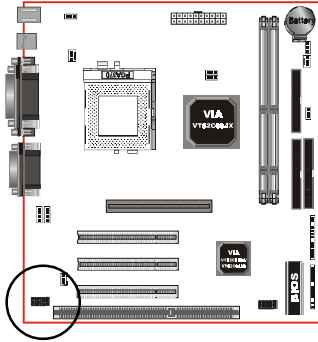
**CD1:** CD Audio\_IN Connector



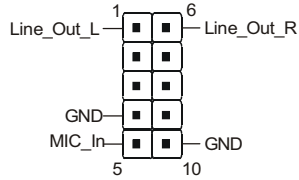
**AUX1:** Auxiliary Line\_IN Connector



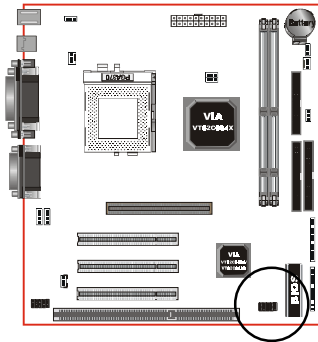
# Installation



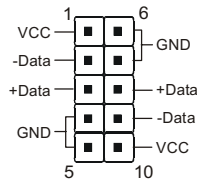
## AUD1: Front Panel Audio Connector



**Note: Either only AUD1 or onboard Audio Connector can be used at one time.**

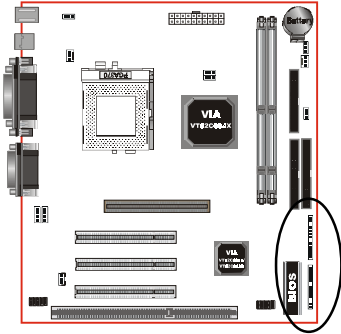


## USB2: USB port header pins for adding two additional USB ports.



USB port header pin descriptions.

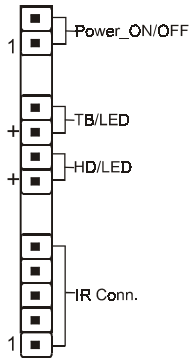
PIN#	Wire color	Signal Name	Comment
1	Red	Vcc	Cable Power
2	White	-Data	Data
3	Green	+Data	Data
4	Black	Ground	Cable Ground
5	Black	Ground	Case Ground
6	Black	Ground	Case Ground
7	Black	Ground	Cable Ground
8	Green	+Data	Data
9	White	-Data	Data
10	Red	Vcc	Cable Power



## ◆ Power On/Off

(This is connected to the power button on the case. Using the Soft-Off by Pwr-BTTN feature, you can choose either Instant Off (turns system off immediately), or 4 sec delay (you need to push the button down for 4 seconds before the system turns off). When the system is in 4 sec delay mode, suspend mode is enabled by pushing the button momentarily.)

## J3



## ◆ TurboLED indicator

LED ON when higher speed is selected

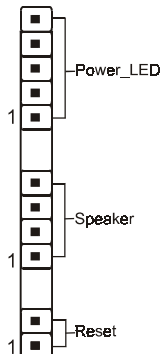
## ◆ IDELED indicator

LED ON when Onboard PCI IDE Hard disks is activate

## ◆ IR Connector

- |        |        |
|--------|--------|
| 1.VCC  | 4.GND  |
| 2.NC   | 5.IRTX |
| 3.IRRX |        |

## J2



## ◆ PowerLED

Power LED connector

- |                 |        |
|-----------------|--------|
| 1. Power LED(+) | 4. NC  |
| 2. N/C          | 5. GND |
| 3. GND          |        |

## ◆ Speaker

Connect to the system's speaker for beeping

- |            |        |
|------------|--------|
| 1. Speaker | 3. GND |
| 2. N/C     | 4. GND |

## ◆ Reset

Closed to restart system.

# Installation

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## Section 3-5 External Modem Ring-in Power ON and Keyboard Power ON Functions (KBPO)

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On the basis of bounded functions in I/O chipset, the two serial ports are able to support the External Modem Ring-in Power ON function. Once users connect the external modem to COM1 or COM2, the mainboard allows users to turn on their system through the remote and host's dial-up control.

### Exclusive Keyboard Power ON Function

To innovate a unique feature to benefit users, we devoted the easiest and most convenient way to turn on your system based on the the ATX power supply.

How to work with it

**Step 1:** Please check JP4 at the position 2-3 after you finished the system installation.

**JP4**



Keyboard Power-ON Function

JP4 = 1-2 Disabled (Default)

= 2-3 Enabled

**Step 2:** You can enjoy the Keyboard Power ON function (KBPO) by *pressing any key and BUTTON only to turn on your system*. Your system will be turned on automatically, after releasing the keys. To power off you system, you can use the Soft-OFF function under Windows® 95/98/SE/ME or Windows® 2000.

**Notes:** Intel ATX version 2.0 specification has recommended you use the power supply with 0.72A(720mA) in 5.0VSB. With our mainboard, *the 5.0VSB standby power only has to be > = 0.2A (200mA)* then you can enjoy this unique benefit. However, the ATX power supply which is < 0.2 (200mA) is still applicable to your system by placed JP4 at the position 1-2 to disable this feature.



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## Section 4

# AWARD BIOS SETUP

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### BIOS Instructions

---

Award's ROM BIOS provides a built-in Setup program which allows user to modify the basic system configuration and hardware parameters. The modified data will be stored in a battery-backed CMOS, so that data will be retained even when the power is turned off. In general, the information saved in the CMOS RAM will stay unchanged unless there is a configuration change in the system, such as hard drive replacement or a device is added.

It is possible for the CMOS battery to fail, this will cause data loss in the CMOS only. If this does happen you will need to reconfigure your BIOS settings.

#### To enter the Setup Program :

Power on the computer and press the <Del> key immediately, this will bring you into the BIOS CMOS SETUP UTILITY.

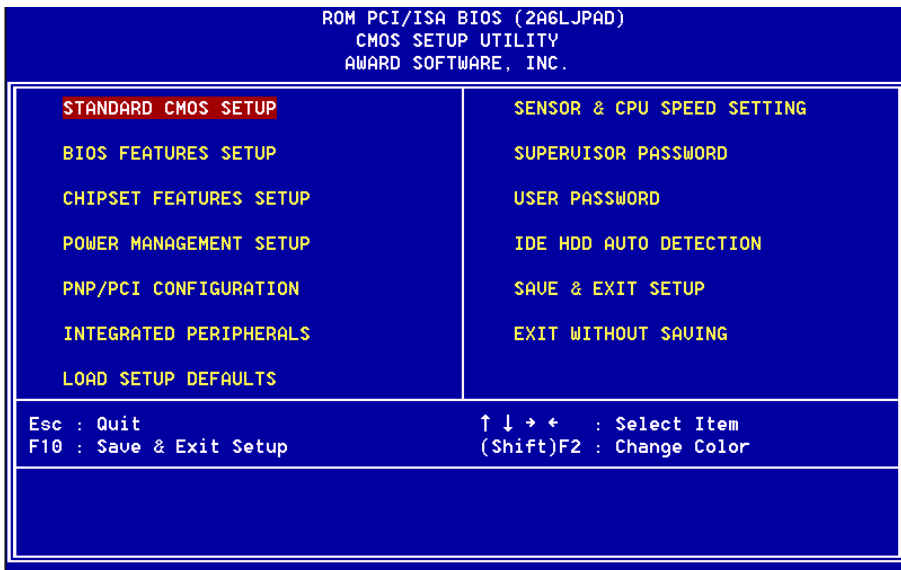


Figure 1: CMOS Setup Utility



# BIOS

The menu displays all the major selection items. Select the item you need to reconfigure. The selection is made by moving the cursor (press any direction key ) to the item and pressing the 'Enter' key. An on-line help message is displayed at the bottom of the screen as the cursor is moved to various items which provides a better understanding of each function. When a selection is made, the menu of the selected item will appear so that the user can modify associated configuration parameters.

## 4-1 Standard CMOS Setup

Choose "Standard CMOS Setup" in the CMOS SETUP UTILITY Menu (Figure 2). The Standard CMOS Setup allows the user to configure system settings such as the current date and time, type of hard disk drive installed, floppy drive type, and display type. Memory size is auto-detected by the BIOS and displayed for your reference. When a field is highlighted (use direction keys to move the cursor and the <Enter> key to select), the entries in the field can be changed by pressing the <PgDn> or the <PgUp> key.

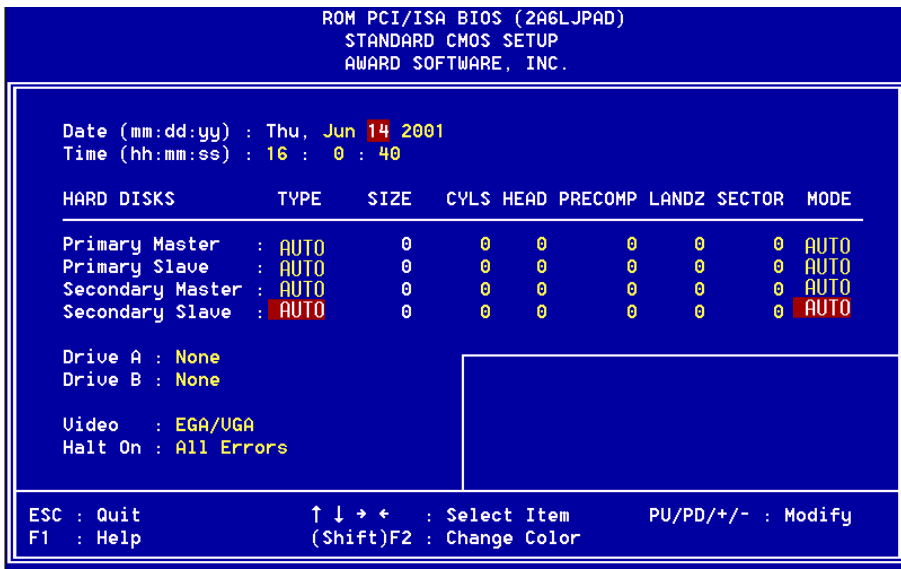


Figure 2: Standard CMOS Setup

**NOTE:** *If the hard disk Primary Master/Slave and Secondary Master/Slave are set to Auto, then the hard disk size and model will be auto-detected.*

**NOTE:** *The “Halt On:” field is used to determine when to halt the system by the BIOS if an error occurs.*

**NOTE:** *Floppy 3 Mode support is a mode used to support a special 3.5” drive used in Japan. This is a 3.5” disk that stores only 1.2 MB, the default setting for this is disabled.*

## 4-2 BIOS Features Setup

Selecting the “BIOS FEATURES SETUP” option in the CMOS SETUP UTILITY menu allows users to change system related parameters in the displayed menu. This menu shows all of the manufacturer’s default values for the board.

Pressing the [F1] key will display a help message for the selected item.

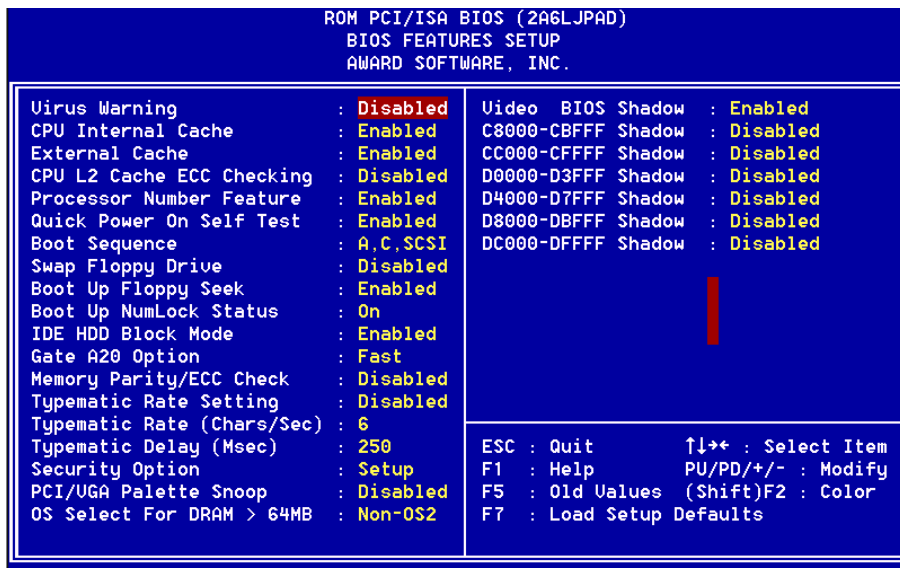


Figure 3: BIOS Features Setup

# BIOS

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**Virus Warning:** 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 an error message will appear.

You should then run an anti-virus program to locate the virus. Keep in mind that this feature protects only the boot sector, not the entire hard drive.

The default value is Disabled.

**Enabled:** Activates automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector.

**Disabled:** No warning message will appear when anything attempts to access the boot sector.

*Note: Many disk diagnostic programs that access the boot sector table can trigger the virus warning message. If you plan to run such a program, we recommend that you first disable the virus warning.*

**CPU Internal Cache:** This controls the status of the processor's internal cache area. The default is Enabled.

**Enabled:** This activates the CPU's internal cache thereby increasing performance.

**Disabled:** This deactivates the CPU's internal cache thereby lowering performance.

**External (L2) Cache:** This controls the status of the external (L2) cache area. The default is Enabled.

**Enabled:** This activates the CPU's L2 cache thereby increasing performance.

**Disabled:** This deactivates the CPU's L2 cache thereby lowering performance.

**CPU L2 Cache ECC Checking:** This control if the CPU's L2 Cache will support Error Checking and Correcting (ECC). The default is Disabled.

**Enabled:** Enables ECC support for the CPU's L2 cache. Performance will decrease 2% ~ 4%.

**Disabled:** Disables ECC support for the CPU's L2 cache.

**Processor Number Feature:** Pentium III or later CPU new feature. The default is Enabled.

**Enabled:** Processor serial number readable.

**Disabled:** Processor serial number disabled.

**Quick Power On Self Test:** This category speeds up the Power On Self Test (POST). The default is Enabled.

**Enabled:** This setting will shorten or skip of the items checked during POST.

**Disabled:** Normal POST.

**Boot Sequence:** This category determines which drive is searched first by the O/S (Operating System). The default is A,C,SCSI.

The following is your list of options:

[A, C, SCSI] - [C, A, SCSI] - [C, CD-ROM, A] - [CD-ROM, C, A]

[D, A,CD-ROM],[E, A, CD-ROM] - [F, A, CD-ROM] - [SCSI, A, C]

[SCSI C, A] - [C Only]

**Swap Floppy Drive:** This will swap your physical drive letters A & B if you are using two floppy disks. The default is Disabled.

**Enabled:** Floppy A & B will be swapped under the O/S.

**Disabled:** Floppy A & B will be not swapped.

**Boot Up Floppy Seek:** During Power-On-Self-Test (POST), BIOS will determine if the floppy disk drive installed is 40 or 80 tracks. Only 360K type is 40 tracks while 760K, 1.2MB and 1.44MB are all 80 tracks. The default is Enabled.

**Enabled:** The BIOS will search the floppy disk drive to determine if it is 40 or 80 tracks.

**Disabled:** The BIOS will not search for the type of floppy disk drive by track number.

*Note: BIOS can not tell the difference between 720K, 1.2MB and 1.44MB drive types as they are all 80 tracks.*

**Boot Up NumLock Status:** This controls the state of the NumLock key when the system boots. The default is On.

**On:** The keypad acts as a 10-key pad.

**Off:** The keypad acts like the cursor keys.

**IDE HDD Block Mode:** IDE Block Mode allows the controller to access blocks of sectors rather than a single sector at a time. The default is Enabled.

**Enabled:** Enabled IDE HDD Block Mode. Provides higher HDD transfer rates.

**Disabled:** Disable IDE HDD Block Mode.

# BIOS

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**Gate A20 Option:** This refers to the way the system addresses memory above 1MB (extended memory). The default is Fast.

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

**Fast:** The A20 signal is controlled by Port 92 or chipset specific method.

**Memory Parity/ECC Check:** If the DRAM chip in your system support Parity/ECC check, select Enabled.

**Typematic Rate Setting:** This determines the keystrokes repeat rate. The default is Disabled.

**Enabled:** Allows typematic rate and typematic delay programming.

**Disabled:** The typematic rate and typematic delay will be controlled by the keyboard controller in your system.

**Typematic Rate (Chars/Sec):** This is the number of characters that will be repeated by a keyboard press. The default is 6.

**6:** 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.

**Typematic Delay (msec):** This setting controls the time between the first and the second character displayed by typematic auto-repeat. The default is 250.

**250:** 250 msec.

**500:** 500 msec.

**750:** 750 msec.

**1000:** 1000 msec.

**Security Option:** This category allows you to limit access to the System and Setup, or just to Setup. The default is Setup.

**System:** The system will not boot and the access to Setup will be denied if the correct password is not entered at the prompt.

**Setup:** The system will boot; but the access to Setup will be denied if the incorrect password is not entered at the prompt.

**PCI/VGA Palette Snoop:** This field controls the ability of a primary PCI VGA controller to share a common palette (When a snoop write cycles) with an ISA video card. The default is Disabled.

**Enabled:** If an ISA card is connected to a PCI VGA card via the VESA connector, and that ISA card connects to a VGA monitor, then that ISA card uses the RAMDAC of the PCI card.

**OS Select For DRAM > 64MB:** Some operating systems require special handling. Use this option only if your system has greater than 64MB of memory. The default is Non-OS2.

**OS2:** Select this if you are running the OS/2 operating system with greater than 64MB of RAM.

**Non-OS2:** Select this for all other operating systems and configurations.

**Video BIOS Shadow:** This option allows video BIOS to be copied into RAM. Video Shadowing will increase the video performance of your system. The default is Enabled.

**Enabled:** Video shadow is enabled.

**Disabled:** Video shadow is disabled.

**C8000 - CBFFF Shadow:**

**CC000 - CFFFF Shadow:**

**D0000 - D3FFF Shadow:**

**D4000 - D7FFF Shadow:**

**D8000 - DBFFF Shadow:**

**DC000 - DFFFF Shadow:**

These categories determine whether ROMs from option cards will be copied into RAM. This will be in 16K byte or 32K byte units, and the size will depend on chipset of the option card.

**Enabled:** Optional shadow is enabled.

**Disabled:** Optional shadow is disabled.

## 4-3 Chipset Features Setup

Choose the “CHIPSET FEATURES SETUP” in the CMOS SETUP UTILITY menu to display following menu.

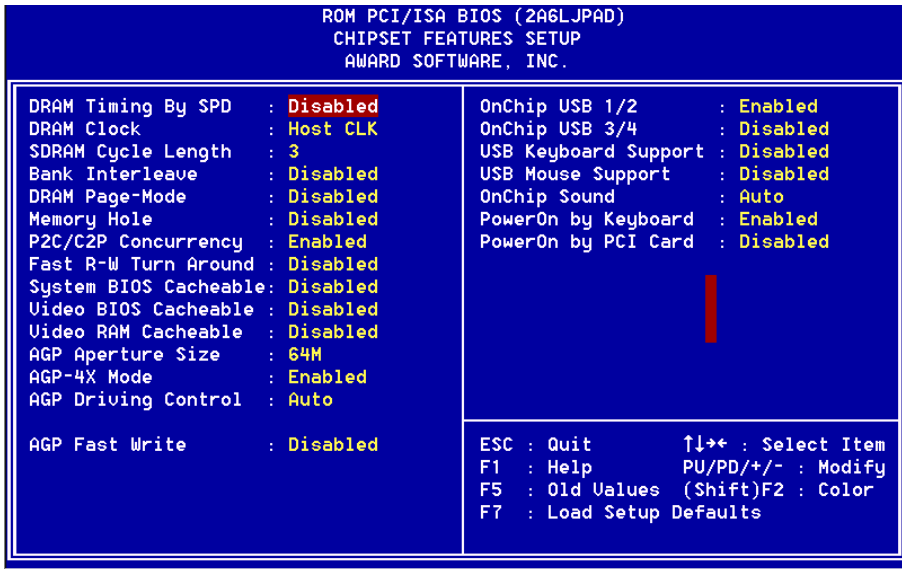


Figure 4: Chipset Features Setup

**DRAM Timing By SPD:** Select Enabled for setting SDRAM timing by SPD. The Choice: Enabled, Disabled.

**DRAM Clock :** The item will synchronize/asynchronize DRAM operation clock.

**Host CLK:** Sets the memory to run at the same speed with the processor’s front side bus. If you have CPU at 133MHz FSB & PC133 memory, please use this selection.

**HCLK+33M:** Sets the memory to run at 33MHz faster than the processor’s front side bus. We recommend to select this item while your CPU is running at 100MHz FSB and memory is PC133 specification to optimize your system performance.

**HCLK -33M:** Sets the memory to run at 33MHz slower than the processor’s front side bus. This selection is suggested to be used under CPU at 133MHz FSB and PC100 memory configuration.

**SDRAM Cycle length:** This setting defines the CAS timing parameter of the SDRAM in terms of clocks. The default is 3.

- 2: Provides faster memory performance.
- 3: Provides better memory compatibility.

**SDRAM Bank Interleave:** The item allows you to set how many banks of SDRAM support in your mainboard.

The Choice: 2 Bank, 4 Bank, Disabled.

**DRAM Page-Mode:** The item will active or inactive chipset page registers.

**Enabled:** Page-Mode Enabled.

**Disabled:** No page registers update and non Page-Mode operation.

**Memory Hole :** You can reserve this memory area for the use of ISA adaptor ROMs. The default is Disabled.

*Enabled: This field enables the main memory (15~16MB) to remap to ISA BUS.*

*Disabled: Normal Setting.*

*Note: If this feature is enabled you will not be able to cache this memory segment.*

**P2C/C2P Concurrency:** This item allows you to enable/disable the PCI to CPU, CPU to PCI concurrency.

**Fast R-W Turn Around:** This item controls the DRAM timing. It allows you to enable/disable the fast read/write turn around.

**System BIOS Cacheable:** This allows you to copy your BIOS code from slow ROM to fast RAM. The default is Disabled.

**Enabled:** The option will improve system performance. However, if any program writes to this memory area, a system error may result.

**Disabled:** System BIOS non-cacheable.

**Video BIOS Cacheable:** This option copies the video ROM BIOS to fast RAM (C0000h to C7FFFh). The default is Enabled.

**Enabled:** Enables the Video BIOS Cacheable to speed up the VGA Performance.

**Disabled:** Will not use the Video BIOS Cacheable function.



# BIOS

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**Video RAM Cacheable:** This option allows the CPU to cache read/writes of the video RAM. The default is Enabled.

**Enabled:** This option allows for faster video access.

**Disabled:** Reduced video performance.

**AGP Aperture Size:** The amount of system memory that the AGP card is allowed to share. The default is 64.

Options: 4, 8, 16, 32, 64, 128, 256MB.

**AGP-4X Mode:** Chipset AGP Mode support.

Options: Enabled, Disabled.

**AGP Driving Control:** This item allows you to adjust the AGP driving force. Choose Manual to key in a AGP Driving Value in the next selection. This field is recommended to set in Auto for avoiding any error in your system.

**AGP Fast Write:** Selecting Enabled allows to use Fast Write Protocol for 4X AGP.

**OnChip USB 1/2,3/4:** USB Connector (Port 1-2)/(Port 3-4).

The choice: Enabled, Disabled.

**USB Keyboard/Mouse Support:** This controls the activation status of an optional USB keyboard/Mouse that may be attached. The default is disabled.

Enabled: Enable USB keyboard/Mouse support.

Disabled: Disable USB keyboard/Mouse support.

**OnChip Sound:** Turn on/off onchip sound device.

**PowerOn by PCI Card:** An input signal from PME on the PCI card awakens the system from a soft off state.

## 4-4 Power Management Setup

Choose the “POWER MANAGEMENT SETUP” in the CMOS SETUP UTILITY to display the following screen. This menu allows the user to modify the power management parameters and IRQ signals. In general, these parameters should not be changed unless it’s absolutely necessary.

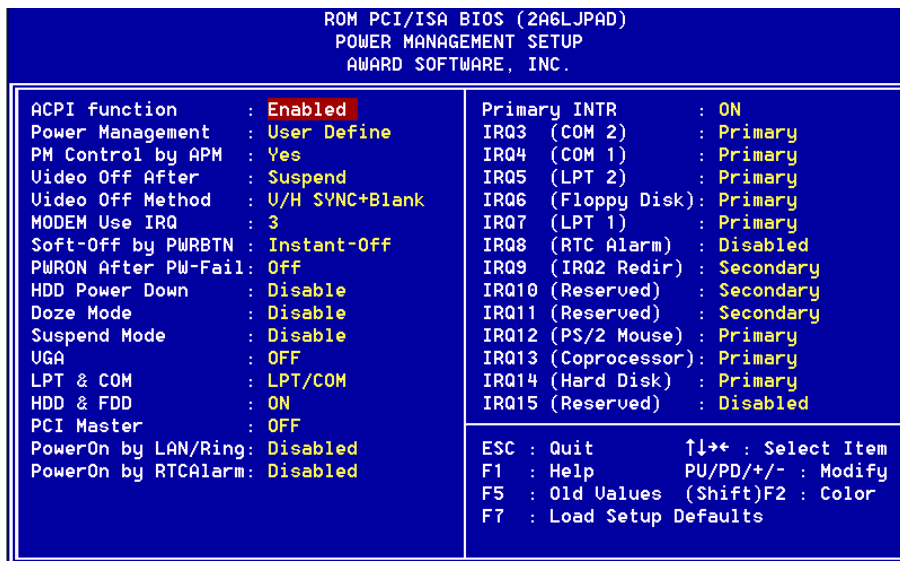


Figure 5: Power Management Setup

**ACPI Function:** This option allows you to select ACPI Function.

The default is Enabled.

**Enabled:** Support ACPI function for new O.S

**Disabled:** No Support ACPI function.

You can only change the content of Doze Mode, Standby Mode, and Suspend Mode when the Power Management is set to ‘User Define’.

**Power Management:** Use this to select your Power Management selection.

**Max. saving:** Maximum power savings. Inactivity period is 1 minute in each mode.

**Min. saving:** Minimum power savings. Inactivity period is 1 hour in each mode.

**User define:** Allows user to define PM Timers parameters to control power saving mode.

# BIOS

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**PM controlled APM:** This option shows whether or not you want the Power Management to be controlled the Advanced Power Management (APM).  
Options: Yes, No.

**Video Off After:** Tells you what time frame that the video will be disabled under current power management settings. The default is Standby.

**Doze:** Video powers off after time shown in doze mode setting.

**Suspend:** Video powers off after time shown in suspend mode setting.

**N/A:** Video power off not controlled by power management.

**Video Off Method:** This option allows you to select how the video will be disabled by the power management. The default is V/H Sync + Blank

**V/H Sync + Blank:** System turns off vertical and horizontal synchronization ports and writes blanks to the video buffer.

**DPMS:** Select this option if your monitor supports the Display Power Management Signaling (DPMS) standard of the Video Electronics Standards Association (VESA). Use the software supplied for your video subsystem to select video power management values.

**Blank Screen:** System only writes blanks to the video buffer.

**MODEM Use IRQ:** Name the interrupt request (IRQ) line assigned to the modem (if any) on your system. Activity of the selected IRQ always awakens the system. Default is IRQ 3.

N/A: No IRQ is used.	3: IRQ 3
4: IRQ 4	5: IRQ 5
7: IRQ 7	9: IRQ 9
10: IRQ 10	11: IRQ 11

**Soft-Off by PWRBTN:** Use this to select your soft-off function.

**Instant Off:** Turns off the system instantly.

**Delay 4 Second :** Turns off the system after a 4 second delay. If momentary press of button, the system will go into Suspend Mode. Press the power button again to take system out of Suspend Mode.

**PWRON After PW-Fail:** The system will stay off or power on after a power interrupted.

**ON:** System always power on after a power interrupted.

**OFF:** System always stay off after a power interrupted.

**HDD Power Down:** HDD Standby timer can be set from 1 to 15 minute(s).

**Doze Mode:** The “Doze” mode timer starts to count when no “PM events” have occurred.

**Suspend Mode:** This function works only when the Pentium II Processor is installed. The timer starts to count when “System Standby” mode timer is timed out and no “PM Events” are occurring. Valid range is from 1 minute up to 1 hour.

**VGA:** When set to On (default), any event occurring at a VGA port will awaken a system which has been powered down.

**LPT & COM:** When set to *On* (default), any event occurring at a COM(serial)/LPT (printer) port will awaken a system which has been powered down.

**HDD & FDD:** When set to *On* (default), any event occurring at a hard or floppy drive port will awaken a system which has been powered down.

**PCI Master:** When set to *On* (default), any event occurring to the DMA controller will awaken a system which has been powered down.

**PowerOn by LAN/Ring:** When set to *Enabled*, any event occurring to the LAN/Modem Ring will awaken a system which has been powered down.

**PowerOn by RTCAlarm:** When set to *Enable rtc alarm resume*, you could set the date (of month) and timer (hh:mm:ss), any event occurring at will awaken a system which has been powered down.

**Primary INTR:** When set to *On* (default), any event occurring at will awaken a system which has been powered down.

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## 4-5 PNP/PCI Configuration

The PNP/PCI configuration program is for the user to modify the PCI/ISA IRQ signals when various PCI/ISA cards are inserted in the PCI or ISA slots.

**WARNING:** *Conflicting IRQ's may cause the system to not find certain devices.*

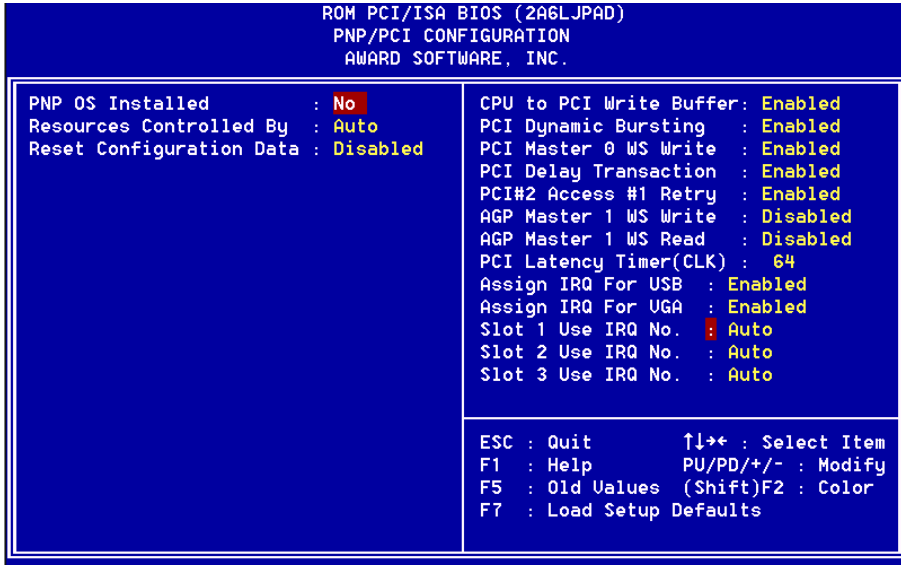


Figure 6: PCI Configuration Setup

**PNP OS Installed:** Do you have a PNP OS installed on your system. The default is No.

**Yes:** Select if you are using a PNP OS.

**No:** Select if your OS does not support PNP.

**Resources Controlled By:** Who controlled the system PNP/PCI resources. The default is Auto.

**Manual:** PNP Card's resources will be controlled manually. You can set which IRQ-X and DMA-X are assigned to PCI/ISA PNP or Legacy ISA Cards.

**Auto:** If your ISA card and PCI card are all PNP cards, BIOS will assign the interrupt resource automatically.

**Reset Configuration Data:** This setting allows you to clear ESCD data.

The default is Disabled

**Disabled:** Normal Setting.

**Enabled:** If you have plugged in some Legacy cards to the system and they were recorded into ESCD (Extended System Configuration Data), you can set this field to Enabled in order to clear ESCD.

**CPU to PCI Write Buffer:** When enabled, up to four D words of data can be written to the PCI bus without interrupting the CPU. When disabled, a write buffer is not used and the CPU read cycle will not be completed until the PCI bus signals that it is ready to receive the data.

The Choice: Enabled, Disabled.

**PCI Dynamic Bursting:** When Enabled, data transfers on the PCI bus, where possible, make use of the high-performance PCI bust protocol, in which graeater amounts of data are transferred at a single command.

The Choice: Enabled, Disabled.

**PCI Master 0 WS Write:** When Enabled, writes to the PCI bus are command with zero wait states.

The Choice: Enabled, Disabled.

**PCI Delay Transaction:** The chipset has an embedded 32-bit posted write buffer to support delay transactions cycles. Select Enabled to support compliance with PCI specification version 2.1.

The Choice: Enabled, Disabled.

**PCI #2 Access #1 Retry:** This item allows you enabled/disable the PCI #2 Access #1 Retry.

The Choice: Enabled, Disabled.

**AGP Master 1 WS Write:** When Enabled, writes to the AGP are executed with one wait states.

The Choice: Enabled, Disabled.

**AGP Master 1 WS Read:** When Enabled, read to the AGP are executed with one wait states.

The Choice: Enabled, Disabled.

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## BIOS

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**PCI Latency Timer (CLK):** The latency timer defines the minimum amount of time, in PCI clock cycles, that the bus master can retain the ownership of the bus. The Choice: 0-255.

**Assign IRQ For VGA/USB:** This item allows BIOS to assign whether IRQ is with VGA/USB or not. If you have not connect the VGA/USB device. Can release the IRQ for other device. The default is Enabled.

**Enabled:** Provides IRQ for VGA/USB device.

**Disabled:** Release IRQ for other device.

**Slot 1 to Slot 3 Use IRQ No:** These settings allow the user to specify what IRQ will be assigned to PCI devices in the chosen slot. Options available: Auto,3,4,5,7,9,10, 11,12,14 & 15. The defaults are Auto.

## 4-6 Integrated Peripherals

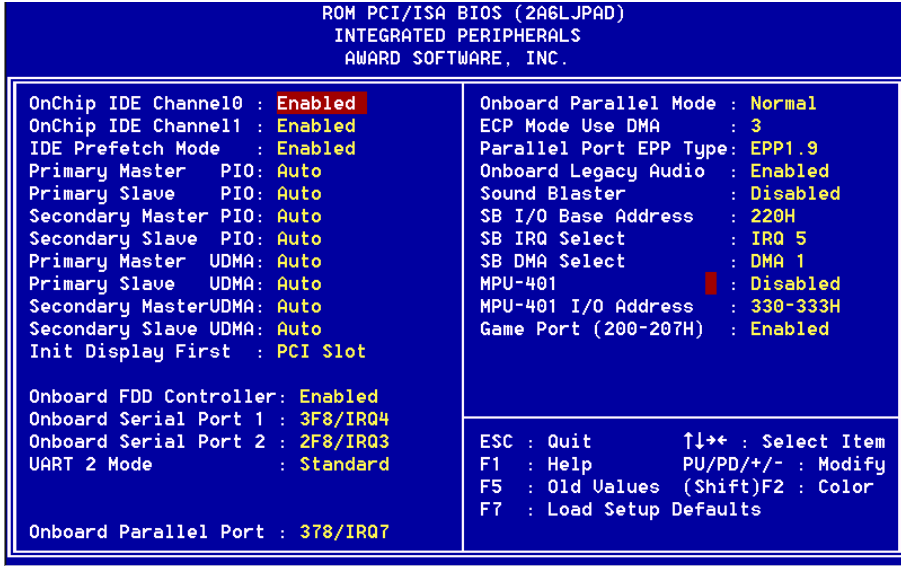


Figure 8: Integrated Peripherals

**Note:** If you do not use the Onboard IDE connector, then you will need to set Onboard Primary PCI IDE: Disabled and Onboard Secondary PCI IDE: Disabled

**Note:** The Onboard PCI IDE cable should be equal to or less than 18 inches (45 cm.).

**OnChip IDE Channel0/1:** The default value is Enabled.

**Enabled:** Enables Onboard IDE primary port.

**Disabled:** Disables Onboard IDE primary port.

**IDE Prefetch Mode:** Enable prefetching for IDE drive interfaces that support its faster drive accesses. If you are getting disk drive errors, change the setting to omit the drive interface where the errors occur. Depending on the configuration of your IDE subsystem, this field may not appear, and it does not appear when the Internal PCI/IDE field, above, is Disabled.

The Choice: Enabled, Disabled.



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**Primary Master PIO:** The default is Auto.

**Auto:** BIOS will automatically detect the Onboard Primary Master PCI IDE HDD Accessing mode.

**Mode 0~4:** Manually set the IDE Programmed interrupt mode.

**Primary Slave PIO:** The default is Auto.

**Auto:** BIOS will automatically detect the Onboard Primary Slave PCI IDE HDD Accessing mode.

**Mode 0~4:** Manually set the IDE Programmed interrupt mode.

**Secondary Master PIO:** The default is Auto.

**Auto:** BIOS will automatically detect the Onboard Secondary Master PCI IDE HDD Accessing mode.

**Mode 0~4:** Manually set the IDE Programmed interrupt mode.

**Secondary Slave PIO:** The default is Auto.

**Auto:** BIOS will automatically detect the Onboard Secondary Slave PCI IDE HDD Accessing mode.

**Mode 0~4:** Manually set the IDE Programmed interrupt mode.

**Primary Master UDMA:** This allows you to select the mode of operation for the hard drive. The default is Auto.

**Auto:** The computer will select the optimal setting.

**Disabled:** The hard drive will run in normal mode.

**Primary Slave UDMA:** This allows you to select the mode of operation for the hard drive. The default is Auto.

**Auto:** The computer will select the optimal setting.

**Disabled:** The hard drive will run in normal mode.

**Secondary Master UDMA:** This allows you to select the mode of operation for the hard drive. The default is Auto.

**Auto:** The computer will select the optimal setting.

**Disabled:** The hard drive will run in normal mode.

**Secondary Slave UDMA:** This allows you to select the mode of operation for the hard drive. The default is Auto.

**Auto:** The computer will select the optimal setting.

**Disabled:** The hard drive will run in normal mode.

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**Init Display First:** If two video cards are used (1 AGP and 1 PCI) this specifies which one will be the primary display adapter. The default is PCI Slot.

**PCI Slots:** PCI video card will be primary adapter.

**AGP:** AGP video card will be primary adapter.

**Onboard FDD Controller:** This controls the state of the onboard floppy controller. The default value is Enabled.

**Enabled:** Enable the Onboard VIA686A(B)'s floppy drive interface controller.

**Disabled:** Disable the Onboard VIA686A(B)'s floppy drive interface controller.

**Onboard Serial Port 1:** This field allows the user to configure the 1st serial port. The default is Auto.

**AUTO:** Enable Onboard Serial port 1 and address is Auto adjusted.

**COM1:** Enable Onboard Serial port 1 and address is 3F8H/IRQ4.

**COM2:** Enable Onboard Serial port 1 and address is 2F8H/IRQ3.

**COM3:** Enable Onboard Serial port 1 and address is 3E8H/IRQ4.

**COM4:** Enable Onboard Serial port 1 and address is 2E8H/IRQ3.

**Disabled:** Disable Onboard VIA686A(B)'s Serial port 1.

**Onboard Serial Port 2:** This field allows the user to configure the 2nd serial port. The default is Auto.

**AUTO:** Enable Onboard Serial port 2 and address is Auto adjusted.

**COM1:** Enable Onboard Serial port 2 and address is Auto.

**COM2:** Enable Onboard Serial port 2 and address is 2F8H/IRQ3.

**COM3:** Enable Onboard Serial port 2 and address is 3E8H/IRQ4.

**COM4:** Enable Onboard Serial port 2 and address is 2E8H/IRQ3.

**Disabled:** Disable Onboard VIA686A(B)'s Serial port 2.

**UART 2 Mode:** This item allows you to determine which Infra Red (IR) function of onboard I/O chip.

The Choice: Standard, ASKIR, HPSIR.

**Onboard Parallel port:** This field allows the user to configure the LPT port. The default is 378H / IRQ7.

**378H:** Enable Onboard LPT port and address is 378H and IRQ7.

**278H:** Enable Onboard LPT port and address is 278H and IRQ5.

# BIOS

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**3BCH:** Enable Onboard LPT port and address is 3BCH and IRQ7.

**Disabled:** Disable Onboard VIA686A(B)'s LPT port.

**Parallel Port Mode:** This field allows the user to select the parallel port mode. The default is Normal.

**Normal:** Standard mode. IBM PC/AT Compatible bidirectional parallel port.

**EPP:** Enhanced Parallel Port mode.

**ECP:** Extended Capabilities Port mode.

**EPP+ECP:** ECP Mode & EPP Mode.

**ECP Mode USE DMA:** This field allows the user to select DMA1 or DMA3 for the ECP mode. The default is DMA3.

**DMA1:** This field selects the routing of DMA1 for the ECP mode.

**DMA3:** This field selects the routing of DMA3 for the ECP mode.

**Parallel Port EPP Type:** This item allows you to determine the IR transfer mode of onboard I/O chip.

The Choice: EPP1.9, EPP1.7.

**Onboard Legacy Audio:** Legacy Audio enabled/disabled.

**Sound Blaster:** Sound Blaster compatible device enabled/disabled.

**SB I/O Base Address:** Sound Blaster I/O resource selection.

**SB IRQ Select:** Legacy audio device IRQ selection.

**SB DMA Select:** Sound Blaster DMA channel selection.

**MPU-401:** MPU-401 function enabled/disabled.

**MPU-401 I/O Address:** Built-in MPU-401 compatible MIDI I/O port selection:

*300-303H*

*310-313H*

*320-323H*

*330-333H (default)*

**Game Port (200-207H):** Built-in joystick port support disabled/enabled(default).

## 4-7 Load Setup Defaults

The “LOAD SETUP DEFAULTS” function loads the system default data directly from ROM and initializes the associated hardware properly. This function will be necessary only when the system CMOS data is corrupted.

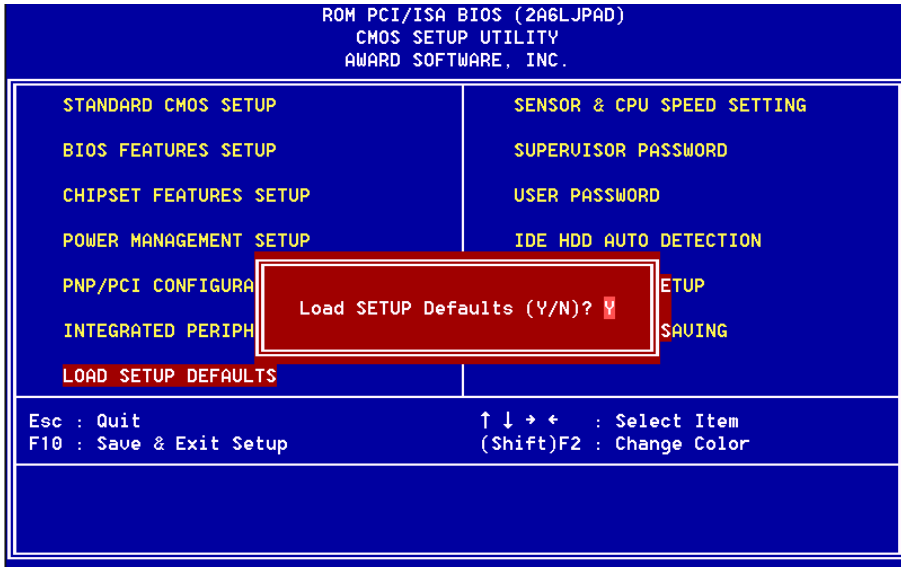
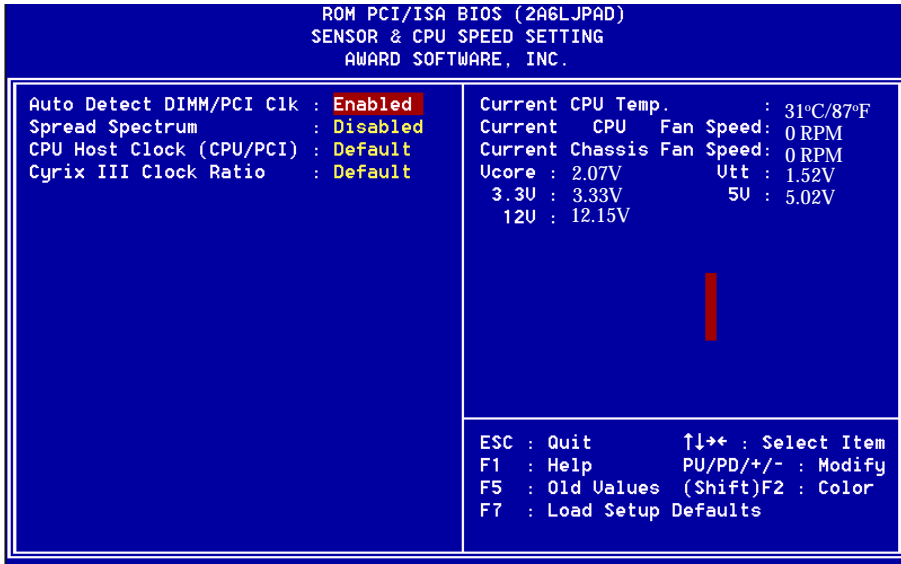


Figure 7: Load Setup Defaults

# BIOS

## 4-8 Sensor and CPU Speed Setup



**Auto Detect DIMM/PCI Clk:** When enabled the motherboard will automatically disable the clock source for a DIMM socket which does not have a module in it. Same applies for PCI slots. This setting will reduce the EMI. The default is Enabled.

**Spread Spectrum:** The default is Disabled.

**CPU Host Clock (CPU/PCI):** The mainboard is designed to set the CPU Host /PCI clock via BIOS. This item allows you to select the CPU Host, PCI clock speed by “Enter” key. “Default” means the CPU Host speed is auto detected.

**Cyrix III Clock Ratio:** Cyrix III CPU Ratio adjust (for CyrixIII CPU only).

**Current CPU Temperature:** This is the current temperature of the CPU.

**Current CPU FAN Speed:** The current CPU fan speed in RPMs.

**Current Chassis FAN Speed:** The current chassis fan speed in RPMs.

**CPU(V):** The voltage level of the CPU( $V_{core}/V_{tt}$ ).

**+3.3V, +5V, +12V:** The voltage level of the switch power supply.

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## 4-9 Change Supervisor or User Password

To change the password, choose the “SUPERVISOR PASSWORD or USER PASSWORD” option from the CMOS SETUP UTILITY menu and press [Enter].

*Note: Either “Setup” or “System” must be selected in the “Security Option” of the BIOS FEATURES SETUP menu.*

1. If CMOS is corrupted or the option was not used, a default password stored in the ROM will be used. The screen will display the following message:

Enter Password:

Press the [Enter] key to continue after the proper password is given.

2. If the CMOS is corrupted or the option was used earlier and the user wishes to change the default password, the SETUP UTILITY will display a message and ask for a confirmation.

Confirm Password:

3. After pressing the [Enter] key (ROM password if the option was not used) or current password (user-defined password), the user can change the password and store new one in CMOS RAM. A maximum of 8 characters can be entered.

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## 4-10 IDE HDD Auto Detection

The “IDE HDD auto detection” utility is a very useful tool, especially when you do not know which kind of hard disk type you are using. You can use this utility to detect the correct disk type installed in the system automatically. But now you can set HARD DISK TYPE to Auto in the STANDARD CMOS SETUP. You don’t need the “IIDE HDD AUTO DETECTION” utility. The BIOS will Auto-detect the hard disk size and model on display during POST.

ROMPCI/ISABIOS(2A6LJPAD)  
CMOSSETUPUTILITY  
AWARDSOFTWARE,INC.

HARD DISKS	TYPE	SIZE	CYLS	HEADS	PRECOMP	LANDZONE	SECTORS	MODE
Primary Master :								
Select Secondary Slave Option (N=Skip) : N								
OPTIONS	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTORMODE		
2 (Y)	4310	524	255	0	14847	63 LBA		
1	4310	14848	9	65535	14847	63 NORMAL		
3	4310	928	144	65535	14847	63 LARGE		
Note: Some OSes (like SCO-UNIX) must use NORMAL for installation								
ESC : Skip								

Figure 8: IDE HDD Auto Detection

### Note: HDD Modes

The Award BIOS supports 3 HDD modes : NORMAL, LBA & LARGE NORMAL mode

Generic access mode in which neither the BIOS nor the IDE controller will make any transformations during accessing.

The maximum number of cylinders, head & sectors for NORMAL mode are 1024, 16 & 63.

no. Cylinder (1024)  
x no. Head ( 16)  
x no. Sector ( 63)  
x no. per sector ( 512)  
528 Megabytes

If user set his HDD to NORMAL mode, the maximum accessible HDD size will be 528 Megabytes even though its physical size may be greater than that!

**LBA (Logical Block Addressing) mode:** A new HDD accessing method to overcome the 528 Megabyte bottleneck. The number of cylinders, heads & sectors shown in setup may not be the number physically contained in the HDD. During HDD accessing, the IDE controller will transform the logical address described by sector, head & cylinder into its own physical address inside the HDD. The maximum HDD size supported by LBA mode is 8.4 GigaBytes which is obtained by the following formula:

$$\begin{array}{r}
 \text{no. Cylinder} \quad \quad \quad (1024) \\
 \text{x no. Head} \quad \quad \quad (255) \\
 \text{x no. Sector} \quad \quad \quad (63) \\
 \hline
 \text{x bytes per sector} \quad \quad (512) \\
 \hline
 \quad \quad \quad \quad \quad \quad 8.4 \text{ GigaBytes}
 \end{array}$$

**LARGE mode:** Extended HDD access mode supported by Award Software.

Some IDE HDDs contain more than 1024 cylinder without LBA support (in some cases, user do not want LBA). The Award BIOS provides another alternative to support these kinds of LARGE mode.

<u>CYLS</u>	<u>HEADS</u>	<u>SECTOR</u>	<u>MODE</u>
1120	16	59	NORMAL
560	32	59	LARGE

BIOS tricks DOS (or other OS) that the number of cylinders is less than 1024 by dividing it by 2. At the same time, the number of heads is multiplied by 2. A reverse transformation process will be made inside

INT 12h in order to access the right HDD address!

**Maximum HDD size:**

$$\begin{array}{r}
 \text{no. Cylinder} \quad \quad \quad (1024) \\
 \text{x no. Head} \quad \quad \quad (32) \\
 \text{x no. Sector} \quad \quad \quad (63) \\
 \hline
 \text{x bytes per sector} \quad \quad (512) \\
 \hline
 \quad \quad \quad \quad \quad \quad 1 \text{ GigaByte}
 \end{array}$$

*Note: To support LBA or LARGE mode of HDDs, there must be some software involved. All the software is located in the Award HDD Service Routine*



## BIOS

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*(INT 13h). It may fail to access a HDD with LBA (LARGE) mode selected if you are running under an Operating System which replaces the whole INT 13h.*

UNIX operating systems do not support either LBA or LARGE and must utilize the Standard mode. UNIX can support drives larger than 528MB.

### 4-11 Save & Exit Setup

The “SAVE & EXIT SETUP” option will bring you back to the boot up procedure with all the changes you just recorded in the CMOS RAM.

### 4-12 Exit Without Saving

The “EXIT WITHOUT SAVING” option will bring you back to normal boot up procedure without saving any data into CMOS RAM.

**All old data in the CMOS will not be destroyed.**

## A-1 Update Your System BIOS

Download the xxxxx.EXE file corresponding to your model form the our website to an empty directory on your hard disk or floppy. Run the downloaded xxxxx.EXE file and it will self extract. Copy these extracted files to a bootable DOS floppy disk.

Note: The DOS floppy disk should contain NO device drivers or other programs.

1. Type "A:\AWDFLASH and press <Enter> Key.
2. You will see the following setup on screen.
3. Please key in the xxxxx.bin BIOS file name.

```
FLASH MEMORY WRITER V7.88
(C)Award Software 2000 All Rights Reserved

For xxxx-W83627-6A69LPA9C-0  DATE: 05/11/2000
Flash Type -
File Name to Program : _____

Error Message:
```

4. If you want to save the previous BIOS data to the diskette, please key in [Y], otherwise please key in [N].

```
FLASH MEMORY WRITER V7.88
(C)Award Software 2000 All Rights Reserved

For xxxx-W83627-6A69LPA9C-0  DATE: 05/11/2000
Flash Type - xxxxx E82802AB /3.3V
File Name to Program : xxxxx.bin

Error Message: Do You Want To Save Bios (Y/N)
```