

# 6KB

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**82440 LX PCI Mainboard  
User's Guide &  
Technical Reference**



**SOYO**<sup>TM</sup>

## About This Guide

This User's Guide is for assisting system manufacturers and end users in setting up and installing the mainboard. Information in this guide has been carefully checked for reliability; however, no guarantee is given as to the correctness of the contents. The information in this document is subject to change without notice.

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**6KB SERIAL**

**FC** Tested To Comply  
With FCC Standards  
FOR HOME OR OFFICE USE

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# 1 Introduction

The 82440 LX PCI mainboard is a high-performance ATX architecture system board that supports 686 (PII) family CPUs. This mainboard is fully compatible with industry standards, and adds many technical enhancements.

## Key Features

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- Processor supports:
  - 686 (PII) CPU up to 66 MHz host bus frequency (233 ~ 333 MHz)
  - **auto detection of CPU voltage**
  - **Slot 1 support**
- DRAM controller:
  - **supports 4 strips of 168-pin EDO /SDRM Unbuffered DIMM**
  - supports auto detection of memory type
  - **supports ECC or Parity configuration**
  - has onboard memory configurations from 8MB to 512MB
- BUS controller:
  - complies with the PCI specifications v2.1
  - four 32-bit PCI slots (Masters), three ISA slots, and 4-layer PCB
  - **supports Universal Serial Bus—USB (Optional)**
- Peripheral controller:
  - System BIOS built-in NCR4.0 SCSI/SY-S8115 SCSI/SY-V325-2M Card BIOS and “Plug and Play” function
  - onboard built-in PCI Master IDE controller and floppy controller
  - onboard supports for two high speed UARTS (w/i 16550 FIFO) and Multimode parallel port for Standard, Enhanced (EPP) and high speed (ECP) modes, PS/2 mouse function
  - onboard supports FLASH Memory for easy upgrade BIOS
  - **onboard supports IR function**
  - One 32-bit AGP slot onboard

## Unpacking the Mainboard

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The mainboard package contains:

- The 82440LX Mainboard
- This User's Guide
- One Triones IDE Bus Master Drivers Diskette

*Note: Do not unpack the mainboard until you are ready to install it.*

Follow the precautions below while unpacking the mainboard.

1. Before handling the mainboard, ground yourself by grasping an unpainted portion of the system's metal chassis.
2. Remove the mainboard from its anti-static packaging and place it on a grounded surface, component side up.
3. Check the mainboard for damage. If any chip appears loose, press carefully to seat it firmly in its socket.

Do not apply power if the mainboard appears damaged. If there is damage to the board contact your dealer immediately.

## Electrostatic Discharge Precautions

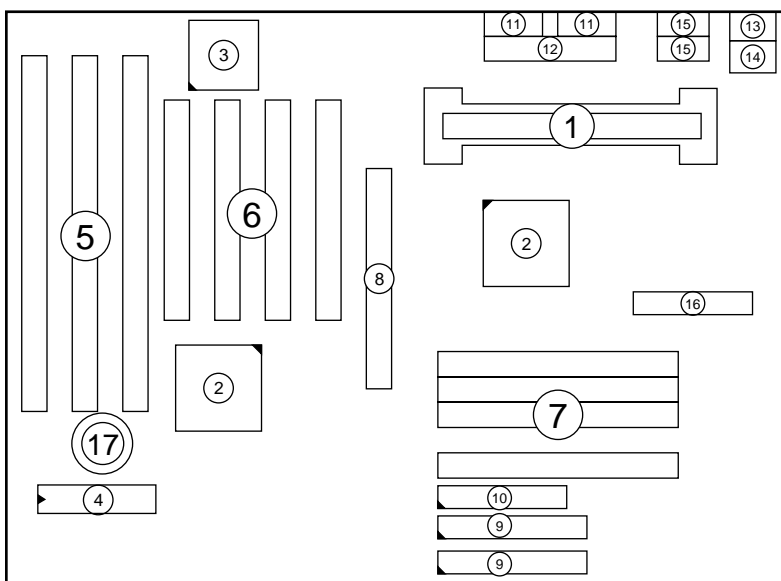
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Make sure you ground yourself before handling the mainboard or other system components. Electrostatic discharge can easily damage the components. Note that you must take special precaution when handling the mainboard in dry or air-conditioned environments.

Take these precautions to protect your equipment from electrostatic discharge:

- Do not remove the anti-static packaging until you are ready to install the mainboard and other system components.
- Ground yourself before removing any system component from its protective anti-static packaging. To ground yourself grasp the expansion slot covers or other unpainted portions of the computer chassis.
- Frequently ground yourself while working, or use a grounding strap.
- Handle the mainboard by the edges and avoid touching its components.

## Mainboard Layout w/ Default Settings



*Figure 1-1. Mainboard Layout*

- |                       |  |
|-----------------------|--|
| 1. Slot 1 for PII CPU | 9. IDE1/IDE2 Connector                 |
| 2. 82440LX Chipset    | 10. Floppy Connector                   |
| 3. Ultra I/O Chip     | 11. COM1/COM2 Connector                |
| 4. PnP FLASH BIOS     | 12. Parallel Port Connector            |
| 5. ISA Slot           | 13. PS/2 Keyboard Connector            |
| 6. PCI Slot           | 14. PS/2 Mouse Connector               |
| 7. DIMM Memory Bank   | 15. USB 1/2 Connector                  |
| 8. AGP Port           | 16. ATX Power Connector                |
|                       | 17. CMOS Battery (Lithium battery, 3V) |

Default settings are as follows: 686 (PII) 233MHz CPU, On-board PCI Bus IDE Enabled, FDC Enabled, 2 high speed UARTS Enabled (w/ 16550 FIFO), 1 EPP/ECP port (ECP + EPP mode), and ATX Power Supply.

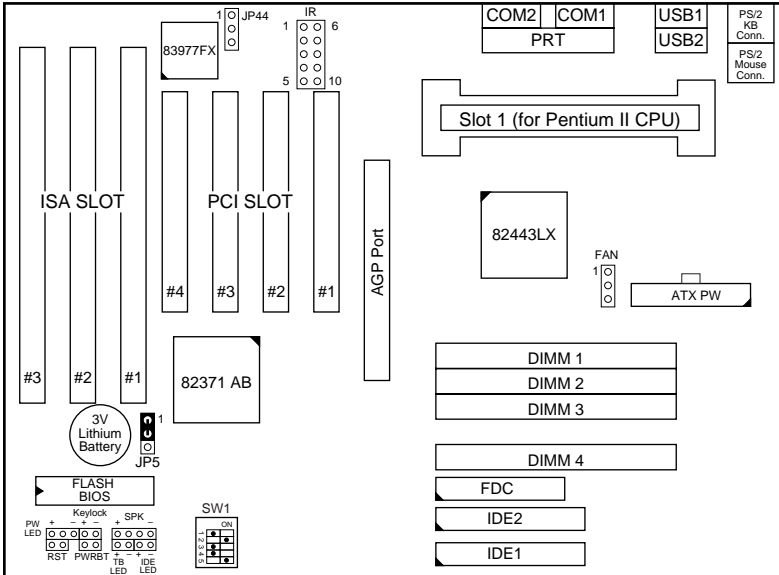


Figure 1–2. Mainboard Default Setting

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**Important:**     *Make sure the system is well ventilated to prevent overheating and ensure system stability.*

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# 2 Hardware Setup

This chapter explains how to configure the mainboard’s hardware. After you install the mainboard, you can set jumpers, install memory on the mainboard, and make case connections. Refer to this chapter whenever you upgrade or reconfigure your system.

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**CAUTION:** *Turn off power to the mainboard, system chassis, and peripheral devices before performing any work on the mainboard or system.*



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## Jumpers

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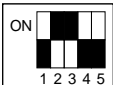
### JP5: CMOS Clear Jumper

Clear the CMOS memory by momentarily shorting this jumper; then open the jumper to retain new settings.

CMOS Setting	JP5
Retain CMOS data (default)	1 
Clear CMOS data	1 

**SW1: Bus Fraction Core/Bus Ratio Select Jumper**

Set this jumper according to your CPU clock.

Ratio	686 (PII) Family	SW1
3.5x (default)	686 (PII) – 233 MHz	
4.0x	686 (PII) – 266 MHz	
4.5x	686 (PII) – 300 MHz	
5.0x	686 (PII) – 330 MHz	

**CPU Type Configuration**

Set the mainboard’s CPU switch SW1 according to CPU type as described below.

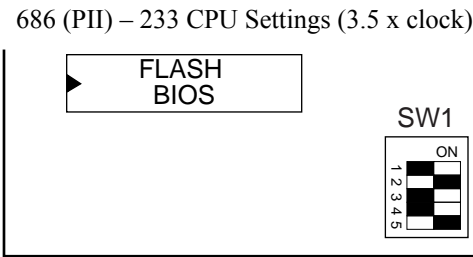


Figure 2–1–1. CPU Jumper Settings

686 (PII) – 266 CPU Settings (4.0 x clock)

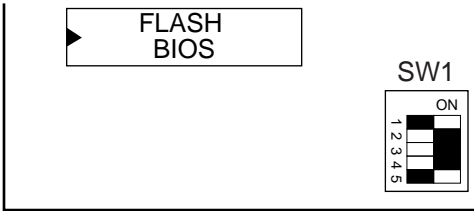


Figure 2–1–2. CPU Jumper Settings

686 (PII) – 300 CPU Settings (4.5 x clock)

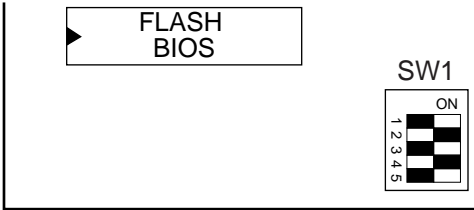


Figure 2–1–3. CPU Jumper Settings

686 (PII) – 330 CPU Settings (5.0 x clock)

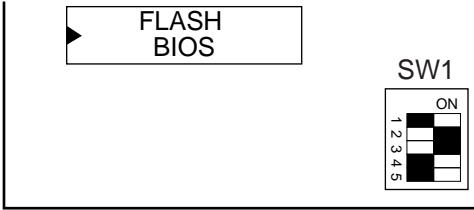


Figure 2–1–4. CPU Jumper Settings

## Memory Configuration

The mainboard supports four banks of **168-pin 3.3V EDO/SDRM Unbuffered DIMM**. The mainboard supports **from 8 to 512 Mbytes** with no other restrictions on memory configurations. You can install DRAM in any combination without having to rely on a memory configuration table. Memory configuration is thus “**Table-Free**” in any bank.

## Multi I/O Port Addresses

Default settings for multi-I/O port addresses are shown in the table below.

Port	I/O Address	IRQ	Status
LPT1*	378H	7	ECP + EPP
COM1	3F8H	4	
COM2	2F8H	3	

\* If default I/O port addresses conflict with other I/O cards (e.g. sound cards or I/O cards), you must adjust one of the I/O addresses to avoid address conflict. (You can adjust these I/O addresses from the BIOS.

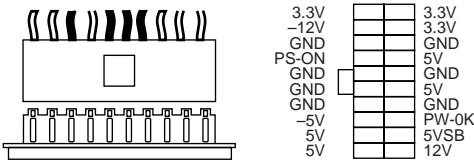
*Note: Some sound cards have a default IRQ setting for IRQ7, which may conflict with printing functions. If this occurs do not use sound card functions at the same time you print.*

## Connectors

Attach the mainboard to case devices, or an external battery, via connectors on the mainboard. Refer to Figure 1-1 for connector locations and connector pin positions.

### ATX PW — ATX Power Supply Connectors

The motherboard provides an ATX power supply connector. It is a twenty-pin male header connector. Plug the connector from the power directly onto the board connector while making sure the pin1 is in its position.



### PS/2 Keyboard Connector

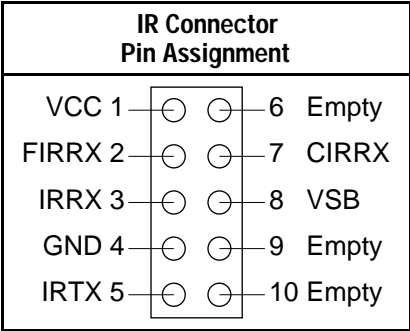
A six-pin female PS/2 keyboard connector is located at the rear of the board. Plug the keyboard jack into this connector.

**PS/2 Mouse Connector**

A six-pin female PS/2 mouse connector is located at the rear of the board. Plug the mouse jack into this connector.

**IR – IR Connector**

A ten-pin wafer connector is for connecting to the IR device. Use the device that has the ASKIR or HPSIR specification and choose ASKIR/HPSIR from the BIOS setup.



There are two ways to use this IR function. One is to connect a 5-pin IR device and treat it like an ordinary IR port. The other way is to connect a 10-pin IR device and use the advanced “IR Wake Up” PC function. Ask your IR provider for the new “IR Wake Up” function.

**Keylock & Power LED Connector**

This connector is for a lock that may be installed on the system case for enabling or disabling the keyboard. This connector also attaches to the case’s Power LED. (Pin 1, 3 for power LED, pin 4, 5 for keylock.)

**SPK – Speaker Connector**

Attach the system speaker to connector SPK.

**RST – Hardware Reset Control**

Attach the Reset switch to RST. Closing the Reset switch restarts the system.

**IDE1/IDE2 – On-board Primary/Secondary IDE HDD Connectors**

Attach on-board hard disk drives to these connectors.

**COM1/COM2 Connectors**

Connect COM1/COM2 devices to these connectors.

**IDE LED – IDE HDD LED Connectors**

Attach on-board IDE device LEDs to this connector. The LED lights when an IDE device is active.

**FDC Connector**

Attach floppy cable to this connector.

**PRT – Parallel Port Connector**

Attach parallel port cable to this connector.

**USB1/USB2 – Universal Serial Bus Connector**

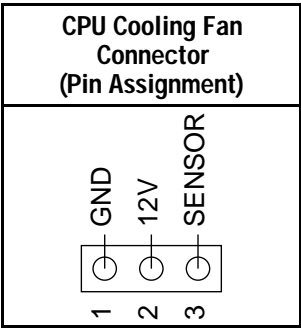
Attach USB cable to these connectors for external USB device.

**PWRBT – ATX Power Supply On/Off Switch Connector (Momentary Type)**

Attach a two-pin switch to this connector for turning the ATX power supply on/off.

**FAN: CPU Cooling Fan Connector**

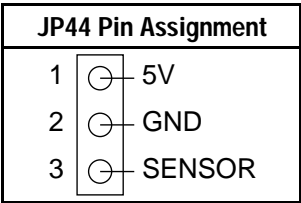
This 3-pins connector provides 12V power for the CPU cooling fan which matches the pin assignment of this connector. If you enable the Suspend Mode function in BIOS setup, this fan will stop when the system is into the suspend mode.



*Note: Make sure the pin assignment of our CPU Cooling Fan is matched with this connector before connecting it, otherwise, you may damage either the mainboard or the cooling fan.*

**JP44 – Wake-On-LAN (WOL) Header**

Attach a 3-pin connector from the LAN card which supports the Wake-On-LAN (WOL) function. This function lets users wake up the connected computer through the LAN card. (The cable should be included with the LAN card.)

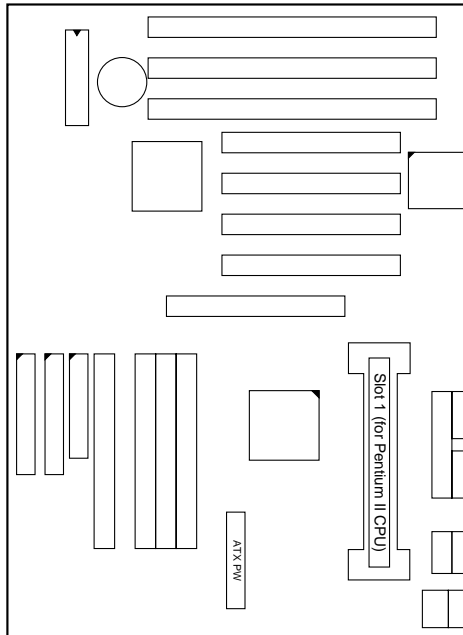


## Slot 1 Installation Guide

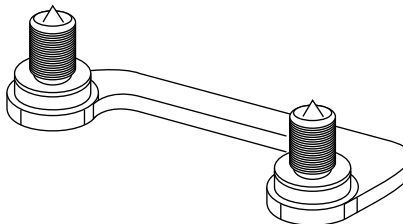
This mainboard provides a non-boxed 686 (PII) CPU retention set to secure the CPU on this board. Follow the steps below to secure this type of CPU on to your motherboard.

### Step 1:

Find the ATX PW and the Slot 1 on the board and set the board in the direction as follows before doing any installation.



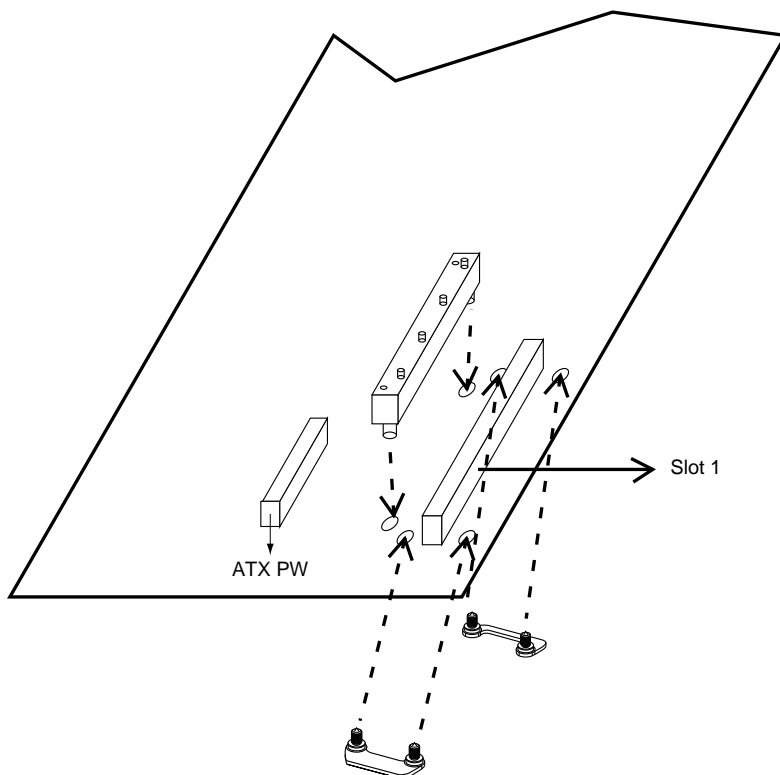
Install the 2 pairs of screws, as shown in the following figure, from the bottom of the motherboard upward onto the mainboard.





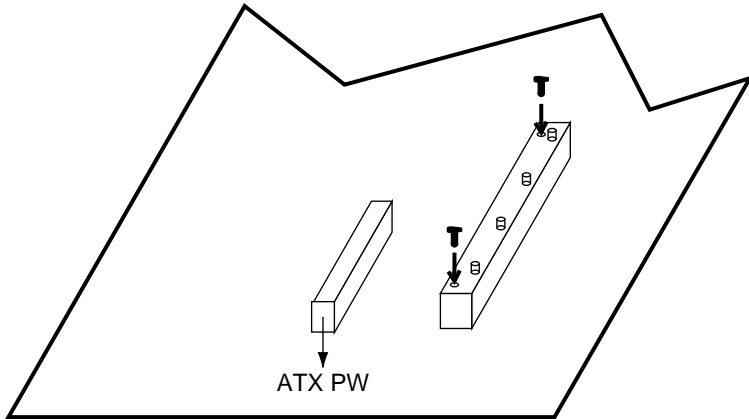
**Step 2:**

Insert the supporting base, which is shown below, into the two holes directly to the left of the 2 sets of screws that have just been inserted on to the board.



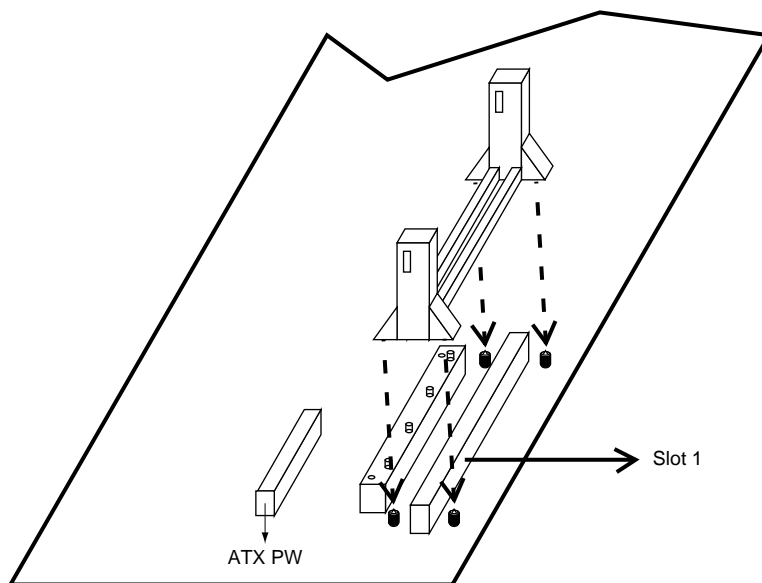
**Step 3:**

Insert the 2 latches into the two holes of the supporting base and then turn them 90° to secure the CPU.



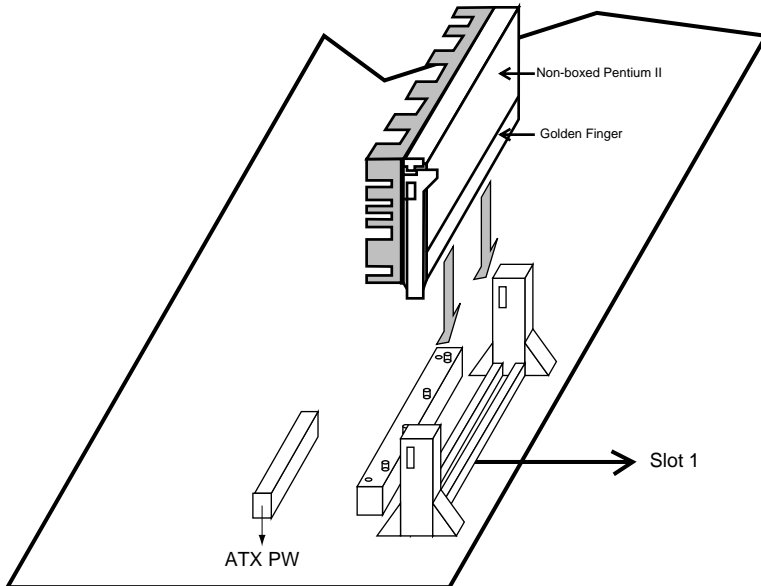
**Step 4:**

Set the retention clip right on the top of the 2 sets of screws which are along the sides of Slot1 and then tighten the 4 screws on the retention clip.



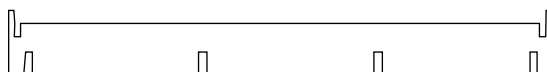
**Step 5:**

Insert the CPU into the retention clip and notice that the heat sink is on the left hand side of the board. Lock the two latches on the sides of the CPU to secure the CPU.

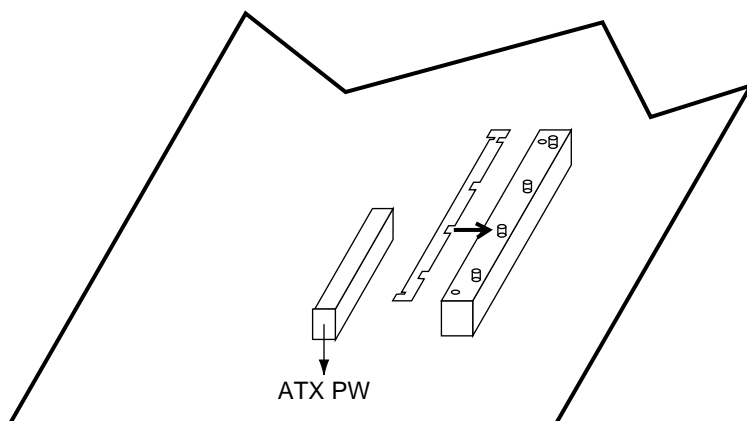


**Step 6:**

Insert the clip portion of the CPU supporter, which is shown below, so that the heat sink can sit on the top of the whole CPU supporter.



*Top View of CPU Support Clip*



### 3 BIOS Setup

The mainboard's BIOS setup program is the ROM PCI/ISA BIOS from Award Software Inc. Enter the Award BIOS program's Main Menu as follows:

1. Turn on or reboot the system. After a series of diagnostic checks, you are asked to press DEL to enter Setup.
2. Press the <DEL> key to enter the Award BIOS program and the main screen appears:

ROM PCI/ISA BIOS  
CMOS SETUP UTILITY  
AWARD SOFTWARE, INC.

STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	SUPERVISOR PASSWORD
CHIPSET FEATURES SETUP	USER PASSWORD
POWER MANAGEMENT SETUP	IDE HDD AUTO DETECTION
PNP/PCI CONFIGURATION	SAVE & EXIT SETUP
LOAD SETUP DEFAULTS	EXIT WITHOUT SAVING
Esc : Quit	↑ ↓ → ← : Select Item
F10 : Save & Exit Setup	(Shift) F2 : Change Color
Time, Date, Hard Disk Type...	

3. Choose an option and press <Enter>. Modify the system parameters to reflect the options installed in the system. (See the following sections.)
4. Press <ESC> at anytime to return to the Main Menu.
5. In the Main Menu, choose “SAVE AND EXIT SETUP” to save your changes and reboot the system. Choosing “EXIT WITHOUT SAVING” ignores your changes and exits the program.

The Main Menu options of the Award BIOS are described in the sections that follow.

# Standard CMOS Setup

Run the Standard CMOS Setup as follows.

1. Choose “STANDARD CMOS SETUP” from the Main Menu. A screen appears.

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

Date (mm:dd:yy) : Fri, Feb 1 1995  
Time (hh:mm:ss) : 7 : 30 : 33

HARD DISKS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
Primary Master	: AUTO	0	0	0	0	0	0	AUTO
Primary Slave	: None	0	0	0	0	0	0	----
Secondary Master	: None	0	0	0	0	0	0	----
Secondary Slave	: None	0	0	0	0	0	0	----

Drive A : 1.44M, 3.5 in.  
Drive B : None  
Floppy 3 Mode Support : Disabled

Base Memory: 640K  
Extended Memory: 3328K  
Other Memory: 128K  
Total Memory: 4096K

Video : EGA/VGA  
Halt On : All Errors

Esc : Quit                   ↑↓→← : Select Item           PU/PD/+/- : Modify  
F11 : Help                   (Shift) F2 : Change Color       F3 : Toggle Calendar

2. Use arrow keys to move between items and select values. Modify selected fields using PgUp/PgDn/+/- keys. Some fields let you enter values directly.

- Date (mm/dd/yy)

Type the current date.
- Time (hh:mm:ss)

Type the current time.
- Primary  
(Secondary)  
Master & Slave

Choose from the standard hard disk types 1 to 46. Type 47 is user definable. If a hard disk is not installed choose “Not installed.” (default)
- Drive A & B

Choose 360KB , 5 1/4 in.,  
1.2MB , 5 1/4 in.,  
720KB , 3 1/2 in.,  
1.4M , 3 1/2 in.(default),  
2.88 MB, 3 1/2 in. or  
Not installed

Video	Choose Monochrome, Color 40x25, VGA/EGA (default), Color 80x25
Floppy 3 Mode Support	Choose Disabled (default) or Enabled. When enables this function, the system will support 720KB/1.25MB/1.44MB 3 different modes floppy diskette. <i>Note: This function is for a special disk drive which happens to be popular in Japan.</i>
Halt On	Choose halt mode when BIOS detects system errors: All Errors (default)   All, But Diskette No Errors   All, But Keyboard   All, But Disk/Key

3. When you finish, press the <ESC> key to return to the Main Menu.



BIOS Features Setup

Run the BIOS Features Setup as follows.

- 1. Choose “BIOS FEATURES SETUP” from the Main Menu and a screen with a list of items appears. (The screen below shows the BIOS default settings.)

ROM PCI/ISA BIOS BIOS FEATURES SETUP AWARD SOFTWARE, INC.			
CPU Internal Cache	: Enabled	Video BIOS Shadow	: Enabled
External Cache	: Enabled	C8000-CBFFF Shadow	: Disabled
Quick Power on Self Test	: Enabled	CC000-CFFFF Shadow	: Disabled
Boot Sequence	: A,C	D0000-D3FFF Shadow	: Disabled
Swap Floppy Drive	: Disabled	D4000-D7FFF Shadow	: Disabled
Boot Up NumLock Status	: On	D8000-DBFFF Shadow	: Disabled
Gate A20 Option	: Fast	DC000-DFFFF Shadow	: Disabled
Typematic Rate Setting	: Disabled	ESC : Quit           ↑ ↓ → ←: Select Item F1 : Help           PU/PD/+/- : Modify F5 : Old Values (Shift)F2 : Color F6 : Load BIOS Defaults F7 : Load Setup Defaults	
Typematic Rate (Chars/Sec)	: 6		
Typematic Delay (Msec)	: 250		
Security Option	: Setup		
PCI/VGA Palette Snoop	: Disabled		
OS Select for DRAM >64MB	: Non-OS2		

- 2. Use the arrow keys to move between items and to select values. Modify the selected fields using the PgUp/PgDn/+/- keys. <F> keys are explained below:

- <F1>: “Help” gives options available for each item.
- Shift <F2>: Change color.
- <F5>: Get the old values. These values are the values with which the user started the current session.
- <F6>: Load all options with the BIOS Setup default values.
- <F7>: Load all options with the Power-On default values.

A short description of screen items follows:

- CPU Internal Cache** This option enables/disables the CPU’s internal cache. (The Default setting is Enabled.)
- External Cache** This option enables/disables the external cache memory. (The Default setting is Enabled.)
- Quick Power On Self Test** Enabled provides a fast POST at boot-up .

<b>Boot Sequence</b>	<p>Choose the boot device sequence as your need. For example, "A, C, SCSI" means that BIOS will look for an operating system first from drive A, drive C, then SCSI device. Options of this function are:</p> <p>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;  LS120, C.</p>
<b>Swap Floppy Drive</b>	<p>Enabled changes the sequence of the A: and B: drives. (The Default setting is Disabled.)</p>
<b>Boot Up Num Lock Status</b>	<p>Choose On or Off. On puts numeric keypad in Num Lock mode at boot-up. Off puts this keypad in arrow key mode at boot-up.</p>
<b>Gate A20 Option</b>	<p>Choose Fast (default) o Normal. Fast allows RAM accesses above 1MB using the fast gate A20 line.</p>
<b>Typematic Rate Setting</b>	<p>Enable this option to adjust the keystroke repeat rate.</p>
<b>Typematic Rate (Chars/Sec)</b>	<p>Choose the rate a character keeps repeating.</p>
<b>Typematic Delay (Msec)</b>	<p>Choose how long after you press a key that a character begins repeating.</p>
<b>Security Option</b>	<p>Choose Setup or System. Use this feature to prevent unauthorized system boot-up or use of BIOS Setup.</p> <p>"System" – Each time the system is booted the password prompt appears.</p> <p>"Setup"– If a password is set, the password prompt only appears if you attempt to enter the Setup program.</p>

<b>PCI/VGA Palette Snoop</b>	Enabled:	The color of the monitor may be incorrect if uses with MPEG card. Enable this option to make the monitor normal.
	Disabled:	Default setting.
<b>OS Select for DRAM &gt;64MB</b>	OS2:	Choosing this when you are using OS/2 operation system.
	Non-OS/2:	Choosing this when you are using no-OS/2 operation system.
<b>Video or Adapter BIOS Shadow</b>		BIOS shadow copies BIOS code from slower ROM to faster RAM. BIOS can then execute from RAM. These 16K segments can be shadowed from ROM to RAM. BIOS is shadowed in a 16K segment if it is enabled and it has BIOS present.

3. After you have finished with the BIOS Features Setup program, press the <ESC> key and follow the screen instructions to save or disregard your settings.

## Chipset Features Setup

The Chipset Features Setup option changes the values of the chipset registers. These registers control system options in the computer.

*Note:* Change these settings only if you are familiar with the Chipset. Run the Chipset Features Setup as follows.

1. Choose “CHIPSET FEATURES SETUP” from the Main Menu and the following screen appears. (The screen below shows default settings.)

ROM PCI/ISA BIOS CHIPSET FEATURES SETUP AWARD SOFTWARE, INC.			
Auto Configuration	: Enabled	SDRAM CAS Latency Time	: 3
DRAM Speed Selection	: 60 ns	Spread Spectrum Modulated	: Disabled
MA Wait State	: Slow	CPU Warning Temperature	: Disabled
EDO RAS# To CAS# Delay	: 3	Current CPU Temperature	: 27°C/80°F
EDO RAS# Precharge Time	: 3	Current System Temperature	: 24°C/80°F
EDO DRAM Read Burst	: x3/3/3	Current CPUFAN1 Speed	: 6553 RPM
EDO DRAM Write Bursts	: x3/3/2	3.3(V) : 2.78 V	VTT(V) : 1.50V
DRAM Data Integrity Mode	: Non-ECC	+12(V) : 11.84V	-12(V) : -11.45V
CPU-TO-PCI IDE Posting	: Enabled	-5(V) : -4.88V	
System BIOS Cacheable	: Disabled		
Video BIOS Cacheable	: Disabled		
Video RAM Cacheable	: Disabled		
8 Bit I/O Recovery Time	: 3		
16 Bit I/O Recovery Time	: 2		
Memory Hole At 15M-16M	: Disabled		
Passive Release	: Enabled	ESC : Quit	↑ ↓ → ← : Select Item
Delay Transaction	: Disabled	F1 : Help	PU/PD/+/- : Modify
AGP Aperture Size (MB)	: 64	F5 : Old Values (Shift)F2 : Color	
SDRAM RAS-to-CAS Delay	: Slow	F6 : Load BIOS Defaults	
SDRAM RAS Precharge Time	: Slow	F7 : Load Setup Defaults	

2. Use the arrow keys to move between items and select values. Modify selected fields using the PgUp/PgDn/+/- keys.

A short description of screen items follows:

**Auto Configuration** Enable this option (strongly recommended) and the system automatically sets all options on the left side of the screen (except cache update mode & BIOS cacheable). If this option is Enabled you must boot from Turbo mode.

**MA Wait State** Use the default setting.

**EDO RAS# to CAS# Delay** Use the default setting.

---

<b>EDO RAS# Precharge Time</b>	Use the default setting.
<b>EDO DRAM Read Burst</b>	Use the default setting.
<b>DRAM Write Burst</b>	Use the default setting.
<b>DRAM Data Integrity Mode</b>	Choose Non-ECC (default) or ECC according to the DRAM type you have.
<b>CPU-TO-PCI IDE Posting</b>	Use the default setting.
<b>System BIOS Cacheable</b>	Disabled: The ROM area F0000H-FFFFFH is not cached. Enabled: The ROM area F0000H-FFFFFH is cacheable if cache controller is enabled.
<b>Video BIOS Cacheable</b>	Disabled: The video BIOS C0000H-C7FFFH is not cached. Enabled: The video BIOS C0000H-C7FFFH is cacheable if cache controller is enabled.
<b>8Bit I/O Recovery Time</b>	Use the default setting.
<b>16Bit I/O Recovery Time</b>	Use the default setting.
<b>Memory Hole At 15M-16M</b>	Choose Enabled or Disabled (default). Some interface cards will map their ROM address to this area. If this occurs, you should select Enabled, otherwise use Disabled.
<b>Passive Release</b>	Use the default setting.
<b>Delayed Transaction</b>	Use the default setting.
<b>AGP Aperture Size</b>	AGP could use the DRAM as its video RAM. Choose the DRAM size that you want it to be used as video RAM. The range is from 4MB to 256MB.

- 
- |   |  |
|---|--|
| <b>SDRAM RAS-to-CAS Delay</b>   | Use the default setting.   |
| <b>SDRAM RAS Precharge Time</b>   | Use the default setting.   |
| <b>SDRAM CAS Latency Time</b>   | Use the default setting.   |
| <b>Spread Spectrum Modulated</b>  | Enabled it when you want to run the FCC or DOC testing.  |
| <b>CPU Warning Temperature</b>  | Choose <b>Disabled</b> (default) or <b>Enabled</b> . Set CPU temperature from 50°C to 70°C. The system will slow down automatically when CPU temperature goes beyond the preset value. CPU will continue to run slow until the CPU temperature returns back within the safe range. |
| <b>Current CPU Temperature;<br/>System Temp and CPU FAN1 Speed;<br/>Vcore</b> | Show the current status of CPU.  |
3. After you have finished with the Chipset Features Setup, press the <ESC> key and follow the screen instructions to save or disregard your settings.

# Power Management Setup

The Power Management Setup option sets the system’s power saving functions.

Run the Power Management Setup as follows.

- 1. Choose “POWER MANAGEMENT SETUP” from the Main Menu and a screen with a list of items appears.

ROM PCI/ISA BIOS CMOS SETUP UTILITY POWER MANAGEMENT SETUP		
Power Management	: Disabled	** Power Down & Resume Events ** IRQ 3 (COM 2) : ON IRQ 4 (COM 1) : ON IRQ 5 (LPT 2) : ON IRQ 6 (Floppy Disk) : OFF IRQ 7 (LPT 1) : ON IRQ 8 (RTC Alarm) : OFF IRQ 9 (IRQ2 Redir) : ON IRQ 10 (Reserved) : ON IRQ 11 (Reserved) : ON IRQ 12 (PS/2 mouse) : ON IRQ 13 (Coprocessor) : ON IRQ 14 (Hard Disk) : ON IRQ 15 (Reserved) : ON
PM Control by APM	: No	
Video Off Method	: V/H SYNC+Blank	
Doze Mode	: Disabled	
Standby Mode	: Disabled	
Suspend Mode	: Disabled	
HDD Power Down	: Disabled	
** Wake Up Events In Doze & Standby **		
IRQ3 (Wake-Up Event)	: ON	
IRQ4 (Wake-Up Event)	: ON	
IRQ8 (Wake-Up Event)	: ON	
IRQ12 (Wake-Up Event)	: ON	
ESC : Quit           ↑ ↓ → ←: Select Item F1 : Help           PU/PD/+/- : Modify F5 : Old Values (Shift)F2 : Color F6 : Load BIOS Defaults F7 : Load Setup Defaults		

- 2. Use the arrow keys to move between items and to select values. Modify the selected fields using the PgUp/PgDn/+/- keys.

A short description of selected screen items follows:

<b>Power Management</b>	Options are as follows:	
	<b>User Define</b>	Let’s you define the HDD and power down times.
	<b>Disabled</b>	Disables the Green PC Features.
	<b>Min Saving</b>	Doze timer = 1 Hour Standby timer = 1 Hour Suspend timer = 1 Hour HDD Power Down = 15 Min
	<b>Max Saving</b>	Doze timer = 1 Min Standby timer = 1 Min Suspend timer = 1 Min HDD Power Down = 1 Min

<b>PM Control by APM</b>	Choose Yes or No (default). APM stands for Advanced Power Management. To use APM, you must run "power.exe" under DOS v6.0 or later version.
<b>Video Off Method</b>	Choose V/H Sync+Blank (default), Blank screen, or DPMS for the selected PM mode.
<b>Doze Mode</b>	When the set time has elapsed, the BIOS sends a command to the system to enter doze mode (system clock drops to 33MHz). Time is adjustable from 1 Min to 1 Hour.
<b>Standby Mode</b>	The default is Disabled. Time is adjustable from 1 Min to 1 Hour.
<b>Suspend Mode</b>	The default is Disabled. Only an SL-Enhanced (or SMI) CPU can enter this mode. Time is adjustable from 1 Min to 1 Hour. Under Suspend mode, the CPU stops completely (no instructions are executed.)
<b>HDD Power Down</b>	When the set time has elapsed, the BIOS sends a command to the HDD to power down, which turns off the motor. Time is adjustable from 1 to 15 minutes. The default setting is Disabled. Some older model HDDs may not support this advanced function.
<b>IRQx (Wake-Up Events)</b>	The BIOS monitors these items for activity. If activity occurs from the Enabled item the system wakes up.
<b>Power Down Activities</b>	The BIOS monitors these items for no activity. If no activity occurs from the Enabled item the system will enter power saving mode (Doze/Standby/Suspend/ HDD Power Down mode) .

3. After you have finished with the Power Management Setup, press the <ESC> key to return to the Main Menu.



## PNP/PCI Configuration Setup

This option sets the mainboard’s PCI Slots. Run this option as follows:

- 1. Choose “PNP/PCI CONFIGURATION SETUP” from the Main Menu and the following screen appears. (The screen below shows default settings.)

ROM PCI/ISA BIOS  
PNP/PCI CONFIGURATION  
AWARD SOFTWARE, INC.

Resources Controlled By : Manual	PCI IRQ Activated By : Level
Reset Configuration Data : Disabled	PCI IDE IRQ Map To : PCI-AUTO
	Primary IDE INT# : A
	Secondary IDE INT# : B
IRQ-3 assigned to : Legacy ISA*	
IRQ-4 assigned to : Legacy ISA*	
IRQ-5 assigned to : PCI/ISA PnP*	
IRQ-7 assigned to : Legacy ISA*	
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 : Legacy ISA*	
IRQ-15 assigned to : Legacy ISA*	
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*	
	ESC : Quit      ↑↓→← : Select Item
	F1 : Help      PU/PD/+/- : Modify
	F5 : Old Values (Shift)F2 : Color
	F6 : Load BIOS Defaults
	F7 : Load Setup Defaults

- \*: These items will disappear when Resource Controlled. is Auto.
- 2. Use the arrow keys to move between items and select values. Modify selected fields using the PgUp/PgDn/+/- keys.

A short description of screen items follows:

<b>Resources Controlled By</b>	Manual: BIOS doesn’t manage PCI/ISA PnP card (i.e., IRQ) automatically.
	Auto: BIOS auto manage PCI and ISA PnP card (recommended).
<b>Reset Configuration Data</b>	Disabled: Retain PnP configuration data in BIOS.
	Enabled: Reset PnP configuration data in BIOS.

- |                                  |  |
|----------------------------------|--|
| <b>IRQX and DMAX assigned to</b> | Choose PCI/ISA PnP or Legacy ISA. If the first item is set to Manual, you could choose IRQX and DMAX assigned to PCI/ISA PnP card or ISA card.<br>PCI/ISA PnP: BIOS auto assigns IRQ/DMA to the device.<br>Legacy ISA: User assigns IRQ/DMA to the device. |
| <b>PCI IRQ Activated By</b>      | Choose Edge or Level. Most PCI trigger signals are Level. This setting must match the PCI card.  |
| <b>PCI IDE IRQ Map To</b>        | Select PCI-AUTO, ISA, or assign a PCI SLOT number (depending on which slot the PCI IDE is inserted). The default setting is PCI-AUTO. If PCI-AUTO does not work, then assign an individual PCI SLOT number.  |
| <b>Primary IDE INT#</b>          | Choose INTA#, INTB#, INTC#, or INTD#. The default setting is INTA#.  |
| <b>Secondary IDE INT#</b>        | Choose INTA#, INTB#, INTC#, or INTD#. The default setting is INTB#.  |
3. After you have finished with the PCI Slot Configuration, press the <ESC> key and follow the screen instructions to save or disregard your settings.

## Load Setup Defaults

---

This item loads the system values you have previously saved. 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 are optimized for the most stabilized performance.*

## Load BIOS Defaults

Choose this item and the following message appears:

“Load BIOS Defaults (Y/N)?N”

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

*Note: BIOS DEFAULTS values are adjusted for high performance. If you run into any problems after loading BIOS DEFAULTS, please load the SETUP DEFAULTS for the stable performance.*

## Integrated Peripherals

The Integrated Peripherals option changes the values of the chipset registers. These registers control system options in the computer.

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

Run the Integrated Peripherals as follows.

1. Choose “Integrated Peripherals” from the Main Menu and the following screen appears. (The screen below shows default settings.,

ROM PCI/ISA BIOS INTEGRATED PERIPHERALS AWARD SOFTWARE, INC.	
IDE HDD Block Mode : Enabled	USB Controller : Enabled
IDE Primary Master PIO : Auto	
IDE Primary Slave PIO : Auto	
IDE Secondary Master PIO : Auto	
IDE Secondary Slave PIO : Auto	
On-Chip Primary PCI IDE: Enabled	
On-Chip Secondary PCI IDE: Enabled	
PCI Slot IDE 2nd Channel : Enabled	
Onboard FDD Controller : Enabled	
Onboard Serial Port 1 : 3F8/IRQ4	
Onboard Serial Port 2 : 2F8/IRQ3	
UART 2 Mode : Standard	
Onboard Parallel Port : 378H/IRQ7	
Onboard Parallel MODE : ECP/EPP	
ECP Mode Use DMA : 3	
Parallel Port EPP Type : EPP1.9	
	ESC : Quit      ↑ ↓ → ←: Select Item
	F1 : Help      PU/PD/+/- : Modify
	F5 : Old Values (Shift)F2 : Color
	F6 : Load BIOS Defaults
	F7 : Load Setup Defaults

2. Use the arrow keys to move between items and select values. Modify selected fields using the PgUp/PgDn/+/- keys.

A short description of screen items follows:

<b>IDE HDD Block Mode</b>	Choose Enabled (default) or Disabled. Enabled invokes multi-sector transfer instead of one sector per transfer. Not all HDDs support this function.
<b>IDE Primary Master PIO</b>	Choose Auto (default) or mode 0~4. Mode 0 is the slowest speed, and HDD mode 4 is the fastest speed. For better performance and stability, we suggest you use the Auto setting to set the HDD control timing.
<b>IDE Primary Slave PIO</b>	
<b>IDE Secondary Master PIO</b>	
<b>IDE Secondary Slave PIO</b>	
<b>On-chip Primary/ Secondary PCI IDE</b>	Enabled: Use the on-board IDE (default) Disabled: Turn off the on-board IDE
<b>PCI Slot IDE 2nd Channel</b>	Choose Enabled (default) or Disabled. When Enabled is set, IRQ15 is dedicated for secondary IDE use. When Disabled is set, IRQ15 is released for other devices.
<b>Onboard FDC Controller</b>	Enabled: Use the on-board floppy controller (default). Disabled: Turn off the on-board floppy controller.
<b>Onboard Serial Port 1</b>	Choose serial port 1 & 2's I/O address. Do not set port 1 & 2 to the same value except for Disabled.
<b>Onboard Serial Port 2</b>	
	COM 1/3F8H   COM3/3E8H COM 2/2F8H   COM4/2E8H (default)
<b>UART 2 Mode</b>	Standard: Use standard UART mode (default). ASK IR: Use UART with ASK. IR function enable. HPSIR: Use UART with HP.. Serial IR function enable.

<b>Onboard Parallel Port</b>	Choose the printer I/O address: 378H/IRQ7 (default), 3BCH/IRQ7, 278H/IRQ5
<b>Onboard Printer Mode</b>	Choose SPP, ECP, EPP/SPP, or ECP/EPP mode. The mode depends on your external device that connects to this port.
<b>ECP Mode Use DMA</b>	Choose 3 (default) or 1 to select DMA3 or DMA1 when using the ECP device.
<b>Parallel Port EPP Type</b>	Choose EPP specification Ver. 1.7 (default) or 1.9.
<b>USB Controller</b>	Enable it when you are using the USB device.

---

## Supervisor Password

---

Based on the setting you made in the “Security Option” of the “BIOS FEATURES SETUP”, this Main Menu item lets you configure the system so that a password is required every time the system boots or an attempt is made to enter the Setup program. Change the password as follows:

1. Choose “SUPERVISOR PASSWORD” in the Main Menu and press <Enter>. The following message appears:

### **“Enter Password:”**

2. Enter a password and press <Enter>.  
(If you do not wish to use the password function, you can just press <Enter> and a “Password disabled” message appears. )
3. After you enter your password, the following message appears prompting you to confirm the new password:

### **“Confirm Password:”**

4. Re-enter your password and then Press <ESC> to exit to the Main Menu.
5. You have the right to change any changeable settings in the “CMOS SETUP UTILITY.”

*Important: If you forget or lose the password, the only way to access the system is to set jumper JP5 to clear the CMOS RAM. All setup information is lost and you must run the BIOS setup program again.*

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## User Password

---

Based on the setting you made in the “Security Option” of the “BIOS FEATURES SETUP”, this Main Menu item lets you configure the system so that a password is required every time the system boots or an attempt is made to enter the Setup program. Change the password as follows:

1. Choose “USER PASSWORD” in the Main Menu and press <Enter>. The following message appears:

**“Enter Password:”**

2. Enter a password and press <Enter>.  
(If you do not wish to use the password function, you can just press <Enter> and a “Password disabled” message appears. )
3. After you enter your password, the following message appears prompting you to confirm the new password:

**“Confirm Password:”**

4. Re-enter your password and then Press <ESC> to exit to the Main Menu.
5. You are not allowed to change any setting in “CMOS SETUP UTILITY” except change user’s password.

***Important: If you forget or lose the password, the only way to access the system is to set jumper JP5 to clear the CMOS RAM. All setup information is lost and you must run the BIOS setup program again.***

## IDE HDD Auto Detection

This Main Menu item automatically detects the hard disk type and configures the STANDARD CMOS SETUP accordingly.

*Note: This function is only valid for **IDE** hard disks.*

ROM PCI/ISA BIOS  
CMOS SETUP UTILITY  
AWARD SOFTWARE, INC.

HARD DISKS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
Primary Master	: None	0	0	0	0	0	0	----
Primary Slave	: None	0	0	0	0	0	0	----
Secondary Master	: None	0	0	0	0	0	0	----
Secondary Slave	: None	0	0	0	0	0	0	----

Do you accept this drive C (Y/N)? N

ESC : Skip



# 4 Drivers Installation Guide

Triones IDE Bus Master Drivers Installation Guide is for Intel PIIX/PIIX3 Chipset.

## **MS-DOS/WINDOW/WFW**

- 1) You should install CD-ROM in secondary channel in Windows (WFW).
- 2) Change the current directory to a: or b:.
- 3) Under DOS command line prompt, run the SETUP directly.

After entering the setup utility, just follow the instructions of the setup.

## **WINDOWS NT3.5/4.0**

- 1) From the Program Manager, double click on “Windows NT Setup” in the Main group.
- 2) Select “Options/Add/Remove SCSI Adapters...”.
- 3) Click on Add.
- 4) The “Select SCSI Adapter Option” dialog will appear; select “Other (Requires a disk from a hardware manufacturer)” from the “Adapter:” list box.
- 5) Next, the “Insert Diskette” dialog box will appear; insert the Triones PIIX/PIIX3 Bus Master EIDE/ATAPI Driver disk into Drive A: and type in “a:\winnt35” and <Return>.
- 6) Next, the “Select OEM Option” dialog box will appear; select “PIIX/PIIX3 Bus Master EIDE/ATAPI” and click “OK”.
- 7) Next, the “Select SCSI Adapter Option” dialog box will appear; click on the “Install” button in the dialog box. If installation is successful, the “SCSI Adapter Setup” dialog box will reappear, and “PIIX/PIIX3 Bus Master EIDE/ATAPI” will be listed. That means the driver is installed.
- 8) Reboot your system to load the driver.

## WINDOWS 95

- 1) Close any running applications.
- 2) Insert the floppy disk into drive A:.
- 3) Open "My Computer", double click "Drive A:".
- 4) Double click "Win95".
- 5) Double click the Setup program.
- 6) Then just follow the instruction.

## NOVELL 3.X&4.X

- 1) Copy the driver TRIN4X.DSK or TRIN312.DSK to the subdirectory which holds the file SERVER.EXE.
- 2) Boot up the file server.
- 3) On the system console and on the command prompt state, type in:  
**load TRIN4X.DSK** <Enter> or **load TRIN312.DSK** <Enter>

You can also include the above command line into the start up file STARTUP.NCF to load the driver automatically.

## SCO UNIX

- 1) Install SCO UNIX 3.2.x or SCO Open Desktop 3.x using the default SCO IDE driver.
- 2) Reboot your SCO UNIX system
- 3) Insert Triones supplied diskette into the 3.5 inch floppy drive of your system. Use doscp command to copy the file TRISCO.TAR to your /tmp directory. for example, if you are using floppy drive A, type: doscp a:/scounix/trisco.tar/tmp/trisco.tar

- 4) From root directory, type the following commands:  
**mkdir/inst**  
**cd /inst**  
**tar xvf /tmp/trisco.tar.**  
(Note: there is a period at the end of the last command.)
- 5) Now, insert a blank diskette into the floppy drive A and type:  
**tar cvf /dev/<your floppy drive A device name>.**  
(Note: there is a period at the end of the last command.)

Your floppy drive A device name could be:

- rfd096ds15,5.25 DSHD
- rfd0135ds18 3.5 DSHD
- rfd048ds9 5.25 DSDD
- rfd0135ds9 3.5 DSDD

Now you have already made an installation diskette for the device driver.

Start the installation by typing: **custom**.

- 6) Select the “Install” operation and then follow the guided steps.  
When prompted “Do you want to set the device configuration (y/n)”, answer “n”.
- 7) Reboot your SCO UNIX system.

## **SCO UNIX 5.0**

- 1) Install SCO UNIX 5.0 using the default SCO IDE driver.
- 2) Reboot your SCO UNIX system
- 3) Insert Triones supplied diskette into the 3.5 inch floppy drive of your system. Use doscp command to copy the file TRISCO.TAR to your /tmp directory. for example, if you are using floppy drive A, type: doscp **a:/scounix/trisco5.tar/tmp/trisco5.tar**

- 4) From root directory, type the following commands:  
**mkdir/inst**  
**cd /inst**  
**tar xvf /tmp/trisco.tar.**  
(Note: there is a period at the end of the last command.)
- 5) Install the driver by typing:  
**./install**
- 6) Reboot your SCO UNIX system..

### **OS/2 2.0 and WARP 3.X**

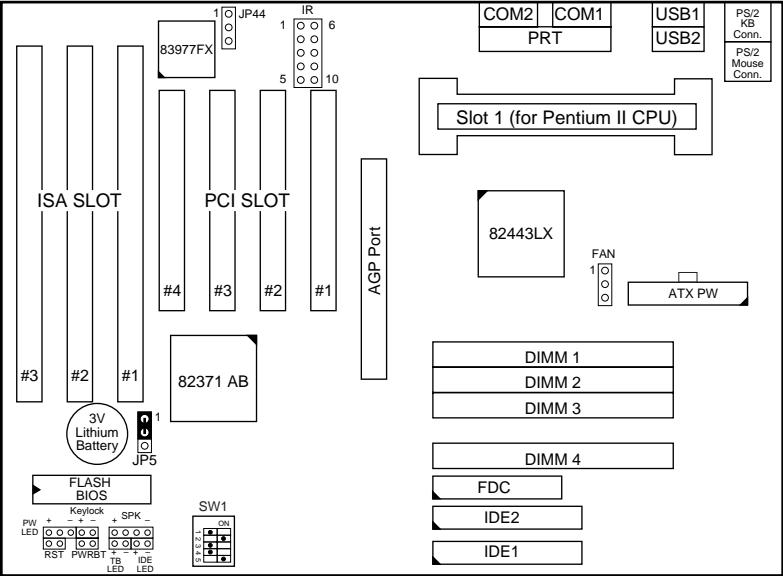
- 1) Copy TRIOS2.ADD from the floppy diskette to your hard disk under the OS2 directory (i.e., C:\OS2).
- 2) Edit C:\CONFIG.SYS to replace **BASEDEV=IBM1S506.ADD** with **BASEDEV=TRIOS2.ADD**
- 3) Reboot the system.

*Note: For more information (like parameter settings, driver de-installation, etc.), please refer to the README.TXT file on the diskette.*

# Quick Installation Guide

This Quick Installation Guide leaflet is designed for those people who are familiar with motherboard settings to set up this new motherboard in order to boot up the system. Refer back to the proper chapters if you have run in to any problems.

## Motherboard Layout



## CPU Jumper Settings

CPU Frequency Settings: JP13, JP10, & JP11		SW1				
Processor Type	Multiplier	1	2	3	4	5
Pentium II 166MHz	2.5x	off	on	off	on	on
Pentium II 200MHz	2.0x	off	on	on	off	on
Pentium II 233MHz	3.5x (default)	off	on	off	off	on
Pentium II 266MHz	4.0x	off	on	on	on	off
Pentium II 300MHz	4.5x	off	on	off	on	off

## Memory Configurations

	DIMM BANKS			
	DIMM1	DIMM2	DIMM3	DIMM4
RAM Type	EDO/SDRAM			
Size	8/16/32/64/128			

*Note: This mainboard requires 3.3V DIMM with an access time of 70ns or less, it supports memory size from 8 to 512MB and you may use any combination of DIMMs in the banks.*

## Connectors and Jumper Settings

CMOS clear: JP5		ATX Power Supply: ATX				CPU Cooling Fan: FAN			
Retain CMOS data (default)	1-2	please insert the ATX power supply plug into this header.				pin	1	2	3
						function	GND	12V	sensor
Clear CMOS data	2-3	wake on LAN jumper: J44				RST		IDE Led	
		Please connect the WOL cable from your LAN card to this jumper.				Connect the reset button to this jumper.		Connect the HDD led to this jumper.	
USB1 and 2				PRT		SPK		Keylock	
Connect your USB devices to these headers				printer cable header		Connect the cable of speakers to this jumper		Connect keyboard lock switch to this jumper	
ATX Power Supply On/Off Switch: PWRBT									
Connect your power switch to this jumper (momentary switct type).									
IrDA (Infrared Devices Connector: IR						TB Led		PW Led	
pin	1	2	3	4	5	Connect your Turbo led to this jumper.		Connect the power led to this jumper.	
function	Vcc	FIRRX	IRRX	GND	IRTX				

## Default I/O Settings

PORT	I/O Address	IRQ	Functionality
LPT1	378H	7	ECP + EPP
COM1	3F8H	4	—
COM2	2F8H	3	—

*Note: If the default I/O settings conflict with those of other I/O cards, such as soundcards you will have to adjust the settings of one of them. The default settings for the onboard I/O can be changed in the BIOS setup. Enter BIOS Setup by pressing <Delete> key during boot-up. The I/O settings can be found under “Integrated Peripherals”.*