SY-P4I Fire DRAGON
Motherboard

mPGA Socket 478 Processor supported

Intel i845 AGP PRO/PCI

400 MHz Front Side Bus supported

ATX Form Factor

User's Manual
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Chapter 1

MOTHERBOARD DESCRIPTION

1-1 INTRODUCTION
The SY-P4I Fire DRAGON AGP/PCI Motherboard is a high-performance Socket 478 processor supported ATX form-factor system board. SY-P4I Fire DRAGON uses the Intel i845 Chipset technology. This Motherboard is fully compatible with industry standards.

1-2 UNPACKING THE MOTHERBOARD
When unpacking the Motherboard, check for the following items:

- The SY-P4I Fire DRAGON Intel i845 AGP/PCI Motherboard
- The User Manual
- The Installation CD-ROM
- SOYO Bonus Pack CD-ROM
- Three IDE Device ATA 100 Flat Cable
- One Floppy Disk Drive Flat Cable
- One Heat Sink Compound
**Warning:** Do not unpack the Motherboard from its anti-static packaging until you are ready to install it.

Like most electronic equipment, your Motherboard may be damaged by electrostatic discharge. To avoid permanent damage to components ground yourself while working by using a grounding strap. Otherwise, ground yourself frequently by touching the unpainted portion of the computer chassis to drain the static charges.

Handle the Motherboard carefully, holding it by the edges. You are now ready to start the installation.

### 1-3 KEY FEATURES

- **CPU SUPPORT**
  - Supports Intel® mPGA Socket 478 processors
  - FSB 400MHz: Pentium® 4

- **CPU SETTINGS**
  
  The SY-P4I Fire DRAGON provides the user with a very complete and convenient CPU setting environment. The CPU settings are all adjusted through the special SOYO COMBO page in the BIOS, therefore rendering the use of jumpers obsolete.

- **Memory Support**
  
  Supports PC1600 & PC2100 DDR Memory module

- **EXPANDABILITY**
  
  The SY-P4I Fire DRAGON provides all the standard expansion slots, and many more additional expansion features:

  - Expansion slots
    - 1 x master AGP Pro slot (1.5V only)
    - 6 x 32-bit bus master PCI slots
Hardware Installation

SY-P4I Fire DRAGON

◆ Enhanced IO
  ■ Floppy disk controller
  ■ 2x EIDE controllers with support for up to 4 Ultra DMA 33/66 /100 devices
  ■ Standard/EPP/ECP parallel port
  ■ 2x 16550 compatible serial ports
  ■ IrDA compatible infrared port
  ■ 4x USB (Universal Serial Bus) connectors
  ■ PS/2 mouse connector
  ■ PS/2 keyboard connector

➢ IDE RAID FUNCTION
Supports HighPoint PCI-to-IDE UDMA/ATA133 RAID on board
  ■ Up to 4 ATA/ATAPI devices
  ■ RAID function (RAID 0, 1, 0+1)

➢ TI IEEE 1394 ON-BOARD
  ■ Two IEEE Standard 1394a-2000 fully compliant cable ports at 100M bits/s, 200M bits/s, 400M bits/s.

➢ SUPPORTS 5 FAN CONNECTOR

➢ C-MEDIA HARDWARE AUDIO
Supports 4/5/5.1 speakers and DLS based wave table music. Also provides professional SPDIF IN/OUT non-distortion digital interface.

➢ LAN ON-BOARD
Supports Intel 82562ET IEEE 802.3 10BASE-T/100BASE-TX compliant physical layer interface. IEEE 802.3u Auto-Negotiation Support.

➢ SMART CARD READER

➢ ADVANCED FUNCTIONS
The SY-P4I Fire DRAGON supports advanced functions such as:
Wake-On-LAN
Supports Wake-On-LAN (Some advanced network cards can wake the system up over the network, the WOL connector is provided by the SY-P4I Fire DRAGON to support this function).

Multiple boot
The SY-P4I Fire DRAGON supports booting from devices such as CD-ROM.

Power on by modem or alarm
If the SY-P4I Fire DRAGON system is in suspend mode, it can be switched back on through the modem or RTC alarm through this function. This opens a lot of possibilities, such as remote access that switches the system on only after the modem receives a call.

Mighty Bolt Security Function
Support Smart Card insertion power-on feature

FAIL SAFE
The SY-P4I Fire DRAGON comes with added functionality to make managing the system easy and safe

Hardware Monitor
The integrated Hardware Monitor IC and Hardware doctor software enables the user to monitor system voltages, temperatures and FAN speeds. This makes sure that the user is full control of the system

Power Failure Resume Function
This function can be set in the BIOS, and determines whether the system will automatically turn on again after a power failure. This function is indispensable for server systems that need to always be on line.

5VSB Indicator
This green LED gives an indication of the presence of the 5V Standby voltage. This voltage is always fed into the motherboard and is used for functions such as WOL.
SOYO Bonus Pack CD-ROM

COMPLIANCE
The SY-P4I Fire DRAGON complies with all important industry standards. The following underlines the reliability of the SY-P4I Fire DRAGON, a motherboard to trust.

- PC99, ACPI compliant

USER FRIENDLY

- SOYO COMBO Setup
- Jumperless design
- You can set up the following options through the Soyo COMBO setup
  - CPU FSB frequency
  - CPU multiplier
  - CPU Vcore voltage select
  - DDR RAM Clock
  - DDR RAM voltage select
  - AGP voltage select
  - On board Devices Enable/Disable
  - Pre-defined optimal system Performance

1-4 HANDLING THE MOTHERBOARD
To avoid damage to your Motherboard, follow these simple rules while unpacking:

- Before handling the Motherboard, ground yourself by grasping an unpainted portion of the system's metal chassis.
- Remove the Motherboard from its anti-static packaging. Hold the Motherboard by the edges and avoid touching its components.
- Check the Motherboard for damage. If any chip appears loose, press carefully to seat it firmly in its socket.

Warning: Do not apply power if the Motherboard appears damaged. If there is damage to the board, contact your dealer immediately.
1-5 ELECTROSTATIC DISCHARGE PRECAUTIONS

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

To protect your equipment from electrostatic discharge, take the following precautions:

- Do not remove the anti-static packaging until you are ready to install.
- 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 Motherboard by its edges and avoid touching its components.
1-6 SY-P4I Fire DRAGON MOTHERBOARD LAYOUT

Back Panel SY-P4I Fire DRAGON Platform
1-7  SY-P4I Fire DRAGON MOTHERBOARD COMPONENTS
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>LAN Chip</td>
</tr>
<tr>
<td>B</td>
<td>CPU Cooling Fan Connector</td>
</tr>
<tr>
<td>C</td>
<td>+12V Power Connector</td>
</tr>
<tr>
<td>D</td>
<td>Aux Power Connector</td>
</tr>
<tr>
<td>E</td>
<td>Socket 478 Connector</td>
</tr>
<tr>
<td>F</td>
<td>Intel i845 North Bridge Chip</td>
</tr>
<tr>
<td>G</td>
<td>Peripheral Power Connector</td>
</tr>
<tr>
<td>H</td>
<td>CPU Cooling Fan2 Connector</td>
</tr>
<tr>
<td>I</td>
<td>DDR DIMM Bank</td>
</tr>
<tr>
<td>J</td>
<td>ATX Power Connector</td>
</tr>
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<td>K</td>
<td>Bus Mastering E-IDE/ATAPI Ports</td>
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<td>L</td>
<td>IDE RAID Ports</td>
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<tr>
<td>M</td>
<td>Floppy Disk Drive (FDD)</td>
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<tr>
<td>N</td>
<td>AGP Pro Slot</td>
</tr>
<tr>
<td>O</td>
<td>Chassis Cooling Fan1,2 Connector</td>
</tr>
<tr>
<td>P</td>
<td>1394 Port</td>
</tr>
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<td>Q</td>
<td>1394 Connector</td>
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<tr>
<td>R</td>
<td>CMOS Clear Jumper</td>
</tr>
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<td>S</td>
<td>Front panel Connectors</td>
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<td>T</td>
<td>High Point RAID Chip</td>
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<tr>
<td>U</td>
<td>3V Lithium Battery</td>
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<td>V</td>
<td>Chassis Cooling Fan3 Connector</td>
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<tr>
<td>W</td>
<td>IEEE 1394 Chip</td>
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<td>X</td>
<td>Intel FW82801BA South Bridge Chip</td>
</tr>
<tr>
<td>Y</td>
<td>USB Connector</td>
</tr>
<tr>
<td>Z</td>
<td>Serial Infrared (IrDA) Device Header</td>
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<tr>
<td>AA</td>
<td>Smart Card Reader Connector</td>
</tr>
<tr>
<td>AB</td>
<td>Flash BIOS</td>
</tr>
<tr>
<td>AC</td>
<td>32-bit PCI Mastering Slots</td>
</tr>
<tr>
<td>AD</td>
<td>ITE I/O Chip</td>
</tr>
<tr>
<td>AE</td>
<td>Wake-On-LAN(WOL) Header</td>
</tr>
<tr>
<td>AF</td>
<td>SPK5 Connector</td>
</tr>
</tbody>
</table>
AG  H/W Onboard Audio Chip
AH  CD-IN Connectors
AI  Front panel Connectors
AJ  Back panel Connectors
Chapter 2

HARDWARE INSTALLATION

Congratulations on your purchase of SY-P4I Fire DRAGON Motherboard. You are about to install and connect your new Motherboard.

Note: Do not unpack the Motherboard from its protective anti-static packaging until you have made the following preparations.

2-1 PREPARATIONS

Gather and prepare all the following hardware equipment to complete the installation successfully:

1. Socket mPGA478 processor with built-in CPU cooling fan.
2. DDR SDRAM memory module(s)
3. Computer case and chassis with adequate power supply unit
4. Monitor
5. PS/2 Keyboard
6. Pointing Device (PS/2 mouse)
7. Disk Drives: HDD, CD-ROM, Floppy drive…
8. External Peripherals: Printer, Plotter, and Modem (optional)
9. Internal Peripherals: Modem and LAN cards (optional)
10. VGA Card (AGP 1.5V only, PCI)

Note: This M/B can only support AGP 1.5V VGA card only!
2-2 INSTALLATION GUIDE
We will now begin the installation of the Motherboard. Please follow the step-by-step procedure designed to lead you to a complete and correct installation.

Step 1 - Install the Central Processing Unit (CPU)
Step 2 - Install memory modules
Step 3 - Install expansion cards
Step 4 - Connect cables, case wires, and power supply
Step 5 - Power on and enter BIOS setup
Step 6 - Install supporting software tools. See Chapter 4 for more info.

Warning: Turn off the power to the Motherboard, system chassis, and peripheral devices before performing any work on the Motherboard or system.

BEGIN THE INSTALLATION
Step 1 Install the CPU
To perform the installation of your new SY-P4I Fire DRAGON Motherboard, follow the steps below:

✔ Mark your CPU Frequency: Record the working frequency of your mPGA CPU that should be clearly marked on the CPU cover.

FSB 400MHz

<table>
<thead>
<tr>
<th>1.5GHz (100 x 15.0)</th>
<th>1.6GHz (100 x 16.0)</th>
<th>1.7GHz (100 x 17.0)</th>
<th>1.8GHz (100 x 18.0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.9GHz (100 x 19.0)</td>
<td>2.0GHz (100 x 20.0)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CPU Mount Procedure: To mount the Pentium® 4 Socket mPGA478 processor that you have purchased separately, follow these instructions.

1. Lift the socket handle up to a vertical position.
2. Align the blunt edge of the CPU with the matching pinhole distinctive edge on the socket.

3. Seat the processor in the socket completely and without forcing.
4. Then close the socket handle to secure the CPU in place.

Remember to connect the CPU Cooling Fan to the appropriate power connector on the Motherboard. The fan is a key component that will ensure system stability. The fan prevents overheating, therefore prolonging the life of your CPU.
Your board comes with two DIMM sockets, providing support for up to 2GB of main memory using unbuffered DIMM modules from 64MB to 1GB. On this motherboard, DRAM speed can be set independent from the CPU front side bus speed. Depending on the DRAM clock speed setting in the BIOS setup, appropriate memory modules must be used. For 100MHz DRAM speed, use PC1600 memory; for 133MHz DRAM speeds, use PC2100 memory. ECC DRAM is also supported.
**Memory Configuration Table**

<table>
<thead>
<tr>
<th>Number of Memory Modules</th>
<th>DIMM 1</th>
<th>DIMM 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAM Type</td>
<td>DDR SDRAM</td>
<td>DDR SDRAM</td>
</tr>
<tr>
<td>Memory Module Size (MB)</td>
<td>64/128/256/512 MB/1 GB</td>
<td>64/128/256/512 MB/1 GB</td>
</tr>
</tbody>
</table>

**Step 3 Install Expansion Card**

The motherboard has 1 AGP slot and 6 PCI slot.

1. Read the related expansion card’s instruction document before inserting the expansion card into the computer.
2. Press the expansion card firmly into expansion slot in motherboard.
3. Be sure the metal contacts on the card are indeed seated in the slot.
4. Replace the screw to secure the slot bracket of the expansion card.
5. Install related driver from the operating system.

**AGP Slot**

This motherboard supports AGP 2x/4x/Pro VGA CARD.

DO NOT remove the safety tab underneath it if you will be using an AGP card without a retention notch. Removing may cause the card to shift and may cause damage to your card, slot, and motherboard. Remove ONLY when you will be using an AGP Pro card. You can use a pen tip to remove the tab from the bay.

**Note:** *This Motherboard can only support 1.5V VGA Card.*
Step 4 Connect cables, case wire, and power supply

A. IDE Device Installation (HDD, CD-ROM)

This Motherboard offers two primary and two secondary IDE device connectors (IDE1, IDE2), can support up to four high-speed Ultra DMA 33/66/100 HDD or CD-ROM. IDE3, IDE4 can support up to four high speed Ultra DMA 33/66/100/133 HDD or CD-ROM.

Connect one side of the ATA66/100/133 flat cable to the IDE device (HDD or CD-ROM) and plug the other end to the primary (IDE1, IDE3) or secondary (IDE2, IDE4) directionally keyed IDE connector on the Motherboard. The ATA66/100 cable is backward compatible with ATA33 HDDs.

This Motherboard can support up to 8 HDDs. There are four HDD connectors (IDE1, IDE2, IDE3, IDE4) on motherboard. IDE3 & IDE4 are provided for IDE RAID or standard IDE function. Please refer to Appendix A for more information.
B. Floppy Drive Installation

The system supports 5 possible floppy drive types: 720 KB, 1.2 MB, 1.44 MB, 2.88 MB, and LS-120. In addition, this Motherboard supports a 3-mode (720KB/1.2MB/1.44MB) floppy commonly used in Japan. Connect one side of the 34-pin flat cable to the floppy drive and plug the other end to the floppy drive connector on the Motherboard. This Motherboard can support up to 2 floppy drives.
C. Front Panel Connections

Plug the computer case's front panel devices to the corresponding headers on the Motherboard.

1. **Power LED & KeyLock**

Plug the Power LED cable into the 5-pin Keylock header. Some systems may feature a KeyLock function with a front panel switch for enabling or disabling the keyboard. Connect the KeyLock switch to the 5-pin Keylock header on the Motherboard. Please install according to the following pin assignment: pin 1,3 are for Power LED and pin 4,5 are for Keylock.

![Power LED & KeyLock Diagram]
2. **Reset**
Plug the Reset push-button cable into the 2-pin Reset header on the Motherboard. Pushing the Reset button on the front panel will cause the system to restart the boot-up sequence.

![Reset Pin Assignment](image)

3. **Speaker**
Attach the 4-pin PC speaker cable from the case to the Speaker header on the Motherboard.

![Speaker Pin Assignment](image)

4. **ACPI LED**
Connecting the 2-pin ACPI LED cable to the corresponding ACPI LED header will cause the LED to light whenever the system is in ACPI mode. The manufacturer has permanently set this Motherboard in ACPI mode due to most hardware and software compliance to ACPI mode.

![ACPI LED Pin Assignment](image)
5. **IDE LED**
Attach the 2-pin IDE device LED cable to the corresponding IDE LED header on the Motherboard. This will cause the LED to lighten when an IDE (HDD, CD-ROM) device is active.

![HDD LED Pin Assignment]

6. **ATX 12V Power On/Off Switch**
Attach the 2-pin momentary type switch to the PWRBT header for turning On or Off your ATX 12V power supply.

![PWRBT Pin Assignment]
D. Back Panel Connections

All external devices such as the PS/2 keyboard, PS/2 mouse, printer, modem, USB can be plugged directly onto the Motherboard back panel. Only after you have fixed and locked the Motherboard to the computer case can you start connecting the external peripheral devices. When connecting an external device, use the following figure to locate and identify which back panel connector to plug the device to.
1. **Onboard Serial Ports COM1/COM2**
External peripherals that use serial transmission scheme include:
- serial mouse,
- and modem.
Plug the serial device cables directly into the COMA/COMB 9-pin male connectors located at the rear panel of the Motherboard.

2. **Parallel Port PRT**
This parallel port is used to connect the printer or other parallel devices.
Plug the parallel device cable into the 25-pin female connector located at the rear panel of the Motherboard.

3. **PS/2 Keyboard**
Plug the keyboard jack directly into the 6-pin female PS/2 keyboard connector located at the rear panel of the Motherboard.

![PS/2 Keyboard Diagram]

4. **PS/2 Mouse**
Similarly, plug the mouse jack directly into the 6-pin female PS/2 mouse connector.

![PS/2 Mouse Diagram]
5. **Universal Serial Bus USB1/USB2/(USB3, USB4)**

This Motherboard provides four USB ports for your additional devices. Plug the USB device jack into the available USB connector USB1 or USB2.

- Standard device drivers come with the Win98 for commonly used USB devices.
- With Win95, use the fast UHCI specifications. To use USB devices under Win95, usually you have to install the device that driver comes with the USB device you have purchased.

USB3 and 4 are available. To make use of these USB ports, purchase a USB cable from your dealer. The lay-out of USB3 and 4 is as follows:

```
+5V —— 1 —— +5V
(-)Data — 4 —— 3 —— (-)Data
(+)(Data — 6 —— 5 —— (+)Data
GND —— 8 —— 7 —— GND
GND —— 10
```

![USB Port Lay-out](image)
E. Other Connections

1. Wake-On-LAN (WOL)

Attach the 3-pin connector from the LAN card which supports the Wake-On-LAN (WOL) function to the JP10 header on the Motherboard. This WOL function lets users wake up the connected computer through the LAN card.

Please install according to the following pin assignment:
2. **Standard Infrared (SIRCON)**

Plug the 5-pin infrared device cable to the SIRCON header.

This will enable the infrared transfer function. This Motherboard meets both the ASKIR and HPSIR specifications.

Please install according to the following pin assignment:
3. Cooling Fan Installation

(1) CPU Cooling Fan (CPUFAN1, CPUFAN2)
After you have seated the CPU properly on the processor, attach the 3-pin fan cable to the CPUFAN connector on the Motherboard. The fan will stop when the system enters into Suspend Mode. (Suspend mode can be enabled from the BIOS Setup Utility, [SOYO COMBO] menu.) To avoid damage to the system, install according to the following pin assignment:
(2) Chassis Cooling Fan (CHAFAN1, CHAFAN2, CHAFAN3)
Some chassis also feature a cooling fan. This Motherboard features a CHAFAN connector to provide 12V power to the chassis fan. Connect the cable from the chassis fan to the CHAFAN 3-pin connector. Install according to the following pin assignment:

![Chassis Cooling Fan Diagram]

**Note:** CPU cooling fan must be installed to prevent CPU from overheating and ensure system stability. Chassis cooling fan is optional, depending on whether there is cooling fan in your chassis.
4. Smart Card Reader

This Motherboard provides one CD-Line in connectors. Please connect the 4-pin audio cable from your CD-ROM drive to either CDIN1 or CDIN2. (It fits in only one, depending on the cable that came with your CD-ROM drive)

Please install according to the following pin assignment:

5. CD Line-in (CDIN1)

This Motherboard provides one CD-Line in connectors. Please connect the 4-pin audio cable from your CD-ROM drive to either CDIN1 or CDIN2. (It fits in only one, depending on the cable that came with your CD-ROM drive)

Please install according to the following pin assignment:
6. **SPK5**

Please refer to the c-media 6 channel Audio solution Manual for more information on AUDIO function.
F. ATX12V Power Supply

The ATX12V power supply includes a 20-pin ATX connector that comply with the ATX specification, Version 2.03 for M/B specification, a new 4-pin receptacle/header combination--the +12V power connector--has been defined. The presence of the +12V power connector indicates that a power supply is ATX12V; the absence of the +12V power connector indicates that a supply is ATX. To allow for greater than +3.3V current, the Aux power connector is recommended for ATX and ATX12V power supplies with +3.3V current >18A.

_WARNING_: Follow these precautions to preserve your Motherboard from any remnant currents when connecting to ATX power supply:

**Turn off the power supply and unplug the power cord of the ATX power supply before connecting to ATX PW connector.**

The Motherboard requires a power supply with at least 250 Watts and a "power good" signal. Make sure the ATX power supply can take at 1.5 A max current * load on the 5V Standby lead (5VSB) to meet the standard ATX specification.
*Note:* If you use the Wake-On-LAN (WOL) function, make sure the ATX power supply can support at least 720 mA on the 5V Standby lead (5VSB).

Please install the ATX power according to the following pin assignment:

### ATX Power

<table>
<thead>
<tr>
<th>Pin</th>
<th>12V</th>
<th>5VSB</th>
<th>PW-OK</th>
<th>GND</th>
<th>5V</th>
<th>GND</th>
<th>5V</th>
<th>GND</th>
<th>3.3V</th>
<th>3.3V</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5V</td>
<td>5V</td>
<td>-5V</td>
<td>GND</td>
<td>GND</td>
<td>GND</td>
<td>PS-ON</td>
<td>GND</td>
<td>-12V</td>
<td>3.3V</td>
</tr>
</tbody>
</table>

➢ Pay special care to the directionality.
G. CMOS Clear (JP5)

In some cases the CMOS memory may contain wrong data, follow the steps below to clear the CMOS memory.

1. Clear the CMOS memory by momentarily shorting pin 2-3 on jumper JP5. This jumper can be easily identified by its white colored cap.

2. Then put the jumper back to 1-2 to allow writing of new data into the CMOS memory.

<table>
<thead>
<tr>
<th>CMOS Clearing</th>
<th>Clear CMOS Data</th>
<th>Retain CMOS Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>JP5 Setting</td>
<td>Short pin 2-3 for at least 5 seconds to clear the CMOS</td>
<td>Short pin 1-2 to retain new settings</td>
</tr>
</tbody>
</table>

*Note: You must unplug the ATX power cable from the ATX power connector when performing the CMOS Clear operation.*

**Step 5 Power On**

You have now completed the hardware installation of your Motherboard successfully.

1. Turn the power on

2. To enter the BIOS Setup Utility, press the <DEL> key while the system is performing the diagnostic checks,

   *Note: If you have failed to enter the BIOS, wait until the boot up sequence is completed. Then push the RESET button and press <DEL> key again at the beginning of boot-up, during diagnostic checks.*

Repeat this operation until you get the following screen.
3. The BIOS Setup screen appears:

<table>
<thead>
<tr>
<th>CMOS Setup Utility – Copyright (C) 1984-2001 Award Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>◀ SOYO COMBO Feature</td>
</tr>
<tr>
<td>◀ Standard CMOS Features</td>
</tr>
<tr>
<td>◀ Advanced BIOS Features</td>
</tr>
<tr>
<td>◀ Advanced Chipset Features</td>
</tr>
<tr>
<td>◀ Integrated Peripherals</td>
</tr>
<tr>
<td>◀ Power Management Setup</td>
</tr>
<tr>
<td>◀ PnP/PCI Configurations</td>
</tr>
<tr>
<td>◀ PC Health Status</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Load Fail - Safe Defaults</td>
</tr>
<tr>
<td>Load Optimized Defaults</td>
</tr>
<tr>
<td>Set Supervisor Password</td>
</tr>
<tr>
<td>Set User Password</td>
</tr>
<tr>
<td>Save &amp; Exit Setup</td>
</tr>
<tr>
<td>Exit Without Saving</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Esc : Quit</td>
</tr>
<tr>
<td>F10 : Save &amp; Exit Setup</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>↑↓ → : Select Item</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Change CPU’s Clock &amp; Voltage</td>
</tr>
</tbody>
</table>

2-3 QUICK BIOS SETUP

This Motherboard does not use any hardware jumpers to set the CPU frequency. Instead, CPU settings are software configurable with the BIOS [SOYO COMBO SETUP]. The [SOYO COMBO SETUP] combines the main parameters that you need to configure, all in one menu, for a quick setup in BIOS.

After the hardware installation is complete, turn the power switch on, then press the <DEL> key during the system diagnostic checks to enter the Award BIOS Setup program. The CMOS SETUP UTILITY will be shown on the screen. Then, follow these steps to configure the CPU settings.

**Step 1. Select [STANDARD CMOS SETUP]**
Set [Date/Time] and [Floppy drive type], then set [Hard Disk Type] to “Auto”.

**Step 2. Select [LOAD OPTIMIZED DEFAULTS]**
Select the “LOAD OPTIMIZED DEFAULTS” menu and type “Y” at the prompt to load the BIOS optimal setup.

**Step 3. Select [SOYO COMBO FEATURE]**  
Do this step if you want to change or overclock the CPU FSB.

Set the [CPU Frequency Select] field to “Manual”, to be able to change the CPU frequency 1 MHz stepping.

**Step 4. Select [SAVE & EXIT SETUP]**  
Press <Enter> to save the new configuration to the CMOS memory, and continue the boot sequence.

You are now ready to configure your system with the BIOS setup program.  
Go to *Chapter 3: BIOS SETUP*
Chapter 3

BIOS SETUP UTILITY

This Motherboard's BIOS setup program uses the ROM PCI BIOS program from Award Software Inc.

To enter the Award BIOS program's Main Menu:
1. Turn on or reboot the system.
2. After the diagnostic checks, press the [Del] key to enter the Award BIOS Setup Utility.

<table>
<thead>
<tr>
<th>SOYO COMBO Feature</th>
<th>PC Health Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard CMOS Features</td>
<td>Load Fail - Safe Defaults</td>
</tr>
<tr>
<td>Advanced BIOS Features</td>
<td>Load Optimized Defaults</td>
</tr>
<tr>
<td>Advanced Chipset Features</td>
<td>Set Supervisor Password</td>
</tr>
<tr>
<td>Integrated Peripherals</td>
<td>Set User Password</td>
</tr>
<tr>
<td>Power Management Setup</td>
<td>Save &amp; Exit Setup</td>
</tr>
<tr>
<td>PnP/PCI Configurations</td>
<td>Exit Without Saving</td>
</tr>
</tbody>
</table>

Esc : Quit
F10 : Save & Exit Setup

Selecting items

- Use the arrow keys to move between items and select fields.
- From the Main Menu press arrow keys to enter the selected submenu.

Modifying selected items

- Use the [Up]/[Down] keys to modify values within the selected fields. Some fields let you enter values directly.
**Hot Keys:** Function keys give you access to a group of commands throughout the BIOS utility.

<table>
<thead>
<tr>
<th>Function</th>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1</td>
<td>General Help</td>
<td>Gives the list of options available for each item.</td>
</tr>
<tr>
<td>F5</td>
<td>Previous Values</td>
<td>Restore the old values. These are the values that the user started the current session with.</td>
</tr>
<tr>
<td>F6</td>
<td>Load Fail-Safe Defaults</td>
<td>Loads all items with the most conservative values.</td>
</tr>
<tr>
<td>F7</td>
<td>Load Optimized Defaults</td>
<td>Loads all options with the optimize values.</td>
</tr>
<tr>
<td>F10</td>
<td>Save</td>
<td>Saves your changes and reboots the system.</td>
</tr>
<tr>
<td>[Esc]</td>
<td>Exit</td>
<td>Returns at anytime and from any location to the Main Menu.</td>
</tr>
<tr>
<td>[Enter]</td>
<td>Select</td>
<td>Will display a overlapping window with all options for the current item.</td>
</tr>
<tr>
<td>[+/-/PU/PD]</td>
<td>Value</td>
<td>Using the +, −, Page Up and Page Down keys the user can toggle the value of the current item.</td>
</tr>
</tbody>
</table>
SAVE AND EXIT SETUP
Select the [SAVE & EXIT SETUP] option from the Main Menu to save data to CMOS and exit the setup utility. This option saves all your changes and causes the system to reboot.

Type [Y] to save the changes and exit or [N] to return to the Main Menu and keep current values.

EXIT WITHOUT SAVING
Selecting the [EXIT WITHOUT SAVING] option allows you to abandon all data and exit setup, therefore ignoring all your changes.

Type [Y] to abandon changes and exit or [N] to return to the Main Menu and keep current values.
3-1 SOYO COMBO SETUP

This Motherboard does not use any hardware jumpers to set the CPU frequency. Instead, CPU settings are software configurable with the BIOS [SOYO COMBO SETUP].

After the hardware installation is complete, turn the power switch on, then press the <DEL> key during the system diagnostic checks to enter the Award BIOS Setup program. The CMOS SETUP UTILITY will display on screen. Then, select the [SOYO COMBO SETUP] option from the main menu and press the <Enter> key.

![CMOS Setup Utility](image)

**CMOS Setup Utility – Copyright (C) 1984-2001 Award Software**

**SOYO COMBO Feature**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>System Performance</td>
<td>Normal</td>
</tr>
<tr>
<td>CPU Frequency Select</td>
<td>Auto</td>
</tr>
<tr>
<td>x Frequency 1MHz Stepping</td>
<td>100MHz</td>
</tr>
<tr>
<td>SOYO Mighty Bolt</td>
<td>Disabled</td>
</tr>
<tr>
<td>CPU Clock Ratio</td>
<td>10 X</td>
</tr>
<tr>
<td>Auto Detect PCI Clk</td>
<td>Enabled</td>
</tr>
<tr>
<td>Spread Spectrum</td>
<td>Disabled</td>
</tr>
<tr>
<td>CPU Vcore Select</td>
<td>Default</td>
</tr>
<tr>
<td>DDR(2.5V) Vcore Select</td>
<td>Default</td>
</tr>
<tr>
<td>AGP(1.5V) Vcore Select</td>
<td>Default</td>
</tr>
<tr>
<td>Advanced Tune-UP Settings</td>
<td>Press Enter</td>
</tr>
<tr>
<td>Quick Power On Self Test</td>
<td>Enabled</td>
</tr>
<tr>
<td>First Boot Device</td>
<td>Floppy</td>
</tr>
<tr>
<td>Second Boot Device</td>
<td>HDD-0</td>
</tr>
<tr>
<td>Boot Other Device</td>
<td>Enabled</td>
</tr>
<tr>
<td>Third Boot Device</td>
<td>LS-120</td>
</tr>
<tr>
<td>RAID/ATA &amp; SCSI Boot Order</td>
<td>RAID/ATA, SCSI</td>
</tr>
<tr>
<td>Onboard LAN</td>
<td>Enabled</td>
</tr>
<tr>
<td>Onboard 6CH H/W Audio</td>
<td>Enabled</td>
</tr>
<tr>
<td>Onboard IEEE1394</td>
<td>Enabled</td>
</tr>
<tr>
<td>Onboard IDE RAID</td>
<td>Enabled</td>
</tr>
<tr>
<td>C.I.H 4-WAY Protection</td>
<td>Enabled</td>
</tr>
</tbody>
</table>

Menu Level ▶

- **F5**: Previous Values
- **F6**: Fail – Safe Defaults
- **F7**: Optimized Defaults
- **F10**: Save
- **ESC**: Exit
- **F1**: General Help

↑↓→ Move  | Enter : Select  | + / - / PU / PD : Value  | F10 : Save  | ESC : Exit  | F1 : General Help

**F5**: Previous Values

**F6**: Fail – Safe Defaults

**F7**: Optimized Defaults
The [SOYO COMBO SETUP] menu combines the main parameters that you need to configure, all in one menu, for a quick setup in BIOS.

### 3-1.1 System Performance

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>System Performance</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal</td>
<td>Adjust your computer performance.</td>
<td>Default</td>
</tr>
<tr>
<td>Maxium</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CPU Frequency Select</strong></td>
<td></td>
<td>Default</td>
</tr>
<tr>
<td>Auto</td>
<td>Set the [CPU Frequency Select] field to “Manual”, to be able to change the CPU frequency 1 MHz stepping.</td>
<td></td>
</tr>
<tr>
<td>Manual</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Frequency 1MHz Stepping</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Min=100  ~  Max=255</td>
<td>Press “Page Up”/”Page Down” key to Over Clock the CPU Front Side Bus in 1MHz increment or Press “Enter” key, then type the desired CPU Front Side Bus.</td>
<td></td>
</tr>
<tr>
<td><strong>SOYO Mighty Bolt</strong></td>
<td></td>
<td>Default</td>
</tr>
<tr>
<td>Disabled</td>
<td>Enabled SOYO Mighty Bolt security function, Check manual for more info on this function.</td>
<td></td>
</tr>
</tbody>
</table>

| Item Help                      | Menu Level ▶ |
### Setting | Description | Note
--- | --- | ---
**CPU Clock Ratio** | x 8, x 10, x 11, x 12, x 13, x 14, x 15, x 16, x 17, x 18, x 19, x 20, x 21, x 22, x 23, x 24 | The available CPU ratio you can select will depend on your CPU ID.
**Auto Detect PCI Clk** | Disabled | For EMI test purpose.
| Enabled | Default |
**Spread Spectrum** | Disabled | This item allows you to enable/disable the spread spectrum modulate.
| Enabled | Default |

### 3-1.2 CPU Vcore Select

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPU Vcore Select</strong></td>
<td>Default</td>
<td>This function adjusts the CPU voltage.</td>
</tr>
<tr>
<td>1.100V, 1.125V, 1.150V, 1.175V, 1.200V, 1.225V, 1.250V, 1.275V, 1.300V, 1.325V, 1.350V, 1.375V, 1.400V, 1.425V, 1.450V, 1.475V, 1.500V, 1.525V, 1.550V, 1.575V, 1.600V, 1.625V, 1.650V, 1.675V, 1.700V, 1.725V, 1.750V, 1.775V, 1.800V, 1.825V, 1.850V</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>DDR(2.5V) Vcore Select</strong></td>
<td>Default</td>
<td>This function adjusts the DDR Vcore.</td>
</tr>
<tr>
<td>2.52V, 2.56V, 2.59V, 2.61V, 2.65V, 2.68V</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>AGP(1.5V) Vcore Select</strong></td>
<td>Default</td>
<td>This function adjusts the AGP Vcore.</td>
</tr>
<tr>
<td>1.53V, 1.56V, 1.59V, 1.62V, 1.65V, 1.68V</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 3-1.3 Advanced Tune-UP Settings

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Memory frequency for DDR266</strong></td>
<td>This item allows you to control the DRAM speed.</td>
<td>Default</td>
</tr>
<tr>
<td><strong>DDR200</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>DRAM Timing Selectable</strong></td>
<td>If enable the DRAM will auto detect the DRAM timing.</td>
<td>Default</td>
</tr>
<tr>
<td><strong>By SPD</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Manual</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CAS Latency Time 1.5</strong></td>
<td>This item allows you to control the DRAM CAS Latency time.</td>
<td></td>
</tr>
<tr>
<td><strong>2</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>2.5</strong></td>
<td></td>
<td>Default</td>
</tr>
<tr>
<td><strong>3</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Active to Percharge Delay 5</strong></td>
<td>This item allows you to control the DRAM Percharge Delay time.</td>
<td></td>
</tr>
<tr>
<td><strong>6</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>7</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>DRAM RAS# to CAS# Delay 2</strong></td>
<td>This item allows you to control DRAM RAS to CAS delay time.</td>
<td>Default</td>
</tr>
<tr>
<td><strong>3</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>DRAM RAS# Percharge 2</strong></td>
<td>This item allows you to control DRAM RAS percharge time.</td>
<td>Default</td>
</tr>
<tr>
<td><strong>3</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>DRAM Data Integrity Mode</strong></td>
<td>Auto-Detect is DDR is ECC or not.</td>
<td></td>
</tr>
<tr>
<td><strong>AGP Aperture Size (MB) 32</strong></td>
<td>Select the size of Accelerated Graphics Port (AGP) aperture. The aperture</td>
<td>Default</td>
</tr>
<tr>
<td><strong>64</strong></td>
<td>is a portion of the PCI memory address range dedicated for graphics memory</td>
<td></td>
</tr>
<tr>
<td><strong>128</strong></td>
<td>address space. Host cycles that hit the aperture range are forwarded to the</td>
<td></td>
</tr>
<tr>
<td><strong>256</strong></td>
<td>AGP without any translation.</td>
<td></td>
</tr>
</tbody>
</table>

### 3-1.4 Quick Power On Self Test

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Quick Power On Self Test</strong></td>
<td>Disabled</td>
<td></td>
</tr>
<tr>
<td><strong>Enabled</strong></td>
<td>Provides a fast POST at boot-up.</td>
<td>Default</td>
</tr>
<tr>
<td><strong>Disabled</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 3-1.5 System Boot Control Settings

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>First/Second/Third Boot Device</td>
<td>Floppy, LS/ZIP, HDD-0, SCSI, CDROM, HDD-1, HDD-2, HDD-3, LAN, Disabled</td>
<td>Select Your Boot Device Priority.</td>
</tr>
<tr>
<td>Boot Other Device</td>
<td>Disabled</td>
<td>Select Your Boot Device Priority.</td>
</tr>
<tr>
<td>RAID/ATA &amp; SCSI Boot Order</td>
<td>RAID/ATA, SCSI, RAID/ATA</td>
<td>Select Your Boot Device Priority.</td>
</tr>
</tbody>
</table>

### 3-1.6 Onboard LAN Settings

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Onboard LAN</td>
<td>Enabled</td>
<td>Default</td>
</tr>
<tr>
<td></td>
<td>Disabled</td>
<td></td>
</tr>
<tr>
<td>Onboard 6CH H/W Audio</td>
<td>Enabled</td>
<td>Default</td>
</tr>
<tr>
<td></td>
<td>Disabled</td>
<td></td>
</tr>
<tr>
<td>Onboard IEEE1394</td>
<td>Enabled</td>
<td>Default</td>
</tr>
<tr>
<td></td>
<td>Disabled</td>
<td></td>
</tr>
<tr>
<td>Onboard IDE RAID</td>
<td>Enabled</td>
<td>Default</td>
</tr>
<tr>
<td></td>
<td>Disabled</td>
<td></td>
</tr>
<tr>
<td>C.I.H 4-WAY Protection</td>
<td>Enabled, Disabled</td>
<td></td>
</tr>
</tbody>
</table>

When set to enabled, the BIOS can only be programmed through AWDFLASH, making sure that any virus is unable to program the system BIOS. Set to disable the BIOS can be programmed the traditional way.
3-2 STANDARD CMOS SETUP
Select the [STANDARD CMOS SETUP] option from the Main Menu and press [Enter] key.

This screen allows you to modify the basic CMOS settings. After you have completed the changes, press [Esc] key to return to the Main Menu.

3-2.1 Date & Time

<table>
<thead>
<tr>
<th>Date</th>
<th>Display</th>
<th>Setting</th>
<th>Please Note</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>mm/dd/yyyy</td>
<td>Type the current date</td>
<td>You can also the PUp/PDn keys to toggle</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>hh:mm:ss</td>
<td>Type the current time</td>
<td>24-hour clock format 3:15 PM is displayed as 15:15:00</td>
</tr>
</tbody>
</table>
### 3-2.2 Hard Disks Type & Mode

Choose the type and mode for the hard disks that you have already installed.

<table>
<thead>
<tr>
<th>Primary (Secondary) Master &amp; Slave</th>
<th>Setting</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDE HDD Auto-Detection</td>
<td>Press Enter</td>
<td>To auto-detect the HDD’s size, head… on this channel</td>
<td></td>
</tr>
<tr>
<td>IDE Primary Slave (User Type)</td>
<td>Auto</td>
<td>BIOS detects hard disk type automatically.</td>
<td>Default</td>
</tr>
<tr>
<td></td>
<td>User</td>
<td>User defines the type of hard disk.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>None</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access Mode</td>
<td>Auto</td>
<td>BIOS detects hard disk mode automatically.</td>
<td>Default</td>
</tr>
<tr>
<td></td>
<td>CHS</td>
<td>Normal IDE hard disk</td>
<td>&lt;528MB</td>
</tr>
<tr>
<td></td>
<td>LBA</td>
<td>Enhanced IDE hard disk</td>
<td>&gt;528MB</td>
</tr>
<tr>
<td></td>
<td>Large</td>
<td>Large IDE hard disk (for certain hard disk)</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** If you have any questions on your hard disk type or mode, ask your hard disk provider or previous user for details.

### 3-2.3 Floppy Drives

<table>
<thead>
<tr>
<th>Floppy Drives</th>
<th>Setting</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drives A &amp; B</td>
<td>360KB, 5.25 in.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.2MB, 5.25 in.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>720KB, 3.5 in.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.44MB, 3.5 in.</td>
<td>Default</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2.88MB, 3.5 in.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>None</td>
<td>Not installed</td>
<td></td>
</tr>
</tbody>
</table>

**Floppy 3-Mode Support**

<table>
<thead>
<tr>
<th>Floppy 3-Mode Support</th>
<th>Setting</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Disabled</td>
<td></td>
<td>Default</td>
</tr>
<tr>
<td>Drive A</td>
<td>Supports 3-mode floppy diskette: 740KB/1.2MB/1.44MB on selected disk drive.</td>
<td>Special disk drive commonly used in Japan</td>
<td></td>
</tr>
</tbody>
</table>
### 3-2.4 Others Optional

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Video</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EGA/VGA</td>
<td>Select the video mode.</td>
<td>Default</td>
</tr>
<tr>
<td>CGA 40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CGA 80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MONO</td>
<td>(Monochrome)</td>
<td></td>
</tr>
<tr>
<td><strong>Halt On</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ALL Errors</td>
<td>When the BIOS detects system errors, this function will stop the system. Select which type of error will cause the system halt.</td>
<td>Default</td>
</tr>
<tr>
<td>No Errors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All, But Keyboard</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All, But Diskette</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All, But Disk/Key</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3-3  ADVANCED BIOS FEATURES
Select the [Advanced BIOS Features] option from the Main Menu and press [Enter] key.

<table>
<thead>
<tr>
<th>Item Help</th>
<th>Virus Warning</th>
<th>Disabled</th>
<th>CPU L1 &amp; L2 Cache</th>
<th>Enabled</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Swap Floppy Drive</td>
<td>Disabled</td>
<td>Boot Up Floppy Seek</td>
<td>Enabled</td>
</tr>
<tr>
<td></td>
<td>Boot Up NumLock Status</td>
<td>On</td>
<td>Gate A20 Option</td>
<td>Fast</td>
</tr>
<tr>
<td></td>
<td>Typematic Rate Setting</td>
<td>Enabled</td>
<td>Typematic Rate (Chars/Sec)</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Typematic Delay (Msec)</td>
<td>Setup</td>
<td>x</td>
<td>250</td>
</tr>
<tr>
<td></td>
<td>Security Option</td>
<td>Non-OS2</td>
<td>APIC Mode</td>
<td>Enabled</td>
</tr>
<tr>
<td></td>
<td>MPS Version Control For OS</td>
<td>1.4</td>
<td>OS Select For DRAM &gt; 64MB</td>
<td>Non-OS2</td>
</tr>
<tr>
<td></td>
<td>Report No FDD For WIN 95</td>
<td>No</td>
<td>EPA LOGO SELECT</td>
<td>LOGO-0</td>
</tr>
<tr>
<td></td>
<td>Small Logo (EPA) Show</td>
<td>Enabled</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

After you have completed the changes, press [Esc] key and follow the instructions on your screen to save your settings or exit without saving.
### 3-3.1 Virus Warning

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disabled</td>
<td>Allows you to choose the VIRUS warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempt to write data into this area, BIOS will show a warning message on screen and alarm beep.</td>
<td></td>
</tr>
<tr>
<td>Enabled</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 3-3.2 Cache Memory Options

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU L1 &amp; L2 Cache</td>
<td>Disabled</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Enabled</td>
<td>Enables the CPU's L1 &amp; L2 cache.</td>
</tr>
</tbody>
</table>

### 3-3.3 Floppy Driver Settings

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swap Floppy Drive</td>
<td>Disabled</td>
<td>Default</td>
</tr>
<tr>
<td></td>
<td>Enabled</td>
<td>Changes the sequence of A and B drives.</td>
</tr>
</tbody>
</table>

### 3-3.4 Boot Up Floppy Seek

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boot Up Floppy Seek</td>
<td>Disabled</td>
<td>Seeks disk drives during boot up. Disabling speeds boot up.</td>
</tr>
<tr>
<td></td>
<td>Enabled</td>
<td>Default</td>
</tr>
</tbody>
</table>

### 3-3.5 Boot Up NumLock Status

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boot Up NumLock Status</td>
<td>On</td>
<td>Puts numeric keypad in NumLock mode at boot-up.</td>
</tr>
<tr>
<td></td>
<td>Off</td>
<td>Puts numeric keypad in arrow key mode at boot-up.</td>
</tr>
</tbody>
</table>
### 3-3.6 Gate A20 Options

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>A pin in the keyboard controller controls GateA20.</td>
<td></td>
</tr>
<tr>
<td>Fast</td>
<td>Lets chipset control GateA20.</td>
<td>Default</td>
</tr>
</tbody>
</table>

### 3-3.7 Typematic Settings

<table>
<thead>
<tr>
<th>Typematic Settings</th>
<th>Setting</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Typematic Rate Setting</td>
<td>Disabled</td>
<td>Keystrokes repeat at a rate determined by the keyboard.</td>
<td>Default</td>
</tr>
<tr>
<td></td>
<td>Enabled</td>
<td>When enables, the typematic rate and typematic delay can be selected.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>The following [Typematic Rate] and [Typematic Delay] fields are active only if [Typematic Rate Setting] is set to [Enabled].</td>
<td></td>
</tr>
<tr>
<td>Typematic Rate</td>
<td>6 (Char/sec)</td>
<td>Choose the rate at which a character is repeated when holding down a key.</td>
<td>Default</td>
</tr>
<tr>
<td></td>
<td>8 (Char/sec)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10 (Char/sec)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>12 (Char/sec)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>15 (Char/sec)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>20 (Char/sec)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>24 (Char/sec)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>30 (Char/sec)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Typematic Delay</td>
<td>250 (msec)</td>
<td>Choose how long after you press a key down the character begins repeating.</td>
<td>Default</td>
</tr>
<tr>
<td></td>
<td>500 (msec)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>750 (msec)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1000 (msec)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## 3-3.8 Security Option

Use this feature to prevent unauthorized system boot-up or use of BIOS Setup. The following table describes the security settings.

<table>
<thead>
<tr>
<th>Security Option</th>
<th>Setting</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>System</td>
<td>Each time the system is booted, the password prompt appears.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Setup</td>
<td>If a password is set, the password prompt only appears when you attempt to enter the BIOS Setup program.</td>
<td>Default</td>
</tr>
<tr>
<td>ACPI Mode</td>
<td>Disabled</td>
<td>Enabled the Advanced Programmable Interrupt Controller (APIC) mode.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Enabled</td>
<td></td>
<td>Default</td>
</tr>
<tr>
<td>MPS Version</td>
<td>1.1</td>
<td>Allows you to choose the Multi Processor Specification (MPS) version.</td>
<td></td>
</tr>
<tr>
<td>Control for OS</td>
<td>1.4</td>
<td></td>
<td>Default</td>
</tr>
</tbody>
</table>

### Other Control Options

<table>
<thead>
<tr>
<th>Other Control Options</th>
<th>Setting</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>OS Select for DRAM&gt;64MB</td>
<td>OS2</td>
<td>When using an OS2 operating system.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Non-OS2</td>
<td>When using another, non-OS2 operating system.</td>
<td>Default</td>
</tr>
<tr>
<td>Report No FDD For WIN 95</td>
<td>Yes</td>
<td>Windows will release IRQ line 6 (normally used by the Floppy Disk Drive) after you disable your on-board FDD and set this field to [Yes].</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>Windows will reserve INT 6 for your FDD, whether it is disabled or not.</td>
<td>Default</td>
</tr>
</tbody>
</table>
## Small Logo(EPA) Show

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EPA LOGO SELECT</strong></td>
<td>LOG0</td>
<td>Allows user to display SOYO logo or own logo. Logo-0 shows SOYO logo, Logo-1 shows user logo.</td>
</tr>
<tr>
<td></td>
<td>LOG1</td>
<td></td>
</tr>
<tr>
<td><strong>Small Logo(EPA) Show</strong></td>
<td>Disabled</td>
<td>Set Enabled to Show Logo(EPA).</td>
</tr>
<tr>
<td></td>
<td>Enabled</td>
<td></td>
</tr>
</tbody>
</table>

---
3-4 ADVANCED CHIPSET FEATURES

Caution: Change these settings only if you are already familiar with the Chipset.

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

<table>
<thead>
<tr>
<th>CMOS Setup Utility – Copyright (C) 1984-2001 Award Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced Chipset Features</td>
</tr>
<tr>
<td>System BIOS Cacheable</td>
</tr>
<tr>
<td>Video BIOS Cacheable</td>
</tr>
<tr>
<td>Video RAM Cacheable</td>
</tr>
<tr>
<td>Delay Prior to Thermal</td>
</tr>
</tbody>
</table>

After you have completed the changes, press [Esc] and follow the instructions on your screen to save your settings or exit without saving.

The following table describes each field in the Advanced Chipset Features Menu and how to configure each parameter.
### 3-4.1 CHIPSET FEATURES SETUP

<table>
<thead>
<tr>
<th>CHIPSET FEATURES</th>
<th>Setting</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>System BIOS Cacheable</strong></td>
<td>Disabled</td>
<td></td>
<td>Default</td>
</tr>
<tr>
<td></td>
<td>Enabled</td>
<td>The ROM area F0000H-FFFFFH is cacheable.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Video BIOS Cacheable</strong></td>
<td>Disabled</td>
<td></td>
<td>Default</td>
</tr>
<tr>
<td></td>
<td>Enabled</td>
<td>The video BIOS C0000H-C7FFFH is cacheable.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Video RAM Cacheable</strong></td>
<td>Disabled</td>
<td>Allows user enabled Video RAM Cacheable.</td>
<td>Default</td>
</tr>
<tr>
<td></td>
<td>Enabled</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### CHIPSET FEATURES SETUP (Continued)

<table>
<thead>
<tr>
<th>CHIPSET FEATURES</th>
<th>Setting</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Delay Prior to Thermal</strong></td>
<td>4Min</td>
<td>Set the time for the system to decrease performance to avoid reaching maximum thermal temp. Ex. If you set it to 16 minutes the system will start decreasing the performance 16 minutes before reaching max thermal temp.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8Min</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>16Min</td>
<td></td>
<td>Default</td>
</tr>
<tr>
<td></td>
<td>32Min</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3-5 INTEGRATED PERIPHERALS

Caution: Change these settings only if you are already familiar with the Chipset.

The [INTEGRATED PERIPHERALS] option changes the values of the chipset registers. These registers control the system options in the computer. The following screen shows setup default settings.

<table>
<thead>
<tr>
<th>Integrated Peripherals</th>
<th>On-Chip Primary PCI IDE</th>
<th>Enabled</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDE Primary Master PIO</td>
<td>Auto</td>
<td></td>
</tr>
<tr>
<td>IDE Primary Slave PIO</td>
<td>Auto</td>
<td></td>
</tr>
<tr>
<td>IDE Primary Master UDMA</td>
<td>Auto</td>
<td></td>
</tr>
<tr>
<td>IDE Primary Slave UDMA</td>
<td>Auto</td>
<td></td>
</tr>
<tr>
<td>On-Chip Secondary PCI IDE</td>
<td>Enabled</td>
<td></td>
</tr>
<tr>
<td>IDE Secondary Master PIO</td>
<td>Auto</td>
<td></td>
</tr>
<tr>
<td>IDE Secondary Slave PIO</td>
<td>Auto</td>
<td></td>
</tr>
<tr>
<td>IDE Secondary Master UDMA</td>
<td>Auto</td>
<td></td>
</tr>
<tr>
<td>IDE Secondary Slave UDMA</td>
<td>Auto</td>
<td></td>
</tr>
<tr>
<td>USB Controller</td>
<td>Enabled</td>
<td></td>
</tr>
<tr>
<td>USB Keyboard Support</td>
<td>Disabled</td>
<td></td>
</tr>
<tr>
<td>Init Display First</td>
<td>AGP</td>
<td></td>
</tr>
<tr>
<td>IDE HDD BlockMode</td>
<td>Enabled</td>
<td></td>
</tr>
<tr>
<td>POWER ON Function</td>
<td>BUTTON ONLY</td>
<td></td>
</tr>
<tr>
<td>x KB Power ON Password</td>
<td>Enter</td>
<td></td>
</tr>
<tr>
<td>x Hot Key Power ON</td>
<td>Ctrl-F1</td>
<td></td>
</tr>
<tr>
<td>Onboard FDC Controller</td>
<td>Enabled</td>
<td></td>
</tr>
<tr>
<td>Onboard Serial Port 1</td>
<td>3F8/IRQ4</td>
<td></td>
</tr>
<tr>
<td>Onboard Serial Port 2</td>
<td>2F8/IRQ3</td>
<td></td>
</tr>
<tr>
<td>UART Mode Select</td>
<td>Normal</td>
<td></td>
</tr>
<tr>
<td>x UR2 Duplex Mode</td>
<td>Half</td>
<td></td>
</tr>
<tr>
<td>Onboard Parallel Port</td>
<td>378/IRQ7</td>
<td></td>
</tr>
<tr>
<td>Parallel Port Mode</td>
<td>SPP</td>
<td></td>
</tr>
<tr>
<td>x ECP Mode Use DMA</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PWRON After PWR-Fail</td>
<td>OFF</td>
<td></td>
</tr>
<tr>
<td>Game Port Address</td>
<td>201</td>
<td></td>
</tr>
<tr>
<td>Midi Port Address</td>
<td>330</td>
<td></td>
</tr>
<tr>
<td>Midi Port IRQ</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

The following tables describe each field in the INTEGRATED
PERIPHERALS Menu and provide instructions on how to configure the IDE controls, FDC controls, and the onboard serial and parallel ports.

### 3-5.1 IDE Device Controls

<table>
<thead>
<tr>
<th>IDE Controls</th>
<th>Setting</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-Chip PCI IDE</td>
<td>Disabled</td>
<td>Turn off the on-board IDE</td>
<td></td>
</tr>
<tr>
<td>➢ Primary</td>
<td>Enabled</td>
<td>Use the on-board IDE</td>
<td>Default</td>
</tr>
<tr>
<td>➢ Secondary</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IDE</td>
<td>mode 0-4</td>
<td>0 is the slowest speed</td>
<td></td>
</tr>
<tr>
<td>➢ Primary Master PIO</td>
<td></td>
<td>4 is the fastest speed</td>
<td></td>
</tr>
<tr>
<td>➢ Primary Slave PIO</td>
<td>Auto</td>
<td>For better performance and stability, we suggest</td>
<td>Default</td>
</tr>
<tr>
<td>➢ Secondary Master PIO</td>
<td></td>
<td>you use the Auto setting to set the HDD control</td>
<td></td>
</tr>
<tr>
<td>➢ Secondary Slave PIO</td>
<td></td>
<td>timing.</td>
<td></td>
</tr>
<tr>
<td>IDE</td>
<td>Disabled</td>
<td></td>
<td></td>
</tr>
<tr>
<td>➢ Primary Master UDMA</td>
<td>Auto</td>
<td>Select Auto to enable Ultra DMA Mode support.</td>
<td>Default</td>
</tr>
<tr>
<td>➢ Primary Slave UDMA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>➢ Secondary Master UDMA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>➢ Secondary Slave UDMA</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 3-5.2 Keyboard Controls

<table>
<thead>
<tr>
<th>Keyboard Controls</th>
<th>Setting</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>USB Controller</td>
<td>Disabled</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Enabled</td>
<td>Select Enabled if your system contains a Universal Serial Bus (USB) controller and you have USB peripherals.</td>
<td>Default</td>
</tr>
<tr>
<td>USB Keyboard Support</td>
<td>Disabled</td>
<td>Turn off the on-board IDE</td>
<td>Default</td>
</tr>
<tr>
<td></td>
<td>Enabled</td>
<td>Use a USB keyboard</td>
<td></td>
</tr>
<tr>
<td>Init Display First</td>
<td>PCI Slot</td>
<td>Choose which card – AGP Display card or PCI VGA card – to initialize first.</td>
<td>Default</td>
</tr>
<tr>
<td></td>
<td>AGP</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 3-5.3 IDE HDD Block Mode

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disabled</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enabled</td>
<td>Invokes multi-sector transfer instead of one sector per transfer. Not all HDDs support this function.</td>
<td>Default</td>
</tr>
</tbody>
</table>

### 3-5.4 Others Optional

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Password</td>
<td>Enables you to wake-up the system by entering a password at the keyboard.</td>
<td></td>
</tr>
<tr>
<td>HotKEY</td>
<td>You can wake-up the system by pressing the key combination of your choice (Ctrl-F1~F12).</td>
<td></td>
</tr>
<tr>
<td>Mouse Left</td>
<td>Enables waking up the system by pressing either the right or left mouse button.</td>
<td></td>
</tr>
<tr>
<td>Mouse Right</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BUTTON-ONLY</td>
<td>Disables the Wake-Up by Keyboard function.</td>
<td>Default</td>
</tr>
<tr>
<td>Keyboard98</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If [POWER ON Function] is set to [Password]

**KB Power ON Password**
Enter (your password) Set the password that will wake-up your system.

If [POWER ON Function] is set to [Hot Key]

**Hot Key Power ON**
Ctrl-F1~F12 Choose the key combination that will wake-up the system. [Ctrl-F1 to Ctrl-F12]

### 3-5.5 FDC Controls

<table>
<thead>
<tr>
<th>FDC Controls</th>
<th>Setting</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Onboard FDC controller</td>
<td>Disabled</td>
<td>Turn off the on-board floppy controller</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Enabled</td>
<td>Use the on-board floppy controller</td>
<td>Default</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 3-5.6 Onboard Serial Ports

<table>
<thead>
<tr>
<th>Onboard Serial Ports</th>
<th>Setting</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Onboard Serial Port 1 / Serial Port 2</td>
<td>Disabled</td>
<td>Choose serial port 1 &amp; 2's I/O address.</td>
<td>Default (port 1)</td>
</tr>
<tr>
<td></td>
<td>3F8/IRQ4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2F8/IRQ3</td>
<td>Do not set port 1 &amp; 2 to the same address except for Disabled or Auto.</td>
<td>Default (port 2)</td>
</tr>
<tr>
<td></td>
<td>3E8/IRQ4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2E8/IRQ3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Auto</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UART Mode Select</td>
<td>Normal</td>
<td>The second serial port offers these InfraRed interface modes.</td>
<td>Default</td>
</tr>
<tr>
<td></td>
<td>IrDA</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ASKIR</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SCR</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If [UART Mode Select] is set to [IrDA]/[ASKIR]

<table>
<thead>
<tr>
<th>UR2 Duplex Mode</th>
<th>Setting</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Half</td>
<td>Choose [Half] or [Duplex] to set UR2 in half duplex mode or full duplex mode respectively. Refer to your IR device specifications to select the suitable mode.</td>
<td>Default</td>
<td></td>
</tr>
<tr>
<td>Full</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 3-5.7 Onboard Parallel Ports

<table>
<thead>
<tr>
<th>Onboard Parallel Ports</th>
<th>Setting</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Onboard Parallel Port</td>
<td>Disabled</td>
<td>Choose the printer I/O address.</td>
<td>Default</td>
</tr>
<tr>
<td></td>
<td>378/IRQ7</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3BC/IRQ7</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>278/IRQ5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parallel Port Mode</td>
<td>SPP</td>
<td>The mode depends on your external device that connects to this port.</td>
<td>Default</td>
</tr>
<tr>
<td></td>
<td>EPP</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ECP</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ECP+EPP</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If [Parallel Port Mode] is set to [ECP] mode

<table>
<thead>
<tr>
<th>ECP Mode use DMA</th>
<th>Setting</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3</td>
<td>Choose DMA3</td>
<td>Default</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Choose DMA1</td>
<td></td>
</tr>
</tbody>
</table>
### 3-5.8 Others Optional

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PWRON After PWR-Fail</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On</td>
<td>The system will switch on when power comes back after a power failure.</td>
<td></td>
</tr>
<tr>
<td>Off</td>
<td>The system will remain off when power comes back after a power failure.</td>
<td>Default</td>
</tr>
<tr>
<td>Former-Sts</td>
<td>The system will return to the state it was in before the power failure when power returns. (i.e: If the system was on, it will switch on again, if it was off, it will remain off)</td>
<td></td>
</tr>
<tr>
<td><strong>Game Port Address</strong></td>
<td>Disabled Set the I/O base address for the ON board game port under this item.</td>
<td>Default</td>
</tr>
<tr>
<td></td>
<td>201</td>
<td></td>
</tr>
<tr>
<td></td>
<td>209</td>
<td></td>
</tr>
<tr>
<td><strong>Midi Port Address</strong></td>
<td>Disabled Set the I/O address for the on board Midi port here.</td>
<td>Default</td>
</tr>
<tr>
<td></td>
<td>330</td>
<td></td>
</tr>
<tr>
<td></td>
<td>300</td>
<td></td>
</tr>
<tr>
<td>If [Midi Port Address] is set to [330]/[300] mode</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Midi Port IRQ</strong></td>
<td>5 Select the IRQ that the Midi port uses under this item.</td>
<td>Default</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>
3-6  POWER MANAGEMENT SETUP
The [POWER MANAGEMENT SETUP] sets the system's power saving functions.

After you have completed the Power Management Setup, press [Esc] to return to the Main Menu.
### 3-6.1 Power Management Controls

<table>
<thead>
<tr>
<th>Power Management Controls</th>
<th>Setting</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ACPI Suspend Type</strong></td>
<td>S1(POS)</td>
<td>The system will enter the S1 state during suspend. (Low latency wake up)</td>
<td>Default</td>
</tr>
<tr>
<td></td>
<td>S3(STR)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>S1 &amp; S3</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Power Management</strong></td>
<td>User Define</td>
<td>Lets you define the HDD and system power down times.</td>
<td>Default</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Doze timer</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Standby timer</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Suspend timer</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>HDD power down</td>
<td></td>
</tr>
<tr>
<td>Min Saving</td>
<td>1 Hour</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max Saving</td>
<td>1 Min</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Video Off Method</strong></td>
<td>V/H Sync+Blank</td>
<td>Selects the method by which the monitor is blanked.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Blank screen</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DPMS</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Video Off In Suspend</strong></td>
<td>Yes</td>
<td>This determines the manner in which the monitor is blanked.</td>
<td>Default</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Suspend Type</strong></td>
<td>Stop Grant</td>
<td>The system can wake up through external events.</td>
<td>Default</td>
</tr>
<tr>
<td></td>
<td>PwrOn Suspend</td>
<td>The system can only wake up through the Power-Button.</td>
<td></td>
</tr>
<tr>
<td><strong>MODEM Use IRQ</strong></td>
<td>3</td>
<td>Assigns an IRQ# to the modem device.</td>
<td>Default</td>
</tr>
<tr>
<td></td>
<td>3-11, NA</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Standby Mode</strong></td>
<td>Disabled</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1Min-1Hour</td>
<td>When the set time has elapsed, BIOS sends a command to the system to enter Standby Mode.</td>
<td></td>
</tr>
</tbody>
</table>
## Power Management Controls (Continued)

<table>
<thead>
<tr>
<th>Power Management Controls</th>
<th>Setting</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDD Power Down</td>
<td>Disabled</td>
<td>When the set time has elapsed, BIOS sends a command to the HDD to power down. This turns off the HDD motor.</td>
<td>Some older model HDDs may not support this advanced function.</td>
</tr>
<tr>
<td></td>
<td>1-15Min</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Instant-off</td>
<td></td>
<td>Default</td>
</tr>
<tr>
<td></td>
<td>Delay 4 Sec.</td>
<td>Turns off the system power 4 seconds after pushing the power button.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disabled</td>
<td>If enabled any PCI interrupt will wake up the system.</td>
<td>Default</td>
</tr>
<tr>
<td></td>
<td>Enabled</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disabled</td>
<td>The system will self-power on when the modem is ringing.</td>
<td>Default</td>
</tr>
<tr>
<td></td>
<td>Enabled</td>
<td></td>
<td></td>
</tr>
<tr>
<td>USB KB Wake Up From S3</td>
<td>Disabled</td>
<td>When Enabled, this feature allows the USB KB to (S3) suspend to RAM.</td>
<td>Default</td>
</tr>
<tr>
<td></td>
<td>Enabled</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disabled</td>
<td>The system ignores the alarm.</td>
<td>Default</td>
</tr>
<tr>
<td></td>
<td>Enabled</td>
<td>Set alarm to power on the system by the date (1-31) or time (hh:mm:ss). If the date is set to [0], the system will self-power on by alarm everyday at the set time.</td>
<td></td>
</tr>
</tbody>
</table>
## 3-6.2 Reload Global Timer Events

<table>
<thead>
<tr>
<th>Power Down &amp; Resume Events</th>
<th>Setting</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDE0, IDE1</td>
<td>Disabled</td>
<td>Default</td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>Enabled</td>
<td>In effect, the system remains alert for anything which occurs to a device which is configured as Enabled.</td>
<td></td>
</tr>
<tr>
<td>Secondary</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FDD, COM, LPT Port</td>
<td>Disabled</td>
<td>Default</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Enabled</td>
<td>In effect, the system remains alert for anything which occurs to a device which is configured as Enabled.</td>
<td></td>
</tr>
<tr>
<td>PCI PIRQ [A-D]#</td>
<td>Disabled</td>
<td>Default</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Enabled</td>
<td>The system monitors these elements for activity. The system will resume if [IRQ activity] is detected.</td>
<td></td>
</tr>
</tbody>
</table>
3-7 PNP/PCI CONFIGURATION SETUP

This option sets the Motherboard's PCI Slots.

<table>
<thead>
<tr>
<th>CMOS Setup Utility – Copyright ( C ) 1984-2001 Award Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>PnP/PCI Configurations</td>
</tr>
<tr>
<td>Reset Configuration Data</td>
</tr>
<tr>
<td>Resources Controlled By</td>
</tr>
<tr>
<td>x IRQ Resources</td>
</tr>
</tbody>
</table>

| PCI/VGA Palette Snoop | Disabled |  |
| Assign IRQ For VGA | Enabled |  |
| Assign IRQ For USB | Enabled |  |
| INT Pin 1 Assignment | Auto |  |
| INT Pin 2 Assignment | Auto |  |
| INT Pin 3 Assignment | Auto |  |
| INT Pin 4 Assignment | Auto |  |

Note: Starred (*) items will disappear when the [Resources Controlled By] option is set to [Auto].

After you have completed the PCI Slot Configuration, press [Esc] and follow the instructions on your screen to save your settings or exit without saving.
## 3-7.1 PNP/PCI Configuration Controls

<table>
<thead>
<tr>
<th>PNP/PCI Controls</th>
<th>Setting</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reset Configuration Data</td>
<td>Disabled</td>
<td>Retain PnP configuration data in BIOS.</td>
<td>Default</td>
</tr>
<tr>
<td></td>
<td>Enabled</td>
<td>Reset PnP configuration data in BIOS.</td>
<td></td>
</tr>
</tbody>
</table>

### Resources Controlled By

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual</td>
<td>BIOS does not manage PCI/ISA PnP card IRQ assignment. Requires to assign IRQ-# and DMA-# to PCI or ISA PnP manually. IRQ-3,4,5,7,9,10,11,12,14,15 assigned to: _ DMA-0,1,3,5,6,7 assigned to: _</td>
<td></td>
</tr>
<tr>
<td>Auto (ESCO)</td>
<td>The Plug-and-Play BIOS auto manages PCI/ISA PnP card IRQ assignment automatically.</td>
<td>Default</td>
</tr>
</tbody>
</table>

If [Resources Controlled By] is set to [Manual]

<table>
<thead>
<tr>
<th>IRQ-# assigned to:</th>
<th>Description</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCI device</td>
<td>Choose IRQ# assigned to PCI/ISA PnP card.</td>
<td></td>
</tr>
<tr>
<td>Reserved</td>
<td>Reserved IRQ</td>
<td></td>
</tr>
</tbody>
</table>

Under this item the user can assign an IRQ to a PCI slot. However, there under some conditions the IRQ will not be assigned as selected under this item:

1. IRQs 0, 1, 2, 6, 8, 13 can NOT be assigned, because they are fixed.
2. IRQs 5, 9, 10, 11 are available
3. IRQs 3,4,7,12,14 and 15 will only be assigned if they are free. See the table below on how to free them:
## PNP/PCI Configuration Setup (Continued)

<table>
<thead>
<tr>
<th>PNP/PCI Setup</th>
<th>Setting</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interrupt Line</td>
<td>How to set the BIOS to release the IRQ to the PnP Interrupt pool:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IRQ 15</td>
<td>IRQ 15: <strong>PCI / ISA PnP</strong></td>
<td>On-Chip Secondary PCI IDE: <strong>disabled</strong></td>
<td></td>
</tr>
<tr>
<td>IRQ 14</td>
<td>IRQ 14: <strong>PCI / ISA PnP</strong></td>
<td>On-Chip Primary PCI IDE: <strong>disabled</strong></td>
<td></td>
</tr>
<tr>
<td>IRQ 12</td>
<td>IRQ 12: <strong>PCI / ISA PnP</strong></td>
<td><em>Interrupt 12 will be released by the PnP BIOS automatically if the PS/2 Mouse Port is not used.</em></td>
<td></td>
</tr>
<tr>
<td>IRQ 7</td>
<td>IRQ 7: <strong>PCI / ISA PnP</strong></td>
<td>Onboard parallel port: <strong>disabled</strong></td>
<td></td>
</tr>
<tr>
<td>IRQ 4</td>
<td>IRQ 4: <strong>PCI / ISA PnP</strong></td>
<td>Onboard Serial port 1: <strong>disabled</strong></td>
<td></td>
</tr>
<tr>
<td>IRQ 3</td>
<td>IRQ 3: <strong>PCI / ISA PnP</strong></td>
<td>Onboard Serial port 2: <strong>disabled</strong></td>
<td></td>
</tr>
</tbody>
</table>

4. Your OS may reassign another interrupt to a PCI slot after BIOS passes control to the OS, especially if you use Windows 95, 98 or NT.

<table>
<thead>
<tr>
<th>Assign IRQ For VGA/USB</th>
<th>Setting</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disabled</td>
<td>BIOS will assign IRQ for USB port.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enabled</td>
<td>BIOS won’t assign IRQ for USB port.</td>
<td><strong>Default</strong></td>
<td></td>
</tr>
</tbody>
</table>

5. Your OS may reassign another interrupt to a PCI slot after BIOS passes control to the OS, especially if you use Windows 95, 98 or NT.

<table>
<thead>
<tr>
<th>INT Pin 1/2/3/4 Assignment</th>
<th>Setting</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto</td>
<td>Set to Auto the BIOS will using IRQs Automatically.</td>
<td><strong>Default</strong></td>
<td></td>
</tr>
</tbody>
</table>

### 3-7.2 MULTI I/O ADDRESSES

Default settings for multi-I/O addresses are as follows:

<table>
<thead>
<tr>
<th>Port</th>
<th>I/O Address</th>
<th>IRQ</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>LPT1</td>
<td>378H</td>
<td>7</td>
<td>ECP/EPP</td>
</tr>
<tr>
<td>COM1</td>
<td>3F8H</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>COM2</td>
<td>2F8H</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

*Warning:* If a default I/O address conflicts with other I/O cards such as sound card, you must change one of the I/O addresses to remedy to this address conflict. (I/O addresses can be adjusted from the BIOS Setup Utility)
### 3-8 PC HEALTH STATUS

This option sets the Motherboard's PC Health Status.

<p>| CMOS Setup Utility – Copyright (C) 1984-2001 Award Software |</p>
<table>
<thead>
<tr>
<th>PC Health Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Shutdown Temperature</strong></td>
</tr>
<tr>
<td>Vcore</td>
</tr>
<tr>
<td>VCC 1.8V</td>
</tr>
<tr>
<td>3.3V</td>
</tr>
<tr>
<td>+5V</td>
</tr>
<tr>
<td>+12V</td>
</tr>
<tr>
<td><strong>CPU Temperature</strong></td>
</tr>
<tr>
<td><strong>System Temperature</strong></td>
</tr>
<tr>
<td><strong>CPUFAN1 Speed</strong></td>
</tr>
<tr>
<td>CHAFAN1 Speed</td>
</tr>
<tr>
<td>SYSFAN2 Speed</td>
</tr>
</tbody>
</table>

**Note:** Starred (*) items will disappear when the [Resources Controlled By] option is set to [Auto].
### 3-8.1 CPU Device Monitoring

<table>
<thead>
<tr>
<th>CPU Device Monitoring</th>
<th>Setting</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shutdown Temperature</td>
<td>Disabled</td>
<td>This item allows you to set up the CPU shutdown Temperature. This item only effective under Windows 98 ACPI mode.</td>
<td>Default</td>
</tr>
<tr>
<td></td>
<td>45°C/113°F, 50°C/122°F, 55°C/131°F, 60°C/140°F, 65°C/149°F, 75°C/167°F</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vcore, VCC</td>
<td>V</td>
<td>Show the current voltage status.</td>
<td></td>
</tr>
<tr>
<td>1.8V, 3.3V, +5V, +12V</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPU Temperature</td>
<td>°C/°F</td>
<td>Show the current status of CPU temperature.</td>
<td></td>
</tr>
<tr>
<td>System CPU Temperature</td>
<td>°C/°F</td>
<td>Show the current status of the system temperature.</td>
<td></td>
</tr>
<tr>
<td>CPUFAN1 Speed</td>
<td>RPM</td>
<td>Show you the current CPUFAN operating speed.</td>
<td></td>
</tr>
<tr>
<td>CHAFAN1 Speed</td>
<td>RPM</td>
<td>Show you the current CHAFAN operating speed.</td>
<td></td>
</tr>
<tr>
<td>SYSFAN2 Speed</td>
<td>RPM</td>
<td>Show you the current SYSFAN operating speed.</td>
<td></td>
</tr>
</tbody>
</table>
3-9 LOAD FAIL-SAFE DEFAULTS
Select the [Load Fail-Safe Defaults] option from the Main Menu to load the system values you have previously saved. This option is recommended if you need to reset the system setup and to retrieve the old values.

Type [Y] to use the Setup Defaults followed by [Enter] or otherwise [N] to return to the Main Menu and keep current values.

Warning: If you run into any problem after changing the BIOS configuration, please load the SETUP DEFAULTS for stable performance.
3-10 LOAD OPTIMIZED DEFAULTS

Select the [Load Optimized Defaults] option from the Main Menu to load the system values you have previously saved. This option is recommended if you need to reset the system setup and to retrieve the old values.

Type [Y] to use the Setup Defaults followed by [Enter] or otherwise [N] to return to the Main Menu and keep current values.

Warning: If you run into any problem after changing the BIOS configuration, please load the SETUP DEFAULTS for stable performance.
3-11 SUPERVISOR PASSWORD

Based on the setting you have made in the [Security Option] of the [BIOS FEATURES SETUP] section, the password prevents access to the system or the setup program by unauthorized users. Follow this procedure to set a new password or disable the password:

1. Choose [BIOS FEATURES SETUP] in the Main Menu and press [Enter]. Select the [Security Options] item and set the field to:
   a. [System]: The password is required every time the system is booted. This means only a person who knows the password can use this computer.
   b. [Setup]: The password is required only when you attempt to enter the BIOS Setup program.

2. Choose [SUPERVISOR PASSWORD] from the Main Menu and press [Enter]. The following prompt appear:

   Enter Password:

   **Warning:** 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.

   **Note:** If you do not wish to use the password function, press [Enter] directly and the following message appears:

   Password Disabled!!
3. Enter your new password and press [Enter]. The following message appears, prompting to confirm the new password:

`Confirm Password:`

4. Re-enter your password and then press [Enter] to exit to the Main Menu.

This diagram outlines the password selection procedure:

3-12 USER PASSWORD

When the user password option is on, you are not allowed to change any setting in the [CMOS SETUP UTILITY] except for changing the user's password.

The password setting procedure is similar to that for the [SUPERVISOR PASSWORD] (Refer to section 3-9).
Boot Menu

Boot Menu enables user to boot-up on different boot device without going into the BIOS setup.

To enable boot Menu, press “ESC” after memory initialization, user will see a device menu, in which user can choose on which device they wish to boot from.

![Boot Menu]

- Floppy
- Ls120
- HDD-0
- SCSI
- CDROM
- HDD-1
- HDD-2
- HDD-3
- ZIP100
- LAN

↑↓:Move ENTER:Accept F4:Exit
Chapter 4

DRIVERS INSTALLATION

The SOYO-CD will NOT autorun if you use it on an Operating System other than Windows 95/98/98SE/ME.

Your SY-P4I Fire DRAGON Motherboard comes with a CD-ROM labeled "SOYO CD." The SOYO CD contains (1) the user's manual file for your new Motherboard, (2) the drivers software available for installation, and (3) a database in HTML format with information on SOYO Motherboards and other products.

**Step 1. Insert the SOYO CD into the CD-ROM drive**

If you use Windows NT, 2000 or XP, the SOYO-CD will not detect your motherboard type. In that case the following dialog will pop up, please choose your motherboard and press OK. Now the SOYO-CD Start Up Menu will be shown.

![Please Select Your Board](image)

(SOYO CD Start Up Program Menu)

If you use Windows 95/98/98SE/ME, the SOYO CD Start Up Program automatically detects which SOYO Motherboard you own and displays the corresponding model name.
The user's manual files included on the SOYO CD are in PDF (Postscript Document) format. In order to read a PDF file, the appropriate Acrobat Reader software must be installed in your system.

**Note:** The Start Up program automatically detects if the Acrobat Reader utility is already present in your system, and otherwise prompts you on whether or not you want to install it. You must install the Acrobat Reader utility to be able to read the user's manual file. Follow the instructions on your screen during installation, then once the installation is completed, restart your system and re-run the SOYO CD.
Step 2. Install Drivers and Utilities

Drivers that are needed to install for the system to operate properly

1. Intel Chipset Software Installation Utility for Win 98/98SE/ME/NT/XP
2. C-Media 8738 audio driver
3. On-board LAN. See chapter 5
4. Highpoint HPT372 driver. See page 105 or appendix A.
5. HighPoint Utility for the on-board RAID function

The rest of the available driver is optional.

Highlight the driver you want to install and then click ok. The Start Up program displays the drivers available for the particular model of Motherboard you own. We recommend that you only install those drivers. Click the Install Drivers button to display the list of drivers software that can be installed with your Motherboard. The Start Up program displays the drivers available for the particular model of Motherboard you own. We recommend that you only install those drivers.

(Driver Installation Menu)

A short description of all available drivers follows:

- Intel Chipset Software Installation Utility for Win 98/98SE/ME/NT/XP
- Intel Application Accelerator for Win 98/98SE/ME/NT/XP
- HighPoint Utility for Win 9x/ME/2000/NT/XP
- C-MEDIA 6-Channel onboard audio Driver/Application for Win 9x/ME/2000/NT/XP
- P4I Fire DRAGON ITE hardware doctor for Win 9x/ME/2000/NT/XP
- ITE SIM card reader driver for Win 9x/ME/2000/NT/XP (english)
- ITE SIM card reader driver for Win 9x/ME/2000/NT/XP (chinese)

Windows operating system will not recognize the new INTEL i845 chipset properly. To update the necessary .inf files that will help Windows recognize
Drivers installation

SY-P4I Fire DRAGON

the i845 chipset, please run this utility.

- **Intel Application Accelerator for Win 98/98SE/ME/NT/XP**
  The Intel(R) Application Accelerator is designed to improve performance of the storage sub-system and overall system performance. This software delivers improved performance through several ingredient technologies(components). Certain components will be available only on Pentium(R) 4 processor-based systems running Microsoft* Windows* 2000 Professional. Software installation is flexible and fully automated for Microsoft* Windows* 98, Windows 98 Second Edition(SE), Windows* 98 Millennium Edition(Me), Windows* NT4.0, and Windows 2000 operating systems.

- **HighPoint Utility for Win 9x/ME/2000/NT/XP**
  The RAID Administrator utility is used to monitor or perform maintenance on a RAID Administrator Mirror (RAID 1), Stripe (RAID 0), Span or Mirror plus Stripe (RAID 0+1). Visual messages are available to warn of possible problems with the disk array or controller.

- **C-MEDIA 6-Channel onboard audio Driver/Application for Win 9x/ME/2000/NT/XP**
  1. The driver supports 2/4/6 speakers 3D positional audio.
  2. The application is include **CD Player/MIDI Player/MP3/Wave Player/Mixer** with the control over your PC’s audio functions.

- **P4I Fire DRAGON ITE hardware doctor for Win 9x/ME/2000/NT/XP**
  Your motherboard comes with a hardware monitoring IC. By installing this utility Temperature, Fan speed and Voltages can be monitored. It is also possible to set alarms when current system values exceed or fall below pre-set values.

- **ITE SIM card reader driver for Win 9x/ME/2000/NT/XP(English)**
  If you have reader card, it must be installed.

- **ITE SIM card reader driver for Win 9x/ME/2000/NT/XP(Chinese)**
  If you have reader card, it must be installed.
Drivers installation

Select which driver you want to install and click OK, or click Cancel to abort the driver installation and return to the main menu.

Note: Once you have selected a driver, the system will automatically exit the SOYO CD to begin the driver installation program. When the installation is complete, most drivers require to restart your system before they can become active.

Step 3. Check the Latest Releases
Click the 'Check the latest Releases' button to go the SOYO Website to automatically find the latest BIOS, manual and driver releases for your motherboard. This button will only work if your computer is connected to the internet through a network or modem connection. Make sure to get your modem connection up before clicking this button.
Chapter 5

Intel Pro/100 LAN driver installation

Intel PRO/100 LAN Driver for Win98SE/ Win ME
1. Click My computer--->Control Panel→ system → device manager.
2. click on “? Other Device” and then double click “! PCI Ethernet Controller”.
3. Click Next in the popup window to continue.”.
4. Click Re-install device
5. Click next
6. choose ”Search for a better driver than your device is using now. (recommended)”
7. Put the driver CD on the CD-ROM
8. Choose the “specify a location” and type “d:\lan\intel\”
9. Win 98 will find look for a file “8255xdel.exe”, type the path “d:\intel\lan” and then click next
10. click finish and reboot.

Intel PRO/100 LAN Driver for Win ME
1. After entering Windows 98/ME, double click “My Computer”.
2. Double click “Control Panel”.
3. Double click “System”.
4. Click the “Device Manager” tab.
5. Open “Other Devices” (with a yellow “?” icon).
6. Select “PCI Ethernet Controller” then click “Remove” button to remove it.
7. Click Refresh and a “Add New Hardware Wizard” appears identifying the card as a “PCI Ethernet Controller”.
8. select “Search for the best driver for your device [Recommended]”.
9. The Intel LAN Driver for Win 98se path is in SOYO CD:\Lan\Intel.
10. Click Next then enable the “Specify a location” check box; specify the correct path in which Intel® PRO/100 VE Network Connection driver for
Win 98 resides.
11. Click Next then Windows 98 identifies the card as “Intel® PRO/100 VE
   Network Connection”.
12. Click Finish to let Windows 98 finishes the driver installation.

**Intel PRO/100 LAN Driver for NT4.0**
1. Double click the Network icon in the Control Panel.
2. Select “Wired to the Network” and click “Next…”.
3. Click “Select from list”.
4. Select Have Disk. Insert the “Intel® PRO/100 Ethernet Adapter Drivers
   Disk” in your CD driver and specify the correct path.
5. The LAN Driver For NT4.0 Path is in SOYO CD:\Lan\Intel.
6. Select one of the following models:
   “Intel® PRO Adapter” then click OK.
7. In the dialog box that appears, select the Media Type and enter the Network
   address for the adapter if necessary (You can click Help for more detailed
   information about these settings). Click OK to complete this dialog box (or
   Cancel to terminate the configuration without completing it).
8. Exit the Network control panel Windows. Windows NT asks if you wish to
   reboot. You must reboot before the adapter will function properly.

**Intel PRO/100 LAN Driver for Windows 2000**
1. Move Mouse Cursor the My Computer icon.
2. Press Mouse right button then click properties.
3. Click Hardware then click Device Manager.
4. Open “Other Devices” (with a yellow “?” icon).
5. Select “Ethernet Controller” then double click it.
6. Click Driver then click update Driver.
7. Click next and next.
8. Select “Search for a suitable driver for my device (recommended)
9. put the CD driver on the CD-ROM
10. remove the check on ”Floppy disk drive” and click next
11. Win 2K will the LAN driver, click next
12. click finish

**Intel PRO/100 LAN Driver for Windows XP**

(Because Windows XP can detect LAN Driver automatic, so this installation is for update)

1. Move Mouse Cursor to My Computer icon.
2. Press Mouse right button then click properties.
3. Click Hardware then click Device Manager.
4. Double Click Network adapters icon.
5. Double Click Intel® PRO/100 VE Network Connection.
6. Click Driver then click update Driver.
7. Select install from a list or specific location (Advanced) then click next.
8. The Intel® LAN Driver for XP path is in SOYO CD:\Lan\Intel.
Chapter 6

HIGHPOINT HPT 372 DRIVER INSTALLATION

See page 109 or Appendix A for Driver Installation procedure.
APPENDIX A

HighPoint HPT 372
Introduction

HPT372 is UDMA/ATA133 RAID controller. You can either use HPT372 (IDE3, IDE4) as a RAID on controller or as an IDE controller.

RAID Administrator is a Windows-based RAID management utility for HPT372 RAID Controller. With graphical user interface, RAID Administrator enable users easily configure and manage disk and disk arrays connected to HPT372 RAID controller.

Main Features & Benefits

- Below are the main features and benefits of RAID Administrator.
- Support RAID 0, 1, 0+1 & SPAN
- Allowed maximum 4 disks connection to every controller(Does not support ATAPI devices)
- Hot-swapping failed hard disk in mirror array
- Support independent use of hard disk
- Support hot spare disk
- Windows-based software for RAID management(compatible with BIOS)
- Disk error alarm mechanism
- Event log for easy trouble shooting
- Plug-and-play

Getting Started

This section is designed to get you started on the setup/installation of your HighPoint HPT372 RAID controller. in your system To use the HPT372 chip as a raid controller, you need to setup the HDD in the HPT372 bios menu (ctrl-H) or use the RAID administrator. If not,
the HDD on IDE 3 and IDE 4 will act as another IDE HDD.

To be able to use the RAID function, please do the following:

1. Create a Disk Array.
2. Install RAID driver

You can disable the HPT372 controller in the BIOS setup.

**Note:**
To boot from the HPT372 controller, (IDE 3 or IDE 4) go to the BIOS setup and set the First Boot device to SCSI.

---

**Create a Disk Array**

You can create a disk array using:

1. HPT372 BIOS Utility Configuration
2. RAID Administrator (software)

---

**HPT372 BIOS Utility Configuration**

**Enter into BIOS Configuration Utility**
When the following information is displayed on screen during the system starting, press `ctrl+H` key to enter into BIOS configuration utility.

The main interface of BIOS configuration utility is as below:
Menu:
It displays all items of the operating command.

Help:
It displays the illustrating information of the current selection and the available operation prompts.

Channel Status:
It displays the status information of all devices in connection. When it is active, users can select the device to be operated.

I. Create RAID
The following steps shall be taken to create RAID in BIOS.
1. Use the arrow key to select **1. Create RAID**.
2. Press **Enter** to confirm and go to next.
3. Select **1. Array Mode** in the popup sub-interface and press **Enter**.
4. Select the intended RAID level in the popup selection box and press **Enter**.
5. Select **2. Select Disk Drives** in the previous sub-interface and press **Enter**.
6. Select the disks to be used for creating the disk array and press **Enter** to confirm in the channel status zone.
7. Select **3. Start Creation Process**.
8. Pay attention to the warning message, and press **Y** to finish creation.

Note:
1. If you have selected **Striping (RAID 0) for Performance** in the popup sub-interface after the operation of **1. Array Mode**, you should directly go to **3. Strip Size 64K** and then select **4. Start Creation Process**. The default strip size is **64K**.
2. If user is creating RAID 0+1, then user must select four
single disks. All data on these disks will be destroyed after creation of RAID 0+1.
3. Different warning messages appear according to different RAID levels.

II. Delete RAID
The following steps shall be taken to delete RAID.
1. In the menu zone, select 2. Delete RAID, press Enter to confirm this operation and go to next.
2. In the validated channel status zone, use the arrow key to select the disk array to be deleted and press Enter to confirm.
3. Press Y when warned **Are you sure you want to remove the disk array?**

III. Rebuild Mirror Array
The following steps shall be taken to rebuild the mirror array.
1. In the menu zone, select 3. Rebuild Mirror Array, press Enter to confirm this operation and go to next.
2. In the menu zone of the popup sub-interface, select 1. Select Source Disk: None and press Enter to confirm.
3. In the validated channel status zone, select the source disk of the mirror array and then press Enter.
4. In the menu zone of the popup sub-interface, select 2. Select Target Disk: None and press Enter to confirm.
5. In the validated channel status zone, select the target disk of the mirror array and then press Enter.
6. In the menu zone of the popup sub-interface, select 3. Start Duplication Process and press Enter to confirm.
7. Press Y when asked **The last time rebuild not completed. Continue?**

**Note:**
When there is no RAID 1 array, system will prompt user **No enough**
disks at the second step, and rebuild can not continue.

**IV. Add Spare Disk**
The following steps shall be taken to add the spare disk.

1. In the menu zone, select **4. Add Spare Disk** and press **Enter** to confirm.
2. In menu zone of the popup sub-interface, select **1. Select Mirror Array: None** and press **Enter** to confirm.
3. In the validated channel status zone, select the mirror array and press **Enter** to confirm.
4. In the menu zone of the popup sub-interface, select **2. Select Spare Drive: None** and press **Enter** to confirm.
5. In the validated channel status zone, select the spare disk to be added and press **Enter** to confirm.

**V. Remove Spare Disk**
The following steps shall be taken to remove the spare disk.

1. In the menu zone, select **5. Remove Spare Disk** and press **Enter** to confirm.
2. The **1. Select Mirror Array: None** item appears in the menu zone of the popup sub-interface.
3. In the validated channel status zone, select the spare disk to be removed and press **Enter** to confirm.

**VI. Set Disk Mode**
The following steps shall be taken to set the disk mode.

1. Select **6. Set Disk Mode** in the menu zone and press **Enter** to confirm.
2. Select the disk mode to be set in the popup selection box and press **Enter** to confirm.

**VII. Set Boot Disk.**
The following steps shall be taken to set the boot disk:

1. In the menu zone, select **7. Set Boot Disk** item, press
Enter to confirm this operation and go to next.

2. In the validated channel status zone, use the arrow key to select the boot device and press **Enter** to confirm.

### Note:

1. The **Set Boot Disk** item appears on condition that no hard disk is connected to IDE on motherboard.

2. After the boot disk is set, its status will become **Boot**.

**RAID Administrator**

### Install RAID Administrator

Please take the following steps to install RAID Administrator:

Double click on the setup program: **setup.exe**, then follow the program prompt to finish the installation.

After the installation is complete, restart the computer. With the implicit option, the setup program will create program group: **Start--> Program-->RAID Administrator**. This program group contains the following contents:

- RAID Administrator
- RAID Help
- Uninstall RAID
I. Run RAID Administrator
The following steps should be taken to run RAID Administrator:

1. Click Start --> Program --> RAID Administrator --> RAID Administrator, the below welcome interface will come up.

2. The above interface stays only for a while. Coming up is the main interface of RAID Administrator (see below).
Tool Bar:
It provides shortcut way to execute the common commands. Commands shown by Tool Bar can also be found under Configuration menu.

Disk Tree:
It shows the connecting information of all hard disks in two ways: View by Device and View by Adapter.

Status Pane:
It lists the information and working status of selected hard disks or disk arrays.

II. Create Stripe Array
The following steps shall be taken to create the stripe array.
1. Click Stripe icon on the tool bar.
2. Select the strip size in the follow-on window, and then click Next button.

In the follow-on dialog box, select hard disk from Available Disks column. Add them into Stripe Array Member Disks column by clicking the corresponding arrow button. Then click Next button.
1. In the follow-on dialog box, click **Create** button to create stripe array, or click **Cancel** button to cancel this creation. If the cancel operation has been selected, the system will remain unchanged.

2. After the completion of creating stripe array, shut down all other programs. Then click **Yes** to restart the computer, or select **No** to restart the computer later.

**Note:**

1. At least two hard disks are needed to create the stripe array. Disks can be connected at any cable and settled as either master or slave device.

2. The capacity of the stripe array is equal to the product of the number of total hard disks and the smallest HD capacity.

**Suggestion:**

1. When selecting the strip size, if the user does not know which one is suitable, please select the default size 64K.

2. In order to avoid the capacity waste, try to use hard disks with the identical capacity to create stripe array.

For the consideration of performance, if two hard disks are used, please connect them to different IDE channels respectively.

**Warning:**

The data on all disks will be destroyed after the creation of the stripe array.

**III. Create Mirror Array**

The following steps shall be taken to create the mirror array:

1. Click **Mirror** icon on the tool bar.

2. In the follow-on dialog box, select hard disks from **Available Disks** column, add them into **Source Disk** column or **Mirror Disk** column respectively by clicking the corresponding arrow button.
3. If the user wants to use a spare disk, please select **Use Spare Disk** item. Then select hard disks from **Available Disks** column, and add it into **Use Spare Disk** column.

![Create Mirror Array](image)

4. Click **Create** to begin the creation or **Cancel** to exit. If you select the cancel operation, the system will remain unchanged.

![Congratulations](image)

5. After the creation is complete, the program will prompt you to synchronize mirror, select **Yes** to begin or **No** to cancel.
6. After your selection of either, the program will prompt you to restart your computer.
If the user has set a spare disk, when the read/write failure of either the source disk or the mirror disk, the program will automatically use the left normal disk and the spare disk to rebuild the mirror array, thereby providing dual security for data.

**Note:**
1. At least the source disk and the mirror disk are needed in the creation of the mirror array. The spare disk is optional. Disks can be connected at any cable and settled as either master or slave device.
2. The capacity of either the mirror disk or the spare disk shall be no less than that of the source disk.
3. The capacity of the mirror array is equal to that of the source disk.

**Suggestion:**
In order to avoid the capacity waste, please use hard disks with the identical capacity to create mirror array.

**Warning:**
The creation of the mirror array will make only the data on the source disk be preserved while the data on both the mirror disk and the spare disk destroyed.

**IV. Add/Remove Spare Disk**
If the user does not want to set a spare disk during the creation of mirror, he can add the spare disk into the mirror array later. The user can also remove the spare disk that has been set. The steps to add/remove the spare disk are as follows:

1. Select the mirror array to be add/remove the spare disk.
2. Click **Spare** icon on the tool bar.
3. In the popup dialog box, select **Add** or **Remove** operation, then click **Next** button.
4. If the user is to add the spare disk, select the hard disk to be used in the follow-on dialog box, and then click Finish button.

5. If the user is to remove the spare disk, click Finish button in the follow-on dialog box.

V. Synchronize/Validate/Verify Mirror Array

Synchronize Mirror

After the completion of creating mirror array, the data on the source disk has not been copied to the mirror disk. The data on the source disk and the mirror disk do not keep identical yet. The user should synchronize mirror, by which the data on the source disk will be fully copied to the mirror disk. Thus the data on the disks in the mirror array become identical. Once the creation of the mirror array is finished, the user will be asked whether to synchronize mirror at once or not. Select Yes to begin the synchronize operation or No to skip.

The status of the mirror array will remain locked if No selected to skip the synchronize operation. The user may at any time synchronize mirror which is in either locked status or normal status. The detailed steps to synchronize mirror are as follows:
1. Right-click the mirror array to be synchronized.

2. Select Synchronize Mirror item from the popup menu. The mirror array being synchronized is labeled at locked status. By selecting this disk array, the user can see the progress of synchronizing mirror.

Validate Mirror
The user can validate the locked mirror array through the following steps:

1. Right-click the locked mirror array.
2. In the popup menu, select **Validate Mirror** item.

Once the mirror disk is validated, it will be implicit by the program that the data on the mirror disk is the same with that on the source disk. And the program will no longer ask the user to synchronize mirror. If the user wants to copy the data from the source disk to the mirror disk, he has to synchronize mirror manually.

**Verify Mirror**

The operation of the verify mirror will compare the data on the source disk and that on the mirror disk. If any discrepancy is found between them, the program will ask the user to synchronize mirror to keep the data in the mirror array identical. The detailed steps to verify mirror are as follows:

1. Right-click the mirror array to be verified.
2. In the popup menu, select **Verify Mirror** item.

By selecting this disk array, the user can check the verification progress at the status pane.

**Suggestion:**

After the creation of the mirror array, if the user wants to keep the source disk data preserved, he shall select **Yes** when the program asks him whether to synchronize mirror or not.

**VI. Create Span Array**

Please follow the steps below to create the span array:

1. Click **Span** icon on the tool bar.
2. In the popup window, select hard disks from **Available Disks** column. Add them into **Span Array Member Disks** column by clicking the corresponding arrow. Then click **Next** to continue.
3. In the follow-on confirmation dialog box, please click **Create** button to start the creation or click **Cancel** button to cancel the creation. If the user selects **Cancel**, the system will
remain unchanged.

4. After the create operation is complete, please shut down all other programs. And then click Yes to restart the computer. The user may also select No to restart the computer later.

**Warning:**
In the creation of the span array, only the data on the first member disk will be preserved while the data on others will be completely destroyed.

**Note:**
At least two hard disks are needed in the creation of the span array. Disks can be connected at any cable and settled as either master or slave device.

**VII Create 0+1 Array**
The following steps shall be taken to create the 0+1 array.

1. Click **0+1** icon on the tool bar.
2. Select the strip size.
3. In the popup dialog box, select the hard disks to be used, and add them into Source Disks column or Mirror Disks column.

![Create 0+1 Array](image)

4. Click Create button to create or Cancel button to cancel the creation. If the user selects Cancel, the system will remain unchanged.

5. When the creation is complete, the program will ask the user to restart the computer.

**Note:**
1. Four hard disks are needed in the creation of the 0+1 array.
2. In the creation of the 0+1 array, the source disk will actually be the first stripe array composed of two hard disks, the mirror disk will actually be the second stripe array composed of two hard disks.
3. The capacity of the stripe array as the source disk shall be not larger than that of the stripe array as the mirror disk.
4. The capacity of the 0+1 array is equal to that of the stripe array as the source disk.
Suggestion:
In order to avoid the capacity waste, please use hard disks with the identical capacity to create the 0+1 array.

Warning:
The data on all member disks will be destroyed after creating the 0+1 array.

VIII. Remove Disk Array
The following steps shall be taken to remove disk array.
1. Select the disk array to be deleted in the disk tree.
2. Click **Remove** icon on the tool bar.
3. In the popup dialog box, select **Yes** to confirm the remove operation, select **No** to cancel the remove operation.

4. After the remove operation is complete, shut down all other programs. Then click **Yes** to restart the computer, or select **No** to restart the computer later.

Note:
1. Remove mirror array operation will generate two physical disks with the identical data on each.
2. Remove 0+1 array operation will generate two stripe arrays with the identical data on each.

Warning:
1. Remove stripe array operation will lead to the data on the striping disks all destroyed.
2. Remove span array operation will lead to the data on the
first disk reserved while the data on other disks will be all destroyed.

IX. Set Transfer Mode
The following steps shall be taken to set transfer mode of hard disk:
1. Select the hard disk in the disk tree.
2. Click Mode icon on the tool bar.
3. In the popup Set Transfer Mode window select the mode to be set.
4. Click OK button to finish or click Cancel button to cancel. If Cancel button is clicked, the system will remain unchanged.
5. The setting will take effect only after the restart of computer.

Suggestion:
1. BIOS and driver of RAID Adapter can automatically detect the optimum transfer mode supported by the corresponding hard disk. Usually no need to change the transfer mode.
2. If the option box of transfer mode is gray, it means such mode is not supported by this hard disk and can not be set.

X. Device Status
Raid Administrator detects the status of each device and shows their status information with different icons to prompt users (see
Device is with error.

Device is normal.

Device is not operatable and needs rebooting.

Mirror Array needs to be synchronized.

**Note:**
When reading data from the mirror array, the source disk is always to be read first, and the mirror disk will not be accessed if the data is successfully read out from the source disk and so the mirror disk's failure can not be detected. But when writing data to the mirror array, both of the member disks will be accessed, so failure on either of them can be detected.

**Suggestion:**
When a failure occurs on a member disk of the mirror array, this array will be labeled in error status. At this time, the mirror array can continue work normally with the other normal disk. In order to avoid data loss due to the failure of the left disk, the user shall settle the fault first and rebuild mirror with this left normal disk.

**Warning:**
1. When the member disk of either the stripe array or the span array failed, the corresponding disk array will be labeled in error status, and it will not be able to work.
2. If both the source disk and the mirror disk failed, the mirror array will not be able to work. The user shall settle the fault quickly.
Xl. Hot-swapping Hard Disks of Mirror Array

During the working process of the mirror array, if there is failure of either the source disk or the mirror disk and the spare disk has not been set, the user can remove the failed hard disk while the computer is still on and hot-plug in a new one. The program will automatically detect the plug-in of the new hard disk and prompt the user whether to add the newly plugged hard disk into the failed mirror array (see below).

Select OK to add it into the failed mirror array, the newly plugged hard disk and the left normal member disk will generate a new mirror array that will be automatically synchronized to keep the data on its member disks identical. Hot-swapping hard disks of mirror array can quick recover the failed mirror array without a shut-down of the computer or a break-off of the work, thereby providing users with the maximum data security and the easiest operation.

Note:
The hard disk used to be a substitute for the failed one must keep the same connection to IDE and setting of jumper to that of the failed one.
For example, if the failed hard disk is connected to IDE2 and set as master, its substitute must be connected to IDE2 and set as master.

**Warning:**
In order to avoid any possible damage to both the system and the device by the manual hot-swap of power and cable. Please operate hot-swapping hard disks of mirror array with the special hard disk swapping box.

**XII. Event Log**
Event Log window will be opened by clicking **View Log** icon on the tool bar.

Event log window lists all the historical operation information including event, time & description, thereby providing reference for solving the problems in the operation of RAID Administrator.

Event log menu provides users with functions as follows:
- **Set Log File:** Set the log file for recording the events.
- **Clear Log:** Clear all the current records in the file.
- **Print Log:** Print the log.
- **Exit:** shut the event log window.
**Driver Installation**

Two ways you can install your HPT372 RAID controller driver:

1. installing driver on an existing system
2. installing driver during OS installation

**Installing Driver on an Existing System**

**Windows 98SE**

**Manual Installation**

If Windows can not find new hardware, the driver can be installed through the following steps:

1. Click **My computer** --> **Control Panel** --> system --> device manager.
2. click on “? Other Device” and then double click “! PCI Raid Controller”.
3. Click **Next** in the popup window to continue.”.
4. Click Re-install device
5. Click next
6. choose "Search for a better driver than your device is using now. (recommended)"
7. Put the driver CD on the CD-ROM
8. Choose the “specify a location” and type “d:\raid\hpt372\win9x”
9. click finish and reboot.

**Windows Me**

**Manual Installation**

If Windows can not find new hardware, the driver can be installed through the following steps:

1. Click **My computer** --> **Control Panel** --> system --> device
manager.
2. click on “? Other Device” and then double click “! PCI Raid Controller”.
3. click Next in the popup window to continue.”.
4. Click Re-install device
5. choose "automatic search for a better driver (recommended)"
6. Put the driver CD on the CD-ROM
7. Win 98/ME will automatically search for the driver and then install it on the system
8. click finish and reboot.

Windows NT 4.0
1. Click Start-->Setup-->Control Panel, then double-click SCSI Adapter icon.
2. In the follow-on window, select Driver item, then click Add button.
3. In the follow-on window, select Have Disk....
4. Insert the floppy disk of driver, input the path of driver A:\WinNT, then click OK.
5. In the follow-on window, select HPT370/HPT372 UDMA/ATA RAID Controller item, then click OK.
6. Follow the system prompt to install the driver. When finished, re-start the computer.

Windows 2000
1. Click My computer-->Control Panel-->system-->hardware
   --> device manager.
2. You will see a “! RAID Controller” under unknown device
3. Double click “! RAID controller”
4. Re-install driver
5. Choose “search for a suitable driver....”
6. Insert Soyo Driver CD, click next
7. remove the check on the “Floppy Disk Drive” and click next
8. Win 2K will find RAID driver, click next
9. Windows will prompt you a “Digital signature not found window”, click yes
10. Win 2K will prompt you to insert the RAID driver CD, click ok.
11. type the path “D:\raid\hpt372\winxp”:
12. Follow the system prompt to finish the installation, and restart the computer.
13. After restart, Win 2k will detect “HPT RCM device”
14. Choose “search for a suitable driver….”, click next
15. Follow the system prompt to finish the installation.

Note: Win 2k & Win XP HPT driver are the same. Win 2k system will detect and install the driver from the Win XP directory.

**Windows XP**

1. Click **My computer**--->**Control Panel** --> system --> hardware --> device manager.
2. You will see a “! RAID Controller” under unknown device
3. Double click “! RAID controller”
4. Re-install driver
5. put the Soyo driver CD on the CD-ROM
6. Choose “Install the software automatically (recommended)” and then click next
7. Choose the driver with the location “d:\raid\hpt372\winxp\hpt3xx.inf”
8. During installation, Win XP will prompt you that this driver have not passed the Windows Logo testing, click “continue anyway”
9. Win XP will prompt you to insert the RAID driver diskette, click ok
9. Browse to the directory that contains the missing file (D:\raid\hpt372\winxp). If you click yes without browsing, Win XP will not find the .inf file.
10. Follow the system prompt to finish the installation, and restart the computer.

**Installing Driver During OS Installation**

*Install driver during Windows NT4.0 installation*

1. Go to “d:\raid\hpt372\” directory, (assuming that your CD-ROM is drive d) copy all the files and directory to a floppy disk.
2. Press F6 key when the system prompts Setup is inspecting your computer’s hardware configuration.
3. Press F6 key, the installation will continue. Later, installation program will remind user to press S key to specify other devices. Please press S key.
4. In the follow-up Device Type window, select Other item, then press Enter to confirm.
5. The installation program will prompt users to insert the floppy disk of driver. Please insert it and then press Enter to confirm.
6. In the follow-on window, select HPT370/HPT372 UDMA/ATA RAID Controller, then press Enter to confirm.
7. The follow-on interface will list the devices to be installed, in which HPT370/ HPT372 UDMA/ATA RAID Controller item should be included. (If users want to install other devices, please operate at this time. If all devices have been successfully installed, please go to next.)
8. Press Enter to continue the installation of Windows NT4.0.
Install driver during Windows 2000 installation

1. Go to “d:\raid\hpt372\” directory, (assuming that your CD-ROM is drive d) copy all the files and directory to a floppy disk.

2. If Windows 2000 is installed from the floppy drive, please let the installing program run automatically. If Windows 2000 is installed from the CD-ROM drive, please F6 key when the message Press F6 if you need to install third party SCSI or RAID driver appears.

3. Press S key to specify additional devices when the Windows 2000 Setup window appears.

4. Insert the floppy disk of driver, then press Enter to continue.

5. The system will ask whether to install driver under WinNT or under Windows 2000, please select to install driver under Windows 2000.

6. In the follow-on window of device type, please select Other and press Enter to continue.

7. The follow-on interface will list the devices to be installed, in which HPT370/HPT372 UDMA/ATA RAID Controller item should be included.( If users want to install other devices, please operate at this time. If all devices have been successfully installed, please go to next.)

Install driver during Windows XP installation

1. Go to “d:\raid\hpt372\” directory, (assuming that your CD-ROM is drive d) copy all the files and directory to a floppy disk.

2. Booting from CD-ROM, when the Windows XP Setup blue screen appear and prompt user to press F6 key to install third party SCSI or RAID driver, please press F6 Key.

3. Press S key to specify additional devices when the Windows XP Setup window appears.

4. The system will ask whether to install driver under WinNT
or under **Windows XP**, please select to install driver under **Windows XP**.

5. Insert the floppy disk of driver, then press **Enter** to continue.

6. In the follow-on window of device type, please select **HPT370/HPT372 UDMA/ATA RAID Controller for Windows XP** to continue.

7. Win XP will prompt you that a message that the driver is newer than the default driver, press S to continue.

8. The follow-on interface will list the devices to be installed, in which **HPT370/ HPT372 UDMA/ATA RAID Controller** item should be included. (If users want to install other devices, please operate at this time. If all devices have been successfully installed, please go to next.)

9. Press ENTER to continue Windows XP setup.

**How to Verify if the HPT372 RAID Controller Setup is Successful**

**Verify Installation on Windows 98/98SE/ME**

When the driver has been successfully installed and the computer restarted:

1. Right-click **My Computer** icon on desktop, and then select **Property** item from the popup menu.

2. Select **Device Manager** item from the popup window.
If there is an HPT370/HPT372 item under **SCSI Controllers**, it indicates that the driver has been installed properly.

If you cannot find these two above-mentioned device items, or there are ? or ! on device icon, it indicates that the driver has not been correctly installed and needs reinstallation.

**Verify Installation on Windows NT 4.0**

When the driver has been successfully installed and the computer restarted:

1. Click **Start-->Setup-->Control Panel**, and then double-click **SCSI Adapter** item.

2. If there is **HPT370/HPT372 UDMA/ATA RAID Controller** item in the popup window, it indicates that the driver has been successfully installed. Otherwise, users need to reinstall the driver.
Verify Installation on Windows 2000
When the driver has been successfully installed and the computer restarted:

1. Right-click My Computer icon, select Property item in the popup menu.
2. In the popup window, select Hardware item and then click Device Manager button.

If there is HPT370/HPT372 UDMA/ATA RAID Controller item in the popup Device Manager window, it indicates that the driver has been successfully installed. Otherwise, please reinstall the driver.
Verify Installation on Windows XP

After the driver has been installed and the computer restarted:

1. Right-click **My Computer** icon, then select **Property** item from the popup menu

2. In the popup window, select **Hardware** tab and then click **Device Manager** button.
If an HPT370/HPT372 UDMA/ATA RAID Controller and HighPoint RCM Device item exists in the popup Device Manager window (see above), it indicates that the driver has been successfully installed.

Otherwise, if user cannot find these four device items, or there is ? or ! markings on device icon, it indicates that the driver has not been correctly installed and user needs to delete the devices and reinstall the drivers.
APPENDIX B

Overview and Acknowledgments

C-Media 6 Channel Audio offers a new generation in audio solution: it utilizes the state-of-the-art CRL® 3D Audio technology (HRTF 3D positional audio), and supports Microsoft® DirectSound® 3D and Aureal®'s A3D® interfaces. Better yet, it supports 2/4/6 speakers and DLS based (DownLoadable Sound) wave table music synthesizer which supports the DirectMusic®. Besides being legacy audio SB pro® compatible and providing professional SPDIF IN/OUT non-distortion digital interface, it also supports MPU-401 interface, dual game ports, etc. What we provide at the side card are line-in/rear speaker jack, microphone jack, audio output jack, SPDIF/OUT jack, and 15pin D-SUB multiplexed joystick/MIDI connector.

• SPECIAL FEATURES

1. Full-duplex playback and recording. Built-in 16-bit CODEC.

2. HRTF 3D positional audio, supporting both DirectSound 3D® & A3D® interfaces. Also supports earphones, 2/4/6 channel speakers mode.


5. MPU-401 Game/Midi port and legacy audio SB Pro support.

6. Downloadable Wave Table Synthesizer, supporting Direct Music®.

Digital Audio (SPDIF IN/OUT)

1. Up to 24-bit stereo 44KHz sampling rate; voice playback/recording.

2. Full-duplex playback and recording. 120dB audio quality measured.
3. Auto detectable SPDIF/IN signal level from 0.5V to 5V.

120dB audio quality in playback, recording, and bypass modes.

• **Stereo Mixer**
  1. Stereo analog mixing from CD-Audio and Line-in
  2. Stereo digital mixing from Voice, FM/Wave-table, and Digital CD-Audio

• **Game and MIDI Interface**
  1. Fully compatible with MPU-401 Midi UART and Sound Blaster Midi mode/Standard IBM PC joystick/game port (dual channels)

**Windows Applications**

**AUDIO RACK (FOR WDM DRIVER)**

By means of a user-friendly interface (as easy as operating your home stereo system), this PCI audio rack provides you with control over your PC's audio functions, including the advantage of 4/6 speakers mode enable/disable, and perfect digital sound (SPDIF) input/output control.
Control Center
This Audio Rack consists of several major components:

**Control Center:** Controls the display of the PCI Audio Rack components.

**CD Player** can play standard audio CDs, and allow you to create your own playlist.

**MIDI Player** can play MIDI files, *.mid/*.rmi, and allow you to create your own playlist.

**MP3/Wave Player** can play mp3, wave, and MPEG-1 files. It provides EAX and equalizer to improve the sound effects when you playback the audio files. If you want to sing a song, MP3/Wave Player also provides a Karaoke function. MP3/Wave Player can record input signals and save it in a wave file as well.

**Mixer** controls the volume level of your audio inputs and outputs.
Showing or Hiding Audio Rack Components
To show or hide a component from the display, click the component button(s) listed on the top.

CD Player

CD Player: Plays standard audio CDs, and allows you to create your own playlist.

Current Track field shows the number of the currently selected CD track.

CD title and track name field shows CD title and track name. You can modify CD title and track name in [Playlist] function.

Total length field displays the total length of the selected track in minutes and seconds.

Playback time field displays the current playback time.

Button Function

Playlist: You can select or move tracks of audio CD from and into the playlist. The title of CD and the name of tracks can be modified as well. Playlist dialog will save and show them automatically when you want to play the same CD.

record input signals and save it in a wave file as well.

Mixer controls the volume level of your audio inputs and outputs.

Showing or Hiding Audio Rack Components
To show or hide a component from the display, click the component button(s) listed on the top.

**Previous song:** Loads the previous track of playlist. If current track is the first track, the last track will become the current track.

**Next song:** Loads the next track of playlist. If current track is the last track, the first track will become the current track.

**Playback:** Starts to playback the current track.

**Pause/Restart:** Pauses or restarts the current playback action.

**Stop:** Stops playback.

**Playback backward for 10 seconds:** Playback the current to 10 seconds before.

**Playback forward for 10 seconds:** Playback the current to 10 seconds after.

**Loop:** Playbacks the tracks over and over again.

**Eject:** Opens the CD-ROM drive to change the audio CD.
**Setting**: Selects the CD-ROM drive which analog output is connected to the Analog-CD in of your sound card. If your CD-ROM does not connect to the analog CD input wire, please use device manager to change the property of your CD-ROM.

![Setting dialog box]

**Help**: Shows the help screen for detailed button function descriptions.

![Help icon]

**About**: Shows software version and copyright information.

![About icon]

**Exit**: Stops and leaves the CD player.

**MIDI Player**

*MIDI Player* can play MIDI files, *.mid/*.rmi, and allow you to create your own playlist.

![MIDI Player interface]

**Current file field** shows the number of the currently selected MIDI files.

**File name field** shows the file name.

**Total length field** displays the total length of the selected file in minutes and seconds.

**Playback time field** displays the current playback time.
**Button Function**

*Playlist:* allows you to insert, remove, and record the MIDI files into and from the playlist. You can save the playlist into a file as well.

![Playlist Window]

- **Previous song:** Loads the previous MIDI file of playlist. If current file is the first MIDI file, the last one will become the current selection.
- **Next song:** Loads the next MIDI file of playlist. If current file is the last one, the first file will become the current selection.
- **Playback:** Starts to playback the current MIDI file.
- **Pause/Restart:** Pauses or restarts the current playback action.
- **Stop:** Stops playback.
- **Playback Backward for 10 seconds:** Playback the current to 10 seconds before.
- **Playback Forward 10 seconds:** Playback the current to 10 seconds after.
- **Loop:** Playbacks the MIDI files of the playlist over and over again.
**Setting**: Selects the output device you want to use to playback the MIDI files.

![](image)

**Help**: Shows the help screen for detailed button function descriptions.

**About**: Shows software version and copyright information.

**Exit**: Stops and leaves the MIDI Player.
**MP3/Wave Player**

**MP3/Wave Player** can play mp3, wave, and MPEG-1 files. It provides EAX and equalizer to improve the sound effects when you playback the audio files. MP3/ Wave Player can record input signals and save it into a wave file as well.

**Current file field** shows the number of the currently selected audio files in the playlist.

**Frequency display field** shows the frequency distribution.

**Total length field** displays the total length of the currently selected file in minutes and seconds.

**Playback time field** displays the current playback time.

**File name and status field** displays the file name, audio format, sound effects selection, playback mode, Karaoke mode, and SPDIF status.

**Button Function**

**Playlist**: Playlist allows you to insert, remove, and record the audio files into and from the playlist. The audio files include wave, MP3, and MPEG-1 encoding files.
**Previous song:** Loads the previous audio file of playlist. If current file is the first file, the last one will become the current selection.

**Next song:** Loads the next audio file of playlist. If current file is the last one, the first file will become the current selection.

**Playback:** Starts to playback the current audio file.

**Pause/Rerstart:** Pauses or restarts the current playback action.

**Stop:** Stops playback.

**Playback backward for 10 seconds:** Playback the current to 10 seconds before.

**Playback forward for 10 seconds:** Playback the current to 10 seconds after.

**Sound effector:** You can use this function to modify the special effect of the song being played. Currently, these effectors can only be used for 44.1 KHz, 16-bit format.
**Setting**: You can use this dialog to set the playback parameters and the status of SPDIF IN/OUT. For more information of SPDIF, please refer to the
Appendixes C and D.

**Recording:** You can use this function to record a wave file from any recording channel.

![Wave Recording Interface](image)

**Help:** Shows the help screen for detailed button function descriptions.

**About:** Shows software version and copyright information.

**Exit:** Stops and leaves the MP3/Wave Player.

**Mixer**

**Volume Control**

For each output signal, the control slider regulates the loudness whereas a horizontal slider the balance between the two speakers. The mute button can temporarily stop the output without changing slider positions. A button with a lit LED means the output is available, and vice versa. Several output signals
can usually be enabled at once.

**Volume**: This is the master control over all outputs. The power of an output signal is determined by both of the volume slider and the slider for the individual output. To modify all the outputs, adjust the volume slider. To change individual output(s), adjust its(their) slider(s).

**CD**: Regulates the CD drive audio input level.

**MIC**: Regulates the input level of microphone.

**WAVE**: Regulates wave (voice) playback levels.

**MIDI**: Regulates the MIDI music play level.

**AUX IN**: Regulates the Auxiliary input play level.

**MONO IN**: Regulates the Mono input level.

**LINE IN**: Regulates the Line-In levels.

**Advanced**: Regulates the advanced settings.

### Recording Control

![Recording Control Interface]

For each input signal, a control slider regulates the loudness whereas a horizontal slider the balance between the two channels. The select button can temporarily select input signal without changing slider positions. A button with a lit LED means it is available, and vice versa.

**CD**: Regulates the CD drive audio input level.

**MIC**: Regulates the input level of microphone.

**WAVE**: Regulates wave (voice) playback level.

**FM**: Regulates the FM music play level.
**AUX IN**: Regulates the Auxiliary input play level.

**LINE IN**: Regulates the Line-In level.

**SPDIF IN**: Enables the recording from SPDIF in. SPDIF-in is mutually exclusive with other input signals.

**Advanced**: Regulates the advanced settings.

**Advanced - SPDIF**

SPDIF dialog provides a full control over SPDIF IN/OUT functions. You can use these settings to connect your computer to other pieces of audio device, such as: Mini Disc players, amplifiers...etc. For more information of SPDIF, please refer to the Appendixes C and D.

**Advanced - Speakers**

Speakers dialog provides an interface allowing you to set your speakers configurations. First, You should make sure what model type your speakers are, and what the correct configurations are. And this dialog also shows the current status and functions of the phone jacks of your audio device. You can always refer to this to make sure whether or not the connections of your speakers and microphone are correct.
Advanced - Volume

Volume dialog provides a full control over the volume of the six channels digital output. You can adjust the volume of your speakers in this dialog. Please note that the volume of analog path is not controlled by this function.
Advanced - Sound effects

Sound effects dialog allows you to modify the special effects of the song and game being played. Currently, these effectors can only be used for the player or the game which utilizes DirectSound 2D and 3D to playback their music.

Advanced - Options

Options dialog provides a hot key setting to control the Mixer in an easy way. Please note that other applications might be affected by this if you use the same hot key setting.
Please use 'Load Mixer Defaults' to change all settings to default values.

MULTI-CHANNEL AUDIO DEMO

CMI8738 PCI-Based C3DX Audio Chip provides many advanced functions, such as:

* HRTF-based CRL® 3D extensional/positional audio; API compatible with Microsoft® DirectSound® 3D and Aureal® A3D API. Supports rear side speakers; C3DX positional audio in 4/6CH speakers mode. (5.1 CH, DVD AC-3® home theater available).

* Compatible with EAX™ (Environment Audio eXtention).

* KARAOKE ascending/descending keys, Echo.

* Supports Center/Subwoofer side speakers. (for chip model 039 and the following models).

To let everyone avail himself/herself of the above functions, a user-friendly interface (Multi-Channel Audio Demo) was designed with the following functions:

1. 4 CH speakers mode, including Demo1 and Demo2.

2. EAX™ (Environment Audio eXtention) support.

3. HRTF-based CRL® 3D extensional/positional audio.

4. KARAOKE ascending/descending keys, Echo, and microphone ascending/descending keys.

5. 6 CH speakers mode, including Demo1 and Demo2. (for chip models 039 and the following models).
Speakers and Microphone Connection

Before running this demo program, you have to connect the speakers to the correct phone jacks.
How to Enable 4/ 5/ 5.1 Speakers

You have to activate the "Mixer" program and enable the "4-Speaker", "5 Speakers", or "5.1 Speakers" mode to let the audio driver recognize your rear or center/subwoofer speakers, and have the front/rear/center/subwoofer speakers work. The audio driver will activate the audio chip to output different sounds from the front/rear/center/subwoofer speakers based on different playback formats. For more information, please refer to the 5.1.5 Mixer Advanced-Speakers dialog.

How to Adjust the Microphone Volume

You have to use the microphone when availing yourself of the "Echo" function. If the microphone is on and is very close to the speakers, it will cause feedback between the two. Also, unusual high frequencies or buzzing sounds might be heard from the speakers. To avoid this, you have to adjust the microphone volume in both recording and playback. Sometimes you might have to adjust the main and Wave volume as well. Please left-click the mouse to adjust the microphone(MIC) in both Volume and Recording Control.

Test Your Speakers Connection

To make sure that the front and the rear speakers are correctly connected, you can use the following program to testify individual speaker output. Move cursor to whichever speaker you want to test and left-click the mouse. If the setup is correct, you can hear music coming from that speaker alone. Each music output is different for distinction.
The Center and Subwoofer speakers are only supported by chip model 039 and the following models.

Demonstrations

Demo 1 and Demo 2 are specially design for 4-speaker system demonstration. Select Demo 1 and/or Demo 2 by left-clicking the mouse. Sit back and relax, and let the music take control.

How was it like? Isn't it fantastic??? If you don't have 4-speaker system, hurry up and buy yourself one right away!
**EAX**

Monotonous footsteps generate distinctive sound effects in different environments. In this Demo, you can hear a lady wearing high heels walk in different surroundings: generic environment, bathroom, sewer pipe, and underwater. Left-click the mouse to activate this Demo and feel the differences.

![EAX Demo](image)

**HRTF**

HRTF stands for Head Related Transfer Functions, and it is a set of audio filters varying locations of sound effects (spatial hearing cues) in three-dimension measured from the listener's eardrum.

This technology and special digital signal processing are used to recreate spatial hearing cues, making our ears hear realistic and three-dimensional sounds coming from a pairs of loud speakers or headphones.

When you activate this Demo, you can hear a helicopter fly around you clockwise for three times.
Echo

Like to sing along with Karaoke? It might occur to you to use your PC for this. However, when you turn on the microphone, play the song, and ready to sing, you see that the effect is not as good as expected. Why? Echo is the answer. To help you solve this problem, this demo is designed to include the Echo function. Please left-click the upper right of the demo screen as shown below, and choose your own music file to play. Please note the file type has to be MP3 file.
Please left-click "Echo" to activate the function. For pitch adjustment, please use ↑ and ↓ keys on the keyboard. For microphone pitch adjustment, please use "+" and "-" keys on the numeric keyboard. To resume the original, please use ← and → keys.

Using MP3/Wave Player to Work With Mini Disc Recording

MP3/Wave Player is an easy and powerful tool for Mini Disc recording. Besides allowing you to create your own playlist, it also provides a control interface of SPDIF IN/OUT of C-Media's sound card. The following 4 steps can help you create your album into Mini Disc easily.

**STEP 1.** Using optical fiber to connect the sound card and the MD player. MD player will start to do the recording and turning on the SYNC mode. (See above 1. Output A. PC to MD player)

**STEP 2.** To execute MP3/Wave Player and modify the playlist. You should select those files whose format can be recognized by the MD Player. You can also change the sound effects if you like. (See also 5.1.4.)

**STEP 3.** In 'Setting' dialog, check 'Enable SPDIF-OUT', input the playback delay time, and select 5 Vp-p (Optical). Please note that in playback, if there is no lapse longer than three seconds between each track, the MD player can not recognize the tracks and will record all of them into one. It is recommended that you set the lapse time to 3~5 seconds to meet all type of MD player requirements.
STEP 4. Start to play the songs. You will see that the MD player starts to do the recording as well.

Recording from SPDIF-IN

The optical module can be connected to SPDIF-IN device, such as the portable CD-ROM player, the CD-ROM drive, the MD Player, to name a few. The Windows application and the MP3/Wave player can be used to do the recording of the signal from SPDIF-IN. The recording steps are as follows:

STEP 1. Use optical fiber or coaxial to connect the sound card and SPDIF-IN device. (See also Appendix C 2. Input)

STEP 2. Execute MP3/Wave Player. In 'Setting' dialog, select 5 Vp-p (Optical) or 0.5 Vp-p (Coaxial).
STEP 3. In 'Wave Recording' dialog, you should select the recording format and SPDIF-IN recording channel. Then input the file name. Before recording, please turn on your SPDIF-IN device and start to playback. Finally, press 'Record' to start the recording process.
APPENDIX C

Troubleshooting at First Start

Boot-up Issues
The system do not power-up, no beeping sound heard and the CPU fan does not turn on.

1. check if the power cord is plug to the power source.
2. check if the power is connected to the M/B.
3. check if the cable of the case power button is connected to the M/B power button connector (see connectors and plug-ins in the manual for more info)
4. make sure the power supply is not defective. Change the power supply. The minimum should be 250 watts.
5. remove the M/B from the case and test the system. The M/B might be shorted to the case.

The system power-up, no video, no beeping sound heard, but the CPU fan is turning.

1. clear CMOS battery. (JP5 connector, see Quick start guide for more info on how to clear the CMOS)
2. check all the jumper settings on the M/B. (if the M/B have any)
3. check if the CPU is ok by using another CPU (check the Quick start guide for CPU supported on this M/B)
4. check if the power supply is ok. The minimum should be 250 watts.
5. make sure the CPU fan is connected to CPUFAN1 connector.
6. remove the M/B from the case and test the system. The M/B might be shorted to the case.

The system power-up, no video, beeping heard.

1. clear CMOS battery. (JP5 connector, see Quick start guide for more info on how to clear the CMOS)
2. check all the jumper settings on the M/B. (if the M/B have any)
3. check the memory module and the VGA card if inserted properly on the M/B.
4. if yes, change the memory module, it might be defective. Make sure the memory specification is supported by the M/B. (for more info on this, check our FAQ website)
5. change the VGA card.

**The system turns on for some seconds then shutdown by itself.**

1. check if the CPU fan is connected to the CPUFAN1 connector.
2. the CPU might be overheating. Check the CPU FAN if it is defective or see if the CPU fan is in contact with the CPU.
3. clear CMOS battery. (JP5 connector, see Quick start guide for more info on how to clear the CMOS)
4. make sure the power supply you have on your system support the M/B specification. Example. If you have a P4 M/B, you need to use a P4 power supply.
5. if you already checked the power supply specification, change the power supply it might be defective. The minimum is 250 watts.
6. remove the M/B from the case and test the system. The M/B might be shorted to the case.

**When I boot up my system, everything works fine, it sees my CPU and memory, detects my hard drive, floppy drive and CD-ROM but locks up at "Verify DMI pool data... ". Don't go any further. What should I do?**

1. clear CMOS battery. (JP5 connector, see Quick start guide for more info on how to clear the CMOS)
2. if still has the problem, remove all other add-on cards except video card and floppy drive see if it can boot from floppy. Then put peripherals in one by one to identify which one cause the lockup.
3. change the CPU.
During Boot-up, my computer says CMOS memory Checksum error.

What is the problem?
1. clear CMOS memory.
2. re-flash BIOS. Check on how to flash bios on the later part of this book.
3. change the CMOS battery, the battery might be drained.
4. the BIOS chip might be failing.

Stability Issue

My system intermittently locks up, very unstable.
1. check the CPU temp. it might be overheating. Change the CPU FAN.
2. do not over clock your CPU.
3. check the specification of the memory module, maybe the M/B do not support it.
4. go to BIOS setup and load fail safe settings. Please check if the system performance in the BIOS setup is set to Turbo/Maximum.
5. check website for latest bios update.
6. check website for FAQ’s regarding instability issue.
7. change the memory module or CPU.
8. the power supply might not have enough wattage to support all the peripherals. if your system has other peripherals connected, like CD-RW, extra HDD, etc. disconnect them.
9. Install the Intel chipset software installation utility.

My system intermittently locks up, during Windows installation
1. go to BIOS and load “load optimized default”.
2. check website for any BIOS update.
3. if still has the problem, remove all other add-on cards except CPU/Memory/Video card/Hard disk. See if you can finish Windows installation. Then put peripherals in one by one to identify which one cause the lockup.
**BIOS Issue**

**Where can I find the BIOS revision of my mainboard?**

It will be displayed on the up-left corner on the screen during boot-up. It will show as your board type followed by the revision number, such as kvxa_2BA1 (meaning BIOS revision 2BA1 for the SY-K7V Dragon plus board) or 6BA+ IV_2AA2 which means SY-6BA+ IV motherboard with 2AA2 bios.

**Where can I find the latest BIOS of my motherboard?**

Please go to the technical support page of one of the SOYO websites (Taiwan: www.soyo.com.tw), and look up your motherboard to find the latest BIOS revision.

**How can I flash the BIOS?**

1. download the BIOS on our support website.
2. Make a bootable floppy disk with out any memory manager loaded. (i.e. himem, emm386, etc..)
3. copy the BIOS file and awdflash utility to the diskette.
4. type "awdflash biosname.bin /sn /py".
5. then reboot.

**After flashing the BIOS, my system will not boot-up**

1. try clearing the CMOS.
2. the BIOS chip is defected due to unsuccessful flash, contact your nearest Soyo branch for re-flashing.

**Is there a way to reprogram my BIOS after an unsuccessful flash?**

No other way, you need to send back the BIOS ROM to your nearest Soyo branch for re-flashing.

**VGA Issue**

**I cannot set my VGA to go higher than 16 color (640x 480)**

1. make sure that you have installed the Intel chipset software installation utility.
2. install/ re-install the VGA driver.

**After wake-up from Suspend to RAM or Standby mode, the screen has**
no display but I can hear the hard disk operating
1. install the Intel chipset software installation utility.
2. Check the VGA card manufacturer for driver update. Or make sure the VGA card support Suspend to Ram function.

Audio Issue

How can I disable the on-board Audio?
Go to the SOYO Combo Feature in the BIOS setup, then set the “onboard 6CH H/W audio” to disable.

I cannot get the sound working on my system.
1. check if the speaker wire is connected to the line out connector in the M/B.
2. check if the speaker power is powered on.
3. install the audio driver supplied on our driver disc.
4. Check BIOS setup if “onboard 6CH H/W audio” is enabled.
5. if sound already installed, check our website for audio driver update.

I cannot get the sound working on the 5.1 channel speaker.
1. install the audio driver and application. Check driver installation for more info.
2. check if the settings in the 5.1 speaker control box are correct, like if you have a SPDIF connector but the setup in the speaker box is set to analog.
3. check if the speaker connection to the M/B is correct.
4. make sure the software setup is correct. check manual for more info.

The sound is working in my system, but when I play CD music from the CD-ROM, I do not get any sound. What is wrong?
This is because the 3-wire audio cable from the CD-ROM to the on-board CDIN1 connector in the M/B is not connected. See manual for location of CDIN1.

The sound from my sound card is distorted when Windows start.
What is wrong?

1. if you are using an ISA sound card, please make sure the IRQ needed for the sound card is set to 'Legacy ISA' in the bios. In other word, if your ISA sound card takes IRQ5, then set IRQ5 to 'Legacy ISA'.

The sound and everything else works fine except that the recorder and microphone do not work. What is wrong?

1. Please go to sound properties and check if the recorder and microphone in the are enabled.
2. check if Microphone is ok.

Hard disk/FDD/ CD-ROM issue

My Western digital HDD is not detected during boot-up
Change the jumper settings to cable select or single.

Sometimes the system finds my CD-ROM, sometimes not

1. check CD-ROM if it is working properly.
2. the power supply might not have enough wattage to support all the peripherals. if your system has other peripherals connected, like CD-RW, extra HDD, etc. disconnect them.

When I boot up my new computer I got "floppy boot failure" and the LED on the floppy stays on

1. Make sure the red wire of floppy ribbon cable goes to Pin1 on the floppy drive side (don't trust the "key lock" or "notch") and use the end-connector of the cable (don't use middle one).
2. change the Floppy disk drive.

RAID issue

Windows do not detect the on-board RAID
Enable the on-board RAID function in the BIOS.

Can I use my CD-ROM on IDE 3 & 4?
Yes, you can use the CD-ROM on IDE 3 & 4.

Can I use IDE 3 & 4 to boot from CD-ROM?
No.

**Can I use IDE 3 & 4 as a normal IDE channel?**
Yes, just connect your HDD on IDE 3 or IDE 4. No need to change any settings in the BIOS.

**I cannot get the HDD to boot from IDE 3 or IDE 4, why?**
Make sure that the 1st boot device in the BIOS is set to SCSI.

**USB Issues**

**Can I use USB port 3_4 and port 5_6 for keyboard resume function?**
This M/B has 6 USB ports, but only the 2 at the back panel can be used for USB keyboard resume function.

**I cannot get my USB working, help!**
Please check if the system performance setting in the BIOS is set to maximum/Turbo, if yes, then enable the USB by setting the system performance to normal or manually enable the USB port (on-chip USB controller under Integrated Peripherals).

**LAN Issues**

**During LAN driver installation, the system hangs on 75%, why?**
Enable the onboard LAN in the BIOS setup..
APPENDIX D
How to contact us:

- If you are interested in our products, please contact the SOYO sales department in the region you live.
- If you require Technical Assistance, please contact our Technical Support in the region you live.

SOYO prefers Email as communication medium, remember to always add to the email the country that you live in.

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