SY-D6IBA2 Motherboard

****

Single or Dual Pentium® II processor supported

82440 BX AGP/PCI Motherboard

66&100MHz Front Side Bus supported

ATX Form Factor

Ultra2 SCSI onboard

****

User's Guide

&

Technical Reference

About This Guide

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

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Version 1.0
D6IBA2 SERIAL

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

100% POST CONSUMER RECYCLED PAPER

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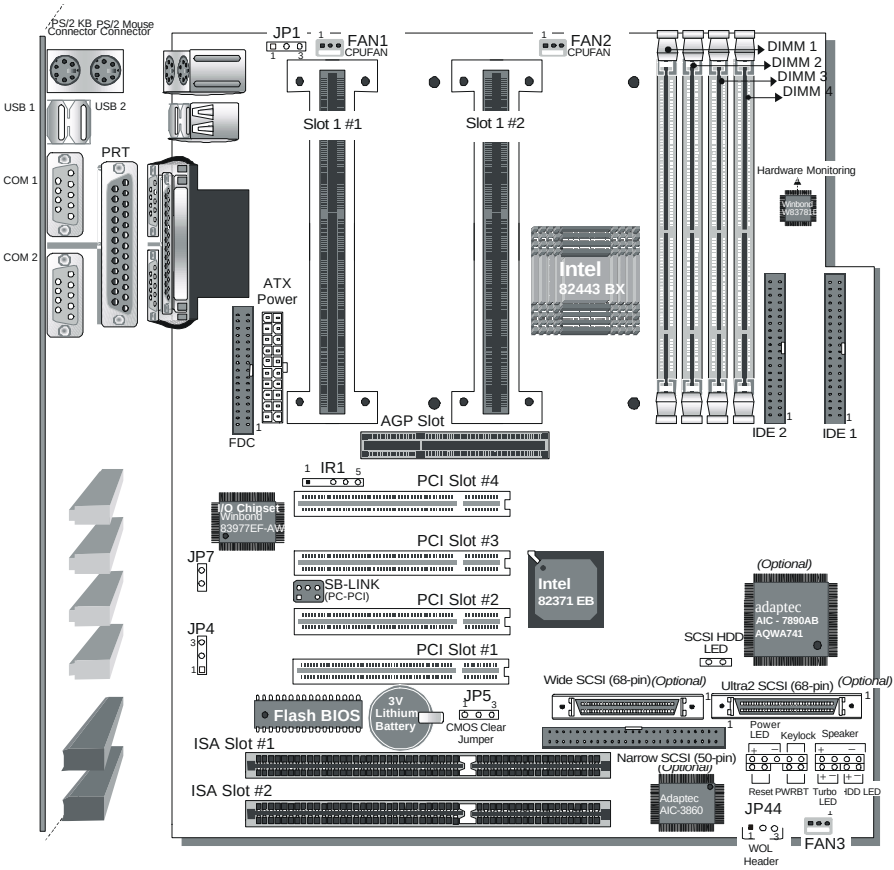
SY-D6IBA2 MOTHERBOARD LAYOUT



Back Panel **SY-D6IBA2 Platform**

Chapter 1

INTRODUCTION

The **SY-D6IBA2** AGP/PCI Motherboard is a high-performance, **Single or Dual Slot 1 processor** supported, ATX form-factor system board. **SY-D6IBA2** uses the 82440 BX Chipset technology and supports most Slot 1 processors. This Motherboard is fully compatible with industry standards and adds many technical enhancements.

1-1 KEY FEATURES

Supports Intel Pentium® III processor (450-550MHz) & Pentium® II processor (233-450MHz)
Auto-detect CPU voltage
Soft CPU settings in BIOS with the "SOYO COMBO Setup"
SCSI onboard *(optional)*
PC97, ACPI, Ultra DMA/33
Supports system memory up to 1GB (1000 Mbytes)
Power-on by modem or alarm
Supports Wake-On-LAN (WOL)
Supports Power-On by PS/2 keyboard
Supports Creative SB-LINK ™(PC-PCI) for PCI audio
Supports onboard hardware monitoring and includes Hardware Doctor ™utility
1 x 32-bit AGP slot
4 x 32-bit bus mastering PCI slots
2 x USB ports onboard
1 x IrDA port
Supports multiple-boot function
ATX power connector
Y2K Compliant
Power failure resume

SY-D6IBA2 PLATFORM FEATURES

Board Size 4-layer PCB, 27x30.5cm (10.6" x 12"),
ATX Form Factor

Slot1Slot 1 for Pentium® III & Pentium® II

- Supports the following processors
  - **100MHz FSB**
    Pentium® II 350/400/450 MHz
    Pentium® III 450/500/550 MHz
  - **66MHz FSB**
    Pentium® II 233/266/300/333 MHz
- Supports both boxed and non-boxed type of CPUs
- Includes a CPU mount kit with retention clip
- Features Auto-detection of CPU voltage

Chipset 82440 BX AGP/PCI Set

ATX Power 20-pin Male Connector

FAN1 Slot1 #1 CPU: 3-pin CPU Cooling Fan Connector

FAN2 Slot1 #2 CPU: 3-pin CPU Cooling Fan Connector

FAN3 Chassis Cooling Fan Connector

Memory DIMM Bank (DIMM1~4)

- Four strips of 168-pin Unbuffered SDRAM DIMM
- Supports 8/16/32/64/128/256MB DIMM modules in each bank
- Provides up to 1 Gbytes of main memory
- Supports ECC configuration

BIOS System BIOS built-in, Award BIOS

- APM, ACPI and "Plug-and-Play" functions
- Supports multiple-boot function
- Onboard FLASH memory for easy upgrade
- Y2K Compliant

Bus Controller Compliant with version 2.1 PCI specifications

PCI Slots	4 x 32-bit Bus Mastering Slots
AGP Slot	1 x 32-bit AGP Slot
ISA Slots	2 x 16-bit ISA Slots
IDE1, IDE2	2 x 40-pin Bus Mastering E-IDE/ATAPI Ports ➢ IDE1: Primary IDE Device Connector ➢ IDE2: Secondary IDE Device Connector ➢ Supports Ultra DMA/33
FDC	1 Floppy Disk Drive (FDD) Port (Supports 1.2MB/1.44MB/2.88MB and LS120/3-mode FDD)
IR1	5-pin Serial Infrared Device Header
Keylock	5-pin KeyLock Header
Reset	2-pin Reset Switch Header
Speaker	4-pin PC Speaker Header
TB_LED	2-pin Turbo LED Header
HDD_LED	2-pin IDE Device LED Header
PWRBT	ATX Power On/Off Switch 2-pin Header
JP5	CMOS Clear Jumper
JP1	Power-On by PS/2 Keyboard Jumper
JP7	Power Button Enable Jumper
JP44	WOL (Wake-On-LAN) 3-pin Header
SBLINK ™	PCI Audio Card Header, (PC-PCI)
Ultra-Wide SCSI	
	68-pin Ultra-Wide SCSI Connector onboard *(optional)*
Ultra 2 SCSI	68-pin Ultra 2 SCSI Connector onboard *(optional)*
Fast SCSI	50-pin Fast SCSI Connector onboard *(optional)*

SY-D6IBA2 BACK-PANEL FEATURES

PRT	1 x Onboard 25-pin Female Parallel Printer Port ➢ ECP/EPP/SPP multi-mode parallel printer port
COM1, COM2	2 x Onboard RS-232 Serial Ports ➢ Feature 2 x high-speed UARTs (with 16550 FIFO)
PS/2 KB	1 x Onboard PS/2 Keyboard Connector
PS/2 Mouse	1 x Onboard PS/2 Mouse Connector
USB1, USB2	2 x Onboard USB (Universal Serial Bus) Connectors

1-2 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.

1-3 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.

Chapter 2

HARDWARE SETUP

Congratulations on your purchase of **SY-D6IBA2** 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. Single or Dual Slot 1 processor with built-in CPU cooling fan (boxed type).

Note: This Motherboard supports non-boxed type CPUs. The heavier CPU cooling fan requires the installation of a CPU support stand included in the Motherboard package.

2. DIMM memory module
3. Computer case and chassis with adequate power supply unit
4. Monitor
5. PS/2 Keyboard
6. Pointing Device (PS/2 mouse)
7. Speaker(s) (optional)
8. Disk Drives: HDD, CD-ROM, and Floppy drive …
9. External Peripherals: Printer, Plotter, and Modem (optional)
10. Internal Peripherals: Modem and LAN cards (optional)
11. Internal SCSI Devices: Hard/Floppy/CD-ROM Drives, Tape Drives, Removable Media Drives, etc. *(optional)*

2-2 UNPACKING THE MOTHERBOARD

When unpacking the Motherboard, check for the following items:

- The **SY-D6IBA2** 82440 BX AGP/PCI Motherboard
- The *Quick Start Guide* *
- The Installation CD-ROM *
- Three SCSI Driver Installation Diskettes labeled "7800 Family Manager Set V3.01" *(optional*
- One IDE Device Flat Cable
- One Floppy Disk Drive Flat Cable
- One 50-pin Fast SCSI Cable *(optional)*
- One 68-pin Ultra-Wide SCSI Cable *(optional)*
- One 68-pin Ultra2 SCSI Cable *(optional)*

* If your board comes with a driver disc and a paper manual, the Quick Start Guide and the CD-ROM are not included in the package.

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.

2-3 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.

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. Single or Dual CPU Installation

Notice 1 (Dual processor): When installing two processors (Dual CPU), please make sure the front side bus and working frequency are identical for both processors.

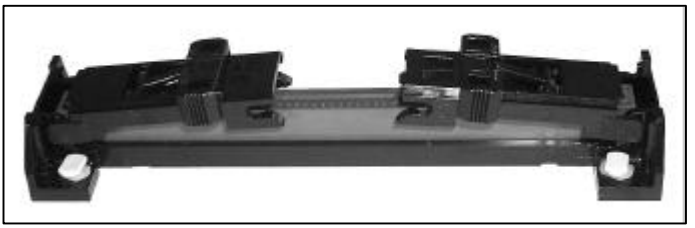
Notice 2 (Single processor): If you are using a single processor, preferably install the processor in Slot 1 #1, leaving Slot 1 #2 empty for future expansion to dual CPU.

Your SY-D6IBA2 Motherboard comes with two CPU retention Module. The retention set is used to hold each Single or Dual Slot1 processor attached to the Slot 1 #1 or Slot1 #2 CPU connectors on the Motherboard.

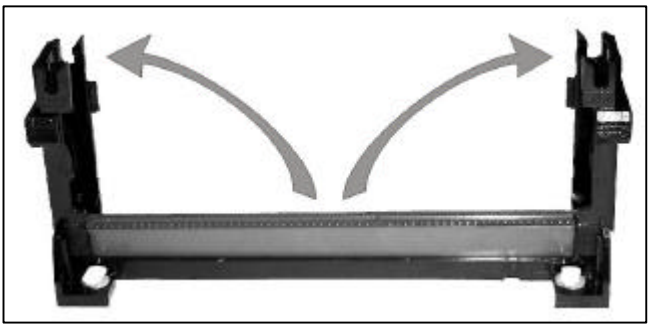
Your SY-D6IBA2 motherboard comes with a CPU retention set kit. The retention set is used to hold the processor attached to the Slot 1 CPU connector on the motherboard.

Follow these instructions to install your Slot 1 processor correctly.

- Retention Module



1. Open the two sides by folding them up.



2. Push the locks on top of the CPU inward.

3. Insert the CPU into the retention module. The CPU fits in the CPU slot in only ONE way, do not try to force it in.

4. After completely inserting the CPU, push the two locks on top of the CPU outward. Now your CPU is ready for use.

To remove the CPU, press the two notches on top of the CPU inward. Now press the two slides on the retention module down and remove the CPU.

Note: Installing a heat sink and cooling fan on top of your CPU is necessary for proper heat dissipation. Failing to install these items may result in overheating and possible burn-out of your CPU.

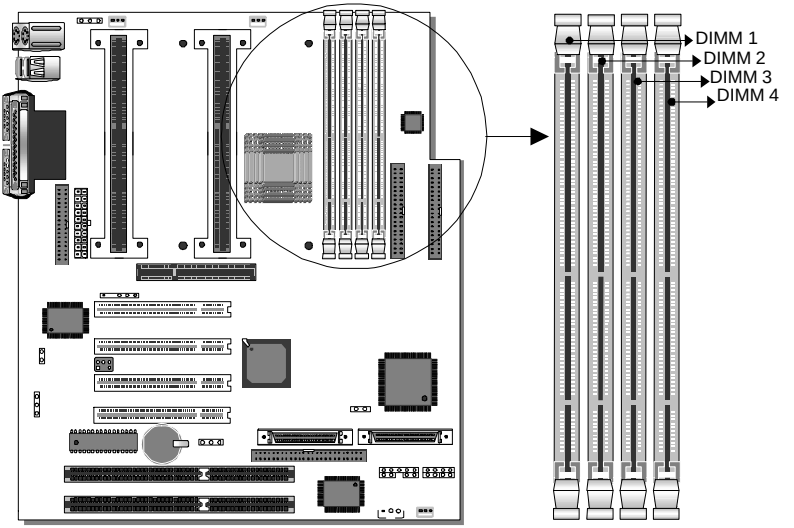
Step 2. CPU Fan Installation

Your Slot 1 processor kit comes with a cooling fan. Mount the fan on the processor according to the instructions provided by the manufacturer. The fan is a key component that will ensure system stability. The fan prevents overheating, therefore prolonging the life of your CPU.

Note: Remember to connect the fan to the appropriate power source.

Step 3. SDRAM Memory Module Installation

This Motherboard features 4 x DIMM Banks for 168-pin 3.3V unbuffered and registered DIMM modules.



Your board comes with four DIMM sockets, providing support for up to 1GB of main memory using DIMM modules from 8MB to 256MB. For 66MHz front side bus CPUs use 12ns or faster memory; for 100MHz front side bus CPUs use 8ns (100MHz, PC100 compliant) memory.

Memory Configuration

Number of Memory Modules	DIMM 1	DIMM 2	DIMM 3	DIMM 4
1	1st			
2	1st	2nd		
3	1st	2nd	3rd	
4	1st	2nd	3rd	4th

RAM Type	SDRAM
Memory Module Size (MB)	8/16/32/64/128/256 Mbytes

Notice 1: 256 MB memory modules only available on PC registered DIMM.

Notice 2: Always install memory modules in the order prescribed in this table.

Notice 3: Do not install unbuffered and registered memory modules together.

Important: It is of prime importance that you install DIMM modules as outlined in the table above in order to preserve signal integrity on 100MHz front side bus systems.

Step 4. IDE Device Installation (HDD, CD-ROM)

This Motherboard offers two primary and secondary IDE device connectors (IDE1, IDE2.) It can support up to four high-speed HDD or CD-ROM.

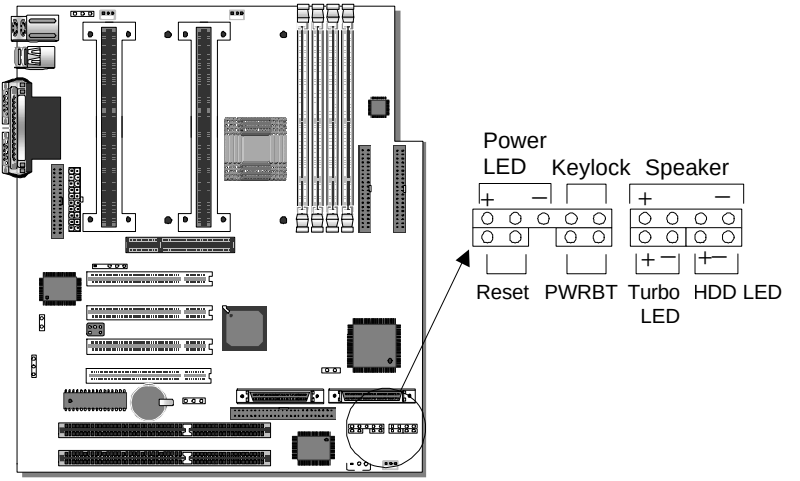
Connect one side of the 40-pin flat cable to the IDE device (HDD or CD-ROM) and plug the other end to the primary (IDE1) or secondary (IDE2) directionally keyed IDE connector on the Motherboard. This Motherboard can support up to four HDDs.

Step 5. 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.

Step 6. 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, according to the following pin assignment: pin 1,3 are for Power LED and pin 4,5 are for Keylock.

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.

3. Speaker

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

4. Turbo LED

Connecting the 2-pin Turbo LED cable to the corresponding Turbo LED header will cause the LED to light whenever the system is in Turbo mode.

The manufacturer has permanently set this Motherboard in Turbo mode due to most hardware and software compliance to turbo mode.

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.

6. ATX Power On/Off Switch

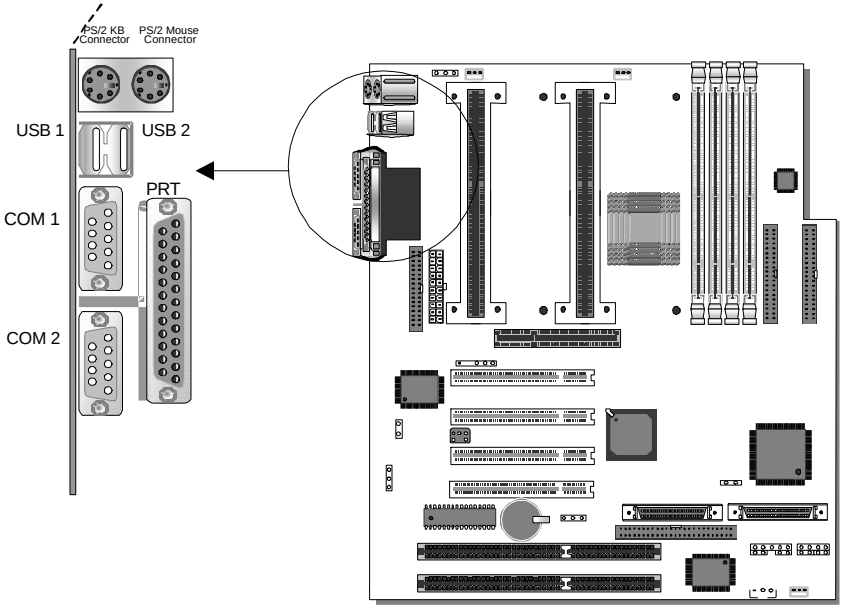
Attach the 2-pin momentary type switch to the PWRBT header for turning On or Off your ATX power supply.

Step 7. 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 COM1/COM2 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.

4. PS/2 Mouse

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

5. Universal Serial Bus USB1/USB2

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

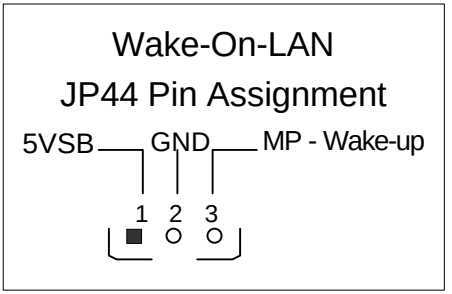
- USB devices under Win98 are allowed.
- With Win95, use the flow OpenHCI specifications.

Step 8. 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 JP44 header on the Motherboard. This WOL function lets users wake up the connected computer through the LAN card.

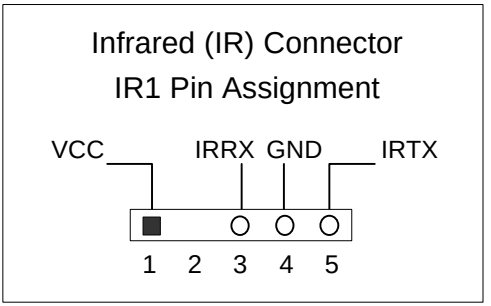
Please install according to the following pin assignment:



2. Infrared (IR1)

Plug the 5-pin infrared device cable to the IR1 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:



Step 9. Cooling Fan Installation

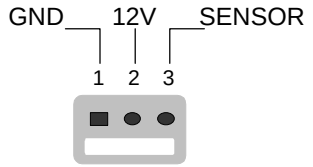
1. CPU Cooling Fans (FAN 1, FAN 2)

After you have seated the Single or Dual CPU properly on the Motherboard, attach the 3-pin fan cable from each CPU to the corresponding CPUFAN connector FAN 1 or FAN 2 on the Motherboard.

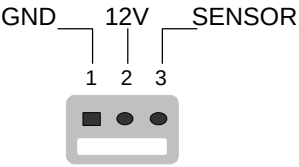
The CPU fans will stop when the system enters into Suspend Mode. (Suspend mode can be enabled from the BIOS Setup Utility, [POWER MANAGEMENT] menu.)

To avoid damage to the system, install according to the following pin assignment:

Slot1 #1 CPU Cooling Fan
FAN 1 Pin Assignment



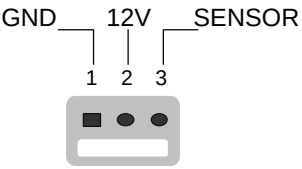
Slot1 #2 CPU Cooling Fan
FAN 2 Pin Assignment



2. Chassis Cooling Fan (FAN 3)

Some chassis also feature a cooling fan. This Motherboard features a FAN 3 connector to provide 12V power to the chassis fan. Connect the cable from the chassis fan to the 3-pin connector labeled FAN 3. Install according to the following pin assignment:

Chassis Cooling Fan
FAN 3 Pin Assignment



Note: FAN 1 and FAN2 must be installed for this Motherboard, CHAFAN is optional.

Step 10. AGP VGA Card

Insert the AGP VGA card into the AGP slot. Then connect the monitor information cable to the AGP card back plane external connector.

Follow the manufacturer's instructions to perform the AGP VGA drivers installation.

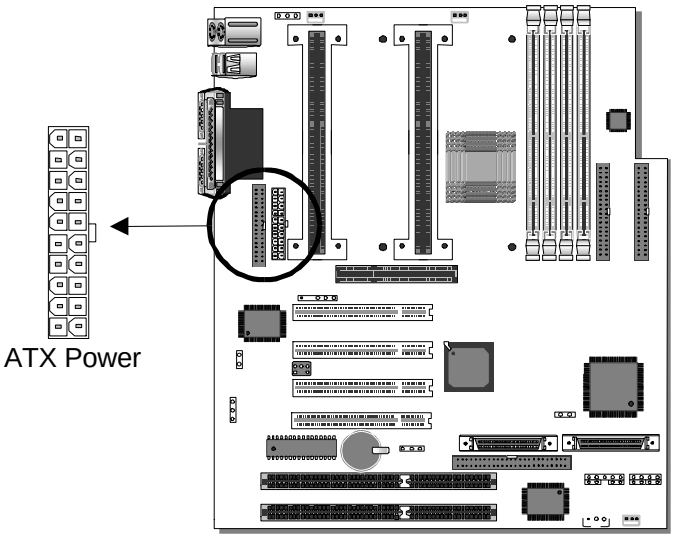
Other Display Cards: Insert other types of VGA cards into the PCI or ISA expansion slots according to card specifications.

Step 11. PCI Audio Card

Some PCI soundcards require a PC-PCI DMA channel. Attach the 5-pin cable from your creative sound blaster PCI audio card to the SB-LINK ™header on the Motherboard. The SB-LINK™ will forward requests for legacy DMA channel to the PCI Bus.

Step 12. ATX Power Supply

Plug the connector from the power directly into the 20-pin male ATX PW connector on the Motherboard, as shown in the following figure.



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

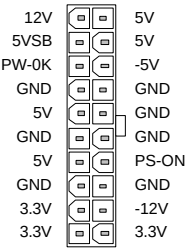
Turn off the power supply and unplug the power cord of the ATX power supply before connecting to ATX PW connector.

The Motherboard requires a power supply with at least 200 Watts and a "power good" signal. Make sure the ATX power supply can take at least 10 mA* 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:

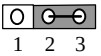
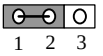
ATX Power



- **Pay special care to the directionality.**

Step 13. Power-On by PS/2 Keyboard Jumper (JP1)

You can choose to enable the Power-On by PS/2 Keyboard function by shorting pin 2-3 on jumper JP1, otherwise, short pin 1-2 to disable this function.

Power-On by PS/2 Keyboard	Enable	Disable
JP1 Setting	Short pin 2-3 to enable the Power-On by PS/2 Keyboard function. 	Short pin 1-2 to disable the Power-On by PS/2 Keyboard function. 

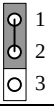
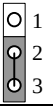
Note: When using the Power-On by PS/2 Keyboard function, please make sure the ATX power supply can take at least 720mA load on the 5V Standby lead (5VSB) to meet the standard ATX specification.

Step 14. CMOS Clearing (JP5)

After you have turned off your computer, clear the CMOS memory by momentarily shorting pins 2-3 on jumper JP5, for a few seconds. Then restore JP5 to the initial 1-2 jumper setting in order to recover and retain the default settings.

After you have turned off your computer, clear the CMOS memory by momentarily shorting pin 2-3 on jumper JP5 for at least 5 seconds. Then permanently short pin 1-2 to retain new settings.

Jumper JP5 can be easily identified by its white colored cap.

CMOS Clearing	Retain CMOS Data	Clear CMOS Data
JP5 Setting	Short pin 1-2 to retain the new CMOS settings. 	Short pin 2-3 for ***at least 5 seconds*** to clear the CMOS. 
Note: You must unplug the ATX power cable from the ATX power connector when performing the CMOS Clear operation.		

Step 15. Power Button Enable (JP7)

Your system can be power on by either pressing a power button or typing in a password, which can be set in the BIOS SOYO COMBO Setup. To avoid being unable to power up the system due to of forgetting the password, you can place a jumper cap to short JP7. This will always enable the Power Button.

Power Button Enable	Power Button always enabled	Power Button according to BIOS setting
JP7 Setting	Short pin to always enable the Power Button. 	Open pin for a Power Button function according to the BIOS setting. 

Step 16. Power On

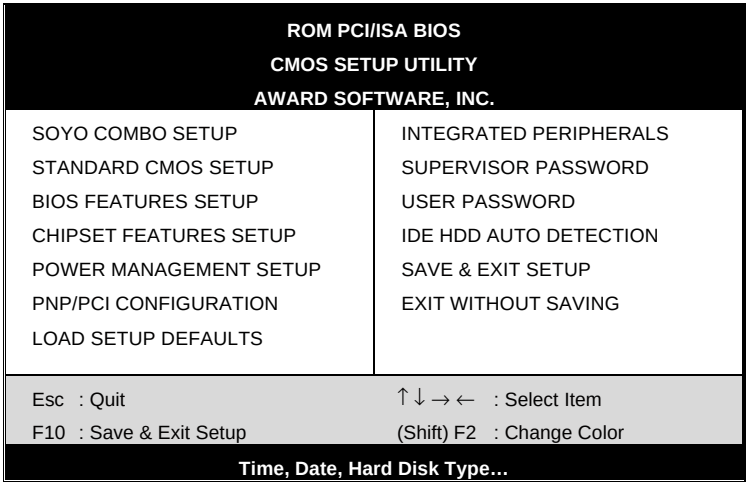
You have now completed the hardware installation of your Motherboard successfully.

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 fail 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:



Step 17. 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] menu 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 display on screen. Follow these steps to configure the CPU settings.

1. Select [LOAD SETUP DEFAULT]

Select the "LOAD SETUP DEFAULT" menu and type "Y" at the prompt to load the BIOS optimal setup.

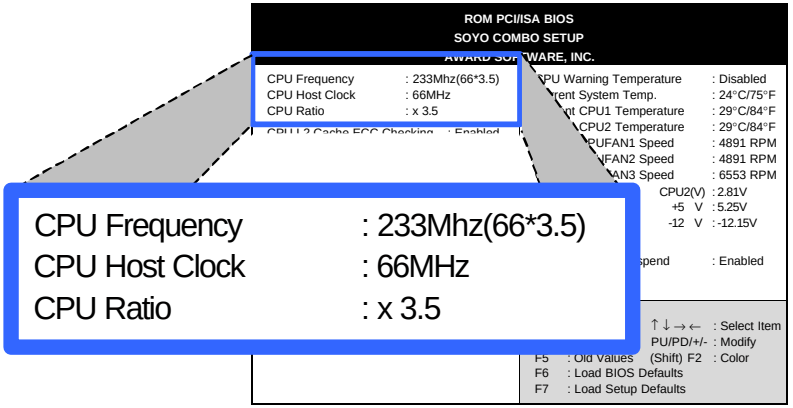
2. Select [STANDARD CMOS SETUP]

Set [Date/Time] and [Floppy drive type], then set [Hard Disk Type] to

"Auto".

3. Select [SOYO COMBO SETUP]

Move the cursor to the [CPU Frequency] field to set the CPU working frequency, as shown in the following display.



Available [CPU Frequency] settings on your SY-D6IBA2 Motherboard are detailed in the following table. If you set this field to [Manual], you are then required to fill in the next two consecutive fields: (1) the CPU Host Clock, and (2) the CPU Ratio.

CPU Frequency	
☐ 233MHz (66 x 3.5)	☐ 350MHz (100 x 3.5)
☐ 266MHz (66 x 4.0)	☐ 400MHz (100 x 4.0)
☐ 300MHz (66 x 4.5)	☐ 450MHz (100 x 4.5)
☐ 333MHz (66 x 5.0)	☐ 500MHz (100 x 5.0)
☐ 366MHz (66 x 5.5)	☐ 550MHz (100 x 5.5)
☐ 400MHz (66 x 6.0)	☐ 600MHz (100 x 6.0)
☐ 433MHz (66 x 6.5)	☐

Select the working frequency of your Pentium® III, Pentium® II processor among these preset values.

Note: ☑ Mark the checkbox that corresponds to the working frequency of your Pentium® III, Pentium® II processor in case the CMOS configuration should be lost.

4. Select [SAVE & EXIT SETUP]

Press **<Enter>** to save the new configuration to the CMOS memory, and continue the boot sequence.

Step 18. Power Off

There are two possible ways to turn off the system:

1. Use the **Shutdown** command in the **Start Menu** of Windows 95/98 to turn off your computer.
2. Press the mechanical power-button and **hold down for over 4 seconds,** to shutdown the computer. If you press the power-button for less than 4 seconds, then your system will enter into **Suspend Mode.**

Troubleshooting at First Start

- ***What should I do if the Motherboard refuses to start?***

The 350MHz setting is used as default so whenever the BIOS settings are erased or reset, the board will be able to boot up.
If the CPU speed was set too high and the Motherboard refuses to start up, you can always load the default values by pressing the [Ins] key during boot up.

- ***Over-clocking may cause system malfunctions!***

The SY-D6IBA2 Motherboard provides over-clocking capability. Due to the over-clocking setting your system may fail to boot up or hang during run time. If this occurs, please perform the following steps to recover your system from the abnormal situation:

1. Turn off system power. (If you use an ATX power supply, and depending on your system, you may have to press the power button for more than 4 seconds to shut down the system.)
2. Press and hold down the <Insert> key while turning on the system power. Keep holding down the <Insert> key until you see the message of the CPU type and frequency (133MHz or 200MHz) appear on screen.
3. Press the <Del> key during the system diagnostic checks to enter the Award BIOS Setup program.
4. From the BIOS main menu, select [SOYO COMBO SETUP] and move the cursor to the [CPU Frequency] field to set the proper working frequency.

5. Select [Save & Exit SETUP] and press <Enter> to save the configuration to the CMOS memory, and continue the boot sequence.

Note: SOYO ***does not*** guarantee system stability if the user over clocks the system. Any malfunctions due to over-clocking ***are not*** covered by the warranty.

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

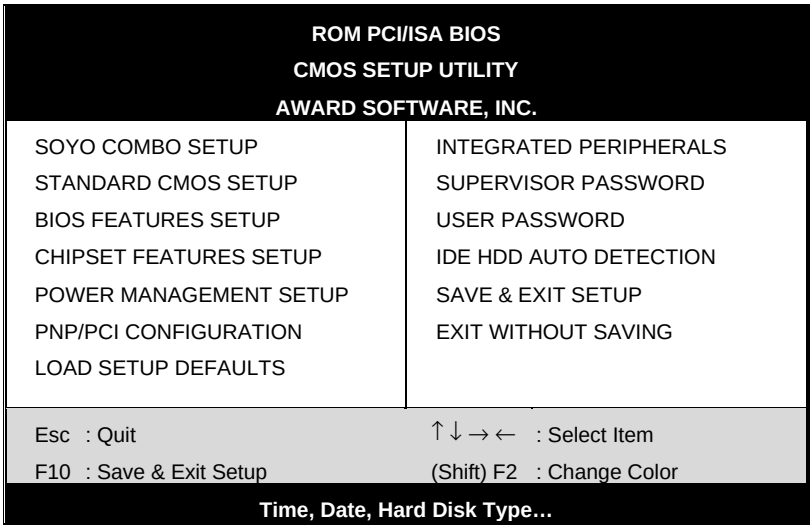
Chapter 3

BIOS SETUP UTILITY

This Motherboard's BIOS setup program uses the ROM PCI/ISA 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.



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

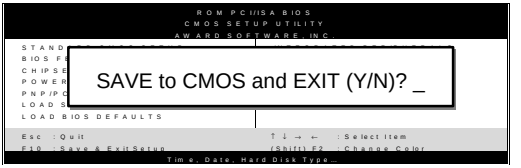
- Use the [Up]/[Down] keys to modify values within the selected fields. Some fields let you enter values directly.

Hot Keys: Function keys give you access to a group of commands throughout the BIOS utility.

Function	Command	Description
F1	Help	Gives the list of options available for each item.
Shift F2	Color	Change the color of the display window.
F5	Old values	Restore the old values. These are the values that the user started the current session with.
F6	Load BIOS Defaults	Loads all options with the BIOS Setup default values.
F7	Load Setup Defaults	Loads all options with the Power-On default values.
F10	Save & Exit Setup	Saves your changes and reboots the system.
[Esc]	Quit	Let' s you return at anytime and from any location to the Main Menu.

SAVE AND EXIT SETUP

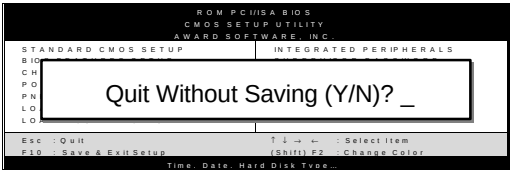
Select the [SAVE & EXIT SETUP] option from the Main Menu to save data to CMOS and exit the setup utility. This option saves all your changes and causes the system to reboot.



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].**

ROM PCI/ISA BIOS
SOYO COMBO SETUP
AWARD SOFTWARE, INC.

CPU Frequency	: 233Mhz(66*3.5)	CPU Warning Temperature	: Disabled
CPU Host Clock	: 66MHz	Current System Temp.	: 24°C/75°F
CPU Ratio	: x 3.5	Current CPU1 Temperature	: 29°C/84°F
CPU L2 Cache ECC Checking	: Enabled	Current CPU2 Temperature	: 29°C/84°F
		Current CPUFAN1 Speed	: 4891 RPM
Boot Sequence	: A,C,SCSI	Current CPUFAN2 Speed	: 4891 RPM
		Current CPUFAN3 Speed	: 6553 RPM
Quick Power On Self Test	: Enabled	CPU1(V) : 2.81 V	CPU2(V) : 2.81V
		+3.3 V : 3.40 V	+5 V : 5.25V
POWER ON Function	: BUTTON ONLY	+12 V : 12.16V	-12 V : -12.15V
KB Power ON Password	: Enter	- 5 V : - 5.26V	
Hot Key Power ON	: Ctrl-F1	CPUFAN Off In Suspend	: Enabled
Soft-Off by PWR-BTTN	: Instant-Off		
Power-On by Ring/LAN	: Enabled		
Power-On by Alarm	: Disabled		

ESC	: Quit	↑ ↓ → ←	: Select Item
F1	: Help	PU/PD/+/-	: Modify
F5	: Old Values	(Shift) F2	: Color
F6	: Load BIOS Defaults		
F7	: Load Setup Defaults		

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.

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

Quick CPU Speed Settings

Quick CPU Speed Settings	Setting	Description	Note
CPU Speed	Manual	Select the working frequency of your Pentium® II processor among these preset values. Note: Setting this field to [Manual] requires you to fill in the next two consecutive fields: (1) the [CPU Host Clock], (2) the [CPU Ratio].	
*(*Default)*	133MHz (66 x 2)		
	166MHz (66 x 2.5)		
	200MHz (66 x 3)		
	233MHz (66 x 3.5)		
	266MHz (66 x 4)		
	300MHz (66 x 4.5)		
	333MHz (66 x 5)		
	350MHz (100 x 3.5)		
	400MHz (100 x 4)		
	450MHz (100 x 4.5)		
	500MHz (100 x 5)		
	550MHz (100 x 5.5)		
If [CPU Speed] field is set to [Manual]			
CPU Host Clock	68 MHz	Select the host clock of your Pentium® II processor among these values. ***Note:*** For the EX/LX chipset, 66MHz and 100MHz host clock frequencies are acceptable. However, the system stability is not guaranteed for other frequencies due to the limitations of this chipset.	
	75 MHz		
	83 MHz		
	66 MHz		
	103 MHz		
	112 MHz		
	133 MHz		
	100 MHz		
If [CPU Speed] field is set to [Manual]			
CPU Ratio	After you have selected the host clock, choose the right multiplier for the CPU. Options are: [2, 2.5, 3., 3.5, 4, 4.5, 5, 5.5]. The CPU frequency is then defined as [host clock freq.]x[multiplier], and should match the working frequency of your Pentium® II processor.		

L2 Cache Memory

	Setting	Description	Note
CPU L2 Cache ECC Checking	Disabled		Default
	Enabled	This option activates the CPU L2 cache ECC checking function.	

System Boot Control Settings

System Boot Control Settings	Setting	Description	Note
Boot Sequence	A,C,SCSI	Choose the boot sequence adapted to your needs, for example: ● [A,C,SCSI] means the BIOS will look for an operating system first in drive A, then in drive C, and eventually in SCSI device.	
	C,A,SCSI		
	C,CD-ROM,A		
	CD-ROM,C,A		
	D,A,SCSI		
	E,A,SCSI		
	F,A,SCSI		
	SCSI,A,C		
	SCSI,C,A		
	C only		
	LS/ZIP,C		
Quick Power On Self Test	Disabled		
	Enabled	Provides a fast POST (Power-On Self Test) at boot-up.	Default

Power Management

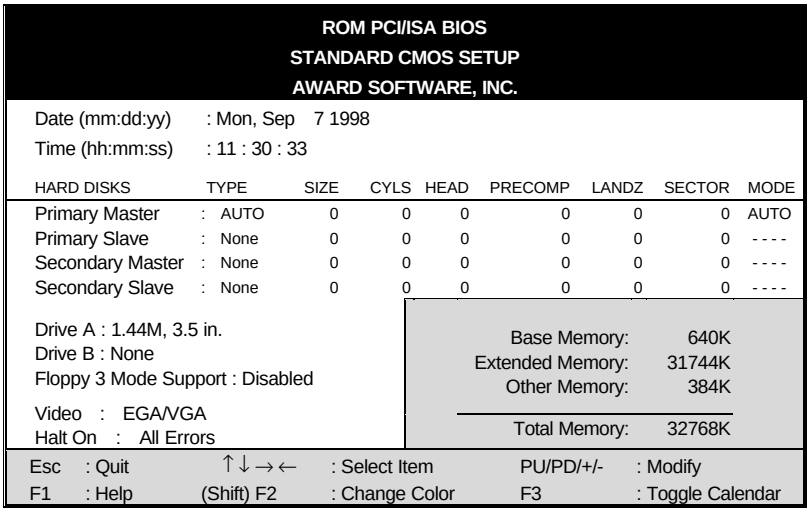
PM Events	Setting	Description	Note
POWER ON Function	BUTTON-ONLY	Disables the Wake-Up by Keyboard function.	Default
	KB Power ON Password	Enables you to wake-up the system by entering a password at the keyboard.	
	Hot Key	You can wake-up the system by pressing the key combination of your choice (Ctrl-F1~F12).	
If [POWER ON Function] is set to [KB Power ON 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]			
KB Power ON Password	Ctrl-F1~F12	Choose the key combination that will wake-up the system. [Ctrl-F1 to Ctrl-F12]	
Soft-Off by PWR-BTTN	Instant-off		Default
	Delay 4 Sec.	Turns off the system power 4 seconds after pushing the power button.	
Power-On by Ring/LAN	Disabled		
	Enabled	The system will self-power on me when the modem is ringing.	Default
Power-On by Alarm	Disabled	The system ignores the alarm.	Default
	Enabled	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.	

CPU Device Monitoring

CPU Device Monitoring	Setting	Description	Note
CPU Warning Temperature	Disabled		Default
	Enabled	Set CPU temperature from 50°C to 70°C. The CPU will slow down when CPU temperature goes beyond the preset value. The CPU will continue to run slow until the temperature returns back within the safe range.	
Current System Temp.	°C/°F	Shows the current status of the system temperature.	
Current CPU1 Temperature	°C/°F	Shows the current status of the CPU1 temperature.	**Slot #1**
Current CPU2 Temperature	°C/°F	Shows the current status of the CPU2 temperature.	**Slot #2**
Current CPUFAN1 Speed	°C/°F	Shows the current status of CPU Fan speed for CPU1.	**Slot #1**
Current CPUFAN2 Speed	°C/°F	Shows the current status of CPU Fan speed for CPU2.	**Slot #2**
Current CPUFAN3 Speed	°C/°F	Shows the current status of the Chassis Fan speed	
CPU1(V), +3.3V, +12V, -5V	V	Shows the current voltage status on CPU1.	**Slot #1**
CPU2(V), +5V, -12V	V	Shows the current voltage status on CPU2.	**Slot #2**
CPUFAN Off In Suspend	Disabled	Disables the PM timer.	
	Enabled	Switches off the CPU Fan when the system enters Suspend Mode.	Default

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.

Date & Time

	Display	Setting	Please Note
Date	mm/dd/yyyy	Type the current date	You can also press the PUp/PDn keys to toggle between values.
Time	hh:mm:ss	Type the current time	24-hour clock format 3:15 PM is displayed as 15:15:00

Hard Disks Type & Mode

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

Primary (Secondary) Master & Slave	Setting	Description	Note
Type	Auto	BIOS detects hard disk type automatically.	Default
	User	User defines the type of hard disk.	
	None		
Mode	Auto	BIOS detects hard disk mode automatically.	Default
	Normal	Normal IDE hard disk	<528MB
	LBA	Enhanced IDE hard disk	>528MB
	Large	Large IDE hard disk (for certain hard disk)	

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

Floppy Drives

Floppy Drives	Setting	Description	Note
Drives A & B	360KB, 5.25 in.		
	1.2MB, 5.25 in.		
	720KB, 3.5 in.		
	1.44MB, 3.5 in.		Default
	2.88MB, 3.5 in.		
	None	Not installed	
Floppy 3-Mode Support	Disabled		Default
	Drive A Drive B Both	Supports 3-mode floppy diskette: 740KB/1.2MB/ 1.44MB on selected disk drive.	Special disk drive commonly used in Japan

Video

Select the video mode: EGA/VGA (Default), CGA 40, CGA 80, MONO (Monochrome).

Halt On

When the BIOS detects system errors, this function will stop the system. Select which type of error will cause the system halt: All Errors (Default), No Errors, All But Keyboard, All But Diskette, All But Disk/Key.

3-3 BIOS FEATURES SETUP

Select the [BIOS FEATURES SETUP] option from the Main Menu and press [Enter] key.

ROM PCI/ISA BIOS
BIOS FEATURES SETUP
AWARD SOFTWARE, INC.

Virus Warning	: Disabled	Video BIOS Shadow	: Enabled
CPU Internal Cache	: Enabled	C8000-CBFFF Shadow	: Disabled
External Cache	: Enabled	CC000-CFFFF Shadow	: Disabled
Swap Floppy Drive	: Disabled	D0000-D3FFF Shadow	: Disabled
Boot Up NumLock Status	: On	D4000-D7FFF Shadow	: Disabled
Typematic Rate Setting	: Disabled	D8000-DBFFF Shadow	: Disabled
Typematic Rate (Chars/Sec)	: 6	DC000-DFFFF Shadow	: Disabled
Typematic Delay (Msec)	: 250		
Security Option	: Setup		
PCI/VGA Palette Snoop	: Disabled		
Assign IRQ for VGA	: Enabled		
MPS Version Control For OS	: 1.4		
OS Select for DRAM > 64MB	: Non-OS2	ESC : Quit	↑↓→← : Select Item
HDD S.M.A.R.T. capability	: Disabled	F1 : Help	PU/PD/+/- : Modify
Report No FDD For WIN 95	: Yes	F5 : Old Values	(Shift) F2 : Color
		F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

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

Virus Warning

	Setting	Description	Note
Virus Warning	Disabled		Default
	Enabled	Enable this option to protect the boot sectors and partition tables of your hard disk. Any attempt to write to them will the system to halt and display a warning message.	

Cache Memory Options

	Setting	Description	Note
CPU Internal Cache	Disabled		
	Enabled	Enables the CPU's internal cache.	Default
External Cache	Disabled		
	Enabled	Enables the external memory.	Default

System Boot Control Settings

System Boot Control Settings	Setting	Description	Note
Swap Floppy Drive	Disabled		Default
	Enabled	Changes the sequence of A and B drives.	
Boot Up NumLock Status	On	Puts numeric keypad in NumLock mode at boot-up.	Default
	Off	Puts numeric keypad in arrow key mode at boot-up.	

Typematic Settings

Typematic Settings	Setting	Description	Note
Typematic Rate Setting	Disabled		Default
	Enabled	Enables to adjust the keystroke repeat rate.	
The following [Typematic Rate] and [Typematic Delay] fields are active only if [Typematic Rate Setting] is set to [Enabled]			
Typematic Rate	6 (Char/sec) 8 (Char/sec) 10 (Char/sec) 12 (Char/sec) 15 (Char/sec) 20 (Char/sec) 24 (Char/sec) 30 (Char/sec)	Choose the rate at which a character is repeated when holding down a key.	Default
Typematic Delay	250 (msec) 500 (msec) 750 (msec) 1000 (msec)	Choose how long after you press a key down the character begins repeating.	Default

Security Option

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

	Setting	Description	Note
Security Option	System	Each time the system is booted, the password prompt appears.	
	Setup	If a password is set, the password prompt only appears when you attempt to enter the BIOS Setup program.	Default

Other Control Options

Other Control Options	Setting	Description	Note
PCI/VGA Palette Snoop	Disabled		Default
	Enabled	The color of the monitor may be altered when using an MPEG card. Enable this option to restore the monitor's normal color.	
Assign IRQ For VGA	Disabled		
	Enabled	Use this default setting.	Default
MPS Version Control For OS	1.1	To specify which MPS version to use.	
	1.4		Default
OS Select for DRAM>64MB	OS2	When using an OS2 operating system.	
	Non-OS2	When using another, non-OS2 operating system.	Default
HDD S.M.A.R.T. capability	Disabled		Default
	Enabled	Enable this field when your HDD supports the S.M.A.R.T. function. Consult your HDD provider for details.	
Report No FDD For WIN 95	Yes	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].	Default
	No	Windows will reserve INT 6 for your FDD, whether it is disabled or not.	

Other Control Options (continued)

Other Control Options	Setting	Description	Note
Video BIOS Shadow	Disabled		
	Enabled	The BIOS is shadowed in a 16K segment if it is enabled and if it has BIOS present. These 16 segments can be shadowed from ROM to RAM. BIOS shadow copies BIOS code from slower ROM to faster RAM. BIOS can then execute from RAM.	Default
C8000-CBFFF/ CC000-CFFFF/ D0000-D3FFF/ D4000-D7FFF/ D8000-DBFFF/ DC000-DFFFF/ Shadow	Disabled		Default
	Enabled	The ROM data at the specified address range will be copied to RAM.	

3-4 CHIPSET FEATURES SETUP

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

The [CHIPSET FEATURES SETUP] option changes the values of the chipset registers. These registers control the system options in the computer.

ROM PCI/ISA BIOS
CHIPSET FEATURES SETUP
AWARD SOFTWARE, INC.

Auto Configuration	: Enabled
SDRAM CAS latency Time	: 3
DRAM Data Integrity Mode	: Non-ECC
System BIOS Cacheable	: Disabled
Video BIOS Cacheable	: Disabled
Video RAM Cacheable	: Disabled
8 Bit I/O Recovery Time	: 1
16 Bit I/O Recovery Time	: 1
Memory Hole At 15M-16M	: Disabled
Passive Release	: Enabled
Delayed Transaction	: Enabled
AGP Aperture Size (MB)	: 64
Spread Spectrum Modulated	: Disabled

ESC	: Quit	↑↓→←	: Select Item
F1	: Help	PU/PD/+/-	: Modify
F5	: Old Values	(Shift) F2	: Color
F6	: Load BIOS Defaults		
F7	: Load Setup Defaults		

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 CHIPSET FEATURES SETUP Menu and how to configure each parameter.

CHIPSET FEATURES SETUP

CHIPSET FEATURES	Setting	Description	Note
Auto Configuration	Disabled		
	Enabled	It is strongly recommended to enable this option so that the system automatically sets all chipset feature options on the left panel of the screen (except for cache update & BIOS cacheable).	Default
SDRAM Cache Latency Time	3 2	Use the default setting	Default
DRAM Data Integrity Mode	Non-ECC	Choose according to the DRAM type you have.	Default
	ECC		
System BIOS Cacheable	Disabled		Default
	Enabled	The ROM area F0000H-FFFFFH is cacheable.	
Video BIOS Cacheable	Disabled		Default
	Enabled	The video BIOS C0000H-C7FFFH is cacheable.	
Video RAM Cacheable	Disabled		Default
	Enabled	The ROM area A0000-BFFFF is cacheable.	
8 BIT I/O Recovery Time	1 2-8,NA	Use the default setting	Default
16 BIT I/O Recovery Time	1 2-4,NA	Use the default setting	Default
Memory Hole At 15M-16M	Disabled		Default
	Enabled	Some interface cards will map their ROM address to this area. If this occurs, select [Enabled] in this field.	

CHIPSET FEATURES SETUP (Continued)

CHIPSET FEATURES	Setting	Description	Note
Passive Release	Enabled	Use the default setting	Default
Delayed Transaction	Enabled	Use the default setting	Default
AGP Aperture Size	64 4-256MB	AGP could use the DRAM as its video RAM. Choose the DRAM size that you wish to allocate as video RAM.	Default
Spread Spectrum Modulated	Disabled		Default
	Enabled	When using Spread Spectrum modulated 1.5% or 6% for FCC or DOC testing.	

3-5 POWER MANAGEMENT SETUP

The [POWER MANAGEMENT SETUP] sets the system's power saving functions.

ROM PCI/ISA BIOS
POWER MANAGEMENT SETUP
AWARD SOFTWARE, INC.

Power Management	: User Define
PM Control by APM	: Yes
Video Off Method	: V/H SYNC+Blank
Video Off After	: Standby
MODEM Use IRQ	: 3
Doze Mode	: Disable
Standby Mode	: Disable
Suspend Mode	: Disable
HDD Power Down	: Disable
VGA Active Monitor	: Disabled
IRQ 8 Break Suspend	: Disabled

** Reload Global Timer Events **

IRQ [3-7,9-15], NMI	: Enabled
Primary IDE 0	: Disabled
Primary IDE 1	: Disabled
Secondary IDE 0	: Disabled
Secondary IDE 1	: Disabled
Floppy Disk	: Disabled
Serial Port	: Enabled
Parallel Port	: Disabled

ESC	: Quit	↑ ↓ → ←	: Select Item
F1	: Help	PU/PD/+/-	: Modify
F5	: Old Values	(Shift) F2	: Color
F6	: Load BIOS Defaults		
F7	: Load Setup Defaults		

After you have completed the Power Management Setup, press [Esc] to return to the Main Menu.

Power Management Controls

Power Management Controls	Setting	Description			Note
Power Management	User Define	Lets you define the HDD and system power down times.			Default
	Disable	Disables the Green PC Features.			
		Doze timer	Standby timer	Suspend timer	HDD power down
	Min Saving	1 Hour	1 Hour	1 Hour	15 Min
	Max Saving	1 Min	1 Min	1 Min	1 Min
PM Control by APM	Yes	To use Advanced Power Management (APM) you must run [power.exe] under DOS V6.0 or later version.			Default
	No				
Video Off Method	V/H Sync+Blank	Selects the method by which the monitor is blanked.			Default
	Blank Screen				
	DPMS				
Video Off After	Standby	Choose the PM mode you want video to go off after the mode is being active.			Default
	Suspend				
	Doze				
	NA				
MODEM Use IRQ	3	Assigns an IRQ# to the modem device.			Default
	3-11,NA				

PM Timers

PM Timers	Setting	Description	Note
The following [Doze Mode] field may be configured only if [Power Management] is set to [User Define]			
Doze Mode	Disable		Default
	1Min-1Hour	When the set time has elapsed, BIOS sends a command to the system to enter Doze Mode.	System clock drops to 33MHz.
The following [Standby Mode] field may be configured only if [Power Management] is set to [User Define]			
Standby Mode	Disable		Default
	1Min-1Hour	When the set time has elapsed, BIOS sends a command to the system to enter Standby Mode.	
The following [Suspend Mode] field may be configured only if [Power Management] is set to [User Define]			
Suspend Mode	Disable		Default
	1Min-1Hour	In Suspend mode, the CPU stops completely (no instructions are executed.)	Only an SL-Enhanced (or SMI) CPU can enter this mode.
HDD Power Down	Disabled		Default
	1-15Min	When the set time has elapsed, BIOS sends a command to the HDD to power down. This turns off the HDD motor.	Some older model HDDs may not support this advanced function.

PM Events

PM Events	Setting	Description	Note
VGA Active Monitor	Disabled		Default
	Enabled	Enables the power management timers when a [no activity] event is detected on the monitor.	
IRQ 8 Break Suspend	Disabled		Default
	Enabled	Alarm function is active.	

Reload Global Timer Events

Power Down & Resume Events	Setting	Description	Note
IRQ [3-7,9-15], NMI	Disabled		
	Enabled	The system monitors these elements for activity. The system will resume if an [IRQ activity] is detected.	Default
IDE0, IDE1 ➢ **Primary** ➢ **Secondary**	Disabled		Default
	Enabled	Enables the PM timers when [No Activity Event] is detected.	
Floppy Disk	Disabled		Default
	Enabled	Enables the PM timers when [No Activity Event] is detected on the floppy disk drive.	
Serial Port	Disabled		
	Enabled	Enables the PM timers when [No Activity Event] is detected on the serial port.	Default
Parallel Port	Disabled		Default
	Enabled	Enables the PM timers when [No Activity Event] is detected on the parallel port.	

3-6 PNP/PCI CONFIGURATION SETUP

This option sets the Motherboard's PCI Slots.

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

PNP OS Installed		: NO	Slot 1 Use	IRQ No.	: Auto
Resources Controlled By		: Manual	Slot 2 Use	IRQ No.	: Auto
Reset Configuration Data		: Disabled	Slot 3 Use	IRQ No.	: Auto
			Slot 4 Use	IRQ No.	: Auto
IRQ - 3	assigned to	: Legacy ISA	Assign IRQ For USB		: Enabled
IRQ - 4	assigned to	: Legacy ISA			
IRQ - 5	assigned to	: PCI/ISA PnP			
IRQ - 7	assigned to	: PCI/ISA PnP			
IRQ - 9	assigned to	: PCI/ISA PnP			
IRQ - 10	assigned to	: PCI/ISA PnP			
IRQ - 11	assigned to	: PCI/ISA PnP			
IRQ – 12	assigned to	: PCI/ISA PnP			
IRQ - 14	assigned to	: PCI/ISA PnP			
IRQ - 15	assigned to	: PCI/ISA PnP			
DMA - 0	assigned to	: PCI/ISA PnP			
DMA - 1	assigned to	: PCI/ISA PnP			
DMA - 3	assigned to	: PCI/ISA PnP	ESC : Quit		↑↓→← : Select Item
DMA - 5	assigned to	: PCI/ISA PnP	F1 : Help		PU/PD/+/- : Modify
DMA - 6	assigned to	: PCI/ISA PnP	F5 : Old Values		(Shift) F2 : Color
DMA - 7	assigned to	: PCI/ISA PnP	F7 : Load Setup Defaults		

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.

PNP/PCI Configuration Controls

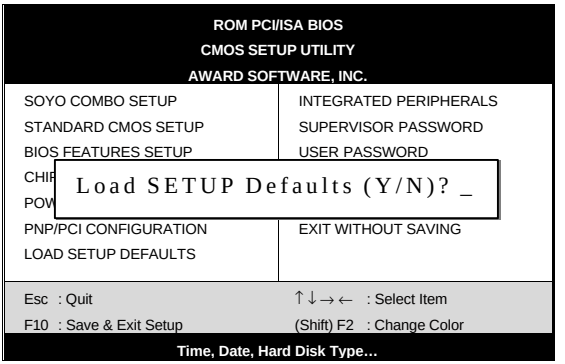
PNP/PCI Controls	Setting	Description	Note
PnP OS Installed	Yes	Set this field to [Yes] if you are running Windows 95/98, which are PnP compatible.	
	No	If the OS you are running does not support PnP configuration.	Default (If there is any doubt, set this field to [No])
Resources Controlled By	Manual	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: _		
	Auto	The Plug-and-Play BIOS auto manages PCI/ISA PnP card IRQ assignment automatically.	**Recommended**
Reset Configuration Data	Disabled	Retain PnP configuration data in BIOS.	Default
	Enabled	Reset PnP configuration data in BIOS.	

PNP/PCI Configuration Setup

PNP/PCI Setup	Setting	Description	Note
If [Resources Controlled By] is set to [Manual]			
IRQ-# and DMA-# assigned to:	PCI/ISA PnP	Choose IRQ-# and DMA-# assigned to PCI/ISA PnP card.	IRQ-3,4,5,7,9,10, 11,12,14,15 DMA-0,1,3,5,6,7
	Legacy ISA	Choose IRQ-# and DMA-# assigned to Legacy ISA card.	IRQ-3,4,5,7,9,10, 11,12,14,15 DMA-0,1,3,5,6,7
Used MEM base addr	N/A		Default
	I/O address	C800,CC00,D000,D400,D800,DC00. (Asking card provider for the exactly I/O address of this add-on card.)	Use this function only when problems occur while using some certain add-on cards.
1. 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.			
Slot 1/2/3/4 Use IRQ NO.	Auto		Default
		Select one of the interrupts. Note: The selected IRQ will only be assigned if it is available. (Windows may reassign IRQs).	
Assign IRQ For USB	Enabled	BIOS will assign IRQ for USB port.	Default
	Disabled	BIOS won't assign IRQ for USB port.	

3-7 LOAD SETUP DEFAULTS

Select the [LOAD SETUP 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.

3-8 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.

ROM PCI/ISA BIOS
INTEGRATED PWEIPHERALS
AWARD SOFTWARD, INC.

IDE HDD Block Mode	: Enabled	Onboard FDC Controller	: Enabled
IDE Primary Master PIO	: Auto	Onboard Serial Port 1	: 3F8/IRQ4
IDE Primary Slave PIO	: Auto	Onboard Serial Port 2	: 2F8/IRQ3
IDE Secondary Master PIO	: Auto	URART Mode Select	: Normal
IDE Secondary Slave PIO	: Auto	RxD, TxD Active	: Hi, Lo
IDE Secondary Master UNMA	: Auto	IR Transmission Delay	: Enabled
IDE Secondary Slave UDMA	: Auto	Onboard Parallel Port	: 378/IRQ7
On-Chip Primary PCI IDE	: Enabled	Parallel Port Mode	: SPP
On-Chip Secondary PCI IDE	: Enabled	ECP Mode Use DMA	: 3
		EPP Mode Select	: EPP1.7
Onboard PCI SCSI Chip	: Enabled	PWRON After PWR-Fail	: Off
USB Keyboard Support	: Disabled		
Init Display First	: PCI Slot		

ESC	: Quit	↑ ↓ → ←	: Select Item
F1	: Help	PU/PD/+/-	: Modify
F5	: Old Values	(Shift) F2	: Color
F7	: Load Setup Defaults		

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.

IDE Device Controls

IDE Controls	Setting	Description	Note
IDE HDD Block Mode	Disabled		
	Enabled	Invokes multi-sector transfer instead of one sector per transfer. Not all HDDs support this function.	Default
IDE ➢ **Primary Master PIO** ➢ **Primary Slave PIO** ➢ **Secondary Master PIO** ➢ **Secondary Slave PIO**	mode 0-4	0 is the slowest speed 4 is the fastest speed	
	Auto	For better performance and stability, we suggest you use the Auto setting to set the HDD control timing.	Default
IDE ➢ **Primary Master UDMA** ➢ **Primary Slave UDMA**	Disabled		
	Auto	Select Auto to enable Ultra DMA Mode support.	Default
On-Chip PCI IDE ➢ **Primary** ➢ **Secondary**	Disabled	Turn off the on-board IDE	
	Enabled	Use the on-board IDE	Default

Onboard SCSI Subsystem Controls

SCSI Subsystem Controls	Setting	Description	Note
Onboard PCI SCSI Chip	Disabled		
	Enabled	Enables the on-board SCSI function. Also, allows you to configure the SCSISelect ™BIOS utility. (Press **<Ctrl-A>** during boot-up to enter the SCSI BIOS utility.)	Default

Keyboard Controls

Keyboard Controls	Setting	Description	Note
USB Keyboard Support	Disabled		Default
	Enabled	Use a USB keyboard	

Display Controls

Display Controls	Setting	Description	Note
Init Display First	PCI Slot	Choose which card – AGP Display card or PCI VGA card – to initialize first.	Default
	AGP		

FDC Controls

FDC Controls	Setting	Description	Note
Onboard FDC controller	Disabled	Turn off the on-board floppy controller	
	Enabled	Use the on-board floppy controller	Default

Onboard Serial Ports

Onboard Serial Ports	Setting	Description	Note
Onboard ➢ **Serial Port 1** ➢ **Serial Port 2**	Disabled		
	3F8/IRQ4	Choose serial port 1 & 2's I/O address. Do not set port 1 & 2 to the same address except for [Disabled] or [Auto].	Default (port 1)
	2F8/IRQ3		Default (port 2)
	3E8/IRQ4		
	2E8/IRQ3		
	Auto		
UART Mode Select	Normal	Supports a Standard serial infrared IrDA.	Default
	IrDA 1.0		
	ASKIR	Supports a Sharp serial interface format.	
	FIR	Fast Infrared Interface	
VxD,TxD Active	Hi,Lo/Lo,Hi/Lo, Lo/Hi,Hi	Check with your IR-device provider for exact setting.	
IR Transmission Delay	Enabled	Check with your IR-device provider for exact setting.	Default
	Disabled		

Onboard Parallel Ports

Onboard Parallel Ports	Setting	Description	Note
Onboard Parallel Port	378/IRQ7	Choose the printer I/O address.	Default
	3BC/IRQ7		
	278/IRQ5		
	Disable		
Parallel Port Mode	ECP/EPP	The mode depends on your external parallel device that connects to this port.	
	SPP		Default
	ECP		
	EPP		
If [Parallel Port Mode] is set to [ECP] or [ECP/EPP] mode			
ECP Mode use DMA	3	Choose DMA3	Default
	1	Choose DMA1	
If [Parallel Port Mode] is set to [EPP] or [ECP/EPP] mode			
EPP Mode Select	EPP1.7	Select the correct EPP operating mode of your on-board parallel port. (This setting should match your parallel device requirements.)	Default
	EPP1.9		
PWRON After PWR-Fail	On	The system will switch on when power comes back after a power failure.	
	Off	The system will remain off when power comes back after a power failure.	Default
	Former-sts	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)	

MULTI I/O ADDRESSES

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

Port	I/O Address	IRQ	Status
LPT1	378	7	SPP
COM1	3F8	4	
COM2	2F8	3	

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)

3-9 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:

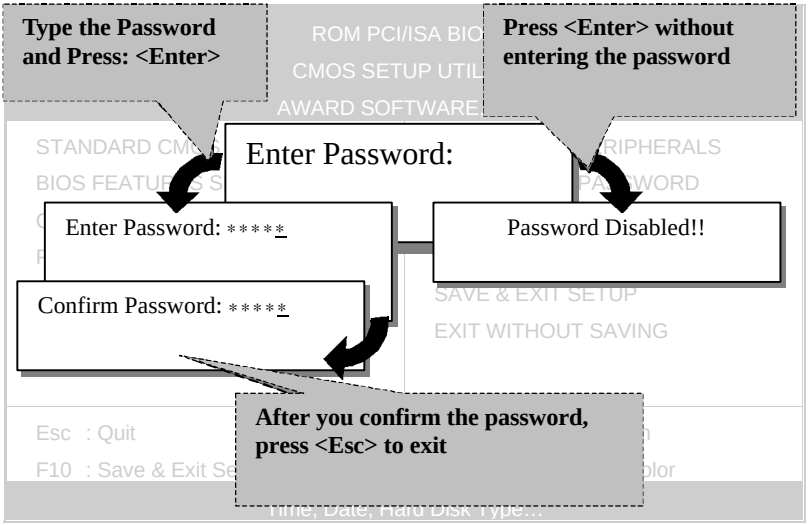
Password Disabled!!

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:



3-10 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).

3-11 IDE HDD AUTO DETECTION

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

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

HARD DISKS	TYPE	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
Primary Master :								

Select Primary Master Option (N=Skip) : N

OPTIONS	SIZE	CYLS	HEAD	PRECOMP	LANDZ	SECTOR	MODE
2(Y)	1707	827	64	0	3308	63	LBA
1	1707	3309	16	65535	3308	63	NORMAL
3	1707	827	64	65535	3308	63	LARGE

Note: Some Oses(SCO-UNIX Before v5.0) must use “NORMAL” for installation

ESC : Skip

Note: This function is only valid for IDE type of hard disk drives.

Chapter 4

DRIVERS INSTALLATION

Your SY-D6IBA2 Motherboard comes with a CD-ROM labeled "SOYO CD." The SOYO CD contains the user's manual file for your new Motherboard, the drivers software available for installation, and a database in HTML format with information on SOYO Motherboards and other products.

The SOYO CD Start Up Program automatically detects which SOYO Motherboard you own and displays the corresponding model name.

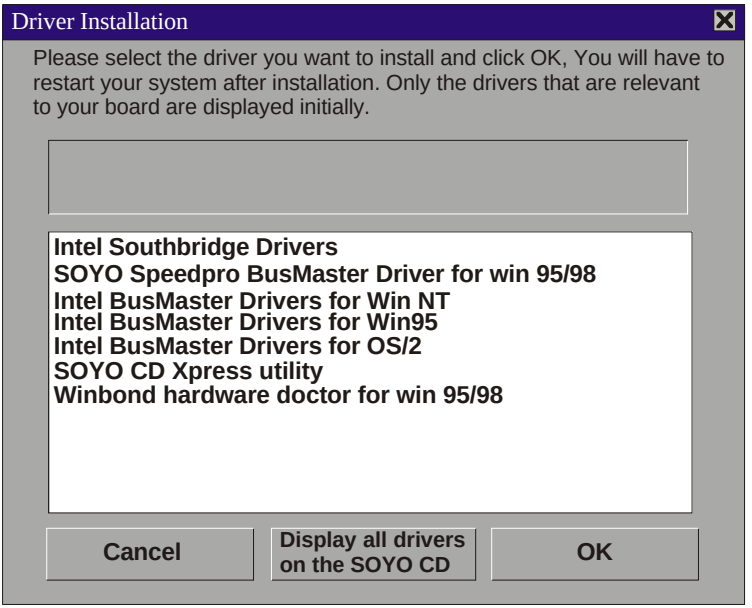
Step 1. Insert the SOYO CD into the CD-ROM drive

The SOYO CD will auto-run, and the SOYO CD Start Up Menu will display as shown below.

Step 2. Install Drivers

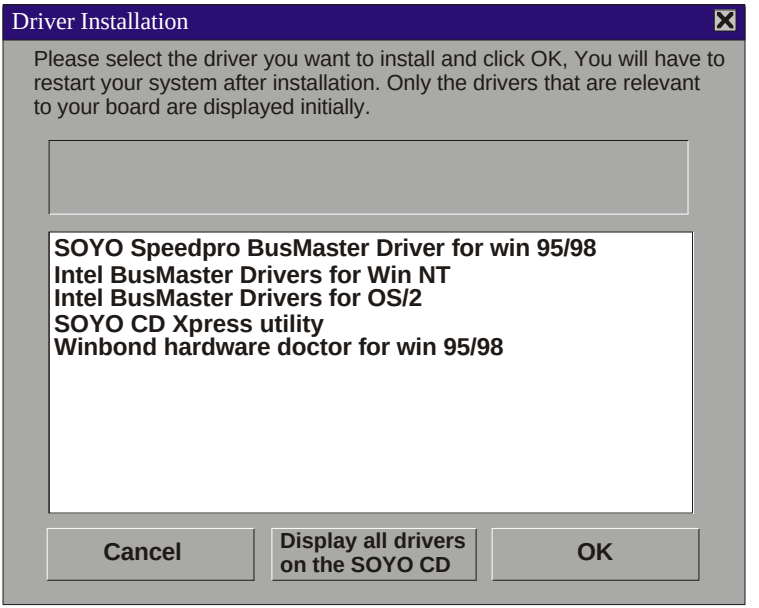
Click the Install Drivers button to display the list of drivers software that can be installed with your Motherboard. The Start Up program displays the drivers available for the particular model of Motherboard you own. We recommend that you only install those drivers.

The following drivers are available for Windows 95



(Driver Installation Menu)

The following drivers are available for Windows 98



(Driver Installation Menu)

A short description of all available drivers follows:

- **Intel Southbridge Drivers**

Because Windows 95 does not recognize the Southbridge of the newer Intel chipsets (TX, BX, ZX etc) this utility has to be run, it will update the necessary Windows files. (Only for Windows 95)

- **SOYO SpeedPro Busmaster Driver for Win 95/98**

Without the busmaster drivers the CPU will need to be involved every time data is read from or written to the Harddisk. The busmaster drivers make use of DMA (Direct Memory Access) to relieve the CPU of this burden, thus speeding up the system.

The SOYO SpeedPro driver makes use of an advanced caching algorithm, which gives it an advantage over other busmaster drivers.

- **Intel Busmaster Drivers for Windows 95**
- **Intel Busmaster Drivers for Win NT**
- **Intel Busmaster Drivers for OS/2**

These are the official busmaster drivers as supplied by Intel.

Note: Do NEVER install two types of busmaster drivers on your system, this will lead to conflicts and system instability. Therefore, if you install the SOYO SpeedPro Busmaster driver you can NOT install the Intel Busmaster drivers. Before installing a new busmaster driver first UNINSTALL the old busmaster driver.

➢ SOYO CD Xpress Utility

This utility will enhance your CD-ROM Drive data-thoughput by using space on the Harddisk as cache. This way application programs can access data faster. This utility is suitable for Windows 95/98.

➢ Winbond hardware doctor for Windows xx

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.

Because the Hardware monitor comes with default monitoring settings that may not be appropriate to the configuration of the actual system, it is possible that the user will have to change some of these settings.

- **Core voltage**

The core voltage differs between generations of Intel CPUs, if the Hardware monitor gives a warning, the settings for the safe range of the core voltage has to be adjusted. This can be done by simply clicking and dragging the upper and lower limit bars.

For example:
Newer Slot 1 CPUs have a core voltage of 2.0V. Therefore, set the CPU Vcore limits to 1.8V and 2.2V. For 2.8V core voltage CPUs the limits would be 2.6V and 3.0V.

- **Fan speed**

The Hardware monitor can keep track of three fans. If the user does not use all fans, the fans that are not in use should be disabled in the Hardware monitor program, otherwise the Hardware monitor will give an alarm. If this happens, make sure to disable monitoring for that fan.

Note 1: **EZ-SCSI Utility**

The SOYO CD contains a SCSI utility (EZ-SCSI) for use with the onboard Adaptec® SCSI chip. The *EZ-SCSI Utility* is located in the *drivers**EZ-SCSI* directory and is suitable for DOS or Windows 3.1 environment only. The manual file in PDF format for the EZ-SCSI Utility can be found at the following location: *Manual**EZ-SCSI.pdf* .

Note 2: However, to display the list of all drivers software available with SOYO Motherboards, click the ***Display all drivers on the SOYO CD*** button. Please make sure to install only the drivers adapted to your system, or otherwise this cause system malfunctions.

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.

Step 4. Select which driver you want to install and click *OK*

Notice 1: You may click ***Cancel*** to abort the driver installation and return to the main menu.

Notice 2: 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 you to restart your system before they can become active.

Chapter 5

ULTRA2 SCSI I/O SUBSYSTEM

Note: For details on how to perform the SCSI driver installation, refer to the *"Adaptec® 7800 Family Manager Set User's Guide"* included on the *Installation CD-ROM* that comes with your Motherboard. You may also obtain additional SCSI driver information by visiting Adaptec®'s Web site at: http://www.adaptec.com
Follow the instructions in Adaptec's SCSI driver installation guide to install the SCSI driver specific to your system:

- Microsoft Windows NT®
- Microsoft Windows® 95
- Novell NetWare
- IBM OS/2
- SCO UNIX
- SCO UnixWare

5-1 INTRODUCTION TO ULTRA 2 SCSI

Your new **SYD6IBA2** high-performance Motherboard is equipped with the onboard Adaptec® AIC-7890 Ultra2 SCSI host adapter for your high bandwidth applications, providing data transfer rates of up to 80 Mbytes per second. The Ultra2 SCSI is an input/output bus interface that provides a powerful multitasking interface between your computer's PCI bus and your SCSI devices.

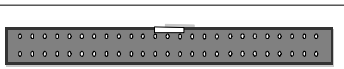
With SCSI, you can connect a variety of devices on your computer (Hard/Floppy Disk Drives, CD-ROM Drives, Scanners, Tape Drives, Removable Media Drives, etc.) in a daisy-chain topology to a common host adapter. Daisy-chaining SCSI devices allows them to communicate with each other by sending commands and data via the SCSI bus.

The AIC-7890 Ultra2 SCSI provides maximum data transfer rates of 20 Mbytes/sec in the narrow 8-bit mode (Fast SCSI) and 40 Mbytes/sec in the wide 16-bit mode (Ultra SCSI), and 80 Mbytes/sec in the LVD mode (Ultra2 SCSI)

5-2 INSTALLING SCSI DEVICES

Your Motherboard features two internal SCSI connectors onboard, and comes with one 50-pin flat cable, one 68-pin flat cable, and one 68-pin Ultra2 cable.

5-2.1 50-pin Fast SCSI Connector



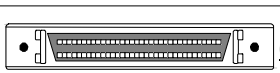
50-pin *Fast SCSI* internal connector

Narrow SCSI allows data transfer rates of up to 20 Mbytes/sec. With Narrow SCSI, you can connect up to 7 internal Fast SCSI devices to the 50-pin Fast SCSI connector on the Motherboard. Use the enclosed Narrow SCSI cable to connect up to 2 internal SCSI devices.

If you are connecting more than 2 internal SCSI devices, you must use an internal SCSI cable with enough connectors to accommodate all your devices. Contact your dealer for special cable service.

When Fast SCSI devices are connected to the bus, the total length of all cables is not to exceed 3 meters (9.8 ft.) to ensure reliable operation.

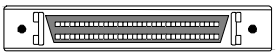
5-2.2 68-pin Ultra-Wide SCSI Connector



68-pin *Ultra-Wide SCSI* internal connector

Ultra-Wide SCSI allows you to connect up to 15 devices (7 Narrow internal and 8 Wide internal or external SCSI devices, or 15 Wide internal or external SCSI devices) to the 68-pin Ultra-Wide SCSI connector on the Motherboard. Devices that connect to the 16-bit Wide SCSI bus can transfer data at the maximum rate of 40 Mbytes/sec.

68-pin Ultra2 SCSI Connector



68-pin *Ultra2 SCSI* internal connector

Ultra2 SCSI allows you to connect up to 15 devices (LVD/SE mode) to the 68-pin Ultra2 SCSI connector on the Motherboard. Devices that connect to the 16-bit Ultra2 SCSI bus can transfer data at the maximum rate of 80 Mbytes/sec.

5-3 CONNECTING INTERNAL SCSI DEVICES

If you are connecting several internal SCSI devices (more than 2 SCSI devices), make sure you have an internal SCSI cable with enough connectors to accommodate all of your devices. The enclosed SCSI flat cables can serve up to 2 SCSI devices.

Follow these steps to ensure a proper installation of your internal SCSI devices:

1. Prepare each SCSI devices for installation; configure the device ***SCSI ID*** and terminators (***terminate*** the last internal device attached to the cable by setting its termination to the ON position; all other internal devices on the SCSI bus must have their termination set to OFF).
2. Install the SCSI devices in your computer.
3. Plug the connector at one end of the internal SCSI cable into the host adapter's SCSI connector on the Motherboard.

Note: Make sure the cable's colored stripe is aligned with pin-1 of the host adapter's connector. Pin-1 of the SCSI connector is usually designated by a small triangle (▲), or a "1" at one corner of the connector.

4. Connect the remaining connectors on the cable to the SCSI devices (CD-ROM drives, etc.).

Note: Make sure the cable's colored stripe is aligned with pin-1 of the SCSI device's connector.

5. Connect a DC power cable (from your computer's power supply) to the power connector on each SCSI device.


SOYO