SY-6ICA
Motherboard

****

Pentium® III & Pentium® II Processor supported

FW82820 AGP/PCI Motherboard

100/133 MHz Front Side Bus supported

ATX Form Factor

****

User's Manual

About This Guide:
This Quick Start Guide can help system manufacturers and end users in setting up and installing the Motherboard. Information in this guide has been carefully checked for reliability; however, to the correctness of the contents there is no guarantee given. The information in this document is subject to amend without notice.

For further information, please visit our **Web Site** on the Internet. The address is **"http://www.soyo.com.tw".**

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Version 1.0
6ICA SERIAL

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

100% POST CONSUMER
RECYCLED PAPER

Table of Contents

Chapter 1

1-1 INTRODUCTION

The **SY-6ICA** AGP/PCI/AMR Motherboard is a high-performance Sot 1 processor supported ATX form-factor system board. The **SY-6ICA** uses the FW82820 Chipset and supports Slot 1 processors. This Motherboard is fully compatible with industry standards and adds many technical enhancements.

1-2 KEY FEATURES

➢ Supports Intel ® processors
  - FSB 100MHz: Pentium ® II (350-450MHz) & Pentium ® III (450-600MHz)
  - FSB 133MHz: Pentium ® III (533/733MHz)

➢ Supports 100/133 MHz Front Side Bus Frequency

➢ Auto-detect CPU voltage

➢ Easy CPU settings in BIOS with the "SOYO COMBO Setup"

➢ PC99, ACPI

➢ Ultra DMA33/66 (ATA 33/66)

➢ Supports Wake-On-LAN   (WOL)

➢ Direct Rambus ™memory technology

➢ Maximum memory size up to 1GB using 256Mb Direct RDRAM technology

➢ Supports ACPI Suspend Indicator

➢ Power-on by modem, alarm, PS/2 Keyboard and Mouse

➢ Power failure resume

➢ Supports Suspend to RAM

➢ Supports onboard hardware monitoring and includes Hardware Doctor ™utility

➢ Fan speed control

➢ Battery Low voltage Detect

➢ Support 7 sets of voltage monitoring

➢ Supports multiple-boot function

➢ Y2K Complaint

➢ AGP 2.0 Compliant;
  AGP Universal Connector supports:
  - 1.5V and 3.3V AGP cards
  - 1X/2X/4X data transfer

➢ Hardware Random Number Generator (RNG) for enabling enhanced
  platform security

➢ RTC hardware to handle Y2K Century Rollover

➢ Supports Audio Modem Riser slot (AMR 1.0 compliant) *

➢ 2 x RIMM slots for RDRAM memory

➢ 1 x 32-bit AGP slot

➢ 5 x 32-bit bus mastering PCI slots

➢ 2 x USB ports onboard

➢ 1 x IrDA port

➢ ATX power connector

** If the user wants to use a Modem Riser card (MR) make sure to use a **Secondary** mode MR, **PRIMARY** mode MRs are **NOT** Supported.*

1-3   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.

1-4 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.

1-5 SY-6ICA MOTHERBOARD LAYOUT
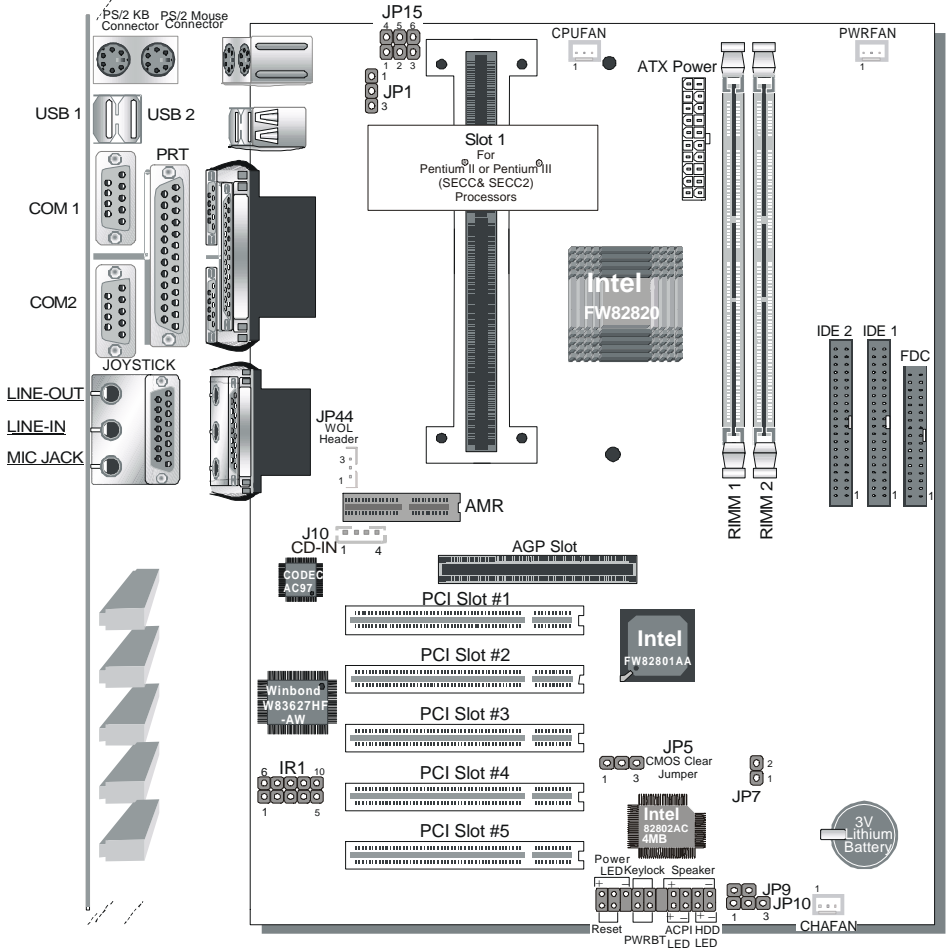
Back Panel **SY-6ICA Platform**

1-6 SY-6ICA MOTHERBOARD COMPONENTS
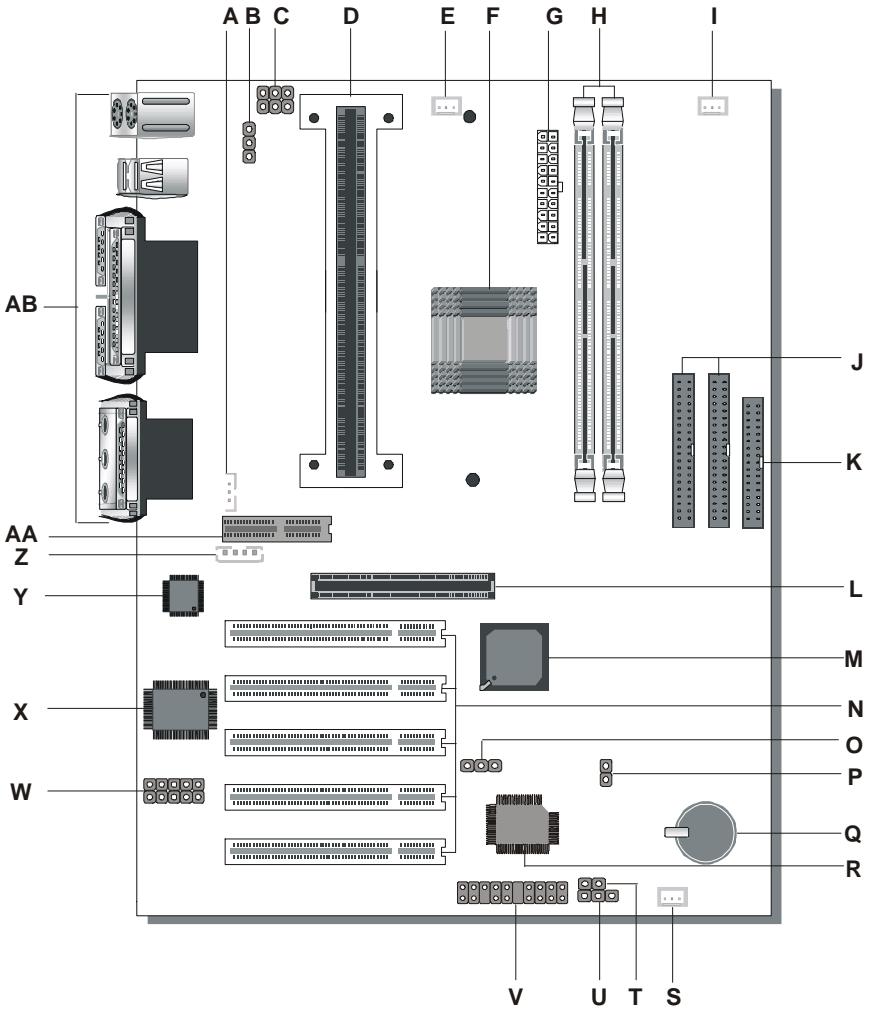
A **Wake-On-LAN(WOL) Header**

B **Power On by Keyboard Jumper**

C **CPU Core Voltage Adjust Jumper**

D **Slot 1 Connector**

E **CPU Cooling Fan Connector**

F **Intel FW82820 PCI/AGP Set**

G **ATX Power Supply Connector**

H **Rambus Bank**

I **Power Cooling Fan Connector**

J **Bus Mastering E-IDE/ATAPI Ports**

K **Floppy Disk Drive (FDD) Port**

L **32-bit AGP Slot**

M **Intel FW82801 ICH (I/O Control Hub) Chip**

N **32-bit PCI Mastering Slots**

O **CMOS Clear Jumper**

P **CPU Safe Mode Jumper**

Q **3V Lithium Battery**

R **Intel 82802AB 4MB FWH (FirmWare Hub) Chip**

S **Chassis Cooling Fan Connector**

T **The FWH Boot Block Write-Protect Jumper**

U **PC speaker redirection Jumper**

V **Front panel connectors**

W **Serial Infrared (IrDA) Device Header**

X **Winbond W83627HF-AW LPC I/O Chip**

Y **AC97 Codec Chip**

Z **CD-IN Connector**

AA **Audio Modem Riser Slot**

AB **Back panel Connectors**

1-7   CHIPSET

To compliment the Intel ® Slot 1 processor, the Intel ® 820 chipset delivers a balanced platform solution for value computing. The 820 chipset is a highly-integrated three-chip solution consisting of a Graphics & Memory Controller (Intel 82820), an I/O Controller (Intel82801), and a Firmware Hub (Intel 82802).

The ICH is a highly integrated multifunctional I/O Controller Hub that provides the interface to the PCI Bus and integrates many of the functions needed in today PC platforms. The ICH communicates with the host controller over a dedicated hub interface.

The Intel ® 82802 Firmware Hub (FWH) component is part of the Intel ® 820 chipset. The FWH is key to enabling future security and manageabilily infrastructures for the PC platform.

Intel has developed technology that enhances the performance and exceptional value of the Intel ® Camino™chipset-powered PC. Built on the strong foundation of Intel ® 440BX AGPset technology, the Intel ® 820 chipset has re-engineered the Value PC, providing next generation features and great graphics performance at a lower cost.

Richer, more robust 2D and 3D graphics are optimized thanks to an integrated chipset design that utilizes second-generation graphics technology. This integrated chipset offers innovative features with compelling performance while lowering overall system costs.

A new design with big benefits

At the core of the 820 chipset is a memory controller with built-in graphics technology. The 82820 chip optimizes system memory arbitration, similar to AGP technology, resulting in a more responsive and cost-effective system.

The 82820 Graphics Memory Controller Hub (GMCH) features Intel ® graphics technology and software drivers, using Direct AGP (integrated AGP) to create vivid 2D and 3D effects and images. The 82820 chip features integrated Hardware Motion Compensation to improve soft DVD video quality and a digital video out port that enables connection to traditional TVs or the new space-saving digital flat panel displays.

Intel ® Dynamic Video Memory Technology (D.V.M.T.) is an architecture that offers breakthrough performance for the Value PC segment through efficient memory utilization and Direct AGP. The system OS uses the Intel software drivers and intelligent memory arbiter to support richer graphics applications.

The System Manageability Bus allows networking equipment to monitor the 820 chipset platform. Using ACPI specifications, the system manageability function enables low-power sleep mode and conserves energy when the system is idle.

The 82801 I/O Controller Hub (ICH) employs the Intel ® Accelerated Hub Architecture to make a direct connection from the graphics and memory to the integrated AC97 controller, the IDE controllers, dual USB ports, and PCI add-in cards.

The Accelerated Hub Architecture provides twice the bandwidth of the PCI bus at 266 MB per second. This allows a wider flow of rich information from the I/O controller to the memory controller, with optimized arbitration rules allowing more functions to run concurrently, enabling more life-like audio and video.

The Integrated Audio-Codec 97 controller enables software audio and modem by using the processor to run sound and modem software. By

reusing existing system resources, this feature adds flexibility, and improves sound quality.

The 82802 Firmware Hub (FWH) stores system BIOS and video BIOS, eliminating a redundant nonvolatile memory component. In addition, the 82802 contains a hardware Random Number Generator (RNG). The Intel® RNG provides truly random numbers to enable fundamental security building blocks supporting stronger encryption, digital signing, and security protocols.
Intel   820 chipset re-engineers the Value PC by providing a platform that will bring next generation features and great graphics performance to Value PC while reducing overall platform cost.

PRODUCT HIGHLIGHTS
- ➢ Enhances performance and exceptional value of the Intel® Camino™ processor-powered PC
- ➢ Built on strong foundation of Intel® 440Bx technology
- ➢ Provides next generation features
- ➢ Provides great graphics performance at a lower cost
- ➢ Optimizes 2D and 3D graphics through integrated chipset design utilizing second-generation graphics technology
- ➢ Innovative features with compelling performance while lowering system costs

FEATURES BENEFITS
- ➢ Intel® Accelerated Hub Architecture. Increased I/O performance allows better concurrency for richer multimedia applications
- ➢ Integrated graphics/AC97 controller, more flexibility and better audio quality
- ➢ Intel® 3D graphics with Direct AGP. Vivid 2D and 3D graphics, efficient use of system memory for graphics, O/S and applications
- ➢ Optional 4MB of dedicated display cache video memory   Enables

SKU differentiation with increased 3D graphics performance improvement over Direct AGP

➢ Low-power sleep modes. Energy Savings

➢ One software driver code base. More stable platform, higher quality graphics, reduced OEM support costs

 ➢ Intel ® Random Number Generator (RNG). Enables ISV's to strengthen security products

➢ Digital Video Out port. Allows connection of traditional TV or new digital flat panel displays; compatible with DVI specification

➢ Soft DVD MPEG 2 playback with Hardware Motion Compensation Life-like video and audio

➢ 100-MHz System Bus capable. Flexibility for performance headroom

➢ Plug and Play 2 USB ports.

Product Package

➢ 82820 Graphics Memory Controller Hub. 421 Ball Grid Array (BGA)

➢ 82801 Integrated Controller Hub. 241 Ball Grid Array (BGA)

➢ 82802 Firmware Hub.32-pin PLCC or 40-pin TSOP

1-7.1 Accelerated Graphics Port (A.G.P.)

A.G.P. is a high-performance bus for graphics-intensive applications, such as 3D applications. A.G.P., while based on the PCI Local Bus Specifications, Rev 2.1, is independent of the PCI bus and is intended for exclusive use with graphical display devices. A.G.P. overcomes certain limitations of the PCI bus related to handling a large amount of graphics data with the following features:

● Pipelined memory read and write operations that hide memory access latency

● Demultiplexing of address and data on the bus for near 100 percent bus efficiency

● AC timing for 133 MHz data transfer rates, allowing real data throughput in excess of 500 MB/sec

1-7.2 Universal Serial Bus (USB)

The motherboard has two USB ports; one USB peripheral can be connected to each port. For more than two USB devices, an external hub can be connected to either port. The motherboard fully supports the universal host controller interface (UHCI) and used UHCI-compatible software drivers.

Specification USB features include:

- Self-identifying peripherals that can be plugged in while the computer is running
- Automatic mapping of function to driver and configuration
- Support for isochronous and asynchronous transfer types over the same set of wires
- Support for up to 127 physical devices
- Guaranteed bandwidth and low latencies appropriate for telephony, audio, and other applications
- Error-handling and fault-recovery mechanisms built into the protocol

Note

Computer systems that have an unshielded cable attached to a USB port may not meet FCC Class B requirements, even if no device or a low-speed USB device is attached to the cable. Use shielded cable that meets the requirements for a full-spe0ed USB device.

1-7.3 IDE Support

The motherboard has two independent bus-mastering PCI IDE interfaces. These interfaces support PIO Mode3, PIO Mode 4, ATAPI devices (e.g., CD-ROM), and Ultra DMA/33 synchronous-DMA mode transfers. The BIOS supports logical block addressing (LBA) and extended cylinder head sector (ECHS) translation modes. The BIOS automatically detects the IDE device transfer rate and translation mode.

Programmed I/O operations usually require a substantial amount of processor bandwidth. However, in multitasking operating systems, the bandwidth freed by bus mastering IDE can be devoted to other tasks while disk transfers are occurring.

The motherboard also supports laser servo (LS-120) drives. LS-120 technology allows the user to perform read/write operations to LS-120 (120MB) and conventional 1.44MB and 720KB diskettes. An optical servo system is used to precisely position a dual-gap head to access the diskett's 2,490 tracks per inch (tpi) containing up to 120 MB of data storage. A conventional diskette uses 135 tpi for 1.44 MB of data storage. LS-120 drivers are ATAPI-compatible and connect to the motherboard's IDE interface. (LS-120 drives are also available with SCSI and parallel port interfaces.) Some versions of Windows 95 and Windows NT operating systems recognize the LS-120 drive as a bootable device in both 120 MB and 1.44 MB mode.

Connection of an LS-120 drive and a standard 3.5-inch diskette drive is allowed. The LS-120 drive can be configured as a boot device if selected as Drive A in the BIOS setup program.

Note

If you connect at LS-120 drive to an IDE connector and configure it as the :boot: drive and configure a standard 3.5-inch diskette drive as a "B" drive, the standard diskette drive is not seen by the operating system. When the LS-120 drive is configured as the "boot: device, the system will recognize it as both the A and B drive

1-7.4 Real-Time Clock, CMOS SRAM, and Battery

The real-time clock is compatible with DS1287 and MC146818 components. The clock provides a time-of-day clock and a multicentury calendar with alarm features and century rollover. The real-time clock supports 256 bytes of battery-backed CMOS SRAM in two banks that are reserved for BIOS use.

The time, date, and CMOS values can be specified in the Setup program. The CMOS values can be returned to their defaults by using the Setup program.

1-8　I/O INTERFACE CONTROLLER

The motherboard uses the Winbond W83627HF-AW I/O controller which features:

- Single diskette drive interface
- Two serial ports
- FIFO supports on both serial and diskette interfaces
- One parallel port with Extended Capabilities Port (ECP) and Enhanced Parallel Port (EPP) support
- PS/2 style mouse and keyboard interfaces
- PCI PME interface
- Intelligent auto power management, including:
  - ➢ Shadowed write-only registers for ACPI compliance
  - ➢ Programmable wake-up event interface

The Setup program provides configuration option for the I/O controller.

1-8.1　Serial Ports

The motherboard has one 9-pin D-Sub serial port connector located on the back panel. The NS16C5450-compatible UARTs support data transfers at speeds up to 115.2 Kbits/sec with BIOS support.

1-8.2　Parallel Port

The connector for the multimode bi-directional parallel port is a 25-pin D-Sub connector located on the back panel of the motherboard. In the Setup program, there are four options for parallel port operation:

- Compatible (standard mode)
- Bi-directional (PS/2 compatible)
- Bi-directional EPP. A driver from the peripheral manufacturer is required for operation. See Section 6.2 for EPP compatibility.
- Bi-directional high-speed ECP

1-8.3 Diskette Drive Controller

The I/O controller is software compatible with the 82077 diskette drive controller and supports both PC-AT and PS/2 modes. In the Setup program, the diskette drive interface can be configured for the following diskette drive capacities and sizes.

- 360 KB, 5.25-inch
- 1.2 MB, 5.25-inch
- 720 KB, 3.5-inch
- 1.2 MB. 3.5-inch (driver required)
- 1.25-1.44 MB, 3.5-inch
- 2.88 MB, 3.5-inch

1-8.4 PS/2 Keyboard and Mouse Interface

PS/2 keyboard and mouse connectors are located on the back panel of the motherboard. The +5 V lines to keyboard and mouse connectors are protected with a fuse that prevents motherboard components from being damaged when an over-current condition occurs.

💡 *Note*

The mouse and keyboard can be plugged into either PS/2 connector. Power to the computer should be turned off before a keyboard or mouse is connected or disconnected.

The keyboard controller contains code, which provides the traditional keyboard and mouse control functions, and also supports Power On/Reset password protection. Power On/Reset password can be specified in the BIOS Setup program.

The keyboard controller also supports the hot-key sequence <Ctrl><Alt><Del>, software reset. This key sequence resets the computer's software by jumping to the beginning of the BIOS code and running the Power On Self Test (POST).

1-8.5　Infrared Support

The IR connection can be used to transfer files to or from portable devices like laptops, PDAs, and printers.

1-9　AUDIO SUBSYSTEM

1-9.1 Audio Connector

The audio connectors include the following:

- Back panel connectors: stereo line-level output (Line Out), stereo line-level input (Line In), and Mic In
- CD Line - in (black)

1-9.1.1 CD Line - in Connector

A1 x 4-pin ATAPI-style connector is available for connecting an internal CD-ROM drive to the audio mixer. The connector is designed for use with cables that are compatible with ATAPI CD-ROM drivers

1-10 HARDWARE MONITOR

The optional hardware monitor subsystem provides low-cost instrumentation capabilities. The features of the hardware monitor subsystem include:

- ➢ An integrated ambient temperature sensor
- ➢ Fan speed sensors, which monitor the fan 1 and fan 2 connectors
- ➢ Power supply voltage monitoring to detect levels above or below acceptable values

When suggested ratings for temperature, fan speed, or voltage are exceeded, an interrupt is activated. The hardware monitor component connects to the SMBus.

1-11   WAKE ON LAN TECHNOLOGY

Wake on LAN technology enables remote wakeup of the computer through a network. Wake on LAN technology requires a PCI add-in network interface card (NIC) with remote wakeup capabilities. The remote wakeup connector on the NIC must be connected to the onboard Wake on LAN technology connector. The NIC monitors network traffic at the Ethernet interface; upon detecting a Magic Packet, the NIC asserts a wakeup signal that powers up the computer. This feature uses the Wake on LAN connector.

☛**CAUTION**

For Wake on LAN, the 5-V standby line for the power supply must be capable of delivering +5V ±5 % at 720 mA. Failure to provide adequate standby current when implementing Wake on LAN can damage the power supply.

Chapter 2

HARDWARE INSTALLATION

Congratulations on your purchase of **SY-6ICA** 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. Slot 1 processor with built-in CPU cooling fan (boxed type).

> *Note:* This Motherboard supports non-boxed type CPUs. The heavier CPU cooling fans require the installation of a CPU support stand.

2. RAMBus memory module and continuation module (see 2-3.2)

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, Floppy drive …

9. External Peripherals: Printer, Plotter, and Modem (optional)

10. Internal Peripherals: Modem and LAN cards (optional)

2-2 UNPACKING THE MOTHERBOARD

When unpacking the Motherboard, check for the following items:

◆ The SY-6ICA FW82820 AGP/PCI/AMR Motherboard

◆ This Quick Start Guide

◆ The Installation CD-ROM

◆ SOYO 3-in-1 Bonus Pack CD-ROM (Norton AntiVirus, Ghost and Virtual Drive)

◆ The Foldable URM (Universal Retention Mechanism) *(Factory installed on this motherboard)*

◆ One IDE Device ATA 66 Flat Cable

◆ One Floppy Disk Drive Flat Cable

STOP   *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.

18

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.

STOP	*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

2-3.1 CPU Installation

Your SY-6ICA 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.

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

FSB 100MHz

☐350MHz (100 x 3. 5)	☐450MHz (100 x 4.5)	☐550MHz (100 x 5.5)	☐
☐400MHz (100 x 4.0)	☐500MHz (100 x 5.0)	☐600MHz (100 x 6.0)	

FSB 133MHz

☐400MHz (133 x 3.0)	☐533MHz (133 x 4.0)	☐667MHz (133 x 5.0)	☐
☐466MHz (133 x 3.5)	☐600MHz (133 x 4.5)	☐733MHz (133 x 5.5)	

Follow these instructions to install your Slot 1 processor correctly.

➢ Retention Module

1.   Open the two sides by folding them up.

2.   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.
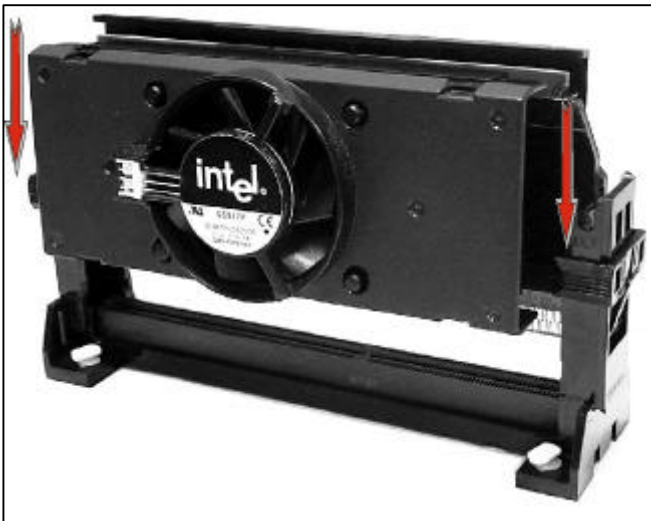
3. After completely inserting the CPU, Now your CPU is ready for use.

HOT 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.

2-3.1.1 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.

2-3.2 RDRAM Memory Module Installation

RIMM 1 RIMM 2
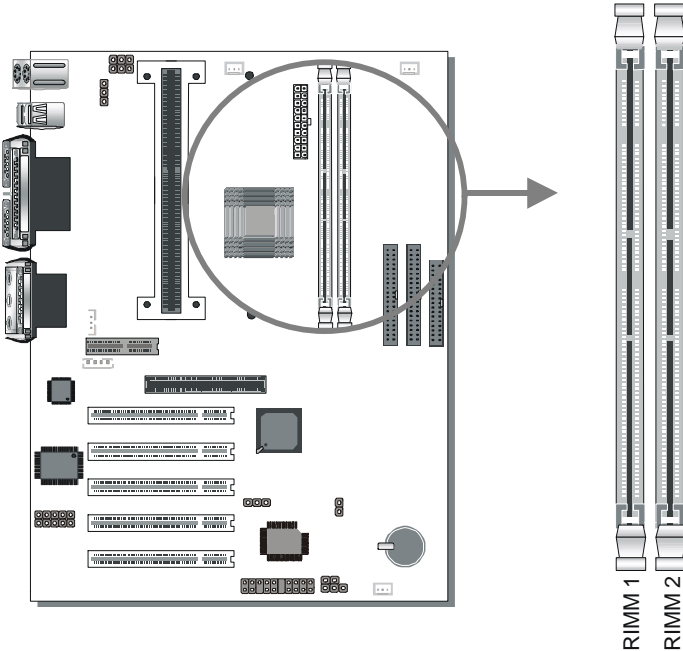
RDRAM M This motherboard incorporates the latest Direct Rambus ™ technology memory subsystem capable of delivering three times the bandwidth of conventional 100MHz SDRAM based systems. The board comes with two RIMM ™sockets for modular memory expansion, allowing maximum memory array sizes of up to 256MB/512MB/1GB using RDRAM modules that come with 64/72Mbit, 128/144Mbit or 256/288Mbit ICs.

This motherboard supports a single channel of Direct RDRAM memory that can accommodate a maximum of 32 RDRAM devices. At a FSB frequency of 100MHz, 300 & 400MHz Direct RDRAMs are supported, At a FSB frequency of 133MHz, 356 & 400MHz direct RDRAMs are supported, providing up to 1.6GB/sec of data transfer rate.

Memory Configuration

Direct Rambus ™ signals are daisy-chained through each RDRAM memory module, as shown in the figure below. ***Therefore, you must always install a total of 2 Direct RDRAM and Continuation modules (as example., one Direct RDRAM and one Continuation modules) in all two RIMM slots to complete the memory subsystem,*** *or otherwise the motherboard main memory will not be functional.* There is no restriction on installing Direct RDRAM and Continuation modules in which RIMM slots.
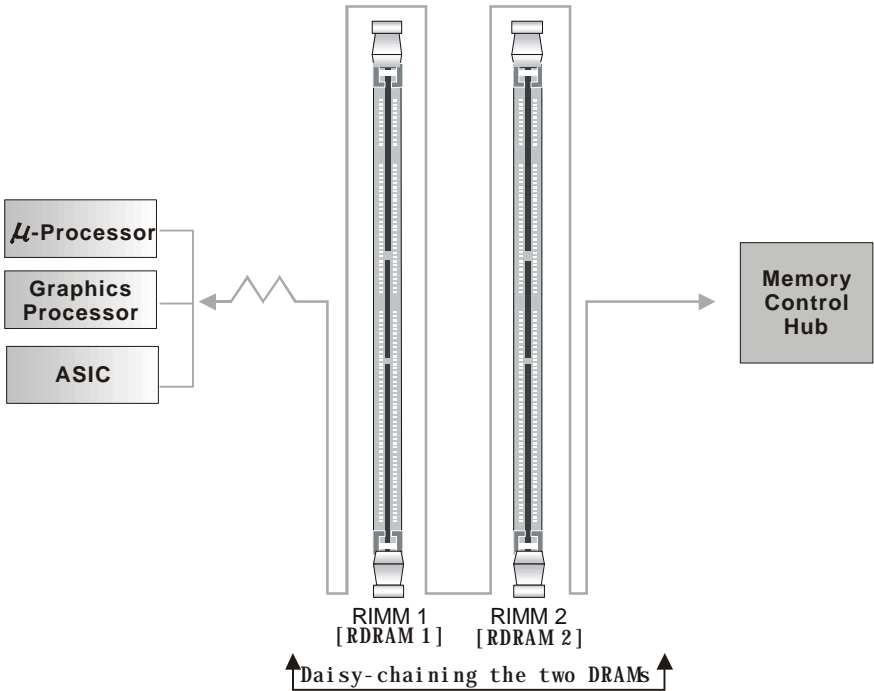
SY-6ICA Direct Rambus Memory Subsystem

*ALWAYS INSTALL TWO RDRAM MODULES

2-3.3 Motherboard Connector
2-3.3.1 IDE Device Installation (HDD, CD-ROM)

Pin -1

IDE 2
Secondary
IDE
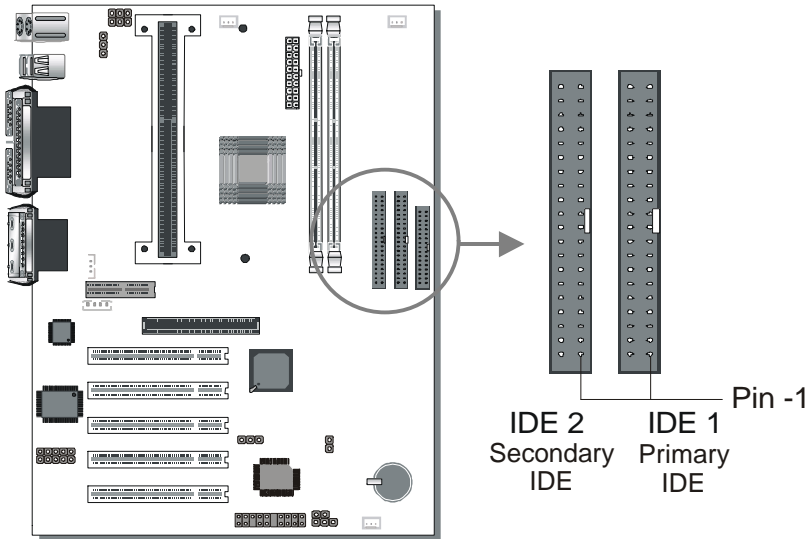
IDE 1
Primary
IDE

This Motherboard offers two primary and secondary IDE device connectors (IDE1, IDE2). It can support up to four high-speed ATA 33/66 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 ATA 33/66 IDE devices.

80-Conductor

**ATA 66
Flat Cable**

40-pin

1

39

1

39
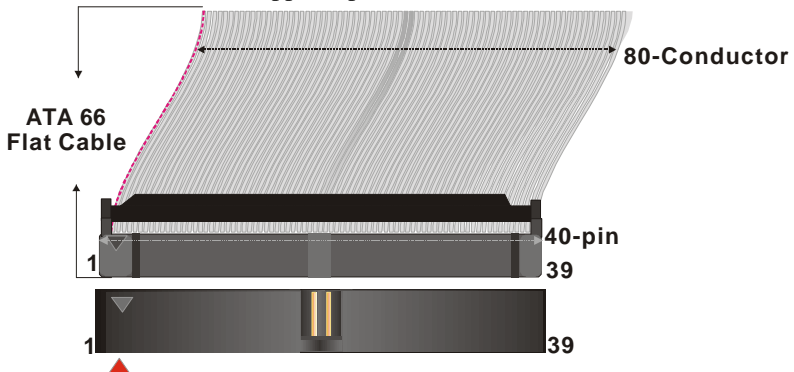
2-3.3.2 Floppy Drive Installation

Pin -1
FDC
Floppy Drive
Connector
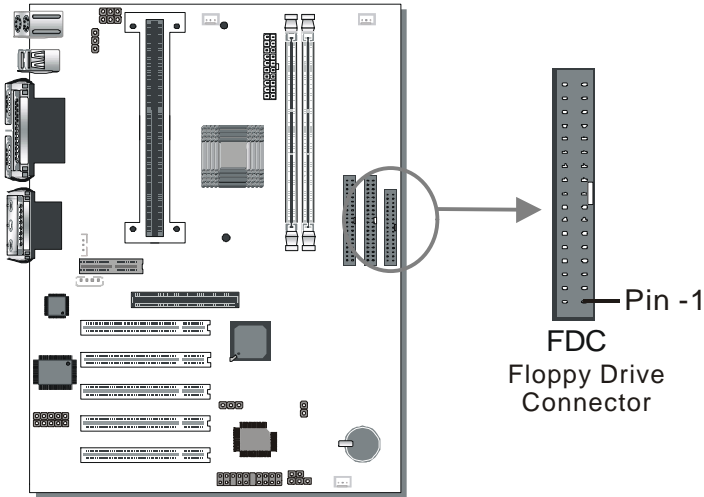
The system supports 5 possible floppy drive types: 720 KB, 1.2 MB, 1.44 MB, 2.88 MB, and LS-120.

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.
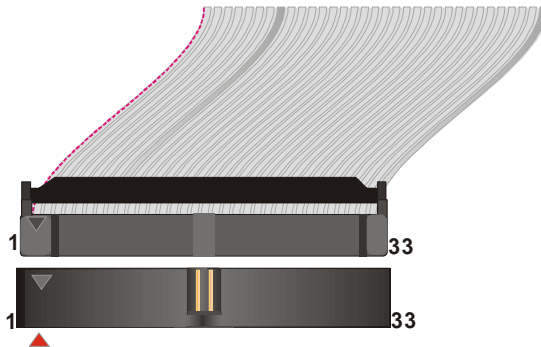
2-3.3.3 Front Panel Connections
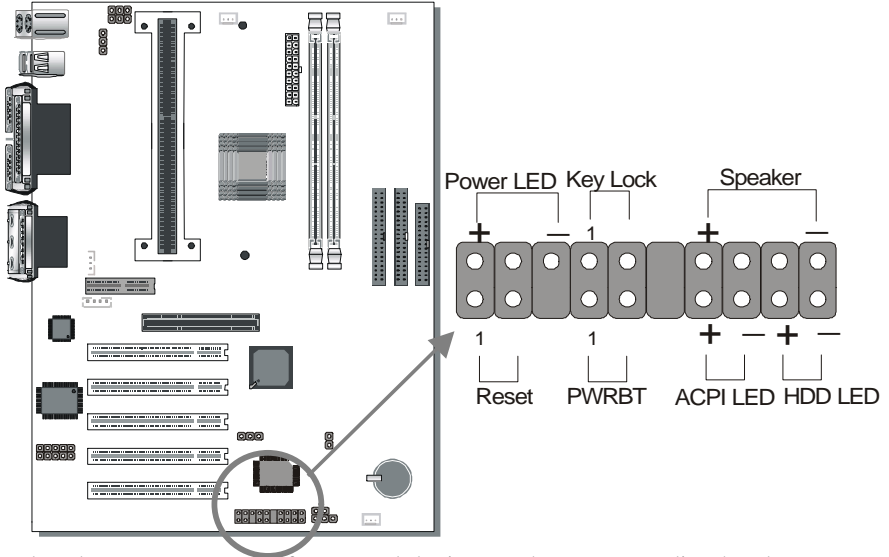
Plug the computer case's front panel devices to the corresponding headers on the Motherboard.

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.
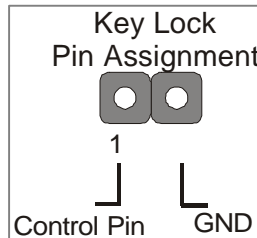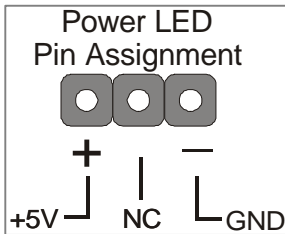
2. Reset

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

1

Power Good   GND
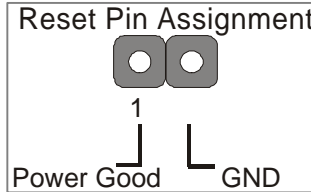
3. Speaker

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

Speaker Pin Assignment

+5V   NC NC   Speaker out
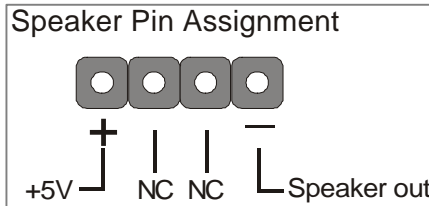
4. ACPI LED

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

＋   －

LED Anode   LED Cathode
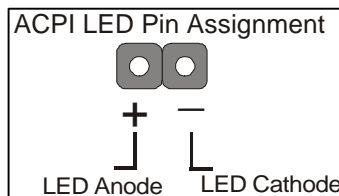
5. IDE LED

Attach the 2-pin IDE device LED cable to the corresponding IDE LED header on the Motherboard. This will cause the LED to light up when an IDE (HDD, CD-ROM) device is active.

HDD LED Pin Assignment

LED Anode LED Cathode
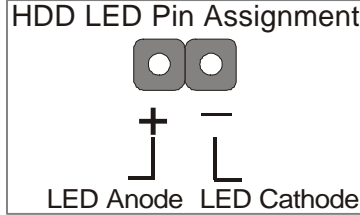
6. ATX Power On/Off Switch

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

PWRBT Pin Assignment

1

Power On/Off   GND
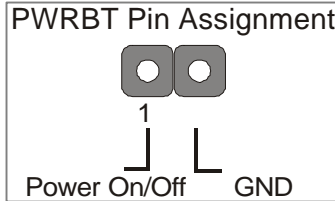
2-3.3.4 Back Panel Connections

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.
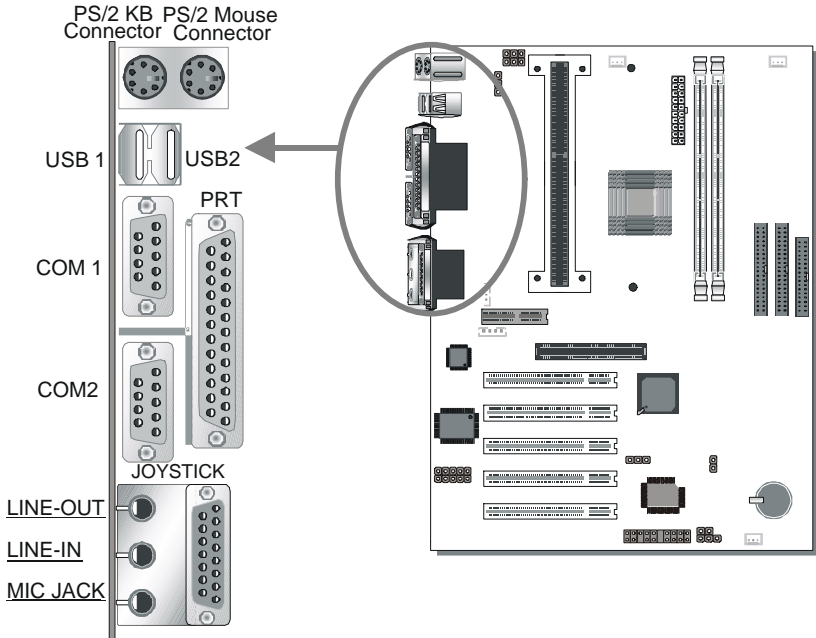
1. Onboard Serial Ports COM1/COM2

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.

```
        Pin6              Pin5
         NC          KBD Clock

     Pin4                  Pin3
     VCC                   GND

      Pin2                Pin1
       NC           KBD DATA
```
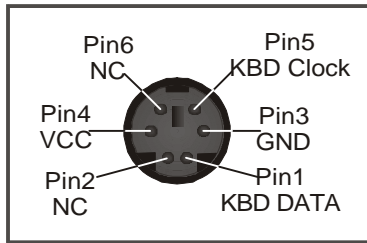
4. PS/2 Mouse

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

```
        Pin6              Pin5
         NC        Mouse Clock

     Pin4                  Pin3
     VCC                   GND

      Pin2                Pin1
       NC          Mouse DATA
```
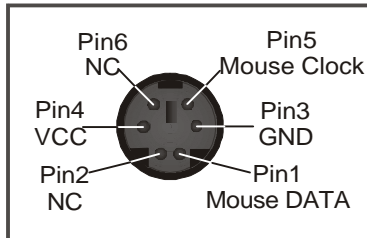
5. Universal Serial Bus USB1/USB2

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

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

6. Onboard Joystick port/audio

This Motherboard provides a Joystick port and audio connectors.

- Attach the joystick cable to the 15-pin JOYSTICK port at the rear panel of you motherboard.
- This Motherboard features three built-in audio-stereo ports (labeled line-in, line-out, and mic jack) convenient to directly plug-in all your external audio devices.

2-3.3.5 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:

**Wake-On-LAN
JP44 Pin Assignment**

MP-Wake-up ——3

GND ——2

5VSB ——1
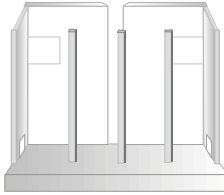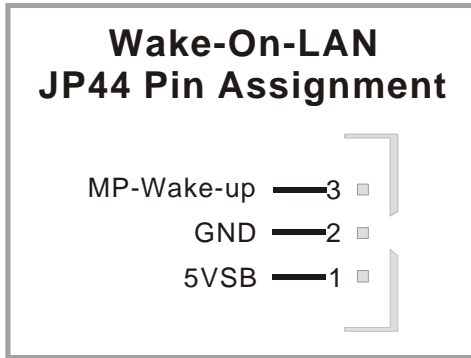
2.   Infrared (IR1)

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:
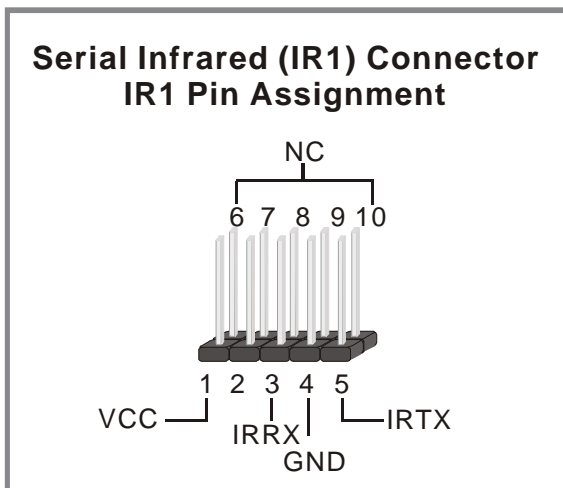
3. Cooling Fan Installation
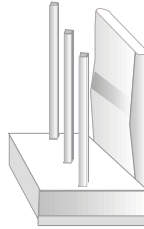
(1) CPU Cooling Fan

After you have seated the CPU properly on the motherboard, 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, [POWER MANAGEMENT] menu.) To avoid damage to the system, install according to the following pin assignment:

CPU Cooling Fan
CPUFAN Pin Assignment

1   2   3

GND   12V   SENSOR
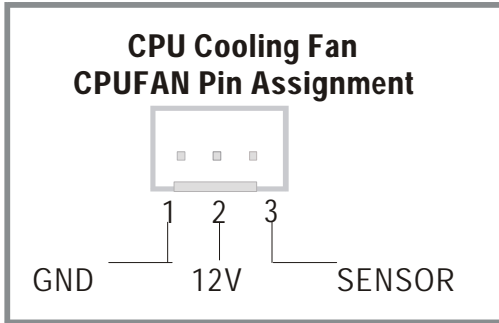
(2) Chassis Cooling Fan

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
CHAFAN Pin Assignment

```
        1    2    3
      GND    12V      SENSOR
```
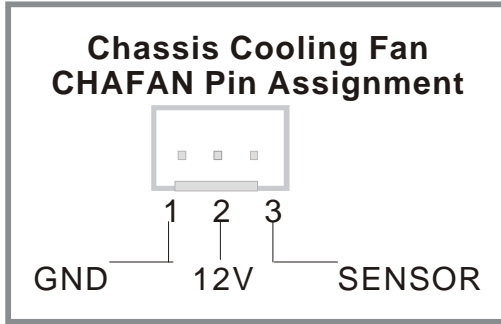
(1) Power Cooling Fan

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

Power Cooling Fan
PWRFAN Pin Assignment

```
        1    2    3
      GND    12V      SENSOR
```
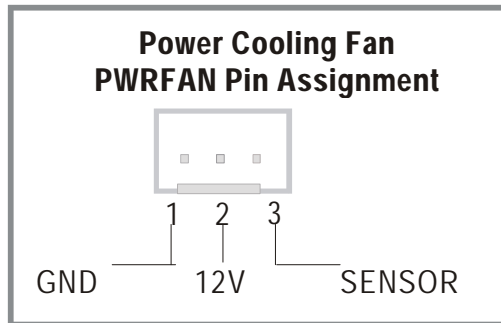
Note: CPU cooling fan must be installed to prevent CPU from overheating and ensure system stability. Chassis cooling fan is optional, depending on whether there is cooling fan in your chassis.

2-3.3.6 AGP VGA Card

Insert the AGP VGA card into the AGP slot. Then connect the monitor 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.

2-3.3.7 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.
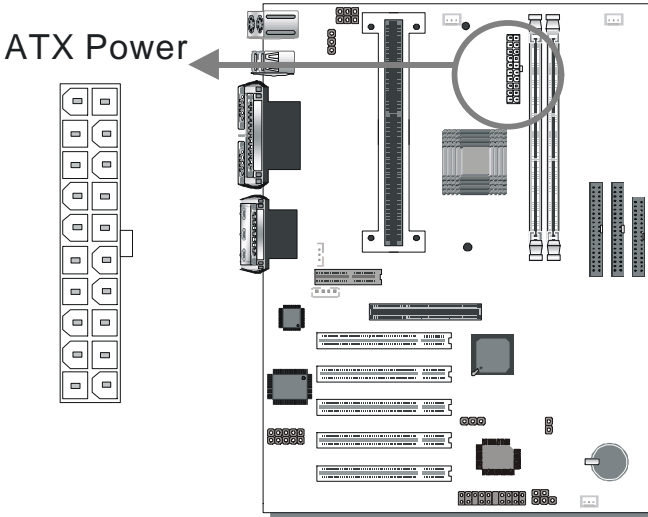
STOP

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

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

This motherboard requires a power supply that meets the ATX 2.03 specifications. Make sure the power supply can support at least 720mA on the 5V Standby lead.

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

ATX Power

12V	▢ ▢	5V	
5VSB	▢ ▢	5V	
PW-OK	▢ ▢	-5V	
GND	▢ ▢	GND	
5V	▢ ▢	GND	
GND	▢ ▢	GND	
5V	▢ ▢	PS-ON	
GND	▢ ▢	GND	
3.3V	▢ ▢	-12V	
3.3V	▢ ▢	3.3V	
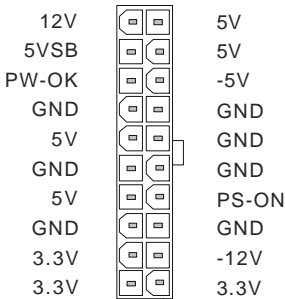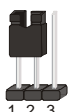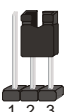
> ➢ **Pay special care to the directionality.**

2-3.4 Jumper Setting

Step 1. Enable/Disable Power-On by Keyboard (JP1)
You may choose to enable the Power-On through Keyboard function by shorting pin 1-2 on jumper JP1; or short pin 2-3 to disable this function.
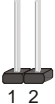
Power-On by Keyboard	Enable	Disable
JP1 Setting	Short pin 1-2 to enable the Power-On by Keyboard function. 1 2 3	Short pin 2-3 and the Power-On by Keyboard function is disabled. 1 2 3
Important: When using the Power-On by Keyboard function, please make sure the ATX power supply is able to provide at least 720mA on the 5V Standby lead (5VSB) in order to meet the standard ATX specification.		

Step 2. CPU Safe Mode (JP7)

If the user overclocks the system there is always the risk that the system will not boot up properly. In that case closing JP7 will force system to use the actual CPU multiplier to boot up. The boot-up sequence in that case will be as follows:

- ➢ -The system will start up with the lowest multiplier available.
- ➢ -The BIOS will now read the CPU-ID code and set the multiplier in accordance with it.
- ➢ -The system will boot up normally with the actual (non-overclock) CPU frequency.

CPU Safe Mode	Normal	Force actual CPU Frequency
JP7 Setting	Open JP7 1 2	Close JP7 1 2

Note: After properly booting up, set JP7 back to open again.

Step 3. Set JP9 for FWH Boot Block Write-Protect

Setting this jumper to open will prevent the boot block area of the FWH (FirmWare Hub) chip from being written data into such that it is write-protected from unwanted or abnormal write activity.

Note: In some rare cases, the boot block area will need to be flashed to complete the BIOS upgrade procedure. Setting JP9 to open will cause incomplete BIOS update in that case.

The FWH Boot Block Write-Protect	Locked	Unlocked
JP9 Setting	**open JP9** 1 2	**short JP9** 1 2

Step 4. PC speaker redirection (JP10)

Through this jumper the case speaker output can be redirected to the external (amplified) speakers (if connected) through the on-board Audio-Codec.

PC speaker redirection	Redirect to external speaker	Use case speaker
JP10 Setting	Short pin 1-2 1 2 3	Short pin 2-3 1 2 3

Step 5. CPU Core Voltage Adjust (JP15)
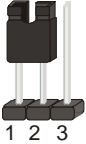
In case your CPU is running on a frequency higher then it is specified for, increasing its core voltage can enhance its stability. Over-clocking your CPU does however force your system to operate outside of its specifications, and therefore SOYO can not guarantee system stability.

CPU Core Voltage Adjust	JP15 Setting
Default Vcore	Short pin 1-2 4 5 6 1 2 3
2.5% higher	Short pin 2-3 4 5 6 1 2 3
5% higher	Short pin 4-5 4 5 6 1 2 3
7.5% higher	Short pin 5-6 4 5 6 1 2 3

2-3.5 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.

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

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

2-3.6 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:

CMOS Setup Utility – Copyright (C) 1984-1999 Award Software	
▶ Soyo Combo Feature	▶ PC Health Status
▶ Standard CMOS Features	Load Fail - Safe Defaults
▶ Advanced BIOS Features	Load Optimized Defaults
▶ Advanced Chipset Features	Set Supervisor Password
▶ Integrated Peripherals	Set User Password
▶ Power Management Setup	Save & Exit Setup
▶ PnP/PCI Configurations	Exit Without Saving
Esc : Quit ↑↓→← : Select Item F10 : Save & Exit Setup	
Change CPU's Clock & Voltage	

2-3.7 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.

SETUP UTILITY will display on 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 SETUP DEFAULT]

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

Step 3. Select [SOYO COMBO SETUP]

Move the cursor to the **[CPU Frequency]** field to set the CPU frequency.

Available [CPU Frequency] settings on your SY-6ICA Motherboard are detailed in the following table.

CPU Frequency		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.
❏350MHz (100 x 3.5)	❏400MHz (133 x 3.0)	
❏400MHz (100 x 4.0)	❏466MHz (133 x 3.5)	
❏450MHz (100 x 4.5)	❏533MHz (133 x 4.0)	
❏500MHz (100 x 5.0)	❏600MHz (133 x 4.5)	
❏550MHz (100 x 5.5)	❏667MHz (133 x 5.0)	
❏600MHz (100 x 6.0)	❏733MHz (133 x 5.5)	
❏	❏	

If you set this field to [Manual], you are then required to fill in the next two consecutive fields: (a) the CPU Host/PCI Clock, and (b) the CPU Ratio.

(a) CPU Host/PCI Clock

CPU Host / PCI Clock					Under this item you find the frequencies your PCI and AGP slots run at. These frequencies are derived from the CPU host clock in the following way: CPU host clock > 100MHz PCI = CPU host clock /3, CPU host clock < 100MHz PCI = CPU host clock /2,
❏66/33	❏95/31	❏115/38	❏124/41	❏140/35	
❏75/37	❏100/33	❏117/39	❏126/31	❏142/35	
❏78/39	❏105/35	❏118/39	❏133/33	❏144/36	
❏81/40	❏110/36	❏120/40	❏135/33	❏150/37	
❏83/40	❏112/37	❏122/37	❏137/34	❏155/38	
❏90/30	❏113/37	❏124/31	❏138/34		

(b) CPU Ratio

After you have selected the CPU Host/ PCI Clock, choose the right
multiplier for the CPU. CPU Ratio options are:

❏ x 2	❏ x 2.5	❏ x 3	❏ x 3.5	❏ x 4
❏ x 4.5	❏ x 5	❏ x 5.5	❏ x 6	❏ x 6.5
❏ x 7	❏ x 7.5	❏ x 8		

The CPU frequency is then defined as [host clock freq.] x [multiplier], and
should the working frequency of your CPUs processor.

Step 4. Select [SAVE & EXIT SETUP]

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

2-3.8 Troubleshooting at First Start

Video (no display) related issues

I built a new computer system using a Soyo board and nothing happens when turning it on, no video and no beeps from the PC speaker. What is happening and how can it be fixed?

No screen and no beeps mean that your CPU and motherboard do not work at all. It could be that the CPU is not seated correctly or that a component on the M/B is grounded (shorted) with the case. Also make sure to check the voltage setting switch (110V/220V) on the back of the power supply. To isolate the problem do the following:

1. Press and hold down on the "Ins" (insert) key while turning on the computer until you get video. If you do not get video then,

2. Double-check jumpers setting on you motherboard and remove all add-on cards, unplug all hard-disk and floppy-disk drive cables and see if you can hear some beeps. If you still do not get any beeps, then try putting the motherboard on the table (to isolate it from the case) with the CPU and speaker only, and give it one more try.

I hear a series of beeps and I do not get anything from my monitor. What could be wrong?

The following lists some basic beep codes and their possible meanings:

- One long beep and 3 very short beeps - The video card is not detected by the motherboard. Please re-seat your video card. If you are using an AGP card, please push your AGP card down real hard. You may have to push VERY hard without the AGP card mounting screw. Make sure not to insert the card the other way around.

- Continuous beeps – One or more of the memory modules is not seated correctly in its socket.

My PCI VGA card works fine with my system, but when I put in a new AGP card, it does not give me any video. Is my AGP slot bad?
This is a common problem with AGP video cards. The reason is that your AGP card did not get seated into the AGP slot fully and firmly. Please push your AGP card down into the socket real hard, it should snap twice. You may have to unscrew the AGP card to allow the card to go further down. Do take care not to damage the card by using too much force.

I get distorted video my AGP card right after I save my bios. Why is that?
The cause is likely that your AGP card is not running at the correct bus speed. To fix this, please clear the CMOS via JP5 and if it still does not work, please upgrade your motherboard bios to the latest version.

BIOS Issues
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 5EH_2CA1 (meaning revision 2CA1 for the SY-5EH 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.

Hard disk, floppy drive, CD-ROM etc
When I boot up my new computer I got "floppy boot failure" and the LED on the floppy stays on
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).

Modem issues
I get an "I/O Conflict" message when I turn on my system and I can not get my modem to work

What you need to do is to disable 'COM2' (or UART2 or serial port 2) in the bios under integrated peripheral setup.

I have installed my modem drivers several times and I still cannot get my modem to work. Why?

If you are sure that the modem driver has been installed correctly, then you need to install the south bridge driver from the SOYO CD, this is because Windows does not properly recognize relatively new chipsets.

Audio Issues

I do not get any sound from my sound card. What could be wrong?

Please make sure the speaker is connected to the speaker out port on your sound card.

In Device Manager, I keep getting yellow exclamation signs on my sound port even though I have installed my sound driver several times and I could not get my sound card to work. What is wrong?

It is likely that you did not have the correct driver installed. If you are sure that the correct sound driver has been installed, then please install the 'south bridge' driver for the motherboard.

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 sound card is not connected or it is loose.

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

First, 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 words, if your ISA sound card takes IRQ5, then set IRQ5 to 'Legacy ISA'. Next, install the 'south bridge' driver for the motherboard.

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

This is because the recorder and microphone in the Windows are not enabled. Please go to sound properties and enable them.

Lock up (freeze)

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... ", and it won't go any further. What should I do?

Please clear the CMOS via JP5 then choose 'load setup default' in the bios and save the bios and exit. Next, unplug all other add-on cards except the video card and floppy drive controller, and see if it can boot from floppy. Then put back the peripherals one by one to identify which one causes the lockup. If you are running a Cyrix CPU, make sure the 'linear burst function' is enabled in the bios.

I can not get my board to run properly.

Please make sure you have the latest bios and driver from the SOYO web site at: http://www.soyo.com

2-3.9 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.**

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.

CMOS Setup Utility – Copyright (C) 1984-1999 Award Software	
▶ Soyo Combo Feature	▶ PC Health Status
▶ Standard CMOS Features	Load Fail - Safe Defaults
▶ Advanced BIOS Features	Load Optimized Defaults
▶ Advanced Chipset Features	Set Supervisor Password
▶ Integrated Peripherals	Set User Password
▶ Power Management Setup	Save & Exit Setup
▶ PnP/PCI Configurations	Exit Without Saving
Esc : Quit ↑↓→← : Select Item F10 : Save & Exit Setup	
Change CPU's Clock & Voltage	

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	General Help	Gives the list of options available for each item.
F5	Previous Values	Restore the old values. These are the values that the user started the current session with.
F6	Load Fail-Safe Defaults	Loads all items with the most conservative values.
F7	Load Optimized Defaults	Loads all options with the optimize values.
F10	Save	Saves your changes and reboots the system.
[Esc]	Exit	Returns at anytime and from any location to the Main Menu.
[Enter]	Select	Will display a overlapping window with all options for the current item.
[+/–/PU/PD]	Value	Using the +, –, Page Up and Page Down keys the user can toggle the value of the current item.

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.

```
                    R O M   P C I/ I S A   B I O S
                    C M O S  S E T U P  U T I L I T Y
                    A W A R D  S O F T W A R E ,  I N C .
STAND ARD CMOS SETUP              INTEGRATED PERIPHERALS
BIOS F
CHIPSE
POWER            SAVE to CMOS and EXIT
PNP/PC
LOAD S
LOAD BIOS DEFAULTS

Esc  : Q u it                 ↑ ↓ → ←   : S e le ct  Ite m
F10  : S a v e  &  E xit S e tu p     (S hift) F2   : C h a n g e  C o lo r
                    Tim e , D a te , H a rd  D is k  Ty p e …
```
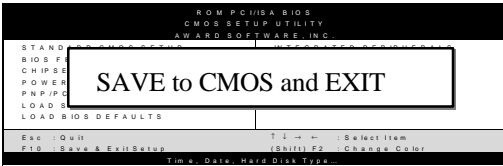
Type [Y] to save the changes and exit or [N] to return to the Main Menu and keep current values.

EXIT WITHOUT SAVING

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

```
                    R O M   P C I/ I S A   B I O S
                    C M O S  S E T U P  U T I L I T Y
                    A W A R D  S O F T W A R E ,   I N C .
STANDARD CMOS SETUP              INTEGRATED PERIPHERALS
BIO
CH
PO            Quit Without Saving (Y/N)? _
PN
LO
LO

Esc  : Q u it                 ↑ ↓ → ←   : S e le ct  Ite m
F10  : S a v e  &  E xit S e tu p     (S hift) F2   : C h a n g e  C o lo r
                    Tim e , D a te , H a rd  D is k  Ty p e …
```
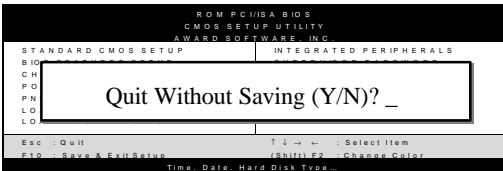
Type [Y] to abandon changes and exit or [N] to return to the Main Menu and keep current values.

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 – Copyright ( C ) 1984-1999 Award Software
                              Soyo Combo Feature

     CPU Host/PCI Clock          Default         ▲          Item Help
     CPU Ratio                   X 3
     C.I.H. 4-WAY Protection     Enabled              Menu Level    ▶
     CPU L2 Cache ECC Checking   Enabled
     Processor Number Feature    Disabled
     Quick Power On Self Test    Enabled

     First Boot Device           Floppy
     Second Boot Device          HDD-0
     Third Boot Device           LS/ZIP
     Boot Other Device           Enabled
     AC97 Audio                  Auto
     AC97 Modem                  Auto

     POWER ON Function           Button Only
   x KB Power ON Password        Enter
   x Hot Key Power ON            Ctrl-F1
     Soft-Off by PWR-BTTN        Instant-Off
     Wake-Up by PCI card         Disabled
     PowerOn by Ring             Enabled
     Resume by Alarm             Disabled
   x Date (of Month) Alarm       0
   x Time (hh:mm:ss) Alarm       0   0   0       ▼

  ↑↓→←: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 Quick CPU Frequency Setup

Quick CPU Frequency Setup	Setting		Description	Note
CPU Host/PCI Clock	Default	105/35 MHz	Select the host clock of your Sot 1 processor among these values. *Note:* For the 820 chipset, 100 and 133 MHz host clock frequencies are acceptable. However, the system stability is not guaranteed for other frequencies due to the limitations of this chipset.	
	66/33 MHz	114/38 MHz		
	70/35 MHz	120/40 MHz		
	75/37 MHz	124/41 MHz		
	83/41 MHz	133/33 MHz		
	90/30 MHz	133/44 MHz		
	95/31 MHz	140/35 MHz		
	100/33 MHz	150/37 MHz		
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, 5.5,6,6.5,7.0,7.5,8.0]. The CPU frequency is then defined as [host clock freq.]x[multiplier], and should the working frequency of your Pentium®III & Pentium®II processor.			

3-1.2 C.I.H. 4-WAY Protection Settings

	Setting	Description	Note
C.I.H. 4-WAY Protection	Disabled	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.	
	Enabled		Default

3-1.3 L2 Cache Memory

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

3-1.4 Processor Number Feature

	Setting	Description	Note
Processor Number Feature	Disabled	Setting this item to enabled will allow application programs to read the ID-code in your Pentium III CPU, disabling this item will not allow any program to read the CPU ID code.	Default
	Enabled		

3-1.5 Quick Power On Self Test

	Setting	Description	Note
Quick Power On Self Test	Disabled		
	Enabled	Provides a fast POTS at boot-up.	Default

3-1.6 System Boot Control Settings

System Boot Control Settings	Setting	Description	Note
First /Second/Third Boot Device	Floppy	Select Your Boot Device Priority	
	LS/ZIP		
	HDD-0		
	SCSI		
	CDROM		
	HDD-1		
	HDD-2		
	HDD-3		
	LAN		
	Disabled		
Boot Other Device	Disabled	Select Your Boot Device Priority	
	Enabled		Default
AC97 Audio/Modem	Disabled	This item allows you to decide to auto/disable the 820 chipset family to support AC97 Audio/Modem.	Default
	auto		

3-1.7 Others Optional

	Setting	Description	Note
POWER ON Function	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).	
	Mouse Left	Enables waking up the system by pressing either the right or left mouse button.	
	Mouse Right		
	BUTTON-ONLY	Disables the Wake-Up by Keyboard function.	Default
	Keyboard 98		
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]	
Soft-Off by PWR-BTTN	Instant-off		Default
	Delay 4 Sec.	Turns off the system power 4 seconds after pushing the power button.	
Wake-Up by PCI card	Disabled	If enabled any PCI interrupt will wake up the system.	Default
	Enabled		
PowerOn by Ring	Disabled		
	Enabled		Default
Resume 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.	

3-2   STANDARD CMOS SETUP

Select the [STANDARD CMOS SETUP] option from the Main Menu and
press [Enter] key.

CMOS Setup Utility – Copyright (C) 1984-1999 Award Software
Standard CMOS Features

Date (mm:dd:yy)	Fri, Jan 1 1999	Item Help
Time (hh:mm:ss)	1 : 22 : 12	
		Menu Level ▶
▶ IDE Primary Master	Press Enter None	
▶ IDE Primary Slave	Press Enter None	
▶ IDE Secondary Master	Press Enter None	
▶ IDE Secondary Slave	Press Enter None	
Drive A	1.44M, 3.5 in.	
Drive B	None	
Floppy 3 Mode Support	Disabled	
Video	EGA/VGA	
Halt On	All Errors	
Base Memory	640K	
Extended Memory	30720K	
Total Memory	31744K	

↑↓→←:Move   Enter:Select   +/-/PU/PD:Value   F10:Save   ESC:Exit   F1:General Help
F5:Previous Values   F6:Fail-Safe Defaults   F7: Optimized Defaults

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

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

3-2.2 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
IDE HDD Auto-Detection	Press Enter	To auto-detect the HDD's size, head …on this channel	
IDE Primary Slave (User Type)	Auto	BIOS detects hard disk type automatically.	Default
	User	User defines the type of hard disk.	
	None		
Access 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.

3-2.3 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

3-2.4 Others Optional

	Setting	Description	Note
Video	EGA/VGA	Select the video mode.	Default
	CGA 40		
	CGA 80		
	MONO (Monochrome)		
Halt On	ALL Errors	When the BIOS detects system	Default
	No Errors	errors, this function will stop the	
	All, But Keyboard	system. Select which type of	
	All, But Diskette	error will cause the system halt.	
	All, But Disk/Key		

3-3   ADVANCED BIOS FEATURES

Select the [Advanced BIOS Features] option from the Main Menu and
press [Enter] key.

CMOS Setup Utility – Copyright (C) 1984-1999 Award Software
Advanced BIOS Features

		Item Help
Anti-Virus Protection	Enabled	
CPU Internal Cache	Enabled	Menu Level ▶
External Cache	Enabled	
Swap Floppy Drive	Disabled	
Boot Up Floppy Seek	Disabled	
Boot Up NumLock Status	On	
Gate A20 Option	Fast	
Typematic Rate Setting	Disabled	
x Typematic Rate (Chars/Sec)	6	
x Typematic Delay (Msec)	250	
Security Option	Setup	
OS Select For DRAM > 64MB	Non-OS2	
Report No FDD For WIN 95	Yes	

↑↓→←:Move   Enter:Select   +/-/PU/PD:Value   F10:Save   ESC:Exit   F1:General Help
F5:Previous Values   F6:Fail-Safe Defaults   F7: Optimized 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.

3-3.1 Virus Warning

	Setting	Description	Note
Anti - Virus Protection	Disabled	If set to enabled, the Paragon Anti-Virus. Function will scan your boot drive for boot virusses. If a boot virus is detected, the BIOS will display a warning message.	
	Enabled		Default

3-3.2 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

3-3.3 Floppy Driver Settings

	Setting	Description	Note
Swap Floppy Drive	Disabled		Default
	Enabled	Changes the sequence of A and B drives.	

3-3.4 Boot Up Floppy Seek

	Setting	Description	Note
Boot Up Floppy Seek	Disabled	Seeks disk drives during boot up. Disabling speeds boot up.	Default
	Enabled		

3-3.5 Boot Up NumLock Status

	Setting	Description	Note
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.	

3-3.6 Gate A20 Options

	Setting	Description	Note
Gate A20 Options	Normal	Lets chipset control GateA20.	
	Fast	A pin in the keyboard controller controls GateA20.	Default

3-3.7 Typematic Settings

Typematic Settings	Setting	Description	Note
Typematic Rate Setting	Disabled	Keystrokes repeat at a rate determined by the keyboard.	Default
	Enabled	When enables , the typematic rate and typematic delay can be selected.	
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

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.

	Setting	Description
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.

3-3.9 Other Control Options

Other Control Options	Setting	Description	Note
OS Select for DRAM>64MB	OS2	When using an OS2 operating system.	
	Non-OS2	When using another, non-OS2 operating system.	Default
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.	

3-4 ADVANCED CHIPSET FEATURES

![STOP] *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.

CMOS Setup Utility – Copyright (C) 1984-1999 Award Software
Advanced Chipset Features

		Item Help
RDRAM Bus Frequency	400 MHz	
RDRAM Device Napdown	Disabled	Menu Level ▶
DRAM Data Integrity Mode	Non-ECC	
System BIOS Cacheable	Disabled	
Video BIOS Cacheable	Disabled	
Video RAM Cacheable	Disabled	
Memory Hole AT 15M- 16M	Disabled	
Delayed Transaction	Enabled	
Spread Spectrum	Disabled	
AGP Fast Write	Enabled	
AGP Aperture Size (MB)	64	

↑↓→←:Move   Enter:Select   +/-/PU/PD:Value   F10:Save   ESC:Exit   F1:General Help
F5:Previous Values   F6:Fail-Safe Defaults   F7: Optimized 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 Advanced Chipset Features Menu and how to configure each parameter.

3-4.1 CHIPSET FEATURES SETUP

CHIPSET FEATURES	Setting	Description	Note
RDRA Bus Frequency	400MHz, 356MHz, 300MHz, 266MHz.	This item defines the RDRAM bus frequency.	Default
RDRAM Device Napdown	Disabled	Select *Disabled* to increase 5% system performance or select *Enabled* to enter the RDRAM device power save mode.	Default
	Enabled		
DRAM Data Integrity Mode	Non-ECC	Select Parity or ECC (error-correcting code), according to the type of installed DRAM.	Default
	ECC		
System BIOS Cacheable	Disabled		
	Enabled	The ROM area F0000H-FFFFFH is cacheable.	Default
Video BIOS Cacheable	Disabled		
	Enabled	The video BIOS C0000H-C7FFFH is cacheable.	Default
Video RAM Cacheable	Disabled	Select Enabled allows caching of the video RAM, resulting in better system performance. However, if any program writes to this memory area, a system error may result.	
	Enabled		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.	
Delayed Transaction	Disabled	The chipset has an embedded 32-bit posted write buffer to support delay transactions cycles. Select *Enabled* to support compliance with PCI specification version 2.1.	
	Enabled		Default

CHIPSET FEATURES SETUP (Continued)

CHIPSET FEATURES	Setting	Description	Note
Spread Spectrum	Disabled		Default
	Enabled	When using Spread Spectrum Modulated 1.5% or 6% for FCC or DOC testing.	
AGP Fast Write	Disabled	This item will enable the AGP model into fast write mode.	
	Enabled		Default
AGP Aperture Size(MB)	64	Select the size of the Accelerated	Default
	4, 8, 16, 32, 64, 128, 256	Graphics Port (AGP) aperture. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation. See www.agpforum.org for AGP information.	

3-5 INTEGRATED PERIPHERALS

STOP | *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.

CMOS Setup Utility – Copyright (C) 1984-1999 Award Software Integrated Peripherals		
On-Chip Primary PCI IDE	Enabled	**Item Help**
On-Chip Secondary PCI IDE	Enabled	
IDE Primary Master PIO	Auto	Menu Level ▸
IDE Primary Slave PIO	Auto	
IDE Secondary Master PIO	Auto	
IDE Secondary Slave PIO	Auto	
IDE Primary Master UDMA	Auto	
IDE Primary Slave UDMA	Auto	
IDE Secondary Master UDMA	Auto	
IDE Secondary Slave UDMA	Auto	
USB Controller	Enabled	
USB Keyboard Support	Disabled	
Init Display First	PCI Slot	
IDE HDD Block Mode	Enabled	
Onboard FDC Controller	Enabled	
Onboard Serial Port 1	3F8/IRQ4	
Onboard Serial Port 2	2F8/IRQ3	
UART Mode Select	Normal	
x RxD , TxD Active	Hi, Lo	
x IR Transmission Delay	Enabled	
x UR2 Duplex Mode	Half	
x Use IR Pins	IR-R x 2T x 2	
Onboard Parallel Port	378/IRQ7	
Parallel Port Mode	SPP	
x EPP Mode Select	EPP1.7	
x ECP Mode Use DMA	3	
PWRON After PWR-Fail	Off	
Game Port Address	201	
Midi Port Address	Disabled	
x Midi Port IRQ	10	
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help		
F5:Previous Values F6:Fail-Safe Defaults F7: Optimized 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.

3-5.1 IDE Device Controls

IDE Controls	Setting	Description	Note
On-Chip PCI IDE ➤ **Primary** ➤ **Secondary**	Disabled	Turn off the on-board IDE	
	Enabled	Use the on-board IDE	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 ➤Secondary Master UDMA ➤Secondary Slave UDMA	Disabled		
	Auto	Select Auto to enable Ultra DMA Mode support.	Default

3-5.2 Keyboard Controls

Keyboard Controls	Setting	Description	Note
USB Controller	Disabled		
	Enabled	Select *Enabled* if your system contains a Universal Serial Bus (USB) controller and you have USB peripherals.	Default
USB Keyboard Support	Disabled	Turn off the on-board IDE	Default
	Enabled	Use a USB keyboard	
Init Display First	PCI Slot	Choose which card – AGP	Default
	AGP	Display card or PCI VGA card – to initialize first.	

3-5.3 IDE HDD Block Mode

	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

3-5.4 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

3-5.5 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.	Default (port 1)
	2F8/IRQ3	Do not set port 1 & 2 to the same address except for Disabled or Auto.	Default (port 2)
	3E8/IRQ4		
	2E8/IRQ3		
	Auto		
UART Mode Select	Normal	The second serial port offers these InfraRed interface modes.	Default
	IrDA		
	ASKIR		
If [UART Mode Select] is set to [IrDA]/[ASKIR]			
RxD, TxD Active	Hi, Hi, Lo, Lo, Lo, Hi, Hi, Lo	This item allows you to determine the active of RxD, TxD.	
IR Transmission delay	Disabled		
	Enabled	Some IR devices need this item enabled.	Default

Onboard Serial Ports (Continued)

Onboard Serial Ports	Setting	Description	Note
UR2 Duplex Mode	Half	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.	Default
	Duplex		
Use IR Pins	IR-Rx2Tx2	Depending on the capabilities of the receiving device, set this item to full or half duplex. (Full duplex allows sending and receiving simultaneously, halt duplex only allows sending and receiving to occur separately).	Default
	RxD2,TxD2		

3-5.6 Onboard Parallel Ports

Onboard Parallel Ports	Setting	Description	Note
Onboard Parallel Port	Disabled	Choose the printer I/O address.	
	378/IRQ7		Default
	3BC/IRQ7		
	278/IRQ5		
Parallel Port Mode	SPP	The mode depends on your external device that connects to this port.	Default
	EPP		
	ECP		
	ECP+EPP		
If [Parallel Port Mode] is set to [EPP] mode			
EPP Mode Select	EPP 1.9	Select EPP port type 1.9	
	EPP 1.7	Select EPP port type 1.7	Default
If [Parallel Port Mode] is set to [ECP] mode			
ECP Mode use DMA	3	Choose DMA3	Default
	1	Choose DMA1	

3-5.7 Others Optional

	Setting	Description	Note
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)	
Game Port Address	Disabled	Set the I/O base address for the ON board game port under this item.	
	201		Default
	209		
Midi Port Address	Disabled	Set the I/O address for the on board Midi port here.	Default
	330		
	300		
If [Midi Port Address] is set to [330]/[300] mode			
Midi Port IRQ	5	Select the IRQ that the Midi port uses under this them.	
	10		Default

3-6   POWER MANAGEMENT SETUP

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

CMOS Setup Utility – Copyright (C) 1984-1999 Award Software Power Management Setup	
ACPI Function Enabled ACPI Suspend Type S1 (POS) Power Management User Define Video Off Method DPMS Video Off In Suspend Yes Suspend Type Stop Grant MODEM Use IRQ 3 Suspend Mode Disabled HDD Power Down Disabled USB KB Wake-Up From S3 Disabled CPU Thermal-Throttling 62.5% ** Reload Global Timer Events ** Primary IDE 0 Disabled Primary IDE 1 Disabled Secondary IDE 0 Disabled Secondary IDE1 Disabled FDD,COM, LPT Port Disabled PCI PIRQ[A-D]# Disabled	Item Help Menu Level ▶
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-Safe Defaults F7: Optimized Defaults	

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

3-6.1 Power Management Controls

Power Management Controls	Setting	Description			Note
ACPI function	Disabled				
	Enabled	ACPI (Advanced Configuration Power Management Interface)			Default
ACPI Suspend Type	S1 (POS)	The system will enter the STR (Suspend To Ram) state during suspend.			Default
	S3 (STR)				
Power Management	User Define	Lets you define the HDD and system power down times.			Default
		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
Video Off Method	V/H Sync+Blank	Selects the method by which the monitor is blanked.			Default
	Blank screen				
	DPMS				
Video Off In Suspend	Yes	This determines the manner in which the monitor is blanked.			Default
	No				
Suspend Type	Stop Grant	The system can wake up through external events.			Default
	PwrOn Suspend	The system can only wake up through the Power-Button.			
MODEM Use IRQ	3	Assigns an IRQ# to the modem device.			Default
	3-11, NA				
Suspend Mode	Disabled				Default
	Enabled	When enabled and after the set time of system inactivity, all devices except the CPU will be shut off.			

Power Management Controls (Continued)

Power Management Controls	Setting	Description	Note
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.
USB KB Wake-UP From S3	Disabled	In order to allow the system to wake up from the S3 suspend state through a USB keyboard, set this item to enabled.	Default
	Enabled		
CPU Thermal-Throttling	87.5%	This item sets the proportion of the original clock frequency to which the CPU will slow do in suspend mode.	
	75.0%		
	62.5%		Default
	50.0%		
	37.5%		
	25.0%		

3-6.2 Reload Global Timer Events

Power Down & Resume Events	Setting	Description	Note
IDE0, IDE1 ➤**Primary** ➤**Secondary**	Disabled		Default
	Enabled	Enables the PM timers when [No Activity Event] is detected.	
FDD, COM, LPT Port	Disabled		Default
	Enabled	Enables the PM timers when [No Activity Event] is detected.	
PCI PIRQ [A-D]#	Disabled		
	Enabled	The system monitors these elements for activity. The system will resume if [IRQ activity] is detected.	Default

3-7   PNP/PCI CONFIGURATION SETUP

This option sets the Motherboard's PCI Slots.

CMOS Setup Utility – Copyright (C) 1984-1999 Award Software PnP/PCI Configurations	
Reset Configuration Data Disabled	**Item Help**
Resources Controlled By Auto (ESCD)	Menu Level ▶
x IRQ Resources Press Enter	
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	
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help	
F5:Previous Values F6:Fail-Safe Defaults F7: Optimized 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.

3-7.1 PNP/PCI Configuration Controls

PNP/PCI Controls	Setting	Description	Note
Reset Configuration Data	Disabled	Retain PnP configuration data in BIOS.	Default
	Enabled	Reset PnP configuration data in BIOS.	
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 (ESCO)	The Plug-and-Play BIOS auto manages PCI/ISA PnP card IRQ assignment automatically.	**Recommended**

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

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:

Interrupt Line	How to set the BIOS to release the IRQ to the PnP Interrupt pool:	
	PnP / PCI configuration	Integrated Peripherals
IRQ 15	IRQ 15: **PCI / ISA PnP**	On-Chip Secondary PCI IDE: **disabled**
IRQ 14	IRQ 14: **PCI / ISA PnP**	On-Chip Primary PCI IDE: **disabled**
IRQ 12	IRQ 12: **PCI / ISA PnP**	*Interrupt 12 will be released by the PnP BIOS automatically if the PS/2 Mouse Port is not used.*
IRQ 7	IRQ 7: **PCI / ISA PnP**	Onboard parallel port: **disabled**
IRQ 4	IRQ 4: **PCI / ISA PnP**	Onboard Serial port 1: **disabled**
IRQ 3	IRQ 3: **PCI / ISA PnP**	Onboard Serial port 2: **disabled**

PNP/PCI Configuration Setup (Continued)

PNP/PCI Setup	Setting	Description	Note
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.			
PCI/VGA Palette Snoop	Disabled	Leave this field at *Disabled*.	Default
	Enabled		
Assign IRQ For	Disabled	BIOS will assign IRQ for VGA/USB port.	
VGA/USB	Enabled	BIOS won't assign IRQ for VGA/USB port.	Default
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.			
Slot 1/2/3/4 Use IRQ NO.	Auto	Set to Auto the BIOS will using IRQs Automatically.	Default

3-7.2 MULTI I/O ADDRESSES

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

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

3-8 PC HEALTH STATUS

This option sets the Motherboard's PC Health Status.

```
        CMOS Setup Utility – Copyright ( C ) 1984-1999 Award Software
                              PC Health Status

   CPU Warning Temperature      Disabled
   Current Sys Temperature      25 °C /   77 °F        Item Help
   Current CPU Temperature      40 °C / 104 °F
   Current CPUFAN Speed         5192 RPM          Menu Level    ▶
   Current CHSFAN Speed            0 RPM
   Current PWRFAN Speed            0 RPM
    Vcore                        2.04 V
    VTT                          1.50 V
   3.3V                          3.31 V
   + 5V                          5.02 V
   +12V                         12.03 V
   VBAT (V)                      3.07 V
   5VSB (V)                      5.45 V



  ↑↓→←:Move    Enter:Select    +/-/PU/PD:Value   F10:Save   ESC:Exit   F1:General Help
     F5:Previous Values         F6:Fail-Safe Defaults      F7: Optimized Defaults
```
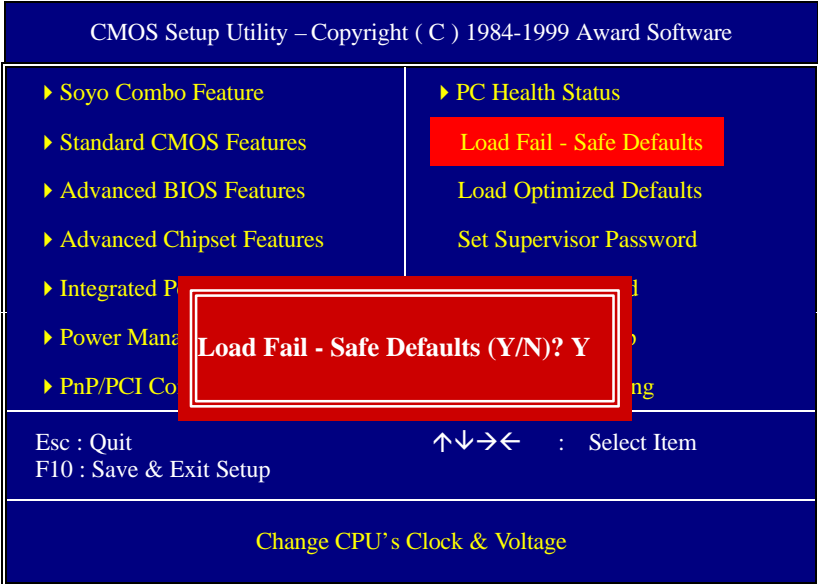
Note: Starred (*) items will disappear when the [Resources Controlled By] option is set to [Auto].

3-8.1 CPU Device Monitoring

CPU Device Monitoring	Setting	Description	Note
CPU Warning Temperature	Disabled		Default
	50°C/122°F 53°C/127°F 56°C/132°F 60°C/140°F 63°C/145°F 66°C/150°F 70°C/158°F 75°C/167°F 80°C/176°F 85°C/185°F 90°C/194°F 95°C/203°F 100°C/212°F 110°C/230°F 120°C/248°F	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 Sys Temperature	°C/°F	Show the current status of the system temperature.	
Current CPU Temperature	°C/°F	Show the current status of CPU temperature.	
Current CPUFAN Speed	°C/°F	Show the current status of CPU Fan	
Current CHSFAN Speed	°C/°F	Show the current status of the chassis Fan	
Current PWRFAN Speed	°C/°F	Show the current status of the Power Fan	
Vcore, VTT, 3.3V, +5V, +12V, VBAT, 5VSB	V	Show the current voltage status.	

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.

CMOS Setup Utility – Copyright (C) 1984-1999 Award Software

▶ Soyo Combo Feature	▶ PC Health Status
▶ Standard CMOS Features	Load Fail - Safe Defaults
▶ Advanced BIOS Features	Load Optimized Defaults
▶ Advanced Chipset Features	Set Supervisor Password
▶ Integrated P	
▶ Power Mana	**Load Fail - Safe Defaults (Y/N)? Y**
▶ PnP/PCI Co	ng

Esc : Quit   ↑↓→←   :   Select Item
F10 : Save & Exit Setup

Change CPU's Clock & Voltage

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

STOP

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.
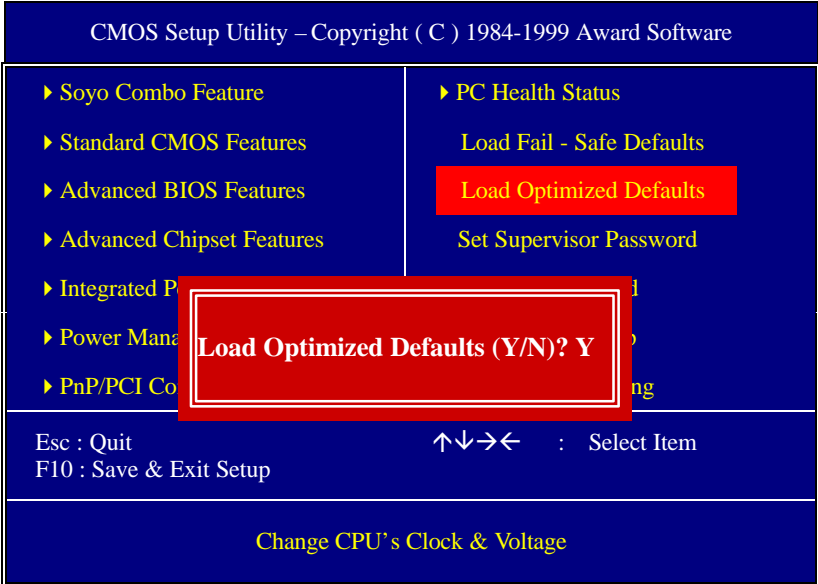
CMOS Setup Utility – Copyright (C) 1984-1999 Award Software	
▶ Soyo Combo Feature	▶ PC Health Status
▶ Standard CMOS Features	Load Fail - Safe Defaults
▶ Advanced BIOS Features	Load Optimized Defaults
▶ Advanced Chipset Features	Set Supervisor Password
▶ Integrated P	
▶ Power Mana	**Load Optimized Defaults (Y/N)? Y**
▶ PnP/PCI Co	
Esc : Quit	↑↓→← : Select Item
F10 : Save & Exit Setup	
Change CPU's Clock & Voltage	

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

STOP *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:
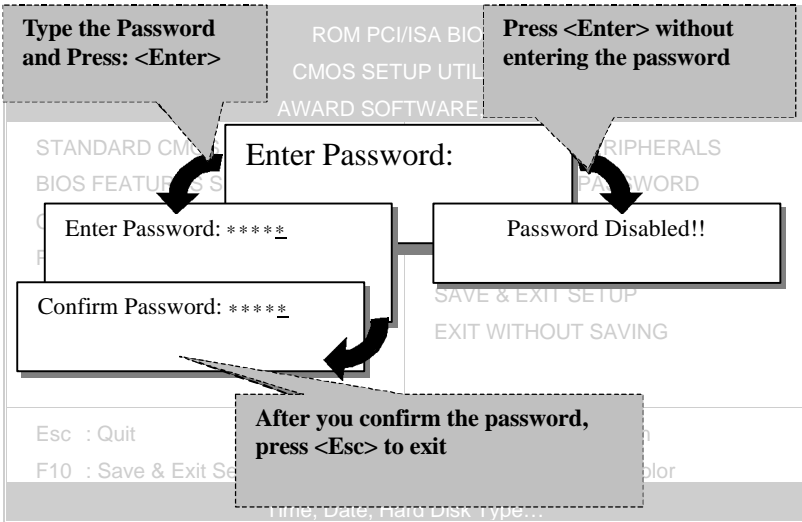
> Password Disabled!!

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).

3-13 IDE HDD AUTO DETECTION

This Main Menu function automatically detects the hard disk type and
configures the [Standard CMOS Features] accordingly.

```
        CMOS Setup Utility – Copyright ( C ) 1984-1999 Award Software
                              IDE Primary Master

    IDE HDD Auto-Detection    Press Enter              Item Help

    IDE Primary Master        Auto           Menu Level    ▶

    Capacity                       0 MB
    Access Mode               Auto
                                   0
    Cylinder                       0
    Head                           0
    Precomp                        0
    Landing Zone                   0
    Sector                             0



  ↑↓→←:Move    Enter:Select    +/-/PU/PD:Value   F10:Save   ESC:Exit   F1:General Help
      F5:Previous Values          F6:Fail-Safe Defaults        F7: Optimized Defaults
```

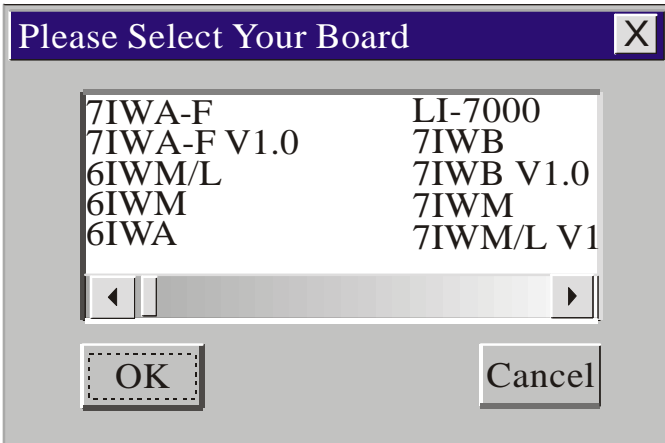*Note:* This function is only valid for IDE type of hard disk drives.

Chapter 4

DRIVERS INSTALLATION

Your SY-6ICA 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.

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 be as shown.

If you use Windows NT, 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	X

7IWA-F	LI-7000
7IWA-F V1.0	7IWB
6IWM/L	7IWB V1.0
6IWM	7IWM
6IWA	7IWM/L V1

◄ ►

OK   Cancel

(SOYO CD Start Up Program Menu)

If you use Windows 95 or 98, the SOYO CD Start Up Program automatically detects which SOYO Motherboard you own and displays the corresponding model name.
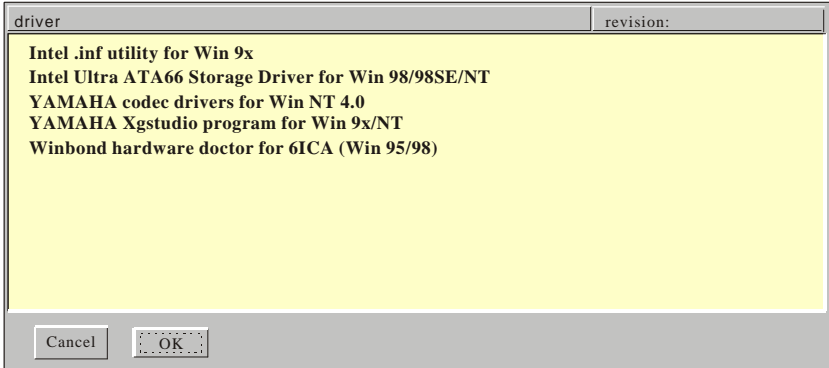

The user's manual files included on the SOYO CD are in PDF (Postscript Document) format. In order to read a PDF file, the appropriate Acrobat Reader software must be installed in your system.

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

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	revision:
Intel .inf utility for Win 9x	
Intel Ultra ATA66 Storage Driver for Win 98/98SE/NT	
YAMAHA codec drivers for Win NT 4.0	
YAMAHA Xgstudio program for Win 9x/NT	
Winbond hardware doctor for 6ICA (Win 95/98)	

| Cancel | OK |

(Driver Installation Menu)

A short description of all available drivers follows:

➢ **Intel .inf utility for Win 9x**
Windows 95 and 98 will not recognize the new INTEL Camino chipset properly. To update the necessary .inf files that will help Windows recognize the Camino chipset, please run this utility.

➢ **Intel Ultra ATA66 Storage Driver for Win 98/98SE/NT**
This driver will enable the use of Ultra 66(ATA66) Harddisks on your system. This driver is optimized for the Intel ® chipset on your motherboard.

➢ **YAMAHA codec drivers for Win NT4.0**
You have to install the drivers before installing any application for the YAMAHA codec. Please refer to the back of the manual for installation information for other operating systems.

87

➢ **YAMAHA XGstudio program for Win 9x/NT**

The Application program allows the user to make full use of the functionality that the Yamaha sound chip has to offer. Make sure to install the Yamaha driver for your OS before installing any of the application software.

➢ **Winbond hardware doctor for 6ICA (Win 95/98)**

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.

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

Notice 1: 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.

Notice 2: You may click *Cancel* to abort the driver installation and return to the main menu.

Step 4. **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

Yamaha Sound Driver Installation

Most of the drivers on this CD can be installed automatically. Run the SOYO-CD program and click the 'install drivers' button. Now a list of the available drivers will be displayed. Select a driver and click OK to install the driver. Some drivers will have to be installed by hand. See the explanation below.

➢   **Yamaha Soundchip drivers for Windows 95 & 98**

For windows 95/98, after installation of windows go to 'my computer' and select 'properties'. Now the 'system properties' menu will be shown. Select 'hardware' tab, and click the 'device manager' button.

On the device manager a question mark will be shown under 'other devices' -> 'PCI multimedia audio device'. Do not remove this entry! To change the driver, click this entry and select properties -> driver -> update driver. Now an update menu will be shown. If windows asks you for the location of the driver, give it the following directory:

d:\driv-com\yamaha\win95&98vxd\v4.06.1010

After the installation is finished, windows 95/89 will properly recognize your Yamaha sound chip.

➢   **Yamaha Soundchip drivers for Windows 98SE**

Windows will detect a multi-media device at start-up, follow the installation steps on the screen. When windows asks you for the location of the drivers, click 'browse' and go the following directory:

d:\driv-com\yamaha\WIN98&2000wdm\v4.10.2119

(where d is your CD-ROM drive letter)

Now click OK and the drivers will be installed properly.

➢　Yamaha Soundchip drivers for Windows 2000

For windows 2000, after installation of windows go to 'my computer' and select 'properties'. Now the 'system properties' menu will be shown. Select 'hardware' tab, and click the 'device manager' button.

On the device manager a question mark will be shown under 'multimedia audio controller'. Do not remove this entry!

To change the driver, click this entry and select properties -> driver -> update driver. Now an updatemenu will be shown. If windows asks you for the location of the driver, give it the following directory:

d:\driv-com\yamaha\WIN98&2000wdm\v4.10.2119

After the installation is finished, windows 2000 will properly recognize your Yamaha sound chip.

➢　Application for windows 95, 98 and 98SE

On the CD an application is available for the Yamaha soundchip.To install this application (Ystation),please go to the following directory:

➢　YAMAHA Codec Application Driver directory:

　driv-com\yamaha\Ystation\v3.26\Setup.exe

and run the setup.exe file. This will install the application.

➢　Wavetable for windows NT

On the CD a wavetable is available. This wavetable has to be installed to make use of MIDI. To install take the following steps:

Double click 'my computer', and choose 'control panel'.

Select the multi media icon and select the devices tab.

Now select 'MIDI devices and instruments' and click the 'add' button below.

Choose 'unlisted or updated driver' and press OK.

Now give the following directory:

d:\driv-com\yamaha\syxg50nt\disk1\setup

This will start the installation process. After installation you will be able to make use of MIDI.