SY-P4IS2
Motherboard

****

mPGA Socket 478 Processor supported

Intel i845 AGP/PCI/CNR

400 MHz Front Side Bus supported

ATX Form Factor

****

User's Manual

SOYO ™ 　　　　　　　　　　　　　　　SY-P4IS2

Copyright ©2001 by Soyo Computer Inc.

Trademarks:
Soyo is the registered trademark of Soyo Computer Inc. All trademarks are the properties of their owners.

Product Rights:
All names of the product and corporate mentioned in this publication are used for identification purposes only. The registered trademarks and copyrights belong to their respective companies.

Copyright Notice:
All rights reserved. This manual has been copyrighted by Soyo Computer Inc. No part of this manual may be reproduced, transmitted, transcribed, translated into any other language, or stored in a retrieval system, in any form or by any means, such as by electronic, mechanical, magnetic, optical, chemical, manual or otherwise, without permission in writing from Soyo Computer Inc.

Disclaimer:
Soyo Computer Inc. makes no representations or warranties regarding the contents of this manual. We reserve the right to amend the manual or revise the specifications of the product described in it from time to time without obligation to notify any person of such revision or amend. The information contained in this manual is provided to our customers for general use. Customers should be aware that the personal computer field is subject to many patents. All of our customers should ensure that their use of our products does not infringe upon any patents. It is the policy of Soyo Computer Inc. to respect the valid patent rights of third parties and not to infringe upon or to cause others to infringe upon such rights.

Restricted Rights Legend:
Use, duplication, or disclosure by the Government is subject to restrictions set forth in subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause at 252.277-7013.

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".**

Edition: July 2001
Version 1.0
P4IS2 SERIAL

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

100% POST CONSUMER RECYCLED PAPER

Table of Contents

Chapter 1

MOTHEBOARD DESCRIPTION

1-1 INTRODUCTION

➢ The **SY-P4IS2** AGP/PCI/CNR Motherboard is a high-performance Socket 478 processor supported ATX form-factor system board. **SY-P4IS2** uses the Intel i845 Chipset technology. This Motherboard is fully compatible with industry standards Supports Intel®mPGA Socket 478 processors

  - FSB 400MHz: Pentium®4

➢ Supports 400 MHz Front Side Bus Frequency

➢ PC99, ACPI

➢ Ultra DMA33/66/100 (ATA 33/66/100)

➢ Supports Wake-On-LAN (WOL)

➢ Supports PC-133 Unbuffer SDRAM and ECC

➢ Supports ACPI Suspend Indicator

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

➢ Power failure resume

➢ Supports Suspend to RAM

➢ Supports onboard hardware monitoring and includes Hardware Doctor™utility

➢ Supports AC97 Codec

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

  - CPU voltage adjust

  - CPU ratio adjust

  - CPU FSB adjust

➢ Supports multiple-boot function

➢ AGP 2.0 Compliant;

1

AGP Connector supports:
- 1.5V only AGP card
- 2X/4X data transfer

➢ Supports Communication Networking Riser Slot (CNR 1.0 compliant) *

➢ Smart Card Reader

- Compliant with Personal Computer Smart Card (PC/SC) Working Group standard

- Compliant with smart card (ISO 7816) protocols

- Supports card present detect

- Supports Smart Card insertion power-on feature

➢ 3 x DIMM slots for SDRAM memory

➢ 1 x 32-bit AGP slot

➢ 6 x 32-bit bus master PCI slots

➢ 4 x USB ports onboard

➢ 1 x IrDA port

➢ ATX 12V power connector

Warning: This M/B can only support 1.5V AGP card.

1-2   HANDLING THE MOTHERBOARD

To avoid damage to your Motherboard, follow these simple rules while unpacking:

➢   Before handling the Motherboard, ground yourself by grasping an unpainted portion of the system's metal chassis.

➢   Remove the Motherboard from its anti-static packaging. Hold the Motherboard by the edges and avoid touching its components.

➢   Check the Motherboard for damage. If any chip appears loose, press carefully to seat it firmly in its socket.

> *Warning:* Do not apply power if the Motherboard appears damaged. If there is damage to the board, contact your dealer immediately.

1-3   ELECTROSTATIC DISCHARGE PRECAUTIONS

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

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

➢   Do not remove the anti-static packaging until you are ready to install.

➢   Ground yourself before removing any system component from its protective anti-static packaging. (To ground yourself, grasp the expansion slot covers or other unpainted portions of the computer chassis.)

➢   Frequently ground yourself while working or use a grounding strap.

➢   Handle the Motherboard by its edges and avoid touching its components.

1-4   SY-P4IS2 MOTHERBOARD LAYOUT
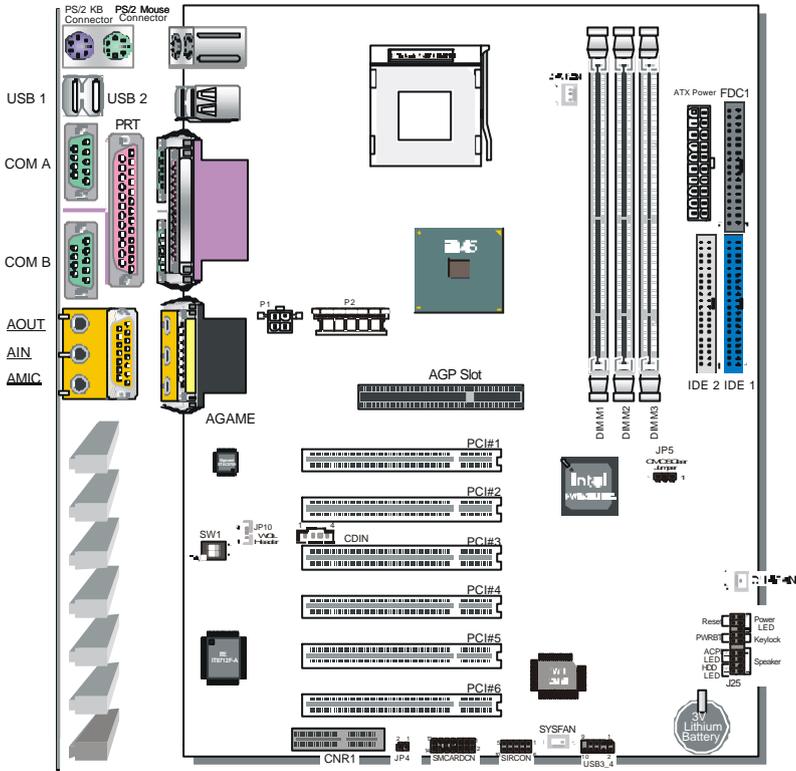
Back Panel   **SY-P4IS2 Platform**

1-5   SY-P4IS2 MOTHERBOARD COMPONENTS

A   B   C   D   E   F   G   H

AC

AB
AA
Z
Y
X

W
V

I

J
K

L

M

N

U   T   S   R Q P O
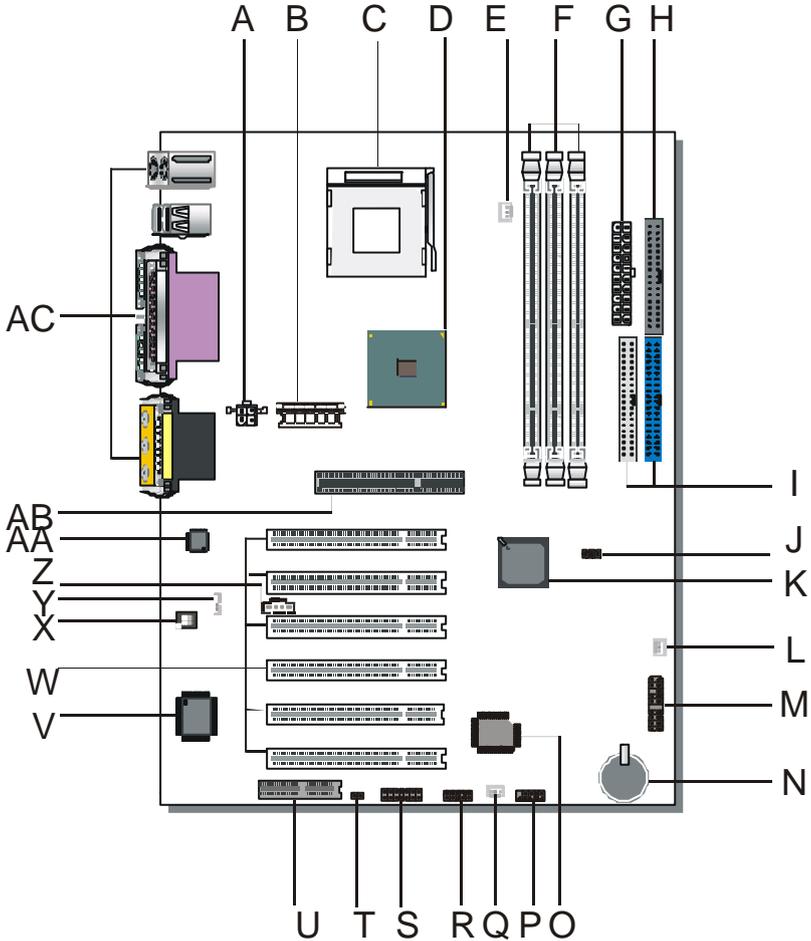
A	**ATX12V 4-Pin(+12V) Connector**
B	**ATX12V 6-Pin(+3.3V, +5V) Connector**
C	**Socket 478 Connector**
D	**Intel i845 North Bridge Chip**
E	**CPU Cooling Fan Connector**
F	**DIMM Bank**
G	**ATX Power Connector**
H	**Floppy Disk Drive (FDD)**
I	**Bus Mastering E-IDE/ATAPI Ports**
J	**CMOS Clear Jumper**
K	**Intel FW82801BA South Bridge Chip**
L	**Chassis Cooling Fan Connector**
M	**Front panel connectors**
N	**3V Lithium Battery**
O	**Flash BIOS**
P	**USB Connector**
Q	**System Fan Connector**
R	**Serial Infrared (IrDA) Device Header**
S	**Smart Card Reader Connector**
T	**CNR MR Card-CODEC OPTION Setting Jumper**
U	**Communication Networking Riser Slot**
V	**ITE I/O Chip**
W	**32-bit PCI Mastering Slots**
X	**On Board Codec Enabled/Disabled Setting Switch**
Y	**Wake-On-LAN(WOL) Header**
Z	**CD-IN Connectors**
AA	**AC97 Codec Chip**
AB	**32-bit AGP slot**
AC	**Back panel Conectors**

1-6   CHIPSET

The Intel®845 chipset Memory Controller Hub (MCH) is designed
for use with the Intel®Pentium 4 processor and Northwood
processor in the 478-pin package. The Intel ®845 chipset MCH role
in a system is to manage the flow of information between its four
interfaces: the System Bus, the memory interface, the AGP port, and
the Hub Interface. The MCH arbitrates between the four interfaces,
when each initiates an operation. While doing so, the MCH must
support data coherency via snooping and must perform address
translation for access to AGP Aperture memory. To increase system
performance, the MCH incorporates several queues, and a write
cache.

The Intel®845 chipset Memory Controller Hub (MCH) may contain
design defects or errors known as errata which may cause the
product to deviate from published specifications.

1-6.1 System Architecture

The Intel®845 chipset Memory Controller Hub (MCH) component
provides the processor interface, DRAM interface, AGP interface,
and Hub Interface in an Intel®845 chipset desktop platform. The
processor interface supports the Intel®Pentium 4 processor subset
of the Extended Mode of the Scalable Bus Protocol. Intel®845
chipset is optimized for the Intel®Pentium 4 processor and
Northwood processor. It supports a single channel of PC133
SDRAM. The MCH contains advanced power management logic.
The Intel®845 chipset platform supports the second generation I/O
Controller Hub (Intel ICH2) to provide the features required by a
desktop platform.
The Intel®845 chipset MCH is in a 593-pin FC-BGA package and
contains the following functionality:
● Supports single Intel®Pentium 4 processor/Northwood
    processor configurations at 400MHz

- AGTL+ system bus with integrated termination supporting 32-bit system bus addressing
- Up to 3GB (w/ 512-Mb technology) of PC133 SDRAM
- 1.5V AGP interface with 4x SBA/Data Transfer and 2x/4x Fast Write capability
- 8 bit, 66 MHz 4x Hub Interface to Intel ICH2
- Distributed arbitration for highly concurrent operation

1-6.2 Intel®Pentium®4 Processor/Northwood Processor System Bus Interface

The Intel®845 chipset MCH is optimized for the Intel®Pentium 4 processor/Northwood processor in the 478-pin package. The primary enhancements over the Compatible Mode P6 bus protocol are:

- Source synchronous double pumped address
- Source synchronous quad pumped data
- System bus interrupt and side-band signal delivery

In this mode, the MCH supports a 64B cache line size. Only one processor is supported at a System bus frequency of 400 MHz. The MCH supports a 3:4 Host-to-Memory frequency ratio (using the 100 MHz clock). The MCH integrates AGTL+ termination resistors on all of the AGTL+ signals. The MCH supports 32-bit system bus addresses, allowing the processor to access the entire 4GB of the MCH memory address space.

The MCH has a 12-deep In-Order Queue to support up to twelve outstanding pipelined address requests on the system bus. The MCH supports two outstanding defer cycles at a time, however only one to any particular IO interface. Processor initiated I/O cycles are positively decoded to AGP/PCI or MCH configuration space and subtractively decoded to the Hub Interface. Processor initiated memory cycles are positively decoded to AGP/PCI or DRAM, and are again subtractively decoded to the Hub Interface if under 4GB. AGP semantic memory accesses initiated from AGP/PCI to DRAM are not snooped on the system bus. Memory accesses initiated from

AGP/PCI using PCI semantics and from the Hub Interface to Dram will be snooped on the system bus. Memory accesses whose addresses lie within the AGP aperture are translated using the AGP address translation table, regardless of the originating interface.

1-6.3 DRAM Interface

The Intel®845 chipset memory controller directly supports one channel of PC133 SDRAM memory. The Intel®845 chipset memory interface supports SDR SDRAM devices with densities of 64-Mb, 128-Mb, 256-Mb, and 512-Mb technoloty. The Intel®845 chipset memory interface also supports variable page sized of 2KB, 4KB, 8KB, and 16KB. Page size is individually selected for every row and a maximum of 8 pages per DIMM may be opened simultaneously.

Technology	SDR (PC133) Maximum
64 Mb	384 MB
128 Mb	768 MB
256 Mb	1.5 GB
512 Mb	3 GB

The memory interface provides optional ECC error checking for DRAM data integrity. During DRAM writes, ECC is generated on a QWORD (64bit) basis. Because the Intel®845 chipset MCH stores only entire cache lines in its internal buffers, partial QWORD writes initially cause a read of the underlying data, and their write-back into memory is no different from that of a complete cache line. During DRAM reads, and the read of the data that underlies partial writes, the MCH supports detection of single-bit and multiple-bit errors, and will correct single bit errors when correction is enabled.

1-6.4 AGP Interface

A single AGP component or connector (not both) is supported by the Intel®845 chipset MCH AGP interface. The AGP buffers operate **only** in 1.5V mode. They are not 3.3V safe.

The AGP interface supports 2x/4x AGP signaling and 2x/4x Fast

Writes. AGP semantic cycles to DRAM are not snooped on the system bus. PCI semantic cycles to DRAM are snooped on the system bus. The MCH supports PIPE# or SBA[7:0] AGP address mechanisms, but not both simultaneously. Either the PIPE# or the SBA[7:0] mechanism must be selected during system initialization. Both upstream and downstream addressing is limited to 32 bits for AGP and AGP/PCI transactions. The MCH contains a 32 deep AGP request queue. High priority accesses are supported. All accesses from the AGP/PCI interface that fall with in the Graphics Aperture address range pass through an address translation mechanism with fully associative 20 entry TLB. Accesses between AGP and Hub Interface are limited to memory writes originating from the Hub Interface destined for AGP. The AGP interface is clocked from a dedicated 66MHz clock (66 IN). The AGP-to-host/core interface is asynchronous.

1-6.5 Hub Interface

The 8-bit Hub Interface connects the MCH to the Intel ICH2. All communication between the MCH and the Intel ICH2 occurs over the Hub Interface. The Hub Interface runs at 66 MHz/266 MB/s. Aside from the obvious traffic types, the following communication also occur over Hub Interface:

● Interrupt related messages
● Power management events as messages
● SMI, SCI, and SERR error indication messages

It is assumed that the Hub Interface is always connected to an Intel ICH2.

1-6.6 MCH Clocking

The MCH has the following clock input pins:

● Differential BCLK for the host interface
● 66MHz clock input for the AGP and Hub Interface

Clock Synthesizer chip(s) are responsible for generating the system Host clocks, AGP and Hub Interface clocks, and PCI clocks. The

system bus target speed is 400MHz. The MCH does not require any
relationship between the HCLKIN host clock and the 66MHz clock
generated for AGP and Hub Interface; they are totally asynchronous
from each other. The AGP and Hub Interface runs at a constant
66MHz base frequency. The Hub Interface runs at 4x. AGP transfers
may be 2x, or 4x.

The following table indicates the frequency ratios between the
various interfaces that the MCH supports:

Interface	Speed	Processor BCLK (100 MHz)
Memory	SDR 133 MHz	3:4 synchronous
AGP	66 MHz	Asynchronous
Hub interface	66 MHz	Asynchronous

1-6.7 System Interrupts

The Intel®845 chipset MCH supports both 8259 and Intel®Pentium 4
processor interrupt delivery mechanisms. The serial APIC interrupt
mechanism is not supported.

8259 support consists of flushing inbound Hub Interface write buffers
when an Interrupt Acknowledge cycle is forwarded from the system bus to
the Hub Interface.

The Inter®845 chipset MCH supports the Inter®Pentium 4 processor
interrupt delivery mechanism. IOxAPIC and PCI MSI interrupts are
generated as Memory Writes. The MCH decodes upstream Memory
Writes to the range 0FEE0_0000h – 0FEEF_FFFFh from AGP and the
Hub Interface as message based interrupts. The MCH forwards the
Memory Writes, along with the associated write data, or the system bus as
an Interrupt Message transaction. Note that since this address does not
decode as part of main memory, the write cycle and the write data does not
get forwarded to DRAM via the write buffer. The Inter®845 chipset MCH
provides the response and TRDY# for all Interrupt Message cycles

including the ones originating from the MCH. The Intel®845 chipset MCH supports interrupt re-direction for inter-processor interrupts (IPIs) as well as upstream interrupt memory writes.

For message based interrupts, system write buffer coherency is maintained by relying on strict ordering of Memory Writes. The Intel®845 chipset MCH ensures that all Memory Writes received from a given interface prior to an interrupt message Memory Write are delivered to the system bus for snooping in the same order that they occur on the given interface.

1-6.8 Powerdown Flow

Since the Intel®845 chipset MCH will be powered down during STR, the MCH can't maintain any state information when exiting STR. This means that the entire initialization process when exiting STR must be performed by the BIOS via accesses to the DRC2 register.

Entry into STR (ACPI S3) is initiated by the (OS) Operating System, based on detecting a lack of system activity. The OS unloads all system device drivers as part of the process of entering STR. The OS then writes to the PM1_CNT I/O register in the ICH2 to actually trigger the transition into STR.

1-6.9 IDE support

The motherboard has two independent bus-mastering PCI IDE interfaces. These interfaces support PIO Mode3, PIO Mode4, PIO Mode5 ATAPI devices (e.g., CD-ROM), and Ultra DMA 33/66/100 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 freed by bus mastering IDE can be devoted to other tasks while disk transfers are occurring.

The motherboard also supports laser servo (LS120) drivers. 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 120MB of data storage. A conventional diskette uses 135 tpi for 1.44MB of data storage. LS-120 drivers are ATAPI-compatible and connect to the motherboard' s IDE interface. (LS-120 drivers 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 120MB and 1.44MB 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 a 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.

1-6.10 Real-Time Clock

The real-time clock supports 256 bytes of battery-backed CMOS SRAM. Hardware implementation to indicate century rollover.

1-7 I/O INTERFACE CONTROLLER

The motherboard uses the ITE IT8712F I/O controller which features:

- Low Pin Count Interface
- PC98/99, ACPI & LANdesk Compliant
- Enhanced Hardware Monitor
- Fan Speed Controller
- SmartGuardian Controller
- Two 16C550 UARTs
- Smart Card Reader
- IEEE1284 Parallel Port
- Floppy Disk Controller

- Keyboard Controller
- 38 General Purpose I/O Pins
- External IRQ Input Routing Capability
- ITE innovative automatic power-failure resume and power button de-bounce

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

1-7.1 Low Pin Count Interface

- Comply with Intel Low Pin Count Interface Specification Rev. 1.0
- Supports LDRQ#, SERIRQ protocols
- Supports LPCPD#, CLKRUN#, PCI PME# Interfaces

1-7.2 PC98/99, ACPI & LANDesk Compliant

- Comply with Microsoft PC98/99 Design Guide
- ACPI V. 1.0 compliant
- Register sets compatible with "Plug and Play ISA Specification V. 1.0a"
- Supports 12 logical devices

1-7.3 Enhanced Hardware Monitor

- Built-in 8-bit Analog to Digital Converter
- 3 thermal inputs from remote thermal resistor or thermal diode or diode-connected transistor
- 8 voltage monitor inputs (VBAT is measured internally.)
- 1 chassis open detection input with low power Flip-Flop backed by the battery
- Watch Dog comparison of all monitored values
- Provides VID0 – VID4 support for the CPU
- SM Bus slave mode supported

1-7.4 Fan Speed Controller

- Provides fan on-off and PWM control
- Supports mix-and-match for temperature inputs and fan speed control outputs
- Overrides fan speed controller during catastrophic situations

14

- Provides over temperature beep tone warning

1-7.5 Two 16C550 UARTs

- Supports two standard Serial Ports
- Supports IrDA 1.0/ASKIR protocols
- Supports Smart Card Reader protocols

1-7.6 Smart Card Reader

- Compliant with Personal Computer Smart Card (PC/SC) Working Group standard
- Compliant with smart card (ISO 7816) protocols
- Supports card present detect
- Supports Smart Card insertion power-on feature
- Supports one programmable clock frequency, and 7.1 MHz and 3.5 MHz (Default) card clocks

1-7.7 IEEE 1284 Parallel Port

- Standard mode – Bi-directional SPP compliant
- Enhanced mode – EPP V. 1.7 and V. 1.9 compliant
- High speed mode – ECP, IEEE 1284 compliant
- Back-drive current reduction
- Printer power-on damage reduction
- Supports POST (Power-On Self Test) Data Port

1-7.8 Floppy Disk Controller

- Supports two 360K/720K/1.2M/1.44M/2.88M floppy disk drivers
- Enhanced digital data separator
- 3-Mode drives supported
- Supports automatic write protection via software

1-7.9 Keyboard Controller

- 8042 Compatible for PS/2 keyboard and mouse
- 2KB of custom ROM and 256-byte data RAM
- GateA20 and Keyboard reset output

1-7.10 38 General Purpose I/O Pins

- Input mode supports either switch de-bounce or programmable external IRQ input routing

- Output mode supports 2 sets of programmable LED blinking periods

1-7.11 External IRQ Input Routing Capability

- Provides IRQ input routing through GPIO input mode

- Programmable registers for IRQ routing

🖥 *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 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 MII interface; upon detecting a Magic Packet, the NIC asserts a wakeup signal that powers up the computer. To access this feature uses the Wake on LAN technology 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-P4IS2** Motherboard. You are about
to install and connect your new Motherboard.

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

2-1 PREPARATIONS

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

1.   Socket mPGA478 processor with built-in CPU cooling fan.

2.   SDRAM memory module(s)

3.   Computer case and chassis with adequate power supply unit

4.   Monitor

5.   PS/2 Keyboard

6.   Pointing Device (PS/2 mouse)

7.   Disk Drives: HDD, CD-ROM, Floppy drive…

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

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

10.   VGA Card (AGP, PCI)

2-2   UNPACKING THE MOTHERBOARD

When unpacking the Motherboard, check for the following items:

◆   The SY-P4IS2 Intel i845 AGP/PCI/CNR Motherboard
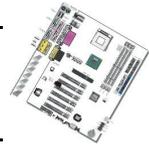
◆   The Quick Start Guide

◆   The Installation CD-ROM

◆   SOYO Bonus Pack CD-ROM

◆   One IDE Device ATA 100 Flat Cable

◆   One Floppy Disk Drive Flat Cable

◆   One Heat Sink Compound

Warning: Do not unpack the Motherboard from its anti-static packaging until you are ready to install it.

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

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

2-3   INSTALLATION GUIDE

We will now begin the installation of the Motherboard. Please follow the step-by-step procedure designed to lead you to a complete and correct installation.

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

BEGIN THE INSTALLATION

2-3.1 CPU Installation

To perform the installation of your new **SY-P4IS2** Motherboard, follow the steps below:

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

FSB 400MHz

☐ 1.5GHz (100 x 15.0)	☐ 1.6GHz (100 x 16.0)	☐ 1.7GHz (100 x 17.0)	☐ 1.8GHz (100 x 18.0)
☐ 1.9GHz (100 x 19.0)	☐ 2.0GHz (100 x 20.0)	☐	☐

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

1.   Lift the socket handle up to a vertical position.

2. Align the blunt edge of the CPU with the matching pinhole distinctive
    edge on the socket.
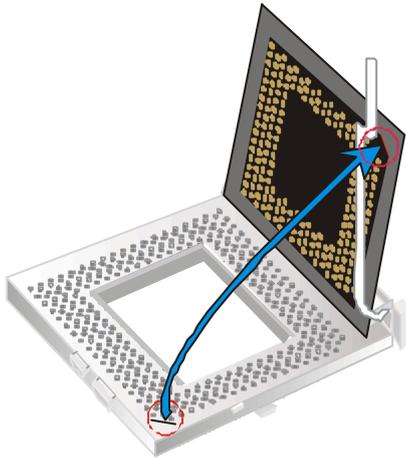
3. Seat the processor in the socket completely and without forcing.
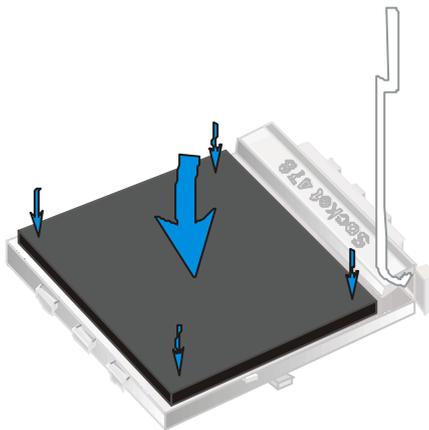
4.   Then close the socket handle to secure the CPU in place.
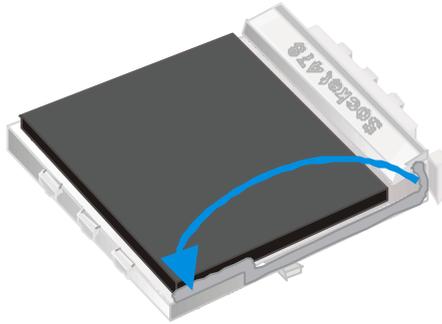
	Remember to connect the CPU Cooling Fan to the appropriate power connector on the Motherboard. *The fan is a key component that will ensure system stability. The fan prevents overheating, therefore prolonging the life of your CPU.*

2-3.2 SDRAM Memory Module Installation
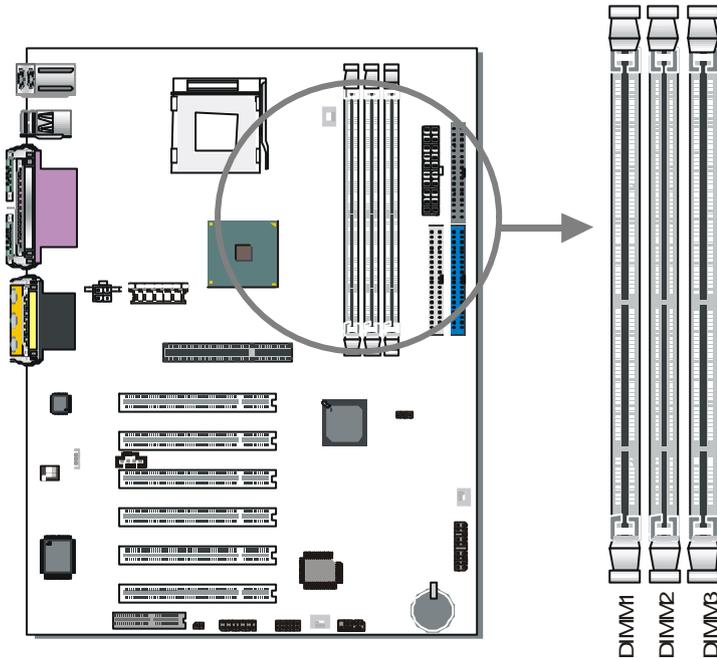
Directly supports one SDR SDRAM channel, 64b wide (72b with ECC),
providing support max of 3 Double-Sided DIMMs with unbuffered PC133,
No reqistered DIMM support. *The largest memory capacity possible is 3GB.*
On this motherboard, DRAM speed can be set independent from the CPU
front side bus speed. Depending on the DRAM clock speed setting in the
BIOS setup.
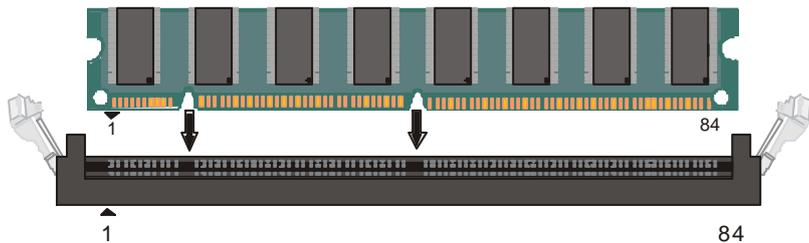
Memory Configuration Table

Number of Memory Modules	DIMM 1	DIMM 2	DIMM 3
RAM Type	SDRAM		
Memory Module Size (MB)	32/64/128/256/512 MB/1 GB		

2-3.3 Motherboard Connector

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

Pin-1

IDE 2   IDE 1

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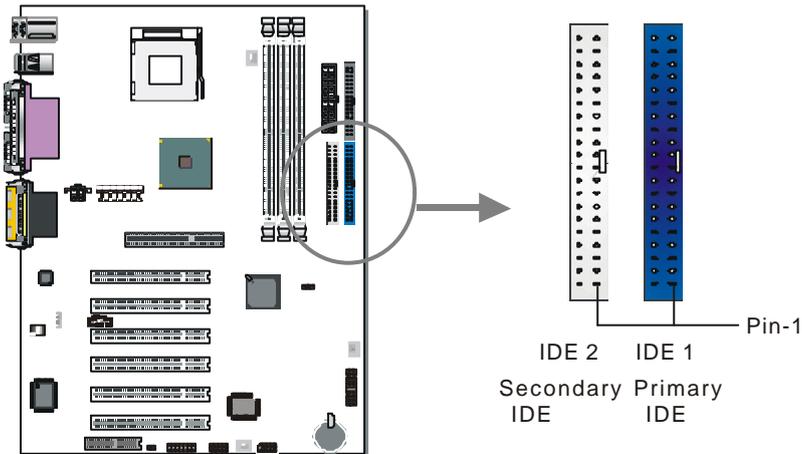
This Motherboard offers two primary and secondary IDE device connectors (IDE1, IDE2). It can support up to four high-speed Ultra DMA 33/66/100HDD or CD-ROM.

Connect one side of the ATA66/100 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. The ATA66/100 cable is backward compatible with ATA33 HDDs.

2-3.3.2 Floppy Drive Installation

Pin -1
FDC
Floppy Drive
Connector
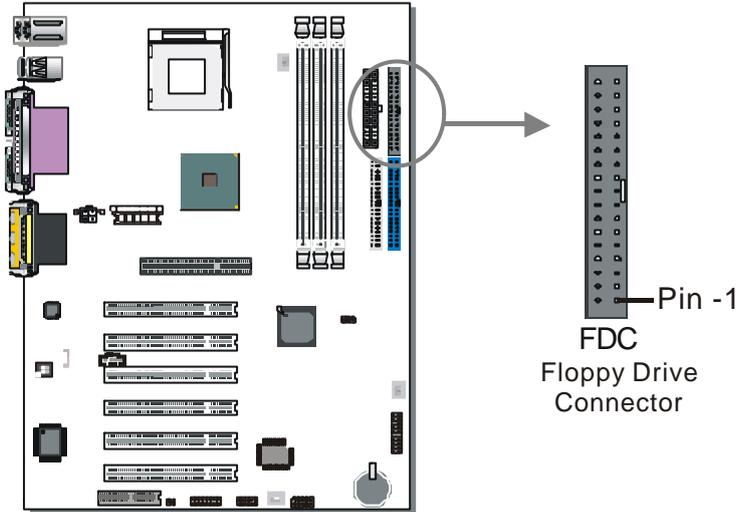
The system supports 5 possible floppy drive types: 720 KB, 1.2 MB, 1.44
MB, 2.88 MB, and LS-120. In addition, this Motherboard supports a 3-mode
(720KB/1.2MB/1.44MB) floppy commonly used in Japan.

Connect one side of the 34-pin flat cable to the floppy drive and plug the other
end to the floppy drive connector on the Motherboard.

This Motherboard can support up to 2 floppy drives.
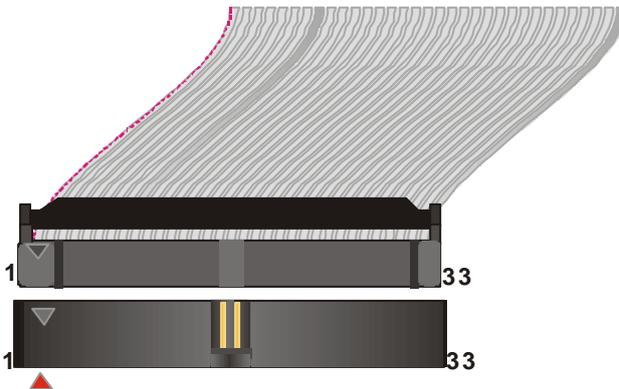
2-3.3.3 Front Panel Connections
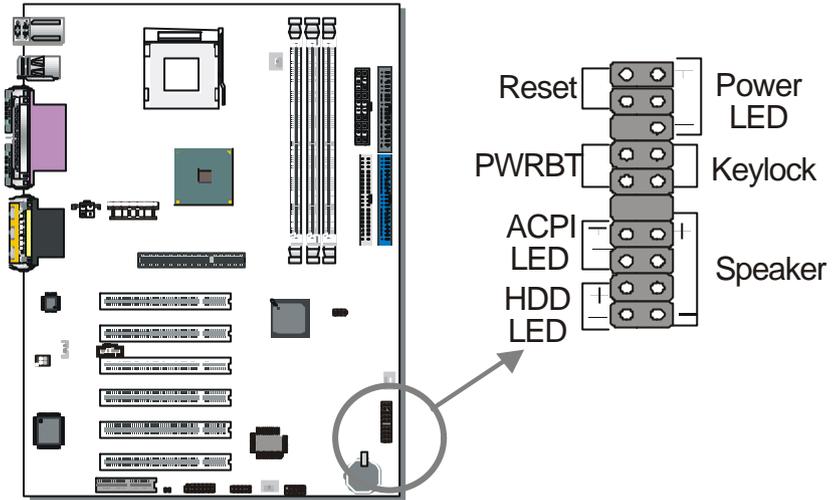
Plug the computer case's front panel devices to the corresponding headers on the Motherboard.

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.
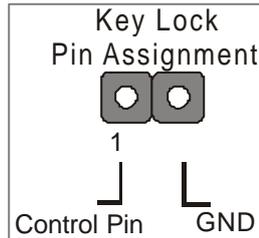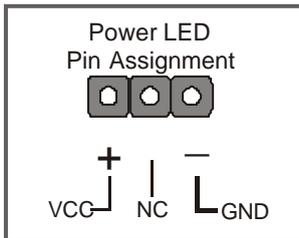
2. Reset

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          │
└─────────────────────────────┘
```
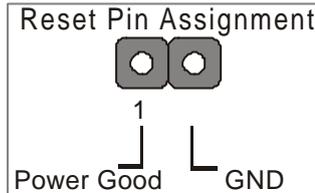
3. Speaker

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

```
┌─────────────────────────────────┐
│ Speaker Pin Assignment          │
│    ┌──┐┌──┐┌──┐┌──┐            │
│    │○ ││○ ││○ ││○ │            │
│    └──┘└──┘└──┘└──┘            │
│                                 │
│ VCC    NC NC   Speaker out      │
└─────────────────────────────────┘
```
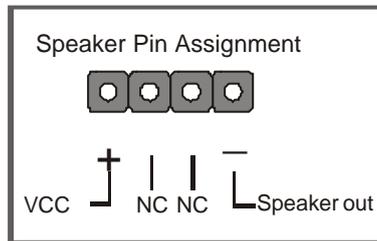
4. ACPI LED

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     │
│        ┌──┐ ┌──┐            │
│        │○ │ │○ │            │
│        └──┘ └──┘            │
│         +    −              │
│                             │
│    VCC3MEM   Control Pin    │
└─────────────────────────────┘
```
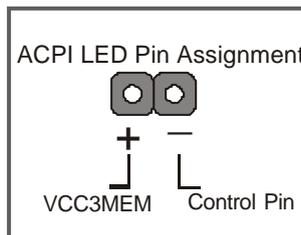
5. IDE LED

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

```
┌─────────────────────────────┐
│ HDD LED Pin Assignment      │
│       ┌──┐┌──┐              │
│       │○ ││○ │              │
│       └──┘└──┘              │
│        +    ─               │
│                             │
│   LED Anode  LED Cathode    │
└─────────────────────────────┘
```
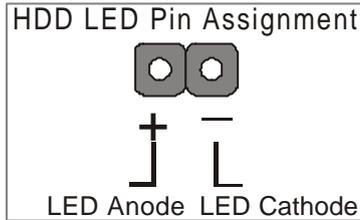
6. ATX Power On/Off Switch

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       │
└─────────────────────────────┘
```
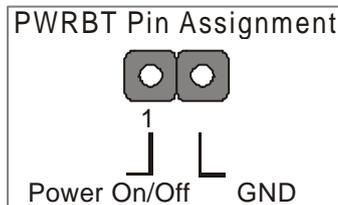
2-3.3.4 Back Panel Connections

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.
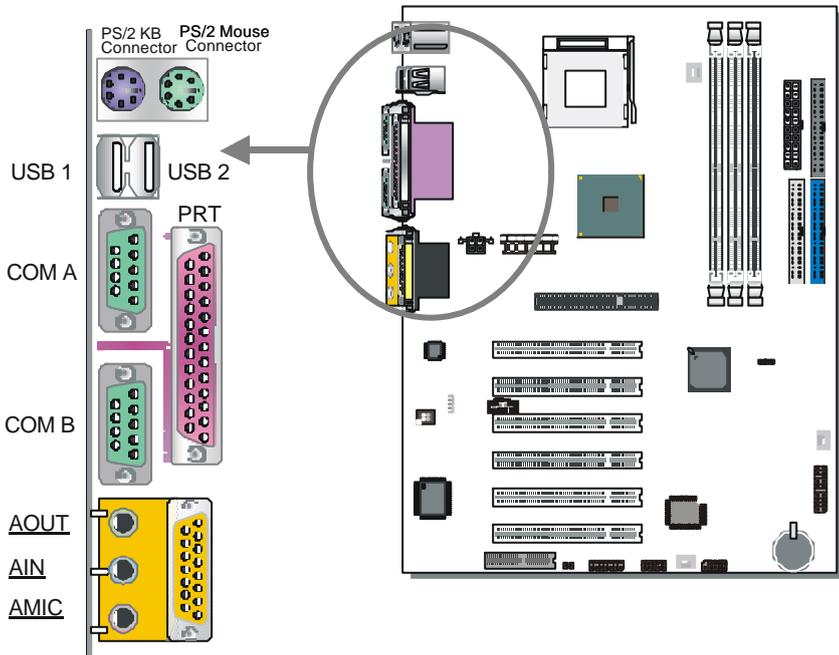
1. Onboard Serial Ports COMA/COMB

External peripherals that use serial transmission scheme include:

- serial mouse,
- and modem.

Plug the serial device cables directly into the COMA/COMB 9-pin male connectors located at the rear panel of the Motherboard.

2. Parallel Port PRT

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

3. PS/2 Keyboard

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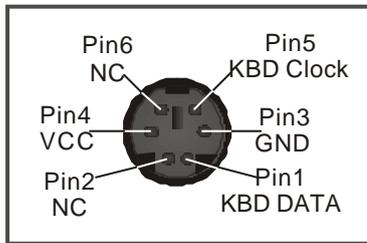
4. PS/2 Mouse

Similarly, plug the mouse jack directly into the 6-pin female PS/2 mouse connector.
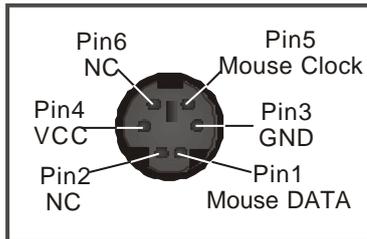
5. Universal Serial Bus USB1/USB2/(USB3, USB4)

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

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

USB3 and 4 are available. To make use of these USB ports, purchase a USB cable from your dealer. The lay-out of USB3 and 4 is as follows:
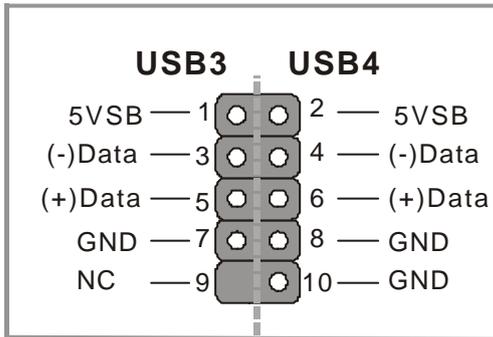
2-3.3.5 Other Connections

1.   Wake-On-LAN (WOL)

Attach the 3-pin connector from the LAN card which supports the
Wake-On-LAN   (WOL) function to the JP10 header on the Motherboard.
This WOL function lets users wake up the connected computer through the
LAN card.
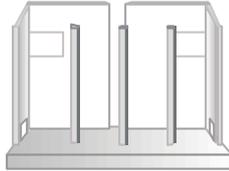
Please install according to the following pin assignment:
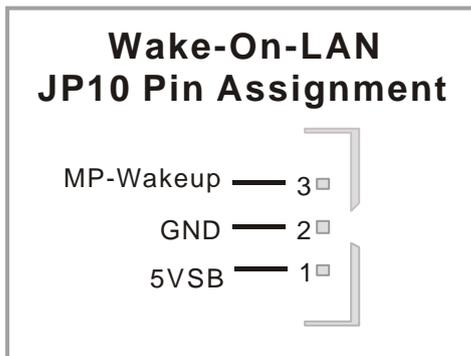
2. Standard Infrared (SIRCON)

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

This will enable the infrared transfer function. This Motherboard meets both

the ASKIR and HPSIR specifications.

Please install according to the following pin assignment:

**Standard Infrared
(SIRCON) Connector
SIRCON Pin Assignment**

1 2 3 4 5

VCC   IRTX

IRRX

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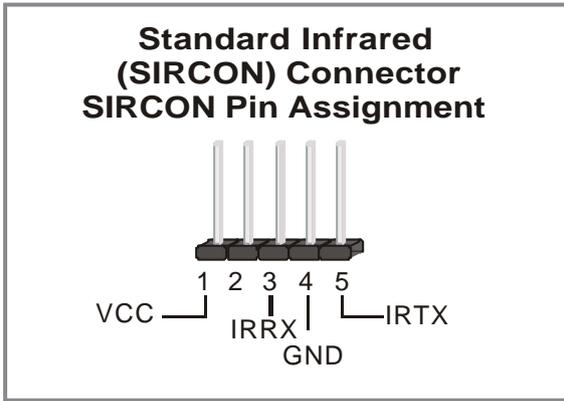
3.   Cooling Fan Installation
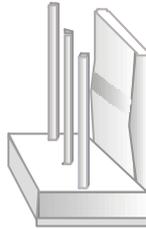
(1) CPU Cooling Fan

After you have seated the CPU properly on the processor, attach the 3-pin fan
cable to the CPUFAN connector on the Motherboard. The fan will stop when
the system enters into Suspend Mode. (Suspend mode can be enabled from the
BIOS Setup Utility, [SOYO COMBO] menu.)
To avoid damage to the system, install according to the following pin
assignment:

**CPU Cooling Fan
CPUFAN Pin Assignment**

SENSOR ——3

12V ——2

GND ——1
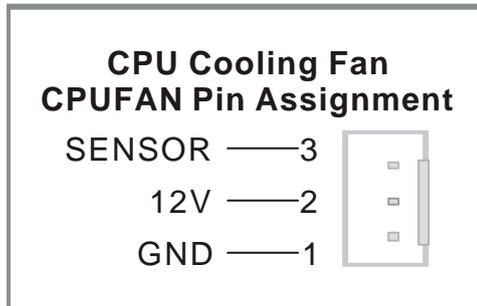
(2) Chassis Cooling Fan

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
CHAFAN1 Pin Assignment**

1—— GND

2—— 12V

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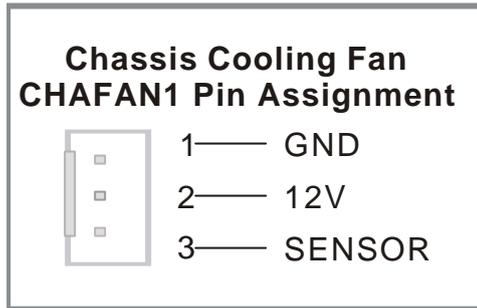
Note: CPU cooling fan must be installed to prevent CPU from overheating and ensure system stability. Chassis cooling fan is optional, depending on whether there is cooling fan in your chassis.

(3) System Fan

**System Fan
SYSFAN Pin Assignment**

1   2   3

GND   12V   SENSOR
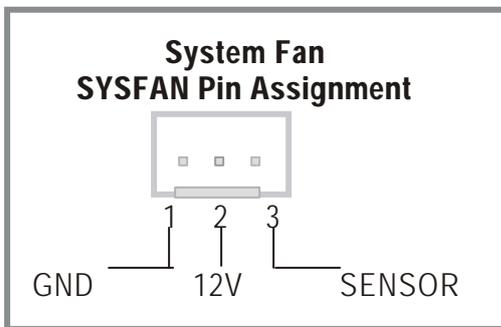
4. Smart Card Reader
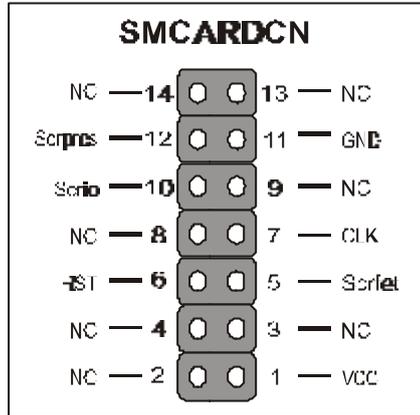
2-3.3.6 AGP VGA Card

Insert VGA card into the AGP or PCI expansion slots according to card specifications.

2-3.3.7 ATX12V Power Supply

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

ATX Power

+12V Power Connector   Aux Power Connector
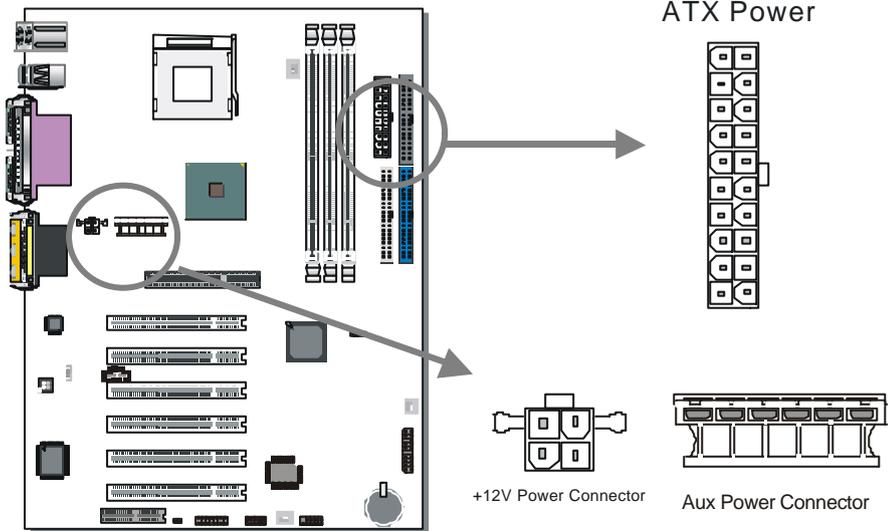
Warning: Follow these precautions to preserve your Motherboard from any remnant currents when connecting to ATX power supply: **Turn off the power supply and unplug the power cord of the ATX power supply before connecting to ATX PW connector.**

The Motherboard requires a power supply with at least 250 Watts and a "power good" signal. Make sure the ATX power supply can take at 1.5 A max current * load on the 5V Standby lead (5VSB) to meet the standard ATX

specification.

* *Note :* If you use the Wake-On-LAN (WOL) function, make sure the ATX power supply can support at least 720 mA on the 5V Standby lead (5VSB).

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

ATX Power

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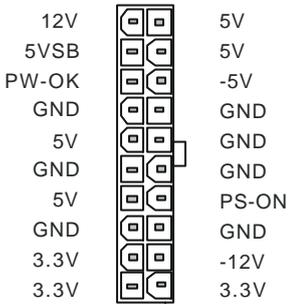
➢ **Pay special care to the directionality.**

Pin1   Pin3

COM   +12VDC
COM   +12VDC

+12V Power Connector

Pin1   COM
COM
COM
+3.3VDC
+3.3VDC
+5VDC
Pin6

Aux Power Connector
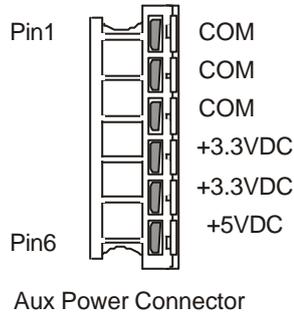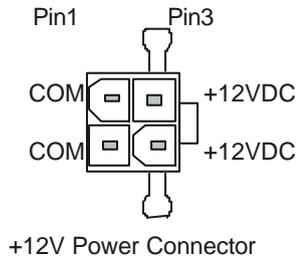
2-3.3.8 CNR (Communication Networking Riser)Connector

This motherboard supports CNR (Communication Networking Riser) slot
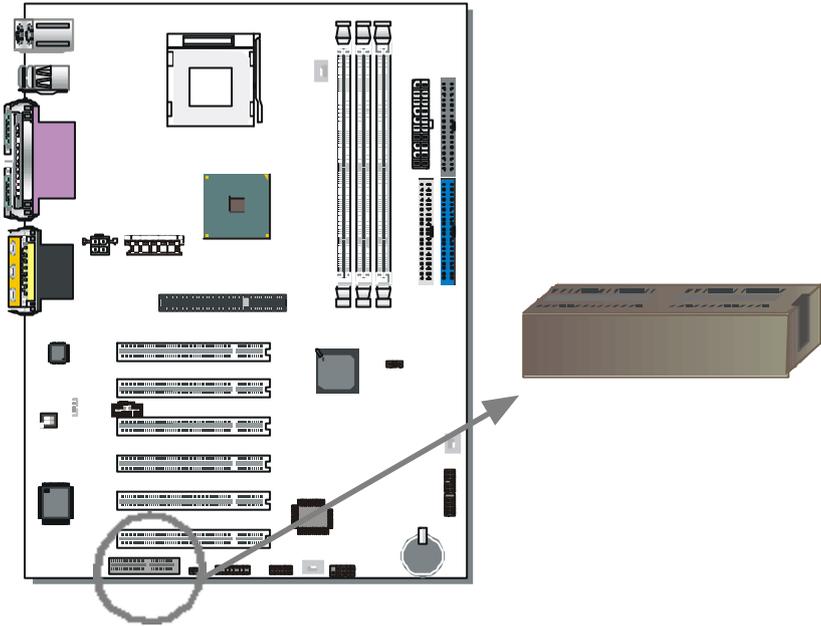
2-3.4 Jumper Setting

Step 1. On Board Audio Codec Enable/Disable (SW1)

SW1	**Pin 1**	**Pin 2**
Enable	On	On
Disable	Off	Off

Step 2. CNR MR Card-CODEC OPTION (JP4)

CNR MR Card-CODEC OPTION	Primary	Secondary
JP4 Setting	**Open JP4** 1 2	**Short JP4** 1 2

CMOS Clear (JP5)

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

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

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

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.

2-3.5 Power On

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

1. Turn the power on

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

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

Repeat this operation until you get the following screen.

3. The BIOS Setup screen appears:

CMOS Setup Utility – Copyright (C) 1984-2001 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	

2-3.6   Quick BIOS Setup

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

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

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

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

Step 3.   Select [SOYO COMBO FEATURE]
Set the **[CPU Frequency Select]** field to "Manual", to be able to change the CPU frequency 1 MHz stepping.

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

2-3.7 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

How can I disable the on-board Audio ?

Set the "OnChip sound" option in the BIOS to disable this option can be found under SOYO COMBO Feature.

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 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 optimized 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.

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

Note on Over-clocking Capability

The SY-P4IS2 provides over-clocking capability. Due to the over-clocking setting your system may fail to boot up or hang during run time. Please perform the following steps to recover your system from the abnormal situation :

1. Turn off system power (If you use an ATX power supply, and depending on your system, you may have to press the power button for more than 4 seconds to shut down the system.)
2. Press and hold down the <Insert> key while turning on the system power. Keep holding down the <Insert> key until you see the message of the CPU type and frequency shown on the screen.
3. Press the <Del> key during the system diagnostic checks to enter the Award BIOS Setup program.
4. Select [Save & Exit SETUP] and press <Enter> to save the new configuration to the CMOS memory, and continue the boot sequence.

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

2-3.8   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 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 ) 1984-2001 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 .
STANDARD CMOS SETUP        INTEGRATED PERIPHERALS
BIOS F
CHIPSE
POWER        SAVE to CMOS and EXIT
PNP/PC
LOAD S
LOAD BIOS DEFAULTS

Esc  : Quit                ↑↓→←  : Select Item
F10  : Save & Exit Setup   (Shift)F2  : Change Color
           Time, Date, Hard Disk Type…
```
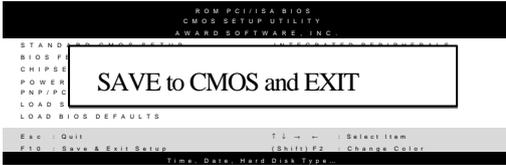
Type [Y] to save the
changes and exit or [N]
to return to the Main
Menu and keep current
values.

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  : Quit                ↑↓→←  : Select Item
F10  : Save & Exit Setup   (Shift)F2  : Change Color
           Time, Date, Hard Disk Type…
```
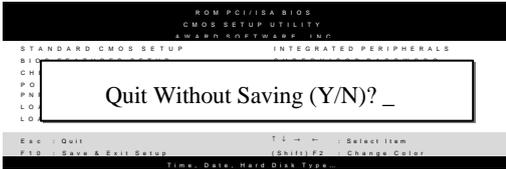
Type [Y] to abandon
changes and exit or [N]
to return to the Main
Menu and keep current
values.

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) 1984-2001 Award Software SOYO COMBO Feature		
CPU Frequency Select	Auto	**Item Help**
Frequency 1MHz Stepping	100MHz	
CPU Clock Ratio	X 17	Menu Level ▶
Spread Spectrum	Disabled	
System Performance	Normal	
Quick Power On Self Test	Enabled	
CPU Vcore Select	Default	
C.I.H. 4-WAY Protection	Enabled	
Memory Frequency For	Auto	
DRAM Timing Selectable	By SPD	
x CAS Latency Time	2	
x Active to Precharge Delay	7	
x DRAM RAS# to CAS# Delay	3	
x DRAM RAS# Precharge	3	
First Boot Device	Floppy	
Second Boot Device	CDROM	
Third Boot Device	LS120	
Boot Other Device	Enabled	
AC97 Audio	Auto	
AC97 Modem	Auto	
↑↓→ 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

	Setting	Description	Note
CPU Frequency Select	Auto Manual	Set the **[CPU Frequency Select]** field to "Manual", to be able to change the CPU frequency 1 MHz stepping.	Default
Frequency 1MHz Stepping	Min=100 ~ Max=255	Press "Page Up"/"Page Down" key to Over Clock the CPU Front Side Bus in 1MHz increment or Press "Enter" key, then type the desired CPU Front Side Bus.	
CPU Clock Ratio	x 8, x 10, x 11, x 12, x 13, x 14, x 15, x 16, x 17, x 18, x 19, x 20, x 21, x 22, x 23, x 24	The available CPU ratio you can select will depends on your CPU ID.	
Spread Spectrum	Disabled Enabled	This item allows you to enable/disable the spread spectrum modulate.	Default

3-1.2 System Performance

	Setting	Description	Note
System Performance	Normal Maxium	Adjust your computer performance.	Default
Quick Power On Self Test	Disabled Enabled	Provides a fast POST at boot-up.	Default

3-1.3 CPU Vcore Select

	Setting	Description	Note
CPU Vcore Select	Default	This function adjust the CPU voltage.	Default
	1.100V, 1.125V, 1.150V, 1.175V, 1.200V, 1.225V, 1.250V, 1.275V, 1.300V, 1.325V, 1.350V, 1.375V, 1.400V, 1.425V, 1.450V, 1.475V, 1.500V, 1.525V, 1.550V, 1.575V, 1.600V, 1.625V, 1.650V, 1.675V, 1.700V, 1.725V, 1.750V, 1.775V, 1.800V, 1.825V, 1.850V		

3-1.4 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
Memory Frequency For	Auto	This item allows you to control the DRAM speed.	Default
	PC133		
	PC100		
DRAM Timing Selectable	By SPD	If enable the DRAM will auto detect the DRAM timing.	Default
	Manual		
CAS Latency Time	2	This item allows you to control the DRAM CAS Latency time.	Default
	3		
Active to Precharge Delay	5	This item allows you to control the DRAM Precharge Delay time.	
	6		
	7		Default

DRAM RAS# to CAS# Delay	2	This item allows you to control DRAM RAS to CAS delay time.	
	3		Default
DRAM RAS# Precharge	2	This item allow you to control DRAM RAS precharge time.	
	3		Default

3-1.5 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 810 chipset family to support AC97 Audio/ Modem.	
	Auto		Default

3-2 STANDARD CMOS SETUP

Select the [STANDARD CMOS SETUP] option from the Main Menu and

press [Enter] key.

```
         CMOS Setup Utility – Copyright ( C ) 1984-2001 Award Software
                           Standard CMOS Features

    Date (mm:dd:yy)        Mon, May 7 2001           Item Help
    Time (hh:mm:ss)        2 : 30 : 20
                                               Menu  Level    ▶
 ▶ IDE Primary Master      None
 ▶ IDE Primary Slave       None               Change the day, month, year
 ▶ IDE Secondary Master    None               and century.
 ▶ IDE Secondary Slave     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        326656K
    Total Memory           327680K

 ↑↓→ 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
	CHS	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 errors, this function will stop the system. Select which type of error will cause the system halt.	Default
	No Errors		
	All, But Keyboard		
	All, But Diskette		
	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) 1984-2001 Award Software Advanced BIOS Features		
Virus Warning	Disabled	**Item Help**
CPU L1 & L2 Cache	Enabled	
Swap Floppy Drive	Disabled	Menu Level ▶
Boot Up Floppy Seek	Enabled	
Boot Up NumLock Status	On	Allows you to choose the
Gate A20 Option	Fast	VIRUS warning feature for
Typematic Rate Setting	Disabled	IDE Hard Disk boot sector
x Typematic Rate (Chars/Sec)	6	protection. If this function is
x Typematic Delay (Msec)	250	enabled and someone attempt
Security Option	Setup	to write data into this area,
APIC Mode	Enabled	BIOS will show a warning
MPS Version Control For OS	1.4	message on screen and alarm
OS Select For DRAM > 64MB	Non-OS2	beep.
Report No FDD For WIN 95	No	
EPA LOGO SELECT	LOGO-0	
Small Logo (EPA) Show	Enabled	
↑↓→ 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
Virus Warning	Disabled	Allows you to choose the VIRUS warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempt to write data into this area, BIOS will show a warning message on screen and alarm beep.	Default
	Enabled		

3-3.2 Cache Memory Options

	Setting	Description	Note
CPU L1 & L2 Cache	Disabled		
	Enabled	Enables the CPU's L1 & L2 cache.	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.	
	Enabled		Default

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	A pin in the keyboard controller controls GateA20.	
	Fast	Lets chipset control 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	Note
Security Option	System	Each time the system is booted, the password prompt appears.	
	Setup	If a password is set, the password prompt only appears when you attempt to enter the BIOS Setup program.	Default
ACPI Mode			
	Disabled	Enabled the Advanced Programmable	
	Enabled	Interrupt Controller (APIC) mode.	Default
MPS Version Control for OS	1.1	Allows you to choose the Multi Processor Specification (MPS) version.	
	1.4		Default

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].	
	No	Windows will reserve INT 6 for your FDD, whether it is disabled or not.	Default

Small Logo(EPA) Show

	Setting	Description	Note
EPA LOGO SELECT	LOG0	Allows user to display SOYO logo or own logo. Logo-0 shows SOYO logo, Logo-1 shows user logo.	Default
	LOG1		
Small Logo(EPA) Show	Disabled	Set Enabled to Show Logo(EPA).	
	Enabled		Default

3-4 ADVANCED CHIPSET FEATURES

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

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

CMOS Setup Utility – Copyright (C) 1984-2001 Award Software Advanced Chipset Features		
System BIOS Cacheable	Disabled	Item Help
Video BIOS Cacheable	Disabled	Menu Level ▶
Video RAM Cacheable	Disabled	
AGP Aperture Size (MB)	128	
Delay Prior to Thermal	16 Min	

↑↓→ 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
System BIOS Cacheable	Disabled		Default
	Enabled	The ROM area F0000H-FFFFFH is cacheable.	
Video BIOS Cacheable	Disabled		Default
	Enabled	The video BIOS C0000H-C7FFFH is cacheable.	
Video RAM Cacheable	Disabled	Allows user enabled Video RAM Cacheable.	Default
	Enabled		

CHIPSET FEATURES SETUP(Continued)

CHIPSET FEATURES	Setting	Description	Note
AGP Aperture Size (MB)	32	Select the size of Accelerated 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.	
	64		
	128		Default
	256		
Delay Prior to Thermal	4Min	Set the time for the system to decrease performance to avoid reaching maximum thermal temp. Ex. If you set it to 16 minutes the system will start decreasing the performance 16 minutes before reaching max thermal temp.	
	8Min		
	16Min		Default
	32Min		

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 ) 1984-2001 Award Software
                              Integrated Peripherals

    On-Chip  Primary     PCI  IDE   Enabled          ┌──────────────────┐
    IDE Primary Master PIO          Auto             │    Item Help     │
    IDE Primary Slave PIO           Auto             │                  │
    IDE Primary Master UDMA         Auto             │  Menu  Level   ▶ │
    IDE Primary Slave UDMA          Auto             │                  │
    On-Chip Secondary PCI IDE       Enabled          │                  │
    IDE Secondary Master PIO        Auto             │                  │
    IDE Secondary Slave PIO         Auto             │                  │
    IDE Secondary Master UDMA       Auto             │                  │
    IDE Secondary Slave UDMA        Auto             │                  │
    USB Controller                  Enabled          │                  │
    USB Keyboard Support            Disabled         │                  │
    Init Display First              AGP              │                  │
    IDE HDD BlockMode               Enabled          │                  │
    POWER ON Function               BUTTON ONLY      │                  │
  x KB Power ON Password            Enter            │                  │
  x Hot Key Power ON                Ctrl-F1          │                  │
    Onboard FDC Controller          Enabled          │                  │
    Onboard Serial Port 1           3F8/IRQ4         │                  │
    Onboard Serial Port 2           2F8/IRQ3         │                  │
    UART Mode Select                Normal           │                  │
  x UR2 Duplex Mode                 Half             │                  │
    Onboard Parallel Port           378/IRQ7         │                  │
    Parallel Port Mode              SPP              │                  │
  x ECP Mode Use DMA                3                │                  │
    PWRON After PWR-Fail            OFF              │                  │
    Game Port Address               201              │                  │
    Midi Port Address               330              │                  │
    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	
	AGP	Display card or PCI VGA card – to initialize first.	Default

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 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]	

3-5.5 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

3-5.6 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		
	SCR		
If [UART Mode Select] is set to [IrDA]/[ASKIR]			
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
	Full		

3-5.7 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 [ECP] mode			
ECP Mode use DMA	3	Choose DMA3	Default
	1	Choose DMA1	

3-5.8 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.	
	330		Default
	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) 1984-2001 Award Software Power Management Setup		
ACPI Suspend Type	S1(POS)	Item Help
Power Management	User Define	
Video Off Method	DPMS	Menu Level ▶
Video Off In Suspend	Yes	
Suspend Type	Stop Grant	
MODEM Use IRQ	3	
Suspend Mode	Disabled	
HDD Power Down	Disabled	
Soft-Off by PWR-BTTN	Instant-Off	
Wake-Up by PCI card	Enabled	
Power On by Ring	Enabled	
Resume by Alarm	Disabled	
x Date (of Month) Alarm	0	
x Time (hh:mm:ss) Alarm	0 : 0 : 0	
** 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	
↑↓→ 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 Suspend Type	S1(POS)	The system will enter the S1 state during suspend. (Low latency wake up)			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.			
	Blank screen				
	DPMS				Default
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				
Standby Mode	Disabled				Default
	1Min-1Hour	When the set time has elapsed, BIOS sends a command to the system to enter Standby Mode.			

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.	
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.		
	Enabled		Default	
Power On by Ring	Disabled			
	Enabled	The system will self-power on me when the modem is ringing.	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.		

3-6.2 Reload Global Timer Events

Power Down & Resume Events	Setting	Description	Note
IDE0, IDE1 ➢**Primary** ➢**Secondary**	Disabled		Default
	Enabled	In effect, the system remains alert for anything which occurs to a device which is configured as *Enabled*.	
FDD, COM, LPT Port	Disabled		Default
	Enabled	In effect, the system remains alert for anything which occurs to a device which is configured as *Enabled*.	
PCI PIRQ [A-D]#	Disabled		Default
	Enabled	The system monitors these elements for activity. The system will resume if [IRQ activity] is detected.	

3-7 PNP/PCI CONFIGURATION SETUP

This option sets the Motherboard's PCI Slots.

CMOS Setup Utility – Copyright (C) 1984-2001 Award Software PnP/PCI Configurations	
Reset Configuration Data Disabled	**Item Help**
Resources Controlled By Auto (ESCD) x IRQ Resources Press Enter	Menu Level ▶
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	Default is Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the OS cannot boot.
↑↓→ 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.	Default
If [Resources Controlled By] is set to [Manual]			
IRQ-# assigned to:	PCI device	Choose IRQ# assigned to PCI/ISA PnP card.	Default
	Reserved	Reserved IRQ	
Under this item the user can assign an IRQ to a PCI slot. However, there under some conditions the IRQ will not be assigned as selected under this item: 1. IRQs 0, 1, 2, 6, 8, 13 can NOT be assigned, because they are fixed. 2. IRQs 5, 9, 10, 11 are available 3. IRQs 3,4,7,12,14 and 15 will only be assigned if they are free. See the table below on how to free them:			

PNP/PCI Configuration Setup (Continued)

PNP/PCI Setup	Setting	Description	Note
Interrupt	How to set the BIOS to release the IRQ to the PnP Interrupt pool:		
Line	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**	
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.			
Assign IRQ For VGA/USB	Disabled	BIOS will assgin IRQ for USB port.	
	Enabled	BIOS won't assign IRQ for 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.			
INT Pin 1/2/3/4 Assignment	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) 1984-2001 Award Software		
PC Health Status		
Shutdown Temperature	Disabled	Item Help
Vcore	1.66 V	
VCC 1.8V	1.79 V	Menu Level ▶
3.3V	3.21 V	
+5V	5.02 V	
+12V	11.77 V	
5VSB	5.02 V	
Voltage Battery	3.10V	
CPU Temperature	40° C	
System Temperature	34° C	
CPUFAN Speed	4891 RPM	
CHAFAN Speed	0 RPM	
SYSFAN Speed	0 RPM	
↑↓→ 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
Shutdown Temperature	Disabled 40°C/104°F, 45°C/113°F, 50°C/122°F, 55°C/131°F, 60°C/140°F, 65°C/149°F, 75°C/167°F	This item allows you to set up the CPU shutdown Temperature. This item only effective under Windows 98 ACPI mode.	Default
Vcore, VCC 1.8V, 3.3V, +5V, +12V, 5VSB	V	Show the current voltage status.	
CPU Temperature	°C/°F	Show the current status of CPU temperature.	
System CPU Temperature	°C/°F	Show the current status of the system temperature.	
CPUFAN Speed	RPM	Show you the current CPUFAN operating speed.	
CHAFAN Speed	RPM	Show you the current CHAFAN operating speed.	
SYSFAN Speed	RPM	Show you the current SYSFAN operating speed.	

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) 1984-2001 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 Pe

▶ Power Mana   **Load Fail - Safe Defaults (Y/N)? Y**

▶ PnP/PCI Co

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

Change CPU' s Clock & Voltage
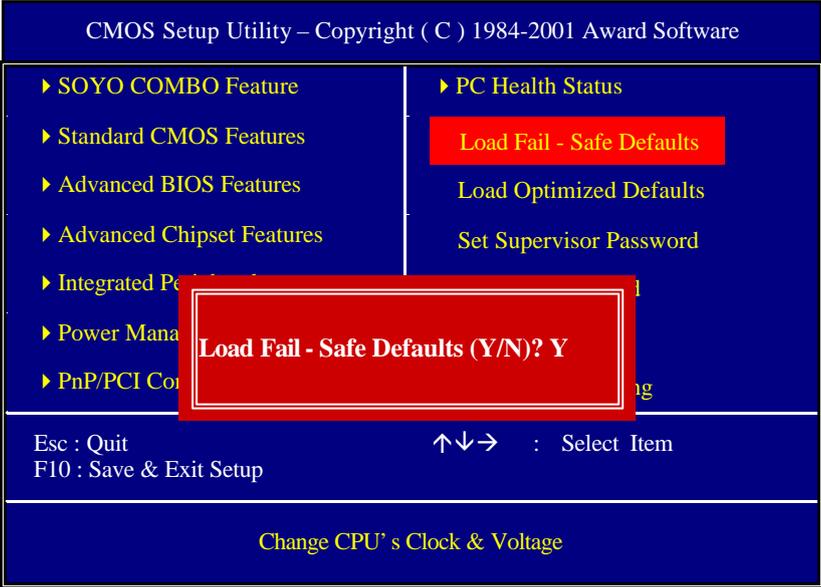
Type [Y] to use the Setup Defaults followed by [Enter] or otherwise [N] to
return to the Main Menu and keep current values.

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) 1984-2001 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 Pe...

▶ Power Mana...   **Load Optimized Defaults (Y/N)? Y**

▶ PnP/PCI Con...

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

Change CPU' s Clock & Voltage
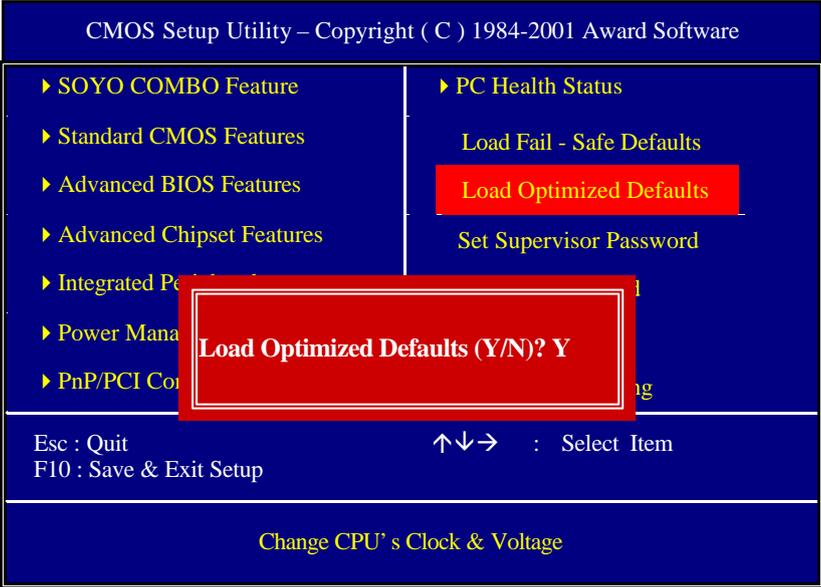
Type [Y] to use the Setup Defaults followed by [Enter] or otherwise [N] to
return to the Main Menu and keep current values.

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:

Type the Password and Press: <Enter>

ROM PCI/ISA BIO
CMOS SETUP UTIL
AWARD SOFTWARE

Press <Enter> without entering the password

STANDARD CMO
BIOS FEATURES S

Enter Password:

Enter Password: █████

Confirm Password: █████

RIPHERALS
PASSWORD

Password Disabled!!

SAVE & EXIT SETUP
EXIT WITHOUT SAVING

After you confirm the password, press <Esc> to exit

Esc : Quit
F10 : Save & Exit Se
Time, Date, Hard Disk Type…
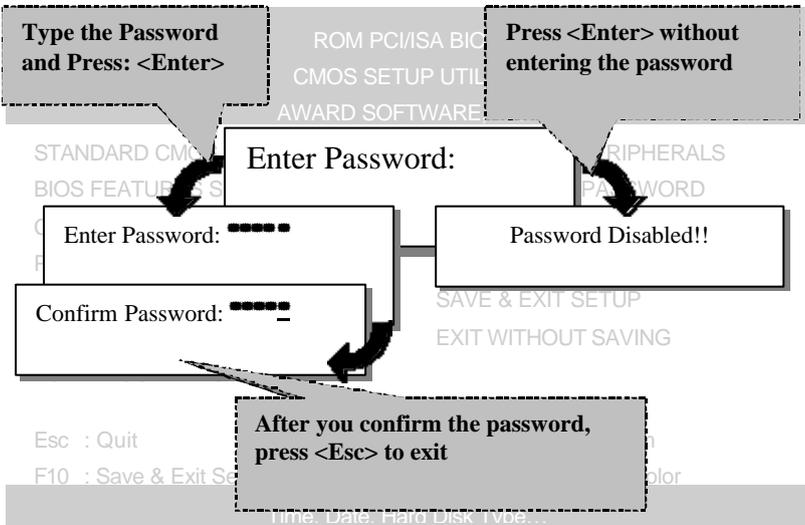
3-12 USER PASSWORD

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

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

Boot Menu

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

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

```
                 Boot Menu
      == Select a Boot First device ==
                  Floppy
                  Ls120
                  HDD-0
                  SCSI
                  CDROM
                  HDD-1
                  HDD-2
                  HDD-3
                  ZIP100
                  LAN


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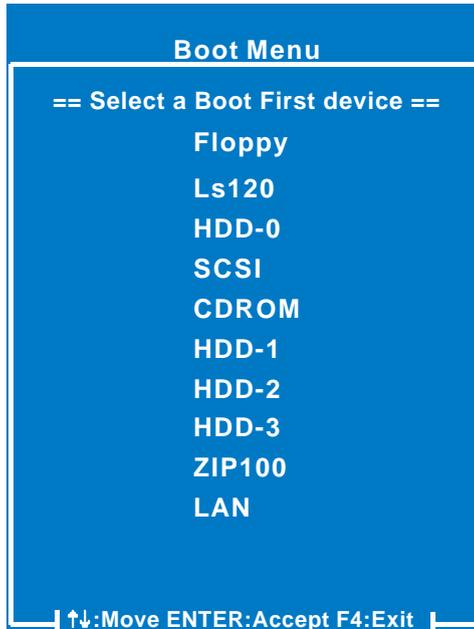
Chapter 4

DRIVERS INSTALLATION

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

Your SY-P4IS2 Motherboard comes with a CD-ROM labeled "SOYO CD." The SOYO CD contains (1) the user's manual file for your new Motherboard, (2) the drivers software available for installation, and (3) a database in HTML format with information on SOYO Motherboards and other products.

Step 1. Insert the SOYO CD into the CD-ROM drive
If you use Windows NT or 2000, 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.

(SOYO CD Start Up Program Menu)

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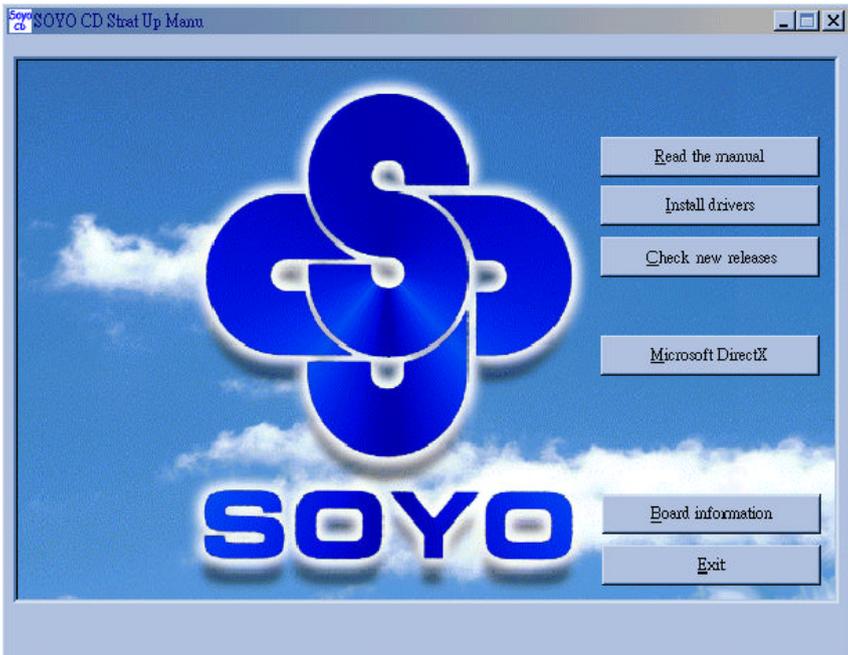
The user's manual files included on the SOYO CD are in PDF (Postscript Document) format. In order to read a PDF file, the appropriate Acrobat Reader software must be installed in your system.

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

Step 2. Install Drivers and Utilities

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 Chipset Software Installation Utility for Win 98/98SE/ME/NT/XP	
Intel Application Accelerator for Win 98/98SE/ME/NT/XP	
Avance Onboard Audio Driver and Applications for Win 9x/ME/2000/NT	
P4IS2 ITE hardware doctor for Win 9x/ME/2000/NT	
ITE SIM card reader driver for Win 9x/ME/2000/NT(english)	
ITE SIM card reader driver for Win 9x/ME/2000/NT(chinese)	

Cancel   OK

(Driver Installation Menu)

A short description of all available drivers follows:

➢ **Intel Chipset Software Installation Utility for Win 98/98S E/ME/NT/XP**

Windows 95 and 98 will not recognize the new INTEL i845 chipset properly. To update the necessary .inf files that will help Windows recognize the i845 chipset, please run this utility.

➢ **Intel Application Accelerator for Win 98/98SE/ME/NT/XP**

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

➢ **Avance Onboard Audio Driver and Applications for Win 9x/ME/2000/NT**

This Onboard Audio drivers for Windows 9x/ME/2000/NT. You have to install the drivers before installing any application for the Onboard Audio.

➢ **P4IS2 ITE hardware doctor for Win 9x/ME/2000/NT**

Your motherboard comes with a hardware monitoring IC. By installing this utility Temperature, Fan speed and Voltages can be monitored. It is also possible to set alarms when current system values exceed or fall below pre-set values.

➢ **ITE SIM card reader driver for Win 9x/ME/2000/NT(English)**

If you have reader card, it must be installed.

➢ **ITE SIM card reader driver for Win 9x/ME/2000/NT(Chinese)**

If you have reader card, it must be installed.

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

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

Step 3. Check the Latest Releases

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