

# SY-6IEM Mainboard

## Quick Start Guide

Introduction

Hardware  
Installation

Quick BIOS  
Setup

The SOYO CD

Onboard Sound  
Driver Installation

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

**100%** POST CONSUMER  
RECYCLED PAPER

# SY-6IEM Mainboard

Pentium® II & Celeron™ processors  
82440 EX/LX AGP/PCI Mainboard  
66MHz Front Side Bus supported  
Micro-ATX Form Factor

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## About This Guide:

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

If you need any further information, please visit our **Web Site** on the Internet. The address is "<http://www.soyo.com.tw>".

## 6IEM Serial - Version 1.0 - Edition: August 1998

\* These specifications are subject to change without notice

# 1 Introduction

Congratulations on your purchase of the **SY-6IEM** Mainboard. This *Quick Start Guide* describes the steps for installing and setting up your new mainboard.

This guide is designed for all users to provide the basic steps of mainboard setting and operation. For further information, please refer to *SY-6IEM Mainboard User's Guide and Technical Reference* online manual included on the CD-ROM packed with your mainboard.

## Unpacking

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

When unpacking the mainboard, check for the following items:

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◆ The SY-6IEM 82440 EX/LX AGP/PCI Mainboard




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◆ This Quick Start Guide



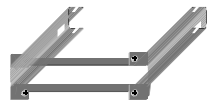

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◆ The Installation CD-ROM




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◆ The CPU Retention Set




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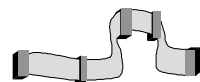
◆ One IDE Device Flat Cable




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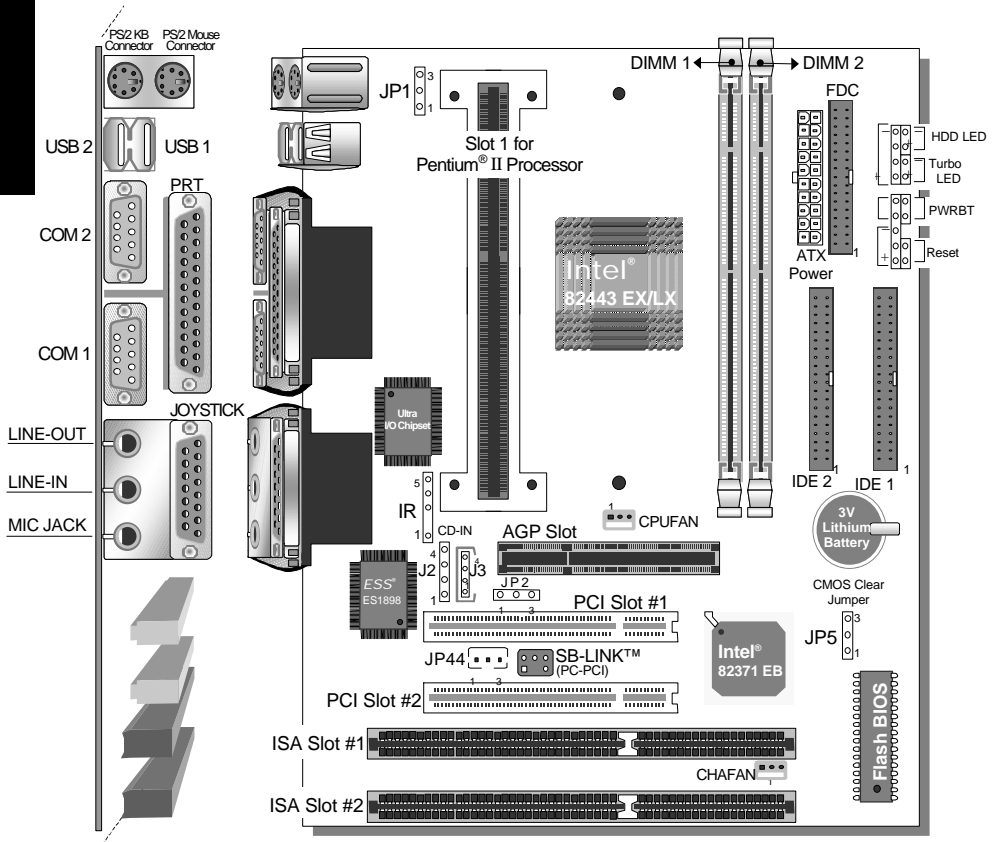
◆ One Floppy Disk Drive Flat Cable

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*SY-6IEM Mainboard Layout*

Introduction



**Key Features**

- Supports Intel Pentium® II processors (233-333MHz) & Celeron™ processors (266-366MHz)
- Easy CPU settings in BIOS with the "SOYO COMBO Setup".
- 3D PnP audio onboard
- Auto-detect CPU voltage
- PC97, APM, ACPI, Ultra DMA/33
- Power-on by modem or alarm
- Supports Wake-On-LAN (WOL)
- Supports Power-On by PS/2 Keyboard
- Supports Creative SB-LINK™ (PC-PCI) for PCI audio card
- 1 x 32-bit AGP slot
- 2 x 32-bit bus mastering PCI slots
- 2 x USB ports
- 1 x IrDA port
- Supports multiple-boot function
- DMI utility
- ATX power connector

## 2 Installation



To avoid damage to your mainboard, follow these simple rules while handling this equipment:

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

Follow the directions in this section designed to guide you through a quick and correct installation of your new **SY-6IEM** Mainboard. For detailed information, please refer to *SY-6IEM Mainboard User's Guide and Technical Reference* online manual included on the CD-ROM packed with your mainboard.

### PREPARATIONS

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

- ◆ Pentium® II processor with built-in CPU cooling fan (boxed type)
- ◆ SDRAM module
- ◆ Computer case and chassis with adequate power supply unit
- ◆ Monitor
- ◆ PS/2 Keyboard
- ◆ Pointing Device (PS/2 Mouse)
- ◆ VGA Card
- ◆ Speaker(s) (optional)
- ◆ Disk Drives: HDD, CD-ROM, Floppy drive ...
- ◆ External Peripherals: Printer, Plotter, and Modem (optional)
- ◆ Internal Peripherals: Modem and LAN cards (optional)

**Notice 1:** This mainboard features three built-in audio-stereo ports. Therefore you do not need to install a sound card.

**Notice 2:** If you want to use an external speaker connected to "Line-out" port, please make sure to use an "amplified speaker" that can generate proper output sound volume.

## SY-6IEM Quick Start Guide

### Install the Mainboard

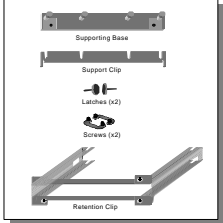
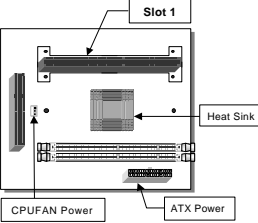
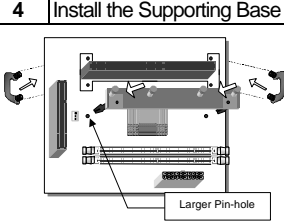
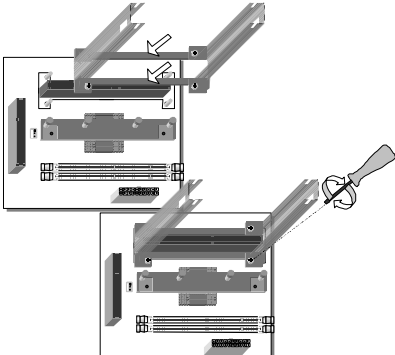
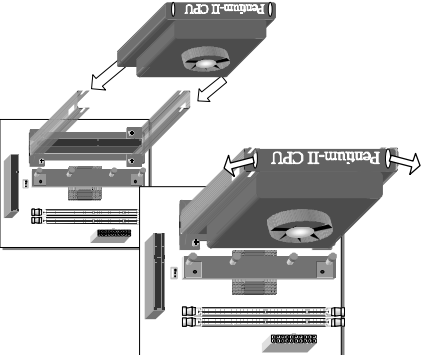
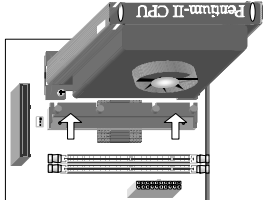
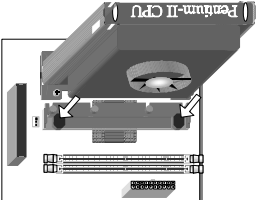

Follow the steps below in order to perform the installation of your new **SY-6IEM** Mainboard.

#### Step 1. Install the CPU

**☑ Mark your CPU Frequency:** Record the working frequency of your CPU that should be clearly marked on the CPU cover or write your own combination in the space provided.

<input type="checkbox"/> 233MHz (66 x 3.5)	<input type="checkbox"/> 300MHz (66 x 4.5)	<input type="checkbox"/> 366MHz (66 x 5.5)
<input type="checkbox"/> 266MHz (66 x 4.0)	<input type="checkbox"/> 333MHz (66 x 5.0)	<input type="checkbox"/> MHz ( x )

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

<p><b>1</b>   <b>Unpack the Retention Kit</b></p> 	<p><b>2</b>   <b>Position the Mainboard</b></p> 	<p><b>3</b>   <b>Insert the Screws</b></p> <p><b>4</b>   <b>Install the Supporting Base</b></p> 
<p><b>5</b>   <b>Install the Retention Clip</b></p> 	<p><b>6</b>   <b>Install the CPU</b></p> 	
<p><b>7</b>   <b>Install the Support Clip</b></p> 	<p><b>8</b>   <b>Insert the Latches</b></p> 	<p><b>9</b></p>  <p><b>Remember to connect the CPU Cooling Fan to the CPUFAN power connector on the mainboard.</b></p>

**Step 2. Make Connections to the Mainboard**

This section tells how to connect internal peripherals and power supply to the mainboard.

Internal peripherals include IDE devices (HDD, CD-ROM), Floppy Disk Drive, Chassis Fan, Front Panel Devices (Turbo LED, Internal Speaker, Reset Button, IDE LED, and KeyLock Switch.), Wake-On-LAN card, VGA card, Sound Card, and other devices.

For more details on how to connect internal and external peripherals to your new SY-6IEM Mainboard, please refer to *SY-6IEM Mainboard User's Guide and Technical Reference* online manual on CD-ROM.

**Connectors and Plug-ins**

<b>PCI Audio Card Header: SB-Link™(PC-PCI)</b>		<b>Wake-On-LAN Header: JP44</b>			
Connect the SB-Link™(PC-PCI) cable from your PCI audio card to this header.		Connect the WOL cable from your LAN card to JP44.			
<b>CPU Cooling Fan: CPUFAN</b>		<b>Chassis Fan: CHAFAN</b>			
Connect the CPU cooling fan cable to the CPUFAN power connector.		Connect the case cooling fan cable to the CHAFAN power connector.			
<b>USB</b>	<b>TB LED</b>	<b>SPK</b>			
Plug your USB devices to this header.	Connect your Turbo LED cable to this header.	Connect the speaker cable to this header.			
<b>RESET</b>	<b>IDE LED</b>	<b>KB-LOCK</b>			
Connect the reset button to this header.	Connect the IDE device LED to this header.	Connect the Power LED and the KB Lock switch to this header.			
<b>CD Line-in: J2, J3</b>		Pin 1	Pin 2	Pin 3	Pin 4
Connect the CD Line-in cord from the CD-ROM device to the matching header J2 or J3.		J2	R	G	L
		J3	R	G	L
<b>IrDA (Infrared Device Header): IR</b>					
Connect the cable from your IrDA device to this header.					
<b>ATX Power On/Off: PWRBT</b>		<b>ATX Power Supply: ATX PW</b>			
Connect your power switch to this header (momentary switch type). <b>To turn off the system, please press this switch and hold down for longer than 4 seconds.</b>		Attach the ATX Power cable to this connector. <b>When using the Power-On by PS/2 Keyboard function, please make sure the ATX power supply can take at least 720mA load on the 5V Standby lead (5VSB) to meet the standard ATX specifications.</b>			

## SY-6IEM Quick Start Guide

### Step 3. Configure Memory

Your board comes with two DIMM sockets, providing support for up to 256MB of main memory using DIMM modules from 8MB to 128MB with no restriction on memory configuration. Therefore, you can install memory modules in any combination.

### Memory Configuration

MEMORY CONFIGURATION	DIMM Banks	
	DIMM 1	DIMM 2
RAM Type	EDO/SDRAM	EDO/SDRAM
RAM Module Size (MB)	8/16/32/64/128	8/16/32/64/128

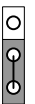

**Note :** There are two types of EDO DIMM modules with different operating voltages: 3.3V and 5.0V. Please note that only 3.3V EDO DIMM modules can be used on this mainboard.

### Step 4. Set the CPU Frequency

You do not need to set any jumper for the CPU frequency. Instead, CPU settings are changed through the BIOS **[SOYO COMBO SETUP]**. Please refer to *Chapter 3 - Quick BIOS Setup* for details on how to set the Pentium® II processor frequency.

### Step 5. Enable/Disable Power-On by PS/2 Keyboard (JP1)

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

Support Power-On by Keyboard	Enable	Disable
<b>JP1 Setting</b>	Enable Power-On by PS/2 Keyboard function (short pin 1-2) 	Disable Power-On by PS/2 Keyboard function (short pin 2-3) 


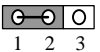
**Important:** When using the Power-On by PS/2 Keyboard function, please make sure the ATX power supply can take at least 720mA load on the 5V Standby lead (5VSB) to meet the standard ATX specifications.



**Step 6. Enable/Disable Onboard Sound (JP2)**



The onboard audio features of your mainboard are controlled by jumper JP2. You can choose to enable or disable the available sound function by setting JP2 accordingly.

- Short pin 2-3 on jumper JP2 to enable the onboard sound function. Then, you can plug your external audio devices such as amplified-speakers, CD-player, and microphone to the mainboard Line-out, Line-in and Mic ports right after the mainboard is installed. (You do not need to install any sound card.)
- To disable the onboard sound options short pin 1-2 on jumper JP2.

Onboard Sound	Enable	Disable
<b>JP2 Setting</b>	Short pin 2-3 to enable the onboard sound function.  1 2 3	Short pin 1-2 to disable the onboard sound function.  1 2 3

**Step 7. Clear CMOS Data (JP5)**

Clear the CMOS memory by momentarily shorting pin 2-3 on jumper JP5 for at least 5 seconds, and then by shorting pin 1-2 to retain new settings. This jumper can be easily identified by its white colored cap.

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

# 3 Quick BIOS Setup

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

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

**Step 1.** Select **[LOAD SETUP DEFAULT]**

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

**Step 2.** Select **[STANDARD CMOS SETUP]**

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

**Step 3.** Select **[SOYO COMBO SETUP]**

Move the cursor to the **[CPU Speed]** field to set the CPU working speed.

Available [CPU Speed] settings on your SY-6IEM Mainboard are detailed in the following table. If you set this field to [Manual], you are then required to fill in the next two consecutive fields: (1) the CPU Ratio, and (2) the CPU Frequency.

CPU Speed		Select the working frequency of your Pentium® II processor among these preset values. <b>Note:</b> <input checked="" type="checkbox"/> Mark the checkbox that corresponds to the working frequency of your Pentium® II processor in case the CMOS configuration should be lost. You can also write your own frequency combination in the space provided.
<input type="checkbox"/> 233MHz (66x3.5)	<input type="checkbox"/> 333MHz (66x5.0)	
<input type="checkbox"/> 266MHz (66x4.0)	<input type="checkbox"/> 366MHz (66x5.5)	
<input type="checkbox"/> 300MHz (66x4.5)	<input type="checkbox"/> MHz ( x )	

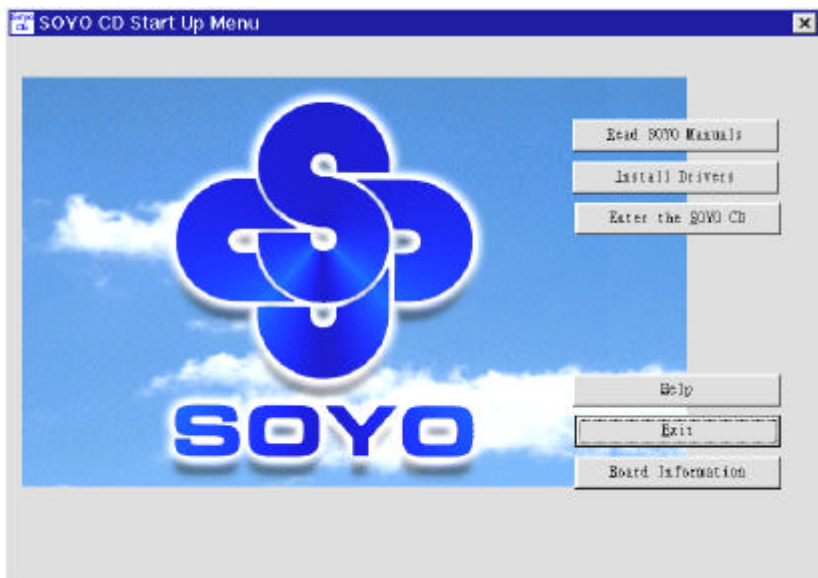
**Step 4.** Select **[SAVE & EXIT SETUP]**

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

## 4 The SOYO CD

Your SY-6IEM Mainboard comes with a CD-ROM labeled "SOYO CD." The SOYO CD contains the user's manual file for your new mainboard, the drivers software available for installation, and a database in HTML format with information on SOYO mainboards and other products.

**Step 1.** Insert the SOYO CD into the CD-ROM drive  
The SOYO CD will auto-run, and the SOYO CD Start Up Menu will display as shown below.



(SOYO CD Start Up Program Menu)

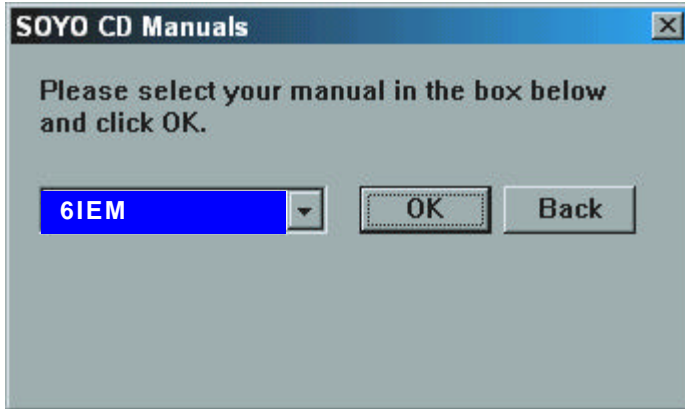
The SOYO CD Start Up Program automatically detects which SOYO mainboard you own and displays the corresponding model name.

**Step 2.** Read SOYO [model name] Manual  
Click the **Read Manual** button to open the user's manual file of your mainboard.

## SY-6IEM Quick Start Guide

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Please note that if the Start Up program was unable to determine which SOYO mainboard you own, the manual selection menu will pop up, as shown below. Then select the user's manual file that corresponds to your mainboard model name and click **OK**.



(Manual Selection Menu)

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

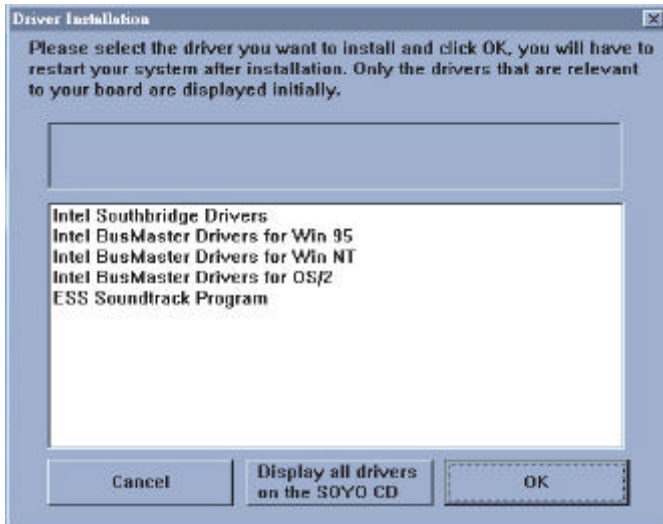
**Note:** The Start Up program automatically detects if the Acrobat Reader utility is already present in your system, and otherwise prompts you on whether or not you want to install it. You must install the Acrobat Reader utility to be able to read the user's manual file. Follow the instructions on your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

### Step 3. Install Drivers

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

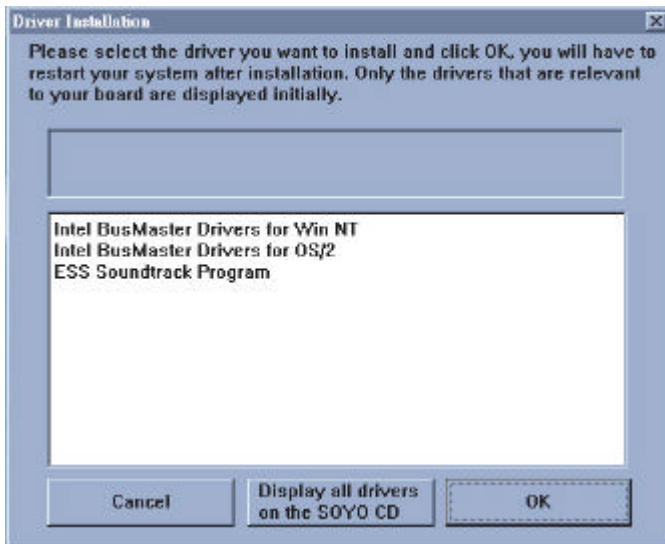
However, to display the list of all drivers software available with SOYO mainboards, click the **Display all drivers on the SOYO CD** button. Please make sure to install only the drivers adapted to your system, or otherwise this cause system malfunctions.

**The following drivers are available for Windows 95**



**(Driver Installation Menu)**

**The following drivers are available for Windows 98**



**(Driver Installation Menu)**

The SOYO CD

## SY-6IEM Quick Start Guide

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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 4. Enter the SOYO CD

Click the **Enter SOYO CD** button to enter the SOYO HTML database. The Start Up program will activate the default HTML browser installed on your system (for example, Internet Explorer or Netscape) to visualize the contents of the SOYO CD.

The SOYO CD contains useful information about your mainboard and other SOYO products available in as many as eleven different languages. For your convenience, this information is available in HTML format, similar to the format widely used on the Internet.



(SOYO CD HTML Database in English\*)

(\* The list of menu options may vary between languages)

**Note:** If no HTML browser is installed on your system, the Start Up program will prompt you on whether or not you would like to install the Internet Explorer\* browser. Click YES to install the HTML browser. After the installation is complete, please restart your system. Then re-run the SOYO CD and you will be able to browse the SOYO HTML database.

(\* Internet Explorer is a Microsoft Trademark)

## 5 Onboard Sound Driver Installation

### Windows® 98 Users

**If you are using the Windows® 98 operating system, skip this section.**

You do not need to install the sound driver since Windows® 98 O/S, which already contains the ESS audio driver, can detect and accommodate the ESS sound chip installed on this mainboard.

### Windows® 95 Users

#### Introduction

This section describes how to install the ESS™ audio driver for Microsoft Windows® 95 environment. For other application programs, and if you are using an operating system other than Win95, please refer to the *ESS™ Audio Driver Installation* section in *SY-6IEM Mainboard User's Guide and Technical Reference* online manual included on the CD-ROM.

Your mainboard comes with a ESS™ installation CD-ROM. The "CD Title Disk" contains the following applications programs:

- Win31d *for Windows® 3.x drivers*
- es1869.driv
- es1869.vxd
- esfm.driv
- essfm.driv
- essmport.driv
- essmpu.driv
- oemsetup.inf

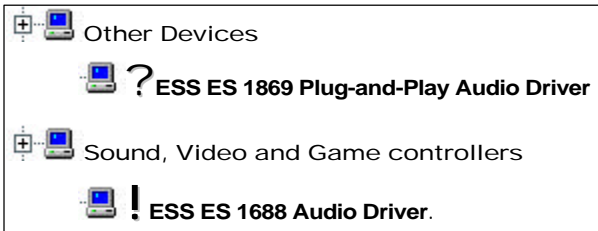
*For Windows 95 Drivers*

### Windows® 95 Sound-Driver Installation

This section describes how to perform the ESS™ audio driver installation in **Windows® 95** environment.

After first installing Windows® 95, follow these steps:

1. From the desktop, click [Start] menu and select [Control Panel] from [Settings] group.
2. Select the [System] icon.
3. Select the [Device Manager] tab; use the scroll bar to locate the following devices and, if these entries exist, remove them:



**Note:** To remove a device, highlight the item you want to take out from your system and press the [Remove] button.

4. Then, click [Refresh].
5. Insert the SOYO CD into the CD-ROM drive.
6. When the "Update Driver Wizard" appears, click [Next].
7. The installation wizard will prompt you on the location of the new audio driver you want to install. Click [Other Location].
8. Click the [Browse] button.
9. Select the "D:\SOYO\_CD\REV-10\UTILITY\ESS-AUD\Win95" path, and click [OK].
10. Now let Windows® 95 automatically copy the .inf driver files and configure the ESS sound chip.

This completes the Windows® 95 installation. The program will continue to load and when it is complete, you should hear the Windows® 95 start-up wave file.



### *ESSCFG.EXE and ESSVOL.EXE*

The installation of the driver will also install three files into the window's directory: ESSCFG.EXE, ESSVOL.EXE and ESSCFG.INI, ESSCFG.EXE, configures AudioDrive chips to make them game-ready in DOS. ESSCFG.INI stores all the potential settings available to your hardware ESSVOL.EXE sets the default mixer volume levels. The following lines are also added to the AUTOEXEC.BAT by the driver installation program:

**C:WINDOWS\ESSCFG.EXE/A:220/I:7/D:I/B:330/J:E**

**C:WINDOWS\ESSVOL.EXE/V:8/L:8/M:0/C:8/S:8/A:8**

Depending on the capabilities of your hardware, the above statements may vary. The ESSCFG settings are selected during the driver installation. If you wish to use different settings at boot-up, use a text editor to edit your AUTOEXEC.BAT and alter the settings as you desire.

**Note:** Modifying the AUTOEXEC.BAT file does not modify the settings for the Windows driver. Run the Audio Applications Setup and uninstall and reinstall the driver or use Control Panel in Windows Main to modify the driver settings. Refer to your Windows User Guide on modifying driver settings. Modifying the driver settings under Windows via the Control Panel does not update AUTOEXEC.BAT with the new driver settings.

### *Using the Configuration Utility in DOS*

In DOS, you may change the configuration of the hardware without rebooting by using ESSCFG.EXE. Type "**ESSCFG**" at the DOS prompt to run it. You will then be given configuration options similar to the following:

- Choose **[1]** to select a new interrupt (IRQ) channel.
- Choose **[2]** to select a new DMA channel.
- Choose **[3]** to select a new interrupt channel for the MPU401.
- Choose **[4]** to select a new base address for the MPU401.
- Choose **[5]** to enable or disable the joystick port.

**Edition: August 1998**  
**Version 1.0**  
**6IEM SERIAL**

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