1. INTRODUCTION

The I440LX mainboard is a high-performance mainboard based on the advanced Pentium II Microprocessor and featuring PCI Local Bus and Accelerated Graphics Port feature. The mainboard offers a high degree of flexibility in configuration and is fully IBM PC/AT compatible.

1.1 KEY FEATURES

- INTEL 440LX PCI/AGP chipset
- Support INTEL 233,266,300, 333Mhz or above PII Processor
- 1MB Flash ROM
- Boot from and bootable device – LS120, ZIP, Floppy, IDE, CD-ROM
- On-board WINBOND I/O chipset
- 3V SDRAM , 168-pin DIMM x 3
- 4 x PCI Local Bus Slots
- 3 x 16-bits ISA Bus slots
- 1 x AGP(Accelerated Graphics Port) slots
- Award System 4.51 BIOS
- 1x Floppy Controller + 2 Serial Port + 1 Parallel
- Meet EPP/ECP parallel port spec.
- 16550A compatible, high speed UART
- IrDA IR function
- PS2 Mouse and Keyboard connector
- 2 channel Universal Serial Bus interface
- Onboard PCI Bus Master IDE interface supports 4 IDE device with 2 channel
- Supports Ultra DMA/33 and Bus-Master IDE DMA Mode 2
- Use Synchronous Switching Regulator. High efficient synchronous switching regulator , Full TTL DAC Control
- Size 300mm x 200mm

1.2 CHECKLIST

- i440LX Mainboard x 1
- User's Guide x 1
- Bus Master IDE Driver Diskette x 1
- Cable Pack included (40-pin IDE connector cable, Floppy disk drive cable)
- Slot 1 Retention Mechanism

1.3 STATIC ELECTRICITY PRECAUTIONS

Static electricity can easily damage your i440LX mainboard. Following procedures can help you to protect your mainboard from electrostatic discharge :

- Keep the mainboard and other system components in their anti-static packaging until you are ready to install them.

- Ground yourself before removing any system component from its protective anti-static packaging. A grounded surface within easy reach is the expansion slot covers at the rear of the system case or any other unpainted portion of the system chassis.

- Frequently ground yourself to discharge any static electric charge that may build up in your body while working on installation and/or configuration.

- Handle the mainboard by its edges or by the mounting bracket to avoid touching its components.

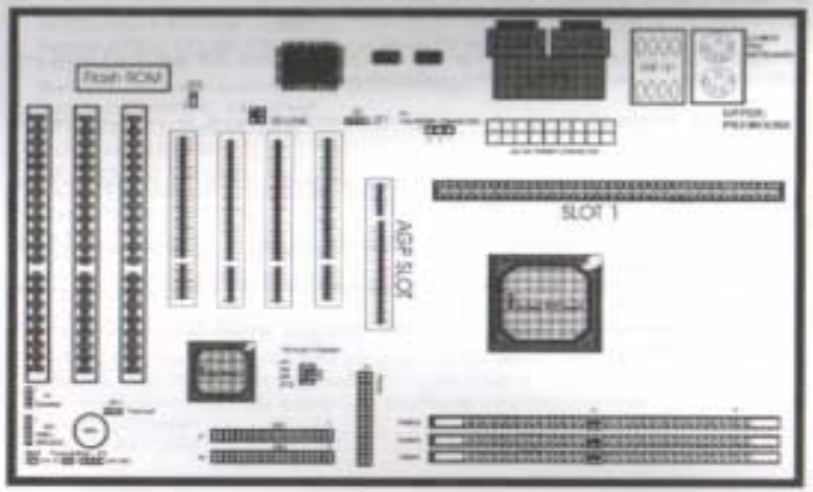
The i440LX mainboard is easily damaged by static electricity. Follow the precautions below while unpacking or installing the mainboard.

1. Before handling the mainboard, ground yourself by grasping an unpainted portion of the system's metal chassis.
2. Remove the mainboard from its anti-static packaging and place it on a grounded surface, component side up.
3. Check the mainboard for damage. If any integrated circuit appears loose, press carefully to seat it firmly in its socket.

2. HARDWARE CONFIGURATION

Before you install the 440LX mainboard into the system chassis, you may find it convenient to first configure the mainboard's hardware. This chapter describes how to set jumpers and install memory modules, and where to attach components.

2.1 MAINBOARD LAYOUT



2.2 INSTALLING PENTIUM II CPU

This mainboard supports the Pentium II CPU using Single Edge Contact (SEC) slot. Make sure that you have the following items which should be included in the package before doing any installation.

The retention mechanism should include :-

1) 2 screws

2) 1 retention clip

Note : The retention mechanism will be enhanced from time to time, therefore the one that you received may look slightly different from the above diagram.

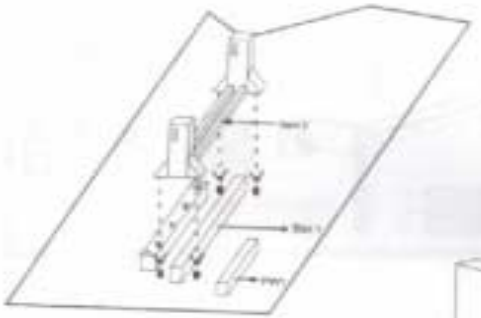
The mainboard comes with Slot 1 socket for the Pentium II CPU. Follow these steps to install Pentium II CPU.

Step 1
Turn the mainboard upside down, and insert the 2 screws from the bottom at the right position.

Step 2
Set the retention clip right on top of the 2 sets of screws which are along the sides of Slot 1. If the retention clip is installed incorrectly, you will not be able to insert the CPU into the retention clip and in this situation you might need to rotate the retention clip by 180 degree.

Step 3
You need to tighten the 4 screws on the retention clip till the neck of the screws cannot be seen from the bottom of the board.

Step 4
To install the CPU, flatten the two latches on the side of the CPU, insert the CPU into the retention clip. Lock the two latches to secure the CPU. Insert the clip portion of the CPU supporter so that the heat sink can sit on top of the whole CPU supporter. Set the necessary jumpers according to the frequency of your Pentium II CPU. Refer to the CPU frequency table.



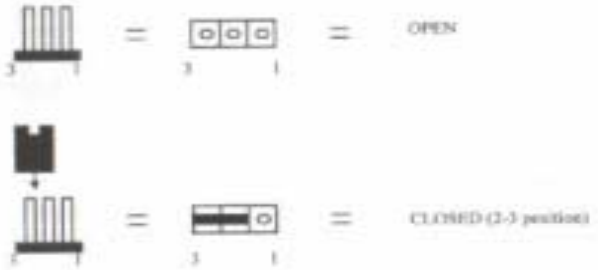
2.3 HOW TO SET JUMPER

Jumper switch is used to select between various operating modes. A jumper switch consists of two or three gold pins, which stretches out from the system board. By using the cap to cover two pins is to short these pins. If the cap is not placed on any pins at all, it indicates to leave the pins open.

To set a jumper switch, please refer to below :

- to close a jumper, insert the plastic jumper cap over two pins of a jumper
- to open a jumper, remove the jumper cap

The following conventions are used to represent the proper jumper settings :



NOTE When you open a jumper, attach the plastic jumper cap to one of the pins so you won't lose it.

2.4 JUMPERS & CONNECTORS

CPU FAN connector (P4)

Plug in the fan cable to the 3-pin fan connector onboard. The fan connector is marked CPU FAN and FAN on the system board.

Pin1	**Sense**
Pin2	+12V
Pin3	GND

Setting the CPU Voltage

This mainboard supports Pentium II VID function, the CPU core voltage is automatically detected, the range is from 1.3V to 3.5V.

Pentium II VID signal provides CPU voltage auto-detection, therefore, no worries on wrong CPU voltage select.

Selecting the CPU Frequency

The possible settings of current CPU available on the market are listed below, the default setting is Pentium II 233Mhz.

Pentium II	233Mhz	266Mhz	300Mhz	333Mhz
JP7	CLOSE	OPEN	OPEN	OPEN
JP8	OPEN	CLOSE	CLOSE	OPEN
JP9	OPEN	CLOSE	OPEN	CLOSE
JP10	CLOSE	CLOSE	CLOSE	CLOSE

Flash ROM Voltage Selector (J25)

Pin	Description
1-2	12v (default)
2-3	5v

Note : The factory default is 1-2, it is not recommended to change the factory default setting.

ATX Soft-Power Switch Connector (P2)

The ATX soft-power switch connector is a 2 pin header on the system board. Locate the power switch cable from your ATX housing. Plug this connector to the soft-power switch connector marked P2 PWRBT.

P2	PWRBT function
Post ON (System Starts)	Instant On/OFF
Post OFF	Delay 4 second

ATX power connector pinout

The ATX power supply provides a single 20-pin connector.

Pin	Description	Pin	Description
1	3.3V	11	3.3V
2	3.3V	12	-12V
3	Ground	13	Ground
4	+5V	14	PS-ON
5	Ground	15	Ground
6	+5V	16	Ground
7	Ground	17	Ground
8	Power OK	18	-5V
9	5VSB	19	+5V
10	+12V	20	+5V

Software Power-Off

Following the steps below to use the "Software Power-Off control" function in windows 95 with ATX power supply.

1.Click the **START** button on the Windows 95 task bar.
2.Select Shut Down The computer to turn off the system. It is now safe to turn off your computer." will not be shown when using this function.

Power Led and Keylock Connector (J23)

Keylock connector enables and disables the keyboard key-in function on the case.

Pin	Description
1	LED Output
2	N.C
3	Ground
4	Keylock
5	Ground

Infra Red Connector (J21)

Pin	Description
1	VCC
2	IRRX
3	Ground
4	IRTX

SB-Link (J27)

SB-Link is a connector used especially with a Creative PCI sound card. The SB-link guides signals from the ISA bus to the PCI sound card through a cable which comes with the PCI sound card. This is necessary because some DOS based games address the ISA bus directly.

Speaker Connector (P1)

Pin	Description
1	Data Out
2	N.C
3	Ground
4	+5V

Hard-Disk Active LED (P5)

Pin	Description
1	Active signal
2	Ground
3	Ground
4	Active signal

Reset Switch Connector (P6)

Attach the Reset push cable to this connector

Setting	Description
Open	Normal Mode
Close	Reset System

CMOS state (JP11)

JP11	CMOS Setting
2-3	Normal operation
1-2	Clear CMOS

On board Connector Description

PS2 Mouse and Keyboard

PS2 Mouse
PS2 Keyboard

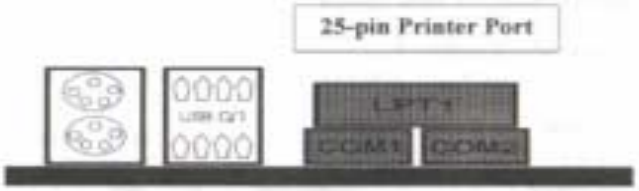
The on board PS2 Keyboard and PS2 Mouse are a 6-pin Mini-Din Connector. The view angle of drawing shown here is from back panel of the housing.

USB Device

USB Port 1
USB Port 0

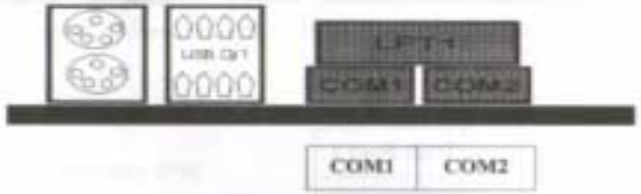
You can attach USB devices to the USB connector. The motherboard contains two USB connectors.

Printer



The onboard printer connector is a 25-pin D-type connector . The view angle of drawing shown here is from back panel of the housing

Serial Devices (COM1 / COM 2)



COM1	COM2

The onboard serial connectors are 9-pin D-type connector on the back panel of mainboard.

2.5 MEMORY CONFIGURATION

The DIMM types supported are EDO and SDRAM . This mainboard has three 168 pin DIMM sockets that allow you to install system memory up to 768MB.

" LX chipset can only use 3V EDO or SDRAM, so we can mix EDO and SDRAM without any problem."

DIMM 1	DIMM 2	DIMM 3	DIMM size
4MB/8MB/ 16MB/32MB/64MB /128MB /256MB	NONE	NONE	Size=DIMM 1 SIZE INSTALLED
4MB/8MB/ 16MB/32MB/64MB /128MB /256MB	4MB/8MB/ 16MB/32MB/64M B/128MB /256MB		Size=DIMM 1 + DIMM 2 SIZE INSTALLED
4MB/8MB/ 16MB/32MB/64MB /128MB /256MB	4MB/8MB/ 16MB/32MB/64M B/128MB /256MB	4MB/8MB/ 16MB/32MB/64M B/128MB /256MB	Size=DIMM 1 + DIMM 2 + DIMM 3 SIZE INSTALLED
	4MB/8MB/ 16MB/32MB/64M B/128MB /256MB		Size=DIMM 2 SIZE INSTALLED
	4MB/8MB/ 16MB/32MB/64M B/128MB /256MB	4MB/8MB/ 16MB/32MB/64M B/128MB /256MB	Size=DIMM 2 + DIMM 3 SIZE INSTALLED
		4MB/8MB/ 16MB/32MB/64M B/128MB /256MB	Size=DIMM 3 SIZE INSTALLED
4MB/8MB/ 16MB/32MB/64MB /128MB /256MB		4MB/8MB/ 16MB/32MB/64M B/128MB /256MB	Size=DIMM 1 + DIMM 3 SIZE INSTALLED