Keyboard connector

Keyboard controller selection

UART 2 port

UART 1 port

Floppy drive port

Secondary IDE port

HD LED connector

Clear CMOS

IO function selection

	J49	J50
On board IO	Close	Close
External IO	Open	Open

J4~J16, J18, J20 Reserved

CPU Frequency Configuration

	J21
Flash ROM 12V	1-2
Flash ROM 5V	2-3
EPROM	Open

Keyboard controller selection

Power connector

Game port

Parallel port

Primary IDE port

PS1

KB1

J1 J2

J3

CN5   CN6   CN7   JI1

CN4   CN3   JI2

HDLED

PCI 3

J4   J5

PCI 2

UM8663AF

J17

J49

J50

PCI 1

J6
J7
J8
J9
J16
J10
J11
J12
J20
J13
J14
J15

J19

J18

ISA 1

J21

ISA 2

J22

ISA 3

ISA 4

UM8004

UM8881

UM8886

UM8005

BIOS

J30

J23
J25
J28 J29

J31

J32
J33

J36
J37
J38

J43

J44

RESET   TURBO LED   TURBO   KEYLOCK   SPEAKER

U13

U9

U12

U8

U11

U7

U10

U6

J24
J26 J27

J48

U4

J34   J35

J39

J40

J41
J42

CPU

J2

J4

Reserved

Keyboard controller selection

J24 ~ J28 Cache memory configuration (See page 2-1)

J23, J29, J33 ~ J44, J48 CPU type configuration (See page 2-2)

CPU power supply setup (See page 2-3)

CONTENTS

▣ Introduction

Overview

▣

P4U880A/IO main board is a PC/AT compatible system board. It features Write Back/Through secondary cache memory from 128KB to 1024KB in size. It supports PCI local bus and ISA bus architecture. This main board also supports Dark Green function (SMM mode of SMI-CPU) to allow maximum power saving.

Key Features

CPU	-	Intel 80486SX/DX/DX2/SL or Non-SL
		25/33/50/66MHz
	-	Intel 80486DX4 75/100MHz
	-	AMD 486DX/DX2/DX4 40/66/80/100/120MHz
	-	Cyrix 486DX/DX2 40/50MHz
	-	UMC U5S 33MHz
Chipset	-	UMC8886, 8881
System memory	-	4 x 72pin SIMM module
	-	Flexible main memory size from 2MB to 128MB
Cache memory	-	Supports Write-Back or Write-Through mode for 128/256/512/1024KB L2 Cache on board
Green function	-	Supports 3 Green modes : Doze, Standby and Suspend
On-board IDE	-	Supports 4 IDE devices and Enhanced IDE functions
On-board IO	-	UMC 8663A IO on board supports multi-mode EPP/ECP
	-	One floppy port supports up to two 3.5" or 5.25" floppy drives
	-	One game port
	-	Two high speed 16550A compatible UARTs
	-	One parallel port at I/O address 378H/278H with multi-mode function (SPP/EPP/ECP)
	-	All ports can be enabled or disabled by BIOS Setup
I/O bus slots	-	32-bit PCI local bus slot x 3
	-	16-bit AT bus slot x 4

Introduction

BIOS   -   Supports Plug and Play BIOS

Board size   -   220mm x 260 mm

2 Jumper Configuration

> WARNING: BEFORE TURNING ON THE SYSTEM POWER,
> PLEASE FOLLOW THE FOLLOWING CONFIGURATION
> CAREFULLY, OTHERWISE YOUR SYSTEM MAY NOT
> OPERATE CORRECTLY.

Cache Memory Selection

Table below is the jumper settings and SRAM selections of secondary cache.

CACHE RAM SIZE	J24	J25 1-2	J25 3-4	J26	J27	J28
128KB	OPEN	OPEN	OPEN	OPEN	2-3	OPEN
256KB/S	OPEN	OPEN	OPEN	1-2	2-3	CLOSE
256KB/D	OPEN	OPEN	OPEN	OPEN	1-2	CLOSE
512KB/S	OPEN	CLOSE	OPEN	1-2	2-3	CLOSE
512KB/D	2-3	CLOSE	OPEN	2-3	1-2	CLOSE
1024KB	1-2	CLOSE	CLOSE	2-3	1-2	CLOSE

Note : D stands for Double Bank, S stands for Single Bank.
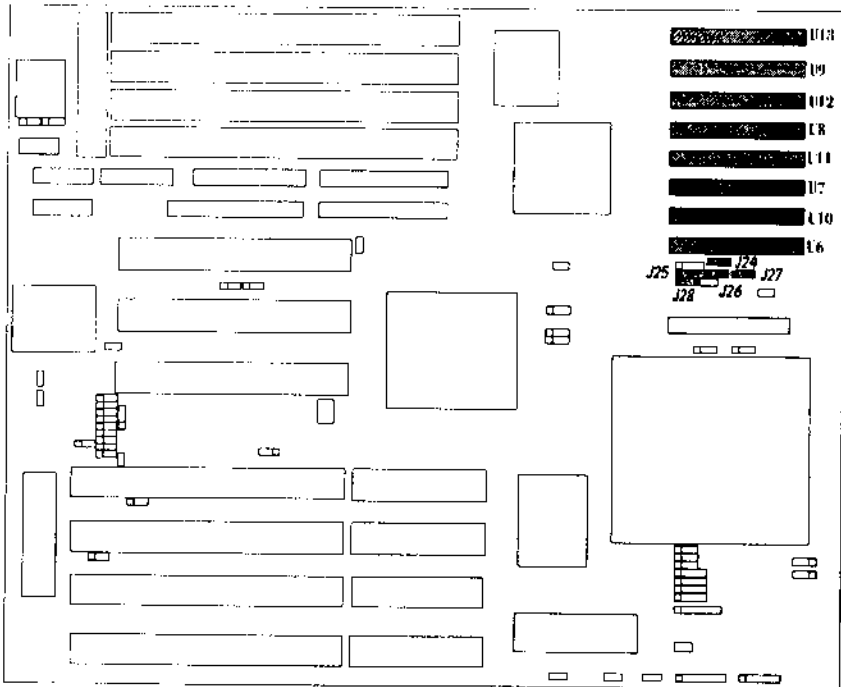

Figure 2-1   The illustration of cache memory configuration

CPU Type Configuration

***WARNING**: CPU power supply voltage (Q2) must be set up correctly as page 2-3, before setting jumpers for CPU selected.*

The main board provides a set of jumper settings that facilitate user to selecte a full range of CPU. When a different 486 CPU installed, you should set the jumpers correctly, otherwise the system will not work properly.

Jumper	Intel 486 SX	Intel SL 486SX	Intel P24D	Intel SL 486 DX/DX2/DX4	Intel P24T/WB	Intel P24T/WT	486 DX/DX2
J23	OPEN	OPEN	1-2	OPEN	1-2	1-2	OPEN
J29	OPEN	OPEN	OPEN	OPEN	OPEN	OPEN	OPEN
J33	OPEN	OPEN	OPEN	OPEN	2-3	2-3	OPEN
J34	1-2	1-2	1-2	1-2	1-2	1-2	1-2
J35	1-2	1-2	1-2	1-2	1-2	1-2	1-2
J36	OPEN	1-2	1-2	1-2	1-2	1-2	OPEN
J37	1-2	2-3	2-3	2-3	2-3	2-3	1-2
J38	OPEN	OPEN	1-2	OPEN	OPEN	OPEN	OPEN
J39	2-3	2-3	1-2, 3-4	1-2, 3-4	1-2, 3-4	1-2, 3-4	1-2, 3-4
J40	OPEN	OPEN	3-4	3-4	2-3	2-3	3-4
J41	OPEN	1-2	1-2, 3-4	1-2	1-2	1-2	OPEN
J42	OPEN	OPEN	3-4	OPEN	1-2	1-2	OPEN
J43	OPEN	2-3, 4-5	2-3, 4-5	2-3, 4-5	2-3, 4-5	2-3, 4-5	OPEN
J44	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE
J48	OPEN	OPEN	OPEN	OPEN	OPEN	CLOSE	OPEN

Jumper	UMC U5S	Cyrix 486DX/DX2	3.45V AMD486 DX4-100 (Non SL)	5V AMD486 DX/DX2	AMD Enhanced 486 DX4 100/120	AMD Enhanced 486 DX2/66/80	3.45V AMD 486 DX2/66/80 (Non SL)
J23	3-4	1-2	OPEN	OPEN	1-2	1-2	OPEN
J29	OPEN	OPEN	OPEN	OPEN	OPEN	2-3	OPEN
J33	OPEN	1-2	OPEN	OPEN	OPEN	OPEN	OPEN
J34	1-2	2-3	1-2	1-2	1-2	1-2	1-2
J35	2-3	1-2	1-2	1-2	1-2	1-2	1-2
J36	2-3	1-2	OPEN	OPEN	1-2	1-2	OPEN
J37	1-2	2-3	1-2	1-2	2-3	2-3	1-2
J38	OPEN	OPEN	OPEN	OPEN	1-2	1-2	2-3
J39	2-3	1-2, 3-4	1-2, 3-4	1-2, 3-4	1-2, 3-4	1-2, 3-4	1-2, 3-4
J40	1-2	3-4	3-4	3-4	3-4	3-4	3-4
J41	OPEN	2-3	OPEN	OPEN	1-2, 3-4	1-2, 3-4	OPEN
J42	OPEN	2-3	OPEN	OPEN	3-4	3-4	OPEN
J43	OPEN	1-2, 3-4	OPEN	OPEN	2-3, 4-5	2-3, 4-5	OPEN
J44	CLOSE	OPEN	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE
J48	OPEN	OPEN	OPEN	OPEN	OPEN	OPEN	OPEN

CPU Frequency Configuration

System Clock	J19 (1-2)	J19 (3-4)	J19 (5-6)
25MHz	Open	Open	Open
33MHz	Close	Close	Open
40MHz	Open	Close	Open
50MHz	Close	Open	Open

CPU Power Supply Setup

WARNING: Make sure that the CPU Power Supply Voltage is correct, otherwise the CPU could be damaged.

1. With transistor Q4 on board

Main Board Configuration	Q2 (Pin2-Pin3)
3.45V 486 CPU	Open
5V 486 CPU	Close

2. Without transistor Q4 on board
   Only supports 5V CPU
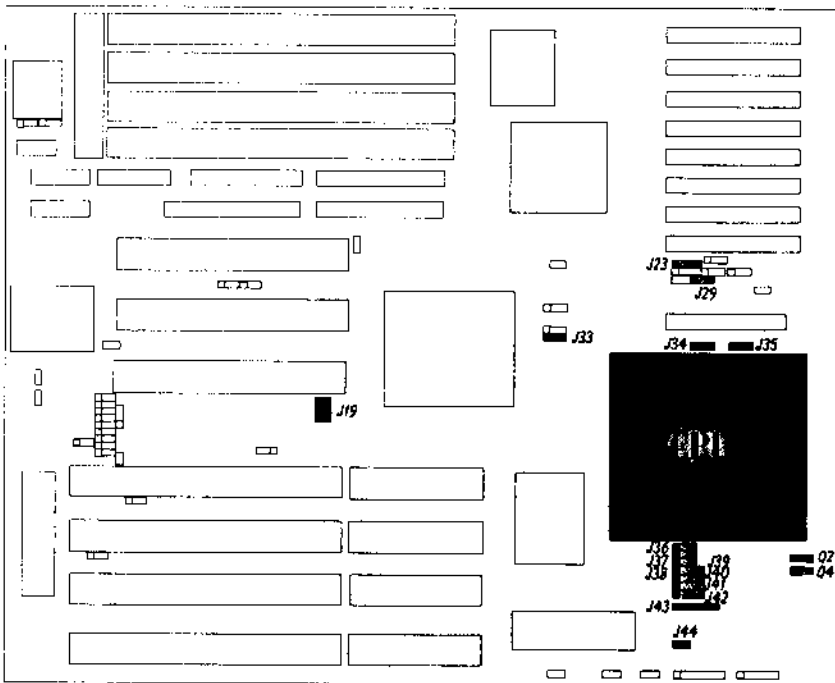
Figure 2-2   The illustration of jumper settings related to CPU

Flash ROM Option

Type	J21	
Flash ROM 12V	1-2	
Flash ROM 5V	2-3	
EPROM	Open	

Keyboard Controller Selection

	J1	J2	J3	J22	J31	J32
External KC	2-3	2-3	1-3, 2-4 5-7, 6-8	2-3	1-2	2-3
Internal KC	1-2	1-2	7-9, 8-10	1-2	2-3	1-2

IO Function Selection

FUNCTION	J49	J50
On board IO	Close	Close
External IO	Open	Open

Clear CMOS (J17)

If the RTC installed is BENCHMARK BQ-3287A, the following procedures should be taken for clearing CMOS:
1. Power on the system, close J17 once, then leave J17 open
2. Power off the system, wait for 3-5 seconds
3. Power on the system again, now all the CMOS settings are cleared.
   Then enter BIOS Setup and set up your system.
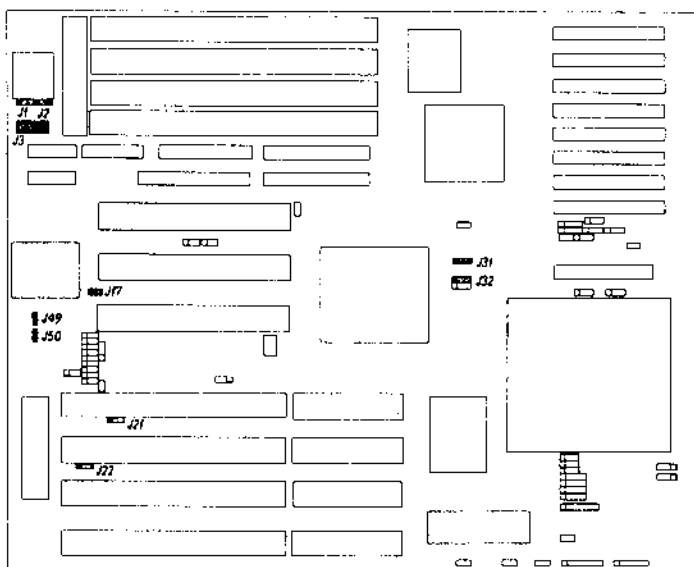If the RTC installed is DALLAS DS-12887A, just close J17 once when power off.

Figure 2-3 The illustration of some jumper settings

Reserved Jumper Settings

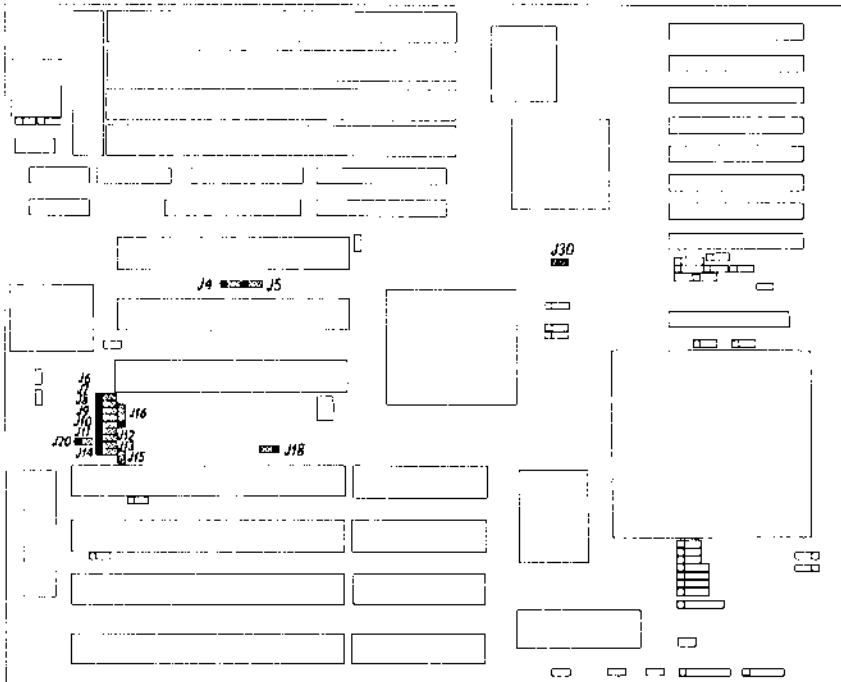| JUMPER	SETTING	JUMPER	SETTING
J4	2-3	J5	2-3
J6	2-3	J7	1-2
J8	2-3	J9	2-3
J10	2-3	J11	1-2
J12	2-3	J13	2-3
J14	2-3	J15	Close
J16	1-2	J18	2-3
J20	2-3	J30	Open

Figure 2-4   The illustration of reserved jumper settings

3 Connector Configuration

Power Connector (PS1)

PIN NUMBER	FUNCTION
1	Power good
2	+5V
3	+12V
4	–12V
5	GND
6	GND
7	GND
8	GND
9	–5V
10	+5V
11	+5V
12	+5V

Keyboard Connector (KB1)

PIN NUMBER	FUNCTION
1	CLOCK
2	DATA
3	NC
4	GND
5	+5V

Turbo Switch (TURBO)

SETTING	SPEED	TURBO LED
OPEN	HIGH	ON
CLOSE	LOW	OFF

Turbo LED

PIN NUMBER	FUNCTION
1	CATHODE
2	ANODE

Reset Switch (RESET)

SETTING	FUNCTION
CLOSE ONCE	RESET THE SYSTEM
OPEN	NORMAL

Keylock Connector (KEYLOCK)

PIN NUMBER	FUNCTION
1	+5V
2	NC
3	GND
4	KEYLOCK
5	GND

Speaker Connector (SPEAKER)

PIN NUMBER	FUNCTION
1	SPKDATA
2	NC
3	GND
4	VCC

Hard Disk LED (HD LED)

PIN NUMBER	FUNCTION
1	LED CATHODE
2	LED ANODE
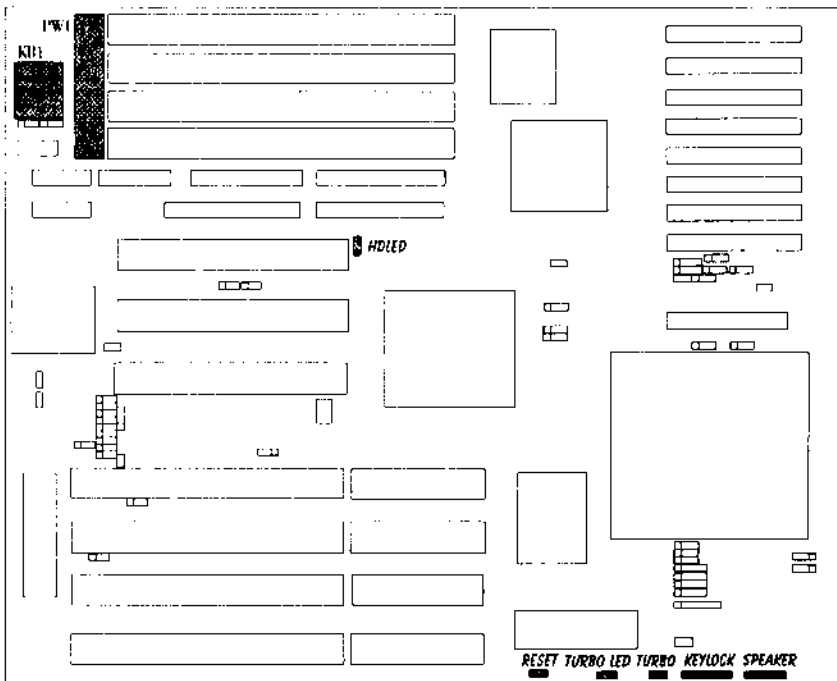
Figure 3-1 The illustration of connector configuration

IO Port Description

CONNECTOR	FUNCTION
JH1	Primary IDE port
JH2	Secondary IDE port
CN3	Floppy Drive Port
CN4	UART 1
CN5	UART 2
CN6	Game Port
CN7	Parallel Port

3

Note : Adaptec AHA-2940 SCSI card can be used on PCI slot PCI 1 & PCI 3, but not on PCI 2.
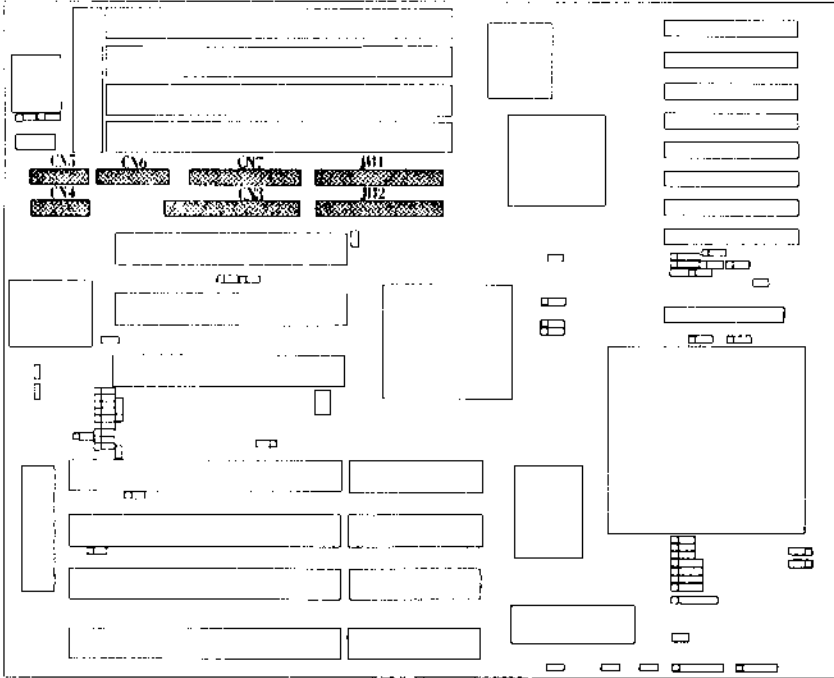

Figure 3-2 The illustration of IO port description

4 Memory Configuration

Main Memory Configuration

The P4U880A/IO main board supports single-bank 72-pin SIMMs or double-bank 72-pin SIMMs providing a flexible size from 2MB up to 128MB main memory. Only one type SIMM (72-pin) will be recognized, please do not plug in two types of SIMM on a bank simultaneously.

RAM SIZE	72-pin SIMM #1	72-pin SIMM #2	72-pin SIMM #3	72-pin SIMM #4
2 MB	1 MB x 1	1 MB x 1	---	---
4 MB	4 MB x 1	---	---	---
8 MB	4 MB x 1	4 MB x 1	---	---
8 MB	8 MB x 1	---	---	---
12 MB	4 MB x 1	4 MB x 1	4 MB x 1	---
16 MB	4 MB x 1	4 MB x 1	4 MB x 1	4 MB x 1
16 MB	8 MB x 1	8 MB x 1	---	---
16 MB	16 MB x 1	---	---	---
32 MB	16 MB x 1	16 MB x 1	---	---
32 MB	---	---	16 MB x 1	16 MB x 1
32 MB	32 MB x 1	---	---	---
48 MB	16 MB x 1	16 MB x 1	16 MB x 1	---
64 MB	32 MB x 1	32 MB x 1	---	---
128 MB	32 MB x 1	32 MB x 1	32 MB x 1	32 MB x 1

Cache Memory Configuration

P4U880A/IO main board supports 128/256/512/1024KB of secondary cache memory. The secondary cache memory consists of one Tag SRAM and 4 or 8 Data SRAMs.

CACHE RAM SIZE	TAG SRAM U4	DATA SRAM	LOCATION OF DATA SRAM
128KB	8K x 8	32K x 8 x 4	U(10-13)(Pin3-30)
256KB/S*	32K x 8	64K x 8 x 4	U(10-13)
256KB/D*	32K x 8	32K x 8 x 8	U(6-13)(Pin3-30)
512KB/S*	32K x 8	128K x 8 x 4	U(10-13)
512KB/D*	32K x 8	64K x 8 x 8	U(6-13)
1024KB	64K x 8	128K x 8 x 8	U(6-13)

System Clock Configuration

CPU should work at proper clock frequency. The system clock frequency should not exceed the CPU maximum working frequency. Table below is the maximum working frequency of different CPU types.

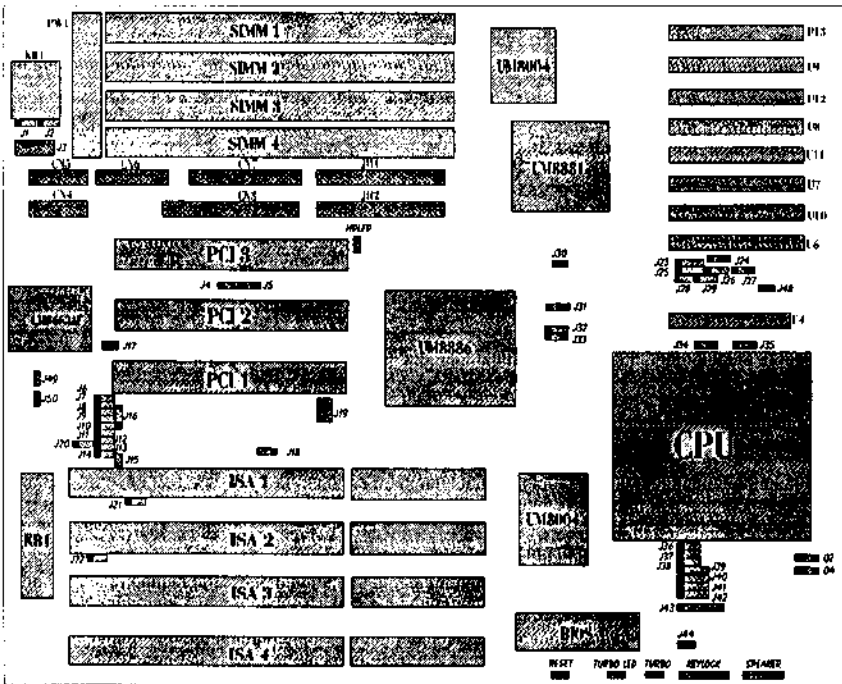| CPU TYPE	486SX/25 486DX/25	486SX/33 486DX/33	486DX/40 486DX2/80	486 DX/50	486SX2/50 486DX2/50	486 DX2/66	486 DX4/75	486 DX4/100	486 DX4/120
System Clock	25MHz	33MHz	40MHz	50MHz	25MHz	33MHz	25MHz	33MHz	40MHz

Figure 4-1 The illustration of board layout