1. Introduction

This manual has two purposes. First, help the users to get familiar with the system board. Second, serve as a guide of procedures and specifications for future system upgrade.

Overview

P5I437P3/IO Green Main Board provides a highly integrated solution for fully compatible, high performance PC/AT platforms, and supports Intel's Pentium microprocessor. It features Write-Back Secondary Cache memory for 256KB/512KB in size. Flexible main memory size can be installed from 8MB up to 128MB DRAMs, so as to give fully play to the advantages of the Pentium CPU. The main board offers a wide range of interface supports for on-board IDE and on-board IO function integrated.
The current Green function is divided up to two phase : standby and suspend.

Key Features

CPU	–	Supports Intel Pentium 75, 90, 100, 120MHz CPUs
	–	Supports VR and VRE CPU voltage mode
Chipset	–	Intel's Triton chipset (include 82437, 82371, 82438)
Main memory	–	Supports 4x72pin SIMMs module
	–	64-bit Data Path for flexible memory size expandable from 8MB up to 128M DRAMs on board
	–	Supports EDO/Hyper Page Mode DRAM (High speed) and also supports Standard Page mode
Cache memory	–	Supports Write-Back Cache policy for 256KB /512KB L2 Cache
Cache module socket (Option)	–	Supports Burst or Pipeline Burst cache module. The logic that supports cache module is based on Intel's COAST specification
On-board IDE	–	Supports PIO and Bus Master IDE
	–	Supports up to Mode 4 Timings
	–	Supports transfer rates up to 22 MBytes/s
	–	Supports 2 Fast IDE interface for up to 4 IDE devices providing an interface for IDE hard disks and CD ROMs
Green function	–	Supports 2 Green mode: standby and suspend
On-board I/O	–	4 x ISA Slots and 3 x PCI Slots
	–	Use Winbond IO chip W83787
	–	Supports up to two 3.5" or 5.25" floppy drives 360K/720K/1.2M/1.44 format

2. Jumper Configuration

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

CPU Frequency Selection

The main board offers a set of jumper settings to facilitate clock frequency adjustable. The table shown below to list selected frequency.

CPU Clock	Bus Clock	JP3	JP9	JP10
75MHz	50MHz	OPEN	CLOSE	CLOSE
90MHz	60MHz	OPEN	OPEN	CLOSE
100MHz	66MHz	OPEN	CLOSE	OPEN
120MHz	60MHz	CLOSE	OPEN	CLOSE
133MHz	66MHz	CLOSE	CLOSE	OPEN

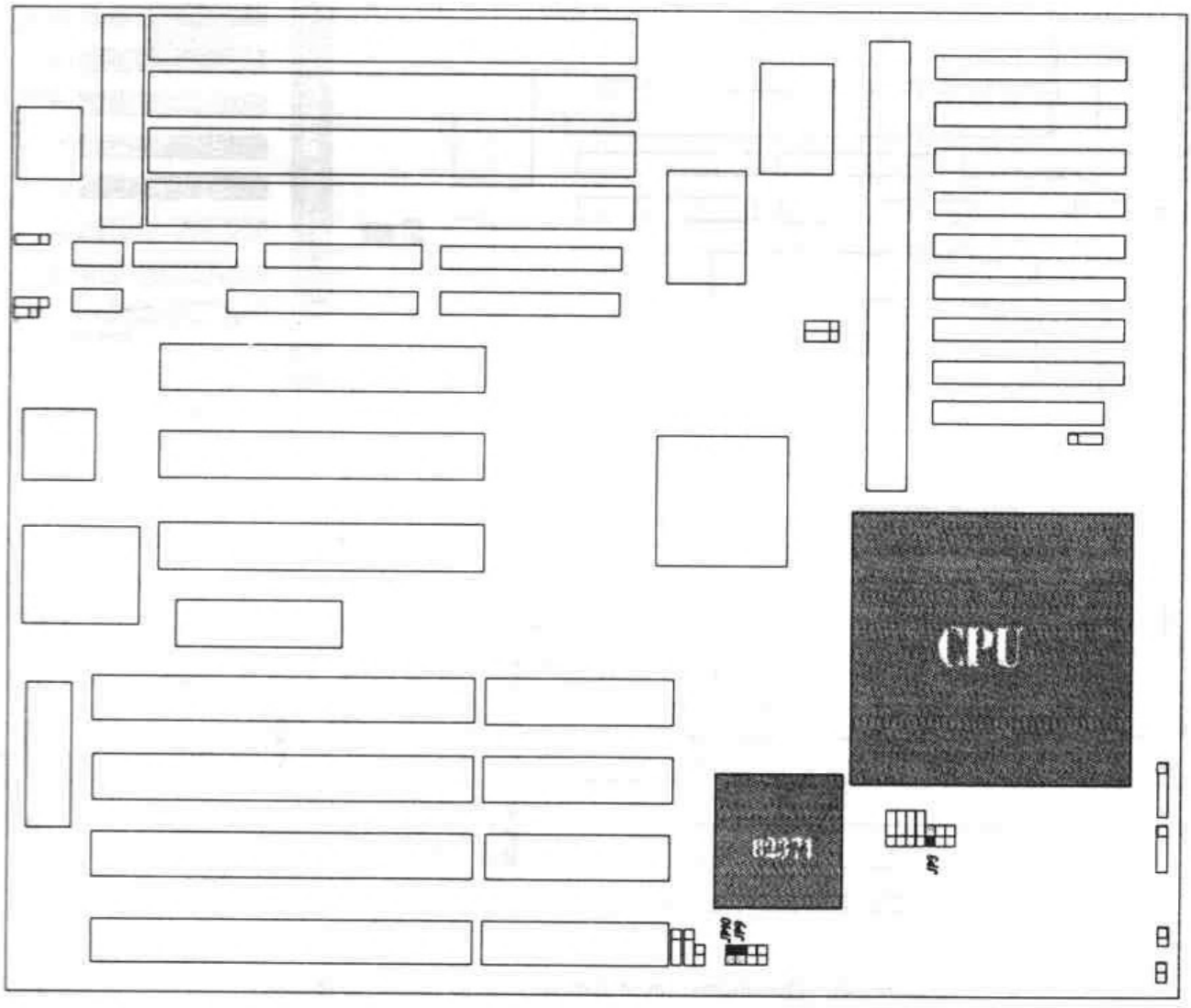


Figure 2-1 The illustration of jumper settings related to CPU

Cache Memory Selection

CACHE SIZE	CACHE RAM	TAG RAM	JP14	JP16	JP17
256K	32K x 8	8Kx8/32K x 8	2-3	2-3	1-2
512K	64K x 8	32K x 8	1-2	1-2	2-3
No Cache	---	---	2-3	1-2	1-2

Flash ROM Option

OPTION	JP5	JP13
Flash ROM 12V	2-3	2-3
Flash ROM 5V	1-2	2-3
EPROM	1-2	1-2

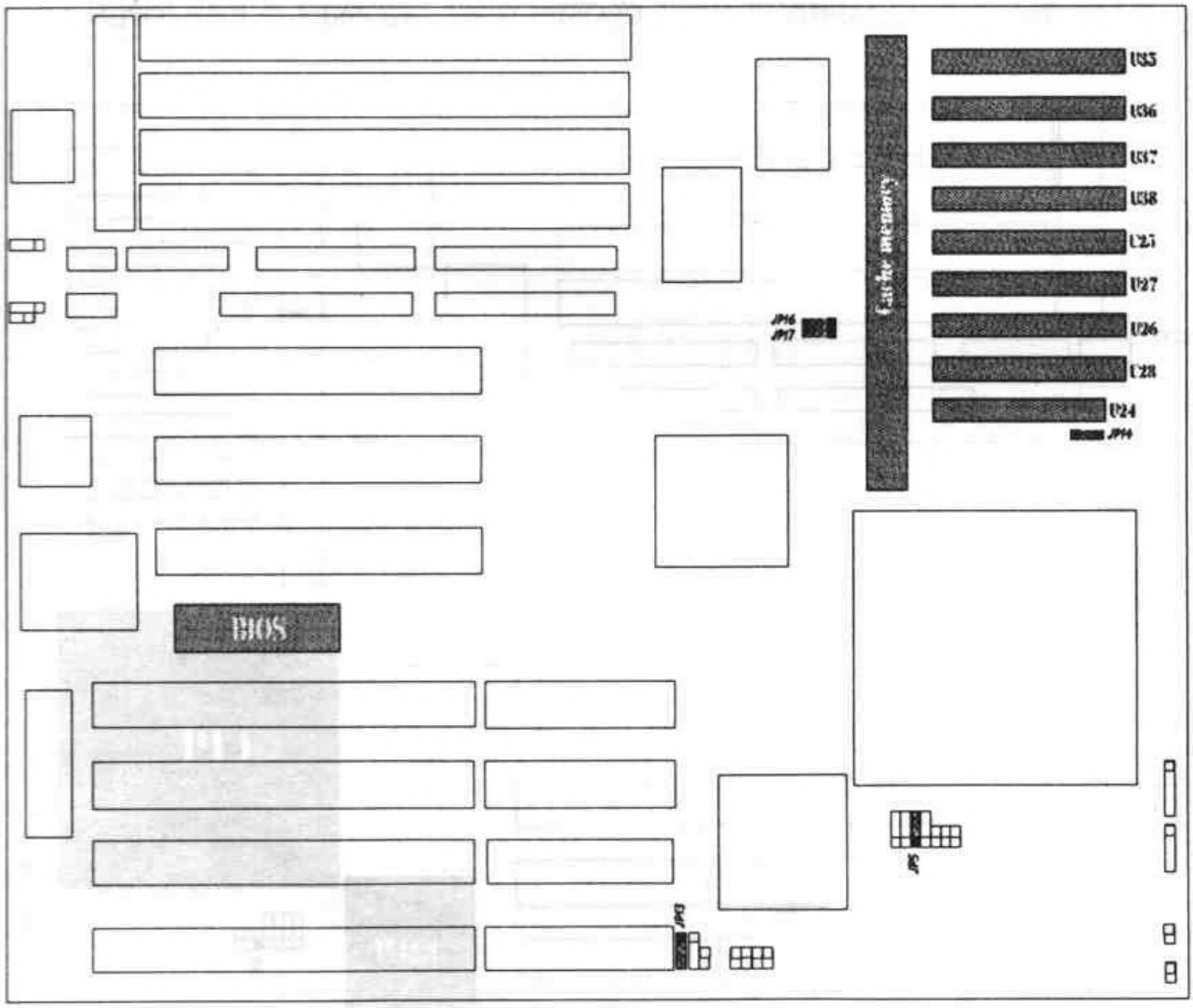


Figure 2-2 The illustration of jumper settings related to memory

Game Port

FUNCTION	JP25
Enabled	Close *
Disabled	Open

DMA Jumpers for ECP Function

	JP31	JP26
Channel 1	1-2 (DREQ 1) *	1-2 (DACK-1) *
Channel 2	2-3 (DREQ 3)	2-3 (DACK-3)

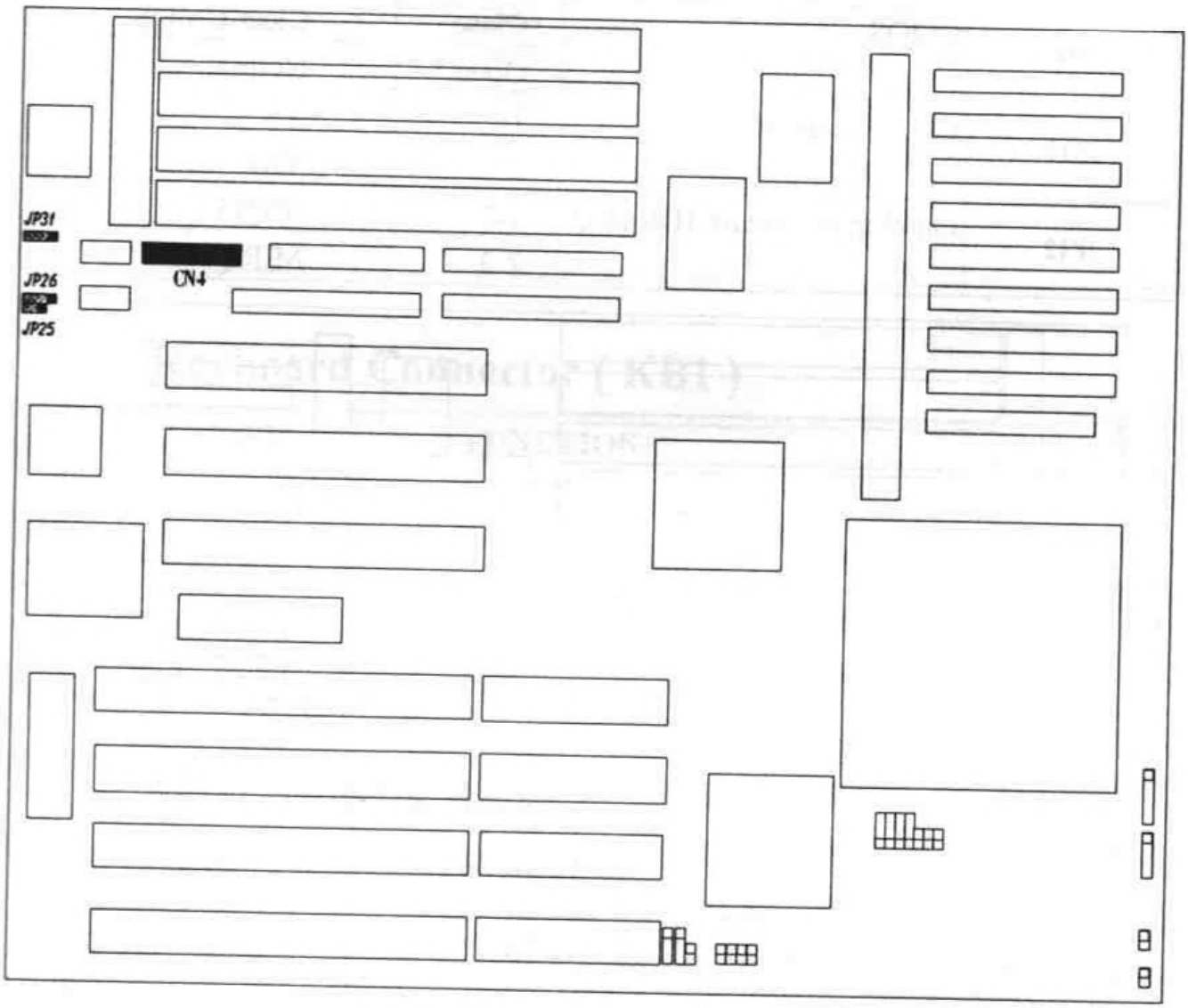


Figure 2-3 The illustration of jumper settings related to on-board IO

"*": Represent for default jumper settings.

Other Jumper Setting Description

JUMPER	FUNCTION	SETTING	DESCRIPTION
JP1	CPU Pipeline	Close	Enable
		Open *	Disable
JP2	L1 Cache	Close	Write Through
		Open *	Write Back
JP4	AT bus clock	1-2	PCI clock/3
		2-3 *	PCI clock/4
JP6	On chip primary IDE IRQ	1-2 *	IRQ14
		2-3	MIRQ0
JP7	External SMI	Close *	SMI mode
		Open	Normal mode
JP8	CMOS	Close	Clear CMOS
		Open *	Normal
JP11	CPU voltage selection	1-2	VR
		2-3 *	VRE
JP12	On chip secondary IDE IRQ	1-2 *	IRQ15
		2-3	MIRQ1

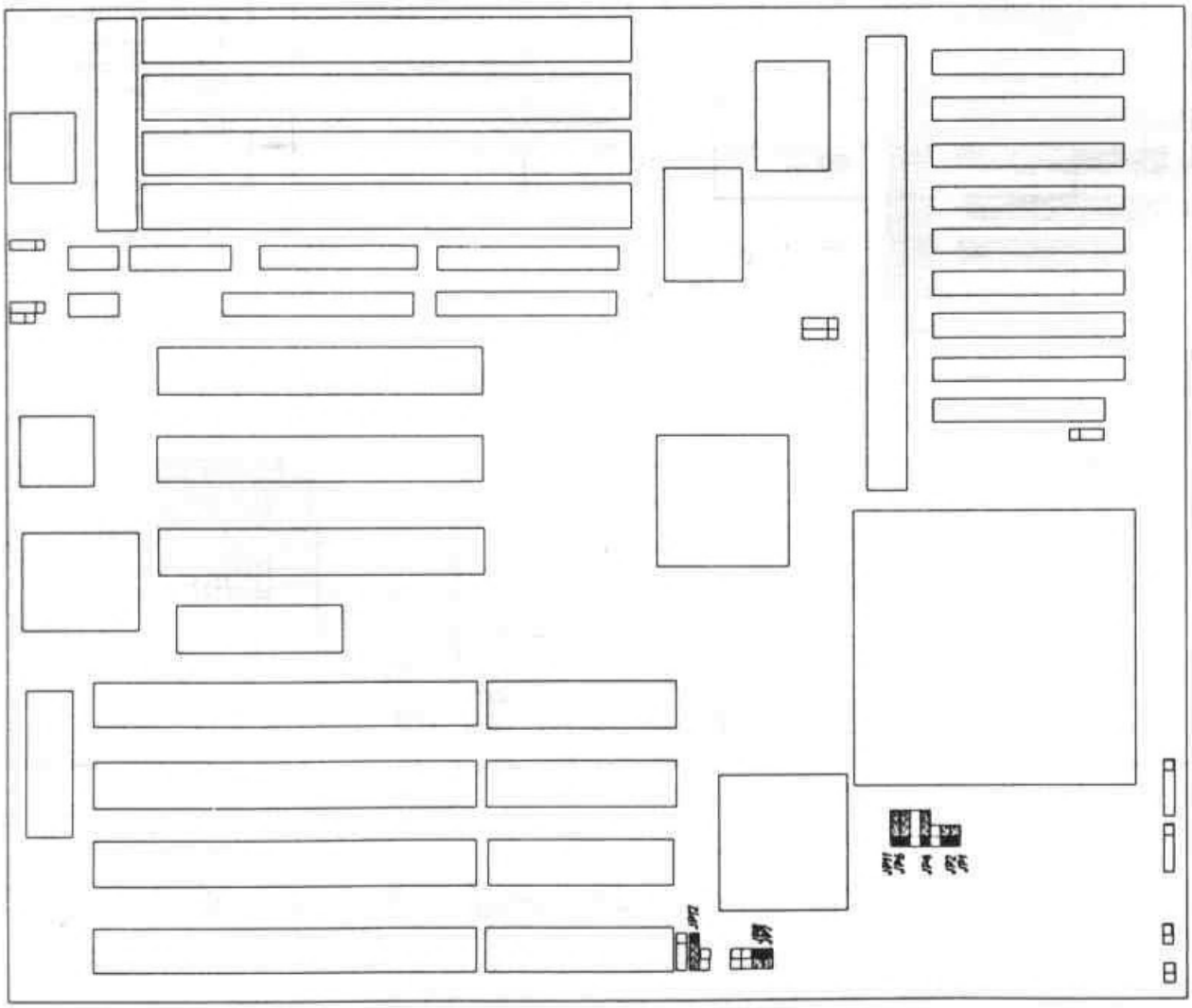
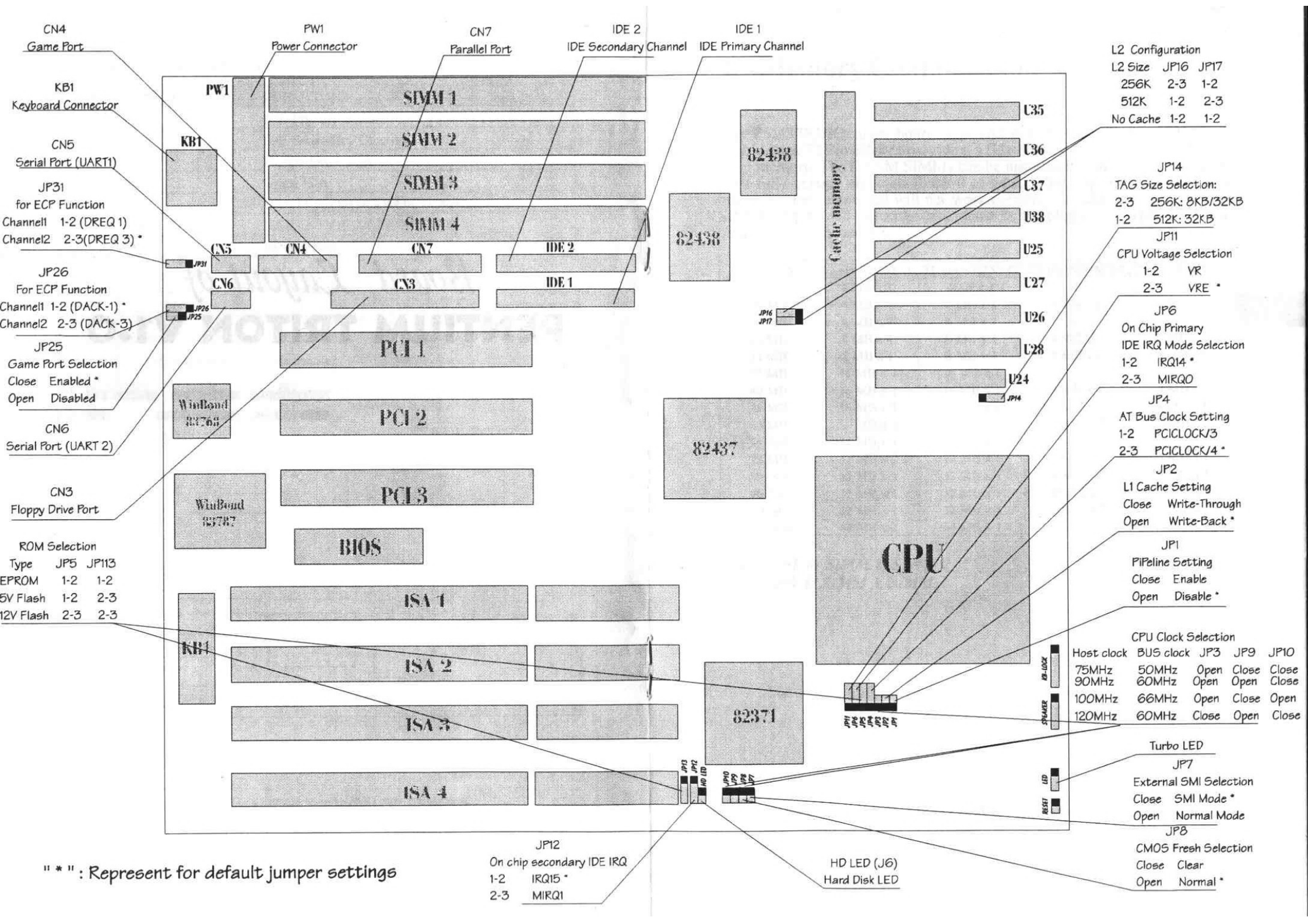


Figure 2-4 The illustration of default jumper settings


CN4
Game Port
PW1
Power Connector
CN7
Parallel Port
IDE 2
IDE Secondary Channel
IDE 1
IDE Primary Channel
KB1
Keyboard Connector
CN5
Serial Port (UART1)
JP31
for ECP Function
Channel1 1-2 (DREQ 1)
Channel2 2-3(DREQ 3) *
JP26
For ECP Function
Channel1 1-2 (DACK-1) *
Channel2 2-3 (DACK-3)
JP25
Game Port Selection
Close Enabled *
Open Disabled
CN6
Serial Port (UART 2)
CN3
Floppy Drive Port
ROM Selection
Type JP5 JP113
EPROM 1-2 1-2
5V Flash 1-2 2-3
12V Flash 2-3 2-3
PW1
KB1
SIMM 1
SIMM 2
SIMM 3
SIMM 4
CN5
CN4
CN7
IDE 2
CN6
CN3
IDE 1
JP31
JP26
JP25
82438
82438
Cache memory
U35
U36
U37
U38
U25
U27
U26
U28
U24
JP14
JP16
JP17
PCI 1
PCI 2
PCI 3
WinBond 83768
WinBond 83787
82437
BIOS
CPU
ISA 1
ISA 2
ISA 3
ISA 4
KB1
82371
JP13
JP12
HD LED
JP11
JP6
JP5
JP4
JP3
JP2
JP1
KB-LOCK
SPEAKER
LED
RESET
L2 Configuration
L2 Size JP16 JP17
256K 2-3 1-2
512K 1-2 2-3
No Cache 1-2 1-2
JP14
TAG Size Selection:
2-3 256K: 8KB/32KB
1-2 512K: 32KB
JP11
CPU Voltage Selection
1-2 VR
2-3 VRE *
JP6
On Chip Primary
IDE IRQ Mode Selection
1-2 IRQ14 *
2-3 MIRQ0
JP4
AT Bus Clock Setting
1-2 PCICLOCK/3
2-3 PCICLOCK/4 *
JP2
L1 Cache Setting
Close Write-Through
Open Write-Back *
JP1
PiPeline Setting
Close Enable
Open Disable *
CPU Clock Selection
Host clock BUS clock JP3 JP9 JP10
75MHz 50MHz Open Close Close
90MHz 60MHz Open Open Close
100MHz 66MHz Open Close Open
120MHz 60MHz Close Open Close
Turbo LED
JP7
External SMI Selection
Close SMI Mode *
Open Normal Mode
JP8
CMOS Fresh Selection
Close Clear
Open Normal *
JP12
On chip secondary IDE IRQ
1-2 IRQ15 *
2-3 MIRQ1
HD LED (J6)
Hard Disk LED
" * " : Represent for default jumper settings

4. Memory Configuration

The P5I437P3/IO main board supports single-bank 72 Pin SIMMs or double-bank 72 Pin SIMMs providing a flexible size from 8MB up to 128MB main memory. The DRAM SIMMs can be installed into any slot location, but must fully occupy one bank (bank 0 or bank 1) for any selected RAM size, otherwise, the mainboard will not work correctly. In addition, only one type SIMM (72 pin) will be recognized, please do not plug in two types of SIMMs on a bank simultaneously.

RAM SIZE	72-pin SIMM #1	72-pin SIMM #2	72-pin SIMM #3	72-pin SIMM #4
8 MB	4 MB x 1	4MB 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	---	---
24 MB	8 MB x 1	8 MB x 1	4 MB x 1	4 MB x 1
32 MB	8 MB x 1	8 MB x 1	8 MB x 1	8 MB x 1
32 MB	16 MB x 1	16 MB x 1	---	---
40 MB	16 MB x 1	16 MB x 1	4 MB x 1	4 MB x 1
48 MB	16 MB x 1	16 MB x 1	8 MB x 1	8 MB x 1
64 MB	16 MB x 1	16 MB x 1	16 MB x 1	16MB x 1
64 MB	32 MB x 1	32 MB x 1	---	---
72 MB	32 MB x 1	32 MB x 1	4 MB x 1	4 MB x 1
80 MB	32 MB x 1	32 MB x 1	8 MB x 1	8 MB x 1
96 MB	32 MB x 1	32 MB x 1	16 MB x 1	16 MB x 1
128 MB	32 MB x 1	32 MB x 1	32 MB x 1	32 MB x 1
128 MB	64 MB x 1	64 MB x 1	---	---

Note: Bank 0: SIMM 1, SIMM 2
Bank 1: SIMM 3, SIMM 4