

HIPPO 15
486

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Chapter One

Introduction

HIPPO 15 supports advanced bus architectures : PCI-Bus and ISA-bus, providing flexibility to set up various system configuration for optional performance. Both buses are industrial standards, with support from major PC manufacturers. So there are wide range of choice of peripherals.

OCTEK HIPPO 15 brings the new technology of power saving to desktop computing. The key components of the advanced power-saving capabilities are HIPPO 15's built-in support of DPMS functions (Display Power Management Standard) of VESA (Video Electronics Standard Association), support for Windows APM and CPU clock step-down hardware. The energy saving feature can compatible with MS-DOS 5.0 (or later versions), Windows 3.1 and also in NOVELL environment.

Chapter Two

General Features

Specifications

Processor: 80486DX, 80486DX2, 80486DX4,
80486SX or 80487SX
486SL-enhance, UMC U5S,
Enhanced AMD486DX4,
AM5X86/133,
CX486DX, CX486DX2,
CX486DX4, CYRIX 5X86,

Processor Clock: 25 / 33 / 40 / 50 MHz clock selectable

Speed: Turbo/normal speed

Expansion Bus: Three PCI slots
Four 16-bit ISA slots

On-board PCI

Bus Device: PCI-IDE controller

DRAM Upgrade

Capacity: 4 MB (min. config.)
256 MB (max. config.)

DRAM

Configuration:72 pin SIMM sockets for 1M x 32,
2M x 32, 4M x 32, 8M x32, 16M x 32,
or x 36

Cache : 128K, 256K, 512K secondary cache

On-board

I/O Facility: Floppy controller
2 serial ports
1 parallel port (ECP, EPP)
1 game port

Power Saving

Feature: Support SMM for power management
CPU with programmable SMM region

The DRAM System

The memory controller supports fast page mode DRAM accesses.

DRAM Configuration

SM1	SM2	SM3	SM4	Total
1Mx32				4M
1Mx32	1Mx32			8M
2Mx32				8M
1Mx32	1Mx32	1Mx32		12M
1Mx32		2Mx32		12M
1Mx32	1Mx32	1Mx32	1Mx32	16M
1Mx32	1Mx32	2Mx32		16M
2Mx32	2Mx32			16M
4Mx32				16M
1Mx32		4Mx32		20M
2Mx32	2Mx32	1Mx32		20M
1Mx32	1Mx32	4Mx32		24M
2Mx32		4Mx32		24M
2Mx32	2Mx32	2Mx32		24M
4Mx32	4Mx32			32M
2Mx32	2Mx32	2Mx32	2Mx32	32M
4Mx32	4Mx32	1Mx32		36M
4Mx32	4Mx32	2Mx32		40M
1Mx32	1Mx32	4Mx32	4Mx32	40M
4Mx32	4Mx32	4Mx32		48M
8Mx32		4Mx32		48M
4Mx32	4Mx32	4Mx32	4Mx32	64M
4Mx32	4Mx32	8Mx32		64M
8Mx32	8Mx32			64M
8Mx32	8Mx32	4Mx32		80M
4Mx32	4Mx32	16Mx32		96M
8Mx32		16Mx32		96M
8Mx32	8Mx32	8Mx32	8Mx32	128M
16Mx32	16Mx32	4Mx32		144M
16Mx32	16Mx32	8Mx32		160M
16Mx32	16Mx32	8Mx32	8Mx32	192M
16Mx32	16Mx32	16Mx32	16Mx32	256M

70ns DRAM can be used in all operating frequencies. System

BIOS will enable the parity check when 36-bit SIMM modules is inserted.

The External Cache System

An external cache is available to boost the system performance. The external cache can select write-through / write-back scheme. The cache are accept 128K, 256K, 512K.

PCI Local Bus

The PCI Local Bus is a high performance 32-bit bus with multiplexed address and data line. It is intended for use as interconnect mechanism between highly integrated peripheral controller, add-on card and memory system.

The On-board PCI IDE

The PCI Local Bus IDE controller supports enhanced IDE mode 3 features. The IDE controller is fully compatible with ANSI ATA rev 3.x - 4.0 specification for IDE hard disk operations.

The On-board I/O Controller

The on-board I/O controller offers

1. Support for two floppy drives (360K 5-1/4", 1.2M 5-1/4", 720K 3-1/2 ", 1.44M 3-1/2 ")
2. One parallel port (ECP, EPP)
3. Two serial ports
4. Game port

Control Of System Speed

System speed can be controlled by the keyboard and the turbo switch. When the keys "Ctrl", "Alt", "-" are pressed simultaneously, the system switches to low speed. When the keys "Ctrl", "Alt", "+" are pressed at the same time, the system returns to high speed mode (turbo mode).

The header P6 should be connected to the turbo switch of the cabinet. Whenever the system speed is set low by the turbo switch, the key strobes "Ctrl", "Alt", "+" and "Ctrl", "Alt", "-" will have NO impact on the system speed.

Power Saving Features

Whenever the system is not in used (e.g. No key has been hit in the keyboard for a certain period of time), the clock chip of the main board will be signaled to slow down the CPU clock. The system subsequently enters a "sleep" mode. When an external request for system usage is detected (as the pressing of a key or the movement of a mouse), the clock is stepped up to full operating frequency. The time limit for entry to "sleep" mode is selectable in CMOS setup.

IDE drive spin-down is also controllable. The fixed disk will stop spinning after a pre-selected time interval of inactivity.

Reset CMOS Setup Information

Sometimes it may be desirable to clear the existing content of the CMOS RAM. Turn off the power and set JP34 to 2-3. The CMOS data will rest. After clear the CMOS, set the jumper to 1-2 and turn-on the power. The BIOS will prompt you the setup is invalid. Setup the system as properly content again.

Chapter Three

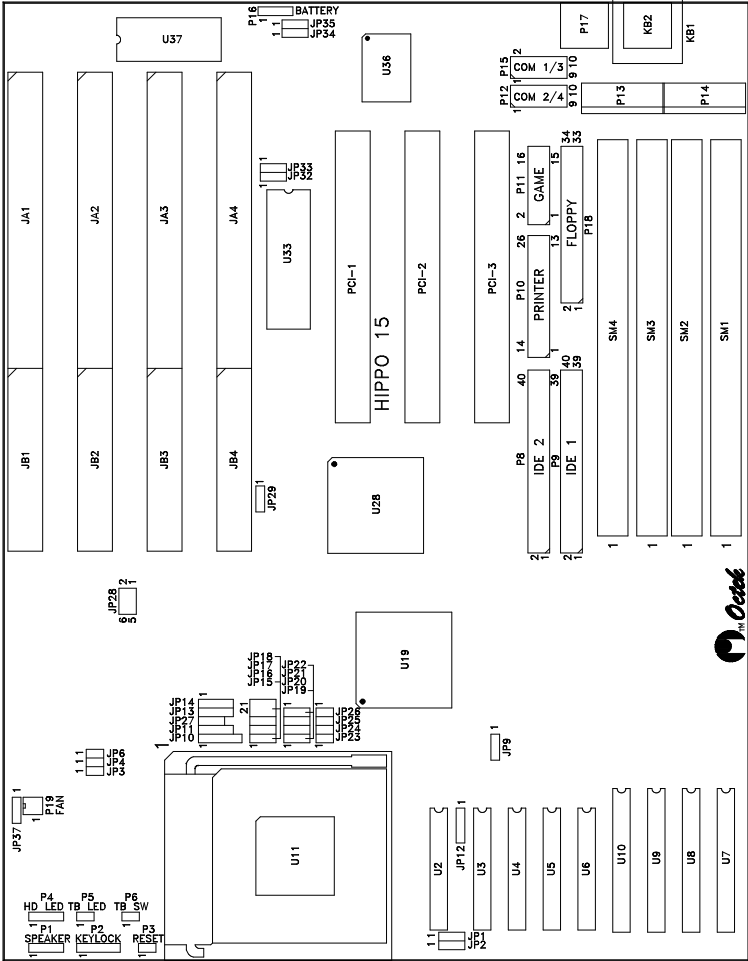
Installation

Installing DRAM Modules

Follow the steps below to install DRAM SIMMs :

- (a) Turn off the PC.
- (b) The SIMM RAM is inserted in SIMM socket 1 first. The memory modules should be carefully installed into the SIMM sockets in such a way that the modules are properly oriented and aligned.
- (c) Allow the two metal latches at each end of the socket to lock onto the memory module.
- (d) Further memory capacity upgrade should be directed to SIMM 2.

Board Layout



System Board Connectors

	Description
P13,P14	Power Connectors
P6	Turbo Switch
P5	Turbo LED Connector
P3	Hardware Reset Switch
P1	Speaker Connector
P4	Hard Disk LED Connector
P2	Power LED and Keylock Connector
P18	Floppy Drive Connector
P8	IDE Hard Disk Connector (secondary)
P11	Game Port Connector
P10	Parallel Port Connector
P9	IDE Hard Disk Connector (primary)
P15	COM 1/3 Serial Port Connectors
P12	COM 2/4 Serial Port Connector
JP35	Battery Selection
P16	External Battery Connection
JP29	DRQ Selection
JP33	DACK Selection
KB1	Keyboard Connector

P13,P14 Power Connectors

Pin	Assignment
1	Power Good
2	+5V
3	+12V
4	-12V
5	Ground
6	Ground

Pin	Assignment
1	Ground
2	Ground
3	-5V
4	+5V
5	+5V
6	+5V

P6 Turbo Switch

Pin	Assignment
1	Signal pin
2	Ground

P5 Turbo LED Connector

Pin	Assignment
1	LED Signal
2	+5V

P3 *Hardware Reset Switch*

Pin	Assignment
1	GND
2	Signal pin

P1 *Speaker Connector*

Pin	Assignment
1	Data out
2	NC
3	Ground
4	+5V

P4 *Hard Disk LED Connector*

Pin	Assignment
1	+5V
2	Signal pin
3	Signal pin
4	+5V

P2 Power LED & Keylock Connector

Pin	Assignment
1	+5V
2	Key
3	Ground
4	Keyboard inhibit
5	Ground

JP35 Battery Selection

Pin	Assignment
1	External battery Output
2	CMOS input
3	On-board Battery output

P16 External Battery Connector

Pin	Assignment
1	External Battery Input
2	Key
3	NC
4	Ground

JP29 DRQ Selection

Pin	Assignment
1	DRQ 1
2	Chipset input
3	DRQ 3

JP33 DACK Selection

Pin	Assignment
1	DACK 3
2	Chipset input
3	DACK 1

Jumper Setting

Cache Configuration

For 33MHz clock, the tag RAM 32Kx8 is used 20ns and 40MHz or 50MHz system, 15ns RAM is used (U2).

	512K (128Kx8) U7 - U10	256K (32Kx8) U7- U10, U3-U6	256K (64Kx8) U7 - U10,	128K (32Kx8) U7 - U10
JP9	2-3	1-2	2-3	2-3
JP12	1-2, 3-4	1-2	1-2	OPEN

Clock Selection

JP28	Clock Rate	CPU Speed
1-2	50MHz	DX50
1-2, 3-4, 5-6	33MHz	DX33, DX2-66,DX4-100
3-4, 5-6	40MHz	DX40, DX2-80, DX4-120
5-6	25MHz	DX25, DX2-50,DX4-75

CPU Voltage

TYPE	CPUVCC	JP3	JP4	JP6
AUTO	5V/3.45V	1-2	OPEN	OPEN
FIXED	5V	OPEN	1-2	OPEN
FIXED	3.6V	OPEN	OPEN	1-2
FIXED	3.45V	OPEN	OPEN	OPEN

CPU Clock Multiple

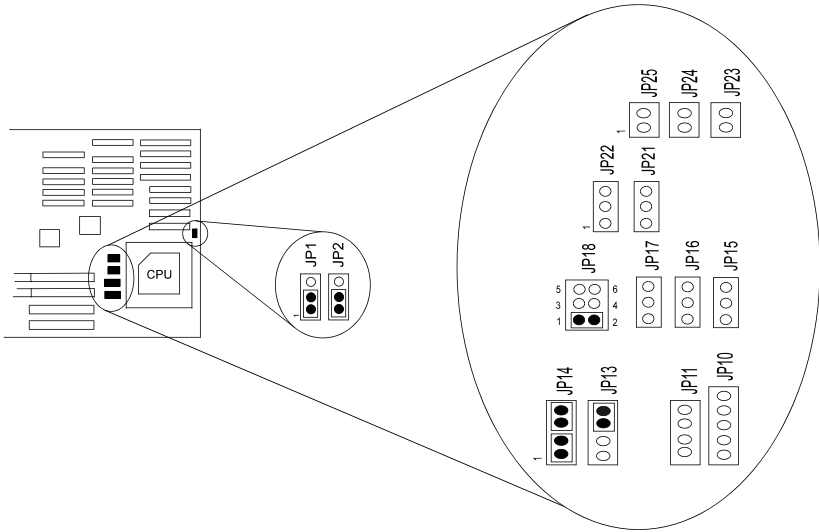
CPU	JP19		
	OPEN	1-2	2-3
Intel	3X	2.5X	2X
AMD Enhance DX4	3X	N/A	2X
AM5x86	N/A	N/A	4X

Reserved Jumpers

JW2	1-2
JW3	1-2
JW4	OPEN
JW5	OPEN
JP20	2-3
JP26	OPEN
JP30	2-3
JP32	1-2
JP36	OPEN

CPU Settings

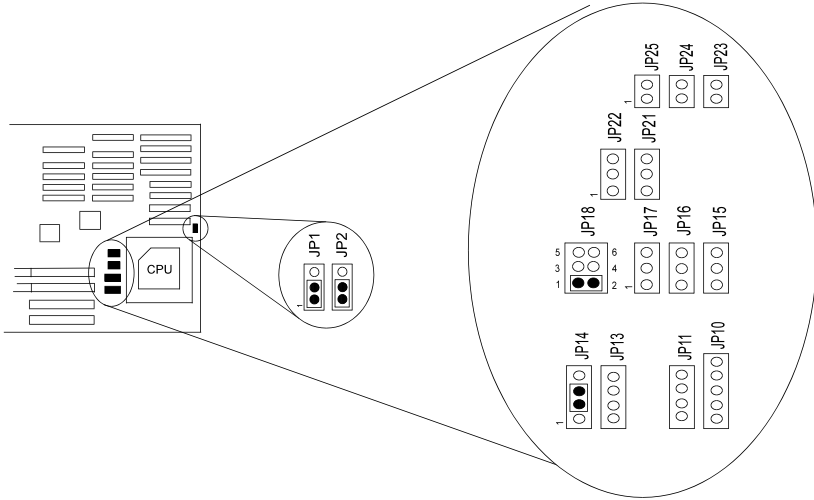
a. Intel 486DX/486DX2



Jumper	Setting
JP1	1-2
JP2	1-2
JP10	OPEN
JP11	OPEN
JP13	3-4
JP14	1-2, 3-4
JP15	OPEN
JP16	OPEN
JP17	OPEN
JP18	1-2
JP21	OPEN
JP22	OPEN
JP23	OPEN
JP24	OPEN
JP25	OPEN

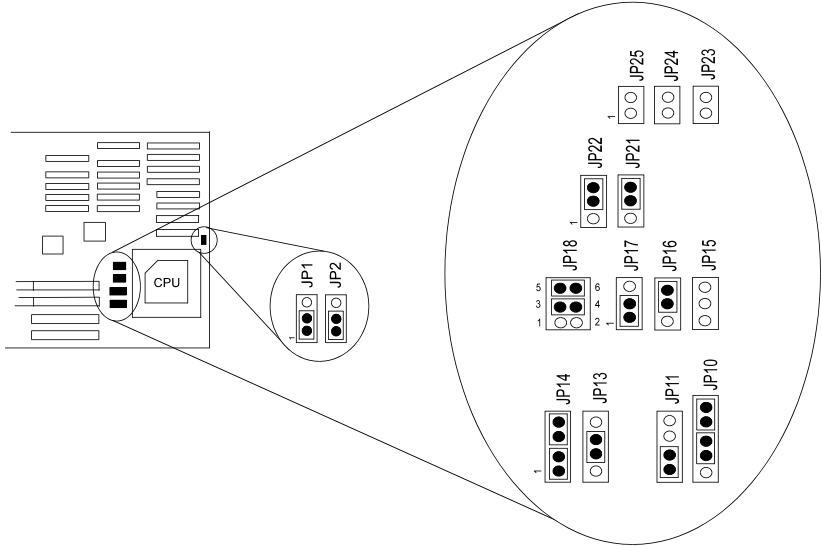


b. Intel 486SX



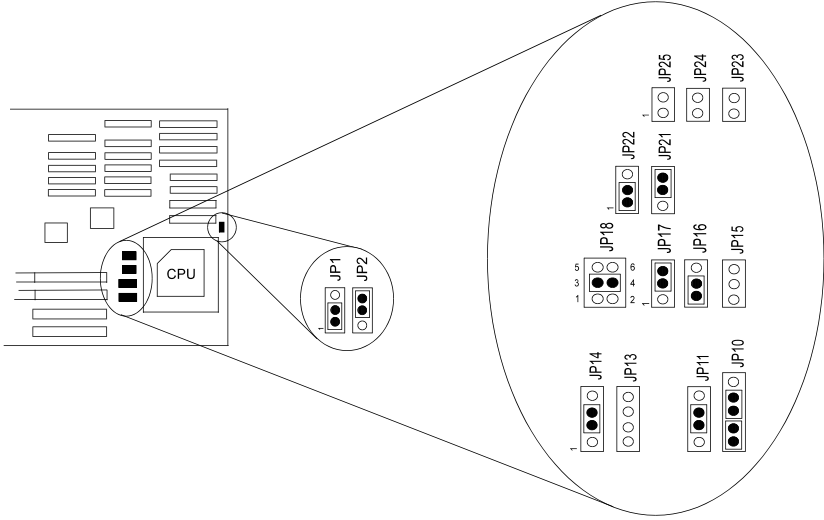
Jumper	Setting
JP1	1-2
JP2	1-2
JP10	OPEN
JP11	OPEN
JP13	OPEN
JP14	2-3
JP15	OPEN
JP16	OPEN
JP17	OPEN
JP18	1-2
JP21	OPEN
JP22	OPEN
JP23	OPEN
JP24	OPEN
JP25	OPEN

c. Intel Pentium Overdrive P24T



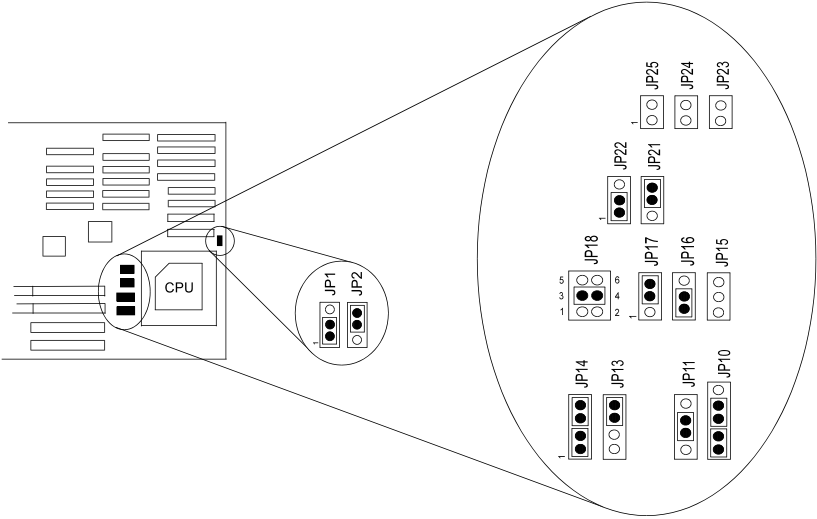
Jumper	Setting
JP1	1-2
JP2	1-2
JP10	2-3, 4-5
JP11	1-2
JP13	2-3
JP14	1-2, 3-4
JP15	OPEN
JP16	2-3
JP17	1-2
JP18	3-4, 5-6
JP21	2-3
JP22	2-3
JP23	OPEN
JP24	OPEN
JP25	OPEN

d. Cyrix CX486S



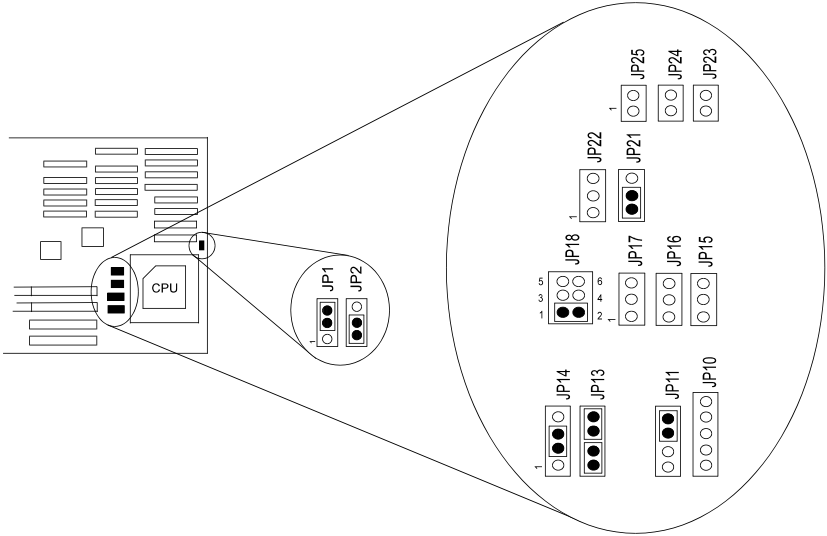
Jumper	Setting
JP1	1-2
JP2	2-3
JP10	1-2, 3-4
JP11	2-3
JP13	OPEN
JP14	2-3
JP15	OPEN
JP16	1-2
JP17	2-3
JP18	3-4
JP21	2-3
JP22	1-2
JP23	OPEN
JP24	OPEN
JP25	OPEN

e. Cyrix CX486D / TI 486DX / 486 Blue Lighting



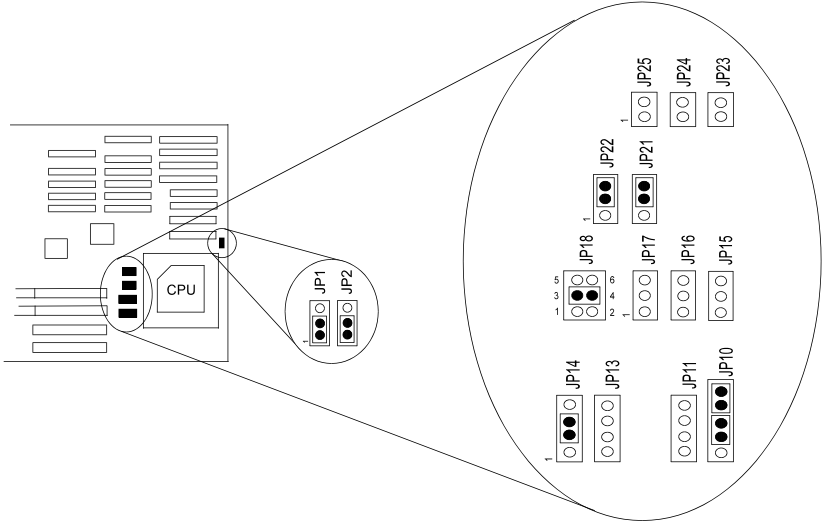
Jumper	Setting
JP1	1-2
JP2	2-3
JP10	1-2, 3-4
JP11	2-3
JP13	3-4
JP14	1-2, 3-4
JP15	OPEN
JP16	1-2
JP17	2-3
JP18	3-4
JP21	2-3
JP22	1-2
JP23	OPEN
JP24	OPEN
JP25	OPEN

f. UMC-U5S



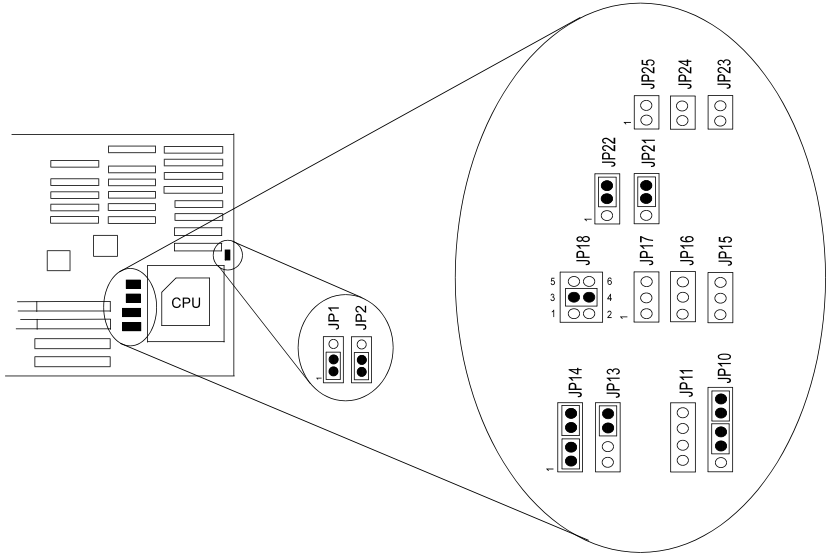
Jumper	Setting
JP1	2-3
JP2	1-2
JP10	OPEN
JP11	3-4
JP13	1-2, 3-4
JP14	2-3
JP15	OPEN
JP16	OPEN
JP17	OPEN
JP18	1-2
JP21	1-2
JP22	OPEN
JP23	OPEN
JP24	OPEN
JP25	OPEN

g. Intel SL 486SX



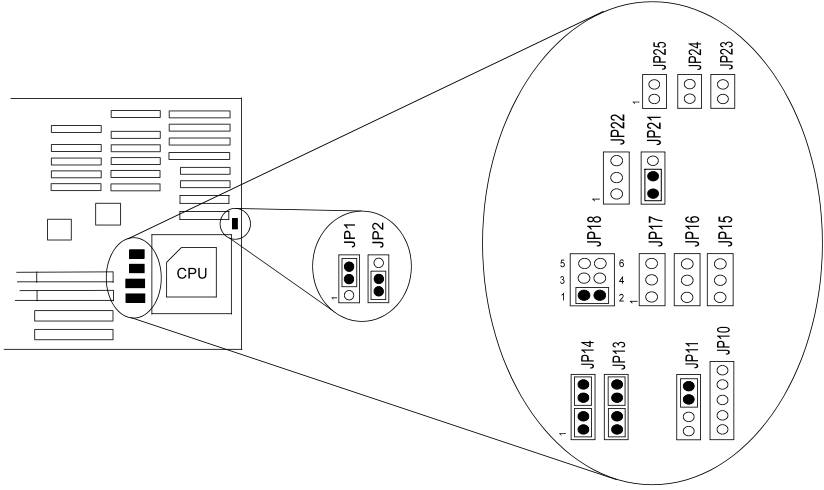
Jumper	Setting
JP1	1-2
JP2	1-2
JP10	2-3, 4-5
JP11	OPEN
JP13	OPEN
JP14	2-3
JP15	OPEN
JP16	OPEN
JP17	OPEN
JP18	3-4
JP21	2-3
JP22	2-3
JP23	OPEN
JP24	OPEN
JP25	OPEN

h. Intel SL 486DX/486DX2/486DX4



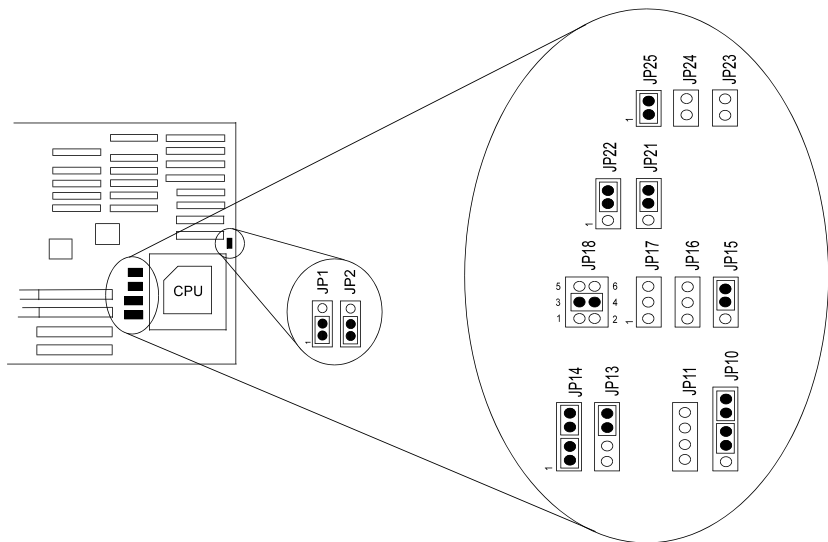
Jumper	Setting
JP1	1-2
JP2	1-2
JP10	2-3, 4-5
JP11	OPEN
JP13	3-4
JP14	1-2, 3-4
JP15	OPEN
JP16	OPEN
JP17	OPEN
JP18	3-4
JP21	2-3
JP22	2-3
JP23	OPEN
JP24	OPEN
JP25	OPEN

i. AM486DXL / AM486DX4 / UMC-U5DS



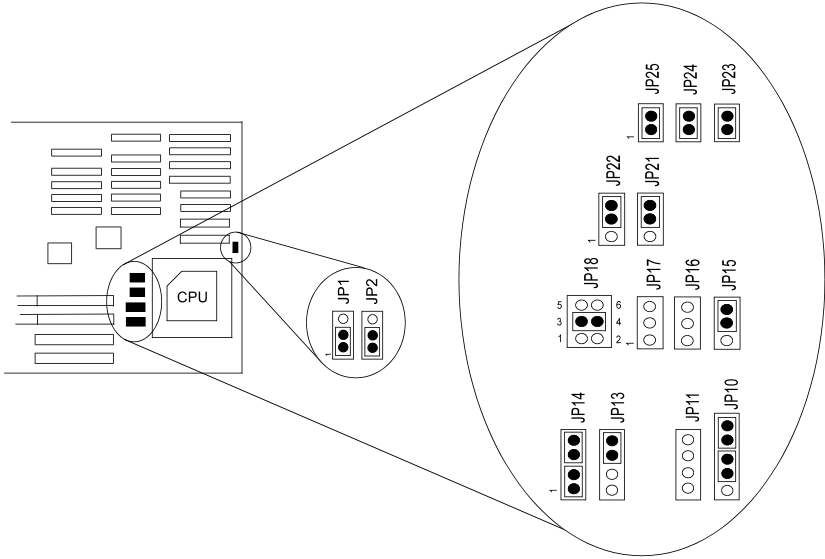
Jumper	Setting
JP1	2-3
JP2	1-2
JP10	OPEN
JP11	3-4
JP13	1-2, 3-4
JP14	1-2, 3-4
JP15	OPEN
JP16	OPEN
JP17	OPEN
JP18	1-2
JP21	1-2
JP22	OPEN
JP23	OPEN
JP24	OPEN
JP25	OPEN

j. AMD Enhance AM486DX2/ AM486DX4



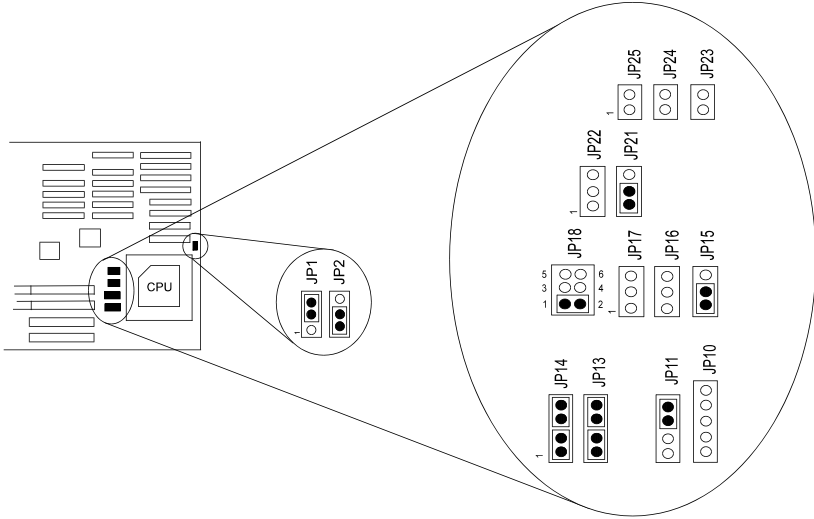
Jumper	Setting
JP1	1-2
JP2	1-2
JP10	2-3, 4-5
JP11	OPEN
JP13	3-4
JP14	1-2, 3-4
JP15	2-3
JP16	OPEN
JP17	OPEN
JP18	3-4
JP21	2-3
JP22	2-3
JP23	OPEN
JP24	OPEN
JP25	1-2

k. Intel P24D / AM5X86



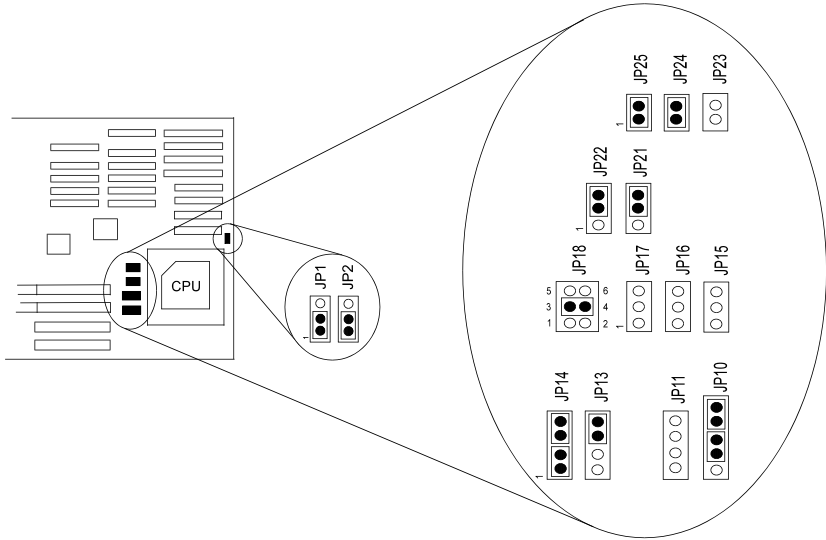
Jumper	Setting
JP1	1-2
JP2	1-2
JP10	2-3, 4-5
JP11	OPEN
JP13	3-4
JP14	1-2, 3-4
JP15	2-3
JP16	OPEN
JP17	OPEN
JP18	3-4
JP21	2-3
JP22	2-3
JP23	1-2
JP24	1-2
JP25	1-2

I. AMD AM486DX2



Jumper	Setting
JP1	2-3
JP2	1-2
JP10	OPEN
JP11	3-4
JP13	1-2, 3-4
JP14	1-2, 3-4
JP15	1-2
JP16	OPEN
JP17	OPEN
JP18	1-2
JP21	1-2
JP22	OPEN
JP23	OPEN
JP24	OPEN
JP25	OPEN

m. Cyrix 5x86



Jumper	Setting
JP1	1-2
JP2	1-2
JP10	2-3, 4-5
JP11	OPEN
JP13	3-4
JP14	1-2, 3-4
JP15	OPEN
JP16	OPEN
JP17	OPEN
JP18	3-4
JP21	2-3
JP22	2-3
JP23	OPEN
JP24	1-2
JP25	1-2