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4IP-SIS-AIO

486 PCI MOTHER BOARD

USER'S MANUAL

Printed in Hong Kong

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IMPORTANT NOTE

WARNING : Before you power on the computer, please ensure jumper J2 is shorted at pin 2 and pin 3 position.

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Chapter 1 Introduction

The **80486** mainboard is a high-performance mainboard based on the 80486 microprocessor and featuring PCI and ISA Bus support. The mainboard offers a high degree of flexibility in configuration and is fully IBM PC/AT compatible.
The PCI (Peripheral Component Interconnect) Local Bus is a high performance, 32-bit bus with multiplexed address and data lines. It is intended for use as an interconnect mechanism between highly integrated peripheral controller components, peripheral add-in boards, and processor/memory system.

Key Features

The advanced features of the 80486 mainboard include:

- Supports CPUs running at 25/33/40/50/66/75/80/100/120/133 MHz including:
- ~ Intel P24D
  ~ Intel P24T
  ~ Intel 80486DX4 (P24C)
  ~ Intel 80486DX/DX2-SL
  ~ Intel 80486DX2/DX/SX
  ~ Cyrix CX486DX2/DX/S/S2
  ~ Cyrix 5x86
  ~ Cyrix DX4
  ~ AMD SX/DX/DX2/DX4
  ~ AMD SX PLUS
  ~ AMD DX4 Enhanced
  ~ AMD Am5x86-P75

- Supports write back mode CPU internal (Level 1) cache
- Flexible cache RAM size 128/256/512 KB one bank with 16 bytes line size
- DRAM auto-detection / banking
- Supports four banks of DRAM in two 72 pin SIMM sockets with memory size up to 128 MB using combinations of 256K, 1M, 2M, 4M, 8M, 16M, 32M, 64M SIMM modules
- Provides green PC power management
- Supports four power management modes for SMM (System Management Mode) CPUs:
  Normal mode, Doze mode, Standby mode, Suspend mode
- Three PCI connectors and three 16 bit ISA I/O slots
- On-board CR2302 3.0 Volt Lithium battery
- Supports 3.3 Volt for low power CPU
- On-board ZIF socket
- Provides flash ROM support
- Two enhanced IDE interfaces on-board, both of them support ATA spec., up to mode 4
- Supports two 16550 compatible enhanced serial ports and one floppy disk interface
- Supports EPP/ECP high performance parallel port

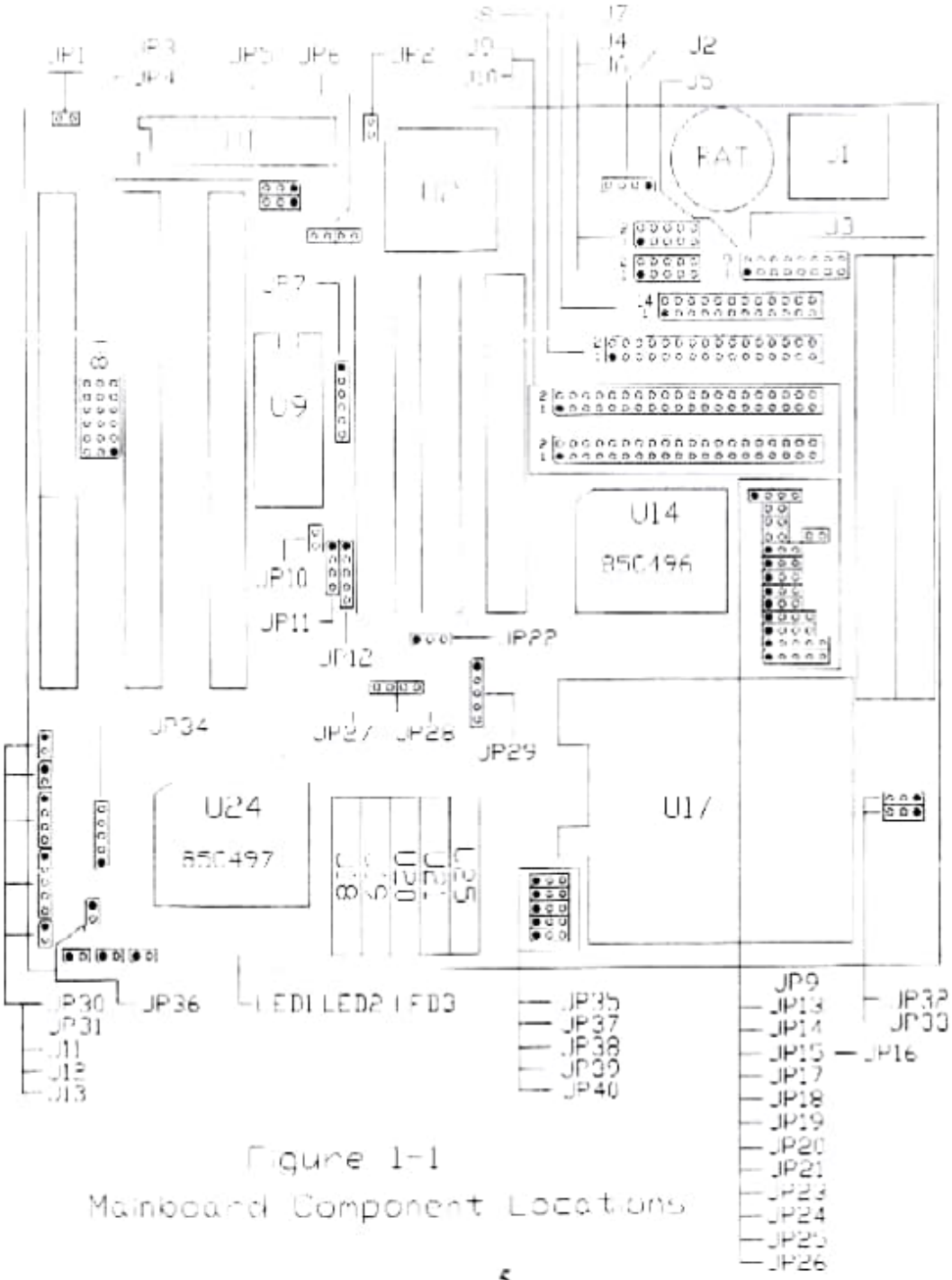


Figure 1-1
Mainboard Component Locations

Chapter 2 Hardware Configuration

Before you install the **80486** mainboard into the system chassis, you may find it convenient to first configure the mainboard's hardware. The chapter describes how to set jumpers and install memory modules, and where to attach components.

Cache Configuration

CACHE SIZE	U18-U21	U22
128K	four 32K x 8	8K x 8
256K	four 64K x 8	16K / 32K x 8
512K	four 128K x 8	32K x 8

CACHE SIZE	JP29	JP35	JP38
128K	1-2 4-5	1-2	1-2
256K	2-3	1-2	2-3
512K	1-2 4-5	2-3	2-3

Connectors

Attach system components and case devices to the mainboard via the mainboard connectors. A description of each connector and its connector pins follows See Figure 1-1for the location of the connectors on the mainboard.

Note: Before making connections to the board, make sure that power to the system is turned off.

Connector

Connector	Description
J1	Keyboard Connector
J3	DC Power Supply Input
J4	On Board Serial Port 1
J6	On Board Serial Port 2
J7	On Board Printer Port
J8	On Board Floppy Connector
J9	On Board Secondary IDE (IDE 2) Connector
J10	On Board Primary IDE (IDE1) Connector
J11	Speaker Connector
J12	Keylock Connector
J13	Reset Switch
LED1	Turbo LED
LED2	Power On LED
LED3	Standby LED
JP9	On Board IDE LED
JP10	Break Switch
JP30	SMM Output Port 1
JP31	SMM Output Port 0
JP36	Turbo Switch

Keyboard Connector(J1)

A standard five-pins female DIN keyboard connector is located at the rear of the board J1.

Pin	Description
1	Keyboard Clock
2	Keybroad Data
3	N.C
4	Ground
5	+5V DC

Power Supply Connectors (J3)

The power supply connectors are two six-pins male header connectors. Plug the dual connectors from the power directly onto the board connectors.

Pin	Description	Pin	Description
1	Power Good	7	Ground
2	+5V DC	8	Ground
3	+12V DC	9	-5V DC
4	-12V DC	10	+5V DC
5	Ground	11	+5V DC
6	Ground	12	+5V DC

External Battery Connector (J2)

You can attach an external battery to J2. The default setting is 2-3, for using the internal battery.

Description	J2
External Battery	Connect an external Battery to pins 1-4 Pin 1 is +, Pin 4 is Gnd
Internal Battery Mode	2-3
Clear CMOS	3-4

I/O DMA Selectors (JP3, JP4)

The mainboard provides an DMA features connector for the use of DMA of ECP feature. The default setting is 2-3.

Pin	Description	Description
1-2	DRQ 1	DACK 1
2-3	DRQ 3	DACK 3

Hard Disk LED Connector (JP9)

Attach the hard disk LED to this connector.

Pin	Description
1, 4	Anode (+)
2, 3	Cathode (-)

Turbo Switch Connector (JP36)

Attach a turbo switch cable to this connector. A turbo switch lets you control system speed.

Setting	Description
Open	Normal Mode
Close	Turbo Mode

Reset Switch Connector (J13)

Attach the Reset push button cable to this connector.

Setting	Description
Open	Normal Mode
Close	Reset System

Turbo LED Connector (LED 1)

Attach a turbo LED For indicating system speed to this connector

Pin	Description
1	Anode (+)
2	Cathode (-)

Speaker Connectors (J11)

Attach the system speaker to connector J11.

Pin	Description
1	Speaker Out
2	Ground
3	Ground
4	5V

Keylock & Power LED Connector (J12)

J12 is a Keylock connector that enables and disables the keyboard key-in function on the case.

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

Jumper Switch Settings

You can configure hardware options by setting jumper switches on the mainboard. See Figure 1-1 for jumper locations.
Set a jumper switch as follows:

- Short a jumper by placing the plastic jumper cap over two pins of the jumper.
- Open the pins of a jumper removing the jumper cap.

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

Flash ROM/EPROM Jumper (JP7)

The mainboard uses two types of Flash chip — 5 volt and 12 volt. Set the mainboard for either type with jumper JP7. You can update both types with new BIOS files as they come available.

Description	JP7
5 volt Flash programming	2-3, 5-6
12 volt Flash programming	1-2, 5-6
EPROM	2-3, 4-5

IDE Drive Reset Source (JP5, JP6)

IDE Drive can be reset from two source:
reset from 497 or reset from RSTDRV.

Reset Source	JP5	JP6
Reset from 497	Close	Open
Reset from STDRV	Open	Close

Monitor Type Selection (JP1)

Monitor	JP1
Color	Close
Mono	Open

On Board IDE IRQ Select (JP34)

On Board IDE	JP34
IDE 1 use IRQ14	1-2 (Default)
IDE 2 use IRQ15	3-4 (Default)
IDE 1 use IRQ15	2-3
IDE 2 use IRQ14	4-5

On Board Super I/O, IO Channel Ready Select (JP2)

IO Channel Ready Select	JP2
Enable	Close (Default)
Disable	Open

COM1 COM2 Printer Port IRQ Select (JP8)

	JP8	
COM1 (Default 2-8)	IRQ3 1-7 IRQ4 2-8	IRQ5 3-9 IRQ7 4-10
COM2 (Default 7-13)	IRQ3 7-13 IRQ4 8-14	IRQ5 9-15 IRQ7 10-16
Printer Port (Default 12-18)	IRQ3 5-11 IRQ4 6-12	IRQ5 11-17 IRQ7 12-18

CPU Speed Jumpers (JP27, JP28)

The mainboard has a clock generator that lets you choose the CPU frequency by setting jumpers JP27, JP28. You can set the CPU speed for 25 MHz, 33 MHz, 40 MHz or 50 MHz as shown below.

CPU Clock	JP27	JP28
25 MHz	Open	Open
33 MHz	Close	Close
40 MHz	Open	Close
50 MHz	Close	Open

CPU Power Jumpers(JP32, JP33)

CPU Power	JP32	JP33
3.3 Volts	2-3	2-3
5 Volts	1-2	1-2

Intel P24D / AMD CPU WB / WT Selection (JP17)

Internal Cache Mode	JP17
WB	1-2
WT	2-3

Intel P24T WB / WT Selection (JP37)

Intel Cache Mode	JP37
WB	1-2
WT	2-3

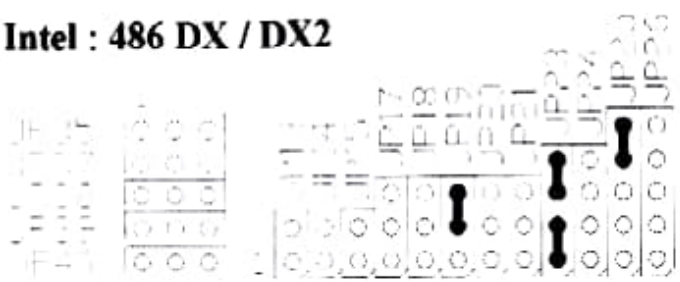
CPU Installation

CPU Type Jumpers

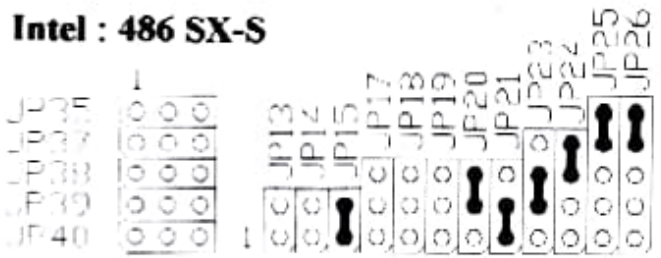
Set jumpers JP14, JP15, JP17-21, JP23-26, JP37, JP39 and JP40 so that the mainboard recognizes the type of CPU installed. Set CPU type as shown below.

Intel : 486 SX

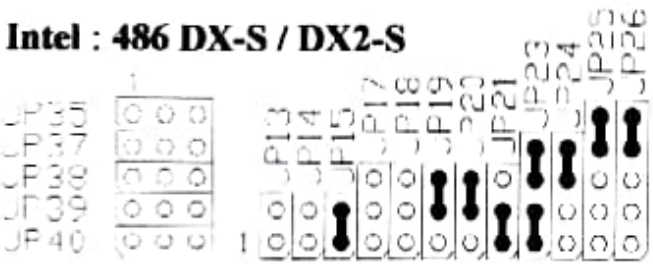
Intel : 486 DX / DX2



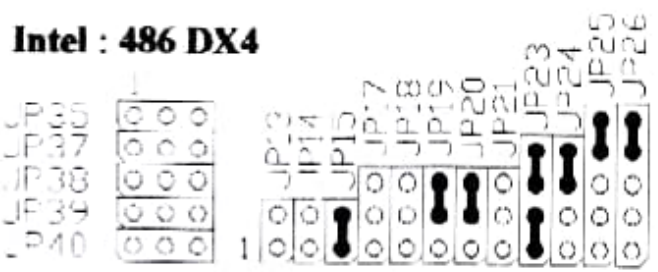
Intel : 486 SX-S



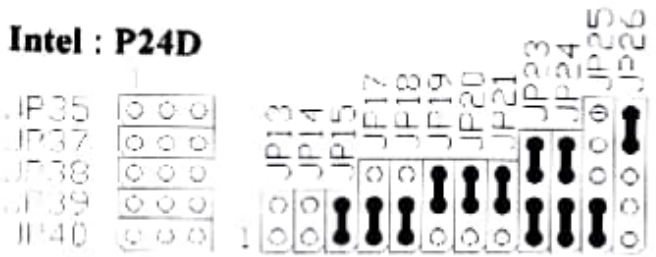
Intel : 486 DX-S / DX2-S



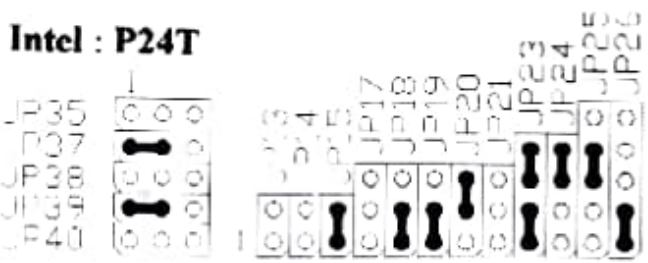
Intel : 486 DX4



Intel : P24D

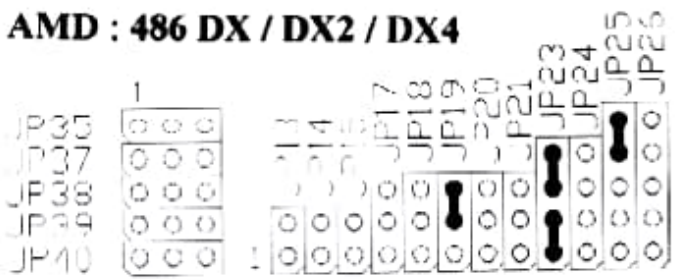


Intel : P24T

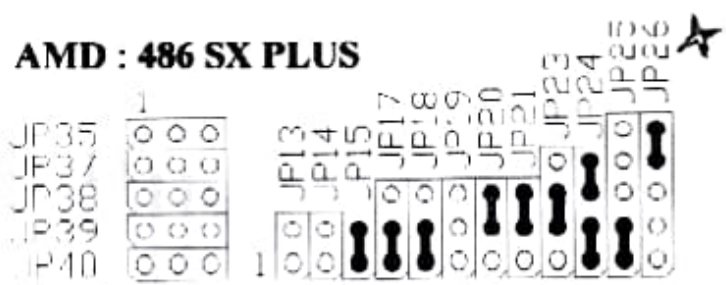


AMD : 486 SX

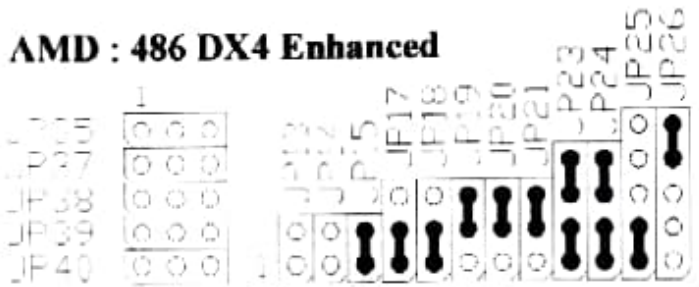
AMD : 486 DX / DX2 / DX4



AMD : 486 SX PLUS

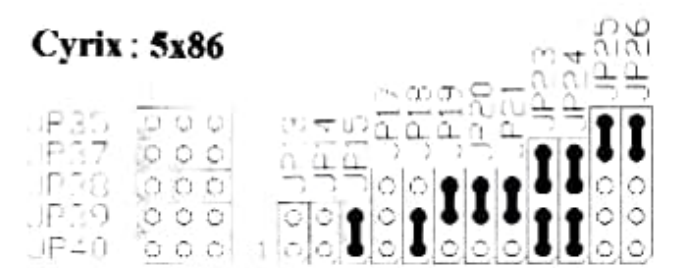


AMD : 486 DX4 Enhanced

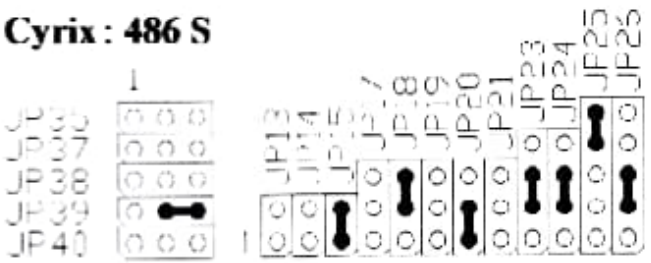


AMD : Am 5x86 P75

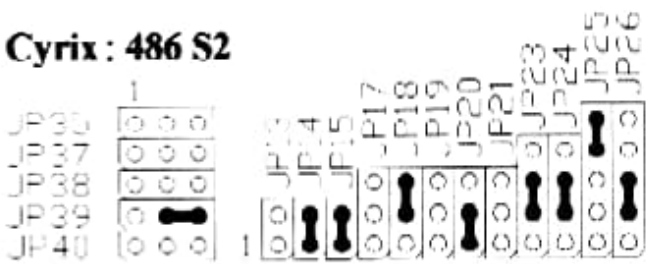
Cyrix : 5x86



Cyrix : 486 S



Cyrix : 486 S2



Cyrix : 486 DX / DX2 / DX4