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## Quick Reference Table

This table helps you quickly find information on specific jumpers and connectors.

Jumper/ Connector	Setting/Description	Page
K/B	Keyboard Connector	5
P1	Power Supply Connectors	6
J2	External Battery Connector	6
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# Chapter 1

## Introduction

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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 or 64-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 process/memory system.

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*Caution: AMI BIOS doesn't support "high scan" in EMM386.EXE.  
Do as the following if you need to use it:*

*device: <path.\EMM386.EXE highscan ROM: F000-FFFF*

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### Key Features

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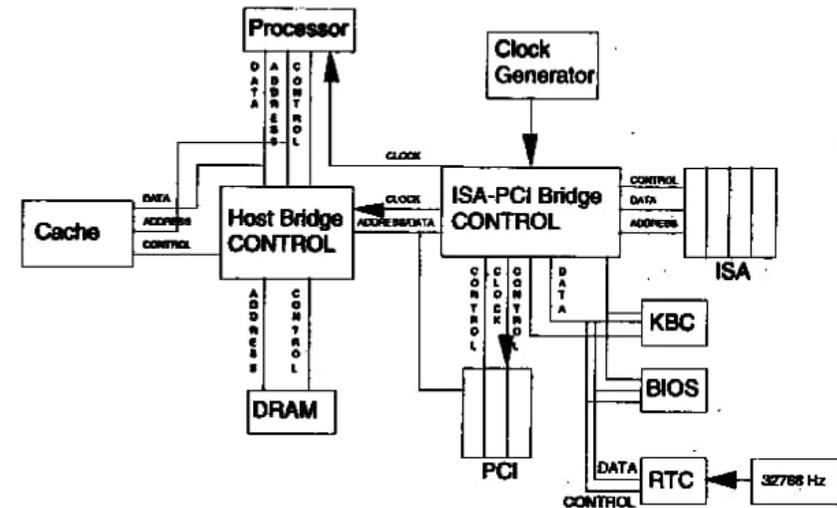
The advanced features of the 80486 mainboard include:

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

- Cyrix DX4
- AMD DX2/4
- TI 80486 DX2
- IBM 80486 DX2
- PCI / Host bridge compliant to PCI specification V2.0
- Supports write back mode CPU internal (Level 1) cache
- Level 2 write back policy for high performance
- Flexible cache RAM size 64/128/256/512 KB one bank with 16 bytes line size
- DRAM auto-detection / banking
- Supports four banks of DRAM including two 72-pin SIMM sockets with memory size up to 256 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: On mode, Standby mode, Inactive mode, Off mode
- Three PCI connectors and four 16 bit I/O slots
- On-board CR2032 3.0 Volt lithium battery
- Supports 3.3 / 4.0 Volts 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 16500 compatible enhanced serial ports and one floppy disk interface
- Supports EPP/ECP high performance parallel port

## Block Diagram

The diagram below shows the ISA and PCI mainboard system architecture. In this diagram, the processor/cache/memory subsystem is connected to the PCI through the Host/PCI Bridge. This bridge provides a low latency path through which the processor may directly access PCI devices mapped anywhere in the memory or I/O address spaces. It also provides a high bandwidth path allowing PCI masters direct access to main memory.



## Mainboard Component Locations

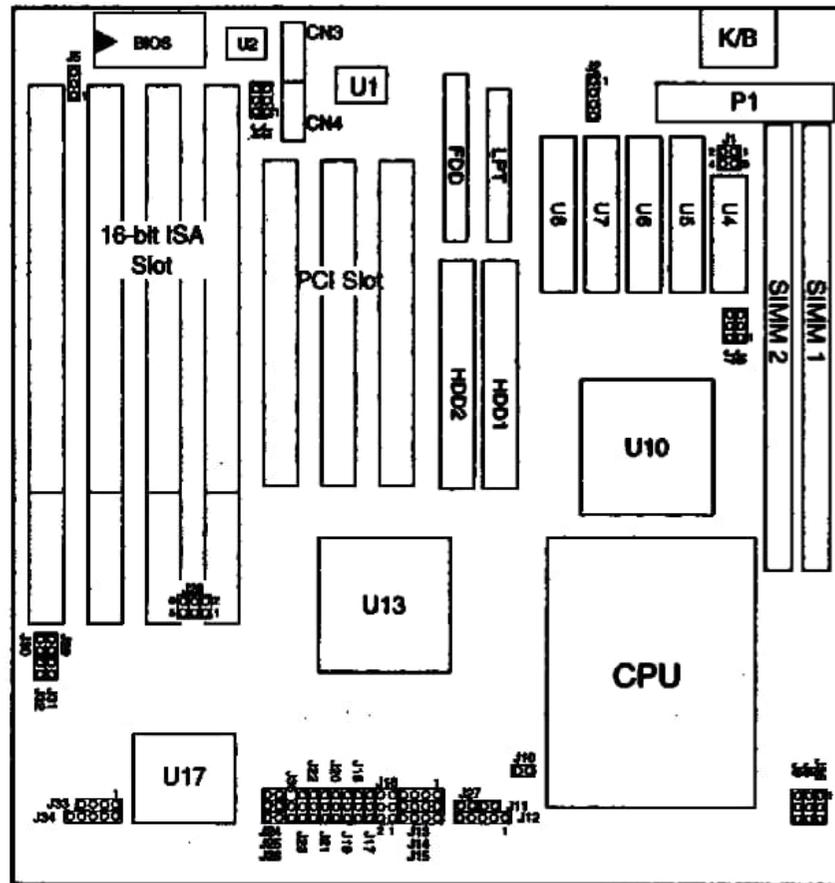


Figure 1-1. Mainboard Component Locations

## 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. This chapter describes how to set jumpers and install memory modules, and where to attach components.

### 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 1-1 for 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.*

#### K/B – Keyboard Connector

A standard five-pin female DIN keyboard connector is located at the rear of the board K/B.

Pin	Description
1	Keyboard Clock
2	Keyboard Data
3	N.C.
4	Ground
5	+5VDC

### P1 – Power Supply Connectors

The power supply connectors are two six-pin 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

### J2 – External Battery Connector

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
Internal battery Mode	
Clear CMOS	

### J3, J4 – I/O DMA Selectors

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

### J10 – Suspend Switch Connector

J10 connects to a push button that allows you to toggle the system between Suspend mode and Normal mode.

Setting	Description
Default	Normal Mode
Toggle	Force system to enter Suspend mode

### J29 – Hard Disk LED Connector

Attach the hard disk LED to this connector.

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

**J30 – Turbo Switch Connector**

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

Setting	Description
Short	Normal Mode
Open	Turbo Mode

**J31 – Reset Switch Connector**

Attach the Reset push button cable to this connector.

Setting	Description
Open	Normal Mode
Short	Reset System

**J32 – Turbo LED Connector**

Attach a turbo LED for indicating system speed to this connector.

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

**J33 – Speaker Connectors**

Attach the system speaker to connector J33.

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

**J34 – Keylock & Power LED Connector**

J34 is a keylock connector that enables and disables the keyboard key-in function on the case.

Pin	Description
1	LED Output
2	NC
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 by 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.

### J5 – Flash EPROM ROM Jumper

The mainboard uses two types of Flash chip — 5 volt and 12 volt. Set the mainboard for either type with jumper J5. You can update both types with new BIOS files as they come available.

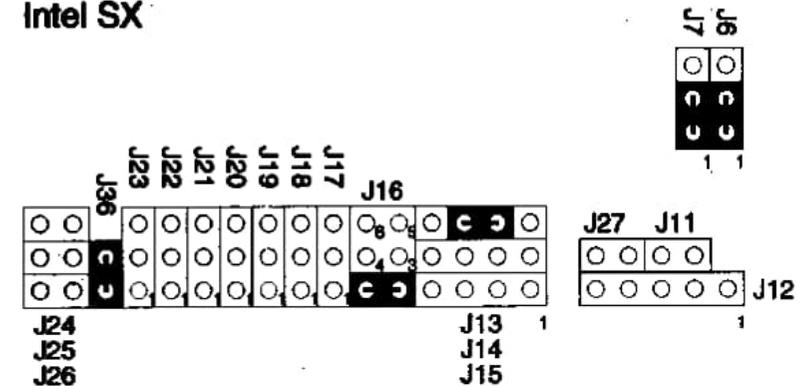
Description	J5
5 volt Flash programming	
12 volt Flash programming	

## CPU Installation

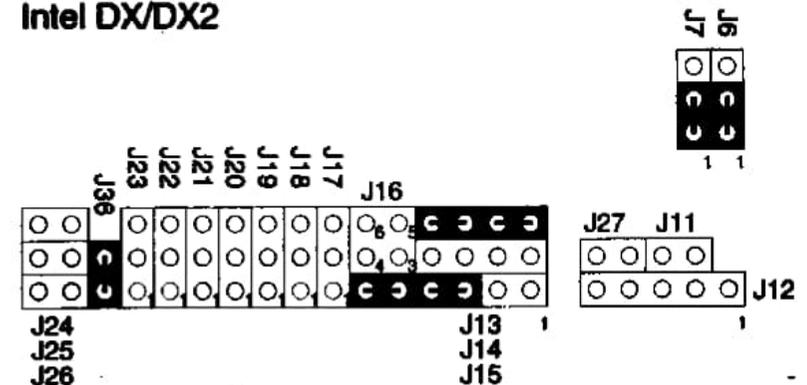
### CPU Type Jumpers

Set jumpers J6~J7, J12~J27, and J36 so that the mainboard recognizes the type of CPU installed. Set CPU type as shown below.

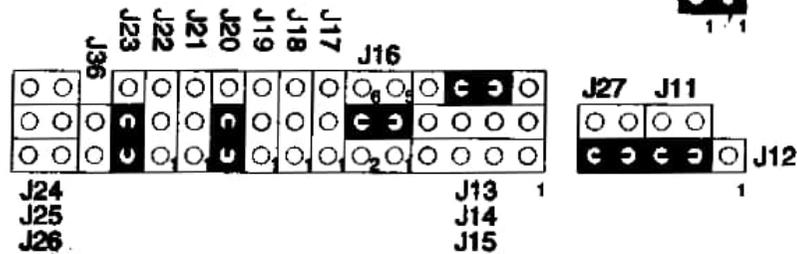
#### Intel SX



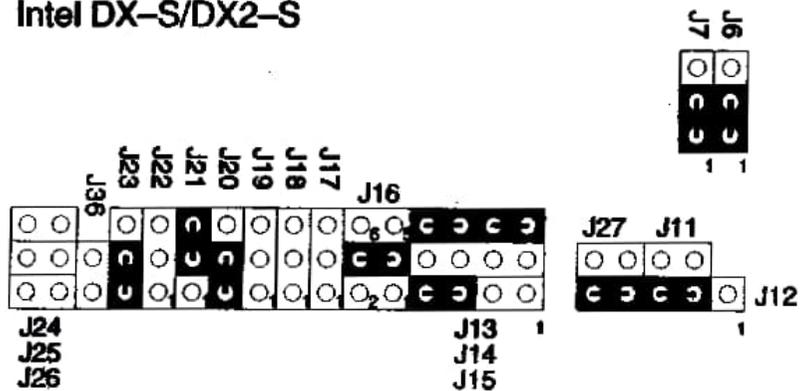
#### Intel DX/DX2



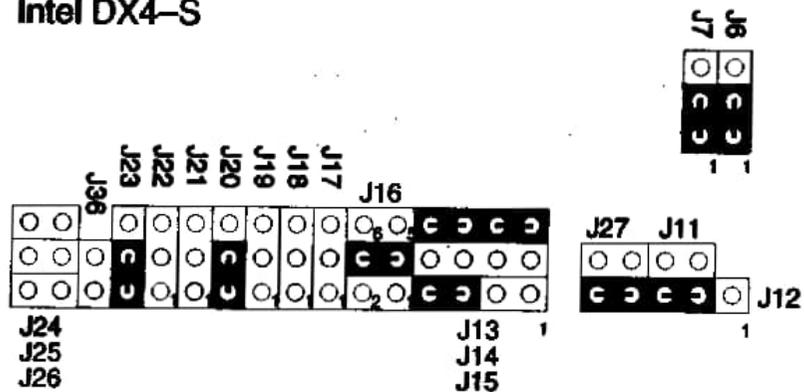
Intel SX-S



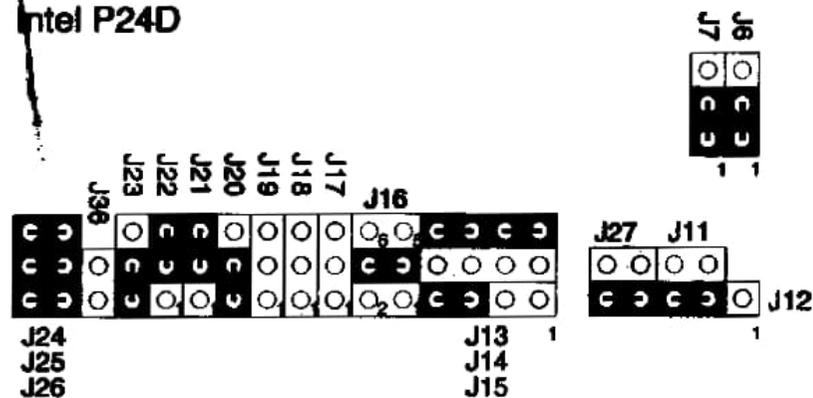
Intel DX-S/DX2-S



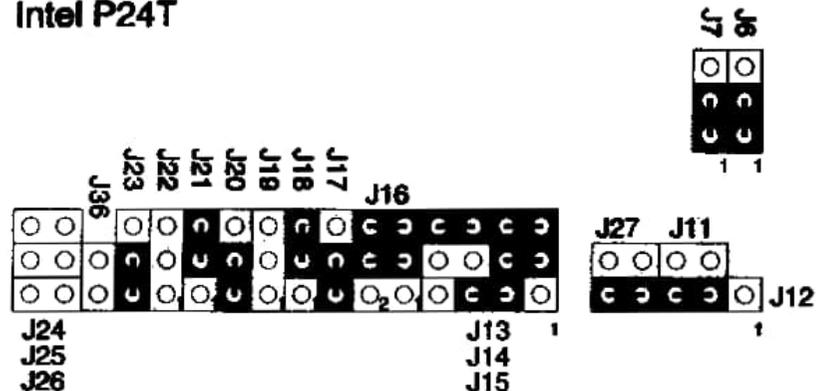
Intel DX4-S



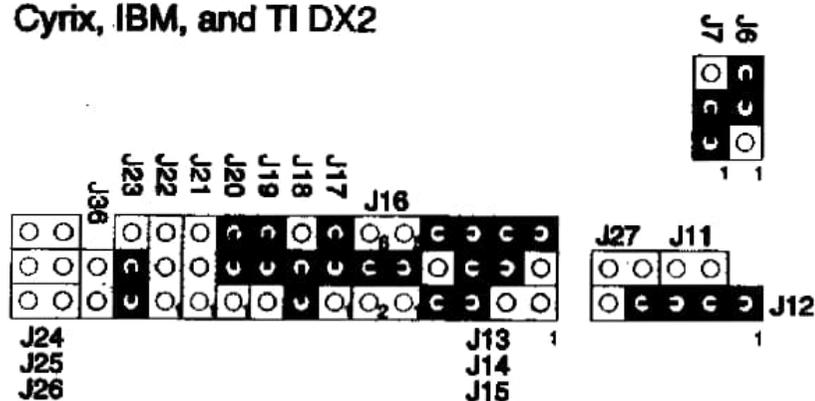
Intel P24D



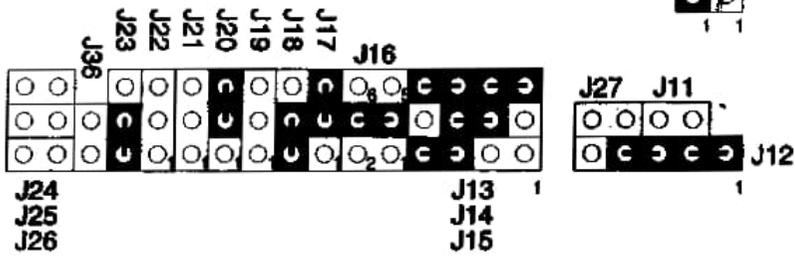
Intel P24T



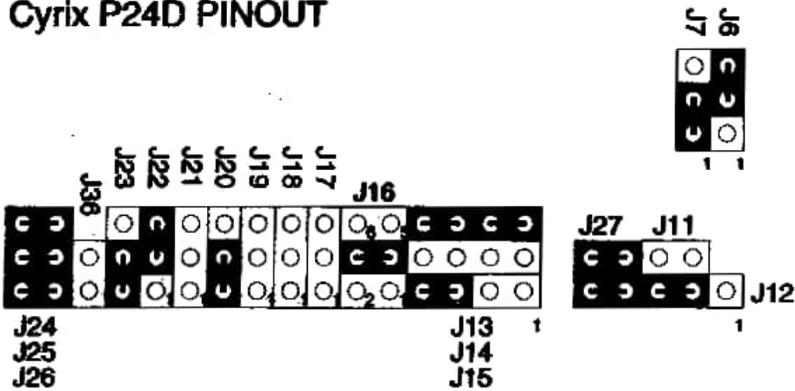
Cyrix, IBM, and TI DX2



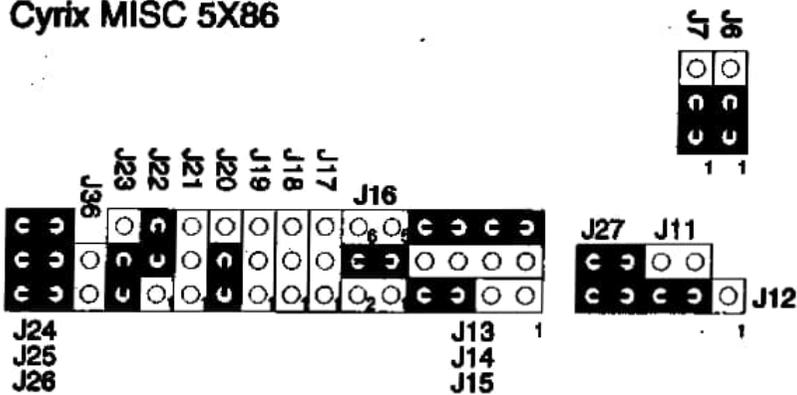
Cyrix and IBM DX4



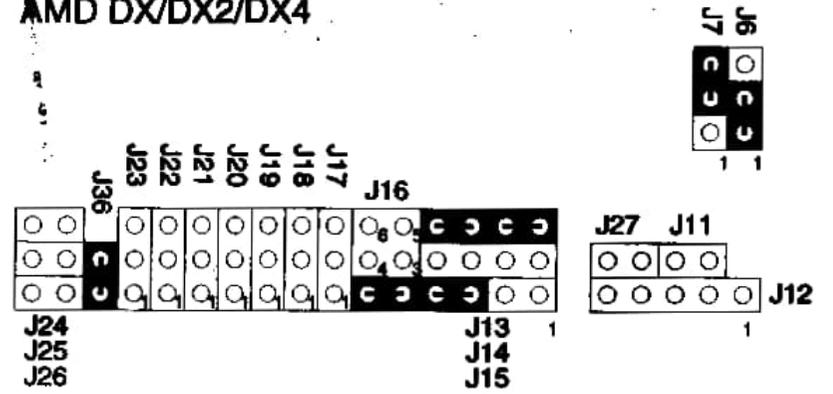
Cyrix P24D PINOUT



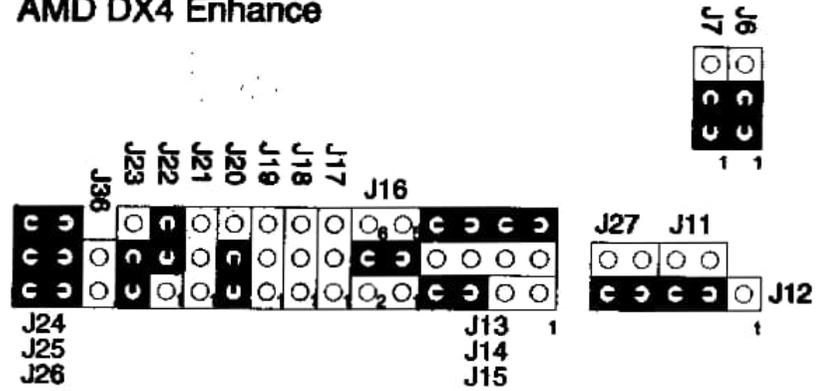
Cyrix MISC 5X86



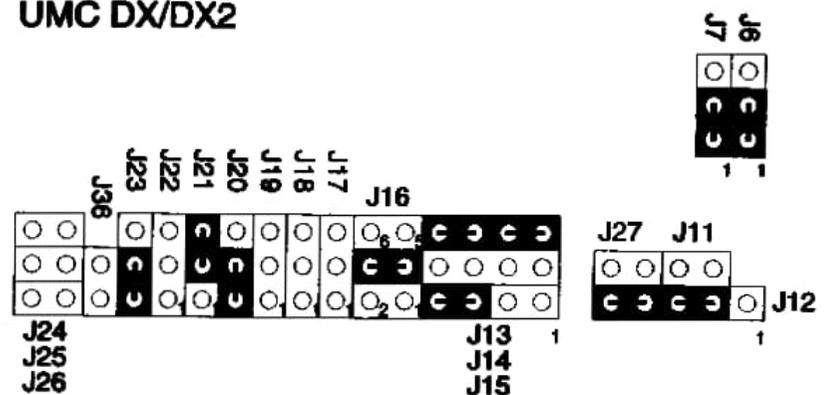
AMD DX/DX2/DX4



AMD DX4 Enhance

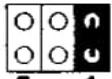
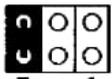


UMC DX/DX2



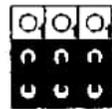
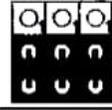
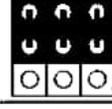
### J28 – CPU Speed Jumpers

The mainboard has a clock generator that lets you choose the CPU frequency by setting jumpers J28. You can set the CPU speed for 25 MHz, 33 MHz, 40 MHz or 50 MHz as shown below.

CPU Clock	J28
25 MHz	6 2  5 1
33 MHz	6 2  5 1
40 MHz	6 2  5 1
50 MHz	6 2  5 1

### J8~9, J11, J35 – CPU Power Jumpers

Check your CPU for the voltage it requires and set jumpers accordingly as shown below.

CPU Power	J8~9, J35	J11
3.3 Volts	J8 J9 J35 	J11 
4 volts	J8 J9 J35 	J11 
5 Volts	J8 J9 J35 	J11 