

Part B System Configuration

This part of user's manual is specifically written to help the user configure the System Board. The user can optimize the system performance by changing the default configuration of the system board.

Features of the PCI/VL Version System Board

- Support Intel™ 486SX/DX/DX2, 486SLE, Pentium™ OverDrive™ Processor, Intel DX4™, P24D (Dark Green support)
- Support Cyrix™ 486S/S2, Cyrix 486DX/DX2 (light Green support)
- Support AMD™ 486DX, AMD 486DXL (light Green support)
- Support CPU speed running at 25/33/40/50/66 Mhz
- Support 256K, 1M, 4M, 16M 30 PIN DRAM SIMM
- Support 256K, 512K, 1M, 2M, 4M, 8M, 16M 72 PIN DRAM SIMM
- Support 128/256 K Write-through / Write-back secondary Cache. Write-back CPU internal Cache for Cyrix.
- Support System Memory Management (SMM) and full SMI Interface support for Intel SL-Enhanced CPU (S-series)
- Two 16-bit ISA BUS expansion slots.
- Three 32-bit VL BUS/ISA BUS shared expansion slots.
- Three 32-bit PCI BUS expansion slots.
- AMI™ WinBIOS™ support system BIOS and PCI BIOS (for VL & PCI model), System and Video BIOS Shadowing, Video BIOS Cacheable. Support Plug and Play on PCI card.

Features of VL Version System Board

- Support Intel™ 486SX/DX/DX2, 486SLE, P24T, DX4, P24D (Dark Green support)
- Support Cyrix™ 486S/S2, Cyrix 486DX/DX2 (light Green support)
- Support AMD™ 486DX, AMD 486DXL (light Green support)
- Support CPU speed running at 25/33/40/50/66 Mhz
- Support 256K, 1M, 4M, 16M 30 PIN DRAM SIMM
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- AMI™ WINBIOS support system BIOS and PCI BIOS (for VL & PCI model), System and Video BIOS Shadowing, Video BIOS Cacheable. Support Plug and Play on PCI card.

Memory Expansion

There is a total of 6 SIMM sockets on the system board, they are labeled as Bank 0, SIMM 1, SIMM 2 on the system board. The system board will support 256K X 9 SIMM, 1M X 9 SIMM, 4M X 9 SIMM, 16M X 9 SIMM for 30 PIN Module, and support 256K X 36 SIMM, 512K X 36 SIMM, 1M X 36 SIMM, 2M X 36 SIMM, 4M X 36 SIMM, 8M X 36 SIMM, 16M X 36 SIMM for 72 PIN Module.

DRAM speed should be 70 ns (or faster) for 25 to 66 Mhz. Please reference to table below for DRAM combination and configuration.

DRAM Configuration Table (30 pin SIMM & 72 pin SIMM mixed)

Bank 0 (30 pin SIMM)	SIM1 (72 pin SIMM)	SIM2 (72 pin SIMM)	Total DRAM Size
256K	256K	X	2MB
1M	X	X	4MB
256K	256K	512K*	4MB
256K	1M	X	5MB
256K	256K	1M	6MB
1M	1M	X	8MB
1M	X	1M	8MB
256K	256K	2M*	10MB
1M	X	2M*	12MB
4M	X	X	16MB
1M	1M	2M*	16MB
256K	4M	X	17MB
1M	4M	X	20MB
1M	X	4M	20MB
4M	4M	X	32MB
4M	X	4M	32MB
16MB	X	X	64MB
4M	4M	8M*	64MB
16M	16M	X	128MB
16M	X	16M	128MB

Remark: X - Not install

*** - Double density SIMM**

DRAM Configuration Table for (72 pin SIMM only)

Bank 0 (30 pin SIMM)	SIM1 (72 pin SIMM)	SIM2 (72 pin SIMM)	Total DRAM Size
X	512K*	X	2MB
X	1M	X	4MB
X	512K*	512K*	4MB
X	512K*	1M	6MB
X	2M*	X	8MB
X	1M	1M	8MB
X	512K*	2M*	10MB
X	1M	2M*	12MB
X	4M	X	16MB
X	2M*	2M*	16MB
X	1M	4M	20MB
X	8M*	X	32MB
X	4M	4M	32MB
X	16M	X	64MB
X	8M*	8M*	64MB
X	32M*	X	128MB
X	16M	16M	128M

Remark: X - Not install
* - Double density SIMM

System Board Configuration

Under some circumstances you may want to change the default configuration of the system board. These changes are made through adapting jumper settings on the system board. The following text will describe the function of jumpers and connectors and their corresponding location on the System Board can be found at the end of this chapter.

Jumper Functions

128K Cache External Cache Size

JP20

U24 installed with 8Kx-15ns SRAM U25, U28, U33, U39 installed with 32Kx8-20ns SRAM



JP22



JP24



256K Cache External Cache Size

JP20









U24 installed with 32Kx8-15ns SRAM U25, U26, U28, U29, U33, U34, U39, U40 installed with 32Kx8-20ns SRAM





JP22, JP24





JP30, JP31 CPU Clock Selection

	25MHz	33MHz	40MHz	50MHz
JP30				
JP31				



JP45 SIMM Module Selection

	Only 72 Pin SIMM Installed, 30 Pin SIMM not Installed
* 	Others



JP39 UNIX Jumper Select

* 	Normal
	UNIX

JP2 CMOS Data Discharge Jumper



	Discharge
* 	Normal

JP18 VL Bus Speed



* 	CPU Speed ≤ 33MHz
	CPU Speed > 33MHz

* = Factory Default Value

JP19 VL Bus Wait State

	Zero Wait State
* 	One Wait State
















JP29 Local Bus Signal Adjust

* 	For CPU Speed 33MHz
	For CPU Speed 40/50MHz

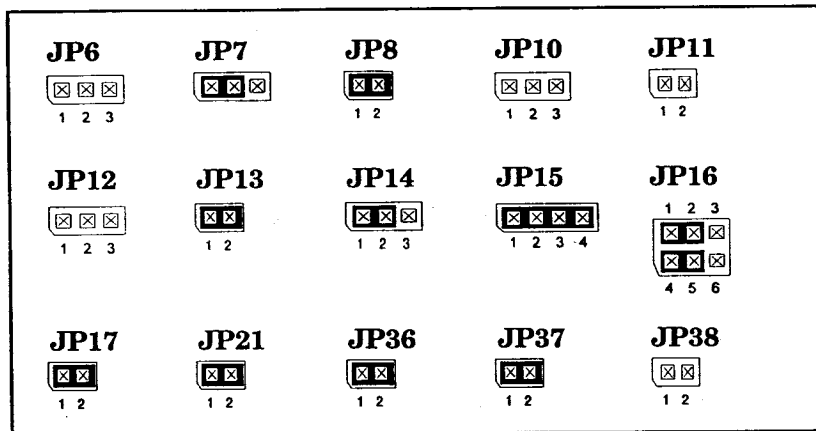
* = Factory Default Value

CPU Type Select Jumpers

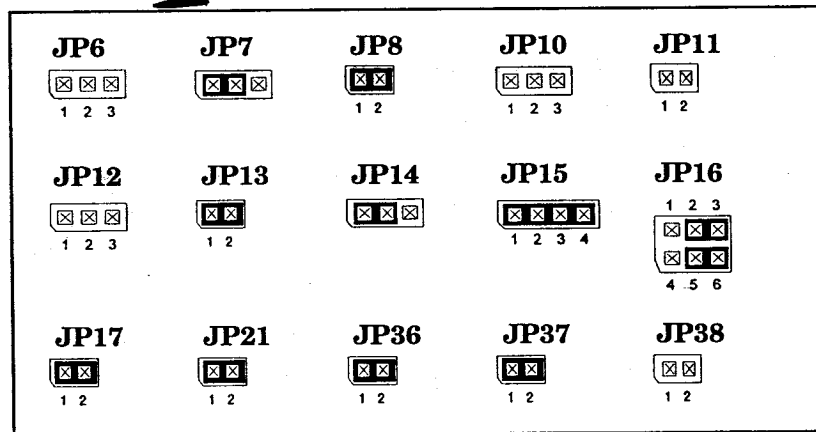
INTEL 486SX CPU

JP6 	JP7 	JP8 	JP10 	JP11 
JP12 	JP13 	JP14 	JP15 	JP16 
JP17 	JP21 	JP36 	JP37 	JP38 

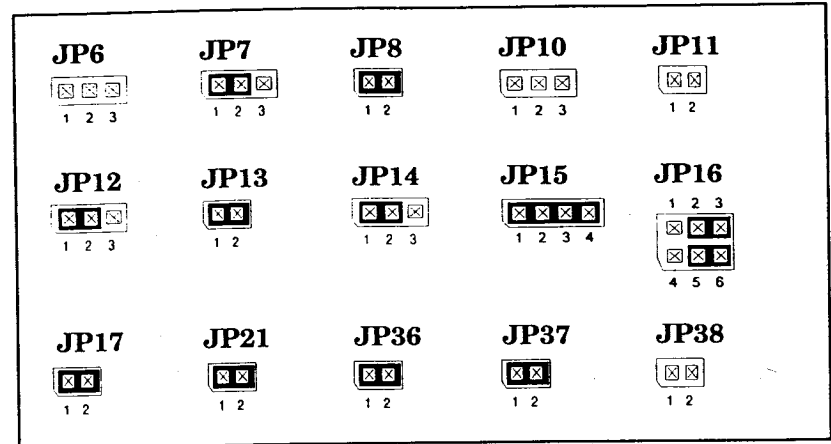
INTEL 486DX CPU



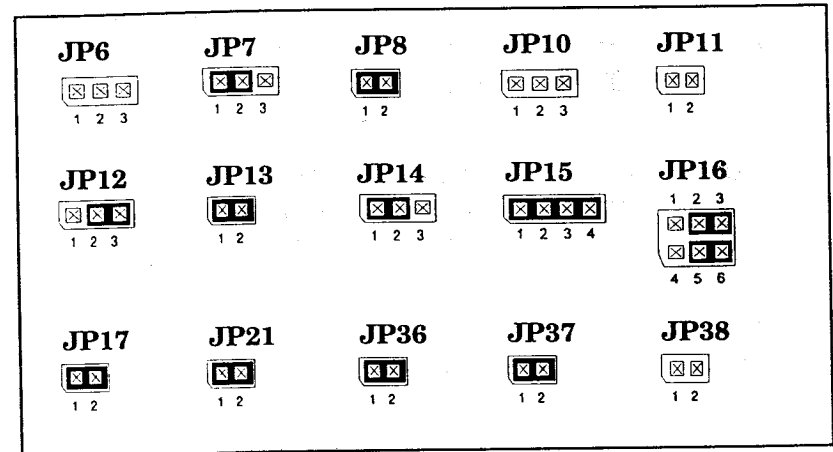
INTEL DX4 CPU (Internal CLK x 3)



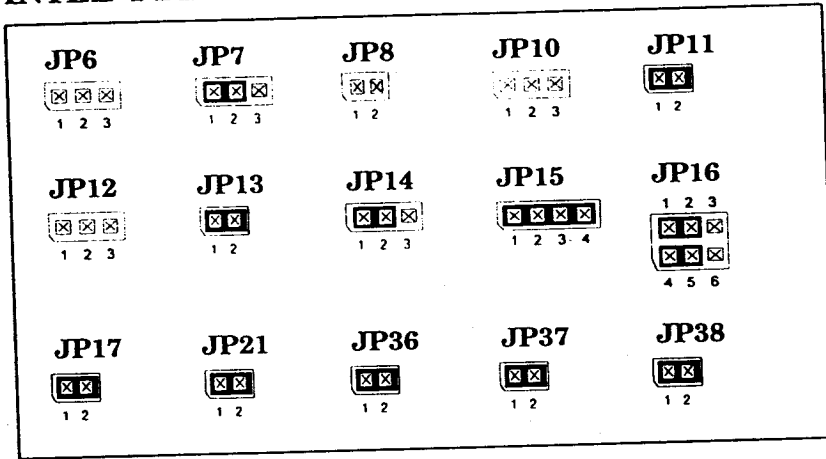
INTEL 486DX4 CPU (Internal CLK x 2.5)



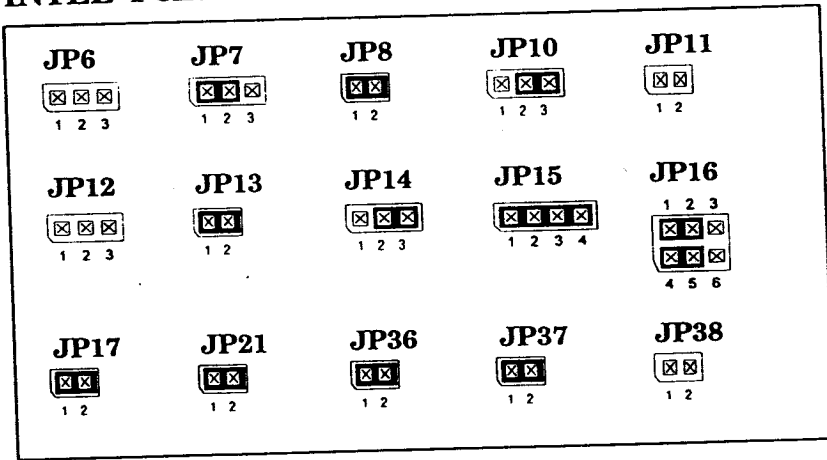
INTEL DX4 CPU (Internal CLK x 2)



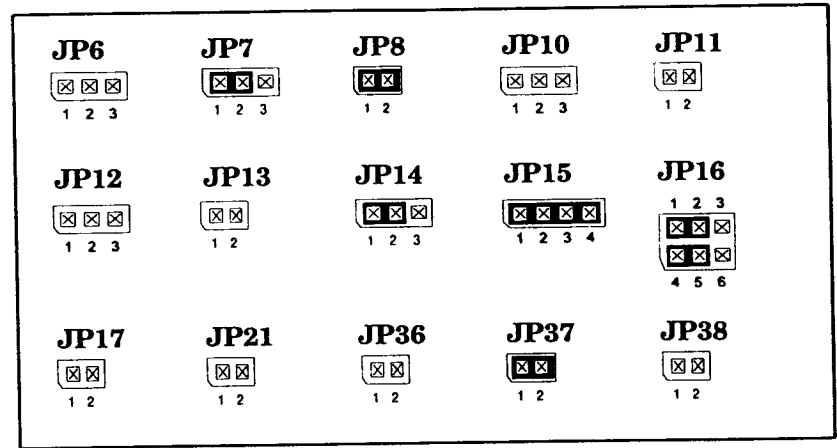
INTEL P24D CPU



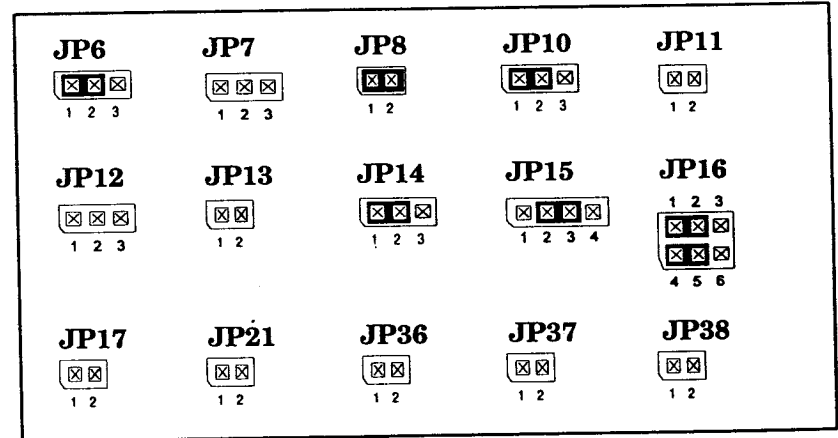
INTEL Pentium OverDrive Processor CPU



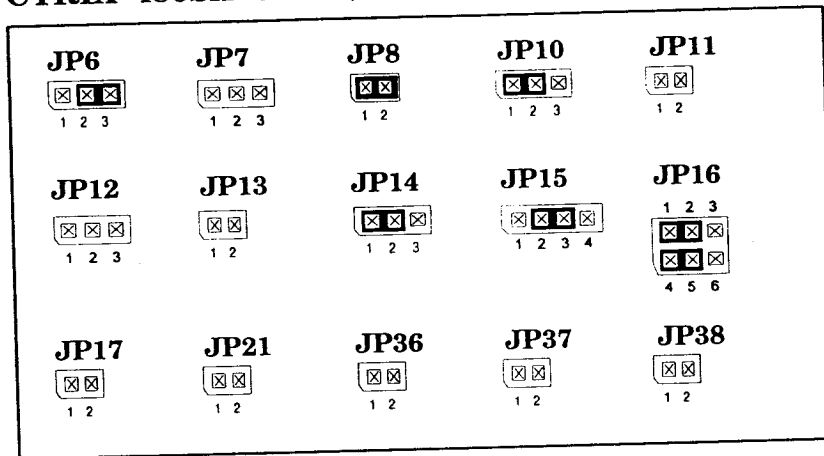
AMD 486DX CPU



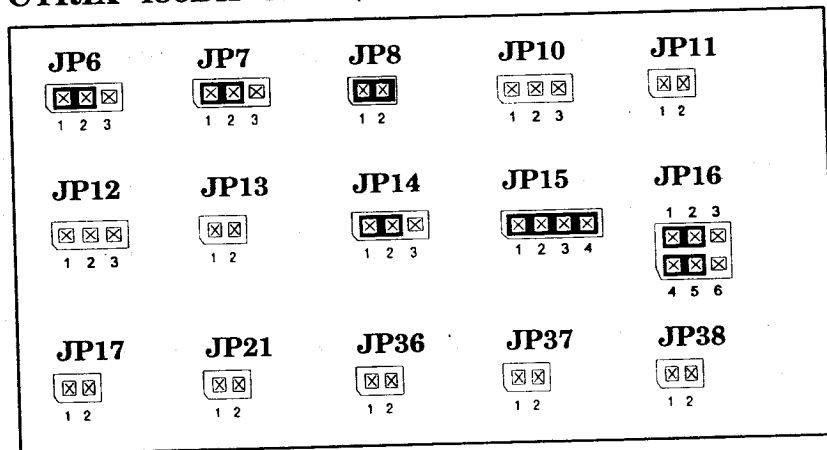
CYRIX 486SX CPU (1 x clk)



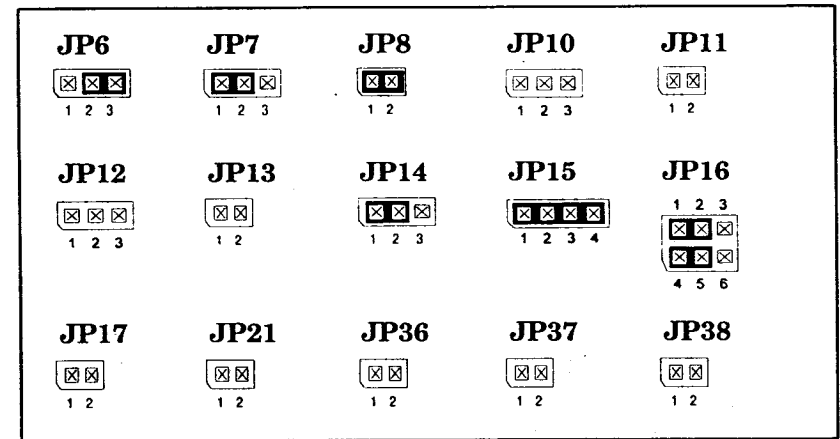
CYRIX 486SX CPU (2 x clk)



CYRIX 486DX CPU (1 x clk)



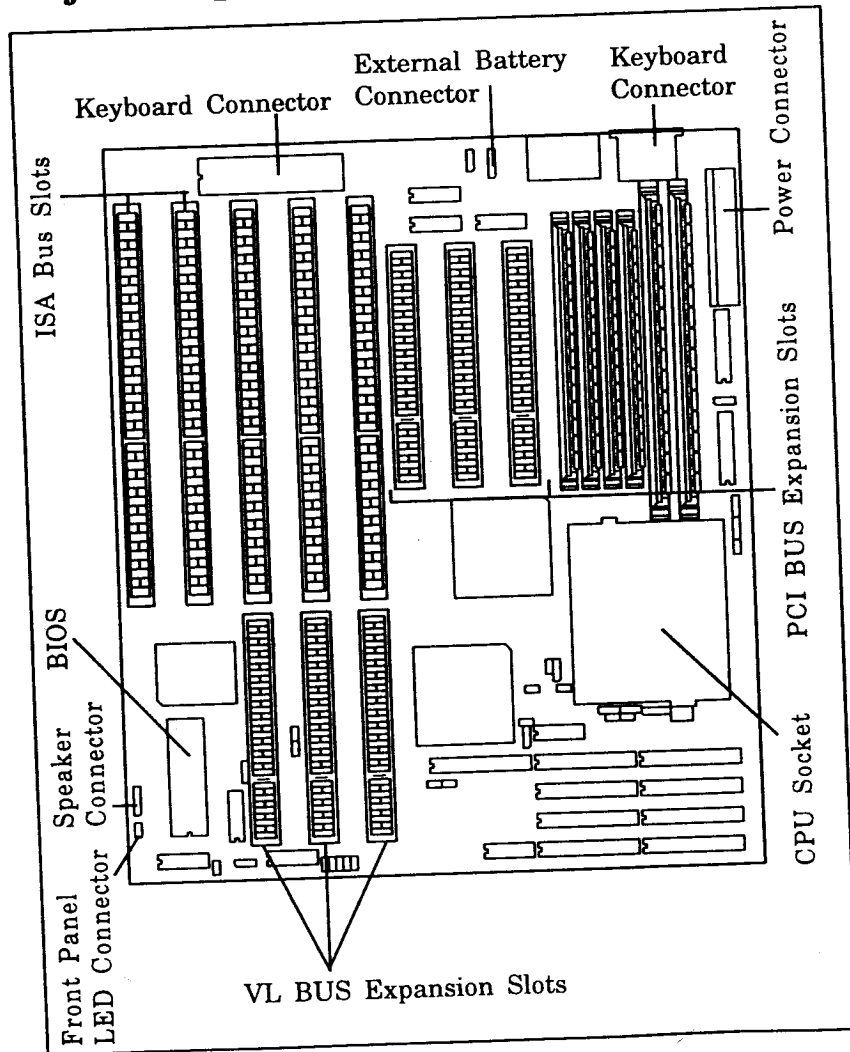
CYRIX 486DX CPU (2 x clk)



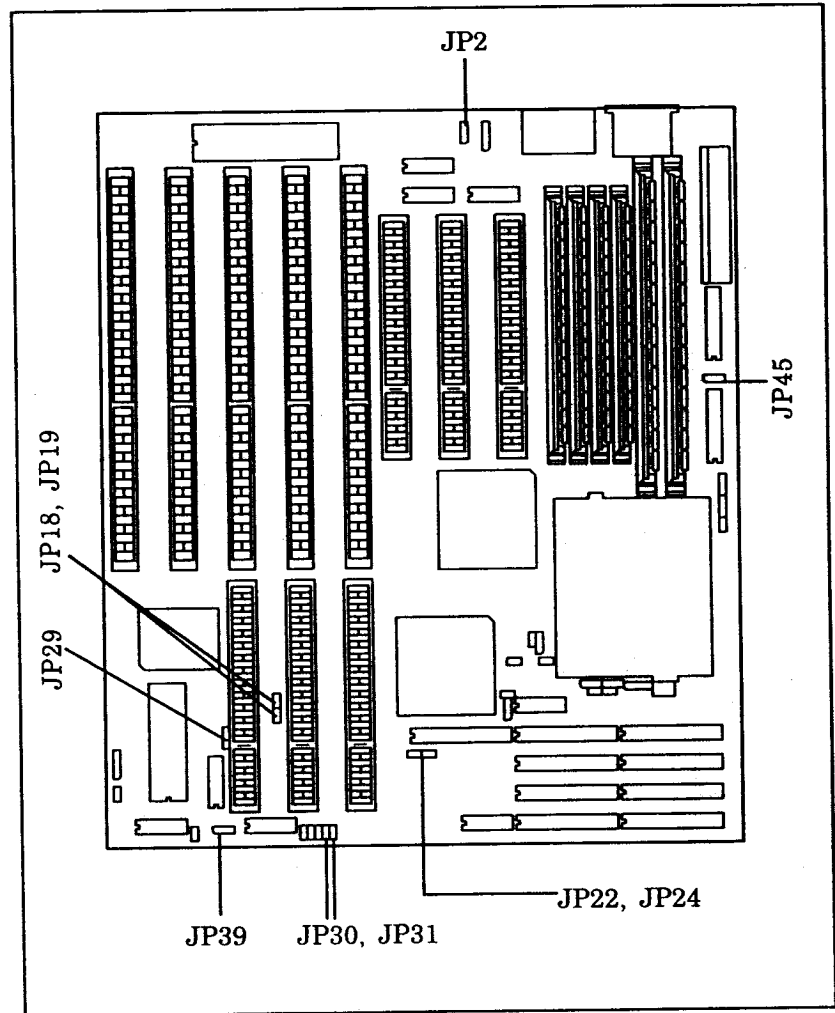
System Board Layout

The following diagrams show the relative positions of the jumpers, connectors, major components and memory banks on the system board.

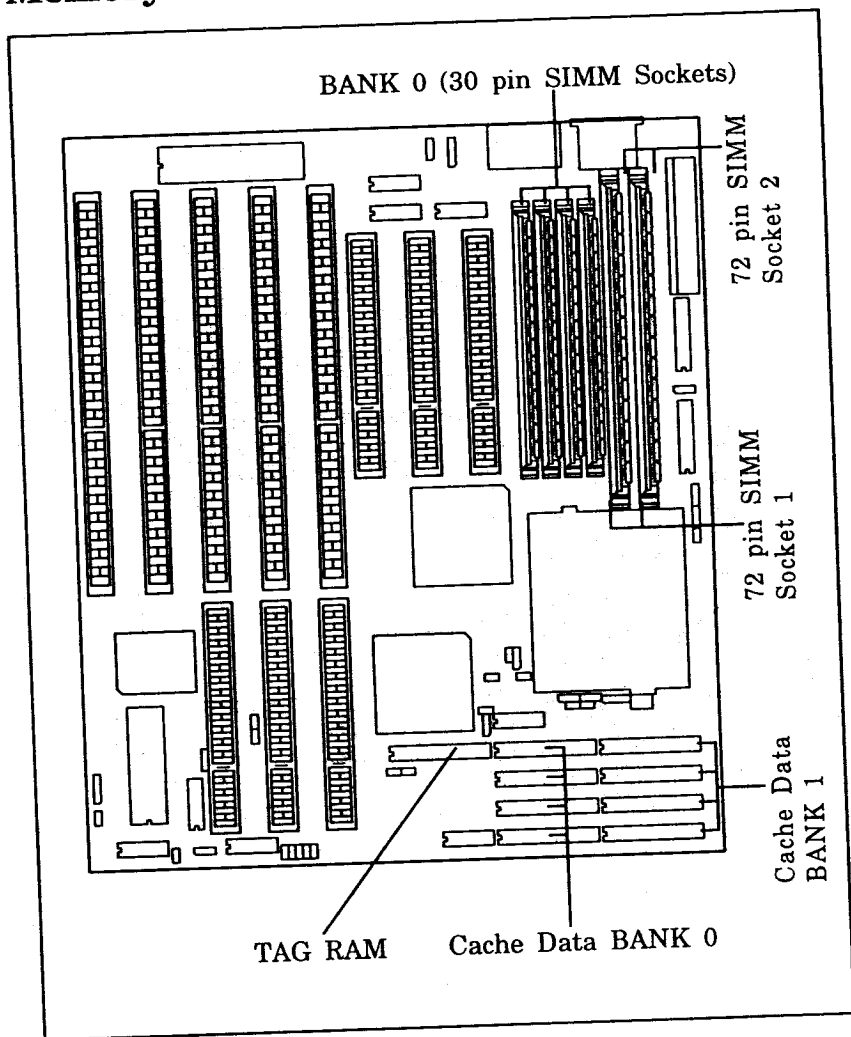
Major Component Locations (PCI/VL Ver.)



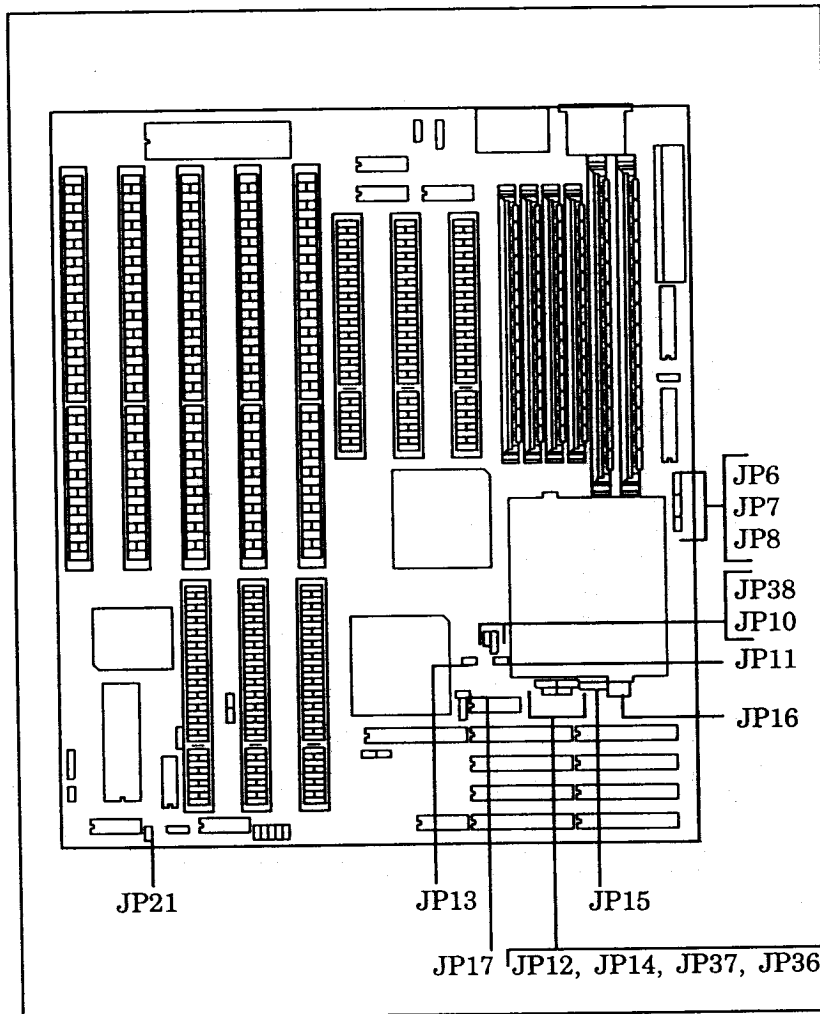
Jumper Locations (PCI/VL Ver.)



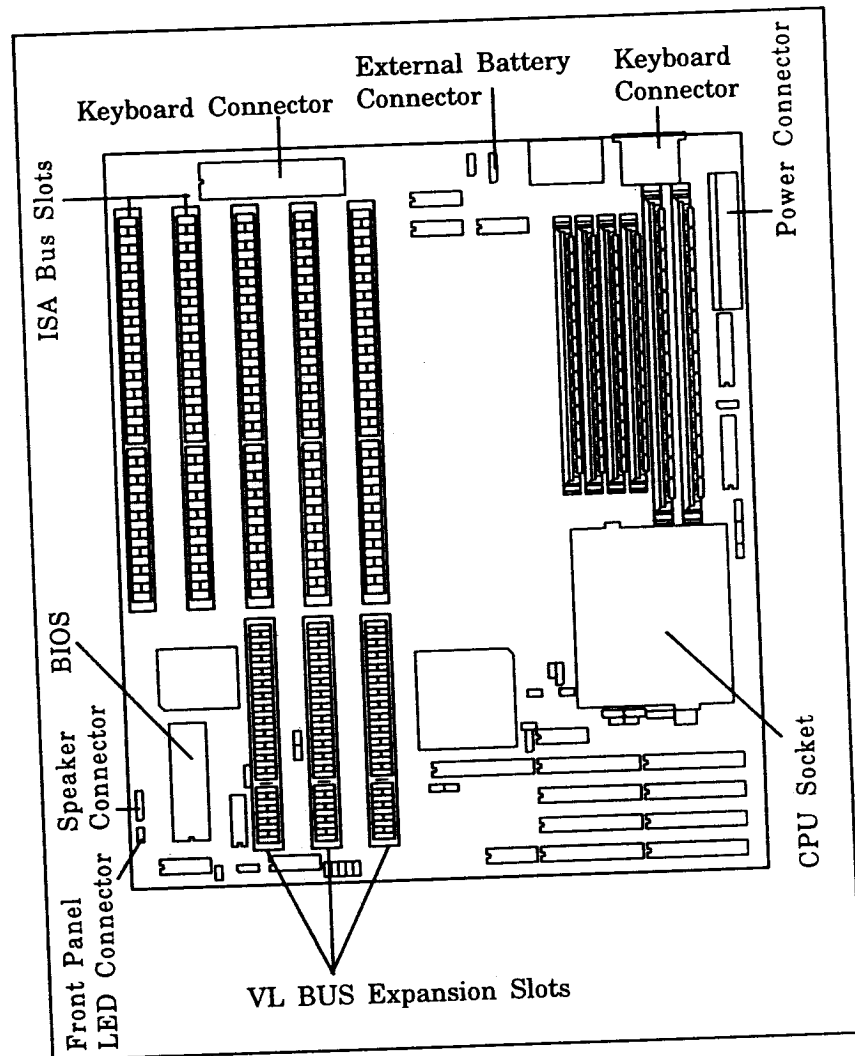
Memory Banks (PCI/VL Ver.)



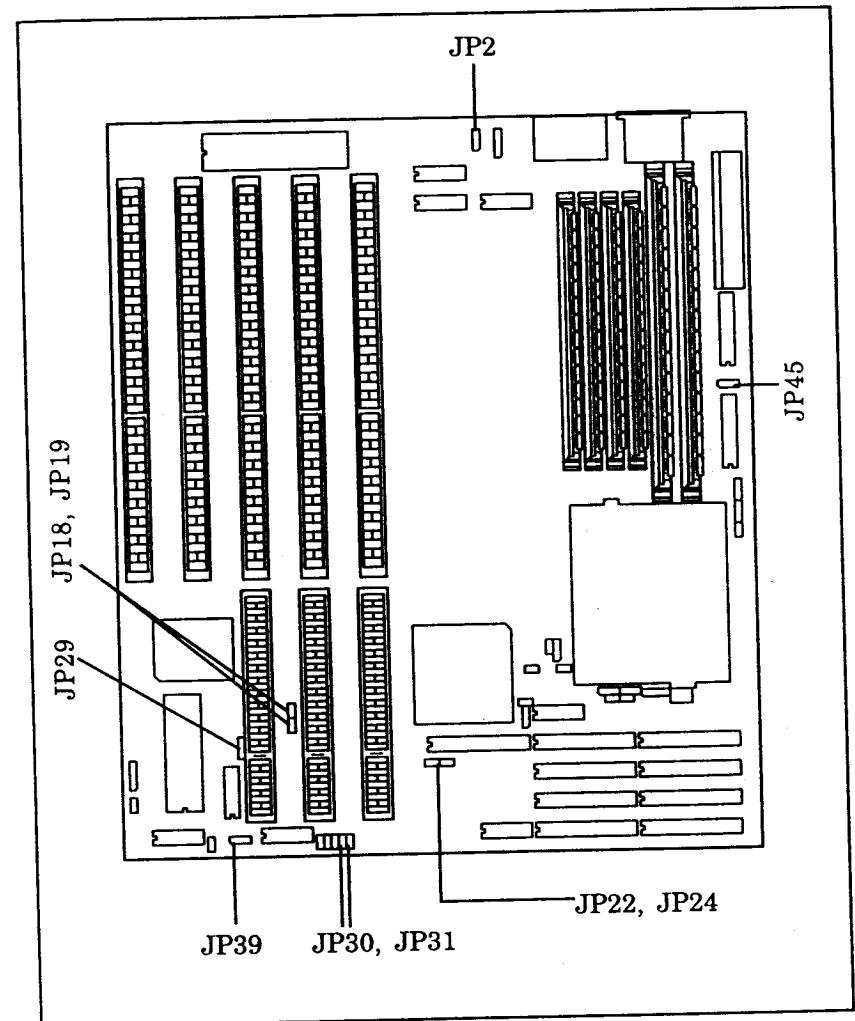
CPU Type Select Jumpers (PCI/VL Ver.)



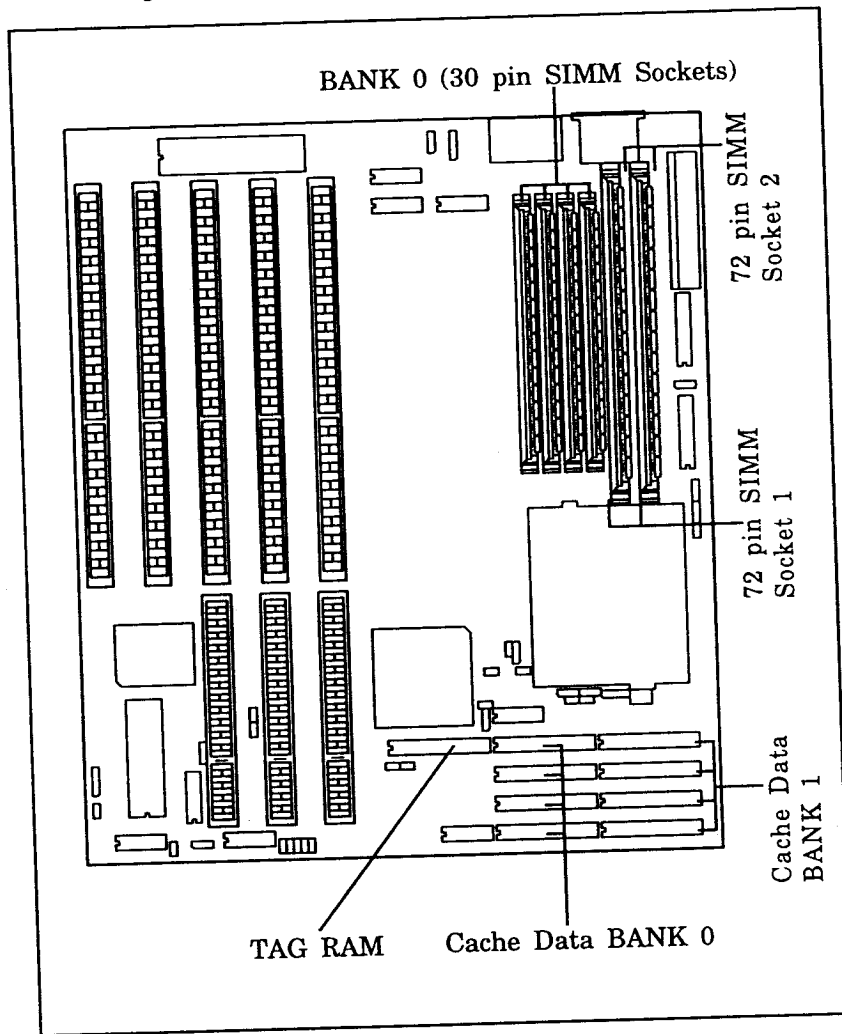
Major Component Locations (VL Ver.)



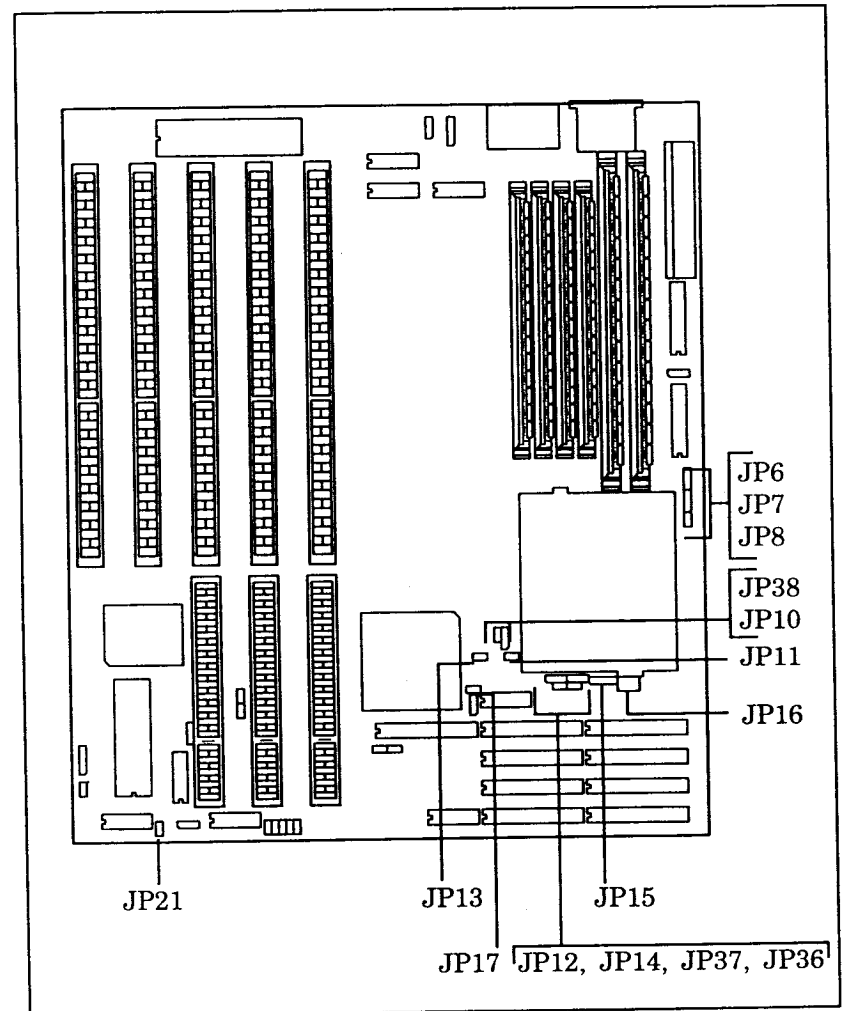
Jumper Locations (VL Ver.)



Memory Banks (VL Ver.)



CPU Type Select Jumpers (VL Ver.)



Chapter 2

WinBIOS Power-On Self Test

WinBIOS provides all IBM standard Power-On Self Test (POST) routines as well as enhanced WinBIOS POST routines. WinBIOS POST supports CPU internal diagnostics.

POST Phases

Every time the system is powered on, WinBIOS executes two types of POST routines:

System Test and Initialization (tests and initializes WinBIOS for normal operations) and

System Configuration Verification (compares defined configuration with hardware actually installed).

BIOS Error Reporting

BIOS errors are reported in one of two ways:

If...	then...
the error occurs before the display device is initialized,	a series of beeps sound. Beep codes indicate that a fatal error has occurred. WinBIOS Beep Codes are described on the next page.
the error occurs after the display device is	the error message is displayed. A prompt to press <F1> can also appear with displayed error messages.

Part C BIOS Setup

Chapter 1

Introduction

The American Megatrends™ WinBIOS™ installed in your system is a collection of device drivers, initialization routines, system data and other code that controls the interface between the operating system software and the system hardware such as your processor and peripherals connected. The following features are included:

POST

Upon powering up, WinBIOS performs a series of device initialization and diagnostic tests known as the power on self test (POST). POST can generate error messages and keep codes to indicate a system problem. If an error occurs during POST before WinBIOS has initialized and configured the display monitor, beeps are sounded to indicate a system problem.

WinBIOS Setup

WinBIOS has a system configuration utility with an easy-to-use graphical user interface, WinBIOS Setup. It is there for you to change the system configuration whenever you add new peripherals, or to fine tune the system performance. WinBIOS Setup is explained in this section.

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Beep Codes

Fatal errors, which halt the boot process, are communicated through a series of audible beeps. If WinBIOS POST can initialize the system video display, it displays the error message. Displayed error messages, in most cases, allow the system to continue to boot.

WinBIOS Beep Codes

Beeps	Error message	Description
1	Refresh Failure	The memory refresh circuitry is faulty.
2	Parity Error	Parity error in the base memory (the first 64 KB block) of memory.
3	Base 64 KB Memory Failure	Memory failure in first 64 KB.
4	Timer Not Operational	A memory failure in the first 64 KB of memory, or Timer 1 is not functioning.
5	Processor error	The CPU generated an error.
6	8042 - Gate A20 Failure	Cannot switch to protected mode.
7	Processor Exception Interrupt Error	The CPU on the CPU Card generated an exception interrupt.
8	Display Memory Read/Write Error	The system video adapter is either missing or its memory is faulty. This is not a fatal error.
9	ROM Checksum Error	The ROM checksum value does not match the value encoded in WinBIOS.
10	CMOS Shutdown Register Read/Write	The shutdown register for CMOS RAM has failed.
11	Cache memory bad — do not enable cache	The cache memory test failed. Cache memory is disabled. <i>Do not press <Ctrl> <Alt> <Shift> <+> to enable cache memory.</i>

Troubleshooting System Problems

What to Do If the Computer Beeps

Here is what you need to do if your computer has a WinBIOS and it starts beeping:

If the system beeps...	then...
1, 2, or 3 times...	reseat the memory SIMMs or DIPs. If the system still beeps, replace the memory.
6 times...	reseat the keyboard controller chip. If it still beeps, replace the keyboard controller. If it still beeps, try a different keyboard, or replace the keyboard fuse, if the keyboard has one.
8 times...	there is a memory error on the video adapter. Replace the video adapter, or the RAM on the video adapter.
9 times...	the BIOS ROM chip is bad. The system probably needs a new BIOS ROM chip.
11 times...	reseat the cache memory on the motherboard. If it still beeps, replace the cache memory.
4, 5, 7, or 10 times...	the motherboard must be replaced.

WinBIOS Displayed Error Messages

If an error occurs after the system display has been initialized, the error messages are displayed as follows:

ERROR Message Line 1

ERROR Message Line 2

Press <F1> to continue

and the system halts. The system does not halt if *Wait for <F1>* If *Any Error* in Advanced Setup is *Disabled*.

RUN SETUP UTILITY.

may also appear. Press <F1> to run AMIBIOS Setup or WinBIOS Setup if this message appears.