

# Chapter 1

## Introduction

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The 80486 VIP (VESA, ISA, PCI) mainboard is a high-performance mainboard based on the 80486 microprocessor and featuring VESA, 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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### Key Features

The advanced features of the 80486 VIP mainboard include:

- Supports CPUs running at 25/33/40/50/66/75/80/100 MHz including:
  - Intel P24D
  - Intel 80486DX4 (P24C)
  - Intel 80486DX / DX2-SL
  - Intel 80486DX2 / DX / SX
  - Cyrix CX486DX2 / DX / S
  - AMD DX2 / 4
  - UMC U5

(Key features continued)

- 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 64/128/256/512/1024 KB in two banks or one bank with 16 bytes line size
- DRAM auto-detection / banking
- Supports eight banks of DRAM including four 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**.
- Four PCI connectors and four 16 bit I/O slots including two 32-bit VL-Bus master 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
- Monitor power control connector
- Fan power control connector
- On-board Two Port PCI IDE controller

# Mainboard Component Locations

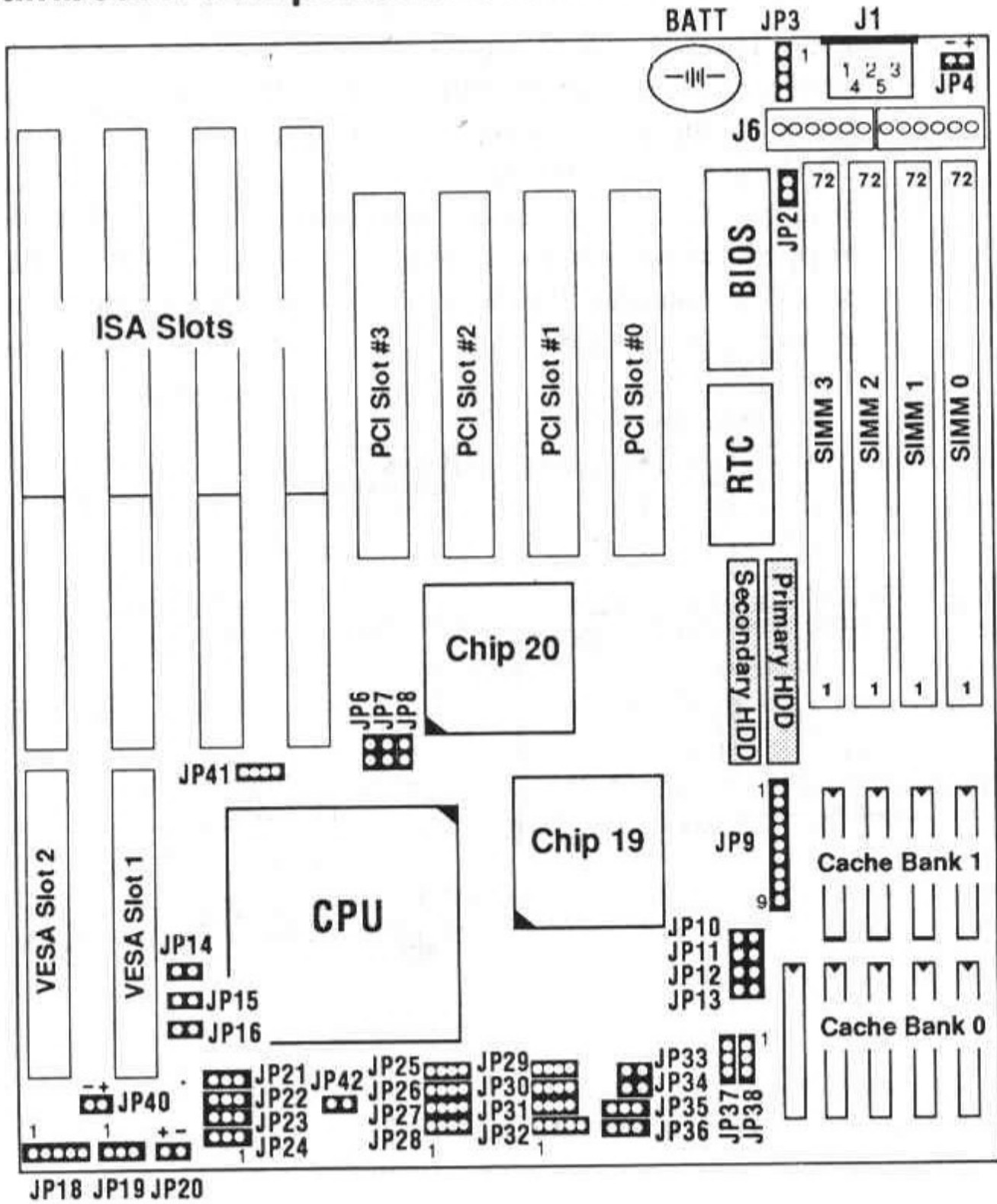


Figure 1-1. Mainboard Component Locations

## J6 - 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

## JP3-External Battery Connector

You can attach an external battery to JP3. The default setting is 2-3, for using the internal battery.

Pin	Description
1	External Battery Positive
2	Internal Battery Positive
3	Connect to CMOS
4	Ground



## JP4 - Monitor Power Control Connector

Attach the power control signal cable from a Green monitor to this connector.

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

## JP2 - Flash EPROM BIOS Jumper

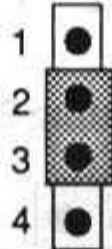
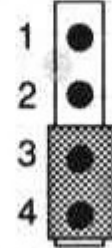
The mainboard uses two types of Flash chip — 5 volt and 12 volt. Set the mainboard for either type with jumper JP2. You can update both types with new BIOS files as they come available.

Description	JP2
5 volt Flash programming	
12 volt Flash programming	

## JP3 - CMOS RAM Discharge Jumper

Jumper JP3 lets you discharge the mainboard's CMOS memory and Real Time Clock (RTC). The CMOS memory maintains the system configuration information that is discussed in Chapter 3; the RTC provides the system with the date and time.

You should set Discharge mode for only a moment when you wish to discharge CMOS, and then make sure this jumper is set for Internal battery mode or connect an External battery to retain your new settings.

Description	JP3
External battery	Connect an external battery to pins 1-4
Internal battery Mode	
Discharge CMOS	

## JP25~JP38 – CPU Type Jumpers

Set jumpers JP25~JP38 so that the mainboard recognizes the type of CPU installed. Set CPU type as shown below.

Jumper	SX	DX	DX4-SL	SX-SL	Cyx-SX	Cyx-DX	U5	P24D	AMD DX4	AMD DX2
JP25	2-3	1-2, 3-4	1-2, 3-4	2-3	2-3	1-2, 3-4	2-3	1-2, 3-4	1-2, 3-4	1-2, 3-4
JP26	OFF	3-4	3-4	OFF	OFF	3-4	1-2, 3-4	3-4	3-4	3-4
JP27	OFF	OFF	1-2	1-2	1-2	1-2	2-3	1-2, 3-4	OFF	OFF
JP28	OFF	OFF	OFF	OFF	2-3	2-3	OFF	3-4	OFF	OFF
JP29	2-3	2-3	1-2	1-2	1-2	1-2	2-3	1-2	2-3	2-3
JP30	OFF	OFF	1-2	1-2	2-3	2-3	OFF	1-2, 3-4	OFF	OFF
JP31	OFF	OFF	OFF	OFF	2-3	2-3	3-4	OFF	OFF	OFF
JP32	OFF	OFF	2-3, 4-5	2-3, 4-5	1-2, 3-4	1-2, 3-4	OFF	2-3, 4-5	OFF	OFF
JP33	ON	ON	OFF	OFF	OFF	OFF	ON	OFF	ON	ON
JP35	OFF	OFF	OFF	OFF	1-2	1-2	OFF	OFF	OFF	OFF
JP36	2-3	2-3	2-3	2-3	OFF	OFF	2-3	1-2	1-2	2-3
JP37	1-2	1-2	1-2	1-2	1-2	1-2	2-3	1-2	1-2	1-2
JP38	1-2	1-2	1-2	1-2	2-3	2-3	1-2	1-2	1-2	1-2

## JP6~JP8 – CPU Speed Jumpers

The mainboard has a clock generator that lets you choose the CPU frequency by settings jumpers JP6~JP8. You can set the CPU speed for 25 MHz, 33 MHz, 40 MHz or 50 MHz as shown below.

CPU clock	JP6	JP7	JP8
25 MHz			
33 MHz			
40 MHz			
50 MHz			



## JP21~JP24, JP42 – CPU Power Jumpers

Check your CPU for the voltage it requires and set jumpers JP21~JP24 and JP42 accordingly as shown below.

CPU Power	JP21~JP24 (Set all four jumpers the same)	JP42
3.3 Volts		
4 volts		
5 Volts		

## JP34– Intel 80486DX4 Clock Multiplier Jumper

Set JP34 as shown below.

Intel 80486DX4 Clock Multiplier	JP34
3 X	 A diagram of a two-pin jumper cap with two solid black circular pins.
2 X	 A diagram of a two-pin jumper cap with two solid black circular pins, and a shaded rectangular area covering the space between the pins.



## Memory Installation

The mainboard provides four SIMM sockets that support 8 banks of DRAM with auto-banking and auto-detection functions. You can install up to 256MB of memory using combinations of 256K, 1M, 2M, 4M, 8M, 16M, 32M, and 64M SIMM modules. Note that if you install modules into both SIMM 0 and SIMM 1, or both SIMM 2 and SIMM 3, the modules must be the same type — examples are shown in the bolded table cells below.

<b>Total Memory</b>	<b>SIMM 0 Bank 0, 1</b>	<b>SIMM 1 Bank 2, 3</b>	<b>SIMM 2 Bank 4, 5</b>	<b>SIMM 3 Bank 6, 7</b>
1M	1M			
2M	1M	1M		
2M	2M (2 bank)			
3M	1M	1M	1M	
3M	2M (2 bank)		1M	
4M	1M	1M	1M	1M
4M	2M (2 bank)		1M	1M
4M	2M (2 bank)		2M (2 bank)	
5M	4M		1M	
6M	4M		1M	1M
6M	4M		2M (2 bank)	
8M	2M (2 bank)	2M (2 bank)	2M (2 bank)	2M (2 bank)
8M	4M		2M (2 bank)	2M (2 bank)
8M	4M		4M	
8M	8M (2 bank)			
9M	4M	4M	1M	
9M	8M (2 bank)		1M	
10M	4M	4M	1M	1M

(table continued)

<b>Total Memory</b>	<b>SIMM 0 Bank 0, 1</b>	<b>SIMM 1 Bank 2, 3</b>	<b>SIMM 2 Bank 4, 5</b>	<b>SIMM 3 Bank 6, 7</b>
10M	4M	4M	2M (2 bank)	
10M	8M (2 bank)		2M (2 bank)	
12M	4M	4M	2M (2 bank)	2M (2 bank)
12M	4M	4M	4M	
12M	8M (2 bank)		4M	
:	:	:	:	:
:	:	:	:	:
:	:	:	:	:
96M	64M		16M	16M
128M	64M		32M (2 bank)	32M (2 bank)
128M	64M	64M		
129M	64M	64M	1M	
144M	64M	64M	8M (2 bank)	8M (2 bank)
160M	64M	64M	32M (2 bank)	
256M	64M	64M	64M	64M