

INTRODUCTION

The 80486VL.A system board is a high performance, function enhanced computer system board that combines the power of an Intel P24C, 486DX or 486SX AMD. Cyrix CPU. The board design includes a variety of high-powered features. Its high performance capability can provide an ideal system board solution for a wide range of demanding applications like CAD/CAM /CAE, database management, image processing, artificial intelligence, desktop publishing, and the environments of network and multiuser systems. The 80486VL.A system board fully utilizes the 32-bit CPU power.

The 80486VL.A system board also incorporates a P24C, 486DX or 486SX microprocessor which has an 1 KByte static RAM cache. Included is a four-way set associative cache controller implemented on the P24C/486DX/486SX chip and an internal enhanced numeric coprocessor unit. The system also features 128KB, 256KB, 512KB and 1MB of external cache memory. Because of its unique memory subsystem design, the 80486VL.A allows for 1 megabyte to 64 megabytes of 32-bit high speed memory by using 256KB, 1MB, 4MB and 16MB SIMM modules.

System Features

- Intel P24C/486DX/486SX microprocessor
 - 1KB static RAM w/ four-way set associative internal cache
 - Internal enhanced numeric coprocessor unit
- Optional 128KB, 256KB, 512KB and 1MB external cache
- SIMM module memory on system board expandable to 64 megabytes

- **Cprix MICROPROCESSORS**

Internal write Back/Write THRU option

For optimum Performance

- **80486VL-V.VII** : **Eight 16 bit ISA Bus and three VESA Bus expansion slots**
- **80486VL-V.VIII** : **Seven 16 bit ISA Bus and three VESA Bus expansion slots**
- **80486VL-V.IX** : **SIX 16 bit ISA Bus and three VESA Bus expansion slots**

80486VL-VI

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External Battery (J1)

The 80486VL.A system board provides one external battery supply connector. The pin assignments are:

| <u>J1 Pin#</u> | <u>Assignment</u> |
|----------------|-------------------|
| 1 | Battery Positive |
| 2 | No connection |
| 3 | Ground |
| 4 | Ground |

Keyboard Connector

The keyboard connector is a 5-pin DIN connector. This connector consists of a 90-degree printed circuit board PCB mounting. The pin assignments are:

| <u>Pin#</u> | <u>Assignment</u> |
|-------------|-------------------|
| 1 | Keyboard Clock |
| 2 | Keyboard Data |
| 3 | Spare |
| 4 | Ground |
| 5 | +5V |

CMOS RAM Discharge Jumper (JP10)

The factory setting of jumper JP1 shorts Pins 2 and 3 for Battery Charge Mode. The pin assignments are:

| <u>JP10 Pin#</u> | <u>Assignment</u> |
|------------------|-------------------|
| 1-2 | Normal |
| 2-3 | CMOS Discharge |

Monitor Display Setting (JP35)

Jumper JP35 sets the monitor display setting for color or monochrome. The pin assignments are:

| <u>JP35</u> | <u>Assignment</u> |
|-------------|-------------------|
| Close | EGA |
| Open | Monochrome, VGA |

CPU Clock Selection

The 80486VL.A system board uses a CPU frequency generator to generate the clock instead of oscillator. There are three jumpers to set for the CPU clock selection. The jumper selections are:

| CPU Clock | JP6 | JP7 | JP8 |
|-----------|-------|-------|-------|
| 20MHz | Close | Open | Close |
| 25MHz | Open | Close | Close |
| 33MHz | Close | Close | Open |
| 40MHz | Open | Open | Close |
| 50MHz | Close | Open | Open |

SRAM Selection

The following jumpers are used to set the Static RAM (SRAM) selection. The jumper selections are:

| SRAM | JP4 | JP5 |
|------|-----|-----|
| 128K | 1-2 | 1-2 |
| 256K | 2-3 | 1-2 |
| 512K | 2-3 | 2-3 |
| 1MB | 2-3 | 2-3 |

Table 1.2: SRAM Selection

JP1 - Amount of Cache Data

1-2: One Bank

2-3: Two Banks

JP2

1-2: 64K x 8

2-3: 32K x 8, 128K x 8

JP3 - Amount of Cache Data

1-2, 3-4: One Bank of 32K x 8, 128K x 8

2-3, 4-5: Two Banks of 32K x 8, 128K x 8

Green PC Function (JP23)

This function allows your system to be energy efficient by lowering the power consumption of your monitor and hard disk drive. It is required by the EPA's Energy Star Program and all U.S. Government agencies. The jumper settings are as follows:

| <u>JP23 Pin#</u> | <u>Setting</u> |
|------------------|---------------------|
| Open | Non-Green (default) |

CPU Type Selection

Configuration of the correct CPU setting allows compatibility with various low-end and high-end applications. The jumper settings are:

| CPU Type | JP28 | JP27 | JP26 | JP25 | JP24 | JP22 | JP21 |
|--------------|------|------|------|---------|------|------|------|
| 486SX | Open | Open | Open | Open | Open | Open | 2-3 |
| 486DX | Open | Open | Open | Open | 3-4 | Open | 2-3 |
| Cyrix 486DX | 2-3 | 2-3 | 2-3 | 1-2,3-4 | 3-4 | 2-3 | 2-3 |
| 486DX/SL | 4-5 | 3-4 | Open | 2-3 | 3-4 | Open | 2-3 |
| ※ P24C (DX4) | 4-5 | 3-4 | Open | 2-3 | 3-4 | Open | 2-3 |

| CPU Type | JP19 | JP18 | JP14 | JP13 | JP12 | JP30 | JP32 |
|--------------|------|------|-------|------|------|------|------|
| 486SX | Open | 2-3 | Open | 2-3 | 1-2 | 1-2 | 2-3 |
| 486DX | Open | 1-2 | Close | 2-3 | 1-2 | 1-2 | 2-3 |
| Cyrix 486DX | Open | 1-2 | Close | 1-2 | 2-3 | 1-2 | 2-3 |
| 486DX/SL | 1-2 | 1-2 | Close | 2-3 | 1-2 | 1-2 | 2-3 |
| ※ P24C (DX4) | 1-2 | 1-2 | Close | 2-3 | 1-2 | 2-3 | 2-3 |

Table 1.3: CPU Type Selection

JP28. 2-3 CLOSE: AMD DX2-66, AMD DX2-80
2-3, OPEN: OTHER CPU [EXCEPT CYRIX CPU]

JP31 - 1-2 = CLKIN and CPUCLK same phase
2-3 = CLKIN Delay for CPUCLK

JP30 1-2: 5V CPU; JP30 2-3: 3.3V CPU

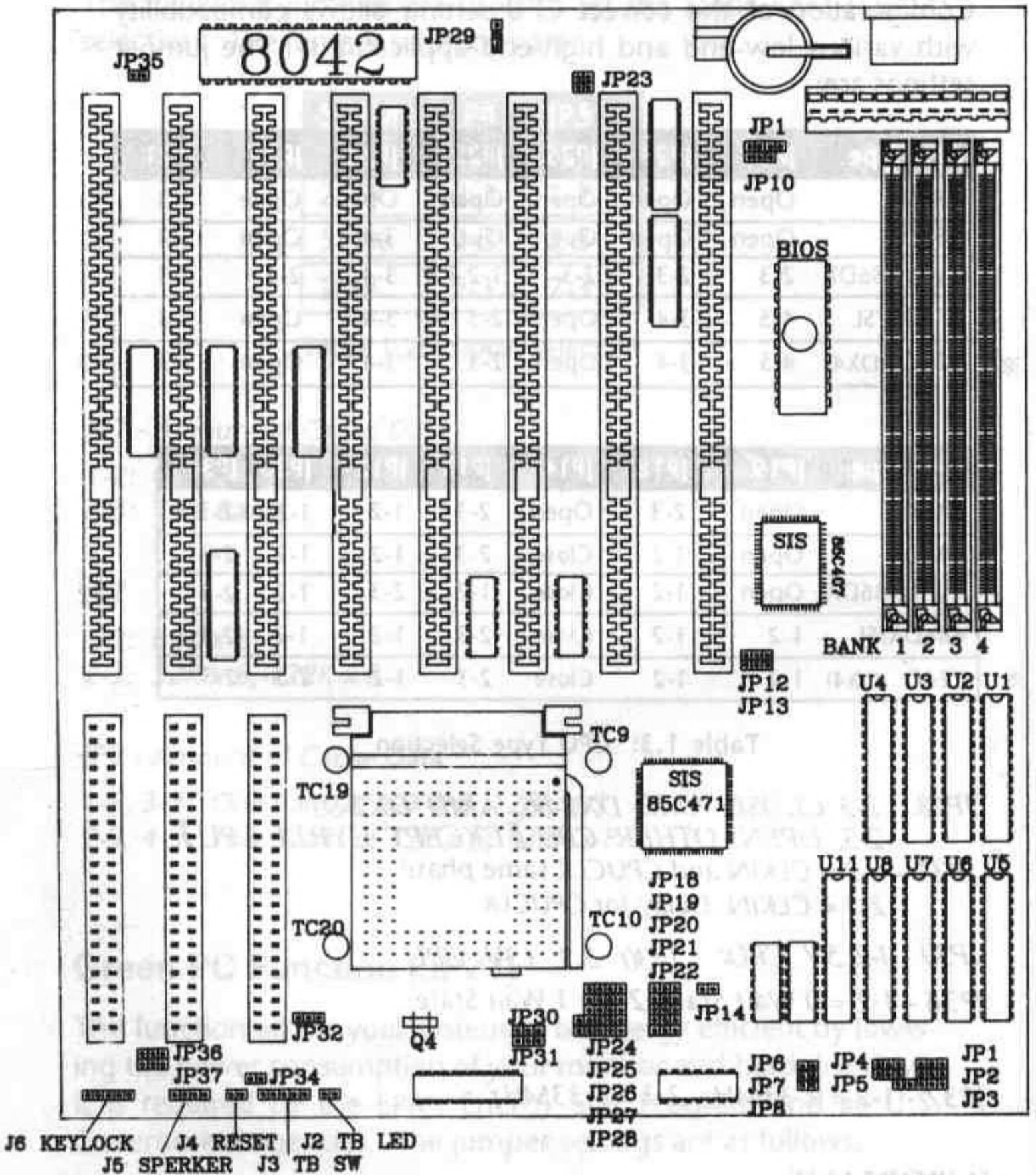
JP36 - 1-2 = 0 Wait State, 2-3 = 1 Wait State

JP37 - 1-2 = < 33MHz, 2-3 = > 33MHz

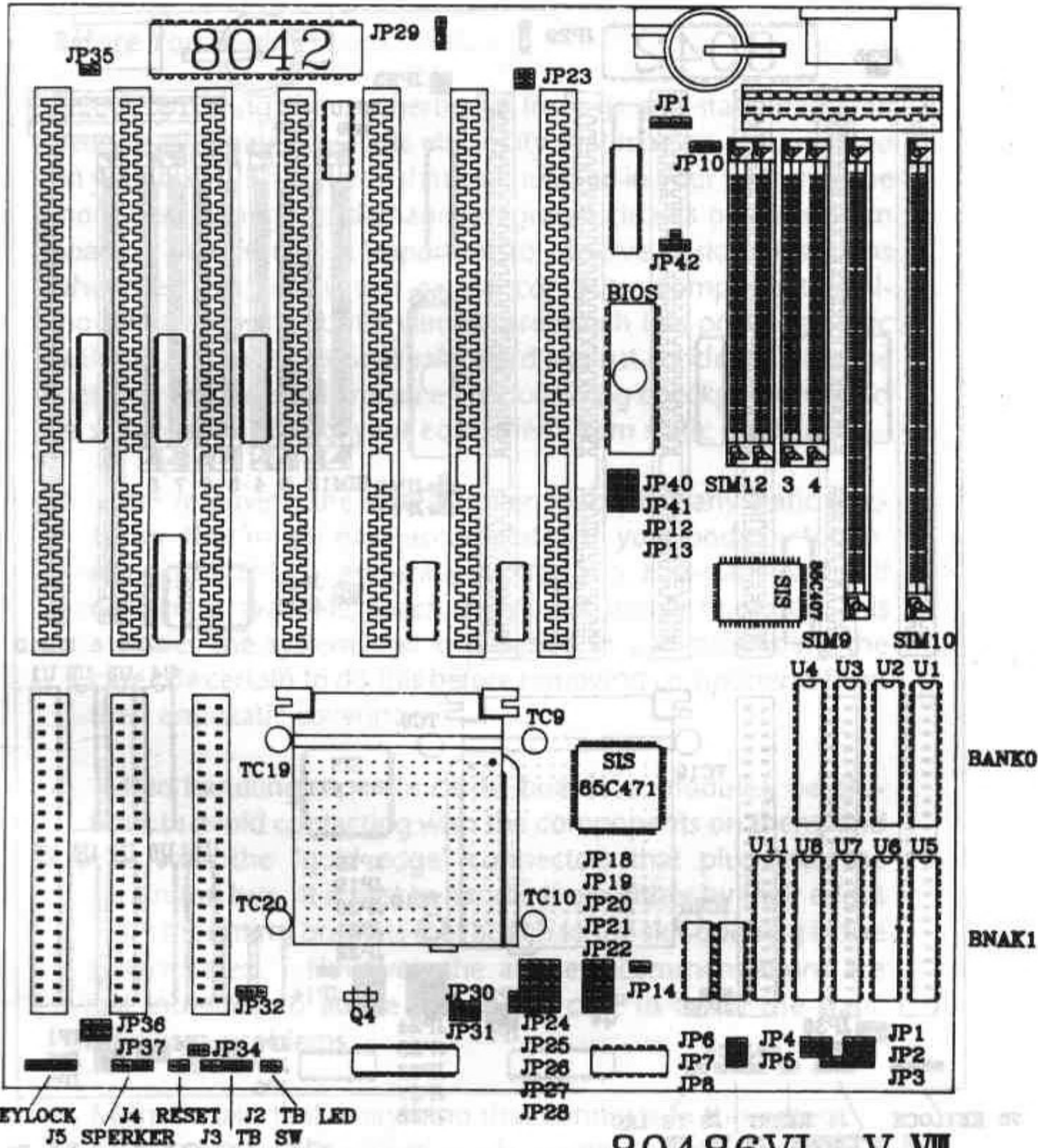
IMPORTANT

※ Only valid for Board with voltage regulator at Q4
(marked on Page 12)

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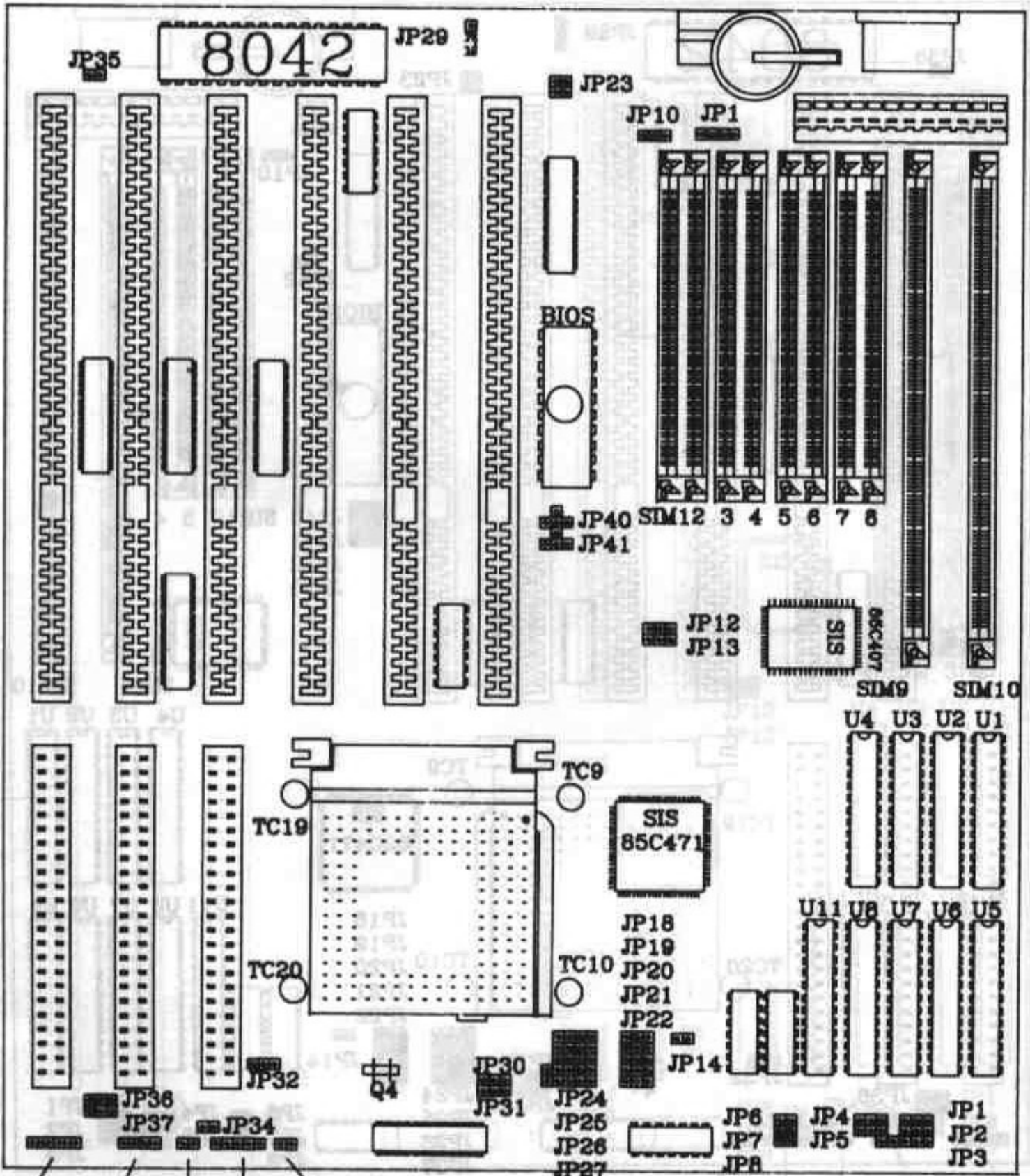


80486VL-V.VII



80486VL-V.VII

80486VL-V.IX



J6 KEYLOCK / J4 RESET / J2 TB LED
 J5 SPERKER / J3 TB SW

80486VL-V.IX

Memory Configuration

Memory can be installed using 256KB, 1MB, 4MB or 16MBx9 SIMM modules. The following tables include the memory configurations available:

| Total Memory | SIMM Bank 0 | SIMM Bank 1 | SIMM Bank 2 | SIMM Bank 3 |
|--------------|-------------|-------------|-------------|-------------|
| 1MB | 1MB | | | |
| 2MB | 1MB | 1MB | | |
| 2MB | 2MB | | | |
| 4MB | 4MB | | | |
| 5MB | 1MB | 4MB | | |
| 6MB | 1MB | 1MB | 4MB | |
| 6MB | 2MB | 4MB | | |
| 8MB | 4MB | 4MB | | |
| 8MB | 8MB | | | |
| 10MB | 1MB | 1MB | 4MB | 4MB |
| 10MB | 1MB | 1MB | 8MB | |
| 12MB | 4MB | 4MB | 4MB | |
| 12MB | 8MB | 4MB | | |
| 16MB | 4MB | 4MB | 4MB | 4MB |
| 16MB | 4MB | 4MB | 8MB | |
| 16MB | 8MB | 8MB | | |
| 16MB | 8MB | 4MB | 4MB | |
| 16MB | 16MB | | | |
| 17MB | 1MB | 16MB | | |
| 18MB | 1MB | 1MB | 16MB | |
| 18MB | 2MB | 16MB | | |
| 20MB | 4MB | 16MB | | |
| 24MB | 4MB | 4MB | 16MB | |
| 24MB | 8MB | 16MB | | |
| 32MB | 16MB | 16MB | | |
| 32MB | 32MB | | | |
| 36MB | 4MB | 16MB | 16MB | |

Table 2.1: Memory Configurations

| Total Memory | SIMM Bank 0 | SIMM Bank 1 | SIMM Bank 2 | SIMM Bank 3 |
|--------------|-------------|-------------|-------------|-------------|
| 36MB | 4MB | 16MB | 16MB | |
| 40MB | 4MB | 4MB | 16MB | 16MB |
| 40MB | 4MB | 4MB | 32MB | |
| 40MB | 8MB | 16MB | 16MB | |
| 40MB | 8MB | 32MB | | |
| 48MB | 16MB | 16MB | 16MB | |
| 64MB | 16MB | 16MB | 16MB | 16MB |
| 64MB | 16MB | 16MB | 32MB | |
| 64MB | 32MB | 32MB | | |

Table 2.1: Memory Configurations (cont.)

System Speed Change

The 80486VL.A system board can be configured for full or low speeds to accommodate most DOS applications. On power-up, the system will operate in full speed (factory setting). You can switch between full and low speeds by toggling the turbo switch or pressing the keyboard keys.

Toggling the Turbo Switch

- 1) Set the turbo switch to the ON position to slow down the system speed.
- 2) Set the turbo switch to the OFF position to speed up the system speed.

Pressing the Keyboard Keys

Note: Before using the keyboard keys to control the system speed, the turbo switch has to be set to the OFF position.

- 1) Press the <CTRL> <ALT> keys while simultaneously pressing the <-> key to slow down the system speed.
- 2) Press the <CTRL> <ALT> keys while simultaneously pressing