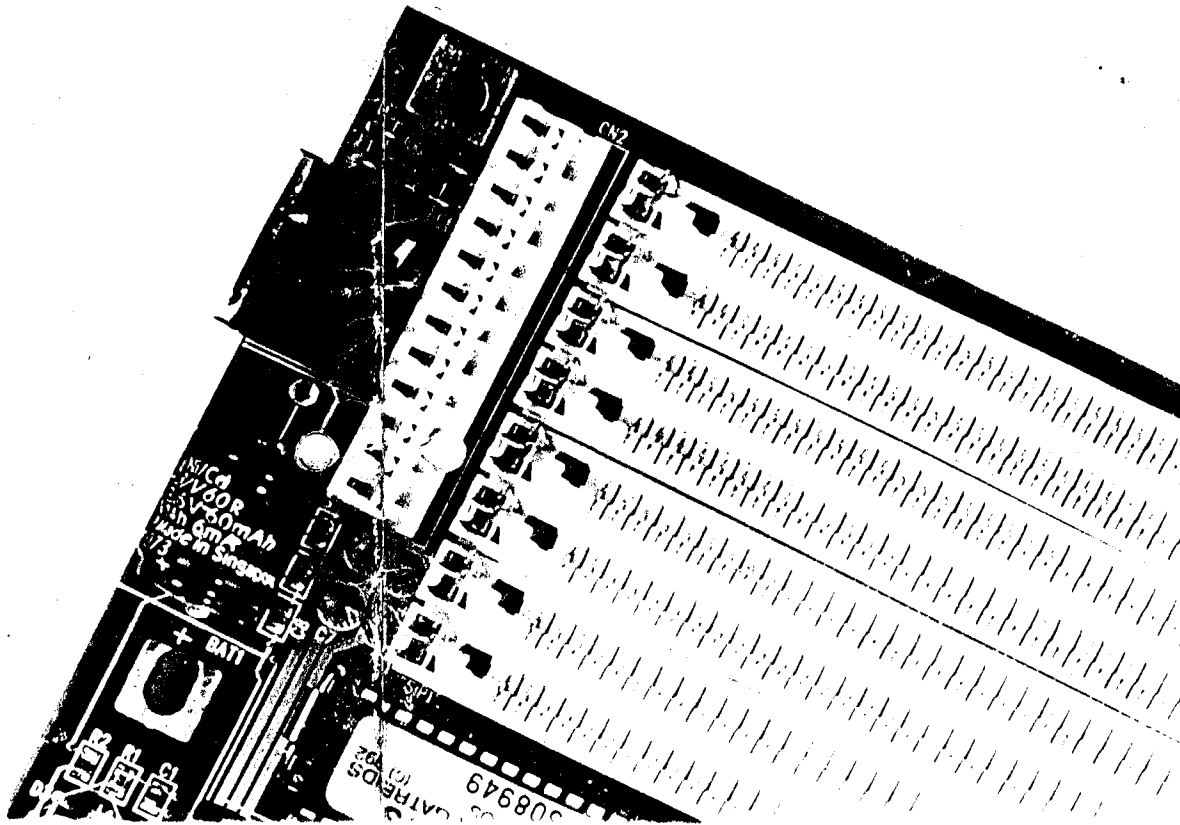# 80486

486VESA Green Mainboard
User's Guide &
Technical Reference

SOYO

About This Guide

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Edition: April 1994

Version 4.3

25J/K/L SERIAL

100% POST-CONSUMER RECYCLED PAPER

Table of Contents

1   Introduction

The 486 VESA mainboard is a high-performance system board that supports Intel 486DX2/DX/SX/SL Enhanced 486, P24T, P24D, DX4, and Cyrix M7 CPUs. The mainboard is fully compatible with industry standards, while incorporating many technical enhancements.

The 486 VESA mainboard offers superior system performance, compatibility, and reliability, and is the ideal choice for a wide variety of system applications.

Key Features

*   Fully AT compatible. Supports Intel 486DX2/DX/SX/SL Enhanced 486, P24T, P24D, 486DX4 (P24C) and Cyrix M7 CPUs
*   Supports internal cache (CPU) write-back (P24T, P24D,M7) systems
*   Supports Power Management Mode
    —   Supports the SMM and the SMI
    —   CPU Stop Clock Function
    —   Four Power Saving States (normal/doze/standby/suspend)
    —   Supports the APM control
    —   Supports Berg Switch control
    —   Power Saving also on non-SMI CPU
    —   More System Event Monitoring and the Power Saving Control
*   Direct map cache controller that supports 64K, 128K, or 256K cache size
*   Fast page burst mode DRAM controller
*   Memory configurations from 1MB to 128MB using combinations of 80ns 256K, 512K, 1M, 2M, 4M and 16M SIMM modules. Uses four 30-pin and two 72-pin DRAM modules in multiple configurations.
*   Video ROM Cacheable
*   Shadow RAM in Increments of 32KB
*   Hardware turbo speed switch
*   Seven 16-bit slots, two master VESA slots, and one slave VESA slot
*   Support for both 5V and 3.45V microprocessors.

Unpacking the Mainboard

The mainboard package contains:

*   The 486 VESA Mainboard
*   This User's Guide

Note: Do not unpack the mainboard until you are ready to install it.

Follow the precautions below while unpacking the mainboard.

1.   Before handling the mainboard, ground yourself by grasping an unpainted portion of the system's metal chassis.

2.   Remove the mainboard from its anti-static packaging and place it on a grounded surface, component side up.

3.   Check the mainboard for damage. If any chip appears loose, press carefully to seat it firmly in its socket.

Do not apply power if the mainboard appears damaged. If there is damage to the board contact your dealer immediately.

Electrostatic Discharge Precautions

Make sure you ground yourself before handling the mainboard or other system components. Electrostatic discharge can easily damage the components. Note that you must take special precaution when handling the mainboard in dry or air-conditioned environments.

Abide by the precautions below to protect your equipment from electrostatic discharge:

*   Do not remove the anti-static packaging until you are ready to install the mainboard and other system components.
*   Ground yourself before removing any system component from its protective anti-static packaging. To ground yourself, grasp the expansion slot covers or other unpainted portions of the computer chassis.
*   Frequently ground yourself while working, or use a grounding strap.
*   Handle the mainboard by the edges and avoid touching its components.

Mainboard Layout

*The default setting is for an Intel DX2-66-CPU, using 72-pin SIMM, and 256K cache (32K*8 pcs).
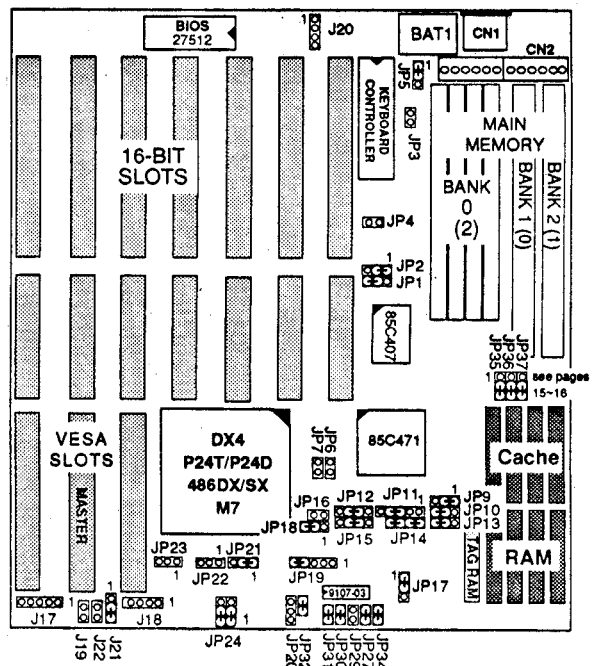

Figure 1-1. Mainboard Layout

Note: If you use a CPU not listed in this manual, please contact your dealer to determine the correct CPU settings.

2 Hardware Setup

This chapter explains how to configure the mainboard's hardware. After you install the mainboard, you can set jumpers install memory and a coprocessor on the mainboard and make case connections. Refer to this chapter whenever you upgrade or reconfigure your system.

CAUTION: *Turn off power to the mainboard, system chassis, and peripheral devices before performing any work on the mainboard or system.*

JP3: Display Type Settings

JP3 configures the mainboard for use with a color or monochrome monitor.

Display Type	JP3
Monochrome	[• •] 1 2
Color/EGA/VGA (Default)	[•: •] 1 2

JP5: CMOS Reset Jumper

Jumper JP5 lets you discharge CMOS memory in the event you forget your password or encounter a BIOS Setup problem. Before you install the mainboard make sure that JP5 is set to retain CMOS memory.

CMOS Setting	JP5
Retain CMOS Data (Default)	[• • •] 1 2 3
Discharge CMOS	[• • •] 1 2 3

JP17: Factory Setting (short pins 1-2)

JP27: Factory Setting (short pins 1-2)

JP32: Factory Setting (fixed pins 1-2)
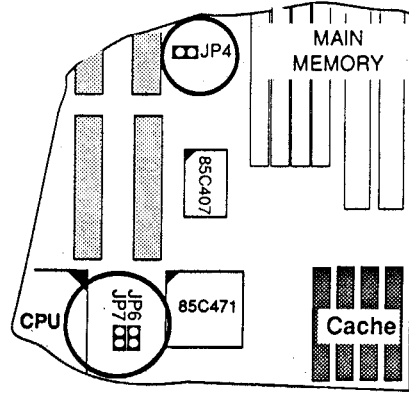
Figure 2-1. JP4, JP6, JP7-8 Jumper Locations

JP4: Berg Switch

Toggle this jumper to force the system to enter the 8 MHz (Standby) mode. Press any key or move the mouse to wake the system to full speed mode.

JP6: Green PC Power Control

This jumper controls Green PC Power, where the output status is **low active**. Pin 1 is the GND pin.

Note: The Green PC Power must accept a low input signal and the BIOS POWER MANAGEMENT function must be Enabled.

JP7: Green Control Pin

The mainboard supports 2 sets of BIOS controlled jumpers. You can set the timer to control an external device. Output status is **low active**. Pin 1 is the GND pin.

CPU Clock / Voltage Configuration
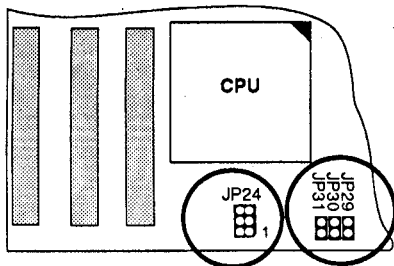
Figure 2-2. JP24, JP29-JP31 Jumper Locations

JP24: 5Volt / 3.45Volt CPU Selector

Set jumper JP24 to configure the CPU voltage. See Figure 2-2.

JP24	5Volts (Intel/AMD/Cyrix/ P24D/P24T)	3.45Volts (Intel 486DX4 / P24C)
JP24	[• • •] [• • •] 1	[• • •] [• • •] 1
Model	For 25J/K/L	For 25L

JP29~JP31: CPU Clock Selectors

Set jumpers JP29, JP30, and JP31 to configure the CPU clock. See Figure 2-2.

	25MHz	33MHz	40MHz	50MHz
JP29	[•: •] 1 2	[• •] 1 2	[•: •] 1 2	[• •] 1 2
JP30	[• •] 1 2	[•: •] 1 2	[• •] 1 2	[•: •] 1 2
JP31	[•: •] 1 2	[•: •] 1 2	[• •] 1 2	[• •] 1 2

CPU Type Configuration

Configure the 486 VESA mainboard's CPU by inserting the specified CPU and setting jumpers as described in the diagrams that follow. Note that the CPU Type jumpers on the mainboard have **yellow** caps and the Clock Setting jumpers have **red** caps.

486DX / SL-Enhanced / 486DX4 ODP (5V) AMD 486DX-25/33/40/50 and 486DX2-50/66 Settings

486DX4-75 ODP 486DX-25 486DX2-50 (Red Caps)
[•• •] JP34
[•• •] JP27
[•: •] JP29
[•: •] JP30
[•• •] JP31

486DX-33 486DX2-66 486DX4-100 ODP(5V) (Red Caps)
[•• •] JP34
[•• •] JP27
[•• •] JP29
[•: •] JP30
[•: •] JP31

486DX2-80(5V) 486DX-40 (Red Caps)
[•• •] JP34
[•• •] JP27
[•: •] JP29
[•• •] JP30
[•: •] JP31

486DX-50 (Red Caps)
[•• •] JP34
[•: •] JP27
[•: •] JP29
[•• •] JP30
[•• •] JP31
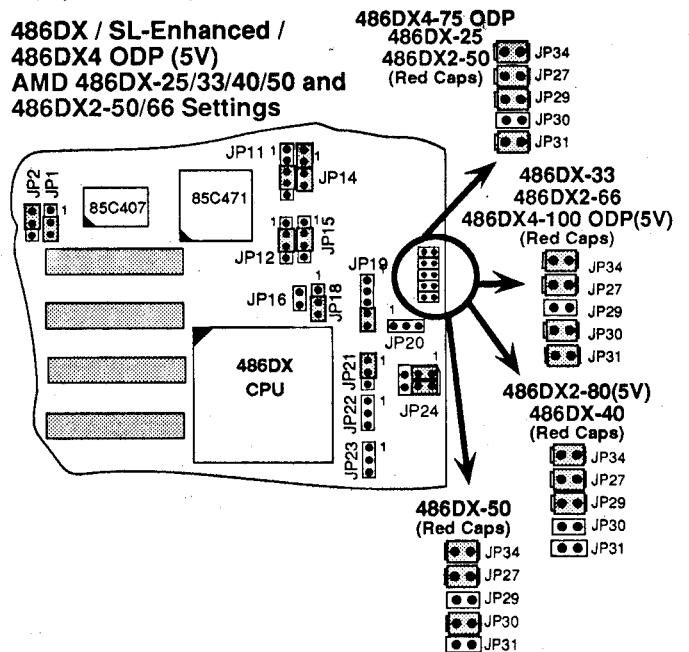
Figure 2-3. 486DX-25/33/40/50, 486DX2-50/66, 486DX4-75/80/100 Jumper Settings

486DX-33
(M7 or M6+C6)
(1x clock) (Red Caps)

JP34
JP27
JP29
JP30
JP31

Cyrix 486DX (M7) and
486S [(M6) + (C6)]
33/40 Settings

486DX-40
(M7 or M6+C6)
(1x clock) (Red Caps)

JP34
JP27
JP29
JP30
JP31

486DX-50 (M7)
(1x clock) (Red Caps)

JP34
JP27
JP29
JP30
JP31

486DX2-66
(2x clock) (Red Caps)

JP34
JP27
JP29
JP30
JP31

486DX2-50
(2x clock) (Red Caps)

JP34
JP27
JP29
JP30
JP31
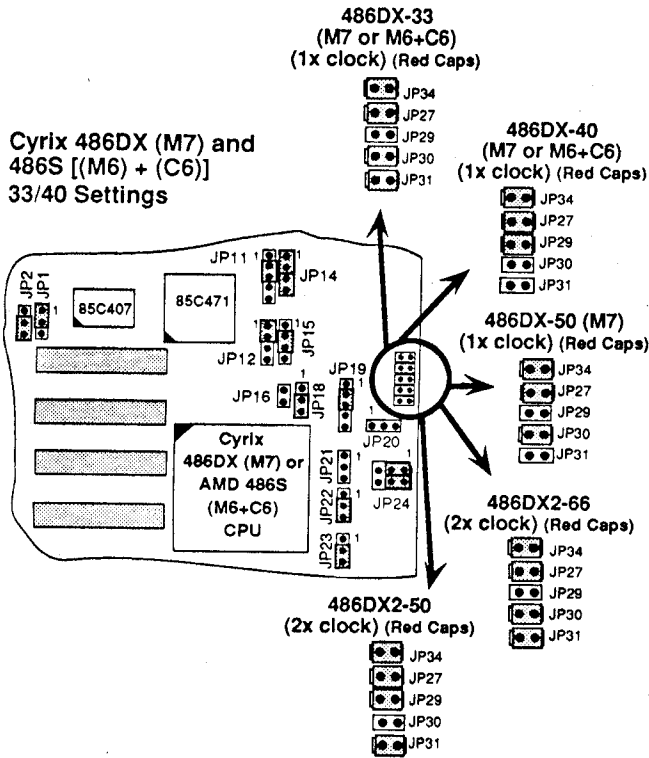
Figure 2-4. Cyrix 486DX (M7) Jumper Settings

AMD DX2-80/DX4-100 (3.45V) Settings

486DX2-80 (3.45V)
(Red Caps)

JP34
JP27
JP29
JP30
JP31

JP20

486DX4-100 (3.45V)
(Red Caps)

JP34
JP27
JP29
JP30
JP31

JP20
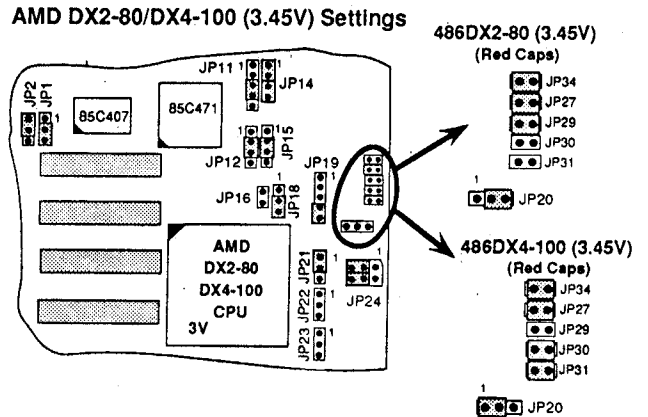
Figure 2-5. AMD DX2-80/DX4-100 Jumper Settings

P24T- 66/80 Settings

P24T-66
(Red Caps)

JP34
JP27
JP29
JP30
JP31

P24T-80
(Red Caps)

JP34
JP27
JP29
JP30
JP31
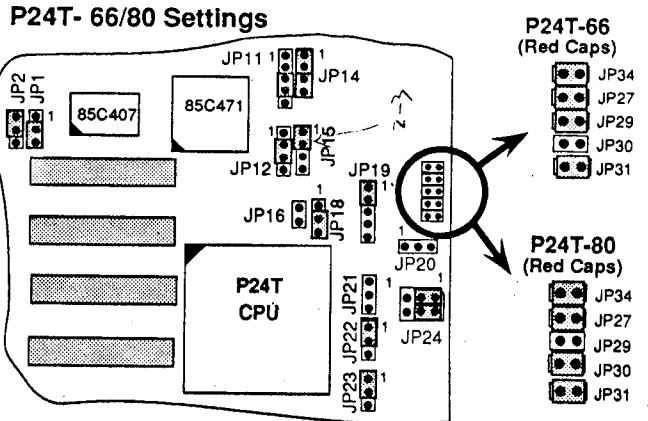
Figure 2-6. P24T-66/80 Jumper Settings

P24D- 50/66 Settings

P24D-50
(Red Caps)

JP34
JP27
JP29
JP30
JP31

P24D-66
(Red Caps)

JP34
JP27
JP29
JP30
JP31
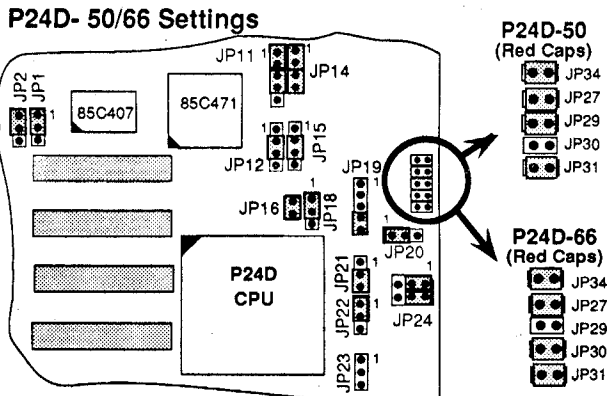
Figure 2-7. P24D-50/66 Jumper Settings

486SX-25/33 Settings

486SX-25
(Red Caps)

JP34
JP27
JP29
JP30
JP31

486SX-33
(Red Caps)

JP34
JP27
JP29
JP30
JP31
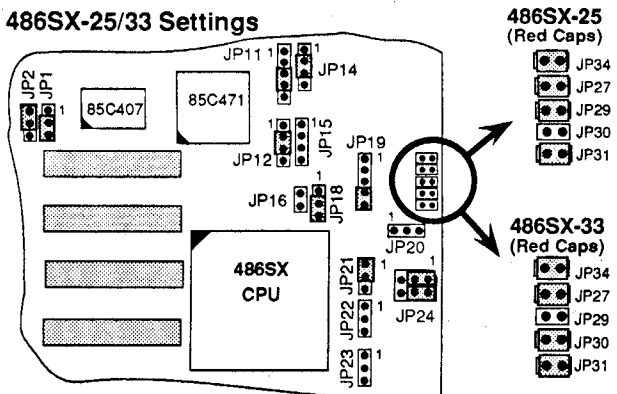
Figure 2-8. 486SX-25/33 Jumper Settings

DX4 (P24C) Settings

DX4-75
(Red Caps)

JP34
JP27
JP29
JP30
JP31

DX4-100
(Red Caps)

JP34
JP27
JP29
JP30
JP31
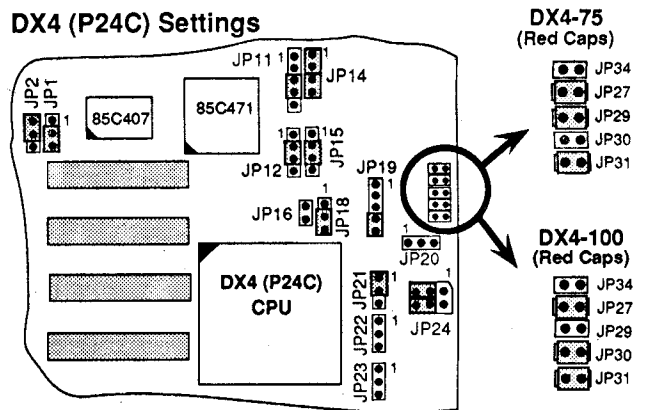
Figure 2-9. DX4 (P24C) Jumper Settings

WARNING: JP24 sets the voltage — 5V or 3.45V — for the CPU. If you do not set JP24 correctly as shown above, you will damage the CPU. Note that JP24 has yellow caps.

Cache Configuration

The 486 VESA mainboard has a write-back caching scheme. You can configure the mainboard's external cache for 64KB, 128KB, or 256KB by setting jumper switches and installing cache chips. Refer to the following pages for jumper switch settings and cache socket locations.

Cache Jumper Settings

You must set jumpers JP9, J10, and J13 to configure cache size. See the illustrations below. Note that the cache jumpers on the mainboard have **white** jumper caps.

Cache Size and RAM Locations

The table below describes the chip type and socket locations for each cache size configuration.

Cache Size	Cache RAM	Tag RAM	Cacheable Range
64KB	8K x 8 – 20/ U16~U19, U22~U25	8K x 8 – 20/U26	8 MB
128KB	32K x 8 – 20/ U16~U19	8K x 8 – 20/U26	16 MB
256KB	32K x 8 – 20/ U16~U19, U22~U25	32K x 8 – 20/U26 or 16K x 8 -20/U26	32 MB
256KB	64K x 8 – 20/ U16~U19	32K x 8 – 20/U26 or 16K x 8 -20/U26	32 MB

Note: *Tag and Data RAM use 20ns for all conditions.*

64K Cache (White Caps) Settings
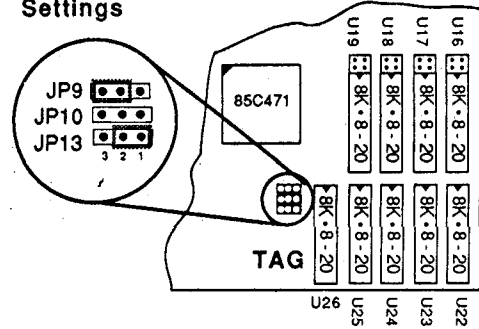
Cache Size	JP9	JP10	JP13
64K	2-3	setting doesn't matter	1-2

128K Cache (White Caps) Settings
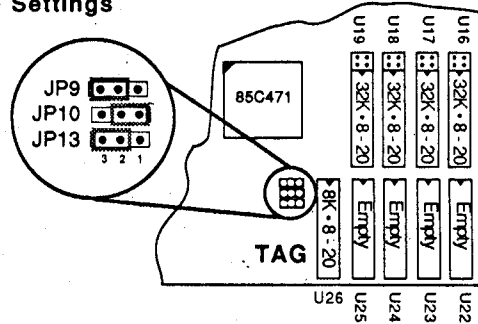
Cache Size	JP9	JP10	JP13
128K	2-3	1-2	2-3

256K Cache (White Caps) Settings (1)
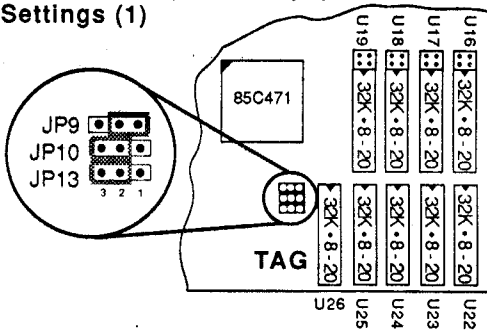
Cache Size	JP9	JP10	JP13
256K	1-2	2-3	2-3

256K Cache (White Caps) Settings (2)
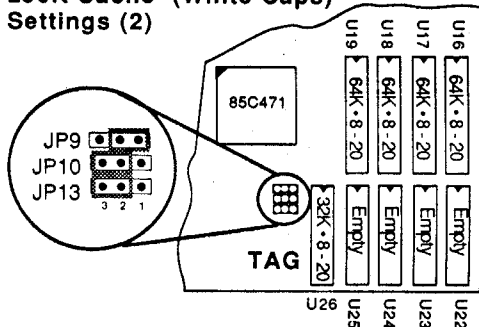
Cache Size	JP9	JP10	JP13
256K	1-2	2-3	2-3

Memory Configurations

The 486 VESA mainboard lets you increase main memory via on-board SIMM (Single In-line Memory Modules) sockets. The mainboard supports three banks of SIMM. One bank supports four 30-pin SIMM; two banks each support one 72-pin SIMM. The mainboard requires SIMM of at least 80ns access time.

Configurations 1
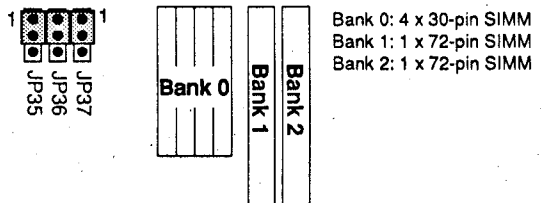
Bank 0: 4 x 30-pin SIMM
Bank 1: 1 x 72-pin SIMM
Bank 2: 1 x 72-pin SIMM

Single-Sided SIMM	Double-Sided SIMM
1MB = 256K x 36(32)	2MB = 512K x 36(32)
4MB = 1MB x 36(32)	8MB = 2MB x 36(32)
16MB = 4MB x 36(32)	32MB = 8MB x 36(32)
64MB = 16MB x 36(32)	

You **must** follow the memory combinations table below. Unlisted combinations are **invalid**.

Total	Bank 0	Bank 1	Bank 1
1MB	1MB	—	—
2MB	1MB	1MB	—
4MB	4MB	—	—
5MB	1MB	4MB	—
6MB	1MB	1MB	4MB
8MB	4MB	4MB	—
12MB	4MB	4MB	4MB
16MB	16MB	—	—
17MB	1MB	16MB	—
18MB	1MB	1MB	16MB
20MB	4MB	16MB	—

Total	Bank 0	Bank 1	Bank 2
24MB	4MB	4MB	16MB
32MB	16MB	16MB	—
36MB	4MB	16MB	16MB
48MB	16MB	16MB	16MB
64MB	64MB	—	—
65MB	1MB	64MB	—
68MB	4MB	64MB	—
72MB	4MB	4MB	64MB
80MB	16MB	64MB	—
96MB	16MB	16MB	64MB
128MB	64MB	64MB	—

Configurations 2 (Default)

Bank 0: 1 x 72-pin SIMM
Bank 1: 1 x 72-pin SIMM
Bank 2: 4 x 30-pin SIMM

The mainboard supports the following configurations 2:

Single-Sided SIMM	Double-Sided SIMM
1MB = 256K x 36(32)	2MB = 512K x 36(32)
4MB = 1MB x 36(32)	8MB = 2MB x 36(32)
16MB = 4MB x 36(32)	32MB = 8MB x 36(32)
64MB = 16MB x 36(32)	

You **must** follow the memory combinations table below. Unlisted combinations are **invalid**.

Total	Bank 0	Bank 1	Bank 1
1MB	1MB	—	—
2MB	1MB	1MB	—
2MB	2MB	—	—
4MB	2MB	2MB	—
4MB	4MB	—	—
5MB	1MB	4MB	—
6MB	1MB	1MB	4MB
6MB	2MB	4MB	—
8MB	4MB	4MB	—
8MB	8MB	—	—
12MB	4MB	4MB	4MB
12MB	4MB	8MB	—
16MB	8MB	8MB	—
16MB	16MB	—	—
17MB	1MB	16MB	—
18MB	1MB	1MB	16MB
18MB	2MB	16MB	—

Total	Bank 0	Bank 1	Bank 2
20MB	4MB	16MB	—
24MB	4MB	4MB	16MB
32MB	16MB	16MB	—
32MB	32MB		—
36MB	4MB	16MB	16MB
36MB	4MB	32MB	—
48MB	16MB	16MB	16MB
48MB	16MB	32MB	—
64MB	32MB	32MB	—
64MB	64MB	—	—
65MB	1MB	64MB	—
68MB	4MB	64MB	—
72MB	4MB	4MB	64MB
80MB	16MB	64MB	—
96MB	16MB	16MB	64MB
128MB	64MB	64MB	—

Connectors

Attach the 486 VESA mainboard to case devices, or an external battery, via connectors on the mainboard. Refer to Figure 1-1 for connector locations and connector pin positions.

J17 - Keylock & Power LED Connector

J17 is a connector for a lock that may be installed on the system case for enabling or disabling the keyboard. J17 also attaches to the case's Power LED.

J18 - Speaker Connector

Attach the system speaker to connector J18.

J19 - Hardware Reset Control

Attach the Reset switch to J19. Closing the Reset switch restarts the system.

J20 - External Battery Connector

J20 is a 4-pin connector to which you can attach an external battery. Pin 1 of J20 is positive (+) and pin 4 is negative (-).

J21 - Turbo Switch Connector

J21 is connected to a Turbo switch on the front of the system case. The connector's pins 1-2 are shorted for normal operation and pins 2-3 are shorted for turbo operation.

J22 - Turbo LED Connector

J22 connects to a Turbo LED on the case control panel and works with the Turbo Switch. If the mainboard is in Turbo mode, the Turbo LED lights.

CN1- Keyboard Connector

A five-pin female DIN keyboard connector is located at the rear of the board. Plug the keyboard jack into this connector.

CN2 - Power Supply Connectors

The mainboard requires a power supply with at least 200 watts and a "power good" signal. CN2 has two six-pin male header connectors.

Plug the dual connectors from the power directly onto the board connector while making sure the black leads are in the center.

---

3   BIOS Setup

The mainboard's BIOS setup program is the ROM ISA BIOS from Award Software Inc. Enter the Award BIOS program's Main Menu as follows:

1. Turn on or reboot the system. After a series of diagnostic checks, you are asked to press DEL to enter Setup.

2. Press the <DEL> key to enter the Award BIOS program and the main screen appears:

```
                    ROM ISA BIOS (2C4I8S21)
                      CMOS SETUP UTILITY
                     AWARD SOFTWARE, INC.

    STANDARD CMOS SETUP           PASSWORD SETTING

    BIOS FEATURES SETUP           IDE HDD AUTO DETECTION

    CHIPSET FEATURES SETUP        SAVE & EXIT SETUP

    POWER MANAGEMENT SETUP        EXIT WITHOUT SAVING

    LOAD BIOS DEFAULTS

    LOAD SETUP DEFAULTS

    Esc : Quit                    ↑ ↓ → ←  : Select Item
    F10 : Save & Exit Setup       (Shift) F2 : Change Color

             Time, Date, Hard Disk Type...
```

3. Choose an option and press <Enter>. Modify the system parameters to reflect the options installed in the system. (See the following sections.)

4. Press <ESC> at anytime to return to the Main Menu.

5. In the Main Menu, choose "SAVE AND EXIT SETUP" to save your changes and reboot the system. Choosing "EXIT WITHOUT SAVING" ignores your changes and exits the program.

The Main Menu options of the Award BIOS are described in the sections that follow.

Standard CMOS Setup

Run the Standard CMOS Setup as follows.

1. Choose "STANDARD CMOS SETUP" from the Main Menu. A screen appears.

```
                    ROM ISA BIOS (2C418S21)
                       STANDARD CMOS SETUP
                       AWARD SOFTWARE, INC.

  Date (mm:dd:yy) : Sat, Mar 21 1994
  Time (hh:mm:ss) : 12 : 21 : 26

                            CYLS.  HEADS  PRECOMP  LANDZONE  SECTORS
  Drive C : None (   0Mb)     0      0       0        0         0
  Drive D : None (   0Mb)     0      0       0        0         0

  Drive A : 1.2M , 5.25 in.
  Drive B : None                      Base Memory:      640K
                                  Extended Memory:    15360K
  Video  : EGA/VGA               Expanded Memory:        0K
                                     Other Memory:      384K
  Halt On : All Errors
                                     Total Memory:    16384K

  Esc : Quit              ↑ ↓ → ←   : Select Item   PU/PD/+/- : Modify
  F1  : Help          (Shift) F2 : Change Color      F3 : Toggle Calendar
```

2. Use arrow keys to move between items and select values. Modify selected
   fields using PgUp/PgDn/+/– keys. Some fields let you key in values directly.

Date (mm/dd/yy)	Type the current date.
Time (hh:mm:ss)	Type the current time.
Drive C & D	Choose from the standard hard disk types 1 to 46. Type 47 is user definable. If a hard disk is not installed choose "Not installed." (default)
Drive A & B	Choose 360KB , 5 1/4", 1.2MB , 5 1/4" (default), 720KB , 3 1/2" 1.4M , 3 1/2", 2.88 MB, 3 1/2" or Not installed
Video	Choose Monochrome, Color 40x25, VGA/EGA (default), Color 80x25

3. When you finish, press the <ESC> key to return to the Main Menu.

BIOS Features Setup

Run the BIOS Features Setup as follows.

1. Choose "BIOS FEATURES SETUP" from the Main Menu and a screen with
   a list of items appears. **(The screen below shows the BIOS default
   settings.)**

```
                    ROM ISA BIOS (2C418S21)
                      BIOS FEATURES SETUP
                      AWARD SOFTWARE, INC.

  CPU Internal Cache      : Enabled    Video BIOS Shadow    : Enabled
  External Cache          : Enabled    C8000-CBFFF Shadow   : Disabled
  Quick Power On Self Test : Enabled   D0000-D3FFF Shadow   : Disabled
  Boot Sequence           : A,C        D8000-DBFFF Shadow   : Disabled
  Swap Floppy Drive       : Disabled
  Boot Up NumLock Status  : On
  IDE HDD Block Mode      : Enabled
  Gate A20 Option         : Fast
  Memory Parity Check     : Disabled
  Typematic Rate Setting  : Disabled
  Typematic Rate (Chars/Sec) : 15
  Typematic Delay (Msec)  : 500
  Security Option         : Setup

                            ESC : Quit          ↑ ↓ → ←: Select Item
                            F1  : Help          PU/PD/+/- : Modify
                            F5  : Old Values (Shift)F2 : Color
                            F6  : Load BIOS Defaults
                            F7  : Load Setup Defaults
```

2. Use the arrow keys to move between items and to select values. Modify the
   selected fields using the PgUp/PgDn/+/– keys. <F> keys are explained
   below:

<F1>:	"Help" gives options available for each item.
Shift <F2>:	Change color.
<F5>:	Get the old values. These values are the values with which the user started the current session.
<F6>:	Load all options with the BIOS Setup default values.
<F7>:	Load all options with the Setup default values.

A short description of screen items follows:

CPU Internal Cache	This option enables/disables the CPU's internal cache. (The Default setting is Enabled.)
External Cache	This option enables/disables the external cache memory. (The Default setting is Enabled.)
Quick Power On Self Test	Enabled provides a fast POST at boot-up.
Boot Sequence	The default setting attempts to first boot from drive A: and then from hard disk C:. You can reverse this sequence with "C: A:", but then drive A: cannot boot directly.
Swap Floppy Drive	Enabled changes the sequence of the A: and B: drives. (The Default setting is Disabled.)
Boot Up Num Lock Status	Choose On or Off. On puts numeric keypad in Num Lock mode at boot-up. Off puts this keypad in arrow key mode at boot-up.
IDE HDD Block Mode	This option enables/disables the IDE HDD Block Mode function. Not all HDDs support this function.
Gate A20 Option	Choose Fast or Normal. Fast allows RAM accesses above 1MB using the fast gate A20 line.
Memory Parity Check	This item enables/disables the memory parity check function.
Typematic Rate Setting	Enable this option to adjust the keystroke repeat rate.
Typematic Rate (Chars/Sec)	Choose the rate a character keeps repeating.
Typematic Delay (Msec)	Choose how long after you press a key that a character begins repeating.

Security Option	Choose Setup or System. Use this feature to prevent unauthorized system boot-up or use of BIOS Setup. "System" – Each time the system is booted the password prompt appears. "Setup"– If a password is set, the password prompt only appears if you attempt to enter the Setup program.
System BIOS Shadow	If enabled and BIOS is present in this segment, then system BIOS (64K) is shadowed.
Video or Adaptor BIOS Shadow	BIOS shadow copies BIOS code from slower ROM to faster RAM. BIOS can then execute from RAM. These 32K segments can be shadowed from ROM to RAM. BIOS is shadowed in a 32K segment if it is enabled and it has BIOS present.

3. After you have finished with the BIOS Features Setup program, press the
   <ESC> key and follow the screen instructions to save or disregard your
   settings.

Chipset Features Setup

The Chipset Features Setup option changes the values of the chipset registers. These registers control system options in the computer.

Note: *Change these settings only if you are familiar with the Chipset.*

Run the Chipset Features Setup as follows.

1. Choose "CHIPSET FEATURES SETUP" from the Main Menu and the following screen appears. (The screen below shows default settings.)

```
                 ROM ISA BIOS (2C418S21)
                 CHIPSET FEATURES SETUP
                  AWARD SOFTWARE, INC.

 Auto Configuration    : Enabled
 AT Bus Clock          : 7.159 MHz

 DRAM Speed            : Slowest
 DRAM Write WS         : 1 WS
 DRAM Write CAS        : 2T

 External Cache W/B/WT : Write Back

 Cache Burst Read     : 2T
 Cache Write Cycle    : 3T         ESC : Quit      ↑↓→←: Select Item
 System Shadow        : Non-Cacheable  F1  : Help       PU/PD/+/- : Modify
 Video Shadow         : Non-Cacheable  F5  : Old Values (Shift)F2 : Color
                                    F6  : Load BIOS Defaults
                                    F7  : Load Setup Defaults
```

2. Use the arrow keys to move between items and select values. Modify selected fields using the PgUp/PgDn/+/- keys.

3. After you have finished with the Chipset Features Setup, press the <ESC> key and follow the screen instructions to save or disregard your settings.

Power Management Setup

The Power Management Setup option lets you set the system's power saving functions.

Run the Power Management Setup as follows.

1. Choose "POWER MANAGEMENT SETUP" from the Main Menu and a screen with a list of items appears.

```
                 ROM ISA BIOS (2C418S21)
                 POWER MANAGEMENT SETUP
                  AWARD SOFTWARE, INC.

 Power Management    : Disabled     IRQ 4  (COM 1)       : Enabled
                                    IRQ 5  (LPT or LAN)  : Enabled
 PM Control by APM   : NO           IRQ 6  (Floppy Disk) : Enabled
 Video Off Method    : V/H SYNC+Blank  IRQ 7 (LPT or LAN)  : Enabled
 Video Off Option    : Susp -> Off  IRQ 8  (RTC,OS2)     : Disabled
                                    IRQ 9  (Reserved)    : Enabled
        ** PM Timers **             IRQ 10 (Reserved)    : Enabled
 HDD Power Down      : Disabled     IRQ 11 (Reserved)    : Enabled
 System Doze         : Disabled     IRQ 12 (PS2 mouse)   : Enabled
 System Standby      : Disabled     IRQ 13 (387)         : Enabled
 System Suspend      : Disabled     IRQ 14 (Hard Disk)   : Enabled
                                    IRQ 15 (Reserved)    : Enabled
        ** PM Events **
 Local Master        : Disabled
 Local Device        : Disabled     ESC : Quit      ↑↓→←: Select Item
 Video Activities    : Disabled     F1  : Help      PU/PD/+/- : Modify
 DMA Activities      : Enabled      F5  : Old Values (Shift)F2 : Color
 IRQ 1 (Keyboard)    : Enabled      F6  : Load BIOS Defaults
 IRQ 3 (COM 2)       : Enabled      F7  : Load Setup Defaults
```

2. Use the arrow keys to move between items and to select values. Modify the selected fields using the PgUp/PgDn/+/- keys.

A short description of selected screen items follows:

Power Management   Options are as follows:

                  User Define Let's you define the HDD and system power down times.

                  Disabled   Disables the Green PC Features.

                  Min Saving System Doze= 3 Hr (Standard 10 Min) System Standby= 3 Hr (Standard 10 Min) System Suspend= 3 Hr

                  Max Saving System Doze = 10 Sec System Standby = 10 Sec System Suspend = 10 Sec

PM Control by APM   Choose Yes or No (default). APM stands for Advanced Power Management. To use APM you must run "power.exe" under DOS v6.0 or later version. This function is only valid for SL-Enhanced (or SMI) CPUs.

Video Off Method   Choose V/H Sync + Blank (Default) or Blank screen. when Suspend Standby mode occurs, the monitor screen shuts off. This function is only valid for SL-Enhanced (or SMI) CPUs.

Video Off Option   When Suspend mode occurs, the monitor screen shuts off. If keys on the keyboard are pressed or if the mouse is moved, the screen comes back on. Only an SL-Enhanced (or SMI) CPU supports this function.

HDD Power Down   When the set time has elapsed, the BIOS sends a command to the HDD to enter standby (sleep) mode, which turns off the motor. Time is adjustable from 1 to 15 minutes. The default setting is Disabled. Some older model HDDs may not support this advanced function.

System Doze   The default setting is Disabled. If setting is 1 minute, after 1 minute without activity the system enters Doze mode. You can adjust the time from 10 sec. to 3 hours depending on your requirements.

System Standby   The default setting is Disabled. If setting is 1 minute, after 1 minute without activity the system enters Doze mode. You can adjust the time from 10 sec. to 3 hours depending on your requirements.

System Suspend   The default setting is Disabled. Only an SL-Enhanced (or SMI) CPU can enter this mode. Time is adjustable from 10 seconds to 3 hours. Doze mode time plus System Standby plus Suspend time is the actual elapsed time before Suspend mode.

Local Master (Device)   Choose Enabled or Disabled (Default). If this option is Enabled and activity occurs from the VESA Local Master (Device) the system will not enter Green mode (power saving) and will wake up.

Video Activities   Choose Enabled or Disabled (Default). If this option is Enabled and activity occurs from the video the system will not enter Green mode (power saving) and will wake up.

DMA Activities   Choose Enabled (Default).or Disabled. If this option is Enabled and activity occurs from the DMA the system will not enter Green mode (power saving) and will wake up.

IRQn   Choose Enabled (Default) or Disabled. If activity occurs from the Enabled IRQ the system will not enter Green mode (power saving) and will wake up.

3. After you have finished with the Power Management Setup, press the <ESC> key to return to the Main Menu.

Load BIOS Defaults

This Main Menu item loads the BIOS default system values. Choose this item and the following message appears:

"Load BIOS Defaults (Y/N)? N"

To use the BIOS defaults, change the prompt to "Y" and press <Enter>.

Load Setup Defaults

This item loads the system values you have previously saved. Choose this item and the following message appears:

"Load SETUP Defaults (Y/N)? N"

To use the SETUP defaults, change the prompt to "Y" and press <Enter>.

Note: *It is strongly recommended that you choose the "Load Setup Defaults" item, when setting the system's defaults.*

Password Setting

This Main Menu item lets you configure the system so that a password is required every time the system boots or an attempt is made to enter the Setup program. Change the password as follows:

1. Choose "PASSWORD SETTING" in the Main Menu and press <Enter>. The following message appears:

"**Enter Password:**"

2. Enter a password and press <Enter>.

(If you do not wish to use the password function, you can just press <Enter> and a "Password disabled" message appears.)

3. After you enter your password, the following message appears prompting you to confirm the new password:

"**Confirm Password:**"

4. Re-enter your password and then Press <ESC> to exit to the Main Menu.

Important: If you forget or lose the password, the only way to access the system is to set jumper JP5 to clear the CMOS RAM. All setup information is lost and you must run the BIOS setup program again.

IDE HDD Auto Detection

This Main Menu item automatically detects the hard disk type and configures the STANDARD CMOS SETUP accordingly.

Note: *This function is only valid for IDE hard disks.*

```
              ROM PCI/ISA BIOS (2C418S21)
                 CMOS SETUP UTILITY
                AWARD SOFTWARE, INC.

                       CYLS.  HEADS  PRECOMP  LANDZONE  SECTORS
  Drive C : User ( 49Mb)  790    15    65535      789       57
  Drive D : User ( 0Mb)     0     0        0        0        0

       Do you accept this drive C (Y/N)? N

                    ESC : Skip
```