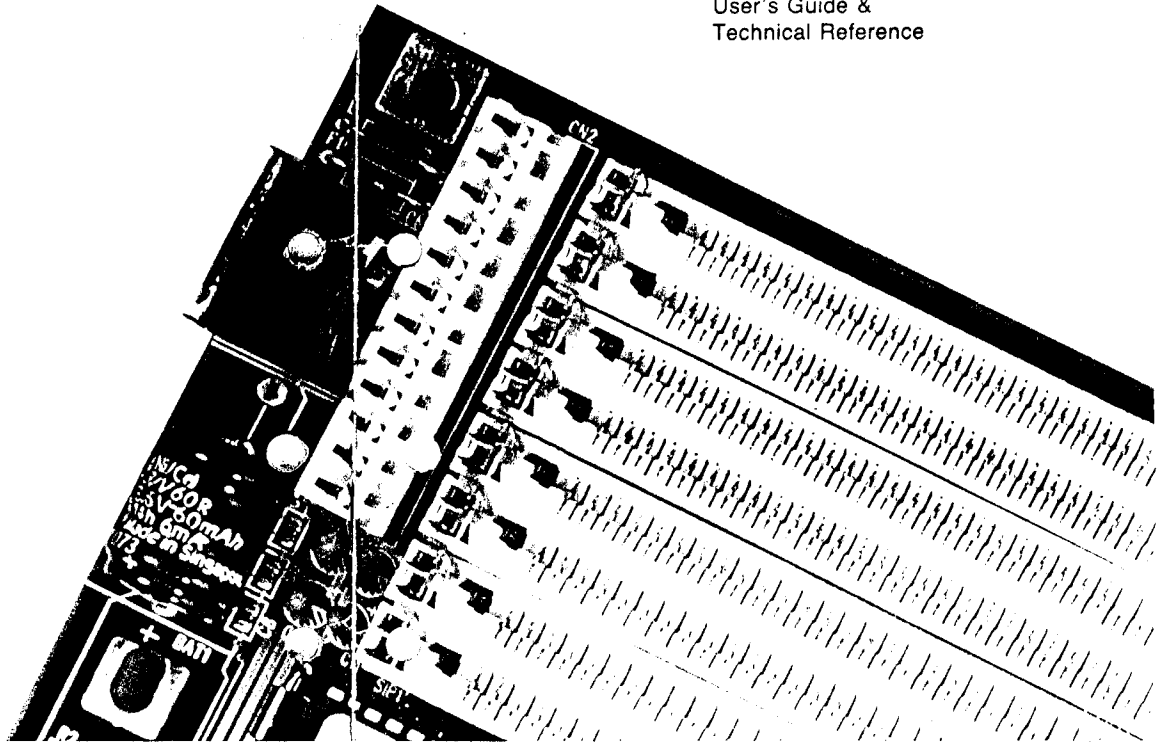# 80486

486VESA Green Mainboard
User's Guide &
Technical Reference

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. You can ground yourself by grasping 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.

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25M/N/P SERIAL

Table of Contents

1 Introduction

The 486 VESA mainboard is a high-performance system board that supports 486DX2/DX/SX/SL Enhanced 486, P24T, P24D, DX4, and Cyrix M6/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 486DX2/DX/SX/SL Enhanced 486, P24T, P24D, 486DX4 (P24C), Cyrix M6/M7 CPUs and AMD CPUs.

- Supports internal cache (CPU) write-back (P24T, P24D, M6/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 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 3.3V 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.
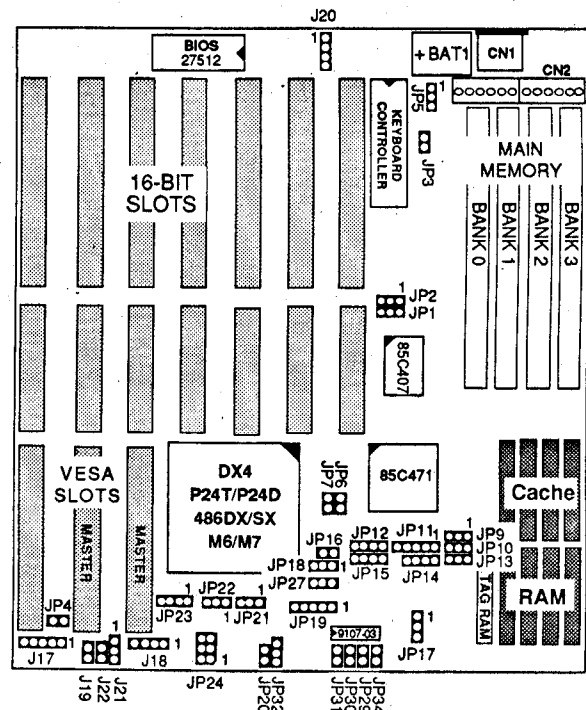
Mainboard Layout


Figure 1-1. Mainboard Layout

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 (Default)	[● ●] 1 2
Color/EGA/VGA	[●●] 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 2-3)

JP27: Factory Setting (short pins 1-2)
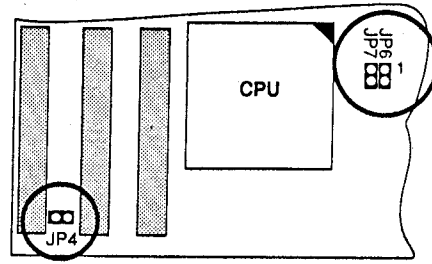
Figure 2-1. JP4, JP6, and JP7 Jumper Locations

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, JP8: 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.

VESA Local Bus Configuration

The 486 VESA mainboard features two VESA local bus master slots (VESA1, VESA2) and a VESA VGA slot (VESA3) that you can configure for a wide range of VESA adapters at different system clock speeds for optimal performance. Jumper JP26 lets you set the local bus for system clock speeds above 33MHz. Jumper JP25 lets you insert 1 wait-state on the local bus. See Figure 2-2.
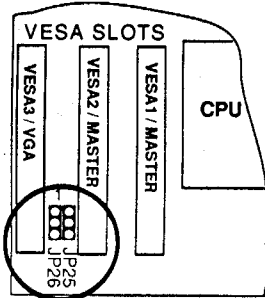
Figure 2-2. VESA Slot and Jumper Locations

JP25: VESA Wait State Configuration (Factory setting)

Local Bus Wait States	JP25
0 wait-state	[● ● ●] 1 2 3
1 wait-state (default)	[● ● ●] 1 2 3

JP26: VESA Local Bus Clock Configuration (Factory setting)

CPU Clock Speed	JP26
Less than or equal to 33MHz	[● ● ●] 1 2 3
Greater than 33MHz (default)	[● ● ●] 1 2 3

CPU Clock / Voltage Configuration
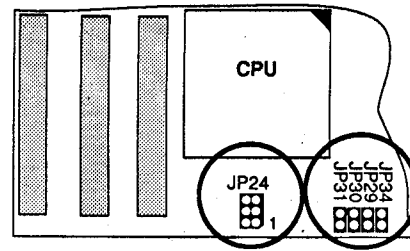
Figure 2-3. JP24, JP29~JP31 and JP34 Jumper Locations

JP24: 5Volt / 3.3Volt CPU Selector

Set jumper JP24 to configure the CPU voltage. See Figure 2-3.

JP24	5Volts (Intel/AMD/Cyrix/ P24D/P24T)	3.3Volts (Intel 486DX4 / P24C)
JP24	[●●][●●][●●] 1	[●●][●●][●●] 1
Model	For 25 M/N/P	For 25P

JP29~JP31: CPU Clock Selectors

Set jumpers JP29~JP31 to configure the CPU clock. See Figure 2-3.

	25MHz	33MHz	40MHz	50MHz
JP29	[●●]	[● ●]	[●●]	[● ●]
JP30	[● ●]	[●●]	[● ●]	[●●]
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 / AMD 486DX-25/33/40/50 and 486DX2-50/66 Settings
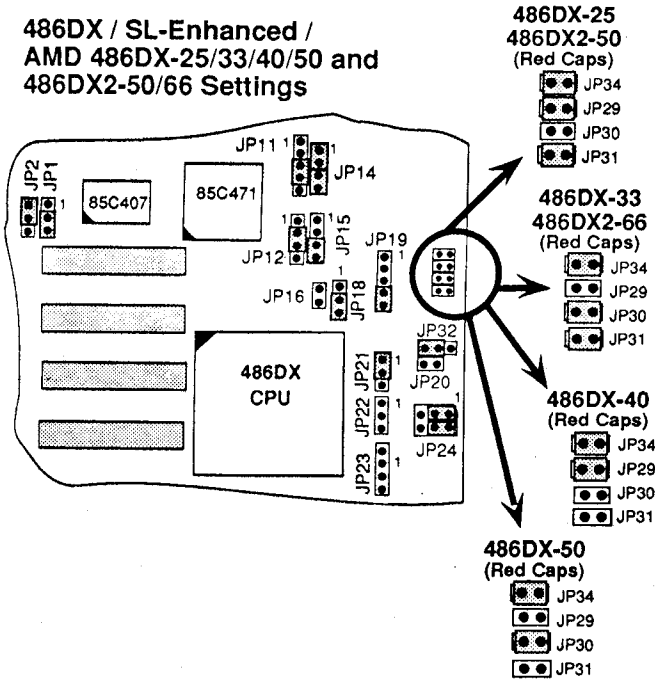
Figure 2-4. 486DX-25/33/40/50, 486DX2-50/66 Jumper Settings

Cyrix 486DX (M7) and 486S [(M6) + (C6)] 33/40 Settings
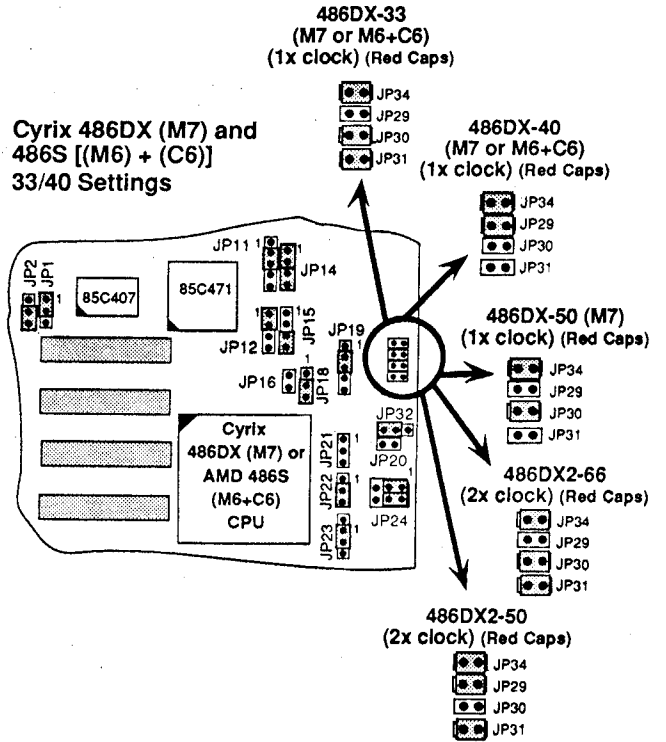
Figure 2-5. Cyrix 486DX (M7) Jumper Settings

Cyrix 486S (M6) 33/40 Settings
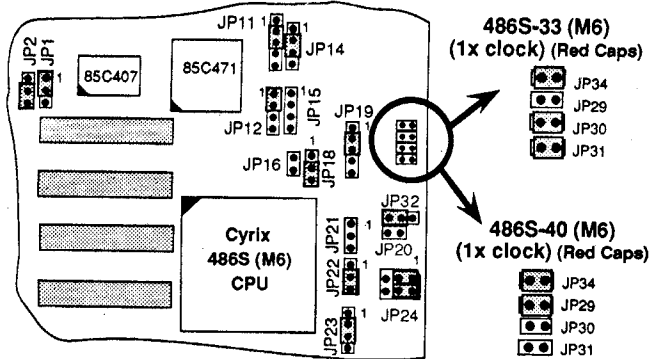
Figure 2-6. Cyrix 486DX (M6) Jumper Settings

P24T- 50/66 Settings
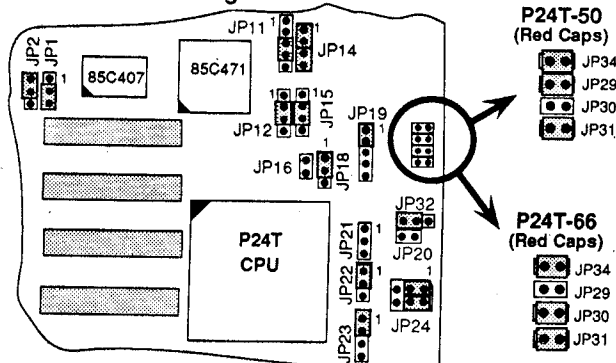
Figure 2-7. P24T-50/66 Jumper Settings

P24D- 50/66 Settings

Figure 2-8. P24D-50/66 Jumper Settings

486SX-25/33 Settings
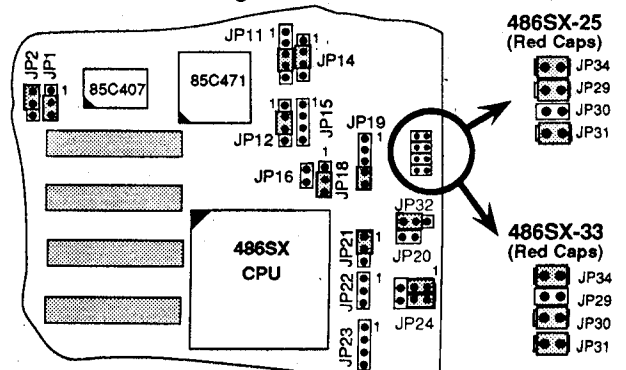
Figure 2-9. 486SX-25/33 Jumper Settings

DX4 (P24C) Settings
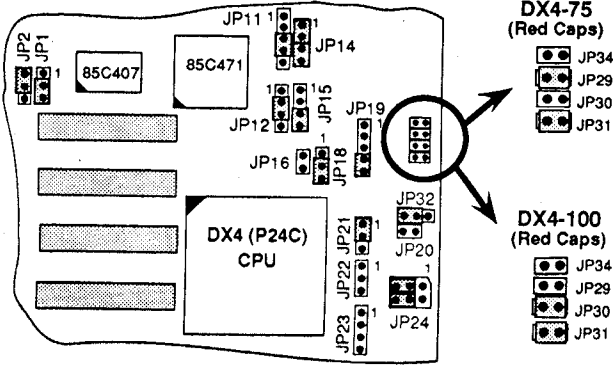
Figure 2-10 DX4 (P24C) Jumper Settings

WARNING: JP24 sets the voltage — 5V or 3.3V — 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
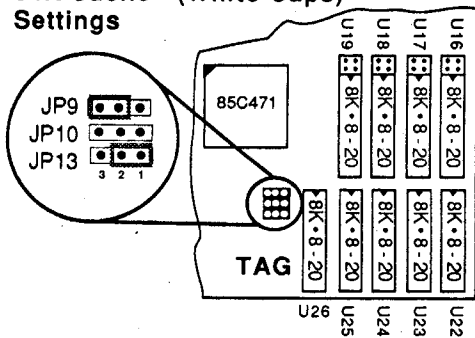
Cache Size	JP9	JP10	JP13
64K	2-3	setting doesn't matter	1-2

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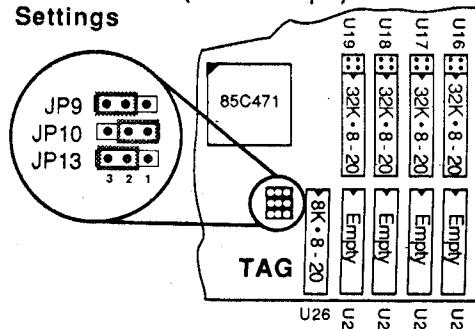
Cache Size	JP9	JP10	JP13
128K	2-3	1-2	2-3

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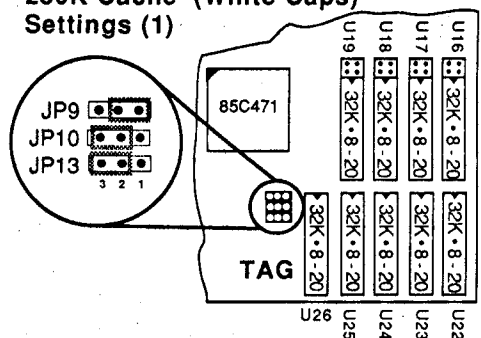
Cache Size	JP9	JP10	JP13
256K	1-2	2-3	2-3

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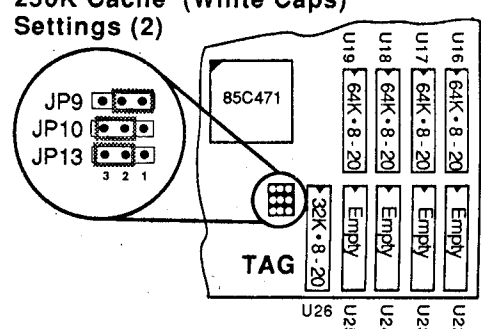
Cache Size	JP9	JP10	JP13
256K	1-2	2-3	2-3

Memory Configuration

The mainboard supports four banks of 72-pin SIMM (Single In-line Memory Modules). The mainboard requires SIMM of at least 80ns access time.

Single Side SIMM	Doubled Side 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 2	Bank 3
1MB	1MB	—	—	—
2MB	1MB	1MB	—	—
2MB	2MB	—	—	—
4MB	1MB	1MB	2MB	—
4MB	2MB	2MB	—	—
4MB	4MB	—	—	—
5MB	1MB	4MB	—	—
6MB	1MB	1MB	4MB	—
6MB	2MB	4MB	—	—
8MB	1MB	1MB	2MB	4MB
8MB	2MB	2MB	4MB	—
8MB	4MB	4MB	—	—
8MB	8MB	—	—	—
10MB	1MB	1MB	4MB	4MB
12MB	2MB	2MB	4MB	4MB
12MB	4MB	4MB	4MB	—
16MB	4MB	4MB	4MB	4MB
16MB	8MB	8MB	—	—
16MB	16MB	—	—	—
17MB	1MB	16MB	—	—
18MB	1MB	1MB	16MB	—

(table cont.)

Total	Bank 0	Bank 1	Bank 2	Bank 3
18MB	2MB	16MB	—	—
20MB	2MB	2MB	16MB	—
20MB	4MB	16MB	—	—
24MB	2MB	2MB	4MB	16MB
24MB	4MB	4MB	16MB	—
24MB	8MB	8MB	8MB	—
32MB	8MB	8MB	8MB	8MB
32MB	16MB	16MB	—	—
32MB	32MB	—	—	—
36MB	2MB	2MB	16MB	16MB
36MB	4MB	16MB	16MB	—
36MB	4MB	32MB	—	—
40MB	4MB	4MB	16MB	16MB
40MB	4MB	4MB	32MB	—
48MB	16MB	16MB	16MB	—
48MB	16MB	32MB	—	—
64MB	16MB	16MB	16MB	16MB
64MB	16MB	16MB	32MB	—
64MB	64MB	—	—	—
64MB	32MB	32MB	—	—
65MB	1MB	64MB	—	—
68MB	4MB	64MB	—	—
68MB	4MB	32MB	32MB	—
72MB	4MB	4MB	64MB	—
72MB	4MB	4MB	32MB	32MB
80MB	16MB	64MB	—	—
80MB	16MB	32MB	32MB	—
96MB	16MB	16MB	64MB	—
96MB	16MB	16MB	32MB	32MB
96MB	32MB	32MB	32MB	—
128MB	64MB	64MB	—	—
128MB	32MB	32MB	32MB	32MB

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.
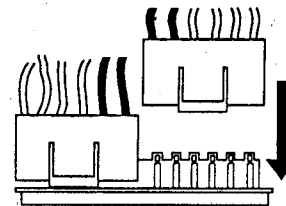
3 BIOS Setup

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.

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 (2C4I8S21)
                      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    │                                │
  │ 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       │
  └──────────────────────────────────┴────────────────────────────────┘
```
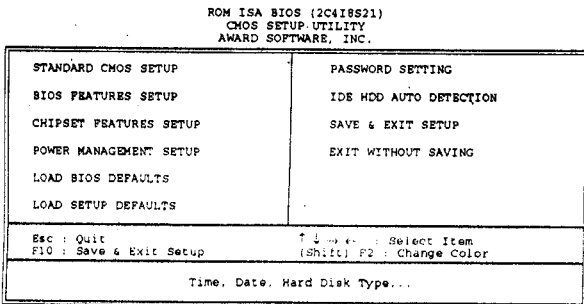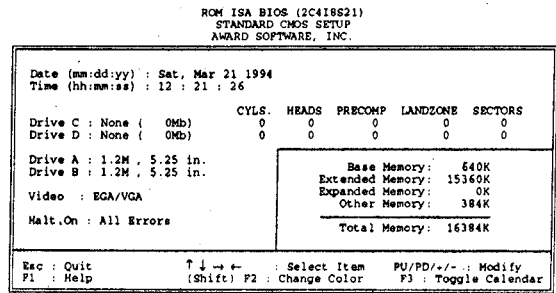
2. Use the arrow keys to move between items and to select values. Modify the selected fields using the PgUp/PgDn/+/– keys. <F> keys are explained below:

<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.

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 (2C4I8S21)
                     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 : 1.2M , 5.25 in.       ┌──────────────────────────────┐  │
  │                                 │  Base Memory:      640K       │  │
  │ Video : EGA/VGA                 │  Extended Memory: 15360K      │  │
  │                                 │  Expanded Memory:    0K       │  │
  │ Halt.On : All Errors            │  Other Memory:     384K       │  │
  │                                 ├──────────────────────────────┤  │
  │                                 │  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, (default)
                   Color 40x25,
                   VGA/EGA
                   Color 80x25

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

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.

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 (2C4I8S21)
              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        ┌──────────────────────────┐│
 │ System Shadow       : Non-Cacheable│ ESC : Quit   ↑↓→←: Select Item│
 │ Video Shadow        : Non-Cacheable│ F1  : Help   PU/PD/+/- : Modify│
 │                                 │ F5  : Old Values (Shift)F2 : Color│
 │                                 │ F6  : Load BIOS Defaults  │
 │                                 │ F7  : Load Setup Defaults │
 └────────────────────────────────────────────────────────────┘
```
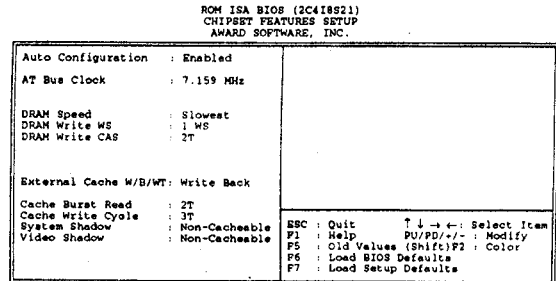
2. Use the arrow keys to move between items and select values. Modify selected fields using the PgUp/PgDn/+/- keys.

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.
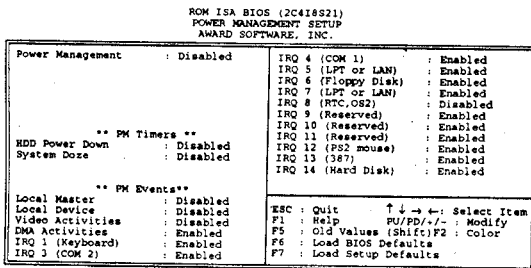

Power Management Setup

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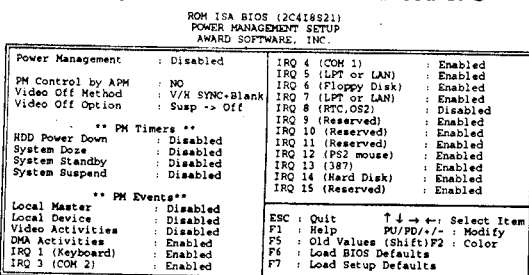
Run the Power Management Setup as follows.

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

Power Management screen for Standard CPU

```
          ROM ISA BIOS (2C4I8S21)
           POWER MANAGEMENT SETUP
             AWARD SOFTWARE, INC.
┌─────────────────────────────┬──────────────────────────────┐
│ Power Management  : Disabled │ IRQ 4 (COM 1)      : Enabled │
│                             │ IRQ 5 (LPT or LAN)  : Enabled │
│                             │ IRQ 6 (Floppy Disk) : Enabled │
│                             │ IRQ 7 (LPT or LAN)  : Enabled │
│                             │ 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 │
│                             │ IRQ 13 (387)        : Enabled │
│                             │ IRQ 14 (Hard Disk)  : 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    │
└─────────────────────────────┴──────────────────────────────┘
```

Power Management screen for SL-Enhanced CPU

```
          ROM ISA BIOS (2C4I8S21)
           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 (2C4I8S21)
                  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
```