

**Mother**  
**BOARD**



**80486 VESA**  
User's Manual

Part No. 03-0039X-05 (AMI)

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## **Warranty Information**

Your 486F39X mainboard comes with a limited one-year warranty. The manufacturer warrants this product against defects in material and workmanship for one (1) year from date of purchase. Defective parts will be exchanged or repaired at the manufacturer's option, for one (1) year after date of original purchase.

Service can be obtained by calling the manufacturer for a Return Merchandise Authorization (RMA) number. A receipt or copy of invoice with date of purchase is also required before any warranty service will be rendered. Write the RMA number legibly on the outside of the shipping carton and mail prepaid or hand carry to the manufacturer. Shipping and handling charges will be applied for all orders that have to be mailed when service is complete.

This warranty covers normal consumer use and does not cover damages incurred in shipping or failure due to abuse, misuse, or misapplication, nor as a result of service or modification other than by the manufacturer.

# 1 Introduction

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## **486F39X Mainboard Features**

The 486F39X is a high performance, function enhanced computer mainboard that combines the power of 80486 DX/DX2/DX4 CPU and the VESA VL-bus. The features integrated onto the 486F39X mainboard are as follows:

- Supports the following 3-VOLT or 5-VOLT CPUs:
  1. Intel 486DX4-100 (486F39X-X4 only)
  2. AMD 3-VOLT CPUs (486F39X-X4 only)
  3. Pentium™ Over Drive Processor (P24T)
  4. 486 SX/DX/DX2, 487SX, 486 Over Drive Processor
- Optional 128KB/256KB/512KB external cache.
- 72-pin DRAM SIMM modules in multiple configurations up to 64 MB.
- Power Saving functions for “SL” and non-“SL” CPUs with a flexible power management setup.
- Compatible with EPA “Energy-Star” specifications and power management utilities such as Microsoft APM.
- 3 32-bit VL-Bus slots and 5 16-bit ISA slots.
- System and Video BIOS relocateable to RAM area to enhance performance.
- Fast A20 and hidden DRAM refresh to boost system performance.
- Break switch connector for a manual suspend button.
- 2 on-board connectors to control “green” devices such as a “green” power supply.

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## **Power Supply for 486F39X Mainboard**

A clean steady power source is necessary to get reliable performance from the system. With the high clock speeds of the CPU (running at 25MHz or above) the quality of the power supply becomes even more important. *Most power supplies in the market meet the standards required by the CPU, however some have been found to be out of specification.* To be certain of the highest performance by your system, be sure your power supply provides a voltage range of 5.25 volts maximum to 4.95 volts minimum.

In areas with noisy power transmission, we suggest the use of a line noise filter between the power and the computer.

## 2 Hardware Guide

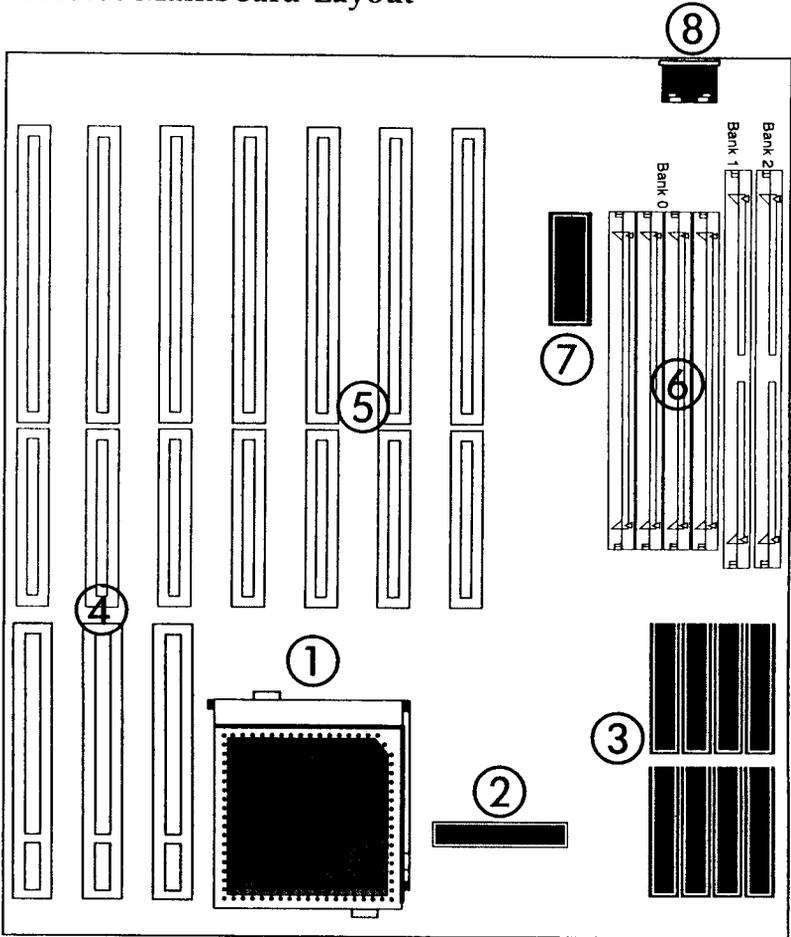
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### Before You Begin

Before removing the mainboard from its anti-static bag, you need to eliminate any static electricity that may be accumulated on your body. The charge that can build up in your body may be more than enough to damage integrated circuits on the system board. Therefore, it is important to observe basic precautions whenever you handle or use computer components. Although areas with humid climate are much less prone to static build-up, it is best to always safeguard against accidental damage that may lead to costly repairs. The following measures should be sufficient to protect your equipment from static discharge:

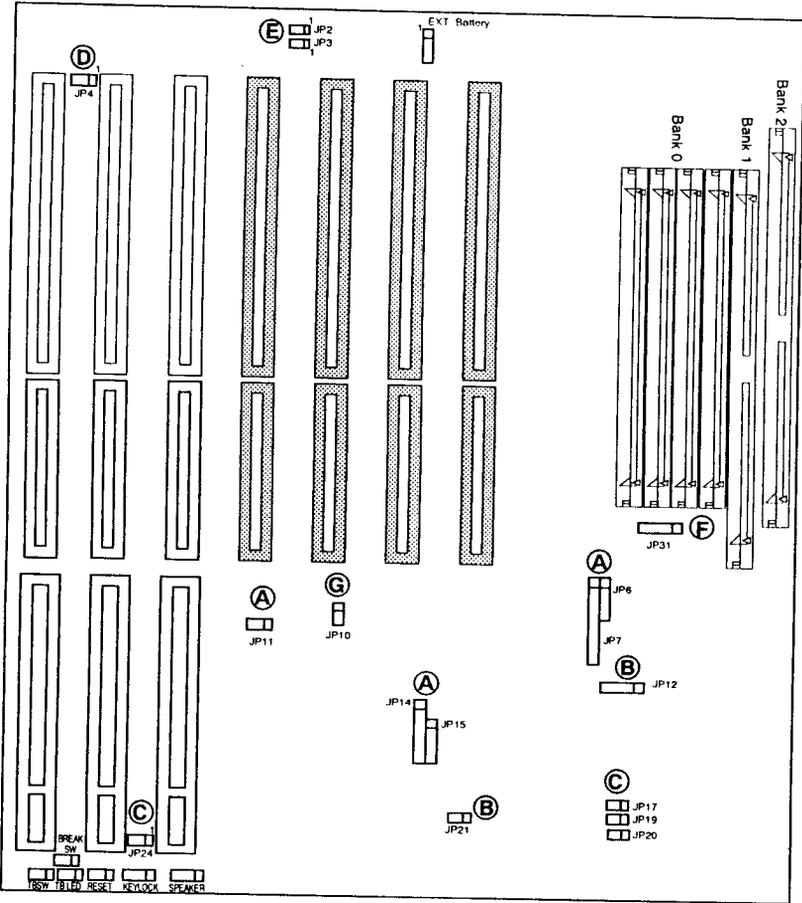
- . After removing the system cover, discharge any static electricity that might have accumulated in your body by touching a grounded or anti-static surface (e.g. anti-static pads). If nothing is available, touch the power supply housing. This assumes the system unit is plugged in and grounding the case. Be certain to do this before removing components from their anti-static coverings.
- . When handling separate cards, boards or modules, be cautious to avoid contacting with the components on them, and also with the “gold edge” connectors that plug into the expansion bus. It is best to handle them either by their edges or by mounting brackets that attach to the slot opening in the system cases. However, the above recommendations are just intended to avoid the static discharge problems.
- . Make certain that everything that connects to the system case, including the power supply, is unplugged before doing the installation work.

## 486F39X Mainboard Layout



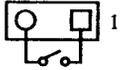
- |                         |                        |
|-------------------------|------------------------|
| 1. CPU                  | 5. ISA Expansion Slots |
| 2. TAG SRAM Chip        | 6. SIMM Memory         |
| 3. Cache SRAM Chips     | 7. ROM BIOS            |
| 4. VESA Expansion Slots | 8. Keyboard Connector  |

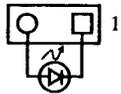
## 486F39X Mainboard Jumper Location

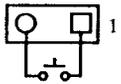


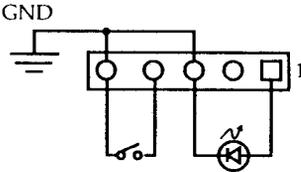
- A. CPU Type Selection
- B. Cache Size Selection
- C. CPU Frequency Selection
- D. CMOS RAM Clear
- E. Power Management SM Outs
- F. Memory Configuration Group Selection
- G. CPU Voltage Selection

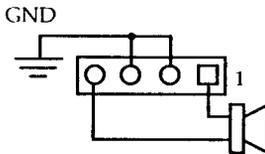
**Connectors**

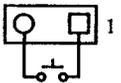
**Turbo**  On: Slow speed, Off: Turbo speed

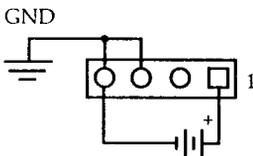
**Turbo LED**  Light on: Turbo speed

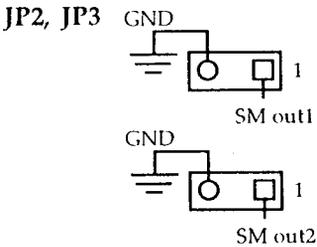
**Reset**  press to reset the system

**KeyLock**  On: disable keyboard  
Light on: +5V exist

**Speaker** 

**Break**  press to enter the power saving suspend mode

**BATT**  external battery 3.6V



Both of two SM out signals will be driven to logic low, when the system enters the suspend mode. These two signals are used to control the "green" devices such as a green power supply or a feature connector on VGA card.

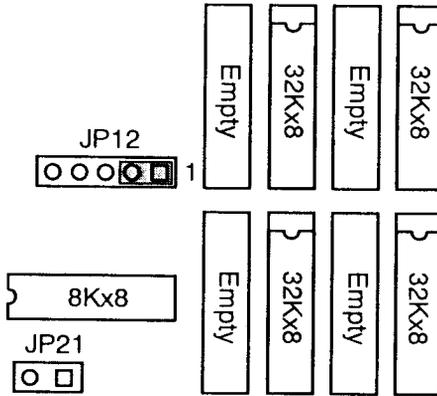
## Cache Memory

The 486F39X mainboard has one of four external cache options installed; 0KB, 128KB, 256KB or 512KB. The cache use SRAM chips in four sizes, 8KB, 32KB, 64KB and 128KB. All SRAM must have a speed of 25ns or faster. If the CPU is a 486DX-50 or 486DX4-100, use a 20ns or faster chip for Tag RAM. The chart below shows the SRAM chips required for each configuration.

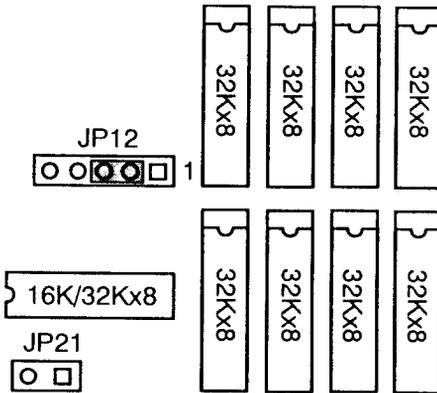
Cache Size	Tag RAM	Data RAM
128KB	one 8Kx8 SRAM	Four 32Kx8 SRAMs
256KB	one 16Kx8 or 32Kx8 SRAM	Eight 32Kx8 SRAMs or Four 64Kx8 SRAMs
512KB	one 32Kx8 SRAM	Eight 64Kx8 SRAMs or Four 128Kx8 SRAMs

The figures below show where to install the SRAM chips and jumper settings for each cache configuration. Note: Top 4 socket pins must be open when install a 28-pin SRAM chip in a 32-pin socket.

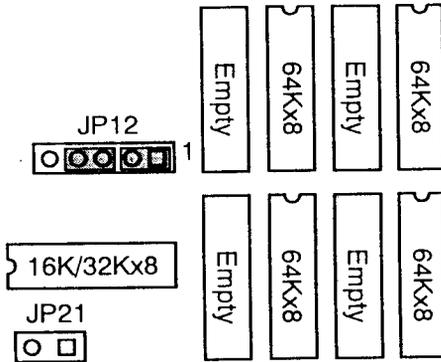
128KB Cache



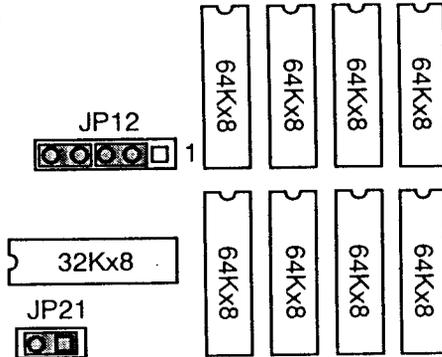
256KB Cache (A)



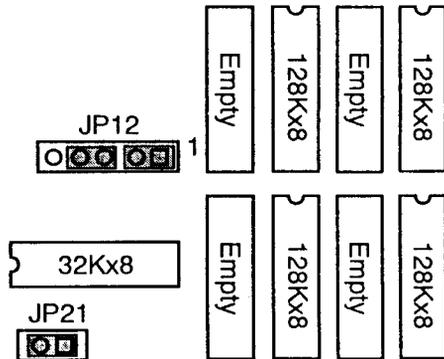
256KB Cache (B)



512KB Cache (A)



512KB Cache (B)



## System Memory

The 486F39X mainboard provides three groups of memory configuration. The flexibility of memory configuration allows 30-pin and/or 72-pin SIMM modules can be used in your system. A 5-pin jumper JP31 is used to select the memory group. Due to the 486F39X mainboard high speed design. The memory modules for the 486F39X must meet all of the following requirements:

30-Pin Modules Size: 1MB, 4MB, 16MB

72-Pin Modules Size: Single side (S)  
1MB, 4MB, 16MB

Double side (D)  
2MB, 8MB, 32MB

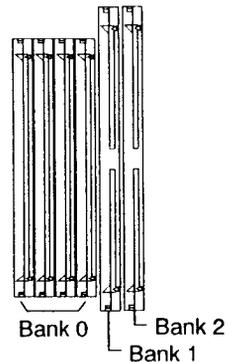
DRAM Mode: fast page mode

DRAM Speed: 80ns or faster

RAS Access Time: 60ns ~ 80ns

CAS Access Time: 10ns ~ 25ns

SIMMs have cut-out at one end that matches an extension on one of the vertical posts of each socket.



The following are all the available memory configurations.

## Memory Configuration Group 1

 1 JP31 (default setting)

SIMM Bank0 (30-Pin)	SIMM Bank1 (72-Pin)	SIMM Bank2 (72-Pin)	Total
1MB			1MB
1MB	1MB (S)		2MB
1MB	1MB (S)	2MB (D)	4MB
1MB	4MB (S)		5MB
1MB	1MB (S)	4MB (S)	6MB
1MB	1MB (S)	8MB (D)	10MB
1MB	16MB (S)		17MB
1MB	1MB (S)	16MB (S)	18MB
4MB			4MB
4MB	4MB (S)		8MB
4MB	4MB (S)	4MB (D)	12MB
4MB	4MB (S)	8MB (D)	16MB
4MB	16MB (S)		20MB
4MB	4MB (S)	16MB (S)	24MB
4MB	16MB (S)	16MB (S)	36MB
4MB	4MB (S)	32MB (D)	40MB
16MB			16MB
16MB	16MB (S)		32MB
16MB	16MB (S)	16MB (S)	48MB
16MB	16MB (S)	32MB (D)	64MB

(S)=single side DRAM (D): double side DRAM

## Memory Configuration Group 2



SIMM Bank0 (30-Pin)	SIMM Bank1 (72-Pin)	SIMM Bank2 (72-Pin)	Total
	1MB (S)		1MB
	1MB (S)	1MB (S)	2MB
	1MB (S)	4MB (S)	5MB
	1MB (S)	16MB (S)	17MB
	4MB (S)		4MB
	4MB (S)	4MB (S)	8MB
	4MB (S)	16MB (S)	20MB
	16MB (S)		16MB
	16MB (S)	16MB (S)	32MB

### Memory Configuration Group 3



SIMM Bank0 (30-Pin)	SIMM Bank1 (72-Pin)	SIMM Bank2 (72-Pin)	Total
	2MB (D)		2MB
	2MB (D)	2MB (D)	4MB
	2MB (D)	4MB (S)	6MB
	2MB (D)	8MB (D)	10MB
	2MB (D)	16MB (S)	18MB
	8MB (D)		8MB
	8MB (D)	4MB (S)	12MB
	8MB (D)	8MB (D)	16MB
	8MB (D)	16MB (S)	24MB
	8MB (D)	32MB (D)	40MB
	32MB (D)		32MB
	32MB (D)	16MB (S)	48MB
	32MB (D)	32MB (D)	64MB

(S)=single side DRAM (D): double side DRAM

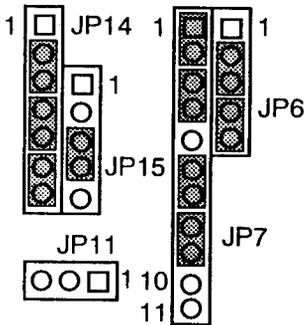
## CPU Type and Speed Selection

- Selecting the CPU Type

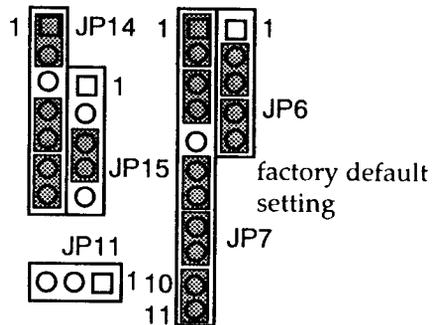
There are five jumpers to be set for the CPU Type selection. Make Sure the settings are correct for your CPU. An improper setting may damage the CPU.

JP10: CPU Voltage Selection	
Close	For 5 Volt CPU
Open	For 3.3 Volt CPU

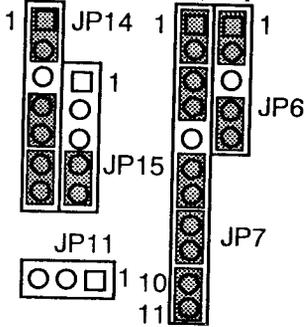
Intel 486SX & SX2  
AMD 486SX & SX2



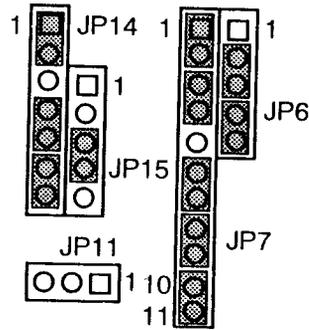
Intel 486DX, DX2, 487SX & ODP  
Intel 486DX4 - 3X Clock (JP11 open)  
Intel 486DX4 - 2.5X Clock (JP11 short 1&2)  
Intel 486DX4 - 2X Clock (JP11 short 2&3)



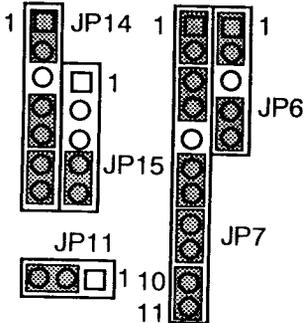
P24D, P24C-WB, P24T & P24CT  
 Write-Thru L1 Cache (JP7 short 10&11)  
 Write-Back L1 Cache (JP7 open 10&11)



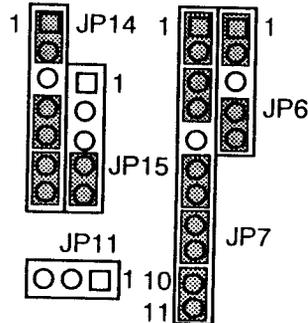
AMD 486 DX2 (JP7 short 10&11)  
 AMD 486 DX4 (JP7 open 10&11)



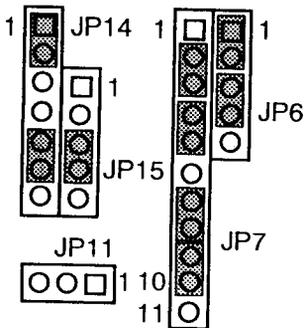
AMD 486 Enhanced DX2  
 Write-Thru L1 Cache (JP7 short 10&11)  
 Write-Back L1 Cache (JP7 open 10&11)



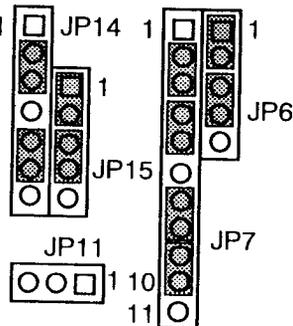
AMD 486 Enhanced DX4  
 Write-Thru L1 Cache (JP7 short 10&11)  
 Write-Back L1 Cache (JP7 open 10&11)



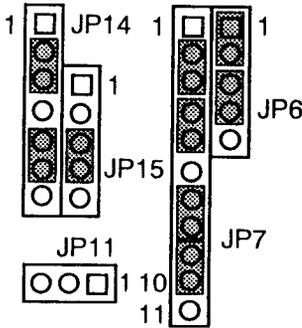
Cx 486DX & DX2



Cx 486S2

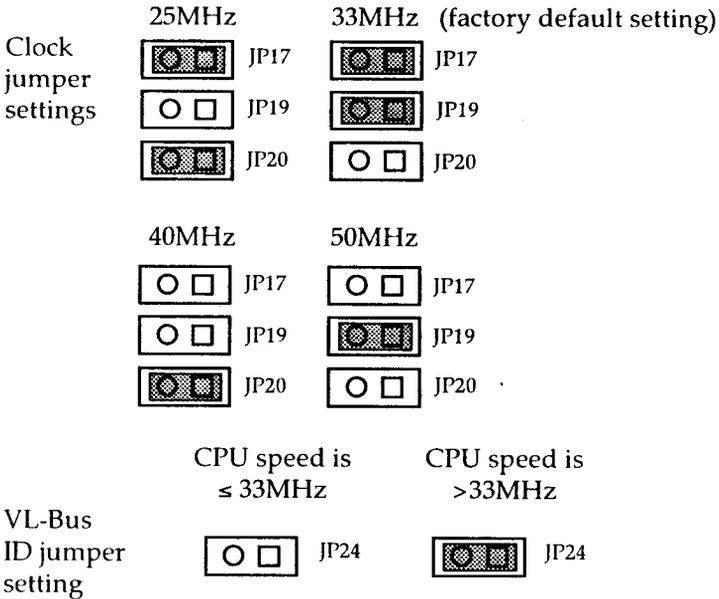


Cx 486S



- Selecting the CPU Speed

If you install a CPU with a different operating speed, you must change the CPU speed jumper settings and the VESA ID speed jumpers setting.



## **System Speed Change**

The 486F39X mainboard can be configured for turbo or slow speeds to accommodate most DOS applications. On power up, the system will be operating at turbo speed (factory setting).

You can switch between turbo and slow 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 the < + > key to speed up the system speed.

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- 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 the < + > key to speed up the system speed.

# 3 Software Guide

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## Software Setup

After hardware configuration of the 486F39X mainboard is completed, and system hardware has been assembled, the completed system may be powered-up. At this point, software setup should be run to ensure that the system information is correct.

Normally, system setup is needed when the system hardware is not identical with the information contained in the CMOS RAM, whenever the CMOS RAM has lost power, or the system features need to be changed.

---

## Running AWARD BIOS

When the system is powered on, the BIOS will enter the Power-On Self Test (POST) routines. These routines perform the various diagnostic checks at the time the system is powered up; if an error is encountered, the error will be reported in one of two different ways. If the error occurs before the display device is initialized, a series of beeps will be transmitted. If the error occurs after the display device is initialized, the screen will display the error message.

After the POST routines are completed, the following message appears:

“ Press DEL to enter SETUP “

To access the AWARD BIOS SETUP program, press the <DEL> key. The main program screen will be displayed at this time.

## The Main Program Screen

ROM ISA BIOS (2C4I8F21) CMOS SETUP UTILITY AWARD SOFTWARE, INC.	
STANDARD CMOS SETUP BIOS FEATURES SETUP CHIPSET FEATURES SETUP POWER MANAGEMENT SETUP LOAD BIOS DEFAULTS LOAD SETUP DEFAULTS	PASSWORD SETTING IDE HDD AUTO DETECTION SAVE & EXIT SETUP EXIT WITHOUT SAVING
ESC: Quit F10: Save & Exit Setup	↑↓→←: Select Item (SHIFT) F2: Change Color
Time, Date, Hard Disk Type...	

Listed below are explanations of the keys displayed at the bottom of the screens:

<ESC>: Exit the utility

**ARROW KEYS:** Use arrow keys to move cursor to desired selection.

<Shift> <F2>: Changes background and foreground colors.

<F10>: Saves all changes made to Setup and exits program.

## Standard CMOS Setup

Selecting "STANDARD CMOS SETUP" on the main program screen displays this menu:

### Standard CMOS Setup Screen

ROM ISA BIOS (2C418F21) CMOS SETUP UTILITY AWARD SOFTWARE, INC.					
Date (mm:dd:yy) : Fri, Jan 14 1994					
Time (hh:mm:ss) : 10: 00: 00					
	CYLS.	HEADS	PRECOMP	LANDZONE	SECTORS
Drive C : User (124MB)	936	16	65535	611	17
Drive D : None (0MB)	0	0	0	0	0
Drive A : 1.2M, 5.25 in.			Base Memory: 640K Extended Memory: 11264K Expanded Memory: 0K Other Memory: 384K <hr/> Total Memory: 12288K		
Drive B : 1.44M, 3.5 in.					
Video : EGA/VGA					
Halt On : All Errors					
ESC : Quit		↑↓→← : Select Item		PU/PD/+/-: Modify	
F1 : Help		(SHIFT)F2 : Change Color		F3: Toggle Calendar	

The standard CMOS Setup utility is used to configure the following features:

- **Set Date: Month, Date, Year.**
- **Set Time: Hour, Minute, and Second.** Uses 24 hour clock format (for PM numbers, add 12 to the hour; you would enter 4:30 p.m. as 16:30:00).

- Drive C: and Drive D: Hard disk types from 1 to 46 are standard ones; type “User” is user definable, and Type “None” is Not Installed (e.g. SCSI). You must enter the hard disk parameters for each drive.

Note 1: For an IDE hard drive, you can use the auto-detection utility in the main program screen to enter this information.

Note 2: There are five categories of information you must enter when you select type “User”. The hard disk manufacturer’s documentation should provide you with the information needed.

Cyl: This is the number of cylinders found in the specified drive type.

Heads: This is the number of heads found in the specified drive type.

WPcom: WPcom is the read delay circuitry which takes into account the timing differences between the inner and outer edges of the surface of the disk platter. The number designates the starting cylinder of the signal.

L-Zone: LZone is the landing zones of the heads. This number determines the cylinder location where the heads will normally park when the system is shut down.

Capacity: This is the formatted capacity of the drive based on the following formula:

(# of heads) x (# of cylinders) x (# of sectors) x (512 bytes/sec)

Floppy Drive A and Floppy Drive B: The options are 360KB 5 1/4", 1.2MB 5 1/4", 720KB 3 1/2", 1.44MB 3 1/2", 2.88MB 3 1/2" and Not Installed. Not Installed could be used as an option for diskless workstations.

Video: Options are Monochrome, CCA40, CGA80 and EGA/VGA.

Halt on: Controls whether the system stops in case of an error. The options are "All Errors", "No Errors", "All, But Keyboard", "All, But Diskette", "All, But Disk/Key". The default setting is "All Errors".

After you have made your selections, exit to the main program screen by pressing the <ESC> key.

---

## **BIOS Features Setup**

Selecting "BIOS FEATURE SETUP" on the main program screen displays this menu:

## BIOS Features Setup Screen

ROM ISA BIOS (2C418F21) BIOS FEATURES SETUP AWARD SOFTWARE, INC.			
Virus Warning	: Enable	Video BIOS Shadow	: Enable
Internal Cache	: Enable	C8000-CFFFF Shadow	: Disable
External Cache	: Enable	D0000-D7FFF Shadow	: Disable
		D8000-DFFFF Shadow	: Disable
Quick Power On Self Test	: Enable		
Boot Up Sequence	: C, A		
Boot Up Floppy Seek	: Enable		
Boot Up NumLock Status	: On		
IDE HDD Block Mode	: Disable		
Gate A20 Option	: Fast		
Typematic Rate Setting	: Disable	ESC : Quit	↑↓→←: Select Item
Typematic Rate (Chars/Sec)	: 6	F1 : Help	PU/PD/+/- : Modify
Typematic Delay (Msec)	: 250	F5 : Old Values (SHIFT)	F2 : Color
Password Option	: Setup	F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

The following explains the options for each feature:

**Virus Warning:** The Virus Warning default setting is "Enable". When enabled, any attempt to write to the boot sector and partition table will halt the system and cause a warning message to appear. If this happens, you can use an anti-virus utility on a virus free, bootable floppy disk to reboot and clean you system.

**Internal Cache:** The default setting is "Enable". This setting enables the CPU internal cache.

**External Cache:** The default setting is "Enable". This setting enables the external cache.

**Quick Power On Self Test:** The default setting is "Enable". If enabled, this will skip some diagnostic checks during the Power On Self Test (POST) to speed up the booting process.

**Boot Up Sequence:** The default setting is “C:, A:”; the other option is “A:, C:”. The BIOS will load the operating system from the disk drives in sequence selected here.

**Boot Up Floppy Seek:** The default setting is “Enable”. When enabled, the BIOS will check whether there is a floppy disk drive installed.

**Boot Up NumLock Status:** The default setting is “ON”. If set “OFF”, the cursor controls will function on the numeric keypad

**IDE HDD Block Mode:** The default setting is “Disable”. When enabled this feature will enhance disk performance by using multi-sector transfer instead of one sector per transfer. Do not change the default setting unless your disk drive supports multi-sector transfer.

**Gate A20 Option:** The default setting is “Fast”. This is the optimum setting for the mainboard. The other option is “Normal”.

**Typematic Rate Setting:** The default setting is “Disable”. If enabled, you can set the typematic Rate and typematic Delay.

**Typematic Rate (Chars/Sec):** This setting controls the speed at which the system registers repeated keystrokes. The choices range from 6 to 30 char/sec. The default setting is “6”.

**Typematic Delay (Msec):** This setting controls the time between the display of the first and second characters. There are four delay rate choices: 250ms, 500ms, 750ms and 1000ms. The default setting is 250ms.

**Password Option:** This setting controls the password feature. The options are “Setup” and “Always”. Select “Setup” will protect the configuration settings from being tampered with. Select “Always” if you want to use password feature every time the system boots up. The default setting is “Setup”. you can create your password by using the “CHANGE PASSWORD” on the main program

screen.

**Video BIOS Shadow:** The default setting is "Enable". When enabled, the ROM BIOS on the video display card is copied into system DRAM to enhance performance.

**C8000-CFFFF Shadow, D0000-D7FFF Shadow, D8000-DFFFF Shadow:** The default setting for the shadow feature is "Disable". When enabled, the ROM on the expansion card with the specific address is copied into system DRAM. It will also reduce the size of memory available to the system.

After you have made your selections in the BIOS FEATURES SETUP, press the <ESC> key to go back to the main program screen.

## Chipset Features Setup:

Selecting "CHIPSET FEATURE SETUP" on the main program screen displays this menu:

### Chipset Features Screen

ROM ISA BIOS (2C418F21) CHIPSET FEATURES SETUP AWARD SOFTWARE, INC.			
Auto Configuration	: Enable	Latch Local Device	: T3
AT Bus Clock	: 1/4 CLKIN	Local Bus Ready	: Synchronize
DRAM Speed	: Faster	Memory Hole Size	: None
DRAM Write WS	: 1 WS	DMA Clock Select	: 4MHz
DRAM Write CAS	: 1T		
DRAM Write Burst	: Disable		
DRAM Slow Refresh	: Disable		
External Cache	: Write Back		
Internal Cache	: Write Thru		
Cache Burst Read	: 1T	ESC : Quit	↑↓→←: Select Item
Cache Write Cycle	: 2T	F1 : Help	PU/PD/+/-: Modify
System Shadow	: Cacheable	F5 : Old Values (SHIFT) F2	: Color
Video Shadow	: Cacheable	F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

The following table lists the features and options available for each

Feature	Options	Remarks
Auto Configuration	Enable (default) Disable	When Enabled the BIOS will automatically detect the CPU frequency and the size of cache banks to enter and make optimal settings.
AT Bus Clock	7.159 MHz 1/2 CLK 1/3 CLK (25MHz) 1/4 CLK (33MHz) 1/5 CLK (40MHz) 1/6 CLK (50MHz)	If the auto-configuration feature is Enabled, the BIOS automatically configures this item.
DRAM Speed	Fastest (25MHz) Faster (33MHz) Slower (40MHz) Slowest (50MHz)	If the auto-configuration feature is Enabled, the BIOS automatically configures this item.
DRAM Write WS	0 WS (25MHz) 1 WS (33/40/50MHz)	If the auto-configuration feature is Enabled, the BIOS automatically configures this item.
DRAM Write CAS	1 T (25/33MHz) 2 T (40/50MHz)	If the auto-configuration feature is Enabled, the BIOS automatically configures this item.
DRAM Write Burst	Disable (default) Enable	
DRAM Slow Refresh	Disable (default) Enable	Enabled only if your system's DRAM can support slow refresh.

Feature	Options	Remarks
External Cache	Write Back (default) Write Thru	Write Back Scheme has better performance than Write Thru.
Internal Cache	Write Back Write Thru (default)	This feature appears only when the BIOS detects the CPU in your system has internal Write Back Cache.
Cache Burst Read	1 T (25MHz, 33MHz w/ two banks of cache) 2 T (40/50MHz, 33MHz w/ one Bank of cache)	If the auto-configuration feature is Enabled, the BIOS automatically configures this item.
Cache Write Cycle	2 T (25/33MHz) 3 T (40/50MHz)	If the auto-configuration feature is Enabled, the BIOS automatically configures this item.
System Shadow	Cacheable (default) Non-Cacheable	
Video Shadow	Cacheable (default) Non-Cachable	
Latch Local Bus	T3 (default) T2	
Local Bus Ready	Synchronize (default) Transparent	
Memory Hole Size	None (default) 1Mb 2Mb 4Mb	<pre> 1 1 x x x x x          L A22      └─ A23 </pre>
DMA Clock Select	4MHz (default) 8MHz	

After you have made your selections in the CHIPSET FEATURES SETUP, press the <ESC> key to go back to the main program screen.

## Power Management Setup

The power Management Setup controls the mainboard's "green" features and is designed to work with "SL" or "Non-SL" type CPUs. The video features work with a "green" monitor, or a regular monitor if you connect the monitor to a green power supply which has a cable connected to the "SM Outs" (JP2 or JP3)

### SL-CPU

Selecting "POWER MANAGEMENT SETUP" on the main program screen displays this menu if your CPU is "SL" Type.

ROM ISA BIOS (2C418F21) POWER MANAGEMENT SETUP AWARD SOFTWARE, INC.			
Power Management	: User Define	IRQ 6 (Floppy Disk)	: Enable
PM Control by APM	: No	IRQ 7 (LPT or LAN)	: Enable
Video off method	: V/H SYNC + Blank	IRQ 8 (RTC, OS2)	: Disable
<b>** System PM **</b>		IRQ 9 (Reserved)	: Enable
HDD Power Down	: Disable	IRQ 10 (Reserved)	: Enable
System Doze	: Disable	IRQ 11 (Reserved)	: Enable
System Standby	: Disable	IRQ 12 (PS2 Mouse)	: Enable
System Suspend	: Disable	IRQ 13 (387)	: Enable
<b>** PM Events **</b>		IRQ 14 (Hard Disk)	: Enable
Local Master	: Enable	IRQ 15 (Reserved)	: Enable
Local Device	: Disable		
Video Activities	: Disable		
DMA Activities	: Enable		
IRQ 1 (Keyboard)	: Enable	ESC : Quit	↑↓←→ : Select Item
IRQ 3 (COM 2)	: Enable	F1 : Help	PU/PD/+/- : Modify
IRQ 4 (COM 1)	: Enable	F5 : Old Values (SHIFT)	F2 : Color
IRQ 5 (LPT or LAN)	: Enable	F6 : Load BIOS Defaults	
		F7 : Load Setup Defaults	

**Power Management:** This setting controls the system Doze, System Standby, and System Suspend Timer features. There are four options.

**User Define:** allow you to customize all power saving timer features.

**Optimize:** This is the recommended setting for general use.

Test/Demo: This is for test/demonstration purpose.

Disable: Disable the power management features.

**PM Control by APM:** The default setting is “No”.

If set “Yes”, system BIOS will wait for APM’s prompt before it enter any PM mode.

Note: If-your system power management is controlled by APM and if there is a task running, even the timer is time out, the APM will not prompt the BIOS to put the system into any power saving mode.

**Video Off Method:** This setting controls the Video off method in power saving mode. The default setting is V/H SYNC+Blank. This setting disables V/H SYNC signals and blank the screen in power saving mode. The other option is “Blank Screen”.

**HDD Power Down:** Setting Range from “1 Min” to “15 Min”, “Disable” and “When Suspend”. The IDE hard drive will spin down if it is not accessed within a specified length of time. If “When Suspend” is selected, the IDE hard drive spin down when the system enters System Suspend mode.

**System Doze:** Setting Range from “10 Sec” to “3 Hr” and “Disable”. The system speed will change from turbo to slow if no Power Management events occur for a specified length of time. The system will return to full power when a Power Management event is detected.

**System Standby:** Setting Range from “10 Sec” to “3 Hr” and “Disable”. The CPU and VESA Local Bus operating frequency slows down to 8MHz and the Video signal is suspended if no Power Management events occur for a specified length of time. Full power functions return when a Power Management event is detected.

**System Suspend:** Setting Range from “10 Set” to “3 Hr” and “Disable”. The VESA Local Bus operating frequency slows down to 8MHz, the CPU clock is stopped, the video signal is suspended, and the “SM Outs” (JP2, JP3) are driven to logic low, if no Power Management events occur for a specified length of time. Full power functions return when a Power Management event is detected.

**Local Master:** The default setting is “Enable”. This makes the chipset to monitor VESA Bus Master card activity such as SCSI card.

**Local Device:** The default setting is “Disable”. This makes the chipset to monitor VESA Bus-Slave card activity such as VESA VGA card or VESA IDE Card.

**Video Activities:** The default setting is “Disable”. When enabled, the Video display activity will be monitored.

**DMA Activities:** The default setting is “Enable”. This makes the chipset to monitor DMA transfer activity.

**IRQ 1-15:** These features determine which IRQs are monitored. If you are not sure which IRQs should be monitored, just enable every IRQ except IRQ8. IRQ8 can only be enabled under OS2 Operating System.



## Non-SL CPU

If your CPU type is Non-SL, the menu will look like this after selecting Power Management setup from the main program screen.

ROM ISA BIOS (2C418F21)	
POWER MANAGEMENT SETUP	
AWARD SOFTWARE, INC.	
Power Management : User Define	IRQ 6 (Floppy Disk) : Enable
	IRQ 7 (LPT or LAN) : Enable
	IRQ 8 (RTC, OS2) : Enable
	IRQ 9 (Reserved) : Enable
<b>** System PM **</b>	IRQ 10 (Reserved) : Enable
HDD Power Down : Disable	IRQ 11 (Reserved) : Enable
System Doze : Disable	IRQ 12 (PS2 Mouse) : Enable
System Standby : Disable	IRQ 13 (387) : Enable
	IRQ 14 (Hard Disk) : Enable
<b>** PM Events **</b>	
Local Master : Enable	
Local Device : Disable	
Video Activities : Disable	
DMA Activities : Enable	
IRQ 1 (Keyboard) : Enable	
IRQ 3 (COM 2) : Enable	
IRQ 4 (COM 1) : Enable	
IRQ 5 (LPT or LAN) : Enable	
	ESC : Quit
	↑↓→← : Select Item
	F1 : Help PU/PD/+/- : Modify
	F5 : Old Values (SHIFT) F2 : Color
	F6 : Load BIOS Defaults
	F7 : Load Setup Defaults

The power saving timers for Non-SL CPU are System Doze and System Standby modes.

**System Doze:** Range from "10 Sec" to "10 Min" and "Disable". If no Power Management events occur for a specified length of time. The CPU and VESA VL-bus operating frequency will slow down to 8MHz.

**System Standby:** Range from "10 Sec" to "10 Min" and "Disable". If no Power Management events occur for a specified length of time, the CPU and VESA VL-bus operating frequency will slow down to 8MHz and the "SM Outs" (JP2, JP3) will be droven to logic low.

If a green monitor is used, you can use a single wire to connector the Pin 1 of JP2 or JP3 to EnSync Pin of the feature connector on VGA card. A regular monitor also can be used to save power if you connect the monitor to a "green" power supply which has a cable connected to the JP2 or JP3.

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## Load BIOS Defaults

This is useful if you are having problems with your mainboard and need to debug or troubleshoot the system.

The defaults loaded only affect the BIOS Features Setup and Chipset Features Setup screens. There is no effect on the Standard CMOS Setup. To use this feature, highlight on the main screen and press <Enter>. A line will appear on screen asking if you want to load the BIOS default values. Press the <Y> key and then press <Enter> key if you want to load the BIOS defaults. Press <N> if you don't want to proceed.

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## Load Setup Defaults

“LOAD SETUP DEFAULTS” loads optimized settings which are stored in the BIOS ROM.

The auto-configured settings only affect the BIOS Features Setup and Chipset Features Setup screens. There is no effect on the Standard CMOS Setup. To use this feature, highlight on the main screen and press the <Enter> key. A line will appear on screen asking if you want to load the Setup default values. press the <Y> key and then press the <Enter> key if you want to load the Setup defaults. Press <N> if you don't want to proceed.



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## Password Setting

The “PASSWORD SETTING” utility sets the password. The mainboard is shipped with the password disabled. If you want to change the password, you must first enter the current password. Then at the prompt, type your new password. The password is case sensitive and you can use up to 8 alphanumeric characters. Press <Enter> after entering the password. At the next prompt, confirm the new password by typing it and pressing <Enter> again.

To disable the password, press the <Enter> key instead of entering a new password when the “Enter Password” dialog box appears. A message will appear confirming that the password is disabled.

Note: If you forget your password, the only way to solve this problem is to discharge the CMOS static memory by removing the jumper shunt from pin 2 and pin 3 of JP4 (default setting), placing it at the position to short pin 1 and pin 2 of JP4 for 5 seconds, then recover it to its default setting.

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## IDE HDD Auto Detection

If your system has an IDE hard drive, you can use this utility to detect its parameters and enter them into the Standard CMOS Setup automatically.

If the auto-detected parameters displayed do not match the ones that should be used for your drive, do not accept them. Press the <N> key to reject the values and enter the correct ones manually on the Standard CMOS Setup screen.

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## **Save And Exit Setup**

Selecting this option and press the <Enter> key to save the new setting information in the CMOS memory and continue with the booting process.

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## **Exit Without Saving**

Selecting this option and pressing the <Enter> key lets you exit the Setup Utility without recording any new values or changing old ones.