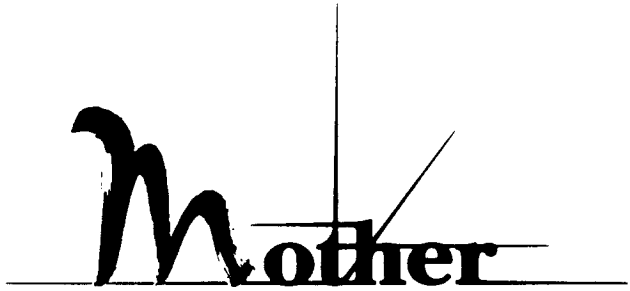

80486VESA

User's Manual

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

Copyright Notice

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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

486F39X Mainboard Features

The 486F39X is a high performance, function enchanced 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.

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

Before You Begin

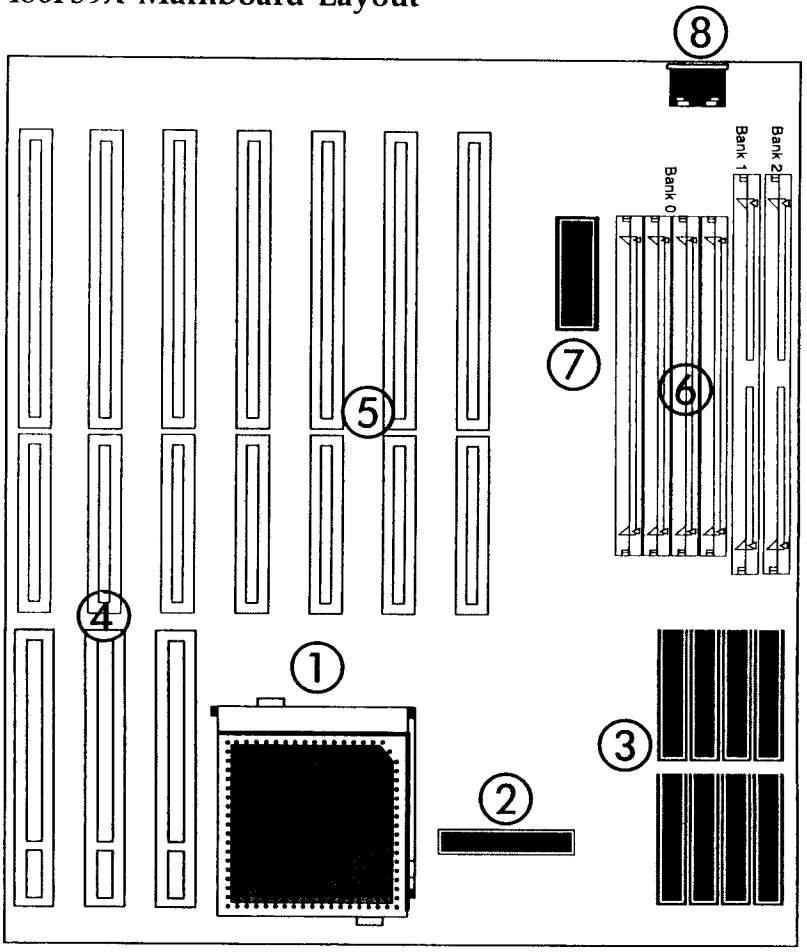
Before removing the mainboard from its anti-static bag, you need to eliminate any static electricity that may be accumulated on your body. The charge that can build u p in your body may be more than enough to damage integrated circuits on the system board. Therefore, it is important to observe basic 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.

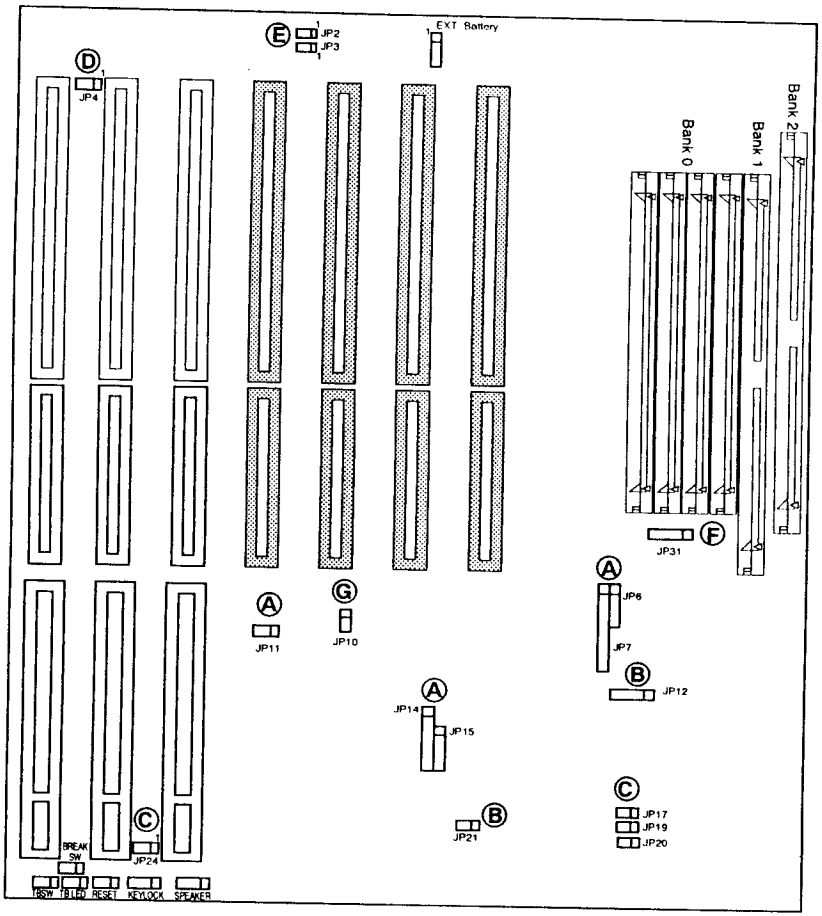
- Make certain that everything that connects to the system case, including the power supply, is unplugged before doing the installation work.

486F39X Mainboard Layout



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

486F39X Mainboard Jumper Location



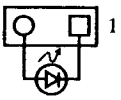
A. CPU Type Selection
B. Cache Size Selection
C. CPU Frequency Selection
D. CMOS RAM Clear
E. Power Management SM Outs
F. Memory Configuration Group Selection
G. CPU Voltage Selection

Connectors

Turbo

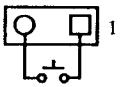
On: Slow speed, Off: Turbo speed

Turbo LED



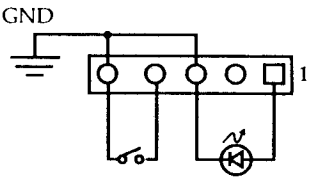
Light on: Turbo speed

Reset



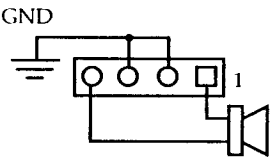
press to reset the system

KeyLock

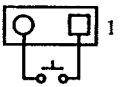


On: disable keyboard
Light on: +5V exist

Speaker

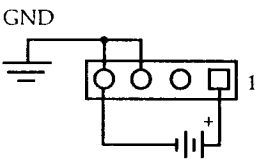


Break



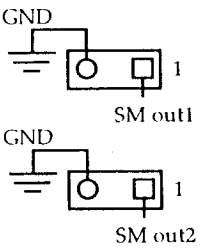
press to enter the power saving suspend mode

BATT



external battery 3.6V

JP2, JP3



Both of two SM out signals will be drived 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.

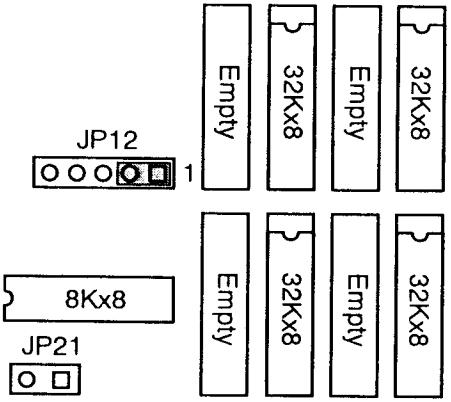
Cache Memory

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.

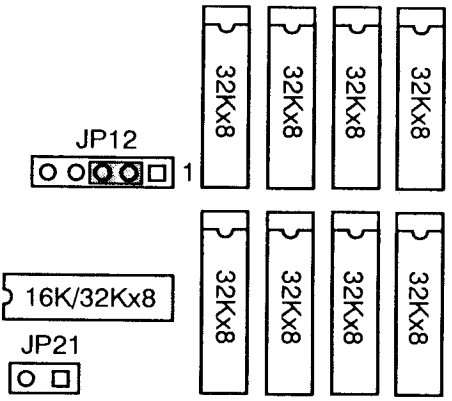
Cache Size	Tag RAM	Data RAM
128KB	one 8Kx8 SRAM	Four 32Kx8 SRAMs
256KB	one 16Kx8 or 32Kx8 SRAM	Eight 32Kx8 SRAMs or Four 64Kx8 SRAMs
512KB	one 32Kx8 SRAM	Eight 64Kx8 SRAMs or Four 128Kx8 SRAMs

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.

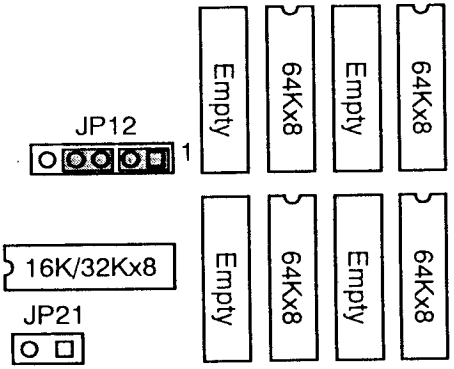
128KB Cache



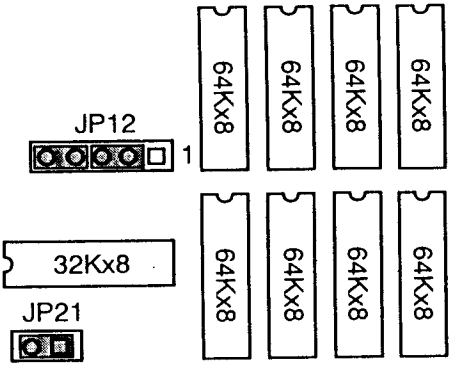
256KB Cache (A)



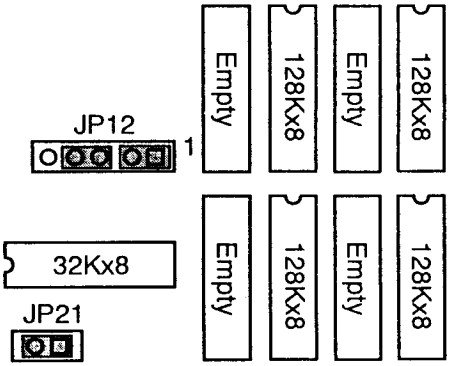
256KB Cache (B)



512KB Cache (A)



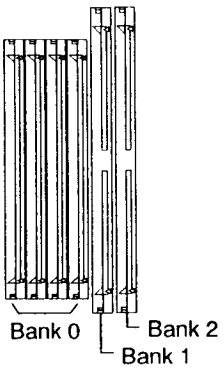
512KB Cache (B)



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

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

JP31

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

JP31

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

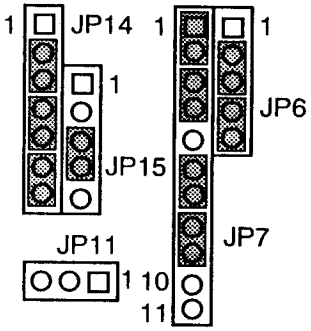
(S)=single side DRAM (D): double side DRAM

CPU Type and Speed Selection

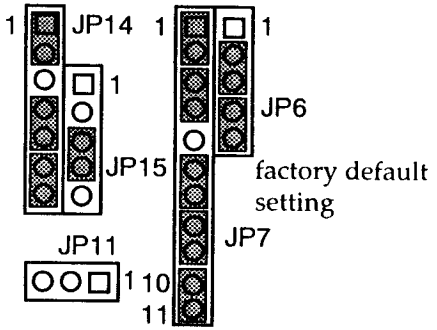
- Selecting the CPU Type
  There are five jumpers to be set for the CPU Type selection. Make Sure the settings are correct for your CPU. An improper setting may damage the CPU.

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

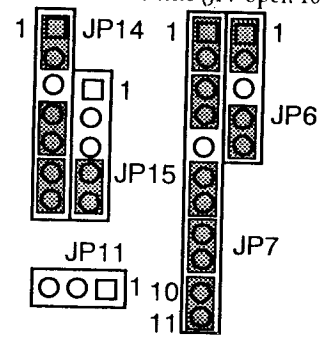
Intel 486SX & SX2
AMD 486SX & SX2



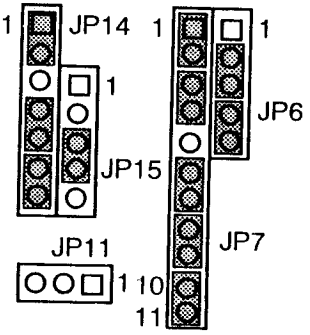
Intel 486DX, DX2, 487SX & ODP
Intel 486DX4 - 3X Clock (JP11 open)
Intel 486DX4 - 2.5X Clock (JP11 short 1&2)
Intel 486DX4 - 2X Clock (JP11 short 2&3)



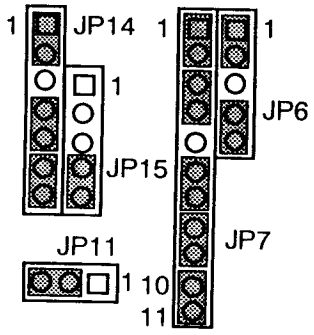
P24D, P24C-WB, P24T & P24CT
Write-Thru L1 Cache (JP7 short 10&11)
Write-Back L1 Cache (JP7 open 10&11)



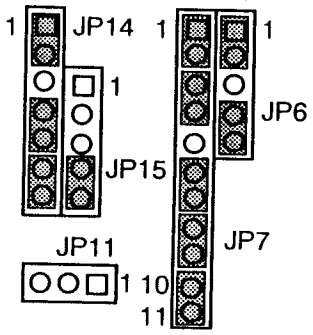
AMD 486 DX2 (JP7 short 10&11)
AMD 486 DX4 (JP7 open 10&11)



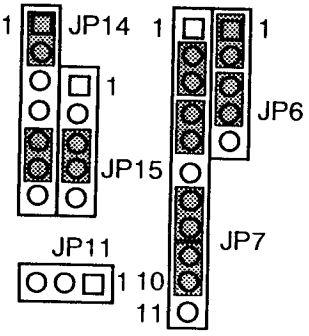
AMD 486 Enhanced DX2
Write-Thru L1 Cache (JP7 short 10&11)
Write-Back L1 Cache (JP7 open 10&11)



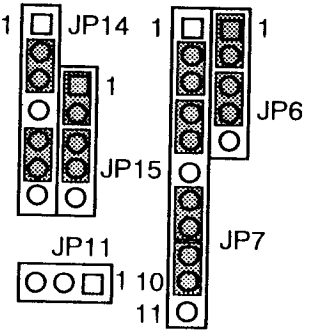
AMD 486 Enhanced DX4
Write-Thru L1 Cache (JP7 short 10&11)
Write-Back L1 Cache (JP7 open 10&11)



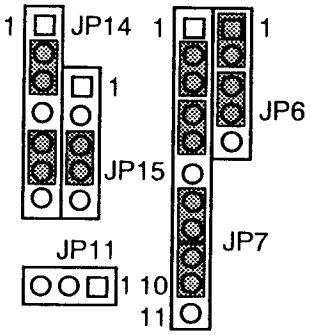
Cx 486DX & DX2



Cx 486S2

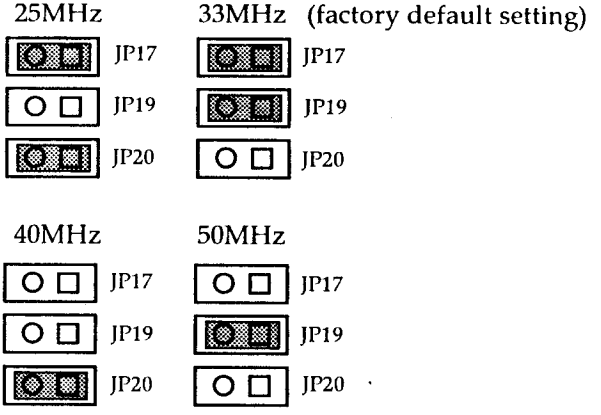


Cx 486S

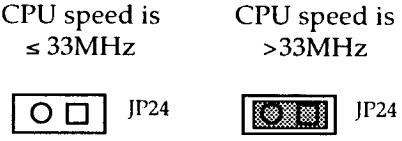


- Selecting the CPU Speed
  If you install a CPU with a different operating speed, you must change the CPU speed jumper settings and the VESA ID speed jumpers setting.

Clock jumper settings



VL-Bus ID jumper setting



System Speed Change

The 486F39X mainboard can be configured for turbo or slow speeds to accomodate 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.

3 Software Guide

Software setup

After hardware configuration of the 486 VESA motherboard 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 system information is correct.

System setup is needed when the system hardware is not identical with the information contained in the CMOS RAM, or whenever the CMOS RAM has lost power.

Running AMI Win BIOS

When the system is powered on, the BIOS will enter the Power-On Self Test(POST) routines. These rountines are divided into two phases:

*System Test and Initialization(test and initialize system boards for normal operations).
*System Configuration Verification(compare defined configuration with hardware actually installed).

The AMI BIOS performs 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. In the case of a non-fatal error, a prompt to press the <F1> key may also appear on the screen.

Normally, the only routine visible on the screen will be the memory test. Figure 1 displays the screen which appears when the system is powered on.

```
American
Megatrends AMIBIOS (c) 1993 American Megatrends, Inc.
xxxx KB OK
Hit DEL if you want to run SETUP


(c)American Megatrends, Inc.
xx-xxxx-xxxxxx-xxxxxxxx-xxxxxx-xxx-x
```

Figure 1:Initial Power-On Screen

At the left bottom corner of the screen, below the copyright message, a one line reference string appears. This screen is used to determine the options installed in the AMI BIOS. If a problem occurs with the system, copy the reference number down before consulting your system manufacturer.

To "freeze" the screen, power on the system and hold a key down on the keyboard. This will cause a "keyboard Error" message to appear on the screen and the system will wait for the <F 1> key to be pressed. At this point, you may copy the line down and then press <F 1> to continue the boot procedure. After the POST routine are completed, the following message appears:

"Hit DEL if you want to run SETUP"

To access the AMI BIOS SETUP program, press the <DEL> key. You may use either mouse or keyboard to change the setup.

Main Menu

The Main Menu contains four menus: Setup menu, Utility menu, Security menu, and Default menu. Each menu has some icons which represent features and/or functions to make your system achieving an optimal operating environment.

Follow the steps listed below to change the option or value of a feature, or perform a function.

(1) Use <Tab> key to select a sub-menu in the Main Menu.
(2) Use <↑> / <↓> or <←> / <→> keys to select an icon, then press <Enter>. A list of features with defaults options, or a sub-menu with icons will show on the screen. If the icon you select is in the Utility menu, the function will be performed.
(3) Use <↑> / <↓> or <←> / <→> keys to select the icon/feature which you want to change the option/value, then press <Enter>. A small screen with option/value will show up.
(4) Use <↑> / <↓> or <←> / <→> keys to select a desired option, or use <+>/<–> keys to change value, then press <Enter>.
(5) After completing the change, press <Esc> to return to the Main Menu.
(6) Press <Esc>, and use <↑> / <↓> or <←> / <→> keys to select "Save Setup Change and Exit" then press <Enter> to save the setup and reboot the system.

Setup Menu

There are four icons in the Setup Menu : 'Standard' icon, "Advances" icon, "Chipset" icon, and "Power Management" icon.

(1) The Standard icon is used to set date /time, floppy A and B types, and hard drive C and D types. After selecting the Standard icon, a sub-menu with five icons:Date/Time icon, Floppy A icon and Floppy B icon, Master Disk icon, Slave Disk icon will display on the screen.

Date/Time :
use <+>/<-> to set month, date, year, hour, minute and second. The time setup use 24-hour clock format, for PM numbers add 12 to the hour. After completeing date/time setting, press <Esc> to return to the Standard sub-menu.

Floppy A/B :
use <↑> / <↓> or <←> / <→> keys to select the proper type, then press<Enter>. The options are 360KB 5-l/4", 1.2MB 5-l/4", 720KB 3-1/2",1.44MB 3-l/2", 2.88MB 3-1/2"and Not Installed. After completing floppy drive type selection, press <Esc> to return to the Standard sub-menu.

Master/Slave Disk :
Use <↑> / <↓> or <←> / <→> keys to select the proper type, then press <Enter>. Hard disk type option available are Not installed, Type 1 to 46, USER, SCSI, and ESDI. Type "USER" is user definable. After completing hard disk type selection, press <Esc> to return to Standard sub-menu.

For an IDE hard drive, you can use the auto-detection utility in the Utility Menu to enter this information.

There are five categories of information you must enter when you select type "USER". The hard disk manufacture's documentation should provide you with the information needed.

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

Hd : This is the number of head found in the specified drive type.

Wp : 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.

LZ : L-Zone 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.

Sec : The number of sector on the hard drive.

Size(MB) : 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)

You must select type "SCSI" instead of "Not installed' for a SCSI hard disk.

After completing Standard setup, press <Esc> to exit from Standard sub-menu to Setup Menu.

(2) The **Advance icon** is used to set up the features for the system such as system boot up sequence, internal / external cache enable / disable, password checking, and ROM shadow area selection. The following table lists the features and options available.

Feature	Available Options
Primary Display	**Absent** **VGA/EGA(default)** **CGA 40x 2S** **CGA 80x 2S** **Mono**
Extended BIOS RAM Area	**0:300 (default)** **DOS 1K**
This option specifices whether the top 1KB of the system programming area beginning at 639K (DOS 1K) or address 0:300 in the system BIOS area in low memory will be used to store extended BIOS RAM information.	
Floppy Drive Seek At Boot	**Enabled(default)** **Disabled**
When enable, the BIOS will performance a Seek Command on floppy driver A: before booting the system.	
System Boot Up Sequence	**C: , A:(default)** **A: , C:**
This BIOS will load the Operation System from the disk driver in sequence selected here.	

Password Checking	**Setup(default)** **Always**
If Setup is chosen, the password prompt appears only if BIOS Setup is executed. If Always is choosen, the password prompt appears every time the computer is turned on.	
Video Shadow C000, 32K	**Enable(default)** **Disabled**
When enabled, the ROM BIOS on the video display card is copied into system DRAM to enhance performance.	
Shadow C800, 32K **Shadow D000, 32K** **Shadow D800, 32K** **Shadow E000, 32K** 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.	**Disabled(default)** **Enabled**
Internal Cache	**Enabled(default)** **Disabled**
Internal Cache Write Mode This option will show only if the internal cache memory of the CPU does not support Write-Back Scheme.	**Wrt-Thru (default)** **Wrt-Back**
External Cache	**Enable(default)** **Disable**
External Cache Write Mode This option specifies the type of caching algorithm used for external cache memory. The settings are Wrt-Thru(write through caching algorithm) or Wrt-Back (write-back caching algorithm).	**Wrt-Back(default)** **Wrt-Thru**

Video ROM Cache C000, 32K	**Enabled (default)** **Disabled**
This option permits the contents of the Video ROM BIOS area (which must have been already copied from ROM to RAM) to be read from or written to cache memory.Before setting this option to Enabled, you should make sure that no program will write to the Video BIOS area while computer is running. Unpredictable results will occur if this happen.	
System ROM Cache F000, 64K	**Enabled (default)** **Disabled**
This option permits the contents of the system BIOS ROM area (which must have been already copied from ROM to RAM) to be read from or written to cache memory. Before setting this option to Enabled, you should make sure that no program will write to the system BIOS area while computer is running. Unpredictable results will occur if this happen.	
Non-Cacheable Area #1 Size	**Disabled (default)** **64KB,128KB,256KB ,512KB, 1MB, 2MB, 4 MB.**
This options specify the size of the Non-Cacheable area of memory.The contents of these memory areas cannot be read from or written to cache memory.	
Non-Cacheable Area #1 Base	**Disabled (default)** **0KB ~**
This options specify the beginning memory address for areas of memory whose contents can't be read from or written to cache memory, In effect, write-protecting these areas. The option setting are any valid memory address start from 0KB.	

Non-Cacheable Area #1 Type	**DRAM (default)** **AT Bus**
IDE Block Mode	**Disabled (default)** **Enabled**
When enabled, this feature enables multiple sectors transfer instead of one sector per transfer for IDE drives to enhance disk performance. Do not change the defaults setting unless your disk drive supports multiple sectors transfer.	
Primary Master IDE LBA Mode	**Disabled (default)** **Enabled**
Logic Block Address mode is a new HDD accessing method to overcome the 528 Megabytes bottleneck. The number of cylinders, heads, and sectors shown in the setup may not be the number physical contained in the HDD. During HDD accessing, the IDE controller will transform the logical address described by cylinder, head, and sector numbers into its own physical address inside the HDD. The maximum HDD size suported by the LBA mode is 8.4 Gigabytes. Do not change the defaults setting unless your disk drive supports the LBA mode.	
Primary Slave IDE LBA Mode	**Disabled(default)** **Enabled**
Primary Ctrl 32 bits Xfer Mode	**Disabled(default)** **Enabled**
When enabled, this feature enables 32-bits data read and write for an IDE drive. Do not change the default setting unless your IDE controller card supports 32-bit data transfer.	

After completing selection within the Advanced icon, press <ESC> to return to the setup menu.

(3) The **Chipset icon** contains the setup of the Chipset's configuration register such as memory (DRAM and Cache RAM) wait states and cycle time, AT Bus clock. The following table lists the features and options available.

Feature	Available Options
System Auto Configuration	**Enabled(default)** **Disabled**
When Enabled , the BIOS will automatically detect the CPU type system frequency, and size of cache to make optional setting.	
-Bus Frequency	**7.159 Mhz** **CLK /10** **CLK /8** **CLK /6(50 MHz)** **CLK /5(40 MHz)** **CLK /4(33 MHz)** **CLK /3(25 MHz)** **CLK /2**
If the auto-configuration feature is Enabled, the BIOS automatically configures this item.	
-System DRAM Speed	**Slowest(25 MHz)** **Slower(33 MHz)** **Faster (40 MHz)** **Fastest (50 MHz)**
If the auto configuration function is enables, the BIOS automatically configure this feature.	

-DRAM Write Cycle Pulse Time	**2T(25/33 MHz)** **1T(40/50 MHz)**
If the auto-configuration feature is Enable, the BIOS automatically configure this items.	
-DRAM Write Cycle Wait State	**1 ws (33/40/50 MHz)** **0 ws (25MHz)**
If the auto-configuration feature is Enable, the BIOS automatically configure this items.	
-Cache Burst Read Cycle Time	**1T(25MHz, 33MHz w/two banks of Cache SRAM)** **2T(40/50 MHz,33MHz w/one bank of Cache SRAM)**
If the auto-configuration feature is Enable, the BIOS automatically configure this items.	
-Cache Write Cycle Time	**3T(40/50 MHz)** **2T(25/33 MHz)**
If the auto-configuration feature is Enable, the BIOS automatically configure this items.	
Local Bus Latch Timing	**T3 (defaults)** **T2**
This option specifies when the local bus devices cycles are latched.	

Local Bus Ready (LRDY*)	**Sync.(default)** **Trans.**
This option determines whether local bus devices READY# signal is synchronized or transparent.	

(4) The Power Management icon 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.

SL-CPU

IDE Power Down Time-out: Setting Range from " 1 Min" to"15 Min", and "Disabled". The IDE hard drive will spin down if it is not accessed within a specified length of time.

Power Management Mode: This setting controls the system Doze, System Standby, and System Suspend Timer features. There are two options,
Enabled : Allow you to customize all power saving timer features.
Disabled : Disable the power management features.

APM Interface : The defaults setting is "Disabled". If set "Enabled", system BIOS will wait for APM's prompt before it enters any PM mode. If your system power management is controlled by APM and if there is a task running, even if the timer times out, the APM will not prompt the BIOS to put the system into any power saving mode.

Doze Timer : Setting Range from "10 Sec" to "1 Hr" and "Disable". The system speed will change from turbo to slow if no Power Management event occurs for a specified length of time. The system will return to full power when a Power Management event is detected.

Standby Timer : Setting range from "10 Sec" to "1 Hr" and "Disable".The CPU and the VESA Local Bus operation frequency slows down to 8 MHz and the video signal is suspend if no Power Management events occur for a specificed length of time. Full Power functions return when a Power Management event is detected.

Suspend Timer : Setting Range from "10 Sec" to "1 Hr" and "Disabled". The VESA Local Bus operating frequency slows down to 8 MHz, the CPU clock is stopped , the video signal is suspended, and the "SM Outs"(JP2, JP3) are drived to logic low, if no Power Managment events occur for a specificed length of time. Full power functions return when a Power Management event is detected.

Video RAM Access AOOO-BFFFh : The default setting is "Disabled". Set this option to enabled to permit local bus access to the video BIOS area in system memory at AOOOh - BFFFh.

Local Bus Master Access : Set this option to "Enabled" to permit local bus master device access. The defaults setting is "Enabled".

DMA Request : Set this option to "Enabled" to permit local bus DMA requests. The defaults setting is "Enabled".

System IRQ Events : These features determined which IRQs are monitored. If you are not sure which IRQs should be monitored, just enable every IRQ except IRQ8. IRQS can only be enable under OS2 Operation System.

Non-SL CPU

The Non-SL CPU's green features are the same as the SL CPU's except there is an additional option "IRQ 12, IRQ 15 or Hw/Pin for PM Mode". If you select "IRQ 12 or IRQ 15", the Non-SL CPU will use IRQ which you select to pass program execution to a Power Management Service Routine. If you select " Hw/Pin " the Power Management will be under chipset hardware control, and only one Power Management modes, Standby, is available.

Note: Not like the SL CPU's SMI(System Management Interrupt), the IRQ interrupt routine could be replaced by certain Operating System and Application softwares which will cause the Power Management functioning improperly or not at all. If this occurs, you should use "Hw/Pin" instead of "IRQ 12 or IRQ 15".

Standby Timer : Range from "10 Sec" to "1 Hr" and "Disabled", press <Esc> to return to the Setup Menu.

Utility Menu

The Utility menu contains three icons:"Detect Master" icon and "Detect Slave" icon and "Color Set" icon. Detect Master icon is used to auto-detect the type of hard disk C and Detect Slave icon is used to auto-detect the type of hard disk D. Color Set icon is used to set the Menu screens color. There are four choicc:LCD, Army, Pastel and Sky. Select the icon by using the <←> / <→> keys, then press <Enter> to start an auto-detected function. After completing the detection, it display the detected parameters in the type 47 and allows you to accept or reject these parameters.

Security Menu

The Security menu contains two icons:“Password” icon and “Anti-Virus” icon.

The “Password” icon is used to create, change or delete user’s Password. The motherboard is shipping with the password disabled. If you want to create/change password, select the “Password” icon then press <Enter>. Enter the password at the prompt of Enter New Password, Then at the prompt of Confirm New Password, confirm the password by entering it again.To disable password, press <Enter> at the prompt of Enter New Password,and press <Enter> again at the prompt of Confirm New Password.

The “Anti-Virus” icon is used to scan the boot sector for virus, if virus exist, it will be killed and removed from the boot sector to secure your system.

Default Menu

The Default menu contains an icon:“Optimal “ icon.

The “Optimal “ icons is used to load the default optimal options from ROM to CMOS RAM to make your system achieve optimal performance.

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Save Setup Change and Exit

After completion of all modifications, get to “Esit CMOS Setup” menu by hitting “ESC” key and sclcct the proper option you desire.