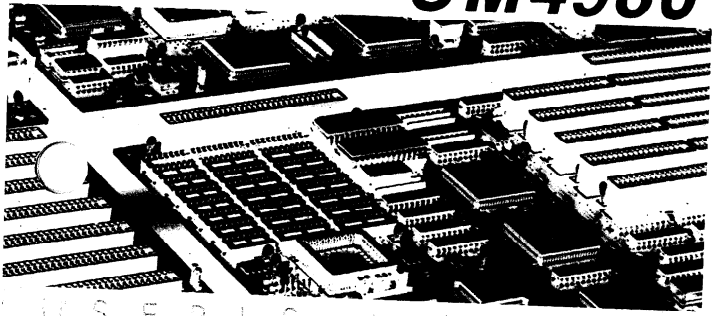


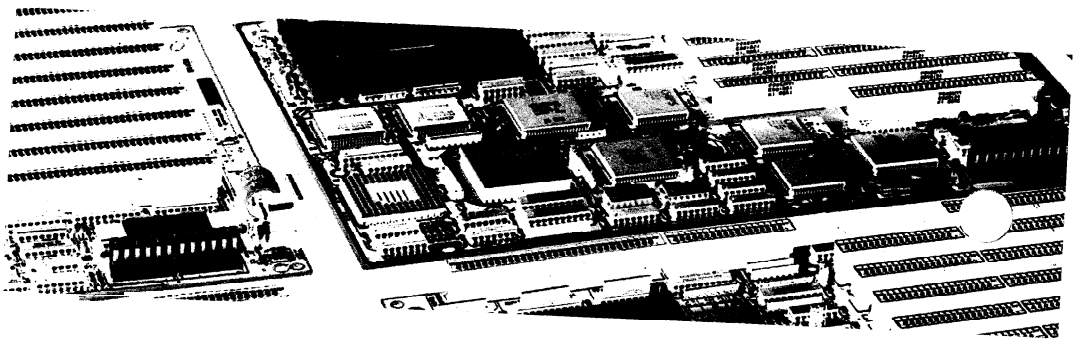


UM4980



U S E R ' S M A N U A L

C



40-012-42311

Version 1.1

Made in Taiwan



RECYCLABLE

Brad

UM4980
User's Manual

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Appendix A Setting the System Speed

1 Introduction

The UM4980 is a high performance 80486 VL-Bus mainboard which includes UM8498F and UM8496F chipsets. It also supports high integration & high performance solution.

1 .1 General Specifications

Processor:	Intel 80486 SX/SX2, 80487SX, 80486DX/DX2/DX4, P24D Cyrix Cx486S (M6), Cx486DX/DX2 (M7) AMD Am486DX/DX2, Am486DXL/DXL2 UMC Green CPU U5S-SUPER
Chipset:	UMC 8498F, UMC 8496F
System BIOS:	Phoenix
Keyboard BIOS:	AMI KEYII
System Memory:	DRAM = > 72_pins SIMM single or double density EPROM = > 27C512
Cache Memory:	12812561512 KB, 1 MB
Slots :	Seven (7) 16-bit AT slots One (1) 8-bit XT slot Three (3) VL-Bus slots
Connectors:	Standard Power Connector Hard ware Reset Connector Ext Speaker Connector External Battery Turbo Switch Suspend/Resume Push Botton Turbo LED Keylock Connector, Power LED Keyboard Connector
Form Factor:	4 layers, 2/3 Baby-AT

Features

- 100% IBM PC/AT compatible
- Supports Local Bus Access
- Supports H/W and S/W Turbo Control
- Provides Fast CPU Reset and Fast Gate 20
- Built-in direct map write through & write back cache controller
- Flexible cache memory size **128/256/512 KB/1MB**
- Supports four banks memory up to 64MB
- Supports double density for bank2 and bank3
- Supports 64MB addressing space for DMA
- Seven AT Bus slots including three VESA master slots
- Performs zero wait burst read for the 486 CPU
- Programmable DRAM Access wait state 0/1 /2
- One 237/238 ZIF pins CPU socket which supports **486SX/SX2/DX/DX2/DX4, AMD486/M6/M7/P24D/U5**

2 System Memory

2.1 Memory Configurations

The UM4980 provides tremendous flexibility to support a number of different on-board DRAM configurations. The on-board DRAM is installed with Single-In-Line Memory Module (SIMM). There are four memory banks capable of supporting 1MB up to 64MB.

The following table lists all the possible DRAM module combinations and the total memory amount for each option.

SIMM 1	SIMM 2	SIMM 3	SIMM4	Total Memory Size
1MB				1MB
1MB	1MB			2MB
			2MB*	2MB
1MB	1MB	1MB		3MB
1MB	1MB	1MB	1MB	4MB
		2MB*	2MB*	4MB
4MB				4MB
4MB	1MB			5MB
4MB	1MB	1MB		6MB
4MB	1MB	1MB	1MB	7MB
4MB	4MB			8MB
			8MB*	8MB
4MB	4MB	1MB		9MB
4MB	4MB	1MB	1MB	10MB
4MB	4MB	4MB		12MB
4MB	4MB	4MB	1MB	13MB
4MB	4MB	4MB	4MB	16MB

Table 2-1. Memory Bank Configurations and Requirements
Continued.. ...

SIMM 1	SIMM 2	SIMM 3	SIMM 4	Total Memory Size
		8MB*	8MB*	16MB
16MB				16MB
16MB	1MB			17MB
16MB	1MB	1MB		18MB
16MB	1MB	1MB	1MB	19MB
16MB	4MB			20MB
16MB	4MB	1MB		21MB
16MB	4MB	1MB	1MB	22MB
16MB	4MB	4MB		24MB
16MB	4MB	4MB	1MB	25MB
16MB	4MB	4MB	4MB	28MB
16MB	16MB			32MB
16MB	16MB	1MB		33MB
16MB	16MB	1MB	1MB	34MB
16MB	16MB	4MB		36MB
16MB	16MB	4MB	1MB	37MB
16MB	16MB	4MB	4MB	40MB
16MB	16MB	16MB		48MB
16MB	16MB	16MB	1MB	49MB
16MB	16MB	16MB	4MB	52MB
16MB	16MB	16MB	16MB	64MB

*: It means double density.

Table 2- 1. Memory Bank Configurations and Requirements
(Continued.)

2.2 Cache Memory Configuration

Option	TAG RAM (U22)	Cache Bank0 (U12, U13, U14,U15)	Cache Bank 1 (U18, U19, U20, U21)
128K	8Kx8	32Kx8	None
256K	32Kx8	32Kx8	32Kx8
256K	32Kx8	64Kx8	None
512K	32Kx8	64Kx8	64Kx8
512K	32Kx8	128Kx8	None
1MB	64Kx8	128Kx8	128Kx8

Table 2-2. Secondary Cache Memory Configurations

3 Jumper Settings and Connectors

3.1 Setting the Jumpers

The table below summarizes the appropriate functions and settings of each jumper on the UM4980.

	Function	Jumper Settings
CPU Type	Intel 80486SX/SX2	JP14 open JP15 short 2-3 JP16 open JP17 open JP18 short 2-3 JP19 open
	Intel 80486DX/DX2 AMD Am486DX/DX2	JP14 open JP15 short 1-2, 3-4 JP1 6 short 1-2 JP17 open JP18 short 2-3 JP19 open
	Intel 80486SX/SX2 (SL Enhance)	JP14 short 1-2, 3-4 JP15 short 2-3 JP16 open JP17 short 5-6 JP18 short 1-2 JP19 short 1-2
	Intel 80486DX/DX2 (SL Enhance)	JP14 short 1-2, 3-4 JP15 short 1-2, 3-4 JP1 6 short 1-2 JP17 short 5-6 JP1 8 short 1-2 JP19 short 1-2
	Intel 80486DX2 (P24D) (L1 Write-Back)	JP14 short 1-2, 3-4 JP15 short 1-2, 3-4 JP1 6 short 1-2 JP17 short 3-4, 5-6 JP18 short 1-2, 4-5 JP19 short 1-2, 4-5
	Cyrix Cx486S (M6)	JP14 short 2-3, 4-5 JP15 short 2-3 JP16 open JP17 short 2-3, 4-5 JP18 short 1-2, 3-4, 5-6 JP19 short 1-2, 3-4, 5-6

Table 3-7. Jumper Settings (Continued)

Function		Jumper Settings
CPU Type	Cyrix Cx486DX/DX2	JP14 short 2-3 JP15 short 1-2, 3-4 JP16 short 1-2 JP17 short 2-3, 4-5 JP18 short 1-2, 3-4, 5-6 JP19 short 1-2, 3-4
	UMC Green CPU U5S-Super	JP14 open JP15 short 2-3 JP16 short 3-4 JP17 short 1-2 JP18 short 2-3 JP19 short 2-3
	AMD Am486DXL/DXL2	JP14 open JP15 short 1-2, 3-4 JP16 short 1-2, 3-4 JP17 short 1-2 JP18 short 2-3 JP19 short 2-3
	Intel 80486DX4	JP14 short 1-2, 3-4 JP15 short 1-2, 3-4 JP16 short 1-2 JP17 short 5-6 JP18 short 1-2 JP19 short 1-2
Clock Select	25 MHz	JP7 short JP8 open JP9 open
	33 MHz	JP7 short JP8 short JP9 short
	40 MHz	JP7 short JP8 short JP9 open
	50 MHz	JP7 open JP8 open JP9 short
Cache Memory Settings	128KB (32Kx8x4) (one bank)	JP4 short 1-2 JP5 short 1-2 JP6 open JP10 open JP11 open JP12 open JP13 open

Table 3-1. Jumper Settings (Continued)

Function		Jumper Settings
Cache Memory Settings	256KB (64Kx8x4) [one bank]	JP4 short 1-2 JP5 short 1-2 JP6 short 1-2 JP10 open JP11 open JP12 open JP13 short
	256KB (32Kx8x8) (two bank)	JP4 short 2-3 JP5 short 2-3 JP6 open JP10 open JP11 open JP12 open JP13 short
	512KB (64Kx8x8) (two bank)	JP4 short 2-3 JP5 short 2-3 JP6 short 2-3 JP10 open JP11 short JP12 open JP13 short
	512KB (128x8x4) (one bank)	JP4 short 1-2 JP5 short 2-3 JP6 short 2-3 JP10 short 1-2 JP11 short JP12 open JP13 short
	1 MB (128Kx8x8) (two bank)	JP4 short 2-3 JP5 short 2-3 JP6 short 2-3 JP10 short 2-3 JP11 short JP12 short JP13 short
Local Bus Write Wait Select	0 Wait State	JP26 open
	1 Wait State	JP26 short
Local Bus Speed Select	<= 33MHz	JP25 open
	> 33MHz	JP25 short
CPU Voltage	+ 5V (Source from standard power supply unit)	JP20 short 1-2 JP21 short 1-2 JP22 open
	+ 3.45V (Source from on board regulator)	JP20 short 2-3 JP21 short 2-3 JP22 short 1-2

Table 3-1. Jumper Settings (Continued.. '.)

Function		Jumper Settings
CPU Voltage	+ 3.3V (Source from on board regulator)	JP20 short 2-3 JP21 short 2-3 JP22 short 2-3
Flash ROM	only when programming a + 5V flash ROM	JP1 short 3-2
	only when programming a + 12V flash ROM	JP1 short 2-3
Normal EPROM		JP1 open

Note: **JP24: Opens for DX4 Internal CLK 3X
Shorts for DX4 Internal CL K 2X (2-3).**
**JP3: Opens for external keyboard control
Shorts for in ternal keyboard control.**

3.2 Connectors

There are several connectors located on the **UM4980**. They are used to connect with some peripheral devices to enhance the operating performance of the system. Refer to Figure 3.1 for the positions of all the connectors on the mainboard. The following table lists the connectors on the **UM4980**.

Connector	Function
J1	Power Supply Connector
J2	External Battery Connector
J3	Keyboard Connector
J27	Suspend/Resume (Push Botton)
J28	Turbo LED
J29	External Speaker Connector
J30	Hard ware Reset Connector
J31	Turbo Switch
J32	Keyboard Lock/Power LED

Table 3-2. Mainboard Connectors

Note: **You can only push the J27 button to enter suspend/resume modes when the system is in "IDLE" state otherwise the system will halt or your data may be destroyed.**

3.3 Board Layout

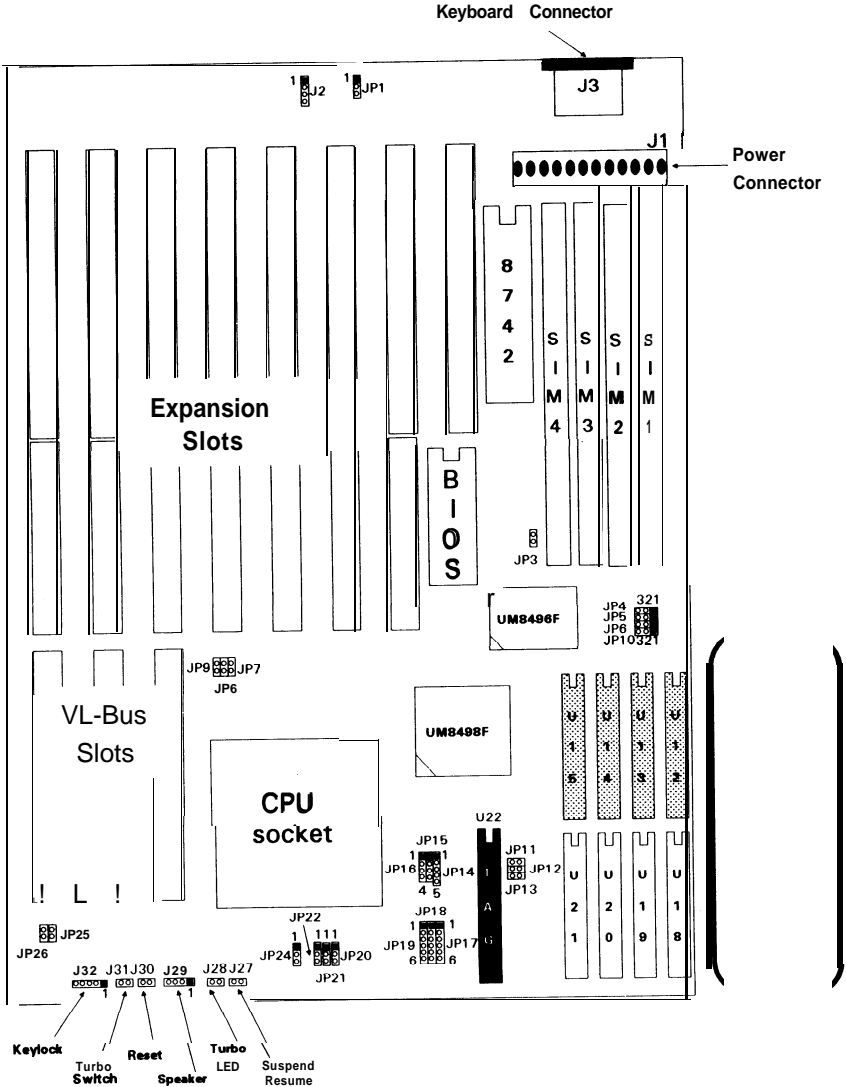
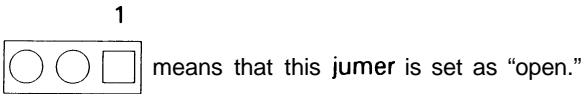
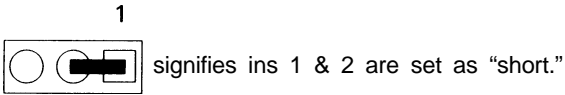


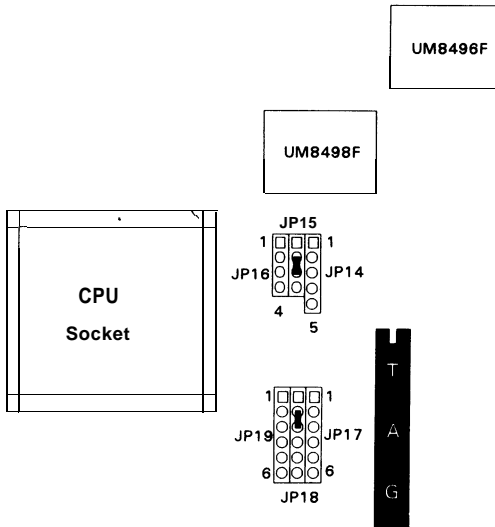
Figure 3-1. UM4980 Mainboard Layout

3.4 Graphical Descriptions of Jumper Settings

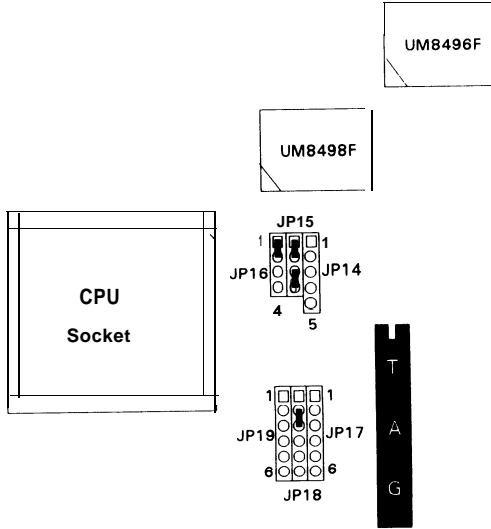


CPU Type

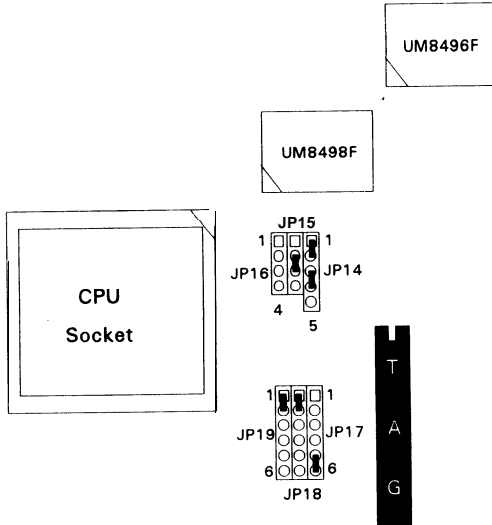
1. Intel 80486SX/SX2 CPU installed on-board



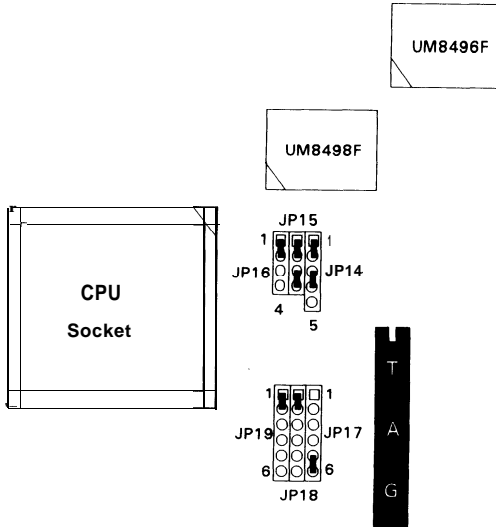
2. Intel 80486DX/DX2/Am486DX/DX2 CPU installed on-board



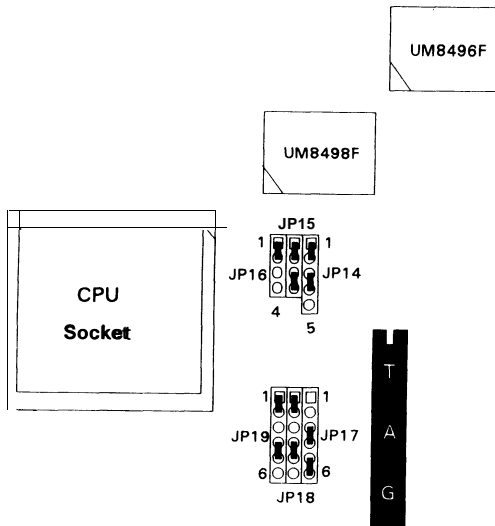
3. Intel 80486SX/SX2 (SL Enhance) CPU installed on-board



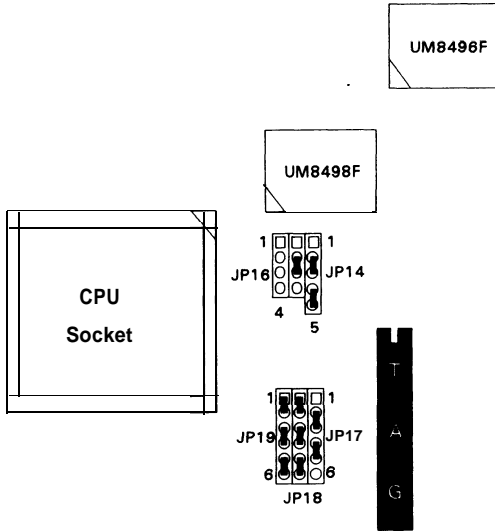
4. 80486 DX/DX2 (SL Enhance) CPU installed on-board



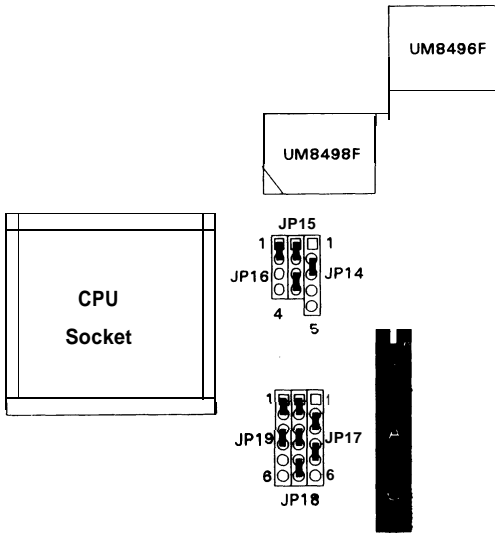
5. Intel 80486 DX2 (L1 Write-Back, P24D) CPU installed on-board



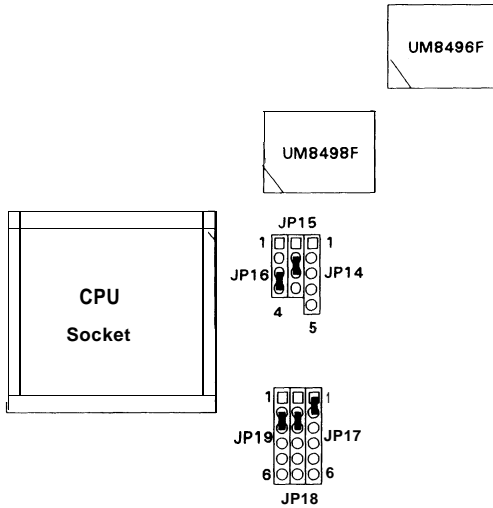
6. Cyrix Cx 486S (M6) CPU installed on-board



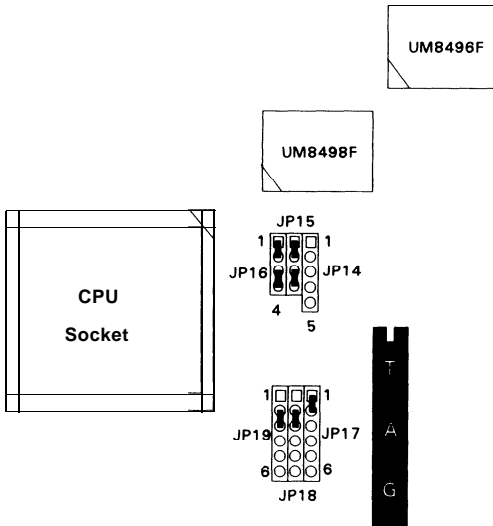
7. Cyrix Cx486DX/DX2 CPU installed on-board



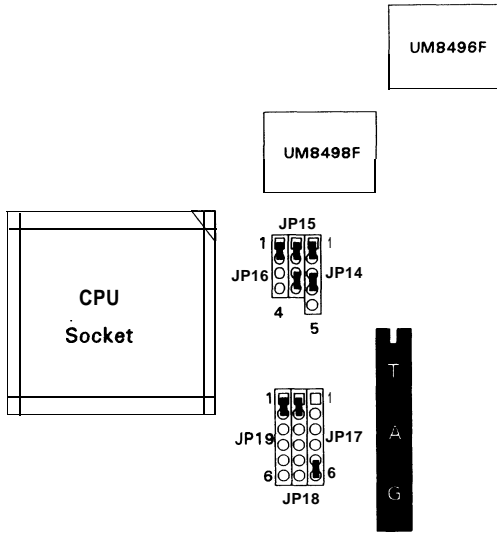
8. UMC Green CPU U5S-Super CPU installed on-board



9. AMD Am486 DXL/DXL2 CPU installed on-board

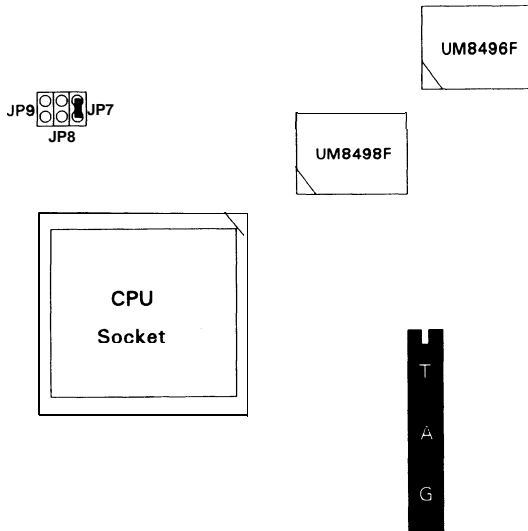


10. 80486DX4 CPU installed on-board

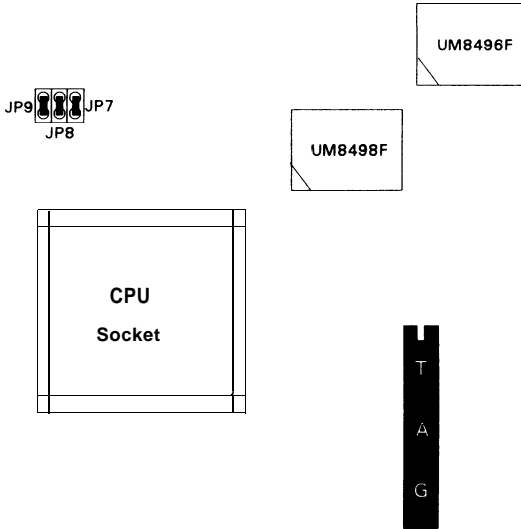


CPU Speed

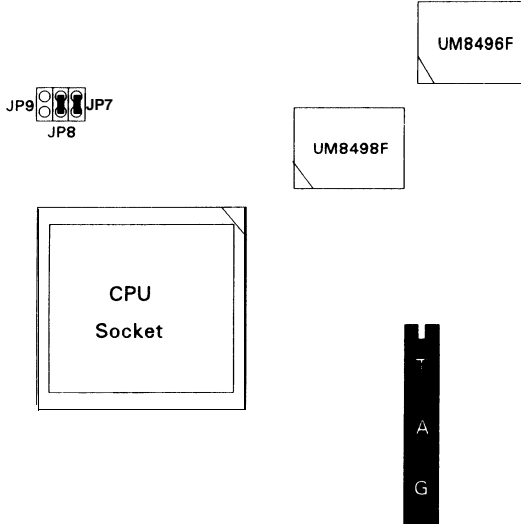
1. 25MHz CPU Speed



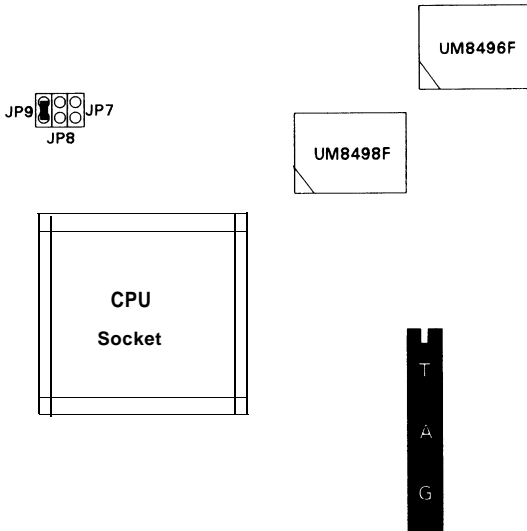
2. 33MHz CPU Speed



3. 40MHz CPU Speed

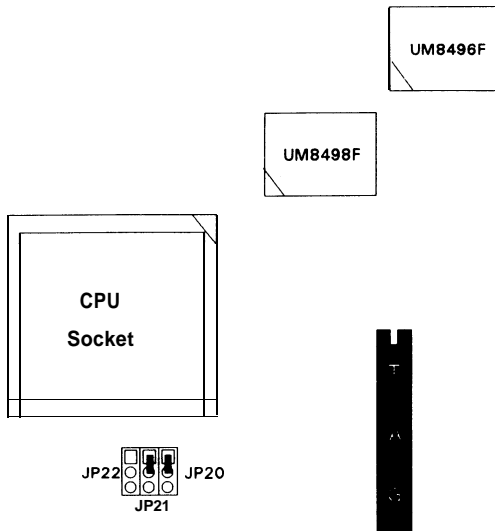


4. 50MHz CPU Speed

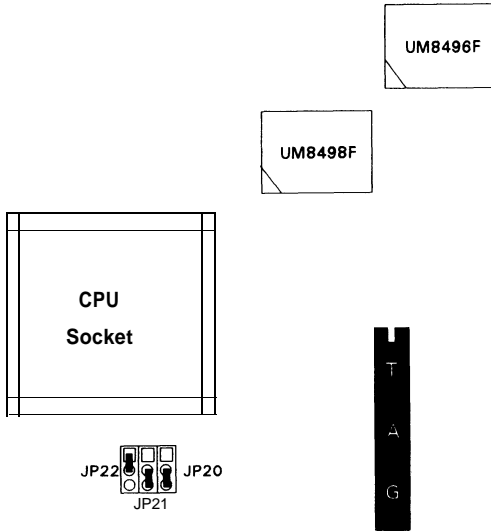


CPU Vcc Source

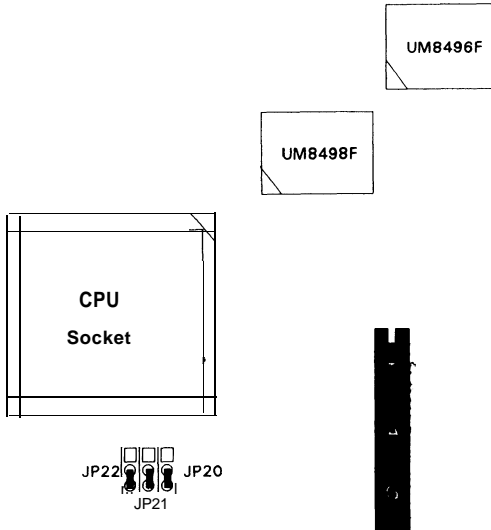
1. + 5Vcc (source from standard power supply unit)



2. + 3.45Vcc (source from on-board regulator)

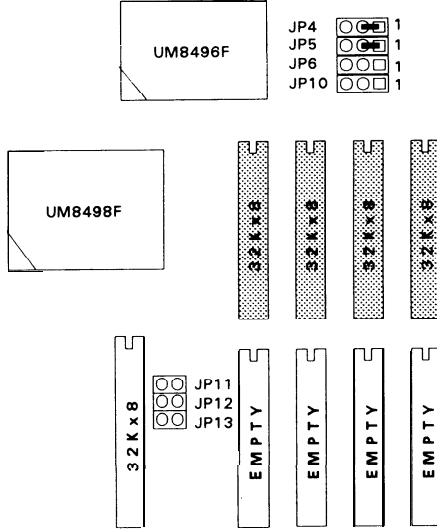


3. + 3.3Vcc (source from on-board regulator)

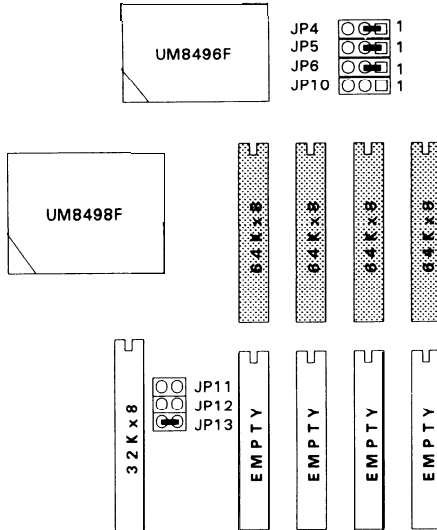


Cache Size Setting

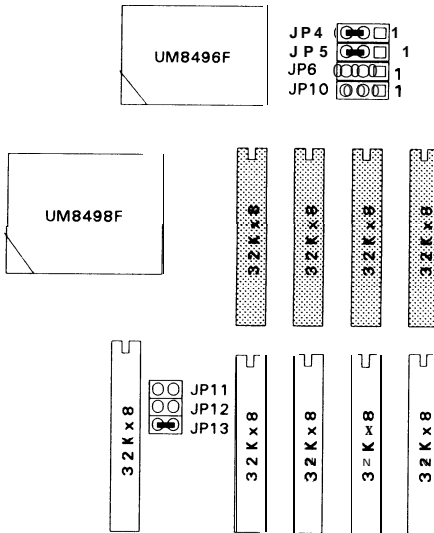
1. 128KB (32Kx8x4) Cache Size



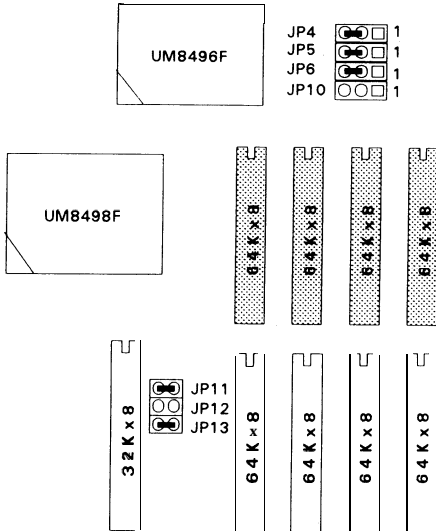
2. 256KB (64Kx8x4) Cache Size



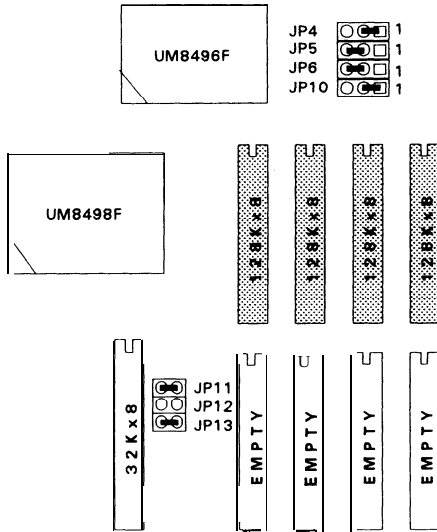
3. 256KB (32Kx8x8) Cache Size



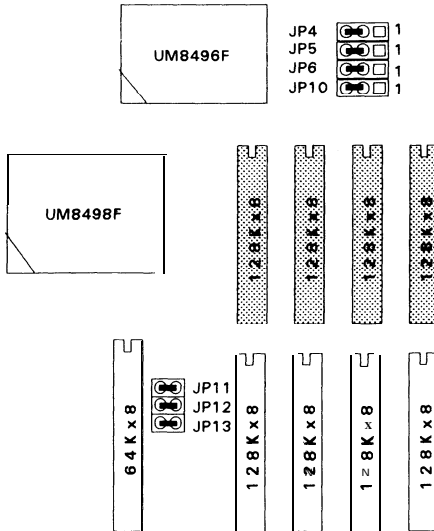
4. 512KB (64Kx8x8) Cache Size



5. 512KB (128Kx8x4) Cache Size



6. 1 MB (128Kx8x8) Cache Memory Settings



4 Built-in BIOS SETUP Program

4.1 SETUP Program

Use the BIOS for UM4980 to record changes in your hardware and to control its special features. The Setup program uses a number of menus in which you can specify changes to your hardware and turn the special features to on or off.

To enter the BIOS Setup program, turn on or reboot the system. Press the key when the system displays the following message:

Press to enter Setup. The following screen will then be displayed.

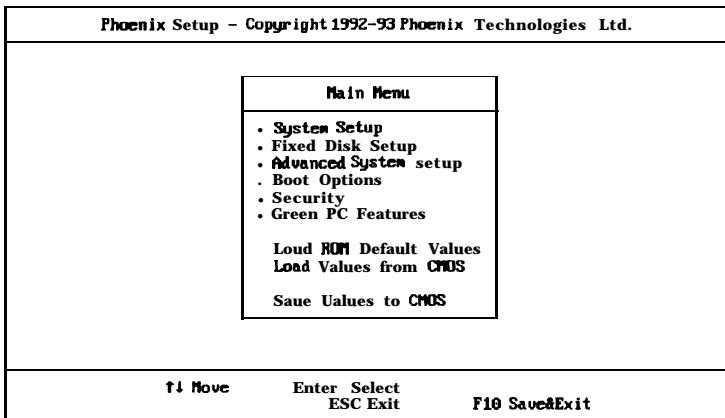


Figure 4- 1. **SETUP Main Menu**

It is highly recommended that you list down all the values of the SETUP program before making any changes. Doing so will save a lot of time restoring the system back in the event of a configuration memory loss.

Note: *On-screen instructions at the bottom of each screen explain how to use the program.*

- **System Setup** - allows checking or modification of general configuration information.

- **Fixed Disk Setup** - allows for automatic detection of the hard disk drive type including the number of cylinders and heads write **pre-compensation** time, read/write head **landing** zone, and number of sectors per track.
- **Advanced System SETUP** - sets the various system options for the user, including the internal/external cache memory functions, ISA features, video and system shadowing etc..
- **Boot Options** - determines the sequence with which the system will proceed when booting the operating system.
- **Security** - provides special access for the user to enter the operating system and Setup program, and restricts unauthorized access to the floppy disk drives.
- **Green PC Features** - allows the timer settings for the DOZE, STANDBY and RESUME modes. It also lists the SMI events by which the system wakes up from STANDBY or SUSPEND modes. If the device is not active, Power Management Function will slow down the CPU speed and both IDE and monitor will be put into doze, standby, or suspend mode.
- **Load ROM Default Values** - allows for automatic configuration of all the above options using the values in the ROM BIOS table.
- **Load Values from CMOS** - allows for automatic configuration of all the above options using the values saved in the CMOS SRAM.
- **Save Values to CMOS** - saves the changes you have made in the Setup program, then quits and reboots the system.

To choose an item from the SETUP main menu, move the cursor to appropriate line using the Up <↑> and Down <↓> arrow keys and press <Enter>. The screen will display a warning message as shown below.

4.2 System Setup

Phoenix Setup - Copyright 1992-93 Phoenix Technologies Ltd.			
System Setup			
System Time:	[17:58:59]		
System Date:	[04/01/1994]		
Video System:	[EGA / VGA]		
System Memory:	640 KB		
Extended Memory:	3 MB		
Diskette Drive A:	[1.2MB]		
Diskette Drive B:	[Not Installed]		
Keyboard:	[Installed]		
↑ Move	ESC Exit	FgUp Previous Value	F5 Previous Configuration
		FgDn Next Value	F6 Default Configuration

Figure 4-2. System Setup

System Time - includes hour, minutes, seconds but only the values of hour and minute can be set.

System Date - allows manual setting of the electronic calendar on the main-board..

Video System - specifies the display adapter installed.

System Memory and Extended Memory - displays important information about your system which includes the conventional and extended memory sizes. They are updated automatically by the Setup program according to the status detected by the BIOS self-test. This section of the System Setup screen is for viewing purpose only and manual modifications are **not** allowed.

Diskette Drives A: and B: - specify the capacity and format of the floppy drives installed in your system.

Keyboard - selects install/Not install for keyboard device setting.

4.3 Fixed Disk Setup

The Fixed Disk Setup provides auto configuration of the hard drive installed in the system. After pressing the <Enter> key on this item on the main menu, the screen will display the following screen.

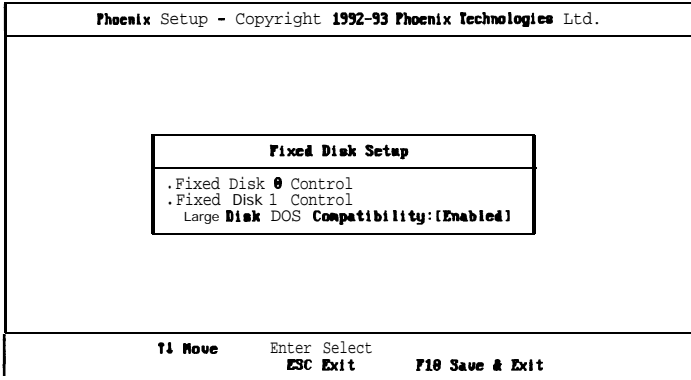


Figure 4-3. Fixed Disk Setup Screen 1

Once the program detects the type of hard disk 0 and/or 1 installed, it will display the relative information such as the type, cylinders, heads, write pre-compensation, landing zone, and number of sectors per track.

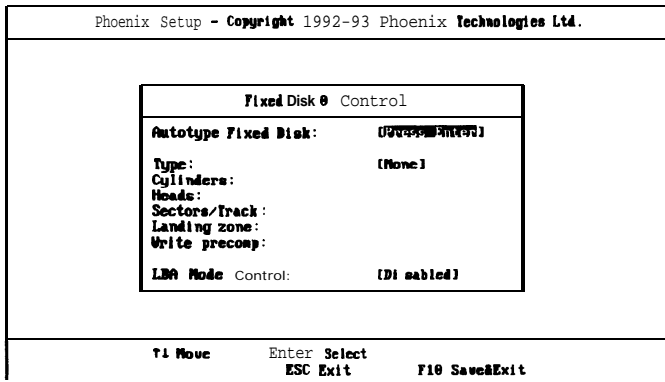


Figure 4-4. Fixed Disk Setup Screen 2

If the program fails to detect the hard disk(s) or the <Enter> key was not pressed in the **Autotype** Fixed Disk option, manual setting of the values is recommended.

Autotype Fixed Disk - detects the type of fixed disk 0 and/or 1 installed. If successful, it fills the remaining fields on this menu.

Type - 1 to 45 fills in remaining fields with values for predefined disk drives. "User" allows the user to fill in the remaining fields..

Cylinders - specifies the number of cylinders of the hard disk drive. The range of this option is from 1 to 1024.

Heads - specifies the number of read/write heads of the hard disk drive. The range of this option is from 1 to 16.

Sectors/Track - provides the number of sectors per track defined for the hard disk drive. The range is from 1 to 64.

Landing Zone - refers to the cylinder number where the disk drive heads (read/write) are positioned to when the disk drive is parked. The range of this option is from 1 to 1024.

Write Precomp - refers the cylinder number, above which, disk drive operations require reduced write current. Also specifies the number of cylinder at which to change the write timing. The available options are from 1 to 1024 and None.

Large Disk DOS Compatibility - for Large Hard Disk Compatibility (Larger than 528MB) issue, you must enable this item except UNIX operating system.

LBA Mode Control - turns on or off the hard disk drive's LBA Mode support. Some HDD support more than 540MB and LBA Mode for data transfer. If your hard disk supports LBA Mode, you should **enable(on)** this option otherwise **disable(off)** it.

4.4 Advanced Chipset SETUP

The Advanced System Setup allows the user to program three main groups of parameters under the Advanced System Setup namely the System Timing, the Memory Shadow, and the Advanced chipset Control. This BIOS Setup parameter is designed for programmers who wish to fine tune the on-board chipset.

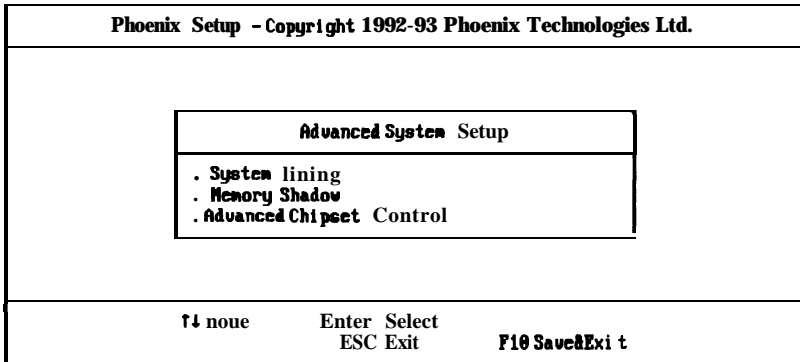


Figure 4-5. Advanced Chipset SETUP Screen

System Timing

Selecting System Timing from the Advanced System Setup main menu displays the following screen. The actual features displayed depend on the capabilities of your system's hardware.

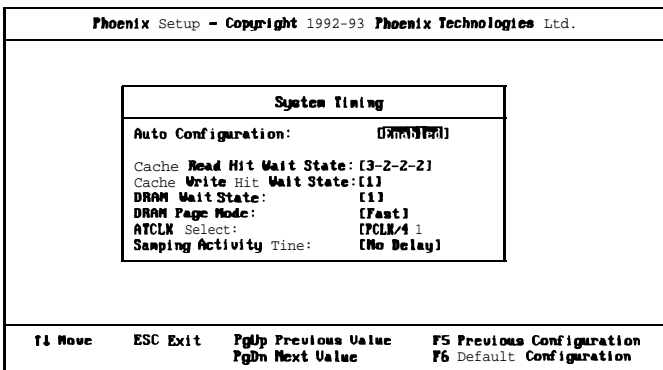


Figure 4-6. System Timing Screen

Auto Configuration - Disabling this option allows the values for the other parameters to be changed. Enabling it will restrict you from making any changes.

Cache ReadHit Wait State - determines the number of cycle times to be inserted when CPU reads data to cache. The setting depends on the speed of the CPU and SRAM. If the CPU is of high speed, the time required by SRAM to process data will need an extension, with the exception of some SRAMs that are fast enough to catch up with the speed of the CPU. The available options are:

- 3-2-2-2
- 3-1-1-1
- 2-1-1-1

Cache Write Hit Wait State - setting of this parameter makes no difference from that of the SRAM Read. This option sets the number of wait states to be added on writes to cache memory. Fewer wait states are recommended to improve the system performance. Check the CPU speed and SRAM before changing the default value. The available options are listed below.

- 0 w s
- 1 WS
- 2 w s

DRAM Wait State - determines the number of wait states to be inserted when the CPU reads data into the local DRAM. Fewer wait states are recommended to improve the system performance. The following are the available options.

- 0 w s
- 2 w s
- 1 WS

DRAM Page Mode - determines the number of wait states to be inserted when the CPU writes data into the local DRAM. Fewer wait states are recommended to improve the system performance. The following are the available options.

- **Normal**
- **Fast**

AT Bus Clock Select - specifies the speed of the AT Bus clock of the system. The available options are:

- PCLK/2
- PCLK/3
- PCLK/4
- PCLK/5
- PCLK/6
- PCLK/8

Sampling Activity Time - selects the delay time when the chipset monitors and samples SMI. The available options are:

- No Delay
- Delay 1 T

Memory Shadow

Select Memory Shadow from the Advanced System Setup main menu displays the following screen. The actual features displayed depend on the capabilities of your system's hardware.

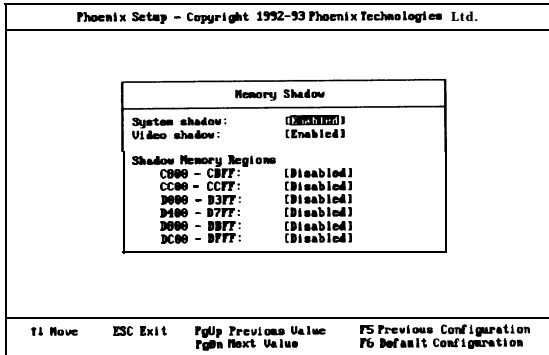


Figure 4-7. Memory Shadow Screen

System shadow - allows shadowing of the system BIOS and improves the system performance. This option is always set as **Enabled**.

Video shadow - sets the mode of the system's video BIOS shadowing mode. The available options are:

- Enabled (default)
- Disabled

Shadow Memory Regions - shadows the option ROM located in the specified blocks of memory, and can improve the system performance.

Note: *Some option ROMs do not work properly when shadowed.*

Advanced Chipset Control

Selecting Advanced Chipset Control from the Advanced System Setup main menu displays the following screen. Technicians use this menu when changing values in the chipset register and optimizing the system's performance.

Phoenix Setup - Copyright 1992-93 Phoenix Technologies Ltd.			
Advanced Chipset Control			
Internal cache feature:		[Write through]	
External cache:		[Enabled]	
External cache feature:		Write through 1	
DRAM Parity check:		[Disabled]	
DRAM Refresh Method:		[RAS only]	
Signal GA20# select:		[Chipset]	
Signal BC select:		[Chipset]	
Local Ready lklay Setting:		[17]	
CPU ADS# Delay:		[None]	
L0 Recovery Time Select :		c5.31	
F1 Move	ESC Exit	PgUp Previous Value PgDn Next Value	F5 Previous Configuration F6 Default Configuration

Figure 4-8. Advanced Chipset Control Screen

Note: *The contents of this menu depends on the chipset installed on your mainboard, and chipsets vary widely. Consult your dealer or the <F1> help screens before changing the items on this menu. Incorrect settings can cause your system to malfunction.*

Internal cache feature - sets the internal code/data memory of the CPU to either *Write back* or *Write through* (default)

External cache - sets the function of the second level cache on-board. If *Enabled* (default), the settings of the following options can be set. *Disabling this option will deem the following options useless.*

External cache feature - sets the external secondary cache memory to either *Write back* (default) or *Write through*.

DRAM Parity Check - During a local memory read cycle, the UM8498F not **only** monitors bus steering, but also checks the parity bit for each data byte from DRAM to ensure that the **correct data** is read. The available options are:

- Enabled
- Disabled (default)

DRAM Refresh Method - specifies the timing pulse width where the row address strobe (RAS) will be on the falling edge and followed by the column address strobe signal (**CAS**). **The** available options are:

- RAS only (default)
- CAS before RAS

Signal GA20# Select - sets the method of select Signal **GA20#** from Keyboard Controller or **UM8498F Chipset Emulate**. The available options are listed below.

- Chipset (default)
- Keyboard

Signale RC select - sets the method of select Signal RC. The available options are:

- Chipset (default)
- Keyboard

Local Ready Delay Setting - sets the delay time of Local Ready Signal. The available options are:

- 1T (default)
- 2T
- 3T
- None

CPU ADS# Delay - The available options are:

- None (default)
- 1T

I/O recovery Time Select - specifies the I/O command recovery time except for some add-on cards. The available options **are**:

- 0,0/1,1/2,2/3,3/5,5/7,7/9,9/12,12
- 5,3 (default)
- 7,3/9,3/12,3

4.5 Boot Options

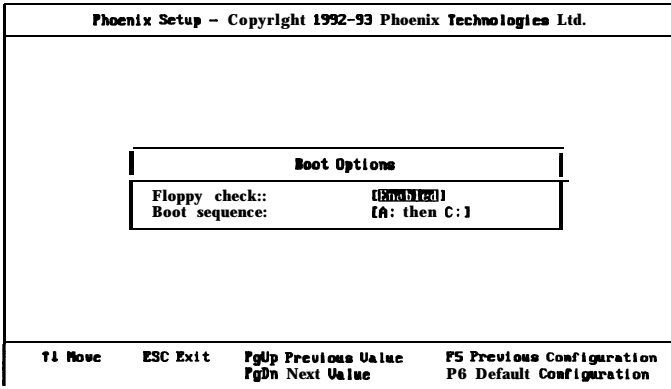


Figure 4-10. Boot Options Screen

Floppy check - allows the system to search and verify the floppy drives during boot. The default value for this option is *"Enabled"*.

Boot sequence - sets the sequence from where the BIOS will attempt to load the operating system. The options are:

- C: then A:
- C: only
- A: then C: (default)

4.6 Security

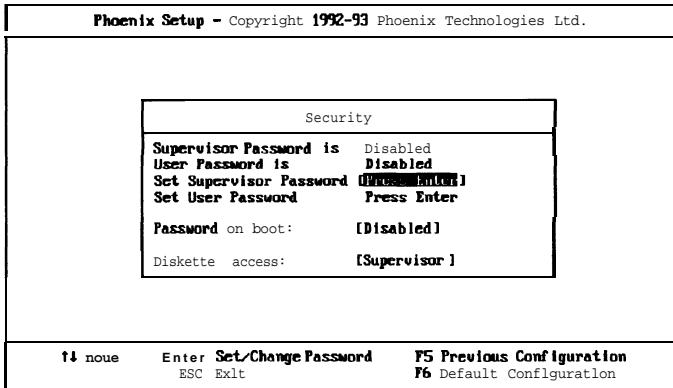


Figure 4-11. Security Screen

Supervisor Password is - shows whether the supervisor password is enabled or disabled (default).

User Password is - shows whether the user password is enabled or disabled (default).

Set Supervisor Password - requires a password when entering Setup, the passwords are not case sensitive. Pressing the <Enter> key will display a message requiring for the supervisor password which can be up to seven alphanumeric characters. This option also gives full access to the Setup menus.

Set User Password - Pressing the <Enter> key will display a message requiring for the user password which can be up to seven alphanumeric characters. This option also gives restricted access to the Setup menus and requires the setting of the Supervisor Password first.

Password on boot - determines whether the password is required on boot. The option needs the setting of the Supervisor Password. If Supervisor Password is set and this option is disabled (default). BIOS assumes that the user is booting.

Diskette access - restricts the use of floppy drives only to the supervisor when set as Supervisor (default). Also, choosing Supervisor for this option will require the setting of the Supervisor Password. Setting is as User allows access to the floppy drives at any time.

4.7 Green PC Features

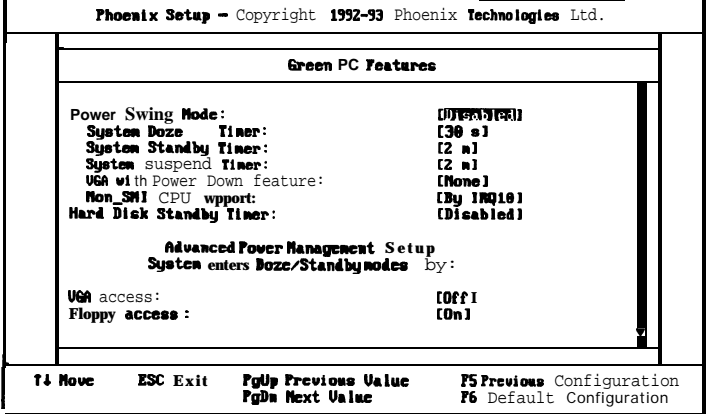


Figure 4- 12. Green PC Features Screen 1

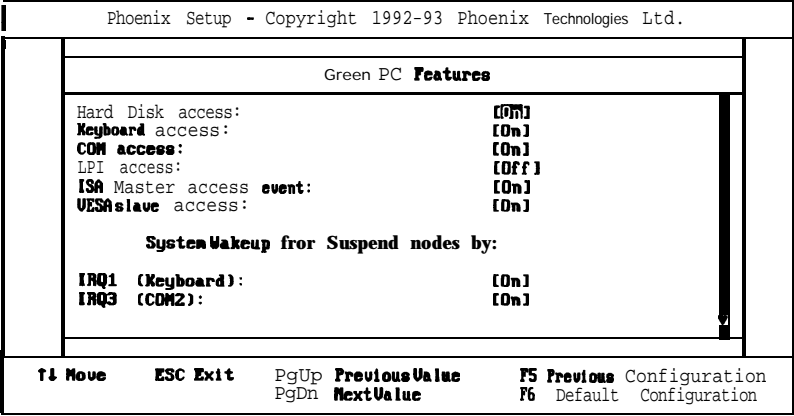


Figure 4- 13. Green PC Features Screen2

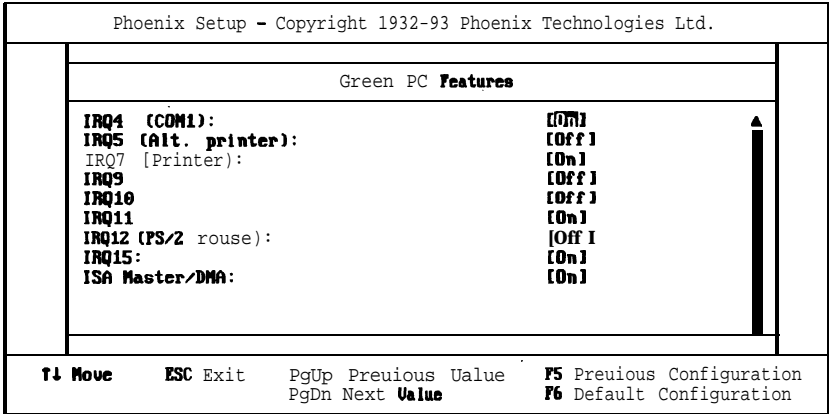


Figure 4- 14. Green PC Features Screen3

Power Saving Mode - enables or disables (default) the power saving mode feature of the chipset. Once enabled, the values of the following options can be set.

System Doze Timer - sets the time interval after system inactivity when the system enters DOZE mode. The available options are:

- 30 s (default)
- 1 /2/4/8 m
- Disabled

System Standby Timer - sets the time interval after system inactivity when the system events enters STANDBY mode. The options are:

- 2 m (default)
- 4/8/16/32/64/128/256/512 m
- Disabled

System Suspend Timer - sets the time interval after system inactivity when the system enters SUSPEND mode. The available options are:

- 2 m (default)
- 4/8/16/32/64/128/256/512 m
- Disabled

VGA with Power Down features - sets the method by which the VGA chip enters SLEEP mode. The options are:

- None (default)
- Standard
- VESA DPMS

Non-SMI CPU Support - selects the interrupt request signal to replace System Management Interrupt (SMI) events when the CPU does not support SMI. The options are:

- . By IRQ 15
- **By IRQ 10 (default)**

Hard Disk Standby Timer - sets the time interval after hard disk inactivity when the system events enter STANDBY mode. The options are:

- **Disabled (default)**
- **1 m, 2m to 15**

Advance Power Management Setup

System enters Doze/Standby modes by - The menu also lists the System Management Interrupt (SMI) events by which the system wakes up from Doze or SUSPEND modes. Switch the following parameters to on or off:

- **VGA access**
- **Floppy access**
- **Hard Disk access**
- **Keyboard access**
- **COM access**
- **LPT access**
- **ISA Master access**
- **VESA Slave access**

System Wakeup from Suspend modes by - The menu lists the SMI events by which the system wakes up from SUSPEND mode. Switch the following parameters to on or off.

- **IRQ1 (keyboard)**
- . IRQ3 (COM2)
- **IRQ4 (COM1)**
- **IRQ5 (Alt. Printer)**
- **IRQ7 (Printer)**
- **IRQ9**
- . IRQ10
- . IRQ11
- **IRQ12 (PS/2, mouse)**
- . IRQ15
- **ISA Master/DMA**

4.8 Load ROM Default Values

If, during **bootup**, the BIOS program detects a problem in the integrity of the CMOS, it will display a message asking you to either press the key to run Setup or the <F1> key to resume booting. This probably means that the CMOS values have been corrupted or modified incorrectly, perhaps by an application program that changes data stored in CMOS.

Press the <F1> key to resume the boot or to run Setup **with** the ROM default values already loaded in the menus. You can make other changes before saving the values to CMOS.

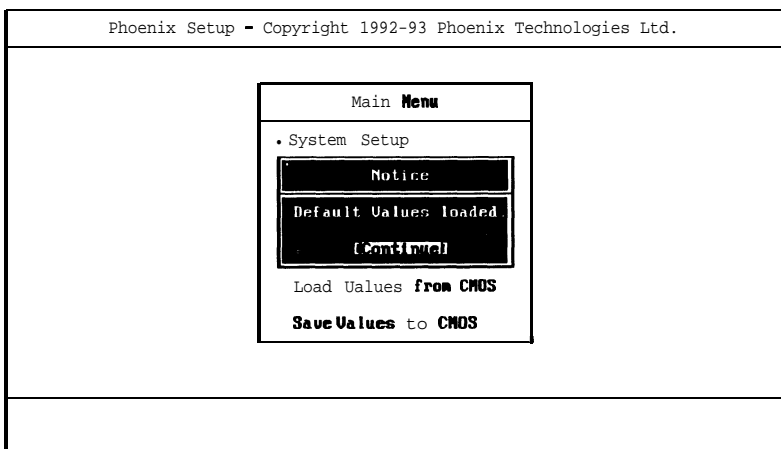


figure 4-15. Load ROM Default Values Screen

4.9 Load Values from CMOS

If, during a Setup session, you change your mind about your selections and have not yet saved the values to CMOS, you can restore the values you previously saved to CMOS.

Select Load Values from CMOS on the Main Menu and the program will display the following screen.

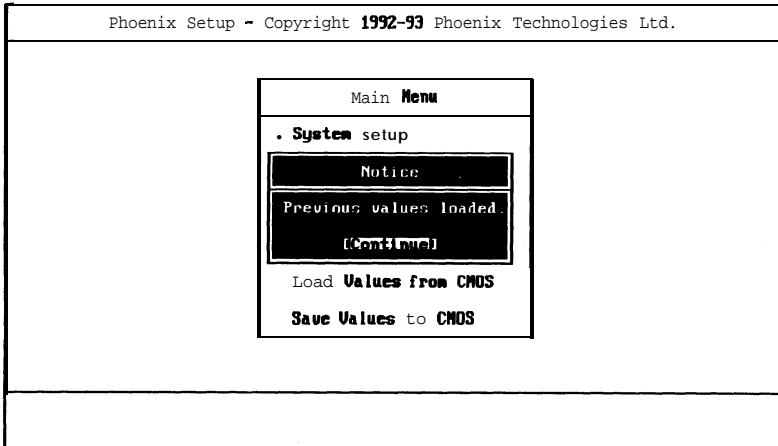


Figure 4- 16. Load Values from CMOS Screen

4.10 Save Values to CMOS

After making your selections on the **SETup** menus, always select Save Values to CMOS in order to make them operative. Unlike standard RAM memory, CMOS RAM is sustained by an on-board battery and stays on after you turn your system off.

After you save your selections, the program will display the following screen.

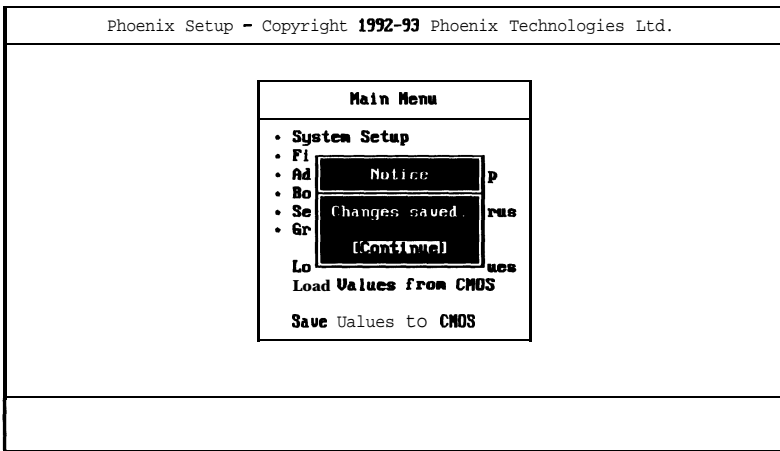


Figure 4-17. Save Values to CMOS Screen

If you attempt to exit without saving, the program will ask you if you would like to save the changes made before exiting.

During **bootup**, BIOS for the **chipset** attempts to load the values you saved in the CMOS RAM. If the values saved in the CMOS cause the system boot to fail, reboot and press the key to enter Setup. In Setup, you may load the ROM default value (as described in the section 4.8) or try to change the values that caused the boot to fail.

4.11 Quitting Setup

After making all modifications in the Setup program, go to the option "Save Values to CMOS" then press the <Enter> key or simply press the <F10> key. The screen will then display a message asking you whether you would like to save and exit or not.

Use the arrow keys or press <Y> for Yes then the <Enter> key to save your settings before exiting. Press <N> for No then the <Enter> key to exit without saving.

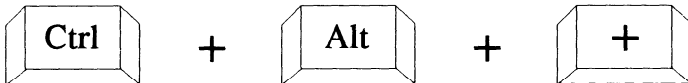
If you made changes to the CMOS values and then press the <ESC> key, the program will prompt you whether you would like to Quit without saving or not.

Press <Y> for Yes then the <Enter> key to quit without saving, or press <N> then the <Enter> key to save your settings first before exiting Setup.

Appendix A

Setting the System Speed

■ High Speed



■ Low Speed

