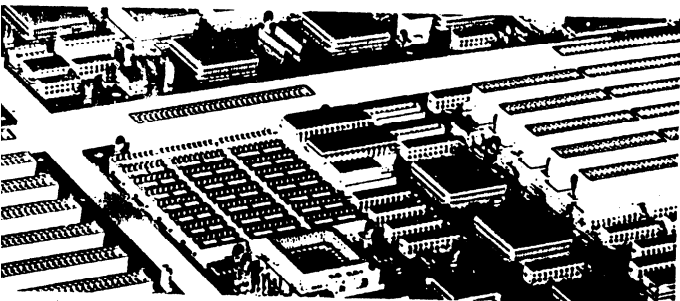




AL486 VIO-U3



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

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1 Introduction

AL486 VIO-U3 is a 486 VL-Bus mainboard based on the Acer M1429G and M 143 1 system chipset. Other on-board specifications include memory capacity of up to 64MB, cache memory sizes of 64/128/256 KB, and the Green function support that complies to the standards of Energy Star.

1.1 General Specifications

Processor:	Traditional CPU (486, 486DX4), Intel S-Series, Pentium overdrive P24T circuit ready, M6, M7
External Cache :	Supports 64/128/256 KB
Memory Size:	Four 72-pin SIMM sockets supporting single density SIMMs only Memory size of 1 MB up to 64MB
System BIOS:	Phoenix BIOS
Slots :	One VL-Bus slot and one 120 pin (Standard ISA 98 pin plus, six special purpose Gnd, VCC pins) Bus slot
Connectors:	Standard Power connector 3.3/3.45V Power Connector (option) PS/2 Keyboard Connector PS/2 Mouse Connector COM1/COM2 Printer Port VGA Connector VGA Feature Connector VL Bus IDE Connector FDC Connector Hardware Reset Connector Ext Speaker Connector Keylock Connector, Power LED HDD LED
Form Factor:	LPX
PCB :	4 layers

Features

- Internal Cache:
 - Supports **L1** write-through feature of 486 systems
 - Supports **L1** write-through/write-back feature of **P24T/P24D/M6/M7** systems
 - Supports enable/disable on **L1** write-back for entire local memory space of **P24T/P24D/M6/M7** systems
 - Supports optional enable write-back in region **>=16MB** of **P24T/P24D/M6/M7** (for ISA compatibility issue)
 - Cacheable to BIOS code Read with default of write-through by **P24T/P24D/M6/M7**, non-cacheable to BIOS data read/write to protect or write-through to BIOS data read/write

- External Cache :
 - L2 write-back or write-through, but no write-buffered for one-bank or two-bank, TAG bit and Modify bit in one SRAM

- **Fast Local Bus:**
 - Allows ISA **master/DMA** access to local device
 - Allows local master access to ISA device

- **DRAM:**
 - Supports **256K/512K/1M/4M/16M** with **80ns** or faster DRAM specifications
 - Page Mode only
 - Hidden refresh/Slow **refresh/Normal** refresh

- ☐ **SMM and PMU:**
 - Supports CPU SMM Mode, SMI feature
 - STPCLK control with clock scaling
 - I/O trap for I/O restart feature
 - Supports **the** APM control
 - Supports the EXTSMI **control** for indicating the power saving state
 - 4 system state for power saving (1) ON (2) DOZE (3) STANDBY (4) SUSPEND
 - Programmable Flash LED (Turbo LED), indicate Power saving **status**
 - Peripheral devices activity monitoring of each state for power saving: KBD, VGA, HDD, LPT, COM, FDD, **IRQS**, DRQS, VESA master and 2 programmable **regions**
 - 7 timers from 1 second to 320 minutes to individually monitor the state, VGA, HDD, LPT, programming region **1**, programming region 2, and standard input **devices activity**
 - External switch, RTC alarm, and modem ring-in wake up control

- Built-in ISP controller and RTC

- Software AT clock programmable

- Supports Flash ROM, EPROM

- Supports I/O Recovery

- Fast RC, Gate A20 emulation

2 Memory Configurations

In this section, the AL486 VIO-U3 DRAM and cache configurations are discussed. Users are recommended to read through this section before installing or removing memory.

2.1 System Memory

The AL486 VIO-U3 DRAM provides tremendous flexibility to support a number of different on-board DRAM configurations. The on-board DRAM is installed with SIMM (Single-In-Line Memory Module). There are four memory banks capable of supporting **1MB** up to 64MB. **72-pin** SIMM modules must be **installed in every banks without any order**.

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

SIMM 1	SIMM 2	SIMM3	SIMM 4	Total
0, 1, 4 or 16MB	0, 1, 4 or 16MB	0, 1, 4 or 16MB	0, 1, 4 or 16MB	Sum of SIMM 1-4

Table 2-1. Memory Configurations

2.2 Cache Memory Configuration

Option	Cacheable Region	TAG RAM U27	Cache Bank 0 (U40-U43)	Cache Bank 1 (U47-U50)
64KB	8MB	8Kx8	8Kx8	8Kx8
128KB	16MB	8Kx8	32Kx8	None
256KB	32MB	32Kx8	32Kx8	32Kx8

Table 2-2. Secondary Cache Memory Configuration

3 Jumper Settings and Connectors

3.1 Setting the Jumpers

The table below summarizes the functions and appropriate jumper settings on the AL486 VIO-U3.

Function		Jumper Settings
CPU Type	486SX	JP54 open JP60 open JP61 short 2-3 JP62 open JP63 open JP64 short 2-3 JP66 short 1-2 JP70 open JP73 open
	486DX	JP54 open JP60 short 2-3 JP61 short 2-3 JP62 open JP63 open JP64 short 1-2, 3-4 JP66 short 1-2 JP70 open JP73 open
	487SX	JP54 open JP60 short 1-2 JP61 short 2-3 JP62 open JP63 open JP64 short 1-2, 3-4 JP66 short 1-2 JP70 open JP73 open
	P4S/P24S	JP54 short JP60 short 2-3 JP61 short 1-2 JP62 short JP63 short 1-2 JP64 short 1-2, 3-4 JP66 short 1-2 JP70 open JP73 short 1-2

Table 3-1. Jumper Settings (Continued)

Function		Jumper Settings
CPU Type	M6	JP54 short JP60 open JP61 short 1-2 JP62 open JP63 short 3-4 JP64 short 2-3 JP66 short 1-2 JP70 open JP73 short 3-4
	M7	JP54 short JP60 short 2-3 JP61 short 1-2 JP62 open JP63 short 3-4 JP64 short 1-2, 3-4 JP66 short 1-2 JP70 open: 1 XCPUCLK short: 2XCPUCLK (for OEM CPU only) JP73 short 3-4
	P23S	JP54 short JP60 open JP61 short 1-2 JP62 short JP63 short 1-2 JP64 short 2-3 JP66 short 1-2 JP70 open JP73 short 1-2
	P24C(DX4)	JP54 short JP60 short 2-3 JP61 short 1-2 JP62 short JP63 short 1-2 JP64 short 1-2, 3-4 JP66 short 1-2 JP70 open JP73 short 1-2
CPU Type Set for the System Controller	M6 System	JP40 short JP42 open JP44 short
	M7 System	JP40 open JP42 open JP44 short
	486 & Upgradeable 486 System	JP40 open JP42 open JP44 open

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

	Function	Jumper Settings
CPU Speed Select	25 MHz	JP37 short 1-2, 5-6 open 3-4 JP43 short 1-2 JP53 short 1-2 JP55 short 1-2
	33MHz	JP37 open 1-2 short 3-4, 5-6 JP43 short 1-2 JP53 short 1-2 JP55 short 1-2
	40 MHz	JP37 short 1-2, 3-4 open 5-6 JP43 short 2-3 JP53 short 2-3 JP55 short 2-3
CPU Voltage	+ 5V	JP80 short JP79 open JP84 open JP67 short 1-2
	LT1085 + 3.45V	JP80 open JP79 short JP84 open JP67 short 2-3
	+ 3.3/ + 3.45V Power Supply	JP80 open JP79 open JP84 short JP67 short 2-3
Cache Size	64K	JP75 short 1-2 JP74 open JP41 open
	128K	JP75 short 2-3 JP74 short JP41 short 1-2
	256K	JP75 short 1-2 JP74 short JP41 short 1-2, 3-4
Flash ROM	+ 12V	JP4 short 1-2
	+ 5V	JP4 short 2-3
Display Adapter	Normal	JP5 short 1-2
	CGA	JP5 short 2-3
On-board VGA	Disabled	JP6 short 2-3
	Enabled	JP6 short 1-2
On-board I/O	Disabled	JP12 short 2-3
	Enabled	JP12 short 1-2
Local IDE	Disabled	JP50 short 2-3
	Enabled	JP50 short 1-2

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

Function		Jumper Settings
EPP & ECP	Enabled	JP21 short
	Disabled	JP21 open
LPT	IRQ5	JP24 short 2-3
	IRQ7	JP24 short 1-2
ECP DMA Channel	DRQ1/DACK1	JP15 short 2-3 JP16 short 1-2
	DRQ3/DACK3	JP15 short 1-2 JP16 short 2-3
Default Setting	Test Use	JP76 open JP77 open

Table 3-1. Jumper Settings

Note1 : *JP79, JP80 will be shorted if the 3.3V power connector is not installed.*

JP65: M6/M 7 short 2-3, other open

JP82: M6/M 7 short 2-3, AMD short 1-2, other open

JP81: For P24C open 3X, short 2-3 2X

Note2: *A MD Microprocessors - The AMD DX2 (D stepping, Non-SMI CPU) series microprocessor cannot support DOZE, STANDBY, and SUSPEND modes. The AMD DXL2 (E stepping, SMI CPU) microprocessor can support the DOZE, STANDBY, and SUSPEND modes but the CPU speed is only decreased to 8MHz state instead of a stop clock state when running in SUSPEND mode.*

The AMD DXL2 CPU uses the PLC circuitry which prevents it from supporting "stop dock".

3.2 Connectors

There are several connectors located on the AL486 VIO-U3. They are used to connect 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 AL486 VIO-U3.

Connector	Function
J1	Printer Port
J2	COM2
J3	COM1
34	VGA Connector
J5	EXT. Battery
J7	Feature Connector
J9	VL Bus IDE Connector
310	FDC Connector
311	I-3 Power LED, 4-5 Keylock
JP2	PS/2 Mouse
JP3	PSI2 Keyboard
JP8	Modem Ring-in Connector
JP9	External Switch for Suspend/Resume
JP10	Standard Power Connector
JP30	+ 3.3/3.45V Power Connector
JP85	Turbo LED
JP86	Turbo Switch
JP87	Hardware Reset
JP88	EXT. Speaker
JP89	HDD LED

4 Built-in BIOS Setup Program

4.1 Setup Program

Use the BIOS for AL486 VIO-U3 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.

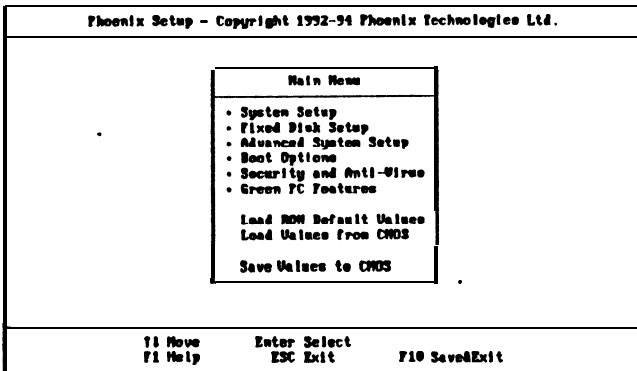


Figure 4-1. Setup Main Menu

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 and Anti-Virus** - 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 previous 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> .

4.2 System Setup

Phoenix Setup - Copyright 1992-94 Phoenix Technologies Ltd.			
System Setup			
System Time:	[[[:50:59]]		
System Date:	[04/01/1994]		
Video System:	[EGA / VGA]		
System Memory:	640 KB		
Extended Memory:	31744 KB		
Diskette Drive 1):	[1.2 MB, 54"]		
Diskette Drive B:	[Not Installed]		
F1 Move	ESC Exit	FgUp Previous Value	F5 Previous Configuration
	F1 Help	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.

Hard Disk C: and Hard Disk D: - specify the physical and electronic properties of the standard hard disk drives installed. Relevant specifications include the number of cylinders, heads, write **pre-compensation** time, read/write head landing zone, and number of sectors per track.

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.

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.

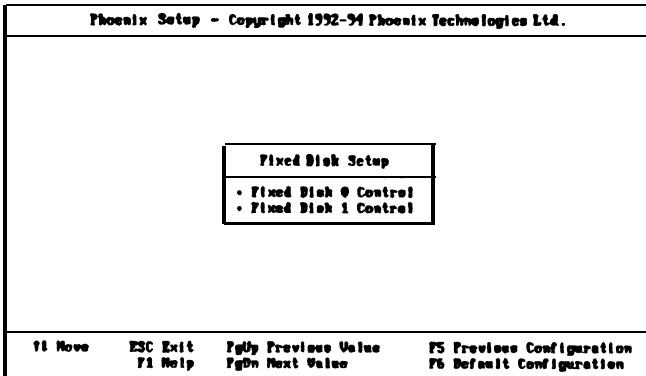


Figure 4-3. Fixed Disk Setup Screen 1

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.

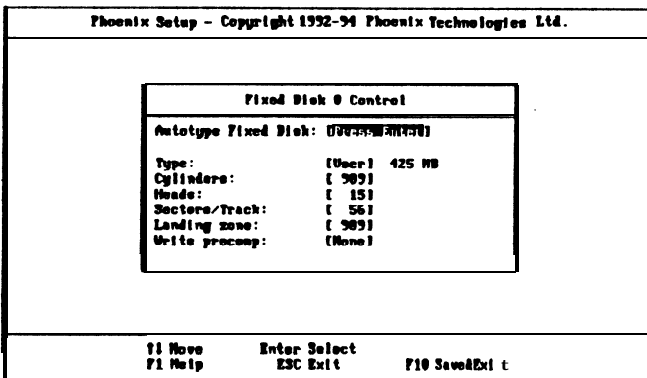


Figure 4-4. Fixed Disk Setup Screen 2

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.

4.4 Advanced System 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.

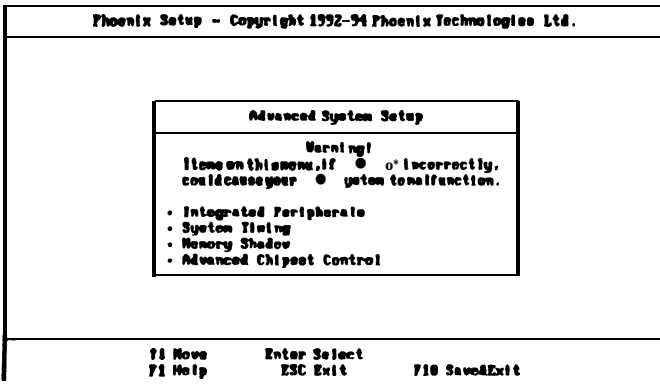


Figure 4-5. Advanced System Setup Screen

Integrated Peripherals

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

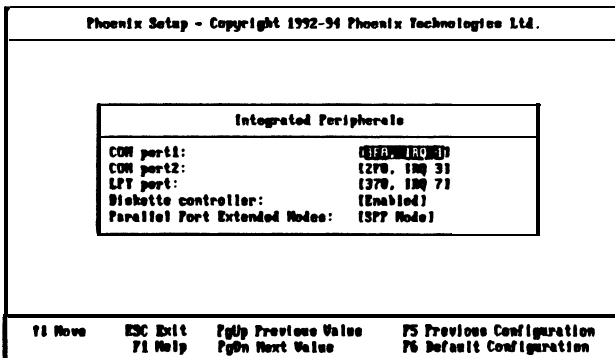


Figure 4-6. Integrated Peripherals

COM port 1 - assigns the address of the primary serial port on-board. The available options are listed **below**. **When** you select "Auto", the system will detect **add-on** card comport address to avoid comport address conflict.

- **Auto**
- **3F8-IRQ4**
- **338-IRQ4**
- **2E8-IRQ4**
- **22D-IRQ4**
- **Disable**
- **2F8-IRQ3**
- **2E8-IRQ3**
- **2ED-IRQ3**
- **228-IRQ3**

COM port 2 - assigns the address of the secondary serial port on-board. The available options are list below.

- **Auto**
- **3F8-IRQ4**
- **338-IRQ4**
- **2E8-IRQ4**
- **22D-IRQ4**
- **Disable**
- **2F8-IRQ3**
- **2E8-IRQ3**
- **2ED-IRQ3**
- **228-IRQ3**

LPT Port - assigns the address of the parallel port on-board. This option also prevents the system **from** encountering any **confliet** when an add-on card with parallel port is installed in **the future**. The available options are list below. When you select "Auto", the system will detect add-on card parallel **port** address then set on-board into **different** address to avoid parallel port address conflict.

- **Auto**
- **Disable**
- **3B7-IRQ7**
- **378-IRQ7**
- **278-IRQ7**

Diskette controller - **sets the** diskette controller mode of the SMC 665 I/O chip to either on or off. The available options are:

- **Disable**
- **Enable**

Parallel Port Extended Modes - In "ECP & EPP" mode, EPP can select through the ECR register of ECP mode 100. In SPP can be selected through the ECR register as mode 000. The available options are:

- SPP Mode
- ECP & EPP
- ECP Mode
- EPP & SPP

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.

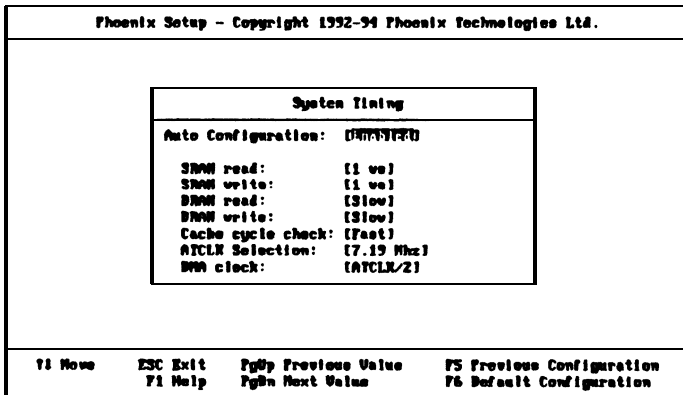


Figure 4-7. System Timing Screen

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

SRAM read - 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. Fewer wait states are recommended to improve the system performance. The available options are:

- 0 WS
- **1 WS**

SRAM write - 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 WS**
- **1 WS**

DRAM read - 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.

- Slow
- Normal
- Fast

DRAM **write** - **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.

- Slow
- **Normal**
- Fast

Cycle Check Point - allows you to **select** the rate for check point to determine whether it is a "hit" or a "miss" of the SRAM TAG. The available options are:

- Slow
- **Normal**
- Fast

AT Bus Clock Select - specifies the speed of the AT Bus clock of the system. The only available option and default value is **7.19MHz**

Memory Shadow

Selecting 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.

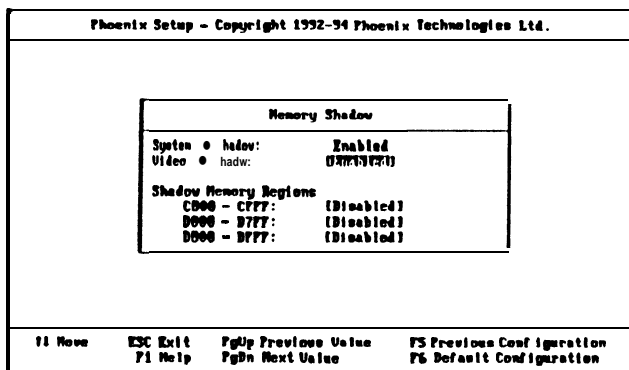


Figure 4-8. Memory Shadow Screen

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.

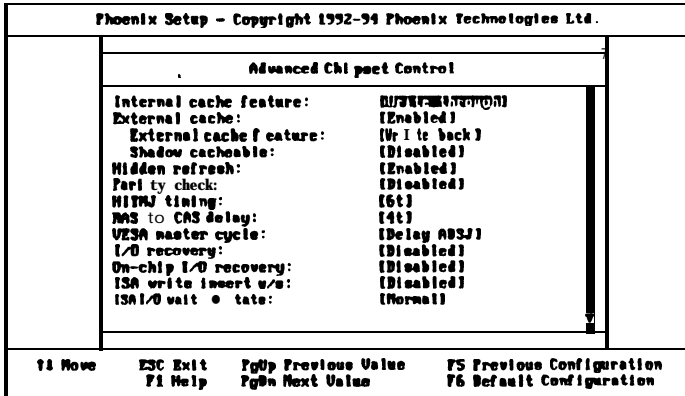


Figure 4-9. Advanced Chipset Control Screen 1

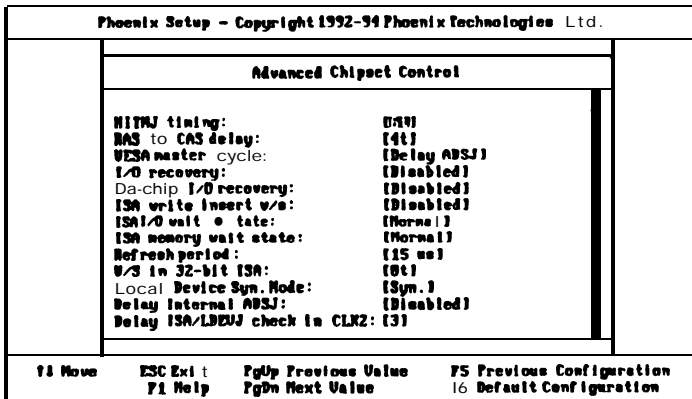


Figure 4-10. Advanced Chipset Control Screen 2

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*.

Shadow cacheable - must be enabled when shadowing for both system and **video** BIOS is present. Otherwise, set this **option to off or *Disabled* (default)**.

Hidden Refresh - enables or disables the hidden refresh mode for the **on-board memory**. The available options are:

- Enabled (**default**)
- Disabled

Parity Check - During a **local** memory read cycle, the **M1429G** 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)

HITMJ timing - indicates the timing pulse width when a hit to a modified **data** cache is set to occur. The available options are:

- 2t
- 3t
- 4t
- 6t (default)

RAS to CAS delay - 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:

- 2t
- 4t (default)
- 6t

VESA master cycle - sets the delay for chipset to check ADSJ after VL Master cycle check point. The available options are:

- Non-delay ADSJ
- Delay ADSJ (default)

I/O recovery - enables or disables the I/O command recovery function. The default setting for this option is *Disabled*.

On-chip I/O recovery - enables or disables the on-chip I/O command recovery feature. The default setting for this option is *Disabled*.

ISA write insert w/s - sets the mode of the ISA write cycle end insert wait state for slot data hold timing issue. The available options are:

- Enabled
- Disabled (default)

ISA I/O wait state - determines the wait states setting to be inserted to the ISA I/O command. The available options are:

- Normal (default)
- 1 wait state
- 2 wait states
- 3 wait states

ISA memory wait state - determines the wait states setting to be inserted to the ISA memory command. The available options are:

- Normal (default)
- 1 wait state
- 2 wait states
- 3 wait states

Refresh period - sets the refresh period of the ISA Bus. The available options are:

- 15 μ s (default)
- 30 μ s
- 60 μ s
- 120 μ s

W/S in 3%bit ISA - sets the second 16-bit access wait timing in 32-bit ISA cycle. The available options are:

- 2t
- 4t
- 6t
- 8t (default)

Local Device Syn. Mode - sets the ready synchronous mode of the local device. The options are:

- Syn. (default)
- Bypass.

Delay Internal ADSJ - indicates the mode setting of the delay internal ADSJ timing. The available options are:

- Enabled
- Disabled (default)

Delay ISA/LDEVJ check in CLK2 - specifies the delay for the chipset to check LDEVJ after the ISA cycle check point. The options are:

- 1
- 2
- 3 (default)

4.5 Boot Options

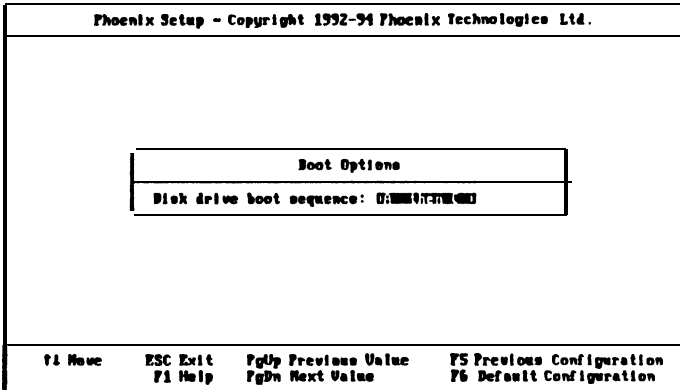


Figure 4-11. Boot Options Screen

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

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

4.6 Security and Anti-Virus

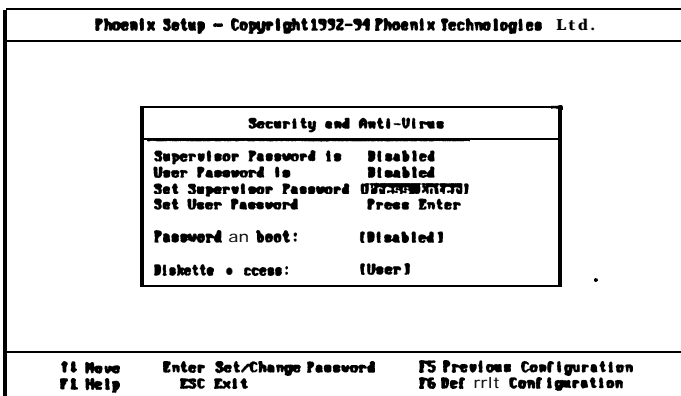


Figure 4-12. Security and Anti-Virus Screen

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 it as **User** allows access to the floppy drives at any time.

4.7 Green PC Features

Phoenix Setup - Copyright 1992-94 Phoenix Technologies Ltd.			
Green PC Features			
Power Saving Role:			[OFF] [F7]
System Beze Timer:			[10 sec]
System Standby Timer:			[10 * sec]
System Suspend Timer:			[10 * sec]
Wake up system during * rapsnd:			[Disabled]
Wake up time at (hour):			[AM 12 :]
Wake up time at (minute):			[0 min]
UGA with Power Down feature:			[None]
Advanced Power Management Setup			
System enters power down/wakeup modes by:			
F1 Move	ESC Exit F1 Help	FgUp Previous Value FgDn Next Value	F5 Previous Configuration F6 Default Configuration

Figure 4-13. Green PC Features Screen 1

Phoenix Setup - Copyright 1992-94 Phoenix Technologies Ltd.			
Green PC Features			
IRQ3 (COM2):			[Off]
IRQ4 (COM1):			[On]
IRQ5 (Alt. printer):			[Off]
IRQ6 (Diskette):			[On]
IRQ7 (Printer):			[ort]
IRQ9 (IRQ2 Redir):			[Off]
IRQ10 (User Define):			[ort]
IRQ11 (User Define):			[On]
IRQ14 (Fixed Disk):			[On]
IRQ15 (User Define):			[Off]
DMA1 (LAN card):			[On]
DMA3 (LAN cud):			[On]
LPT ID address:			[On]
F1 Move	ESC Exit F1 Help	FgUp Previous Value FgDn Next Value	F5 Previous Configuration F6 Default Configuration

Figure 4-14. Green PC Features Screen 2

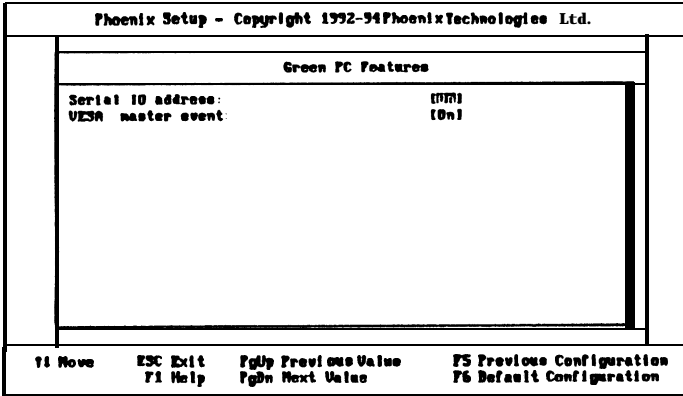


Figure 4-16. Green PC Features Screen 3

Power Saving Mode - enables (default) or disables 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:

- 10 **sec** (default)
- 20/30/90 **sec**
- 1/2 **mins**
- Disabled

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

- 10/30 **sec**
- 5 **mins** (default)
- 1/2/3/8/1 0/15/30 **mins**
- Disabled

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

- 10/30 **sec**
- 10 **mins** (default)
- 1/5/20/30/40/50 **mins**
- 1/2 **hrs**
- Disabled

Wakeup system during suspend - sets the time when **Enabled**, in the options Wakeup time at (hour) and Wakeup time at (minute), after which the system will return from SUSPEND mode back to RESUME mode. The default setting for this option is **Disabled**.

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

- None (default)
- Standard
- **Cirrus Logic**
- **S3 805 (VESA DPMS)**

The menu also lists the System Management interrupt (SMI) events by which the system wakes up from STANDBY or SUSPEND modes. Switch the following parameters to on or off:

- IRQ3 (COM2)**
- IRQ4 (COM1)**
- IRQ5 (Alt. printer)**
- IRQ6 (Diskette)**
- IRQ7 (Printer)**
- IRQ9 (IRQ2 Redir)**
- IRQ10 (User Define)**
- IRQ11 (User Define)**
- IRQ14 (Fixed Disk)**
- IRQ15 (User Define)**
- DMA1 (LAN card)**
- DMA3 (LAN card)**
- LPT IO address**
- Serial IO address**
- VESA master event**

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.

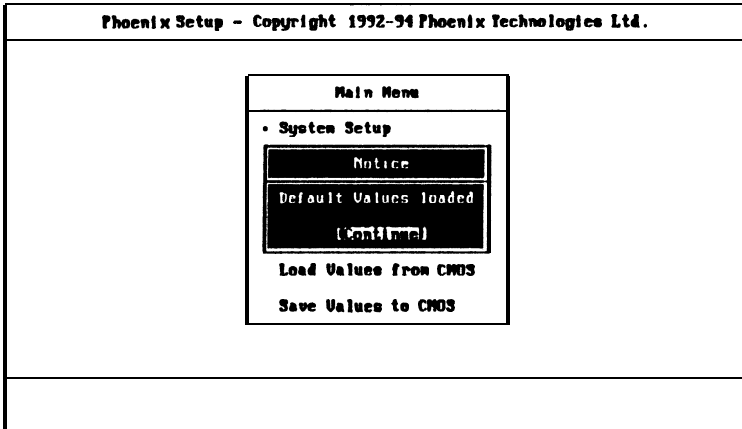


Figure 4-17. Load ROM Default Values Screen

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.

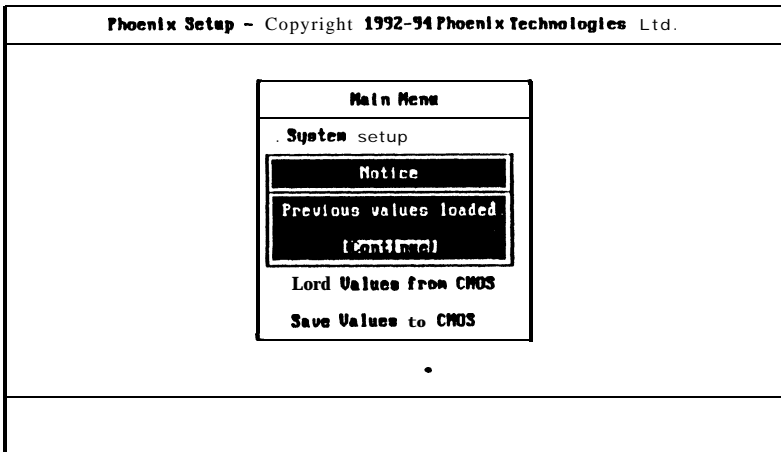


Figure 4-18. Load Values from CMOS Screen

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 **mem-**ory, 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.

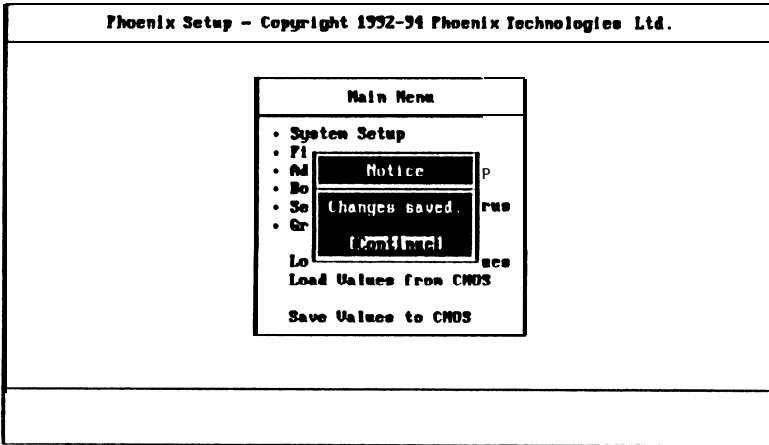


Figure 4- 19. Save Values to CMOS Screen

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 values (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.

4.12 BIOS Errors and Messages

After entering the Setup choices, the system will reboot. The Setup summary **and** system information will appear on screen along with messages. These may include ERROR messages concerning the system or Setup.

Phoenix BIOS **performs** various diagnostic tests at the time the system is turned on. Whenever an error is encountered during these tests, error messages will be displayed on the monitor.

The following is a list of all the BIOS error and messages and their corresponding meanings.

***nnnn* Cache SRAM Passed**

Diskette drive A error

Diskette drive B error

Entering SETUP . . .

Extended RAM Failed at offset: *nnnn**

Extended RAM Passed

Failing Bits: *nnnn* *

Fixed Disk 0 Failure

Fixed Disk 1 Failure

Fixed Disk Controller Failure *

Incorrect Drive A type - run SETUP

Incorrect Drive B type - run SETUP

Invalid NVRAM media type*

Keyboard controller error *

Keyboard error

Keyboard locked - Unlock key switch

Monitor type does not match CMOS - Run SETUP

Operating system not found

Parity Check 1 *

Parity Check 2*

Press < F1 > to resume, < F2 > to Setup

Press < F2 > to enter SETUP

Real time clock error*

Shadow Ram Failed at offset: *nnnn* *

***nnnn* Shadow RAM Passed**

System battery is dead - Replace and run SETUP

System BIOS shadowed

System cache error - Cache disabled*

System CMOS checksum bad - run SETUP

System RAM Failed at offset: *nnnn* *

***nnnn* System RAM Passed**

System timer error*

UMB upper limit segment address: *nnnn*

Video BIOS shadowed

** If your system displays this message, write down the message and contact your dealer. If your system fails after you made changes in the Setup menus, you may be able to correct the problem by entering Setup and restoring the original values.*

***nnnn* Cache SRAM Passed**

Where *nnnn* is the amount of system cache in kilobytes **successfully tested**.

Diskette drive A error or Diskette drive B error

Drive A: or Drive B: is present but fails the BIOS Power-On-Self-Test (POST) diskette tests. Check to see that the drive is defined with the proper diskette type in Setup and that the diskette drive is installed correctly.

Entering SETUP . . .

Starting Setup program

Extended RAM Failed at offset: *nnnn**

Extended memory not working or not configured properly.

***nnnn* Extended RAM Passed**

Where *nnnn* is the amount of RAM in kilobytes **successfully tested**.

Failing Bits: *nnnn**

The hex number *nnnn* is a map of the bits at the RAM address (in System, Extended, or Shadow memory) which failed the memory test. Each **1** (one) in the **map** indicates a failed bit.

Fixed Disk 0 Failure, Fixed Disk 1 Failure, Fixed Disk Controller Failure *

Fixed disk is not working or not configured properly. **Run** Setup and ensure that the fixed disk type is correctly identified.

Incorrect Drive A type - run Setup

Type of floppy drive **A:** is not correctly identified in Setup.

Incorrect Drive B type - run Setup

Type of floppy drive **B:** is not correctly identified in Setup.

Invalid NVRAM media type*

Problem with NVRAM access

Keyboard controller error *

The keyboard controller failed test. **You may have to replace the keyboard or the controller.**

Keyboard error

Keyboard is not working.

Keyboard error *nn*

BIOS discovered a stuck key and displays the scan code *nn* for the **stuck** key.

Keyboard locked - Unlock key switch

Unlock the system to proceed.

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Monitor type does not match CMOS - Run SETUP

Monitor type is not correctly identified in Setup.

Operating system not found

Operating system can **not** be located on either drive **A:** or drive **C:**. Enter Setup and see if fixed disk and drive **A:** are properly identified.

Parity Check 1 *

Parity error found in the system bus. BIOS attempts to locate the address and display it on the screen. If it can not locate **the** address, it displays **????**.

Parity Check 2*

Parity error found in the I/O bus. BIOS attempts to locate **the** address and display it on the screen. **If it can not locate the address, it displays ????.**

Press <F1> to resume, <F2> to Setup

Displayed after any recoverable **error** message. Press **<F1>** to start the **boot** process or **<F2 >** to enter **Setup and change** any settings.

Press <F2> to enter SETUP

Optional message displayed during POST. Can be turned off in Setup.

Real time clock error*

Real time **clock fails** BIOS test. May **require board repair**.

Shadow Ram Failed at offset: *nnnn**

Shadow RAM failed at offset ***nnnn*** of the 64K block at which the error was detected.

***nnnn* Shadow RAM Passed**

Where *nnnn* is the amount of shadow **RAM** in kilobytes successfully tested.

System battery is dead - Replace and run SETUP

The CMOS clock battery indicator shows the battery is dead. Replace the battery and run Setup to reconfigure the system.

System BIOS shadowed

System BIOS copied to shadow RAM.

System cache error - Cache disabled*

RAM cache failed the **BIOS** test. BIOS disabled the cache.

System CMOS checksum bad - run SETUP

System CMOS has been corrupted or modified incorrectly, perhaps by an application program that changes data stored in CMOS. Run Setup and re-configure the system.

System RAM Failed at offset: *nnnn**

System RAM failed at offset *nnnn* of the 64K block in which the error was detected.

***nnnn* System RAM Passed**

Where *nnnn* is the amount of system RAM in kilobytes successfully tested.

System timer error*

The timer test failed. Requires repair of system board.

UMB upper limit segment address: *nnnn*

Displays the address of the upper limit of Upper Memory Blocks, indicating released segments of the BIOS that a virtual memory manager can reclaim

Video BIOS shadowed

Video BIOS successfully copied to shadow RAM.

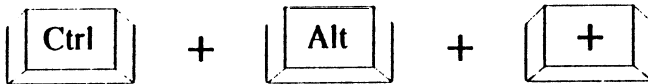
Appendix A

Setting the System Speed

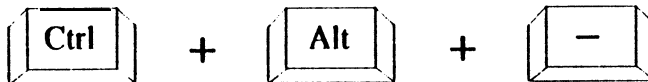
There are two methods in changing the system processing speed of your AL486 VIO-U3. The first method is implemented through the hardware turbo switch J2. The second method, software setting, requires the simultaneous pressing of several keys on the keyboard known as hot-keys. You may change the speed during normal operation while working with your application program.

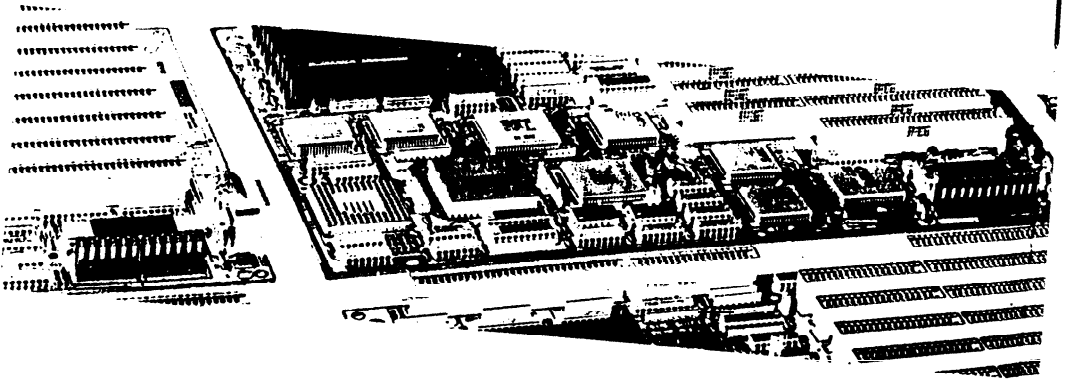
The hot-key combinations for setting the system speed on your AL486 VIO-U3 are shown on the following diagrams.

■ High Speed



□ Low Speed





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