

486 PCI/ISA MAIN BOARD (486SX / DX / DX2 / DX4)


PT-432B

USER'S MANUAL

432B/015/0995



Recycled Paper

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Before installing this 486 Main Board please read this manual completely and retain it for future reference.



The Green Connection :

For information on the Green Connection, please refer to page 2, section 1.3.

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Table Of Contents

1. Introduction	1
1.1 Overview	1
1.2 Checklist	2
1.3 Green PC Power Management	2
2. Specifications	3
2.1 Specifications	3
2.2 Quick CPU Set-up	3
2.3 Jumpers & Connectors	4
2.4 SIMM memory Configuration	8
3. AMI BIOS Set-up	9
3.1 About CMOS Setup	9
3.2 Using AMI WinBIOS	9
3.3 Getting Help	9
3.4 Starting AMI WinBIOS Setup	9
3.5 AMI WinBIOS Set-up Menu	10
3.6 Standard Setup	11
3.7 Advanced Setup	12
3.8 Chipset Setup	14
3.9 Power Management Setup	16
3.10 Peripheral Setup	18
3.11 Detect C:	19
3.12 Detect D:	19
3.13 Colour Set	20
3.14 Password Setup	20
3.15 Original Setup	21
3.16 Optimal Setup	21
3.17 Fail-safe Setup	21
4. Software Installation	22
4.1 DOS & Windows Driver Installation	22
4.2 Other Drives Supported	22
5. Trouble Shooting Guide	23
5.1 No Display after Power-On	25
5.2 Cannot Boot up	23
5.3 Lose CMOS Data	23
5.4 No System Management Mode	23
5.5 General notes	23
6. CPU Type Select	24
7. Diagram of Board Layout	25

1. Introduction

1.1 Overview

- The PT-432B offers a 32-bit programming architecture compatible with the software base of the 486 microprocessor. It is a reliable motherboard using a UMC chipset and a multi-layer printed circuit board. The chipset consists of UM8881F/E and UM8886BF which provides the most cost effective and high performance solution for a 486 computer system and UM8663B I/O chip which provides Enhanced I/O functions.
- The UM8881F/E is a Host Bridge compliant to PCI spec. 2.0 for a 486 motherboard architecture which contains a sophisticated direct-mapped cache controller with write-back or write-through operation, Fast Page Mode DRAM Controller, and supports system management mode operations. It also provides more enhanced features, such as EDO DRAM support and Cyrix 5x86 unique burst order support. The UM8886BF provides the bridge between the PCI bus and ISA bus and an Enhanced DMA function. It also incorporates two 82C59 interrupt controllers, one 82C54 16-bit counter/timer, NMI control logic, built-in hardware keyboard controller, RTC and NVM direct interface, and primary and secondary PCI IDE mode 4 controller interface.
- The PT-432B is a PCI Local Bus motherboard. The three PCI Bus slots fully comply with the PCI spec, v2.0. The speed of I/O peripherals can be dramatically increased by connecting PCI compatible controller cards to the PCI Bus slots on the PT-432B.
- The PT-432B offers you the option for an excellent CPU upgrade path. Designed to work with most brands of 486 CPUs such as 486SX/DX and DX2, an on-board 3.3V regulator lowers the voltage to work with Intel & AMD DX4 CPUs (and other 3.3Volt CPUs), offering speeds of up to 120MHz.
- The PT-432B is a green mother-board which means when there is no system activity for a specific period of time (this period is software programmable), the PT-432B will slow down its original working frequency to 8 MHz speed when used with standard CPUs. If an 'SMM' (System Management Mode) CPU is used, the green feature of PT-432B slows down the CPU clock to zero. This will help to save power consumption, reducing energy related pollution and protecting our environment.

"This is an ENERGY STAR™ compliant product."

The Environmental Protection Agency ENERGY STAR™ program defines that as an Ally of this program the specified manufacturer must produce systems, or system components which enable a computer system to operate and draw 30 watts or less of power in idle mode. Although the EPA do not endorse any particular product or service, the program is designed to offer a cooperative effort between the EPA and the component manufacturer (Ally) to provide energy saving products and education to customers."

"FCC Approval"

The PT-432B motherboard has been approved for FCC Class B when properly installed in a barebone configuration using the following case/power supply:

Brand	Model	FCC ID
Procase	PC-109 SM	JPJFINE429G109
Procase	FC-609 T/M	JPJFINE429G609
Procase	PC-709 T/M	JPJFINE429G709

FCC Notice:

Information to the User

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Should you experience interference to radio or television reception then the user is encouraged to try to correct this interference by one or more of the following measures:

- Re-locate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help and for additional suggestions.

The user may find the booklet, "How to identify and Resolve Radio-TV Interference Problems," prepared by the Federal Communications Commission to be helpful. The booklet is available from the U.S. Government Printing Office, Washington, DC20402, Stock No. 004-000-00345-4.

FCC Warning

The user is cautioned that changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment.

Note: In order for the installation of this product to maintain compliance with the limits for a Class B device, shielded cables and power cords must be used.

1.2 Checklist

Please check your PT-432B package to ensure that it contains the following items:

- One PT-432B Main Board
- One PT-432B User's Manual
- One PT-432B PCI IDE Driver Diskette
- Two IDE cables
- One FDD cable
- One DB9 + DB25 Serial and printer cable with bracket
- One DB25 serial cable with bracket

If any of these items are missing or damaged, please contact your local dealer or sales representative for assistance.

1.3 Green PC Power Management

The Green PC mode is a state that minimizes power consumption. There are three different Green PC modes:

- Doze mode:** This mode is available for all kinds of CPU. The clock of the CPU will slow down to 8 MHz.
- Standby mode:** This mode is only available for the SMM CPUs. The clock of the CPU will slow down to the pre-set frequency.
- Inactive mode:** This mode is only available for the SMM CPUs. The PT-432B can stop the CPU clock under this mode.

The PT-432B will be lapse into Green PC mode as a result of one of the following occurrences:

- Suspend switch (JP1) is pressed.
- Expiration of the internal Green PC Timer. The Green PC Timer is software programmable which can configure in the "Power Management Setup" option of the BIOS CMOS setup. (Refer to 3.10 Power Management Setup). The power management feature will be *enabled* as default, however the timing may differ due to production control. It is recommended that you re-adjust these timings according to your personal requirements/set-up.

Due to system activity monitoring and management, the PT-432B will not go into Green PC mode if one or more of the following activities is detected:

- PCI slave activity
- LPT port activity
- COM port activity
- ISA master activity
- IDE activity
- Floppy activity
- VGA activity
- Keyboard activity

2. Specifications

2.1 PT-432B System Board Specifications

- Supports 4pcs. of 72 pins SIMM (single or double bank) up to 256MB on board memory.
- Auto configure memory size without hardware jumpers.
- Supports EDO RAM.
- Supports 128K, 256K or 512K cache memory size.
- Fast CPU reset and Fast gate A20 logic.
- Speed switching with hardware and software selection.
- Board Dimensions : 220 mm by 222 mm.
- 4 x 16-bit ISA slots; 3 x PCI slots.
- Clock chip design makes CPU speed changing easier.
- I/O slot signal protector on: IRQ9, DRQ2, OWS#.
- On-board I/O and PCI Enhanced IDE (Mode 4) for primary and secondary ports.
- Two 16c550 compatible enhanced serial ports on-board.
- Supports IrDA or ASKIR infrared interface
- Supports two floppy drivers of either 360K, 720K, 1.2M or 1.44M type.
- A and B drive may be swapped by software configuration.
- Green features to slow down / stop the CPU clock & turn off VGA display signals.
- Supports 3.3V CPUs.
- On-board CPU cooling fan power pin with +5V or +12V selection.
- Parallel printer EPP / ECP / SPP support.

2.3 Jumpers and Connectors

Jumpers / Connectors	Description
JP1	Hardware Light Green Switch
JP5,JP6,JP7	L2 cache size select
JP15,16,17	CPU Clock Select
JP18	STOPCLK# enable
JP19,JP20,JP22,JP32	CPU Type Select
JP21	L1 cache write back/write through
JP33	DX4 Clock Multiplier
JP47	Cooling fan power port
JP36,JP39	CPU voltage select
JP10,JP11	Power management mode select
JP41	Power connector
KD1	Keyboard connector
CN1	Speaker connectors
CN2	Power LED & key-lock connector
CN3	Printer connector
CN4	Primary IDE connector
CN5	Secondary IDE connector
JP2	Reset connector
JP3	Turbo switch
JP4	Pine infra-red port

Shaded Box represents default setting

Flash VCC: JP13

This mother board can use a FLASH ROM which allows you to change the system BIOS through software. This enables you to constantly update your system BIOS as changes are made. Should you wish to use this feature then you must set the above jumper according to the voltage of that FLASH ROM. When using FLASH ROMs a Flash Memory Writer Utility software driver is required. For further details concerning this driver please contact your dealer or sales representative.

JP13	FLASH ROM VCC
2-3	12V
1-2	5V

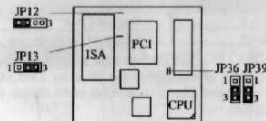
VCC Select : JP36, JP39

JP36,39	CPUVCC
2-3	3.3V
1-2	5V

JP12

If the machine has set a PASSWORD, but it has been forgotten. The only way is to erase the CMOS setting. To comply this set the JP12 to 2-3 and turn on the power supply. After that set the jumper to default.

1-2	default
2-3	erase CMOS



CPU Type Select : JP19, JP20, JP23-JP29

This mother board has been designed to work with a wide range of CPUs offered by the various chipset manufacturers. Please set CPU type select according to the CPU being used.

CPU Type	JP19	JP20	JP23	JP24	JP25	JP26	JP27	JP28	JP29
486DX/DX2	OPEN	OPEN	OPEN	1-2	OPEN	OPEN	OPEN	3-4	1-2,3-4
486SX	OPEN	OPEN	OPEN	1-2	OPEN	OPEN	OPEN	OPEN	2-3
P24T	1-2	2-3,4,5	2-3	3-4,5,6	2-3	1-2	1-2	2-3	1-2,3-4
CX486S	1-2	1-2,3-4	1-2	3-4	1-2	1-2	2-3	OPEN	2-3
CX486DX	2-3	1-2,3-4	OPEN	3-4	1-2	1-2	2-3	3-4	1-2,3-4
UMC486	3-4	OPEN	OPEN	1-2	OPEN	2-3	OPEN	1-2,3-4	2-3
SL SX	OPEN	2-3,4,5	OPEN	3-4	OPEN	1-2	1-2	OPEN	2-3
SL DX/24 MISC EN AMD DX-4	OPEN	2-3,4,5	OPEN	3-4	OPEN	1-2	1-2	3-4	1-2,3-4
P24D	OPEN	2-3,4,5	OPEN	3-4	OPEN	1-2	1-2	3-4	1-2,3-4
Am486DXLT	3-4	OPEN	OPEN	1-2	OPEN	2-3	OPEN	1-2,3-4	1-2,3-4

Cyril 5X86

For 5X86 set the below jumpers, other CPU just let it open

JP22	JP30	JP31	JP32
OPEN	OPEN	SHORT	SHORT

P24D

For P24D set the below jumpers, other CPU just let it open

JP22	JP30	JP32
SHORT	SHORT	SHORT

INTEL P24C Clock Multiplier : JP33

JP33	External Clock
OPEN	1 X External Clock
1-2	2 X External Clock
2-3	2.5 X External Clock

DX4 CPUs can perform high speed processing due to internal clock multiplication. This type of CPU is capable of multiplying the clock by 2X/2.5X and 3X to reach 100MHz speed. However CPU vendors recommend that it is far more stable to use the 3X clock method. Therefore this option has been set as default.

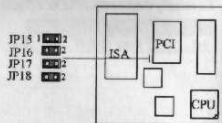
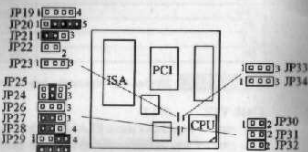
L1 cache write back/write through : JP21

For all DX4 pin-out write back CPUs, set this jumper to select the cache line as write-back or write-through.

JP21	Cache Line
1-2	L1 write through
2-3	L1 write back
OPEN	Other CPUs

CPU Clock Select : JP15, JP16, JP17

Clock Freq.	JP15	JP16	JP17
20MHz	OFF	OFF	OFF
25MHz	OFF	OFF	ON
33MHz	ON	ON	ON
40MHz	OFF	ON	ON
50MHz	ON	OFF	OFF



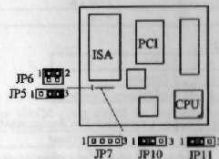
Cache Size Select : JP5, JP6, JP7

Cache Size	JP5	JP6	JP7	Cache RAM	Tag RAM
128KB	1-2	OPEN	OPEN	32K8 x 4	8K8 x 1
256KB	1-2	1-2	1-2	64K8 x 4	32K8 x 1
256KB	2-3	1-2	OPEN	32K8 x 8	32K8 x 1
512KB	1-2	1-2,3-4	1-2,3-4	128K8 x 4	32K8 x 1

This selects the size and type of the Cache RAM used on the mother board. This mother board can work with three types of Cache RAM which allows for extra flexibility should you wish to upgrade. The jumpers will be set accordingly during production.

Power Management Select : JP10, JP11

Brand	JP10	JP11
Intel	1-2	1-2
Cyrix	2-3	1-2
AMD/UMC	1-2	2-3



JP8: DMA REQUEST

JP8	DMA Request
1-2	DRQ1
2-3	DRQ3
OPEN	Disable

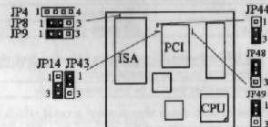
JP9: DMA Acknowledge

JP9	DMA Acknowledge
1-2	DACK 1
2-3	DACK3
OPEN	Disable

Factory Setting

The JP14, 18, 43 & JP44 are factory setting, it is recommended not to change.

JP	Default
14	2-3
18	short
43	1-2
44	1-2
48	1-2
49	1-2



JP42

For on-board battery, please short the 2-3 pins of JP42. If using 3V external battery, remove the jumper from JP42. And had the battery connected to pin 4 (negative) and pin 3 to positive. For high voltage battery, connect the positive to pin 1 instead of pin 3.

JP42	Battery Type
2-3	on board battery
3-4	external 3V battery
1-4	external 4.5V battery

Connectors Pin Assignment

Infra red port : JP4

pin 1	IRTSIN
pin 2	GND
pin 3	IRTSOUT
pin 4	VCC

PS/2 Mouse connector : JP46

1	MSDATA
2	GND
3	MCLK
4	+5V

JP47

pin 1	+5V
pin 2	Ground
pin 3	+12V

Power Supply Connector Pin Assignment : JP41

1	Power Good
2	+5V
3	+12V
4	-12V
5	Ground
6	Ground
7	Ground
8	Ground
9	-5V
10	+5V
11	+5V
12	+5V

D2 : PCI IDE LED Connector

Pin 1	LED cathode (-)
Pin 2	LED anode (+)

JP1 : Hardware Light Green Standby Switch

Press once to go in suspend mode
Press another time to go back normal mode

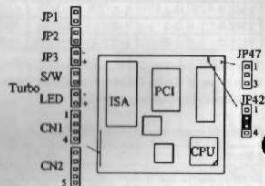
Some system cases also possess a cable which is attached to a switch on the case front which, when pressed, will automatically put the system into / and out of 'suspend' mode. Connect that cable here.

CN2 : Power LED & Key-Lock Connector

1	+5V
2	NC
3	Ground
4	Key-Lock
5	Ground

CN1 : Speaker Connector

1	Speaker data
2	NC
3	Ground
4	+5V



JP3 : Turbo Switch

OPEN	Turbo Speed
CLOSE	Normal Speed

LED1 : Turbo LED Connector

1	LED cathode (-)
2	LED anode (+)

JP2 : Reset Switch

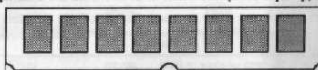
OPEN	Normal
CLOSE	Reset

2.4 SIMM MEMORY Configuration

This motherboard can work with various types of SIMM module. It's auto-banking feature means that you do not have to set any jumpers to designate the bank, size or type of SIMM - just install the modules and the motherboard will auto-configure on booting up.

This motherboard supports 72-Pin SIMM modules OF 32-Bits (without parity) or 36-bits (with parity).

- 72-Pin



There are four SIMM sockets which support up to 256MB of memory. The SIMM can be sized as follows:

- 256Kx32/36 (1M/SIMM)
- 512Kx32/36 (2M/SIMM)
- 1Mx32/36 (4M/SIMM)
- 2Mx32/36 (8M/SIMM)
- 4Mx32/36 (16M/SIMM)
- 8Mx32/36 (32M/SIMM)
- 16Mx32/36 (64M/SIMM)

In addition, the SIMM 1 must of the same size of SIMM 2, and so on for the SIMM 3 and SIMM 4.

Memory Configurations

The group A(SIMM 1& 2) & group B(SIMM3&4) can be of the following memory size.

SIMM	SIMM	SIZE
256Kx32/36	0	1M
256Kx32/36	256Kx32	2M
512Kx32/36	0	2M
512Kx32/36	512Kx32	4M
1Mx32/36	0	4M
1Mx32/36	1Mx32	8M
2Mx32/36	0	8M
2Mx32/36	2Mx32	16M
4Mx32/36	0	16M
4Mx32/36	4Mx32	32M
8Mx32/36	0	32M
8Mx32/36	8Mx32/36	64M
16Mx32/36	0	64M
16Mx32/36	16Mx32	128M

3. AMI BIOS Setup

3.1 About CMOS Setup

After the PT-432B motherboard has been integrated into the system, you need to run the Setup Program in order to set up the system configuration. Upon completion of this Setup Program, the settings you specify within the Setup program will be recorded in a special area of memory called CMOS RAM. This memory is backed up by a battery so that it will not be erased when you turn off or reset the system. Whenever you turn on the power, the system reads the settings stored in CMOS RAM and compares them to the equipment check conducted during the POST. If an error occurs, an error message will be displayed on screen, and you will be prompted to run the Setup program again.

AMI WinBIOS Setup configures system information that is stored in CMOS RAM. The Setup Program has an easy-to-use graphical user interface that will be immediately recognizable to anyone who has ever used Microsoft Windows. WinBIOS Setup sets a new standard in BIOS user interfaces.

3.2 Using AMI WinBIOS Setup with Mouse & Keyboard

- WinBIOS Setup can be accessed via mouse, or pen. The mouse click functions are:
 - double click to perform an operation in the selected field.
- WinBIOS Setup has a built-in keyboard driver that uses simple keystroke combinations

Keystroke	Function
<Tab>	Move to the next window or field.
→, ←, ↑, ↓	Move to the next field to the right, left, above, or below.
<Enter>	Select in the current field.
+	Increments a value.
-	Decrements a value.
<Esc>	Closes the current operation and return to previous level.
<PgUp>	Returns to the previous page.
<PgDn>	Advances to the next page.
<Home>	Returns to the beginning of the text.
<End>	Advances to the end of the text.
<Alt> <H>	Access a help window.
<Alt> <Spacebar>	Exit WinBIOS Setup.
Alphabetic keys	A to Z are used in the Virtual Keyboard, and are not case-sensitive.
Numeric keys	0 to 9 are used in the Virtual Keyboard and Numeric keypad.

3.3 Getting Help

WinBIOS Setup provides Help screens for Advanced Setup, Chipset Setup, Power Management Setup, and Peripheral Setup. Help on mouse and keyboard use is also available. Choose Help by pressing <Alt> <H>.

3.4 Starting AMI WinBIOS Setup

When you turn on the system and in the course of the system POST, you will be presented with the screen depicted on the next page.

To enter the Setup program at this time, press the [DEL] key. This will display the first page of the AMI BIOS Setup menu. If you do not press the [DEL] key at the right time, press [Ctrl-Alt-Del] to restart the system and try again.

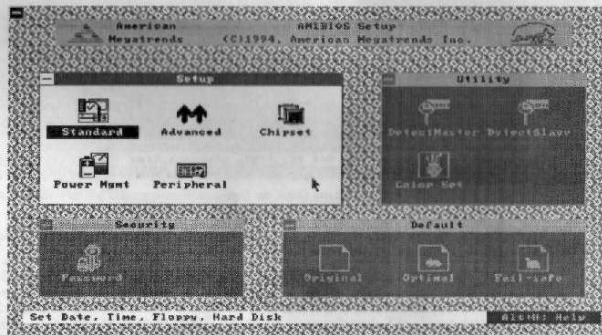
If you do not press the key at the correct time and the system fails to boot, an error message KEYBOARD ERROR will be displayed and you will again be asked to .

RUN SETUP UTILITY
Press <F1> to resume

If you press and hold the [Ins] key while the system is booting until you hear a single beep, the default Setup values will be loaded into CMOS. Release the key after the beep to prevent a keyboard error.

3.5 AMI WinBIOS Setup Main Menu

The WinBIOS Setup Menu, shown below, is organized into four windows. Each window contains several options. Clicking on each icon activates a specific function. The windows are: Setup / Utilities / Security / Default.



Each WinBIOS Setup option has two default settings. These settings can be applied to all WinBIOS Setup options when you select the Default section on the WinBIOS Setup main menu. The types of defaults are

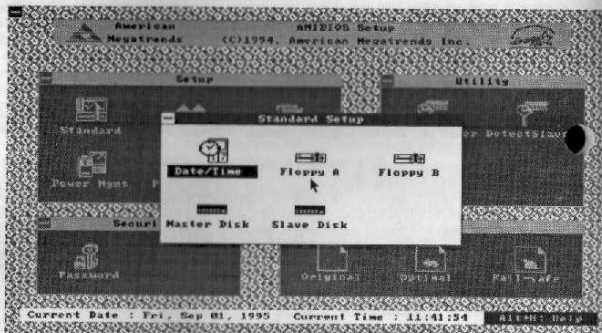
Optimal : these settings provide the best performance characteristics.

Fail-Safe : these settings are more likely to configure a workable computer when something is wrong. If you cannot boot the computer successfully, select the Fail-Safe WinBIOS Setup options and try to diagnose the problem after the computer boots. These settings do not provide optimal performance.

Notes : AMI WinBIOS only has the set-up options for 2 hard drives. However when using an Enhanced IDE controller you can actually attach 4 hard drives. With an Enhanced IDE controller the two drives in the AMI WinBIOS set-up will refer to the two drives connected to the 'Primary' IDE Port of that card. Set up these two drives in the WinBIOS, and upon re-booting the system the BIOS will automatically detect the 3rd & 4th drives.

3.6 Standard Setup

The Standard Setup option is selected by choosing the "Standard" icon from the Setup section of the AMI WinBIOS Setup main menu selection screen. The Standard Setup screen should be as follows:



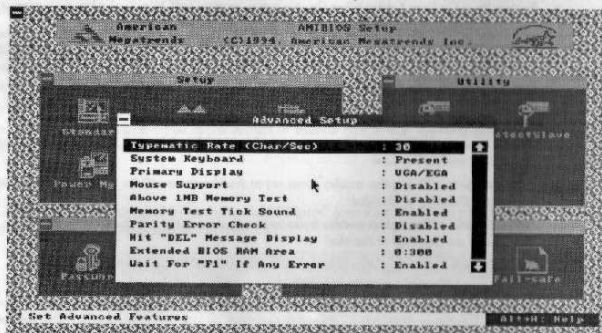
- **Date / Time** : Select the Standard option. Select the Date and Time icon. The current values for each category are displayed. Enter new values through the keyboard.
- **Floppy Drive A, Floppy Drive B** : Move the cursor to these fields and select the floppy type. The settings are 360 KB 5 1/4 inch, 1.2 MB 5 1/4 inch, 720 KB 3 1/2 inch, 1.44 MB 3 1/2 inch.
- **Hard Disk C, Hard Disk D** : Select one of these hard disk drive icons to configure the drive named in the option. A scrollable screen that lists all valid disk drive types is displayed. Select the correct type and press <Enter>. If the hard disk drive is an IDE drive, select Detect C: or Detect D: from the Utility section of the WinBIOS Setup main menu to allow WinBIOS to automatically detect the IDE drive parameters and report them on this screen. You may also enter the hard disk drive parameters. The drive parameters are:

Parameter	Description
Type	The number for a drive with certain identification parameters.
Cylinders	The number of cylinders in the disk drive.
Heads	The number of heads.
Write Precompensation	The size of a sector gets progressively smaller as the track diameter diminishes. Yet each sector must still hold 512 bytes. Write precompensation circuitry on the hard disk compensates for the physical difference in sector size by boosting the write current for sectors on inner tracks. This parameter is the track number where write precompensation begins.
Landing Zone	This number is the cylinder location where the heads will normally park when the system is shut down.
Sectors	The number of sectors per track. MFM drives have 17 sectors per track. RLL drives have 26 sectors per track. ESDI drives have 34 sectors per track. SCSI and IDE drive may have even more sectors per track.
Capacity	The formatted capacity of the drive is (Number of heads) x (Number of cylinders) x (Number of sectors per track) x (512 bytes per sector)

If you select Detect C: or Detect D: from the Utility section of the WinBIOS Setup main menu, WinBIOS automatically finds all IDE hard disk drive parameters. WinBIOS places the hard disk drive parameters that it finds in the Drive C: Type or Drive D: Type fields in Standard Setup.

3.7 Advanced Setup

- The Advanced Setup option is selected by choosing the "Advanced" icon from the Setup section of the AMI WinBIOS Setup main menu selection screen. The Advanced Setup screen should be as follows:



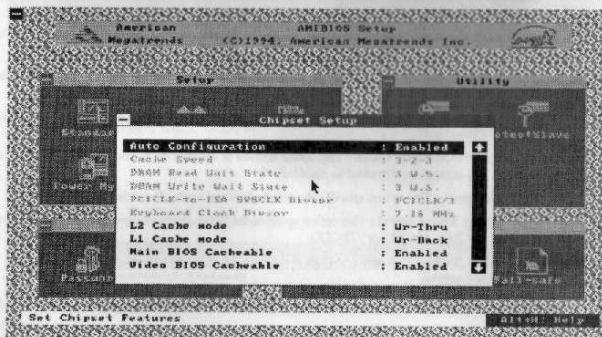
- **Typematic Rate (Chars/Sec)** : Typematic Rate sets the rate at which characters on the screen repeat themselves when a key is pressed and held down. The settings are 15, 20, or 30 characters per second.
- **System Keyboard** : This option does not specify if a keyboard is attached to the computer. Rather, it specifies if error messages are displayed if a keyboard is not attached. This option permits you to configure workstations with no keyboards. The settings are *Absent* or *Present*.
- **Primary Display** : Select this option to configure the type of monitor attached to the computer. The settings are *Mono*, *CGA 80x25*, *Color 40x25*, *VGA/EGA*, or *Absent*.
- **Mouse Support** : When this option is enabled, WinBIOS supports a PS/2-type mouse. The settings are *Enabled* or *Disabled*.
- **Above 1 MB Memory Test** : When this option is enabled, the WinBIOS memory test is performed on all system memory. When this option is disabled, the memory test is done only on the first 1MB of system memory. The settings are *Enabled* or *Disabled*.
- **Memory Test Tick Sound** : This option enables (turns on) or disables (turns off) the ticking sound during the memory test. The settings are *Enabled* or *Disabled*.
- **Parity Error Check** : This option enables or disables parity error checking for system RAM. The settings are *Enabled* (all system RAM parity is checked) or *Disabled* (parity is checked only on the first 1MB of system RAM).
- **Hit "DEL" Message Display** : Disabling this option prevents -Hit if you want to run Setup - from appearing when the system boots. The settings are *Enabled* or *Disabled*.

- **Extended BIOS RAM Area** : Specify in this option if the top 1KB of the system programming area, beginning at 639K or 0:300 in the system BIOS area in low memory, will be used to store hard disk information. The settings are *Top 1K* or *0:300*.
- **Wait for <F1> If Any Error** : WinBIOS POST runs system diagnostic tests that can generate a message followed by - Press <F1> to continue - If this option is enabled, WinBIOS waits for the end user to press <F1> before continuing. If this option is disabled, WinBIOS continues the boot process without waiting for <F1> to be pressed. The settings are *Enabled* or *Disabled*.
- **System Boot Up Num Lock** : When On, this option turns on / off Num Lock when the system is powered up. The settings are *On* or *Off*.
- **Floppy Drive Seek At Boot** : When this option is enabled, WinBIOS performs a Seek command on floppy drive A: before booting the system. The settings are *Enabled* or *Disabled*.
- **System Boot Up Sequence** : This option sets the sequence of boot drives (either floppy drive A, or hard disk drive C:) that WinBIOS attempts to boot from after POST completes. The settings are *C:,A:* or *A:,C:*.
- **System Boot Up CPU Speed** : This option specifies the speed of the CPU at the time of the system boot. The settings are *High* or *Low*.
- **External Cache** : This option enables (turns on) or disables (turns off) the secondary cache memory. The settings are *Disabled* or *Enabled*.
- **Internal Cache** : This option enables (turns on) or disables (turns off) the CPU built-in cache memory. The settings are *Disabled* or *Enabled*.
- **Turbo Switch Function** : When this option is set to *Enabled*, the externally-mounted turbo switch is enabled. The settings are *Enabled* or *Disabled*.
- **Password Checking** : This option enables the password check option every time the system boots or the end user runs Setup. If *Always* is chosen, a user password prompt appears every time the computer is turned on. If *Setup* is chosen, the password prompt appears if AMI WinBIOS Setup is executed.
- **Video Shadow C000,16K** : When this option is set to *Enabled*, the video ROM area from C0000h - C3FFFh is copied (shadowed) to the RAM for faster execution.
- **Shadow C800,16K** : This option enables (turns on) or disables (turns off) the shadowing function of the contents of ROM area named in the option title. The settings are *Disabled* or *Enabled*.
- **Shadow CC00,16K** : This option enables (turns on) or disables (turns off) the shadowing function of the contents of ROM area named in the option title. The settings are *Disabled* or *Enabled*.
- **Shadow D0B0,16K** : This option enables (turns on) or disables (turns off) the shadowing function of the contents of ROM area named in the option title. The settings are *Disabled* or *Enabled*.
- **Shadow D400,16K** : This option enables (turns on) or disables (turns off) the shadowing function of the contents of ROM area named in the option title. The settings are *Disabled* or *Enabled*.
- **Shadow D800,16K** : This option enables (turns on) or disables (turns off) the shadowing function of the contents of ROM area named in the option title. The settings are *Disabled* or *Enabled*.
- **Shadow DC00,16K** : This option enables (turns on) or disables (turns off) the shadowing function of the contents of ROM area named in the option title. The settings are *Disabled* or *Enabled*.
- **IDE Block Mode** : This option enables (turns on) or disables (turns off) the block mode data transfer of the IDE hard disks. The settings are *Auto*, *2*, *4*, or *8*.
- **Primary Master LBA MODE** : This option enables (turns on) or disables (turns off) the Logical Block Addressing for the primary master IDE hard disk. The settings are *Disabled* or *Enabled*. If the IDE hard disk capacity is greater than 528MB, this option should be enabled.

- **Primary Slave LBA MODE** : This option enables (turns on) or disables (turns off) the Logical Block Addressing for the primary slave IDE hard disk. The settings are *Disabled* or *Enabled*. If the IDE hard disk capacity is greater than 528MB, this option should be enabled.
- **Secondary Ctrl Drivers Present** : This option specifies whether the number of the secondary hard disk present. The settings are *0*, *1* or *2*.
- **Secondary Master LBA MODE** : This option enables (turns on) or disables (turns off) the Logical Block Addressing for the secondary master IDE hard disk. The settings are *Disabled* or *Enabled*. If the IDE hard disk capacity is greater than 528MB, this option should be enabled.
- **Secondary Slave LBA MODE** : This option enables (turns on) or disables (turns off) the Logical Block Addressing for the primary slave IDE hard disk. The settings are *Disabled* or *Enabled*. If the IDE hard disk capacity is greater than 528MB, this option should be enabled.
- **OS/2 Cmpatible Memory Cache** : This option enables or disables the OS/2 to detect over 64MB system memory. The settings are *Enabled* or *Disabled*.
- **Boot to PaP operating System** : This option enables or disables boot to PaP operating system or non PaP operating system. The settings are *Yes* or *No*.

3.8 Chipset Setup

The Chipset Setup option is selected by choosing the "Chipset" icon from the Setup section of the AMI WinBIOS Setup main menu selection screen.



- **AUTO Configuration** : The settings of this option are *Enable / Disable*. If it is enabled, the BIOS will automatically set up the "Cache Read Hit Wait State", "Cache Write Hit State", "DRAM Wait State Select", "DRAM Page Mode", "Keyboard Clock Select", and "AT Clock Select" options in the Chipset Setup. When it is disabled, the user can set these options to their own choice.
- **Cache Speed** : This option specifies the number of the wait state when the cache reads the hit. The settings are *3-2-3*, *3-1-3*, *2-2-2* or *2-1-2*.
- **DRAM Read Wait State** : This option specifies the number of the wait state of DRAM. The settings are *3W.S.*, *2W.S.*, *1W.S.*, or *0W.S.*

- **DRAM Write Wait State** : This option specifies the number of the wait state of DRAM. The settings are *3W.S., 2 W.S., 1 W.S., or 0 W.S.*
- **PCICLK- to-ISA SYSCLK Divisor** : This option specifies the clock speed of the ISA Bus which is divided by the PCICLK. The settings are *PCICLK/2, PCICLK/3, PCICLK/4.*
- **Keyboard Clock Divisor** : This option specifies the clock speed of the keyboard controller. The settings are *PCICLK/4, PCICLK/3, or 7.16MHz.*
- **L2 Cache Mode** : This option specifies the mode of external cache on board. The settings are *write-back or write-through.*
- **L1 Cache Mode** : This options specifies the mode of internal cache in CPU. The settings are *write-back or write-through.*
- **Main BIOS Cacheable** : This option enables or disables the caching function of the contents of the system BIOS EPROM. The settings are *Enabled or Disabled.*
- **Video BIOS Cacheable** : This option enables or disables the caching function of the contents of the video BIOS EPROM. The settings are *Enabled or Disabled.*
- **Resource Lock for Local DRAM** : This option enables or disables the resource lock for local DRAM. The settings are *Disabled or Enabled.*
- **Host-to-PCI POST Write wait state** : This option specifies the wait state for host-to-PCI devices. The settings are *0 or 1.*
- **Host-to-PCI Burst Write** : This option enables or disables the host-to-PCI burst write. The settings are *Disabled or Enabled.*
- **Host-to-DRAM Burst Write** : This option enables or disables the host-to-DRAM burst write. The settings are *Disabled or Enabled.*
- **LDEV# Sampling Point** : This option specifies the sampling time of the LDEV# signal. The settings are *172 or 272.*
- **PCI Parity Check** : This option enables or disables the parity check for PCI devices. The settings are *Disabled or Enabled.*
- **On Board DRAM Parity Check** : This option enables or disables the hardware DRAM parity check function. The settings are *Disabled or Enabled.*
- **De-Turbo Speed** : This option specifies the speed of normal mode. The settings are *1/3 or 1/6.*
- **I/O Recovery Time Control** : This option specifies the I/O recovery time period. The settings are *2BCLKs, 4BCLKs, 8BCLKs or 12BCLKs.*
- **POST Write Buffer** : This option enables or disables the PCI post write buffer. The settings are *Disabled or Enabled.*
- **Bus Park** : This option enables or disables the PCI Bus Park function. The settings are *Disabled or Enabled.*
- **Bus/ Resource Lock Option** : This option specifies the lock option for Bus or resource. The settings are *BUS or Resource.*
- **Slot# of NCR810 Use AD#17** : This option specifies the NCR SCSI device location. The settings are *Slot1, Slot2, Slot3 or Slot4.*
- **PCI on board IDE Drive** : This option enables or disables the on board PCI IDE connector. The settings are *Disabled or Enabled.*
- **PCI on board IDE Speed Mode** : This option specifies the speed mode of on board PCI IDE. The settings are *Auto, Mode2 or Mode3.*

- **PCI IDE Presence On** : This option specifies the presence of the on-board PCI IDE. The default setting is *Auto.*
- **PCI IDE IRQ** : This option specifies the trigger method of the PCI IRQ signal, the default setting is *Edge.*
- **PCI Primary IDE IRQ** : This option specifies the IRQ's signal for the on-board primary IDE, the default setting is *INTA.*
- **PCI Secondary IDE IRQ** : This option specifies the IRQ signal for the secondary IDE, the default setting is *INTR.*
- **IRQ 9 Use On** : This option specifies the IRQ 9 use on PCI or ISA. The settings are *PCI/PnP or ISA.*
- **IRQ 10 Use On** : This option specifies the IRQ 9 use on PCI or ISA. The settings are *PCI/PnP or ISA.*
- **IRQ 11 Use On** : This option specifies the IRQ 9 use on PCI or ISA. The settings are *PCI/PnP or ISA.*
- **IRQ 12 Use On** : This option specifies the IRQ 9 use on PCI or ISA. The settings are *PCI/PnP or ISA.*

3.9 Power Management Setup

The Power Management Setup option is selected by choosing the "Power Mgmt" icon from the Setup section of the AMI WinBIOS Setup main menu selection screen.



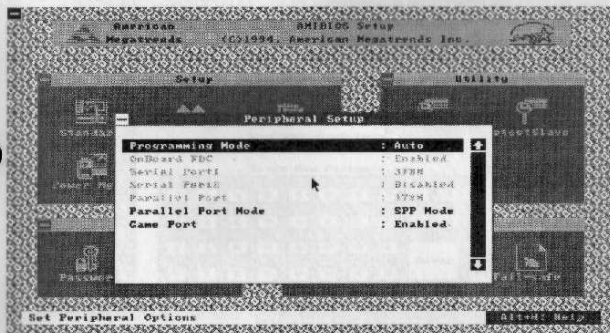
- **Power Management** : This option enables or disables the System Power Management Mode. The settings are *Enabled or Disabled.*
- **APM Function** : This option enables or disables the Advanced Power Management function. The settings are *Disabled or Enabled.*
- **Doze Mode Timer** : This option specifies the length of time of the PT-432B inactivity that must expire before the PT-432B is placed in Doze Mode. The settings are *15sec, 1min, 2Min, 4min, 8min, 16min, 32min, 64min, 128min, 256min or 512min.*
- **Sleep Mode Timer** : This option specifies the length of time of the PT-432B inactivity that must expire before the PT-432B is placed in Sleep Mode. The settings are *Disabled, 2Min, 4min, 8min, 16min, 32min, 64min, 128min, 256min, or 512min.*

- **Suspend Mode Timer** : This option specifies the minutes of PT-432B inactivity that must expire before the PT-432B is placed in Suspend Mode. The settings are Disabled, 2Min., 4min., 8min., 16min., 32min., 64min., 128min., 256min. or 512min.
- **VGA Power Down** : This option enables or disables the VGA Power Down function. The settings are Enabled or Disabled.
- **HDD Power Down** : This option specifies the length of time before powering down the HDD. The settings are Suspend, 1min., 2min., 3min., 4min., 5min., 6min., 7min., 8min., 9min., 10min., 11min., 12min., 13min. or 14min.
- **Monitor PCI Master 0** : This option specifies whether the PT-432B monitors the PCI Master 0 device activity. The settings are Enabled or Disabled.
- **Monitor PCI Master 1** : This option specifies whether the PT-432B monitors the PCI Master 1 device activity. The settings are Enabled or Disabled.
- **Monitor PCI Master 2** : This option specifies whether the PT-432B monitors the PCI Master 2 device activity. The settings are Enabled or Disabled.
- **Monitor PCI Master 3** : This option specifies whether the PT-432B monitors the PCI Master 3 device activity. The settings are Enabled or Disabled.
- **Monitor LPT Activity** : This option specifies whether the PT-432B monitors the LPT port activity. The settings are Enabled or Disabled.
- **Monitor COM Activity** : This option specifies whether the PT-432B monitors the COM port activity. The settings are Enabled or Disabled.
- **Monitor ISA Master & DMA Activity** : This option specifies whether the PT-432B monitors the ISA Master & DMA activity. The settings are Enabled or Disabled.
- **Monitor IDE Activity** : This option specifies whether the PT-432B monitors the IDE device activity. The settings are Enabled or Disabled.
- **Monitor FLP Activity** : This option specifies whether the PT-432B monitors the Floppy disk controller activity. The settings are Enabled or Disabled.
- **Monitor VGA Activity** : This option specifies whether the PT-432B monitors the VGA Master activity. The settings are Enabled or Disabled.
- **Monitor KBD Activity** : This option specifies whether the PT-432B monitors the Keyboard activity. The settings are Enabled or Disabled.
- **Monitor I/O Region Activity** : This option specifies whether the PT-432B monitors the I/O port activity. The settings are Enabled or Disabled.
- **Monitor I/O Address** : This option specifies whether the PT-432B I/O port address which will not be monitored by the SMM mode. The default setting is 0.
- **Mask I/O Address** : This option specifies whether the PT-432B I/O port address which will not be monitored by the SMM mode. The default setting is 0.
- **Monitor IRQ15** : This option specifies whether the PT-432B monitors the IRQ15 activity. The settings are Enabled or Disabled.
- **Monitor IRQ 14** : This option specifies whether the PT-432B monitors the IRQ14 activity. The settings are Enabled or Disabled.
- **Monitor IRQ 12** : This option specifies whether the PT-432B monitors the IRQ12 activity. The settings are Enabled or Disabled.
- **Monitor IRQ 11** : This option specifies whether the PT-432B monitors the IRQ11 activity. The settings are Enabled or Disabled.

- **Monitor IRQ 10** : This option specifies whether the PT-432B monitors the IRQ10 activity. The settings are Enabled or Disabled.
- **Monitor IRQ 9** : This option specifies whether the PT-432B monitors the IRQ9 activity. The settings are Enabled or Disabled.
- **Monitor IRQ 8** : This option specifies whether the PT-432B monitors the IRQ8 activity. The settings are Enabled or Disabled.
- **Monitor IRQ 7** : This option specifies whether the PT-432B monitors the IRQ7 activity. The settings are Enabled or Disabled.
- **Monitor IRQ 6** : This option specifies whether the PT-432B monitors the IRQ6 activity. The settings are Enabled or Disabled.
- **Monitor IRQ 5** : This option specifies whether the PT-432B monitors the IRQ5 activity. The settings are Enabled or Disabled.
- **Monitor IRQ 4** : This option specifies whether the PT-432B monitors the IRQ4 activity. The settings are Enabled or Disabled.
- **Monitor IRQ 3** : This option specifies whether the PT-432B monitors the IRQ3 activity. The settings are Enabled or Disabled.
- **Monitor IRQ 2** : This option specifies whether the PT-432B monitors the IRQ2 activity. The settings are Enabled or Disabled.
- **Monitor IRQ 1** : This option specifies whether the PT-432B monitors the IRQ1 activity. The settings are Enabled or Disabled.

3.10 Peripheral Setup

The Peripheral Setup option is selected by choosing the "Peripheral" icon from the Setup section of the AMI WinBIOS Setup main menu selection screen.



Programming Mode : This option specifies whether the on-board I/O address are set by auto configuration or manual. The settings are Auto or Manual.

- **On Board FDC** : This option enables or disables the on board floppy disk controller. The settings are *Enabled* or *Disabled*.
- **Serial port 1** : This option specifies the port address of serial port 1. The settings are *Disabled*, *3F8* or *3E8*.
- **Serial port 2** : This option specifies the port address of port 2. The settings are *Disabled*, *2F8* or *2E8*.
- **Parallel Port** : This option specifies the port address of parallel port. The settings are *Disabled*, *378* or *278*.

3.11 Detect C:

The Detect C: option is selected by choosing the "Detect C:" icon from the Utility section of the AMI WinBIOS Setup main menu selection screen.

If drive C: is an IDE drive, the hard disk drive parameters for drive C: are automatically detected and reported to the Hard Disk Drive C: screen in Standard Setup, so you can easily configure drive C:. This option enables (turns on) or disables (turns off) the Advanced Power Management (APM) function. The settings are *Disabled* or *Enabled*.

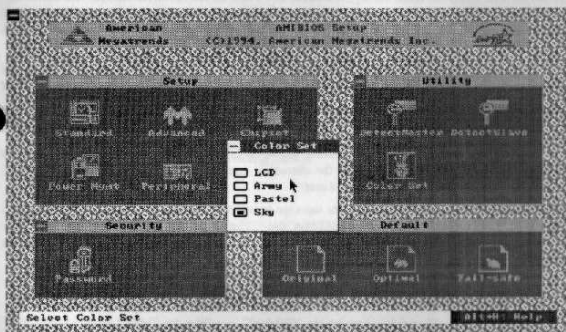
3.12 Detect D:

The Detect D: option is selected by choosing the "Detect D:" icon from the Utility section of the AMI WinBIOS Setup main menu selection screen.

If drive D: is an IDE drive, the hard disk drive parameters for drive D: are automatically detected and reported to the Hard Disk Drive C: screen in Standard Setup, so you can easily configure drive D:. This option enables (turns on) or disables (turns off) the Advanced Power Management (APM) function. The settings are *Disabled* or *Enabled*.

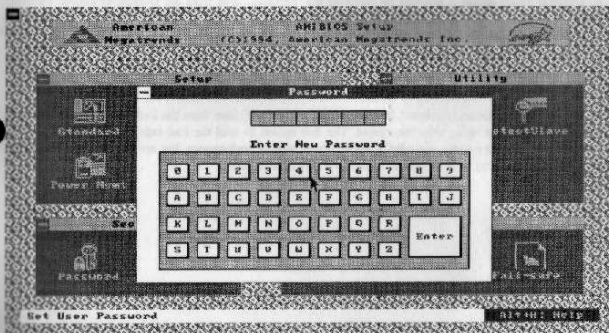
3.13 Colour Set

The Colour Set Setup option is selected by choosing the "Colour Set" icon from the Utility section of the AMI WinBIOS Setup main menu selection screen. This option specifies the colour of the AMI Win BIOS Setup screen. The settings are *LCD*, *Army*, *Pastel*, or *Sky*.



3.14 Password Setup

The Password Setup option is selected by choosing the "Password" icon from the Security section of the AMI WinBIOS Setup main menu selection screen.



You can enter a password by:

- typing the password on the keyboard,
- selecting each letter via the mouse.

Setting a Password

The password check option is enabled in Advanced Setup by choosing either *Always* (the password prompt appears every time the system is powered on) or *Setup* (the password prompt appears only when WinBIOS Setup is run). The password is stored in CMOS RAM. The system asks for a password.

Enter a 1 to 6 character password. The password does not appear on the screen when typed. WinBIOS will ask you to retype the password. Make sure you write it down. **If you forget it, you must drain CMOS RAM and reconfigure the system.**

Changing the Password

Select the *Password* icon from the Security section of the WinBIOS Setup main menu. Enter the password and press <Enter>. The screen does not display the characters entered. After the new password is entered, retype the new password as prompted and press <Enter>.

If the password confirmation is incorrect, an error message appears. If the new password is entered without error, press <Esc> to return to the WinBIOS Setup Main Menu. The password is stored in CMOS RAM after WinBIOS Setup completes. The next time the system boots, you are prompted for the password if the password function is present and is enabled.

3.15 Original Setup

The Original Setup option is selected by choosing the "Original" icon from the Default section of the AMI WinBIOS Setup main menu selection screen. Use this option to return to the system configuration values present in WinBIOS Setup when you first began this WinBIOS Setup session.

3.16 Optimal Setup

The Optimal Setup option is selected by choosing the "Optimal" icon from the Default section of the AMI WinBIOS Setup main menu selection screen. Use this option to load the optimal settings for the WinBIOS Setup options. The optimal default settings are best-case values that should optimize system performance. If the CMOS RAM is corrupted, the Optimal settings are loaded automatically.

3.17 Fail-safe Setup

The Fail-safe Setup option is selected by choosing the "Fail-safe" icon from the Default section of the AMI WinBIOS Setup main menu selection screen. Use this option to load the Fail-safe WinBIOS Setup option settings. The Fail-safe settings provide far from optimal system performance, but are the most stable settings. Use this option as a diagnostic aid if the system is behaving erratically.

4. Software Installation

4.1 DOS & Windows Driver Installation

To install the software driver for the on-board PCI connectors, please insert the driver diskette into drive A:

(Type) INSTALL

This will then take you through the installation set-up for DOS & Windows drivers. It also gives you an opportunity to see the automatic hard disk timing setting of the drive in your system. The driver automatically reads your hard disk drive model # and sets the optimum speed accordingly (0 = lowest / 11 = highest). If you are using an Enhanced hard drive and system BIOS then the card will automatically set the hard drive type in the system BIOS. If not, you will still need to enter the parameters of the "C" and "D" hard drives you're using (type/cylinders etc) in to the STANDARD CMOS set-up. If you want to have the driver re-test the optimum speed for your hard drive, you have this option. The software will re-test the drive by creating a free area on the drive and writing to it / reading from it.

4.2 Other Drivers Supported

Besides DOS and Windows the following drivers are supported:

- OS/2 v3.1 (UMC1S506.ADD)
- Novell Netware v3.10 (UMC310.DSK), v3.11 & v4.1 (UMC401.DSK)
- SCO Unix 3.0 (UM8886B.UNX)
- Windows NT 3.x (ATDISK.SYS)

To utilize these drivers you must first copy the driver to your hard drive, and then edit your 'config.sys' file by adding the software driver file name after the line "DEVICE=C:\(Filename)" (If your HDD is device: D, then change accordingly).

Note: Subsequent to the printing of this manual some of the drivers may have been updated or others added. Should you notice any drivers not mentioned here please contact your dealer or sales representative for further information.

Please find further detailed information about the driver installation from the README file inside the PT-432B PCI IDE driver diskette.

5. Trouble Shooting Guide

5.1 No Display After Power On

Check the following points if you face a "No Display" problem after power on:

- The interface cards must be inserted into the system slots properly and the gold fingers on the cards must be clean.
- The CPU must be installed properly in the CPU socket (U25) in the correct direction. If the CPU is inserted in a wrong direction, it will cause the "No Display" problem. The worst case is that the CPU may be destroyed.
- The clock chip speed (JP15, JP16, JP17) must be set to match with the CPU speed. If the clock chip speed is set faster than the CPU speed, e.g. 50MHz clock chip speed with a 80486SX-25 CPU, the system will have no display after power on.
- The SIMMs must be inserted into the sockets properly and must have complete contact with the socket pins. Otherwise there will be a "No Display" problem.

5.2 Cannot Boot Up

Check the following points if you face a "Cannot Boot Up" problem:

- The Cache RAM setting must be correct and the SRAM must be inserted in the correct position. Otherwise there will be a "Cannot Boot Up" problem.
- Make sure the hard disk drive / floppy disk drive / IDE controller card / Super I/O card is in good condition. The cables must be connected to them in the correct direction. Otherwise you will face a "Cannot Boot Up" problem.

5.3 Lose CMOS Data

Check the following points if you face a "Lose CMOS Data" problem:

- The RTC UM12881/146818 must be inserted correctly. Otherwise there will be a "Lose CMOS Data" problem.

5.4 No System Management Mode

Check the following points if you face a "No System Management Mode" problem:

- Check the CPU type. The SMM CPUs can support all the DOZE, STANDBY, INACTIVE modes while the non-SMM CPU can support only the DOZE mode.
- The CPU type select jumpers must be set to match with the CPU type. Otherwise there will be "No System Management Mode" problem.

5.5 General Notes

If, on the first time installation, an error message <CMOS CHECKSUM ERROR> appears on the screen, please follow these steps:

- Leave the system on for about 15-30 minutes to recharge the battery, then you can enter the system configuration.
- Alternatively, leave your system on for about 24 hours to recharge the battery fully.

If you have switched off the computer system for more than two weeks, you might be required to recharge the battery fully.

Any hard disk cable longer than the standard type is not recommended for used with PT-432B. Too long a hard disk cable will make the Green PC circuit unable to monitor the hard disk activity.

6. PT-432B CPU Type Select

CPU Type	JP10-11	JP15	JP16	JP17	JP19	JP20	JP21	JP24	JP25	JP26	JP27	JP28	JP29	JP33
Intel SX-25	1-2,1-2	open	open	short	open	open	open	1-2	open	open	open	open	1-2,1-4	open
Intel DX-25/DX2-50	1-2,1-2	open	short	short	open	open	open	1-2	open	open	open	open	1-2,1-4	open
Intel SX-33	1-2,1-2	short	short	short	open	open	open	1-2	open	open	open	open	1-2,1-4	open
Intel DX-33/DX2-66	1-2,1-2	short	short	short	open	open	open	1-2	open	open	open	open	1-2,1-4	open
Intel DX4-100 WT S CPU (JP24C)	1-2,1-2	short	short	short	open	2-3,4-5	open	3-4	open	1-2	1-2	open	3-4	1-2,1-4
Intel DX4-100 WB S CPU (JP24D)	1-2,1-2	open	short	short	open	2-3,4-5	open	3-4	5-6	2-3	1-2	2-3	2-3	1-2,1-4
Intel OverDrive 63 Mhz (P24T)	1-2,1-2	open	short	short	1-2	2-3,4-5	2-3	1-2	2-3	1-2	1-2	2-3	2-3	1-2,1-4
Intel OverDrive 83 Mhz (P24T)	1-2,1-2	open	short	short	1-2	2-3,4-5	2-3	1-2	2-3	1-2	1-2	2-3	2-3	1-2,1-4
AMD DX2-50	1-2,2-3	open	open	short	open	open	open	open	open	open	open	open	open	3-4
AMD DX-33/DX2-66	1-2,2-3	short	short	short	open	open	open	1-2	open	open	open	open	open	3-4
AMD DX-40	1-2,2-3	open	short	short	open	open	open	1-2	open	open	open	open	open	3-4
AMD DX2-80 5V	1-2,2-3	open	short	short	open	open	open	1-2	open	open	open	open	open	3-4
AMD DX2-80 3.3V	1-2,2-3	open	short	short	open	open	open	1-2	open	open	open	open	open	3-4
AMD DX4-100 WT	1-2,1-2	short	short	short	open	2-3,4-5	open	3-4	open	1-2	1-2	open	3-4	1-2,1-4
AMD Enhance DX4-100 WB	1-2,1-2	short	short	short	open	2-3,4-5	open	3-4	open	1-2	1-2	open	3-4	1-2,1-4
AMD Enhance DX4-120 WB	1-2,1-2	open	short	short	open	2-3,4-5	open	3-4	open	1-2	1-2	open	3-4	1-2,1-4
AMD Enhance DX4-133 WB	1-2,1-2	short	short	short	open	2-3,4-5	open	3-4	open	1-2	1-2	open	3-4	1-2,1-4
Intel SX-25 S CPU	2-3,1-2	open	open	short	open	open	open	1-2	1-2	2-3,1-4	1-2	3-4	1-2	2-3
Intel DX2-50 S CPU	2-3,1-2	open	open	short	open	open	open	1-2	1-2	2-3,1-4	1-2	3-4	1-2	2-3
Intel SX-33 S CPU	2-3,1-2	short	short	short	open	open	open	1-2	1-2	2-3,1-4	1-2	3-4	1-2	2-3
Intel DX2-80 S CPU	2-3,1-2	short	short	short	open	open	open	1-2	1-2	2-3,1-4	1-2	3-4	1-2	2-3
Intel DX4-100 S CPU	2-3,1-2	open	open	short	open	open	open	1-2	1-2	2-3,1-4	1-2	3-4	1-2	2-3
Intel SX86-100 S CPU (MISC)	2-3,1-2	short	short	short	open	open	open	1-2	1-2	2-3,1-4	1-2	3-4	1-2	2-3
UMC SX-40	1-2,2-3	short	short	short	open	open	open	1-2	open	open	open	open	open	3-4
UMC SX-40	1-2,2-3	open	short	short	open	open	open	1-2	open	open	open	open	open	3-4
TI DX4-100	2-3,1-2	short	short	short	open	open	open	1-2	1-2	2-3	open	open	open	3-4
ST DX4-100	1-2,1-2	short	short	short	open	open	open	1-2	open	open	open	open	open	3-4

Note:

- If you are using a 3.3V, 3.45V or 4V CPU, please ensure that you have set the JP36, JP39 to pin 2-3.
- For both TI DX2/DX2, ST DX2/DX2 or IBM DX2/DX2 CPU, the jumper setting is exactly the same as Cyrix DX2/DX2 CPU.
- Short JP22, JP30 & JP32 for AMD DX4 WB S CPUs.

