Note:

**This is a generic version manual for MB520N,
its content may not equal your motherboard.
All specifications are subject to change without
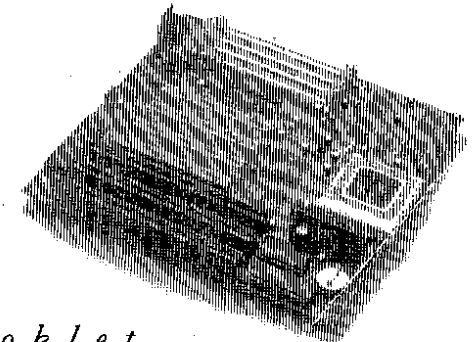notice.**

PCPartner®

MOTHERBOARD

MB520N

*Technical
Reference Booklet*

Table of Contents

Chapter 1
Hardware Configuration

Your computer system is a high-performance computer system board that supports a Pentium™ CPU running at 75, 90, 100, 120, 133, 150, 166, 180, 200MHz and future Pentium Processor upgradable. The motherboard is equipped with on-board pipelined cache. The motherboard offers floppy drive interface, IDE interface for HDD and CD-ROM Drive, two serial ports and an ECP/EPP capable parallel port. In addition to the hardware features, Windows 95™ ready Plug and Play and Advanced Power Management (APM) are supported.

Features :

Processor
- Intel™ Pentium™ (75/90/100/120/133/150/166/180/200)/ Cyrix™ 6x86 (100/120/133)/AMD5K86™ (75/90/100) Intel™ Pentium™ P55C with MMX.

Upgradability
- Pentium Over Drive™ Processor.

Chip Set
- Intel™ 430VX

External Cache
- Direct mapped L2 write back cache.
- 256/512KB on-board Synchronous Pipelined Burst SRAM.

Memory
- 8MB to 128MB.
- Four 72pins standard SIMMs.
- Fast Page Mode and Extended Data output (EDO).
- SIMMs depth of 512KB,1MB,2MB,4MB and 8MB.
- System BIOS, video BIOS and adapter BIOS shadow.

On-Board I/O
- Support two PCI enhanced IDEs PIO mode 3 and mode 4 HDDs.Twin headers for four IDE devices including IDE HDDs and CD-ROMs.
- Support two FDDs of 360KB,720KB,1.2MB,1.44MB adn 2.88MB.
- One ECP/EPP parallel port.
- Two 16550UA UART serial ports.
- Two USB channel
- One PS/2 mouse port (Options).

Expansion Slot
- Three (3) ISA bus slots (One ISA shared slot).
- Four (4) PCI bus slots (One PCI shared slot).

Power Management
- Support SMM and APM.
- Comply to Energy Star "Green" PC program.

Plug and Play
- Support PnP for DOS and Windows® 3.1 as well as Windows® 95.
- Plug and Play specification 1.1.
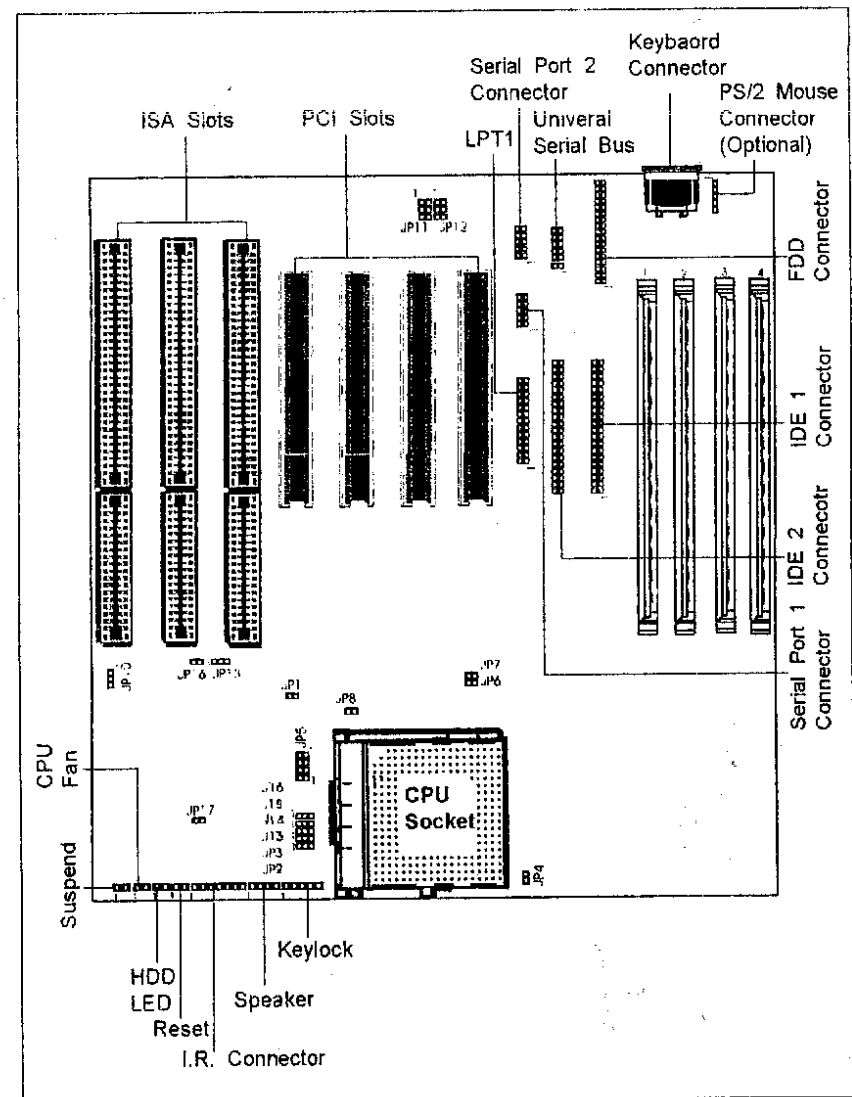
PCI
- PCI 2.1 Compliant.

Battery
- On-board lithium, Nicd battery.

Board Size
- 220mm x 230mm

Motherboard Layout

Hardware Setup

This chapter explains how to configure the motherboard's hardware. After you install the motherboard, you can set jumpers, install memory on the motherboard, and make case connections. Refer to this chapter whenever you upgrade or reconfigure your system.

Jumper Settings

CPU Type Please skip the JP1 & JP4, if you cannot find these jumpers on your motherboard.

	Cyrix	Intel/AMD
JP1	Open	Closed
JP4	Open	Closed

CPU Clock

	JP6	JP7	PCI Clock
50MHz	Closed	Closed	25MHz
60MHz	Closed	Open	30MHz
66MHz	Open	Closed	33MHz
*55MHz	Open	Open	27.5MHz

*Only for IMISC618 or CY2254A-2 or ICS9159-14 clocck gen

	JP2	JP3	JP6	JP7
Intel Pentium-75	1-2	1-2	Closed	Closed
Intel Pentium-90	1-2	1-2	Closed	Open
Intel Pentium-100 / 233 K6 233	1-2	1-2	Open	Closed
Intel Pentium-120	1-2	2-3	Closed	Open
Intel Pentium-133	1-2	2-3	Open	Closed
Intel Pentium-150	2-3	2-3	Closed	Open
Intel Pentium-166 K6 166	2-3	2-3	Open	Closed
Intel Pentium-180	2-3	1-2	Closed	Open
Intel Pentium-200 K6 200	2-3	1-2	Open	Closed
Cyrix 6x86-P120+ 100MHz	1-2	2-3	Closed	Closed
Cyrix 6x86-P133+ 110MHz	1-2	2-3	Open	Open
Cyrix 6x86-P150+ 120MHz	1-2	2-3	Closed	Open
Cyrix 6x86-P166+ 133MHz	1-2	2-3	Open	Closed
AMD 5K86-P75 (AMD-SSA/5-66)	1-2	2-3	Open	Closed
AMD 5K86-P75 (AMD-SSA/5-75)	1-2	1-2	Closed	Closed
AMD 5K86-P90 (AMD-SSA/5-83)	1-2	1-2	Open	Open
AMD 5K86-P90 (AMD-SSA/5-90)	1-2	1-2	Closed	Open
AMD 5K86-P100 (AMD-SSA/5-100)	2-3	1-2	Open	Closed

Hardware Configuration

Flash BIOS Type Select

JP10	PGM voltage
1-2	5V Flash
2-3	12V Flash

CMOS RAM Clear

	Normal	Clear
JP16	Open	Closed

CPU Core-voltage select

	JP5
2.50V	Please refer the printing on your motherboard.
2.70V	
2.88V	
3.38V(STD)	
3.53V (VRE)	

CPU Bus-voltage select

	JP17
3.53V (VRE)	Please refer the printing on your motherboard.
3.38V (STD)	

Power source selection for the CPU Bus section

	J13,J14,J15,J16
Intel P54C	2-3
Intel P55C	1-2
Cyrix 6x86	2-3
AMD 5k86 (SSA/5)	2-3
AMD 5k86 (dual voltage)	1-2

Connectors

Once you have fastened the motherboard into the system case, the next step is to connect the internal cables. The motherboard connectors have varying numbers of pins and are the points of contact between the motherboard and other parts of the computer.

CN2- PS/2 Keyboard Connector (optional)

Pin	Description	Pin	Description
1	Keyboard Data	4	+5V DC
2	NC	5	Keyboard Clock
3	Ground	6	NC

CN1-Keyboard Connector

A standard five-pin female DIN keyboard connector is located at the rear of the board. Plug the keyboard jack into this connector.

Pin	Description	Pin	Description
1	Keyboard Clock	4	Ground
2	Keyboard Data	5	+5V DC
3	NC		

J1 - USB Connector

Pin	Description	Pin	Description
1	USBP0-	7	USBP1+
2	GND	8	GND
3	USBP0+	9	VCC
4	GND	10	GND
5	USBP1-	11	VCC
6	GND	12	GND

J3 - Keyboard & Power LED Connector

Pin	Description	Pin	Description
1	LED Power	4	Keyboard Inhibitor
2	NC	5	Ground
3	Ground		

J12 - Power Supply Connector

The motherboard requires a power supply with at least 200 Watts and a "power good" signal. PW1 has two six-pin male header connectors. Plug the dual connectors from the power directly onto the board connector while making sure the black leads are in the center.

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

JP14 - IDE LED

Pin	Description	Pin	Description
1	+Anode	2	-Cathode

J9 - Parallel Port Connector

Pin	Description	Pin	Description
1	STROBE-	14	Ground
2	AUTO FEED-	15	Data Bit 6
3	Data Bit 0	16	Ground
4	ERROR-	17	Data Bit 7
5	Data Bit 1	18	Ground
6	INIT -	19	ACJ-
7	Data Bit 2	20	Ground
8	SLCT IN-	21	BUSY
9	Data Bit 3	22	Ground
10	Ground	23	PE (PaperEnd)
11	Data Bit 4	24	Ground
12	Ground	25	SLCT
13	Data Bit 5	26	N.C.

J6, J7 - Serial Ports Connectors

Pin	Description	Pin	Description
1	RLSD	6	DSR
2	RX	7	RTS
3	TX	8	CTS
4	DTR	9	RI
5	GND	10	N.C.

J10 - IR Connector

Pin	Description	Pin	Description
1	IR IN	5	IR MODE
2	GND	6	Vcc
3	IR OUT	7	GND
4	Vcc		

J11 - Speaker Connector

Pin	Description	Pin	Description
1	Data out	3	Ground
2	NC	4	+5V

J19 - Reset Switch Connectors

Pin	Description	Pin	Description
1	GND	2	Reset

J2 - PS/2 Mouse Connector

Pin	Description	Pin	Description
1	VCC	4	GND
2	N.C.	5	Mouse clock
3	Mouse Data		

Memory Configuration

Table 1 shows the possible memory combination. The motherboard will support both Fast Page DRAM or EDO DRAM SIMMs, but they cannot be mixed within the same memory bank. If Fast Page DRAM and EDO DRAM SIMMs are installed in separate banks, each bank will be optimized for maximum performance.

SIMM 1 (Bank 0) SIMM Type (Size)	SIMM 2 (Bank 0) SIMM Type (Size)	SIMM 3 (Bank 1) SIMM Type (Size)	SIMM 4 (Bank 1) SIMM Type (Size)	Total System Memory
Empty	Empty	4 MB	4 MB	8 MB
Empty	Empty	8 MB	8 MB	16 MB
Empty	Empty	16 MB	16 MB	32 MB
Empty	Empty	32 MB	32 MB	64 MB
4 MB	4 MB	Empty	Empty	8 MB
4 MB	4 MB	4 MB	4 MB	16 MB
4 MB	4 MB	8 MB	8 MB	24 MB
4 MB	4 MB	16 MB	16 MB	40 MB
4 MB	4 MB	32 MB	32 MB	72 MB
8 MB	8 MB	Empty	Empty	16 MB
8 MB	8 MB	4 MB	4 MB	24 MB
8 MB	8 MB	8 MB	8 MB	32 MB
8 MB	8 MB	16 MB	16 MB	48 MB
8 MB	8 MB	32 MB	32 MB	80 MB
16 MB	16 MB	Empty	Empty	32 MB
16 MB	16 MB	4 MB	4 MB	40 MB
16 MB	16 MB	8 MB	8 MB	48 MB
16 MB	16 MB	16 MB	16 MB	64 MB
16 MB	16 MB	32 MB	32 MB	96 MB
32 MB	32 MB	Empty	Empty	64 MB
32 MB	32 MB	4 MB	4 MB	72 MB
32 MB	32 MB	8 MB	8 MB	80 MB
32 MB	32 MB	16 MB	16 MB	96 MB
32 MB	32 MB	32 MB	32 MB	128 MB

Chapter 2
AMI WINBIOS Setup

WINBIOS Setup configures system information that is stored in CMOS RAM. WINBIOS Setup 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.

Starting WINBIOS Setup
As POST executes, the following appears:

    Hit <DEL> if you want to run SETUP

Press <Del> to run WINBIOS Setup.

Using a Mouse with WINBIOS Setup
WINBIOS Setup can be accessed via keyboard, mouse, or pen. The mouse click functions are:

- single click to change or select both global and current fields and

- double-click to perform an operation in the selected field.

Using the Keyboard with WINBIOS Setup
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 Keypad.	0 to 9 are used in the Virtual Keyboard and Numeric

Flash update procedure

1. Turn off the PC.

   Prepare a formatted diskette with the flash binary file residing in the root directory. The file should be renamed as "AMIBOOT.ROM".

2. Press the "Ctrl" and the "HOME" keys simultaneously and then power up the PC.

3. The flash memory will then the updated accordingly.

WINBIOS Setup Main Menu

The WINBIOS Setup main menu is organized into four windows. Each window contains several icons. Clicking on each icon activates a specific function. The WINBIOS Setup icons and functions are described in this chapter. The sections are:

Windows	Function
Setup	This section has six icons that permit you to set system configuration options such as date, time, hard disk type, floppy type, and many others.
Utilities	This section has two icons that perform system functions.
Security	This section has three icons that control AMIBIOS security features.
Default	This section has three icons that permit you to select a group of settings for all WINBIOS Setup options.

Default Settings

Each WINBIOS Setup option has three 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:

| Defaults	Description
Optimal	These settings provide the best performance characteristics.
Original	Ignore the previous CMOS settings and restore the original settings.
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.
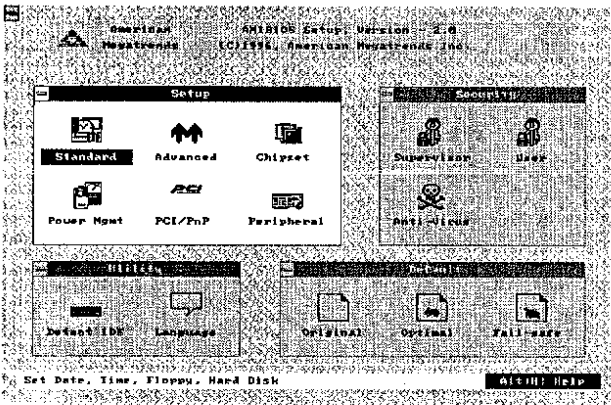
Figure 2-1 : WINBIOS Setup Main Menu

Setup Types

WINBIOS Setup can have up to six separate screens. Different types of system configuration parameters are set on each screen.

Type	Description
Standard Setup	Set the time and date. Configure disk drives.
Advanced Setup	Configure basic system performance parameters.
Chipset Setup	Configure features specific to the chipset used in the computer.
Power Management Setup	Configure power conservation features.
PCI/PnP Setup	Configure PCI and Plug-and-Play features.
Peripheral Setup	Configure I/O support.

Standard Setup

Standard Setup options are displayed by choosing the Standard icon from the WINBIOS Setup menu. All Standard Setup options are described below.
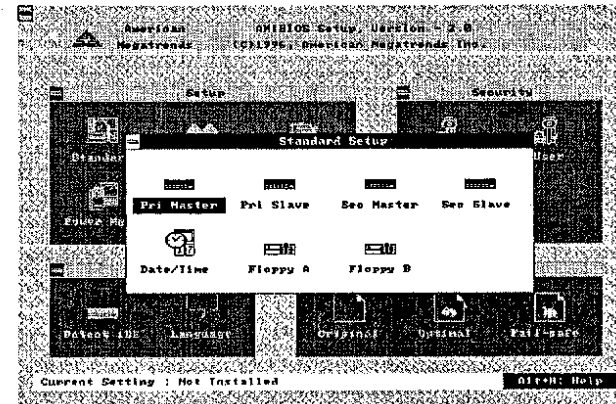
Figure 2-2 : Standard Setup

Date/Time
:   Select the Date/Time option to change the date or time. The current date and time are displayed. Enter new values through the displayed window.

Floppy Drive A, B
:   Choose the Floppy Drive A or B icon to specify the floppy drive type. The settings are *360 KB 5+", 1.2 MB 5+", 720 KB 3+", 1.44 MB 3+", or 2.88 MB 3+".*

Pri Master
Pri Slave
Sec Master
Sec Slave
:   Choose these icons to configure the hard disk drive named in the option. When you click on an icon, the following parameters are listed: Type, LBA/Large Mode, Block Mode, 32Bit Mode, and PIO Mode. All parameters relate to IDE drives except Type.

Configuring an
MFM Drive
:   If configuring an old MFM hard disk drive, you must know the drive parameters (number of heads, number of cylinders, number of sectors, the starting write precompensation cylinder, and drive capacity). Choose Type and choose the appropriate hard disk drive type (1 - 46). The old MFM hard drive types are listed on the following pages. If the drive parameters of your MFM drive do not match any drive type listed on the following pages, select User in the Type field and enter the drive parameters on the screen that appears.

User-Defined Drive

If you are configuring a SCSI drive or an MFM, RLL, ARLL, or ESDI drive with drive parameters that do not match drive types 1-46, you must select User in the Type field. You must then enter the drive parameters on the screen that appears. The drive parameters include:
- Cylinder (number of cylinders).
- Hd (number of heads).
- WP (starting write precompensation cylinder).
- Sec (number of sectors).
- Size (drive capacity).

Configuring IDE Drives

If the hard disk drive to be configured is an IDE drive, select the appropriate drive icon (Pri Master, Pri Slave, Sec Master, or Sec Slave). Choose the Type parameter and select Auto.

AMIBIOS automatically detects the IDE drive parameters and displays them. Click on the OK button to accept these parameters.

Click on **LBA/Large Mode** and choose On to enable support for IDE drives with capacities greater than 528 MB.

Click on **Block Mode** and choose On to support IDE drives that use Block Mode.

Click on **32Bit Mode** and click on On to support IDE drives that permit 32-bit accesses.

Click on **PIO Mode** to select the IDE Programmed I/O mode. The settings are *Auto, 0, 1, 2, 3, 4, or 5*. Click on Auto to allow AMIBIOS to automatically choose the PIO mode that the IDE drive being configured uses. If you select 0-5 you must make absolutely certain that you are selecting the PIO mode supported by the IDE drive being configured.

Configuring a CD-ROM Drive

Select the appropriate drive icon (Pri Master, Pri Slave, Sec Master, or Sec Slave). Choose the Type parameter and select CDROM. You can boot the computer from a CD-ROM drive.

Hard Disk Drive Types

Type	Cylinders	Heads	Write Precompensation	Landing Zone	Sectors	Capacity
1	306	4	128	305	17	10 MB
2	615	4	300	615	17	20 MB
3	615	6	300	615	17	31 MB
4	940	8	512	940	17	62 MB
5	940	6	512	940	17	47 MB
6	615	4	65535	615	17	20 MB
7	462	8	256	511	17	31 MB
8	733	5	65535	733	17	30 MB
9	900	15	65535	901	17	112 MB
10	820	3	65535	820	17	20 MB
11	855	5	65535	855	17	35 MB
12	855	7	65535	855	17	50 MB
13	306	8	128	319	17	20 MB
14	733	7	65535	733	17	43 MB
16	612	4	0	663	17	20 MB
17	977	5	300	977	17	41 MB
18	977	7	65535	977	17	57 MB
19	1024	7	512	1023	17	60 MB
20	733	5	300	732	17	30 MB
21	733	7	300	732	17	43 MB
22	733	5	300	733	17	30 MB
23	306	4	0	336	17	10 MB
24	925	7	0	925	17	54 MB
25	925	9	65535	925	17	69 MB
26	754	7	754	754	17	44 MB
27	754	11	65535	754	17	69 MB
28	699	7	256	699	17	41 MB
29	823	10	65535	823	17	68 MB
30	918	7	918	918	17	53 MB
31	1024	11	65535	1024	17	94 MB
32	1024	15	65535	1024	17	128 MB
33	1024	5	1024	1024	17	43 MB
34	612	2	128	612	17	10 MB
35	1024	9	65535	1024	17	77 MB
36	1024	8	512	1024	17	68 MB
37	615	8	128	615	17	41 MB
38	987	3	987	987	17	25 MB
39	987	7	987	987	17	57 MB
40	820	6	820	820	17	41 MB
41	977	5	977	977	17	41 MB
42	981	5	981	981	17	41 MB
43	830	7	512	830	17	48 MB
44	830	10	65535	830	17	69 MB
45	917	15	65535	918	17	114 MB
46	1224	15	65535	1223	17	152 MB
USER-DEFINED HARD DRIVE - Enter user-supplied parameters.						

Advanced Setup

Advanced Setup options are displayed by choosing the Advanced icon from the WINBIOS Setup main menu. All Advanced Setup options are described in this section.
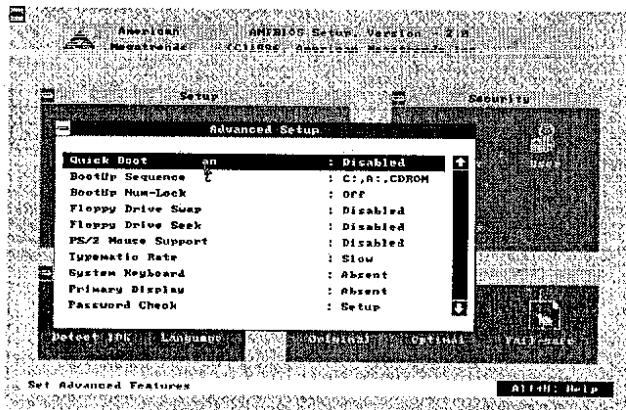

Figure 2-3 : Advanced Setup

Quick Boot   Set this option to Enabled to instruct AMIBIOS to boot
                    quickly when the computer is powered on. This option
                    replaces the old **Above 1 MB Memory Test** Advanced Setup
                    option. The settings are:

Setting	Description
Disabled	AMIBIOS test all system memory. AMIBIOS waits up to 40 seconds for a READY signal from the IDE hard disk drive. AMIBIOS waits for .5 seconds after sending a RESET signal to the IDE drive to allow the IDE drive time to get ready again. AMIBIOS checks for a <Del> key press and runs WINBIOS Setup if the key has been pressed.
Enabled	AMIBIOS does not test system memory above 1 MB. AMIBIOS does not wait up to 40 seconds for a READY signal from the IDE hard disk drive. If a READY signal is not received immediately from the IDE drive, AMIBIOS does not configure that drive. AMIBIOS does not wait for .5 seconds after sending a RESET signal to the IDE drive to allow the IDE drive time to get ready again. You cannot run WINBIOS Setup at system boot, because there is no delay for the Hit <Del> to run Setup message.

The Optimal and Fail-Safe default settings are *Enabled*.

BootUp Sequence   This option sets the sequence of boot drives (floppy drive
                    A:, hard disk drive C:, or a CD-ROM drive) that the
                    AMIBIOS attempts to boot from after AMIBIOS POST
                    completes.

                    The settings are *C:,A:, CDROM, CDROM, C:,A:, or A:,C:,
                    CDROM.*

                    The default settings are *C:,A:, CDROM.*

BootUp CPU Speed   This option lets you specify the CPU speed at system
                    boot. The settings are *Low* or *High.* The Optimal default
                    setting is *High.*

BootUp NumLock   Set this option to *Off* to turn the Num Lock key off
                    when the computer is booted so you can use the arrow
                    keys on both the numeric keypad and the keyboard. The
                    settings are *On* or *Off.* The default settings are *On.*

Turbo Switch   Set this option to *Enabled* to permit AMIBIOS to control
                    the hardware turbo (speed) switch. The settings are
                    Disabled or *Enabled.* The Optimal default setting is
                    Disabled.

Floppy Drive Swap   Set this option to *Enabled* to permit drives A: and B:
                    to be swapped. The settings are Enabled or Disabled.
                    The default settings are *Disabled.* Floppy Drive Seek
                    Set this option to Enabled to specify that floppy drive
                    A: will perform a Seek operation at system boot. The
                    settings are *Disabled* or *Enabled.* The Optimal default
                    setting is *Disabled.*

Mouse Support   When this option is set to *Enabled,* AMIBIOS supports
                    a PS/2-type mouse. The settings are *Enabled* or *Disabled.*
                    The default settings are *Disabled.*

Typematic Rate   This option specifies the speed at which a keyboard
                    keystroke is repeated. The settings are *Fast* or *Slow.* The
                    Optimal default setting is *Fast.*

System Keyboard   This option specifies that a keyboard is attached to the
                    computer. The settings are *Present* or *Absent.* The Optimal
                    default setting is *Present.*

Primary Display

This option specifies the type of display monitor and adapter in the computer. The settings are *Mono, CGA40, CGA80, EGA/VGA,* or *Absent.* The Optimal default setting is EGA/VGA.

Password Check

This option enables password checking every time the computer is powered on or every time WINBIOS Setup is executed. 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 WINBIOS is executed. The Optimal default is *Setup.*

Parity Check

Set this option to *Enabled* to check the parity of all system memory. The settings are *Disabled* or *Enabled.* The Optimal default setting is *Disabled.*

OS/2 Compatible Mode

Set this option to Enabled to permit AMIBIOS to run with IBM OS/2. The settings are *Enabled* or *Disabled.* The default settings are *Disabled.*

Wait For F1 if Error

AMIBIOS POST error messages are followed by:

```
Press <F1> to continue
```

If this option is set to *Disabled,* AMIBIOS does not wait for you to press the <F1> key after an error message. The settings are *Disabled* or *Enabled.* The Optimal default setting is *Enabled.*

Hit Del Message Display

Set this option to Disabled to prevent

```
Hit <DEL> if you want to run Setup
```

from appearing on the first AMIBIOS screen when the computer boots. The settings are *Disabled* or *Enabled.* The Optimal default setting is *Enabled.*

CPU Selection

This option allows you to select the type of CPU installed in the computer. The settings are Auto (AMIBIOS automatically determines the CPU type) or *Intel.* The Optimal default setting is *Auto.*

Internal Cache

This option specifies the caching algorithm used for L1 internal cache memory. The settings are:

Setting	Description
Disabled	Neither L1 internal cache memory on the CPU or L2 secondary cache memory is enabled.
WriteBack (default)	Use the write-back caching algorithm.
WriteThru	Use the write-through caching algorithm.

External Cache

This option specifies the caching algorithm used for L2 secondary (external) cache memory.

System BIOS Shadow Cacheable

When this option is set to *Enabled,* the contents of the F0000h system memory segment can be read from or written to L2 secondary cache memory. The contents of the F0000h memory segment are always copied from the BIOS ROM to system RAM for faster execution.

The settings are *Enabled* or *Disabled.* The Optimal default setting is *Enabled.*

C000,16K Shadow
C400,16K Shadow
C800,16K Shadow
CC00,16K Shadow
D000,16K Shadow
D400,16K Shadow
D800,16K Shadow
C000,16K Shadow

These options control the location of the contents of the 16KB of ROM beginning at the specified memory location. If no adaptor ROM is using the named ROM area, this area is made available to the local bus. The settings are:

Setting	Description
Shadow	The contents of C0000h - C3FFFh are written to the same address in system memory (RAM) for faster execution.
Cache	The contents of the named ROM area are written to the same address in system memory (RAM) for faster execution, if an adaptor ROM will be using the named ROM area. Also, the contents of the RAM area can be read from and written to cache memory.
Disabled	The video ROM is not copied to RAM. The contents of the video ROM cannot be read from or written to cache memory.

The default setting is *Cache.*

In the AMIBIOS for the Intel chipset, the E000h page is used as ROM during POST, but shadowing is disabled and the ROM CS# signal is disabled to make the E000h page available on the local bus.

Chipset Setup

Chipset Setup options are displayed by choosing the chipset icon from the WINBIOS setup main menu. All Chipset Setup options are described in this section.
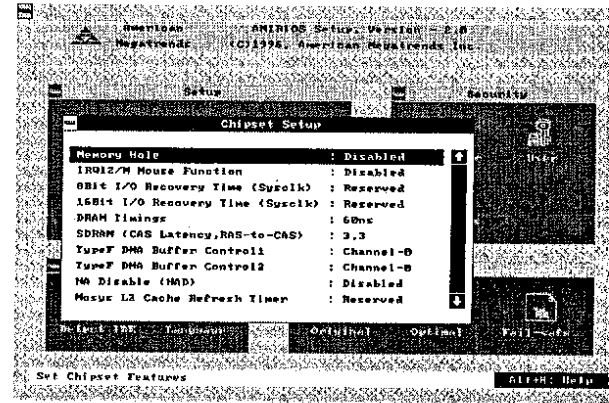
*Figure 2-4 : the Chipset Setup Menu*

Memory Hole — Use this option to specify an area in memory that cannot be addressed on the ISA bus. The settings are *Disabled, 512-640K, or 15-16MB.* The default setting is *Disabled.*

DRAM Speed — Specify the RAS access speed of the SIMMs installed in the motherboard as system memory. The settings are *60ns* or *70 ns.* The default is *70ns.*

Caution

If you have installed SIMMs with different speeds in the motherboard, select the speed of the slowest SIMM.

You must always use SIMMs that have the same speed within a memory bank.

IRQ12/M Mouse Function — Set this option to *Enabled* to specify that IRQ12 will be used for the mouse. The settings are *Disabled* or *Enabled.* The Optimal default setting is *Enabled.*

8-Bit I/O Recovery Time (SYSCLK)	This option specifies the length of the delay (in SYSCLKs) inserted between consecutive 8-bit I/O operations. The settings are *1, 2, 3, 4, 5, 6, 7, or 8*. The Optimal default setting is *2*.
16-Bit I/O Recovery Time (SYSCLK)	This option specifies the length of the delay (in SYSCLKs) inserted between consecutive 16-bit I/O operations. The settings are *1, 2, 3, 4, 5, 6, 7, or 8*. The Optimal default setting is *2*.

Power Management Setup

Power Management Setup options are displayed by choosing the Power Management icon from the WINBIOS Setup main menu. All Power Management Setup options are described in this section.
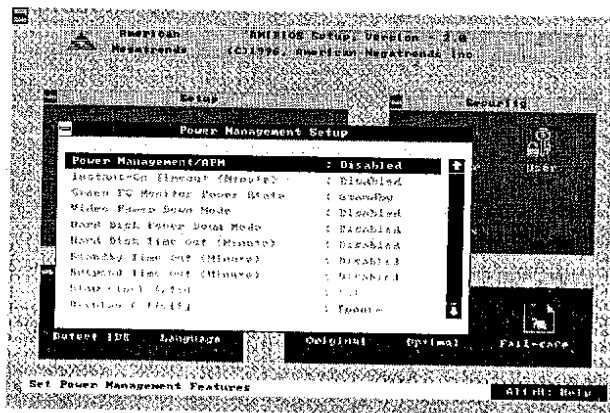
Figure 2-5 : Power Management Setup

Power Management/APM	Set this option to *Enabled* to enable the power management and APM (Advanced Power Management) features. The settings are *Enabled* or *Disabled*. The default settings are *Disabled*.
Instant On Support	Set this option to Enabled to allow the computer to go to full power on mode when leaving a power-conserving state. *This option is only available if supported by the computer hardware*. AMIBIOS uses the RTC Alarm function to wake the computer at a prespecified time. The settings are *Enabled* or *Disabled*. The default settings are *Disabled*.
Green PC Monitor Power State	This option specifies the power management state that the Green PC-compliant video monitor enters after the specified period of display inactivity has expired. The settings are *Disabled, Off, Standby, or Suspend*. The default settings are *Disabled*.
Video Power Down Mode	This option specifies the power management state that the video subsystem enters after the specified period of display inactivity has expired. The settings are *Disabled, Standby, or Suspend*. The default settings are *Disabled*.

Hard Disk Power Down Mode

This option specifies the power management state that the hard disk drive enters after the specified period of display inactivity has expired. The settings are *Disabled, Standby, or Suspend*. The default settings are *Disabled*.

Hard Disk Timeout (Min)

This option specifies the length of a period of hard disk inactivity. When this period expires, the hard disk drive enters the power-conserving mode specified in the Hard Disk Power Down Mode option described on the previous page. The settings are *Disabled, 1 Min (minutes)*, and all one minute intervals up to and including 15 *Min*. The default settings are *Disabled*.

Full-On to Standby Timeout

This option specifies the length of the period of system inactivity when the computer is in Full-On mode before the computer is placed in Standby mode. In Standby mode, some power use is curtailed. The settings are *Disabled, 1 Min, 2 Min*, and all one minute intervals up to and including 15 *Min*. The default settings are *Disabled*.

Standby to Suspend Timeout

This option specifies the length of the period of system inactivity when the computer is already in Standby mode before the computer is placed in Suspend mode. In Suspend mode, nearly all power use is curtailed. The settings are *Disabled, 1 Min, 2 Min*, and all one minute intervals up to and including 15 *Min*. The default settings are *Disabled*.

Slow Clock Ratio

This option specifies the speed at which the system clock runs in power saving modes. The settings are expressed as a ratio between the normal clock speed and the power down clock speed. The settings are *1:1, 1:2* (half as fast as normal), 1:4 ((the normal clock speed), *1:8, 1:16, 1:32, 1:64, or 1:128*. The default setting is *1:1*.

Display Activity

This option specifies if AMIBIOS is to monitor activity on the display monitor for power conservation purposes. When this options set to Monitor and there is no display activity for the length of time specified in the value in the Full-On to Standby Timeout (Min) option, the computer enters a power saving state. The settings are *Monitor* or *Ignore*. The default settings are *Ignore*.

IRQ 3
IRQ 4
IRQ 5
IRQ 7
IRQ 9
IRQ 10
IRQ 11
IRQ 12
IRQ 13
IRQ 14
IRQ 15

These options enable event monitoring. When the computer is in a power saving mode, activity on the named interrupt request line is monitored by AMIBIOS. When any activity occurs, the computer enters Full On mode.

Each of these options can be set to *Monitor* or *Ignore*. The default setting for all options is *Ignore*.

PCI/PnP Setup PCI/PnP Setup options are displayed by choosing the PCI/PnP Setup icon from the WINBIOS Setup main menu. All PCI/PnP Setup options are described in this section
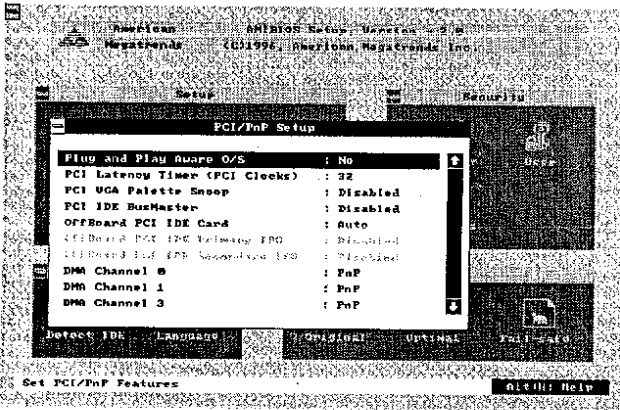
PCI/PnP Setup

PCI/PnP Setup options are displayed by choosing the PCI/PnP Setup icon from the WINBIOS Setup main menu . All PCI/PnP Setup options are described in this section.

Figure 2-6 : PCI/PnP Setup

Plug and Play Aware OS

Set this option to *Yes* if the operating system installed in the computer is Plug and Play-aware. AMIBIOS only detects and enables PnP ISA adapter cards that are required for system boot. The Windows 95 operating system detects and enables all other PnP-aware adapter cards. Windows 95 is PnP-aware. Set this option to No if the operating system (such as DOS, OS/2, Windows 3.x) does not use PnP. *You must set this option correctly or PnP-aware adapter cards installed in your computer will not be configured properly.* The settings are *No* or *Yes*. The Optimal default setting is *No*.

PCI Burst Mode

Set this option to *Enabled* to enable PCI burst mode. The settings are *Disabled* or *Enabled*. The Optimal default setting is *Enabled*.

PCI Latency Timer (in PCI Clocks)

This option sets latency of all PCI devices on the PCI bus. The settings are in units equal to PCI clocks. The settings are *32, 64, 96, 128, 160, 192, 224, or 248*. The Optimal default setting is *64*.

PCI VGA Palette Snoop

This option must be set to Enabled if any ISA adapter card installed in the computer requires VGA palette snooping. The settings are *Disabled* or *Enabled.* The Optimal default setting is *Disabled.*

PCI IDE BusMaster

Set this option to Enabled to specify that the IDE controller on the PCI local bus has bus mastering capability. The settings are *Disabled* or *Enabled.* The Optimal default setting is *Disabled.*

Offboard PCI IDE Card

This option specifies if an offboard PCI IDE controller adapter card is used in the computer. You must also specify the PCI expansion slot on the motherboard where the offboard PCI IDE controller card is installed. If an offboard PCI IDE controller is used, the onboard IDE controller on the motherboard is automatically disabled. The settings are *Disabled, Auto, Slot1, Slot2, Slot3, or Slot4.*

If *Auto* is selected, AMIBIOS automatically determines the correct setting for this option. The Optimal default setting is *Auto.*

In the AMIBIOS for the Intel chipset, this option forces IRQ 14 and 15 to a PCI slot on the PCI local bus. This is necessary to support non-compliant PCI IDE adapter cards.

Offboard PCI IDE Primary IRQ

This option specifies the PCI interrupt used by the primary IDE channel on the offboard PCI IDE controller. The settings are *Disabled, INTA, INTB, INTC, or INTD.* The Optimal default setting is *Disabled.*

Offboard PCI IDE Secondary IRQ

This option specifies the PCI interrupt used by the secondary IDE channel on the offboard PCI IDE controller. The settings are *Disabled, INTA, INTB, INTC, or INTD.* The Optimal default setting is *Disabled.*

IRQ3	These options specify the bus that the named interrupt
IRQ4	request lines (IRQs) are used on. These options allow
IRQ5	you to specify IRQs for use by legacy ISA adapter cards.
IRQ7	These options determine if AMIBIOS should remove
IRQ9	an IRQ from the pool of available IRQs passed to BIOS
IRQ10	configurable devices. The available IRQ pool is determined
IRQ11	by reading the ESCD NVRAM. If more IRQs must be
IRQ12	removed from the pool, the end user can use these PCI/
IRQ14	PnP Setup options to remove the IRQ by assigning the
IRQ15	option to the *ISA/EISA* setting. Onboard I/O is
	configurable by AMIBIOS. The IRQs used by onboard
	I/O are configured as *PCI/PnP*.

The settings are *PCI/PnP* or *ISA/EISA*. The Optimal default setting is *PCI/PnP*.

Reserved Memory Size This option specifies the size of the memory area reserved for legacy ISA adapter cards. The settings are *Disabled, 16K, 32K, or 64K.* The Optimal default setting is *Disabled.*

Reserved Memory Address This option specifies the beginning address (in hex) of the reserved memory area. The specified ROM memory area is reserved for use by legacy ISA adapter cards.

The settings are *C0000, C4000, C8000, CC000, D0000, D4000, D8000, or DC000.* The Optimal default setting is *C0000.*

Peripheral Setup

Peripheral Setup options are displayed by choosing the Peripheral Setup icon from the WINBIOS Setup main menu. All Peripheral Setup options are described in this section.
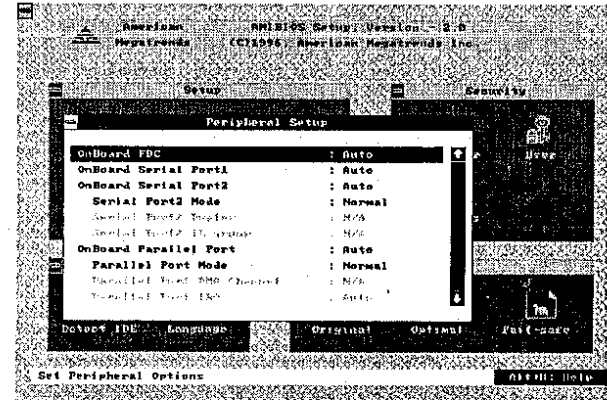

Figure 2-7 : Peripheral Setup

Onboard FDC This option enables the floppy drive controller on the motherboard. The settings are Enabled or Disabled. The Optimal default setting is Enabled.

Onboard Serial Port1 This option enables serial port 1 on the motherboard and specifies the base I/O port address for serial port 1.

The settings are *3F8h, 3E8h,* or *Disabled.* The Optimal default setting is *3F8h.*

Onboard Serial Port2 This option enables serial port 2 on the motherboard and specifies the base I/O port address for serial port 2.

The settings are *2F8h, 2E8h,* or *Disabled.* The Optimal default setting is *3F8h.*

Onboard Parallel Port This option enables the parallel port on the motherboard and specifies the parallel port base I/O port address. The settings are *378h, 278h,* or *Disabled.*

The Optimal default setting is *378h.* The Optimal default settings is *Disabled.*

Parallel Port Mode   This option specifies the parallel port mode. ECP and EPP are both bidirectional data transfer schemes that adhere to the IEEE P1284 specifications. The settings are:

Setting	Description
Normal	The normal parallel port mode is used. This is the default setting.
Bi-Dir	Use this setting to support bidirectional transfers on the parallel port.
EPP	The parallel port can be used with devices that adhere to the Enhanced Parallel Port (EPP) specification. EPP uses the existing parallel port signals to provide asymmetric bidirectional data transfer driven by the host device.
ECP	The parallel port can be used with devices that adhere to the Extended Capabilities Port (ECP) specification. ECP uses the DMA protocol to achieve transfer rates of approximately 2.5 Mbs. ECP provides symmetric bidirectional communications.

Parallel Port DMA   This option is only available if the setting for the Parallel Port Mode option is ECP. The settings are *Disabled, DMA CH (channel) 0, DMA CH 1, or DMA CH 3.* The default setting is *Disabled.*

Onboard IDE   This option specifies the onboard IDE controller channels that will be used. The settings are *Primary, Secondary, Both,* or *Disabled.* The Optimal default setting is *Primary.*

Utility

The following icons appear in this section:

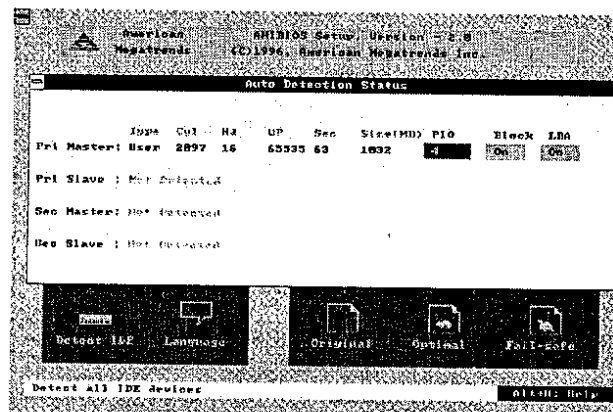- Detect IDE, and
- Language.

Figure 2-8 : Auto Detect IDE HDD

Detect IDE   Auto detect the IDE Devices type and set into the CMOS.

Language   Language allows you to select English, German, or French language screen prompts and messages.

Security

AMIBIOS Password Support

WINBIOS Setup has an optional password feature. The system can be configured so that all users must enter a password every time the system boots or when WINBIOS Setup is executed. You can set either a Supervisor password or a User password.

If You Do Not Want to Use a Password   Just press <Enter> when the password prompt appears.

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 is run). The password is stored in CMOS RAM. The following screen appears when you select the password icon from the WINBIOS Setup main menu:
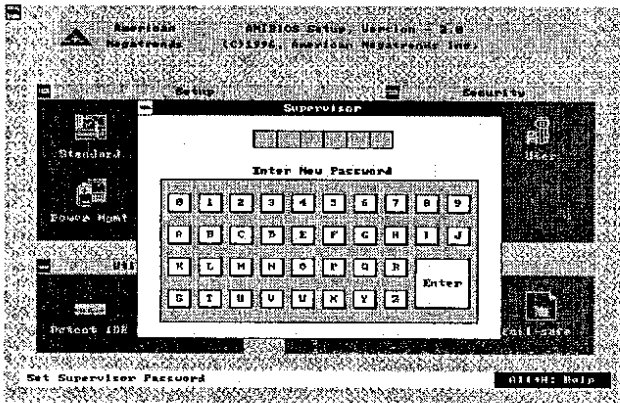

Figure   2-9 : Setting a Password

You can enter a password by:
● typing the password on the keyboard,
● selecting each letter via the mouse, or
● selecting each letter via the pen stylus.

Pen access must be customized for each specific hardware platform.

When you select Supervisor or User, AMIBIOS prompts for a password. You must set the Supervisor password before you can set the User password. Enter a 1 û 6 character password. The password does not appear on the screen when typed. Make sure you write it down. If you forget it, you must drain CMOS RAM and reconfigure the system.

Changing a Password

Select the appropriate password icon (Supervisor or User) 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 Main Menu. The password is stored in CMOS RAM after WINBIOS completes. The next time the system boots, you are prompted for the password if the password function is present and is enabled.

Remember the Password   Keep a record of the new password when the password is changed. If you forget the password, remove the computer cover, set switch 1-2 (the DIAG switch) to ON, power on the computer. AMIBIOS will erase the password.

Anti-Virus

When this icon is selected from the Security section of the WINBIOS Setup main menu, AMIBIOS issues a warning when any program (or virus) issues a Disk Format command or attempts to write to the boot sector of the hard disk drive. The settings are Enabled or Disabled. If enabled, the following appears when a write is attempted to the boot sector. You may have to type N several times to prevent the boot sector write.

```
Boot  Sector  Write!!!
Possible  VIRUS:  Continue  (Y/N)?  _
```

The following appears after any attempt to format any cylinder, head, or sector of any hard disk drive via the BIOS INT 13 Hard Disk Drive Service:

```
Format!!!
Possible  VIRUS:  Continue  (Y/N)?  _
```

Default

The icons in this section permit you to select a group of settings for all WINBIOS Setup options. Not only can you use these icons to quickly set system configuration parameters, you can choose a group of settings that have a better chance of working when the system is having configuration-related problems.

Original

Choose the Original icon to return to the system configuration values present in WINBIOS Setup when you first began this WINBIOS Setup session.

Optimal

You can load the optimal default settings for the WINBIOS by selecting the Optimal icon. The Optimal default settings are best-case values that should optimize system performance. If CMOS RAM is corrupted, the Optimal settings are loaded automatically.

Fail-Safe

You can load the Fail-Safe WINBIOS Setup option settings by selecting the Fail-Safe icon from the Default section of the WINBIOS Setup main menu. 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.

Exit WINBIOS Setup

When you have finished to configure the machine, you can exit the WINBIOS setup menu by pressing <ESC> key or clicking the upper-left corner's box of the setup menu. The following screen appears:
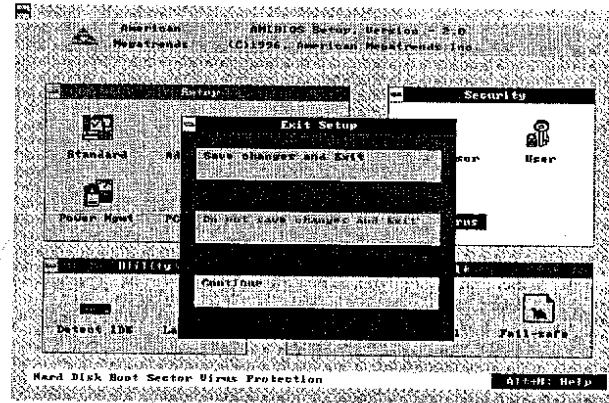

Figure 2-10 : Exit setup

You can exit the WINBIOS Setup by choosing the appropriate option.