
AIO8554
SYSTEM SECTION

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CHAPTER 1 INTRODUCTION

1.1 OVERVIEW

The **AIO8554** is complemented by a 512KB second level Write-Back cache providing workstation level computing performance, and SIMM sockets support up to 128MB of DRAM.

The **AIO8554** motherboard offers outstanding I/O capabilities. One EISA expanded slot for ISA/PCI Local Bus slots provide a high bandwidth data path for data-movement intensive function such as Graphics.

The **AIO8554** motherboard provides the foundation for cost effective, high performance, highly expandable platforms which deliver the latest in CPU and I/O technologies.

1.2 SYSTEM FEATURES

- Supports INTEL PENTIUM 75/90/100/120/133 MHz
- Supports H/W GREEN/WAKE UP Switch
- Supports EDO DRAM
- Supports L1/L2 Write Back/Write Through Cache Feature
- Supports EISA Expanded Slot for ISA/PCI Bus
- Supports 256KB/512KB Cache Size
- Supports 72pin SIM MODULES
- Supports SMI/SMM/PMU/APM Power Controllers
- Enhanced PCI IDE on Board (Two Channels)
- Supports 2S1P, Floppy on Board
- BIOS has been Hardware Integrated with Enhanced IDE Driver for Best Hard Disk Performance
- Supports Parallel Port EPP/ECP Mode

1.2.1 VGA FEATURES

- High performance acceleration
- Screen refresh rates up to 75 Hz
- Full PCI compatibility
- Accelerated modes include 1024 x 768 x 64K colors and 1600 x 1200 x 256 colors (If 2M of memory is available)
- Full software support, including enhanced drivers for Windows™ 3.1, AutoCAD® applications, MicroStation® 4.0 and MicroStation 5.0
- Galileo Windows utility, which provides the capability of changing resolutions, color depth and refresh rates within Windows

1.3 SYSTEM SPECIFICATIONS

Processor : INTEL PENTIUM 75/90/100/120/133 MHz
CPU Clock : 50/60/66 MHz CPU
Memory : Up to 128MB
Memory Configuration : 1MB/2MB/4MB/8MB/16MB/32MB/64MB/128MB
SRAM Configuration : 256KB/512KB
BIOS Subsystem : AMI BIOS
I/O Subsystem No. Slot : One EISA Slot
Dimension : 21cm x 33cm, Baby AT Size

Additional Features

Miscellaneous Connectors : Reset Button, Internal Battery, Turbo SW
Board Design : Four-layer Implementation for Low Noise Operation

1.4 SYSTEM PERFORMANCE

SOFTWARE	LANDMARK 2.0	POWER METER	NORTON V8.0
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CPU TYPE		V1.8 MIPS	CPU SPEED
INTEL PENTIUM 75	432.90 MHz	36.9 MIPS	237.7
INTEL PENTIUM 90	519.49 MHz	44.4 MIPS	285.2
INTEL PENTIUM 100	574.59 MHz	49 MIPS	315.5
INTEL PENTIUM 120	692.66 MHz	58 MIPS	380.3
INTEL PENTIUM 133	766.13 MHz	64.6 MIPS	420.6

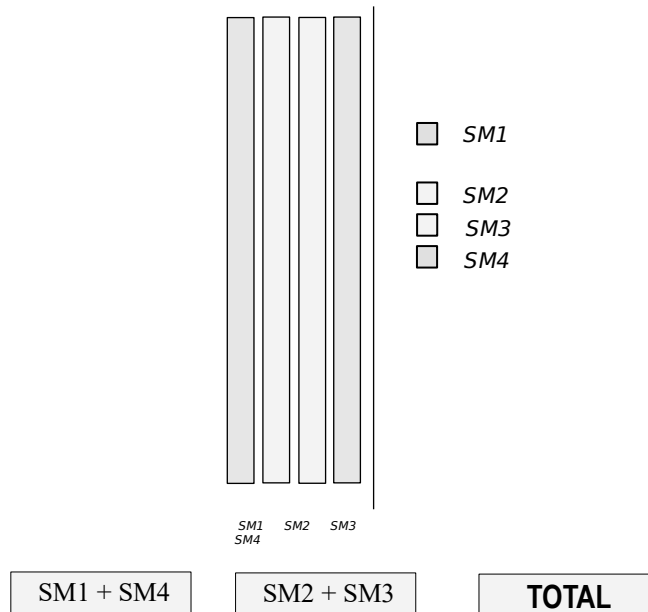
CHAPTER 2 INSTALLATION

Before the system is ready to operate, the hardware must be set up for various functions of the system. To set up the AIO8554 motherboard is a simple task. The user only has to set a few jumpers, connectors and sockets.

2.1 DRAM INSTALLATION

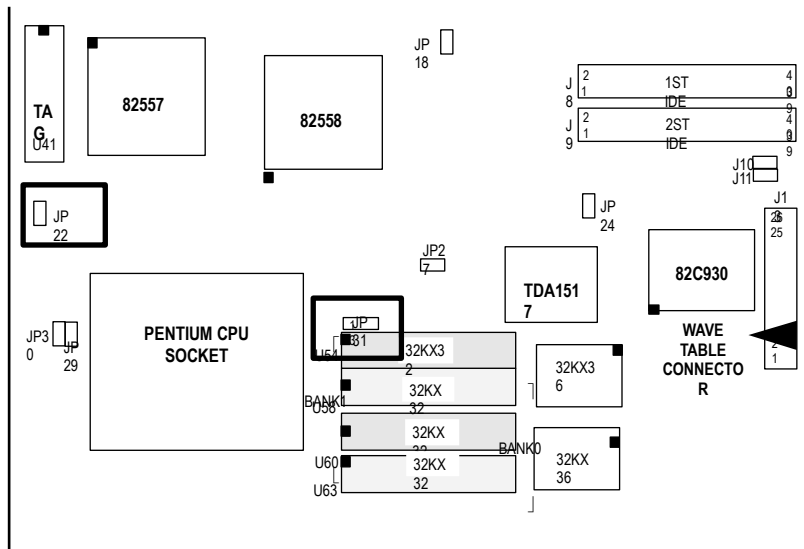
The AIO8554 motherboard can support expanded memory from 1MB to 128MB. Either 1MB, 2MB, 4MB, 8MB, 16MB, 32MB, SIM Modules can be used on the AIO8554 motherboard.

v The board layout below shows the locations of the DRAM memory banks :



Each group includes two SIMMs, each SIMM size can be 1,2,4,8,16,32MB, please install the same DRAM size in one group.

2.2 SRAM INSTALLATION

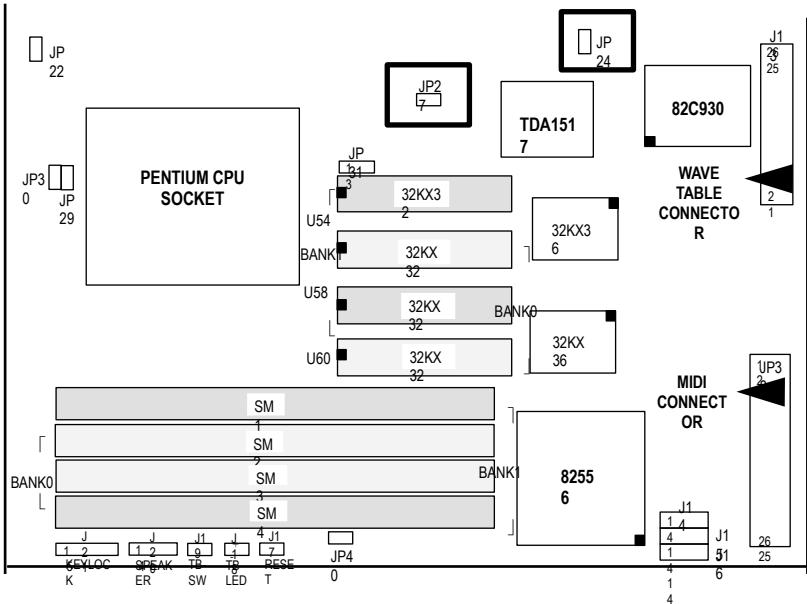


CACHE CONFIGURATION SIZE

256K ☆		512K	
TAG RAM	DATA RAM	TAG RAM	DATA RAM
U41 8Kx8,16Kx8,32Kx8	U58,U63 32Kx32	U41 16Kx8, 32Kx8	U54,U58,U60, U63 32Kx32
 JP2 2		 JP2 2	
 JP3 2 1 3		 JP3 1 1 3	

☆ Default Setting

2.3 SYSTEM BUS FREQUENCY INSTALLATION



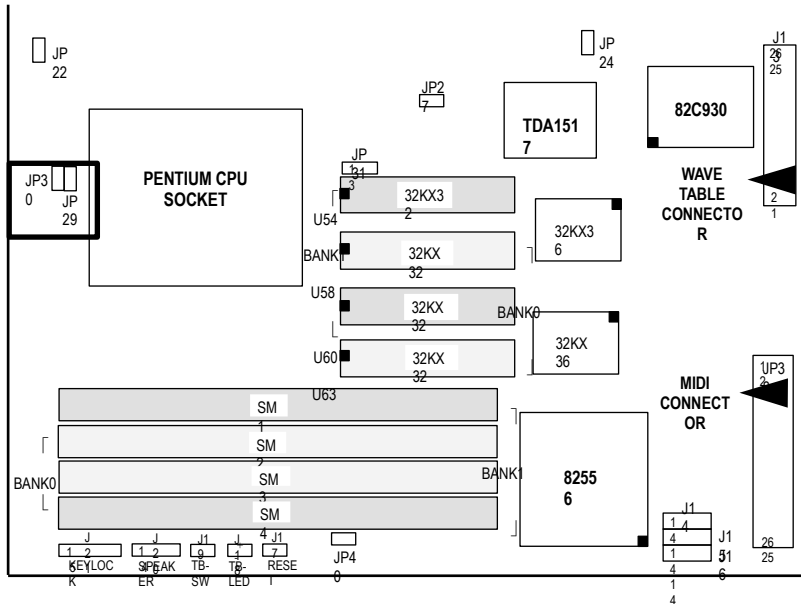
50MHz	60MHz ☆	66MHz

☆ Default Setting

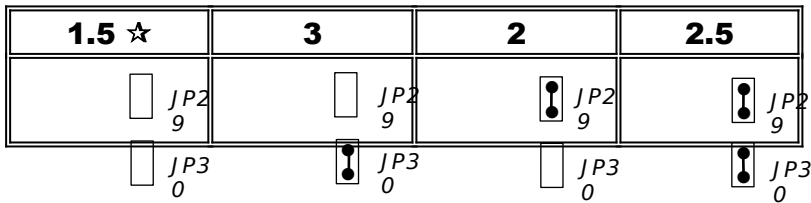
CPU TYPE REFERENCE SETTING

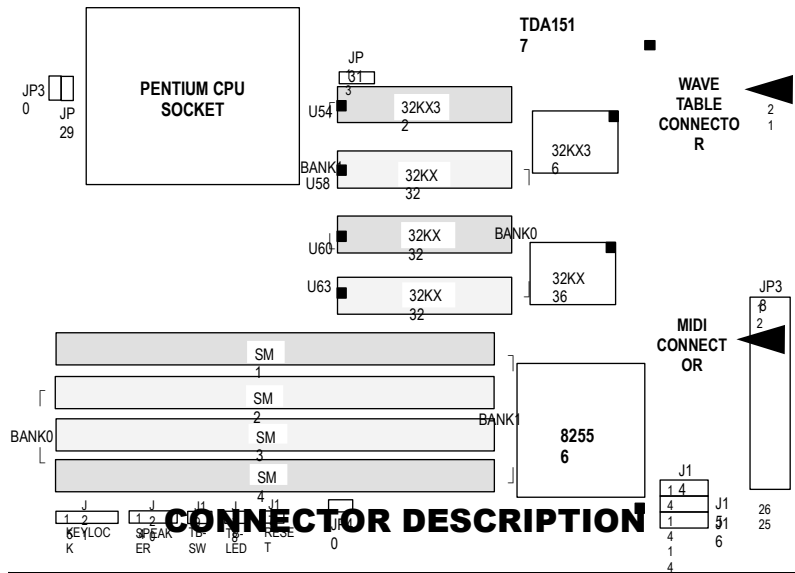
CPU TYPE	75MHz	90MHz	100MH z	120MH z	133MH z
FREQUENCY	50MHz	60MHz	66MH z	60MH z	66MH z
TIMES	1.5	1.5	1.5	2	2


2.4 CPU FREQUENCY INSTALLATION



CPU FREQ. TIMES





CONNECTOR	PIN OUT	SIGNAL NAME
JP13	1-2 2-3	DMA 1 DMA 3
JP14	1-2 2-3	DMA 1 DMA 3
JP15	Open For EPP/ECP Mode Close For Standar mode	
JP11	 3	1-2 Discharge CMOS (When use Battery) ★ 2-3 Normal operation
JP18	GREEN SWITCH Touch one time GREEN next time WAKE UP.	
J21 : KEY LOCK	1 2 3 4 5	Power LED Not Used Ground Keyboard Inhibitor Ground
J20 : SPEAKER	1 2 3 4	+5V DC Data Out Data Out Data Out

J17 : RESET	1 2	Ground Reset In
J18 : TB-LED	1 2	+Anode -Cathode
J19 : TURBO SWITCH	* <input type="checkbox"/> Turbo Speed	<input checked="" type="checkbox"/> Normal Speed ● Speed
KB1: KEYBOARD D CONNECT OR	1 2 3 4 5	Keyboard Clock Keyboard-Data Space Ground +5V
P1 & P2 : POWER CONNECT OR	1 2 3 4 5,6,7,8 9 10,11,12	Power Good +5V DC +12V DC -12V DC Ground -5V DC +5V DC

CONNECTOR DESCRIPTION

CONN ECTOR	PIN OUT	SIGNAL NAME
JP12	CLOSE for CLEAR CMOS When Use 12887A	
JP40	Normal Open , Close For Feature Function	
J10	<input type="checkbox"/> Secondary IDE LED	
11	<input type="checkbox"/> Primary IDE LED	
1	COM1 Connector	
J2	COM2 Connector	
J3	LPT1 Connector	
J4	VGA Connector	

J6 : EXTERNAL BATTERY CONNECTOR	1 2 3 4	+3.6V NC Ground Ground
J14 : PANASONIC AUDIO IN	1 2 3 4	Ground Right Ground Left
J15 : SONY AUDIO IN	1 2 3 4	Left Ground Ground Right
J16: MITUSMI AUDIO IN	1 2 3 4	Right Ground Left Ground

CHAPTER 3

SYSTEM BIOS 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	0 to 9 are used in the Virtual Keyboard and Numeric Keypad.

The hardware features and options of the **AIO8554** are on-site selectable for maximum flexibility. You will need to configure these options through the built-in Setup Utility prior to using **AIO8554** for the first time. This setup Utility is a multi-screen, menu driven program and is contained within the BIOS EPROM.

The following sections show the procedures that you may need to configure the **AIO8554** :

1. Press while turning on or rebooting the system to invoke Setup Utility program.
2. The Main Menu will be shown as follows:

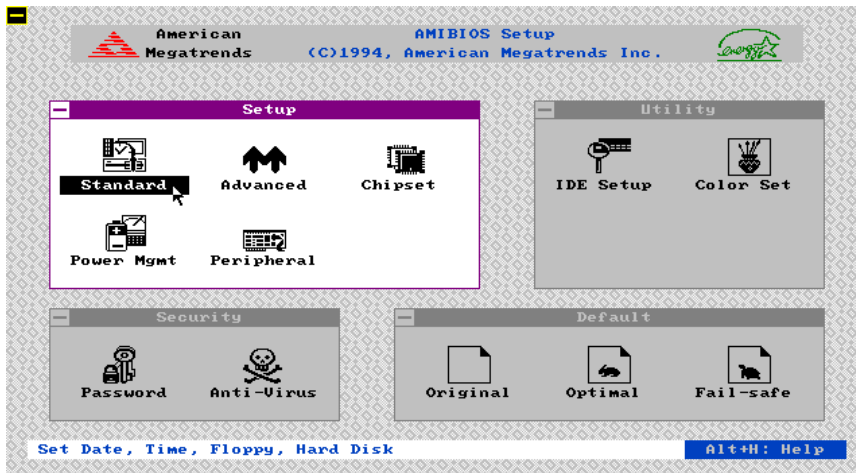


Figure 1

3. The functions are grouped into four categories which are Setup, Utility, Security and Default.
4. By using <TAB> key or mouse cursor to select the function group.
5. Use arrow keys or mouse to select the function icon within the group. Then press <Enter> key to invoke the setup function.
6. Use <ESC> key to go back to the previous screen.

3.1 SYSTEM SETUP

There are five icons in the Setup Group.
Selecting Standard icon displays the following menu:

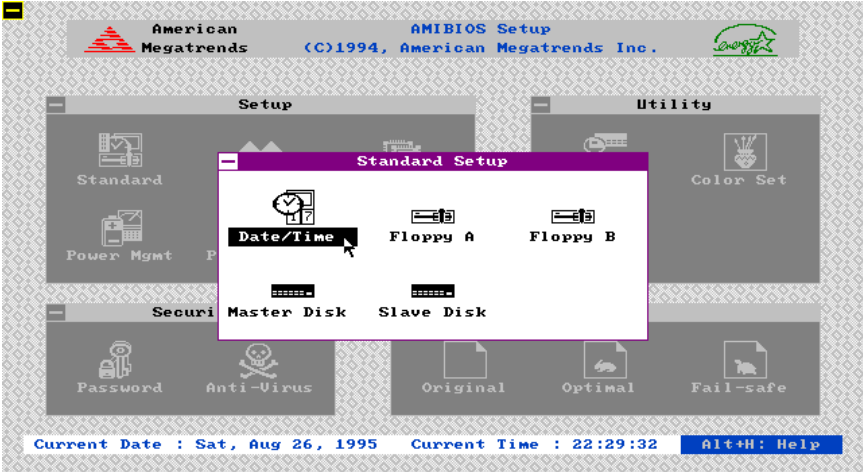


Figure 2

Selecting Date/Time icon displays the following menu:

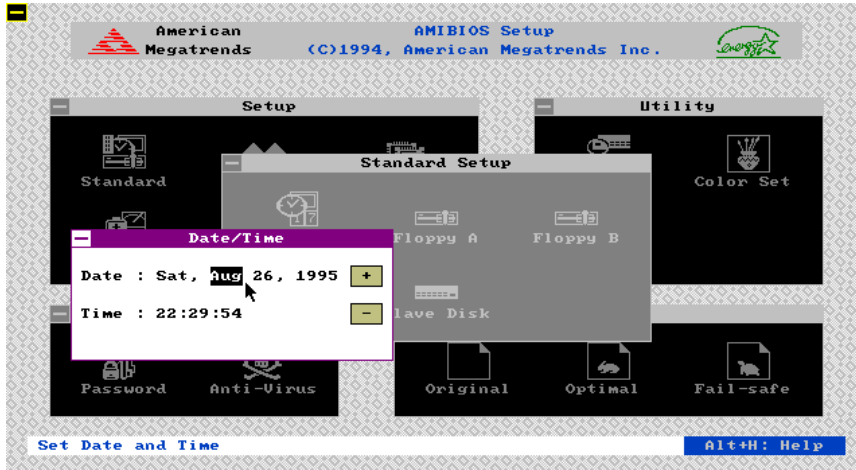


Figure 3

After entering correct date and time, press <ESC> to go back to the previous menu.

Using arrow keys or mouse to select the correct specification of floppy drive. Press <ESC> key to go back to the previous menu.

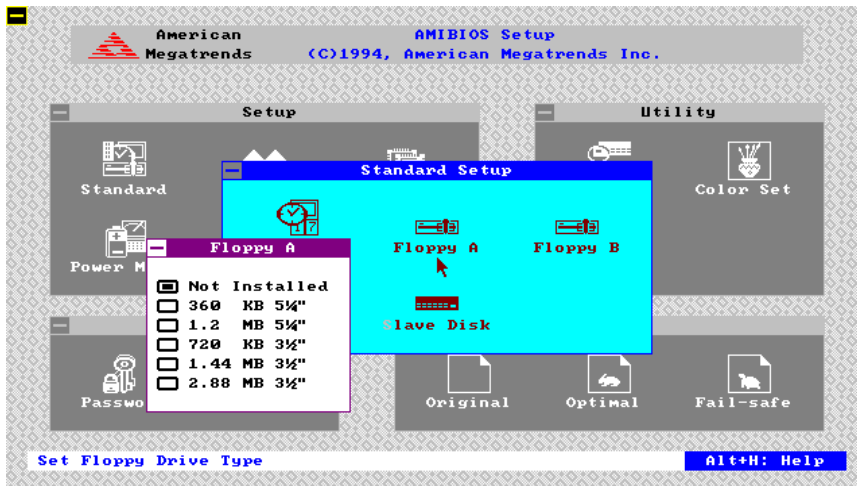


Figure 4

Selecting Floppy A/B icon displays the following menu:

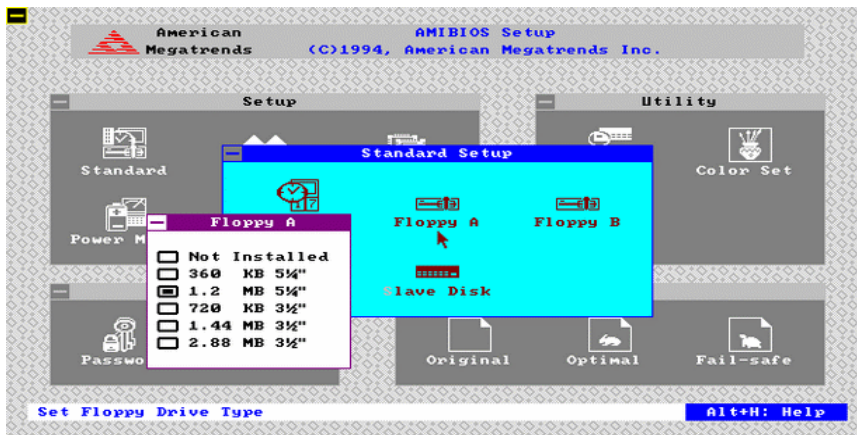


Figure 5

Selecting Master/Slave Disk icon displays the following menu:

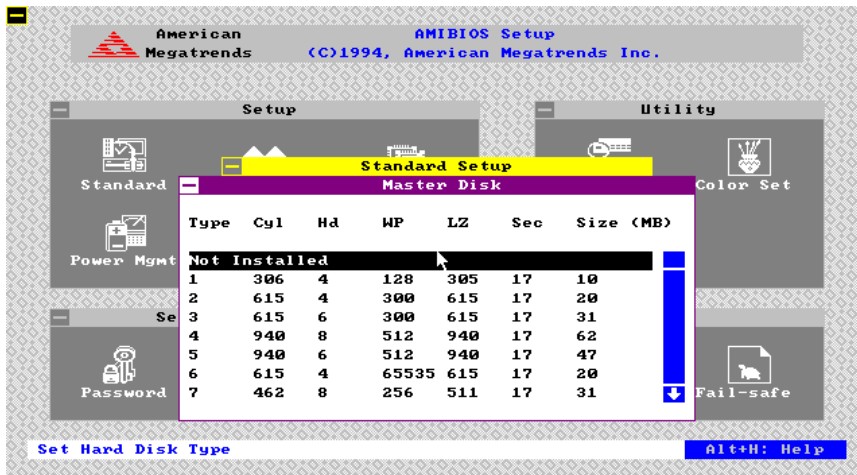


Figure 6

Use arrow keys or mouse to select or enter the Hard Disk specifications. Press <ESC> to go back to the previous menu.

Selecting Slave Disk icon displays the following menu:

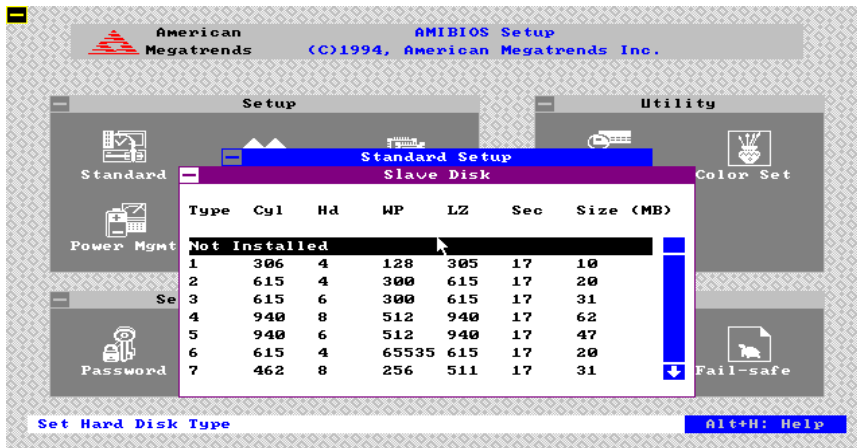


Figure 7

Selecting Advanced icon displays the following menu:
 Use arrow keys to select the desired entries and make changes. Press <Esc> key to go back to the previous menu.

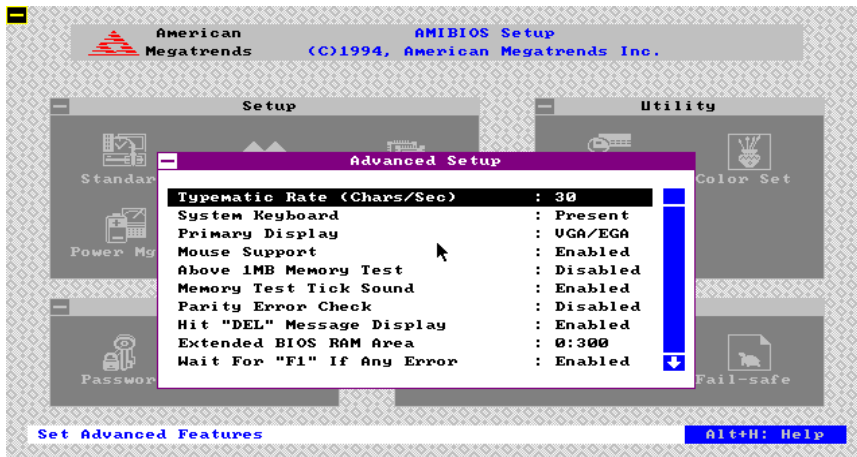


Figure 8

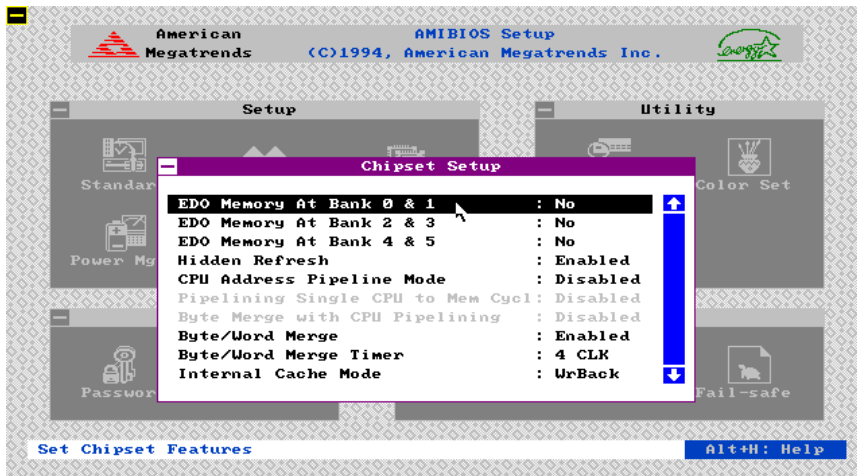


Figure 9

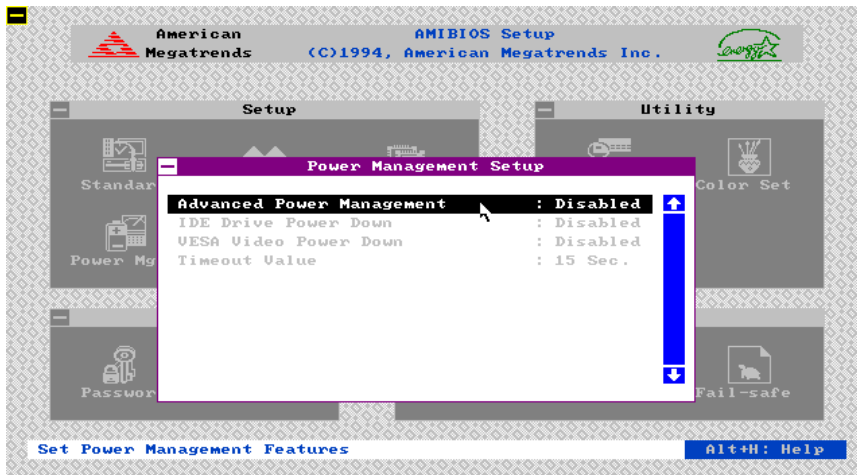


Figure 10

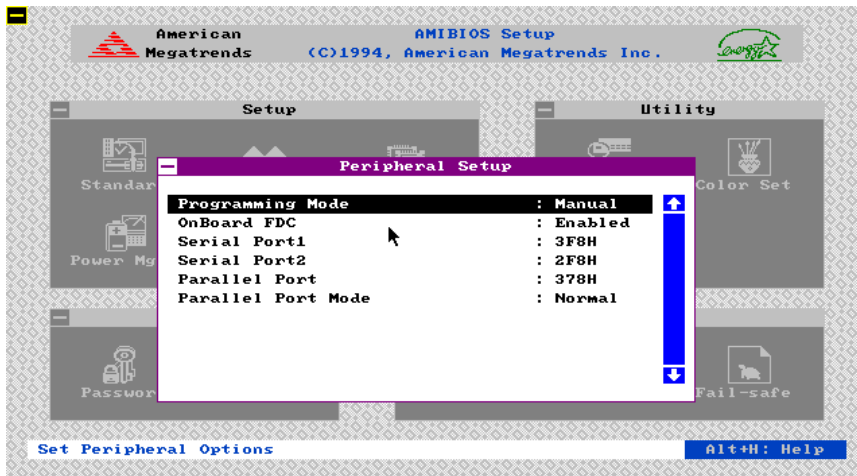


Figure 11

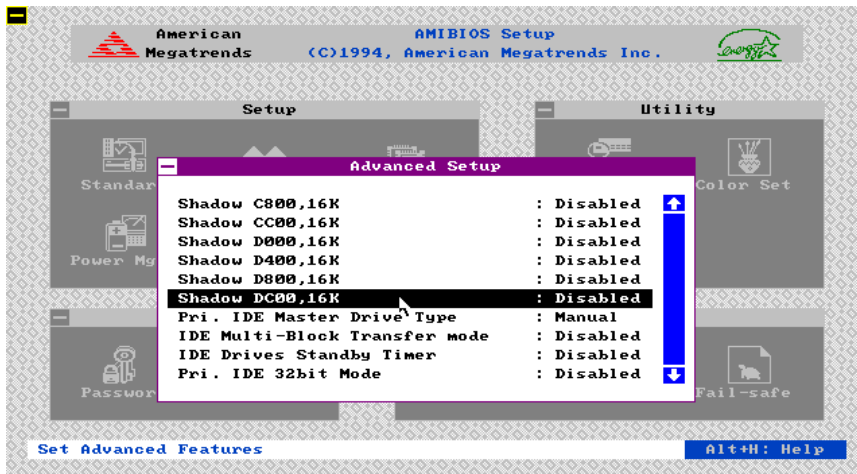


Figure 12

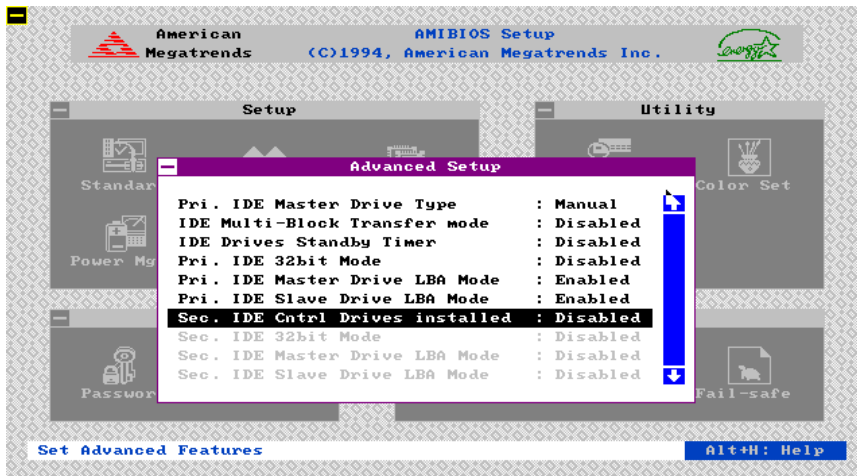


Figure 13

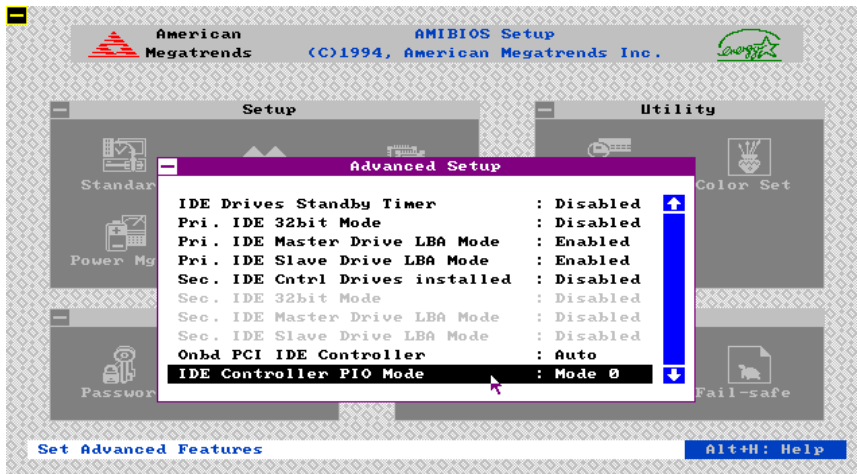


Figure 14

SELECTING CHIPSET

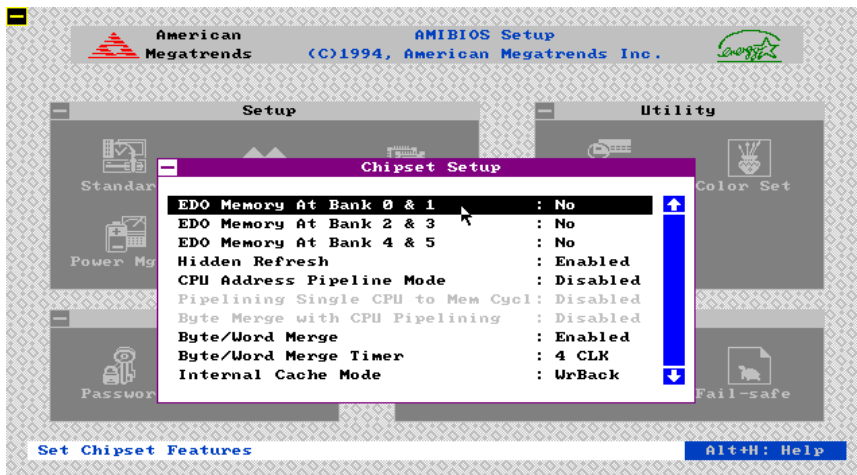


Figure 15

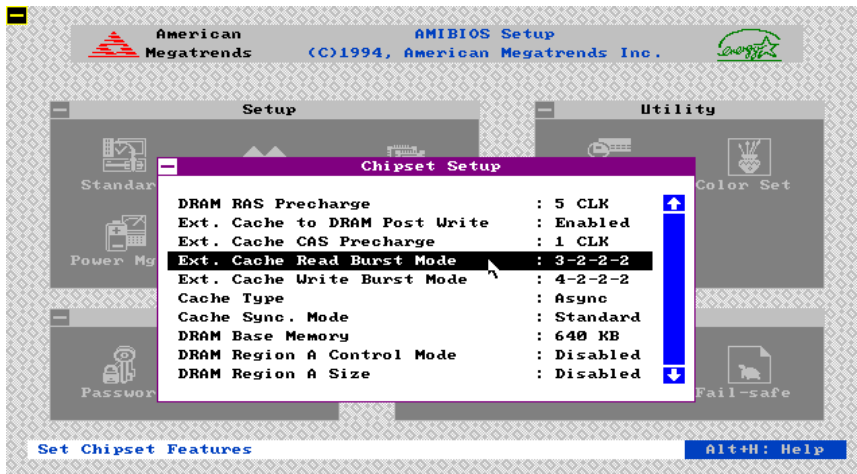


Figure 16

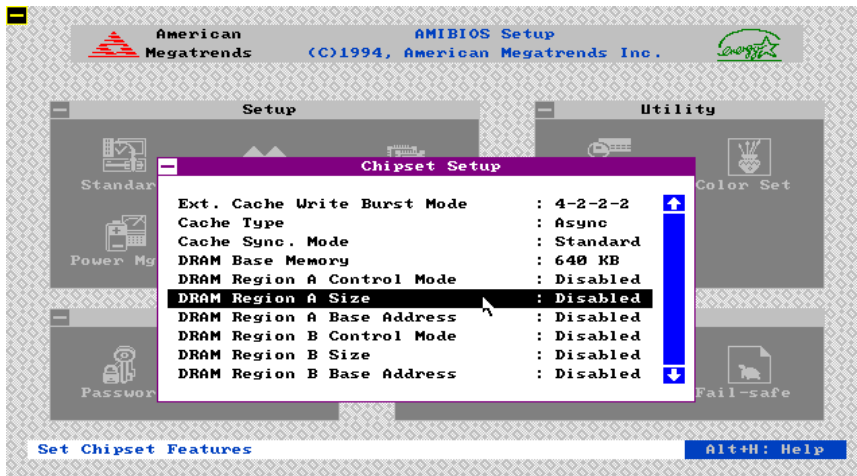


Figure 17

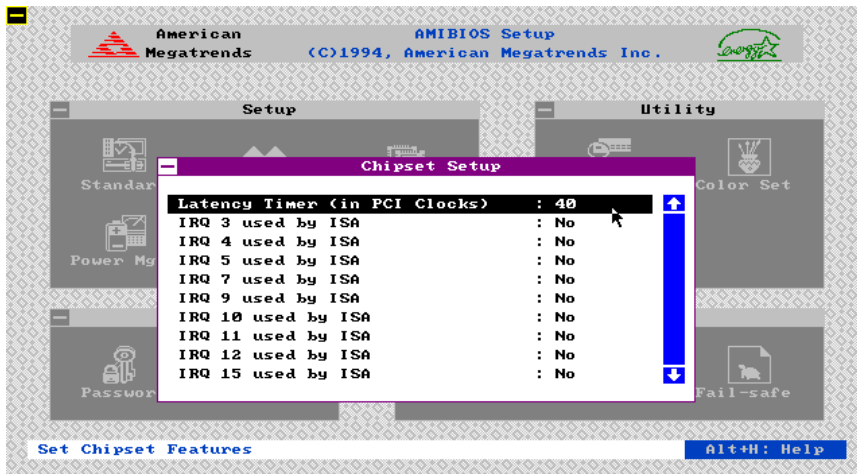


Figure 18

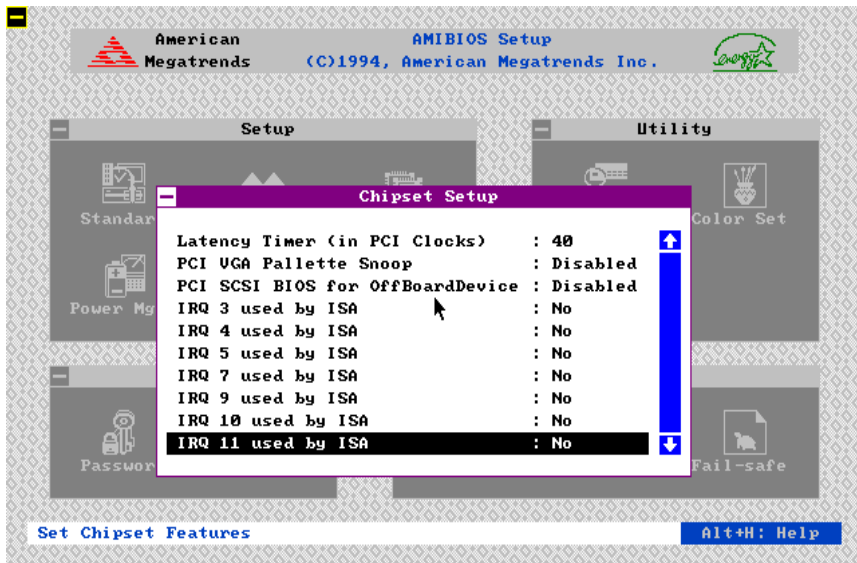


Figure 19

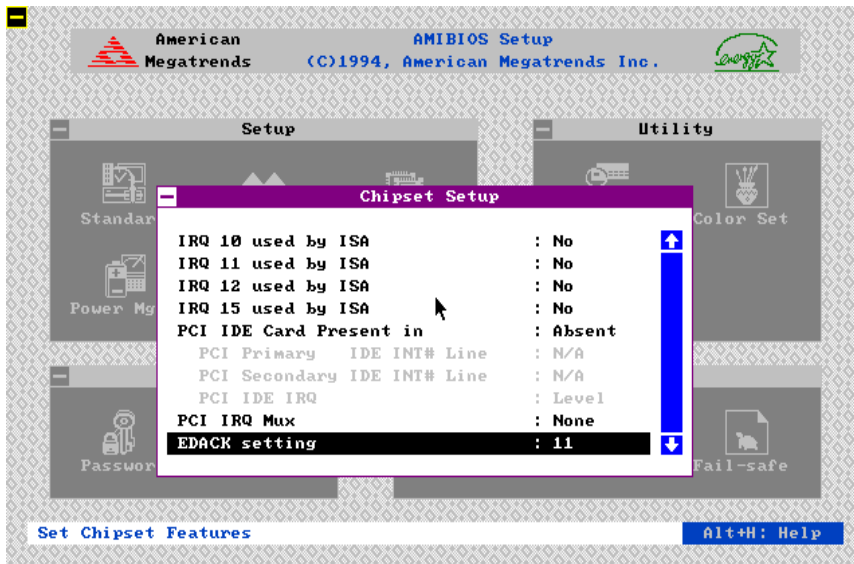


Figure 20

UTILITY

The following icons appear in this section:

IDE SETUP If drive C: or D: is an IDE drive, the hard disk drive parameters for drive C: or D: are automatically detected and reported to the Hard Disk Drive C: or D: screen in Standard Setup, so you can easily configure drive C: or D:.

Color Set Set the WinBIOS Setup screen colors.

Language Permits you to select a foreign language-specific screen character set.

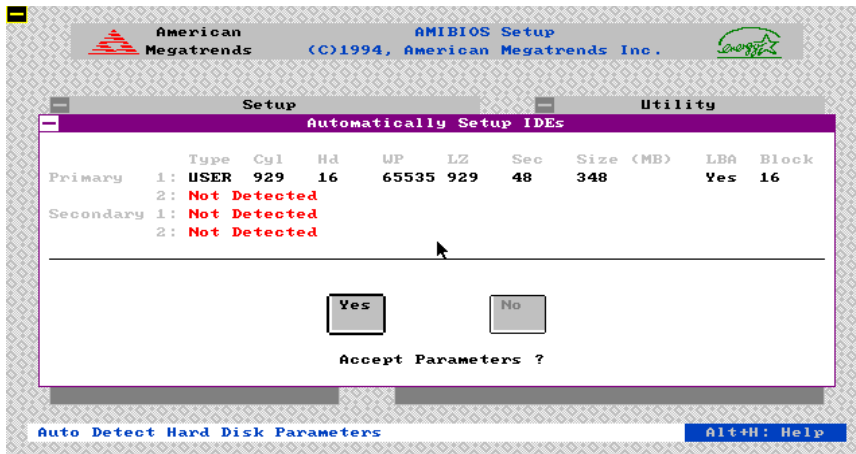


Figure 21

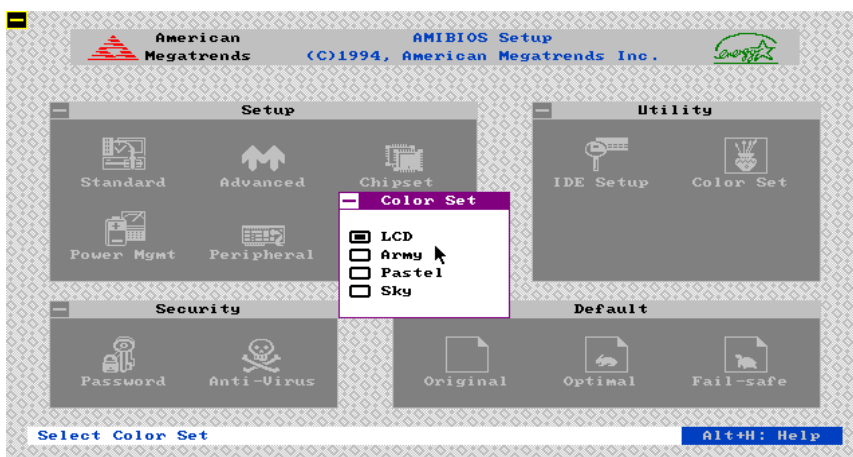


Figure 22

Use arrow key to select the desired entries and make changes, press <Esc> key to go back to the previous menu.

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. The following screen appears when you select the password icon.

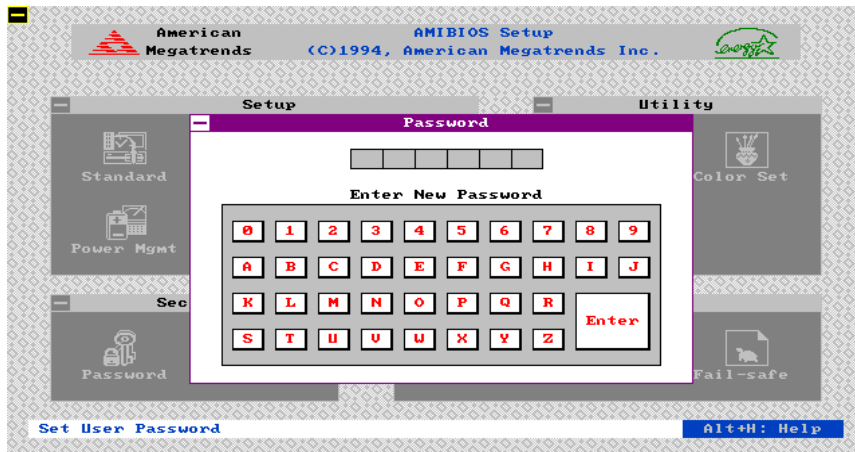


Figure 23

You can enter a password by:

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

Pen access must be customized for each specific hardware platform.

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 1-6 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. WinBIOS will then display the following:

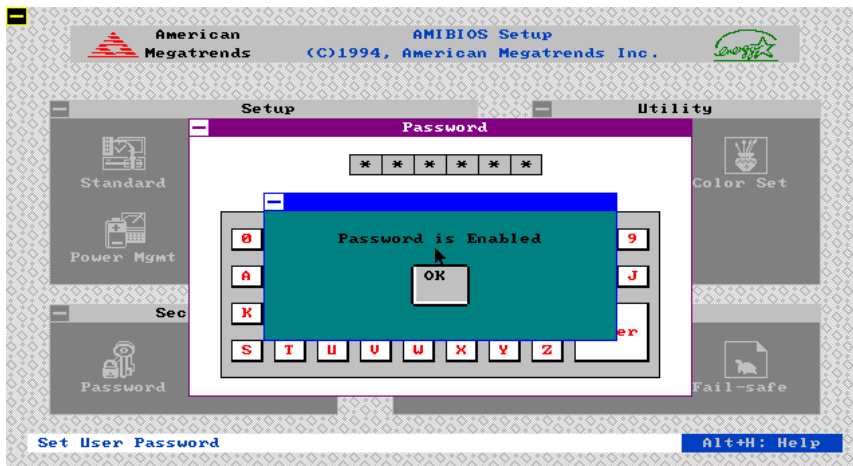


Figure 24

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.

Remember the Password

Keep a record of the new password when the password is changed. If you forget the password and your computer has an American Megatrends motherboard, remove the computer cover, set switch 1-2 (the DIAG switch) to ON, power on the computer. WinBIOS erases the password.

When this icon is selected from the Security section of the WinBIOS Setup main menu, WinBIOS 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 following screen appears when you select the Anti-Virus icon:

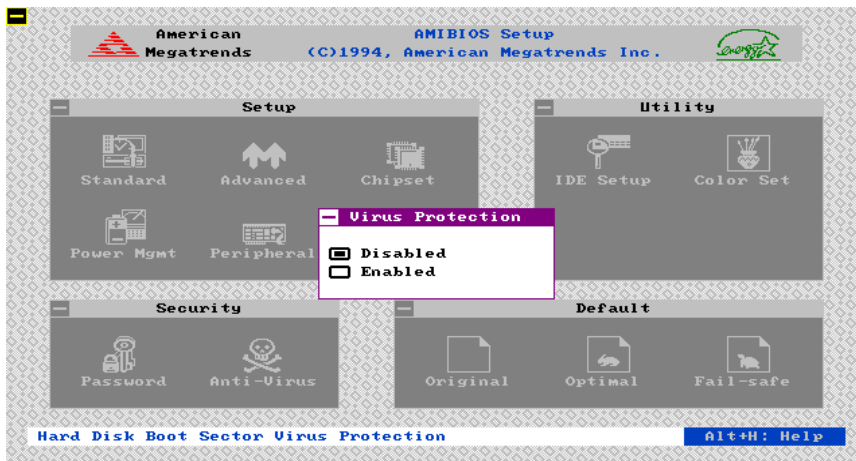


Figure 25

The setting 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.

☛ 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 Setup options 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.

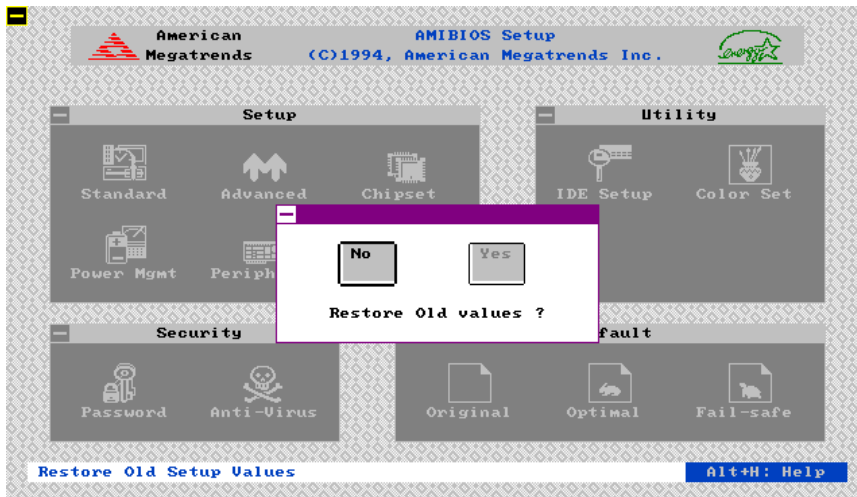


Figure 26

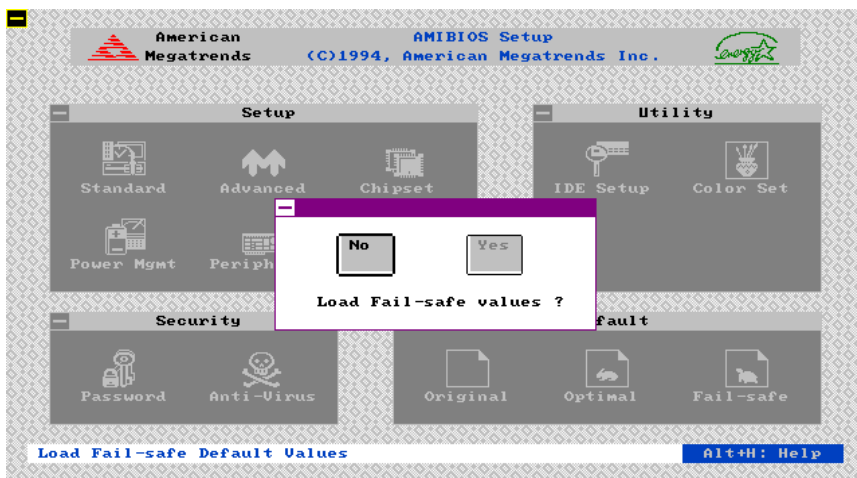


Figure 27

WINBIOS BEEP CODES

BEEPS	ERROR MESSAGE	DESCRIPTION
1	Refresh Failure	The memory refresh circuitry is faulty.
2	Parity error	Parity error in the base memory (the first 64 KB block) of memory.
3	Base 64 KB Memory Failure	Memory failure in first 64 KB.
4	Timer Not Operational	A memory failure in the first 64 KB of memory, or Timer is not functioning.
5	Processor error	The CPU generated an error.
6	8042-Gate A20 Failure	Cannot switch to protected mode.
7	Processor exception Interrupt Error	The CPU on the CPU Card generated an exception interrupt.
8	Display Memory Read/Write Error	The system video adapter is either missing or its memory is faulty. This is not a fatal error.
9	ROM Checksum Error	The ROM checksum value does not match the value encoded in WinBIOS.
10	CMOS Shutdown Register Read/Write Error	The shutdown register for CMOS RAM has failed.
11	Cache memory bad - do not enable cache	The cache memory test failed. Cache memory is disabled. Do not press <Ctrl> <Alt> <+> to enable cache memory.

What to Do If the Computer Beeps

Here is what you need to do if your computer has a WinBIOS and it starts beeping:

IF THE SYSTEM BEEPS...	THEM...
1, 2, or 3 times...	reseat the memory SIMMs or DIPs. If the system still beeps, replace the memory.
6 times...	reseat the keyboard controller chip. If it still beeps, replace the keyboard controller. If it still beeps, try a different keyboard, or replace the keyboard fuse, if the keyboard has one.
8 times...	there is a memory error on the video adapter. Replace the video adapter, or the RAM on the video adapter.
9 times...	the BIOS ROM chip is bad. The system probably needs a new BIOS ROM chip.
11 times...	reseat the cache memory on the motherboard. If it still beeps, replace the cache memory.
4, 5, 7, or 10 times...	the motherboard must be replaced.

APPENDIX

On-board IDE PIO Mode:(on figure 14)

The setting are "Auto" or "PIO xx". When set to "Auto", the WinBIOS automatically detects PIO mode up to PIO Mode 4 or data transfer rate of the IDE hard disk. Please refer to the specification of your hard disk if you set the option as "PIO xx". Incorrect setting of the parameter may corrupt the hard disk data or crash the hard disk. Default setting set as "Auto".

On-PCI IDE 32-bit Mode:(on figure 12)

The setting are "Disabled" or "Enabled". When set to "Enabled" the WinBIOS will initialize the hard disk firmware for a 32-bit I/O data access to and from the IDE hard disk at a time. This option refer to the type of hard disk with the 32 bit I/O data transfer support . Only new release of the high performance PIO mode 4 type of hard disk will incorporate the 32-bit I/O data transfer parameter.

Please refer to the specification of your hard disk if you set the option as "Enabled". Incorrect setting of the parameter or installing with the IDE software I/O 32-bit driver together may corrupt the hard disk data or crashes the hard disk. Note that the on-board IDE controller will also support the IDE 32-bit I/O software driver for the hard disk that will not the support the 32-bit I/O feature.

Primary Master/Slave LBA Mode:(on figure 14)

This option (Logical Block Address) support the hard disk that exceed the standard IDE 520MB capacity limit when default set as "Enabled".

Programming Mode:(on figure 11)

The setting are "Auto " or "Manual". When set to "Auto", the WinBIOS automatically detects all adapter cards installed in the system and configures the on-board serial ports, parallel ports. Floppy controller and IDE controller automatically. Default setting is set as "Enabled".

RMA FORM

When the motherboard can not work well, please fill up this form to describe related situations. If the space is not enough to use, you can attach separate paper.

MODEL:

MODEL NO:

HARDWARE

CPU: Brand _____, Model _____, Speed _____ MHz

CO-PROCESSOR: Brand _____, Model _____, Speed _____ MHz

SIMM: Brand _____, Speed _____ ns, Q'ty _____ pcs, Total _____ MB

CACHE: Brand _____, Speed _____ ns, Total _____ K

TAG RAM: Brand _____, Speed _____ ns

BIOS DATE CODE: _____

SYSTEM SPEED RUNNING _____ MHz

VIDEO CARD: Chip _____, RAM _____, VGA Mode _____
Bus _____ (ISA, VESA or PCI)

OTHER ADD-ON CARDS:

SOFTWARE

OPERATING SYSTEM _____ VERSION _____

SOFTWARE _____ PROGRAM _____

BIOS SETUP: DRAM Wait State _____ CACHE Wait State _____

If you change BIOS SETUP, please describe the changes:

<A> ERROR

- | | | |
|--|------------------------------------|-------------------------------------|
| <input type="checkbox"/> HANG UP
ERROR | <input type="checkbox"/> NO SCREEN | <input type="checkbox"/> FLOPPY R/W |
| <input type="checkbox"/> HARD DISK R/W ERROR
MEMORY ERROR | | <input type="checkbox"/> PARITY |
| <input type="checkbox"/> | | OTHER |
-

** ERROR MESSAGES ON YOUR SCREEN (PLEASE SHOW US THE WHOLE SENTENCE)**

<C> PROBLEM DESCRIPTION