User's Manual

486-VLS

Contents

TRADEMARKS ANNOUNCEMENT

* IBM PC/AT , AMI, INTEL/486, SIS, MS-DOS, OS/2, UNIX, XENIX, ...ARE THE REGISTERED TRADEMARKS OF THEIR RESPECTIVE ORGANIZATIONS

Unit 1

Overview

O verview .....

*T*alking about 486 VESA M/B, everybody thinks of SPEED. Yes, the feature of this new enhanced main board, SIS 486 VESA, is in its fast speed when compare with the other 486 VESA M/B.

*T*he concept of cache memory is some active portion of a low speed memory is stored in a duplicate high-speed cache memory. When memory request is generated, the request presents to the cache memory at first. If cache cann't respond, the request will present to main memory.

*T*he cache main board is designed to perform as a very efficient memory system. Meanwhile, the memory device is very low-cost at the current market. The detailed specifications of this SIS 486 VESA M/B are as follows :

*S*pecification :

* Using SIS-85C460 ATQ Single Chip.

* Using INTEL 80486SX or 80486DX, 80486DX2 CPU to Support 25 or 33/50 or 50/66 MHz, Landmark Speed (Ver. 0.99) is 130.5 or 167.8/234.9 or 234.9/293.6 MHz.

* 100% IBM PC/AT compatible.

* Write-BACK/Through direct mapping Cache with Cache sizes 64KB/128KB/256KB.

* Page mode DRAM controller supports 1MB/2MB/4MB/ 8MB/16MB/20MB/32MB DRAM with combination of 256KB/1MB/4MB SIMM Modules devices.

* AMI BIOS (Single BIOS, 512K-Bit ROM on board).

* Two 32-Bit VESA slot-2 slave or 2 master and seven 16-Bit expansion ISA slots.

* Support VESA CARD :
  VGA CARD : ET4000, S3, CIRRUS, OAK ....
  IDE CACHE CARD: DC-680, DC-680T ....
  SCSI CTRL CARD : ULTRASTOR, BUSLOGIC ...

* Optimized for OS/2, WINDOWS/386, UNIX, XENIX, NOVELL 386.... software environment.

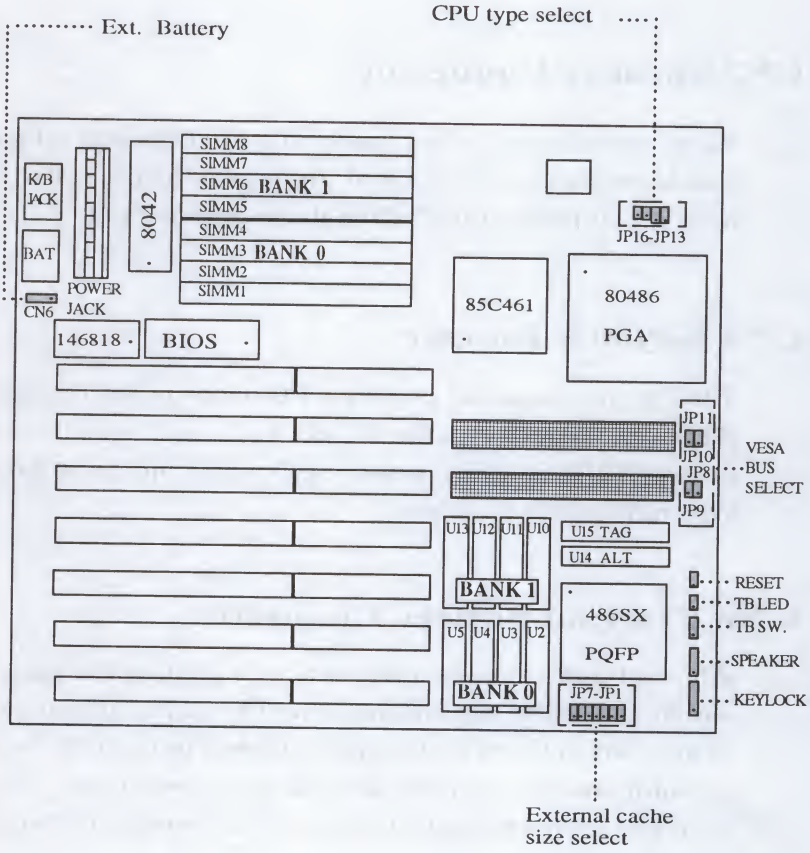
* On board rechargeable battery back-up for CMOS configuration and real time clock.

* 2/3 Baby AT size ; 4 Layers (22cm * 26cm).

Unit 2

Main Board Layout and Description

SIS 486 VL-BUS Main Board Layout :



Reset Jumper

*T*his is for the system's re-boot and is also connected to front panel of case.

CN3 Speaker Connector

*T*his connector is to be connected with a speaker which should be attached on back of front panel while installation. It will make sound while the system is boot.

CN1 Keylock Jumper

*T*his jumper is to be connected to front panel of case. Keylock connector controls the keyboard to be locked or not. It also controls power LED which indicates if the system is power on or not.

CN6 External Battery Connector

*T*he cache 486 main board uses a 3.6V rechargable battery which maintains the information of system configuration in the CMOS RAM and supplies the real time clock. It can be automatically recharged while the power is on. However, this connector can be connected to an external battery source .

CN2 Keyboard Jack

This jack is plugged by the keyboard connector while you use the keyboard.

CN7 Power Connector

The power supply is required to be connected in this two male six-pin power connector. Please take at least 200W power supply.

CN4 Turbo LED

This is to be connected to front panel of case. While it shines, the system is under turbo status, otherwise, it reverses.

CN5 Turbo Switch Jumper

This jumper decides whether the system runs at turbo or normal speed. If short, it is in turbo status. If open, it is in normal. This switch can be connected to front panel of case. After installation, you can just press the "Turbo button" on the case to choose turbo or normal speed.

JP13-JP16 for CPU Type Select Jumper

*T*hese jumpers select your CPU type for 80486-DX, 80486-SX or 80487-SX.

Jumper \ CPU Type	486-DX	486-SX	487-SX
JP13	1-2	open	2-3
JP14	1-2	2-3	1-2
JP15	short	open	short

JP16 for PGA/PQFP 486 CPU Select

Jumper \ CPU Type	PGA	PQFP
JP16	Short	Open

JP1-JP7 for Cache RAM size Jumper Setting

SIZE	JP1	JP2	JP3	JP4	JP5	JP6	JP7
64KB	1-2	1-2	1-2	1-2	2-3	-----	1-2
128KB	2-3	1-2	2-3	1-2	1-2	1-2	2-3
256KB	2-3	2-3	2-3	2-3	2-3	2-3	2-3

64KB DATA RAM using 8K8 * 8 pcs
TAG RAM using 8K8 * 1 pcs

128KB DATA RAM using 32K8 * 4 pcs
TAG RAM using 8K8 * 1 pcs

256KB DATA RAM using 32K8 * 8 pcs
TAG RAM using 32K8 * 1 pcs

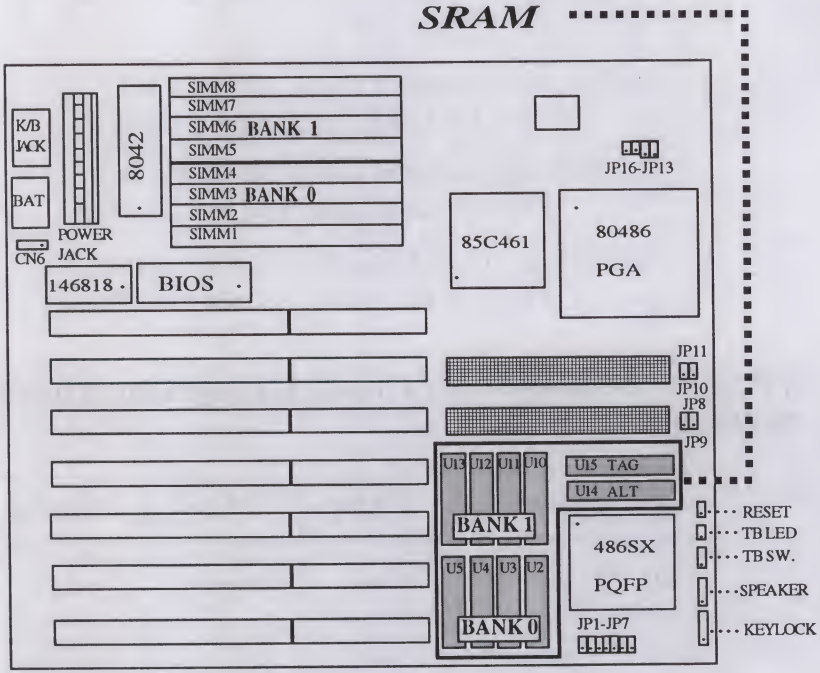
JP20-JP22 for (MX) Clock Generator Jumper Setting

SIZE	25MHz	33MHz	40MHz	50MHz
JP20	short	short	short	open
JP21	open	short	short	open
JP22	open	short	open	short

CACHE RAM Installed Guide :

While using 64KB or 256KB please insert the SRAM in sockets U2-U5 & U10-U13 and TAG RAM in socket U15.

While using 128KB, please insert the SRAM in sockets U2-U5 and TAG RAM in socket U15.



JP8-JP11 for VESA BUS Setup

	SLOT 1		SLOT 2	
	JP10	JP11	JP 8	JP 9
<=33 MHz	1-2	----	1-2	----
> 33 MHz	2-3	----	2-3	----
0 WAIT WRITE	----	1-2	----	1-2
1 WAIT WRITE	----	2-3	----	2-3

CACHE RAM Speed type :

CPU Speed	TAG Speed	Cache Speed
33 MHz	20 ns	20 ns
50 MHz	20 ns	20 ns

SLOTS

The expansion slots are :

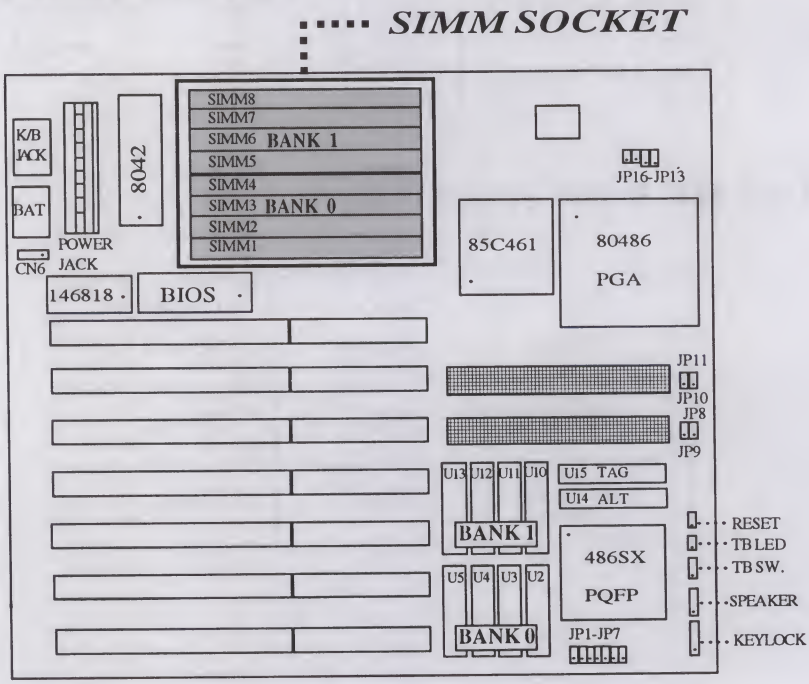
32 bit VESA slot * 2 pcs

16 bit ISA slot * 7 pcs

Memory Organization

Memory area includes 2 BANKS (BANK0-BANK1). Memory sizes are expandable from 1 MB to 32MB (MAX.) on board. Let's discuss it one by one :

On Board DRAM :



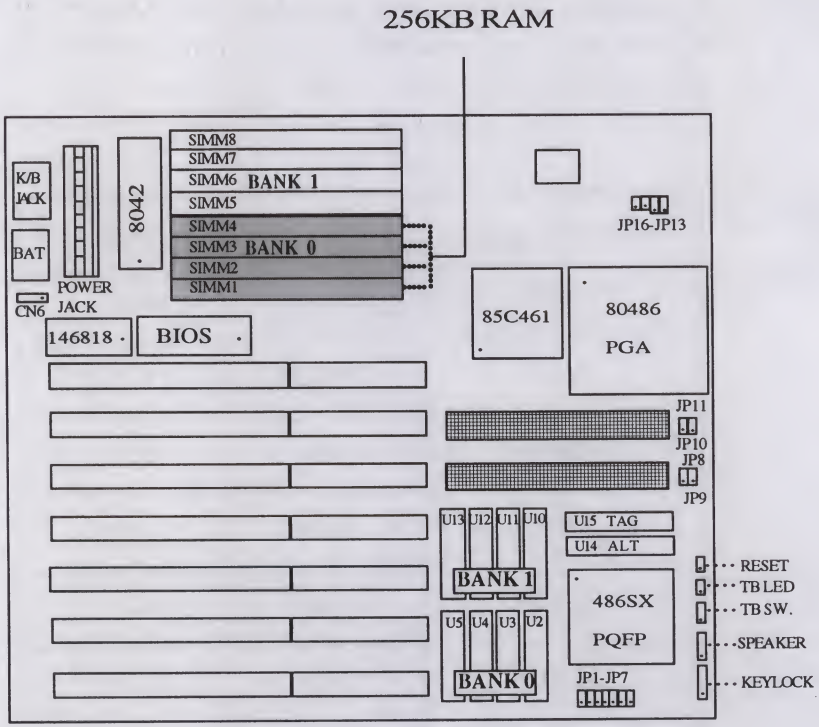
BANK 0 : SIMM 1, 2, 3, 4

BANK 1 : SIMM 5, 6, 7, 8

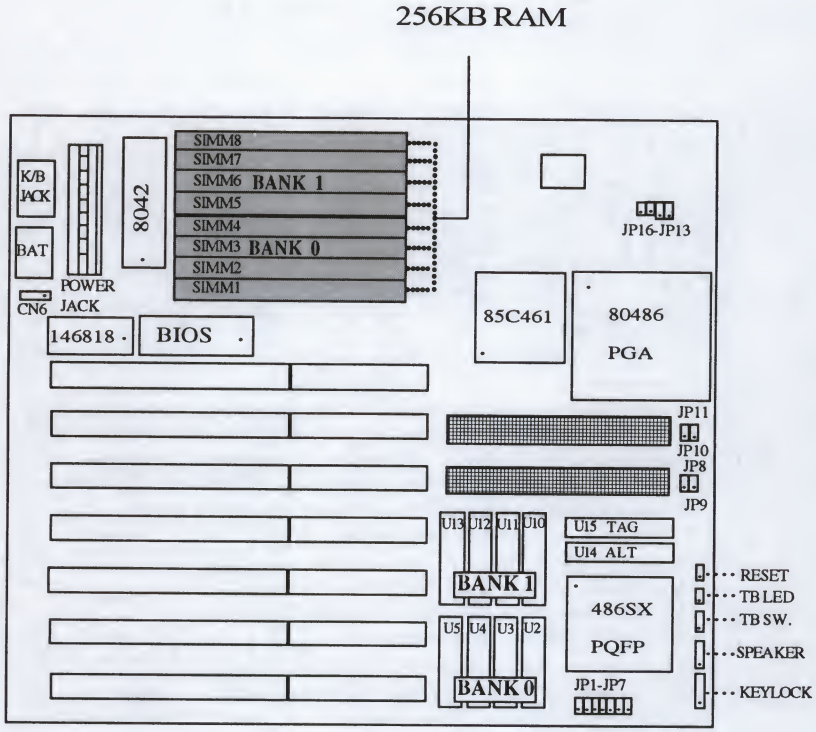
Supporting 256KB, 1MB and 4MB SIM MODULE. So, memory are available with multiple options of 1MB, 2MB, 4MB, 8MB, 16MB,20MB or 32MB.

Memory Size	BANK 0	BANK 1
1MB	256KB	0KB
2MB	256KB	256KB
4MB	1MB	0KB
8MB	1MB	1MB
16MB	4MB	0KB
20MB	1MB	4MB
32MB	4MB	4MB

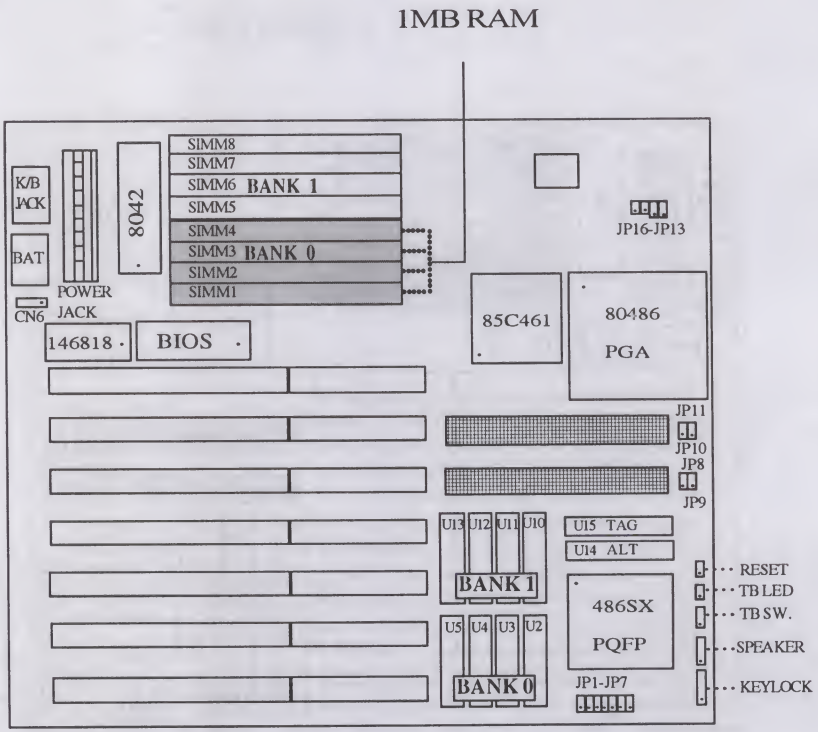
1MB - Bank 0 with 256KB SIMM RAM MODULE * 4



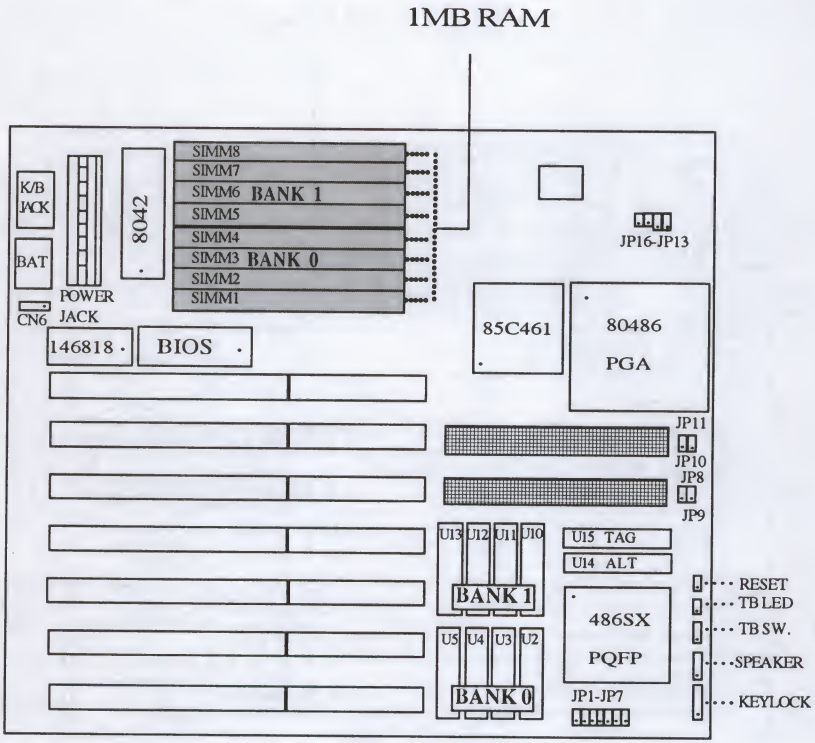
2MB - Bank 0-1 with 256KB SIMM RAM MODULE * 8



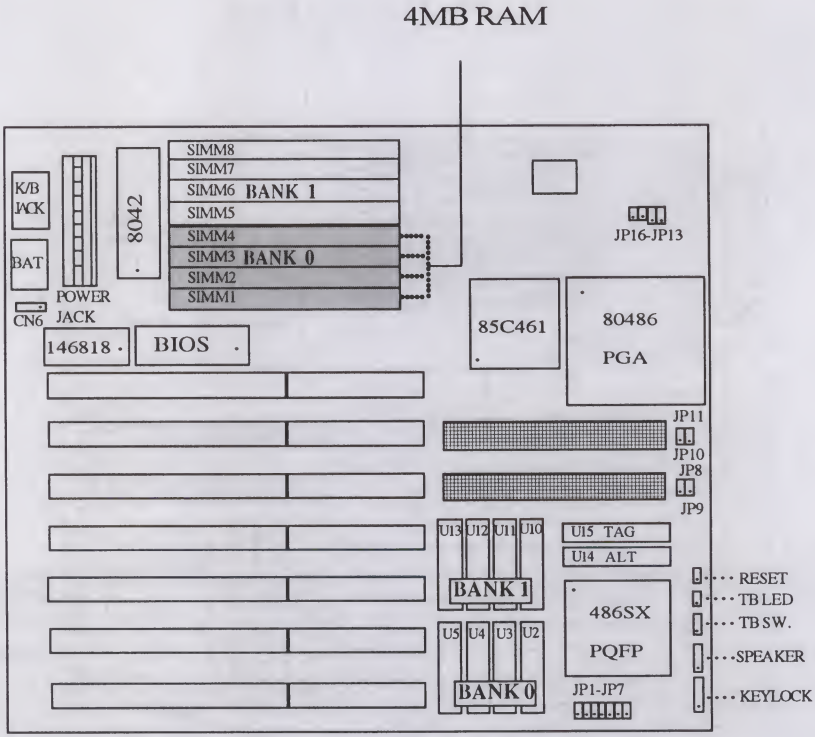
4MB - Bank 0 with 1MB SIMM RAM MODULE * 4



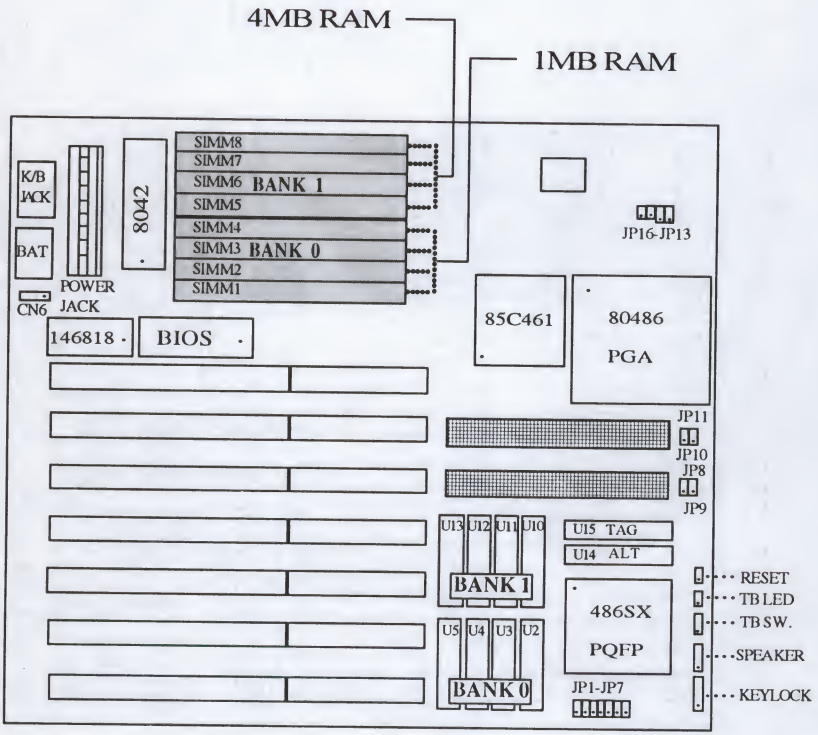
8MB - Bank 0-1 with 1MB SIMM RAM MODULE * 8



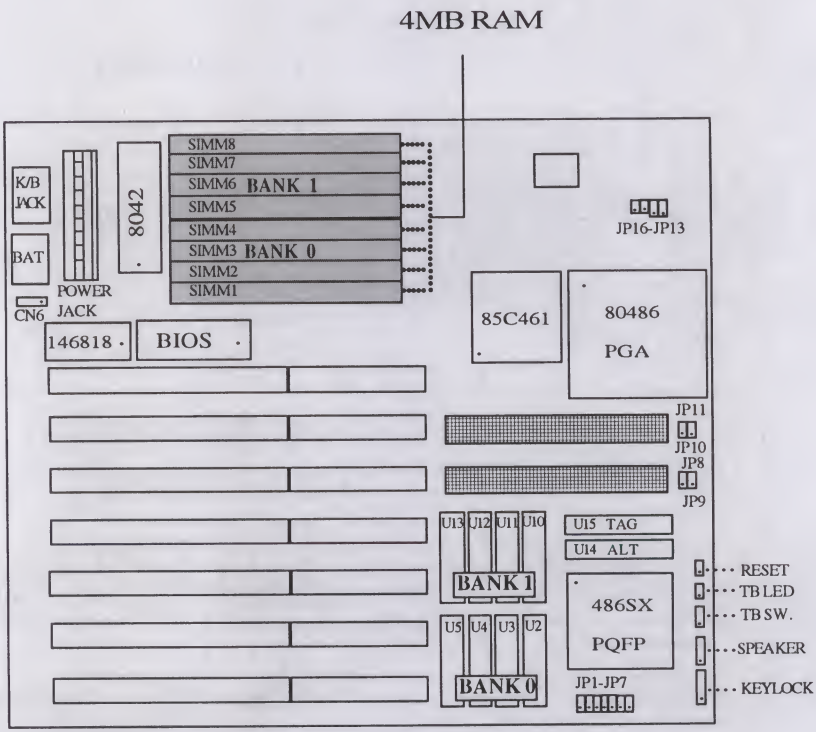
16MB - Bank 0 with 4MB SIMM RAM MODULE * 4



20MB - Bank 0 with 1MB SIMM RAM MODULE * 4
Bank 1 with 4MB SIMM RAM MODULE * 4



32MB - Bank 0-1 with 4MB SIMM RAM MODULE * 8



Unit 3

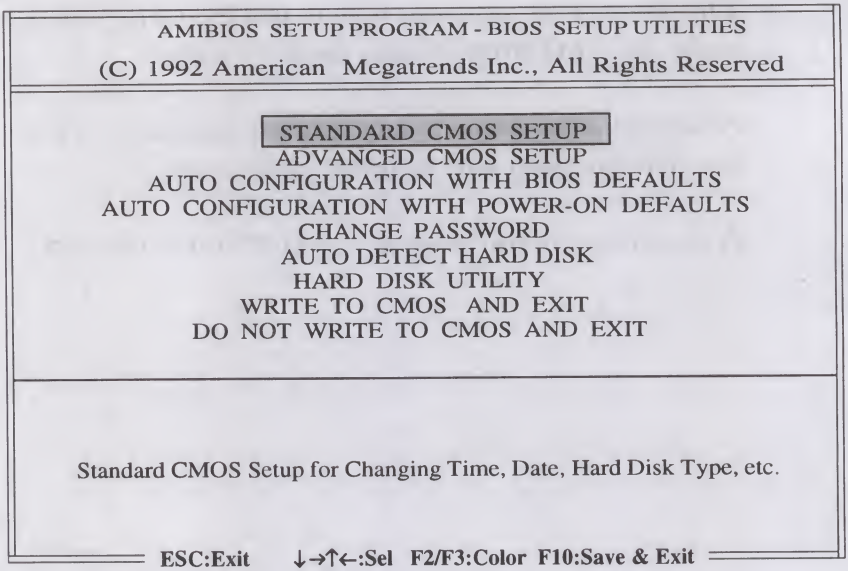
BIOS Setup

BIOS Setup .....

This chapter advises user how to use the CHIP SETUP under the AMI BIOS. Please read it clearly.

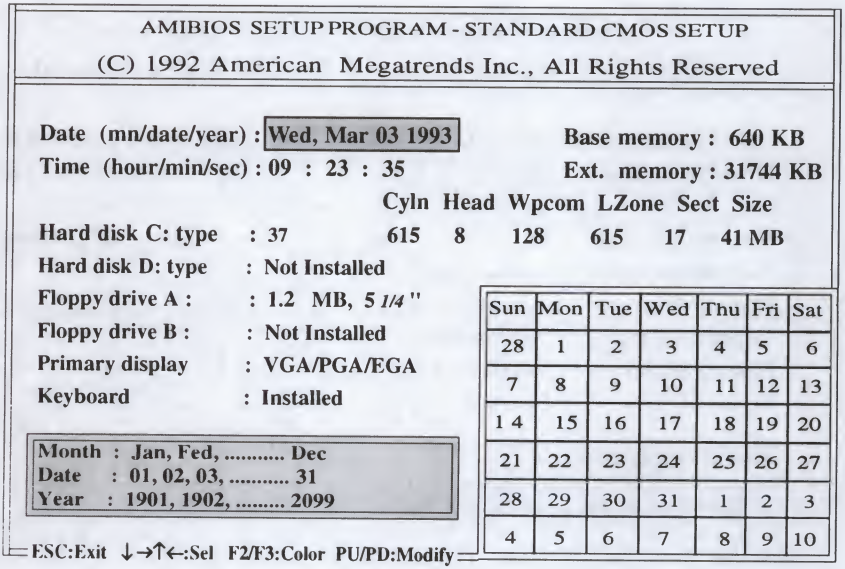
After power on and memory test, please press " DEL " key. The program will go to the next screen.

Hit <DEL>, If you want to run SETUP/EXTD-SET.



NOTE :

Standard CMOS Setup for Changing Time, Date, Hard-disk Type, etc.



NOTE :

In the right bottom part of the screen, the calendar will alter the current year/month/date. You can use " ↑" " ↓" " → " "← " to select the item you want, and use PgUp & PgDn to change the value.

AMI BIOS SETUP PROGRAM - STANDARD CMOS SETUP

(C) 1992 American Megatrends Inc., All Rights Reserved

Date (mn/date/year) : Wed, Mar 03 1993 **Base memory : 640 KB**

Time (hour/min/sec) : 09 : 23 : 35 **Ext. memory : 31744 KB**

		Cyln	Head	Wpcom	LZone	Sect	Size
Hard disk C: type	**: 37**	615	8	128	615	17	41 MB

Hard disk D: type : Not Installed

Floppy drive A : : 1.2 MB, 5 1/4 "

Floppy drive B : : Not Installed

Primary display : VGA/PGA/EGA

Keyboard : Installed

Time is 24 hour format:-
Hour:(00-23),Minute:(00-59),Second:(00-59)
(1:30 AM=01:30:00), (1:30 PM=13:30:00)

Sun	Mon	Tue	Wed	Thu	Fri	Sat
28	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	1	2	3
4	5	6	7	8	9	10

ESC:Exit ↓→↑←:Sel F2/F3:Color PU/PD: Modify

NOTE :

You can change the time according to the rule explanation in the left bottom part of the screen.

AMIBIOS SETUP PROGRAM - STANDARD CMOS SETUP

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Date (mn/date/year) : Wed, Mar 03 1993 **Base memory : 640 KB**

Time (hour/min/sec) : 09 : 23 : 35 **Ext. memory : 31744 KB**

		Cyln	Head	Wpcom	LZone	Sect	Size
Hard disk C: type	**: 37**	**615**	**8**	**128**	**615**	**17**	**41 MB**
Hard disk D: type	**: Not Installed**						

Floppy drive A : : 1.2 MB, 5 1/4 "

Floppy drive B : : Not Installed

Primary display : VGA/PGA/EGA

Keyboard : Installed

FIXED type = 01...46, USER defined type = 47, For type 47 Enter : Cyln,Head,WPcom,LZone, Sec, (WPcom is 0 for ALL, 65535 for NONE)

Sun	Mon	Tue	Wed	Thu	Fri	Sat
28	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	1	2	3
4	5	6	7	8	9	10

ESC:Exit ↓→↑←:Sel F2/F3:Color PU/PD: Modify

NOTE :

According to your equipment, select hard disk C or D.
The options are 1-47 types.

AMIBIOS SETUP PROGRAM - STANDARD CMOS SETUP

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Date (mn/date/year) : Wed, Mar 03 1993 **Base memory : 640 KB**

Time (hour/min/sec) : 09 : 23 : 35 **Ext. memory : 31744 KB**

		Cyln	Head	Wpcom	LZone	Sect	Size
Hard disk C: type	**: 37**	**615**	**8**	**128**	**615**	**17**	**41 MB**
Hard disk D: type	**: Not Installed**						
Floppy drive A :	**: 1.2 MB, 5 1/4 "**						
Floppy drive B :	**: Not Installed**						
Primary display	**: VGA/PGA/EGA**						
Keyboard	**: Installed**						

Options:-
360 KB 5 1/4", 1.2 MB 5 1/4 ",720 KB 3 1/2",
1.44 MB 3 1/2", 2.88 MB 3 1/2"not Installed

Sun	Mon	Tue	Wed	Thu	Fri	Sat
28	1	2	3	4	5	6
7	8	9	10	11	12	13
1 4	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	1	2	3
4	5	6	7	8	9	10

ESC:Exit ↓→↑←:Sel F2/F3:Color PU/PD:Modify

NOTE :

According to your equipment, set floppy drive A or B. The options are 360KB 51/4", 1.2MB 51/4", 720KB 31/2", 1.44MB 31/2", 2.88MB 31/2" and Not Installed.

AMIBIOS SETUP PROGRAM - STANDARD CMOS SETUP

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Date (mn/date/year) : Wed, Mar 03 1993 **Base memory : 640 KB**

Time (hour/min/sec) : 09 : 23 : 35 **Ext. memory : 31744 KB**

		Cyln	Head	Wpcom	LZone	Sect	Size
Hard disk C: type	**: 37**	615	8	128	615	17	41 MB

Hard disk D: type : Not Installed

Floppy drive A : : 1.2 MB, 5 1/4 "

Floppy drive B : : Not Installed

Primary display : VGA/PGA/EGA

Keyboard : Installed

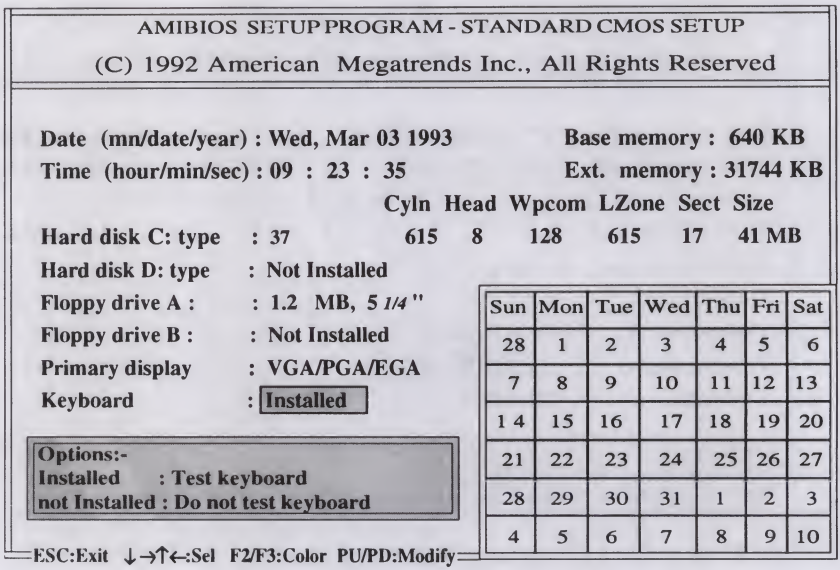
Options:-
Monochrome, Color 40x25,
VGA/PGA/EGA, Color 80x25, not installed

ESC:Exit ↓→↑←:Sel F2/F3:Color PU/PD:Modify

Sun	Mon	Tue	Wed	Thu	Fri	Sat
28	1	2	3	4	5	6
7	8	9	10	11	12	13
1 4	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	1	2	3
4	5	6	7	8	9	10

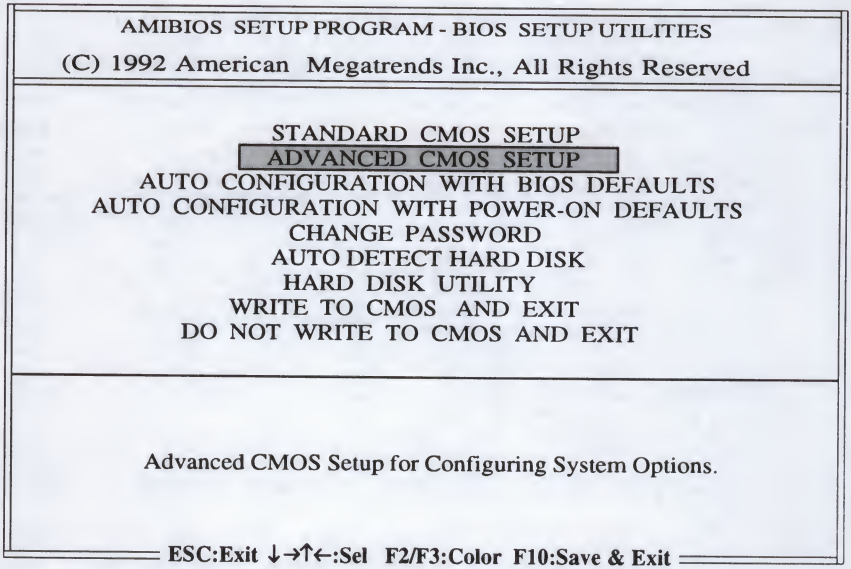
NOTE :

According to your display card, set primary display types. The options are Monochrome, Color 40 x 25, Color 80 x 25, VGA or EGA and Not Installed.



NOTE :

When keyboard is installed, ROM tests keyboard; otherwise, it dose not.



NOTE :

Advanced CMOS Setup for configuration System Options.

AMIBIOS SETUP PROGRAM - ADVANCED CMOS SETUP

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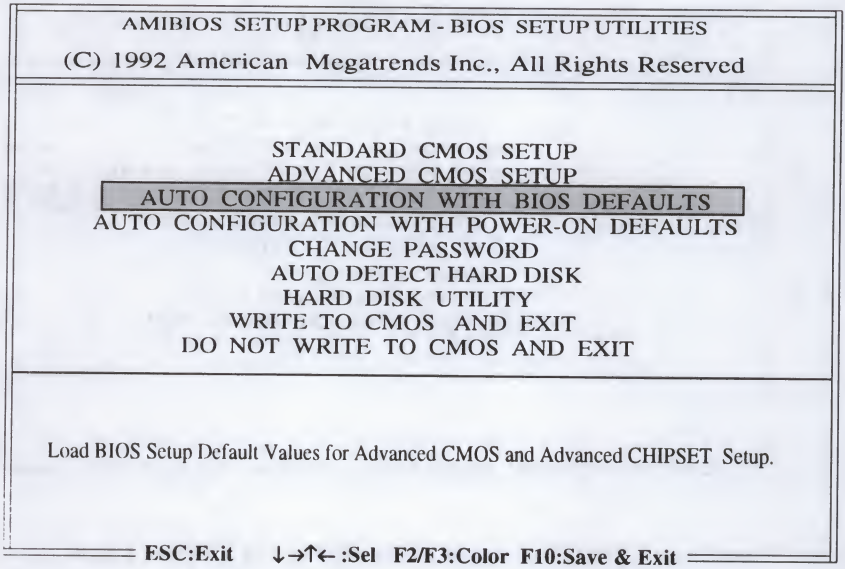
Above 1 MB Memory Test	: Disabled	BootSector Virus Protection	: Disabled
Memory Parity Error Check	: Enabled	AUTO Config Function	: Enabled
Hard Disk Type 47 RAM Area	: 0 : 300	DRAM Speed Option	: Fastest
Numeric Processor Test	: Enabled	DRAM Write CAS Pulse	: 2T
System Boot Up Sequence	: A:, C:	DRAM Write Cycle	: 1 W/S
External Cache Memory	: Enabled	DRAM Hidden Refresh	: Enabled
Internal Cache Memory	: Enabled	SCache Write Cycle Option	: 3T
Password Checking Option	: Setup	Cache Burst Read Cycle Option	: 1T
Video ROM Shadow C000,32K	: Enabled	Bus Clock Frequency Selecte	: 7.15 MHz
Adaptor ROM Shadow C800,32K	: Disabled	Vedio Cacheable Option	: Enable
Adaptor ROM Shadow D000,32K	: Disabled		
Adaptor ROM Shadow D800,32K	: Disabled		
Adaptor ROM Shadow E000,32K	: Disabled		
Adaptor ROM Shadow E800,32K	: Disabled		

ESC:Exit ↓→↑← :Sel (Ctrl)PU/PD:Modify F1:Help F2/F3:Color
F5:Old Values F6:BIOS Setup Defaults F7:Power-on Defaults

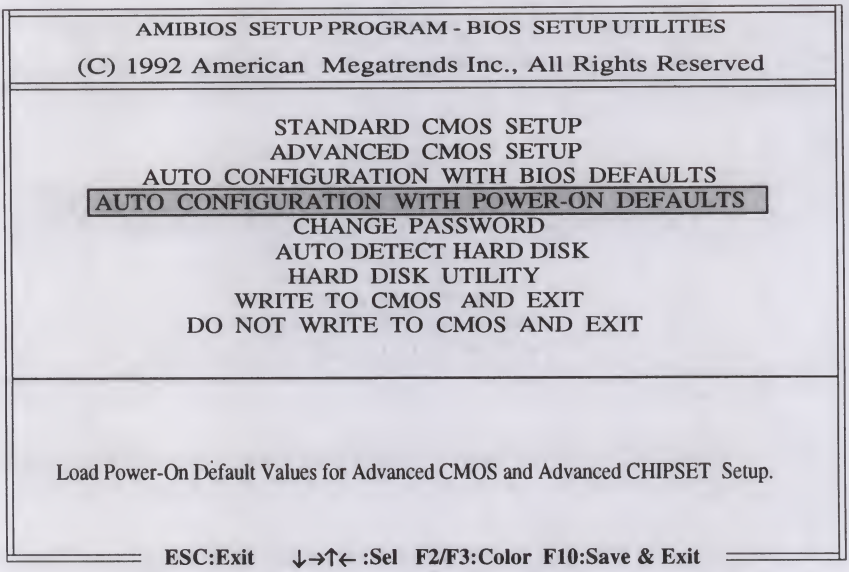
NOTE :

Above Values are Default.



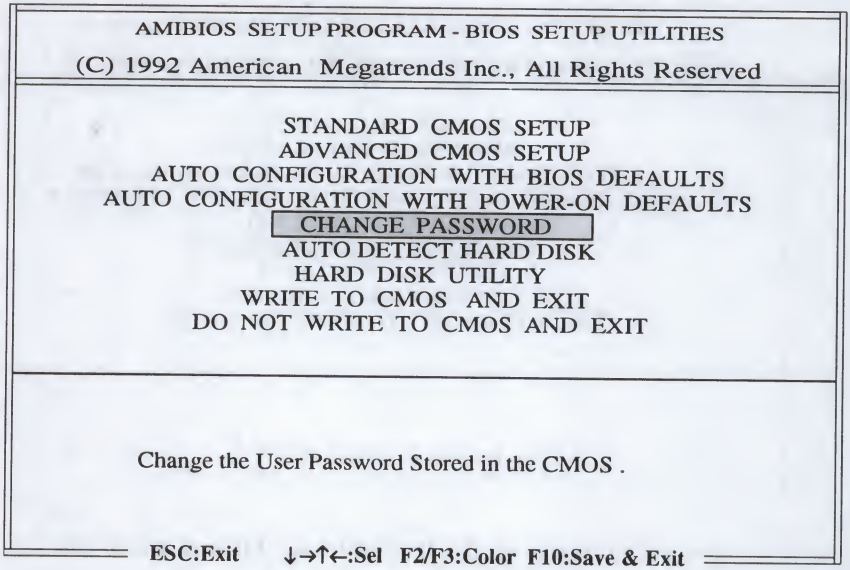
NOTE :

Load BIOS Setup Default Values for Advanced CMOS and Advanced CHIPSET Setup.



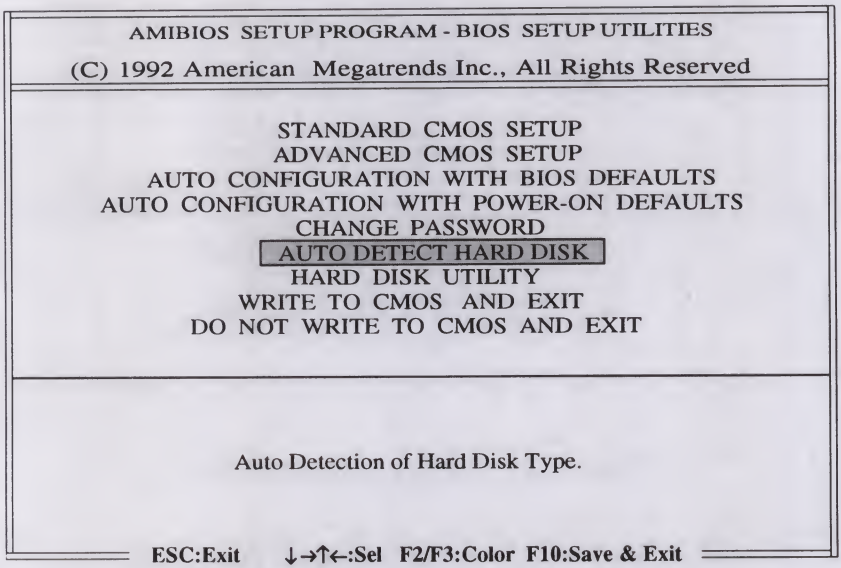
NOTE :

Load Power-On Default Values for Advanced CMOS and Advanced CHIPSET Setup.



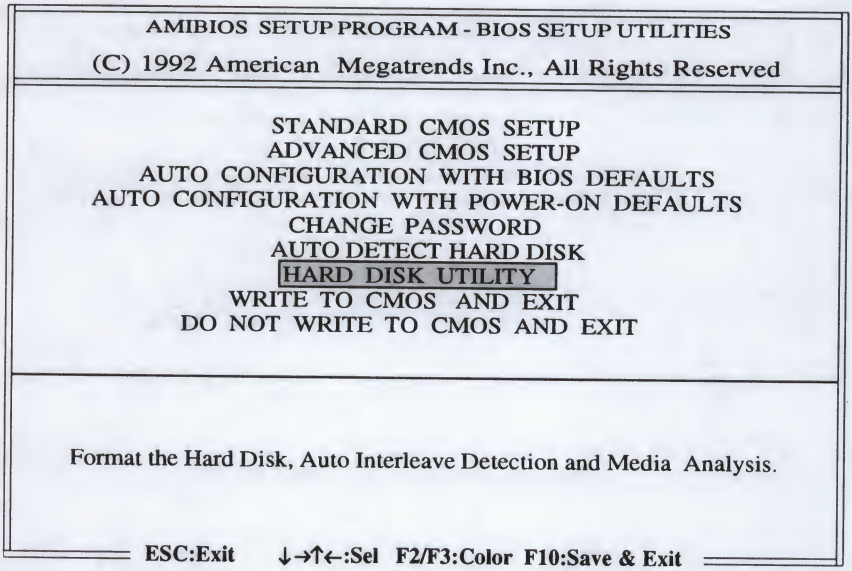
NOTE :

Change the User Password Stored in the CMOS.



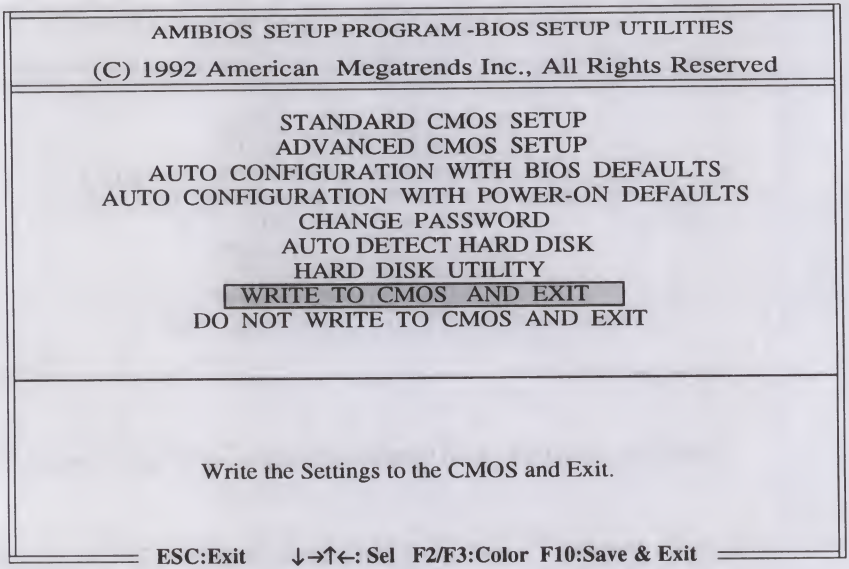
NOTE :

Auto Detection of Hard Disk Type.



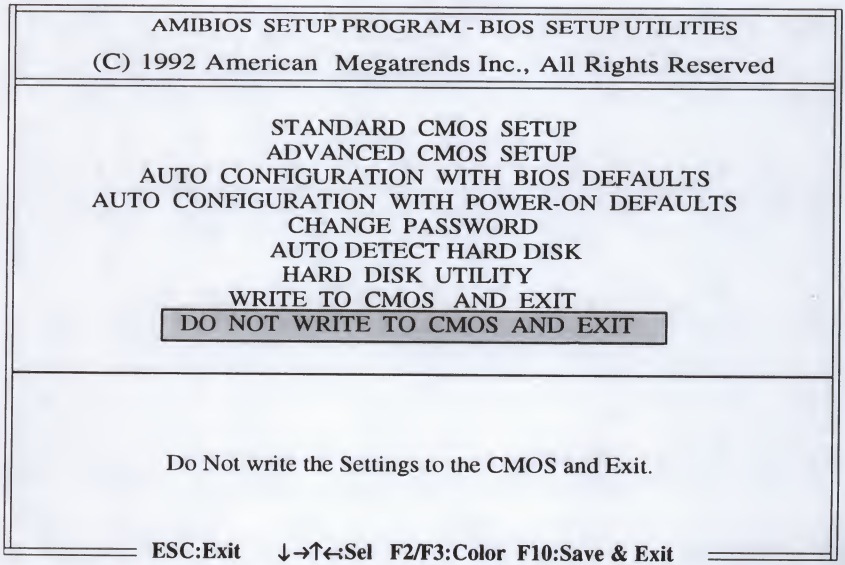
NOTE :

Format the Hard Disk, Auto Interleave Detection and Media Analysis.



NOTE :

Write the Settings to the CMOS and Exit.



NOTE :

Do Not write the Settings to the CMOS and Exit.

Unit 4

Other

Suggestion :

If you use the QEMM Ver. 5.x or Ver. 6.x for your system configuration, you must add a parameter " NOSH " to your CONFIG.SYS as following:

DEVICE=C:\QEMM5.x(QEMM6.x)\QEMM386.SYS_NOSH