

PENTIUM

5DHX

I/O Built-in

**PCI LOCAL BUS
SYSTEM BOARD**

Your User-friendly Guide !

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CHAPTER 1

SYSTEM BOARD OVERVIEW

Preface

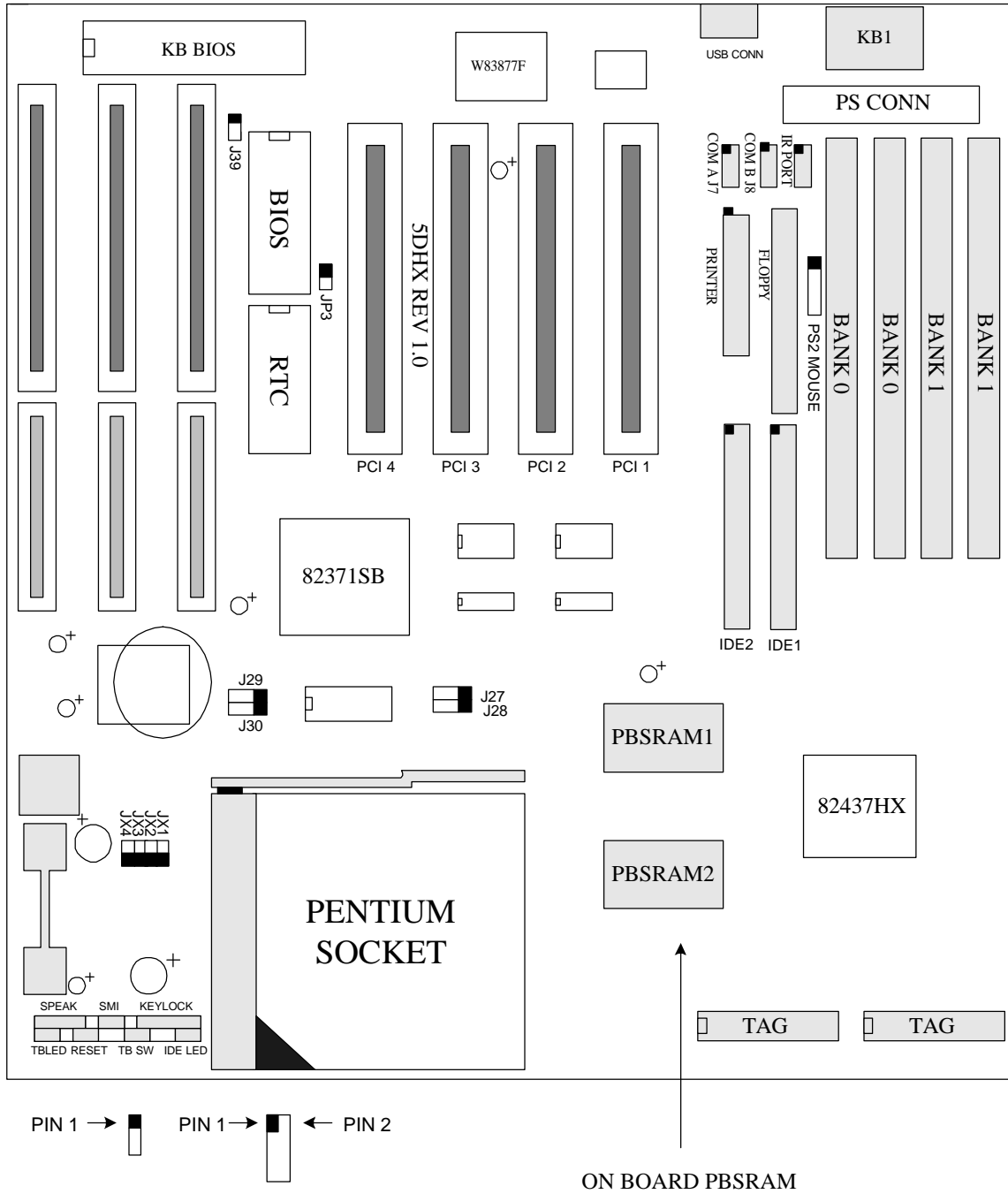
This user's manual explains how to use this system board and configure the board for your system.

The 5DHX system board designed for Intel™ PENTIUM™ or same class CPU use in personal computer. This system board built with high performance VLSI chipset. The system comes with either 256K or 512K external pipeline cache, which boost the system performance without extra cost. The PCI local bus in the system board is designed to work with high performance peripheral devices. The system BIOS can support Plug & Play features which is based on Intel Plug & Play specification. The built in enhanced multi I/O and standard SIMM connector with EDO mode DRAM support, just add a display card will give you total solution for your system. The full specification of the board is listed as follows:

System Board Specifications:

- IBM PC/AT Compatible.
- Intel 430HX high performance BGA chipset
- Support 75-200Mhz PENTIUM, P55C dual voltage PENTINUM, CYRIX 6x86, AMD 5k86.
- Supports up to 512K cache on board.
- Plug & Play flash BIOS architecture, can be upgradable by user.
- On board dual channel IDE interface, ANSI ATA Rev.3.X, 4.0 compatible.
- Dual port Universal Serial Bus connector(USB) connector.
- Enhanced multi-I/O on board-Floppy interface, 2 x 16550 COM port, Enhanced parallel port and IrDA infra red port.
- Supports Standard / EDO mode DRAM.
- Supports up to 512MB DRAM on board (4 x 72pin SIMM), totally 2 banks.
- 4 x PCI 32 bit bus slots, 3 x ISA 16 bit bus slots.
- Mini AT board size 220mm x 250mm.

Layout Of System Board



Jumper Settings

- **CPU TYPE SELECT**
J27,J28,J29,J30

CPU TYPE	J27	J28	J29	J30	CORE FREQUENCY Mhz
PENTIUM 75	CLOSE	CLOSE	1-2	1-2	50
PENTIUM 90	OPEN	CLOSE	1-2	1-2	60
PENTIUM 100	CLOSE	OPEN	1-2	1-2	66
PENTIUM 120	OPEN	CLOSE	1-2	2-3	60
PENTIUM 133	CLOSE	OPEN	1-2	2-3	66
PENTIUM 150	OPEN	CLOSE	2-3	2-3	60
PENTIUM 166	CLOSE	OPEN	2-3	2-3	66
PENTIUM 180	OPEN	CLOSE	2-3	1-2	60
PENTIUM 200	CLOSE	OPEN	2-3	1-2	66
PENTIUM 166 MMX*	CLOSE	OPEN	2-3	2-3	66
PENTIUM 200 MMX*	CLOSE	OPEN	2-3	1-2	66
CYRIX / IBM PR120	CLOSE	CLOSE	OPEN	2-3	50
CYRIX / IBM PR133	OPEN	OPEN	OPEN	2-3	55
CYRIX / IBM PR150	OPEN	CLOSE	OPEN	2-3	60
CYRIX / IBM PR166	CLOSE	OPEN	OPEN	2-3	66
AMD-K5-PR75	CLOSE	CLOSE	1-2	1-2	50
AMD-K5-PR90	OPEN	CLOSE	1-2	1-2	60
AMD-K5-PR100	CLOSE	OPEN	1-2	1-2	66
AMD-K5-PR120	OPEN	CLOSE	1-2	1-2	60
AMD-K5-PR133	CLOSE	OPEN	1-2	1-2	66
AMD-K5-PR150	OPEN	CLOSE	1-2	2-3	60
AMD-K5-PR-166	CLOSE	OPEN	2-3	2-3	66

- **CMOS DISCHARGE**
JP3

SETTING	JP3
NORMAL	OPEN
DISCHARGE	CLOSE

- **Flash ROM write protection**
JP39

SETTING	JP39
NORMAL	CLOSE
PROTECTED	OPEN

- **P55C(dual voltage) Pentium Support**
JX1-4

CORE VOLTAGE	JX1-4
3.3 V	CLOSE
2.9V	OPEN

*DEFAULT SETTING IS SHADED

Connector

- **Connector Descriptions**

Description	Connectors
Multi I/O Interface	
Floppy Drive Connector	FLOPPY
IDE Drive Connector 1&2	IDE1, IDE2
Parallel Port	PRINTER
Serial Port 1&2	COM A , COM B
Function Connector	
IDE LED	IDE LED
IR Connector	IR PORT
Keyboard	KB1
PS2 Mouse Port	PS2 MOUSE
Power Connector	PS CONN
Power LED & Keylock	KEYLOCK
Power Saving Control	SMI
Reset Switch	RESET
Speaker	SPEAKER

- **Infra Red Communication Link Connector (IR PORT)**

PIN	SIGNAL
1	VCC
2	NC
3	SIGNAL RECEIVE
4	GND
5	SIGNAL TRANSMIT
6	VCC
7	RESERVE
8	RESERVE
9	GND
10	NC

- **Keyboard Connector (KB1)**

PIN	SIGNAL
1	CLOCK
2	DATA
3	SPARE
4	GROUND
5	+5V

- **PS2 Mouse Connector (PS2 MOUSE)**

PIN	SIGNAL
1	CLOCK
2	DATA
3	GND
4	NC
5	VCC

- **Power Connector (PS CONN)**

PIN	SIGNAL
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

- **Power LED & Keylock Connector (KEYLOCK)**

PIN	SIGNAL
1	LED POWER
2	NO CONNECTION
3	GROUND
4	KEYBOARD INHIBIT
5	GROUND

- **Power Saving Control (SMI)**

PIN	SIGNAL
1	CONTROL
2	GROUND

- **Reset Switch Connector (RESET)**

RESET	FUNCTION
OPEN	NORMAL OPERATION
CLOSE	SYSTEM RESET

- **Speaker Connector : (SPEAKER)**

PIN	SIGNAL
1	SPEAKER
2	KEY
3	GROUND
4	+5V

SIMM RAM Support

The system board supports flexible SIMM configuration:

- Flexible memory bank location and size.
- Accepts 4 pieces 72-pin SIMM sockets, SIMM 1/ 2/ 3/ 4, total 2 banks.
- Auto detect standard SIMM or EDO SIMM installed on board.
- Support SIMM type: 1MB, 2MB, 4MB, 16MB and 32MB.

The following DRAM table is for your reference:

Total Memory	SIMM1	SIMM2	SIMM3	SIMM4
	BANK 0		BANK1	
8MB	1MB*32	1MB*32	X	X
16MB	2MB*32	2MB*32	X	X
16MB	1MB*32	1MB*32	1MB*32	1MB*32
32MB	4MB*32	4MB*32	X	X
64MB	4MB*32	4MB*32	4MB*32	4MB*32
128MB	8MB*32	8MB*32	8MB*32	8MB*32
512MB	32MB*32	32MB*32	32MB*32	32MB*32

* Use 36 bit SIMM for parity or ECC support.

CHAPTER 2

AWARD BIOS SETUP

Award's BIOS has a built-in Setup program that allows user to modify the basic system configuration. This type of information is stored in battery-backed RAM so that it retains the setup information when the power is turned off. This chapter explains the setup utility for the Award BIOS.

Entering Setup

To enter setup menu, power on the computer and press immediately. The other way to enter Setup is to power on the computer, when the below message appears at the bottom of the screen during the POST (Power On Self Test), press key or simultaneously press <Ctrl>, <Alt> and <Esc> keys.

TO ENTER SETUP BEFORE BOOT UP PRESS CTRL-ALT-DEL KEY

If the message disappears before you respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the "RESET" button on the system case. You may also restart your system by simultaneously pressing <Ctrl>, <Alt> and <Delete> keys. If you do not press the keys at the correct time and the system does not boot up, an error message will be displayed and you will again be asked to,

PRESS F1 TO CONTINUE, CTRL-ALT-DEL TO ENTER SETUP

Control Keys

Up arrow	Move to previous item
Down arrow	Move to next item
Left arrow	Move to the item in the left hand
Right arrow	Move to the item in the right hand
Esc key	Main Menu -- Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu -- Exit current page and return to Main Menu
PgUp key	Increase the numeric value or make changes
PgDn key	Decrease the numeric value or make changes
+ key	Increase the numeric value or make changes
- key	Decrease the numeric value or make changes
F1 key	General help, only for Status Page Setup Menu and Option Page Setup Menu
(Shift)F2 key	Change color from total 16 colors. F2 to select color forward, (Shift) F2 to select color backward
F3 key	Calendar, only for Status Page Setup Menu
F4 key	Reserved
F5 key	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
F6 key	Load the default CMOS value from BIOS default table, only for Option Page Setup Menu
F7 key	Load the setup default, only for Option Page Setup Menu
F8 key	Reserved
F9 key	Reserved
F10 key	Save all the CMOS changes, only for Main Menu

PnP / PCI configuration

This setup page includes all the items of PnP, PCI IRQ and ISA IRQ settings. You can allocate these resources for your system use in this menu.

Integrated Peripheral setup

This setup page is used to configure the On-board multi I/O and IDE interface.

Load BIOS defaults

This function is for user to load the BIOS default settings. The BIOS defaults indicates the most appropriate value of the system parameter which the system would be in minimum performance.

Load SETUP defaults

This function is for user to load the SETUP default settings. SETUP defaults indicates the values required by the system for the maximum performance.

Supervisor / User Password

This function is for Change, set, or disable the supervisor or user password. The supervisor password allows you to limit the user access to the system and Setup.

IDE HDD auto detection

Automatically configure hard disk parameters.

HDD Low Level Format

This Automatically configure hard disk parameters.

Save & exit setup

Save CMOS value changes to CMOS and exit setup.

Exit without save

Abandon all CMOS value changes and exit setup.

There are the option of Type "AUTO" and Mode "AUTO" to auto detect the hard disk type and the hard disk mode (Normal, LBA and Large). If a hard disk has not been installed select NONE and press <Enter>.

Note: Mode Setting For Hard Disk Larger than 528MB

The Mode settings are for IDE hard disks only. There are three entries you can select from in the mode field, "Normal", "Large" and "LBA".

Set Mode to the Normal settings for IDE hard disk drives smaller than 528MB. Use the LBA setting for drives over 528MB that use Logical Block Addressing mode to allow larger IDE hard disks.

Drive A / Drive B

This category identifies the types of floppy disk drive A or drive B that have been installed in the computer.

Video

This category selects the type of adapter used for the primary system monitor that must match your video display card and monitor. Although secondary monitors are supported, you do not have to select the type in Setup.

Halt On

This category determines whether the computer will stop if an error is detected during power up. There are different types of error can be config in this category.

Total Memory

This category is display-only which is determined by POST (Power On Self Test) of the BIOS.

Base Memory

The POST of the BIOS will determine the amount of base (or conventional) memory installed in the system. The value of the base memory is typically 640K for systems with 640K or more memory installed on the motherboard.

Extended Memory

The BIOS determines how much extended memory is present during the POST. This is the amount of memory located above 1MB in the CPU's memory address map.

Other Memory

This refers to the memory located in the 640K to 1024K address space. This is memory that can be used for different applications. DOS uses this area to load device drivers to keep as much base memory free for application programs. Most applicause for this area is Shadow RAM.

External Cache

This category enables or disables the external cache to speed up memory access. The default value is Enabled.

Quick Power On Self Test

This category speeds up Power On Self Test (POST) after you power on the computer. If it is set to Enable, BIOS will shorten or skip some check items during POST. The default value is disabled.

Boot Sequence

This category determines which drive computer searches first for the disk operating system (i.e., DOS). Default value is A,C.

Swap Floppy Drive

This feature allows you to enable the system swap floppy function. When this function enables, the system will assign the Drive A as Drive B, and vice versa.

Boot Up Floppy Seek

If enabled, the BIOS searches for floppy disk drive to determine if it is 40 or 80 tracks. If disabled, BIOS will not search for the type of floppy disk drive by track number. Note that there will be no warning message if the drive installed is 360K.

Boot Up NumLock Status

It determine the Num-Lock is turned on/off Num Lock. when the system is powered on so that the end user can use the arrow keys on both the numeric keypad and the keyboard. The default value is On.

Boot Up System Speed

It selects the default system speed - the speed that the system will run at immediately after power up. The default value is High.

Gate A20 Option

The A20 signal option specify A20 controlled by keyboard controller or chipset hardware. If *Fast* is selected, the A20 signal is controlled by chipset specific method

Typematic Rate Setting

Typematic Rate sets the rate at which characters on the screen at which characters on the screen repeat. The default setting is Disabled.

Typematic Rate (Chars/Sec)

Typematic rate sets the rate at which characters on the screen repeat when a key is pressed and held down. You can select 6-30 characters per second. The default setting is 6.

Typematic Delay (Msec)

When holding down a key, the time between the first and second character display. you specified numbers of times of character repeat on the screen. The default setting is 250.

Security Option

This category allows you to limit access to the system and Setup or just to Setup. When you select system, the system will not boot and access to Setup will be denied if the correct password is not entered at the prompt. If you select Setup, the system will boot but access to Setup will be denied if the correct password is not entered at the prompt. The default setting is Setup.

PCI/VGA Palette Snoop

This option controls the system to access the PCI VGA card palette register. In general, this option is disabled. However, you may need to enable this option for some VGA cards which have incorrect color displayed on some software application.

OS Select For DRAM > 64MB

Some the OS/2 application access the memory in different mode. Enable this option to allow the system use another mode to access the main memory for OS/2 applications.

VIDEO BIOS Shadow

The system BIOS is automatically shadowed .

The default setting for the “Video BIOS Shadow” is “Enabled”. It determines whether video BIOS will be copied to RAM. However, it is optional from chipset design. Video Shadow will increase the video speed.

C8000 - CFFFF Shadow/E8000 - EFFFF Shadow

These categories determine whether optional ROM will be copied to RAM by 16K byte. You can enable the optional shadow or you can disable it. The default setting is disabled.

Configuration enabled and you should not change the setting unless you know what are the functions of the item.

PM Control by APM

This feature is automatically set to “Yes”, the system BIOS will wait for APM prompt before it enters the GREEN mode.

NOTE : If APM is installed, & if there is a task running, event the timer is time out, the APM will not prompt the BIOS to put the system into any power saving mode!

Video Off Method

There are three options you can choose to turn off the VGA display.

- Blank Screen - The system will blank the screen only.
 - DPMS - This function is enabled for only the VGA card supporting DPM.
 - V/H SYNC + Blank - Choose this mode if your system use the monitor with power management feature. In addition to the blank screen, the system will turn off the horizontal and vertical sync signal. Most monitor will turn off itself if these signal are inactive.
-

Modem Use IRQ

If you installed the MODEM on your system, you can use this option to specify the MODEM use which IRQ. Normally, if you install the external modem on COM1 will use IRQ4 and COM2 will use IRQ3.

Doze Mode/Standby Mode/ Suspend Mode

These option specify the continuous idle time before the system enter the power saving mode. Normally, Doze and Standby mode puts the system into low speed clock and suspend mode puts the system clock stopped.

HDD Power Down

This option defines the continuous HDD idle time before the HDD entering power saving mode (motor off).

Wake up & Resume Events

The menu lists the SMI events by which the system wakes up from SUSPEND modes. The settings for the following SMI events can **On** or **OFF**. When an activity is set to off, the system will enter power saving modes even this activity is still occurring.

- Keyboard Activity
 - Harddisk Activity
 - IRQ 3 (Com 2) Activity
 - IRQ 4 (Com 1) Activity
 - IRQ 5 (Lpt 2) Activity
 - IRQ 7 (Lpt 1) Activity
 - IRQ 8 (RTC Alarm) Activity
 - IRQ 9 Activity
 - IRQ 10 Activity
 - IRQ 11 Activity
 - IRQ 12 (PS/2 Mouse) Activity
 - IRQ 15 (Secondary Harddisk channel) Activity
-

PCI IRQ Activated By

This option is hardware related setting and it tell the system the IRQ signals level or edge trigger. You can select either level or edge in this option. Most PCI IRQ function activated by level. If your PCI card is not function on your board, you can try to select edge option. Please consult your hardware supplier for information.

PCI IDE IRQ Map To

Primary IDE INT:

Secondary IDE INT:

This option indicates the presence and the information of an offboard PCI IDE device. The first option indicates the slot number of PCI IDE and the other options indicate how IRQ14 and IRQ15 are routed to the device. If an IDE IRQ MAP To is set to PCI-AUTO, this means that the system will scan for PCI IDE devices & determine the location of the PCI IDE device. If this option is set to PCI-SLOT, this indicates that the offboard PCI IDE device is present and the system will route the IRQ to that SLOT. If an IDE IRQ MAP is set to ISA, the system does not need to route the IRQ because a paddle card is installed and the IRQ is received from an ISA slot. Otherwise, the IRQ can be routed correctly according to the specification of the INT# value.

IDE HDD Block Mode

If IDE HDD Block Mode Enabled, the BIOS will detect the block size of the HDD and send block command automatically. Select Disable if your harddisk not support the Block mode transfer.

PCI Slot IDE 2nd Channel

This option allows you disable the second channel IDE interface if you are not using it or you are using another peripheral as second channel IDE interface.

On-Chip Primary/Secondary PCI IDE

This option allows you disable the IDE interface if you are not using it or you are using another peripheral as IDE interface.

IDE PIO Mode

This option sets the PIO mode for all drives connected to the onboard PCI IDE. If this option is set to AUTO, the PIO mode will be set according to the value the drive reports with the auto detect harddisk function. The user may decrease the PIO mode by modifying this option

Onboard FDD Controller

The on-board floppy disk controller can be enabled or disabled. You can select enabled or disabled in this option.

Onboard serial port 1(2)

You can config the on-board serial port as COM1-COM4 or select “none” to disable the serial port.

Onboard parallel port

The on-board parallel port configed as LPT1 (378), LPT2 (278) or select “none” to disable the parallel port.

Onboard parallel port mode

You can select ESP (Standard mode), EPP(Enhanced mode) and ECP(Extended mode) for parallel port mode in this menu.

ECP mode use DMA

This option specifies which DMA channel will be used when the parallel port is set to ECP mode.

Parallel port EPP type

In EPP mode, there are two different versions-Ver. 1.7 or Ver.1.9. When you connect a device to the parallel port which using EPP mode, you may need to choice

correct EPP version before you can access that device. Please consult the device menu to identify which version of EPP mode it support.

Load BIOS Defaults

This features stay in the default system values before the user has changed any CMOS values. If CMOS setting is lost, the BIOS defaults will automatically be loaded.

Load Setup Defaults

This features load the default setting for normal use.

Password Setting

When you select the supervisor or user password function, the following message will appear on the screen to assist you in creating a password.

ENTER PASSWORD:

Type the password, up to eight characters, and press <Enter>. The password typed now will clear any previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not to enter a password.

To disable password, just press <Enter> when you are prompted to enter password. A message will confirm the password being disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

PASSWORD DISABLED.

If you select System at Security Option of BIOS Features Setup Menu, you will be prompted for the password every time the system is rebooted or any time you try to enter Setup. If you select Setup at Security Option of BIOS Features Setup Menu, you will be prompted only when you try to enter Setup.

IDE HDD Auto Detection

You can use this utility to detect the IDE hard disk parameters. It can automatically detect up to four hard disk.

Save And Exit Setup

Select this option when you finished setup the CMOS and it will save the change you made and reboot the system after you press "YES".

Exit Without Saving

If you decided not to save any change you had made, you can select this option to exit the CMOS setup and all the change you made will be ignored.