4 Built-in BIOS Setup Program

SETUP Program

Use the BIOS for TR5510 AIO to record changes in your hardware and to control its special features. The setup program uses a number of menus in which you can specify changes to your hardware and turn the special features to on or off.

To enter the BIOS setup program, turn on or reboot the system. Press the <DEL> key when the system displays "`Press DEL to enter SETUP`".

The following screen will then be displayed.

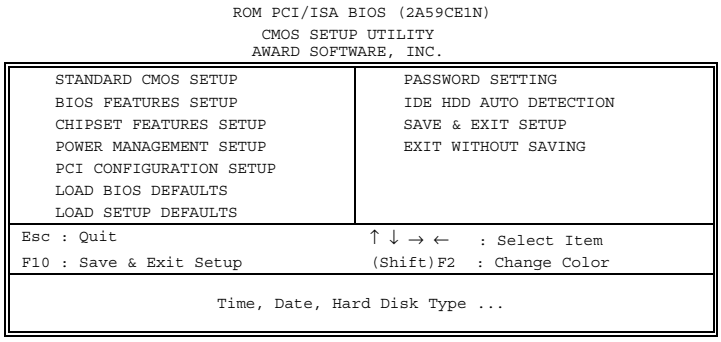


Figure 4 -1. SETUP Main Menu

It is highly recommended that you list down all the values of the SETUP program before making any changes. Doing so will save a lot of time restoring the system back in the event of a configuration memory loss.

On-screen instructions at the bottom of each screen explain how to use the program.

- **STANDARD CMOS SETUP** - allows checking or modification of general configuration information.
- **BIOS FEATURES SETUP** - used to set the various system options for the user, including the virus warning, external cache, memory parity check, security option, boot operations, typematic rate settings, and video BIOS shadow, etc.

- **CHIPSET FEATURES SETUP** - dedicated for the user who wishes to program the chipset features.
- **POWER MANAGEMENT SETUP** - allows the programming of the time out functions of six devices. If the device is not active, Power Management Function will slow down the CPU speed to 8 MHz and both IDE and monitor will be put into standby mode.
- **PCI CONFIGURATION SETUP** - used to set the various system functions and internal addresses of the PCI devices and onboard PCI IDE controller.
- **LOAD BIOS DEFAULTS** - loads the BIOS default values that would allow safe booting of the system in the event a BIOS configuration memory loss.
- **LOAD SETUP DEFAULTS** - allows of automatic configure all of the options in the Standard CMOS Setup, BIOS Features Setup, and Chipset Features Setup with the SETUP defaults.
- **PASSWORD SETTING** - Password is required when entering and changing the SETUP option or booting your system. Users can change the current password stored in the CMOS by accessing this option.
- **IDE HDD AUTO DETECTION** - allows of automatic detect the hard disk drive type(s) including the number of cylinders and heads, write pre-compensation time, read/write head landing zone, and number of sectors per track.
- **SAVE & EXIT SETUP** - saves the changes you have made in the SETUP program, then exits and reboots the system.
- **EXIT WITHOUT SAVING** - abandons all previous settings then exits and reboots the system.

To choose an item from the SETUP main menu, move the cursor using the ↑,↓,→,← arrow keys and press <Enter>. To modify the setting of an option, simply press the <PgUp> or <+> and the <PgDn> or <-> keys. Press the <F2> key when changing the color setting, <F1> for a context sensitive help function, and the <ESC> key when quitting SETUP.

Standard CMOS Setup

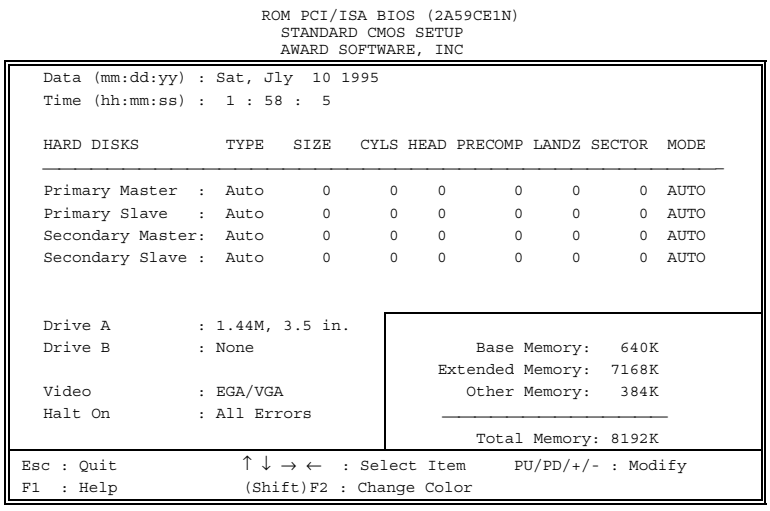


Figure 4 -2. Standard CMOS SETUP Screen

Date - allows manual setting of the electronic calendar on the mainboard.

Time - sets the system's internal clock which includes hour, minutes, and seconds.

Primary Master/Primary Slave/Secondary Master/Secondary Slave - specify the physical and electronic properties of the standard hard disk drives installed. Relevant specifications include the type, number of cylinders (CYLS), heads (HEAD), write pre-compensation time (PRECOMP), read/write head landing zone (LANDZ), number of sectors per track (SECTOR), and HDD mode (MODE). Selecting "***AUTO***" (default) in the hard disk type item avoids the necessity of loading the HDD specifications and the function of the IDE HDD Auto Detection option in the main menu. The system BIOS will automatically detect the hard drive installed on the system upon bootup.

Drive A:/B: - specifies the capacity and format of the floppy drive installed in your system.

Video - specifies the display adapter installed.

Halt On - enables the system to halt on several conditions/options. The default value is set at "***All Errors***."

Base/Extended/Other Memory - A small section in the lower right corner of the screen displays important information about your system which includes the base,

extended, and other memory sizes. They are updated automatically by the SETUP program according to the status detected by the BIOS self-test. This section of the Standard CMOS SETUP screen is for viewing purpose only and manual modifications are not allowed.

BIOS Features Setup

```
                    ROM PCI/ISA BIOS (2A59CE1N)
                      BIOS FEATURES SETUP
                      AWARD SOFTWARE, INC.
```

Virus Warning	: Disabled	Video BIOS Shadow	: Enabled
CPU Internal Cache	: Enabled	C8000-CBFFF Shadow	: Disabled
External Cache	: Enabled	CC000-CFFFF Shadow	: Disabled
Quick Power On Self Test	: Disabled	D0000-D3FFF Shadow	: Disabled
Boot Sequence	: A,C,CDROM	D4000-D7FFF Shadow	: Disabled
Swap Floppy Drive	: Disabled	D8000-DBFFF Shadow	: Disabled
Boot Up Floppy Seek	: Enabled	DC000-DFFFF Shadow	: Disabled
Boot Up NumLock Status	: On		
Boot Up System Speed	: High		
Gate A20 Option	: Fast		
Memory Parity Check	: Disabled		
Typematic Rate Setting	: Disabled		
Typematic Rate (Chars/Sec)	: 6		
Typematic Delay (Msec)	: 250		
Security Option	: Setup		
PCI/VGA Palette Snoop	: Disabled		

```
ESC : Quit          ↑↓→←: Select Item
F1  : Help          PU/PD/+/- : Modify
F5  : Old Values    (Shift)F2 : Color
F6  : Load BIOS Defaults
F7  : Load Setup Defaults
```

Figure 4 -3. BIOS Features Setup Screen

Virus Warning - allows the virus warning feature for the hard disk boot sector to display a warning message and produce a beep sound whenever an attempt is made to write on the hard disk's boot sector. The default value for this option is "***Disabled***."

CPU Internal Cache - enables the internal 16KB code/data cache of the Intel Pentium CPU when sets to "***Enabled***" (default).

External Cache - enables the on-board secondary cache (either standard non-burst or burst cache) when sets to "***Enabled***" (default).

Quick Power On Self Test - allows the power on self test to run at either a fast or a normal speed. The available options are:

- Disabled (default)
- Enabled

Boot Sequence - selects the drive where the system would search for the operating system to run with. The available options are:

- A,C,CDROM (default)
- C,A,CDROM
- C,CDROM,A
- CDROM,C,A

Swap Floppy Drive - "***Disabled***" will effectively change the A: drive to B: and the B: to A: drive. "***Disabled***" (default) sets the floppy drives in their default states.

Boot Up Floppy Seek - checks whether the floppy drives installed on the system are correct or not. This option's operation usually occurs when the magnetic heads of the floppy drives produce a sound during power on self test. The available options are:

- Enabled (default)
- Disabled

Boot Up NumLock Status - sets the <Num Lock> key to either on or off during system boot-up. The available options are:

- On (default)
- Off

Boot Up System Speed - sets the speed of the system during power on self test sequence. The available options are:

- High (default)
- Low

Gate A20 Option - boosts the performance of system with softwares using the 80286 protected mode such as OS/2 or UNIX. This option determines the accessibility of the extended memory. The available options are:

- Fast (default)
- Normal

Memory Parity Check - ***enables*** or ***disables*** the memory parity error check of every DRAM module on board. It is recommended to set this option to "***Disabled***" (default) when using non-parity bit DRAM modules.

Typematic Rate Setting - defines the setting of the keyboard's typematic rate. The available options are:

- Disabled (default)
- Enabled

Typematic Rate (Chars/Sec) - specifies the key repeat rate, in seconds, of keyboard characters. The available options are:

- 6 (default)
- 8
- 10
- 12
- 15
- 20
- 24
- 30

Typematic Delay (Msec) - selects the delay, in milliseconds, before a key repeats itself. The available options are:

- 250 (default)
- 500
- 750
- 1000

Security Option - determines whether the password will be asked for in every boot (***System***), or when entering into the SETUP program (***Setup*** - default). Refer to the section entitled Password Setting for the password setting procedure.

PCI/VGA Palette Snoop - Selects ***"Enabled"*** to solve the abnormal color in windows while using ISA MPEG and PCI VGA card. The available options are:

- Disabled(default)
- Enabled

Video BIOS Shadow - if you have a shadowing of the Video BIOS, you may set the appropriate memory cacheable function to ***"Enabled"*** (default). Otherwise, select ***"Disabled".***

C8000-CBFFF, CC000-CFFFF, D0000-D3FFF, D4000-D7FFF, D8000-DBFFF, DC000-DFFFF Shadow - if you have a shadowing of the BIOS at any of the above segments, you may set the appropriate memory cacheable function to ***"Enabled***". Otherwise, select "***Disabled***" (default).

Chipset Features Setup

```
                    áROM PCI/ISA BIOS (2A59CE1N)
                      CHIPSET FEATURES SETUP
                       AWARD SOFTWARE, INC.
```

DRAM Timing : 70 ns	IDE Hard Disk Master Mode: Disabled
	Onboard FDD Controller : Enabled
System BIOS Cacheable : Disabled	Onboard Serial Port 1 : COM1/3F8
Video BIOS Cacheable : Disabled	Onboard Serial Port 2 : COM2/2F8
8 Bit I/0 Recovery Time : 1	Infra Red (IR) Function : Disabled
16 Bit I/O Recovery Time : 1	Onboard Parallel Port : 378H/IRQ7
	Parallel Mode : SPP
IDE HDD Block Mode : Enabled	
IDE Primary Master PIO : Auto	IR Transfer Mode : Half-Dup
IDE Primary Slave PIO : Auto	
IDE Secondary Master PIO : Auto	
IDE Secondary Slave PIO : Auto	
On-Chip Primary PCI IDE: Enabled	
On-Chip Secondary PCI IDE: Enabled	
PCI Slot IDE 2nd Channel : Enabled	ESC : Quit ↑↓→←: Select Item
	F1 : Help PU/PD/+/- : Modify
	F5 : Old Values (Shift)F2 : Color
	F6 : Load BIOS Defaults
	F7 : Load Setup Defaults

Figure 4 -4. Chipset Features Setup Screen

DRAM Timing - configures the DRAM read/write timing for the maximum performance. The available options are:

- 60 ns
- 70 ns (default)

System BIOS Cacheable - allows caching of the different segments where there is system BIOS shadowing. The available options are:

- Enable
- Disable (default)

Video BIOS Cacheable - allows caching of the different segments where there is video BIOS shadowing. The available options are:

- Enabled
- Disable (default)

8 Bit I/0 Recovery Time - defines the 8-bit I/O recovery time with one of the following system clock options.

- NA
- 1 (default)/2/3/4/5/6/7/8

16 Bit I/O Recovery Time - defines the 16 bit I/O recovery tiem with one of the following system clock options.

- NA
- 1 (default)/2/3/4

IDE HDD Block Mode - The available options are:

- Enabled (default)
- Disabled

IDE Primary/Secondary Master/Slave PIO - sets the advanced hard disk PIO transfer mode which effects your hard disk transfer rate. The program will auto detect the mode of this option you select ***"Auto"*** Otherwise, you must set this option by yourself. The available options are:

- Auto(defualt)
- Mode 0
- Mode 1
- Mode 2
- Mode 3
- Mode 4

On-Chip Primary/Secondary PCI IDE - ***Enables*** or ***Disables*** the primary PCI IDE of Intel IDE controller Selecting ***"Disabled"*** can release IRQ14

- Disabled
- Enabled(default)

PCI Slot IDE 2nd Channel - ***Enables*** or ***Disables*** the second IDE channel of PCI slot if user uses the PCI IDE card on board

- Disabled
- Enabled(default)

IDE Hard Disk Master Mode -The available options are:

- Disabled (default)
- Enabled

Onboard FDD Controller - ***Enables*** or ***Disables*** the second IDE channel of PCI slot if user uses the PCI IDE card on board

- Disabled
- Enabled(default)

Onboard Serial Port 1 - sets the I/O address for serial port 1.

- COM1/3F8(default of Serial Port 1)
- COM2/2F8(default of Serial Port 2)
- COM3/3E8
- COM4/2E8
- Disabled

On board Serial Port 2 - sets the I/O address for serial port 2.

- COM1/3F8(default of Serial Port 1)
- COM2/2F8(default of Serial Port 2)
- COM3/3E8
- COM4/2E8
- Disabled

Onboard Parallel Port - sets the I/O address for the parallel port

- 378H /IRQ 7(default)
- 278H/IRQ 5
- 3BC/IRQ7
- Disabled

Parallel Port Mode - selects the working mode of parallel port

- SPP (default)
- EPP
- ECP
- ECP+EPP

The default of Parallel Port Mode is SPP. If users choose the ECP+EPP or ECP option, ***ECP Mode Use DMA*** *will be shown under* ***IR Transfer Mode****.*

IR Transfer Mode - The available options are:

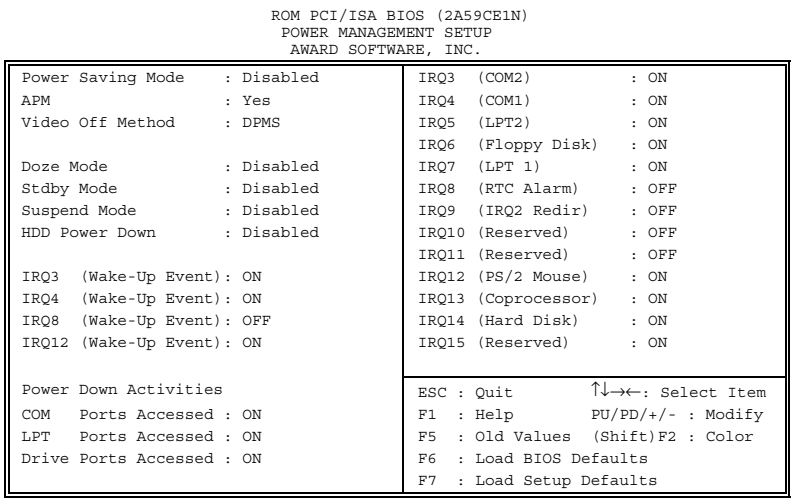
- Half-Dup (default)
- Full-Dup

ECP Mode Use DMA - selects the DMA channel of ECP Mode to transfer you data. The available options are:

- 3 (default)
- 1

ECP Mode Use DMA *will not be shown on the Chipset Features Setup screen untill users choose the ECP+EPP or ECP option for the setting of Parallel Port Mode.*

Power Management Setup



```
                    ROM PCI/ISA BIOS (2A59CE1N)
                     POWER MANAGEMENT SETUP
                      AWARD SOFTWARE, INC.

Power Saving Mode    : Disabled          IRQ3  (COM2)          : ON
APM                  : Yes               IRQ4  (COM1)          : ON
Video Off Method     : DPMS              IRQ5  (LPT2)          : ON
                                         IRQ6  (Floppy Disk)   : ON
Doze Mode            : Disabled          IRQ7  (LPT 1)         : ON
Stdby Mode           : Disabled          IRQ8  (RTC Alarm)     : OFF
Suspend Mode         : Disabled          IRQ9  (IRQ2 Redir)    : OFF
HDD Power Down       : Disabled          IRQ10 (Reserved)      : OFF
                                         IRQ11 (Reserved)      : OFF
IRQ3  (Wake-Up Event): ON                IRQ12 (PS/2 Mouse)    : ON
IRQ4  (Wake-Up Event): ON                IRQ13 (Coprocessor)   : ON
IRQ8  (Wake-Up Event): OFF               IRQ14 (Hard Disk)     : ON
IRQ12 (Wake-Up Event): ON                IRQ15 (Reserved)      : ON

Power Down Activities                    ESC : Quit         ↑↓→←: Select Item
COM   Ports Accessed : ON                F1  : Help         PU/PD/+/- : Modify
LPT   Ports Accessed : ON                F5  : Old Values  (Shift)F2 : Color
Drive Ports Accessed : ON                F6  : Load BIOS Defaults
                                         F7  : Load Setup Defaults
```

Figure 4 -5. Power Management Setup Screen

Power Saving Mode - The available options are:

- Disabled (default)
- Min Saving
- Max Saving
- User Define

APM - sets the power management (PM) control by the APM. The available options are:

- Yes (default)
- No

Video Off Mtehod - selects the video off method in standby mode. The available options are:

- Y/H SYNC+Blank
- DPMS (default)
- Blank Screen

Doze/Standby/Suspend Mode - sets the time interval after system inactivity when the system enters DOZE/STANDBY/SUSPEND mode. The available options are:

- Disabled (default)
- 1/2/4/6/8/10/20/30/40 Min
- 1 Hour

HDD Power Down - sets the time to power down HDD in standby mode. The available options are:

- Disabled (default)
- 1/2/3/4/5...15 Min

IRQ 3/4/8/12(Wake-Up Event) - sets the wake-up event to ***"ON"*** or ***"OFF"*** while system enters the suspend mode.

Power Down Activitieis - The menu also lists the Power Management SETUP (PM) events by which the system wakes up from DOZE or STANDBY modes. Switch the following parameters to ***"ON"*** or ***"OFF"***.

- COM Ports Accessed
- LPT Ports Accessed
- Drive Ports Accessed
- IRQ3 (COM2)
- IRQ4 (COM1)
- IRQ5 (LPT2)
- IRQ6 (Floppy Disk)
- IRQ7 (LPT1)
- IRQ8 (RTC Alarm)
- IRQ9 (IRQ2 Redir)
- IRQ10 (Reserved)
- IRQ11 (Reserved)
- IRQ12 (PS/2 Mouse)
- IRQ13 (Coprocessor)
- IRQ14 (Hard Disk)
- IRQ15 (Reserved)

PCI & Onboard I/O Setup

```
                    ROM PCI/ISA BIOS (2A59CE1N)
                     PCI & ONBOARD I/O SETUP
                      AWARD SOFTWARE, INC.
```

```
PnP BIOS Auto-Config: Enabled

Slot 1 Using INT#   : Auto
Slot 2 Using INT#   : Auto
Slot 3 Using INT#   : Auto
Slot 4 Using INT#   : Auto




PCI IRQ Actived By  : Edge
PCI IDE IRQ Map To  : PCI-AUTO
 Primary   IDE INT# : A
 Secondary IDE INT# : B
```

```
ESC : Quit          ↑↓→←: Select Item
F1  : Help          PU/PD/+/- : Modify
F5  : Old Values  (Shift)F2 : Color
F6  : Load BIOS Defaults
F7  : Load Setup Defaults
```

Figure 4 -6. PCI & Onboard I/O Setup Screen

PnP BIOS Auto-Config - If user selects "***Enabled***", the "1st/2nd/3rd/4th Available" IRQ options will disappear and the system will auto configure the available IRQ(s).

- Enabled (default)
- Disabled

If user sets this option to "Disabled", the "1st Available IRQ" ,"2nd Available IRQ", "3rd Available IRQ" and "4th Available IRQ" options below will not be shown on the screen.

Slot 1/2/3/4 Using INT# - defines the INTx# assigned to every PCI slot. The available options are:

- AUTO (default)
- A
- B
- C
- D

1st/2nd/3rd/4th Available IRQ - specifies the IRQ for the PCI devices. The end user should assign an available IRQ if the PCI device needs an IRQ service The available options are:

- NA
- 4
- 7
- 10 (1st Available IRQ default)
- 12 (4th Available IRQ default)
- 15
- 3
- 5
- 9 (3rd Available IRQ default)
- 11 (2nd Available IRQ default)
- 14

The "1st Available IRQ" ,"2nd Available IRQ", "3rd Available IRQ" and "4th Available IRQ" options above will not be shown on the screen untill users set Disabled for the PnP BIOS Auto-Config setting.

PCI IDE Activied by - programs the PCI IRQ to single edge or logic level. Level/Edge sensitivity is programmed per controller. Every IRQ input for a given bank is either ***"Edge" (***default) or ***"Level"*** triggered.

- Edge (default)
- level

PCI IDE IRQ Map To - defines the on board IDE IRQ Routing either from the PCI Bus or the ISA Bus. The available options are:

- PCI-AUTO (default)
- PCI-SLOT1
- PCI-SLOT3
- ISA
- PCI-SLOT2
- PCI-SLOT4

If user sets this options to "ISA", both the "Primary IDE INT#" and "Secondary IDE#" options below will not be shown on the screen.

Primary/Secondary IDE INT# - defines the primary/secondary IDE INT# of the PCI IDE card. The available options are:

- A (default of Primary IDE INT#)
- B (default of Secondary IDE INT#)

- C
- D

Load BIOS Defaults

In the event of a loss in memory on the configuration SETUP, the user can restore the information on the BIOS by loading its default values. Loading the BIOS defaults provides safe booting of the system.

This option may not be able to configure all the values within the SETUP program according to the installed equipments (i.e., floppy drives A: & B:, hard disk drives C: & D:).

Load Setup Defaults

SETUP defaults are considered default values with which the system will be enabled to perform better. This is due to the enabling of some options within the SETUP program. However, if problems are encountered after loading the SETUP defaults, reboot the system and load the BIOS defaults instead.

Password Setting

The Password Setting utility allows you to set, change, and disable the password stored in the BIOS. To change the password setting, press <Enter> on the Password Setting option of the main menu and then type the new password.

The password can be at most 6 characters long. The program will require you to confirm the new password before it exits and enables the utility. To disable the password setting, press the <F1> once the program asks you to enter the new password.

Configure the Security Option within the BIOS Features Setup corresponding to the setting in this utility.

IDE HDD Auto Detection

The IDE HDD Auto Detection provides auto configuration of the hard drive installed in the system. It supports LBA, Large, and Normal modes. If the system's hard disk drive has a capacity of over 528MB and supports LBA functions, you may enable either the LBA mode or the Large mode. On the other hand, if the hard disk drive's capacity is over 528MB but does support LBA functions, you may enable the Large mode in order to use over 528MB.

a. *The LBA and Large modes will only appear on the screen when the installed hard disk drive is specified to support the LBA mode.*

b. *In the case when a hard disk drive's cylinder specification exceeds 1024, and does not support the LBA functions, only the Large mode will be displayed on the screen.*

c. *With a hard disk drive supporting cylinders below 1024, only the Normal mode will appear on the screen. The Normal mode will also be shown on the screen under conditions a & b above.*

d. *Hard disk drives with less than 528MB total capacity must be set to Normal mode when combined with either old BIOS versions or the Award BIOS.*

LBA and Large modes are new specifications which may not be fully supported by all operating systems. An example of which is the current version of UNIX System (R3.2.4) which is still unable to support the LBA function. Therefore, determine the specifications of your hard disk drive and operating system before selecting the drive's mode.

After pressing the <Enter> key on this item of the main menu, the display screen will show the following screen.

```
                    ROM PCI/ISA BIOS (2A59CE1N)
                     CMOS SETUP UTILITY
                     AWARD SOFTWARE, INC.

HARD DISKS          TYPE   SIZE   CYLS HEAD PRECOMP LANDZ SECTOR  MODE
-------------------------------------------------------------------------
Primary Master  :
Primary Slave   :
Secondary Master:
Secondary Slave :

          Select Primary Master   Option (N=Skip) : N
 OPTIONS        SIZE   CYLS HEAD PRECOMP LANDZ SECTOR  MODE
    2(Y)        1277    619   64      0   2476     63   LBA
    1           1278   2477   16  65535   2476     63 NORMAL
    3           1277   1238   32  65535   2476     63 LARGE
 Note: Some OSes (like SCO-UNIX) must use "NORMAL" for installation
                              Esc : Skip
```

Figure 4 -7. IDE HDD Auto Detection Screen

Once the program detects the type of hard disk installed, it will display the relative information such as the type, cylinders, heads, write pre-compensation, landing zone, number of sectors per track, size and mode. A message asking you to accept the IDE HDD detected will also be flashed on the screen.

Quitting SETUP

After making all modifications in the SETUP program, go to the option "Save & Exit SETUP" then press the <Enter> key. The program will display the following screen.

Press <Y> to confirm the changes made, and the <N> or the <ESC> keys if further modifications are still necessary before exiting the SETUP program. Once the <Y> key is pressed, the system will automatically exit the program and reboot. However, if you want to cancel all changes made under the SETUP program, go to the option "Exit Without Saving".

Press <Y> and the system will exit the SETUP program then reboot without saving any of the changes made.

You may also use the <F10> key to save the new settings.