

PM-PRO1000 FEATURES

CPUs SUPPORTED

- Intel Pentium Pro Microprocessor
- 150 MHz to 200 MHz
- Voltage Regulator Module (VRM) Supported
- Intel 82440FX Chipset

MEMORY

- Up to 1024MB Main Memory
- Four 72-pins SIMM slots for EDO, BEDO and Fast Page Mode DRAM Modules

CACHE

- No On-Board Cache
- CPU built-in L1 & L2 Cache*

BUS ARCHITECTURE

- Four 32-Bit PCI Slots
 - Four 16-Bit ISA Slots
- All PCI slots support Master Mode*

ONBOARD I/O

- Two PCI Enhanced IDE Ports
- Supports 4 Devices PIO 0-4 with Bus Mastering*
- Two High Speed Serial Ports
- 16550 UART Compatible
- One Enhanced Parallel Port
- SPP, EPP, ECP capable*
- One Floppy Drive Port
- Supports 2 Floppy Drives*
- One PS/2 Port

ENERGY SAVING FUNCTIONS

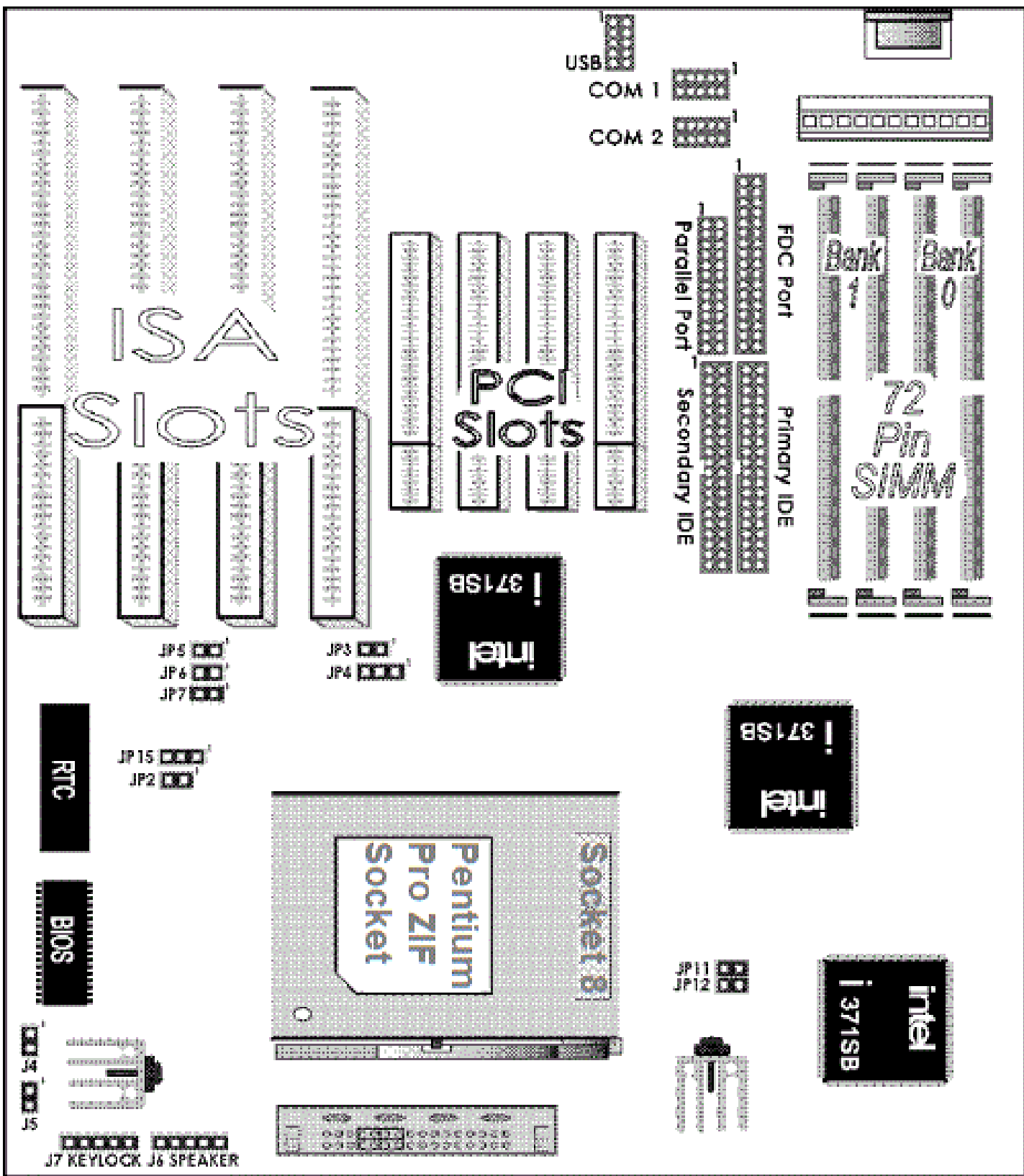
- SMM/SMI Power Management with APM Software Interface
- Monitor CPU & I/O status with fully user configurable parameters in BIOS*

BIOS

- Plug & Play Award BIOS
- Flash EPROM for convenient BIOS upgrades
- Dallas Real Time Clock (or compatible)

SIZE

- 8 3/4" X 11"
- 22cm X 28 cm*



PMPRO-1000

JUMPER SETTINGS

KB1 - KEYBOARD CONNECTOR

USB - UNIVERSAL SERIAL BUS CONNECTOR

J4 - HDD LED CONNECTOR

J5 - RESET SWITCH CONNECTOR

JP15 - CLEAR CMOS

J7 - KEYLOCK & POWER LED CONNECTOR

J6 - SPEAKER CONNECTOR

JP2 - FLASHROM VOLTAGE SELECTOR

JP4 - AT BUS CLOCK SELECTOR

JP3 - SLEEP SWITCH CONNECTOR

JP11 & JP12 - CPU CLOCK SPEED SELECTOR

JP5, JP6 & JP7 - CPU CLOCK MULTIPLIER SETTING

PS/2 - PS/2 MOUSE CONNECTOR

KB1 - Keyboard Connector

PIN	ASSIGNMENT
1	KEYBOARD CLOCK
2	KEYBOARD DATA
3	NC
4	GROUND
5	+5 VDC

USB - Universal Serial Bus Connector

PIN	ASSIGNMENT
1	+5 VDC
2	DATA -
3	DATA +
4	GROUND
5	NC

J4 - HDD LED Connector

PIN	ASSIGNMENT
1	+5V
2	Active Low

J5 - Reset Switch Connector

JUMPER	ASSIGNMENT
OPEN	NORMAL MODE
SHORT	RESET SYSTEM

JP15 - CLEAR CMOS

JUMPER	ASSIGNMENT
OPEN	NORMAL
SHORT	CLEAR CMOS

J7 - Keylock & Power LED Connector

PIN	ASSIGNMENT
1	LED OUTPUT
2	NC
3	GROUND
4	KEYLOCK
5	GROUND

J6 - Speaker Connectors

PIN	ASSIGNMENT
1	DATA OUT
2	NC
3	GROUND
4	+ 5V

JP2 - FlashROM Voltage Selector

JUMPER	ASSIGNMENT
1 - 2	EPROM & 5 VOLT FLASHROM
2 - 3	12 VOLT FLASHROM

JP4 - AT Bus Clock Selector

CPU CLOCK	JUMPER	STATE
66MHZ	1-2	PCI CLK/4
60MHZ	1-2	PCI CLK/4
50MHZ	2-3	PCI CLK/3

JP3 - Sleep Switch Connector

JUMPER	ASSIGNMENT
OPEN	NORMAL MODE
1 - 2	SLEEP MODE ON

JP11 & JP12 - CPU Clock Speed Selector

CPU CLOCK	JP11	JP12
66MHZ	OPEN	SHORT
60MHZ	SHORT	OPEN
50MHZ	SHORT	SHORT

JP5, JP6, & JP7 - CPU Clock Multiplier Setting

MULTIPLIER	JP5	JP6	JP7
X2.0	SHORT	SHORT	SHORT
X2.5	OPEN	SHORT	SHORT
X3.0	SHORT	OPEN	SHORT
X3.5	OPEN	OPEN	SHORT
X4.0	SHORT	SHORT	OPEN

PS/2 Mouse Connector

PIN	ASSIGNMENT
1	MOUSE DATA
2	NC
3	GROUND
4	+5 VDC
5	MOUSE CLK
6	NC

PMPRO-1000

MEMORY SETTINGS

THE MEMORY

POSSIBLE MEMORY CONFIGURATIONS

The Memory

This system board can support up to 1024MB of Fast Page Mode, BEDO or EDO DRAM main memory in 4 auto banking 72-pin SIMM slots.

Possible Memory Configurations:

=====				
	-BANK 0-----		-BANK 1-----	
#	SIMM1	SIMM2	SIMM3	SIMM4

1	4-32MB	4-32MB	NONE	NONE
2	NONE	NONE	4-32MB	4-32MB
3	4-32MB	4-32MB	4-32MB	4-32MB
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PMPRO-1000 BIOS SETTINGS

SYSTEM BIOS SETUP

ENTERING BIOS SETUP PROGRAM

LOAD SETUP DEFAULTS

STANDARD CMOS SETUP OPTION

Hard disk primary & secondary drive types

Floppy drives A & B

BIOS FEATURES SETUP

Virus warning

CPU internal & external cache

Security option

CHIPSET FEATURES SETUP

Auto Configuration

DRAM RAS# precharge time

DRAM R/W burst timing

ISA bus clock

DRAM Refresh Queue

DRAM RAS only refresh

System BIOS cacheable

Video RAM cacheable

8/16 bit I/O recovery time

Memory hole at 15M-16M

POWER MANAGEMENT SETUP

Power management

Video off method

Modem use IRQ

Doze, standby, and suspend modes

HHD power down

Wake up events

Power down & resume events

PCI CONFIGURATION SETUP

INTEGRATED PERIPHERALS SETUP

IDE HDD block mode

IDE primary & secondary, master & slave PIO modes

Primary & secondary PCI IDE, PCI slot IDE 2nd
channel, USB

controller, FDD controller, serial ports

On-Board parallel port, parallel mode, and ECP DMA
channel

EXITING SETUP UTILITY

System BIOS Setup

After you have configured the system board and assembled all the components, you need to enter the system configuration information to the system BIOS through the Award PnP BIOS Setup programs. This Award PnP BIOS Setup program and the system configuration information are embedded in the system board and it is backup by the Dallas Real Time Clock.

Due to frequent update of system BIOS, the actual options available in your system board BIOS setups may vary comparing with this manual. If technically necessary, we would provide a special insert for instruction of the difference in regard to any changes of the BIOS setup option.

Entering BIOS Setup Program

Turn on or reboot the system. After the system finished testing the on-board memory, the message "Hit DEL if you want to run SETUP" will appear. Press "DEL" key at this time will bring you into the BIOS Setup program.

Use "Arrow" keys to high-light items, and use the "Enter" key to select option or you may use the mouse to "Click" on item you want to select and change.

After the BIOS Setup program is entered, you may want to do choose the "Standard CMOS Setup" option for date, time, and all disk drives information. If you have IDE Hard Drive(s) installed, the "IDE HDD Auto Detection" option can be used to automatically enter your hard drive(s) information.

At any time you may press "ESC" key to exit the window, and choose the "Exit Without Saving" option to keep the original configuration.

Load Setup Defaults

There is a set of BIOS values stored in the ROM files: *The "Setup" default values*. The "Setup" default values are those settings which should provide optimum performance for the system. They are the best case default values. This set of default values can be loaded by using the "Load Setup Defaults" option in the main BIOS menu when you first entered the setup utility.

Standard CMOS Setup Option

Primary Master & Slave, Secondary Master & Slave

Drive Types According to your actual equipment, you can select the type of hard disks for C, D, E, & F from 'Not Installed' to type 46 for standard hard disks. As for type 47, user may define by himself. If a ATAPI IDE CD-ROM is connected to any on-board IDE port, the HARD DISKS "Type" should be set to "None". The DOS CD-ROM driver or the Win95 built-in driver will handle the communication by themselves. You may also use the "IDE HDD Auto Detection" option in the Main Menu to allow the system to detect and enter these information for you.

It is strongly recommended that the HARD DISK "Type" and "Mode" be set to "Auto" to allow the BIOS to detect and configure the hard disk(s) since hard disks are becoming increasingly complicated. If the "Auto" modes are enabled, the BIOS will perform a very reliable operation which it will read the detail information about the hard disk that is embedded in the drive by the manufacturer. This information is the true and optimal setting for the drive and it will allow the BIOS to properly configure the system.

As it is proven, manually setting the hard disk parameters often causes unnecessary troubles; from being unable to format the disk to its full capacity to the system simply refusing to boot. Therefore, it is only wise to leave these settings to "Auto" and let the system do the job it does best.

Primary Master & Slave are the 2 IDE drives connected to the Primary IDE port as shown in the drawing under the "Board Description" at the beginning of Chapter 2. The Secondary Master & Slave are the 2 IDE drives connected to the Secondary IDE port. If there are IDE device(s) installed on any of these 2 port, you must make sure the corresponding "On-Chip Primary PCI IDE" and/or "On-Chip Secondary PCI IDE" in "Integrated Peripherals Setup" is enabled.

Floppy Drives A & B

According to your actual equipment, set floppy drive A & B whose five options are as highlighted.

BIOS Features Setup

Virus Warning

This function, if enabled, will detect boot sector viruses and a warning will be given when a program attempted to change boot sector information.

CPU Internal & External Cache

These options allow the user to enable or disable the on-board (External) and the on-chip (CPU Internal) cache memories (SRAM) when special peripheral or software implemented indicate such requirement. System overall speed will slow down considerably if any of these options are disabled.

Security Option

This option allows a password to be set up so that a password will be needed to enter the CMOS Setup or to boot the system including entering CMOS Setup. After this option is enabled, you must use the "Password Setting" option in the main menu to setup your password. In any case the password is lost or forgotten, the jumper JP7 - Clear CMOS can be used to clear the configuration.

WARNING - "JP7" will clear and reset ALL and EVERY configuration parameters. Make sure you know what you are doing or ask someone who does to help you.

Chipset Features Setup

Most of the options in this group have major influence to the system. If the options are not set properly, it may not only greatly affect the performance, but also it may bring the system down unexpectedly in most cases. Therefore, it is only wise to leave the defaults alone unless there are specific reason to do any change.

Auto Configuration

Auto Configuration selects predetermined optimal values of chipset parameters. When *Disabled*, chipset parameters revert to setup information stored in CMOS. Many fields in this screen are not available when Auto Configuration is *Enabled*.

DRAM RAS# Precharge Time

DRAM must continually refreshed or it will lose its data. This option allows you to determine the number of CPU clocks allocated for the Row Address Strobe to accumulate its electrical charge before the DRAM is refreshed. If insufficient time is allowed, refresh may be incomplete and the DRAM may fail to retain data.

DRAM Read (EDO/FP) / Write Burst Timing

These 2 options set the timing for Burst Mode reads and writes from and to the Fast Page Mode or EDO DRAM. The burst read and write requests are generated by the CPU in four separate parts. The four numbers indicate the actual data cycles. The lower the timing number, the faster the system will address the memory.

ISA Bus Clock

Set the speed of the ISA bus here. The settings are tied to the speed of the PCI bus. If the PCI bus operates at 33 MHz, a setting of PCICLK/4 (default) would yield an ISA bus speed of approximately 8 MHz, the standard speed of the ISA bus. While most devices operate at higher ISA bus speeds, try a slower bus speed if your ISA device does not function properly at a high bus speed.

DRAM Refresh Queue

Enabled permits queuing up to four DRAM refresh requests, so DRAM can refresh at optimal times. *Disabled* makes all refreshes priority requests. Installed DRAM must support this feature; most do.

DRAM RAS Only Refresh

An alternate to CAS-before-RAS refresh. Leave *Disabled* unless your DRAM requires this older method of refresh generation.

Fast DRAM Refresh

The cache DRAM controller offers two refresh modes, *Normal* and *Hidden*. In both modes, CAS takes place before RAS but the *Normal* mode requires a CPU cycle for each. On the other hand, a cycle is eliminated by "hiding" the CAS refresh in *Hidden* mode. Not only is the *Hidden* mode faster and more efficient, but it also allows the CPU to maintain the status of the cache even if the system goes into a power management "suspend" mode.

System BIOS Cacheable

Selecting *Enabled* allows caching of the system BIOS ROM at F0000h-FFFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

Video RAM Cacheable

Selecting *Enabled* allows caching of the video BIOS ROM at C0000h to C7FFFh, resulting in better video performance. However, if any program writes to this memory area, a system error may result.

8/16 Bit I/O Recovery Time

The I/O recovery mechanism adds bus clock cycles between PCI-originated I/O cycles to the ISA bus. This delay takes place because the PCI bus is so much faster than the ISA bus. These two fields let you add recovery time (in bus clock cycles) for 16-bit and 8-bit I/O.

Memory Hole at 15M-16M

You can reserve this area of system memory for ISA adapter ROM. When this area is reserved, it cannot be cached. The user information of peripherals that need to use this area of system memory usually discusses their memory requirements.

Power Management Setup

This system board is designed to fully support the SMM/SMI power management protocol. This option allows you to select the type (or degree) of power saving for Doze, Standby, and Suspend modes.

Max Saving

Maximum power savings. *Only Available for SL CPUs*. Inactivity period is 1 minute in each mode.

User Define

Set each mode individually.

Min Saving

Minimum power savings. Inactivity period is 1 hour in each mode (except the hard drive).

PM Control by APM

If Advanced Power Management (APM) is installed on

your system, selecting **Yes** gives better power savings.

Video Off Method

Determines the manner in which the monitor is blanked.

V/H SYNC+Blank

System turns off vertical and horizontal synchronization ports and writes blanks to the video buffer.

DPMS Support

Select this option if your monitor supports the Display Power Management Signaling (DPMS) standard of the Video Electronics Standards Association (VESA). Use the software supplied for your video subsystem to select video power management values.

Blank Screen

System only writes blanks to the video buffer.

MODEM Use IRQ

Name the interrupt request (IRQ) line assigned to the modem (if any) on your system. Activity of the selected IRQ always awakens the system.

PM Timers

The following modes are Green PC power saving functions. They are user-configurable only during User Defined Power Management mode.

Doze Mode

After the selected period of system inactivity (1 minute to 1 hour), the CPU clock runs at slower speed while all other devices still operate at full speed.

Standby Mode

After the selected period of system inactivity (1 minute to 1 hour), the fixed disk drive and the video shut off while all other devices still operate at full speed.

Suspend Mode

After the selected period of system inactivity (1 minute to 1 hour), all devices except the CPU shut off.

HDD Power Down

After the selected period of drive inactivity (1 to 15 minutes), the hard disk drive powers down while all other devices remain active.

Wake Up Events

You can turn *On* or *Off* monitoring of four commonly used interrupt requests so they do not awaken the system from, or reset activity timers for, Doze and Standby modes.

Power Down and Resume Events

You can disable monitoring of common interrupt requests

so they do not awaken the system from, or reset activity timers for, Suspend mode.

IRQ3 (COM 2)	IRQ10 (Reserved)
IRQ4 (COM 1)	IRQ11 (Reserved)
IRQ5 (LPT 2)	IRQ12 (PS/2 Mouse)
IRQ6 (Floppy Disk)	IRQ13 (Coprocesor)
IRQ7 (LPT 1)	IRQ14 (Hard Disk)
IRQ8 (RTC Alarm)	IRQ15 (Reserved)
IRQ9 (IRQ2 Redir)	

PCI Configuration Setup

Unless otherwise required, do not change the default setting.

Integrated Peripherals Setup

IDE HDD Block Mode

This option, if enabled, instruct the hard disk to read multiple blocks of data from the disk for one read request. You must refer to your hard disk information to be certain your drive support this feature.

IDE Primary & Secondary, Master & Slave PIO Modes

Rather than have the BIOS issue a series of commands to effect a transfer to or from the hard drive, PIO(Programmed Input/Output) allows the BIOS to tell the hard drive controller what it wants and lets the controller and the CPU to perform the complete task themselves. This method is simpler, more efficient, and so is faster. The BIOS supports five modes(0 through 4) and can be set to "Auto" for each individual hard drive.

Warning : The default for the PIO Modes are "Auto", if you manually set this parameter to a mode that your hard drive does not support, it will cause the HDD to crash, lost data, and/or trash your hard drive completely. If you are not 100% certain, or your hard drives does not meet the ATA specification, set the PIO Mode to "0" for that hard disk.

Primary & Secondary PCI IDE, PCI slot IDE 2nd channel, USB

controller, FDD Controller, Serial Port 1 & 2

Use these options to enable or disable the respective on-board controllers.

On-Board Parallel Port, Parallel Mode, and ECP DMA Channel

Use DMA LPT port address can be selected by using the first option. The second option allows the setting of the enhanced modes for the parallel port. If "ECP" or "EPP+ECP" is enabled in the "Parallel Mode" option, use the "ECP Mode Use DMA" to select DMA channel for the ECP Mode.

Exiting Setup Utility

At this point, you can either choose to confirm your setup

entries and exit by using "ESC" key and taking the "Save & Exit Setup" or the "Exit Without Saving" option to restore the original setup parameters and exit.

After you highlight the desired option and press <<ENTER>>, the system will reset itself. The new or original setup parameters, depend on the option which you have chosen, will become the current setting.