

# The BIOS Setup Program

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## Introduction

The BIOS (Basic Input and Output System) Setup program is a menu driven utility that enables you to make changes to the system configuration and tailor the operation of your Notebook to your individual work needs. A ROM-based configuration utility displays the system's configuration status and provides you with a tool to set system parameters. These parameters are stored in nonvolatile battery backed backed-up CMOS RAM, which saves this information even when the power is turned off. When the computer is turned back on, the system is configured with the values found in CMOS. Using easy-to-use menus, menus, you can configure such items as:

- Hard drives, diskette drives and peripherals
- Video display options
- Password protection from unauthorized use
- Boot devices

The settings made in the Setup program intimately affect how the Notebook performs. It is important, therefore, first to try to understand all the available options, and second, to make settings appropriate for the way you use the Notebook. This chapter will guide you through the Setup program by providing clear explanations for all Setup options.

A standard configuration has already been set in the Setup program by the factory technicians, so you will very likely have little to worry about for now. However, eventually you may want to customize your system to to suit your own performance needs. It is recommended that you read this chapter and become familiar with the adjustments that can be made made in the BIOS.

The next section explains how to move around in the Setup program, as as well as how to specify and save your new settings. A brief discussion discussion of the optional settings among the different submenus follows.

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## Navigating through the BIOS Setup Program

The Setup program has been designed to make it as easy to use as possible. It is a menu driven program, which means you can scroll through the various directories and make your selections among the various predetermined choices. If you accidentally make a setting and do not know which one to switch back to, use the BIOS hot keys to return to the previous value. The hot keys are discussed in more detail later in this chapter.

When turning on the Notebook for the first time you may get a message message prompting you to run the BIOS Setup program. A warning message may appear on the screen if the hardware configuration is changed or the POST fails. This message will inform you of any errors or invalid settings and prompt you to run the Setup program to correct the problem.

Even if you are not prompted by a message instructing you to use the Setup program, at some time in the future you may want to change the configuration of your computer. For example, you may want to make changes to the display option settings or enable the Notebook's password function for security purposes. It will then be necessary to reconfigure your system using the Setup program so that the computer can recognize these changes.

The list below gives a few examples of reasons why you may want or need to run the BIOS Setup program.

- You have set up the computer for the first time and you got a message stating that you should run the BIOS Setup program.
- You want to redefine the communication ports to prevent any conflicts.
- You want to change the password or make other changes to the security setup.



The few examples listed above are by no means a complete list.

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## Accessing the BIOS Setup program

To access the BIOS Setup program, press the F2 key after the Notebook has run through its POST.

### The Menu Bar

The top of the Setup screen has a menu bar with the following selections:

<b>Main</b>	Use this menu to make changes to the basic system configuration.
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<b>System Devices</b>	Use this menu to enable and make changes to the advanced features available on your system.
<b>Security</b>	Use this menu to set System and Boot passwords.
<b>Boot</b>	Use this menu to specify the order in which the Notebook is to check for a device to boot the system.
<b>Info</b>	This menu lists hardware information about your system. The items cannot be modified.
<b>Exit</b>	Use this menu to specify how to exit the Setup program.

To move between menu bar items, use the [ ◀ ] and [ ▶ ] arrow keys until the desired item is highlighted. For example, if you want to move from the Main menu to the System Devices menu, press the right arrow key [ ▶ ] once. The System Devices menu item should now be highlighted.

### The Legend Bar

At the bottom of the Setup screen, you will notice a legend bar. The keys in the legend bar allow you to navigate through the various individual setup menus. The following table lists the keys found in the legend bar with their corresponding functions:

Legend Key	Function
[F1] or [Alt] + [H]	<i>Displays the General Help window.</i>
[Esc]	<i>Exits the current menu and moves you to the Exit menu.</i>
[ ◀ ] or [ ▶ ]	<i>Selects a different menu bar item.</i>
[ ▲ ] or [ ▼ ]	<i>Moves the cursor up and down between fields.</i>
[F5] / [-]	<i>Scrolls backwards through the values for the highlighted field.</i>
[F6] / [+] / [Space]	<i>Scrolls forward through the values for the highlighted field.</i>
[F9]	<i>Sets the parameters to their default values.</i>
[F10]	<i>Saves any changes and exits Setup.</i>
[Enter]	<i>Executes commands or selects a submenu.</i>

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## Launching submenus

A submenu contains additional options for a field parameter. To call up a submenu, simply move the highlight to the desired field and press the [Enter] key. The submenu will then immediately appear. Use the legend keys to enter values and move from field to field within a submenu just as you would within a menu.

If you are a first time user or are not familiar with BIOS Setup programs, it is highly recommended that you take a few minutes to familiarize yourself with each of the legend keys and their corresponding corresponding functions. Practice navigating through the various menus and submenus. If you accidentally make unwanted changes to

the current configuration, pressing the function key [F9] will return the activated menu to its factory set values.

Note that on the right side of each of the BIOS screens there is a section labeled *Item Specific Help*. While moving around through the Setup program, explanations for the currently highlighted field appear in the *Item Specific Help* window.

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## General Help

In addition to the Item Specific Help window, the BIOS Setup program also provides a General Help screen. This screen can be called up from from any menu by simply pressing the function key [F1], or the [Alt] + [H] combination. The General Help screen lists the legend keys with their corresponding alternates and functions.

When a scroll bar appears to the right of a help window, this indicates that there is more information to be displayed that will not fit in the window. Use the [Page Up] and [Page Down] keys or the up and down arrow keys [▲] [▼] to scroll through the entire help document. Press [Home] to display the first page. Press [End] to go to the last page. To exit the help window, press the [Enter] or the [Esc] key.

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## Saving Changes and Exiting the Setup Program

Refer to the Exit Menu section of this chapter for detailed information on on saving changes and exiting the Setup program.

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## The Main Menu

When the Setup program is accessed, the Information screen appears. Use the [►] key to select the Main Menu.

PhoenixBIOS Setup Utility					
Main	System Devices	Security	Boot	Info.	Exit
		Item specific Help			
System Time:	[09:00:00]				
System Date:	[01/01/2002]	<Tab>, <Shift-Tab>, or			
Floppy Disk Drive	1.44 MB	Floppy disk size			
Internal Hard Disk:	[xxxxx MB]	Disk Size			
ATAPI Device:	[Model Name]				
Boot Display Device:	[Both]				
Screen Expansion:	[Enabled]				
Television Type:	[NTSC]	Select NTSL or PAL standard			
VGA Memory:	[16MB]	VGA Memory Size Configuration			
F1 Help   ↑↓ Select Item   F5/F6 Change Values   F9 Setup defaults Esc Exit   ←→ Select Menu   Enter Select   ► Sub-Menu   F10 Save and Exit					

Figure 3-1: The Setup Main Menu

Enter the Main Menu of the BIOS setup program to make changes to the Notebook's basic system configuration. Each of the fields displayed in this menu is covered below in detail.

### System Time

Sets your system to the time that you specify (usually the current time). The format is hour, minute, and second, using the 24-hour clock. Insert the appropriate information. Use the tab key to move between the hour, minute, and second fields.

### System Date

Sets your system to the date that you specify (usually the current date). The format is month, day, year. Type in the appropriate information. Use the tab key to move between the month, day, and year fields.

### Floppy Disk Drive

The Floppy Drive status is auto detected by the system.

### Internal Hard Disk

The hard disk types and capacity are auto detected and set by the system. If there is no hard disk present or unknown type, "None" should be shown on this field, otherwise the capacity should be shown.

### ATAPI Device

The CD-ROM, DVD-ROM or CD-RW is auto detected and set by the system. If there is no ATAPI Device present or unknown type, "None" should be shown on this field, otherwise the model name should be shown.

### Boot Display Device

This field allows you to specify display type options. They are:

- Auto-Selected
- Both

*Auto-Selected:* During the power on process, the system will detect if any display device is connected on the external video port. If any external display device is connected, the power on display will be in CRT (or projector) only mode. Otherwise it will be in LCD only mode. will automatically select the external display if a CRT monitor is connected to the Notebook.

*Both* allow you to simultaneously view the Notebook's LCD display and an external CRT monitor display or projector.

The default value for this field is: Both

### Screen expansion

This field allows you to enlarge the LCD viewing area when you operate in lower resolution. There are two possible settings:

- Enabled
- Disabled

The default value for this field is: Enabled

### Television Type

This field allows you to select the television system mode. There are two possible settings:

- NTSC
- PAL

The default setting for this field is: NTSC

### VGA Memory

This field displays the amount of shared memory available for the Video Graphics Array. There are three possible settings: 16MB, 32MB and 64 MB. The default value for this field is 16MB.

NOTE: The sub-items under each device will not be shown if the device control is set to disable or auto. This is because the user is not allowed to control the settings in these cases.

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## The System Devices Menu

Selecting *System Devices* from the menu bar displays the System Devices Menu. Please see *Figure 2-2*.

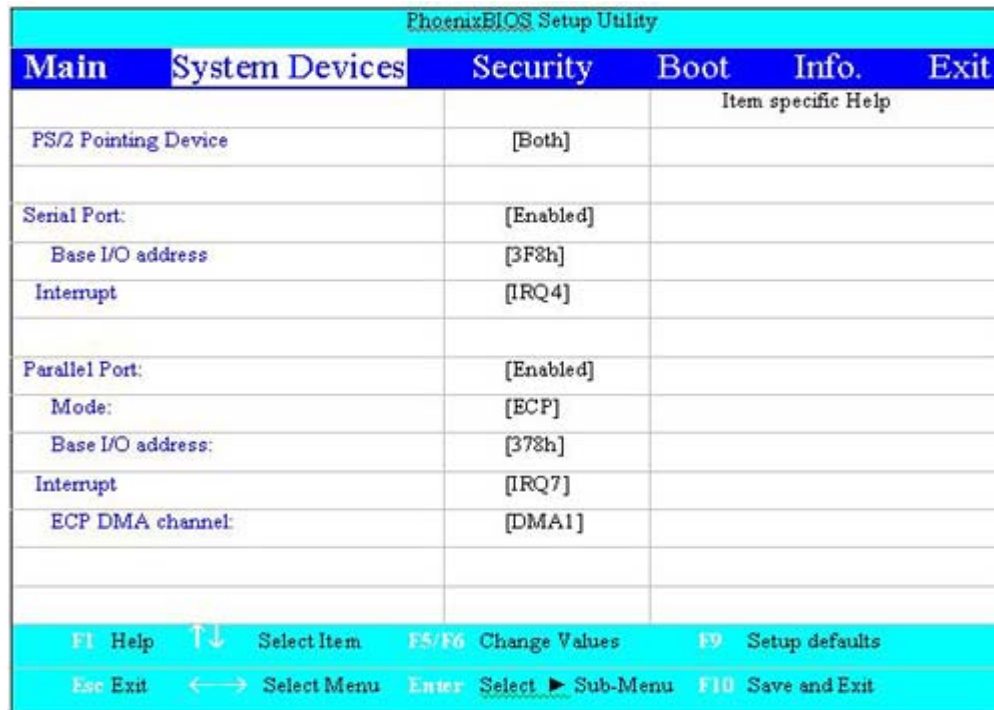


Figure 3-2: The System Devices Menu

This menu allows you to configure the Notebook's PS/2 pointing devices, and serial and parallel ports options. Each field on this menu is covered below.

### PS/2 Pointing Device

This field allows you to select whether the internal pointing device is enabled or disabled when an external PS/2 mouse is present. Available options for this field are:

- Auto-Selected
- Both

*Auto-Selected* mode will automatically disable the internal pointing device if an external PS/2 mouse is present.

*Both* will allow both internal pointing device and external PS/2 mouse to be used simultaneously.

The default value for this field is: Both

### Serial Port

This field allows you to configure the Notebook's Serial Port. The following options are available:

- Enabled: configuration set by user
- Disabled: no configuration
- Auto: BIOS or OS chooses configuration

The default value for this field is: Enabled



*Changing the default address and IRQ settings for the Serial and Parallel Port can cause conflicts with other system devices or installed peripherals*

### Base I/O address

When the Serial Port field is set to Enabled, the "Base I/O address" field becomes available and you can set the serial port's I/O address. The following I/O options are available:

- 3F8
- 2F8
- 3E8
- 2E8

The default value for this field is: 3F8

### Interrupt

When the Serial Port field is set to Enabled, the "Interrupt" field becomes available and you can set the serial port's IRQ value. The following IRQ options are available:

- IRQ 4
- IRQ 3

The default value for this field is: IRQ 4

### Parallel Port

This field allows you to configure the Notebook's Parallel Port. The following options are available:

- Enabled: configuration set by user
- Disabled: no configuration
- Auto: BIOS or OS chooses configuration

The default value for this field is: Enabled



*Changing the default address and IRQ settings for the Serial and Parallel Port can cause conflicts with other system devices or installed peripherals*

### Mode

This field allows you to configure the Notebook's Parallel Port transmission mode. The following options are available:

- Normal
- Bi-directional
- ECP
- EPP

EPP and ECP are bi-directional modes, allowing both data input and output. The



EPP and ECP modes are only supported with EPP- and ECP-aware peripherals.

The default value for this field is: ECP Mode

### **Base I/O address**

When the Parallel Port field is set to Enabled, and the mode to Normal, Bi-directional or ECP, the "Base I/O address" field becomes available and you can set the parallel port's I/O address. The following I/O options are available:

- 378
- 278
- 3BC

The default value for this field is: 378

### **Interrupt**

When the Parallel Port field is set to Enabled, the "Interrupt" field becomes available and you can set the parallel port's IRQ value. The following IRQ options are available:

- IRQ 7
- IRQ 5

The default value for this field is: IRQ 7

### **DMA Channel**

This field is only available when the Parallel Port Mode field is set to ECP. It allows you to configure the Parallel Port's DMA Channel for ECP mode. The following options are available:

- DMA 1
- DMA 3

The default value for this field is: DMA 3

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## **The Security Menu**

The Notebook's advanced system of security allows you to set a password to prevent unauthorized access to system resources, data, and the BIOS Setup program. This section covers each parameter of the Security Menu. Selecting *Security* from the menu bar displays the following menu:

PhoenixBIOS Setup Utility		
Main	System Devices	Security
		Item specific Help
User Password is	Clear	
Administrator Password is	Clear	
Set User Password	[Enter]	
Set Administrator Password	[Enter]	Supervisor Password controls access to the setup utility
Password Required to:		
Boot:	[Enabled]	
F1 Help	↑↓ Select Item	F5/F6 Change Values
Esc Exit	←→ Select Menu	F9 Setup defaults
	Enter Select	F10 Save and Exit

Figure 3-3: The Security Menu

Each field of the Security Menu is covered in detail below.

### A Note about Passwords

The BIOS Setup program allows you to specify passwords in the Security menu. The passwords control access to the BIOS and certain Security menu options during system startup.

The passwords are not case sensitive. In other words, a password can be entered using either upper or lower case letters; it makes no difference.

Passwords should be composed of characters A-Z, 0-9 and not exceed eight characters in length.

The administrator password controls access to the setup utility. The administrator password must be set before the user password can be set.

The user password controls access to the system at bootup. The format of the password is as follows:

### User Password Is / Administrator Password Is

This field will show Set when you have set a System Password as described below. If you have not set the System Password, the field will show Clear. This is a display only field.

### Set User Password... / Set Administrator Password...

This field allows you to set the System Password. The System Password allows full access to the BIOS Setup menus. To set the administrator password, highlight this field and press the [Enter] key. The following dialog box appears:

<b>Set Administrator Password</b>
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**Enter New Password [ ]**

**Confirm New Password [ ]**

Type the password and press the [Enter] key. You can type up to eight alphanumeric characters. Symbols and other keys are ignored. To confirm the password, type the password again and press the [Enter] key. The System password is now set. Note that the "Administrator Password is" field automatically changes to **Set**.

To change or clear a password, highlight this field and press the [Enter] key.

The following dialog box appears:

**Set Administrator Password**

**Enter Current Password [ ]**

**Enter New Password [ ]**

**Confirm New Password [ ]**

Enter the current password, then enter the new password, and finally confirm the new password. To clear the password, enter the current password, then press the [Enter] key twice. The password is now cleared and the "System Password is" field is automatically set to **Clear**.

When changing or clearing the password a "Setup Notice" will inform you that changes have been saved.

**Setup Notice**  
**Changes have been saved.**  
**[ continue]**

Press the [Enter] key to register your changes.

If the current password entered does not match the actual current password the following message will appear:

**Setup Warning**  
**Invalid password**  
**Re-enter Password**  
**[ continue]**

If the new password and confirm new password strings do not match this message will appear:

**Setup Warning**  
**Password do not match**  
**Re-enter Password**

### **Password Required to Boot**

When this field is enabled, the system will require the password before the system can bootup. This option is only available once an administrator password has been set. The options for this field are:

- Enabled
- Disabled

The default setting for this field is: Disabled

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## The Boot Menu

The Boot Menu allows the user to specify the order in which the Notebook is to check for a device to boot the system. To make changes, select Boot from the menu menu bar. The following screen appears:

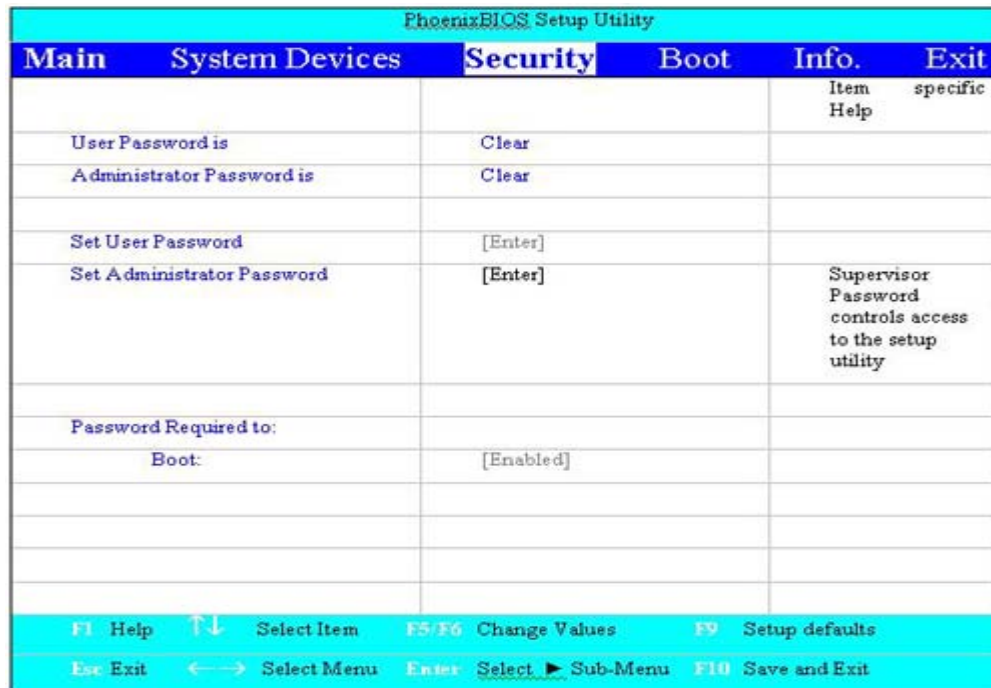


Figure 3-4: The Boot Menu

### Boot Sequence

The Boot Menu allows you to alter the priority the system uses to search for the boot boot device on system power up according to numerical order.

Use the up and down arrow keys [ ▲ ] [ ▼ ] to select a device, then press:

- [F6] to move a device up the list
- [F5] to move a device down the list

Press [Esc] to exit the menu.

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## The Information Menu

The information menu displays static system information. The fields are read only.

PhoenixBIOS Setup Utility		
Main	System Devices	Security
Boot	Info.	Exit
Item specific Help		
System BIOS Version:	CY25_1.00	
VGA BIOS Version:	1.10.xx	
Serial Number:	XXXXXXXXXX	
UUID Number:	XXXXXXXXXX XXXXXXXXXX	
System Memory:	640 KB	Show System Memory Size
Extended Memory:	127 MB	Show Extended Memory Size
F1 Help    ↑↓ Select Item    F5/F6 Change Values    F9 Setup defaults Esc Exit    ←→ Select Menu    Enter Select    Sub-Menu    F10 Save and Exit		

Figure 3-5: The Information Menu

### System Memory

This field displays the amount of conventional memory detected by the system during bootup. You do not need to make changes to this field. This is a display only field.

### Extended Memory

This field displays the amount of extended memory detected by the system during bootup. You do not need to make changes to this field. This is a display only field.  
 Extended Memory size = Total memory size - 1 MB

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## The Exit Menu

Once you have made all of your selections from the various menus in the Setup program, you should save your changes and exit Setup. Select Exit from the menu bar to display the following menu:

[illegible]

*Figure 3-6: The Exit Menu*



*Pressing the [Esc] key does not exit this menu. You must select one of the options from this menu or a menu bar item to exit this menu.*

Each of the options on this menu is described below.

## Save Changes and Exit

Once you are finished making your selections, choose this option from the Exit Menu Menu to ensure the values you selected are saved to Non-Volatile RAM. Changes you made to the Setup program must be changed to Non-Volatile RAM in order to make them operative. Non-Volatile RAM differs from standard RAM memory in that it is sustained by an on-board battery and stays on even when the Notebook is turned off.

Once your selections have been saved, the Setup program displays the following message:

Setup Confirmation
<b>Save configuration changes and exit now?</b>
<b>[Yes] [No]</b>

System will reboot if Yes is selected and will stay in Setup if No is selected.

The next time you bootup the Notebook, the BIOS will attempt to load the values you saved in Non-Volatile memory. If these values cause the system boot to fail, reboot and press [F2] to enter the Setup program. Once in Setup, you can try to change the values that caused the system boot to fail. If the problem persists, load the default values (see *Get Default Values* below).



*If you attempt to exit the Setup program without saving your changes, the program will prompt you with a message asking if you want to save your changes before exiting.*

### Discard Changes and Exit

This option should only be used if you do not want to save the changes you have made to the Setup program. The default is set to No. If you have made changes to the fields other than system date, system time and password, the system will ask for confirmation when choosing *Exit Discarding Changes*.

<p>Warning Configuration has not been saved! Save before exiting? [Yes] [No]</p>
--

The system will reboot after either selection.

### Get Default Values

This option allows you to load the default values for each of the parameters on the Setup Menus. When this option is selected, the following message is displayed:

<p>Setup Confirmation</p>
<p>Load default configuration now?  [Yes] [No]</p>

The system will remain in Setup after either selection.

You can now select *Exit Saving Changes* or make other changes before saving the values to Non-Volatile RAM.

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