Chapter 6
The BIOS Setup Program
6.1 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-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, 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 guides 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 suit your own performance needs. It is recommended that you read this chapter and become familiar with the adjustments that can be made in the BIOS.

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

- Accessing the BIOS Setup program
- Launching submenus
- Saving Changes and Exiting the 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 configure 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 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.
6.2.1 Accessing the BIOS Setup program

To access the BIOS Setup program, press the F2 key as soon as the computer starts up and you see the Phoenix BIOS screen.

The Menu Bar

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

**Main**
Allows the user to configure standard IBM PC AT system parameters.

**Advanced**
Allows the user to configure advanced system settings.

**Security**
Allows the user to configure security system settings.

**Others**
Allows the user to configure miscellaneous system settings.

**Boot**
Allows the user to specify the order in which the notebook is to check for a device to boot the system.

**Exit**
Allows the user 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 Advanced menu, press the right arrow key [►] once.

**Item Specific Help**

At the right of the Setup screen, you will notice an item specific help bar. For each item that you select on the menu, the bar informs of its specific function as well as the hot keys related specifically to that item and/or submenu.

### 6.2.2 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 opens.

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 submenus and their corresponding functions. If you accidentally make unwanted changes to the current configuration, go to the Exit menu and select Discard Changes.

### 6.2.3 Saving Changes and Exiting the Setup Program

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

When the Setup program is accessed, the Information screen appears. It displays the following pieces of information regarding your current system:

<table>
<thead>
<tr>
<th>PhoenixBIOS Setup Utility</th>
<th>Item Specific Help</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main</td>
<td>Advanced</td>
</tr>
<tr>
<td>System Time:</td>
<td>[19:34:35]</td>
</tr>
<tr>
<td>System Date:</td>
<td>[01/01/2005]</td>
</tr>
<tr>
<td>Hard Disk:</td>
<td></td>
</tr>
<tr>
<td>Quiet Boot:</td>
<td>[Enabled]</td>
</tr>
<tr>
<td>Power on display:</td>
<td>[Auto-Selected]</td>
</tr>
<tr>
<td>LCD Display stretch</td>
<td>[Enabled]</td>
</tr>
<tr>
<td>System Memory:</td>
<td>640 KB</td>
</tr>
<tr>
<td>Extended Memory:</td>
<td>1022 MB</td>
</tr>
<tr>
<td>BIOS Ver.</td>
<td>XXXXX</td>
</tr>
<tr>
<td>Language</td>
<td>[English (US)]</td>
</tr>
</tbody>
</table>

F1 Help  ↑↓ Select Item  F5/F6 Change Values  F9 Setup Defaults
Esc Exit  ←→ Select Menu  Enter Select  Sub-Menu  F10 Save and Exit

System Time and System Date

The hour is displayed with 24-hour format. The values set in these two fields take effect immediately.

Hard Disk

The hard disk information is displayed with the manufacturer and model name.

Quiet Boot

*Enabled:* Customer logo is displayed; Summary screen is disabled.

Disabled: Customer logo is not displayed; Summary screen is enabled.

Power on Display

This option is auto-selected. Displays on an external monitor if connected, otherwise it will be displayed on the laptop LCD.
LCD Display Stretch

Disabled: Disables vertical LCD stretch; enables horizontal LCD stretch.

Enabled: Enables vertical LCD stretch; enables horizontal LCD stretch.

System Memory

This field reports the memory size of system base memory. The size is fixed to 640KB.

Extended Memory

This field reports the memory size of the extended memory with an integer in the system, but 32Bit SMI will occupy 1 MB and UMA frame buffer (Integrated VGA uses only).

Extended Memory size = Total memory size - 1 MB – 1 MB – UMA frame buffer

BIOS Ver

This field displays current version of the BIOS.

Language

This field allows the user to change the languages among English, Japanese, and French.
6.4 The Advanced Menu

Selecting Advanced on the menu bar displays the Advanced Menu. Each field on this menu is covered below.

<table>
<thead>
<tr>
<th>Legacy USB Support</th>
<th>[Enabled]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Execute-Disable Bit Capability</td>
<td>[Disabled]</td>
</tr>
<tr>
<td>Dynamic CPU Frequency Mode</td>
<td>[Dynamic]</td>
</tr>
<tr>
<td>Built-in LAN</td>
<td>[Enabled]</td>
</tr>
<tr>
<td>Wake-up on LAN</td>
<td>[Disabled]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>F1</th>
<th>Help</th>
<th>↑↓</th>
<th>Select Item</th>
<th>F5/F6</th>
<th>Change Values</th>
<th>F9</th>
<th>Setup Defaults</th>
</tr>
</thead>
<tbody>
<tr>
<td>Esc</td>
<td>Exit</td>
<td>←→</td>
<td>Select Menu</td>
<td>Enter Select</td>
<td>Sub-Menu</td>
<td>F10</td>
<td>Save and Exit</td>
</tr>
</tbody>
</table>

Legacy USB Support

Disabled: Disables the legacy USB support.

Enabled: Enables the legacy USB support.

Execute-Disable Bit Capability

Disabled: Forces the Execute-Disable Bit Capability extended feature bit to always return to 0.

Enabled: Enabled.

Dynamic CPU Frequency Mode

Always Low: The CPU always runs at low power consumption and low speed.

Dynamic: When the computer is in use, CPU operation is automatically switchable when necessary.

Built-in LAN

Disabled: Disables built-in LAN.

Enabled: Enables built-in LAN.

Wake-up on LAN

Disabled: Disables wake-up on LAN.

Enabled: Enables wake-up on LAN.
6.5 The Security Menu

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

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.

Passwords are not case sensitive. A password can be entered using either upper or lower case letters; it makes no difference. When you choose your password, it should be composed of characters A-Z, 0-9 and eight characters in length.

NOTE: The administrator password must be set before the user password can be set.

Set User Password… / Set Admin Password…

These fields allow you to set the System Password. The System Password allows full access to the BIOS Setup menus. To set the Supervisor password, highlight this field and press [Enter].

Type the password and press the [Enter] key. You can type up to ten alphanumeric characters. Symbols are ignored.

To confirm the password, type the password again and press the [Enter] key.
User Password Is / Supervisor Password Is

These two fields shows that User / Supervisor Passwords are set or not.

**Set** System Password is set.

**Clear** System Password is not set.

Set Supervisor Password / Set User Password

Enter this field always shows the message.

While this field is highlighted, press “Enter”. The following message is shown:

<table>
<thead>
<tr>
<th>Set Supervisor Password</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enter New Password [ ]</td>
</tr>
<tr>
<td>Confirm New Password [ ]</td>
</tr>
</tbody>
</table>

If there is an old password then setup will prompt with the following window instead and a current password will be required to be entered at first:

<table>
<thead>
<tr>
<th>Set Supervisor Password</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enter Current Password [ ]</td>
</tr>
<tr>
<td>Enter New Password [ ]</td>
</tr>
<tr>
<td>Confirm New Password [ ]</td>
</tr>
</tbody>
</table>

User can type password in field of “Enter New Password”, and re-enter password in field of “Confirm New Password “ for verification.

If verification OK:

<table>
<thead>
<tr>
<th>Setup Notice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Changes have been saved.</td>
</tr>
<tr>
<td>[Continue]</td>
</tr>
</tbody>
</table>

The supervisor password is set complete after user press “Enter”.

If verification fails:

<table>
<thead>
<tr>
<th>Setup Warning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passwords do not match.</td>
</tr>
<tr>
<td>Re-enter Password.</td>
</tr>
<tr>
<td>[Continue]</td>
</tr>
</tbody>
</table>

If password on boot is required, the password must be set otherwise it cannot be enabled.

The formats of the password are as follows:

Length: No more than 8 characters.

Characters: Alphanumeric keys only. The shift status, Ctrl, Shift, Alt, and Capital, are ignored.
Built-in HDD Status

Set  HDD Password is set.
Clear HDD Password is not set.

Built-in HDD Password Select

User Only  For normal user entering HDD password.
User+Master  Master password must be set first before user password can be configured.

Set HDD User Password / Set HDD Master Password

Enter this field always shows the message.

While this field is highlighted, press “Enter”. The following message is shown:

```
Set HDD Master Password
Enter New Password      [                           ]
Confirm New Password      [                           ]
```

If there is an old password then setup will prompt with the following window instead and a current password will be required to be entered at first:

```
Set HDD Master Password
Enter Current Password    [                           ]
Enter New Password      [                           ]
Confirm New Password      [                           ]
```

User can type password in field of “Enter New Password”, and re-enter password in field of “Confirm New Password “ for verification.

If verification OK:

```
Setup Notice
Changes have been saved.
[Continue]
```

The HDD password is set complete after user press “Enter”.

If verification fails:

```
Setup Warning
Passwords do not match.
Re-enter Password.
[Continue]
```

If password on boot is required, the password must be set otherwise it cannot be enabled.

The formats of the password are as follows:

Length:  No more than 8 characters.

Characters:  Alphanumeric keys only. The shift status, Ctrl, Shift, Alt, and Capital, are ignored.
**Trusted Platform Module Setting**

<table>
<thead>
<tr>
<th>PhoenixBIOS Setup Utility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main</td>
</tr>
<tr>
<td><strong>Trusted Platform Module Setting</strong></td>
</tr>
<tr>
<td>Security Chip State</td>
</tr>
<tr>
<td>Deactivated</td>
</tr>
<tr>
<td>Trusted Platform Support</td>
</tr>
</tbody>
</table>

F1 Help ↑↓ Select Item  F5/F6 Change Values  F9 Setup Defaults
Esc Exit ←→ Select Menu Enter Select  Sub-Menu  F10 Save and Exit

**Security Chip State**

- Enabled & Activate: Enable security chip encrypted data and user from taking ownership.
- Disable & Deactivate: Disable security chip prevents encrypted data from being used and Deactivated security chip prevents a user from taking ownership.

**Trusted Platform Support**

- **Disabled:** Disables Trusted Platform Module support.
- Enabled: Enables Trusted Platform Module support.
6.6 Others Menu

<table>
<thead>
<tr>
<th>PhoenixBIOS Setup Utility</th>
<th>Main</th>
<th>Advanced</th>
<th>Security</th>
<th>Others</th>
<th>Boot</th>
<th>Exit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item Specific Help</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low Battery Alarm:</td>
<td>[Enabled]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Panel Close Alarm:</td>
<td>[Disabled]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>System Beep:</td>
<td>[Disabled]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

F1 Help ‾‾ Select Item F5/F6 Change Values F9 Setup Defaults
Esc Exit ←→ Select Menu Enter Select ⏐ Sub-Menu F10 Save and Exit

**Low Battery Alarm**

Disabled: The system will not sound an alarm when battery power is low.

**Enabled:** The system will sound an alarm when battery power is low.

**Panel Close Alarm**

Disabled: The system will not sound an alarm when the LCD cover is closed.

Enabled: The system will sound an alarm when the LCD cover is closed.

**System Beep**

Disabled: The system will not beep prior to booting the OS.

Enabled: The system will beep prior to booting the OS.
## 6.7 Boot Menu

This menu allows the user to decide the order of boot devices to load the operating system. Bootable devices include the diskette drive in module bay, the onboard hard disk drive and the CD-ROM in module bay.

<table>
<thead>
<tr>
<th>PhoenixBIOS Setup Utility</th>
<th>Main</th>
<th>Advanced</th>
<th>Security</th>
<th>Others</th>
<th>Boot</th>
<th>Exit</th>
<th>Item Specific Help</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDD</td>
<td>HDD</td>
<td>Hard Disk Model name</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CD/DVD</td>
<td>CD/DVD</td>
<td>CD/DVD Drive Model name</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FDD</td>
<td>FDD</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LAN</td>
<td>LAN</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **F1** Help          - **↑↓** Select Item  - **F5/F6** Change Values  - **F9** Setup Defaults
- **Esc** Exit  - **←→** Select Menu  - **Enter** Select  - **Sub-Menu**  - **F10** Save and Exit
6.8 Exit Menu

The PhoenixBIOS Setup Utility provides an Exit Menu that allows users to save or discard changes to CMOS and exit the setup program.

### Exit Saving Changes

Allows the user to save changes to CMOS and reboot the system. The following message is prompted when the user presses “Enter” on the item:

<table>
<thead>
<tr>
<th>Setup Confirmation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Save configuration changes and exit now?</td>
</tr>
<tr>
<td>[Yes] [No]</td>
</tr>
</tbody>
</table>

Yes: Exit SETUP and reboot

No: Go back to the previous screen

### Exit Discarding Changes

A setup warning appears indicating that the configuration has not been saved. The user is prompted to save before exiting.

<table>
<thead>
<tr>
<th>Setup Warning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Configuration has not been saved!</td>
</tr>
<tr>
<td>Save before exiting?</td>
</tr>
<tr>
<td>[Yes] [No]</td>
</tr>
</tbody>
</table>
Load Setup Defaults

Allows the user to load default value in CMOS Setup. The following message is prompted when user press “Enter” on this item:

Setup Confirmation
Load default confirmation now?
[Yes]        [No]

Select Yes to confirm or No to abort. You will then return to the setup screen.

Discard Changes

Allows the user to load previous value in CMOS Setup. The following message is prompted when press “Enter” on this item:

Setup Confirmation
Load previous confirmation now?
[Yes]        [No]

Select Yes to confirm or No to abort. You will then return to the setup screen.

Save Changes

Allows the user to save changes and not exit Setup. The following message is prompted when press “Enter” on this item:

Setup Confirmation
Save configuration changes now?
[Yes]        [No]

Select Yes to confirm or No to abort. You will then return to the setup screen.