Chapter 2

BIOS Utility

2.1 Entering Setup

Save and close all open files and leave your application program before entering Setup.

Follow these steps to enter Setup:

1. Turn on the system. The program displays the following message:

```
Press <F2> to enter SETUP
```

2. Press F2. The Setup Main menu appears.

2.2 The Main Menu

```
PhoenixBIOS Setup - Copyright 19xx-xx Phoenix Technologies Ltd.
Main   Advanced   Security   Power   Exit

                                          Item Specific Help

 System Time:              [xx:xx:xx]
 System Date:              [xx/xx/xxxx]   <Tab>, <Shift-Tab>, or
 Diskette A:               [1.2 MB, 5 ¼”]  <Enter> selects field
 Diskette B:               [Not Installed]
▸IDE Adapter 0 Master:     C: 121 Mb
▸IDE Adapter 0 Slave:      None
 Video System:             [EGA/VGA]
 Plug and Play OS:         [Auto]
▸Memory Cache
▸System shadow:            [Enabled]
▸Video shadow:             [Enabled]
▸Boot sequence:            [A: then C:]
▸Numlock:                  [Auto]

 System Memory:             640 KB
 Extended Memory:          1024 KB

F1  Help  ↑↓  Select Item   -/+  Change Values       F9  Setup Defaults
ESC Exit  ←→  Select Menu   Enter Select ▸Sub-Menu   F10 Previous Values
```

The Menu Bar

The Menu bar is the top part of the window that contains the following options:

Main Opens the Basic System Configuration.

Advanced Allows you to set the Advanced Features available on your system chipset.

Security Allows you to set the User and Supervisor password, as well as the Backup and Virus-check reminders.

Power	Configures the Power management feature.
Exit	Quits the current menu.

Use the ← or → to make a selection.

The Legend Bar

The Legend bar is the area at the bottom of the window that displays the keys to press to move within the menu or exit the current menu. The legend keys listed are as follows:

F1 or **Alt-H**	Opens the General Help window.
Esc	Exits the Setup Main menu.
← or →	Lets you select a menu.
↑ or ↓	Moves the cursor up/down.
Tab or **Shift-Tab**	Cycles the cursor up/down.
Home or **End**	Moves the cursor to top/bottom of the window.
PgUp or **PgDn**	Moves the cursor to the next/previous page.
PgUp or **PgDn**	Moves the cursor to the next/previous page.
F5 or **-**	Selects the Previous Value for the field.
F5 or **-**	Selects the Previous Value for the field.
F6 or **+** or **Space**	Selects the Next Value for the field.
F9	Loads the Default Configuration values for the current menu.

F10	Loads the Previous Configuration values for the current menu.
Enter	Executes Command or Select ▸ Submenu.
Alt-R	Refreshes the screen.

To select an item, move the cursor to the desired field using the arrowkeys. To select a value for that field, use the [+] or [−] keys. To save the values currently displayed in all the menus, use the Save Values commands in the Exit menu.

To display a submenu, move the cursor to the desired submenu using the arrowkeys. Then press [ENTER]. A ▸ pointer marks the submenus.

The Field Help Window

The Field Help window is the window on the right side of each menu that displays the help text for the currently selected field.

The General Help Window

To open the General Help window, press F1 or ALT-H. The General Help window appears as follows:

```
General Help

Setup changes system behavior by modifying the power on
initialization parameters.  Selecting incorrect values may cause
system boot failure; load Setup Default values to recover.

<Up/Down> arrows select fields in current menu.
<PgUp/PgDn> moves to previous/next page on scrollable menus.
<Home/End> moves to top/bottom item of current menu.

Within a field, <F5> or <-> selects next lower and
<F6>, <+>, or <Space> selects next higher value.

<Left/Right> arrows select menus on menu bar.
<Enter> displays more options for items marked with ▸.

<F9> loads factory-installed Setup Default values.
<F10> restores previous values from CMOS.

<ESC> or <Alt-X> exits Setup; in sub-menus, pressing these keys
returns to the previous menu.

<F1> or <Alt-H> displays General Help (this screen).

[Continue]
```

The scroll bar on the right side of the window indicates that there is more than one page of information available. To move within the General Help window, you can do any of the following:

1. Press PGUP or PGDN to view the other pages.
2. Press HOME to display the first page.
3. Press END to display the last page.
4. Press ENTER to display each page then exit the window.

5. Press ESC to exit the current window.

2.2.1 System Time

This parameter allows you to set the system time in hour, minute, and second format.

2.2.2 System Date

This parameter allows you to set the system time in month, day, and year format.

2.2.3 Diskette Drives A and B

These parameters allow you to select the type of diskette drive(s) currently installed in your system. The selections are:

- 360KB, 5 ¼″
- 1.2MB, 5 ¼″
- 720KB, 3 ½″
- 1.44MB, 3 ½″
- 2.88MB, 3 ½″
- Not Installed

Highlight the Diskette Drive A parameter to configure the first diskette drive. If you have more than one diskette drive installed, highlight Diskette Drive B parameter to configure the second diskette drive.

2.2.4 Video System

This parameter lets you select the default video mode of your primary display. The options are:

- Monochrome
- EGA/VGA
- CGA 40x25
- CGA 80x25

2.2.5 Plug and Play OS

Set this parameter to Yes if your system has a Plug-and-Play (PnP) operating system. This enables the operating system to configure the PnP devices not required for boot.

Set this parameter to No to allow BIOS to configure the PnP devices, instead of the PnP OS.

Select Auto if your OS is PnP aware.

2.2.6 System Memory

This parameter is non-configurable and for display only. This displays the total amount of memory supported by the system.

2.2.7 Extended Memory

Similar to System Memory, this parameter is non-configurable and for display only. This displays the total amount of extended memory detected by the system during bootup.

2.2.8 IDE Adapters

The IDE adapters control the hard disk drives and are capable of supporting one master drive and one optional slave drive in any of these combinations:

- One master
- One master, one slave
- Two masters
- Two masters, one slave
- Two masters, two slaves

Use a separate submenu to configure each hard disk drive. The submenu varies depending on these conditions:

Advanced Hard Disk Features - Not Installed

If the Advance Hard Disk Features are not installed, the IDE adapter submenu appears as follows:

```
  PhoenixBIOS Setup - Copyright 19xx-xx Phoenix Technologies Ltd.
 Main

 IDE Adapter 0 Master:        C: XXX Mb        Item Specific Help

 Autotype Fixed Disk        [Press Enter]      Attempts to
                                               automatically detect
 Type:                      [User]  XXX Mb     the drive type for
 Cylinders:                 [XXX]              drives that comply with
 Head:                      [  X]              ANSI specifications.
 Sectors/Track:             [ XX]
 Landing Zone:              [XXX]
 Write Precomp:             [None]

F1  Help  ↑↓  Select Item   -/+  Change Values       F9  Setup Defaults
ESC Exit  ←→  Select Menu  Enter Select ▸Sub-Menu    F10 Previous Values
```

Autotype Fixed Disk	Pressing ENTER allows the system to detect the hard disk type. If successful, the system automatically loads the detected values for the remaining fields in this menu.
Type	Allows you to set the hard disk type currently installed in the system. The selections are 1 to 39. Select the User option to manually set the remaining fields in this menu.
Cylinders	Specifies the number of cylinders. The available settings are 1 to 2048.
Heads	Specifies the number of read/write heads. The available settings are 1 to 16.
Sectors/Tracks	Specifies the sectors per track available in the hard disk. The available settings are 1 to 64.
Landing Zone*	Indicates the number of cylinders specifies as the landing zone for the read/write heads. The available settings are 1 to 2048.
Write Precomp*	Specifies the number of cylinder at which the write timing will change. The available settings are 1 to 2048 and None.

* The IDE drives do not require the Landing Zone and the Write Precomp settings.

Incorrect settings can cause serious system problems.

Advanced Hard disk features - Installed

If the Advance Hard Disk Features are installed, the IDE adapter submenu appears as follows:

```
PhoenixBIOS Setup - Copyright 19xx-xx Phoenix Technologies Ltd.
Main

IDE Adapter 0 Master:          C: XXX Mb        Item Specific Help

Autotype Fixed Disk        [Press Enter]        Attempts to
                                                automatically detect
Type:                      [User]  XXX Mb       the drive type for
Cylinders:                 [XXX]                drives that comply with
Head:                      [   X]               ANSI specifications.
Sectors/Track:             [  XX]
Landing Zone:              [XXX]
Write Precomp:             [None]

Multi-Sector Transfers:    [XX] sectors
LBA Mode Control:          [Disabled]
32-Bit I/O:                [Enabled]
Transfer Mode:             [Fast PIO 3]

F1  Help  ↑↓  Select Item   -/+  Change Values      F9  Setup Defaults
ESC Exit  ←→  Select Menu   Enter Select ▸Sub-Menu  F10 Previous Values
```

Autotype Fixed Disk	Pressing ENTER allows the system to read the hard disk drive parameters from the drive itself, loads the optimum settings for the other options in this menu, set the Type field to User and allows editing other fields.
Type	Allows you to set the hard disk type currently installed in the system. The selections are 1 to 39. Select the User option to manually set the remaining fields in this menu. Select the Auto option to automatically detect the hard disk type every time the system boots and to prevent editing of the remaining fields.
Cylinders	Specifies the number of cylinders. The available settings are 1 to 2048.
Heads	Specifies the number of read/write heads. The available settings are 1 to 16.
Sectors/Tracks	Specifies the sectors per track available in the hard disk. The available settings are 1 to 64.
Landing Zone*	Indicates the number of cylinders specifies as the landing zone for the read/write heads. The available settings are 1 to 2048.
Write Precomp*	Specifies the number of cylinder at which the write timing will change. The available settings are 1 to 2048 and None.

* The IDE drives do not require the Landing Zone and the Write Precomp settings.

Multi-Sector Transfers Indicates the type of data transfer supported. The options are:

- Standard 1 sector per block
- 2 sectors 2 sectors per block
- 4 sectors 4 sectors per block
- 8 sectors 8 sectors per block
- 16 sectors 16 sectors per block
- MAX n If Block PIO is installed, this option indicates the largest sector possible (n=32, 64, or 128). However, the maximum option is not always the fastest.

LBA Mode Control Select Enabled to activate the Logical Block Access (LBA) mode. The LBA mode enables the operating system to format disks with capacities of more than 8GB. Select Disabled to deactivate LBA.

32-Bit I/O Select Enabled to activate the 32-bit communication between CPU and the IDE card. This feature requires the PCI or the local bus. Select Disabled to disregard the feature.

Transfer Mode Lets you set the data transfer method between the hard disk and the system memory. The Setup menu lists only those options supported by the drive and the platform. The options are:

- Standard
- Fast PIO 1 or Fast DMA A
- Fast PIO 2 or Fast DMA B
- Fast PIO 3 or Fast DMA F

Incorrect settings can cause serious system problems.

2.2.9 Memory Cache

Enabling cache speeds up the CPU data access time by temporarily holding the most recently accessed data in the regular memory (i.e., dynamic RAM or DRAM) in a special storage area of the static RAM. When the data is required, the CPU accesses the cache first. If it cannot find the data in the cache, it accesses the regular memory.

Selecting the Memory Cache parameter opens the Memory Cache menu (see the screen below). The parameters displayed in this menu depend on your system hardware.

```
PhoenixBIOS Setup - Copyright 19xx-xx Phoenix Technologies Ltd.
Main

Memory Cache                                  Item Specific Help

External cache:              [Disabled]       Sets the state of the
                                              external system memory
Cache Interleave:            [Disabled]       cache.
Cache Write Back:            [Disabled]
Cache Read Cycles:           [2T]
Cache Write Cycles:          [3T]

Cache System BIOS:           [Disabled]
Cache Video BIOS:            [Disabled]
Cache E800 - EFFF:           [Disabled]
Cache E000 - E7FFF:          [Disabled]
Cache D800 - DFFF:           [Disabled]
Cache D000 - D7FFF:          [Disabled]
Cache C800 - CFFF:           [Disabled]

Non-cacheable Regions
   Region 0, start:          [    0 KB]
   Region 0, size:           [Disabled]
   Region 1, start:          [    0 KB]
   Region 1, size:           [Disabled]

F1  Help   ↑↓  Select Item    -/+  Change Values       F9  Setup Defaults
ESC Exit   ←→  Select Menu   Enter Select ▸Sub-Menu    F10 Previous Values
```

External Cache Enables or disables all memory caching.

Cache Interleave	If enabled, system allows interleaving of multiple banks of static RAM to improve CPU access. If disabled, system disregards the interleave function.
Cache Write Back	If enabled, caching for both read and write to memory is activated. If disabled, caching is activated for read function only.
Cache Read Cycles	Specifies the number of clock pulses for reading from cache. Shorter clock pulses improve system performance. This information is chipset dependent.
Cache Write Cycles	Specifies the number of clock pulses for reading from cache. Shorter clock pulses improve system performance. This information is chipset dependent.
Cache System BIOS	Enabling the parameter activates the system BIOS caching. This improves the system performance. Disable the parameter to bypass the option.
Cache Video BIOS	Enabling the parameter activates the video BIOS caching. This improves the system performance. Disable the parameter to bypass the option.
Cache Segments	These lines let you enable or disable the caching for certain memory segments usually reserved for shadowing system or option ROMs.
Non-cacheable Regions	Specifies the non-cacheable areas of regular and extended memory.

Region 0, start	Defines the start of non-cacheable region 0 in KB. The setting should be in multiples of 64.
Region 0, size	Defines the size of non-cacheable region 0 in KB. The setting should be in multiples of 64. Disabling the parameter makes the region available for cache.
Region 1, start	Defines the start of non-cacheable region 1 in KB. The setting should be in multiples of 64.
Region 1, size	Defines the size of non-cacheable region 1 in KB. The setting should be in multiples of 64. Disabling the parameter makes the region available for cache.

Incorrect settings can cause serious system problems.

2.2.10 Memory Shadow

Selecting the System Shadow or Video Shadow parameter from the Main menu opens the Memory Shadow menu (see the following screen). The parameters displayed in this menu depend on the capabilities of your system hardware.

```
PhoenixBIOS Setup - Copyright 19xx-xx Phoenix Technologies Ltd.
Main

| Memory Shadow                          | Item Specific Help |
|----------------------------------------|--------------------|
| System shadow:          Enabled        | Enables option ROM |
| Video shadow:          [Enabled]       | shadowing in this  |
|                                        | region.            |
| Shadow Option ROM's                    |                    |
| C800 - CFFF:           [Disabled]      |                    |
| D000 - D7FF:           [Disabled]      |                    |
| D800 - DFFF:           [Disabled]      |                    |
| E000 - E7FF:           [Disabled]      |                    |
| E800 - E7FF:           [Disabled]      |                    |

F1  Help  ↑↓  Select Item   -/+  Change Values      F9  Setup Defaults
ESC Exit  ←→  Select Menu   Enter Select ▸Sub-Menu  F10 Previous Values
```

System Shadow For display only and permanently set to Enabled.

Video Shadow Enables or disables the video BIOS shadowing. When enabled, the video BIOS locations change from ROM to RAM. Shadowing improves system performance since RAM information access is faster ROM.

Shadow option ROM Enables or disables shadowing for option ROMs located in the specified segments of memory.

Some option ROMs do not work properly when shadowed.

2.2.11 Boot Sequence

Selecting the Boot Sequence parameter from the Main menu opens the Boot Options menu (see the screen below).

```
PhoenixBIOS Setup - Copyright 19xx-xx Phoenix Technologies Ltd.
Main

| Boot Options                                | Item Specific Help |
|---------------------------------------------|---------------------------------|
| Boot sequence:          [A: then C:]        | Order system searches           |
| SETUP prompt:           [Enabled]           | drives for a boot disk.         |
| POST Errors:            [Enabled]           |                                 |
| Floppy check:           [Enabled]           |                                 |
| Summary screens:        [Enabled]           |                                 |

F1  Help  ↑↓  Select Item   -/+  Change Values      F9  Setup Defaults
ESC Exit  ←→  Select Menu   Enter Select ▸Sub-Menu  F10 Previous Values
```

Boot Sequence	Specifies the sequence of loading the operating system from the disk drives. The options are: • A: then C: • C: then A: • C: only
SETUP Prompt	Lets you display or hide the Press <F2> for Setup message during bootup.
POST Errors	Lets you display or hide the Press <F1> to resume, <F2> to Setup message during bootup.
Floppy Seek	If enabled, the system checks the diskette drive(s) during bootup. To speed up boot time, disable the parameter.
Summary Screen	Lets you display or hide the summary screen during bootup.

2.2.12 Numlock

Selecting the Numlock parameter from the Main menu displays the Keyboard Features menu (see the screen below).

```
PhoenixBIOS Setup - Copyright 19xx-xx Phoenix Technologies Ltd.
Main

| Boot Options                                | Item Specific Help |
|---------------------------------------------|---------------------------|
| Numlock:                    [Off]           | Selects Power-on State    |
| Key Click:                  [Disabled]      | for Numlock               |
| Keyboard auto-repeat rate:  [30/sec]        |                           |
| Keyboard auto-repeat delay: [1/2 sec]       |                           |

F1  Help   ↑↓  Select Item    -/+  Change Values       F9  Setup Defaults
ESC Exit   ←→  Select Menu   Enter Select ▸Sub-Menu    F10 Previous Values
```

Numlock Activates or deactivates the Numlock keyboard function. The options are:

- On Activates Numlock
- Off Deactivates Numlock
- Auto Activates Numlock only if it finds a numeric keypad.

Key Click Enables or disables the key click sound.

Keyboard auto-repeat rate Sets the number of times per second a keystroke repeats while holding the key down. The options are:

- 2/sec
- 6/sec
- 10/sec
- 13.3/sec
- 21.8/sec
- 26.7/sec
- 30/sec

Keyboard auto-repeat delay Sets the time before a keystroke repeats after pressing the key.

- ¼ sec
- ½ sec
- ¾ sec
- 1 sec

2.3 The Advanced Menu

The following screen appears if you select Advanced for the menu bar.

```
PhoenixBIOS Setup - Copyright 19xx-xx Phoenix Technologies Ltd.
Main   Advanced   Security   Power   Exit

                                        Item Specific Help
                Warning!
Setting items on this menu to incorrect  If you have DOS, select
values may cause your system to malfunction.  'DOS'.  If you have
                                         UNIX, Novell Netware,
                                         or other operating
 ▸Advanced Chipset Control               systems, select
                                         'Other'.  If you are
  Large Disk Access Node:   [DOS]        installing new software
                                         and the drive fails,
 ▸Integrated Peripherals                 change this selection
 ▸PCI Devices                            and try again.
                                         Different operating
                                         systems require
                                         different
                                         representations of
                                         drive geometries.

F1  Help  ↑↓  Select Item    -/+  Change Values       F9  Setup Defaults
ESC Exit  ←→  Select Menu   Enter Select ▸Sub-Menu    F10 Previous Values
```

2.3.1 Large Disk Mode

A large disk is a hard disk that has more than 1024 cylinders, more than 16 heads, or more than 63 tracks per sector.

Set this parameter to DOS only if you have DOS. Otherwise, select Other.

2.3.2 Advanced Chipset Control

Selecting the Advanced Chipset Control parameter from the Advanced menu displays the Advanced Chipset Control submenu. This submenu allows you to change the values in the chipset registers to optimize system performance.

The Advanced Chipset Control submenu varies depending on the following conditions:

No PCI

If the system does not have a PCI chipset, the Advanced Chipset Control submenu appears as follows:

```
PhoenixBIOS Setup - Copyright 19xx-xx Phoenix Technologies Ltd.
      Advanced

| Advanced Chipset Control                | Item Specific Help |
|                                         |                    |
| Parity check:              [Enabled]    | Controls system memory
| Hidden refresh:            [Enabled]    | parity through the
| Slow refresh:              [Disabled]   | chipset.
| Read wait states:          [0]          |
| Write wait states:         [0]          |
| Extra bus wait states:     [0]          |
| Multiple ALE:              [Enabled]    |
| Keyboard reset delay:      [Disabled]   |

F1  Help   ↑↓  Select Item    -/+  Change Values       F9  Setup Defaults
ESC Exit   ←→  Select Menu   Enter Select ▸Sub-Menu    F10 Previous Values
```

Parity Check Enables or disables the system memory parity checking function.

Hidden Refresh	Enables or disables the refreshing of regular memory without holding up the CPU.
Slow Refresh	If enabled, regular memory refreshing slows down by a factor of 4. If disabled, refreshing rate is normal.
Read Wait States	Sets the number of wait states added to reads from system memory. This information is chipset dependent.
Write Wait States	Sets the number of wait states added to writes to system memory. This information is chipset dependent.
Extra Bus Wait States	Sets the number of wait states added to the AT bus accesses. This information is chipset dependent.
Multiple ALE	Enables or disables the use of single or multiple ALEs during cycle conversion.
Keyboard Reset Delay	If enabled, a period of 2 microseconds is added to the delay before resetting the system.

The parameters in this menu depend on the chipset installed on your system board. Before changing the items in this menu, we recommend that you consult your dealer or your chipset manual.

Incorrect settings can cause serious system problems.

With PCI BIOS

If the system has a PCI chipset, the Advanced Chipset Control submenu appears as follows:

```
PhoenixBIOS Setup - Copyright 19xx-xx Phoenix Technologies Ltd.
      Advanced

| Advanced Chipset Control                | Item Specific Help |
|-----------------------------------------|--------------------|
| Hidden Refresh:             [Disabled]  | Enables CPU to PCI |
| Code Read Page Mode:        [Disabled]  | write buffers, which |
| Write Page Mode:            [Disabled]  | allow data to be |
| CPU to PCI Write Buffers:   [Disabled]  | temporarily stored |
| PCI to DRAM Write Buffers:  [Disabled]  | buffers before writing |
| CPU to DRAM Write Buffers:  [Disabled]  | the data. |
| Snoop Ahead:                [Disabled]  |
| PCI Memory Burst Cycles:    [Disabled]  |

F1  Help   ↑↓  Select Item   -/+  Change Values   F9  Setup Defaults
ESC Exit   ←→  Select Menu   Enter Select ▸
```

Hidden Refresh Enables or disables the refreshing of regular memory without holding up the CPU.

Code Read Page Mode If enabled, it improves system performance especially when code contains mainly of sequential instructions.

Write Page Mode If enabled, it improves system performance especially when data is written sequentially.

CPU to PCI Write Buffers Enables or disables the storing of data in buffers before writing to PCI.

PCI to DRAM Write Buffers Enables or disables the storing of data in buffers before writing to DRAM.

CPU to DRAM Write Buffers Enables or disables the storing of data in buffers before writing to DRAM.

Snoop Ahead Lets you control the PCI bus master access to DRAM.

PCI Memory Burst Cycles Enables or disables the PCI memory burst write cycles.

The parameters in this menu depend on the chipset installed on your system board. Before changing the items in this menu, we recommend that you consult your dealer or your chipset manual.

Incorrect settings can cause serious system problems.

2.3.3 Integrated Peripherals Menu

Selecting the Integrated Peripherals parameter from the Advanced menu displays the following submenu:

```
PhoenixBIOS Setup - Copyright 19xx-xx Phoenix Technologies Ltd.
      Advanced

| Integrated Peripherals                | Item Specific Help |
|---------------------------------------|--------------------|
| COM port:                  [3F8, IRQ4]| Set COM port address
| COM port:                  [2F8, IRQ3]|
| LPT port:                  [378, IRQ7]|
| Diskette controller:       [Enabled ] |
| IDE controller:            [Enabled ] |
| ECP:                       [Disabled] |

F1  Help  ↑↓  Select Item   -/+  Change Values       F9  Setup Defaults
ESC Exit  ←→  Select Menu   Enter Select ▸Sub-Menu   F10 Previous Values
```

COM Port

Lets you select a unique address and interrupt request for the listed COM ports. If set to Auto, BIOS automatically assigns only the available IRQs to the ports. The available options are :

- Disabled
- 3F8, IRQ4
- 2F8, IRQ3
- 338, IRQ4
- 238, IRQ3
- 2E8, IRQ3

- 2E0, IRQ3
- 220, IRQ4
- 228, IRQ3
- Auto

LPT Port

Lets you select a unique address and interrupt request for the LPT port. If set to Auto, BIOS automatically assigns only the available IRQs to the ports. The available options are :

- Disabled
- 3BC, IRQ7
- 378, IRQ7
- 278, IRQ5

Diskette Controller

Enables or disables the onboard diskette controller.

IDE Controller

Enables or disables IDE controller.

ECP

Enables or disables the Extended Capabilities Port feature. This feature allows the parallel port to operate in bidirectional mode at a speed exceeding the maximum data transfer rate.

2.3.4 PCI Devices Menu

Selecting the PCI Devices parameter from the Advanced menu displays the PCI Devices submenu. This submenu allows you to configure the PCI devices installed in your system.

```
PhoenixBIOS Setup - Copyright 19xx-xx Phoenix Technologies Ltd.
      Advanced

| PCI Devices                                | Item Specific Help |
|                                            |                    |
| PCI Device Slot #1                         | Enable selected device
|    Enable Master:            [Disabled]    | as a PCI bus master.
|    Default Latency Timer:    [Yes]         |
|    Latency Timer:            [0000]        |
|                                            |
| PCI Device Slot #2                         |
|    Enable Master:            [Disabled]    |
|    Default Latency Timer:    [Yes]         |
|    Latency Timer:            [0000]        |
|                                            |
| PCI Device Slot #3                         |
|    Enable Device:            [Disabled]    |
|    Enable Master:            [Disabled]    |
|    Default Latency Timer:    [Yes]         |
|    Latency Timer:            [0000]        |

F1  Help   ↑↓  Select Item    -/+  Change Values       F9  Setup Defaults
ESC Exit   ←→  Select Menu   Enter Select ▸Sub-Menu    F10 Previous Values
```

PCI Device, Slots 1-n Allows you to configure the PCI devices installed in each onboard PCI slot.

Enable Device Enables or disables the device connected to the selected PCI slot.

Enable Master Enables or disables the selected PCI device as PCI bus master. However, not all device can function as master. Check your device documentation before setting this parameter.

Default Latency Timer Lets you set the bus master clock rate. If set to Yes, the system uses the default rate, i.e., minimum bus master clock rate, and you do not need to set the Latency Timer parameter.

Latency Timer Specifies the bus master clock rate. A high-priority, high-throughput device may benefit from a greater value. The available settings are 000h to 0280h.

The parameters in this menu depend on the device(s) installed in your system.

Incorrect settings can cause serious system problems.

2.4 The Security Menu

The following menu appears if you select Security from the menu bar:

```
PhoenixBIOS Setup - Copyright 19xx-xx Phoenix Technologies Ltd.
Main   Advanced   Security   Power   Exit

                                          Item Specific Help

 Supervisor Password is      Disabled
User Password is             Disabled
Set Supervisor Password:    [Press Enter]
Set User Password:           Press Enter

Password on boot            [Disabled]

Diskette access:            [Supervisor]
Fixed disk boot sector:     [Normal]
System backup reminder:     [Disabled]
Virus check reminder:       [Disabled]

F1  Help   ↑↓  Select Item    -/+  Change Values       F9  Setup Defaults
ESC Exit   ←→  Select Menu   Enter Select ▸Sub-Menu    F10 Previous Values
```

2.4.1 Supervisor Password is…

This parameter is fixed to `Disabled` if a supervisor password does not exist.

2.4.2 User Password is…

This setting is fixed to `Disabled` if a user password does not exist.

2.4.3 Set Supervisor Password

A Supervisor password prevents unauthorized persons from entering Setup and changing the CMOS settings. When you have set a Supervisor password, the BIOS program requires you to enter the password whenever you want to have full access to the Setup menus.

Follow these steps to set a Supervisor password:

1. Highlight Set Supervisor Password, then press ENTER to display the following dialog box.

```
                Set Password
------------------------------------------
       Enter New Password - [          ]
     Re-enter New Password - [          ]
```

2. Type a password using up to seven alphanumeric characters, then press ENTER.
3. Retype the password and press ENTER.

2.4.4 Set User Password

Similar to Supervisor password, a User password also prevents unauthorized persons from entering Setup and changing the CMOS settings. However, this password gives only limited access to the Setup menus.

To set a User password, follow the instructions listed in section 2.8.3.

You must set a Setup password first before you can set a User password.

2.4.5 Password on Boot

When you set this parameter to Enabled, the BIOS program requires you to enter the User password whenever you boot the system. If set to Disabled, the BIOS skips the Enter password prompt and immediately starts the booting process.

This parameter requires prior setting of the Supervisor password.

2.4.6 Diskette Access

This parameter restricts the use of the diskette drives. If you set this to Supervisor, the BIOS program requires you to enter the Supervisor password before granting access to the diskette drives. If you set this to User, then you must enter the User password.

This parameter requires prior setting of the Supervisor password.

2.4.7 Fixed Disk Boot Sector

Setting this parameter to Write-Protected prevents viruses from entering the hard disk.

2.4.8 System Backup Reminder

If enabled, a message asking if you have backed up the system appears during bootup. The message returns on each boot unit you respond with Y.

The available settings are:

- Daily Displays the message on the first boot of the day.

- `Weekly` Displays the message on the first boot after Sunday.
- `Monthly` Displays the message on the first boot of the month.
- `Disabled` Skips the message during bootup.

2.4.9 Virus Check Reminder

If enabled, a message asking if have scanned the system for viruses appears during bootup. The message returns on each boot unit you respond with Y.

The available settings are:

- `Daily` Displays the message on the first boot of the day.
- `Weekly` Displays the message on the first boot after Sunday.
- `Monthly` Displays the message on the first boot of the month.
- `Disabled` Skips the message during bootup.

2.5 The Power Menu

Selecting Power from the menu bar opens the Power menu. This menu allows you to specify your Power management settings.

```
PhoenixBIOS Setup - Copyright 19xx-xx Phoenix Technologies Ltd.
Main   Advanced   Security   Power   Exit

                                          Item Specific Help

Power Management Mode:      [Customized]  Selects power
                                          management mode
Standby Timeout:            [15          sec]
Suspend Timeout:            [15          sec]
Standby CPU Speed:          [MAX/3]
Fixed Disk Timeout:         [5           min]
CRT:                        [5           min]

Break         Stop         Clock         On:

IRQ0                        [Enabled]
IRQ1                        [Enabled]
IRQ2                        [Enabled]
IRQ3                        [Enabled]
IRQ4                        [Enabled]

F1  Help   ↑↓  Select Item    -/+  Change Values       F9  Setup Defaults
ESC Exit   ←→  Select Menu   Enter Select ▸Sub-Menu    F10 Previous Values
```

The options in this menu depend on the hardware installed in your system.

2.5.1 Power Management Mode

This parameter allows you to specify the settings for the Power management function. The options are:

- `Maximum` Automatically loads the predefined values for full power reduction.
- `Medium` Automatically loads the predefined values for partial power reduction.
- `Minimum` Automatically loads the predefined values for the least power reduction.
- `Customize` Allows you to manually specify the desired settings for the other Power management parameters.
- `Disabled` Turns off the power management.

2.5.2 Standby Timeout

This parameter lets you set the interval between system inactivity and the time the system enters Standby mode (i.e., partial power shutdown). The available settings are:

- `1 sec`
- `4 sec`
- `8 sec`
- `Disabled`

Select `Disabled` to deactivate the timer.

2.5.3 Suspend Timeout

This parameter lets you set the system inactivity period before the enters the Suspend mode. The available settings are:

- `1 min`
- `2 min`

- 4 min
- 6 min
- 8 min
- 12 min
- 16 min
- Disabled

Setting this parameter to Disabled deactivates the timer.

2.5.4 Standby CPU Speed

This parameter lets you set the CPU speed during Standby mode. The options are:

- MAX/3 Divides the CPU speed by 3.
- MAX/4 Divides the CPU speed by 4.
- Disabled Leaves the CPU speed at its original speed.

2.5.5 Fixed Disk Timeout

This parameter lets you specify the inactivity period of the hard disk before it enters the Standby mode. The available settings are:

- 1 min
- 2 min
- 4 min
- 6 min
- 8 min
- 12 min
- 16 min
- Disabled

Setting this parameter to Disabled deactivates the timer.

2.5.6 CRT

Setting this parameter to Off automatically shuts down the video display once the system enters the Standby mode. When set to On, the video display disregards the power-saving mode.

2.5.7 IRQ0…IRQ4

These parameters allow your system to monitor the IRQ0, IRQ1, IRQ2, IRQ3, and IRQ4. When enabled, any activity detected during Suspend mode turns on the CPU clock.

2.6 The Exit Menu

Selecting Exit from the menu bar displays the following screen:

```
PhoenixBIOS Setup - Copyright 19xx-xx Phoenix Technologies Ltd.
Main   Advanced   Security   Power   Exit

                                        Item Specific Help

 Save values & Exit                     Save changed SETUP item
 Exit Without Saving Changes            values before exit.
 Get Default Values
 Load Previous Values
 Save Current Values

F1  Help  ↑↓  Select Item   -/+  Change Values       F9  Setup Defaults
ESC Exit  ←→  Select Menu   Enter Select ▸Sub-Menu   F10 Previous Values
```

2.6.1 Save Values & Exit

After making the desired changes in the Setup menus, select this option or the Save Current Values option (refer to section 2.6.5) to store the current Setup menu settings in CMOS. The CMOS is a special section of the memory that stays on even after you turn off the system. The next time you boot your computer, the BIOS program configures your system according to the latest Setup values stored in the CMOS.

After you select the Save Values & Exit option, the screen displays the following message:

```
Values have been saved to CMOS!

Press <space> to continue
```

If you made changes in Setup and you attempt to exit without saving, a message asks if you want to save before exiting. Select Yes then press [ENTER] to save your changes before exiting. Select No then press [ENTER] to exit without saving the changes.

When you boot the system, the BIOS program loads the values stored in CMOS. If these new values cause the system to fail, reboot and press [F2] to enter Setup. You can either select Exit then the Get Default Values option (refer to section 2.6.3) to load the ROM default values or change the values that may have caused the booting process to fail.

2.6.2 Exit Without Saving Changes

Select this option to exit Setup without storing in CMOS any modifications that you have made and to let the previous settings remain in effect.

2.6.3 Get Default Values

Select this option to load the Setup default values. After making your selection, the program displays the following message:

```
ROM Default values have been loaded!

Press <space> to continue
```

If the BIOS program detects a problem in the integrity of the CMOS values during bootup, it displays the following message:

```
System CMOS checksum bad - run Setup

Press <F1> to resume, <F2> to Setup
```

Press F1 to resume the boot or press F2 to run Setup with the ROM default values.

2.6.4 Load Previous Values

This option allows you to restore the values previously saved in the CMOS. After you select this option, the BIOS program resets all the selections to its previous settings then displays the following message:

```
CMOS values have been loaded!

Press <space> to continue
```

2.6.5 Save Current Values

This option lets you save the current Setup menu settings without leaving Setup. This allows you to return to other menus in case you want to review or change your settings.