

1 The Setup Guide

With the **PhoenixBIOS Setup** program, you can modify BIOS settings and control the special features of your computer. The Setup program uses a number of menus for making changes and turning the special features on or off.

Note: The menus shown here are from a typical system. The actual menus displayed on your screen may be quite different and depend on the hardware and features installed in your computer. For more accurate information about your BIOS Setup program, consult your system manual or contact the manufacturer.

The Main Menu

To start the *PhoenixBIOS* Setup utility:

Turn on or reboot your system. PhoenixBIOS displays this message:

Press <F2> to enter SETUP

2. Pressing <F2> displays the Main Menu, which looks like this:

PhoenixBIOS Setup Utility				
Main	Advanced	Security	Power	Boot Exit
				Item Specific Help
System Time		[16:19:20]		<Tab>, <Shift-Tab>, or <Enter> selects field
System Date:		[03/02/1994]		
Legacy Diskette A:		[1.44/1.25 MB 3½"]		
Legacy Diskette B		[Not Installed]		
▶ Primary Master		6449 MB		
▶ Secondary Slave		None		
▶ Secondary Master		CD-ROM		
▶ Secondary Slave		None		
Numlock:		[Disabled]		
▶ Memory Cache		[Enabled]		
▶ System Shadow		[Enabled]		
▶ Video Shadow		[Enabled]		
System Memory		640 kB		
Extended Memory		31744 kB		
F1 Help	↓ Select Item	-/+ Change Values		F9 Setup Defaults
ESC Exit	↔ Select Menu	Enter Select	▶ Sub-Menu	F10 Save and Exit

See p. 4 for a description of the fields on this menu.

The Menu Bar

The Menu Bar at the top of the window lists these selections:

Main	Use this menu for basic system configuration.
Advanced	Use this menu to set the Advanced Features available on your system's chipset.
Security	Use this menu to set User and Supervisor Passwords and the Backup and Virus-Check reminders.
Power	Use this menu to configure Power-Management features.
Exit	Exits the current menu.

Use the left and right ↔ arrow keys to make a selection.

See the section below, "Exiting Setup," for a description on exiting the Main Menu.

The Legend Bar

Use the keys listed in the legend bar on the bottom to make your selections or exit the current menu. The chart on the following page describes the legend keys and their alternates:

Key	Function
<F1> or <Alt-H>	General Help window (See below).
<Esc>	Exit this menu.
↔ arrow keys	Select a different menu.
or ↑ ↓ arrow keys	Move cursor up and down.
<Tab> or <Shift-Tab>	Cycle cursor up and down.
<Home> or <End>	Move cursor to top or bottom of window.
<PgUp> or <PgDn>	Move cursor to next or previous page.
<F5> or <->	Select the Previous Value for the field.
<F6> or <+> or <Space>	Select the Next Value for the field.
<F9>	Load the Default Configuration values for this menu.
<F10>	Save and exit.
<Enter>	Execute Command or Select P Submenu.
<Alt-R>	Refresh screen.

To select an item, use the arrow keys to move the cursor to the field you want. Then use the plus-and-minus value keys to select a value for that field. The Save Values commands in the Exit Menu save the values currently displayed in all the menus.

To display a sub menu, use the arrow keys to move the cursor to the sub menu you want. Then press <Enter>.

A pointer (▶) marks all sub menus.

The Field Help Window

The help window on the right side of each menu displays the help text for the currently selected field. It updates as you move the cursor to each field.

The General Help Window

Pressing <F1> or <Alt-H> on any menu brings up the General Help window that describes the legend keys and their alternates:

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General Help

Setup changes system behavior by modifying the BIOS
Configuration 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 value and
<F6>, <+>, or <Space> selects next higher value.

<Left/Right> arrows select menus on menu bar.
<Enter> displays more options for items marked with a ▶,
<Enter> also displays an option list on some fields.

<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]
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The scroll bar on the right of any window indicates that there is more than one page of information in the window. Use <PgUp> and <PgDn> to display all the pages. Pressing <Home> and <End> displays the first and last page. Pressing <Enter> displays each page and then exits the window.

Press <Esc> to exit the current window.

Main Menu Selections

You can make the following selections on the Main Menu itself. Use the sub menus for other selections.

Feature	Options	Description
System Time	HH:MM:SS	Set the system time.
System Date	MM/DD/YYYY	Set the system date.
Diskette 1 Diskette 2	360 kB, 5 ¼" 1.2 MB, 5 ¼" 720 kB, 3 ½" 1.44/1.25 MB, 3 ½" 2.88 MB, 3 ½" Not installed Disabled	Select the type of floppy-disk drive installed in your system. 1.25 MB is a Japanese media format that requires a 3½" 3-Mode Diskette drive.
System Memory	N/A	Displays amount of conventional memory detected during boot up.
Extended Memory	N/A	Displays the amount of extended memory detected during boot up.

You can set the boot sequence of the bootable drives by selecting **Boot Sequence** on the Main Menu or opening the **Boot Menu**.

Master and Slave Sub-Menus

The **Master** and **Slave** sub-menus accessed from the Main Menu control these types of devices:

- Hard-disk drives
- Removable-disk drives such as Zip drives
- CD-ROM drives

PhoenixBIOS 4.0 supports up to two **IDE disk adapters**, called **primary** and **secondary** adapters. Each adapter supports one **master drive** and one optional **slave drive** in these possible combinations:

- 1 Master
- 1 Master, 1 Slave
- 2 Masters
- 2 Masters, 1 Slave
- 2 Masters, 2 Slaves

There is one IDE connector for each adapter on your machine, usually labeled "Primary IDE" and "Secondary IDE." There are usually two connectors on each ribbon cable attached to each IDE connector. When you have connected two drives to these connectors, the one on the end of the cable is the Master.

If you need to change your drive settings, selecting one of the Master or Slave drives on the Main Menu displays a sub-menu like this:

PhoenixBIOS Setup Utility		
Main		Item Specific Help
Primary Master		
Type:	[Auto]	Select the drive type of the fixed disk installed in your system. If type User is selected, Cylinders, Heads, and Sectors can be edited directly. Auto attempts to automatically detect the drive type for drives that comply with ANSI specifications.
Cylinders:	[13328]	
Heads:	[15]	
Sectors/Track:	[63]	
Maximum Capacity:	6449 MB	
Landing Zone:	[762]	
Write Precomp:	[None]	
Multi Sector Transfer:	[16 Sectors]	
LBA Mode Control:	[Enabled]	
32-bit I/O:	[Enabled]	
Transfer Mode:	[Fast PIO 4]	
SMART Monitoring	[Enabled]	
F1 Help ↓ Select Item -/+ Change Values F9 Setup Defaults ESC Exit ↔ Select Menu Enter Select ▶ Sub-Menu F10 Save and Exit		

Use the legend keys listed on the bottom to make your selections and exit to the Main Menu. Use the following chart to configure the hard disk.

Feature	Options	Description
Type	None 1 to 39 User Auto IDE Removable CD-ROM ATAPI Removable	None = Autotyping is not able to supply the drive type or end user has selected None, disabling any drive that may be installed. User = You supply the hard-disk drive information in the following fields. Auto = Autotyping, the drive itself supplies the correct drive information. IDE Removable = Removable read-and-write media (e.g., IDE Zip drive). CD-ROM = Readable CD-ROM drive. ATAPI Removable = Read-and-write media (e.g., LS120, USB Floppy, USB Zip).
Cylinders	1 to 65,536	Number of cylinders.
Heads	1 to 16	Number of read/write heads.
Sectors/Track	1 to 63	Number of sectors per track.
Landing Zone*	1 to 2048	Number of the cylinder specified as the landing zone for the read/write heads.

Feature	Options	Description
Write Precomp*	1 to 2048 None	Number of the cylinder at which to change the write timing.
Multi-Sector Transfers	Disabled Standard 2 sectors 4 sectors 8 sectors 16 sectors	Any selection except Disabled determines the number of sectors transferred per block. Standard is 1 sector per block.
LBA Mode Control	Enabled Disabled	Enabling LBA causes Logical Block Addressing to be used in place of Cylinders, Heads, & Sectors.
32-Bit I/O	Enabled Disabled	Enables 32-bit communication between CPU and IDE card. Requires PCI or local bus.
Transfer Mode	Standard Fast PIO 1 Fast PIO 2 Fast PIO 3 Fast PIO 4	Selects the method for transferring the data between the hard disk and system memory. The Setup menu only lists those options supported by the drive and platform.
SMART Monitoring	Enabled Disabled	Turn on Self-Monitoring Analysis-Reporting Technology, which monitors condition of the hard drive and reports when a catastrophic IDE failure is about to happen.

* IDE drives do not require setting Landing Zone and Write Precomp.

When you enter Setup, the Main Menu usually displays the results of **Autotyping**—information each drive provides about its own parameters (e.g., cylinders, heads, and sectors)—and how the drives are arranged as Masters or Slaves on your machine.

Some older drives, however, do not use Autotyping and require selecting type User and entering a pre-defined fixed-disk type value (e.g., 1 to 39) or specifying the drive parameters separately with the User type selected. You can find the correct parameters for hard-disk drives in the drive manual or written on the casing of the drive itself.

Note: Exiting this menu keeps your selections but loses internal autotyping information, which may not be selected. If you exit this menu and re-enter it, press <Enter> on Autotype again to restore the Autotype information.

Note: Do not attempt to change these settings unless you have an older drive that does not support autotyping.

Note: Before changing the contents of this menu, **write them down**. Once you have established correct parameters for your drive, **write them down and store them in a safe place** (e.g., tape them to the disk drive) for use in case these values are lost in CMOS or if autotyping fails. If these hard-disk parameters are not correctly entered in CMOS, you cannot access the data on your drive.

WARNING: Incorrect settings can cause your system to malfunction. To correct mistakes, return to Setup and restore the Setup Defaults with <F9> and re-enter the correct drive parameters.

Memory Cache

Enabling **cache** saves time for the CPU by holding data most recently accessed in regular memory (dynamic RAM or DRAM) in a special storage area of static RAM (SRAM), which is faster. Before accessing regular memory, the CPU first accesses the cache. If it does not find the data it is looking for there, it accesses regular memory. Selecting "Memory Cache" from the Main menu displays a menu like the one shown here. The actual features displayed depend on your system's hardware.

PhoenixBIOS Setup Utility			
Main			
Memory Cache		Item Specific Help	
External cache:	[Enabled]	Sets the state of the external system memory cache.	
Cache Interleave:	[Disabled]		
Cache Write Back:	[Disabled]		
Cache Read Cycles:	[2T]		
Cache System BIOS:	[Disabled]		
Cache Video BIOS:	[Enabled]		
Cache E800 - EFFF:	[Disabled]		
Cache E000 - E7FF:	[Disabled]		
Cache D800 - DFFF:	[Disabled]		
Cache D000 - D7FF:	[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 Save and Exit

Use the legend keys listed on the bottom to make your selections and exit to the Main Menu. Use this chart to configure the memory cache.

Feature	Options	Description
External Cache	Enabled Disabled.	Generally enables or disables all memory caching.
Cache Interleave	Enabled Disabled	Interleaves multiple banks of static RAM. Improves CPU access.
Cache Write Back	Enabled Disabled	Enables caches to both read and write to memory. Disabled caches reads only.
Cache Read Cycles	Chipset Dependent	Sets the number of clock pulses for reading from the cache. Shorter number of pulses improves performance.
Cache Write Cycles	Chipset Dependent	Sets the number of clock pulses for writing to the cache. Shorter number of pulses improves performance.
Cache System BIOS	Enabled Disabled	Caches the system BIOS and improves performance.
Cache Video BIOS	Enabled Disabled	Caches the video BIOS and improves performance.
Cache segments, e.g., E800-EFFF	Enabled Disabled	Controls caching of individual segments of memory usually reserved for shadowing system or option ROMs
Non-cacheable regions:		Specifies areas of regular and extended memory as non-cacheable regions.
Region 0, start	0 Multiples of 64	Multiples of 64 define start of non-cacheable region 0 in kilobytes.
Region 0, size	Disabled Multiples of 64	Disabling makes this region available for cache. Multiples of 64 define size of non-cacheable region 0 in kilobytes.
Region 1, start	0 Multiples of 64	Multiples of 64 define start of non-cacheable region 1 in kilobytes.
Region 1, size	Disabled Multiples of 64	Disabling makes this region available for cache. Multiples of 64 define size of non-cacheable region 1 in kilobytes.

WARNING: Incorrect settings can cause your system to malfunction. To correct mistakes, return to Setup and restore the Setup Defaults with <F9>.

Memory Shadow

Selecting "System Shadow" or "Video Shadow" from the Main Menu displays a menu like the one shown here. The actual features displayed depend on the capabilities of your system's hardware.

PhoenixBIOS Setup Utility		
Main		
Memory Shadow	Item Specific Help	
System shadow: Enabled	Enables shadowing of Option ROM in this region.	
Video shadow: [Enabled]		
Shadow Option ROM's -		
C800 - CFFF: [Disable]		
D000 - D7FF: [Disable]		
D800 - DFFF: [Disable]		
E800 - EFFF: [Disable]		
F1 Help ↓ Select Item -/+ Change Values F9 Setup Defaults ESC Exit ← Select Menu Enter Select ▶ Sub-Menu F10 Save and Exit		

Use the legend keys to make your selections and exit to the Main Menu. Use the following chart to configure memory shadowing.

WARNING: Incorrect settings can cause your system to malfunction. To correct mistakes, return to Setup and restore the Setup Defaults with <F9>.

Feature	Options	Description
System shadow	N/A	Usually permanently enabled.
Video shadow	Enabled Disabled	Shadows video BIOS and improves performance.
Shadow Option ROM	Enabled Disabled	Shadows option ROM located in the specified segments of memory and can improve performance. WARNING: Some option ROMs do not work properly when shadowed.

Boot Sequence

Selecting "Boot Sequence" on the Main Menu displays the Boot Options menu.

PhoenixBIOS Setup Utility	
Main	
Boot Options	Item Specific Help
Boot sequence: [Disabled] SETUP prompt: [Enabled] POST Errors: [Enabled] Floppy check: [Enabled] Summary screen: [Enabled]	Order in which the system searches for a boot disk.
F1 Help ↓ Select Item -/+ Change Values F9 Setup Defaults ESC Exit ← Select Menu Enter Select → Sub-Menu F10 Save and Exit	

Use the legend keys to make your selections and exit to the Main Menu.

Use the following chart to select your boot options.

Feature	Options	Description
Boot sequence	A: then C; C: then A; C: only	The BIOS attempts to load the operating system from the disk drives in the sequence selected here. See also the Boot Menu on p. 11.
Setup prompt	Enabled Disabled	Displays "Press <F2> for Setup" during boot up.
POST errors	Enabled Disabled	At boot error, pauses and displays "Press <F1> to resume, <F2> to Setup".
Floppy seek	Enabled Disabled	Seeks diskette drives during boot up. Disabling speeds boot time.
Summary screen	Enabled Disabled	Displays system summary screen during boot up.

Keyboard Features

Selecting "Numlock" on the Main Menu displays the Keyboard Features menu:

PhoenixBIOS Setup Utility	
Main	
Keyboard Features	Item Specific Help
Numlock: [Off] Key Click: [Disabled] Keyboard auto-repeat rate: [30/sec] Keyboard auto-repeat delay: [1/2 sec]	Selects power-on state for Numlock key.
F1 Help ↓ Select Item -/+ Change Values F9 Setup Defaults ESC Exit ←Select Menu Enter Select →Sub-Menu F10 Save and Exit	

Use the legend keys to make your selections and exit to the Main Menu.

Use the following chart to configure the keyboard features:

Feature	Options	Description
Numlock	Auto On Off	On or Off turns NumLock on or off at boot up. Auto turns NumLock on if it finds a numeric key pad.
Key Click	Enabled Disabled	Turns audible key click on.
Keyboard auto-repeat rate	2/sec 6/sec 10/sec 13.3/sec 21.8/sec 26.7/sec 30/sec	Sets the number of times a second to repeat a keystroke when you hold the key down.
Keyboard auto-lag delay	¼ sec ½ sec ¾ sec 1 sec	Sets the delay time after the key is held down before it begins to repeat the keystroke.

Boot Menu

After you turn on your computer, it will attempt to load the operating system (such as Windows 98) from the device of your choice. If it cannot find the operating system on that device, it will attempt to load it from one or more other devices in the order specified in the Boot Menu. Boot devices (i.e., with access to an operating system) can include: hard drives, floppy drives, CD ROMs, removable devices (e.g., Iomega Zip drives), and network cards.

Note: Specifying any device as a boot device on the Boot Menu requires the availability of an operating system on that device. Most PCs come with an operating system already installed on hard-drive C:.

Selecting "Boot" from the Menu Bar displays the Boot menu, which looks like this:

PhoenixBIOS Setup Utility					
Main	Advanced	Security	Power	Boot	Exit
					Item Specific Help
QuickBoot Mode:		[Enabled]		Use these keys to set the boot order in which the BIOS attempts to boot the OS: <+> or <-> moves device up or down. <Enter> expands or collapses devices marked with + or -. <Ctrl+Enter> expands all <Shift+1> enables or disables a device. <n> moves a removable device between hard or removable disk.	
Display OPRM Messages:		[Enabled]			
Preferred Video:		[AGP]			
Summary Screen:		[Enabled]			
Removable Devices					
ATAPI CD-ROM Drive					
-Hard Drive					
Primary Master					
Bootable Add-in Card					
Network Boot					
F1 Help	↓ Select Item	-/+ Change Values		F9 Setup Defaults	
ESC Exit	↔ Select Menu	Enter Select	▶ Sub-Menu	F10 Save and Exit	

Use this menu to arrange to specify the priority of the devices from which the BIOS will attempt to boot the Operating System. In the example above, the BIOS will attempt first to boot from the CD-ROM drive (the only Removable Device listed). Failing that, it will attempt to boot from the Primary Master hard disk, and so on down the list.

Removable Devices, Hard Drive, and Network Boot are the generic types of devices on your system from which you can boot an operating system. You may have more than one device of each type. If so, the generic type is marked with a plus or minus sign. Use the <Enter> key to expand or collapse the devices marked with <+> or <->. Press <Ctrl+Enter> to expand all such devices.

Note: Floppy drives are not managed on this menu as part of Removable Devices.

To change a device's priority on the list, first select it with the up-or-down arrows, and move it up or down using the <+> and <-> keys. Pressing <n> moves a device between the Removable Devices and Hard Drive. Pressing <Shift+1> enables or disables a device.

Feature	Options	Description
QuickBoot Mode	Enabled Disabled	Enabled skips some POST tests, speeding boot time
Display OPRM Messages	Enabled Disabled	Displays boot messages of add-on cards. Recommended for newly installed cards. May be disabled later.
Preferred Video	AGP PCI	If you have more than one video card, select one to be used at boot.
Summary Screen	Enabled Disabled	Display system configuration screen during POST.

The Advanced Menu

Selecting "Advanced" from menu bar on the Main Menu displays a menu like this:

PhoenixBIOS Setup Utility		
Main	Advanced	Security Power Boot Exit
Setting items on this menu to incorrect values may cause your system to malfunction.		Item Specific Help
Installed Operating System	[Other]	Select the operating system installed on you system that you use most often.
Reset Configuration Data: ▶ PCI Configuration	[No]	
PS/2 Mouse	[Enabled]	Note: An incorrect setting can cause unexpected behavior in some operating systems.
Secured Setup Configurations ▶ Peripheral Configuration	[No]	
Large Disk Access Mode:	[DOS]	
Local Bus IDE adapter:	[Both]	
SMART Device Monitoring:	[Enabled]	
▶ Advanced Chipset Control ▶ I/O Device Configuration		
F1 Help ↓ Select Item -/+ Change Values F9 Setup Defaults ESC Exit ↔ Select Menu Enter Select ▶ Sub-Menu F10 Save and Exit		

Use the legend keys to make your selections and exit to the Main Menu.

Feature	Options	Description
Installed Operating System	Other Win95 Win98/NT	Select the operating system you use most often.
Reset Configuration Data	Yes No	Yes erases all configuration data in a section of memory for ESCD (Extended System Configuration Data) which stores the configuration settings for non-PnP plug-in devices. Select Yes when required to restore the manufacturer's defaults.
PS/2 Mouse	Enabled Disabled Auto OS Controlled	Disabled disables any installed PS/2 mouse, but frees up IRQ 12 for use by another device. Auto lets the BIOS control the mouse. OS Controlled lets the operating system control the mouse.
Secured Setup Configurations	Yes No	Yes prevents the Operating System from overriding selections you have made in Setup.
Large Disk Access Mode	DOS Other	Select DOS if you have DOS. Select Other if you have another operating system such as UNIX. A large disk is one that has more than 1024 cylinders, more than 16 heads, or more than 63 tracks per sector.
SMART	Enabled Disabled	Enabled installs SMART (Self-Monitoring Analysis-Reporting Technology), which issues a warning if an IDE failure is imminent.

WARNING: Incorrect settings can cause your system to malfunction. To correct mistakes, return to Setup and restore the Setup Defaults with <F9>.

Advanced Chipset Control (No PCI)

In a system with no PCI, selecting "Advanced Chipset Control" from menu bar on the Advanced menu displays a menu like this:

PhoenixBIOS Setup Utility	
Advanced	
<p>Warning!</p> <p>Setting items on this menu to incorrect values may cause your system to malfunction.</p> <p>Parity check: [Enabled]</p> <p>Hidden refresh: [Enabled]</p> <p>Slow refresh: [Disabled]</p> <p>Read wait states: [0]</p> <p>Write wait states: [0]</p> <p>Extra bus wait states: [0]</p> <p>Multiple ALE: [Enabled]</p> <p>Keyboard reset delay: [Disabled]</p>	<p>Item Specific Help</p> <p>Controls system memory parity through the chipset.</p>
F1 Help	↓ Select Item -/+ Change Values F9 Setup Defaults
ESC Exit	↔ Select Menu Enter Select ▶ Sub-Menu F10 Save and Exit

The chipset consists of one or more integrated circuits that act as an interface between the CPU and much of the system's hardware. You can use this menu to change the values in the chipset registers and optimize your system's performance.

Use the legend keys to make your selections, display the sub menus, and exit to the Main Menu.

Use the following chart in configuring the chipset:

Feature	Options	Description
Parity check	Enabled Disabled	Controls system memory parity checking.
Hidden refresh	Enabled Disabled	Refreshes regular memory without holding up the CPU.
Slow Refresh	Enabled Disabled	Slows memory refresh by a factor of 4.
Read wait states	0 to n	Sets the number of wait states added to reads from system memory. Chipset dependent.
Write wait states	0 to n	Sets the number of wait states added to writes to system memory. Chipset dependent.
Extra bus wait states	0 to n	Sets the number of wait states added to accesses of the AT bus. Chipset dependent.
Multiple ALE	Enabled Disabled	Determines whether to use single or multiple ALEs during cycle conversion.
Keyboard reset delay	Enabled Disabled	Enabled adds a 2 microsecond delay before resetting the system.

NOTE: The contents of this menu depend on the chipset installed on your motherboard, and chipsets vary widely. Consult your dealer or the chipset manual before changing the items on this menu. **Incorrect settings can cause your system to malfunction.**

Advanced Chipset Control Menu (PCI BIOS)

If the system has a PCI chipset, selecting "Advanced Chipset Control" from the Advanced menu displays a menu like this:

PhoenixBIOS Setup Utility			
Advanced		Item Specific Help	
Advanced Chipset Control			
Hidden Refresh:	[Disabled]	Enables CPU to PCI write buffers, which allow data to be temporarily stored in buffers before writing the data.	
Code Read Page Mode:	[Disabled]		
Write Page Mode:	[Disabled]		
CPU to PCI Write Buffers:	[Disabled]		
PCI to DRAM Write Buffers:	[Disabled]		
CPU to DRAM Write Buffers:	[Disabled]		
Snoop Ahead:	[Disabled]		
PCI Memory Burst Cycles:	[Disabled]		
F1 Help	↓ Select Item	-/+ Change Values	F9 Setup Defaults
ESC Exit	↔ Select Menu	Enter Select	▶ Sub-Menu F10 Save and Exit

The chipset is one or more integrated circuits that act as an interface between the CPU and the system's hardware. It manages such things as memory access, buses, and caching. You can use this menu to optimize the performance of your computer.

Use the legend keys to make your selections and exit to the Main Menu.

Use the following chart in configuring the chipset:

Feature	Options	Description
Hidden Refresh	Disabled Enabled	Refreshes regular memory without holding up the CPU
Code Read Page Mode	Disabled Enabled	Improves performance when code contains mainly sequential instructions.
Write Page Mode	Disabled Enabled	Improves performance when data is written sequentially.
CPU to PCI Write Buffers	Disabled Enabled	Stores CPU data in buffers before writing to PCI.
PCI to DRAM Write Buffers	Disabled Enabled	Stores PCI data in buffers before writing to DRAM.
CPU to DRAM Write Buffers	Disabled Enabled	Stores CPU data in buffers before writing to DRAM.
Snoop Ahead	Disabled Enabled	Improves PCI bus master access to DRAM.
PCI Memory Burst Cycles	Disabled Enabled	Enables PCI memory burst write cycles.

NOTE: The contents of this menu depend on the chipset installed on your motherboard, and chipsets vary widely. Consult your dealer or the computer manual before changing the items on this menu. **Incorrect settings can cause your system to malfunction.**

PCI Devices Menu

If the system has a PCI bus, selecting "PCI Devices" from menu bar on the Advanced menu displays a menu like this:

PhoenixBIOS Setup Utility		
Advanced		
PCI Devices		Item Specific Help
PCI Device Slot #1:		Initialize device expansion ROM
Option ROM Scan:	[Enabled]	
Enable Master:	[Disabled]	
Latency Timer:	[0040h]	
PCI Device Slot #2:		
Option ROM Scan:	[Disabled]	
Enable Master:	[Disabled]	
Latency Timer:	[0000]	
PCI Device Slot #3		
Option ROM Scan:	[Disabled]	
Enable Master:	[Disabled]	
Latency Timer:	[0000]	
Shared PCI IRQs:	[Auto]	
F1 Help	↑ Select Item	-/+ Change Values
ESC Exit	↔ Select Menu	Enter Select ▶ Sub-Menu
		F9 Setup Defaults
		F10 Save and Exit

PCI Devices are devices equipped for operation with a **PCI** (Peripheral Component Interconnect) **bus**, a standardized Plug-and-Play hardware communication system that connects the CPU with other devices. Use this menu to configure the PCI devices installed on your system.

Use the legend keys to make your selections and exit to the Advanced menu. Use the following chart in configuring the PCI devices:

Feature	Options	Description
PCI Device Slots 1-n:		
Option ROM Scan	Disabled Enabled	Initialize device expansion ROM.
Enable Master	Disabled Enabled	Enables selected device as a PCI bus master. Not every device can function as a master. Check your device documentation.
Latency Timer	0000h to 0280h	Bus master clock rate. A high-priority, high-throughput device may benefit from a greater value.
Shared PCI IRQs	Share One IRQ Share Two IRQs Share Three IRQs Auto	Share <i>n</i> IRQs: Forces PCI devices to use at most <i>n</i> IRQs. Auto: Minimizes PCI IRQ Sharing.

NOTE: The contents of this menu depend on the devices installed on your system. **Incorrect settings can cause your system to malfunction. To correct mistakes, return to Setup and restore the System Defaults (F9).**

I/O Device Configuration Menu

The CPU communicates with external devices such as printers through devices called **Input/Output (I/O) ports** such as serial and parallel ports. These I/O devices require the use of system resources such as I/O addresses and interrupt lines. If these devices are Plug and Play, either the BIOS can allocate the devices during POST, or the operating system can do it. If the I/O devices are not Plug and Play, they may require manually setting them in Setup.

On some systems, the **chipset** manages the communication devices. Other systems have, instead, a separate **I/O chip** on the motherboard for configuring and managing these devices.

Many systems allow you to control the configuration settings for the I/O ports. Select "I/O Device Configuration" on the Advanced Menu to display this menu and specify how you want to configure these I/O Devices:

PhoenixBIOS Setup Utility		
Advanced		
I/O Device Configuration		Item Specific Help
Serial Port A:	[Enabled]	Set Serial Port A:
Base I/O address/IRQ	[3F8/IRQ4]	Using options:
Serial Port B:	[OS Controlled]	Disabled
Parallel Port:	[User]	[No configuration]
Mode:	[Bi-directional]	Enabled
Base I/O address	[378]	[User configuration]
Interrupt	[IRQ5]	Auto
Diskette Controller	[Enabled]	[BIOS configuration]
Base I/O address:	[Primary]	OS Controlled
		[OS configuration]
F1 Help ↑Select Item -/+ Change Values F9 Setup Defaults ESC Exit ↔Select Menu Enter Select ▶Sub-Menu F10 Save and Exit		

Use the legend keys to make your selections and exit to the Main Menu.

Use the following chart to configure the Input/Output settings:

Feature	Options	Description
Serial port A: Serial port B:	Disabled Enabled Auto OS Controlled	Disabled turns off the port. Enabled requires you to enter the base Input/Output address and the Interrupt number on the next line. Auto makes the BIOS configure the port automatically during POST. OS Controlled lets the PnP Operating System (such as Windows 95) configure the port after POST.
Base I/O Address/IRQ	3F8, IRQ 4 2F8, IRQ 3	If you select Enabled, choose one of these combinations.
Parallel Port:	Disabled Enabled Auto OS Controlled	Disabled turns off the port. Enabled requires you to enter the base Input/Output address and the Interrupt number below. Auto makes the BIOS auto configure the port during POST. OS Controlled lets the PnP Operating System (such as Windows 95) configure the port after POST.
Mode	Output only Bi-directional	Output only is standard one-way protocol for a parallel device. Bi-directional uses two-way protocol of an Extended Capabilities Port (ECP).
Base I/O Address	378 278 3BC	If you select Enabled for the Parallel Port, choose one of these I/O addresses.
Interrupts	IRQ5 IRQ7	If you select Enabled for the Parallel Port, choose one of these interrupt options.
Diskette Controller	Disabled Enabled	Enables the on-board legacy diskette controller. Disabled turns off all legacy diskette drives.
Base I/O Address	Primary Secondary	If you select Enabled for the Diskette Controller, choose Primary for one diskette drive installed or Secondary for two diskette drives installed.

Use this menu to specify how the I/O (Input and Output) ports are configured:

- Manually by you.
- Automatically by the BIOS during POST (See "ROM BIOS Functions" on page 32)
- Automatically by a PnP Operating System such as Windows 95 after the Operating System boots.

Warning: If you choose the same I/O address or Interrupt for more than one port, the menu displays an asterisk (*) at the conflicting settings. It also displays this message at the bottom of the menu:

* Indicates a DMA, Interrupt, I/O, or memory resource conflict with another device.

Resolve the conflict by selecting another settings for the devices.

The Security Menu

Selecting "Security" from the Main Menu displays a menu like this:

PhoenixBIOS Setup Utility				
Main	Advanced	Security	Power	Boot Exit
				Item Specific Help
Set User Password		[Enter]	Supervisor password controls access to Setup utility.	
Set Supervisor Password		[Enter]		
Virus Check Reminder:		[Disabled]		
System backup Reminder:		[Disabled]		
Password on boot:		[Disabled]		
Diskette access:		[Disabled]		
Fixed disk boot sector:		[Normal]		
F1 Help	↓ Select Item	-/+ Change Values	F9 Setup Defaults	
ESC Exit	↔ Select Menu	Enter Select	▶ Sub-Menu	F10 Save and Exit

Use the legend keys to make your selections and exit to the Main Menu.

Enabling "Supervisor Password" requires a password for entering Setup. The passwords are not case sensitive.

Pressing <Enter> at either Set Supervisor Password or Set User Password displays a dialog box like this:

Set Password	
Enter new password:	[]
Confirm new password:	[]
Enter: Accept	

Type the password and press <Enter>. Repeat.

Note: In some systems, the User and Supervisor passwords are related; you cannot have a User password without first creating a Supervisor password. In other systems, you can create and use them independently.

Use the following chart to configure the system-security and anti-virus options.

Feature	Options	Description
Set User Password	Up to seven alphanumeric characters	Pressing <Enter> displays the dialog box for entering the user password. In related systems, this password gives restricted access to SETUP menus.
Set Supervisor Password	Up to seven alphanumeric characters	Pressing <Enter> displays dialog box for entering the supervisor password. In related systems, this password gives full access to Setup menus.
Password on boot	Enabled Disabled	Enabled requires a password on boot. Requires prior setting of the Supervisor password. If supervisor password is set and this option disabled, BIOS assumes user is booting.
Diskette access	Enabled Disabled	Enabled requires a password to boot from or access the floppy disk.
Fixed disk boot sector	Normal Write Protect	Write protects the boot sector on the hard disk for virus protection. Requires a password to format or Fdisk the hard disk.
System backup reminder Virus check reminder	Disabled Daily Weekly Monthly	Displays a message during boot up asking (Y/N) if you have backed up the system or scanned it for viruses. Message returns on each boot until you respond with "Y". Daily displays the message on the first boot of the day, Weekly on the first boot after Sunday, and Monthly on the first boot of the month.

The Power Menu

Selecting "Power" from the menu bar displays a menu like this:

PhoenixBIOS Setup Utility				
Main	Advanced	Security	Power	Boot Exit
				Item Specific Help
Power Savings		[Customize]	Select Power Management Mode. Choosing modes changes system power management settings. Maximum Power Savings conserves the greatest amount of system power while Maximum Performance conserves power but allows greatest system performance. To alter these settings, choose Customize. To turn off power management, choose Disable.	
Standby Timeout:		[15 sec]		
Auto Suspend Timeout:		[15 sec]		
Hard Disk Timeout:		[10 min]		
Video Timeout:		[5 min]		
Resume On Modem Ring:		[Off]		
Resume On Time:		[Off]		
▶ Advanced Options				
F1 Help	↓ Select Item	-/+ Change Values	F9 Setup Defaults	
ESC Exit	↔ Select Menu	Enter Select	▶ Sub-Menu	F10 Save and Exit

Use this menu to specify your settings for Power Management. Remember that the options available depend upon the hardware installed in your system. Those shown here are from a typical system.

A power-management system reduces the amount of energy used after specified periods of inactivity. The Setup menu pictured here supports a **Full On** state, a **Standby** state with partial power reduction, and a **Suspend** state with full power reduction.

Use the Advanced Options on this menu to specify whether or not the activity of interrupts can terminate a Standby or Suspend state and restore Full On. Do not change these settings without knowing which devices use the interrupts.

Use the legend keys to make your selections and exit to the Main Menu. Use the following chart in making your selections:

Feature	Options	Description
Power Management Mode	Disabled Customize Maximum Power Savings Maximum Performance	Maximum options: pre-defined values. Select Customize to make your own selections from the following fields. Disabled turns off all power management.
Standby Timeout	Off 1 min 2 min 4 min 6 min 8 min 12 min 16 min	Inactivity period required to put system in Standby (partial power shutdown).
Auto Suspend Timeout	Disabled 5 min 10 min 15 min 20 min 30 min 40 min 60 min	Inactivity period required after Standby to Suspend (maximum power shutdown).
Hard Disk Timeout	Disabled 1 min 2 min 4 min 8 min 12 min 16 min	Inactivity period of hard disk required before standby (motor off).
Video Timeout	Disabled 10 sec 15 sec 20 sec 30 sec 45 sec 1 min to 15 min	Set inactivity period required before independently turning off monitor. Disabled turns CRT off in Standby.
Resume On Modem Ring	Off On	Wakes up system when an incoming call is detected on the modem.
Resume On Time	Off On	Wakes up system at predetermined time.
IRQ0...IRQ15 SMI NMI	Disabled Enabled	Enabling interrupt causes it to restore Full On during Standby or Suspend. SMI = System Management Interrupt. NMI = Non-Maskable Interrupt.

The Exit Menu

Selecting "Exit" from the menu bar displays this menu:

PhoenixBIOS Setup Utility				
Main	Advanced	Security	Power	Boot Exit
Exit Saving Changes Exit Discarding Changes Load Setup Defaults Discard Changes Save Changes				Item Specific Help
				Exit System Setup and save your changes to CMOS.
F1 Help	↓ Select Item	-/+ Change Values	F9 Setup Defaults	
ESC Exit	↔ Select Menu	Enter Select	▶ Sub-Menu	F10 Save and Exit

The following sections describe each of the options on this menu. Note that <Esc> does not exit this menu. You must select one of the items from the menu or menu bar to exit.

Saving Values

After making your selections on the Setup menus, always select either "Saving Values" or "Save Changes." Both procedures store the selections displayed in the menus in **CMOS** (short for "battery-backed CMOS RAM") a special section of memory that stays on after you turn your system off. The next time you boot your computer, the BIOS configures your system according to the Setup selections stored in CMOS.

After you save your selections, the program displays this message:

```
Values have been saved to CMOS!
Press <space> to continue
```

If you attempt to exit without saving, the program asks if you want to save before exiting.

During boot up, *PhoenixBIOS* attempts to load the values saved in CMOS. If those values cause the system boot to fail, reboot and press <F2> to enter Setup. In Setup, you can get the Default Values (as described below) or try to change the selections that caused the boot to fail.

Exit Discarding Changes

Use this option to exit Setup without storing in CMOS any new selections you may have made. The selections previously in effect remain in effect.

Load Setup Defaults

To display the default values for all the Setup menus, select "Load Setup Defaults" from the Main Menu. The program displays this message:

```
ROM Default values have been loaded!
Press <space> to continue
```

If, during boot up, the BIOS program detects a problem in the integrity of values stored in CMOS, it displays these messages:

```
System CMOS checksum bad - run SETUP
Press <F1> to resume, <F2> to Setup
```

The CMOS values have been corrupted or modified incorrectly, perhaps by an application program that changes data stored in CMOS.

Press <F1> to resume the boot or <F2> to run Setup with the ROM default values already loaded into the menus. You can make other changes before saving the values to CMOS.

Discard Changes

If, during a Setup Session, you change your mind about changes you have made and have not yet saved the values to CMOS, you can restore the values you previously saved to CMOS.

Selecting “Discard Changes” on the Exit menu updates all the selections and displays this message:

```
CMOS values have been loaded!  
Press <space> to continue
```

Save Changes

Selecting “Save Changes” saves all the selections without exiting Setup. You can return to the other menus if you want to review and change your selections.