XPC User Guide

For the : SK22G2

Statement of Shuttle Mainboard via the EMI Test

Shuttle mainboards have been via the EMI test in terms of series of regulations: EN55022/CISPR22/AS/NZS3548 Class B, EN55024 (1998/AS/NZS), EN4252.1 (1994), EN61000, ANSI C63.4 (1992), CFR47 Part 15 Subpart B, and CNS13438 (1997). The items tested are illustrated as follows:

(A) Voltage: AC 110V/60HZ & AC 230V/50HZ

(B) Tested Product Information:

Product Name: PC Mainboard

Status: Sample

Model Name: SK22G2

S/N: N/A

CPU:

External Frequency: 200 MHz

AMD Athlon™ 64x2 : 5000 +

AMD Athlon™ 64 : 3800 +

AMD Sempron: 3600 +

Serial Port: one port with 9 pins

Clear CMOS button: one port

Keyboard Port: one port with 6 pins

Mouse Port: one port with 6 pins

USB 2.0 Port: six ports with 4 pins respectively

1394 Port: one port with 4 pins respectively, one port with 6 pins respectively

LAN Port: one port with 8 pins (10Mbps/100Mbps/1G)

Line-in Ports: two port

Mic-In & Earphone Ports: one port for each

Center/Bass-Out Port: one port

Surround-Back Port: one port

Front-Out Port: one port

DIMM Memory (optional): DDRII 533/667 1GBx2

Power Cable: Detachable and Shielded (with a GND pin)

Monitor: CRT

Maximum Resolution: 2048 X 1536 V:75Hz

All CPUs have completely been tested, and values offered by the worst EMI combination of CPU external frequency are listed as follows:

Test Mode	External Frequency	CPU		CPU Open/Close
1	200MHz	AMD Athlon™ 64x2	5000 +	Close
2	200MHz	AMD Athlon™ 64x2	5000 +	Open
3	200MHz	AMD Athlon™ 64	3800 +	Close
4	200MHz	AMD Athlon™ 64	3800 +	Open
5	200MHz	AMD Sempron	3600 +	Close
6	200MHz	AMD Sempron	3600 +	Open

(C) Remedy for the Tested Product & Its EMI Interference:

Remedy: N/A

EMI Interference:

Crystal : 32.768 KHz(X1)/ 25 MHz(X2)/ 24.576 MHz(X2)/ 14.318 MHz(X1)

(D) Supported Host Peripherals:

Host Peripheral	Product Name	Model Name
# 1	Case	SK22G2
# 2	Power Supply	PC30I2003
# 3	Serial ATA Hitachi	HDS724040KLSA80
# 4	Card Reader	PC22
# 5	DVD Dual Player	CR40
# 6	DDRII	DDRII 667 512MBx2

(E) Notices for Assembling Computers:

1. Cases should be made of iron or other metal that has good electric conductivity.

2. Cylinders in a case should be made of metal, and as having a mainboard mounted in a case, make sure screws are all utilized and fastened on a mainboard.

3. An I/O shielding should be contacted with I/O metallic parts of a mainboard.

4. Cables should appropriately be arranged and fixed in a case. Follow instructions:

   ➢ Leave IDE cables not crossed upon CPU and SDRAM;

   ➢ Leave power cables minimum in length, and not crossed upon a mainboard;

   ➢ Leave CPU fan cables minimum in length, and not near CPU;

   ➢ Leave cables on panels and other spare cables tied in a computer case.

5. Make sure an EMI shielding attached to a case has properly been installed.

6. Make sure a 5.25" or 3.5" FDD and screws are fastened to an EMI shielding.

7. Make sure a case is closely in contact with EMI connected points.

8. Make sure there is no cleft in a case which is not deformed.

9. Make sure a PCI or AGP door is bound to a case.

10. Make sure cables of other devices (fans or some others) are fixed in a case.

Shuttle®

XPC Installation Guide

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This device complies with Part 15 of the FCC Rules, Operation is subject to the following two conditions:

1. This device may not cause harmful interference.

2. This device must accept any interference received, including interference that may cause undesired operation.

Trademarks

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Intel and Pentium are registered trademarks of Intel Corporation.
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General Notice

Other brand and product names used herein are for identification purposes only and may be trademarks of their respective owners.

Safety Information

Read the following precautions before setting up a Shuttle XPC.

CAUTION

Incorrectly replacing the battery may damage this computer. Replace only with the same or equivalent as recommended by Shuttle. Dispose of used batteries according to the manufacturer's instructions.

Installation Notices

Do not place this device underneath heavy loads or in an unstable position.
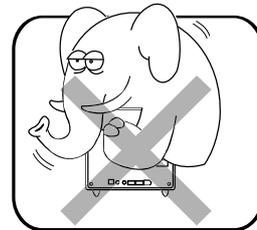
Do not expose this device to high levels of direct sunlight, high-humidity or wet conditions.

Do not use or expose this device around magnetic fields as magnetic interference may affect the performance of the device.
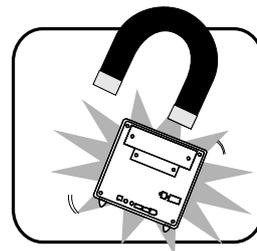
Do not block the air vents to this device or impede the airflow in any way.
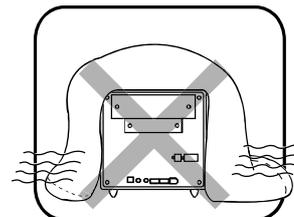
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1 Driver and Software Installation

■ 1.1 Mainboard Driver CD

> **Note : The CD contents attached in SK22G2 mainboard are subject to change without notice.**

The Mainboard Driver CD contains all the motherboard driver necessary to optimize the performance of this XPC in a Windows(R) OS. Install these drivers after installing Microsoft(R) Windows(R).

Navigation Bar Description :

☞ **Install Mainboard Software -** VIA 4in1 Driver, VIA VGA Driver, VIA LAN Driver, Realtek Audio Driver, VIA USB 2.0 Driver, DirectX9 Utility.

☞ **Install Utility -** Install Acrobat Reader, WinFlash Utility.

☞ **Manual -** SK22G2 user's guide and RAID manual in PDF format.

☞ **Link to Shuttle Homepage -** Link to shuttle website homepage.

☞ **Browse this CD -** Allows you to see contents of this CD.

☞ **Quit -** Close this CD.
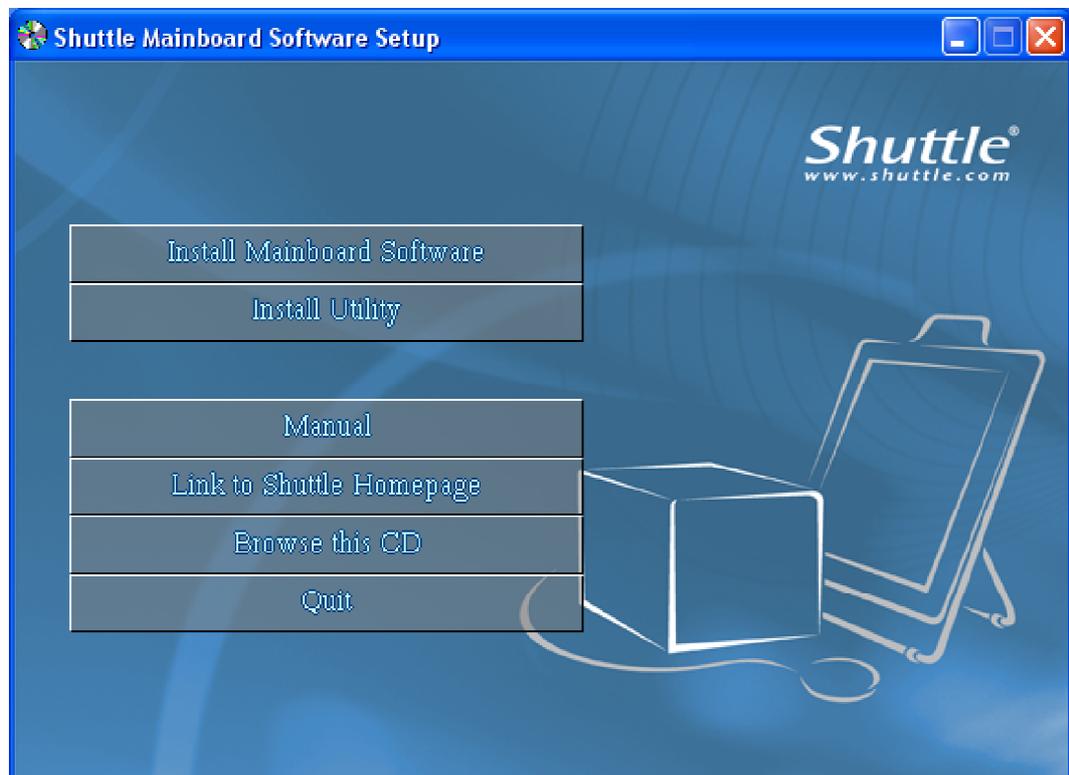
■ 1.1.1 Install Mainboard Software

Insert the attached CD into your CD-ROM drive. The CD AutoRun screen should appear. If the AutoRun screen does not appear, double click on Autorun icon in **My Computer** to bring up **Shuttle Mainb-oard Software Setup** screen.

Click the "**Install Main-board Software**" bar. Individually install the following drivers.

      ☞   **Install VIA 4in1 Driver**

      ☞   **Install VIA VGA Driver**

      ☞   **Install VIA LAN Driver**

      ☞   **Install Realtek Audio Driver**

      ☞   **Install VIA USB 2.0 Driver**

      ☞   **Install DirectX9 Utility**

Appendix
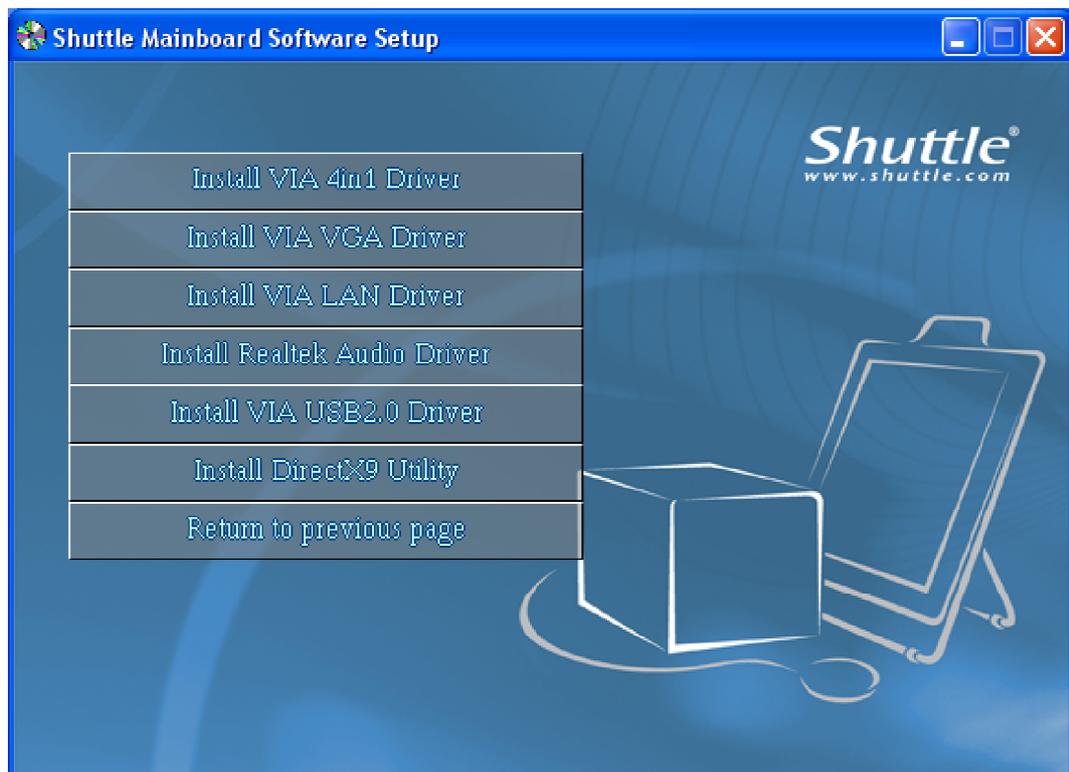
BIOS Settings

The SK22G2 BIOS ROM has a built-in Setup program that allows users to modify basic system configuration. This information is stored in battery-backed RAM so that it retains Setup information even if the system power is turned off.

The system BIOS manages and executes a variety of hardware related functions including:

System date and time

Hardware execution sequence

Power management functions

Allocation of system resources

Enter the BIOS

To enter the BIOS (Basic Input / Output System) utility, follow these steps:

Step1. Power on the computer. The system will perform its POST (Power-On Self Test) routine checks.

Step2. Press the <Del> key immediately, or at the following message:
Press DEL to enter SETUP, or simultaneously press <Ctrl>,<Alt>, <Esc> keys

> **Note 1. If you miss the train of words mentioned in step2 (the message disappears before you can respond) and you still wish to enter BIOS Setup, restart the system and try again by turning the computer OFF and ON again or by pressing the <RESET> switch located at the computer's front-panel. You may also reboot by simultaneously pressing the <Ctrl>,<Alt>, <Del> keys simultaneously.**
>
> **Note 2. If you do not press the keys in time and system does not boot, the screen will prompt an error message, and you will be given the following options:**
>
> **"Press F1 to Continue, DEL to Enter Setup"**

Step3. When you enter the BIOS program, the CMOS Setup Utility will display the Main Menu, as shown in the next section.

The Main Menu

Once you enter the AwardBIOS(tm) CMOS Setup Utility, the Main Menu will appear on the screen. The Main Menu allows you to select from several setup functions and two exit choices. Use the arrow keys to select among the items and press <Enter> to accept and enter the sub-menu.

```
              Phoenix - Award WorkstationBIOS CMOS Setup Utility

   ▶ Standard CMOS Features              ▶ Frequency Control

   ▶ Advanced BIOS Features                 Load Fail-Safe Defaults

   ▶ Advanced Chipset Features              Load Optimized Defaults

   ▶ Integrated Peripherals                 Set Supervisor Password

   ▶ Power Management Setup                  Set User Password

   ▶ PnP/PCI Configurations                 Save & Exit Setup

   ▶ PC Health Status                       Exit Without Saving

   Esc : Quit                       ↑ ↓ → ←    : Select Item
   F10 : Save & Exit Setup

                     Time, Date, Hard Disk Type...
```

Note that a brief description of each highlighted selection appears at the bottom of the screen.

Setup Items

The main menu includes the following main setup categories. Recall that some systems may not include all entries.

Standard CMOS Features

Use this menu for basic system configuration.

Advanced BIOS Features

Use this menu to set the Advanced Features available on your system.

Advanced Chipset Features

Use this menu to change the values in the chipset registers and optimize your system's performance.

Integrated Peripherals

Use this menu to specify your settings for integrated peripherals.

Power Management Setup

Use this menu to specify your power management settings.

PnP / PCI Configurations

This entry appears if your system supports PnP / PCI.

PC Health Status

This entry displays the current system temperature, Voltage, and FAN settings.

Frequency Control

Use this menu to specify your settings for ratio control.

Load Fail-Safe Defaults

Use this menu to load the BIOS default values for the minimal/stable performance of your system to operate.

Load Optimized Defaults

Use this menu to load the BIOS default values that are factory-set for optimal system operation. While Award has designed the custom BIOS to maximize performance, the factory has the right to change these defaults to meet users' needs.

Set Supervisor / User Password

Use this menu to change, set, or disable password protection. This allows you to limit access to the system and Setup, or only to Setup.

Save & Exit Setup

Save CMOS value changes in CMOS and exit from setup.

Exit Without Saving

Abandon all CMOS value changes and exit from setup.

✍ *Standard CMOS Features*

The items in the Standard CMOS Setup Menu are divided into several categories. Each category includes none, one or more than one setup items. Use the arrow keys to highlight the item and then use the <PgUp> or <PgDn> keys to select the value you want in each item.

```
             Phoenix - Award WorkstationBIOS CMOS Setup Utility
                           Standard CMOS Features
   ┌─────────────────────────────────────────────┬──────────────────────────┐
   │  Date (mm:dd:yy)            Sun, Feb  7 1999 │        Item Help         │
   │  Time (hh:mm:ss)             10 : 54 : 34    ├──────────────────────────┤
   │                                              │ Menu Level    ▶          │
   │ ▶ IDE Channel 0 Master                       │                          │
   │ ▶ IDE Channel 0 Slave       [ None]          │ Change the day, month,   │
   │ ▶ IDE Channel 2 Master                       │ year and century         │
   │ ▶ IDE Channel 3 Master                       │                          │
   │                                              │                          │
   │   Drive A                   [1.44M, 3.5 in.] │                          │
   │                                              │                          │
   │   Video                     [EGA/VGA]        │                          │
   │   Halt On                   [All Errors]     │                          │
   │                                              │                          │
   │   Base Memory                       640K     │                          │
   │   Extended Memory                 65472K     │                          │
   │   Total Memory                     1024K     │                          │
   │                                              │                          │
   │                                              │                          │
   ├──────────────────────────────────────────────┴──────────────────────────┤
   │ ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help│
   │    F5: Previous Values    F6: Fail-Safe Defaults   F7: Optimized Defaults  │
   └───────────────────────────────────────────────────────────────────────────┘
```

Date

<Month> <DD> <YYYY>

Set the system date. Note that the 'Day' automatically changes when you set the date.

Time

<HH : MM : SS>

The time is converted based on the 24-hour military-time clock. For example, 5 p.m. is 17:00:00.

IDE Channel 0 Master/Slave/ IDE Channel 2,3 Master

Options are in its sub-menu.

Press <Enter> to enter the sub-menu of detailed options.

Drive A

Select the type of floppy disk drive installed in your system.

➢ The choice: None, 360K, 5.25 in, 1.2M, 5.25 in, 720K, 3.5 in, 1.44M, 3.5 in, or 2.88M, 3.5 in.

Video

Select the default video device.

➢ The choice: EGA/VGA, CGA 40, CGA 80, or MONO.

Halt On

Select the situation in which you want the BIOS to stop the POST process and notify you.

 ➢ The choice: All Errors, No Errors, All, But Keyboard, All, But Diskette, or All, But Disk/Key.

Base/Extended/Total Memory

Theseitems are automatically detected by the system at start up time. These are display-only fields. You can't make change to these fields.

* *

IDE Adapters

The IDE adapters control the hard disk drive. Use a separate sub-menu to configure each hard disk drive.

IDE HDD Auto-Detection

Press <Enter> to auto-detect HDD on this channel. If detection is successful, it fills the remaining fields on this menu.

 ➢ Press Enter

IDE Channel 0 Master/Slave/ IDE Channel 2,3 Master

Selecting 'manual' lets you set the remaining fields on this screen and select the type of fixed disk. "User Type" will let you select the number of cylinders, heads, etc., Note: PRECOMP=65535 means NONE !

 ➢ The choice: None, Auto, or Manual.

Access Mode

Choose the access mode for this hard disk.

 ➢ The choice: CHS, LBA, Large, or Auto.

Capacity

Disk drive capacity (Approximated). Note that this size is usually slightly greater than the size of a formatted disk given by a disk checking program.

 ➢ Auto-Display your disk drive size.

The following options are selectable only if the 'IDE Primary Master' item is set to 'Manual'

Cylinder
Set the number of cylinders for this hard disk.
- ➢ Min = 0, Max = 65535

Head
Set the number of read/write heads.
- ➢ Min = 0, Max = 255

Precomp
Warning: Setting a value of 65535 means no hard disk.
- ➢ Min = 0, Max = 65535

Landing zone

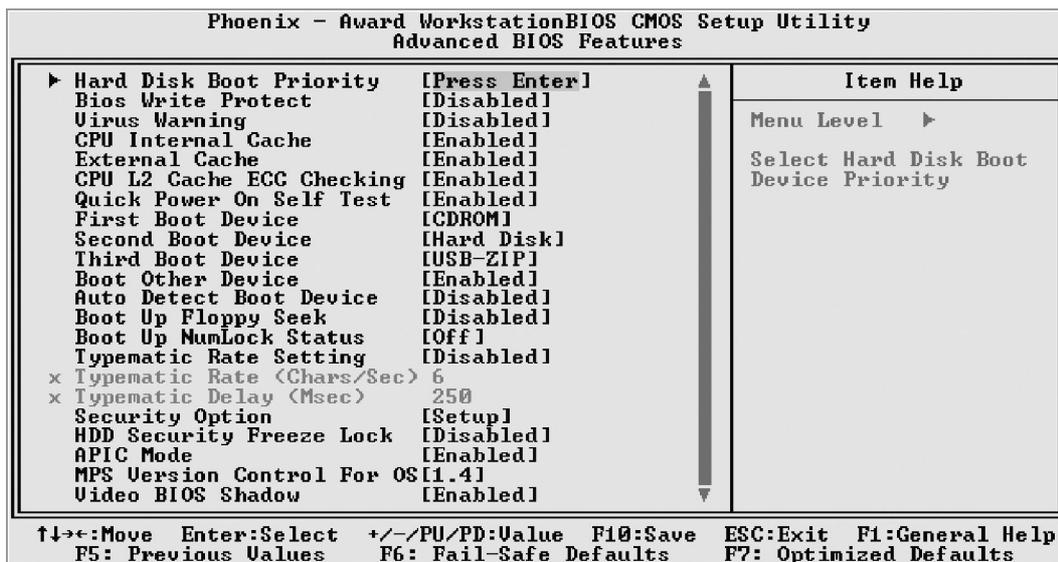Set the Landing zone size.
- ➢ Min = 0, Max = 65535

Sector
Number of sector per track.
- ➢ Min = 0, Max = 255

****

✎ *Advanced BIOS Features*

This section allows you to configure your system for basic operation. You have the opportunity to select the system's default speed, boot-up sequence, keyboard operation, shadowing, and security.

```
        Phoenix - Award WorkstationBIOS CMOS Setup Utility
                      Advanced BIOS Features
┌────────────────────────────────────────────┬──────────────────────┐
│ ▶ Hard Disk Boot Priority  [Press Enter] ▲  │      Item Help       │
│   Bios Write Protect       [Disabled]       │                      │
│   Virus Warning            [Disabled]       │ Menu Level    ▶      │
│   CPU Internal Cache       [Enabled]        │                      │
│   External Cache           [Enabled]        │ Select Hard Disk Boot│
│   CPU L2 Cache ECC Checking [Enabled]       │ Device Priority      │
│   Quick Power On Self Test [Enabled]        │                      │
│   First Boot Device        [CDROM]          │                      │
│   Second Boot Device       [Hard Disk]      │                      │
│   Third Boot Device        [USB-ZIP]        │                      │
│   Boot Other Device        [Enabled]        │                      │
│   Auto Detect Boot Device  [Disabled]       │                      │
│   Boot Up Floppy Seek      [Disabled]       │                      │
│   Boot Up NumLock Status   [Off]            │                      │
│   Typematic Rate Setting   [Disabled]       │                      │
│ x Typematic Rate (Chars/Sec) 6             │                      │
│ x Typematic Delay (Msec)    250            │                      │
│   Security Option          [Setup]          │                      │
│   HDD Security Freeze Lock  [Disabled]      │                      │
│   APIC Mode                [Enabled]        │                      │
│   MPS Version Control For OS[1.4]           │                      │
│   Video BIOS Shadow        [Enabled]     ▼  │                      │
├────────────────────────────────────────────┴──────────────────────┤
│ ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help│
│    F5: Previous Values   F6: Fail-Safe Defaults  F7: Optimized Defaults │
└────────────────────────────────────────────────────────────────────┘
```

Hard Disk Boot Priority

This item allows you to select Hard Disk Book Device Priority.

BIOS Write Protect

The item allows you to enable/disable the Bios Write Protect.

➢ The choice: Enabled or Disabled.

Virus Warning

Allows you to choose the VIRUS Warning feature for IDE Hard Disk boot sector protection. If this function is enables and someone attempts to write data into this area, BIOS will show a warning message on screen, and an alarm beep.

Enabled Activates automatically when the system boots up, causing a warning message to appear when anything attempts to access the boot sector or hard disk partition table.

Disabled No warning message will appear when anything attempts to access the boot sector or hard disk partition table.

➢ The choice: Enabled or Disabled.

CPU Internal Cache

All processors that can be installed in this mainboard use internal level 1 (L1) cache memory to improve performance. Leave this item at the default value for better performance.

➢ The choice: Enabled or Disabled.

External Cache

Most processors that can be installed in this system use external level 2 (L2) cache memory to improve performance. Leave this item at the default value for better performance.

➢ The choice: Enabled or Disabled.

CPU L2 Cache ECC Checking

This item to enabled or disabled ECC (Error Correction Code) error checking on the CPU cache memory.

➢ The choice: Enabled or Disabled.

Quick Power On Self Test

This item speeds up Power-On Self Test (POST) after you power on the computer. If it is set to enabled, BIOS will shorten or skip some check items during POST.

➢ The choice: Enabled or Disabled.

First/Second/Third Boot Device

The BIOS attempts to load the operating system from the devices in the sequence selected in these items.

➢ The Choice: Floppy, LS120, Hard Disk, CDROM, ZIP100, USB-FDD, USB-ZIP, USB-CDROM, LAN, or Disabled.

Boot Other Device

Select Your Boot Device Priority.

➢ The choice: Enabled or Disabled.

Auto Detect Boot Device

If the boot devices have been changed, BIOS will show a warning message on screen.

➢ The choice: Enabled or Disabled.

Boot Up Floppy Seek

Seeks disk drives during boot-Up. Disabling speed boots up. Enabled tests floppy drives to determine whether they have 40 or 80 tracks.

➢ The choice: Enabled or Disabled.

Boot Up NumLock Status

Selects power on state for NumLock.

➢ The choice: Off or On.

Typematic Rate Setting

Keystrokes repeat at a rate determined by the keyboard controller. When this controller enabled, the typematic rate and typematic delay can be selected.

➢ The choice: Enabled or Disabled.

Typematic Rate (Chars/Sec)

This item sets how many times the keystroke will be repented in a second when you hold the key down.

➢ The choice: 6, 8, 10, 12, 15, 20, 24 or 30.

Typematic Delay (Msec)

Sets the delay time after the key is held down before it begins to repeat the keystroke.

➢ The choice: 250, 500, 750 or 1000.

Security Option

Select whether the password is required every time the system boots or only when you enter setup.

System	The system will not boot and access to Setup will be denied if the correct password is not entered promptly.
Setup	The system will boot, but access to Setup will be denied if the correct password is not entered promptly.

➢ The choice: System or Setup.

> **Note :** To disabled security, select PASSWORD SETTING at Main Menu, and then you will be asked to enter password. Do not type anything and just press ＜Enter＞; it will disable security. Once the security is disabled, the system will boot, and you can enter Setup freely.

HDD Security Freeze Lock

Selects enable/disable HDD Security Freeze Lock, Enabled - prevents any external application from locking Hard drive except for BIOS.

➢ The choice: Enabled or Disabled.

APIC Mode

Selects enable/disable IO APIC function

➢ The choice: Enabled or Disabled.

MPS Version Control For OS

Selects the operating system multiprocessor support version.

➢ The choice: 1.1 or 1.4
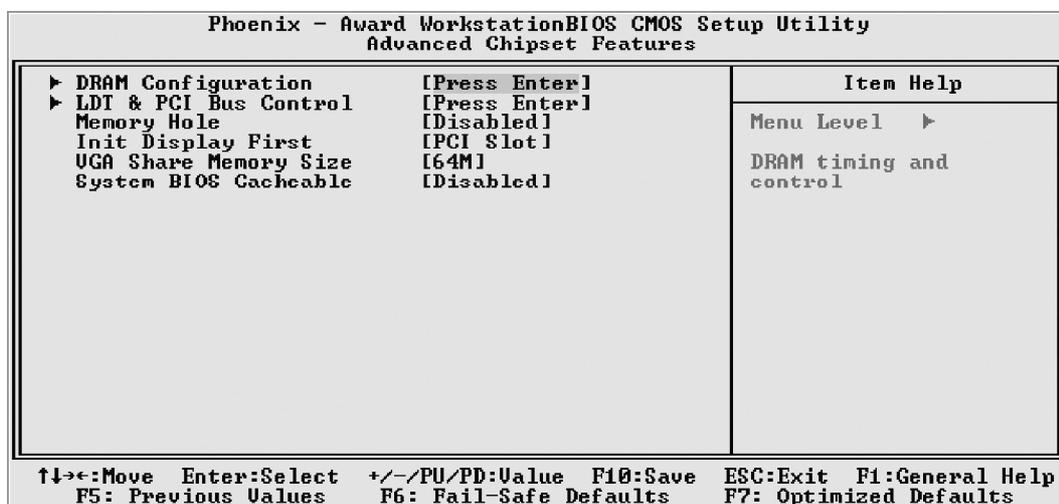
Video BIOS Shadow

Determines whether video BIOS will be copied to RAM. However, it is optional depending on chipset design. Video Shadow will increase the video speed.

➢ The choice: Enabled or Disabled.

✍ *Advanced Chipset Features*

This section allows you to configure the system based on the specific features of the installed chipset. This chipset manages bus speeds and access to system memory resources, such as DRAM and the external cache. It also coordinates communications between the conventional ISA bus and the PCI bus. It states that these items should never need to be altered.

The default settings have been chosen because they provide the best operating conditions for your system. If you discovered that data was being lost while using your system, you might consider making any changes.

```
          Phoenix - Award WorkstationBIOS CMOS Setup Utility
                        Advanced Chipset Features
 ┌──────────────────────────────────────┬─────────────────────────┐
 │ ▶ DRAM Configuration    [Press Enter] │        Item Help        │
 │ ▶ LDT & PCI Bus Control [Press Enter] │                         │
 │   Memory Hole           [Disabled]    │ Menu Level    ▶         │
 │   Init Display First    [PCI Slot]    │                         │
 │   UGA Share Memory Size [64M]         │ DRAM timing and         │
 │   System BIOS Cacheable [Disabled]    │ control                 │
 │                                       │                         │
 │                                       │                         │
 │                                       │                         │
 │                                       │                         │
 │                                       │                         │
 │                                       │                         │
 │                                       │                         │
 ├──────────────────────────────────────┴─────────────────────────┤
 │ ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help │
 │    F5: Previous Values     F6: Fail-Safe Defaults   F7: Optimized Defaults    │
 └─────────────────────────────────────────────────────────────────┘
```

DRAM Configuration

Options are in its sub-menu.

Press <Enter> to enter the sub-menu of detailed options.

Current FSB Frequency

This item shows the current CPU Front Side Bus Speed.

Current DRAM Frequency

This item shows the current DRAM speed.

Timing Mode

Auto, no user limit MaxMemClk, limit by Memory Clock value.

➢ The Choice: Auto or MaxMemClk.

Memory Clock value or Limi

Setting platform Memclock.

➢ The Choice: DDR 400, DDR533, DDR667, or DDR800.

DDRII Timing Item

Selects enable/disable DDRII Timing Item.

➢ The choice: Enabled or Disabled.

(Tcl)CAS Latency Time

This item defines the timing delay in clock cycles before SDRAM starts a read command after receiving it.

➢ The Choice: 3 ~ 6 Clocks.

(Trcd)RAS to CAS R/W Delay

This item defines the timing of the transition from RAS (row address strobe) to CAS (column address strobe) as both rows and columns are separately addressed shortly after DRAM is refreshed.

➢ The Choice: 3 ~ 6 Clocks.

(Trp)Row Precharge Time

This item defines the numbers of cycles for RAS (row address strobe) to be allowed to precharge.

➢ The Choice: 3 ~ 6 Clocks.

(Tras)RAS Active Time

This precharge time is the number of cycles it takes for DRAM to accumulate its charge before refresh.

➢ The Choice: 5 ~ 18 bus clocks.

LDT & PCI Bus Control

Options are in its sub-menu.

Press <Enter> to enter the sub-menu of detailed options.

Upstream LDT Bus Width

This item allows you to select the LDT upstream width.

➢ The Choice: 8 bit or 16 bit.

Downstream LDT Bus Width

This item allows you to select the LDT downstream width.

➢ The Choice: 8 bit or 16 bit.

LDT Bus Frequency

The item selects the LDT bus frequency.

➢ The Choice: Atuo, 200 MHz, 400 MHz, 600 MHz, 800 MHz or 1GHz.

PCI Delay Transaction

The chipset has an embedded 32-bit posted write buffer to support delay transactions cycles. Select Enabled to support compliance with PCI specification version 2.1.

➢ The Choice: Enabled or Disabled.

Memory Hole

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

➢ The Choice: Disabled or 15M-16M.

Init Display First

This item allows you to decide to activate whether PCI slot or PCIE slot first. Dual display function: Before using PCI VGA card to build dual display function with onboard VGA under OS, please select PCIE Slot/ Onboard item first.

➢ The choice: PCI Slot or PCIE Slot/Onboard.

VGA Share Memory Size

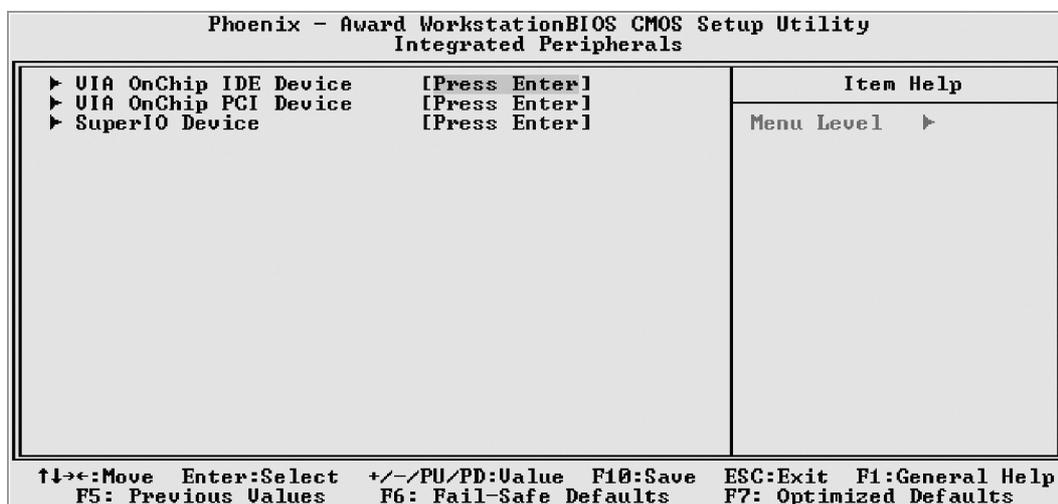This item defines the onboard VGA shared memory size.

➢ The Choice: Disabled, 8M, 16M, 32M, 64M, 128M, 256M or 512M.

System BIOS Cacheable

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

➢ The choice: Enabled or Disabled.

✍ *Integrated Peripherals*

```
            Phoenix - Award WorkstationBIOS CMOS Setup Utility
                         Integrated Peripherals
  ┌─────────────────────────────────────────────┬──────────────────────┐
  │ ▶ VIA OnChip IDE Device    [Press Enter]     │      Item Help       │
  │ ▶ VIA OnChip PCI Device    [Press Enter]     │                      │
  │ ▶ SuperIO Device           [Press Enter]     │ Menu Level    ▶      │
  │                                              │                      │
  │                                              │                      │
  │                                              │                      │
  │                                              │                      │
  │                                              │                      │
  │                                              │                      │
  │                                              │                      │
  │                                              │                      │
  │                                              │                      │
  │                                              │                      │
  └─────────────────────────────────────────────┴──────────────────────┘
   ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
       F5: Previous Values      F6: Fail-Safe Defaults   F7: Optimized Defaults
```

VIA OnChip IDE Device

Option are in its sub-menu.

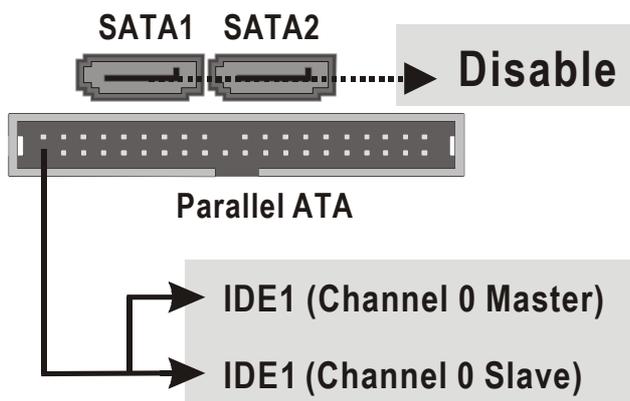Press < Enter > to enter the sub-menu of detailed options.

OnChip SATA

The chipset contains a SATA interface with support to on SATA channel. Select Enabled to active the primary SATA interface. Select Disabled to deactivate the primary interface.

➢ The choice: Disabled or Enabled.

SATA Mode

You can select SATA Mode as "RAID" to run RAID bios and make raid.

➢ The choice: IDE or RAID.

OnChip IDE Channel

The chipset contains a PCI IDE interface with support to two IDE channels. Select Enabled to activate the primary IDE interface; select Disabled to deactivate this interface.

➢ The choice: Enabled or Disabled.

IDE Prefetch Mode

The onboard IDE drive interfaces support IDE prefetching for faster drive access. If you install a primary and/or secondary add-on IDE interface, set this field to Disabled if the interface does not support prefetching.

➢ The choice: Enabled or Disabled.

Primary Master/Slave PIO

Each IDE channel supports a master device and a slave device. These four items let you assign which kind of PIO (Programmed Input / Output) is used by IDE devices. Choose Auto to let the system auto detect which PIO mode is best or select a PIO mode from 0-4.

➢ The choice: Auto, Mode 0, Mode 1, Mode 2, Mode 3 or Mode 4.

Primary Master/Slave UDMA

Each IDE channel supports a master device and a slave device.
This mainboard supports UltraDMA technology, which provides faster access to IDE devices.

➢ The choice: Auto or Disabled.

IDE HDD Block Mode

If your IDE hard disk drive supports block mode (most new drives do), select Enabled to automatic detect the optimal number of block read and writes per sector that the drive can support and improves the speed of access to IDE devices.

➢ The choice: Enabled or Disabled.

VIA Onchip PCI Device

Option are in its sub-menu.

Press < Enter > to enter the sub-menu of detailed options.

Onboard Audio

This item allows you to select audio chip to support Audio. Disable this item. If you are going to install a PCI audio add-on card.

➢ The Choice: Auto or Disabled.

Onboard LAN

This item allows you to select onchip LAN.

➢ The Choice: Enabled or Disabled.

Onboard Lan Boot ROM

Device whether to invoke the boot ROM of the onboard LAN chip.

➢ The Choice: Enabled or Disabled.

Onchip USB Controller

Select Enabled if your system contains a Universal Serial Bus (USB) port on this mainboard.

➢ The Choice: All Disabled or All Enabled.

Onchip USB 2.0 Controller

Selects enable/disable Onchip USB 2.0 Controller.

➢ The Choice: Enabled or Disabled.

SuperIO Device

Option are in its sub-menu.

Press＜Enter＞to enter the sub-menu of detailed options.

Onboard FDC Controller

This item specifices onboard floppy disk drive controller. This setting allows you to connect your floppy disk drives to the onboard floppy connector.

➢ The choice: Enabled or Disabled.

Onboard Serial Port

This option is used to assign the I/O address and interrupt request (IRQ) for the onboard serial port1 (COM1).

➢ The choice: Disabled, 3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3, or Auto.

Onboard Parallel Port

This item allows you to determine onboard parallel port controller I/O address and interrupt request (IRQ).

➢ The choice: 378/IRQ7, 278/IRQ5, 3BC/IRQ7 or Disabled.

Parallel Port Mode

Select an operating mode for the onboard parallel (printer) port. Select Normal, Compatible, or SPP unless you are certain your hardware and software both support one of the other available modes.

➢ The choice: SPP, EPP, ECP or ECP + EPP.

ECP Mode Use DMA

When the onboard parallel is set to ECP mode, the parallel port can use DMA3 or DMA1.

➢ The choice: 1 or 3.

✎ *Power Management Setup*

```
        Phoenix - Award WorkstationBIOS CMOS Setup Utility
                       Power Management Setup
┌──────────────────────────────────────────────┬───────────────────┐
│ ACPI function            Enabled              │    Item Help      │
│ ACPI Suspend Type        [S1(POS)]            │                   │
│ HDD Power Down           [Disable]            │ Menu Level   ►    │
│ Suspend Mode             [Disable]            │                   │
│ Video Off Option         [Suspend -> Off]     │                   │
│ Video Off Method         [V/H SYNC+Blank]     │                   │
│ MODEM Use IRQ            [3]                   │                   │
│ Soft-Off by PWRBTN       [Instant-Off]        │                   │
│ Run VGABIOS if S3 Resume [Auto]               │                   │
│ PWRON After PWR-Fail     [Off]                │                   │
│ ► IRQ/Event Activity Detect [Press Enter]     │                   │
│                                               │                   │
│                                               │                   │
│                                               │                   │
├──────────────────────────────────────────────┴───────────────────┤
│ ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help│
│    F5: Previous Values    F6: Fail-Safe Defaults   F7: Optimized Defaults │
└───────────────────────────────────────────────────────────────────┘
```

The Power Management Setup allows you to configure your system to most effectively saving energy while operating in a manner consistent with your own style of computer use.

ACPI Function

This item allows you to enable/disable the Advanced Configuration and Power Management (ACPI).

➢ Always "Enabled".

ACPI Suspend Type

This item allows you to select sleep state when suspend.

➢ The choice: S1(POS) or S3(STR).

HDD Power Down

The IDE hard drive will spin down if it is not accessed within a specified length of time. Options are from 1 Min to 15 Min and Disable.

➢ The choice: Disabled or 1 Min ~ 15 Min.

Suspend Mode

When this item enabled and after the set up time of system inactivity, all devices except the CPU will be shut off.

➢ The choice: Disable, 1Min, 2Min, 4Min, 6Min, 8Min, 10Min, 20Min, 30Min, 40Min or 1Hour.

Video Off Option

This item specifies on/off for the monitor when it enters the power-saving mode.

➢ The choice: Suspend->off or Always On.

Video Off Method

This determines the manner in which the monitor is blanked.

Blank Screen	This option only writes blanks to the video buffer.
V/H SYNC+Blank	This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.
DPMS Supported	Initial display power management signaling.

➢ The choice: V/H SYNC+Blank, Blank Screen or DPMS Supported.

MODEM Use IRQ

This determines the IRQ which the MODEM can use.
➢ The choice: 3, 4, 5, 7, 9, 10, 11 or NA.

Soft-Off by PWR-BTN

Under ACPI you can create a software power down. In a software power down, the system can be resumed by Wake UP Alarms. This item lets you install a software power down that is controlled by the power button on your system. If the item is set to Instant-Off, then the power button causes a software power down. If the item is set to Delay 4 Sec. then you have to hold the power button down for 4 seconds to cause a software power down.

➢ The choice: Instant-Off or Delay 4 Sec.

Run VGABIOS if S3 Resume

This item becomes available when the previous item is seto to S3(STR) or S1 & S3. The item allows the system to initialize a VGA BIOS from S3 (Suspend to RAM) sleep state.

➢ The choice: Yes, No or Auto.

PWRON After PWR-Fail

This item select power on function when power fail.

➢ The choice: Off, On or Former-Sts.

IRQ / Event Activity Detect

Option are in its sub-menu.

Press<Enter>to enter the sub-menu of detailed options.

PS2KB Wakeup Select

Select a hotkey or password to wake up the system.

➤ The choice: Hot key or Password.

PS2KB Wakeup from S3/S4/S5

Set a key to awaken the system from a keyboard.

➤ The choice: Disable, Ctrl+F1~F12, Power, Wake or Any Key.

PS2MS Wakeup from S3/S4/S5

This item enables or disables the PS/2 mouse to awaken the system.

➤ The choice: Disabled or Enabled.

VGA

Select ON to have the VGA awaken the system.

➤ The choice: OFF or ON.

LPT & COM

This item determines if any activity from LPT, COM, or both wakes up the system.

➤ The choice: NONE, LPT, COM or LPT/COM.

HDD & FDD

Select ON to have any activity from HDD or FDD wake up the system.

➤ The choice: OFF or ON.

PCI Master

Select ON to have any activity from the primary PCI wake up the system.

➤ The choice: OFF or ON.

PowerOn by PCI Card

This item enables/disables the power on function of PCI card.

➤ The choice: Disabled or Enabled.

Modem Ring Resume

When this item is enabled, any event from Modem Ring will awaken the system which has been powered down.

➤ The choice: Disabled or Enabled.

RTC Alarm Resume

When this item is enabled, your can set the date and time at which the RTC (real-time clock) alarm awakens the system from suspend mode.

➤ The choice: Disabled or Enabled.

Data (of Month)
This item selects the alarm date.
➢ Key in a DEC number: Min = 0, Max = 31.

Resume Time (hh:mm:ss)
This item selects the alarm Time.

[hh]   ➢ Key in a DEC number: Min = 0, Max = 23.
[mm]   ➢ Key in a DEC number: Min = 0, Max = 59.
[ss]   ➢ Key in a DEC number: Min = 0, Max = 59.

IRQs Activity Monitoring
Press < Enter > to enter the sub-menu of detailed options.

Primary INTR
Select ON/OFF to enable/disable a specified IRQ.
➢ The choice: OFF or ON.

In the following is a list of IRQs (Interrupt Requests), which can be exempted much as the COM ports and LPT ports above can. When an I/O device wants to gain the attention of the operating system, it signals this by causing an IRQ to occur. When the operating system is ready to respond to the request, it interrupts itself and performs the service. When on mode exists, activity will neither prevent the system from going into a power management mode nor awaken it.

> **IRQ3 (COM 2)**
> **IRQ4 (COM 1)**
> **IRQ5 (LPT 2)**
> **IRQ6 (Floppy Disk)**
> **IRQ7 (LPT 1)**
> **IRQ8 (RTC Alarm)**
> **IRQ9 (IRQ2 Redir)**
> **IRQ10 (Reserved)**
> **IRQ11 (Reserved)**
> **IRQ12 (PS/2 Mouse)**
> **IRQ13 (Coprocessor)**
> **IRQ14 (Hard Disk)**
> **IRQ15 (Reserved)**
>
> ➢ The choice: Disabled or Enabled.

✎ PnP/PCI Configurations

This section configures how PnP and PCI operate in your system. Correctly setting up the IRQ and DMA (both PnP and PCI use) assignments will make your system work stably. It is strongly recommended that only technical users make changes to the default settings.

```
          Phoenix - Award WorkstationBIOS CMOS Setup Utility
                        PnP/PCI Configurations
┌─────────────────────────────────────────────┬───────────────────────┐
│   PNP OS Installed          [No]             │      Item Help        │
│   Reset Configuration Data  [Disabled]       ├───────────────────────┤
│                                              │ Menu Level    ▶       │
│   Resources Controlled By   [Auto(ESCD)]     │                       │
│ x IRQ Resources              Press Enter     │ Select Yes if you are │
│                                              │ using a Plug and Play │
│   PCI/VGA Palette Snoop     [Disabled]       │ capable operating     │
│   Assign IRQ For VGA        [Enabled]        │ system Select No if   │
│   Assign IRQ For USB        [Enabled]        │ you need the BIOS to  │
│                                              │ configure non-boot    │
│   ** PCI Express relative items **           │ devices               │
│   Maximum Payload Size      [4096]           │                       │
│                                              │                       │
│                                              │                       │
│                                              │                       │
│                                              │                       │
│                                              │                       │
├─────────────────────────────────────────────┴───────────────────────┤
│ ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help │
│     F5: Previous Values      F6: Fail-Safe Defaults   F7: Optimized Defaults  │
└──────────────────────────────────────────────────────────────────────┘
```

PNP OS Installed

This item allows you to determine PnP OS is installed or not.

➢ The choice: Yes or No.

Reset Configuration Data

Normally, you leave this field Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit from Setup if you have installed a new device or software and the system reconfiguration has caused such a serious conflict that the operating system can not boot.

➢ The choice: Enabled or Disabled .

Resource controlled By

The Award Plug-and-Play BIOS has the capacity to automatically configure all of the boot and Plug-and-Play compatible devices. However, this capability means absolutely nothing unless you are using a Plug-and-Play operating system such as Windows 95.

If you set this field to "manual", choose specific resources by going into each of the sub-menu that follows this field (a sub-menu is proceeded by a " > ").

➢ The choice: Auto (ESCD) or Manual.

IRQ Resources

When resources are controlled manually, assign each system interrupt a type, depending on the type of device using the interrupt.

IRQ3/4/5/7/9/10/11/12/14/15 assigned

This item allows you to determine the IRQ assigned to the ISA bus and is not available to any PCI slot. Legacy ISA for devices is compliant with the original PC AT bus specification; PCI/ISA PnP for devices is compliant with the Plug-and-Play standard whether designed for PCI or ISA bus architecture.

➢ The choice: PCI Device or Reserved.

PCI/VGA Palette Snoop

It determines whether the MPEG ISA/VESA VGA Cards can work with PCI/VGA or not. If you have MPEG ISA/VESA VGA Cards and PCI/VGA Card worked, Enable this field. Otherwise, please Disable it.

➢ The choice: Enabled or Disabled.

Assign IRQ for VGA

The item allows the user to set VGA IRQ Routing table Enabled or Disabled.

➢ The choice: Enabled or Disabled.

Assign IRQ for USB

The item allows the user the option to assign an IRQ to onboard USB controller. Since the onboard controller is always enabled, if no IRQ is assigned to it, there will be a question mark report on the system device under Windows95/98.

➢ The choice: Enabled or Disabled.

** PCI Express relative items **

Maximum Payload Size

Set maximum TLP payload size for the PCI Express devices. The unit is byte.

➢ The choice: 128, 256, 512, 1024, 2048 or 4096.

✎ *PC Health Status*

```
         Phoenix - Award WorkstationBIOS CMOS Setup Utility
                          PC Health Status
┌─────────────────────────────────────────────┬──────────────────────┐
│ Advanced CPU Fan Setting   [Smart Fan]        │     Item Help        │
│ CPU Voltage                                   │                      │
│ Chipset Voltage                               │ Menu Level   ▶       │
│ +3.3V                                         │                      │
│ +5V                                           │                      │
│ +12V                                          │                      │
│ -12V                                          │                      │
│ RAM Voltage                                   │                      │
│ +5VSB                                         │                      │
│ Voltage Battery                               │                      │
│ System Temperature                            │                      │
│ CPU Temperature                               │                      │
│ FAN1 Speed                                    │                      │
│ FAN2 Speed                                    │                      │
│                                               │                      │
│                                               │                      │
├─────────────────────────────────────────────┴──────────────────────┤
│ ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help │
│     F5: Previous Values    F6: Fail-Safe Defaults   F7: Optimized Defaults    │
└─────────────────────────────────────────────────────────────────────┘
```

CPU Fan Speed Control

Here you can set the CPU Fan Speed.

➢ The choice: Smart Fan, Noise Control - U Low, Noise Control - Low, Noise Control - Mid, Noise Control - Full, Temp Control - 40°C, Temp Control - 45°C, Temp Control - 50°C, Temp Control - 55°C, , Temp Control - 60°C

Note : **Before manually modifying the CPU fan setting, please make sure fan connectors are plug ged into the correct fan connector on the mainboard.**

CPU Voltage

 Chipset Voltage

 +3.3V

 +5V

 +12V

 -12V

 RAM Voltage

 +5VSB

 Voltage Battery

 System Temperature

 CPU Temperature

 FAN1 Speed

 FAN2 Speed

Warning : It is Strongly reco-mmended to disable CPU Fan Auto Guardian feature, if you wish to use other fan cooler, allowing the fan to run at its default speed.

✎ *Frequency Control*

```
           Phoenix - Award WorkstationBIOS CMOS Setup Utility
                            Frequency Control
 ┌─────────────────────────────────────────────┬─────────────────────────┐
 │ Auto Detect PCI Clk       [Enabled]          │        Item Help        │
 │ Spread Spectrum           [Enabled]          │                         │
 │ CPU Clock                 [255MHz]           │ Menu Level    ▶         │
 │ Async PCI clock           [Sync with CPU Clock]│                       │
 │ Linear PCIEX clock        [100MHz]           │                         │
 │                                              │                         │
 │                                              │                         │
 │                                              │                         │
 │                                              │                         │
 │                                              │                         │
 │                                              │                         │
 │                                              │                         │
 │                                              │                         │
 │                                              │                         │
 └─────────────────────────────────────────────┴─────────────────────────┘
 ↑↓→←:Move   Enter:Select   +/-/PU/PD:Value   F10:Save   ESC:Exit   F1:General Help
      F5: Previous Values    F6: Fail-Safe Defaults    F7: Optimized Defaults
```

Auto Detect PCI Clk

This item allows you to enable/disable auto detection PCI Clock.

➢ The choice: Enabled or Disabled.

Spread Spectrum

This item allows you to enable or disable the spread spectrum modulation.

➢ The choice: Disabled or Enabled.

CPU Clock

This item allows you to adjust CPU Host Clock.

Min: 200

Max: 255

➢ Key in a DEC number: (Between Min and Max.)

Async PCI clock

This item allows you to adjust Async PCI clock.

➢ The choice: Sync with CPU Clock or Fixed 33 MHz.

Linear PCIEX clock

This item allows you to adjust Linear PCIEX clock.

➢ The choice: 100~150 MHz.

🖎 *Load Fail-Safe Defaults*

When you press <Enter> on this item, you will get a confirmation dialog box with a message similar to:

Load Fail-Safe Defaults (Y/N) ? N

Pressing 'Y' loads the BIOS default values for the most stable, minimal performance system operations.

🖎 *Load Optimized Defaults*

When you press <Enter> on this item, you will get a confirmation dialog box with a message similar to:

Load Optimized Defaults (Y/N) ? N

Pressing 'Y' loads the default values that are factory-set for optimal performance system operation.

🖎 *Set Supervisor/User Password*

```
            Phoenix - Award WorkstationBIOS CMOS Setup Utility
┌──────────────────────────────────────┬─────────────────────────────────┐
│  ▶ Standard CMOS Features             │  ▶ Frequency Control            │
│  ▶ Advanced BIOS Features             │    Load Fail-Safe Defaults      │
│  ▶ Advanced Chipset Features          │    Load Optimized Defaults      │
│  ▶ Integrated Peripherals             │    Set Supervisor Password      │
│  ▶ Power Management Setup             │    Set User Password            │
│  ▶ PnP/PCI Configurati┌───────────────────────────────┐t Setup         │
│  ▶ PC Health Status   │ Enter Password:               │ut Saving       │
│                       └───────────────────────────────┘                │
├──────────────────────────────────────┴─────────────────────────────────┤
│  Esc : Quit                            ↑ ↓ → ←   : Select Item          │
│  F10 : Save & Exit Setup                                                │
├─────────────────────────────────────────────────────────────────────────┤
│                  Change/Set/Disable Password                            │
└─────────────────────────────────────────────────────────────────────────┘
```

Steps to set supervisor/user password are described as follows:

New Password Setting:

1. While pressing <Enter> to set a password, a dialog box appears to ask you enter a password.

2. Key in a new password. The password can not exceed eight characters.

3. System will request you to confirm the new password again.

4. When completed, new code takes effect.

No Password Setting:

5. If you want to delete the password, just press the <Enter> key instead of typinga new password. Follow the procedure as ablve.

If You Forget Password:

6. If you forget your password, you must turn off the system and clear CMOS. Please refer to the tech notes at the end of section two for more information.

Save & Exit Setup

Pressing <Enter> on this item asks for confirmation:

SAVE to CMOS and EXIT (Y/N)? Y

Pressing "Y" stores the selections made in the menus of CMOS - 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 saving the values the system is restarted again.

Exit Without Saving

Pressing <Enter> on this item asks for confirmation:

Quit Without Saving (Y/N)? N

This allows you to exit from Setup without storing in CMOS any change. The previous selections remain in effect. This exits from the Setup utility and restarts your computer.