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# XPC User Guide

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For the : SN78SH7

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Shuttle®

## XPC Installation Guide

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## 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.

### Laser compliance statement

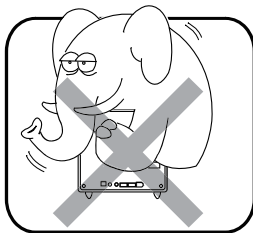
The optical disc drive in this server is a laser product. The drive's classification label is located on the drive.

### CLASS 1 LASER PRODUCT

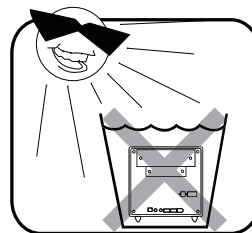
CAUTION: INVISIBLE LASER RADIATION WHEN OPEN.  
AVOID EXPOSURE TO BEAM.

## Installation Notices

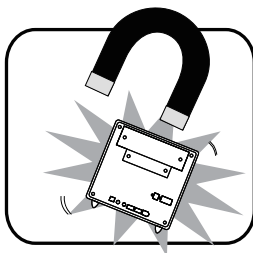
Do not place this device underneath heavy loads or in an unstable position.



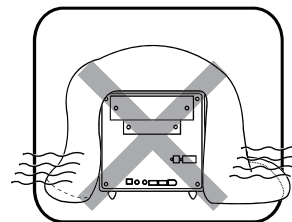
Do not expose this device to high levels of direct sunlight, high-humidity or wet conditions.



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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## Driver and Software Installation

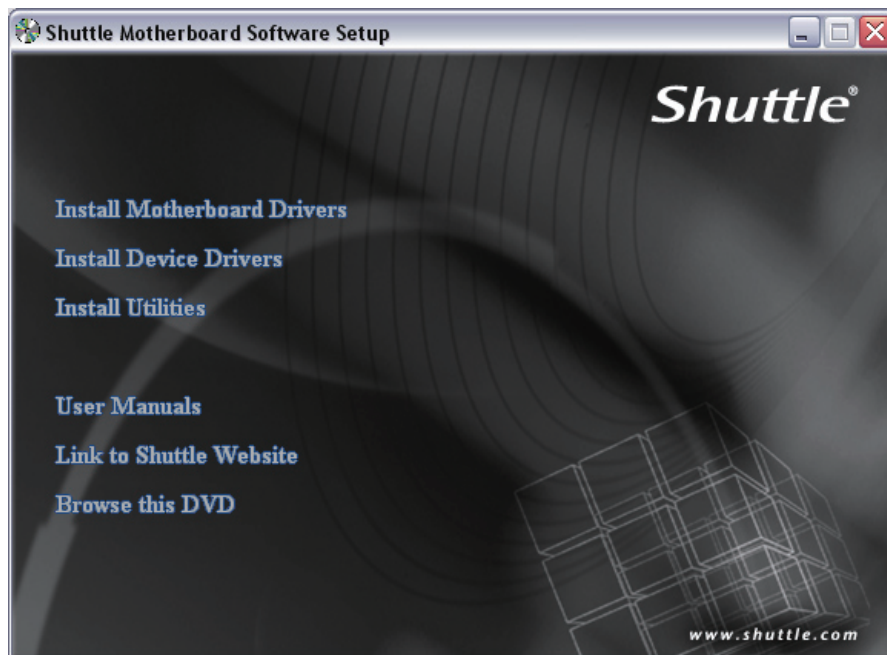
### ■ Motherboard Driver DVD

Note : The DVD contents attached in SN78SH7 motherboard are subject to change without notice. The product's specifications will depend upon the actually shipping product.

The Motherboard Driver DVD contains all the motherboard drivers necessary to optimize the performance of this XPC in a Windows® OS. Install these drivers after installing Microsoft® Windows®.

Navigation Bar Description :

- ☞ Install Motherboard Drivers - Install Realtek Audio, nVDIA Chipset, VFD (MCE Only)(Optional), IR Receiver HotFix(MCE Only)(Optional) Drivers.
- ☞ Install Device Drivers (Optional) - Install Fingerprint Recognition, Wireless LAN, Bluetooth, Wireless/Bluetooth LED Drivers.
- ☞ Install Utilities - Install Adobe Reader 8.1, Install Symantec Norton 2008 Software, Install Fingerprint Recognition Utility (Optional).
- ☞ User Manuals - SN78SH7 Manual/Quick Guide, Speed-Link Manual (Optional), Fingerprint Recognition Manual (Optional), Wireless LAN Manual/Quick Guide (Optional) in PDF format.
- ☞ Link to Shuttle Website - Link to shuttle website homepage.
- ☞ Browse this DVD - Allows you to see contents of this DVD.

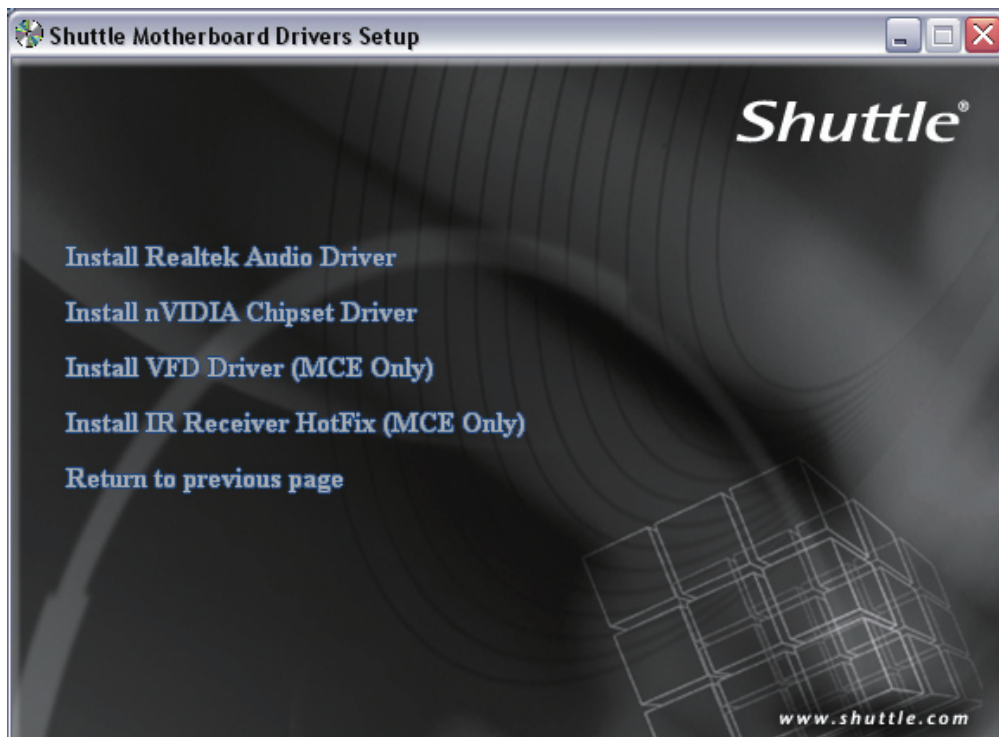


## ■ Installing Motherboard Software

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

Click the "Install Motherboard Drivers" bar. Individually install the following drivers.

- ☞ Install Realtek Audio Driver
- ☞ Install nVIDIA Chipset Driver
- ☞ Install VFD Driver (MCE Only)(Optional)
- ☞ Install IR Receiver HotFix (MCE Only)(Optional)



### BIOS Settings

The SN78SH7 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 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



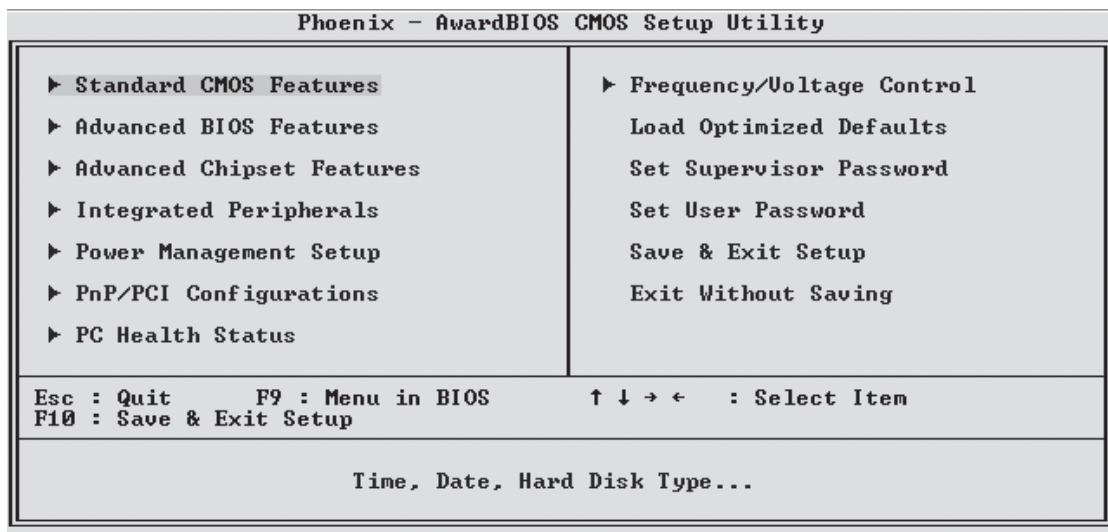
1. If you miss wordings mentioned in step2 (the message disappears before you can respond) and you still wish to enter BIOS Setup, restart the system and try again by turning the computer OFF and ON again or by pressing the <RESET> switch located at the computer's front-panel. You may also reboot by simultaneously pressing the <Ctrl>, <Alt>, <Del> keys simultaneously.
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.



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.

#### Integrated Peripherals

Use this menu to specify your settings for integrated peripherals.



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## **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/Voltage Control**

Use this menu to specify your settings for frequency/voltage control.

## **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 - AwardBIOS CMOS Setup Utility Standard CMOS Features		
Date (mm:dd:yy)	Fri, Jan 15 1999	Item Help Menu Level ▶ Change the day, month, year and century
Time (hh:mm:ss)	15 : 59 : 1	
▶ IDE Channel 0 Master		
▶ IDE Channel 0 Slave		
Drive A	[None]	
Halt On	[All , But Keyboard]	
Base Memory	640K	
Extended Memory	65535K	
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

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, 1.44M, 3.5 in, or 2.88M, 3.5 in.

### 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, or All, But Diskette.

### Base/Extended/Total Memory

These items 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

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', and Access mode set to CHS.

### 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 BIOS CMOS Setup Utility Advanced BIOS Features		
▶ CPU Feature	[Press Enter]	Item Help
▶ Removable Device Priority	[Press Enter]	Menu Level ▶
▶ Hard Disk Boot Priority	[Press Enter]	
▶ CD-ROM Boot Priority	[Press Enter]	
BIOS Write Protect	[Disabled]	
Quick Power On Self Test	[Enabled]	
First Boot Device	[CDROM]	
Second Boot Device	[Hard Disk]	
Third Boot Device	[Removable]	
Boot Other Device	[Enabled]	
Boot Up Floppy Seek	[Disabled]	
Security Option	[Setup]	
Delay For HDD <Secs>	[ 0]	
Full Screen LOGO Show	[Enabled]	
↑↓→←:Move Enter:Select +/~/PU/PD:Value F10:Save ESC:Exit F1:General Help F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults		

### CPU Feature

Options are in its sub-menu.

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

### Virtualization

This item allows you to enable or disable the Virtualization

➤ The choice: Enabled or Disabled.

### Removable Device Priority

Options are in its sub-menu.

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

### Hard Disk Boot Priority

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

### CD-ROM Boot Priority

This item allows you to select CD-ROM Book Device Priority.

### Bios Write Protect

This item allows you to enable or disable the Bios Write Protect. If you want to flash BIOS, you must set it [Disabled].

➤ 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: Removable, NVIDIA Boot Age, CD-ROM, Hard Disk, Legacy LAN or Disabled.

### Boot Up Floppy Seek

Enabled tests floppy drives to determine whether they have 40 or 80 tracks.

- The choice: Enabled or Disabled.

### 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.



To disabled security, select PASSWORD SETTING at Main Menu, and then you will be asked to enter password.

Don't 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.

### Delay For HDD <Secs>

This item allows you to set delay for HDD <secs>.

- The choice: 0 ~ 15.

### Full Screen LOGO Show

This item allows you to enable/disable the Full Screen LOGO Show.

- 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.

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 - AwardBIOS CMOS Setup Utility Advanced Chipset Features		
Init Display First	[PCI Slot]	Item Help
Hybrid SLI	[Disable]	Menu Level ▶
Display Detection	[Enabled]	
Graphic Frame Buffer	[Auto]	
Graphic Frame Buffer Size	[128M]	
Onboard VGA	[Enable If No Ext VGA]	
MCP78 PCIe training	[Gen2 if supported]	
Onboard Lan Boot ROM	[Disabled]	
↑↓←→:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults		

### Init Display First

This item is used to determine initial device when system power on.

- The choice: PCI Slot, Onboard or PCI-Ex.

### Hybrid SLI

This item allows you to enable or disable the Hybrid SLI.

- The choice: Enabled or Disabled.

### Display Detection

This item allows you to enable or disable the Display Detection.

- The choice: Enabled or Disabled.

### Graphic Frame Buffer

This item allows you to set the Graphic Frame Buffer.

- The choice: Auto or Manual.

### Graphic Frame Buffer Size

This item allows you to set the Graphic Frame Buffer Size.

- The choice: 64M, 128M, 256M, 512M or Disabled.

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### Onboard VGA

This item allows you to set the Onboard VGA.

- The choice: Always Enable or Enable If Ext VGA.

### MCP78 PCIE training

Cards supporting gen2 mode will be trained in Gen2 mode by BIOS.

- The choice: Only Gen1 or Gen2 if supported.

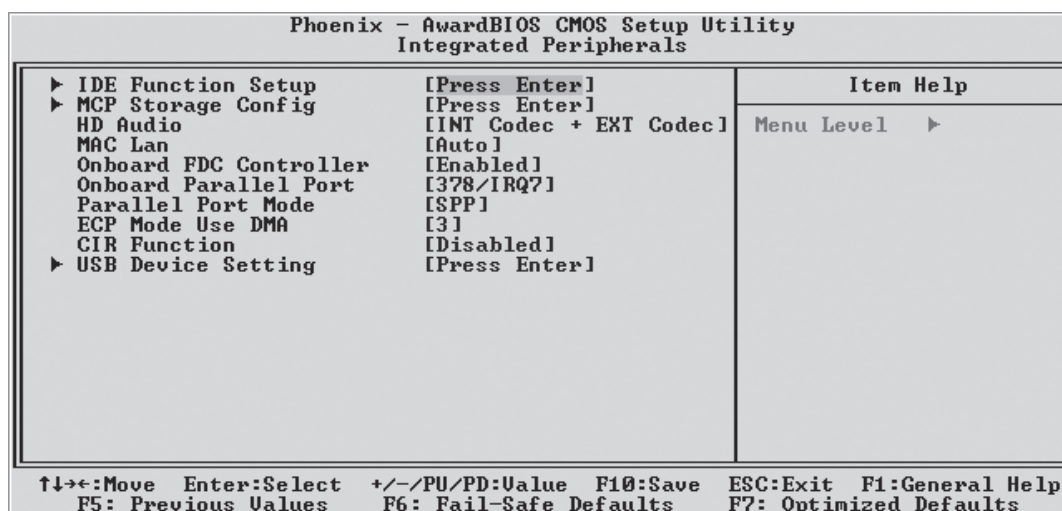
### Onboard Lan Boot ROM

This item allows you to enable or disable the Onboard Lan Boot ROM.

- The choice: Disabled or Enabled.



## Integrated Peripherals



### IDE Function Setup

Options are in its sub-menu.

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

### OnChip IDE Channel 0

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.

### Primary Master/Slave PIO

The four IDE PIO (Programmed Input/Output) fields let you set a PIO mode (0-4) for each of the four IDE devices that the onboard IDE interface supports. Modes 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device.

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

### Primary Master/Slave UDMA

Ultra DMA/100 implementation is possible only if your IDE hard drive supports it and the operating environment includes a DMA driver (Windows 95 OSR2 or a third-party IDE bus master driver). If both of your hard drive and your system software support Ultra DMA/100, select Auto to enable BIOS support.

- The choice: Auto or Disabled.

### Serial-ATA Controller

This item allows you to enable/disable the SATA transfer access.

- The choice: Enabled, or Disabled.

### MCP Storage Config

Options are in its sub-menu.

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

### SATA Operation Mode

This item allows you to set the SATA Mode.

- The choice: IDE, RAID or AHCI.

### SATA SALP Feature

This item allows you to set the SATA SALP Feature.

- The Choice: OFF, Partial or Slumber.

### HD Audio

This item allows you to control the HD Audio.

- The Choice: Internal Codec, External Codec, INT Codec+EXT Codec or Disabled.

### MAC Lan

This item allows you to control the MAC Lan.

- The Choice: Auto or Disabled.

### Onboard FDC Controller

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

- The Choice: Enable or Disabled.

### 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.

### CIR Function

This item allows you to set the CIR Function.

- The choice: Enabled, or Disabled.

### USB Device Setting

Option are in its sub-menu.

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

#### USB 2.0 Controller

Enable or Disable Universal Host Controller Interface for Universal Serial Bus.

- The choice: Enabled or Disabled.

#### USB Operation Mode

Auto decide USB device operation mode.

High speed: If USB device was high speed device, then it operated on high speed mode. If USB device was full/low speed device, then it operated on full/low speed mode.

Full/Low Speed: All of USB device operated on full/low speed mode.

- The choice: High speed or Full/Low Speed.

\*\*\* USB Mass Storage Device Boot Setting \*\*\*

#### UFDDA USB Floppy

#### UFDDB USB Floppy

#### No Device

Auto: According to contents of USB MSD decide boot up type.

FDD Mode: The USB MSD always boot up as floppy disk.

HDD Mode: The USB MSD always boot up as hard disk.

- The choice: Auto mode, FDD mode or HDD mode.



## Power Management Setup

Phoenix - AwardBIOS CMOS Setup Utility		
Power Management Setup		
ACPI function	Enabled	Item Help
ACPI Suspend Type	[S3(STR)]	Menu Level ▶
Soft-Off by PBTN	[Instant-Off]	
WOL(PME#) From Soft-Off	[Disabled]	
MAC Resume from S4/S5	[Disabled]	
Power-On by Alarm	[Disabled]	
x Day of Month Alarm	0	
x Time (hh:mm:ss) Alarm	0 : 0 : 0	
PS2 Keyboard Power ON	[Disabled]	
KB Power ON Password	[Enter]	
Hot Key Power ON	[Any Key]	
PS2 Mouse Power ON	[Disabled]	
Power-On After Power-Fail	[Off]	
↑↓←→: 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).

### Soft-Off By PBTN

Pressing the power button for more than 4 seconds forces the system to enter the Soft-Off state when the system has "hung".

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

### WOL(PME#) From Soft-Off

If this item sets to Enable, the system power will be turned on when the LAN port receives an incoming signal. You have to connect the fax/modem to the mainboard Wake On LAN connector for this feature to work.

- The choice: Enabled or Disabled.

### MAC Resume from S4/S5

This item allows you to enable/disable the MAC Resume from S4/S5.

- The choice: Disabled or Enabled.

### Power-On by Alarm

When this item enabled, you can set the date (day of the month) and time to turn on your system.

- The choice: Disabled or Enabled.

#### Date(of Month) Alarm

This item selects the alarm Date (day of the month).

- Key in a DEC number: Min=0, Max=31.

#### Time(hh : mm : ss) Alarm

This item selects the alarm Time.

- [hh] ➤ Key in a DEC number: Min=0, Max=23.

- [mm/ss] ➤ Key in a DEC number: Min=0, Max=59.

### PS2 Keyboard Power ON

This item allows you to set the Keyboard Power On function.  
"PS2 KB Power ON" Function only support S3/S5 status.

- The choice: Disabled, password, or Hot KEY.

### KB Power ON Password

This item allows you to set the KB Power On Password.

- Press "Enter" to set Password.

### Hot Key Power On

This item allows you to set the Hot Key Power On.

- The choice: Any Key, Ctrl-F1 ~ Ctrl-F12.

### PS2 Mouse Power ON

This item allows you to set the the Mouse Power On function.  
"PS2 MS Power ON" Function only support S3/S5 status.

- The choice: Disabled or Enabled.

### Power-On After Power-Fail

This item allows you to select power on function when power fail.

- The choice: Off or On.

## PnP/PCI Configurations

Phoenix - AwardBIOS CMOS Setup Utility PnP/PCI Configurations		
Resources Controlled By	[Auto<ESCD>]	Item Help
x IRQ Resources	Press Enter	Menu Level ▶
PCI/UGA Palette Snoop	[Disabled]	BIOS can automatically configure all the boot and Plug and Play compatible devices. If you choose Auto, you cannot select IRQ DMA and memory base address fields, since BIOS automatically assigns them
INT Pin 1 Assignment	[Auto]	
INT Pin 2 Assignment	[Auto]	
INT Pin 3 Assignment	[Auto]	
INT Pin 4 Assignment	[Auto]	
** PCI Express relative items **		
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		

This section describes the configuration of PCI bus system. PCI or Personal Computer Interconnection is a system which allows I/O devices to operate at the speed CPU itself keeps when CPU communicating with its own special components.

This section covers some very technical items, and it is strongly recommended that only experienced users should make any changes to the default settings.

### 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.

➤ 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.

IRQ5/7/9/10/11/14 assigned to

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.

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### 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.

### INT Pin1 ~ 4 Assignment

Names the interrupt request(IRQ) line assigned to a device connected to the PCI interface on your system.

- The choice: Auto, 3, 4, 5, 7, 9, 10, 11, 12, 14, 15.

\*\*\*\*\* PCI Express relative items \*\*\*\*\*

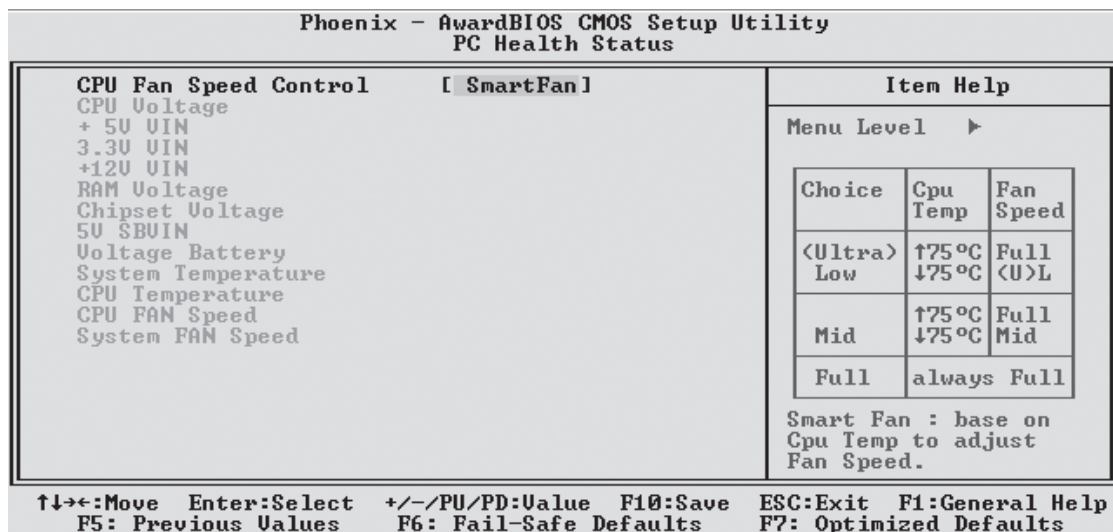
### Maximum Payload Size

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

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



## PC Health Status



### CPU Fan Speed Control

Here you can set the CPU Fan Speed.

- The choice: Smart Fan, Ultra-Low, Low, Mid, or Full.

CPU Voltage

+ 5V VIN

3.3V VIN

+ 12V VIN

RAM Voltage

Chipset Voltage

5V SBVIN

Voltage Battery

System Temperature

CPU Temperature

CPU FAN Speed

System FAN Speed



Before manually modifying the CPU fan setting, please make sure fan connectors are plugged into the correct fan connector on the motherboard.

Warning: It is strongly recommended to disable 'Smart Fan' if you use an alternative fan to the default.



## Frequency/Voltage Control

Phoenix - AwardBIOS CMOS Setup Utility		
Frequency/Voltage Control		
CPU Frequency	[ 200]	Item Help  Menu Level ▶
CPU<->NB HT Speed	[Auto]	
CPU<->NB HT Width	[Auto]	
PCIE Clock	[ 100]	
Chipset Voltage Setting	[Auto]	
DDR2 Voltage Setting	[Auto]	
CPU Voltage Setting	[Auto]	
▶ DRAM Configuration	[Press Enter]	
CPU Spread Spectrum	[Enabled]	
SATA Spread Spectrum	[Enabled]	
iGPU Spread Spectrum	[Enabled]	
↑↓←→:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults		

### CPU Frequency

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

- The choice: 100 ~ 500.

### CPU <-> NB HT Speed

This item allows you to set the NB HT Speed.

- The choice: Auto, 1x ~ 5x.

### CPU <-> NB HT Width

This item allows you to set the NB HT Width.

- The choice: ↓ 8 ↑ 8, ↓ 16 ↑ 16 or Auto.

### PCIE Clock

This item allows you to set the PCIE Clock.

- The choice: 100 ~ 200Mhz.

### Chipset Voltage Setting

This item allows you to set the Chipset Voltage.

- The choice: Auto < 1.1V >, 1.2V, 1.3V or 1.4V.

### DDR2 Voltage Setting

This item allows you to set the DDR2 Voltage.

- The choice: Auto, 1.82V ~ 2.42V.

### CPU Voltage Setting

This item allows you to set the CPU Voltage.

- The choice: Auto, +10mV ~ +400mV.

### DRAM Configuration

Options are in its sub-menu.

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

#### Timing Mode

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

- The Choice: Manual, Auto or MaxMemClk.

#### Memory Clock value or Limi

Setting platform Memclock.

- The Choice: DDR400, DDR533, DDR667, DDR800 or DDR1066.

#### TwTr Command Delay

- The Choice: 1 ~ 3 bus clocks.

#### Trfc0 for DIMM0

- The Choice: 75ns, 105ns, 127.5ns, 195ns, or 327.5ns.

#### Trfc1 for DIMM1

- The Choice: 75ns, 105ns, 127.5ns, 195ns, or 327.5ns.

#### (Twr) Write Recovery Time

- The Choice: 3 ~ 6 bus clocks.

#### (Trtp) Precharge Time

- The Choice: 2 ~ 3 clocks.

#### (Trc) Row Cycle Time

- The Choice: 11 ~ 26 bus clocks.

#### (Tcl)CAS Latency Time

- The Choice: 3 ~ 6 clocks.

#### (Trcd)RAS to CAS R/W Delay

- The Choice: 3 ~ 6 clocks.

#### (Trrd)RAS to RAS Delay

- The Choice: 2 ~ 5 clocks.

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#### (Trp)Row Precharge Time

- The Choice: 3 ~ 6 clocks.

#### (Tras)Minimum RAS Active Time

- The Choice: 5 ~ 18 bus clocks.

#### CPU Spread Spectrum

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

- The Choice: Enabled or Disabled.

#### SATA Spread Spectrum

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

- The Choice: Enabled or Disabled.

#### iGPU Spread Spectrum

This item allows you to set the iGPU Spread Spectrum.

- The choice: Enabled or Disabled.

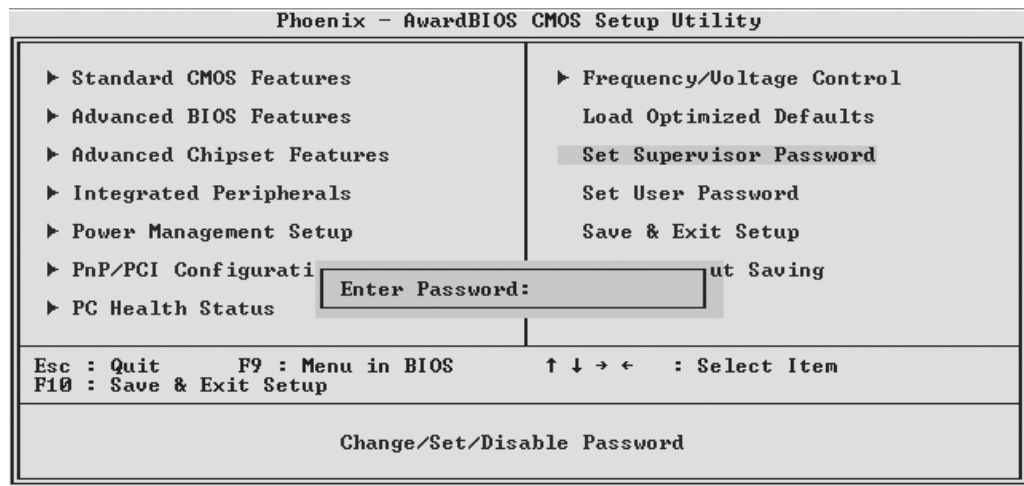
## Load Optimized Defaults

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

Load Default Settings (Y/N) ? N

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

## Set Supervisor/User 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 typing a new password. Follow the procedure as above.

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.