XPC User Guide

For the : SN21G5

Shuttle XPC EMI Test Statement

Shuttle XPC have been through EMI tests according to the following 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: XPC

Status: Sample

Model Name: SN21G5

S/N: N/A

CPU:

External Frequency: 200MHz

AMD Athlon™ 64 FX55

Serial Port: one port with 9 pins

VGA Port: one port with 15 pins

Keyboard Port: one port with 6 pins

Mouse Port: one port with 6 pins

USB 2.0 Port: four ports with 4 pins respectively

1394a Port: one port with 4 pins and one port with 6 pins respectively

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

Center/Bass-Out Port: three ports

Mic-In & Earphone Ports: one port of each

Line-In Ports: one port

SPDIF-Out (Coaxial) Port: one port

Clear CMOS button: one port

DIMM Memory (optional): DDR 400 256 MB *2

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

Monitor: CRT

Maximum Resolution: 1280 X 1024   V:60Hz

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™ 64 FX55	Close
2	200MHz	AMD Athlon™ 64 FX55	Open

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

Remedy: N/A

EMI Interference:

Crystal : 32.768MHz(X2)/ 25MHz(X5)/ 25MHz(X1)/ 24.576MHz(X3)

(D) Supported Host Peripherals:

Component	Brand	Model No. / Spec.
HDD	Seagate	ST3120026AS
CARD READER	SHUTTLE	PC22
DVD-ROM	SHUTTLE	CR40
Power	Shuttle	PC40I2503

(E) Notices for Assembling Computers:

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

2. 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.

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

4. Make sure a 5.25" drive and screws are fastened to the case (EMI shielding).

5. Make sure the case is in contact with EMI connection points.

6. Make sure there is no cleft in the case.

7. Make sure a PCI door is bound to a case.

8. 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.

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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

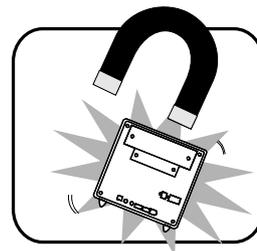**Do not place this device underneath heavy loads or in an unstable position.**
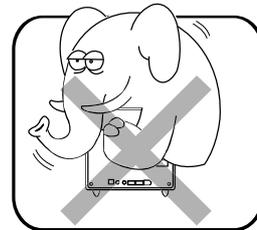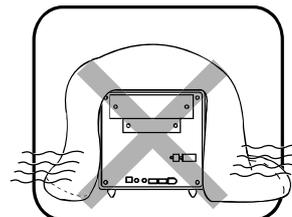
Do not expose this device to high levels of direct sunlight, high-humidity or wet conditions.
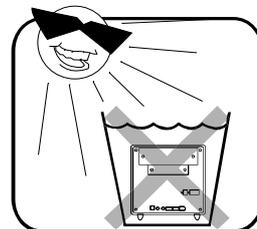
Do not use or expose this device around magnetic fields as magnetic interference may affect the performance of the device.

Do not block the air vents to this device or impede the airflow in any way.

TABLE OF CONTENTS

1   Function Introduction

■ 1.1 XPC Introduction

The Shuttle XPC is the original high-performance Small Form Factor (SFF) computer. Since the first model was introduced in 2001, the XPC has become the world's best-selling SFF computer brand.

Each Shuttle XPC is sold as a "barebone" computer ~ chassis, power supply and motherboard. The user must add his own processor, memory, drives and, as applicable, expansion cards. The XPC has been designed to be easily assembled and configured directly by the end user. Consumers can choose to buy preconfigured, ready-to-run XPC's as well ~ a list of Shuttle-authorized value-added resellers can be found at www. shuttle.com.

The Shuttle XPC owes its popularity to its unique combination of small-size, high-performance and near universal component compatibility. However, unlike ordinary desktop computers, Shuttle XPC's have been engineered as complete systems.

The XPC concept can be summarized as:

Use of high-performance, industry-standard components; Minimum size possible, while preserving component compatibility and system expansion; Focus on quality ~ a commitment to quality construction, materials and industrial design.

To meet the above requirements, Shuttle has created and patented dozens of new technologies, including the Integrated Cooling Engine (ICE), which extend and enhance the personal computing experience while reducing heat, noise and space requirements.

Thank you for choosing the Shuttle XPC!

■ 1.2 Model Specifications

Form Factor

Shuttle Small Form Factor

Processor

AMD™ Athlon64 with 200MHz FSB clock on 939-pins SMT Socket.

Chipset

NVIDIA GeForce 6100 (C51G) + nForce 410 MCP (MCP51G)

Memory

(2) 184 pin DDR SDRAM Socket

Support DDR 333/400 Dual Channel DDR SDRAM up to 2GB capacity

Audio AC97 CODEC (ALC655)

ALC655 compliant with AC97, 6-Channel dedicated mode output

Ethernet (Realtek RTL8201CL)

Supports 10/100 Mbps data rate and Wake-on-Lan (WOL) function.

IEEE 1394a (VIA VT6307)

1394 OHCI v1.0 and v1.1 compliant, Up to 400Mb/s data transfer rate

IDE/Serial ATA (MCP51G)

Supports single IDE connector (PIO mode 0,1,2,3,4 and Ultra DMA 33/66/100/133)
Supports 2 Serial-ATA(150MB/s)/ Serial-ATA II connectors (data transfer rates up to 300MB/s per port) with Raid 0 and Raid 1.

Onboard headers & connectors

(1) ATA133 IDE connector	(2) Fan connectors	(1) CD_IN header
(2) Power connector	(1) Power & reset header	(1) AUX_IN header
(2) SATA connectors	(2) 1x5 pin USB 2.0 headers	(1) PCI
(1) 2x5 USB 2.0 header	(1) Printer port header	(1) PCI-E X16
(1) PCI-E Power connector	(1) SPDIF In/Out header	(1) Mini CD_IN header

PSU

Output:250W, Input: 100/240V AC, Active PFC, FCC, CE , BSMI, UL, TUV, CB certificated

Chassis

G5, Dimension: 310 (L) x 200 (W) x 185 (H) mm
Bay: (1) 3.5" bay (2) 3.5" bays (internal) (1) 5.25" bay

■ 1.3 XPC Exterior Dissection

> **Note : Shuttle offers a variety of different XPC models loaded with various options. The illustration below will help familarize you with the included features in your new XPC.**

■ 1.3.1 XPC Front

1. Eject button

2. 5.25″ Bay

3. 3.5″ Bay

4. ↻ Reset

5. ⬗ HDD LED

6. ☼ Power LED

7. ⏻ Power switch

8. 🎤 ⬤ Mic

9. 🎧 ⬤ Headphones

10. ⟜ USB ports

11. FireWire® 400 mini port

■ 1.3.2 XPC Back

1. AC Power socket

2. [IOIOI] COM port

3. VGA port

4. 1394 FireWire® 400 port

5. PS/2 Mouse

6. PS/2 Keyboard

7. LAN port

8. USB Ports

9. SPDIF OUT (Coaxial)

10. Line-In port

11. Central / Bass

12. Rear out(R/L)

13. Front out (R/L)

14. Clear CMOS button
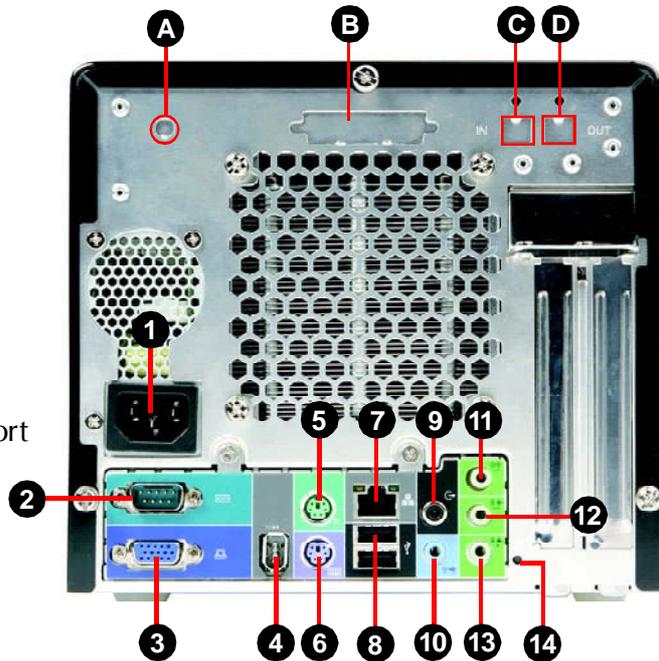
A. Wireless LAN perforation

B. Parallel port perforation

C. SPDIF IN (Optional)

D. SPDIF OUT (Optional)

■ 1.4 Accessories

1. **ICE Heat-Pipe (1)**
2. **Cable tie (2)**
3. **RAID Driver Floppy Disk (32bit/64bit) (2)**
4. **FDD cable (1)**
5. **Motherboard CD Driver (32bit/64bit) (2)**
6. **Shuttle Extras CD (1)**
7. **Power cord (1)**
8. **Cable clip (1)**
9. **Adhesive (1)**
10. **Optical Drive Control Rod (1)**
11. **Heatsink compound (1)**
12. **Screws**
13. **XPC User Guide (1)**
14. **RAID manual (1)**

> **Note : Bundled Accessories may differ from specified. If there are items missing, please contact your local authorized Shuttle dealer.**

■ 1.5 XPC Mainboard
■ 1.5.1 SN21G5 mainboard illustration

LAN & USB 2.0 Ports

SPDIF OUT(Coaxial)/ Line-IN Ports

Center/Bass/ Rear-Out/ Front-Out Ports

Clear CMOS Button

Realtek ALC655 Chipset

SPDIF In/Out- J3

PCI-E Power
Connector- ATX3

CD-IN Connector-CN2

Mini CD-IN Connector
-CN1

FAN Connector-
FAN1,FAN2

NVIDIA GeForce 6100
(C51G) Chipset

One PCI Slot

One PCI Express
x16 Slot

DUAL USB Header
- USB2

nForce 410 MCP
(MCP51G) Chipset

EXT USB Header
- USB4

Front Panel
Connector- JP4

Two Serial ATA
Connectors- SATA1,SATA2

One IDE Connector- IDE1

PS/2 Keyboard/Mouse Ports

1394 Port

AUX-IN Connector- CN3

COM & VGA Ports

One Floppy Connector

EXT USB Header
- USB3

EXT. Print Port- JP7

ITE 8712F Chipset

VIA VT6307 Chipset

Realtek RTL8201CL
Chipset

Socket 939

Power Connector- ATX1

TWO 184-pin DDR
SDRAM DIMM Sockets

Power Connector- ATX2

Front Panel Connector- JP3

■ 1.5.2 Jumper Settings

✍ *Front Panel Connector (JP3/JP4)*

Header JP3 can be used to provide operation status signals to the front daughterboard. Note that this is an alternative header to the 50pins streamline header that also connects the motherboard to the front daughterboard.

Headers JP4 is used to connect cable to front panel connector mounted on front-panel or back-panel. The front panel is where the hard drive activity lights, reset button, on/off button, computer power on light, USB connectors, 1394a connectors, and audio headers, are located.

Pin Assignments (JP4):

1 = HDLED_PU	2 = GLEDA
3 = HDLED	4 = GLEDB
5 = Reset_SW	6 = Power_SW
7 = GND	8 = GND
9 = NC	10 = KEY
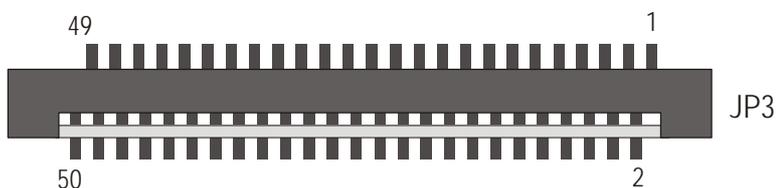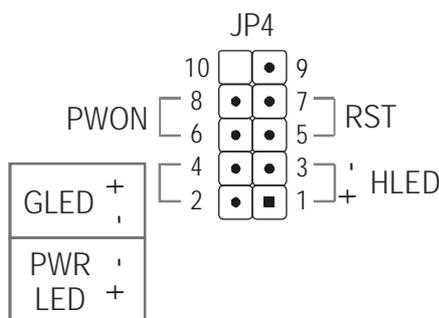
✍ *Fan Connectors (FAN1/FAN2)*

The mainboard provides two onboard 12V cooling fan power connectors to support CPU (FAN1), System (FAN2) cooling fans.

FAN1

1
GND +12V PWM_CTRL
SPEED_SENSE

FAN2

1
Ground FAN_SENSE
FAN_CTRL(+12V)
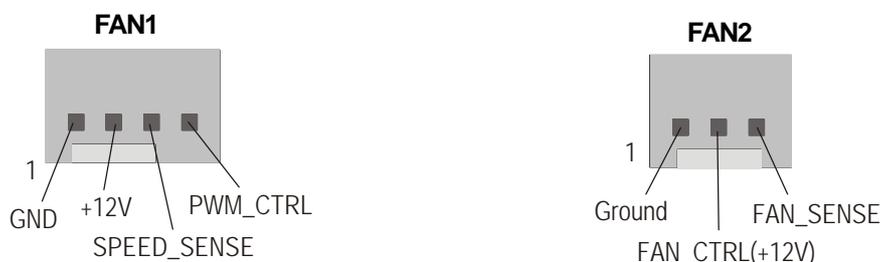
> **Note : Both cable wiring and type of plug may vary depending on the fan maker.**

✍ *Extended USB Connectors (USB2/USB3/USB4)*

These headers are used to connect auxillary USB devices to the mainboard. These headers are directional and will only allow USB cables to be connected in one direction.

Pin Assignments (USB3/USB4):

1 = GND

2 = GND

3 = USBD +

4 = USBD -

5 = USBPWR

USB3

5
4
3
2
1
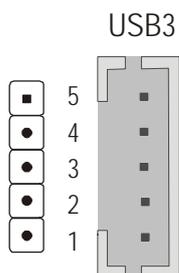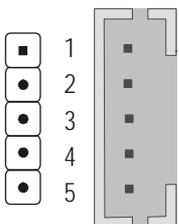
Pin Assignments (USB2):

1 = VCC

2 = VCC

3 = Data0-

4 = Data1-

5 = Data0 +

6 = Data1 +

7 = Ground

8 = Ground

9 = Key

10 = N/C

USB2

10 9
8   7
6   5
4   3
2   1

USB4

1
2
3
4
5
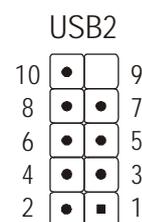
✍ *SPDIF-IN/Out Connector (J3)*

Port J3 can be used to connect special device.

Pin Assignments (J3):

1 = SPDIF IN

2 = GND

3 = VCC

4 = GND

5 = VCC

6 = SPDIF OUT

J3

6 5 4 3 2 1
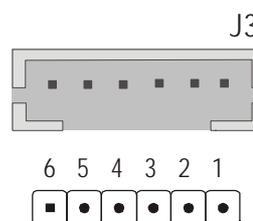
✍ *CD-IN (CN2)(Black)/ AUX-IN (CN3)(White)/*
Mini CD-IN (CN1)(White) Connectors

Port CN2(Black) and CN1,3(White) are used to connect stereo audio inputs from a CD-ROM drive.

Pin Assignments (CN2):	Pin Assignments (CN3):	Pin Assignments (CN1):
1 = CD-in Left	1 = AUX-in Left	1 = Ground
2 = Ground	2 = Ground	2 = CD-in Right
3 = Ground	3 = Ground	3 = Ground
4 = CD-in Right	4 = AUX-in Right	4 = CD-in Left

```
4  3  2  1            4  3  2  1                    1
                                                    2
                                                    3
  CD-IN   CN2        LINE-IN   CN3                  4

                                          Mini CD-IN   CN1
```
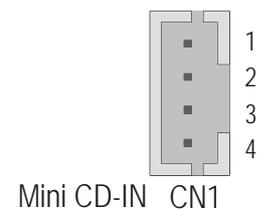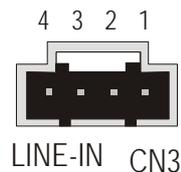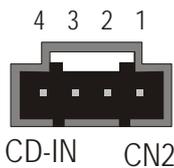
✍ *Parallel Port Header-EXT. Printer Port (JP7)*

A DB25 male parallel port header is located near the rear panel of the mainboard.
The header is used to connect a parallel port socket (PC8) to the mainboard.
The parallel printer port can be purchased from Shuttle as an optional accessory.

```
 1  ■  •  14
 2  •  •  15
 3  •  •  16
 4  •  •  17
 5  •  •  18
 6  •  •  19
 7  •  •  20
 8  •  •  21
 9  •  •  22
10  •  •  23
11  •  •  24
12  •  •  25
13  •     26

       JP7
```
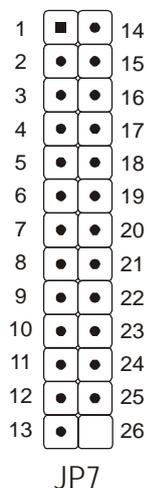
2 XPC Installation Guide

■ **2.1 Installation**

> **Note : For safety reasons, please ensure that the power cord is disconnected before opening the case.**

■ **2.1.1 Remove the Cover**

1. Unscrew the three thumbscrews.

2. Slide the cover backwards and upwards.
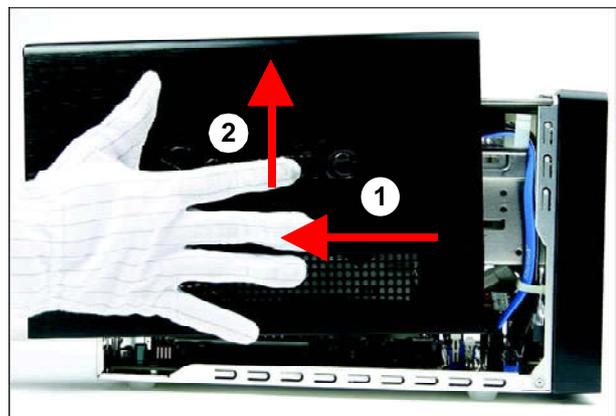
■ 2.1.2 Remove the Rack

1. Unfasten the rack mount screws.
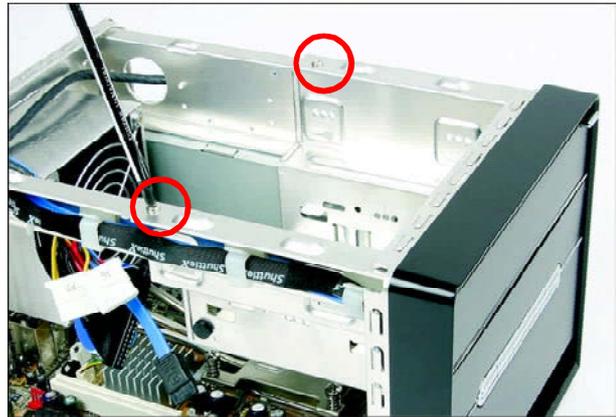
2. Remove the rack.
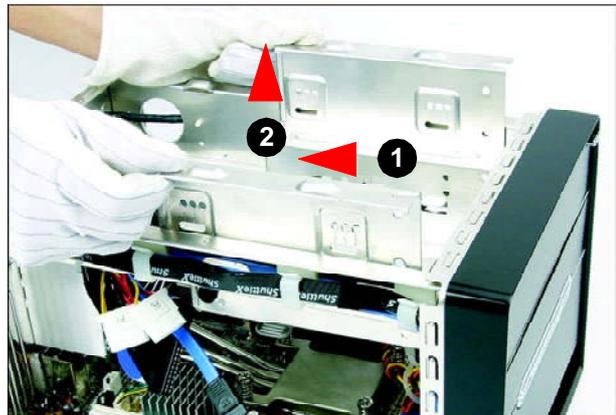
Rack

■ 2.2 CPU and ICE Installation

■ 2.2.1 Remove the ICE Module

1. Unfasten the ICE fan thumbscrews on the back of the chassis.

2. Unplug the fan power connector.
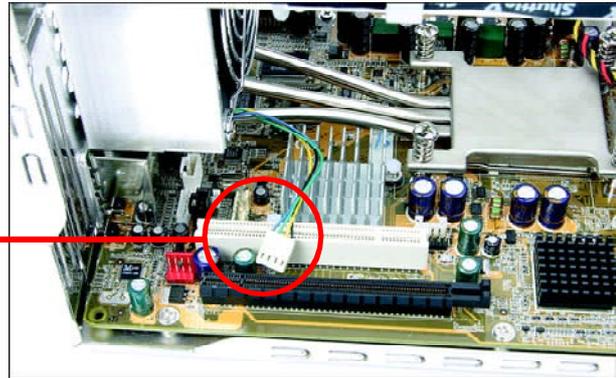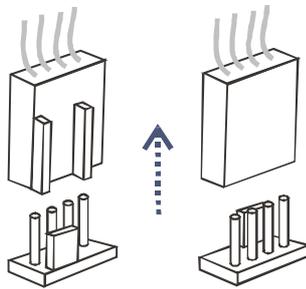
3. Unfasten the four attachment screws.
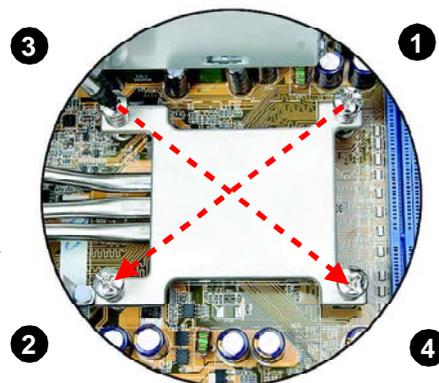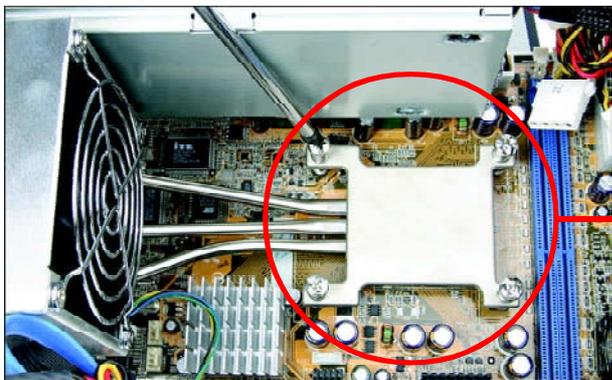
4. Remove the ICE module from the chassis and put it aside.

ICE Heat-Pipe Module

Smart Fan

Heat sink

Smart Fan Power Connector
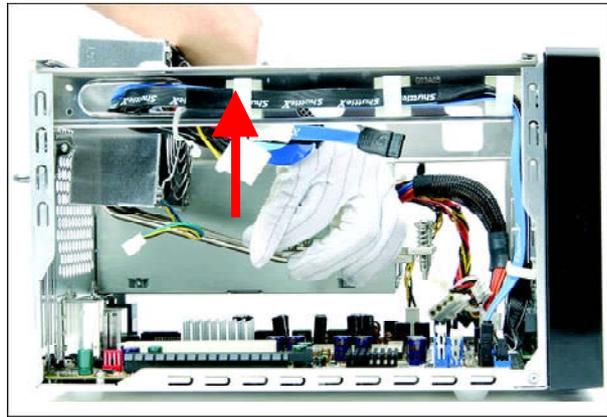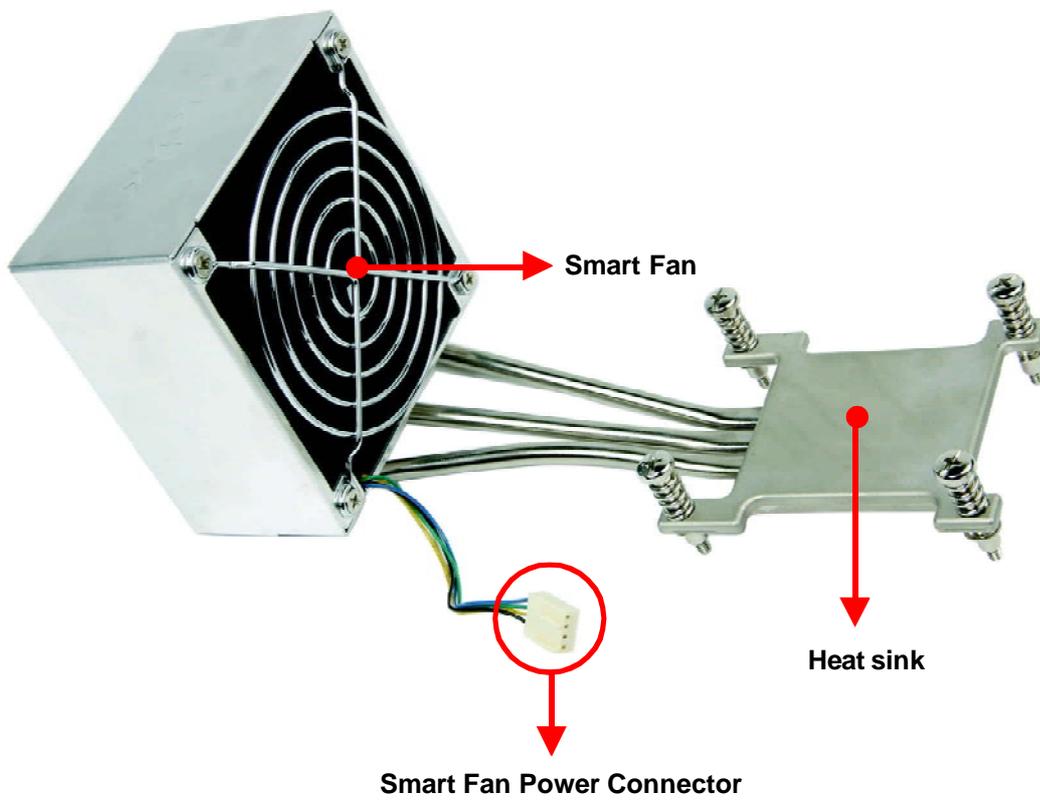
■ 2.2.2 Install the CPU

1. Pull up the CPU socket lever to 90-degrees.
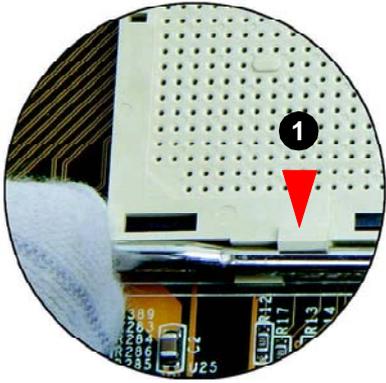
Push the lever
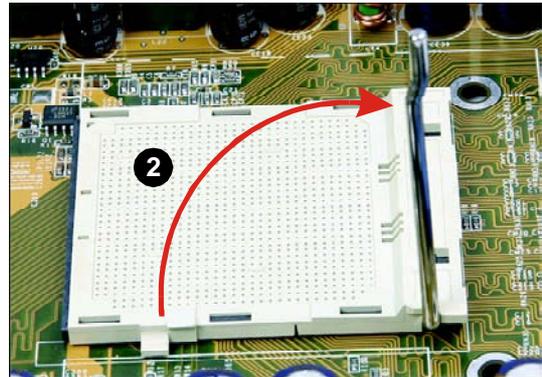
CPU socket lever at 90 degrees

2. Match the yellow triangle on a corner of the CPU with the triangle on the socket corner and gently insert the CPU into the socket.

Triangle Markings

Lever

AMD Athlon™ 64 Processor
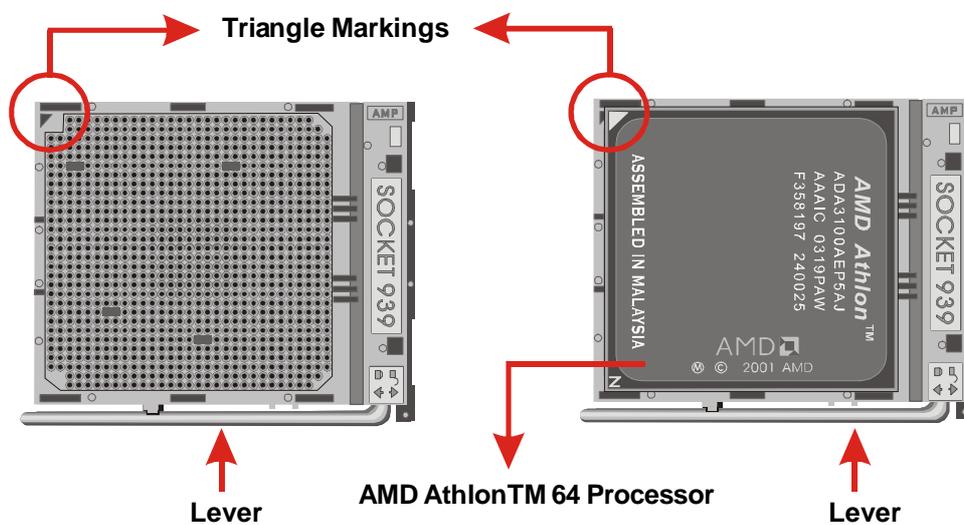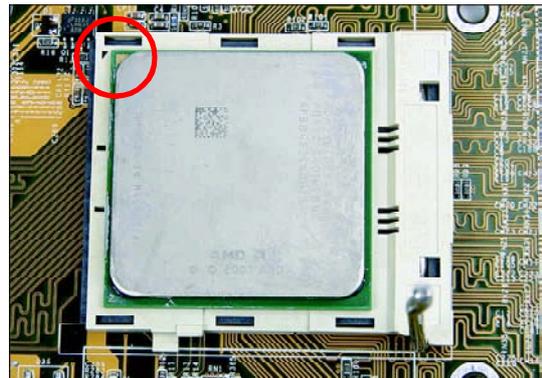
Lever

3. Press down the CPU socket lever.
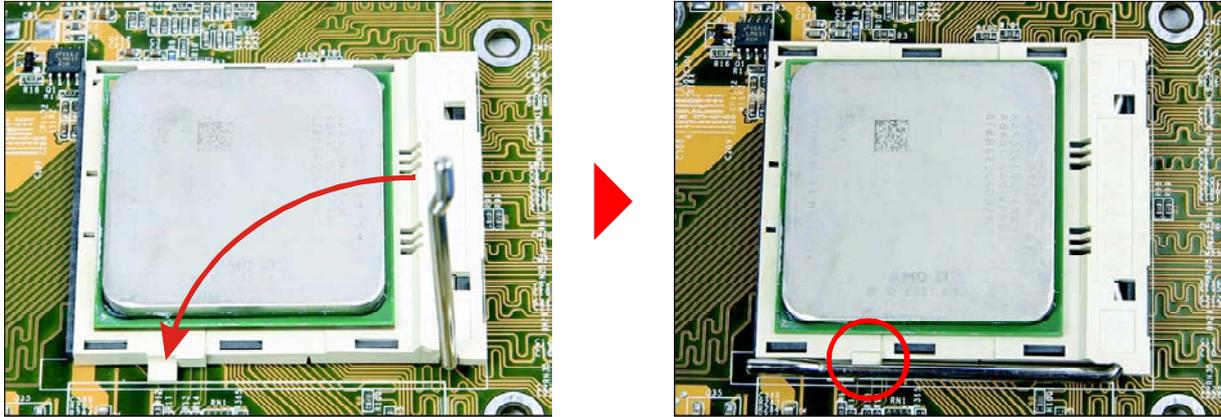
> **Note** : **Failure to correctly align the CPU and socket can result in damage to the CPU.**

4. Spread an even layer of thermal compound on the CPU die.

Thermal compound application area
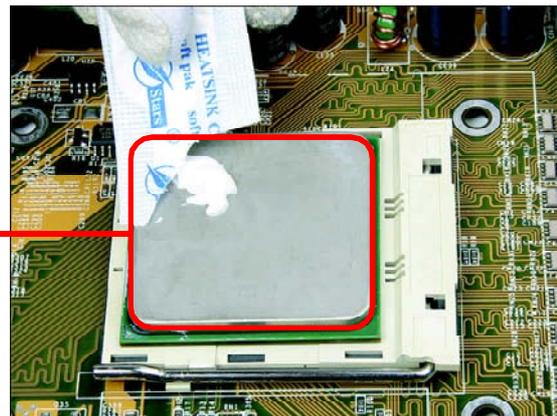
> **Note** : **Please do not use too much Heatsink compound.**

■ 2.2.3 Install the ICE Module

1. Place the ICE the module on top of the CPU and align the spring loaded screws with the mainboard mounting holes.
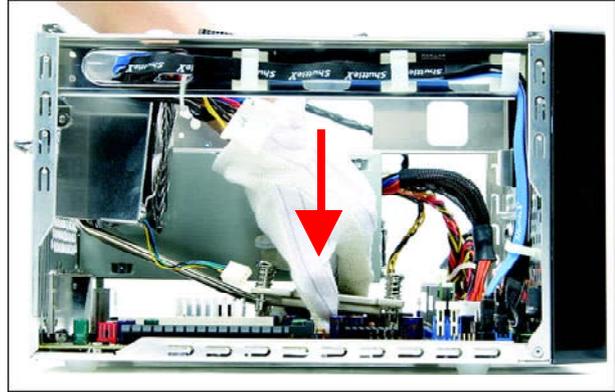
2. Screw the ICE module to the mainboard. Note to press down on the opposite diagonal corner while tightening each screw.
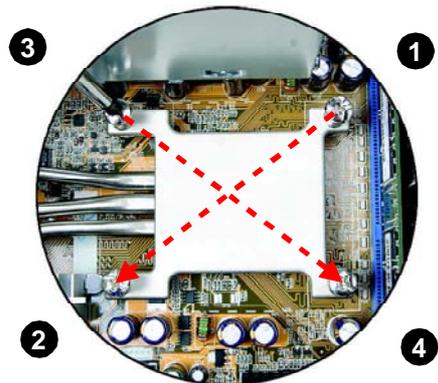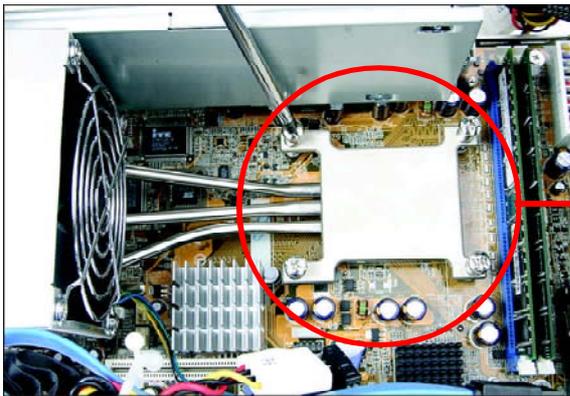
3. Connect the fan's power connector.
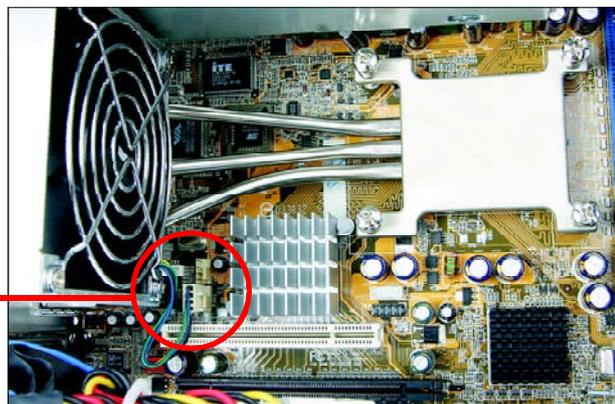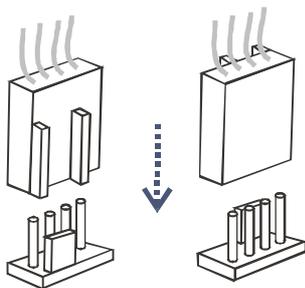
4. Fasten the Smart Fan to the chassis with the four thumbscrews.
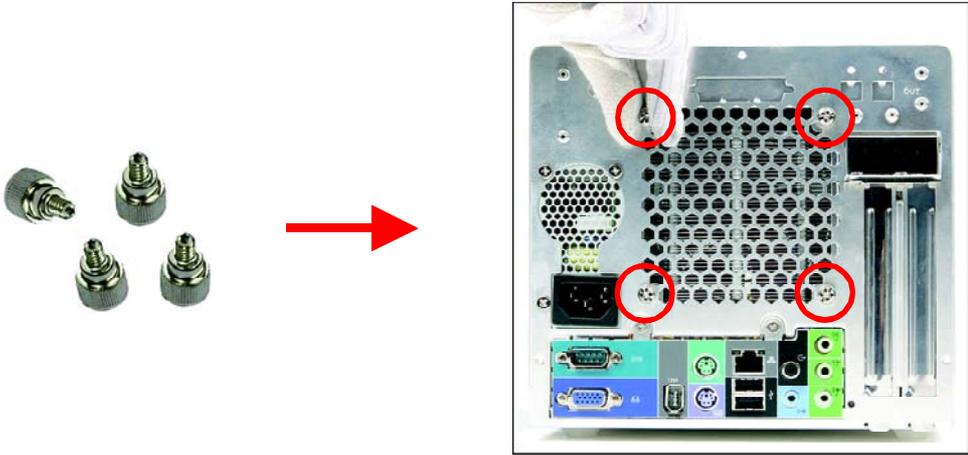
■ 2.3 DDR Installation

Memory Compatibility : Install memory in any or all of the banks according to the combinations shown below.

TOTAL 2 DIMM in Single or Dual Channel Mode up to 2GB and 1GB per DIMM						
Density	**256 Mbit**		**512 Mbit**		**1024 Mbit**	
Device Width	X8	X16	X8	X16	X8	X16
Single Side	256MB	128MB	512MB	256MB	1024MB	512MB
Double Side	512MB	N/A	1024MB	N/A	2048MB	N/A

Note : 1. *Maximum installable memory is 2GB.*

2. *Double-side X16 DDR-SDRAM chips are not supported.*

3. *Registered DIMMs are not supported.*

4. *Only unbuffered without ECC DIMM are supported.*

5. *Does not support X4 DDR-SDRAM.*

Note : **No jumper settings are required to configure memory.**
The system BIOS utility automatically detects the memory settings.
Check the total installed system memory value in the BIOS menu.

Install a DDR module in DIMM1/DIMM2.

1. Unlock the DIMM latch.
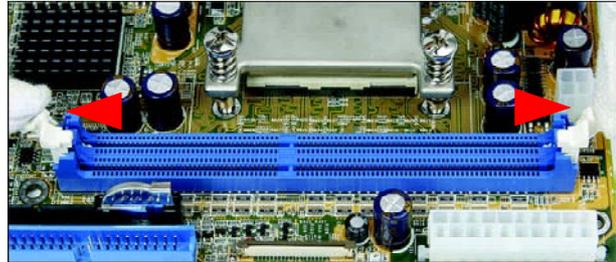
2. Align the DDR module's cutout with the DIMM slot notch.
   Slide the DDR module into the DIMM slot.

Cutout

Notch

Latch   **Latch**
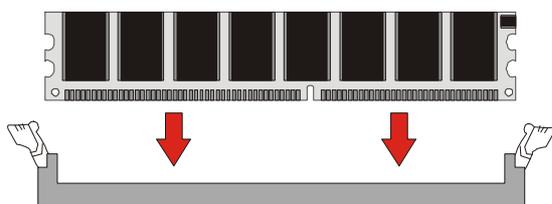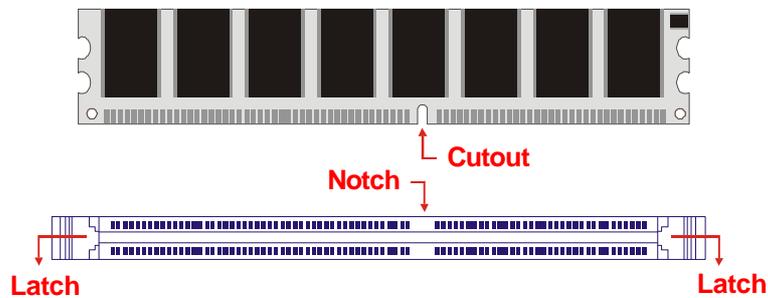
3. Check that the latches are closed, and the DDR module is firmly installed.
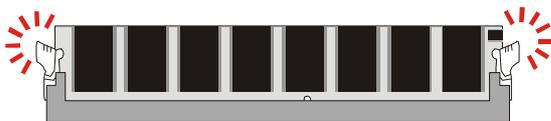
■ 2.4 Cable and Rack Installation

■ 2.4.1 Install the FDD Cable

1. Plug the FDD cable in the FDD header (FDD1).

Pin1 (white line)
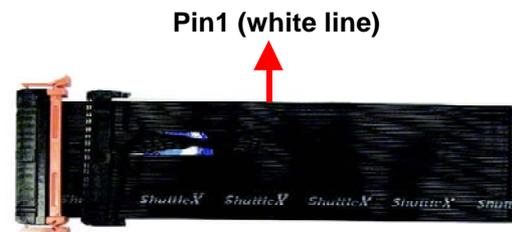
2. Fold the FDD cable under the power supply.

Pin 1 (white line)

Pin1

FDD1

Made in China
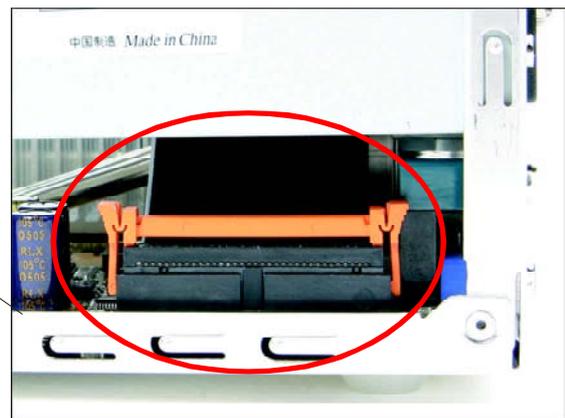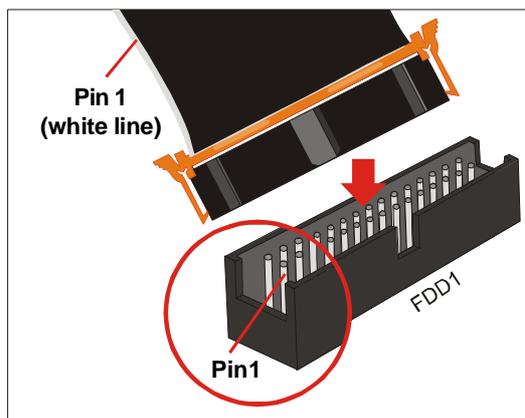
3. Fix the FDD cable to the power and chassis rail with the supplied adhesive tape.
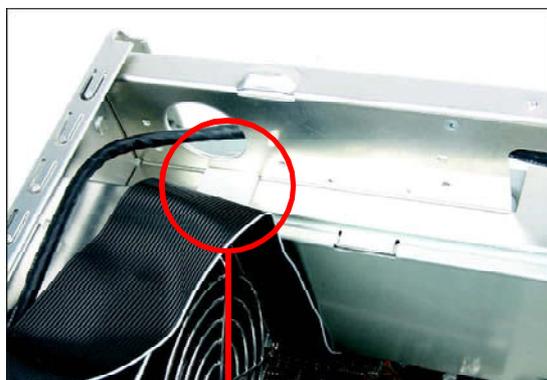
Adhesive
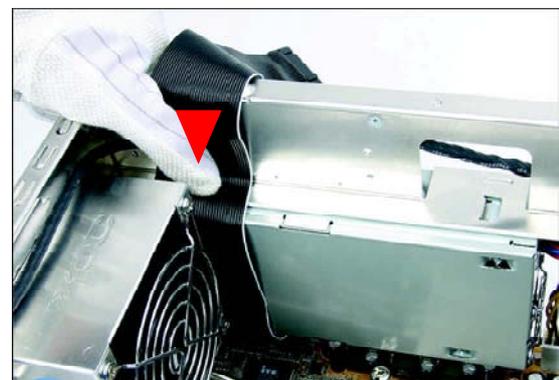
4. Loosen the purse lock and separate the HDD/FDD power cable.

Purse lock ←

Serial ATA Power Cable ←

FDD Power Cable ←
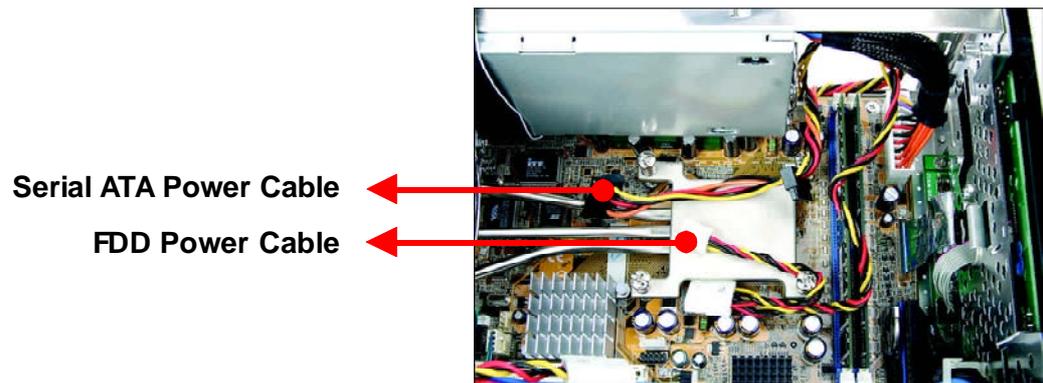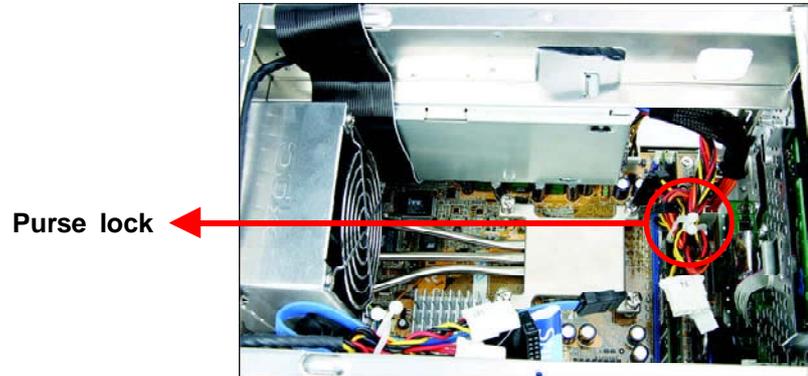
■ 2.4.2 Install the Rack

1. Place the HDD in the rack and secure with screws from the side.

Screws (HDD)
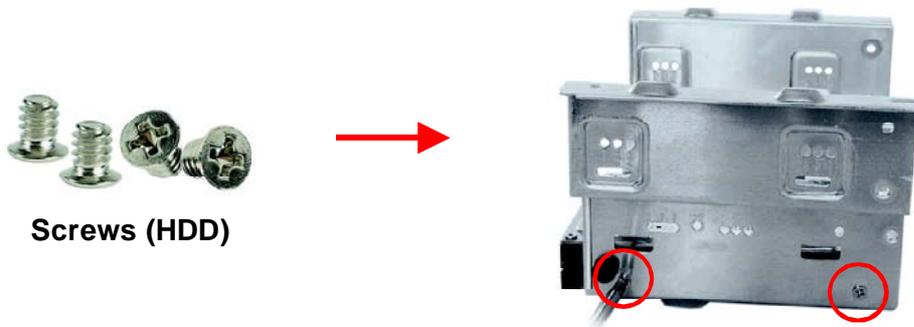
> **Note : Secure with two screws on each side.**

2. Place the FDD in the rack and tighten with its own screws.

Screws (FDD)

> **Note : The second screw is located on the opposite side of rack.**

3. Place the rack in the chassis.
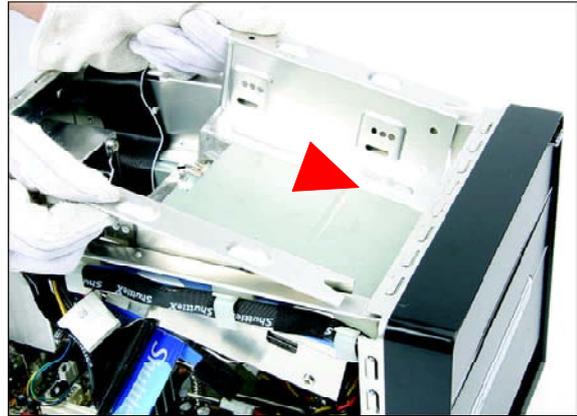
4. Refasten the rack.
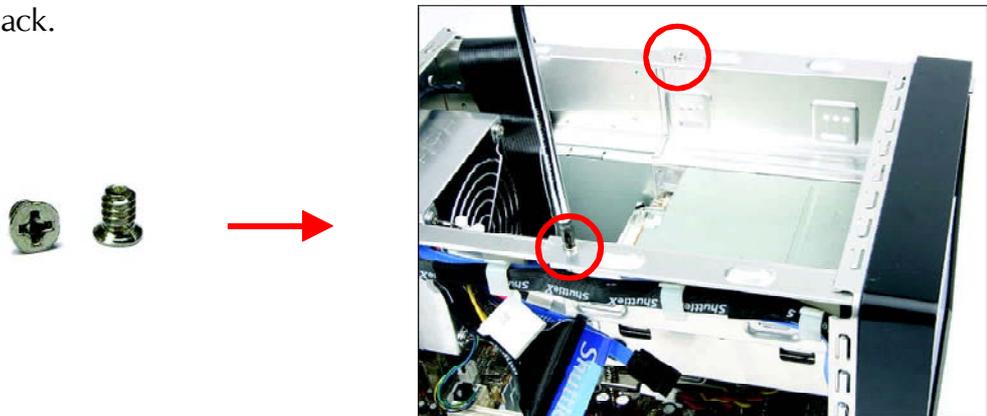
5. Place the power cables in the rack clip located on the underside of the rack mount then loosen the purse lock and separate the Optical Drive power cable.

Purse lock ←

Rack Clip ←
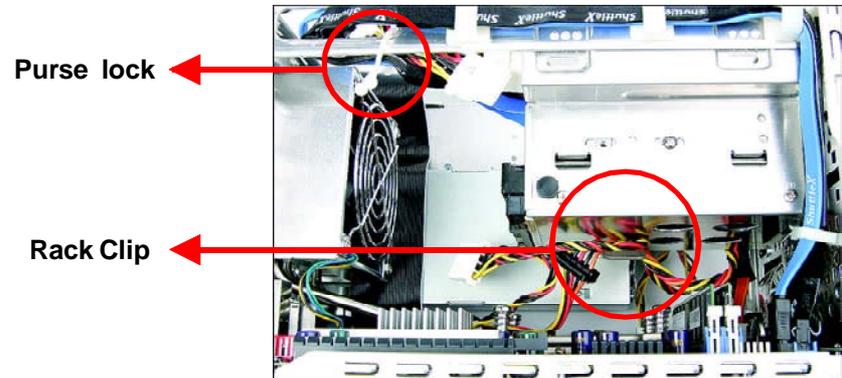
■ 2.5 Peripheral Installation

■ 2.5.1 Install the Serial ATA HDD

1. Connect the Serial ATA and power cables to the HDD.

Serial ATA Power Cable ←

Serial ATA Cable ←
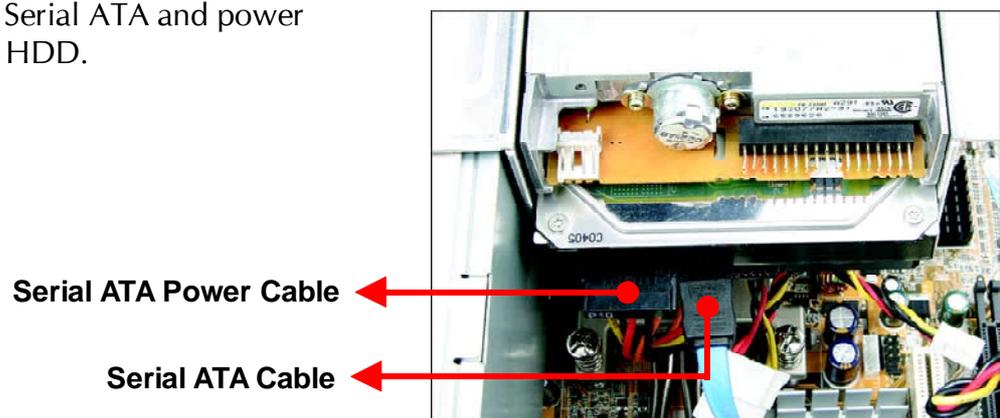
■ 2.5.2 Install the Floppy Drive

1. Connect the FDD and power cables to the Floppy drive.

FDD Power Cable ←

FDD Cable ←
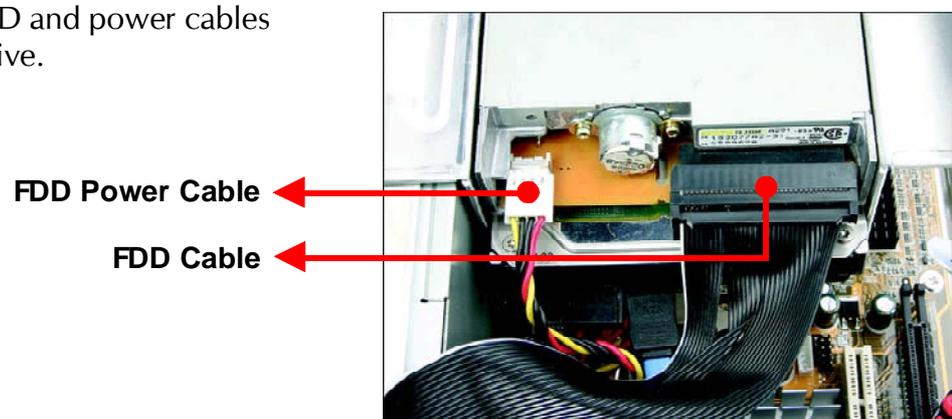
■ 2.5.3 Install an Optical Drive

1. Slide the optical drive into the chassis.

2. Open the stealth drive door. Check the alignment of the drive's eject button with this XPC's drive eject mechanism. Press the external eject button to check. If it is well aligned, proceed Step 5. If it is poorly aligned, adjust the internal control rod to suite.
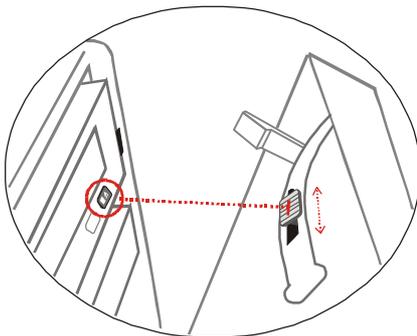
Adjust Control rod

3. Please choose the control rod of CD-DROM suitable for you, if your CD-ROM can't eject.

(Default)

4. Take out the control rod from
   the accessory box and insert
   it in the slot as show.
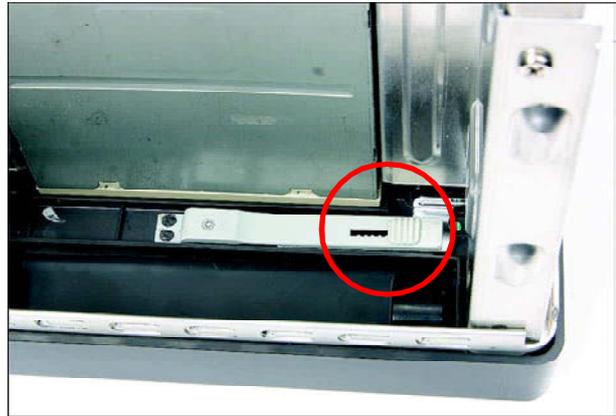
5. Fasten the four side screws.

Screws (Optical Drive)
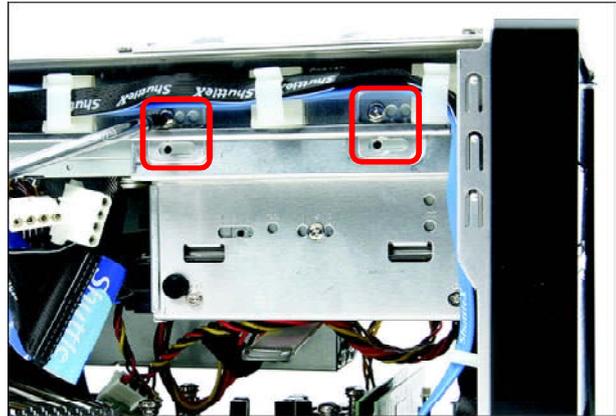
6. Plug the optical drive cable and
   power cable into the optical drive.

Optical Drive Cable ←

Optical Drive Power Cable ←
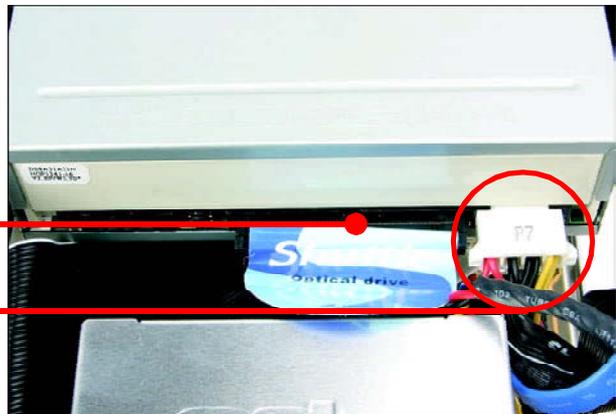
■ 2.6 Accessories Installation

■ 2.6.1 Install PCI/ PCI Express x16 Card

1. A PCI/ PCI Express x16 card will be used to demonstrate the installation procedure. Unfasten expansion slot bracket screws.

PCI Express x16 slot
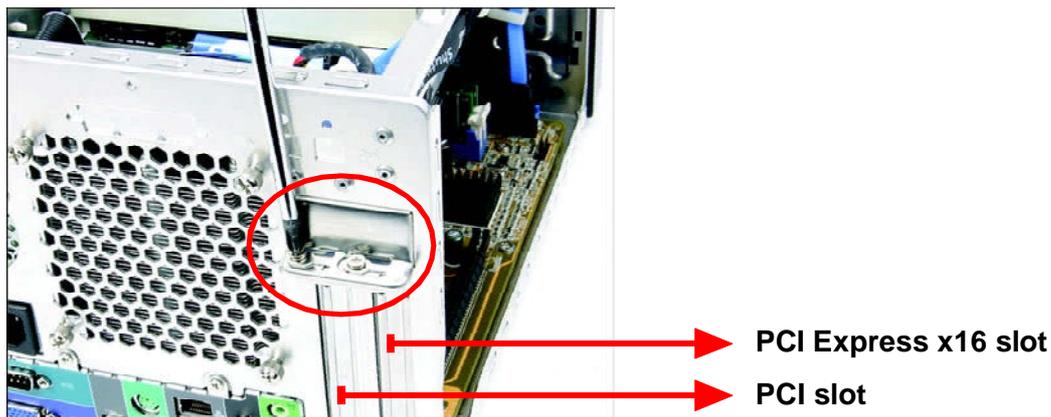
PCI slot

2. Remove the back panel bracket and put the bracket aside.

Lift up
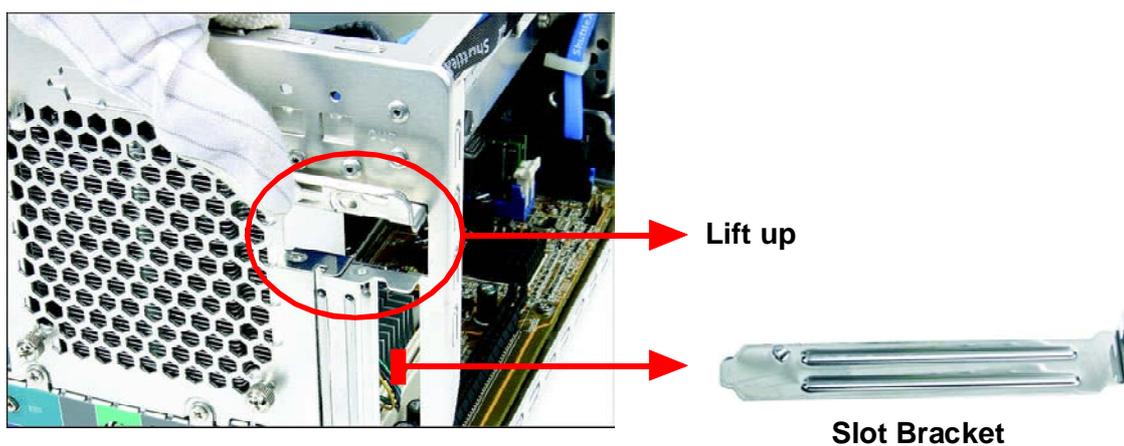
Slot Bracket

3. Install the PCI card into the PCI slot.
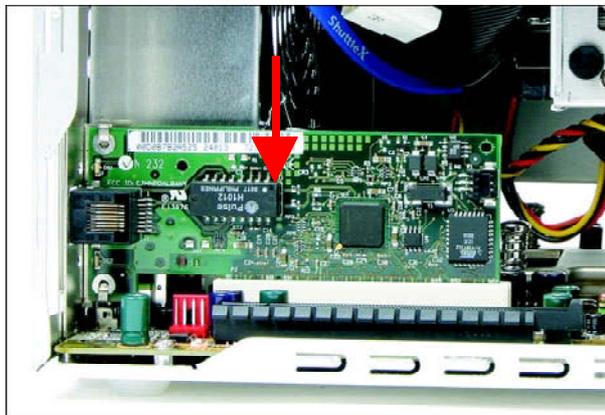
4. As shown Install the PCI Express x16 card into the PCI Express x16 slot.
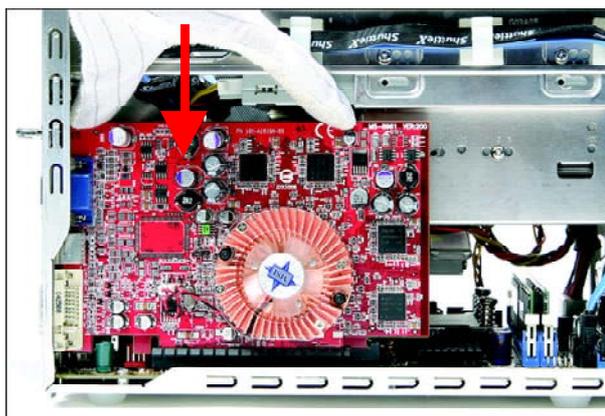
5. Secure the bracket.

■ **2.7 Final Touches**

■ **2.7.1 Close the Chassis Cover**

1. Replace the cover and refasten the thumbscrews.
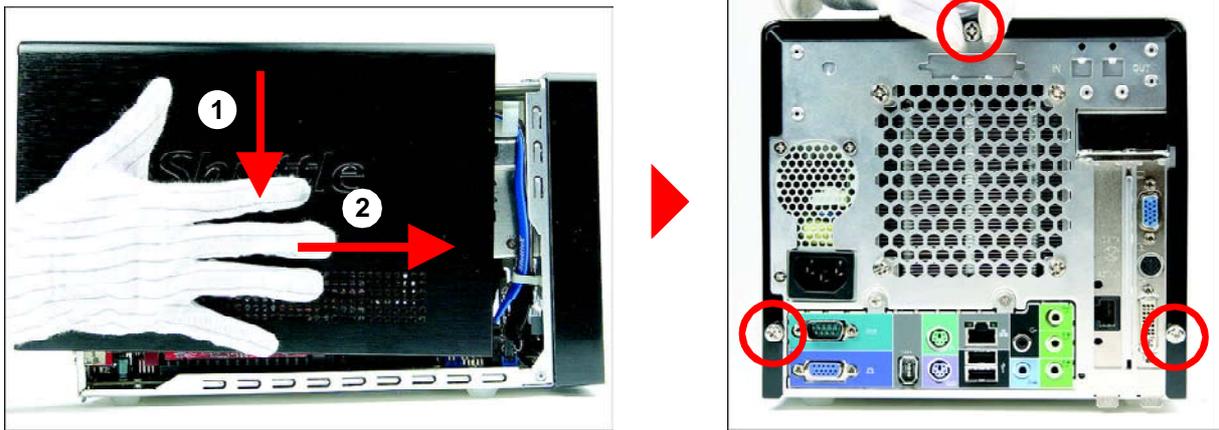
■ **2.7.2 Complete**

■ 2.8 XPC Accessories

Shuttle offers over 25 great upgrade and modding kits for your XPC. Visit our website at http://www.shuttle.com for more information or speak to your local retailer.

■ 2.9 Tech Support

1. Shuttle Inc.

   http://www.shuttle.com

2. Tech Support

   http://global.shuttle.com/Support/Support.asp

3. Download

   http://global.shuttle.com/Download/Download.asp

4. Barebone FAQ

   http://global.shuttle.com/Support/SupportFAQ_Brb.asp

5. Barebone Support List

   http://global.shuttle.com/Support/SupportList_Brb.asp

■ 2.A Technical Notes: Clear CMOS Button

This XPC comes enhanced with an easy-to-use Clear CMOS Button. This button allows users to reset BIOS information to factory default settings.

1. Power down the XPC and remove the power cord.

2. Press the Clear CMOS Button by inserting a pointed object (e.g. a pen nib) into the clear CMOS hole. Keep it pressed for 5 seconds.

3. Reconnect the power cord and turn on the computer.

Clear CMOS button ←
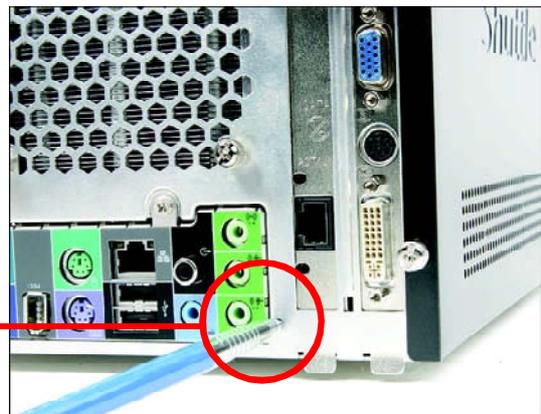
> **Note : Remove the power cord before clearing CMOS.**

3 Driver and Software Installation

■ **3.1 Mainboard Driver CD**

> **Note : The CD contents attached in SN21G5 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 -** Install DirectX9 Utility, nVIDIA Chipset Driver, nVIDIA VGA Driver, Realtek Audio Driver, nVIDIA USB 2.0 Driver

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

☞ **Manual -** SN21G5 and NVIDIA RAID User's Guide 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.

■ 3.1.1 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 DirectX9 Utility**

      ☞   **Install nVIDIA Chipset Driver**

      ☞   **Install nVIDIA VGA Driver**

      ☞   **Install Realtek Audio Driver**

      ☞   **Install nVIDIA USB 2.0 Driver**

Appendix

BIOS Settings

The SN21G5 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 trains 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             │ ► Ratio/Voltage 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       F9 : Menu in BIOS       ↑ ↓ → ←   : 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.

Ratio/Voltage Control

Use this menu to specify your settings for Ratio/Voltage 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)        Tue, Nov  3 2099      │      Item Help      │
 │  Time (hh:mm:ss)        10 : 53 : 26          ├─────────────────────┤
 │                                               │ Menu Level    ►     │
 │ ► IDE Channel 0 Master                        │                     │
 │ ► IDE Channel 0 Slave                         │ Change the day, month,│
 │ ► IDE Channel 2 Master                        │ year and century    │
 │ ► IDE Channel 3 Master                        │                     │
 │                                               │                     │
 │  Drive A                [1.44M, 3.5 in.]      │                     │
 │  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.

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, All, But Disk/Key.

Base Memory

Displays the amount of conventional memory detected during boot up.

➢ The choice: N/A.

Extended Memory

Displays the amount of extended memory detected during boot up.

➢ The choice: N/A.

Total Memory

Displays the total memory available in the system.

➢ The choice: N/A.

****

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

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 WorkstationBIOS CMOS Setup Utility
                       Advanced BIOS Features
┌─────────────────────────────────────────────┬─────────────────────┐
│ ► Removable Device Priority [Press Enter]  ▲ │      Item Help      │
│ ► Hard Disk Boot Priority   [Press Enter]    │                     │
│ ► CD-ROM Boot Priority      [Press Enter]    │ Menu Level    ►     │
│   BIOS Write Protect        [Disabled]       │                     │
│   Virus Warning             [Disabled]       │ Select Removable Boot│
│   CPU Internal Cache        [Enabled]        │ Device Priority     │
│   External Cache            [Enabled]        │                     │
│   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]       │                     │
│   Boot Up NumLock Status    [Off]            │                     │
│   Typematic Rate Setting    [Disabled]       │                     │
│ x Typematic Rate (Chars/Sec) 6               │                     │
│ x Typematic Delay (Msec)     250             │                     │
│   Security Option           [Setup]          │                     │
│   APIC Mode                 [Enabled]        │                     │
│   MPS Version Control For OS[1.4]          ▼ │                     │
├─────────────────────────────────────────────┴─────────────────────┤
│ ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help│
│    F5: Previous Values    F6: Fail-Safe Defaults   F7: Optimized Defaults    │
└────────────────────────────────────────────────────────────────────┘
```

Removable Device Priority

Select Removable Boot Device Priority [Press Enter].

Hard Disk Boot Priority

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

CD-ROM Boot Priority

Select CD-ROM Boot Device Priority [Press Enter].

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.

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.

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, Legacy LAN, or Disabled.

Boot Other Device

Select Your Boot Device Priority.

➢ 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 repeat 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.

APIC Mode

Via the routing, I/O APIC support a total of 24 interrupts. We recommend to choose [Enabled] for Windows XP and Windows 2000.

➢ The choice: Enabled or Disabled.

MPS Version Control For OS

Selects the operating system multiprocessor support version.

➢ The choice: 1.1 or 1.4

✍ *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

     Frame Buffer Size          [64M]              │    Item Help
     K8<->NB HT Speed           [5x]               │
     NB-->SB HT Speed           [4x]               │ Menu Level    ►
     NB<--SB HT Speed           [4x]               │
     K8<->NB HT Width           [↓16 ↑16]          │
     NB<->SB HT Width           [↓ 8 ↑ 8]          │
   ► DRAM Configuration         [Press Enter]      │
     CPU Frequency              [200.0]            │
     PCIE Clock                 [100Mhz]           │
     CPU Spread Spectrum        [Center]           │
     PCIE Spread Spectrum       [Enabled]          │
     SATA Spread Spectrum       [Enabled]          │
     HT Spread Spectrum         [Center]           │
     SSE/SSE2 Instructions      [Enabled]          │
     System BIOS Cacheable      [Disabled]         │

 ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
       F5: Previous Values    F6: Fail-Safe Defaults  F7: Optimized Defaults
```

Frame Buffer Size

This item allows you to set the Frame Buffer Size for onboard graphic chipset.

➢ The Choice: 12M,32M,64M,128M, or Disabled.

K8 <-> NB HT Speed

➢ The Choice: 1x ~ 5x.

NB--> SB HT Speed

➢ The Choice: 1x ~ 4x.

NB <--SB HT Speed

➢ The Choice: 1x ~ 4x.

K8 <-> NB HT Width

➢ The Choice: 16 16 or 8 8.

NB <-> SB HT Width

➢ The Choice: 8 8 or 4 4.

DRAM Configuration

Options are in its sub-menu.

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

Timing Mode

➢ The Choice: Manual or Auto.

Memclock index value (Mhz)

Places an artificial memory clock limit on the system.
Memory is prevented from running faster than this frequency.

➢ The Choice: 100Mhz, 133Mhz, 166Mhz, 200Mhz, 216Mhz,
233Mhz or 250Mhz.

CAS# latency (Tcl)

When synchronous DRAM is installed, the number of clock cycles of
CAS latency depends on the DRAM timing. Don't change this field
from the default value specified by the system designer.

➢ The Choice: 2, 2.5 or 3.

Min RAS# active time (Tras)

Places an artificial memory clock limit on the system.
Memory is prevented from running faster than this frequency.

➢ The Choice: Auto or 5T~15T.

RAS# to CAS# delay (Trcd)

This field lets you insert a timing delay between the CAS and RAS
strobesignals, and you can use it when DRAM is written to , read from,
or refreshed. Faster performance is gained in high speed, more stable
performance, in low speed..

➢ The Choice: Auto or 2T~7T.

Row precharge Time (Trp)

This field specifies the Row precharge Time. Precharge to Active or
Auto-Refresh of the same bank. Typically 20-24 nsec.

➢ The Choice: Auto or 2T~7T.

1T/2T Memory Timing

This item allows you to set the Memory Timing.

➢ The Choice: 1T or 2T.

CPU Frequency

➢ The Choice: 200.0~300.0

PCIE Clock Function

➢ The Choice: 100Mhz~145Mhz

CPU Spreed Specturm

This item allows you to set the CPU Spreed Specturm.

➢ The choice: Center, Down or Disabled.

PCIE Spreed Specturm

This item allows you to set the SATA Spreed Specturm.

➢ The choice: Enable or Disabled.

SATA Spreed Specturm

This item allows you to set the SATA Spreed Specturm.

➢ The choice: Enable or Disabled.

HT Spread Spectrum

This item allows you to set the HT Spread Spectrum.

➢ The choice: Center, Down or Disabled.

SSE/SSE2 Instructions

This item allows you to enable/disable the SSE/SSE2 Instructions.

➢ The choice: Enabled or Disabled.

System BIOS Cacheable

Select Enable allows caching of the system BIOS ROM at F000h-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
  ┌─────────────────────────────────────────────┬──────────────────────┐
  │ ▶ Onboard IDE Device      [Press Enter]      │      Item Help       │
  │ ▶ Onboard SuperIO Device  [Press Enter]      │                      │
  │ ▶ Onboard PCI 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    │
  └──────────────────────────────────────────────────────────────────────┘
```
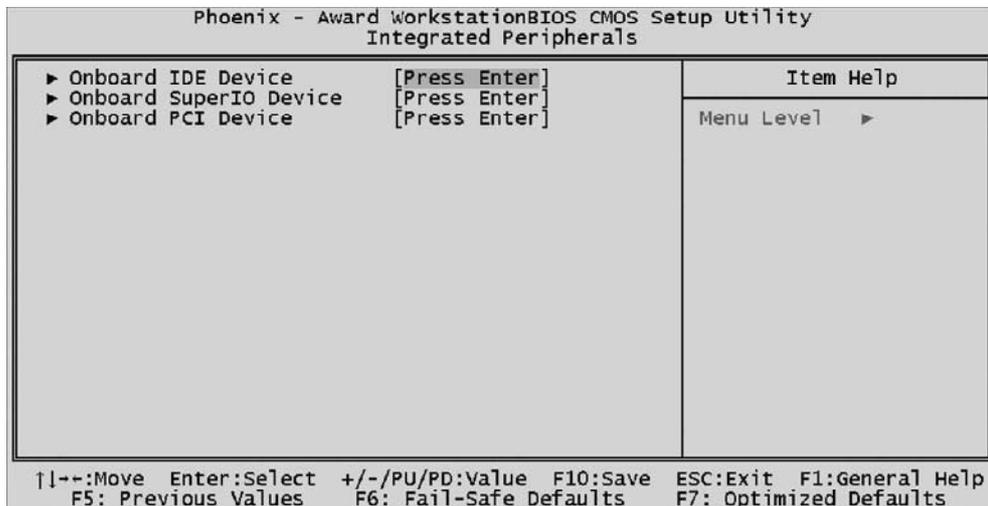
Onboard IDE Device

Options are in its sub-menu.

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

RAID Function Setup

Press <Enter> to enter the RAID Function.

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 Port 1

This item allows you to enable/disable the Serial-ATA Port 1.

➢ The choice: Enabled or Disabled.

IDE Prefetch Mode

The onboard IDE drive interface 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.

IDE HDD Block Mode

Block mode is also called block transfer, multiple commands, or multiple sector read/write. If your IDE hard drive supports block mode(most new drivers do), select Enabled for automatic detection of the optimal number of block read/write per sector the drive can support.

➢ The Choice: Enable or Disabled.

Onboard SuperIO Device

Options are in its sub-menu.

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

Onboard FDC Controller

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

➢ The Choice: Enable or Disabled.

Onboard Serial Port1

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

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 mode.

➢ 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.

Onboard PCI Device

Options are in its sub-menu.

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

OnChip USB

This should be enabled if your system has a USB installed on the system board and you want to use it.

➢ The choice: Desable, V1.1+V2.0 or V1.1.

AC97 Audio

This item allows you to select AC 97 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.

OnChip Lan

This item allows you to control the onboard Lan.

➢ The Choice: AUTO or Disabled.

✎ *Power Management Setup*

```
         Phoenix - Award WorkstationBIOS CMOS Setup Utility
                      Power Management Setup
 ┌──────────────────────────────────────────┬─────────────────────┐
 │ ACPI function            Enabled          │      Item Help      │
 │ ACPI Suspend Type        [S1(POS)]        │                     │
 │ Power Management         [User Define]    │ Menu Level    ►     │
 │ Video Off Method         [DPMS Support]   │                     │
 │ HDD Power Down           [Disabled]       │                     │
 │ HDD Down In Suspend      [Disabled]       │                     │
 │ Soft-Off by PBTN         [Instant-Off]    │                     │
 │ WOL(PME#) From Soft-Off  [Disabled]       │                     │
 │ WOR(RI#) From Soft-Off   [Disabled]       │                     │
 │ Power-On by Alarm        [Disabled]       │                     │
 │x Day of Month Alarm           4           │                     │
 │x Time (hh:mm:ss) Alarm     0 :  0 : 26    │                     │
 │ PS2 Keyboard Power ON    [Disabled]       │                     │
 │ KB Power ON Password     [Enter]          │                     │
 │ Hot Key Power ON         [Any Key]        │                     │
 │ PS2 Mouse Power ON       [Disabled]       │                     │
 │ PWRON After PWR-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).

Power Management

This category allows you to select the type (or degree) of power saving mode settings.

Min Saving   Minimum power management.
Suspend Mode = 15 min.

Max Saving   Maximum power management.
Suspend Mode = 1 min.

User Define   Allows you to set each mode individually.
Suspend Mode = Disabled or 1 min ~ 15min.

➢ The choice: User Define, Min Saving or Max Saving.

Video Off Method

This determines the manner in which the monitor is blanked.

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.
Blank Screen	This option only writes blanks to the video buffer.
DPMS Supported	Initial display power management signaling.

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

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.

HDD Down In Suspend

The item allows you to enabled or disabled the HDD Down In Suspend.

➢ The choice: Enabled or Disabled.

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.

WOR(RI#) From Soft-Off

If this item is enable, it allows the system to resume from a software power down or power-saving mode whenever there is an incoming call to an installed fax/modem. You have to connector the fax/modem to the mainboard.

➢ The choice: Enabled or Disabled.

Power-On by Alarm

When set to Enabled, the following three fields become available and you can set the month, date (day of the month), hour, minute and second to turn on your system.

➢ The choice: Enabled or Disabled.

Day of Month Alarm

This item selects the alarm Day of Month.

➢ The choice: 0 ~ 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

When the POWER ON Function is set to PS2 Keyboard, use this item to set the PS2 keyboard combination that turns on the system.

➢ The choice: Disabled, Password or Hot KEY.

KB Power ON Password

When the POWER ON Function is set to Password, use this item to set the password.

➢ The choice: Enter.

Hot Key Power ON

When the POWER ON Function is set to Hot Key, use this item to set the hot key combination that turns on the system.

➢ The choice: Ctrl-F1 ~ F12 or Any key.

PS2 Mouse Power ON

When the POWER ON Function is set to PS2 Mouse, use this item to set the PS2 mouse combination that turns on the system.

➢ The choice: Disabled or Enabled.

PWRON After PWR-Fail

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

➢ The choice: Former-Sts, Off or On.

✍ *PnP/PCI Configurations*

```
            Phoenix - Award WorkstationBIOS CMOS Setup Utility
                          PnP/PCI Configurations
   ┌──────────────────────────────────────────┬────────────────────────┐
   │   Init Display First      [PCIE]          │      Item Help         │
   │   Reset Configuration Data [Disabled]     ├────────────────────────┤
   │                                           │  Menu Level    ▶       │
   │   Resources Controlled By   [Auto(ESCD)]  │                        │
   │ x IRQ Resources               Press Enter │                        │
   │                                           │                        │
   │   PCI/VGA Palette Snoop     [Disabled]    │                        │
   │                                           │                        │
   │   ** 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.

Init Display First

This item allows you to decide to activate whether PCI slot or PCIE first.

➢ The Choice: PCI Slot, Onboard or PCIE.

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.

IRQ 5/7/9/10/11/14/15 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.

* * * * * * * * * * **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*

```
       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 VIN
  + 5V VIN
  +12V VIN
  -12V VIN
  RAM Voltage
  5V SBVIN
  Voltage Battery
  System Temperature
  CPU Temperature
  CPU Fan Speed
  Fan 2 Speed




  ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help
     F5: Previous Values      F6: Fail-Safe Defaults  F7: Optimized Defaults
```

Advanced CPU Fan Setting

Set the CPU Fan Speed.

➤The choice : Smart Fan, Noise Control - U Low, Noise Control - Low, Noise Control - Mid, Noise Control - Full, Temp Control - 50°C, Temp Control - 55°C, Temp Control - 60°C or Temp Control - 65°C.

Smart Fan : The CPU fan speed will be increased when the temperature of CPU is raising up. Upon the temperature raising up to 80°C, the CPU fan will be full speed.

Noise Control-U Low :   When the CPU fan being set up as ULTRA LOW and the temperature of CPU is raising up to 80°C, the CPU fan being full speed.

Noise Control-Low :   When the CPU fan being set up as LOW and the temperature of CPU is raising up to 80°C, the CPU fan being full speed.

Noise Control-Mid :   When the CPU fan being set up as Mid and the temperature of CPU is raising up to 80°C, the CPU fan being full speed.

Noise Control-Full : CPU fan full speed.

Temp Control-40°C :   When the CPU fan being set up as auto-modified, the temperature of CPU will be remained as 40°C.

Temp Control-45°C :   When the CPU fan being set up as auto-modified, the temperature of CPU will be remained as 45°C.

Temp Control-50°C :   When the CPU fan being set up as auto-modified, the temperature of CPU will be remained as 50°C.

Temp Control-55°C :   When the CPU fan being set up as auto-modified, the temperature of CPU will be remained as 55°C.

Temp Control-60°C :   When the CPU fan being set up as auto-modified, the temperature of CPU will be remained as 60°C.

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

CPU Voltage
Chipset Voltage
+3.3V VIN
+5V VIN
+12V VIN
-12V VIN
RAM Voltage
5V SBVIN
Voltage Battery
System Temperature
CPU Temperature
CPU Fan Speed
FAN 2 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/Voltage Control*

```
           Phoenix - Award WorkstationBIOS CMOS Setup Utility
                        Frequency/Voltage Control
   ┌──────────────────────────────────────────┬────────────────────────┐
   │ CPU Ratio              [Auto]             │       Item Help        │
   │ CPU Voltage Select     [Auto]             ├────────────────────────┤
   │ RAM Voltage Select     [Auto]             │ Menu Level    ►        │
   │ Chipset Voltage Select [Auto]             │                        │
   │                                           │                        │
   │                                           │                        │
   │                                           │                        │
   │                                           │                        │
   │                                           │                        │
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   │                                           │                        │
   │                                           │                        │
   ├───────────────────────────────────────────┴───────────────────────┤
   │ ↑↓→←:Move  Enter:Select  +/-/PU/PD:Value  F10:Save  ESC:Exit  F1:General Help │
   │    F5: Previous Values    F6: Fail-Safe Defaults   F7: Optimized Defaults    │
   └──────────────────────────────────────────────────────────────────┘
```
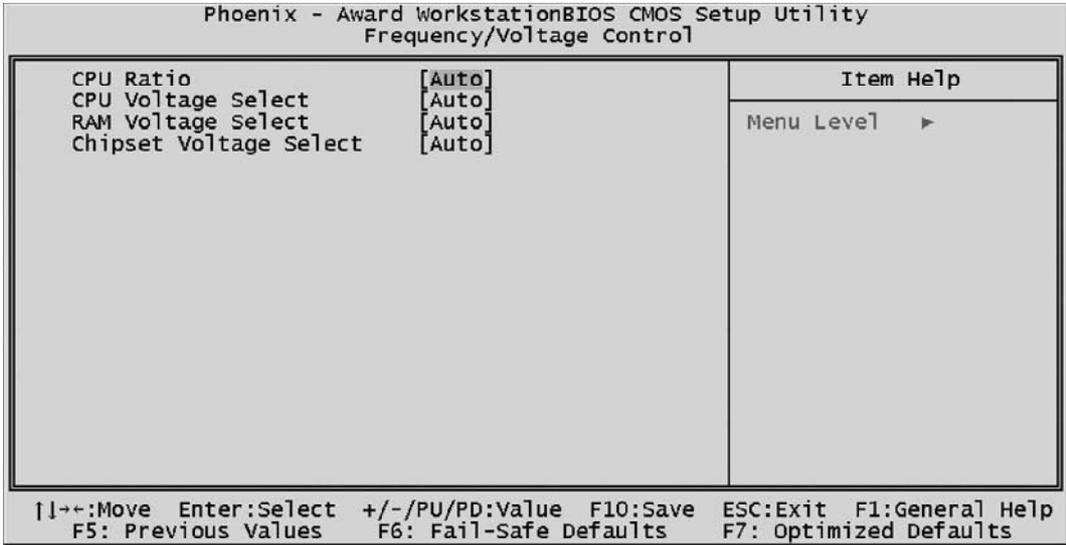
CPU Ratio

This item allows you to set the CPU Ratio.

➢ The choice: x5 1000Mhz, x6 1200Mhz, x7 1400Mhz,
x8 1600Mhz, x9 1800Mhz, x10 2000Mhz, x11 2200Mhz,
x12 2400Mhz, x13 2600Mhz, x14 2800Mhz, x15 3000Mhz,
x16 3200Mhz, x17 3400Mhz, x18 3600Mhz, x19 3800Mhz,
x20 4000Mhz, x21 4200Mhz, x22 4400Mhz, x23 4600Mhz,
x24 4800Mhz, x25 5000Mhz or Auto.

CPU Voltage Select

This item allows you to set the CPU Voltage.

➢ The choice: 0.800V, 0.825V, 0.850V, 0.875V, 0.900V, 0.925V,
0.950V, 0.975V, 1.000V, 1.025V, 1.050V,1.075V, 1.100V, 1.125V,
1.150V, 1.175V, 1.200V, 1.225V, 1.250V, 1.275V, 1.300V,
1.325V, 1.350V, 1.375V, 1.400V, 1.425V, 1.450V, 1.475V,
1.500V, 1.525V or Auto.

RAM Voltage Select

This item allows you to set the RAM Voltage.

➢ The choice: 2.70V, 2.80V, 2.90V or Auto.

Chipset Voltage Select

This item allows you to set the Chipset Voltage.

➢ The choice: 1.25V, 1.3V, 1.35V or Auto.

✍ *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 system performance.

✍ *Load Optimized Defaults*

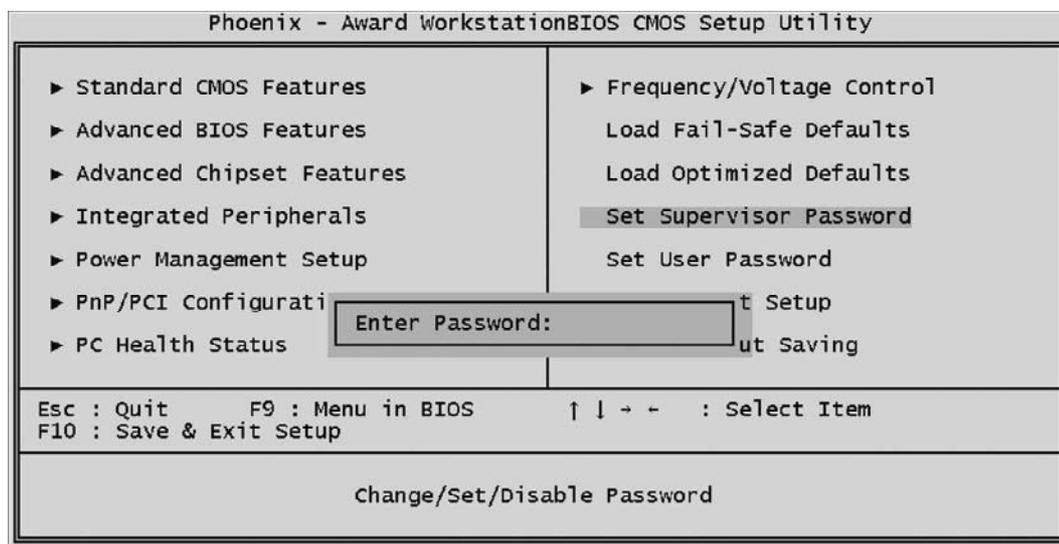When you press <Enter> on this item, you will get a confirmation dialog box with a message similar to:

Load Optimized Defaults (Y/N) ? N

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

✎ *Set Password*

```
         Phoenix - Award WorkstationBIOS CMOS Setup Utility

  ► Standard CMOS Features          ► Frequency/Voltage 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
                       │  Enter Password:      │
  ► PC Health Status   └───────────────────────┘ut Saving

  Esc : Quit      F9 : Menu in BIOS    ↑ ↓ → ←   : Select Item
  F10 : Save & Exit Setup

                  Change/Set/Disable Password
```

This item is to set a supervisor password. Please follow below steps.

New Password Setting:

1. Press the < Enter > key. A dialog box appears to ask you to "Enter password: ".

2. Key in a new password.

   The password can not be over eight characters or numbers.

3. The system will then request you to confirm the new password by asking you to key in the new password again.

4. Once the confirmation is completed, new code is in 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

Press < Enter > on this item to save your changes. The system will ask for confirmation : system

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 will restart.

✍ Exit Without Saving

Press < Enter > on this item to exit without saving changes. The system will ask for confirmation:

Quit without saving (Y/N)? Y

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.

XPC By SHUTTLE

MEMO

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