XPC User Guide

For the : SX48P2 Deluxe

Shuttle®

XPC Installation Guide

Copyright

©2008 by Shuttle® Inc. All Rights Reserved.

No part of this publication may be reproduced, transcribed, stored in a retrieval system, translated into any language, or transmitted in any form or by any means such as electronic, mechanical, magnetic, optical, chemical, photocopy, manual, or otherwise, without prior written permission from Shuttle® Inc.

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

Disclaimer

Shuttle® Inc. shall not be liable for any incidental or consequential damages resulting from the performance or use of this product.

Shuttle® Inc. makes no representation or warranty regarding the contents of this manual. Information in this manual had been carefully checked for accuracy;however, no guarantee is given as to the correctness of the contents. For continuing product improvement, Shuttle® Inc. reserves the right to revise the manual or make changes to the specifications of this product at any time without notice and obligation to any person or entity regarding such change. The information contained in this manual is provided for general use by customers.

This device complies to 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 withstand any background interference including those that may cause undesired operation.

Trademarks

Shuttle is a registered trademark of Shuttle Inc.

Intel and Pentium are registered trademarks of Intel Corporation.

PS/2 is a registered trademark of IBM Corporation.

AWARD is a registered trademark of Award Software Inc.

Microsoft and Windows are registered trademarks of Microsoft Corporation.

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.

Laser compliance statement

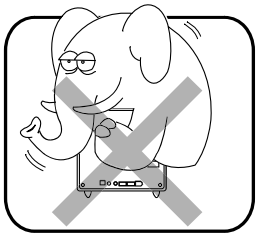
The optical disc drive in this server is a laser product. The drive's classification label is lacated on the drive.

CLASS 1 LASER PRODUCT

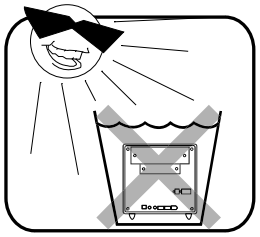
CAUTION：INVISIBLE LASER RADIATION WHEN OPEN.
AVOID EXPOSURE TO BEAM.

Installation Notices

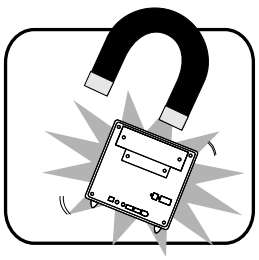
Do not place this device underneath heavy loads or in an unstable position.



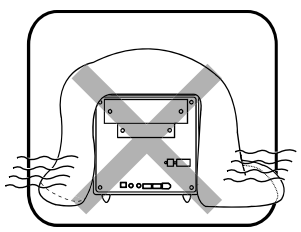
Do not expose this device to high levels of direct sunlight, high-humidity or wet conditions.



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.



产品中有毒有害物质或元素的名称及含量

部件名称及 型号	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr^{6+})	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
主机板	X	○	○	○	○	○
机壳	X	○	○	○	○	○
线材	○	○	○	○	○	○
电源供应器	○	○	○	○	○	○
散热模组	X	○	○	○	○	○
包材	○	○	○	○	○	○

○：表示该有毒有害物质在该部件所有均质材料中的含量均在 SJ/T 11363-2006 标准规定的限量要求以下。

X：表示该有毒有害物至少在该部件某一均质材料中的含量超出 SJ/T 11363-2006 标准规定的限量要求。

TABLE OF CONTENTS

1 Function Introduction 1
1.1 XPC Introduction 1
1.2 Model Specifications 2
1.3 XPC Exterior Dissection 3
1.3.1 XPC Front 3
1.3.2 XPC Back 3
1.4 Accessories 4
1.5 XPC Motherboard 5
1.5.1 SX48P2 Deluxe Motherboard illustration 5
1.5.2 Jumper Settings 6
Front Panel Header 6
CIR Header 6
Extended USB Header 7
PS/2 Keyboard & Mouse Header 7
AUX-IN Header 7
Fan Connector 8
GPIO Header 8
BIOS Header 8
2 XPC Installation Guide 9
2.1 Installation 9
2.1.1 Remove the Cover 9
2.1.2 Remove the Rack 9
2.2 CPU and ICE Installation 10
2.2.1 Remove the ICE Module 10
2.2.2 Install the CPU 10
2.2.3 Install the ICE Module 11
2.3 Memory module Installation 12
2.4 Peripheral Installation 13
2.4.1 Install the Rack 13
2.4.2 Install the Card Reader 13
2.4.3 Install the IDE HDD 14
2.4.4 Install an Optical Drive 15

2.4.5 Install more Serial ATA HDDs 16
2.5 Accessories Installation 16
2.5.1 Install PCI Express x16 Card 16
2.5.2 Install Mini PCIe Card 18
2.5.3 Install eSATA HDD 19
2.6 Final Touches 20
2.6.1 Close the Chassis Cover 20
2.6.2 Install Front Feet 20
2.6.3 Complete 20
2.7 XPC Accessories 21
2.8 Tech Support 21
2.9 Technical Notes: Clear CMOS Button 21
3 Driver and Software Installation.....22
3.1 Motherboard Driver DVD 22
3.1.1 Install Motherboard Software 23
Appendix.....24
Enter the BIOS 24
The Main Menu 25
Standard CMOS Features 27
IDE Adapters 28
Advanced BIOS Features 30
Integrated Peripherals 33
Power Management Setup 36
PnP/PCI Configurations 38
PC Health Status 40
Frequency/Voltage Control 41
Load Optimized Defaults 44
Set Supervisor/User Password 45
Save & Exit Setup 46
Exit Without Saving 46
TROUBLESHOOTING SOP.....47

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 Form Factor
PROCESSOR	● Supports 1600/1333/1066/800 MHz FSB for dual-core and single core CPUs ● LGA775, Intel® Core™2 Quad /Core™2 Extreme /Core™2 Duo /Pentium® D
CHIPSET	● North Bridge: Intel® X48 Chipset ● South Bridge: ICH9-R
MEMORY DIMM Slots	● 4x Dual channel unbuffered non-ECC DDR3 1066/1333/1600MHz ● DIMM Supports up to 8GB system memory
AUDIO	● Realtek ALC888DD ● Supports Analog 7.1 channel output ● Supports Digital S/PDIF out ● Supports Dolby® Digital Live! and DTS™
ETHERNET	● Marvell 88E8056 (PCI-E Interface) ● IEEE 802.3u 100Base-T compliant ● 10Mb/s, 100Mb/s and 1000Mb/s operation ● Supports Wake-On-LAN ● Dual LAN support teaming
STORAGE INTERFACE	● South Bridge (1) Floppy connector (2) eSATA connectors in back panel (4) On board SATA 3.0Gb/s connectors ● Jmicron (1) UltraDMA 100 IDE channel connector ● NCQ support

ON BOARD CONNECTORS

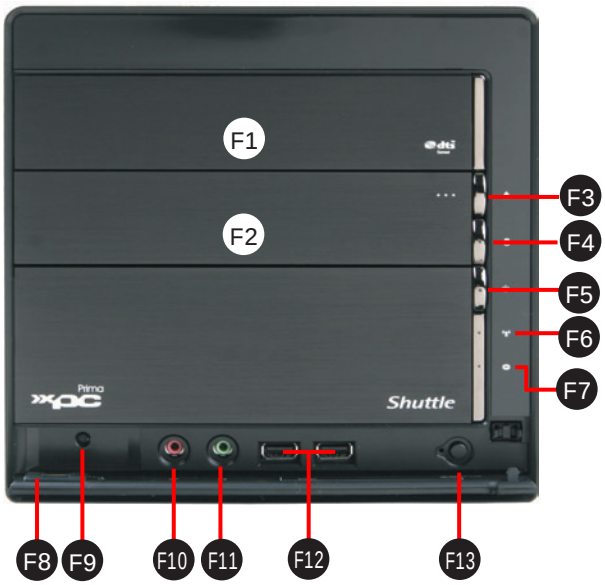
(1) ATA100 IDE connector	(1) Floppy connector	(4) SATA connectors
(4) Fan connectors	(1) PS/2 Keyboard & Mouse header	(2) Power connectors
(2) Front Panel headers	(1) AUX_IN header	(1) BIOS header
(2) 2x5 USB 2.0 headers	(1) MINI PCIE connector X1	(2) PCI-E X16
(1) SPI_FLASH header	(1) CIR header	(1) GPIO header

POWER	● Input: 100/240V, Support 80 PLUS ● Output: 450W
CHASSIS	● P2, Dimension: 325(L) x 220(W) x 210(H) mm ● Bay: (2) 3.5" bays (internal) (1) 5.25" bay

■ 1.3 XPC Exterior Dissection

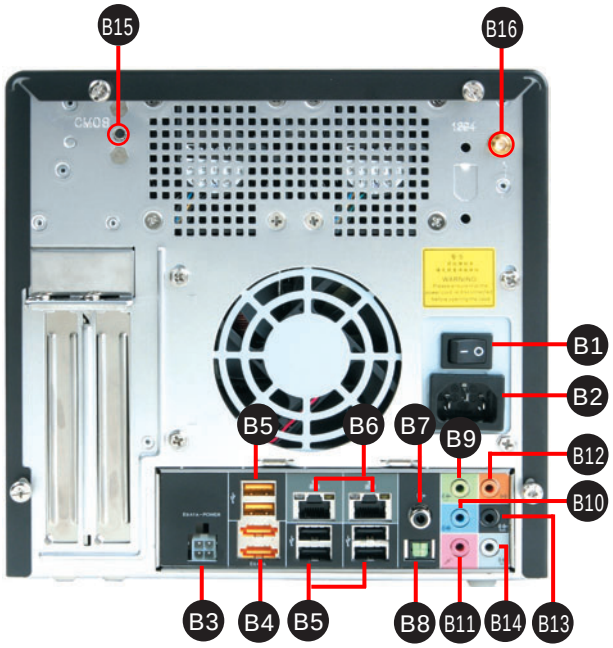
> ⚠ Shuttle offers a variety of different XPC models loaded with various options. The illustration below will help familarize you with the included features in your new XPC.

■ 1.3.1 XPC Front



F1. 5.25″ Bay
F2. 3.5″ Bay
F3. Eject Button
F4. HDD LED
F5. Power Switch & LED
F6. WiFi LED
F7. Bluetooth LED
F8. Fingerprint Sensor
F9. Reset Button
F10. Mic in
F11. Headphone
F12. USB 2.0 Ports
F13. Speed-Link On/Off

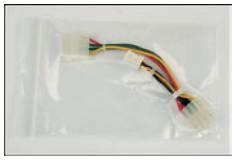
■ 1.3.2 XPC Back



B1. AC Power Switch
B2. AC Power Socket
B3. External SATA power port
B4. eSATA Ports
B5. USB 2.0 Ports
B6. LAN Ports
B7. SPDIF Out (Coaxial)
B8. SPDIF Out (Optical)
B9. Front Out (L/R)
B10. Line-In Port
B11. Mic in
B12. Center/Bass
B13. Surround Back (L/R)
B14. Side Surr (L/R)
B15. Clear CMOS Button
B16. Wireless LAN Perforation

■ 1.4 Accessories

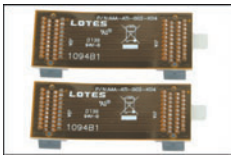
1. Power cord (1)
   Power extension cable (1)

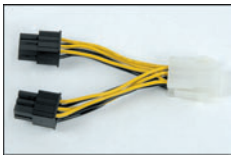
2. ICE Heat-Pipe (1)



3. Cross fire bridge (2)



4. VGA power cord (1)



5. Cable tie (2), Cable clip (1),
   Adhesive tape (2), Screws



6. USB to USB cable (1)
   FDD cable (1), Serial ATA cable (1)



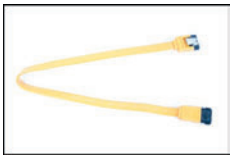

7. Front feet (2)



8. Heatsink compound (1)



9. eSATA to SATA Cable (1),
   External SATA Power Cable (1)




10. Dipole Antenna (1)



11. Motherboard DVD (1)

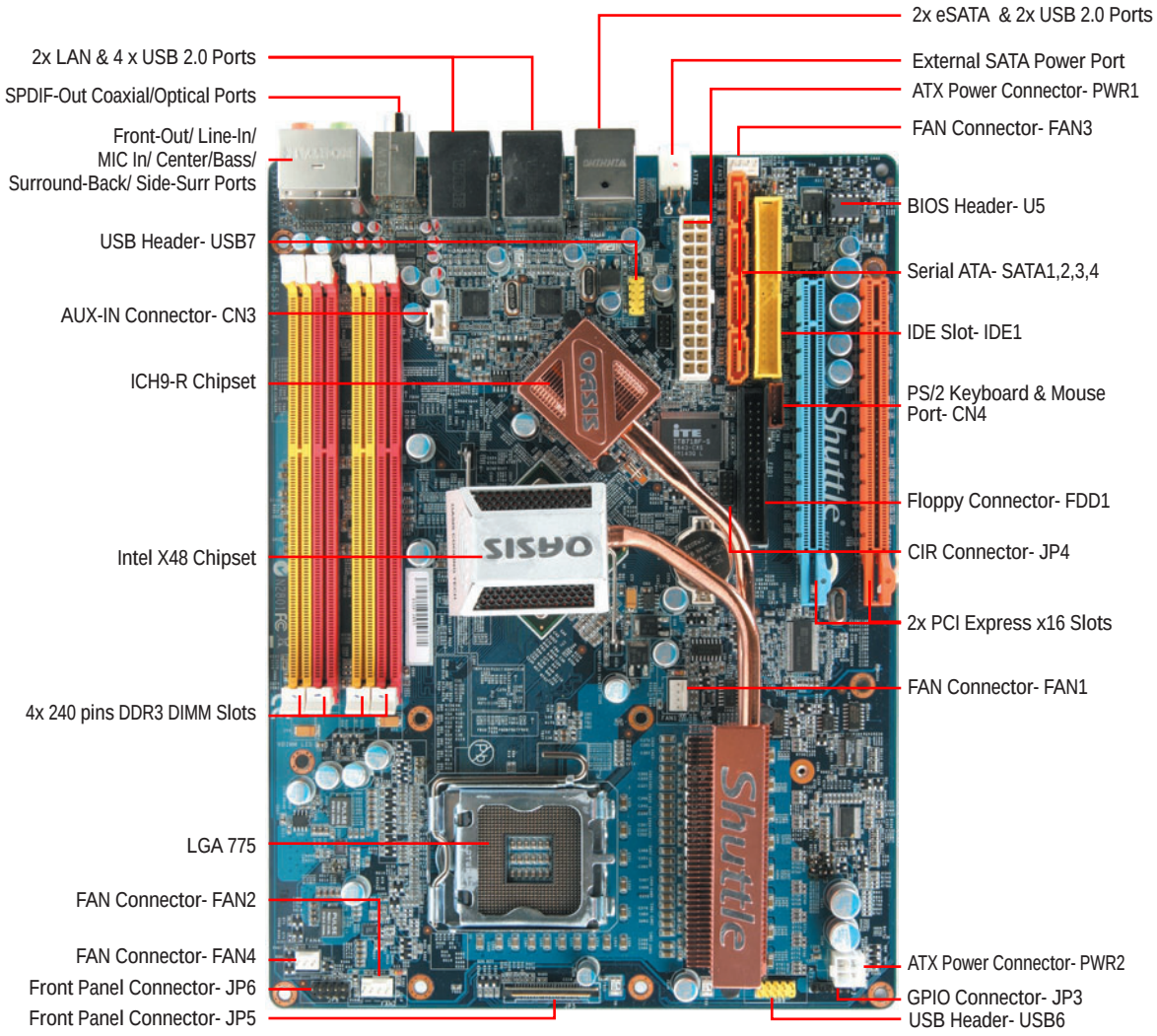


12. XPC installation guide (1),
    BT12 Quick guide (1),
    PN20 Quick guide (1)

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

■ 1.5 XPC Motherboard

■ 1.5.1 SX48P2 Deluxe motherboard illustration



■ 1.5.2 Jumper Settings

Front Panel Header

Header JP5 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. Header JP6 is used to connect cable to front panel connector mounted on front-panel or back-panel.

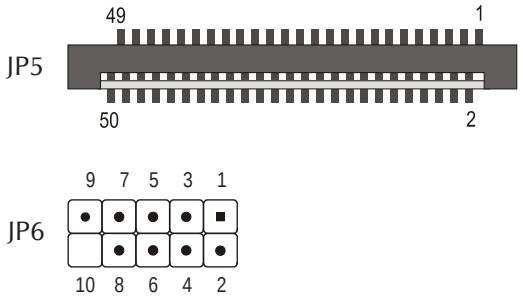
The front panel is where the hard drive activity lights, reset button, on/off button, computer power on light, USB connectors, 1394 connectors, and audio headers, are located.

Pin Assignments (JP5):

1 = USBPWR	2 = USBPWR	3 = USBPWR	4 = USBPWR	5 = USBPWR
6 = USBPWR	7 = USBPWR	8 = USBPWR	9 = USBA +	10 = USBA-
11 = USBGND	12 = USBGND	13 = USBB +	14 = USBB-	15 = USBGND
16 = USBGND	17 = TPA +	18 = TPA-	19 = 1394GD	20 = 1394GD
21 = TPB +	22 = TPB-	23 = 1394GD	24 = 1394GD	25 = FMIC
26 = MIC_PWR	27 = SNESE0	28 = AUDIOGD	29 = LINE_IL	30 = AUDIOGD
31 = LINE_IR	32 = SENSE1	33 = AUDIOGD	34 = AUDIOGD	35 = LINE_OR
36 = LINE_FR	37 = AUDIOGD	38 = AUDIOGD	39 = LINE_OL	40 = LINE_FL
41 = AUDIOGD	42 = AUDIOGD	43 = HDPWR	44 = GLEDA	45 = HDLED
46 = GLEDB	47 = RST_SW	48 = PW_SW	49 = VCC	50 = VCC

Pin Assignments (JP6):

1 = HDLEDPWR	2 = GRNLEDA
3 = -HD_LED	4 = GRNLEDB
5 = BT_SEL	6 = -PWRSW
7 = GND	8 = GND
9 = NC	10 = KEY

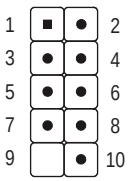


CIR Header

Header JP4 can be used to connect special device.

Pin Assignments (JP4):

1 = PIN26	2 = 5V_DUAL
3 = PIN30_CIRTX	4 = PIN85_CIRRX
5 = PIN27	6 = PIN20
7 = PIN21	8 = PIN23
9 = KEY	10 = GND

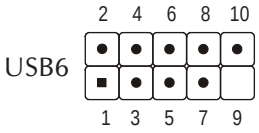


Extended USB Header

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

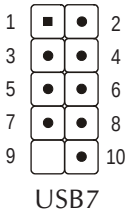
Pin Assignments (USB6):

1 = USBPWR4
2 = USBPWR4
3 = USBP4N
4 = USBP11_N
5 = USBP4P
6 = USBP11_P
7 = GND
8 = GND
9 = Key
10 = N/C



Pin Assignments (USB7):

1 = USBPWR7
2 = USBPWR7
3 = USBP10N
4 = USBP1N
5 = USBP10P
6 = USBP1P
7 = GND
8 = GND
9 = Key
10 = N/C

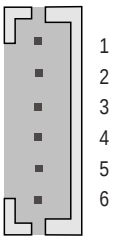


PS/2 Keyboard & Mouse Header

Header CN4 can be used to connect PS/2 Keyboard & Mouse device.

Pin Assignments (CN4):

1 = KDAT
2 = KCLK
3 = 5V_DUAL
4 = GND
5 = MDAT
6 = MCLK

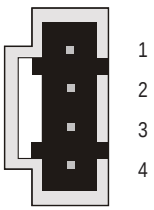


AUX-IN Header

If you have installed a CD-ROM drive or DVD-ROM drive, you can connect the drive audio cable to the onboard sound system. On the motherboard, locate the 4-pin Aux-In header, and connect the cable to this header.

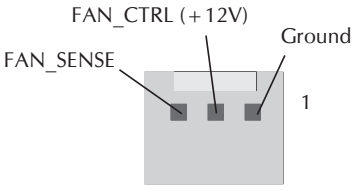
Pin Assignments (CN3):

1 = AUX-IN – Left
2 = Ground
3 = Ground
4 = AUX-IN – Right

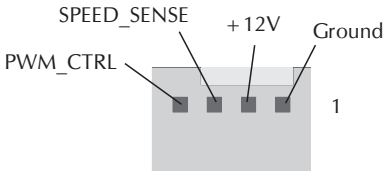


Fan Connector

The motherboard provides the onboard 12V cooling fan power connector to support CPU, Chassis or Chipset cooling fans.



FAN4



FAN1/FAN2/FAN3

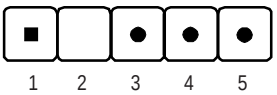
> ⚠ Both cable wiring and type of plug may vary depending on the fan maker.

GPIO Header

GPIO Supports three application-definable GPIO LEDs.

Pin Assignments (JP3):

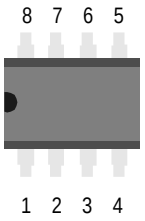
1 = VCC
2 = KEY
3 = VCC
4 = GPO23
5 = GPO22



BIOS Header

Pin Assignments (U5):

1 = SPI_CS0-	2 = SPI_MISO
3 = SPI_WP-	4 = GND
5 = SPI_MOSI	6 = SPI_CLK
7 = SPI_HOLD-	8 = SPI_VDD



■ 2.1 Installation

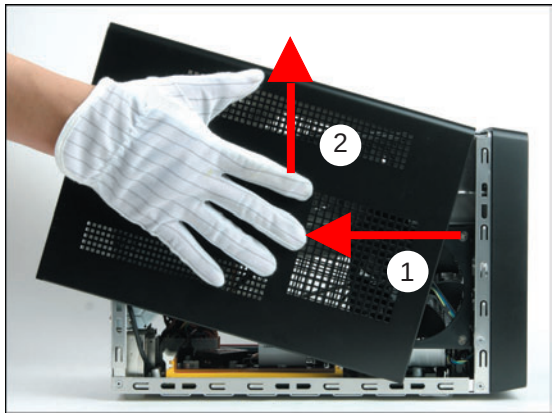
> ⚠ For safety reasons, please ensure that the power cord is disconnected before opening the case.

■ 2.1.1 Remove the Cover

1. Unscrew 4 thumbscrews of the chassis cover.

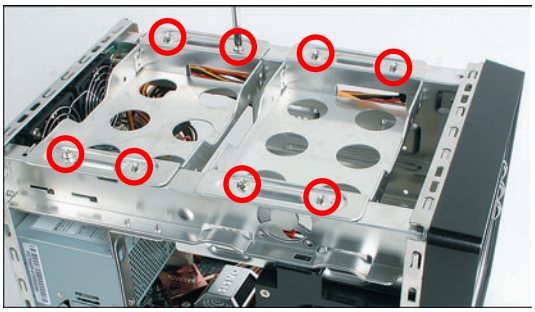


2. Slide the cover backwards and upwards.

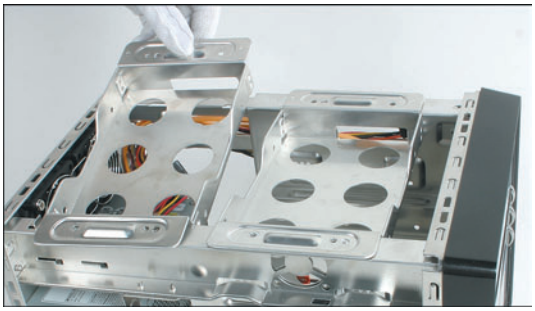


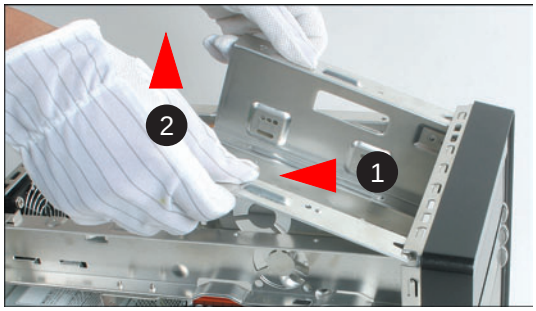
■ 2.1.2 Remove the Rack

1. Unfasten the serial ATA HDD racks mount screws.



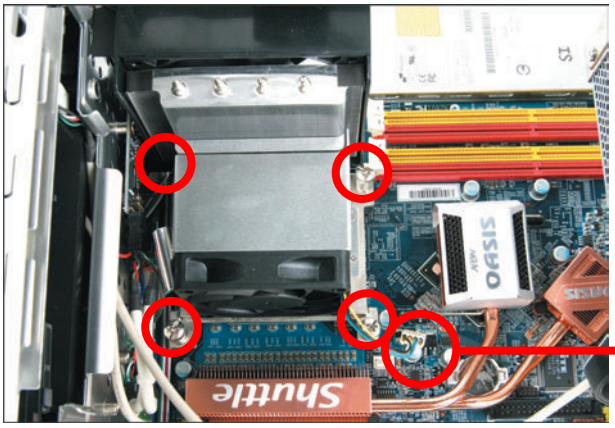
2. Remove the racks.



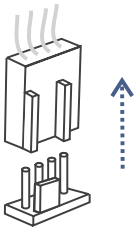


■ 2.2 CPU and ICE Installation

■ 2.2.1 Remove the ICE Module

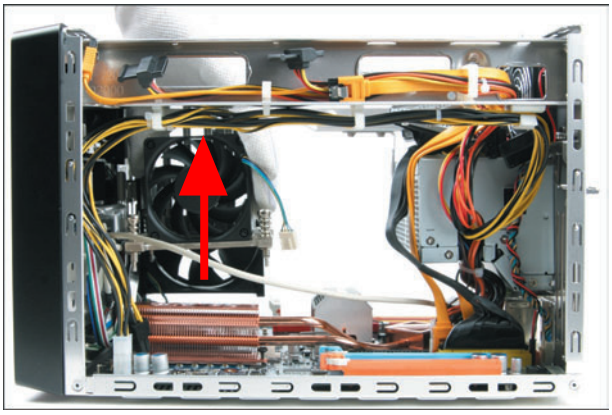


1. Unfasten the four ICE module attachment screws and unplug the fan connector.



Fan Connector

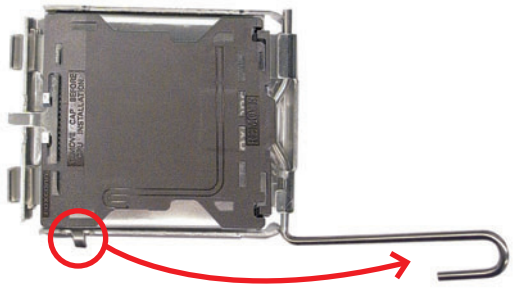
2. Remove the ICE module from the chassis and put it aside.



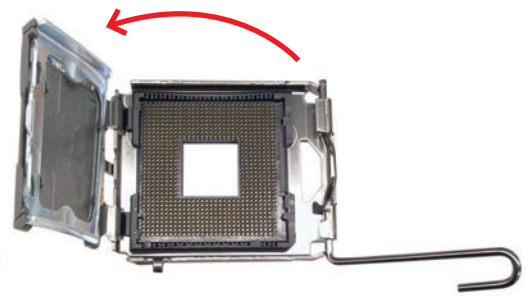
■ 2.2.2 Install the CPU

> ⚠ This 775 pin socket is fragile and easily damaged. Always use extreme care when installing a CPU and limit the number of times that you remove or change the CPU.

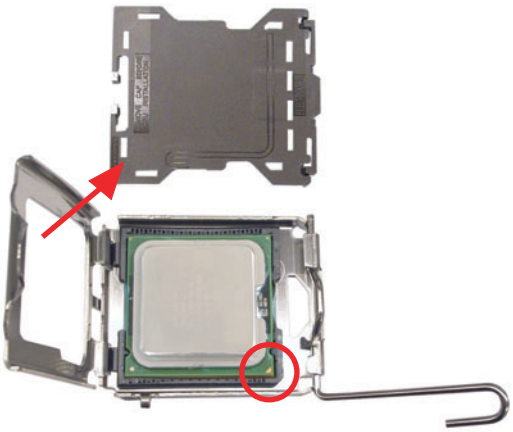
1. First unlock and raise the socket lever.

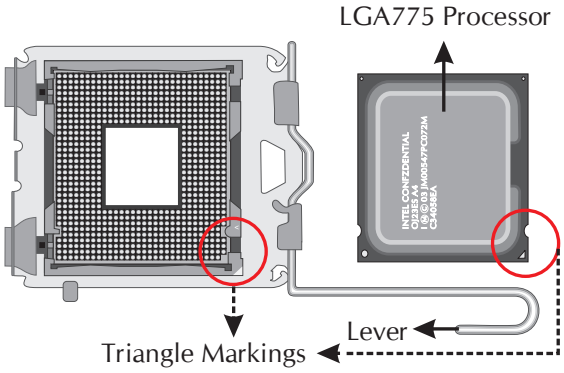


2. Lift the metal load plate on the CPU socket.



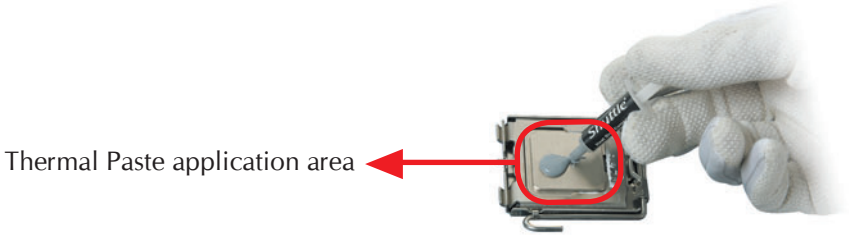
3. Orientate the CPU and socket, aligning the yellow triangle on the corner of the CPU with the triangle on the socket. Make sure the CPU is perfectly horizontal, insert the CPU into the socket.
4. Remove the protective socket cover. Close the load plate, lower the CPU socket lever and lock in place.





> Please be aware of the CPU orientation, DO NOT force the CPU into the socket of prevent bending the pins on the socket and damaging the CPU!

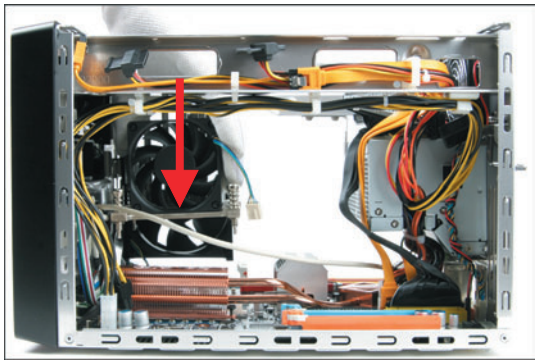
5. Spread thermal paste evenly on the CPU surface.

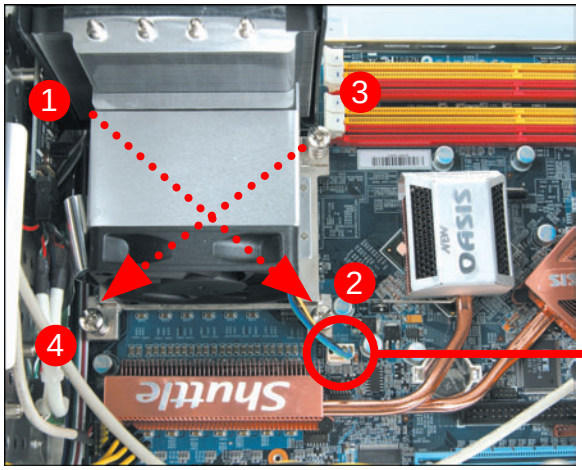


> Please do not apply excess amount of thermal paste.

■ 2.2.3 Install the ICE Module

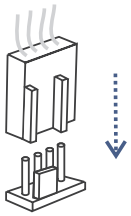
1. Place the ICE module on top of the CPU die and match the screws with the holes on the motherboard.





2. Screw the ICE module to the motherboard. Note to press down on the opposite diagonal corner while tightening each screw.

3. Connect the fan connector.

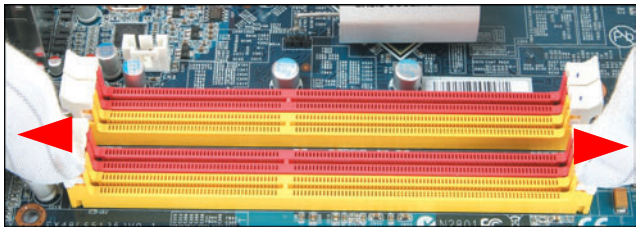


Fan Connector

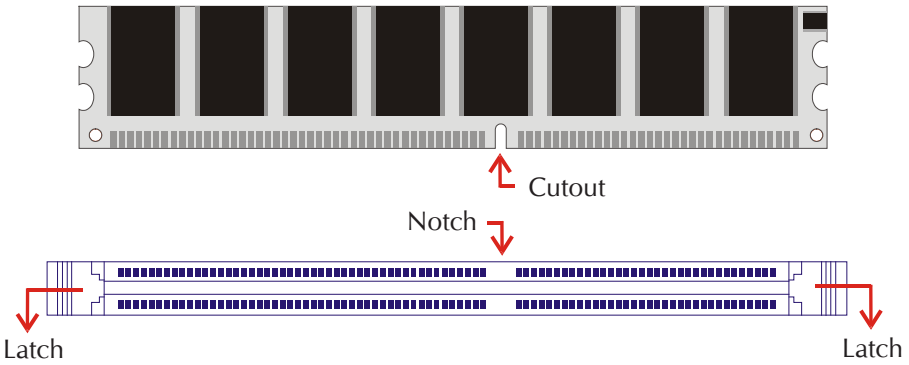
■ 2.3 Memory module Installation

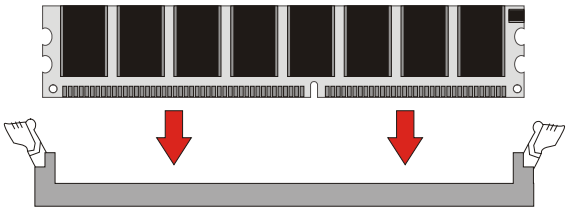
Install a memory module in DIMM1/DIMM2/DIMM3/DIMM4.

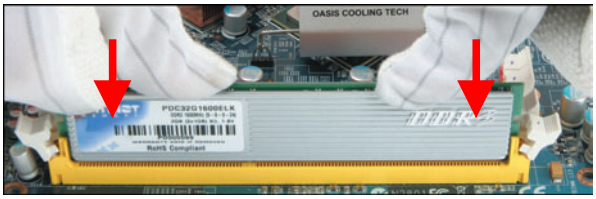
1. Unlock the DIMM latch.



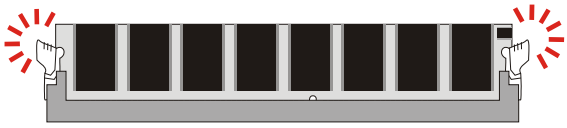
2. Align the memory module's cutout with the DIMM slot notch. Slide the memory module into the DIMM slot.

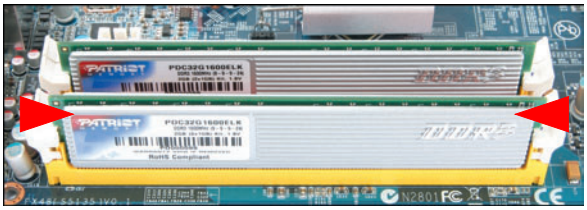






3. Check that the latches are closed, and the memory module is firmly installed.





> Repeat to install additional memory modules if required.

■ 2.4 Peripheral Installation

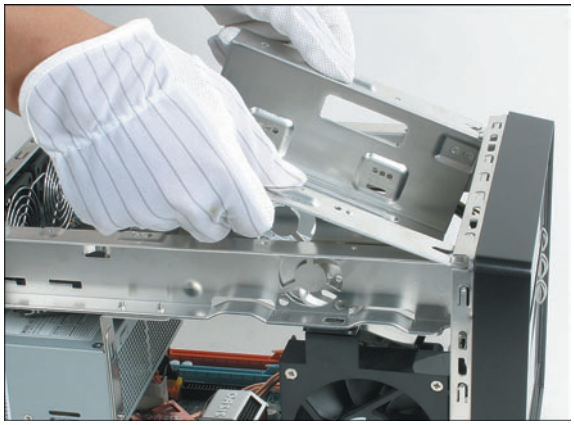
■ 2.4.1 Install the Rack

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



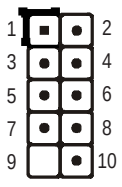
> Please make sure to secure the screws on each side.

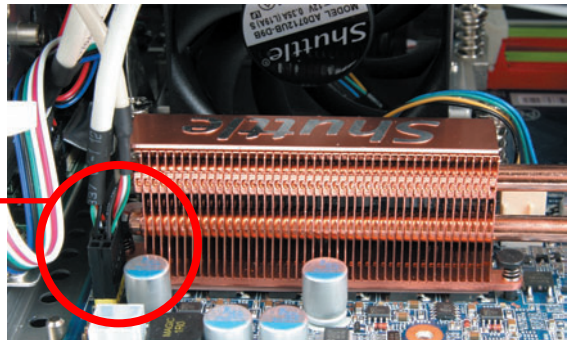
2. Place the rack in the chassis.



■ 2.4.2 Install the Card Reader

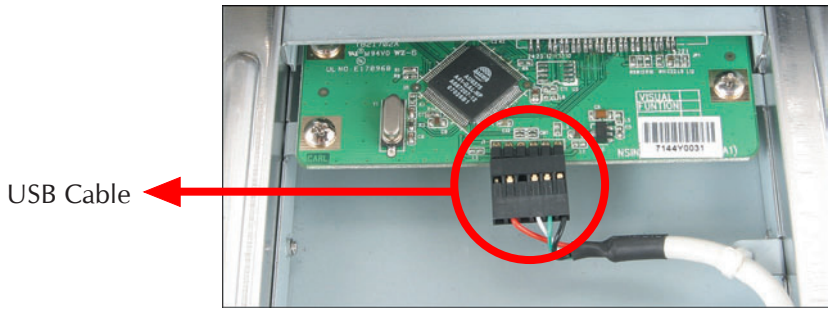
1. If you are installing a Card Reader, plug the card reader's USB cable to the USB wheader located on the motherboard.





> Please make sure the red cable is on Pin 1 or Pin 2.

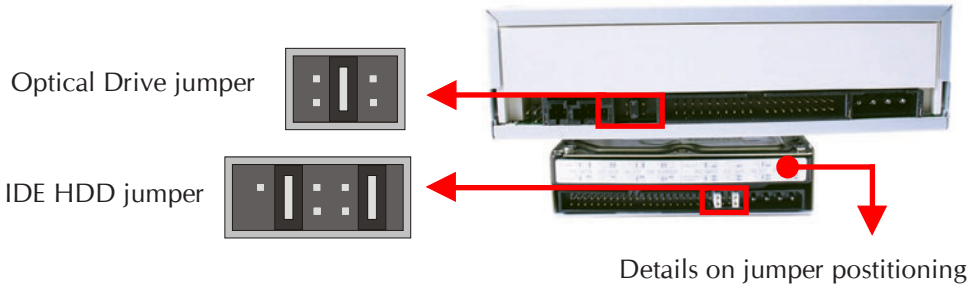
2. Connect the USB cable to the USB header located on Card Reader.



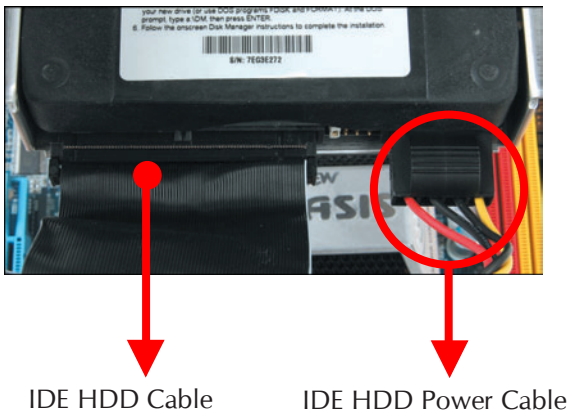
> The red line on the USB cable must be aligned with 1st pin on the USB header.

■ 2.4.3 Install the IDE HDD

1. Jumper settings. If you are using an IDE HDD, you will need to set the jumpers on the HDD to master and the optical drive to slave. Refer to your peripherals for details on jumper positioning.

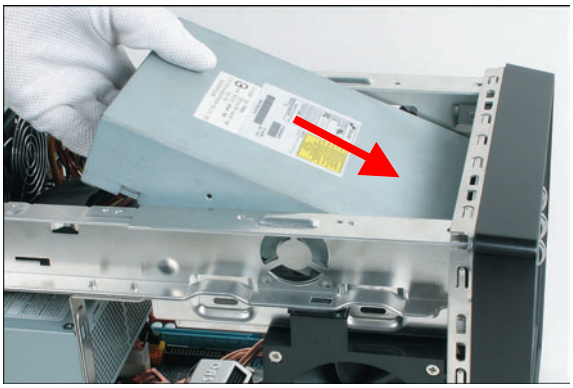


2. Connect the IDE and power cables to the HDD.

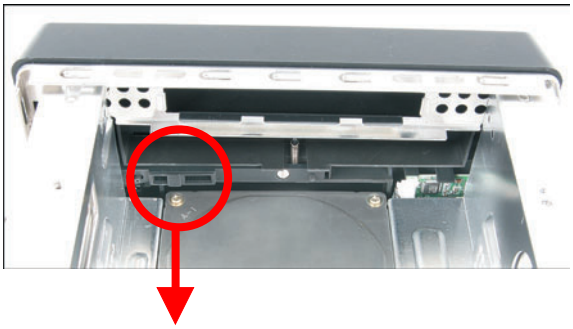


■ 2.4.4 Install an Optical Drive

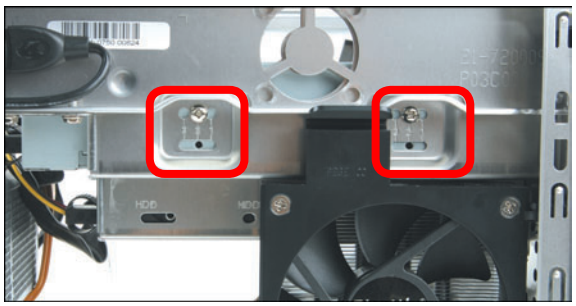
1. Slide the optical drive into the chassis.



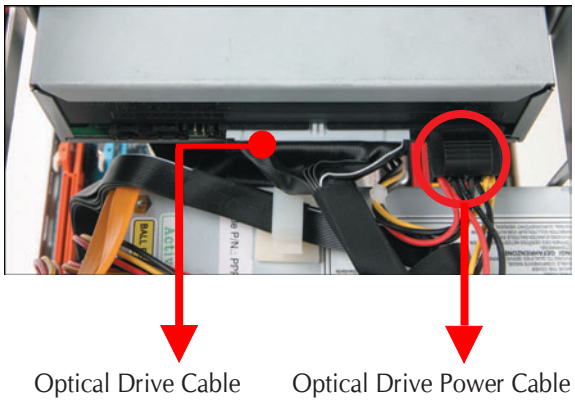
2. Looking at the inside of the stealth drive door, check the alignment of the drive's eject button with this XPC's drive eject mechanism.
   Adjust the internal control rod to match the position of the optical drive's eject button.



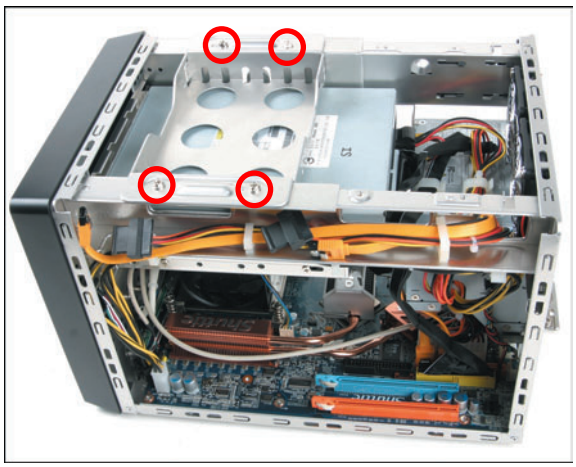
3. Fasten the four side screws.



4. Plug the optical drive cable and power cable into the optical drive.



5. If you are not installing more serial ATA HDDs, place the serial ATA HDD rack in the chassis and refasten the rack.



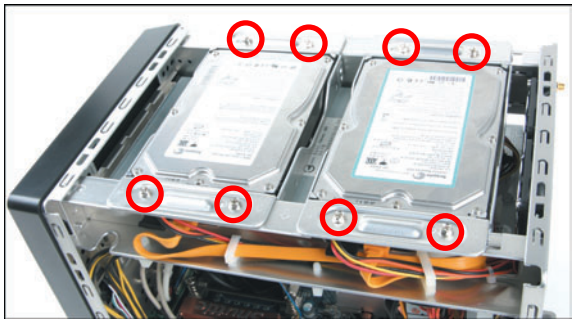
■ 2.4.5 Install more Serial ATA HDDs

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

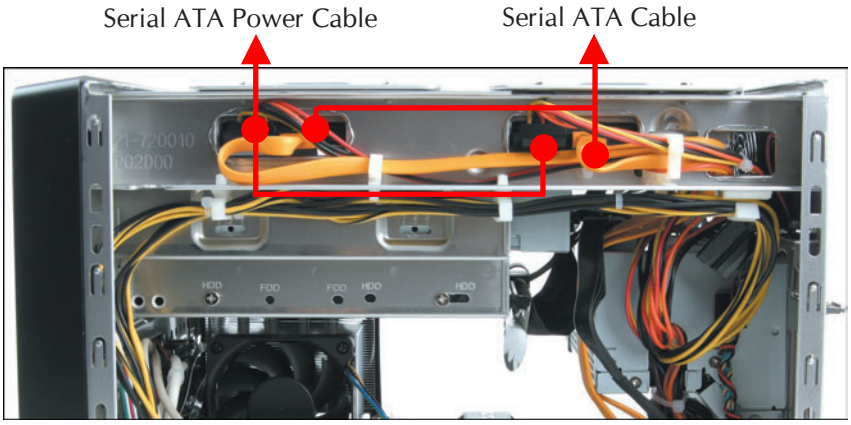


2. Place the serial ATA HDD rack in the chassis and refasten the rack.

   Repeat to install another serial ATA HDD.



3. Connect the serial ATA and power cables to the HDD.



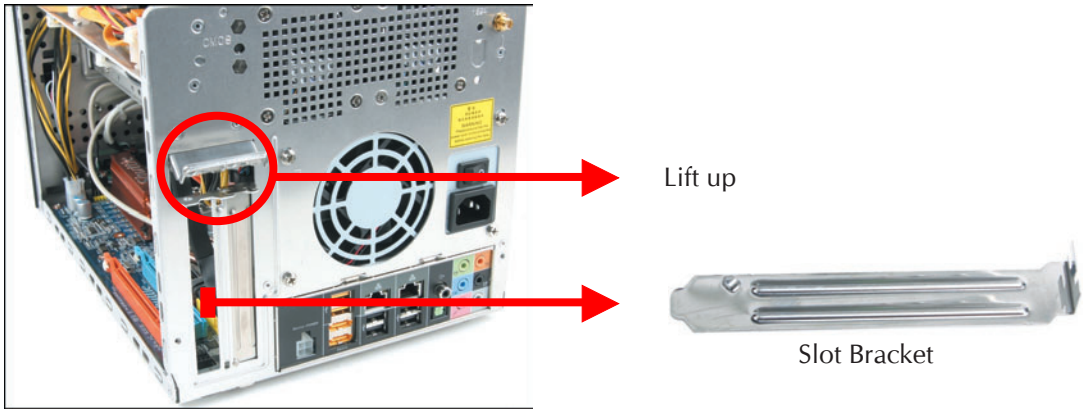
■ 2.5 Accessories Installation

■ 2.5.1 Install PCI Express x16 Card

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

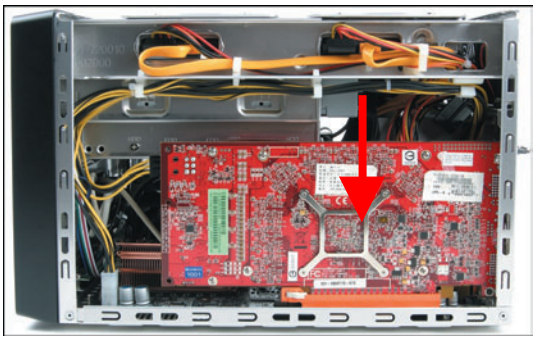


2. Remove the back panel bracket and put the bracket aside.



> The maximum size acceptable for display card is 266mm x 98mm x 36mm

3. As shown Install the PCI Express x16 card into the PCI Express x16 slot.



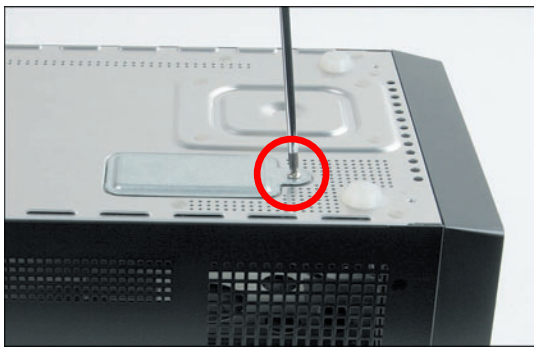
> Repeat to install additional PCI Express x16 card if desired.

4. Secure the bracket.

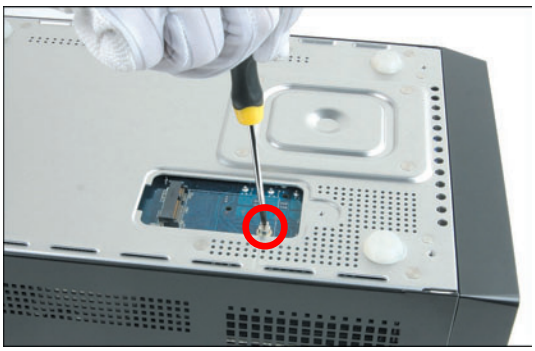


■ 2.5.2 Install Mini PCIe Card

1. If you are installing a Mini-PCIe card, unscrew 1 screw base of the chassis and remove the plate.

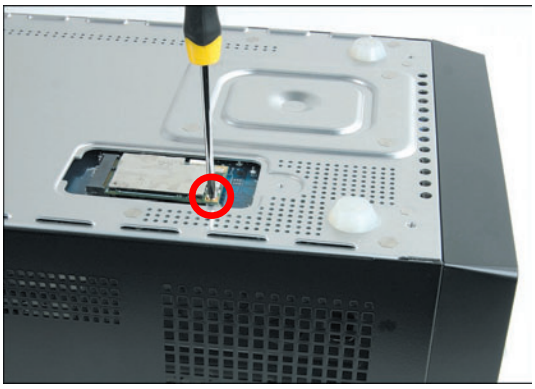


2. As shown unscrew 1 screw.

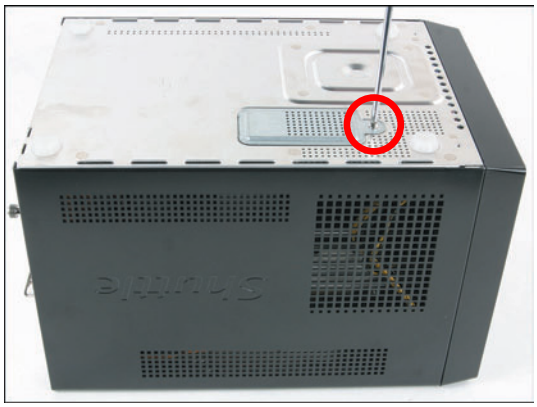


3. As shown Install the Mini-PCIe card into the Mini-PCIe card slot and fasten 1 screw.



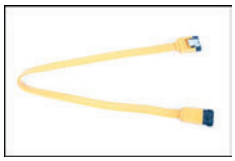


4. Secure the plate.



■ 2.5.3 Install eSATA HDD

1. Take out the eSATA to SATA Cable and External SATA Power Cable from the accessory box.





eSATA to SATA Cable

External SATA Power Cable

2. Plug the eSATA to SATA cable to the eSATA port and plug the External SATA Power Cable to the External SATA power port.



External SATA power port eSATA ports

3. Connect the eSATA to SATA Cable and External SATA Power Cable to the HDD.

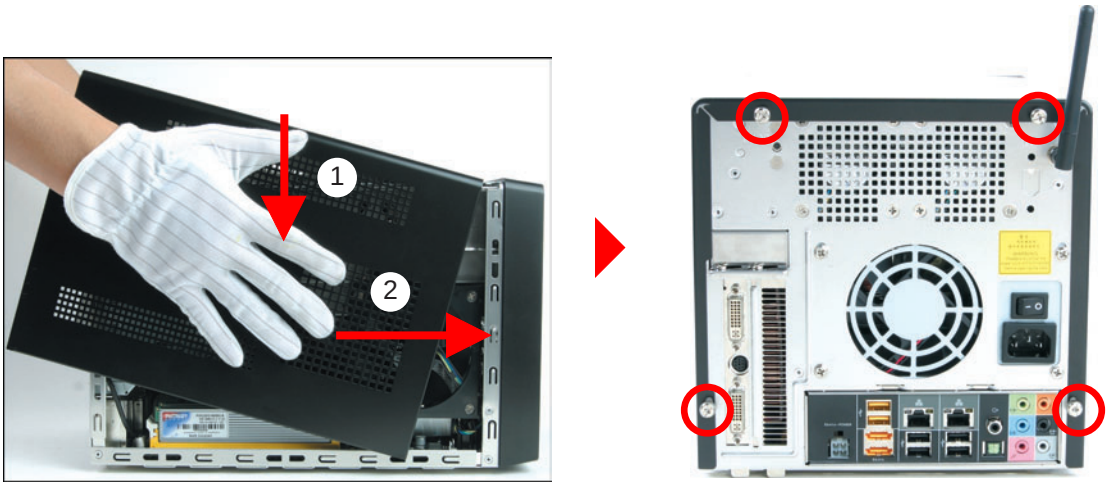


External SATA Power Cable eSATA to SATA Cable

■ 2.6 Final Touches

■ 2.6.1 Close the Chassis Cover

1. Replace the cover and refasten the thumbscrews.

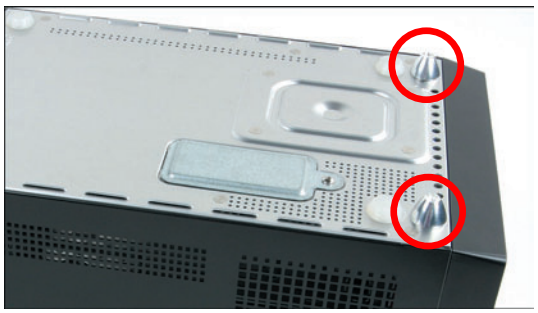


■ 2.6.2 Install Front Feet

1. Take out the two front feet from the accessory box.
2. Screw the front feet to the base of the chassis.



Front feet



■ 2.6.3 Complete



■ 2.7 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.

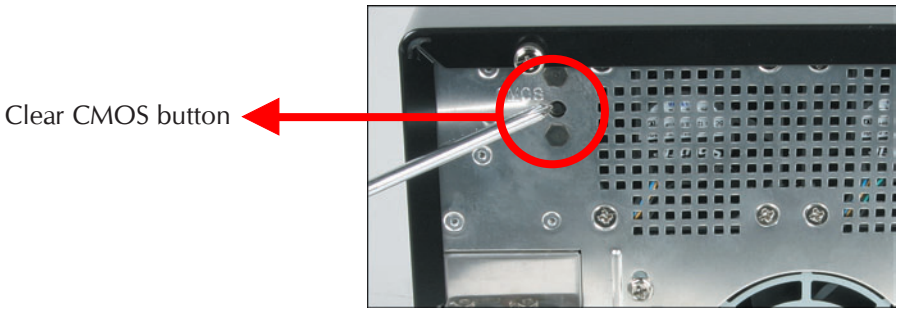
■ 2.8 Tech Support

1. Shuttle Inc.
   http://global.shuttle.com/
2. Tech Support
   http://global.shuttle.com/support.jsp
3. Download
   http://global.shuttle.com/download.jsp
4. Barebone FAQ
   http://global.shuttle.com/support_faq.jsp
5. Barebone Support List
   http://global.shuttle.com/support_list.jsp

■ 2.9 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.



⚠ Remove the power cord before clearing CMOS.

3 Driver and Software Installation

■ 3.1 Motherboard Driver DVD

> ⚠ The DVD contents attached in SX48P2 Deluxe motherboard are subject to change without notice.

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 Intel Chipset, Realtek Audio, Marvell Gigabit LAN, Intel IAA Drivers.
- ☞ Install Device Divers - 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
- ☞ User Manuals - SX48P2 Deluxe Manual , Speed-Link Manual, Fingerprint Recognition Manual, Wireless LAN Manual, Wireless Quick Guide.
- ☞ Link to Shuttle Website
- ☞ Browse this DVD



■ 3.1.1 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 Motherboard Software Setup screen.

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

- ☞ Install Intel Chipset Driver
- ☞ Install Realtek Audio Driver
- ☞ Install Marvell Gigabit LAN Driver
- ☞ Install Intel IAA Driver
- ☞ Return to previous page



Appendix

BIOS Settings

The SX48P2 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



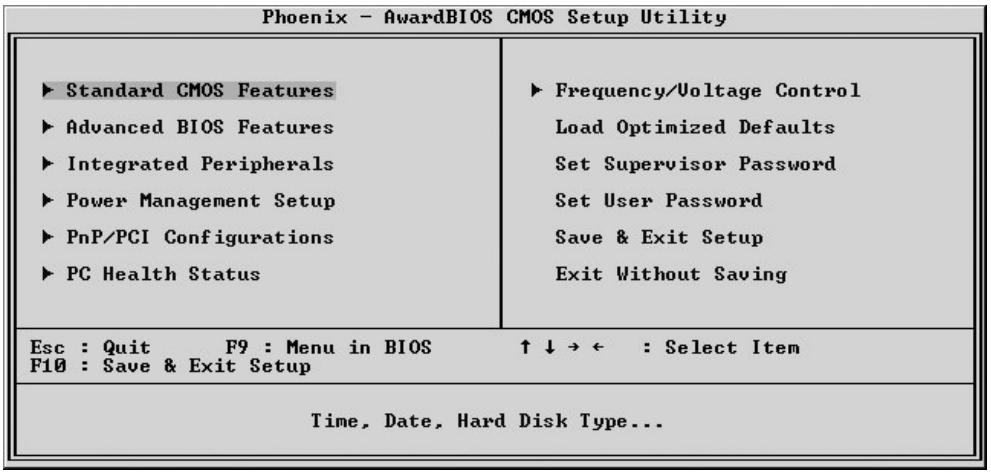
1. If you miss wordings mentioned in step2 (the message disappears before you can respond) and you still wish to enter BIOS Setup, restart the system and try again by turning the computer OFF and ON again or by pressing the <RESET> switch located at the computer's front-panel. You may also reboot by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

Integrated Peripherals

Use this menu to specify your settings for integrated peripherals.

Power Management Setup

Use this menu to specify your power management settings.

PnP / PCI Configurations

This entry appears if your system supports PnP / PCI.

PC Health Status

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

Frequency/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

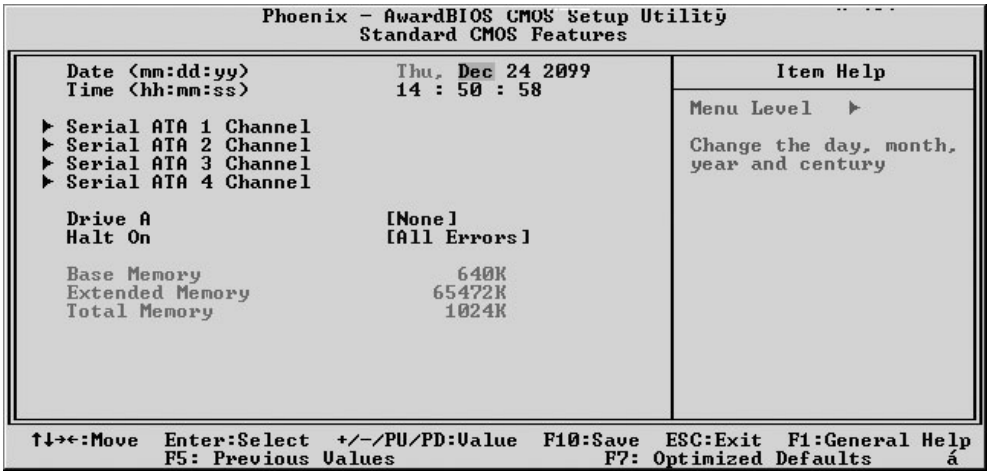
Save CMOS value changes in CMOS and exit from setup.

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.



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.

Serial ATA 1,2,3,4 Channel

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, 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.

SATA 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

Serial ATA 1/2/3/4 Channel

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

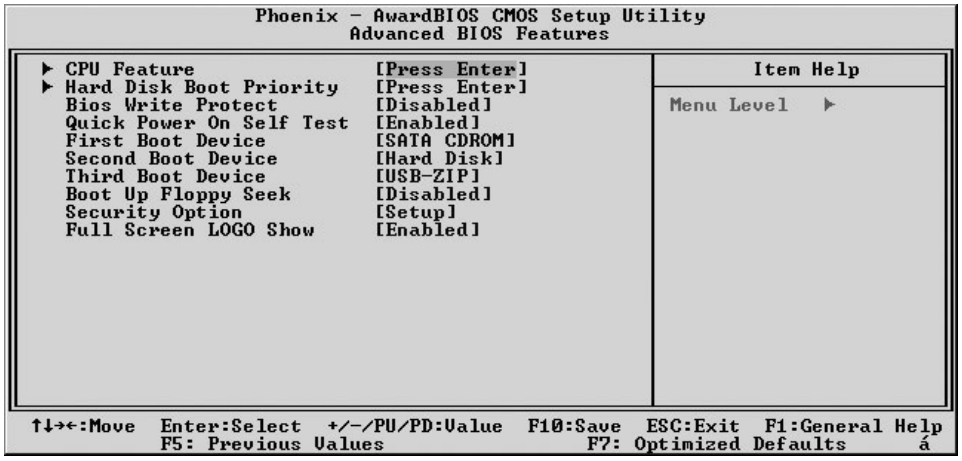
Number of sector per track.

- 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.



CPU Feature

Options are in its sub-menu.

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

Delay Prior to Thermal

This item is select Delay Prior to Thermal.

➢ The Choice: 4Min, 8Min, 16Min or 32 Min.

Thermal Management

This item is select Thermal Management . Thermal Monitor 1 (On die throtting). Thermal Monitor 2 Ratio & VID transition).

➢ The Choice: Thermal Monitor 1 or Thermal Monitor 2.

TM2 Bus Ratio

Represents the frequency (bus ratio of the throttled performance statethat will be initiated when the on-diesensor gose from not hot to hot.

➢ The Choice: Min = 0 Max = 255.

CPU support TM2, item appear.

TM2 Bus VID

Represents the voltageof the throttled performance statethat will be initiated when the on diesensor gose from not hot to hot.

➢ The Choice: 0.8375V ~ 1.6000V.

CPU support TM2, item appear.

PPM Mode

Native mode is for fully support ACPI OS (ex.WINXP, VISTA...), SMM mode is for legacy OS (ex. Win2K...).

➢ The Choice: SMM Mode or Native Mode.

Limit CPUID MaxVal

Set Limit CPUID MaxVal to 3,Should Be "Disabled" for WinXp.

➢ The Choice: Disabled or Enabled.

⚠ Some older O.S.'s (Win98,WinMe..) cannot handle a CPUID MaxVal greater than 3. Please choose "Enabled" if you use one of those O.S. If your O.S. is WinXP or Win2000, we suggest you "Disabled" the item.

C1E Function

When disabled, processor can't transitions to a lower core frequency and voltage.

➢ The Choice: Auto or Disabled.

⚠ CPU support, item appear.

Execute Disable Bit

When disabled, forces the XD feature flag to always return 0.

➢ The Choice: Enabled or Disabled.

⚠ CPU support, item appear.

Virtualization Technology

When enabled, a VMM can utilize the additional hardwarecapabilities provided by Vanderpool Technology.

➢ The Choice: Enabled or Disabled.

⚠ CPU support, item appear.

Core Multi-Processing

This item allows you to enable/disable the Core Multi-Processing.

➢ The choice: Disabled or Enabled.

Hard Disk Boot Priority

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

Bios Write Protect

This item allows you to enable/disable the Bios Write Protect. Choose [Enabled] to avoid virus destroy BIOS. 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: LS120, Hard Disk, SATA CDROM, ZIP100, USB-FDD, USB-ZIP,USB-CDROM, Disabled or Floppy.

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.

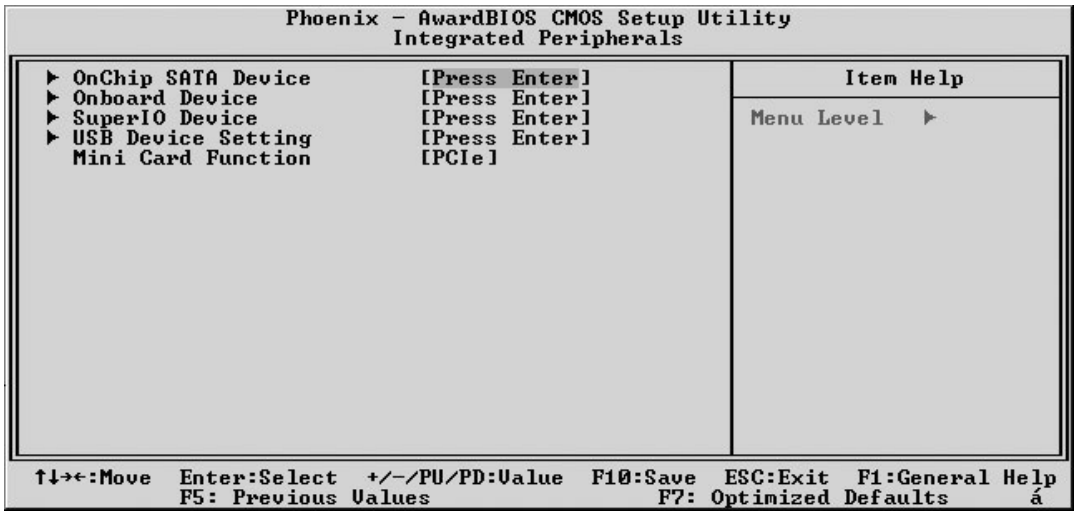
Don't type anything and just press <Enter>; it will disable security. Once the security is disabled, the system will boot, and you can enter Setup freely.

Full Screen LOGO Show

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

➢ The choice: Enabled or Disabled.

Integrated Peripherals



OnChip SATA Device

Option are in its sub-menu.

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

SATA Mode

This item allows you to set the SATA Mode.

➢ The choice: IDE, RAID or AHCI.

LEGACY Mode Support

Certain OS is not supported under Native mode.

➢ The choice: Enabled or Disabled.

Robson Support

This item allows you to set the Robson Support.

➢ The choice: Enabled or Disabled.

Onboard Device

Option are in its sub-menu.

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

High Definition Audio

This item allows you to set the High Definition Audio.

➢ The choice: Enabled or Disabled.

Onboard Lan Boot ROM

Decide whether to invoke the boot ROM of the onboard Lan Chip.

➢ The choice: Enabled or Disabled.

SuperIO Device

Option are in its sub-menu.

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

Onboard FDC Controller

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

➢ The choice: Enabled or Disabled.

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 Interfacefor 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 Storage Function

Enable or Disable Legacy support of USB USB Mass Storage.

➢ The choice: Enabled or Disabled.

*** 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.

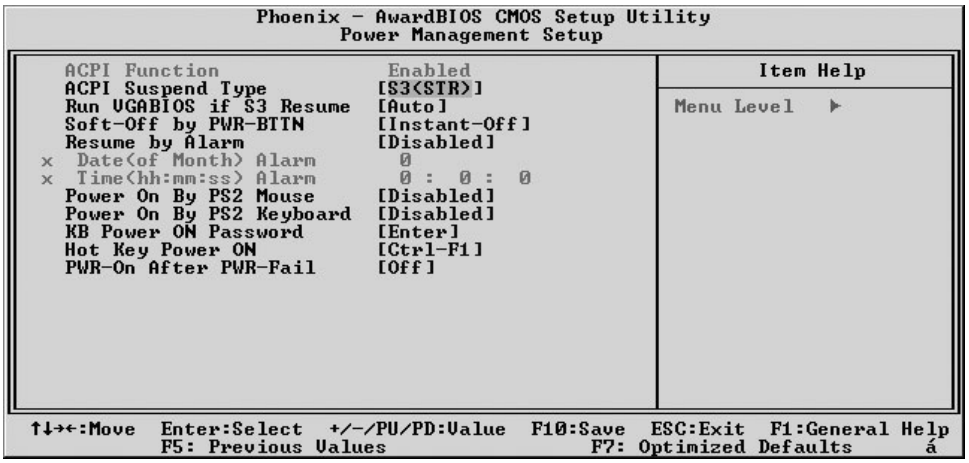
- The choice: Auto mode, FDD mode or HDD mode.

Mini card function

This item allows you to set the Mini card function.

- The choice: PCIe or USB.

Power Management Setup



The Power Management Setup allows you to configure your system to most effectively save energy while operating in a manner consistent with your computer usage.

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).

Run VGABIOS if S3 Resume(Auto)

This item allows the system to initialize the VGA BIOS from S3(Sus-pend to RAM) sleep state.

- The choice: Auto, Yes or No.

Soft-Off by PWR-BTTN

Under ACPI you can create a software power down. In a software power down, the system can be resumed by Wake UP Alarms. This item lets you install a software power down that is controlled by the power button on your system. If the item is set to Instant-Off, then the power button causes a software power down. If the item is set to Delay4 Sec. then you have to hold the power button down for 4 seconds to cause a software power down.

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

Resume by Alarm

When this item enabled, your 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.

Power on By PS2 Mouse

This item allows you to set the Mouse Power On function. Only supports S4/S5.

- The choice: Disabled or Enabled.

Power on By PS2 Keyboard

This item allows you to set the Keyboard Power On function. Only supports S4/S5.

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

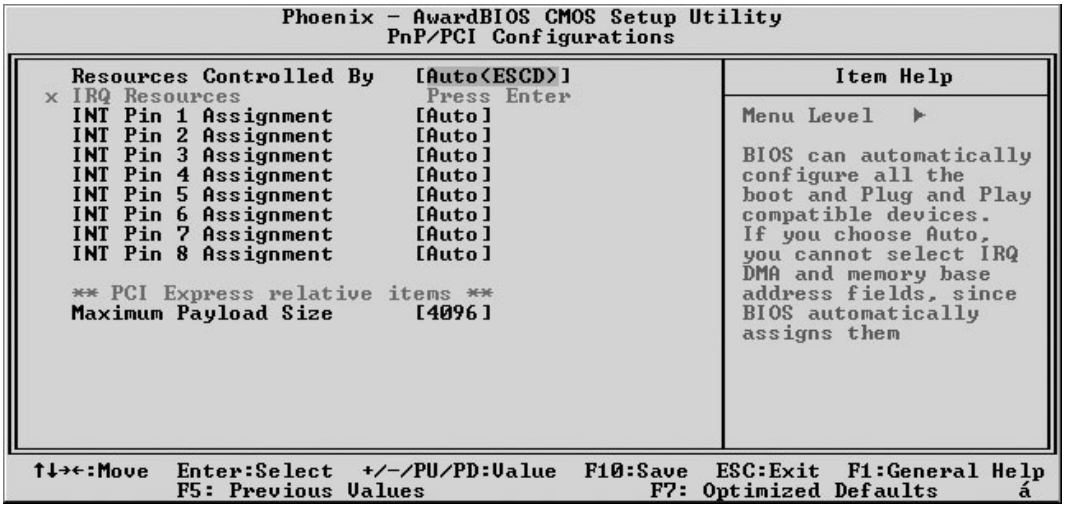
- The choice: Any Key, Ctrl-F1 ~ Ctrl-F12.

PWR-On After PWR-Fail

This item defines if the system will be rebooted after the power fails.

- The choice: Off, On, Former-Sts.

PnP/PCI Configurations



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.

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

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

- The choice: PCI Device or Reserved.

INT Pin1～8 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.

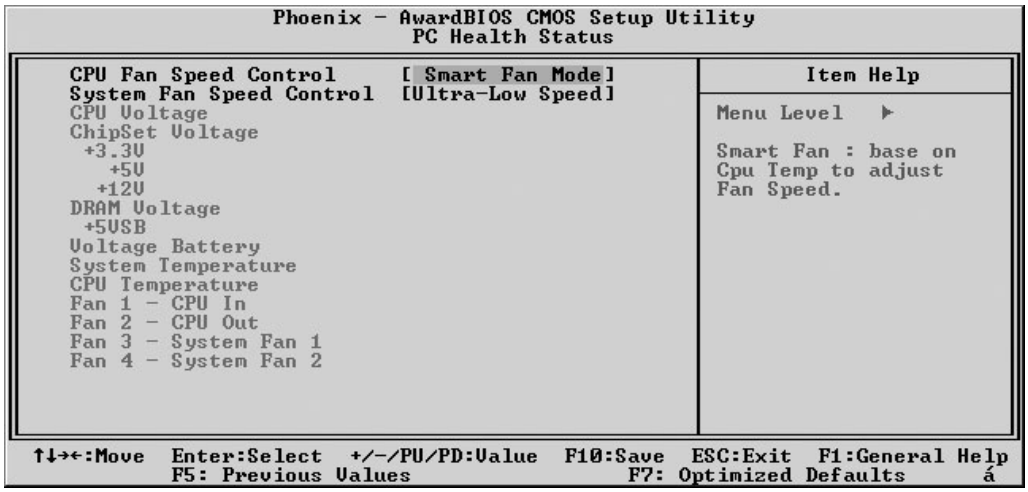
********** PCI Express relative items **********

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 Mode, Ultra-Low Speed, Low Speed, Mid Speed, or Full Speed.

System Fan Speed Control

Here you can set the System Fan Speed.

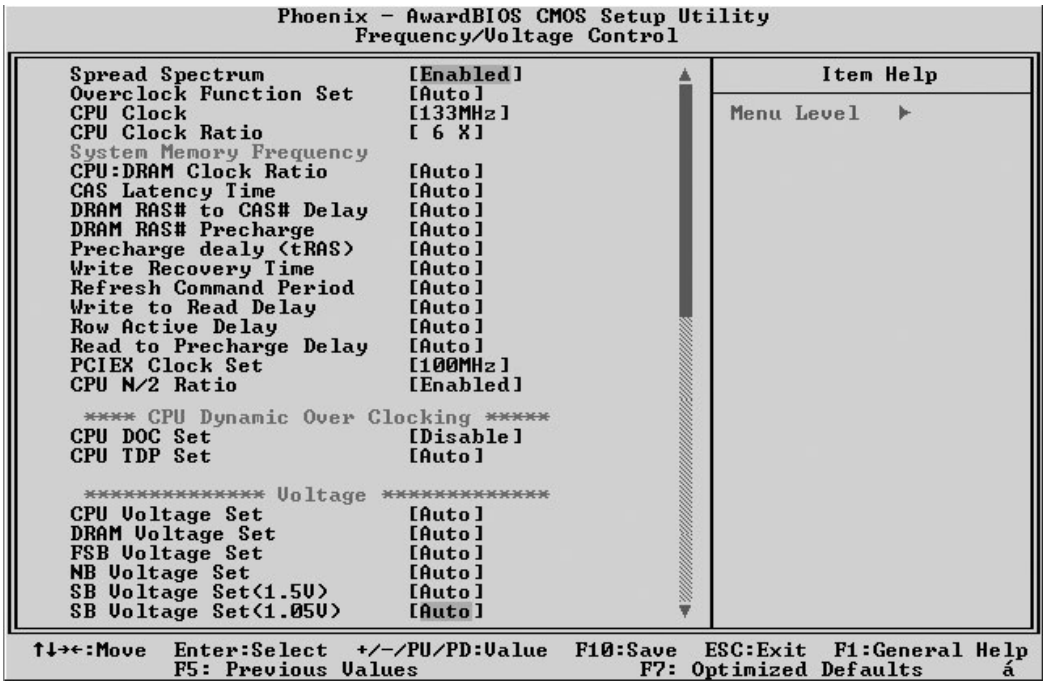
- The choice: Ultra-Low Speed, Low Speed, Mid Speed, or Full Speed.

CPU Voltage
ChipSet Voltage
+3.3V
+5V
+12V
DRAM Voltage
+5VSB
Voltage Battery
System Temperature
CPU Temperature
Fan 1 - CPU In
Fan 2 - CPU Out
Fan 3 - System Fan 1
Fan 4 - System Fan 2

Before manually modifying the CPU fan setting, please make sure fan connectors are plug ged into the correct fan conne ctor on the motherboard.

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

Frequency/Voltage Control



Spread Spectrum

This item allows you to enable/disable the Spread Spectrum.

- The choice: Disabled or Enabled.

Overclock Function Set

This item allows the user to adjust Overclock Function Set.

- The Choice: Auto, Manual, XMP＜Profile1＞, XMP＜Profile2＞.

CPU Clock

This item allows the user to adjust CPU Host Clock.

Min: 133 Max: 600

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

CPU Clock Ratio

This item allows the user to adjust CPU Clock Ratio.
If CPU is unlocked, item appear.

- The Choice: 6X～50X.

System Memory Frequency

CPU :DRAM Clock Ratio

This item allows the user to adjust CPU :DRAM Clock Ratio. Based on FSB: DRAM Ratio.

- The Choice: Auto, 1:2,2:3,3:4,1:1,5:8,5:6.

DRAM Timing Selectable

This item allows you to enable/disable the DRAM Timing Selectable.

- The choice: Disabled or Enabled.

DRAM Timing Setting

Options are in its sub-menu.

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

CAS Latency Time

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: Auto,5,6,7,8,9 or 10.

DRAM RAS# to CAS# Delay

This field lets you insert a timing delay between the CAS and RAS strobe signals, 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. This field is applied only when synchronous DRAM is installed in the system.

- The Choice: Auto,5,6,7,8,9 or 10.

DRAM RAS# Precharge

If an insufficient number of cycles is allowed for the RAS to accumulate its charge before DRAM refresh, the refresh may be-incompleted, and the DRAM may fail to retain data. Fast gives faster performance; and Slow gives more stable performance. This field is applied only when synchronous DRAM is installed in the system.

- The Choice: Auto,5,6,7,8,9 or 10.

Precharge dealy (tRAS)

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

- The Choice: Auto or 14～28.

Write Recovery Time

This item allows you to set the Write Recovery Time.

- The Choice: Auto or 3～15.

Refresh Command Period

This item allows you to set the Refresh Command Period.

- The Choice: Auto,40,42,44,...,96,98,100.

Write to Read Delay

This item allows you to set the Write to Read Delay.

- The Choice: Auto or 4～15.

Row Active Delay

This item allows you to set the Row Active Delay.

- The Choice: Auto or 3～15.

Read to Precharge Delay

This item allows you to set the Read to Precharge Delay.

- The Choice: Auto or 4～15.

PCIEX Clock Set

This item allows you to set PCIEX Clock Set.

- The choice: 100MHz～150MHz.

CPU N/2 Ratio

This item allows you to set CPU N/2 Ratio.

- The choice: Enabled or Disabled.

**** CPU Dynamic Over Clocking *****

CPU DOC Set

This item allows you to set CPU DOC Set.

- The choice: Disabled, 3%, 5%, 7% or 10%.

CPU TDP Set

This item allows you to set CPU TDP Set.

- The choice: 65W, 90W, 130W or Auto.

********** Voltage **********

CPU Voltage Set

This item allows you to set CPU Voltage Set.

- The choice: 1.2875V～2.0000V or Auto.

DRAM Voltage Set

This item allows you to set DRAM Voltage Set.

- The choice: 1.55V～2.4V or Auto.

FSB Voltage Set

This item allows you to set FSB Voltage Set.

- The choice: +50mV, +100mV, +150mV or Auto.

NB Voltage Set

This item allows you to set NB Voltage Set.

- The choice: 1.3V, 1.35V, 1.4V or Auto.

SB Voltage Set(1.5V)

This item allows you to set SB Voltage Set(1.5V).

- The choice: 1.55V, 1.6V, 1.65V or Auto.

SB Voltage Set(1.05V)

This item allows you to set SB Voltage Set(1.05V).

- The choice: 1.1V, 1.15V, 1.2V or Auto.

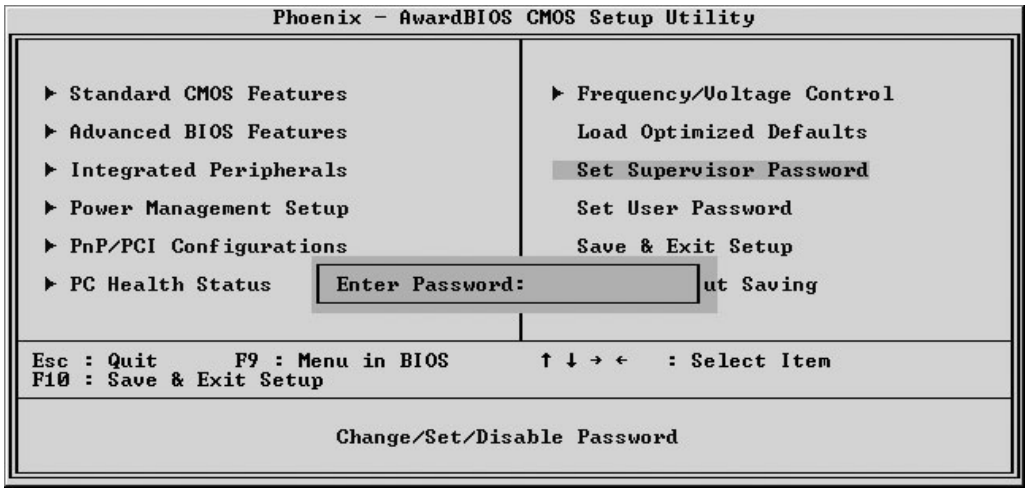
Load Optimized Defaults

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

Load Optimized Defaults (Y/N) ? N

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

Set Supervisor/User Password



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

New Password Setting:

1. While pressing <Enter> to set a password, a dialog box appears to ask you enter a password.
2. Key in a new password. The password can not exceed eight characters.
3. System will request you to confirm the new password again.
4. When completed, new code takes effect.

No Password Setting:

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

If You Forget Password:

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

Save & Exit Setup

Pressing <Enter> on this item asks for confirmation:

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

Pressing "Y" stores the selections made in the menus of CMOS - a special section of memory that stays on after you turn your system off. The next time you boot your computer, the BIOS configures your system according to the Setup selections stored in CMOS. After saving the values the system is restarted again.

Exit Without Saving

Pressing <Enter> on this item asks for confirmation:

Quit Without Saving (Y/N)? N

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

- Objective: To improve abilities for Shuttle's customer to troubleshoot and decrease NTF (No Trouble Found) return repair goods
- Tools: CPU, VGA card, DDR Memory, Power Supply Unit.
- Type of situation: 1. System boot failure
  2. System unstable
  3. System incompatibility

➢ System won't boot

When receive a system or motherboard from end user that can not boot. Technician will need to identify the components that can be added on this system/motherboard. You may find the specifications inside the manual, CD driver or on our website.

Web link: http://www.shuttle.com/hq/product/product.asp

Step 1 Please unplug the power cord on the power supply to clear the CMOS jumper. Clear CMOS jumper will reset previous BIOS setting to the default. Change CPU,memory modules, VGA card and power supply unit for testing.

Explanation:

Why change CPU?

Customer(s) might have inserted a processor which is already damaged, or that does not meet the specification of the chipset layout design.

Example:

1. When using a FSB 1333MHz of processor on a system/motherboard it can only support FSB 800/1066 processor.
2. Systems like SD32 and SS30 does not support FSB 800/1066 processor due to the VRM (Voltage Regulator Module) design or others, they can only support FSB 800/1066 of processor.

Why change memory module(s)?

End user has inserted a memory module(s) which is already damaged. Chip on memory module(s) were not met by the specification of the chipset.

Example:

1. Some memory module like DDR3 800/1066/1333/1600, user may need to add extra voltage in the BIOS in order to provide sufficient voltage for DDR3

Why change VGA card?

1. When defected VGA card has inserted into the system/motherboard.
2. When VGA card is inserted into a system/motherboard does not support its interface.

If the system/motherboard continues fail to boot after following above procedure, please contact with your local retailer.

➢ System running unstable

If the system incompatible the following may occur:

1. Overheating
2. System compatibility issue (Software, Operating system)
3. Add on components out of system/motherboard specification (Hardware)

Suggestion:

1. Unplug the power cord from the system and clear CMOS jumper.
   Update the BIOS to newest version. Updating BIOS may fix the previous bug or enhance stability of system.
2. Add thermal greases on top of CPU die to improve the heat conduction.
3. Change other hardware such as processor, memory module(s), VGA card or power supply unit to eliminate the chance of any hardware failure and compatibility problem
4. In order to eliminate the chance of any software or operating system problem. Please backup the data in the current system on separate storage device. Format the harddrive and reinstall the operating system and driver.
5. Try cross testing, by swapping components system/motherboard.

➢ System incompatibility

There are four common system incompatibility issues, they are caused by add on device(s), driver, BIOS and hardware design. All system/motherboard may function normally until certain system actions are called upon causing conflict.

What causes CPU to become incompatible?

A processor with same speed could have difference on the sSpec#, Bus Speed, Mfg. Tech/Micron, Stepping, Cache Size and packaging type. System could show different result with differences on their performance due to the variables mentioned above. This may show a variant of inaccurate information on processor.

Example:

- Processor like AMD AM2, it has the memory control build into the processor. The compatibility issue may be different pending the version of processor.
- Processor like Intel 45nm , may have compatibility issue if the PWM on the system/motherboard does not support subject's type of processor.
- Motherboard unable to recognize incompatible processor inserted.
- BIOS did not provide efficiency of voltage to the system processor.
- Did not show the correct sign on string in the POST screen and the Cache size.

What will cause memory module incompatible?

Most of system incompatibility is cause by memory module(s). In situations like this systems may freeze while user installs system OS, running a program, or fail on the benchmark test.

Example of memory incompatibility:

- Uncompetitive memory timing or inefficiency of voltage.
- Insert different combination of memory.
- Oxidize of on golden figure of the memory modules.

What will cause VGA card incompatibility?

VGA card incompatible may cause some functions to fail, for example system won't boot.

Example of AGP incompatibility:

- VGA card did not plug-in its extend power.
- If drivers are not installed or installed improperly, then you may not use the standby functions such as S3, S4

What will cause USB device incompatibility?

USB device did not provide efficiency of power, or driver installation incomplete.

Example of USB device incompatible:

- Shows unknown device in hardware manager due to missing driver.
- USB device that is out of standard specification may cause clock jitters with irregularly.

What will cause SATA/RAID incompatibility?

In order to install SATA for system, RAID driver is the essential part of the whole process. Without RAID driver, system may not detect the SATA harddrive.

Harddrive/CD-ROM/DVD-ROM:

When system do not detect IDE device, system will shows incorrect harddrive size

Audio:

No sound from system when drive did not install.

PCI:

When IRQ is in conflict, there could be a chance that PCI devices will fail in function.

Conclusion:

Always make sure you have the right components insert to system.

You may always find the specification of your system/motherboard from the manual, our website (product page) or download it from web link:

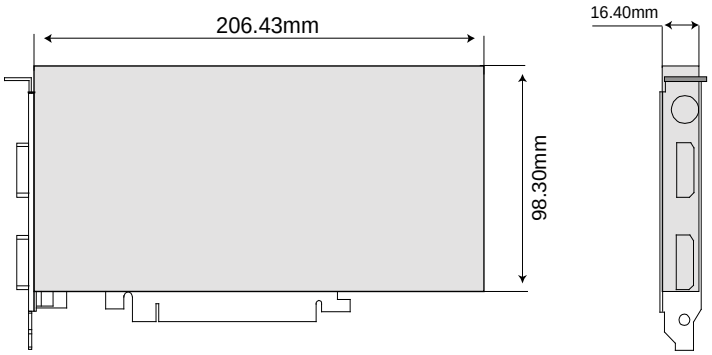
http://global.shuttle.com/download.jsp

The greatest card size that could fit in G/P series of XPC:

What size of VGA card could fit in G series of XPC?

The greatest card size that could fit in G series of XPC is 206.43mm(L) x 98.30mm(H) x 16.40mm(D). But due to the different layout design on each model and VGA card, we strong suggest to check on VGA support list for each model or hard fit before purchase the VGA card.

Please check our internet website <http://global.shuttle.com/support_faq_detail.jsp?PI=766&PFI=1109> for details

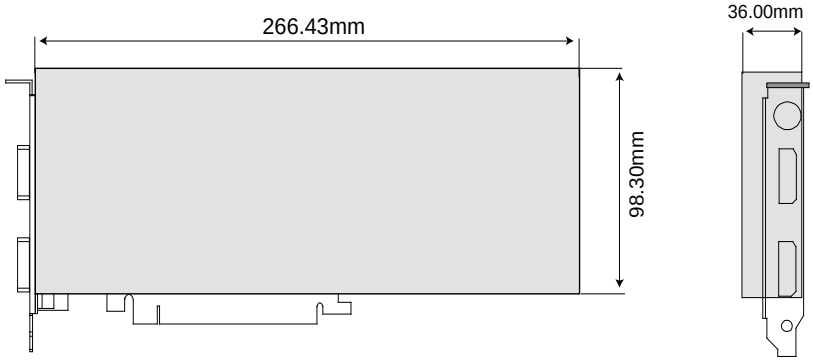


unit :mm

What size of VGA card could fit in P/P2 series of XPC?

The greatest card size that could fit in P/P2 series of XPC is 266mm(L) x 98mm(H) x 36mm(D). But due to the different layout design on each model and VGA card, we strong suggest to check on VGA support list for each model or hard fit before purchase the VGA card.

Please check our internet website <http://global.shuttle.com/support_faq_detail.jsp?PI=766&PFI=263> for details



unit :mm

BIOS update process (DOS & windows) :

How to use Winflash utility?

Please check our internet website <http://global.shuttle.com/support_faq_detail.jsp?PCI=%20&PI=766&PFI=992> for details

How to making a bootable disk to flash BIOS?

Please check our internet website <http://global.shuttle.com/support_faq_detail.jsp?PCI=%20&PI=766&PFI=968> for details