XPC User Guide

For the : SD11G5

Shuttle Mainboard EMI Test Statement

Shuttle mainboards 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: PC Mainboard

Status: Sample

Model Name: SD11G5

S/N: N/A

CPU:

External Frequency: 400 MHz

Intel Pentium M, Socket 479 Processor: 1.7/ 1.46 GHz

External Frequency: 533 MHz

Intel Pentium M, Socket 479 Processor: 2.0/ 1.86/ 1.73/ 1.6 GHz

External Frequency: 400 MHz

Celeron M, Socket 479 Processor: 1.5 GHz

VGA Port: one port with 15 pins

DVI Port: one port with 24 pins

Keyboard Port: one port with 6 pins

Mouse Port: one port with 6 pins

S-Video Port: one port with 7 pins

USB 2.0 Port: six ports with 4 pins respectively

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

LAN Port: one port with 8 pins (10Mbps/100Mbps/1000Mbps)

Line-Out Ports: five ports

Mic-In Ports: one port

Line-In Ports: one port

SPDIF-Out (Optical) Port: one port

SPDIF-In (Optical) Port: one port

Clear CMOS button: one port

DIMM Memory (optional): DDR2 400/533 *2

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

Monitor: CRT+DVI

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	533MHz	Pentium M 2.0GHz	Close
2	533MHz	Pentium M 2.0GHz	Open
3	400MHz	Pentium M 1.7GHz	Close
4	400MHz	Pentium M 1.7GHz	Open
5	400MHz	Celeron M 1.5GHz	Close
6	400MHz	Celeron M 1.5GHz	Open

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

Remedy: N/A

EMI Interference:

Crystal : 14.318MHz(X2)/ 25MHz(X5)/ 32.768KHz(X1)/ 24.5MHz(X3)/ 24.5MHz(X4)

Clock Generator : U5

(D) Supported Host Peripherals:

Component	Brand	Model No. / Spec.
HDD	Maxtor	7Y250M0/6Y200M0
CD-ROM	BTC	DRW1108IM, DVD-Dual
Memory x2	A-Data	430F3H4TR/DDR2/533, 512MB
Power	Delta	SADP-220DB, 220W

(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

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9M0-A71SD0-11G0

Safety Information

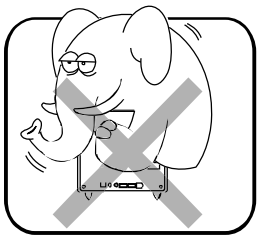
Read the following precautions before setting up a Shuttle XPC.

CAUTION

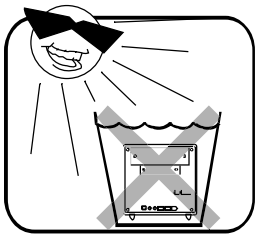
Incorrectly replacing the battery may damage this computer. Replace only with the same or equivalent as recommended by Shuttle. Dispose of used batteries according to the manufacturer's instructions.

Installation Notices

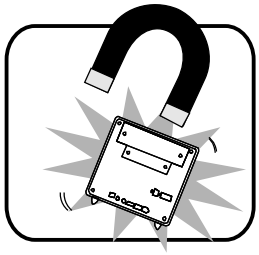
Do not place this device underneath heavy loads or in an unstable position.



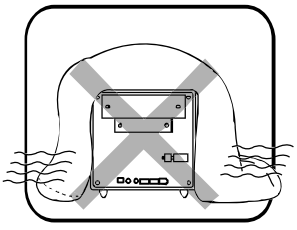
Do not expose this device to high levels of direct sunlight, high-humidity or wet conditions.



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.



POWER-FCC Appendix

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, and

(2) This device must accept any interference received; including interference that may cause undesired operation.

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 4

1.4 Accessories 5

1.5 XPC Mainboard 6

1.5.1 FD11 mainboard illustration 6

1.5.2 Jumper Settings 7

Front Panel Connector (JP8/JP10) 7

Fan Connectors (FAN1/FAN2) 7

Extended USB Connector (USB2/USB3/JP7) 8

EXT.GPI Header (JP2) 8

Parallel Port Header-EXT. Printer Port (JP4) 9

FSB Frequency Regulator (JP3) 9

Select DVI or PCI-Express X16 model (J1)(default DVI) 10

CONNECTOR TO AUDIO (JP12) 10

1.5.3 Audio Board description 10

CONNECTOR TO AUDIO (JP1) 11

JP2 link up daughter board JP2 11

AUX-IN CONNECTOR (J1) 11

2 XPC Installation Guide 12

2.1 Installation 12

2.1.1 Remove the Cover 12

2.1.2 Remove the Rack 13

2.2 CPU and ICE Installation 14

2.2.1 Remove the ICE Module 14

2.2.2 Install the CPU 16
2.2.3 Install the ICE Module 17
2.3 DDR2 Installation 18
2.4 Cable and Rack Installation 20
2.4.1 Install a Serial ATA HDD Cable 20
2.4.2 Install the IDE Cable 20
2.4.3 Install the Rack 21
2.5 Peripheral Installation 22
2.5.1 Install the Serial ATA HDD 22
2.5.2 Install an Optical Drive 22
2.6 Accessories Installation 25
2.6.1 Install PCI Express x1/ PCI Express x16 Card 25
2.6.2 Install Mini PCI Card 27
2.7 Final Touches 28
2.7.1 Close the Chassis Cover 28
2.7.2 Install Front Feet 28
2.7.3 Complete 29
2.7.4 Install Power Adapter 29
2.8 XPC Accessories 30
2.9 Tech Support 30
2.A Technical Notes: Clear CMOS Button 30
2.B Use Hot-Key 31
3 Driver and Software Installation 33
3.1 Mainboard CD Overview 33
3.1.1 Install Mainboard Software 34
Appendix 35
Enter the BIOS 35
THE MAIN MENU 36

STANDARD CMOS FEATURES 38
ADVANCED BIOS FEATURES 41
ADVANCED CHIPSET FEATURES 45
INTEGRATED PERIPHERALS 49
POWER MANAGEMENT SETUP 53
PNP/PCI CONFIGURATIONS 57
PC HEALTH STATUS 59
Frequency Control 60
LOAD FAIL-SAFE DEFAULTS 61
LOAD OPTIMIZED DEFAULTS 61
SET PASSWORD 62
SAVE & EXIT SETUP 63
EXIT WITHOUT SAVING 63

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

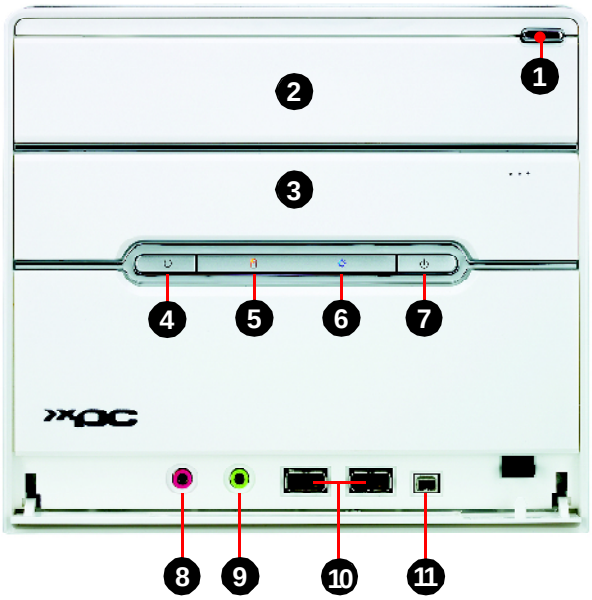
Form Factor		
Shuttle Small Form Factor		
Processor		
Pentium M 400/533MHz system bus with 2MB L2 cache		
Celeron M 400MHz system bus with 1MB L2 cache		
Chipset		
Intel 915GM + ICH6M		
Memory		
240 pins 400/533 DDR2 DIMM X2 with Single & Dual-Channel Mode configuration		
Supports 256Mb,512Mb, and 1Gb technologies for X8 and X16 devices		
Audio		
H/W Audio Creative P17 (7.1-CHANNEL)		
Ethernet		
BCM5789 PCI-E Lan Controller		
10/100/1000 Mb/s LAN operation (1) PS2 Keyboard/Mouse		
IEEE 1394a		
VIA VT6307, 1394 OHCI v1.0 compliant, Up to 400Mb/s data transfer rate		
Serial ATA		
ICH6M integrated SATA, Two Channel UDMA 150MB/s S-ATA		
Onboard headers & connectors		
(1) ATA100 IDE connector	(2) Fan connectors	(1) Adjust CPU model
(1) Line_in header	(1) Power & reset header	(1) AUX_IN header
(2) SATA connectors	(2) 1x5 pin USB 2.0 headers	(1) GPIO header
(1) 2x5 USB 2.0 header	(1) Printer port header	(1) 1394 header
(2) Power connector	(1) PCI-E X1	(1) PCI-E X16
(1) FSB Frequency Regulator	(1) Select DVI or PCI-Express X16 model	
PSU		
Output:220W, Input: 100/240V AC, Active PFC, FCC, CE , BSMI, UL, TUV, CB certificated		
Chassis		
G5, Dimension: 200 (W) x 185 (H) x 280 (L) 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.

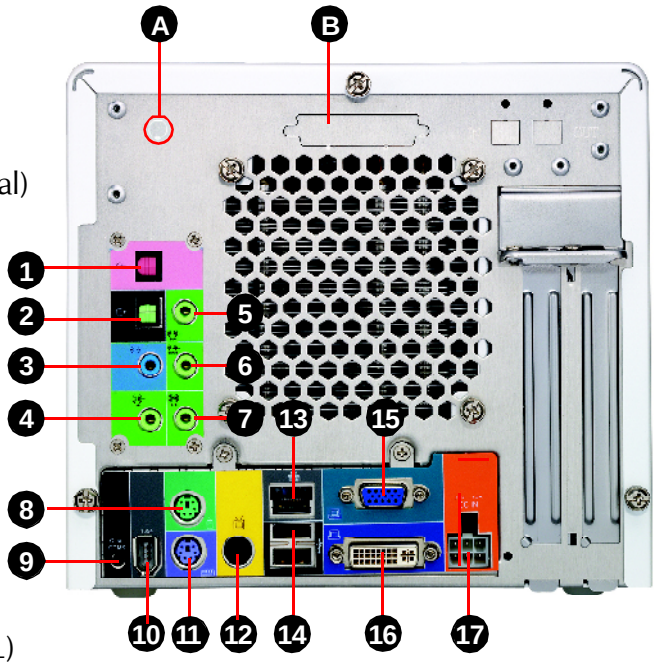
■ 1.3.1 XPC Front

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. SPDIF IN (Optical)
2. SPDIF OUT (Optical)
3. LINE IN port
4. Front-out (R/L)
5. Side Surr (R/L)
6. Surround back (R/L)
7. Central/Bass
8. PS/2 Mouse
9. Clear CMOS button
10. FireWire® 400 port
11. PS/2 Keyboard
12. TV & S-Video port
13. LAN port
14. USB ports
15. VGA port
16. DVI port
17. DC Power Inlet

A. Wireless LAN perforation

B. Parallel port perforation

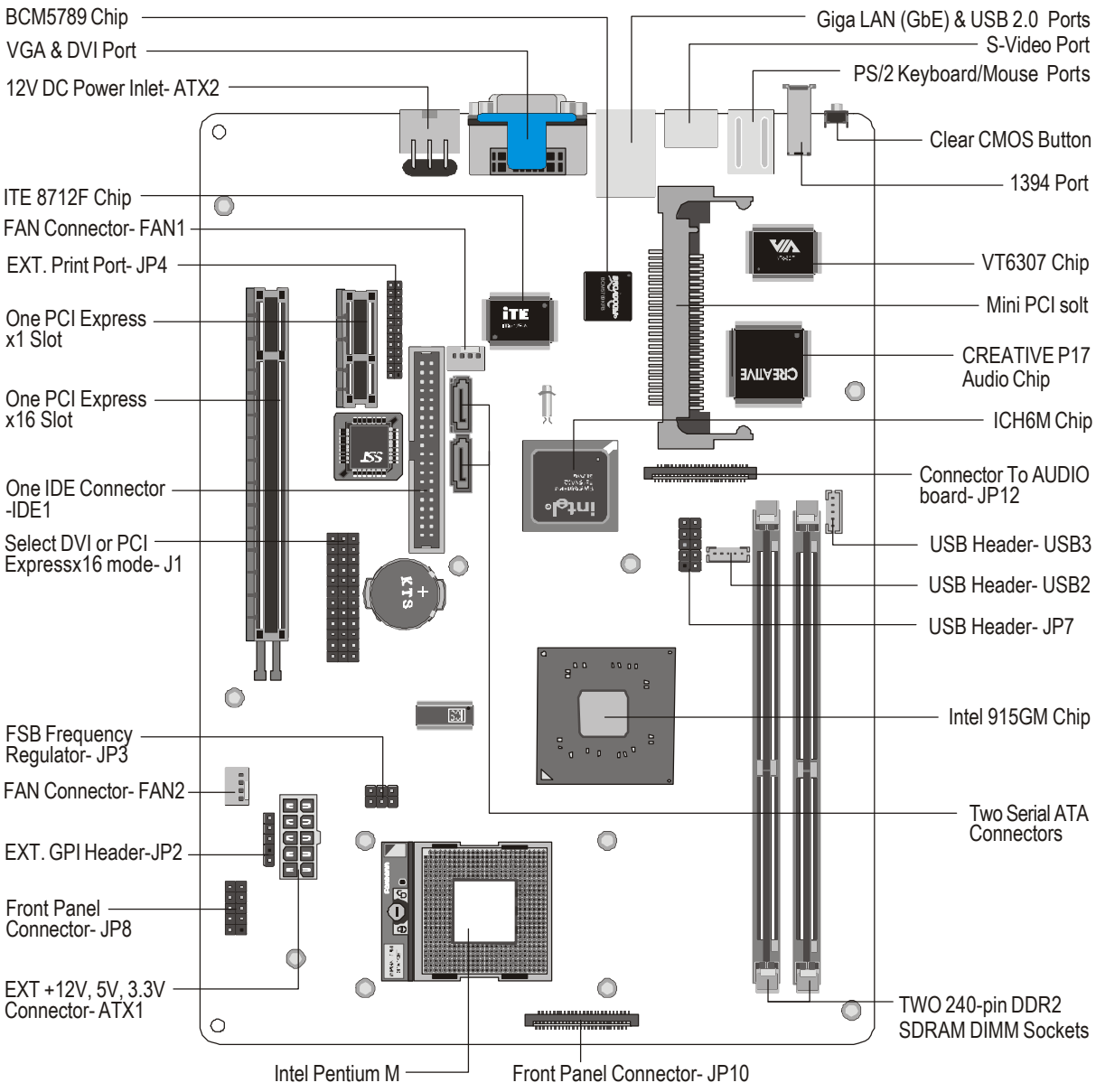
■ 1.4 Accessories

1. ICE Heat-Pipe (1)
2. IDE cable ＜1 to 1＞ (1)
3. Extension Power Adapter (1)
4. Serial ATA cable (1)
5. Cable clip (1)
6. Adhesive (1)
7. Heatsink compound (1)
8. Front feet (2)
9. Optical Drive Control Rod (1)
10. Screws
11. TV-out switch (1)
12. Cable tie (2)
13. Motherboard CD Driver (32bits) (2)
14. Shuttle Extras CD (1)
15. XPC User Guide (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 FD11 mainboard illustration



■ 1.5.2 Jumper Settings

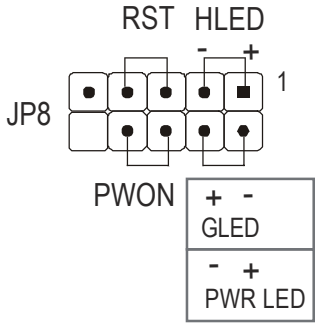
Front Panel Connector (JP8/JP10)

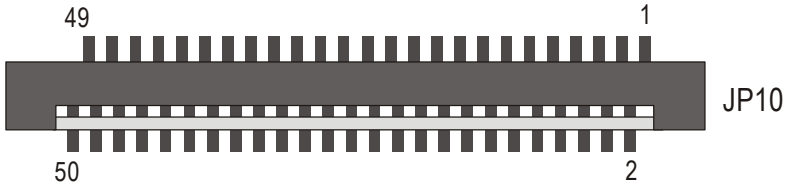
Header JP8 can be used to provide operation status signals to the front daughterboard. Note that this is an alternative header to the 50pins streamline header that also connects the motherboard to the front daughterboard.

Headers JP10 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 (JP8):

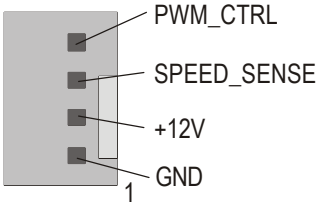
1 = HDLED_PU	2 = GLEDA
3 = HDLED	4 = GLEDB
5 = Reset_SW	6 = Power_SW
7 = GND	8 = GND
9 = NC	10 = KEY





Fan Connectors (FAN1/FAN2)

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



Note : Both cable wiring and type of plug may vary depending on the fan maker. Keep in mind that the red wire must always be connected to the + 12V header and the black wire to the ground (GND) header.

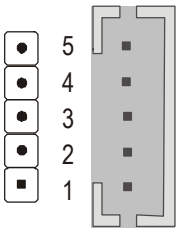
Extended USB Connectors (USB2/USB3/JP7)

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 (USB2/USB3):

1 = GND
2 = GND
3 = Data +
4 = Data-
5 = VCC

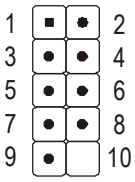
USB2/USB3



Pin Assignments (JP7):

1 = VCC
2 = VCC
3 = Data0-
4 = Data1-
5 = Data0 +
6 = Data1 +
7 = Ground
8 = Ground
9 = Key
10 = N/C

JP7



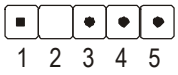
EXT. GPI Header (JP2)

The GPI supports user-defined function names. This means that the functions inside the platform-independent code can be called anything. The user defines the linking function names in the GPI header file.

Pin Assignments (JP2):

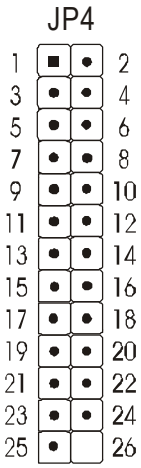
1=5V_DUAL
2=KEY
3=GND
4=GPI8
5=GPI11

JP2

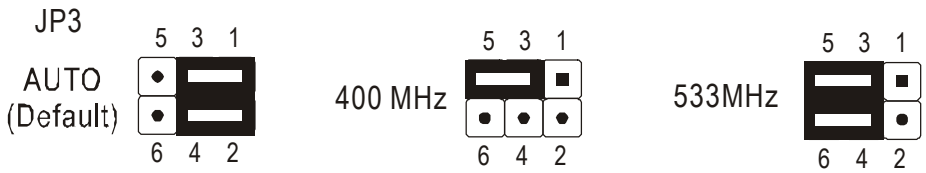


Parallel Port Header-EXT. Printer Port (JP4)

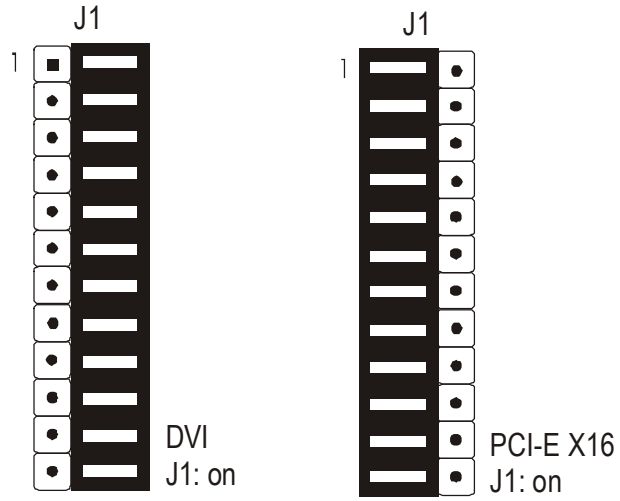
A DB25 male parallel port header is located near the rear panel of the mainboard. The header is used to connect a parallel port socket (PC8) to the mainboard. The parallel printer port can be purchased from Shuttle as an optional accessory.



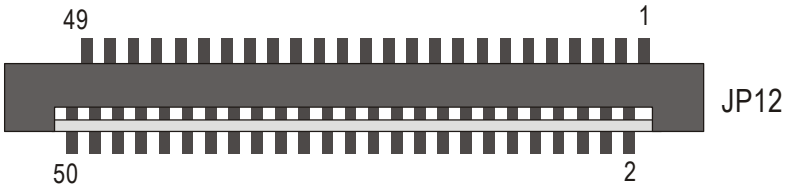
FSB Frequency Regulator (JP3)



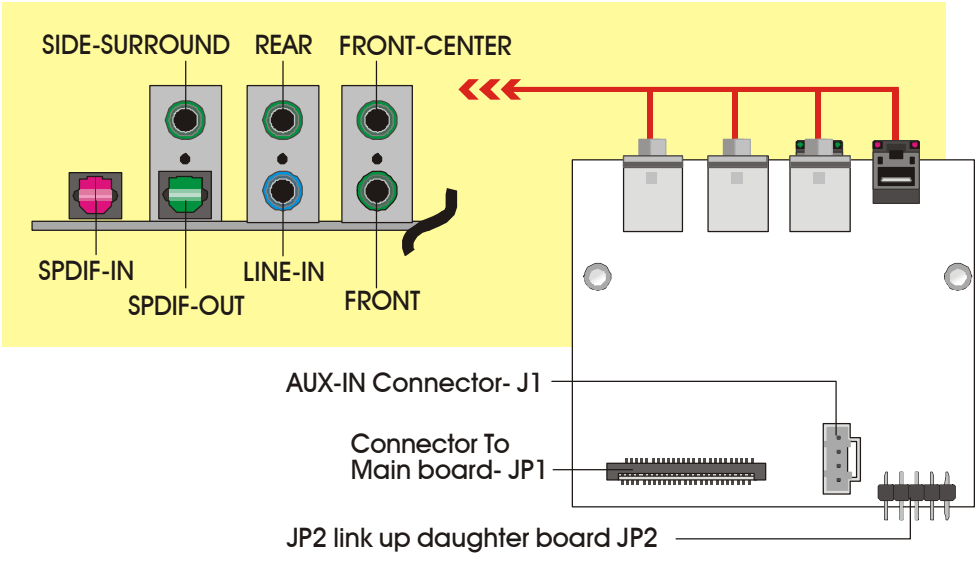
Select DVI or PCI-Express X16 model (J1)(default DVI)



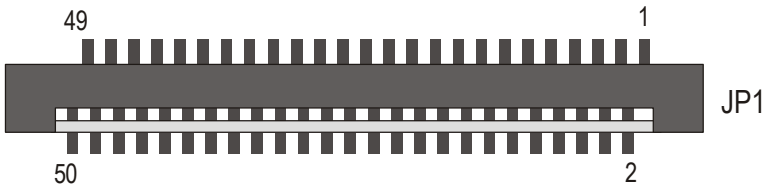
CONNECTOR TO AUDIO (JP12)



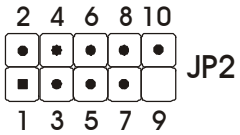
■ 1.5.3 Audio Board description



CONNECTOR TO AUDIO (JP1)



JP2 link up daughter board JP2

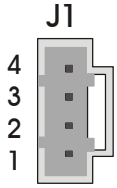


AUX-IN CONNECTOR (J1)

Port J1(White) is used to connect stereo audio inputs from a CD-ROM.

Pin Assignments (J1):

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



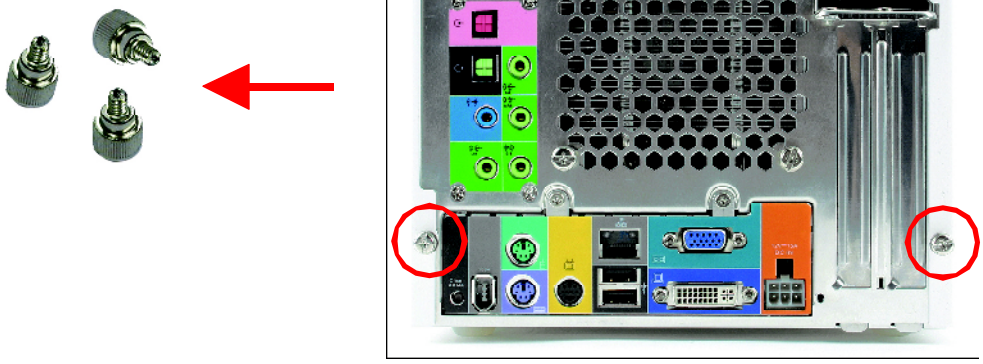
2 XPC Installation Guide

■ 2.1 Installation

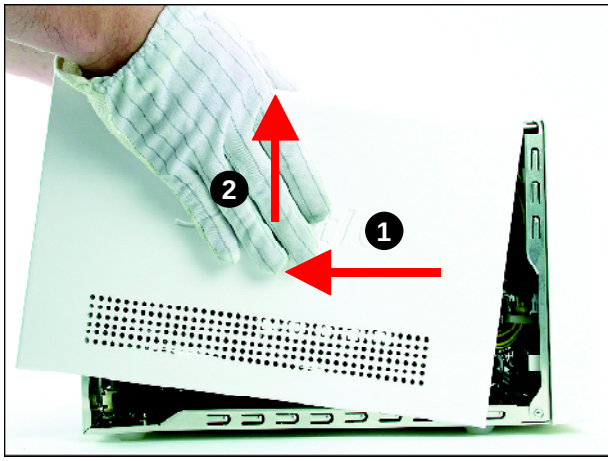
Note : For safety reasons, please ensure that the power cord is disconnected before opening the case.

■ 2.1.1 Remove the Cover

1. Unscrew the three thumbscrews.

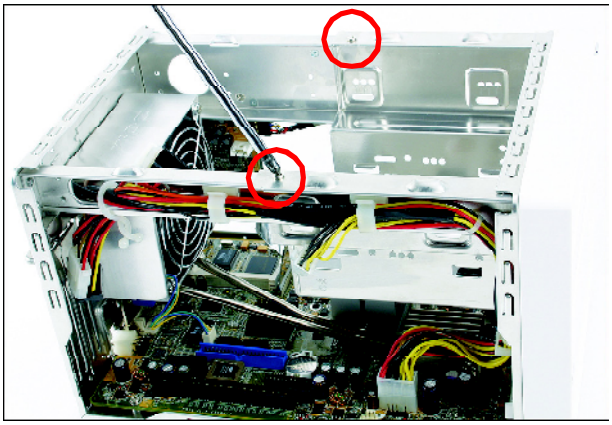


2. Slide the cover backwards and upwards.

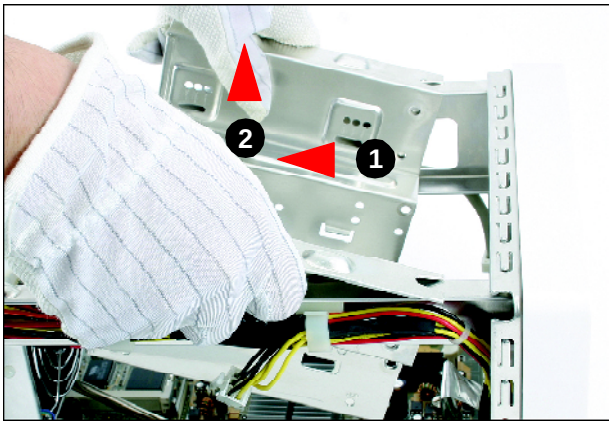


■ 2.1.2 Remove the Rack

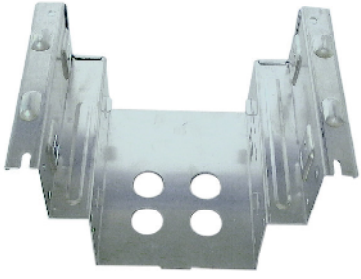
1. Unfasten the rack mount screws.



2. Remove the rack.



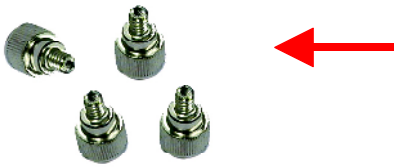
Rack

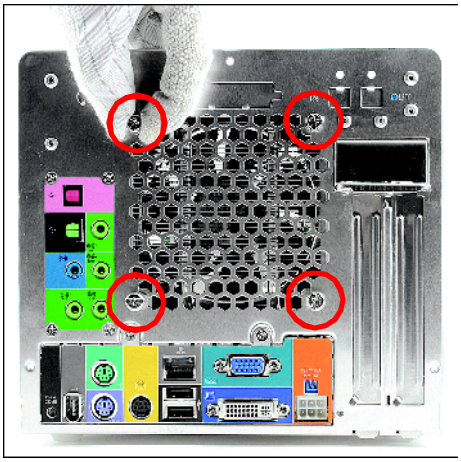


■ 2.2 CPU and ICE Installation

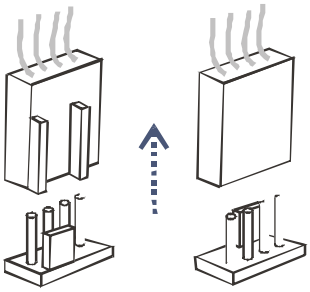
■ 2.2.1 Remove the ICE Module

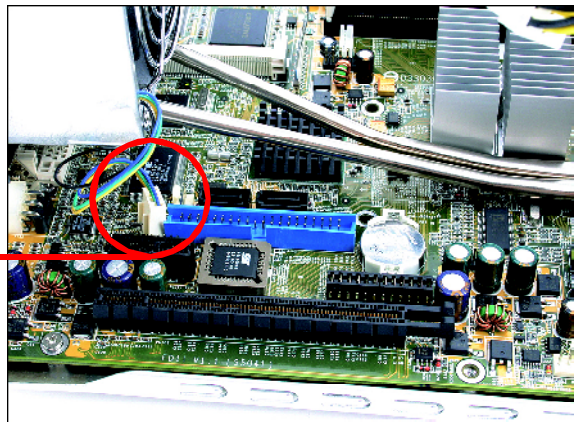
1. Unfasten the ICE fan thumbscrews on the back of the chassis.



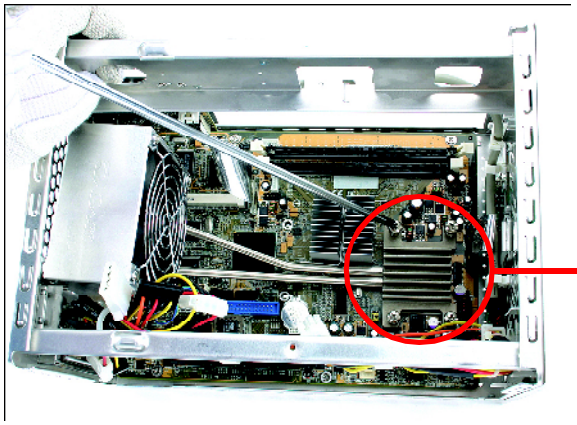


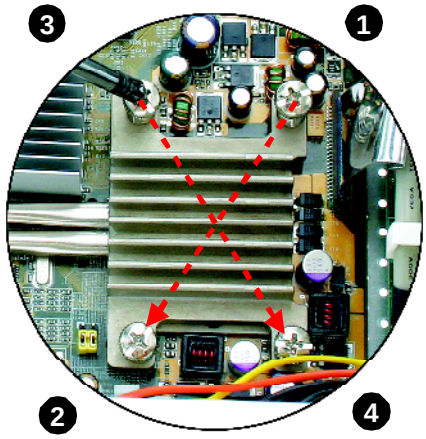
2. Unplug the fan power connector.



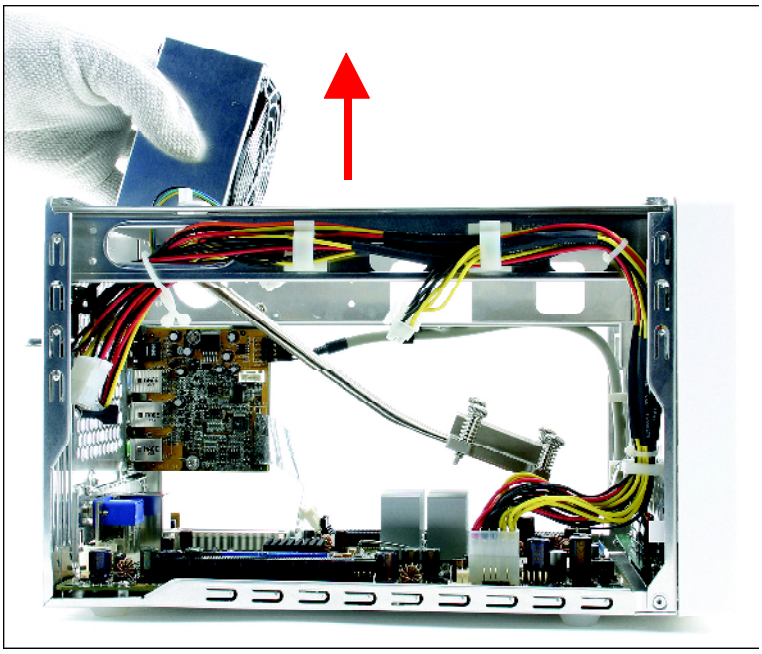


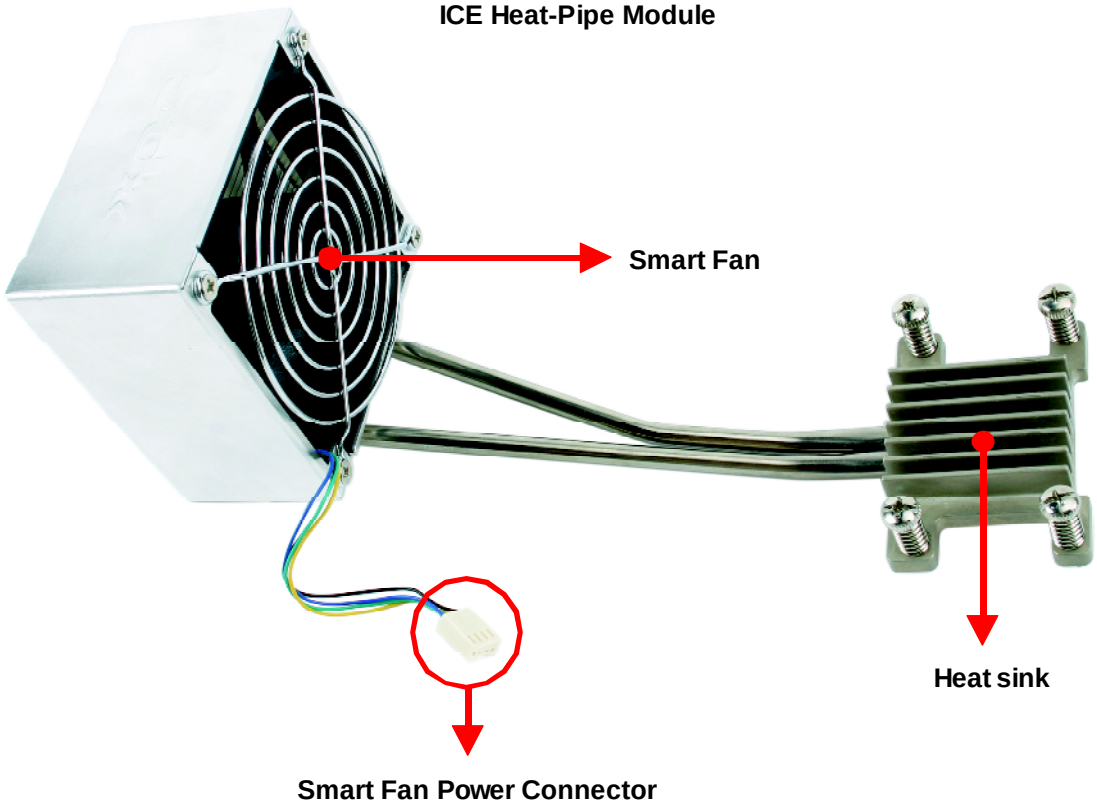
3. Unfasten the four attachment screws.





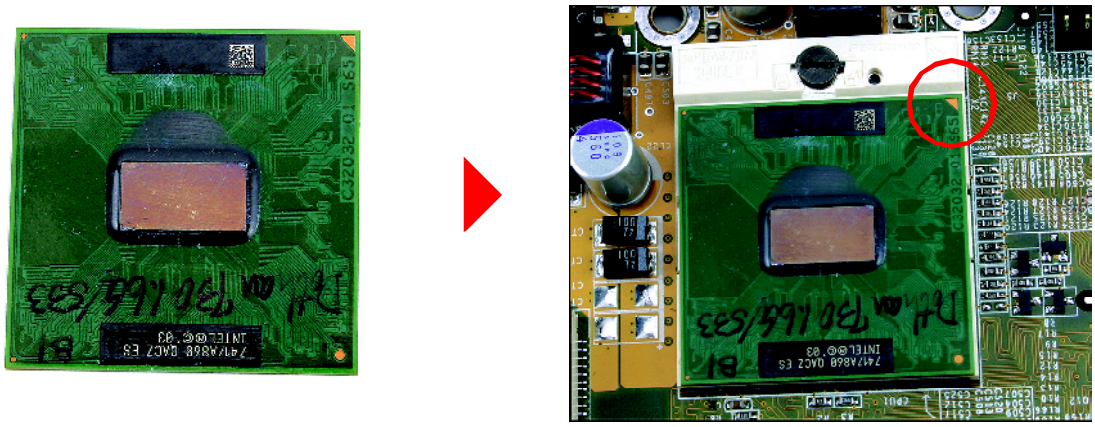
4. Remove the ICE module from the chassis and put it aside.



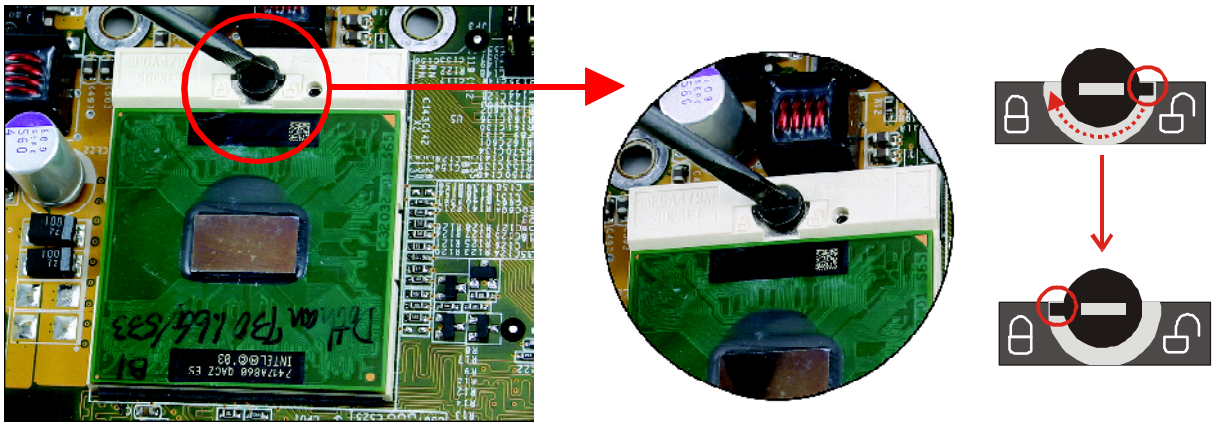


■ 2.2.2 Install the CPU

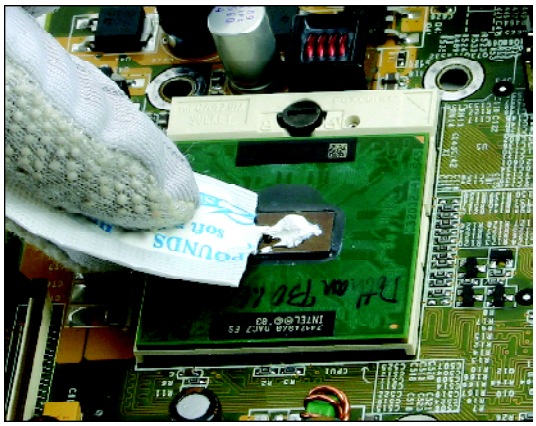
1. Match the yellow triangle on a corner of the CPU with the triangle on the socket corner and gently insert the CPU into the socket.



2. Use a screwdriver to screw the CPU on the CPU Socket as indicated in the follwing graph.

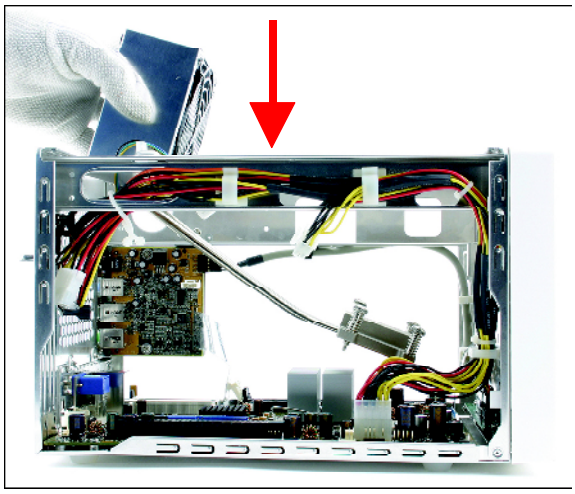


3. Spread an even layer of Heatsink compoundon the CPU die.

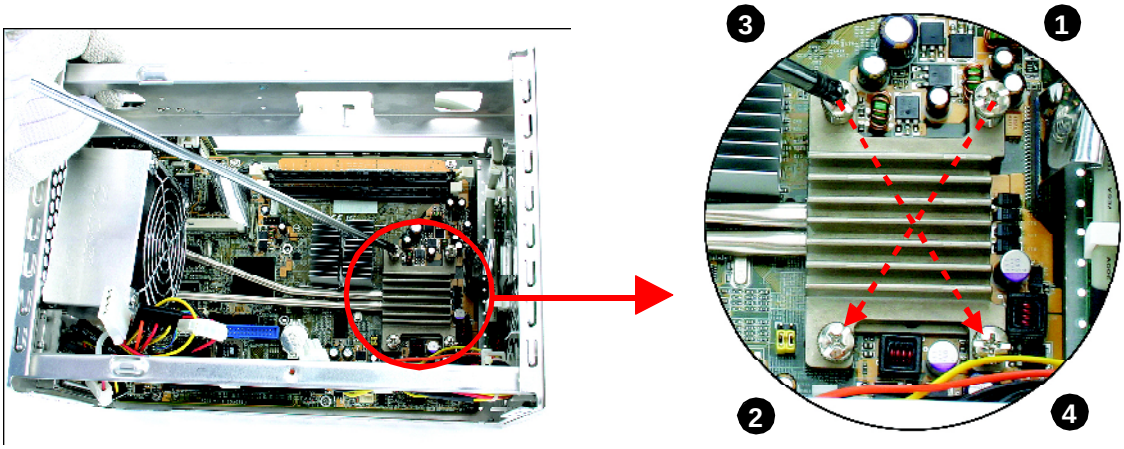


■ 2.2.3 Install the ICE Module

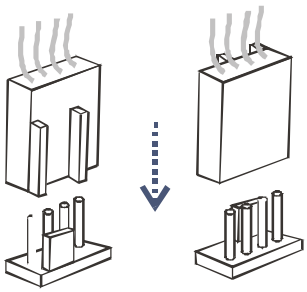
1. Place the ICE the module on top of the CPU and align the spring loaded screws with the mainboard mounting holes.

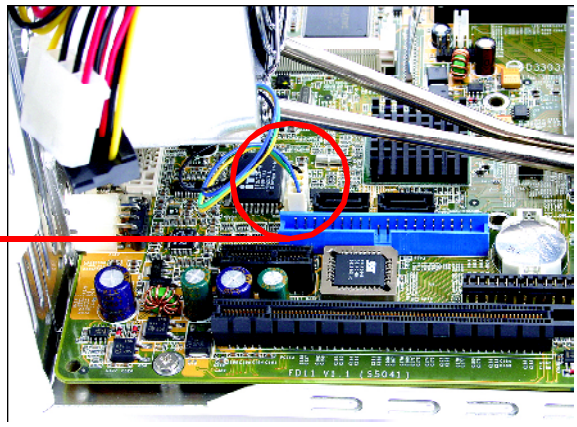


2. Screw the ICE module to the mainboard. Note to press down on the opposite diagonal corner while tightening each screw.

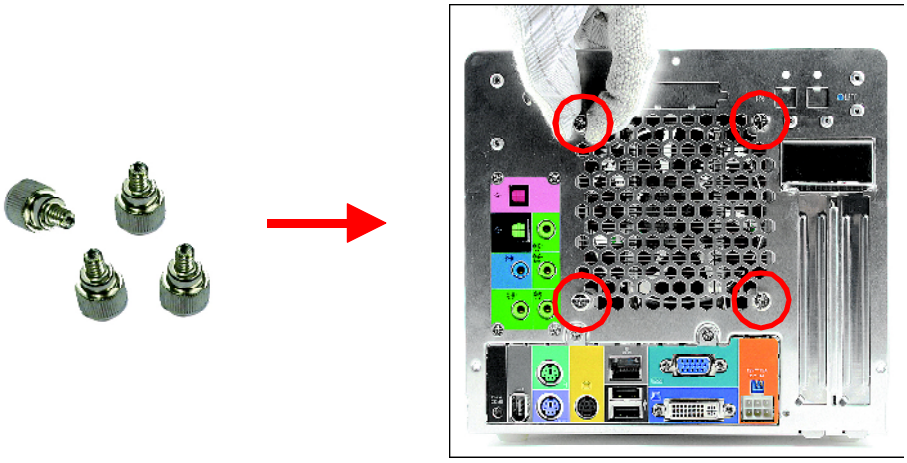


3. Attach the fan power connector to the extension cable connected to the mainboard.





4. Fasten the Smart Fan to the chassis with the four thumbscrews.



■ 2.3 DDR2 Installation

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

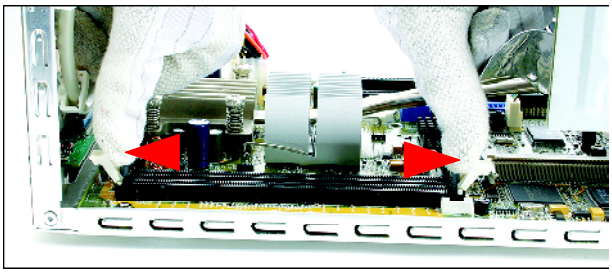
TOTAL 2 DIMM in Single or Dual Channel Mode up to 2GB and 1GB per DIMM						
Density	**256 Mbit**		**512 Mbit**		**1024 Mbit**	
Device Width	X8	X16	X8	X16	X8	X16
Single Side	256MB	128MB	512MB	256MB	1024MB	512MB
Double Side	512MB	N/A	1024MB	N/A	N/A	N/A

Note : ***1. Maximum installable memory is 2GB.***
2. Double-side X16 DDR2 chips are not supported.
3. Registered DIMMs are not supported.
4. Only unbuffered without ECC DIMM are supported.
5. Does not support X4 DDR2.

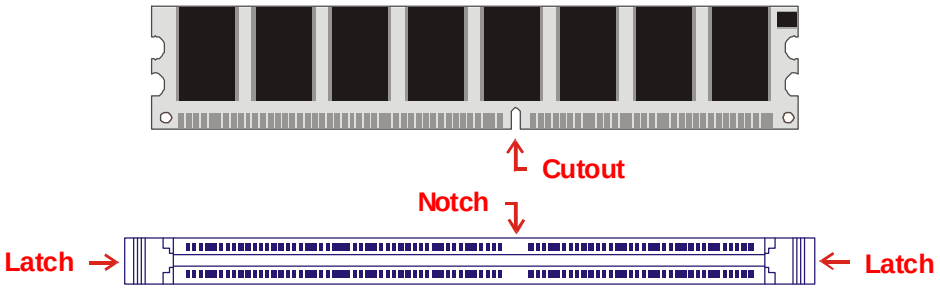
Note : No jumper settings are required to configure memory.
The system BIOS utility automatically detects the memory settings.
Check the total installed system memory value in the BIOS menu.

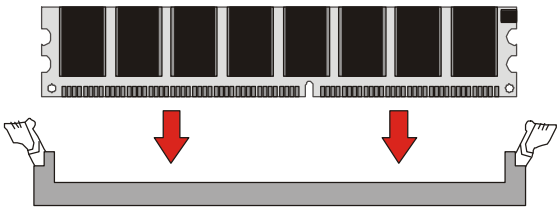
Install a DDR2 module in DIMM1/DIMM2.

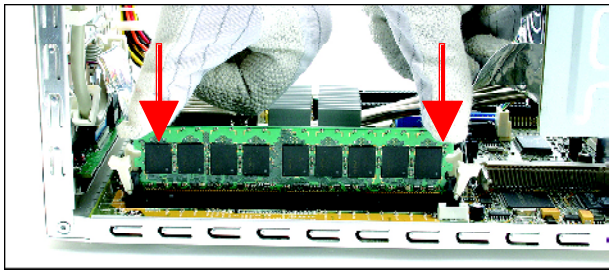
1. Unlock the DIMM latch.



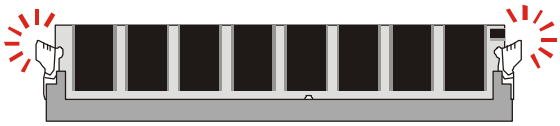
2. Align the DDR2 module's cutout with the DIMM slot notch.
   Slide the DDR2 module into the DIMM slot.

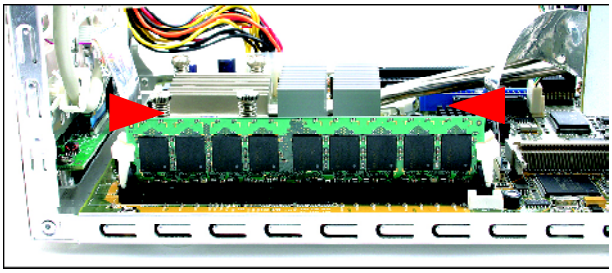






3. Check that the latches are closed, and the DDR2 module is firmly installed.

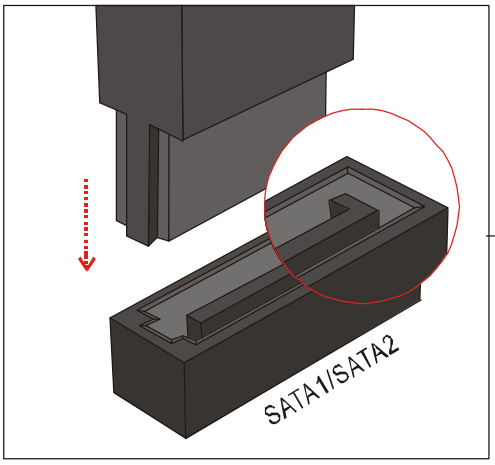


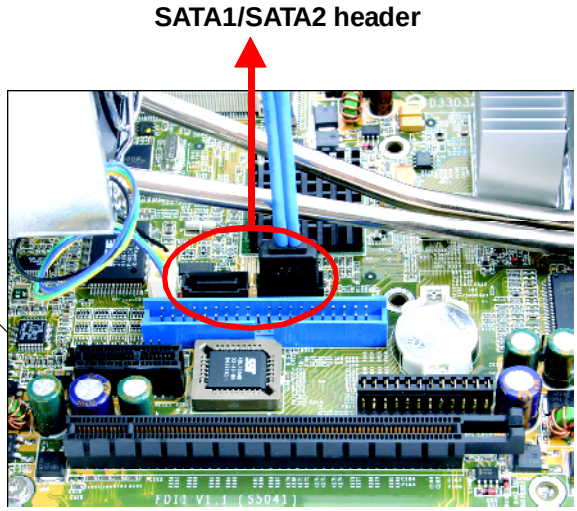


■ 2.4 Cable and Rack Installation

■ 2.4.1 Install a Serial ATA HDD Cable

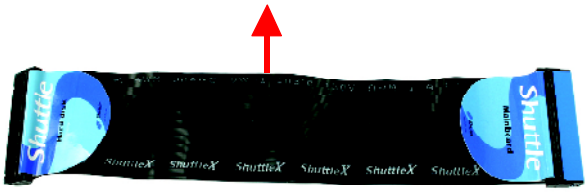
1. Take the Serial ATA cable from accessory box and plug it in the SATA1/2 header.

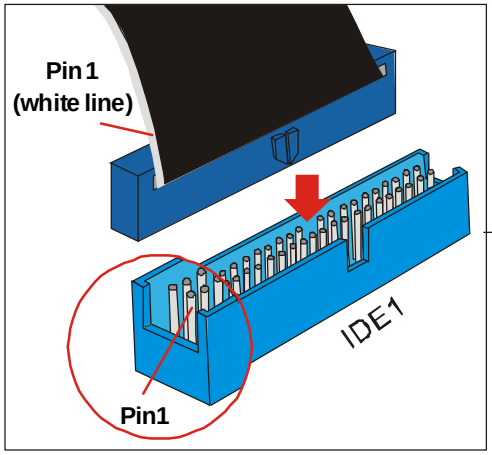


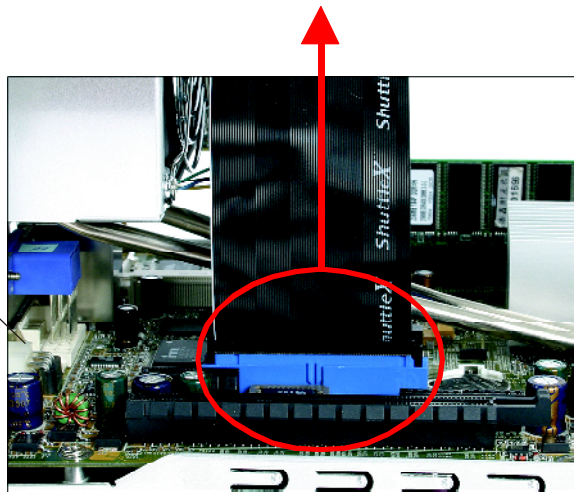


■ 2.4.2 Install the IDE Cable

1. Take out the triple head IDE cable from accessory box. Connect the end labelled mainboard to the IDE1 header.

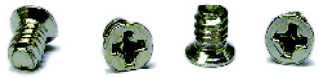




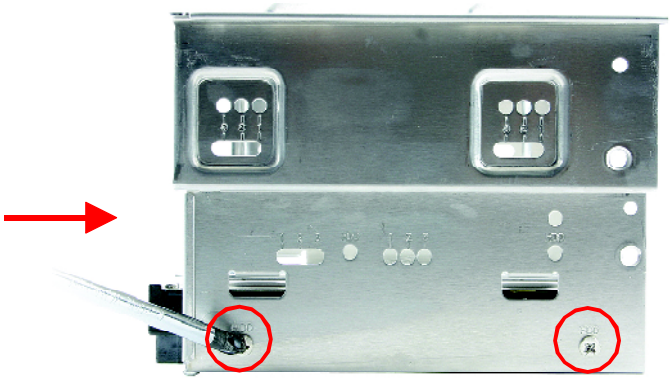


■ 2.4.3 Install the Rack

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

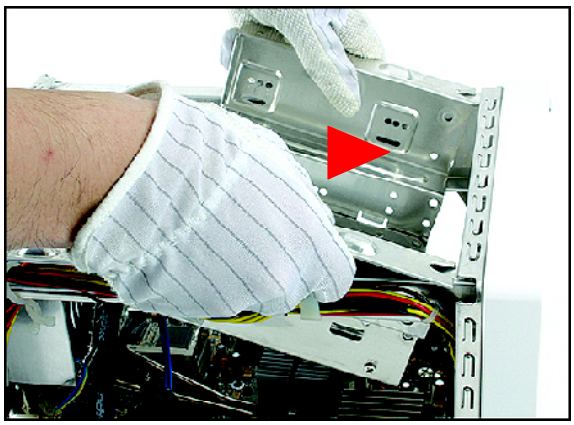


Screws (HDD)

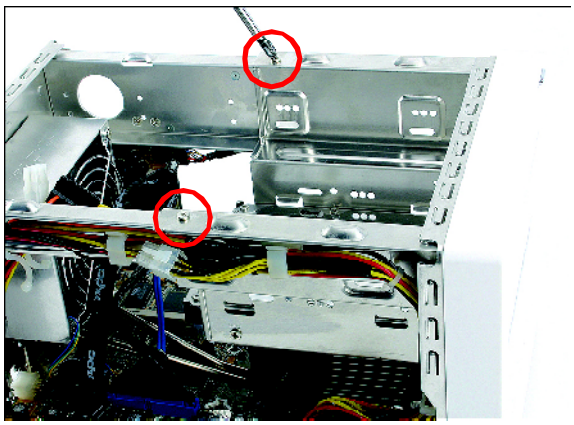


Note : Secure with two screws on each side.

2. Place the rack in the chassis.



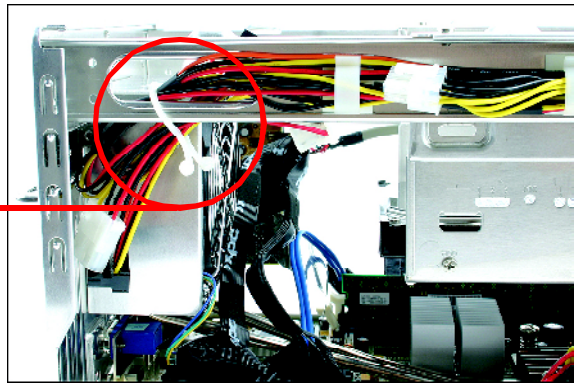
3. Refasten the rack.



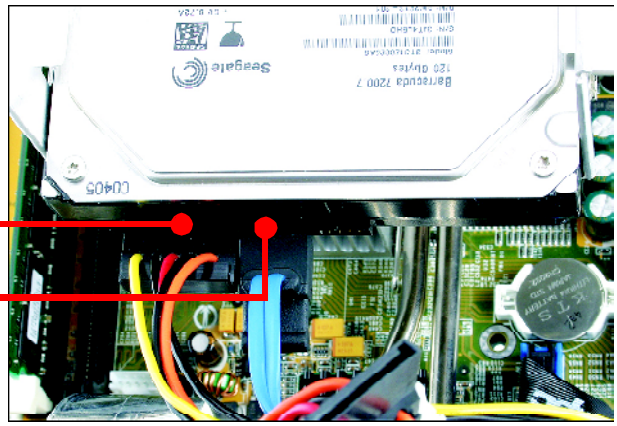
■ 2.5 Peripheral Installation

■ 2.5.1 Install the Serial ATA HDD

1. Loosen the purse lock and separate the IDE HDD/Optical Drive power cable (white) and Serial ATA HDD power cable (black).

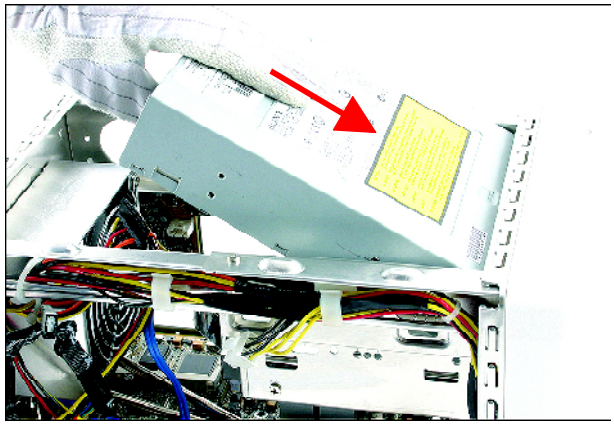


2. Connect the Serial ATA and power cables to the HDD.

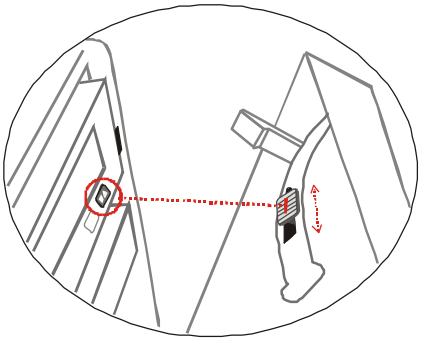


■ 2.5.2 Install an Optical Drive

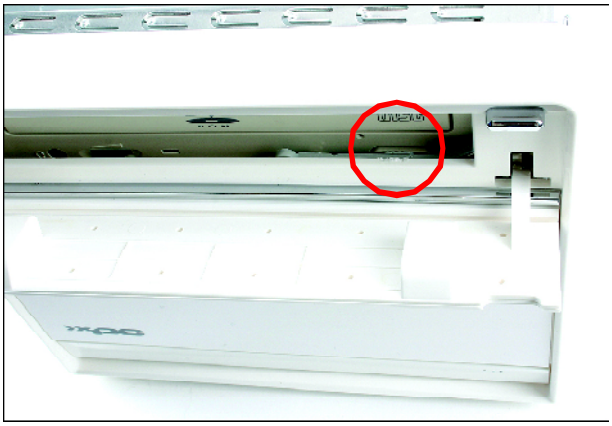
1. Slide the optical drive into the chassis.



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.



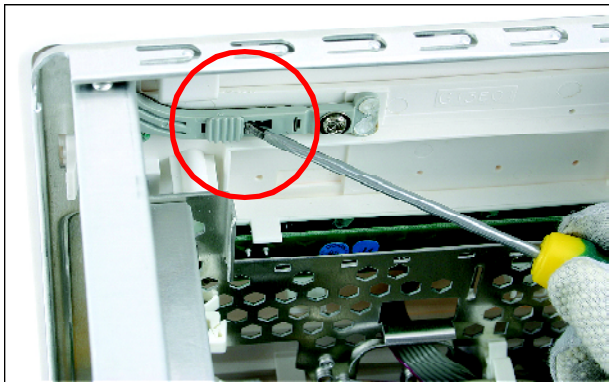
Adjust Control rod



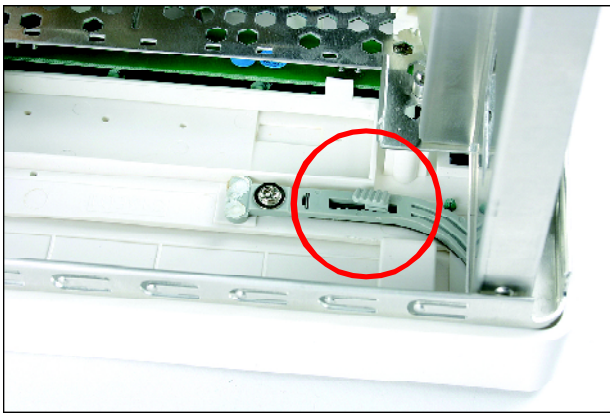
3. Please choose the control rod of CD-DROM suitable for you, if your CD-ROM can't eject.

1.8 mm

1.2 mm

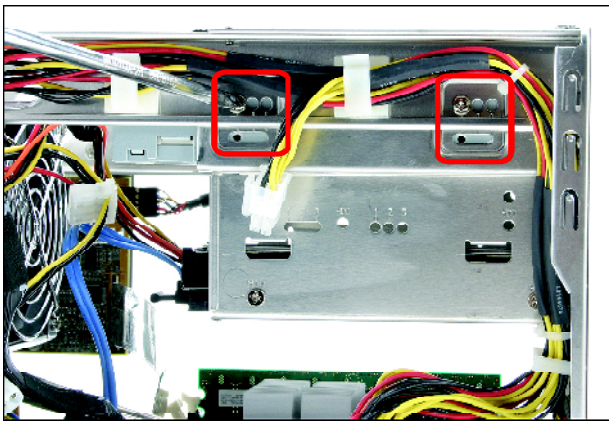


4. Take out the control rod from the accessory box and insert it in the slot as show.



5. Fasten the four side screws.

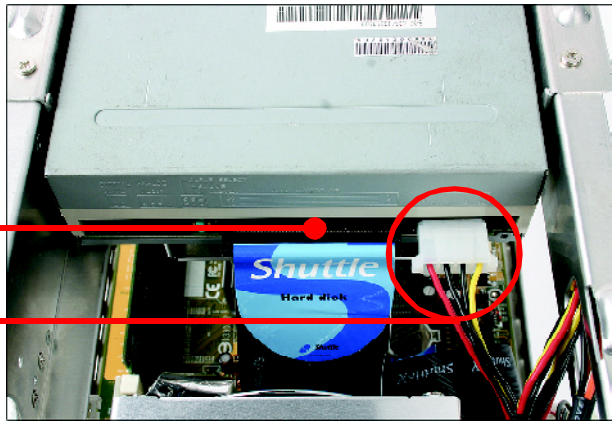
Screws (Optical Drive)



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

Optical Drive Cable

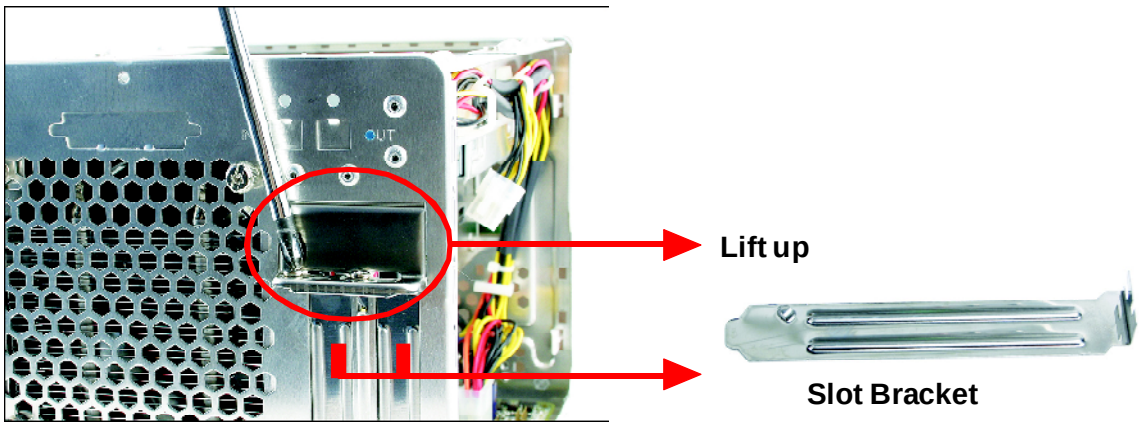
Optical Drive Power Cable



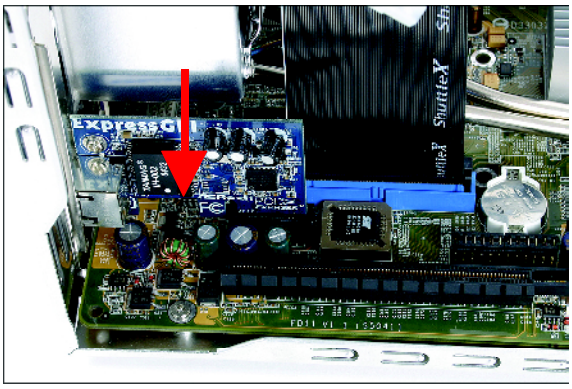
■ 2.6 Accessories Installation

■ 2.6.1 Install PCI Express x1/ PCI Express x16 Card

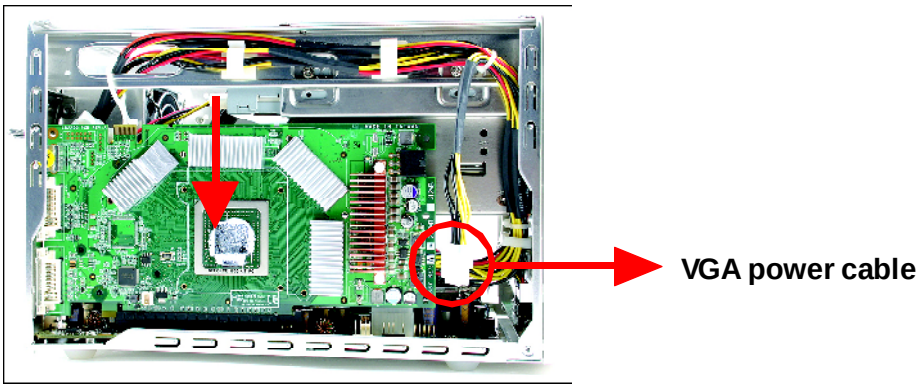
1. A PCI Express x1/PCI Express x16 card will be used to demonstrate the installation procedure. Unfasten expansion slot bracket xcrews and remove back panel braket. Put it aside.



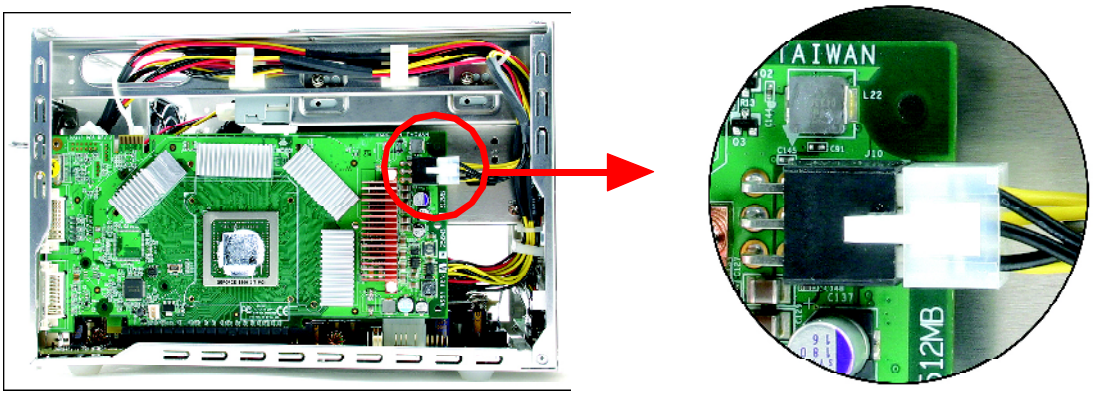
2. Install the PCI Express x1 card into the PCI Express x1 slot.



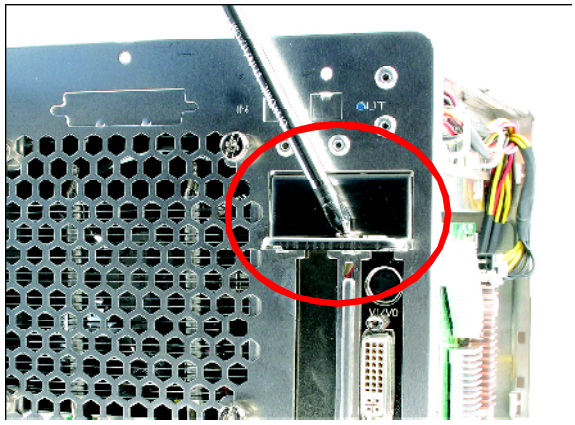
4. As shown Install the PCI Express x16 card into the PCI Express x16 slot.



5. Connect the VGA power cable as shown below.

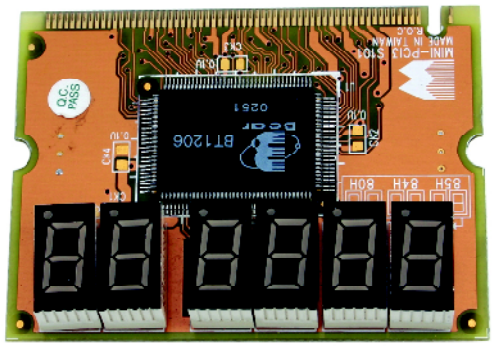


6. Secure the bracket.

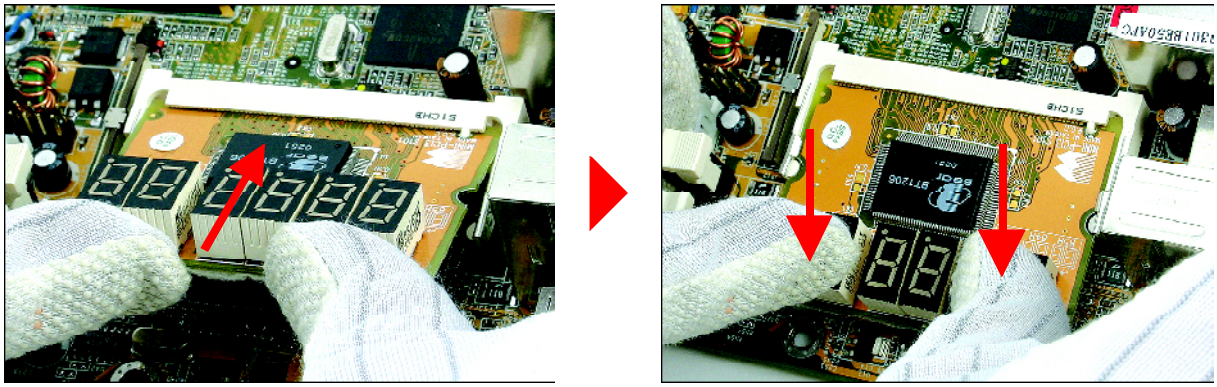


■ 2.6.2 Install Mini PCI Card

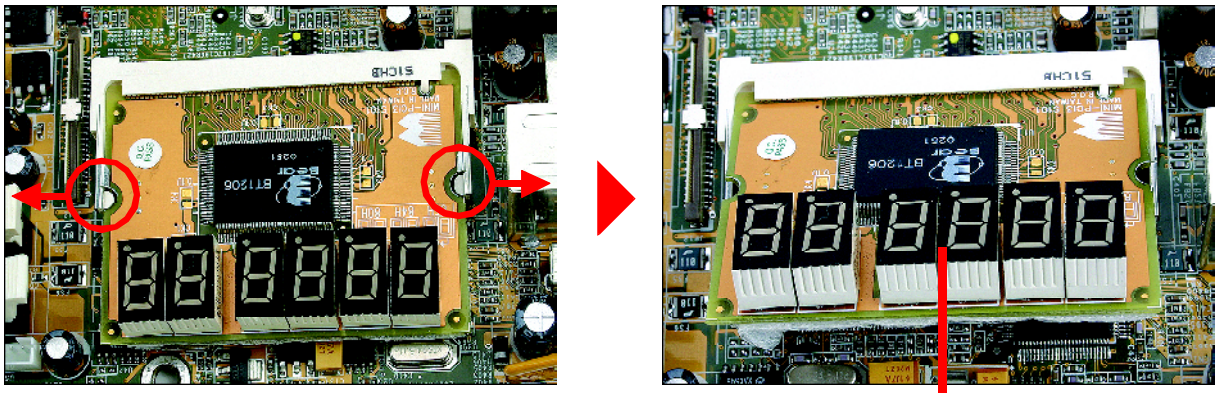
1. A mini PCI card will be used to demonstrate the installation procedure.



2. Install the mini PCI card into the mini PCI slot.



3. If you want to remove the mini PCI card, as shown remove the mini PCI card.



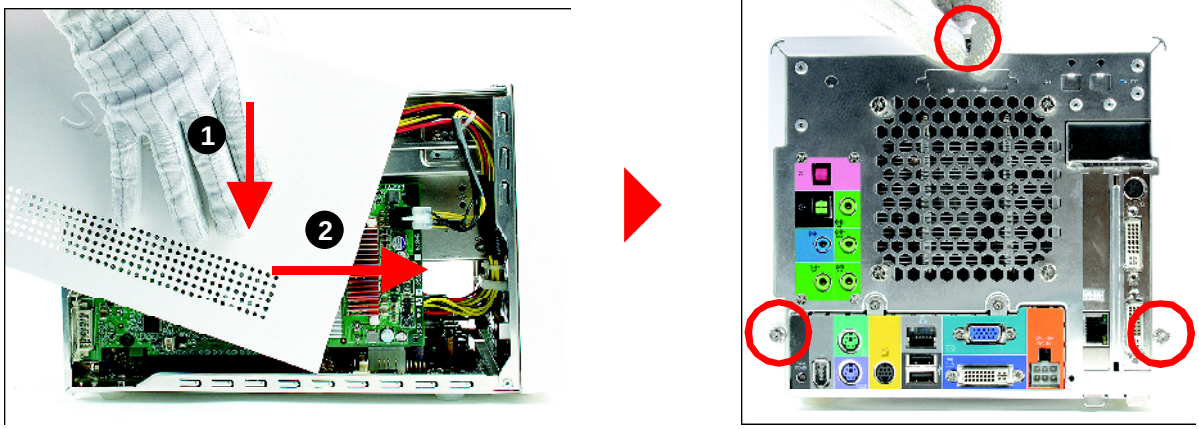
Unlock the two mini PCI slot latchs

Remove the mini PCI card

■ 2.7 Final Touches

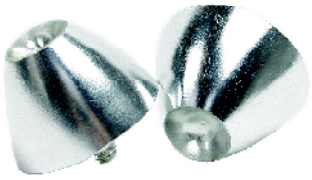
■ 2.7.1 Close the Chassis Cover

1. Replace the cover and refasten the thumbscrews.



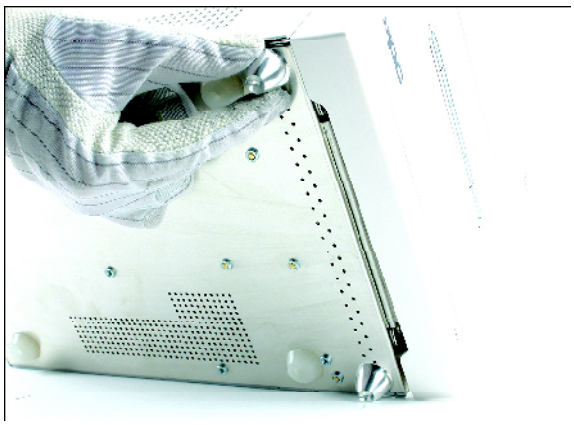
■ 2.7.2 Install Front Feet

1. Take out the two front feet from the accessory box.



Front feet

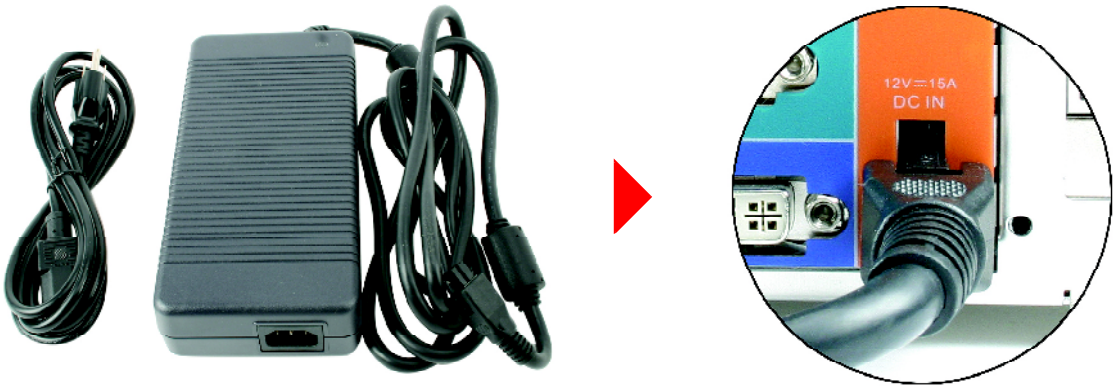
2. Screw the front feet to the base of the chassis.



■ 2.7.3 Complete

■ 2.7.4 Install Power Adapter

1. Take out the external power adapter.
   Plug the external power adapter to the DC IN port.



2. Finish the installation of the external power adapter.

■ 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.

■ 2.B Use Hot-Key

Note : You can use "Hot keys" select output to Monitor, DVI or S-Video model under Windows :

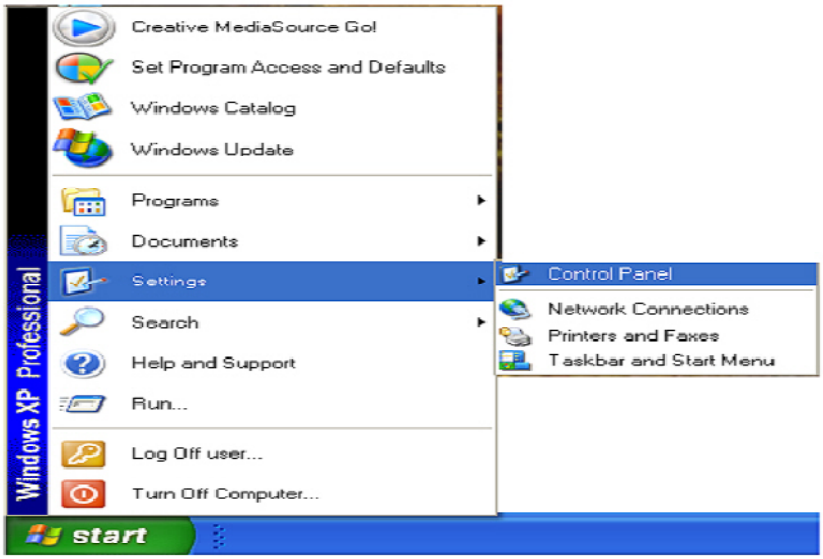
(1) < Ctrl > + < Alt > + F1 → Monitor

(2) < Ctrl > + < Alt > + F2 → Television

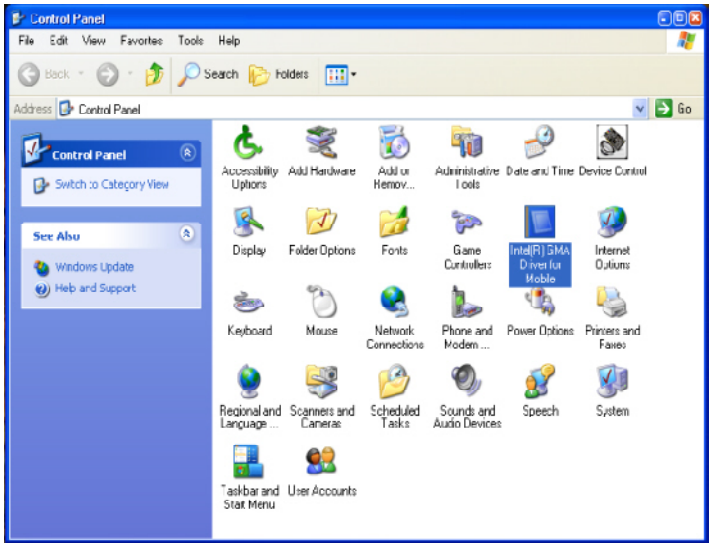
(3) < Ctrl > + < Alt > + F4 → DVI

1. If you went to use "Dual Display Model" that you'll select :

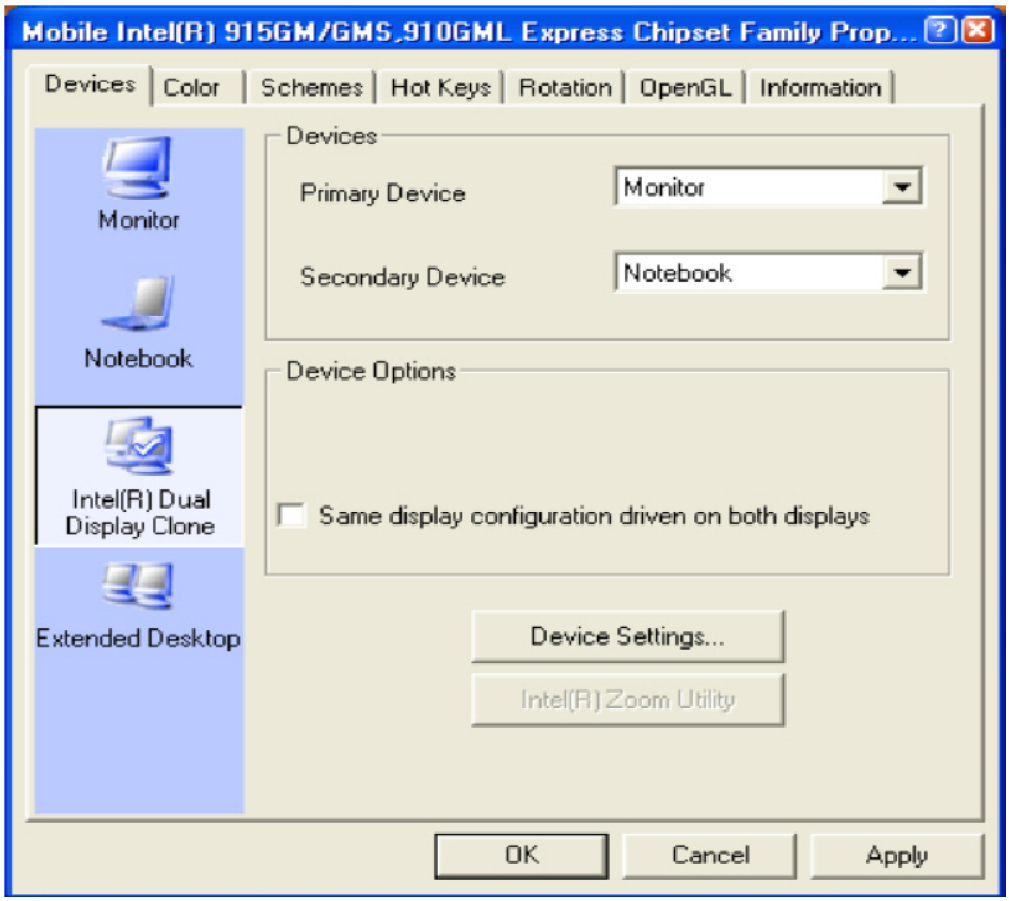
STEP 1



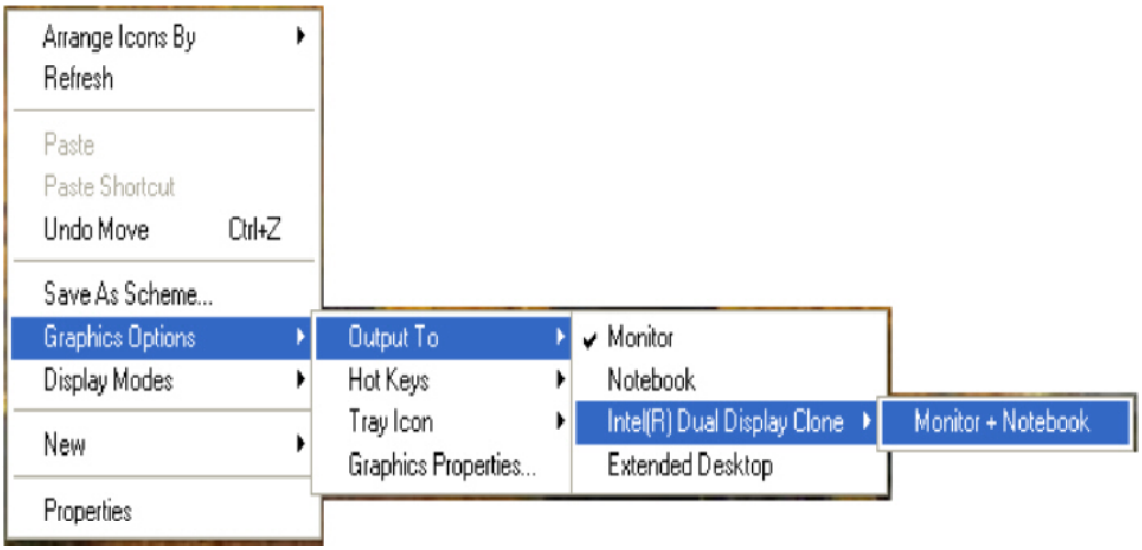
STEP 2



STEP 3



2. Use "Mouse Right Key" select:



3 Driver and Software Installation

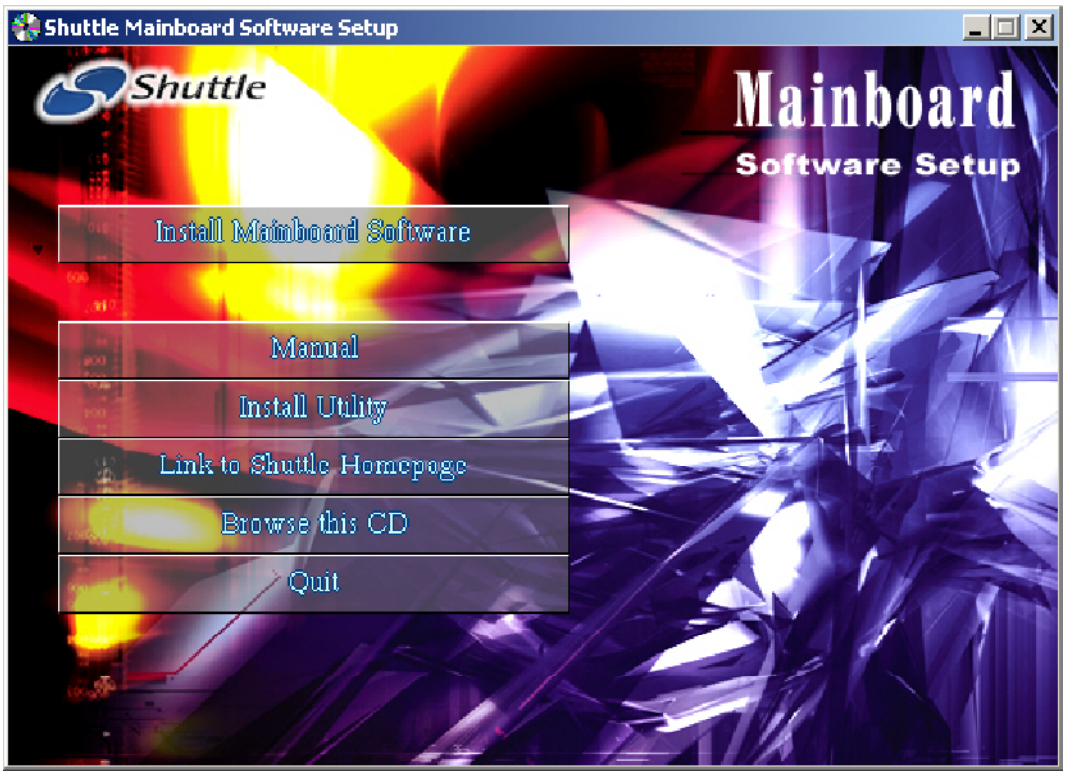
■ 3.1 Mainboard Driver CD

Note : The CD contents attached in SD11 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 -** Intel Chipset Driver, Intel VGA Driver, Creative Audio Driver, Broadcom Giga LAN Driver, Broadcom BACS, Intel USB 2.0 Driver, DirectX9 Utility.
- **Install Utility** - Install Acrobat Reader, WinFlash Utility.
- **Manual** - SD11G5 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 Intel Chipset Driver**
- **Install Intel VGA Driver**
- **Install Creative Audio Driver**
- **Install Broadcom Giga LAN Driver**
- **Install Broadcom BACS**
- **Install Intel USB 2.0 Driver**
- **Install DirectX9 Utility**

BIOS Settings

The SD11 BIOS ROM has a built-in Setup program that allows users to modify basic system configuration. This information is stored in battery-backed RAM so that it retains Setup information even if the system power is turned off.

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

System date and time

Hardware execution sequence

Power management functions

Allocation of system resources

Enter the BIOS

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

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

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

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

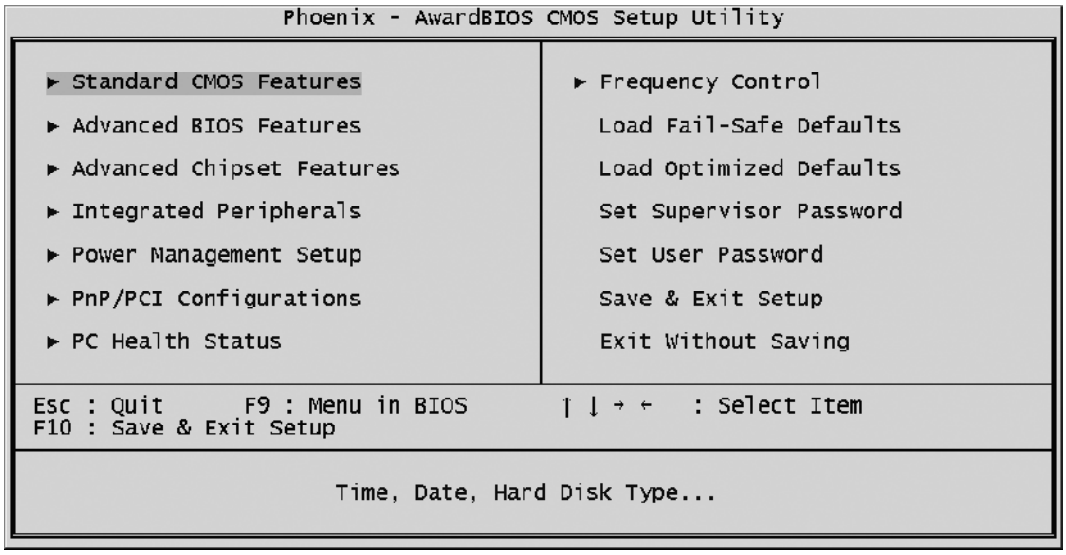
Note 2. If you do not press the keys in time and system does not boot, the screen will prompt an error message, and you will be given the following options:

"Press F1 to Continue, DEL to Enter Setup"

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

The Main Menu

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



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

Setup Items

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

Standard CMOS Features

Use this menu for basic system configuration.

Advanced BIOS Features

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

Advanced Chipset Features

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

Integrated Peripherals

Use this menu to specify your settings for integrated peripherals.

Power Management Setup

Use this menu to specify your power management settings.

PnP / PCI Configurations

This entry appears if your system supports PnP / PCI.

PC Health Status

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

Frequency Control

Use this menu to specify your settings for frequency/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

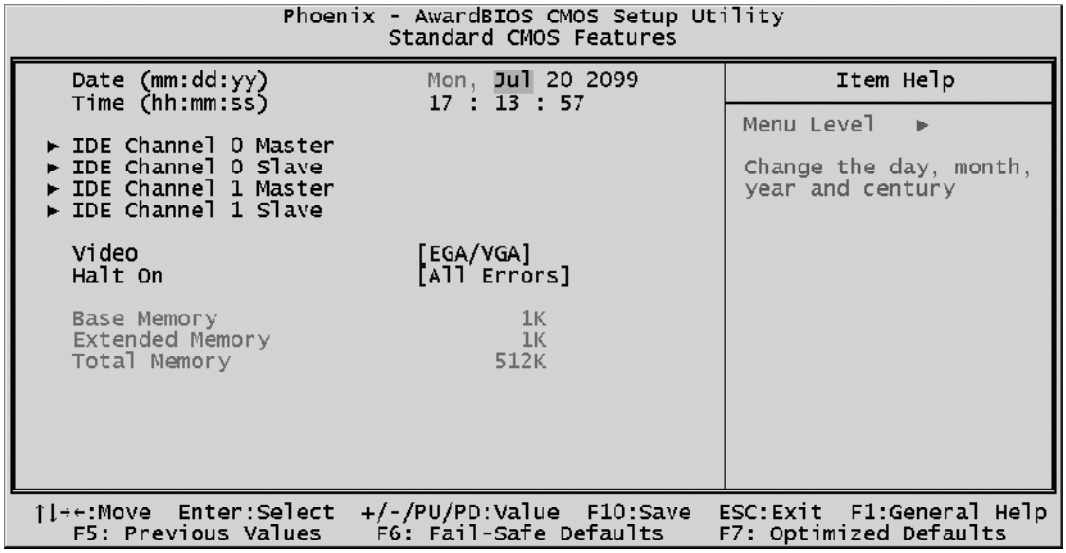
Save CMOS value changes in CMOS and exit from setup.

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.



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 0/1 Master/Slave

Options are in its sub-menu.

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

Drive A

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

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

Video

Select the default video device.

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

Halt On

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

- The choice: All Errors, No Errors, or All, But Keyboard.

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 0/1 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

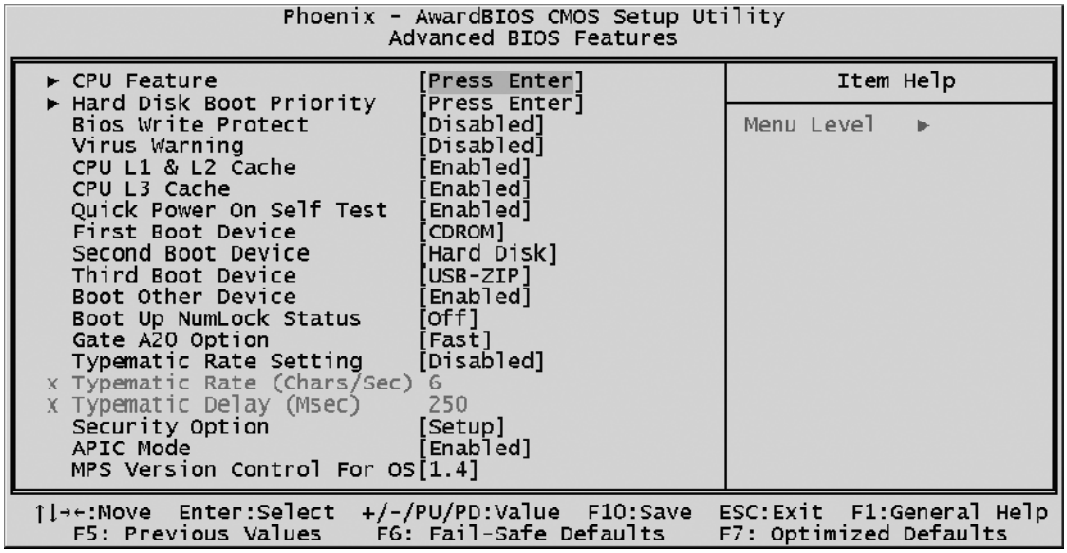
Number of sector per track.

- 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.



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.

Note: 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.

Note: CPU support TM2, item appear.

Execute Disable Bit

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

- The Choice: Enabled or Disabled.

Note : CPU support, Execute Disable Bit item appear.

Hard Disk Boot Priority

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

Bios Write Protect

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

- The choice: Enabled or Disabled.

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 L1&L2&L3 Cache

All processors that can be installed in this mainboard use internal level1 (L1) , external 2(L2) and (L3) cache memory to imporve performance.

Leave this item at the default value for better performance.

- The choice: Enabled or Disabled.

Note : CPU support, L3 item appear.

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, CDROM, ZIP100, USB-FDD, USB-ZIP,USB-CDROM, LAN, Disabled or Floppy.

Boot Other Device

If BIOS can't load O.S. from First/Second/Third boot device you select above, BIOS will search other devices and attempt to load O.S..

- The choice: Enabled or Disabled.

Boot Up NumLock Status

Selects power on state for NumLock.

- The choice: Off or On.

Gate A20 Option

This entry allows you to select how the Gate A20 is handled. The gate A20 is a device used for above 1MByte of address memory. Initially, the gate A20 was handled via a pin on the keyboard. Today, while a keyboard still provides this support, it is more common and much faster in setting to fast for the system chipset to provide support for gate A20.

- The choice: Normal or Fast.

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.

Note : 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.

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

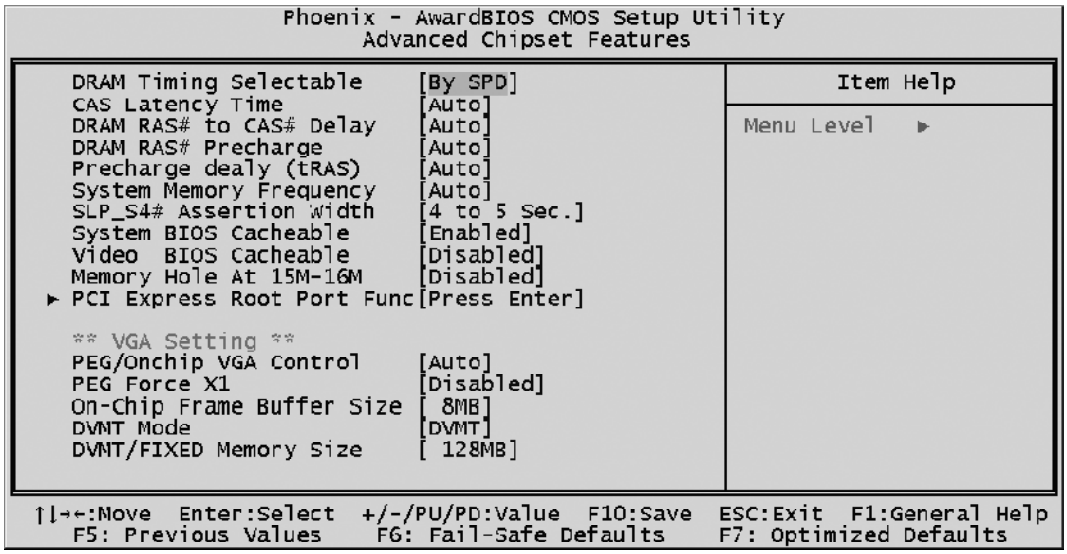
Selects the operating system multiprocessor support version.

- 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.



DRAM Timing Selectable

The value in this field depends on performance parameters of the installed memory chips(DRAM). It is recommended that you don't change the value from the factory setting unless you install new memory that has a different performance rating than the original DRAMs.

➢ The Choice: Manual or BySPD

CAS Latency Time

When synchronous DRAM is installed, the number of CAS latency clock cycles depends on the DRAM timing. It is recommended don't change this field from the default value specified.

➢ The Choice: Auto, 3, 4 or 5.

DRAM RAS # to CAS # Delay

This field lets you insert a timing delay between the CAS and RAS strobe signals when DRAM is written to, read from, or refreshed. Faster performance is gained at high speed, more stable performance, at low speed. This field is applied only when synchronous DRAM

is installed in the system.

- The Choice: Auto, 2, 3, 4, or 5.

DRAM RAS # Precharge

If an insufficient number of cycles is allowed for the RAS to accumulate its charge before DRAM refresh, the refresh may not complete, and the DRAM may fail to retain data. High gives faster performance; and Slow gives more stable performance. This field is applicable only when synchronous DRAM is installed in the system.

- The Choice: Auto, 2, 3, 4, or 5.

Precharge delay (tRAS)

This item allows you to set Precharge delay (tRAS).

- The Choice: 4 ~ 15 or Auto.

System Memory Frequency

This item allows you to set System Memory Frequency.

- The Choice: 333MHz, 400MHz, 533MHz or Auto.

SLP_S4# Assertion Width

This item allows you to set SLP_S4# Assertion Width.

- The Choice: 1 to 2 Sec., 2 to 3 Sec., 3 to 4 Sec., or 4 to 5 Sec..

System BIOS Cacheable

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

- The Choice: Enabled or Disabled.

Video BIOS Cacheable

Selecting Enabled allows caching of the video BIOS, 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.

Memory Hole At 15M-16M

You can reserve this area of system memory for ISA adapter ROM. When this area is reserved, it can't be cached. The user information of peripher

als that need to use this area of system memory usually discusses their memory requirements.

➢ The Choice: Enabled or Disabled.

PCI Express Root Port Func

Press <Enter> to set the PCI Express Root Port Func.

PCI Express Port 1

This item allows you to set PCI Express Port 1.

➢ The Choice: Auto, Disabled, or Enabled.

PCI-E Compliancy Mode

This item is select PCI-E Compliancy Mode.

➢ The Choice: v1.0a, or v1.0.

** **VGA Setting** **

PEG/Onchip VGA

Control

This item allows you to decide to activate whether PEG slot or Onchip VGA first.

➢ The choice: Auto, Onchip VGA or PEG Port .

PEG Force X1

This item allows you to force PEG link X1.

➢ The Choice: Enabled, or Disabled.

Note : When install the pcie card, PEG Force X1 item appear.

On-Chip Frame Buffer Size

This item allows you to set the onboard VGA share memory size.

➢ The Choice: 1MB or 8MB.

Note : When use On-chip VGA, On-Chip Frame Buffer Size item appear.

DVMT Mode

This item allows you to set the DVMT Version.

- The Choice: DVMT, BOTH or Fixed.

Note : When use On-chip VGA, DVMT Mode item appear.

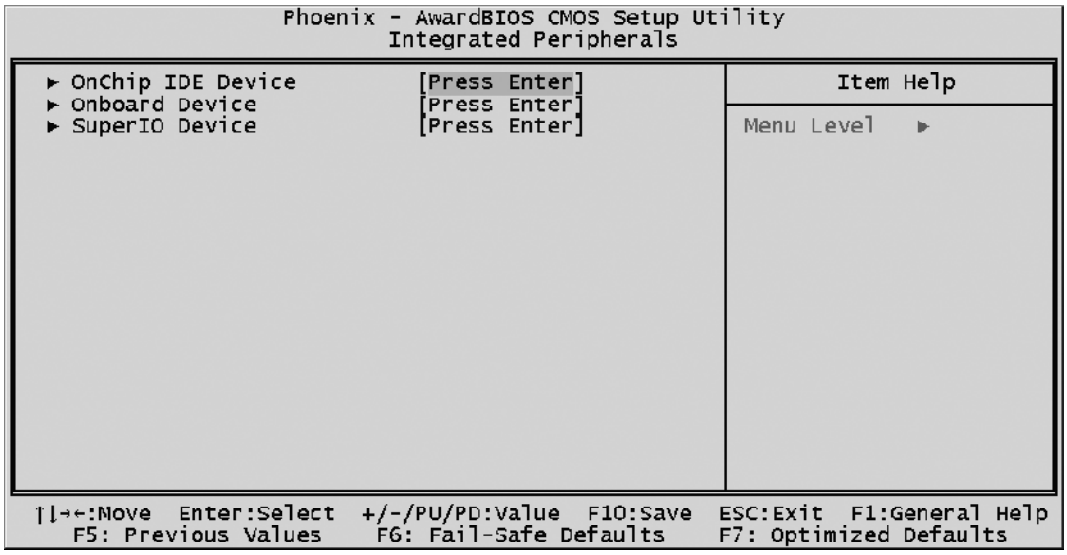
DVMT/FIXED Memory Size

This item allows you to set the DVMT/FIXED Memory Size.

- The Choice: 64MB or 128MB.

Note : When use On-chip VGA, DVMT/FIXED Memory Size item appear.

Integrated Peripherals



On-Chip IDE Device

Option are in its sub-menu.

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

IDE HDD Block Mode

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

➢ The choice: Enabled, or Disabled.

On-Chip Primary/Secondary PCI IDE

Use these items to enable or disable the PCI IDE channels that are integrated on the mainboard.

➢ The choice: Enabled or Disabled.

IDE Primary/Secondary Master/Slave PIO

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

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

IDE Primary/Secondary Master/Slave UDMA

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

If you install a device that supports UltraDMA, change the appropriate item on this list to Auto. You may have to install the UltraDMA driver supplied with this mainboard in order to use an UltraDMA device.

- The Choice: Auto or Disabled.

*** **On -Chip Serial ATA Setting** ***

SATA Mode

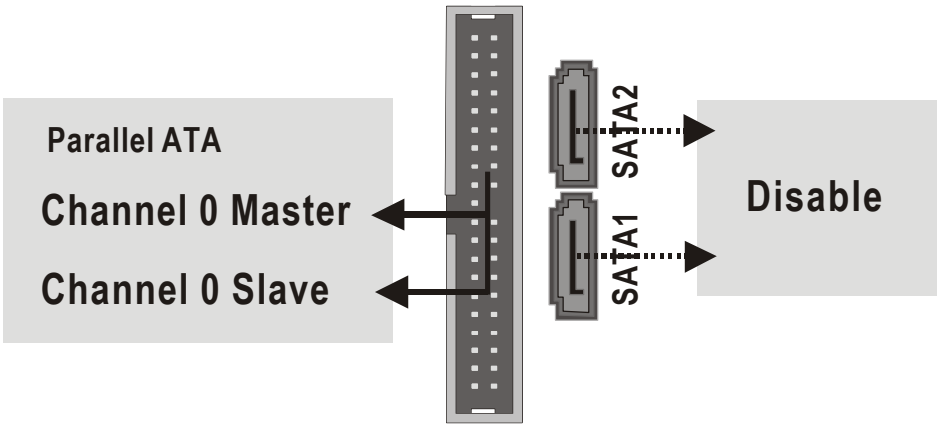
This item allows you to set the SATA Mode.

- The choice: IDE.

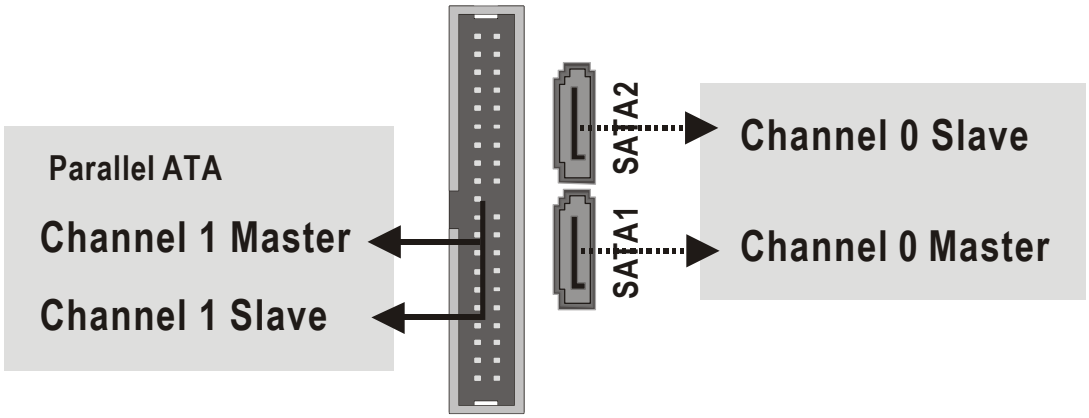
On-Chip Serial ATA

- The Choice: Disabled, Auto, Combined Mode, Enhanced Mode or SATA Only.

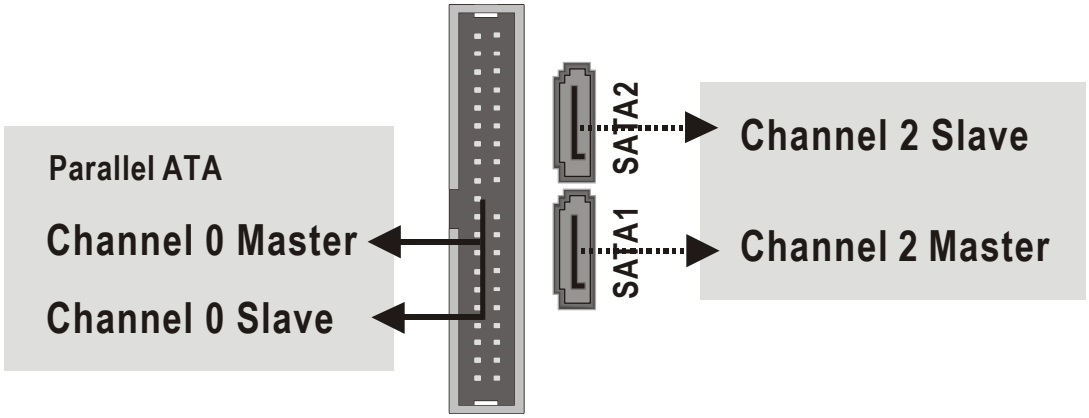
Disabled : Disabled SATA Controller.



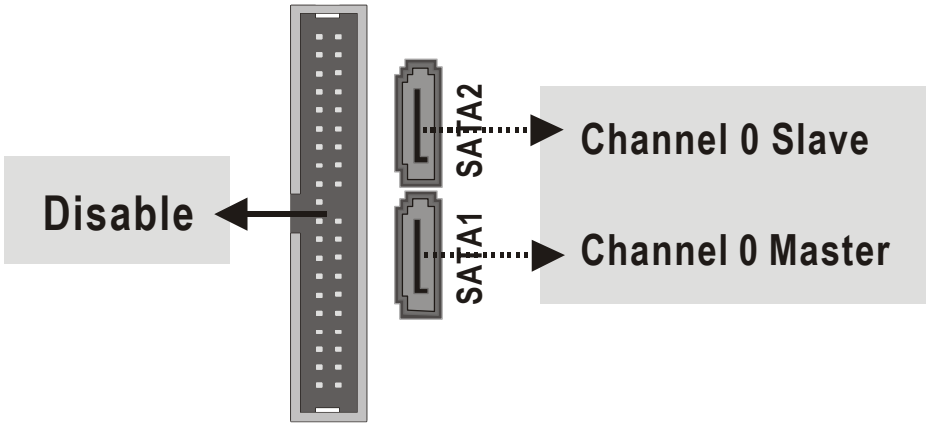
Combined Mode: PATA and SATA are combined. Max.of 2 storage drives in each channel.



Enhanced Mode: Enable both SATA and PATA. Max.of 4 storage (2 IDE and 2 SATA) drives are supported.



SATA Only: SATA is operating in legacy mode.



Onboard Device

Option are in its sub-menu.

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

USB Controller

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

- The choice: Enabled or Disabled.

USB 2.0 Controller

Select Enabled if your system contains a Universal Serial Bus (USB) 2.0 controller and you have USB peripherals.

- 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 Parallel Port

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

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

Parallel Port Mode

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

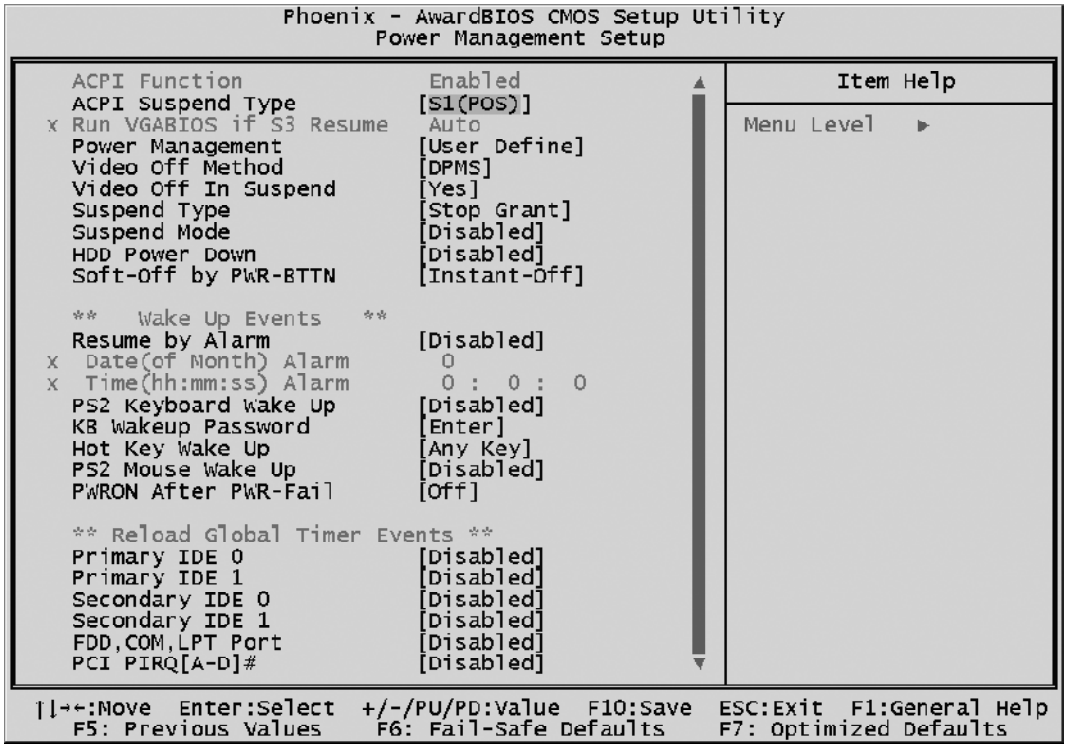
- The choice: SPP, EPP, ECP, or ECP+EPP.

ECP Mode Use DMA

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

- The choice: 1 or 3.

Power Management Setup



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(Suspend to RAM) sleep state.

- The choice: Auto, Yes or No.

Power Management

This item allows you to decide the timing to enter suspend mode.

- The choice: User Define, Min Saving, 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	Initial display power management signaling.

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

Video Off In Suspend

This item determines the manner in which the monitor is blanked.

- The choice: Yes or No.

Suspend Type

This item allows you to select the Suspend Type.

- The choice: Stop Grant or PwrOn suspend.

Suspend Mode

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

- The choice: Disabled, 1Min, 2Min, 4Min, 8Min, 12Min, 20Min, 30Min, 40Min, or 1Hour.

HDD Power Down

When this item enabled and after the set up time of system inactivity, the hard disk drive will be powered down while all other devices remain active.

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

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.

*** **Wake Up Events** ***

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.

PS2 Keyboard Wake Up

This item allows you to set the PS2 Keyboard Wake Up On function.

Set PS2 Keyboard Wake Up system from S3/S4/S5.

- The choice: Disabled, Password, or Hot Key.

KB Wake Up Password

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

Press "Enter" to set password (1 to 8 characters).

- Press" Enter" to set Password.

Hot Key Wake Up

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

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

PS2 Mouse Wake Up

This item allows you to enable or disable the PS2 Mouse Power On.

- The choice: Disabled or Enabled.

PWRON After PWR-Fail

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

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

*** **Reload Global Timer Events** ***

Global Timer (power management) events are I/O events whose occurrence can prevent the system from entering a power saving mode or can awaken the system from such as a mode. In effect, the system remains

alert for anything that occurs to a device that is configured as Enabled, even when the system is in a power-down mode.

Primary/Secondary IDE 0/1

When these items are enabled, the system will restart the power-saving time out counters when any activity is detected on any of the drives or devices on the primary or secondary IDE channels.

- The choice: Disabled or Enabled.

FDD, COM, LPT Port

When this item is enabled, the system will restart the power-saving timeout counters when any activity is detected on the floppy disk drive, serial ports, or the parallel port.

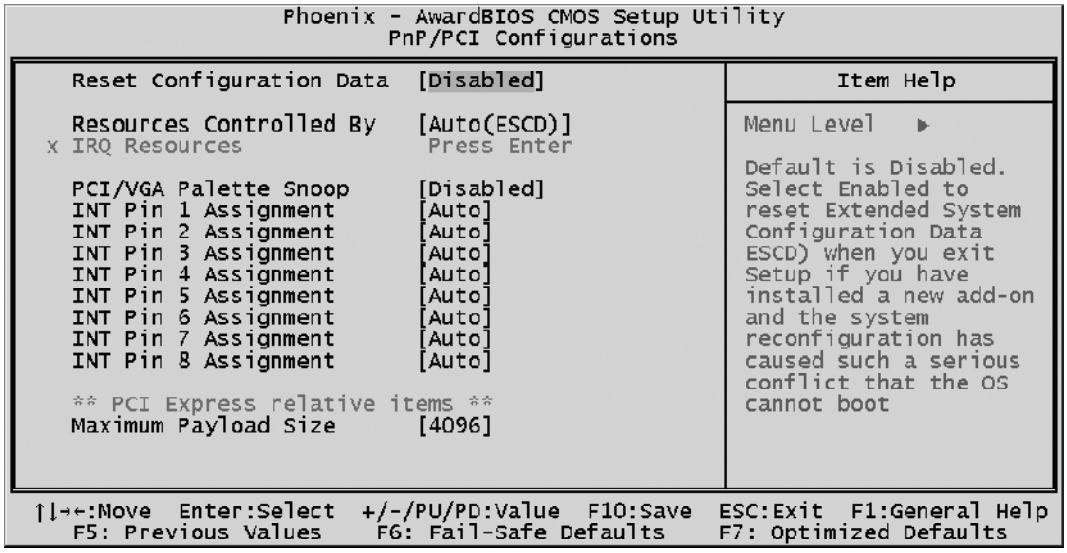
- The choice: Disabled or Enabled.

PCI PIRQ [A-D] #

When this item is disabled, any PCI device set as the Master will not power on the system.

- The choice: Disabled or Enabled.

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.

Reset Configuration Data

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

- The choice: Enabled or Disabled .

Resource controlled By

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

If you set this field to "manual" , choose specific resources by going into

each of the sub-menu that follows this field (a sub-menu is proceeded by a ">").

- The choice: Auto(ESCD) or Manual.

IRQ Resources

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

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

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

- The choice: PCI Device or Reserved.

PCI/VGA Palette Snoop

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

- The choice: Enabled or Disabled.

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.

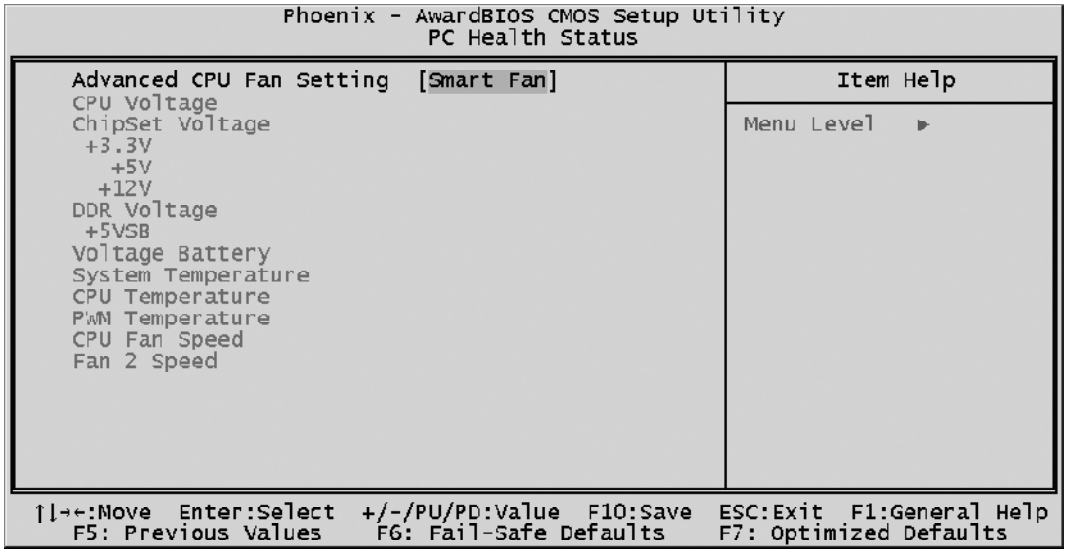
********** **PCI Express relative items** **********

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



Advanced CPU Fan Setting

Here you can set the CPU Fan Speed.

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

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

CPU Voltage

ChipSet Voltage

+3.3V

+5V

+12V

DDR2 Voltage

+5VSB

Voltage Battery

System Temperature

CPU Temperature

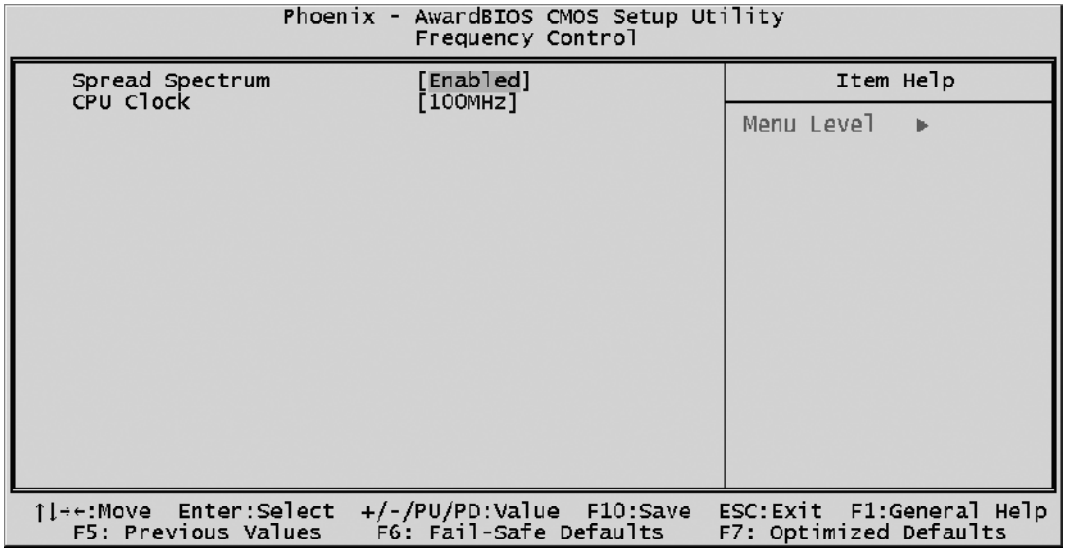
PWM Temperature

CPU Fan Speed

Fan 2 Speed

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

Frequency Control



Spread Spectrum

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

- The choice: Disabled or Enabled.

CPU Clock

This item allows the user to adjust CPU Host Clock.

- The choice: 100 MHz ~ 165 MHz.

Load Fail-Safe Defaults

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

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

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

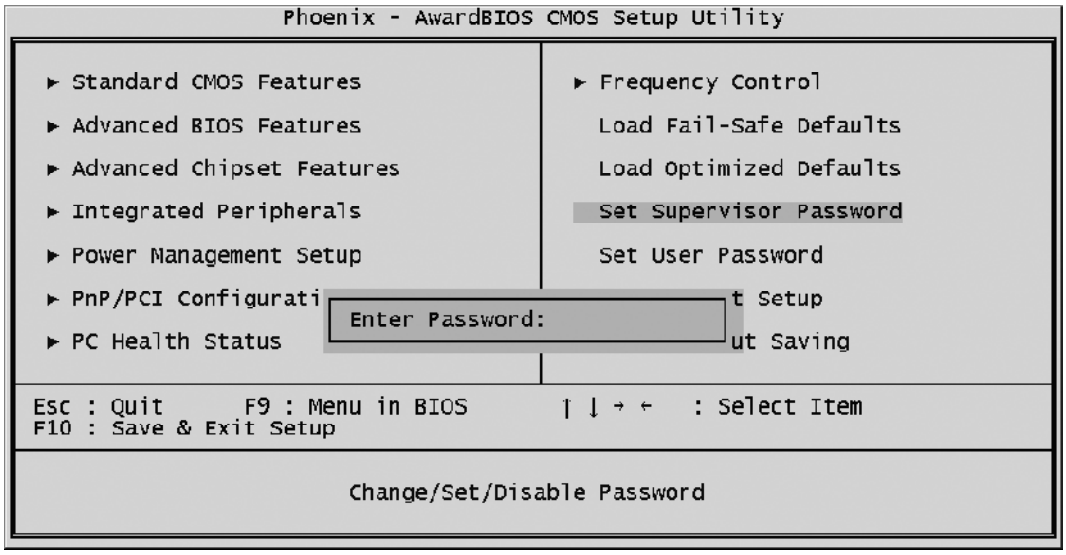
Load Optimized Defaults

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



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.

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