Introduction

Congratulations on purchasing Spectra.

Spectra is an optimized design that combines functions of computers and home entertainment facilities. Spectra aims to provide individuals new and exciting ways to use their PCs.

In the digital home, you may use your Spectra to connect to the electronic entertainment devices and enjoy the fun and convenience of combining different devices together. When it comes to capturing, editing and sharing digital media, Spectra is being optimized to make it easier to access and manipulate content and information when it is wanted, where it is wanted.

Copyright

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Trademarks

All trademarks mentioned in this manual are the registered property of their respective owners.

General Guideline

1. Read all of these instructions.
2. Save these instructions for future use.
3. Follow all warnings and instructions marked in the computer.
4. Except as explained elsewhere in this manual, do not attempt to service the computer yourself. Opening or removing covers that are marked “Do Not Remove” could expose you to dangerous voltage points or other risks. Refer all servicing of marked components to qualified personnel.

Restrictions

Installation Restrictions

1. Follow all warnings and instructions marked on the product.
2. Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
3. Do not use this product near water, for example, near a bathtub, washbowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool.
4. Do not place this product on an unstable cart, stand, or table. The product could fall and sustain serious damage.
5. Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.
6. Do not use the telephone to report a gas leak in the vicinity of the leak.
7. Slots and openings in the cabinet and the back or bottom are provided for ventilation; to ensure reliable operation of the product and to protect it from overheating, these openings must not be blocked or covered. The product should never be placed near or over a radiator or heat register, or in a built-in installation unless proper ventilation is provided.
8. This product should be operated from the type of power indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local power company.
9. Do not allow anything to rest on the power cord. Do not locate this product where persons will tread on the cord.

10. If an extension cord is used with this product, make sure that the total ampere rating of the equipment plugged into the extension cord does not exceed the extension cord ampere rating. Also, make sure that the total rating of all products plugged into the wall outlet does not exceed the fuse rating.
11. Never push objects of any kind into this product through cabinet slots as they may touch dangerous voltage points or short out parts that could result in a fire or electronic shock. Never spill liquid of any kind on the product.
12. To reduce the risk of fire, use at least No. 26 AWG wire for the telecommunication line cord.
13. Always disconnect all telephone lines & all power cords from the wall outlet before servicing or disassembling this product.
14. Refer your system for servicing to qualified service personal under the following conditions:
    - When the power cord or plug is damaged or frayed.
    - If liquid has been spilled into the product.
    - If the product has been exposed to rain or water.
    - If the product does not operate normally when the operating instructions are followed. Adjust only those controls that are covered by the operating instructions, since improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal condition.
    - If the product has been dropped or the cabinet has been damaged.
    - If the product displays a distinct change in performance, indicating a need for service.

Electrical Restrictions

WARNING

This equipment is designed for connection to a grounded (earthed) outlet. The grounding type plug is an important safety feature. To reduce the risk of electrical shock, damage to your equipment, or loss of data, do not disable this feature.

Thermal Restrictions

WARNING

Do not cover the air intake and venting holes with objects. Please operate the product in a well ventilated ambient condition. If the system is to be operated in an audio/visual cabinet, be sure the cabinet is well ventilated on the front and/or rear panel section otherwise heat generated by the system will be accumulated in the cabinet.

Safety Restrictions

WARNING

This equipment is designed for connection to a grounded (earthed) outlet. The grounding type plug is an important safety feature. To reduce the risk of electrical shock, damage to your equipment, or loss of data, do not disable this feature.

Requirements

General Requirements

1. The requirements listed below are applicable to all countries:
2. The length of the power cord set must be at least 6.0 feet (1.8 m) and a maximum of 14.76 feet (4.5 m).
3. All power cord sets must be approved by an acceptable accredited agency responsible for evaluation in the country where the power cord set will be used.
4. The power cord set must have a minimum current capacity of 10A and a normal voltage rating of 125 or 250 volts AC, as required by each country's power system.
5. The appliance coupler must meet the mechanical configuration of an EN 60320. / IEC 320 Standard Sheet C13 connector, for mating the appliance inlet on the computer.

Power Cord Set Requirements

The power cord set (appliance coupler, flexible cord, and wall plug) you received with the computer meets the requirements for use in the country where you purchased the equipment.

Power cord sets for use in other counties must meet the requirements of the country where you use the computer. For more information on power cord set requirement, contact your local authorized dealer, reseller, or service provider.

Country-Specific Requirements

Power Cord Set Requirement		
Country	**Accredited Agency**	**Applicable Note Numbers**
Australia	EANSW	1
Austria	OVE	1
Belgium	CEBC	1
Canada	CSA	2
Denmark	DEMKO	1
Finland	FIMKO	1
France	UTE	1
Germany	VDE	1
Italy	IMQ	1
Japan	JIS	3
The Netherlands	KEMA	1
Norway	NEMKO	1
Sweden	SEMKO	1
Switzerland	SEV	1
United Kingdom	BSI	1
United States	UL	2

NOTE

1. *Flexible cord must be <HAR> Type HO5VV-F, 3-conductor. 1.0 mm2 conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country where it will be used.*
2. *Flexible cord must be Type SVT or equivalent. No. 18 AWG, 3-conductor. Wall plug must be a two-pole grounding type with a NEMA 5-15P (10A. 125V) or NEMA 6-15P (15A 250V) configuration.*
3. *Appliance coupler, flexible cord, and wall plug must bear a "PSE" mark and registration number in accordance with the Japanese DENAN Law. Flexible cord must be Type VCT or VCTF, 3-conductor, 0.75mm2 conductor size. Wall plug must be a two-pole grounding type with a Japanese Industrial Standard C8303 (15A, 125V) configuration.*

Installation Instructions (for power supply)

1. English

CAUTION: DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER. DISCARD USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.

2. French

IL Y A DANGER D'EXPLOSION S'IL Y A REMPLACEMENT INCORRECT DE LA BATTERIE. REMPLACER UNIQUEMENT AVEC UNE BATTERIE DU MÊME TYPE OU D'UN TYPE RECOMMANDÉ PAR LE CONSTRUCTEUR. METTER AU RÉBUT LES BATTERIES USAGÉES CONFORMÉMENT AUX INSTRUCTIONS DU FABRICANT.

3. German

VORSICHT ! Explisionsgefahr bei unsachgemäßen Austausch der Batterie. Ersatz nur durch denselben oder einem vom Hersteller empfohlenem ähnlichen Typ. Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

4. Swedish

Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren. Kassera använt batteri enligt fabrikantens instruktion.

5. Danish

Lithiumbatteri- Eksplosionsfare ved fejlagtig håndtering.
Udskiftning må kum ske med batteri af samme fabrikat og type.
Lever det brugte batteri tilbage til leverandoren.

6. Norwegian

Ekspolsjonsafe ved feilaktig skifte av batteri. Benytt samme batteritype eller en tilsvarende type anbefalt av apparatfabriknten. Brukte batterier kasseres i henhold til fabrikantens instruksjoner.

7. Finnish

Paristo voi räjähtää, jos se on virheellisesti asennettu. Vaihda paristo ainostaan laitevalmistajan suosittelemaan tyyppiin. Hävitä käyteet paristo valmistajan ohjeiden mukaisesti.

Battery (lithium)

NOTE

The following caution statement is located in the service and operating manual or on the label adjacent to the battery.

Safety Instructions

The computer has been tested for conformance to international safety regulations. Like any electronic device, however, the computer should be used with care.

To avoid electrical shock, do not touch the modem card when the system is in use. To protect yourself from possible injury and to minimize the risk of damage to the computer, read and follow these safety instructions:

FCC Statement

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.

FCC Caution: Any change or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

NOTE

FCC Radiation Exposure statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 2.5cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Laser Compliance Statement

The CD-ROM / DVDROM / CD-RW / DVD-RW drive in this computer is a laser product. The CD-ROM / DVD-ROM / CD-RW / DVD-RW drive's classification label (shown below) is location on the drive.

WARNING

Class 1 laser product

Caution: invisible laser radiation when open. Do not stare into beam.

Caution: Use to any controls or adjustments or procedures other than those specified herein may result in hazardous radiate exposure. To prevent exposure to laser emanations (Harmful to Human eyes). Do not attempt disassemble this unit

Table of Contents

Introduction 1

Copyright 2
Disclaimer 2
Trademarks 2

General Guideline 2

Restrictions 3

Installation Restrictions 3
Thermal Restrictions 5
Safety Restrictions 6

Requirements 7

General Requirements 7
Power Cord Set Requirements 7
Country-Specific Requirements 8

Installation Instructions (for power supply) 10

Battery (lithium) 11

Safety Instructions 11

FCC Statement 11

Table of Contents 14

Getting Started 16

Package Content 16

Product Overview 17

..... 17

Replacement Procedure 19

Before Replacement 19

CPU 20

RAM 23
ODD..... 24
HDD..... 27
PCI Express..... 29

Troubleshooting 31
Power Problems..... 32
Hard Disk Problems..... 32

Specifications.....33
System Hardware..... 33
Motherboard 33
Peripheral Cards 33
Spinning Media.....33
Chassis.....34
Thermal/Acoustic Solution 34
Power Supply 35
Controller Board 35
RF Keyboard & Mouse Board 35
Front Panel I/O Board 35
RCA Connector Board.....35
External Peripherals (if applicable) 36

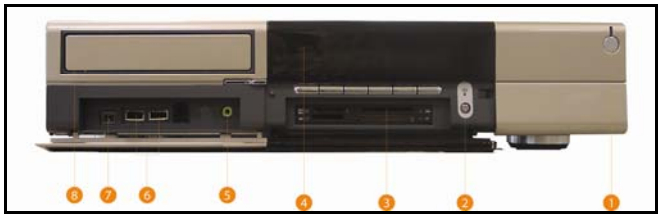
Chapter 1

Getting Started

Package Content

1.	Spectra System
2.	RF Keyboard and Mouse
3.	Remote Control
4.	Power Cord
5.	SATA Cable
6.	ODD IDE Cable
7.	Driver CD
8.	Addendum
9.	User's manual
10.	Battery *6

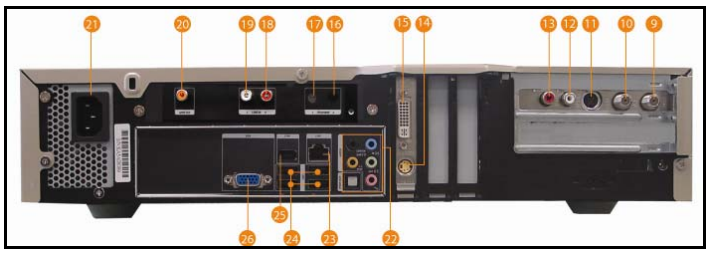
Product Overview



1	Power Switch	5	LINE OUT
2	RF Connect	6	USB Port
3	Card Reader	7	IEEE 1394
4	LED Display	8	Optical Drive

Note:

Volume Control is optional; subsequent reference to the volume control is applicable to configuration with this feature present.



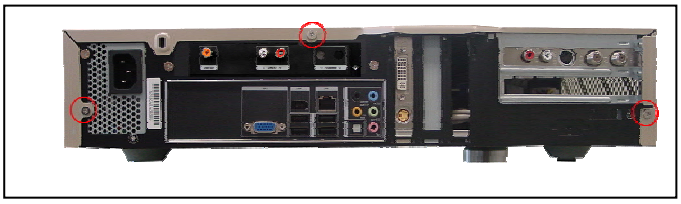
9	FM Radio Connector	18	Line In R
10	Coaxial TV Connector	19	Line In L
11	S-Video In	20	Coaxial SPDIF Out
12	Composite Video In	21	Power Connect
13	RCA Audio In	22	HD Audio Connectors with Optical S/PDIF
14	S-Video Out		
15	DVI Port	23	Ethernet
16	IR Control	24	USB ports
17	IR Control	25	IEEE 1394
		26	VGA ports

Chapter 2

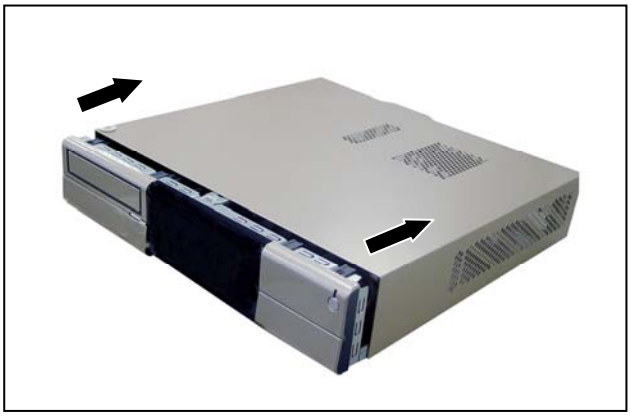
Replacement Procedure

Before Replacement

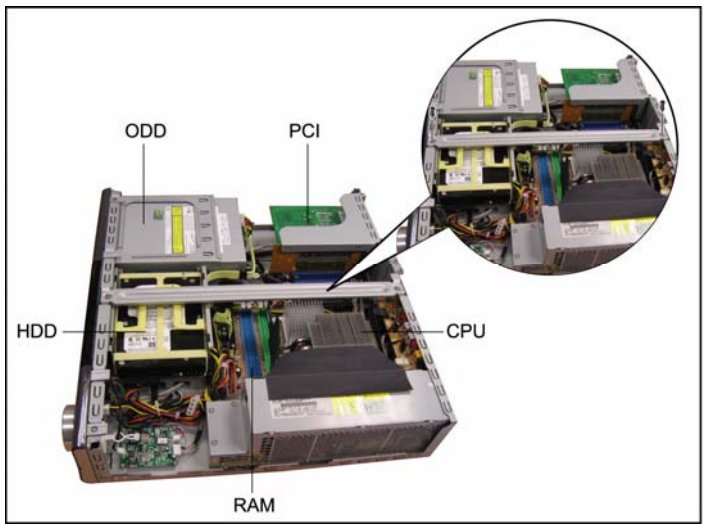
1. Unscrew three screws on the rear side of the case.



2. Remove the cover of the case by push in the direction indication in the picture below.

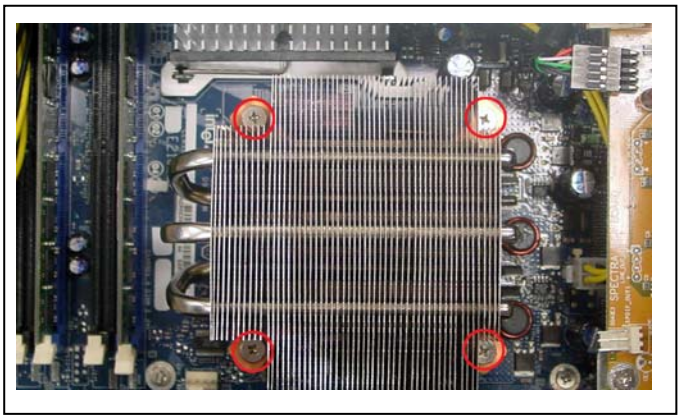


3. After the cover is removed, the arrangement of the system is shown as below. Unscrew two screws on the linking bar, and separate the linking bar from the system (Please see the enlarged picture below.)

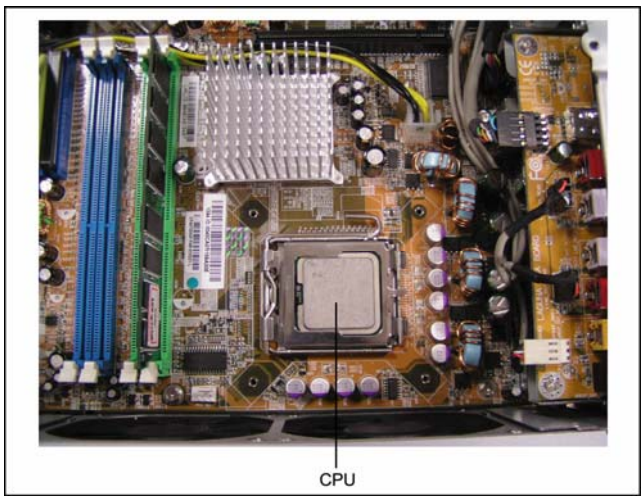


CPU

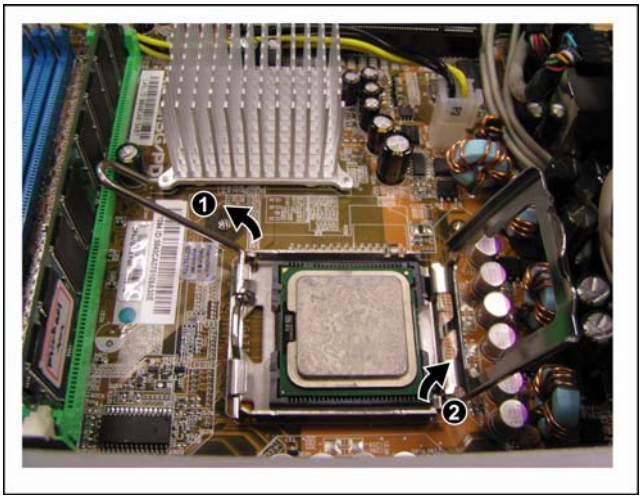
1. Release four screws on the four corners of the heat sink



2. Lift up the heat sink and you see the CPU.

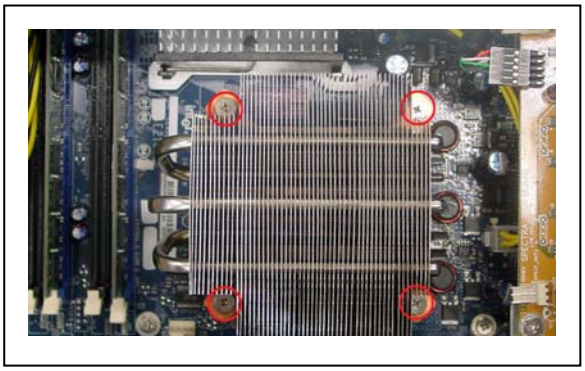


3. To replace the CPU, first lift up the side metal by pressing down a little bit (1). And then lift up the metal bracket (2).



you replace the CPU, please aim at the four angles and put it down.

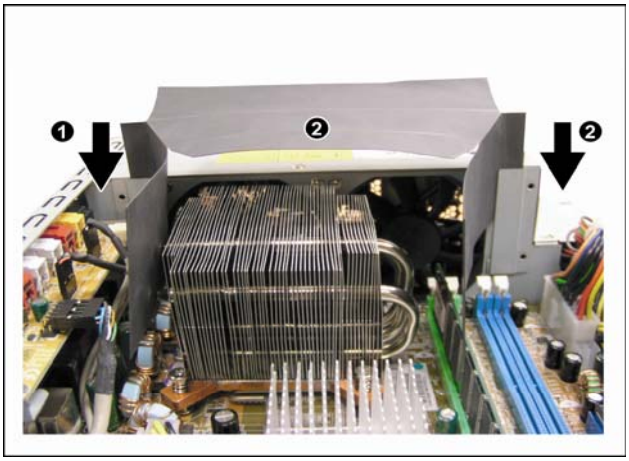
4. Fasten the four screws on the heat sink.



Note:

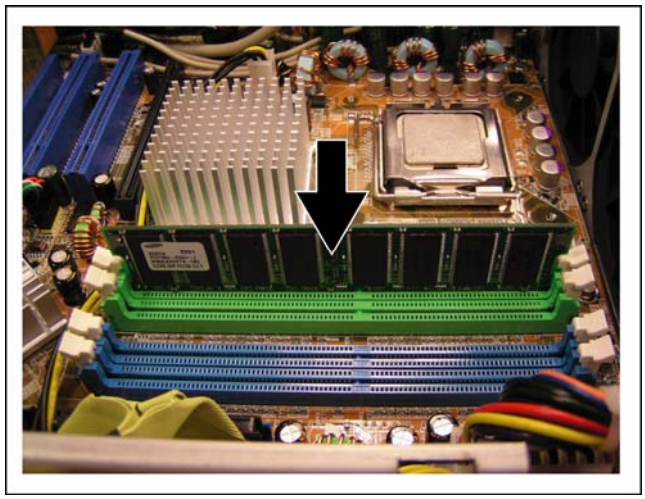
In a diagonal direction, fasten two nails at a time. It is suggested gently slide in the screws first, and fasten them securely later.

5. Use the air-flow guide coming in the package. Slide it in along the two metal pieces on the two sides (1) and then secure it by using the sticker on the air-flow guide (2).



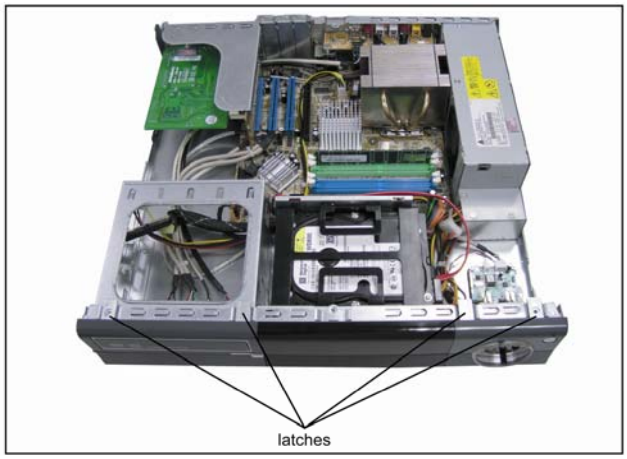
RAM

1. To replace RAM, just slide into the slot.

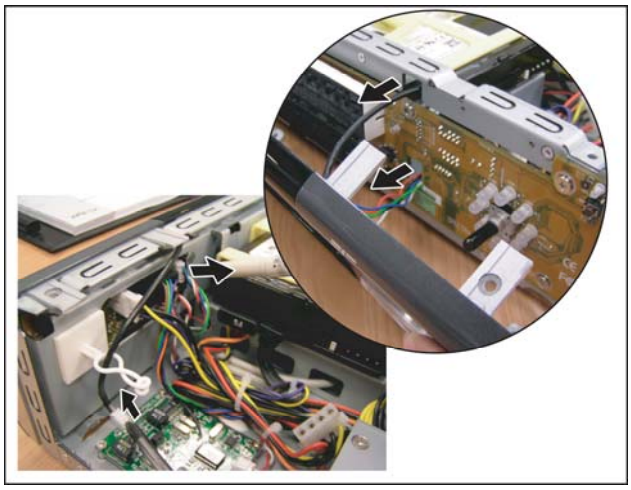


ODD

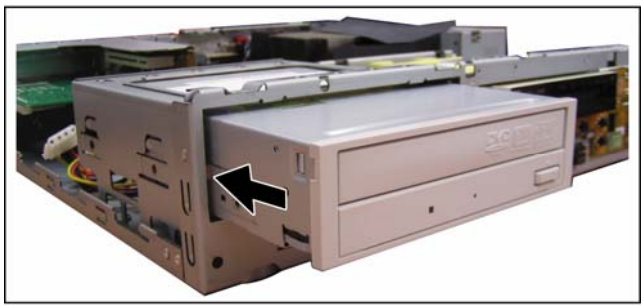
1. Loosen the panel from four latches.



2. Remove two wires: RF control board cable and IR receiver cable. And then remove the front panel of the system.

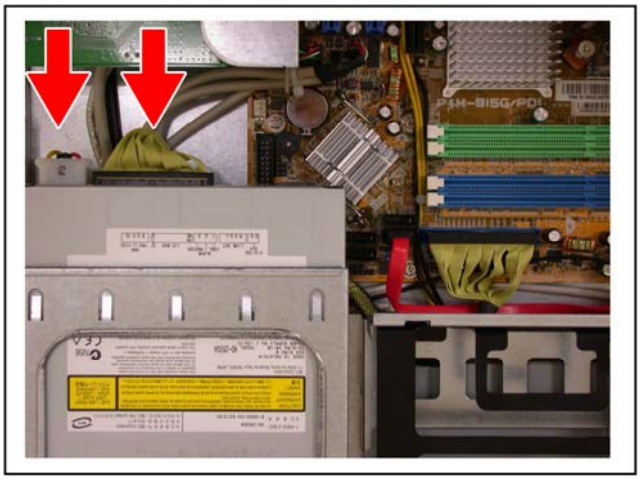


3. Slide in the ODD.



4. Fasten two screws to secure the ODD.

5. Connect ODD cable and power cable.



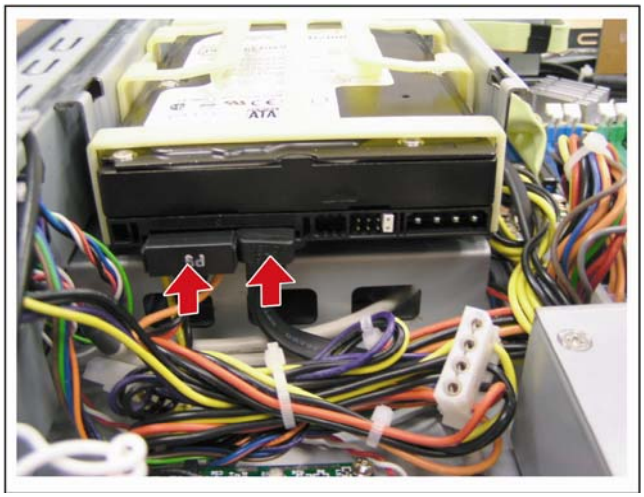
HDD

1. Slide the HDD into the HDD holder.

Note:

Before you slide the HDD into the holder, make sure you focus the four jacks on the side of the HDD.

2. Connect the power and Serial ATA cable.



Note:

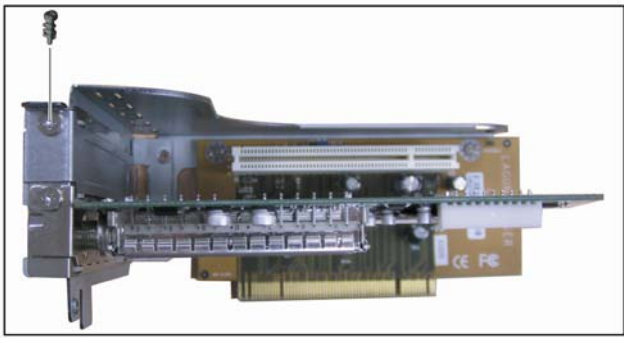
There will be labels on the HDD to guide you to slide in the HDD into the holder.

Serial ATA cable is the accessory coming in the package.

PCI Express

1. Unscrew one screw on the bracket.

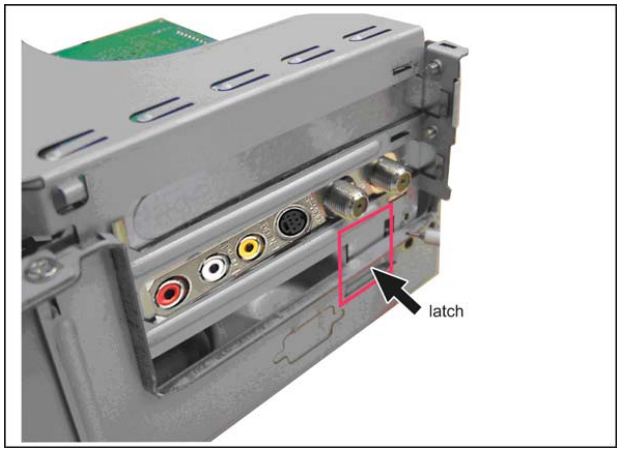
2. Remove the bracket. Unscrew the nail on the slot, and insert the card on the riser card.



3. After replacement, slide the bracket back to the system and fasten it with a screw.

NOTE

- *When you put the metal slot back, make sure the slot slide into the latch*
- *Top PCI slot always work, bottom PCI slot works only when the top slot is installed.*



Appendix A

Troubleshooting

Your system has passed a series of rigorous quality assurance tests to guarantee reliable performance. However, the system is a complicated piece of equipment and as such may malfunction if used incorrectly or if one of its components fails. This appendix attempts to anticipate potential problems that may crop up during the use of your computer. Included are important tips and information you will need to help locate and solve problems you encounter.

In general, troubleshooting involves an organized approach to problem solving. You should always try to isolate the problem and identify the defective device (hardware) or improper setting (software). When you encounter a problem, the first thing you should do is perform a thorough visual inspection of the system. If no indicators are lit and you cannot hear the fan, then the computer is probably not receiving power. Make sure the power cord is plugged in. If you are using a power strip or surge protector, ensure that those devices are turned on.

A problem can be caused by an improperly connected cable. Ensure that none of the connectors' pins are bent or broken. Check all cables connected to your computer. If any are cut, frayed or damaged in any way, replace them right away. Never use a damaged cable. A damaged cable is not only a fire hazard, it may also cause a short circuit, resulting in irreparable damage to your computer.
The examples that follow provide useful tips and information that will help you isolate and solve some of the more common problems you may encounter. If the problem persists after trying the suggested solutions, contact your dealer or a qualified service technician.

Power Problems

Q: The system won't turn on.

- The computer may not be properly connected to a grounded wall outlet. Make sure the power cord is firmly plugged into the wall outlet and into the computer.
- The wall outlet may not be working. To check, plug another device (such as a lamp) into the wall outlet. If the outlet is not working, use another wall outlet.
- If the computer was shut down by a sudden power failure, the user cannot use the power button to restart immediately. To turn the computer back on, first unplug the power cord and wait about 10 seconds for complete discharge before plugging the power cord back in. Then press the power button.

Hard Disk Problems

Q: The hard disk drive seems to be operating slowly

- The files stored on your hard disk may be fragmented. Check for lost allocation units by running Disk Defragmenter. For more information, refer to the Windows Help. To open Windows Help, click the Start button, and then click Help and Support

Specifications

System Hardware

Motherboard

a) Form Factor and size	uATX 9.6" x 9.6"
b) Processors supported	Intel LGA775 Prescott & Pentium-D Dual-Core processors
c) Processor Socket	LGA 775
d) Chipset	945G/ICH7DH
e) Memory sockets	DDR II 533/667 x4
f) PCI Express slots	x16 PCIe * 1
g) PCI Slots	3 (for 1x Low Profile / 2x Standand through Riser)
h) Serial ATA ports	4
i) Parallel ATA channels	2
j) Audio	High Definition 7.1 Channel
k) USB ports supported	8 (Stand by power support under S4,S5)

Peripheral Cards

a) Graphics	x16 PCI Express / DVI / D-Sub (through DVI to D-Sub connector) / S-video / Composite (through S-video to Composite cable)
b) TV Tuner(optional)	Analog/Hybrid TV Tuner Card / NTSC, PAL, SECAM, ATSC, DVB-T, DVB-C, DVB-S (depends on tuner)
c) Wireless LAN(optional)	Wireless LAN Card / 802.11 b/g (PCI)
d) LAN	On board Gigabit LAN
e) Riser Card	PCI portsx2

Spinning Media

a) Hard Disk Drive	
i) Physical Size	Standard 3.5" HDD
ii) Capacity (Gb)	200GB or higher
iii) Bus	SATA

iv) Rotating Speed	7200rpm
v) Cache Size	8MB
vi) UDMA Modes	UDMA modes 0-5+/PIO modes 0-4
vii) Average r/w seek	<8.5 ms
b) Optical Disk Drive	DVD Dual/Multi
i) Physical Size	5.25"
ii) Bus	ATAPI Compatible
iii) Write Speed	DVD4x4x2/24x16(DVD Dual)
iv) Read Speed	DVD12x/32x
v) Read Modes/Media	DVD±R/+RW/-RW,CD-RW/-R
vi) Buffer Size	2MB
vii) UDMA Modes	0-2+/PIO modes 0-4
c) Floppy Disk Drive (if applicable)	8 in 1 card reader
i) Physical Size	slim-type
ii) Capacity	SD/MMC/CF(Type I/II)/SMC/MS/MS Pro/Micro Drive

Chassis

a) Form Factor	Advanced Form Factor: 86(H) x 430(W) x 390(D)mm
b) Peripheral Card Support	1x LP x16 PCIe / 2x full height & 1x half length PCI
c) Antennas	2x internal wireless antenna for 802.11b/g (optional)
d) External 5.25” Bays	1
e) External 3.5” Bays	N/A
f) Internal 5.25” Bays	N/A
g) Internal 3.5” Bays	2
h) Power Supply form factor	Proprietary 82mm(H)x265mm(W)x68mm(D)
i) Front Panel I/O support	2xUSB / 1x headphone/ 1x 1394
j) Material (Chassis and Bezel)	SECC/ABS
k) Bezel LED indicators	Dual color power LED (Green and Amber) / Blue Knob LED/ HDD status on Blue LED Display

Thermal/Acoustic Solution

a) PSU fan	x2 (80mm x 80mm x 15mm axial fan)

b) Processor Heatsink	Aluminum fins and copper base Heatpipe heatsink with 2 spring-loaded screws

Power Supply

	250W/with Fan Control

Controller Board

a) USB Controller	Cypress AN2131
b) USB Hub	Cypress CY7C65640_LFC
c) Micro Controller	Microchip PIC 18F4320-I/TP
d) IR receiver	PDI USB D2
e) LED Display Module	TOSD-5711BB 120*25*12 mm (Taiwan Oasis)
f) ACPI Power Button	YES
g) Stand-by / Resume Button	YES
h) Power LED	Green for On/ Amber for Stand-by
i) RF Reset button	YES
j) Transport buttons	Play/Pause/Stop/Fast Forward/Rewind/Record
k) Volume Knob Encoder	Panasonics GS Encoder
l) Knob LED	Blue * 4
m) Frimware	FIC

RF Keyboard & Mouse Board

a) Interface	USB 2.0
b) Antenna	Yes

Front Panel I/O Board

a) USB Ports	USB2.0*2
b) Audio ports	Mic-in*1/Headset*1
c) IEEE1394 Port	Firewire*1 (4Pin)

RCA Connector Board

a) SPDIF-out	Coax and Optical
b) Stereo	Stereo Line-in (L/R)
c) IEEE1394	Firewire*1 (6Pin)

External Peripherals (if applicable)

a) Remote	MCE Remote
b) Keyboard	YES / 2.4GHz
c) Mouse	YES / 2.4 GHz embedded in KB