IBM NetVista
Type: 6049 and 2259

Hardware
Maintenance
Manual

Version: HMM02

Safety information

DANGER

Electrical current from power, telephone, and communication cables is hazardous.

To avoid a shock hazard:

• Do not connect or disconnect any cables or perform installation, maintenance, or reconfiguration of this product during an electrical storm.

• Connect all power cords to a properly wired and grounded electrical outlet.

• Connect to properly wired outlets any equipment that will be attached to this product.

• When possible, use one hand only to connect or disconnect signal cables.

• Never turn on any equipment when there is evidence of fire, water, or structural damage.

• Disconnect the attached power cords, telecommunications systems, networks, and modems before you open the device covers, unless instructed otherwise in the installation and configuration procedures.

• Connect and disconnect cables as described in the following table when installing, moving, or opening covers on this product or attached devices.

To connect:	To disconnect:
1. Turn everything OFF.	1. Turn everything OFF.
2. First, attach all cables to devices.	2. First, remove power cords from outlet.
3. Attach signal cables to connectors.	3. Remove signal cables from connectors.
4. Attach power cords to outlet.	4. Remove all cables from devices.
5. Turn device ON.	

Lithium battery notice

CAUTION:

Danger of explosion if battery is incorrectly replaced.

When replacing the battery, use only IBM Part Number 33F8354 or an equivalent type battery recommended by the manufacturer. The battery contains lithium and can explode if not properly used, handled, or disposed of.

Do not:

• Throw or immerse into water

• Heat to more than 100°C (212°F)

• Repair or disassemble

Dispose of the battery as required by local ordinances or regulations.

Modem safety information

To reduce the risk of fire, electrical shock, or injury when using telephone equipment, always follow basic safety precautions, such as:

• Never install telephone wiring during a lightning storm.

Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.

• Never touch un-insulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.

• Use caution when installing or modifying telephone lines.

• Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.

• Do not use the telephone to report a gas leak in the vicinity of the leak.

Laser compliance statement

Some IBM Personal Computer models are equipped from the factory with a CD-ROM drive or a DVD-ROM drive. CD-ROM drives and DVD-ROM drives are also sold separately as options. CD-ROM drives and DVD-ROM drives are laser products. These drives are certified in the U.S. to conform to the requirements of the Department of Health and Human Services 21 Code of Federal Regulations (DHHS 21 CFR) Subchapter J for Class 1 laser products. Elsewhere, these drives are certified to conform to the requirements of the International Electrotechnical Commission (IEC) 825 and CENELEC EN 60 825 for Class 1 laser products. When a CD-ROM drive or a DVD-ROM drive is installed, note the following handling instructions.

CAUTION:

Use of controls or adjustme nts or performance of procedures other than those specified herein might result in hazardous radiation exposure.

Removing the covers of the CD-ROM drive or DVD-ROM drive could result in exposure to hazardous laser radiation. There are no serviceable parts inside the CD-ROM drive or DVD-ROM drive. Do not remove the drive covers.

Some CD-ROM drives and DVD-ROM drives contain an embedded Class 3A or Class 3B laser diode. Note the following statement.

DANGER
Laser radiation when open. Do not stare into the beam, do not view directly with optical instruments, and avoid direct exposure to the beam.

Getting Started

1.Before you begin, have a Philips medium sized head screwdriver to begin.

2.Locate the 3 screws at the back of the case; use the screwdriver to loosen them.

3.Using both hands, gently pull back the top cover as shown in the figure. Slide the cover up off the frame of the case.
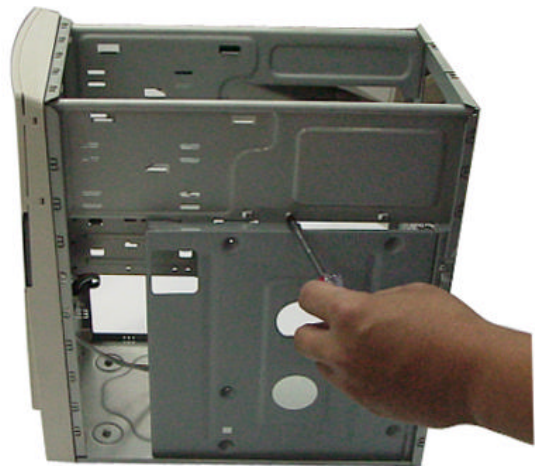
4. For installing the mainboard, locate the three screws which secure the plate and remove it.
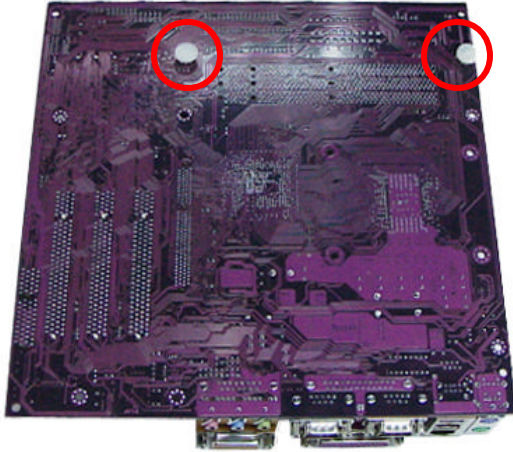
Installing the Power Supply Fan
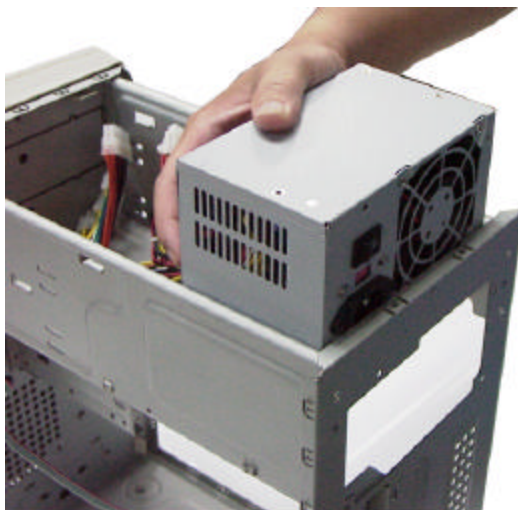
1.The power supply should be installed in the back of the chassis. This is to draw the air out of the inside of the case. Check the position of the power supply fan as shown in the figure.

2.Using the screwdriver, gently tighten the three screws.

   This completes the installation for the power supply fan.

Assembling the Mainboard

1.The plastic spacers provide extreme support in areas of high mechanical stress on your mainboard. Insert the plastic spacers in the 2 mounting holes as shown in the figure through the back of your mainboard. The plastic spacers are provided with the case.
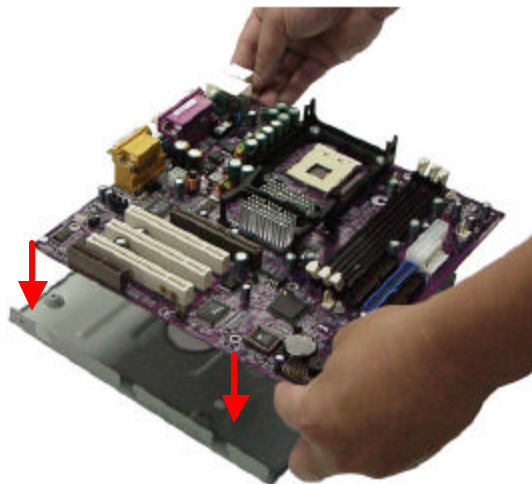
2. Position the mainboard in the plate so you can see the alignment of the mounting holes in the mainboard with the standoff holes. There are at least 4 screws that need to be secured.

478 Pins ?

Pentium 4
CPU

3.Prepare the CPU, heatsink and the CPU cooling fan.
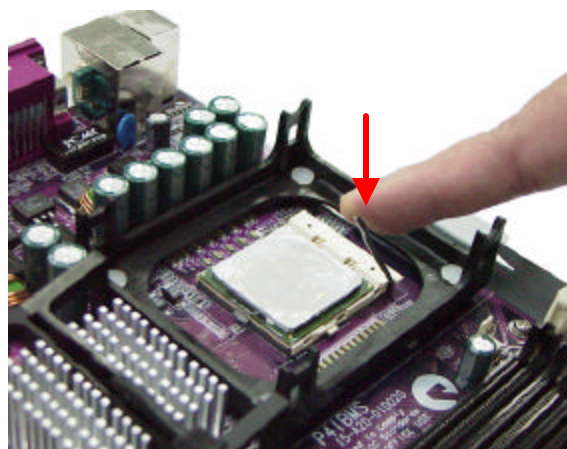
4 Pull the CPU socket-locking lever away from the socket to unhook it and raise the locking lever to the upright position. Place the CPU into the socket and pull down the lever. Apply thermal grease to the top of the CPU.
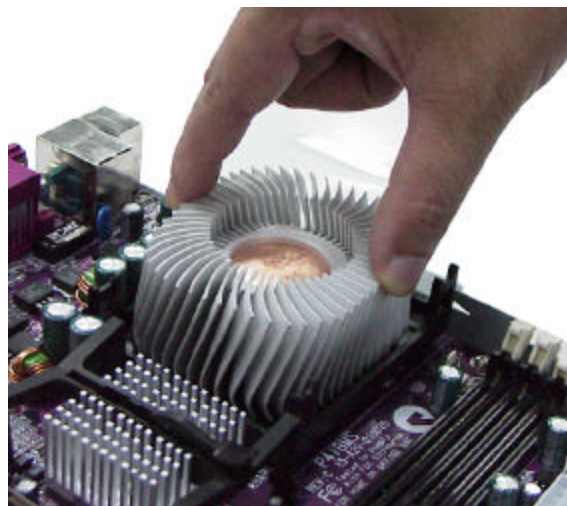
5.Place the heatsink at the top of the CPU. See figure for reference.
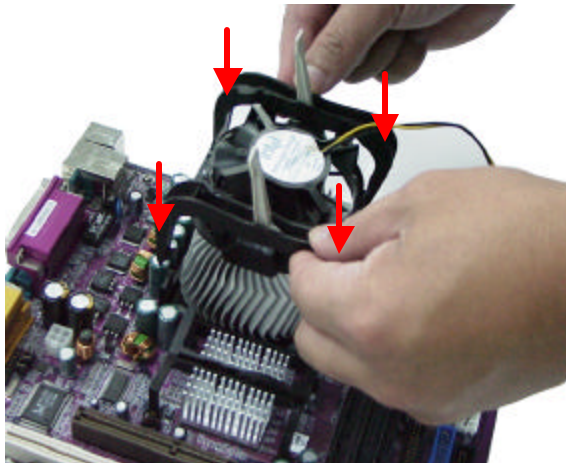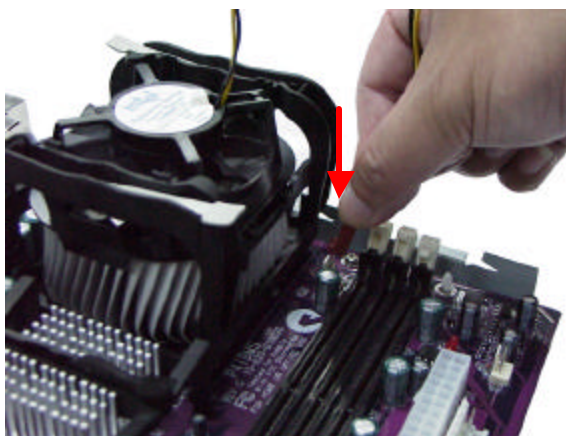
6. Attach the CPU cooling fan on top of the heatsink. Snap the four retention legs of the cooling fan into place.
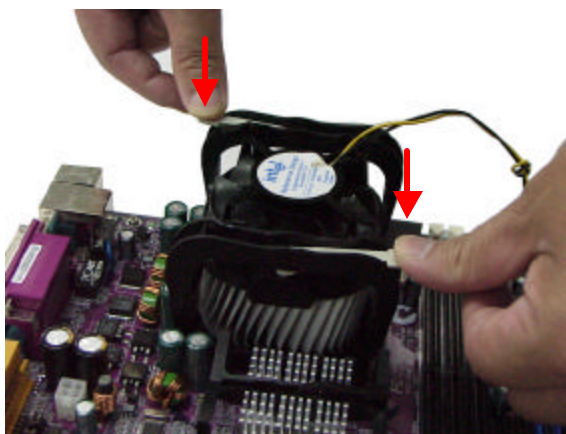
7. Lock both levers on top of the cooling fan to their opposite sides to secure the cooling fan on top of the heatsink.
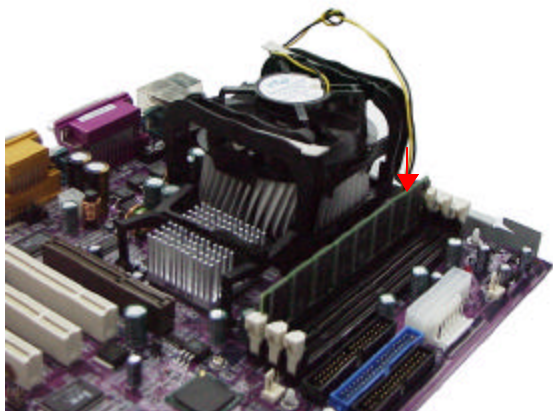
**8**. Connect the CPU cooling fan power cable to the CPU fan connector.

Installing the Memory Modules
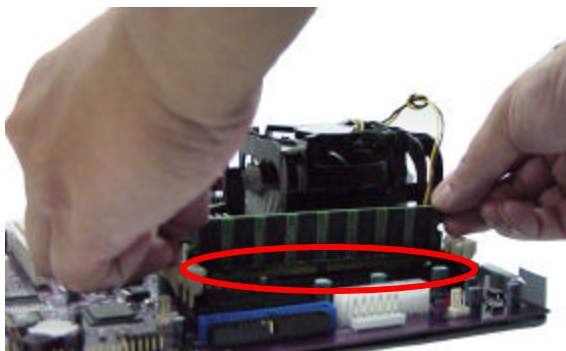
9.Open the left and right levers of the slot. Then firmly slide the Memory Module into the DIMM slot. The DIMM slots are keyed with notches and the DIMMs are indicated with cut outs so that they can only be installed correctly.
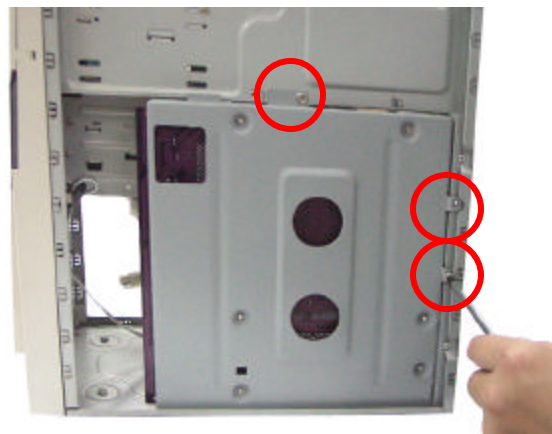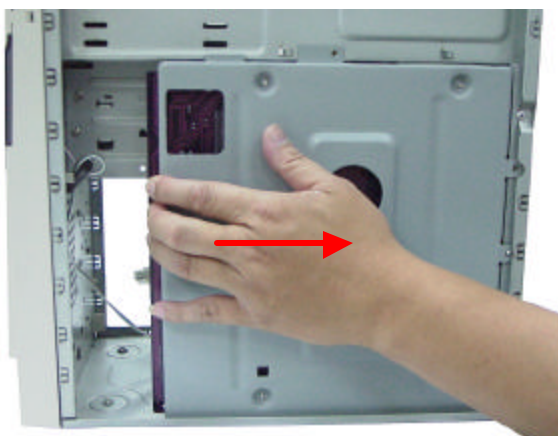
10.After installing, the Memory Module should look like this.
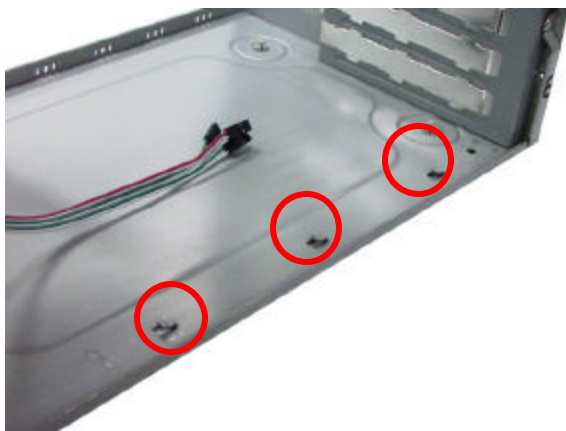
11.To install the mainboard inside the case. Locate the three mounting brackets on the case as shown in the figure.
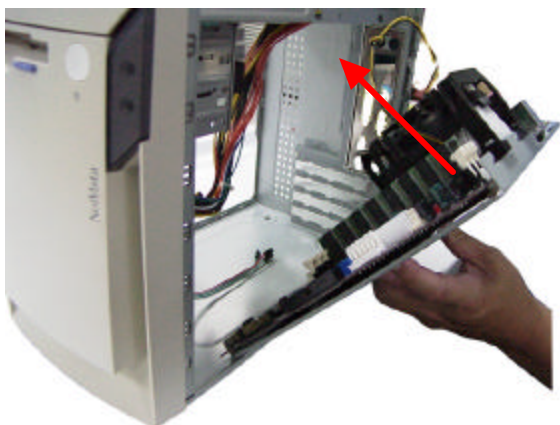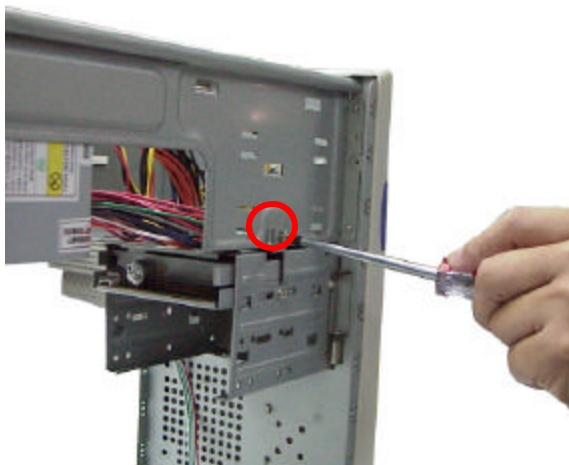
12.Place the mainboard over the mounting brackets. Then slide the mainboard into place as shown in the next figure.

13.Secure the mainboard into the mounting brackets with screws. Do not overtighten the screws. Gentle pressure is enough.

Connecting the Power Supply

1.After you have installed the mainboard into the case, you should connect the power cable from the case power supply unit to the mainboard power connector. Since the floppy drive is situated closely to the power supply. For convenience purpose, loosen the screw that holds the Floppy drive.
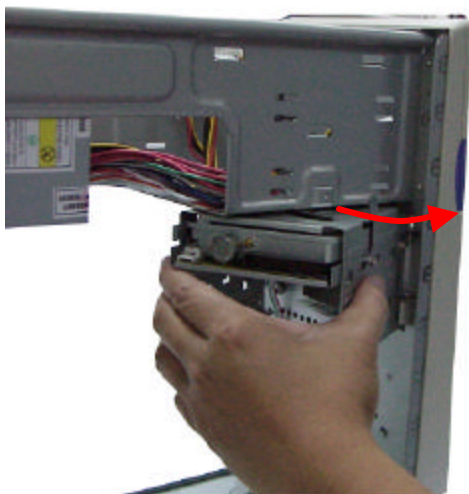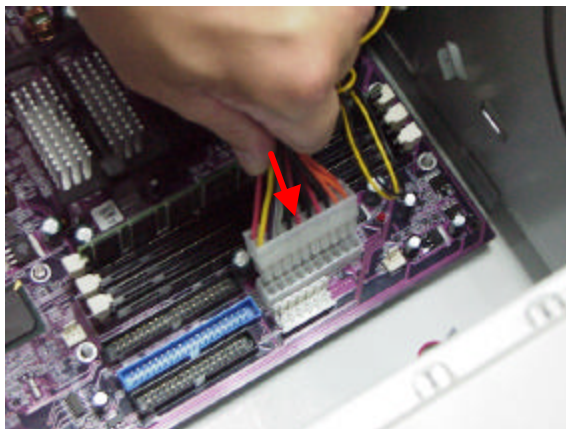
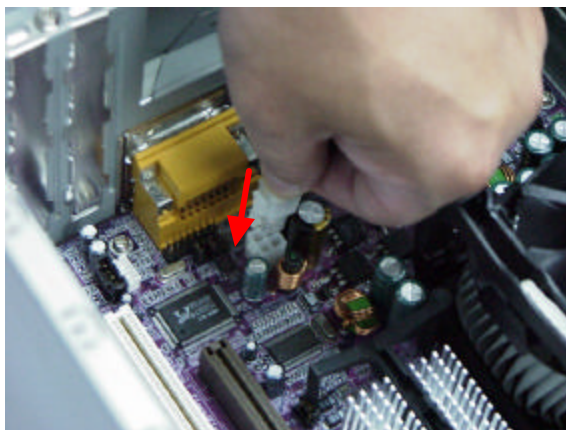**2**.Push the storage bay sideways as shown in the figure.
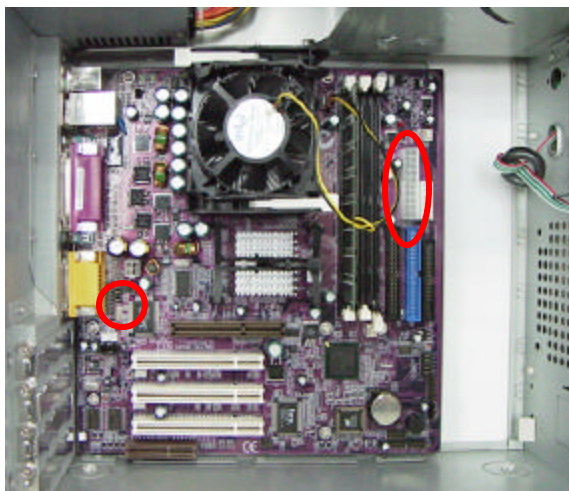
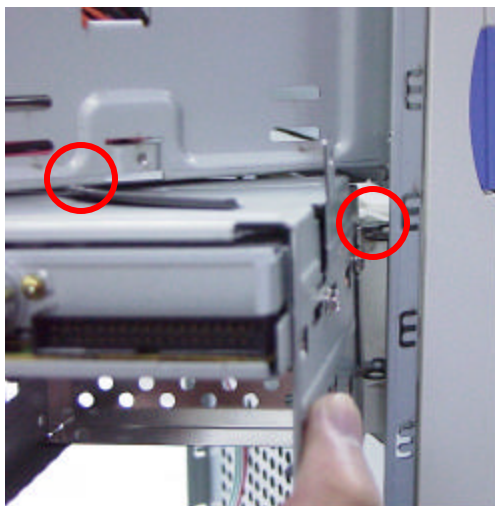**3**. Locate the mainboard power connector. See figure for reference.

4. The power connector should fit perfectly in the slot on the mainboard. Note the orientation of the cables before trying to connect them. Each function of the cable is already defined.
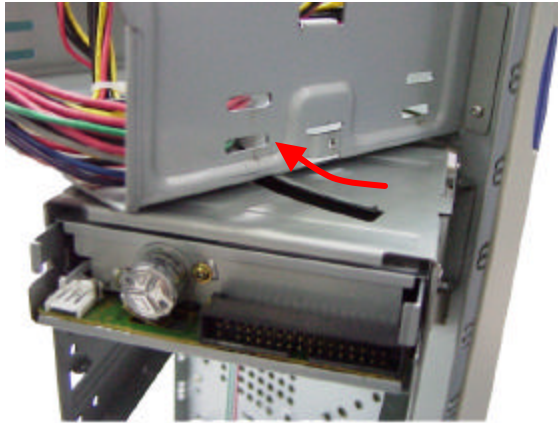

5. Connect the +12V power connector. Make sure the power connectors are properly seated and firmly attached.

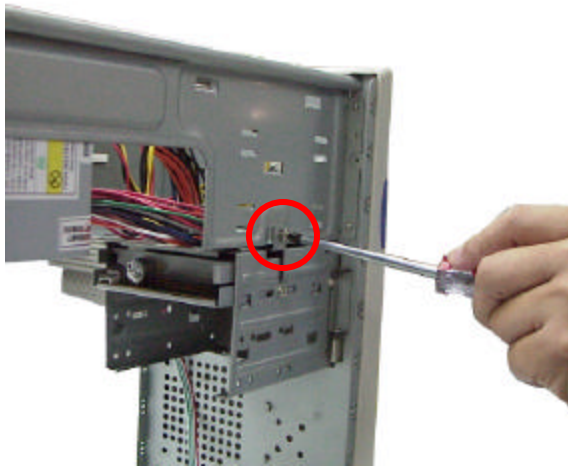**6**.Push back the storage bay to its original position. There are two things that need to be aware of: One is to make sure that the screw holes of the mounting box are aligned with that of the drive and the brackets are smoothly attached to the hook.

**7**. The storage bay should slide easily back to place.

8. Secure the chassis and the storage bay with screws. Do not over tighten the screws. Gentle pressure is enough.

Installing the CD-ROM, Floppy and Hard Drives

1. There are two different size "bays" into which each of the various drives will fit. Take a close look at the drive and determine which is the "bay" for the floppy drive. Install the floppy drive into the upper side of the storage bay. See figure for reference.
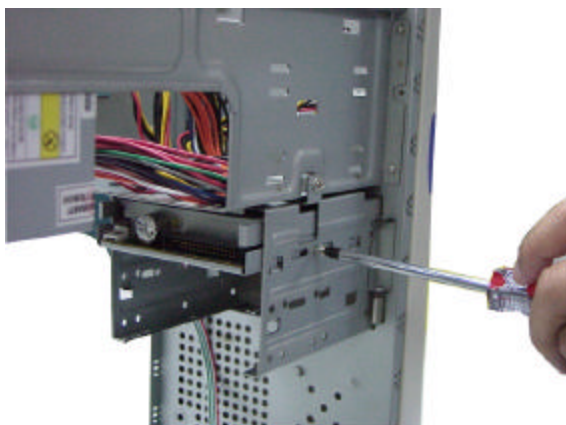
2. Slide the drive in the appropriate location. For a 3.5" drive, secure the two screws located on the both side of the storage bay.
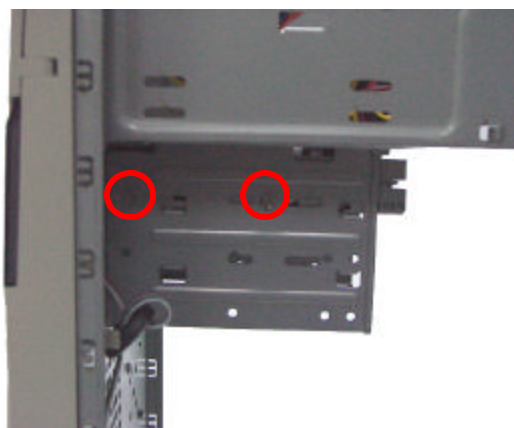
You can easily see where the screw holes in the drive line up.

3.For the hard disk drive, follow the same manner for installing the floppy disk drive.

Always secure the screws when installing the drives. This will prevent them from moving and falling from the storage bay.
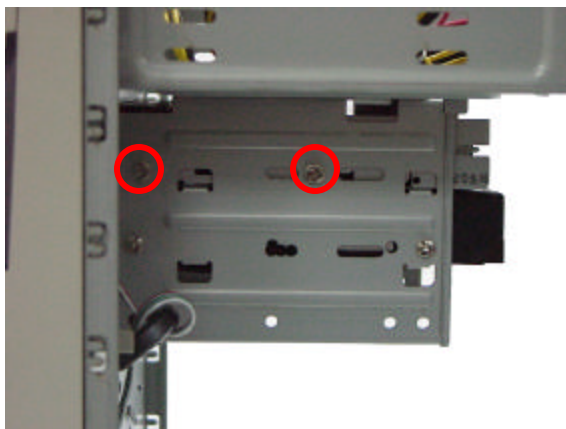
4.For the CD-ROM drive, gently open the door panel.

5. Slide the CD-ROM drive into the bay and align the drive's faceplate with the front of the case.

6. When the CD-ROM drive is positioned correctly, secure the drive to the bay using four screws.

The figure shows the other side of the chassis.

7.Close the door panel. This completes the setup for the CD-ROM drive.
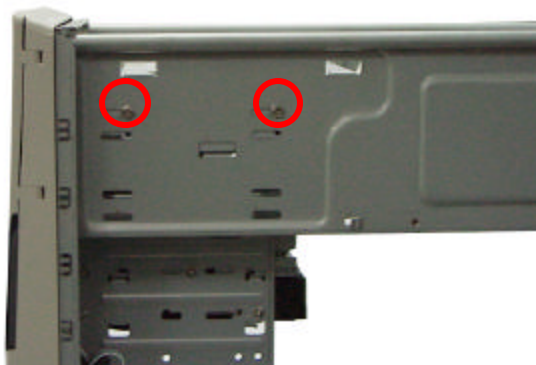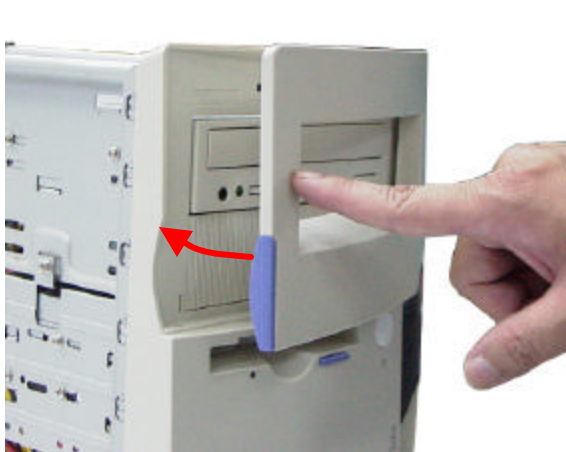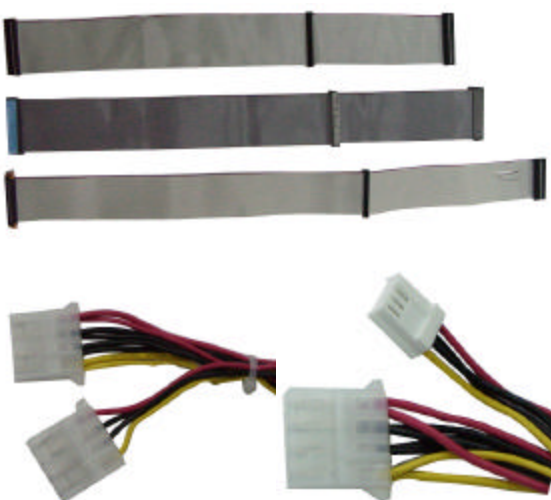
8.Next, you should get familiar with the cables that are used with the various drives. The first cable is use for the floppy drives, the second cable is for the hard disk drive and the third long cable is use for the CD-ROM drive.
For the power cables, the cable has peripheral and floppy drive power connector and is designed to connect from the power supply to the drives.
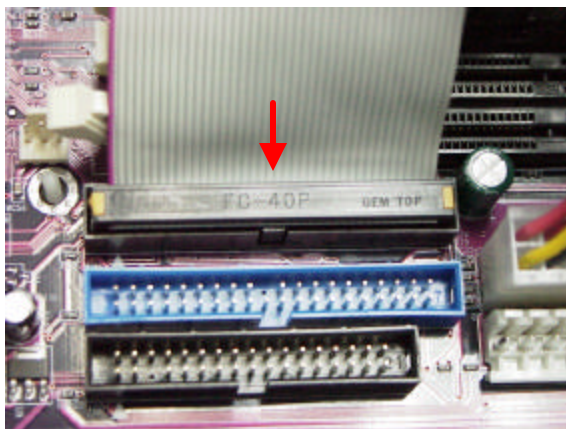
9.Plug the CD-ROM cable into the Primary IDE channel on the mainboard. The edge of the cable that is red determines its orientation. Push the CD-ROM cable squarely onto the Primary pins.

10.Connect the other end of the cable to the CD-ROM drive. Note the orientation of the cable before trying to connect it.

11. Next, plug the hard disk cable into the Secondary IDE channel on the mainboard. The edge of the cable that is red determines its orientation. Push the hard disk cable squarely onto the Secondary pins.
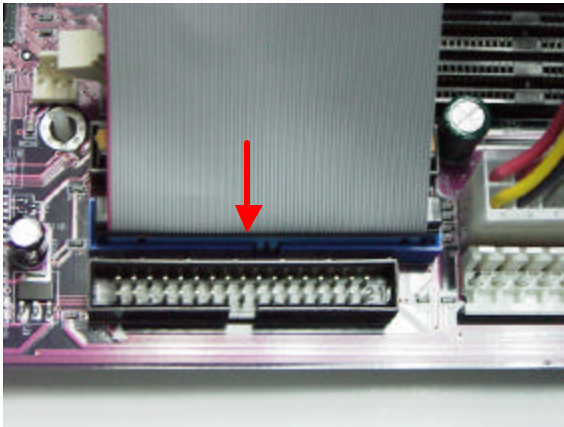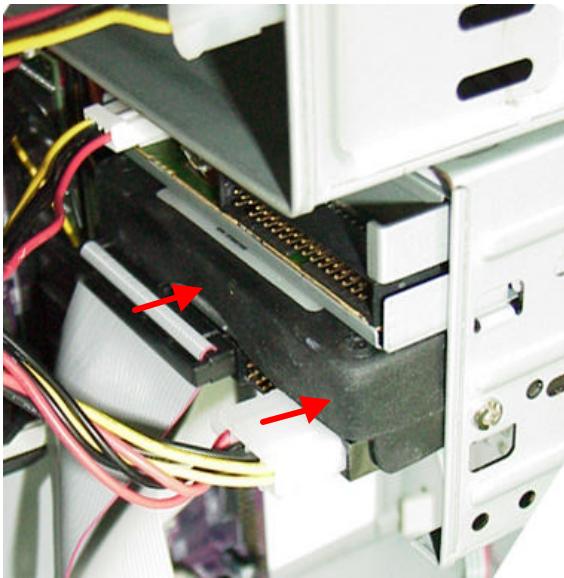

12.Following the same procedure mentioned in step 10. Connect the other end of the cable to the hard disk drive.
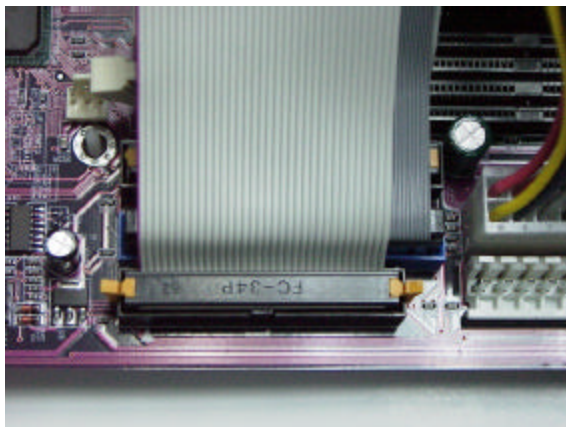
13.Lastly, connect the cables of the floppy drive as you did with the CD-ROM and hard disk drive. The edge of the cable that is yellow should situate firmly on the plastic shroud.
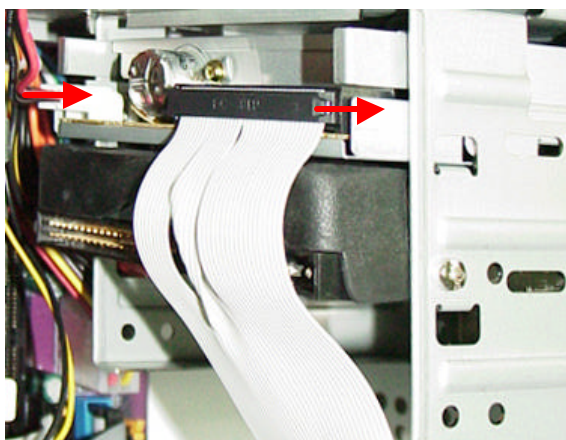
14.Then connect the other end to the Floppy drive.

15.Use the audio cable provided with the CD-ROM drive to connect the audio connector on the rear edge of the CD-ROM drive to one of the audio-in connectors on the mainboard. The audio sound does not come from the mainboard itself.
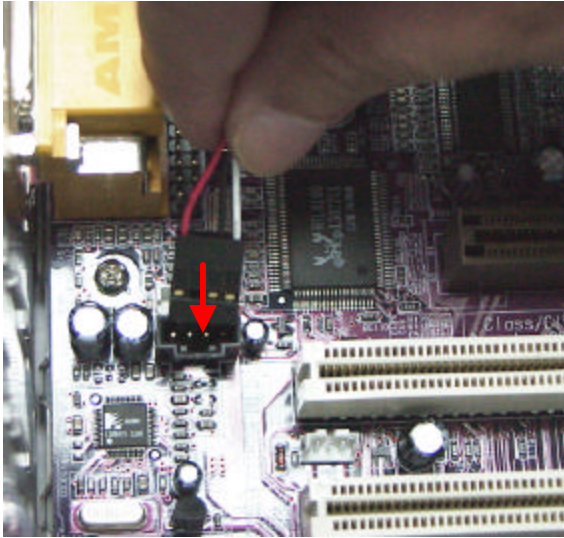
16.Attach the other end of the cable to the controller on the mainboard. See figure for reference.

17.Then attach the other end of the cable to the CD-ROM drive audio port.

This completes the installation for the CD-ROM, Floppy and Hard drive.

Connecting the Power LED

1. Connect the Power LED and Power SW cable on the Panel 1 of the mainboard. The Power button located in front of the case only works when the Power Switch connector is connected to the mainboard.
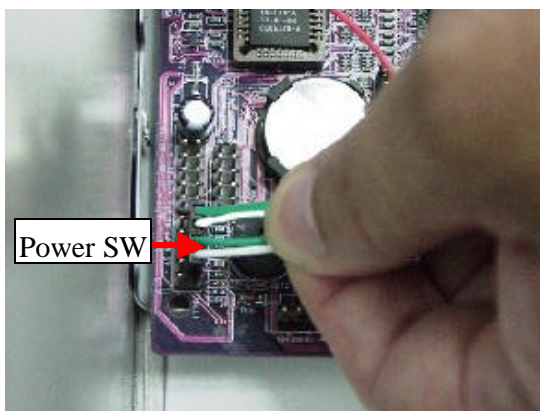
Power SW

2. Connect the Power SW (usually with green wires) into the connector of the mainboard.

3. The HDD LED indicates the usage of the hard disk drives.
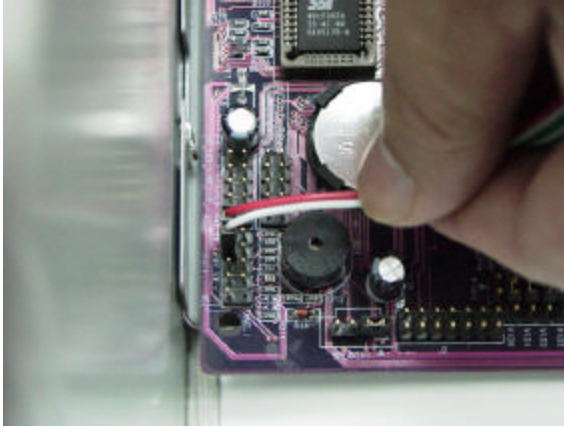
4. Next, Connect the HDD LED into the connector of the mainboard. The HDD LED indicator has two pins with one of them marked positive. One of the wires from the HDD LED is usually red and goes on the positive pin.
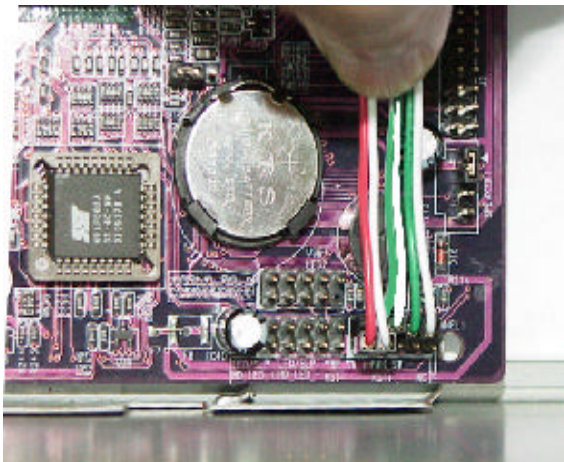
The Power SW and HDD LED should look like this after they are connected.

Installing the USB Cable

1. This is the real side of the Dragon system.

2. Remove the dust cover from the COM port as shown in the figure.

3. The figure shows the system board inside the case.

4. Remove the AGP card from the expansion slot.

5. Remove one screw from the USB bracket using a screwdriver.

6. Then, loosen the screw on the other side.

7. Place the USB cable behind the port.

8. Attached the bracket and USB cable to the USB port. Make sure that the direction is installed correctly.

9. Using the screwdriver, gently tighten the screws.

10. Following the same procedure in step 8. Attached the other USB cable to the USB port

11. Secure the USB cable with the screw.

12. This completes the installation for the USB cable.

13. The figure shows the USB connector.

14. Locate the USB2 header on the system board.

15. Connect the USB connector into the USB2 header of the system board. Note that the connector is keyed (Pin 9) so that it can only be installed correctly on the header.

16. The USB should look like this after it is connected.

17. To reduce unnecessary tangles, place the cables beside the slots as shown in the figure.

18. Install the AGP card back to the expansion slot. Situate the cables below the AGP card.
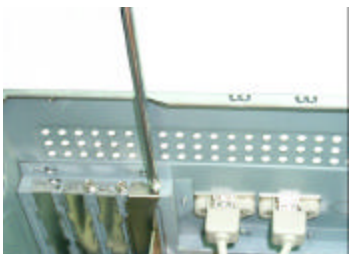
19. Secure the AGP card with a screw.

20. This completes the installation for the USB cable.

Installing the Expansion Card
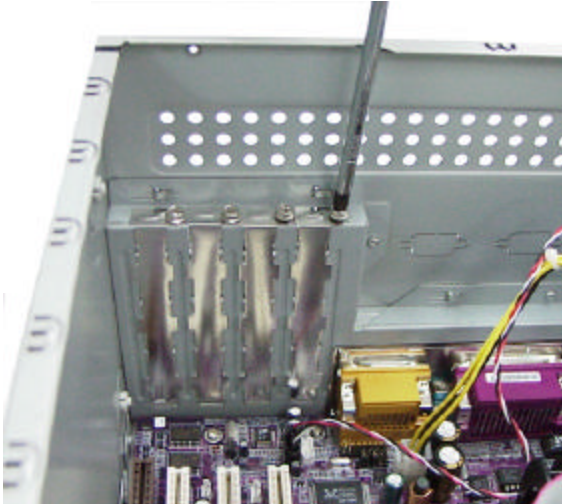
1.The most commonly used expansion card is the AGP and modem card. Let's start by installing the AGP card first. Remove the dust cover from the slot in the system case that corresponds t o the expansion slot that you going to use.
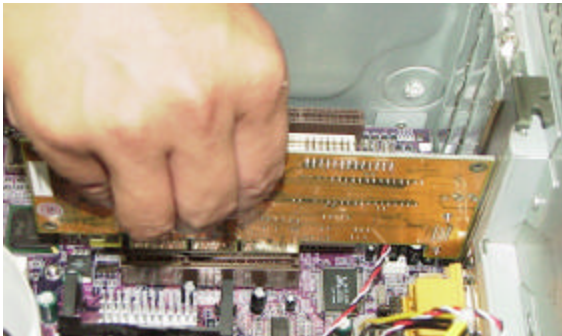
2.Following the figure, push the edge connector of the AGP card into the expansion slot.
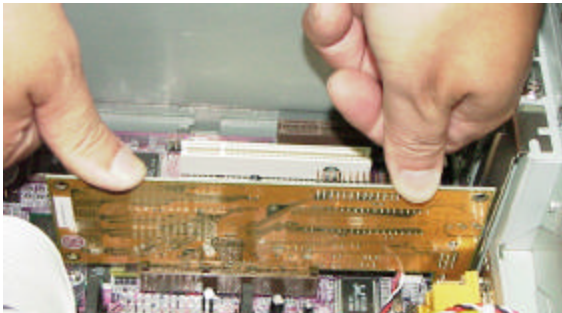
3.Using both hands, gently press down the AGP card firmly to ensure that the edge connector is correctly rested in the slot.

4.Secure the AGP card with the screw.
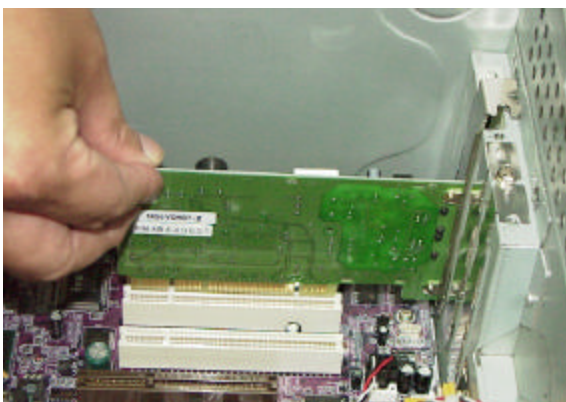
5.Next, install the Modem card as the same way with the AGP card. Insert the Modem card to the first 32-bit PCI slot. Refer to the figure for reference.
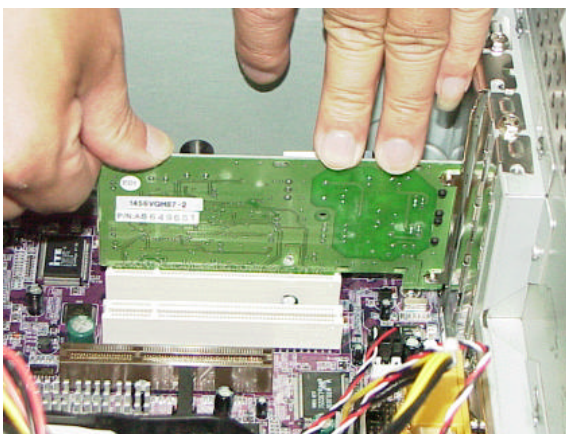
6.Gently use both hands to press down the Modem card onto the PCI slot.

7.Secure the metal bracket of the Modem card with a screw.
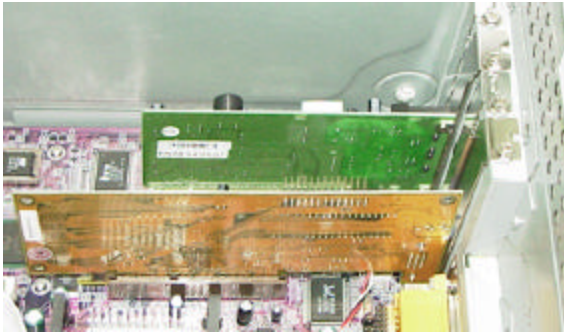
You have finished installing the Modem and AGP cards. Make sure that the add-on cards are installed properly on the mainboard See figure for reference.

Completing the Assembly

1.When all necessary peripherals and drivers are installed in the case and that there are no loose wires that may get in the way of the CPU fan and other components. Place back the top cover to the case.
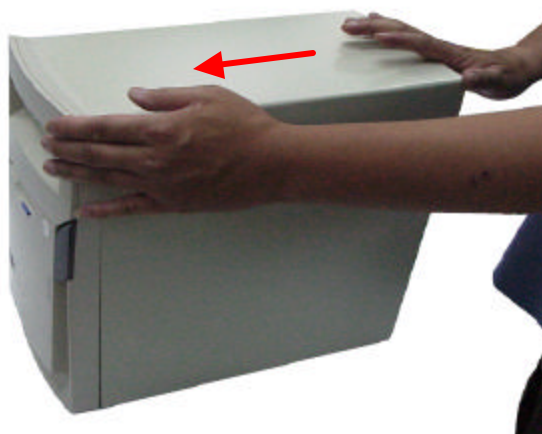
2.Using both hands, push the top cover towards the case. See figure for reference.

3.Secure the three screws.

FRU list

Items	IBM P/N	FRU P/N	Region	Comments
Recovery CDs		46P6851		Windows XP Home Simplified Chinese
		46P6852		Windows XP Home Traditional Chinese
		46P6853		Windows XP Home Hong Kong
		46P6854		Windows XP Home AP English
		46P6848		Windows XP Pro Traditional Chinese
		46P6847		Windows XP Pro Simplified Chinese
		46P6849		Windows XP Pro Hong Kong Chinese
System Board		**46L5519**		
CPU	38L4525	25P5040		Intel Pentium 4 1.5GHz
	38L4526	25P5041		Intel Pentium 4 1.7GHz
	38L4623	33P0963		Intel Pentium 4 1.6GHz
	38L4625	33P0965		Intel Pentium 4 1.8GHz
	38L4645	48P7205		Intel Pentium 4 2.0GHz
Fansink	46L5376	46L5400	1.5-2.0GHz	Fansink FOXCOM PKP021G01D12
DIMM	38L2818			128MB PC133 CL3 Infineon/Hynix 128Mb
	38L4294	33L3294		128MB PC133 CL3 Infineon/Hynix 128Mb
	46L5450	46L5451		128MB PC133 CL3 by ECS H/C: 5M-07K
	46L5452			Infineon 128MB PC133 CL3 w/128MB SDRAM assembled in China
	46L5453	19K1560		Hynix 128MB PC133 CL3 w/128MB PC 133 CL2 w/128MB SDRAM
	38L4690	10K0058		Infineon/Hynix/Mosel Vitelic 128MB PC 133 CL2 w/128MB SDRAM
HDD	06P5312	19K1560		20GB Maxtor Athena 5400RPM
	09N0998			20GB Seagate U6 5400RPM, ATA-100
	24P3660	06P5237		80GB Maxtor Romulus 5400RPM
	06P5328			80GB Seagate U6 5400RPM, ATA-100
	24P3662	19K1568		40GB Maxtor Viper 7200RPM
	24P3697	19K1568		40GB Seagate Snowmass 7200RPM
CD-ROM	06P5265	19K1531		Lite On LTN-486S (black)
	06P5264	19K1529		Lite-On LTN-486S (white)
	33P3206	33P3207		Lite On LTN-486S (black)
	33P3204	33P3205		Lite-On LTN-486S (white)
	33P3200	33P3201		LG HC:5M-07Z (White)
	33P3202	33P3203		LG HC:5M-07Z (Black)
	06P5270	06P5271		BTC 522B (Black)
	33P3214	33P3215		BTC 522B (Black) new Firmware
DVD-ROM	24P3618	24P3619		16x48x DVD-ROM MKE SR-8587
	24P3622	24P3623		16x48x DVD-ROM Hitachi GD-8000BM0
CD-RW	06P5160			CD-RW 12x/8x/32x LG CED-8120B
CD-ROM cable	37L5001	37L5098		
CD-ROM audio	75H9247	75H9219		
Modem	19K2964	19K2965	China	56K PCI MODEM CARD/GVC F-1156IV/R9C

	19K2964	19K2965	Hong Kong	56K PCI MODEM CARD/GVC F-1156IV/R9C
	19K2964	19K2965	Taiwan	56K PCI MODEM CARD/GVC F-1156IV/R9C
	19K2962	19K2963	ASEAN	56K PCI MODEM CARD/GVC F1156IV+/R9C
Phone Cable	00K8182	00K8182		CABLE SIG 7FT PHONE
Speaker	25P4715	25P4723		TIER4 SPEAKERS (Black)
Speaker AC adapter	10K2596	10K2597	China	
	25P5699	25P5703	Hong Kong	
	10K2586	10K2587	Taiwan	
KBD	37L2514	37L2514	PRC/HKE/ASEA	US Eng.103P (White) PS2
	37L2548	37L2548	Taiwan/HK	US and TC (White) PC Next A Lite
	19K1910	19K1910	PRC/HKE/ASEA	US Eng.103P (Black) Rak3E
	19K1915	19K1915	Taiwan/HK	US and TC (Black) RAK3 E
Mouse	24P0380	24P0381		STD PS2 2 BUTTON (White)
	09N5536	09N5537		SP II (Black)
Power Cord	02K0545	02K0545	China	POWER CORD
	14F0033	14F0033	Hong Kong	
	62X0663	62X0663	Taiwan	
System BD	46L5380	46L5512		Header Code : 5M-07D
Video CD	46L5382	46L5513		Header Code : 5M-07E
FDD	46L5384	46L5385		Header Code : 5M-07F
FDD Cable	N/A	46L5393		
HDD Cable	N/A	46L5394		
Front Bezel	N/A	26P8963		(White)
	N/A	46L5395		(Black)
Chassis	N/A	46L5396		(White)
(w/Top Cover)	N/A	46L5397		(Black)
I/O port cover	N/A	46L5398		Hunan
	N/A	46L5399		Dragon
PSU	46L5386	46L5387		Header Code : 5M-07G