Machine Disassembly and Replacement

This chapter contains step-by-step procedures on how to disassemble the notebook computer for maintenance and troubleshooting.

To disassemble the computer, you need the following tools:

❑   Wrist grounding strap and conductive mat for preventing electrostatic discharge

❑   Flat screwdriver

❑   Phillips screwdriver

❑   Hex screwdriver

❑   Plastic flat screwdriver

❑   Plastic tweezers

NOTE: The screws for the different components vary in size. During the disassembly process, group the screws with the corresponding components to avoid mismatch when putting back the components.
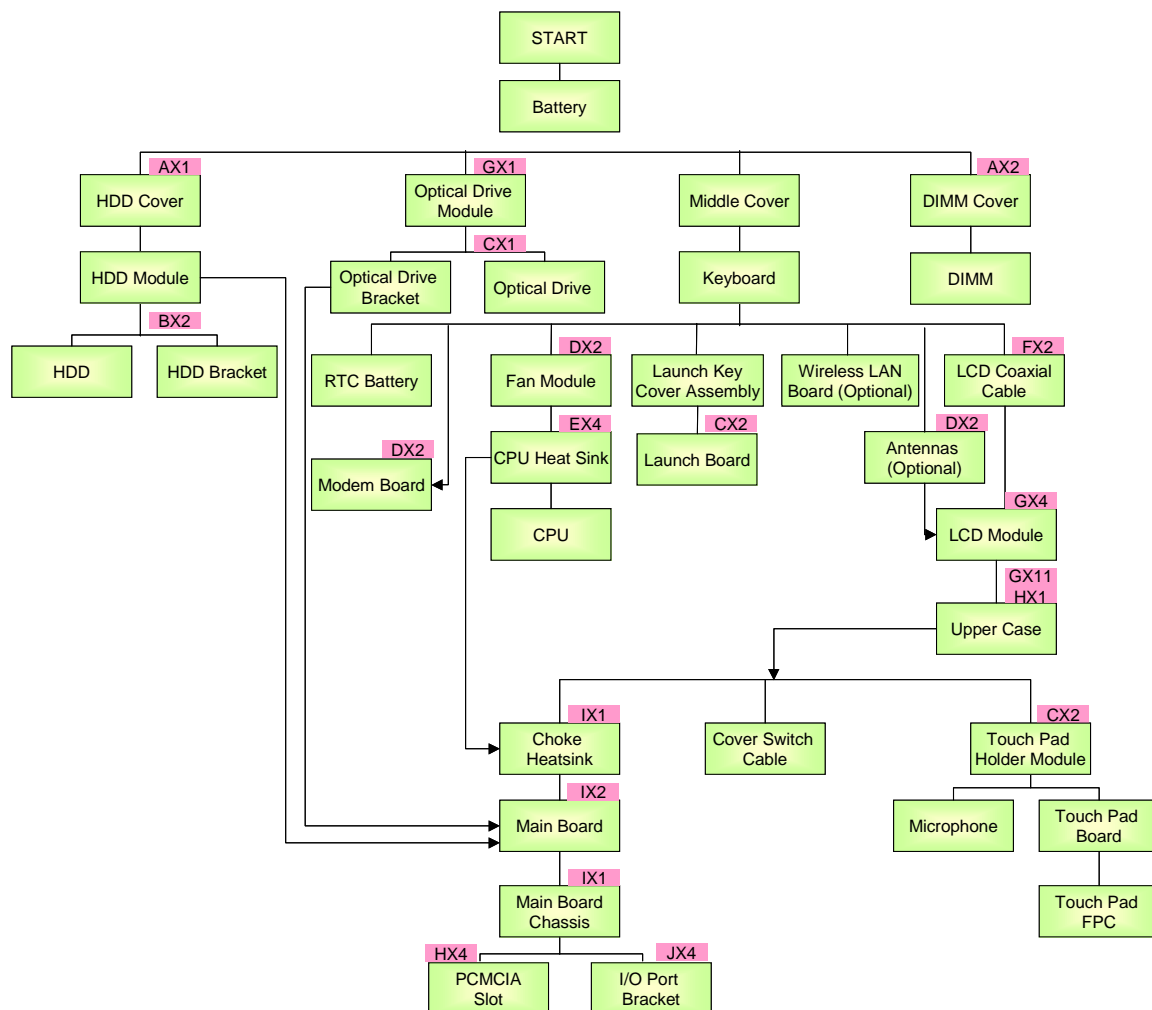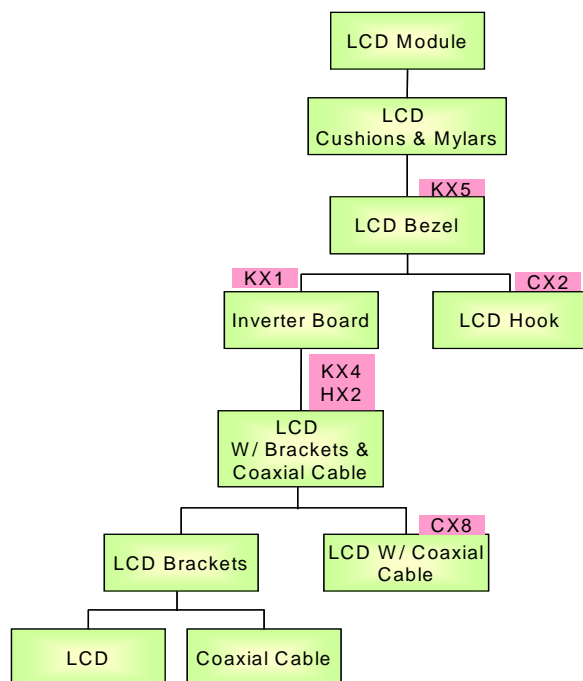
General Information

Before You Begin

Before proceeding with the disassembly procedure, make sure that you do the following:

1. Turn off the power to the system and all peripherals.
2. Unplug the AC adapter and all power and signal cables from the system.
3. Remove the battery pack.

Disassembly Procedure Flowchart

The flowchart on the succeeding page gives you a graphic representation on the entire disassembly sequence and instructs you on the components that need to be removed during servicing. For example, if you want to remove the main board, you must first remove the keyboard, then disassemble the inside assembly frame in that order.

```
                                    START
                                      |
                                   Battery
                                      |
   ┌──────────────┬───────────────────┼────────────────────┬──────────────┐
  AX1            GX1                                        AX2
  HDD Cover    Optical Drive        Middle Cover         DIMM Cover
                 Module
      |             |                    |                    |
  HDD Module   ┌────┴────CX1┐        Keyboard              DIMM
      |        Optical Drive  Optical Drive  |
     BX2         Bracket        Drive        |
   ┌──┴──┐          |                ┌───────┼──────────┬──────────┐FX2
  HDD  HDD      RTC Battery      Launch Key  Wireless LAN   LCD Coaxial
      Bracket       |   DX2      Cover Assembly  Board        Cable
                Fan Module           |CX2      (Optional)        |DX2
                    |EX4         Launch Board                Antennas
          DX2   CPU Heat Sink                                (Optional)
      Modem Board     |                                          |GX4
                     CPU                                     LCD Module
                                                                |GX11
                                                                 HX1
                                                             Upper Case
                                                                 |
   ┌───────────────┬──────────────┬──────────────┐
  IX1                                             CX2
  Choke        Cover Switch                   Touch Pad
  Heatsink        Cable                     Holder Module
     |IX2                                  ┌──────┴──────┐
  Main Board                           Microphone   Touch Pad
     |IX1                                             Board
  Main Board                                            |
  Chassis                                          Touch Pad
   ┌──┴──┐                                            FPC
  HX4   JX4
  PCMCIA  I/O Port
  Slot    Bracket
```

```
                          ┌─────────────┐
                          │ LCD Module  │
                          └──────┬──────┘
                          ┌──────┴──────┐
                          │     LCD     │
                          │Cushions & Mylars│
                          └──────┬──────┘
                              [KX5]
                          ┌──────┴──────┐
                          │  LCD Bezel  │
                          └──────┬──────┘
              [KX1]  ┌──────────┴──────────┐  [CX2]
          ┌──────────┴──────┐       ┌──────┴──────┐
          │ Inverter Board  │       │  LCD Hook   │
          └────────┬────────┘       └─────────────┘
                [KX4
                 HX2]
          ┌────────┴────────┐
          │      LCD        │
          │  W/ Brackets &  │
          │  Coaxial Cable  │
          └────────┬────────┘
          ┌────────┴──────────┐  [CX8]
    ┌─────┴────────┐   ┌───────┴──────┐
    │ LCD Brackets │   │ LCD W/ Coaxial│
    └─────┬────────┘   │    Cable     │
   ┌──────┴───────┐    └──────────────┘
┌──┴───┐   ┌──────┴──────┐
│ LCD  │   │Coaxial Cable│
└──────┘   └─────────────┘
```

Screw List

Item	Description
A	SCREW DIMM COVER STEEL (BLACK)
B	SCREW M3X L2.8 (GOLDEN)
C	SCREW M2XL3 NYLOK (BLACK)
D	SCREW M2.5XL5 NYLOK (SILVER)
E	SPRING SCREW (SCREW)
F	SCREW M2.5XL10 (BLACK)
G	SCREW M2.5 X L8 (BLACK)
H	SCREW M2XL4 NYLOK (SILVER)
I	SCREW M2.5XL5 NYLOK (SILVER)
J	SCREW HEX W/ WASHER (SILVER)
K	SCREW M2.5XL5 NYLOK (BLACK)

Removing the Battery

1. Unlock the battery release button.

2. Push the other battery release button in the arrow direction and lift up the battery out from the main unit.

3. Remove the battery from the system.

Removing the Hard Disk Drive Module

1. See "Removing the Battery" on page 55

2. Remove the screw on the hard disk cover, and then remove the HDD cover.

3. Push the HDD module out by pulling the mylar, lift up the HDD module and remove it from the unit.

Disassembling the Hard Disk Drive Module

1. See "Removing the Battery" on page 55

2. See "Removing the Hard Disk Drive Module" on page 56

3. Remove the two screws as shown here, and then detach the HDD from the HDD bracket.

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Removing the External DIMM Module

1. See "Removing the Battery" on page 55

2. Remove the two screws on the DIMM cover, then remove the DIMM cover from the lower case.

3. Push out the latches on both sides of the DIMM socket and then remove the DIMM module.
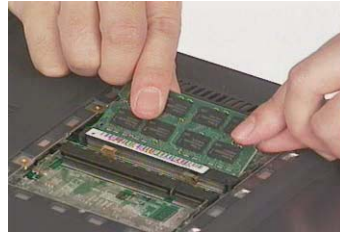
Removing the Optical Drive Module

1. See "Removing the Battery" on page 55

2. Remove the screw on the back side of the unit and pull gently to detach the optical drive module from the main unit .

Disassembling the Optical Drive Module

1. See "Removing the Battery" on page 55

2. See "Removing the Optical Drive Module" on page 58

3. First remove the one screw as shown here, and then detach the optical drive bracket from the optical drive.

Disassembling the Main Unit

Removing the Middle Cover

1. See "Removing the Battery" on page 55
2. Push the middle cover outward on both sides, and lift it up gently.

3. Turn the middle over and put it on the keyboard. Disconnect the audio DJ board cable, speaker cable, the power PCB cable from the main board as shown.
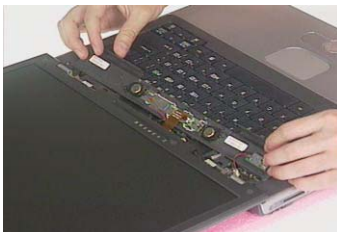
4. Detach the middle cover from the main unit

Removing the Wireless LAN Board (Optional)

1. See "Removing the Battery" on page 55
2. See "Removing the Middle Cover" on page 59
3. Lift up the keyboard, turn it over and put it on the upper case.

4. Put the RTC battery aside.

5. The two RF cables are routed beneath the inverter cable and the coaxial cable. Thus, lift up the inverter cable first and then the coaxial cable before you release the two RF cables. Or you may choose to disconnect the inverter cable, remove the two screws on the coaxial cable, and then disconnect the coaxial cable from the main board.

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6. Disconnect the two RF cables from the sockets on the wireless LAN board.

7. Release the two RF cables as shown.
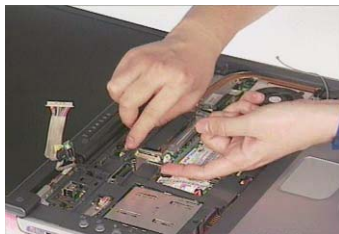
8. Remove the one screw and then detach the right antenna from the upper case.

9. Remove the one screw and then detach the left antenna from the upper case.

10. Press the latches on both sides of the socket, and then detach the wireless LAN board.
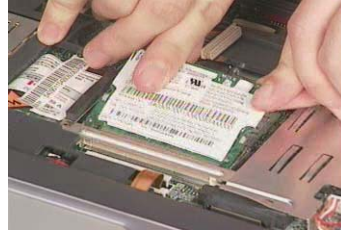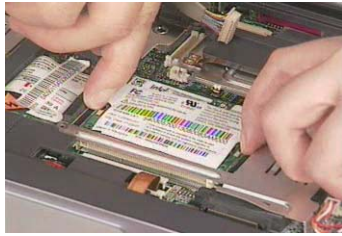
NOTE: 1. When attaching the antennas back to the upper case, make sure the two RF cables are routed as shown and should be beneath the inverter cable and the coaxial cable.
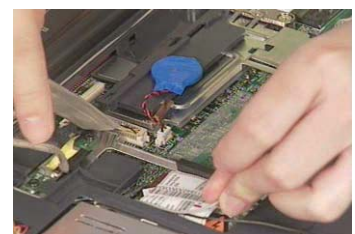
2. Route the two RF cables in the way as shown.
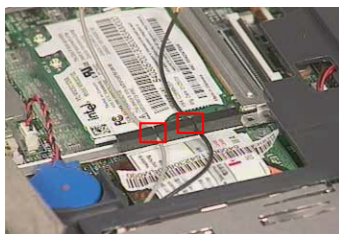
3. Please ignore this step if your notebook is not equipped with wireless LAN board and antennas.

Removing the Keyboard

1. See "Removing the Battery" on page 55
2. See "Removing the Middle Cover" on page 59
3. Lift the keyboard up and put it on the upper case, disconnect the keyboard cable from the main board.
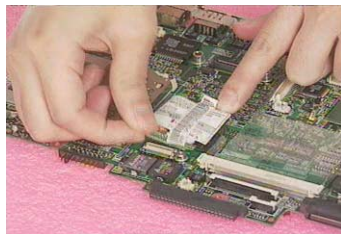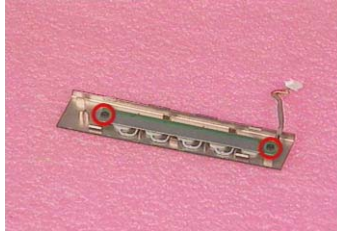

4. Remove the keyboard away.

Removing the LCD Module

1. See "Removing the Battery" on page 55
2. See "Removing the Middle Cover" on page 59
3. See "Removing the Keyboard" on page 63
4. See "Removing the Wireless LAN Board (Optional)" on page 60
5. Disconnect the inverter cable from the main board.

6. Remove the two screws as shown, and then disconnect the LCD coaxial cable from the main board.
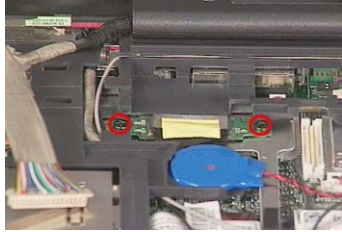
7. Remove the two screws as shown.

8. Remove the two screws and then lift up the LCD module carefully.

NOTE: When connecting the inverter cable and coaxial cable back to the unit, please note that the two cables should be routed as shown.

Removing the Fan Module

1. See "Removing the Battery" on page 55
2. See "Removing the Middle Cover" on page 59
3. See "Removing the Keyboard" on page 63
4. Disconnect the fan cable from the main board by using a plastic flat screwdriver, remove the two screws, and then detach the fan from the main board.
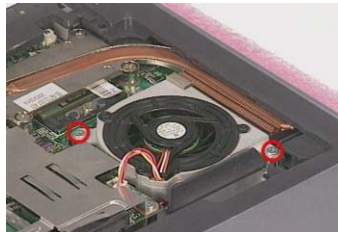
Removing the CPU Heat Sink

1. See "Removing the Battery" on page 55
2. See "Removing the Middle Cover" on page 59
3. See "Removing the Keyboard" on page 63
4. See "Removing the Fan Module" on page 65
5. Remove the four screws on the CPU heat sink, and then remove the CPU heat sink from the main board.
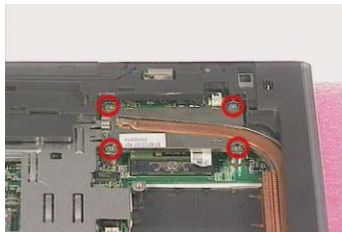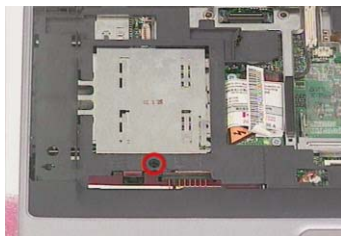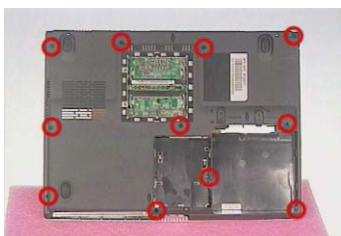
Removing the CPU

1. See "Removing the Battery" on page 55
2. See "Removing the Middle Cover" on page 59
3. See "Removing the Keyboard" on page 63
4. See "Removing the Fan Module" on page 65
5. See "Removing the CPU Heat Sink" on page 65
6. Release the screw counterclockwise by using a flat screwdriver, remove the CPU.
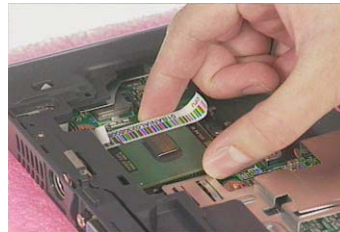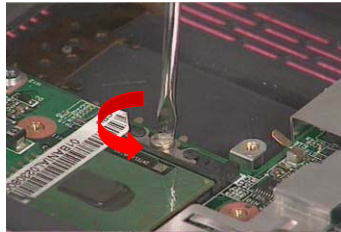
NOTE: To install the CPU, first release the screw counterclockwise, put the CPU back and then secure the screw clockwise to lock the socket. When you reinstall the CPU back to its socket, please put it back with the triangle mark this side as shown here.
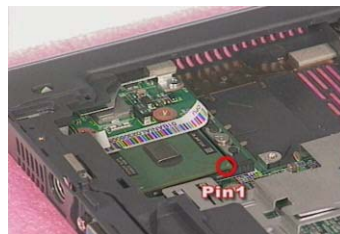
Removing the RTC Battery

1. See "Removing the Battery" on page 55
2. See "Removing the Middle Cover" on page 59
3. See "Removing the Keyboard" on page 63
4. Disconnect the RTC cable from the mainboard by using a plastic flat screwdriver and remove the RTC battery.

Removing the Modem Board

1. See "Removing the Battery" on page 55
2. See "Removing the Middle Cover" on page 59
3. See "Removing the Keyboard" on page 63
4. Release and disconnect the two RF cables and then remove the two screws on the modem board.
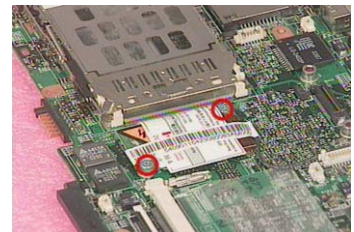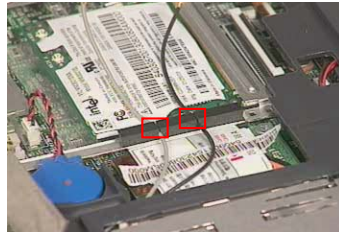
5. Disconnect the modem cable from the modem board and remove it from the main board.

Removing the Launch Key Cover Assembly

1. See "Removing the Battery" on page 55
2. See "Removing the Middle Cover" on page 59
3. See "Removing the Keyboard" on page 63
4. Disconnect the launch key cable from the main board.
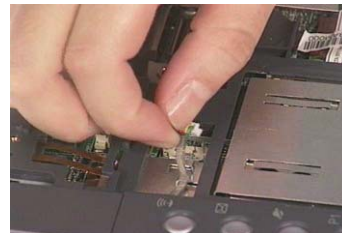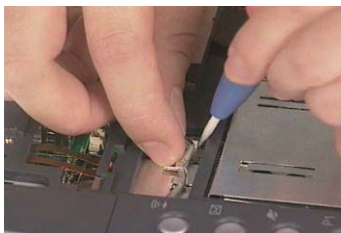
5. Release the latches with a plastic flat screwdriver and detach the launch key cover assembly from the upper case.

6. Remove the two screws and then detach the launch board from the upper case.

Separating the Upper Case from the Lower Case

1. See "Removing the Battery" on page 55
2. See "Removing the Middle Cover" on page 59
3. See "Removing the Keyboard" on page 63
4. See "Removing the Wireless LAN Board (Optional)" on page 60
5. See "Removing the LCD Module" on page 63
6. Put the RTC battery on the main board.
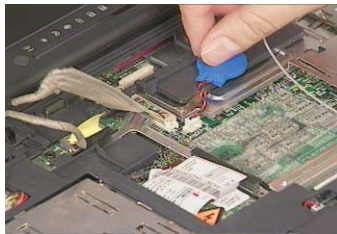
7. Disconnect the touch pad cable, the microphone cable, the cover switch cable, and the launch key cable from the main board by using plastic tweezers.
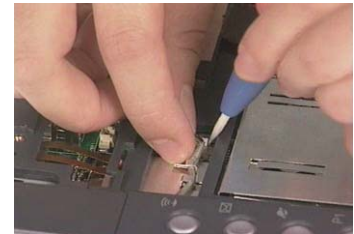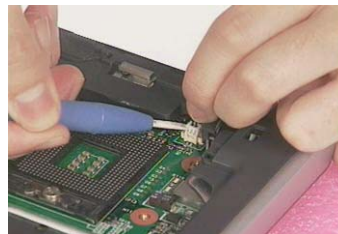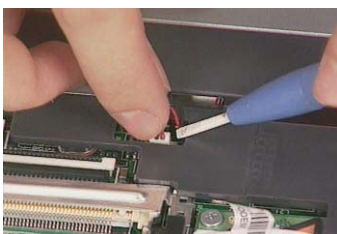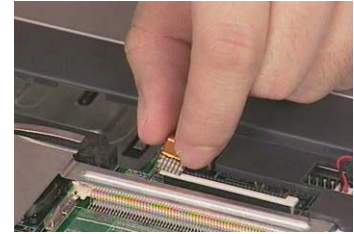
8. Release the eleven screws from the bottom of the main unit and the other one as shown, and then remove the upper case from the main unit gently.

Removing the Touch Pad Holder Module

1. See "Removing the Battery" on page 55

2. See "Removing the Middle Cover" on page 59

3. See "Removing the Keyboard" on page 63

4. See "Removing the Wireless LAN Board (Optional)" on page 60

5. See "Removing the LCD Module" on page 63

6. See "Separating the Upper Case from the Lower Case" on page 68

7. Remove the tape from the touch pad cable and two tapes from the microphone cable, and put the microphone cable aside.
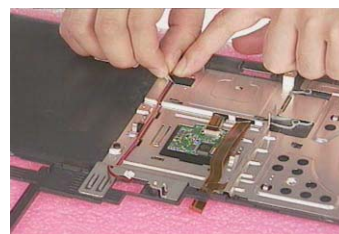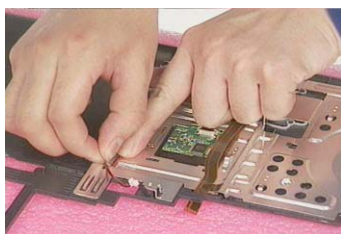
8. Release the touch pad cable from the upper case, remove the two screws, slide the touch pad holder module as shown and then detach the touch pad holder module from the upper case.
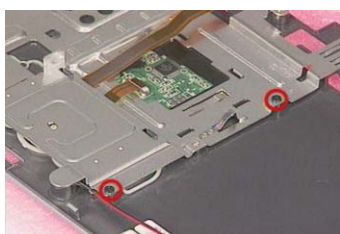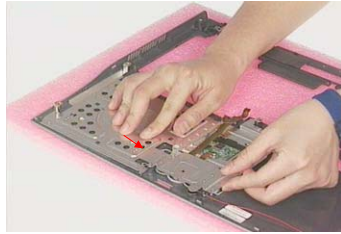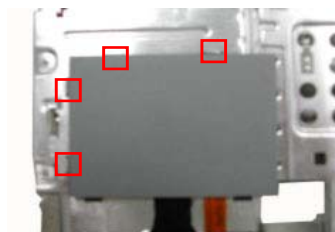
Removing the Touch Pad Board

1. See "Removing the Battery" on page 55

2. See "Removing the Middle Cover" on page 59

3. See "Removing the Keyboard" on page 63

4. See "Removing the LCD Module" on page 63

5. See "Separating the Upper Case from the Lower Case" on page 68

6. See "Removing the Touch Pad Holder Module" on page 69

7. Disconnect the touch pad cable from the touch pad board with a plastic flat screwdriver, remove the touchpad board from the upper case.
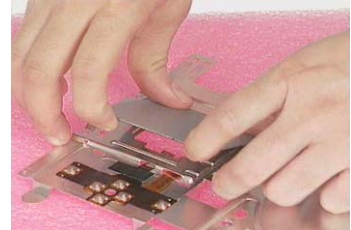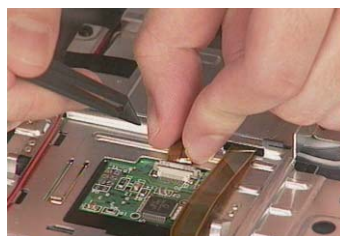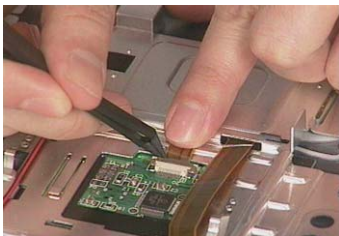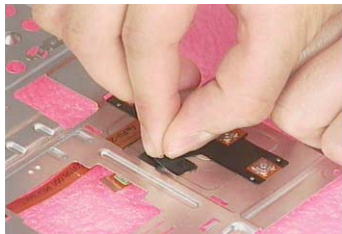

NOTE: When attaching the touch pad board onto the touch pad holder, please make sure the touch pad board aligns with the four marks as shown.
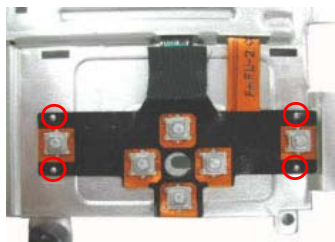
Removing the Touch Pad FPC

1. See "Removing the Battery" on page 55
2. See "Removing the Middle Cover" on page 59
3. See "Removing the Keyboard" on page 63
4. See "Removing the Wireless LAN Board (Optional)" on page 60
5. See "Removing the LCD Module" on page 63
6. See "Separating the Upper Case from the Lower Case" on page 68
7. See "Removing the Touch Pad Holder Module" on page 69
8. See "Removing the Touch Pad Board" on page 70
9. Remove the tape, and detach the touch pad FPC in the way as shown.
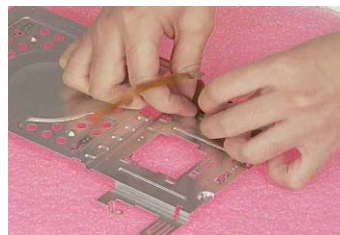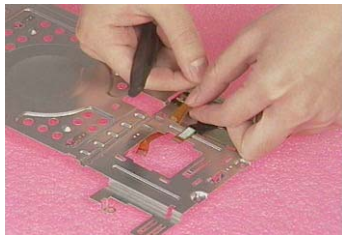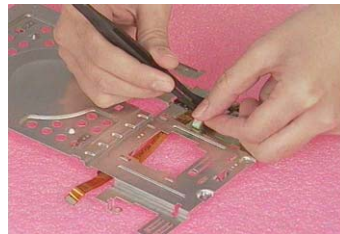
NOTE: When attaching the touch pad FPC back to the touch pad holder, please make sure the points on the touch pad holder are well inserted as shown.

Removing the Microphone

1. See "Removing the Battery" on page 55
2. See "Removing the Middle Cover" on page 59
3. See "Removing the Keyboard" on page 63
4. See "Removing the Wireless LAN Board (Optional)" on page 60
5. See "Removing the LCD Module" on page 63
6. See "Separating the Upper Case from the Lower Case" on page 68
7. See "Removing the Touch Pad Holder Module" on page 69
8. Detach the microphone from the touch pad holder.

Removing the Microphone Rubber

1. See "Removing the Battery" on page 55
2. See "Removing the Middle Cover" on page 59
3. See "Removing the Keyboard" on page 63
4. See "Removing the Wireless LAN Board (Optional)" on page 60
5. See "Removing the LCD Module" on page 63
6. See "Separating the Upper Case from the Lower Case" on page 68
7. See "Removing the Touch Pad Holder Module" on page 69
8. See "Removing the Microphone" on page 72
9. Detach the microphone from microphone rubber.

NOTE: When attaching the microphone to the microphone rubber, please pay attention to the way how it is attached.
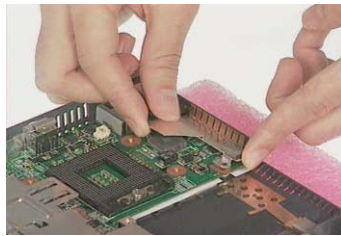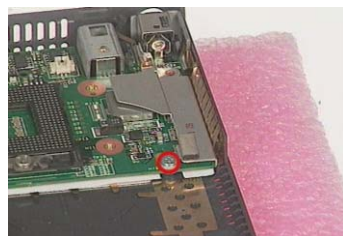
Removing the Cover Switch Cable

1. See "Removing the Battery" on page 55
2. See "Removing the Middle Cover" on page 59
3. See "Removing the Keyboard" on page 63
4. See "Removing the Wireless LAN Board (Optional)" on page 60
5. See "Removing the LCD Module" on page 63
6. See "Separating the Upper Case from the Lower Case" on page 68
7. Remove the cover switch cable from the upper case. Be very careful when you try to remove it from the upper case.
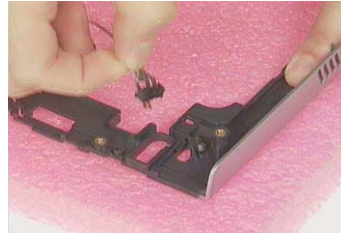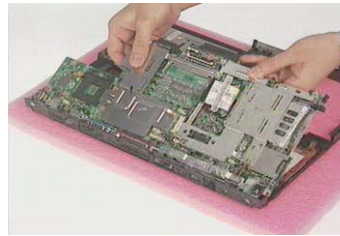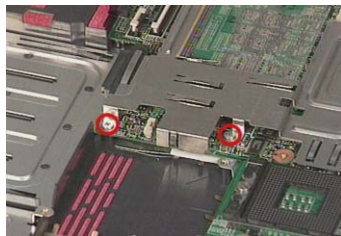

Removing the Choke Heatsink

1. See "Removing the Battery" on page 55
2. See "Removing the Middle Cover" on page 59
3. See "Removing the Keyboard" on page 63
4. See "Removing the Wireless LAN Board (Optional)" on page 60
5. See "Removing the LCD Module" on page 63
6. See "Removing the Fan Module" on page 65
7. See "Removing the CPU Heat Sink" on page 65
8. See "Separating the Upper Case from the Lower Case" on page 68
9. Remove the one screw and detach the choke heatsink from the main board.
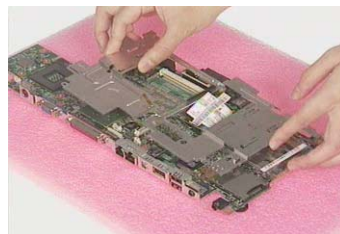
Removing the Main Board

1. See "Removing the Battery" on page 55
2. See "Removing the Optical Drive Module" on page 58
3. See "Removing the Middle Cover" on page 59
4. See "Removing the Keyboard" on page 63
5. See "Removing the Wireless LAN Board (Optional)" on page 60
6. See "Removing the LCD Module" on page 63
7. See "Removing the Fan Module" on page 65
8. See "Removing the CPU Heat Sink" on page 65
9. See "Separating the Upper Case from the Lower Case" on page 68
10. See "Removing the Choke Heatsink" on page 73
11. Remove the two screws on the main board as shown below and then detach the main board from the lower case with caution.
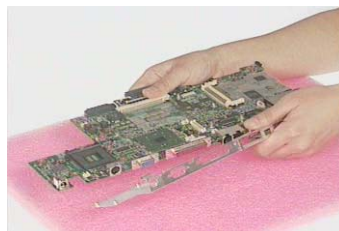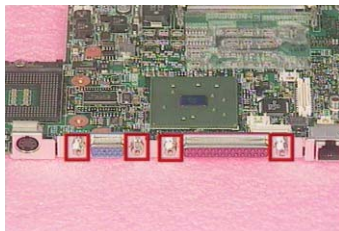

Removing the Main Board Chassis

1. See "Removing the Battery" on page 55
2. See "Removing the Middle Cover" on page 59
3. See "Removing the Keyboard" on page 63
4. See "Removing the Wireless LAN Board (Optional)" on page 60
5. See "Removing the LCD Module" on page 63
6. See "Removing the Fan Module" on page 65
7. See "Removing the CPU Heat Sink" on page 65
8. See "Separating the Upper Case from the Lower Case" on page 68
9. See "Removing the Choke Heatsink" on page 73
10. See "Removing the Main Board" on page 74
11. Remove the one screw as shown and detach the main board chassis from the lower case.
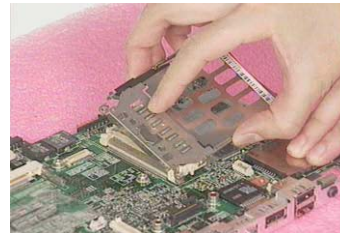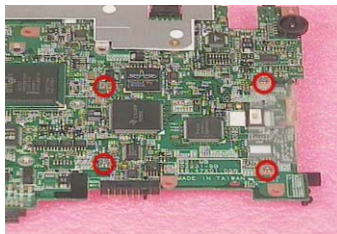
Removing I/O Port Bracket

1. See "Removing the Battery" on page 55
2. See "Removing the Optical Drive Module" on page 58
3. See "Removing the Middle Cover" on page 59
4. See "Removing the Keyboard" on page 63
5. See "Removing the Wireless LAN Board (Optional)" on page 60
6. See "Removing the LCD Module" on page 63
7. See "Removing the Fan Module" on page 65
8. See "Removing the CPU Heat Sink" on page 65
9. See "Separating the Upper Case from the Lower Case" on page 68
10. See "Removing the Choke Heatsink" on page 73
11. See "Removing the Main Board" on page 74
12. See "Removing the Main Board Chassis" on page 74
13. Remove the four hex screw as shown here and then detach the I/O port bracket from the main board.
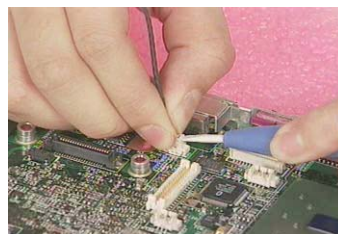
Removing the PCMCIA Socket

1. See "Removing the Battery" on page 55
2. See "Removing the Optical Drive Module" on page 58
3. See "Removing the Middle Cover" on page 59
4. See "Removing the Keyboard" on page 63
5. See "Removing the Wireless LAN Board (Optional)" on page 60
6. See "Removing the LCD Module" on page 63
7. See "Removing the Fan Module" on page 65
8. See "Removing the CPU Heat Sink" on page 65
9. See "Separating the Upper Case from the Lower Case" on page 68
10. See "Removing the Choke Heatsink" on page 73
11. See "Removing the Main Board" on page 74
12. See "Removing the Main Board Chassis" on page 74
13. Release the four screws with a screwdriver and detach the PCMCIA socket from the main board.

Removing the Modem Board Cable

1. See "Removing the Battery" on page 55
2. See "Removing the Middle Cover" on page 59
3. See "Removing the Keyboard" on page 63
4. See "Removing the Modem Board" on page 67
5. Disconnect the modem cable with a plastic flat screwdriver and remove it from the main board.

Disassembling the 15" TFT LCD Module

Removing the LCD Bezel

1. See "Removing the Battery" on page 55

2. See "Removing the Middle Cover" on page 59

3. See "Removing the Wireless LAN Board (Optional)" on page 60

4. See "Removing the LCD Module" on page 63

5. Remove the three mylars and two screw caps from the LCD module.

6. Remove the five screws from the LCD module.

7. Snap off the LCD bezel carefully and then remove it from the LCD module.

Removing the Inverter Board

1. See "Removing the Battery" on page 55
2. See "Removing the Middle Cover" on page 59
3. See "Removing the Wireless LAN Board (Optional)" on page 60
4. See "Removing the LCD Module" on page 63
5. See "Removing the LCD Bezel" on page 77
6. Remove the one screw, detach the inverter board from the LCD panel, disconnect the LCD power cable and the coaxial cable from the inverter board.
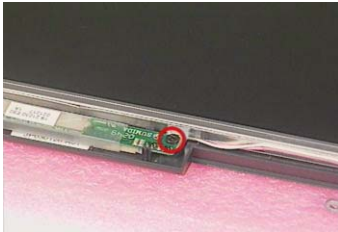
7. Remove the inverter board from the LCD panel.

Removing the LCD Hook

1. See "Removing the Battery" on page 55
2. See "Removing the Middle Cover" on page 59
3. See "Removing the Wireless LAN Board (Optional)" on page 60
4. See "Removing the LCD Module" on page 63
5. See "Removing the LCD Bezel" on page 77
6. Remove the two screws and detach the LCD hook from the LCD panel in the way shown here.

Removing the LCD

1. See "Removing the Battery" on page 55
2. See "Removing the Middle Cover" on page 59
3. See "Removing the Wireless LAN Board (Optional)" on page 60
4. See "Removing the LCD Module" on page 63
5. See "Removing the LCD Bezel" on page 77
6. See "Removing the Inverter Board" on page 78
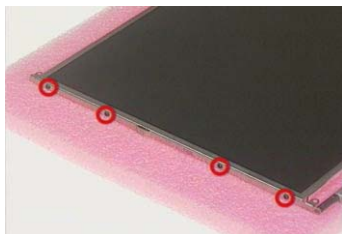7. Remove the two screws as shown.

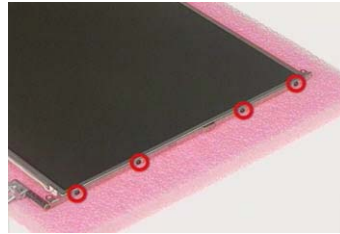8. Remove the four screws on the hinges as shown.

9. Detach the LCD together with the LCD brackets from the LCD panel.

10. Remove the eight screws and then detach the LCD brackets from the LCD.

Removing the LCD Coaxial Cable

1. See "Removing the Battery" on page 55
2. See "Removing the Middle Cover" on page 59
3. See "Removing the Wireless LAN Board (Optional)" on page 60
4. See "Removing the Keyboard" on page 63
5. See "Removing the LCD Module" on page 63
6. See "Removing the LCD Bezel" on page 77
7. See "Removing the Inverter Board" on page 78
8. See "Removing the LCD" on page 79
9. Remove the tapes, disconnect and remove the coaxial cable from the LCD.