## 4.1 General

This section explains how to disassemble the computer and replace Field Replaceable Units (FRUs). It may not be necessary to remove all the FRUs in order to replace one. The chart below is a guide to which FRUs need to be removed in order to remove others. Always start by removing the battery pack, next, optional items such as the optional PC card, optional mini PCI card and optional memory module, then follow the line on the chart to determine which FRU you must remove next in order to repair the one you think is causing the computer to operate improperly. Refer to the example at the bottom of the page.

| 4.1	Battery		
4.2 HDD	4.3 Slim select bay options	4.4 Wireless LAN board	4.18 Display mask
4.6 Keybaord		4.5 RTC battery	
4.7 Main/Expansion memory			4.19 FL inverter
4.8 IPS button and Palm rest			
4.9 Bluetooth board	4.10 Sound/FIR board	4.11 MODEM 4.12 Wireless comunication switch board	4.20 LCD module
4.13 Top cover and Display assembly			4.21 LCD/FL cable 4.22 Antenna cable 4.23 FL
4.14 Speaker	4.15 System board		
	4.16 PC card slot	4.17 I/O board	

How to See the Chart

Two examples of referring to the chart are shown below.

- **Removing the Sound/FIR Board.**

The HDD, Slim Select Bay Options, Wireless LAN Card, RTC battery, keyboard, Memory Modules, IPS board and Palm Rest must be removed before removing the Sound/FIR board.

- **Removing the LCD Module**

The FL inverter board and display mask above the LCD module must be removed to access the LCD Module.

4.1	Battery		
4.2 HDD	4.3 Slim select bay options	4.4 Wireless LAN card	4.18 Display mask
4.6 Keyboard		4.5 RTC battery	
4.7 Main/Expansion memory			4.19 FL inverter
4.8 IPS button and Palm rest			
4.9 Bluetooth board	4.10 Sound/FIR board	4.11 MODEM 4.12 Wireless comucation switch board	4.20 LCD module
4.13 Top cover and Display assembly			4.21 LCD/FL cable 4.22 Antenna cable 4.23 FL
4.14 Speaker	4.15 Systemu board		
	4.16 PC card slot	4.17 I/O board	

----------- Sound/FIR board

——·—— LCD module

Safety Precautions

Before you begin disassembly, read the following safety precautions and observe them carefully as you work.

DANGER: 1. *Always use the genuine battery that is authorized by Toshiba or compatible with the unit. Since other battery packs have different specifications, they may be incompatible with the unit, and may burst or explode.*
Never heat or disassemble the battery pack, as that could cause leakage of alkaline solution. Never throw the battery pack into a fire, as that could cause the battery pack to explode.

                2. *The power supply, FL inverter and other components carry high voltages. If you need to turn on the power of a partially disassembled computer to check its operation, be very careful not to touch connectors or components, in order to avoid the risk of electric shock.*
Also, do not disassemble individual components in first-level maintenance.

WARNING: 1. *Turn off the power and disconnect the AC adaptor from the power source, to avoid exposure to electric shock.*

                2. *Batteries in the computer retain an electrical charge, so there is danger of electrical shock even when the computer is disconnected from an AC power source. Remove any metal jewelry or accessories such as necklaces, bracelets or rings, in order to reduce the risk of electric shock. Never work with wet or damp hands.*

                3. *Be careful of edges and corners as these may cut.*

CAUTION: 1. *When you change a component, be sure the replacement component meets the required specifications. Never use foreign parts, to avoid any risk of damage to the computer.*

                2. *To avoid any risk of short-circuit, fire or other internal damage, never allow any metal objects such as screws or paper clips to fall into the unit. Be sure to replace screws with the same size as those removed. Make sure all screws are securely fastened. Loose screws can cause short circuits, resulting in heat, smoke or fire.*

                3. *Before lifting out an FRU or other component, make sure all cables to the component have been disconnected, in order to reduce the risk of accidental electric shock.*

                4. *If you use AC power, be sure to use the cable that came with the computer or one recommended by Toshiba.*

                5. *Make sure that all replacement components meet the specifications for the computer and that all cables and connectors are securely fastened, in order to avoid the risk of electric shock.*

                6. *Some parts inside the computer, such as the CPU and cooling module, become very hot during operation. Conduct repair work after they have cooled. Be careful around the CPU and cooling module to avoid burns.*

Before You Begin

Look over the procedures in this section before you begin disassembling the computer.
Familiarize yourself with the disassembly and reassembly steps. Begin each procedure by
removing the AC adapter and the battery pack as instructed in this section:

1. Do not disassemble the computer unless it is operating abnormally.

2. Use only the correct and approved tools.

3. Make sure the working environment is free from the following elements whether you are
    using or storing the computer.

    ❑ Dust and contaminates
    ❑ Static electricity
    ❑ Extreme heat, cold and humidity

4. Make sure the FRU you are replacing is causing the abnormal operation by performing
    the necessary diagnostics tests described in this manual.

5. Do not perform any operations that are not necessary and use only the described
    procedures for disassembling and installing FRUs in the computer.

6. After removing parts from the computer, place them in a safe place away from the
    computer so they will not be damaged and will not interfere with your work.

7. You will remove and replace many screws when you disassemble the computer. When
    you remove screws, make sure they are placed in a safe place and identified with the
    correct parts.

8. When assembling the computer make sure you use the correct screws to secure the
    various pieces in place. Screw sizes are listed in their corresponding figures.

9. The computer contains many sharp edges and corners, so be careful not to injure
    yourself.

10. After you have replaced an FRU, make sure the computer is functioning properly by
    performing the appropriate test on the FRU you have fixed or replaced.

Disassembly Procedures

The computer has two basic types of cable connectors:

❑ Pressure Plate Connectors

❑ Normal Pin Connectors

To disconnect a Pressure Plate connector, lift up the tabs on either side of the connector's plastic pressure plate and slide the cable out of the connector. To connect the cable to a Pressure Plate connector, make sure the pressure plate is fully lifted and slide the cable into the connector. Secure the cable in place by pushing the sides of the pressure plate down so the plate is flush with the sides of the connector. Gently pull on the cable to make sure the cable is secure. If you pull out the connector, connect it again making sure the connector's pressure plate is fully lifted when you insert the cable.

Standard pin connectors are used with all other cables. These connectors can be connected and disconnected by simply pulling them apart or pushing them together.

Assembly Procedures

After you have disassembled the computer and fixed or repaired the problem that was causing the computer to operate abnormally, you will need to reassemble the computer.

Install all the removed FRUs following the steps described in the corresponding sections in this chapter.

While assembling the computer, remember the following general points:

❑ Take your time, making sure you follow the instructions closely. Most problems arise when you get in a hurry assembling the computer.

❑ Make sure all cables and connectors are securely fastened.

❑ Before securing the FRU or other parts, make sure that no cables will be pinched by screws or the FRU.

❑ Check that all latches are closed securely in place.

❑ Make sure all the correct screws are used to secure all FRUs. Using the wrong screw can either damage the threads on the screw or the head of the screw and may prevent proper seating of an FRU.

After installing an FRU in the computer, confirm that the FRU and the computer are functioning properly.

Tools and Equipment

The use of Electrostatic Discharge (ESD) equipment is very important for your safety and the safety of those around you. Proper use of these devices will increase the success rate of your repairs and lower the cost for damaged or destroyed parts. The following equipment is necessary to disassemble and reassemble the computer:

❑ One M2 point size 0 Phillips screwdriver to remove and replace screws.

❑ One 4 mm flat-blade screwdriver.

❑ Tweezers, to lift out screws that you cannot grasp with your fingers.

❑ ESD mats for the floor and the table you are working on.

❑ An ESD wrist strap or heel grounder.

❑ Anti-static carpeting or flooring.

❑ Air ionizers in highly static sensitive areas.

❑ Plastic card of the size of credit card.

❑ One LH-STIX screw driver

❑ Tools for disconnecting Antenna cable

❑ Tweezers.

Screw Tightening Torque

When you fasten screws, be sure to follow the torque list below.

> *CAUTION:* *Overtightening can damage components and screws; undertightening can result in electrical shorts or other damage if screws or components come loose.*

> *NOTE:* *Toshiba recommends that you use an electric screw driver for quick and easy operations.*

- ❑ M2   0.17 N·m (1.7 kgf·cm)
- ❑ M2.5   0.30 N·m (3.0 kgf·cm)
- ❑ FDD   0.22 N·m (2.2 kgf·cm)
- ❑ HDD   0.3 N·m (3.1 kgf·cm) or less
- ❑ LCD (internal use)   0.176 N·m ± 0.22 N·m

> *NOTE:* *The computer contains several flat-head screws. These screws have less contact area with the screwdriver, so be careful to press firmly enough to prevent the screwdriver from slipping out and damaging the screw head.*

Color of Screw Shaft

To avoid mistakes on the screw length, screw shafts are colored as follows:

❑ Even number length screw: brown

❑ Odd number length screw: white

❑ Special length screw: blue
     Screws whose lengths are indicated to one or more decimal places such as 2.5 mm or
     2.8 mm.

Marking of Screws on the Computer Body

To make maintenance of the computer easier, markings of the kinds of the screws including the
types and lengths of the screws are indicated on the computer body.

	Kind of screws	Symbol
❑	Bind screw	B
❑	Flat-head screw	F
❑	Super flat-head screw	S
❑	Tapping screw	T
❑	Other screws (Unique screws, stud, etc.)	U

Examples:

❑ 6 mm bind screw   B6

❑ 12 mm bind screw   B12

❑ 5 mm stud   U5
     (Indicates the screwed length in round number regardless the length of the stud.)

Removing the Battery Pack

To remove the battery pack, follow the steps below and refer to figure 4-1.

CAUTION: When handling battery packs, be careful not to short circuit the terminals. Also do not drop, hit or otherwise apply impact; do not scratch or break the casing and do not twist or bend the battery pack.

1. Turn the computer upside down with the back of the computer facing you.

2. Lift up the **battery lock** and slide the **battery release latch** to free the battery pack for removal.

3. Pull the **battery pack** forward to remove it.

NOTE: For environmental reasons, do not throw away a spent battery pack. Please follow local ordinances or regulations for its disposal.
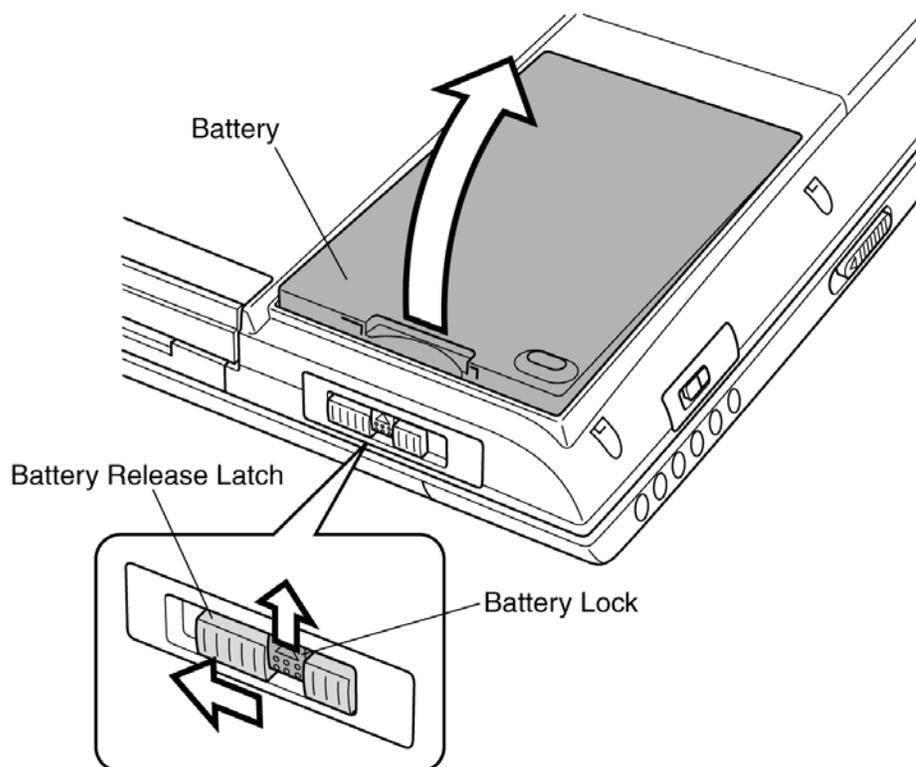
Figure 4-1   Removing the battery pack

Installing the Battery Pack

To install the battery pack, follow the steps below and refer to figure 4-1.

> *CAUTION:* *The battery pack is a lithium ion battery which can explode if not properly replaced, used, handled or disposed of. Dispose of the battery as required by local ordinances or regulations. Use only batteries recommended by Toshiba as replacements.*

> *NOTE:* *Check the battery's terminals visually. If they are dirty, wipe them clean with a dry cloth.*

1. Seat a new or recharged **battery pack**.

2. Secure **the battery lock**.

Removing the Optional PC Card

To remove the PC Card (option), make sure the computer is in boot mode, then follow the steps below and refer to figure 4-2.

CAUTION: *Before you remove a PC Card, refer to the card's documentation and to your operating system documentation for proper procedures and precautions.*

---

1. Press the **eject button** of the **PC card** you want to remove to extend the button.

2. Press the extended **eject button** to pop the card out slightly.

3. Grasp the **PC card** and remove it.

4. When the **eject butt**on is pressed again, it is put in.
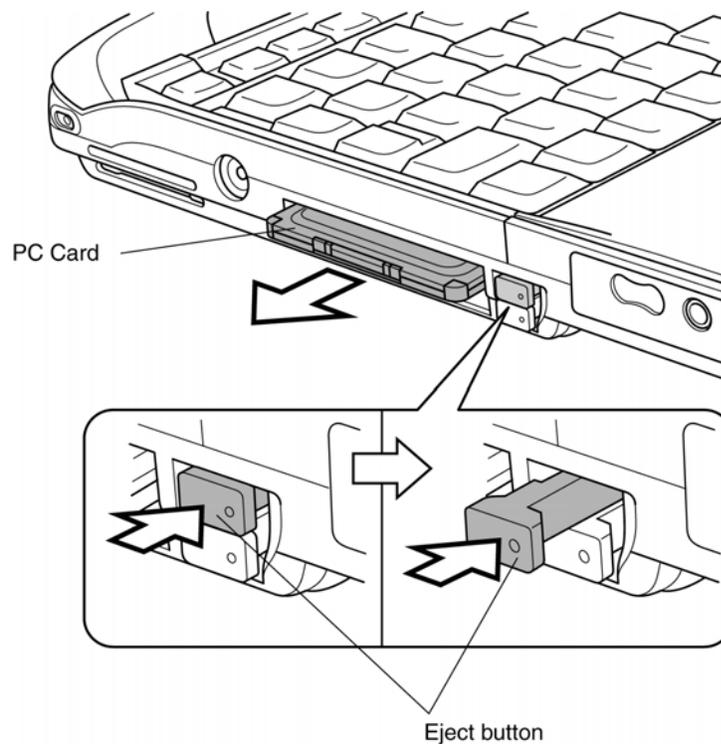
Figure 4-2   Removing a PC Card

Installing the Optional PC Card

To install the PC card (option), follow the steps below and refer to figure 4-2.

1. Make sure that the **eject button** is out.

2. Insert the **PC card**. Press gently to ensure a firm connection.

Removing the Optional SD Card

To remove the SD Card (option), make sure the computer is in boot mode, then follow the steps below and refer to figure 4-3.

> *CAUTION:* *Before you remove an SD Card, refer to the card's documentation and to your operating system documentation for proper procedures and precautions.*

1. Push in the **SD card** and release it to pop the card out slightly.

2. Grasp the **SD card** and remove it.
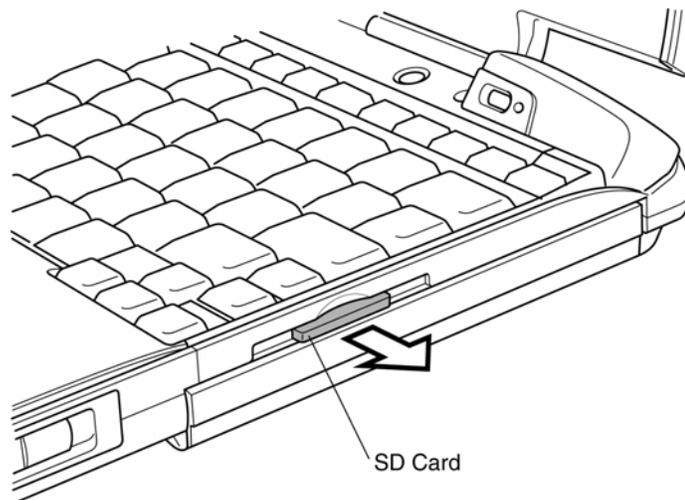
Figure 4-3   Removing a SD Card

Installing the Optional SD Card

To install the SD Card (option), follow the steps below and refer to figure 4-3.

1. Insert the **SD card**.

2. Press gently to ensure a firm connection.

4.2 HDD

Removing the HDD

CAUTION: *Be very careful not to press on the top or bottom of the HDD. Pressure can destroy data or damage the drive.*
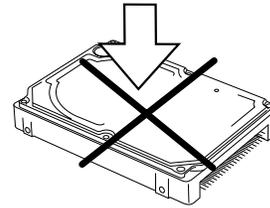
To remove the HDD, follow the steps below and refer to figures 4-4 to 4-7.

1. Turn the computer upside down.

2. Remove two **M2×4 silver screws** securing the HDD cover.

3. Lift off the **HDD cover**.
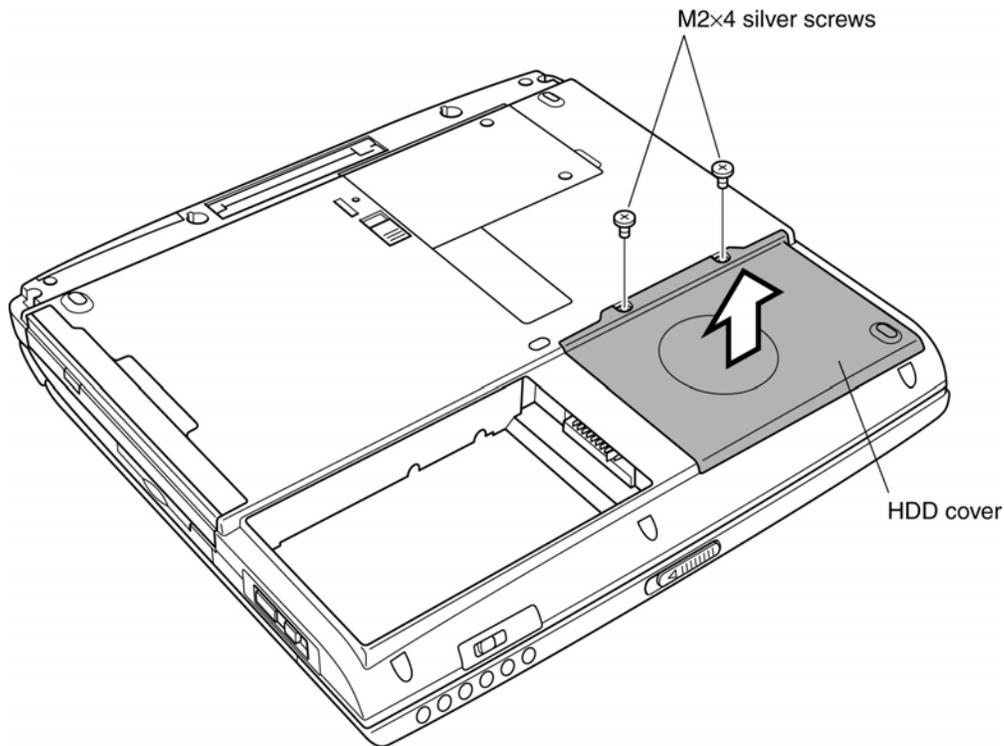
Figure 4-4   Removing the HDD cover

4. Grasp the **plastic tab** on the **HDD**. As indicated by the arrow, pull to disconnect the **HDD** from **PJ1800** on the system board, then pull the **HDD**.
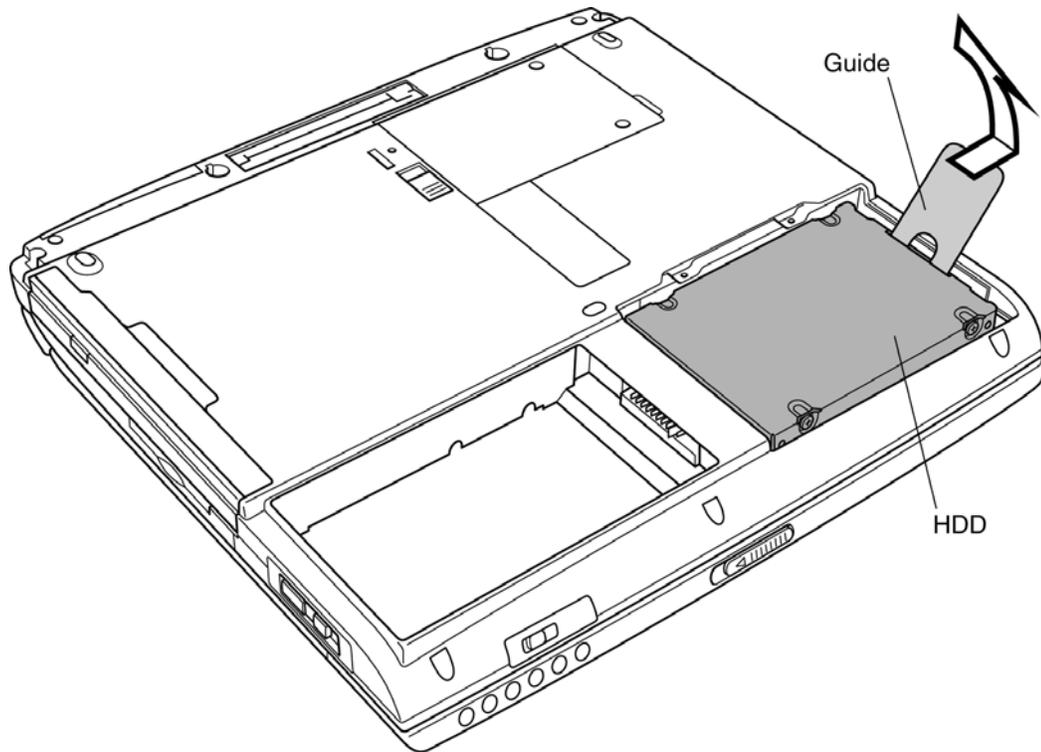
Figure 4-5   Removing the HDD pack

NOTE: *The following steps describe how to disassemble the HDD pack; however, do not disassemble if the HDD is working properly.*

---

5. Place the **HDD pack** on a flat surface and remove **four M3×4 flat-head screws**.

6. Remove the **HDD** bracket.
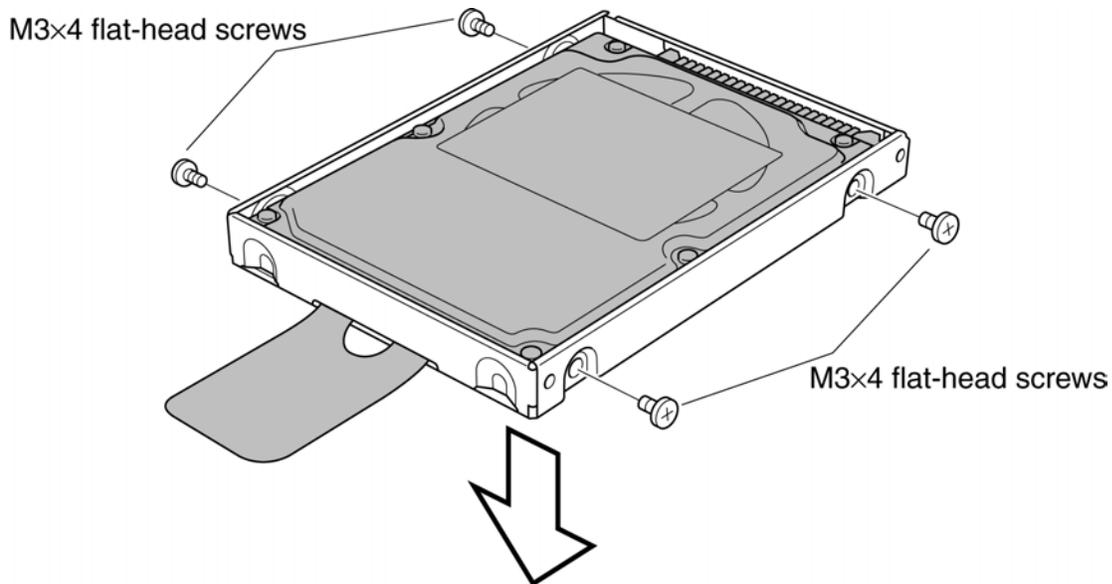
Figure 4-6   Removing screws and HDD bracket

7. Remove the **connector**.

CAUTION: *Do not apply pressure to the top or bottom of the HDD.*
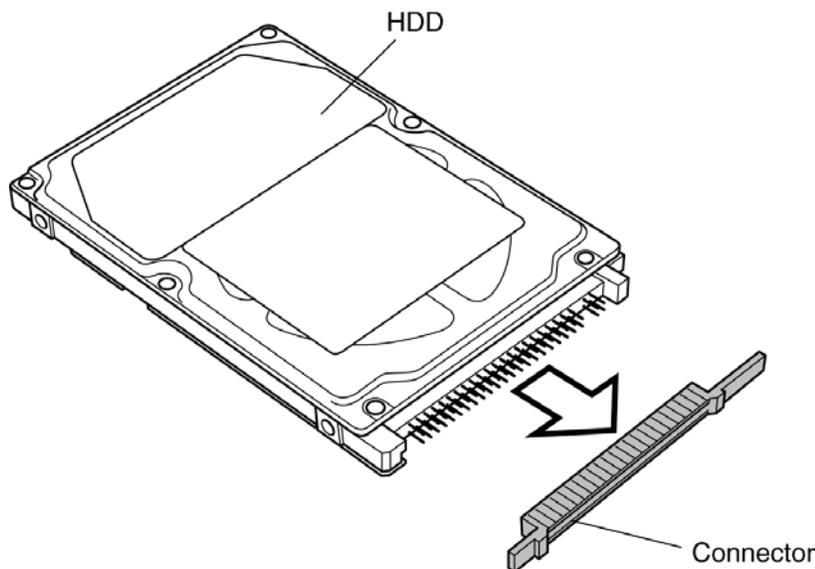
Figure 4-7   Removing the connector

Installing the HDD

To install the HDD, follow the steps below and refer to figures 4-4 to 4-7.

CAUTION: *Don't hold the HDD by its top and bottom flat surfaces.*
              It may damage the HDD.

---

1. Connect the **connector**.

2. Seat the **HDD** bracket.

3. Secure **four M3×4 flat-head screws**.

CAUTION: *Do not apply pressure to the middle part of the HDD pack.*
              It may damage the HDD bracket. Hold the HDD by its corners.

---

4. Hold the **HDD** pack by its corners, insert and press it into the computer, to fit the connector of the **HDD pack** into the connector of the computer.

5. Insert the white plastic tab into the gap between the computer top cover and **HDD**, and seat the cover.

6. Secure the **HDD cover** with **two M2×4 silver screws**.

4.3   Slim Select Bay Options

Removing the Slim Select Bay Options

> *NOTE:* *This section explains how to change modules in the Slim Select Bay. The illustration shows replacement of the DVD-ROM drive as an example. The procedures are the same for any of the modules: DVD-ROM drive, CD-RW/DVD-ROM drive, optional Slim Select Bay HDD adaptor or optional secondary battery pack with separate tray.*

To remove the Slim Select Bay module, follow the steps below and refer to figure 4-8.

1. Turn the computer upside down.

2. Slide the **Slim Select Bay latch** to the unlock position.

3. Grasp the **DVD-ROM** drive and slide it out.
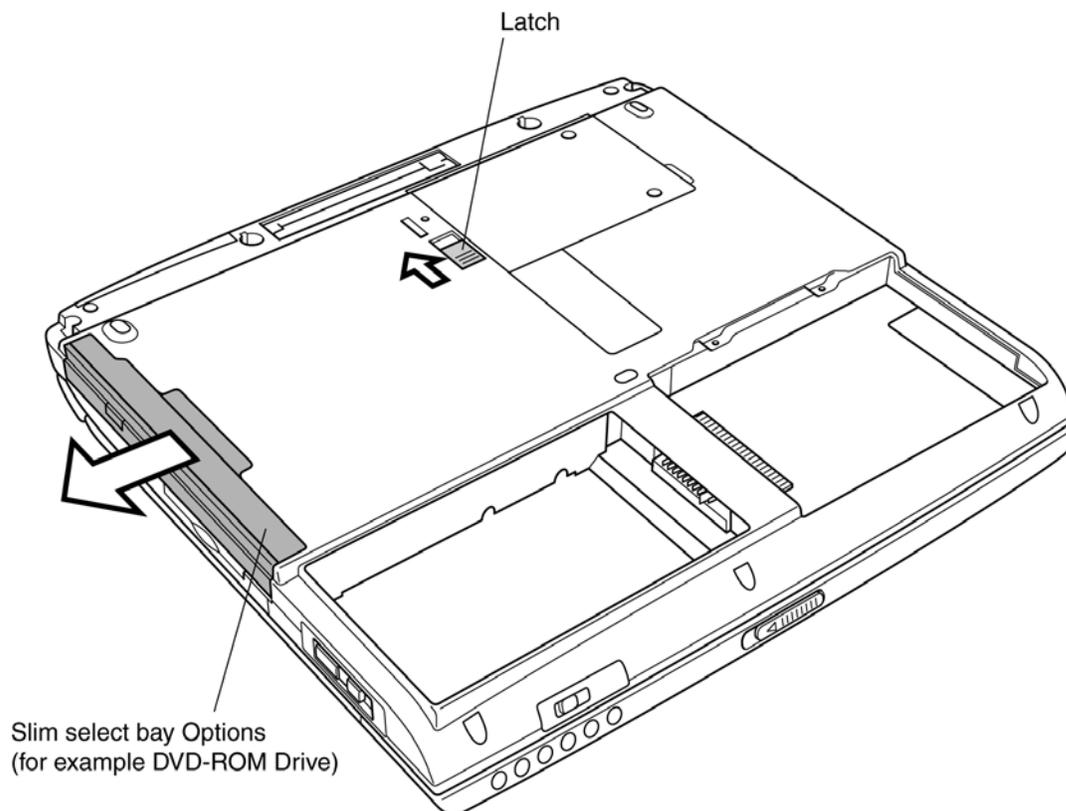
Figure 4-8 Removing a Slim Select bay module

CAUTION: *The Slim Select Bay modules can become hot with use.*
Be careful when removing the module.

Installing the Slim Select Bay Options

Install the Slim Select Bay modules as described below and refer to figure 4-8.

1. Insert the module in the **Slim Select Bay module**.

2. Push it in till it clicks.

4.4   Wireless LAN Card

Removing the Wireless LAN Card

To remove the wireless LAN card (option) make sure the computer is in boot mode and powered off, follow the steps below and refer to figures 4-9 to 4-11.

CAUTION: *Do not try to remove the wireless LAN card with the computer turned on. You can damage the computer and wireless LAN card.*

---

1. Turn the computer upside down.

2. Remove following screws using a LH-STIX screwdriver or ordinary driver.

    - **M2×4 LH-STIX**   ×2 (for Atheros card, but not for Toshiba
                                            direct PC)
    - **M2×4 silver**   ×2 (for cards other than Atheros card)

3. Remove the **wireless LAN card slot cover**.

CAUTION: *Do not touch the connectors on the Wireless LAN Card module or on the computer. Debris on the connectors may cause Wireless LAN Card access problems.*
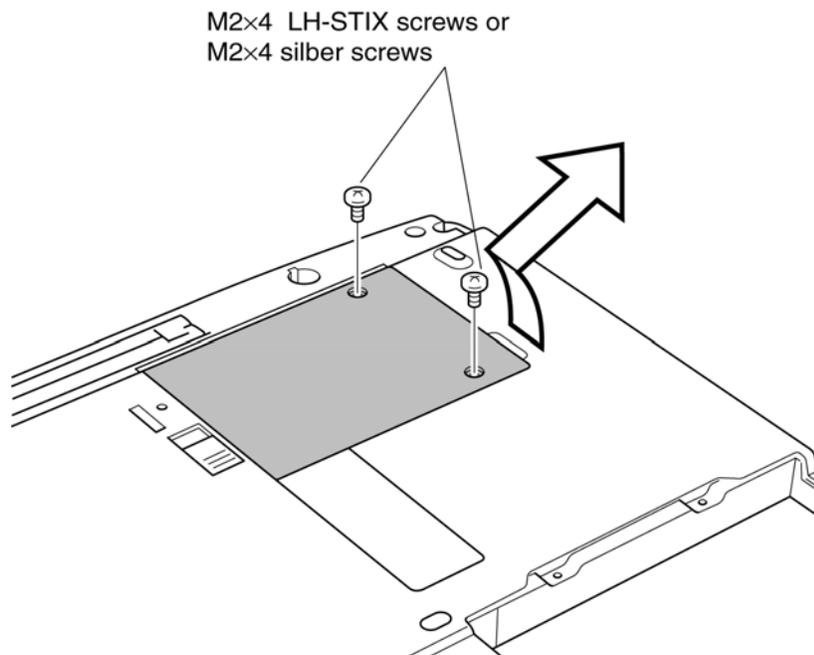
Figure 4-9   Removing the wireless LAN card slot cover

---

4. Disconnect **the antenna coaxial cables** (black and white) from the **wireless LAN card** using a tool to disconnect an antenna coaxial cable.
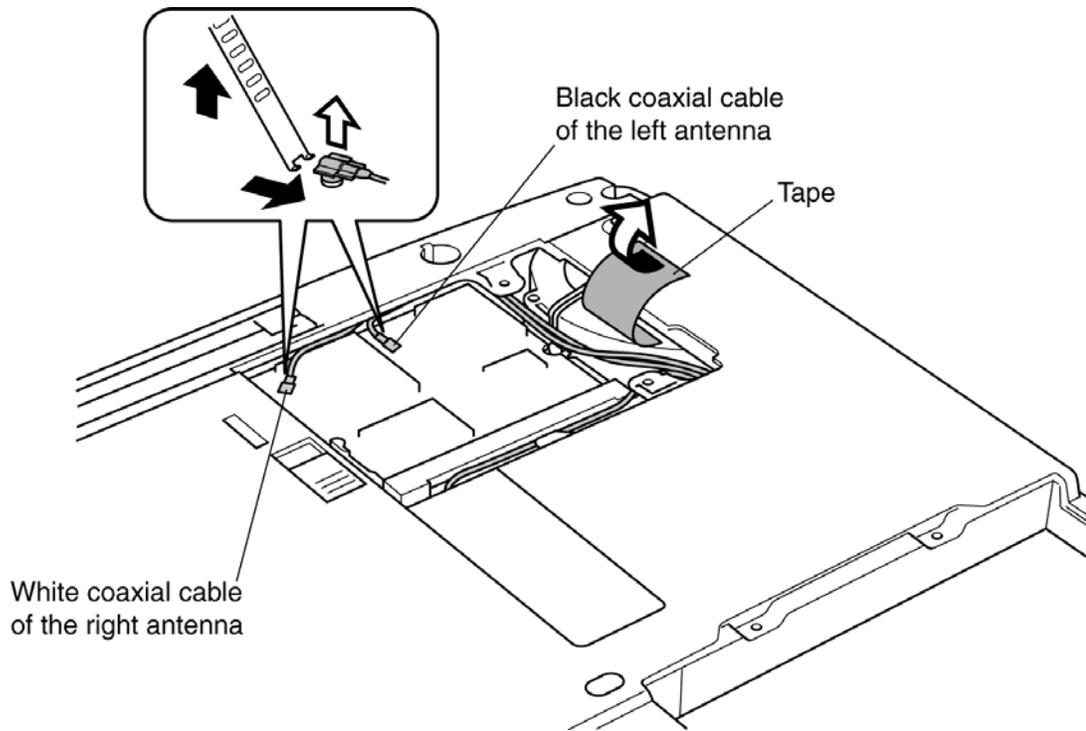
Figure 4-10 Disconnecting the antenna coaxial cables

CAUTION: *The position of the terminal depends on the wireless LAN card (the manufacturer), but the white coaxial is connected to the left terminal viewing from the front side and the black one to the right.*

CAUTION: *When disconnecting the antenna coaxial cables, use a dedicated tool. Do use a pair of tweezers it may damage the connector portion of antenna.*

5. Push the **wireless LAN card lock latches** outward to release the **wireless LAN card**. It will pop up to about a 45 degrees angle.
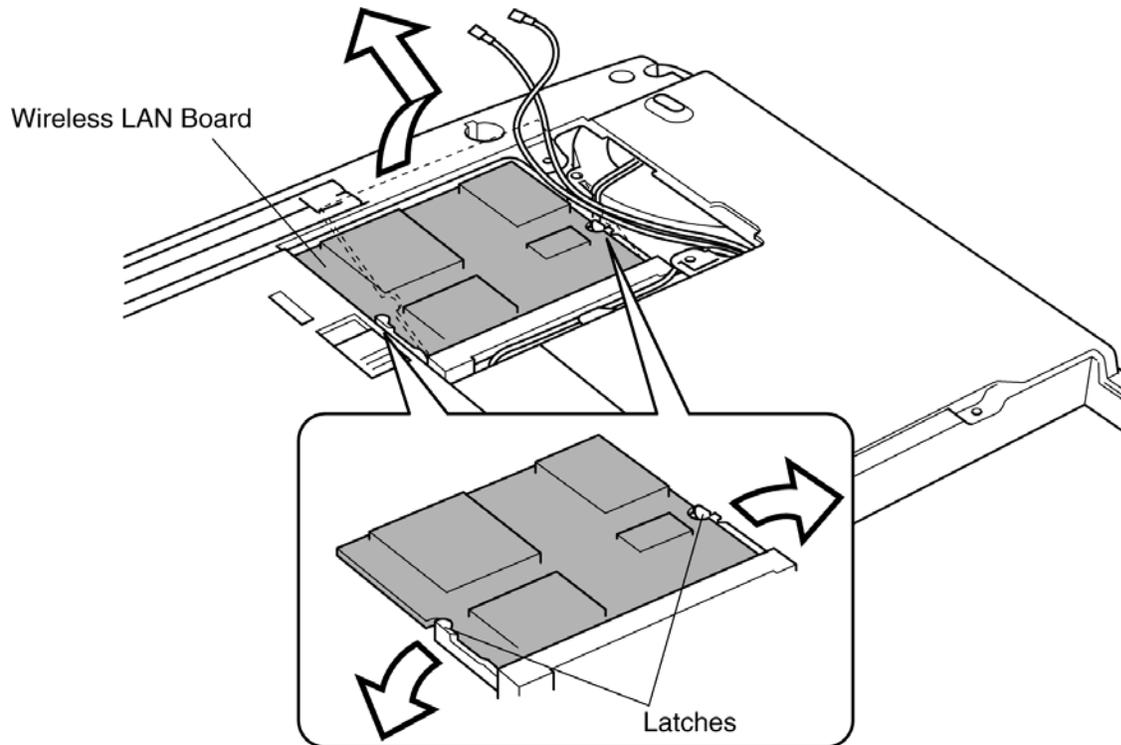
Figure 4-11 Disconnecting the Wireless LAN Card

6. Pull out the **wireless LAN card**. Be careful not to damage the connector.

CAUTION: *Do not touch the connectors on the Wireless LAN Card. Debris on the connectors may cause Wireless LAN Card access problems.*

Installing the Wireless LAN Card

To install the wireless LAN card (option), make sure that the computer is in boot mode and powered off, follow the steps below and refer to figures 4-9 to 4-12.

CAUTION: *Be sure to switch the computer off before removing the **wireless LAN card**. Otherwise, the computer or the **wireless LAN card** may be damaged.*

---

1. Insert the **wireless LAN card** into the connector at an angle of 45 degrees.

2. Gently push the **wireless LAN card** down until latches on both sides engage the **wireless LAN card** to hold it in place.

3. Connect the antenna coaxial cable to the connectors on the **wireless LAN card**.

4. Route the **antenna coaxial cables** inside the guide and secure it with a glass tape.

CAUTION: *Make sure the cables lie inside the guide. Be careful not to damage or pinch the cables when you seat the wireless LAN card. Refer to Figure 4-12.*
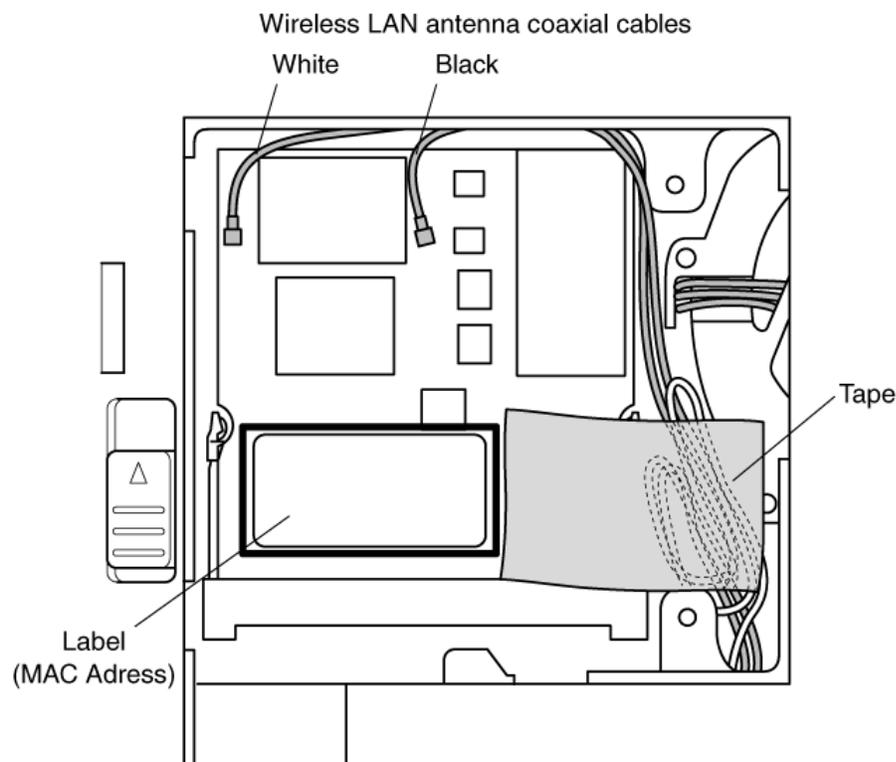
Figure 4-12 Connecting the Wireless LAN cables

5. Secure the **wireless LAN antenna cables with the tape** together.

CAUTION: *The position of the terminal depends on the wireless LAN acrd (the manufacturer), but the white coaxial shall be connected to the left terminal viewing from the front side and the black one to the right.*

CAUTION: *Be careful not to let the edge of the tape touch the cooling fan or overlap the label of the MAC address.*

6. Seat the **wireless LAN card slot cover**.

CAUTION: *Be careful not to damage or pinch the wireless LAN cables when you seat the slot cover.*

7. Secure the slot cover with **two M2×4 LH-STICKS screws** (for Atheros card, but not for Toshiba direct PC) or **two M2×4 silver screws** (for cards other than Atheros card).

CAUTION: *There are two MAC address barcode labels in the package containing the new Wireless LAN card. Apply one label to the bottom of the computer and one to the box the computer was shipped in. Before you apply the new labels, remove the old ones from the computer and the box. The computer may have MAC address barcode labels for both wired and wireless LANs. Be sure to replace the correct label.*

4.5   RTC Battery

WARNING: *When it is necessary to replace the RTC battery, be sure to use a genuine battery or a battery authorized by Toshiba. Installing the wrong battery could cause a battery explosion or other damage.*

If the RTC battery is found abnormal, it must not be installed. Replace it with a new battery, and dispose of the old one according to the local regulations.

Check for any of the following signs of damage:

1) Electrolyte leakage

- *Corrosion (greenish color) on the battery connector or cable*

- *Corrosion on the computer's battery connector*

- *White powder on any part of the battery*

- *White powder in the battery tray*

- *Clear liquid on the battery*

- *Clear liquid in the battery tray*

- *Clear liquid on any board near the battery*

2) Damage to the connection cable
3) Damage to the connector housing

If any powder or liquid is found in or around the battery tray, clean it. Be very careful not to let any leaked material contact your eyes or mouth. Do not inhale fumes from leaked material.

If leaked material contacts your skin, eyes or mouth, wash the affected area thoroughly with clean water.

Removing the RTC Battery

To remove the RTC battery, follow the steps below and refer to figure 4-13, 4-14.

1. Remove the **RTC battery cover**.
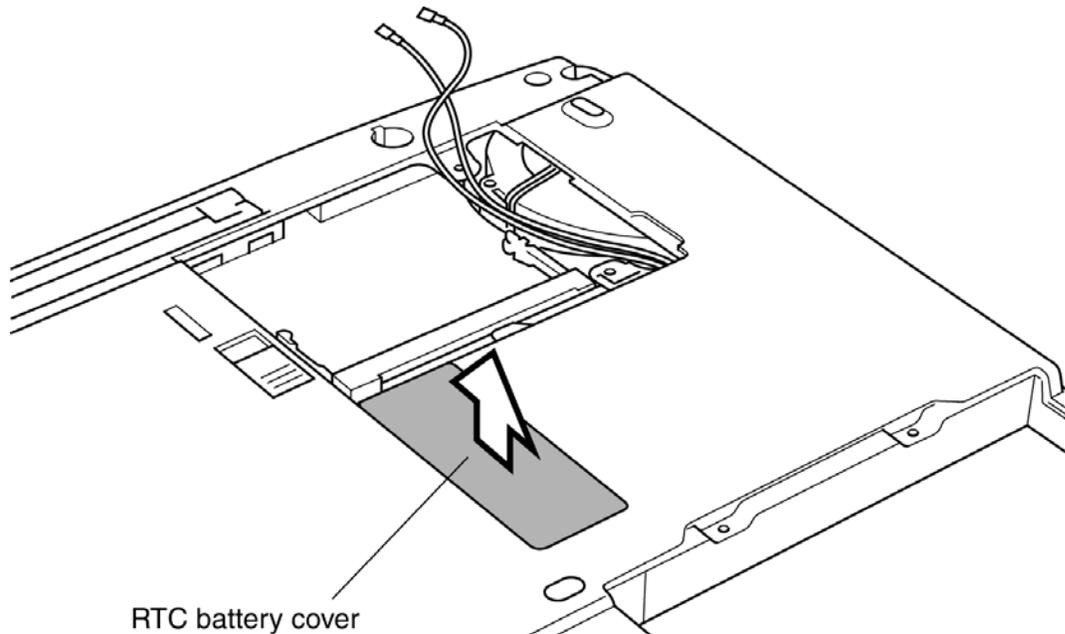
RTC battery cover

Figure 4-13 Removing the RTC battery cover

2. Disconnect the **RTC battery cable** from connector **PJ8760** on the IO board.

3. Lift up the insulator covering the RTC battery.

4. Lift out the **RTC battery**.
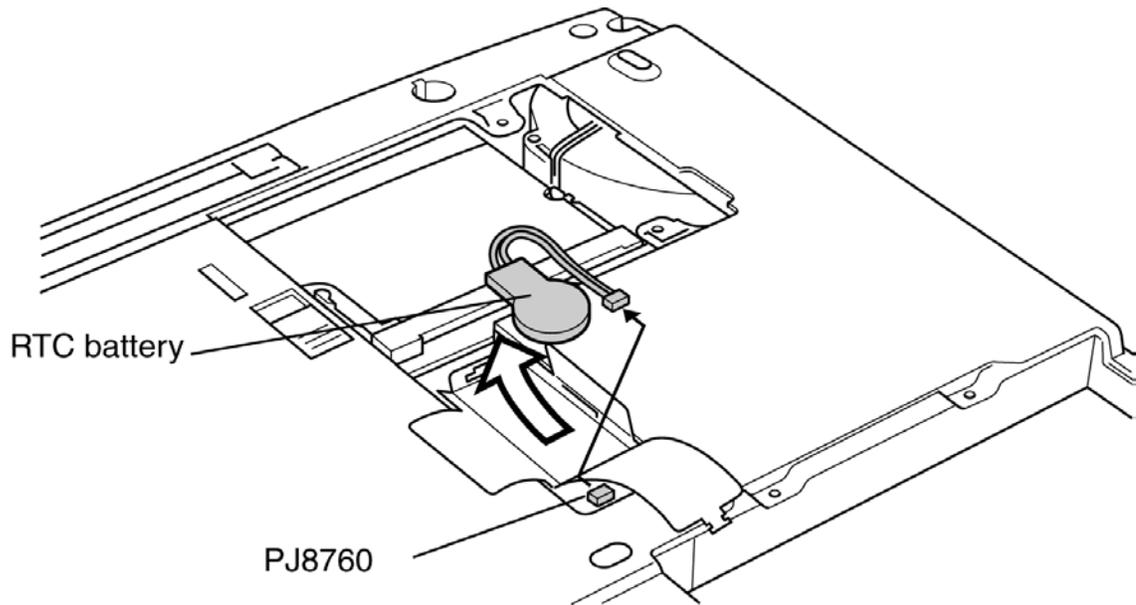
Figure 4-14 Removing the RTC battery

Installing the RTC Battery

To install the RTC battery, follow the steps below and refer to figure 4-13, 4-14.

1. Lift up the **insulator** and seat the **RTC battery**.

2. Connect the **RTC battery cable** to connector **PJ8760** on the IO board.

3. Set the **RTC battery cover**.

4.6   Keyboard

Removing the Keyboard

To remove the keyboard, follow the steps below and refer to figures 4-15 to 4-17.

1. Open the **display panel**.

2. Insert your fingernail into the gap between the **keyboard holder** and the computer and pry up the keyboard holder.
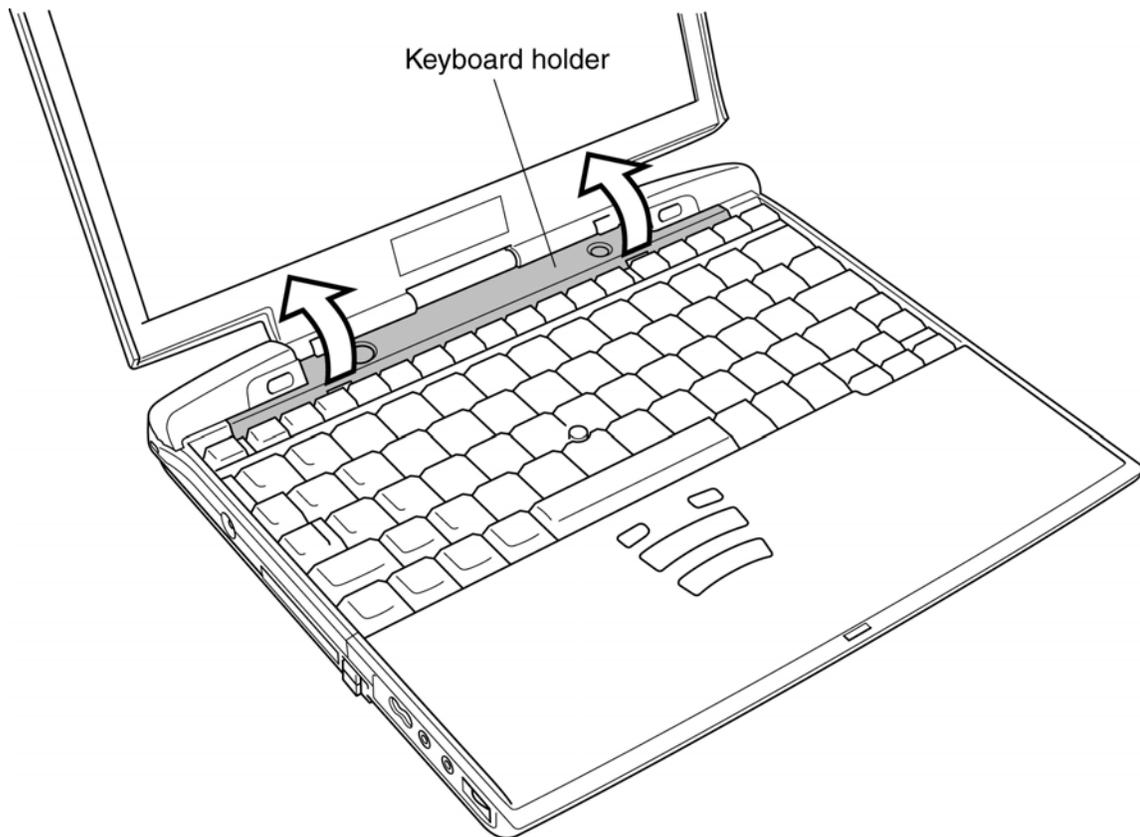
Figure 4-15   Removing the keyboard brace

3. Remove **two M2×4 black screws** and one **M2×4 flat-head screw**.

4. Remove the **harness plate** and move the **keyboard** in the arrow direction till the keyboard connector is exposed. Be careful not to damage the keyboard cable.
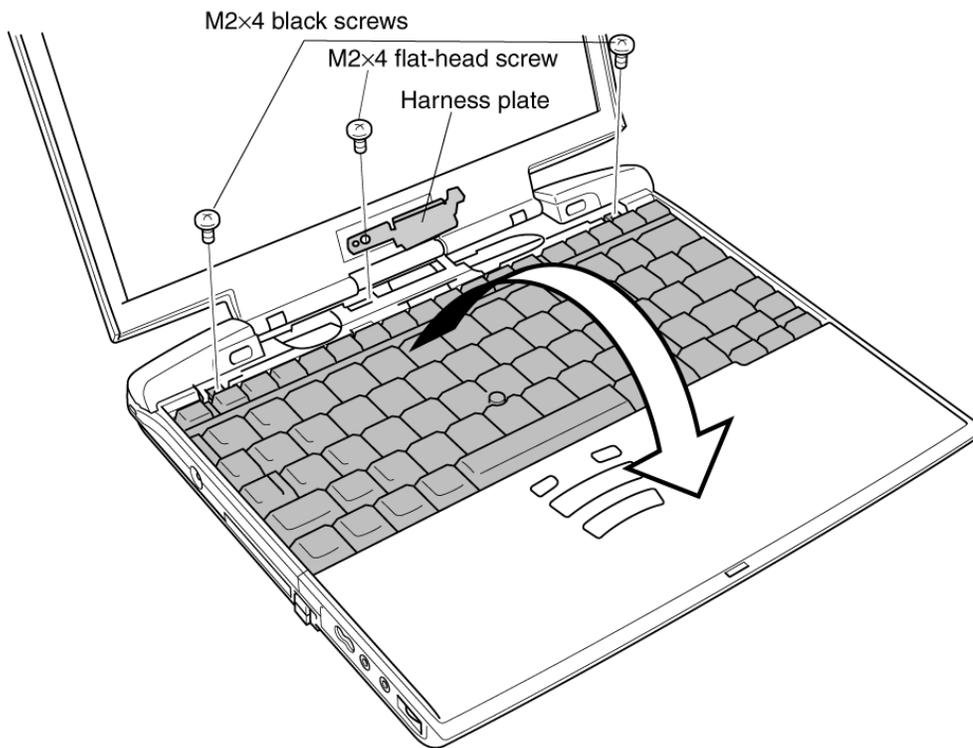
Figure 4-16   Removing two screws

5. Disconnect the **keyboard cable** from **PJ3230** on the system board, and remove the keyboard.
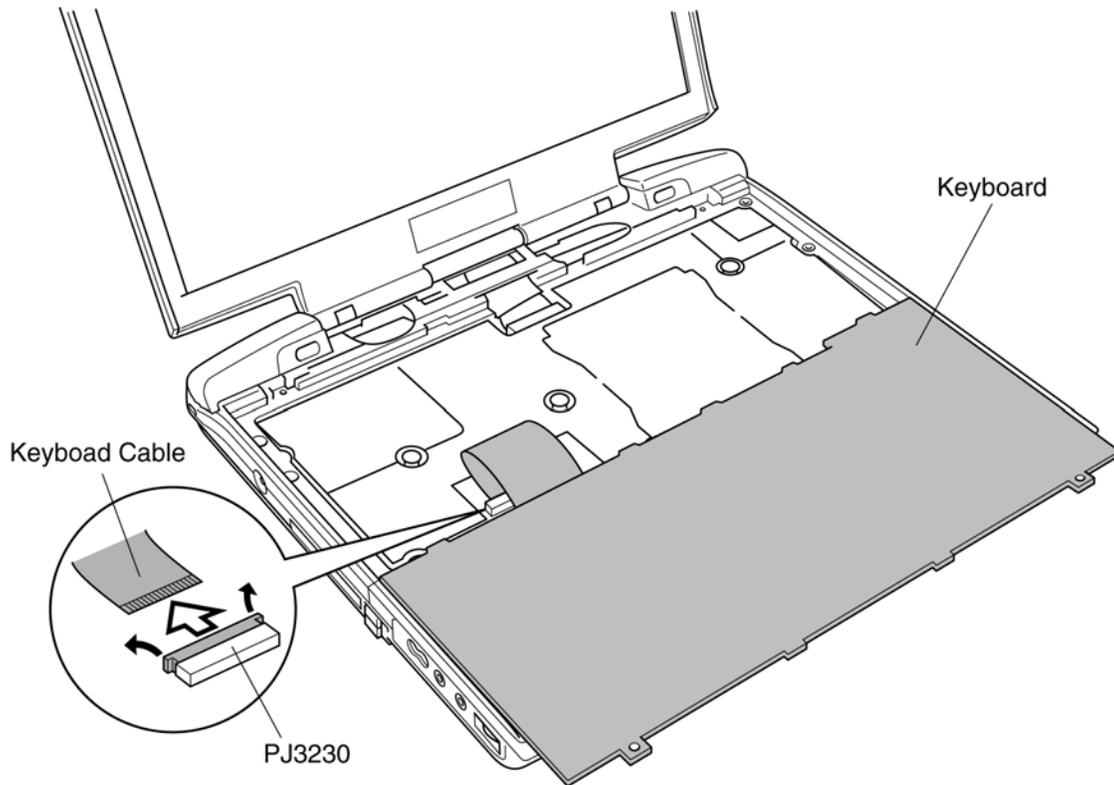
Figure 4-17 Removing the keyboard

Installing the Keyboard

To install the keyboard, follow the steps below and refer to figures 4-15 to 4-17.

1. Put the **keyboard** with the backside up on the palm rest.

2. Connect the **keyboard cable** to **PJ3230** on the system board.

3. Seat the **keyboard** in position and secure it with **two M2×4 black screws** and the **harness plate** with **one M2×4 flat-head screw**.

4. Seat the **keyboard holder** and press to secure latches.

4.7 Memory Module

Removing the Main/Expansion Memory Module

To remove the main/expansion memory module, make sure the computer is in boot mode and powered off, follow the steps below and refer to figures 4-18.

CAUTION: *Do not try to remove a main/expansion memory module with the computer turned on. You may damage the computer and the memory module.*

---

1. Gently press out on **two latches**. One end of the **main/expansion memory module** will pop up.

2. Grasp the **main/expansion memory module** and pull it out.
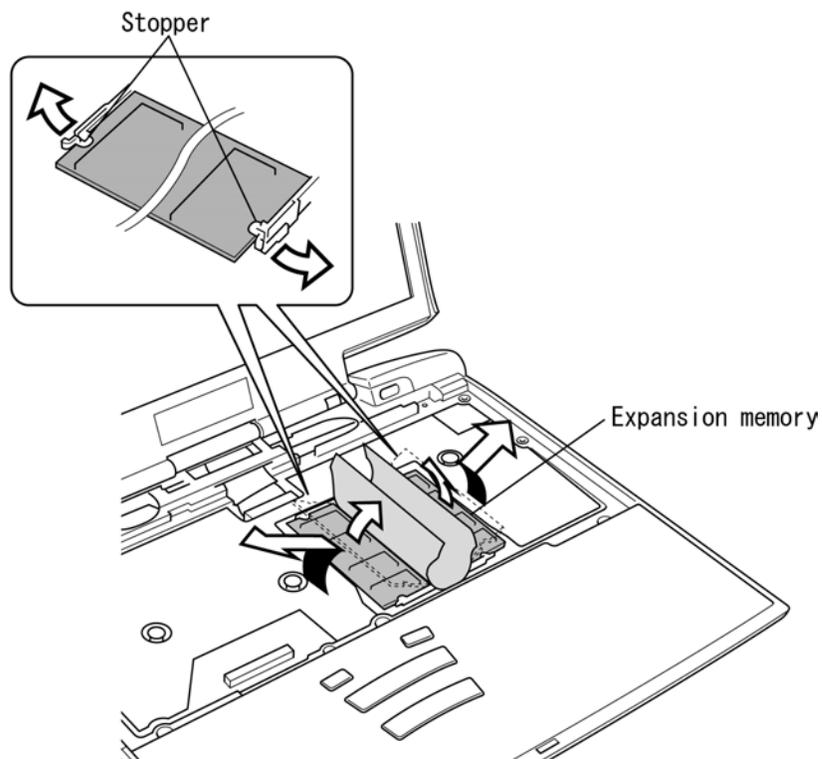
Figure 4-18 Removing the memory module(s)

CAUTION: *Do not touch the connectors on the memory module(s) or on the computer. Debris on the connectors may cause memory access problems.*

Installing the Main/Expansion Memory Module

To install the main/expansion memory module, make sure that the computer is in boot mode and powered off, follow the steps below and refer to figures 4-18.

CAUTION: *Do not touch the connectors on the memory module or on the computer.*
               Debris on the connectors may cause memory access problems.

---

1. Fit the **main/expansion memory module**'s connectors into the memory slots and press carefully to ensure firm contact.

2. Gently, push the **main/expansion memory module** down until **latches** on either side engage the **main/expansion memory module** to hold it in place.

CAUTION: *Do not install a memory module in slot B only. Use the slot A prior to slot B.*

4.8 Palm Rest and IPS Board

Removing the Palm Rest and IPS Board

To remove the palm rest and IPS board, follow the steps below and refer to Figure 4-19 to 4-22.

1. Lay the **computer** upside down.

2. Remove **three M2×4 silver screws** securing the **palm rest**.

3. Turn the computer right side up and open the **display** so that it lies flat.
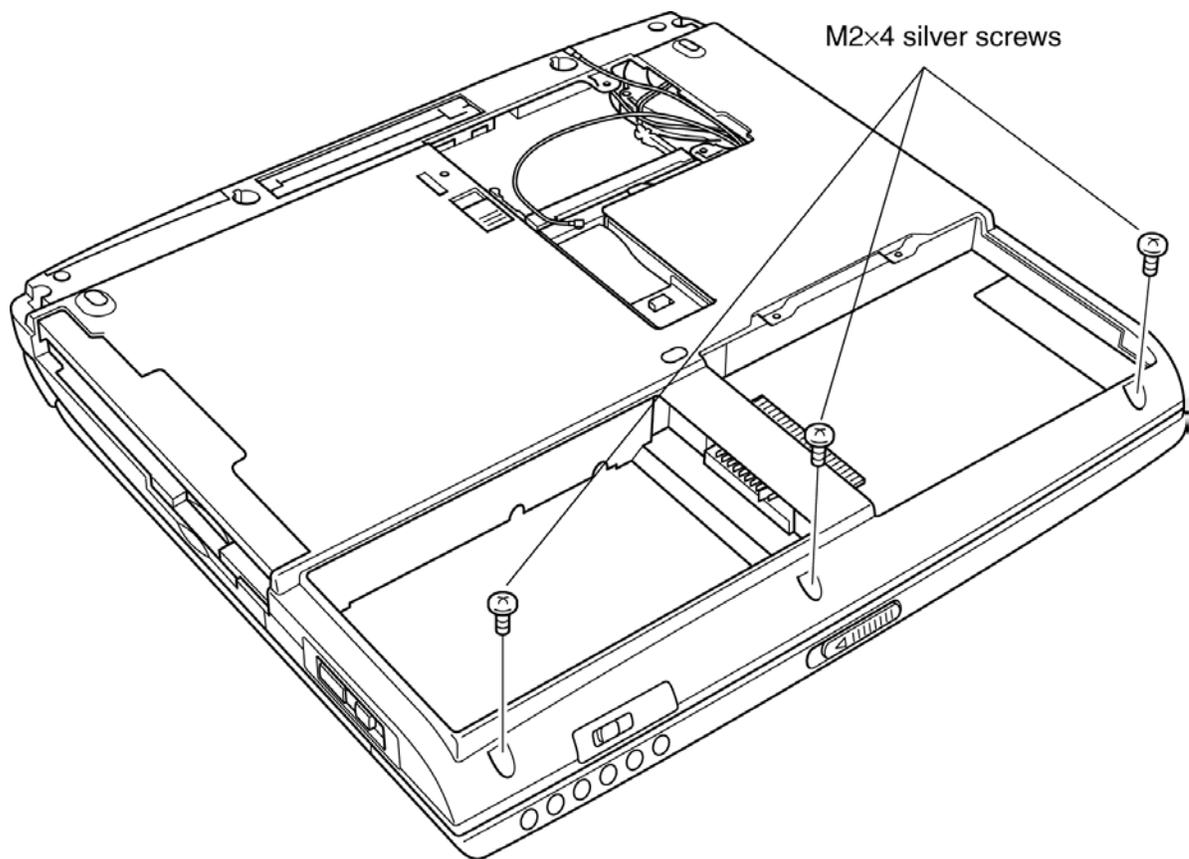
Figure 4-19 Removing the screws securing the bottom of the palm rest

4. Remove **three M2×4 flat-head screws** securing the **palm rest**.
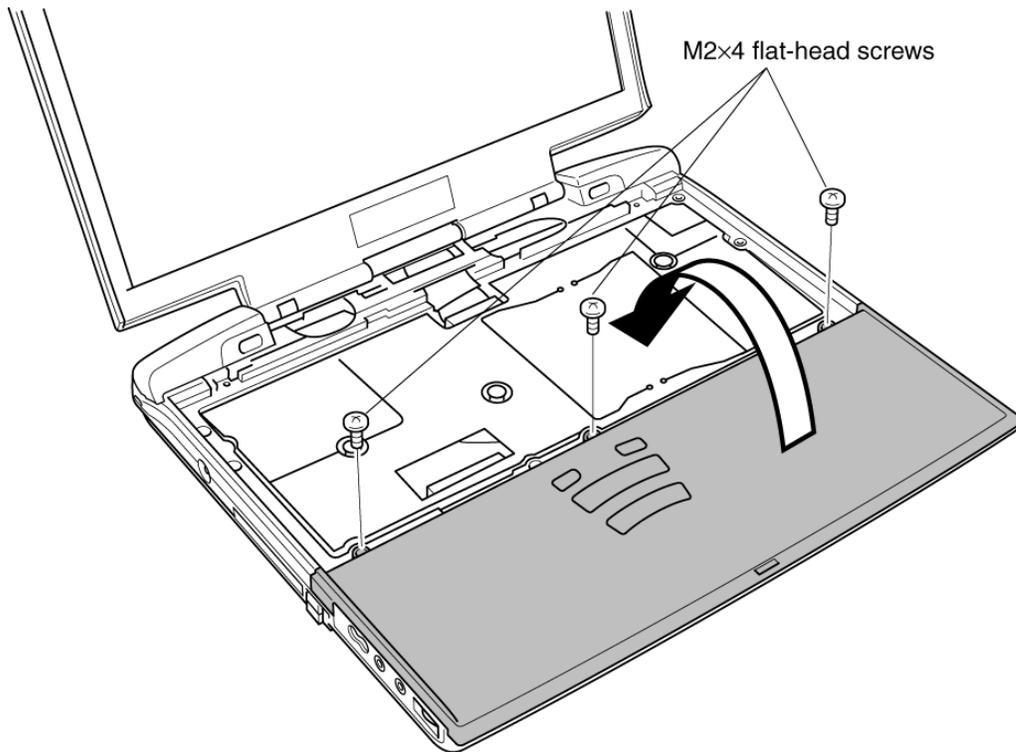
Figure 4-20 Removing the screws securing the top of the palm rest

5. Lift the **palm rest** out and turn it face down on the **top cover**. Be careful not to apply pressure to the **cables** or **connectors**.

6. Disconnect the **IPS cable** from **PJ3280** on the system board, and remove the **palm rest**.
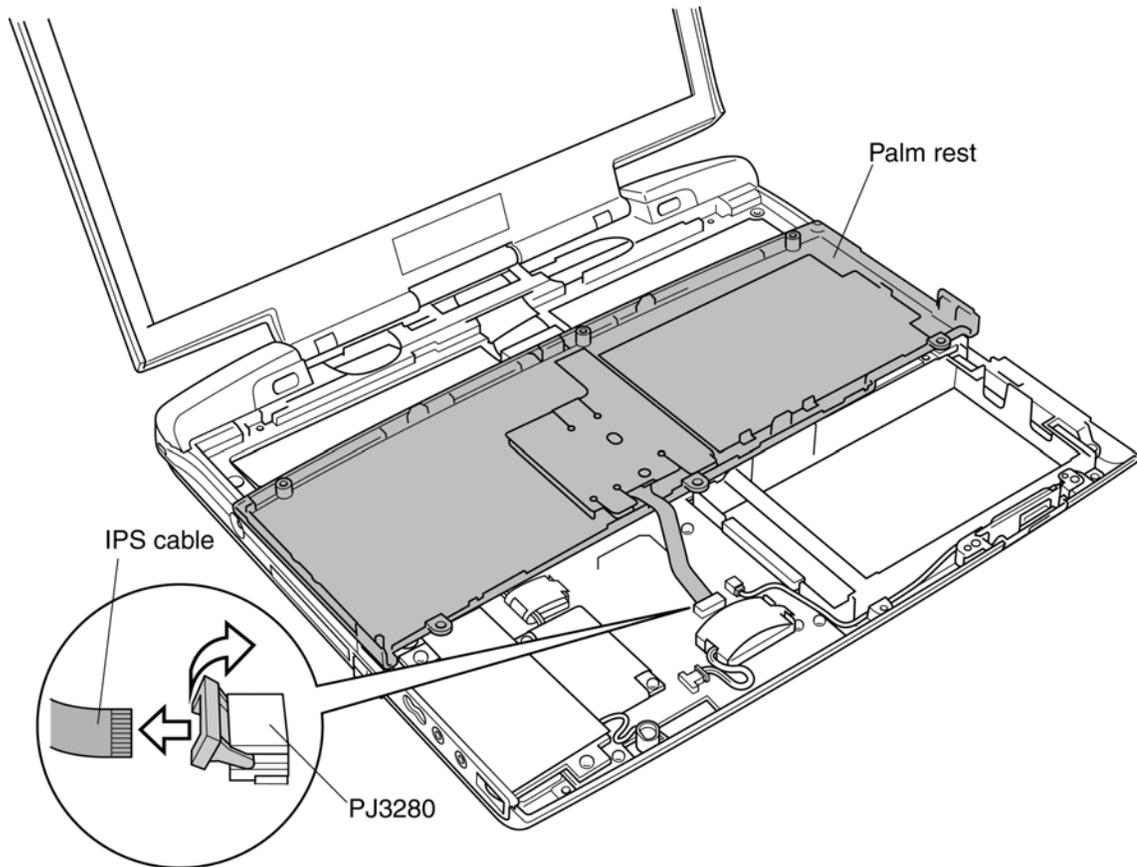
Figure 4-21 Removing the palm rest

7.   Lay the **Palm rest** upside down.

8.   Remove **three M2×3 silver flat head screws** securing the **IPS Board**.

9.   Remove the **IPS Board**.
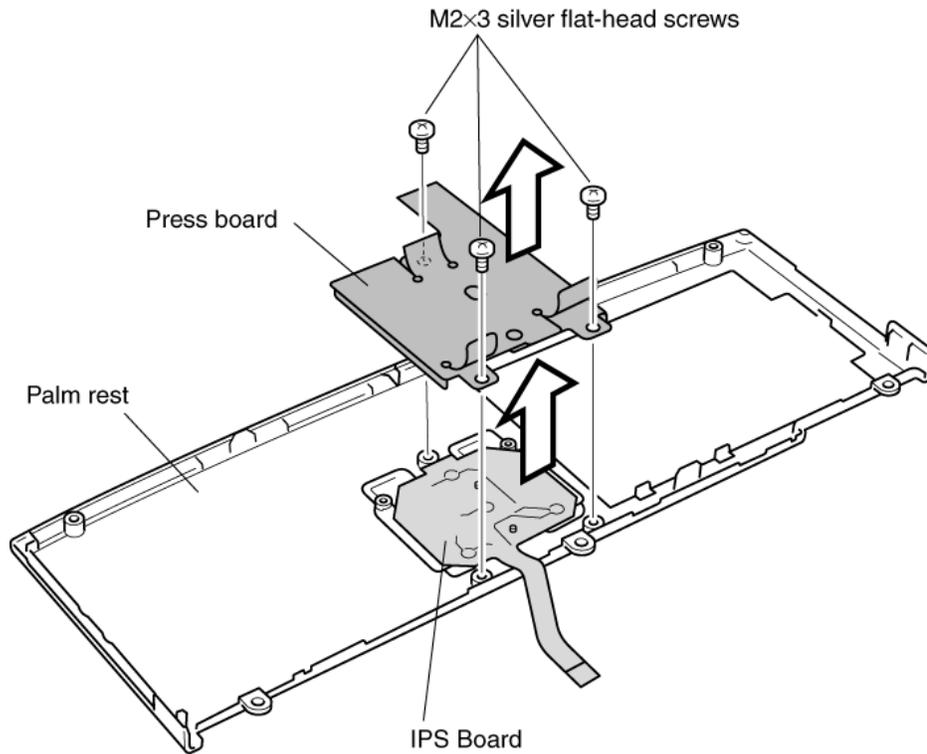
Figure 4-22 Removing the IPS Board

Installing the IPS Board and the Palm Rest

To install the **IPS board** and **the palm rest**, follow the steps below and refer to Figures 4-19 to 4-22.

1. Lay the **palm rest** upside down.

2. Seat the **IPS board** and secure it with **three M2×3 silver flat-head screws**.

3. Connect the **IPS cable**.

4. Seat the **palm rest** and secure it with **three M2×4 flat-head screws**.

5. Turn the computer upside down.

6. Secure the **palm rest** with **three M2×4 silver screws**.

4.9 Bluetooth Board

Removing the Bluetooth Board

To remove the Bluetooth board make sure the computer is in boot mode and powered off, follow the steps below and refer to figures 4-23.

> *CAUTION:* *Do not try to remove the Bluetooth board with the computer turned on. You can damage the computer and the Bluetooth Board.*

1. Disconnect the **Bluetooth flexible flat cable** from the connector **PJ3110** on the system board.

2. Remove **two M2x3 silver flat head screws** and the Bluetooth board.

3. Disconnect the **Bluetooth flexible flat cable** from the Bluetooth board.

> *CAUTION:* *Do not touch the connectors on the Bluetooth. Debris on the connectors may cause access problems.*
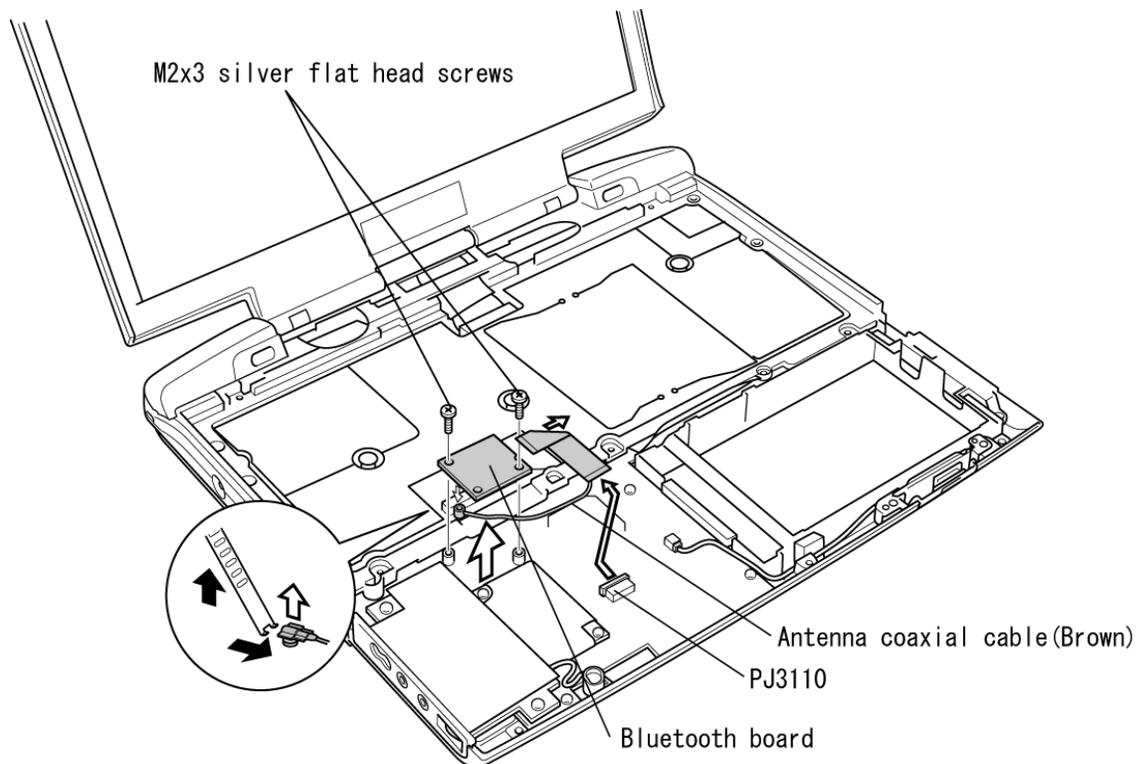
Figure 4-23   Removing the Bluetooth board

4. Disconnect the **antenna coaxial cable** from the **Bluetooth board** using a tool to disconnect an antenna coaxial cable.

Installing the Bluetooth Board

To install the Bluetooth board, make sure that the computer is in boot mode and powered off, follow the steps below and refer to figures 4-23.

CAUTION: *Be sure to switch the computer off before removing the Bluetooth board. Otherwise, the computer or the Bluetooth board may be damaged.*

---

1. Connect the **antenna coaxial cable** to the connector on the Bluetooth board.

CAUTION: *Lay down the bluetooth antenna cable referring the following figure not to be pinched.*

---
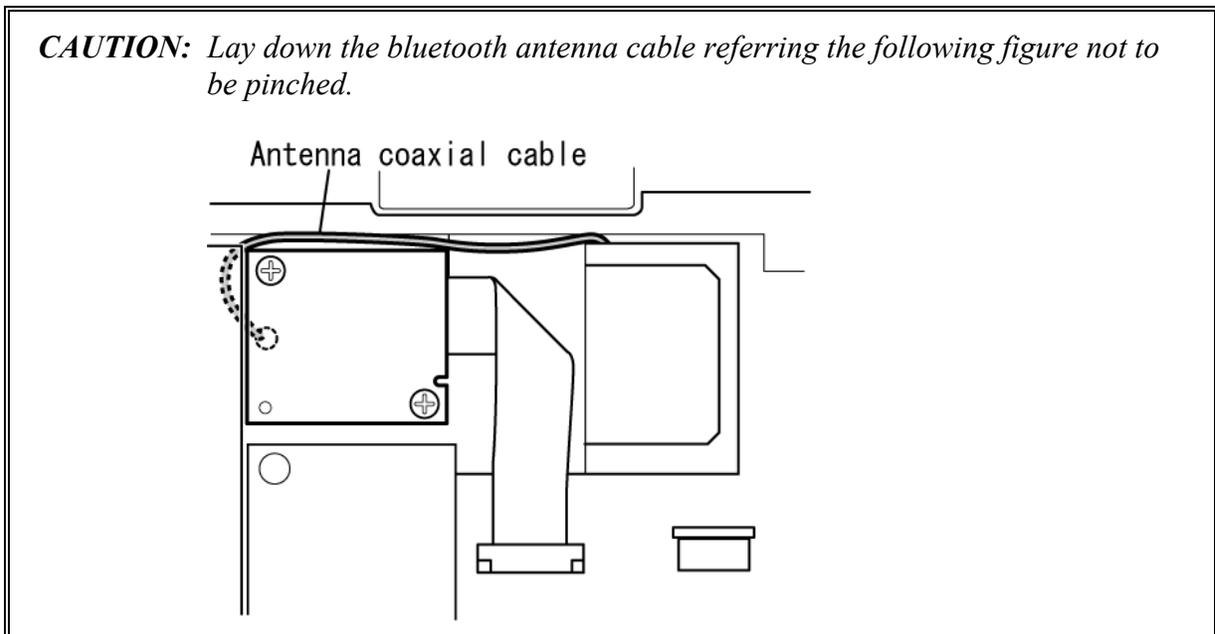
2. Connect the one side of **bluetooth flexible flat cable** to the Bluetooth board.

3. Fix the bluetooth board on the system board with **two M2x3 silver flat head screws**.

4. Connect the other side of **bluetooth flexible flat cable** to the connector **PJ3110** on the system board.

4.10 Sound/FIR Board

Removing the Sound/FIR Board

To remove the **sound/FIR board**, follow the steps below and refer to figures 4-24 and 4-25.

1. Remove **two M2×4 screws** securing the **sound/FIR board**.

2. Lift out the **sound/FIR board** with the **internal microphone**.
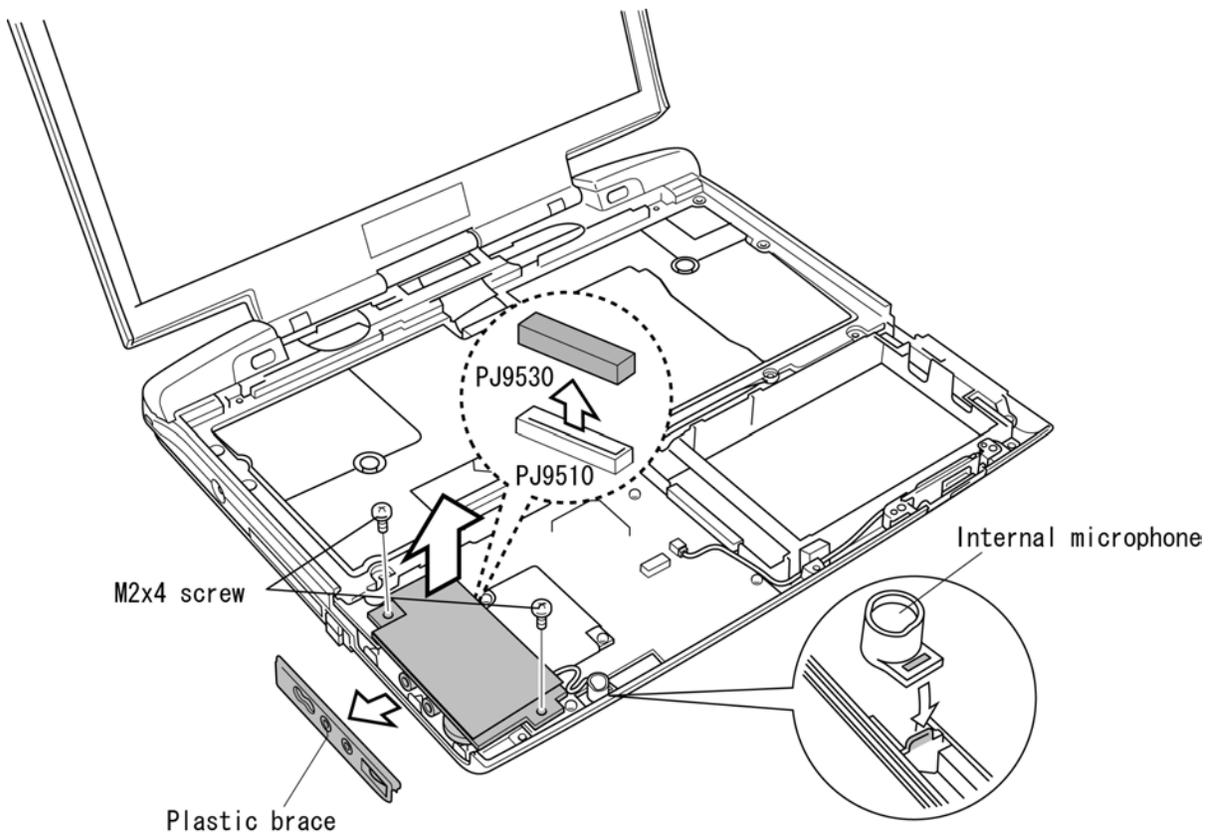
Figure 4-24   Removing the sound/FIR board

CAUTION: *The sound/FIR board is connected to the system board by stacking connectors. When connecting or disconnecting a headphone or microphone to the jack on the sound/FIR board, be sure to do it after securing the sound/FIR board to the system board with screws. Otherwise the connector may be cracked.*

---

3. When you lift out the **sound/FIR board,** the **plastic brace** may separate.

4. Lift up the corner of the insulator and disconnect the internal microphone cable from **PJ6000** on the **sound/FIR board**.
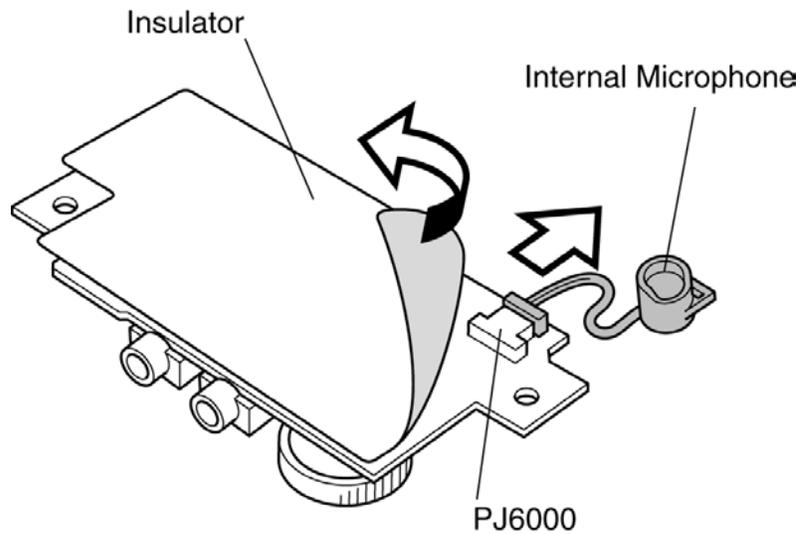

Figure 4-25 Disconnecting microphone cable

Installing the Sound/FIR Board

To install the **Sound/FIR Board**, follow the steps below and refer to figures 4-24 and 4-25.

1. Connect the sound cable to **PJ6000** on the **sound/FIR board**.

2. Fit the plastic cover onto the **sound/FIR board**.

3. Seat the **sound/FIR board**.

4. Seat the **microphone** in position.

CAUTION: *Be careful to route the cable so that the Top cover will not pinch it. Make a small loop on the board and set the microphone.*

---

5. Secure the **sound/FIR board** with **two M2×4 screws**.

4.11 Modem Daughter Card (MDC)

Removing the Modem Daughter Card

To remove the modem daughter card, follow the steps below and refer to figure 4-26.

1. Remove **two M2×4 screws** securing the **modem daughter card**.

2. Carefully lift up just above the **modem daughter card** to disconnect it from **PJ3020** on the system board.

3. Disconnect the **MDC cable** from the modem daughter card.
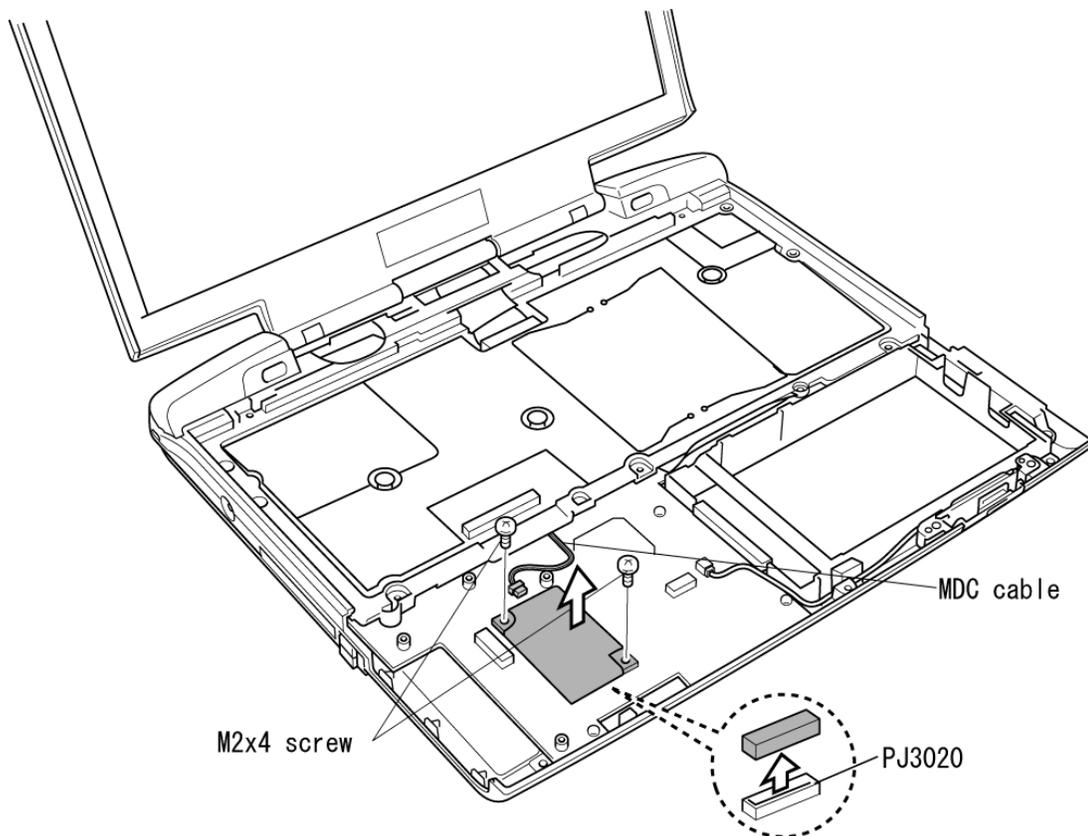
Figure 4-26   Removing the modem daughter card

Installing the Modem Daughter Card

To install the modem relay board, follow the steps below and refer to figures 4-26.

1. Connect the **MDC cable** to the modem daughter card

2. Seat the **modem daughter card** and press carefully on the end of the card to connect it to **PJ3020** on the system board. Be careful not to damage the card or connector.

3. Secure the **modem daughter card** with **two M2×4 screws**.

4.12 Wireless Communication Switch Board

Removing the Wireless Communication Switch Board

To remove the **Wireless communication switch board**, follow the steps below and refer to figure 4-27.

1. Disconnect the **cable** from **PJ3270** on the system board.

2. Remove **one M2×4 screw** securing the **Wireless communication switch board**.

3. Lift out the **Wireless communication switch board**.

4. Disconnect the **cable** from **PJ3290** on the **Wireless communication switch board**.
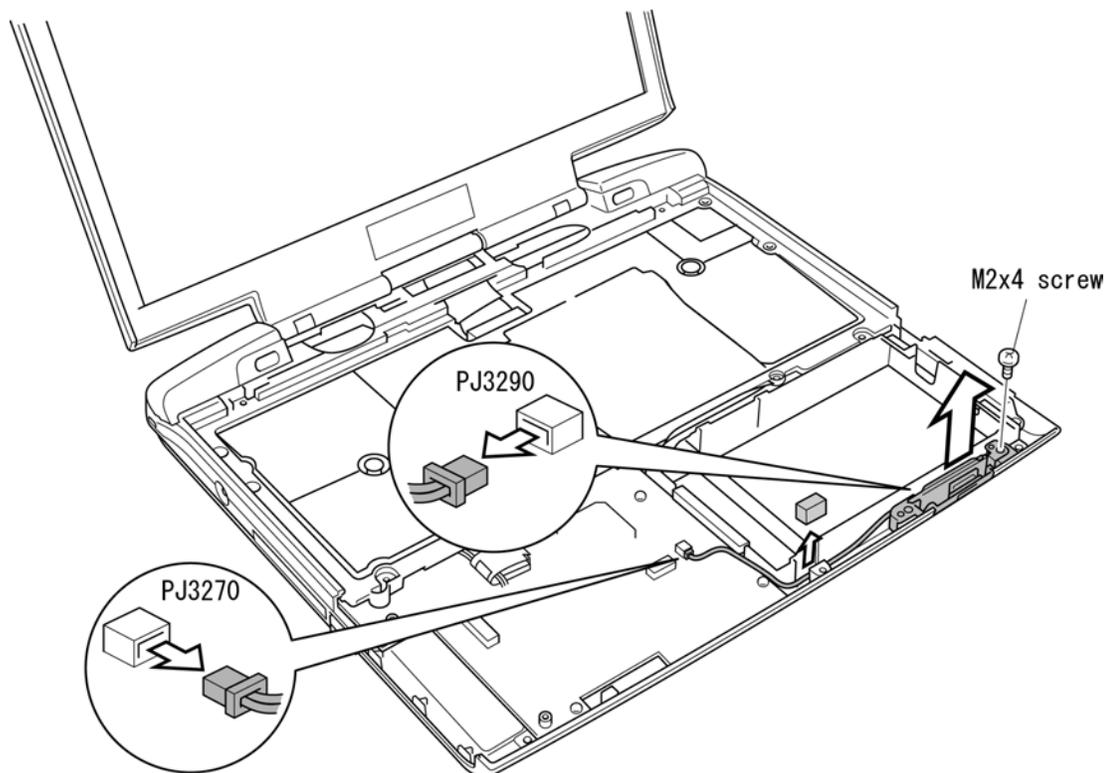
Figure 4-27 Removing the Wireless Communication Switch Board

Installing the Wireless Communication Switch Board

To install the **Wireless communication switch board**, follow the steps below and refer to figure 4-27.

1. Connect the **cable** to **PJ3290** on the **Wireless communication switch board**.

2. Seat the **Wireless communication switch board** in place.

3. Connect the **cable** to **PJ3270** on the system board.

4. Secure the **Wireless communication switch board** with **one M2×4 screw**.

4.13 Top Cover with Display Assembly

Removing the Top Cover with Display Assembly

To remove the top cover with display assembly, follow the steps below and refer to figures 4-28 to 4-30.

1. Turn the computer upside down, and remove the following **four screws**:
   - **Two M2×6 silver screws**
   - **Two M2×10 silver flat-head screws**
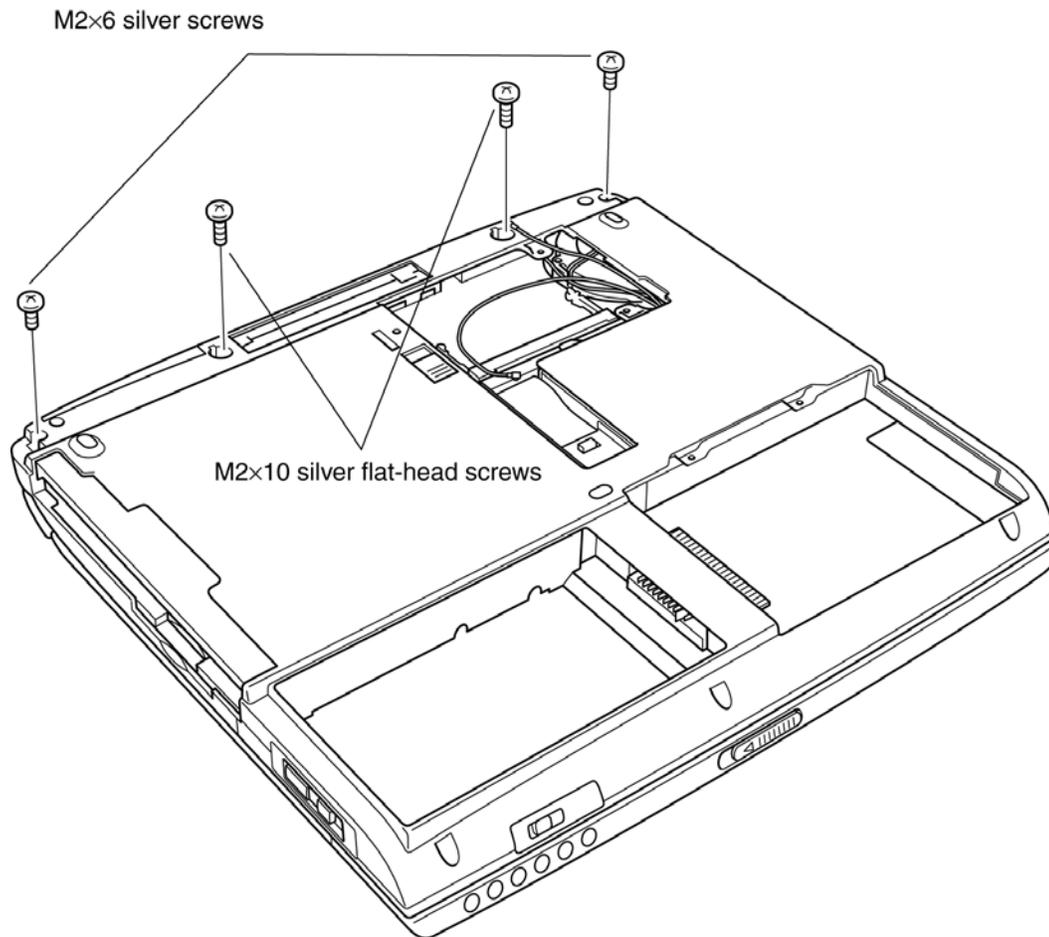
Figure 4-28 Removing four screws from the bottom of the computer

2. Turn the computer right side up and open the **display panel**.

3. Disconnect the **LCD/LED cable** from **PJ5600.**

4. Disconnect the **Speaker cables** from **PJ9511** and **PJ9512** on the system board.
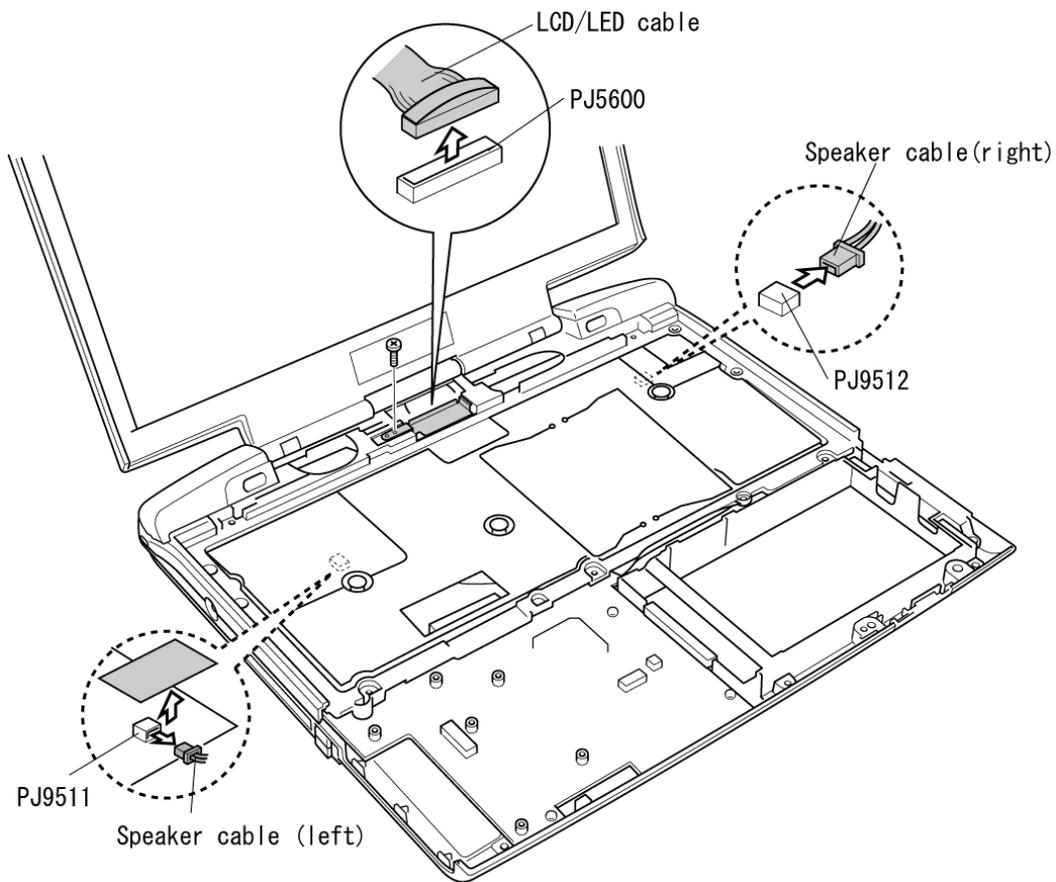
Figure 4-29 Disconnecting cables

5.   Remove **eight M2×4 flat-head screws**.

6.   Remove the **top cover with display assembly**. Be careful not to damage the Bluetooth and wireless LAN antenna coaxial cables.
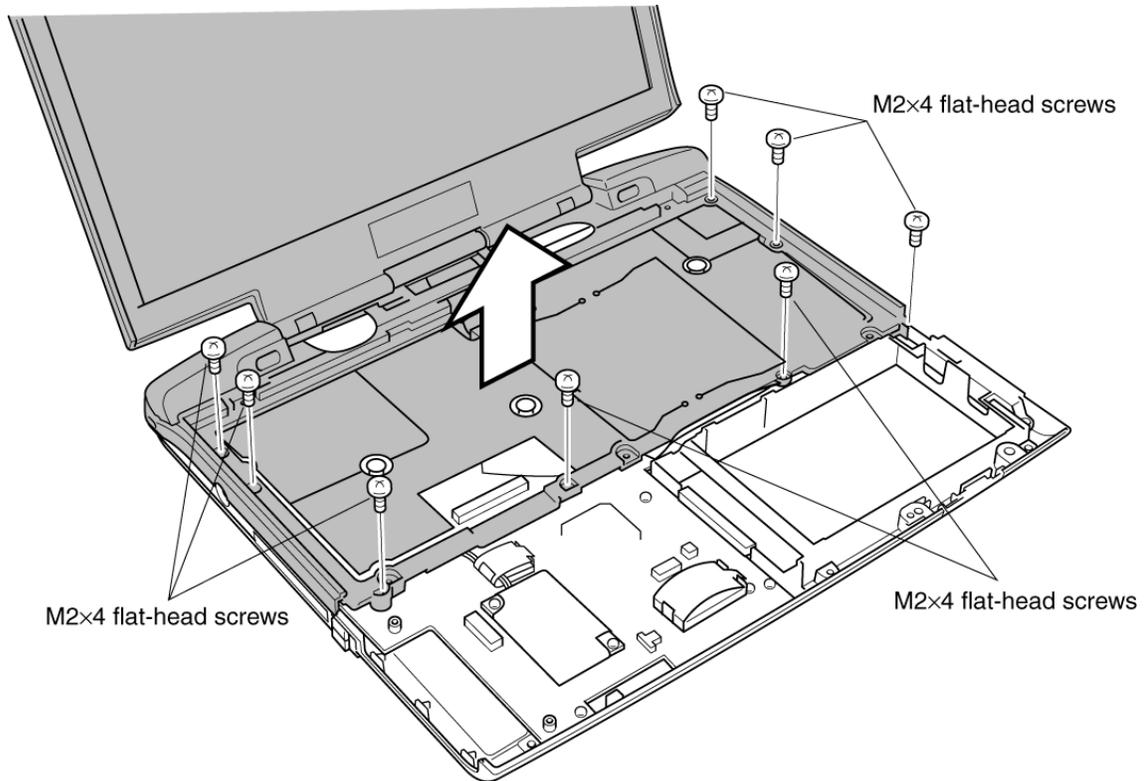

Figure 4-30 Remove eight screws and top cover with display assembly

Installing the Top Cover with Display Assembly

To install the top cover with display assembly, follow the steps below and refer to figures 4-28to 4-32.

1. Be careful to route the wireless LAN antenna coaxial cables so that the **display assembly** will not pinch it.

2. Seat the **top cover with display assembly**.

3. Route the Left speaker cable and connect to the connector **PJ9511**.

4. Route the **Wireless LAN cables** and **Bluetooth cable**.

5. Secure the **cables** with the **tape**.
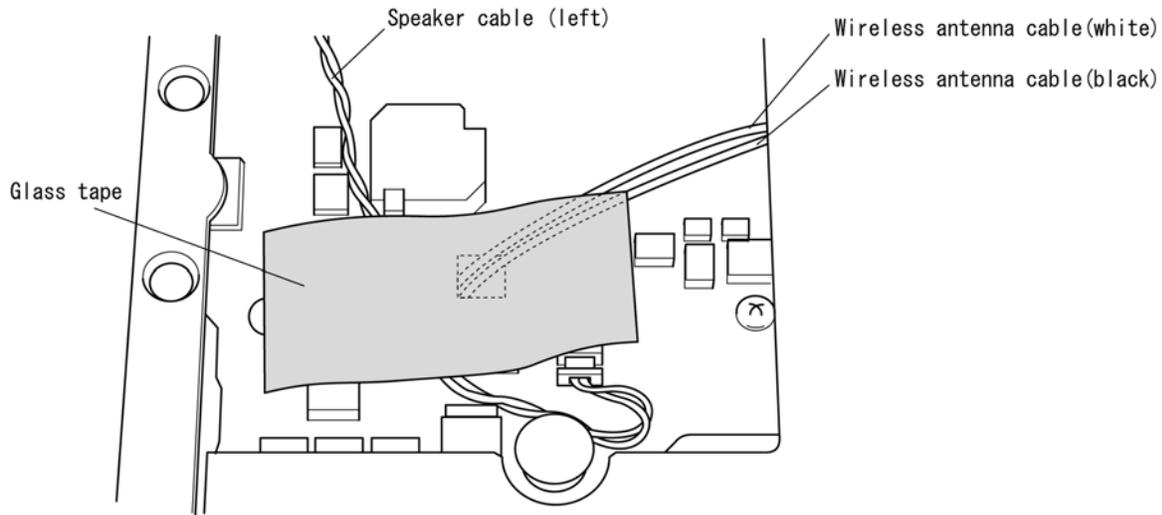
Figure 4-31   Route the Left Speaker cable

CAUTION: *Be careful to route the cable so that the Top cover will not pinch it. Make sure it lies between the two chips. Refer to Figure 4-31.*

6. Route the **Right speaker cable** and connect it to the connector **PJ9512**.
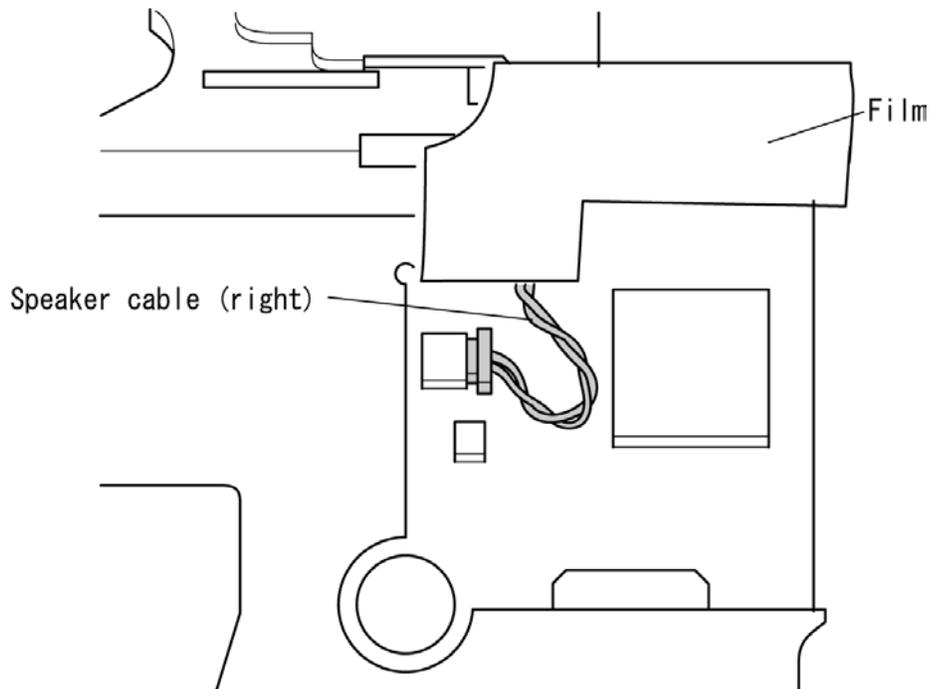
Figure 4-32 Route the Right Speaker cable

CAUTION: *Be careful to route the cable so that the Top cover will not pinch it. Make sure it lies to the left of the IC 312. Refer to Figure 4-32.*

---

7. Press along the edges of the **top cover with display assembly** to secure latches.

8. Connect the **LCD/LED cable** to **PJ5600**.

9. Secure **eight M2×4 flat-head screws**.

10. Close the **top cover with display assembly** and turn the computer upside down.

11. Secure the following four screws:
    * **Two M2×6 silver screws**
    * **Two M2×10 silver flat-head screws**