Chapter 8. Removing and replacing a FRU

This chapter presents directions and drawings for use in removing and replacing a FRU.

External CRU statement to customers:

Some problems with your product can be resolved with a replacement part you can install yourself, called a “Customer Replaceable Unit” or “CRU.” Some CRUs are designated as Self-service CRUs and others are designated as Optional-service CRUs. *Installation of Self-service CRUs is your responsibility; you may request that Lenovo installs an Optional-service CRU according to the warranty service for your product.* Where you are installing the CRU, Lenovo will ship the CRU to you. CRU information and replacement instructions are shipped with your product and are available from Lenovo at any time upon request. You may find a list of CRUs in the publications that ship with your product or at http://www.lenovo.com/CRUs. You may be required to return the defective part that is replaced by the CRU. When return is required: (1) return instructions, a prepaid shipping label, and a container will be included with the replacement CRU; and (2) you may be charged for the replacement CRU if Lenovo does not receive the defective part within thirty (30) days of your receipt of the replacement CRU. See your Lenovo Limited Warranty documentation for full details.

Be sure to observe the following general rules:

1. Do not try to service any computer unless you have been trained and certified. An untrained person runs the risk of damaging parts.
2. Before replacing any FRU, review Chapter 7 “FRU replacement notices” on page 61.
3. Begin by removing any FRUs that have to be removed before replacing the failing FRU. Any such FRUs are listed at the top of each FRU replacement page. Remove them in the order in which they are listed.
4. Follow the correct sequence in the steps for removing a FRU, as given in the drawings by the numbers in square callouts.
5. When turning a screw to replace a FRU, turn it in the direction as given by the arrow in the drawing.
6. When removing a FRU, move it in the direction as given by the arrow in the drawing.
7. To put the new FRU in place, reverse the removal procedure and follow any notes that pertain to replacement. For information about connecting and arranging internal cables, see Chapter 9 “Locations” on page 129.
8. When replacing a FRU, use the correct screw(s) as shown in the procedures.

DANGER

Before removing any FRU, turn off the computer, unplug all power cords from electrical outlets, remove the battery pack, and then disconnect any interconnecting cables.

Attention: After replacing a FRU, do not turn on the computer until you have made sure that all screws, springs, and other small parts are in place and none are loose inside the computer. Verify this by shaking the computer gently and listening for rattling sounds. Metallic parts or metal flakes can cause electrical short circuits.

Attention: The system board is sensitive to, and can be damaged by, electrostatic discharge. Before touching it, establish personal grounding by touching a ground point with one hand or by using an electrostatic discharge (ESD) strap (P/N 6405959).

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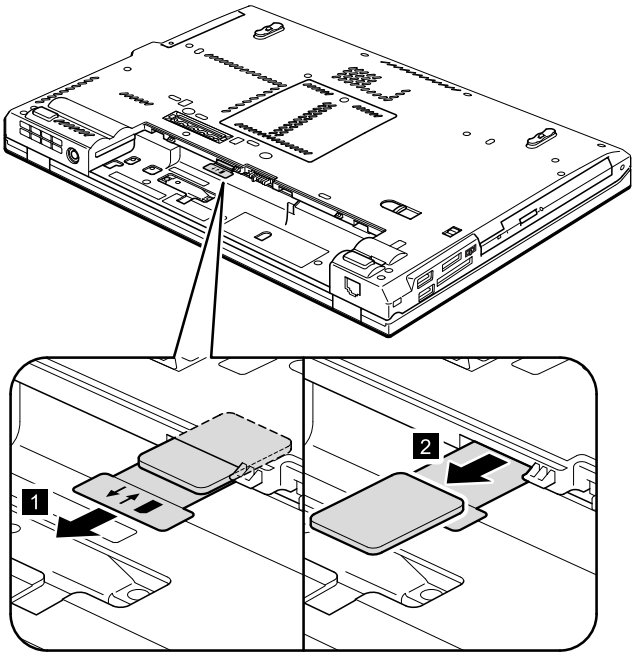
Before servicing ThinkPad T420 and T420i

Some models of the ThinkPad T420 and T420i you are servicing might have the SIM card that the customer has installed.

If the computer you are servicing has the SIM card, remove it before you start the servicing.

To remove the SIM card, you need to remove the battery pack first. (See “1010 Battery pack” on page 67.)

After you finish the servicing, make sure that you insert the card back into the slot firmly.



1010 Battery pack

Important notice for replacing a battery pack:
The Lenovo ThinkVantage Toolbox and Lenovo Solution Center (in Windows 7) have an automatic battery diagnostic component that determines if the battery pack is defective. A battery pack FRU should not be replaced unless this diagnostic test shows that the battery is defective.

The only exception to this is if the battery pack is physically damaged or a customer is reporting a possible safety issue.

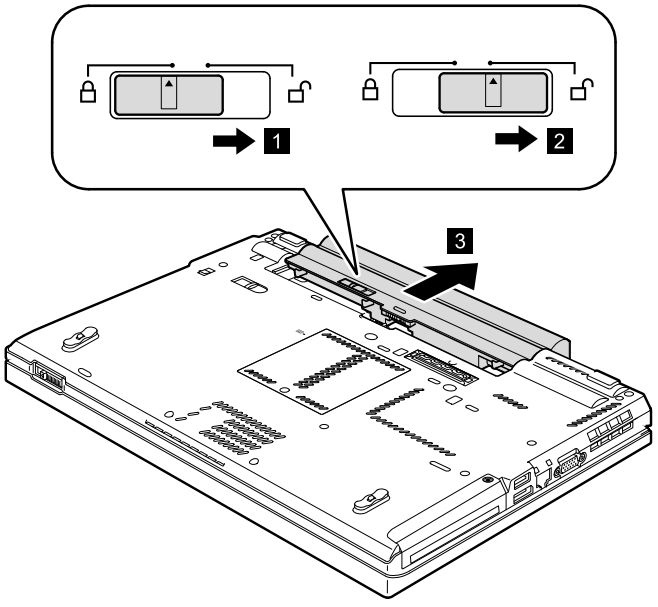
If Lenovo ThinkVantage Toolbox is not installed in the computer, the customer should download this program before a non-physically damaged battery pack is replaced. Note that the replacement of a physically damaged battery pack is not covered by the warranty.

Removal steps of battery pack

DANGER

Use only the battery specified in the parts list for your computer. Any other battery could ignite or explode.

Unlock the battery latch 1. Holding the battery latch in the unlocked position 2, remove the battery pack in the direction shown by arrow 3.

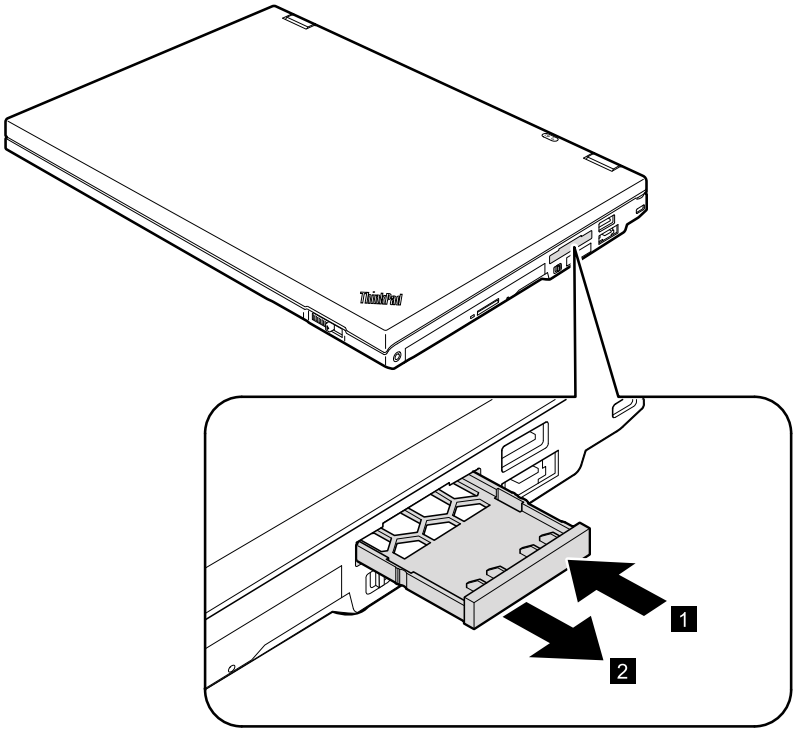


When installing: Install the battery pack in the slot. Make sure that the battery latch is in the locked position.

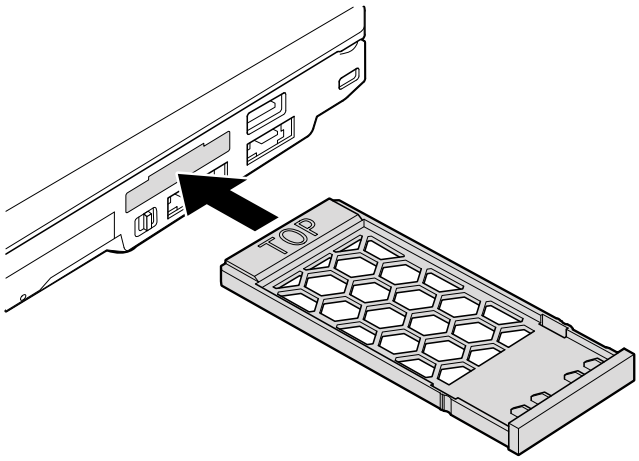
1020 ExpressCard blank bezel

Removal steps of ExpressCard blank bezel

When you press the ExpressCard blank bezel **1**, it pops out **2**.



When installing: Make sure that the bezel is correctly oriented as shown in the following figure.



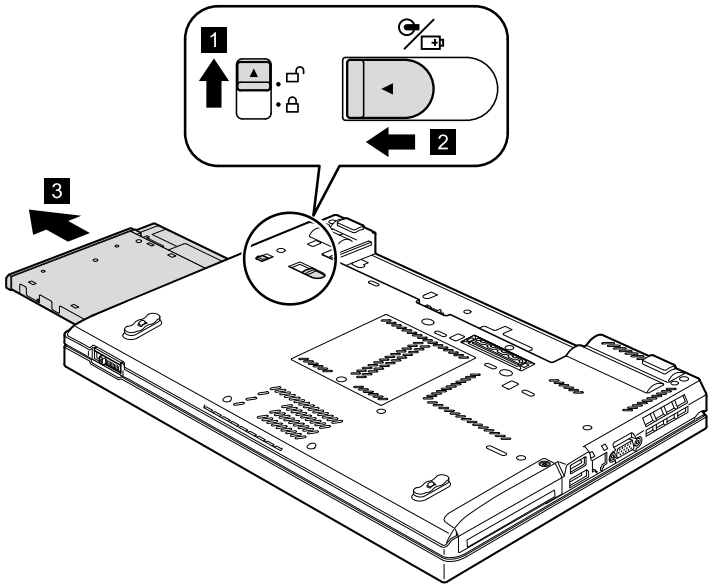
1030 Serial Ultrabay Enhanced device or travel bezel

For access, remove this FRU:

- “1010 Battery pack” on page 67

Removal steps of Serial Ultrabay Enhanced device or travel bezel

Holding the bay lock latch in the unlocked position **1**, slide the bay eject latch in the direction shown by arrow **2**, and then pull out the Serial Ultrabay Enhanced device or the travel bezel in the direction shown by arrow **3** to completely remove it.



1040 Hard disk drive (HDD) and solid state drive (SSD)

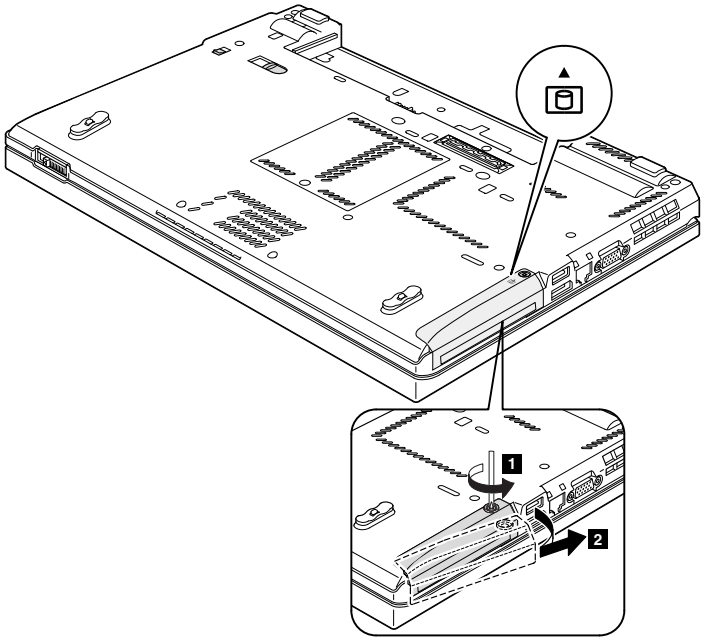
For access, remove this FRU:
- “1010 Battery pack” on page 67

Attention:

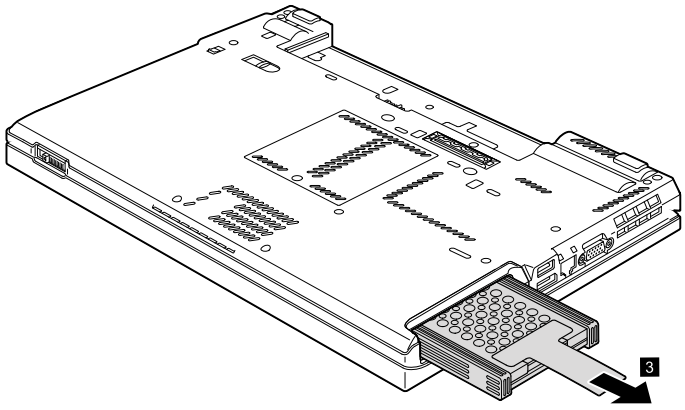
- Do not drop the drive or apply any physical shock to it. The drive is sensitive to physical shock. Improper handling can cause damage and permanent loss of data.
- Before removing the drive, have the user make a backup copy of all the information on it if possible.
- Never remove the drive while the system is operating or is in suspend mode.

Removal steps of hard disk drive and solid state drive

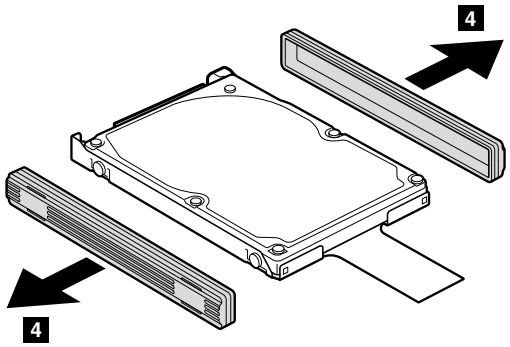
Note: Loosen the screw **1**, but do not remove it.



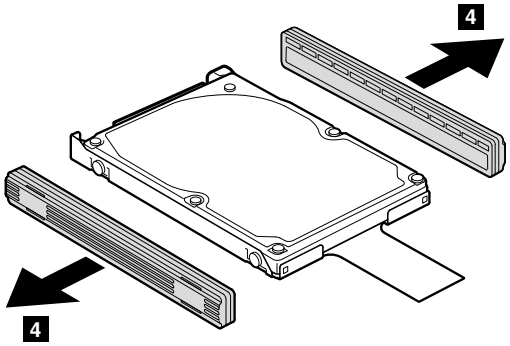
Step	Screw (quantity)	Color	Torque
1	Capture screw (1)	Black	0.181 Nm (1.85 kgf-cm)



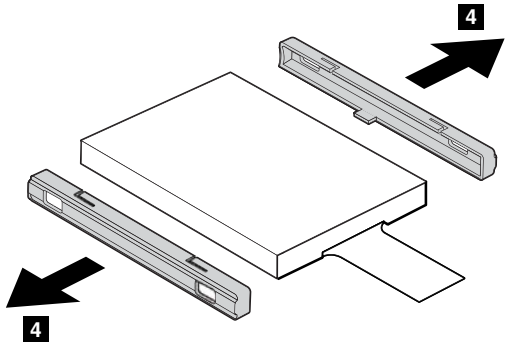
For HDD and HDD rubber rails (9.5 mm):



For HDD and HDD rubber rails (7.0mm) :



For SSD and spacers:



When installing: Make sure that SSD spacers or HDD rubber rails are attached firmly.

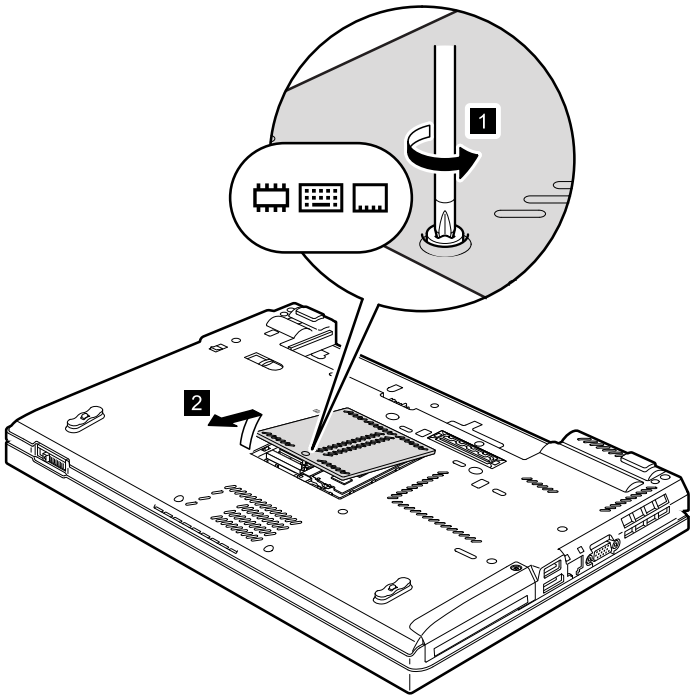
1050 DIMM slot cover

For access, remove this FRU:

- “1010 Battery pack” on page 67

Removal steps of DIMM slot cover

Note: Loosen the screw **1**, but do not remove it.

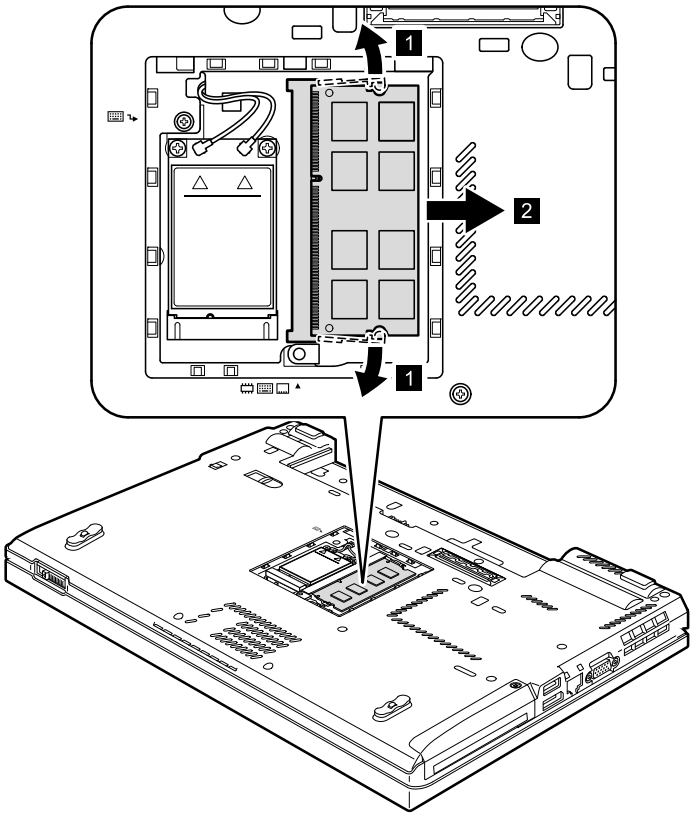


1060 DIMM (in the slot on the underside of the computer)

For access, remove these FRUs in order:
- “1010 Battery pack” on page 67
- “1050 DIMM slot cover” on page 73

Note: Your computer has two DIMM slots: one under the keyboard and another on the underside of the computer. If you install a DIMM in only one of the two slots, install it in the slot located under the keyboard.

Removal steps of DIMM (in the slot on the underside of the computer)



When installing: Insert the notched end of the DIMM into the socket. Press the DIMM firmly, and pivot it until it snaps into place. Make sure that it is firmly fixed in the slot and does not move easily.

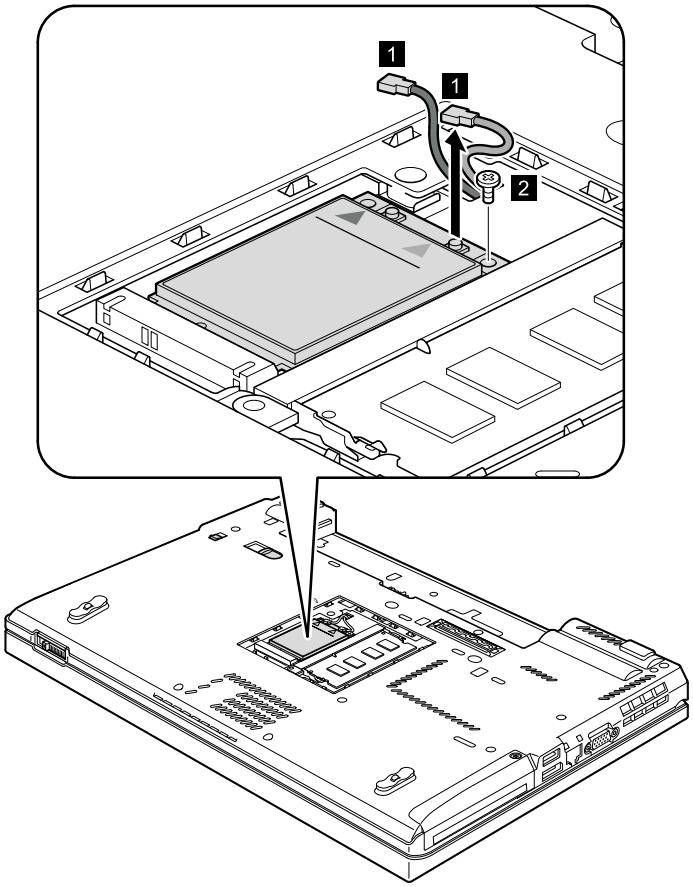
1070 PCI Express Mini Card for wireless WAN

For access, remove these FRUs in order:

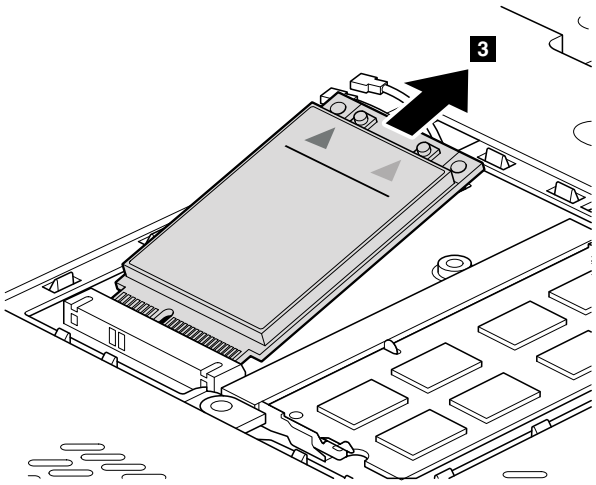
- “1010 Battery pack” on page 67
- “1050 DIMM slot cover” on page 73

Removal steps of PCI Express Mini Card for wireless WAN

In step 1, unplug the jacks by using the removal tool antenna RF connector (P/N: 08K7159), or pick the connectors with your fingers and gently unplug them in the direction of the arrow.

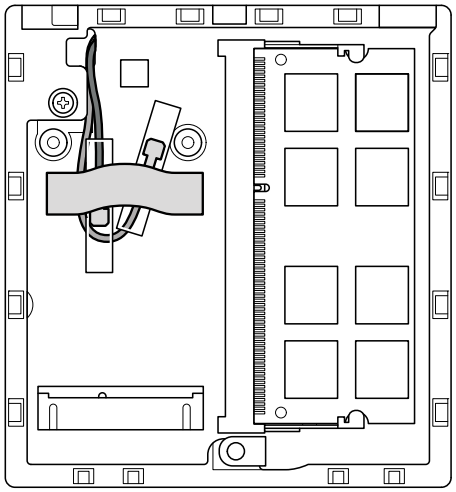


Step	Screw (quantity)	Color	Torque
2	M2 × 3 mm, wafer-head, nylon-coated (1)	Black	0.181 Nm (1.85 kgf-cm)



Note: Plug the yellow cable into the jack labeled **MAIN**, and the blue cable into the jack labeled **AUX** on the card.

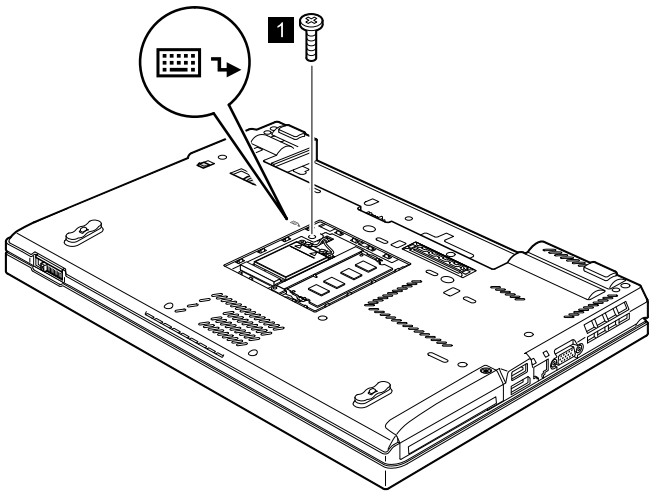
If the computer you are servicing is a wireless WAN-ready model and does not have a wireless WAN card, route the antenna cables and secure them with a tape as shown in the following figure.



1080 Keyboard

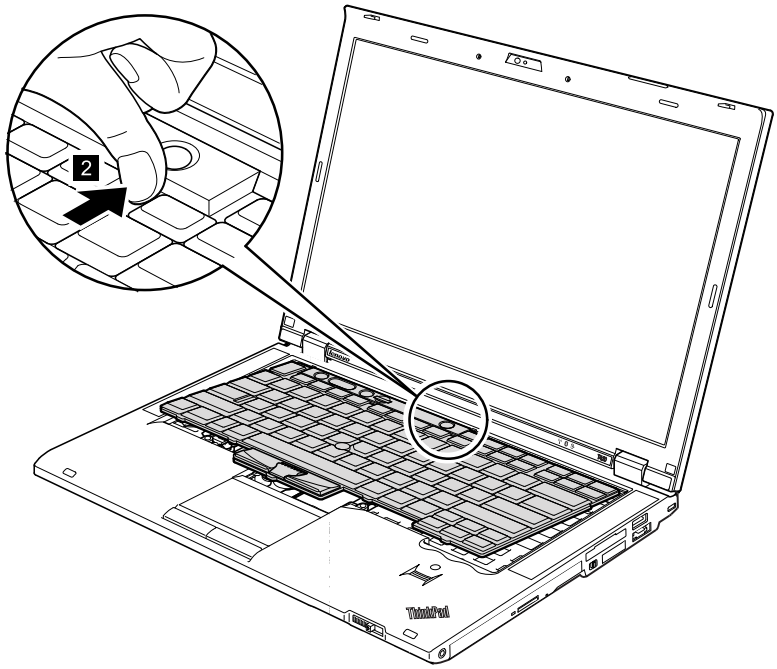
For access, remove these FRUs in order:
- “1010 Battery pack” on page 67
- “1050 DIMM slot cover” on page 73

Removal steps of keyboard

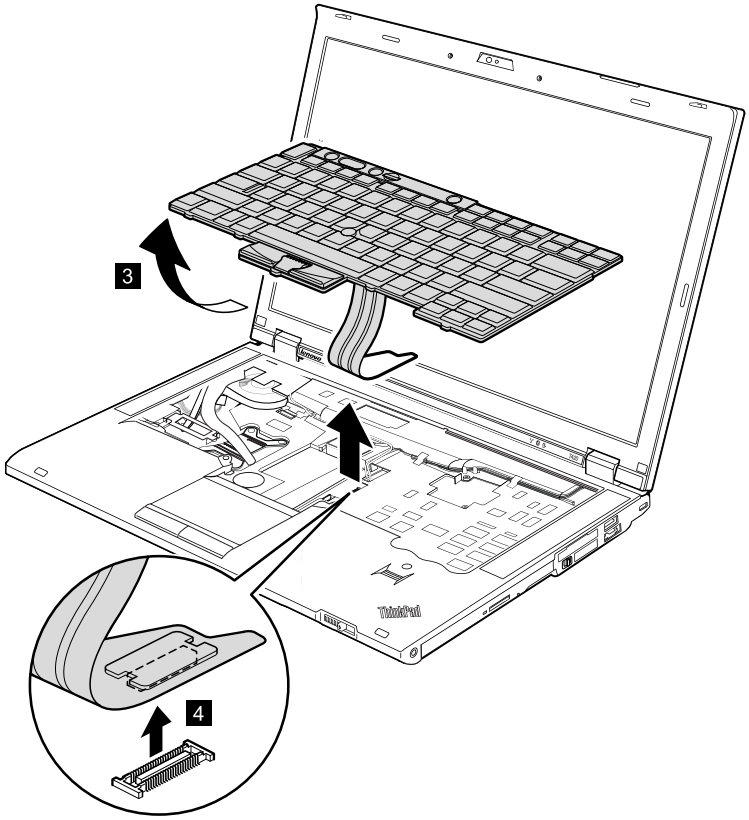


Step	Screw (quantity)	Color	Torque
1	M2 × 10 mm, wafer-head, nylon-coated (1)	Silver	0.181 Nm (1.85 kgf-cm)

Push down the keyboard a little and slide it toward the arrow 2 to detach the front edge of the keyboard from the frame.



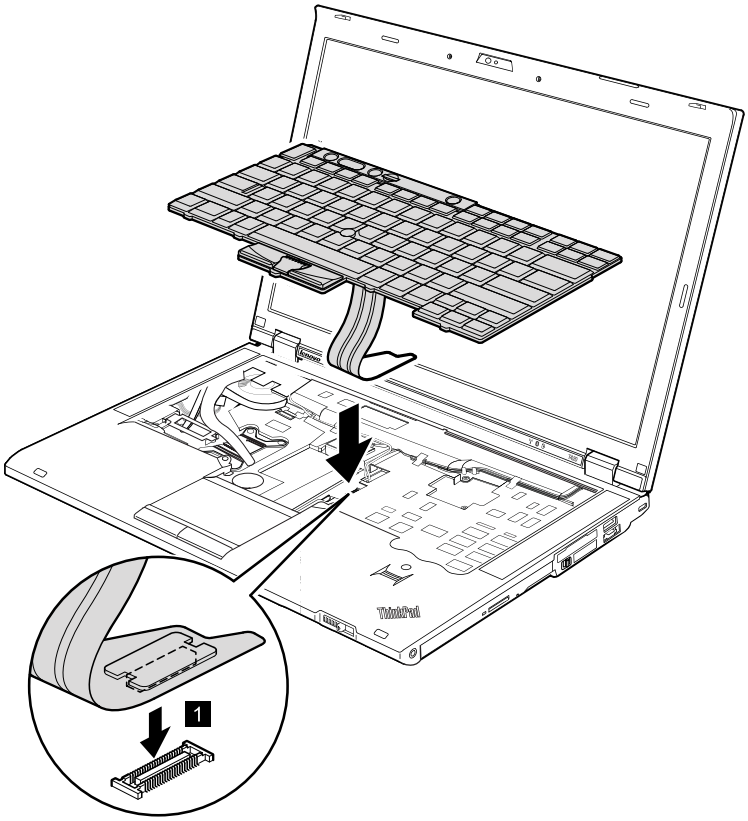
Lift the keyboard a little in the direction shown by arrow **3**, and then detach the connector **4**.



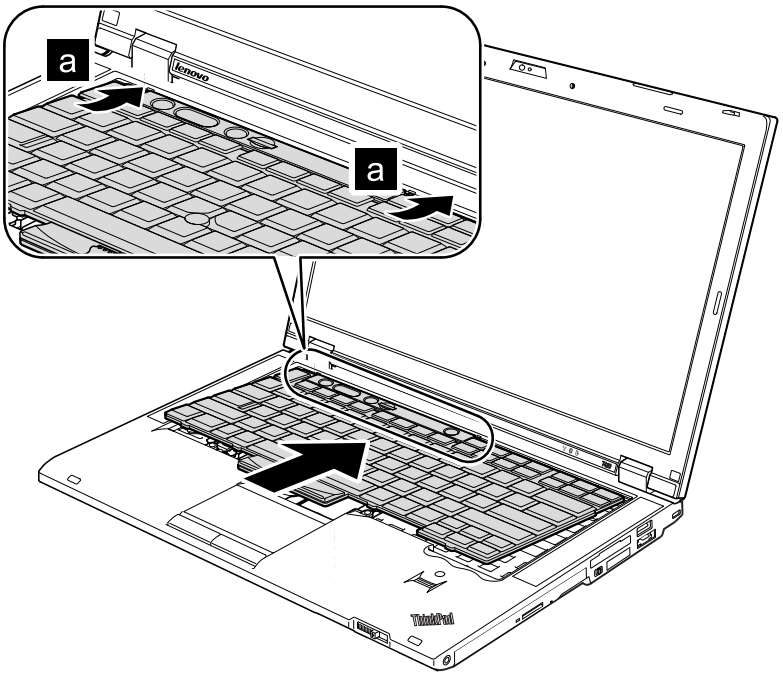
Installation steps of keyboard

When installing the keyboard, do the following:

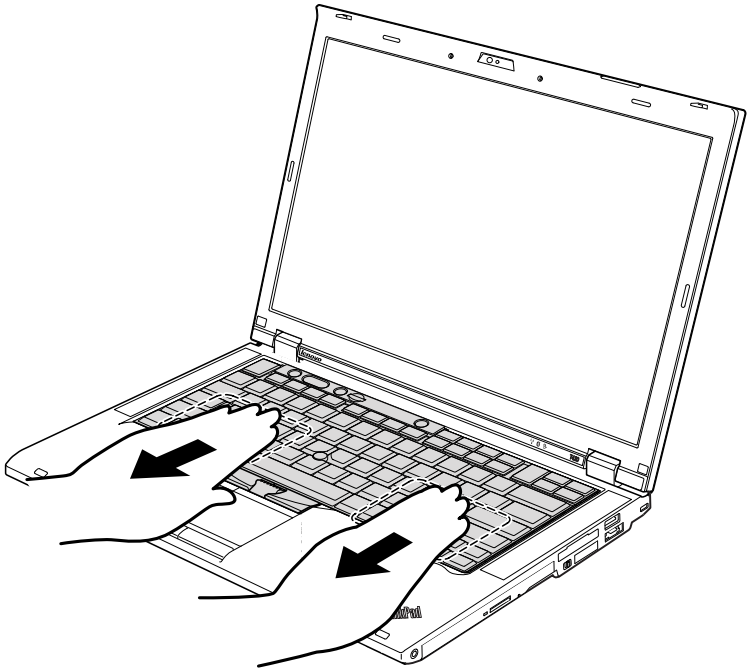
1. Attach the keyboard connector.



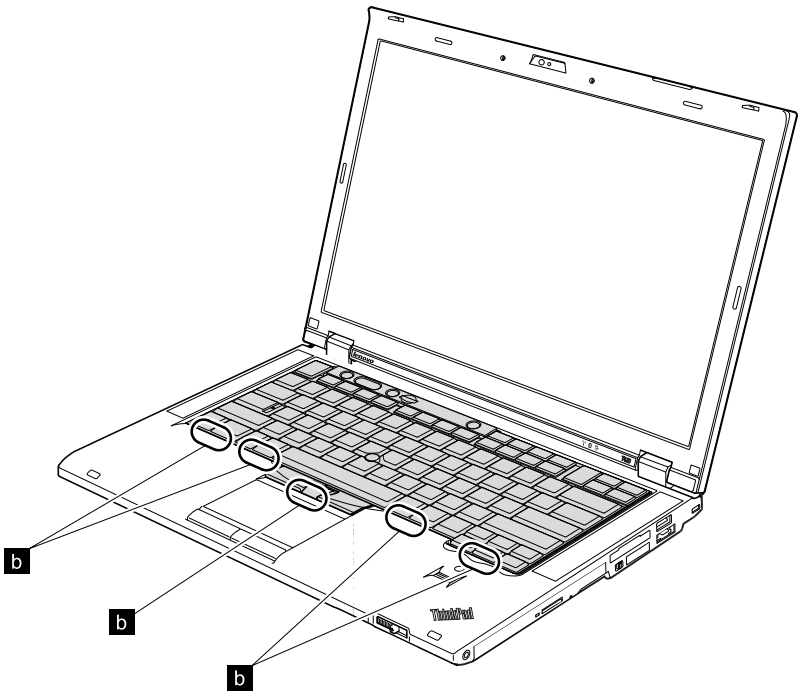
2. Attach the keyboard so that the keyboard edges **a** are under the frame.



3. To make sure that the front edge of the keyboard is housed firmly, gently press the keys with your palms and slightly slide the keyboard toward you until it snaps into position.



4. Make sure that the front edge of the keyboard **b** is attached firmly.



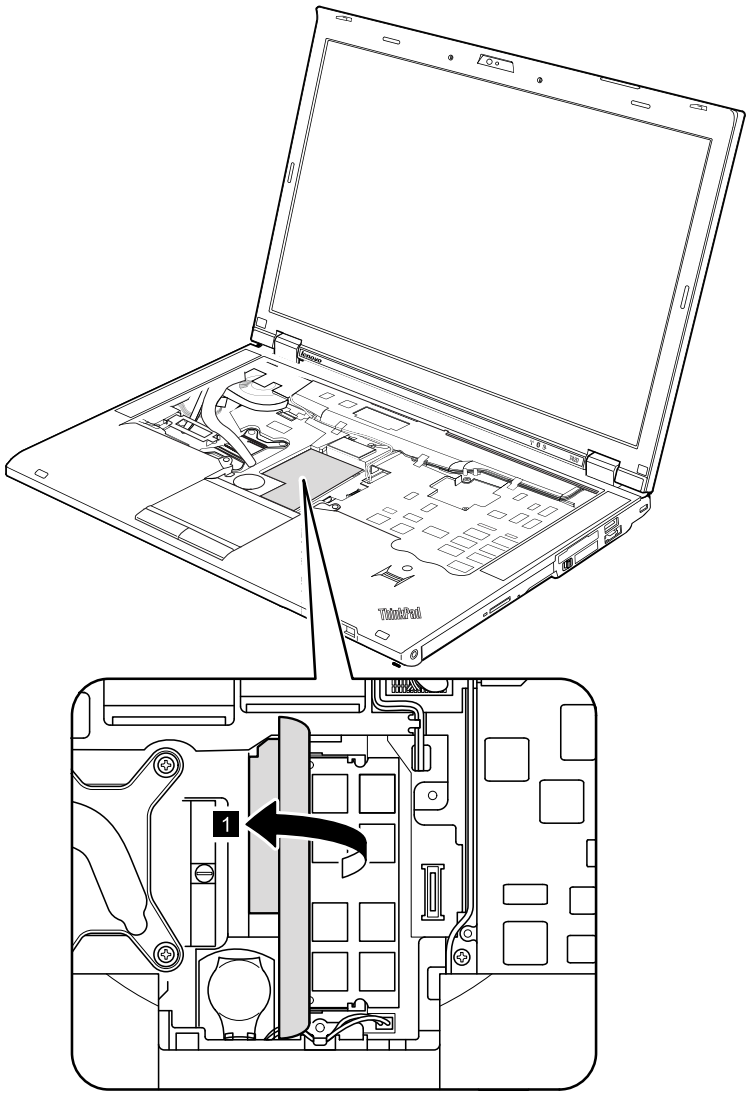
5. Secure the keyboard by tightening the screws from the bottom side of the computer.

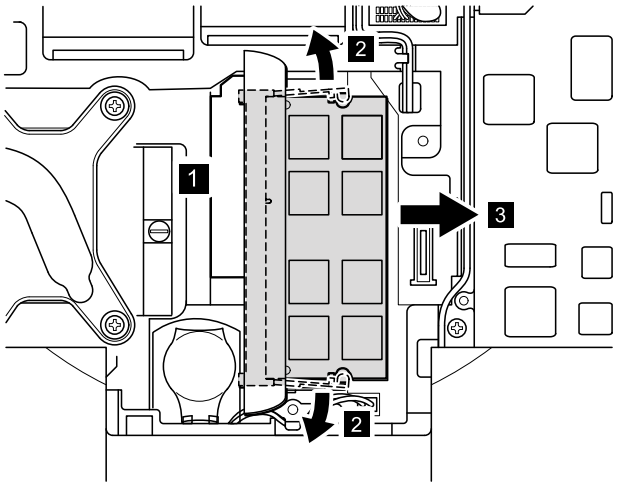
1090 DIMM (in the slot under the keyboard)

For access, remove these FRUs in order:
- “1010 Battery pack” on page 67
- “1050 DIMM slot cover” on page 73
- “1080 Keyboard” on page 77

Note: Your computer has two DIMM slots: one under the keyboard and another on the underside of the computer. If you install a DIMM in only one of the two slots, install it in the slot located under the keyboard.

Removal steps of DIMM (in the slot under the keyboard)





When installing: Insert the notched end of the DIMM into the socket. Press the DIMM firmly, and pivot it until it snaps into place. Make sure that it is firmly fixed in the slot and does not move easily.

1100 Backup battery

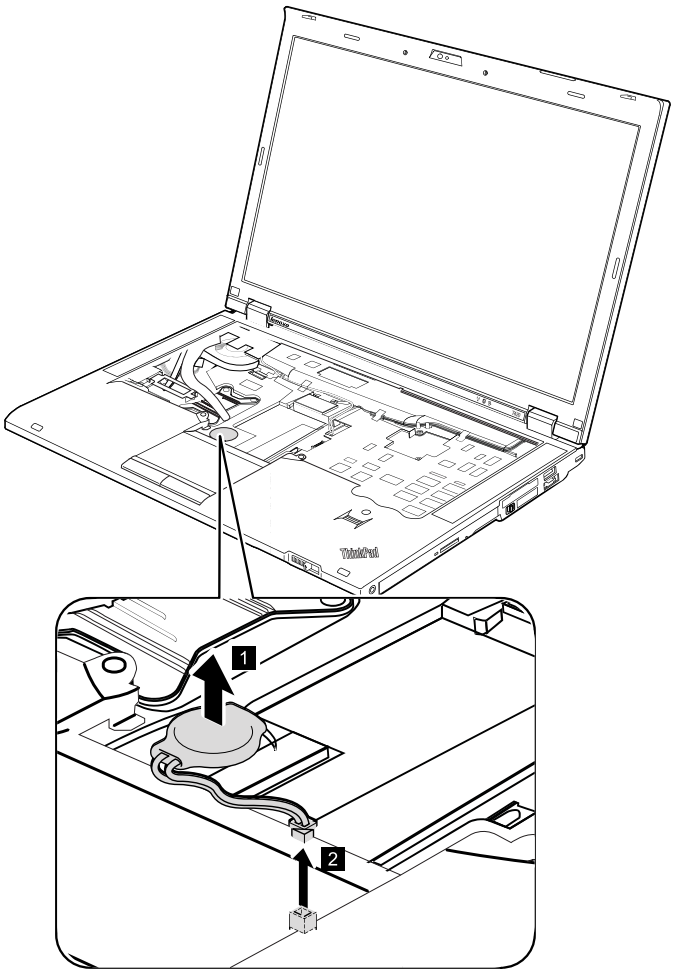
For access, remove these FRUs in order:

- “1010 Battery pack” on page 67
- “1050 DIMM slot cover” on page 73
- “1080 Keyboard” on page 77

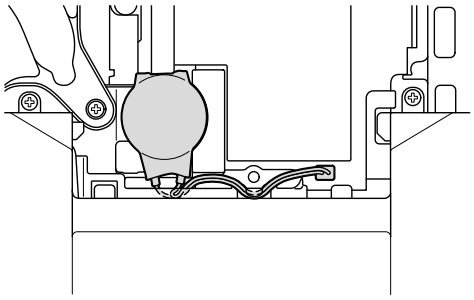
Removal steps of backup battery

DANGER

Use only the battery specified in the parts list for your computer. Any other battery could ignite or explode.



Cable routing: Attach the backup battery and route the cable as shown in the figure below and make sure that the battery connector is attached firmly.



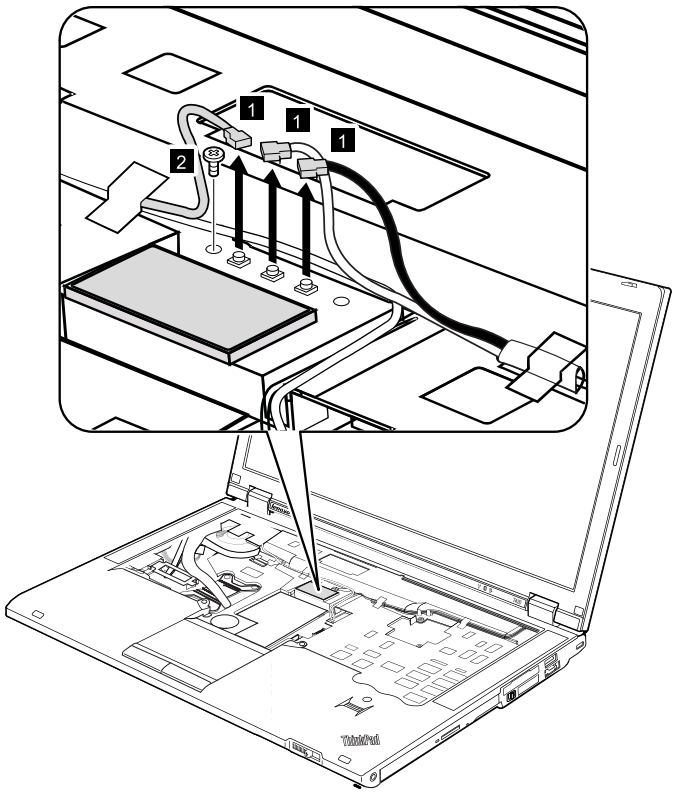
1110 PCI Express Mini Card for wireless LAN

For access, remove these FRUs in order:
- “1010 Battery pack” on page 67
- “1050 DIMM slot cover” on page 73
- “1080 Keyboard” on page 77

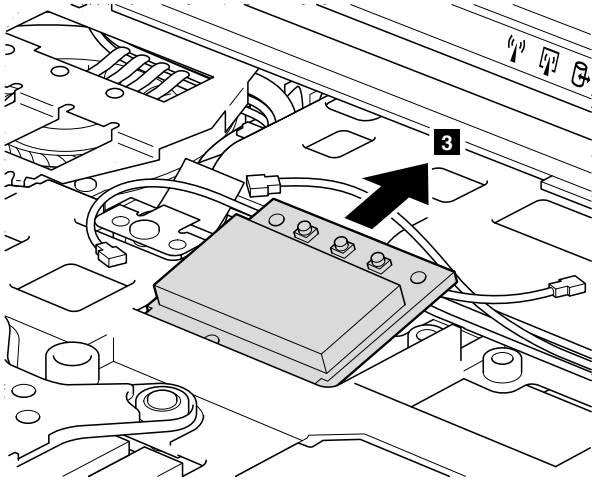
Removal steps of PCI Express Mini Card for wireless LAN

In step **1**, unplug the jacks by using the removal tool antenna RF connector (P/N: 08K7159), or pick the connectors with your fingers and gently unplug them in the direction of the arrow.

Note: Some models might have only two antenna cables.

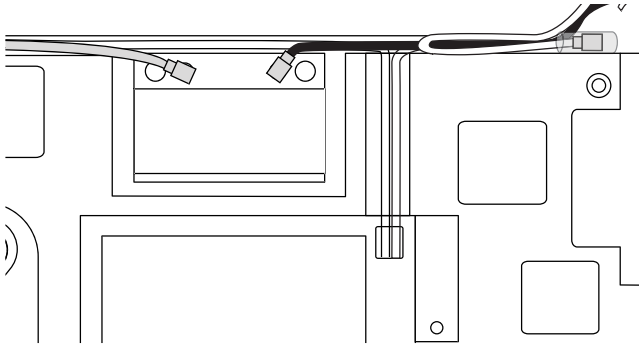


Step	Screw (quantity)	Color	Torque
2	M2 × 10 mm, wafer-head, nylon-coated (1)	Silver	0.181 Nm (1.85 kgf-cm)



When installing:

- In models with a wireless LAN card that has two antenna connectors, plug the gray cable into the jack marked **MAIN** or **M**, and the black cable into the jack marked **AUX** or **A** on the card. If the computer you are servicing has three cables, put the white cable in the cable protection tube and secure it with a tape as shown in this figure.



- In models with a wireless LAN card that has three antenna connectors, plug the gray cable (MAIN) into the jack marked **TR1**, the white cable (third) into the jack marked **RO** or **TR3**, and the black cable (AUX) into the jack marked **TR2** on the card.

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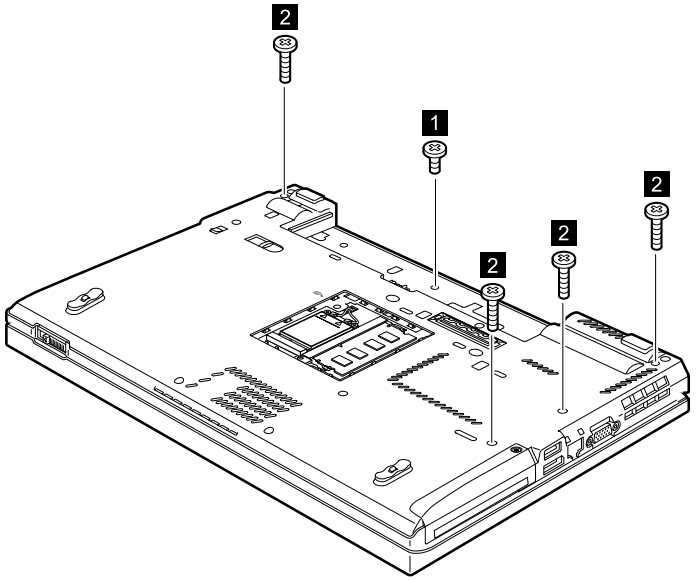
1120 Keyboard bezel assembly, FPC cable, and *Bluethooth* daughter card

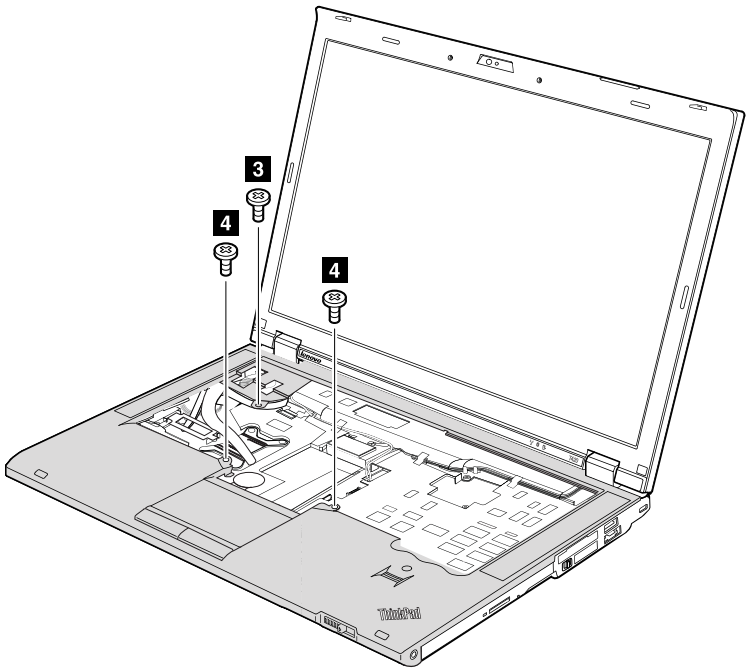
For access, remove these FRUs in order:
- “1010 Battery pack” on page 67
- “1020 ExpressCard blank bezel” on page 68
- “1050 DIMM slot cover” on page 73
- “1080 Keyboard” on page 77

Note: The FPC cable is attached on the underside of the keyboard bezel assembly. In some models, the Bluetooth daughter card is also attached on the underside of the keyboard bezel assembly. For the models that do not have a Bluetooth daughter card, skip steps 8 to 10.

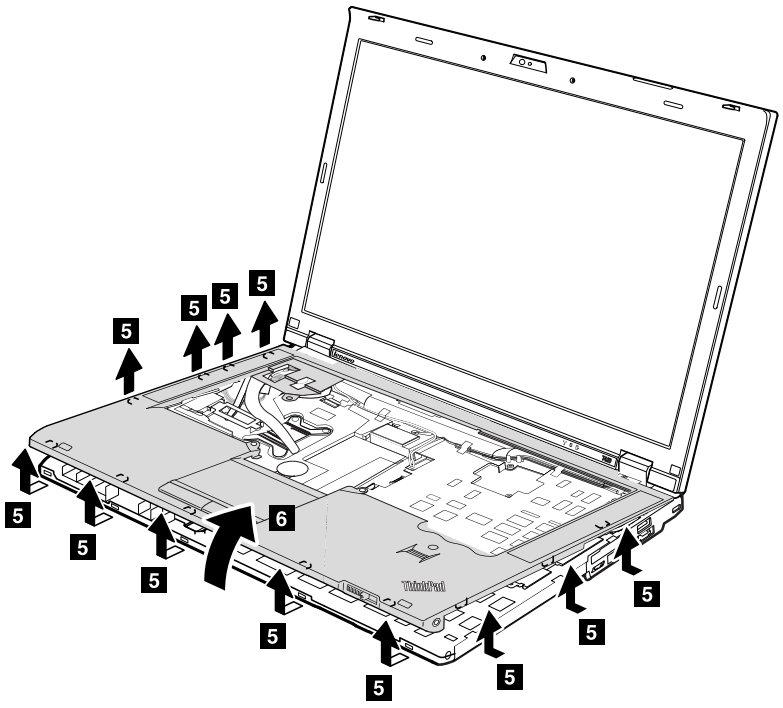
Removal steps of keyboard bezel assembly, FPC cable, and Bluetooth daughter card

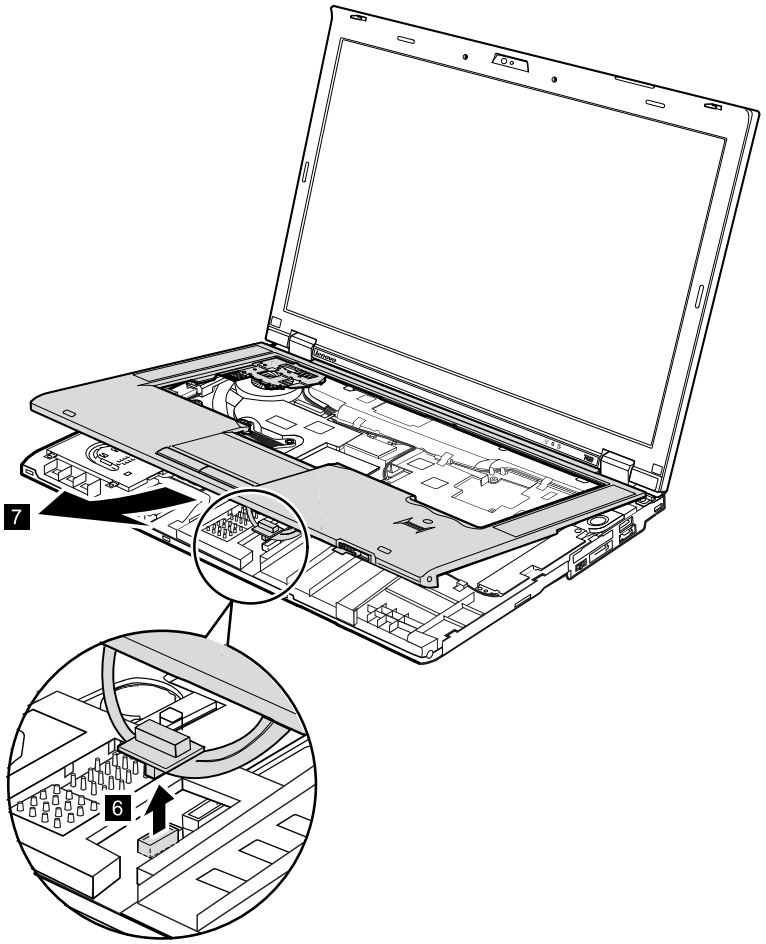


Step	Screw (quantity)	Color	Torque
1	M2 × 3 mm, wafer-head, nylon-coated (1)	Black	0.181 Nm (1.85 kgf-cm)
2	M2 × 15 mm, wafer-head, nylon-coated (4)	Black	0.181 Nm (1.85 kgf-cm)

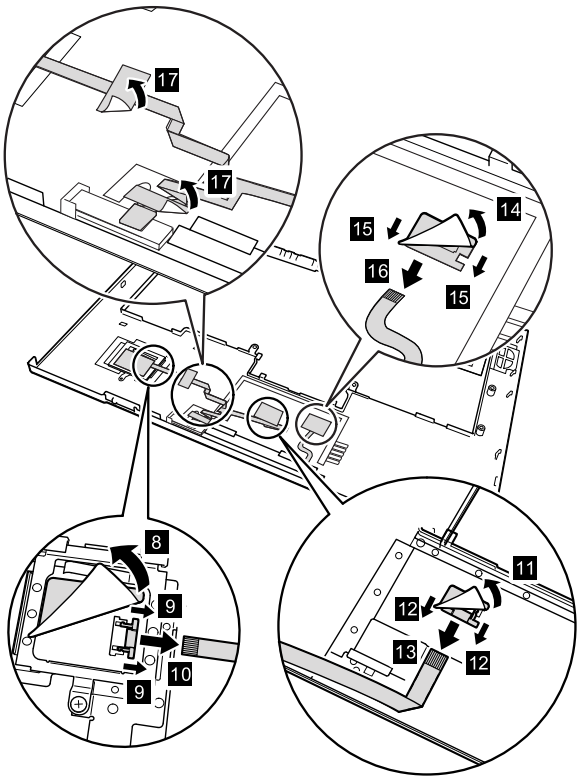


Step	Screw (quantity)	Color	Torque
3	M2 × 3 mm, wafer-head, nylon-coated (1)	Black	0.181 Nm (1.85 kgf-cm)
4	Shoulder screw (2)	Silver	0.181 Nm (1.85 kgf-cm)

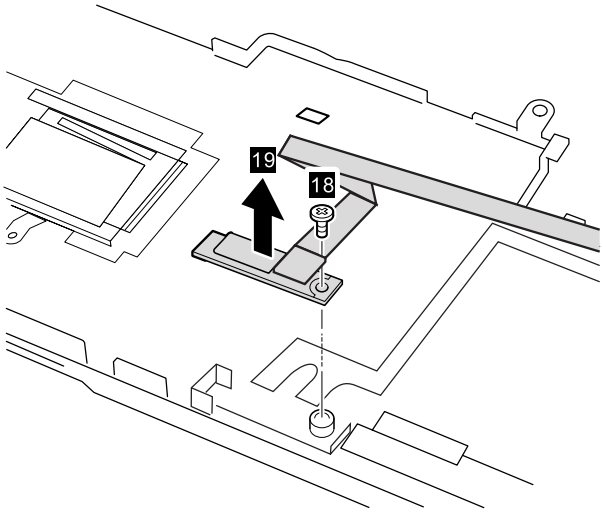




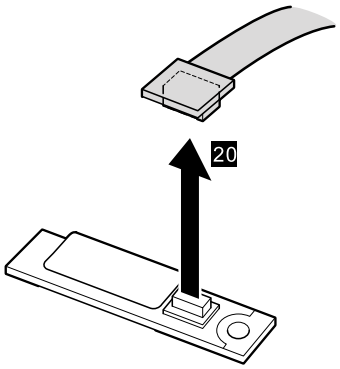
When installing: Make sure that the connector is attached firmly.



When installing: Make sure that the connectors are attached firmly.



Step	Screw (quantity)	Color	Torque
13	M2 × 3 mm, wafer-head, nylon-coated (1)	Black	0.181 Nm (1.85 kgf-cm)



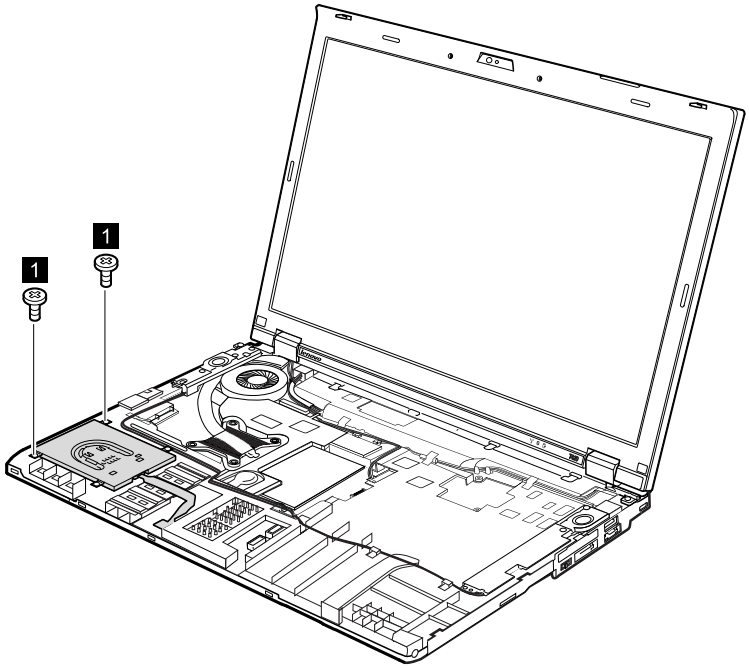
When installing: Make sure that the connector is attached firmly.

1130 SmartCard

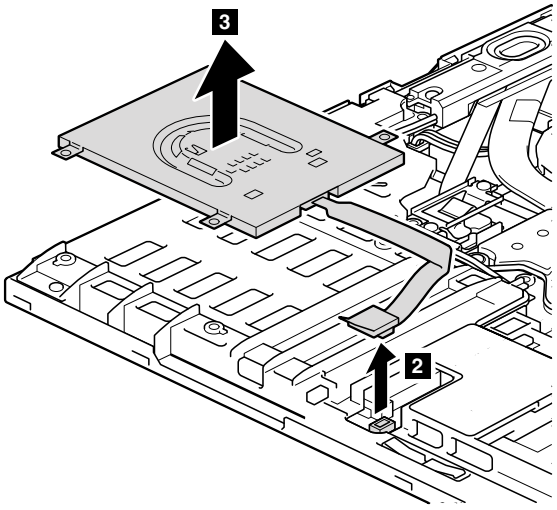
For access, remove these FRUs in order:

- “1010 Battery pack” on page 67
- “1050 DIMM slot cover” on page 73
- “1080 Keyboard” on page 77
- “1120 Keyboard bezel assembly, FPC cable, and *Bluethooth* daughter card” on page 87

Removal steps of SmartCard



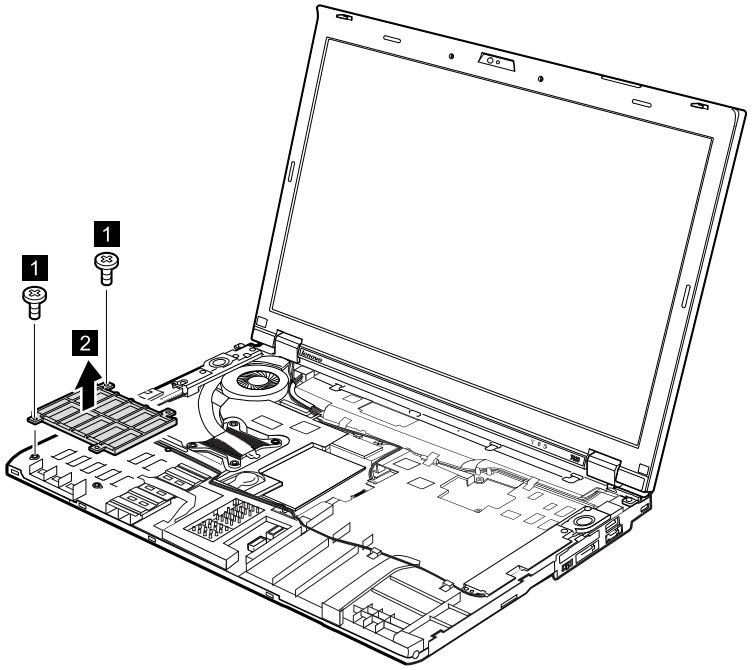
Step	Screw (quantity)	Color	Torque
1	M2 × 3 mm, wafer-head, nylon-coated (2)	Black	0.181 Nm (1.85 kgf-cm)



When installing: Make sure that the connector is attached firmly.

Removal steps of SmartCard dummy spacer

Some models have a SmartCard dummy spacer as a miscellaneous part. For those models, remove the spacer as shown:

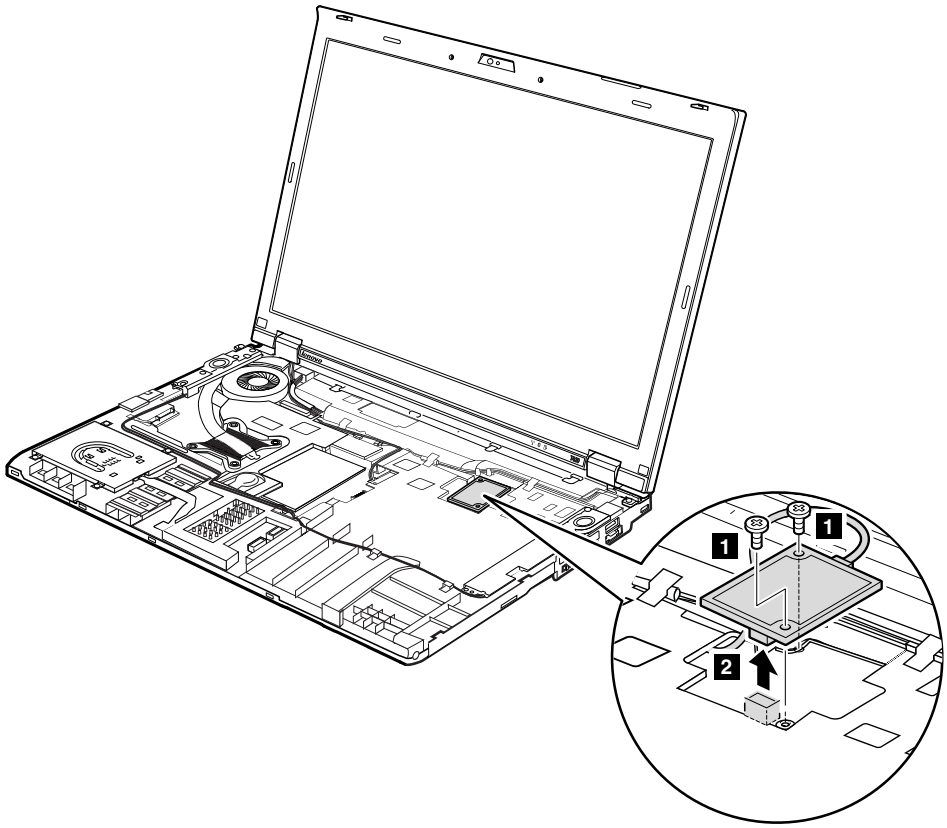


Step	Screw (quantity)	Color	Torque
1	M2 × 3 mm, wafer-head, nylon-coated (2)	Black	0.181 Nm (1.85 kgf-cm)

1140 Modem daughter card (MDC)

For access, remove these FRUs in order:
- “1010 Battery pack” on page 67
- “1050 DIMM slot cover” on page 73
- “1080 Keyboard” on page 77
- “1120 Keyboard bezel assembly, FPC cable, and *Bluethooth* daughter card” on page 87

Removal steps of modem daughter card (MDC)



Step	Screw (quantity)	Color	Torque
1	M2 × 3 mm, wafer-head, nylon-coated (2)	Black	0.181 Nm (1.85 kgf-cm)

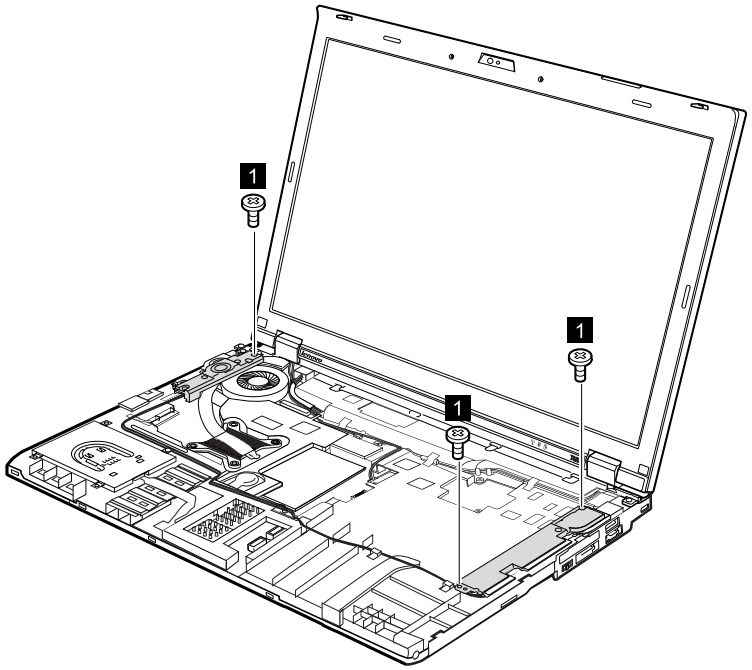
When installing: Make sure that the connector is attached firmly.

1150 Speaker assembly

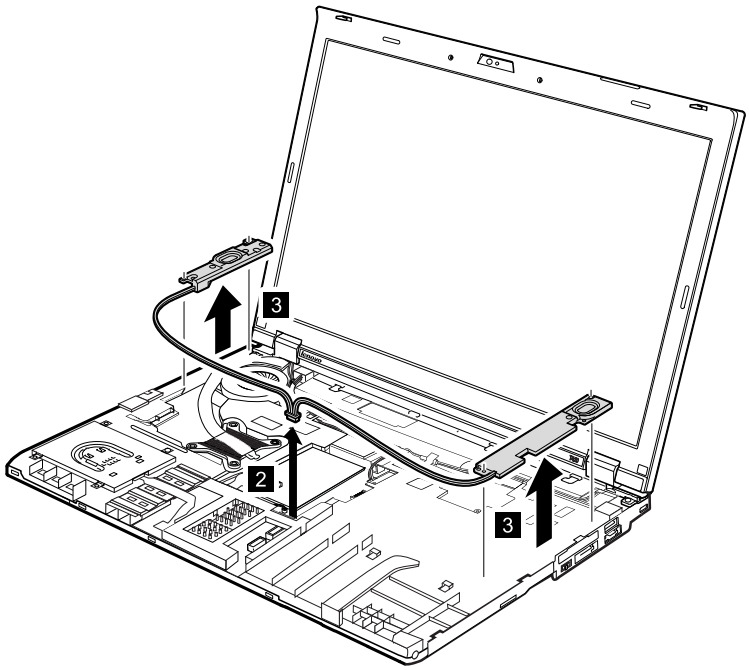
For access, remove these FRUs in order:

- “1010 Battery pack” on page 67
- “1050 DIMM slot cover” on page 73
- “1080 Keyboard” on page 77
- “1120 Keyboard bezel assembly, FPC cable, and *Bluethooth* daughter card” on page 87

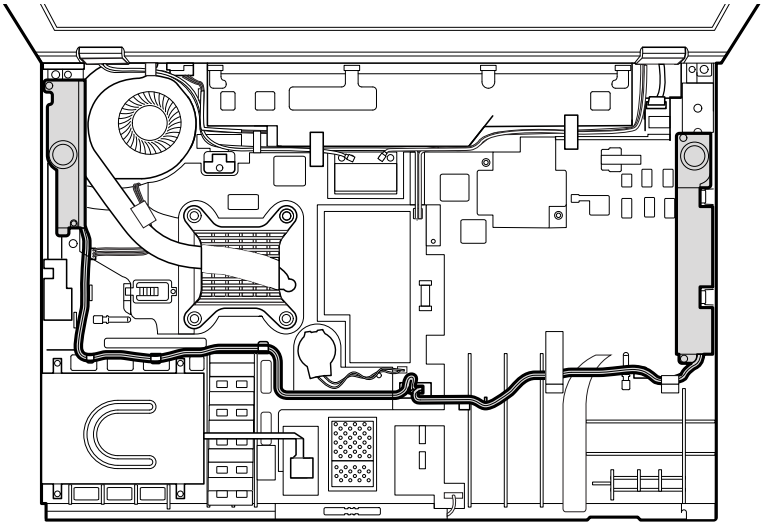
Removal steps of speaker assembly



Step	Screw (quantity)	Color	Torque
1	M2 × 3 mm, wafer-head, nylon-coated (3)	Black	0.181 Nm (1.85 kgf-cm)



When installing: Attach the speaker assembly and route the cable as shown in the following figure, and make sure that the speaker connector is attached firmly.

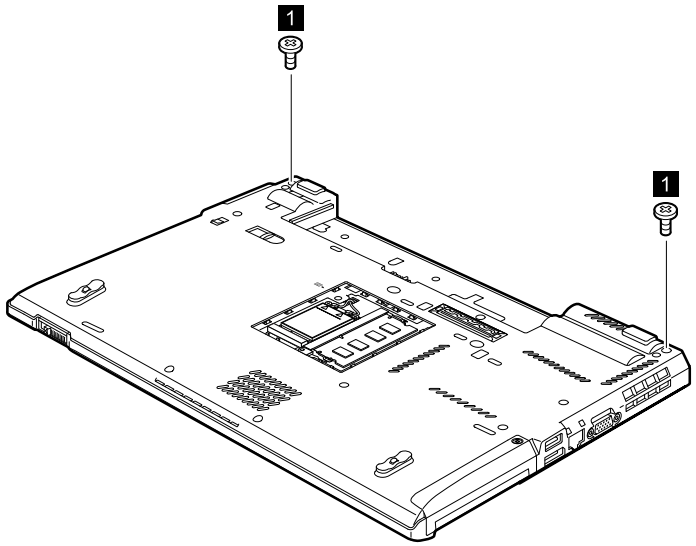


1160 LCD unit

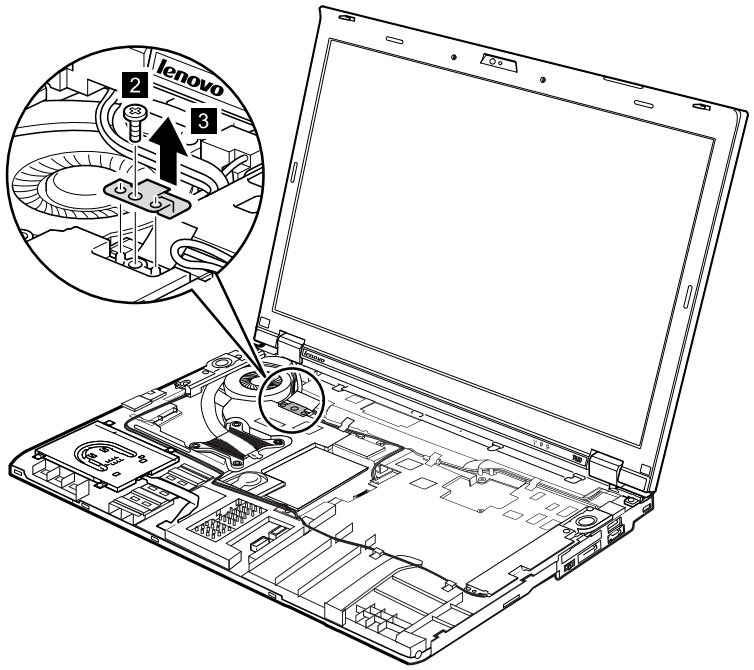
For access, remove these FRUs in order:

- “1010 Battery pack” on page 67
- “1020 ExpressCard blank bezel” on page 68
- “1050 DIMM slot cover” on page 73
- “1070 PCI Express Mini Card for wireless WAN” on page 75
- “1080 Keyboard” on page 77
- “1110 PCI Express Mini Card for wireless LAN” on page 85
- “1120 Keyboard bezel assembly, FPC cable, and *Bluethooth* daughter card” on page 87

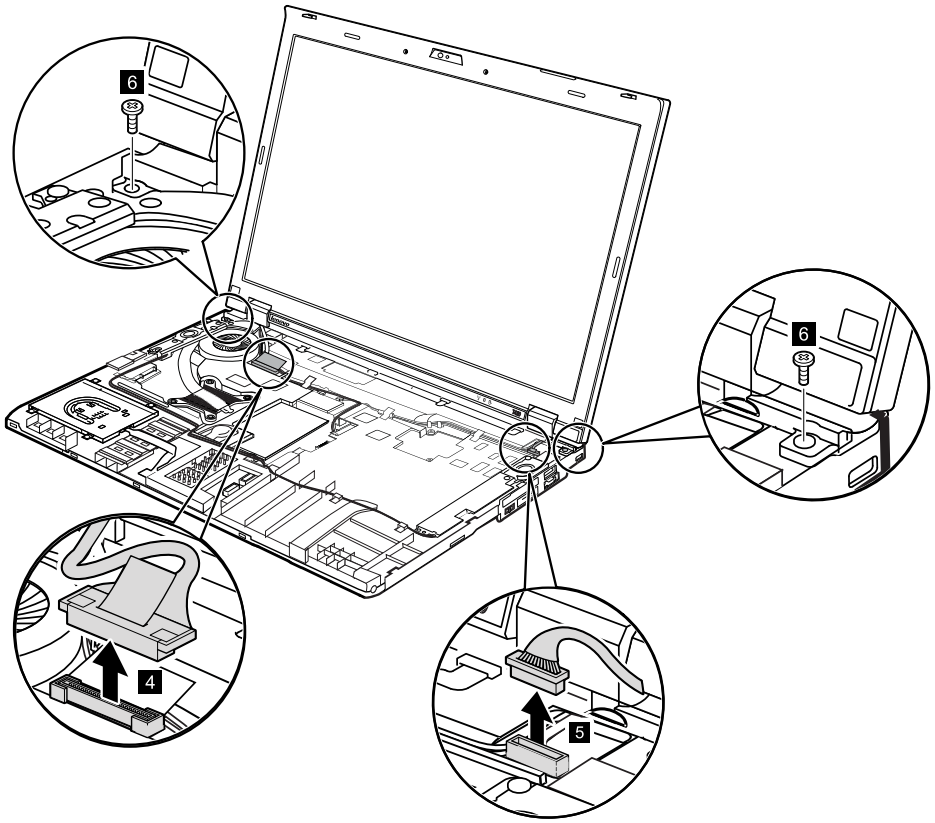
Removal steps of LCD unit



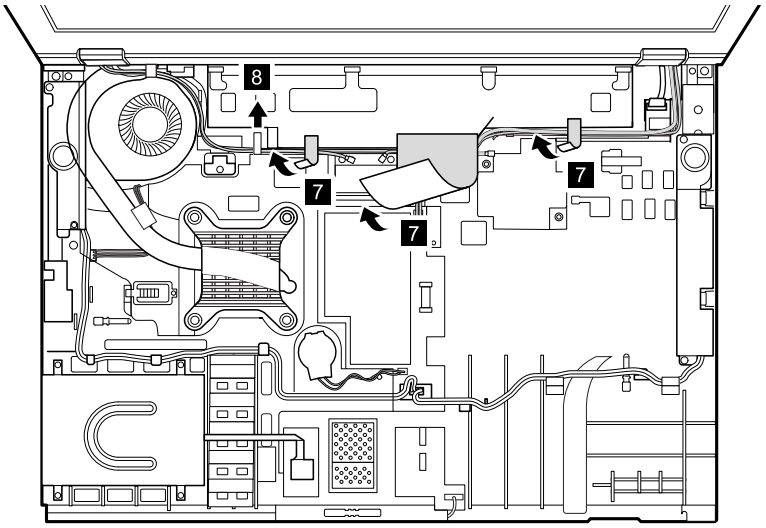
Step	Screw (quantity)	Color	Torque
1	M2.5 × 6 mm, wafer-head, nylon-coated (2)	Black	0.392 Nm (4.0 kgf-cm)



Step	Screw (quantity)	Color	Torque
2	M2 × 3 mm, wafer-head, nylon-coated (1)	Black	0.181 Nm (1.85 kgf-cm)

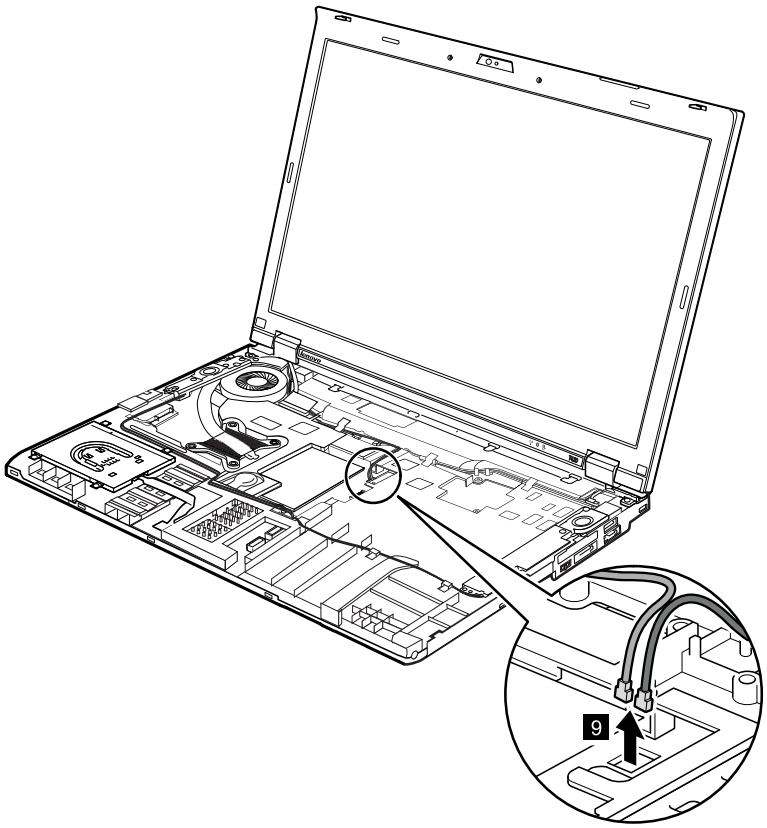


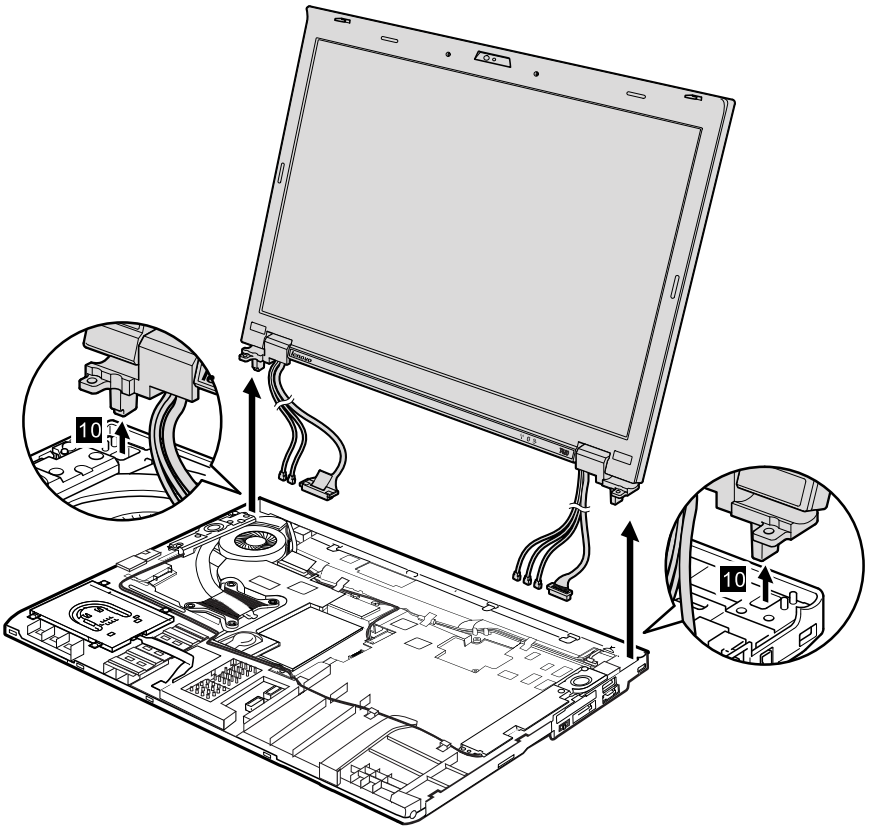
Step	Screw (quantity)	Color	Torque
6	M2.5 × 6 mm, wafer-head, nylon-coated (2)	Black	0.392 Nm (4.0 kgf-cm)



When installing:

- Make sure that you attach the connectors firmly.
- Make sure that you route the cables correctly and you tape up in the proper positions as shown in the above figure.
- When you route the cables, make sure that they are not subjected to any tension. Tension could cause the cables to be damaged by the cable guides, or a wire to be broken.


9


10
10

1170 Fan assembly

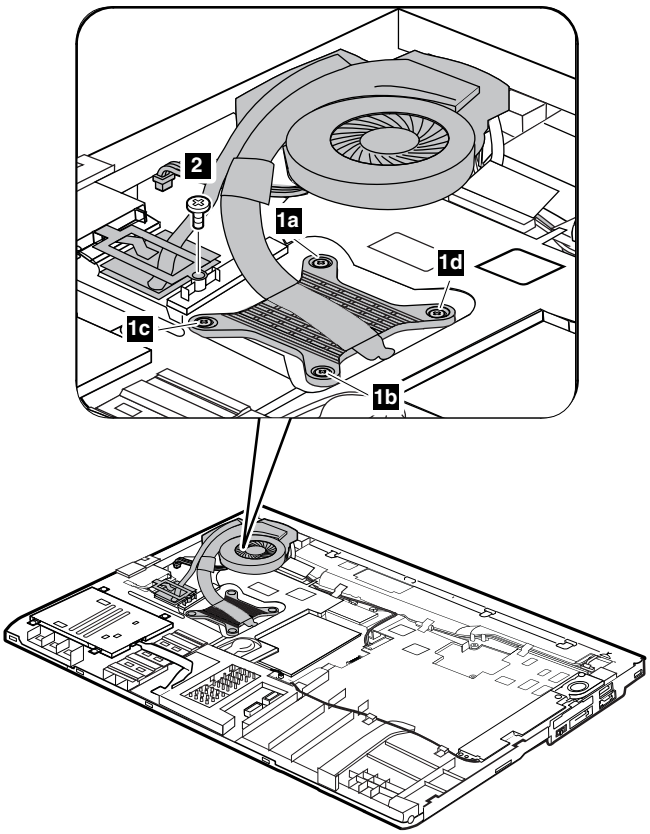
For access, remove these FRUs in order:

- “1010 Battery pack” on page 67
- “1020 ExpressCard blank bezel” on page 68
- “1050 DIMM slot cover” on page 73
- “1070 PCI Express Mini Card for wireless WAN” on page 75
- “1080 Keyboard” on page 77
- “1110 PCI Express Mini Card for wireless LAN” on page 85
- “1120 Keyboard bezel assembly, FPC cable, and *Bluethooth* daughter card” on page 87
- “1150 Speaker assembly” on page 95
- “1160 LCD unit” on page 97

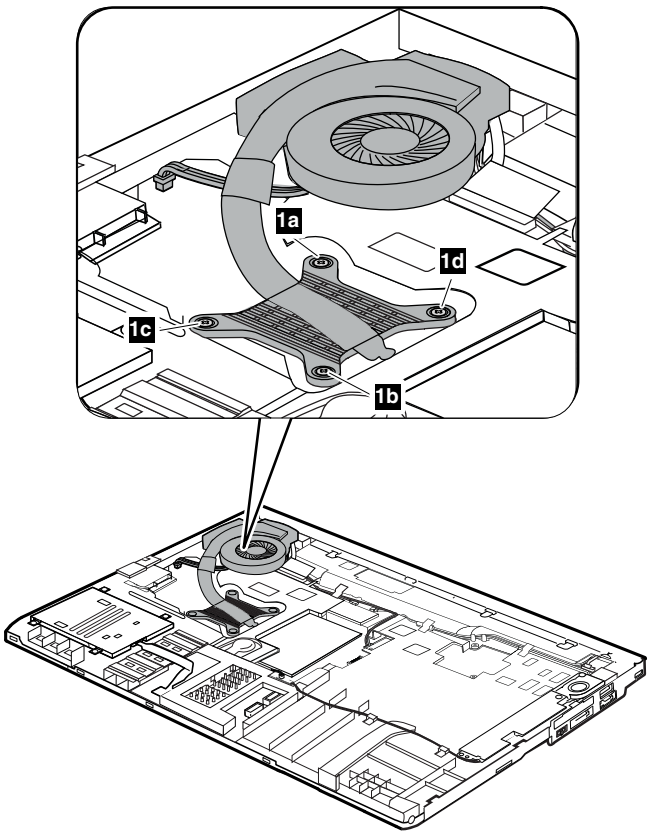
Removal steps of fan assembly

Note: Loosen the screws **1a** to **1d** in order, but do not remove them.

For Discrete Graphics models:

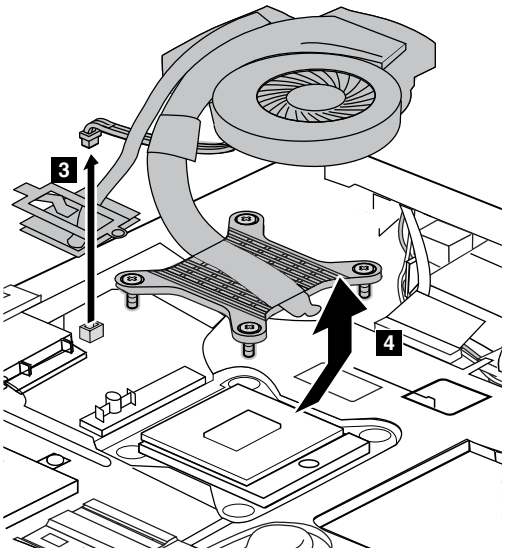


For Integreted Graphics models:

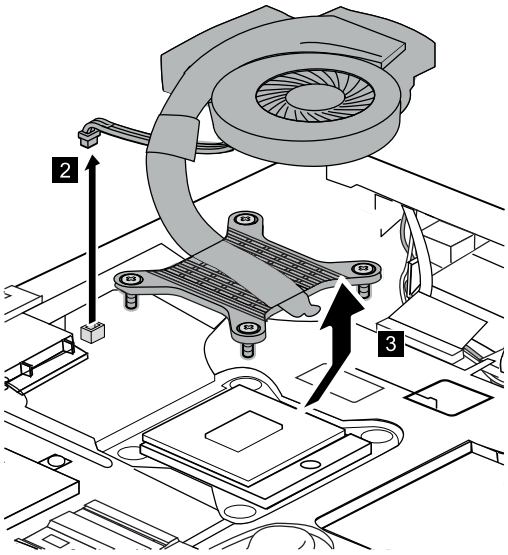


Step	Screw (quantity)	Color	Torque
1	Capture shoulder screw (4)	Silver	0.181 Nm (1.85 kgf-cm)
2	M2 × 3 mm, wafer-head, nylon-coated (1)	black	0.181 Nm (1.85 kgf-cm)

For Discrete Graphics models:

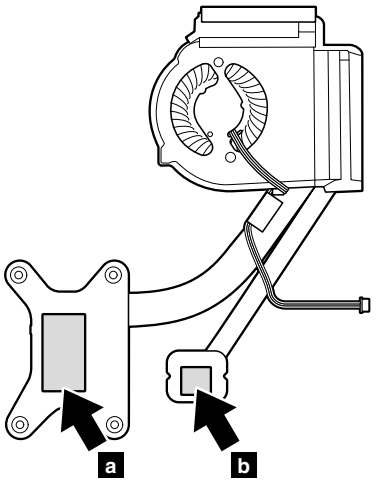


For Integreted Graphics models:

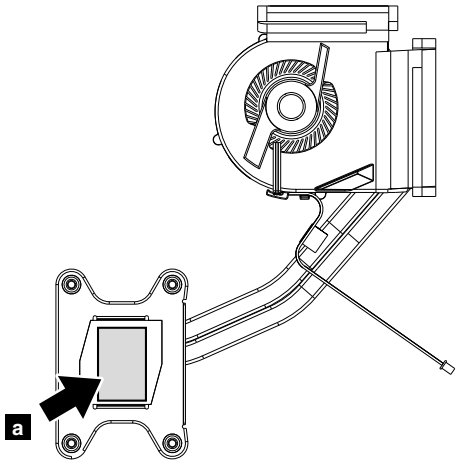


When installing:

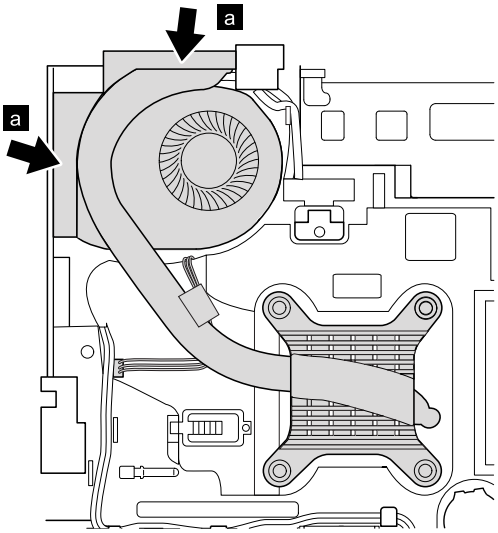
- Before you attach the fan assembly to the computer, apply thermal grease, at an amount of 0.2 grams, on the parts marked **a** as in the following figures. Either too much or too less application of grease can cause a thermal problem due to imperfect contact with a component. For the fan in the integrated graphics models, you need to peel the thin film off from the thermal rubber marked **b**.
  For Discrete Graphics models:



  For Integrated Graphics models:



- When attaching the fan assembly to the frame, take care not to damage the heat sink **a** of the fan assembly.



- Make sure that the fan connector is attached firmly.

1180 CPU

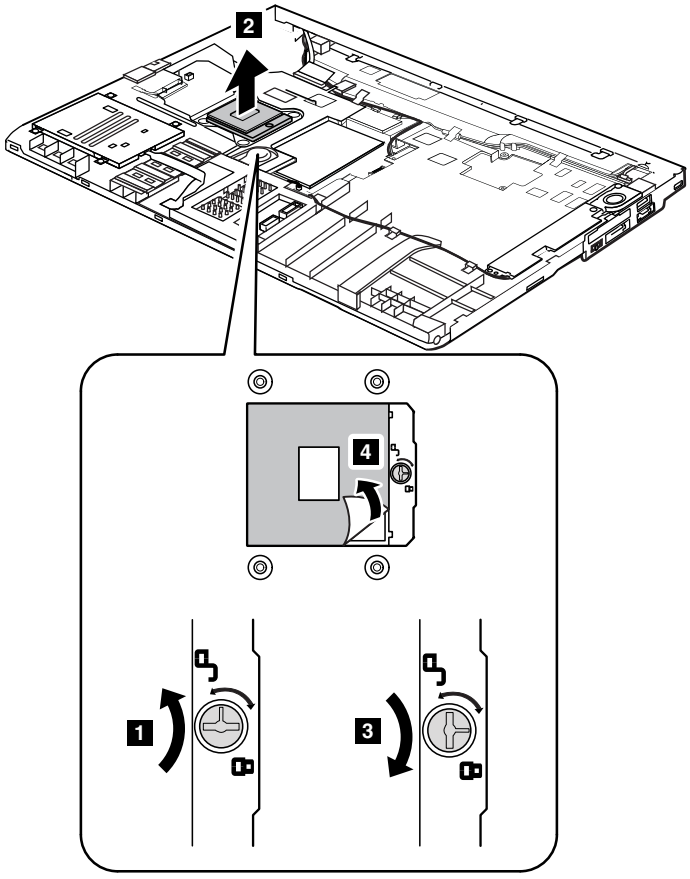
For access, remove these FRUs in order:

- “1010 Battery pack” on page 67
- “1020 ExpressCard blank bezel” on page 68
- “1050 DIMM slot cover” on page 73
- “1070 PCI Express Mini Card for wireless WAN” on page 75
- “1080 Keyboard” on page 77
- “1110 PCI Express Mini Card for wireless LAN” on page 85
- “1120 Keyboard bezel assembly, FPC cable, and *Bluethooth* daughter card” on page 87
- “1150 Speaker assembly” on page 95
- “1160 LCD unit” on page 97
- “1170 Fan assembly” on page 101

Attention: The CPU is extremely sensitive. When you service the CPU, avoid any kind of rough handling.

Removal steps of CPU

Rotate the head of the screw in the direction shown by arrow **1** to release the lock, and then remove the CPU **2**. After that peel the mylar off from the CPU as shown by arrow **4**.



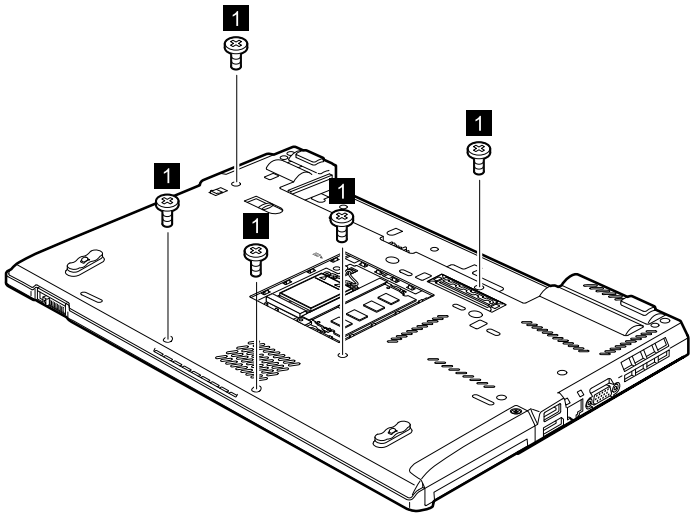
When installing: Make sure that the mylar is attached to the CPU. Place the CPU on the CPU socket, and then rotate the head of the screw in the direction shown by arrow **3** to secure the CPU.

1190 Base cover assembly and DC-in connector cable

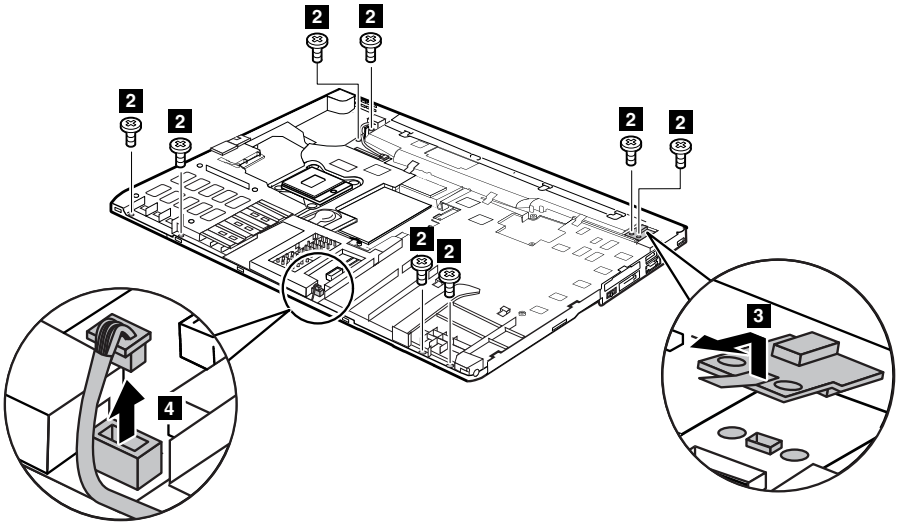
For access, remove these FRUs in order:

- “1010 Battery pack” on page 67
- “1020 ExpressCard blank bezel” on page 68
- “1030 Serial Ultrabay Enhanced device or travel bezel” on page 69
- “1040 Hard disk drive (HDD) and solid state drive (SSD)” on page 70
- “1050 DIMM slot cover” on page 73
- “1070 PCI Express Mini Card for wireless WAN” on page 75
- “1080 Keyboard” on page 77
- “1110 PCI Express Mini Card for wireless LAN” on page 85
- “1120 Keyboard bezel assembly, FPC cable, and *Bluethooth* daughter card” on page 87
- “1150 Speaker assembly” on page 95
- “1160 LCD unit” on page 97
- “1170 Fan assembly” on page 101

Removal steps of base cover assembly and DC-in connector cable

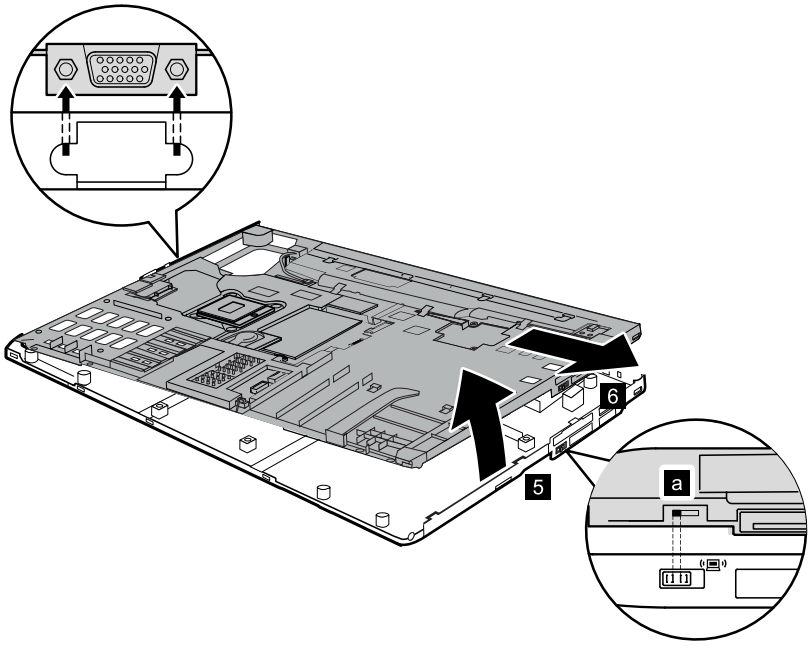


Step	Screw (quantity)	Color	Torque
1	M2 × 8 mm, wafer-head, nylon-coated (5)	Black	0.181 Nm (1.85 kgf-cm)

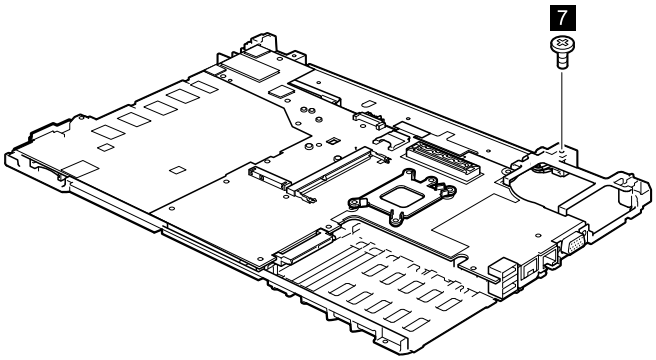


Step	Screw (quantity)	Color	Torque
2	M2 × 5 mm, wafer-head, nylon-coated (8)	Black	0.181 Nm (1.85 kgf-cm)

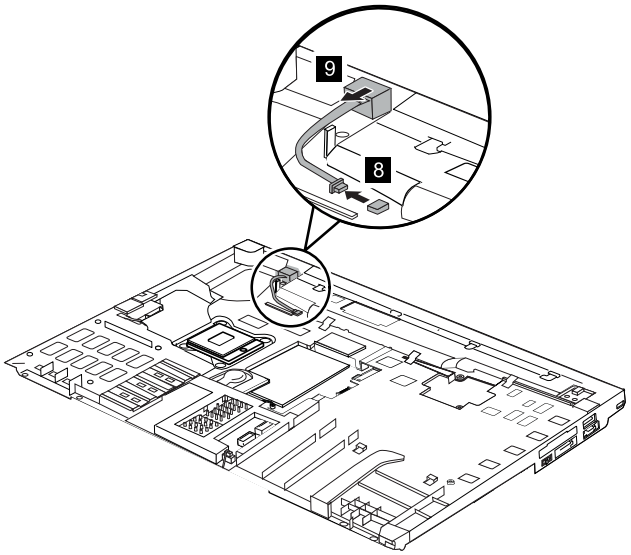
When installing: Make sure that the connector is attached firmly.



When installing: Make sure that the wireless switch is adjusted as shown in callout a.



Step	Screw (quantity)	Color	Torque
7	M2 × 3 mm, wafer-head, nylon-coated (1)	Black	0.181 Nm (1.85 kgf-cm)



Note: Applying labels to the base cover
The new base cover FRU is shipped with a kit containing labels of several kinds.

When you replace the base cover, you need to apply the following label:

17 Homologation label

The following labels need to be peeled off from the old base cover, and need to be put on the new base cover.

Note: If the COA label 1 is attached to a part that is replaced, return the old part with the label attached to the customer, or provide a letter to the customer stating what the label was originally on the system and what the label part number, serial number, and product key were.

1 Windows Certificate of Authentication label (COA)

2 Wireless LAN MAC address label

3 Information label

4 Ethernet MAC address label

5 Wireless WAN MAC address label

6 China mobile IMEI label

7 China telecom IMEI label

8 SIRM labels (only for Malaysia)

9 Wireless card label (only for Brazil)

10 Anatel label (only for Brazil)

11 Modem AMOM label (only for Brazil)

12 Bluetooth label (only for Brazil)

13 Israel label (50 mm x 19 mm)

14 No MIC label (only for TAA module assembled in Mexico)

15 Vodafone label

16 FCC label

18 Asset tag

19 Serial number label

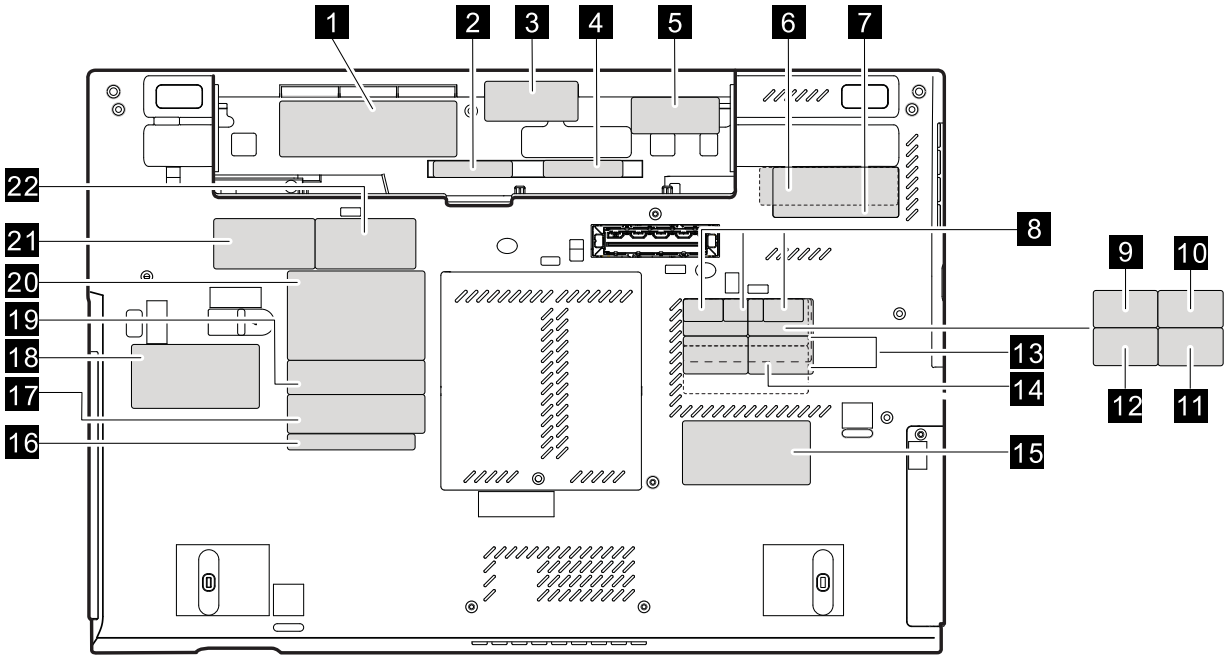
20 Product label

21 China wireless WAN label

22 China modem label

For some models, you need to apply two FCC labels. Check the old base cover; if it has two FCC labels, apply both to the new base cover.

For the location of each label, refer the following figure:

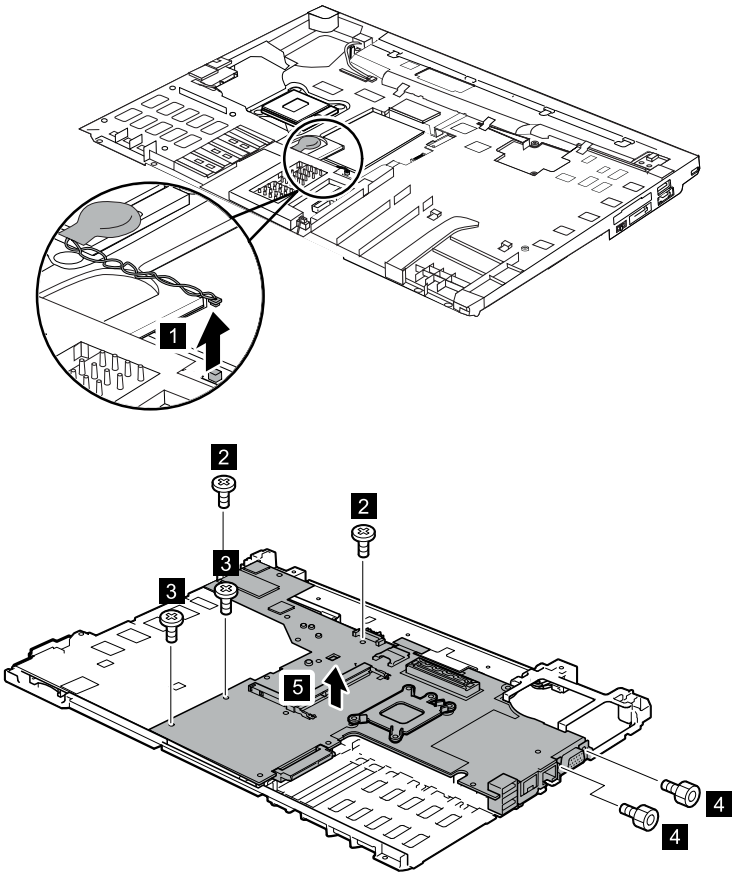


1200 Magnesium structure frame

For access, remove these FRUs in order:

- “1010 Battery pack” on page 67
- “1020 ExpressCard blank bezel” on page 68
- “1030 Serial Ultrabay Enhanced device or travel bezel” on page 69
- “1040 Hard disk drive (HDD) and solid state drive (SSD)” on page 70
- “1050 DIMM slot cover” on page 73
- “1070 PCI Express Mini Card for wireless WAN” on page 75
- “1080 Keyboard” on page 77
- “1110 PCI Express Mini Card for wireless LAN” on page 85
- “1120 Keyboard bezel assembly, FPC cable, and *Bluethooth* daughter card” on page 87
- “1150 Speaker assembly” on page 95
- “1160 LCD unit” on page 97
- “1170 Fan assembly” on page 101
- “1180 CPU” on page 105
- “1190 Base cover assembly and DC-in connector cable” on page 106

Removal steps of magnesium structure frame



Step	Screw (quantity)	Color	Torque
2	M2 × 5 mm, wafer-head, nylon-coated (2)	Black	0.181 Nm (1.85 kgf-cm)

3	M2 × 8 mm, wafer-head, nylon-coated (2)	Black	0.181 Nm (1.85 kgf-cm)
4	Hex stud, nylon-coated (2)	Silver	0.392 Nm (4.0 kgf-cm)

1210 System board and ExpressCard slot assembly

For access, remove these FRUs in order:

- “1010 Battery pack” on page 67
- “1020 ExpressCard blank bezel” on page 68
- “1030 Serial Ultrabay Enhanced device or travel bezel” on page 69
- “1040 Hard disk drive (HDD) and solid state drive (SSD)” on page 70
- “1050 DIMM slot cover” on page 73
- “1070 PCI Express Mini Card for wireless WAN” on page 75
- “1080 Keyboard” on page 77
- “1110 PCI Express Mini Card for wireless LAN” on page 85
- “1120 Keyboard bezel assembly, FPC cable, and *Bluethooth* daughter card” on page 87
- “1150 Speaker assembly” on page 95
- “1160 LCD unit” on page 97
- “1170 Fan assembly” on page 101
- “1180 CPU” on page 105
- “1190 Base cover assembly and DC-in connector cable” on page 106

Important notices for handling the system board:
When handling the system board, bear the following in mind.

- The system board has an accelerometer, which can be broken by applying several thousands of G-forces.

  Note: Dropping a system board from a height of as little as 6 inches so that it falls flat on a hard bench can subject the accelerometer to as much as 6,000 G's of shock.
- Be careful not to drop the system board on a bench top that has a hard surface, such as metal, wood, or composite.
- If a system board is dropped, test it using PC-Doctor for DOS if the system supports PC-Doctor for DOS, to make sure that the HDD Active Protection System™ still functions.

  Note: If the test shows that HDD Active Protection System is not functioning, be sure to document the drop in a reject report, and replace the system board.
- Avoid rough handling of any kind.
- At every point in the process, be sure not to drop or stack the system board.
- If you put a system board down, be sure to put it only on a padded surface such as an ESD mat or a corrugated conductive surface.

If the system supports PC-Doctor for DOS, after replacing the system board, run PC-Doctor for DOS to make sure that HDD Active Protection System still functions. The procedure is as follows:

1. Place the computer on a horizontal surface.
2. Run **Diagnostics → ThinkPad Devices → HDD Active Protection Test**.

   Attention: Do not apply physical shock to the computer while the test is running.

Removal steps of system board and ExpressCard slot assembly

The following components soldered on the top side of the system board are extremely sensitive. When you service the system board, avoid any kind of rough handling.

a CPU

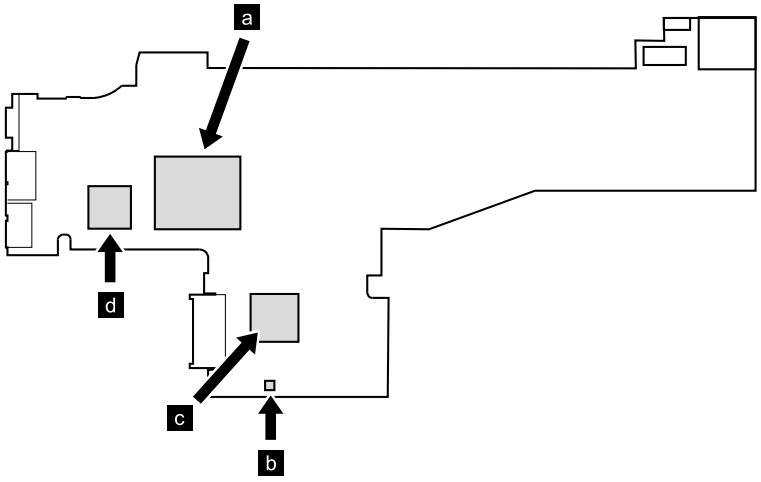
b Accelerometer chip for the HDD Active Protection System

c Platform Controller Hub (PCH)

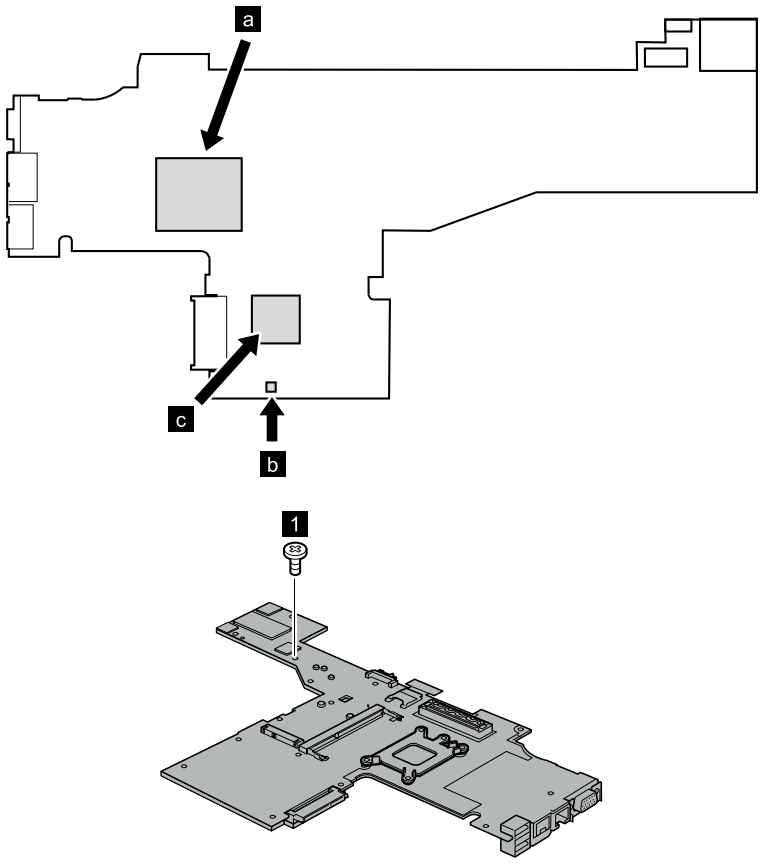
d Graphic Processing Unit (GPU) (Discrete graphics chip)

Note: The GPU d is only for models with switchable graphics. Models with integrated graphics do not have a GPU on the system board.

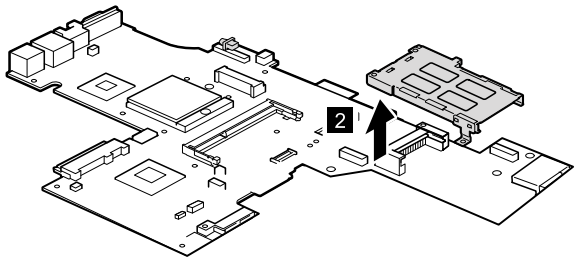
For Switchable Graphics models:



For Integrated Graphics models:



Step	Screw (quantity)	Color	Torque
1	M2 × 3 mm, wafer-head, nylon-coated (1)	Black	0.181 Nm (1.85 kgf-cm)



When installing: Make sure that the connector is attached firmly.

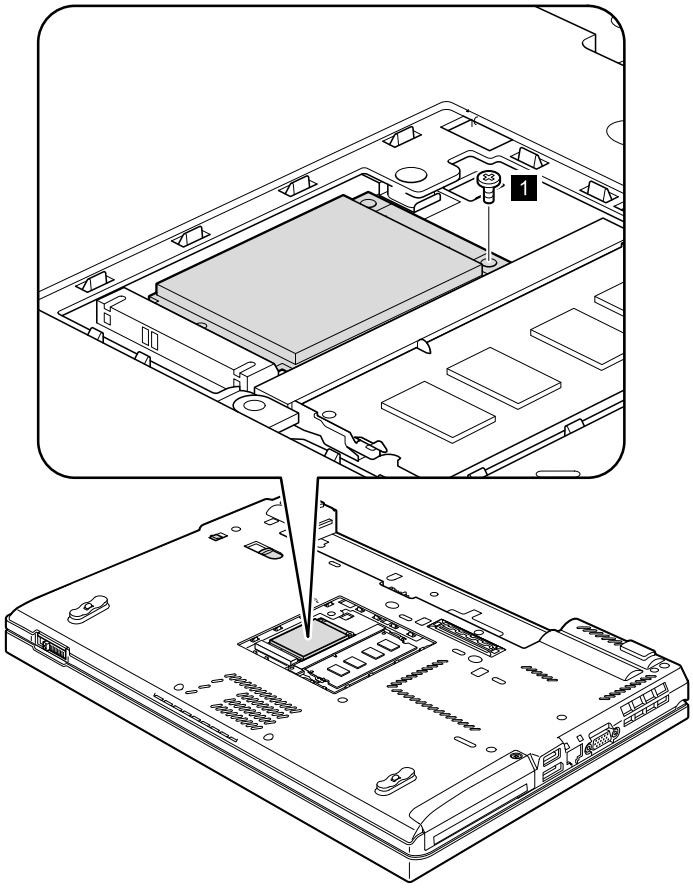
1220 mSATA solid state drive

For access, remove these FRUs in order:
- "1010 Battery pack" on page 67
- "1050 DIMM slot cover" on page 73

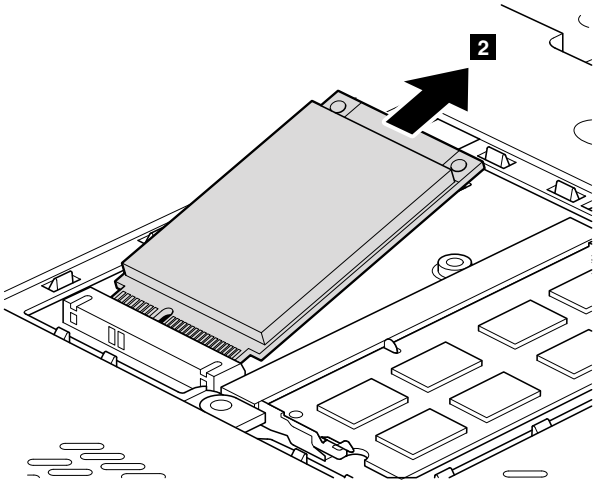
Attention:

- Do not drop the drive or apply any physical shock to it. The drive is sensitive to physical shock. Improper handling can cause damage and permanent loss of data.
- Before removing the drive, have the user make a backup copy of all the information on it if possible.
- Never remove the drive while the system is operating or is in suspend mode.

Removal steps of mSATA solid state drive



Step	Screw (quantity)	Color	Torque
1	M2 × 3 mm, wafer-head, nylon-coated (1)	Black	0.181 Nm (1.85 kgf-cm)

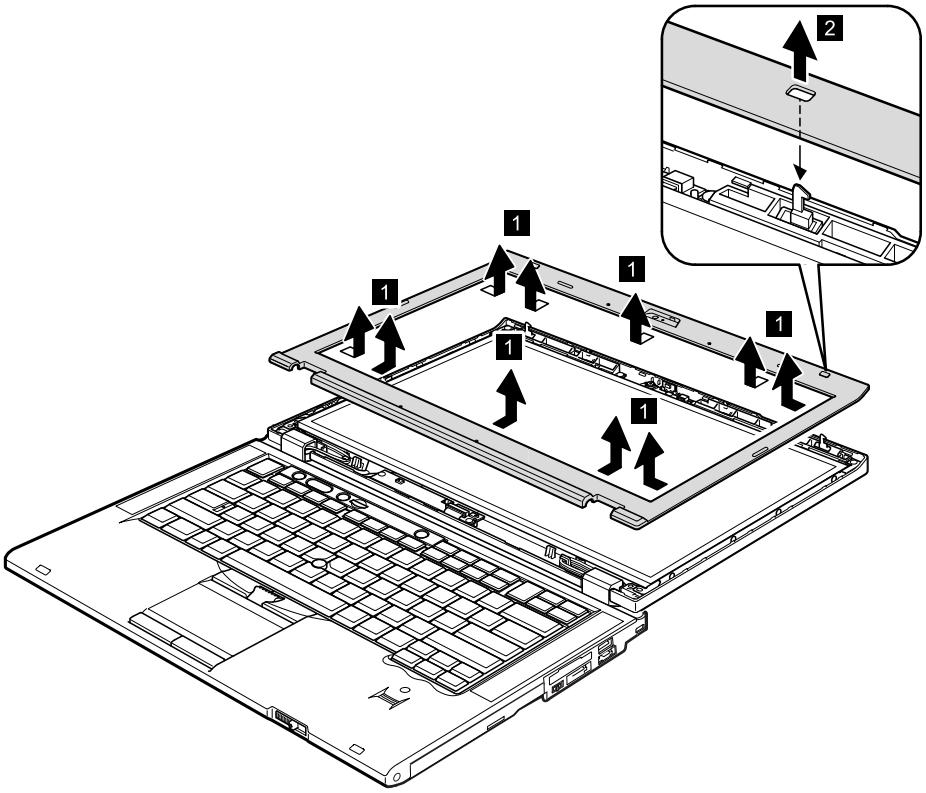


2010 LCD bezel assembly

For access, remove the following FRU:

- “1010 Battery pack” on page 67

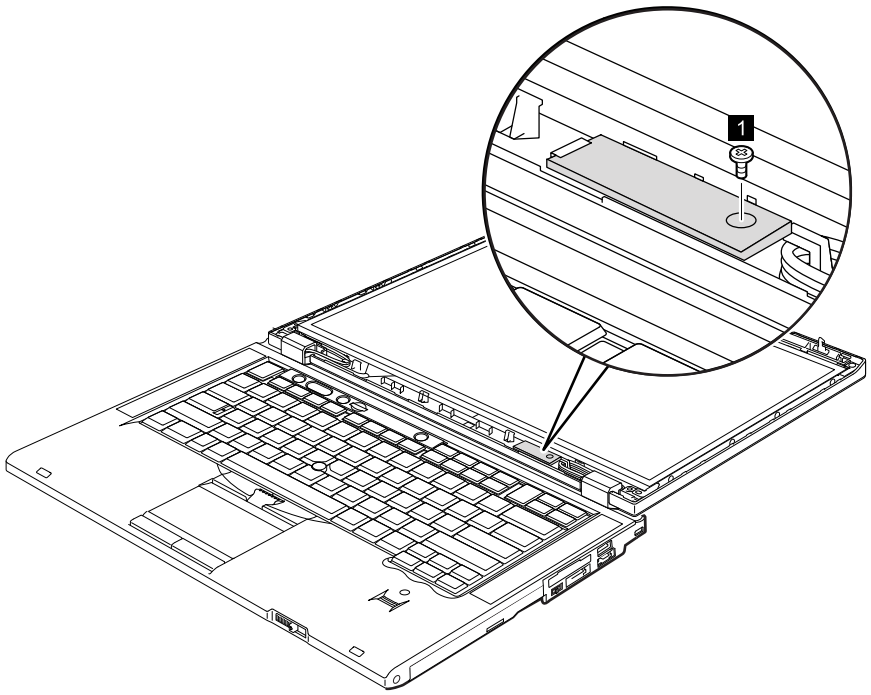
Removal steps of LCD bezel assembly



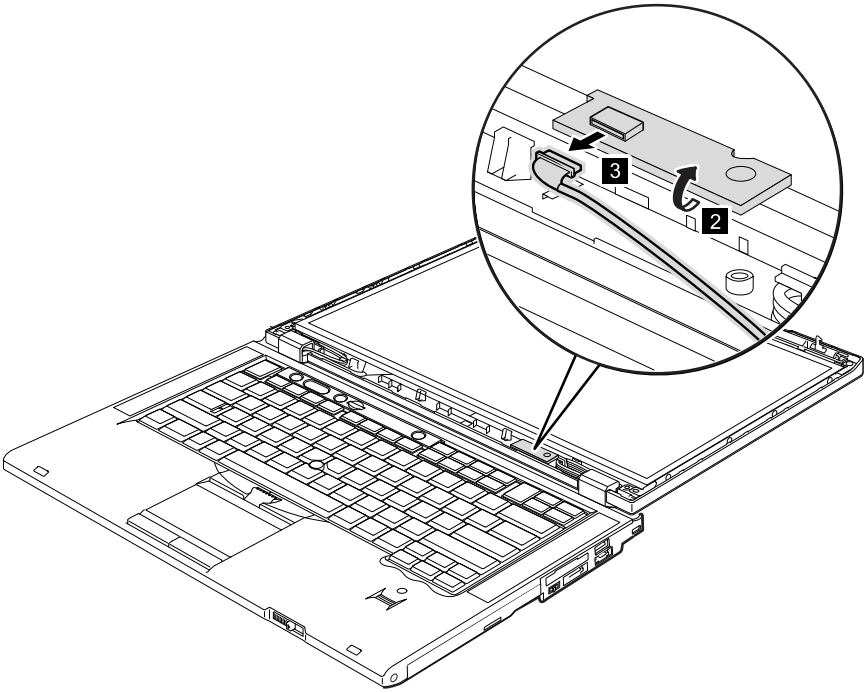
2020 LED board

For access, remove these FRUs in order:
- “1010 Battery pack” on page 67
- “2010 LCD bezel assembly” on page 116

Removal steps of LED board



Step	Screw (quantity)	Color	Torque
1	M2 × 3 mm, flat-head, nylon-coated (1)	Black	0.181 Nm (1.85 kgf-cm)



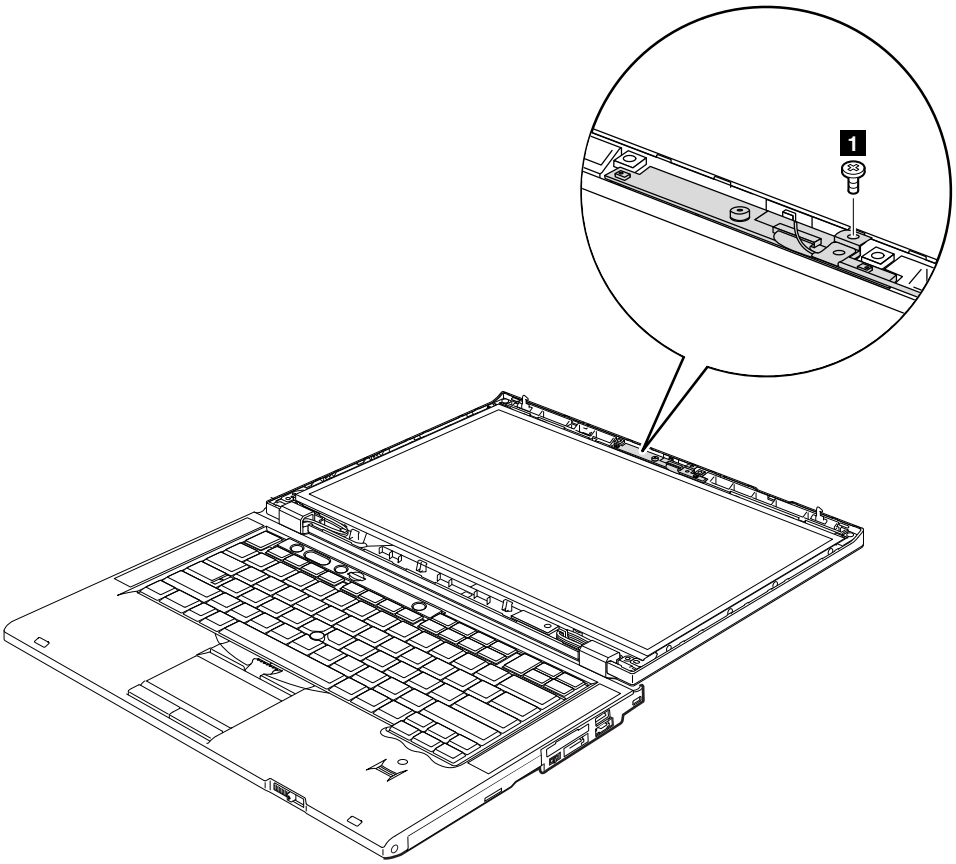
When installing: Make sure that the connector is attached firmly.

2030 Integrated camera

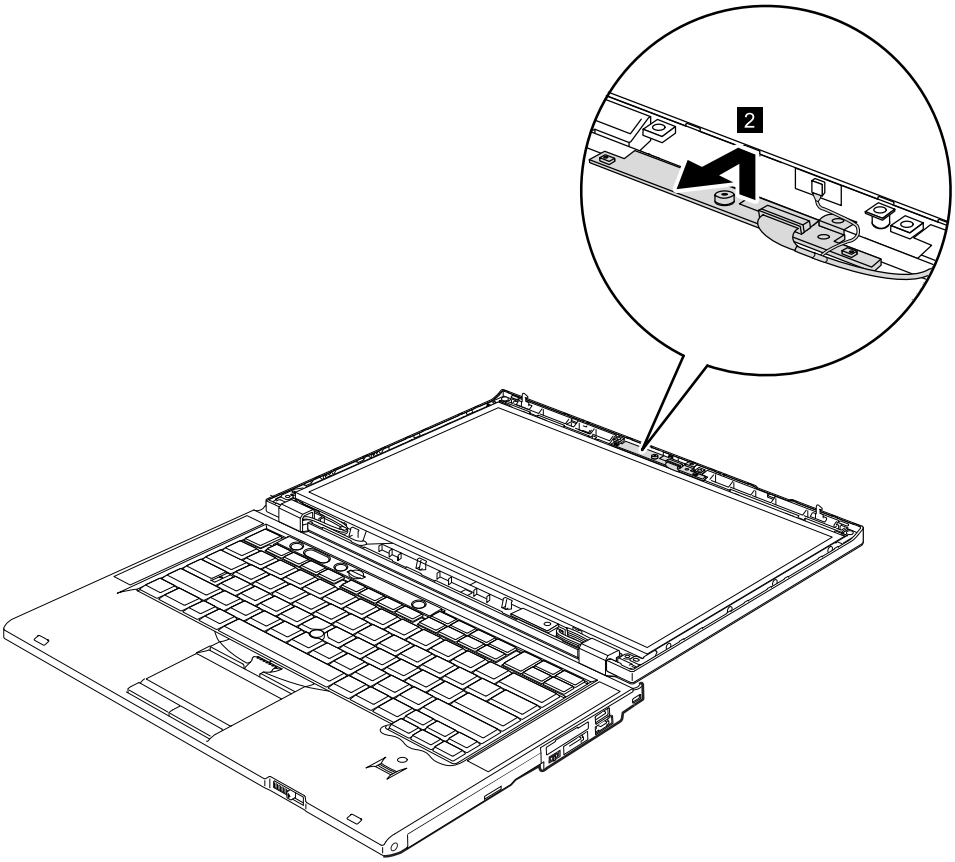
For access, remove these FRUs in order:

- “1010 Battery pack” on page 67
- “2010 LCD bezel assembly” on page 116

Removal steps of integrated camera



Step	Screw (quantity)	Color	Torque
1	M2 × 3 mm, flat-head, nylon-coated (1)	Black	0.181 Nm (1.85 kgf-cm)

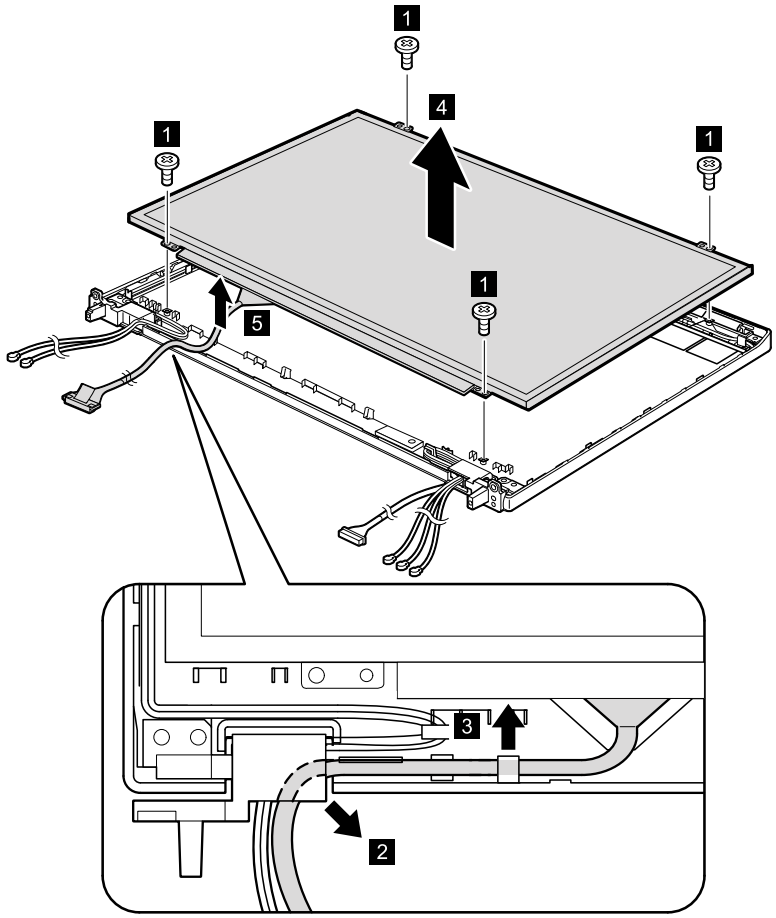

2

2040 LCD panel and LCD cable

For access, remove these FRUs in order:

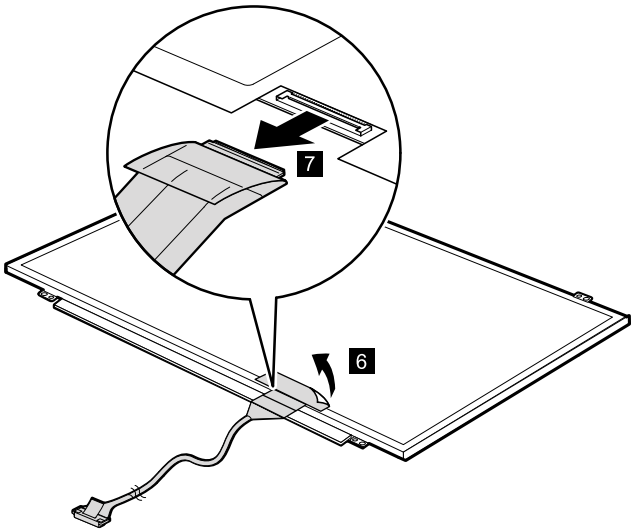
- “1010 Battery pack” on page 67
- “1020 ExpressCard blank bezel” on page 68
- “1050 DIMM slot cover” on page 73
- “1070 PCI Express Mini Card for wireless WAN” on page 75
- “1080 Keyboard” on page 77
- “1110 PCI Express Mini Card for wireless LAN” on page 85
- “1120 Keyboard bezel assembly, FPC cable, and *Bluethooth* daughter card” on page 87
- “1150 Speaker assembly” on page 95
- “1160 LCD unit” on page 97
- “2010 LCD bezel assembly” on page 116
- “2020 LED board” on page 117
- “2030 Integrated camera” on page 119

Removal steps of LCD panel and LCD cable



Step	Screw (quantity)	Color	Torque
1	M2 × 3 mm, wafer-head, nylon-coated (4)	Black	0.181 Nm (1.85 kgf-cm)

When installing: When attaching the LCD panel to the cover, gently press the left and right edges covered with metal. DO not press the surface of the panel or apply any excessive force to the panel.



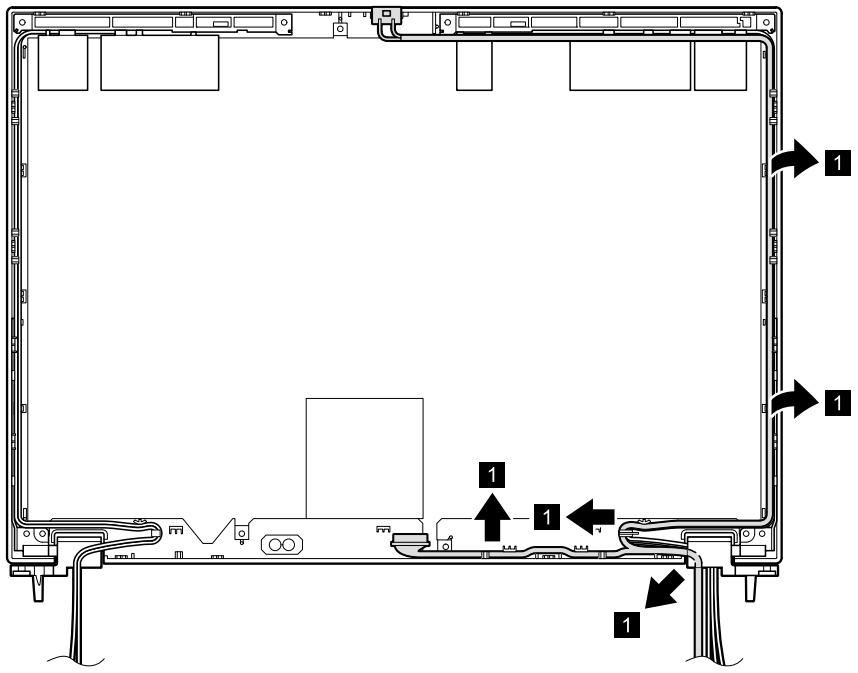
When installing: Make sure that the connector is attached firmly.

2050 Camera cable

For access, remove these FRUs in order:

- “1010 Battery pack” on page 67
- “1020 ExpressCard blank bezel” on page 68
- “1050 DIMM slot cover” on page 73
- “1070 PCI Express Mini Card for wireless WAN” on page 75
- “1080 Keyboard” on page 77
- “1110 PCI Express Mini Card for wireless LAN” on page 85
- “1120 Keyboard bezel assembly, FPC cable, and *Bluethooth* daughter card” on page 87
- “1150 Speaker assembly” on page 95
- “1160 LCD unit” on page 97
- “2010 LCD bezel assembly” on page 116
- “2020 LED board” on page 117
- “2030 Integrated camera” on page 119
- “2040 LCD panel and LCD cable” on page 121

Removal steps of camera cable

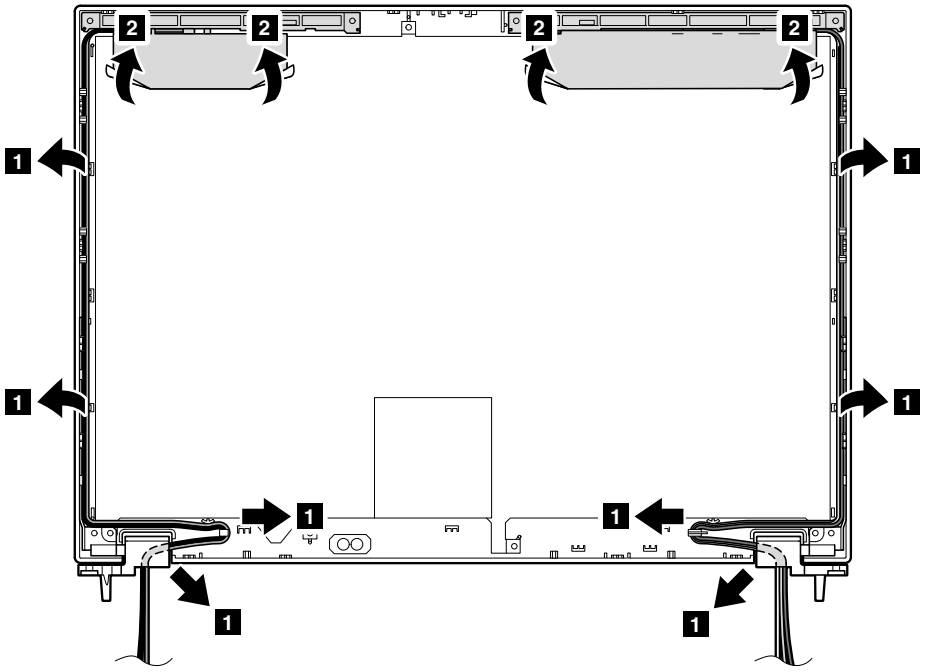


2060 Wireless LAN antenna assembly or wireless LAN/WAN antenna assembly

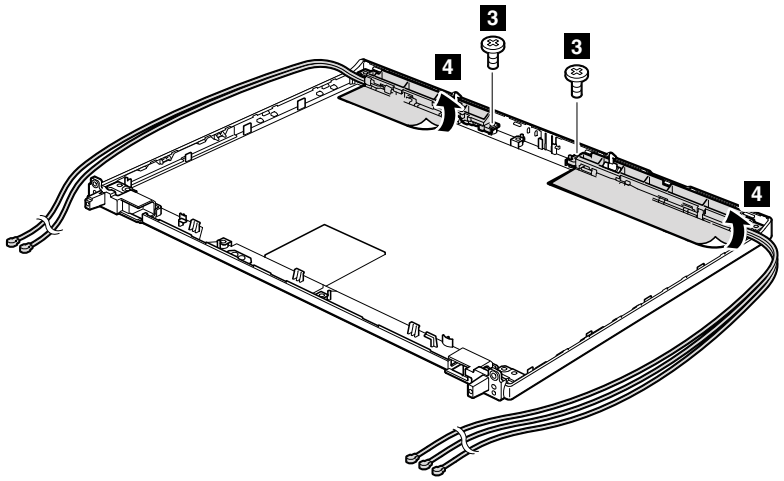
For access, remove these FRUs in order:

- “1010 Battery pack” on page 67
- “1020 ExpressCard blank bezel” on page 68
- “1050 DIMM slot cover” on page 73
- “1070 PCI Express Mini Card for wireless WAN” on page 75
- “1080 Keyboard” on page 77
- “1110 PCI Express Mini Card for wireless LAN” on page 85
- “1120 Keyboard bezel assembly, FPC cable, and *Bluethooth* daughter card” on page 87
- “1150 Speaker assembly” on page 95
- “1160 LCD unit” on page 97
- “2010 LCD bezel assembly” on page 116
- “2020 LED board” on page 117
- “2030 Integrated camera” on page 119
- “2040 LCD panel and LCD cable” on page 121
- “2050 Camera cable” on page 123

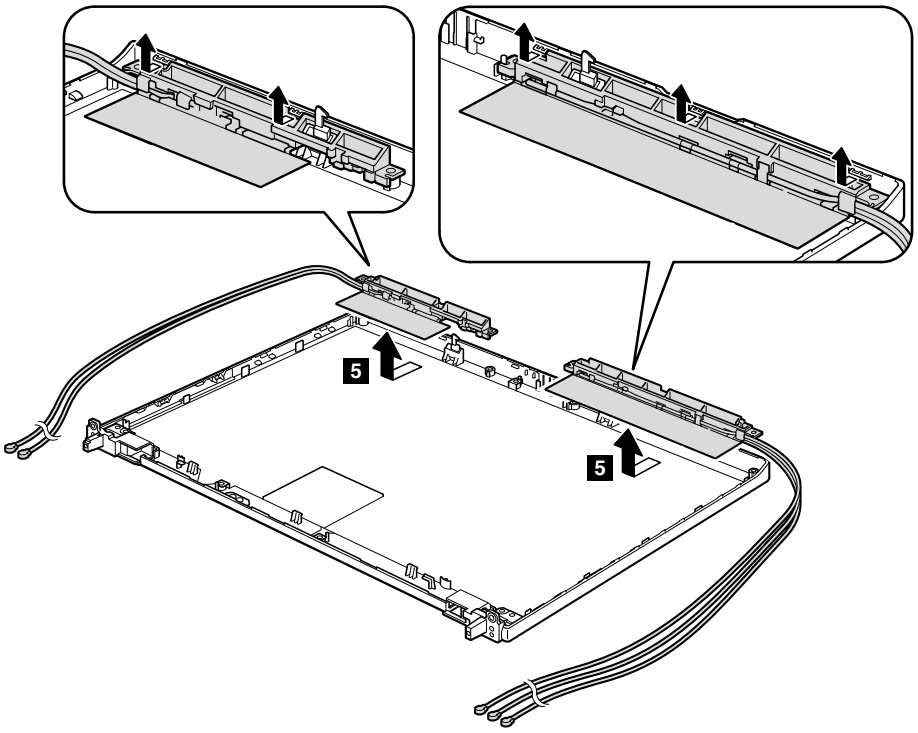
Removal steps of wireless LAN antenna assembly or wireless LAN/WAN antenna assembly



When installing: When you install the antenna kit, route the cables as shown in the figure above. As you route the cables, make sure that they are not subjected to any tension. Tension could cause the cables to be damaged by the cable guides, or a wire to be broken.



Step	Screw (quantity)	Color	Torque
3	M2 × 3 mm, flat-head, nylon-coated (2)	Black	0.181 Nm (1.85 kgf-cm)

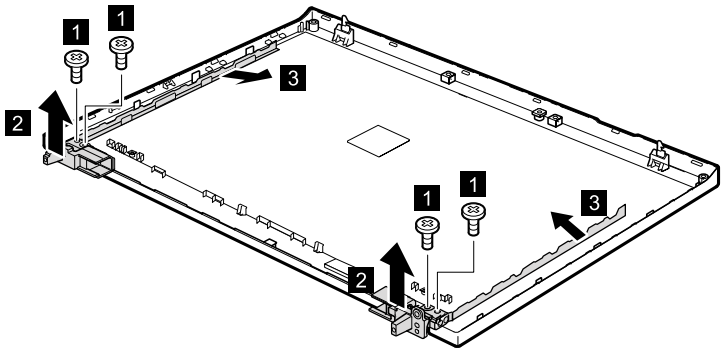


2070 Hinges and LCD rear cover assembly

For access, remove these FRUs in order:

- “1010 Battery pack” on page 67
- “1020 ExpressCard blank bezel” on page 68
- “1050 DIMM slot cover” on page 73
- “1070 PCI Express Mini Card for wireless WAN” on page 75
- “1080 Keyboard” on page 77
- “1110 PCI Express Mini Card for wireless LAN” on page 85
- “1120 Keyboard bezel assembly, FPC cable, and *Bluethooth* daughter card” on page 87
- “1150 Speaker assembly” on page 95
- “1160 LCD unit” on page 97
- “2010 LCD bezel assembly” on page 116
- “2020 LED board” on page 117
- “2030 Integrated camera” on page 119
- “2040 LCD panel and LCD cable” on page 121
- “2050 Camera cable” on page 123
- “2060 Wireless LAN antenna assembly or wireless LAN/WAN antenna assembly” on page 124

Removal steps of hinges and LCD rear cover assembly



Step	Screw (quantity)	Color	Torque
1	M2.5 × 4 mm, wafer-head, nylon-coated (4)	Black	0.392 Nm (4.0 kgf-cm)

When installing: Attach the hinges as shown in the following figure.