



Gateway 450SX4 Service Guide



Contents

Replacing Gateway 450SX4 Components	1
Identifying your notebook model	2
Identifying components	3
Preparing your work space	4
Preventing static electricity discharge	5
Preparing your notebook	6
Disconnecting from the port replicator	7
Removing the batteries	8
Removing the main battery	8
Removing the optional secondary battery	9
Adding or replacing memory modules	11
Replacing the 802.11 mini PCI card	18
Replacing the hard drive kit	24
Replacing the hard drive in the hard drive kit	27
Replacing the keyboard cover	30
Replacing the keyboard	34
Replacing the modem	39
Replacing the LED indicator panel	43
Replacing the cooling assembly	47
Replacing the hinge covers	50
Replacing the LCD panel assembly	52
Replacing the palm rest assembly	57
Replacing the CMOS battery	62
Replacing the power board	65
Replacing the system board	69



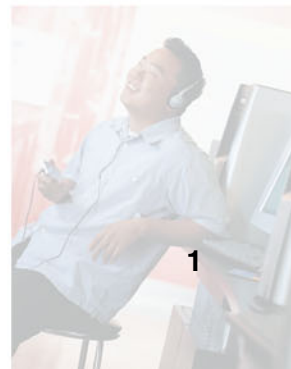
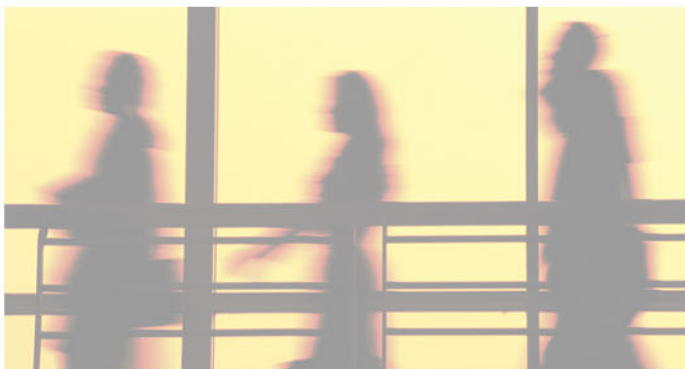
Replacing Gateway 450SX4 Components

Use this service guide to help plan your maintenance tasks for the Gateway 450SX4 notebook. All tasks covered in this guide can be performed by an authorized field technician without jeopardizing your notebook's warranty.

For information on your notebook's general maintenance, technical support, safety notices, and regulatory notices, see your Gateway user's guide.

If you have suggestions regarding the content of this guide, send an e-mail with the subject "Service Guide Comments" to channel.services@gateway.com.

© 2003 Gateway, Inc. All rights reserved. Gateway, Gateway Country, the Gateway stylized logo, and the black-and-white spot design are trademarks or registered trademarks of Gateway, Inc. in the United States and other countries. All other brands and product names are trademarks or registered trademarks of their respective companies.



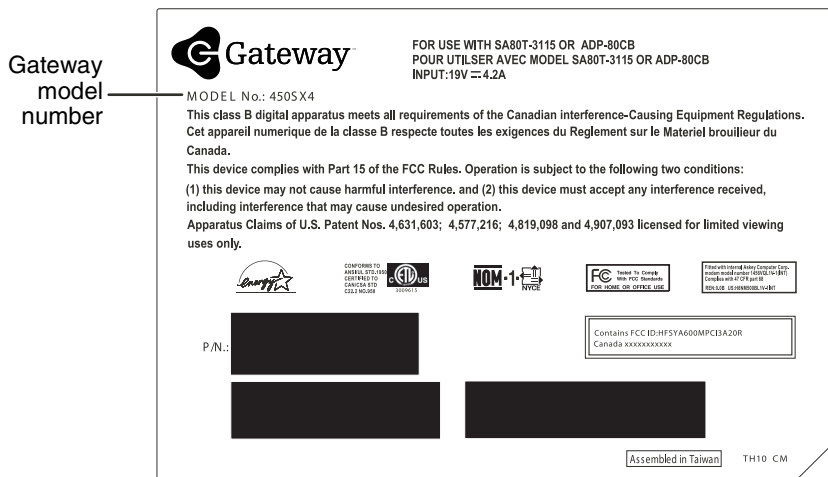
Thank you for purchasing this Factory Service Manual CD/DVD from servicemanuals4u.com.

Please check out our eBay auctions for more great deals on Factory Service Manuals:

[servicemanuals4u](http://servicemanuals4u.com)

Identifying your notebook model

The label on the bottom of your notebook contains information that identifies your notebook model and its features.



Warning

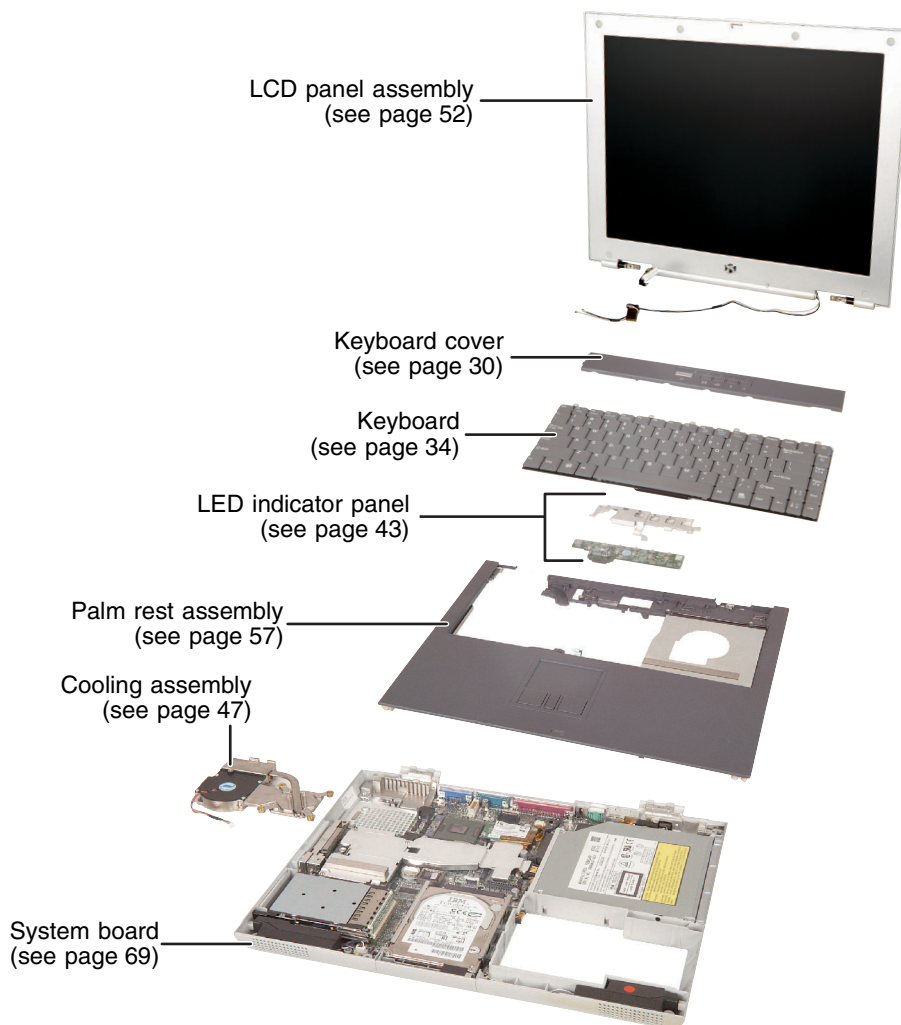


It is important that you use the correct service guide for your notebook. Failure to follow the approved tasks for your notebook model may result in damage to the notebook.

Identifying components

Where screw measurements are shown, the first number indicates screw head width, and the second number indicates screw length.

Use this chart to identify the main components of your notebook. For a complete list of replaceable parts, see the Contents.



Preparing your work space

Before performing maintenance on your notebook, make sure that your work space and your notebook are correctly prepared.

- Wear a grounding (ESD) wrist strap, and use a grounded or dissipative work mat.
- Use a stable and strong table, and make sure that the table top is large enough to hold each component as you remove it.
- Use bright lighting to make part identification easier.
- Keep your work surface free from clutter and dust that may damage components.
- Use a magnetized screwdriver for removing screws.
- When removing components that are attached to the notebook by a cable, unplug the cable before removing the screws, when possible, to avoid damaging the cable.
- As you remove components and screws, lay them toward the rear of your work surface (behind your notebook) or far enough to the side that your arms do not accidentally brush them onto the floor.
- To help keep track of screws, try the following:
 - Place each component's screws in their own section of a parts sorter.
 - Place each component's screws next to the component on your work surface.
 - Print the first page of each task, then place the page toward the rear of your work surface. As you remove screws, place the screws in their respective boxes on the page. Where screw measurements are shown, the first number indicates screw head width, and the second number indicates screw length.
 - After loosening screws that are deeply recessed in a hole (for example, on the bottom of the base assembly), you can leave the screws in the holes if you place small pieces of masking tape over the hole openings. When reassembling the component, just remove the tape and tighten the screws.
 - When you place flat-headed screws on your work surface, stand them on their heads to prevent the screws from rolling off the table.

Preventing static electricity discharge

The components inside your notebook are extremely sensitive to static electricity, also known as *electrostatic discharge* (ESD).

Warning



ESD can permanently damage electrostatic discharge-sensitive components in your notebook. Prevent ESD damage by following ESD guidelines every time you open your notebook case.

Warning



To avoid exposure to dangerous electrical voltages and moving parts, turn off your notebook and unplug the power cord and modem and network cable before opening the case.

Before replacing components, follow these guidelines:

- Turn off your notebook.
- Wear a grounding wrist strap (available at most electronics stores) and attach it to a bare metal part of your workbench or other grounded connection.

Warning



To prevent risk of electric shock, do not insert any object into the vent holes of the notebook.

- Touch a bare metal surface on your workbench or other grounded object.
- Unplug the power cord and the modem and network cables.
- Remove the main and optional secondary batteries. For more information, see “Removing the batteries” on page 8.
- Disconnect all peripheral devices and remove any PC Cards.

Before working with notebook components, follow these guidelines:

- Avoid static-causing surfaces such as carpeted floors, plastic, and packing foam.
- Remove components from their antistatic bags only when you are ready to use them. Do not lay components on the outside of antistatic bags because only the inside of the bags provide electrostatic protection.
- Always hold components by their edges. Avoid touching the edge connectors. Never slide components over any surface.

Preparing your notebook

Warning



To avoid exposure to dangerous electrical voltages and moving parts, turn off your notebook, remove the main and optional secondary batteries, and unplug the power cord and modem and network cables before opening the case. Replace the cover before you restore power or reconnect the modem and network cables.

To prepare your notebook for maintenance:

- Make sure that the modular drive is empty.
- Disconnect all peripheral devices and remove any PC Cards.
- Turn off your notebook and unplug the power cable and modem and network cables (if attached).
- Disconnect your notebook from the optional port replicator. For more information see “Disconnecting from the port replicator” on page 7.
- Turn over your notebook and remove the main and optional secondary batteries. For more information see “Removing the batteries” on page 8.

Disconnecting from the port replicator



To separate your notebook from the port replicator:

- 1 Press down on both docking release latches. The notebook will spring up slightly.



- 2 Lift the notebook off of the port replicator.

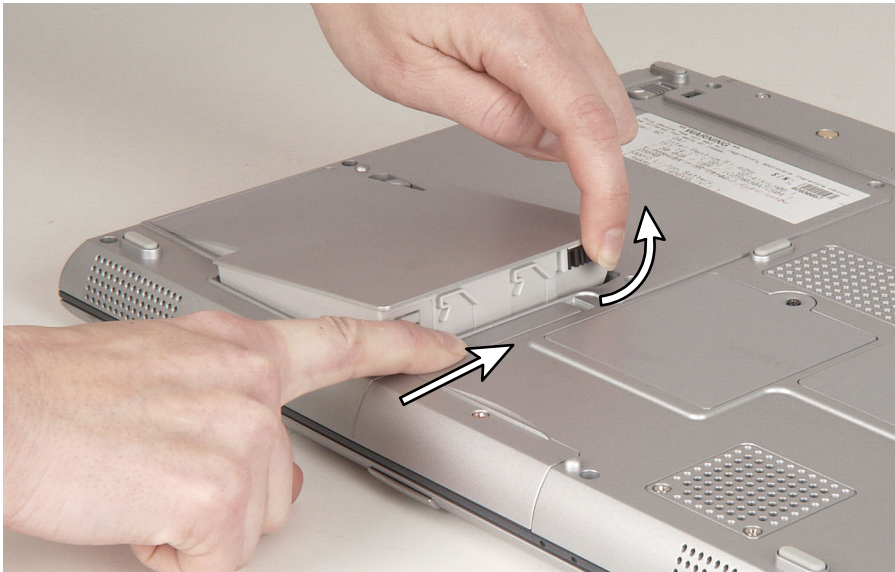


Removing the batteries

Removing the main battery

 To remove the main battery:

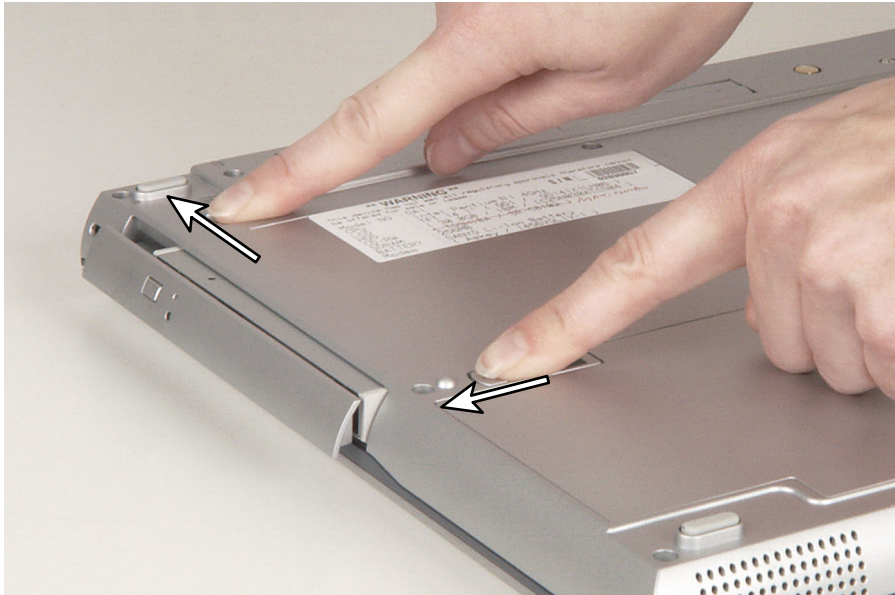
- 1** Disconnect the AC adapter and modem and network cables and prepare your notebook by following the instructions in “Preparing your notebook” on page 6.
- 2** Disconnect your notebook from the optional port replicator by following the instructions in “Disconnecting from the port replicator” on page 7.
- 3** Turn your notebook over so the bottom is facing up.
- 4** Slide the battery release latch and lift the battery out of the bay.



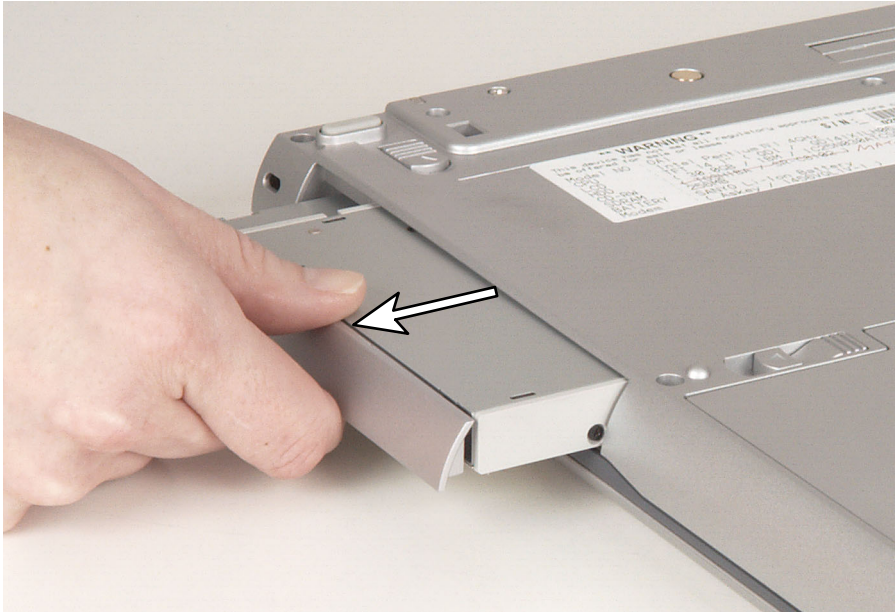
Removing the optional secondary battery

To remove the secondary battery:

- 1** Disconnect the AC adapter and modem and network cables and prepare your notebook by following the instructions in “Preparing your notebook” on page 6.
- 2** Disconnect your notebook from the optional port replicator by following the instructions in “Disconnecting from the port replicator” on page 7.
- 3** Turn your notebook over so the bottom is facing up.
- 4** Slide and hold the bay module latch closest to the back of the notebook.
- 5** Slide the other bay module release latch. The battery moves out slightly.



- 6 Slide the battery out.



Adding or replacing memory modules

Tools you need to complete this task:

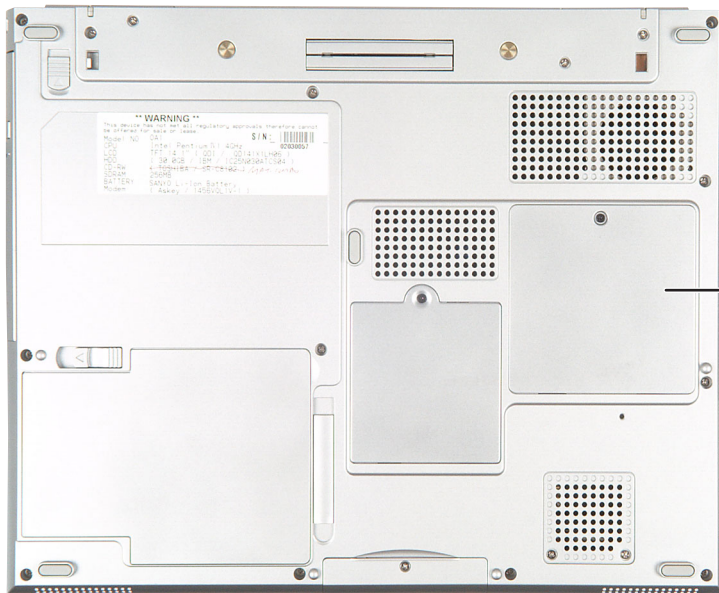


Phillips #0 screwdriver

Important



Use only memory modules designed for the Gateway 450SX4



Memory bay

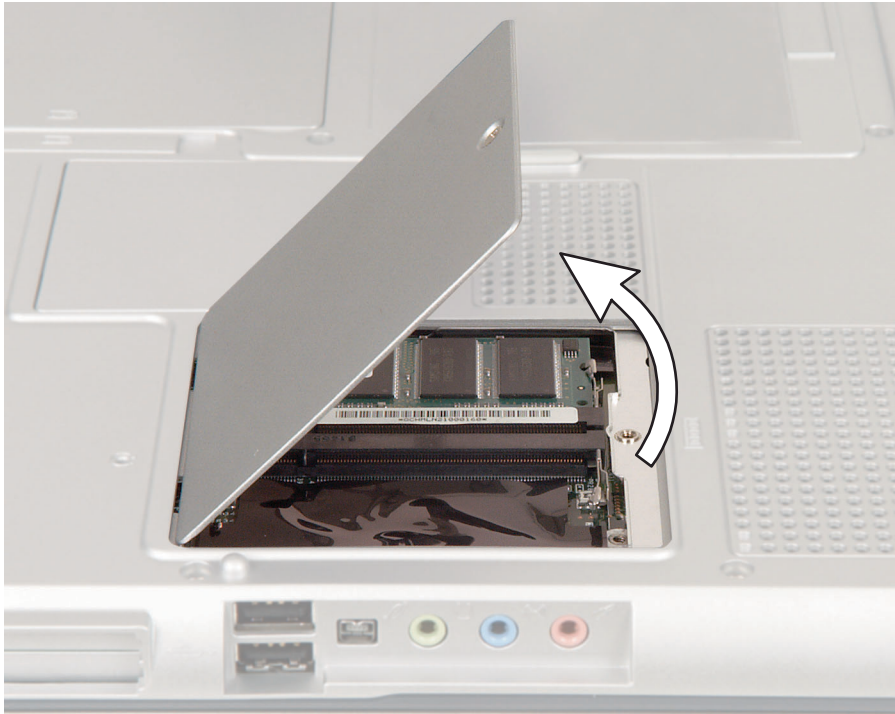


To add or replace memory modules:

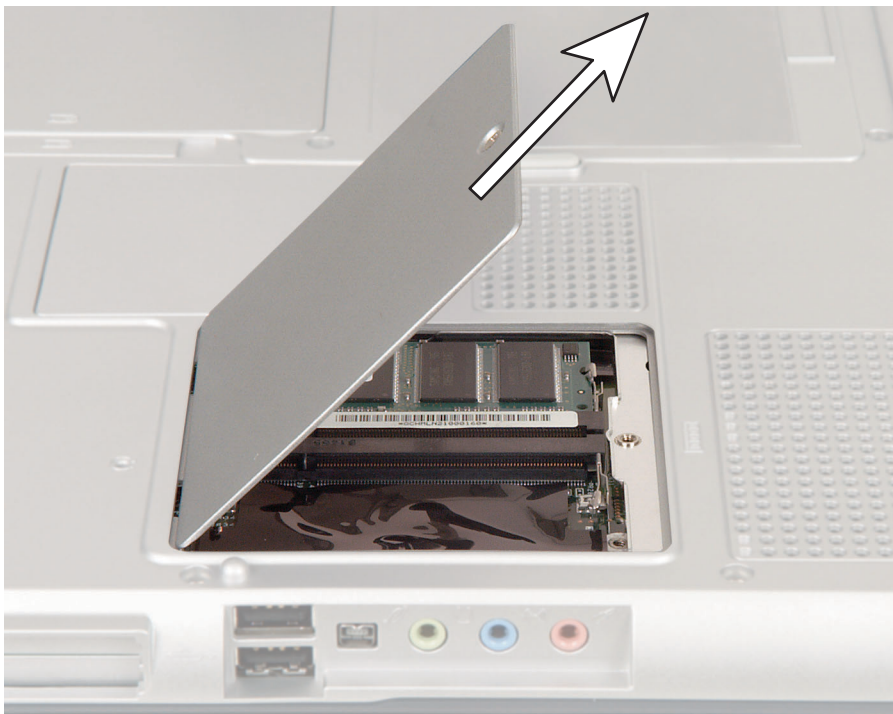
- 1 Disconnect the AC adapter and modem and network cables and prepare your notebook by following the instructions in “Preparing your notebook” on page 6.
- 2 Disconnect your notebook from the optional port replicator by following the instructions in “Disconnecting from the port replicator” on page 7.
- 3 Turn your notebook over so the bottom is facing up.
- 4 Remove the main and optional secondary batteries by following the instructions in “Removing the batteries” on page 8.
- 5 Loosen the captive screw that secures the memory cover. (The screw cannot be removed.)



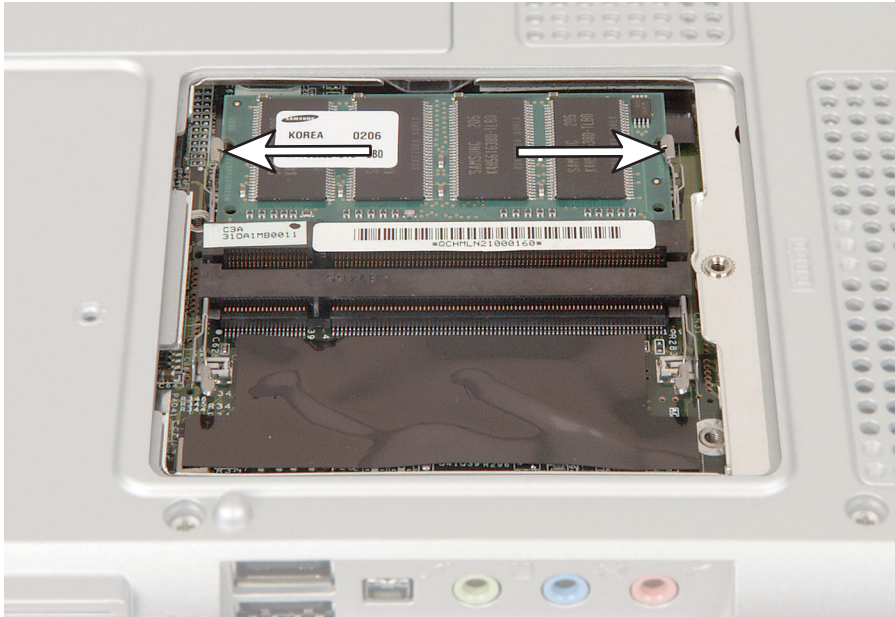
- 6 Lift the screw side of the cover upward.



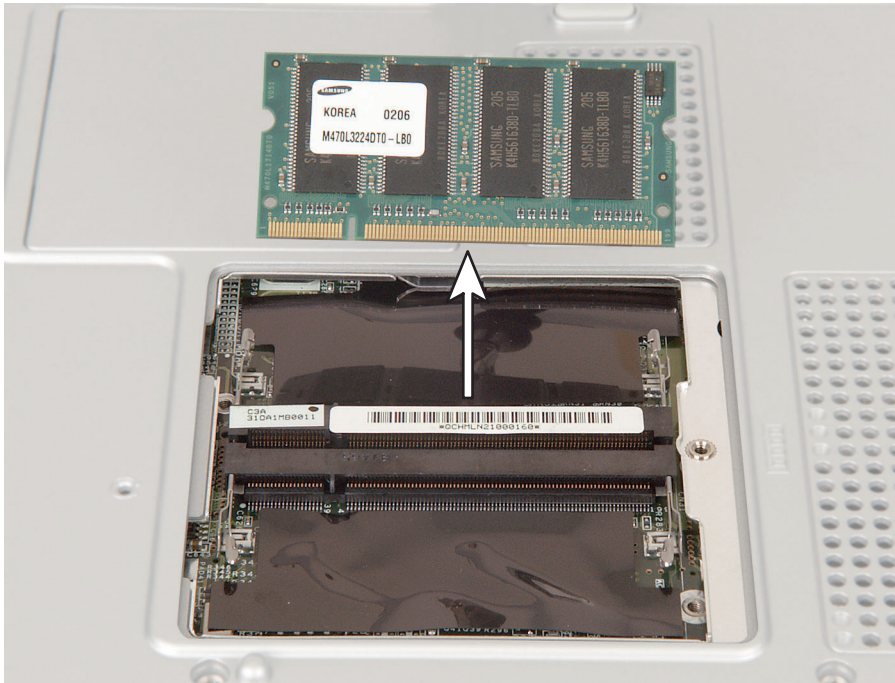
7 Slide the cover out.



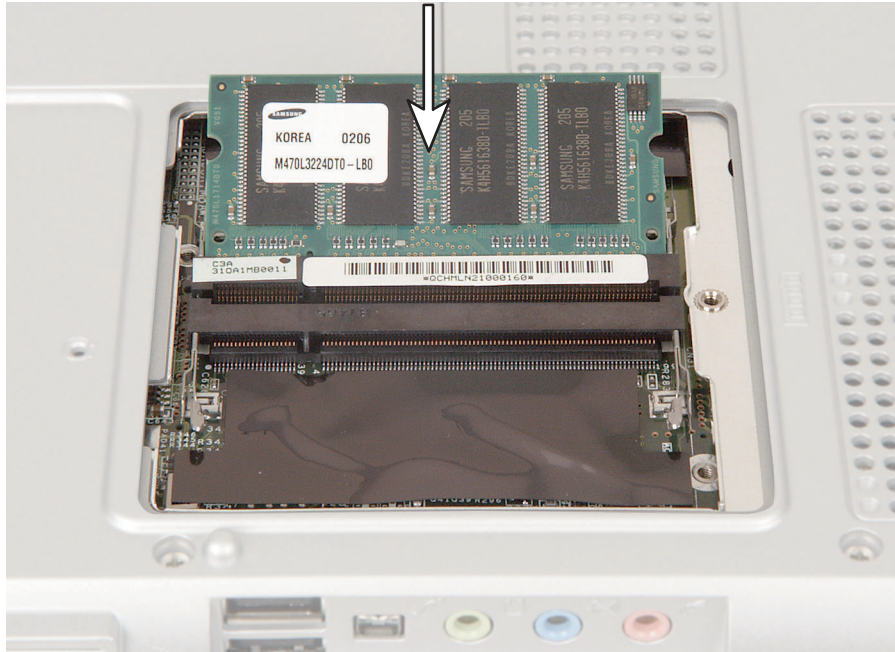
- 8 If you are removing a module, gently press outward on the clip at each end of the memory module until the module tilts upward.



- 9 Pull the memory module out of the slot.



- 10** Hold the new or replacement module at a 30-degree angle and press it into the empty memory slot. This module is keyed so it can only be inserted in one direction. If the module does not fit, make sure that the notch in the module lines up with the tab in the memory slot.



- 11** Gently press the module down until it clicks into place.
- 12** Replace the memory bay cover and tighten the captive screw.



Replacing the 802.11 mini PCI card

Caution



By law, only approved wireless modules provided by Gateway, or a Gateway authorized representative, explicitly for your Gateway 450SX4 may be installed in this notebook.

Tools you need to complete this task:



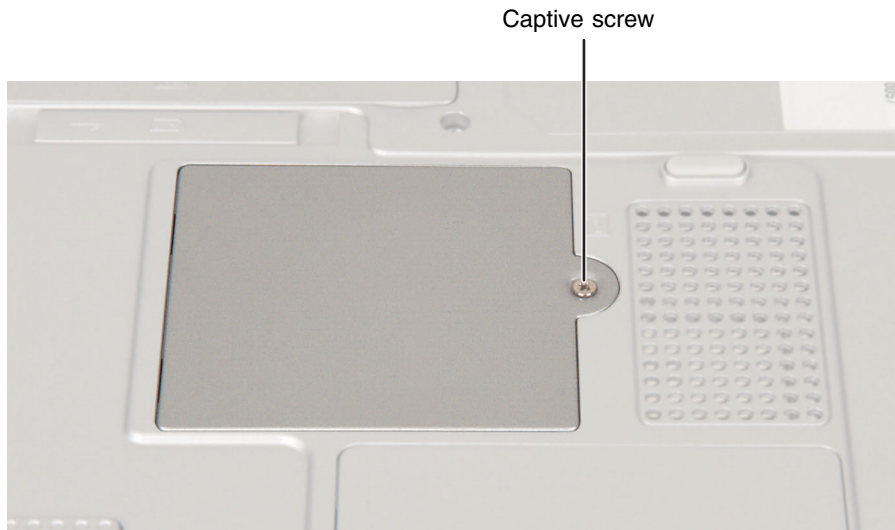
Phillips #0 screwdriver



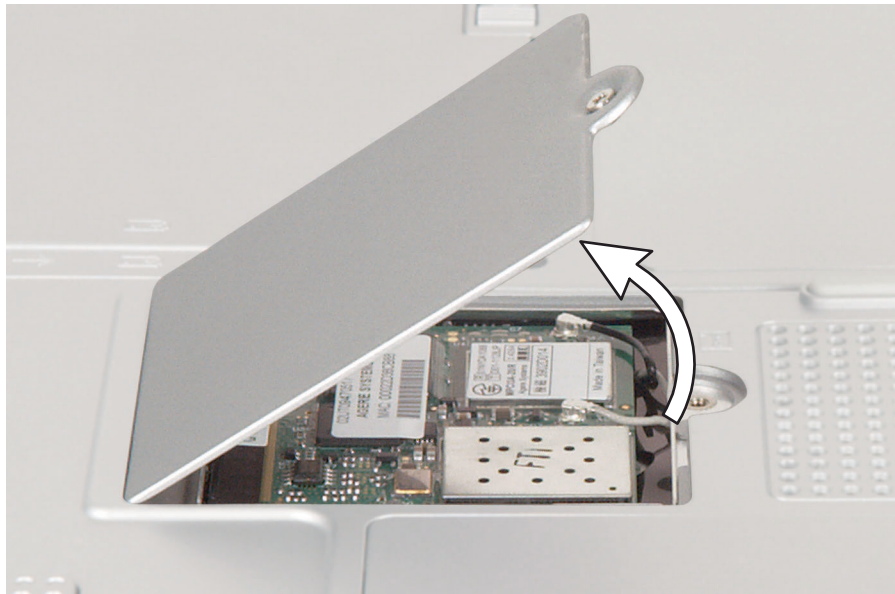
To replace the 802.11 mini PCI card:

- 1 Disconnect the AC adapter and modem and network cables and prepare your notebook by following the instructions in “Preparing your notebook” on page 6.
- 2 Disconnect your notebook from the optional port replicator by following the instructions in “Disconnecting from the port replicator” on page 7.
- 3 Turn your notebook over so the bottom is facing up.
- 4 Remove the main and optional secondary batteries by following the instructions in “Removing the batteries” on page 8.

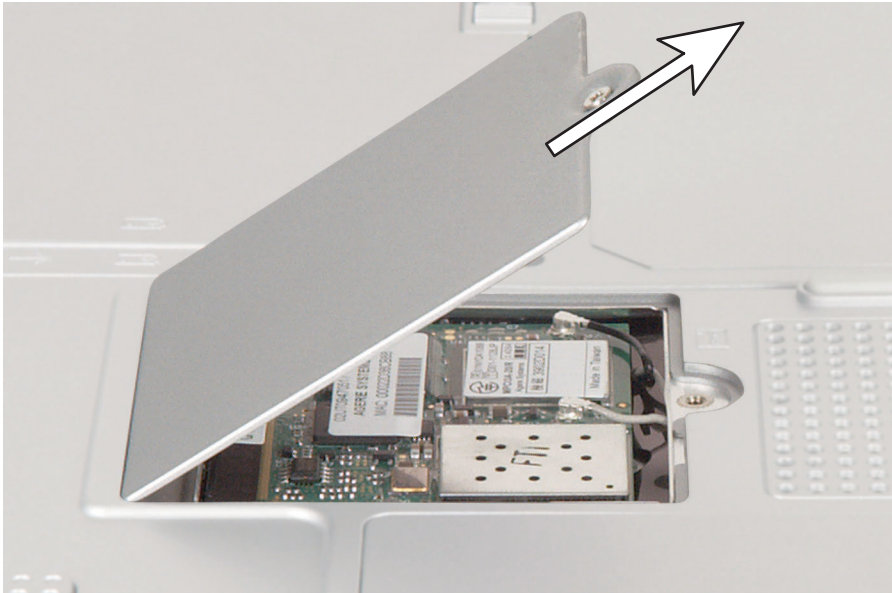
- 5 Loosen the captive screw that secures the mini PCI cover. (The screw cannot be removed.)



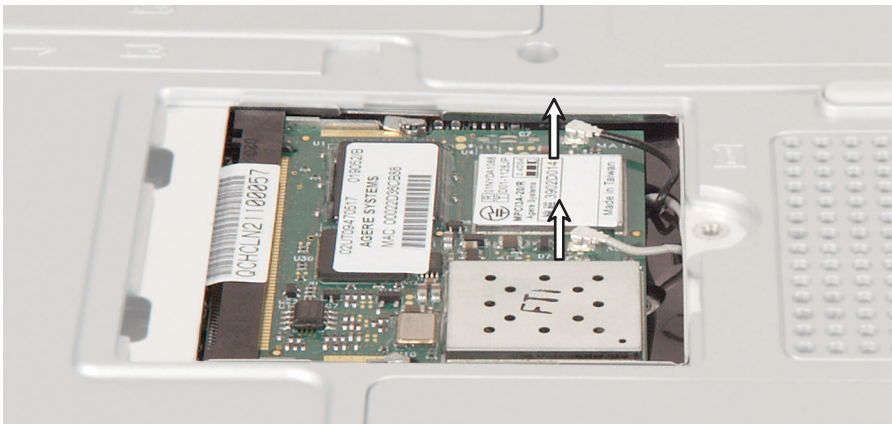
- 6 Lift the screw side of the cover upward.



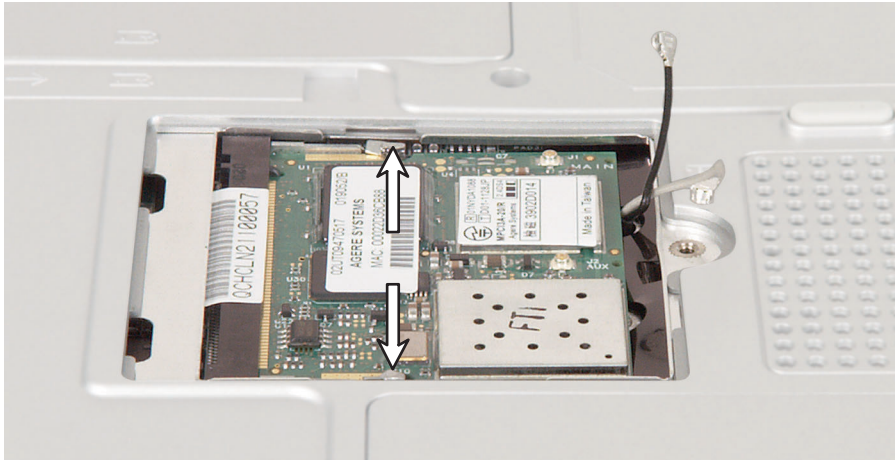
- 7** Slide the cover out.



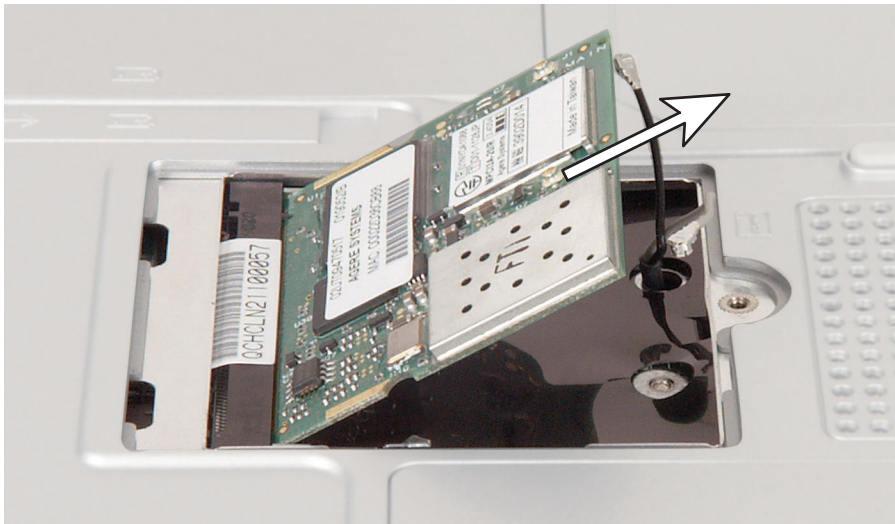
- 8** Unplug the two antenna cables.



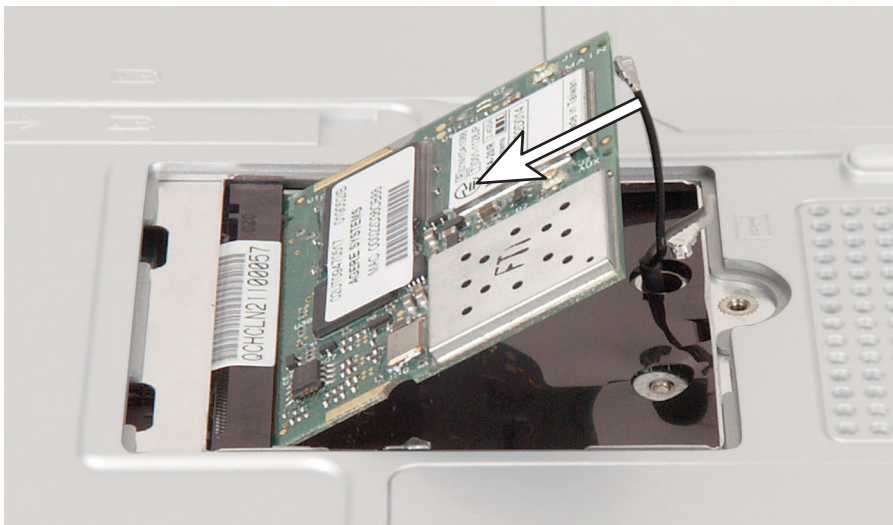
- 9 Move the antenna wires out of the way, then press outward on the clip at each side of the module until the module tilts upward.



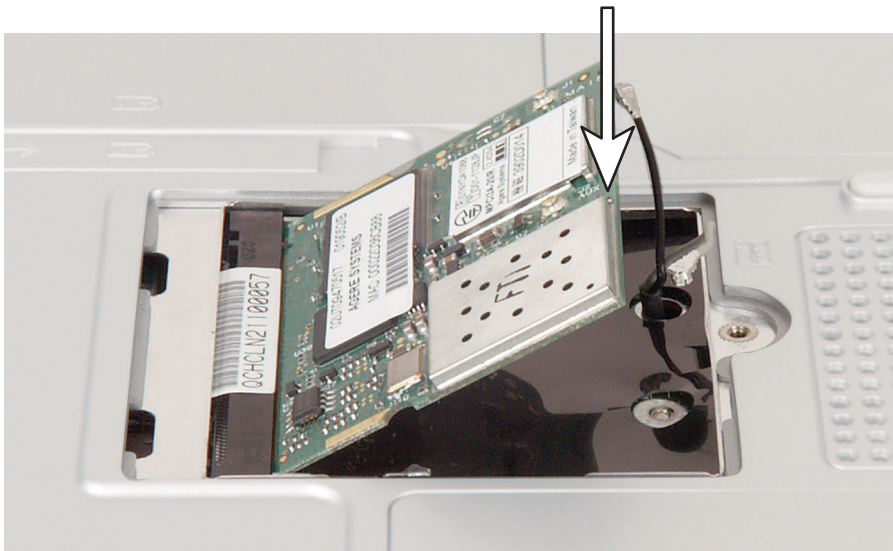
- 10 Pull the module out of the slot.



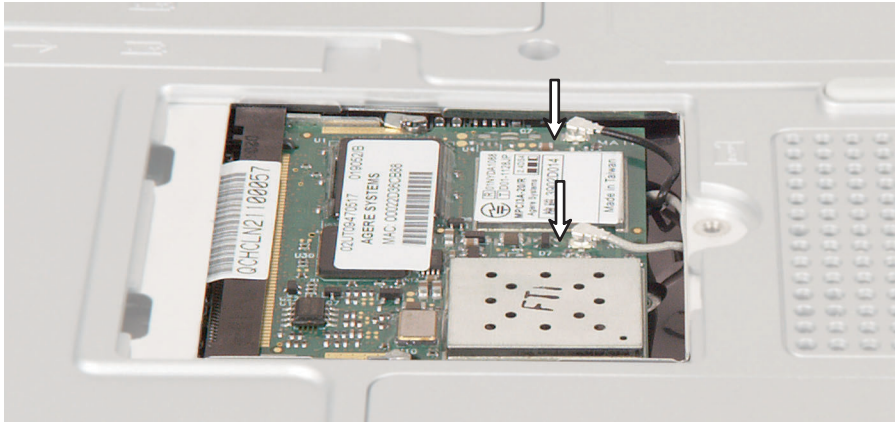
- 11** Hold the new module at a 30-degree angle and press it into the empty slot. This module is keyed so it can only be inserted in one direction. If the module does not fit, make sure that the notch in the module lines up with the tab in the module slot.



- 12** Move the antenna wires out of the way, then press the module down until it clicks into place.



- 13** Reattach the black antenna cable to the connector labelled MAIN or M, then reattach the light gray antenna cable to the connector labelled AUX or A.



- 14** Replace the mini PCI cover, then tighten the captive screw.

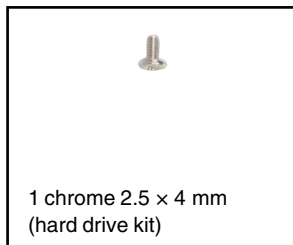


Replacing the hard drive kit

Tools you need to complete this task:



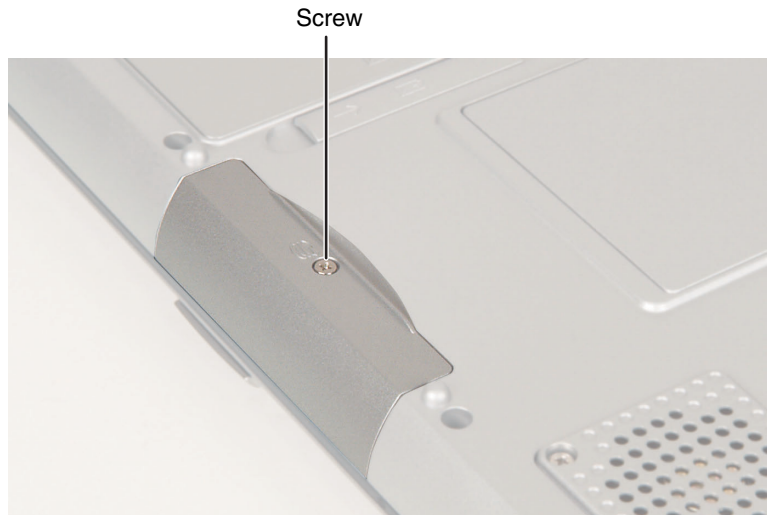
Screws removed during this task:



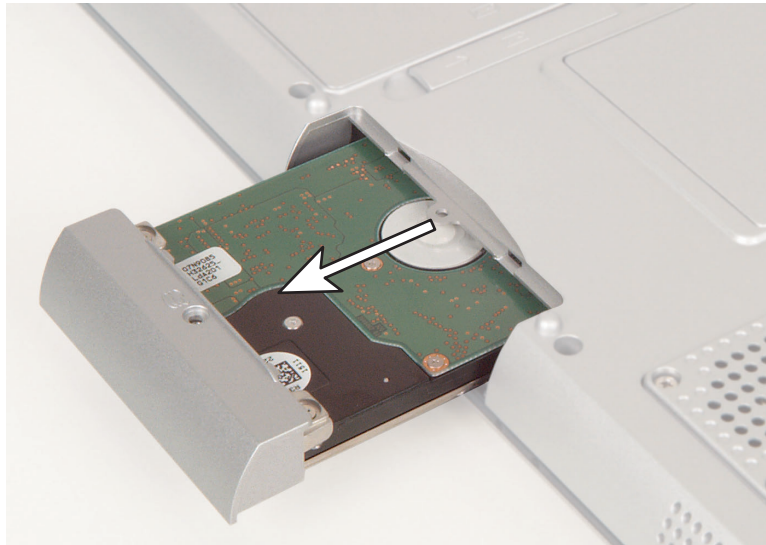
To replace the hard drive kit:

- 1** Disconnect the AC adapter and modem and network cables and prepare your notebook by following the instructions in “Preparing your notebook” on page 6.
- 2** Disconnect your notebook from the optional port replicator by following the instructions in “Disconnecting from the port replicator” on page 7.
- 3** Turn your notebook over so the bottom is facing up.
- 4** Remove the main and optional secondary batteries by following the instructions in “Removing the batteries” on page 8.

- 5** Remove the hard drive kit screw.



- 6** Slide the old hard drive kit out of your notebook.



- 7 Slide the new hard drive kit into your notebook.
- 8 Replace the screw that secures the hard drive kit to your notebook.



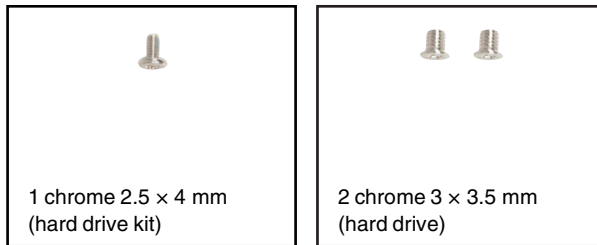
Replacing the hard drive in the hard drive kit

Tools you need to complete this task:



Phillips #0 screwdriver

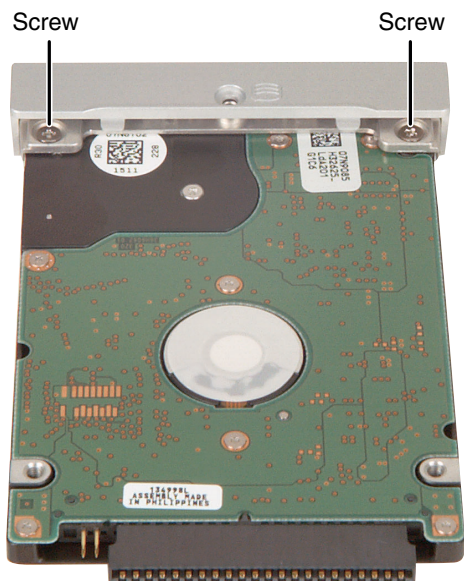
Screws removed during this task:



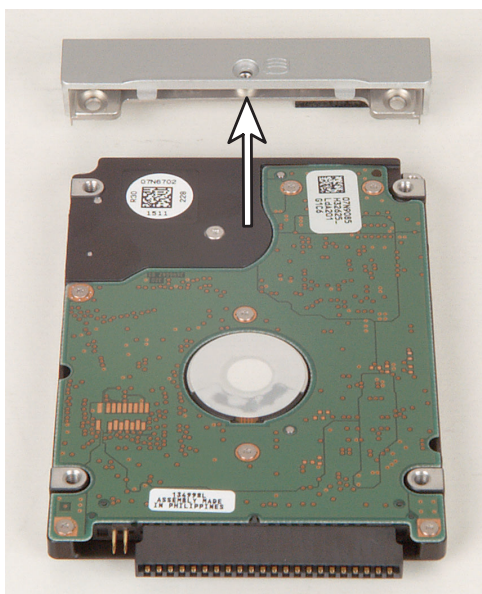
To replace the hard drive in the hard drive kit:

- 1 Disconnect the AC adapter and modem and network cables and prepare your notebook by following the instructions in “Preparing your notebook” on page 6.
- 2 Disconnect your notebook from the optional port replicator by following the instructions in “Disconnecting from the port replicator” on page 7.
- 3 Turn your notebook over so the bottom is facing up.
- 4 Remove the main and optional secondary batteries by following the instructions in “Removing the batteries” on page 8.
- 5 Remove the hard drive kit by following the instructions in “Replacing the hard drive kit” on page 24.

- 6 Remove the two screws that secure the hard drive to the hard drive kit bracket.



- 7 Remove the bracket from the old drive.



- 8 Insert the new drive into the bracket so the screw holes line up and the plastic strip on the top of the bracket is positioned as shown.



- 9 Replace the two screws that secure the bracket to the drive.
- 10 Slide the hard drive kit into your notebook.
- 11 Replace the screw that secures the hard drive kit to your notebook.



Replacing the keyboard cover

Tools you need to complete this task:



To replace the keyboard cover:

- 1** Disconnect the AC adapter and modem and network cables and prepare your notebook by following the instructions in “Preparing your notebook” on page 6.
- 2** Disconnect your notebook from the optional port replicator by following the instructions in “Disconnecting from the port replicator” on page 7.
- 3** Turn your notebook over so the bottom is facing up.
- 4** Remove the main and optional secondary batteries by following the instructions in “Removing the batteries” on page 8.
- 5** Turn your notebook over so the top is facing up.
- 6** Open the LCD panel to the normal viewing position.

- 7 Insert the small flat-blade screwdriver or non-marring tool under the bottom right corner of the keyboard cover and gently pry it up.

Important



Inserting a piece of cloth between the screwdriver and keyboard and notebook case will help prevent damage to your notebook.



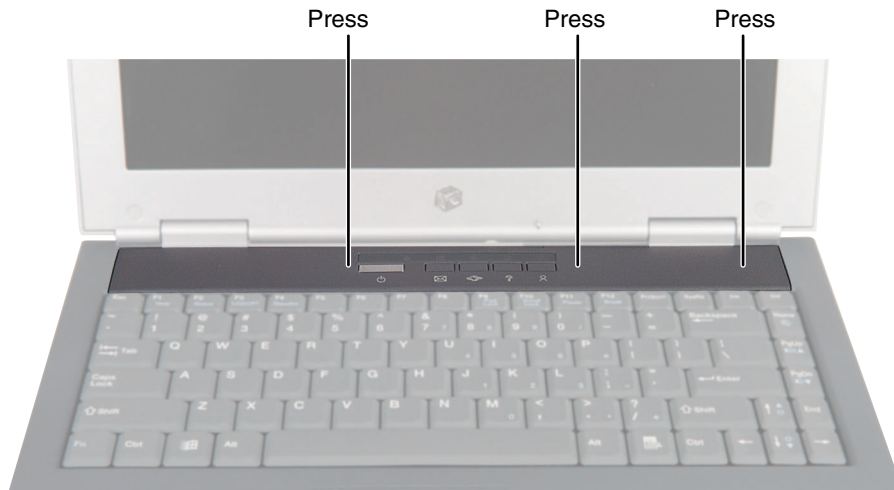
- 8 Pull the cover off your notebook. You will hear small snapping sounds as the cover comes away from your notebook. Be careful not to break off the tabs found on the left end of the cover.



- 9 Slide the two tabs on the left end of the new cover under your notebook frame.



- 10** Press down on the cover in several places until it clicks in place. The cover is correctly mounted when you can run your finger along the cover and find no loose spots. The cover should be flat all the way across.



Warning

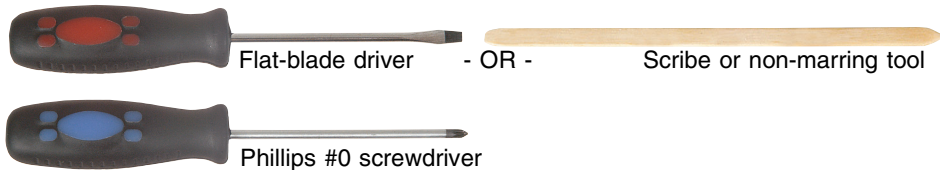


If the cover is not correctly replaced, your notebook could be damaged when you try to close the LCD panel.

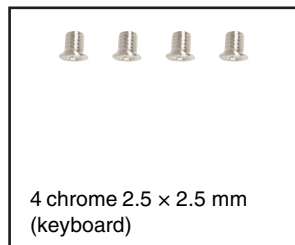


Replacing the keyboard

Tools you need to complete this task:



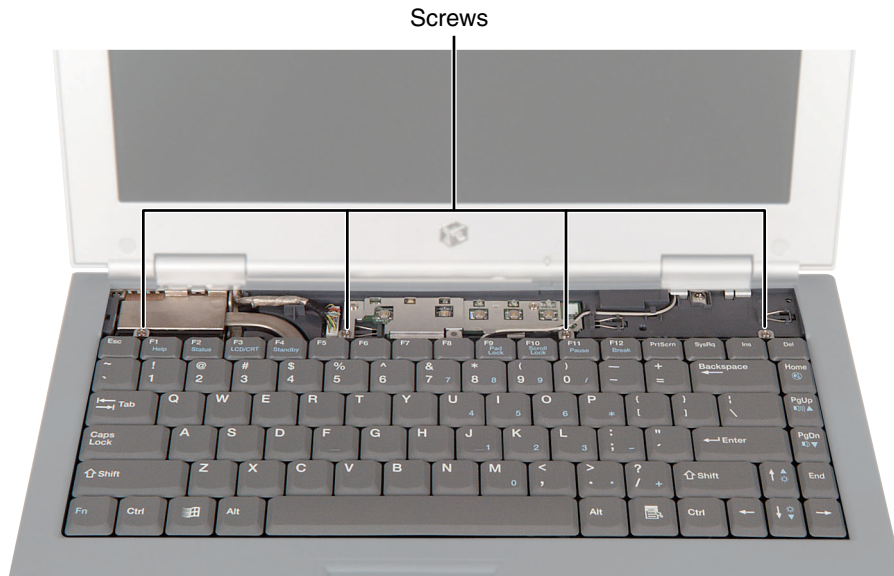
Screws removed during this task:



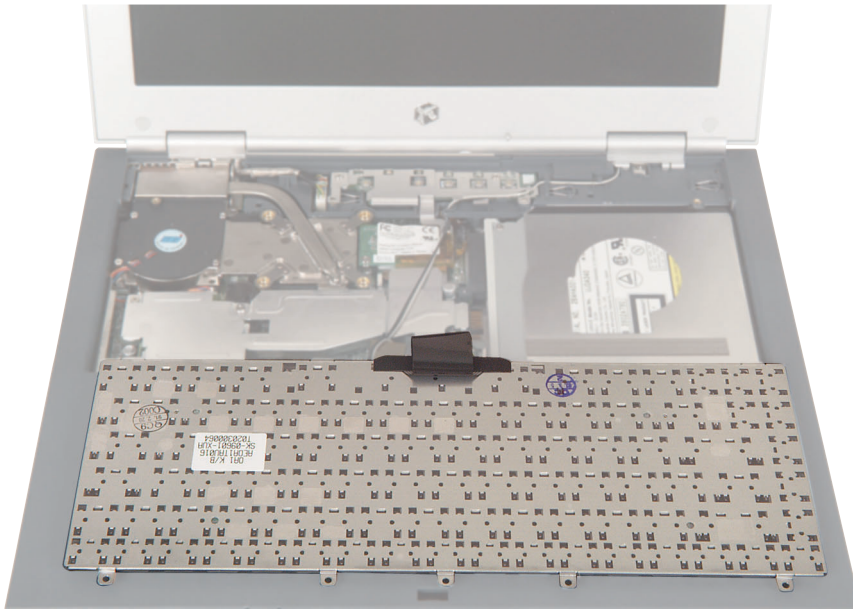
To remove the keyboard:

- 1** Disconnect the AC adapter and modem and network cables and prepare your notebook by following the instructions in “Preparing your notebook” on page 6.
- 2** Disconnect your notebook from the optional port replicator by following the instructions in “Disconnecting from the port replicator” on page 7.
- 3** Turn your notebook over so the bottom is facing up.
- 4** Remove the main and optional secondary batteries by following the instructions in “Removing the batteries” on page 8.
- 5** Turn your notebook over so the top is facing up.
- 6** Remove the keyboard cover by following the instructions in “Replacing the keyboard cover” on page 30.

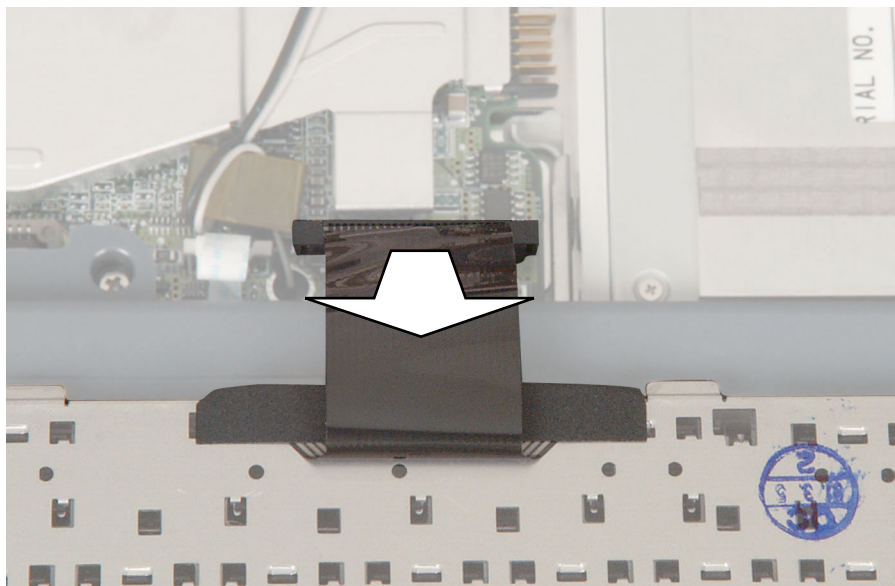
- 7 Remove the four keyboard screws that secure the keyboard to your notebook.



- 8 Lift the back edge of the keyboard, then slowly rotate it toward you so it lies **keys-down** on top of your notebook. Be careful not to damage the LCD panel.



- 9 Use your fingers to unplug the keyboard panel connector from your notebook. Be careful not to touch or damage any other components.



- 10 Place the new keyboard **keys-down** on your notebook with the space bar away from you.
- 11 Insert the keyboard plug, on the end of the keyboard cable, onto the keyboard connector.

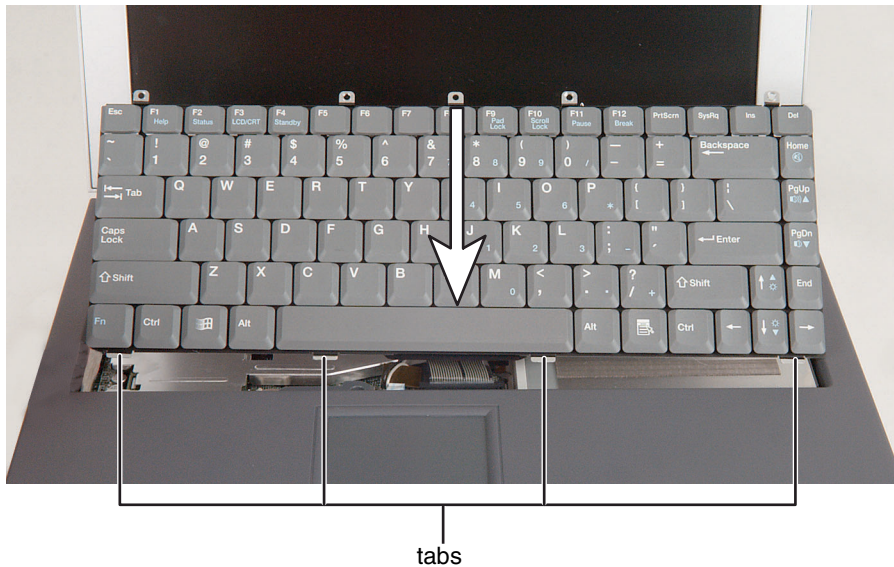
Important



The outside of the keyboard plug goes around the keyboard connector. The plug is correctly oriented if the cable is not twisted.

- 12 Rotate the keyboard toward the LCD panel until the keyboard is almost face-up.

- 13** Insert the four tabs located on the front edge of the keyboard into the corresponding slots under the palm rest.

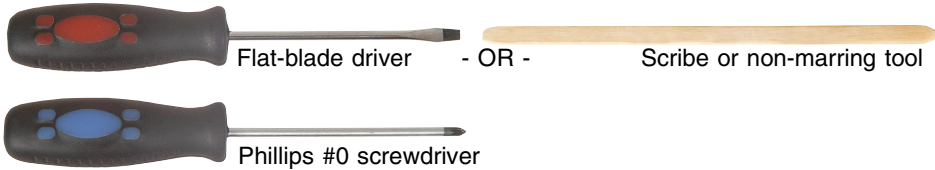


- 14** Gently press the keyboard down until it is flat all the way across. The keyboard should easily fall into place. Be careful not to damage the LCD panel.
- 15** Replace the four keyboard screws.
- 16** Reassemble your notebook.

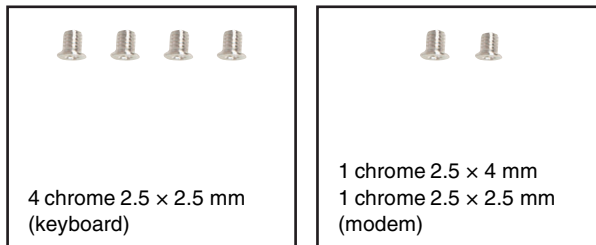


Replacing the modem

Tools you need to complete this task:



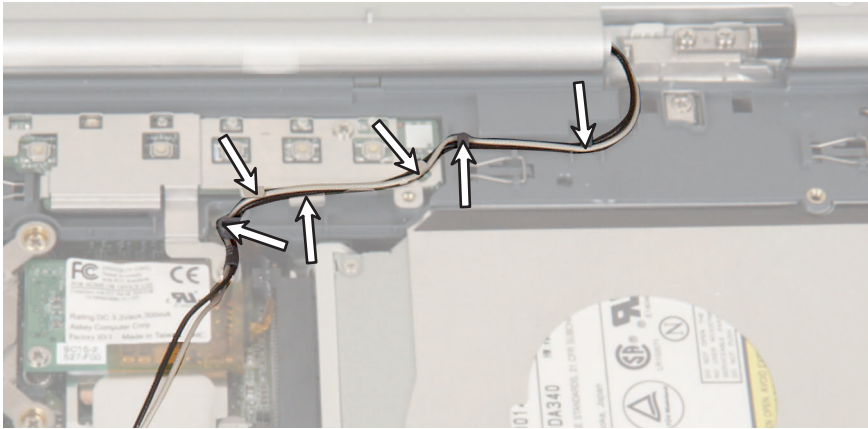
Screws removed during this task:



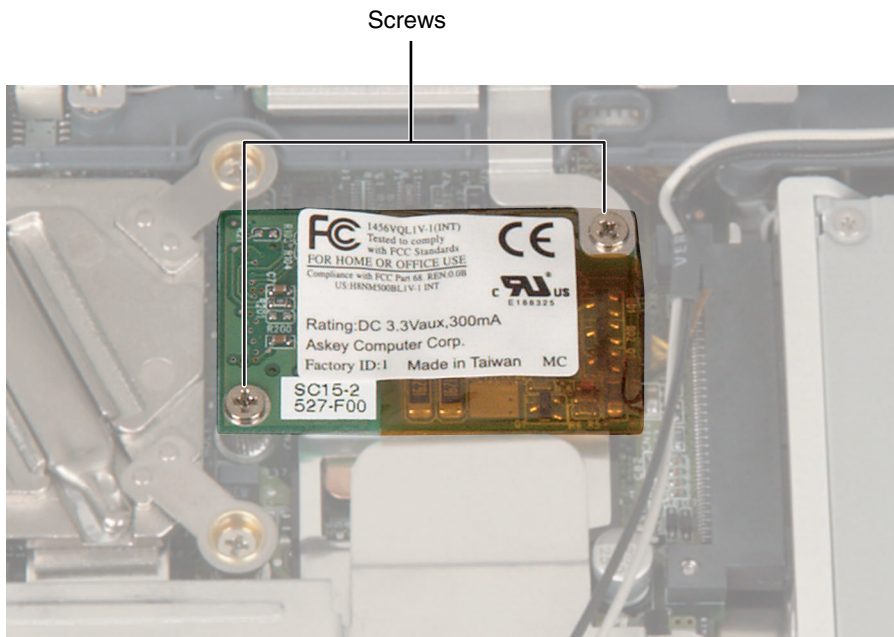
To replace the modem:

- 1** Disconnect the AC adapter and modem and network cables and prepare your notebook by following the instructions in “Preparing your notebook” on page 6.
- 2** Disconnect your notebook from the optional port replicator by following the instructions in “Disconnecting from the port replicator” on page 7.
- 3** Turn your notebook over so the bottom is facing up.
- 4** Remove the main and optional secondary batteries by following the instructions in “Removing the batteries” on page 8.
- 5** Turn your notebook over so the top is facing up.
- 6** Remove the keyboard cover by following the instructions in “Replacing the keyboard cover” on page 30.
- 7** Remove the keyboard by following the instructions in “Replacing the keyboard” on page 34.

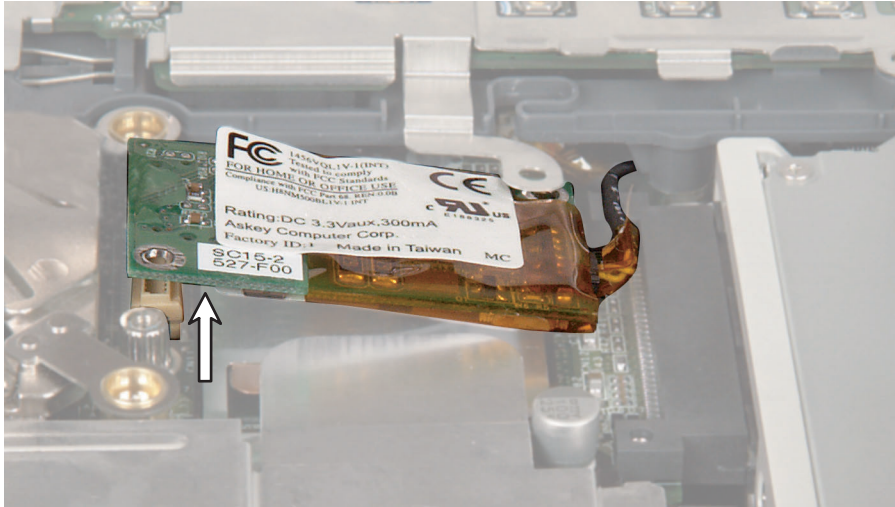
- 8 If your notebook has 802.11 wireless networking built in, slide the antenna cables away from the LED indicator panel EMI shielding.



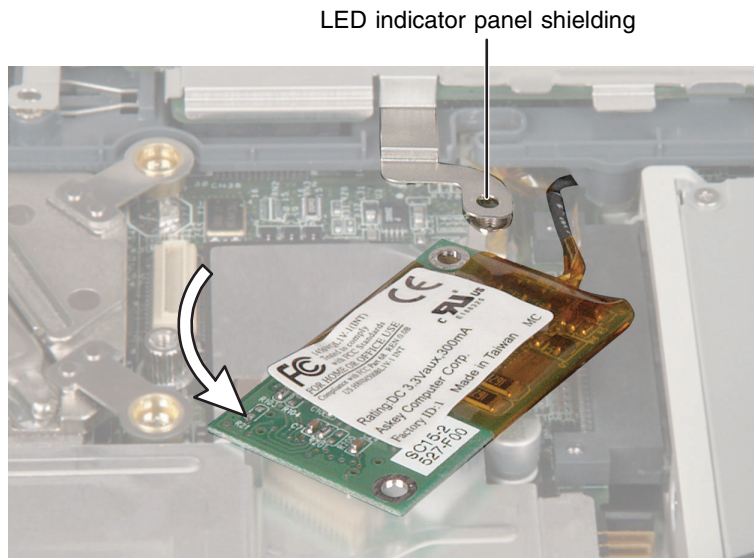
- 9 Remove the two screws that secure the modem to your notebook.



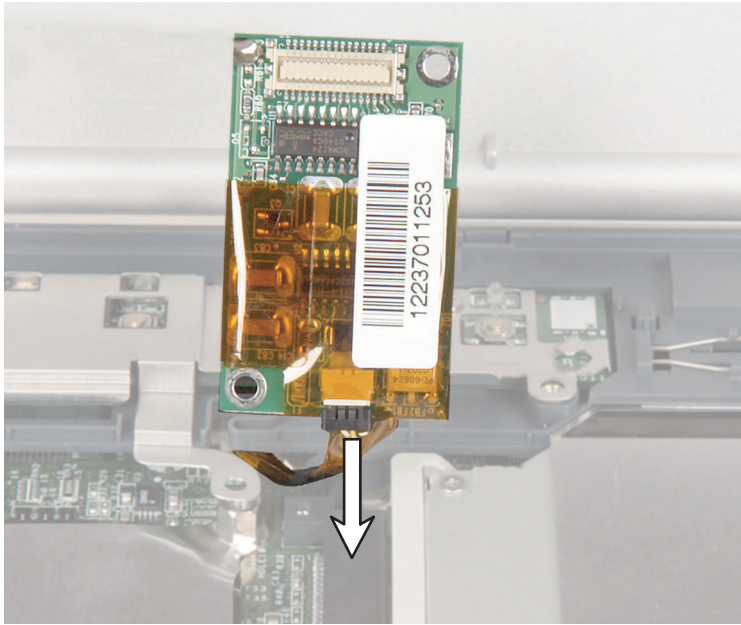
- 10 Insert the small flat-blade screwdriver or non-marring tool under the left side of the modem and gently pry it up about ¼ inch.



- 11 Slide the modem toward you until it slides out from under the LED indicator panel shielding.



- 12** Unplug the modem cable from the modem.

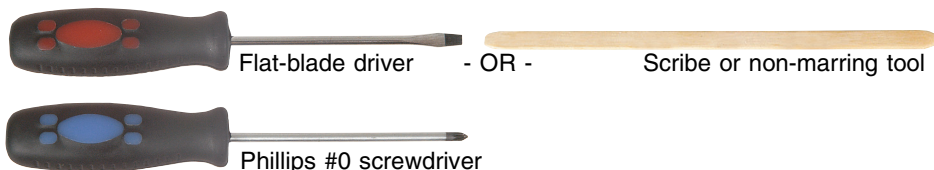


- 13** Connect the modem cable to the new modem.
- 14** Slide the modem under the LED indicator panel shielding, align the modem's screw holes with the holes on your notebook, then press the modem into place.
- 15** Replace the two screws that secure the modem to your notebook. Use the shorter screw to secure the lower-left corner.
- 16** Rethread the antenna cables (if applicable).
- 17** Reassemble your notebook.

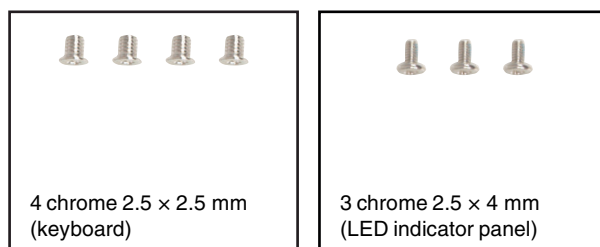


Replacing the LED indicator panel

Tools you need to complete this task:



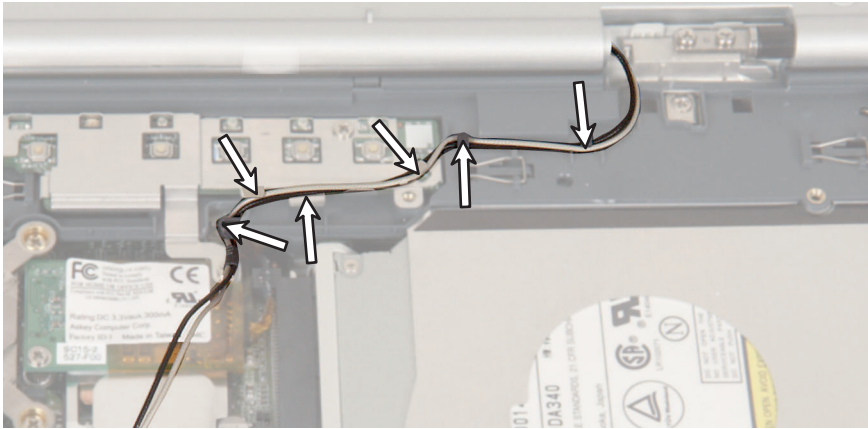
Screws removed during this task:



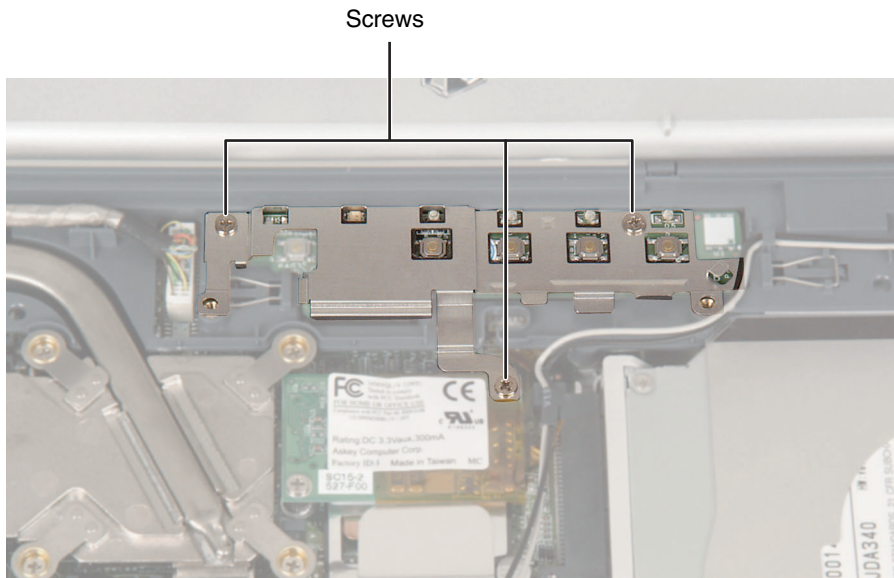
To replace the LED indicator panel:

- 1 Disconnect the AC adapter and modem and network cables and prepare your notebook by following the instructions in “Preparing your notebook” on page 6.
- 2 Disconnect your notebook from the optional port replicator by following the instructions in “Disconnecting from the port replicator” on page 7.
- 3 Turn your notebook over so the bottom is facing up.
- 4 Remove the main and optional secondary batteries by following the instructions in “Removing the batteries” on page 8.
- 5 Turn your notebook over so the top is facing up.
- 6 Remove the keyboard cover by following the instructions in “Replacing the keyboard cover” on page 30.
- 7 Remove the keyboard by following the instructions in “Replacing the keyboard” on page 34.

- 8 If your notebook has 802.11 wireless networking built in, slide the antenna cables away from the LED indicator panel EMI shielding.



- 9 Remove the three screws that secure the LED indicator panel shield to your notebook.

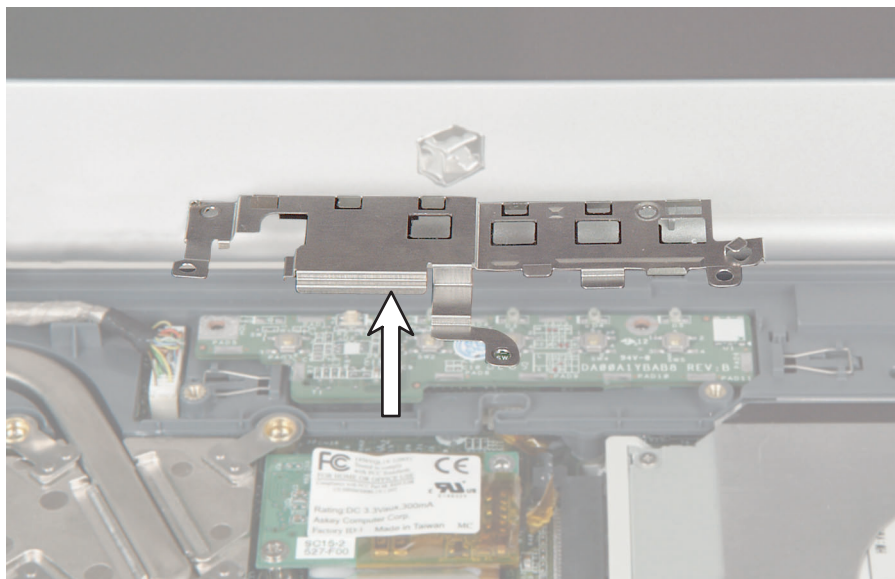


- 10** Carefully lift the middle of the shielding slightly, then lift the ends slightly, then repeat until the shielding pulls completely free.

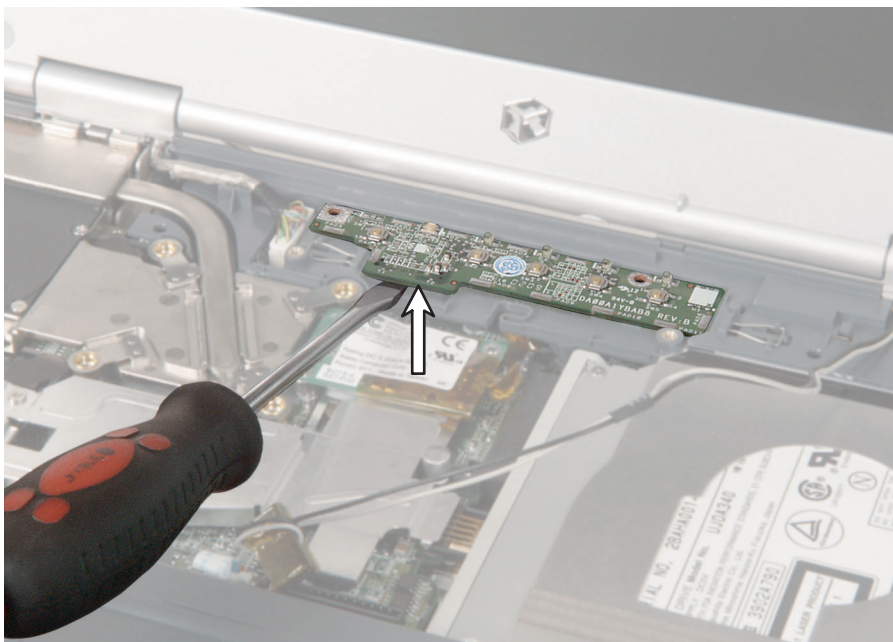
Warning



The LED panel's metal shielding is very thin and will break if you bend it too much. When removing the shielding, carefully lift the middle slightly, then lift the ends slightly, then repeat until the shielding pulls completely free.



- 11** Insert the small flat-blade screwdriver or non-marring tool under the left side of the indicator panel and gently pry it up about ¼ inch, then lift the entire panel from the notebook.

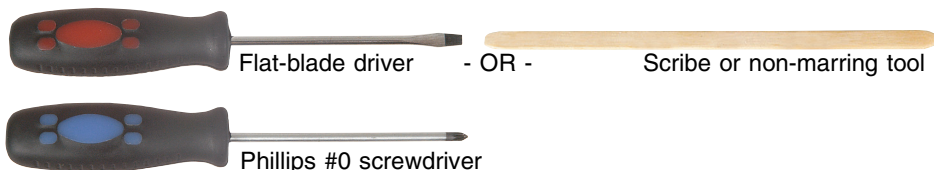


- 12** Align the new indicator panel's screw holes with the holes on your notebook, then press the panel into place.
- 13** Carefully replace the indicator panel's shielding.
- 14** Replace the three screws that secure the LED indicator panel to your notebook.
- 15** Rethread the antenna cables (if applicable).
- 16** Reassemble your notebook.

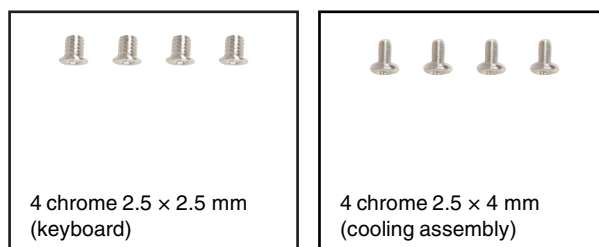


Replacing the cooling assembly

Tools you need to complete this task:



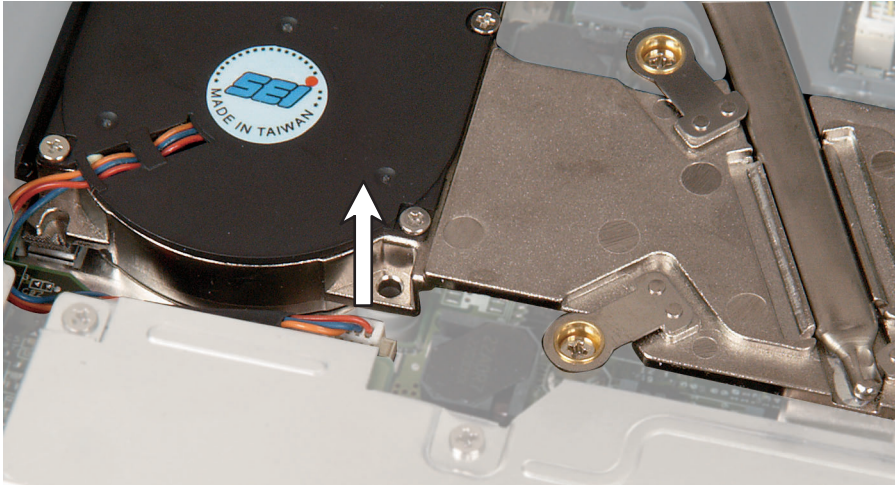
Screws removed during this task:



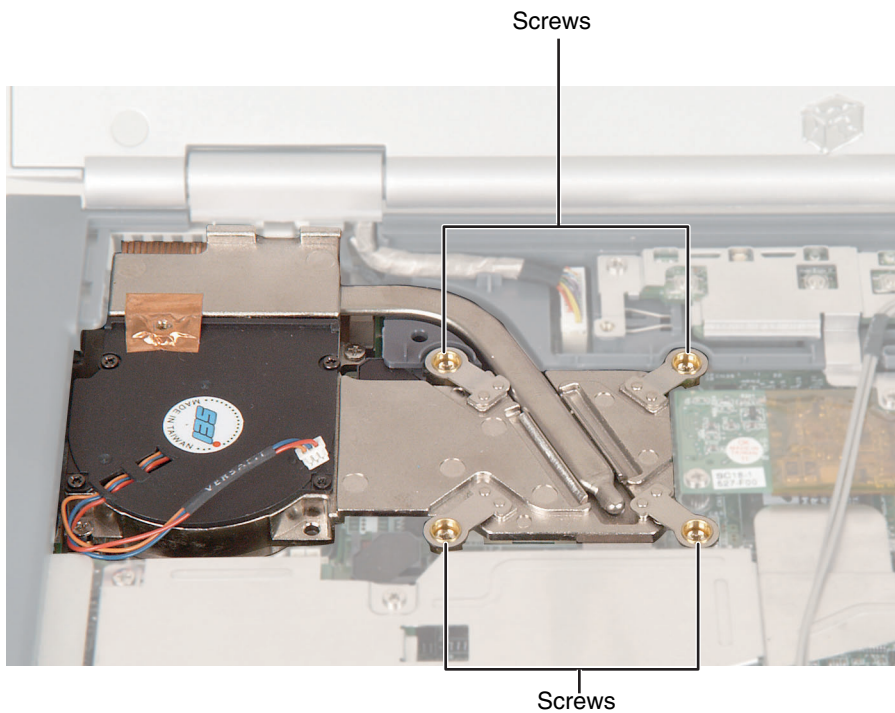
To replace the cooling assembly:

- 1 Disconnect the AC adapter and modem and network cables and prepare your notebook by following the instructions in “Preparing your notebook” on page 6.
- 2 Disconnect your notebook from the optional port replicator by following the instructions in “Disconnecting from the port replicator” on page 7.
- 3 Turn your notebook over so the bottom is facing up.
- 4 Remove the main and optional secondary batteries by following the instructions in “Removing the batteries” on page 8.
- 5 Turn your notebook over so the top is facing up.
- 6 Remove the keyboard cover by following the instructions in “Replacing the keyboard cover” on page 30.
- 7 Remove the keyboard by following the instructions in “Replacing the keyboard” on page 34.

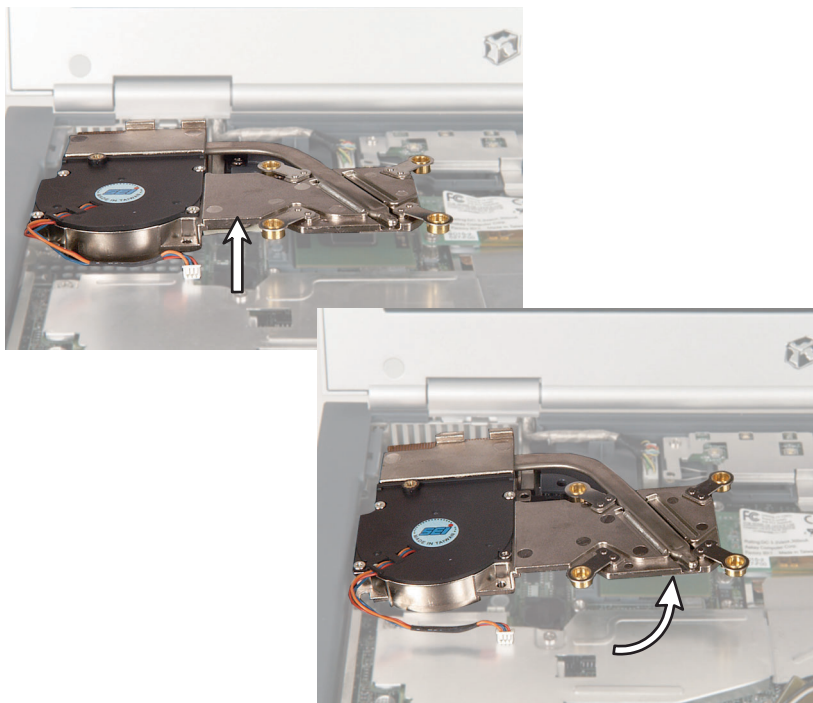
- 8 Unplug the cooling fan.



- 9 Remove the four screws that secure the cooling assembly to your notebook.



- 10 At the same time as you lift, move the cooling assembly to the front of the notebook and remove it.

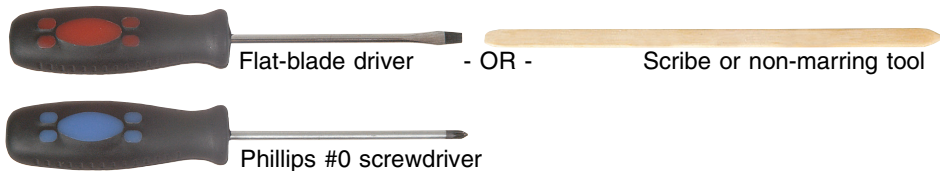


- 11 Insert the new cooling assembly into your notebook.
- 12 Replace the four cooling assembly screws.
- 13 Plug in the cooling fan.
- 14 Reassemble your notebook.

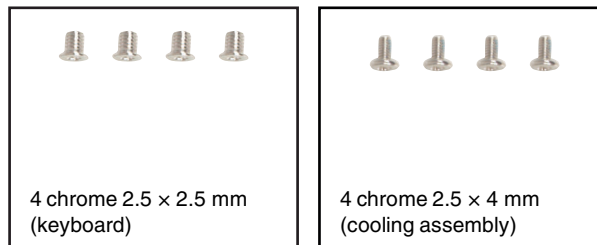


Replacing the hinge covers

Tools you need to complete this task:



Screws removed during this task:



To replace the hinge covers:

- 1 Disconnect the AC adapter and modem and network cables and prepare your notebook by following the instructions in “Preparing your notebook” on page 6.
- 2 Disconnect your notebook from the optional port replicator by following the instructions in “Disconnecting from the port replicator” on page 7.
- 3 Turn your notebook over so the bottom is facing up.
- 4 Remove the main and optional secondary batteries by following the instructions in “Removing the batteries” on page 8.
- 5 Turn your notebook over so the top is facing up.
- 6 Remove the keyboard cover by following the instructions in “Replacing the keyboard cover” on page 30.

- 7** If you are replacing the left hinge cover, go to Step 8.
-OR-
If you are replacing only the right hinge cover, go to Step 10.
- 8** Remove the keyboard by following the instructions in “Replacing the keyboard” on page 34.
- 9** Remove the cooling assembly by following the instructions in “Replacing the cooling assembly” on page 47.
- 10** Open the LCD panel all the way, so it lies flat on the table.
- 11** Insert the small flat-blade screwdriver or non-marring tool under the bottom of the hinge covers, then carefully pry them up.

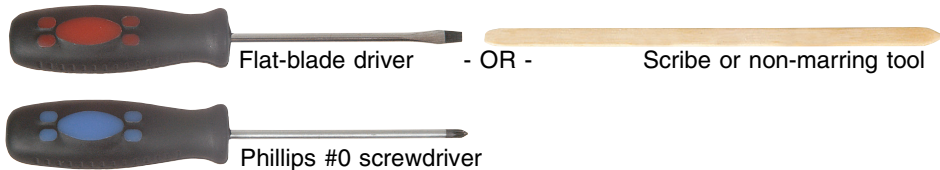


- 12** Snap the new covers into place over the hinges.
- 13** Reassemble your notebook.

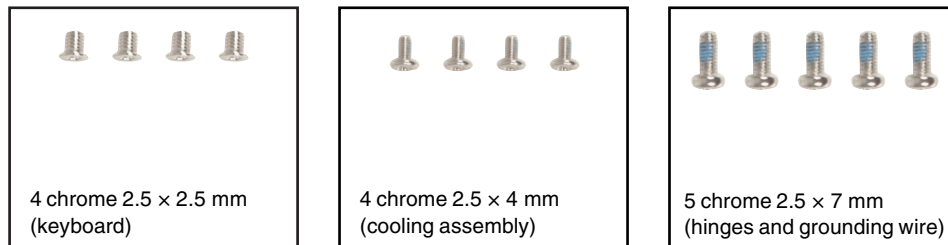


Replacing the LCD panel assembly

Tools you need to complete this task:



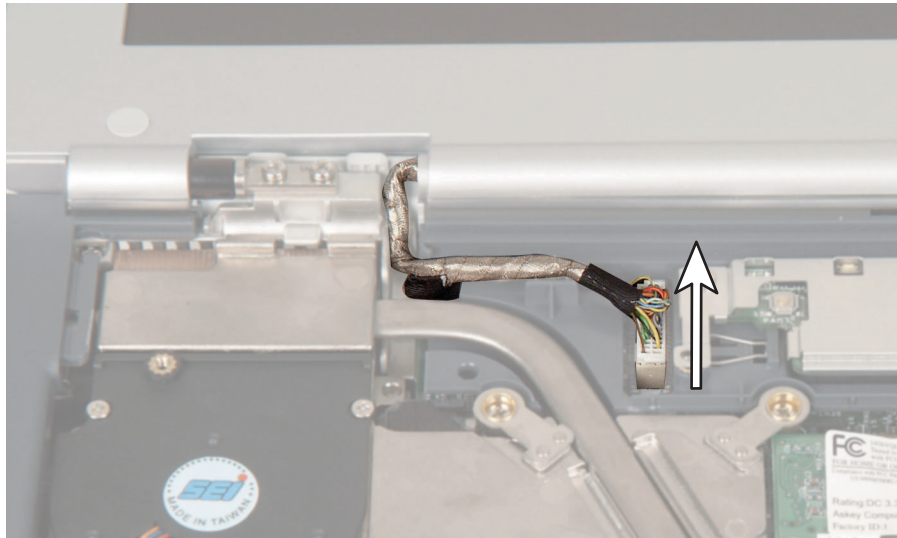
Screws removed during this task:



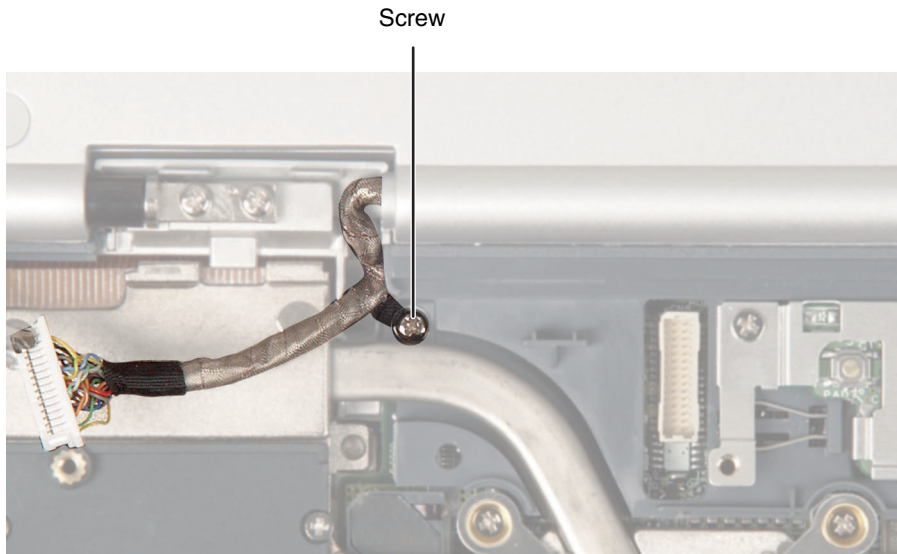
To replace the LCD panel assembly:

- 1 Disconnect the AC adapter and modem and network cables and prepare your notebook by following the instructions in “Preparing your notebook” on page 6.
- 2 Disconnect your notebook from the optional port replicator by following the instructions in “Disconnecting from the port replicator” on page 7.
- 3 Turn your notebook over so the bottom is facing up.
- 4 Remove the main and optional secondary batteries by following the instructions in “Removing the batteries” on page 8.
- 5 If your notebook has 802.11 wireless networking built in, remove the mini PCI 802.11 module by following the instructions in “Replacing the 802.11 mini PCI card” on page 18.
- 6 Turn your notebook over so the top is facing up.
- 7 Remove the keyboard cover by following the instructions in “Replacing the keyboard cover” on page 30.

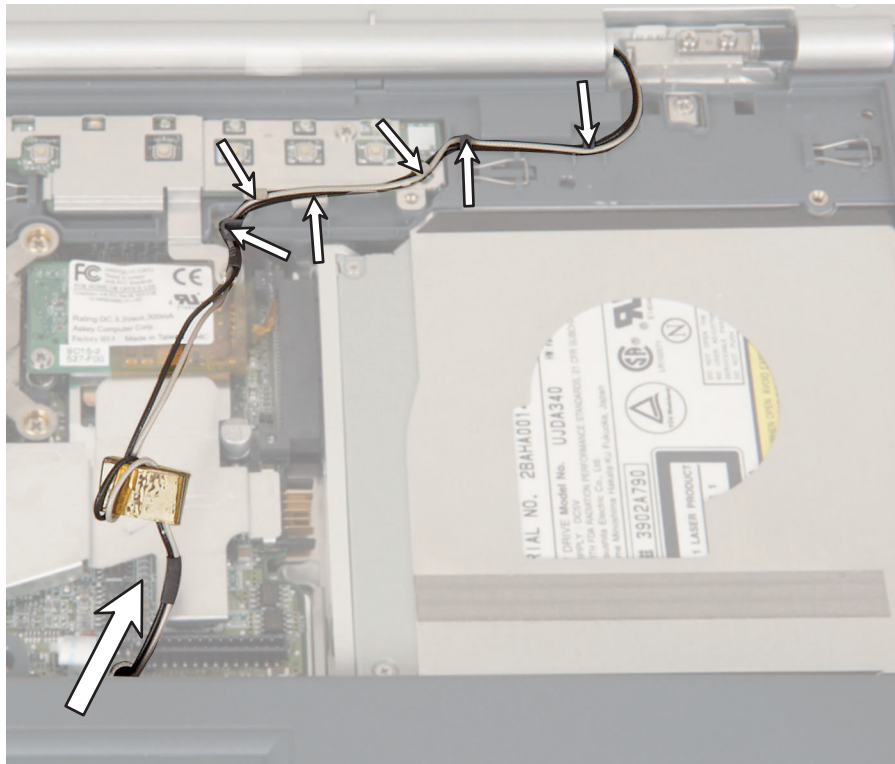
- 8** Remove the keyboard by following the instructions in “Replacing the keyboard” on page 34.
- 9** Remove the cooling assembly by following the instructions in “Replacing the cooling assembly” on page 47.
- 10** Remove the hinge covers by following the instructions in “Replacing the hinge covers” on page 50.
- 11** Use your fingers to unplug the LCD cable from your notebook. Grasp the large cluster of cables, then pull the connector straight up.



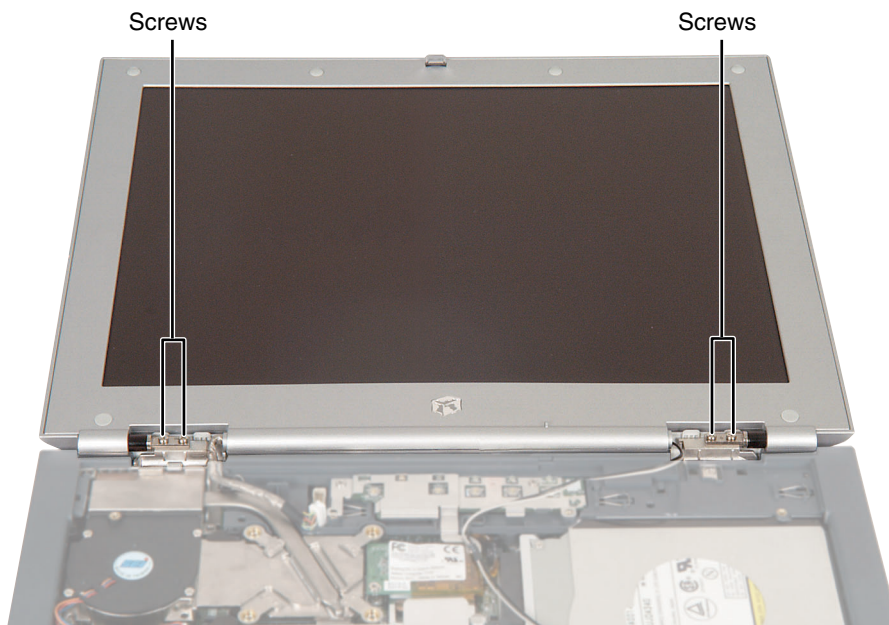
- 12** Loosen the screw holding the grounding wire, then lift the LCD panel grounding wire to remove the screw.



- 13** If your notebook has 802.11 built in, pull the detached antenna cables up through the hole in the system board near the touchpad, then carefully pull the cables away from the LED indicator panel shielding.



- 14** Remove the four hinge screws that secure the LCD panel to your notebook.

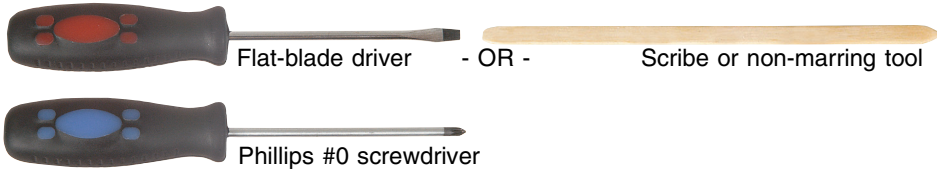


- 15** Place the new LCD panel assembly onto your notebook, then replace the four hinge screws.
- 16** Reattach the grounding cable.
- 17** Thread the antenna cables through the guides on the LED indicator panel shielding, then through the hole in the system board.
- 18** Plug the LCD cable into your notebook.
- 19** Reassemble your notebook.

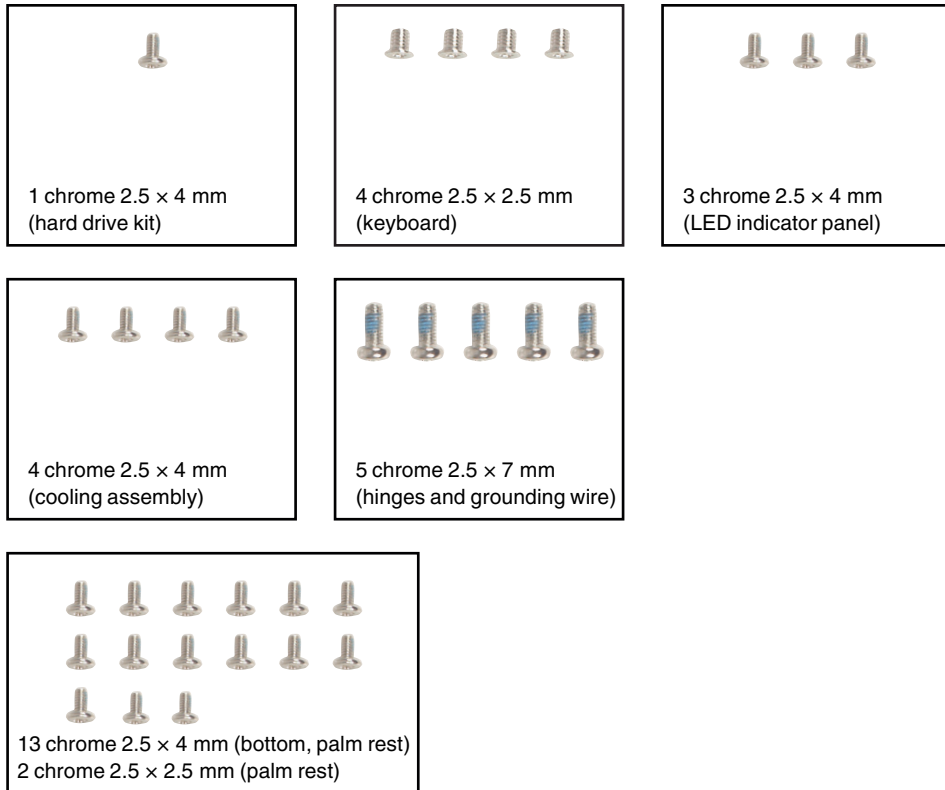


Replacing the palm rest assembly

Tools you need to complete this task:



Screws removed during this task:

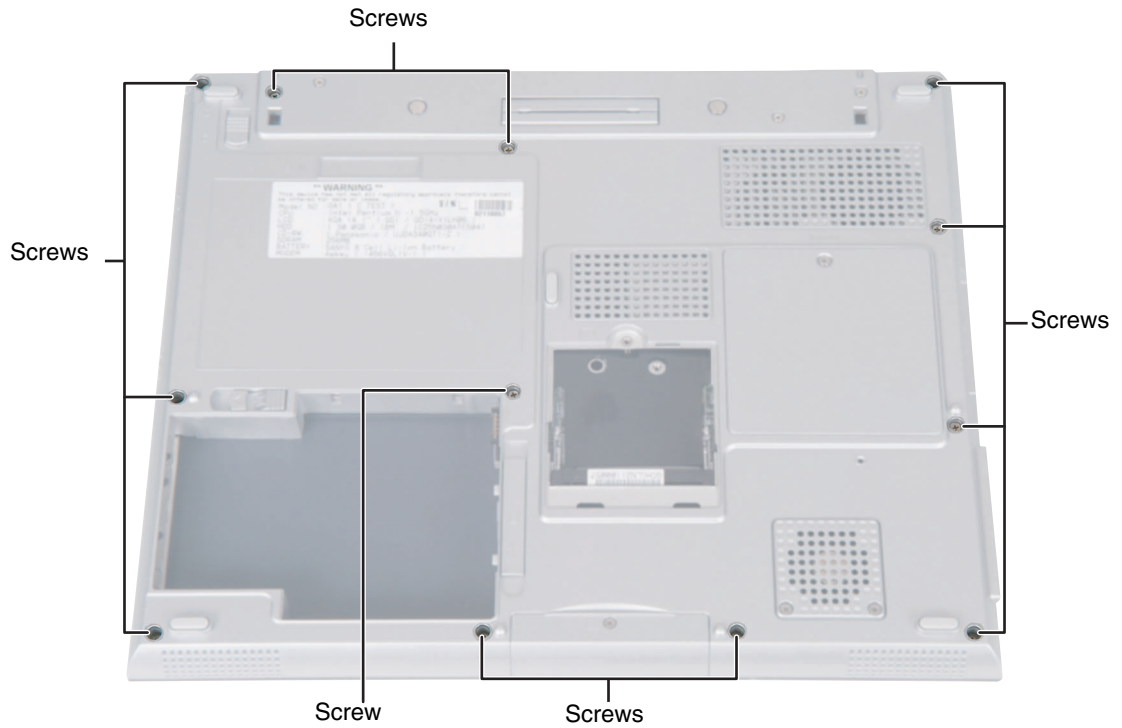




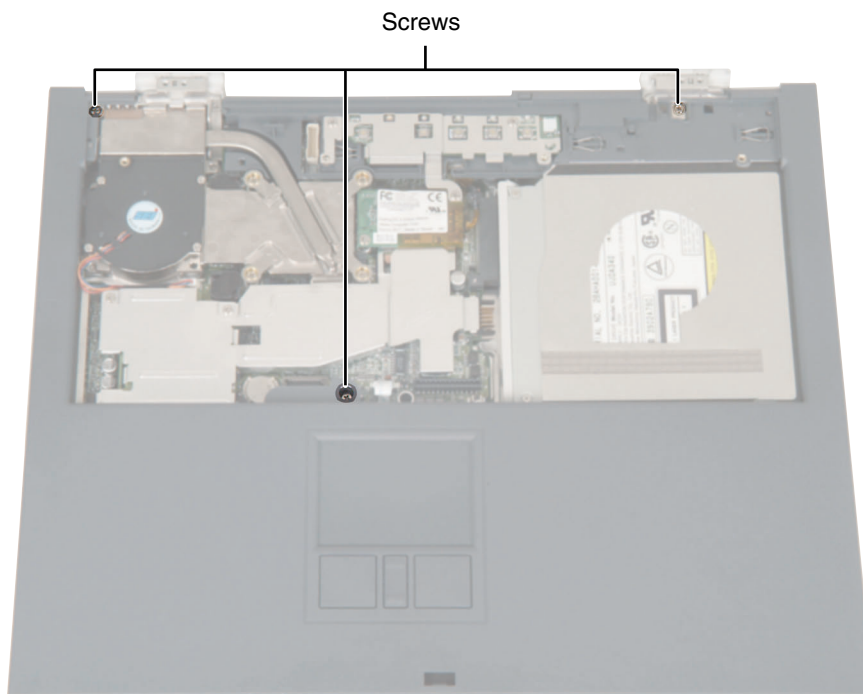
To replace the palm rest assembly:

- 1** Disconnect the AC adapter and modem and network cables and prepare your notebook by following the instructions in “Preparing your notebook” on page 6.
- 2** Disconnect your notebook from the optional port replicator by following the instructions in “Disconnecting from the port replicator” on page 7.
- 3** Turn your notebook over so the bottom is facing up.
- 4** Remove the main and optional secondary batteries by following the instructions in “Removing the batteries” on page 8.
- 5** If your notebook has 802.11 wireless networking built in, remove the mini PCI 802.11 module by following the instructions in “Replacing the 802.11 mini PCI card” on page 18.
- 6** Remove the hard drive kit by following the instructions in “Replacing the hard drive kit” on page 24.
- 7** Turn your notebook over so the top is facing up.
- 8** Remove the keyboard cover by following the instructions in “Replacing the keyboard cover” on page 30.
- 9** Remove the keyboard by following the instructions in “Replacing the keyboard” on page 34.
- 10** Remove the LED indicator panel by following the instructions in “Replacing the LED indicator panel” on page 43.
- 11** Remove the cooling assembly by following the instructions in “Replacing the cooling assembly” on page 47.
- 12** Remove the hinge covers by following the instructions in “Replacing the hinge covers” on page 50.
- 13** Remove the LCD panel by following the instructions in “Replacing the LCD panel assembly” on page 52.

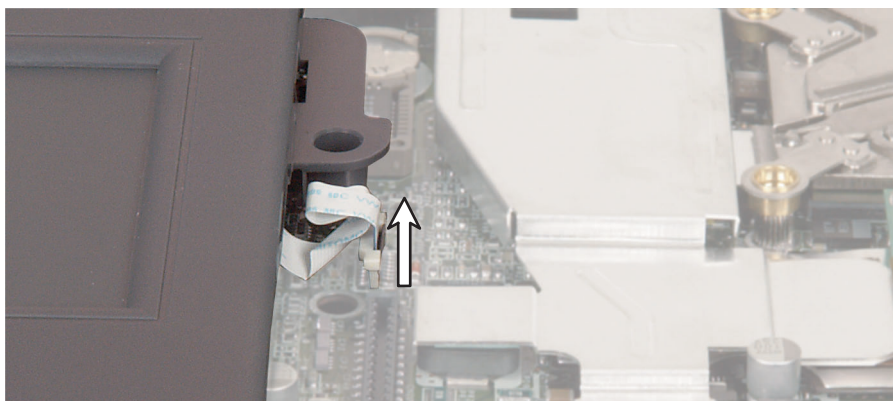
- 14** Remove the twelve chrome screws on the bottom of your notebook.



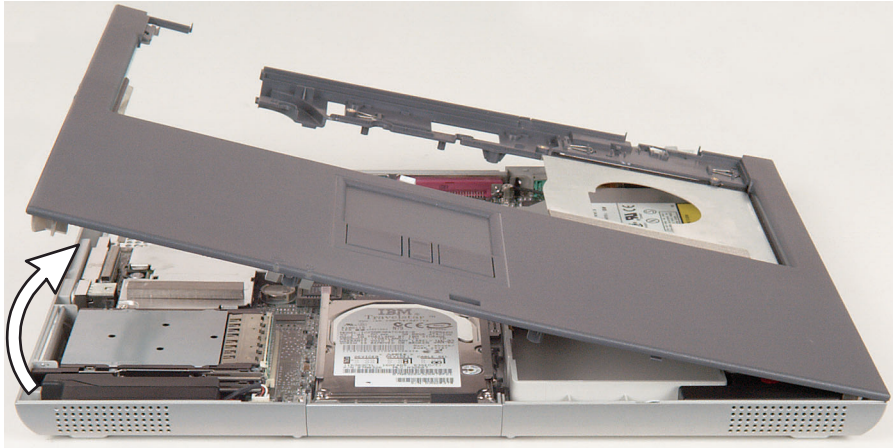
- 15** Turn your notebook over, then remove the three screws on the top of your notebook.



- 16** Use two fingers to pull up on the touchpad connector tabs. After the connector is in the raised position, carefully pull the cable out of the connector.



- 17** Remove the palm rest assembly.



- 18** Place the new palm rest assembly onto your notebook, and snap the assembly into place.
- 19** Replace all of the palm rest screws. Use the two shortest screws to secure the top-rear corners of the palm rest, which are near the LCD panel hinges.
- 20** Pull up on the touchpad connector tabs to verify that the connector is in the raised position.
- 21** Slide the end of the touchpad cable into the touchpad connector.

Important



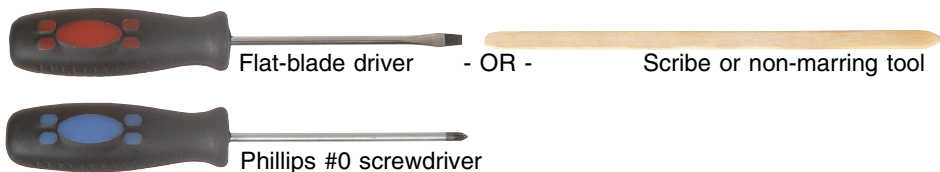
The touchpad cable should slide easily into the touchpad connector. The cable is oriented correctly if it is not twisted.

- 22** Use two fingers to press down on the touchpad connector tabs. This locks the touchpad cable into the touchpad connector.
- 23** Reassemble your notebook.

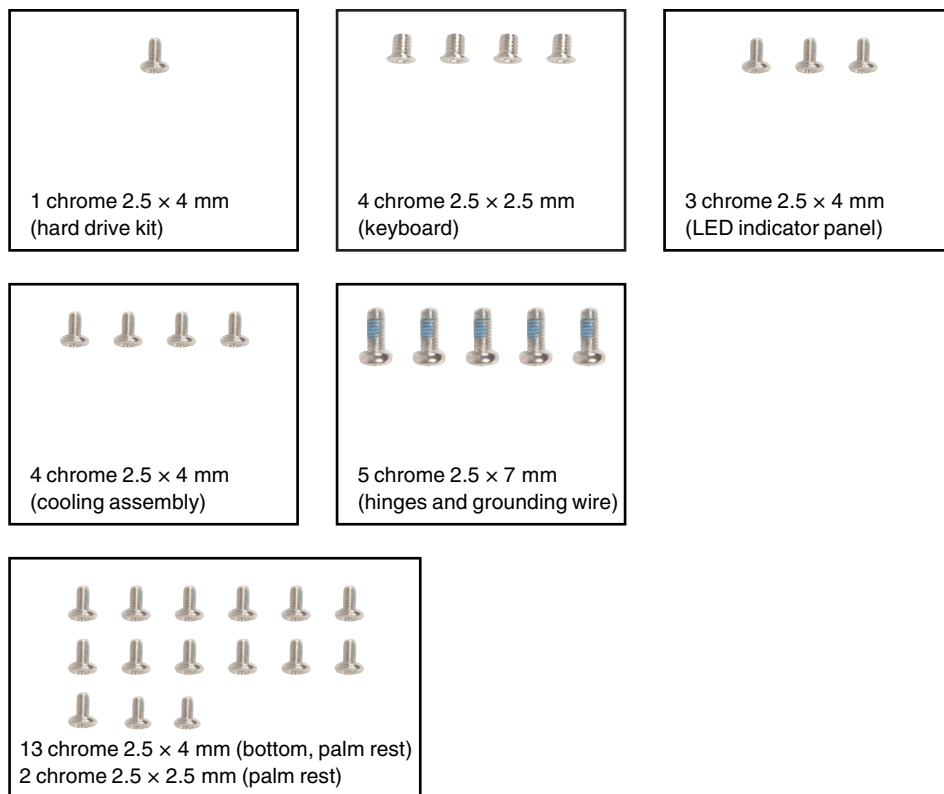


Replacing the CMOS battery

Tools you need to complete this task:



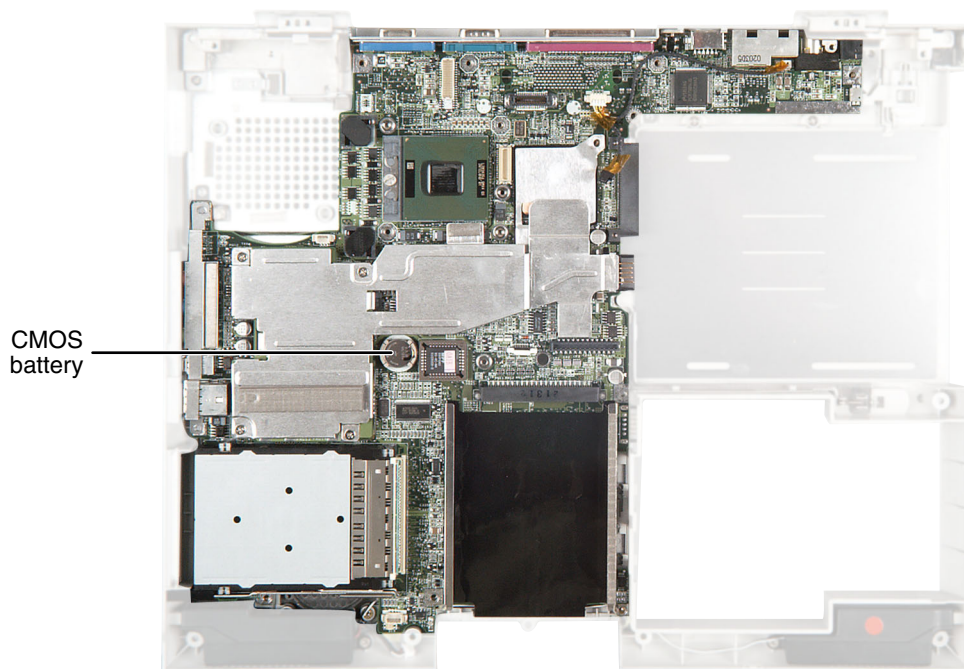
Screws removed during this task:



**To replace the CMOS battery:**

- 1** Disconnect the AC adapter and modem and network cables and prepare your notebook by following the instructions in “Preparing your notebook” on page 6.
- 2** Disconnect your notebook from the optional port replicator by following the instructions in “Disconnecting from the port replicator” on page 7.
- 3** Turn your notebook over so the bottom is facing up.
- 4** Remove the main and optional secondary batteries by following the instructions in “Removing the batteries” on page 8.
- 5** If your notebook has 802.11 wireless networking built in, remove the mini PCI 802.11 module by following the instructions in “Replacing the 802.11 mini PCI card” on page 18.
- 6** Remove the hard drive kit by following the instructions in “Replacing the hard drive kit” on page 24.
- 7** Turn your notebook over so the top is facing up.
- 8** Remove the keyboard cover by following the instructions in “Replacing the keyboard cover” on page 30.
- 9** Remove the keyboard by following the instructions in “Replacing the keyboard” on page 34.
- 10** Remove the LED indicator panel by following the instructions in “Replacing the LED indicator panel” on page 43.
- 11** Remove the cooling assembly by following the instructions in “Replacing the cooling assembly” on page 47.
- 12** Remove the hinge covers by following the instructions in “Replacing the hinge covers” on page 50.
- 13** Remove the LCD panel by following the instructions in “Replacing the LCD panel assembly” on page 52.
- 14** Remove the palm rest assembly by following the instructions in “Replacing the palm rest assembly” on page 57.

- 15** Locate the old battery on the system board.

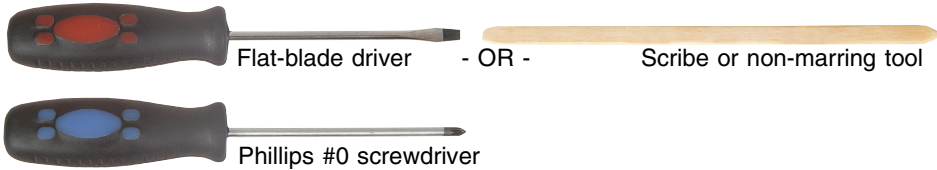


- 16** Insert the small flat-blade screwdriver or non-marring tool under the old battery and gently pry it up until it pops out of the socket.
- 17** Make sure the positive (+) side of the new battery is facing up, then press the battery into the socket until it snaps into place.
- 18** Reassemble your notebook.

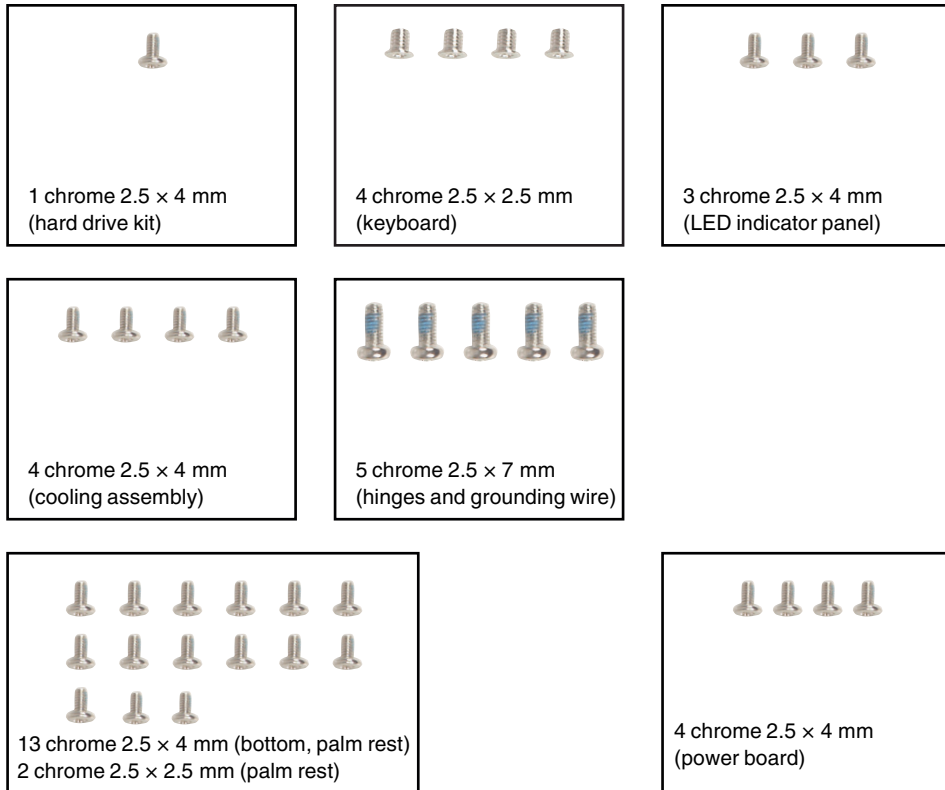


Replacing the power board

Tools you need to complete this task:



Screws removed during this task:

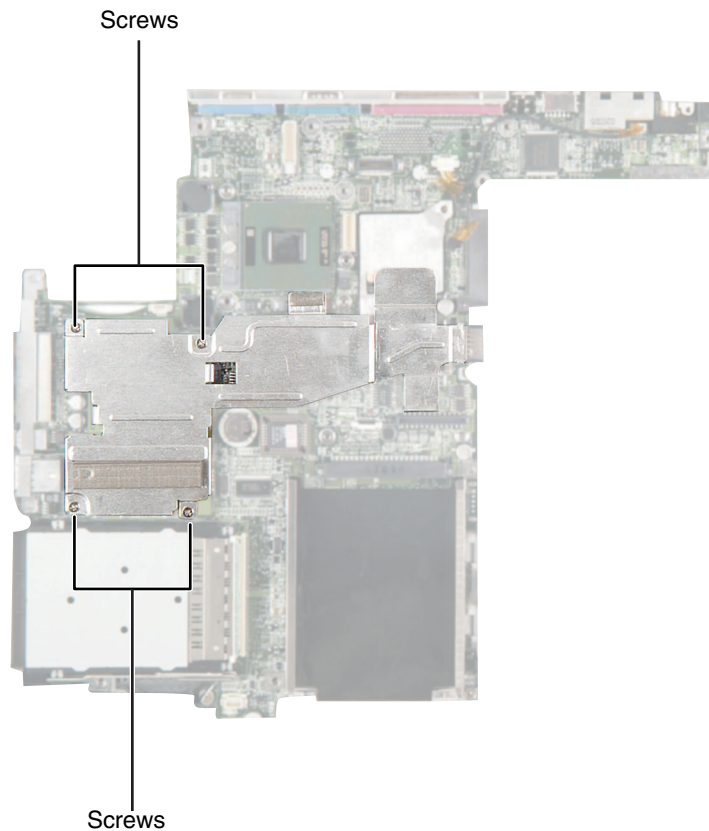




To replace the power board:

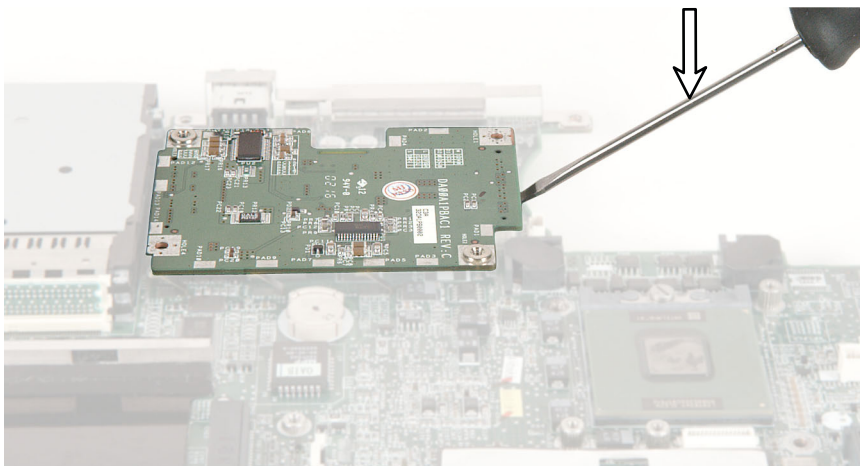
- 1** Disconnect the AC adapter and modem and network cables and prepare your notebook by following the instructions in “Preparing your notebook” on page 6.
- 2** Disconnect your notebook from the optional port replicator by following the instructions in “Disconnecting from the port replicator” on page 7.
- 3** Turn your notebook over so the bottom is facing up.
- 4** Remove the main and optional secondary batteries by following the instructions in “Removing the batteries” on page 8.
- 5** If your notebook has 802.11 wireless networking built in, remove the mini PCI 802.11 module by following the instructions in “Replacing the 802.11 mini PCI card” on page 18.
- 6** Remove the hard drive kit by following the instructions in “Replacing the hard drive kit” on page 24.
- 7** Turn your notebook over so the top is facing up.
- 8** Remove the keyboard cover by following the instructions in “Replacing the keyboard cover” on page 30.
- 9** Remove the keyboard by following the instructions in “Replacing the keyboard” on page 34.
- 10** Remove the LED indicator panel by following the instructions in “Replacing the LED indicator panel” on page 43.
- 11** Remove the cooling assembly by following the instructions in “Replacing the cooling assembly” on page 47.
- 12** Remove the hinge covers by following the instructions in “Replacing the hinge covers” on page 50.
- 13** Remove the LCD panel by following the instructions in “Replacing the LCD panel assembly” on page 52.
- 14** Remove the palm rest assembly by following the instructions in “Replacing the palm rest assembly” on page 57.

- 15** Remove the four screws that secure the power board EMI shield to your system board.



- 16** Lift the shielding away from the system board.

- 17** Insert the small flat-blade screwdriver or non-marring tool under the power board and gently pry up.

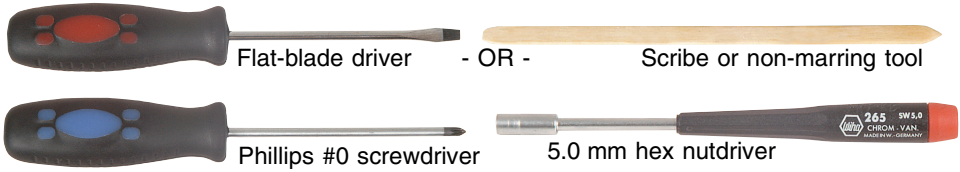


- 18** Align the new power board's screw holes with the holes on the system board, then press the power board into place.
- 19** Replace the power board's EMI shielding, then replace the screws.
- 20** Reassemble your notebook.

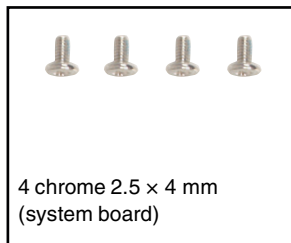
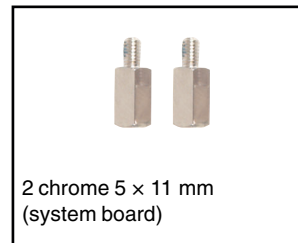
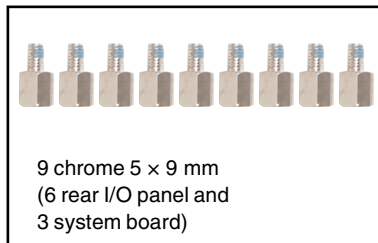
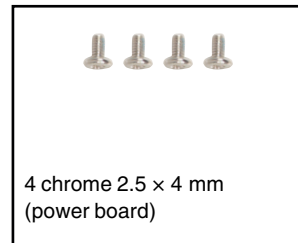
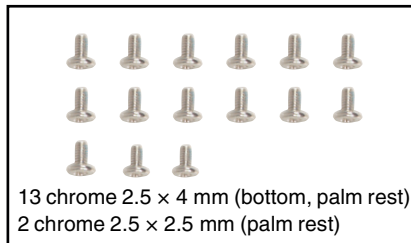
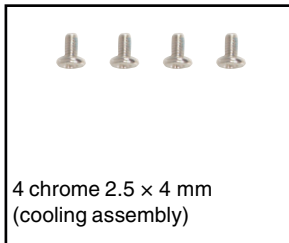
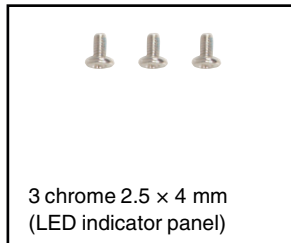
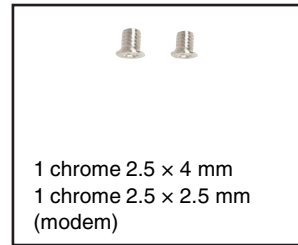
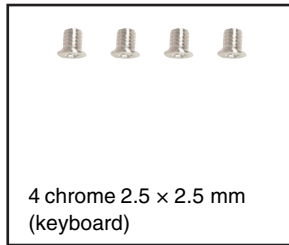
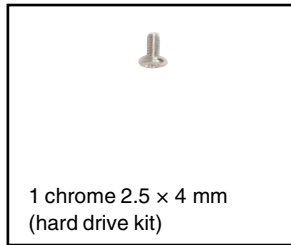


Replacing the system board

Tools you need to complete this task:



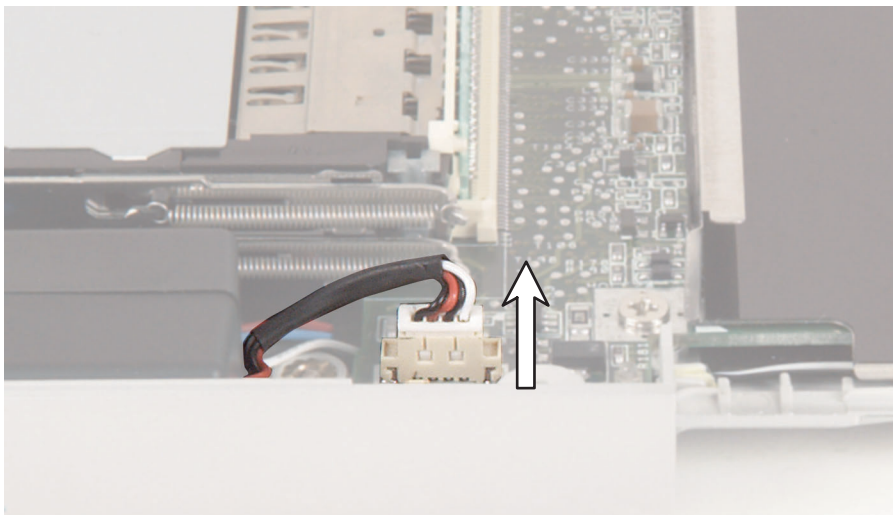
Screws removed during this task:



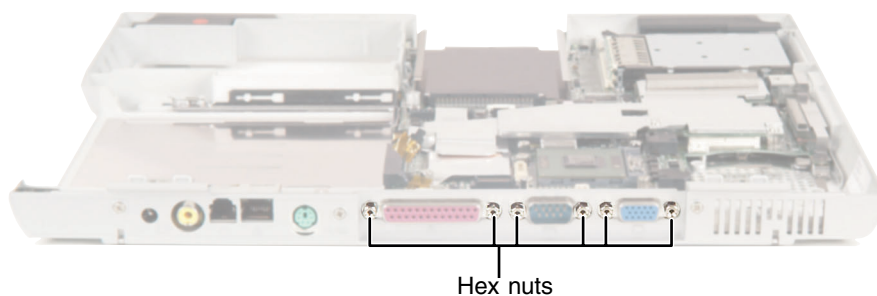
**To replace the system board:**

- 1** Disconnect the AC adapter and modem and network cables and prepare your notebook by following the instructions in “Preparing your notebook” on page 6.
- 2** Disconnect your notebook from the optional port replicator by following the instructions in “Disconnecting from the port replicator” on page 7.
- 3** Turn your notebook over so the bottom is facing up.
- 4** Remove the main and optional secondary batteries by following the instructions in “Removing the batteries” on page 8.
- 5** Remove the modular drive.
- 6** Remove the memory modules by following the instructions in “Adding or replacing memory modules” on page 11.
- 7** If your notebook has 802.11 wireless networking built in, remove the mini PCI 802.11 module by following the instructions in “Replacing the 802.11 mini PCI card” on page 18.
- 8** Remove the hard drive kit by following the instructions in “Replacing the hard drive kit” on page 24.
- 9** Turn your notebook over so the top is facing up.
- 10** Remove the keyboard cover by following the instructions in “Replacing the keyboard cover” on page 30.
- 11** Remove the keyboard by following the instructions in “Replacing the keyboard” on page 34.
- 12** Remove the modem by following the instructions in “Replacing the modem” on page 39.
- 13** Remove the LED indicator panel by following the instructions in “Replacing the LED indicator panel” on page 43.
- 14** Remove the cooling assembly by following the instructions in “Replacing the cooling assembly” on page 47.
- 15** Remove the hinge covers by following the instructions in “Replacing the hinge covers” on page 50.
- 16** Remove the LCD panel by following the instructions in “Replacing the LCD panel assembly” on page 52.

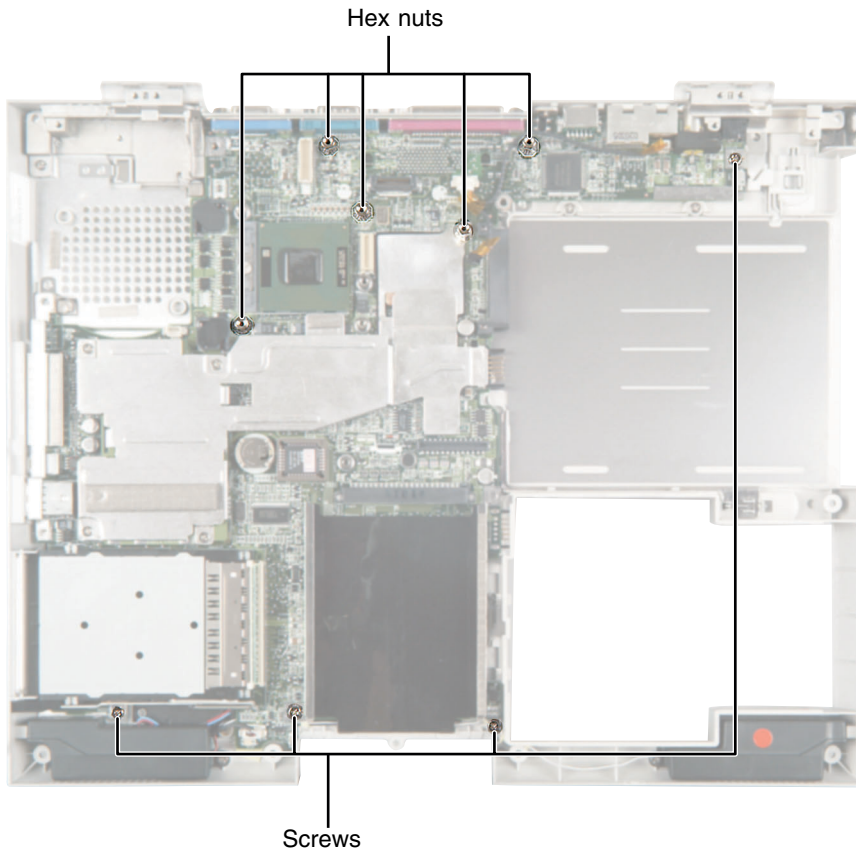
- 17** Remove the palm rest assembly by following the instructions in “Replacing the palm rest assembly” on page 57.
- 18** Remove the power board by following the instructions in “Replacing the power board” on page 65.
- 19** Unplug the speakers from the system board (one connector).



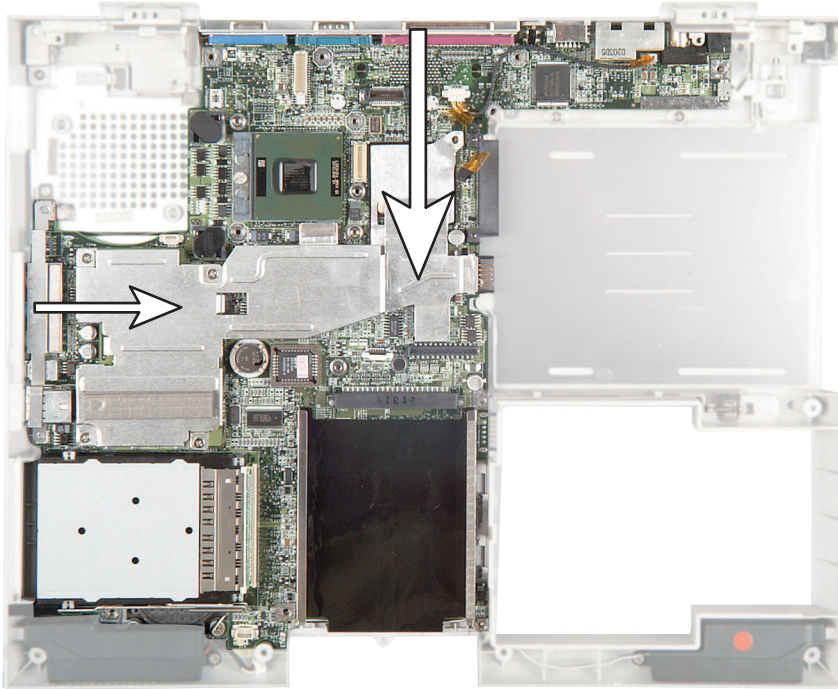
- 20** Remove the six hex nuts on the rear I/O panel.



- 21** Remove four system board screws and five system board hex nuts.

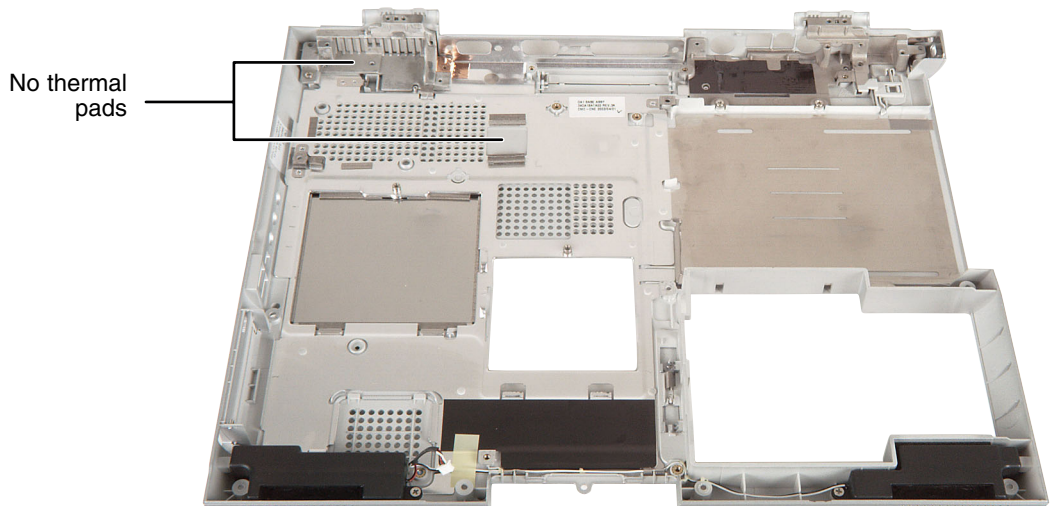
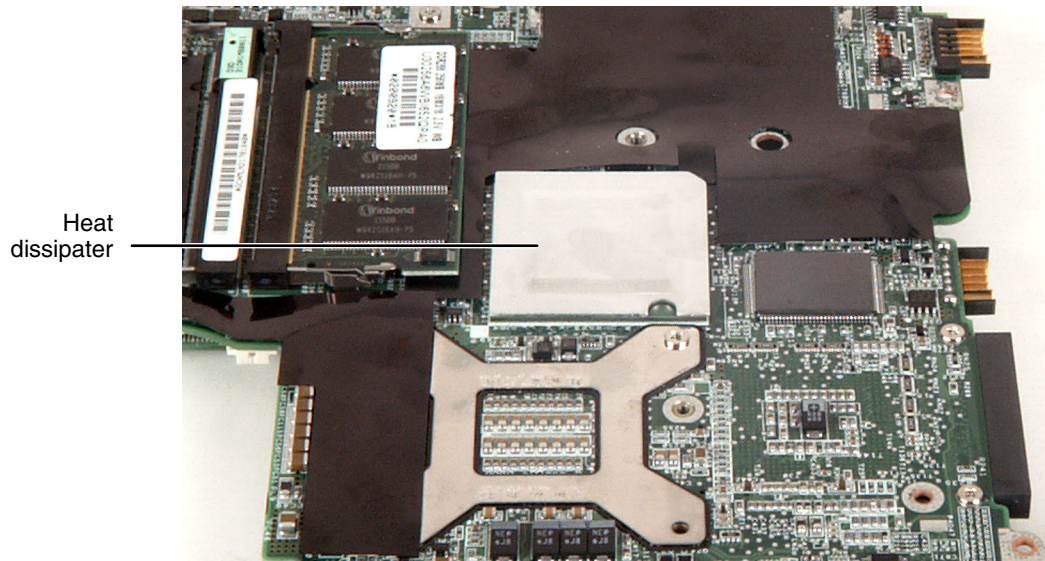


- 22** While pushing in on the PC Card eject button, remove the system board. Make sure that the rear I/O panel clears the bottom of the chassis (shown by the top arrow) and the side audio jacks clear the bottom of the chassis (shown by the left arrow).

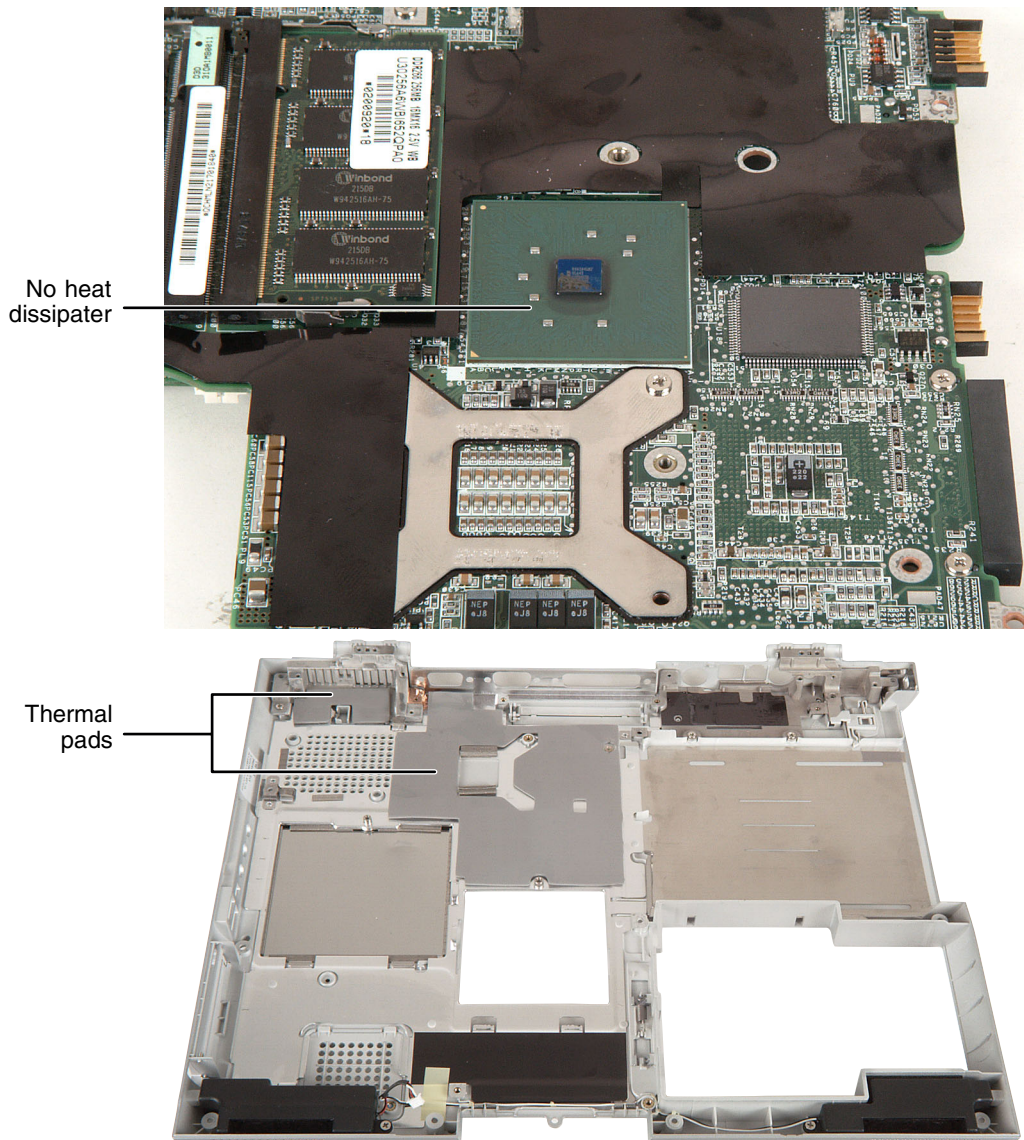


- 23** Turn the system board over and examine it and the inside of the bottom of the chassis. Gateway has two versions of the 450SX4 system board. Before you continue, you should verify that the new system board you received is the same version as the old system board.

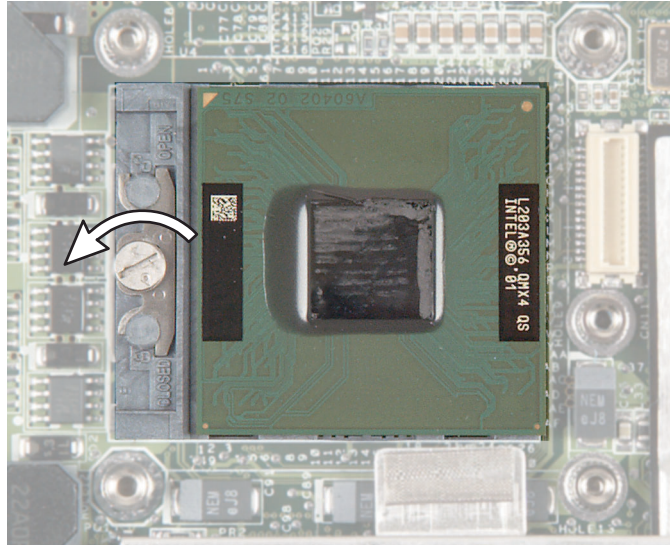
One version of the Gateway 450SX4 system board has a square silver heat dissipater. This type of system board is used with a chassis bottom that does not have thermal pads.



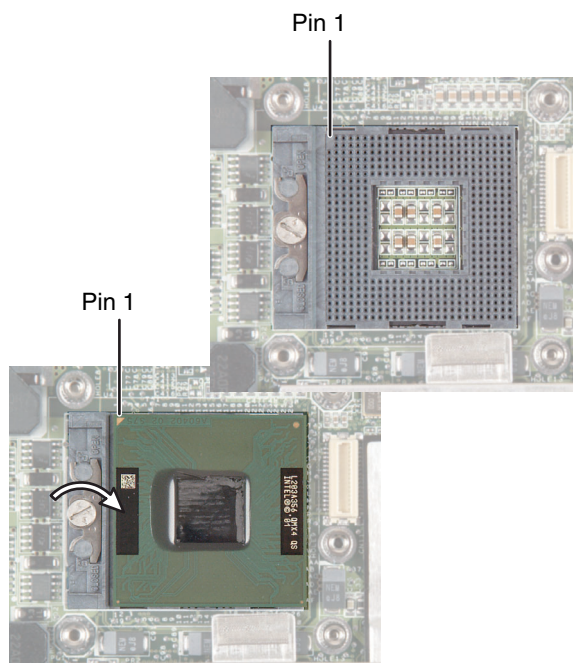
The second version of the Gateway 450SX4 system board does not have a square silver heat dissipater. This type of system board is used with a chassis bottom that has thermal pads.



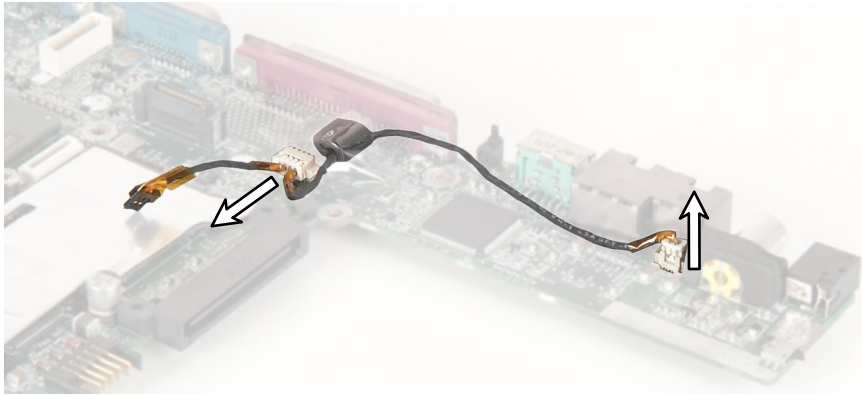
- 24** After you make sure that the new system board is the same as the old one, transfer the processor from the old board to the new one. Use a flat-blade screwdriver to turn the processor lock screw $\frac{1}{4}$ -turn counter-clockwise, then remove the processor from the old system board.



- 25** Install the processor onto the new system board making sure that Pin 1 on the processor (indicated by the silk-screened arrow on the corner of the processor) aligns with Pin 1 on the processor socket (indicated by the absence of a pin hole in the processor socket), then lock the processor in place by using a flat-blade screwdriver to turn the processor lock screw $\frac{1}{4}$ -turn clockwise.



- 26** Remove the modem cable from the old system board and install it on the new board.



- 27** Place the new system board into your notebook.
- 28** Replace the four system board mounting screws and the five system board mounting hex nuts.
- Hex nut numbered holes 3 and 4 use the “long” hex nuts and hex nut numbered holes 7, 10, and 12 use the “short” hex nuts.
- 29** Replace the six rear I/O panel hex nuts.
- 30** Connect the speakers.
- 31** Reassemble your notebook.



MAN SYS 450SX4 SERVICE GDE R4 4/03



8509179