

E24331

First Edition / December 2024

IN SEARCH OF INCREDIBLE



Service Manual



COPYRIGHT INFORMATION

No part of this manual, including the products and software described in it, may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language in any form or by any means, except documentation kept by the purchaser for backup purposes, without the express written permission of ASUSTeK COMPUTER INC. ("ASUS").

ASUS PROVIDES THIS MANUAL "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL ASUS, ITS DIRECTORS, OFFICERS, EMPLOYEES OR AGENTS BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES (INCLUDING DAMAGES FOR LOSS OF PROFITS, LOSS OF BUSINESS, LOSS OF USE OR DATA, INTERRUPTION OF BUSINESS AND THE LIKE), EVEN IF ASUS HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES ARISING FROM ANY DEFECT OR ERROR IN THIS MANUAL OR PRODUCT.

Products and corporate names appearing in this manual may or may not be registered trademarks or copyrights of their respective companies, and are used only for identification or explanation and to the owners' benefit, without intent to infringe.

SPECIFICATIONS AND INFORMATION CONTAINED IN THIS MANUAL ARE FURNISHED FOR INFORMATIONAL USE ONLY, AND ARE SUBJECT TO CHANGE AT ANY TIME WITHOUT NOTICE, AND SHOULD NOT BE CONSTRUED AS A COMMITMENT BY ASUS. ASUS ASSUMES NO RESPONSIBILITY OR LIABILITY FOR ANY ERRORS OR INACCURACIES THAT MAY APPEAR IN THIS MANUAL, INCLUDING THE PRODUCTS AND SOFTWARE DESCRIBED IN IT.

Copyright © 2024 ASUSTeK COMPUTER INC. All Rights Reserved.

LIMITATION OF LIABILITY

Circumstances may arise where because of a default on ASUS' part or other liability, you are entitled to recover damages from ASUS. In each such instance, regardless of the basis on which you are entitled to claim damages from ASUS, ASUS is liable for no more than damages for bodily injury (including death) and damage to real property and tangible personal property; or any other actual and direct damages resulted from omission or failure of performing legal duties under this Warranty Statement, up to the listed contract price of each product.

ASUS will only be responsible for or indemnify you for loss, damages or claims based in contract, tort or infringement under this Warranty Statement.

This limit also applies to ASUS' suppliers and its reseller. It is the maximum for which ASUS, its suppliers, and your reseller are collectively responsible.

UNDER NO CIRCUMSTANCES IS ASUS LIABLE FOR ANY OF THE FOLLOWING: (1) THIRD-PARTY CLAIMS AGAINST YOU FOR DAMAGES; (2) LOSS OF, OR DAMAGE TO, YOUR RECORDS OR DATA; OR (3) SPECIAL, INCIDENTAL, OR INDIRECT DAMAGES OR FOR ANY ECONOMIC CONSEQUENTIAL DAMAGES (INCLUDING LOST PROFITS OR SAVINGS), EVEN IF ASUS, ITS SUPPLIERS OR YOUR RESELLER IS INFORMED OF THEIR POSSIBILITY.

SERVICE AND SUPPORT

Visit our multi-language website at <https://www.asus.com/support/>.

Table of Contents

Chapter 1: Introduction

Disclaimer	6
Safety precautions.....	6
Pre-repair checklist.....	8
Repair tools.....	9
Accessories	9
Diagnostic tools.....	9
Major components	10

Chapter 2: Service Procedures

Bottom cover	14
Removal.....	15
Installation.....	18
Battery.....	21
Removal.....	22
Installation.....	25
M.2 SSD module	28
Removal.....	29
Installation.....	30
Speakers	31
Removal.....	32
Installation.....	36
Touchpad	40
Removal.....	41
Installation.....	44

Fan module	47
Removal	48
Installation.....	49
Heat sink	50
Removal	51
Installation.....	53
Display panel module	55
Removal	56
Installation.....	61
Display bezel	65
Removal	66
Installation.....	67
Motherboard	68
Removal	69
Installation.....	71
I/O board	73
Removal	74
Installation.....	75
Keyboard module.....	76
Removal	77
Installation.....	78

Appendices

Wiring and connection diagrams.....	80
-------------------------------------	----

Chapter 1:

Introduction

Disclaimer

ASUS is not responsible for direct, indirect, intentional or unintentional damages resulting from improper installation and operation.

Safety precautions

- Before handling components, use a grounded wrist strap or touch a safely grounded object to avoid damaging them due to static electricity.
- Keep liquids or moisture away from your device to avoid short circuits.
- Remove rings, watches, and any other metal objects from your hands.
- Hold components by the edges to avoid touching the ICs.
- Properly install all components before connecting the AC power.
- Do not use power adapters or batteries from other devices to reduce the risk of injury to persons due to fire or explosion. Use only certified power adapters or batteries supplied by the manufacturer or authorized retailers.
- Detach all clips or flaps before removing cables to prevent damage.

- Disconnect cables, connectors, and power plugs by pulling the plug evenly to avoid damage.
- Use the correct screw models on your device to prevent damage.
- Confirm that the cable orientation is correct before connecting any cables.
- Fully remove all adhesive residue after removing and before installing any components.
- Photograph the appearance of cables, cable routing, connectors, and screws for later reference before proceeding with each step.

Pre-repair checklist

- Read the entire manual before starting any service procedures and follow all instructions.
- Back up the data on your device.
- Place your device on a clean and stable surface.
- Turn off your device.
- Disconnect all connected peripherals and cables.
- Disconnect all power cables and remove the battery pack (if applicable).

IMPORTANT!

- If you are uncertain about performing the described service procedures, stop and contact an authorized service center for assistance.
- Purchase replacement components from authorized retailers of this device to ensure maximum compatibility and reliability.

NOTE:

- The illustrations are for reference only.
 - The service procedures described in this manual depend on the model configuration and may not reflect the entire servicing process. To service components that are not covered in this manual, please visit an authorized service center for further assistance.
 - Keep all adhesive tape, insulating materials, screws, and other removable items in a safe place until the service procedure is completed, as they may be needed during installation.
-

Repair tools



Screwdriver



Plastic blade



Tweezers

Accessories



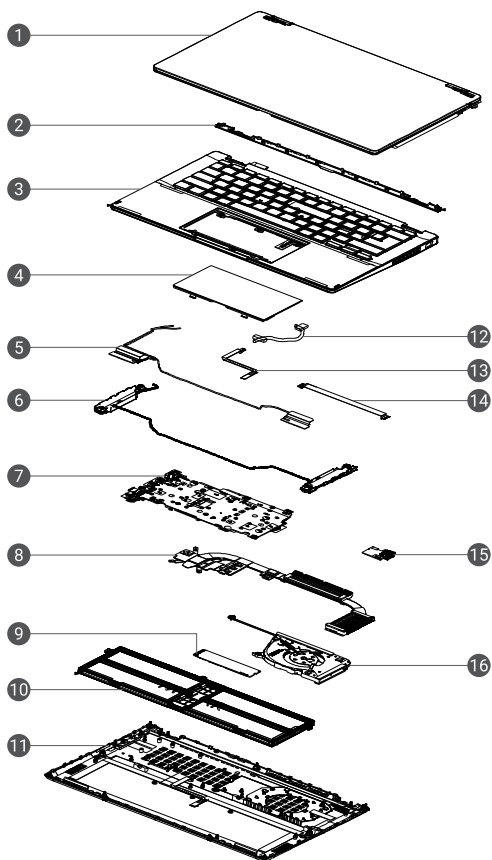
Power adapter

Diagnostic tools

Use ASUS System Diagnostics after completing any service procedures to ensure that all components are working properly.

For more information, visit www.asus.com/support/FAQ/1048490/.

Major components



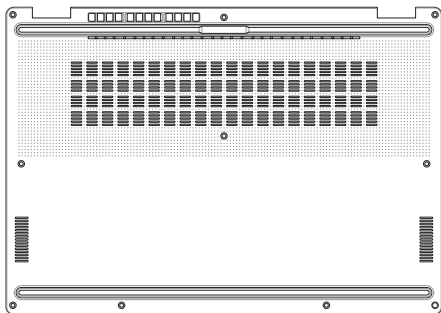
- | | |
|-------------------------|-------------------------|
| 1. Display panel module | 9. M.2 SSD module |
| 2. Display bezel | 10. Battery |
| 3. Keyboard module | 11. Bottom cover |
| 4. Touchpad | 12. Battery power cable |
| 5. Antenna cables | 13. Touchpad cable |
| 6. Speakers | 14. I/O board cable |
| 7. Motherboard | 15. I/O board |
| 8. Heat sink | 16. Fan |

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Chapter 2:

Service Procedures

Bottom cover



Before you begin

Read the **Safety Precautions** and complete the **Pre-repair Checklist**.

Screw list

14" model

- ⊕ M2.0 X 7.5L (3pcs)
- ⊕ M2.0 X 6.0L (2pcs)
- ⊕ M2.0 X 4.5L captive screw (1pc)
- ⊕ M2.0 X 4.5L (4pcs)

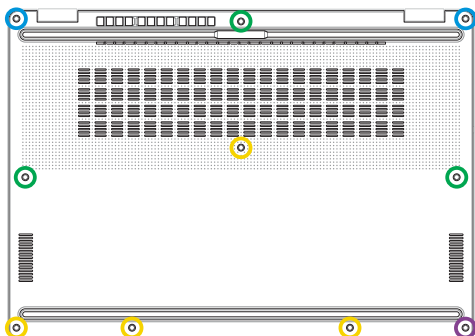
16" model

- ⊕ M2.0 X 7.5L (2pcs)
- ⊕ M2.0 X 6.0L (4pcs)
- ⊕ M2.0 X 4.5L captive screw (1pc)
- ⊕ M2.0 X 4.0L (3pcs)

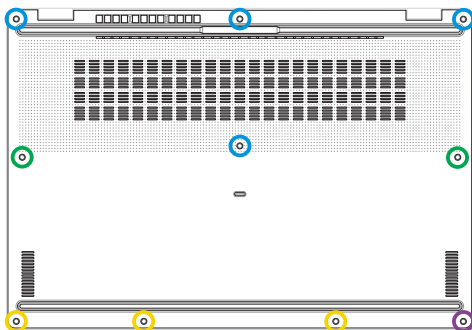
Removal

1. Remove the screw(s) from the bottom cover.
2. Loosen the captive screw located at the bottom right corner of the bottom cover.

14" model



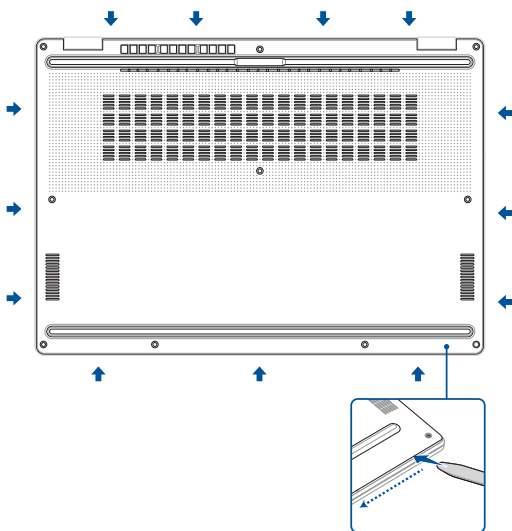
16" model



3. Use the plastic blade to pry open the indicated area of the bottom cover as shown in the illustration below.

IMPORTANT! Avoid sliding the plastic blade along the side of your device or air vents to prevent damage.

4. Remove the bottom cover.

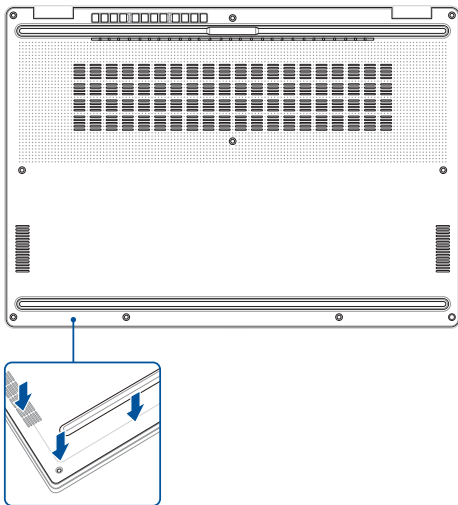


Installation

1. Install the bottom cover.

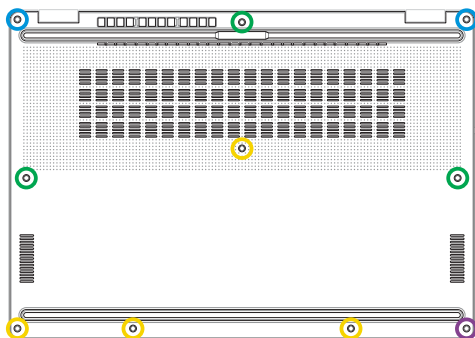
NOTE: When replacing the existing component with a new one, ensure you move the washer from the old component to the new bottom cover.

2. Gently press down on the bottom cover until it clicks into place.

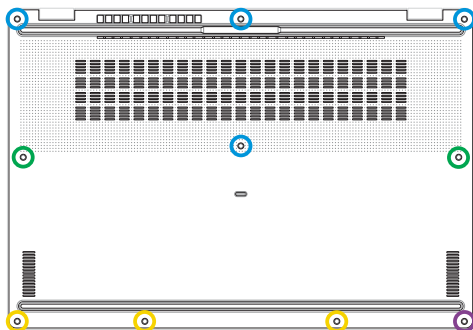


3. Tighten the captive screw located at the bottom right corner of the bottom cover.
4. Secure the bottom cover using the screw(s) you removed earlier.

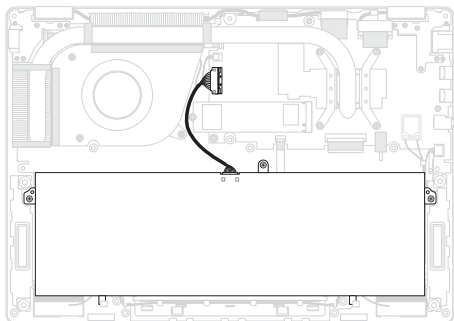
14" model



16" model



Battery



Before you begin

1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the bottom cover.

Screw list

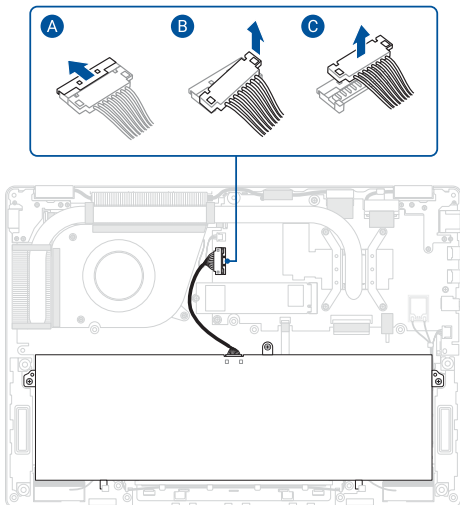
- ⊕ M2.0 X 3.5L (3pcs)

Removal

1. Disconnect the battery power cable.

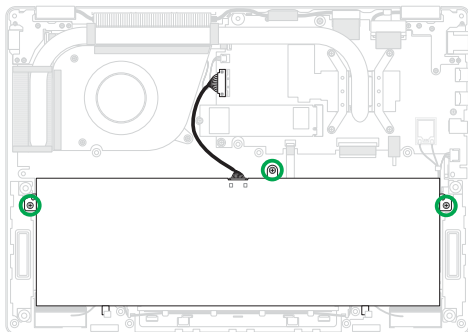
IMPORTANT!

- Disconnect the battery power cable by lifting the side with the red wires first.
 - Serious risk of fire or explosion may occur if the battery is punctured. If you are uncertain about proceeding, stop and contact an authorized service center for assistance.
-

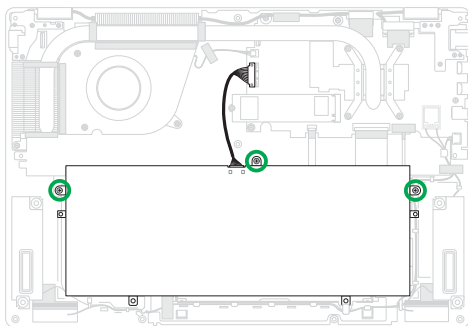


2. Remove the screw(s) from the battery.
3. Remove the battery.

14" model

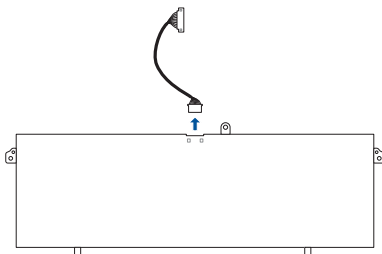


16" model



4. Remove the battery power cable.

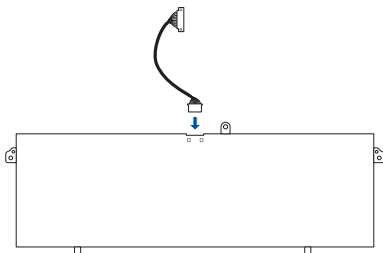
NOTE: This step is only required when you are replacing the existing component with a new one.



Installation

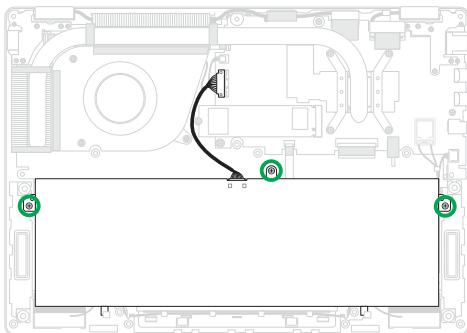
1. Connect the battery power cable to the battery.

NOTE: This step is only required when you are replacing the existing component with a new one.

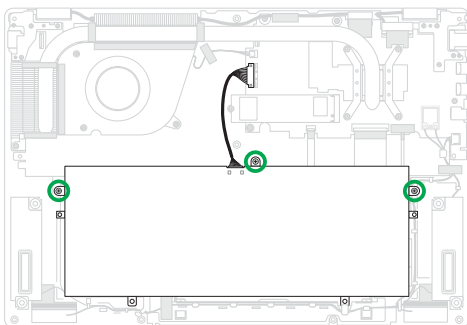


2. Install the battery.
3. Secure the battery using the screw(s) you removed earlier.

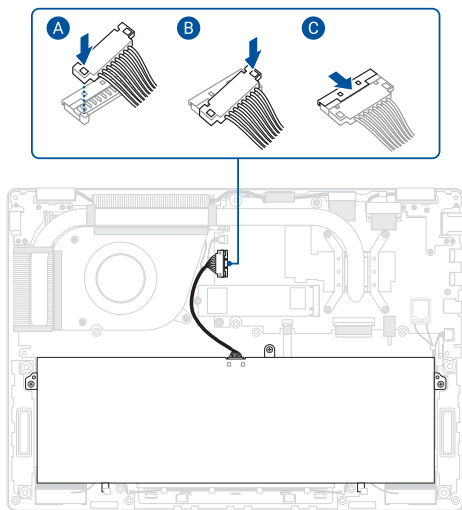
14" model



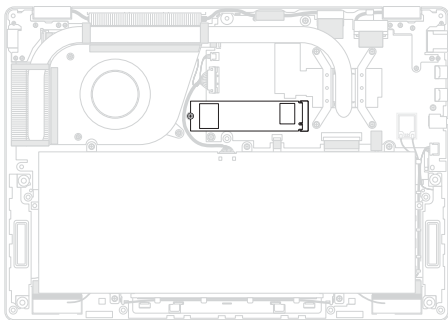
16" model



4. Reconnect the battery power cable.
5. Install the components you removed in the *Before you begin* section.



M.2 SSD module



Before you begin

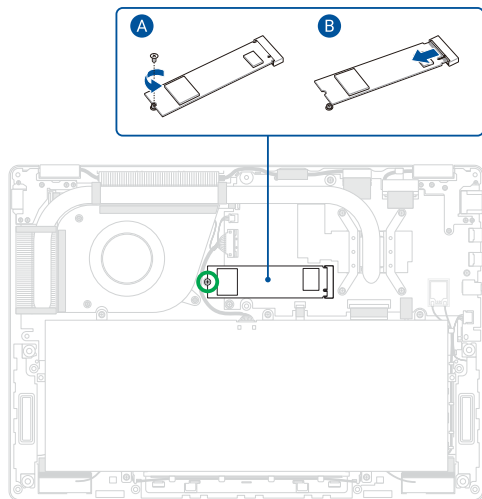
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the bottom cover and disconnect the battery power cable.

Screw list

- ⊕ M2.0 X 2.5L (1pc)

Removal

Remove the screw, then remove the M.2 SSD module from the motherboard.

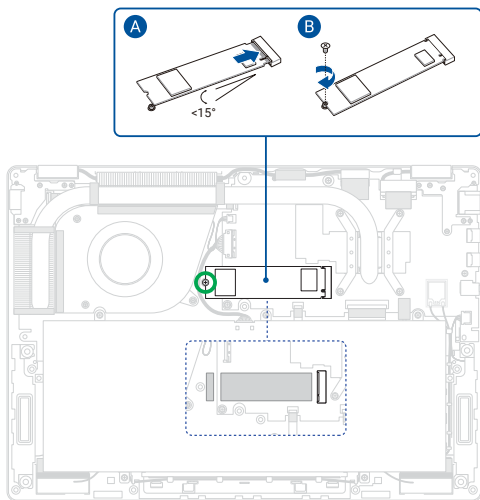


Installation

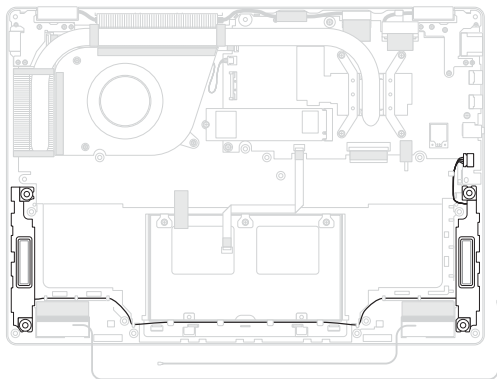
1. Align and insert the M.2 SSD module into the M.2 connector on the motherboard, then secure the M.2 SSD module using the screw you removed earlier.

NOTE: Ensure to put the thermal pad(s) back in place as shown before installing the M.2 SSD module.

2. Install the components you removed in the *Before you begin* section.



Speakers



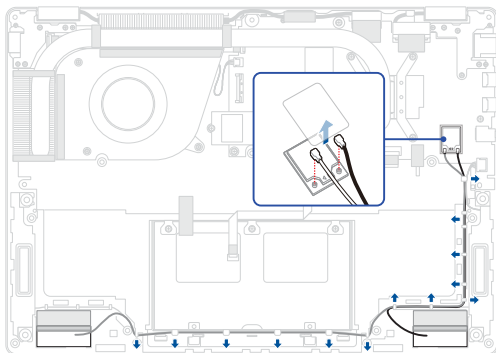
Before you begin

1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the bottom cover and disconnect the battery power cable.
3. Remove the following components:
 - Battery

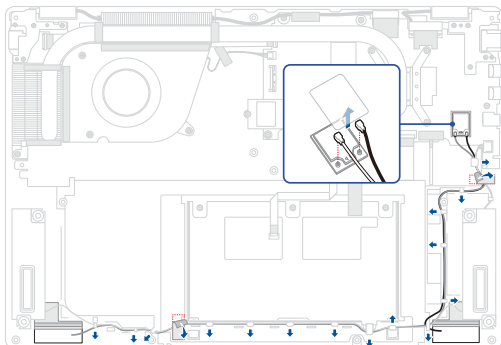
Removal

1. Remove the plastic sheet and disconnect the antenna cable(s), then remove the cable(s) from the cable guide(s).

14" model

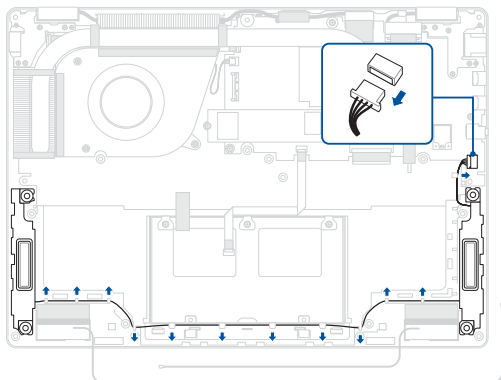


16" model

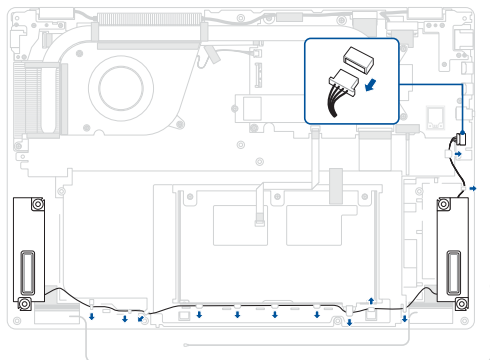


2. Disconnect the speaker connector.
3. Remove the speaker cable from the cable guide(s).
4. Remove the speakers.

14" model



16" model



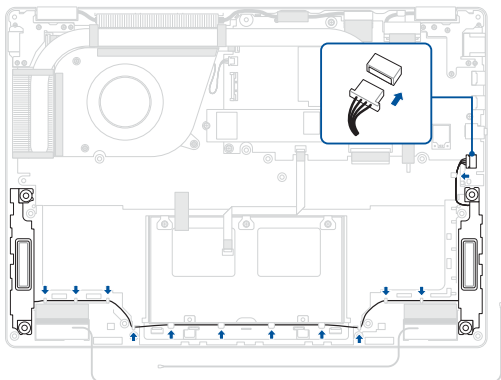
Installation

1. Install the speakers.
2. Route the speaker cable through the cable guide(s).

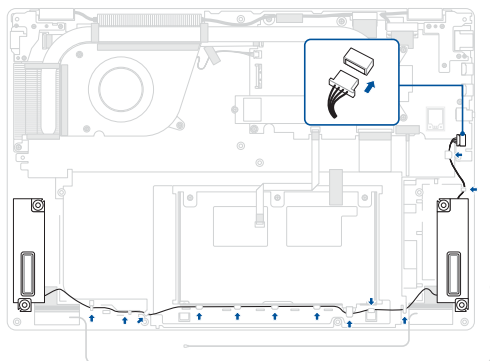
IMPORTANT! Damage may occur if cables are not properly routed through the cable guides. Confirm that all cables are routed through each of the indicated cable guides before proceeding.

3. Reconnect the speaker connector.

14" model



16" model

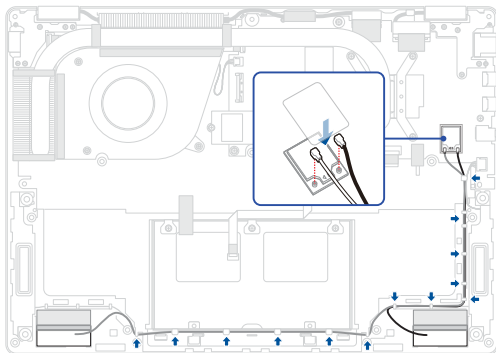


4. Route the antenna cable(s) through the cable guide(s), then reconnect the antenna cable(s) and reattach the plastic sheet.

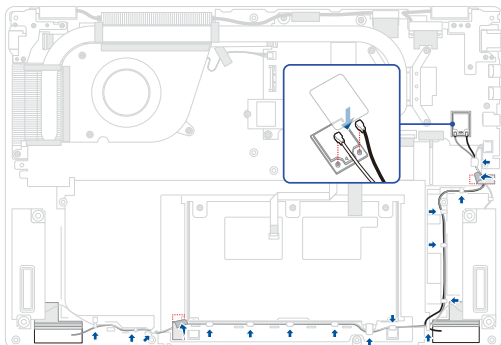
IMPORTANT! Damage may occur if cables are not properly routed through the cable guides. Confirm that all cables are routed through each of the indicated cable guides before proceeding.

5. (On 16" model) Reattach the tape on the antenna cable(s).
6. Install the components you removed in the *Before you begin* section.

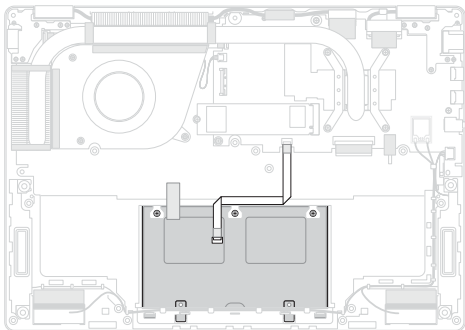
14" model



16" model



Touchpad



Before you begin

1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the bottom cover and disconnect the battery power cable.
3. Remove the following components:
 - Battery

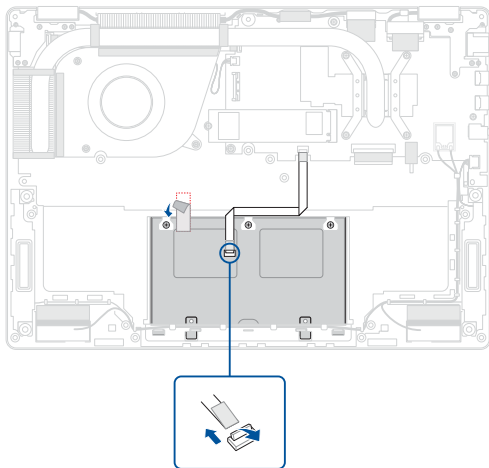
Screw list

- ⊕ M2.0 X 2.0L (3pcs)

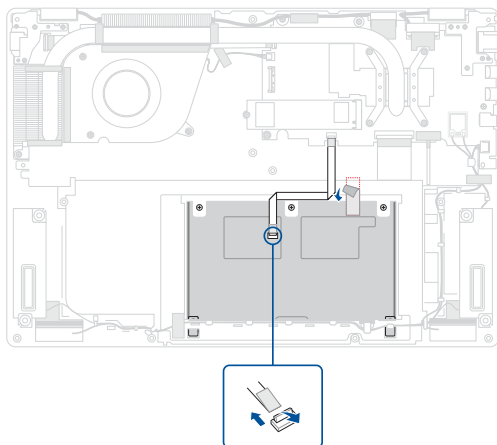
Removal

1. Disconnect the cable and remove the tape.

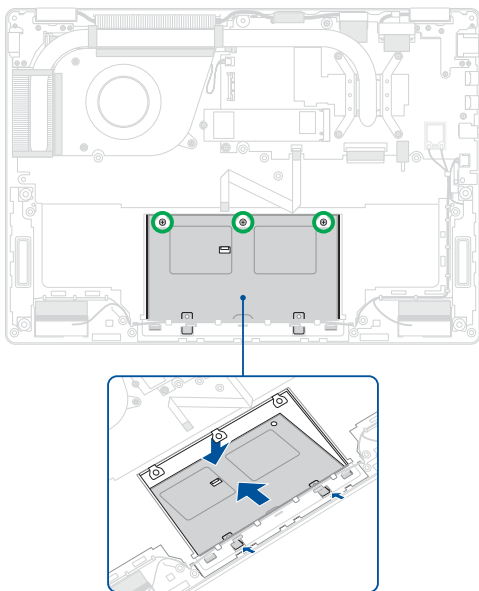
14" model



16" model

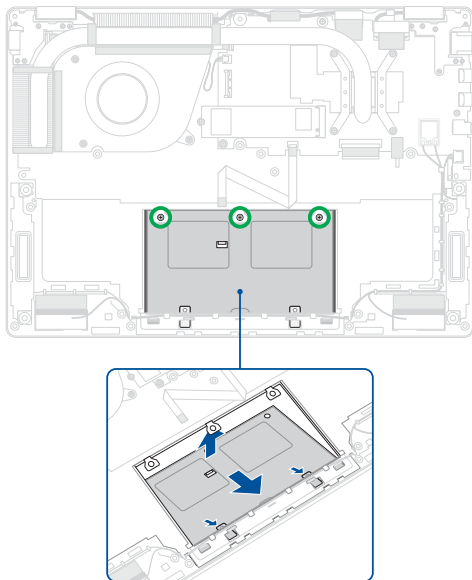


2. Remove the screw(s), then remove the touchpad.



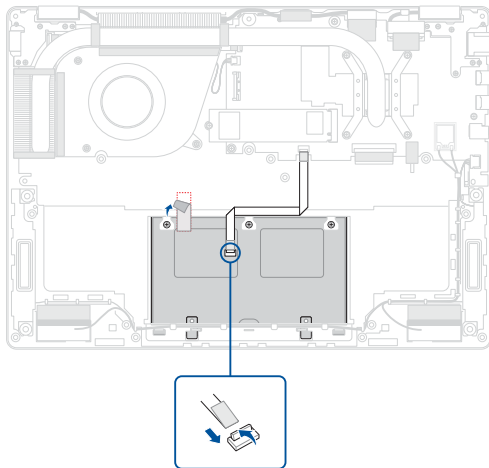
Installation

1. Align and install the touchpad as shown in the illustration below, then secure the touchpad using the screw(s) you removed earlier.

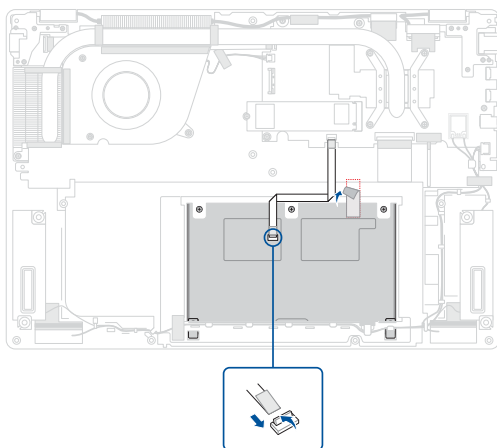


2. Reconnect the cable and attach the tape.
3. Install the components you removed in the *Before you begin* section.

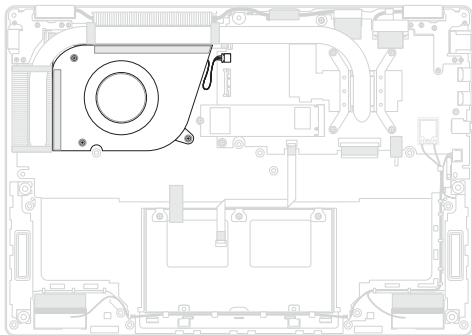
14" model



16" model



Fan module



Before you begin

1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the bottom cover and disconnect the battery power cable.

Screw list

14" model

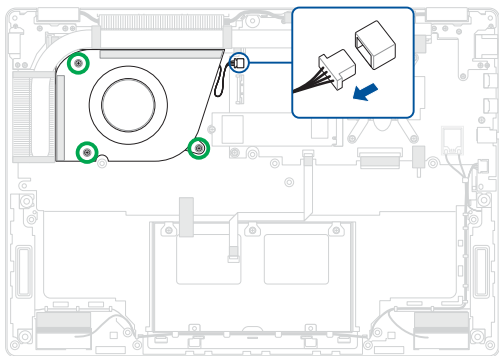
- ⊕ M2.0 X 4.0L (3pcs)

16" model

- ⊕ M2.0 X 3.5L (3pcs)

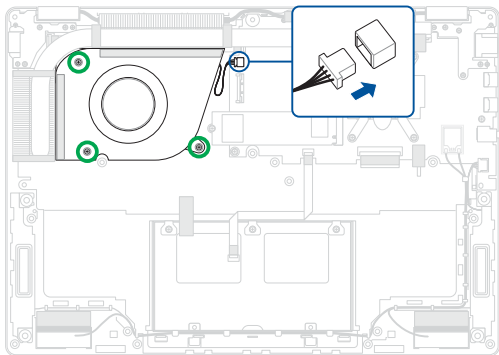
Removal

1. Disconnect the fan connector.
2. Remove the screw(s).
3. Remove the fan.

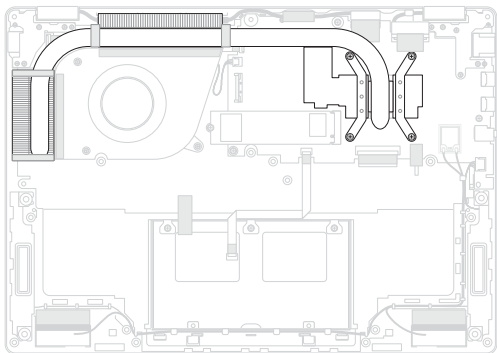


Installation

1. Install the fan.
2. Secure the fan using the screw(s) you removed earlier.
3. Reconnect the fan connector.
4. Install the components you removed in the *Before you begin* section.



Heat sink



Before you begin

IMPORTANT! Thermal paste, thermal pads, liquid metal, or other thermal interface materials must be thoroughly removed and replaced if this component is removed. Ensure that replacement materials are available before proceeding, or contact an authorized service center for assistance.

1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the bottom cover and disconnect the battery power cable.

Screw list

14" model

- ⊕ M2.0 X 2.5L (4pcs)

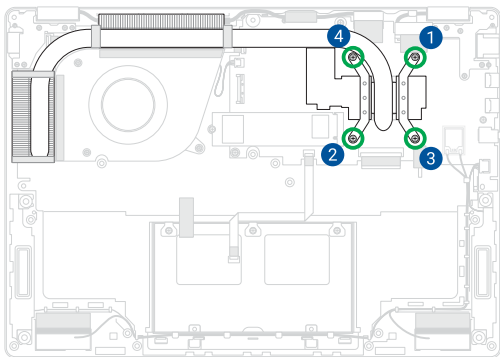
16" model

- ⊕ M2.0 X 2.5L (5pcs)

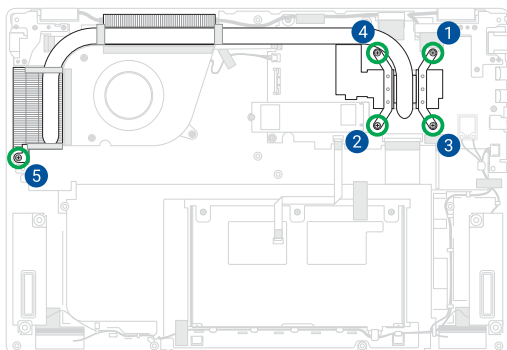
Removal

1. Remove the heat sink screw(s) one by one in the sequence shown in the illustration below.
2. Remove the heat sink.

14" model



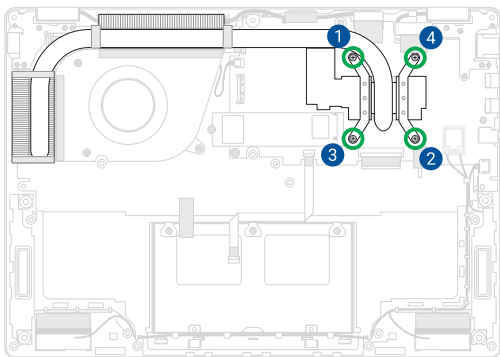
16" model



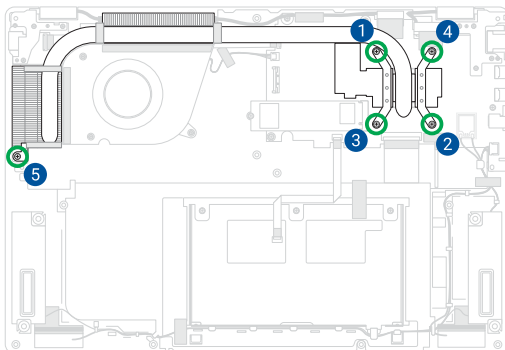
Installation

1. Install the heat sink.
2. Secure the heat sink screw(s) one by one in the sequence shown in the illustration below.
3. Install the components you removed in the *Before you begin* section.

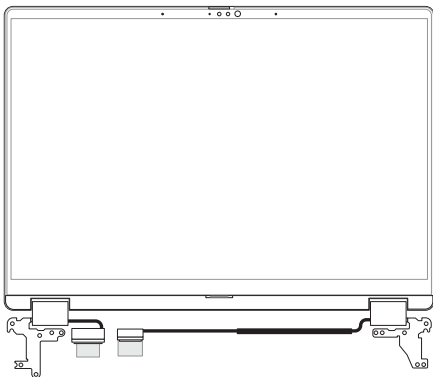
14" model



16" model



Display panel module



Before you begin

IMPORTANT! Do not bend the display panel in any way to avoid risk of display panel leakage.

1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the bottom cover and disconnect the battery power cable.
3. Remove the following components:
 - Heat sink

Screw list

14" model

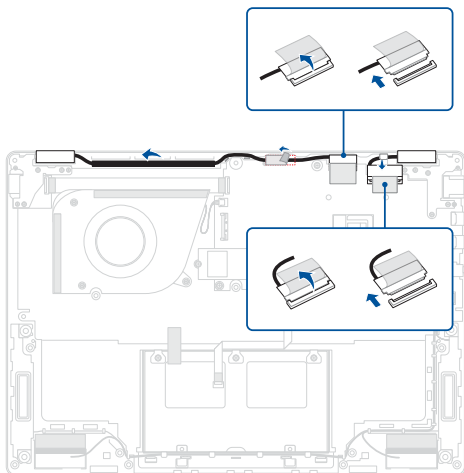
- ⊕ M2.0 X 4.5L (2pcs)
- ⊕ M2.0 X 4.0L (4pcs)
- ⊕ M2.0 X 3.5L (1pcs)

16" model

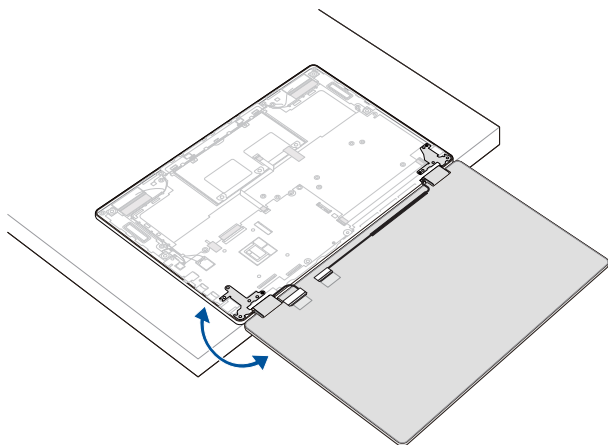
- ⊕ M2.5 X 4.5L (6pcs)
- ⊕ M2.5 X 3.5L (1pc)

Removal

1. Disconnect the cable(s) from the motherboard.
2. Remove the tape, then remove the cable(s) from the cable guide(s).

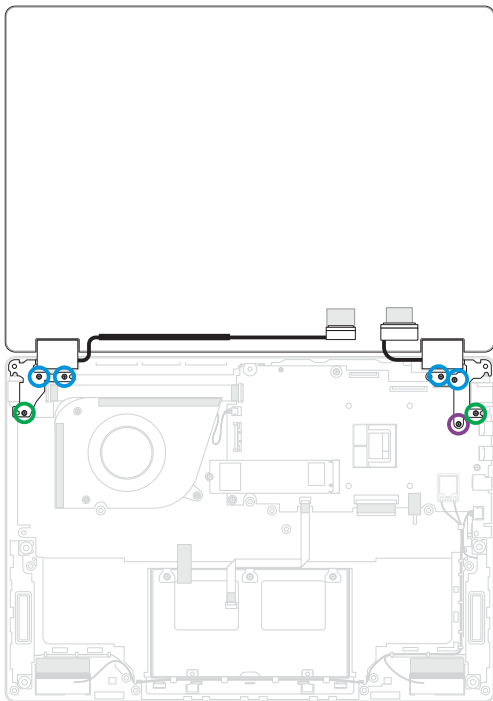


3. Open the display panel module to 180 degrees.

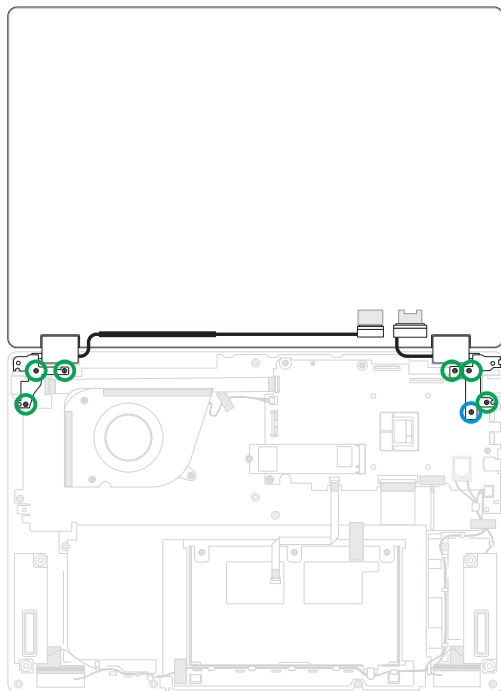


4. Remove the screw(s) from the hinges.

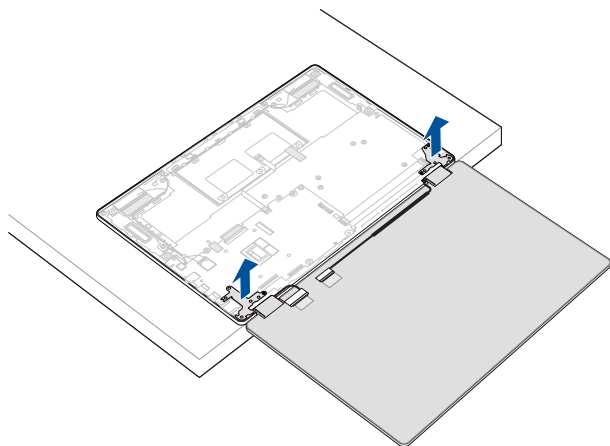
14" model



16" model

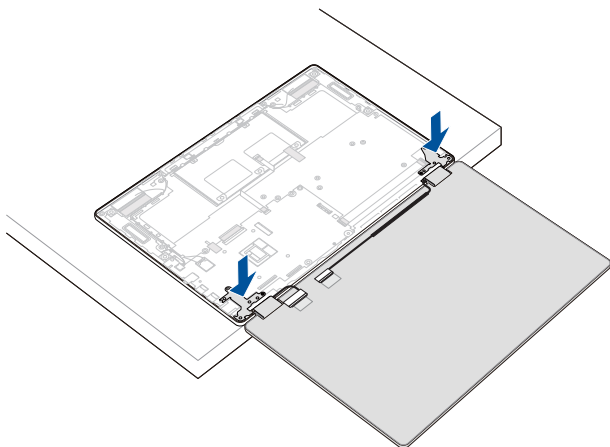


5. Remove the display panel module.



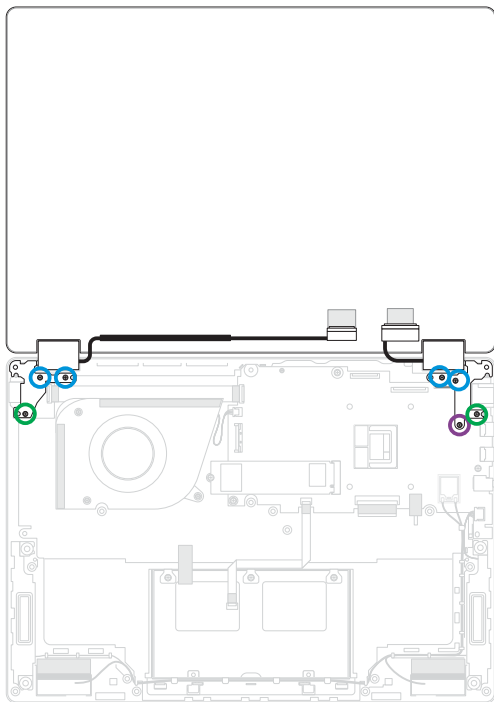
Installation

1. In the orientation shown, align and place the hinges of the display panel module on the screw holes.

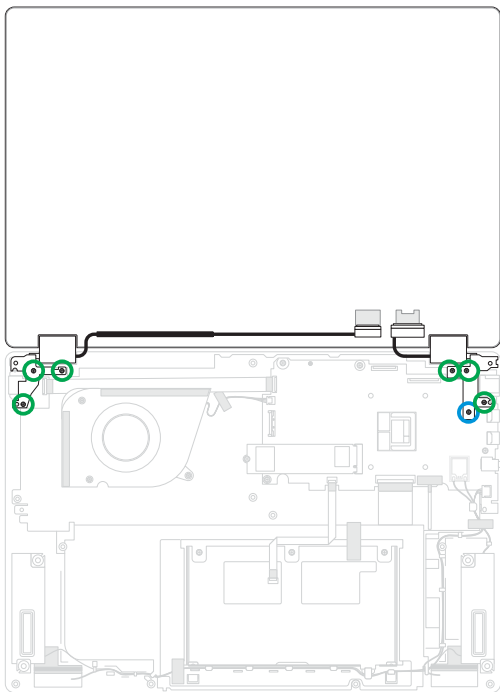


2. Secure the hinges using the screw(s) you removed earlier.

14" model



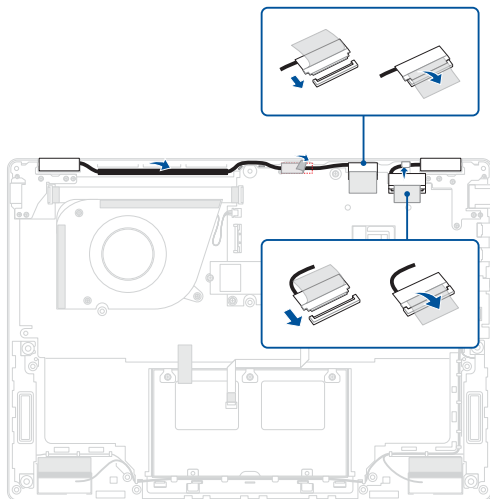
16" model



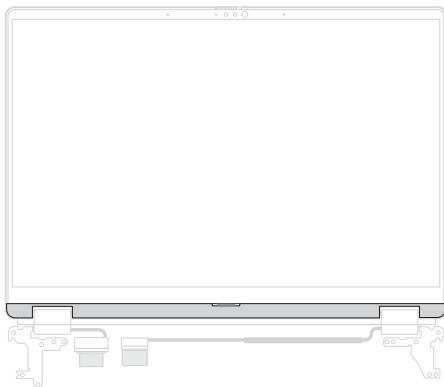
3. Route the cable(s) through the cable guide(s), then reconnect the cable(s).

IMPORTANT! Damage may occur if cables are not properly routed through the cable guides. Confirm that all cables are routed through each of the indicated cable guides before proceeding.

4. Reattach the tape.
5. Install the components you removed in the *Before you begin* section.



Display bezel



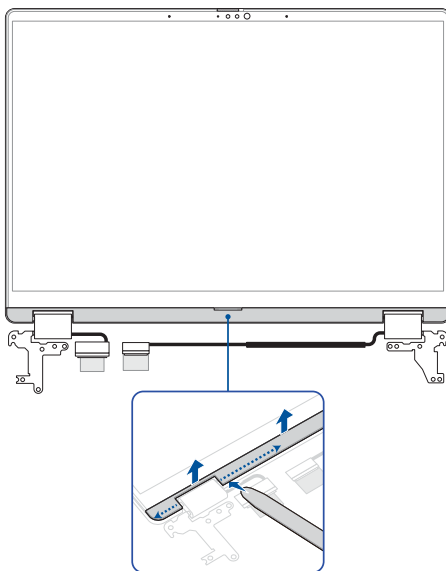
Before you begin

IMPORTANT! This component is fragile. Damage may occur if the service procedure is performed incorrectly. If you are uncertain about proceeding, stop and contact an authorized service center for assistance.

1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the bottom cover and disconnect the battery power cable.
3. Remove the following components:
 - Heat sink
 - Display panel module

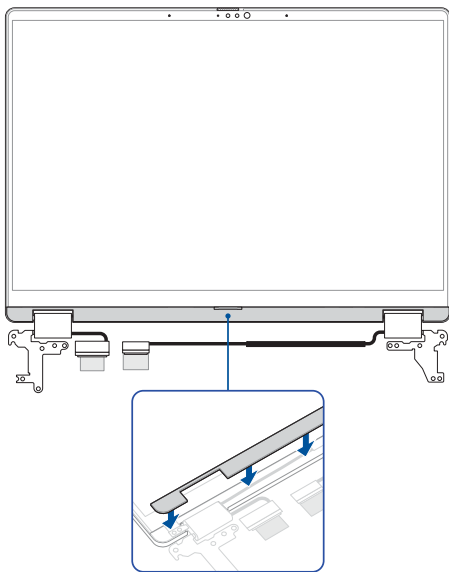
Removal

Carefully pry the bezel loose, then remove the bezel.

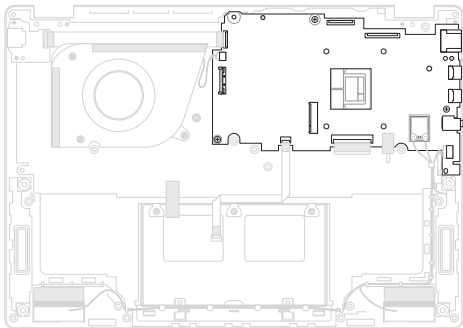


Installation

1. Align and install the bezel.
2. Install the components you removed in the *Before you begin* section.



Motherboard



Before you begin

1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the bottom cover and disconnect the battery power cable.
3. Remove the following components:
 - M.2 SSD module
 - Heat sink
 - Display panel module

Screw list

14" model

- ⊕ M2.0 X 3.0L (1pc)
- ⊕ M2.0 X 2.0L (2pcs)

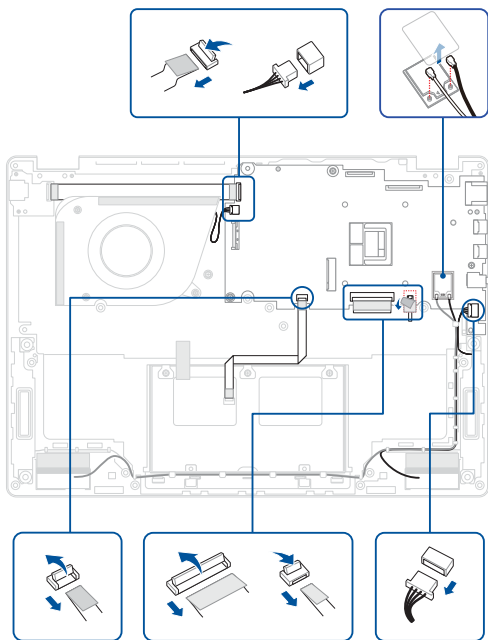
16" model

● ⊕ M2.0 X 3.0L (2pcs)

● ⊕ M2.0 X 2.0L (2pcs)

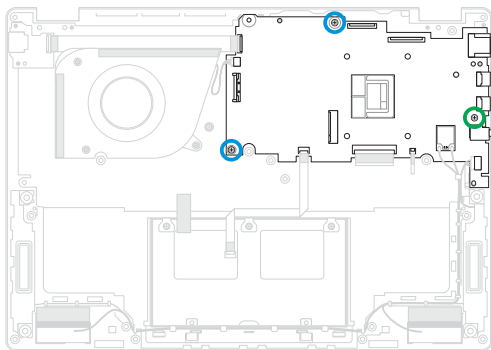
Removal

1. Remove and disconnect the cable(s) as shown in the illustration below.

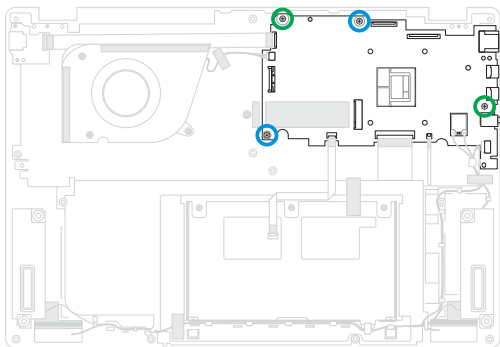


2. Remove the screw(s), then remove the motherboard.

14" model



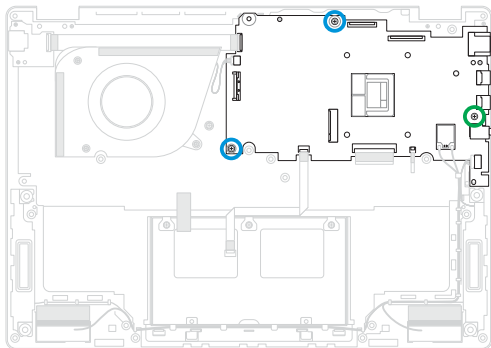
16" model



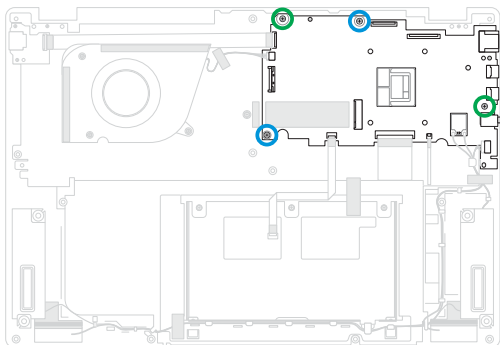
Installation

1. Install the motherboard, then secure the motherboard using the screw(s) you removed earlier.

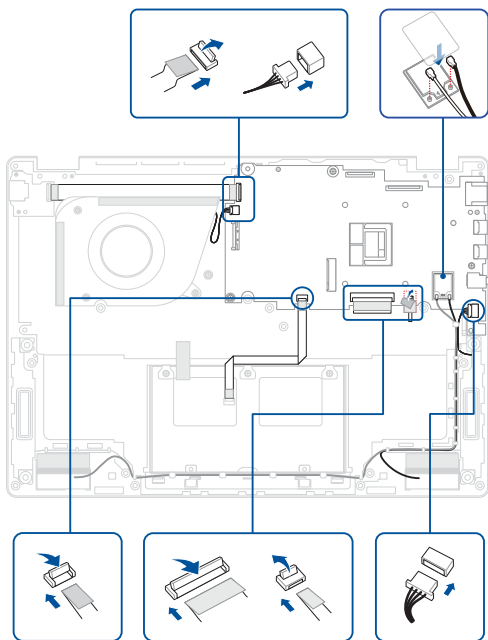
14" model



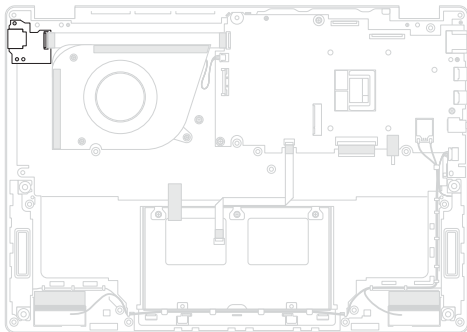
16" model



2. Reconnect the cable(s) as shown in the illustration below.
3. Install the components you removed in the *Before you begin* section.



I/O board

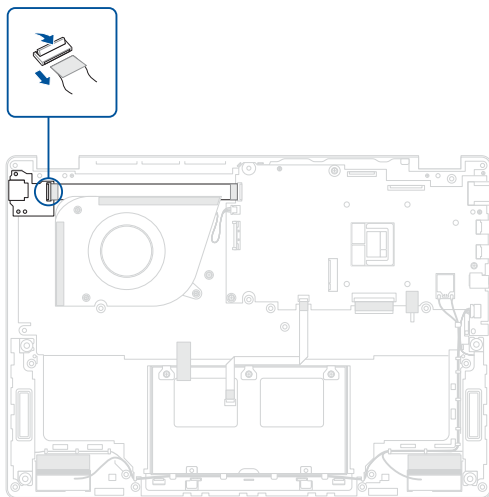


Before you begin

1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the bottom cover and disconnect the battery power cable.
3. Remove the following components:
 - Heat sink
 - Display panel module

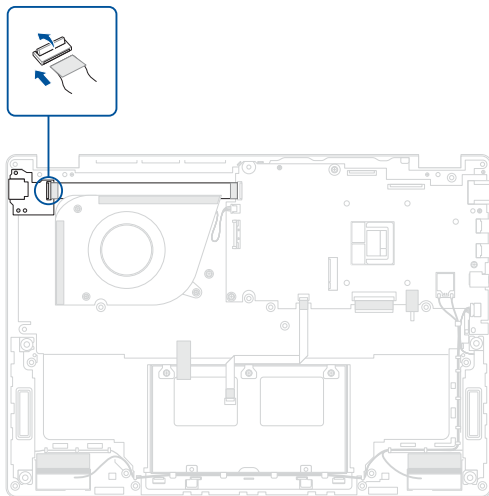
Removal

1. Disconnect the I/O board cable.
2. Remove the I/O board.

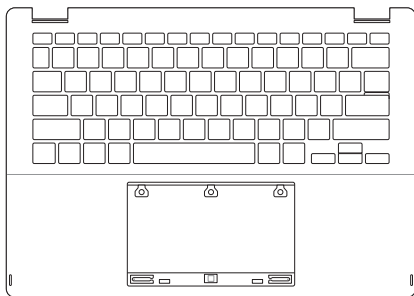


Installation

1. Install the I/O board.
2. Reconnect the I/O board cable.
3. Install the components you removed in the *Before you begin* section.



Keyboard module



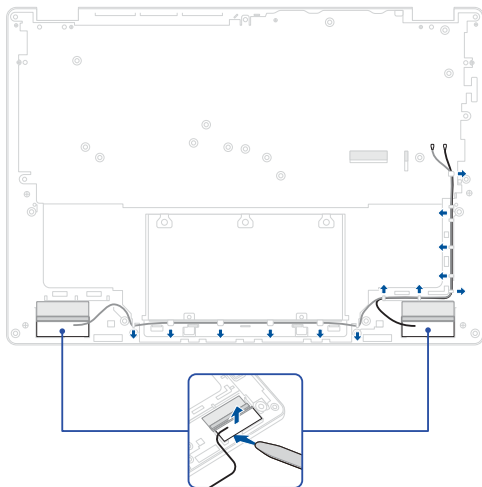
Before you begin

1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the bottom cover and disconnect the battery power cable.
3. Remove the following components:
 - Battery
 - M.2 SSD module
 - Speakers
 - Touchpad
 - Fan module
 - Heat sink
 - Display panel module
 - Motherboard
 - I/O board

Removal

Remove the antenna cable(s) as shown in the illustration below.

IMPORTANT! The antenna cable(s) cannot be reused once removed.

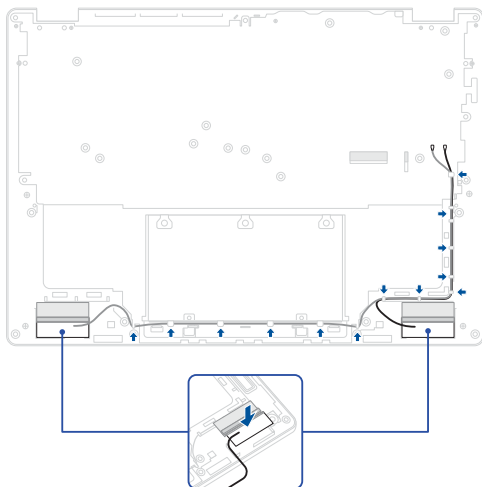


Installation

1. Install the antenna cable(s), then route the cable(s) through the cable guide(s).

IMPORTANT! Damage may occur if cables are not properly routed through the cable guides. Confirm that all cables are routed through each of the indicated cable guides before proceeding.

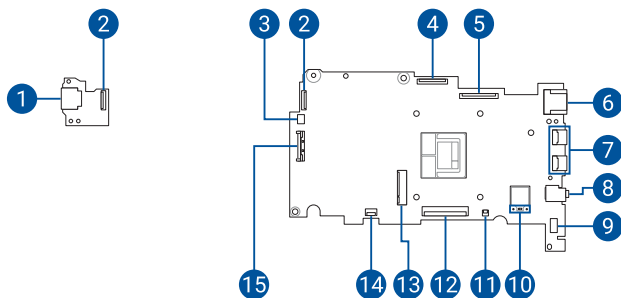
2. Install the components you removed in the *Before you begin* section.



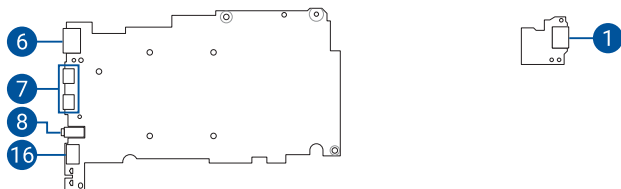
Appendices

Wiring and connection diagrams

Top View



Bottom View



- | | |
|-------------------------------|----------------------------------|
| 1. USB Type-A connector | 9. Speaker connector |
| 2. I/O board connector | 10. WLAN connector |
| 3. Fan connector | 11. Keyboard backlight connector |
| 4. Touch board/CMOS connector | 12. Keyboard connector |
| 5. eDP connector | 13. M.2 SSD connector |
| 6. HDMI connector | 14. Touchpad connector |
| 7. USB Type-C® connector | 15. Battery connector |
| 8. Audio connector | 16. microSD connector |

[illegible]