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IN SEARCH OF INCREDIBLE

Service Manual

ASUS

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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.

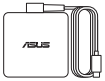
Installation tools

Screwdriver

Plastic blade

Tweezers

Accessories



Power adapter

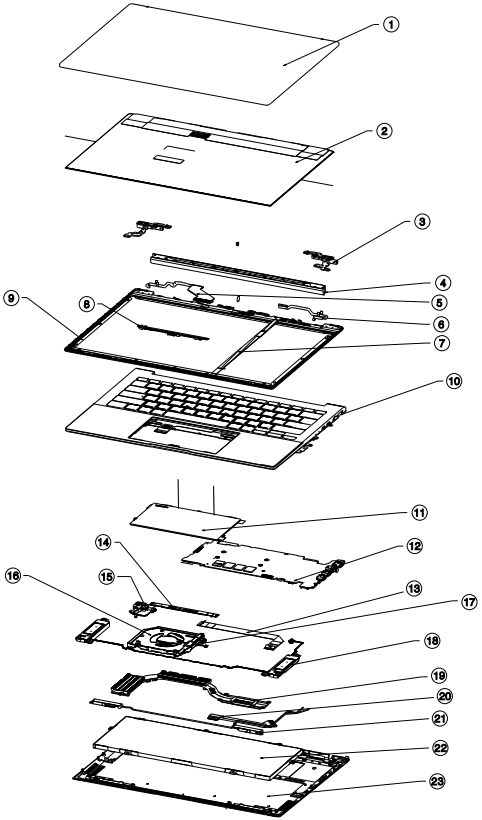
Diagnostic tools

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/.

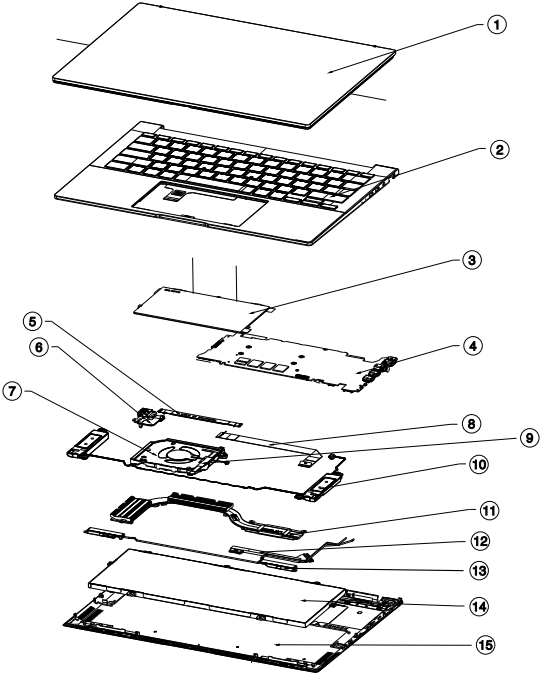
Major components

Non-touch model



1. Top cover
2. Display panel
3. Display hinges
4. Hinge cap
5. eDP cable
6. Camera cable
7. Camera FPC cable
8. Camera module
9. Display bezel
10. Keyboard module
11. Touchpad
12. Motherboard
13. Motherboard FFC cable
14. I/O board FFC cable
15. I/O board
16. Fan
17. Touchpad FFC cable
18. Speakers
19. Heat sink
20. Battery power cable
21. Antenna cables
22. Battery
23. Bottom cover

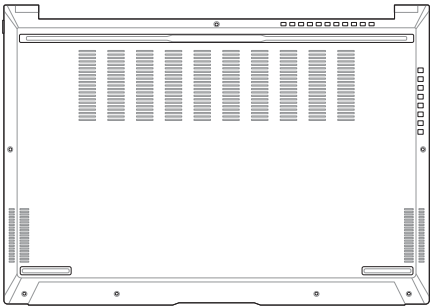
Touch model



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

Chapter 2: Service Procedures

Bottom cover



Before you begin

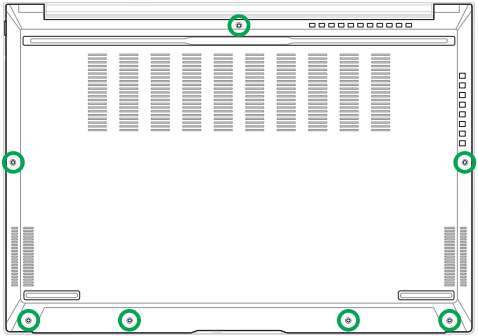
Read the **Safety Precautions** and complete the **Pre-repair Checklist**.

Screw list

- ⊕ M2.0 X 2.5L (7pcs)

Removal

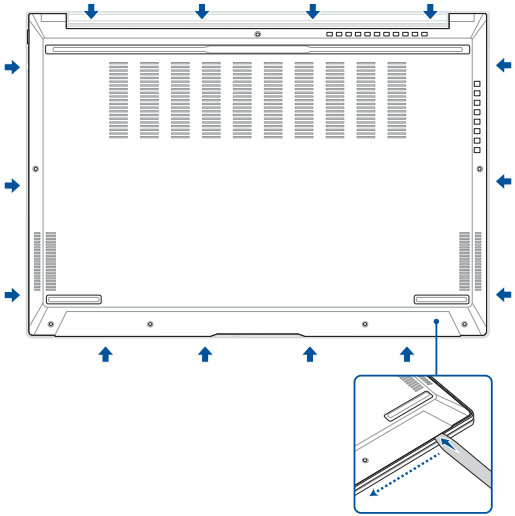
1. Remove the screw(s) from the bottom cover.



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

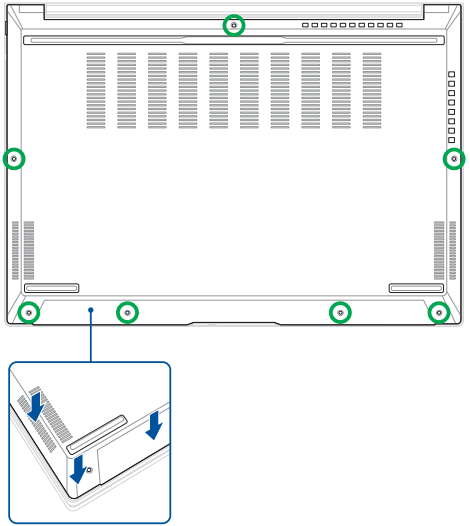
IMPORTANT! Avoid sliding the plastic blade along the side of your device or air vents to prevent damage.

3. Remove the bottom cover.

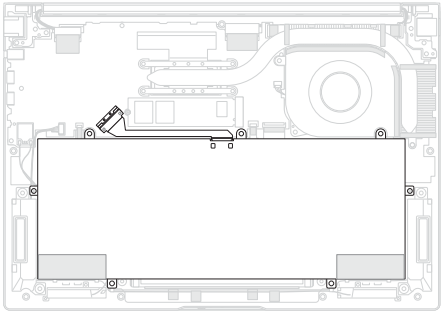


Installation

1. Install the bottom cover.
2. Gently press down on the bottom cover until it clicks into place.
3. Secure the bottom cover using the screw(s) you removed earlier.



Battery



Before you begin

1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
   - Bottom cover

Screw list

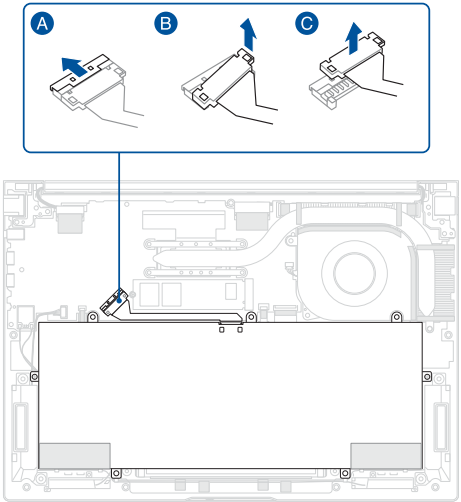
● ⊕ M2.0 X 3.0L (5pcs)

Removal

1. Disconnect the battery power cable.

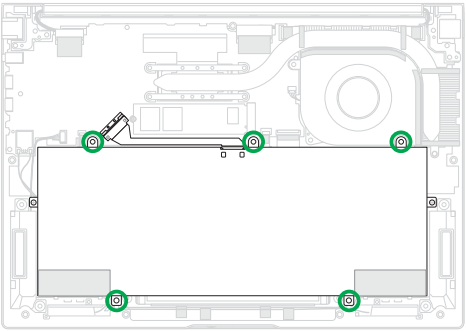
IMPORTANT!

- 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.



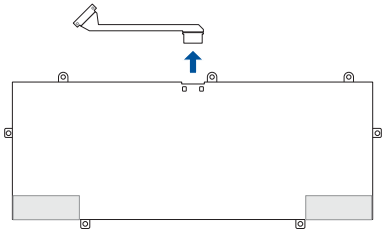
2. Remove the screw(s) from the battery.

3. Remove the battery.



4. Remove the battery power cable.

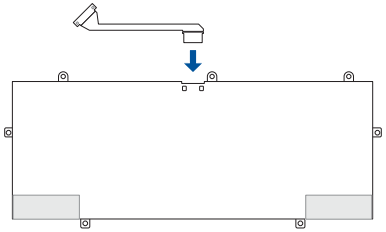
NOTE: This step is only required when you are replacing the existing component with a new one.



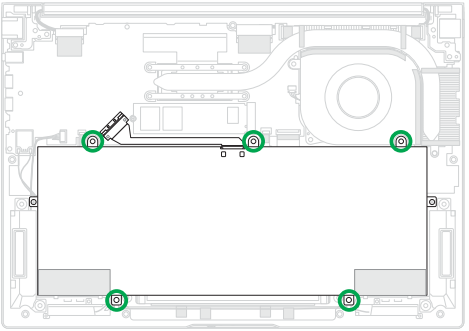
Installation

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.

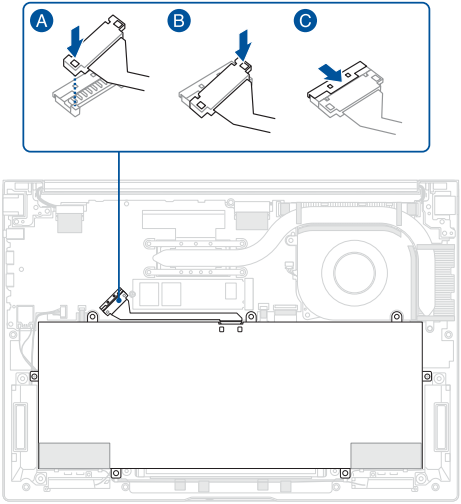


2. Install the battery.
3. Secure the battery using the screw(s) you removed earlier.

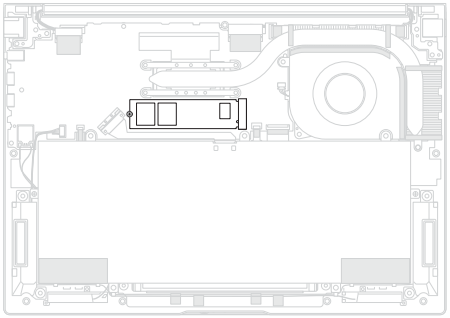


4. Reconnect the battery power cable.

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



M.2 SSD module



Before you begin

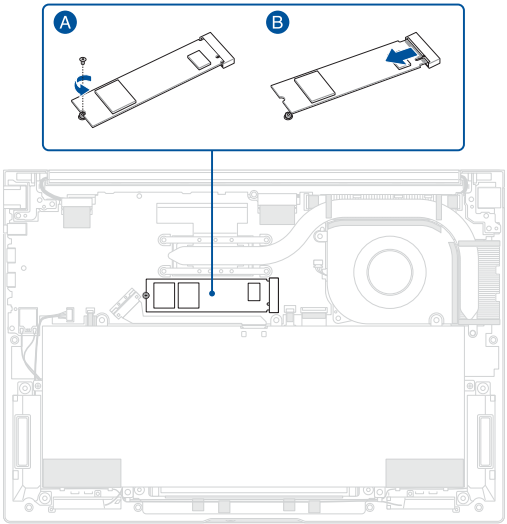
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
   - Bottom cover
   - Battery

Screw list

● ⊕ M2.0 X 2.5L (1pc)

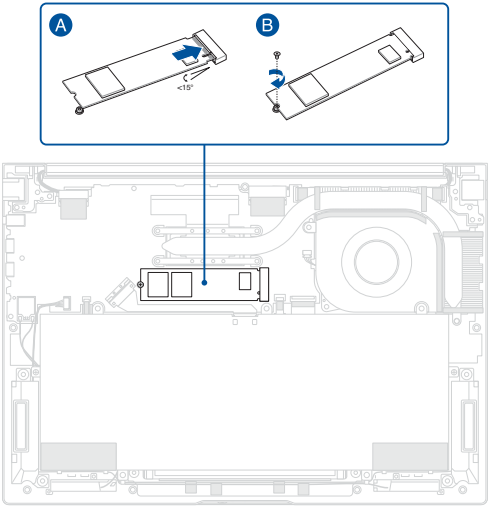
Removal

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

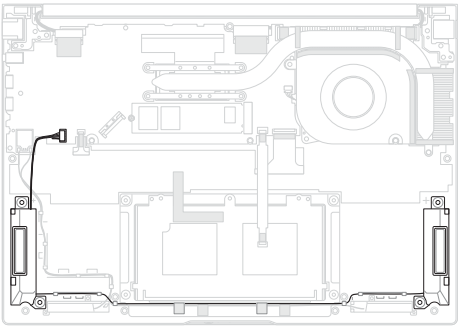


Installation

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



Speakers

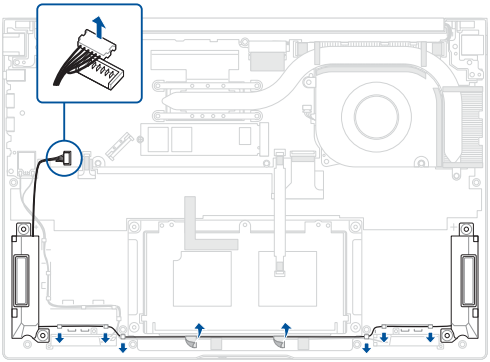


Before you begin

1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
   - Bottom cover
   - Battery

Removal

1. Disconnect the speaker connector.
2. Remove the tape, then remove the speaker cable from the cable guide(s).
3. Remove the speakers.

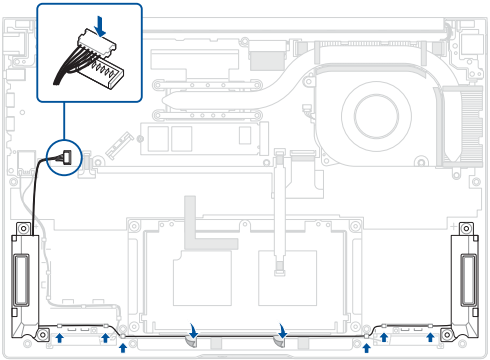


Installation

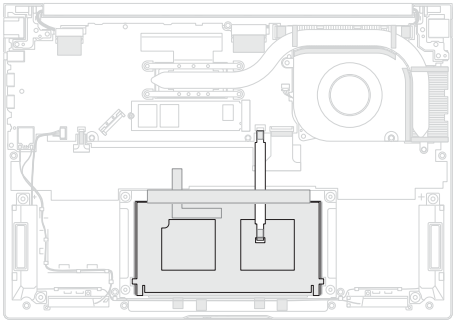
1. Install the speakers.
2. Route the speaker cable through the cable guide(s) and reattach the tape.

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



Touchpad



Before you begin

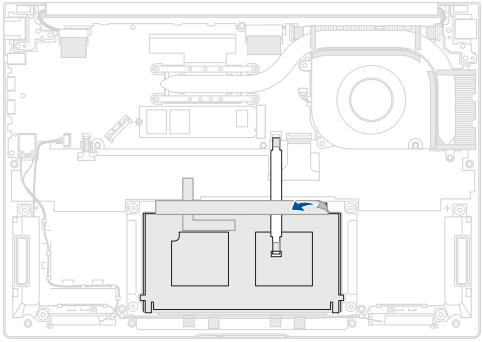
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
   - Bottom cover
   - Battery

Screw list

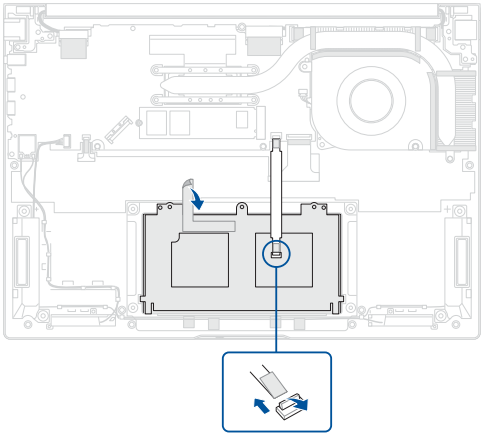
- M1.6 X 2.0L (3pcs)

Removal

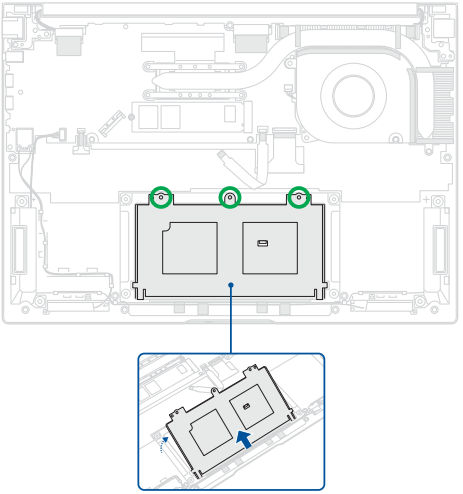
1. Remove the sponge.



2. Disconnect the cable from the touchpad and remove the tape.

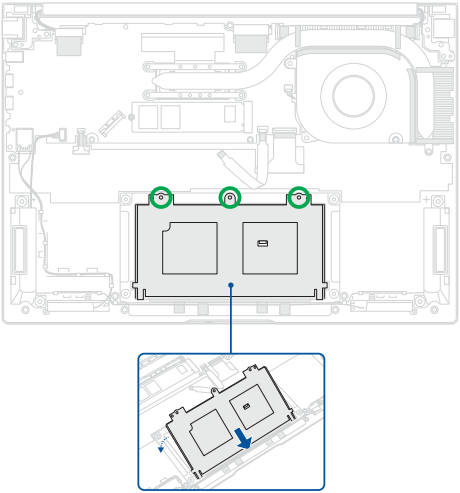


3. Remove the screw(s), then remove the touchpad.

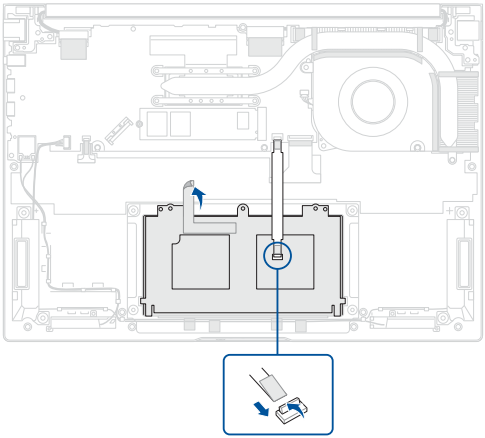


Installation

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

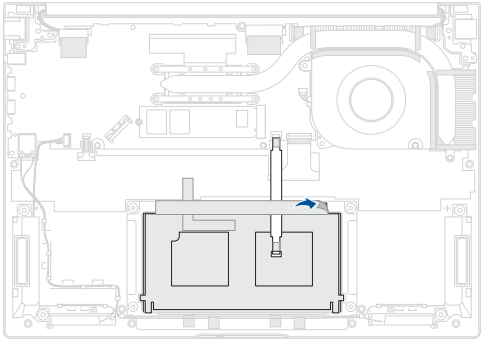


2. Reconnect the cable to the touchpad and reattach the tape.

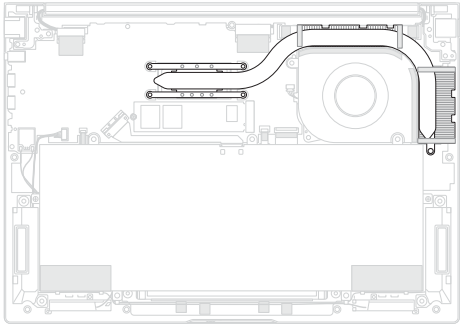


3. Reattach the sponge.

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 following components:
   - Bottom cover
   - Battery

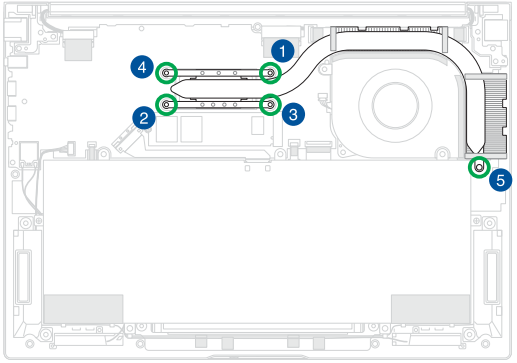
Screw list

● ⊕ M2.0 X 2.5L (5pcs)

Removal

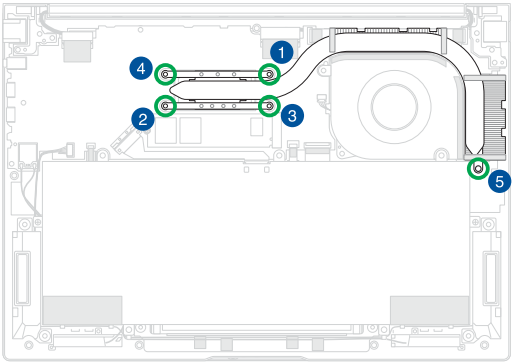
1. Remove the heat sink screw(s) one by one in the sequence shown in the illustration below.
2. Remove the heat sink.

IMPORTANT! Vertically lift the heat sink using the left side of the heat sink to prevent damage.

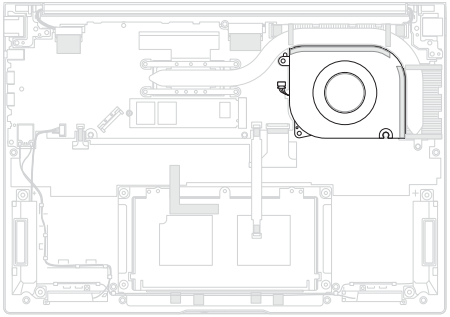


Installation

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.



Fan module



Before you begin

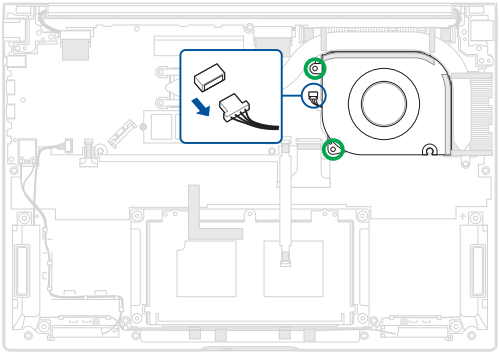
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
   - Bottom cover
   - Battery

Screw list

● ⊕ M2.0 X 4.5L (2pcs)

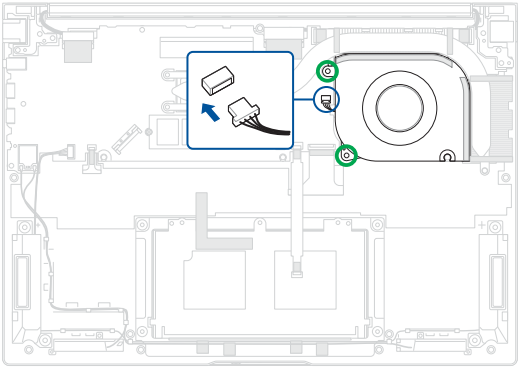
Removal

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

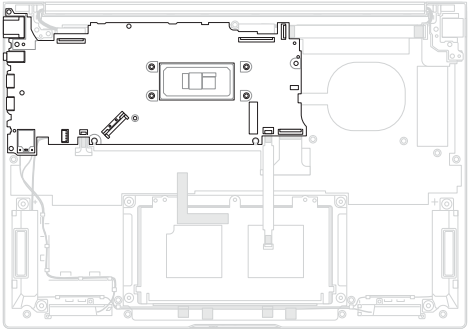


Installation

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.



Motherboard



Before you begin

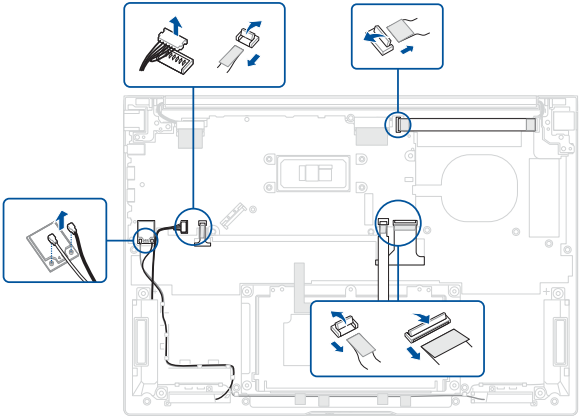
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
    - Bottom cover
    - Battery
    - M.2 SSD module
    - Heat sink
    - Fan module

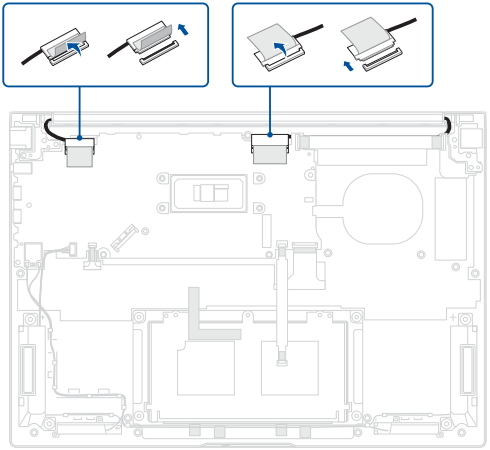
Screw list

- M2.0 X 4.5L (1pc)
- M2.5 X 4.0L (2pcs)
- M2.0 X 3.0L (2pcs)
- M1.6 X 3.0L (1pc)

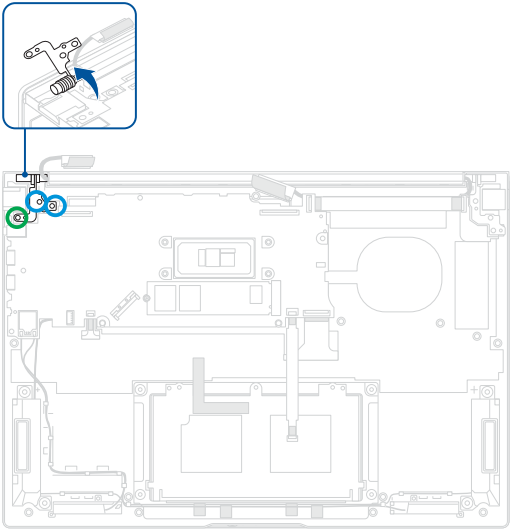
Removal

1. Disconnect the cable(s) from the motherboard.

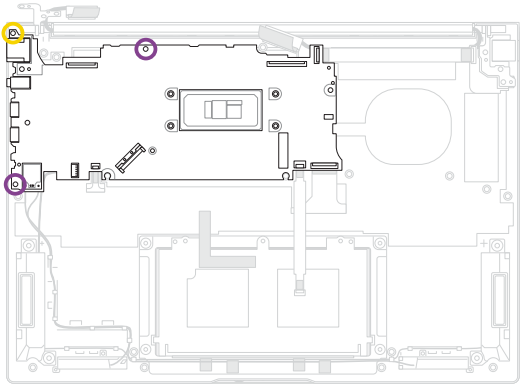




2. Remove the screw(s) from the hinge on the left side, then lift the hinge to a 90-degree position.

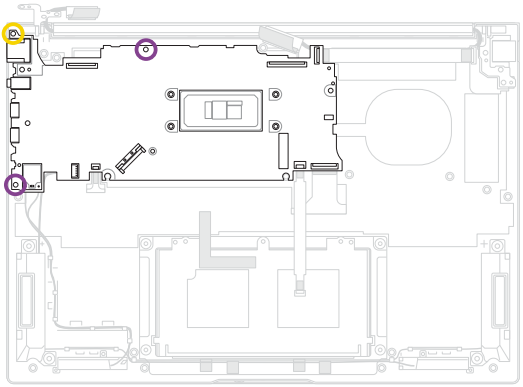


3. Remove the screw(s) from the motherboard, then remove the motherboard.

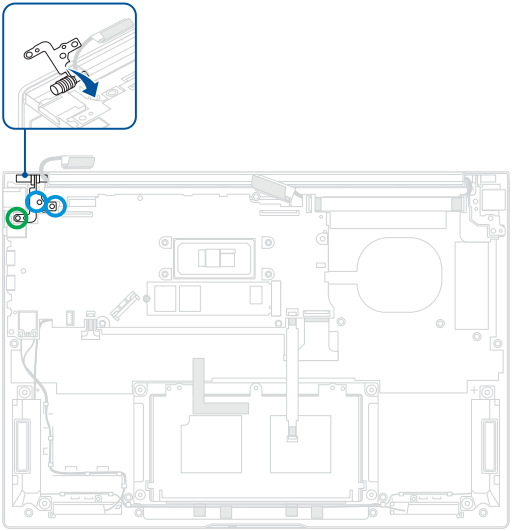


Installation

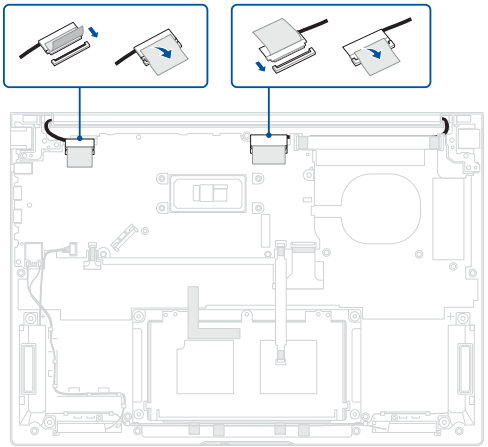
1. Align and install the motherboard, then secure the motherboard using the screw(s) you removed earlier.

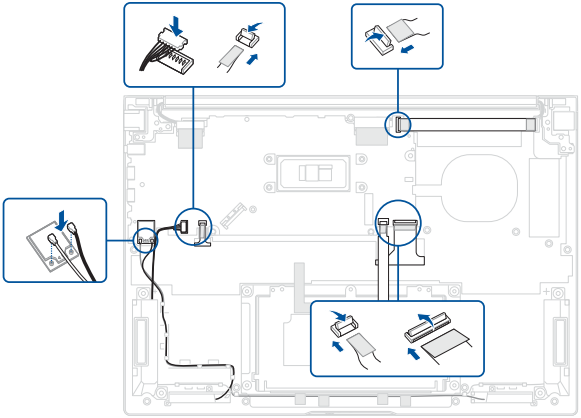


2. Place the hinge of the display panel module on the screw holes, then secure the hinge using the screw(s) you removed earlier.

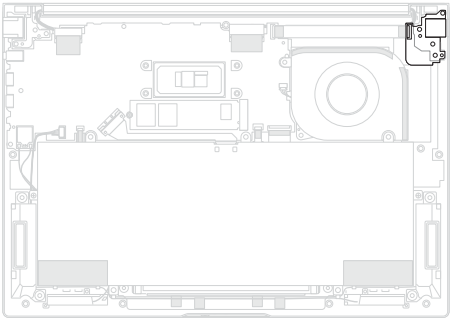


3. Reconnect the cable(s) to the motherboard.
4. Install the components you removed in the *Before you begin* section.





I/O board



Before you begin

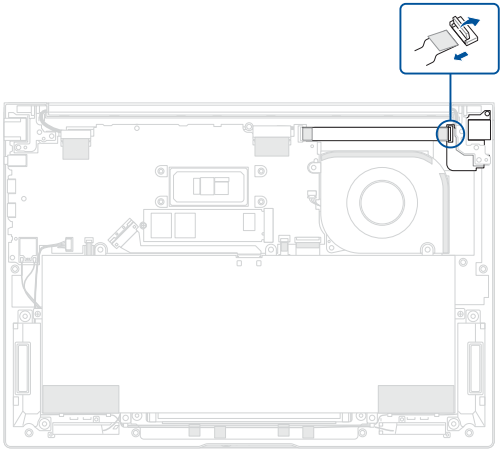
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
   - Bottom cover
   - Battery
   - Heat sink

Screw list

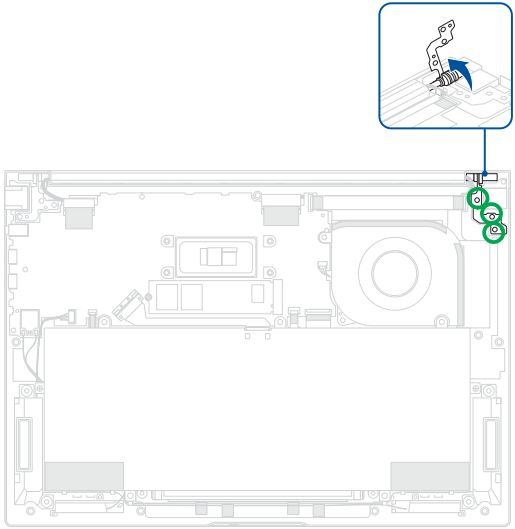
- M2.5 X 5.0L (3pcs)
- M1.6 X 3.0L (1pc)

Removal

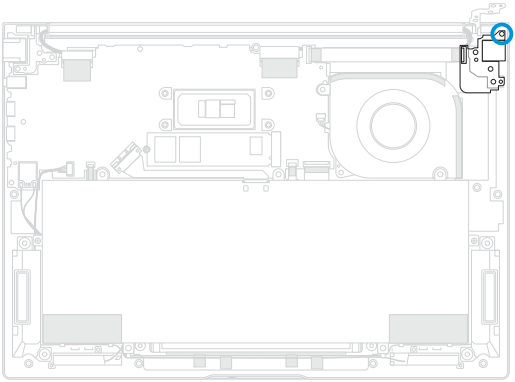
1. Disconnect the cable from the I/O board.



2. Remove the screw(s) from the hinge on the right side, then lift the hinge to a 90-degree position.

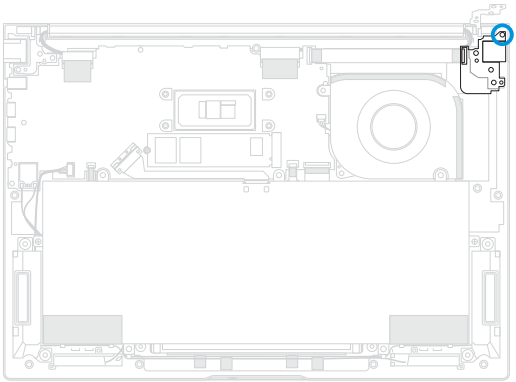


3. Remove the screw from the I/O board, then remove the I/O board.

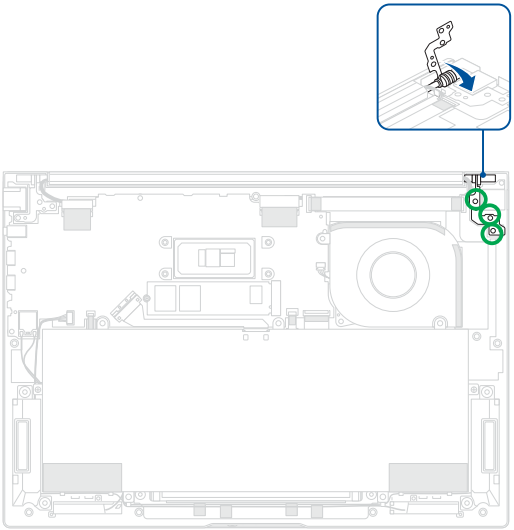


Installation

1. Install the I/O board, then secure the I/O board using the screw you removed earlier.

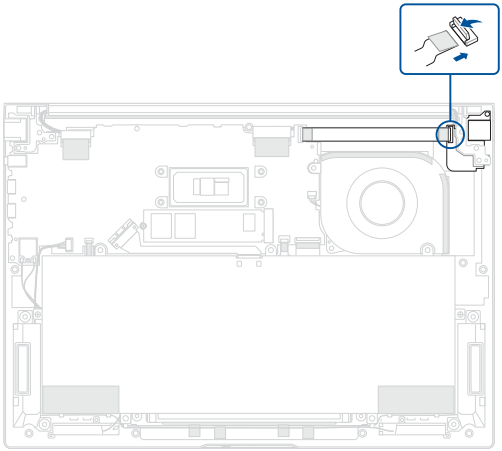


2. Place the hinge of the display panel module on the screw holes, then secure the hinge using the screw(s) you removed earlier.

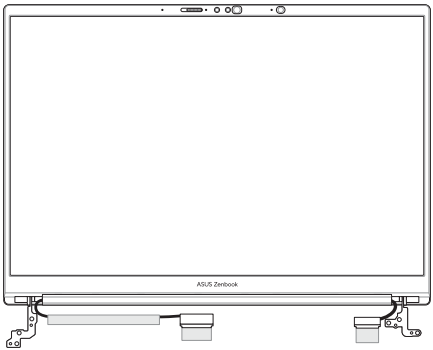


3. Reconnect the cable to the I/O board.

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



Display panel module



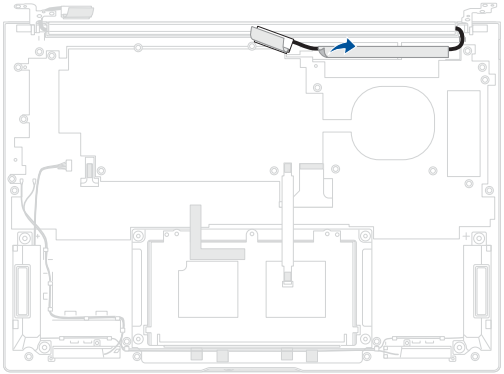
Before you begin

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

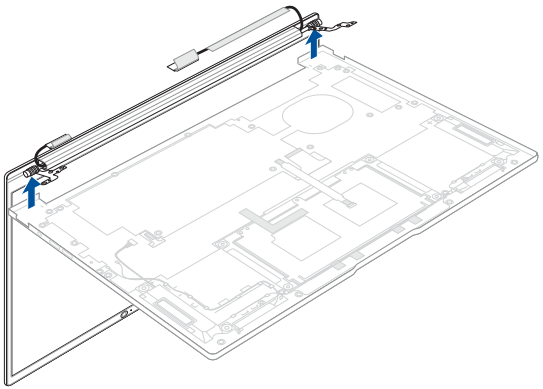
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
   - Bottom cover
   - Battery
   - Heat sink
   - Fan module
   - Motherboard
   - I/O board

Removal

1. Remove the tape, then remove the cable.

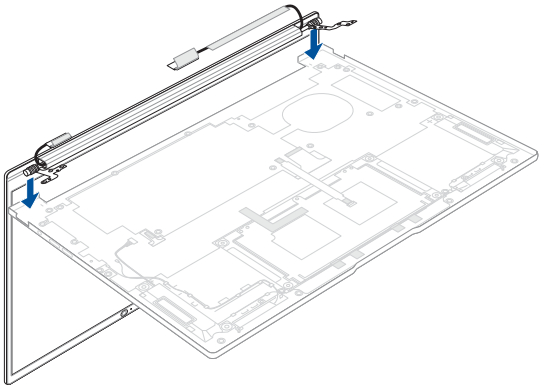


2. In the orientation shown, remove the display panel module.



Installation

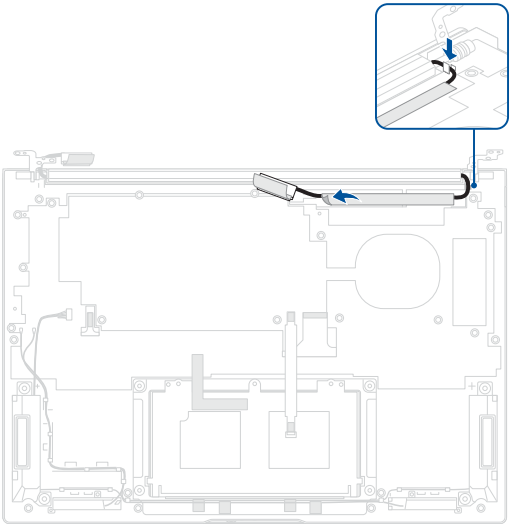
1. In the orientation shown, align and install the display panel module.



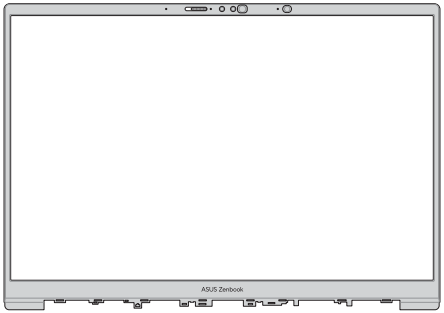
2. Install the cable and route the cable through the cable guide, then reattach the tape.

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



Display bezel (Non-touch model)



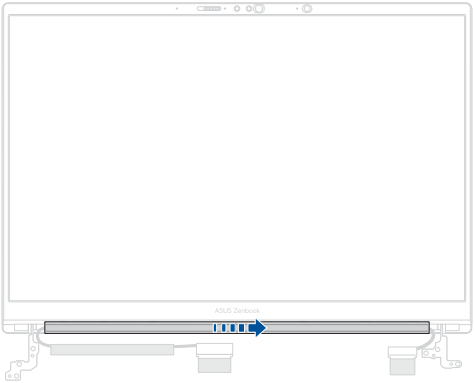
Before you begin

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.

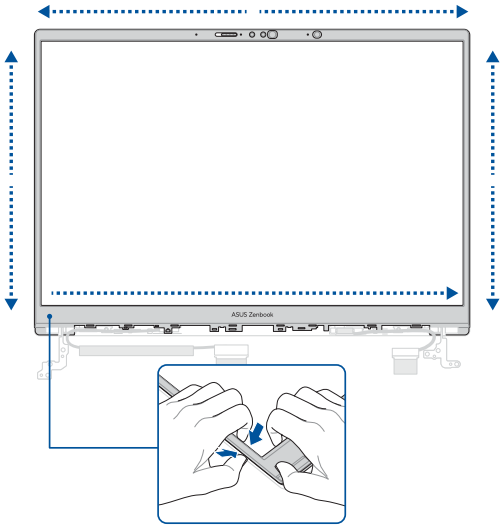
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
   - Bottom cover
   - Battery
   - Heat sink
   - Fan module
   - Motherboard
   - I/O board
   - Display panel module

Removal

1. Remove the hinge cap as shown in the illustration below.



2. Carefully pry the bezel loose, then remove the bezel.

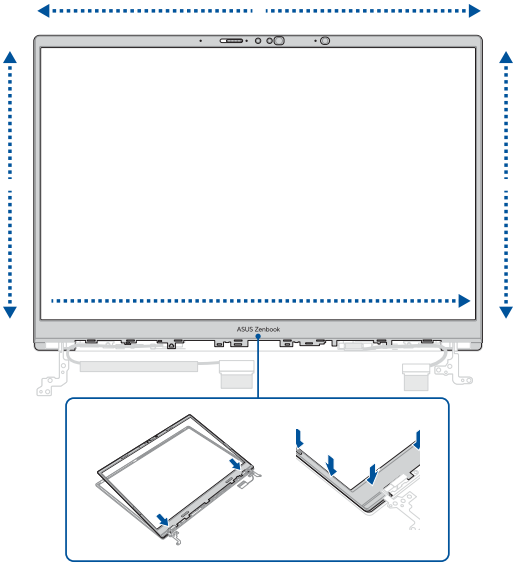


Installation

1. Remove the release liner(s) from the tape on the bezel.

NOTE: The tape cannot be reused. Remove any adhesive residue and use new tape when reinstalling components.

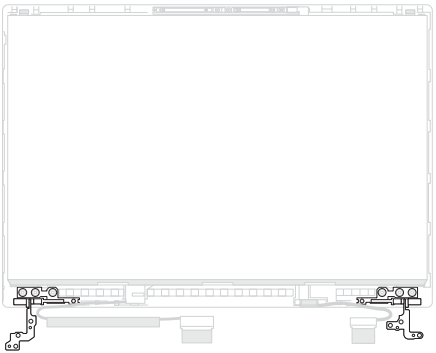
2. Align and install the bezel.



3. Install the hinge cap.

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

Display hinges (Non-touch model)



Before you begin

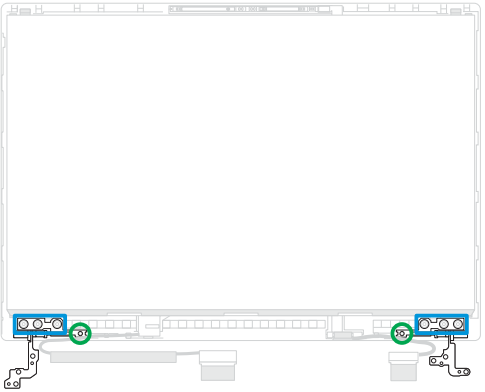
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
   - Bottom cover
   - Battery
   - Heat sink
   - Fan module
   - Motherboard
   - I/O board
   - Display panel module
   - Display bezel (Non-touch model)

Screw list

- M2.0 X 3.0L (2pcs)
- M2.0 X 2.0L (6pcs)

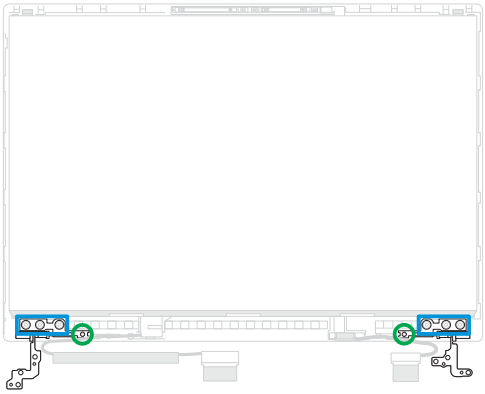
Removal

Remove the screw(s), then remove the hinges.

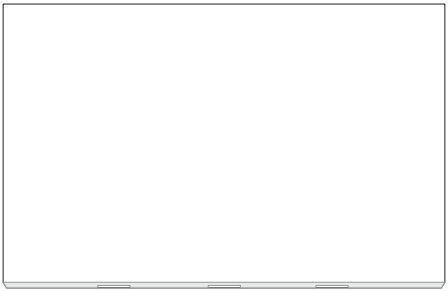


Installation

1. Install the hinges, then secure the hinges using the screw(s) you removed earlier.
2. Install the components you removed in the *Before you begin* section.



Display panel (Non-touch model)



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.
- 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 following components:

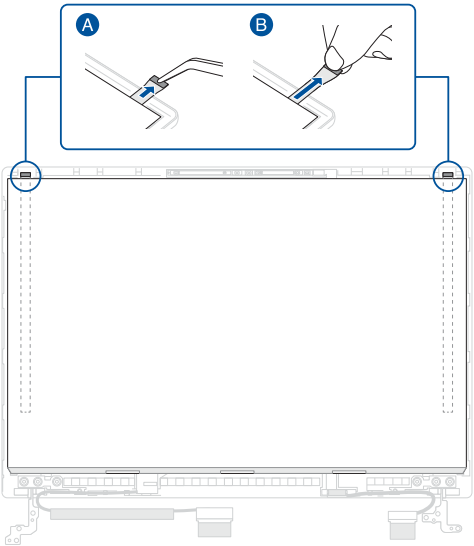
   - Bottom cover
   - Battery
   - Heat sink
   - Fan module
   - Motherboard
   - I/O board
   - Display panel module
   - Display bezel (Non-touch model)

Removal

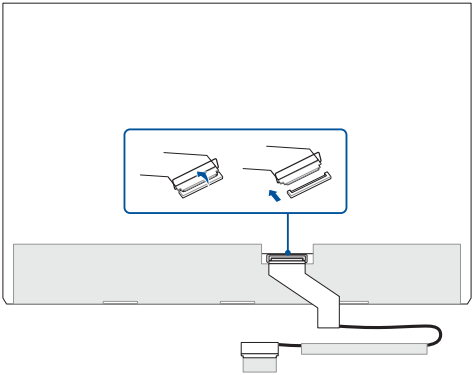
1. Locate the tip of the stretch release tape, then carefully pull out the stretch release tape as shown in the illustration below.

IMPORTANT! Maintain a flat angle and constant speed when pulling the stretch release tape. Excessive force may damage the stretch release tape and prevent removal of the display panel.

2. Remove the display panel from the top cover.

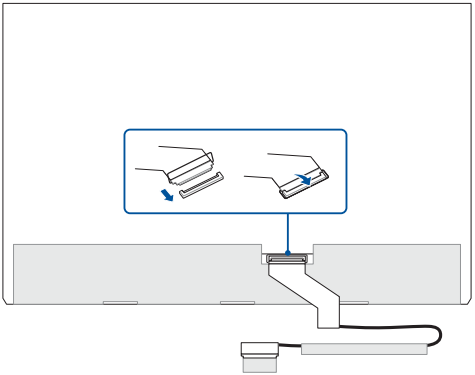


3. Disconnect the cable from the rear side of the display panel.

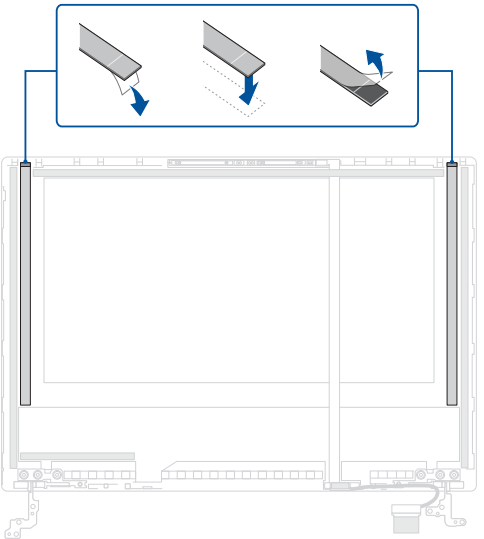


Installation

1. Reconnect the cable to the rear side of the display panel.

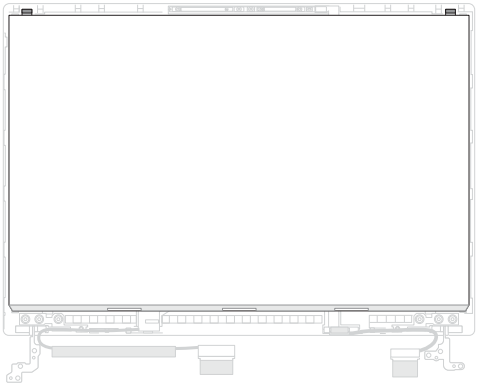


2. Place the top cover in the orientation shown in the illustration below.
3. Remove the release liner(s) from the bottom side of the stretch release tape.
4. Align and attach the stretch release tape to the top cover.
5. Remove the release liner(s) from the top side of the stretch release tape.

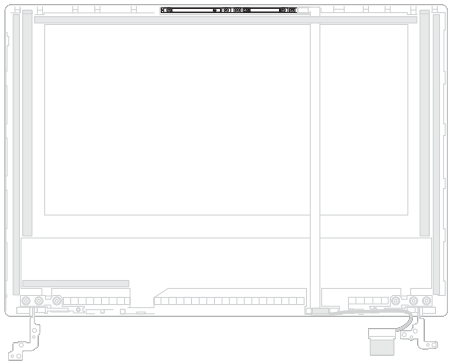


6. Align and install the display panel.

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



Camera module (Non-touch model)



Before you begin

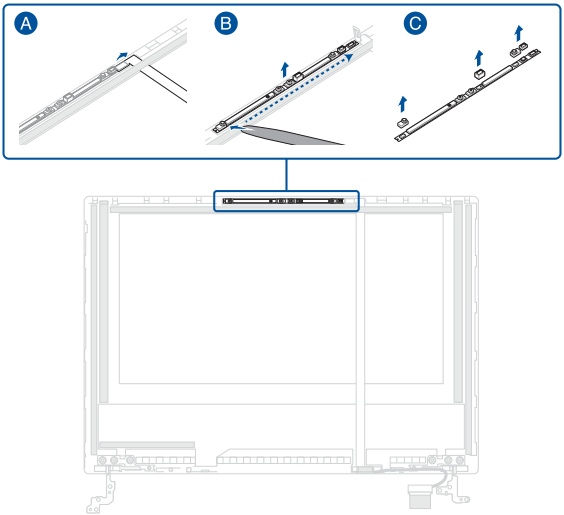
IMPORTANT! This component is fragile. Damage may occur if the service procedure is performed incorrectly. If you are uncertain about proceeding, stop and contact an authorized service center for assistance.

1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
   - Bottom cover
   - Battery
   - Heat sink
   - Fan module
   - Motherboard

- I/O board
- Display panel module
- Display bezel (Non-touch model)
- Display panel (Non-touch model)

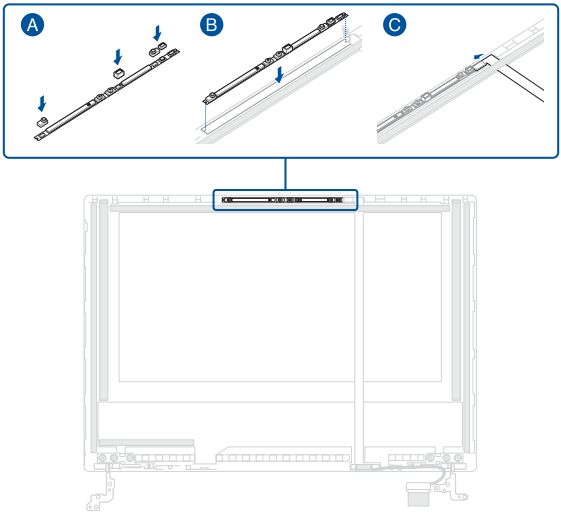
Removal

Disconnect the cable from the camera module and carefully remove the camera module, then remove the rubber caps from the camera module.

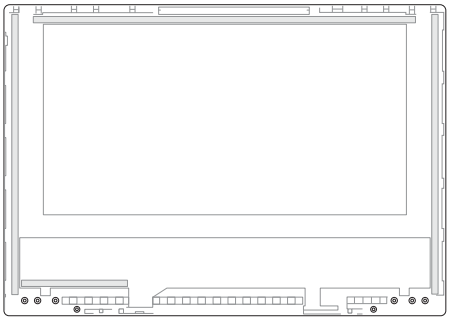


Installation

1. Attach the rubber caps to the camera module, then install the camera module and reconnect the cable to the camera module.
2. Install the components you removed in the *Before you begin* section.



Top cover (Non-touch model)

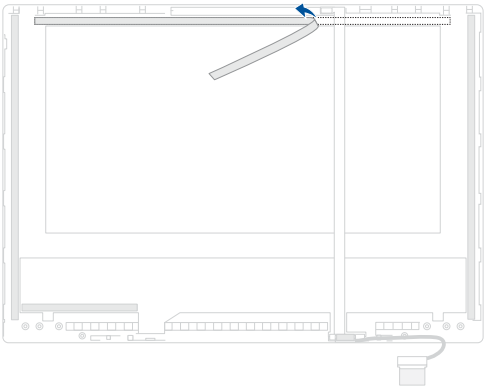


Before you begin

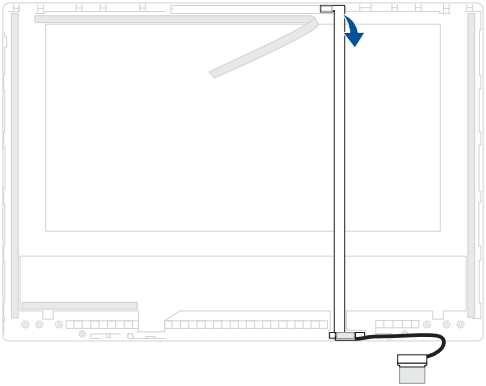
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
    - Bottom cover
    - Battery
    - Heat sink
    - Fan module
    - Motherboard
    - I/O board
    - Display panel module
    - Display bezel (Non-touch model)
    - Display hinges (Non-touch model)
    - Display panel (Non-touch model)
    - Camera module (Non-touch model)

Removal

1. Peel off the sponge as shown in the illustration below.

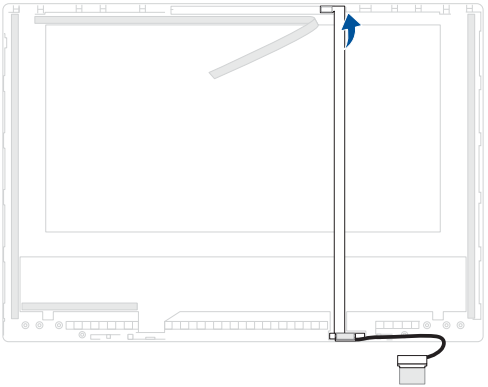


2. Remove the cable.



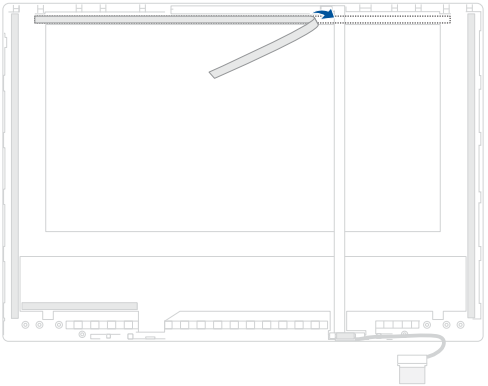
Installation

1. Install the cable as shown in the illustration below.

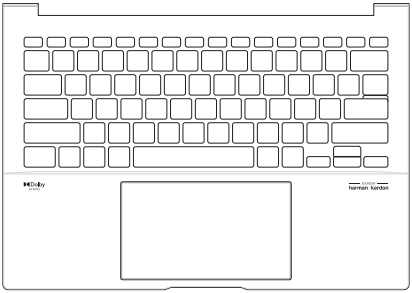


2. Reattach the sponge.

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



Keyboard module



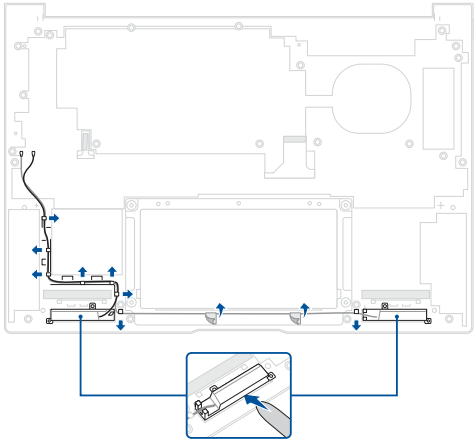
Before you begin

1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
    - Bottom cover
    - Battery
    - Speakers
    - Touchpad
    - Heat sink
    - Fan module
    - Motherboard
    - I/O board
    - Display panel module

Removal

Remove the tape, then remove the antenna cable(s) from the cable guide(s).

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

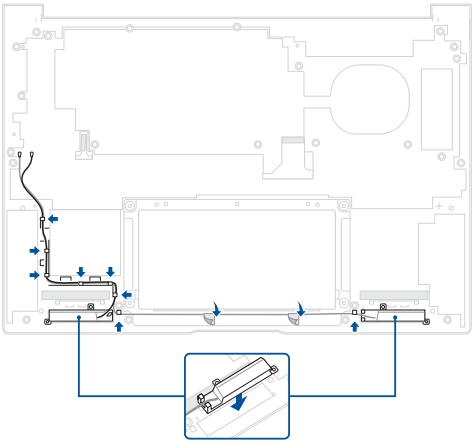


Installation

1. Install the antenna cable(s).
2. Route the cable(s) through the cable guide(s), then reattach the tape.

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.

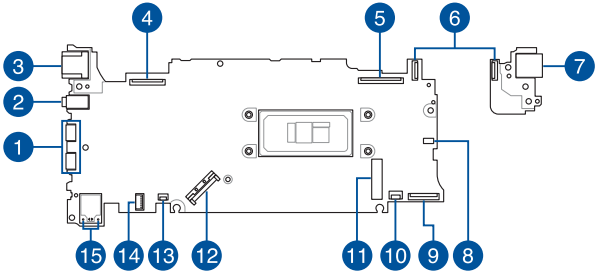
3. Install the components you removed in the *Before you begin* section.



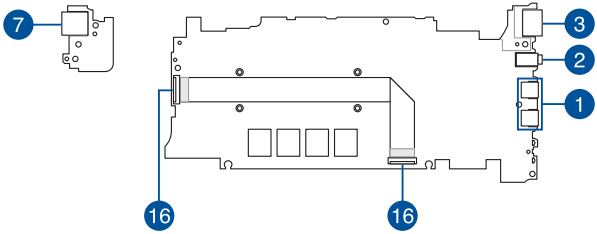
Appendices

Wiring and connection diagrams

Top View



Bottom View



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