

E22841

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IN SEARCH OF INCREDIBLE



Service Manual



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

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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

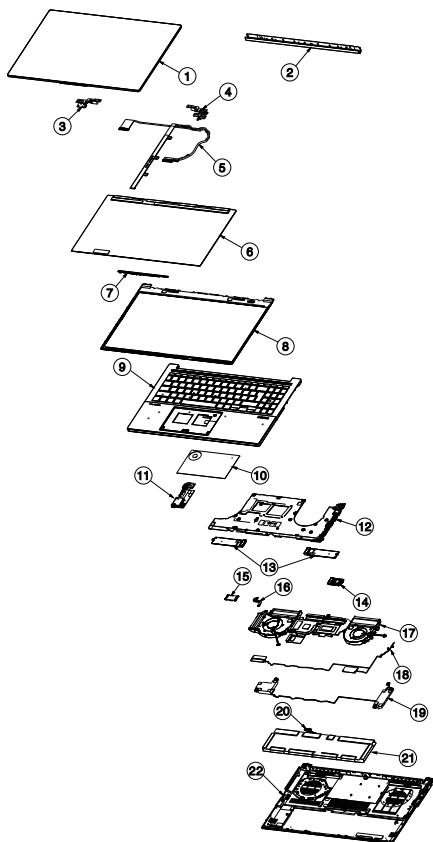
Diagnostic tools

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/.

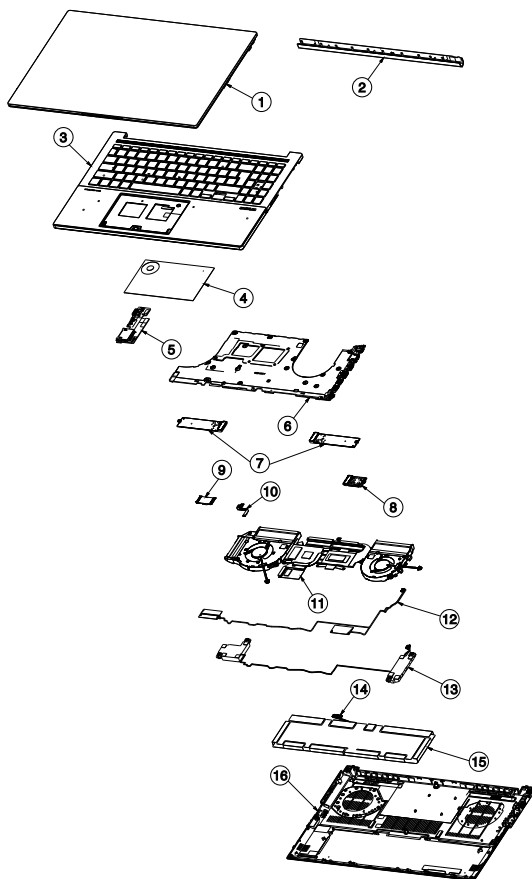
Major components

Model with framed display



1. Top cover
2. Hinge cap
3. Display hinge (left)
4. Display hinge (right)
5. eDP cable
6. Display panel
7. Camera module
8. Display bezel
9. Keyboard module
10. Touchpad
11. I/O board
12. Motherboard
13. M.2 SSD modules
14. WLAN module
15. I/O board FPC cable
16. Touchpad FFC cable
17. Heat sink and fans
18. Antenna cables
19. Speakers
20. Battery power cable
21. Battery
22. Bottom cover

Model with frameless display



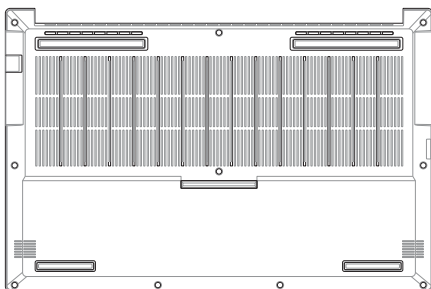
1. Display panel module
2. Hinge cap
3. Keyboard module
4. Touchpad
5. I/O board
6. Motherboard
7. M.2 SSD modules
8. WLAN module
9. I/O board FPC cable
10. Touchpad FFC cable
11. Heat sink and fans
12. Antenna cables
13. Speakers
14. Battery power cable
15. Battery
16. Bottom cover

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Chapter 2:

Service Procedures

Bottom cover



Before you begin

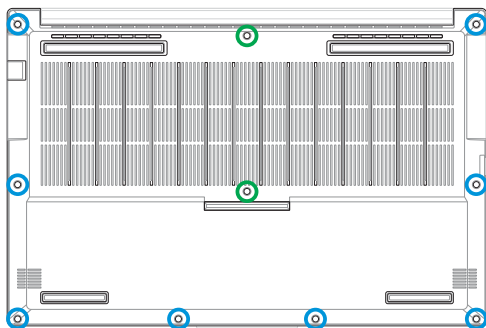
Read the **Safety Precautions** and complete the **Pre-repair Checklist**.

Screw list

- ⊗ M2.0 X 10.0L (2pcs)
- ⊗ M2.0 X 5.0L (8pcs)

Removal

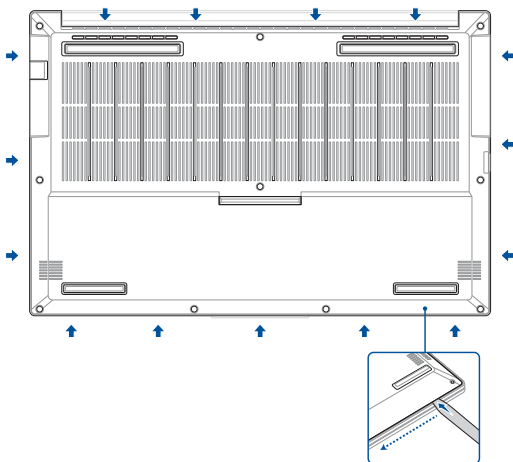
1. Remove the screw(s) from the bottom cover.



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

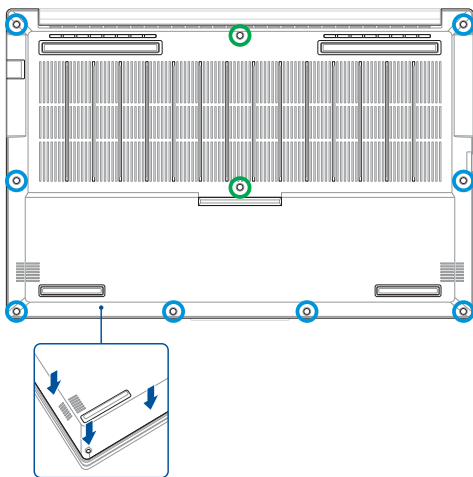
IMPORTANT! Avoid sliding the plastic blade along the side of your device or air vents to prevent damage.

3. Remove the bottom cover.

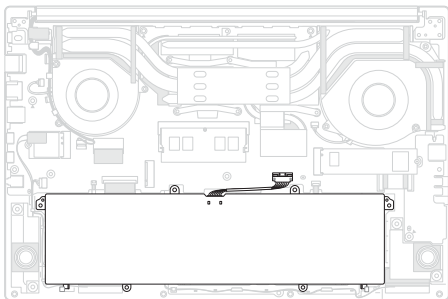


Installation

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

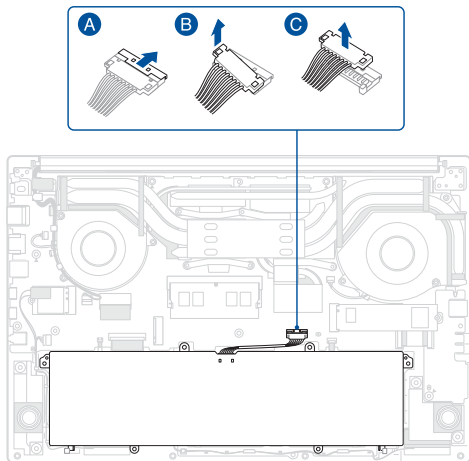
- ⊕ M2.0 X 5.0L (4pcs)

Removal

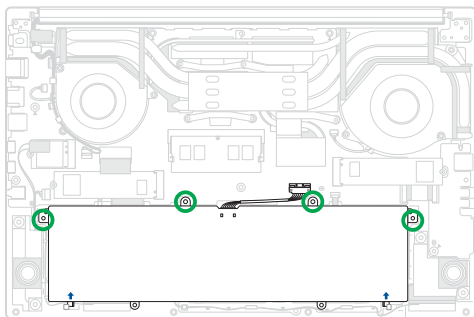
1. Disconnect the battery power cable.

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.
-

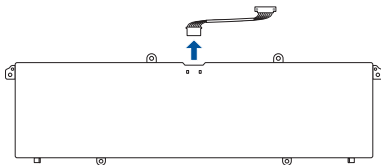


2. Remove the screw(s) from the battery.
3. Remove the battery.



4. Remove the battery power cable.

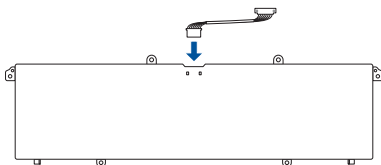
NOTE: This step is only required when you are replacing the existing component with a new one.



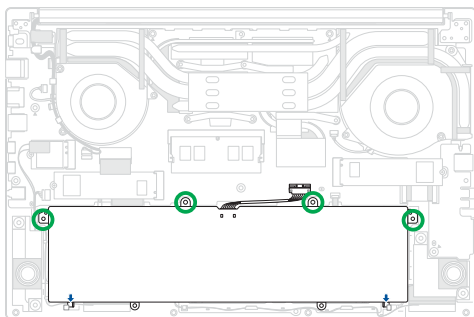
Installation

1. Connect the battery power cable to the battery.

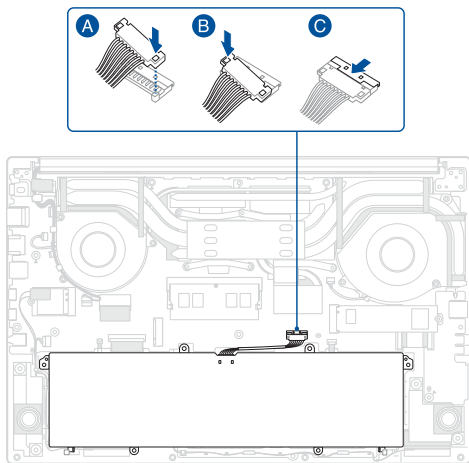
NOTE: This step is only required when you are replacing the existing component with a new one.



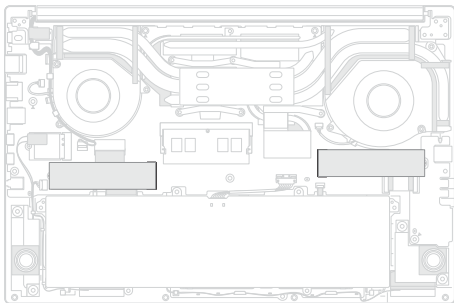
2. Install the battery.
3. Secure the battery using the screw(s) you removed earlier.



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

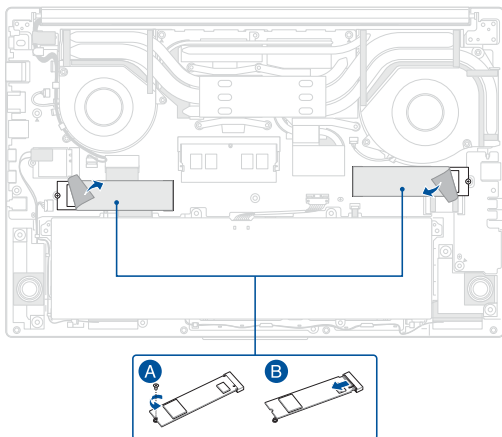
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Bottom cover
 - Battery

Screw list

- ⊕ M2.0 X 3.0L (2pcs)

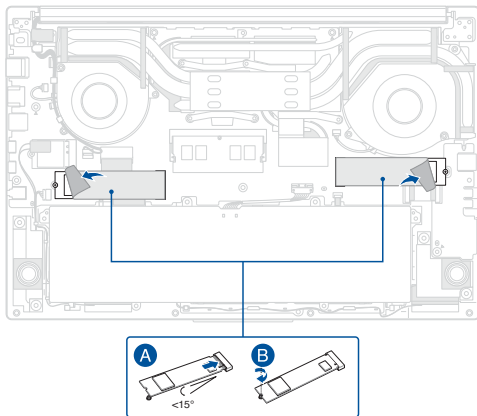
Removal

1. Remove the polyester film from the M.2 SSD module(s).
2. Remove the screw(s), then remove the M.2 SSD module(s) from the motherboard.

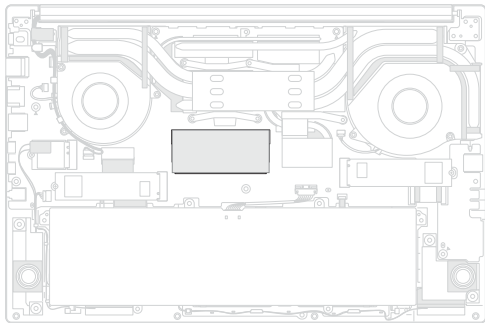


Installation

1. Align and insert the M.2 SSD module(s) into the M.2 connector(s) on the motherboard, then secure the M.2 SSD module(s) using the screw(s) you removed earlier.
2. Reattach the polyester film.
3. Install the components you removed in the *Before you begin* section.



RAM module

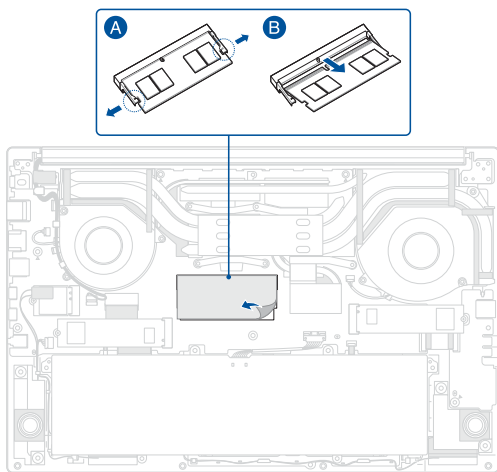


Before you begin

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

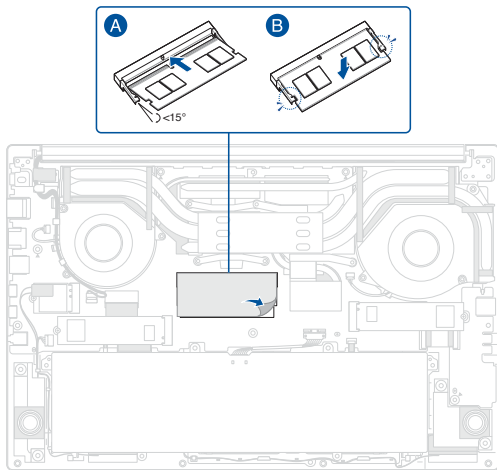
Removal

1. Remove the polyester film from the RAM module.
2. Push the clips outwards to remove the RAM module.

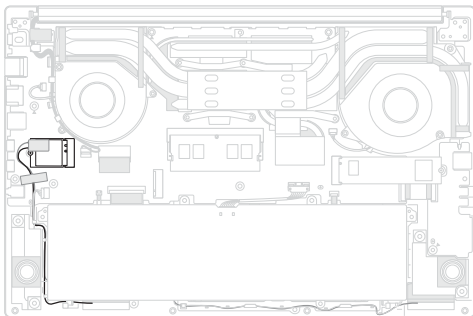


Installation

1. Align and insert the RAM module into the RAM module slot.
2. Reattach the polyester film.
3. Install the components you removed in the *Before you begin* section.



WLAN module



Before you begin

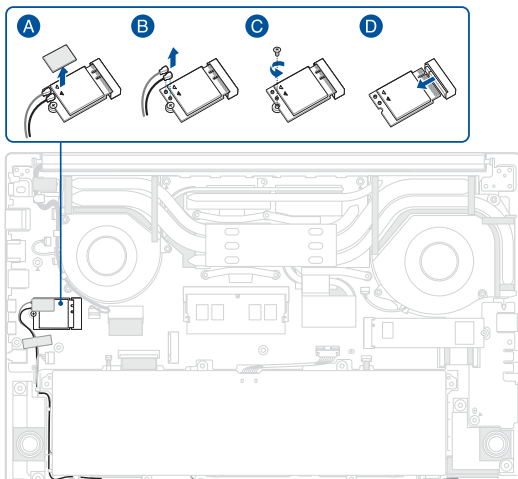
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Bottom cover
 - Battery

Screw list

- ⊕ M2.0 X 3.0L (1pc)

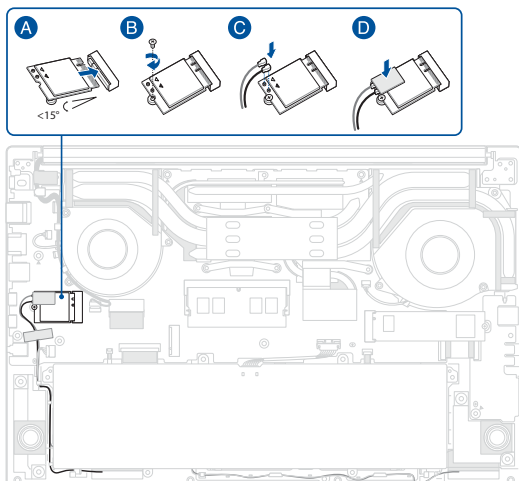
Removal

Disconnect the antenna cable(s), then remove the screw and remove the WLAN module.

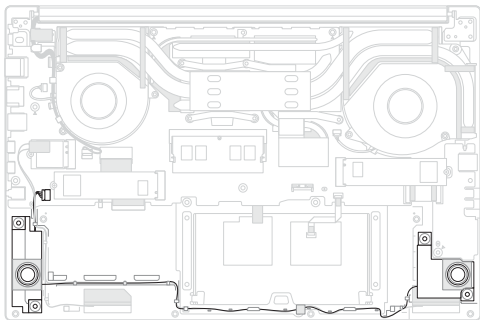


Installation

1. Install the WLAN module, then secure the WLAN module using the screw you removed earlier and reconnect the antenna cable(s).
2. Install the components you removed in the *Before you begin* section.



Speakers

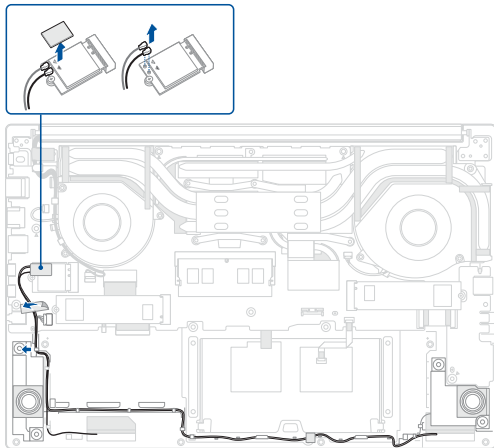


Before you begin

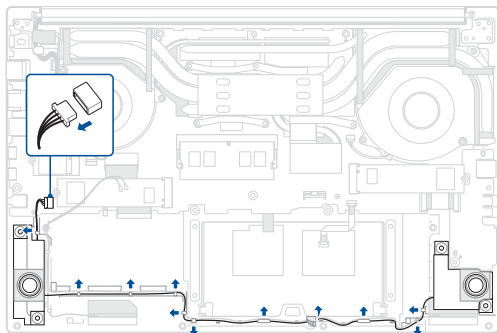
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Bottom cover
 - Battery

Removal

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



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

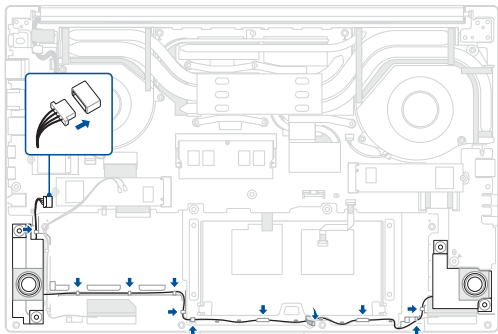


Installation

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.

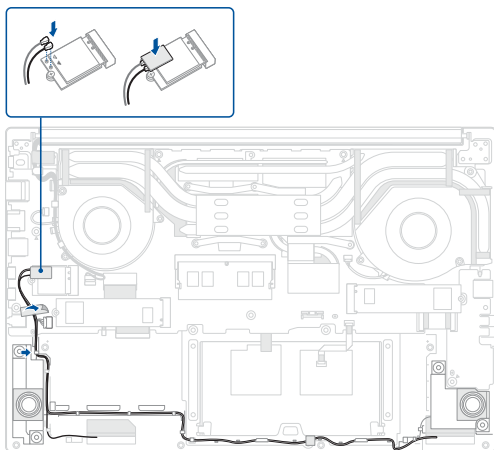
3. Reconnect the speaker connector.



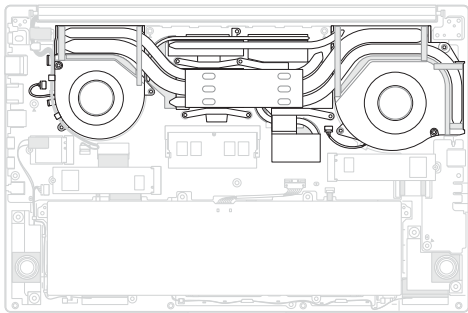
4. Route the antenna cable(s) through the cable guide(s), then reattach the tape.

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.

5. Reconnect the antenna cable(s).
6. Install the components you removed in the *Before you begin* section.



Heat sink and fan



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.

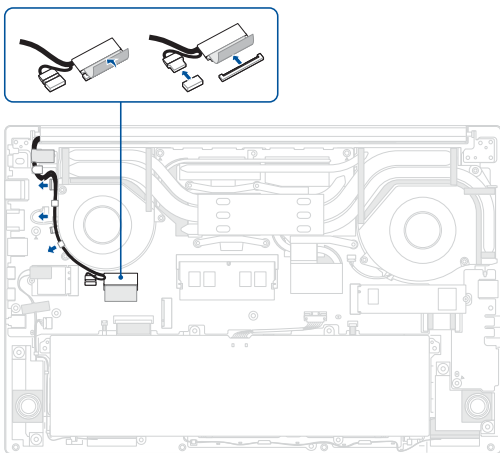
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Bottom cover
 - Battery

Screw list

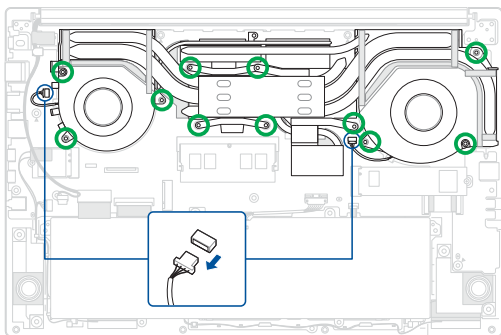
- ⊕ M2.0 X 5.0L (11pcs)

Removal

1. Disconnect the cable(s) and remove the cable(s) from the cable guide(s).

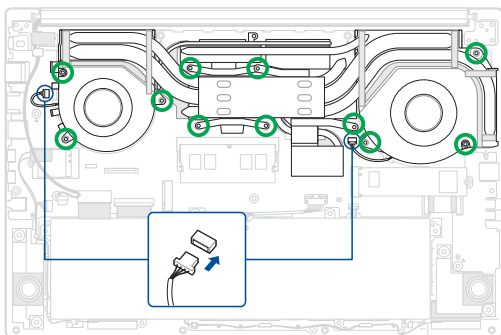


2. Remove the screw(s).
3. Disconnect the fan connector(s).
4. Remove the heat sink and fans.



Installation

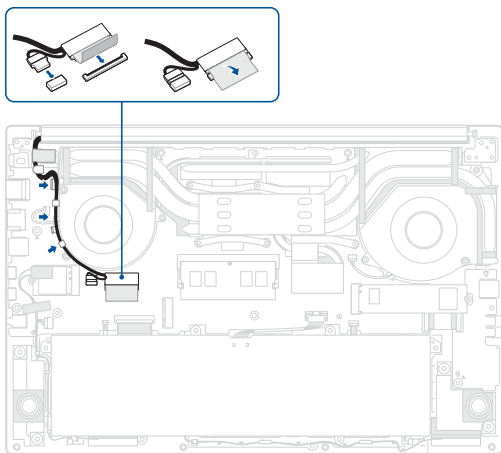
1. Install the heat sink and fans.
2. Reconnect the fan connector(s).
3. Secure the screw(s).



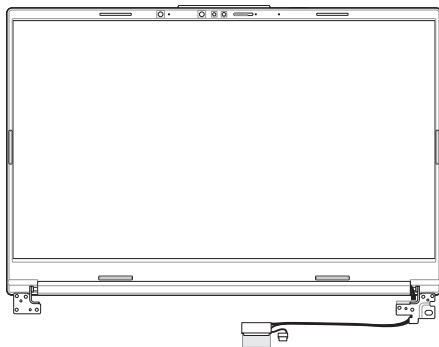
4. Route the cable(s) through the cable guide(s), then reconnect the cable(s).

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.

5. 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.

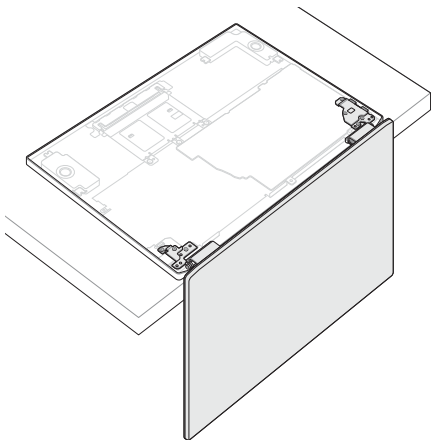
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Bottom cover
 - Battery

Screw list

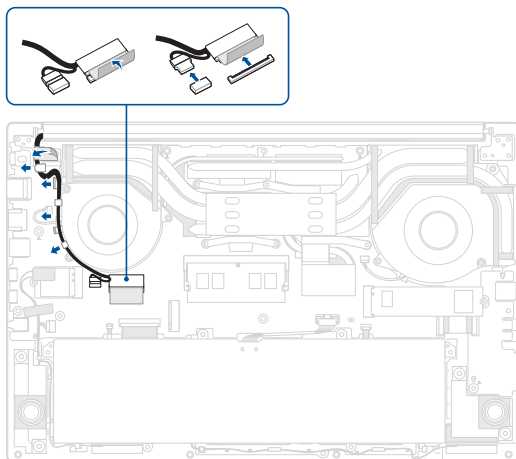
- ⊕ M2.5 X 4.0L (6pcs)

Removal

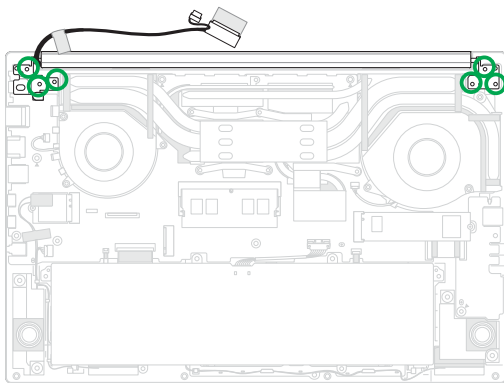
1. Place your device with the display panel hanging over the edge of the workspace as shown in the illustration below.



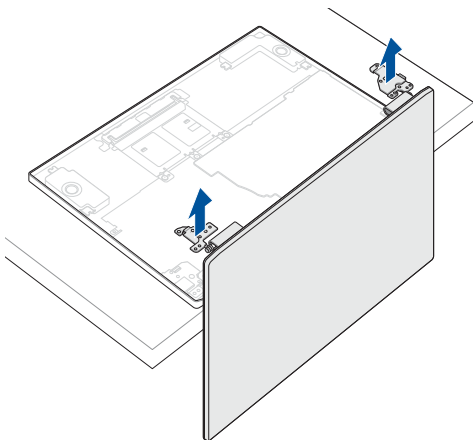
2. Disconnect the cable(s) from the motherboard.
3. Remove the tape, then remove the cable(s) from the cable guide(s).



4. Remove the screw(s).

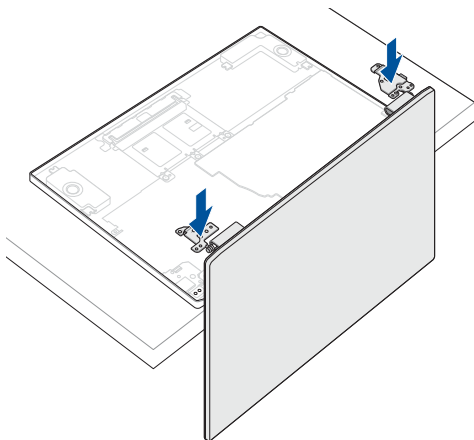


5. Remove the display panel module.

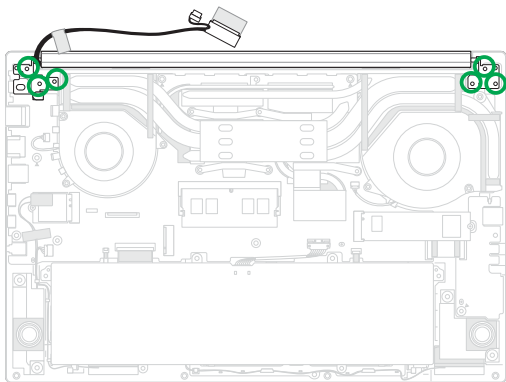


Installation

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



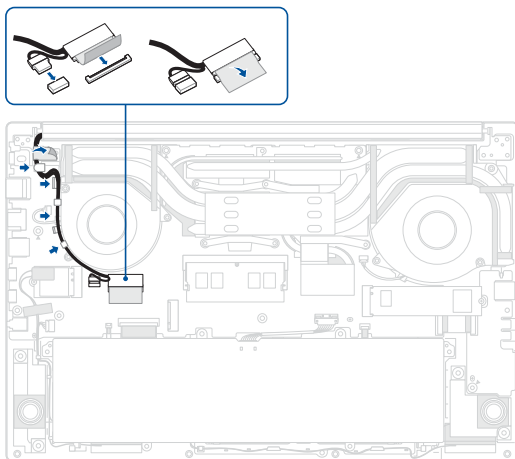
2. Secure the hinges using the screw(s) you removed earlier.



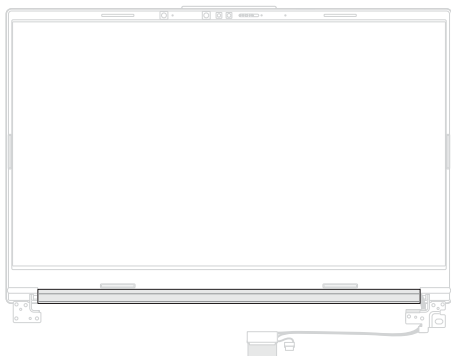
3. Route the cable(s) through the cable guide(s), then reattach the tape.

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.

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



Hinge cap

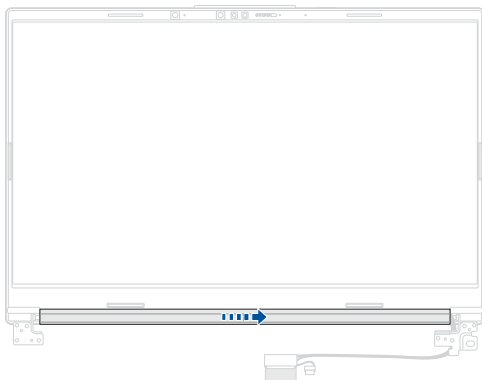


Before you begin

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

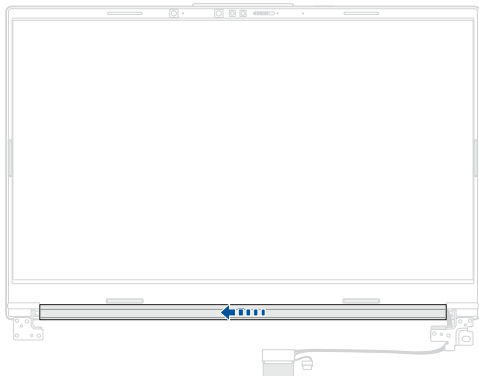
Removal

Remove the hinge cap as shown in the illustration below.

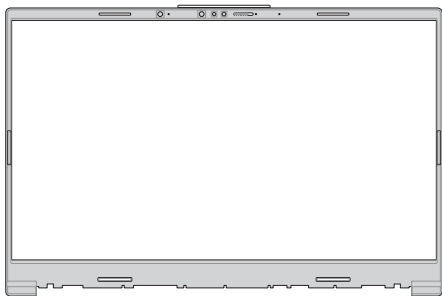


Installation

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



Display bezel (on selected models)



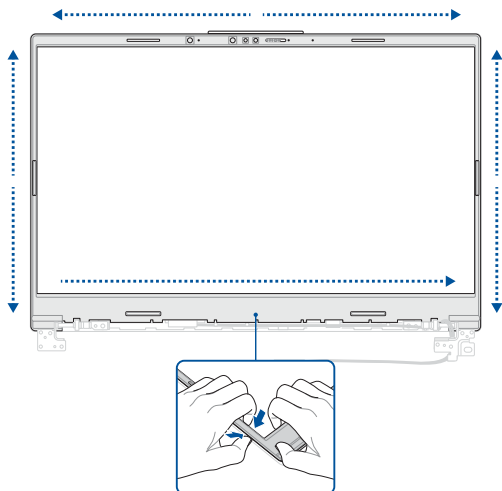
Before you begin

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
 - Display panel module
 - Hinge cap

Removal

Carefully pry the bezel loose, then remove the bezel.

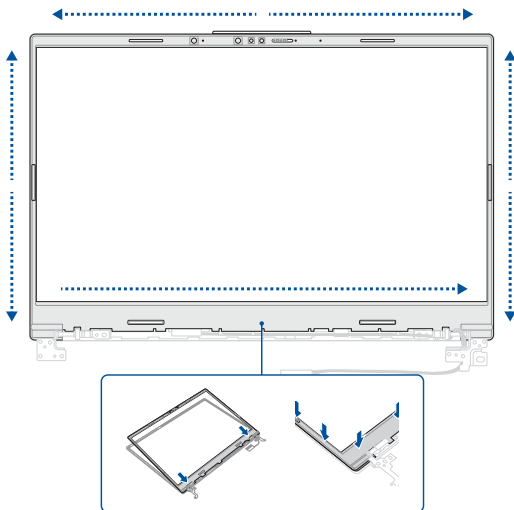


Installation

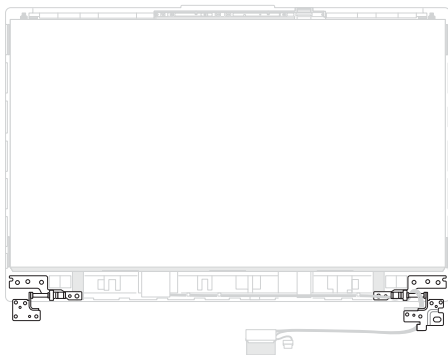
1. Remove the release liner(s) from the tape on the bezel.

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



Display hinges (on selected models)



Before you begin

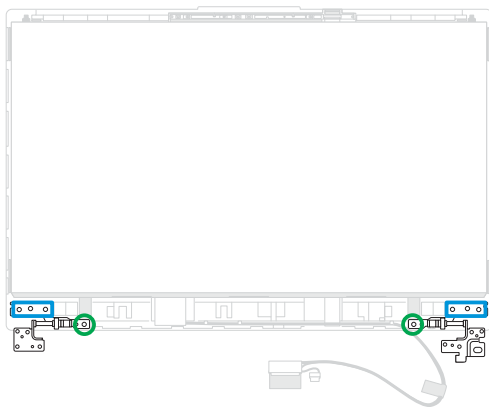
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Bottom cover
 - Battery
 - Display panel module
 - Hinge cap
 - Display bezel (on selected models)

Screw list

- ⊕ M2.5 X 4.0L (2pcs)
- ⊕ M2.5 X 2.5L (6pcs)

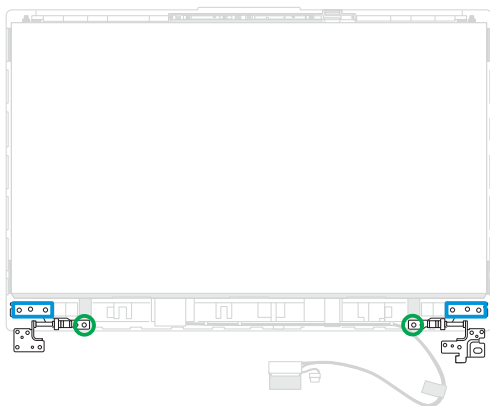
Removal

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

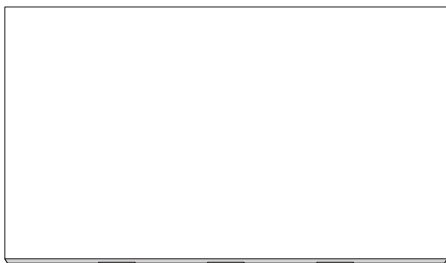


Installation

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 (on selected models)



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.
-

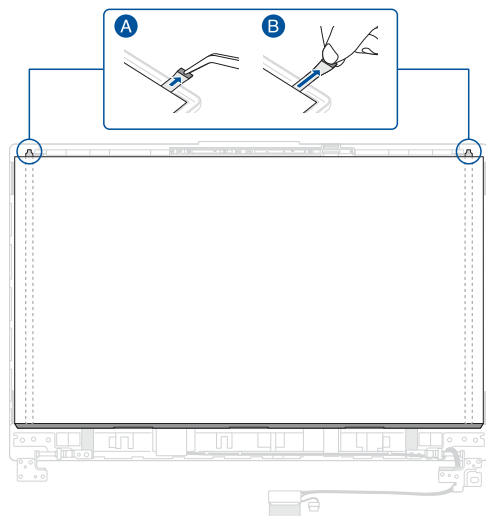
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Bottom cover
 - Battery
 - Display panel module
 - Hinge cap
 - Display bezel (on selected models)

Removal

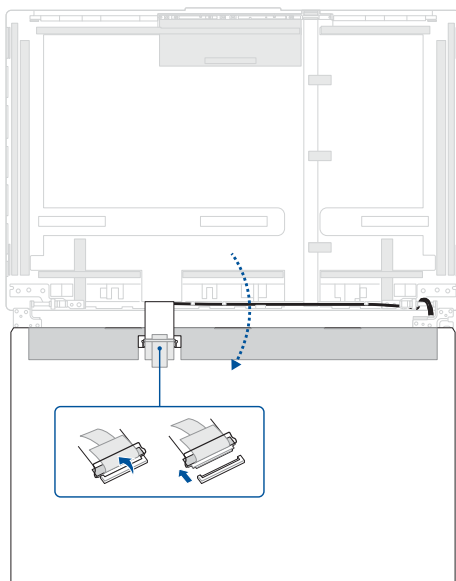
1. Locate the tip of the stretch release tape, then carefully pull out the stretch release tape as shown in the illustration below.

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.

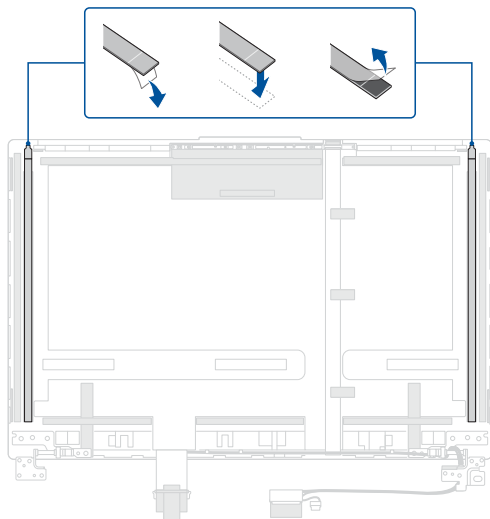


3. Lift the display panel, then disconnect the cable from the rear side of the display panel.

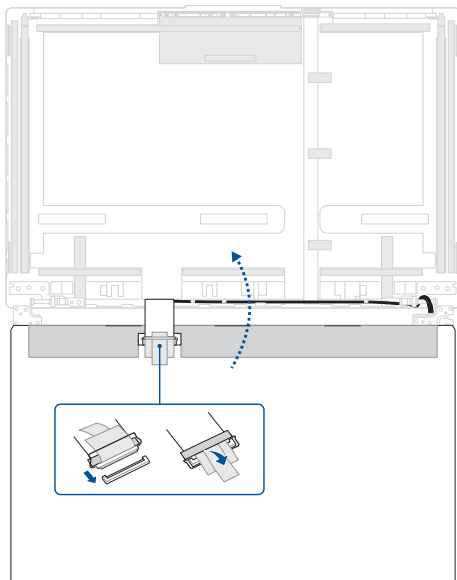


Installation

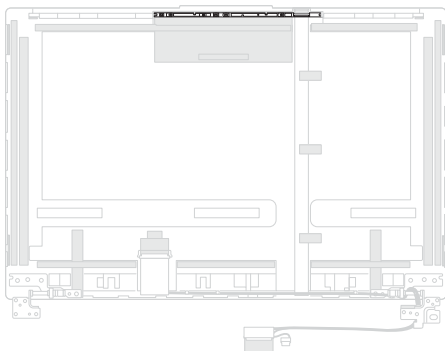
1. Place the top cover in the orientation shown in the illustration below.
2. Remove the release liner(s) from the bottom side of the stretch release tape.
3. Align and attach the stretch release tape to the top cover.
4. Remove the release liner(s) from the top side of the stretch release tape.



5. Reconnect the cable to the rear side of the display panel.
6. Align and install the display panel.
7. Install the components you removed in the *Before you begin* section.



Camera module (on selected models)



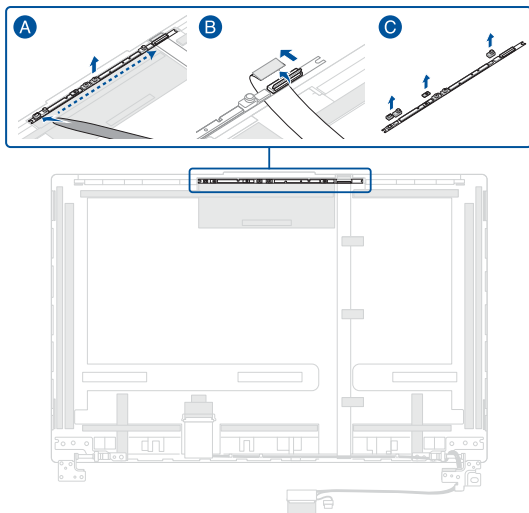
Before you begin

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
 - Display panel module
 - Hinge cap
 - Display bezel (on selected models)
 - Display panel (on selected models)

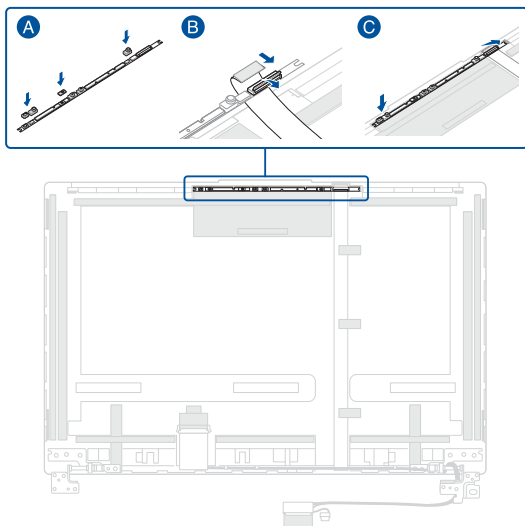
Removal

Carefully remove the camera module and disconnect the cable from the camera, then remove the rubber caps from the camera module.

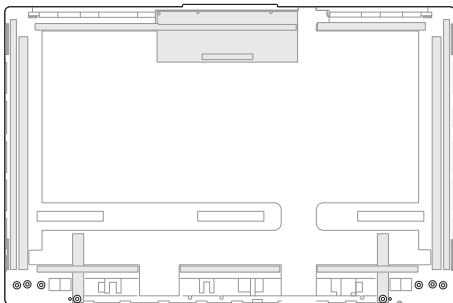


Installation

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



Top cover (on selected models)

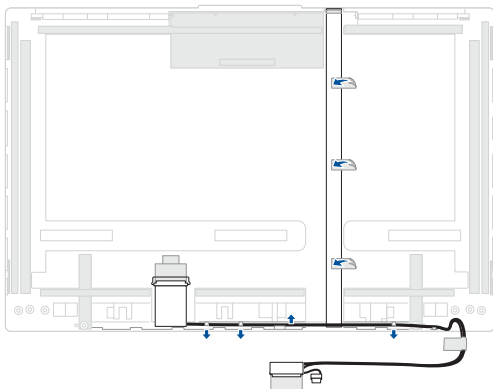


Before you begin

1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Bottom cover
 - Battery
 - Display panel module
 - Hinge cap
 - Display bezel (on selected models)
 - Display hinges (on selected models)
 - Display panel (on selected models)
 - Camera module (on selected models)

Removal

Remove the tape, then remove the cable(s).

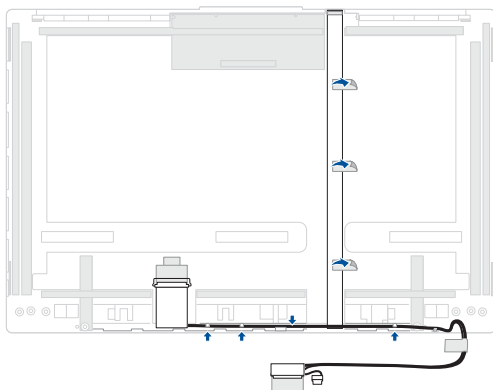


Installation

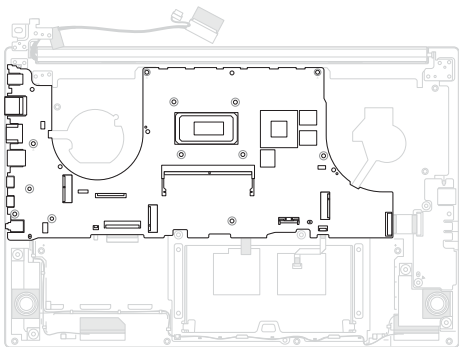
1. Install the cable(s) and route the cable(s) through the cable guide(s).

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



Motherboard



Before you begin

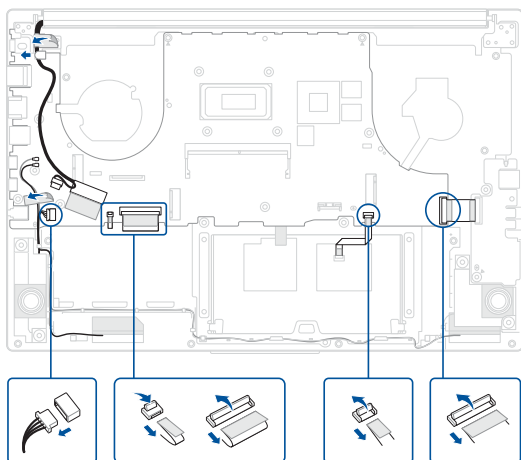
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Bottom cover
 - Battery
 - M.2 SSD module
 - RAM module
 - WLAN module
 - Heat sink and fan

Screw list

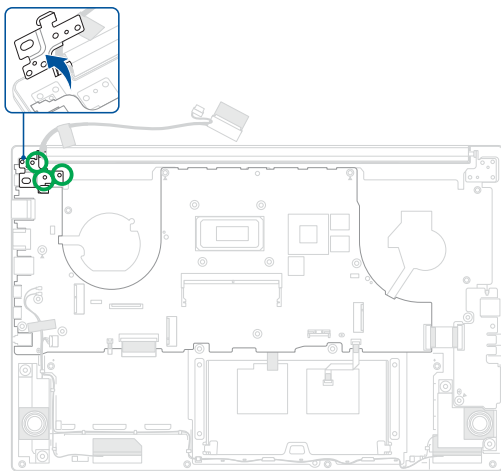
- ⊕ M2.5 X 4.0L (3pcs)
- ⊕ M2.0 X 3.0L (3pcs)

Removal

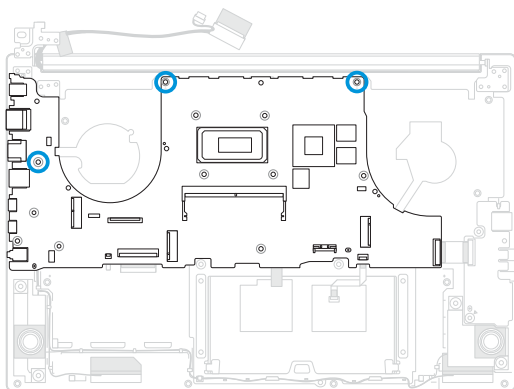
1. Remove and disconnect the cable(s) from the motherboard.



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

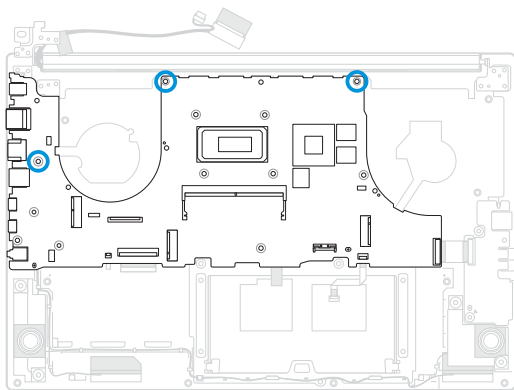


3. Remove the screw(s) from the motherboard, then remove the motherboard.

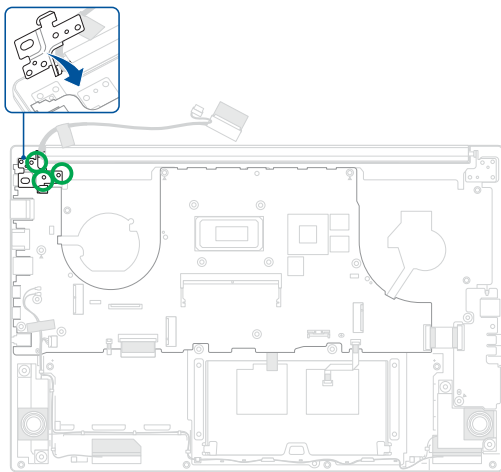


Installation

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



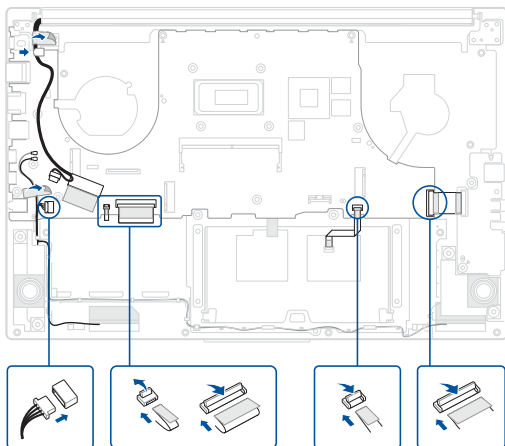
2. Place the hinge of the display panel module on the screw holes, then secure the hinge using the screw(s) you removed earlier.



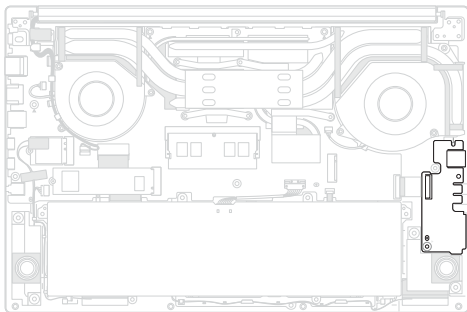
3. Route the cable(s) through the cable guide(s), then reattach the tape.

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.

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



I/O board



Before you begin

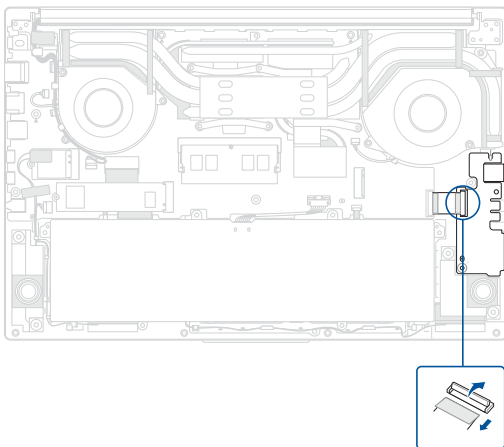
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Bottom cover
 - Battery

Screw list

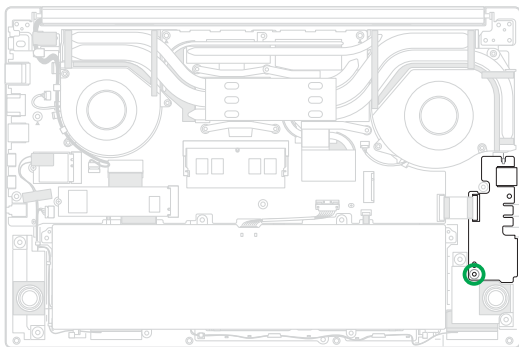
- ⊕ M2.0 X 5.0L (1pc)

Removal

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

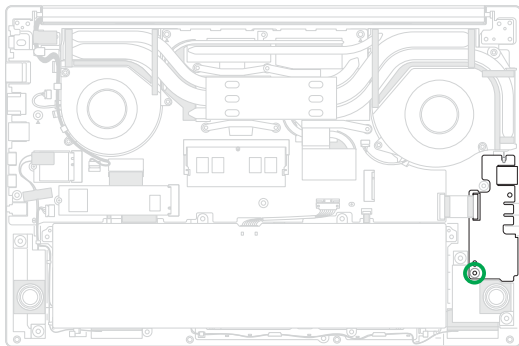


2. Remove the screw from the I/O board, then remove the I/O board.

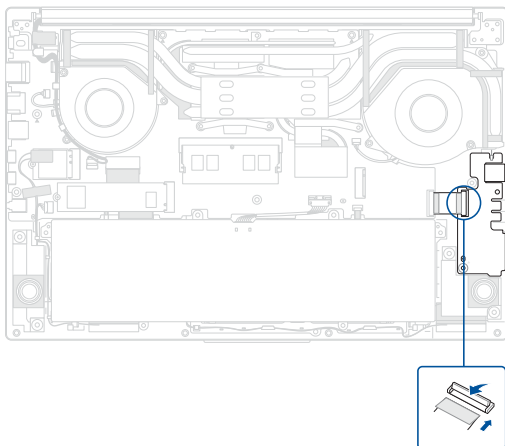


Installation

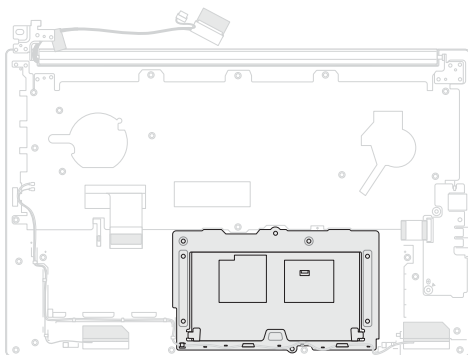
1. Install the I/O board, then secure the I/O board using the screw you removed earlier.



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



Touchpad



Before you begin

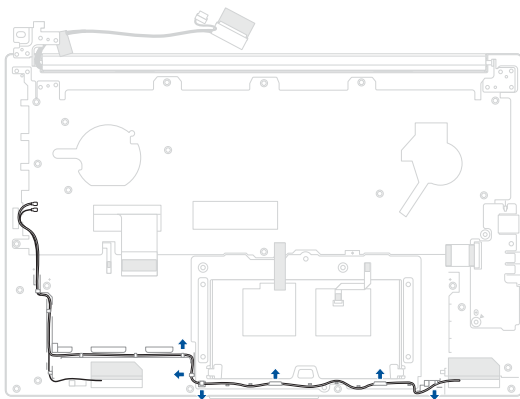
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Bottom cover
 - Battery
 - M.2 SSD module
 - WLAN module
 - Speakers
 - Heat sink and fan
 - Motherboard

Screw list

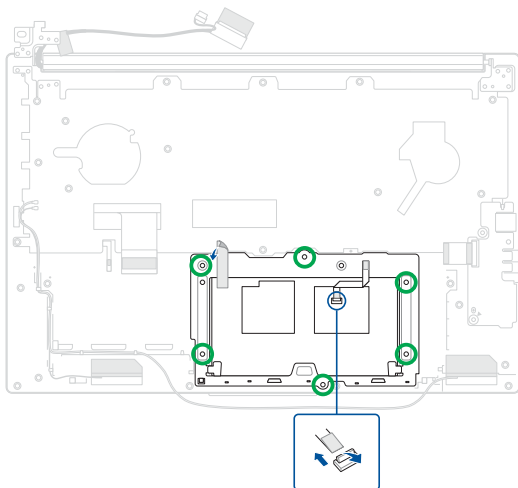
- ⊕ M2.0 X 2.5L (6pcs)

Removal

1. Remove the antenna cable(s) from the cable guide(s).

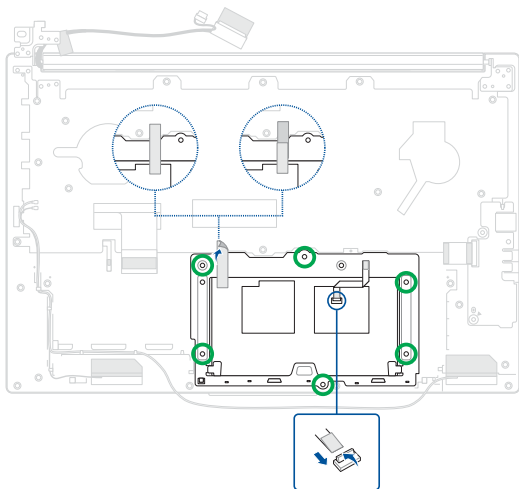


2. Disconnect the cable from the touchpad and remove the tape.
3. Remove the screw(s), then remove the touchpad.



Installation

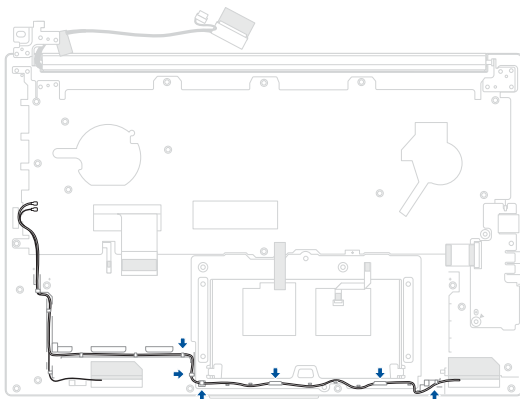
1. Install the touchpad, then secure the touchpad using the screw(s) you removed earlier.
2. Reconnect the cable and reattach the tape.



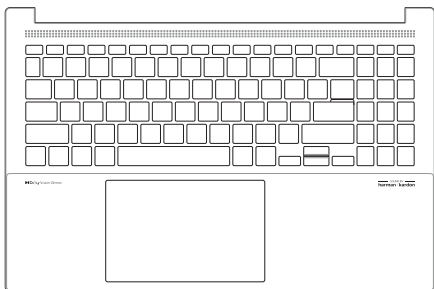
3. Route the antenna cable(s) through the cable guide(s).

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.

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



Keyboard module



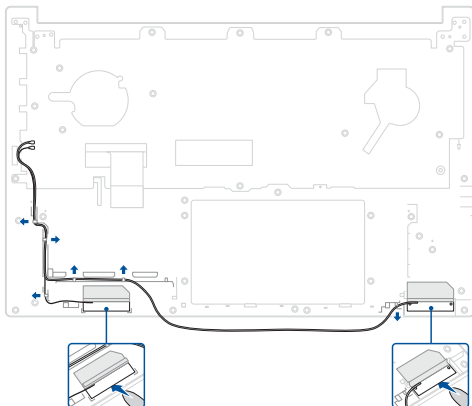
Before you begin

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

Removal

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

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

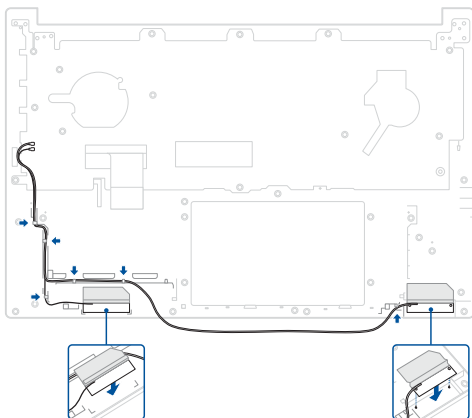


Installation

1. Align and install the antenna cable(s) as shown in the illustration below.
2. 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.

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

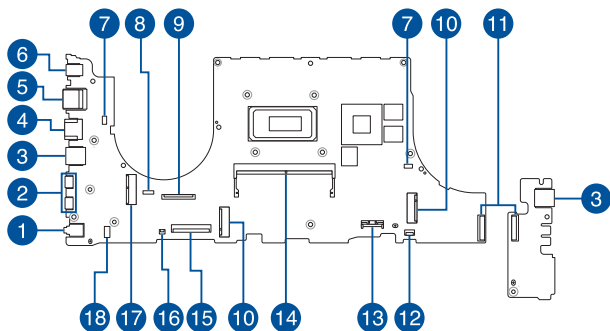


This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

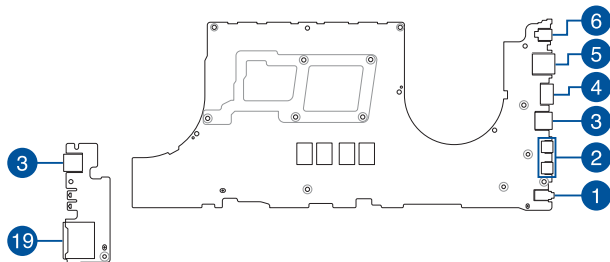
Appendices

Wiring and connection diagrams

Top View



Bottom View



1. Audio connector
2. USB Type C® connector
3. USB Type-A connector
4. HDMI connector
5. LAN connector
6. Power supply connector
7. Fan connector
8. PMIC connector
9. eDP connector
10. M.2 SSD connector
11. I/O board connector
12. Touchpad connector
13. Battery connector
14. RAM module slot
15. Keyboard connector
16. Keyboard backlight connector
17. WLAN connector
18. Speaker connector
19. Card reader connector

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