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IN SEARCH OF INCREDIBLE

Service Manual

ASUS

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Important information

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SERVICE AND SUPPORT

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

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.

Repair and reuse information

This device meets environmental and safety standards and is designed for easy repair and reuse.

- The components in this device can be disassembled and reassembled using commonly available tools.
- The screws in this device are reusable. If screws are damaged or missing, contact an ASUS service center for assistance.

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



Suction cup

Accessories



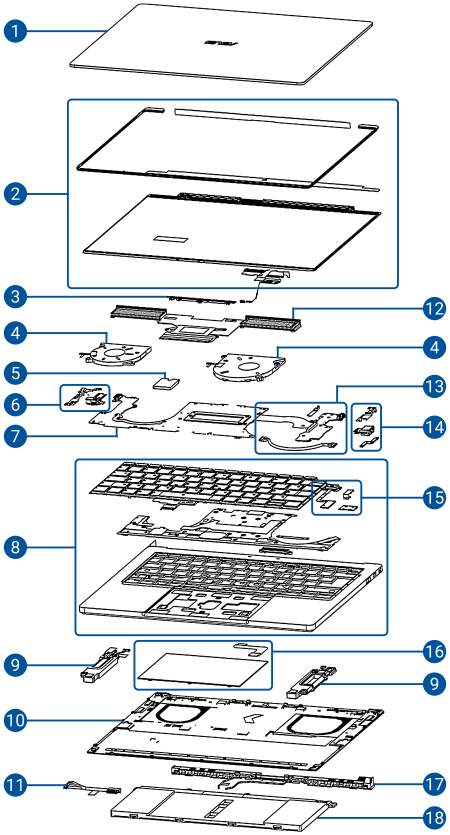
Power adapter

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/.

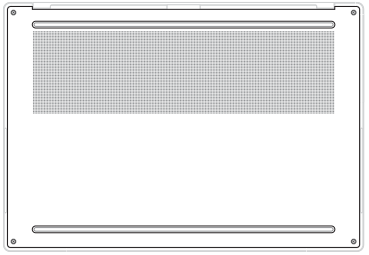
Major components



1. Top cover
2. Display panel module
3. Camera module
4. Fan modules
5. M.2 SSD module
6. Audio and HDMI ports
7. Motherboard
8. Keyboard module
9. Speakers
10. Bottom cover
11. Battery power cable
12. Heat sink
13. I/O board
14. USB port
15. Fingerprint reader
16. Touchpad
17. WLAN antenna
18. Battery

Chapter 2: Service Procedures

Bottom cover



Before you begin

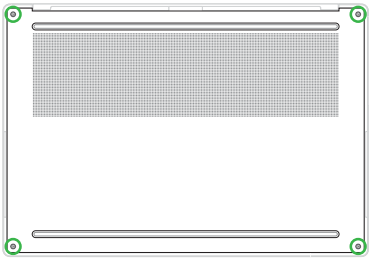
Read the **Safety Precautions** and complete the **Pre-repair Checklist**.

Screw list

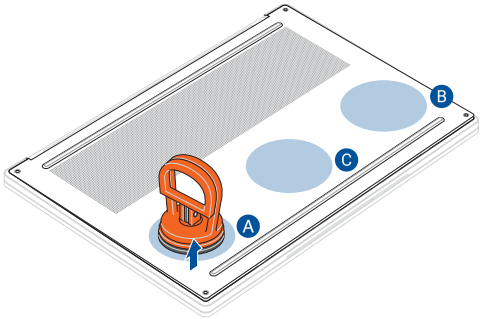
- ⊕ M2.0 X 6.6L (4pcs)

Removal

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



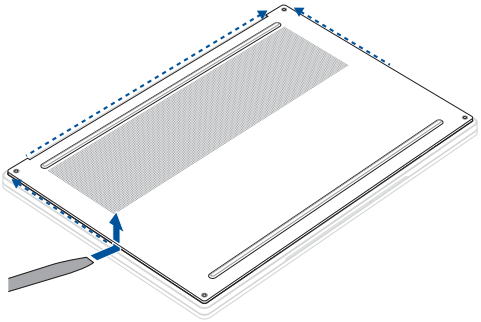
2. Attach the suction cup to the bottom cover and partially detach the bottom cover in the order shown below.



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

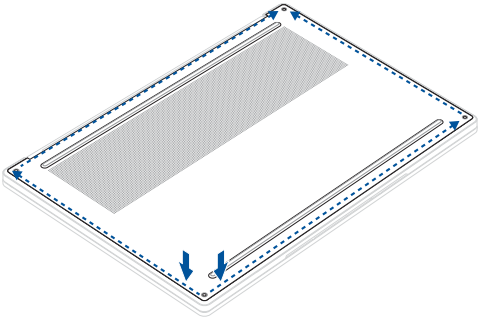
IMPORTANT!

- Avoid sliding the plastic blade along the side of your device or air vents to prevent damage.
- System power will be cut off automatically upon removal of the bottom cover. To restore power, reattach the bottom cover securely and connect the AC power adapter to your Notebook PC after the servicing is complete.

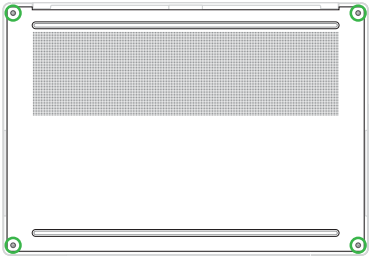


Installation

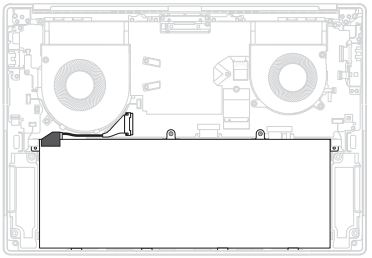
1. Install the bottom cover.
2. Gently press down on the bottom cover until it clicks into place.



3. Secure the bottom cover using the screw(s) you removed earlier.



Battery



Before you begin

IMPORTANT! 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.

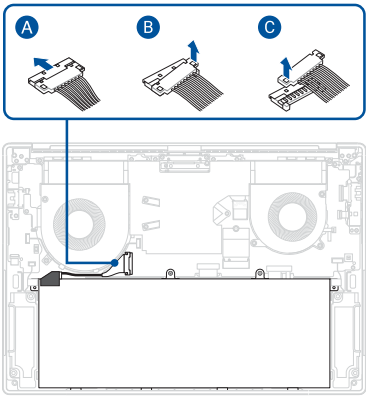
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the bottom cover.

Screw list

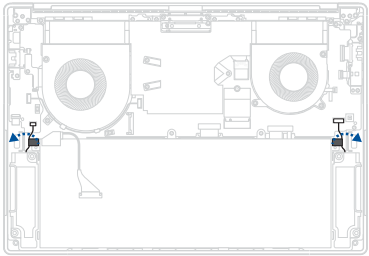
- ⊕ M2.0 X 3.0L (4pcs)

Removal

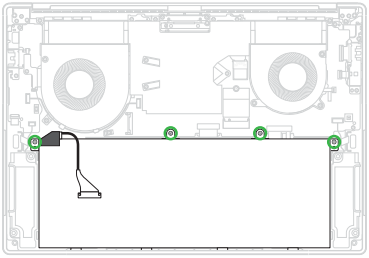
1. Disconnect the battery power cable.



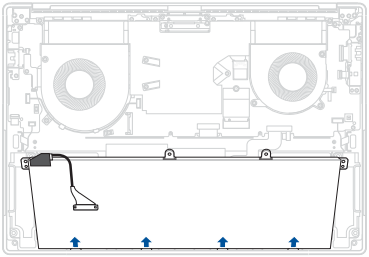
2. Detach the tape.



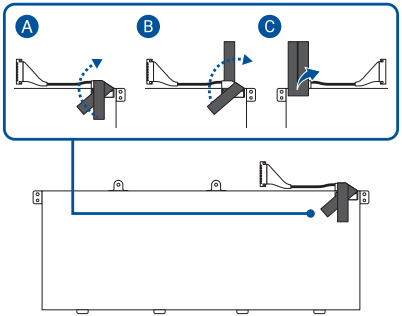
3. Remove the screw(s).



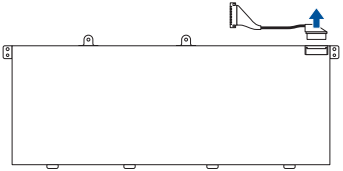
4. Remove the battery.



5. Detach the tape.

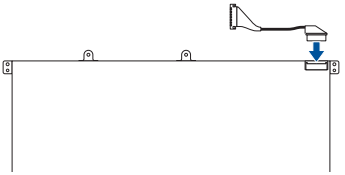


6. Disconnect the cable.

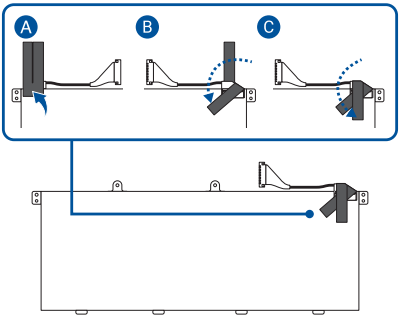


Installation

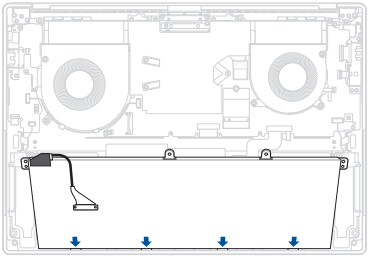
1. Reconnect the cable.



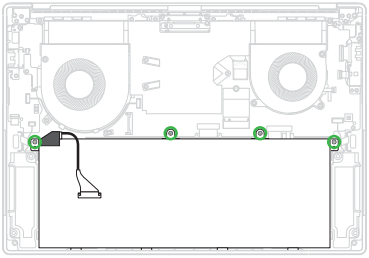
2. Attach the tape.



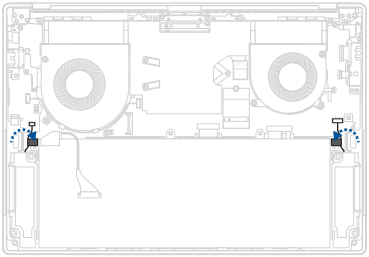
3. Install the battery.



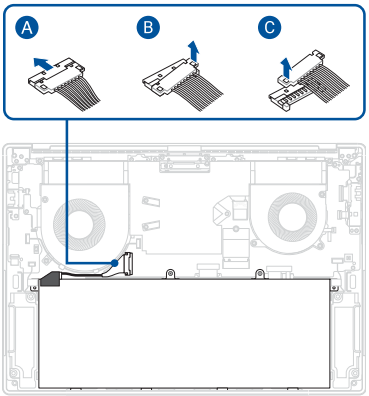
4. Secure the battery using the screw(s) you removed earlier.



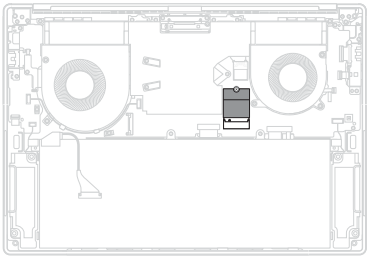
5. Attach the tape.



6. Reconnect the battery power cable.
7. Install the components you removed in the *Before you begin* section.



M.2 SSD module



Before you begin

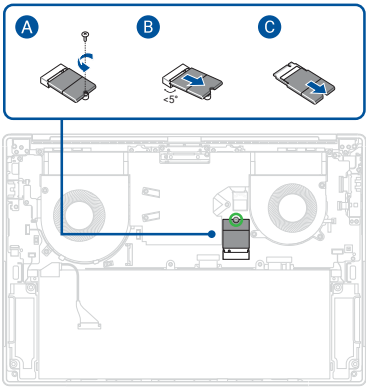
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the bottom cover and disconnect the battery power cable.

Screw list

- ⊕ M2.0 X 3.0L (1pc)

Removal

1. Remove the screw.
2. Remove the M.2 SSD module.
3. Remove the sleeve from the M.2 SSD module.

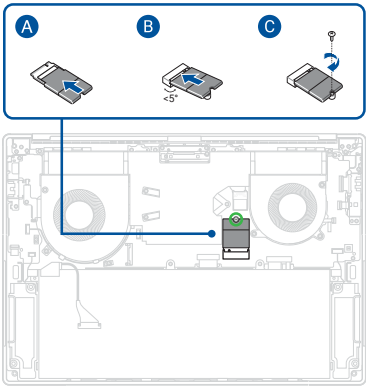


Installation

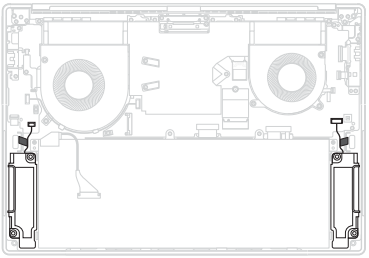
1. Insert the M.2 SSD module into the sleeve.

> **NOTE:** The side of the M.2 SSD sleeve with the yellow polymer film should face downwards.

2. Install the M.2 SSD module.
3. Secure the M.2 SSD module using the screw(s) you removed earlier.
4. Install the components you removed in the *Before you begin* section.



Speakers

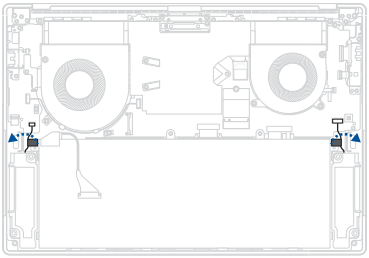


Before you begin

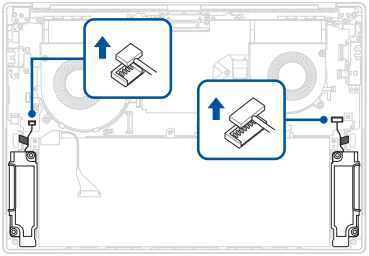
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the bottom cover and disconnect the battery power cable.

Removal

1. Detach the tape.

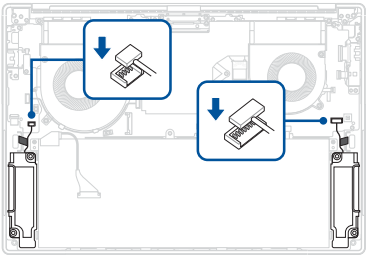


2. Disconnect the cable(s).
3. Remove the speakers.

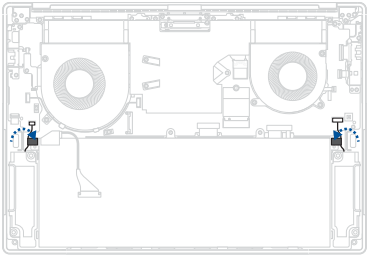


Installation

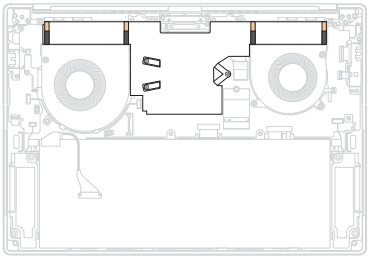
1. Install the speakers.
2. Reconnect the cable(s).



3. Attach the tape.
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.

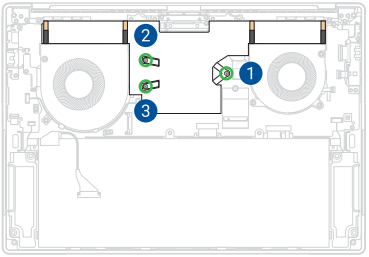
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the bottom cover and disconnect the battery power cable.

Screw list

- ⊕ M2.0 X 3.0L (3pcs)

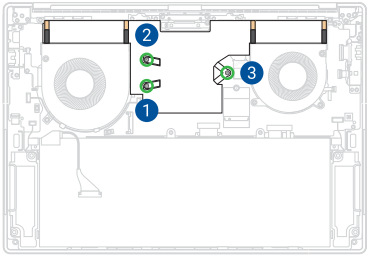
Removal

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

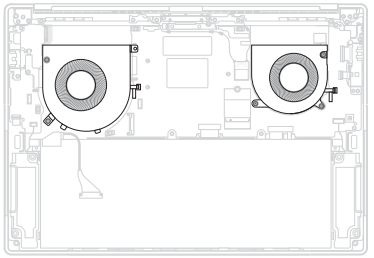


Installation

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



Fan module



Before you begin

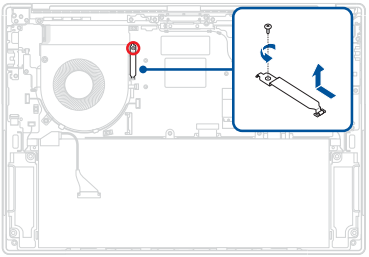
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the bottom cover and disconnect the battery power cable.
3. Remove the following components:
   - Heat sink

Screw list

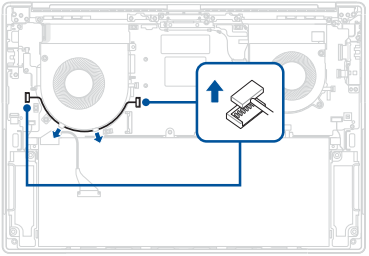
- ⊕ M1.6 X 3.6L (1pc)
- ⊕ M2.0 X 3.0L (4pcs)
- ⊕ M1.6 X 2.5L (1pc)

Removal

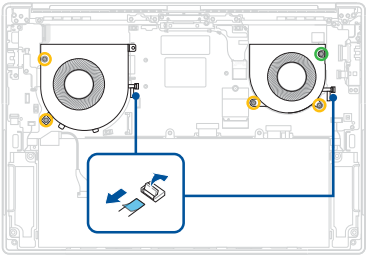
1. Remove the screw.
2. Remove the bracket.



3. Disconnect the cable(s).
4. Remove the cable from the cable guide(s).

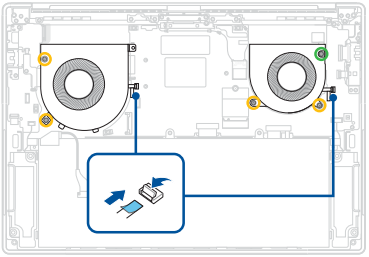


5. Disconnect the cable(s).
6. Remove the screw(s).
7. Remove the fans.



Installation

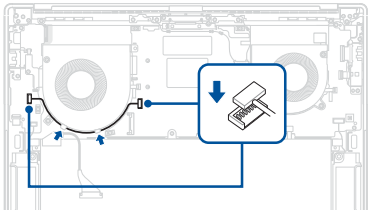
1. Install the fans.
2. Secure the fans using the screw(s) you removed earlier.
3. Reconnect the cable(s).



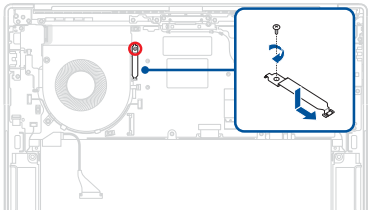
4. Route the cable through the cable guide(s).

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.

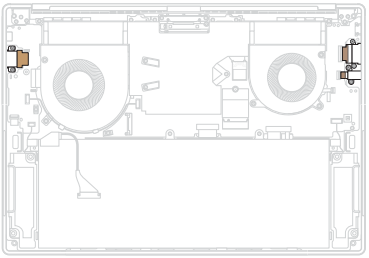
5. Reconnect the cable.



6. Install the bracket.
7. Secure the bracket using the screw you removed earlier.
8. Install the components you removed in the *Before you begin* section.



I/O ports



Before you begin

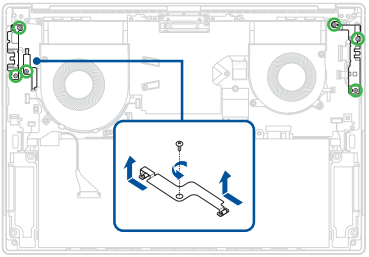
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the bottom cover and disconnect the battery power cable.

Screw list

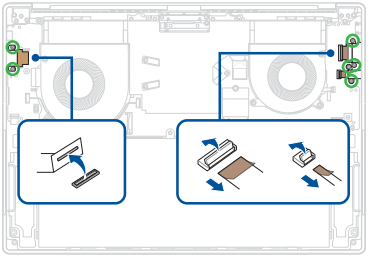
- ⊕ M1.6 X 2.5L (12pcs)

Removal

1. Remove the screw(s).
2. Remove the brackets.

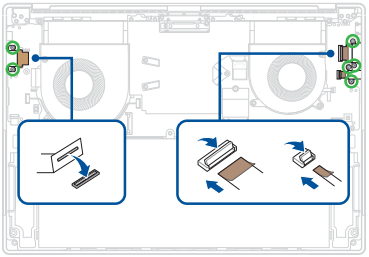


3. Disconnect the cable(s).
4. Remove the I/O ports.

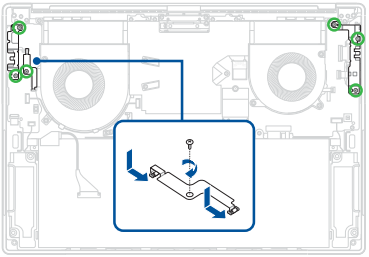


Installation

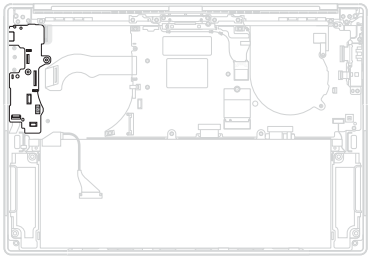
1. Install the I/O ports.
2. Reconnect the cable(s).



3. Install the brackets.
4. Secure the brackets using the screw(s) you removed earlier.
5. Install the components you removed in the *Before you begin* section.



I/O board



Before you begin

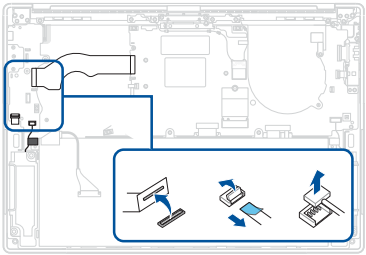
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the bottom cover and disconnect the battery power cable.
3. Remove the following components:
   - Heat sink
   - Fan module

Screw list

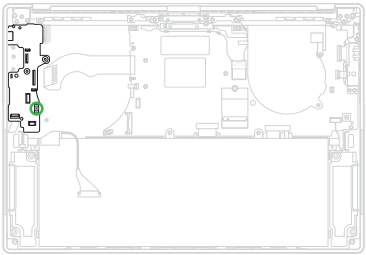
- ⊕ M1.6 X 2.5L (1pc)

Removal

1. Disconnect the cable(s).

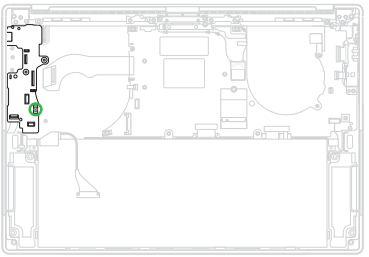


2. Remove the screw.
3. Remove the I/O board.

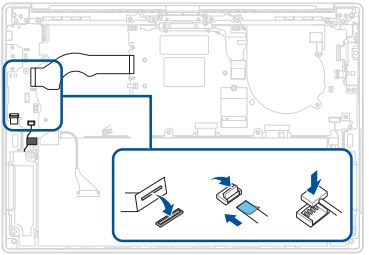


Installation

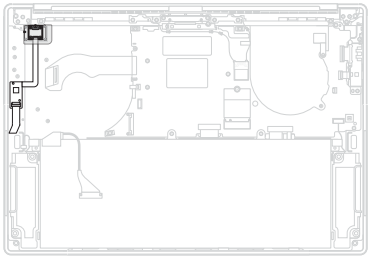
1. Install the I/O board.
2. Secure the I/O board using the screw you removed earlier.



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



Fingerprint reader



Before you begin

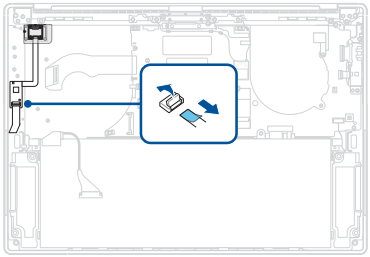
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the bottom cover and disconnect the battery power cable.
3. Remove the following components:
   - Heat sink
   - Fan module

Screw list

- ⊕ M1.2 X 1.6L (4pcs)

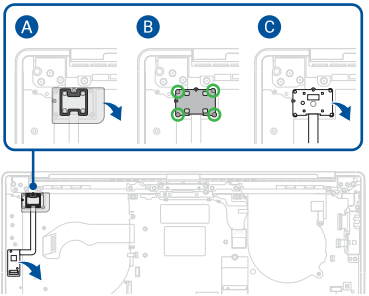
Removal

1. Disconnect the cable.



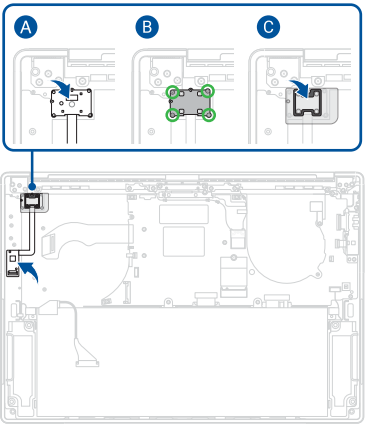
2. Remove the polymer film.
3. Remove the screw(s).
4. Remove the fingerprint reader.

IMPORTANT! This component cannot be reused once removed.

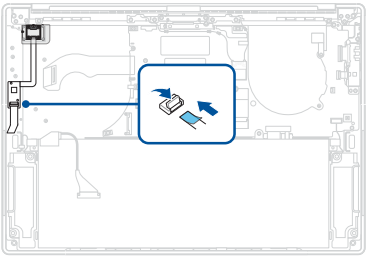


Installation

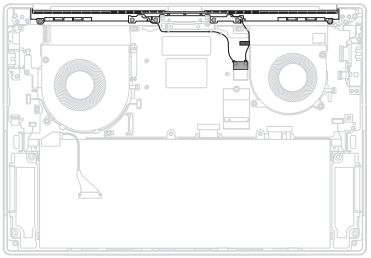
1. Install the fingerprint reader.
2. Secure the fingerprint reader using the screw(s) you removed earlier.
3. Attach the polymer film.



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



WLAN antenna



Before you begin

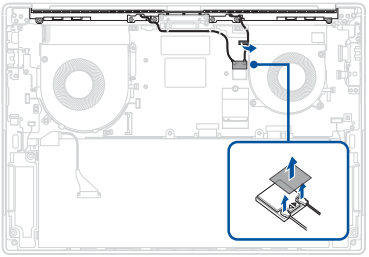
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the bottom cover and disconnect the battery power cable.
3. Remove the following components:
   - Heat sink

Screw list

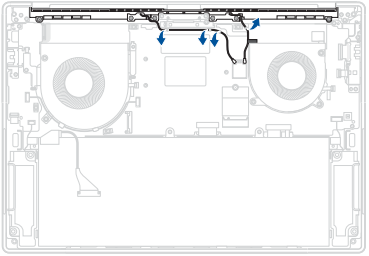
- ⊕ M1.6 X 2.5L (6pcs)

Removal

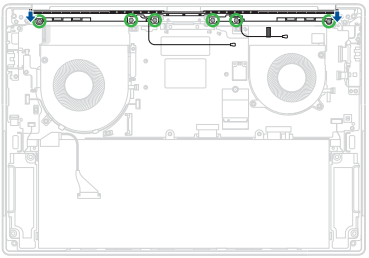
1. Detach the tape.
2. Remove the polymer film.
3. Disconnect the cable(s).



4. Remove the cable(s) from the cable guide(s).

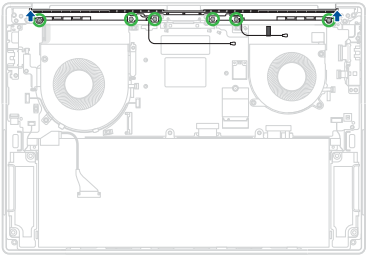


5. Remove the screw(s).
6. Remove the WLAN antenna.



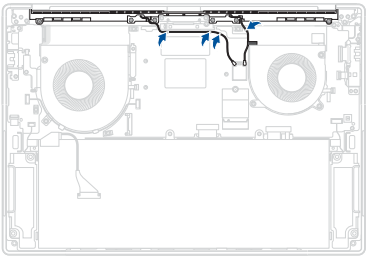
Installation

1. Install the WLAN antenna.
2. Secure the WLAN antenna using the screw(s) you removed earlier.

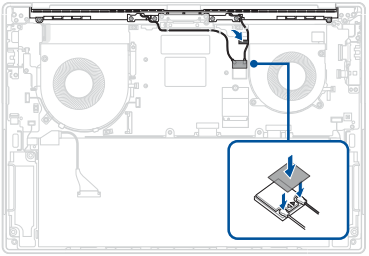


3. Route the cable(s) through the cable guide(s).

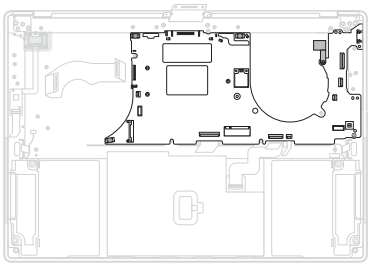
IMPORTANT! Damage may occur if cables are not properly routed through the cable guides. Confirm that all cables are routed through each of the indicated cable guides before proceeding.



4. Reconnect the cable(s).
5. Attach the polymer film.
6. Attach the tape.
7. Install the components you removed in the *Before you begin* section.



Motherboard



Before you begin

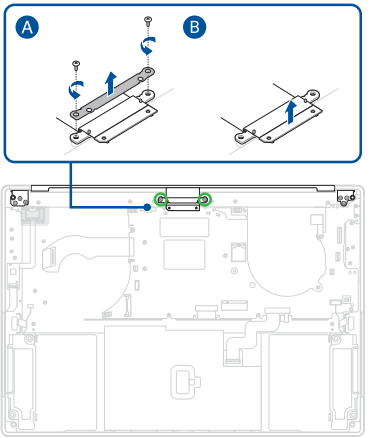
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the bottom cover and disconnect the battery power cable.
3. Remove the following components:
   - Battery
   - M.2 SSD module
   - Heat sink
   - Fan module
   - I/O ports

Screw list

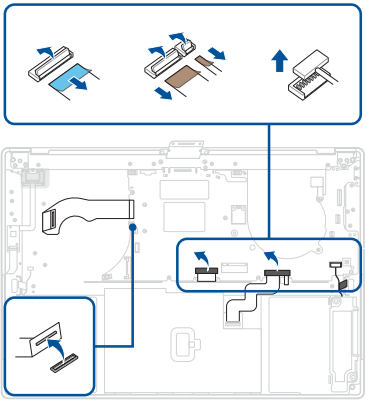
- ⊕ M1.6 X 2.5L (5pcs)
- ⊕ M1.2 X 1.3L (1pc)

Removal

1. Remove the screw(s).
2. Remove the bracket.
3. Disconnect the cable.



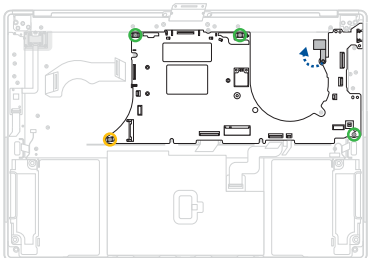
4. Remove the tape.
5. Disconnect the cable(s).



6. Detach the tape.

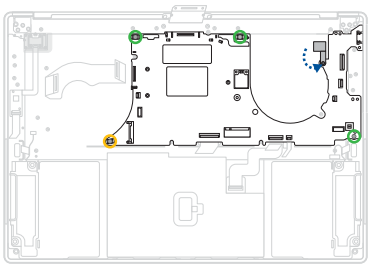
IMPORTANT! The tape cannot be reused once removed. Remove any adhesive residue and use new tape during reinstallation.

7. Remove the screw(s).
8. Remove the motherboard.

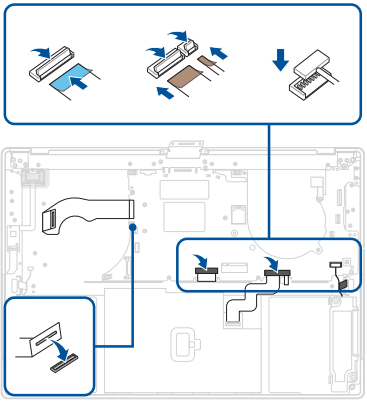


Installation

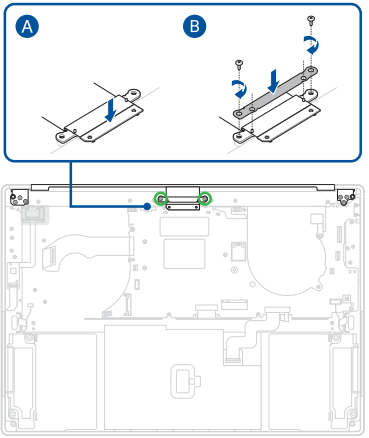
1. Install the motherboard.
2. Secure the motherboard using the screw(s) you removed earlier.
3. Attach the tape.



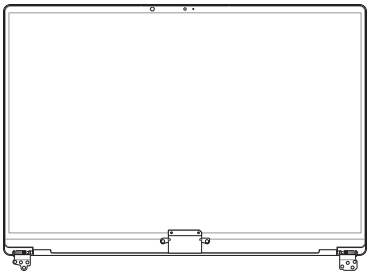
4. Reconnect the cable(s).
5. Attach the tape.



6. Reconnect the cable.
7. Install the bracket.
8. Secure the bracket using the screw(s) you removed earlier.
9. 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.

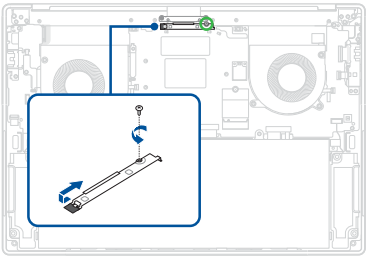
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the bottom cover and disconnect the battery power cable.
3. Remove the following components:
   - Heat sink

Screw list

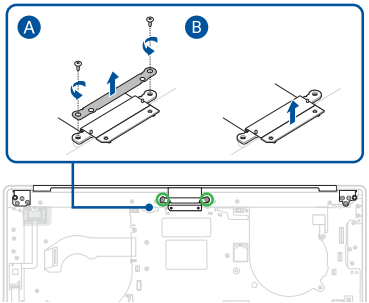
- M1.6 X 2.5L (3pcs)
- M2.0 X 4.5L (6pcs)

Removal

1. Remove the screw.
2. Remove the bracket.



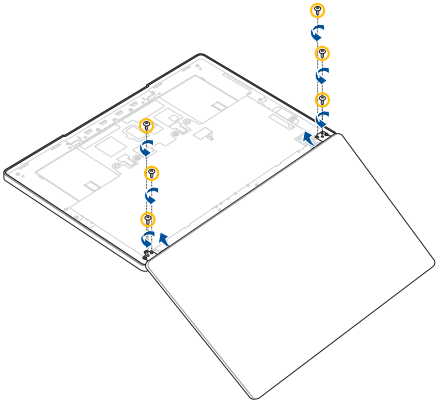
3. Remove the screw(s).
4. Remove the bracket.
5. Disconnect the cable.



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

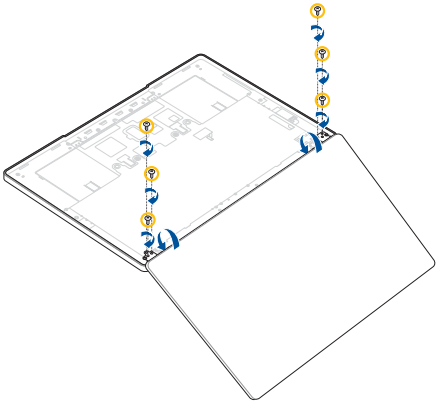
NOTE: Fully open the display panel to an angle of 135 degrees.

7. Remove the screw(s).
8. Remove the display panel module.

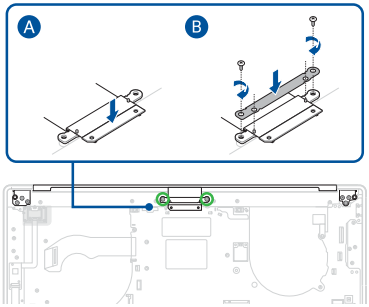


Installation

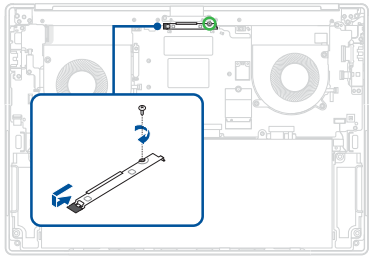
1. In the orientation shown, align and place the hinges of the display panel module on the screw holes.
2. Secure the display panel module using the screw(s) you removed earlier.



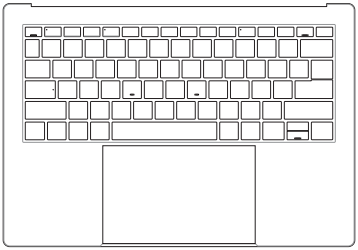
3. Reconnect the cable.
4. Install the bracket.
5. Secure the bracket using the screw(s) you removed earlier.



6. Install the bracket.
7. Secure the bracket using the screw you removed earlier.
8. Install the components you removed in the *Before you begin* section.



Keyboard module



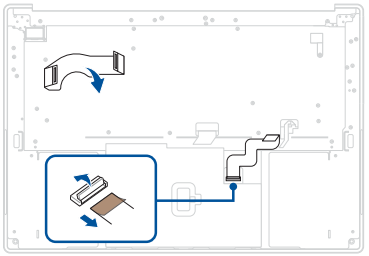
Before you begin

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
   - Heat sink
   - Fan module
   - I/O ports
   - I/O board
   - Fingerprint reader

- WLAN antenna
- Motherboard
- Display panel module

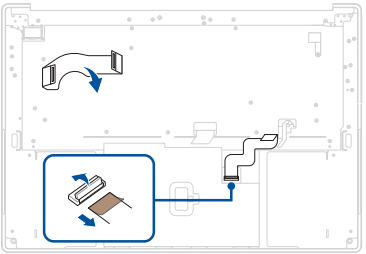
Removal

Disconnect and remove the cable(s).



Installation

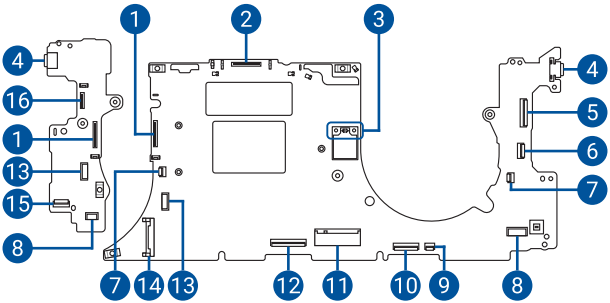
1. Attach and reconnect the cable(s).
2. Install the components you removed in the *Before you begin* section.



Appendix

Wiring and connection diagrams

Top view



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