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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

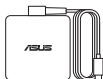


Plastic blade



Tweezers

Accessories



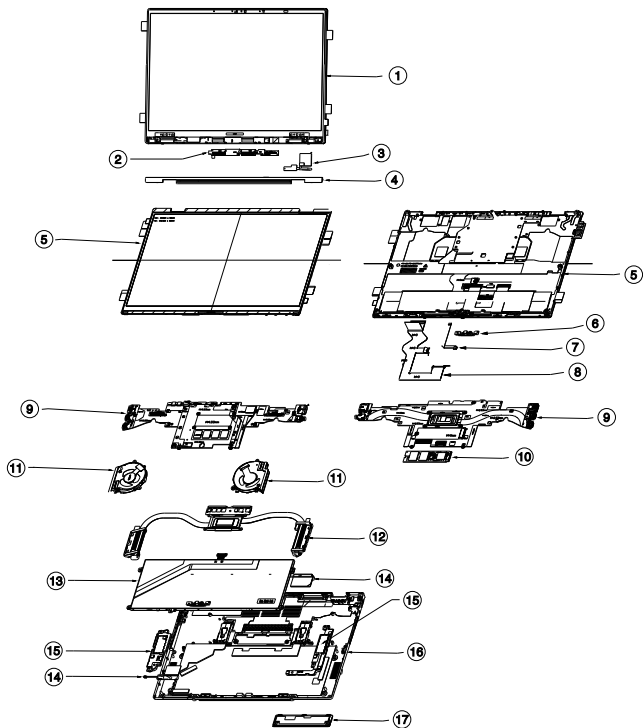
Power adapter

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



1. Upper display panel module
2. Control board
3. Control board cable
4. Display bezel
5. Lower display panel module (top/bottom)
6. Pogo board
7. Pogo FFC cable
8. eDP cable
9. Motherboard (top/bottom)
10. M.2 SSD module
11. Fan
12. Heat sink
13. Battery
14. Antenna cables
15. Speakers
16. Bottom cover
17. Access panel

Chapter 2: ***Service Procedures***

Lower display panel module



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.
-

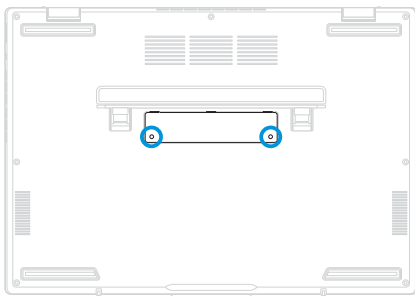
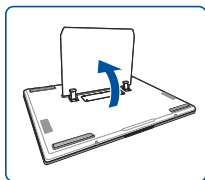
Read the **Safety Precautions** and complete the **Pre-repair Checklist**.

Screw list

- ⊗ M2.0 X 4.0L (8pcs)
- ⊗ M2.0 X 2.2L (2pcs)
- ⊗ M1.6 X 2.0L (2pcs)

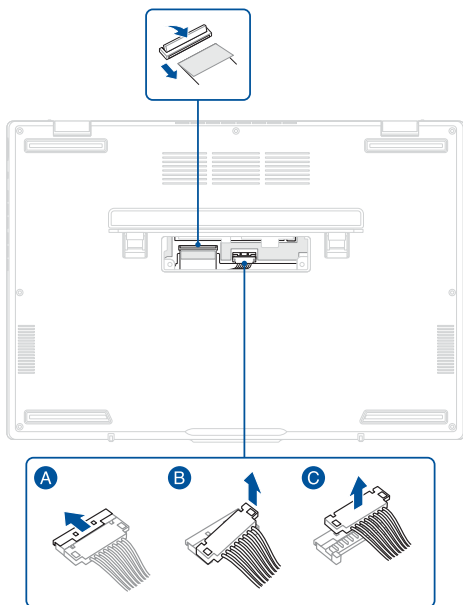
Removal

1. Lift the kickstand to reveal the access panel on the bottom cover.
2. Remove the screw(s) from the access panel, then remove the access panel.

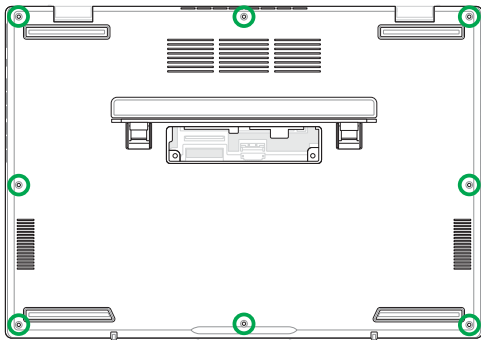


3. Disconnect the eDP cable and battery power cable.

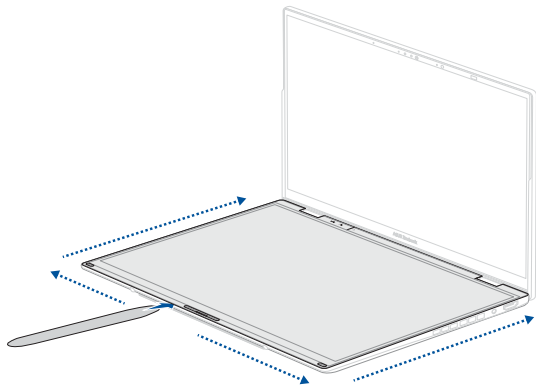
IMPORTANT! Disconnect the battery power cable by lifting the side with the red wires first.



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

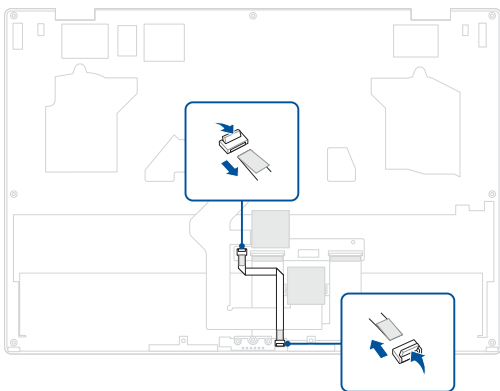


5. Turn over your device and place the device as shown in the illustration below.
6. Use the plastic blade to pry open the indicated area of the lower display panel module as shown in the illustration below.
7. Remove the lower display panel module.



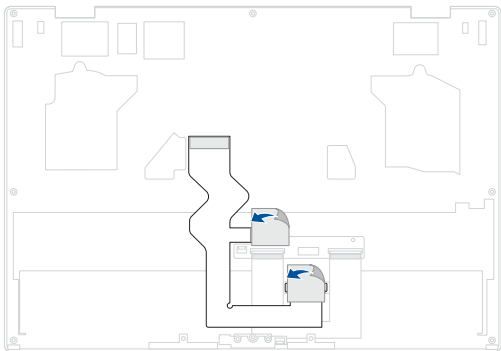
8. Turn over the lower display panel module, then disconnect the cable as shown in the illustration below.

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



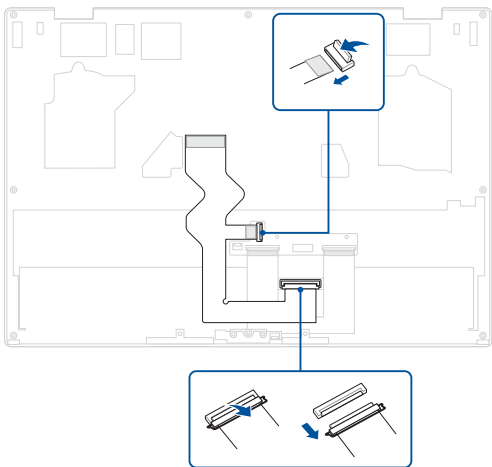
9. Remove the tape.

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



10. Disconnect the cable as shown in the illustration below.

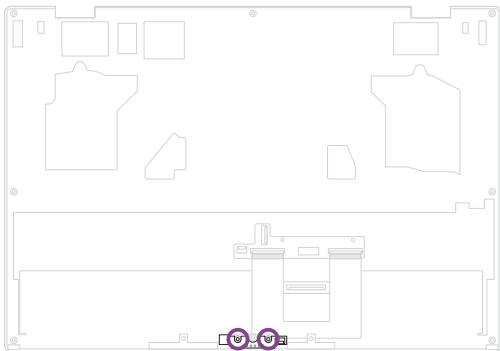
NOTE: This step is only required when you are replacing the existing component with a new one.



11. Remove the screw(s), then remove the Pogo board.

NOTE:

- This step is only required when you are replacing the existing component with a new one.
 - Ensure to fully remove the tape and all adhesive residue after removing the Pogo board.
-

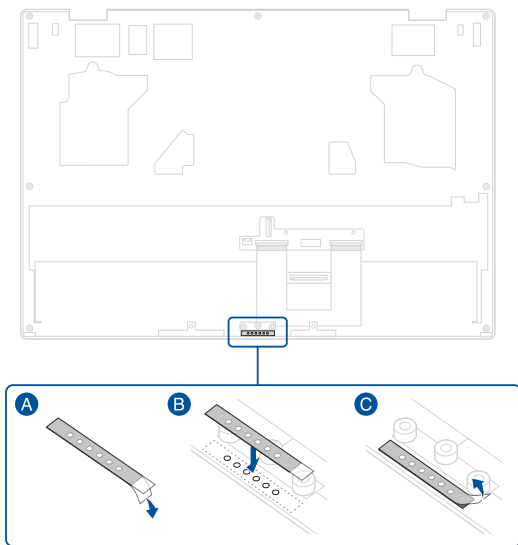


Installation

1. Align and attach the tape to the indicated area of the lower display panel module as shown in the illustration below.

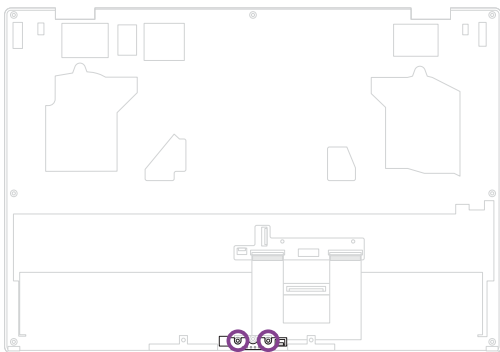
NOTE:

- This step is only required when you are replacing the existing component with a new one.
 - When attaching the tape, ensure not to cover the pinholes on the lower display panel module.
-



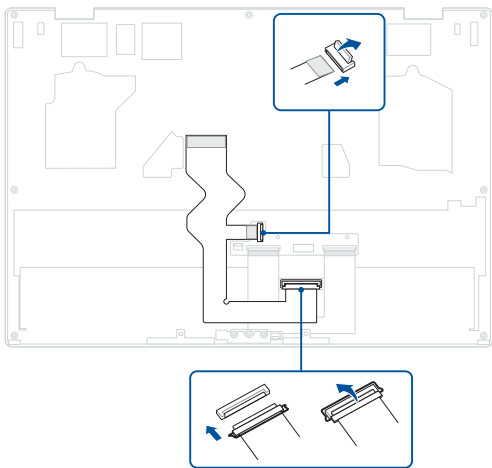
2. Align and install the Pogo board, then secure the Pogo board using the screw(s) you removed earlier.

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



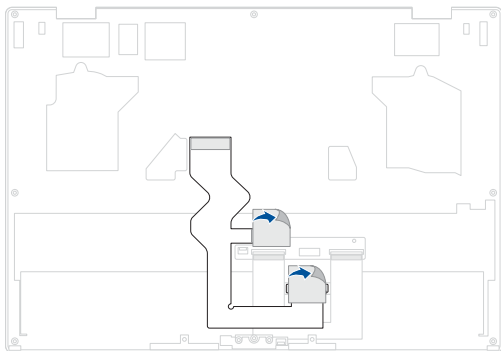
3. Install and reconnect the cable, ensuring that the cable is securely connected to the connector(s).

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



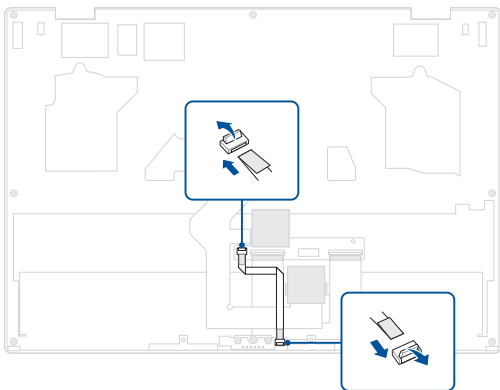
4. Reattach the tape.

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

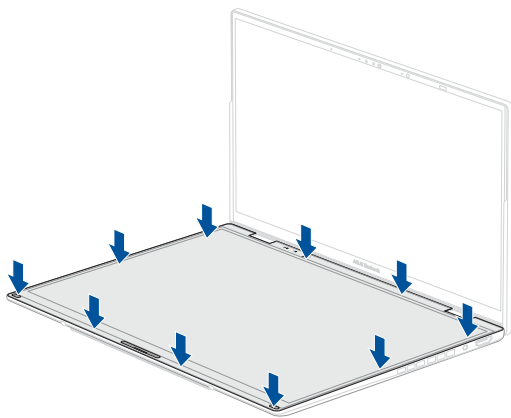


5. Install and reconnect the cable, ensuring that the cable is securely connected to the connector(s).

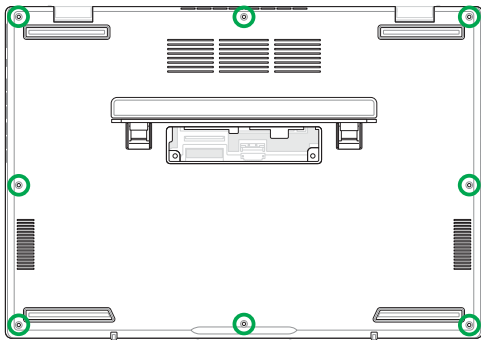
NOTE: This step is only required when you are replacing the existing component with a new one.



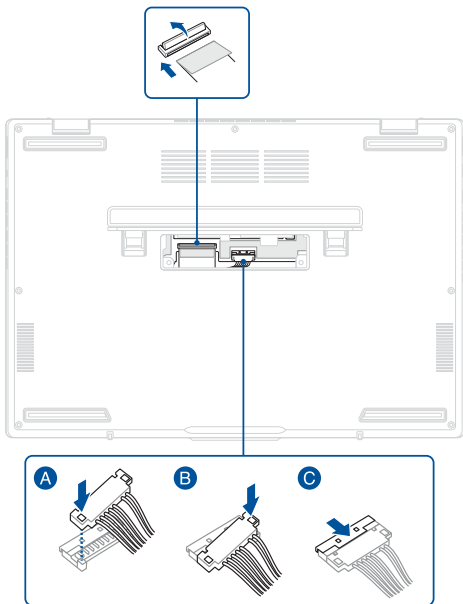
6. Align and install the lower display panel module.



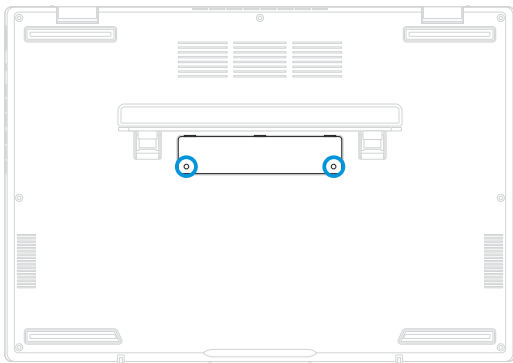
7. Close the lid and turn over your device.
8. Secure the bottom cover using the screw(s) you removed earlier.



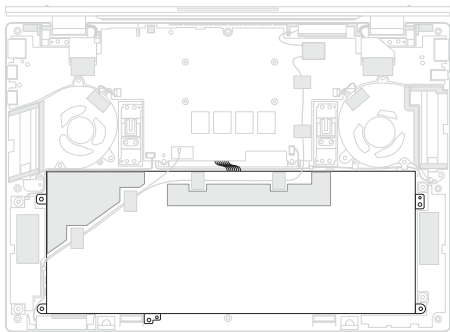
9. Reconnect the eDP cable and battery power cable.



10. Install the access panel, then secure the access panel using the screw(s) you removed earlier.



Battery



Before you begin

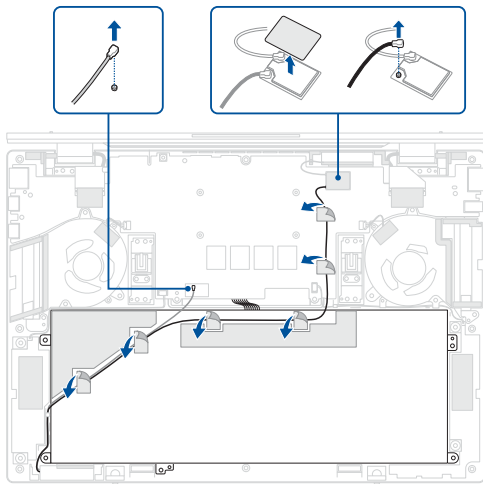
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Lower display panel module

Screw list

- ⊕ M2.0 X 3.5L (3pcs)

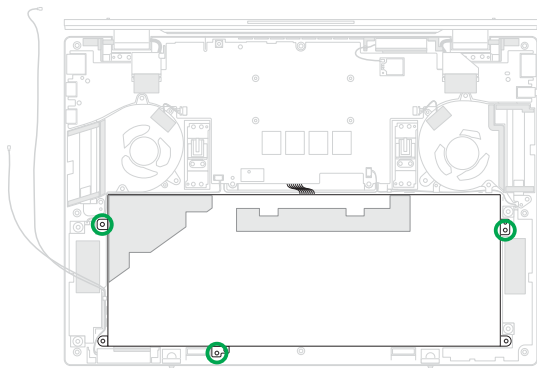
Removal

1. Disconnect the antenna cable(s).
2. Remove the tape from the antenna cable(s).



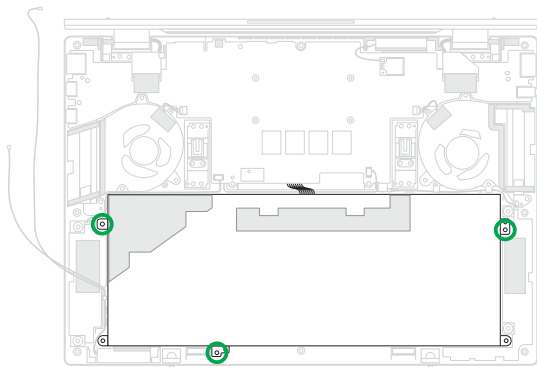
3. Remove the screw(s) from the battery.
4. Remove the battery.

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.



Installation

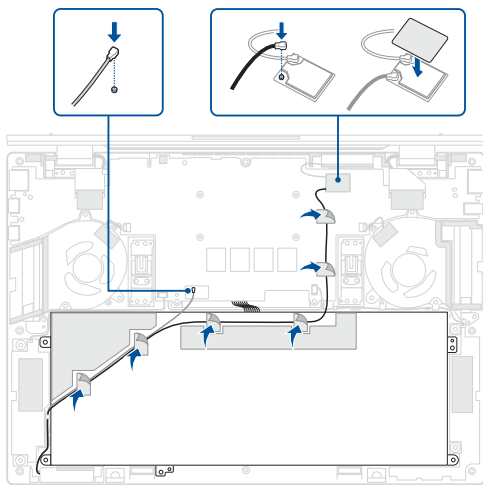
1. Install the battery.
2. Secure the battery using the screw(s) you removed earlier.



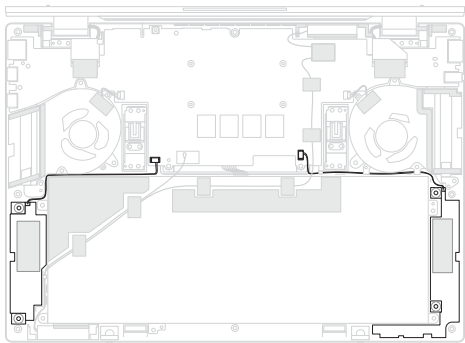
3. Route the antenna cable(s) and reattach the tape as shown in the illustration below.

IMPORTANT! Damage may occur if cables are not properly routed. Confirm that all cables are routed as shown in the illustration below before proceeding.

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



Speakers

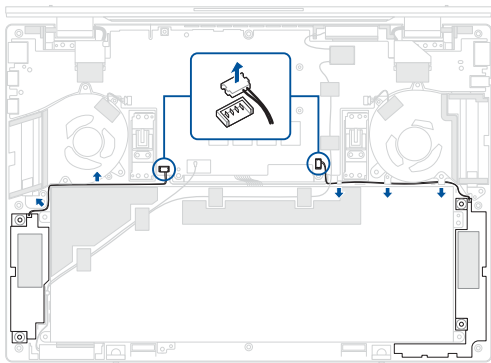


Before you begin

1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Lower display panel module

Removal

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

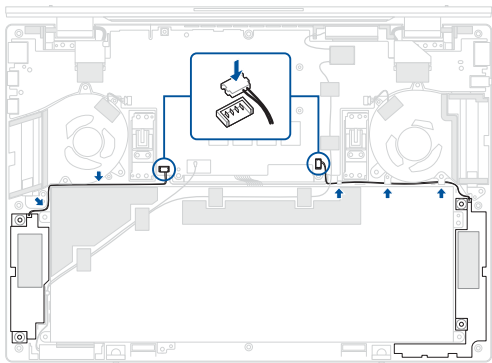


Installation

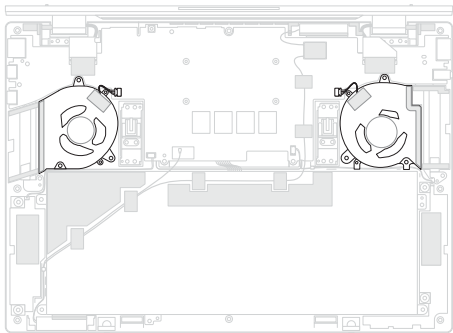
1. Install the speakers.
2. Route the speaker cable(s) through the cable guide(s).

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



Fan module



Before you begin

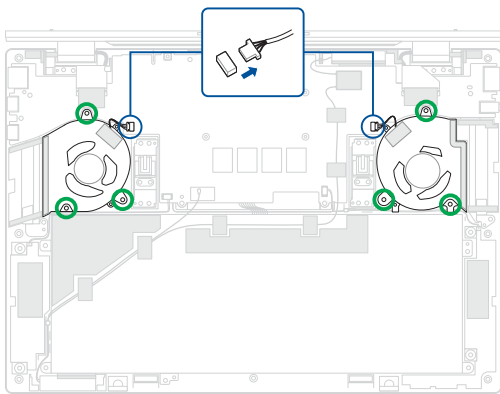
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Lower display panel module

Screw list

- ⊕ M2.0 X 2.5L (6pcs)

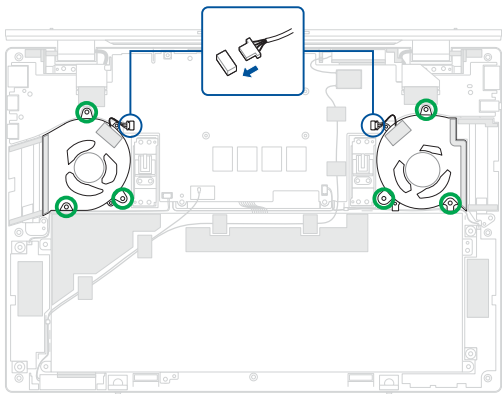
Removal

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

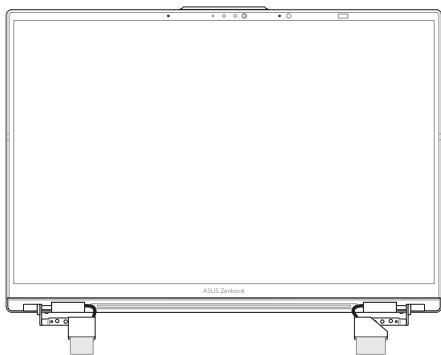


Installation

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



Upper display panel module



Before you begin

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

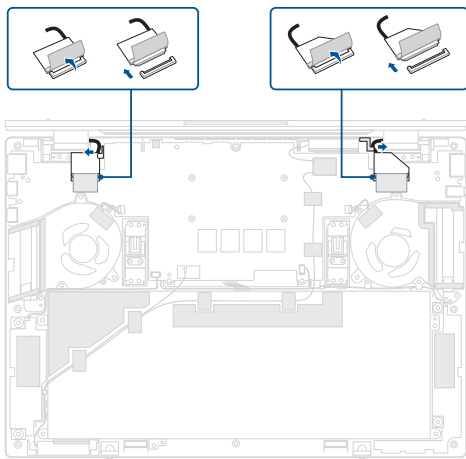
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Lower display panel module

Screw list

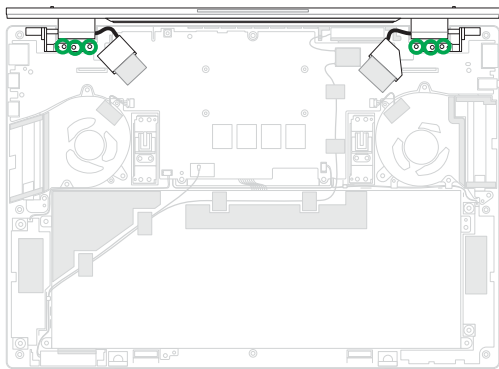
- ⊕ M2.0 X 3.5L (6pcs)

Removal

1. Disconnect the cable(s), then remove the cable(s) from the cable guide(s).

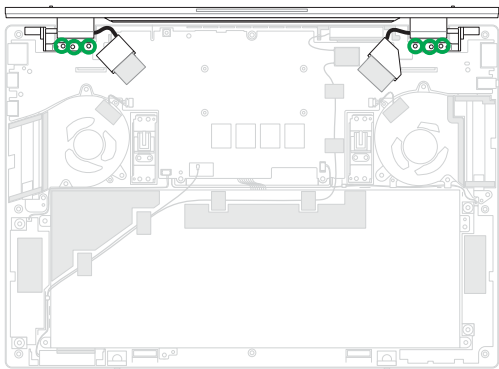


2. Remove the screw(s).
3. Remove the upper display panel module.



Installation

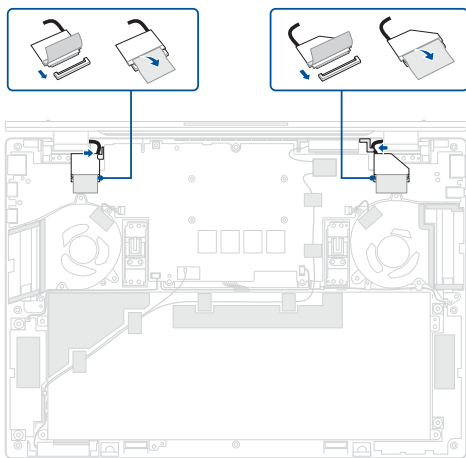
1. Align and place the hinges of the upper display panel module on the screw holes.
2. Secure the hinges using the screw(s) you removed earlier.



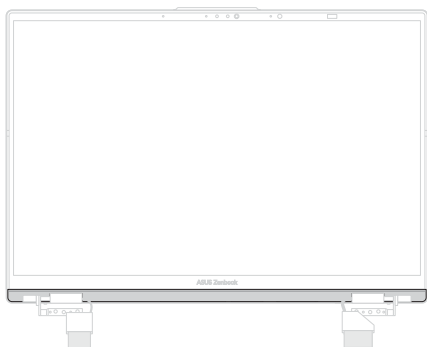
3. Route the cable(s) through the cable guide(s), then reconnect the cable(s).

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

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



Display bezel



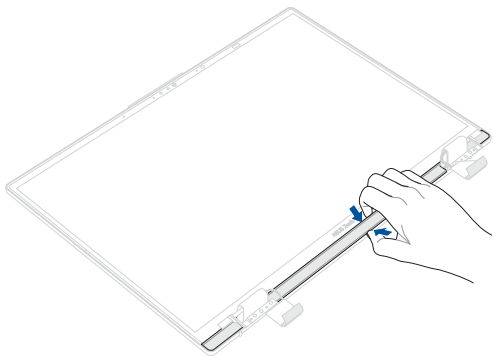
Before you begin

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

1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Lower display panel module
 - Upper display panel module

Removal

Carefully pry the bezel loose, then remove the bezel.



Installation

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



Control board

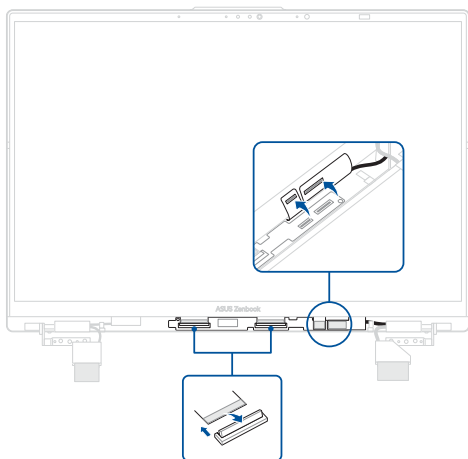


Before you begin

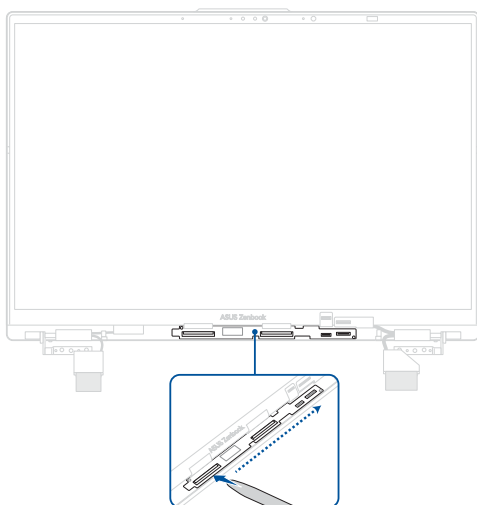
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Lower display panel module
 - Upper display panel module
 - Display bezel

Removal

1. Disconnect the cable(s).

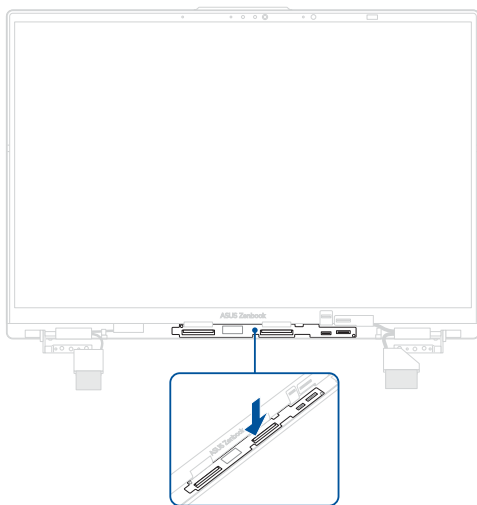


2. Remove the control board.

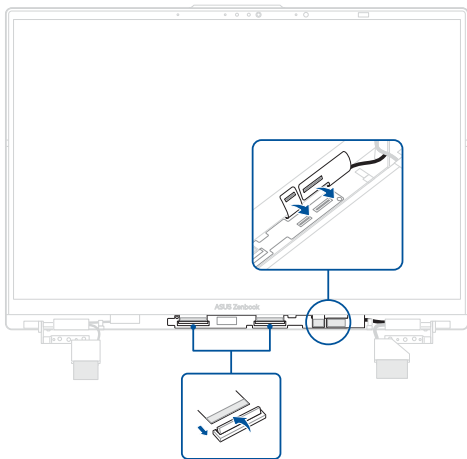


Installation

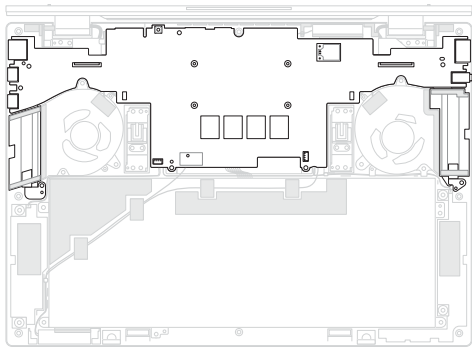
1. Install the control board.



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



Motherboard



Before you begin

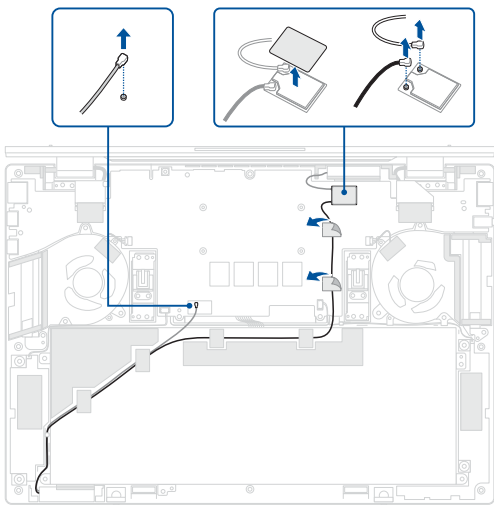
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Lower display panel module

Screw list

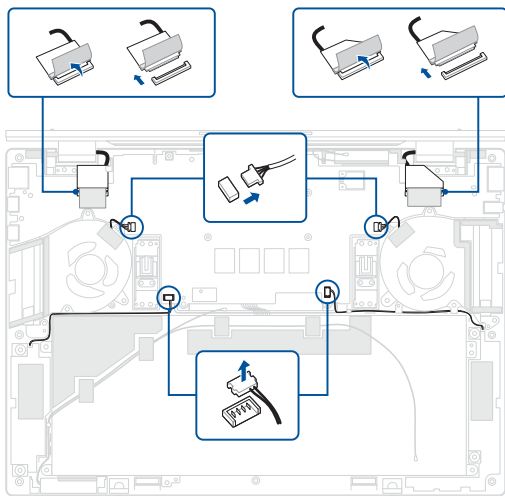
- ⊕ M2.0 X 2.5L (13pcs)

Removal

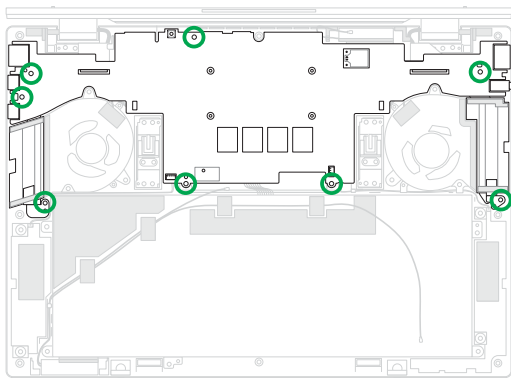
1. Disconnect the antenna cable(s).
2. Remove the tape from the antenna cable.



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



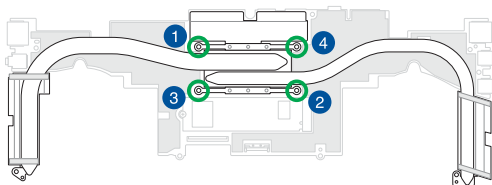
4. Remove the screw(s), then remove the motherboard with heat sink installed underneath.



5. Turn over the motherboard with heat sink installed underneath. Remove the heat sink screw(s) one by one in the sequence shown in the illustration below, then remove the heat sink from the motherboard.

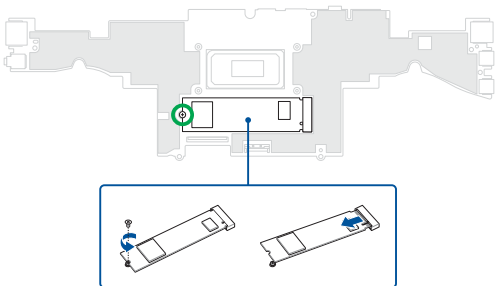
NOTE: This step is only required when you are replacing the existing component with a new one.

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



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

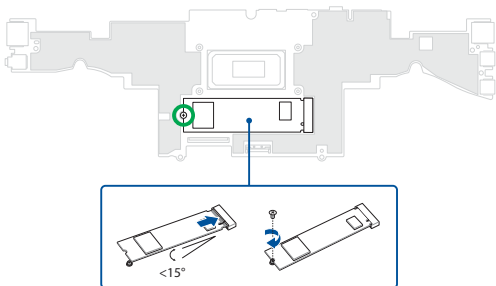
NOTE: This step is only required when you are replacing the existing component with a new one.



Installation

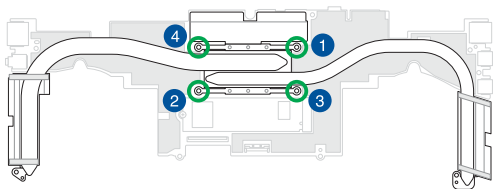
1. Align and insert the M.2 SSD module into the M.2 connector on the motherboard, then secure the M.2 SSD module using the screw you removed earlier.

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

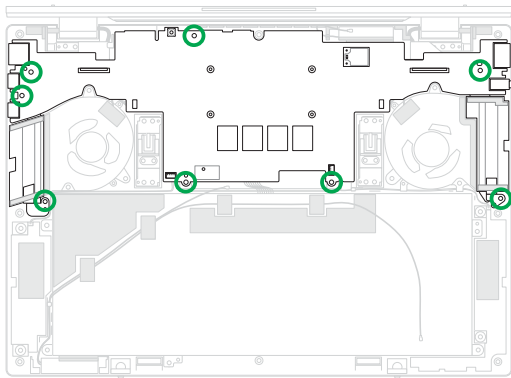


2. Install the heat sink and secure the heat sink screw(s) one by one in the sequence shown in the illustration below, then turn over the motherboard with heat sink installed underneath.

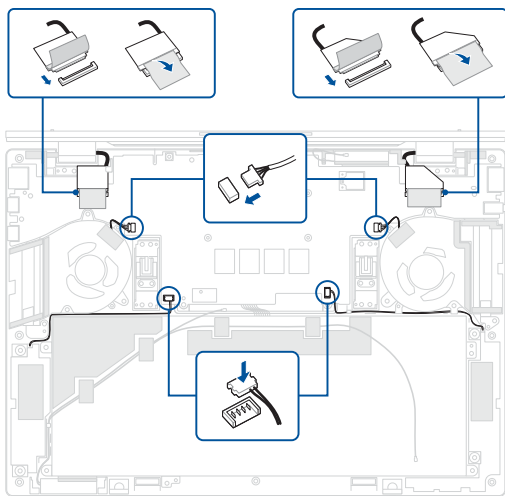
NOTE: This step is only required when you are replacing the existing component with a new one.



3. Align and install the motherboard with heat sink installed underneath, then secure the screw(s).



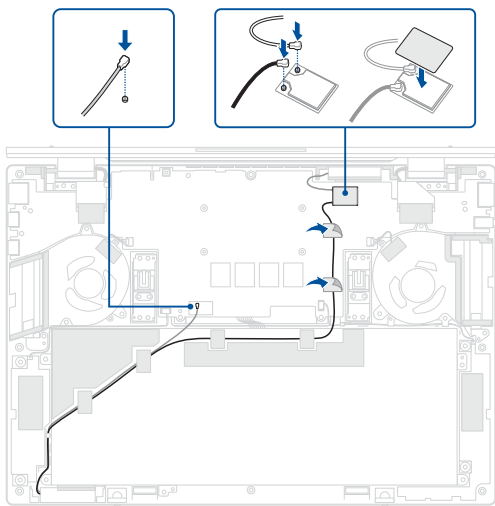
4. Reconnect the cable(s) to the motherboard.



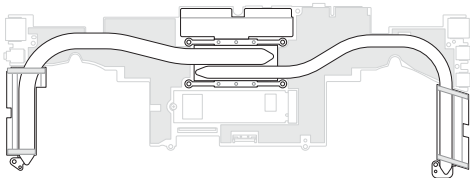
5. Route the antenna cable(s) and reattach the tape as shown in the illustration below.

IMPORTANT! Damage may occur if cables are not properly routed. Confirm that all cables are routed as shown in the illustration below before proceeding.

6. Reconnect the antenna cable(s).
7. 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:
 - Lower display panel module
 - Motherboard

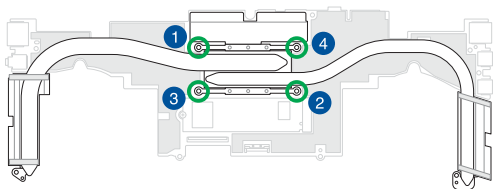
Screw list

- ⊕ M2.0 X 2.5L (4pcs)

Removal

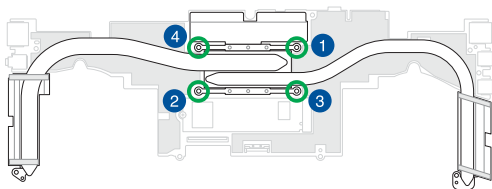
1. Remove the heat sink screw(s) one by one in the sequence shown in the illustration below.
2. Remove the heat sink from the motherboard.

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

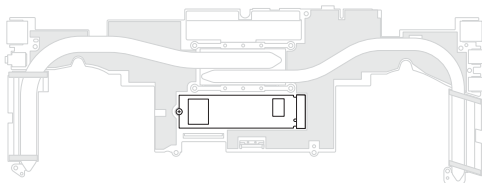


Installation

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.



M.2 SSD module



Before you begin

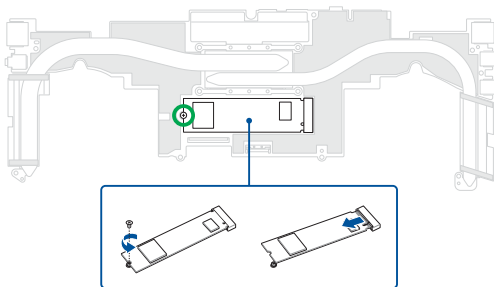
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Lower display panel module
 - Motherboard

Screw list

- ⊕ M2.0 X 2.5L (1pc)

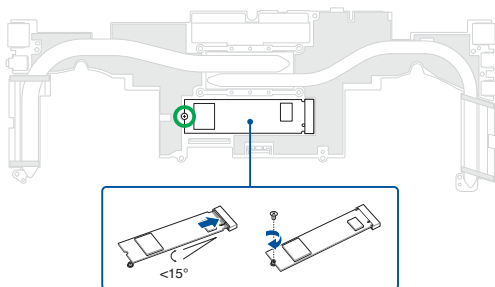
Removal

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

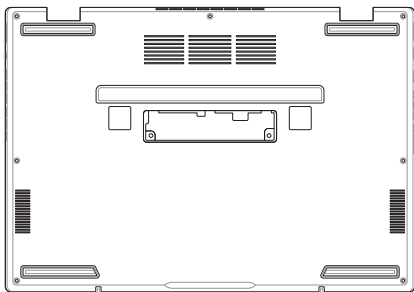


Installation

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.



Bottom cover



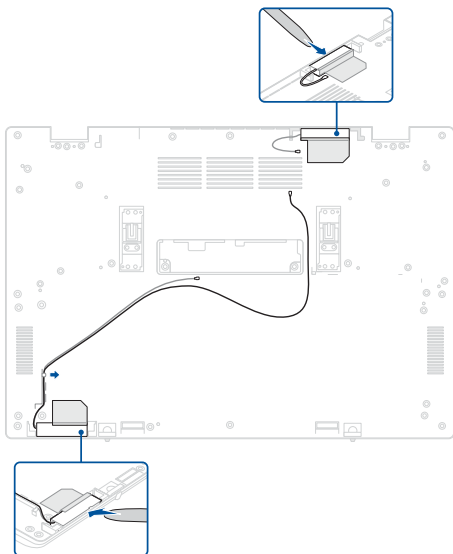
Before you begin

1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Lower display panel module
 - Battery
 - Speakers
 - Fan module
 - Upper display panel module
 - Motherboard

Removal

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

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

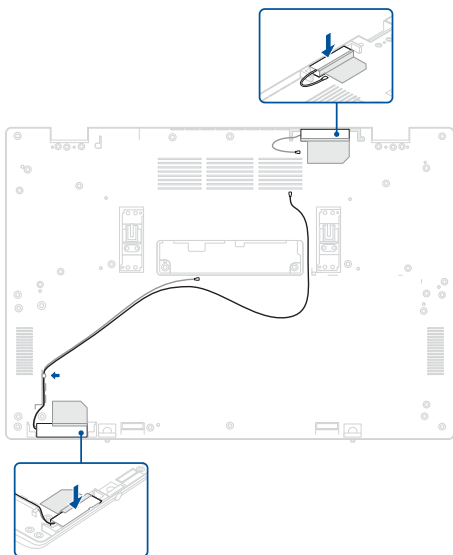


Installation

1. Install the antenna cable(s).
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.

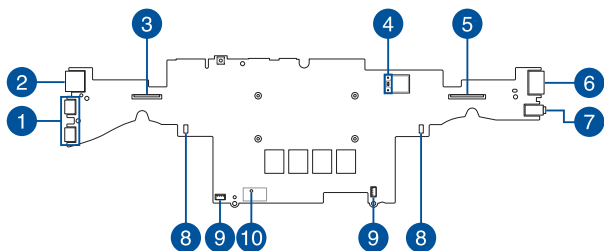
3. Install the components you removed in the *Before you begin* section.



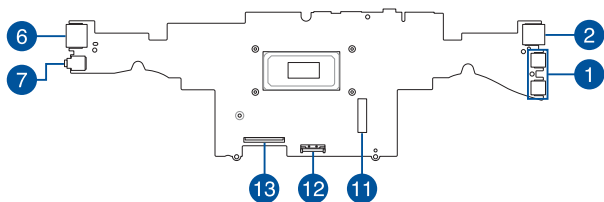
Appendices

Wiring and connection diagrams

Top View



Bottom View



1. USB Type C® connector
2. USB Type-A connector
3. LCD eDP connector
4. WLAN connector
5. Camera connector
6. HDMI connector
7. Audio connector
8. Fan connector
9. Speaker connector
10. RF connector
11. M.2 SSD connector
12. Battery connector
13. System eDP connector

