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IN SEARCH OF INCREDIBLE



Service Manual

ASUS

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Table of Contents

Chapter 1: Introduction

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

Chapter 2: Service Procedures

Bottom cover	14
Removal.....	15
Installation.....	16
Battery	17
Removal.....	18
Installation.....	21
WLAN module.....	24
Removal.....	25
Installation.....	26
Speakers	27
Removal.....	28
Installation.....	29
Fan module	30
Removal.....	31
Installation.....	32

Heat sink	33
Removal	34
Installation	35
Motherboard	36
Removal	37
Installation	39
Touchpad	41
Removal	42
Installation	44
Display panel module	46
Removal	47
Installation	50
Display bezel	53
Removal	54
Installation	55
Display panel	57
Removal	58
Installation	62
Camera module	69
Removal	70
Installation	71
Top cover	72
Removal	73
Installation	74

Appendix

Wiring and connection diagrams	78
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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.
-

Repair tools



Screwdriver



Plastic blade



Tweezers

Accessories



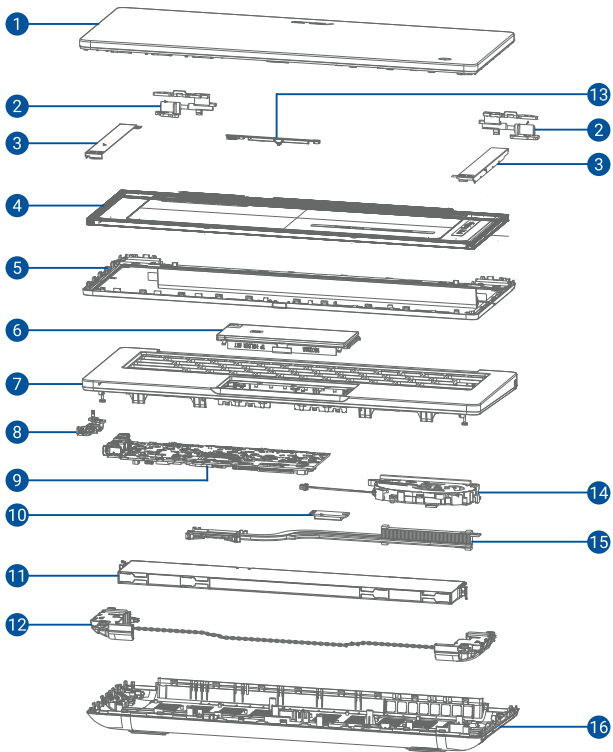
Power adapter

Software repair tools

After replacing certain system components, you may be required to download and run a repair tool to complete the service procedure.

For more information, visit www.asus.com/support/FAQ/1051611/.

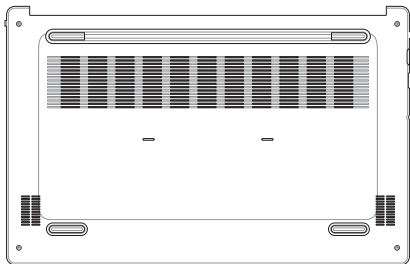
Major components



1. Top cover
2. Hinges
3. Display brackets
4. Display panel
5. Display bezel
6. Touchpad
7. Keyboard module
8. I/O port bracket
9. Motherboard
10. WLAN module
11. Battery
12. Speakers
13. Camera module
14. Fan module
15. Heat sink
16. Bottom cover

Chapter 2: ***Service Procedures***

Bottom cover



Before you begin

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

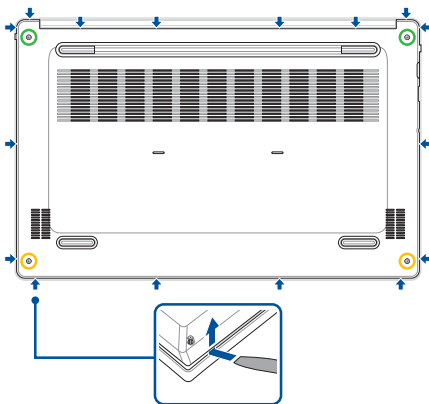
Screw list

- ⊕ M2.0 X 8.0L captive screw (2pcs)
- ⊕ M2.0 X 6.0L captive screw (2pcs)

Removal

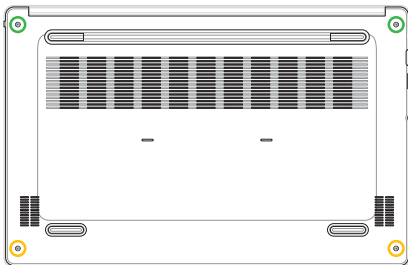
1. Loosen the captive screw(s) without removing the screw(s).
2. Use the plastic blade to pry open the indicated area of the bottom cover as shown in the illustration below.

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

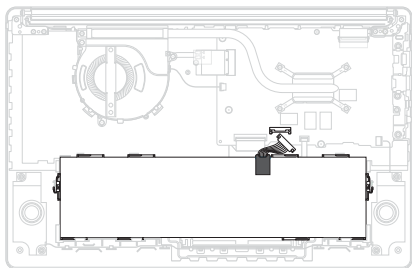


Installation

1. Install the bottom cover.
2. Gently press down on the bottom cover until it clicks into place.
3. Secure the bottom cover by tightening the screw(s).



Battery



Before you begin

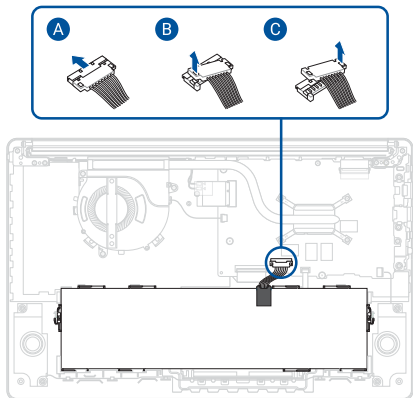
IMPORTANT! Serious risk of fire or explosion may occur if the battery is punctured. If you are uncertain about proceeding, stop and contact an authorized service center for assistance.

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

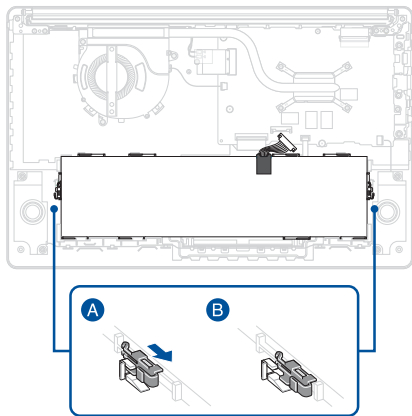
Removal

1. Disconnect the battery power cable.

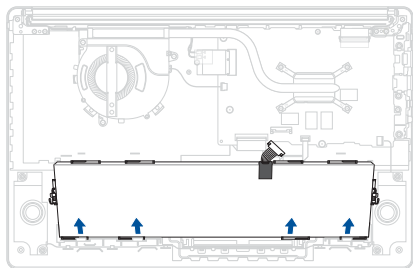
IMPORTANT! Disconnect the battery power cable by lifting the side with the red wires first.



2. Push the latches into the unlocked position.

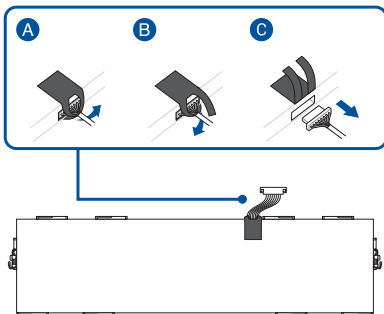


3. Remove the battery.



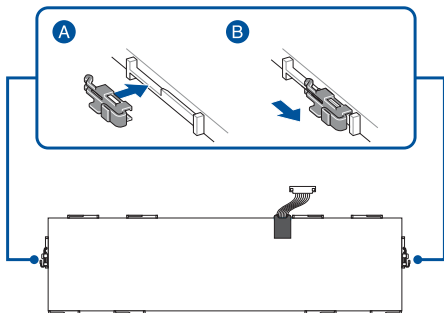
4. Remove the tape, then disconnect the cable.

NOTE: The following steps are only required when you are replacing the existing component with a new one.

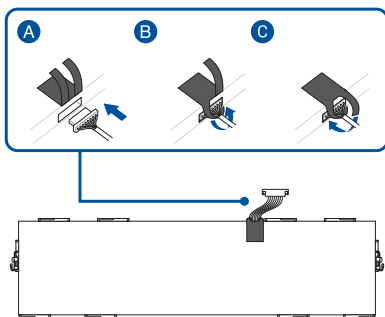


Installation

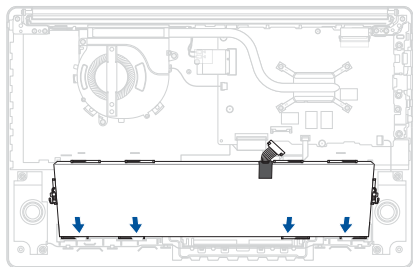
1. Install the latches.



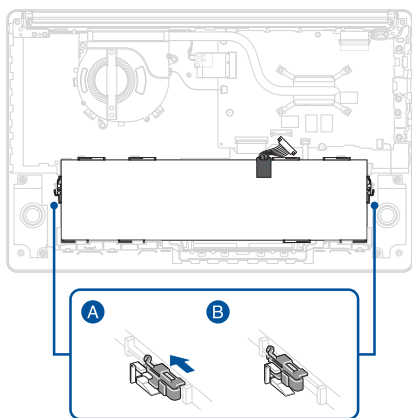
2. Reconnect the cable, then reattach the tape.



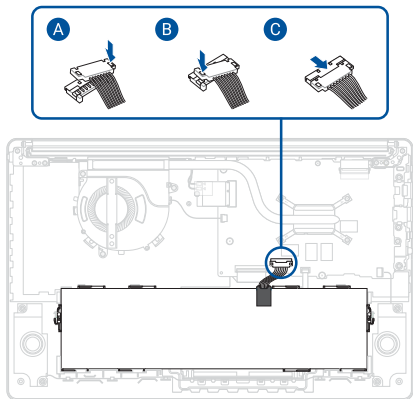
3. Install the battery.



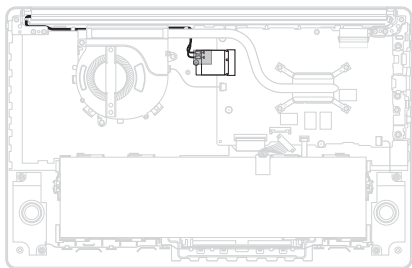
4. Push the latches into the locked position.



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



WLAN module



Before you begin

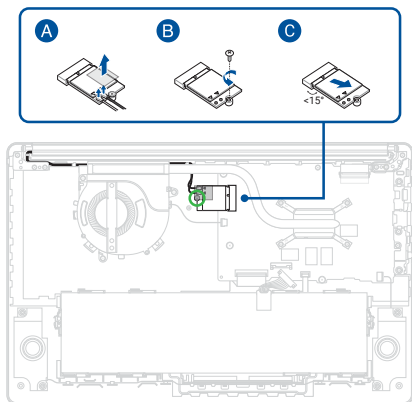
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the bottom cover and disconnect the battery power cable.

Screw list

- ⊕ M2.0 X 2.5L (1pc)

Removal

1. Remove the polyester film, then disconnect the cable(s).
2. Remove the screw.
3. Remove the WLAN module.

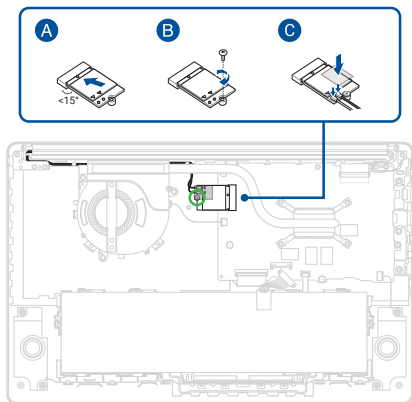


Installation

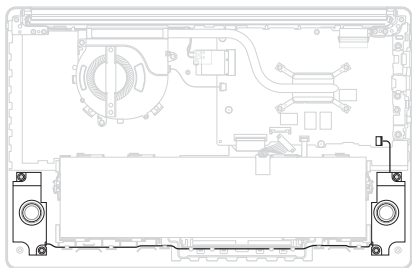
1. Install the WLAN module.
2. Secure the WLAN module using the screw you removed earlier.
3. Reconnect the cable(s), then reattach the polyester film.
4. Route the cable through the cable guide(s).

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



Speakers

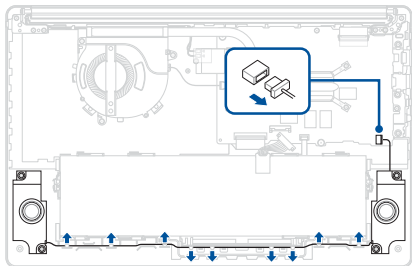


Before you begin

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

Removal

Disconnect the cable, then remove the speakers.

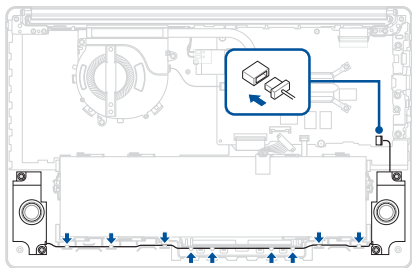


Installation

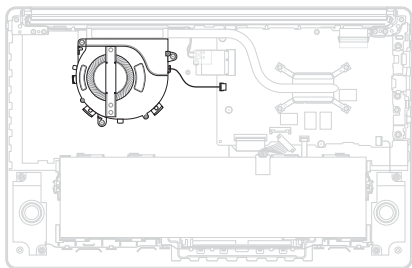
1. Install the speakers and reconnect the cable.
2. Route the cable through the cable guide(s).

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.

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



Fan module



Before you begin

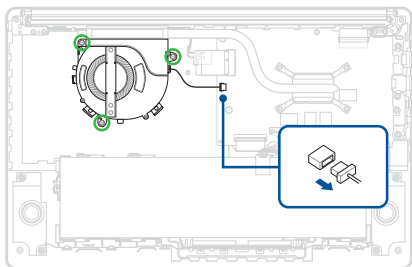
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the bottom cover and disconnect the battery power cable.

Screw list

- ⊕ M2.0 X 2.5L (3pcs)

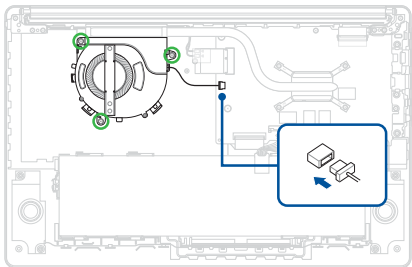
Removal

Disconnect the cable and remove the screw(s), then remove the fan.

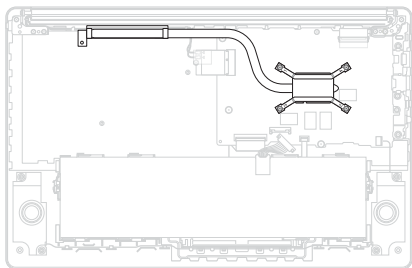


Installation

1. Install the fan, then secure the fan using the screw(s) you removed earlier and reconnect the cable.
2. 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.

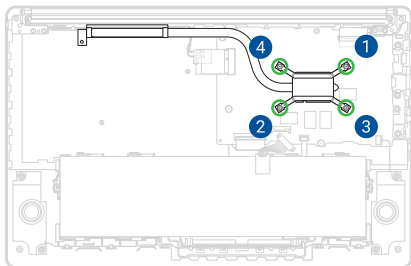
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the bottom cover and disconnect the battery power cable.
3. Remove the following components:
 - Fan module

Screw list

- ⊕ M2.0 X 2.5L (4pcs)

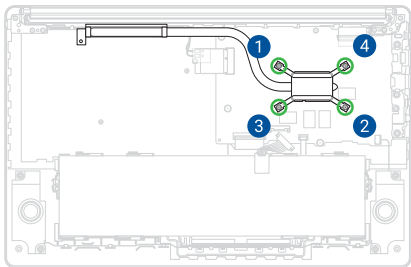
Removal

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

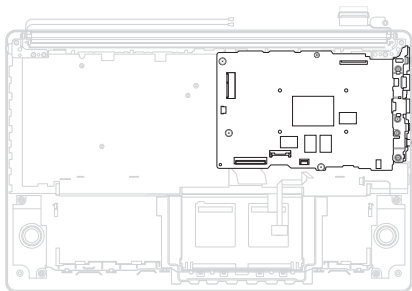


Installation

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.



Motherboard



Before you begin

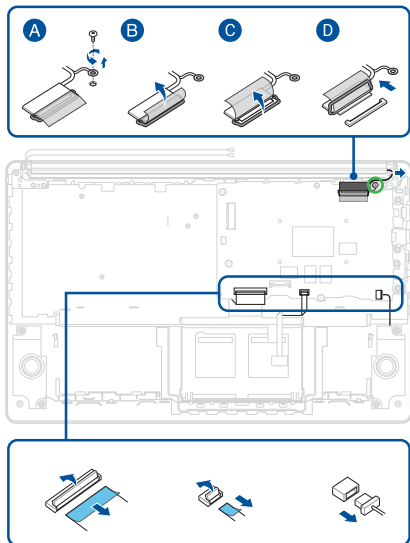
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the bottom cover and disconnect the battery power cable.
3. Remove the following components:
 - Battery
 - WLAN module
 - Speakers
 - Fan module
 - Heat sink

Screw list

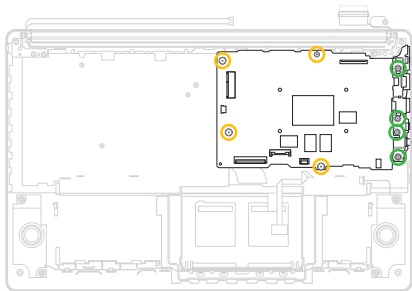
- ⊕ M2.0 X 4.0L (5pcs)
- ⊕ M2.0 X 2.0L (4pcs)

Removal

1. Remove the screw, then disconnect the cable(s).



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



3. Remove the I/O port bracket.

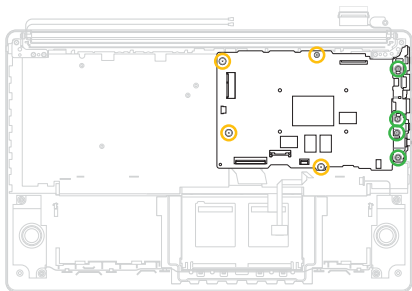


Installation

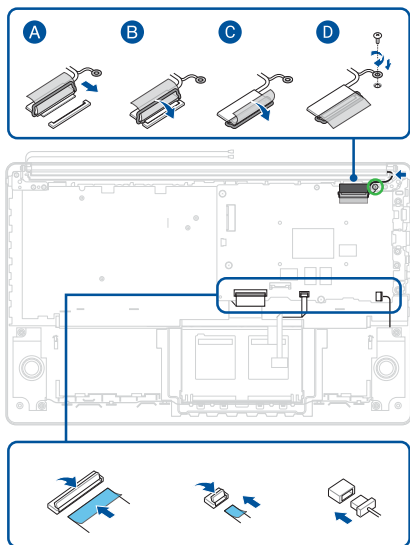
1. Install the I/O port bracket.



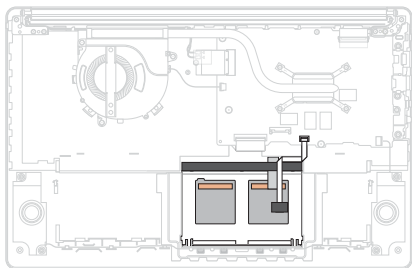
2. Install the motherboard, then secure the motherboard using the screw(s) you removed earlier.



3. Reconnect the cable(s), then secure the cable using the screw you removed earlier.
4. Install the components you removed in the *Before you begin* section.



Touchpad



Before you begin

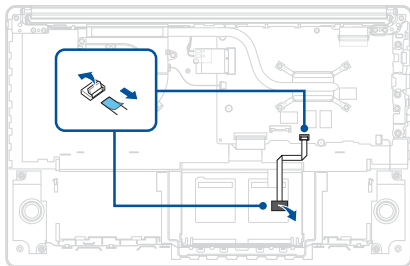
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the bottom cover and disconnect the battery power cable.
3. Remove the following components:
 - Battery

Screw list

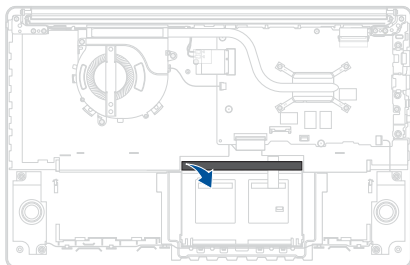
- ⊕ M2.0 X 2.0L (3pcs)

Removal

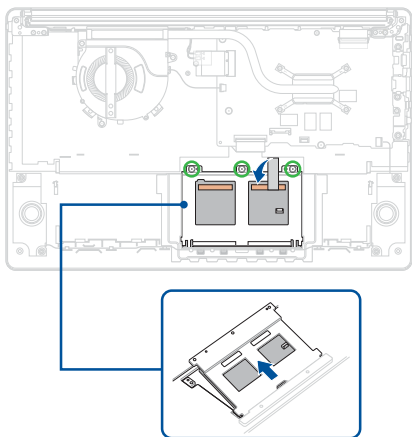
1. Remove the tape, then disconnect the cable.



2. Remove the tape.

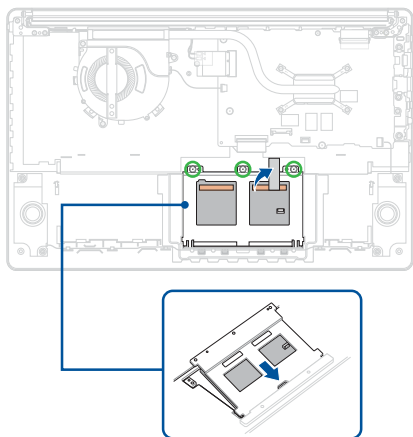


3. Remove the screw(s) and remove the tape, then remove the touchpad.

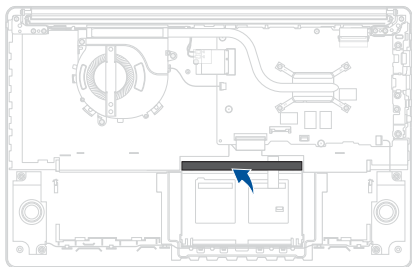


Installation

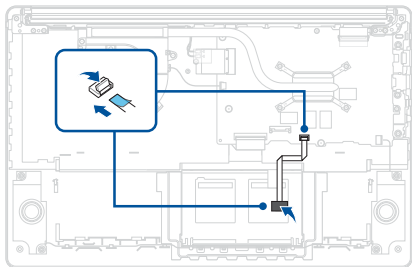
1. Install the touchpad, then secure the touchpad using the screw(s) you removed earlier and reattach the tape.



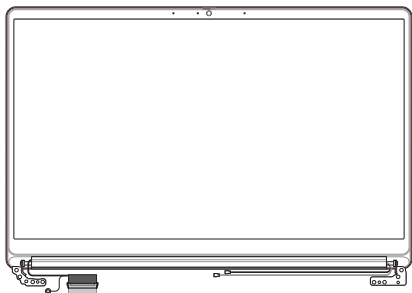
2. Reattach the tape.



3. Reconnect the cable, then reattach the tape.
4. Install the components you removed in the *Before you begin* section.



Display panel module



Before you begin

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

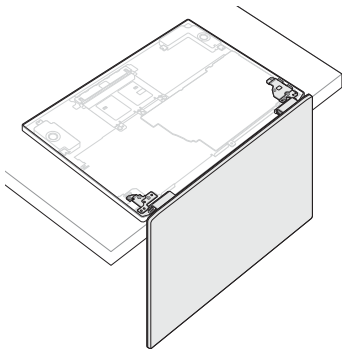
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the bottom cover and disconnect the battery power cable.
3. Remove the following components:
 - Fan module
 - Heat sink

Screw list

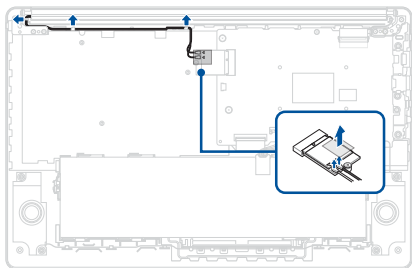
- ⊕ M2.0 X 4.0L (6pcs)

Removal

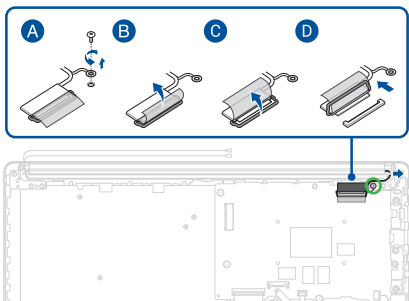
1. Place your device with the display panel hanging over the edge of the workspace as shown in the illustration below.



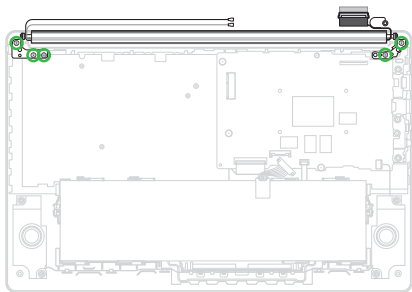
2. Remove the polyester film, then disconnect the cable(s).



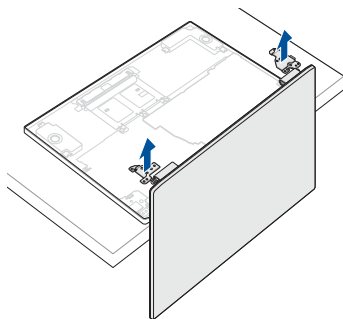
3. Remove the screw, then disconnect the cable.



4. Remove the screw(s).

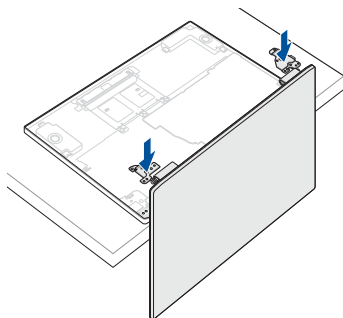


5. Remove the display panel module.

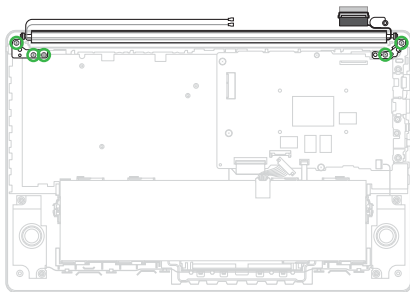


Installation

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



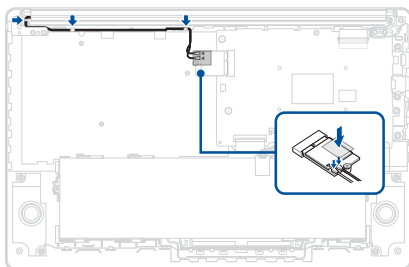
2. Secure the display panel module using the screw(s) you removed earlier.



3. 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.

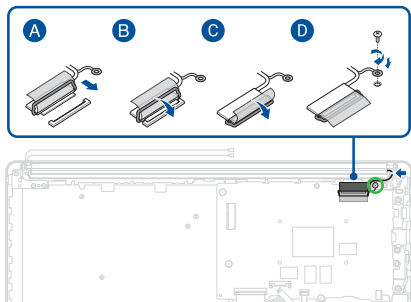
4. Reconnect the cable(s), then reattach the polyester film.



5. 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.

6. Reconnect the cable, then secure the cable using the screw you removed earlier.
7. Install the components you removed in the *Before you begin* section.



Display bezel



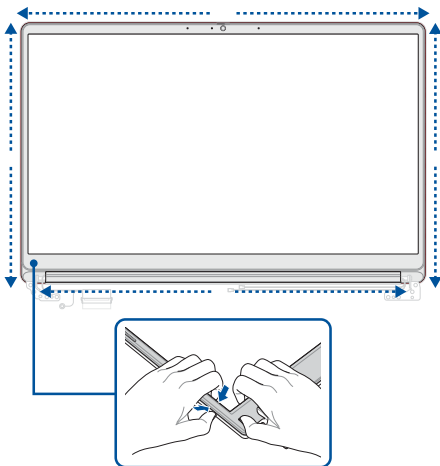
Before you begin

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

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

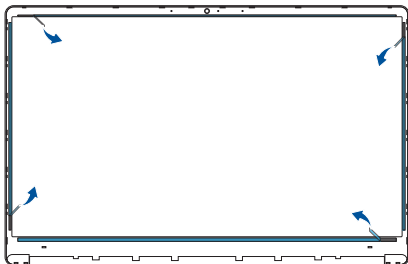
Removal

Carefully pry the bezel loose, then remove the bezel.

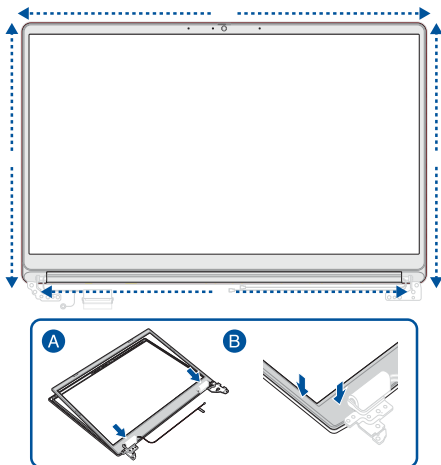


Installation

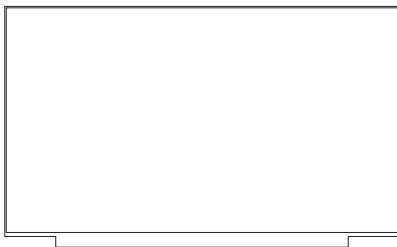
1. Remove the release liners from the tape on the bezel.



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



Display panel



Before you begin

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

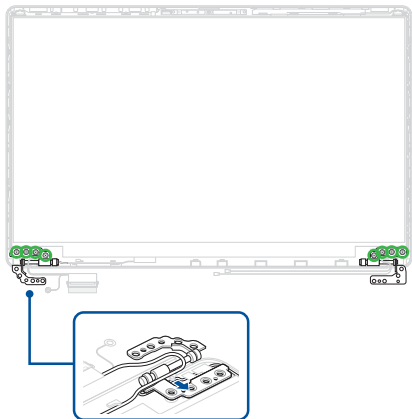
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the bottom cover and disconnect the battery power cable.
3. Remove the following components:
 - Fan module
 - Heat sink
 - Display panel module
 - Display bezel

Screw list

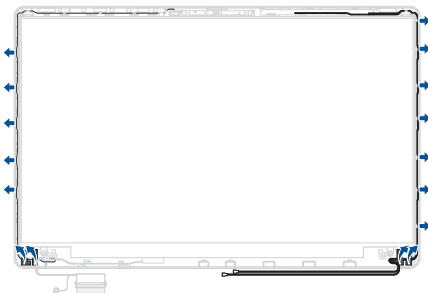
- ⊕ M2.5 X 3.0L (8pcs)

Removal

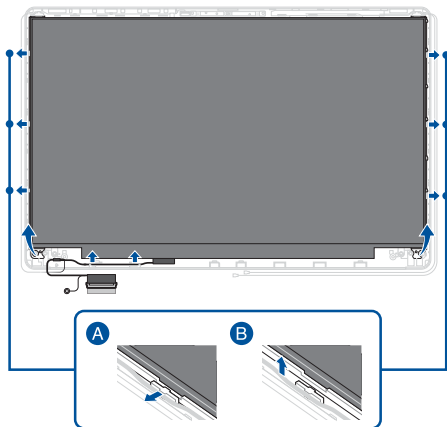
1. Remove the cable(s) from the cable guide(s).
2. Remove the screw(s), then remove the hinges.



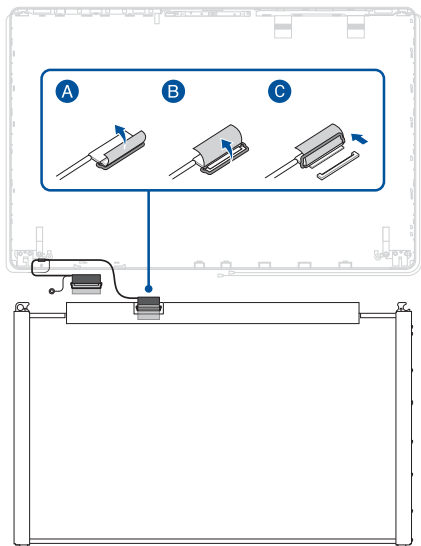
3. Remove the tape, then remove the cable(s) from the cable guide(s).



- Carefully pry the display panel loose.
- Lift the display panel without removing it completely, then hold it in place above the top cover.

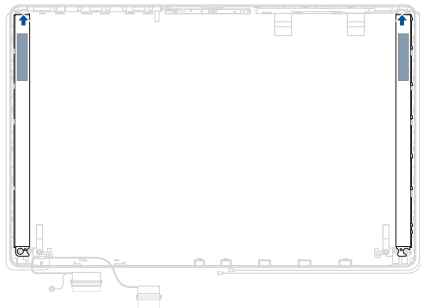


6. Flip the display panel over, then disconnect the cable from the rear side of the display panel.



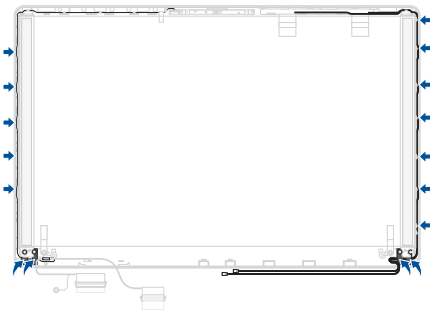
Installation

1. Align and install the display brackets.

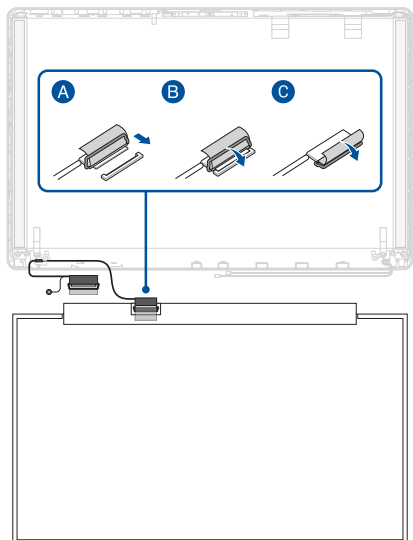


2. Route the cable(s) through the cable guide(s), then reattach the tape.

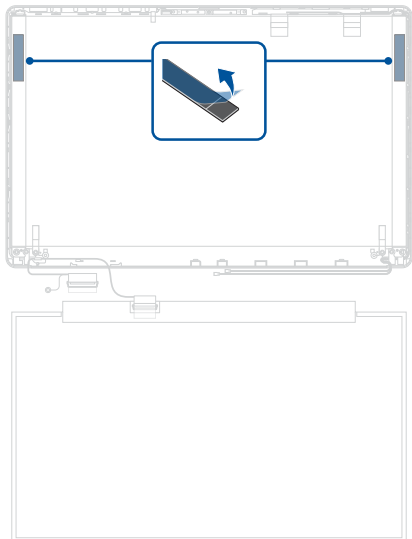
IMPORTANT! Damage may occur if cables are not properly routed through the cable guides. Confirm that all cables are routed through each of the indicated cable guides before proceeding.



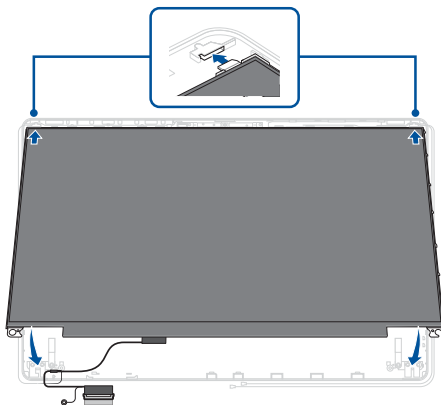
3. Reconnect the cable to the rear side of the display panel.



4. Remove the release liners.

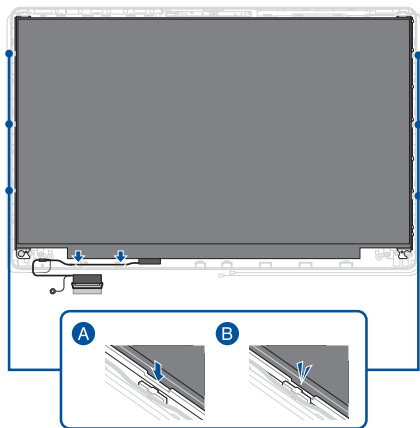


5. Flip the display panel over, then align the display panel with the chassis and lower the display panel.



6. Gently press down on the display panel until it clicks into place.
7. Route the cable through the cable guide(s).

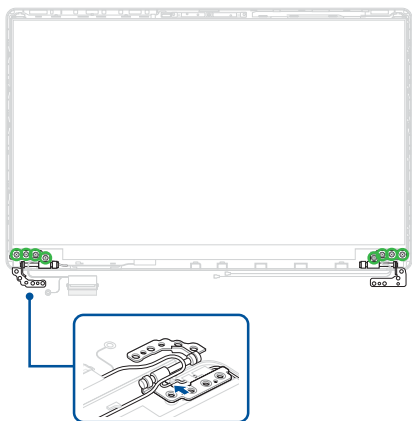
IMPORTANT! Damage may occur if cables are not properly routed through the cable guides. Confirm that all cables are routed through each of the indicated cable guides before proceeding.



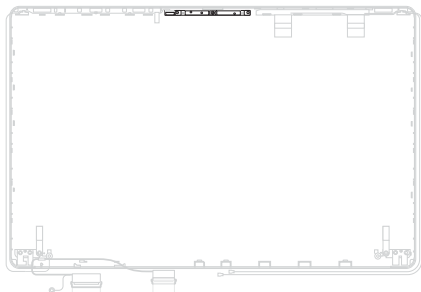
8. Install the hinges, then secure the hinges using the screw(s) you removed earlier.
9. Route the cable through the cable guide(s).

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.

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



Camera module



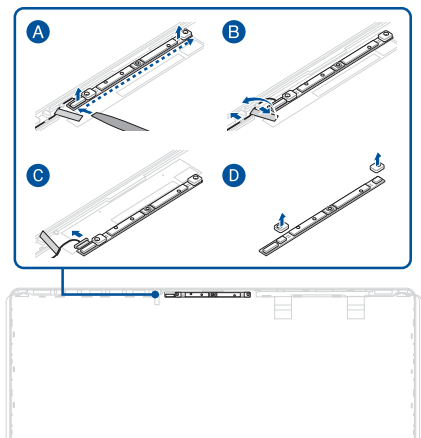
Before you begin

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.

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:
 - Fan module
 - Heat sink
 - Display panel module
 - Display bezel
 - Display panel

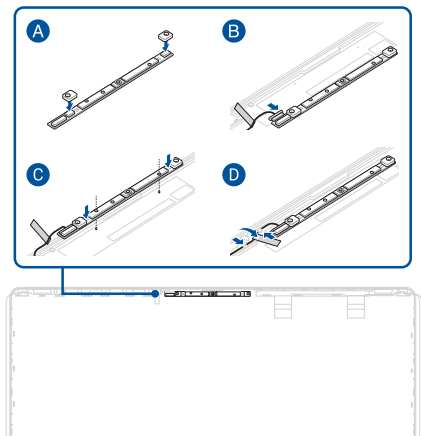
Removal

1. Carefully remove the camera module.
2. Detach the tape.
3. Disconnect the cable.
4. Remove the rubber caps from the camera module.

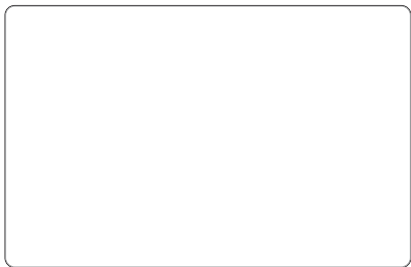


Installation

1. Attach the rubber caps to the camera module.
2. Reconnect the cable.
3. Install the camera module.
4. Reattach the tape.
5. Install the components you removed in the *Before you begin* section.



Top cover

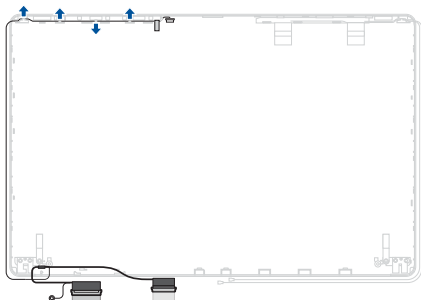


Before you begin

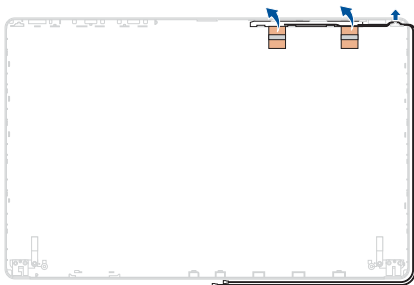
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the bottom cover and disconnect the battery power cable.
3. Remove the following components:
 - Fan module
 - Heat sink
 - Display panel module
 - Display bezel
 - Display panel
 - Camera module

Removal

1. Remove the cable.

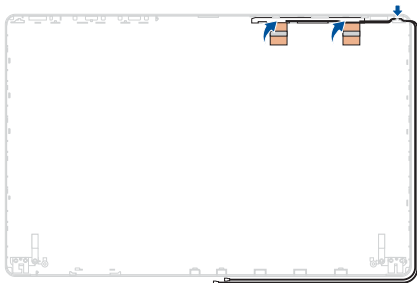


2. Remove the WLAN antenna.



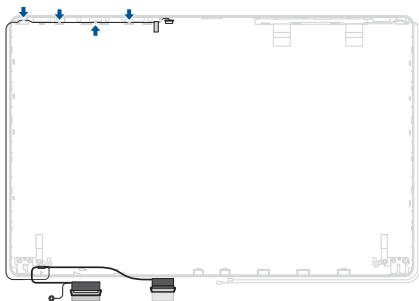
Installation

1. Install the WLAN antenna.

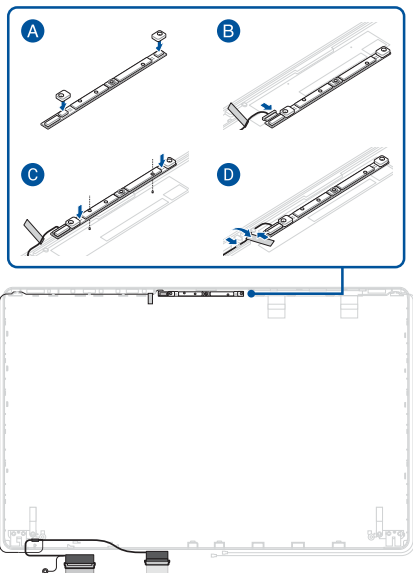


2. Route the cable through the cable guide(s).

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.

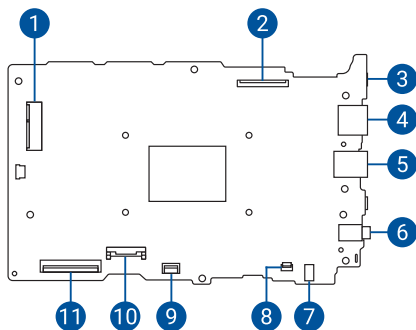


3. Attach the rubber caps to the camera module.
4. Reconnect the cable.
5. Install the camera module.
6. Reattach the tape.
7. Install the components you removed in the *Before you begin* section.



Appendix

Wiring and connection diagrams



- | | |
|--------------------------|---------------------------------|
| 1. WLAN module connector | 7. Speaker connector |
| 2. eDP connector | 8. Keyboard backlight connector |
| 3. USB Type-C® connector | 9. Touchpad connector |
| 4. HDMI connector | 10. Battery connector |
| 5. USB Type-A connector | 11. Keyboard connector |
| 6. Audio connector | |