

E23565

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IN SEARCH OF INCREDIBLE



Service Manual



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Table of Contents

Chapter 1: Introduction

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

Chapter 2: Service Procedures

Bottom cover.....	14
Removal	15
Installation	17
Battery	19
Removal	20
Installation	23
M.2 SSD module	26
Removal	27
Installation	30
WLAN module.....	33
Removal	34
Installation	35
Fan module, heat sink and motherboard	36
Removal	38
Installation	42

Power board and power button.....	46
Removal	47
Installation	49
Woofer speakers.....	51
Removal	52
Installation	53
Tweeter speakers.....	54
Removal	55
Installation	57
Touchpad.....	59
Removal	60
Installation	62
Display panel module	64
Removal	65
Installation	72
Keyboard module.....	78
Removal	79
Installation	80

Appendices

Wiring and connection diagrams	82
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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



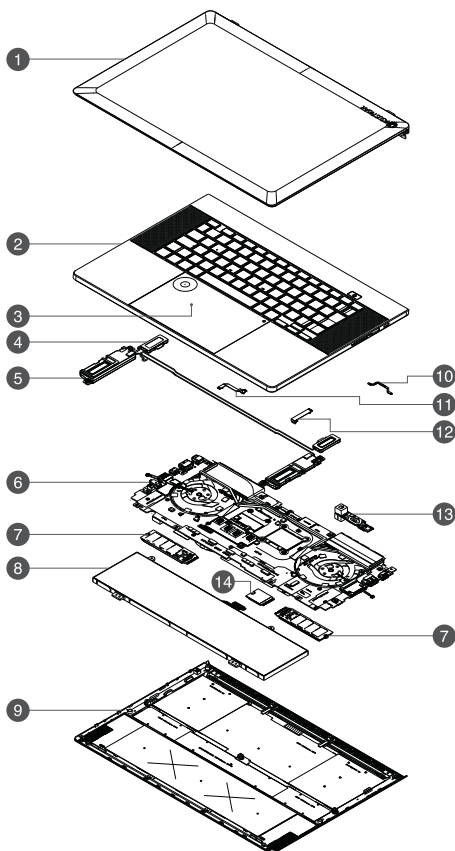
Power adapter

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



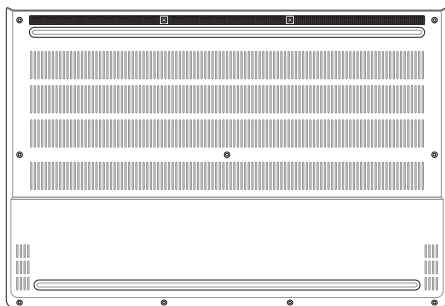
- | | |
|-------------------------------|------------------------------|
| 1. Display panel module | 8. Battery |
| 2. Keyboard module | 9. Bottom cover |
| 3. Touchpad | 10. Power board FFC cable |
| 4. Tweeter speakers | 11. Touchpad FFC cable |
| 5. Woofer speakers | 12. Keyboard backlight cable |
| 6. Fans/heat sink/motherboard | 13. Power board |
| 7. M.2 SSD module | 14. WLAN module |

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

Chapter 2:

Service Procedures

Bottom cover



Before you begin

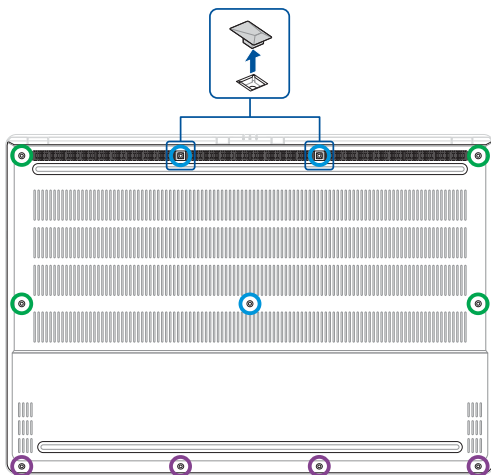
Read the **Safety Precautions** and complete the **Pre-repair Checklist**.

Screw list

- ⊛ M2.0 X 9.5L (4pcs)
- ⊛ M2.0 X 7.0L (3pcs)
- ⊛ M2.0 X 4.5L (4pcs)

Removal

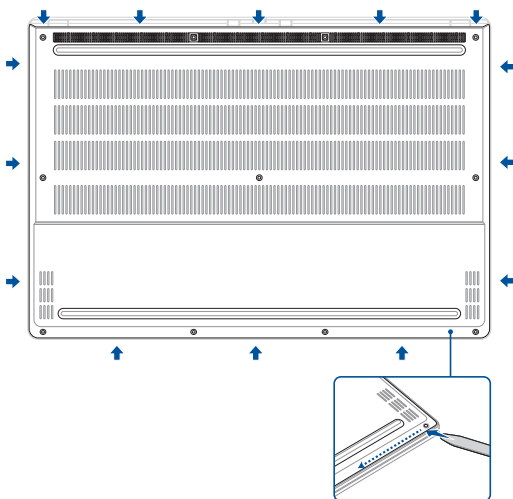
1. Remove the screw cover(s), then remove the screw(s) from the bottom cover.



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

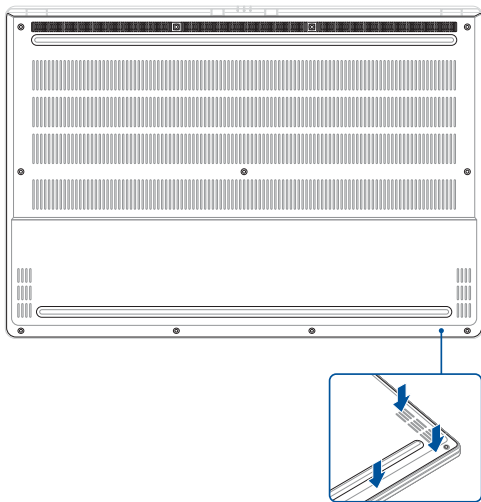
IMPORTANT! Avoid sliding the plastic blade along the side of your device or air vents to prevent damage.

3. Remove the bottom cover.

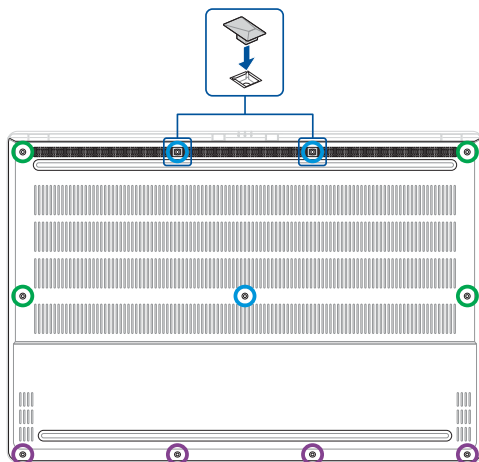


Installation

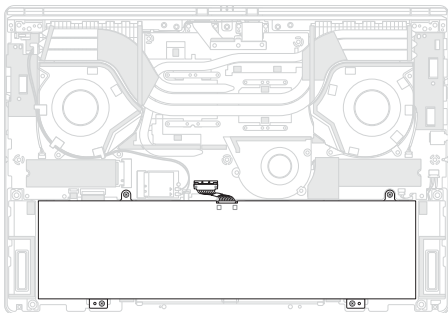
1. Install the bottom cover.
2. Gently press down on the bottom cover until it clicks into place.



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



Battery



Before you begin

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

Screw list

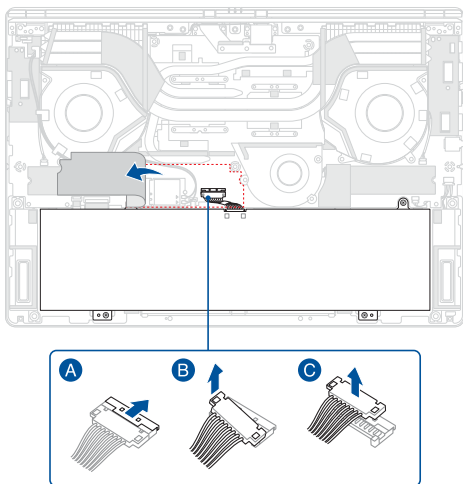
- ⊕ M2.0 X 4.5L (4pcs)

Removal

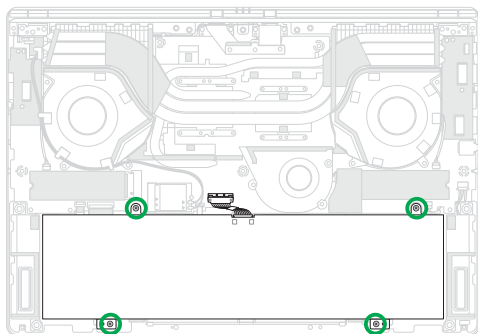
1. Remove the polyester film, then disconnect the battery power cable.

IMPORTANT!

- Disconnect the battery power cable by lifting the side with the red wires first.
 - Serious risk of fire or explosion may occur if the battery is punctured. If you are uncertain about proceeding, stop and contact an authorized service center for assistance.
-

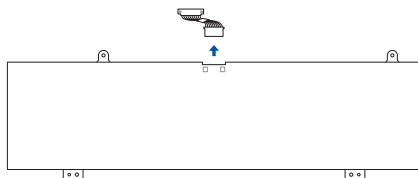


2. Remove the screw(s).
3. Remove the battery.



4. Remove the battery power cable.

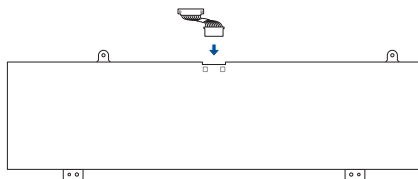
NOTE: This step is only required when you are replacing the existing component with a new one.



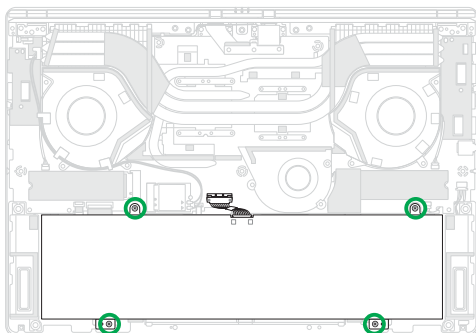
Installation

1. Connect the battery power cable to the battery.

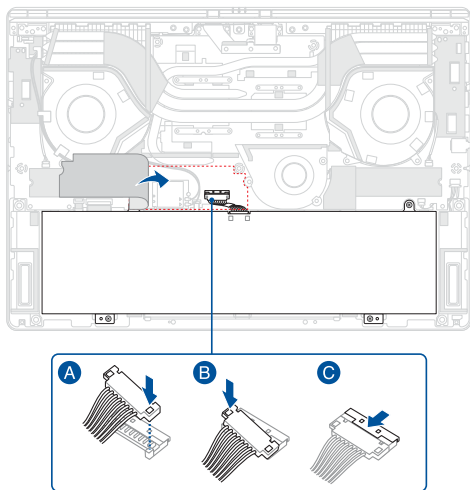
NOTE: This step is only required when you are replacing the existing component with a new one.



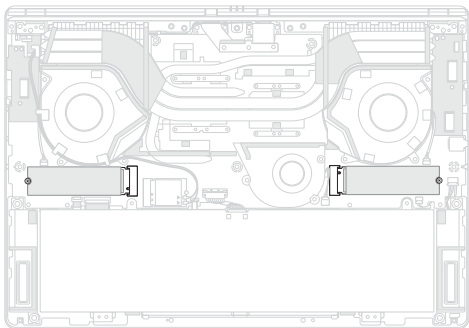
2. Install the battery.
3. Secure the battery using the screw(s) you removed earlier.



4. Reconnect the battery power cable, then reattach the polyester film.
5. Install the components you removed in the *Before you begin* section.



M.2 SSD module



Before you begin

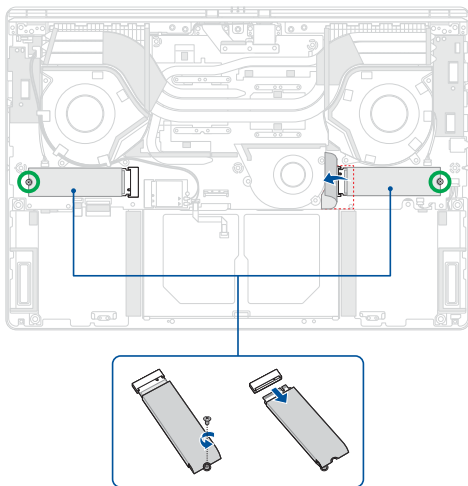
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Bottom cover
 - Battery

Screw list

- ⊕ M2.0 X 2.0L (2pcs)

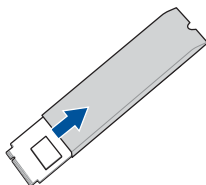
Removal

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



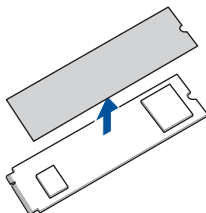
3. Remove the aluminum foil sleeve.

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



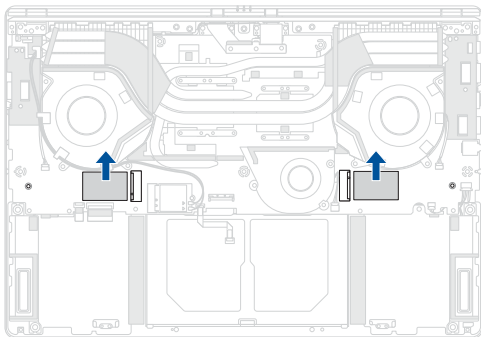
4. Remove the absorber sheet.

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



5. Remove the thermal pad(s) from the motherboard.

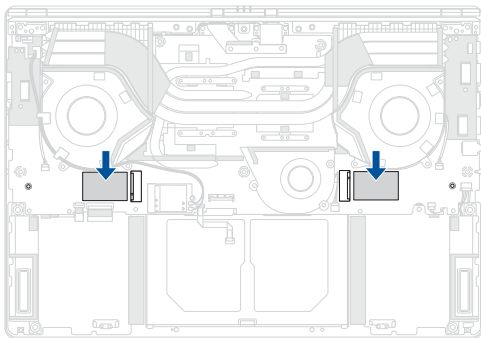
NOTE: This step is only required when you are replacing the existing component with a new one.



Installation

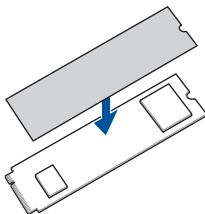
1. Install the thermal pad(s) on the motherboard.

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



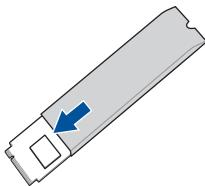
2. Attach the absorber sheet to the M.2 SSD module(s).

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

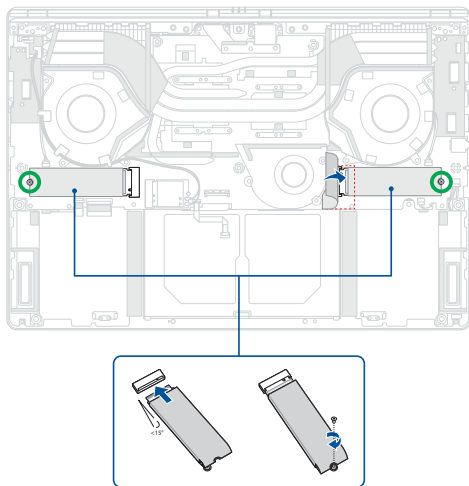


3. Insert the M.2 SSD module(s) into the aluminum foil sleeve.

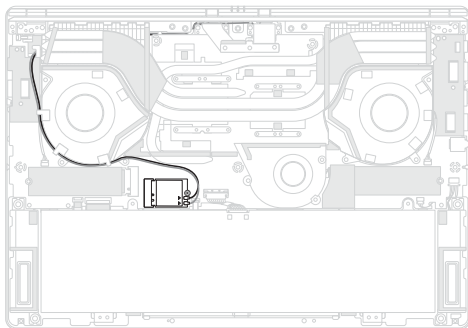
NOTE: This step is only required when you are replacing the existing component with a new one.



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



WLAN module



Before you begin

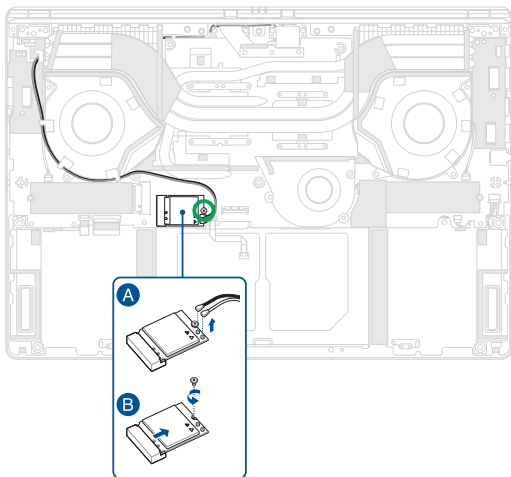
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Bottom cover
 - Battery

Screw list

- ⊕ M2.0 X 2.0L (1pc)

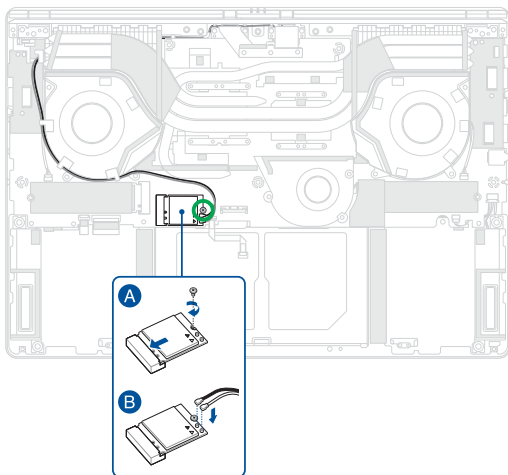
Removal

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

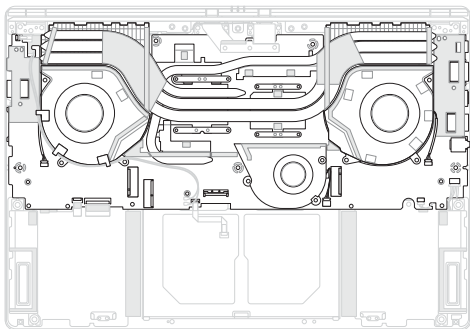


Installation

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



Fan module, heat sink and motherboard






Before you begin

WARNING! The heat sink contains liquid metal and should only be removed by authorized service personnel. Significant damage may occur to motherboard components if the heat sink is improperly removed.

IMPORTANT! Thermal paste, thermal pads, liquid metal, or other thermal interface materials must be thoroughly removed and replaced if this component is removed. Ensure that replacement materials are available before proceeding, or contact an authorized service center for assistance.

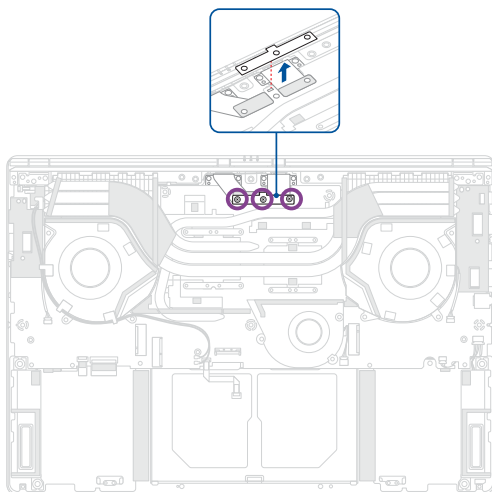
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Bottom cover
 - Battery
 - M.2 SSD module
 - WLAN module

Screw list

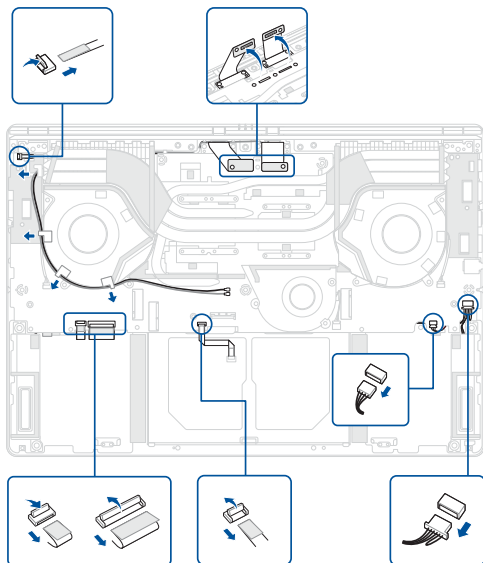
-  ⊕ M2.0 X 4.5L (2pcs)
-  ⊕ M2.0 X 4.0L (15pcs)
-  ⊕ M2.0 X 2.0L (4pcs)

Removal

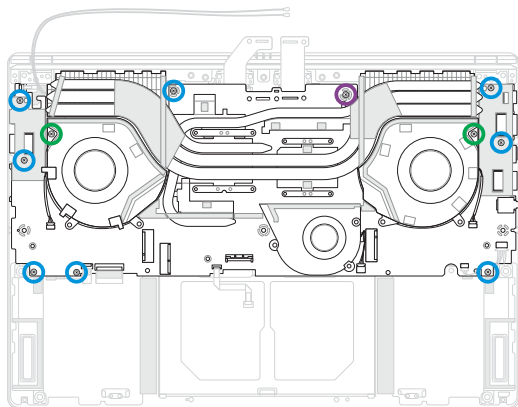
1. Remove the screw(s), then remove the bracket.



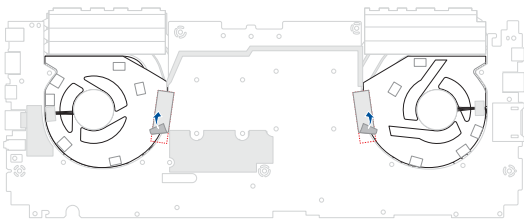
2. Remove and disconnect the cable(s) as shown in the illustration below.



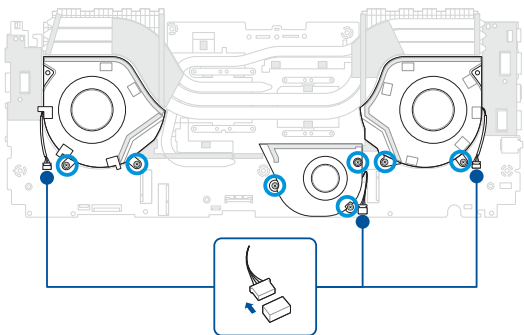
3. Remove the screw(s), then remove the motherboard with the fan(s) and heat sink attached.



4. Turn over the motherboard, then remove the tape.

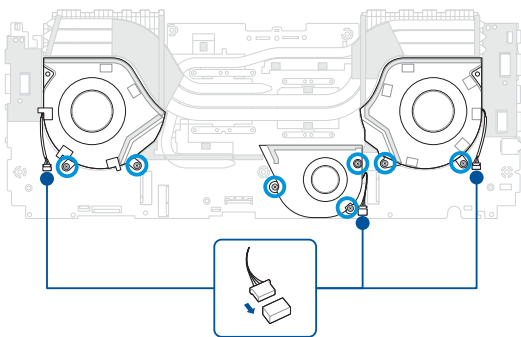


5. Turn over the motherboard again, then disconnect the fan connector(s).
6. Remove the screw(s), then remove the fan(s).

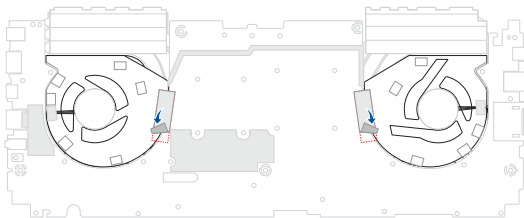


Installation

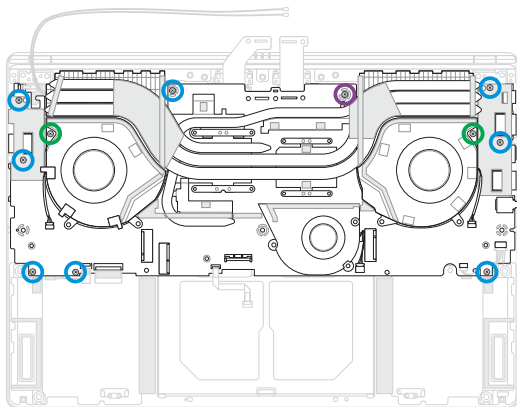
1. Align and install the fan(s) on the motherboard.
2. Secure the fan(s) using the screw(s) you removed earlier, then reconnect the fan connector(s).



3. Turn over the motherboard, then reattach the tape.

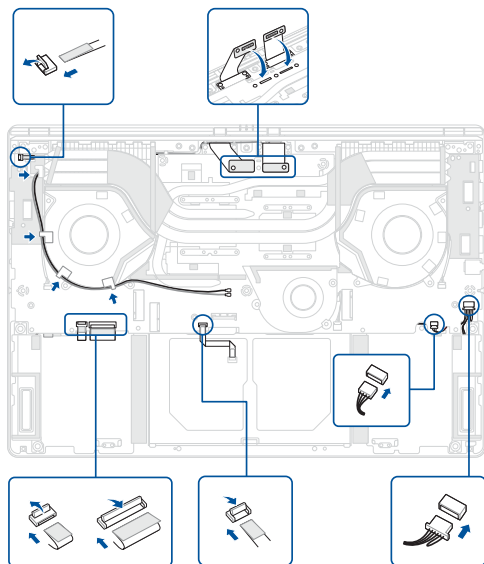


4. Turn over the motherboard again, then install the motherboard with the fan(s) and heat sink attached.
5. Secure the motherboard using the screw(s) you removed earlier.

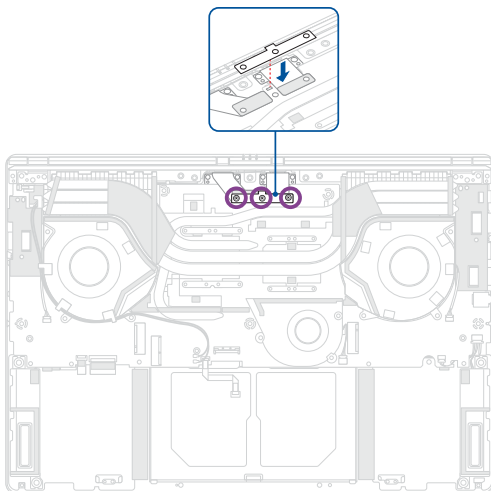


6. Route the cable(s) through the cable guide(s), then reconnect the cable(s) as shown in the illustration below.

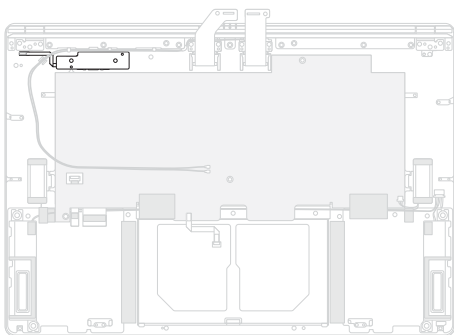
IMPORTANT! Damage may occur if cables are not properly routed through the cable guides. Confirm that all cables are routed through each of the indicated cable guides before proceeding.



7. Install the bracket, then secure the bracket using the screw(s) you removed earlier.
8. Install the components you removed in the *Before you begin* section.



Power board and power button



Before you begin

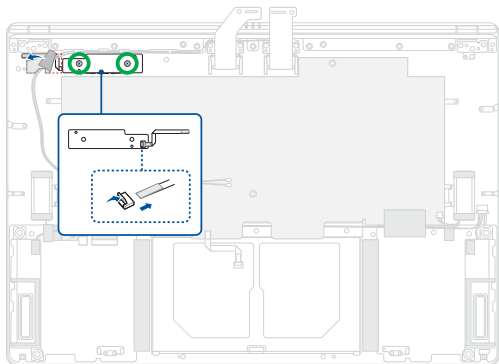
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Bottom cover
 - Battery
 - M.2 SSD module
 - WLAN module
 - Fan module, heat sink and motherboard

Screw list

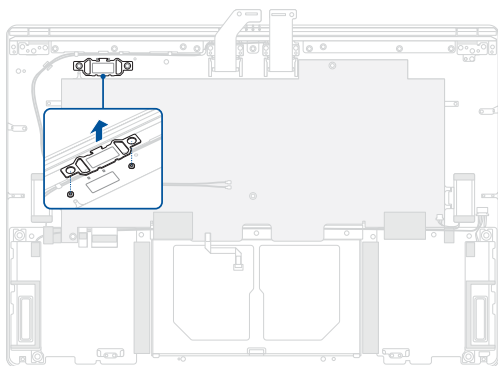
- ⊕ M2.0 X 2.0L (2pcs)

Removal

1. Remove the tape.
2. Remove the screw(s) from the power board, then remove the power board.
3. Turn over the power board, then disconnect the FFC cable.

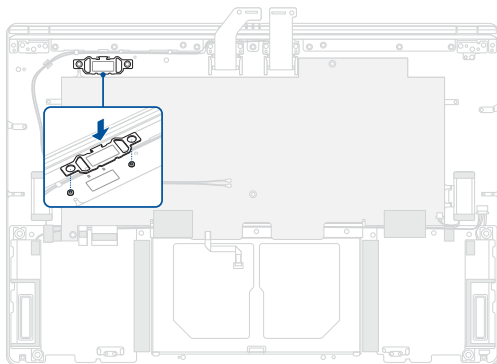


4. Remove the power button

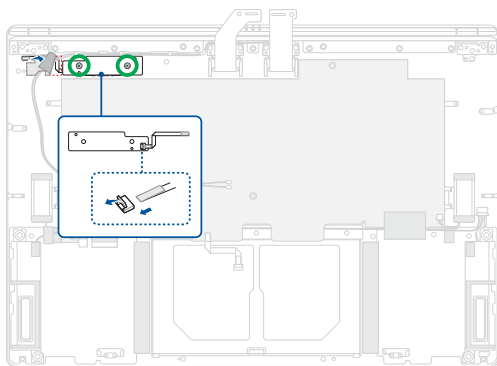


Installation

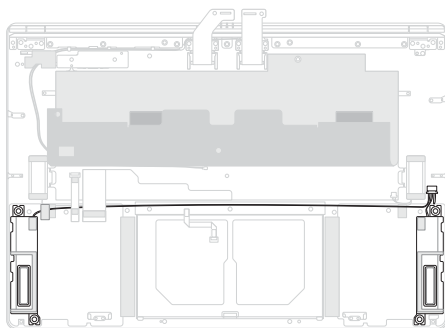
1. Install the power button.



2. Reconnect the FFC cable to the power board.
3. Turn over the power board, then install the power board.
4. Secure the power board using the screw(s) you removed earlier.
5. Ensure to route the FFC cable underneath the antenna cable(s), then reattach the tape.
6. Install the components you removed in the *Before you begin* section.



Woofer speakers

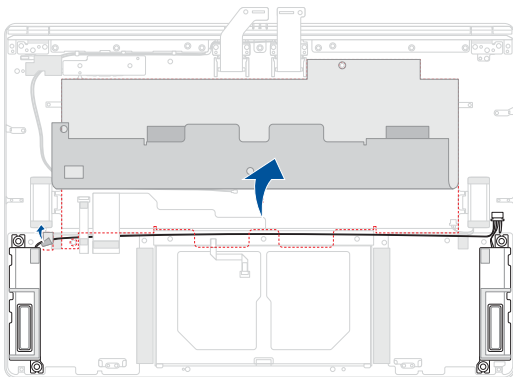


Before you begin

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

Removal

1. Peel off the indicated area of the polyester film.
2. Remove the tape, then remove the woofer speakers.

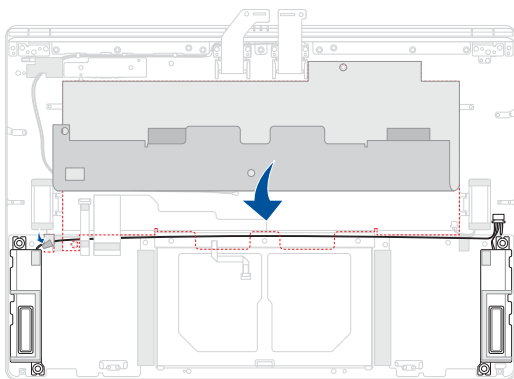


Installation

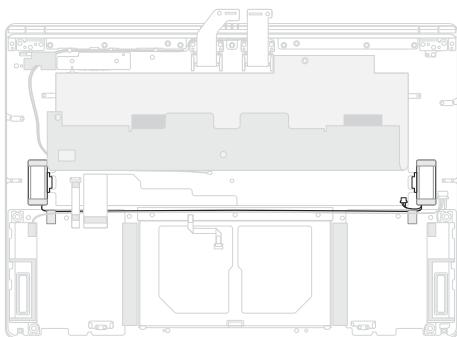
1. Install the woofer speakers.
2. Route the speaker cable through the cable guide(s), then reattach the tape.

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. Reattach the indicated area of the polyester film.
4. Install the components you removed in the *Before you begin* section.



Tweeter speakers

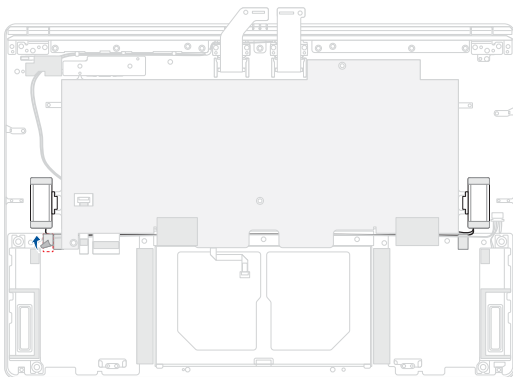


Before you begin

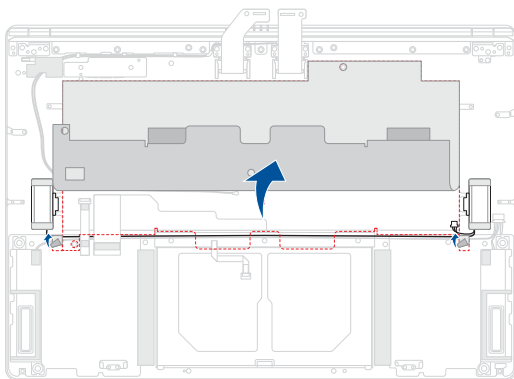
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Bottom cover
 - Battery
 - M.2 SSD module
 - WLAN module
 - Fan module, heat sink and motherboard

Removal

1. Remove the tape.



2. Peel off the indicated area of the polyester film.
3. Remove the tape, then remove the tweeter speakers.

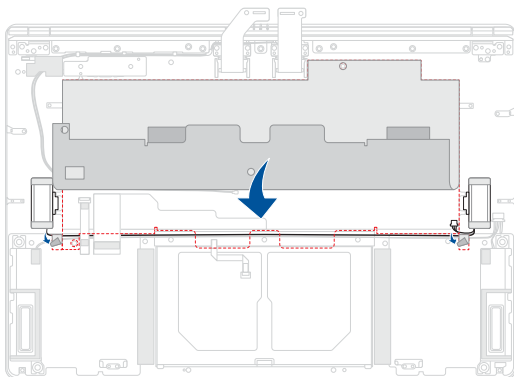


Installation

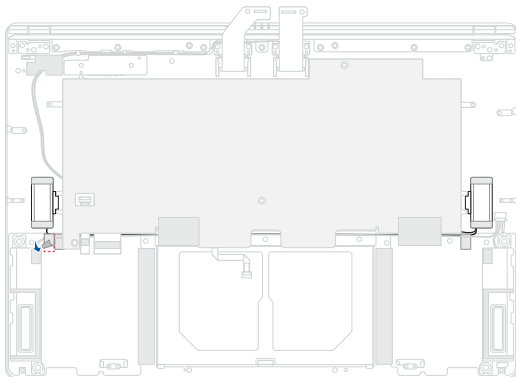
1. Install the tweeter speakers.
2. Route the speaker cable through the cable guide(s), then reattach the tape.

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.

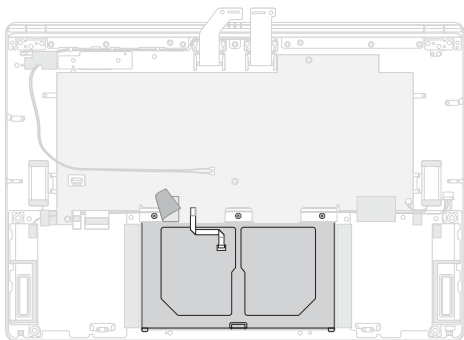
3. Reattach the indicated area of the polyester film.



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



Touchpad



Before you begin

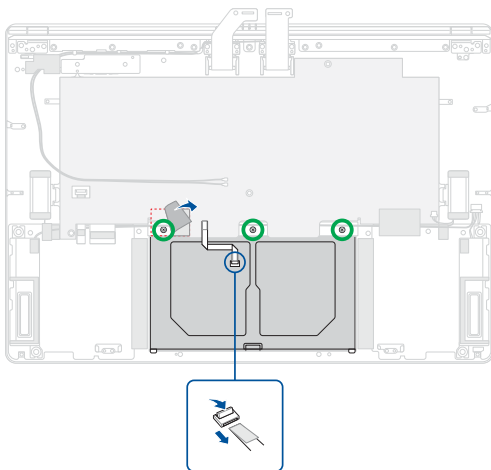
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Bottom cover
 - Battery
 - M.2 SSD module
 - WLAN module
 - Fan module, heat sink and motherboard

Screw list

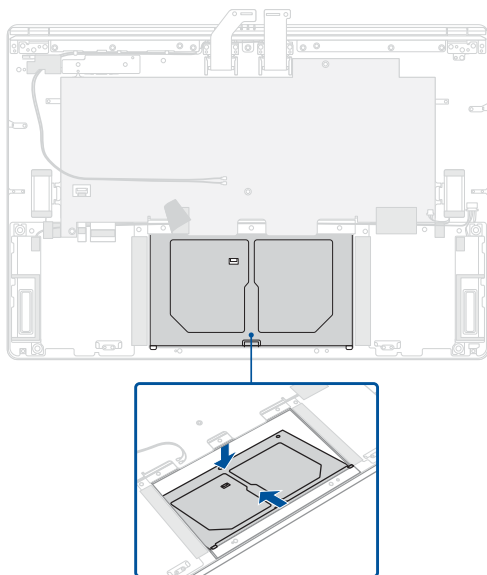
- ⊕ M2.0 X 2.0L (3pcs)

Removal

1. Disconnect the cable and remove the tape.
2. Remove the screw(s) from the touchpad.

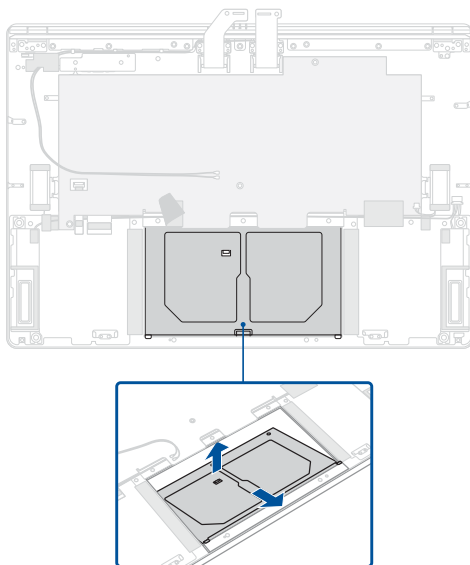


3. Remove the touchpad as shown in the illustration below.

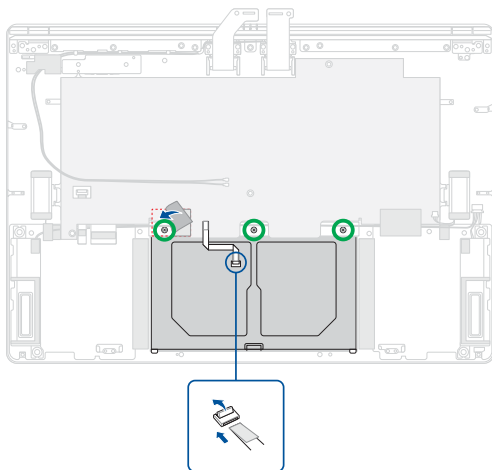


Installation

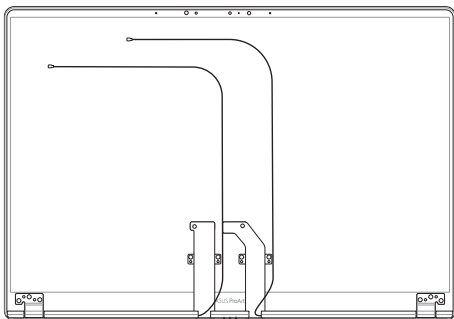
1. Align and install the touchpad as shown in the illustration below.



2. Secure the touchpad using the screw(s) you removed earlier.
3. Reconnect the cable and 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.

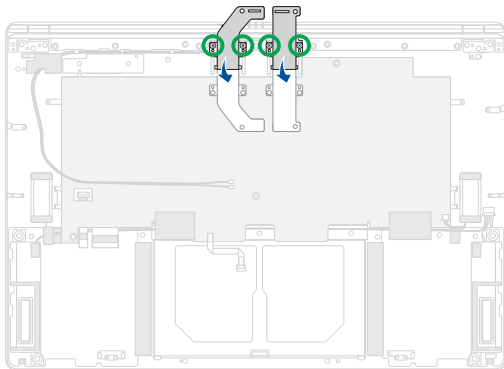
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Bottom cover
 - Battery
 - M.2 SSD module
 - WLAN module
 - Fan module, heat sink and motherboard

Screw list

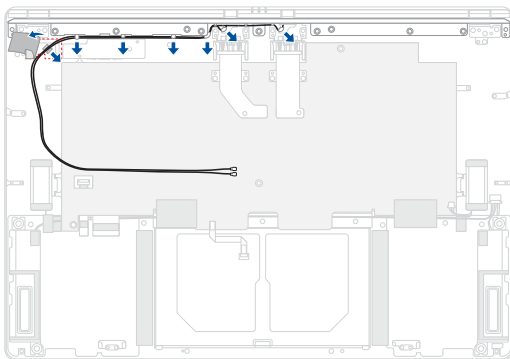
- ⊕ M2.0 X 4.0L (10pcs)
- ⊕ M2.0 X 2.0L (7pcs)

Removal

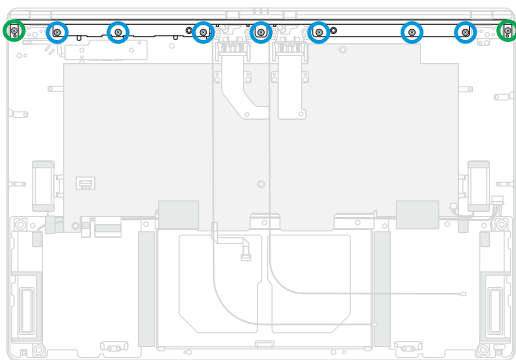
1. Remove the screw(s), then pull down the FPC cable(s) to reveal the cable latch holders.



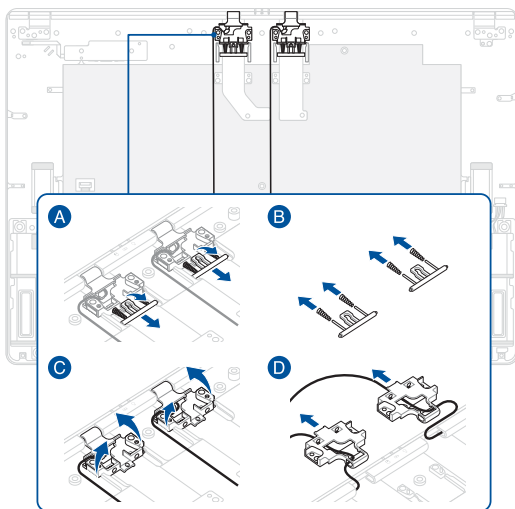
2. Remove the tape, then remove the antenna cable(s) from the cable guide(s).



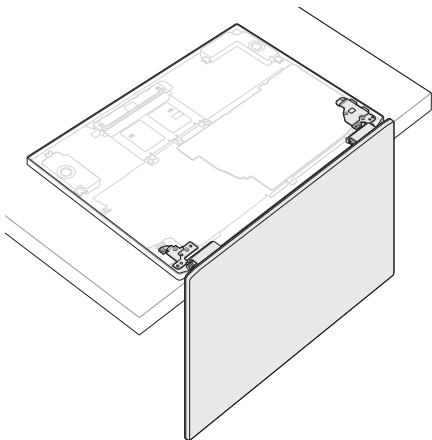
3. Remove the screw(s), then remove the thermal cover.



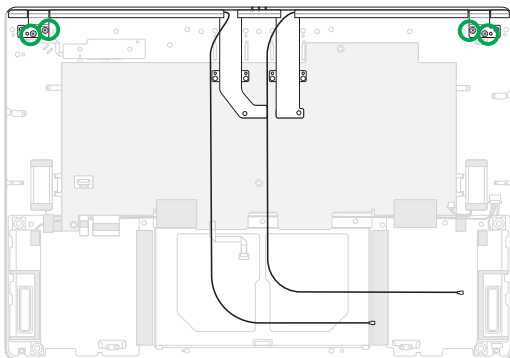
4. Make sure a hand of yours hovers over the latch holder(s) to prevent the spring(s) from popping out in the next step.
5. Carefully pry up the latches and remove the spring(s).
6. Pry up the latch holder(s) and remove them.



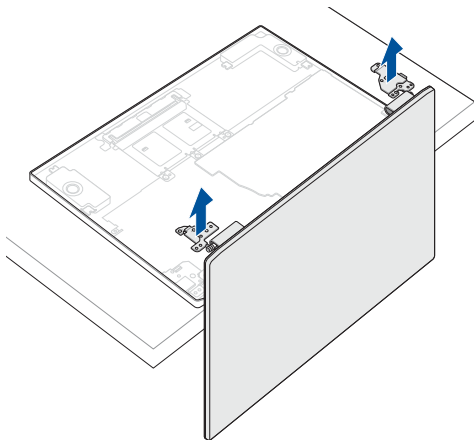
7. Place your device with the display panel hanging over the edge of the workspace as shown in the illustration below.



8. Remove the screw(s).

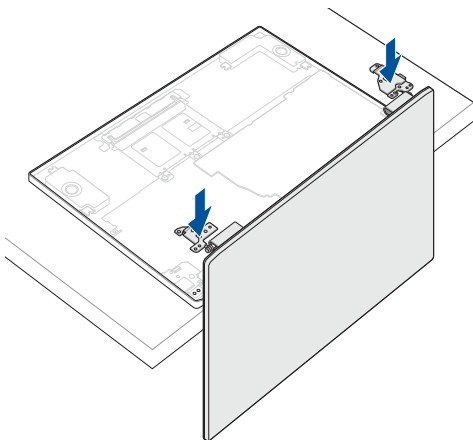


9. Remove the display panel module.

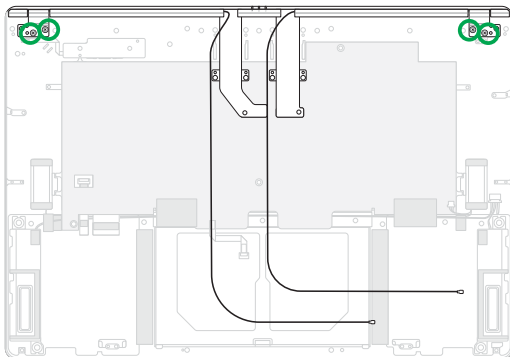


Installation

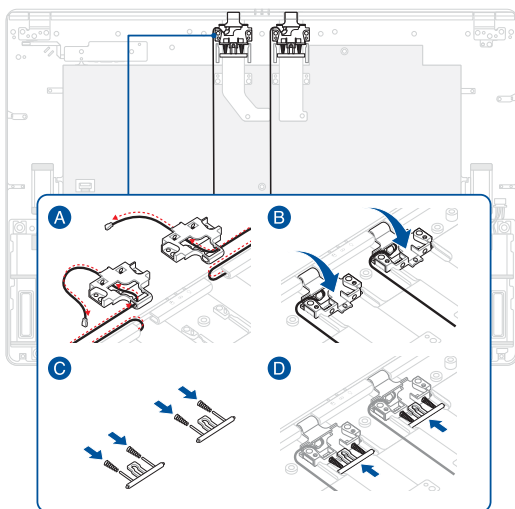
1. In the orientation shown, align and place the hinges of the display panel module on the screw holes.



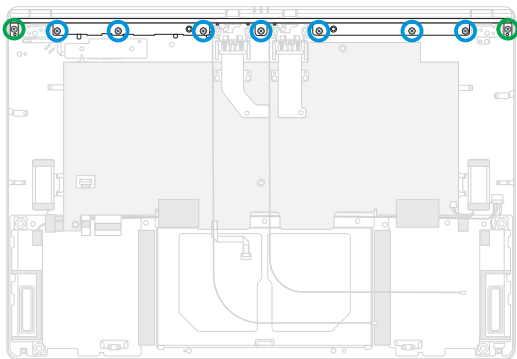
2. Secure the hinges using the screw(s) you removed earlier.



3. Thread the cable(s) through the opening(s) in the middle of the latch holder(s) as shown in the illustration below.
4. Flip over the latch holder(s), then align and install the latch holder(s) on the keyboard module.
5. Install the spring(s) on the latches with the small end down.
6. Align and install the latches back to the latch holder(s).

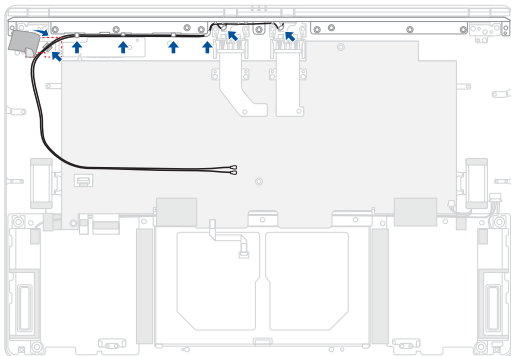


7. Install the thermal cover, then secure the thermal cover using the screw(s) you removed earlier.

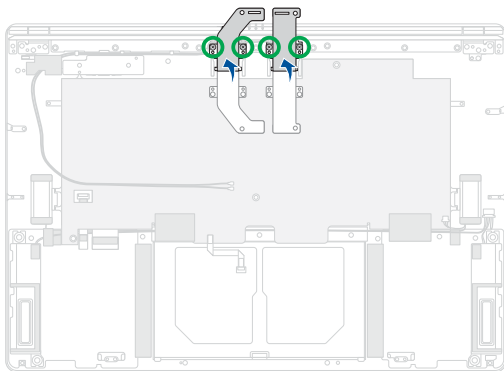


8. Route the antenna cable(s) through the cable guide(s), then reattach the tape.

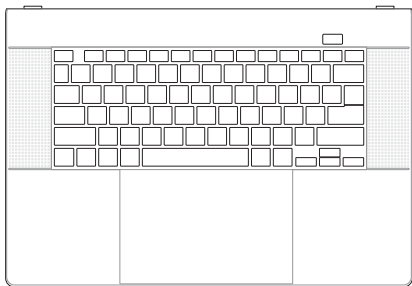
IMPORTANT! Damage may occur if cables are not properly routed through the cable guides. Confirm that all cables are routed through each of the indicated cable guides before proceeding.



9. Cover the cable latch holder(s) with the FPC cable(s) and secure the FPC cable(s) using the screw(s) you removed earlier.
10. Install the components you removed in the *Before you begin* section.



Keyboard module

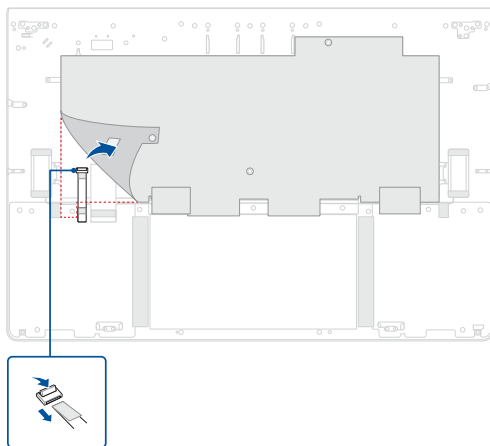


Before you begin

1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Bottom cover
 - Battery
 - M.2 SSD module
 - WLAN module
 - Fan module, heat sink and motherboard
 - Power board and power button
 - Woofer speakers
 - Touchpad
 - Display panel module

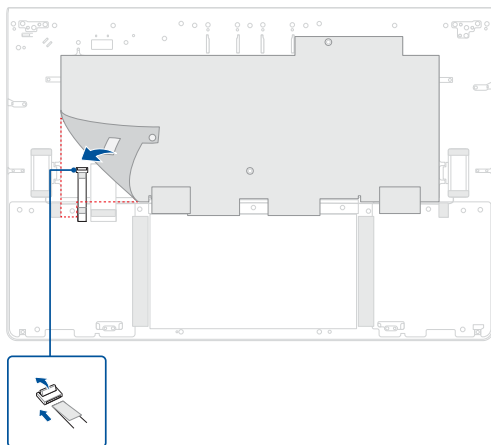
Removal

1. Peel off the indicated area of the polyester film.
2. Disconnect and remove the cable.



Installation

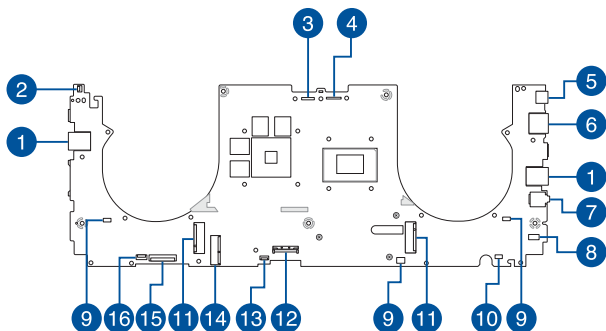
1. Install and reconnect the cable.
2. Reattach the indicated area of the polyester film.
3. Install the components you removed in the *Before you begin* section.



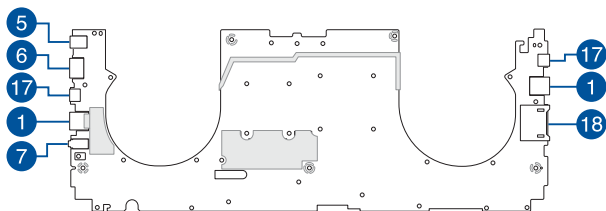
Appendices

Wiring and connection diagrams

Top View



Bottom View



- | | |
|---------------------------------|----------------------------------|
| 1. USB Type-A connector | 10. Tweeter speaker connector |
| 2. Power board connector | 11. M.2 SSD connector |
| 3. Touch panel/camera connector | 12. Battery connector |
| 4. eDP connector | 13. Touchpad connector |
| 5. Power supply connector | 14. WLAN module connector |
| 6. HDMI connector | 15. Keyboard connector |
| 7. Audio connector | 16. Keyboard backlight connector |
| 8. Woofer speaker connector | 17. USB Type-C® connector |
| 9. Fan connector | 18. Card reader connector |

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