E24304
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# G SERIES

## GAMING NOTEBOOK PC

## SERVICE MANUAL

MORE INFO:

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# Table of Contents


## Chapter 1: Introduction

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

## Chapter 2: Service Procedures

Display panel ..... 14
- Removal ..... 15
- Installation ..... 20

Battery ..... 24
- Removal ..... 25
- Installation ..... 28

M.2 SSD module ..... 32
- Removal ..... 33
- Installation ..... 35

Heat sink ..... 37
- Removal ..... 38
- Installation ..... 39

Fan module ..... 40
- Removal ..... 41
- Installation ..... 42

Rear camera module ..... 43
- Installation ..... 46

Camera module ..... 49
Removal ..... 50
Installation ..... 51
Speakers ..... 52
Removal ..... 53
Installation ..... 54
Pogo pin ..... 55
Removal ..... 56
Installation ..... 57
microSD reader board ..... 58
Removal ..... 59
Installation ..... 61
I/O board ..... 63
Removal ..... 64
Installation ..... 67
Motherboard ..... 70
Removal ..... 71
Installation ..... 77
Bottom cover ..... 83
Removal ..... 84
Installation ..... 88

## Appendices

Wiring and connection diagrams ..... 96

# *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**

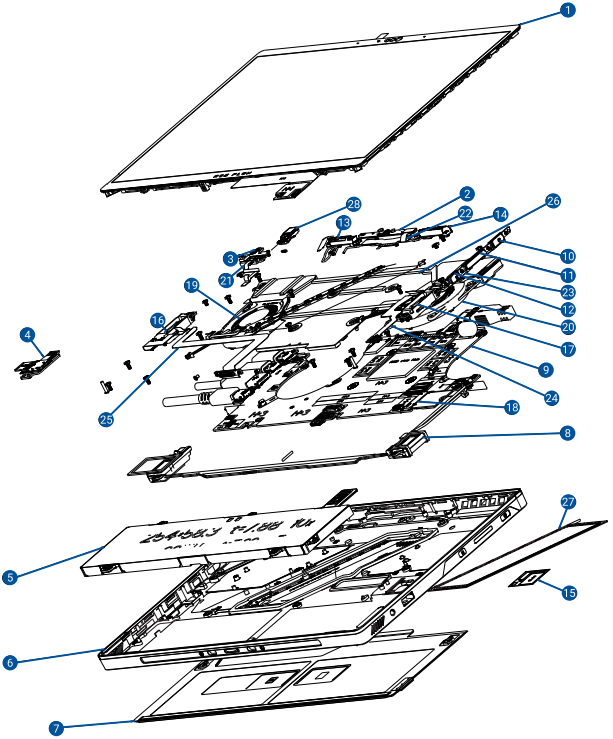
**Suction pliers**

## 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. Touch display panel
2. Front camera module
3. Hall sensor board
4. microSD reader board
5. Battery
6. Bottom cover
7. Kickstand module
8. Speakers
9. Motherboard
10. Power button
11. Volume button
12. Command center button
13. Main antenna cable
14. Auxiliary antenna cable
15. SSD compartment cover
16. Display hinge (left)
17. Display hinge (right)
18. M.2 SSD module
19. Fan module (left)
20. Fan module (right)
21. Hall sensor cable
22. Camera cable
23. Button cable
24. Audio board cable
25. Pogo pin cable
26. Heat sink
27. Decorative glass
28. Rear camera module

# *Chapter 2: Service Procedures*

# Display panel

## Before you begin

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

**IMPORTANT!**

- Specific tools are required for servicing this component. It is recommended that you contact an authorized service center for assistance.
- 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.

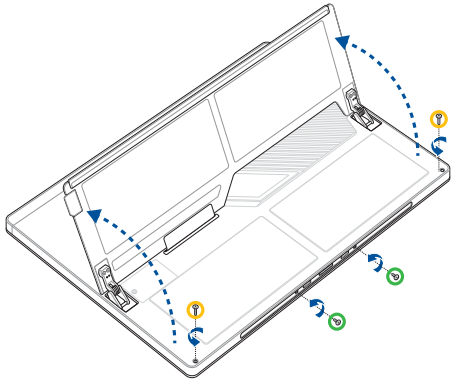
## Screw list

- M2.0 X 3.0L (2pcs)
- M2.0 X 10.0L (2pcs)

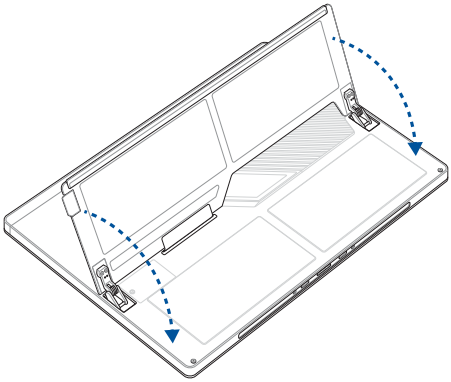
## Removal

**IMPORTANT!** System power will be cut off automatically upon removal of the bottom cover. To restore power, reattach the bottom cover securely and connect the AC power adapter to your Notebook PC after the servicing is complete.

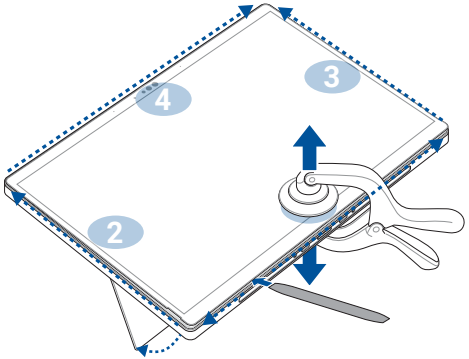
1. Open the kickstand as shown in the illustration below.
2. Remove the screw(s) from the bottom cover.



3. Close the kickstand.



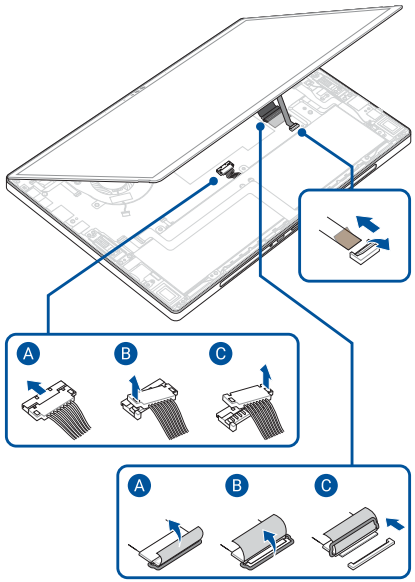
4. Turn over the display panel module, then open the kickstand.
5. Open the suction pliers and securely position the suction cups on both sides of the display panel (not on the kickstand) as shown in the illustration below.
6. Squeeze the handles of the suction pliers to lift and slightly separate the display panel from the bottom cover. Start from the lower part of the display panel and repeat the procedure from side to side in the sequence shown in the illustration below.
7. Use the plastic blade to carefully pry open the indicated area of the bottom cover.



8. Slightly lift the display panel, then disconnect the battery power cable and the touch screen panel cable from the motherboard.

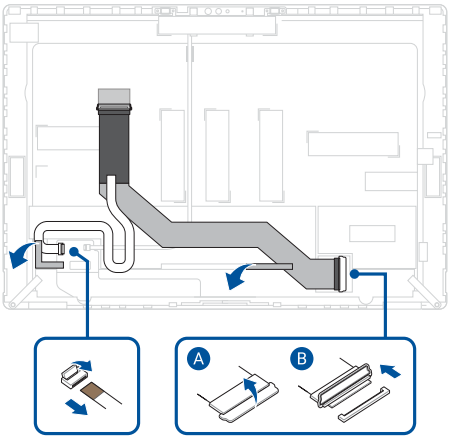
**IMPORTANT!**

- 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.



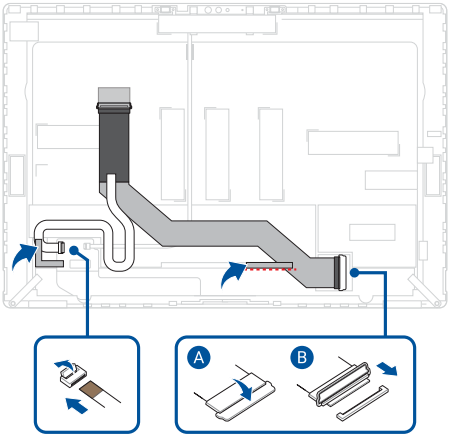
9. Remove the tape.

10. Disconnect the cable(s) from the rear side of the display panel.

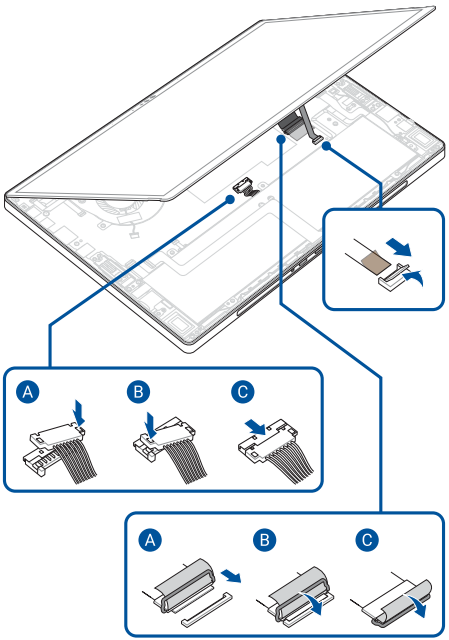


## Installation

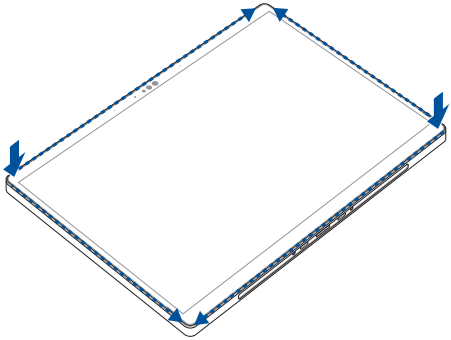
1. Reconnect the cable(s) to the rear side of the display panel.
2. Reattach the tape.



3. Slightly lift the display panel, then reconnect the cable(s) to the motherboard.

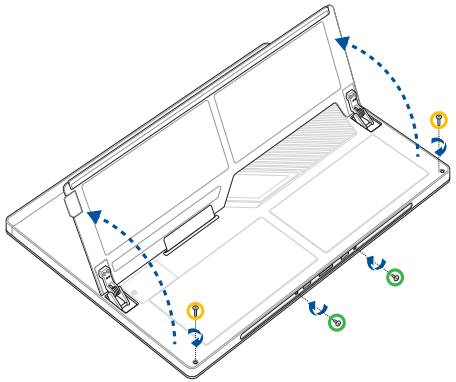


4. Align and install the display panel.

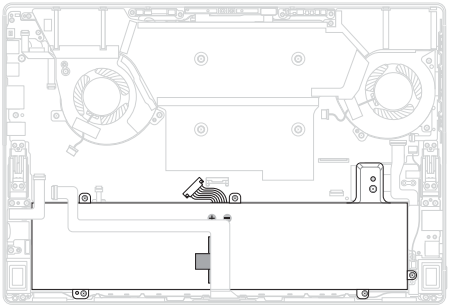


5. Secure the bottom cover using the screw(s) you removed earlier.

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



# Battery



## Before you begin

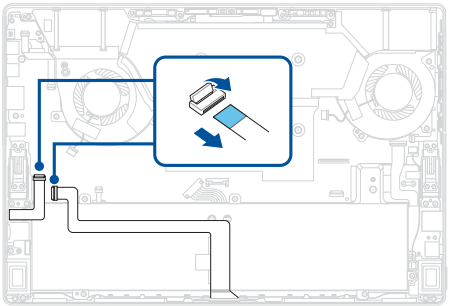
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the display panel.

## Screw list

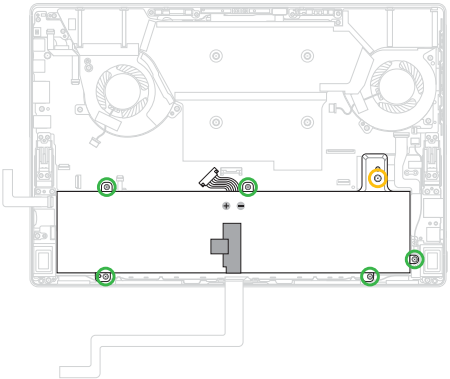
- M2.0 X 5.0L (5pcs)
- M2.0 X 2.0L (1pc)

## Removal

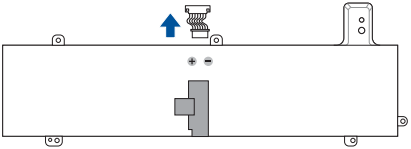
1. Disconnect the cable(s).



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



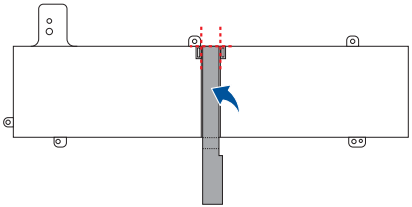
4. Remove the cable from the battery.



## Installation

1. Position the battery in the orientation shown, then align and attach the first half of the tape on the battery.

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

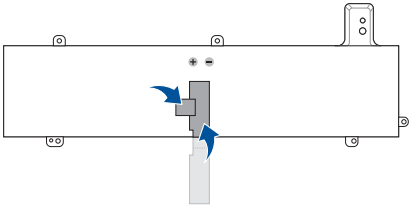


2. Turn over the battery, then attach the other half of the tape on this side of the battery.

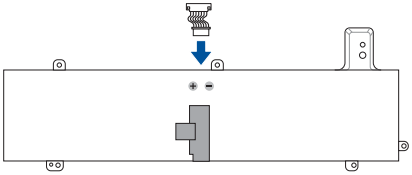
**NOTE:** This step is only required when you are replacing the existing component with a new one.

3. Attach the smaller piece of tape as shown in the illustration below.

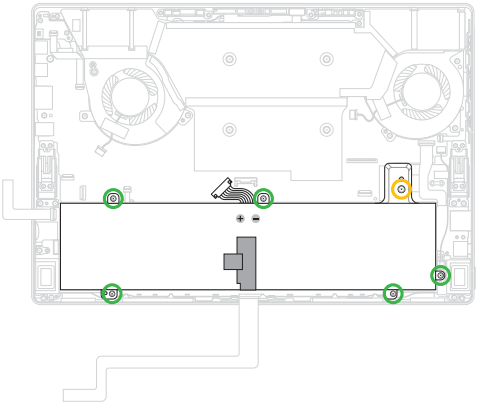
**NOTE:** This step is only required when you are replacing the existing component with a new one.



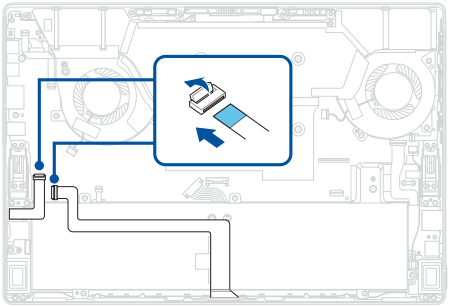
4. Reconnect the battery power cable to the battery.



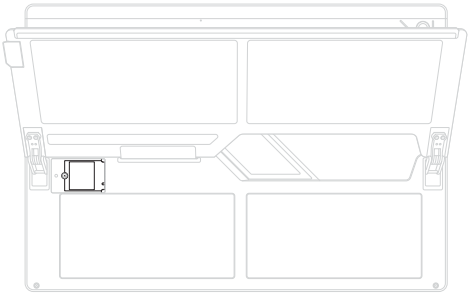
5. Secure the battery using the screw(s) you removed earlier.



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



# M.2 SSD module



## Before you begin

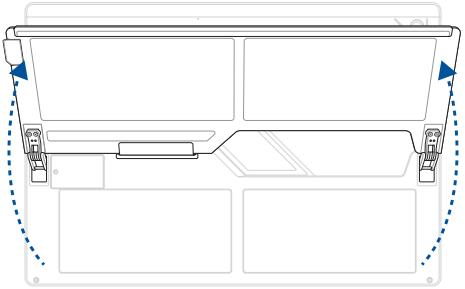
Read the **Safety Precautions** and **Pre-repair Checklist**.

## Screw list

- M2.0 X 2.5L (1pc)
- M2.0 X 7.0L (1pc)

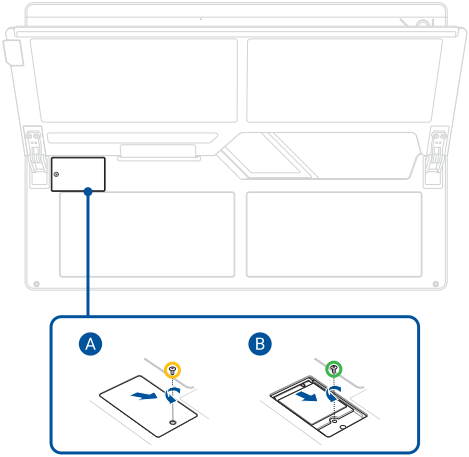
## Removal

1. Open the kickstand.



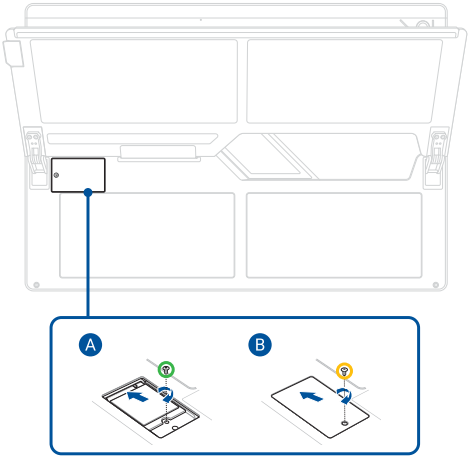
2. Remove the screw to open the compartment cover.

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



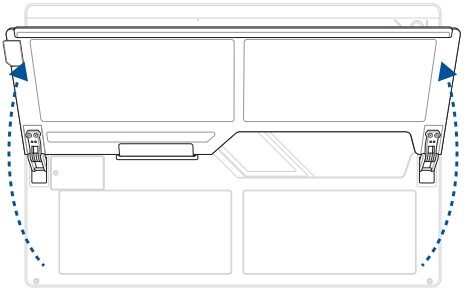
## Installation

1. Secure the M.2 SSD module to the motherboard using the screw you removed earlier.
2. Secure the compartment cover.

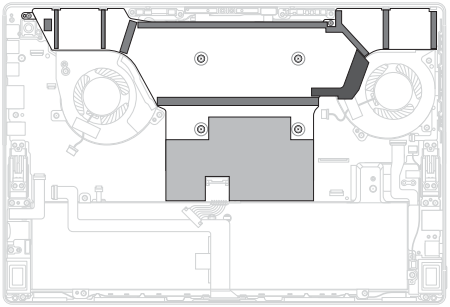


3. Close the kickstand.

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



# Heat sink



## 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.

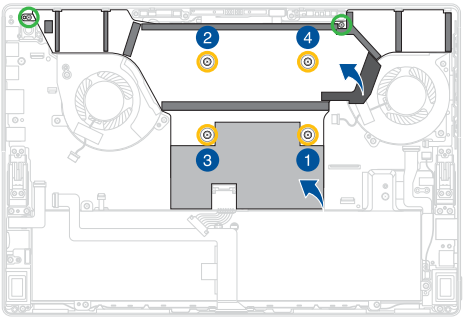
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the display panel and disconnect the battery power cable.

## Screw list

- M2.0 X 3.0L (2pcs)
- Captive screw (4pcs)

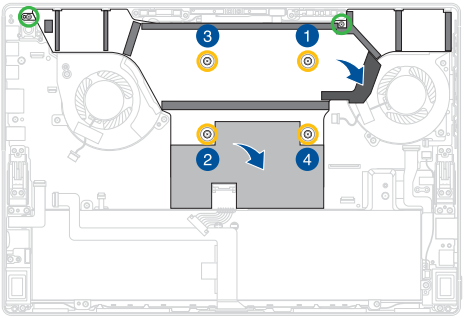
## Removal

1. Remove the absorber sheet and the tape.
2. Remove the screw(s) from both ends of the heat sink.
3. Loosen the captive heat sink screw(s) one by one in the sequence shown in the illustration below without removing the screw(s), then remove the heat sink.

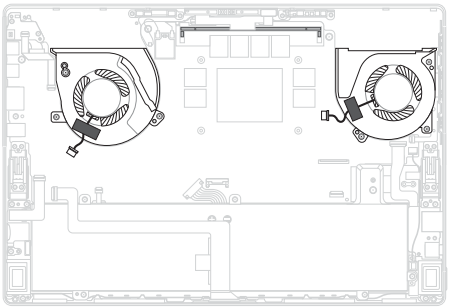


## Installation

1. Align and install the heat sink, then secure the captive heat sink screw(s) one by one in the sequence shown in the illustration below.
2. Secure the screw(s) on both ends of the heat sink.
3. Attach the tape and the absorber sheet.



# Fan module



## Before you begin

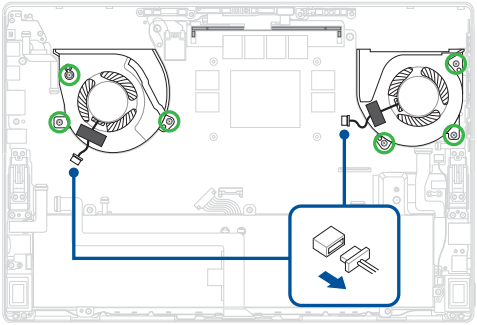
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the display panel and disconnect the battery power cable.
3. Remove the following components:
   - Heat sink

## Screw list

● ⊕ M2.0 X 5.0L (6pcs)

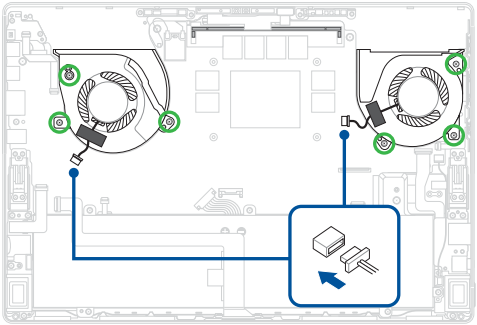
## Removal

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

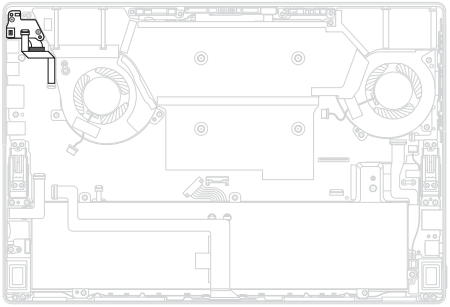


## Installation

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.



# Rear camera module



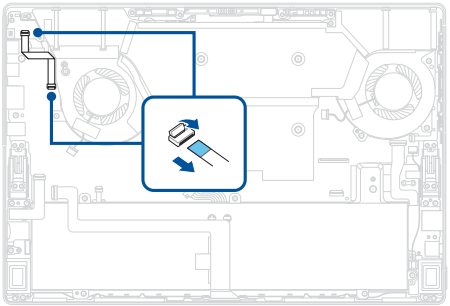
## Before you begin

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

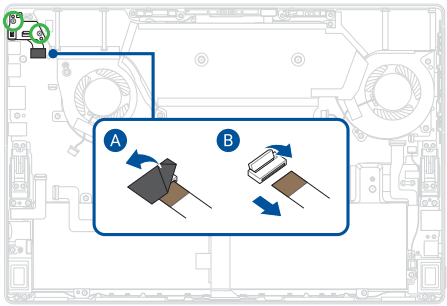
## Screw list

- M2.0 X 3.0L (2pcs)

1. Disconnect the cable from the motherboard and the rear camera board, then remove the cable.

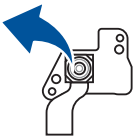


2. Remove the screw(s).
3. Remove the tape, then disconnect the cable.




4. Turn over the rear camera board and remove the camera lens.

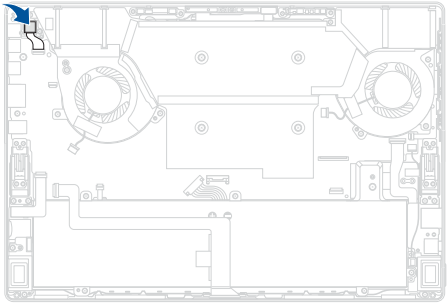
**NOTE:** This step is only required when you are replacing the existing component with a new one.



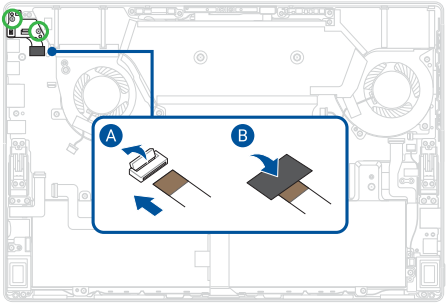
## Installation

1. Install the new camera lens.

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

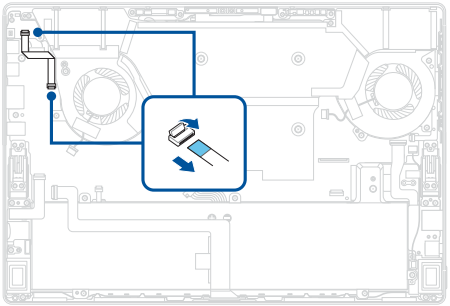


2. Align and install the rear camera board.
3. Secure the rear camera board using the screw(s) you removed earlier.
4. Connect the cable, then attach the tape.

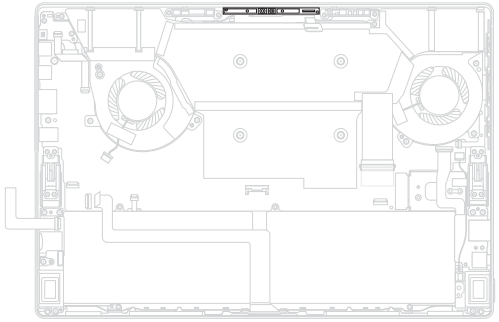


5. Reconnect the cable to the rear camera board and the motherboard.

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



# Camera module



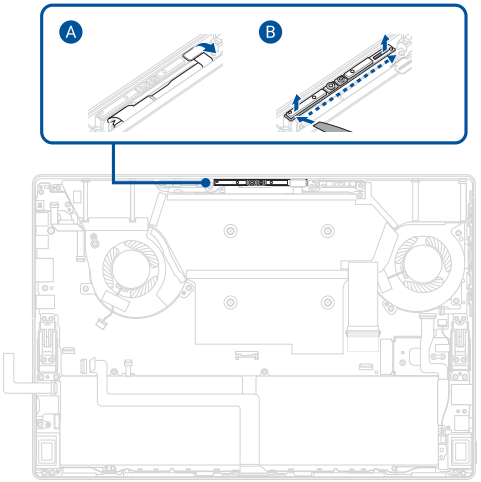
## Before you begin

**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 display panel and disconnect the battery power cable.

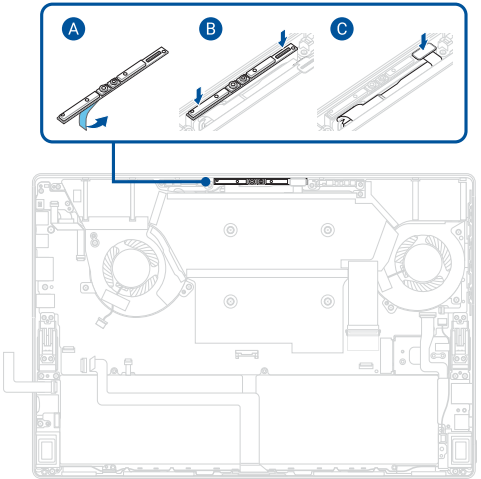
## Removal

1. Disconnect the cable from the camera module.
2. Carefully remove the camera module.

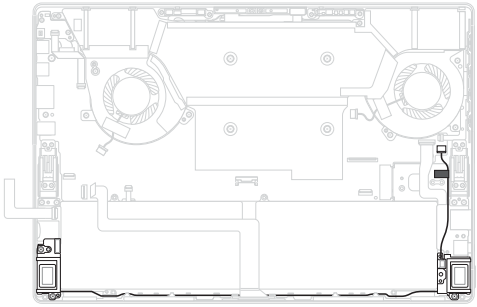


## Installation

1. Remove the release liner from the bottom of the new camera module, then install the camera module.
2. Reconnect the cable.
3. Install the components you removed in the *Before you begin* section.



# Speakers



## Before you begin

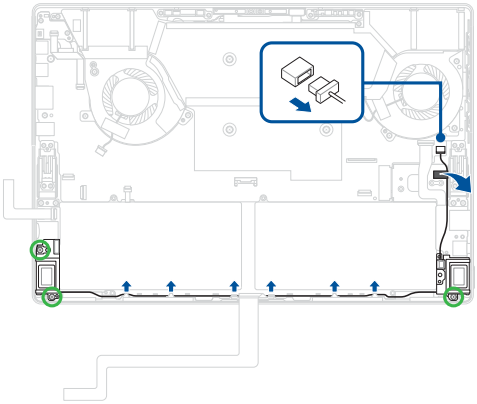
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the display panel and disconnect the battery power cable.
3. Remove the following components:
   - Battery

## Screw list

- M2.0 X 5.0L (4pcs)

## Removal

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

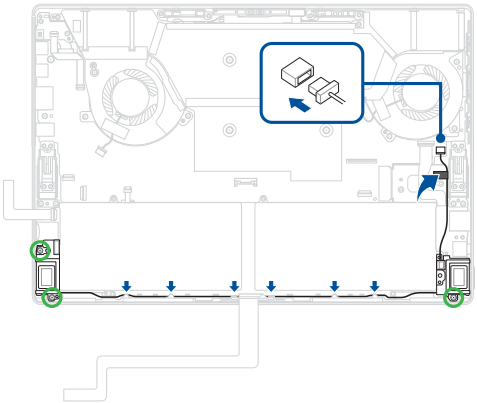


## Installation

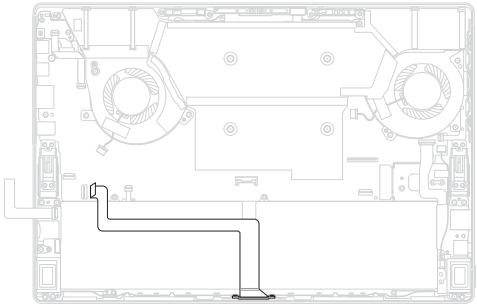
1. Install the speakers.
2. Route the speaker cable through the cable guide(s).

**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. Secure the speaker using the screw(s) you removed earlier.
4. Reconnect the cable, then reattach the tape.
5. Install the components you removed in the *Before you begin* section.



# Pogo pin



## Before you begin

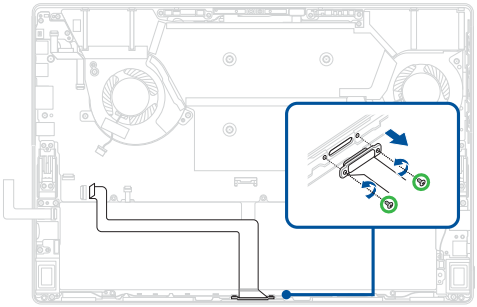
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the display panel and disconnect the battery power cable.
3. Remove the following components:
    - Battery

## Screw list

- M1.6 X 2.5L (2pcs)

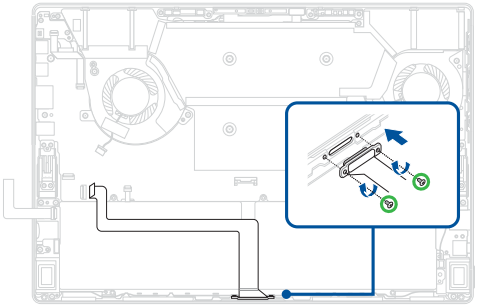
## Removal

Remove the screw(s), then remove the pogo pin with the FFC cable connected as shown.

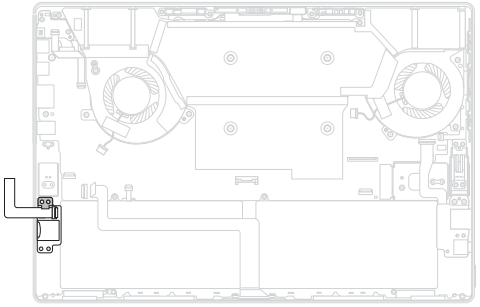


## Installation

1. Align and install the pogo pin with the FFC cable connected, then secure it using the screw(s) you removed earlier.
2. Install the components you removed in the *Before you begin* section.



# microSD reader board



## Before you begin

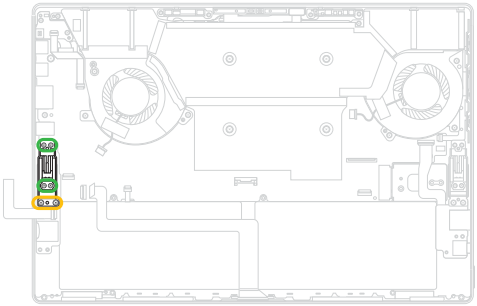
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the display panel and disconnect the battery power cable.
3. Remove the following components:
   - Battery
   - Speaker

## Screw list

- M2.0 X 3.0L (4pcs)
- M2.0 X 5.0L (2pcs)

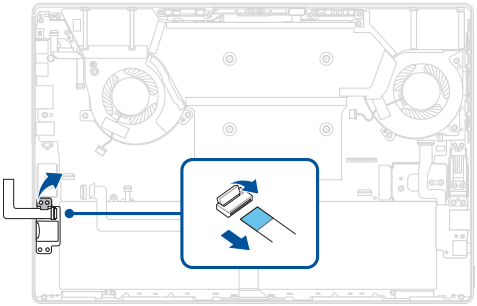
## Removal

1. Remove the hinge screw(s) from the left side.



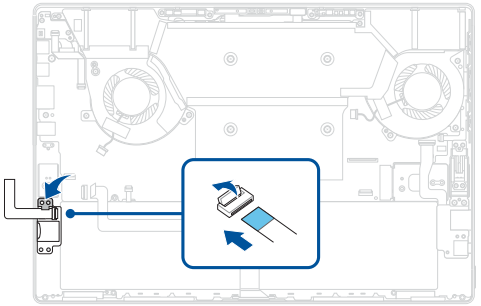
2. Remove the tape.

3. Disconnect the cable from the microSD reader board, then remove the microSD reader board.



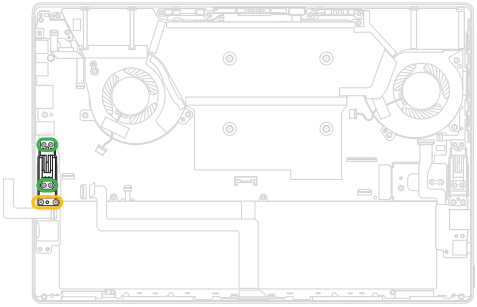
## Installation

1. Install the microSD reader board, then reconnect the cable to the microSD reader board.
2. Reattach the tape.

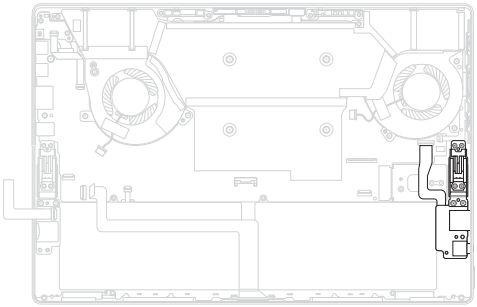


3. Secure the hinge on the left side using the screw(s) you removed earlier.

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



# I/O board



## Before you begin

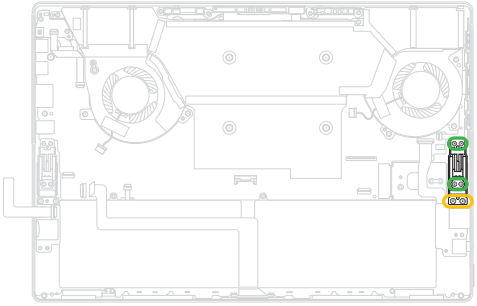
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the display panel and disconnect the battery power cable.
3. Remove the following components:
   - Battery
   - Speaker

## Screw list

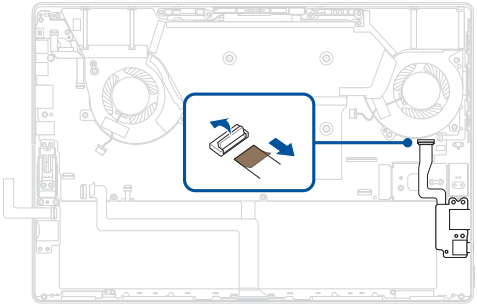
- M2.0 X 3.0L (4pcs)
- M2.0 X 5.0L (2pcs)

## Removal

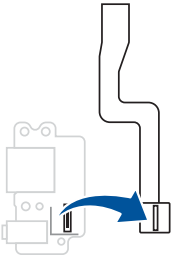
1. Remove the hinge screw(s) from the right side.



2. Disconnect the I/O board cable from the motherboard.

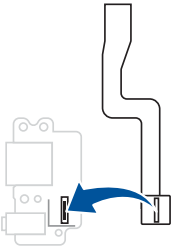


3. Turn over the I/O board, then disconnect and remove the cable.

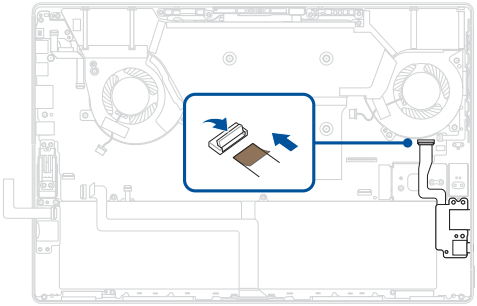


## Installation

1. Connect the cable to the bottom of the I/O board.

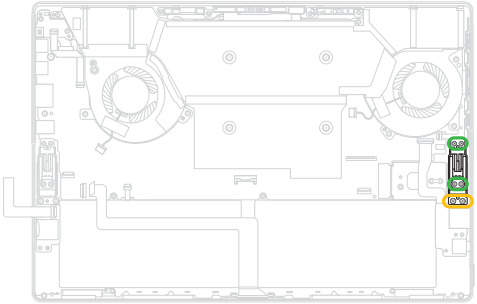


2. Turn over the I/O board, then install the I/O board.
3. Reconnect the I/O board cable to the motherboard.

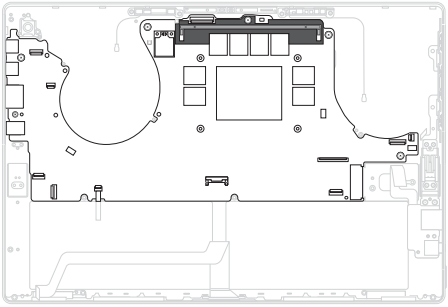


4. Secure the hinge on the right side using the screw(s) you removed earlier.

5. 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 display panel and disconnect the battery power cable.
3. Remove the following components:
    - Battery
    - M.2 SSD module
    - Heat sink
    - Fan module
    - Rear camera module
    - Speaker

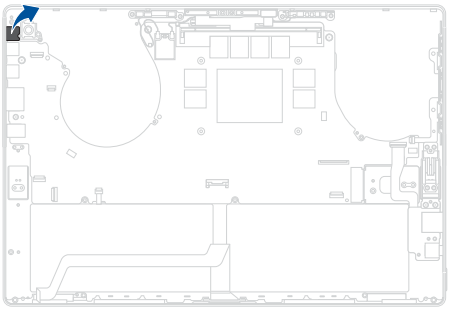
- Pogo pin
- microSD reader board
- I/O board

## Screw list

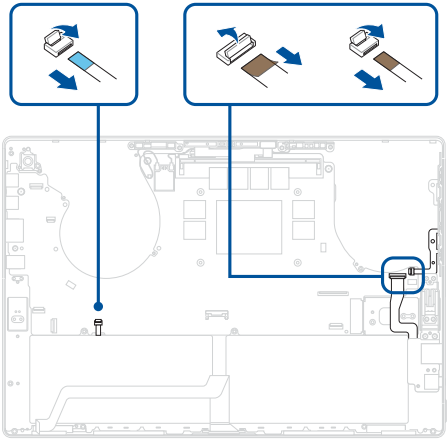
- M2.0 X 2.0L (5pcs)
- M2.0 X 3.0L (1pc)

## Removal

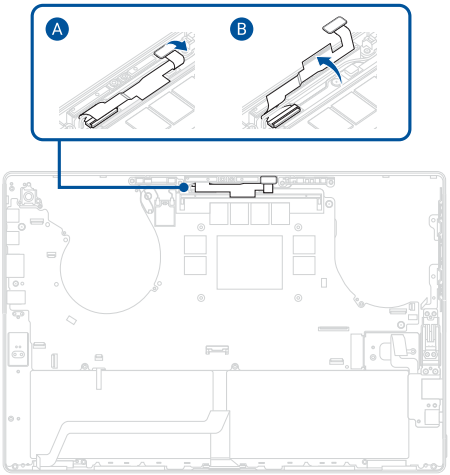
1. Remove the rubber piece.



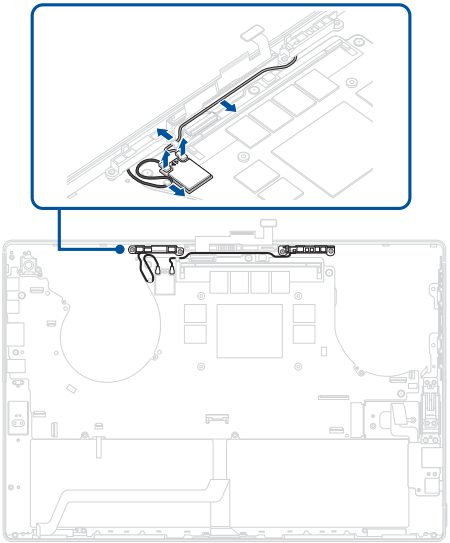
2. Disconnect the cable(s) from the motherboard.



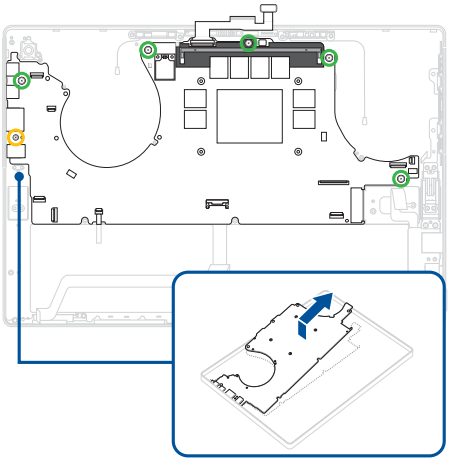
3. Disconnect and lift the camera cable.



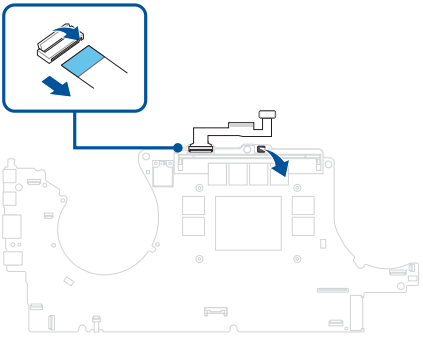
4. Disconnect the antenna cable(s), then remove the antenna cable from the cable guide(s).



5. Remove the screw(s), then remove the motherboard from the chassis as shown in the illustration below.

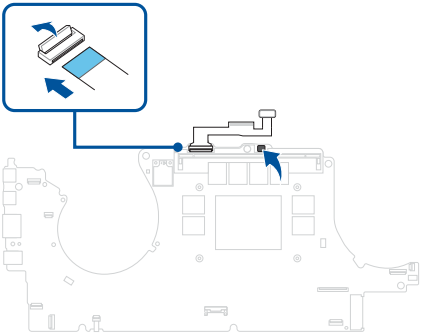


6. Disconnect the cable and remove the rubber piece.

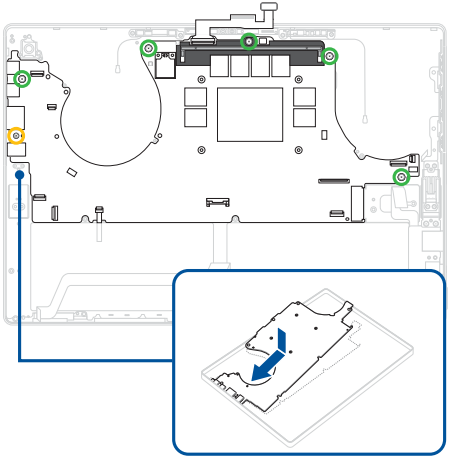


## Installation

1. Reconnect the cable and install the rubber piece.

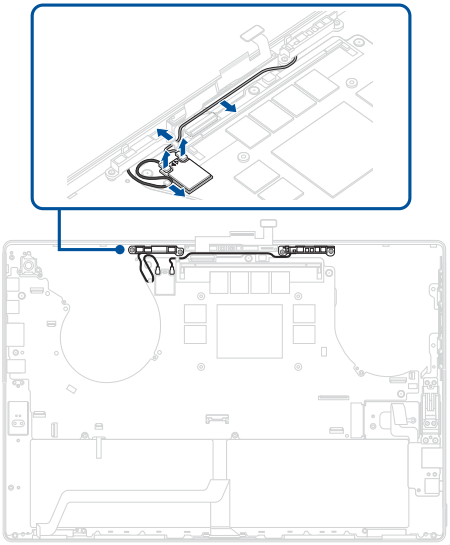


2. Align and install the motherboard as shown in the illustration below, then secure the motherboard using the screw(s) you removed earlier.

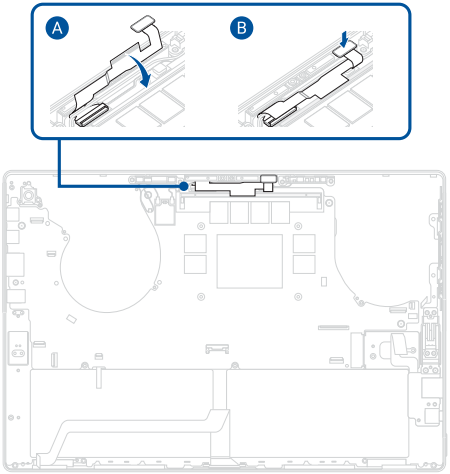


3. Reconnect the antenna cable(s).
4. Route the antenna cable(s) through the cable guide(s).

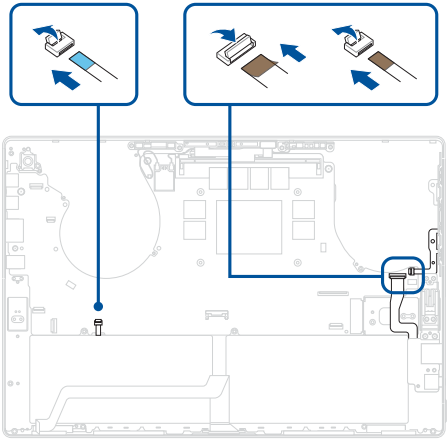
**IMPORTANT!** Damage may occur if cables are not properly routed through the cable guides. Confirm that all cables are routed through each of the indicated cable guides before proceeding.



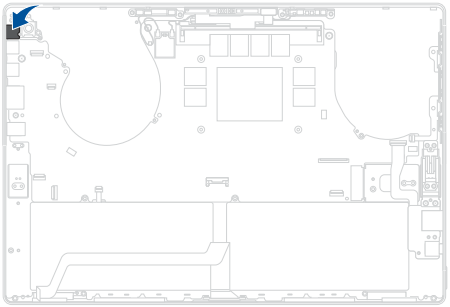
5. Reconnect the camera cable.



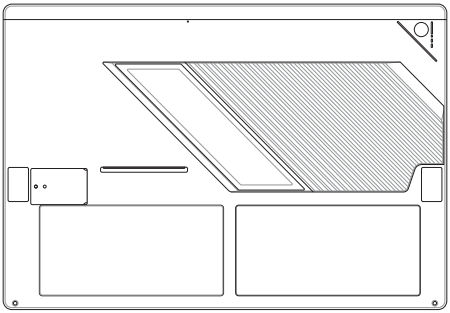
6. Reconnect the cable(s) to the motherboard.



7. Align and install the rubber piece.
8. 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 display panel and disconnect the battery power cable.
3. Remove the following components:
    - Battery
    - M.2 SSD module
    - Heat sink
    - Fan module
    - Rear camera module
    - Speaker

- Pogo pin
- microSD reader board
- I/O board
- Motherboard

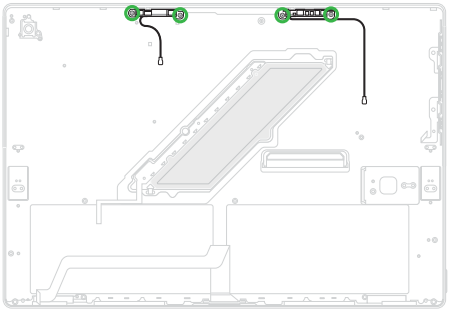
## Screw list

- M1.6 X 3.0L (4pcs)
- M1.6 X 2.5L (4pcs)

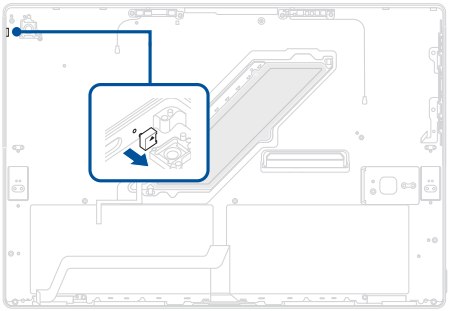
## Removal

1. Remove the screw(s), then remove the antenna cable(s).

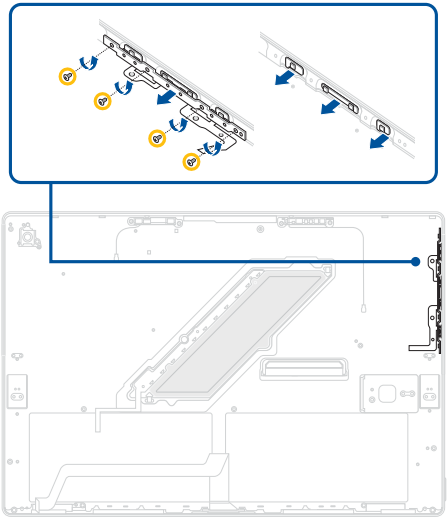
**IMPORTANT!** The antenna cable(s) cannot be reused once removed.



2. Remove the indicator lens.

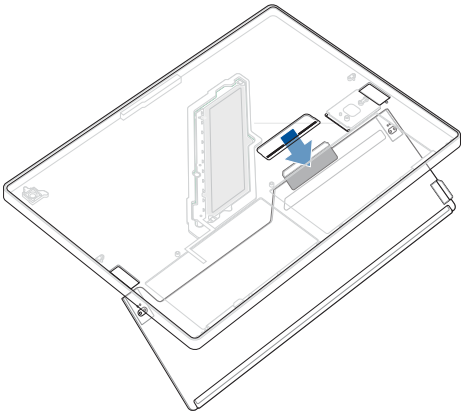


3. Remove the screw(s), then remove the bracket.
4. Remove the side key(s).



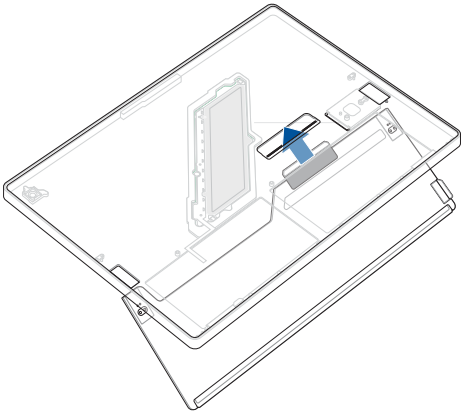
5. Position the bottom cover in the orientation shown and hold the kickstand.

6. Tilt and remove the kickstand from the opening in the bottom cover.

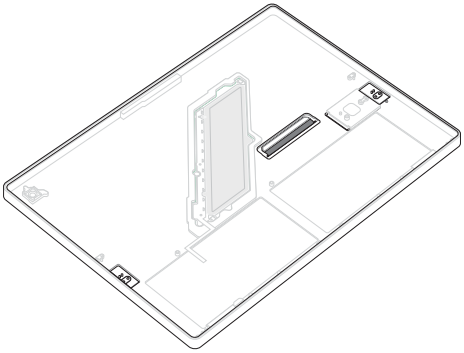


## Installation

1. Position the bottom cover in the orientation shown, then tilt and insert the kickstand to the opening in the bottom cover.

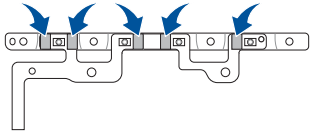


2. Align the kickstand with the bottom cover, then place the bottom cover on a surface to ensure the bottom cover sits securely without any instability.

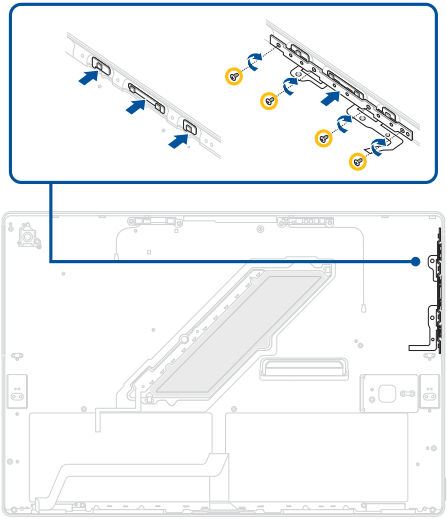


3. Position the new bracket in the orientation shown, then install the sponge piece(s) to the bracket as shown in the illustration below.

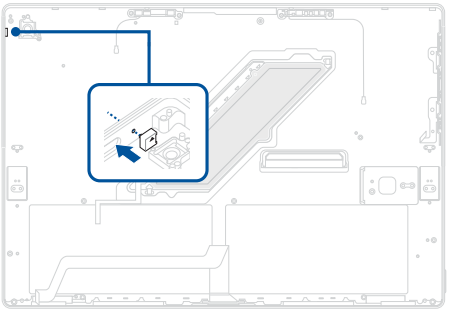
**NOTE:** This step is only required when you are replacing the existing component with a new one.



4. Align and install the side key(s).
5. Secure the bracket using the screw(s) you removed earlier.

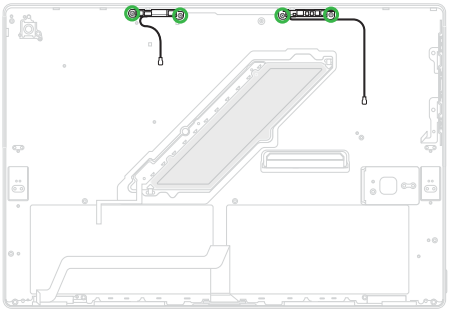


6. Align and install the indicator lens.



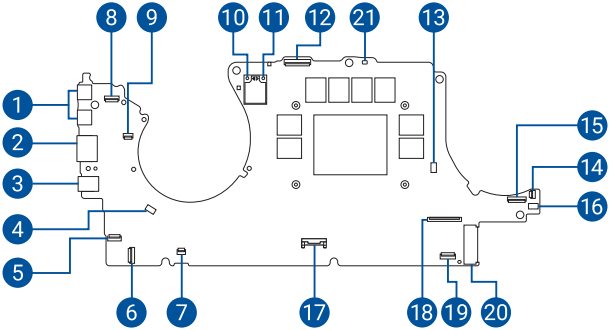
7. Secure the antenna cable(s) using the screw(s) you removed earlier.

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



# *Appendices*

# Wiring and connection diagrams



1. USB Type-C® connector
2. HDMI connector
3. Power supply connector
4. Fan connector (right)
5. microSD reader board connector
6. Pogo pin connector
7. LED FPC connector
8. Rear camera connector
9. Hall sensor PCB connector
10. WLAN connector (Main)
11. WLAN connector (AUX)
12. Front camera connector
13. Fan connector (left)
14. Power button and volume button connector
15. I/O board connector
16. Speaker connector
17. Battery connector
18. eDP connector
19. Touch screen panel connector
20. SSD connector
21. Microphone connector