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IN SEARCH OF INCREDIBLE



Service Manual

ASUS

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Chapter 1: ***Introduction***

Disclaimer

ASUS is not responsible for direct, indirect, intentional or unintentional damages resulting from improper installation and operation.

Safety precautions

- Before handling components, use a grounded wrist strap or touch a safely grounded object to avoid damaging them due to static electricity.
- Keep liquids or moisture away from your device to avoid short circuits.
- Remove rings, watches, and any other metal objects from your hands.
- Hold components by the edges to avoid touching the ICs.
- Properly install all components before connecting the AC power.
- Do not use power adapters or batteries from other devices to reduce the risk of injury to persons due to fire or explosion. Use only certified power adapters or batteries supplied by the manufacturer or authorized retailers.
- Detach all clips or flaps before removing cables to prevent damage.

- Disconnect cables, connectors, and power plugs by pulling the plug evenly to avoid damage.
- Use the correct screw models on your device to prevent damage.
- Confirm that the cable orientation is correct before connecting any cables.
- Fully remove all adhesive residue after removing and before installing any components.
- Photograph the appearance of cables, cable routing, connectors, and screws for later reference before proceeding with each step.

Pre-repair checklist

- Read the entire manual before starting any service procedures and follow all instructions.
 - Back up the data on your device.
 - Place your device on a clean and stable surface.
 - Turn off your device.
 - Disconnect all connected peripherals and cables.
 - Disconnect all power cables and remove the battery pack (if applicable).
-

IMPORTANT!

- If you are uncertain about performing the described service procedures, stop and contact an authorized service center for assistance.
 - Purchase replacement components from authorized retailers of this device to ensure maximum compatibility and reliability.
-

NOTE:

- The illustrations are for reference only.
 - The service procedures described in this manual depend on the model configuration and may not reflect the entire servicing process. To service components that are not covered in this manual, please visit an authorized service center for further assistance.
 - Keep all adhesive tape, insulating materials, screws, and other removable items in a safe place until the service procedure is completed, as they may be needed during installation.
-

Installation tools



Screwdriver



Plastic blade



Tweezers

Accessories



Power adapter

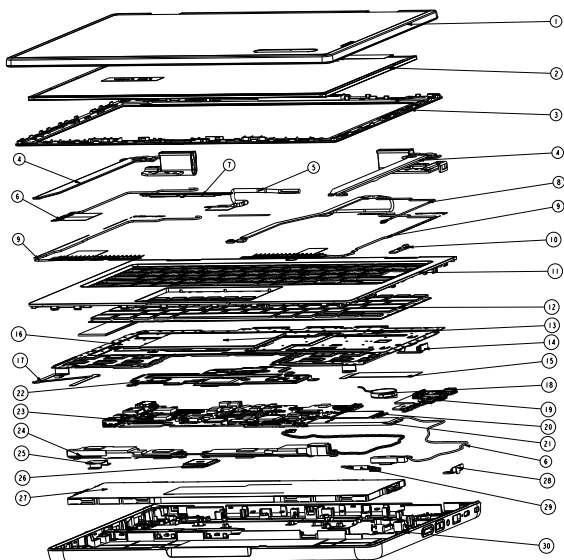
Diagnostic tools

Use ASUS System Diagnostics after completing any service procedures to ensure that all components are working properly.

For more information, visit www.asus.com/support/FAQ/1048490/.

Major components

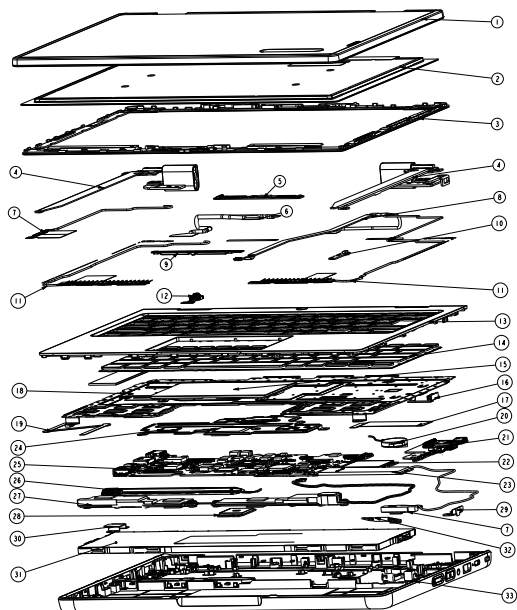
Non-touch model



1. Top cover
2. Display panel
3. Display bezel
4. Hinges
5. eDP cable
6. WLAN antenna
7. Camera module
8. Camera cable
9. LTE antenna*
10. LED board
11. Keyboard module
12. Keyboard
13. Touchpad
14. Fingerprint sensor*
15. I/O board cable
16. Keyboard bracket
17. Touchpad cable
18. Coin battery
19. I/O board
20. LTE module*
21. M.2 SSD module*
22. Heat sink
23. Motherboard
24. Speakers
25. USB Type-C® bracket
26. WLAN module
27. Battery
28. Fingerprint sensor bracket*
29. Battery power cable
30. Bottom cover

** On selected models*

Touch model

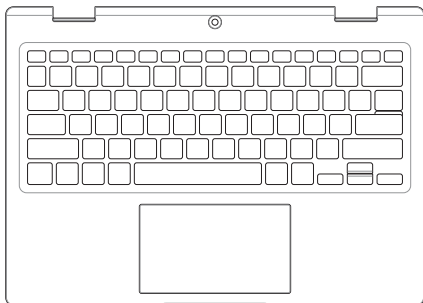


1. Top cover
2. Display panel
3. Display bezel
4. Hinges
5. Touch screen board
6. eDP cable
7. WLAN antenna
8. Camera cable
9. Camera module (upper)
10. LED board
11. LTE antenna*
12. Camera module (lower)
13. Keyboard module
14. Keyboard
15. Touchpad
16. Fingerprint sensor*
17. I/O board cable
18. Keyboard bracket
19. Touchpad cable
20. Coin battery
21. I/O board
22. LTE module*
23. M.2 SSD module*
24. Heat sink
25. Motherboard
26. Stylus storage slot*
27. Speakers
28. WLAN module
29. Fingerprint sensor bracket*
30. USB Type-C® bracket
31. Battery
32. Battery power cable
33. Bottom cover

** On selected models*

Chapter 2: ***Service Procedures***

Keyboard module



Before you begin

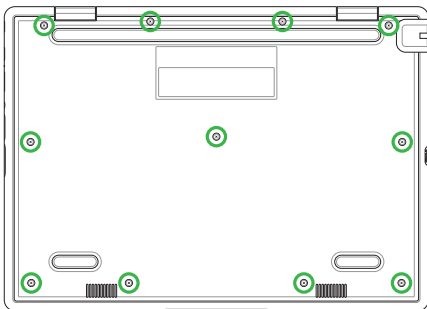
Read the **Safety Precautions** and complete the **Pre-repair Checklist**.

Screw list

- ⊕ M2.5 X 7.5L captive screw (11 pcs)

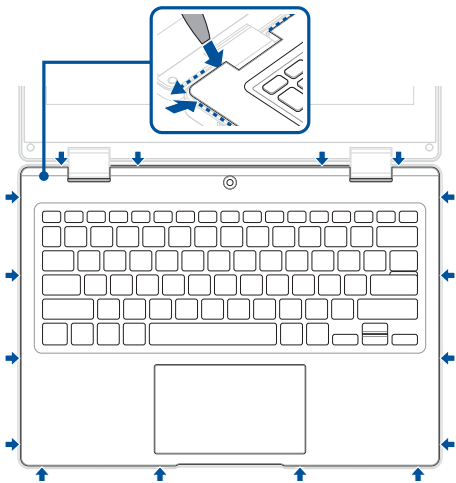
Removal

1. Loosen the captive screw(s) without removing the screw(s).



2. Flip your device over, then use the plastic blade to pry open the indicated area of the keyboard module as shown in the illustration below.

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

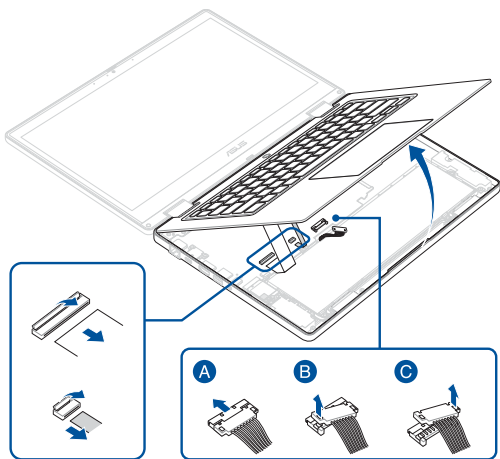


- Lift the keyboard module without removing it completely, then hold it in place above the chassis.
- Disconnect the battery power cable.

IMPORTANT!

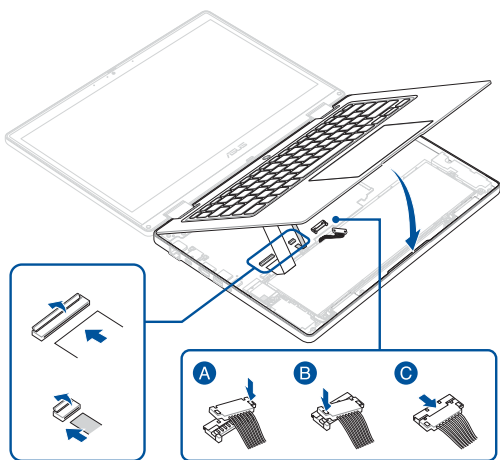
- Disconnect the battery power cable by lifting the side with the red wires first.
 - Serious risk of fire or explosion may occur if the battery is punctured. If you are uncertain about proceeding, stop and contact an authorized service center for assistance.
-

- Disconnect the cable(s), then remove the keyboard module.

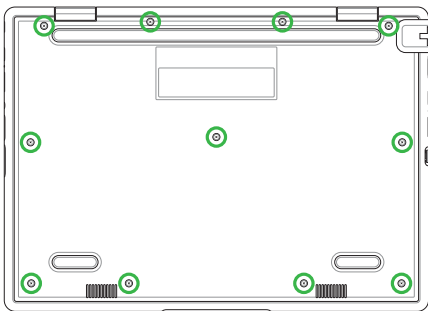


Installation

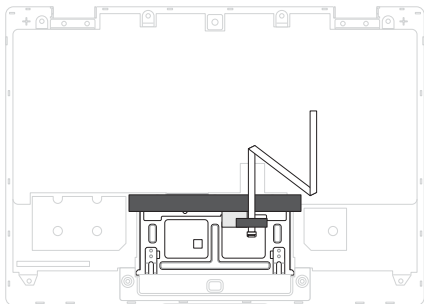
1. Align the keyboard module with the chassis, then hold it in place above the chassis.
2. Reconnect the cable(s).
3. Reconnect the battery power cable.
4. Lower the keyboard module, then gently press down on the keyboard module until it clicks into place.



5. Flip your device over, then secure the keyboard module by tightening the screw(s).



Touchpad



Before you begin

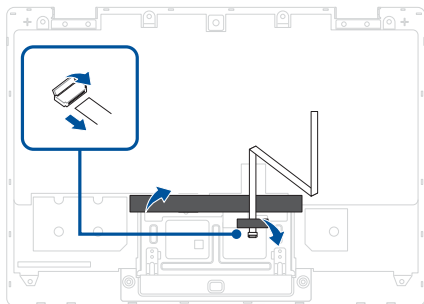
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Keyboard module

Screw list

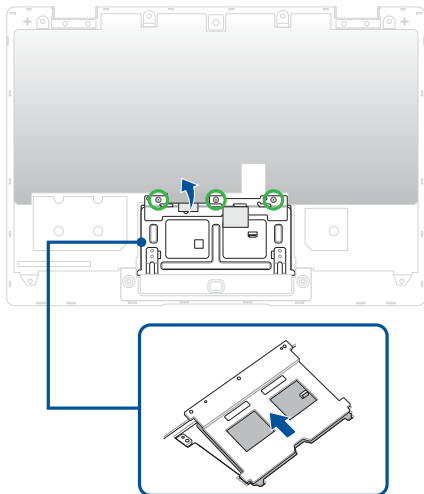
- ⊕ M2.0 X 2.0L (3pcs)

Removal

1. Disconnect the cable, then remove the tape and foam piece.

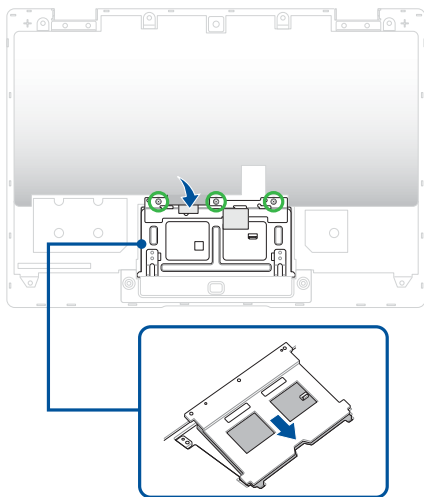


2. Partially peel off the polyester film.
3. Remove the screw(s), then remove the touchpad.

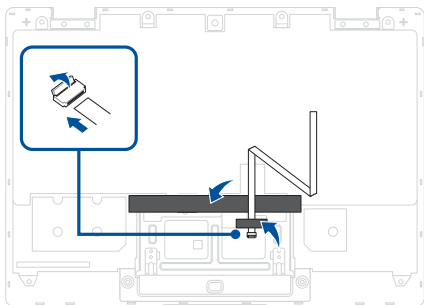


Installation

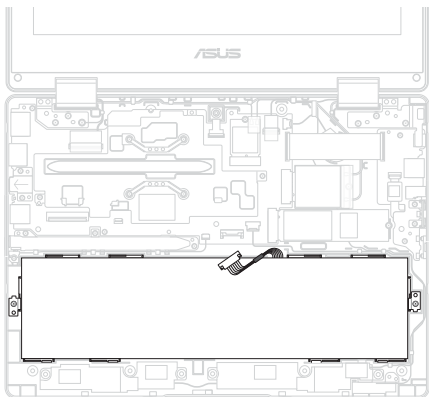
1. Install the touchpad, then secure the touchpad using the screw(s) you removed earlier.
2. Reattach the polyester film.



3. Reattach the tape and foam piece, then reconnect the cable.
4. Install the components you removed in the *Before you begin* section.



Battery



Before you begin

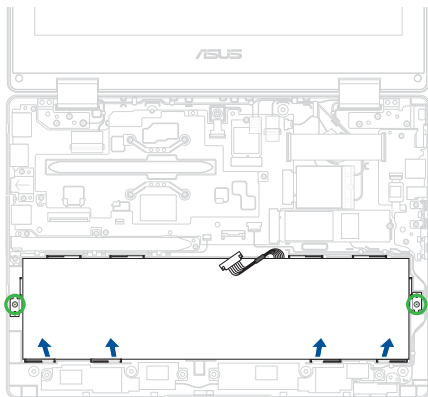
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Keyboard module

Screw list

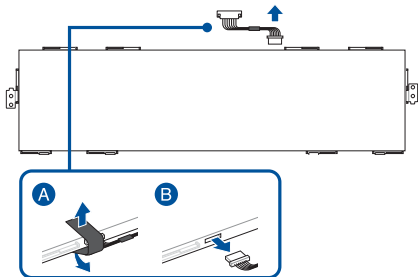
- ⊕ M2.0 X 3.0L (2pcs)

Removal

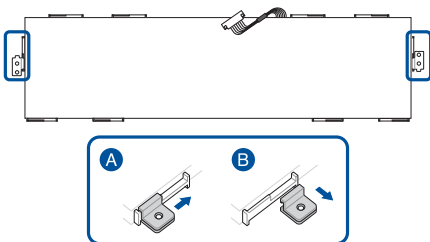
1. Remove the screw(s) from the battery, then remove the battery.



2. Remove the tape, then remove the battery power cable.

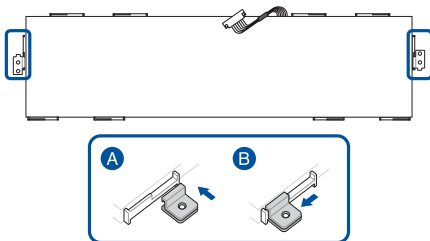


3. Remove the battery brackets from the battery.

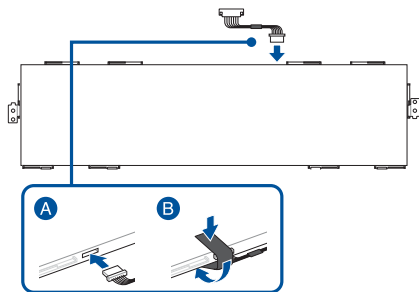


Installation

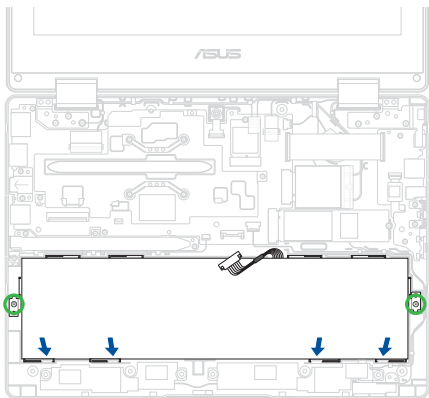
1. Attach the battery brackets to the battery.



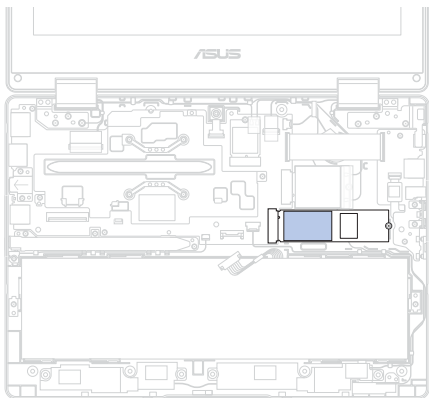
2. Connect the battery power cable to the battery, then reattach the tape.



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



M.2 SSD module (on selected models)



Before you begin

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

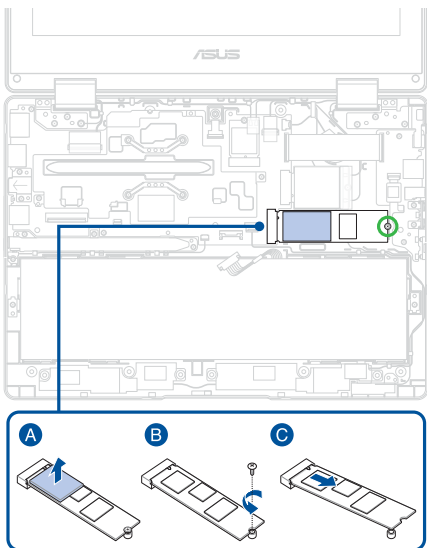
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Keyboard module
 - Battery

Screw list

- ⊕ M2.0 X 3.0L (1pc)

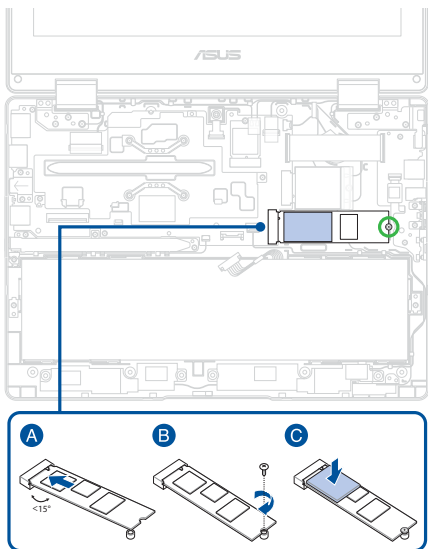
Removal

1. Remove the thermal pad from the M.2 SSD module.
2. Remove the screw, then remove the M.2 SSD module.

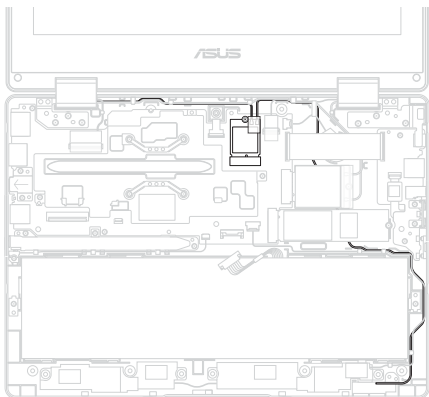


Installation

1. Align and install the M.2 SSD module, then secure the M.2 SSD module using the screw you removed earlier.
2. Reattach the thermal pad.
3. Install the components you removed in the *Before you begin* section.



WLAN module



Before you begin

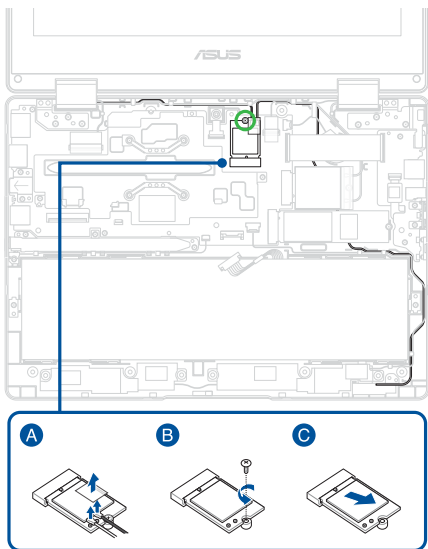
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Keyboard module
 - Battery

Screw list

- ⊕ M2.0 X 3.0L (1pc)

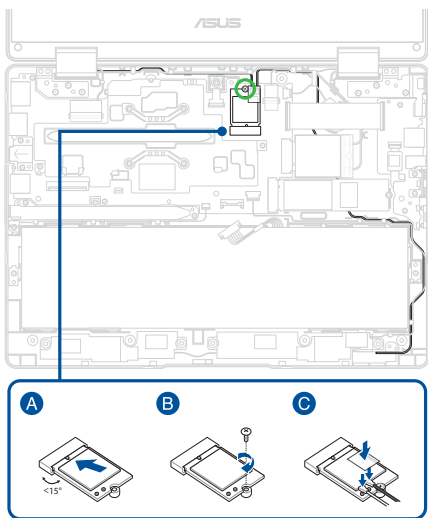
Removal

Remove the polyester film and disconnect the antenna cable(s), then remove the screw and remove the WLAN module.

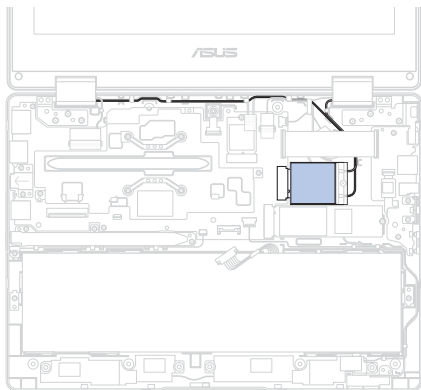


Installation

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



LTE module (on selected models)



Before you begin

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

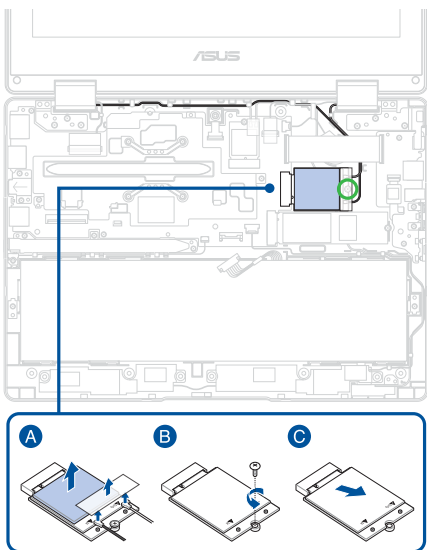
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Keyboard module
 - Battery

Screw list

- ⊕ M2.0 X 3.0L (1pc)

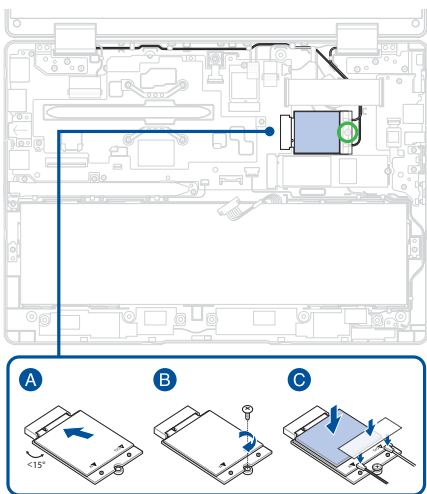
Removal

1. Remove the polyester film and remove the thermal pad, then disconnect the antenna cable(s).
2. Remove the screw, then remove the LTE module.

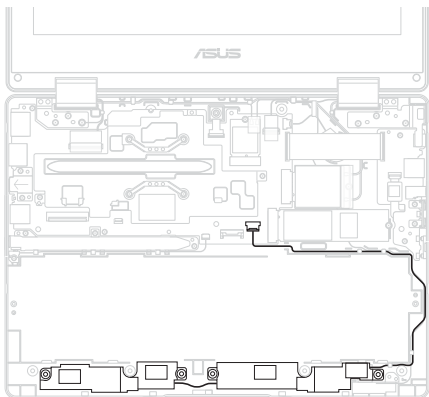


Installation

1. Install the LTE module and secure the LTE module using the screw you removed earlier.
2. Reconnect the antenna cable(s), then reattach the thermal pad and reattach the polyester film.
3. Install the components you removed in the *Before you begin* section.



Speakers

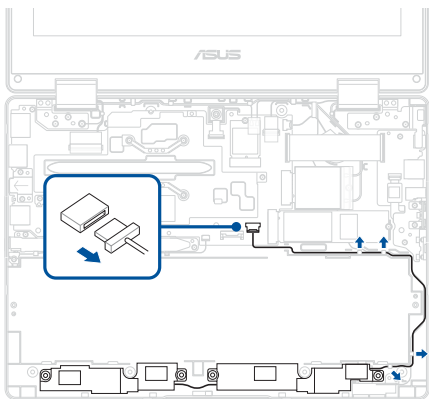


Before you begin

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

Removal

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

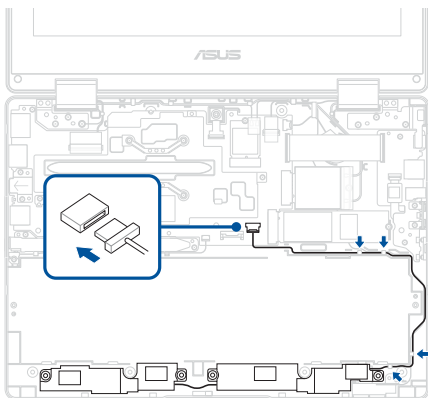


Installation

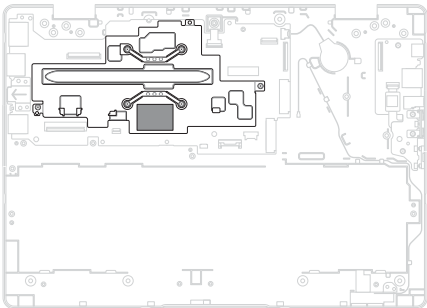
1. Install the speakers.
2. Route the cable through the cable guide(s).

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



Heat sink



Before you begin

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

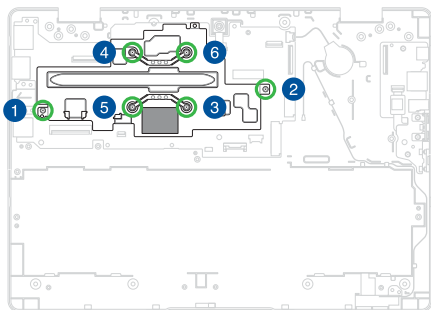
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Keyboard module
 - Battery

Screw list

- ⊕ M2.0 X 3.0L (6pcs)

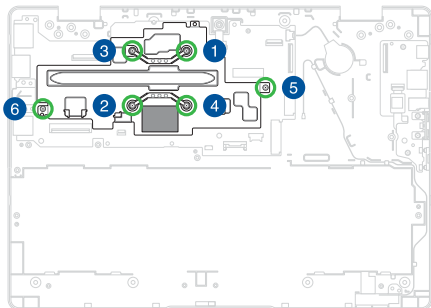
Removal

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

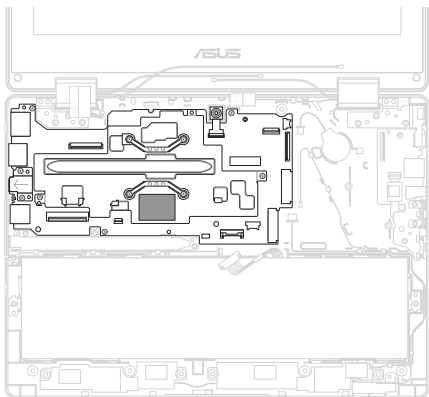


Installation

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

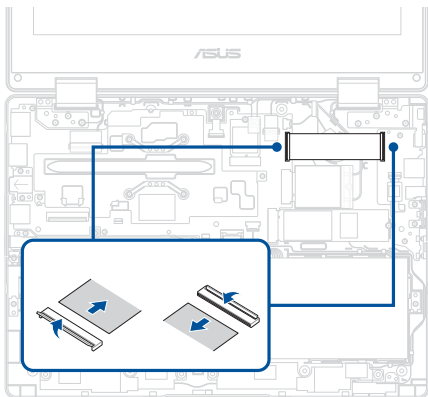
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Keyboard module
 - Battery
 - M.2 SSD module (on selected models)
 - WLAN module
 - LTE module (on selected models)

Screw list

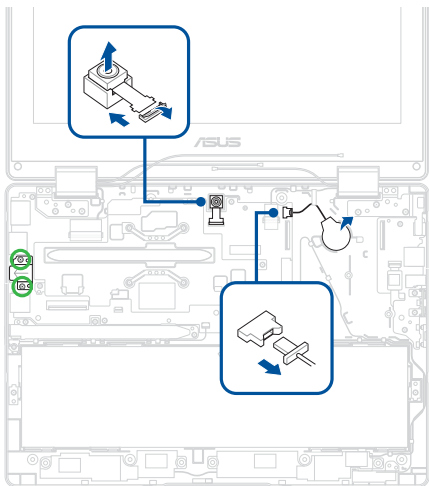
- ⊕ M2.0 X 3.0L (7pcs)

Removal

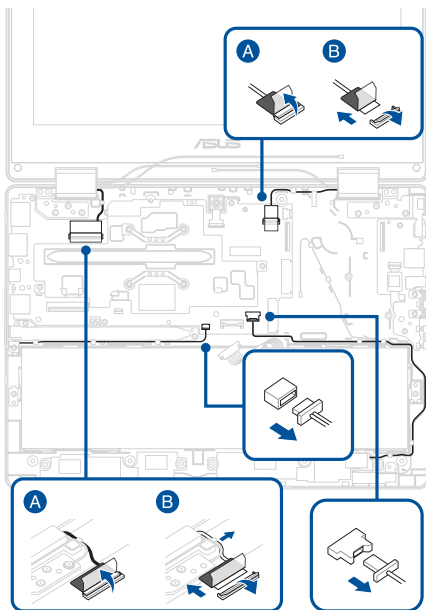
1. Disconnect and remove the cable.



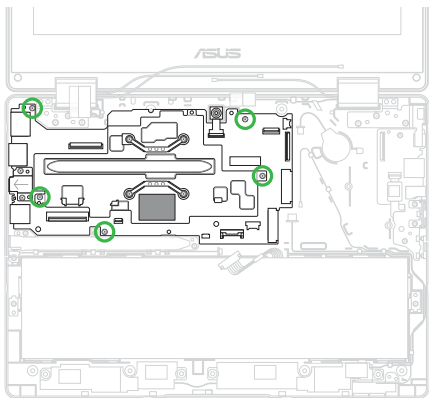
2. Remove the screw(s), then remove the bracket.
3. Disconnect and remove the camera module (if available).
4. Disconnect and remove the coin battery.



5. Disconnect the cable(s).

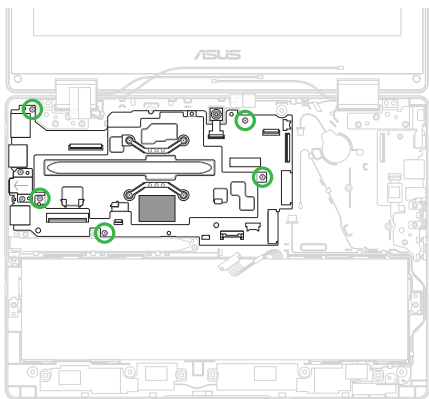


6. Remove the screw(s), then remove the motherboard from the chassis.

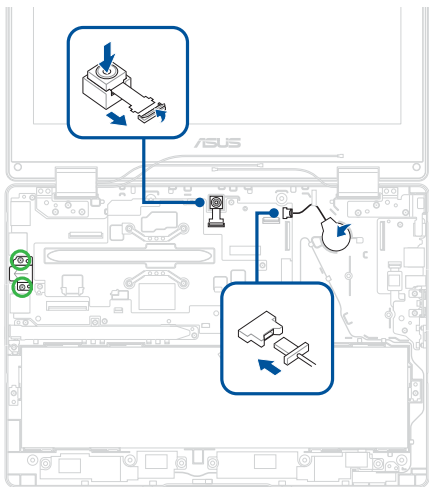


Installation

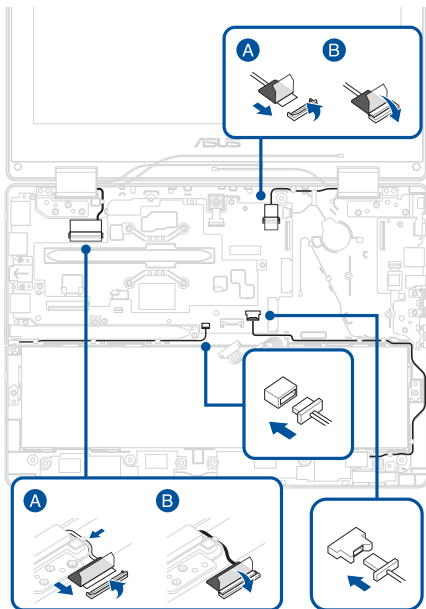
1. Align and install the motherboard, then secure the motherboard using the screw(s) you removed earlier.



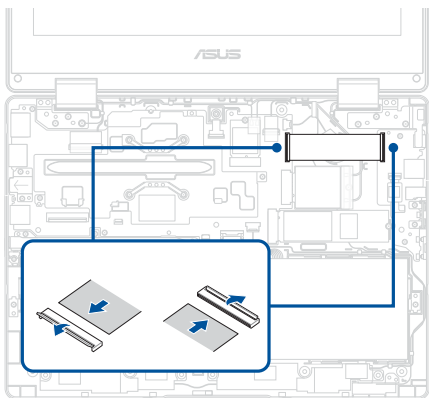
2. Install and reconnect the coin battery.
3. Install and reconnect the camera module (if available).
4. Install the bracket, then secure the bracket using the screw(s) you removed earlier.



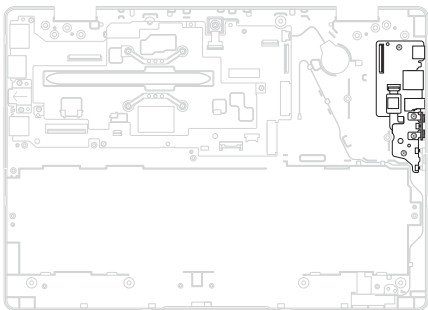
5. Reconnect the cable(s).



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



I/O board



Before you begin

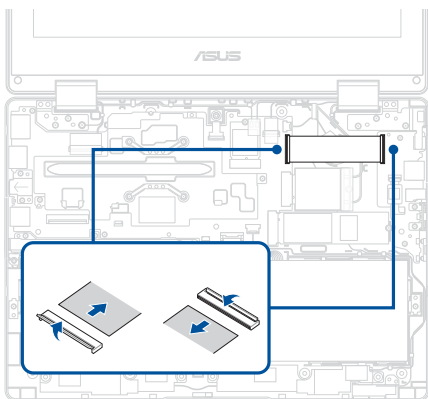
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Keyboard module
 - Battery
 - Display panel module

Screw list

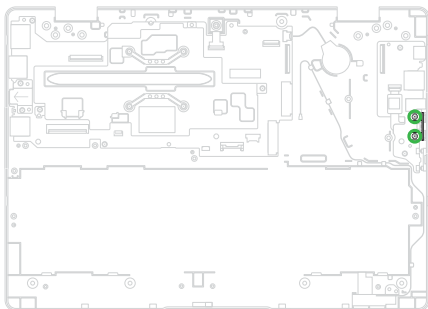
- ⊕ M2.0 X 3.0L (4pcs)

Removal

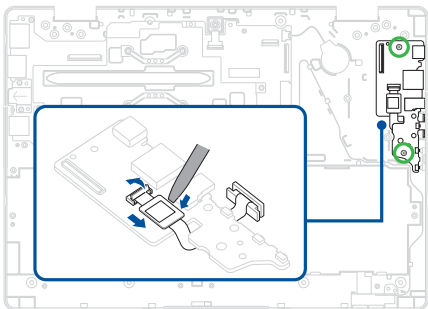
1. Disconnect and remove the cable.



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

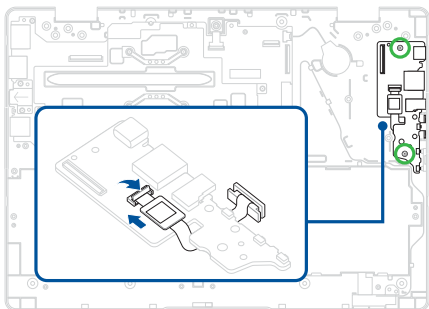


3. Remove the screw(s), then remove the I/O board.
4. Carefully pry the fingerprint sensor loose, then disconnect and remove the fingerprint sensor (if available).

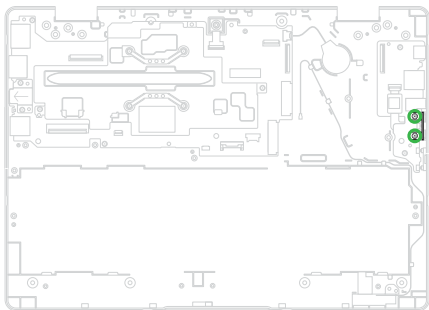


Installation

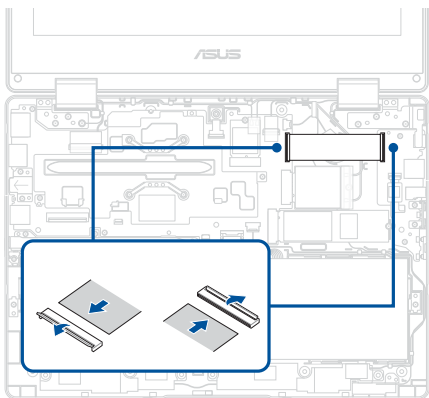
1. Align and install the fingerprint sensor, then reconnect the fingerprint sensor (if available).
2. Install the I/O board, then secure the I/O board using the screw(s) you removed earlier.



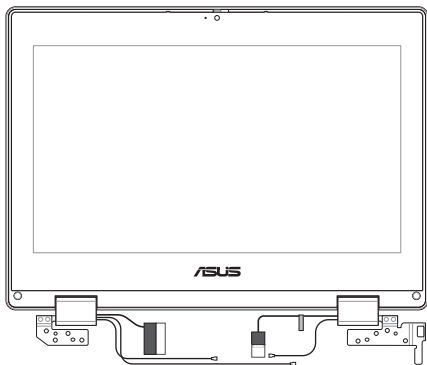
3. Install the bracket, then secure the bracket using the screw(s) you removed earlier.



4. Reconnect the cable.
5. 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.

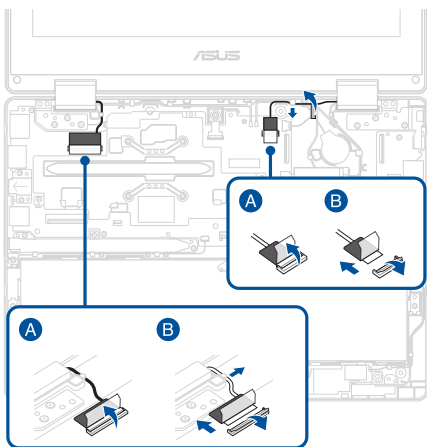
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Keyboard module
 - Battery
 - WLAN module
 - LTE module (on selected models)

Screw list

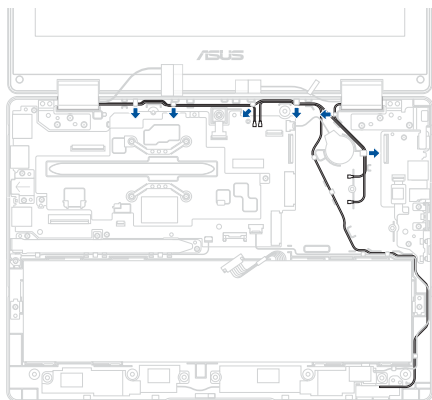
- ⊕ M2.5 X 4.0L (6pcs)

Removal

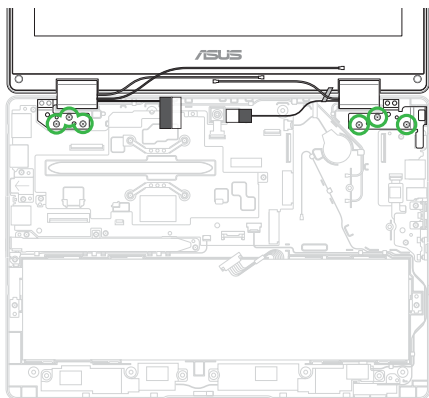
1. Remove the tape, then disconnect the cable(s).



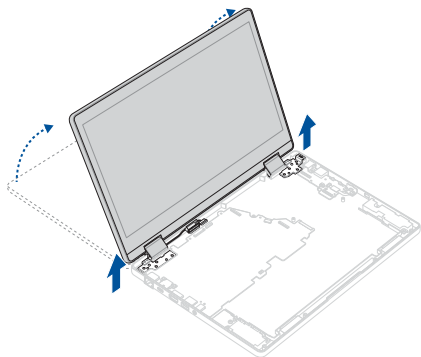
2. Remove the cable(s) from the cable guide(s).



3. Remove the screw(s).

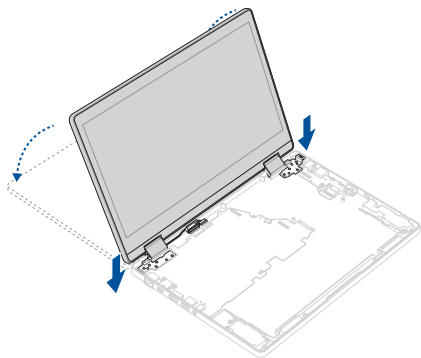


4. Place your device on a flat surface, then lift and remove the display panel module as shown in the illustration below.

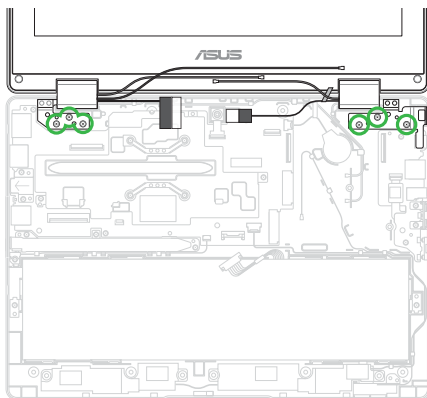


Installation

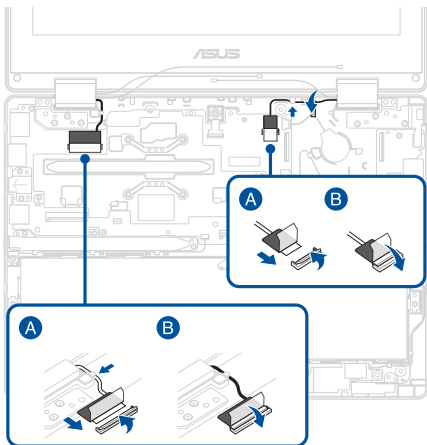
1. In the orientation shown, align and place the hinges of the display panel module on the screw holes.



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



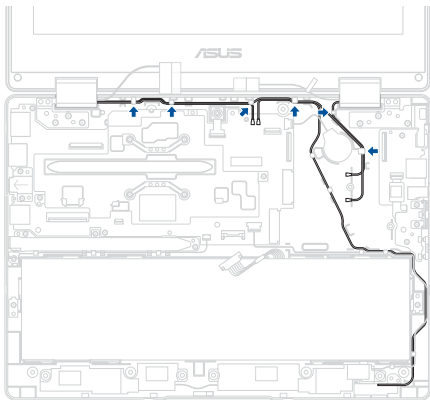
3. Reconnect the cable(s), then reattach the tape.



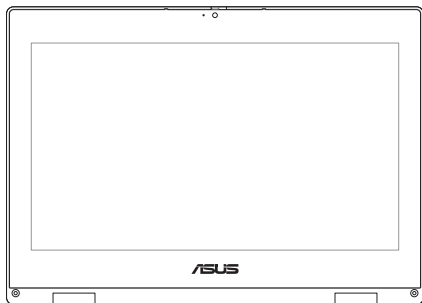
4. Route the cable(s) through the cable guide(s).

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

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



Display panel (Touch model)



Before you begin

IMPORTANT!

- This component is fragile. Damage may occur if the service procedure is performed incorrectly. If you are uncertain about proceeding, stop and contact an authorized service center for assistance.
 - Do not bend the display panel in any way to avoid risk of display panel leakage.
-

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

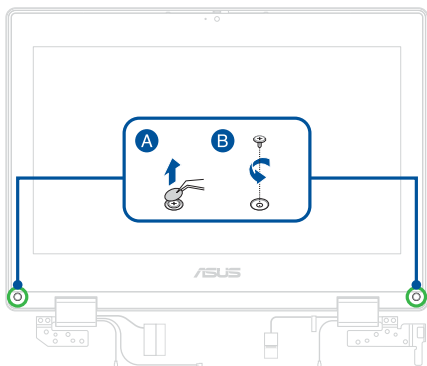
- LTE module (on selected models)
- Display panel module

Screw list

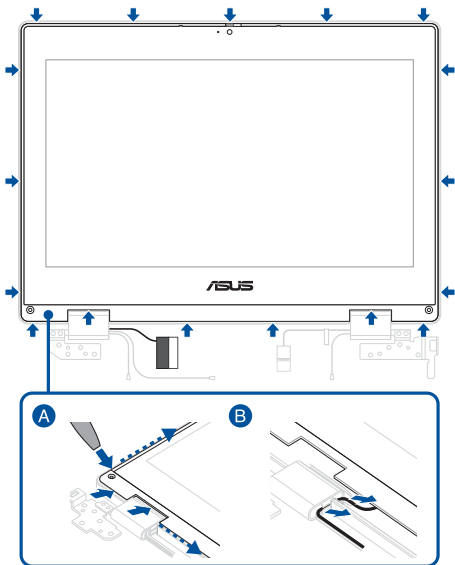
- ⊕ M2.0 X 3.0L (2pcs)

Removal

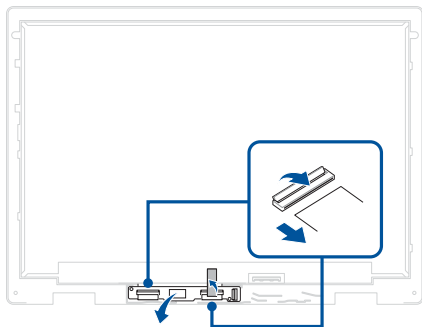
1. Remove the screw cover(s), then remove the screw(s).



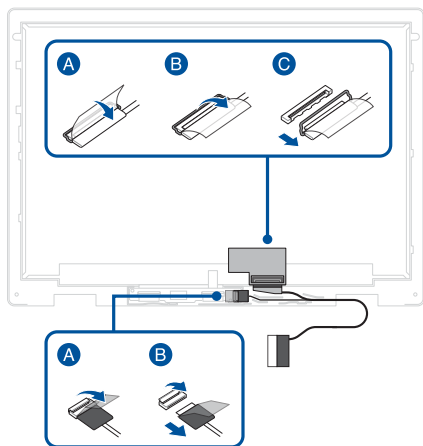
2. Carefully pry the display panel loose, then remove the display panel.
3. Remove the cable from the cable guide(s).



4. Flip the display panel over.
5. Remove the tape and disconnect the cable(s), then remove the touch screen board.

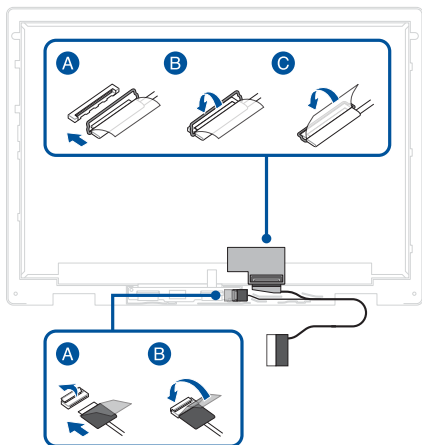


6. Disconnect the cable(s).

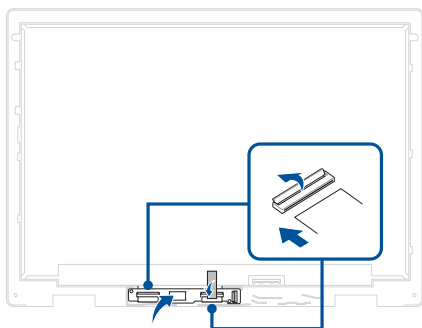


Installation

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



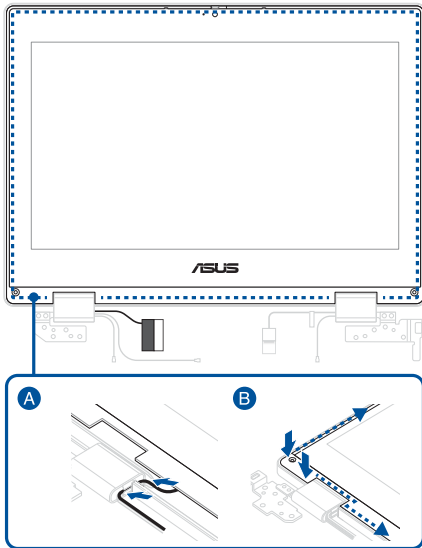
2. Install the touch screen board, then reconnect the cable(s) and reattach the tape.



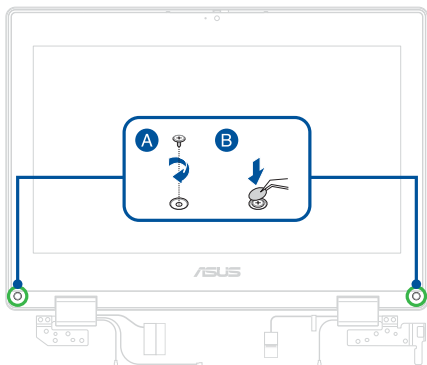
3. Route the cable(s) through the cable guide(s).

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

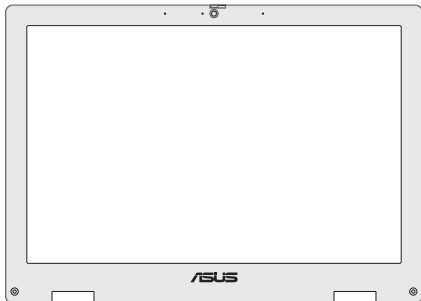
4. Align and install the display panel, then gently press down on the display panel until it clicks into place.



5. Secure the display panel using the screw(s) you removed earlier, then reattach the screw cover(s).
6. Install the components you removed in the *Before you begin* section.



Display panel (11.6" Non-touch model)



Before you begin

IMPORTANT!

- This component is fragile. Damage may occur if the service procedure is performed incorrectly. If you are uncertain about proceeding, stop and contact an authorized service center for assistance.
 - Do not bend the display panel in any way to avoid risk of display panel leakage.
-

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

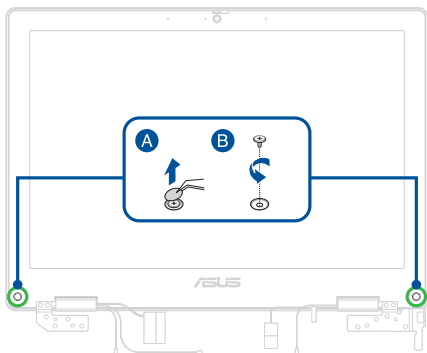
- WLAN module
- LTE module (on selected models)
- Display panel module

Screw list

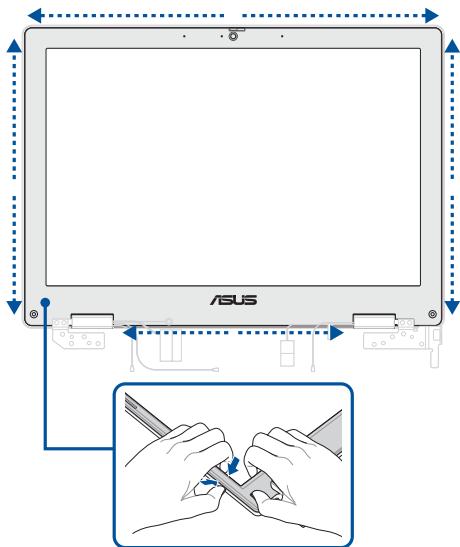
- ⊕ M2.0 X 3.0L (6pcs)

Removal

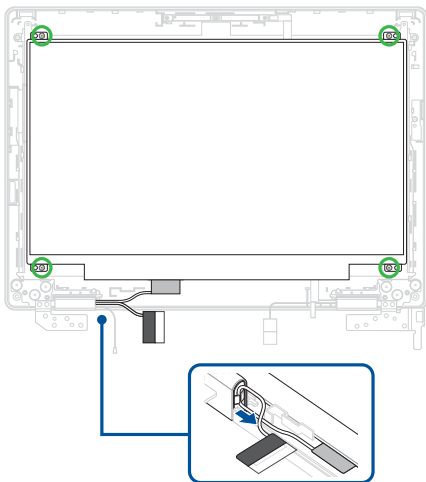
1. Remove the screw cover(s), then remove the screw(s).



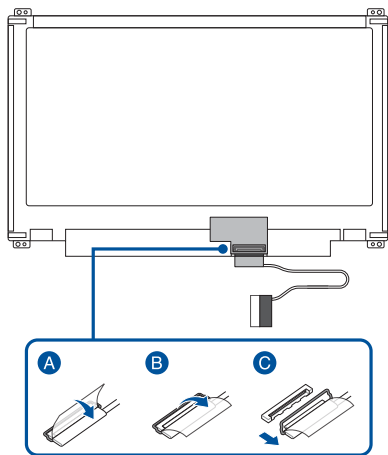
- Carefully pry the bezel loose, then remove the bezel.



3. Remove the cable from the cable guide(s).
4. Remove the screw(s), then remove the display panel.

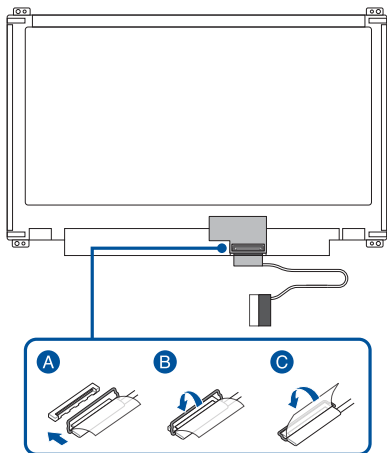


5. Flip the display panel over, then disconnect the cable.



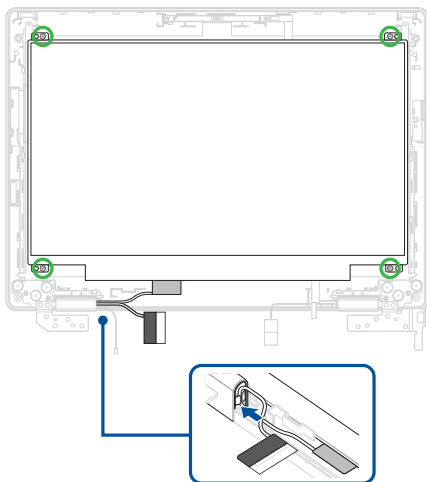
Installation

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



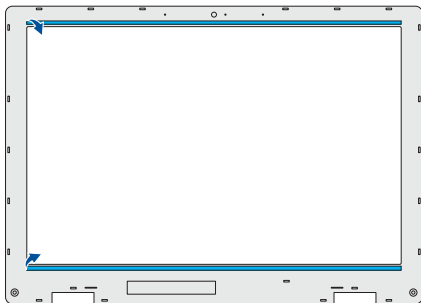
2. Align and install the display panel, then secure the display panel using the screw(s) you removed earlier.
3. Route the cable(s) through the cable guide(s).

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

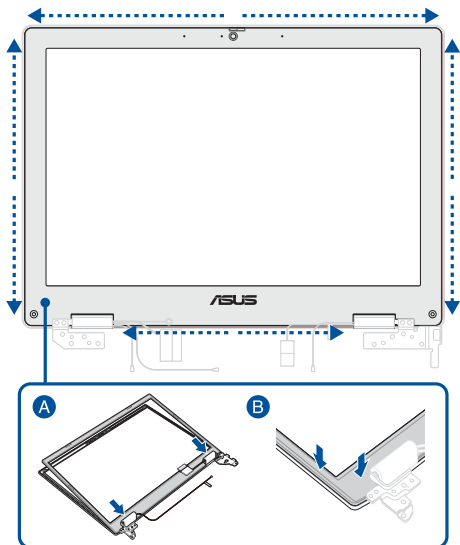


4. Remove the release liner(s) from the tape on the bezel.

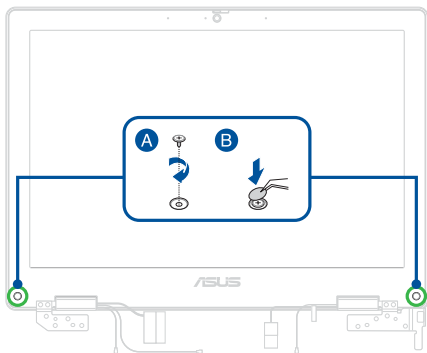
NOTE: The tape cannot be reused. Remove any adhesive residue and use new tape when reinstalling components.



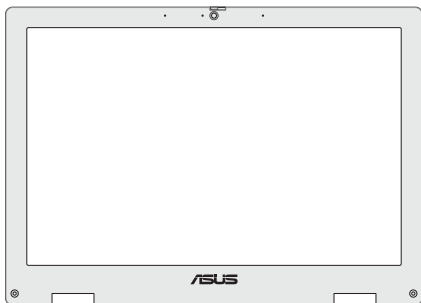
5. Align and install the bezel.



- Secure the bezel using the screw(s) you removed earlier, then reattach the screw cover(s).
- Install the components you removed in the *Before you begin* section.



Display panel (12.2" Non-touch model)



Before you begin

IMPORTANT!

- This component is fragile. Damage may occur if the service procedure is performed incorrectly. If you are uncertain about proceeding, stop and contact an authorized service center for assistance.
 - Do not bend the display panel in any way to avoid risk of display panel leakage.
-

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

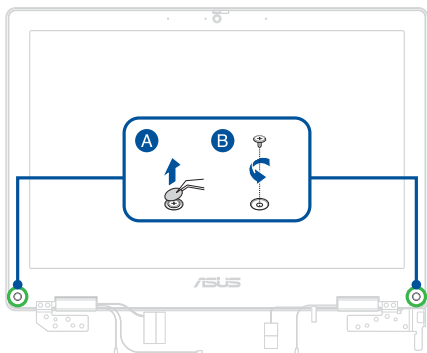
- WLAN module
- LTE module (on selected models)
- Display panel module

Screw list

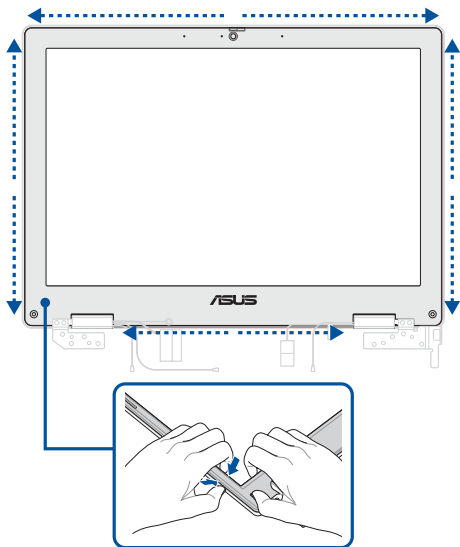
- ⊕ M2.0 X 3.0L (2pcs)

Removal

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

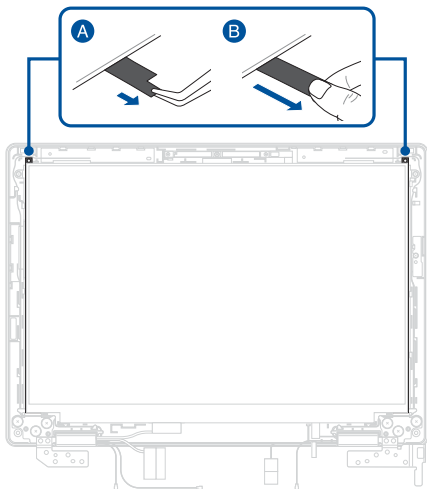


- Carefully pry the bezel loose, then remove the bezel.

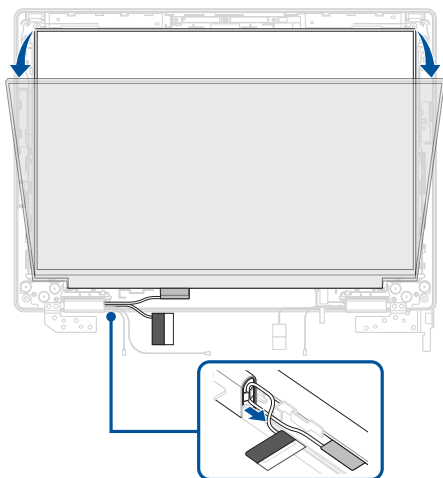


3. Locate the tip of the stretch release tape, then carefully pull out the stretch release tape as shown in the illustration below.

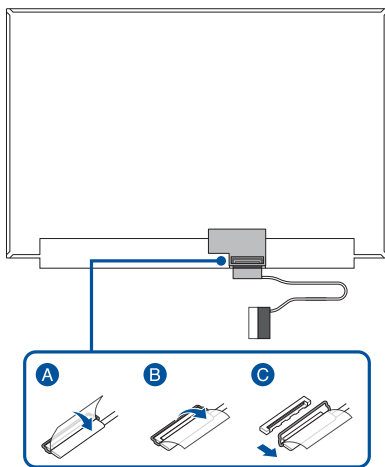
IMPORTANT! Maintain a flat angle and constant speed when pulling the stretch release tape. Excessive force may damage the stretch release tape and prevent removal of the display panel.



4. Remove the cable from the cable guide(s), then remove the display panel.

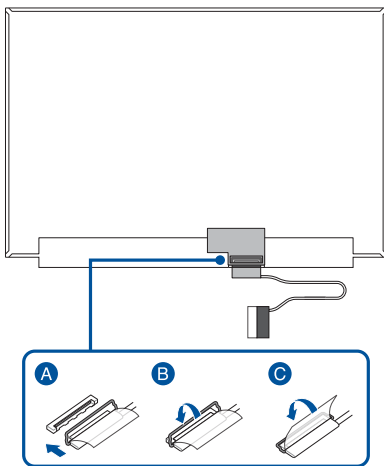


5. Flip the display panel over, then disconnect the cable.



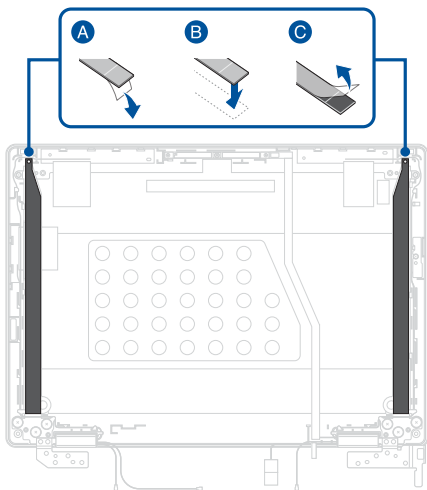
Installation

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



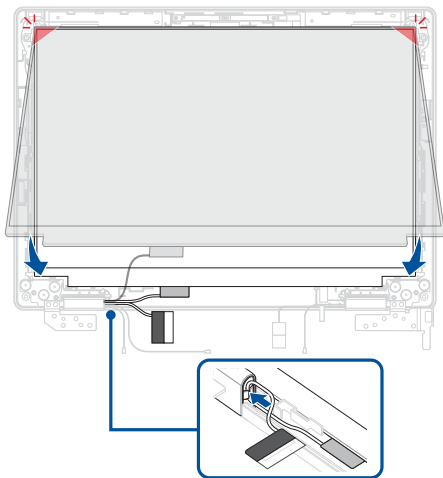
2. Remove the release liner(s) from the bottom side of the stretch release tape.
3. Align and attach the stretch release tape to the top cover.
4. Remove the release liner(s) from the top side of the stretch release tape.

NOTE: The tape cannot be reused. Remove any adhesive residue and use new tape when reinstalling components.



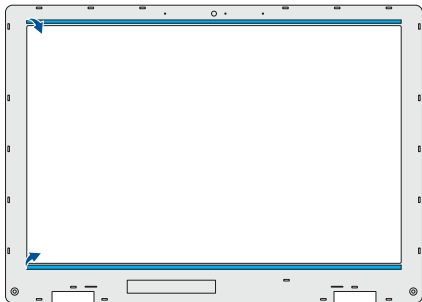
5. Align and install the display panel.
6. Route the cable through the cable guide(s).

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.

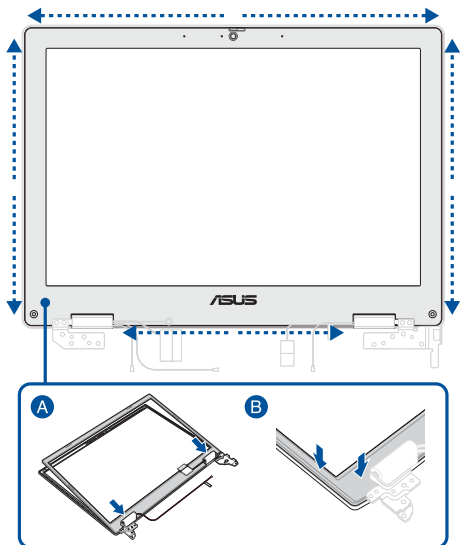


7. Remove the release liner(s) from the tape on the bezel.

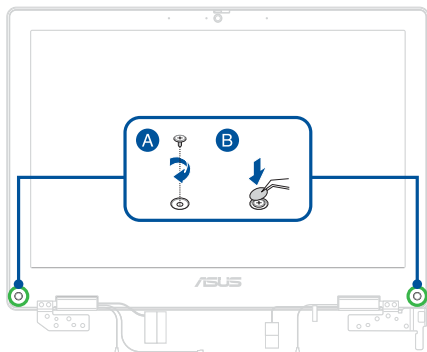
NOTE: The tape cannot be reused. Remove any adhesive residue and use new tape when reinstalling components.



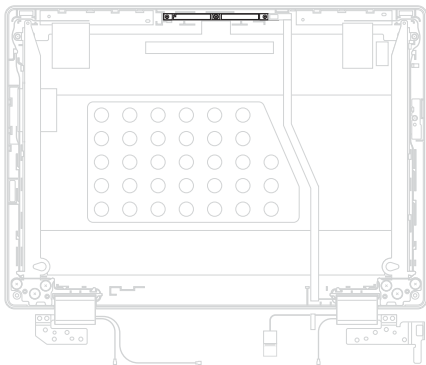
8. Align and install the bezel.



- Secure the bezel using the screw(s) you removed earlier, then reattach the screw cover(s).
- Install the components you removed in the *Before you begin* section.



Camera module



Before you begin

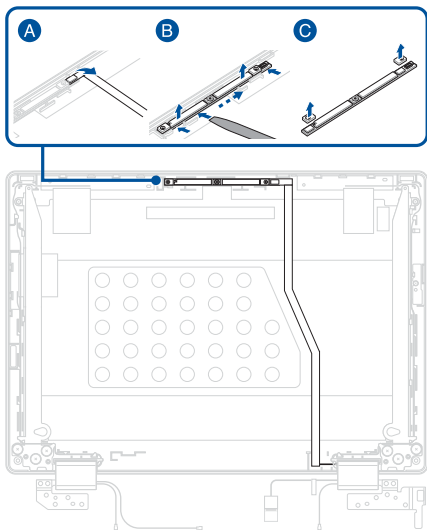
IMPORTANT! This component is fragile. Damage may occur if the service procedure is performed incorrectly. If you are uncertain about proceeding, stop and contact an authorized service center for assistance.

1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Keyboard module
 - Battery
 - WLAN module
 - LTE module (on selected models)

- Display panel module
- Display panel

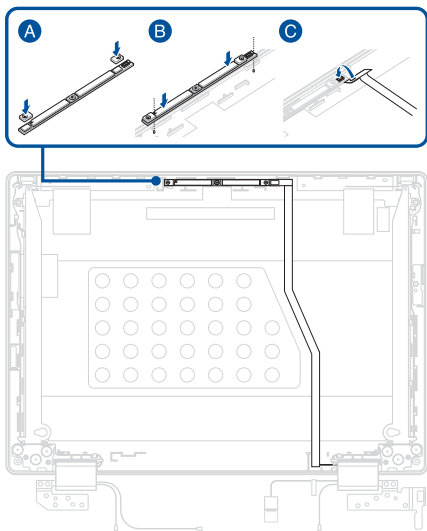
Removal

Disconnect the cable from the camera module and carefully remove the camera module, then remove the rubber caps from the camera module.

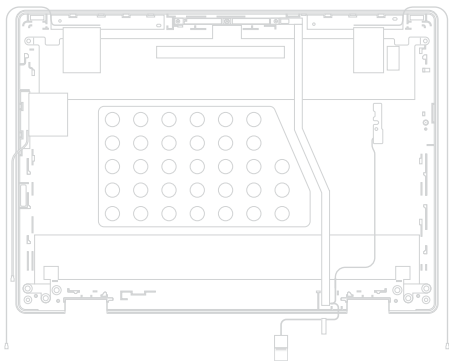


Installation

1. Attach the rubber caps to the camera module, then install the camera module and reconnect the cable to the camera module.
2. Install the components you removed in the *Before you begin* section.



Top cover



Before you begin

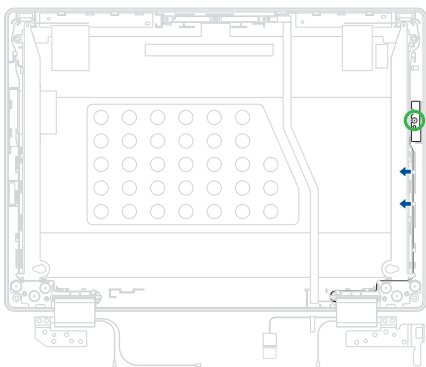
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Keyboard module
 - Battery
 - WLAN module
 - LTE module (on selected models)
 - Display panel module
 - Display panel
 - Camera module

Screw list

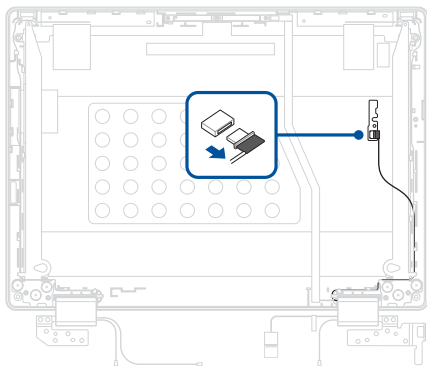
- ⊕ M2.0 X 3.0L (3pcs)
- ⊕ M2.5 X 2.5L (6pcs)

Removal

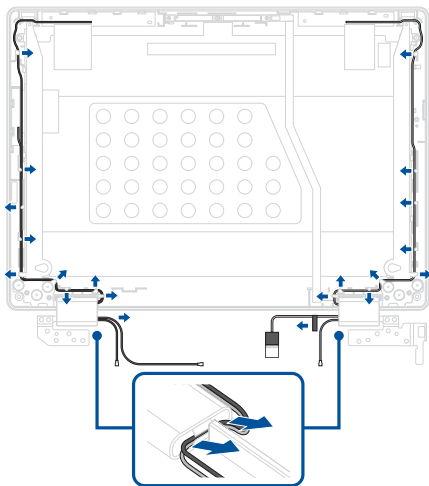
1. Remove the screw.
2. Remove the cable(s) from the cable guide(s).



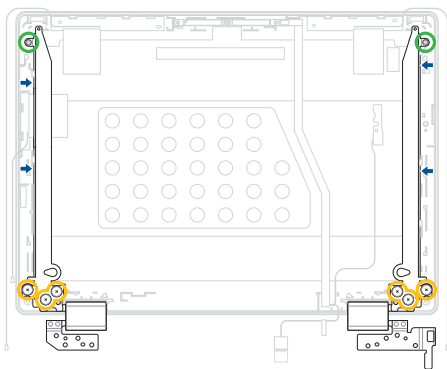
3. Disconnect and remove the LED board.



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

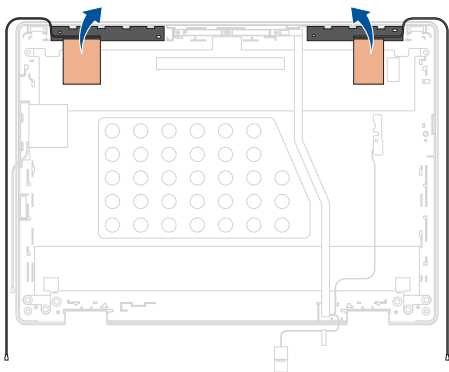


5. Remove the screw(s), then remove the hinges.



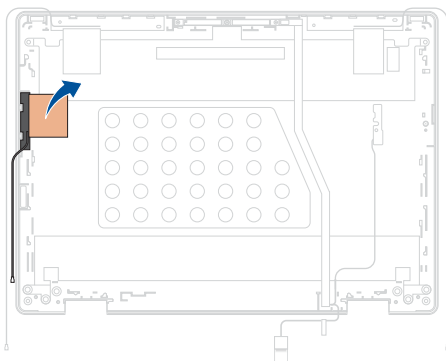
6. Remove the antenna cable(s) (if available).

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



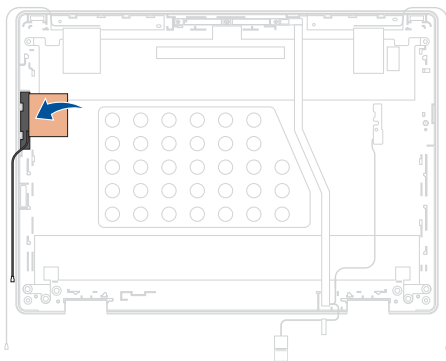
7. Remove the antenna cable(s).

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

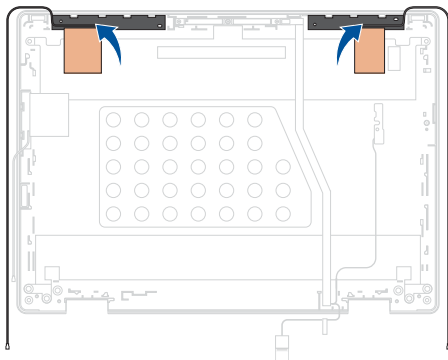


Installation

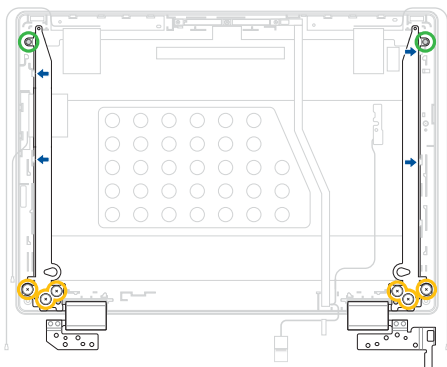
1. Install the antenna cable(s).



2. Install the antenna cable(s) (if available).

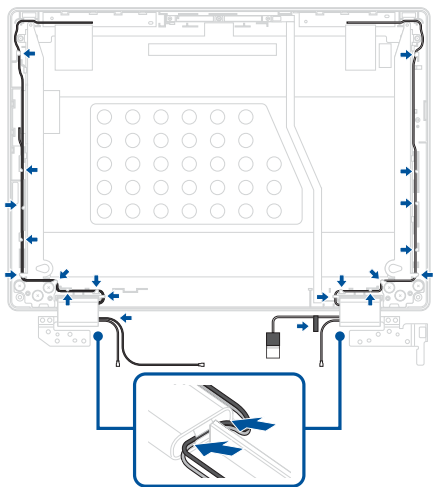


3. Install the hinges, then secure the hinges using the screw(s) you removed earlier.

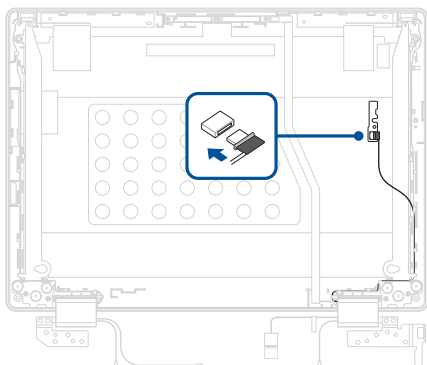


4. Route the cable(s) through the cable guide(s).

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



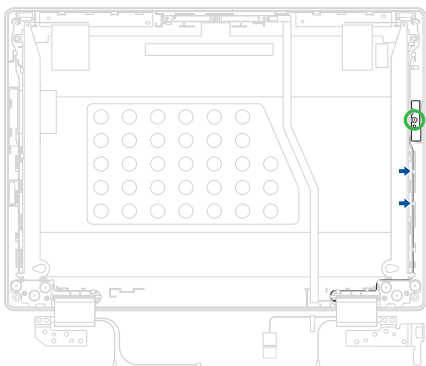
5. Reconnect the cable to the LED board.



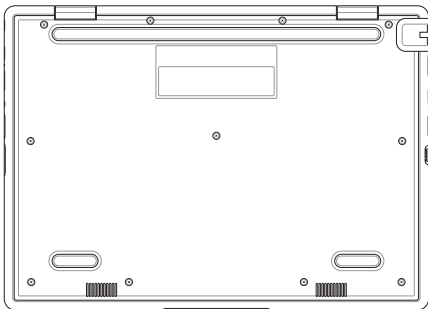
6. Install the LED board, then secure the LED board using the screw you removed earlier.
7. Route the cable(s) through the cable guide(s).

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

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



Bottom cover



Before you begin

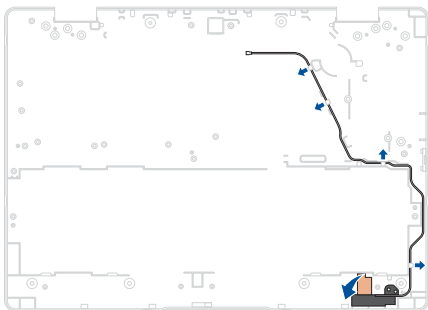
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Keyboard module
 - Battery
 - M.2 SSD module (on selected models)
 - WLAN module
 - LTE module (on selected models)
 - Speakers

- Motherboard
- I/O board
- Display panel module

Removal

Remove the antenna cable(s).

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

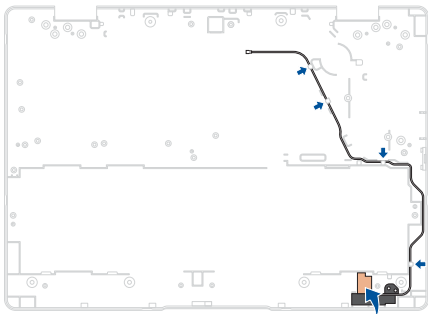


Installation

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

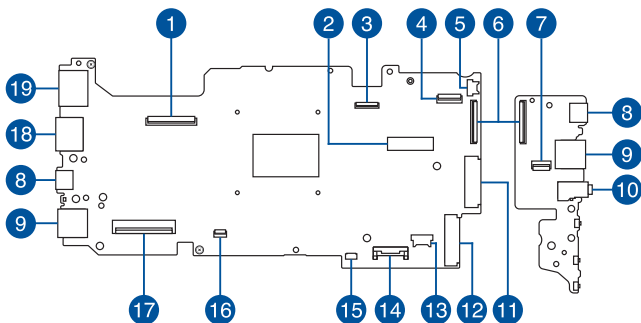
IMPORTANT! Damage may occur if cables are not properly routed through the cable guides. Confirm that all cables are routed through each of the indicated cable guides before proceeding.

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



Appendix

Wiring and connection diagrams



- | | |
|-----------------------------------|-------------------------------|
| 1. eDP connector | 11. LTE module connector* |
| 2. WLAN module connector | 12. M.2 SSD connector* |
| 3. Camera connector* | 13. Speaker connector |
| 4. LED board and camera connector | 14. Battery connector |
| 5. Coin battery connector | 15. Stylus charger connector* |
| 6. I/O board connector | 16. Touchpad connector |
| 7. Fingerprint sensor connector | 17. Keyboard connector |
| 8. USB Type-C® connector | 18. HDMI connector |
| 9. USB Type-A connector | 19. LAN connector |
| 10. Audio connector | |

*On selected models