

E23750

Revised Edition V2 / July 2024

IN SEARCH OF INCREDIBLE



Service Manual



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Table of Contents

Chapter 1: Introduction

Disclaimer	8
Safety precautions.....	8
Pre-repair checklist	10
Installation tools.....	11
Diagnostic tools	11
Major components.....	12

Chapter 2: Service Procedures

Rear cover	16
Removal	17
Installation	19
Hinge.....	21
Removal	22
Installation	23
Battery (on selected models).....	24
Removal	25
Installation	27
HDD module (on selected models).....	29
Removal	30
Installation	31
Motherboard shield	32
Removal	33
Installation	34

M.2 SSD module	35
Removal	36
Installation	37
RAM module.....	38
Removal	39
Installation	40
Heat sink	41
Removal	42
Installation	44
WLAN module.....	46
Removal	47
Installation	48
I/O board.....	49
Removal	50
Installation	51
Touch screen board	52
Removal	53
Installation	54
Speakers.....	55
Removal	56
Installation	58
Motherboard	60
Removal	61
Installation	63

Main frame	65
Removal	66
Installation	68
Camera module.....	70
Removal	71
Installation	72
Display panel	73
Removal	74
Installation	75

Appendix

Wiring and connection diagrams	78
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Chapter 1:

Introduction

Disclaimer

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

Safety precautions

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

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

Pre-repair checklist

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

IMPORTANT!

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

NOTE:

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

Installation tools



Screwdriver



Plastic blade



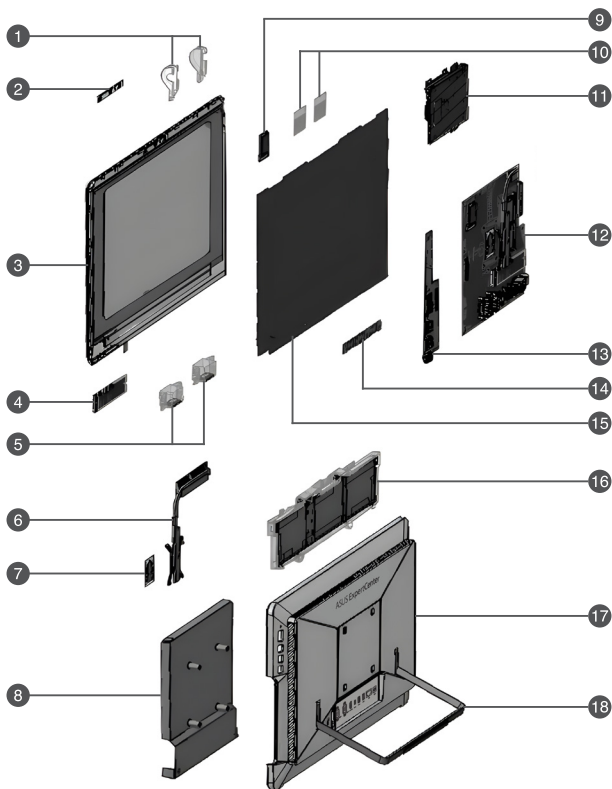
Tweezers

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. Hinge caps | 10. WLAN antenna |
| 2. Camera module | 11. HDD module* |
| 3. Display panel module | 12. Motherboard |
| 4. M.2 SSD module | 13. I/O board |
| 5. Speakers | 14. Touch screen board |
| 6. Heat sink | 15. Main frame |
| 7. RAM module | 16. Battery* |
| 8. Motherboard shield | 17. Rear cover |
| 9. WLAN module | 18. Stand |

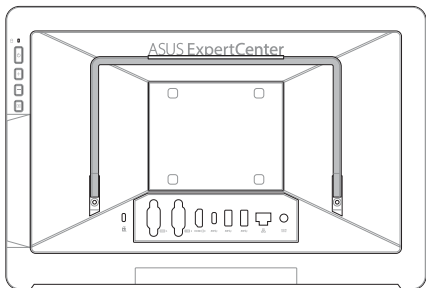
** On selected models*

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

Rear cover



Before you begin

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

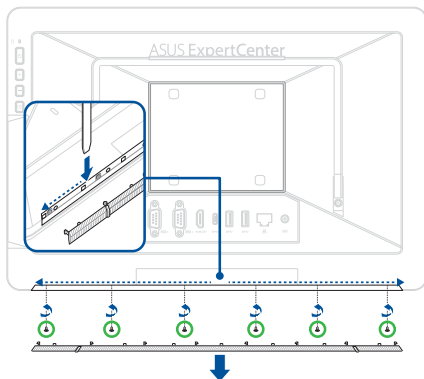
Screw list

- ⊕ M2.0 X 4.0L (6pcs)
- ⊕ M3.0 X 4.0L (2pcs)

Removal

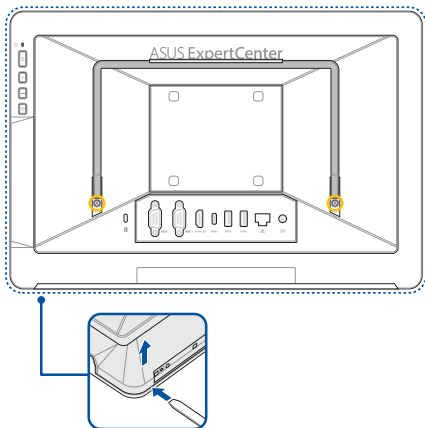
1. Pry open and remove the plastic strip as shown in the illustration below, then remove the screw(s).

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



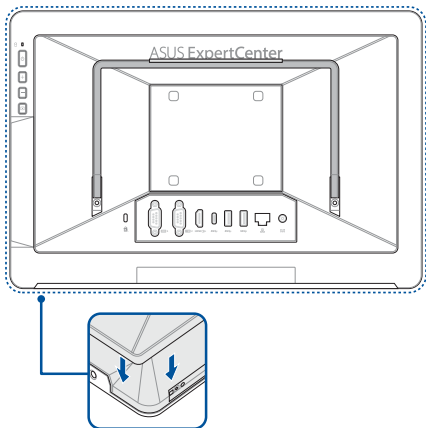
2. Close the hinge, then remove the screw(s) from the rear side of the device.
3. Pry open the indicated area of the rear cover as shown in the illustration below, then remove the rear cover.

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

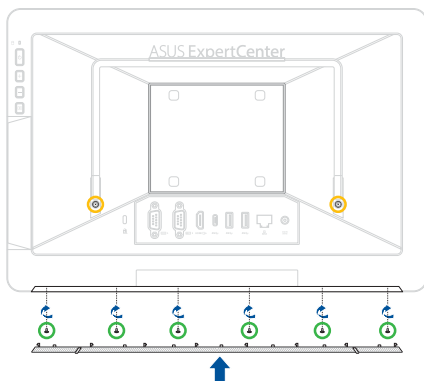


Installation

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



3. Secure the rear cover using the screw(s) you removed earlier.
4. Reattach the plastic strip.



Hinge



Before you begin

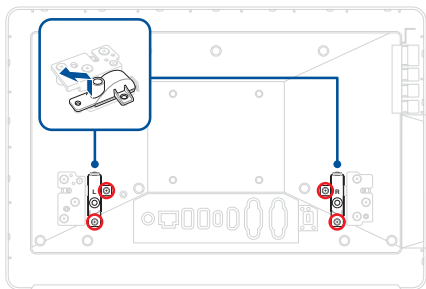
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Rear cover

Screw list

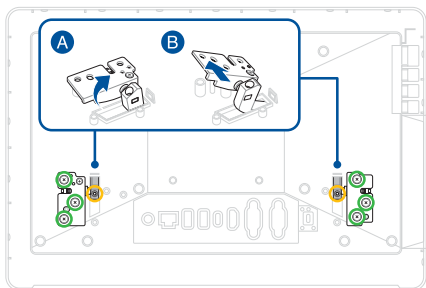
- ⊕ M4.0 X 7.0L (6pcs)
- ⊗ M3.0 X 7.0L #2 hex socket (2pcs)
- ⊕ M3.0 X 4.0L (4pcs)

Removal

1. Remove the screw(s), then remove the hinge caps.

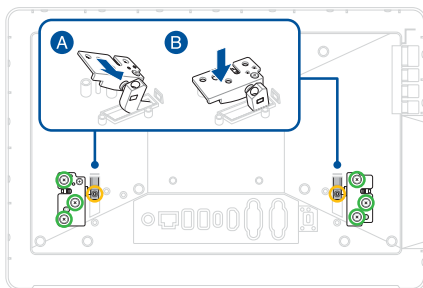


2. Remove the screw(s), then remove the hinges.

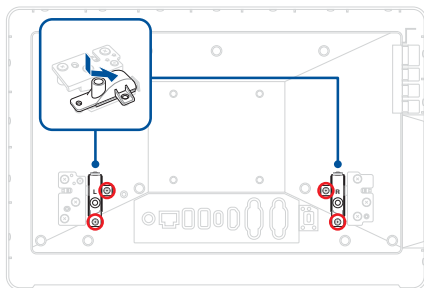


Installation

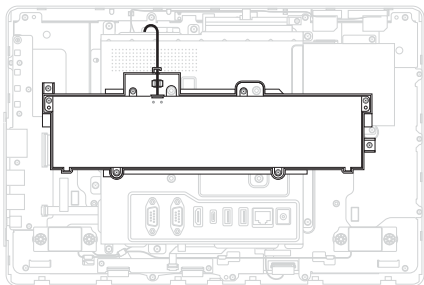
1. Install the hinges, then secure the hinges using the screw(s) you removed earlier.



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



Battery (on selected models)



Before you begin

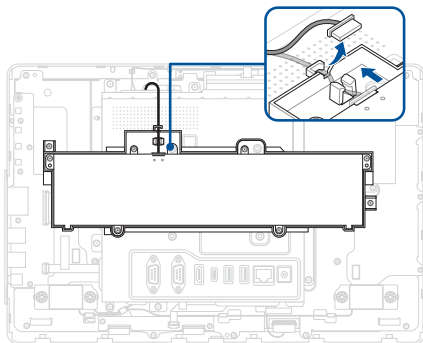
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Rear cover

Screw list

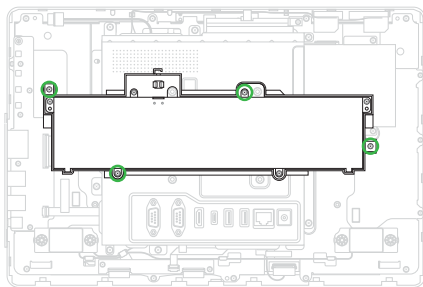
- ⊕ M2.0 X 4.0L (8pcs)

Removal

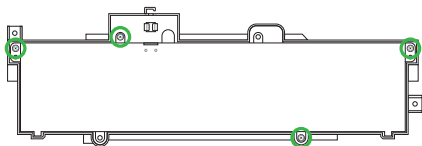
1. Disconnect the battery power cable, then remove the battery power cable from the cable guide.



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

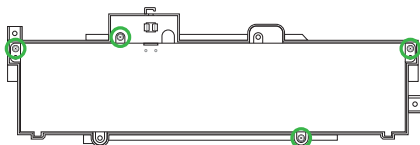


3. Remove the screw(s), then remove the battery from the battery bracket.

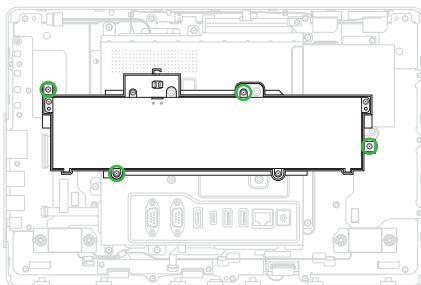


Installation

1. Install the battery onto the battery bracket, then secure the battery using the screw(s) you removed earlier.



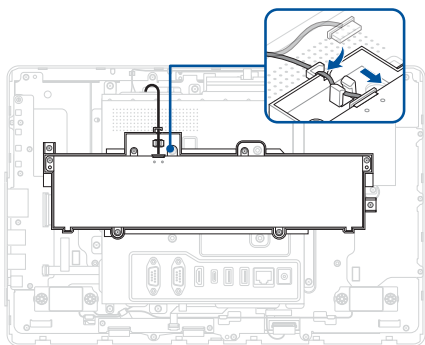
2. Install the battery bracket, then secure the battery bracket using the screw(s) you removed earlier.



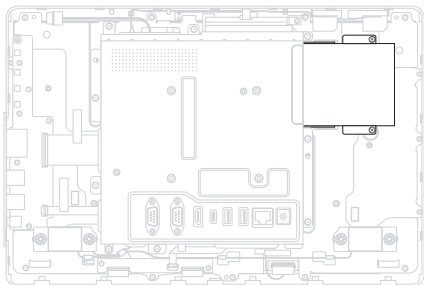
3. Route the battery power cable through the cable guide, then connect the battery power cable to the battery.

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

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



HDD module (on selected models)



Before you begin

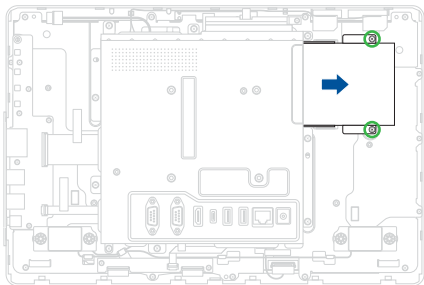
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Rear cover
 - Battery (on selected models)

Screw list

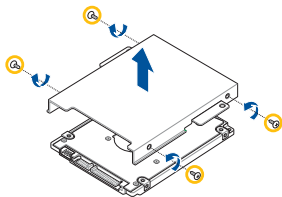
- ⊕ M3.0 X 4.0L (2pcs)
- ⊕ M3.0 X 3.0L (4pcs)

Removal

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

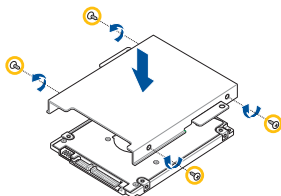


2. Remove the screw(s), then remove the HDD bracket from the HDD.

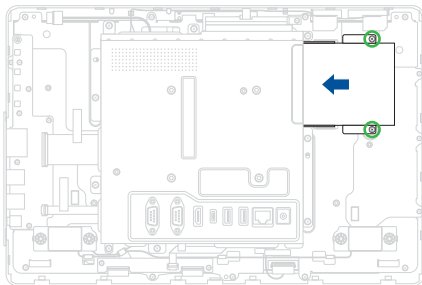


Installation

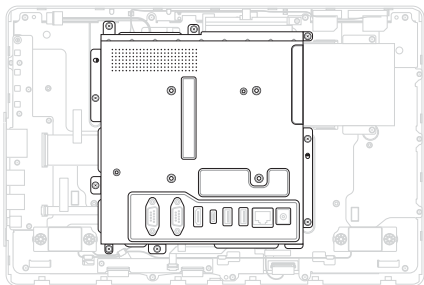
1. Reattach the HDD bracket to the HDD, then secure the HDD bracket using the screw(s) you removed earlier.



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



Motherboard shield



Before you begin

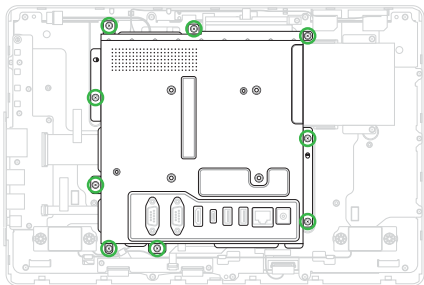
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Rear cover
 - Battery (on selected models)

Screw list

- ⊕ M3.0 X 4.0L (9pcs)

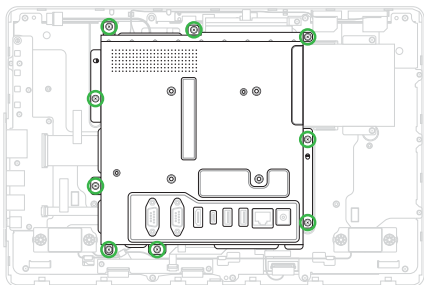
Removal

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

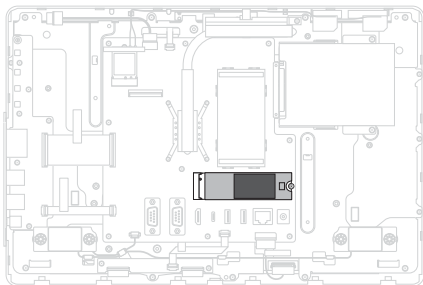


Installation

1. Install the motherboard shield, then secure the motherboard shield using the screw(s) you removed earlier.
2. Install the components you removed in the *Before you begin* section.



M.2 SSD module



Before you begin

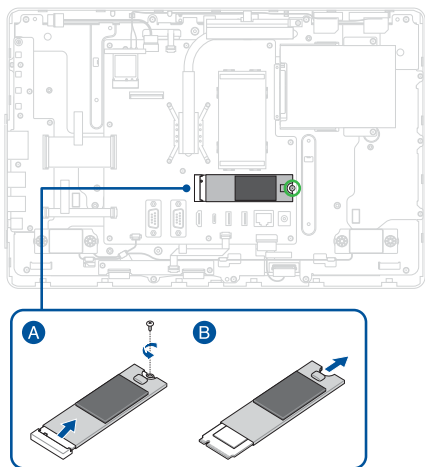
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Rear cover
 - Battery (on selected models)
 - Motherboard shield

Screw list

- ⊕ M2.0 X 3.0L (1pc)

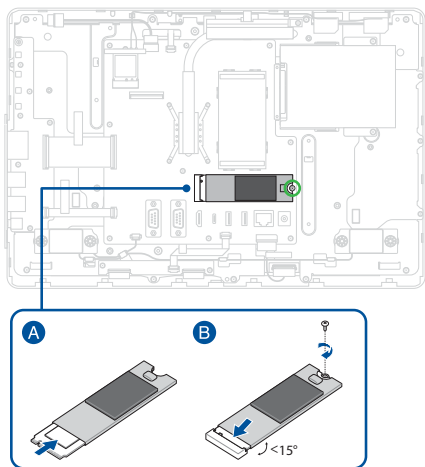
Removal

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

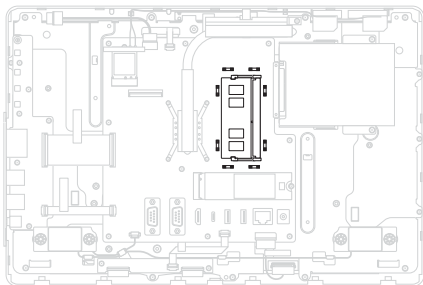


Installation

1. Place the M.2 SSD module inside the cover.
2. Align and insert the M.2 SSD module into the M.2 connector on the motherboard, then secure the M.2 SSD module using the screw you removed earlier.
3. Install the components you removed in the *Before you begin* section.



RAM module

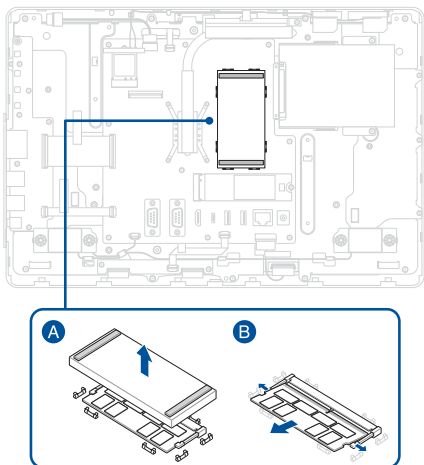


Before you begin

1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Rear cover
 - Battery (on selected models)
 - Motherboard shield

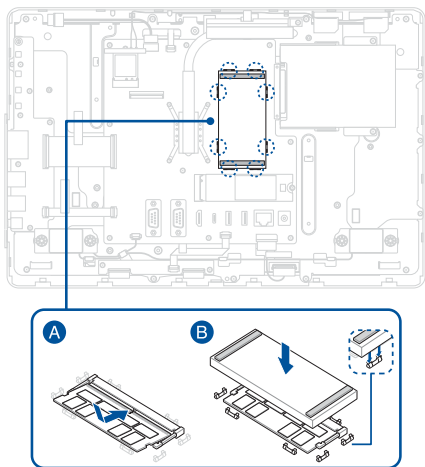
Removal

Remove the RAM shield, then push the clips outwards to remove the RAM module

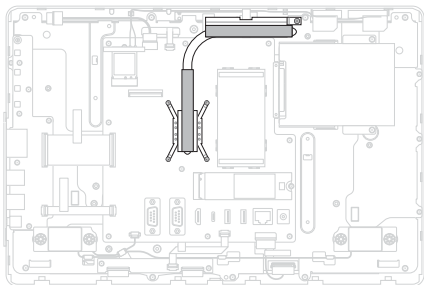


Installation

1. Align and insert the RAM module into the RAM module slot, then install the RAM shield.
2. Install the components you removed in the *Before you begin* section.



Heat sink



Before you begin

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

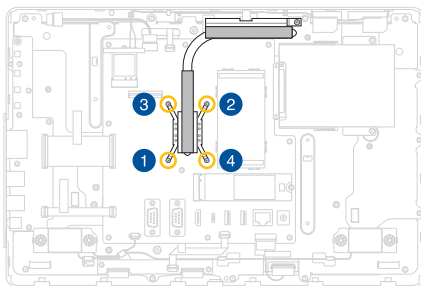
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Rear cover
 - Battery (on selected models)
 - Motherboard shield

Screw list

- ⊕ M3.0 X 4.0L (1pc)
- ⊕ Captive screw (4pcs)

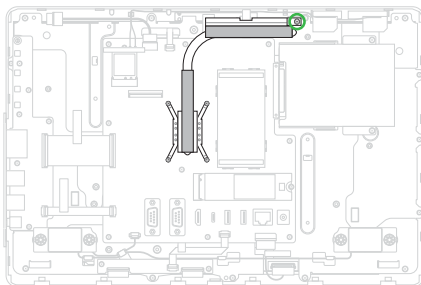
Removal

1. Loosen the captive heat sink screw(s) one by one in the sequence shown in the illustration below without removing the screw(s).

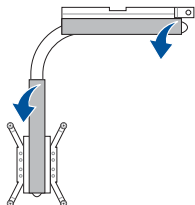


2. Remove the screw, then remove the heat sink.

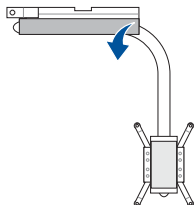
IMPORTANT! Vertically lift the heat sink to prevent damage.



3. Remove the thermal pads from the front side of the heat sink.

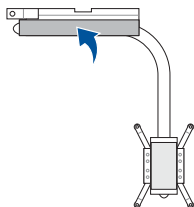


4. Flip the heat sink over, then remove the thermal pad from the rear side of the heat sink.

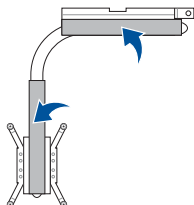


Installation

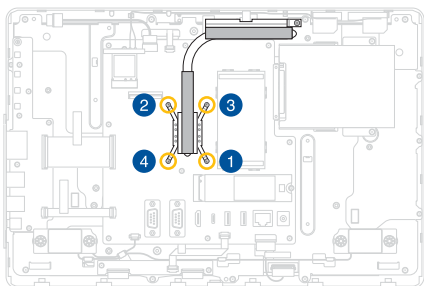
1. Reattach the thermal pad to the rear side of the heat sink.



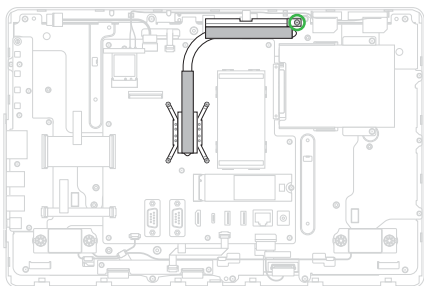
2. Flip the heat sink over, then reattach the thermal pad to the front side of the heat sink.



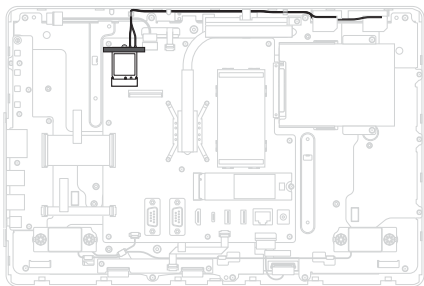
3. Install the heat sink, then secure the captive heat sink screw(s) one by one in the sequence shown in the illustration below.



4. Secure the heat sink using the screw you removed earlier.
5. Install the components you removed in the *Before you begin* section.



WLAN module



Before you begin

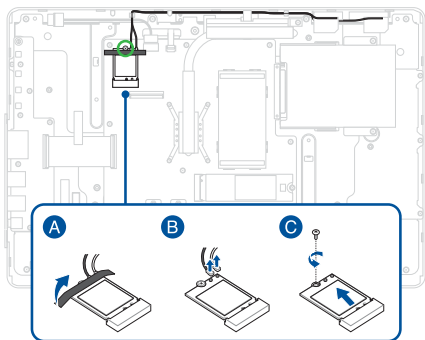
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Rear cover
 - Battery (on selected models)
 - Motherboard shield

Screw list

- ⊕ M2.0 X 3.0L (1pc)

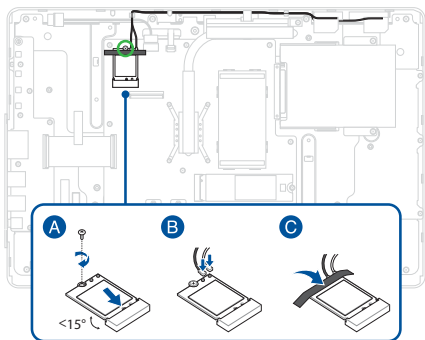
Removal

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

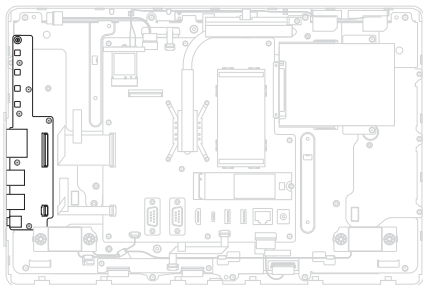


Installation

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



I/O board



Before you begin

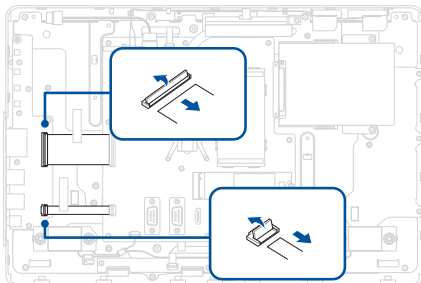
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Rear cover
 - Battery (on selected models)
 - Motherboard shield

Screw list

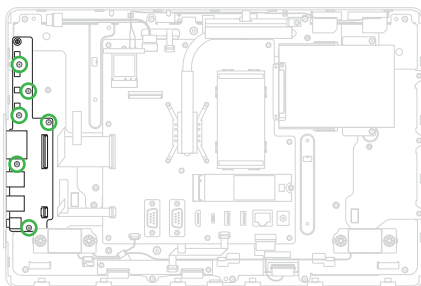
- ⊕ M2.0 X 3.0L (6pcs)

Removal

1. Disconnect the cable(s).

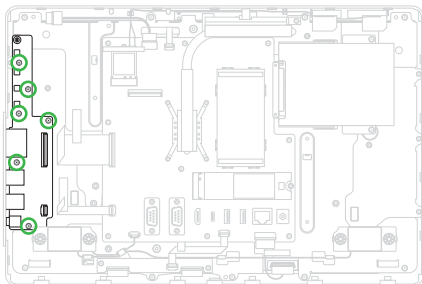


2. Remove the screw(s), then remove the I/O board.

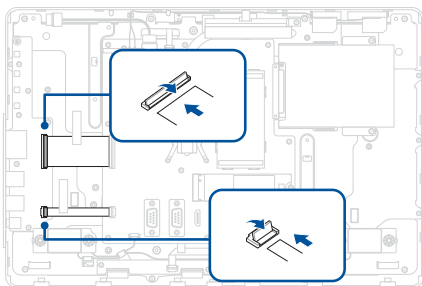


Installation

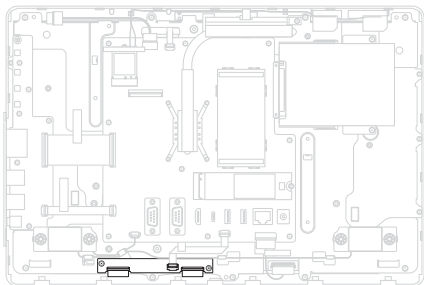
1. Install the I/O board, then secure the I/O board using the screw(s) you removed earlier.



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



Touch screen board



Before you begin

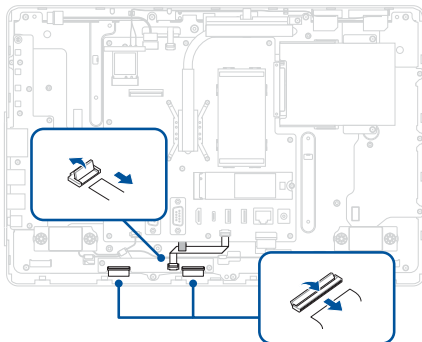
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Rear cover
 - Battery (on selected models)
 - Motherboard shield

Screw list

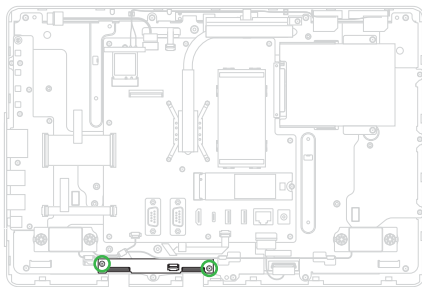
- ⊕ M2.0 X 3.0L (2pcs)

Removal

1. Disconnect the cable(s).

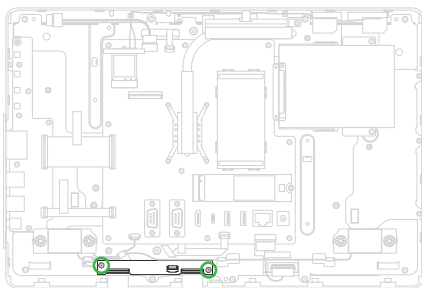


2. Remove the screw(s), then remove the touch screen board.

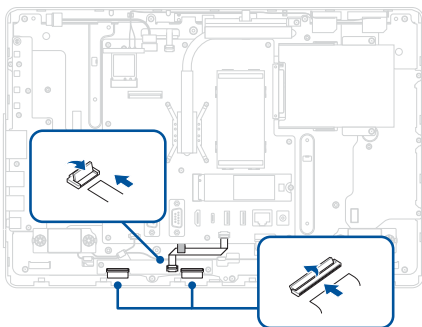


Installation

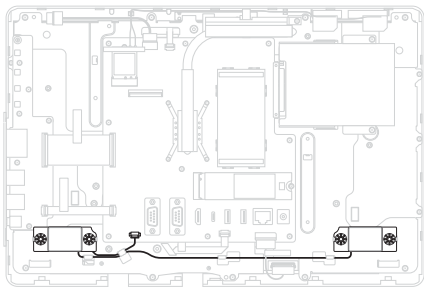
1. Install the touch screen board, then secure the touch screen board using the screw(s) you removed earlier.



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



Speakers

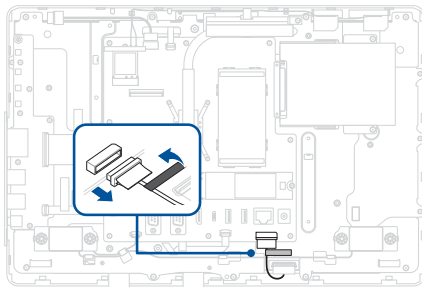


Before you begin

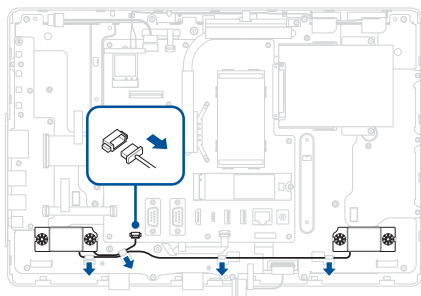
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Rear cover
 - Battery (on selected models)
 - Motherboard shield

Removal

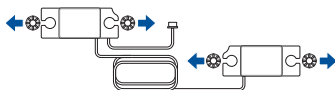
1. Remove the tape, then disconnect the cable.



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

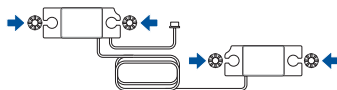


3. Remove the rubber pieces from the speakers.



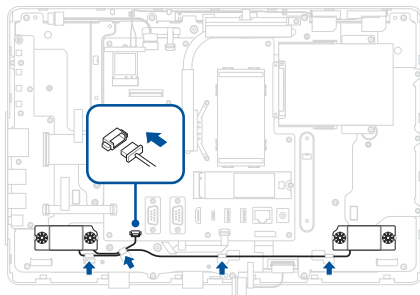
Installation

1. Reattach the rubber pieces to the speakers.

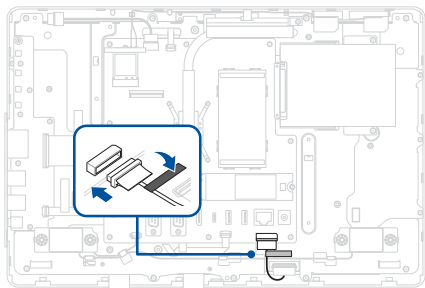


2. Install the speakers, then route the cable through the cable guide(s).

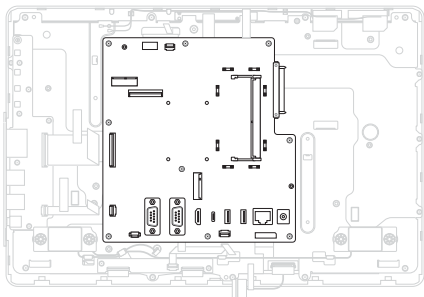
IMPORTANT! Damage may occur if cables are not properly routed through the cable guides. Confirm that all cables are routed through each of the indicated cable guides before proceeding.



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



Motherboard



Before you begin

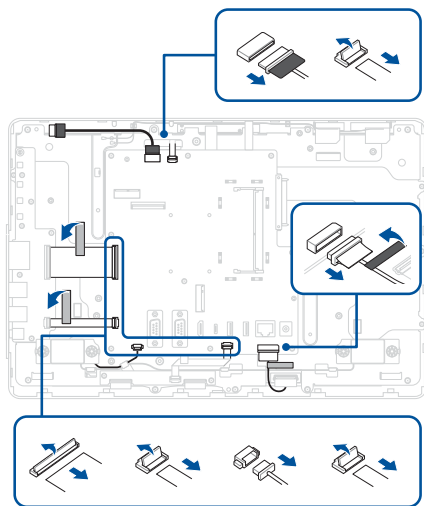
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Rear cover
 - Battery (on selected models)
 - HDD module (on selected models)
 - Motherboard shield
 - M.2 SSD module
 - RAM module
 - Heat sink
 - WLAN module

Screw list

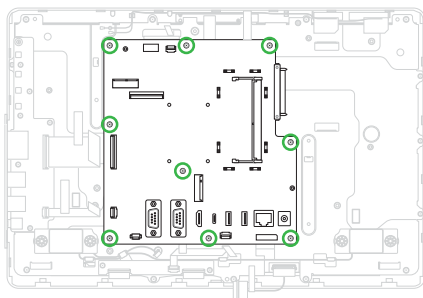
- ⊕ M2.0 X 3.0L (9pcs)

Removal

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

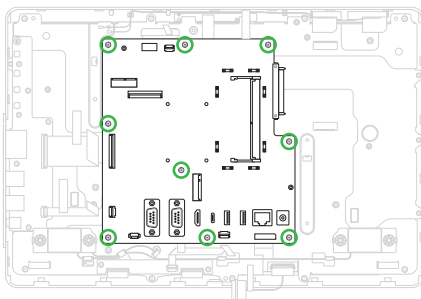


2. Remove the screw(s), then remove the motherboard from the chassis.

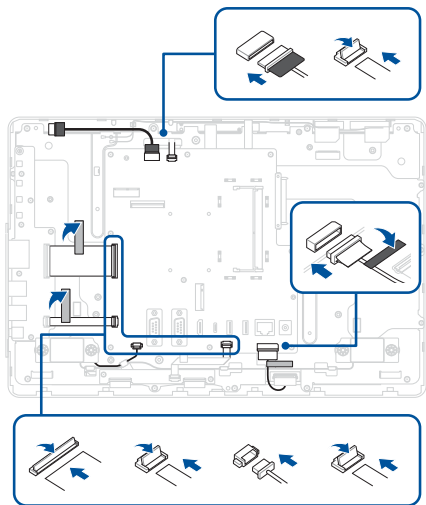


Installation

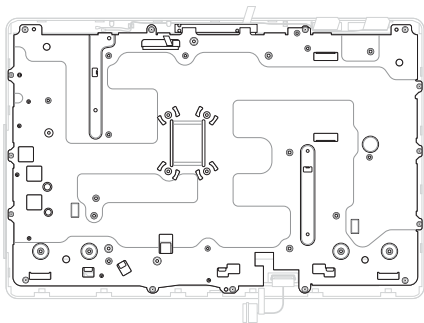
1. Align and install the motherboard, then secure the motherboard using the screw(s) you removed earlier.



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



Main frame



Before you begin

1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Rear cover
 - Battery (on selected models)
 - HDD module (on selected models)
 - Motherboard shield
 - Heat sink
 - WLAN module
 - I/O board

- Touch screen board
- Speakers
- Motherboard

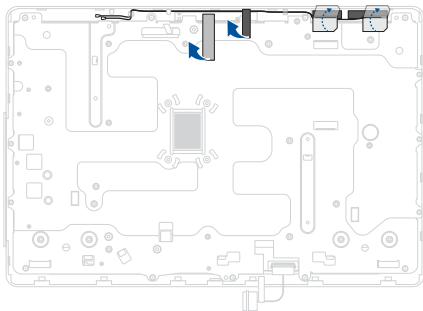
Screw list

● ⊕ M3.0 X 4.0L (9pcs)

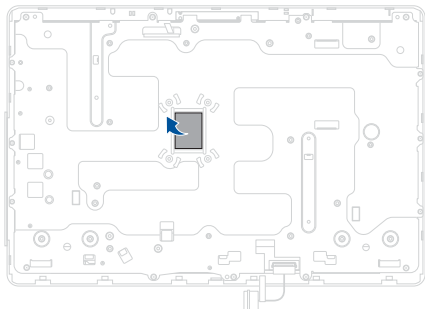
● ⊕ M1.6 X 3.0L (6pcs)

Removal

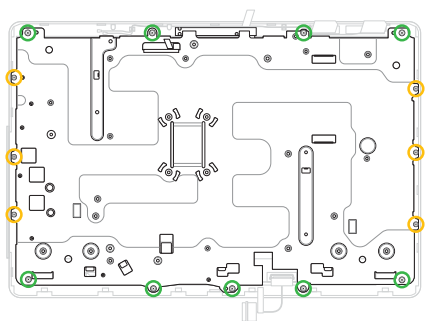
1. Remove the tape, then remove the cable.



2. Remove the thermal pad.

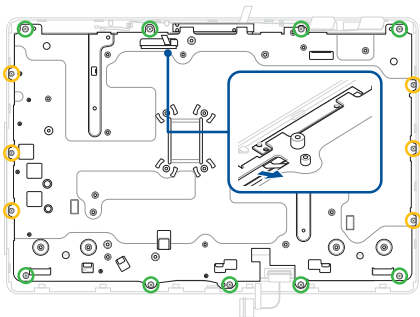


3. Remove the screw(s), then remove the main frame.

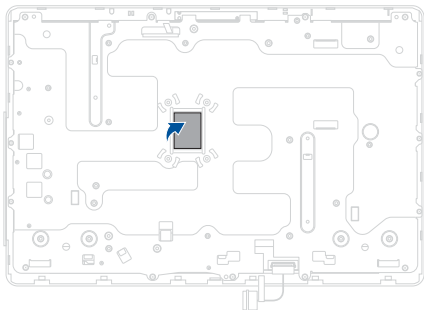


Installation

1. Route the cable through the opening on the main frame, then install the main frame and secure the main frame using the screw(s) you removed earlier.



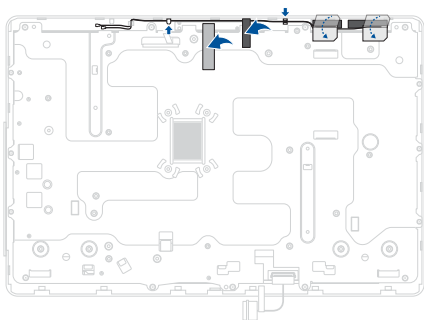
2. Reattach the thermal pad.



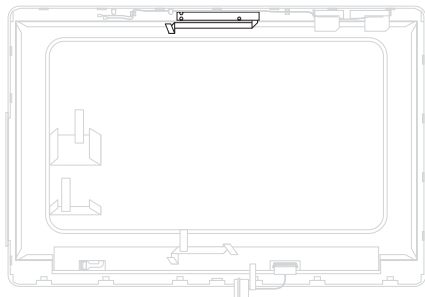
3. Install the cable and route the cable through the cable guide(s), then reattach the tape.

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.

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



Camera module



Before you begin

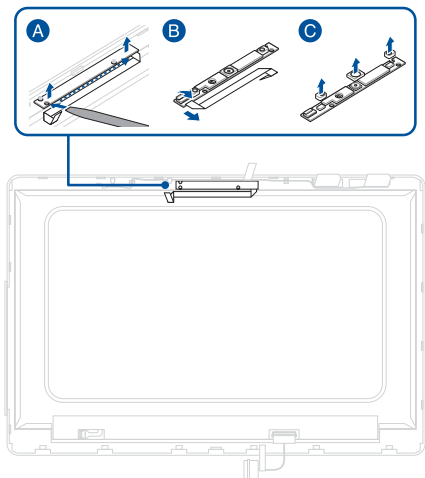
IMPORTANT! This component is fragile. Damage may occur if the service procedure is performed incorrectly. If you are uncertain about proceeding, stop and contact an authorized service center for assistance.

1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Rear cover
 - Battery (on selected models)
 - HDD module (on selected models)
 - Motherboard shield
 - Heat sink
 - WLAN module

- I/O board
- Touch screen board
- Speakers
- Motherboard
- Main frame

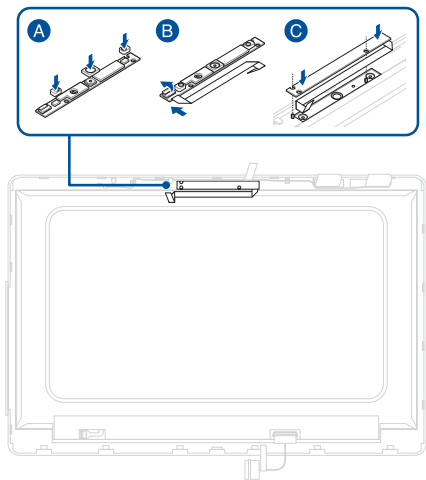
Removal

Carefully remove the camera module, then disconnect the cable and remove the rubber caps from the camera module.

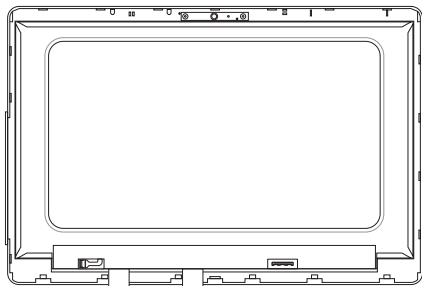


Installation

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



Display panel



Before you begin

IMPORTANT!

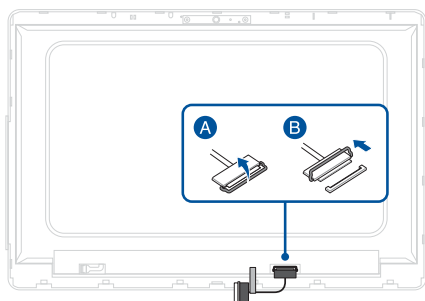
- This component is fragile. Damage may occur if the service procedure is performed incorrectly. If you are uncertain about proceeding, stop and contact an authorized service center for assistance.
 - Do not bend the display panel in any way to avoid risk of display panel leakage.
-

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

- Motherboard shield
- Heat sink
- WLAN module
- I/O board
- Touch screen board
- Speakers
- Motherboard
- Main frame
- Camera module

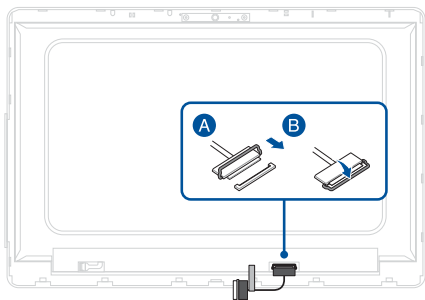
Removal

Disconnect the cable.



Installation

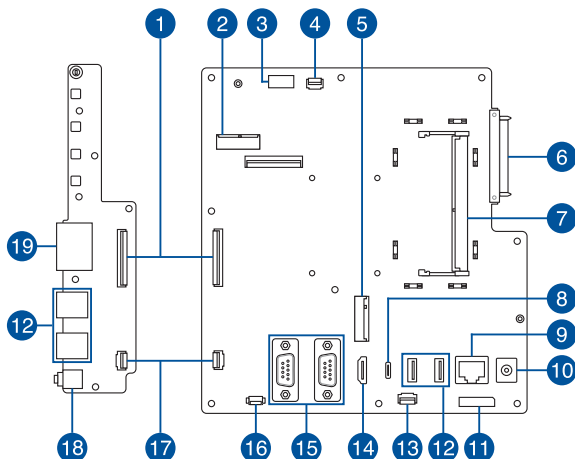
1. Reconnect the cable.
2. Install the components you removed in the *Before you begin* section.



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Appendix

Wiring and connection diagrams



- | | |
|----------------------------|---------------------------|
| 1. I/O board connector 1 | 11. eDP connector |
| 2. WLAN module connector | 12. USB Type-A connector |
| 3. Battery connector | 13. Touch panel connector |
| 4. Camera connector | 14. HDMI connector |
| 5. M.2 SSD connector | 15. VGA connector |
| 6. HDD connector | 16. Speaker connector |
| 7. RAM module slot | 17. I/O board connector 2 |
| 8. USB Type-C® connector | 18. Audio connector |
| 9. LAN connector | 19. microSD card slot |
| 10. Power supply connector | |