

E22004

First Edition / August 2023

IN SEARCH OF INCREDIBLE



Service Manual



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Visit our multi-language website at <https://www.asus.com/support/>.

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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 Mini PC 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 screws with the correct specifications on your Mini PC to prevent damage.
- Confirm that the cable orientation is correct before connecting any cables.
- Photograph the appearance of cables, cable routing, connectors, and screws for later reference before proceeding with each step.

Pre-repair checklist

1. Read the entire manual before starting any service procedures and follow all instructions.
2. Back up your Mini PC.
3. Turn off your Mini PC.
4. Place your Mini PC on a stable surface.
5. Disconnect all connected peripherals and cables.

IMPORTANT!

- Purchase replacement components from an authorized retailer of this Mini PC to ensure maximum compatibility and reliability.
 - Refer to <https://www.asus.com> for a list of compatible components.
-

NOTE:

- The illustrations are for reference only.
 - The procedures described in this manual may vary depending 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 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.
-

Diagnostics tool

Run system diagnosis in MyASUS after replacing any components to ensure that all components are working properly.

For more information, visit <https://www.asus.com/support/myasus-deeplink/>.

Installation tools



Screwdriver

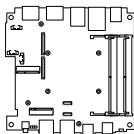


Plastic blade



Tweezers

Major components



Motherboard



HDD / SSD



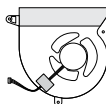
Memory Module



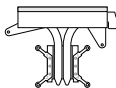
M.2 SSD module



Wireless card



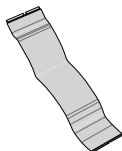
Fan module



Heatsink



Battery



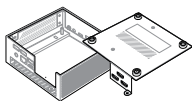
FPC



**Configurable port
module**



HDD/SSD PCB



Chassis



**Power adapter
and cord**

[illegible]

Chapter 2:

Service Procedures

Bottom cover

Before you begin

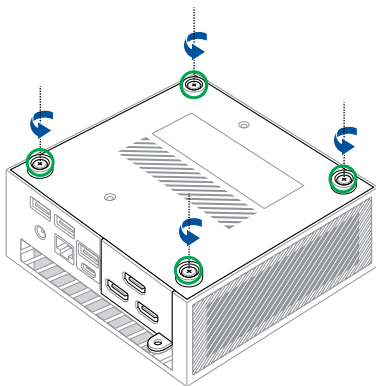
Read the **Safety Precautions** and complete the **Pre-repair Checklist**.

Screw list

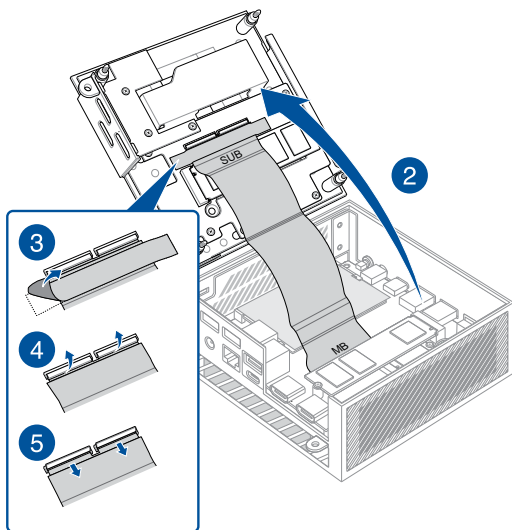
- ⊕ M3 X 5.2L captive (4 pcs)

Removal

1. Loosen the screw(s) from the Mini PC's bottom cover.



2. Slowly and with extreme care, lift the bottom cover in the direction shown in the illustration.
3. Carefully remove the acetate cloth tape holding the flexible printed circuit (FPC) in place.
4. Flip the connector flap open.
5. Remove the FPC.



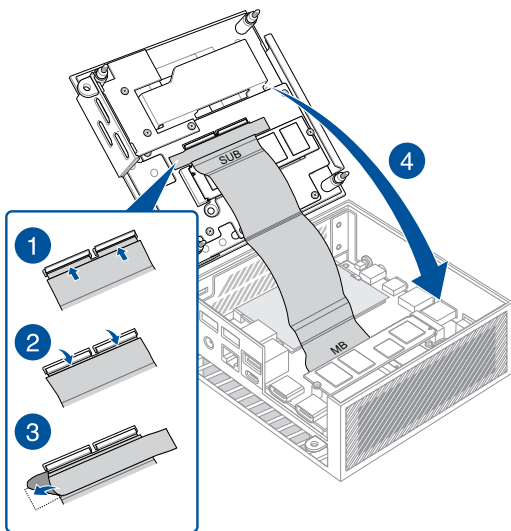
Installation

1. Insert the end of the FPC marked **SUB** into the connectors.

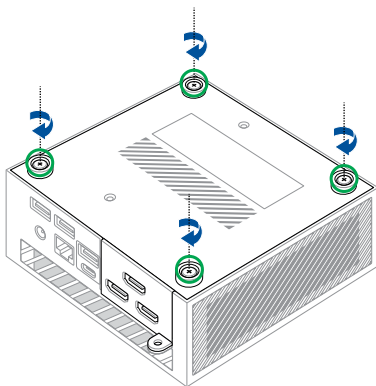
WARNING!

- Ensure the PCB gold fingers on the cable are facing the connectors.
 - Inserting the wrong end of the FPC into the connectors will cause damage to the golden fingers, motherboard, and SSD interface board.
-

2. Close the flap to secure the FPC.
3. Use the acetate cloth tape removed earlier to hold the FPC in place as shown.
4. Close the bottom cover.



5. Tighten the screws on the bottom cover to secure it in place.



Memory module(s)

IMPORTANT! You can only install DDR5 SO-DIMMs to the Mini PC's DIMM slots.

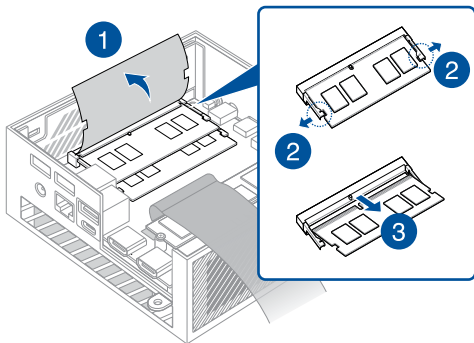
NOTE: We recommend that you install the memory module(s) under professional supervision. You may also visit an authorized service center for further assistance.

Before you begin

1. Read the **Safety Precautions** and complete the **Pre-repair Checklist**.
2. Remove the following component(s):
Bottom cover

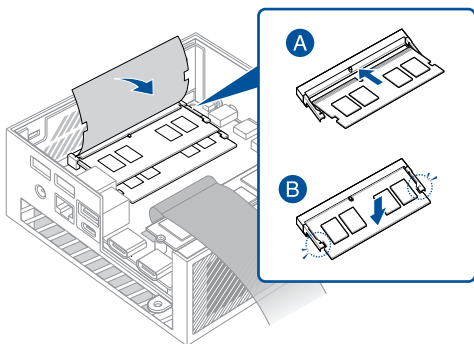
Removal

1. Flip the shielding foil to expose the memory slot(s)
2. Simultaneously press the two retaining clips outward.
3. Remove the module from the slot.
4. Repeat the same steps to remove the other module.



Installation

1. Align and insert the new memory module into the slot (A), and press down (B) until it is securely seated in place.



2. Repeat the same steps to install a second memory module.
3. Install the component(s) you removed in **Before you begin**.

HDD or SSD

Before you begin

1. Read the **Safety Precautions** and complete the **Pre-repair Checklist**.
2. Remove the following component(s):

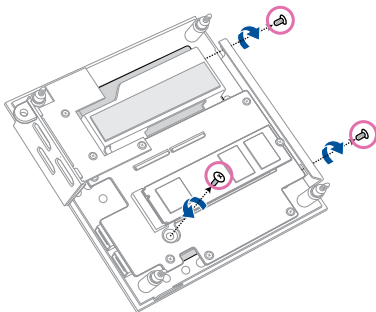
Bottom cover

Screw list

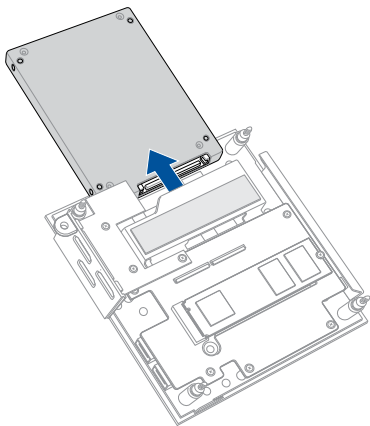
- ⊕ M3 X 4L (3 pcs)

Removal

1. Remove the screw(s) securing the HDD or SSD in place.



2. Remove the HDD or SSD.

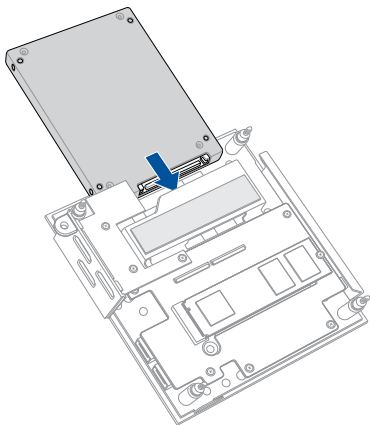


Installation

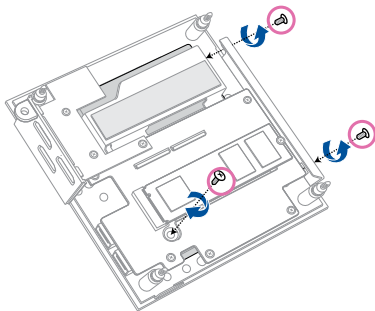
1. Align the HDD or SSD with the storage bay on the bottom cover of your Mini PC.

IMPORTANT! This device only supports 7mm 2.5" HDD or SSD.

2. Insert the HDD or SSD into the storage bay.



3. Secure the HDD or SSD with the screw(s) you removed earlier.



4. Install the component(s) you removed in **Before you begin**.

M.2 SSD on the bottom cover

NOTE: We recommend that you install the M.2 SSD under professional supervision. You may also visit an authorized service center for assistance.

Before you begin

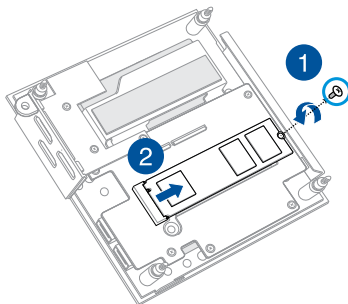
1. Read the **Safety Precautions** and complete the **Pre-repair Checklist**.
2. Remove the following component(s):
Bottom cover

Screw list

- ⊕ M2 X 2.5L (1 pcs)

Removal

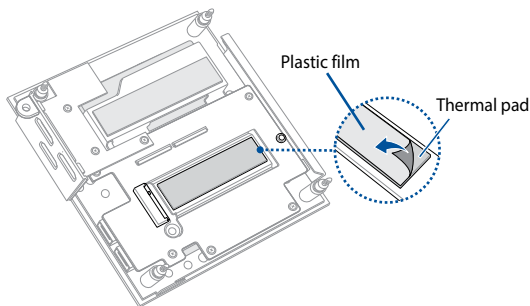
1. Remove the screw from the standoff.
2. Remove the M.2 SSD from the bottom cover.



Installation

NOTE: Refer to <https://www.asus.com> for a list of compatible M.2 SSD.

1. Remove the plastic film on the thermal pad, if one exists.



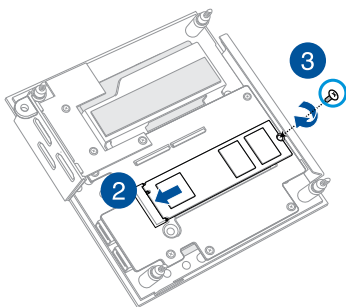
NOTE:

- The specifications for the thermal pad used in this Mini PC are as follows:

Thickness:	1.25 mm
Size:	63 mm x 15.5 mm
Thermal conductivity:	> 1.2 W/mK
Hardness:	< 30
 - To replace the thermal pad yourself, check with an ASUS Service Partner near you (www.asus.com/support) for the availability of replacement thermal pads.
 - The availability of replacement parts may vary depending on the country.
-

WARNING! Heat dissipation performance may still vary even when you have replaced the thermal pad with one that meets the specifications provided. To prevent potential damage to the M.2 SSD, you should have the thermal pad replaced by a service center near you.

2. Align and insert the M.2 SSD into its slot on the bottom cover.
3. Gently push down the M.2 SSD on top of the standoff, and secure it using the screw removed earlier.



4. Install the component(s) you removed in **Before you begin**.

M.2 SSD in the chassis

Before you begin

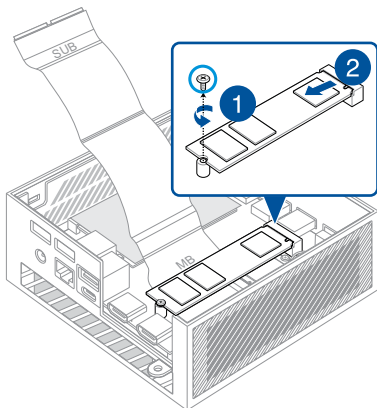
1. Read the **Safety Precautions** and complete the **Pre-repair Checklist**.
2. Remove the following component(s):
Bottom cover

Screw list

- ⊕ M2 X 2.5L (1 pcs)

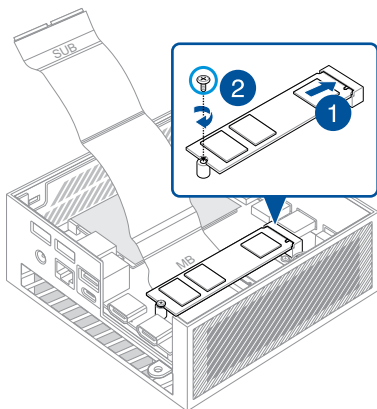
Removal

1. Remove the screw from the standoff.
2. Remove the M.2 SSD from the chassis.

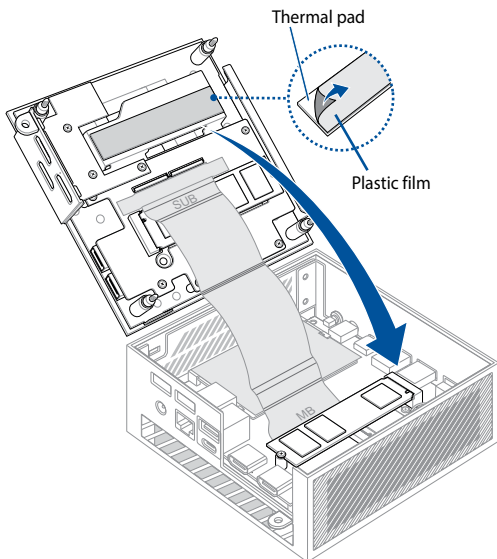


Installation

1. Align and insert the M.2 SSD.
2. Gently push down the M.2 SSD on top of the standoff, and secure it using the screw removed earlier.



3. Before replacing the bottom cover, ensure to remove the plastic film on the thermal pad, if one exists.



4. Install the component(s) you removed in **Before you begin**.

NOTE:

- The specifications for the thermal pad used in this Mini PC are as follows:

Thickness:	2.0 mm
Size:	70 mm x 20 mm
Thermal conductivity:	> 1.2 W/mK
Hardness:	< 30

- To replace the thermal pad yourself, check with an ASUS Service Partner near you (www.asus.com/support) for the availability of replacement thermal pads.
 - The availability of replacement parts may vary depending on the country.
-

WARNING! Heat dissipation performance may still vary even when you have replaced the thermal pad with one that meets the specifications provided. To prevent potential damage to the M.2 SSD, you should have the thermal pad replaced by a service center near you.

Wireless card

Before you begin

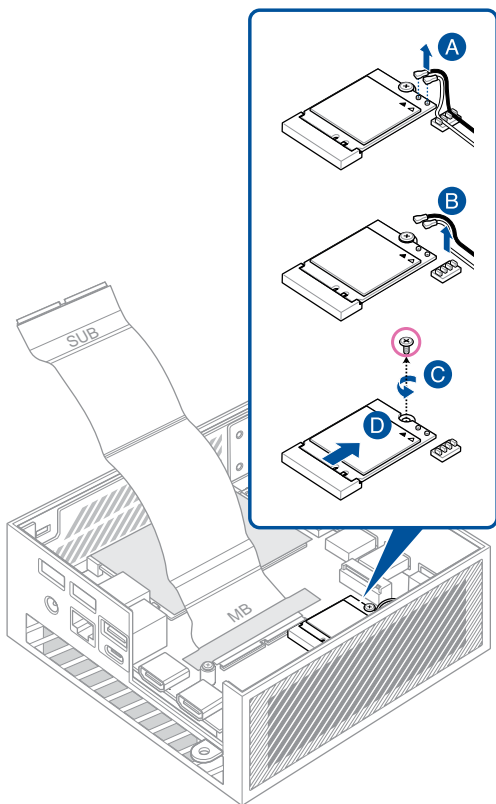
1. Read the **Safety Precautions** and complete the **Pre-repair Checklist**.
2. Remove the following component(s):
 - Bottom cover
 - M.2 SSD in the chassis (if one is installed)

Screw list

- ☉ M2 X 2.4L (1 pcs)

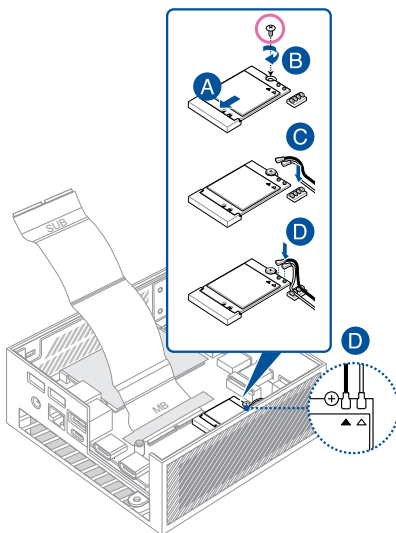
Removal

Remove the wireless card as shown.



Installation

1. Install the wireless card as shown.



NOTE:

- Connect the black antenna cable to the wireless card connector marked with a black triangle ▲, and connect the white antenna cable to the one marked with a white triangle △.
 - Connecting antennas to your wireless card may strengthen the wireless signal.
 - A soft clicking sound indicates that the antenna has been securely attached to the wireless card.
-

2. Install the component(s) you removed in **Before you begin**.

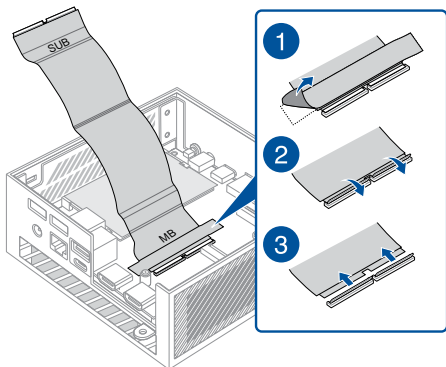
FPC

Before you begin

1. Read the **Safety Precautions** and complete the **Pre-repair Checklist**.
2. Remove the following component(s):
 - Bottom cover
 - M.2 SSD in the chassis (if one is installed)

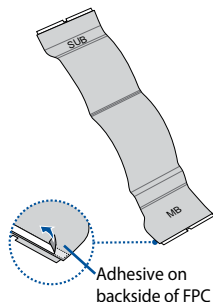
Removal

1. Gently remove the acetate cloth tape holding the FPC in place.
2. Flip the connector flaps open.
3. Remove the FPC.

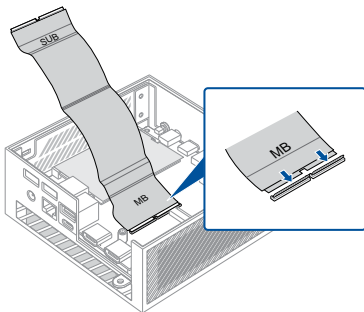


Installation

1. (Optional) If you are installing a new FPC, remove the release liner from the adhesive tape on the end of the FPC marked **MB**.



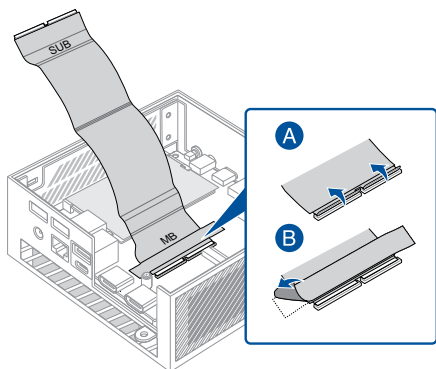
2. Insert the end of the FPC marked **MB** into the connectors on the motherboard.



WARNING!

- Ensure the PCB gold fingers on the cable are facing the connectors.
 - Inserting the wrong end of the FPC into the connectors will cause damage to the golden fingers, motherboard, and SSD interface board.
-

3. Close the flaps to secure the FPC (A), and use the acetate cloth tape removed earlier to hold the FPC in place as shown (B).



4. Install the component(s) you removed in **Before you begin**.

Configurable port module

Before you begin

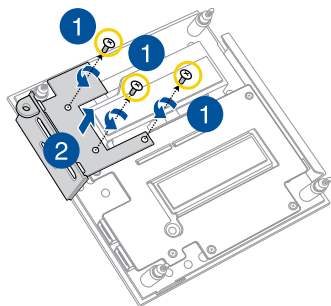
1. Read the **Safety Precautions** and complete the **Pre-repair Checklist**.
2. Remove the following component(s):
Bottom cover

Screw list

- ⊕ M2 X 3L (3 pcs)

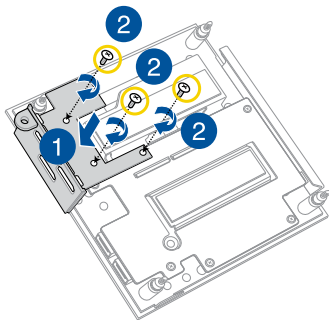
Removal

1. Remove the screw(s) securing the configurable port module in place.
2. Remove the configurable port module.



Installation

1. Align and place the configurable port module on the bottom cover as shown.
2. Secure the configurable port module with the screw(s) you removed earlier.



3. Install the component(s) you removed in **Before you begin**.

HDD/SSD PCB

Before you begin

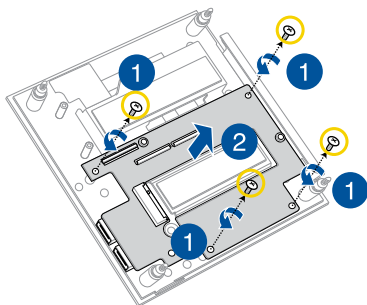
1. Read the **Safety Precautions** and complete the **Pre-repair Checklist**.
2. Remove the following component(s):
 - Bottom cover

Screw list

● ⊕ M2 X 3L (4 pcs)

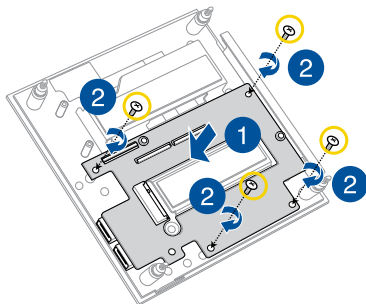
Removal

1. Remove the screw(s) securing the HDD/SSD PCB in place.
2. Remove the HDD/SSD PCB.



Installation

1. Align and place the HDD/SSD PCB on the bottom cover as shown.
2. Secure the HDD/SSD PCB with the screw(s) you removed earlier.



3. Install the component(s) you removed in **Before you begin**.

Fan module

Before you begin

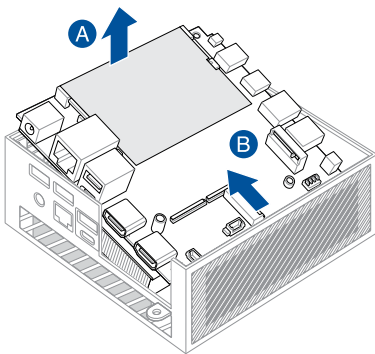
1. Read the **Safety Precautions** and complete the **Pre-repair Checklist**.
2. Remove the following component(s):
 - Bottom cover
 - FPC

Screw list

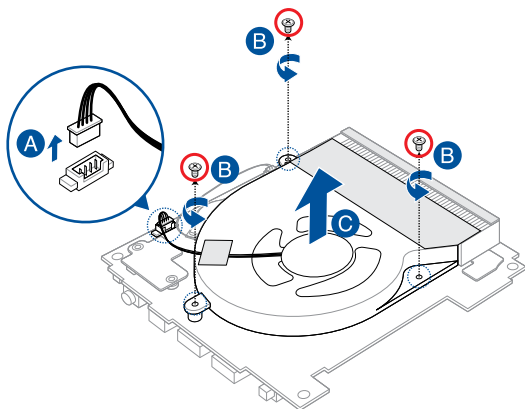
- ⊕ M2 X 6L (3 pcs)

Removal

1. Remove the motherboard as shown.

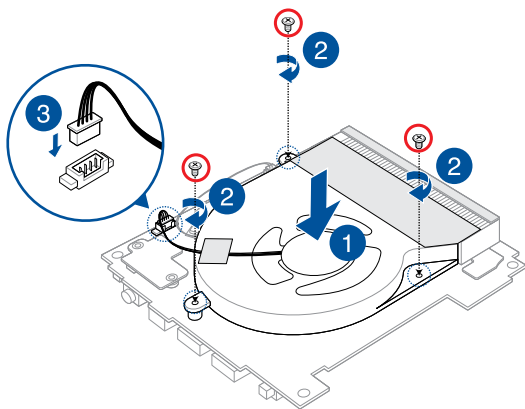


2. Place the motherboard face down.
3. Disconnect the fan connector (A), remove the screw(s) securing the fan module (B), and then remove the fan module (C).



Installation

1. Align and place the fan module as shown.
2. Secure the fan module using the screw(s) removed earlier.
3. Connect the cable from the fan module to the fan connector on the motherboard.



4. Install the component(s) you removed in **Before you begin**.

Heatsink

Before you begin

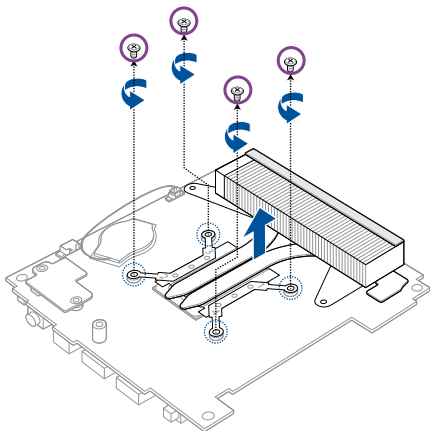
1. Read the **Safety Precautions** and complete the **Pre-repair Checklist**.
2. Remove the following component(s):
 - Bottom cover
 - FPC
 - Fan module

Screw list

- ⊕ M2.5 X 3.5L (4 pcs)

Removal

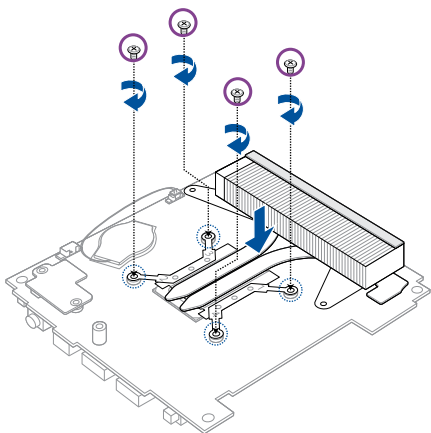
1. Remove the screw(s) securing the heatsink.



2. Remove the heatsink.

Installation

1. Align and place the heatsink as shown, and secure it using the screw(s) removed earlier.



2. Install the component(s) you removed in **Before you begin**.

Motherboard

Before you begin

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

NOTE: It is recommended that you replace the motherboard under professional supervision. You may also visit an authorized service center for further assistance.

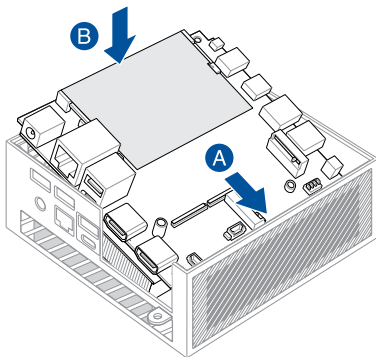
Removal

Remove the following component(s):

- Bottom cover
- FPC
- Memory module(s)
- Wireless card
- Fan module
- Heatsink

Installation

1. Install the component(s) you removed in **Removal**.
2. Align and place the motherboard in the chassis as shown.



3. Install the component(s) you removed in **Before you begin**.

CMOS battery

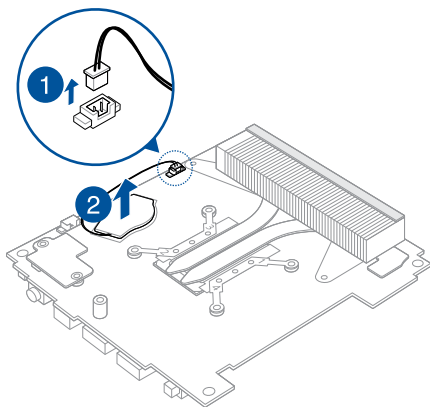
Before you begin

1. Read the **Safety Precautions** and complete the **Pre-repair Checklist**.
2. Remove the following component(s):
 - Bottom cover
 - FPC
 - Fan module

Removal

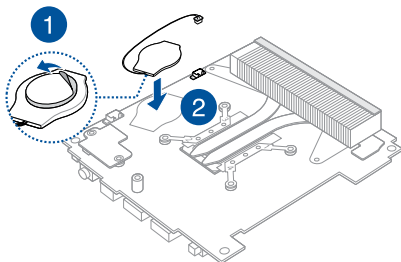
1. Disconnect the battery cable from the connector.
2. Carefully remove the CMOS battery.

IMPORTANT! When removing the battery, be careful not to damage the motherboard or the CMOS battery, which is taped to the motherboard.

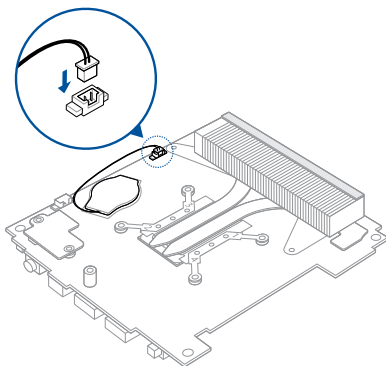


Installation

1. Remove the release liner on the battery, if one exists.
2. Align the battery as shown, and then affix it within the designated area outlined on the motherboard.



3. Connect the cable from the battery to the battery connector on the motherboard.



4. Install the component(s) you removed in **Before you begin**.

Audio card

Before you begin

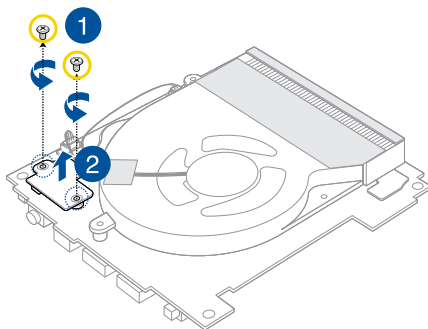
1. Read the **Safety Precautions** and complete the **Pre-repair Checklist**.
2. Remove the following component(s):
 - Bottom cover
 - FPC

Screw list

- ⊕ M2 X 3L (2 pcs)

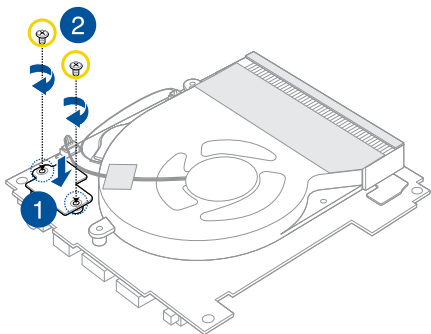
Removal

1. Remove the screw(s) securing the audio card.
2. Remove the audio card.



Installation

1. Align and place the audio card as shown.
2. Secure the audio card to the motherboard using the screw(s) previously removed.



3. Install the component(s) you removed in **Before you begin**.

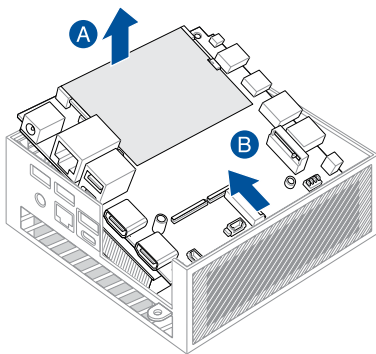
Chassis

Before you begin

1. Read the **Safety Precautions** and complete the **Pre-repair Checklist**.
2. Remove the following component(s):
 - Bottom cover
 - FPC

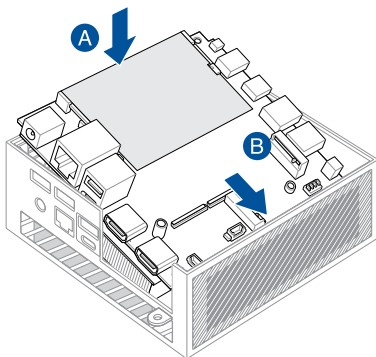
Removal

Remove the motherboard assembly as shown.



Installation

1. Install the motherboard assembly that was removed earlier into the new chassis as shown.



2. Install the component(s) you removed in **Before you begin**.