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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 Chromebox 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 Chromebox 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 Chromebox.
3. Turn off your Chromebox.
4. Place your Chromebox on a stable surface.
5. Disconnect all connected peripherals and cables.

IMPORTANT!

- Purchase replacement components from an authorized retailer of this Chromebox 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.
- Product and component images are for illustrative purposes only. The actual appearance and specifications may vary depending on the model.
- 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

Diagnostics tools are available to help you identify components that need to be replaced and ensure the functionality of the newly installed component(s).

For more information, visit
https://www.asus.com/support/FAQ/1051593

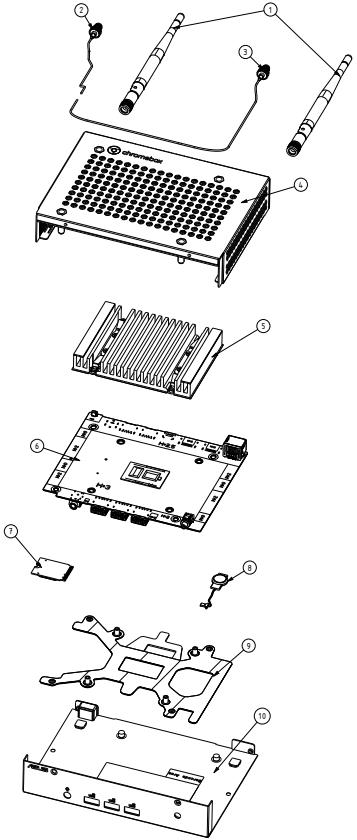
Installation tools

Screwdriver

Plastic blade

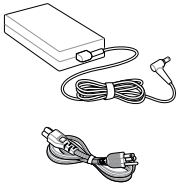
Tweezers

Major components

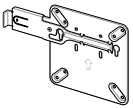


1. Wi-Fi antenna
2. RF cable assembly (short)
3. RF cable assembly (long)
4. Chassis (top)
5. Heatsink
6. Motherboard
7. Wireless card
8. CMOS battery
9. Bracket
10. Chassis (bottom cover)

Accessories



Power adapter and cord



VESA mount

Wi-Fi antenna

Chapter 2: Service Procedures

Bottom cover

Before you begin

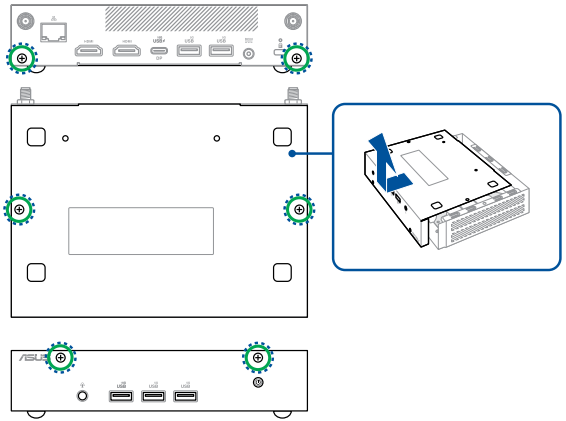
Read the **Safety Precautions** and complete the **Pre-repair Checklist**.

Screw list

- M3 X 3.1L (6 pcs)

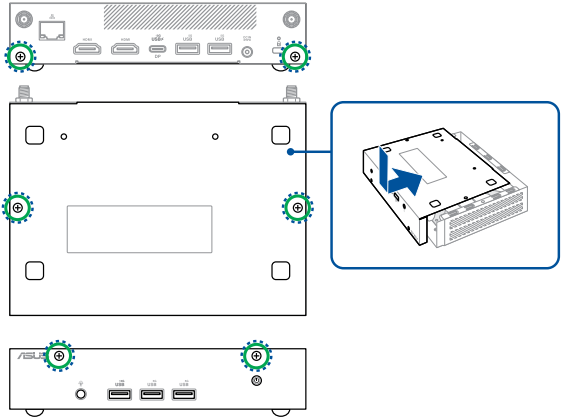
Removal

1. Place the Chromebox on a flat stable surface with its top side facing down.
2. Loosen the screw(s) securing the Chromebox's bottom cover, and with extreme care, remove the bottom cover as shown.



Installation

1. Place the bottom cover into position as shown.
2. Tighten the screw(s) on the bottom cover to secure it in place.



Wireless card

Before you begin

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

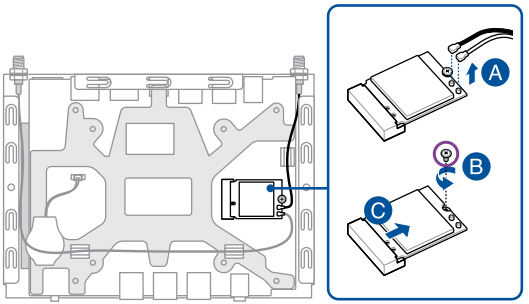
   Bottom cover

Screw list

- M2 X 2.5L (1 pc)

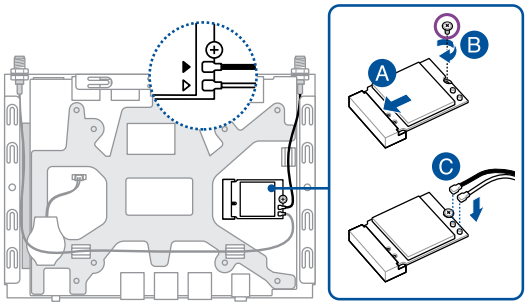
Removal

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**.

CMOS battery

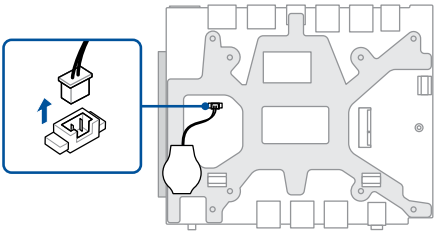
Before you begin

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

   Bottom cover

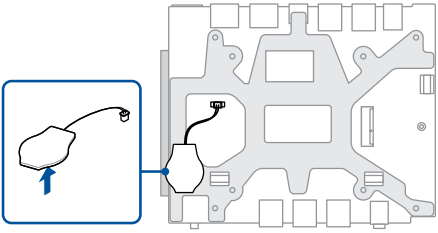
Removal

1. Disconnect the battery cable from the connector.



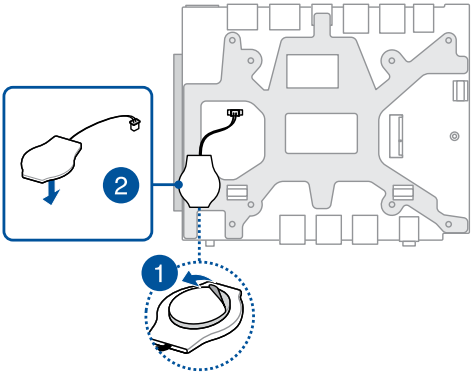
2. Carefully remove the CMOS battery.

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

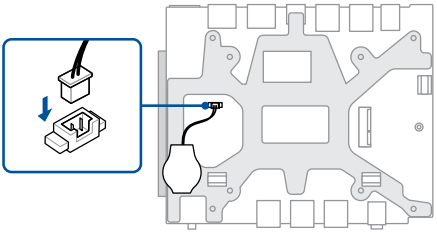


Installation

1. Remove the release liner on the battery, if one exists.
2. Align the battery as shown, and then affix it to the metal bracket 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**.

Heatsink

WARNING! To prevent potential damage to the CPU, you should have the heatsink replaced by a service center near you.

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.

Before you begin

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

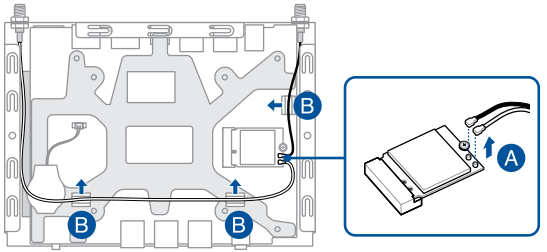
   Bottom cover

Screw list

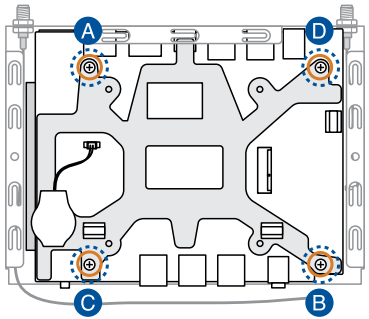
- M2 X 4.0L (4 pcs) for the motherboard
- M2 X 4.0L (4 pcs) for the heatsink

Removal

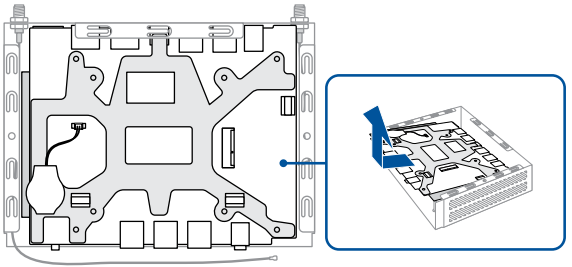
1. Disconnect the RF cable assemblies from the wireless card (A), and then remove the RF cable assemblies from the cable guide(s) on the motherboard.



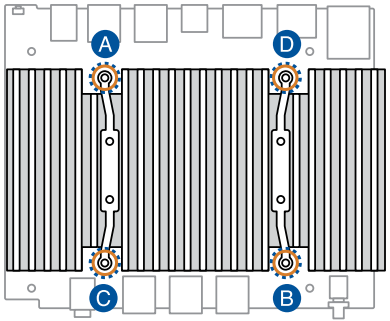
2. Remove the screw(s) securing the motherboard to the chassis one by one in the sequence shown.



3. Remove the motherboard as shown.



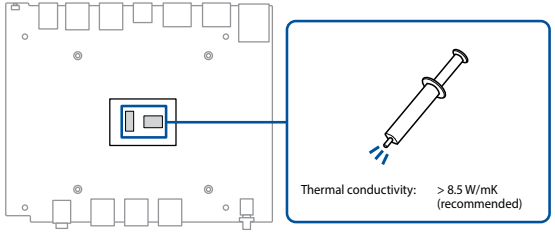
4. Place the motherboard face down, and remove the heatsink screw(s) one by one in the sequence shown.



5. Remove the heatsink.

Installation

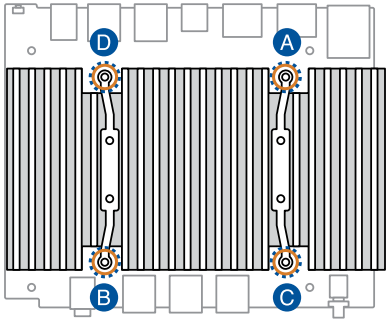
1. Wipe the CPU and chipset surfaces clean with a clean cloth. Apply several drops of Thermal Interface Material (TIM) to the exposed areas of the CPU and chipset that will come in contact with the heatsink. Ensure that the TIM is spread evenly in a thin layer over the surfaces.



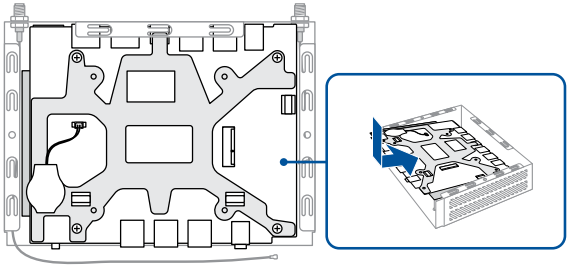
WARNING! The TIM is toxic and inedible. DO NOT eat it. If it gets into your eyes or touches your skin, wash it off immediately, and seek professional medical help.

IMPORTANT! To prevent contaminating the TIM, DO NOT spread it with your finger.

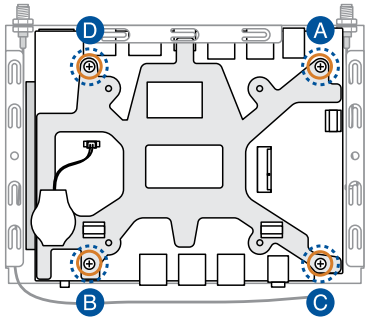
2. Align and place the heatsink as shown, and secure it to the motherboard by tightening the screw(s) removed earlier one by one in the sequence shown.



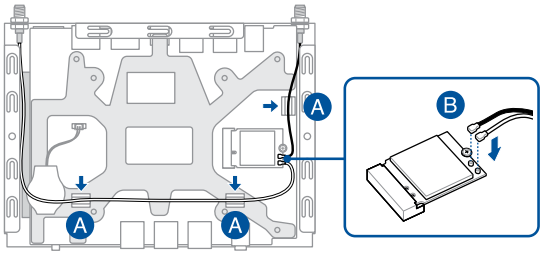
3. Align and place the motherboard in the chassis as shown.



4. Secure the motherboard by tightening the screw(s) removed earlier one by one in the sequence shown.



5. Route the RF cable assemblies through the cable guide(s) (A), and then reconnect the RF cable assemblies to the wireless card.



6. 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.

Screw list

- M2 X 4.0L (4 pcs)

Removal

Remove the following component(s):

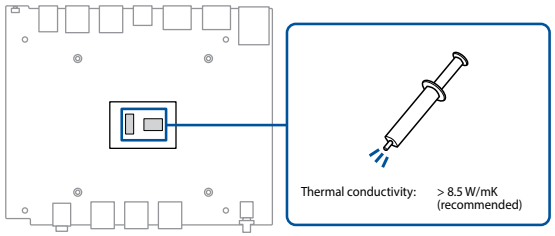
- Bottom cover
- Wireless card (if installed)
- CMOS battery
- Heatsink

Installation

WARNING! To prevent potential damage to the CPU, you should have the heatsink replaced by a service center near you.

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. Prepare the motherboard by wiping the CPU and chipset surfaces clean with a clean cloth. Apply several drops of Thermal Interface Material (TIM) to the exposed areas of the CPU and chipset that will come in contact with the heatsink. Ensure that the TIM is spread evenly in a thin layer over the surfaces.



WARNING! The TIM is toxic and inedible. DO NOT eat it. If it gets into your eyes or touches your skin, wash it off immediately, and seek professional medical help.

IMPORTANT! To prevent contaminating the TIM, DO NOT spread it with your finger.

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

RF cable assembly

Before you begin

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

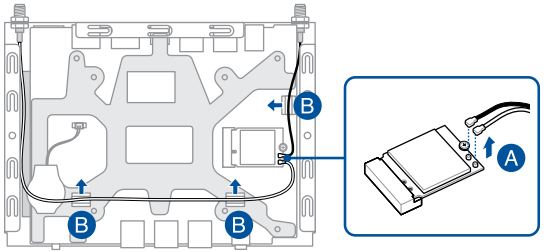
   Bottom cover

Screw list

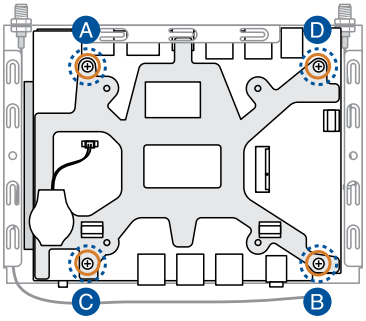
- M2 X 4.0L (4 pcs)

Removal

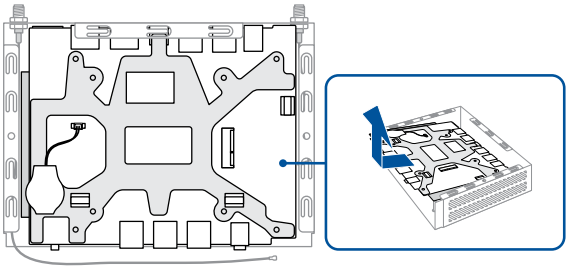
1. Disconnect the RF cable assemblies from the wireless card (A), and then remove the RF cable assemblies from the cable guide(s) on the motherboard.



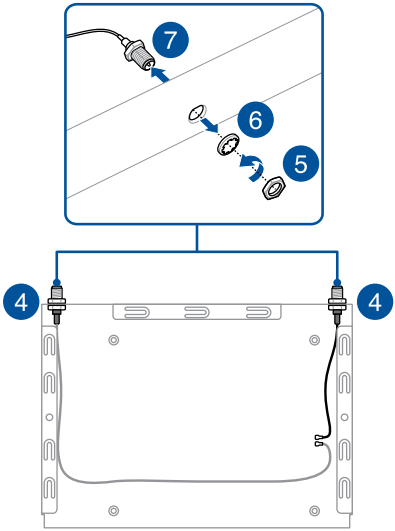
2. Remove the screw(s) securing the motherboard to the chassis one by one in the sequence shown.



3. Remove the motherboard as shown.

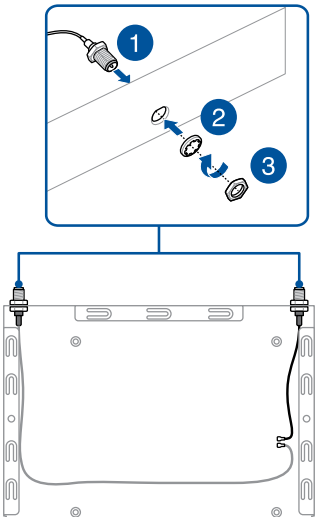


4. Locate in the chassis the antenna jack end of the RF cable assembly.
5. Remove the hex screw securing the antenna jacks
6. Remove the O-ring from the antenna jack.
7. Remove the RF cable assembly from the chassis.
8. Repeat steps 4 to 7 to remove the other RF cable assembly.


7
6
5
4
4

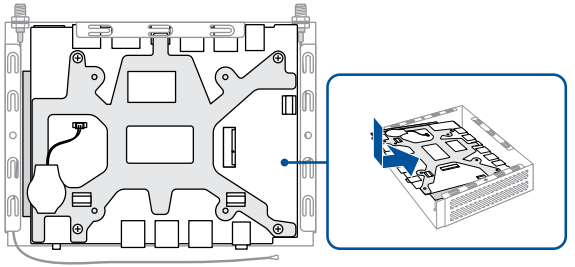
Installation

1. Insert the antenna jack end of the RF cable assembly into the antenna hole from within the chassis outwards.
2. Insert the O-ring removed earlier over the antenna jack.
3. Secure the antenna jack using the hex screw removed earlier.

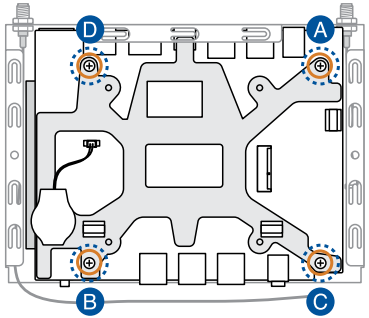


4. Repeat steps 1 to 3 to install the other RF cable assembly.

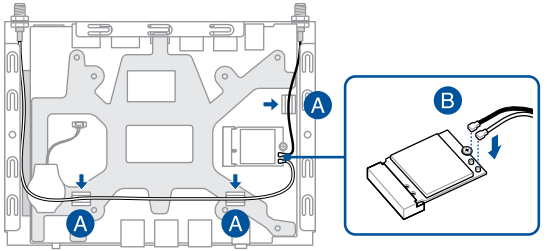
5. Align and place the motherboard in the chassis as shown.



6. Secure the motherboard by tightening the screw(s) removed earlier one by one in the sequence shown.



7. Route the RF cable assemblies through the cable guide(s) (A), and then connect the RF cable assemblies to the wireless card.



8. 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):

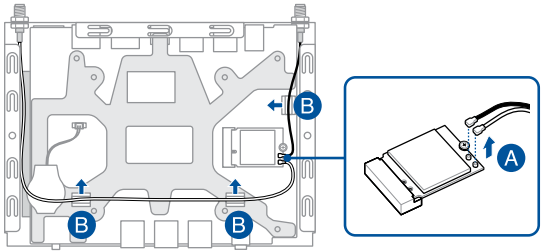
   Bottom cover

Screw list

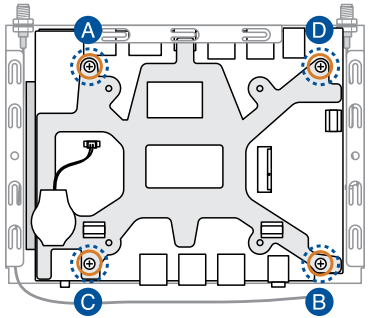
- M2 X 4.0L (4 pcs)

Removal

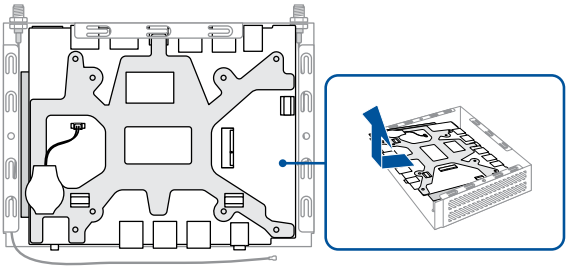
1. Disconnect the RF cable assemblies from the wireless card (A), and then remove the RF cable assemblies from the cable guide(s) on the motherboard.



2. Remove the screw(s) securing the motherboard to the chassis one by one in the sequence shown.

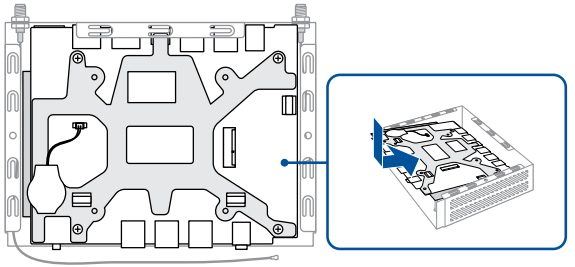


3. Remove the motherboard as shown.

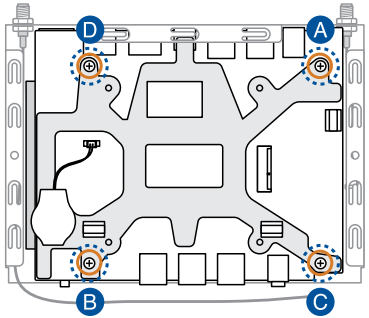


Installation

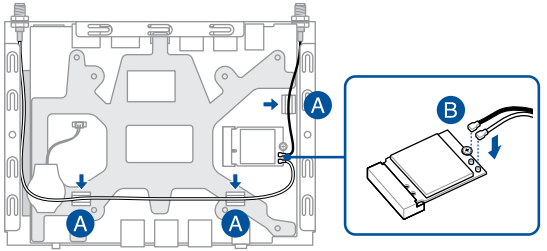
1. Align and place the motherboard in the chassis as shown.



2. Secure the motherboard by tightening the screw(s) removed earlier one by one in the sequence shown.



3. Route the RF cable assemblies through the cable guide(s) (A), and then reconnect the RF cable assemblies to the wireless card.



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