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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 Desktop 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 the correct screw models on your Desktop PC 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 Desktop PC.
 - Place your Desktop PC on a clean and stable surface.
 - Turn off your Desktop PC.
 - 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 Desktop PC 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 tool



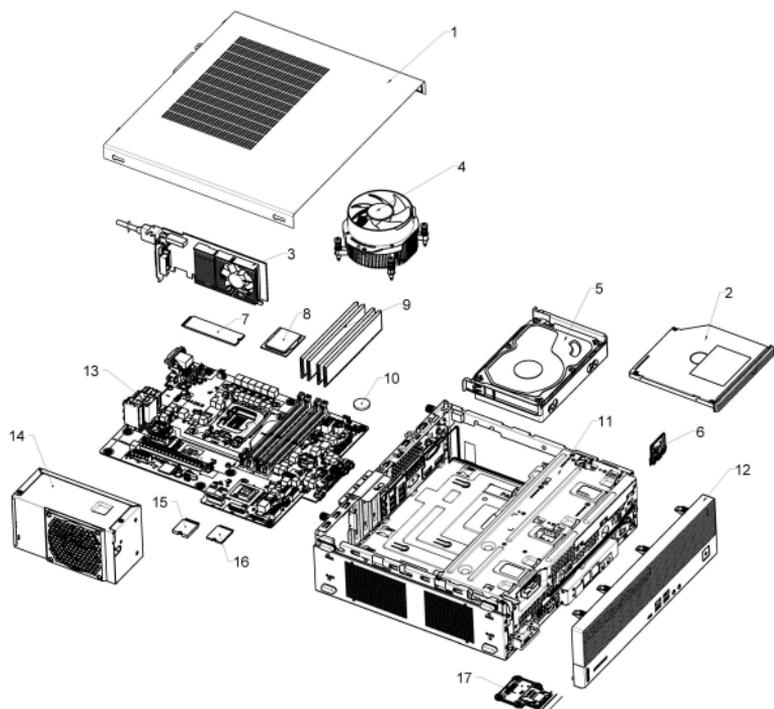
Screwdriver

Diagnostic tools

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

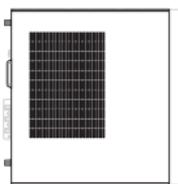
For more information, visit www.asus.com/support/FAQ/1048490/.

Exploded diagram

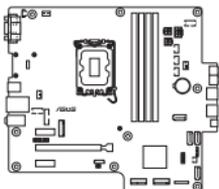


- | | |
|---------------------------------------|-------------------------------------|
| 1. Chassis side cover | 10. Lithium battery |
| 2. Slim optical disk drive (optional) | 11. Chassis body assembly |
| 3. Graphics card | 12. Front bezel assembly |
| 4. CPU cooler | 13. Motherboard |
| 5. 3.5-inch hard disk drive | 14. TFX PSU |
| 6. Power switch board | 15. M.2 Wi-Fi card |
| 7. M.2 solid-state drive | 16. M.2 solid-state drive |
| 8. Central processing unit (CPU) | 17. SD card reader board (optional) |
| 9. U-DIMM | |

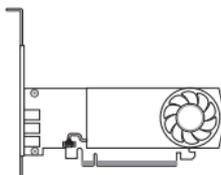
Major components



Left side cover



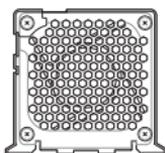
Motherboard



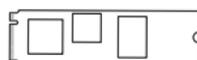
Graphics card



CPU fan module



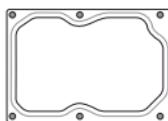
Chassis fan module



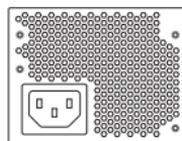
M.2 SSD module



RAM module



HDD module



PSU module

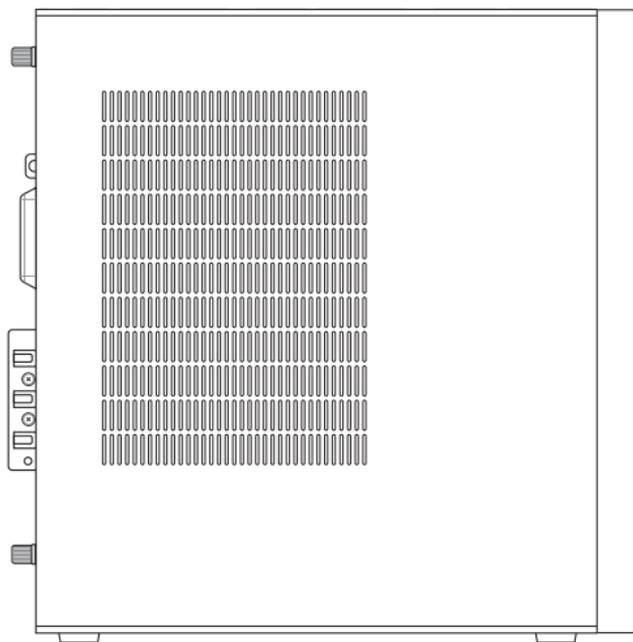


M.2 Wi-Fi module

NOTE: The illustrations in this manual are for reference only. Actual components may vary per model.

Chapter 2: Service Procedures

Left side cover



Before you begin

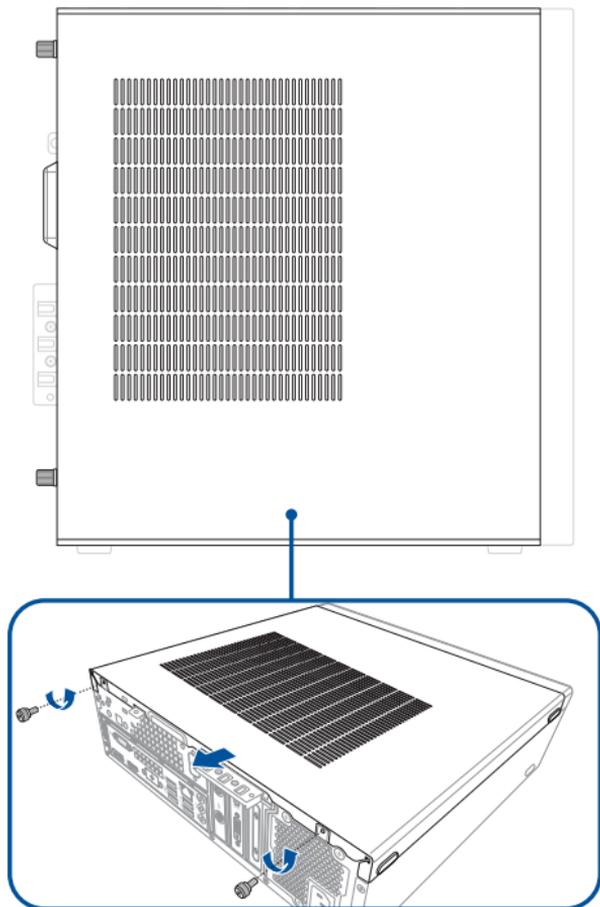
Read the **Safety Precautions** and complete the **Pre-repair Checklist**.

Screw list

- ⊕ Thumb screw #6-32, L9.5 * H5.9 (2pcs)

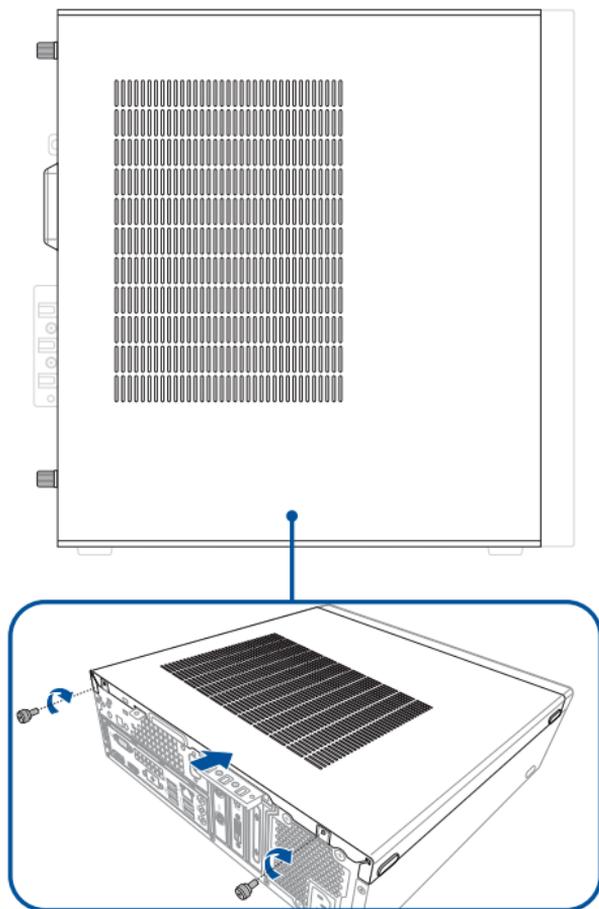
Removal

Remove the screws from the Desktop PC's left side cover.

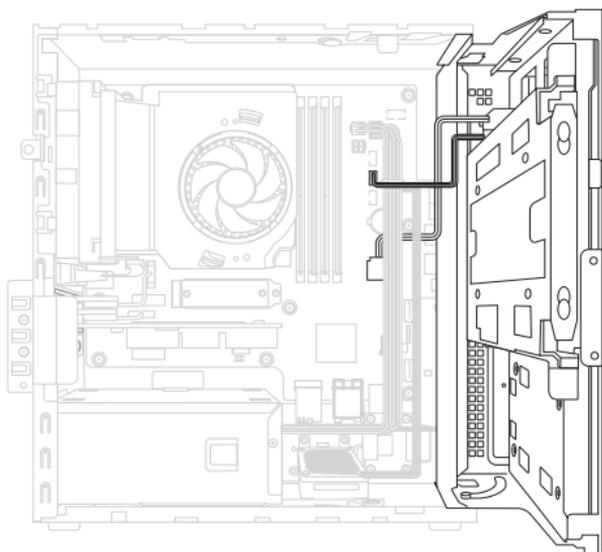


Installation

1. Put the left side cover on the chassis and align the screw holes.
2. Secure the left side cover using the screws you removed earlier.



HDD module

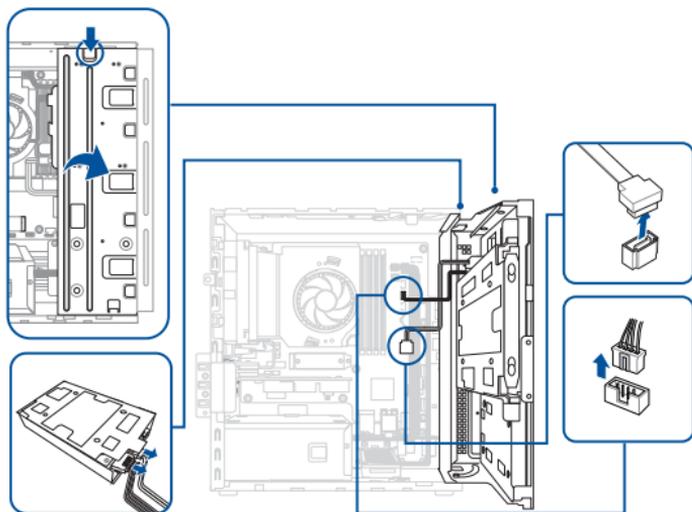


Before you begin

1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following component:
 - Left side cover

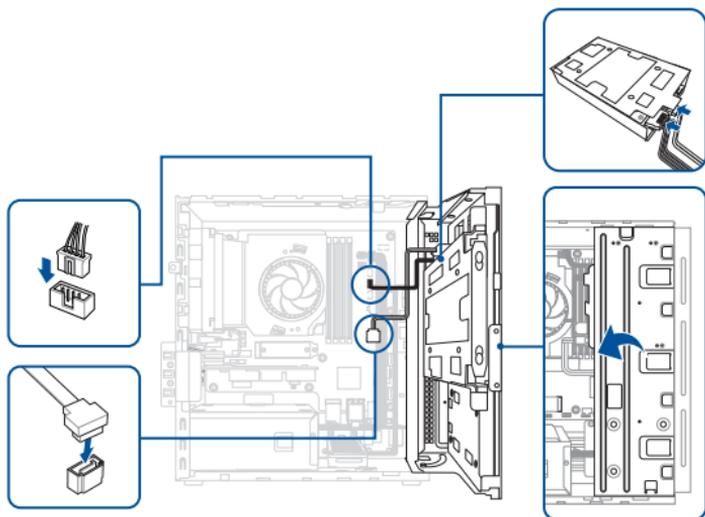
Removal

1. Remove the front bezel from the chassis and then the two screws that secure the front I/O.
2. Press the latch on the HDD housing compartment to unlock and swing the HDD housing compartment open.
3. Press the hooks on the sides of HDD bracket and take out the HDD bracket.
4. Disconnect the SATA cable and power cable from the HDD and the motherboard.
5. Pull out the tool-less HDD tray.

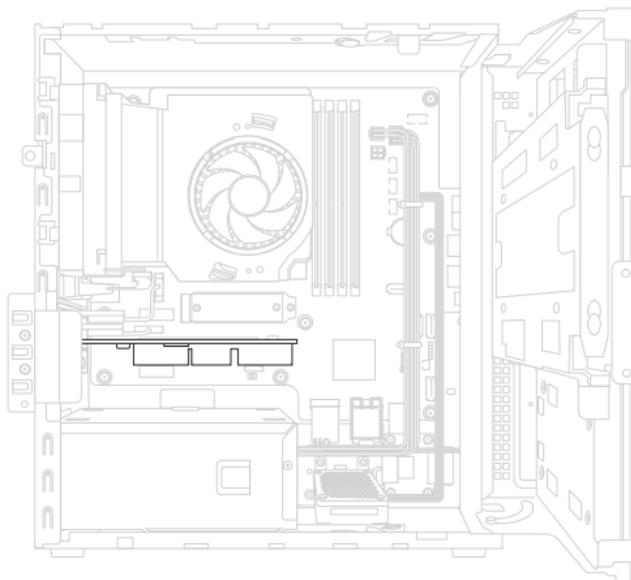


Installation

1. Put the HDD module in the HDD bracket.
2. Install the HDD bracket to the HDD housing compartment.
3. Connect the SATA cable and the SATA power cable to the HDD module and the motherboard.
4. Swing the HDD housing compartment and lock it to the chassis.
5. Secure the front I/O to the front chassis with the two screws you removed earlier and install the front bezel to the chassis.
6. Install the component you removed in the **Before you begin** section.



Graphics card

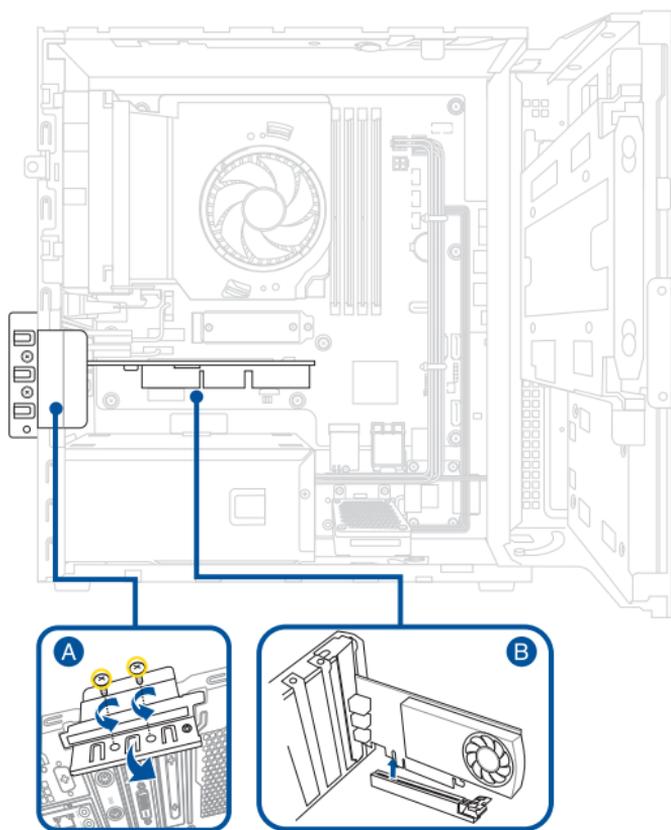


Before you begin

1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Left side cover
 - HDD housing compartment

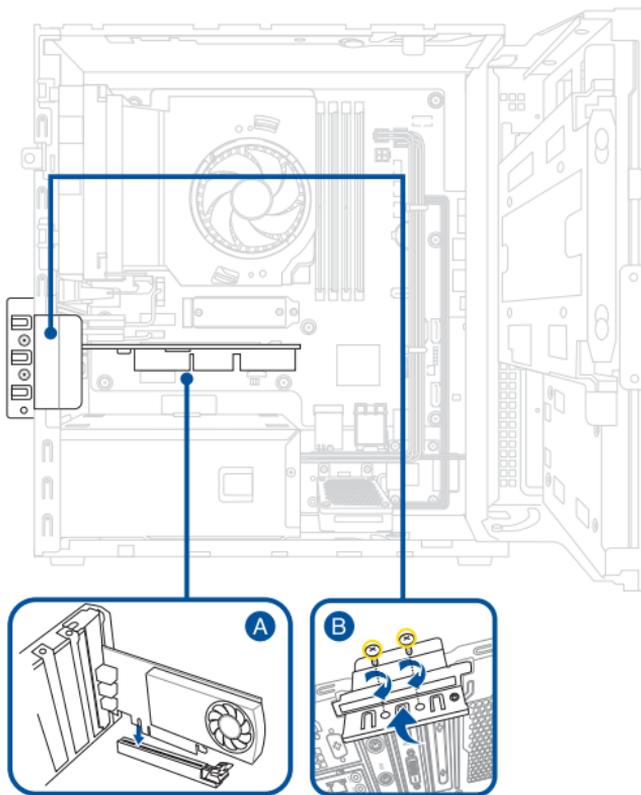
Removal

1. Remove the screws that secure the graphics card to the rear side of the chassis.
2. Press the retaining clip of the PCI Express slot outward to unlock and eject the graphics card, and then take the graphics card out.

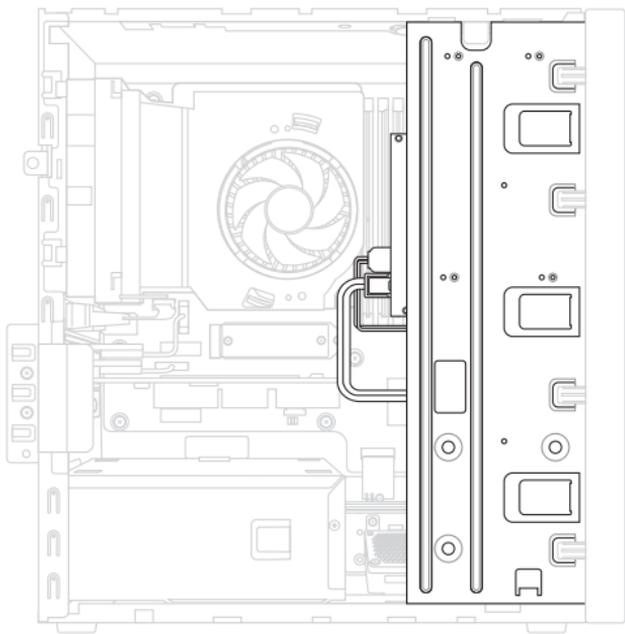


Installation

1. Firmly insert the graphics card into the PCI Express slot until the retaining clip snaps back in place.
2. Secure the graphics card to the rear side of the chassis with the screws you removed earlier.
3. Install the components you removed in the **Before you begin** section.



ODD module



Before you begin

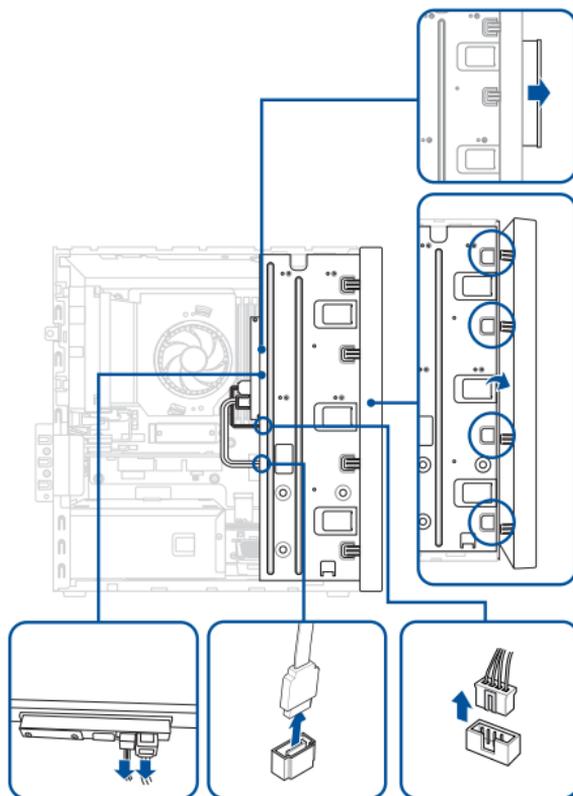
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following component:
 - Left side cover

Screw list

- ⊕ M2, L4 * H4 (2pcs)

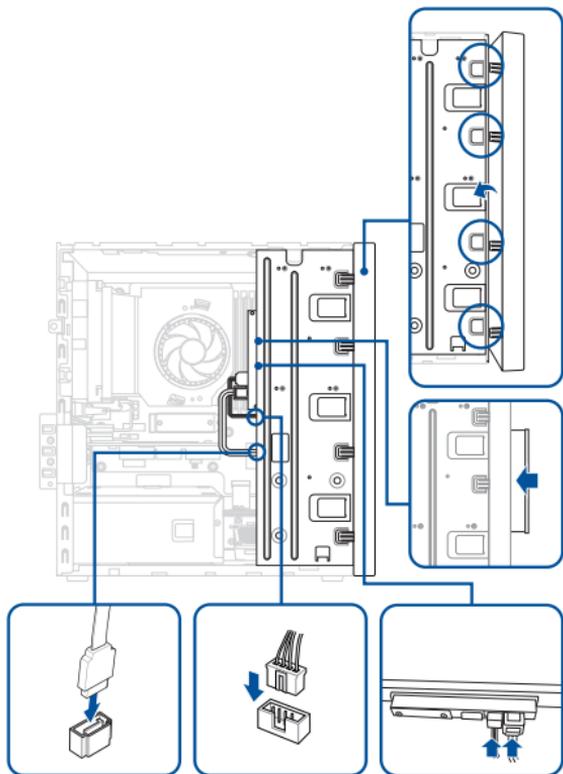
Removal

1. Release the clasps that secure the front bezel and then remove it.
2. Disconnect the SATA cable and SATA power cable from the ODD and the motherboard.
3. Pull out the ODD bezel together with ODD module from the ODD slot.
4. Remove the ODD module from the ODD bracket.
5. Detach the ODD bezel from the ODD module.

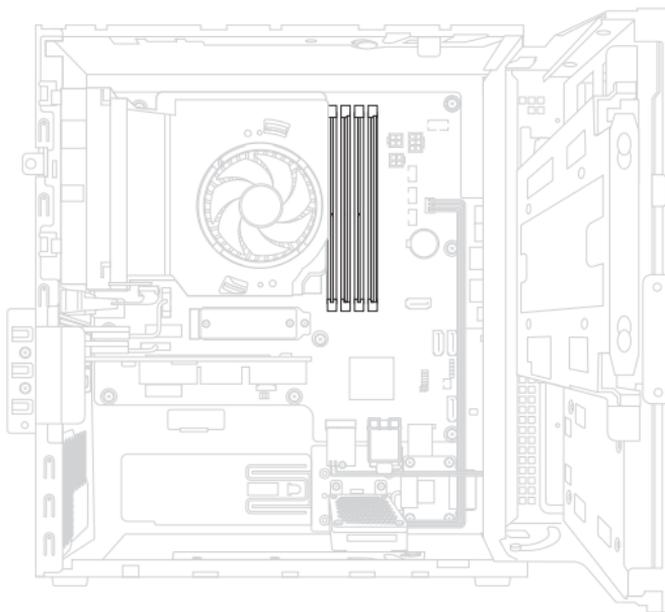


Installation

1. Install the ODD bezel to the ODD module.
2. Place the ODD module to the ODD bracket and secure with two screws you removed earlier.
3. Push the ODD module into the ODD slot in the chassis.
4. Connect the SATA cable and the SATA power cable to the ODD and the motherboard.
5. Install the chassis's front bezel.
6. Install the component you removed in the **Before you begin** section.



RAM module



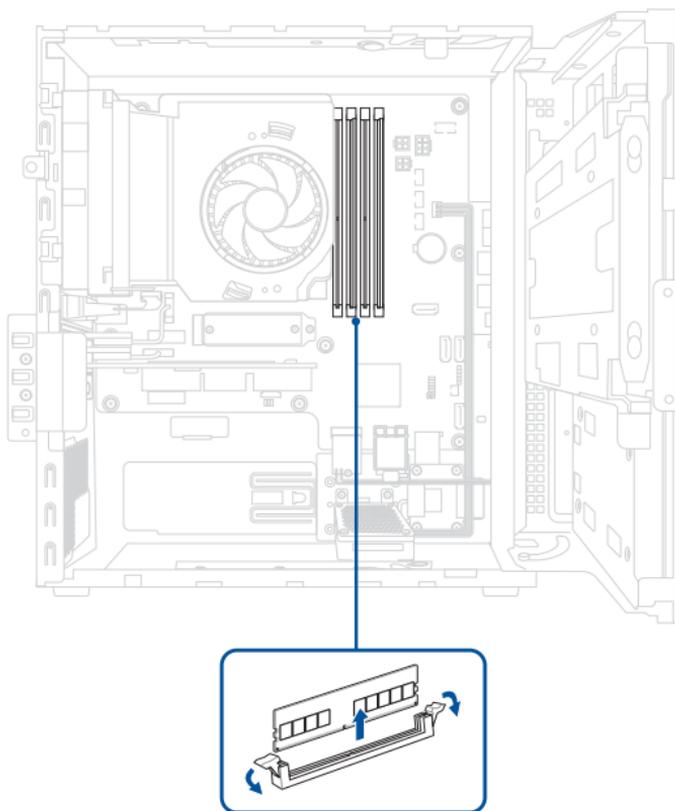
Before you begin

NOTE: The orientation of this component may vary by model.

1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Left side cover
 - HDD housing compartment

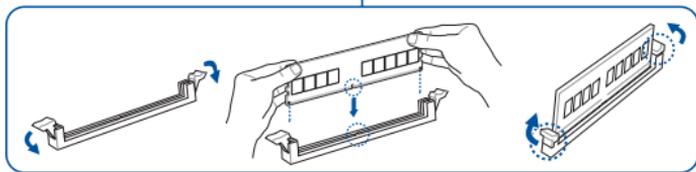
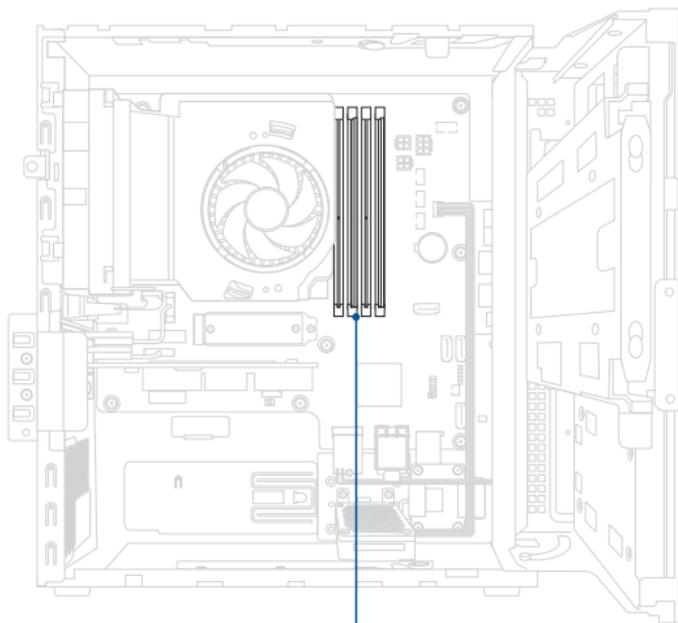
Removal

Press the clip(s) outwards to remove the RAM module(s).

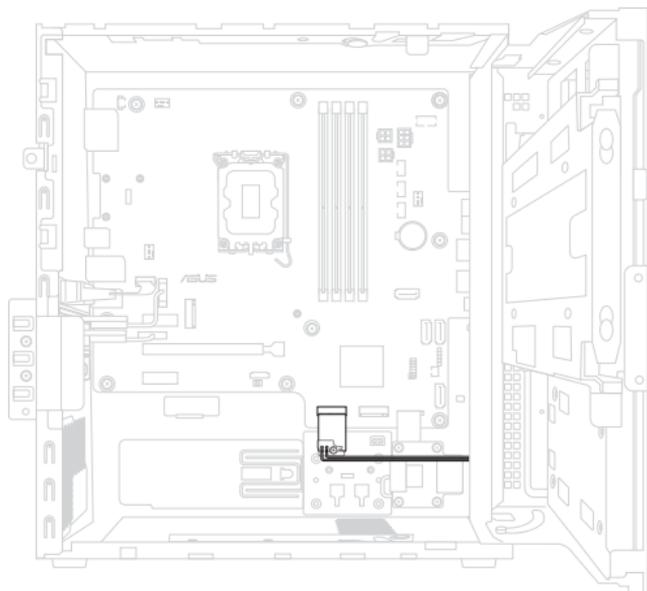


Installation

1. Align and insert the RAM module(s) into the RAM module slot(s).
2. Install the components you removed in the **Before you begin** section.



M.2 WiFi module



Before you begin

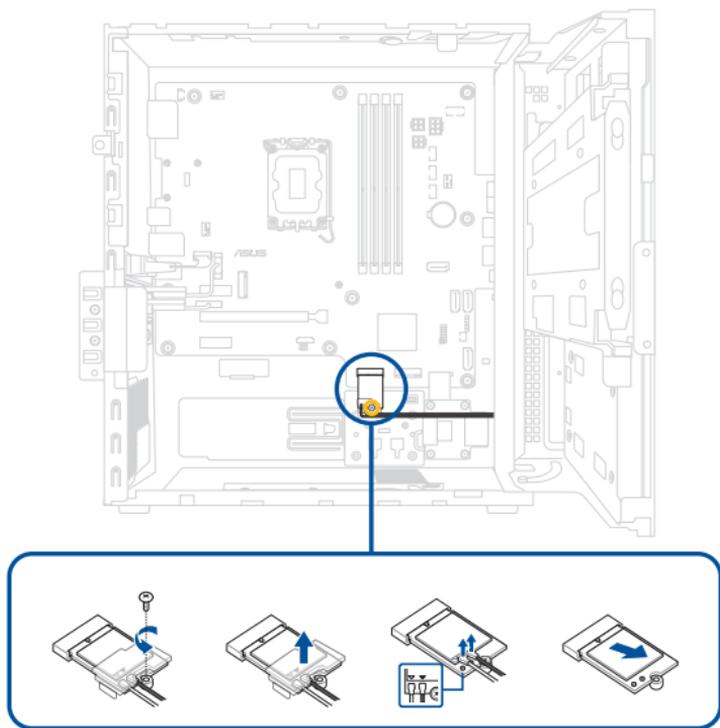
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Left side cover
 - HDD housing compartment

Screw list

- ⊕ M2 * 3L, L5.5 * H3 (B) (1pc)

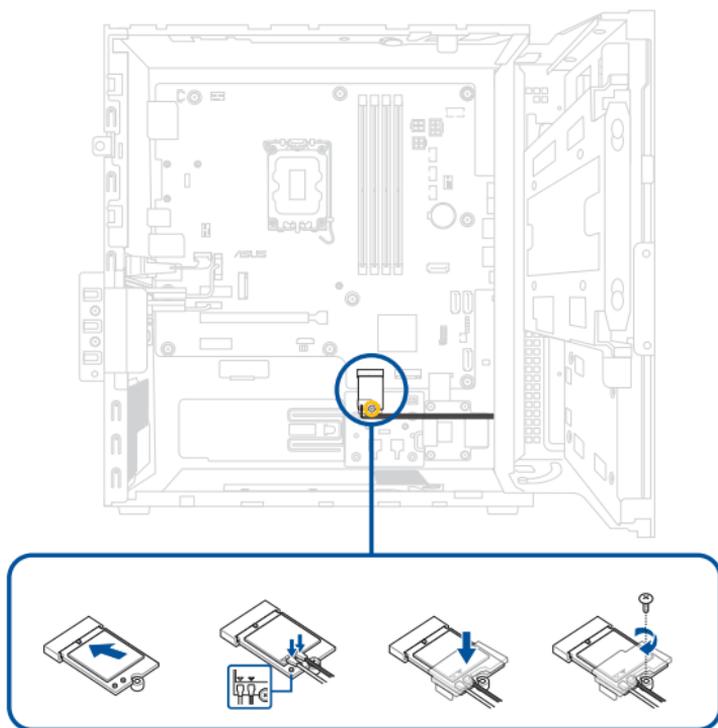
Removal

1. Remove the screw that secures the card to the motherboard.
2. Remove the plastic cover that protects the WiFi cable terminals.
3. Disconnect two RF cables from the M.2 WiFi card.
4. Remove the M.2 WiFi card from the motherboard.

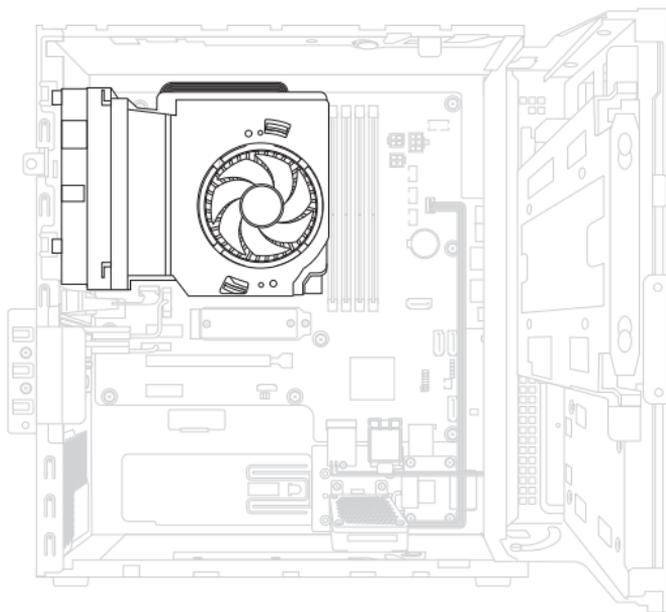


Installation

1. Insert the M.2 WiFi module into the M.2 slot on the motherboard.
2. Connect the two RF cables to the M.2 WiFi card.
3. Place the plastic cover on the M.2 WiFi card.
4. Secure the M.2 WiFi module using the screw you removed earlier.
5. Install the components you removed in the **Before you begin** section.



CPU fan module

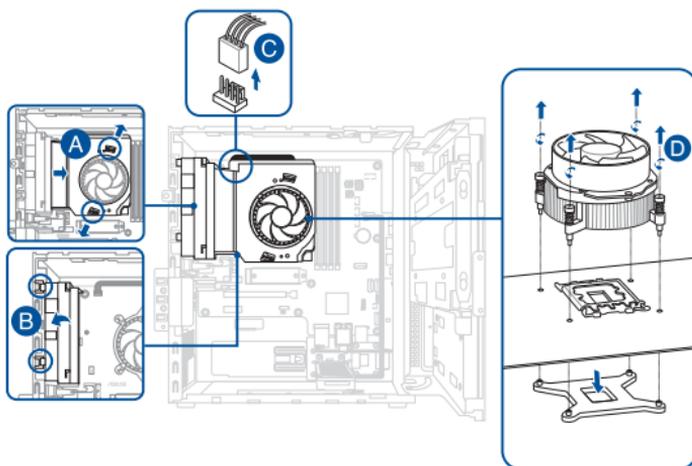


Before you begin

1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following component:
 - Left side cover
 - HDD housing compartment
 - Graphics card

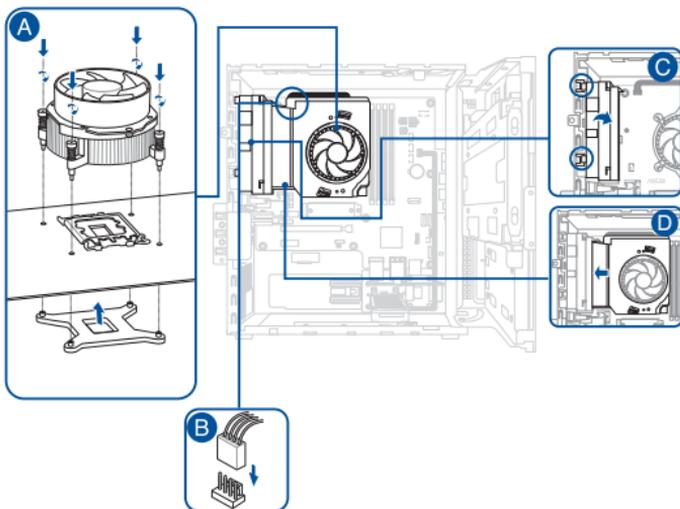
Removal

1. Press the two buttons on the front fan duct to release it.
2. Detach the rear fan duct from the rear side of the chassis.
3. Disconnect the fan header.
4. Remove the four screws that secure the CPU fan.

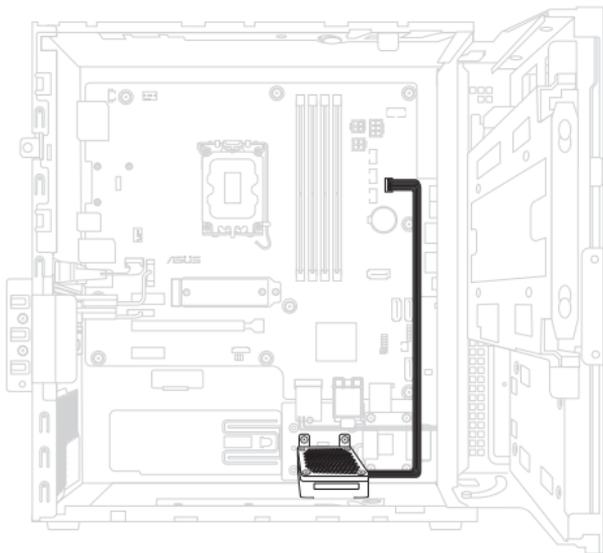


Installation

1. Place the CPU fan on top of the installed CPU and secure it with four screws you removed earlier in a diagonal sequence, ensuring that the air outlet faces the expansion slot.
2. Connect the fan header.
3. Attach the rear fan duct to the rear side of the chassis and flip up.
4. Attach the front fan duct to the CPU fan and flip the rear fan duct over it.
5. Route the cables with a cable tie.
6. Install the components you removed in the **Before you begin** section.



Chassis fan module



Before you begin

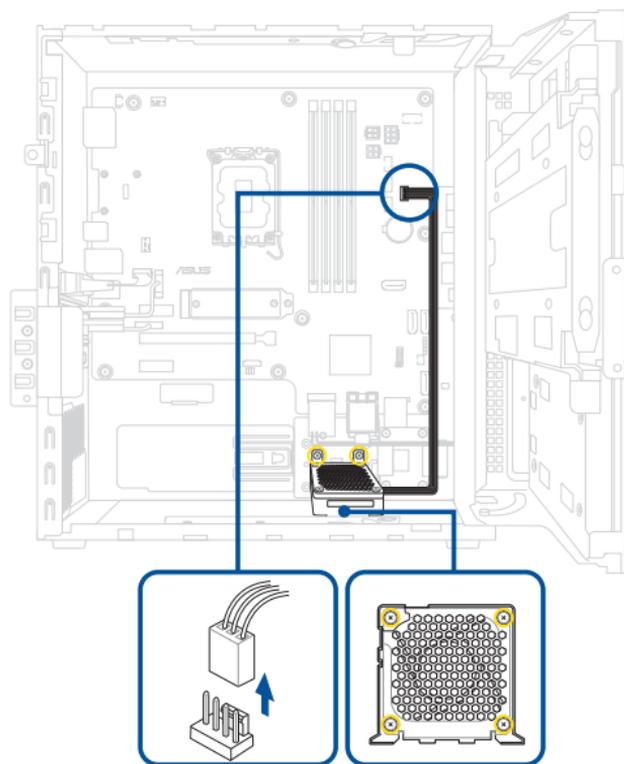
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following component:
 - Left side cover
 - HDD housing compartment

Screw list

- ⊕ M3 * 4L, L7 * H4 (2pcs); M5 * 10L, L6.3 * H10.3 (4pcs)

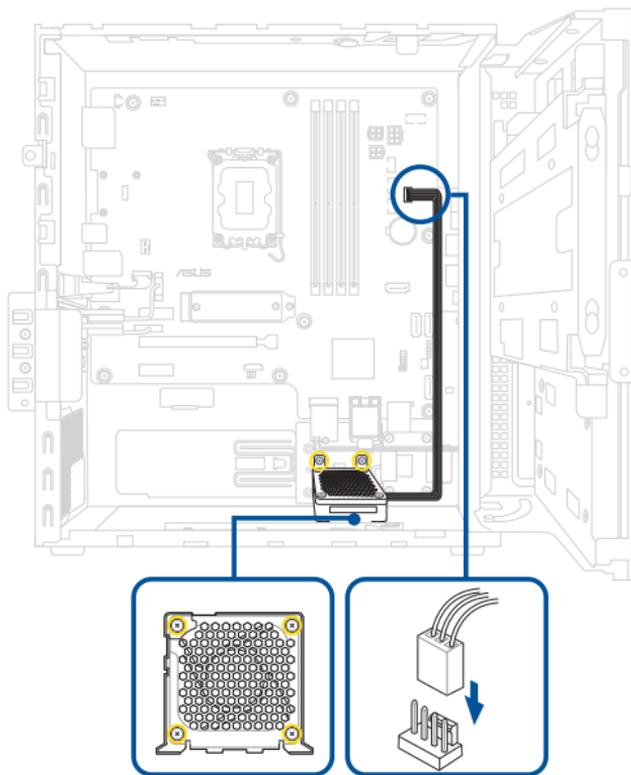
Removal

1. Disconnect the chassis fan header.
2. Remove the screws on the bottom of the chassis and remove the chassis fan.

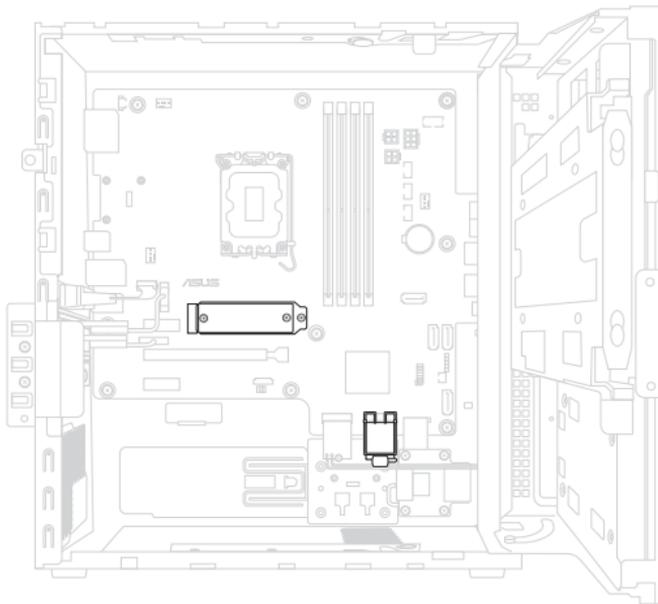


Installation

1. Align the screw holes of the fan and the chassis.
2. Secure with the screws you removed earlier.
3. Reconnect the chassis fan header.
4. Install the component 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:
 - Left side cover
 - HDD housing compartment
 - Graphics card

Screw list

- ⊕ Included in the SSD heatsink package (2pcs)
- ⊕ M2 * 3L, L5.5 * H3 (B) (1pc)

Removal

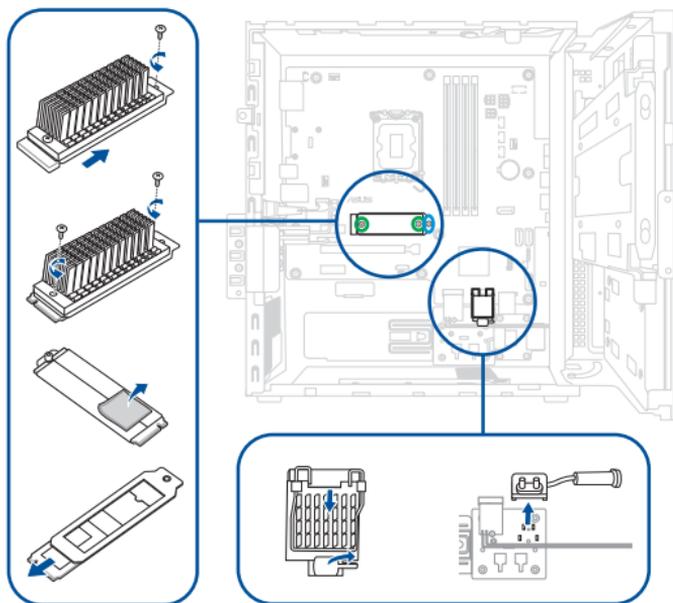
NOTE: Remove the SSD module on the M.2_2 slot before removing the motherboard from the chassis.

SSD1 (near CPU):

Remove the screws on the M.2 heatsink and take out the M.2 SSD module from the motherboard.

SSD2:

1. Unlatch the retaining tab and detach the SSD assembly module.
2. Press to release the retaining latch.
3. Remove the heatsink.
4. Remove the SSD from the bracket.



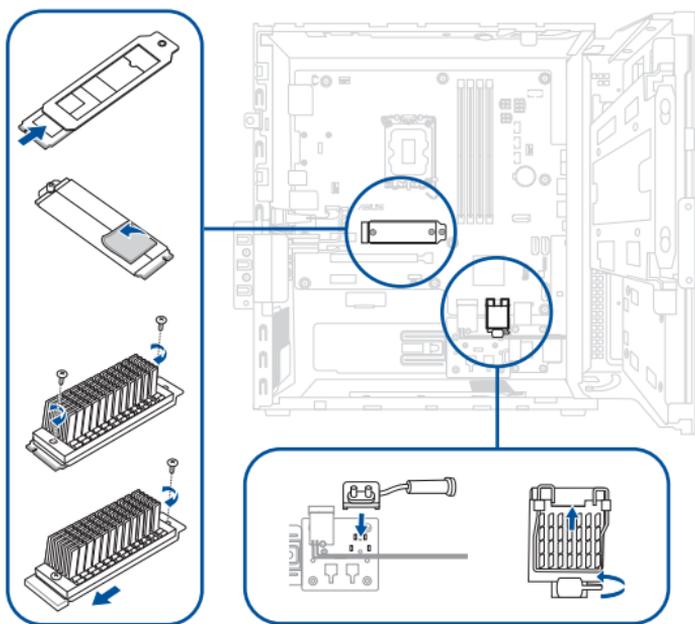
Installation

SSD1 (near CPU):

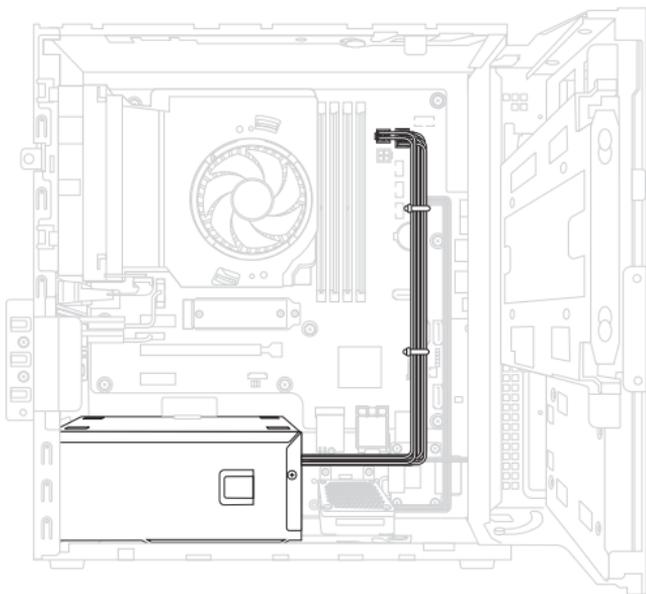
1. Align and insert the M.2 SSD module into the M.2 slot on the motherboard, then secure the M.2 SSD module using the heatsink with screws you removed earlier.
2. Install the components you removed in the **Before you begin** section.

SSD2:

1. Install the SSD to the bracket.
2. Place the heatsink on the SSD bracket.
3. Press the retaining latch to lock the heatsink.
4. Insert the SSD assembly module to the M.2 slot and latch the retaining tab to secure the SSD assembly module.
5. Install the components you removed in the **Before you begin** section.



Power supply unit (PSU) module



Before you begin

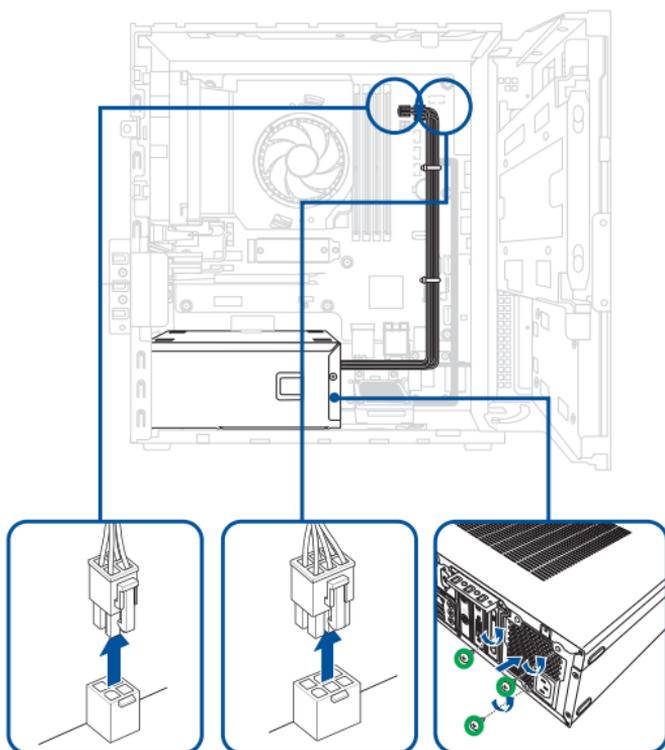
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following component:
 - Left side cover
 - HDD housing compartment
 - Graphics card

Screw list

- ⊕ #6-32 * 6.3L, L7 * H6.3 (3pcs)

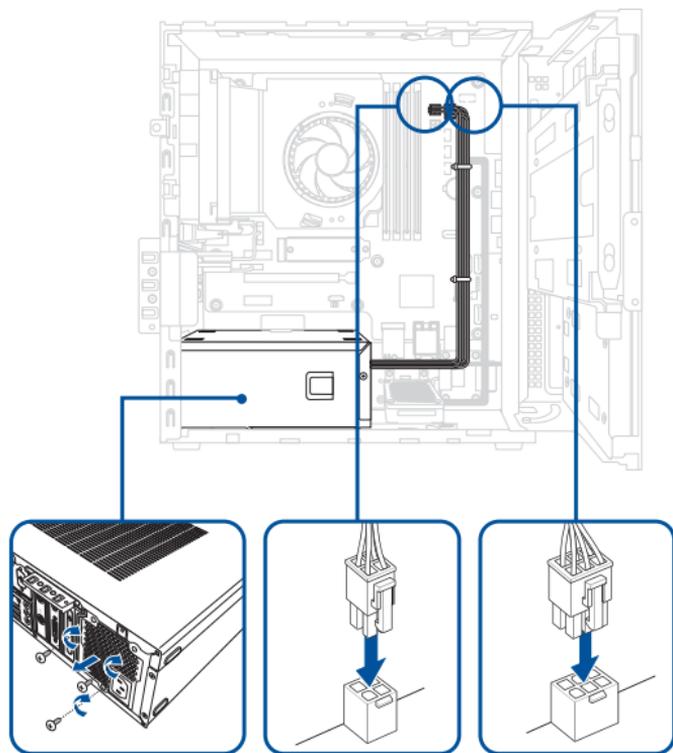
Removal

1. Disconnect the 6-pin and the 4-pin power connectors from the motherboard.
2. Remove the power cables from the cable ties.
3. Remove the screws on the bottom side of the chassis and take the power supply unit out.

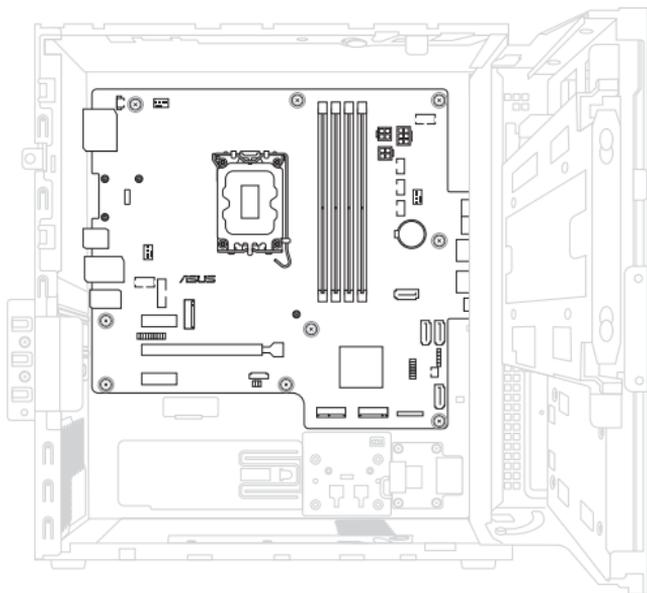


Installation

1. Put the power supply unit at the bottom of the chassis and align the screw holes.
2. Secure the power supply unit using the screws you removed earlier.
3. Route the power cable properly with the cable ties.
4. Plug the 6-pin and the 4-pin power connectors to the motherboard.
5. Install the components you removed in the **Before you begin** section.



Motherboard



Before you begin

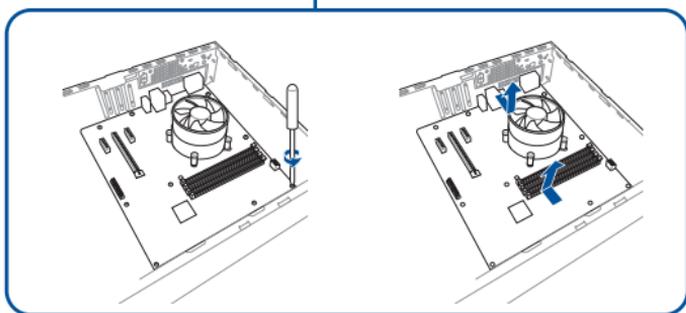
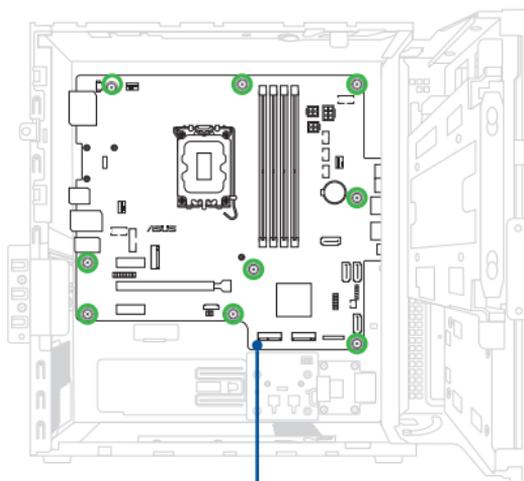
1. Read the **Safety Precautions** and **Pre-repair Checklist**.
2. Remove the following components:
 - Left side cover
 - HDD housing compartment
 - Graphics card
 - CPU fan module
 - Power supply unit

Screw list

- ⊕ M3 * 4L, L7 * H4 (9pcs)

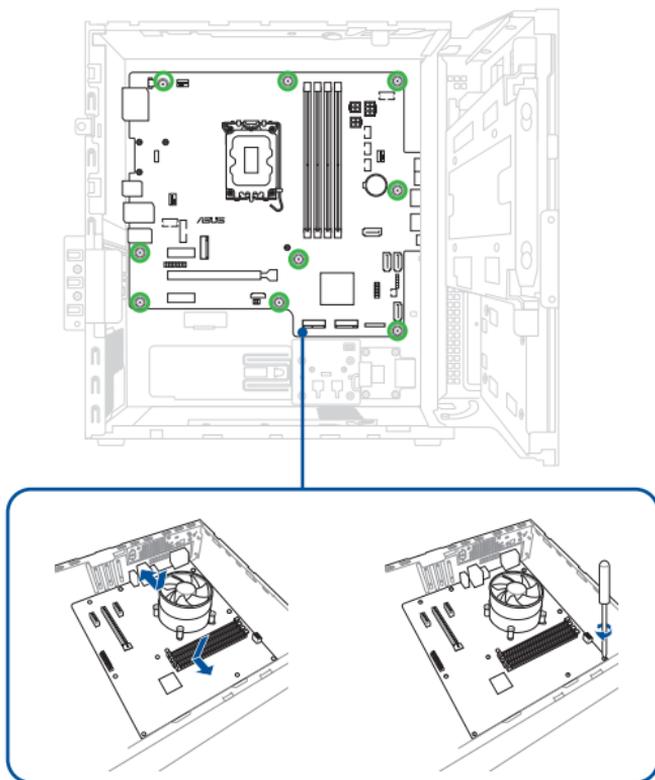
Removal

1. Disconnect all the cables from the motherboard.
2. Detach the front and rear fan ducts from the chassis.
3. Remove the screws, then remove the motherboard from the chassis.



Installation

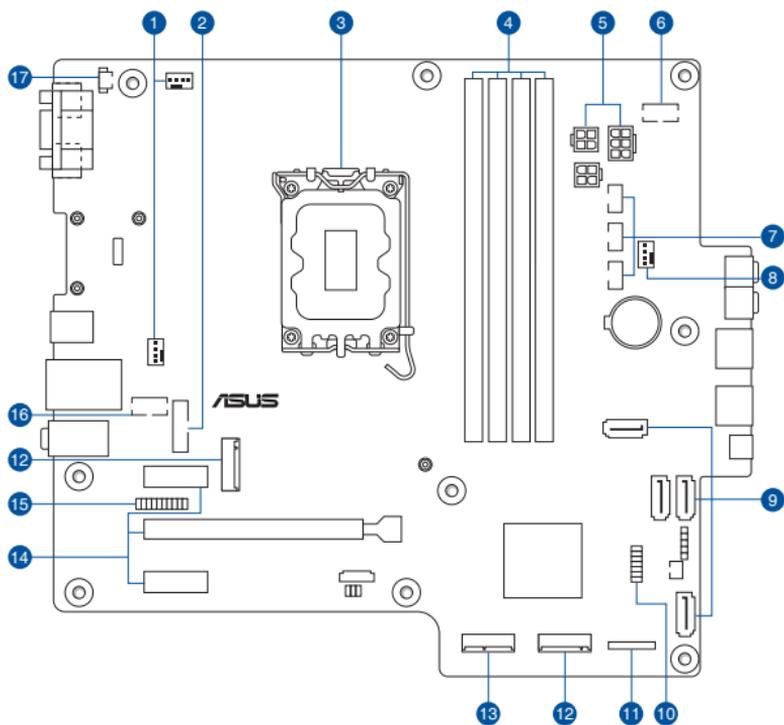
1. Align and install the motherboard, then secure the motherboard using the screws you removed earlier.
2. Reconnect the cables to the motherboard.
3. Attach the front and rear fan ducts to the chassis.
4. Install the components you removed in the **Before you begin** section.



Appendix

Wiring and connection diagrams

Motherboard View



1. CPU fan headers
2. COM/PS2 header
3. CPU socket
4. DIMM slots
5. Power connectors
6. Power switch header
7. ODD/SATA power headers
8. Chassis fan header
9. SATA ports
10. TPM header
11. Smart card reader
12. M.2 SSD slots
13. M.2 WiFi slot
14. Expansion slots
15. LPT header
16. COM port header
17. Chassis intrusion header