

E19825

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# IN SEARCH OF INCREDIBLE



Service Manual

**ASUS**

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# Disclaimer

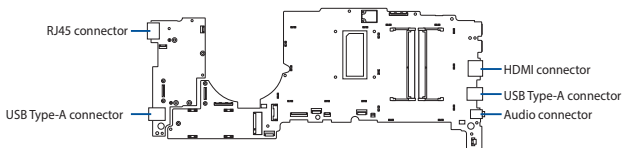
ASUS is not responsible for direct, indirect, intentional or unintentional damages resulting from improper installation and operation.

## Safety precautions

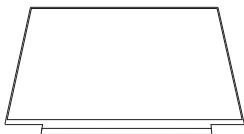
- Keep liquids or moisture away from your Notebook PC before installing or removing any components.
- Ensure to place your Notebook PC on a stable surface before installing or removing any components.
- Detach the clip or flap before removing the signal cables to prevent damage.
- Disconnect the power plug by pulling the plug evenly to avoid damage. Ensure to connect the signal cables in the correct orientation.
- Disconnect all power cables and remove the battery pack (if applicable) before cleaning your Notebook PC with liquid detergent to avoid risk of electric shock.
- Disconnect all power cables and remove the battery pack (if applicable) before installing or removing any components. Ensure to read and follow the instructions in the manual.

- 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 Notebook PC to avoid short circuits.
- Hold components by the edges to avoid touching the ICs.
- Ensure to properly install all the 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.
- Ensure to install the correct screw models on your Notebook PC to prevent damage.

# Major components



## Motherboard with ports and connectors



**LCD panel module**



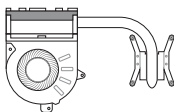
**Keyboard**



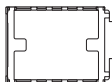
**RAM module**



**M.2 SSD module**



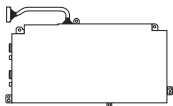
**Thermal module**



**HDD module\***



**Power adapter**



**Battery and power connector**

\* On selected models

---

**NOTE:**

- The illustrations are for reference only.
  - The maintenance procedures described in this manual depend on the model configuration and may not reflect the entire servicing process. For servicing those components that are not covered in this manual, please visit an authorized service center for further assistance.
- 

## Installation tools



**Screwdriver**



**Plastic blade**



**Tweezers**

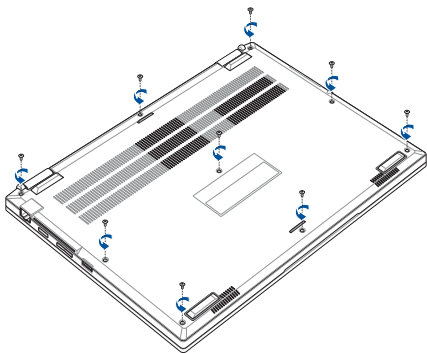
# Removing the bottom cover

---

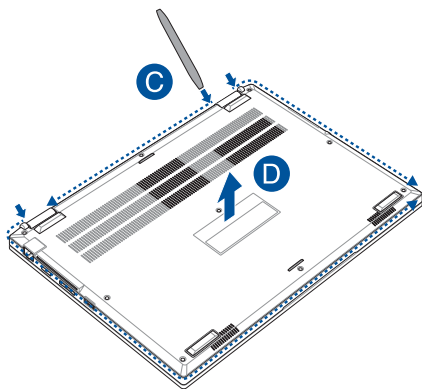
**NOTE:** The appearance of your Notebook PC's bottom view may vary per model.

---

- A. Remove the screw(s) from the Notebook PC's bottom cover.



- B. Prepare the plastic blade.
- C. Use the plastic blade to pry open the indicated area of the bottom cover as shown in the illustration below.
- D. Pull out the bottom cover and remove it completely from your Notebook PC.



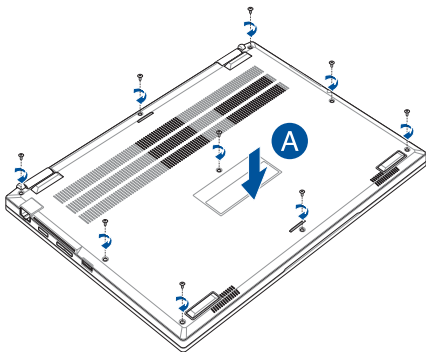
---

**IMPORTANT!** Avoid sliding the plastic blade along the side of your Notebook PC to prevent damage.

---

To reattach the bottom cover:

- A. Align and reattach the bottom cover.
- B. Secure the cover using the screw(s) you removed earlier.



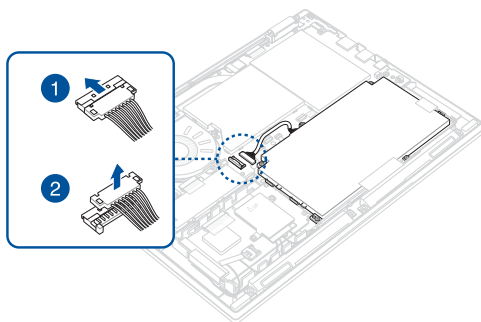
# Disconnecting the battery

- A. Remove the bottom cover.
- 

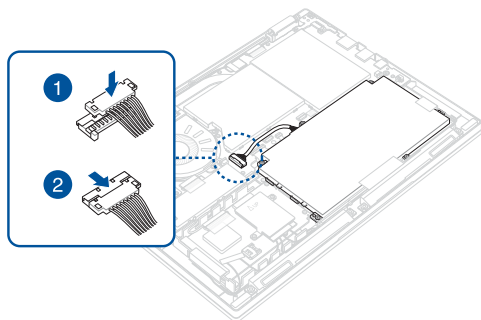
**NOTE:** For more details, refer to the *Removing the bottom cover* section in this manual.

---

- B. Disconnect the cable from the battery connector.



To connect the battery, align and connect the cable to the battery connector before you reattach the bottom cover.



# Replacing the battery

Refer to the following steps when installing a compatible battery in your Notebook PC:

---

**IMPORTANT!** Purchase your battery from authorized retailers of this Notebook PC to ensure maximum compatibility and reliability.

---

---

**WARNING!** Disconnect all the connected peripherals, any telephone or telecommunication lines and power connector (such as external power supply, battery pack, etc.) before removing the bottom cover.

---

**NOTE:**

- The appearance of your Notebook PC's bottom view and battery may vary per model but the module installation remains the same.
  - It is recommended that you install the battery under professional supervision. You may also visit an authorized service center for further assistance.
-

- A. Remove the bottom cover and disconnect the battery.

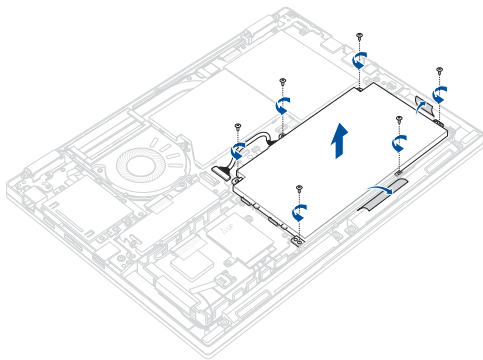
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**NOTE:** For more details, refer to the *Removing the bottom cover* and *Disconnecting the battery* sections in this manual.

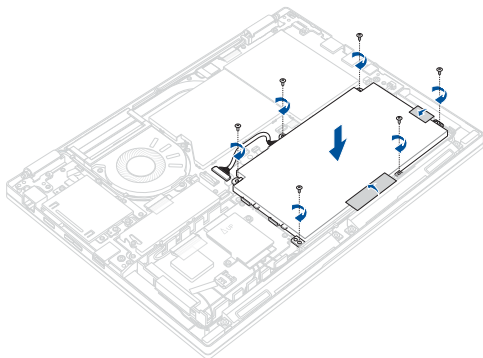
---

- B. Remove the screw(s) from the battery.

- C. Remove the battery.



- D. Prepare the new battery.
- E. Reinstall the battery.
- F. Secure the battery using the screw(s) you removed earlier.



## Replacing the RAM module

Upgrade the memory capacity of your Notebook PC by installing a RAM (Random Access Memory) module in the memory module compartment. Refer to the following steps when installing a RAM module in your Notebook PC:

---

**WARNING!** Disconnect all the connected peripherals, any telephone or telecommunication lines and power connector (such as external power supply, battery pack, etc.) before removing the bottom cover.

---

---

**IMPORTANT!** Visit an authorized service center or retailer for information on RAM module upgrades for your Notebook PC. Purchase RAM modules from authorized retailers of this Notebook PC to ensure maximum compatibility and reliability.

---

**NOTE:**

- The appearance of your Notebook PC's bottom side and RAM module may vary per model but the RAM module installation remains the same.
  - It is recommended that you install the RAM module under professional supervision. You may also visit an authorized service center for further assistance.
-

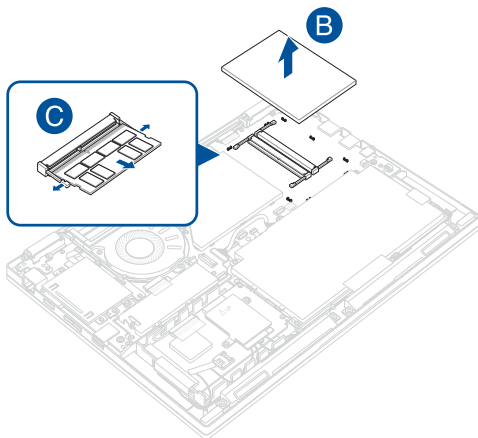
- A. Remove the bottom cover and disconnect the battery.

---

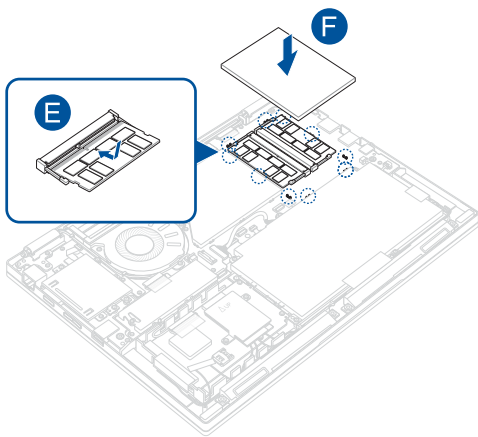
**NOTE:** For more details, refer to the *Removing the bottom cover* and *Disconnecting the battery* sections in this manual.

---

- B. Remove the shielding cover.
- C. Push the clips outwards to remove the RAM module.



- D. Prepare the new RAM module.
- E. Align and insert the RAM module into the RAM module slot.
- F. Align and reinstall the shielding cover.



# Replacing the M.2 SSD module

Refer to the following steps when installing a compatible M.2 SSD module in your Notebook PC:

---

**IMPORTANT!** Purchase your M.2 SSD module from authorized retailers of this Notebook PC to ensure maximum compatibility and reliability.

---

---

**WARNING!** Disconnect all the connected peripherals, any telephone or telecommunication lines and power connector (such as external power supply, battery pack, etc.) before removing the bottom cover.

---

**NOTE:**

- The appearance of your Notebook PC's bottom view and M.2 SSD module may vary per model but the module installation remains the same.
  - It is recommended that you install the M.2 SSD module under professional supervision. You may also visit an authorized service center for further assistance.
-

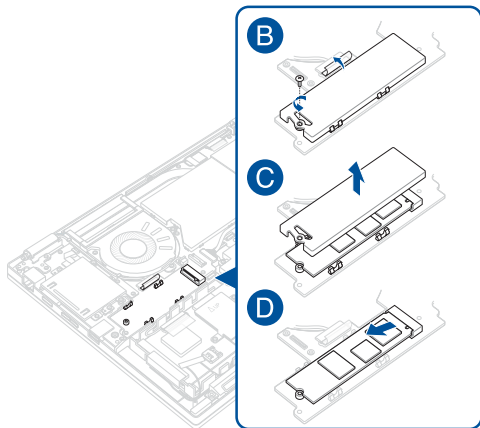
- A. Remove the bottom cover and disconnect the battery.

---

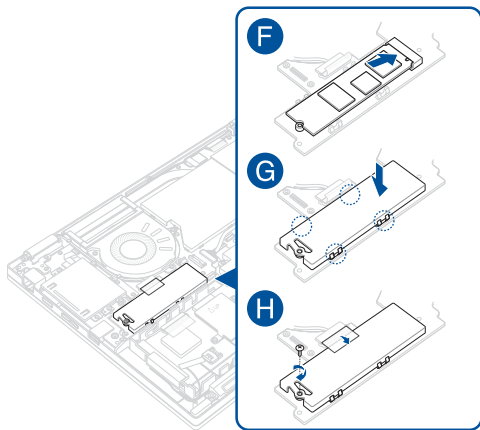
**NOTE:** For more details, refer to the *Removing the bottom cover* and *Disconnecting the battery* sections in this manual.

---

- B. Remove the screw from the shielding cover.
- C. Remove the shielding cover.
- D. Remove the M.2 SSD module from the motherboard.



- E. Prepare the new M.2 SSD module.
- F. Align and insert the M.2 SSD module into the M.2 connector on the motherboard.
- G. Align and reinstall the shielding cover.
- H. Secure the M.2 SSD module in place using the screw(s) you removed earlier



## Replacing the LCD module

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**IMPORTANT!** Do not bend the LCD panel in any ways to avoid risk of LCD panel leakage.

---

**NOTE:** The illustrations are for reference only.

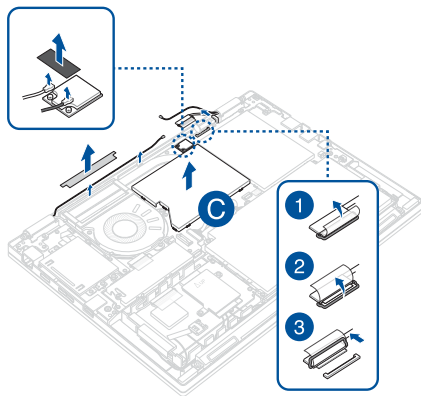
---

- A. Remove the bottom cover and disconnect the battery.
- 

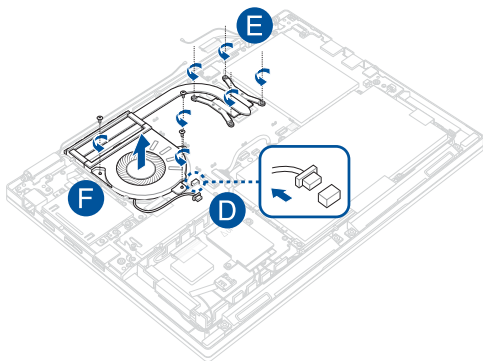
**NOTE:** For more details, refer to the *Removing the bottom cover* and *Disconnecting the battery* sections in this manual.

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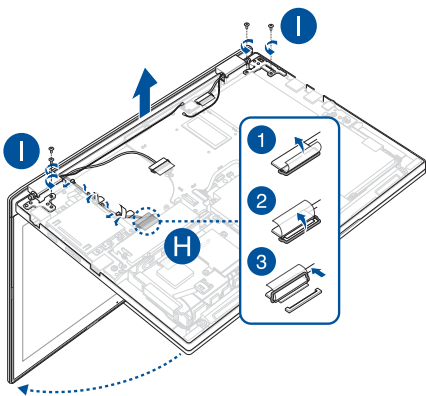
- B. Locate and disconnect all the cable(s) and antenna(s) as shown in the illustration below.
- C. Remove the shielding cover.



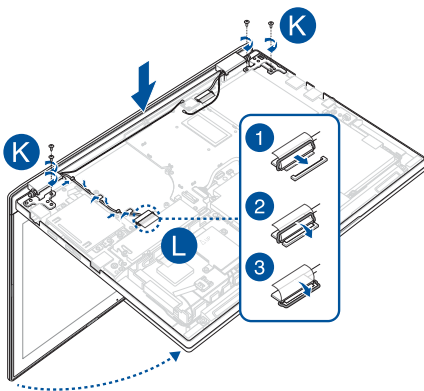
- D. Remove the fan module connector(s) from the motherboard.
- E. Remove the screw(s) from the cooling radiator.
- F. Remove the screw(s) from the fan module then remove the thermal module.



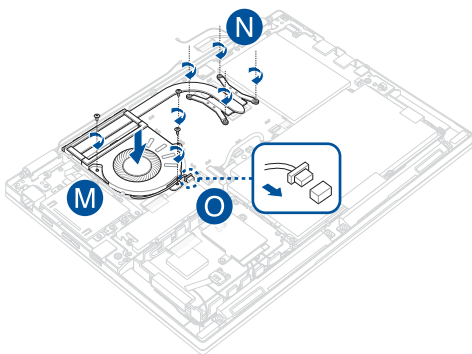
- G. Place your Notebook PC in the orientation as shown in the illustration below.
- H. Locate and disconnect the cable from the motherboard.
- I. Remove the screw(s) from the hinges then remove the display panel.



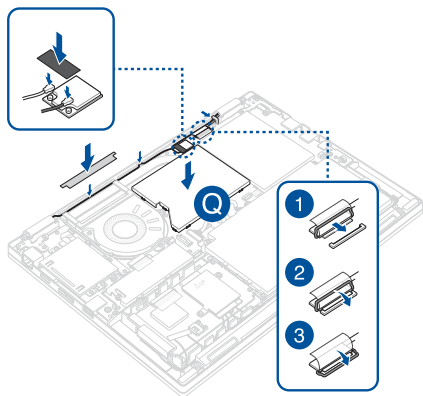
- J. Prepare the new LCD panel module.
- K. Align and place the hinge of the display panel on the screw holes of the motherboard then secure the hinge using the screw(s) you removed earlier.
- L. Route the cable through the cable guide(s) then reconnect the cable to the motherboard.



- M. Place the thermal module back in place and secure the fan module with the screw(s) you removed earlier.
- N. Secure the cooling radiator using the screw(s) you removed earlier.
- O. Reconnect the fan module cable(s) to the motherboard.



- P. Locate and reconnect all the cable(s) and antenna(s) as shown in the illustration below.
- Q. Reinstall the shielding cover.



## Replacing the 5G board

Refer to the following steps if you need to install a new 5G board to your Notebook PC:

---

**IMPORTANT!** Purchase a 5G board from authorized retailers of this Notebook PC to ensure maximum compatibility and reliability.

---

---

**WARNING!** Disconnect all the connected peripherals, any telephone or telecommunication lines and power connector (such as external power supply, battery pack, etc.) before removing the bottom cover.

---

---

**NOTE:**

- The appearance of your Notebook PC's bottom side and 5G board may vary per model but the 5G board installation remains the same.
  - It is recommended that you replace the 5G board under professional supervision. You may also visit an authorized service center for further assistance.
-

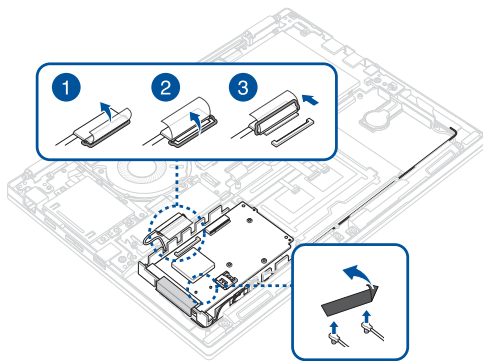
- A. Remove the bottom cover and disconnect the battery.

---

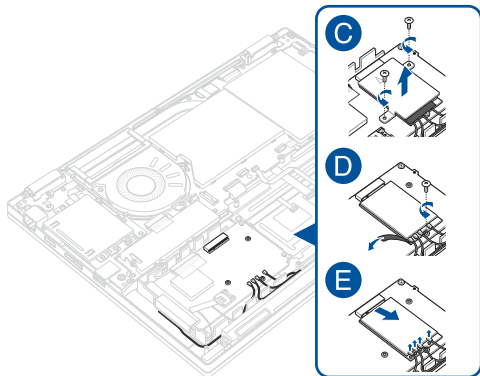
**NOTE:** For more details, refer to the *Removing the bottom cover* and *Disconnecting the battery* sections in this manual.

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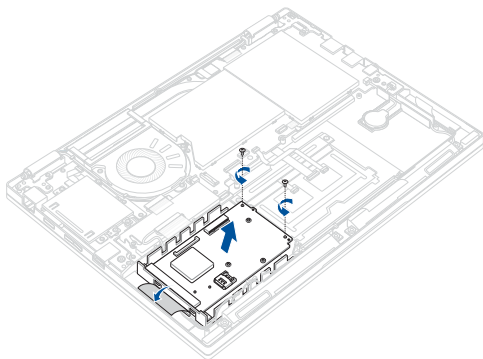
- B. Locate and disconnect all the cable(s) and antenna(s) as shown in the illustration below.



- C. Remove the screw(s) then remove the 5G card shielding cover.
- D. Remove the screw(s) from the 5G card.
- E. Remove the antenna(s) then remove the 5G card.

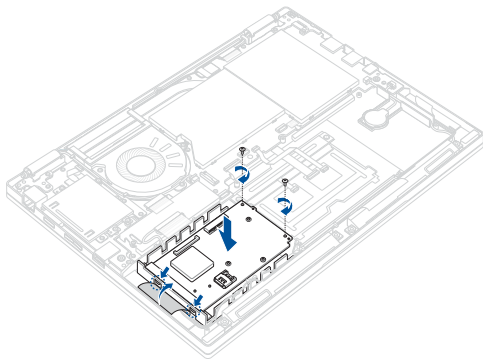


- F. Remove the screw(s) from the 5G board.
- G. Remove the 5G board from the chassis.

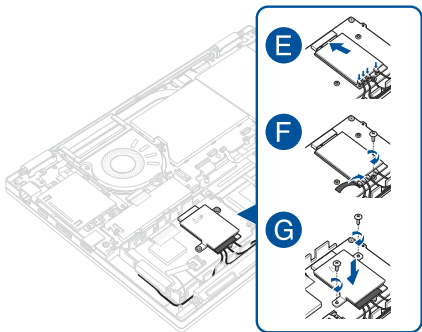


To install the new 5G board:

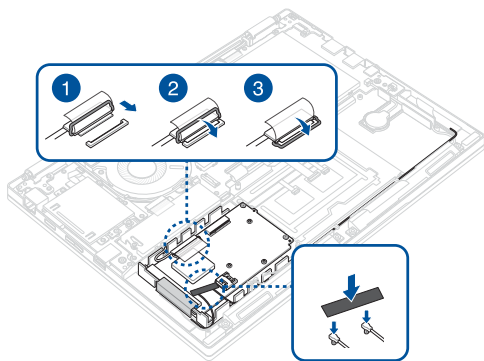
- A. Prepare the new 5G board.
- B. Align and reinstall the 5G board as shown in the illustration below.
- C. Secure the 5G board using the screw(s) you removed earlier.



- D. (Optional) Prepare the new 5G card.
- E. Align and insert the 5G card into the card slot then reconnect all the antenna(s).
- F. Secure the 5G card using the screw(s) you removed earlier.
- G. Secure the 5G card shielding cover using the screw(s) you removed earlier.



- H. Locate and reconnect all the cable(s) and antenna(s) as shown in the illustration below.



# Replacing the Hard Disk Drive

Refer to the following steps if you need to install a new HDD (Hard Disk Drive) to your Notebook PC:

---

**IMPORTANT!** Purchase an HDD from authorized retailers of this Notebook PC to ensure maximum compatibility and reliability.

---

---

**WARNING!** Disconnect all the connected peripherals, any telephone or telecommunication lines and power connector (such as external power supply, battery pack, etc.) before removing the bottom cover.

---

---

**NOTE:**

- The appearance of your Notebook PC's bottom side and HDD may vary per model but the HDD installation remains the same.
  - It is recommended that you replace the HDD under professional supervision. You may also visit an authorized service center for further assistance.
-

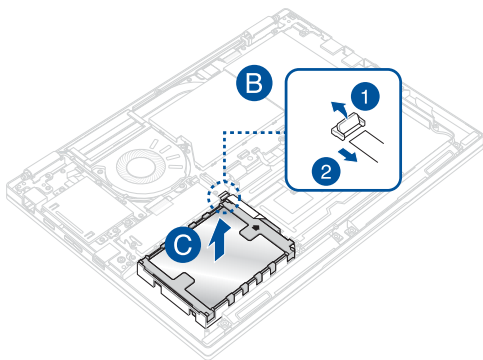
- A. Remove the bottom cover and disconnect the battery.

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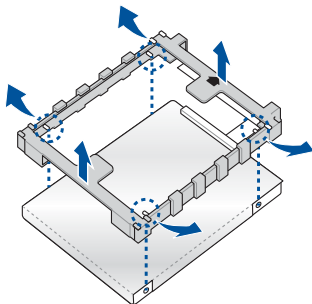
**NOTE:** For more details, refer to the *Removing the bottom cover* and *Disconnecting the battery* sections in this manual.

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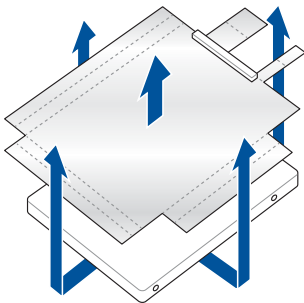
- B. Remove the cable(s) from the HDD connector.
- C. Remove the HDD bay from the chassis.



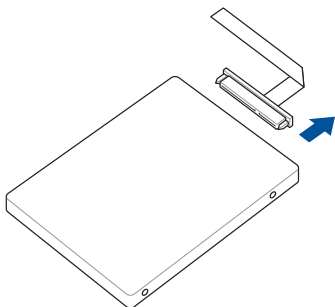
- D. Remove the rubber cover from the HDD.



- E. Remove the foiler from the HDD.

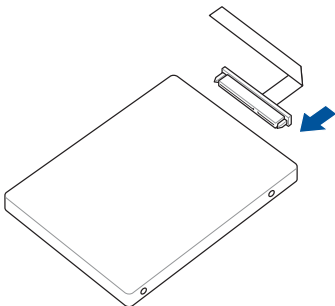


- F. Remove the FPC connector from the HDD.

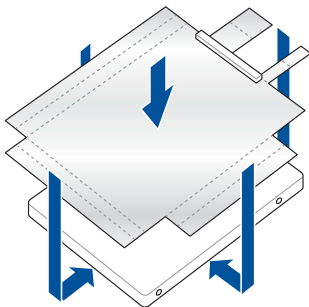


- G. Prepare the new HDD.

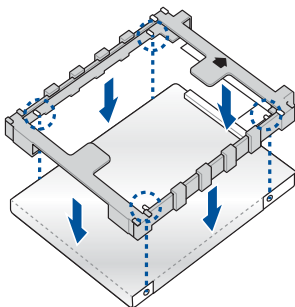
- H. In the orientation shown, reconnect the FPC connector to the HDD.



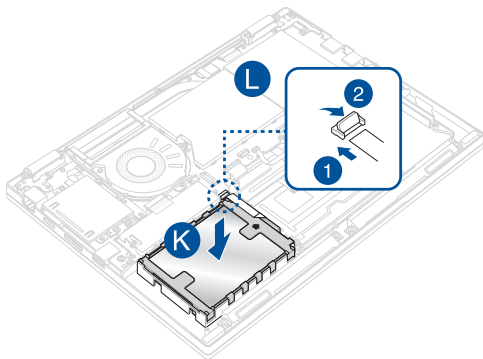
- I. Align and reattach the foiler as shown in the illustration below.



- J. Align and reattach the rubber cover as shown in the illustration below.



- K. In the orientation shown, reinstall the HDD assembly to the chassis.
- L. Reconnect the cable(s) to the HDD connector.



# Replacing the motherboard

Refer to the following steps when installing the motherboard to your Notebook PC:

---

**IMPORTANT!** Purchase your motherboard from authorized retailers of this Notebook PC to ensure maximum compatibility and reliability.

---

---

**WARNING!** Disconnect all the connected peripherals, any telephone or telecommunication lines and power connector (such as external power supply, battery pack, etc.) before removing the bottom cover.

---

---

**NOTE:**

- The appearance of your Notebook PC's bottom view and motherboard may vary per model but the module installation remains the same.
  - It is recommended that you install the motherboard under professional supervision. You may also visit an authorized service center for further assistance.
-

- A. Remove the bottom cover and disconnect the battery.

---

**NOTE:** For more details, refer to the *Removing the bottom cover and Disconnecting the battery* sections in this manual.

---

- B. Remove the battery.

---

**NOTE:** For more details, refer to the *Replacing the battery* section in this manual.

---

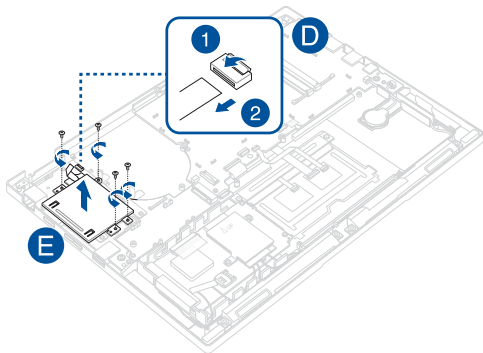
- C. Remove the LCD module.

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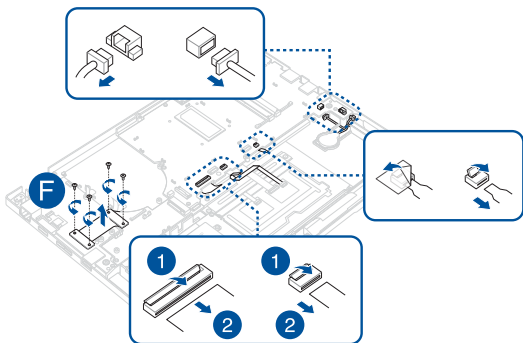
**NOTE:** For more details, refer to the *Replacing the LCD module* section in this manual.

---

- D. Locate and disconnect the smart card reader cable.
- E. Remove the screw(s) then remove the smart card reader module.



- F. Remove the screw(s) then remove the bracket.
- G. Locate and disconnect all the cable(s) as shown in the illustration below.



- H. Remove the RAM module.

---

**NOTE:** For more details, refer to the *Replacing the RAM module* section in this manual.

---

- I. Remove the M.2 SSD module.

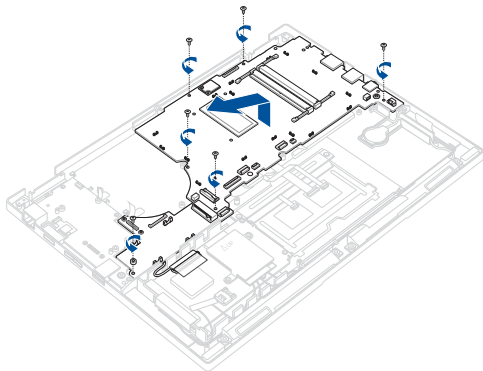
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**NOTE:** For more details, refer to the *Replacing the M.2 SSD module* section in this manual.

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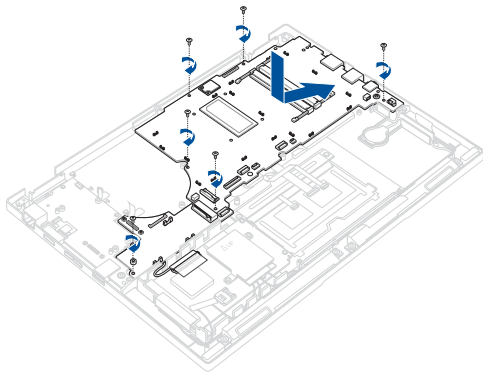
- J. Remove the screw(s) from the motherboard.

- K. Remove the motherboard from the chassis.



To install the new motherboard:

- A. Prepare the new motherboard.
- B. Align and place the motherboard back in the chassis then secure the motherboard using the screw(s) you removed earlier.



- C. Reinstall the RAM module.

---

**NOTE:** For more details, refer to the *Replacing the RAM module* section in this manual.

---

- D. Reinstall the M.2 SSD module.

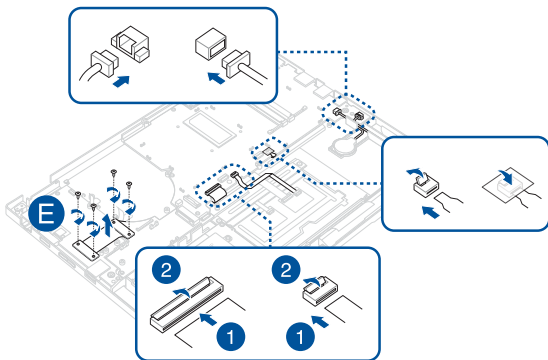
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**NOTE:** For more details, refer to the *Replacing the M.2 SSD module* section in this manual.

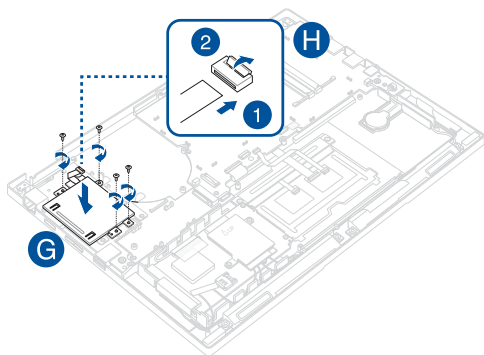
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- E. Secure the bracket using the screw(s) you removed earlier.

- F. Locate and reconnect all the cable(s) as shown in the illustration below.

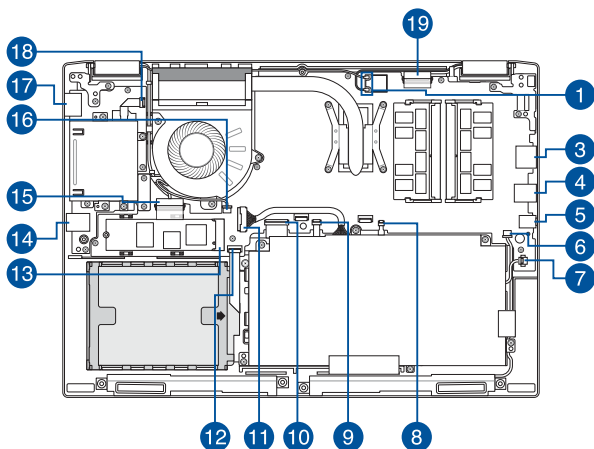


- G. Align and reinstall the smart card reader module then secure the smart card reader bracket using the screw(s) you removed earlier.
- H. Locate and reconnect the smart card reader cable.

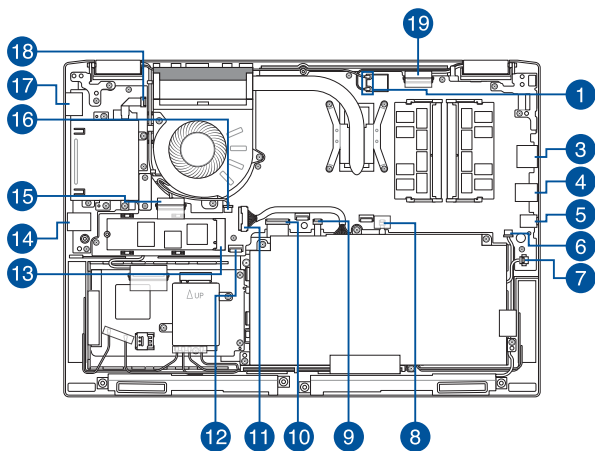


# Wiring and connection diagrams

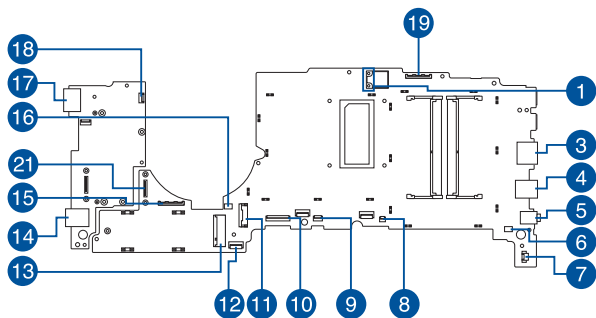
## HDD model



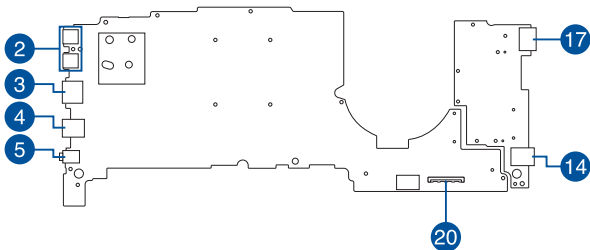
## 5G board model



## Top View



## Bottom View



- |                                 |                                 |
|---------------------------------|---------------------------------|
| 1. WLAN antenna connector       | 12. HDD FFC connector           |
| 2. USB Type-C® connector        | 13. SSD connector               |
| 3. HDMI connector               | 14. USB Type-A connector        |
| 4. USB Type-A connector         | 15. CMOS connector              |
| 5. Audio connector              | 16. Fan connector               |
| 6. Speaker connector            | 17. RJ45 connector              |
| 7. RTC connector                | 18. Smart card reader connector |
| 8. Keyboard backlight connector | 19. EDP connector               |
| 9. FFC connector                | 20. 5G cable connector          |
| 10. Keyboard connector          | 21. I/O connector               |
| 11. Battery connector           |                                 |

