

E20142

First Edition / May 2022

IN SEARCH OF INCREDIBLE



Service Manual



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Disclaimer

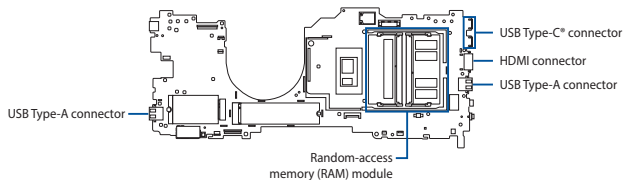
ASUS is not responsible for direct, indirect, intentional or unintentional damages resulting from improper installation and operation.

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.

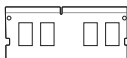
Major components



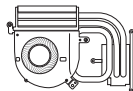
Motherboard with ports and connectors



M.2 SSD module



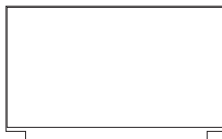
RAM module



Thermal module



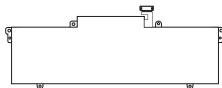
Keyboard (Top case module)



LCD panel module



Power adapter



Battery and power connector

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

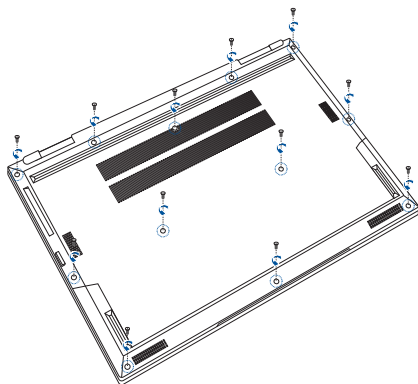


Tweezers

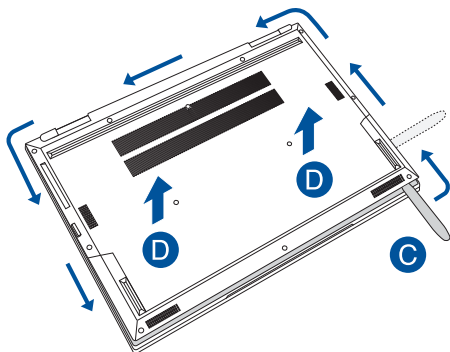
Removing the compartment cover

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

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



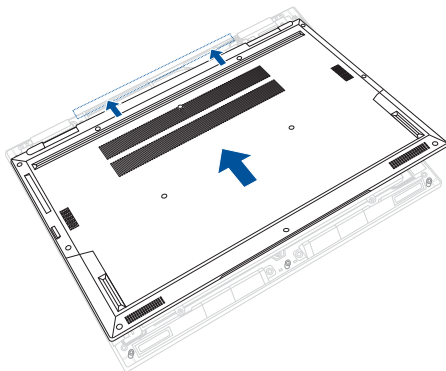
- B. Place your Notebook PC in the orientation as shown in the illustration below.
- C. Use the plastic blade to pry open the indicated area of the compartment cover as shown in the illustration below.
- D. Remove the compartment cover.



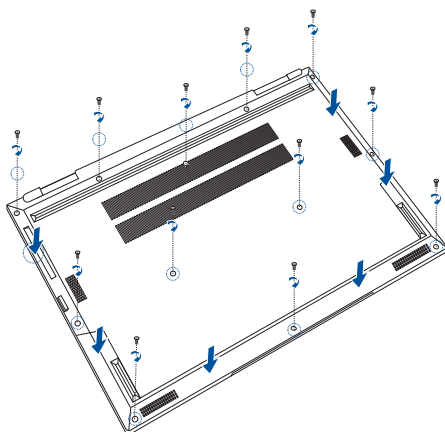
IMPORTANT! Avoid sliding the plastic blade along the side of your Notebook PC to prevent damage.

To reattach the compartment cover:

- A. Align and reattach the compartment cover.



- B. Secure the compartment cover using the screw(s) you removed earlier.

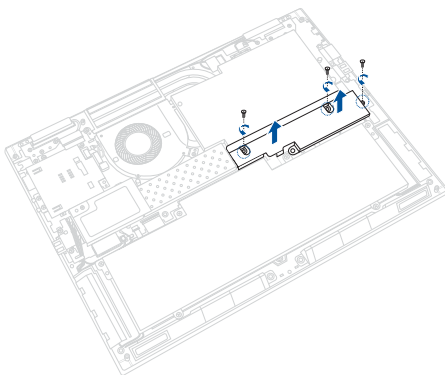


Disconnecting the battery

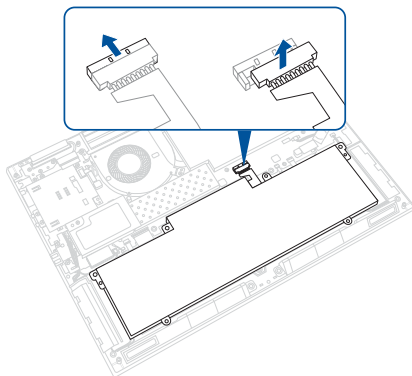
- A. Remove the compartment cover.

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

- B. Locate and remove the screw(s) then remove the bracket(s) as shown in the illustration below.

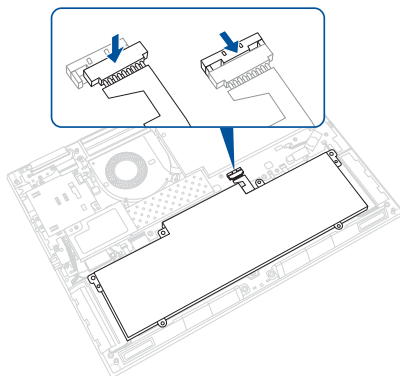


- C. Locate and disconnect the battery power cable(s) as shown in the illustration below.

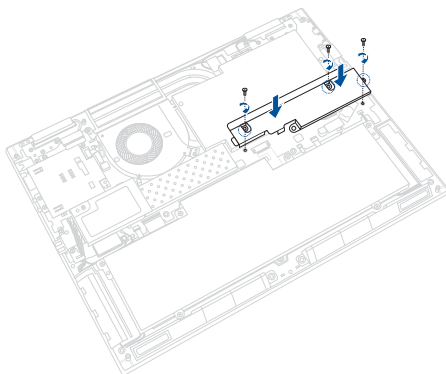


To connect the battery:

- A. Align and connect the cable to the battery connector before you reattach the compartment cover.



- B. Reinstall the bracket(s) then secure the bracket(s) using the screw(s) you removed earlier.



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 compartment cover.

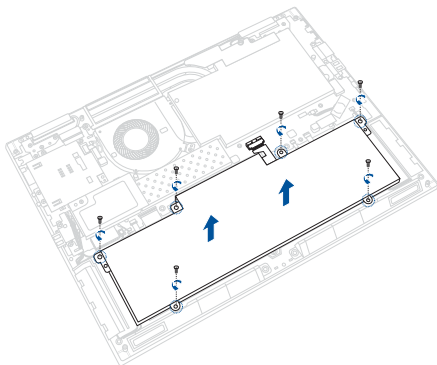
NOTE:

- 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.
-

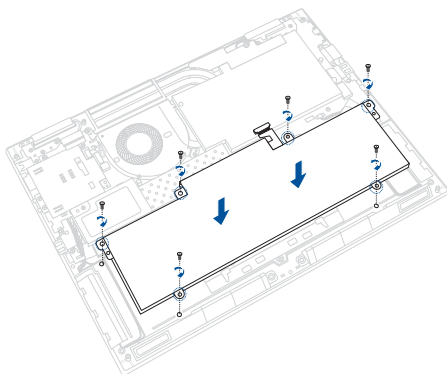
- A. Remove the compartment cover and disconnect the battery.

NOTE: For more details, refer to the *Removing the compartment 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 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 compartment cover.

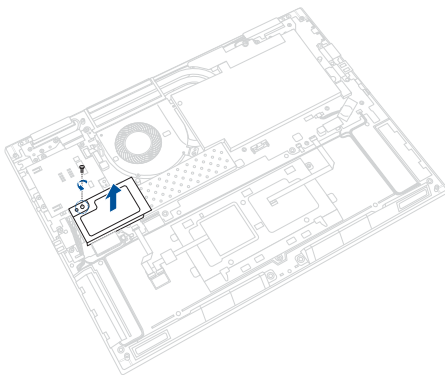
NOTE:

- 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.
-

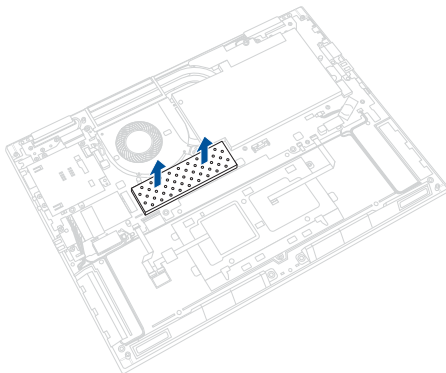
- A. Remove the compartment cover and disconnect the battery.

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

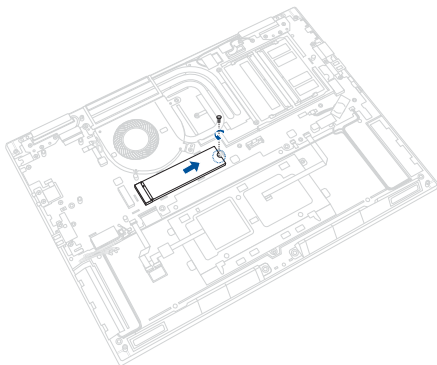
- B. Locate and remove the screw(s) then remove the bracket(s).



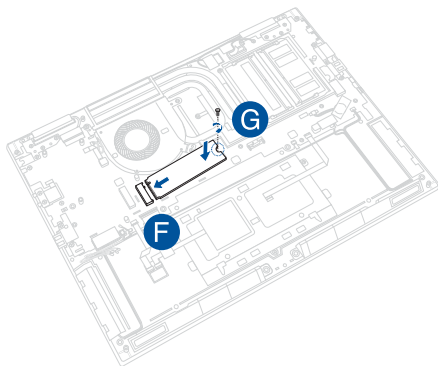
- C. Remove the M.2 SSD module cover.



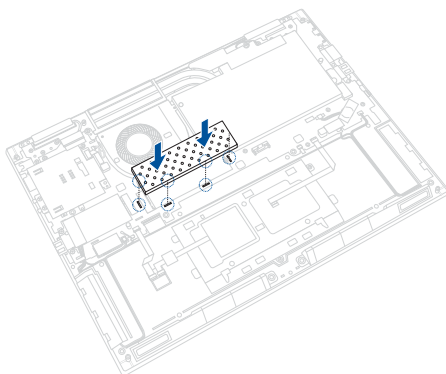
- D. Remove the screw(s) then remove the M.2 SSD module from the motherboard.



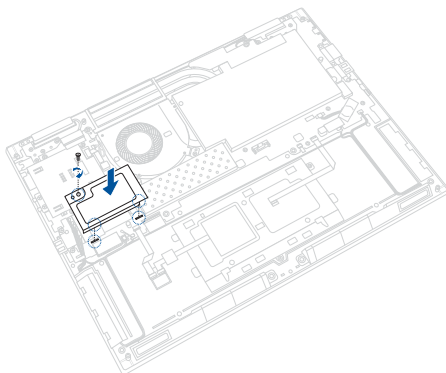
- E. Prepare the new M.2 SSD module.
- F. Align and insert the M.2 SSD module into the M.2 connector(s) on the motherboard.
- G. Secure the M.2 SSD module in place using the screw(s) you removed earlier.



- H. Align and reinstall the M.2 SSD module cover.



- I. Reinstall the bracket(s) then secure the bracket(s) 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:

IMPORTANT! Visit an authorized service center or retailer for information on RAM module upgrades for your Notebook PC. Purchase your RAM modules 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 compartment cover.

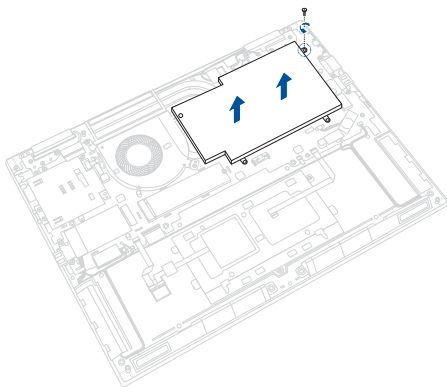
NOTE:

- The appearance of your Notebook PC's bottom view 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.
-

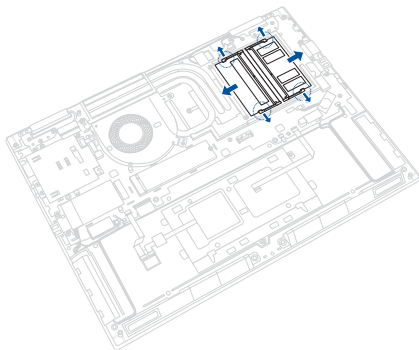
- A. Remove the compartment cover and disconnect the battery.

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

- B. Remove the screw(s) then remove the shielding cover from the motherboard.

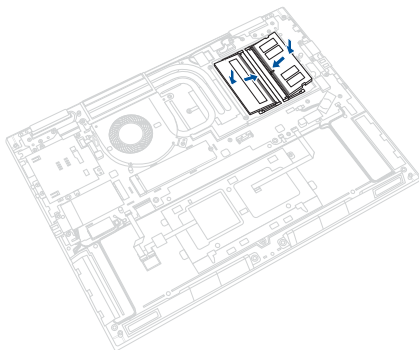


- C. Push the clips outwards to remove the RAM module.

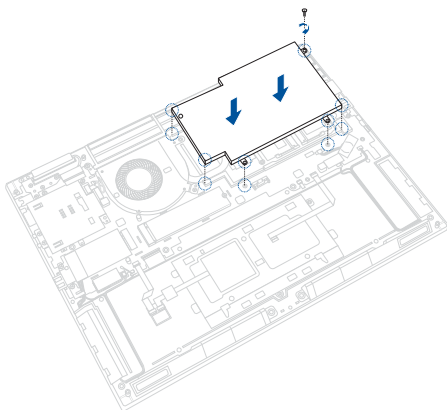


- D. Prepare the new RAM module.

- E. Align and insert the RAM module into the RAM module slot.



- F. Align and reinstall the shielding cover then secure the shielding cover using the screw(s) you removed earlier.



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 compartment 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.
-

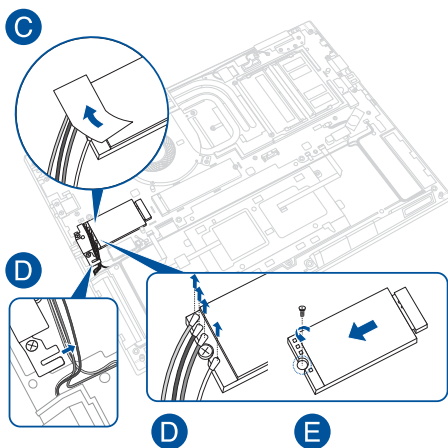
- A. Remove the compartment cover and disconnect the battery.

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

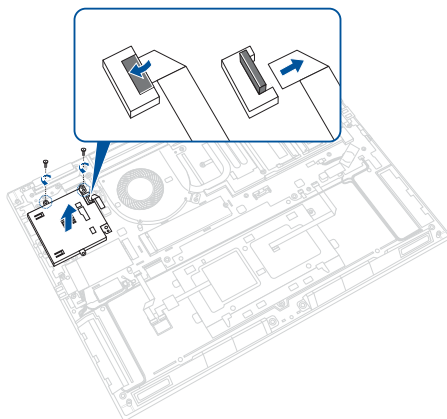
- B. Remove the RAM module and the M.2 SSD module.

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

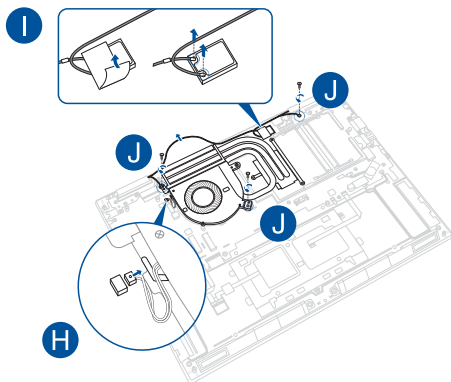
- C. In the orientation shown, locate and remove the tape.
- D. Remove all the antenna(s).
- E. Remove the screw(s) then remove the LTE module.



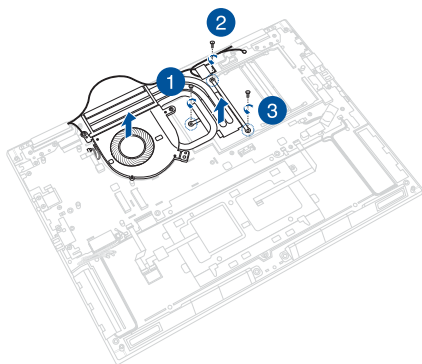
- F. Locate and remove the screw(s).
- G. Slight lift the bracket(s) to remove the cable(s) then remove the bracket(s) from the motherboard as shown in the illustration below.



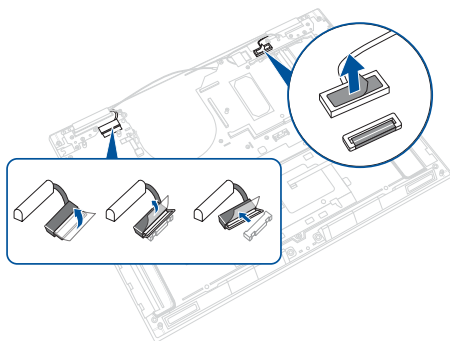
- H. In the orientation shown, locate and remove the fan connector(s).
- I. Locate and remove the antenna(s).
- J. Locate and remove the screw(s).



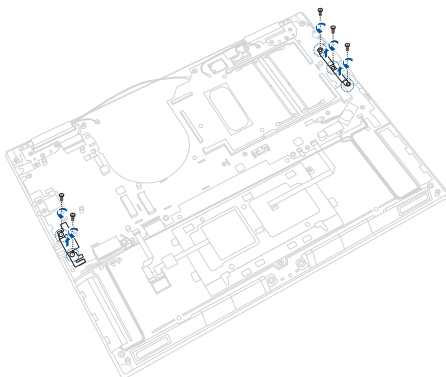
- K. Remove the screw(s) one by one in the sequence as shown in the illustration below.
- L. Remove the thermal module from the motherboard.



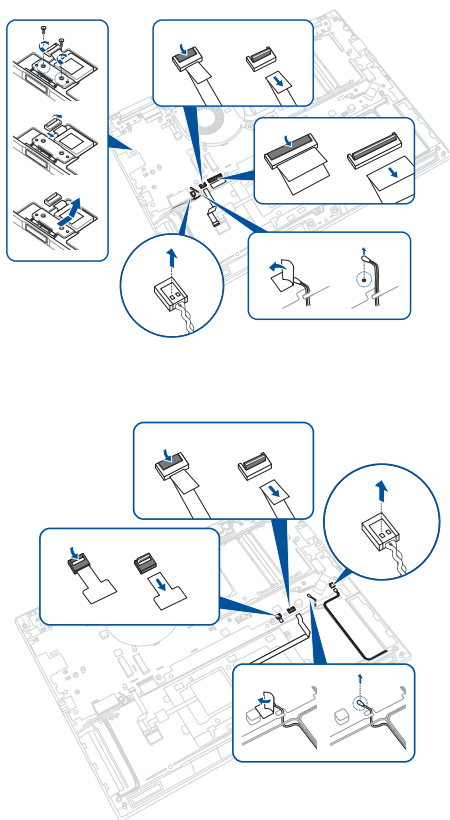
- M. Locate and remove all the cable(s) and connector(s) as shown in the illustration below.



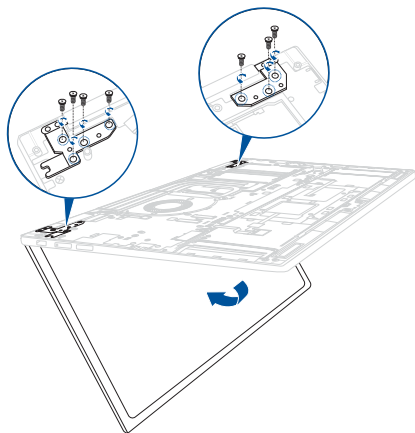
- N. Locate and remove the screw(s) then remove the bracket(s) as shown in the illustration below.



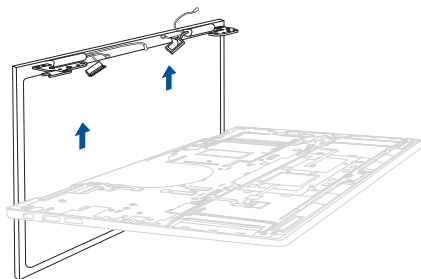
- O. Locate and remove all the cable(s) and connector(s) as shown in the illustration below.



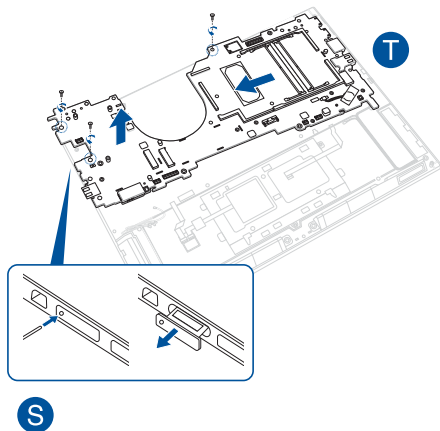
- P. Place your Notebook PC in the orientation as shown in the illustration below.
- Q. Remove the screw(s) from the hinges.



R. Remove the display panel.



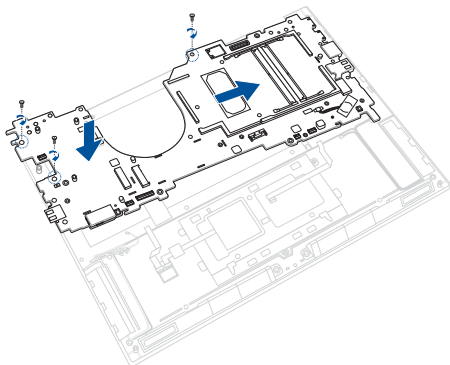
- S. Insert a pin to remove the SIM card tray.
- T. Remove the screw(s) from the motherboard then remove the motherboard from the chassis.



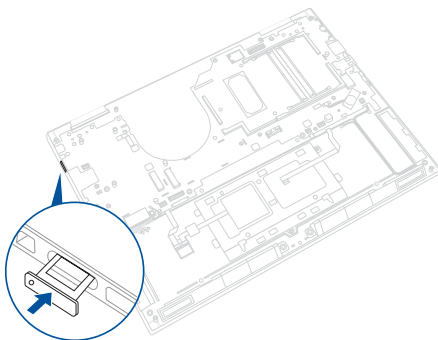
To install the new motherboard:

- 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.

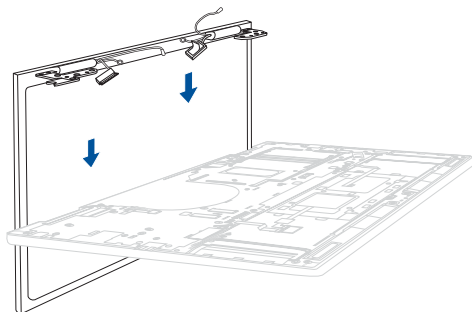
IMPORTANT! Ensure the FPC is not obstructed in any way.



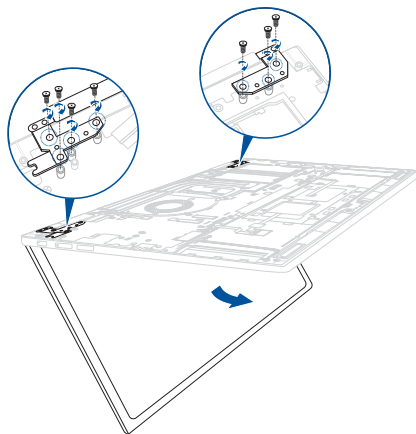
- C. Reinstall the SIM card tray.



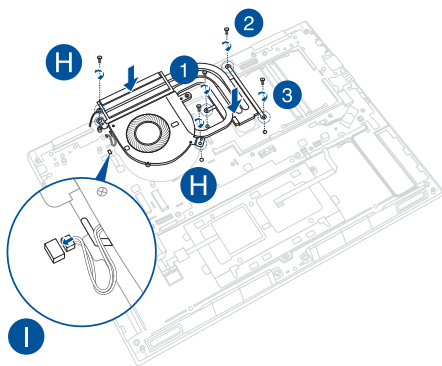
- D. In the orientation shown, align and place the hinge of the display panel on the screw holes of the motherboard.



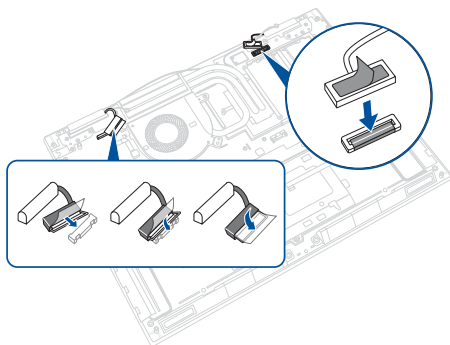
- E. Secure the hinge using the screw(s) you removed earlier.



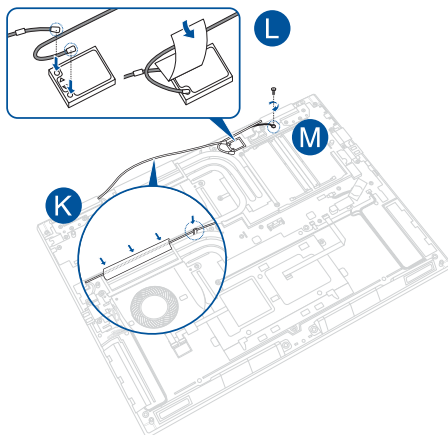
- F. Align and place the thermal module on the screw holes of the motherboard.
- G. Secure the screw(s) one by one in the sequence as shown in the illustration below.
- H. Secure the fan module to the motherboard using the screw(s) you removed earlier.
- I. Reconnect the fan connector(s) to the motherboard.



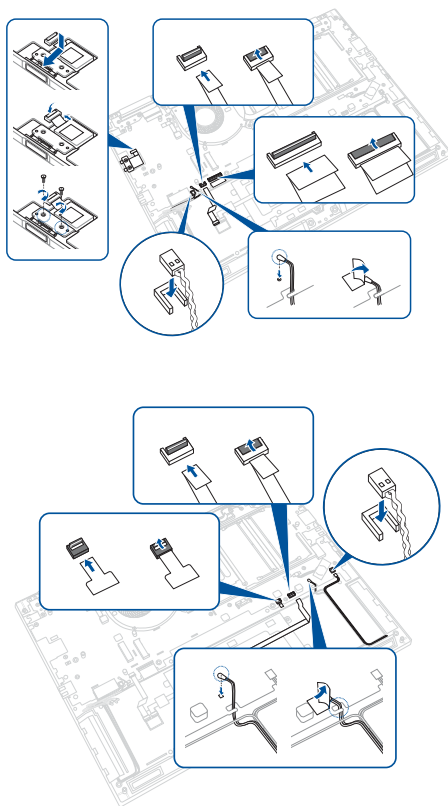
- J. Locate and reconnect all the cable(s) and connector(s) as shown in the illustration below.



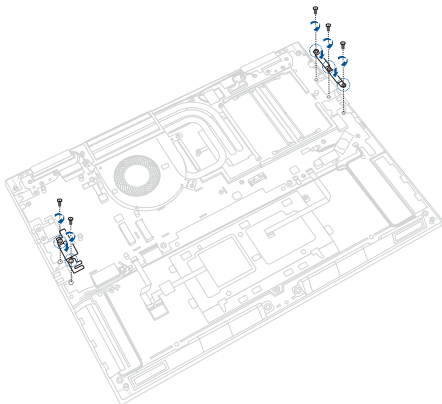
- K. Route the cable(s) through the cable guide.
- L. Reconnect the antenna(s).
- M. Secure the ground strap using the screw(s) you removed earlier as shown in the illustration below.



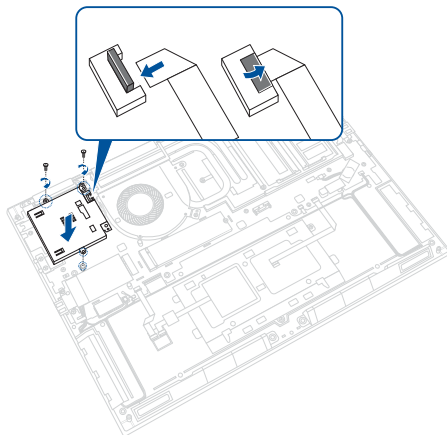
- N. Locate and reconnect all the cable(s) and connector(s) as shown in the illustration below.



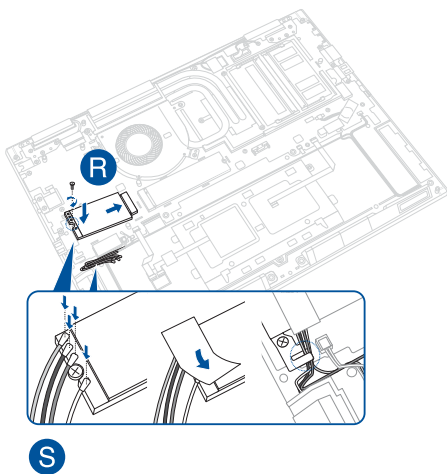
- O. Locate and reinstall the bracket(s) then secure the bracket(s) using the screw(s) you removed earlier as shown in the illustration below.



- P. Reconnect the cable(s) then align and place the bracket(s) on the screw holes of the motherboard.
- Q. Secure the bracket(s) using the screw(s) you removed earlier.



- R. Align and insert the LTE module into the LTE connector on the motherboard then secure the LTE module in place using the screw(s) you removed earlier.
- S. Reconnect all the antenna(s) as shown in the illustration below.



Replacing the LCD module

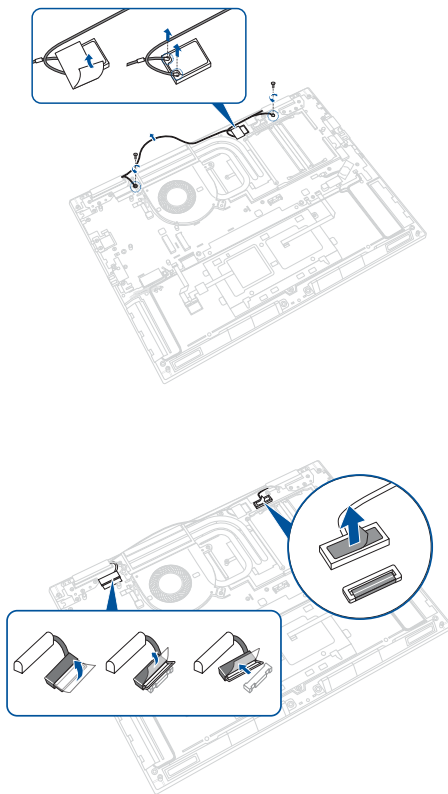
IMPORTANT! Do not bend the LCD panel in any ways to avoid risk of LCD panel leakage.

NOTE: The illustrations are for reference only.

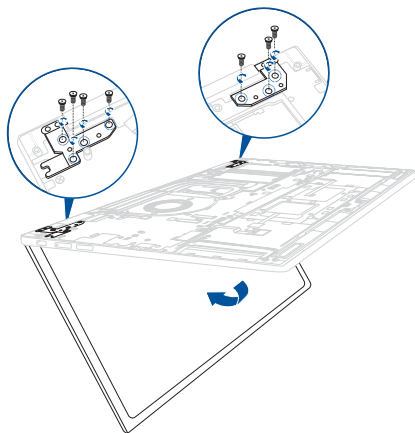
- A. Remove the compartment cover and disconnect the battery.

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

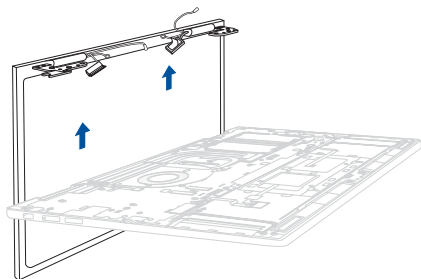
- B. Locate and remove all the antenna(s) and cable(s) as shown in the illustration below.



- C. Place your Notebook PC in the orientation as shown in the illustration below.
- D. Remove the screw(s) from the hinges.

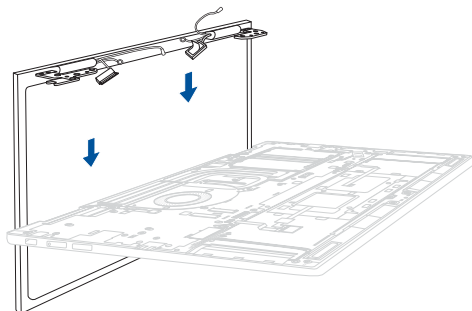


- E. Remove the display panel.

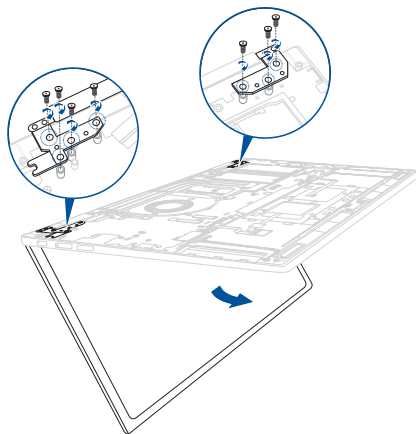


To install the new LCD panel module:

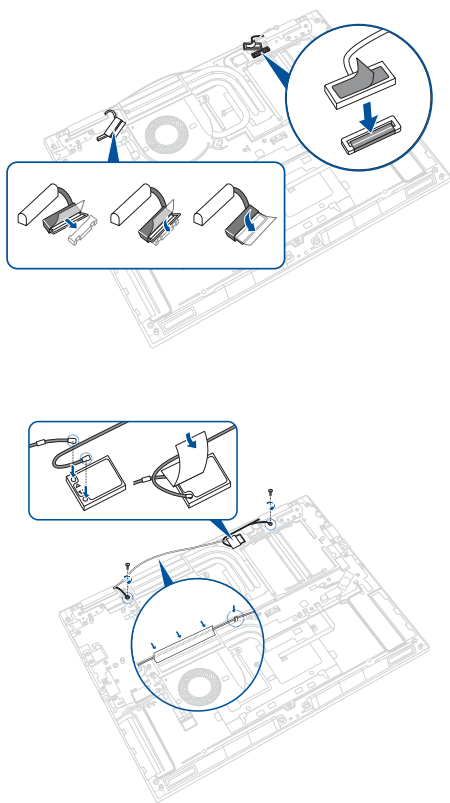
- A. Prepare the new LCD panel module.
- B. In the orientation shown, align and place the hinge of the display panel on the screw holes of the motherboard.



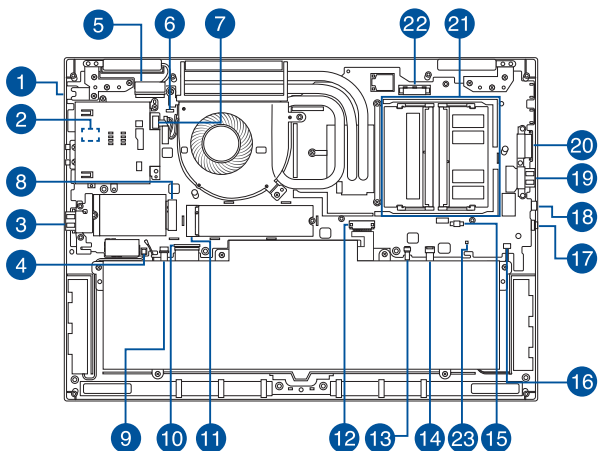
- C. Secure the hinge using the screw(s) you removed earlier.



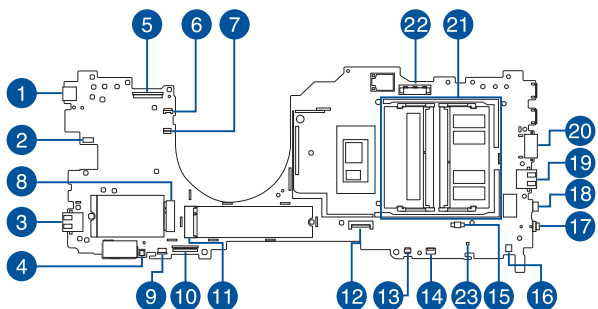
- D. In the orientation shown, locate and reconnect all the antenna(s) and cable(s).



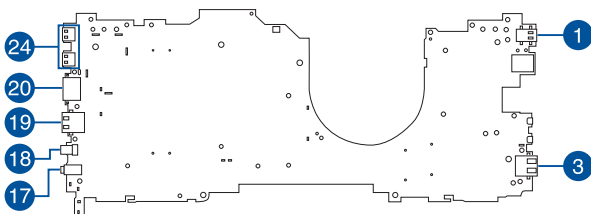
Wiring and connection diagrams



Top View



Bottom View



- | | |
|---------------------------------|----------------------------------|
| 1. Mini DisplayPort connector | 13. Keyboard backlight connector |
| 2. Fingerprint connector | 14. Touchpad connector |
| 3. USB Type-A connector | 15. Coin battery connector |
| 4. Speaker connector | 16. Speaker connector |
| 5. Touch panel/Camera connector | 17. Audio connector |
| 6. Fan connector | 18. LAN connector |
| 7. Smart card reader connector | 19. USB Type-A connector |
| 8. LTE connector | 20. HDMI connector |
| 9. NFC connector | 21. DIMM connector |
| 10. Keyboard connector | 22. eDP connector |
| 11. SSD connector | 23. RF connector |
| 12. Battery connector | 24. USB Type-C® connector |

[illegible]