

E18001

First Edition / June 2022

IN SEARCH OF INCREDIBLE



Service Manual

ASUS

COPYRIGHT INFORMATION

No part of this manual, including the products and software described in it, may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language in any form or by any means, except documentation kept by the purchaser for backup purposes, without the express written permission of ASUSTeK COMPUTER INC. ("ASUS").

ASUS PROVIDES THIS MANUAL "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL ASUS, ITS DIRECTORS, OFFICERS, EMPLOYEES OR AGENTS BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES (INCLUDING DAMAGES FOR LOSS OF PROFITS, LOSS OF BUSINESS, LOSS OF USE OR DATA, INTERRUPTION OF BUSINESS AND THE LIKE), EVEN IF ASUS HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES ARISING FROM ANY DEFECT OR ERROR IN THIS MANUAL OR PRODUCT.

Products and corporate names appearing in this manual may or may not be registered trademarks or copyrights of their respective companies, and are used only for identification or explanation and to the owners' benefit, without intent to infringe.

SPECIFICATIONS AND INFORMATION CONTAINED IN THIS MANUAL ARE FURNISHED FOR INFORMATIONAL USE ONLY, AND ARE SUBJECT TO CHANGE AT ANY TIME WITHOUT NOTICE, AND SHOULD NOT BE CONSTRUED AS A COMMITMENT BY ASUS. ASUS ASSUMES NO RESPONSIBILITY OR LIABILITY FOR ANY ERRORS OR INACCURACIES THAT MAY APPEAR IN THIS MANUAL, INCLUDING THE PRODUCTS AND SOFTWARE DESCRIBED IN IT.

Copyright © 2022 ASUSTeK COMPUTER INC. All Rights Reserved.

LIMITATION OF LIABILITY

Circumstances may arise where because of a default on ASUS' part or other liability, you are entitled to recover damages from ASUS. In each such instance, regardless of the basis on which you are entitled to claim damages from ASUS, ASUS is liable for no more than damages for bodily injury (including death) and damage to real property and tangible personal property; or any other actual and direct damages resulted from omission or failure of performing legal duties under this Warranty Statement, up to the listed contract price of each product.

ASUS will only be responsible for or indemnify you for loss, damages or claims based in contract, tort or infringement under this Warranty Statement.

This limit also applies to ASUS' suppliers and its reseller. It is the maximum for which ASUS, its suppliers, and your reseller are collectively responsible.

UNDER NO CIRCUMSTANCES IS ASUS LIABLE FOR ANY OF THE FOLLOWING: (1) THIRD-PARTY CLAIMS AGAINST YOU FOR DAMAGES; (2) LOSS OF, OR DAMAGE TO, YOUR RECORDS OR DATA; OR (3) SPECIAL, INCIDENTAL, OR INDIRECT DAMAGES OR FOR ANY ECONOMIC CONSEQUENTIAL DAMAGES (INCLUDING LOST PROFITS OR SAVINGS), EVEN IF ASUS, ITS SUPPLIERS OR YOUR RESELLER IS INFORMED OF THEIR POSSIBILITY.

SERVICE AND SUPPORT

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

Table of Contents

Disclaimer	4
Safety precautions.....	4
Major components.....	6
Installation tools.....	7
Removing the compartment cover.....	8
Disconnecting the battery	11
Replacing the battery.....	13
Replacing the Hard Disk Drive	18
Replacing the motherboard	23
Replacing the LCD module	49
Replacing the M.2 SSD module	65
Replacing the RAM module	67
Screw map.....	69
Wiring and connection diagrams	71

Disclaimer

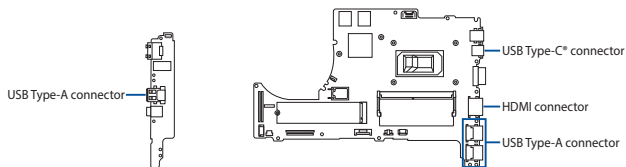
ASUS is not responsible for direct, indirect, intentional or unintentional damages resulting from improper installation and operation.

Safety precautions

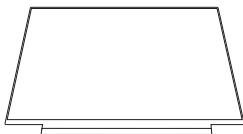
- Keep liquids or moisture away from your Notebook PC before installing or removing any components.
- Ensure to place your Notebook PC on a stable surface before installing or removing any components.
- Detach the clip or flap before removing the signal cables to prevent damage.
- Disconnect the power 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



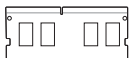
Motherboard with ports and connectors



LCD panel module



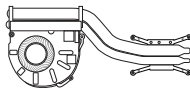
Keyboard



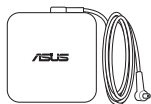
RAM module



M.2 SSD module



Thermal module



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

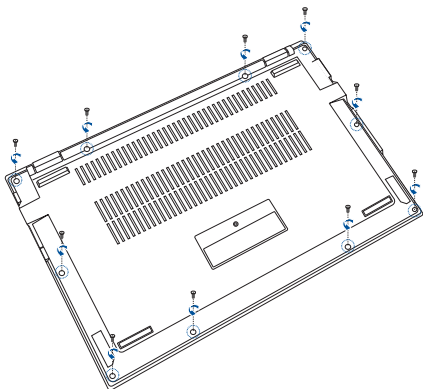


Tweezers

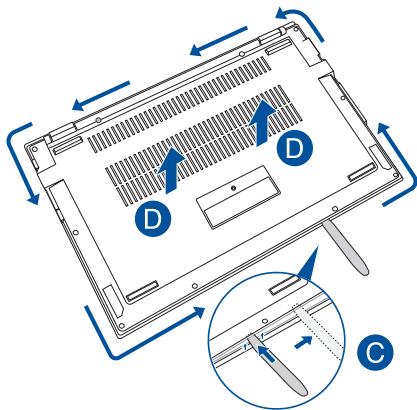
Removing the compartment cover

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.



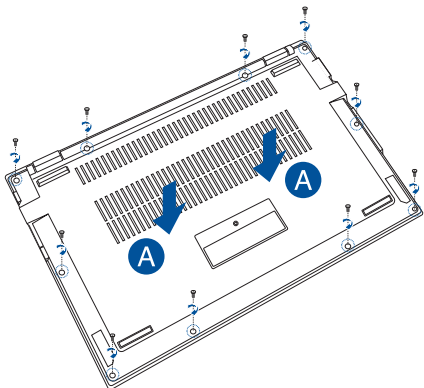
- B. Prepare the plastic blade.
- C. Use the plastic blade to pry open the indicated area of the compartment cover as shown in the illustration below.
- D. Pull out the compartment cover and remove it completely from your Notebook PC.



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

To reattach the compartment cover:

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

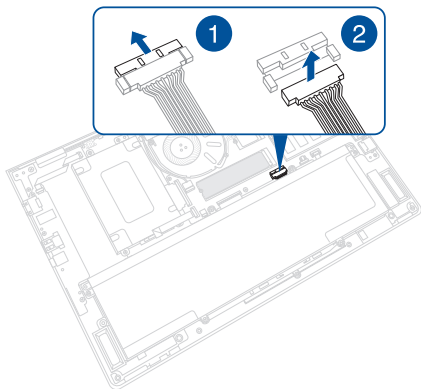


Disconnecting the battery

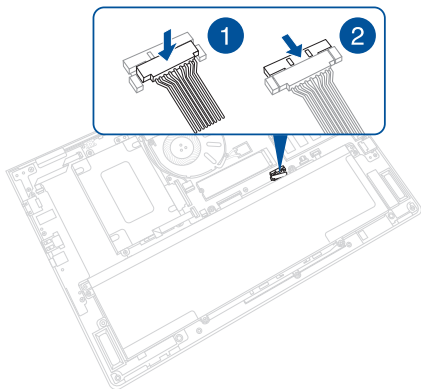
- A. Remove the compartment cover.
-

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

- B. Disconnect the cable from the battery connector.



To connect the battery, align and connect the cable to the battery connector before you reattach the compartment 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 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.
-

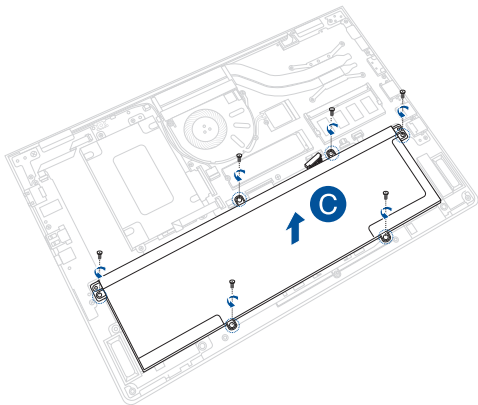
- A. Remove the compartment cover and disconnect the battery.

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

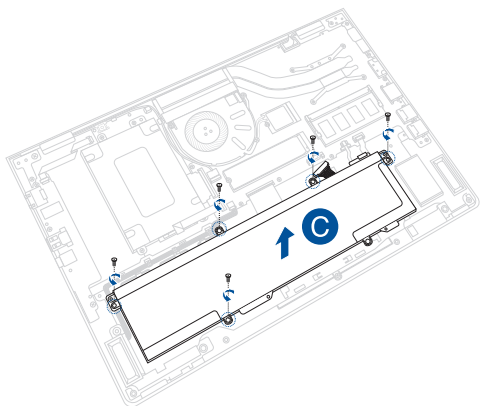
- B. Remove the screw(s) from the battery.

- C. Remove the battery.

14" model

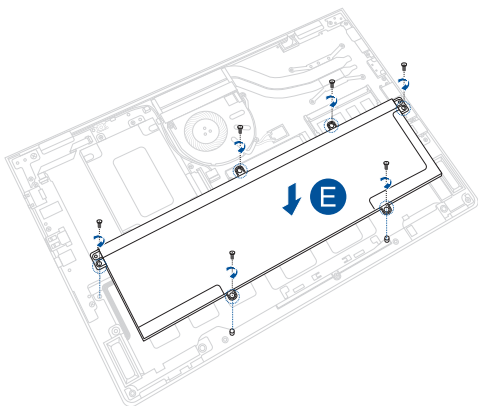


15" model

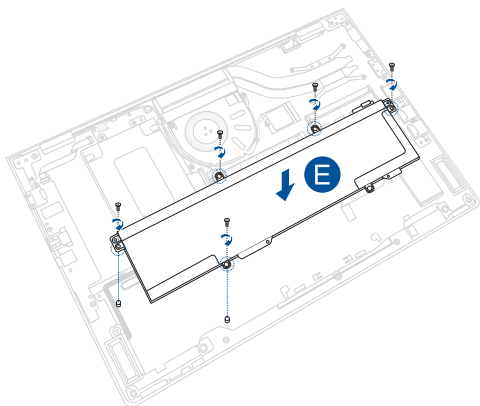


- D. Prepare the new battery.
- E. Reinstall the battery.
- F. Secure the battery using the screw(s) you removed earlier.

14" model



15" model



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 compartment cover.

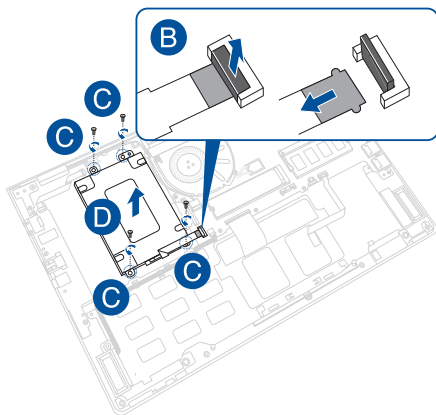
NOTE:

- 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.
-

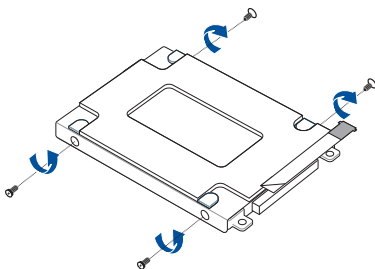
- A. Remove the compartment cover and disconnect the battery.

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

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

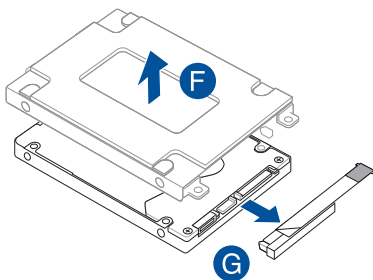


- E. Remove all the screw(s) on the sides of the HDD bay.

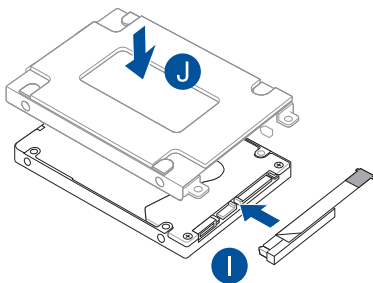


- F. Remove the HDD bay.

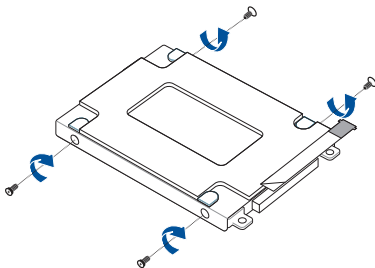
- G. Remove the FPC connector from the HDD.



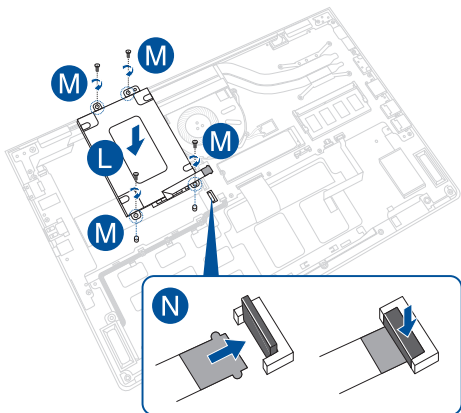
- H. Prepare the new HDD.
- I. In the orientation shown, reconnect the FPC connector to the HDD.
- J. Reattach the HDD bay to the HDD.



- K. Secure the HDD using the screw(s) you removed earlier.



- L. Reinstall the HDD bay.
- M. Secure the HDD bay using the screw(s) you removed earlier.
- N. 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 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.
-

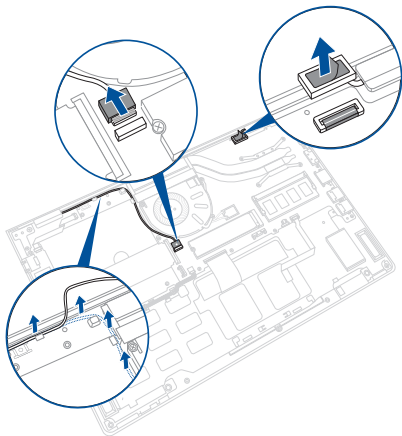
- A. Remove the compartment cover and disconnect the battery.

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

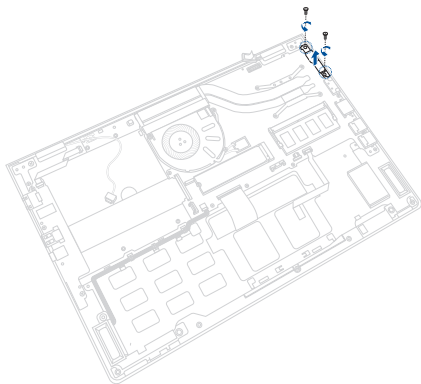
- B. Remove the battery.

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

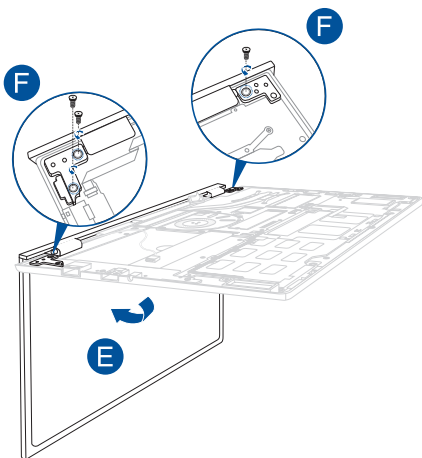
- C. Locate and disconnect all the cable(s) as shown in the illustration below.



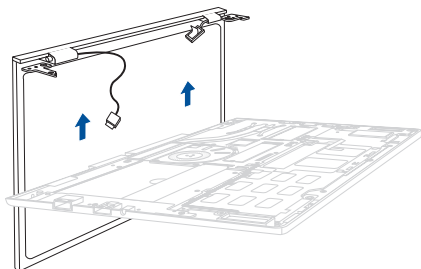
- D. Locate and remove the screw(s) then remove the bracket(s) as shown in the illustration below.



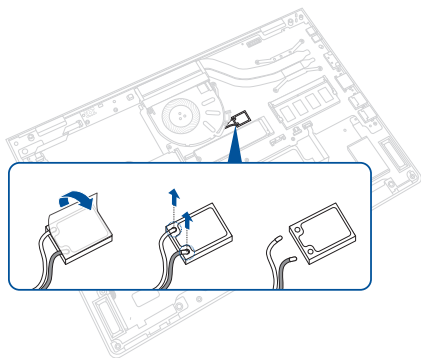
- E. Place your Notebook PC in the orientation as shown in the illustration below.
- F. Remove the screw(s) from the hinge.



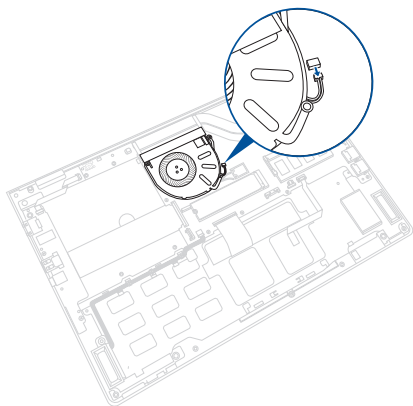
G. Remove the display panel.



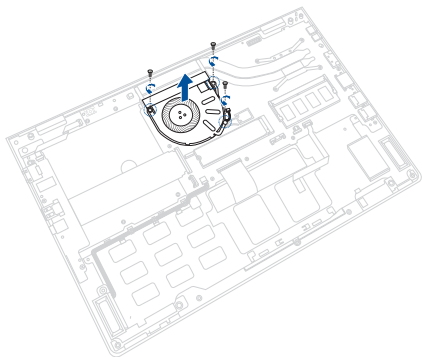
- H. Locate and remove all the antenna(s) as shown in the illustration below.



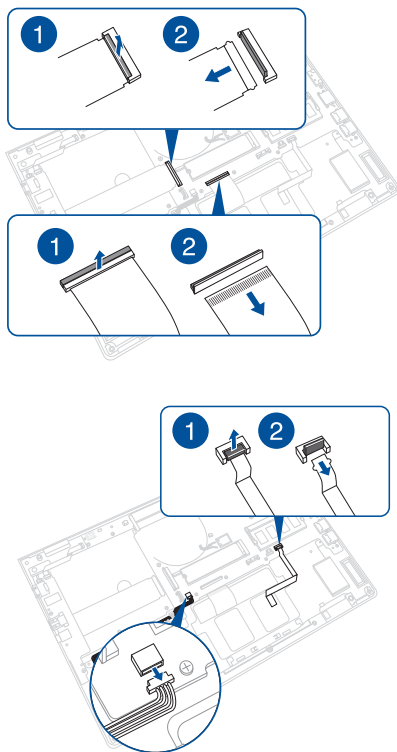
- I. Remove the fan module connector(s) from the motherboard.



- J. Remove the screw(s) then remove the fan module(s).



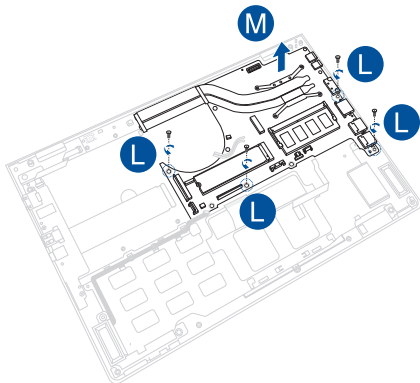
- K. Locate and remove all the cable(s) and connector(s) as shown in the illustration below.



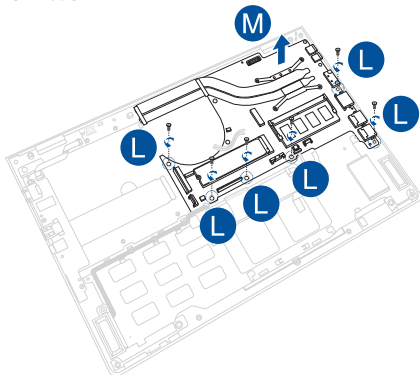
L. Remove the screw(s) from the motherboard.

M. Remove the motherboard from the chassis.

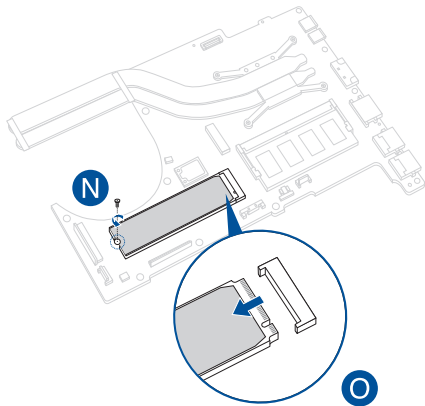
14" model



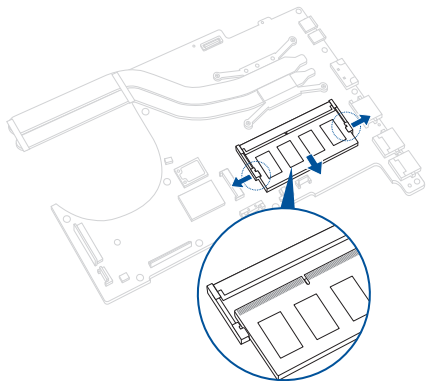
15" model



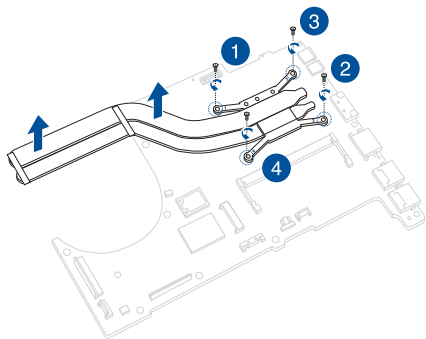
- N. Remove the screw(s) from the M.2 SSD module.
- O. Remove the M.2 SSD module from the motherboard.



- P. Remove the RAM module from the RAM module slot.

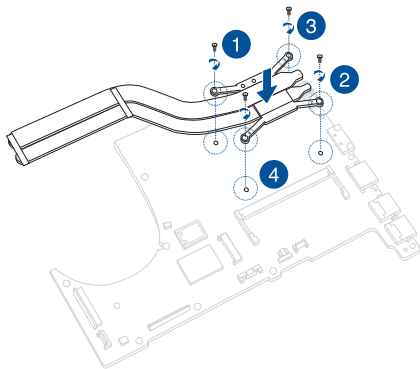


- Q. Remove the screw(s) one by one in the sequence as shown in the illustration below.
- R. Remove the cooling radiator.

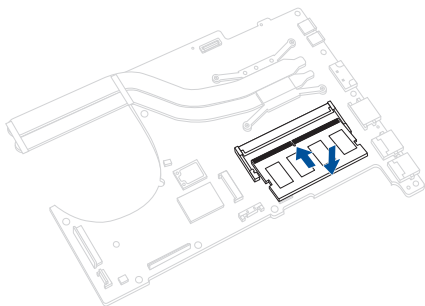


To install the new motherboard:

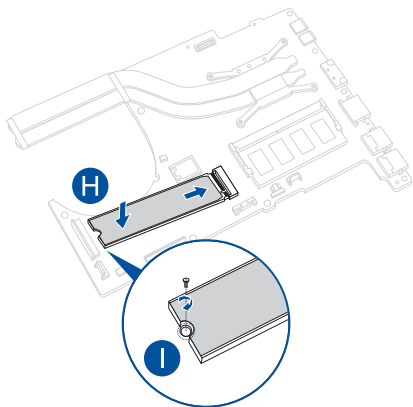
- A. Prepare the new motherboard.
- B. Align and replace the cooling radiator on the screw holes of the motherboard.
- C. Secure the screw(s) one by one in the sequence as shown in the illustration below.



- D. (Optional) Prepare the new RAM module.
- E. Align and insert the RAM module into the RAM module slot.
- F. Push down the RAM module until it clicks in place.

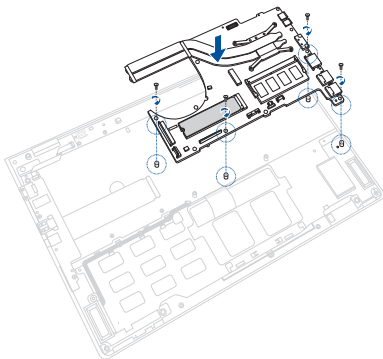


- G. (Optional) Prepare the new M.2 SSD module.
- H. Align and insert the M.2 SSD module into the M.2 connector on the motherboard.
- I. Secure the M.2 SSD module in place using the screw(s) you removed earlier.

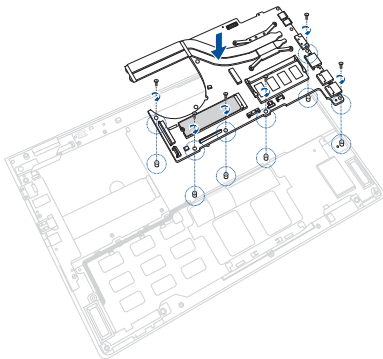


- J. Align and place the motherboard back in the chassis then secure the motherboard using the screw(s) you removed earlier.

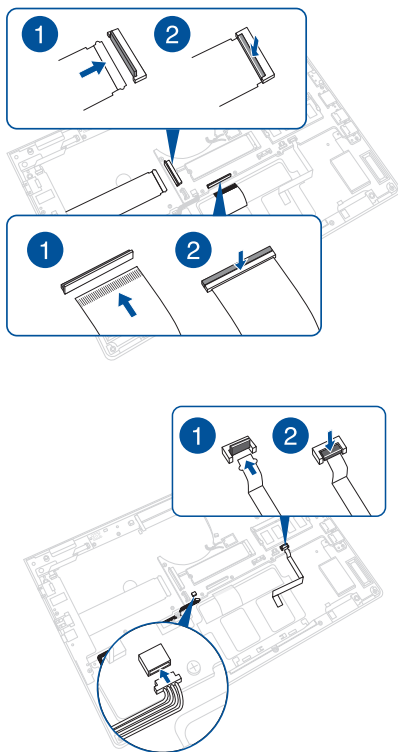
14" model



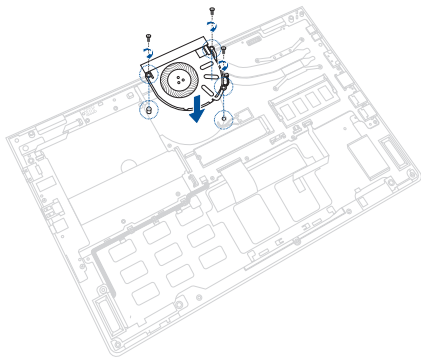
15" model



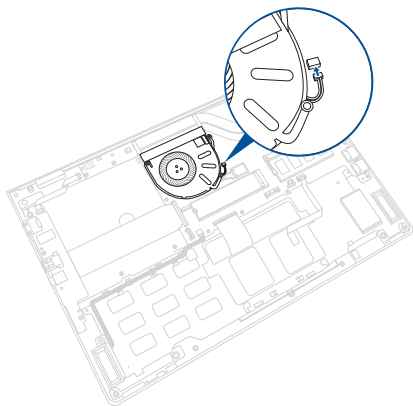
K. Locate and reconnect all the cable(s) and connector(s).



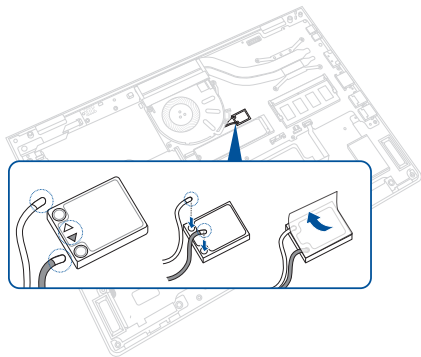
- L. Align and place the fan module(s) back in the chassis.
- M. Secure the fan module(s) to the motherboard using the screw(s) you removed earlier.



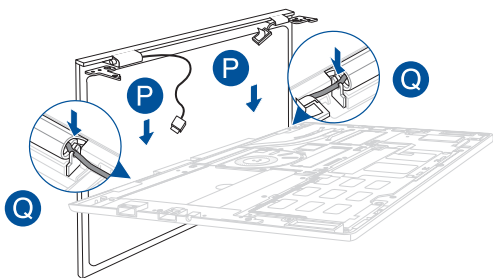
N. Reconnect the fan module connector(s) to the motherboard.



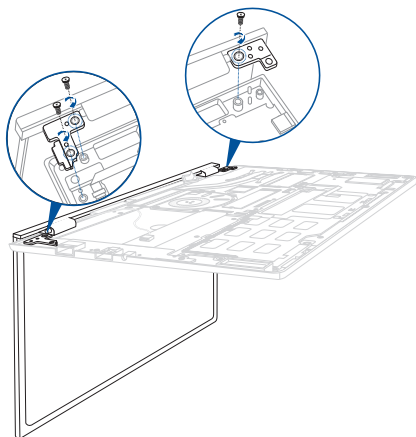
- O. Reconnect all the antenna(s) as shown in the illustration below.



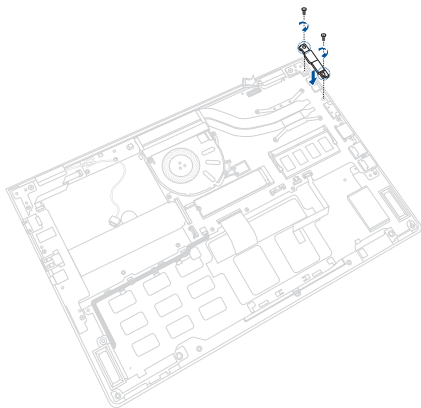
- P. In the orientation shown, align and place the hinge of the display panel on the screw holes of the motherboard.
- Q. Route the cable(s) through the cable guide(s).



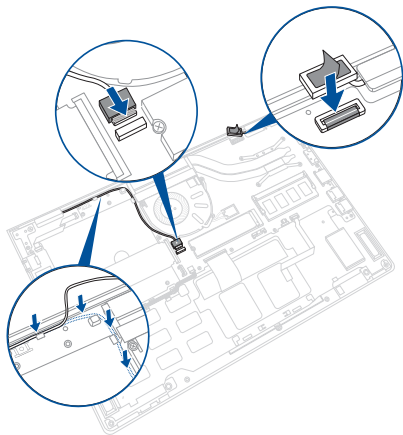
- R. Secure the hinge using the screw(s) you removed earlier.



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



T. Reconnect all the cable(s) as shown in the illustration below.



Replacing the LCD module

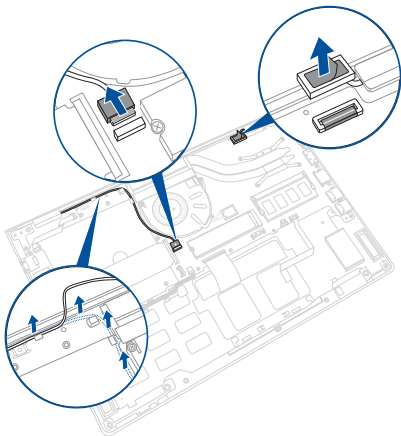
IMPORTANT! Do not bend the LCD panel in any ways to avoid risk of LCD panel leakage.

NOTE: The illustrations are for reference only.

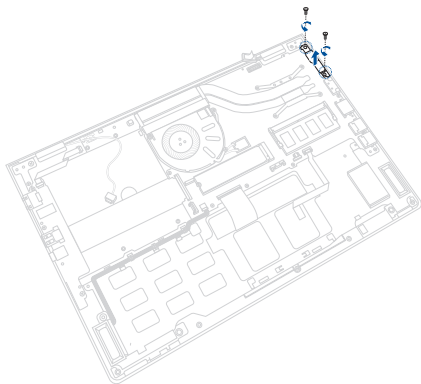
- A. Remove the compartment cover and disconnect the battery.
-

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

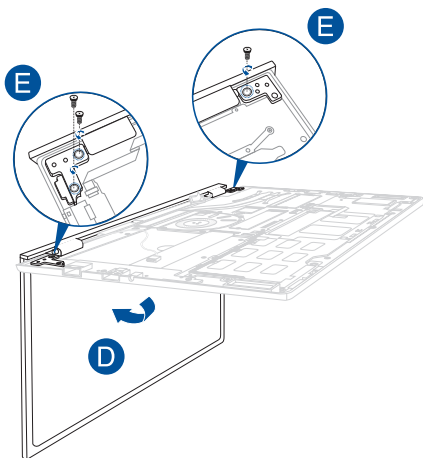
- B. Locate and disconnect all the cable(s) as shown in the illustration below.



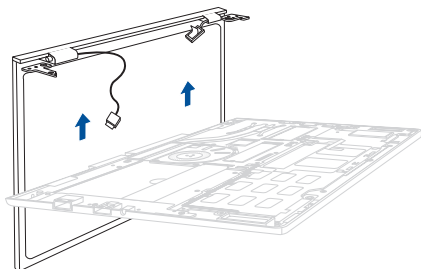
- C. Locate and remove the screw(s) then remove the bracket(s) as shown in the illustration below.



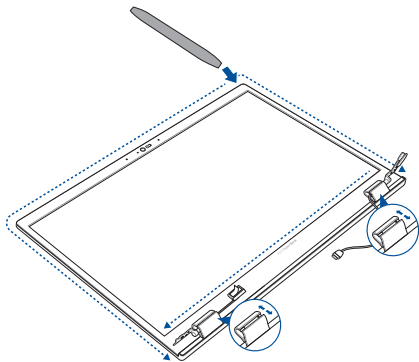
- D. Place your Notebook PC in the orientation as shown in the illustration below.
- E. Remove the screw(s) from the hinge.



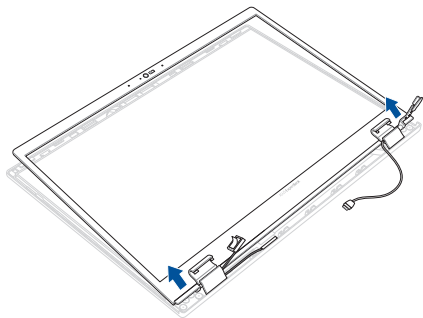
F. Remove the display panel.



- G. Use the plastic blade to pry loose the bezel as shown in the illustration below.



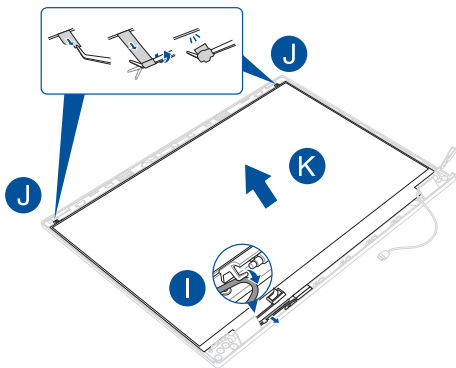
- H. Remove the bezel.



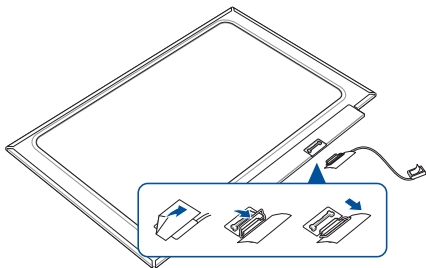
- I. Unroute the cable(s) from the cable guide(s) as shown in the illustration below.
- J. Locate the tip of the adhesive strips then carefully pull the adhesive strips out one part at a time as shown in the illustration below.

IMPORTANT! Avoid pulling the adhesive strips with excessive force or the adhesive strips might break.

- K. Remove the LCD panel module.

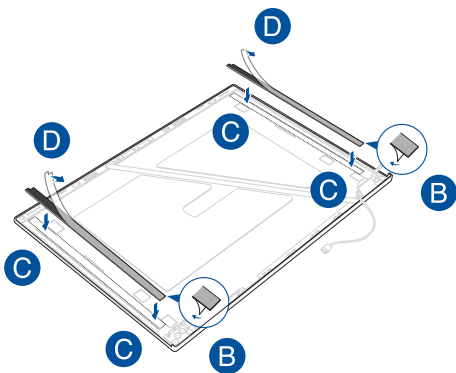


- L. Remove the cable from the LCD panel module.

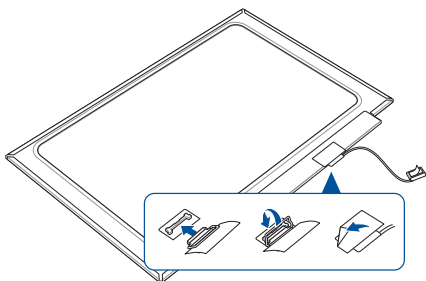


To install the new LCD panel module:

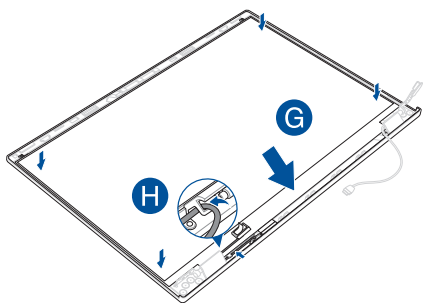
- A. Prepare the new adhesive strips.
- B. Remove the release liner underneath the adhesive strips.
- C. Align and apply the adhesive strips as shown in the illustration below.
- D. Remove the release liner above the adhesive strips.



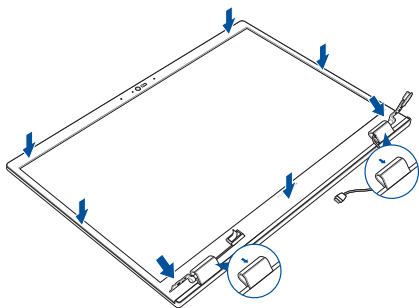
- E. Prepare the new LCD panel module.
- F. Reconnect the cable to the LCD panel module.



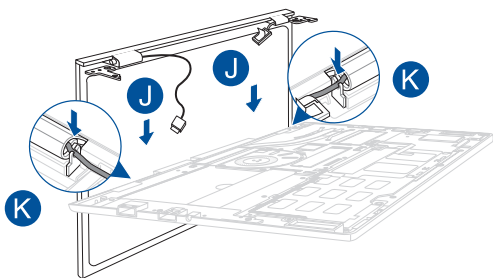
- G. Align and place the new LCD panel module in the orientation as shown in the illustration below.
- H. Route the cable(s) through the cable guide(s).



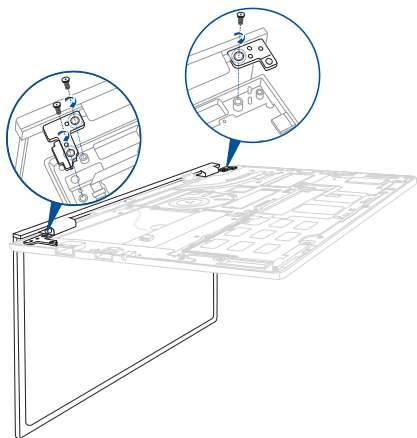
- I. Align and gently reattach the bezel around the display panel.



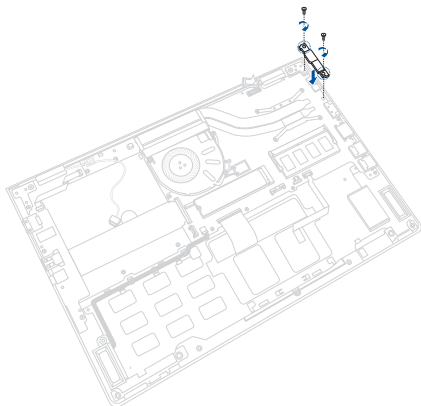
- J. In the orientation shown, align and place the hinge of the display panel on the screw holes of the motherboard.
- K. Route the cable(s) through the cable guide(s).



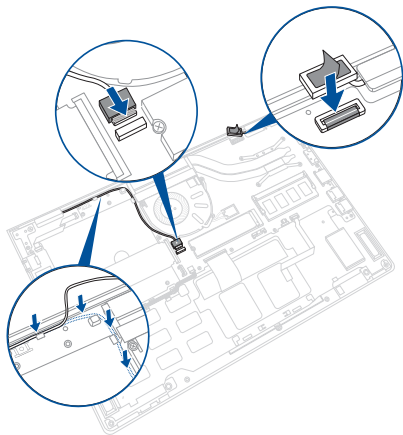
- L. Secure the hinge using the screw(s) you removed earlier.



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



N. Reconnect all the cable(s) as shown in the illustration below.



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. Replace the M.2 SSD module.

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

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 compartment 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 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.

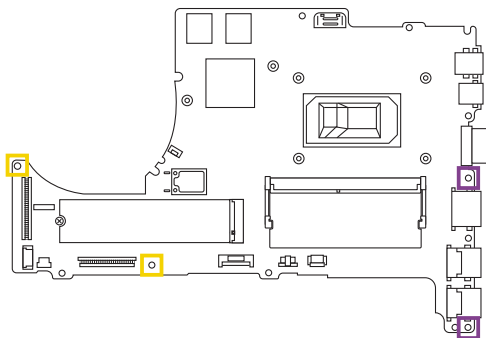
- B. Replace the RAM module.

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

Screw map

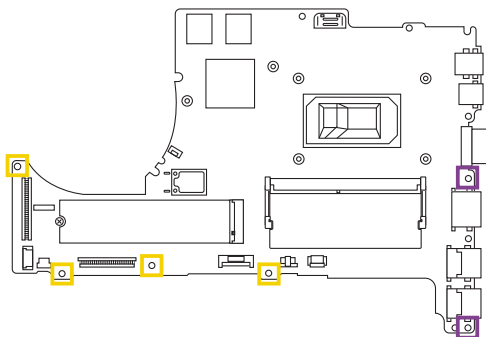
Motherboard screw map

14" model



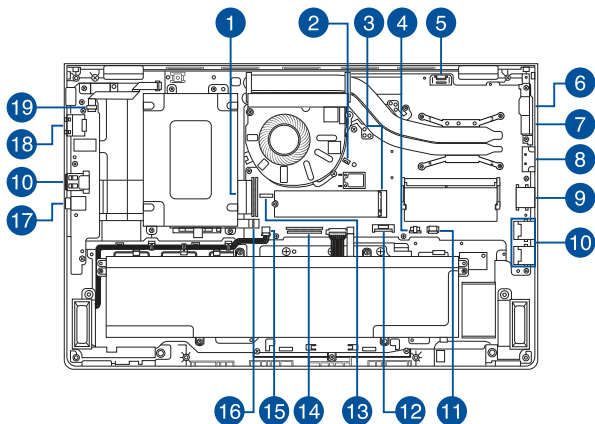
- M2 X 4L (2PCS)
- M2 X 2.5L (2PCS)

15" model

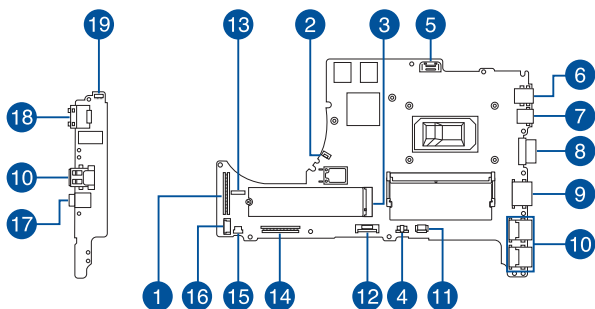


- M2 X 4L (2PCS)
- M2 X 2.5L (4PCS)

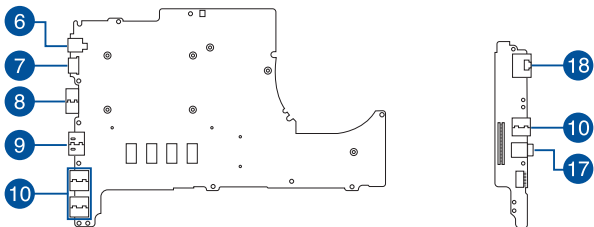
Wiring and connection diagrams



Top View



Bottom View



- | | |
|---------------------------|---------------------------------------|
| 1. I/O connector | 11. Touchpad/NumberPad connector |
| 2. Fan connector | 12. Battery connector |
| 3. M.2 SSD connector | 13. Camera connector |
| 4. Backlight connector | 14. Keyboard connector |
| 5. Display connector | 15. Speaker connector |
| 6. Power supply connector | 16. HDD connector |
| 7. USB Type-C® connector | 17. Headphone/Headset/Microphone jack |
| 8. VGA connector | 18. RJ45 connector |
| 9. HDMI connector | 19. Fingerprint connector |
| 10. USB Type-A connector | |