REPUBLIC OF GAMERS

ROG NUC 16

NUC16JNK (Mini PC)

Service Manual

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Service And Support

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

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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 NUC system to avoid short circuits.
- Remove rings, watches, and any other metal objects from your hands.
- Hold components by the edges to avoid touching the ICs.
- Properly install all components before connecting the AC power.
- Do not use power adapters or batteries from other devices to reduce the risk of injury to persons due to fire or explosion. Use only certified power adapters or batteries supplied by the manufacturer or authorized retailers.
- Detach all clips or flaps before removing cables to prevent damage.
- Disconnect cables, connectors, and power plugs by pulling the plug evenly to avoid damage.
- Use screws with the correct specifications on your NUC system to prevent damage.
- Confirm that the cable orientation is correct before connecting any cables.
- Photograph the appearance of cables, cable routing, connectors, and screws for later reference before proceeding with each step.

Pre-repair checklist

1. Read the entire manual before starting any service procedures and follow all instructions.
2. Back up your NUC system.
3. Turn off your NUC system.
4. Place your NUC system on a stable surface.
5. Disconnect all connected peripherals and cables.

IMPORTANT!

- Purchase replacement components from an authorized retailer of this NUC system to ensure maximum compatibility and reliability.
- Refer to https://www.asus.com for a list of compatible components.

NOTE:

- The illustrations are for reference only.
- Product and component images are for illustrative purposes only. The actual appearance and specifications may vary depending on the model.
- The procedures described in this manual may vary depending on the model configuration and may not reflect the entire servicing process. To service components that are not covered in this manual, please visit an authorized service center for assistance.
- Keep all adhesive tape, insulating materials, screws, and other removable items in a safe place until the service procedure is completed, as they may be needed during installation.

Repair and reuse information

This device meets environmental and safety standards and is designed for easy repair and reuse.

- The components in this device can be disassembled and reassembled using commonly available tools.
- The screws in this device are reusable. If screws are damaged or missing, contact an ASUS service center for assistance.

Diagnostics tool

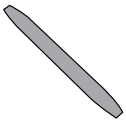
Run system diagnosis in MyASUS after replacing any components to ensure that all components are working properly.

For more information, visit https://www.asus.com/support/myasus-deeplink/.

Installation tools



Screwdriver

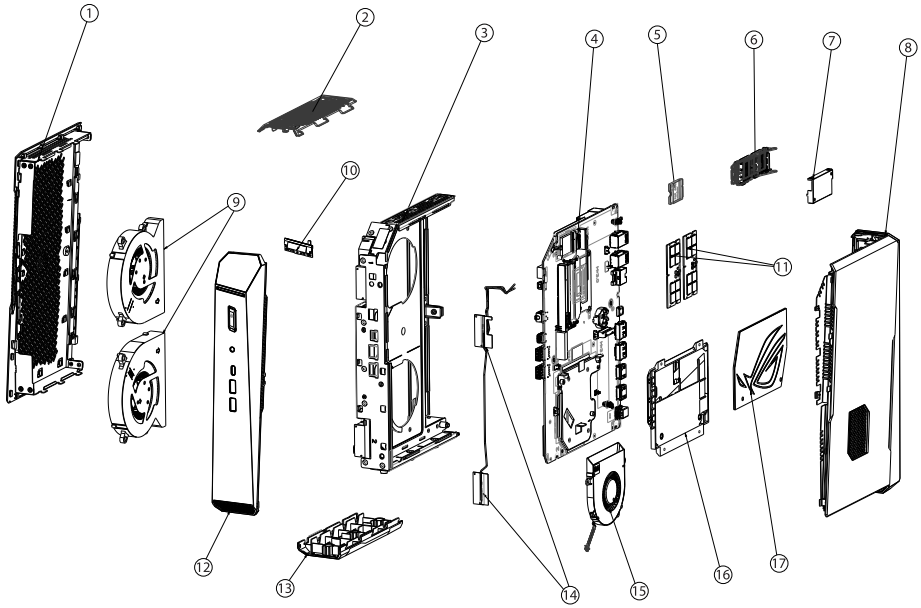


Plastic blade



Tweezers

Major components



1. Left cover
2. Top cover
3. System chassis inner bracket
4. Motherboard
5. Wireless card
6. M.2 SSD
7. Wireless card shield
8. Right cover
9. Fan module
10. Front panel light bar module
11. Memory modules
12. Front plate
13. Bottom cover
14. Antenna module
15. Memory module fan
16. Logo mask cover
17. Logo mask

Chapter 2: Service Procedures

Right cover

Before you begin

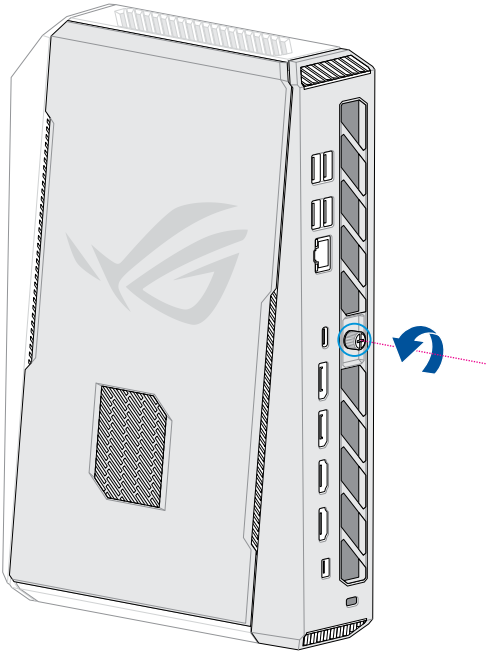
Read the **Safety Precautions** and complete the **Pre-repair Checklist**.

Screw list

- ⊕ Captive screw (1 pc)

Removal

1. Place the NUC system upright on a flat stable surface.
2. Completely loosen the captive screw on the rear of the system.



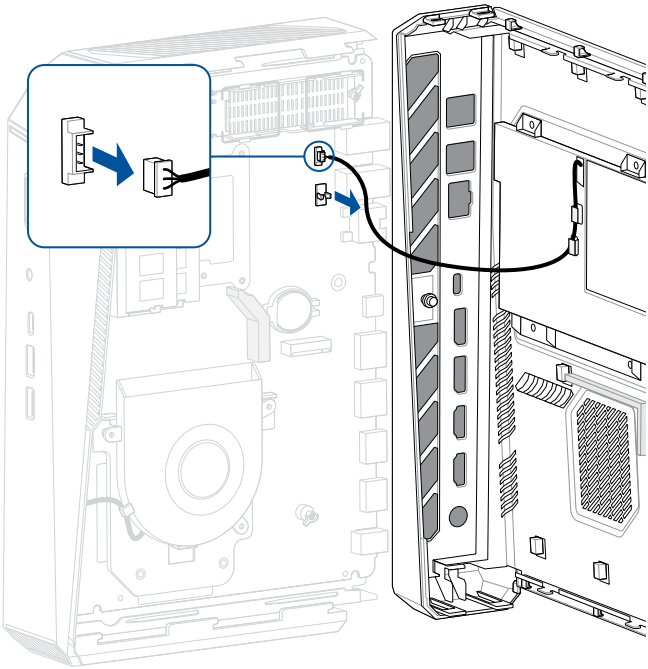
3. Push the right cover towards the rear of the system until it disengages from the system.



4. Gently lift and flip the right cover open.

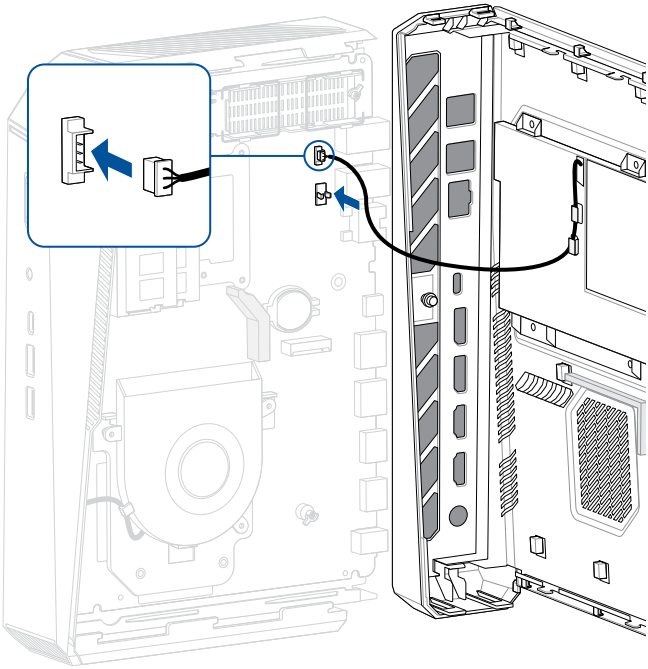
NOTE: Do not use excessive force when lifting or flipping the right cover open, doing so may cause damage to the cable connecting the right cover to the motherboard.

5. Disconnect the cable on the motherboard connected to the Backlight module on the right cover.



Installation

1. Connect the cable from the Backlight module to the connector on the motherboard.

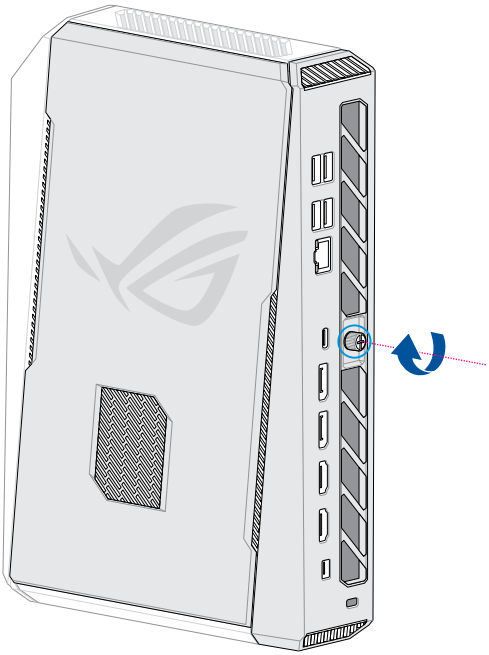


2. Align the right cover with the system chassis.

3. Push the right cover towards the front of the system.



4. Tighten the captive screw on the rear of the system to secure the right cover to the system chassis.



Memory module(s)

IMPORTANT! You can only install DDR5 CSO-DIMMs to the NUC system's DIMM slot(s).

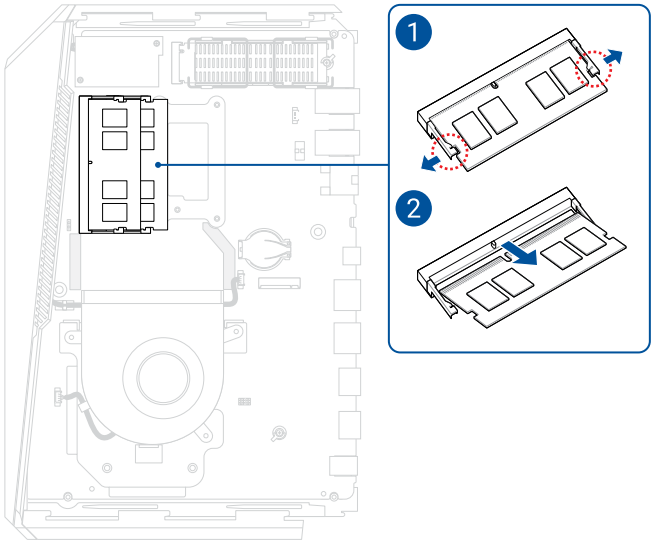
NOTE: We recommend that you install the memory module(s) under professional supervision. You may also visit an authorized service center for further assistance.

Before you begin

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

Removal

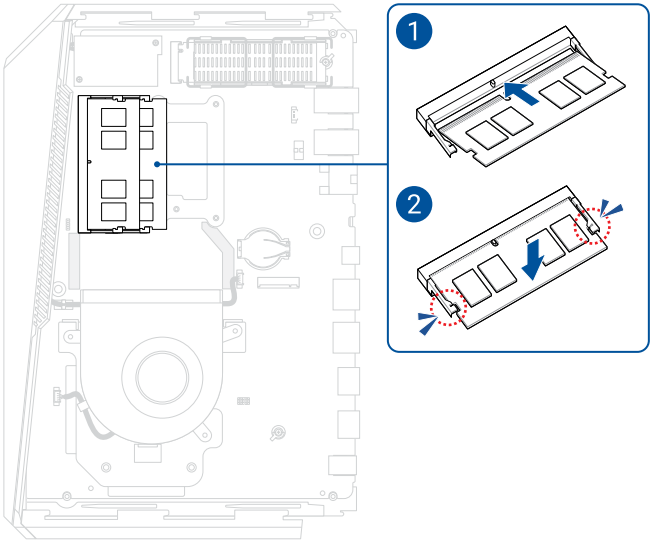
1. Simultaneously push the two retaining clips on the memory module slot outward.
2. Remove the module from the slot.



3. Repeat the same steps to remove the other module.

Installation

1. Align and insert the memory module into the slot.
2. Press down until it clicks and is securely seated in place.



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

M.2 SSD

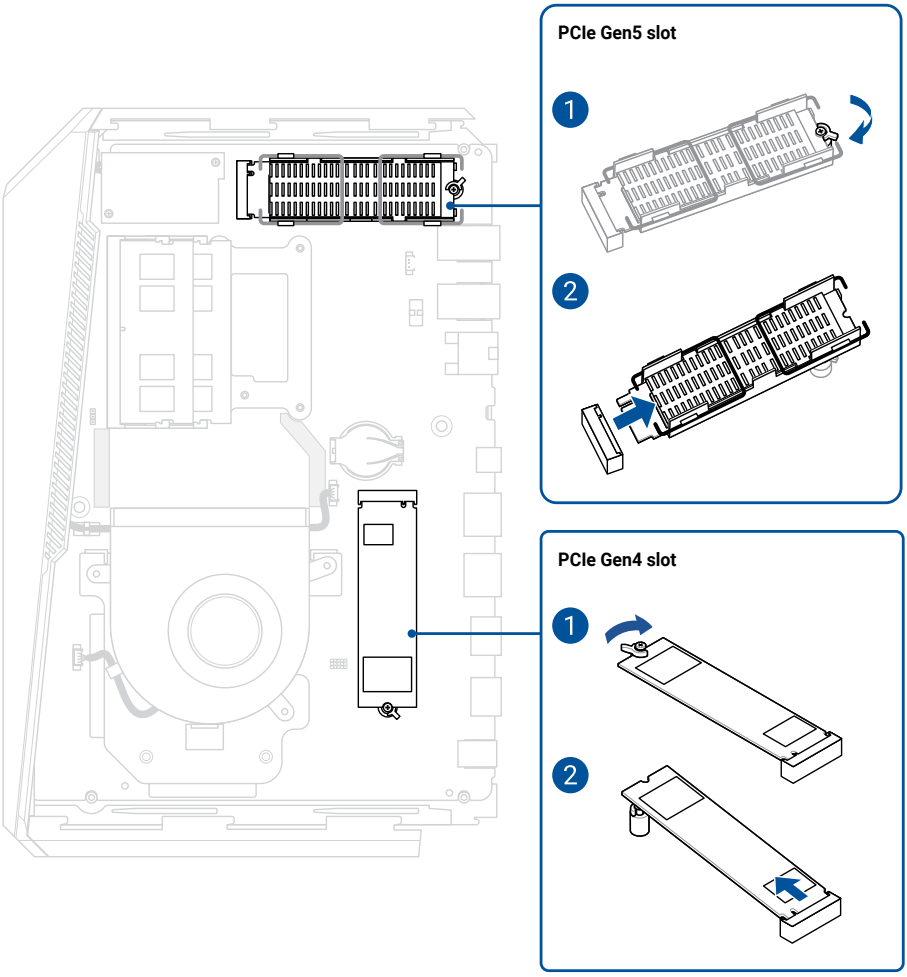
IMPORTANT! Thermal paste, thermal pads, or other thermal interface materials must be thoroughly removed and replaced if this component is removed. Ensure that replacement materials are available before proceeding, or contact an authorized service center for assistance.

Before you begin

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

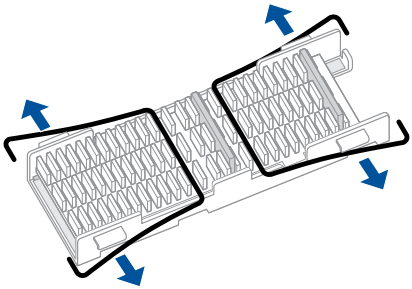
Removal

1. Rotate the Q-Latch clockwise to release the M.2 module.
2. Remove the M.2 module from the motherboard.

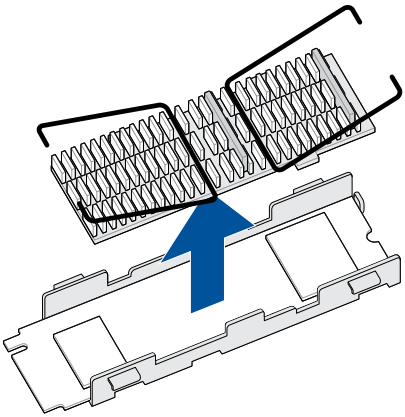


Removal (2280 M.2 bracket)

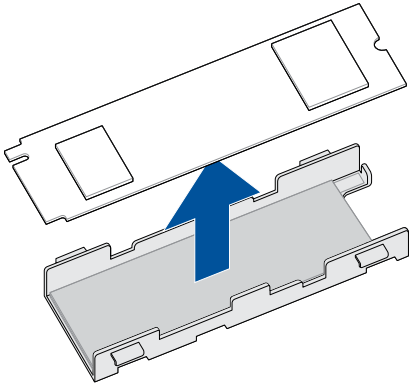
1. Push the wires out from under the hooks on both sides of the 2280 M.2 bracket to release the heatsink cover.



2. Lift and remove the heatsink cover.

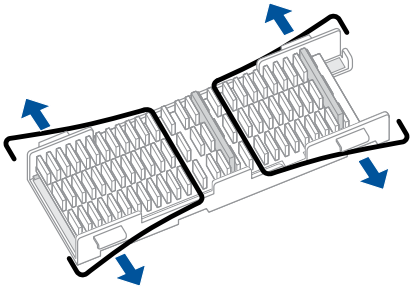


3. Lift and remove the M.2 module from the casing.

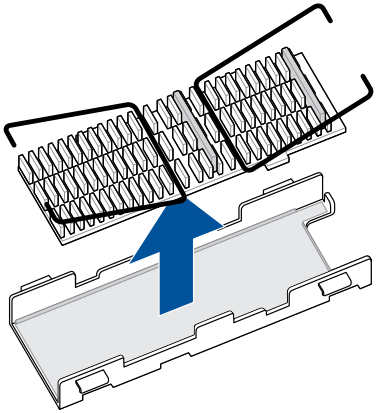


Installation (2280 M.2 bracket)

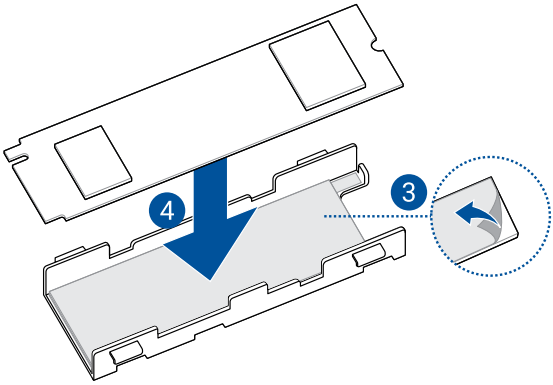
1. Push the wires out from under the hooks on both sides of the 2280 M.2 bracket to release the heatsink cover.



2. Lift and remove the heatsink cover.



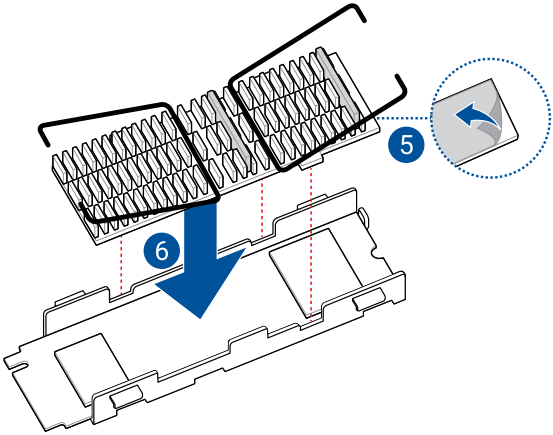
3. Remove the plastic film from the thermal pad on the casing of the M.2 2280 bracket.
4. Place your M.2 SSD into the casing.



The specifications for the thermal pad(s) used here are as follows:

Thermal Pad	
Thickness:	1mm
Size:	64mm x 20mm
Thermal conductivity:	3 W/mK
Hardness:	20 shore 00

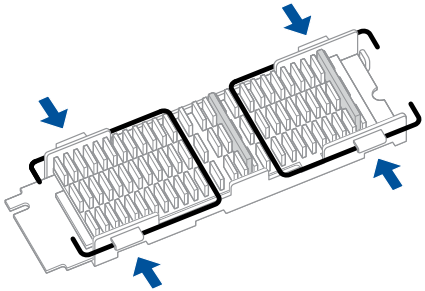
5. Remove the plastic film from the thermal pad on the heatsink cover.
6. Align and place the heatsink cover into the casing.



The specifications for the thermal pad(s) used here are as follows:

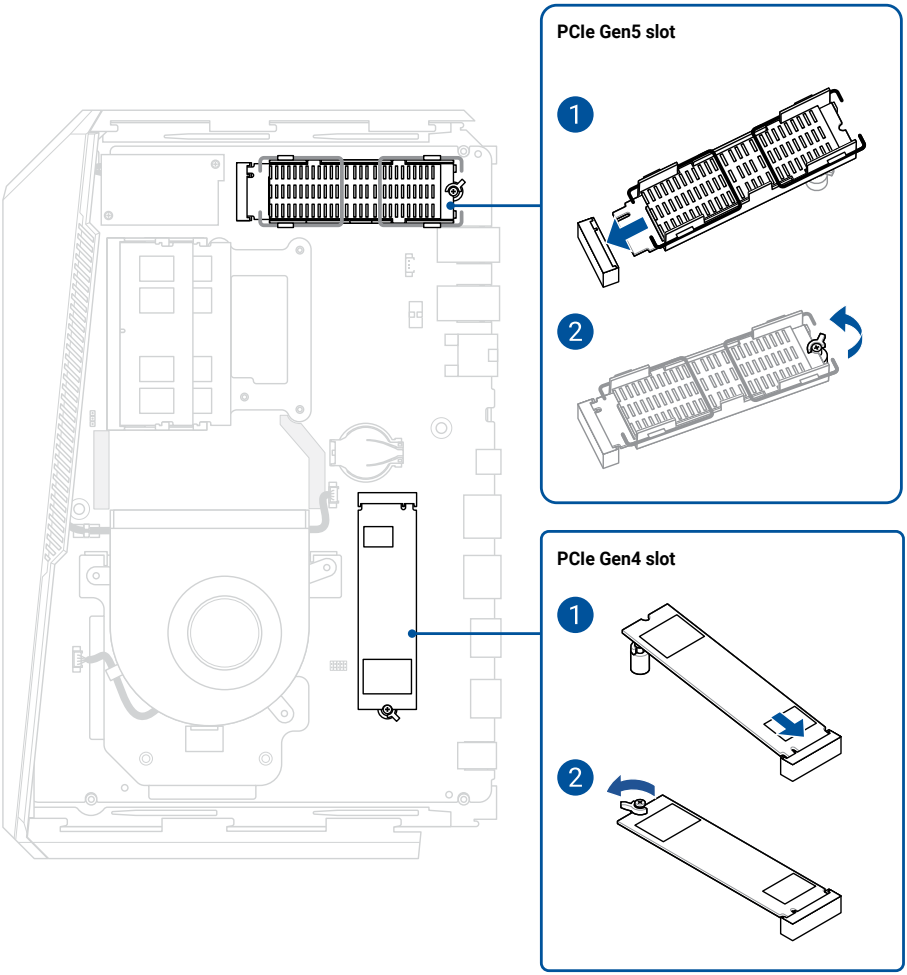
Thermal Pad	
Thickness:	1mm
Size:	64mm x 20mm
Thermal conductivity:	3 W/mK
Hardness:	20 shore 00

7. Push the wires into the hooks on both sides of the 2280 M.2 bracket to secure the heatsink cover.



Installation

1. Insert the M.2 module into the M.2 slot on the system board.
2. Rotate the Q-Latch counterclockwise to secure the M.2 module in place.



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

Wireless card

Before you begin

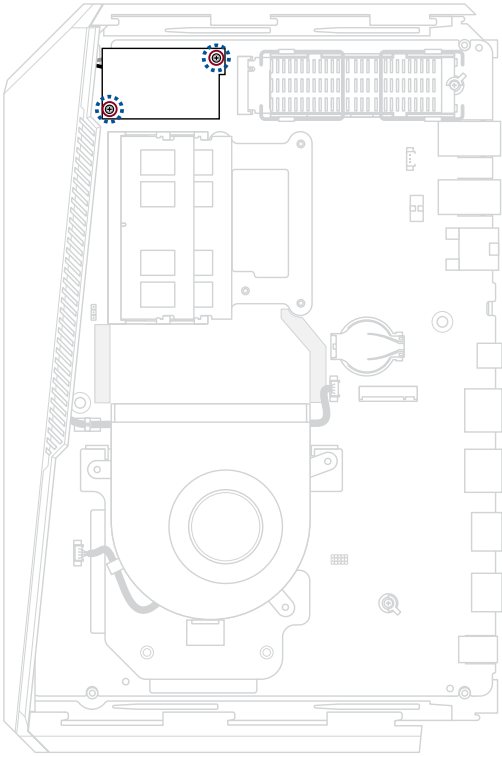
1. Read the **Safety Precautions** and complete the **Pre-repair Checklist**.
2. Remove the following component(s):
   - Right cover

Screw list

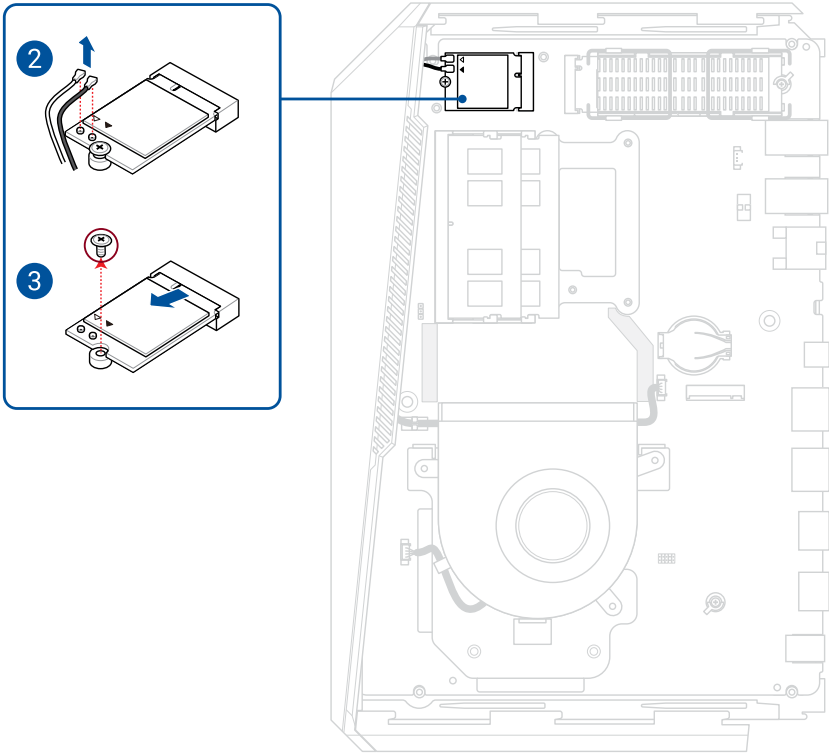
- ⊕ M2 X 2.3L (3 pc)

Removal

1. Remove the two (2) screws securing the wireless card shield.

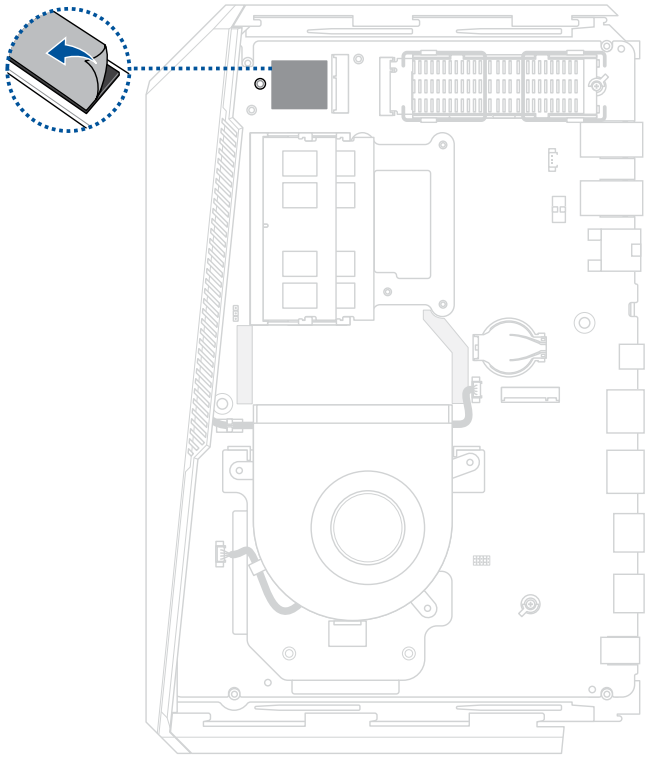


2. Disconnect the antenna cables from the wireless card.
3. Remove the screw securing the wireless card, then remove the wireless card.



Installation

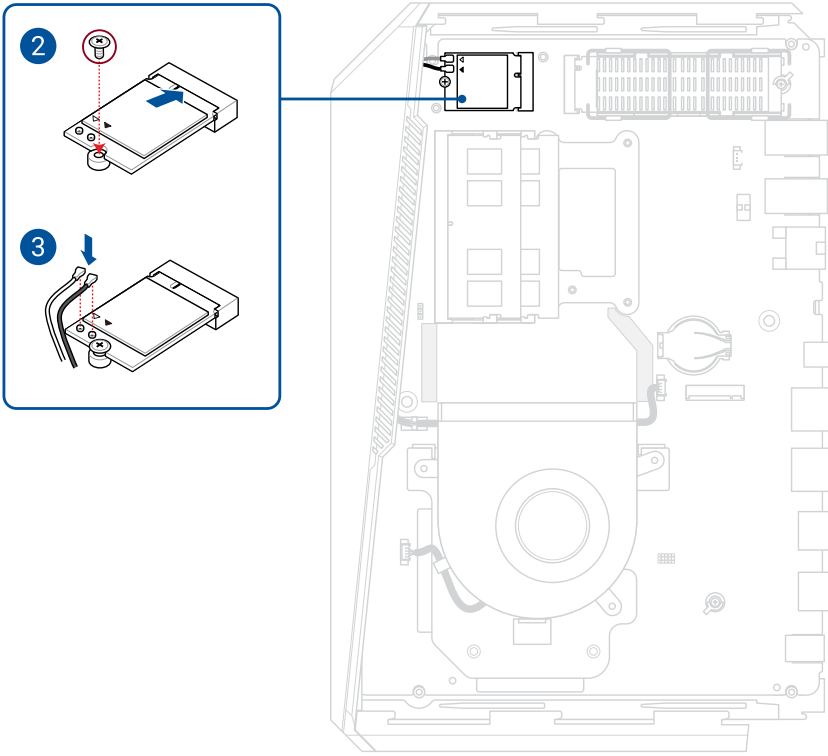
1. Remove the plastic film from the thermal pad on the motherboard, if it exists.



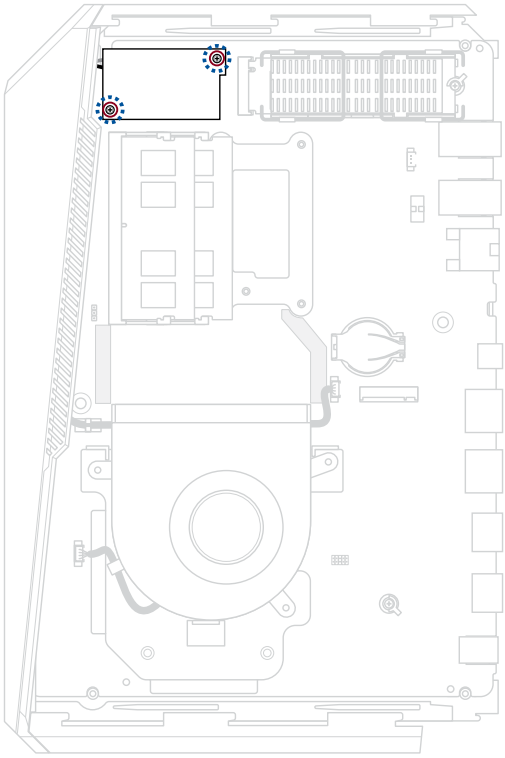
The specifications for the thermal pad(s) used here are as follows:

Thermal Pad	
Thickness:	2.75mm
Size:	20mm x 20mm
Thermal conductivity:	3 W/mK
Hardness:	20 shore 00

2. Install the wireless card, then secure it using a screw.
3. Connect the antenna cables to the wireless card.



4. Replace the wireless card shield and secure it using two (2) screws.



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

CMOS battery

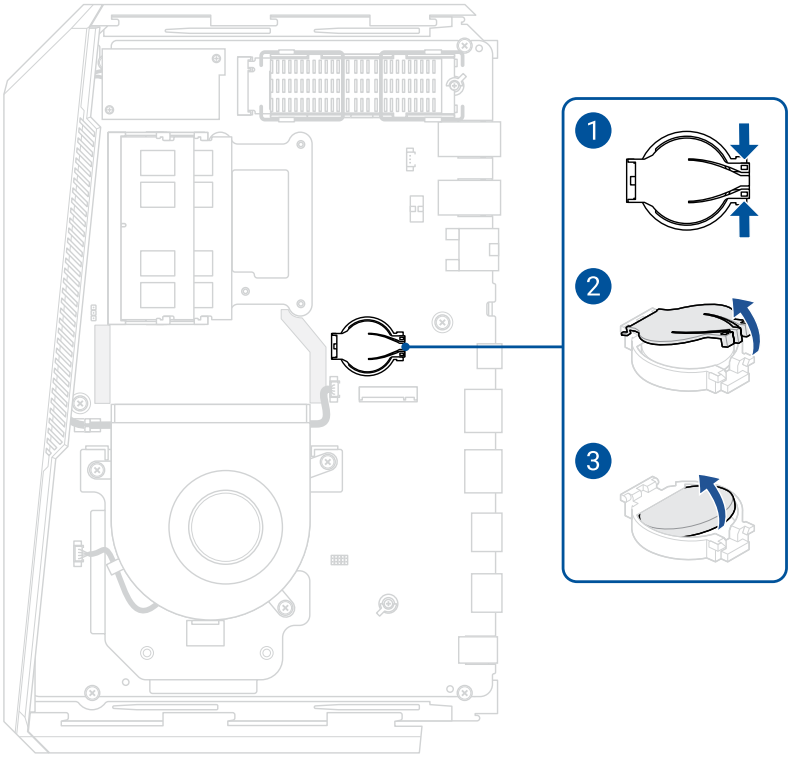
Before you begin

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

Removal

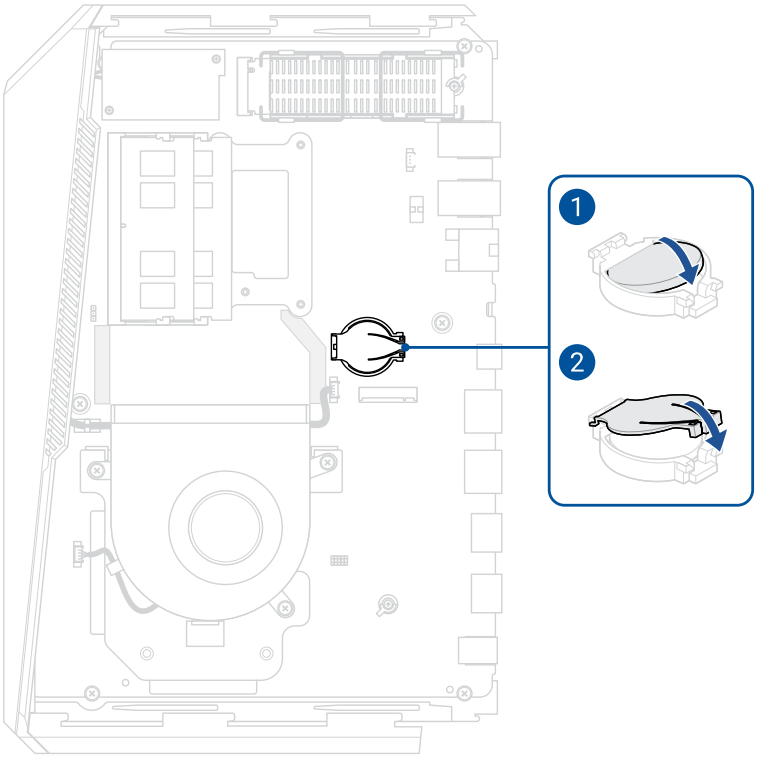
1. Push the two sides of the front of the plastic cover inwards.
2. Whilst the two sides of the front of the plastic cover is still pushed inwards, lift open the plastic cover.
3. Remove the CMOS battery from the battery compartment.

NOTE: Use a tool such as a plastic blade if necessary.



Installation

1. Install the CMOS battery to the battery compartment.
2. Close the plastic cover and make sure to push down until the plastic cover clicks into place and secures the CMOS battery.



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

Memory fan module

Before you begin

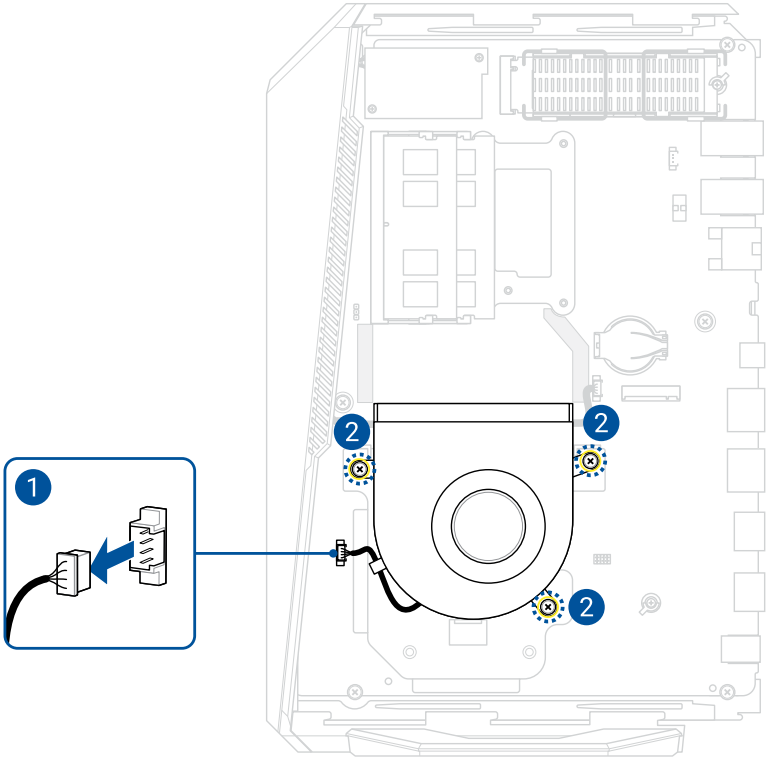
1. Read the **Safety Precautions** and complete the **Pre-repair Checklist**.
2. Remove the following component(s):
   - Right cover

Screw list

- ⊕ M2 X 4L (3 pcs)

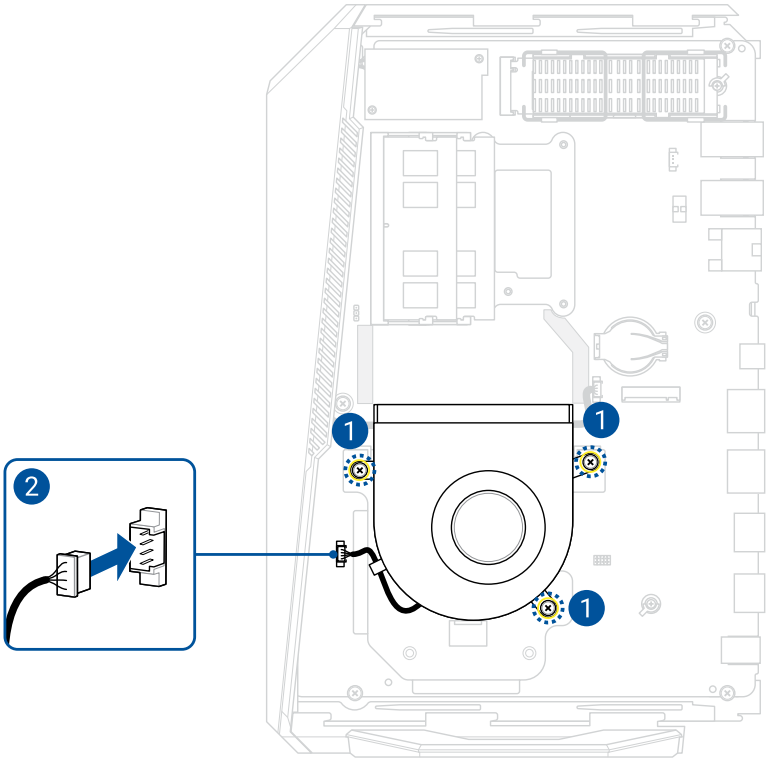
Removal

1. Disconnect the fan cable connected to the motherboard.
2. Remove the three (3) screws from the memory fan module, then lift and remove the memory fan module.



Installation

1. Secure the memory fan module to the motherboard using three (3) screws.
2. Connect the fan cable to the fan connector on the motherboard.



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

Fan module

Before you begin

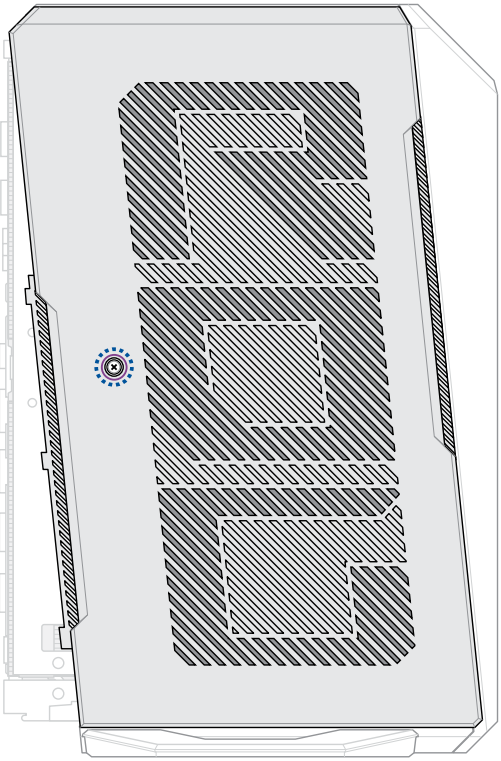
1. Read the **Safety Precautions** and complete the **Pre-repair Checklist**.
2. Remove the following component(s):
   - Right cover

Screw list

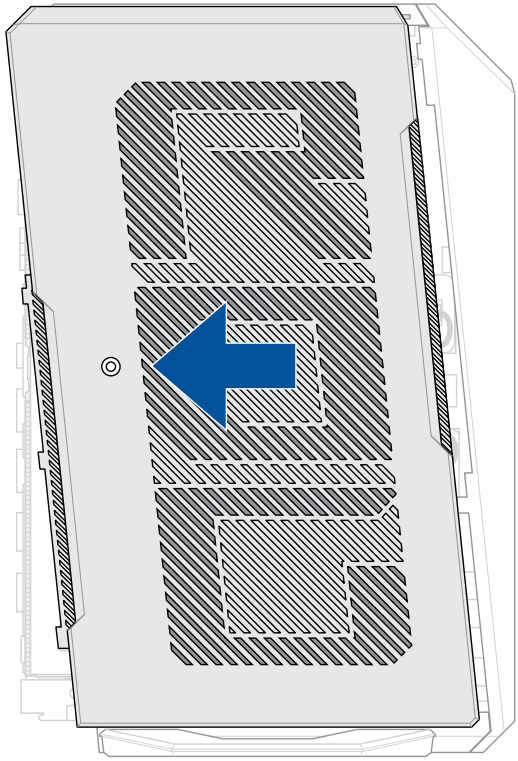
- ⊕ M3 X 4L (1 pc)
- ⊕ M2 X 4L (6 pcs)

Removal

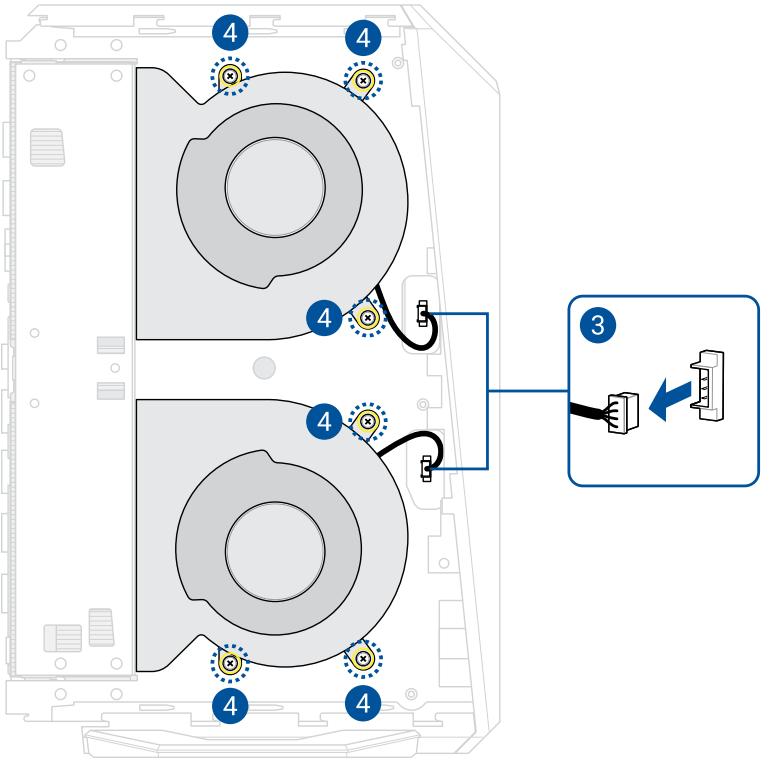
1. Remove the screw from the left cover.



2. Push the left cover towards the rear of the system until it disengages from the system, then remove the left cover.

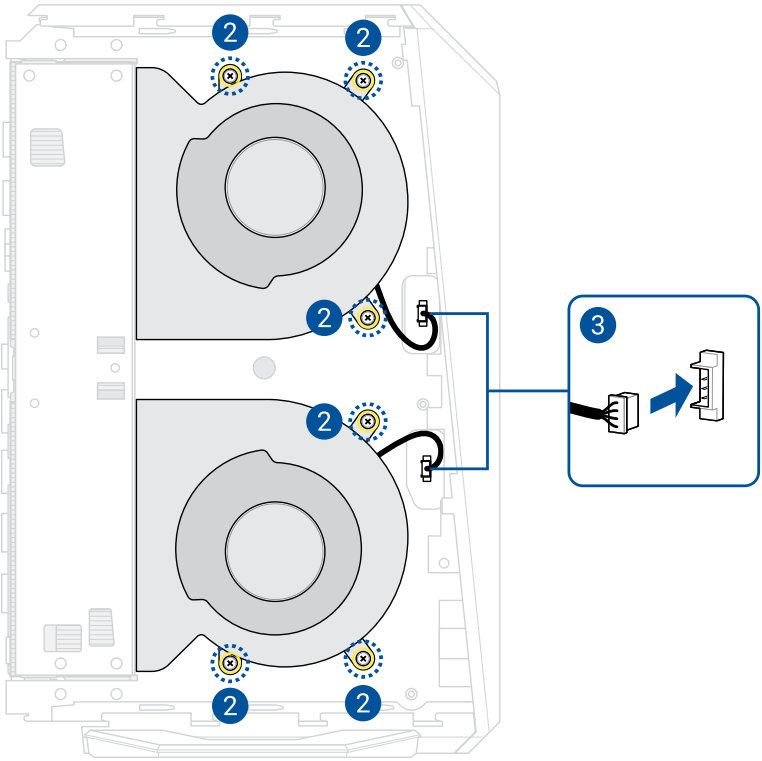


3. Disconnect the fan cable connected to the motherboard.
4. Remove the six (6) screws from the fan modules, then lift and remove the fan modules from the system chassis.

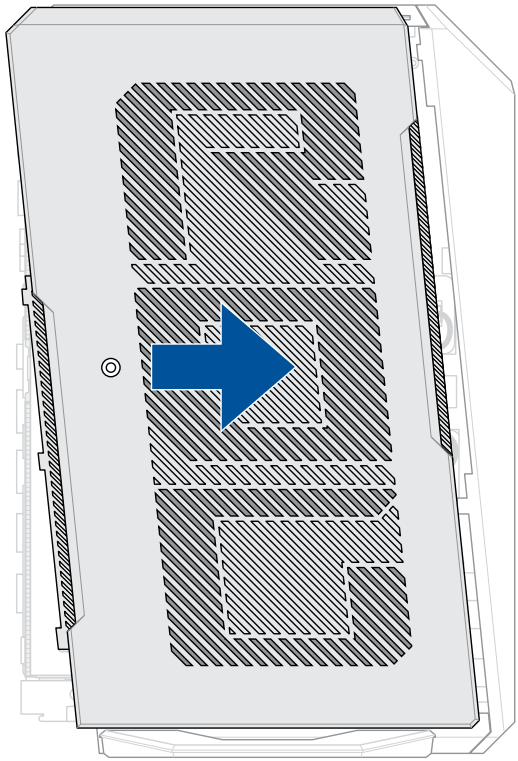


Installation

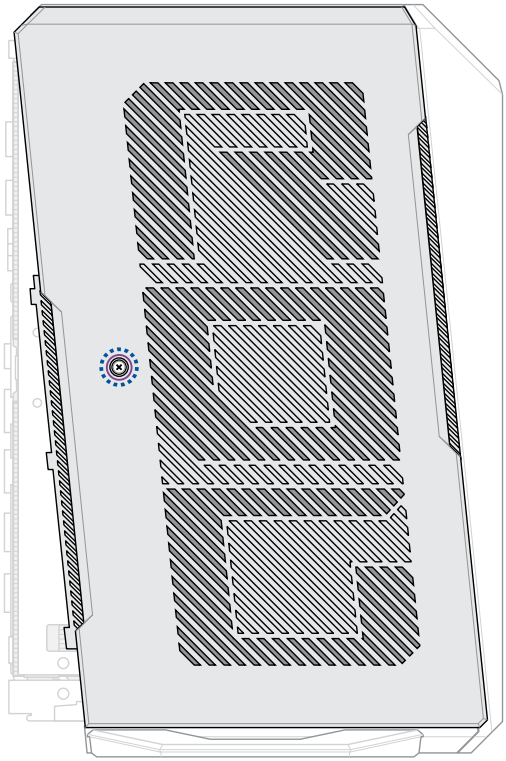
1. Align the fan modules to the screw holes on the system chassis.
2. Secure the fan modules to the system chassis using six (6) screws.
3. Connect the fan cables to the fan connectors on the motherboard.



4. Align the left cover with the system chassis.
5. Push the left cover towards the front of the system.



6. Secure the left cover to the system chassis using a screw.



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

Motherboard

The NUC system features two (2) different board SKUs, please follow the removal and installation steps for your NUC system's motherboard.

Before you begin

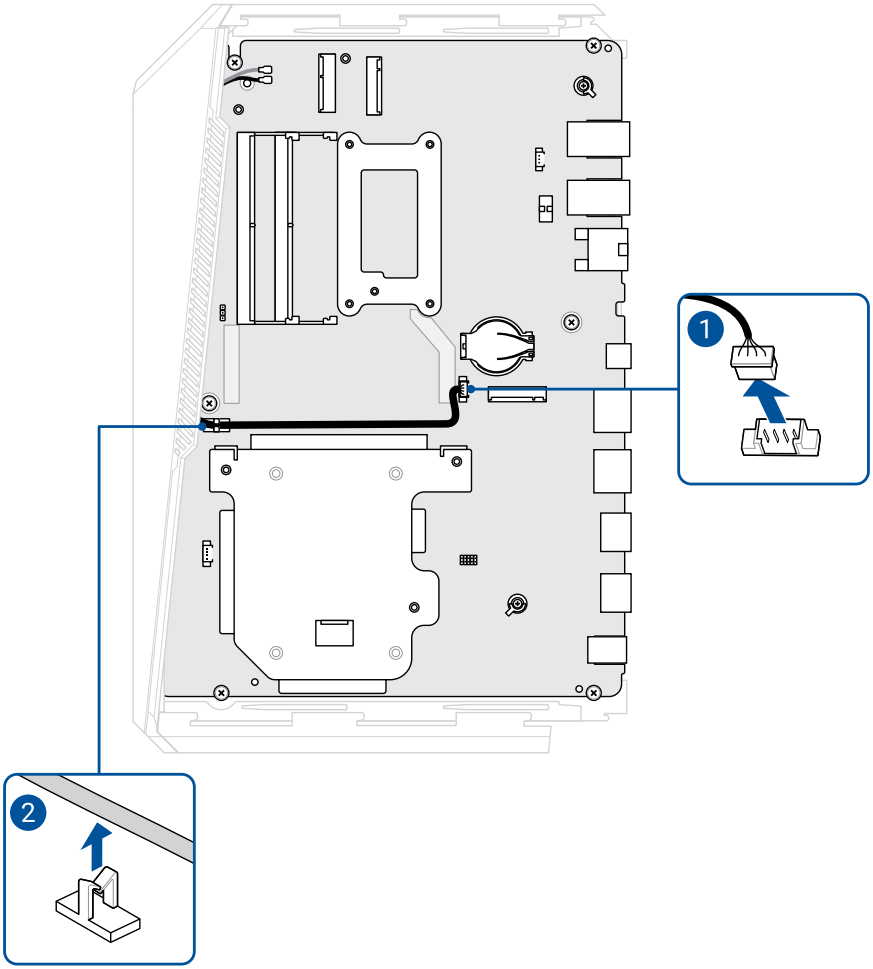
1. Read the **Safety Precautions** and complete the **Pre-repair Checklist**.
2. Remove the following component(s):
   - Right cover
   - Memory module(s)
   - M.2 SSD(s)
   - Wireless card
   - CMOS battery
   - Memory fan module
   - Fan modules

Screw list

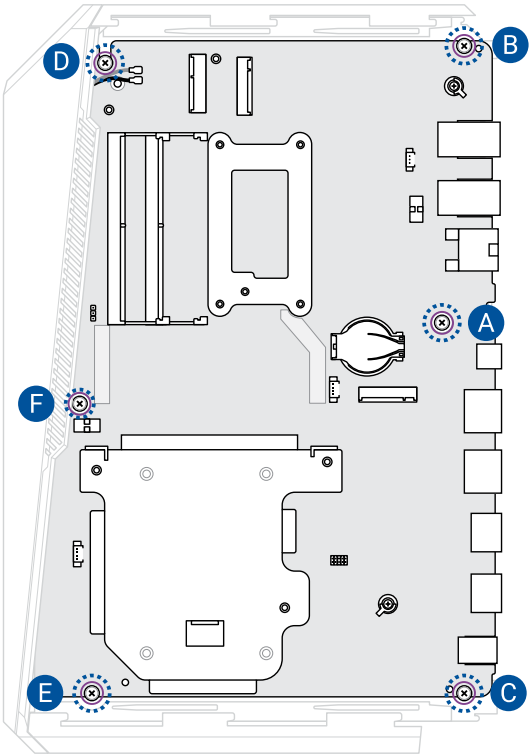
- M3 X 4L (6 pcs)
- Heatsink captive screws (8 pcs)
- M2 X 2.3L (6 pcs)

Removal (Board SKU1)

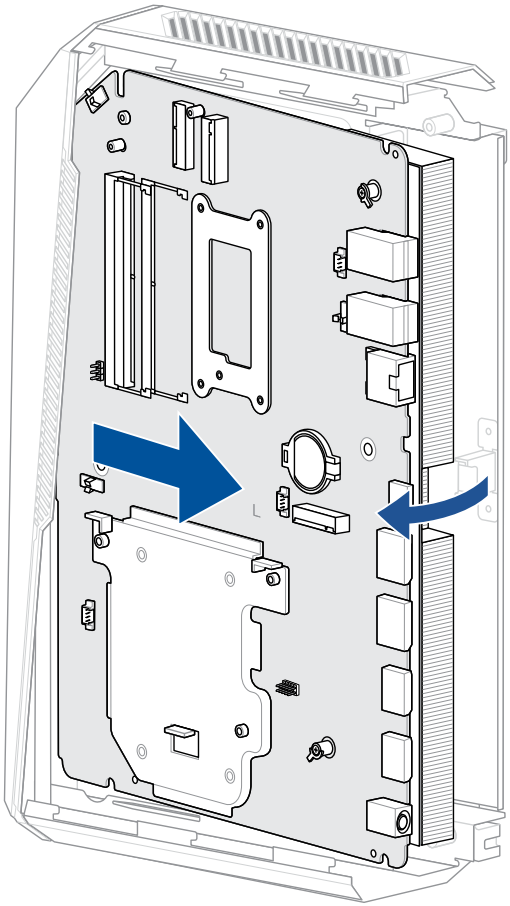
1. Disconnect the front LED cable from the connector on the motherboard.
2. Remove the front LED cable from the cable organizer.



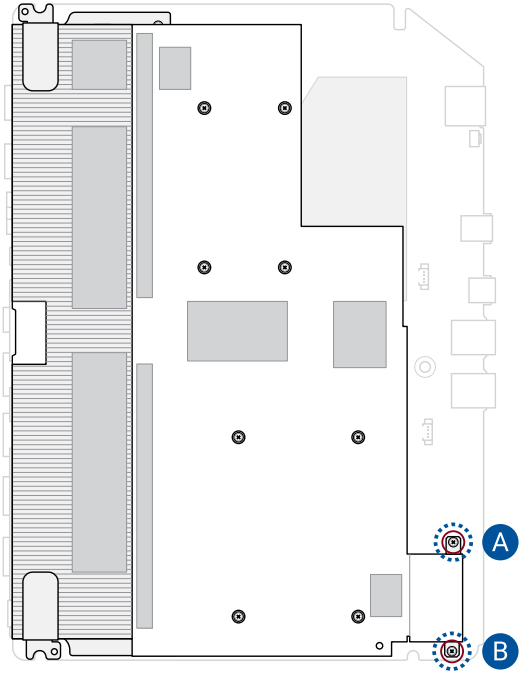
3. Remove the six (6) screws from the motherboard in the order shown on the illustration below.



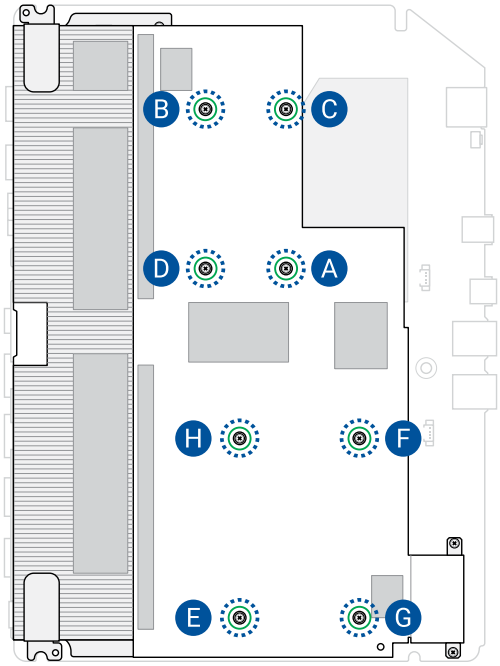
4. Lift the motherboard from the side with the heatsink, then slide the front IO ports out of the openings on the front plate to remove the motherboard from the system chassis.



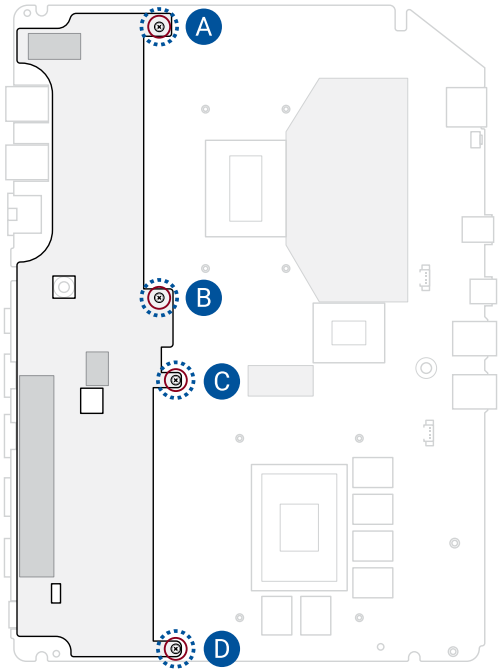
5. Flip the motherboard over so that the heatsink is visible, then place the motherboard on a flat, stable surface.
6. Remove the two (2) screws on the heatsink in the order shown below.



7. Completely loosen the eight (8) screws on the heatsink in the order shown in the illustration below.



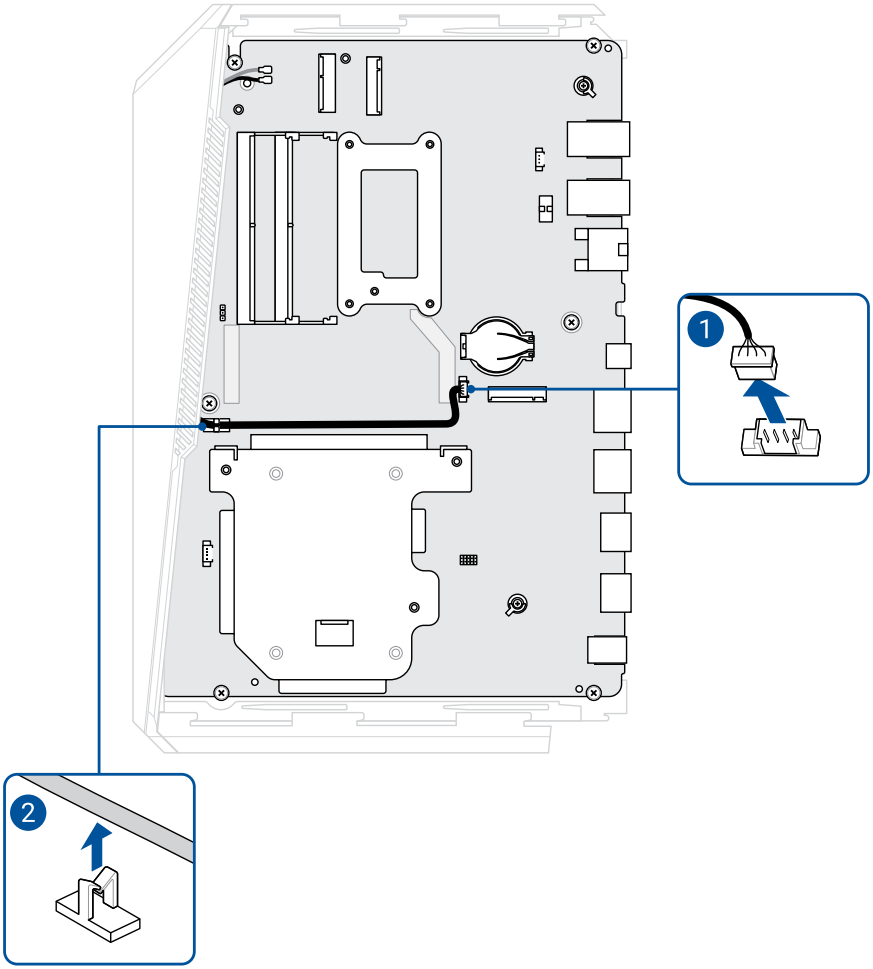
8. Remove the four (4) screws from the VR heatsink in the order shown in the illustration below.



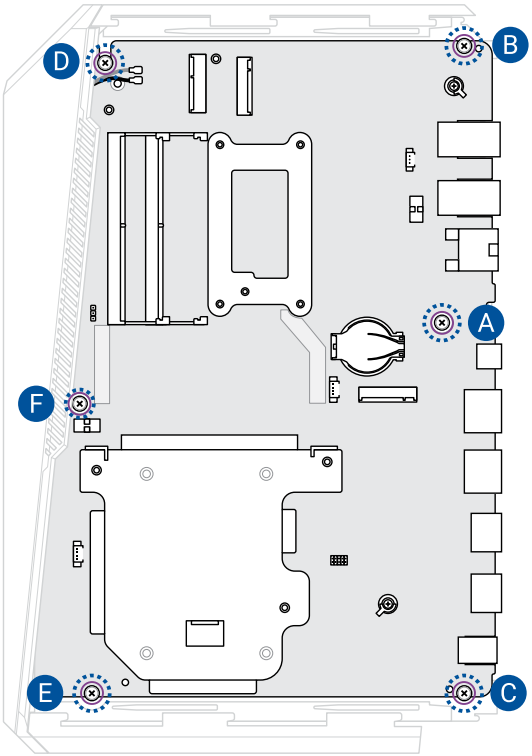
9. Lift and remove the VR heatsink.

Removal (Board SKU2)

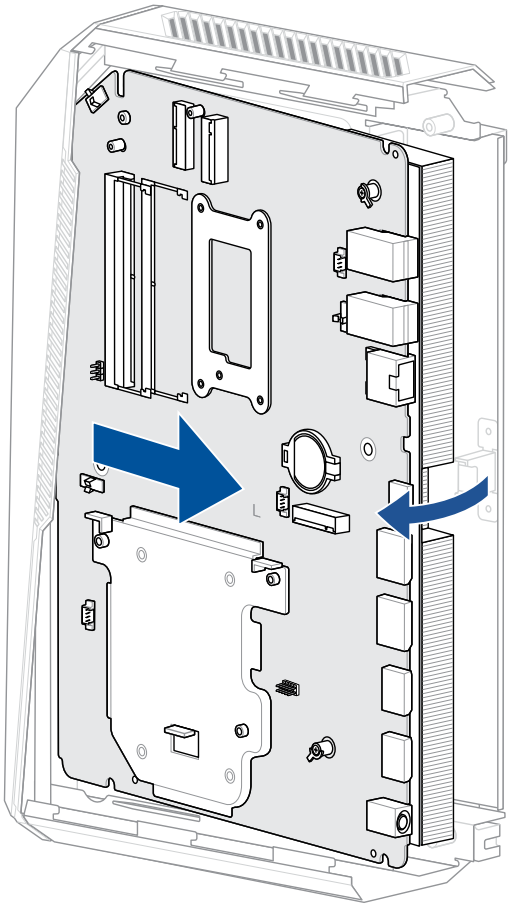
1. Disconnect the front LED cable from the connector on the motherboard.
2. Remove the front LED cable from the cable organizer.



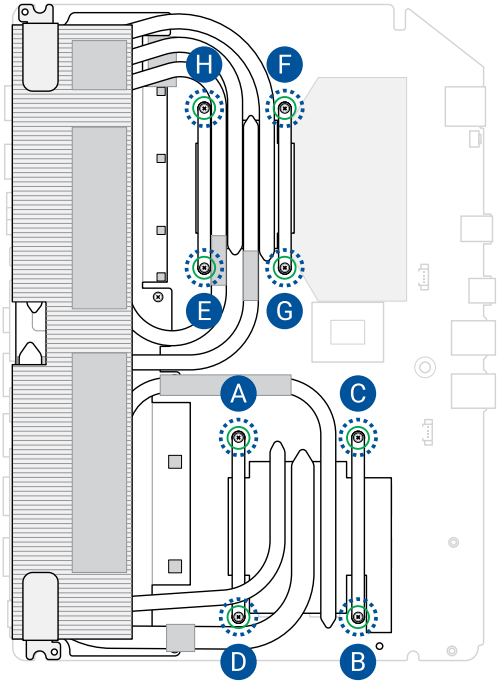
3. Remove the six (6) screws from the motherboard in the order shown on the illustration below.



4. Lift the motherboard from the side with the heatsink, then slide the front IO ports out of the openings on the front plate to remove the motherboard from the system chassis.

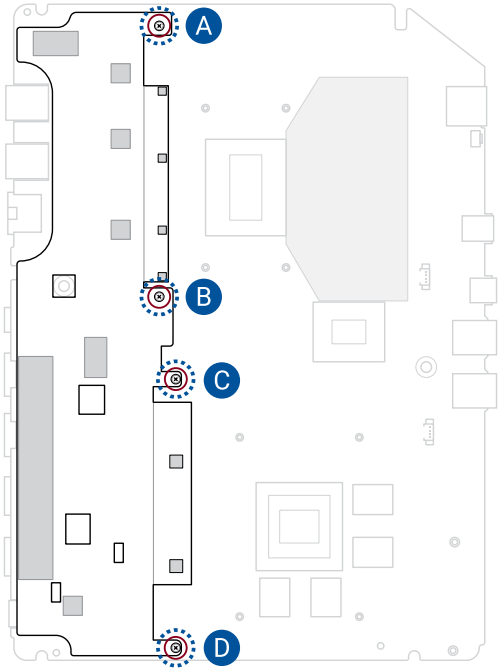


5. Flip the motherboard over so that the heatsink is visible, then place the motherboard on a flat, stable surface.
6. Completely loosen the eight (8) screws on the heatsink in the order shown in the illustration below.



7. Lift and remove the heatsink.

8. Remove the four (4) screws from the VR heatsink in the order shown in the illustration below.



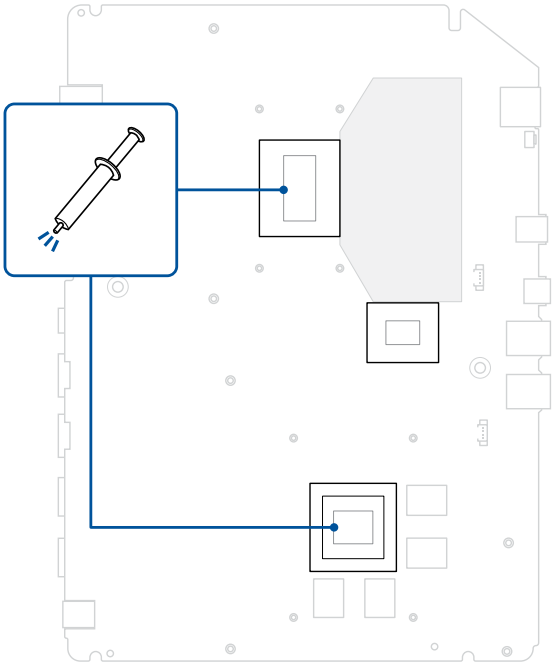
9. Lift and remove the VR heatsink.

Installation (Board SKU1)

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

IMPORTANT! Thermal paste, thermal pads, or other thermal interface materials must be thoroughly removed and replaced if this component is removed. Ensure that replacement materials are available before proceeding, or contact an authorized service center for assistance.

1. Prepare the motherboard by wiping the CPU surface clean with a clean cloth. Apply several drops of TIM to the exposed area of the CPU that will be in contact with the heatsink. Ensure that it is spread in an even thin layer.

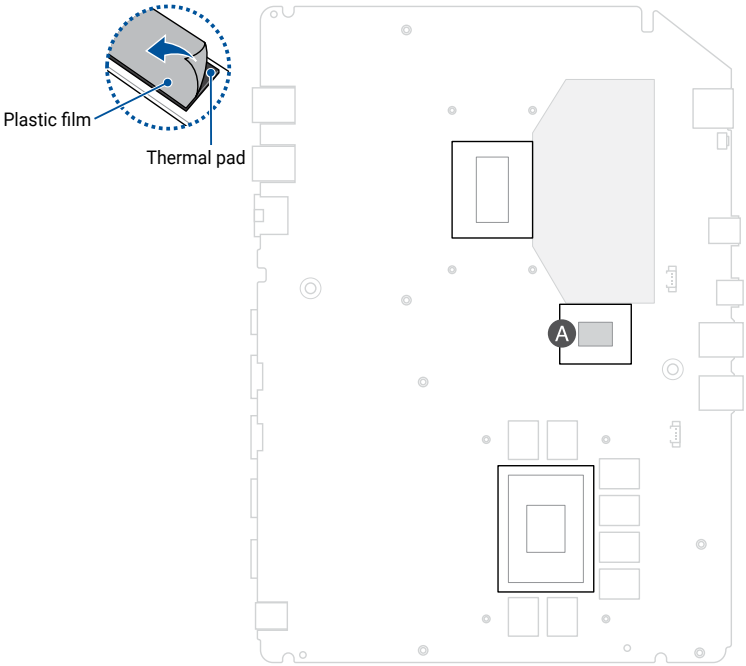


Thermal conductivity: > 8.5 W/mK (recommended)

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

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

2. Remove the plastic film from the thermal pad on the motherboard.



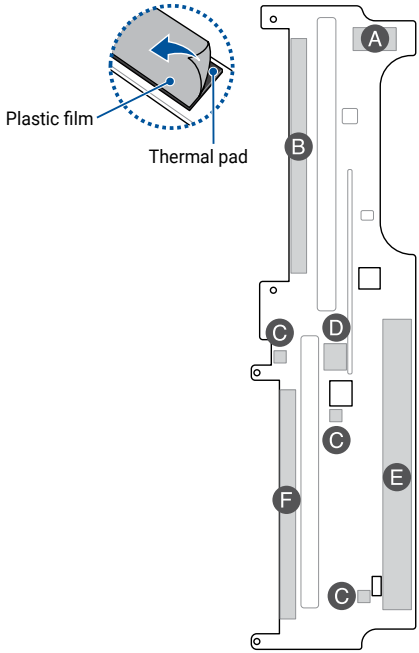
The specifications for the thermal pad(s) used here are as follows:

Thermal Pad A	
Thickness:	3mm
Size:	13.4mm x 10.2mm
Thermal conductivity:	3 W/mK
Hardness:	12 shore 00

NOTE:

- To replace the thermal pad yourself, check with an ASUS Service Partner near you (www.asus.com/support) for the availability of replacement thermal pads.
- The availability of replacement parts may vary depending on the country.

3. Before replacing the VR heatsink, ensure to remove the plastic film from the thermal pad(s) on the bottom of the VR heatsink, if they exist.



The specifications for the thermal pad(s) used here are as follows:

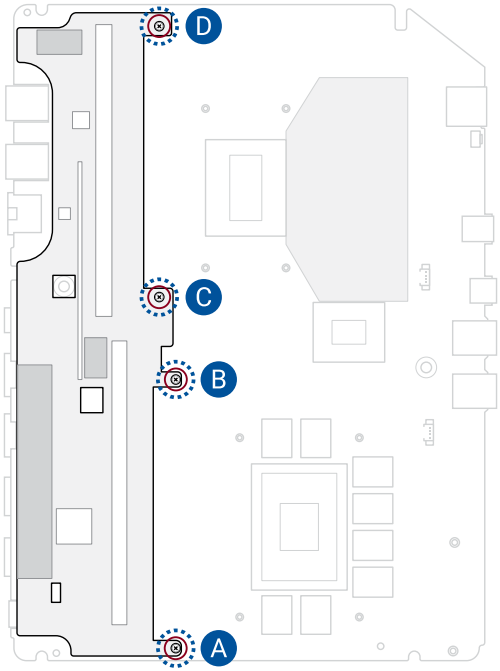
Thermal Pad A		Thermal Pad D	
Thickness:	2.5mm	Thickness:	2.5mm
Size:	17mm x 9mm	Size:	10.5mm x 9mm
Thermal conductivity:	3 W/mK	Thermal conductivity:	3 W/mK
Hardness:	20 shore 00	Hardness:	20 shore 00
Thermal Pad B		**Thermal Pad E**	
Thickness:	1.5mm	Thickness:	2.5mm
Size:	88.5mm x 6.5mm	Size:	110mm x 11mm
Thermal conductivity:	5 W/mK	Thermal conductivity:	3 W/mK
Hardness:	20 shore 00	Hardness:	20 shore 00
Thermal Pad C		**Thermal Pad F**	
Thickness:	1.25mm	Thickness:	1.5mm
Size:	5mm x 5mm	Size:	87mm x 6.5mm
Thermal conductivity:	5 W/mK	Thermal conductivity:	5 W/mK
Hardness:	20 shore 00	Hardness:	20 shore 00

NOTE:

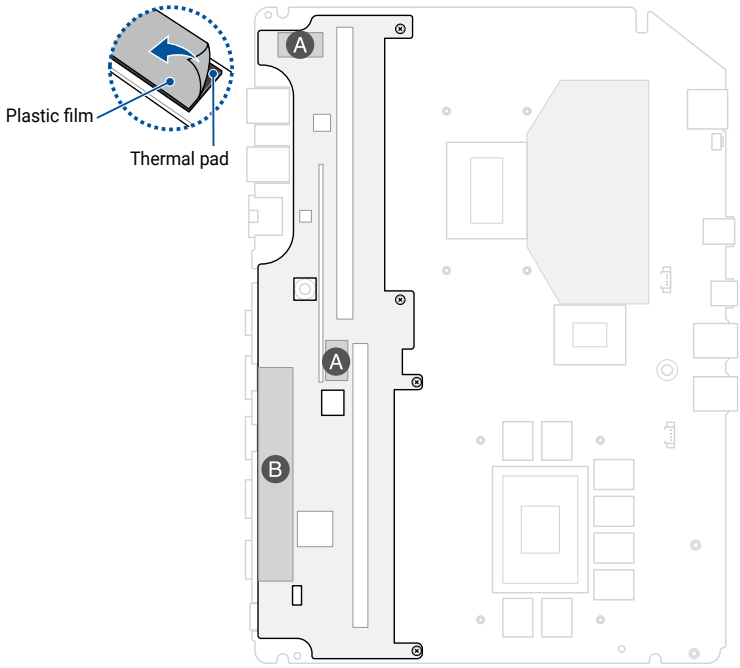
- To replace the thermal pad yourself, check with an ASUS Service Partner near you (www.asus.com/support) for the availability of replacement thermal pads.
- The availability of replacement parts may vary depending on the country.

WARNING! Heat dissipation performance may still vary even when you have replaced the thermal pad with one that meets the specifications provided. To prevent potential damage to the VR heatsink, you should have the thermal pad replaced by a service center near you.

4. Flip the VR heatsink over so that the top side of the VR heatsink faces up.
5. Install the VR heatsink to the motherboard using four (4) screws in the order shown in the illustration below.



6. Remove the plastic film from the thermal pad(s) on the top of the VR heatsink, if they exist.



The specifications for the thermal pad(s) used here are as follows:

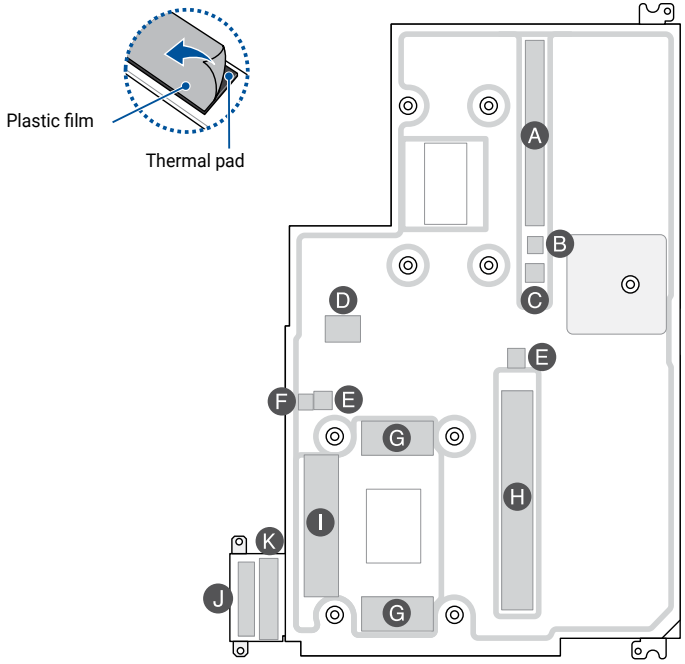
Thermal Pad A		Thermal Pad B	
Thickness:	1.75mm	Thickness:	1.75mm
Size:	17mm x 9mm	Size:	80mm x 12mm
Thermal conductivity:	3 W/mK	Thermal conductivity:	3 W/mK
Hardness:	20 shore 00	Hardness:	20 shore 00

NOTE:

- To replace the thermal pad yourself, check with an ASUS Service Partner near you (www.asus.com/support) for the availability of replacement thermal pads.
- The availability of replacement parts may vary depending on the country.

WARNING! Heat dissipation performance may still vary even when you have replaced the thermal pad with one that meets the specifications provided. To prevent potential damage to the VR heatsink, you should have the thermal pad replaced by a service center near you.

7. Before replacing the heatsink, ensure to remove the plastic film from the thermal pad(s) on the bottom of the heatsink, if they exist.



The specifications for the thermal pad(s) used here are as follows:

Thermal Pad A		Thermal Pad D	
Thickness:	1.25mm	Thickness:	3mm
Size:	70mm x 7mm	Size:	13.4mm x 10.5mm
Thermal conductivity:	5 W/mK	Thermal conductivity:	3 W/mK
Hardness:	20 shore 00	Hardness:	12 shore 00
Thermal Pad B		**Thermal Pad E**	
Thickness:	2.25mm	Thickness:	1.5mm
Size:	6.5mm x 6mm	Size:	7mm x 7mm
Thermal conductivity:	3 W/mK	Thermal conductivity:	3 W/mK
Hardness:	20 shore 00	Hardness:	30 shore 00
Thermal Pad C		**Thermal Pad F**	
Thickness:	1mm	Thickness:	3.5mm
Size:	7mm x 7mm	Size:	6mm x 5mm
Thermal conductivity:	3 W/mK	Thermal conductivity:	5 W/mK
Hardness:	20 shore 00	Hardness:	30 shore 00

Thermal Pad G	
Thickness:	2.25mm
Size:	27mm x 13mm
Thermal conductivity:	5 W/mK
Hardness:	12 shore 00

Thermal Pad J	
Thickness:	4.5mm
Size:	27.1mm x 6.2mm
Thermal conductivity:	5 W/mK
Hardness:	30 shore 00

Thermal Pad H	
Thickness:	1.25mm
Size:	83mm x 12mm
Thermal conductivity:	5 W/mK
Hardness:	30 shore 00

Thermal Pad K	
Thickness:	1mm
Size:	29mm x 7mm
Thermal conductivity:	3 W/mK
Hardness:	30 shore 00

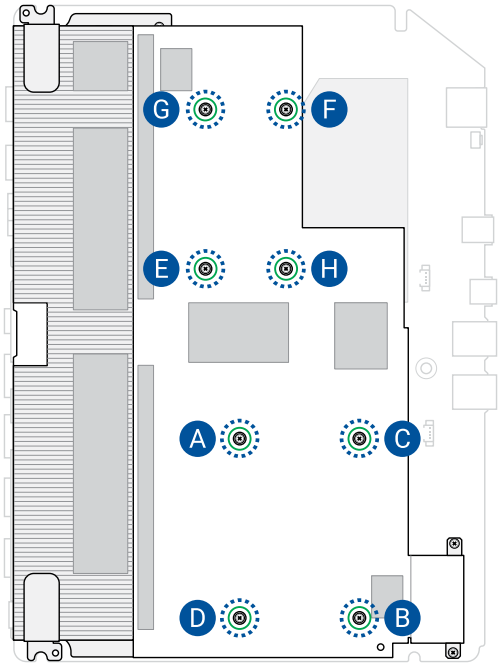
Thermal Pad I	
Thickness:	2.25mm
Size:	54.5mm x 13mm
Thermal conductivity:	5 W/mK
Hardness:	12 shore 00

NOTE:

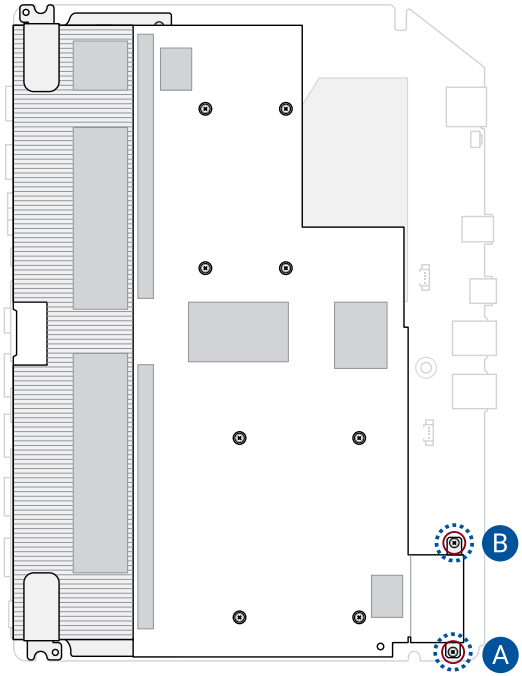
- To replace the thermal pad yourself, check with an ASUS Service Partner near you (www.asus.com/support) for the availability of replacement thermal pads.
- The availability of replacement parts may vary depending on the country.

WARNING! Heat dissipation performance may still vary even when you have replaced the thermal pad with one that meets the specifications provided. To prevent potential damage to the VR heatsink, you should have the thermal pad replaced by a service center near you.

8. Flip the heatsink over so that the top side of the heatsink faces up.
9. Align and place the heatsink onto the VR heatsink and motherboard, then secure the heatsink by tightening the eight (8) screws in the order shown in the illustration below.

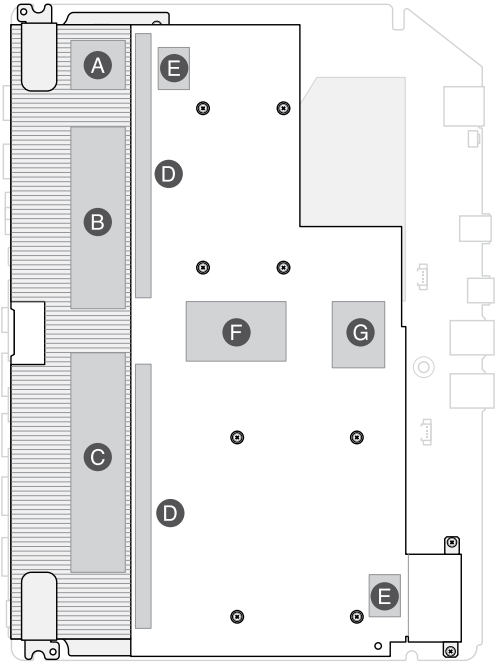


10. Secure two (2) screws on the heatsink in the order shown below.



11. Remove the plastic film from the thermal pad(s) on the top of the heatsink, if they exist.





The specifications for the thermal pad(s) used here are as follows:

Thermal Pad A		Thermal Pad D	
Thickness:	2.25mm	Thickness:	0.75mm
Size:	20mm x 22mm	Size:	100mm x 6mm
Thermal conductivity:	8 W/mK	Thermal conductivity:	8 W/mK
Hardness:	40~55 shore 00	Hardness:	40~55 shore 00
Thermal Pad B		**Thermal Pad E**	
Thickness:	2.25mm	Thickness:	1.25mm
Size:	70mm x 22mm	Size:	16mm x 12mm
Thermal conductivity:	8 W/mK	Thermal conductivity:	8 W/mK
Hardness:	40~55 shore 00	Hardness:	40~55 shore 00
Thermal Pad C		**Thermal Pad F**	
Thickness:	2.25mm	Thickness:	1.25mm
Size:	83mm x 22mm	Size:	22mm x 38mm
Thermal conductivity:	8 W/mK	Thermal conductivity:	8 W/mK
Hardness:	40~55 shore 00	Hardness:	40~55 shore 00

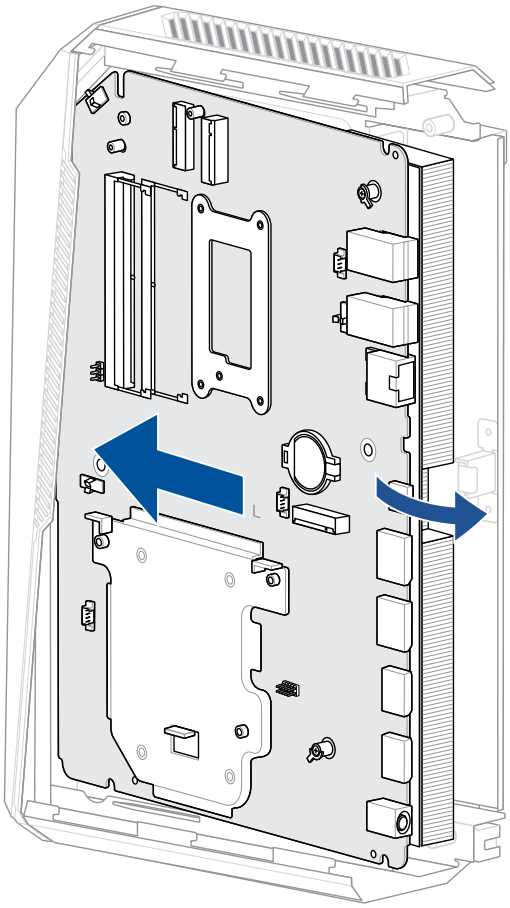
Thermal Pad G	
Thickness:	1.25mm
Size:	25mm x 20mm
Thermal conductivity:	8 W/mK
Hardness:	40~55 shore 00

NOTE:

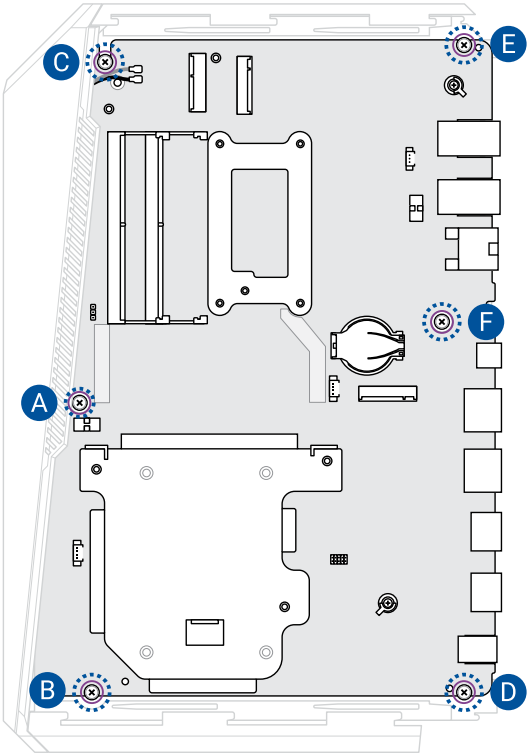
- To replace the thermal pad yourself, check with an ASUS Service Partner near you (www.asus.com/support) for the availability of replacement thermal pads.
- The availability of replacement parts may vary depending on the country.

WARNING! Heat dissipation performance may still vary even when you have replaced the thermal pad with one that meets the specifications provided. To prevent potential damage to the heatsink, you should have the thermal pad replaced by a service center near you.

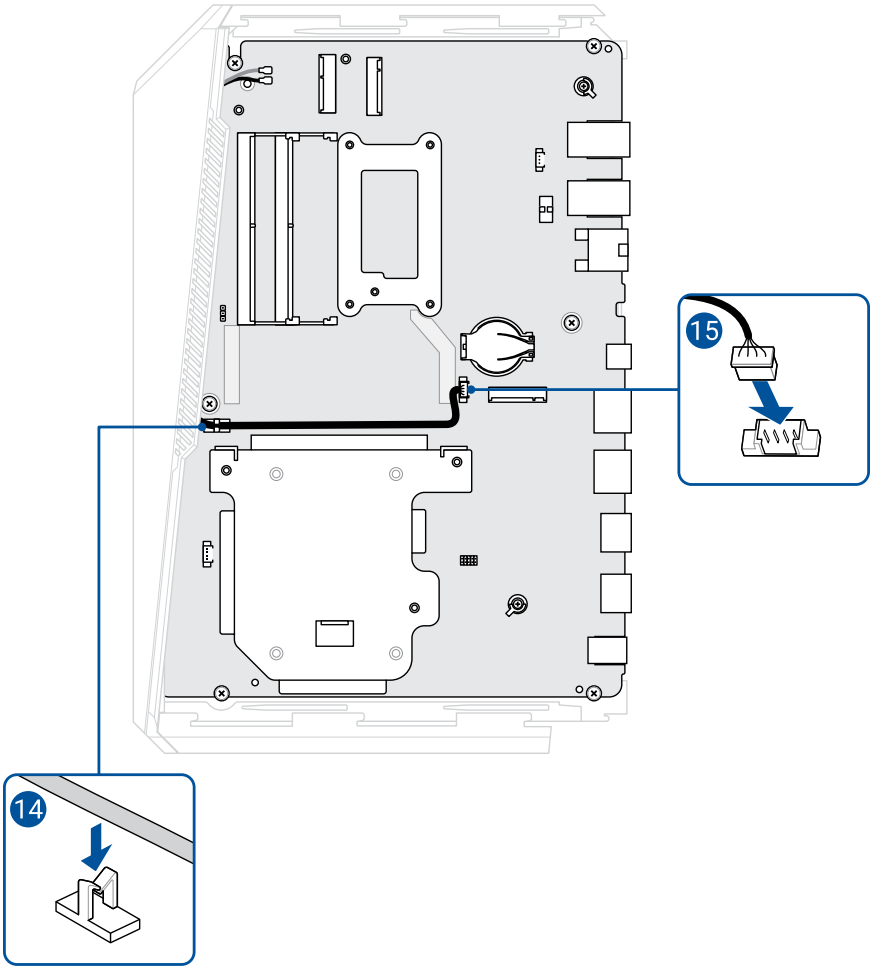
12. Slide the front IO ports on the motherboard into the openings on the front plate, then gently place the motherboard into the chassis.



13. Secure the motherboard to the chassis using six (6) screws in the order shown on the illustration below.



14. Push the front LED cable into the cable organizer.
15. Connect the front LED cable from the connector on the motherboard.



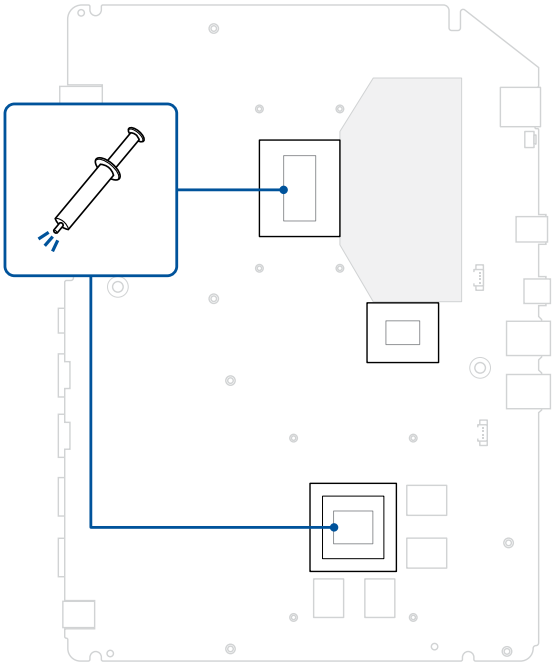
16. Install the component(s) you removed in **Before you begin**.

Installation (Board SKU2)

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

IMPORTANT! Thermal paste, thermal pads, or other thermal interface materials must be thoroughly removed and replaced if this component is removed. Ensure that replacement materials are available before proceeding, or contact an authorized service center for assistance.

1. Prepare the motherboard by wiping the CPU surface clean with a clean cloth. Apply several drops of TIM to the exposed area of the CPU that will be in contact with the heatsink. Ensure that it is spread in an even thin layer.

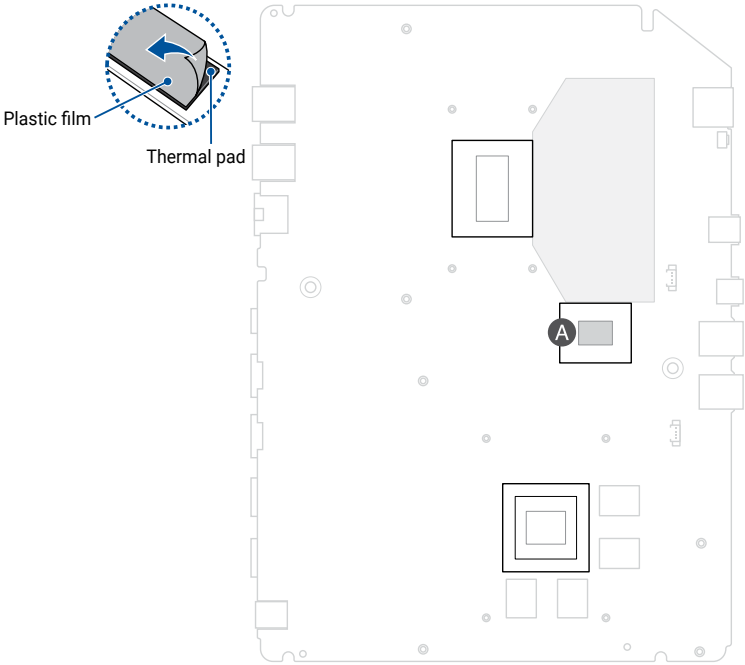


Thermal conductivity: > 8.5 W/mK (recommended)

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

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

2. Remove the plastic film from the thermal pad on the motherboard.



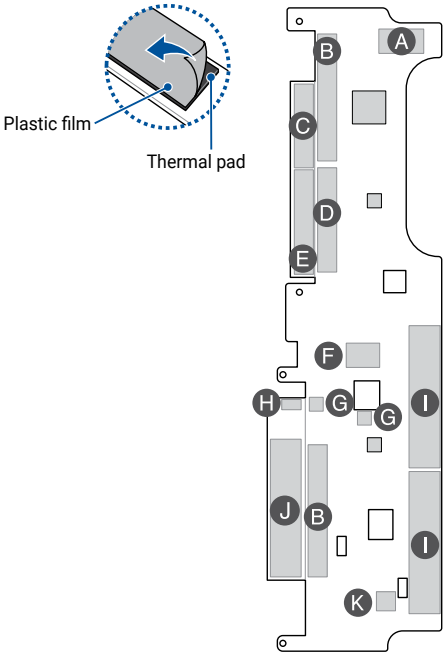
The specifications for the thermal pad(s) used here are as follows:

Thermal Pad A	
Thickness:	8.5mm
Size:	16mm x 12mm
Thermal conductivity:	3 W/mK
Hardness:	20 shore 00

NOTE:

- To replace the thermal pad yourself, check with an ASUS Service Partner near you (www.asus.com/support) for the availability of replacement thermal pads.
- The availability of replacement parts may vary depending on the country.

3. Before replacing the VR heatsink, ensure to remove the plastic film from the thermal pad(s) on the bottom of the VR heatsink, if they exist.



The specifications for the thermal pad(s) used here are as follows:

Thermal Pad A		Thermal Pad D	
Thickness:	2.5mm	Thickness:	1.75mm
Size:	17mm x 9mm	Size:	40mm x 6.5mm
Thermal conductivity:	3 W/mK	Thermal conductivity:	3 W/mK
Hardness:	20 shore 00	Hardness:	20 shore 00
Thermal Pad B		**Thermal Pad E**	
Thickness:	1.75mm	Thickness:	1.5mm
Size:	48.5mm x 6.5mm	Size:	39.5mm x 7mm
Thermal conductivity:	3 W/mK	Thermal conductivity:	5 W/mK
Hardness:	20 shore 00	Hardness:	20 shore 00
Thermal Pad C		**Thermal Pad F**	
Thickness:	1.25mm	Thickness:	2.25mm
Size:	32.5mm x 7mm	Size:	10.5mm x 9mm
Thermal conductivity:	5 W/mK	Thermal conductivity:	3 W/mK
Hardness:	20 shore 00	Hardness:	20 shore 00

Thermal Pad G	
Thickness:	1.75mm
Size:	5mm x 5mm
Thermal conductivity:	3 W/mK
Hardness:	20 shore 00

Thermal Pad J	
Thickness:	1.5mm
Size:	51mm x 12mm
Thermal conductivity:	5 W/mK
Hardness:	20 shore 00

Thermal Pad H	
Thickness:	2.25mm
Size:	6.8mm x 5.1mm
Thermal conductivity:	5 W/mK
Hardness:	20 shore 00

Thermal Pad K	
Thickness:	1.75mm
Size:	7mm x 7mm
Thermal conductivity:	5 W/mK
Hardness:	20 shore 00

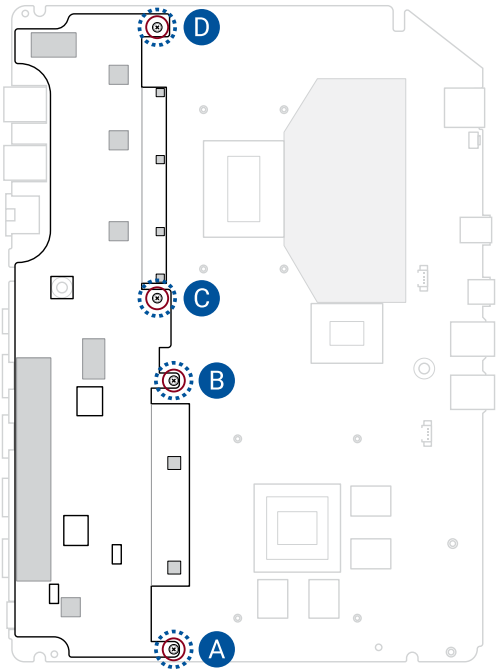
Thermal Pad I	
Thickness:	2.25mm
Size:	54mm x 11mm
Thermal conductivity:	3 W/mK
Hardness:	20 shore 00

NOTE:

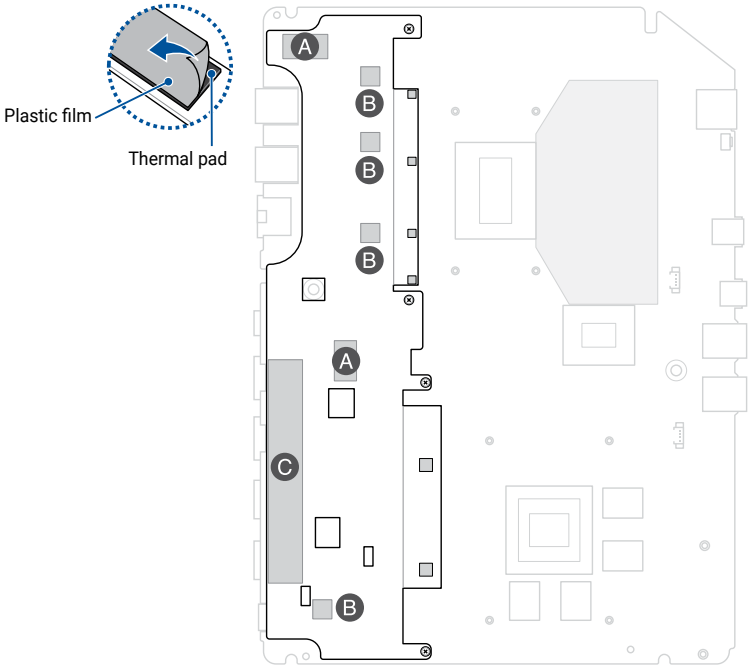
- To replace the thermal pad yourself, check with an ASUS Service Partner near you (www.asus.com/support) for the availability of replacement thermal pads.
- The availability of replacement parts may vary depending on the country.

WARNING! Heat dissipation performance may still vary even when you have replaced the thermal pad with one that meets the specifications provided. To prevent potential damage to the VR heatsink, you should have the thermal pad replaced by a service center near you.

4. Flip the VR heatsink over so that the top side of the VR heatsink faces up.
5. Install the VR heatsink to the motherboard using four (4) screws in the order shown in the illustration below.



6. Remove the plastic film from the thermal pad(s) on the top of the VR heatsink, if they exist.



The specifications for the thermal pad(s) used here are as follows:

Thermal Pad A	
Thickness:	1.5mm
Size:	17mm x 9mm
Thermal conductivity:	3 W/mK
Hardness:	20 shore 00

Thermal Pad B	
Thickness:	1.75mm
Size:	6.5mm x 6.5mm
Thermal conductivity:	3 W/mK
Hardness:	20 shore 00

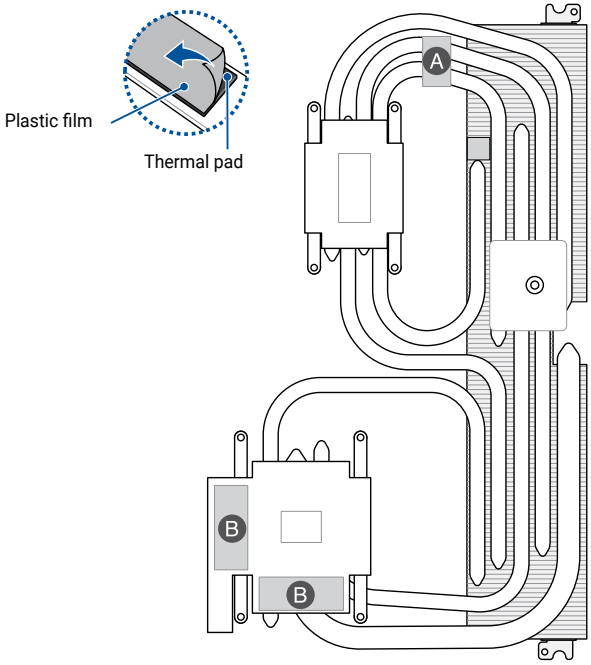
Thermal Pad C	
Thickness:	1.5mm
Size:	41mm x 12mm
Thermal conductivity:	3 W/mK
Hardness:	20 shore 00

NOTE:

- To replace the thermal pad yourself, check with an ASUS Service Partner near you (www.asus.com/support) for the availability of replacement thermal pads.
- The availability of replacement parts may vary depending on the country.

WARNING! Heat dissipation performance may still vary even when you have replaced the thermal pad with one that meets the specifications provided. To prevent potential damage to the VR heatsink, you should have the thermal pad replaced by a service center near you.

7. Before replacing the heatsink, ensure to remove the plastic film from the thermal pad(s) on the bottom of the heatsink, if they exist.



The specifications for the thermal pad(s) used here are as follows:

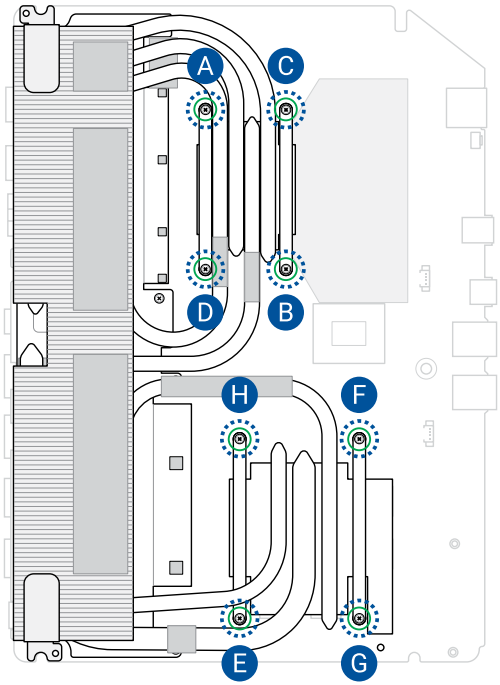
Thermal Pad A		Thermal Pad B	
Thickness:	1.25mm	Thickness:	1.25mm
Size:	17.5mm x 10mm	Size:	31mm x 13mm
Thermal conductivity:	5 W/mK	Thermal conductivity:	5 W/mK
Hardness:	20 shore 00	Hardness:	12 shore 00

NOTE:

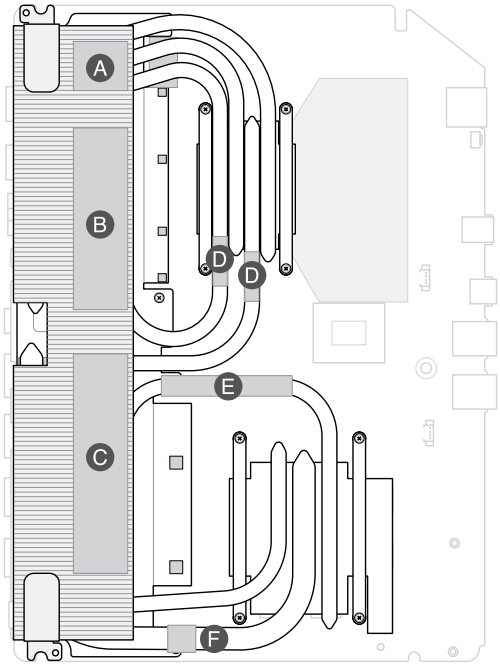
- To replace the thermal pad yourself, check with an ASUS Service Partner near you (www.asus.com/support) for the availability of replacement thermal pads.
- The availability of replacement parts may vary depending on the country.

WARNING! Heat dissipation performance may still vary even when you have replaced the thermal pad with one that meets the specifications provided. To prevent potential damage to the heatsink, you should have the thermal pad replaced by a service center near you.

8. Flip the heatsink over so that the top side of the heatsink faces up.
9. Align and place the heatsink onto the VR heatsink and motherboard, then secure the heatsink by tightening the eight (8) screws in the order shown in the illustration below.



10. Remove the plastic film from the thermal pad(s) on the top of the heatsink, if they exist.



The specifications for the thermal pad(s) used here are as follows:

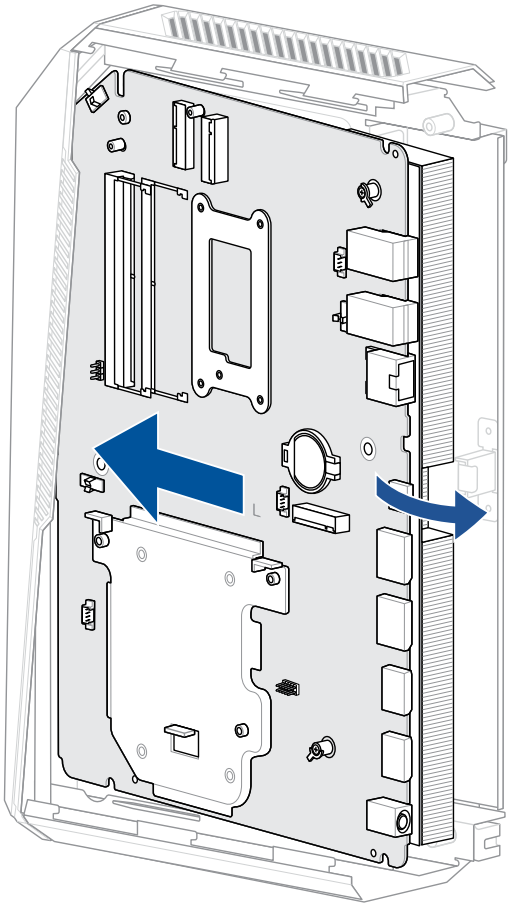
Thermal Pad A		Thermal Pad D	
Thickness:	2.25mm	Thickness:	1mm
Size:	20mm x 22mm	Size:	18mm x 5.5mm
Thermal conductivity:	8 W/mK	Thermal conductivity:	5 W/mK
Hardness:	40~55 shore 00	Hardness:	20 shore 00
Thermal Pad B		**Thermal Pad E**	
Thickness:	2.25mm	Thickness:	1.75mm
Size:	70mm x 22mm	Size:	49mm x 7.6mm
Thermal conductivity:	8 W/mK	Thermal conductivity:	5 W/mK
Hardness:	40~55 shore 00	Hardness:	20 shore 00
Thermal Pad C		**Thermal Pad F**	
Thickness:	2.25mm	Thickness:	1.75mm
Size:	83mm x 22mm	Size:	10mm x 10mm
Thermal conductivity:	8 W/mK	Thermal conductivity:	5 W/mK
Hardness:	40~55 shore 00	Hardness:	20 shore 00

NOTE:

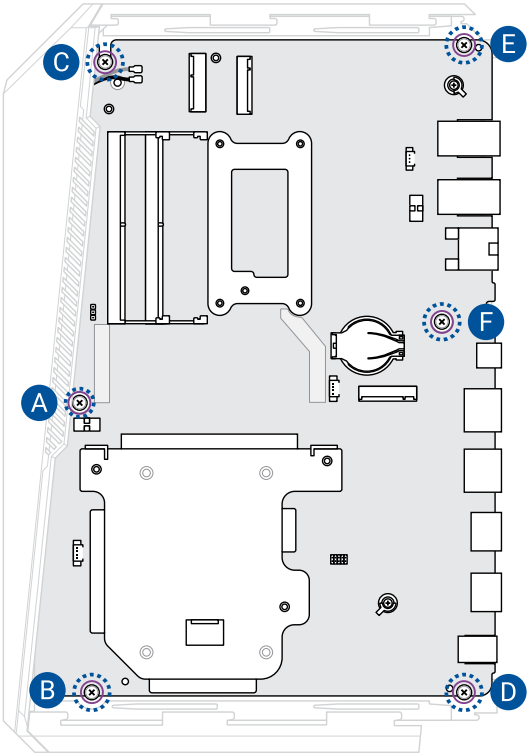
- To replace the thermal pad yourself, check with an ASUS Service Partner near you (www.asus.com/support) for the availability of replacement thermal pads.
- The availability of replacement parts may vary depending on the country.

WARNING! Heat dissipation performance may still vary even when you have replaced the thermal pad with one that meets the specifications provided. To prevent potential damage to the heatsink, you should have the thermal pad replaced by a service center near you.

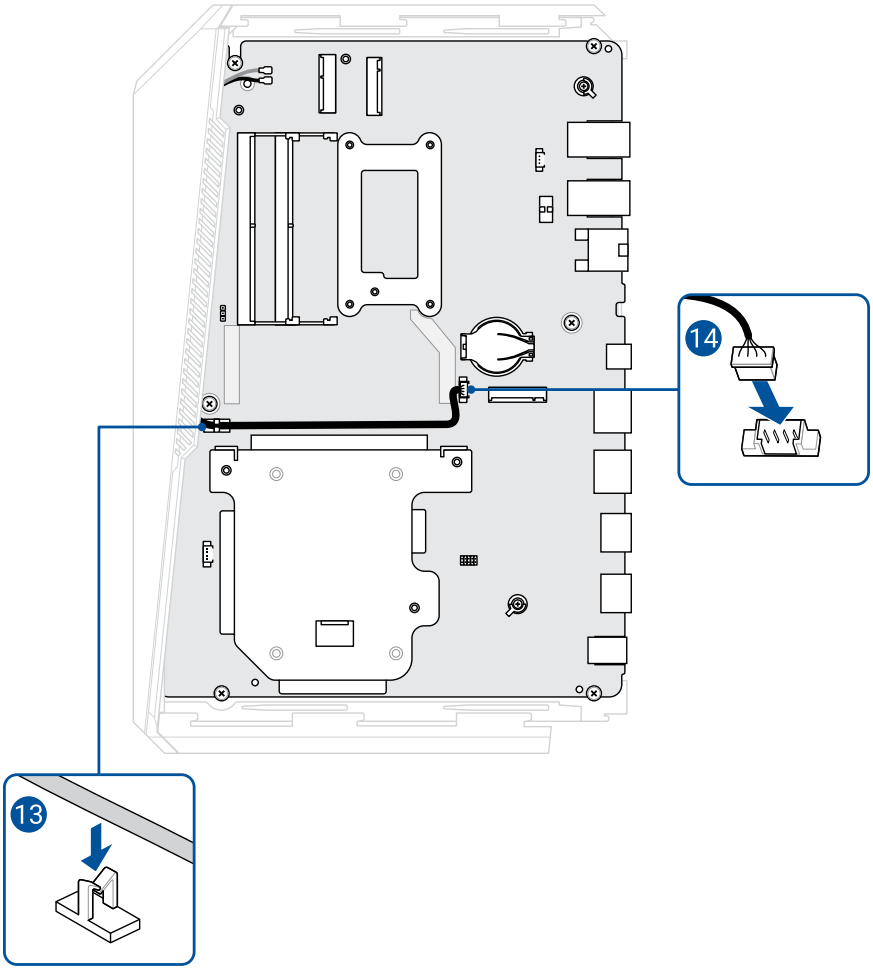
11. Slide the front IO ports on the motherboard into the openings on the front plate, then gently place the motherboard into the chassis.



12. Secure the motherboard to the chassis using six (6) screws in the order shown on the illustration below.



13. Push the front LED cable into the cable organizer.
14. Connect the front LED cable from the connector on the motherboard.



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

Heatsink

The NUC system features two (2) different board SKUs, please follow the removal and installation steps for your NUC system's motherboard.

Before you begin

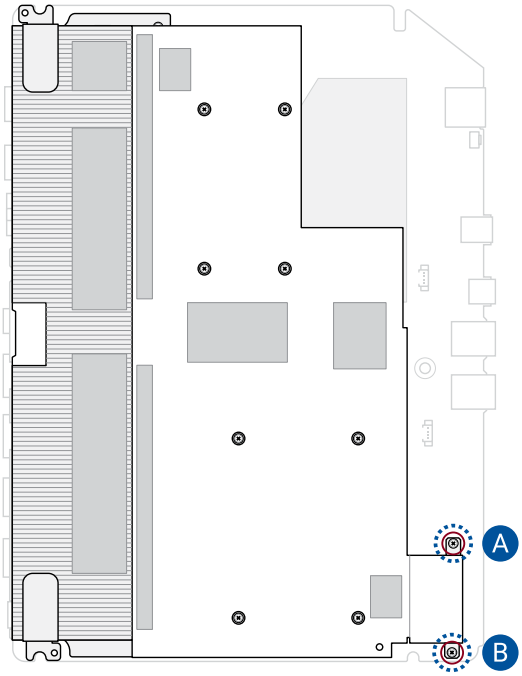
1. Read the **Safety Precautions** and complete the **Pre-repair Checklist**.
2. Remove the following component(s):
   - Right cover
   - Memory module(s)
   - M.2 SSD(s)
   - Wireless card
   - CMOS battery
   - Memory fan module
   - Fan modules
   - Motherboard

Screw list

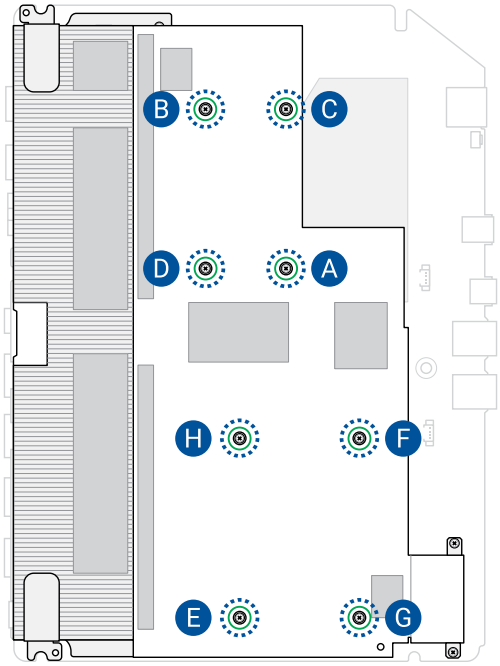
- ⊕ Heatsink captive screws (8 pcs)
- ⊕ M2 X 2.3L (6 pcs)

Removal (Board SKU1)

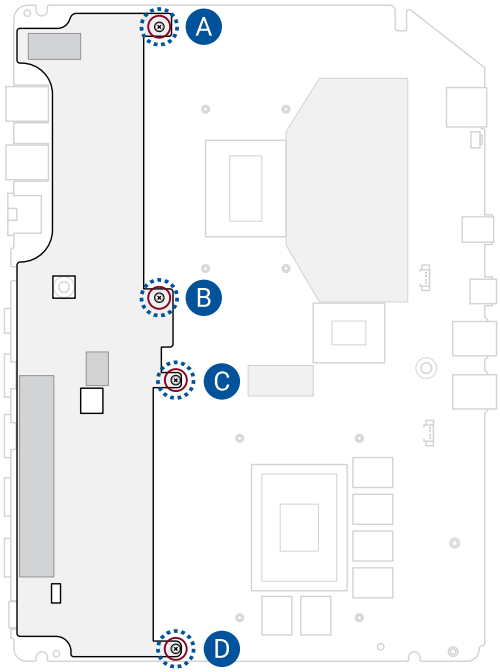
1. Flip the motherboard over so that the heatsink is visible, then place the motherboard on a flat, stable surface.
2. Remove the two (2) screws on the heatsink in the order shown below.



3. Completely loosen the eight (8) screws on the heatsink in the order shown in the illustration below.



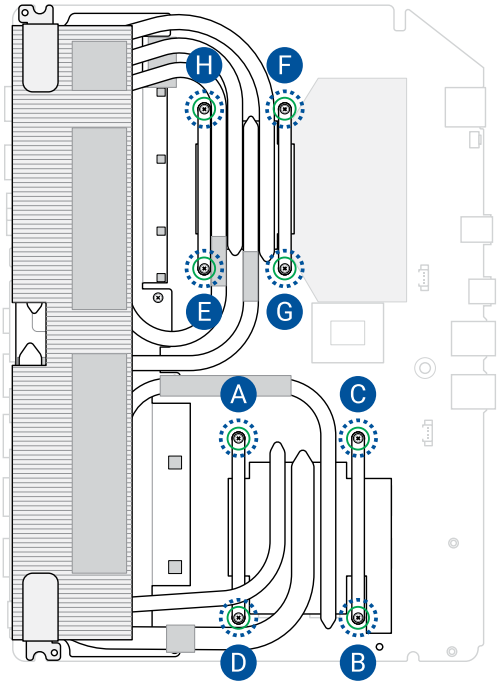
4. Remove the four (4) screws from the VR heatsink in the order shown in the illustration below.



5. Lift and remove the VR heatsink.

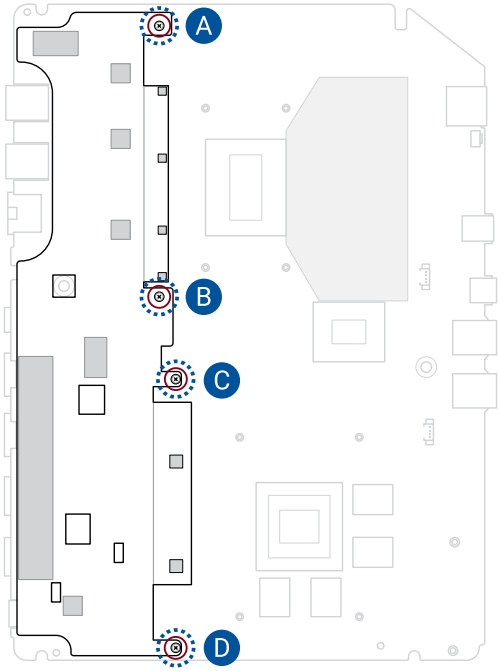
Removal (Board SKU2)

1. Flip the motherboard over so that the heatsink is visible, then place the motherboard on a flat, stable surface.
2. Completely loosen the eight (8) screws on the heatsink in the order shown in the illustration below.



3. Lift and remove the heatsink.

4. Remove the four (4) screws from the VR heatsink in the order shown in the illustration below.



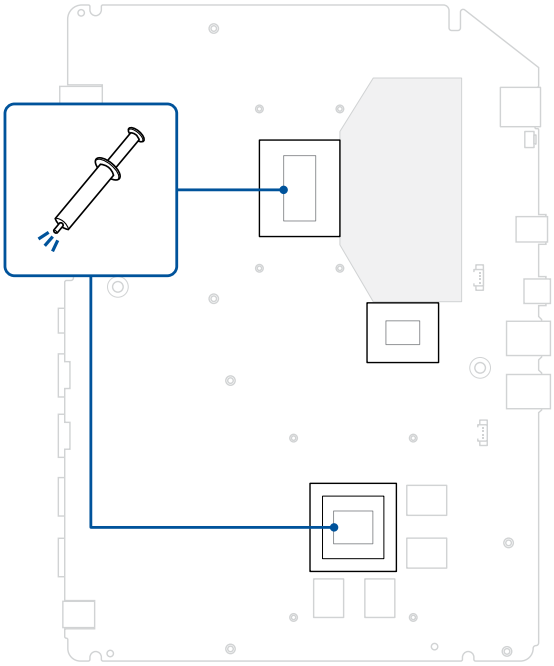
5. Lift and remove the VR heatsink.

Installation (Board SKU1)

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

IMPORTANT! Thermal paste, thermal pads, or other thermal interface materials must be thoroughly removed and replaced if this component is removed. Ensure that replacement materials are available before proceeding, or contact an authorized service center for assistance.

1. Prepare the motherboard by wiping the CPU surface clean with a clean cloth. Apply several drops of TIM to the exposed area of the CPU that will be in contact with the heatsink. Ensure that it is spread in an even thin layer.

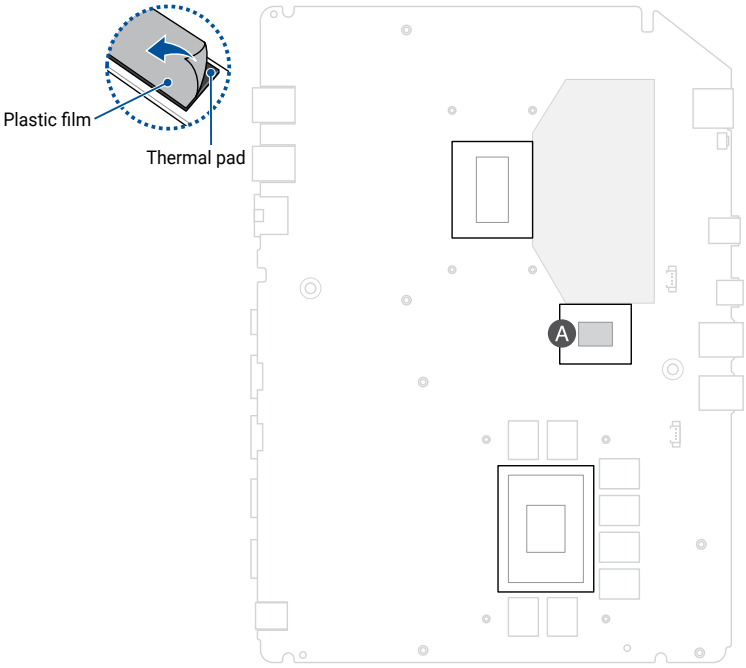


Thermal conductivity: > 8.5 W/mK (recommended)

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

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

2. Remove the plastic film from the thermal pad on the motherboard.



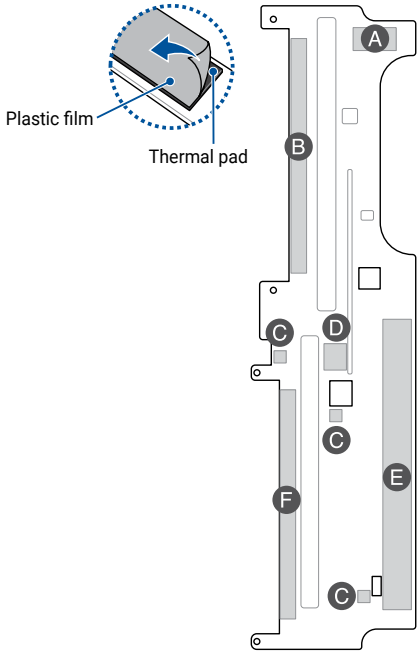
The specifications for the thermal pad(s) used here are as follows:

Thermal Pad A	
Thickness:	3mm
Size:	13.4mm x 10.2mm
Thermal conductivity:	3 W/mK
Hardness:	12 shore 00

NOTE:

- To replace the thermal pad yourself, check with an ASUS Service Partner near you (www.asus.com/support) for the availability of replacement thermal pads.
- The availability of replacement parts may vary depending on the country.

3. Before replacing the VR heatsink, ensure to remove the plastic film from the thermal pad(s) on the bottom of the VR heatsink, if they exist.



The specifications for the thermal pad(s) used here are as follows:

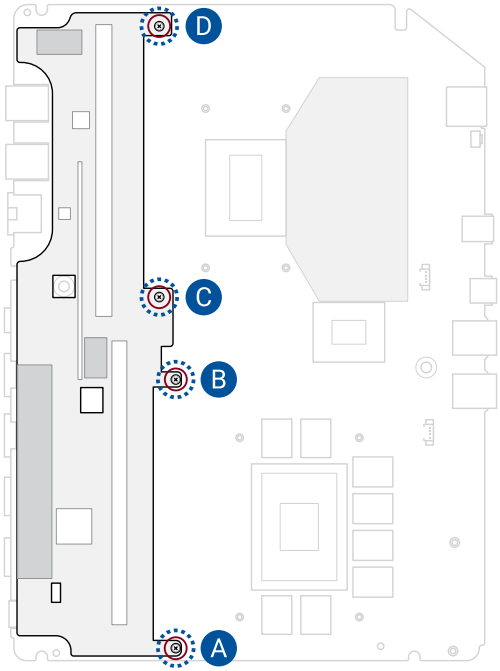
Thermal Pad A		Thermal Pad D	
Thickness:	2.5mm	Thickness:	2.5mm
Size:	17mm x 9mm	Size:	10.5mm x 9mm
Thermal conductivity:	3 W/mK	Thermal conductivity:	3 W/mK
Hardness:	20 shore 00	Hardness:	20 shore 00
Thermal Pad B		**Thermal Pad E**	
Thickness:	1.5mm	Thickness:	2.5mm
Size:	88.5mm x 6.5mm	Size:	110mm x 11mm
Thermal conductivity:	5 W/mK	Thermal conductivity:	3 W/mK
Hardness:	20 shore 00	Hardness:	20 shore 00
Thermal Pad C		**Thermal Pad F**	
Thickness:	1.25mm	Thickness:	1.5mm
Size:	5mm x 5mm	Size:	87mm x 6.5mm
Thermal conductivity:	5 W/mK	Thermal conductivity:	5 W/mK
Hardness:	20 shore 00	Hardness:	20 shore 00

NOTE:

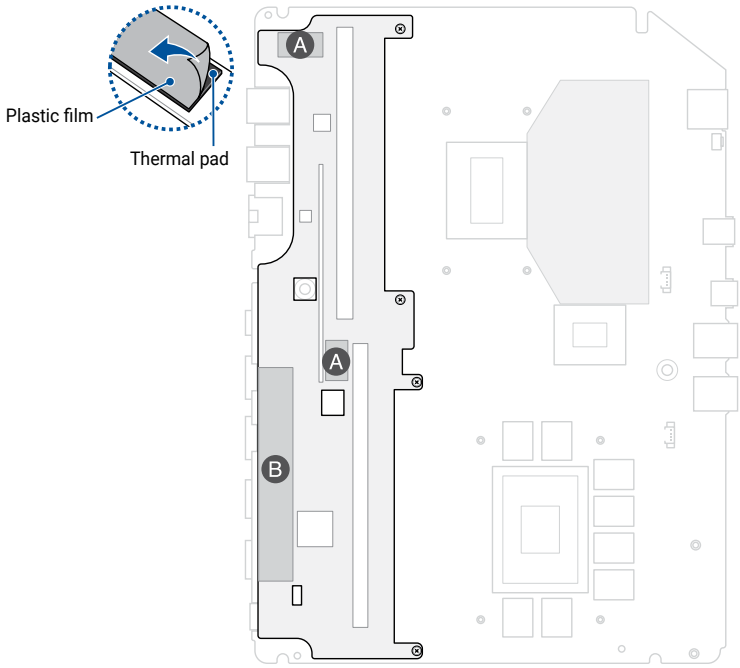
- To replace the thermal pad yourself, check with an ASUS Service Partner near you (www.asus.com/support) for the availability of replacement thermal pads.
- The availability of replacement parts may vary depending on the country.

WARNING! Heat dissipation performance may still vary even when you have replaced the thermal pad with one that meets the specifications provided. To prevent potential damage to the VR heatsink, you should have the thermal pad replaced by a service center near you.

4. Flip the VR heatsink over so that the top side of the VR heatsink faces up.
5. Install the VR heatsink to the motherboard using four (4) screws in the order shown in the illustration below.



6. Remove the plastic film from the thermal pad(s) on the top of the VR heatsink, if they exist.



The specifications for the thermal pad(s) used here are as follows:

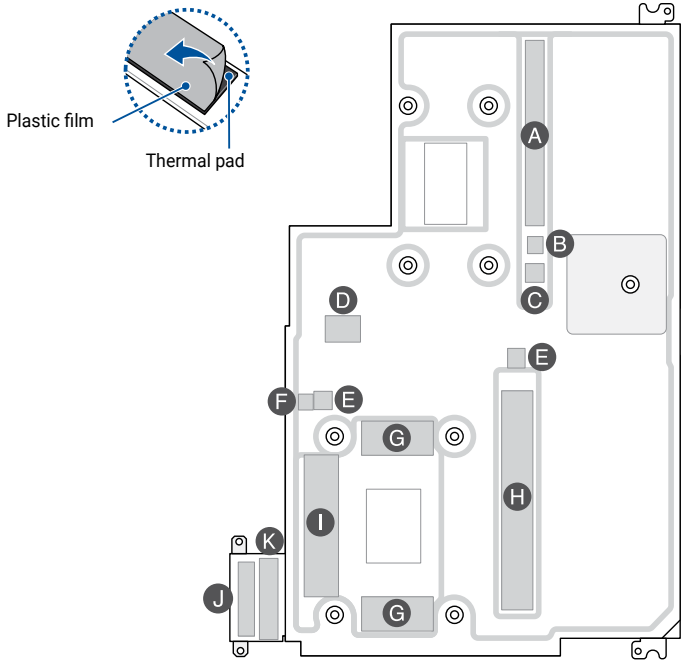
Thermal Pad A		Thermal Pad B	
Thickness:	1.75mm	Thickness:	1.75mm
Size:	17mm x 9mm	Size:	80mm x 12mm
Thermal conductivity:	3 W/mK	Thermal conductivity:	3 W/mK
Hardness:	20 shore 00	Hardness:	20 shore 00

NOTE:

- To replace the thermal pad yourself, check with an ASUS Service Partner near you (www.asus.com/support) for the availability of replacement thermal pads.
- The availability of replacement parts may vary depending on the country.

WARNING! Heat dissipation performance may still vary even when you have replaced the thermal pad with one that meets the specifications provided. To prevent potential damage to the VR heatsink, you should have the thermal pad replaced by a service center near you.

7. Before replacing the heatsink, ensure to remove the plastic film from the thermal pad(s) on the bottom of the heatsink, if they exist.



The specifications for the thermal pad(s) used here are as follows:

Thermal Pad A		Thermal Pad D	
Thickness:	1.25mm	Thickness:	3mm
Size:	70mm x 7mm	Size:	13.4mm x 10.5mm
Thermal conductivity:	5 W/mK	Thermal conductivity:	3 W/mK
Hardness:	20 shore 00	Hardness:	12 shore 00
Thermal Pad B		**Thermal Pad E**	
Thickness:	2.25mm	Thickness:	1.5mm
Size:	6.5mm x 6mm	Size:	7mm x 7mm
Thermal conductivity:	3 W/mK	Thermal conductivity:	3 W/mK
Hardness:	20 shore 00	Hardness:	30 shore 00
Thermal Pad C		**Thermal Pad F**	
Thickness:	1mm	Thickness:	3.5mm
Size:	7mm x 7mm	Size:	6mm x 5mm
Thermal conductivity:	3 W/mK	Thermal conductivity:	5 W/mK
Hardness:	20 shore 00	Hardness:	30 shore 00

Thermal Pad G	
Thickness:	2.25mm
Size:	27mm x 13mm
Thermal conductivity:	5 W/mK
Hardness:	12 shore 00

Thermal Pad J	
Thickness:	4.5mm
Size:	27.1mm x 6.2mm
Thermal conductivity:	5 W/mK
Hardness:	30 shore 00

Thermal Pad H	
Thickness:	1.25mm
Size:	83mm x 12mm
Thermal conductivity:	5 W/mK
Hardness:	30 shore 00

Thermal Pad K	
Thickness:	1mm
Size:	29mm x 7mm
Thermal conductivity:	3 W/mK
Hardness:	30 shore 00

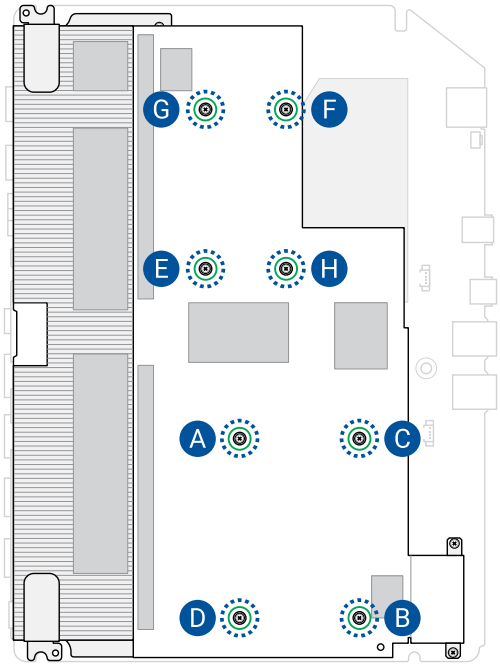
Thermal Pad I	
Thickness:	2.25mm
Size:	54.5mm x 13mm
Thermal conductivity:	5 W/mK
Hardness:	12 shore 00

NOTE:

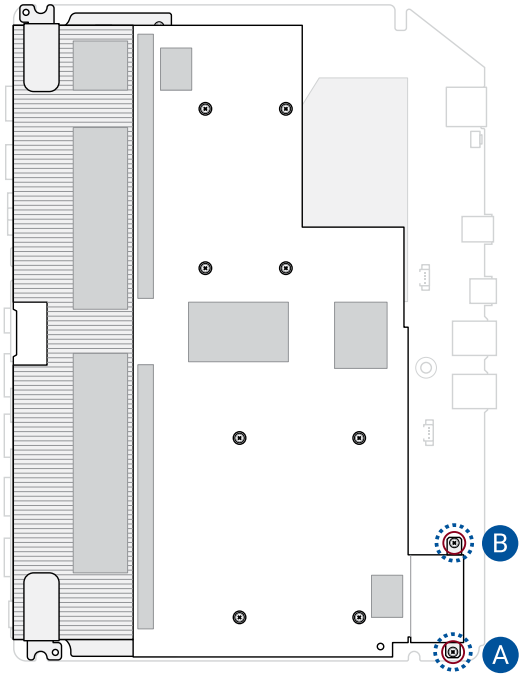
- To replace the thermal pad yourself, check with an ASUS Service Partner near you (www.asus.com/support) for the availability of replacement thermal pads.
- The availability of replacement parts may vary depending on the country.

WARNING! Heat dissipation performance may still vary even when you have replaced the thermal pad with one that meets the specifications provided. To prevent potential damage to the VR heatsink, you should have the thermal pad replaced by a service center near you.

8. Flip the heatsink over so that the top side of the heatsink faces up.
9. Align and place the heatsink onto the VR heatsink and motherboard, then secure the heatsink by tightening the eight (8) screws in the order shown in the illustration below.



10. Secure two (2) screws on the heatsink in the order shown below.

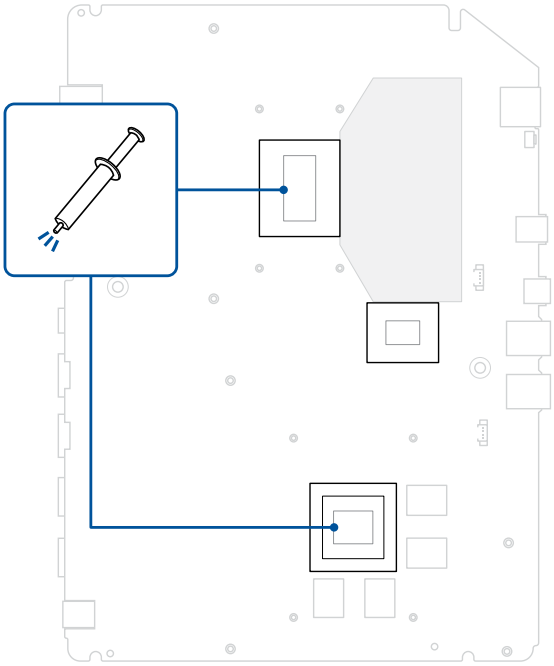


Installation (Board SKU2)

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

IMPORTANT! Thermal paste, thermal pads, or other thermal interface materials must be thoroughly removed and replaced if this component is removed. Ensure that replacement materials are available before proceeding, or contact an authorized service center for assistance.

1. Prepare the motherboard by wiping the CPU surface clean with a clean cloth. Apply several drops of TIM to the exposed area of the CPU that will be in contact with the heatsink. Ensure that it is spread in an even thin layer.

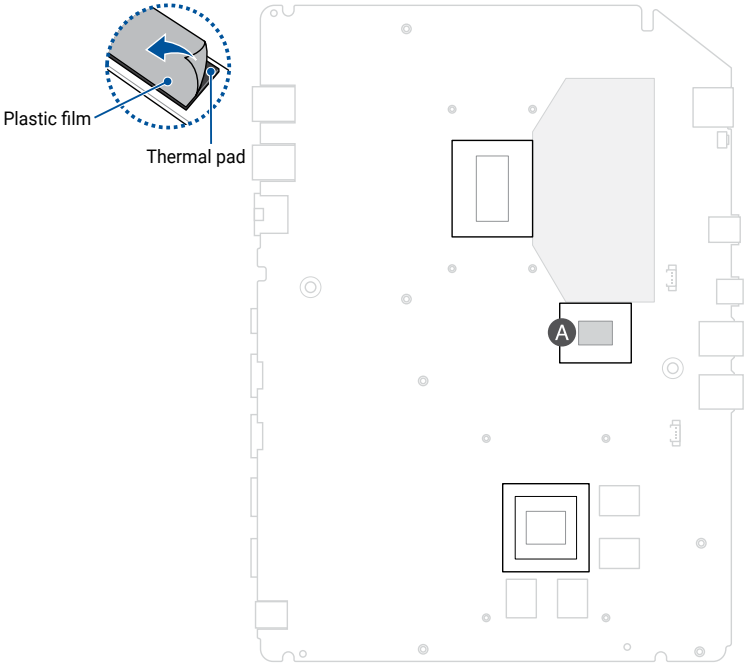


Thermal conductivity: > 8.5 W/mK (recommended)

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

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

2. Remove the plastic film from the thermal pad on the motherboard.



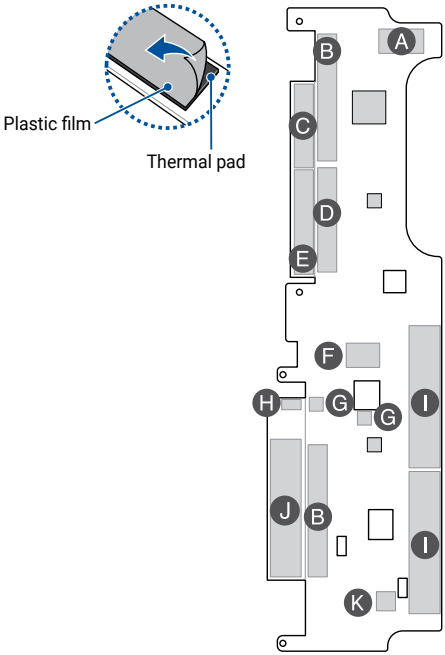
The specifications for the thermal pad(s) used here are as follows:

Thermal Pad A	
Thickness:	8.5mm
Size:	16mm x 12mm
Thermal conductivity:	3 W/mK
Hardness:	20 shore 00

NOTE:

- To replace the thermal pad yourself, check with an ASUS Service Partner near you (www.asus.com/support) for the availability of replacement thermal pads.
- The availability of replacement parts may vary depending on the country.

3. Before replacing the VR heatsink, ensure to remove the plastic film from the thermal pad(s) on the bottom of the VR heatsink, if they exist.



The specifications for the thermal pad(s) used here are as follows:

Thermal Pad A		Thermal Pad D	
Thickness:	2.5mm	Thickness:	1.75mm
Size:	17mm x 9mm	Size:	40mm x 6.5mm
Thermal conductivity:	3 W/mK	Thermal conductivity:	3 W/mK
Hardness:	20 shore 00	Hardness:	20 shore 00
Thermal Pad B		**Thermal Pad E**	
Thickness:	1.75mm	Thickness:	1.5mm
Size:	48.5mm x 6.5mm	Size:	39.5mm x 7mm
Thermal conductivity:	3 W/mK	Thermal conductivity:	5 W/mK
Hardness:	20 shore 00	Hardness:	20 shore 00
Thermal Pad C		**Thermal Pad F**	
Thickness:	1.25mm	Thickness:	2.25mm
Size:	32.5mm x 7mm	Size:	10.5mm x 9mm
Thermal conductivity:	5 W/mK	Thermal conductivity:	3 W/mK
Hardness:	20 shore 00	Hardness:	20 shore 00

Thermal Pad G	
Thickness:	1.75mm
Size:	5mm x 5mm
Thermal conductivity:	3 W/mK
Hardness:	20 shore 00

Thermal Pad J	
Thickness:	1.5mm
Size:	51mm x 12mm
Thermal conductivity:	5 W/mK
Hardness:	20 shore 00

Thermal Pad H	
Thickness:	2.25mm
Size:	6.8mm x 5.1mm
Thermal conductivity:	5 W/mK
Hardness:	20 shore 00

Thermal Pad K	
Thickness:	1.75mm
Size:	7mm x 7mm
Thermal conductivity:	5 W/mK
Hardness:	20 shore 00

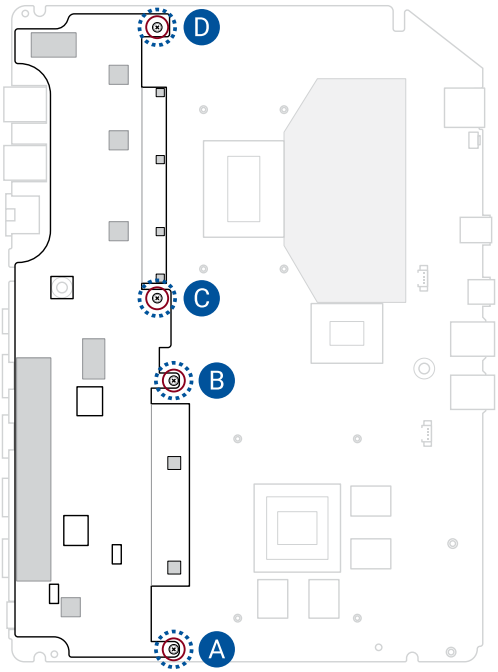
Thermal Pad I	
Thickness:	2.25mm
Size:	54mm x 11mm
Thermal conductivity:	3 W/mK
Hardness:	20 shore 00

NOTE:

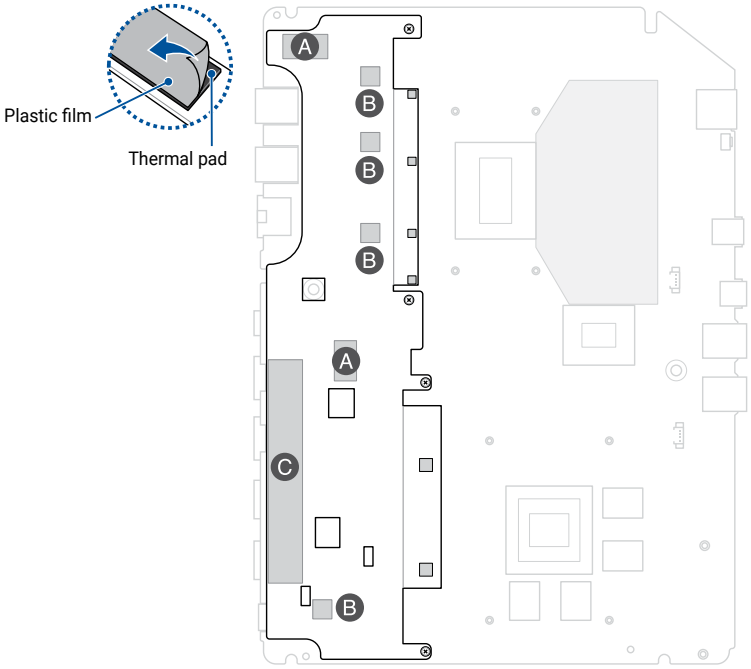
- To replace the thermal pad yourself, check with an ASUS Service Partner near you (www.asus.com/support) for the availability of replacement thermal pads.
- The availability of replacement parts may vary depending on the country.

WARNING! Heat dissipation performance may still vary even when you have replaced the thermal pad with one that meets the specifications provided. To prevent potential damage to the VR heatsink, you should have the thermal pad replaced by a service center near you.

4. Flip the VR heatsink over so that the top side of the VR heatsink faces up.
5. Install the VR heatsink to the motherboard using four (4) screws in the order shown in the illustration below.



6. Remove the plastic film from the thermal pad(s) on the top of the VR heatsink, if they exist.



The specifications for the thermal pad(s) used here are as follows:

Thermal Pad A	
Thickness:	1.5mm
Size:	17mm x 9mm
Thermal conductivity:	3 W/mK
Hardness:	20 shore 00

Thermal Pad B	
Thickness:	1.75mm
Size:	6.5mm x 6.5mm
Thermal conductivity:	3 W/mK
Hardness:	20 shore 00

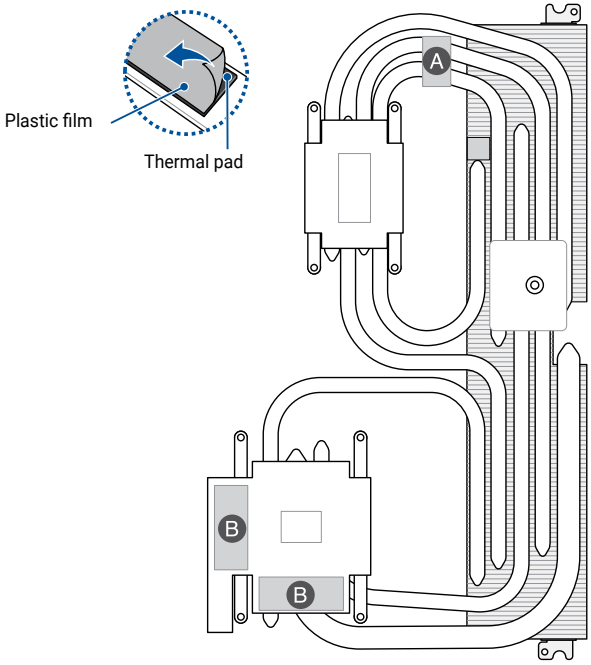
Thermal Pad C	
Thickness:	1.5mm
Size:	41mm x 12mm
Thermal conductivity:	3 W/mK
Hardness:	20 shore 00

NOTE:

- To replace the thermal pad yourself, check with an ASUS Service Partner near you (www.asus.com/support) for the availability of replacement thermal pads.
- The availability of replacement parts may vary depending on the country.

WARNING! Heat dissipation performance may still vary even when you have replaced the thermal pad with one that meets the specifications provided. To prevent potential damage to the VR heatsink, you should have the thermal pad replaced by a service center near you.

7. Before replacing the heatsink, ensure to remove the plastic film from the thermal pad(s) on the bottom of the heatsink, if they exist.



The specifications for the thermal pad(s) used here are as follows:

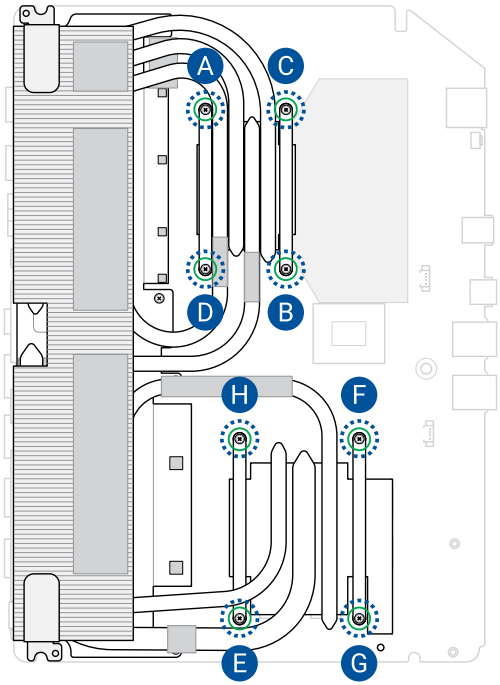
Thermal Pad A		Thermal Pad B	
Thickness:	1.25mm	Thickness:	1.25mm
Size:	17.5mm x 10mm	Size:	31mm x 13mm
Thermal conductivity:	5 W/mK	Thermal conductivity:	5 W/mK
Hardness:	20 shore 00	Hardness:	12 shore 00

NOTE:

- To replace the thermal pad yourself, check with an ASUS Service Partner near you (www.asus.com/support) for the availability of replacement thermal pads.
- The availability of replacement parts may vary depending on the country.

WARNING! Heat dissipation performance may still vary even when you have replaced the thermal pad with one that meets the specifications provided. To prevent potential damage to the heatsink, you should have the thermal pad replaced by a service center near you.

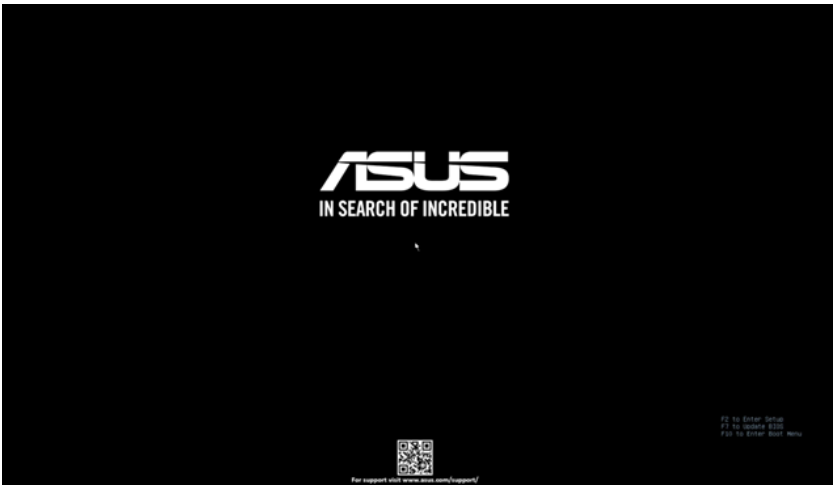
8. Flip the heatsink over so that the top side of the heatsink faces up.
9. Align and place the heatsink onto the VR heatsink and motherboard, then secure the heatsink by tightening the eight (8) screws in the order shown in the illustration below.



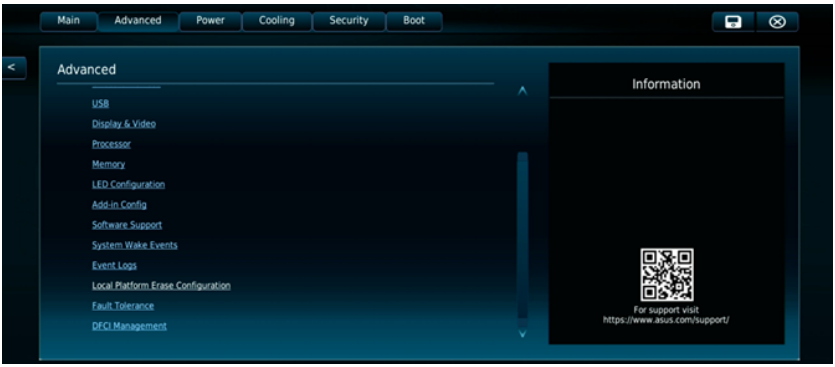
Local Platform Erase

Performing a Local Platform Erase allows the IT administrator to remotely erase all of a platform's information. This allows you to reuse the platform without having to erase the SSD manually.

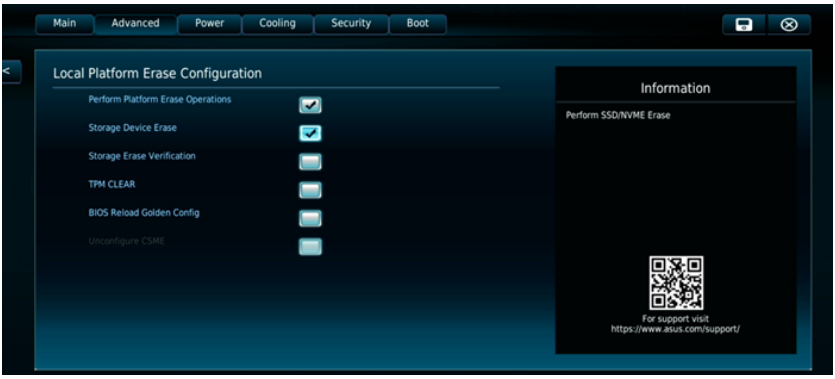
1. Enter the BIOS Setup Configuration menu by pressing "F2" during the post logo.



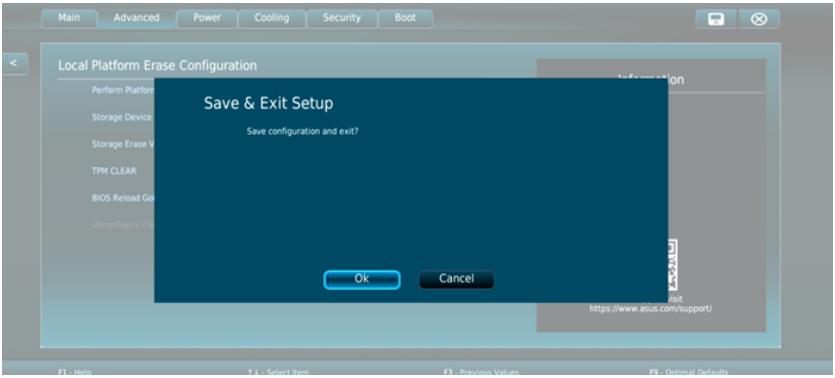
2. Go to **Advanced** > **Local Platform Erase Configuration**.



3. Select **Perform Platform Erase Operations** and **Storage Device Erase**.



4. Save and exit BIOS by pressing “F10” or clicking the button to the top right of the page.



5. After the system reboots, the Platform Erase procedure will begin.

6. A pop-up window will appear after a successful erase. Type “Y’ to save the erase report or press “N” to end the process without saving an erase report.



7. Once the erase procedure has been completed, the system will automatically reboot after 5 seconds.