ASUS TUF Gaming A17 (FA707R) series

Service Guide

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Disclaimer

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

Safety precautions

- Keep liquids or moisture away from your Notebook PC before installing or removing any components.
- Ensure to place your Notebook PC on a stable surface before installing or removing any components.
- Detach the clip or flap before removing the signal cables to prevent damage.
- Disconnect the power plug by pulling the plug evenly to avoid damage. Ensure to connect the signal cables in the correct orientation.
- Disconnect all power cables and remove the battery pack (if applicable) before cleaning your Notebook PC with liquid detergent to avoid risk of electric shock.
- Disconnect all power cables and remove the battery pack (if applicable) before installing or removing any components. Ensure to read and follow the instructions in the manual.
- Before handling components, use a grounded wrist strap or touch a safely grounded object to avoid damaging them due to static electricity.
- Keep liquids or moisture away from your Notebook PC to avoid short circuits.
- Hold components by the edges to avoid touching the ICs.
- Ensure to properly install all the components before connecting the AC power.
- Do not use power adapters or batteries from other devices to reduce the risk of injury to persons due to fire or explosion. Use only certified power adapters or batteries supplied by the manufacturer or authorized retailers.
- Ensure to install the correct screw models on your Notebook PC to prevent damage.

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Service Overview

- **Carefully read through this Service Guide for a look at various components of the device before performing any service and repairs.**

- To provide the best service, we have provided the below information for technicians from distributors and resellers to perform the complete device disassembly and assembly. Before performing the procedures, please be sure to read through the overview in this service guide for component overview to avoid any unwarranted damages to the device hardware.

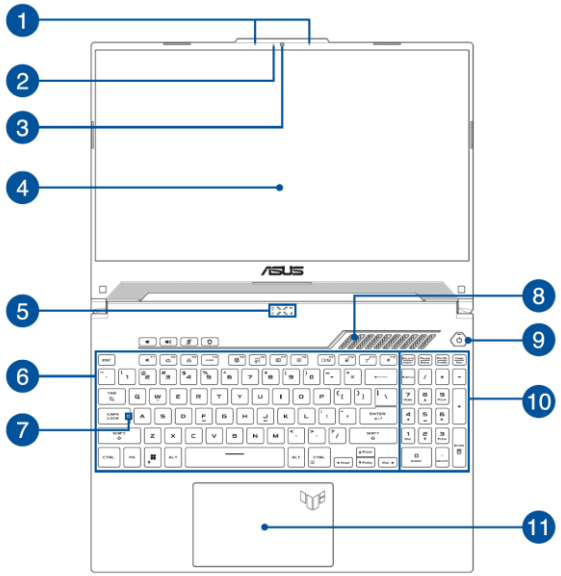
- The following contents include all part numbers mentioned in the service guide are **used for reference only**, if you need the exact part number for ordering, please refer to the OrderBook.

- Due to sales policy difference, the components might have different specifications on the same series product, please refer to E-manual by model.

Due to sales policy difference, the components may have different specifications on the same model. If you have any operational issues, please contact the service hotline.

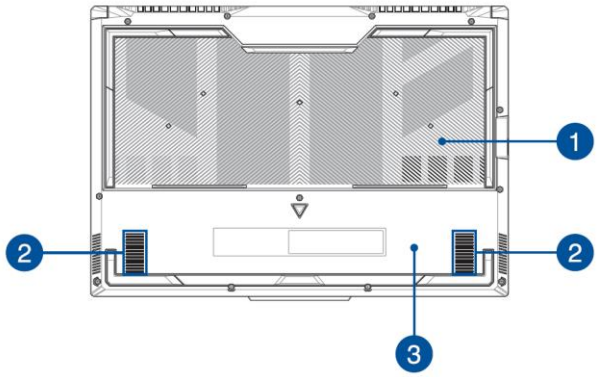
ASUS TUF Gaming A17 (FA707R) series Overview

Top View



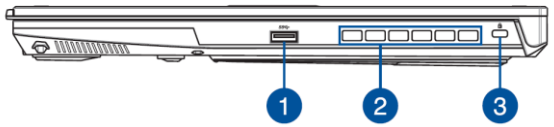
1. Array microphones
2. Camera indicator
3. Camera
4. Display panel
5. Status indicators
6. Keyboard
7. Capital lock indicator
8. Air vents
9. Power button
10. Numeric keypad
11. Touchpad

Bottom View



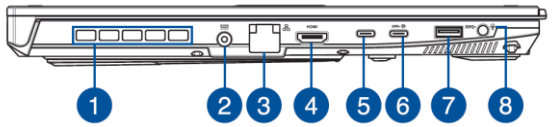
1. Air vents
2. Audio speakers
3. Compartment cover

Right View



1. USB 3.2 Gen 1 port
2. Air vents
3. Kensington® security slot

Left View



1. Air vents (on selected models)
2. Power (DC) input port
3. LAN port
4. HDMI port
5. USB 3.2 Gen 1 Type-C®
6. USB 3.2 Gen 1 Type-C®/DisplayPort combo port
7. USB 3.2 Gen 1 port
8. Headphone/Headset/Microphone jack

Components Top View

♦ LCD COVER



♦ KEYBOARD MODULE



♦ SSD AL FOIL



♦ USB FFC



♦ MAIN BOARD



♦ LED BD



SPONGE LED NJK

♦ HINGE



(L) (R)

♦ LCD BEZEL



♦ BATTERY



♦ SSD ABSORBER



♦ WIFI CARD



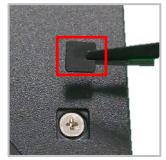
♦ THERMAL MODULE ASSY



♦ LED FFC



♦ BEZEL COSMETIC MYLAR



♦ 17.3'LCD



♦ BATTERY CABLE



♦ DDR



♦ DIMM COVER MYLAR



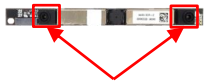
♦ SPEAKER



♦ TOUCHPAD



♦ CAMERA



MIC RUBBER

♦ BASE CASE



♦ SSD



♦ MB RAM ABSORBER



♦ GPU FAN ♦ CPU FAN



♦ USB BD



♦ TP FFC

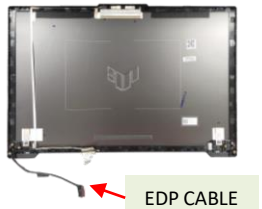


♦ BATTERY-(56W)



Components Bottom View

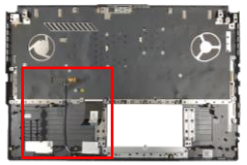
♦ LCD COVER



♦ LED BD



♦ WIFI ANTENNA



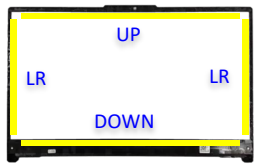
♦ BATTERY



♦ USB BD



♦ LCD BEZEL ADHESIVE
UP/LR/DOWN



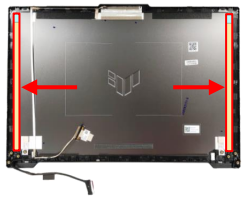
♦ THERMAL MODULE ASSY



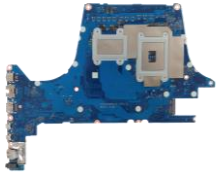
♦ TOUCHPAD



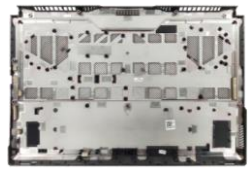
♦ LCD COVER TAPE



♦ MAIN BOARD



♦ BASE CASE



♦ BATTERY-(56W)



Repair Overview

This chapter describes disassembly and assembly (Assemble document please look up from the last page), please follow the information provided in this section to perform the complete disassembly procedure.

♦ Precautions:

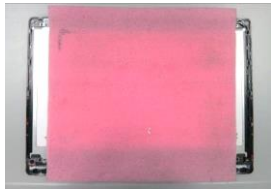
Before you perform any service or repair on the notebook, please pay special attention to the cautions prevent any damages to the notebook.

1. Be sure that the notebook is powered down.
2. Before disassembling any part, please disconnect all power source. ex: AC plug/Battery connector/Power protect screw etc.

3. Remove all rings, watches and any other metal objects from your hands.




4. Always wear a ground strap on your hand to protect the notebook from static discharge.
5. Please refer to “ANSI ESD S20.20” about ESD protection measure.
6. Put the disassembled parts in the functional PE BAG to avoid any damages of the A/B/C/D part.




7. The maintenance environment temperature is 20-30 ℃ and humidity is 40% - 70%.
8. To avoid scratching on the surface of machine; please use anti-static and soft materials to put on desk in repair environment as below photo.



9. Screw Appearance Criteria:

   If the screws have the following damaged appearance, please do not use.

   a. Shape deformed.
   b. Damaged head – unable to drive in or the stripped screw.
   c. Damaged unable to securely tighten.
   d. Paint scratched off.
   e. Rusty



10. The following chapter includes all part numbers mentioned in service guide are used for reference only, actual part name depends on different SKU, if you need the exact part number for ordering, please refer to the Orderbook.

11. Due to sales policy difference, the components may have different specifications on the same model. Please note that all pictures and components shown on Service Guide are for disassembly/assembly description purpose only, so please refer to the actual product for disassemble/assemble.

Appropriate Tools

Please prepare and select the appropriate tools to disassemble/assemble for the **ASUS TUF Gaming A17 (FA707R) series** notebook.

♦ Screwdriver

Please accord to different screw specification to choose different screwdriver and head.

#1 

♦ Alcohol 95



♦ Glove



♦ Dust-free Cloth



♦ Plastic Blade



♦ Thermal Pad



♦ PLASTIC PICK T=0.5mm



♦ Plastic Tweezers

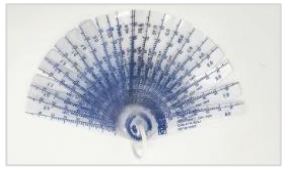
Use a pair of tweezers to remove/insert/tidy up cables.



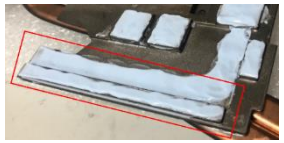


♦ Thickness Gauge

Thickness compass specification 0.05mm-1.5mm. Use it to measure the gap.

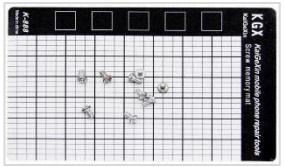


♦ FCR-AS Thermal Grease



♦ Magnetism Board

Suggest local buy magnetism board to place screw, avoid mix different type screw to cause assembly damage.



Back

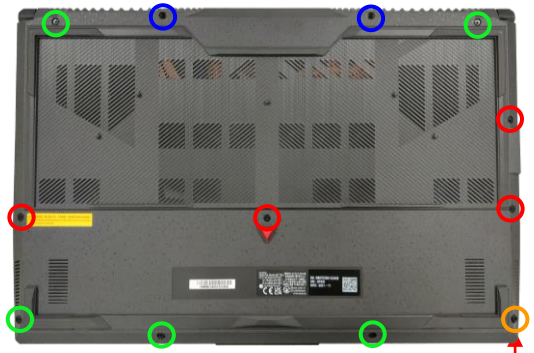
BOTTOM CASE

Disassembly Notice

Step 1 : Remove screws*11pcs.
Step 2 : Use the non-conductive pry tool to pry the bottom case.

Screws	QTY	Spec	Torque (kgf-cm)
	5	M2.5*8L (4.6,0.8) (K) #1	2.5
	4	M2.5*10L (K) B-ZN NY	2.5
	2	M2.5*13L (4.5.0.8) (K)#1	2.5

1

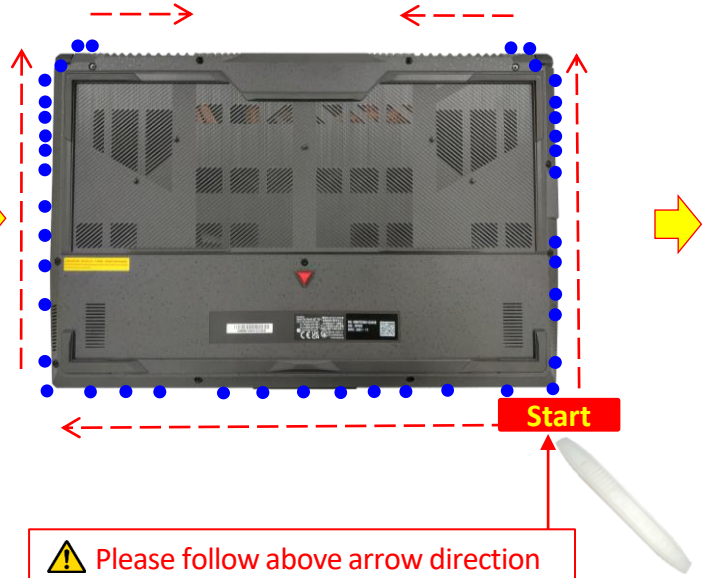


⚠ The screw is unable to remove from bottom case, so please always loosen it last, and lock it at first.

2

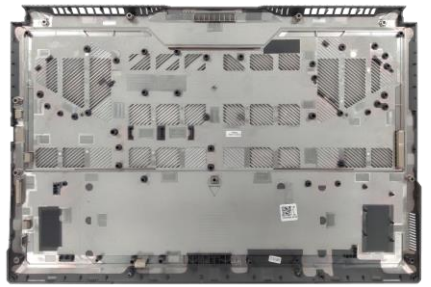


⚠ To avoid the bottom case hooks, don't insert plastic blade in each red circle.



⚠ Please follow above arrow direction with using plastic blade to pry bottom case in each blue circle location.
(To avoid the bottom case hook, please prying at each blue circle location.)





BATTERY

Disassembly Notice

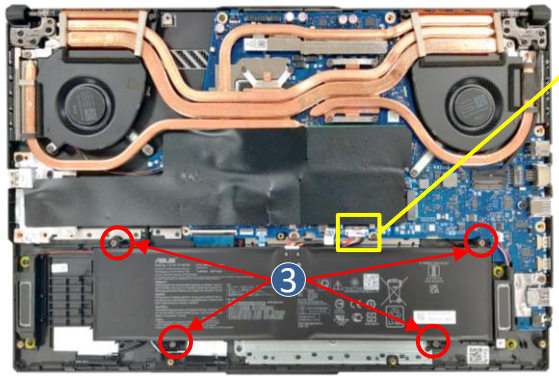
Please be sure to pull out adapter and disconnect the battery.

⚠ Before disassembly battery connector, please be sure to pull out adapter and disconnect the battery more than ten seconds in order to IC damage.

Step 1 : Use the non-conductive pry tool to push iron sheet.
Step 2 : Use the non-conductive pry tool to disconnect battery connector.
Step 3 : Remove the screws*4pcs.
Step 4 : Take out Battery then remove the Battery cable.

Screws	QTY	Spec	Torque(kgf-cm)
	4	M2*4L (5,0.8) (K) #1	2.0

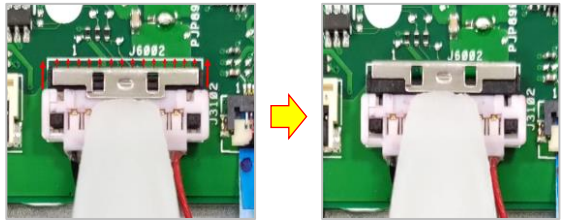
BATT-90W



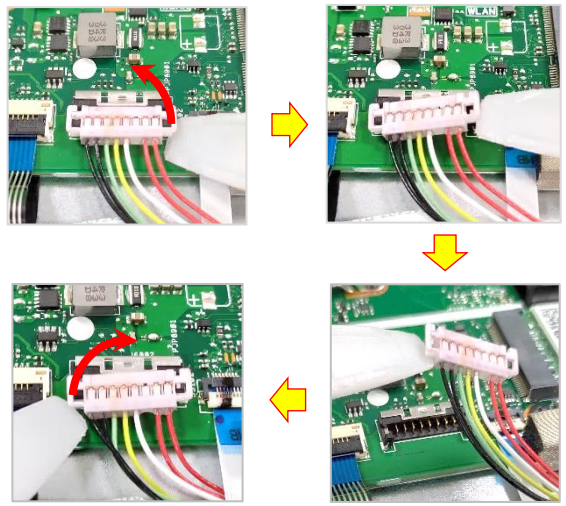
BATT-56W



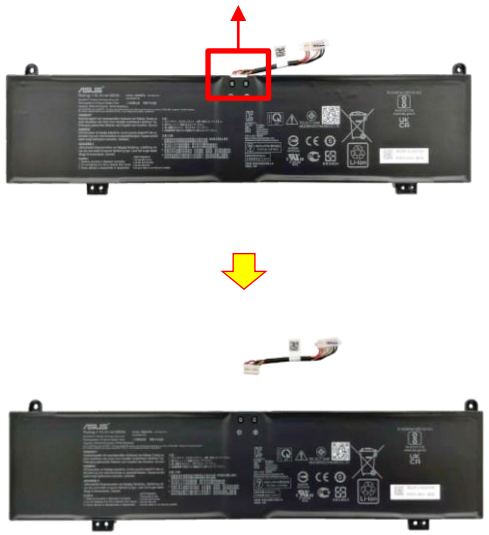
1 (The following is an operation example)



2



4



(90W)

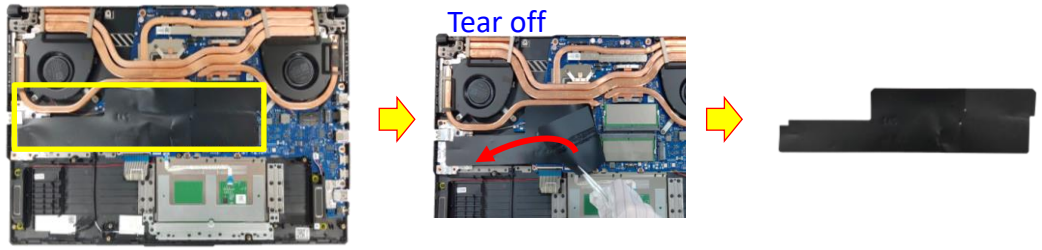
Disassembly Notice

Please be sure to pull out adapter and disconnect the battery.

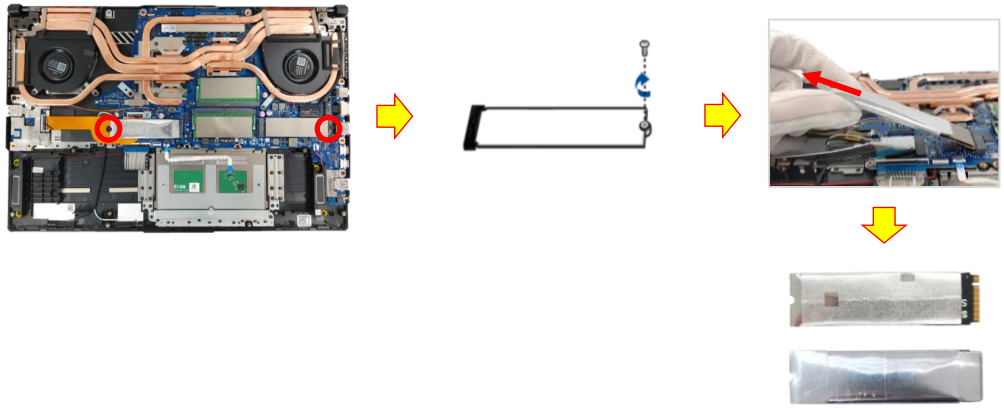
Screws	QTY	Spec	Torque (kgf-cm)
	2	M2*3L (5.6,0.8) (K) #1	2.0

Step 1 : Tear off the (yellow mark) DIMM COVER MYLAR.
Please keep these parts, it will be reused for new SSD installation.
Step 2 : Remove the (red mark) screws*2pcs and left-M.2 card (SSD).
Step 3 : Remove the AL FOIL and ABSORBER of the left-M.2 card (SSD).
Please keep these parts, it will be reused for new SSD installation.
Step 4 : Remove the right-M.2 card (SSD), then tear off the ABSORBER from the SSD.

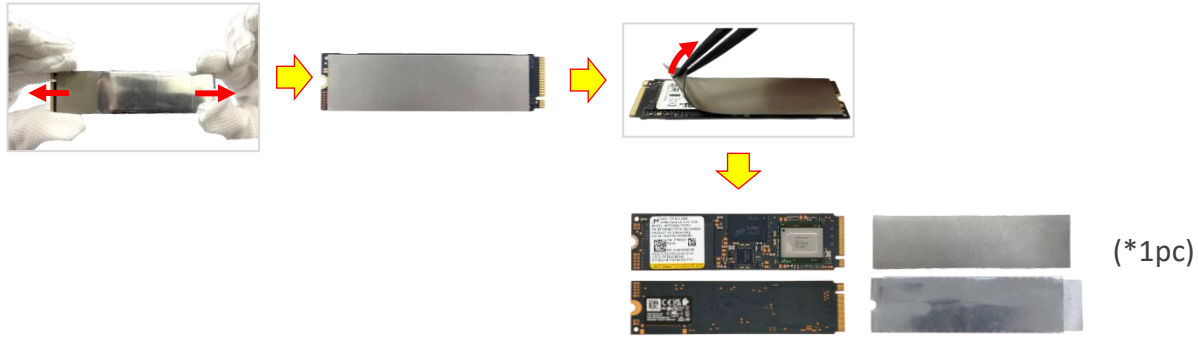
1



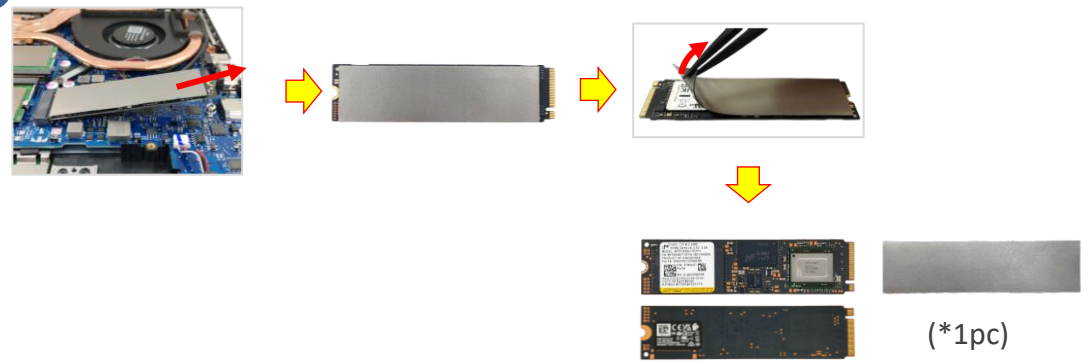
2 Remove Screws in red circles



3



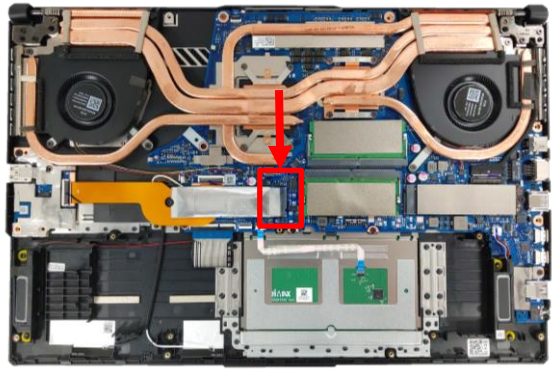
4



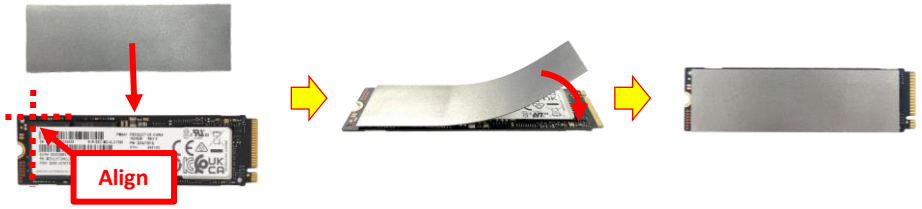
SSD

Assembly Notice Please be sure to pull out adapter and disconnect the battery.

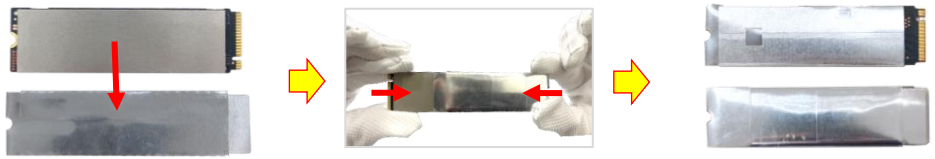
A Please use this SSD slot as first priority.



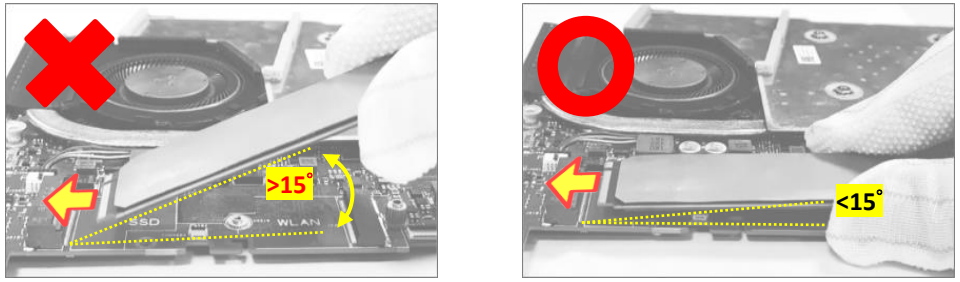
B Paste the ABSORBER*1pc on both of the left-M.2 card (SSD) and right-M.2 card (SSD).



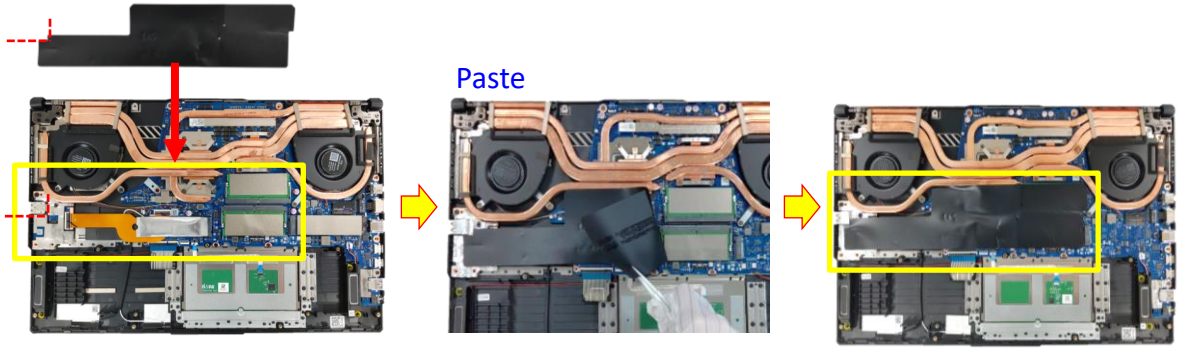
C Put the left-M.2 card (SSD) into the AL FOIL*1pc before inserting it into the left-SSD slot.



D When installing the SSD, please keep the SSD less then 15 degrees with motherboard, and then insert the SSD.



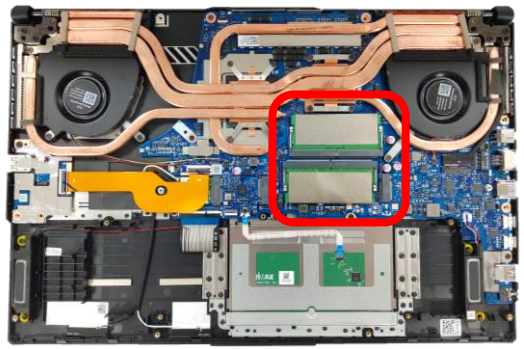
E After installing the SSD, please paste the DIMM COVER MYLAR on below location. (yellow mark)



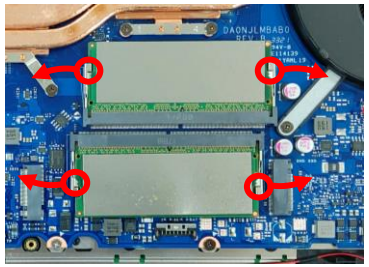
Disassembly Notice

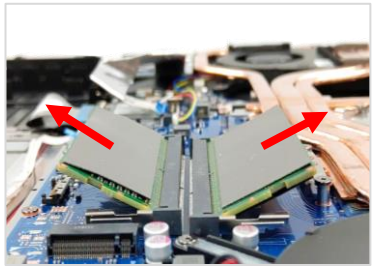
Please be sure to pull out adapter and disconnect the battery.

Step 1 : Unlock and remove the RAM module.
Step 2 : Tear off the ABSORBERS from RAM front and back side.
Please keep the ABSORBERS, as that will be reused when installing the new RAM module.



1

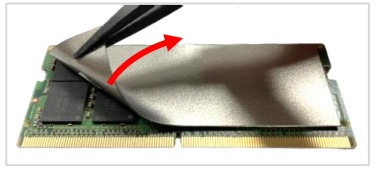






(*2pcs)

2





(*2pcs)



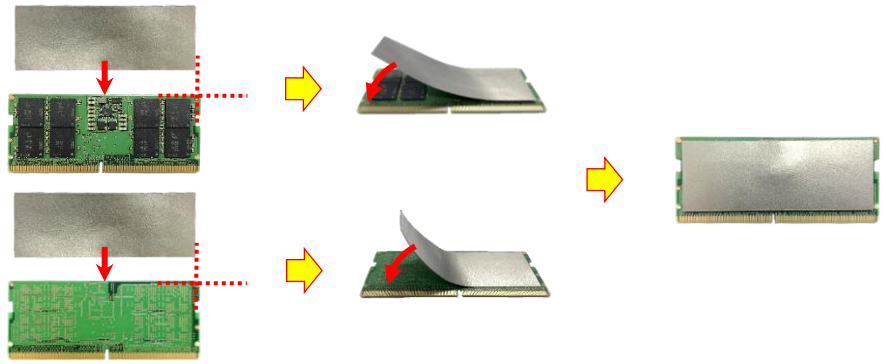
(*4pcs)

Assembly Notice

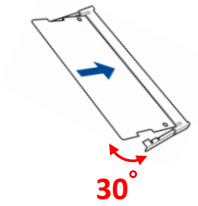
⚠ Please paste ABSORBERS on the front and back sides of RAM before installing the Memory Module.

Step 1 : Paste the two ABSORBERS on the new RAM front and back side.
Step 2 : Align and insert the new RAM module at 30° into the memory slot.
Step 3 : Once properly inserted, push down the RAM module until it clicks in place.

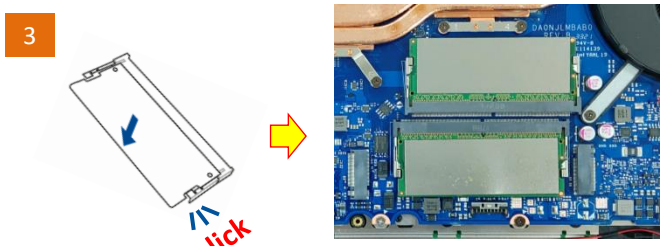
1



2



3

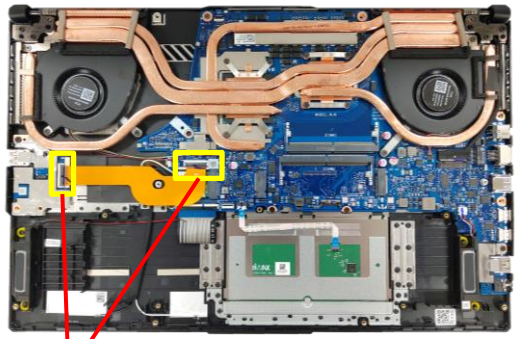


USB BOARD

Disassembly Notice Please be sure to pull out adapter and disconnect the battery.

Step 1 : Disconnect the (yellow mark) connectors then remove USB FPC.
Step 2 : Remove the screw*1pc then remove USB BOARD.

Screws	QTY	Spec	Torque (kgf-cm)
	1	M2*3L (5.6,0.8) (K) #1	2.0



1



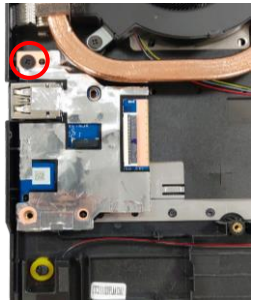


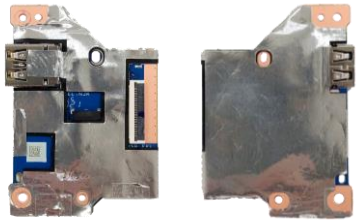


Remove



2



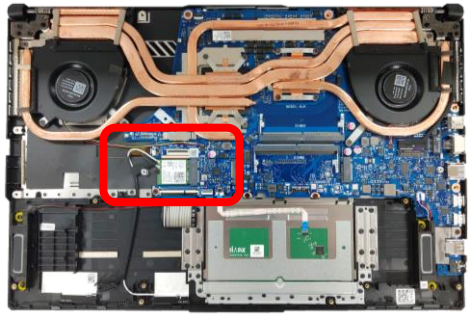


WIFI CARD

Disassembly Notice

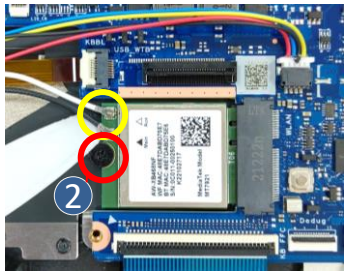
Please be sure to pull out adapter and disconnect the battery.

Step 1 : Disconnect the RF CABLE connectors*2pcs.
Step 2 : Remove the screw*1pc.
Step 3 : Remove WIFI CARD.

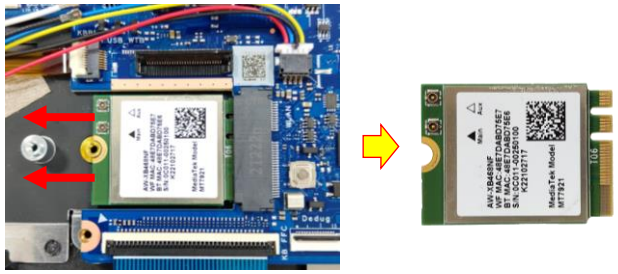


Screws	QTY	Spec	Torque (kgf-cm)
	1	M2*3L (5.6,0.8) (K) #1	2.0

1 (The following is an operation example)

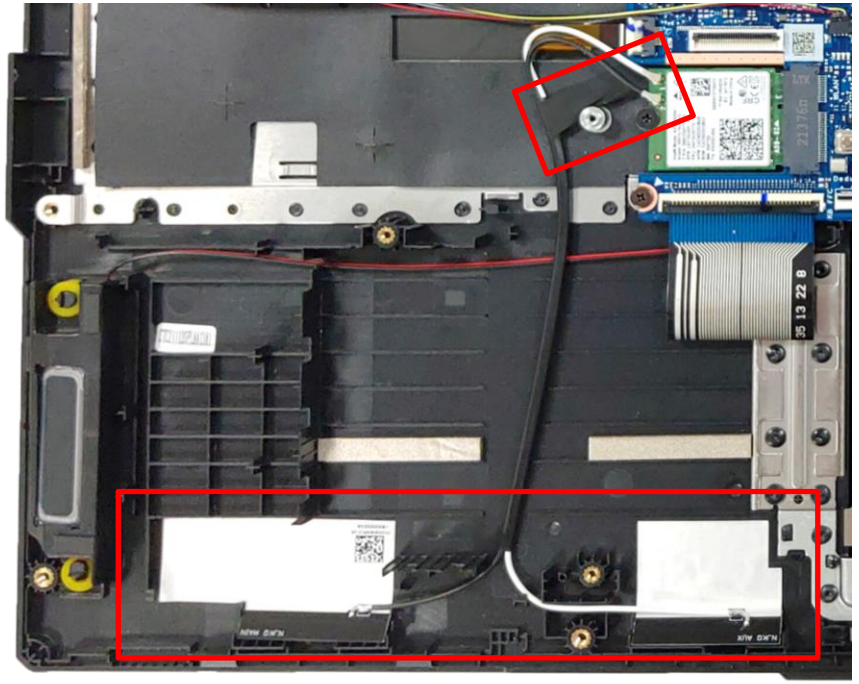


3



Assembly Notice

⚠ Please according to below image to assemble and tidy up WIFI ANTENNA.



FAN (with THERMAL MODULE and MAIN BOARD)

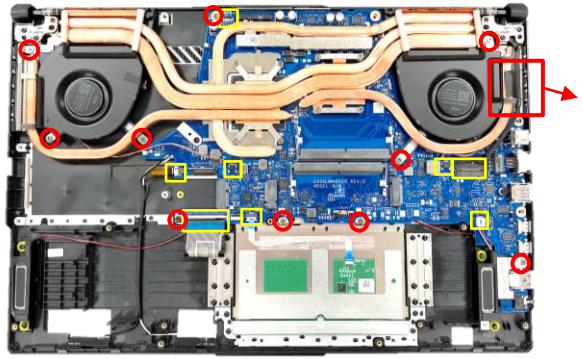
Disassembly Notice Please be sure to pull out adapter and disconnect the battery.

Step 1 : Disconnect (yellow mark) connectors*8pcs.
Step 2 : Remove(Red mark) screws*10pcs.
Step 3 : Release the tape of EDP cable, remove MB with Thermal and CPU FAN, then remove CPU FAN.
Step 4 : Remove the GPU FAN.

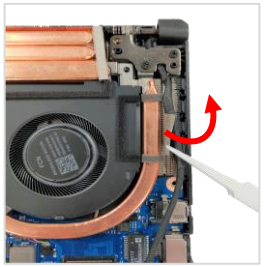
Screws	QTY	Spec	Torque (kgf-cm)
T O	10	M2*4L (5,0.8) (K) #1	2.0

1 Disconnect (Yellow mark)

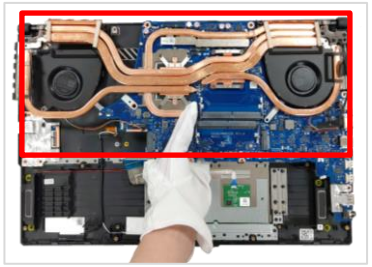
2 Remove (Red and green mark) Screws

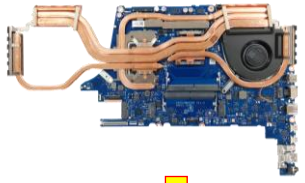


3 Release Mylar



Remove module
(MB+Thermal+ CPU FAN)

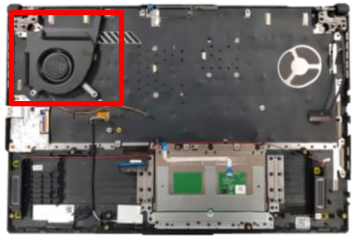




♦ CPU FAN



4 Remove



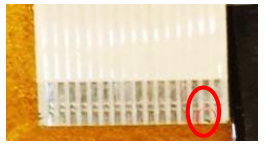
♦ GPU FAN



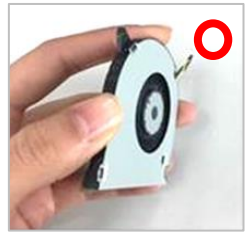
Assembly Notice

⚠ If FFC is damage during disassembly, please replace new one. Here are some samples of FFC damage:






⚠ Please use the correct technique to take fans off to avoid getting out of shape.





THERMAL MODULE

Disassembly Notice

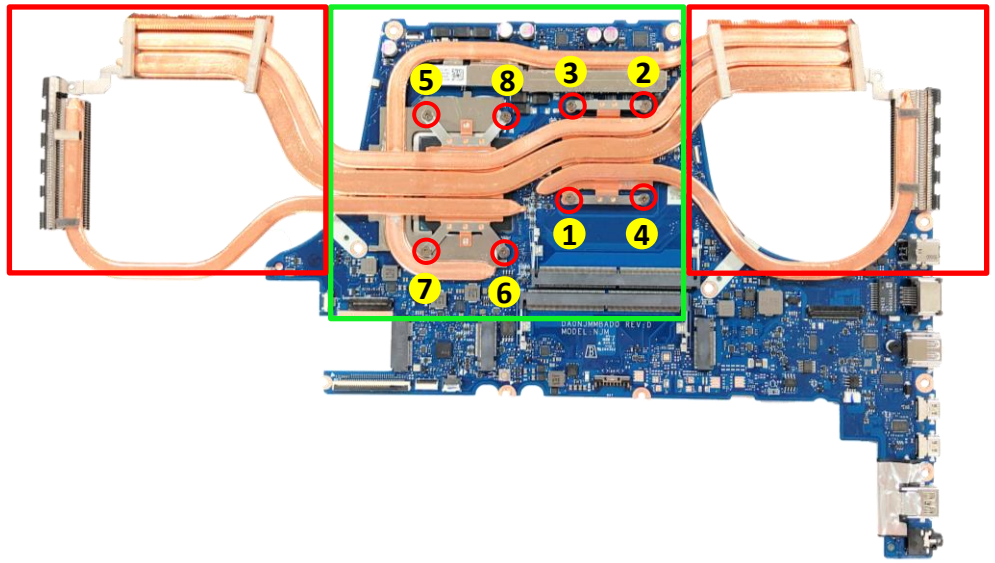
Please be sure to pull out adapter and disconnect the battery.

Step 1 : Please follow the reverse screws numbers to remove screws*8pcs.
Step 2 : Remove the THERMAL MODULE from MB.

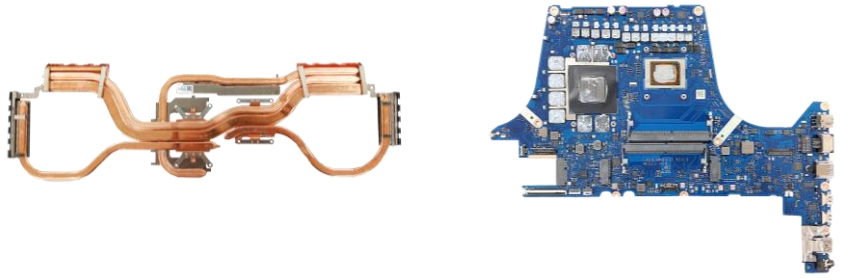
⚠ Recommend that the force point is at green block, and pull up thermal module to take it out.
Do not pull up at red block and also notice the thermal pipe should not have deformation.

Screws	QTY	Spec	Torque (kgf-cm)
	8	M2*4L (5,0.8) (K) #1	2.0

1



2



Assembly Notice

Step-1

- THERMAL MODULE Location:[VRAM/CHOKE/MOS]
  Material: FCR-AS Grease
- MB Location:[GPU/CPU]
  Material: TH PAD PTM7958)

Step-2

Please follow the screws numbers to lock screws *8pcs.

IMPORTANT! Thermal paste, thermal pads, liquid metal, 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.

WARNING! The heat sink contains liquid metal and should only be removed by authorized service personnel. Significant damage may occur to motherboard components if the heat sink is improperly removed.

FA707RF THERMAL MODULE

Disassembly Notice

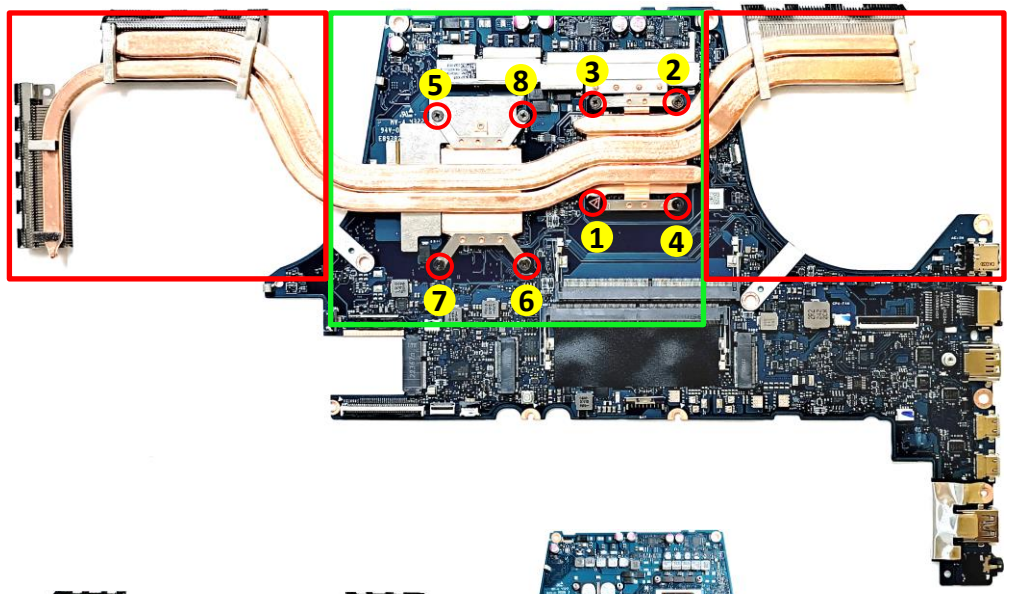
Please be sure to pull out adapter and disconnect the battery.

Step 1 : Please follow the reverse screws numbers to remove screws*8pcs.
Step 2 : Remove the THERMAL MODULE from MB.

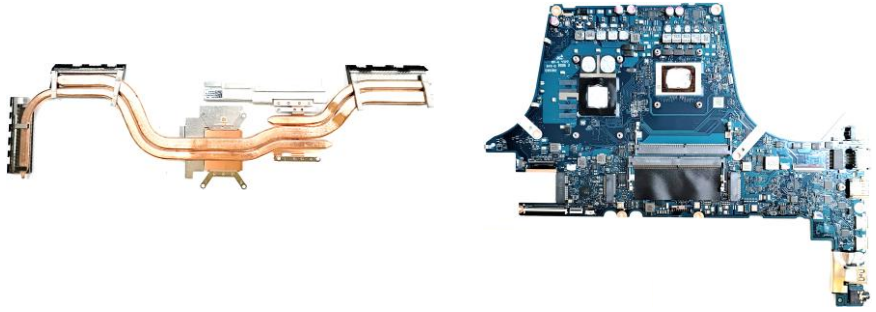
⚠ Recommend that the force point is at green block, and pull up thermal module to take it out.
Do not pull up at red block and also notice the thermal pipe should not have deformation.

Screws	QTY	Spec	Torque (kgf-cm)
	8	M2*4L (5,0.8) (K) #1	2.0

1



2



Assembly Notice

Step-1

- THERMAL MODULE Location:[VRAM/CHOKE/MOS]
  Material: FCR-AS Grease

- MB Location:[GPU/CPU]
  Material: TH PAD PTM7958)

Step-2

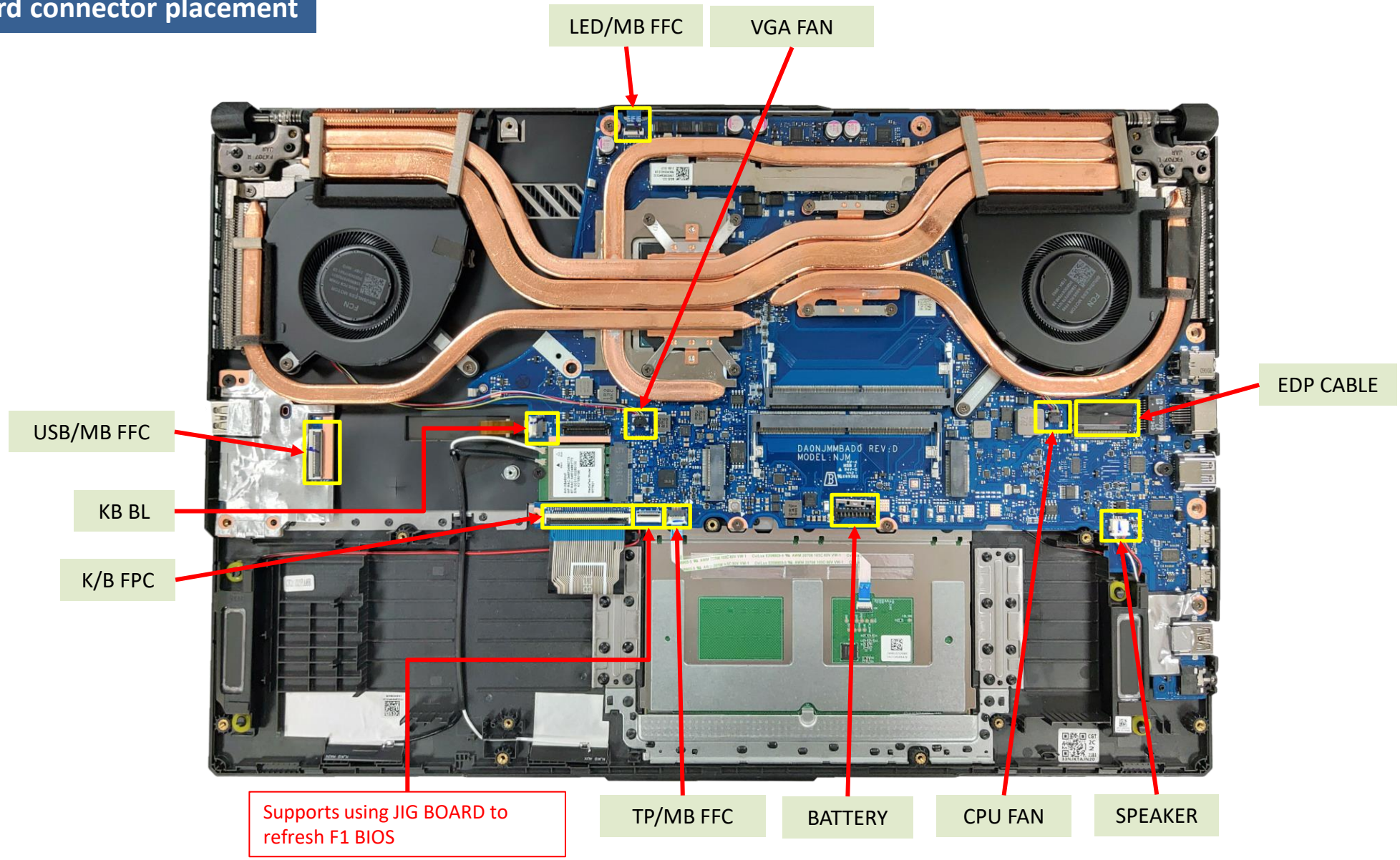
Please follow the screws numbers to lock screws *8pcs.

IMPORTANT! Thermal paste, thermal pads, liquid metal, 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.

WARNING! The heat sink contains liquid metal and should only be removed by authorized service personnel. Significant damage may occur to motherboard components if the heat sink is improperly removed.

MAIN BOARD

Mainboard connector placement

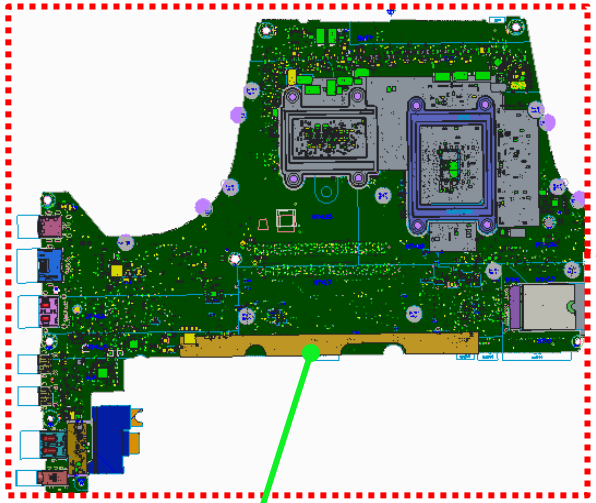


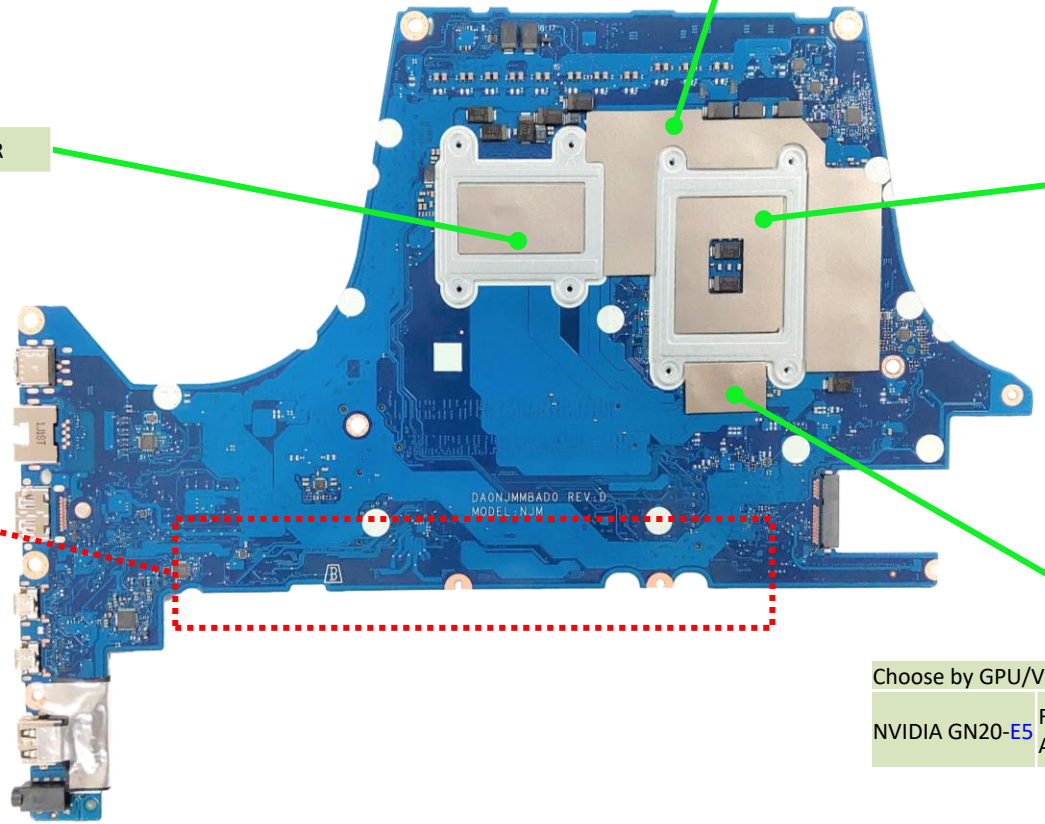
MAIN BOARD

Materials on mainboard

⚠ Parts marked in yellow can be ordered/replaced separately at L2 repair level. When L3/L4 repair finished, no need to paste new one if shortage of this material on the MB.

BOT SIDE





FA507RM MB G20 GPU TOP ABSORBER

FA506IV N18E CPU ABSORBER

FX507ZE G20 GPU ABSORBER

FX507ZE TP HOLDER SCREW MYLAR

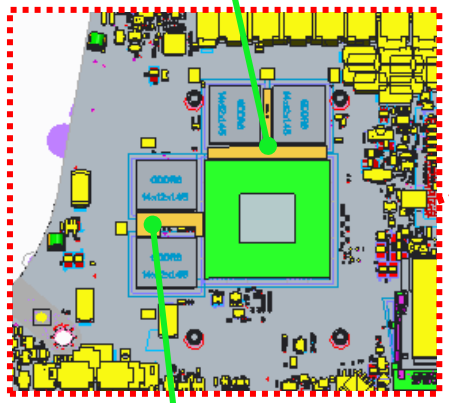
Choose by GPU/VGA CHIP Model	
NVIDIA GN20-E5	FA506QM MB G20 GPU TOP DOWN ABSORBER(INTEL E6)

Materials on mainboard

⚠ Parts marked in yellow can be ordered/replaced separately at L2 repair level. When L3/L4 repair finished, no need to paste new one if shortage of this material on the MB.

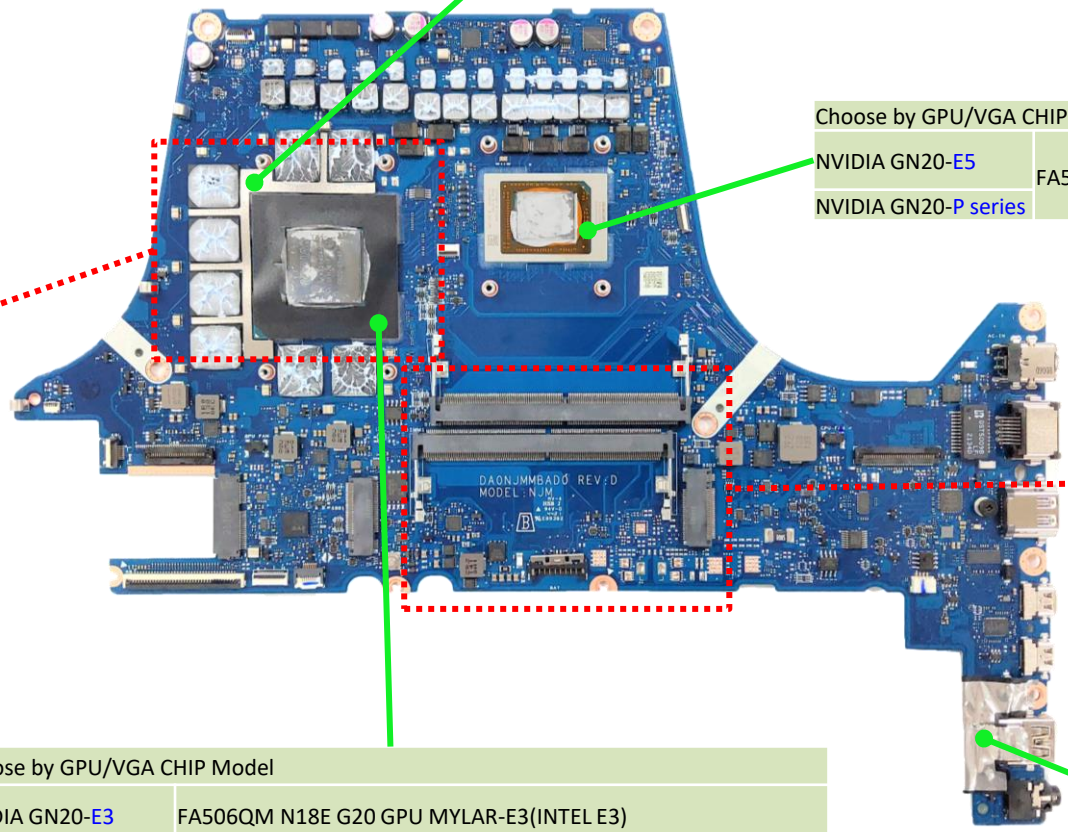
BOT SIDE

Choose by GPU/VGA CHIP Model	
NVIDIA GN20-P series	FX507ZC MB G20P GPU BOT ABSORBER(INTEL P SERIES)

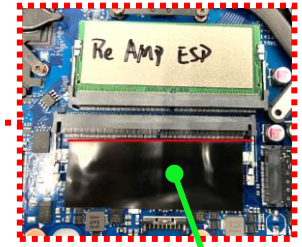


Choose by GPU/VGA CHIP Model	
NVIDIA GN20-P series	FX507ZC MB G20P GPU BOT R ABSORBER(INTEL P SERIES)

Choose by GPU/VGA CHIP Model	
NVIDIA GN20-E5	FX507ZE MB G20 GPU BOT ABSORBER



Choose by GPU/VGA CHIP Model	
NVIDIA GN20-E5	FA507RM APU KAPTON FILM（AMD E SERIES）
NVIDIA GN20-P series	



Choose by GPU/VGA CHIP Model	
NVIDIA GN20-P series	FX507ZE RAM UNDERSIDE MYLAR

Choose by GPU/VGA CHIP Model	
NVIDIA GN20-E3	FA506QM N18E G20 GPU MYLAR-E3(INTEL E3)
NVIDIA GN20-E5	FA506QM N18E G20 GPU MYLAR
NVIDIA GN20-P series	FA506IV N18P GPU MYLAR(INTEL P SERIES)

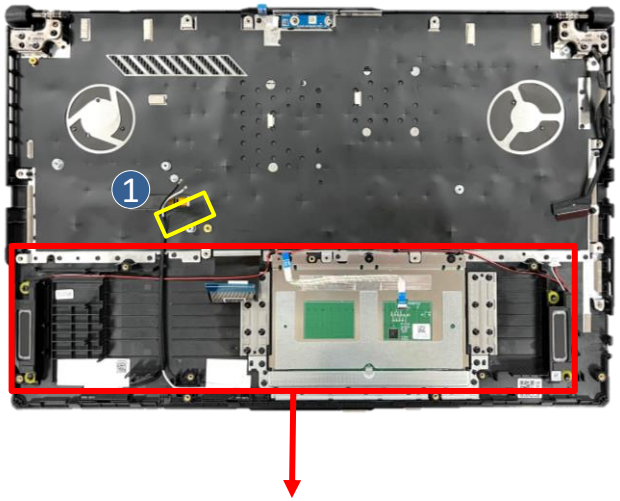
Choose by GPU/VGA CHIP Model	
NVIDIA GN20-E5	FX507ZE IO BD AL FOIL
NVIDIA GN20-P series	

SPEAKER

Disassembly Notice

Please be sure to pull out adapter and disconnect the battery.

Step 1 : Release the tape in the yellow mark.
Step 2 : Remove SPEAKER.



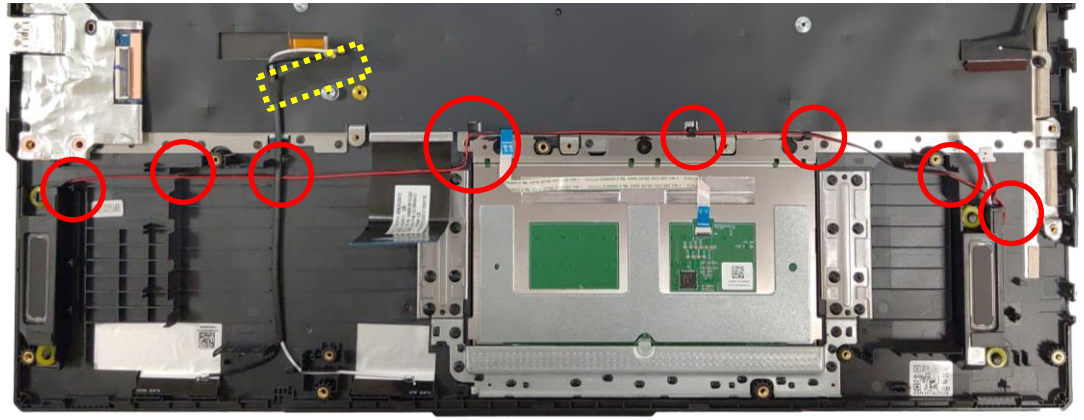
2 Remove



Assembly Notice

⚠ For Speaker assembly, please follow the mark below to tidy cable.

Step 1: Tidy up the cable as illustrated also put the cable under the parts as shown in the red mark.
Step 2: Paste Acetate cloth*1pc in the yellow mark.



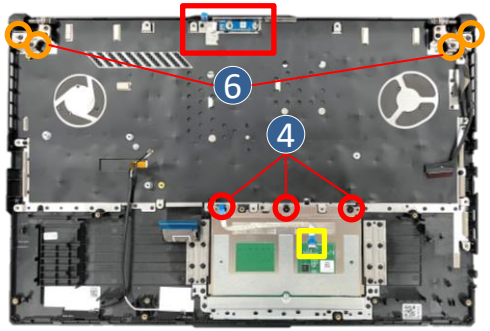
KEYBOARD MODULE

Disassembly Notice

Please be sure to pull out adapter and disconnect the battery.

Screws	QTY	Spec	Torque (kgf-cm)
	4	M2.5*5L (K) B-ZN NY #1	2.5
	3	M2*2L (6.2,0.55) (K) #1	2.0

Step 1 : Disconnect and remove the touchpad cable in the yellow mark.
Step 2 : Release the gasket of the cable then remove the LED Module.
Step 3 : Disconnect the LED FFC.
Step 4 : Remove (red mark) screws*3pcs.
Step 5 : Remove the touchpad module.
Step 6 : Remove (orange mark) screws*4pcs.
Step 7 : Release and separate the Keyboard module.



1



2 Release



Remove





3 Disconnect

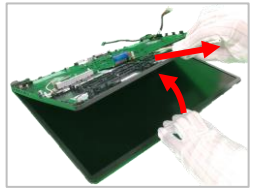




5



7 Open and remove







Assembly Notice

⚠ Please refer below picture to organize EDP cable.



⚠ If FFC is damage during disassembly, please replace new one. Here are some samples of FFC damage:



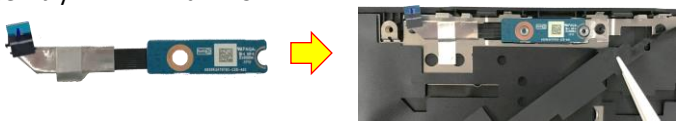
⚠ The TOP LED SPONGE and LED BD AL FOIL are not reusable after disassembly LED BOARD, before assembly LED BOARD Module, please follow the steps below to paste the new TOP LED SPONGE and LED BD AL FOIL.



Step1 :
Paste TOP LED SPONGE *1pc

Step2 :
Paste LED BD AL FOIL *1pc

Step3 :
Assembly LED BD with FFC



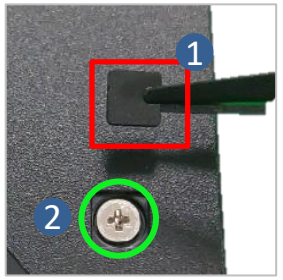
LCD BEZEL

Disassembly Notice

Please be sure to pull out adapter and disconnect the battery.

Step 1 : Remove BEZEL COSMETIC MYLAR*2pcs.
Step 2 : Remove screws*2pcs.
Step 3 : Remove LCD BEZEL.



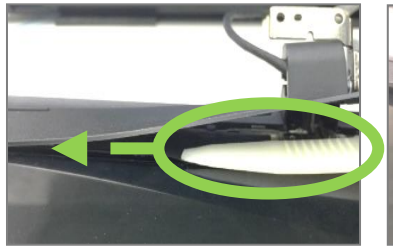


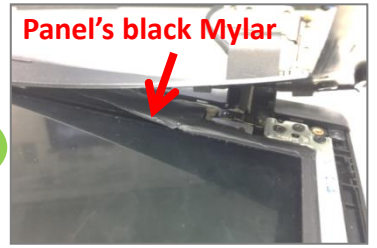
Screws	QTY	Spec	Torque (kgf-cm)
	2	M2.5*3.5L(4.5,0.5) (K)#1	2.5

Step 3-4

Due to some tapes behind the lower edge of bezel, please using plastic blade to teardown the bezel.
Please follow the direction shown in the red arrow, to move plastic blade from left to right and peel the bezel away slowly. While peeling, please move the blade in the parallel direction to the panel and **pressing the black Mylar downward** (As circled in green) to ensure the black Mylar and the tape behind the bezel are well separated.

Please move blade slowly to separate the bezel away, and must press the black Mylar downward with panel parallel direction.

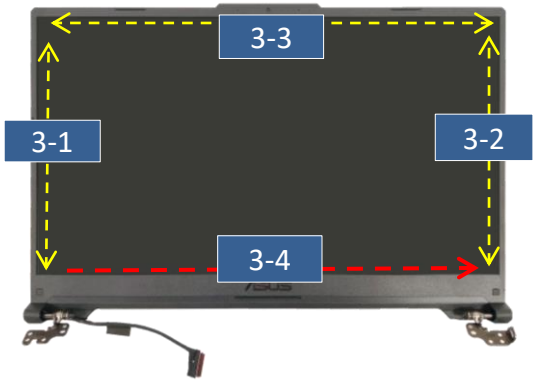






3

Step 3-1~3-3, Start from the middle area of each side of bezel,
Using the forefinger to hold the outer edge firmly and the thumb flipping the bezel inner edge outward to release the hooks as indicated in the diagram shown.
(It can be helpful, if holding the bezel outer edge firmly with forefinger.)



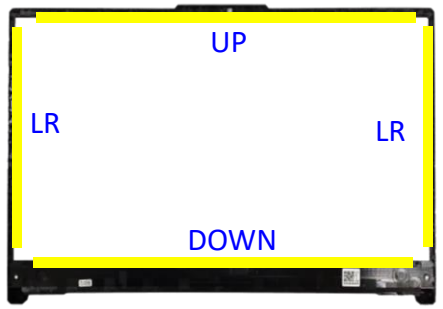
Step 3-1~3-3

Thumb flipping the inner edge outward.



Assembly Notice

When reuse the LCD BEZEL:
Please paste new LCD BEZEL ADHESIVE before assembly BEZEL.
(New LCD BEZEL already contains LCD BEZEL ADHESIVE *4pcs)



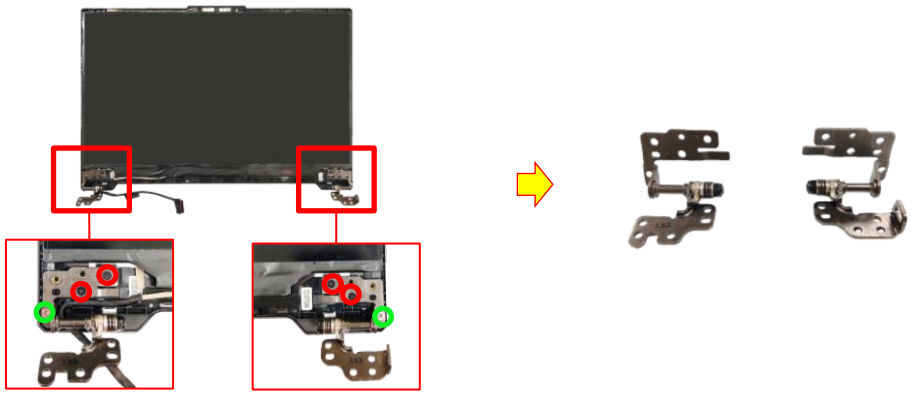
LCD PANEL

Disassembly Notice Please be sure to pull out adapter and disconnect the battery.

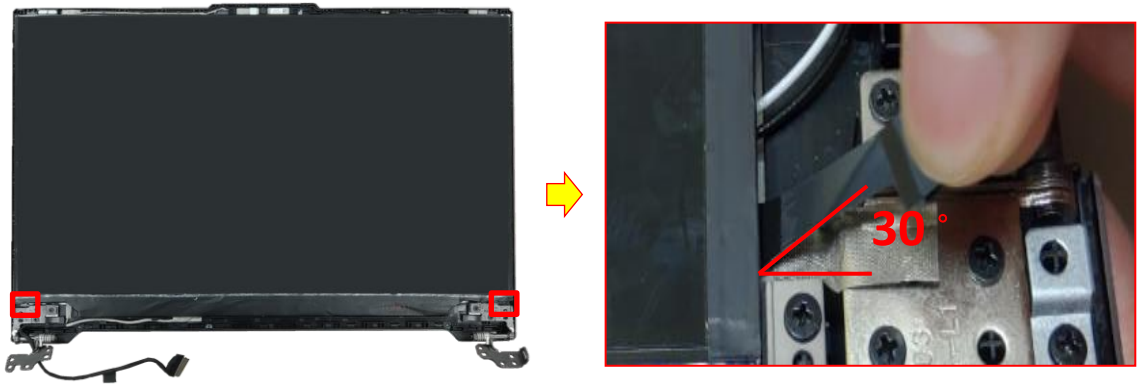
Step 1 : Remove screws*6pcs and remove hinges*2pcs.
Step 2 : Pull out LCD adhesive*2pcs.
Step 3 : Flip up the panel and disconnect the EDP cable.

Screws	QTY	Spec	Torque (kgf-cm)
	4	M2.5*3L (4.5,0.4) (K) #1	2.5
	2	M2.5*3.5L(4.5,0.5) (K)#1	2.5

1

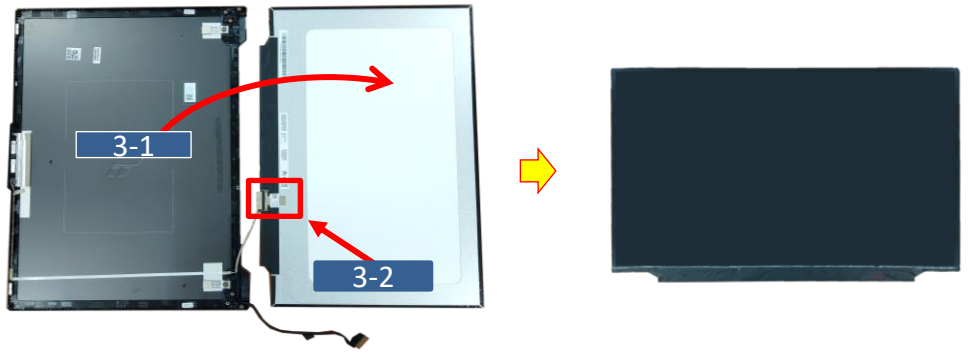


2 ⚠ **Please pull the adhesive up about 30 degree slowly, and don't pull out the tape in vertical direction!**



3 Flip up the panel, and disconnect the EDP cable.

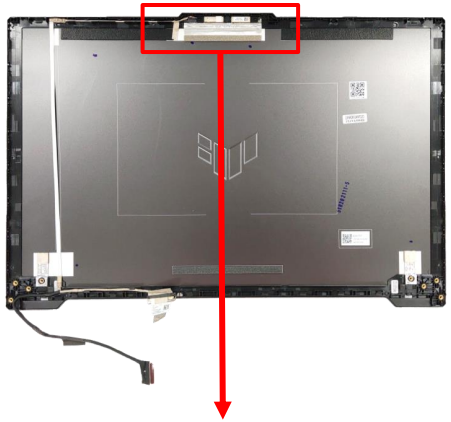
(The following is an operation example)



LCD COVER

Disassembly Notice Please be sure to pull out adapter and disconnect the battery.

Step 1 : Disconnect Camera connector.
Step 2 : Remove the CAMERA.
Step 3 : Remove MIC RUBBER*2pcs.



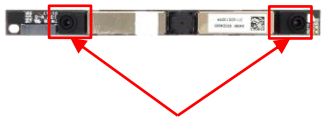
1 Disconnect



2

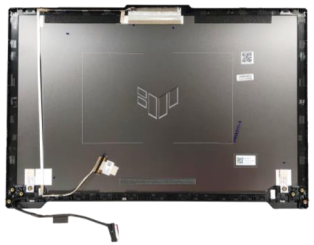


3



MIC RUBBER

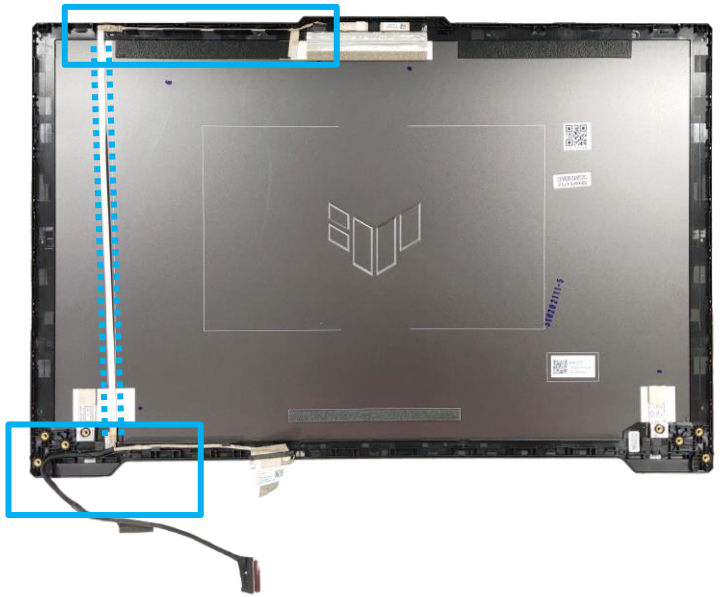






Assembly Notice

⚠ Please follow the yellow mark to tidy EDP cable.

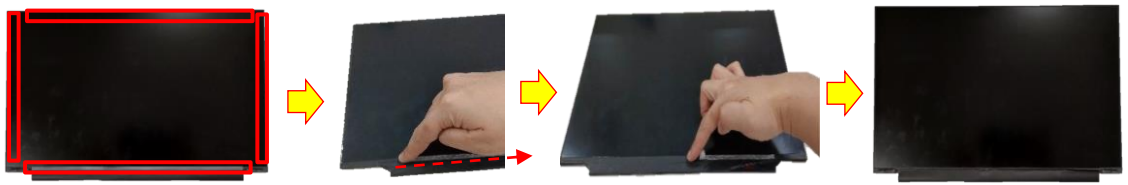


LCD PANEL and LCD Cover

Assembly Notice Please be sure to pull out adapter and disconnect the battery.

A **When reuse the LCD Panel:** (The following is an operation example)

Please use the fingertip to clean the residual glue on PANEL or BEZEL.



B **Clean the back of the LCD PANEL :**

Before assembling the LCD panel, use a dust-free cloth and a small amount of alcohol to clean the back of the panel.



C **When replace the LCD:**

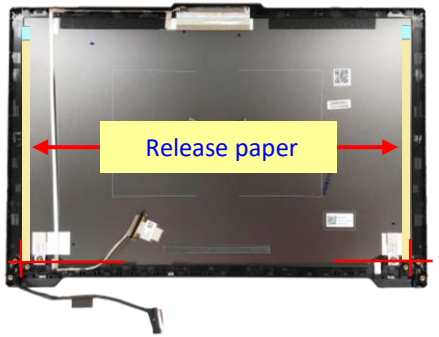
Please paste new LCD COVER TAPE *2pcs on cover.
Don't over the marking line, then Flatten by hand.



D **When assembly the LCD PANEL:**

Step 1 : Remove release paper of LCD Adhesive*2pcs.
Step 2 : Assembly and align the LCD to the upper side of the LCD Cover.

Remove



Align

