

ASUS TUF Gaming A15 (FA506I/Q) series

Service Guide

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Safety precautions

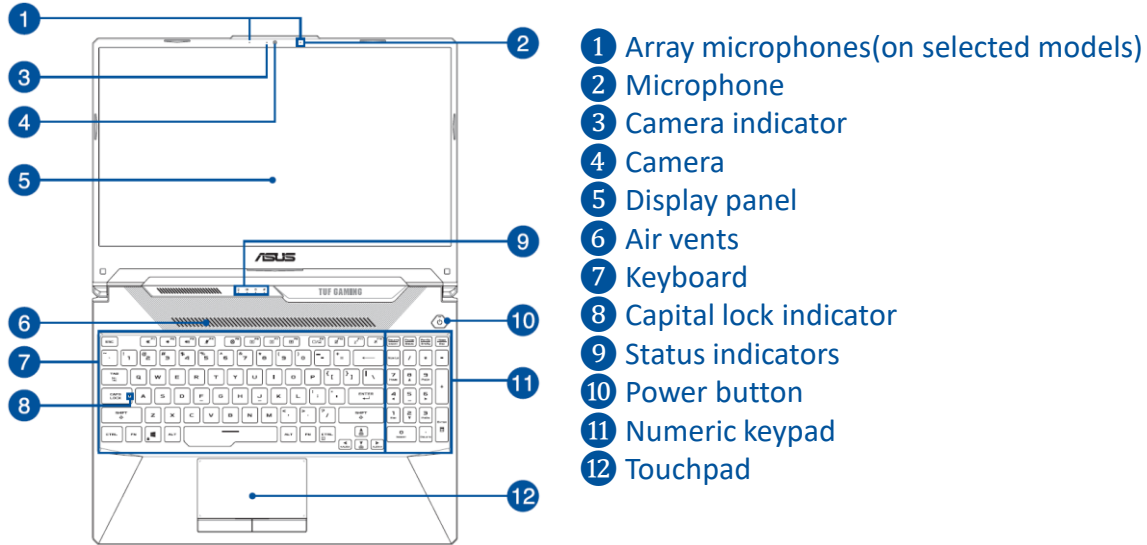
- Keep liquids or moisture away from your Notebook PC before installing or removing any components.
- Ensure to place your Notebook PC on a stable surface before installing or removing any components.
- Detach the clip or flap before removing the signal cables to prevent damage.
- Disconnect the power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

- [Service Overview](#)
- [ASUS TUF Gaming A15 \(FA506I/Q\) series Overview](#)
- [Components Top View](#)
- [Components Bottom View](#)
- [Repair Overview](#)
- [Appropriate Tools](#)
- [Keyparts and Related Parts](#)
- Disassembly steps :
 - [BOTTOM CASE](#)
 - [BATTERY](#)
 - [SSD](#)
 - [DDR](#)
 - [WIFI CARD](#)
 - [SPEAKER](#)
 - [USB BOARD](#)
 - [FAN \(with THERMAL MODULE and MAIN BOARD\)](#)
 - [THERMAL MODULE](#)
 - [MAIN BOARD](#)
 - [KEYBOARD MODULE](#)
 - [LCD BEZEL](#)
 - [LCD PANEL](#)

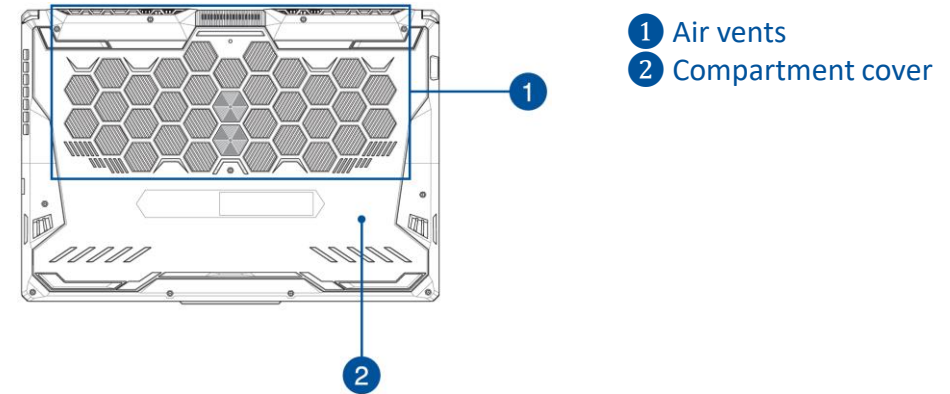
- **Carefully read through this Service Guide for a look at various components of the device before performing any service and repairs.**
- To provide the best service, we have provided the below information for technicians from distributors and resellers to perform the complete device disassembly and 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.

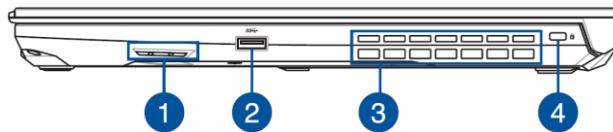
Top View



Bottom View

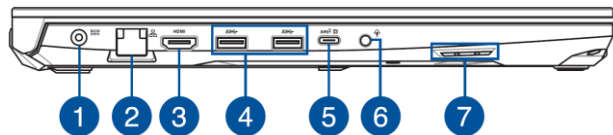


Right View



- 1 Audio speakers
- 2 USB 3.2 Gen 1 port
- 3 Air vents
- 4 Kensington® security slot

Left View



- 1 Power (DC) input port
- 2 LAN Port
- 3 HDMI port
- 4 USB 3.2 Gen 1 port
- 5 USB 3.2 Gen 2 Type-C® /DisplayPort combo port
- 6 headphone/Headset/Microphone jack
- 7 Audio speakers

Components Top View

◆ LCD COVER MODULE



◆ KEYBOARD MODULE



◆ WIFI CARD



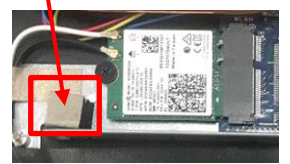
◆ DDR



◆ DC JACK CABLE 8PIN



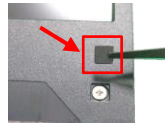
◆ SSD GASKET



◆ LCD BEZEL



◆ BEZEL COSMETIC MYLAR



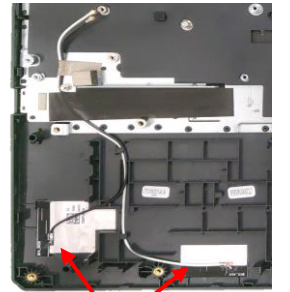
◆ BATTERY



◆ MB RAM ABSORBER



◆ TP-MB FFC



◆ MAIN BOARD



◆ CAMERA



◆ DIMM COVER MYLAR



◆ USB-MB FFC



WIFI ANTENNA

◆ 15.6' LCD



◆ MIC RUBBER



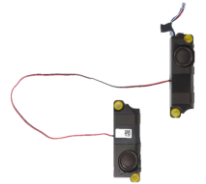
◆ SSD



◆ LED-MB FFC



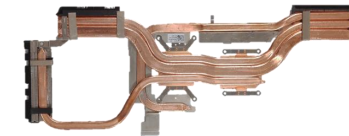
◆ SPEAKER



◆ LED BOARD



◆ THERMAL MODULE ASSY



◆ SSD MYLAR



◆ HINGE (For FA506IV-1A)



L AL

R AL

◆ BASE BATTERY GASKET



◆ BASE CASE



◆ USB BOARD



◆ GPU FAN



◆ CPU FAN



◆ SSD AL FOIL



◆ SSD ABSORBER



◆ HINGE

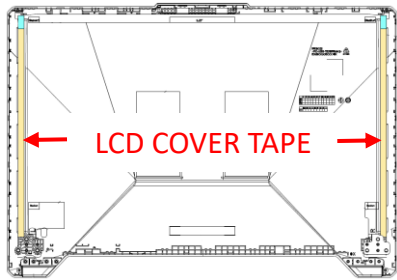


L IMR



R IMR

◆ LCD COVER MODULE



◆ LCD BEZEL



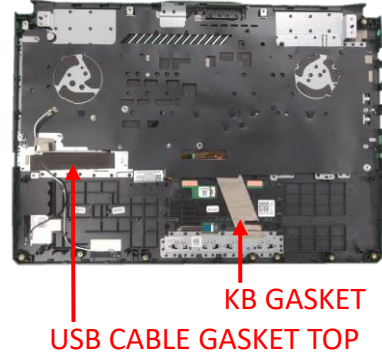
◆ LCD Panel



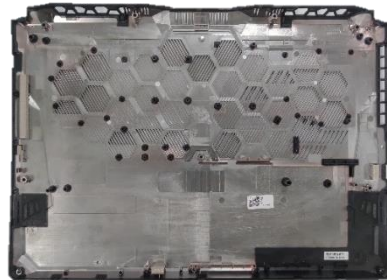
◆ LED BOARD



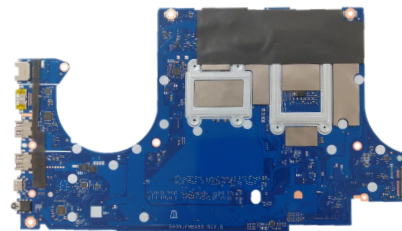
◆ KEYBOARD MODULE



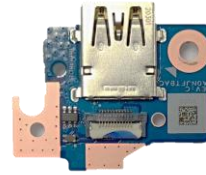
◆ BASE CASE



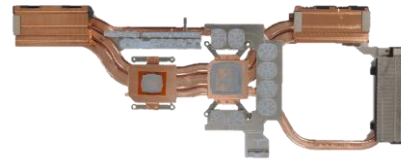
◆ MAIN BOARD



◆ USB BOARD



◆ THERMAL MODULE ASSY



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 °C 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.

Please prepare and select the appropriate tools to disassemble/assemble for the ASUS TUF Gaming A15 (FA506I/Q) series notebook.

◆ Screwdriver

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



◆ Plastic Blade



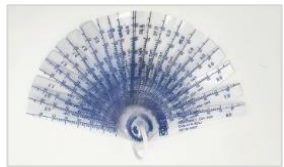
◆ Plastic Tweezers

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



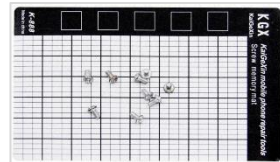
◆ Thickness Gauge

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



◆ Magnetism Board

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



◆ Alcohol 95



◆ Glove



◆ Dust-free Cloth



◆ Thermal Pad



◆ PLASTIC CARD T=0.35mm

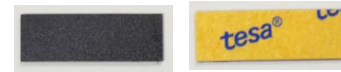


◆ PLASTIC PICK T=0.5mm



◆ NB LCD MYLAR *6pcs

Use it to align panel position.







◆ FCR-AS Thermal Grease

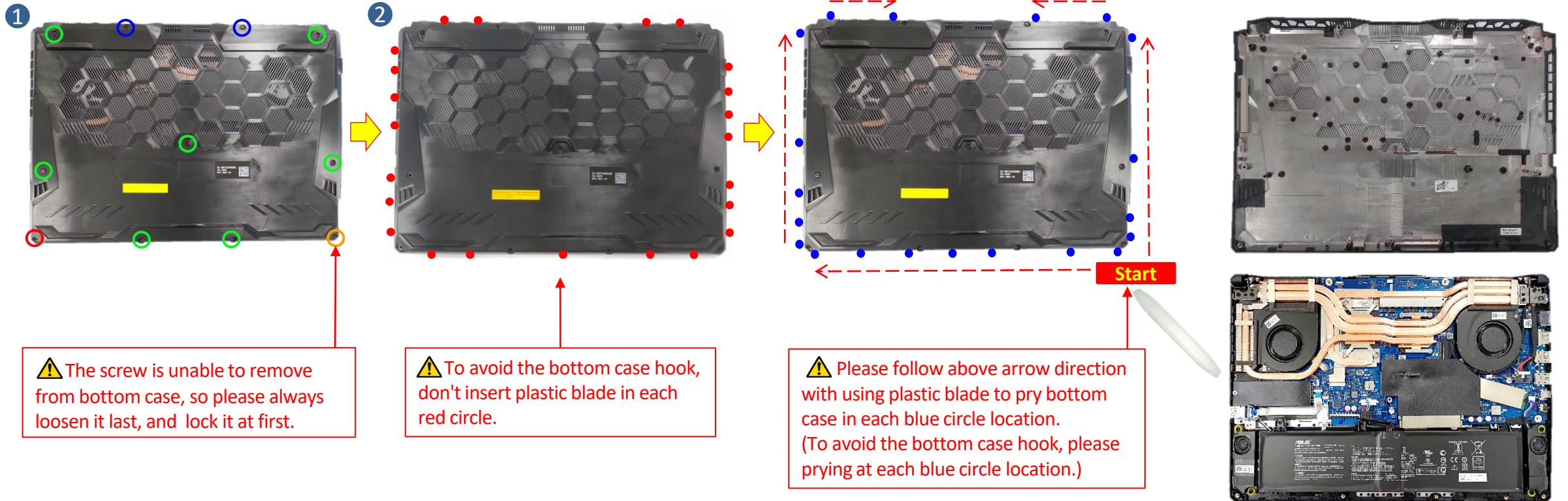



Disassembly Notice


Step 1 : Remove screws *10pcs.


Step 2 : Use plastic blade to pry the bottom case.

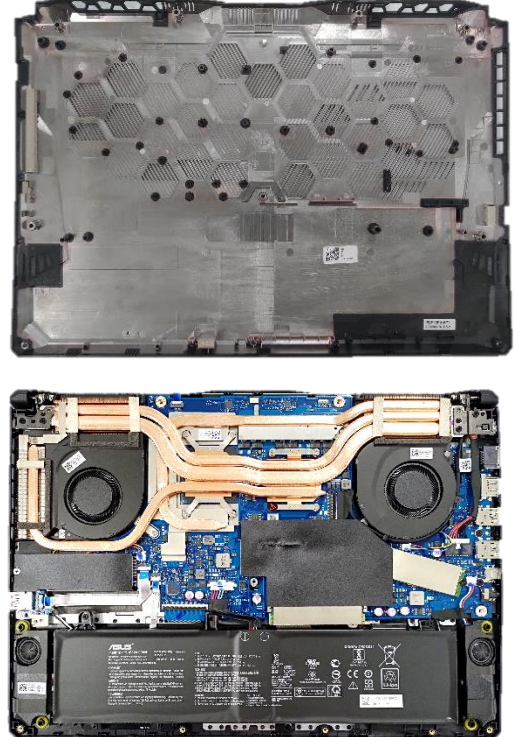
Screws	QTY	Spec	Torque (kgf-cm)
	2	M2.5*14L	2.5
	1	M2.5*5.5L	2.5
	7	M2.5*11L	2.5
	1	M2.5*2.5L+3.5 (4.5,0.8)	2.5



1 

2 



Start 

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

⚠ To avoid the bottom case hook, 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.)

Disassembly Notice

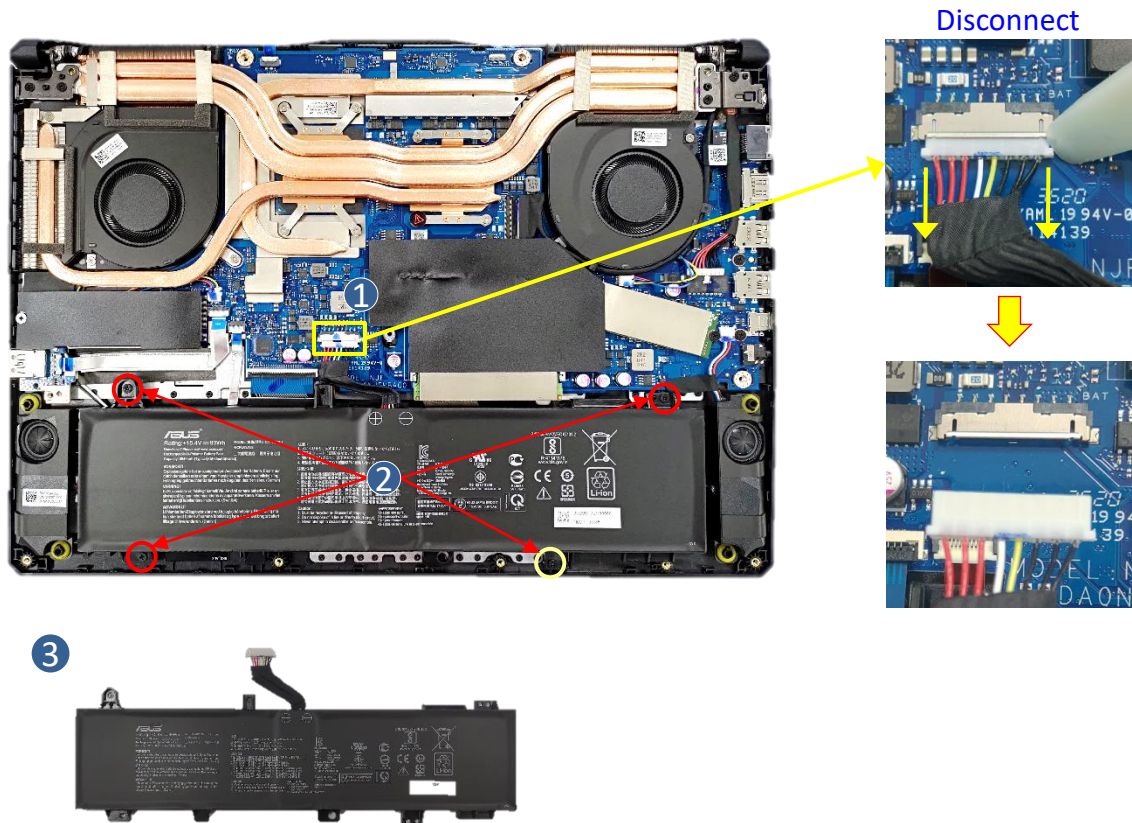
Please be sure to pull out adapter and disconnect the battery.

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 : Disconnect the battery connector.

Step 2 : Remove screws *4pcs.

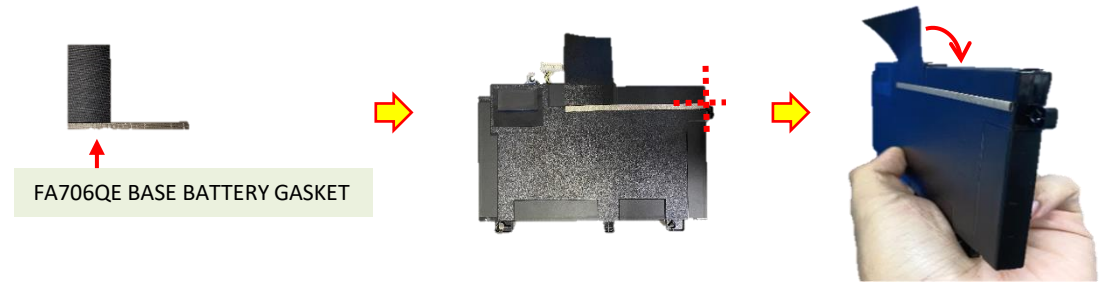
Step 3 : Remove BATTERY.



Screws	QTY	Spec	Torque(kgf-cm)
	3	M2.5*5.5L	2.5
	1	M2.5*4.5L	2.0~2.2

Assembly Notice

For FA506Q: Replacing the 48W Battery notice. Please paste FA706QE BASE BATTERY GASKET on the 48W Battery as illustrated.

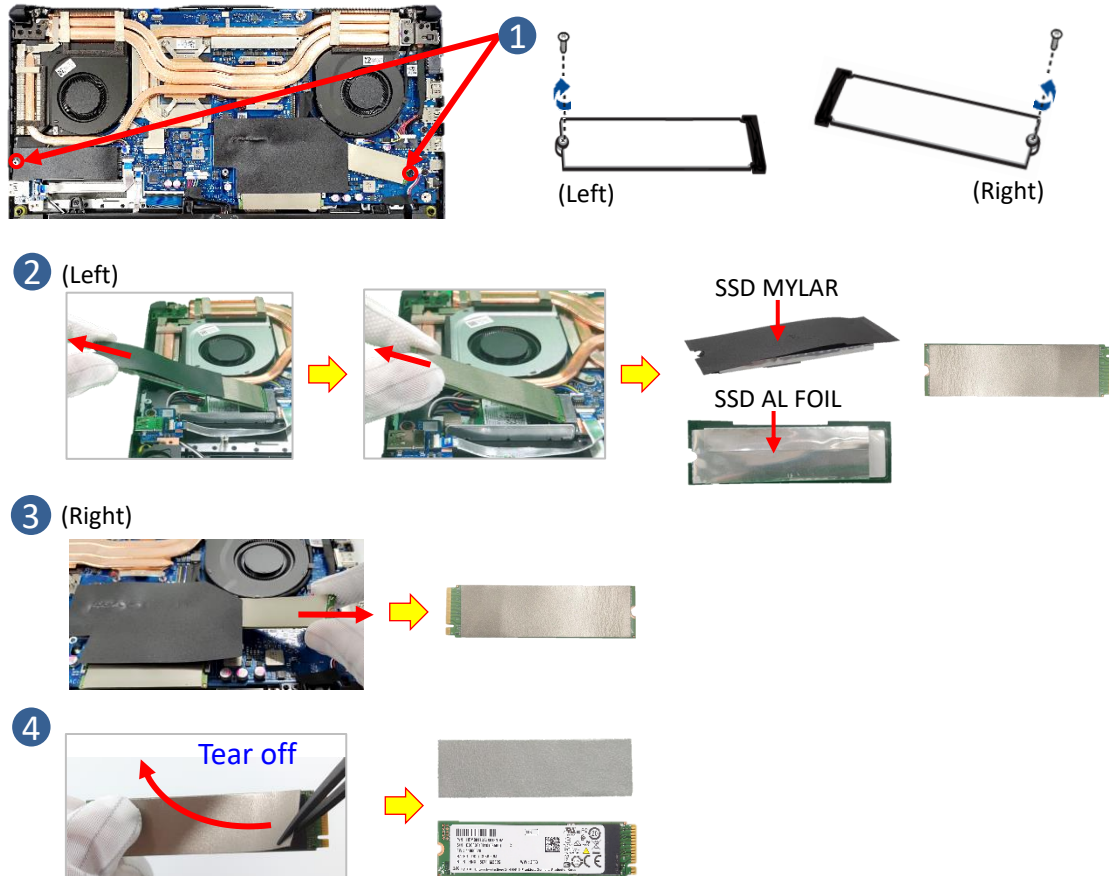


Disassembly Notice

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

- Step 1 : Remove the screws *2pcs.
- Step 2 : Remove SSD Mylar and AL Foil at left side, and remove SSD.
- Step 3 : Remove SSD at right side.
- Step 4 : Tear off ABSORBER from SSD.

Screws	QTY	Spec	Torque (kgf-cm)
	2	M2*3L	2.0

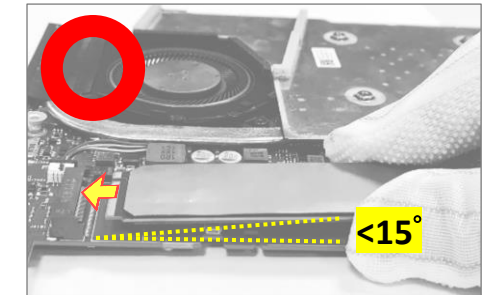
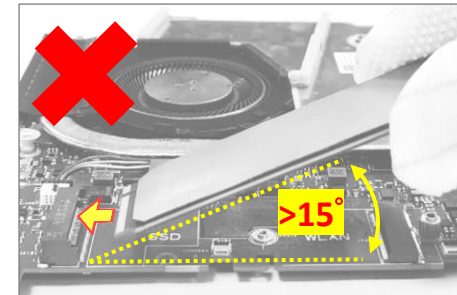


Assembly Notice

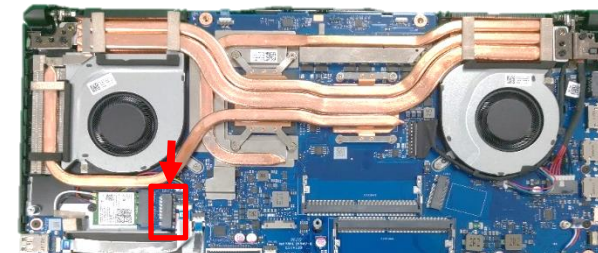
Please make sure to paste ABSORBER before assembling SSD.



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



Please use this SSD slot as first priority.



Disassembly Notice

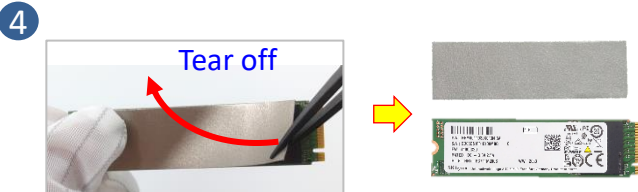
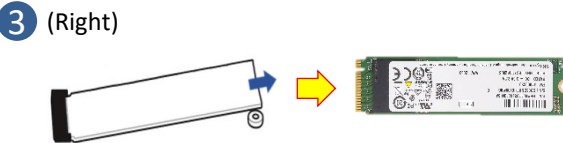
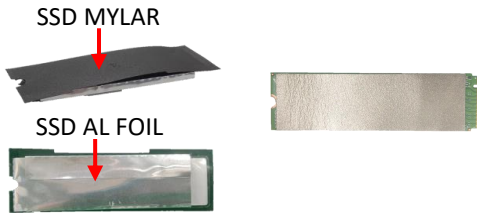
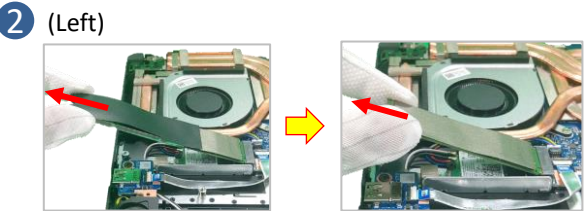
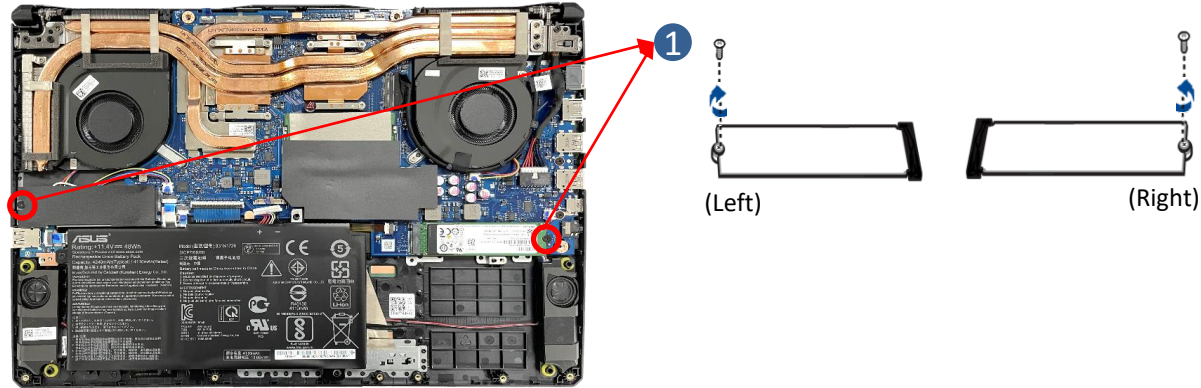
Please be sure to pull out adapter and disconnect the battery.

Step 1 : Remove the screws *2pcs.

Step 2 : Remove SSD Mylar and AL Foil at left side, and remove SSD.

Step 3 : Remove SSD at right side.

Step 4 : Tear off ABSORBER from SSD.



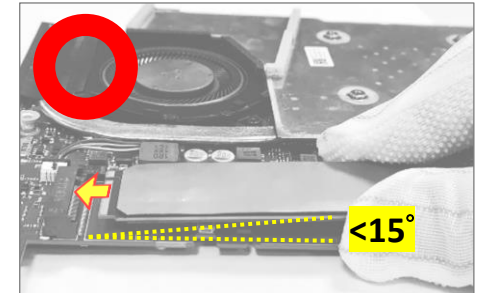
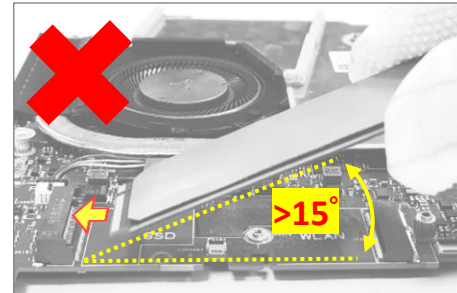
Screws	QTY	Spec	Torque (kgf-cm)
	2	M2*3L	2.0

Assembly Notice

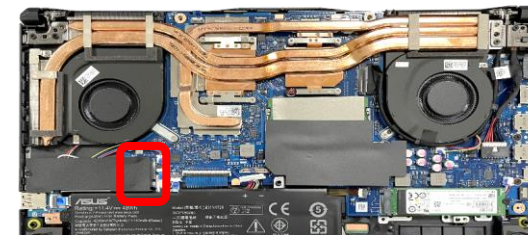
Please make sure to paste ABSORBER before assembling on the left side SSD.



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



Please use this SSD slot as first priority.



Disassembly Notice

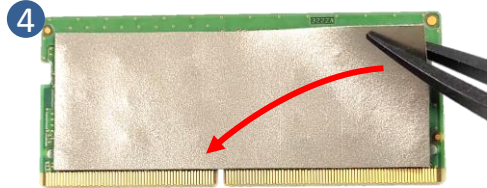
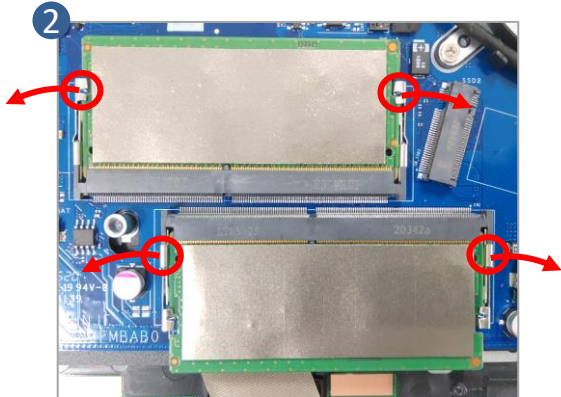
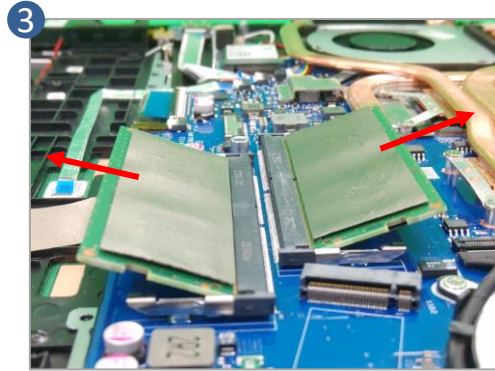
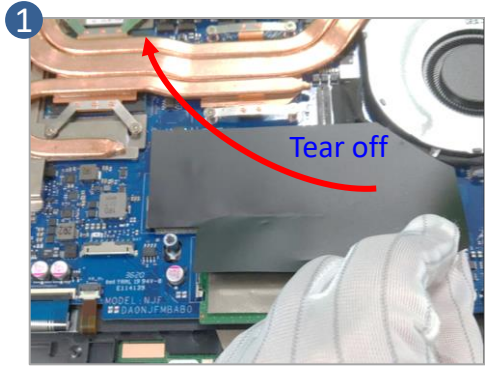
Please be sure to pull out adapter and disconnect the battery. 

Step 1 : Remove the Mylar.

Step 2 : Unlock DDR.

Step 3 : Remove DDR.

Step 4 : Tear off ABSORBER on the front and back of DDR.




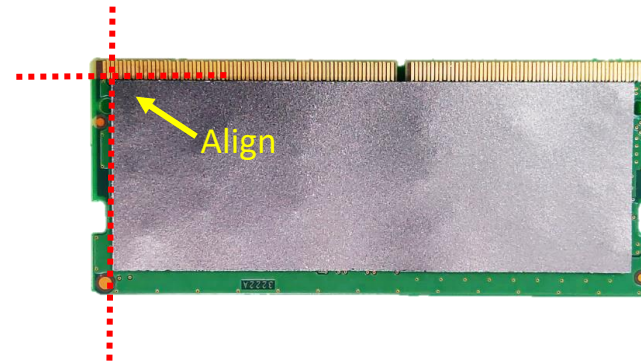
(*2pcs)



(*4pcs)

Assembly Notice

 Please make sure to paste ABSORBER on the front and back side of DDR, before assembling the DDR.



Disassembly Notice

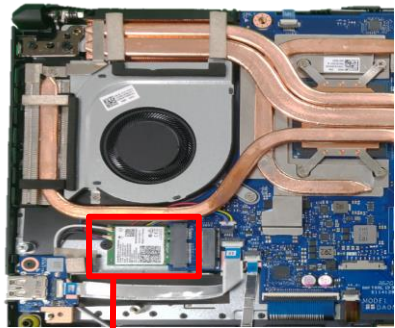
Please be sure to pull out adapter and disconnect the battery.

Step 1 : Disconnect the RF CABLE connector *2pcs.

Step 2 : Remove the screw *1pcs.

Step 3 : Remove WIFI CARD.

Screws	QTY	Spec	Torque (kgf-cm)
	1	M2*3L	2.0



Assembly Notice

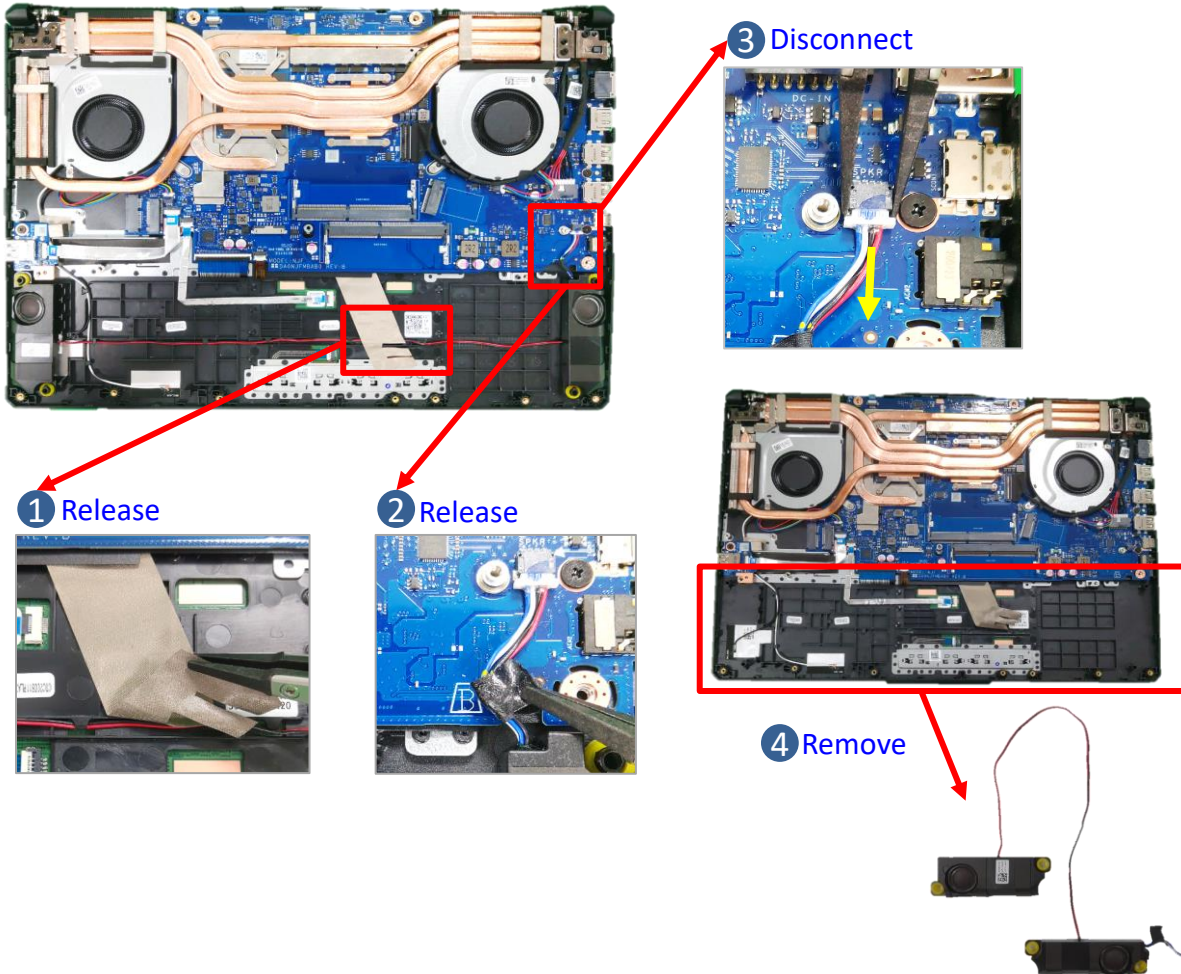
Please according to below image to assemble RF cable.



Disassembly Notice

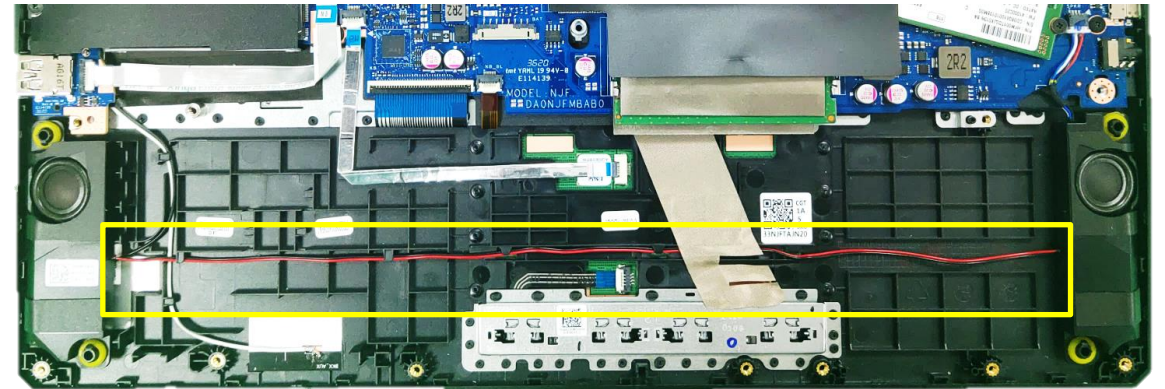
Please be sure to pull out adapter and disconnect the battery.

- Step 1 : Release the tape.
- Step 2 : Release the tape.
- Step 3 : Disconnect the SPEAKER connector.
- Step 4 : Remove SPEAKER.



Assembly Notice

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



Disassembly Notice

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

Step 1 : Disconnect the FFC connector.

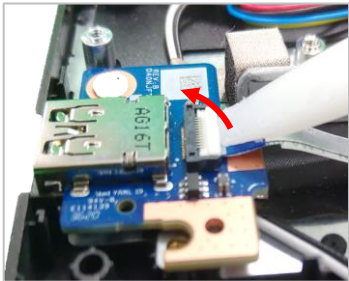
Step 2 : Remove USB-MB FFC.

Step 3 : Remove screw *1pcs and remove USB BOARD.

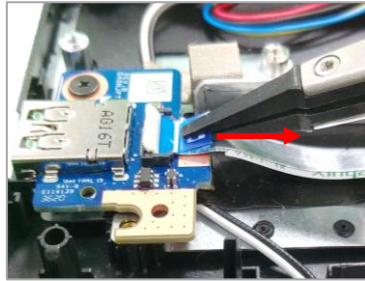
Screws	QTY	Spec	Torque (kgf-cm)
	1	M2*3L	2.0



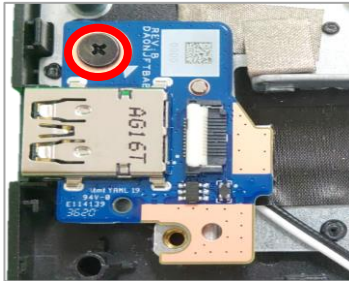
1 Disconnect



2 Remove

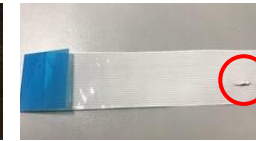
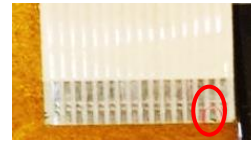


3 Remove



Assembly Notice

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



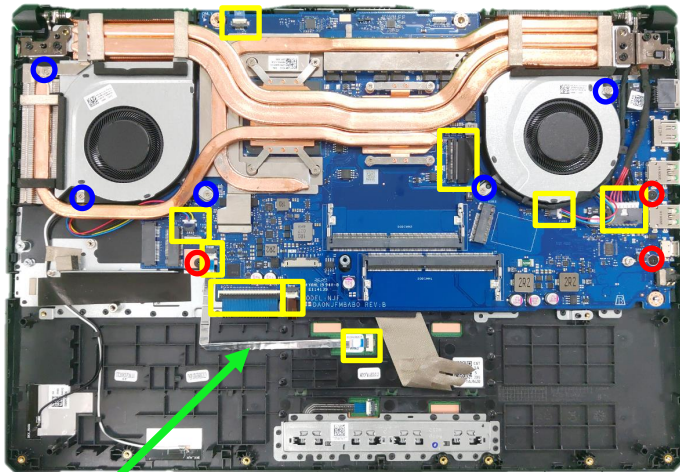
Disassembly Notice

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

- Step 1 : Disconnect (yellow mark) connector *9pcs.
- Step 2 : Remove TP-MB FFC.
- Step 3 : Remove screws *8pcs.
- Step 4 : Remove MB and Thermal and FAN module.
- Step 5 : Remove FAN *2pcs.

Screws	QTY	Spec	Torque (kgf-cm)
	3	M2*3L	2.0
	5	M2*4L	2.0

① Disconnect (Yellow mark)

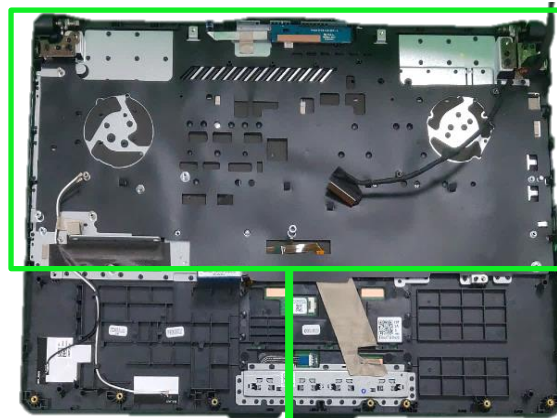


② Remove

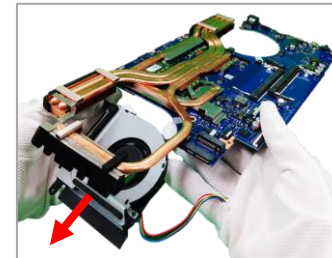
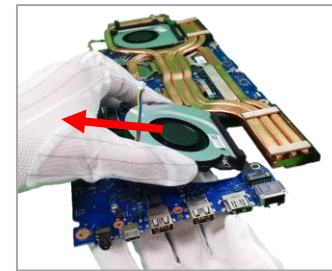


③ Remove (Red and blue mark)

④ Remove module (MB+Thermal+FAN)

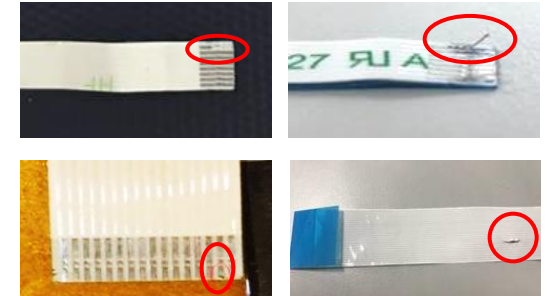


⑤ Remove FAN

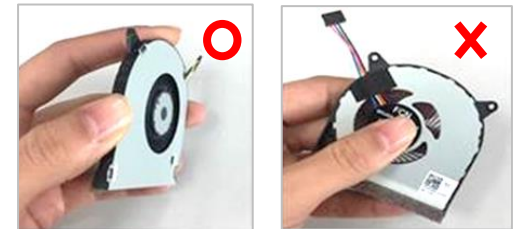


Assembly Notice

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.



Disassembly Notice

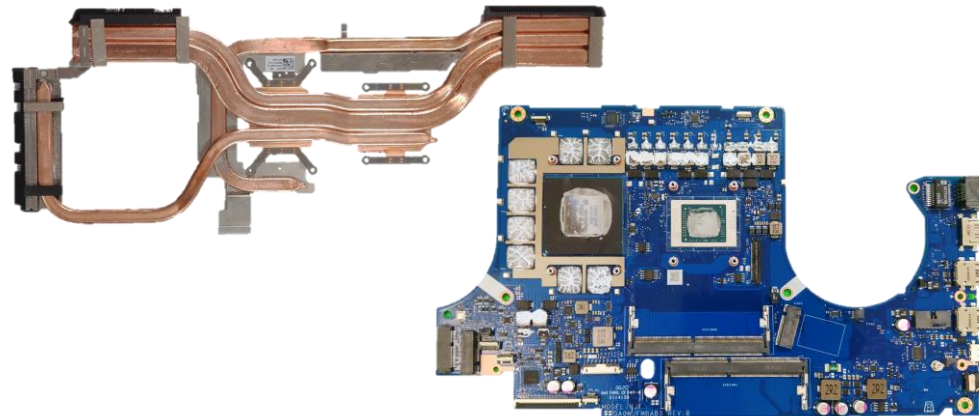
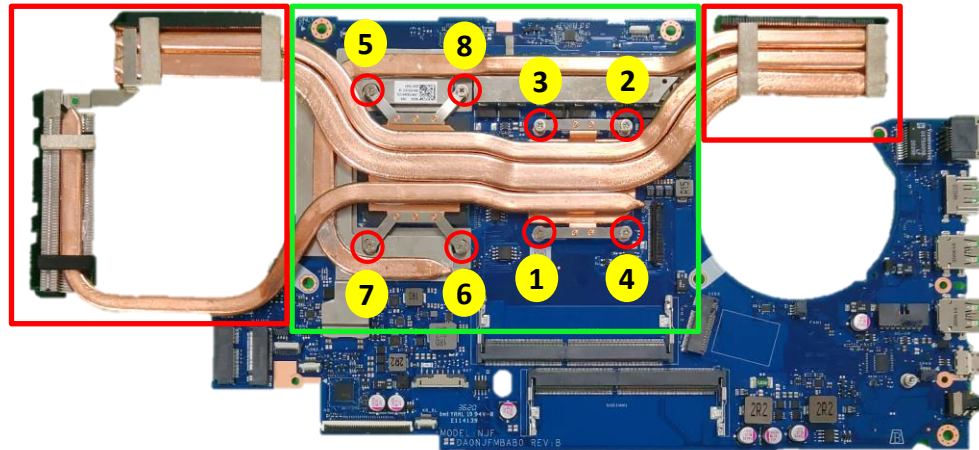
Please be sure to pull out adapter and disconnect the battery.

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	2.0



Assembly Notice

Step-1

Please refer **Repair Notice SOP** for thermal material rework when reassemble thermal module before.

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

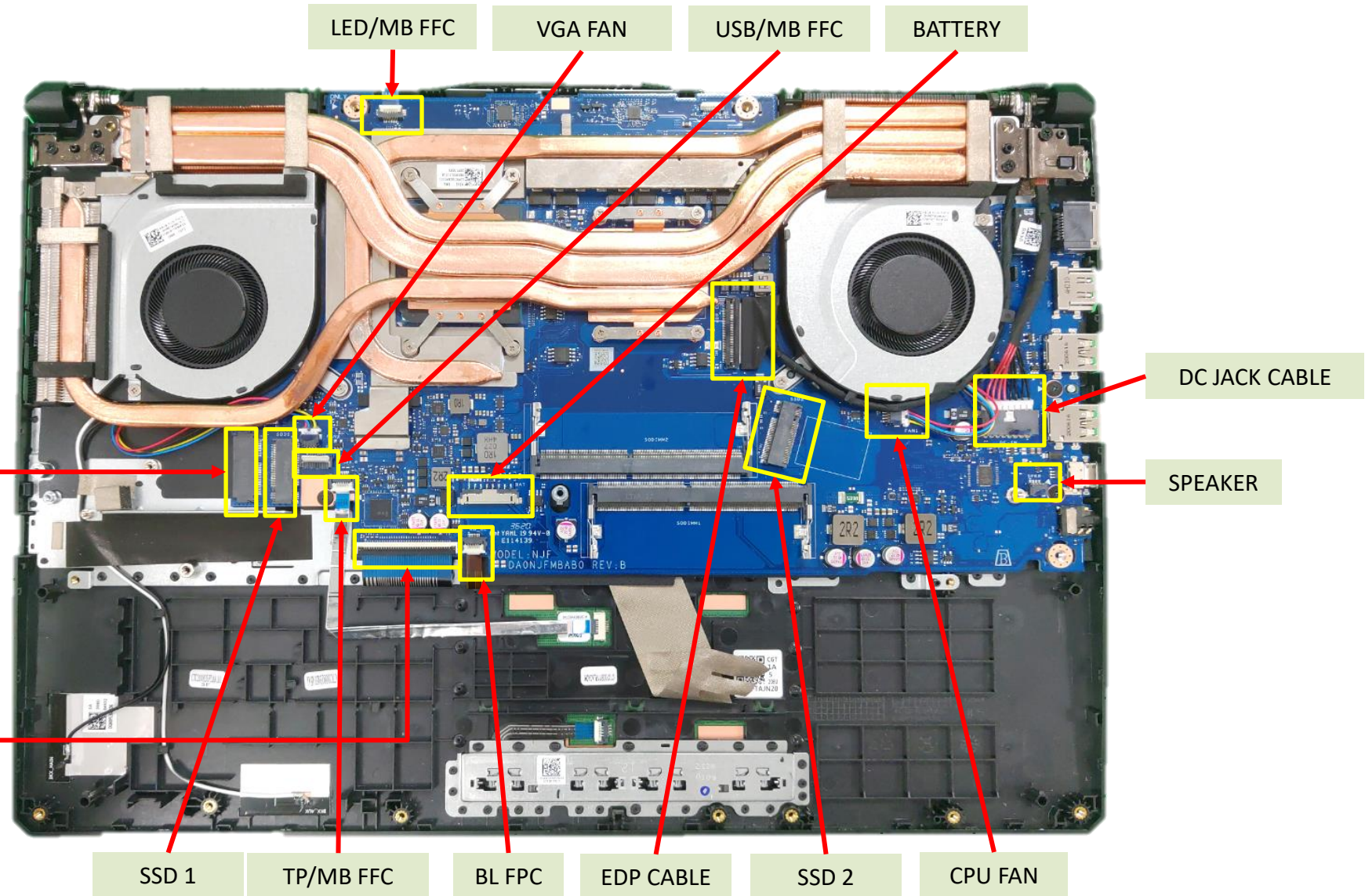
Step-2

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.

Mainboard connector placement



K/B FPC

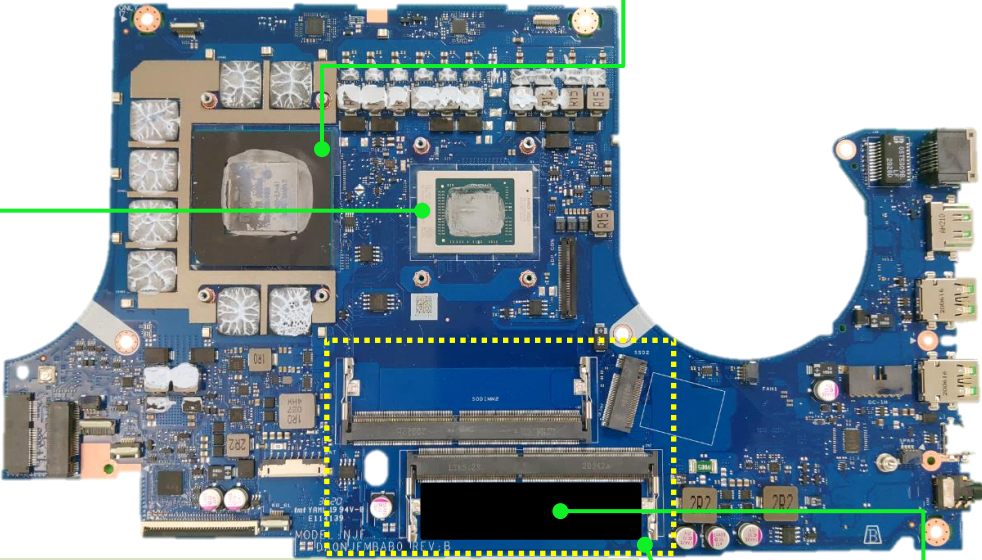
Supports using JIG BOARD to refresh F1 BIOS.



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.

Chose the Mylar according to GPU model
 FA506QM N18E G20 GPU MYLAR
 FA506IV N18P GPU MYLAR
 FA506QM N18E G20 GPU MYLAR-E3
 FA506IV N18E G0 GPU MYLAR
 FA506IV N18E G1 GPU MYLAR



Chose the Mylar according to AMD CPU model
 (Cezanne FA506QM APU KAPTON FILM)
 (Renoir FA506IV AMD APU MYLAR)

FX507ZE RAM UNDERSIDE MYLAR

Renoir



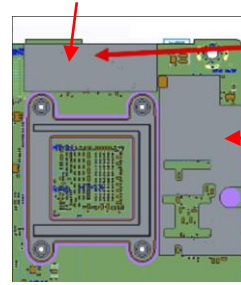
Cezanne



FA506IV DIMM COVER MYLAR (For FA506IV_IU_IU)
 FA506QM DIMM COVER MYLAR (For FA506QM)
 FA506QE DIMM MYLAR (For FA506IC_IE_IHR_QE)

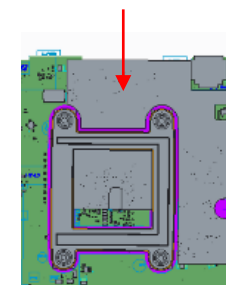


FA506IV N18E CPU UP ABSORBER

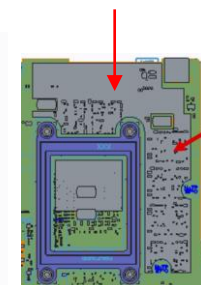


FA506IV N18E CPU DOWN ABSORBER

FA506IV N18E GPU ABSORBER



FA506QM MB G20 GPU TOP ABSORBER



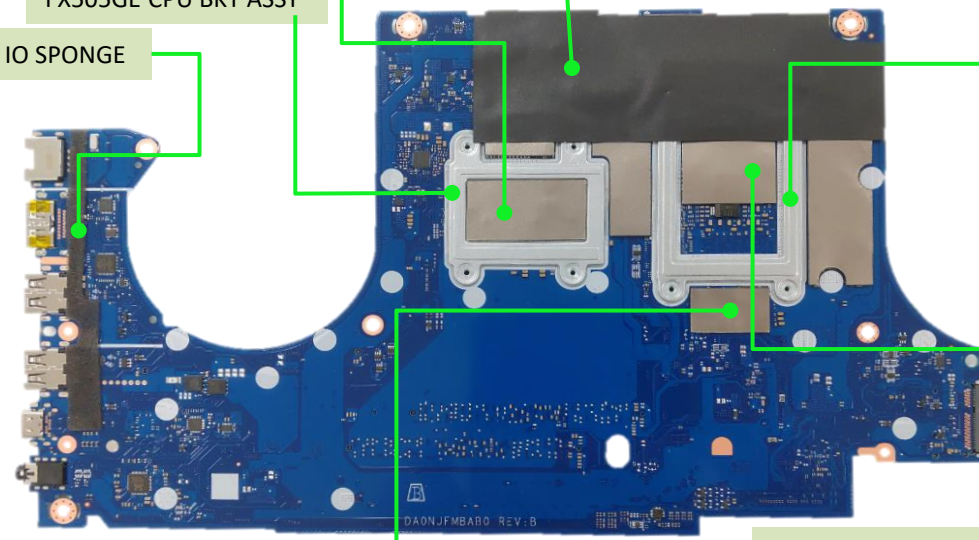
FA506IV N18E CPU ABSORBER

FA506IV MB TOP MYLAR

- FA506QM GPU BKT-AMD ASSY (For FA506QM_QR)
- FX505GE GPU BKT ASSY (For FA506IC_IE_IH_IHR_II_IU_IV_QE)

FX505GE CPU BKT ASSY

FA506IV IO SPONGE

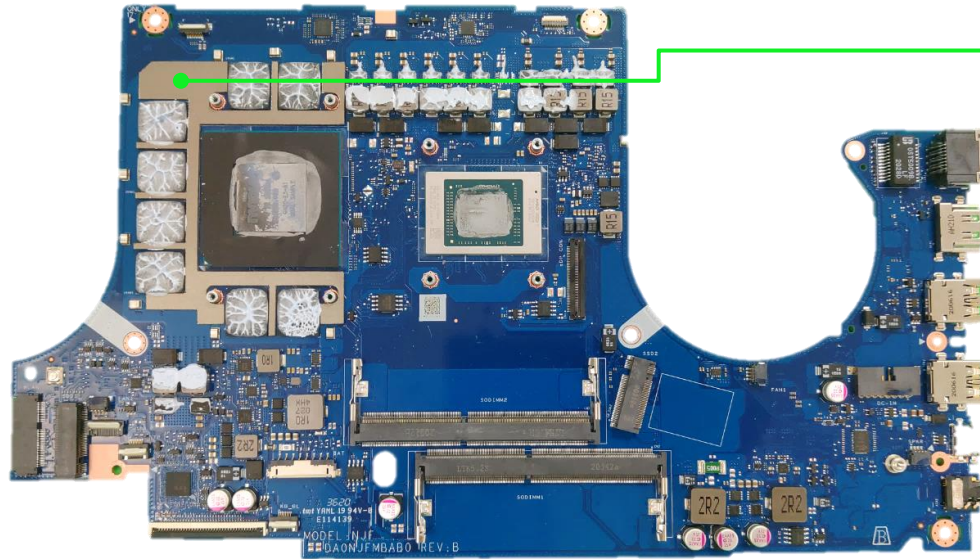


FA506QM MB G20 GPU TOP DOWN ABSORBER

FA506QC MB G20 GPU TOP ABSORBER

Materials on mainboard

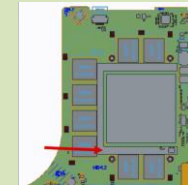
⚠ Parts marked in yellow can be ordered/replaced separately at L2 repair level. When L3/L4 repair finished, no need to paste new one if shortage of this material on the MB.



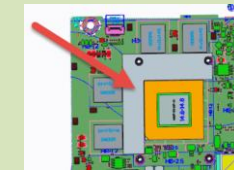
FA506QC MB G20 GPU BOT ABSORBER



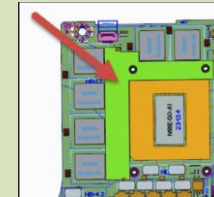
FA506QM G20 GPU ABSORBER



FA506II N18P GPU BOT ABSORBER




FA506IV N18E GPU BOT ABSORBER

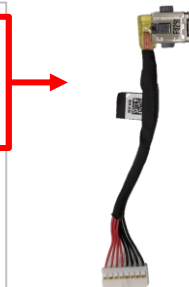
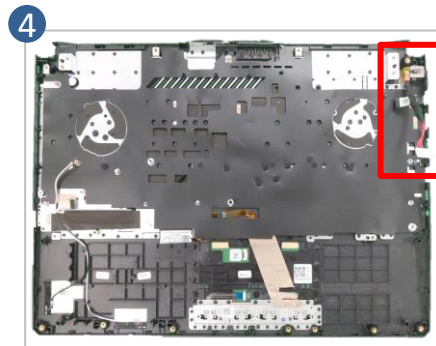
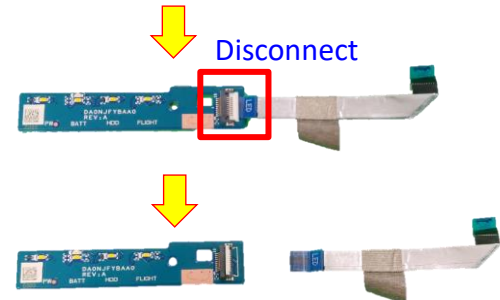
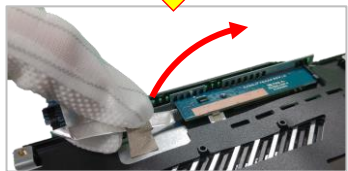
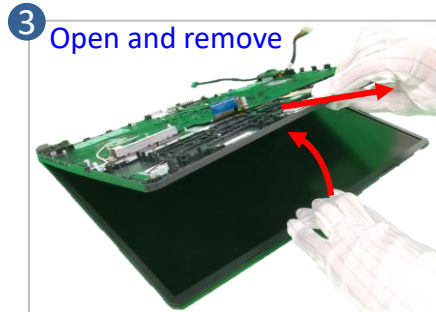
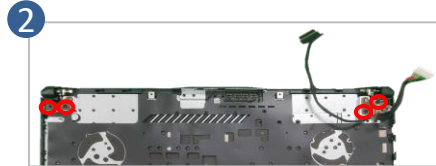
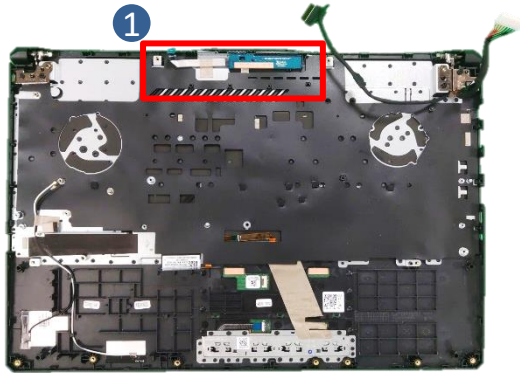


Disassembly Notice


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

- Step 1 : Remove the LED BD and FFC.
- Step 2 : Remove screws *4pcs.
- Step 3 : Remove the KEYBOARD MODULE.
- Step 4 : Remove the DC JACK CABLE.

Screws	QTY	Spec	Torque (kgf-cm)
	4	M2.5*5.5L	2.5

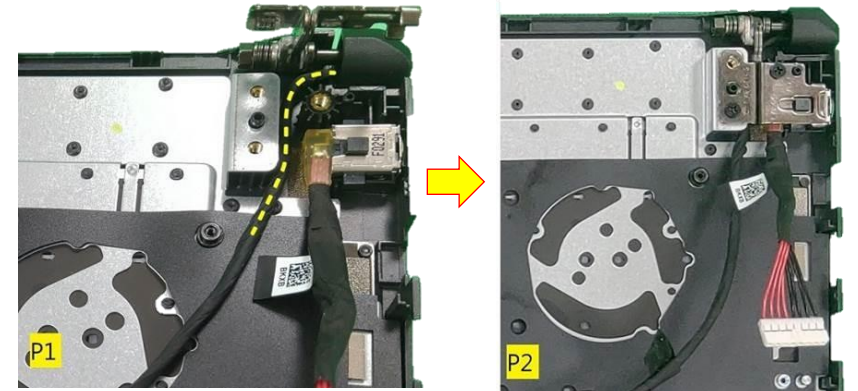


Assembly Notice

 Please refer below picture to organize EDP cable while repair device, it's to keep device safety.

P1. EDP cable need to following yellow dotted line to organize EDP cable, DO NOT pass through hinge.

P2. After assemble hinge as picture.



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.

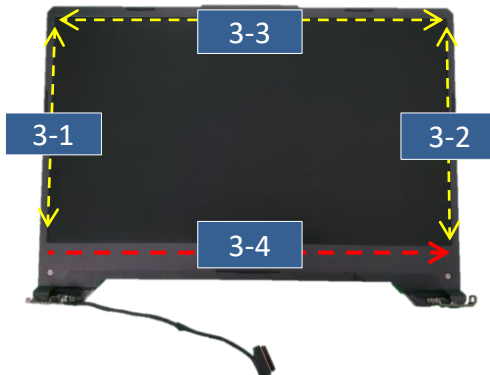
Step 3 : Remove LCD BEZEL.

Screws	QTY	Spec	Torque (kgf-cm)
	2	M2.5*3.5L	2.5



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.



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.

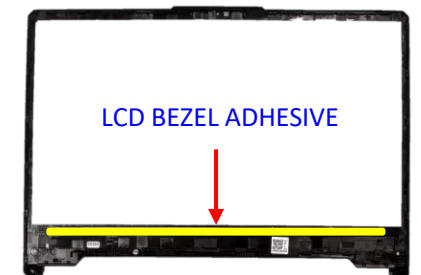
Please move blade slowly to separate the bezel away, and must press the black Mylar downward with panel parallel direction..



Assembly Notice

When reuse the LCD BEZEL:

Please paste new LCD BEZEL ADHESIVE before assembly BEZEL.
(New LCD BEZEL already contains LCD BEZEL ADHESIVE *1pcs)



Disassembly Notice

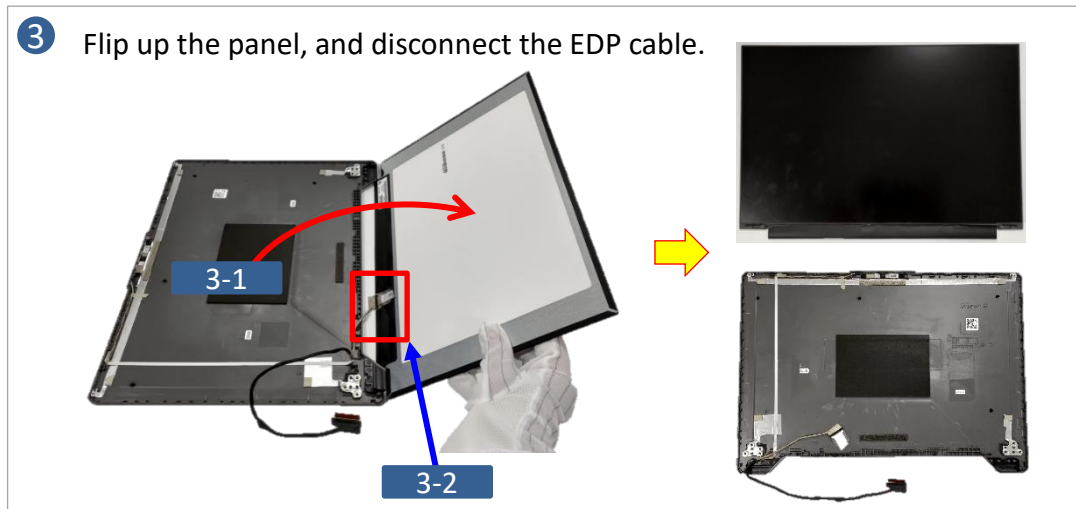
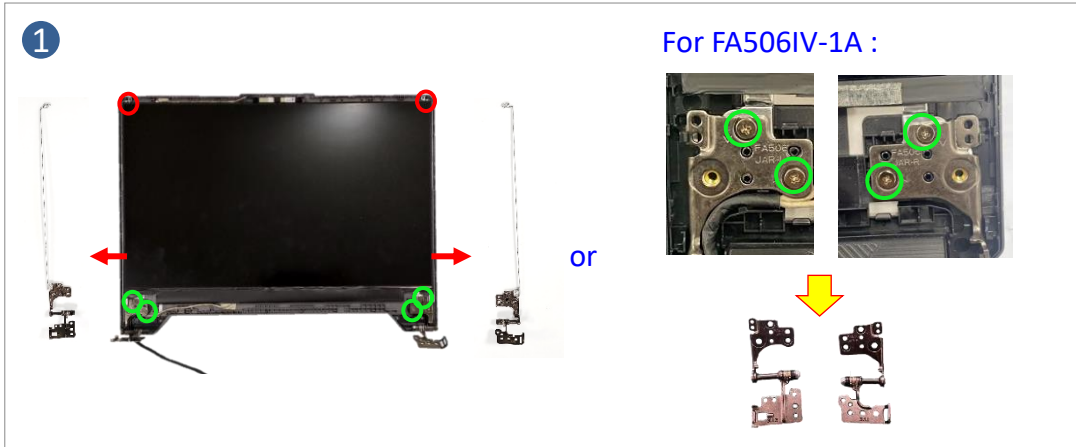
Please be sure to pull out adapter and disconnect the battery.

Step 1 : Remove screws *6pcs, and remove hinges *2pcs.

Step 2 : Pull out LCD adhesive *2pcs.

Step 3 : Remove LCD PANEL.

Screws	QTY	Spec	Torque (kgf-cm)
	8	M2.5L*3	2.5
	2	M1.6*2.5L	1.6

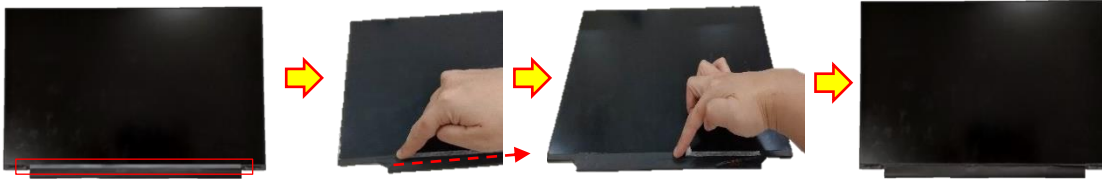


Assembly Notice

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

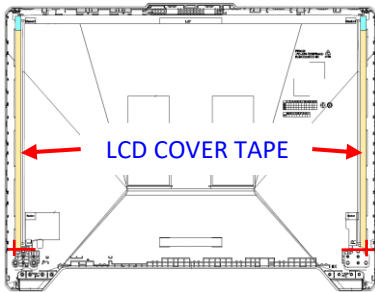
A When reuse the LCD PANEL:

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

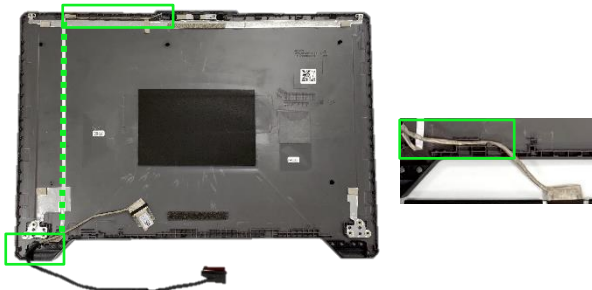


B When reuse the LCD COVER:

Please paste new PANEL ADHESIVE *2pcs.
(New LCD COVER already contains PANEL ADHESIVE *2pcs)



C Please follow the green mark to tidy EDP cable.



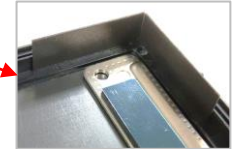
D When assembly the LCD PANEL: (The following is an operation example)

Step 1~2 : Paste 16TT0-R0042000 NB LCD MYLAR *4pcs on LCD COVER.
(Positions are as below)

D-1 Upper Left Corner : Mylar *2pcs



D-2 Upper Right Corner : Mylar *2pcs

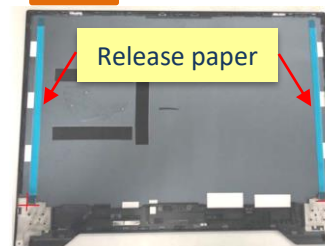


Step 3 : Remove release paper of LCD Adhesive *2pcs.

Step 4 : Assembly and align the LCD to the upper side of the LCD Cover.

Step 5 : Remove Mylar *4pcs and complete the Panel assembly.

D-3 Remove



D-4 Align



D-5 Pull out Mylar *4pcs.

