

# ASUS ROG Zephyrus G14 (2021 GA401Q/IHR) series

**Service Guide** 

# /ISUS

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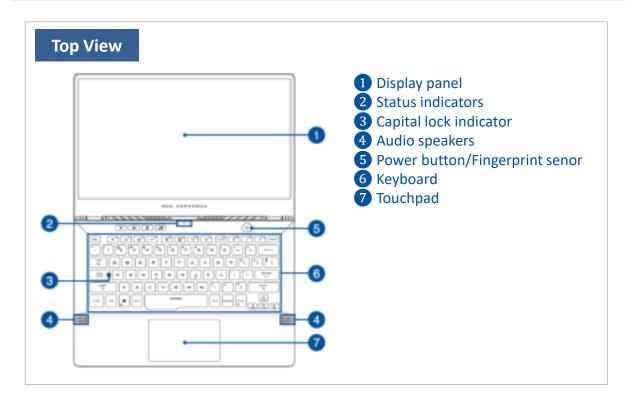
# **Service Overview**

- 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.

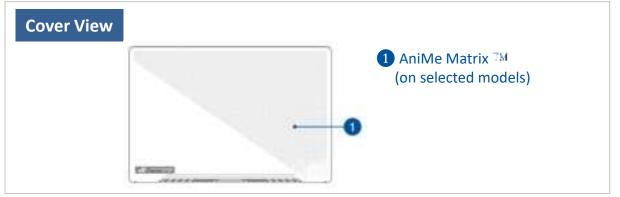
Due to sales policy difference, the components may have different specifications on the same model. If you have any operational issues, please contact the service hotline.

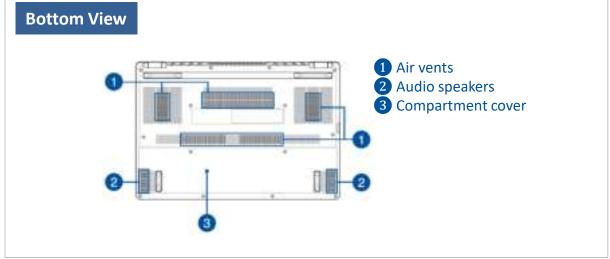


# ASUS ROG Zephyrus G14 (2021 GA401Q/I) series Overview













# **Components Top View**

#### **♦** LCD COVER MODULE



**♦ LCD BEZEL** 



♦ LCD Panel(14")



◆ BASE CASE



**\*** KEYBOARD MODULE



**MAIN BOARD** 



**♦ THERMAL MODULE ASSY** 



♦ GPU FAN



◆ CPU FAN

**♦**FP TOUCH



**♦** POWER KEY HOLDER



**♦** POWER KEY RUBBER



BATTERY



♦ HINGE L/R



♦ HINGE CAP L/R





♦ HINGE DECO RUBBER L/R





♦ DDR



WIFI CARD



♦ SSD



**♦** TOUCHPAD



**DIMM COVER MYLAR** 



SSD MYLAR

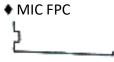


**♦** EDP TAPE



♦ TP FFC





**♦** EDP CABLE



**†** FP PW FFC



**♦** SPEAKER



♦ BATT-LI



**TWEETER SPEAKER** 



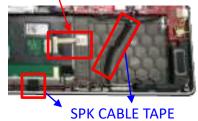
**SSD THERMAL PAD** 

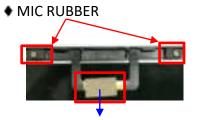


**+** CABLE SPONGE

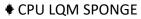


**♦** TP EMI FABRIC





MIC FPC EMI FABRIC







# **Components Bottom View**

**+** LCD COVER MODULE

Without Matrix LED SKU



LCD ADHESIVE R&L

With Matrix LED SKU



LCD ADHESIVE R&L

**MAIN BOARD** 



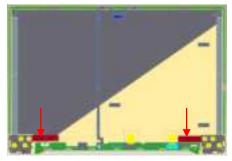
**♦ THERMAL MODULE ASSY** 



**♦** KEYBOARD MODULE



**♦ LCD MG FRAME FABRIC** 



♦ LCD Panel

**♦ LCD BEZEL** 



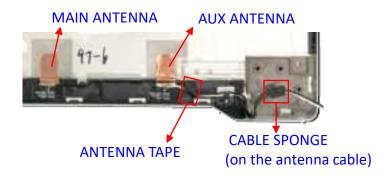
LCD BEZEL ADHESIVE

BASE CASE



MG L SIDE FRAME FABRIC

**\***ANTENNA



**♦ PANEL BACK MYLAR** 

Without Matrix LED SKU

COLOR ID=1D/1E PANEL BACK MYLAR \*2pcs



With Matrix LED SKU

COLOR ID=2D/2E PANEL BACK MYLAR CO \*1pcs



COLOR ID=2G PANEL BACK MYLAR AW \*1pcs





# **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 °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.



# **Appropriate Tools**

Please prepare and select the appropriate tools to disassemble/assemble for the ASUS ROG Zephyrus G14 (2021 GA401Q/I) series notebook.

#### Screwdriver

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

#1 🛨



#### **♦** Plastic Blade



#### Plastic Tweezers

Use a pair of tweezers to remove/insert/tidy 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



#### **♦ NB LCD MYLAR \*6pcs**

Use it to align panel position.





#### **♦** Thermal Pad PTM7958



#### **♦ PLASTIC CARD T=0.35mm**



#### **\*** FCR-AS Thermal Grease



#### **♦ PLASTIC PICK T=0.5mm**





# **Appropriate Tools**

Please prepare and select the appropriate tools to disassemble/assemble for the ASUS ROG Zephyrus G14 (2021 GA401Q/I) notebook.















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	- 1







Tooling Type	Item	Part Name	Memo
	1	Silicone scraping pen	
For Liquid metal use	2	Conductonaut 1g (Liquid Metal)	<ul> <li>Please store it in the environment of 10 ~ 40 °C.</li> <li>Please keep cover tightly closed until ready for next time use.</li> <li>Shipping category: Dangerous Goods.</li> </ul>
roi Liquiu illetai use	3	AMD Cezanne CPU steel plate//2020	
	4	Stainless steel plate (60mm*20mm*0.2t)	
	5	AMD Renoir CPU steel plate//2019	
	6	Height limit fixture	
	7	Paperclip	
	8	Glue Nozzle	
For RV289 Glue use	9	Glue Connector	
	10	Thermally Conductive Elastomer(RV289 5G)	<ul> <li>Please store it in the environment under 27°C.</li> <li>Please keep cover tightly closed until ready for next time use.</li> <li>Shipping category: NOT Dangerous Goods.</li> </ul>
	11	Dust-free cotton swab//class 100 (100pcs)	
For Cloop was	12	95% alcohol	
For Clean use	B	Dust-free cloth	

# ▲ Warning: When the tool is with Liquid Metal or Thermally Conductive Elastomer (RV289) residue, please clean tools with dust-free cloth and 95% alcohol.



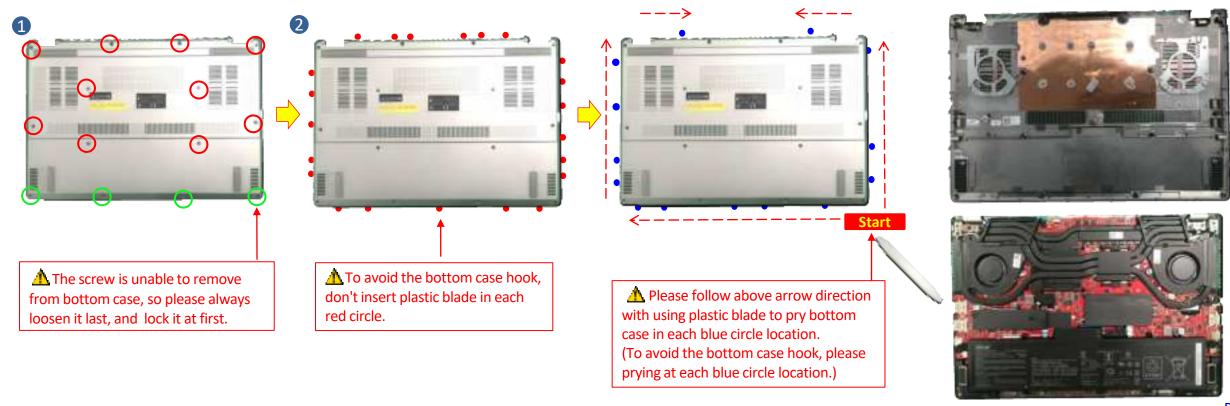
# **BOTTOM CASE**

## **Disassembly Notice**

Step 1 : Remove screws \*13pcs.

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

Screws	QTY	Spec	Torque (kgf-cm)
10	10	M2*9.5L (4.5,0.8) (K)#1	2.0±0.2
10	4	M2*4.5L(4.5,0.8) (K) #1	2.0±0.2





# **BATTERY**

## **Disassembly Notice**

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



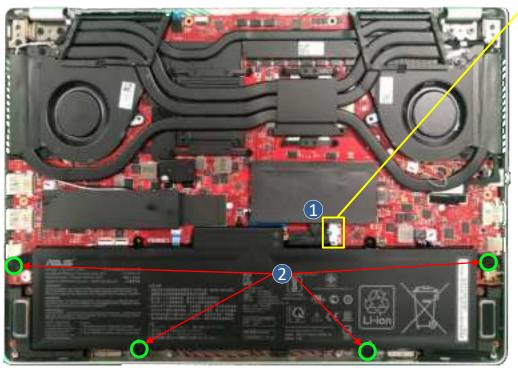
A Before disassembly battery connector, please be sure to pull out adapter and disconnect the battery more than ten seconds in order to IC damage.

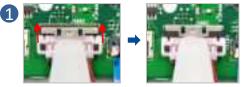
Step 1 : Disconnect the battery connector.

Step 2: Remove screws \*4pcs.

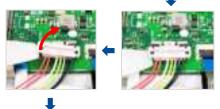
Step 3: Remove BATTERY.

Screws	QTY	Spec	Torque(kgf-cm)
10	4	M2*4.5L(4.5,0.8) (K)#1	2.0±0.2





Please disconnect the red cable side first!









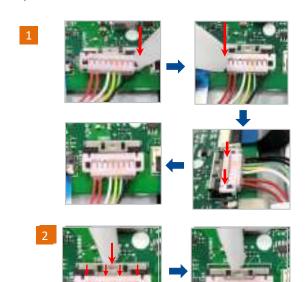
### **Assembly Notice**



To prevent getting a short circuit or an electric shock accident, please follow the below steps to connect the battery connector.

Step 1: Use the non-conductive pry tool to connect the black cable side first, then connect the red cable side.

Step 2: Use the non-conductive pry tool to push the iron sheet.





# **RTC BATTERY**

**Disassembly Notice** 

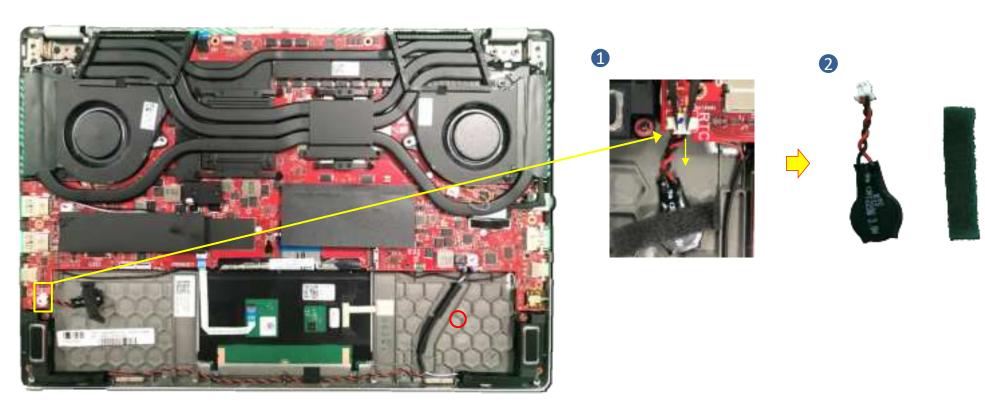
Please be sure to pull out adapter and disconnect the battery.

A 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 RTC battery connector.

Step 2: Remove RTC BATTERY.





# **DDR**

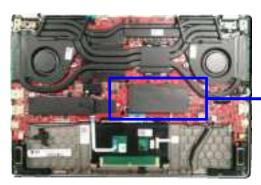
## **Disassembly Notice**

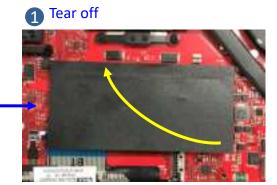
Please be sure to pull out adapter and disconnect the battery.



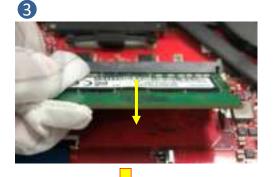
Step 1 : Remove the Mylar.

Step 2 : Unlock DDR. Step 3: Remove DDR.













## **Assembly Notice**

▲ Please make sure to paste ABSORBER on the <u>front</u> and back side of DDR, before assembling the DDR.







## **Disassembly Notice**

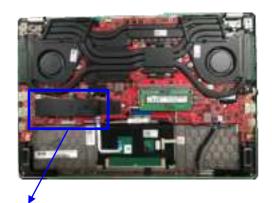
Please be sure to pull out adapter and disconnect the battery.

Step 1 : Remove the SSD Mylar.

Step 2 : Remove the screws \*1pcs.

Step 3 : Remove SSD.

Screws	QTY	Spec	Torque (kgf-cm)
TO	1	M2*4.5L (4.5,0.8) (K) #1	2.0±0.2











## **Assembly Notice**

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





# **WIFI CARD**

## **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)
TO	1	M2*3L (5.6,0.8) (K) #1	2.0±0.2



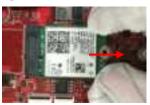
















## **Assembly Notice**

⚠ Please according to below image to assemble RF cable.





# **SPEAKER**

## **Disassembly Notice**

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



Step 1: Disconnect the SPEAKER connector.

Step 2 : Remove SPEAKER.

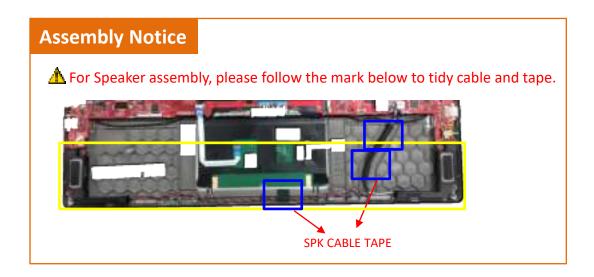








Remove





# **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) connector \*9pcs.

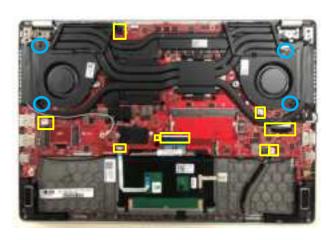
Step 2: Remove screws \*4pcs.(blue mark)

Step 3: Remove MB and Thermal and FAN module.

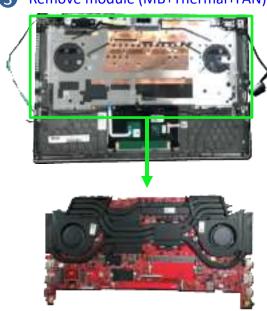
Step 4 : Remove FAN \*2pcs.

Screws	QTY	Spec	Torque (kgf-cm)
TO	4	M2*4.5L (5.6,0.8) (K) #1	2.0±0.2

- 1 Disconnect (Yellow mark)
- Remove screw\*4pcs (blue mark)



Remove module (MB+Thermal+FAN)



#### **Assembly Notice**

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

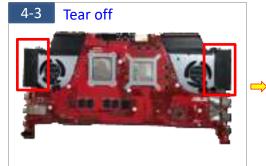


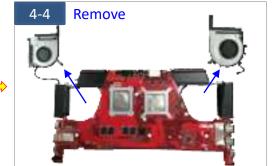


Remove FAN











## THERMAL MODULE

### **Disassembly Notice**

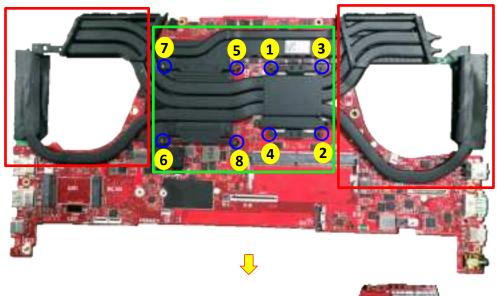
Please be sure to pull out adapter and disconnect the battery.



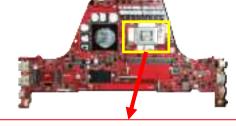
Step 1: Please follow the reverse screws numbers to remove screws \*8pcs.

Step 2: Remove the THERMAL MODULE from MB.

A 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.







Please refer Repair Notice SOP for Liquid metal rework.

Screws	QTY	Spec	Torque (kgf-cm)
TO	8	M2*4.5L (4.5,0.8) (K) W-NI	2.0±0.2

## Assembly Notice /



#### Step-1

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

MB Location:[GPU]

Material:

Main (Thermal Pad PTM7958)

#### Step-2

MB Location:[CPU]

#### Step-3

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

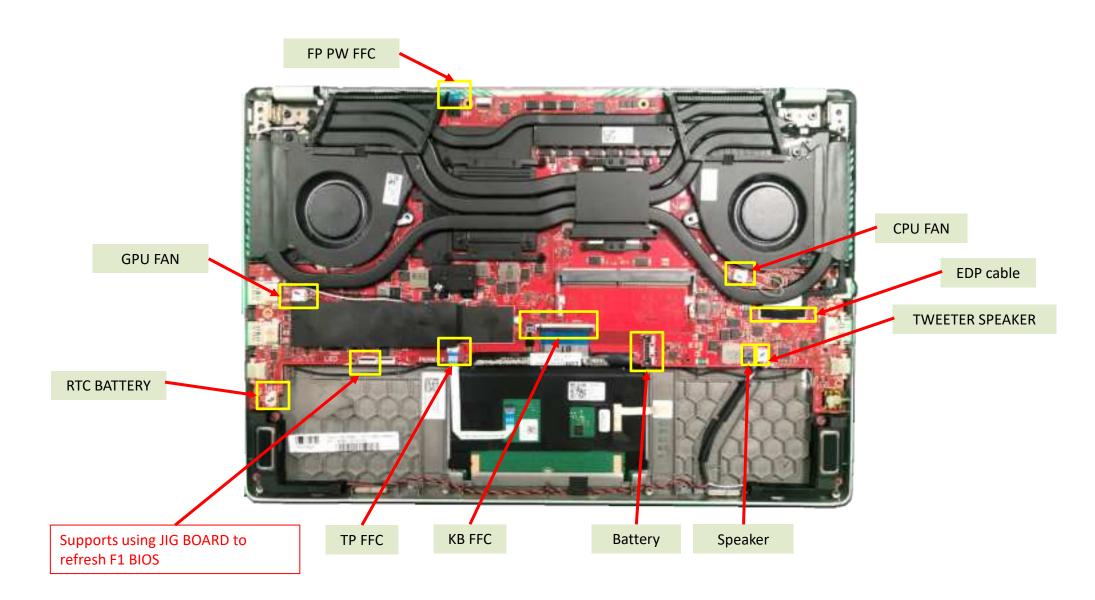
**IMPORTANT!** Thermal paste, thermal pads, liquid metal, or other thermal interface materials must be thoroughly removed and replaced if this component is removed. Ensure that replacement materials are available before proceeding, or contact an authorized service center for assistance.

**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**

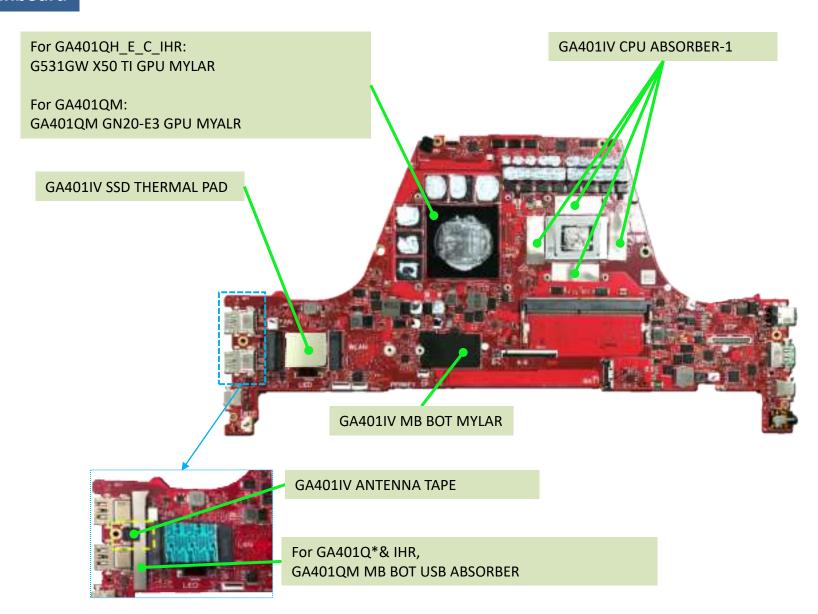
## **Mainboard connector placement**





# **MAIN BOARD**

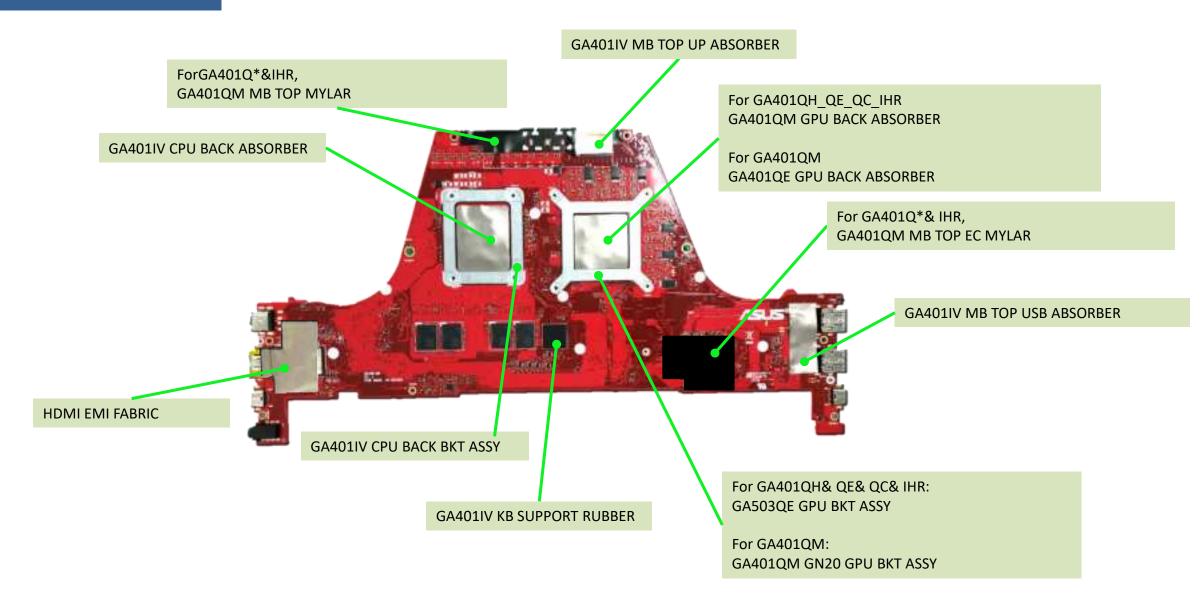
## Materials on mainboard





# **MAIN BOARD**

## Materials on mainboard





# **FINGERPRINT MODULE (Power key)**

## **Disassembly Notice**

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



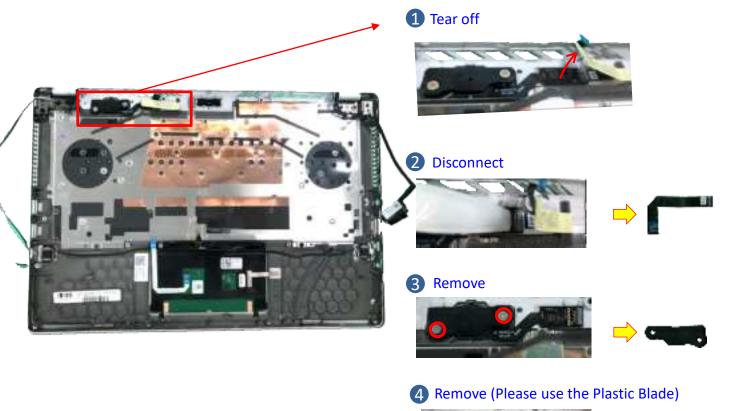
Step 1 : Tear off	the	tape.
-------------------	-----	-------

Step 2: Disconnect FP connector and Remove FFC.

Step 3: Remove screws \*2pcs and Remove holder.

Step 4: Remove FP Touch module.

Screws	QTY	Spec	Torque (kgf-cm)
TO	2	M2*2.5L (5.6,0.8) (K) #1	2.0±0.2









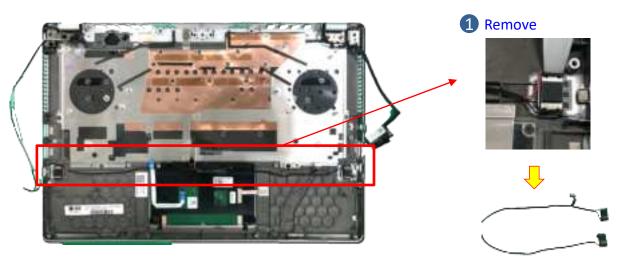
# **TWEETER SPEAKER**

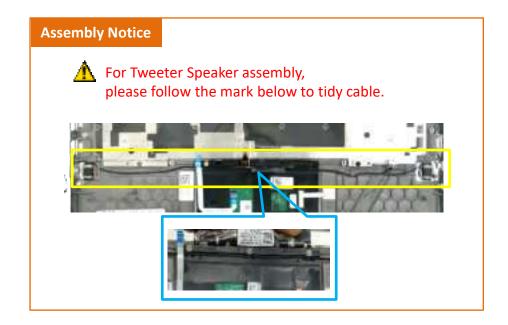
**Disassembly Notice** 

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



Step 1 : Remove tweeter speaker.







# **TOUCHPAD MODULE**

## **Disassembly Notice**

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

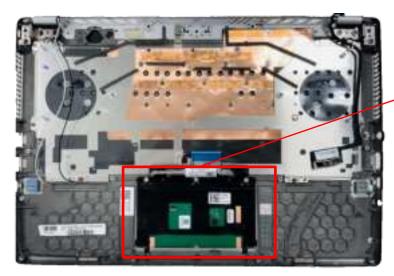


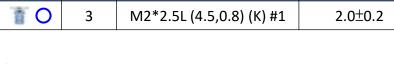
Step 1: Remover TP FFC and tear off TP EMI FABRIC.

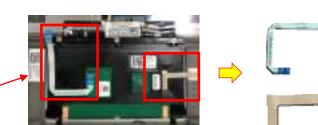
Step 2 : Remove screws \*3pcs.

Step 3: Remove TOUCHPAD module.

Screws	QTY	Spec	Torque (kgf-cm)
	3	M2*2.5L (4.5,0.8) (K) #1	2.0±0.2



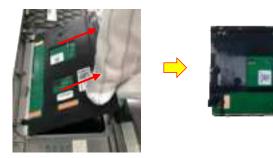






Remove and Tear off





#### **Assembly Notice**

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



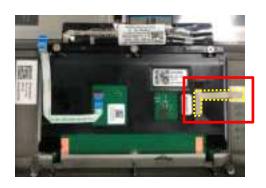








Please according to below image to paste TP EMI FABRIC.





# **KEYBOARD MODULE**

## **Disassembly Notice**

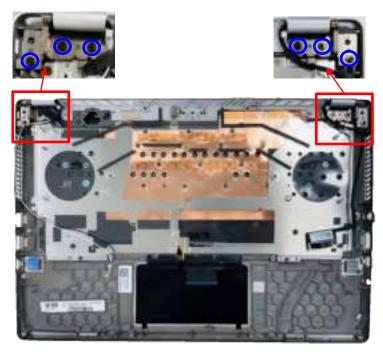
Please be sure to pull out adapter and disconnect the battery.

Step 1 : Remove screws \*6pcs.

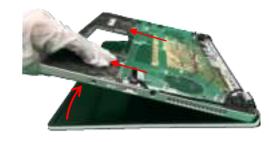
Step 2: Flip up and Remove KB module.

Screws	QTY	Spec	Torque (kgf-cm)
TO	6	M2*4.5L (4.5,0.8) (K) #1	2.0±0.2

















## **LCD BEZEL**

#### **Disassembly Notice**

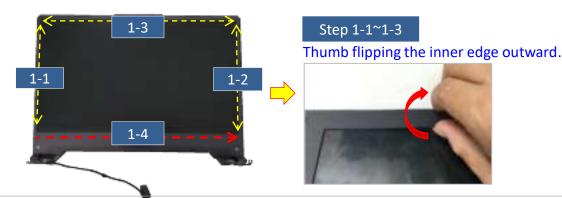
Please be sure to pull out adapter and disconnect the battery.



Step 1: Remove LCD BEZEL.



Step 1-1~1-3, 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 1-4 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 <u>LCD BEZEL ADHESIVE</u> before assembly BEZEL.

(New LCD BEZEL already contains LCD BEZEL ADHESIVE \*1pcs)





# **LCD PANEL**

## **Disassembly Notice**

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

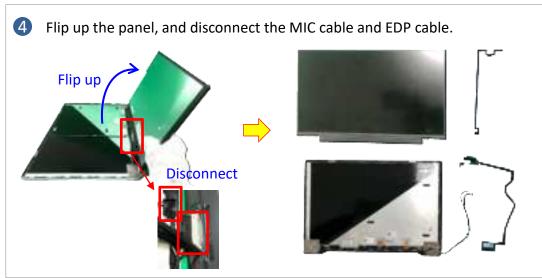
Step 1: Remove screws \*8pcs, and remove Hinge\*2pcs.

Step 2: Remove screws \*4pcs, and remove hinge cap \*2pcs & hinge DECO rubber \*2pcs.

Step 3: Pull out LCD adhesive \*2pcs.

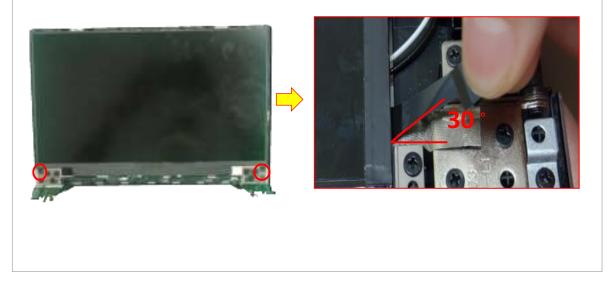
Step 4: Remove LCD PANEL.





Screws	QTY	Spec	Torque (kgf-cm)
TO	8	M2.5*2.3L (7.5,0.6) (K)#1	2.3±0.2 kgf-cm
TO	4	M1.6*3L (3.5,0.5) (K)#1	1.5±0.2 kgf-cm

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





# **LCD PANEL**

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



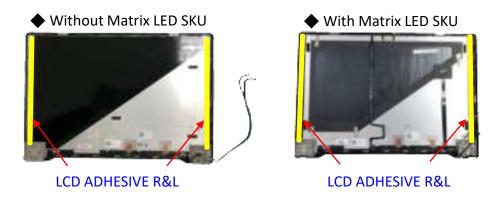
When reuse the LCD PANEL:

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

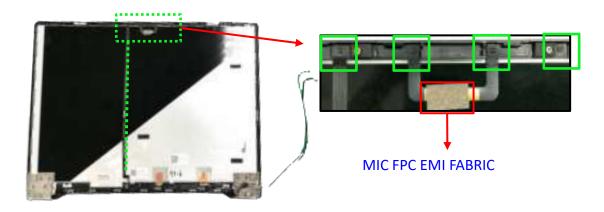


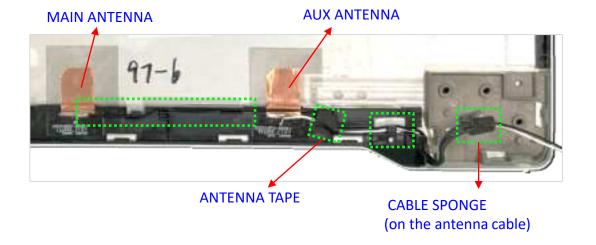
When reuse the LCD COVER:

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



Please follow the green mark to tidy MIC FPC and Antenna.







## **LCD PANEL**

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



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

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



- 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.



When reassembly PANEL:

please make sure to paste Panel Back Mylar.

Without Matrix LED SKU

COLOR ID=1D/1E PANEL BACK MYLAR \*2pcs



With Matrix LED SKU

COLOR ID=2D/2E PANEL BACK MYLAR CO \*1pcs



COLOR ID=2G PANEL BACK MYLAR AW \*1pcs

