ROG Zephyrus Duo 15 SE (GX551) series

Service Guide

Table of Contents

- Service Overview
- ROG Zephyrus Duo 15 SE (GX551) 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
  - FAN (with THERMAL MODULE and MAIN BOARD)
  - THERMAL MODULE & FAN
  - MAIN BOARD
  - KEYBOARD MODULE
  - 14” SUB LCD MODULE
  - LCD BEZEL
  - LCD PANEL
  - LCD COVER

COPYRIGHT INFORMATION

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

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

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

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

Copyright © 2024 ASUSTeK COMPUTER INC. All Rights Reserved.

LIMITATION OF LIABILITY

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

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

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

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

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.

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.

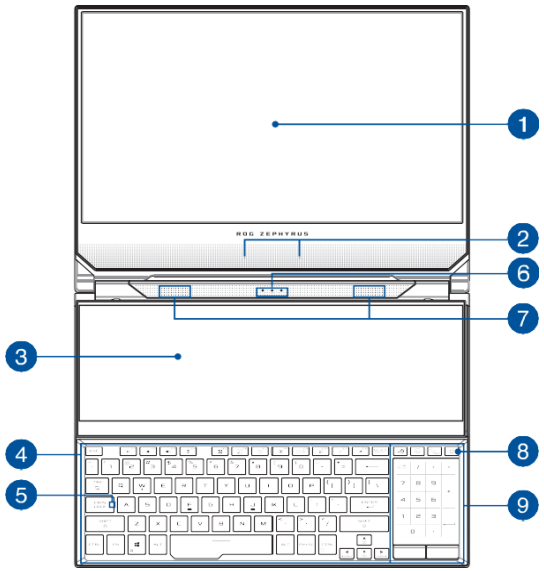
- The following contents include all part numbers mentioned in the service guide are **used for reference only**, if you need the exact part number for ordering, please refer to the OrderBook.

- 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.

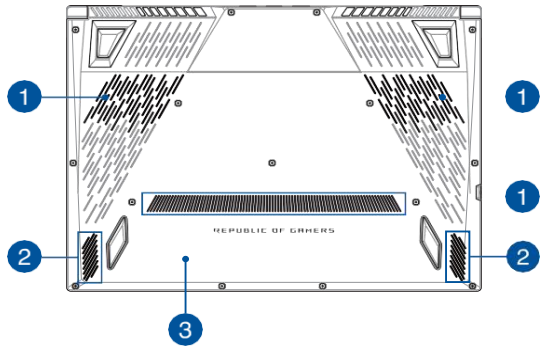
ROG Zephyrus Duo 15 SE (GX551) series Overview

Top View



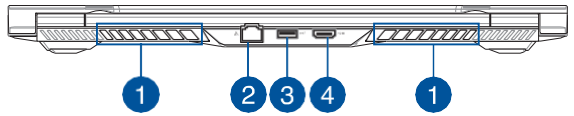
1. Display panel
2. Array microphones
3. Companion display panel
4. Keyboard
5. Capital lock indicator
6. Status indicators
7. Audio speakers
8. Power button
9. Touchpad/NumberPad

Bottom View



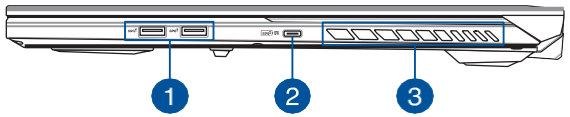
1. Air vents
2. Audio speakers
3. Compartment cover

Rear View



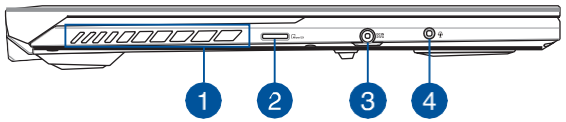
1. Air vents
2. LAN port
3. USB 3.2 Gen 2 port
4. HDMI port

Right View



1. USB 3.2 Gen 2 port
2. USB 3.2 Gen 2 Type-C®/DisplayPort/ Power Delivery combo port
3. Air vents

Left View



1. Air vents
2. MicroSD card slot
3. Power (DC) input port
4. Headphone/Headset/Microphone jack

Components Top View

♦ LCD COVER MODULE



♦ KEYBOARD MODULE



♦ DDR



♦ SPEAKER



♦ MAIN BOARD



♦ GX551QS TP FFC
12P 0.5 L38.5



♦ SUB HINGE

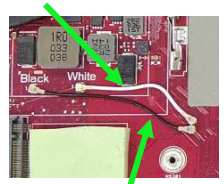


(R) (L)

♦ EDP CABLE



♦ RF COAXIAL CABLE2(WHITE)



♦ RF COAXIAL CABLE1(BLACK)

♦ LCD BEZEL



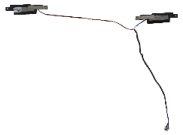
♦ BATTERY



♦ WIFI CARD



♦ TWEETER



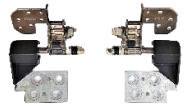
♦ THERMAL MODULE ASSY



♦ BL FFC



♦ HIHGE

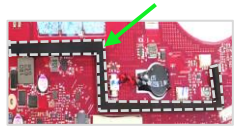


(L) (R)

♦ EDP CABLE TAPE



♦ GX551QS THERMAL
SPONGE RCT



♦ 15.6‘ LCD Panel



♦ SSD



♦ TOUCHPANEL
CONTROL BD



♦ 2ndPanel



♦ CPU FAN ♦ GPU FAN



♦ GX550LXS TP FFC
12P 0.5,L99.5



♦ GX550LXS TOP
MYLAR TP FPC



♦ MIC FPC



MIC RUBBER

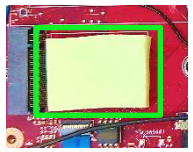
♦ GX551QS EMI ABSORBER-1



♦ BASE CASE



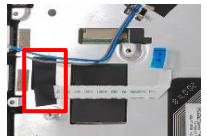
♦ SSD THERMAL PAD



♦ DIMM MYLAR



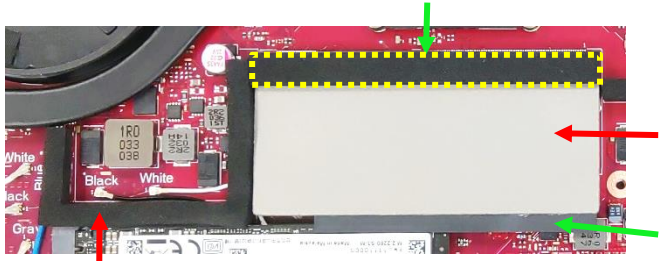
♦ GX550LXS CABLE TAPE



♦ WIFI A1 ANTENNA



♦ GX551QS THERMAL SPONGE DIMM



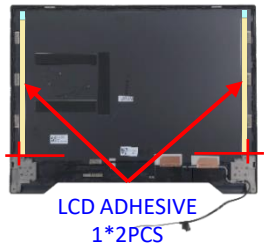
♦ GX551QS DIMM ABSORBER

♦ GU502GW DIMM MYLAR

♦ GX551QS THERMAL SPONGE ATN

Components Bottom View

♦ LCD COVER MODULE



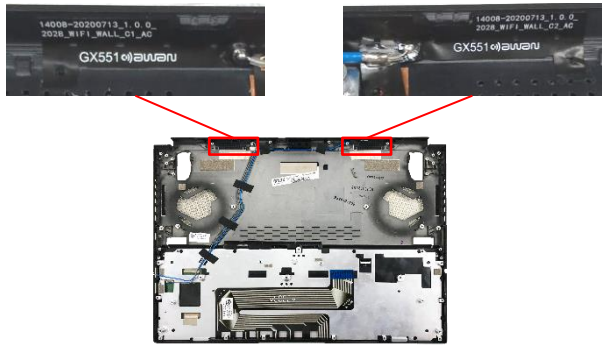
♦ LCD BEZEL



♦ KEYBOARD MODULE

GX551Q WIFI_CD_WALL_
MAIN ANTENNA

GX551Q WIFI_CD_WALL_
AUX ANTENNA



♦ BASE CASE



♦ THERMAL MODULE ASSY



♦ 15.6‘ LCD Panel



♦ MAIN BOARD



♦ TOUCHPANEL
CONTROL BD



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:

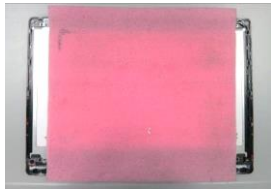
Before you perform any service or repair on the notebook, please pay special attention to the cautions prevent any damages to the notebook.

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 **ROG Zephyrus Duo 15 SE (GX551) series** notebook.

♦ Screwdriver

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

#1 T5



♦ Plastic Blade



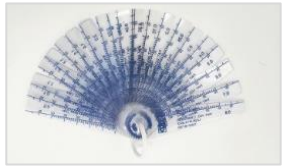
♦ Plastic Tweezers

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



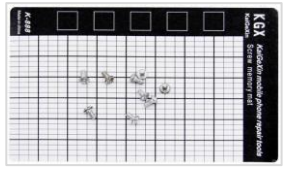
♦ Thickness Gauge

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



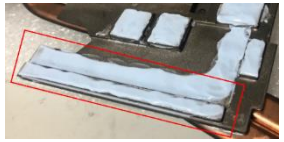
♦ Dust-free Cloth



♦ Thermal Pad PTM7958

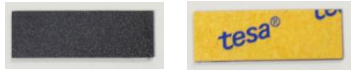


♦ FCR-AS Thermal Grease



♦ NB LCD MYLAR *4pcs

Use it to align panel position.



♦ PLASTIC PICK T=0.5mm





Appropriate Tools

Please prepare and select the appropriate tools to disassemble/assemble for the **ROG Zephyrus Duo 15 SE (GX551) series** notebook.

Tooling list for Thermal material rework		
Item	**Part Name**	**Memo**
1	Silicone scraping pen	
2	AMD Cezanne CPU steel plate//2020	
3	Stainless steel plate (60mm*20mm*0.2t)	
4	AMD Renoir CPU steel plate//2019	
5	Height limit fixture//For AMD Renoir/ Cezanne CPU	
6	Conductonaut (Liquid Metal Paste 1g)	▪Please store it in the environment of 10℃ ~ 40℃. ▪Please keep cover tightly closed until ready for next time use.
7	Glue Nozzle	
8	Glue Connector	
9	Thermally Conductive Elastomer//Kaneka/RV289 5G	▪Please store it in the environment of < 27℃。 ▪Please keep cover tightly closed until ready for next time use.
10	Dust-free cotton swab//class 100 (100pcs)	
11	Paperclip	

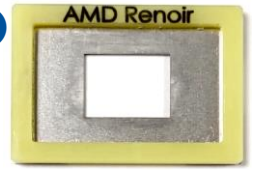
1



2



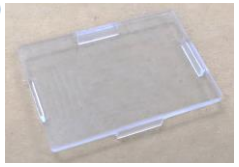
4



3



5



6



7 8 9



10



11



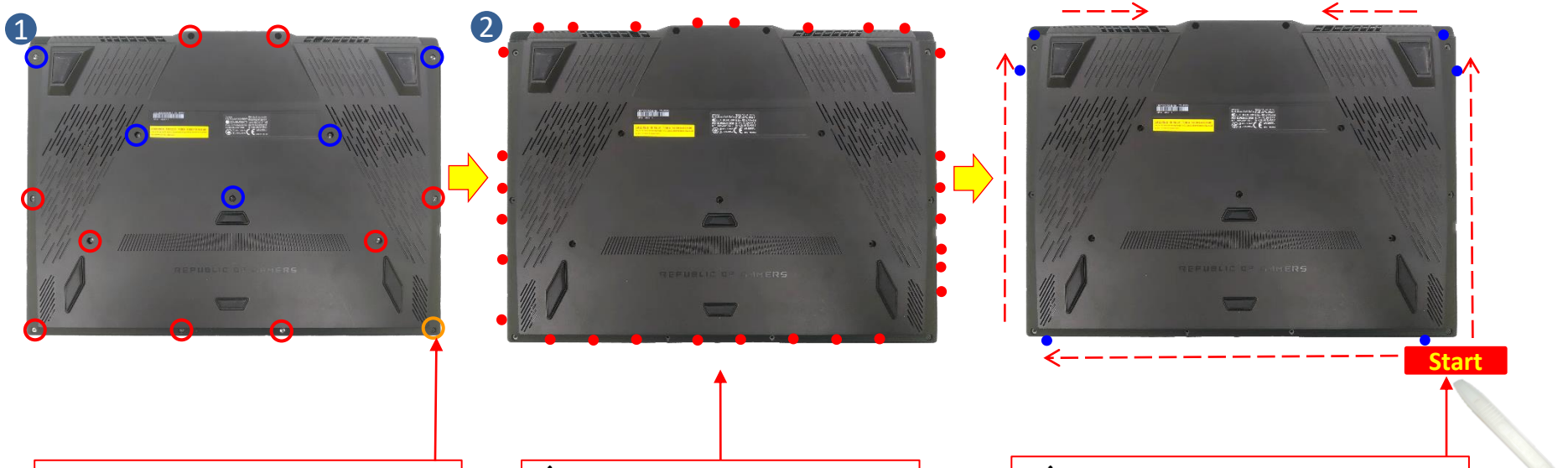
⚠ **Warning : When the tool is with Liquid Metal or Thermally Conductive Elastomer (RV289) residue, please clean tools with dust-free cloth and 95% alcohol.**

BOTTOM CASE

Disassembly Notice

Step 1 : Remove screws *14pcs.
Step 2 : Use plastic blade to pry the bottom case.

Screws	QTY	Spec	Torque (kgf-cm)
	5	SCREW M2*7L (4.5,0.8) (K)+H T5	1.5±0.2
	9	SCREW M2*8L (4.5,0.8) (K)+H T5	2.0±0.2



⚠ 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.)





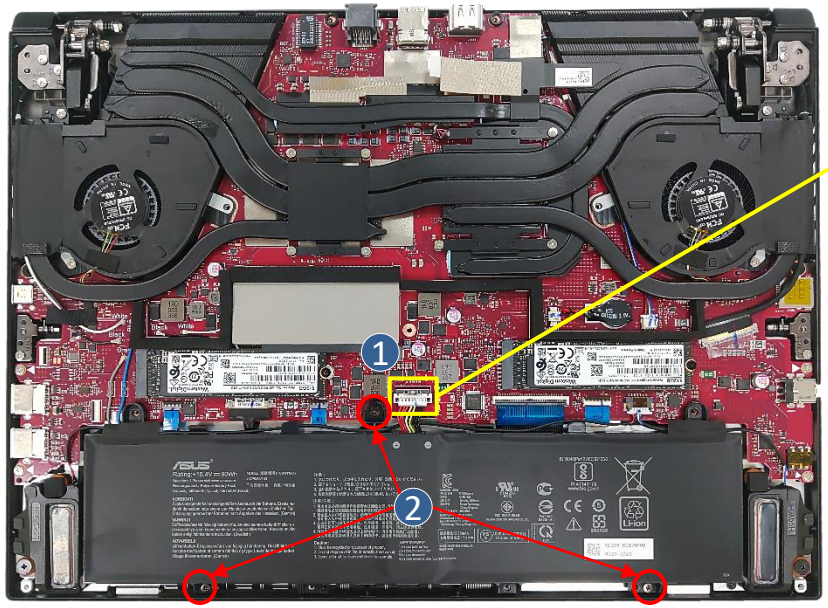
BATTERY

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

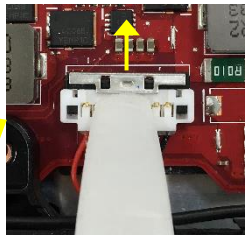
⚠ Before disassembly battery connector, please be sure to pull out adapter and disconnect the battery more than ten seconds in order to IC damage.

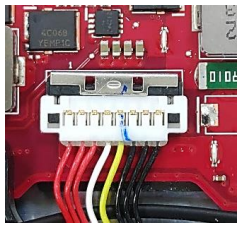
Step 1 : Disconnect the battery connector.
Step 2 : Remove screws *3pcs.
Step 3 : Remove BATTERY.

Screws	QTY	Spec	Torque(kgf-cm)
	3	SCREW M2*5L (K) B-NI,NY	2.0±0.2



Unlock





Disconnect

3 GX550LXS CABLE TAPE



SSD

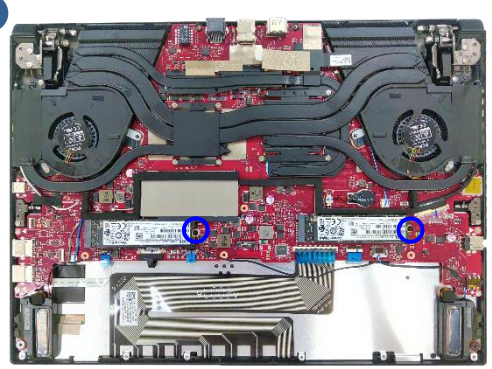
Disassembly Notice

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

Step 1 : Remove the screws *2pcs.
Step 2 : Remove SSD *2pcs.

Screws	QTY	Spec	Torque (kgf-cm)
	2	SCREW M2*2.5L D4.5(K)B-ZN,NY#1	2.0±0.2

1



2

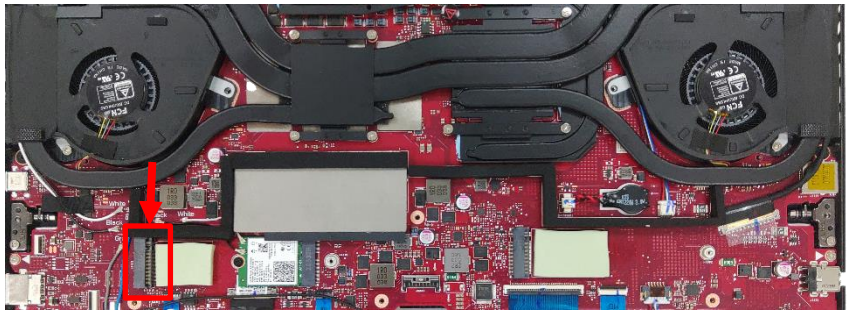




(2pcs)

Assembly Notice

⚠ A single SSD card, please use this SSD slot as the first priority.



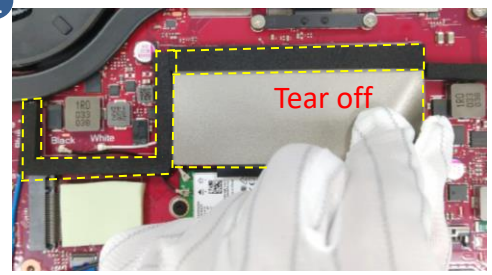
DDR

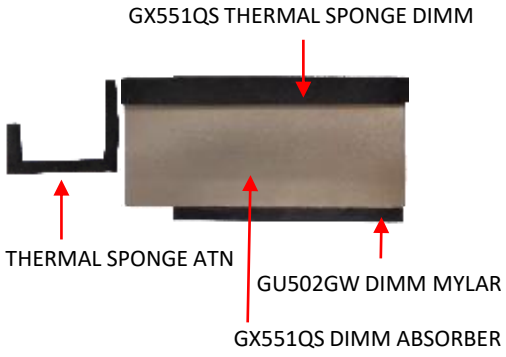
Disassembly Notice

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

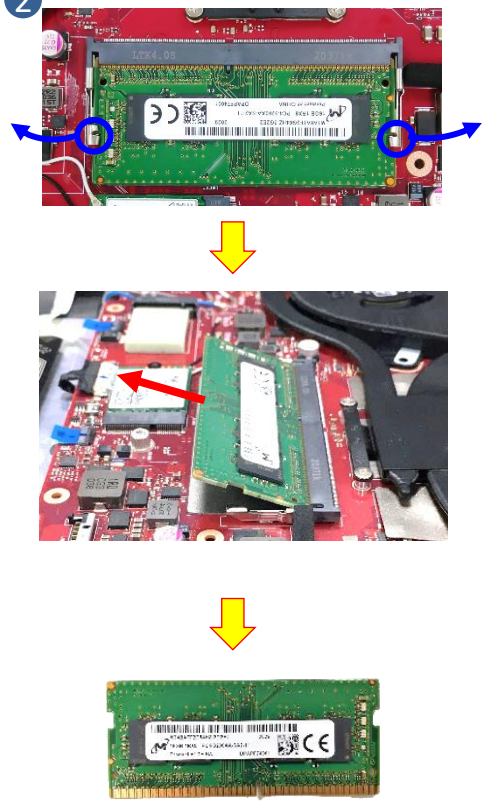
Step 1 : Tear off the parts in the yellow dotted line.
Step 2 : Unlock and remove DDR.

1



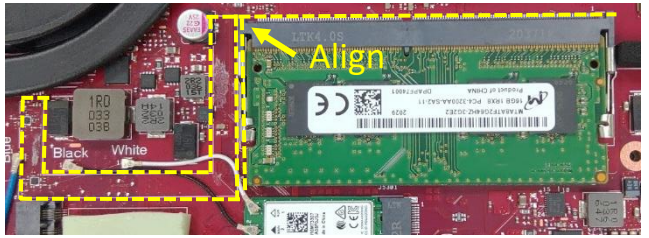


2



Assembly Notice

⚠ When assembling the DDR, please make sure to paste below parts.





WIFI CARD

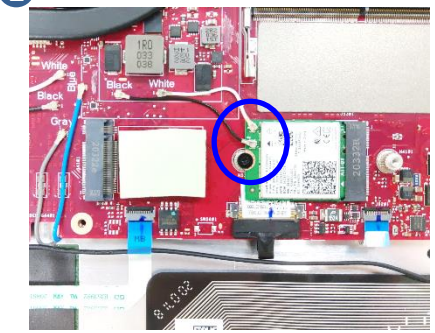
Disassembly Notice

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

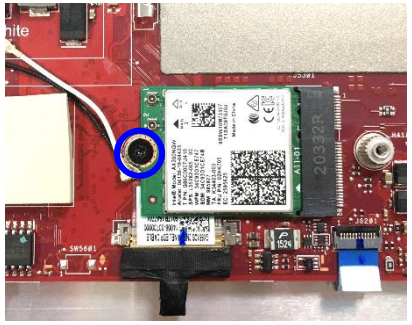
Step 1 : Disconnect the RF CABLE connector *2pcs.
Step 2 : Remove the screw *1pcs.
Step 3 : Remove WIFI CARD.

Screws	QTY	Spec	Torque (kgf-cm)
	2	SCREW M2*2.5L D4.5(K)B-ZN,NY#1	2.0±0.2

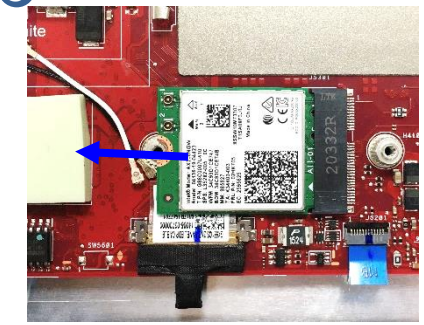
1 Disconnect



2



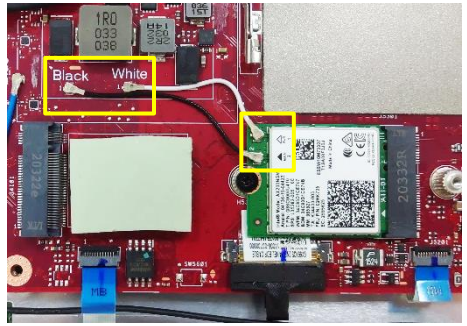
3





Assembly Notice

⚠ Please according to below image to assemble RF cable.



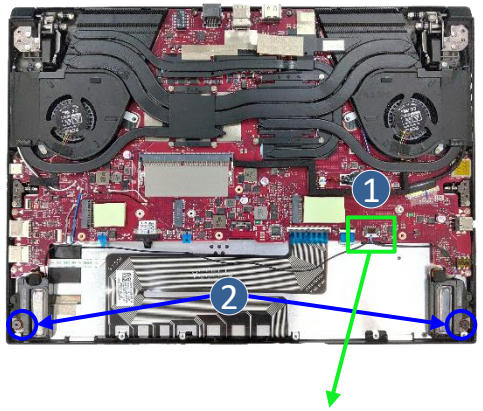
SPEAKER

Disassembly Notice

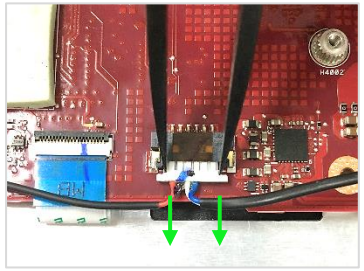
Please be sure to pull out adapter and disconnect the battery.

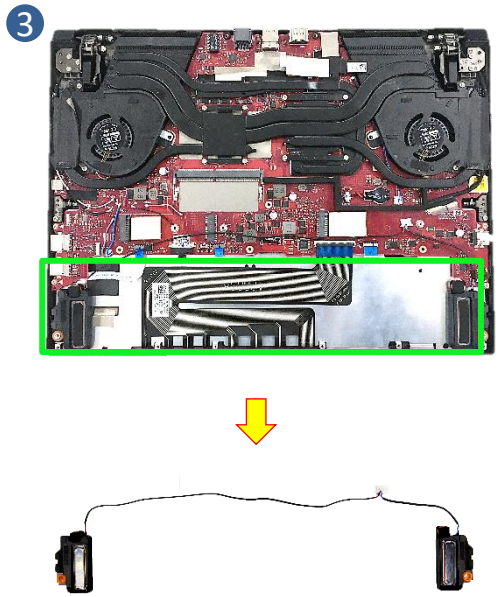
Step 1 : Disconnect (green mark) connector *1pcs.
Step 2: Remove screws *2pcs.
Step 3 : Remove Speaker*1pcs.

Screws	QTY	Spec	Torque (kgf-cm)
T O	2	SCREW M2.5*2.3L(7,0.6)(K) #1	2.5±0.2



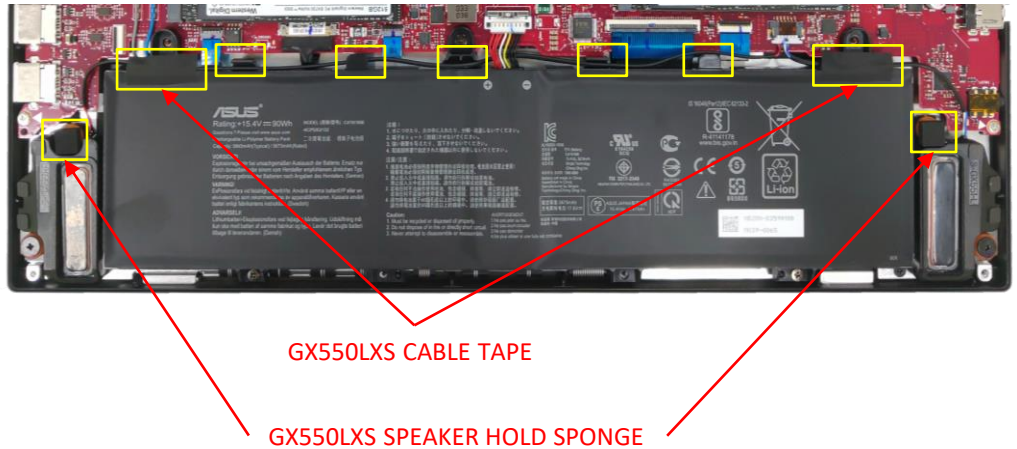
Disconnect (Green mark)





Assembly Notice

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



FAN (with THERMAL MODULE and MAIN BOARD)

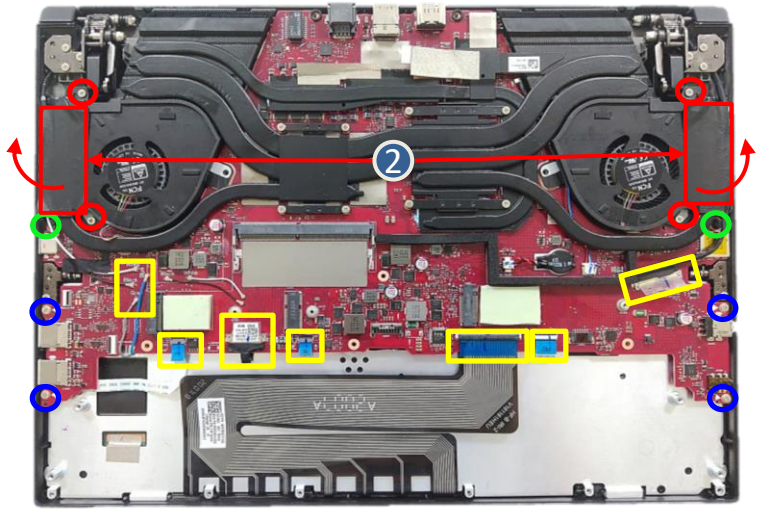
Disassembly Notice

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

Step 1 : Disconnect (yellow mark) connector *10pcs.
Step 2 : Lift the tape of both sides on the Thermal module and take out cables.
Step 3 : Remove screws *10pcs (Red, blue and green mark).
Step 4 : Take the mainboard, slightly and carefully move downward 2~3 CM.
Step 5 : Release tape*2pcs and remove screws*4pcs.
Step 6 : Remove the MB with Cooling module and tweeter.

Screws	QTY	Spec	Torque (kgf-cm)
	2	SCREW M2*2L (6.2,0.55) (K) #1	2.0±0.2
	4	SCREW M2*4L D4.6 (K) W-NI NY	2.0±0.2
	4	SCREW M2*4L D4.6 (K) W-NI NY	2.0±0.2
	4	SCREW M1.6*3L (3.5,0.5) (K) #0	1.0±0.2

1 Disconnect (Yellow mark)

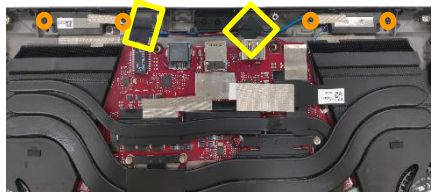


3 Unscrew
(Red, blue and green mark)

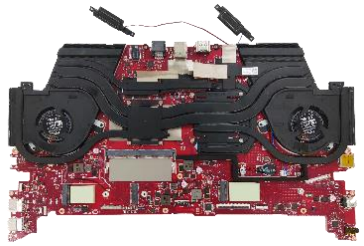
4



5



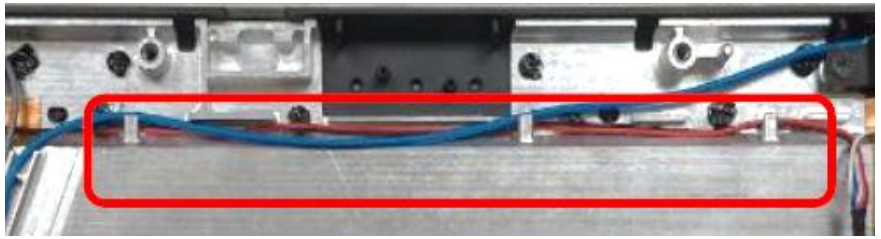
6



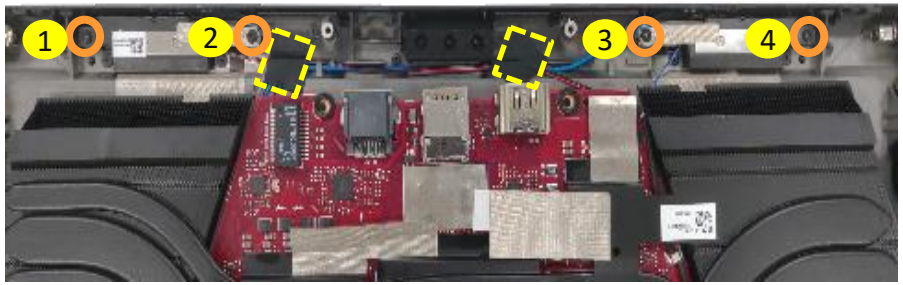
Assembly Notice

⚠ Please note tidy up cables and Tweeters screws in assembly order as illustrated.

A To tidy up cables into the hooks.



B Please follow the numbers to lock screws*4pcs then paste the tape*2pcs.



THERMAL MODULE & FAN

Disassembly Notice

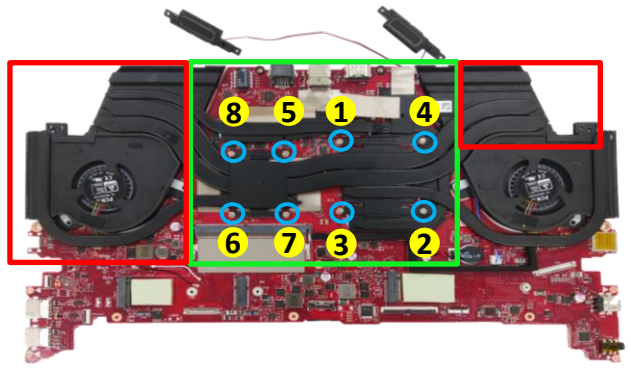
Please be sure to pull out adapter and disconnect the battery.

Step 1 : Please follow the reverse screws numbers to remove screws *8pcs.
Step 2 : Remove the THERMAL MODULE from MB.
Step 3 : Disconnect (yellow mark) connector *3pcs.
Step 4 : Remove FAN *2pcs and Tweeter *1pcs.

Screws	QTY	Spec	Torque (kgf-cm)
	8	SCREW M2*4L D4.6 (K) W-NI NY	2.0±0.2

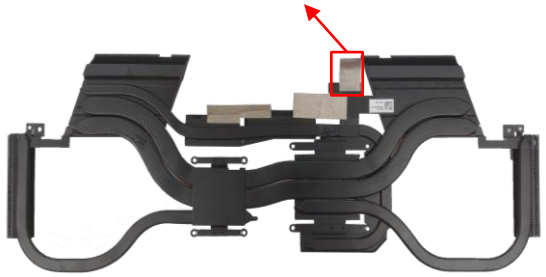
⚠ Recommend that the force point is at green block, and pull up thermal module to take it out.
Do not pull up at red block and also notice the thermal pipe should not have deformation.

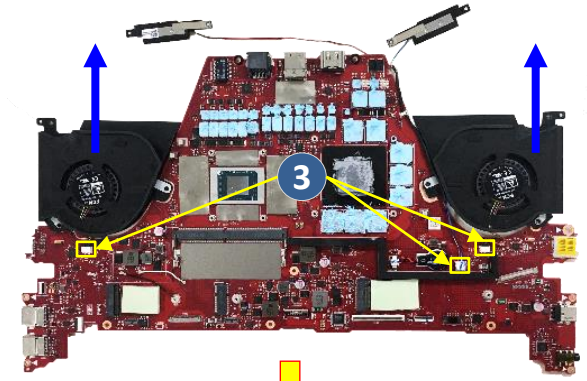
1



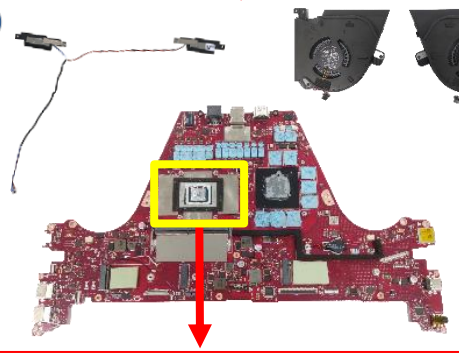
2

GX551QS EMI ABSORBER-1





4



⚠ **Please refer Repair Notice SOP for Liquid metal rework.**

Assembly Notice ⚠

Step-1

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

- MB Location:[GPU]
  Material:
  Main (GA500 Grease)
  Substitute (PSX Thermal pad)

Step-2

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

- 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.

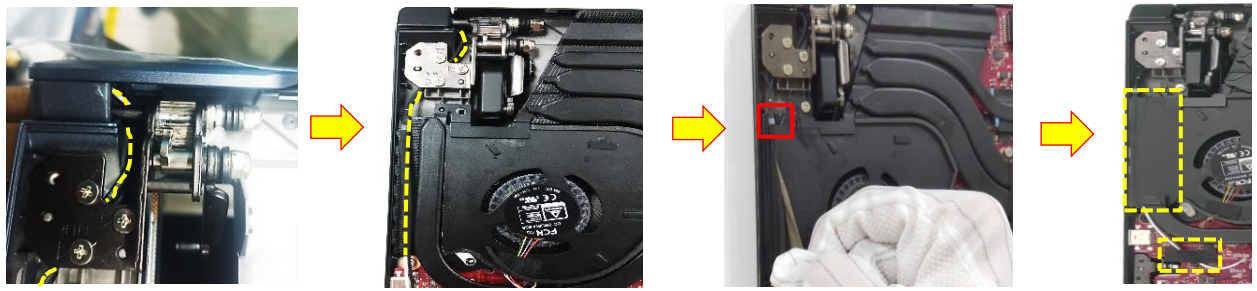
WARNING! The heat sink contains liquid metal and should only be removed by authorized service personnel. Significant damage may occur to motherboard components if the heat sink is improperly removed.

MAIN BOARD

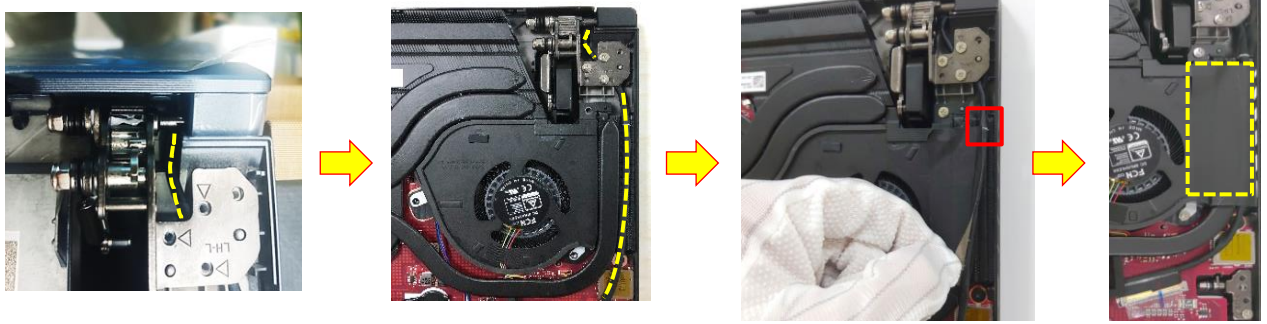
Assembly Notice Please be sure to pull out adapter and disconnect the battery.

Please follow the yellow mark to tidy Antenna cables and EDP cable.

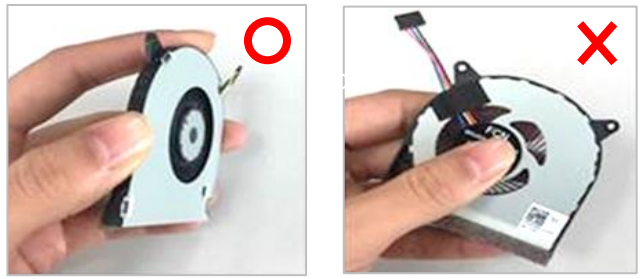
A Put the Antenna cables under the hinge, align white mark and paste tape to fix cable.



B Put the EDP cable under the hinge, align white mark and paste tape to fix cable.

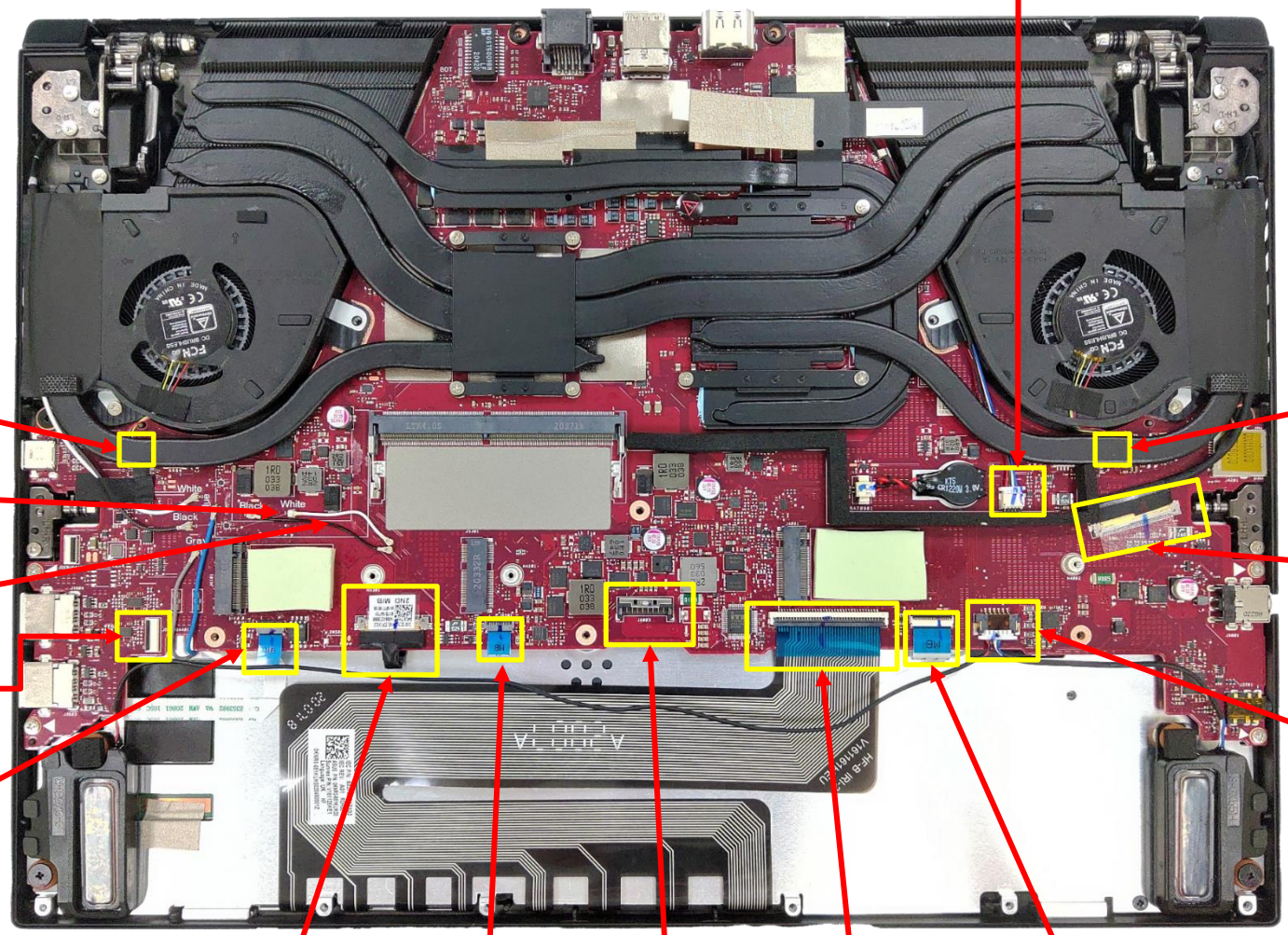


Please use the correct technique to take fans off to avoid getting out of shape.



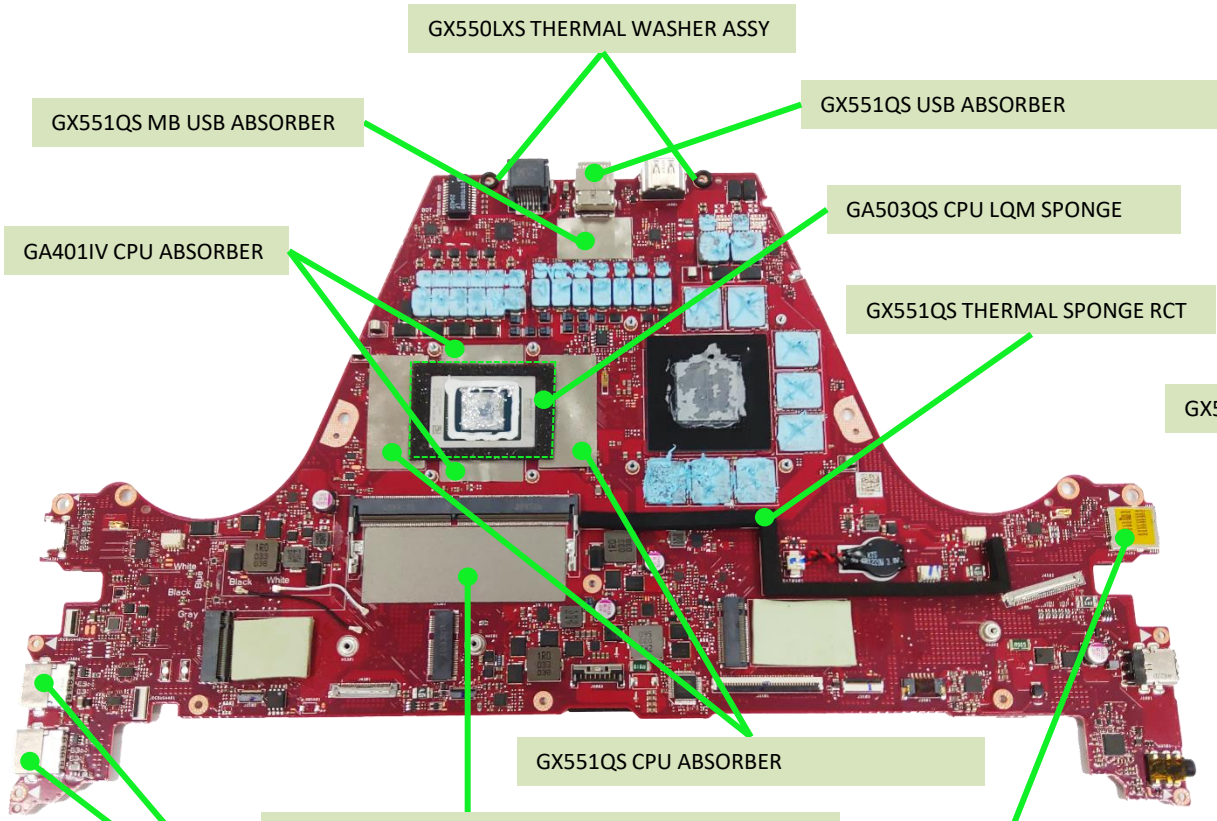
MAIN BOARD

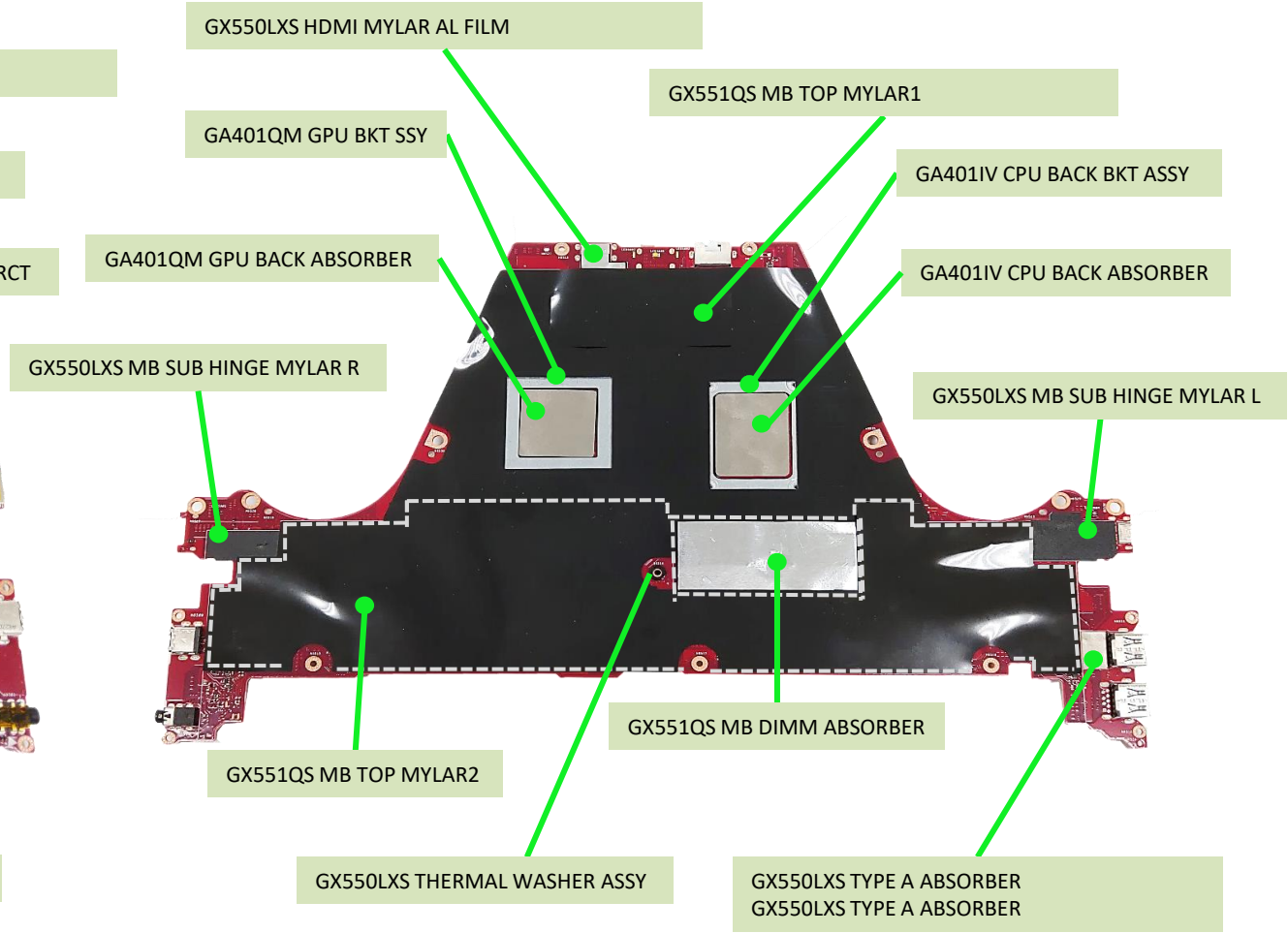
Mainboard connector placement



MAIN BOARD

Materials on mainboard





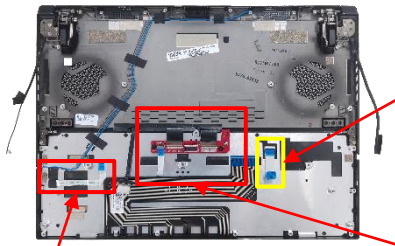
KEYBOARD MODULE

Disassembly Notice

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

Step 1 : Remove GX550LXS CABLE TAPE and TP FFC.
Step 2: Remove (yellow mark) BL FFC*1pcs.
Step 3 : Disconnect (yellow mark) connector*3pcs.
Step 4 : Remove screws*2pcs.
Step 5 : Remove TOUCHPANEL CONTROL and TP FFC .
Step 6 : Remove screws*6pcs.
Step 7 : Remove KB Module.

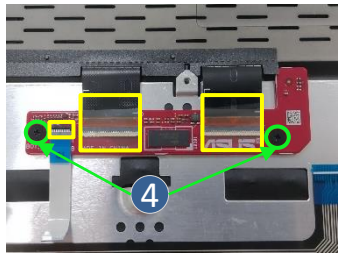
Screws	QTY	Spec	Torque (kgf-cm)
	2	SCREW M2*2L (6.2,0.55) (K) #1	2.0±0.2
	6	SCREW M2*4L D4.6 (K) W-NI NY	2.0±0.2



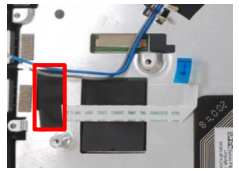
2 Remove



3 Disconnect (yellow mark)



1



GX550LXS CABLE TAPE



5 TOUCHPANEL CONTROL BD



GX550LXS TP FFC 12P 0.5,L99.5



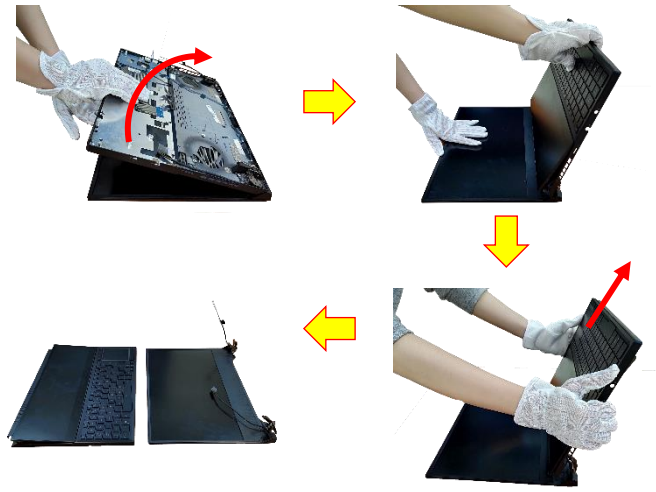
GX551QS TP FFC 12P 0.5 L38.5



6

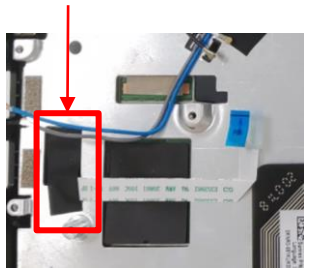


7 Open and remove as below instructed.

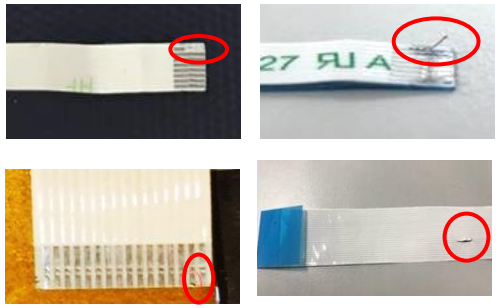


Assembly Notice

Please follow the red mark to paste the corresponding tape as illustrated.



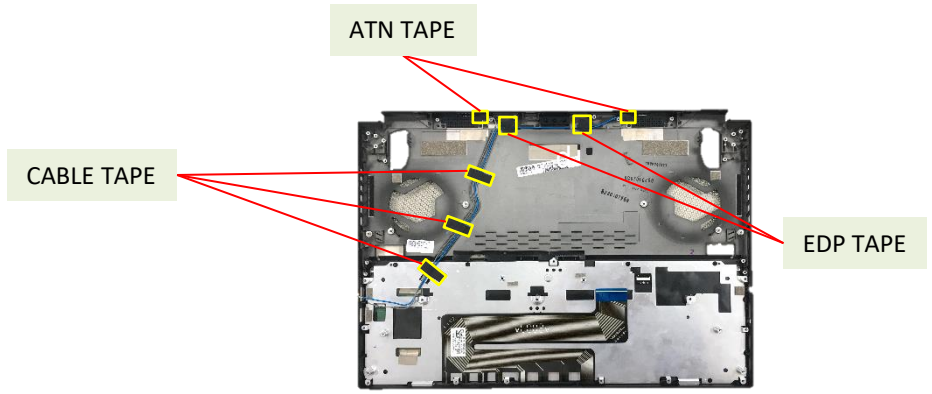
If FFC is damage during disassembly, please replace new one. Here are some samples of FFC damage:



KEYBOARD MODULE

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

A Please follow the yellow mark to paste the corresponding tape as illustrated.

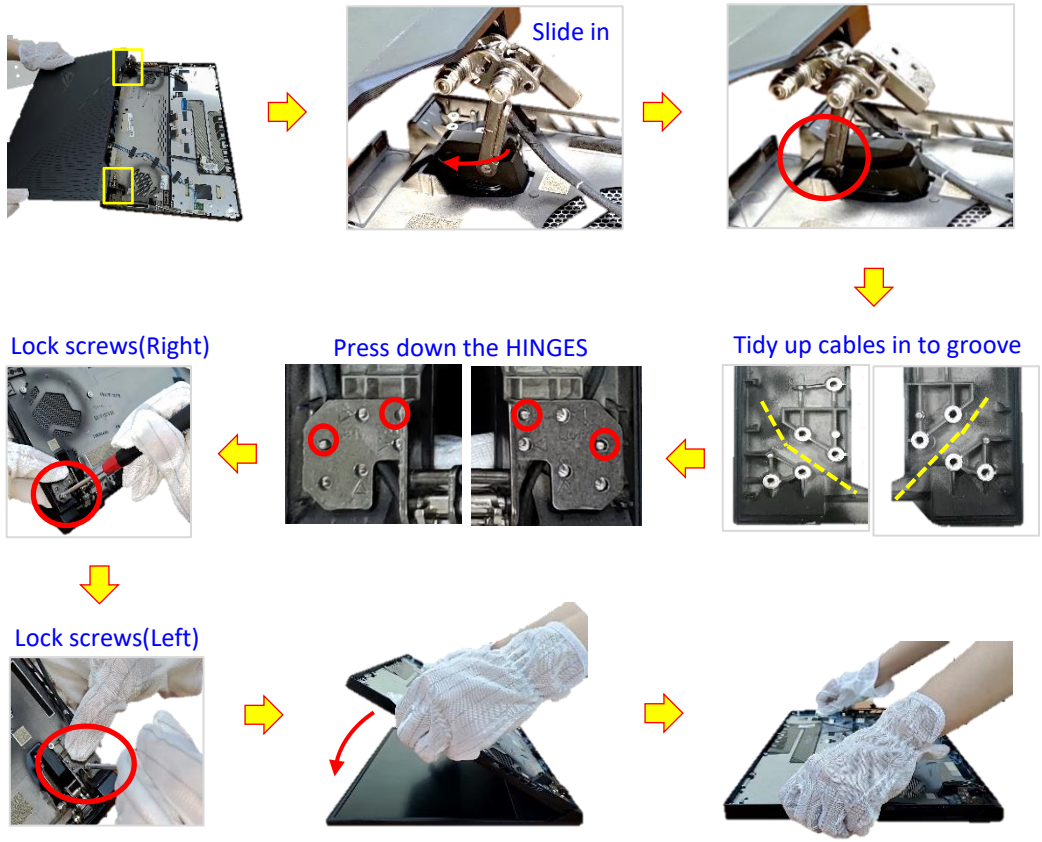


B When replace the keyboard module, please be sure to paste GX550 2ND PANEL HINGE LEFT and RIGHT LABEL.



(L) (R)

C Please follow the steps to assemble HINGES and keyboard module.



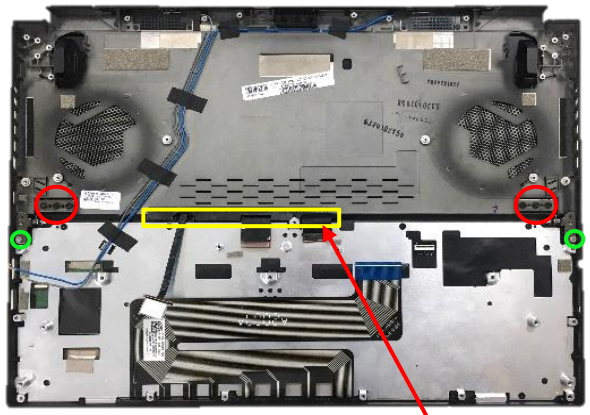
14” SUB LCD MODULE

Disassembly Notice

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

Step 1 : Remove screws*8pcs (Red and green mark) and remove SUB HINGE.
Step 2 : Tear off the TOP MYLAR (yellow mark).
Step 3 : Remove SECOND PANEL.

Screws	QTY	Spec	Torque (kgf-cm)
	6	SCREW M2*4L (K) B-ZN,NY	2.0±0.2
	2	SCREW M2*4L D4.6 (K) W-NI NY	2.0±0.2



1 Unscrew
(Red and green mark)

2 Tear off
(Yellow mark)

SUB HINGE



(R) (L)

GX550LXS TOP MYLAR TP FPC

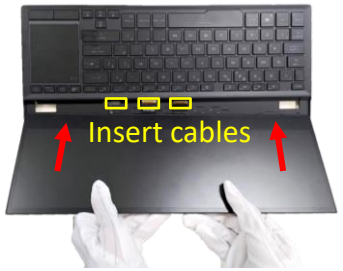


3 Flip up and remove

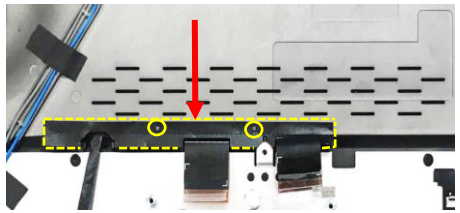


Assembly Notice

Please follow the instruction to assemble the 2nd Panel and paste a new GX550LXS TOP MYLAR TP FPC *1 pcs when repairing.



Flip to the back side,
paste GX550LXS TOP MYLAR TP FPC



LCD BEZEL

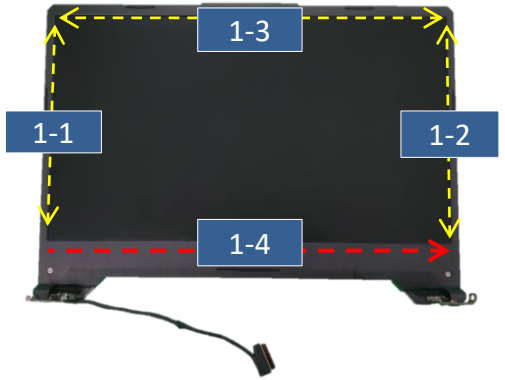
Disassembly Notice Please be sure to pull out adapter and disconnect the battery.

Step 1 : Remove LCD BEZEL.

1



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.)



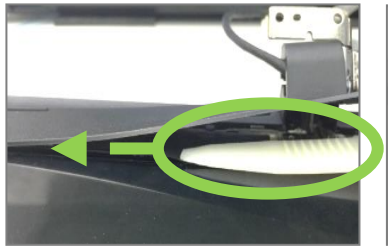
1-1~1-3

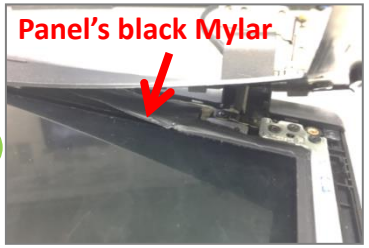
Thumb flipping the inner edge outward.



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 LCD BEZEL AD DOWN*1 pcs before assembly BEZEL.
(New LCD BEZEL already contains LCD BEZEL AD DOWN *1pcs)



LCD PANEL

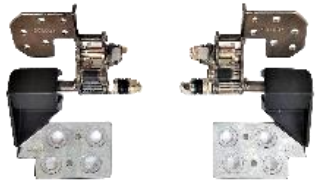
Disassembly Notice Please be sure to pull out adapter and disconnect the battery.

Step 1 : Remove screws *8pcs, and remove hinges *2pcs.
Step 2 : Pull out LCD adhesive *2pcs.
Step 3 : Remove LCD PANEL.

Screws	QTY	Spec	Torque (kgf-cm)
	8	SCREW M2.5*2.3L(7,0.6)(K) #1	2.5±0.2

1

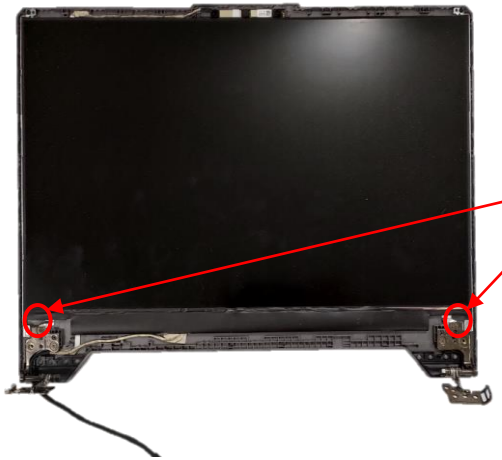


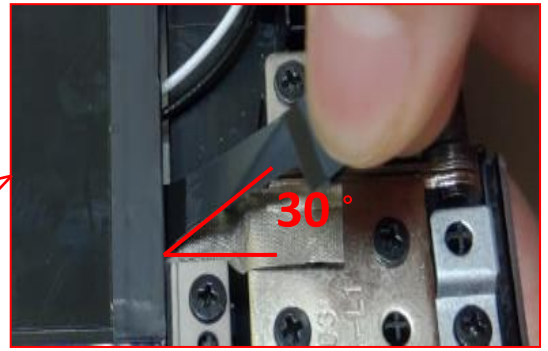


(L) (R)

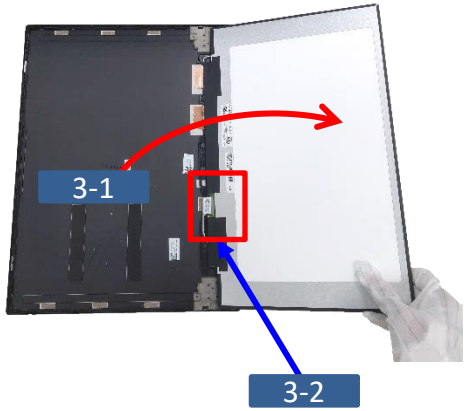
2

⚠ **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.



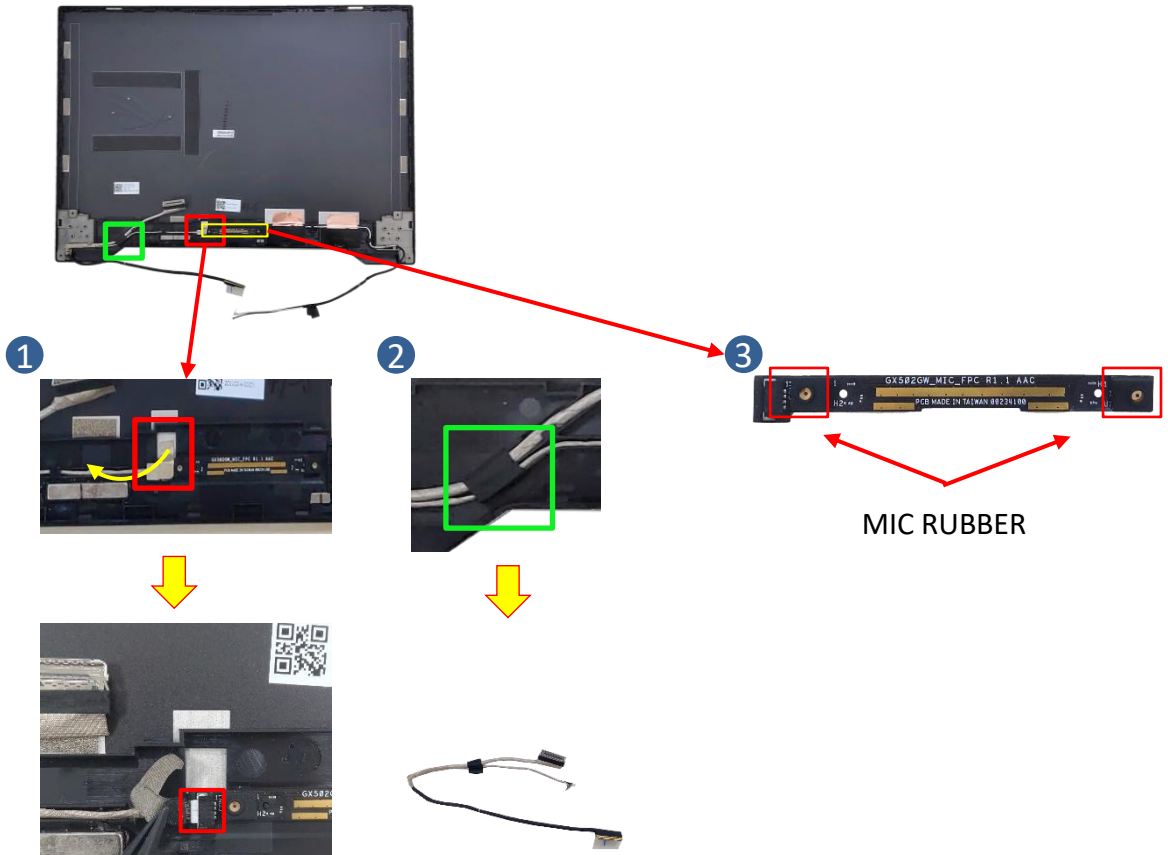


LCD COVER

Disassembly Notice

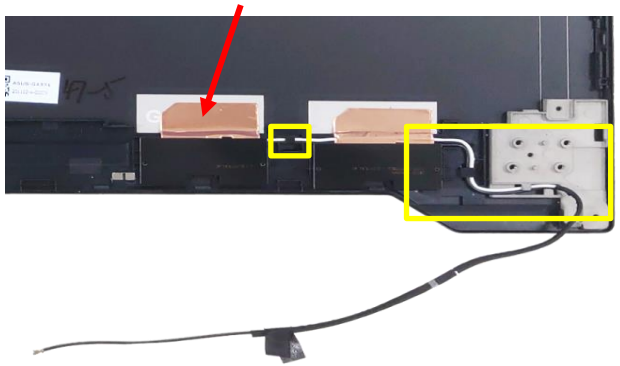
Please be sure to pull out adapter and disconnect the battery.

Step 1 : Release TAPE and disconnect the connector.
Step 2 : Release TAPE and remove EDP cable.
Step 3 : Remove the MIC FPC.

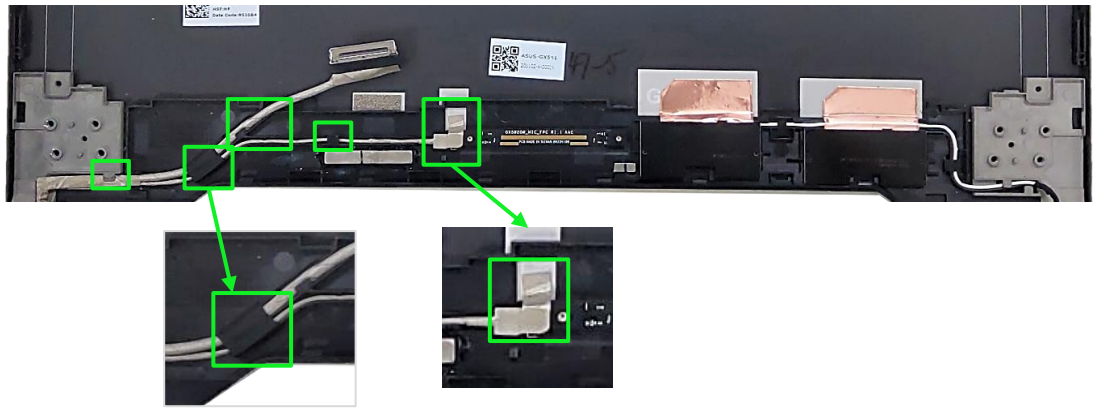


Assembly Notice

⚠ When replace LCD COVER, please paste a new WIFI ANTENNA A1, and follow the yellow mark below to tidy cable.



⚠ Please follow the green mark to tidy EDP cable.

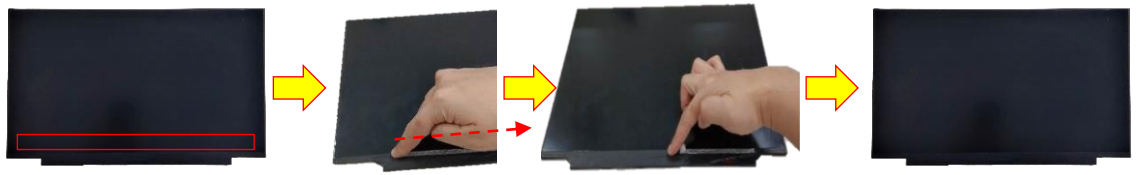


LCD PANEL and LCD Cover

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

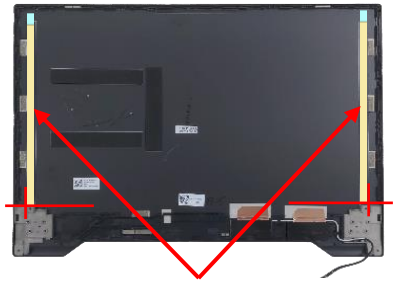
A **When reuse the LCD PANEL:**

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



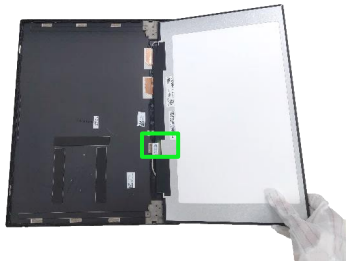
B **When reuse the LCD COVER:**

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



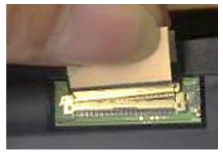
LCD ADHESIVE 1*2PCS

C **Please note the EDP connector when assembling:**





OK



NG

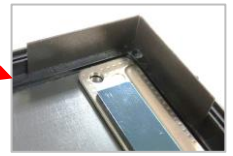
D **When assembly the LCD PANEL:** (The following is an operation example)

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

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.

