

Disassembly Procedure

Please follow the information provided in this section to perform the complete disassembly procedure of the Notebook. Be sure to use proper tools described before.

ASUS E510MA Series notebook consists of various modules. This chapter describes the procedure for the complete notebook disassembly and assembly (**Assemble document please look up from the last page**). In addition, in between procedures, the detailed disassembly procedure of individual modules will be provided for your service needs. The disassembly procedure consists of the following steps:

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Service Overview

- **ASUS is not responsible for direct, indirect, intentional o unintentional damages resulting from improper installation and operation.**
- **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.
- Due to sales policy difference, the components might have different specifications on the same series product, please refer to E-manual by model.

Safety precautions

- Before handling components, use a grounded wrist strap or touch a safely grounded object to avoid damaging them due to static electricity.
- Keep liquids or moisture away from your device to avoid short circuits.
- Remove rings, watches, and any other metal objects from your hands.
- Hold components by the edges to avoid touching the ICs.
- Properly install all components before connecting the AC power.
- Do not use power adapters or batteries from other devices to reduce the risk of injury to persons due to fire or explosion. Use only certified power adapters or batteries supplied by the manufacturer or authorized retailers.
- Detach all clips or flaps before removing cables to prevent damage.
- Use the correct screw models on your device to prevent damage.
- Fully remove all adhesive residue after removing and before installing any components.
- Photograph the appearance of cables, cable routing, connectors, and screws for later reference before proceeding with each step.

Pre-repair checklist

- Read the entire manual before starting any service procedures and follow all instructions.
- Back up the data on your device.
- Place your device on a clean and stable surface.
- Turn off your device.
- Disconnect all connected peripherals and cables.
- Disconnect all power cables and remove the battery pack (if applicable).

IMPORTANT!

- If you are uncertain about performing the described service procedures, stop and contact an authorized service center for assistance.
- Purchase replacement components from authorized retailers of this device to ensure maximum compatibility and reliability.

NOTE

- The illustration are for reference only.
- The service procedures described in this document depend on the model configuration and may not reflect the entire servicing process. To service components that are not covered in this document, please visit an authorized service center for further assistance.
- Keep all adhesive tape, insulating materials, screws, and other removable items in a safe place until the service procedure is completed, as they may be needed during reassembling.

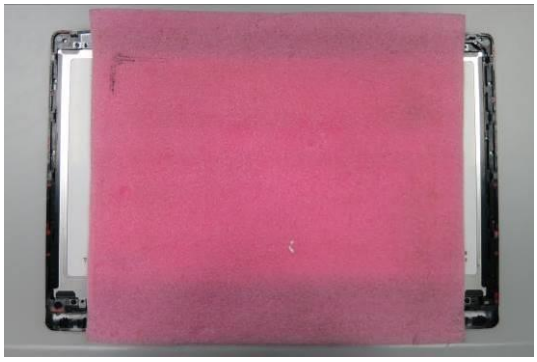
Precautions

Before you perform any service or repair on the notebook, please follow the steps below first.

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 disassemble the parts in the functional PE BAG for avoid any damages of the A/B/C/D part.




7. Environment temperature is 20-30 ℃ and humidity is 40% - 70%.
8. Avoid scratching the surface of the 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. Paint scratched off.
   c. Rusty.




   d. Damaged head – unable to drive in.




   e. Damaged unable to securely tighten.

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 purpose only, so please refer to the actual product for disassemble/assemble.

BACK

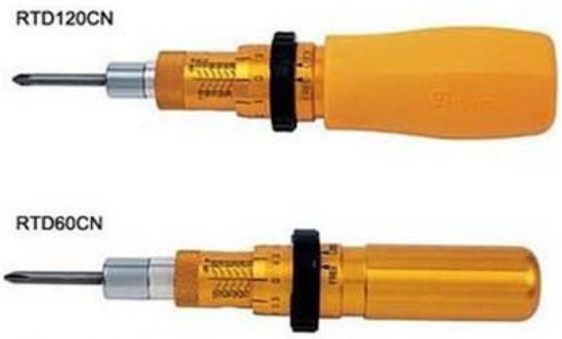
Appropriate Tools

The illustrations below show the appropriate tools that should be used for the notebook's service and repair.

➢ **Cross Screwdriver**

Please accord to different screw specification to choose different screwdriver and head. Below photos are for reference only.

Use a cross screwdriver to fasten/remove screws.







➢ **Plastic Blade**



➢ **Tweezers**

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



- **Thickness gauge**

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



Bottom Case Module

The illustrations below show how to remove the Bottom Case Module.

Notice: After disassembling bottom case, if you want to replace any part, please be sure to disconnect the battery connector more than ten seconds to avoid damaging any part.

1. Remove 10 screws on the bottom case.

   Assembly Notice: Follow the reverse numbers to lock screws.

   Screw tightening torque (Kg F-cm): 2.0KG±0.2kgf.

   Screw tightening torque (Kg F-cm): 2.0KG±0.2kgf.





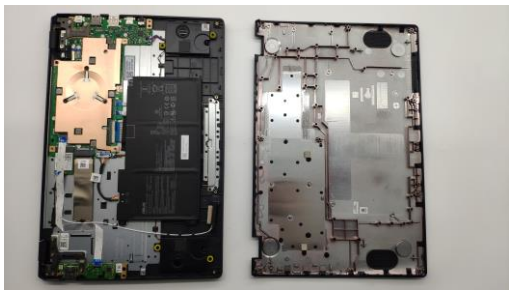
SCREW M2*7.5L



SCREW M2*5.5L

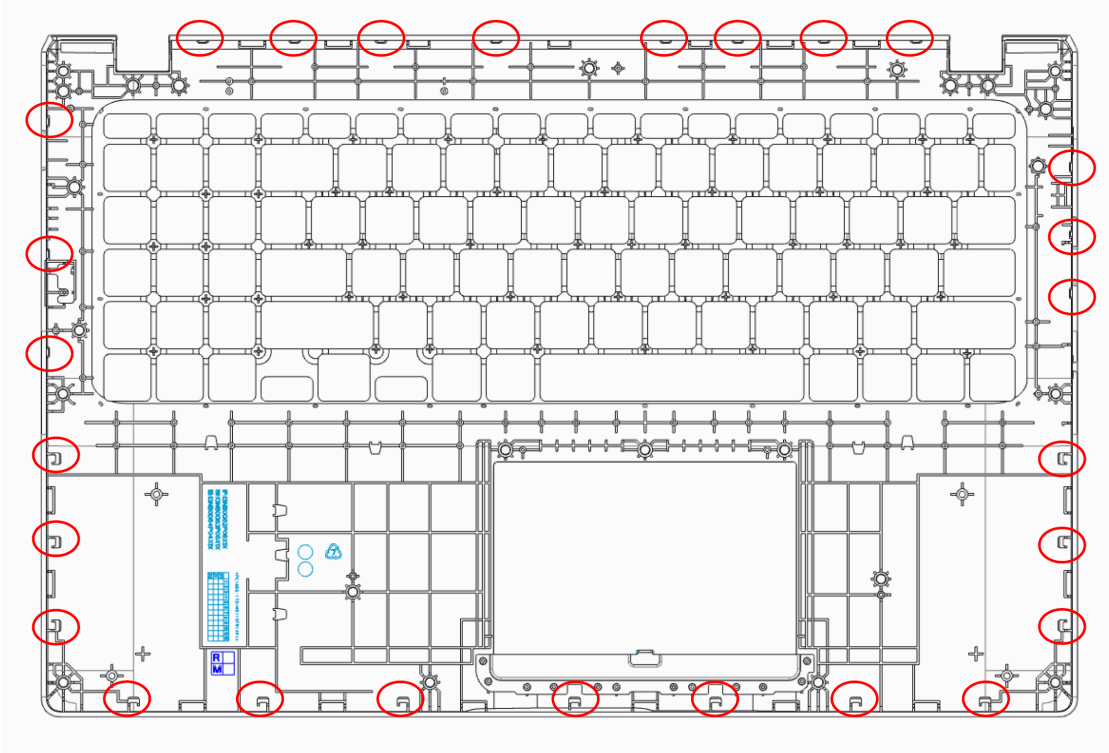
2. Use plastic blade to pry Bottom Case and remove it.

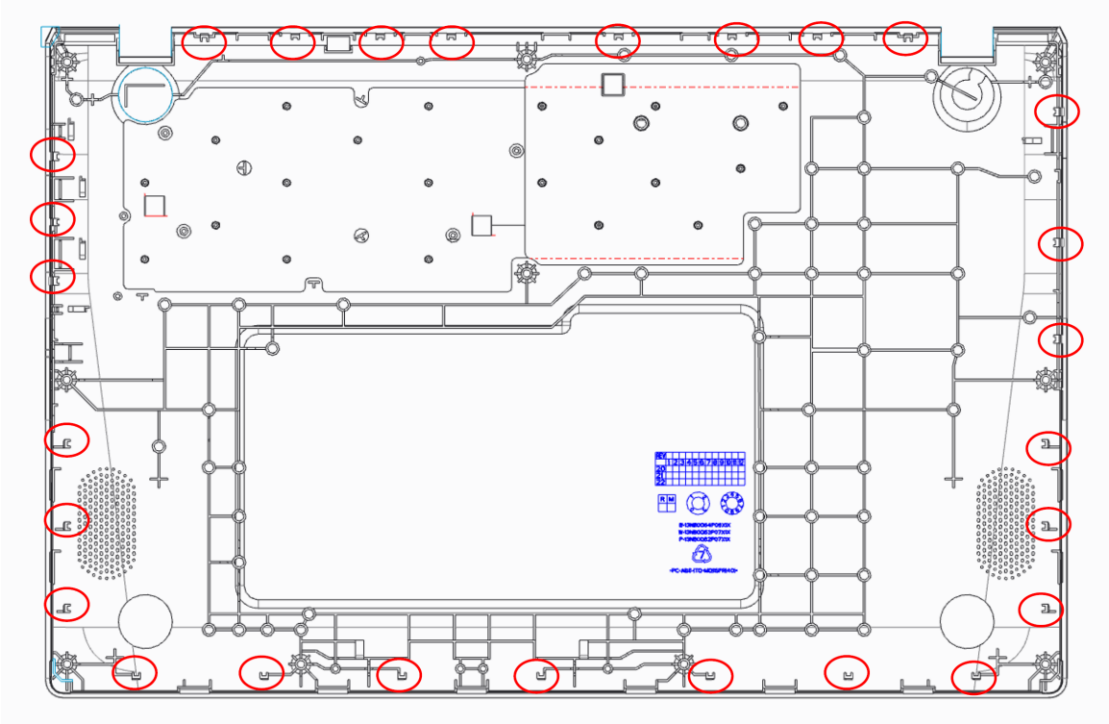




Snaps as below

For Plastic and Metal





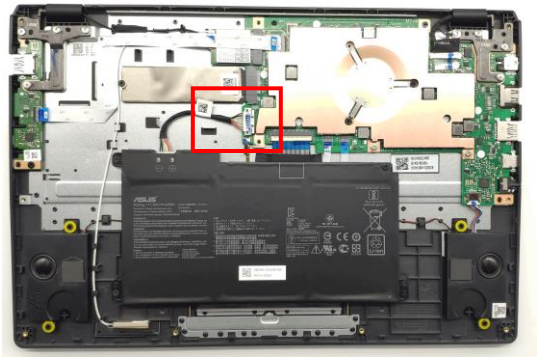
Parts:

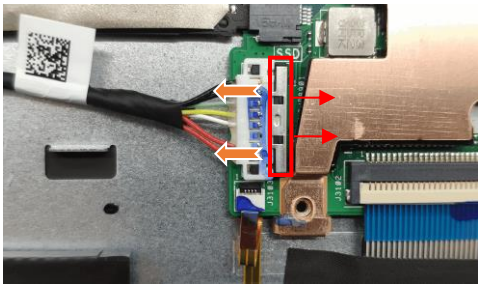
- Total screw * 10
- BOTTOM CASE *1
- (Actual part name depends on different SKU.)

Battery Module

The illustrations below show how to remove the Battery Module.

1. Disconnect the battery connector.

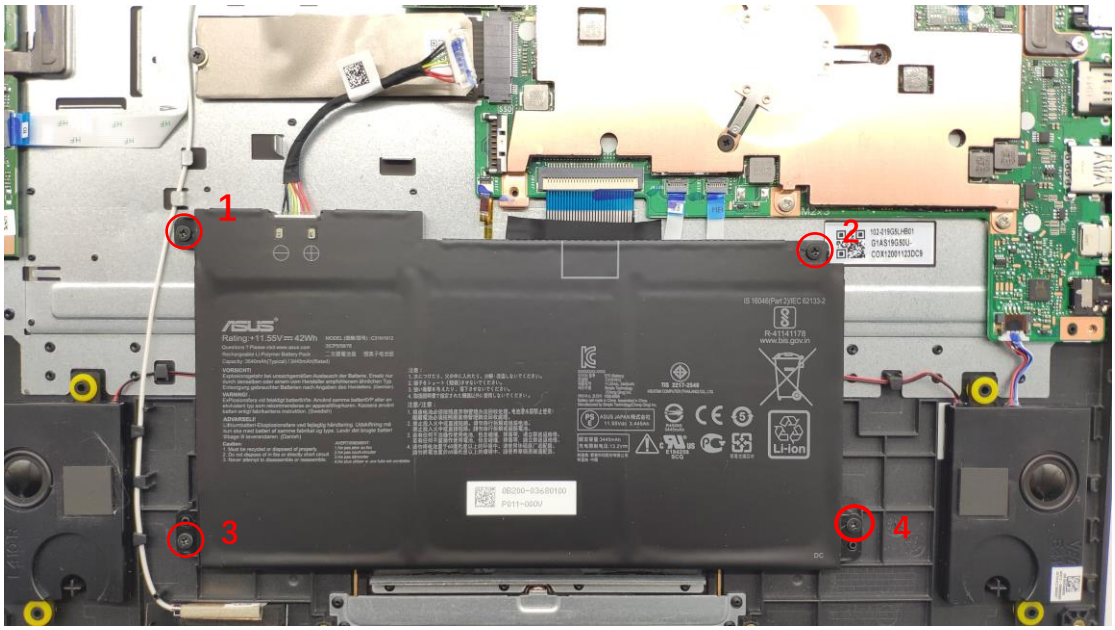




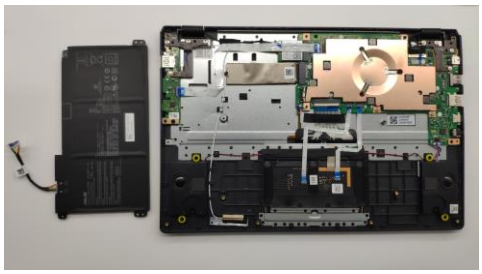
2. Follow below numbers to remove 4 screws on the battery module.

   Assembly Notice: Follow the reverse numbers to lock screws.

   Screw tightening torque (Kg F-cm): 2.0KG±0.2kgf .



3. Remove the Battery





SCREW M2*4L 2.0KG±0.2kgf.

4. Disconnect the battery cable.





Parts:

- Total screw * 4
- Battery SMP/LP485780/3S1P/11.55V/42WH *1
- (Actual part name depends on different SKU.)

IO Board

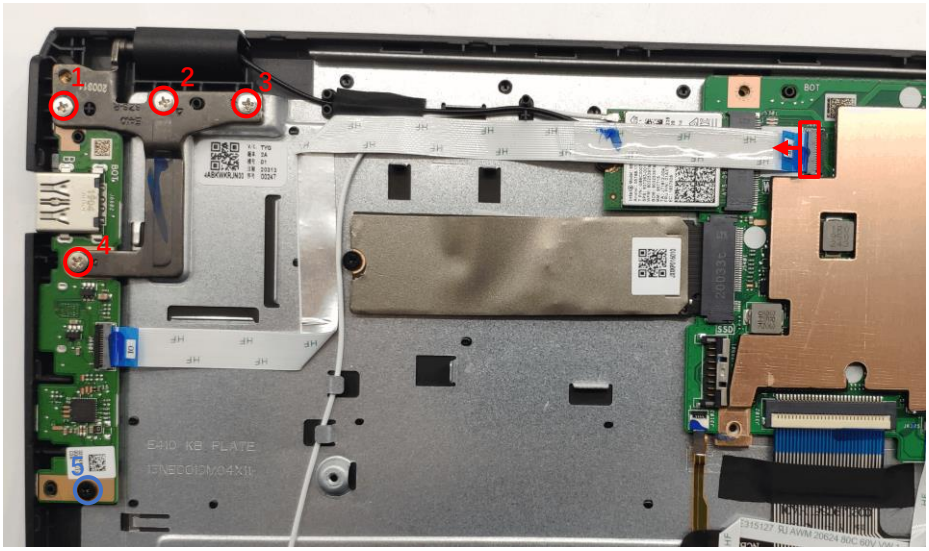
The illustrations below show how to remove the IO Board.

1. Disconnect the IO FFC and remove 5 screws.

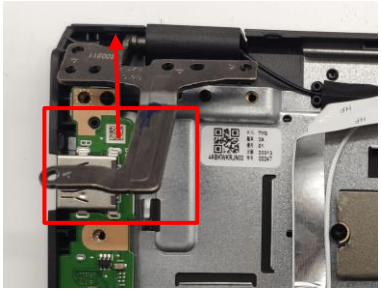
   Assembly Notice: follow the reverse numbers to lock screws.

   Screw tightening torque: 2.5KG±0.2kgf

   Screw tightening torque: 2.0KG±0.2kgf

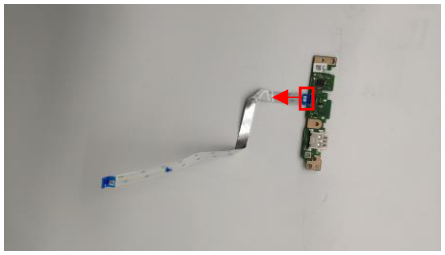


2. Rotate the hinge and take out the IO Board.





3. Disconnect the IO FFC.







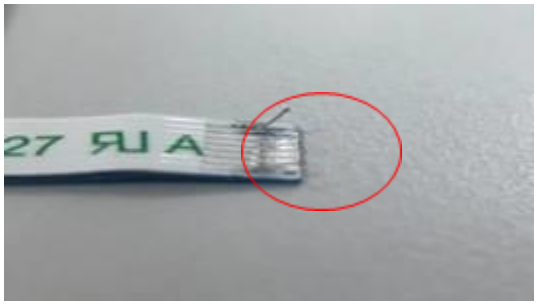
SCREW M2.5*5L

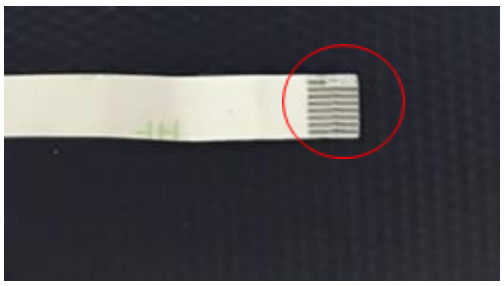


SCREW M2*4L

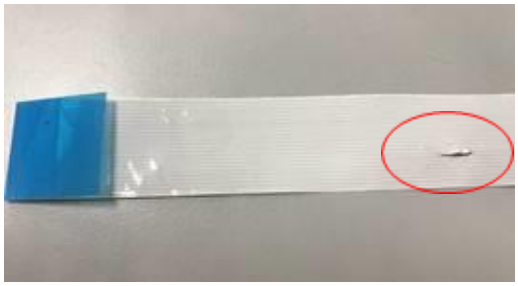
Assembly notice: Please change new one, If FFC is damage during disassembly.

Here are some samples of FFC damage:









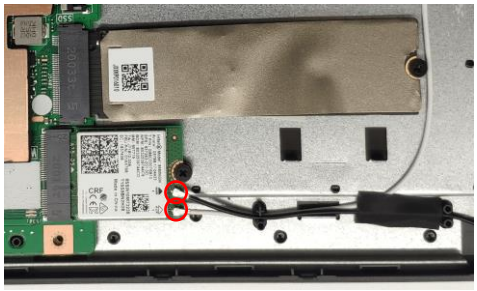
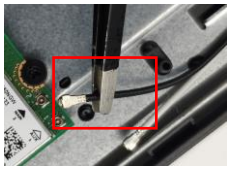
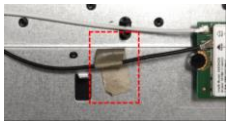
Parts:

- Total screw * 5
- IO FFC 16P 0.5MM,L204.5//GOO DONG/G12459-A*1
- IO_BD.//R2.0*1
- (Actual part name depends on different SKU.)

WLAN Module

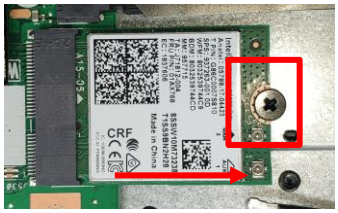
The illustrations below show how to remove the WLAN Module.

1. Remove the antenna connectors.

2. Remove 1 screw and take out the WLAN.

Screw tightening torque: 2.0KG±0.2kgf

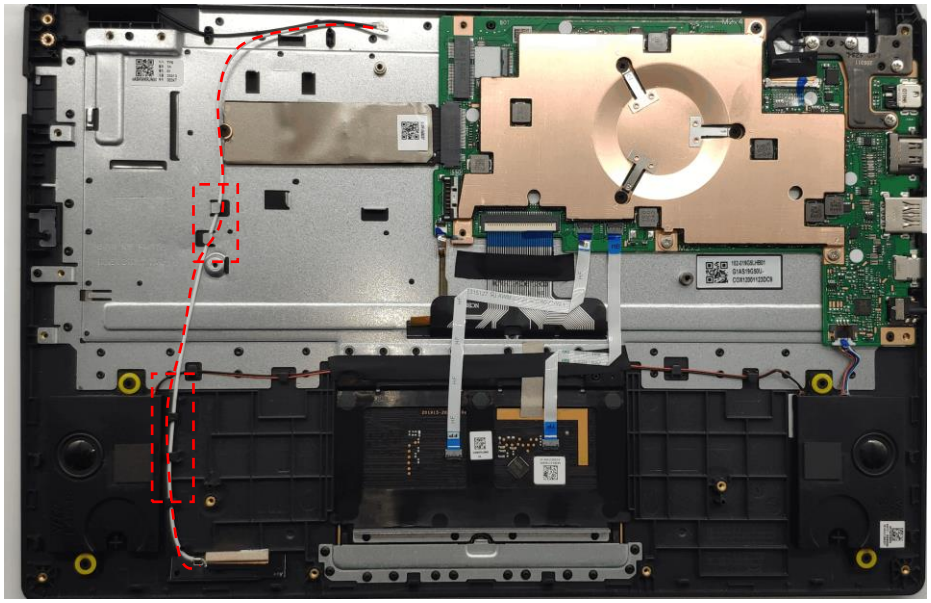


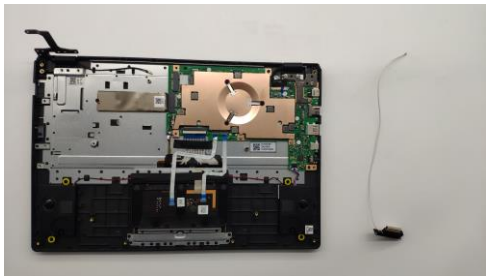


M2*2.5L

3. Take out the AUX Antenna.

Please arrange the antenna well when you assemble it.





Parts:

- Total screw * 1
- 802.11AC+BT5.0(2*2)M.2_WW//IN/9560.NGWG.NV957715JFP2/BLK *1
- (Actual part name depends on different SKU.)

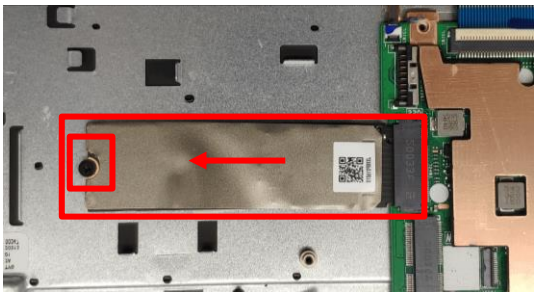
SSD Module

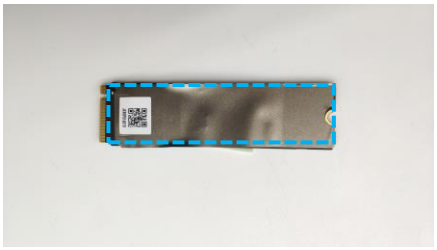
The illustrations below show how to remove the SSD Module.

1. Remove 1 screw on Motherboard and take the SSD away.

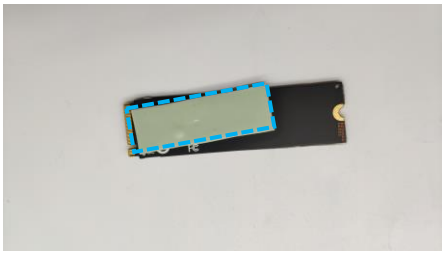
Assembly Notice: follow the reverse numbers to lock screws.

Screw tightening torque (Kg F-cm): 2.0KG±0.2kg





SSD ABSORBER (optional)



THM SSD PAD//LAIRD (optional)



M2*2.5L

Parts:

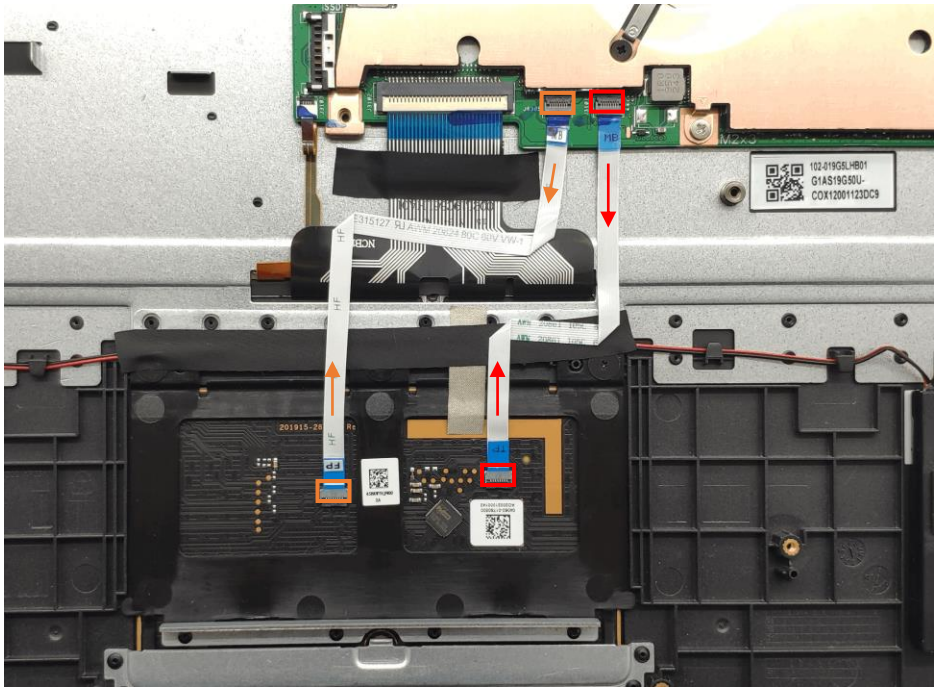
- Total screw * 1
- SSD M2 2280 P3X4(VAL) 512G//SAM/MZVLQ512HALU-00000 *1
- SSD ABSORBER//嘉得隆 *1
- THM SSD PAD//LAIRD *1
- (Actual part name depends on different SKU.)

Speaker Module

The illustrations below show how to remove the Speaker Module.

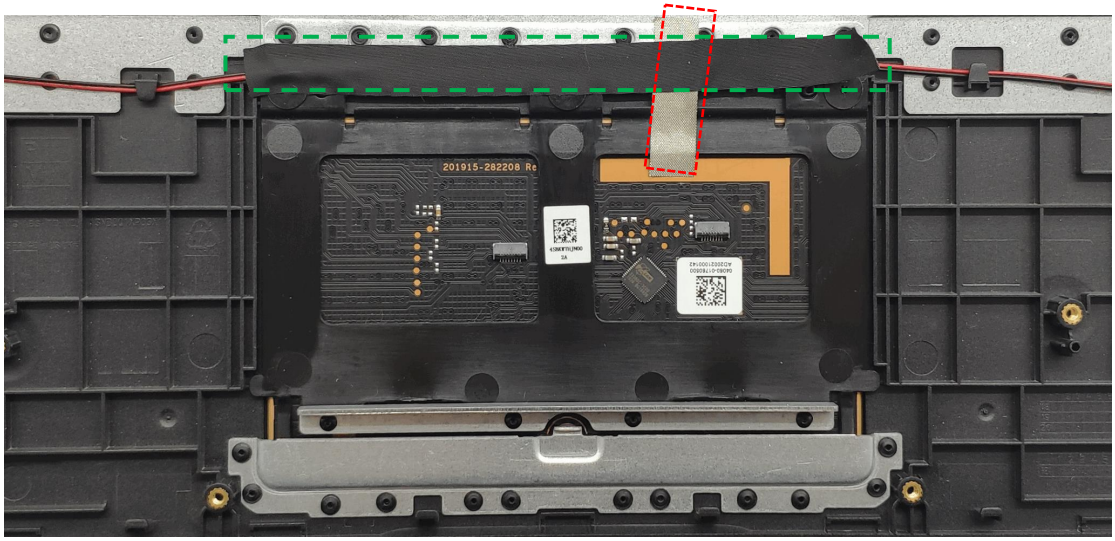
1. Disconnect the TP FFC and FP FFC.

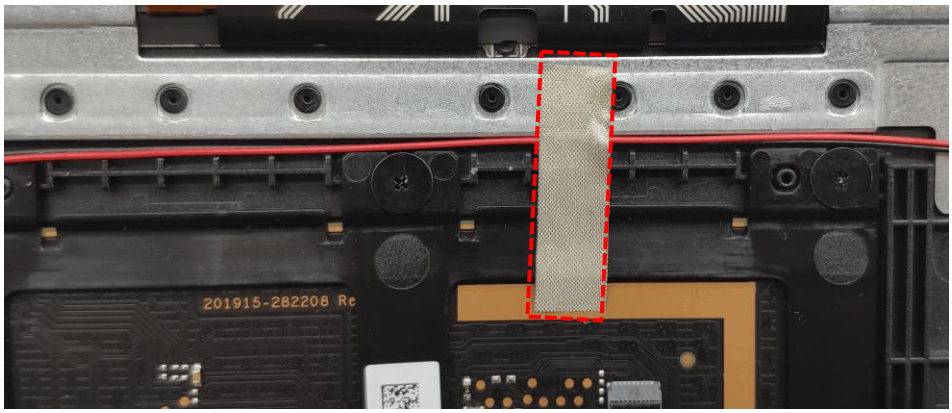
   Assembly notice: Insert FFC to the bottom until just accord with the line when lock the latch.



2. Tear up the TP GASKET and CABLE ACETONE TYPE.

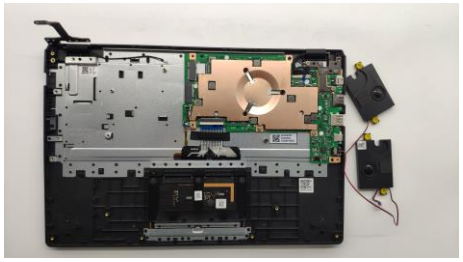
   Notice: The TP Gasket and ACETONE TYPE must be stuck well when assembled.





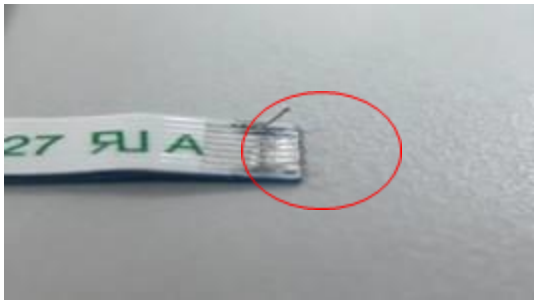
3. Disconnect the speaker cable and take out the speaker.
   Please arrange the speaker cable well when you assemble it.

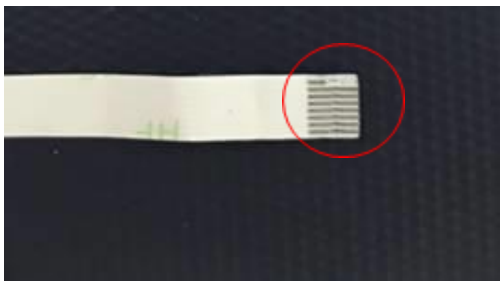




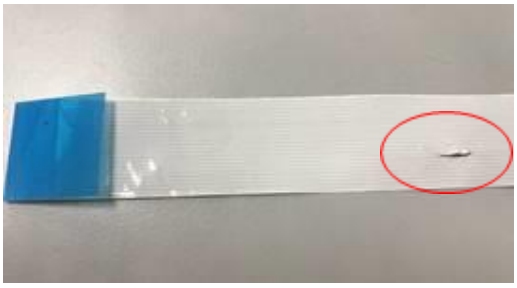
Assembly notice: Please change new one, If FFC is damage during disassembly.

Here are some samples of FFC damage:









Parts:

- Total screw * 0
- SPEAKER MODULE * 1
- TP FFC 8P 0.5MM,L103.5//XINYA/X20AA1-9880-HP*1
- FP FFC 8P 0.5MM,L131.5//XINYA/X19AA1-8632-HP*1
- TP GASKET *1
- CABLE ACETONE TYPE*1
- (Actual part name depends on different SKU.)

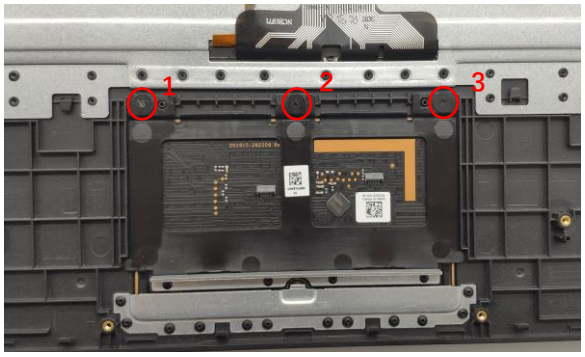
Touchpad Module

The illustrations below show how to remove the Touchpad Module.

1. Remove 3 screws and take out the touchpad.

   Assembly Notice: follow the reverse numbers to lock screws.

   Screw tightening torque (Kg F-cm): 1.6KG±0.2kgf.







SCREW M2*1.5L

Parts:

- Total screw * 3
- TOUCHPAD *1
- (Actual part name depends on different SKU.)

Thermal Module

The illustrations below show how to remove the Thermal Module.

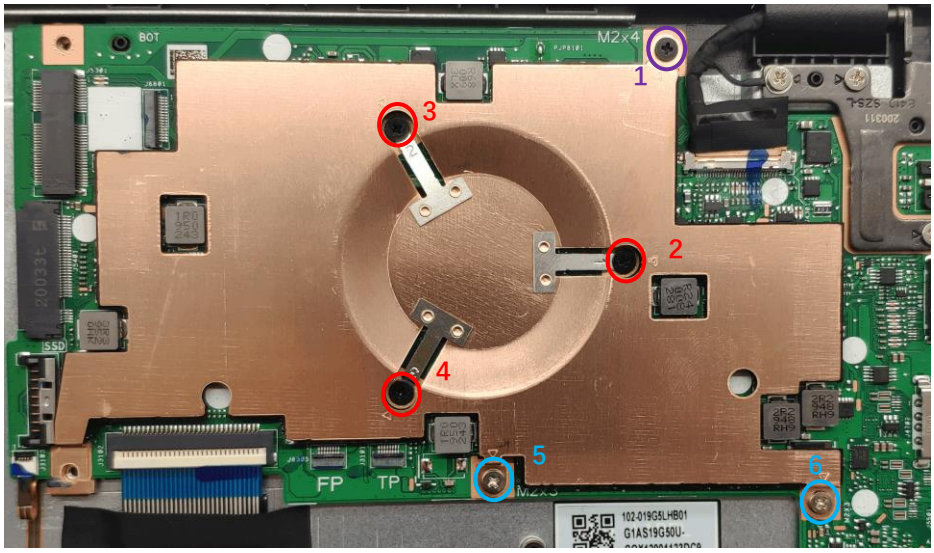
1. Remove 6 screws.

   Assembly Notice: follow the reverse numbers to lock screws.

   Screw tightening torque: 2.0KG±0.2kgf

   Screw tightening torque: 2.0KG±0.2kgf

   Screw tightening torque: 2.0KG±0.2kgf



2. Take out the Thermal Module.





SCREW M2*3L

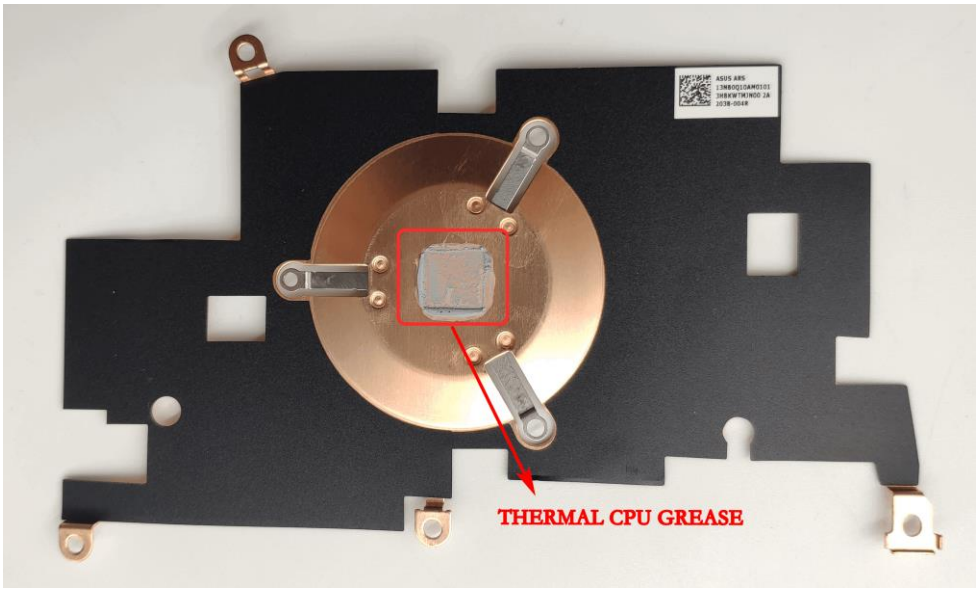


M2*2.5L



SCREW M2*4L

- Assembly Notice:



After replacing a new MB, please clean remaining CPU GREASE on thermal module and then paste new U20A CPU PAD.

Parts:

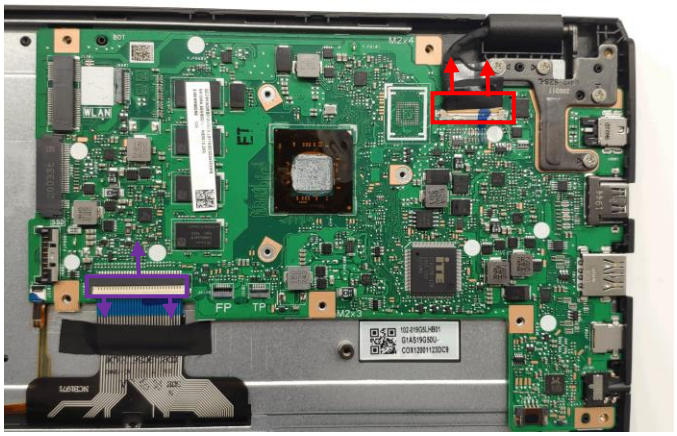
- Total screw * 6
- THERMAL MODULE// *1
- (Actual part name depends on different SKU.)

Motherboard Module

The illustrations below show how to remove the Motherboard Module.

1. Disconnect **EDP Cable** and **Keyboard Cable.**

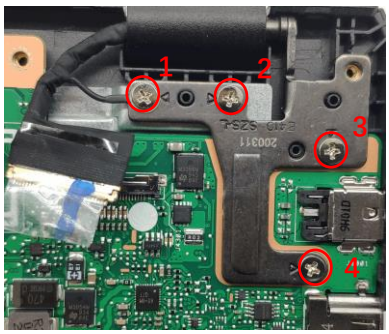
   Assembly Notice: Please well arrange the cables.

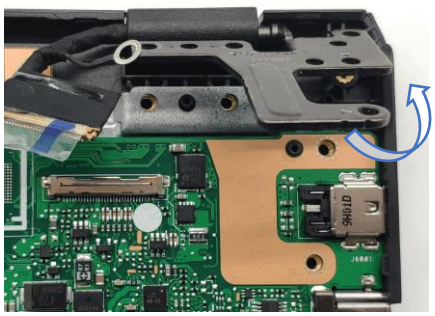


2. Remove 4 screws on the hinge and rotate it.

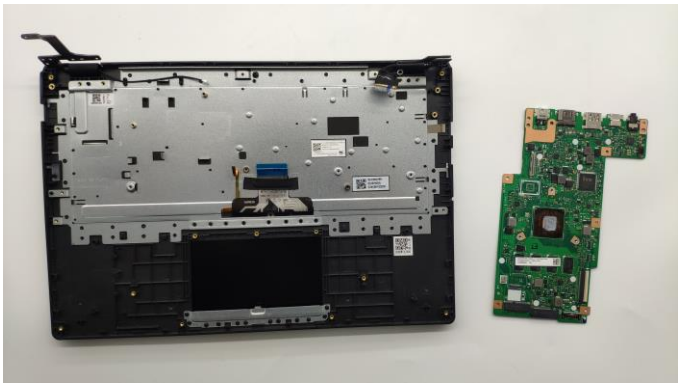
   Assembly Notice: follow the reverse numbers to lock screws.

   Screw tightening torque: 2.5KG±0.2kgf





3. Take out the mainboard.





SCREW M2.5*5L

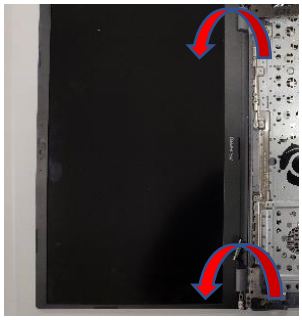
Parts:

- Total screw * 4
- MAIN_BD. *1
- (Actual part name depends on different SKU.)

Top Case Module

The illustrations below show how to remove the Top Case Module.

Follow the direction of the arrows to rotate the hinges, take out the Top Case .





Parts:

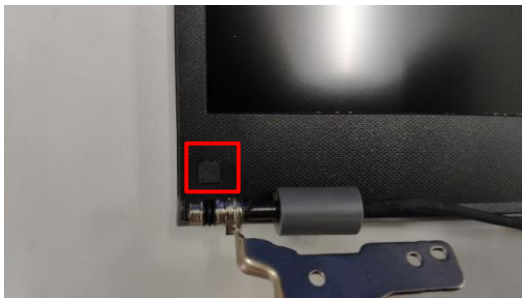
- Total screw * 0
- K/B_(ND)_MODULE*1
- (Actual part name depends on different SKU.)

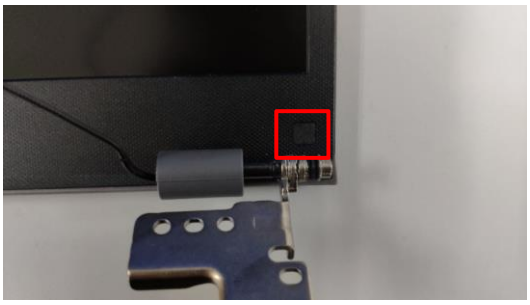
LCD Module for Plastic SKU

The illustrations below show how to remove the LCD Module.

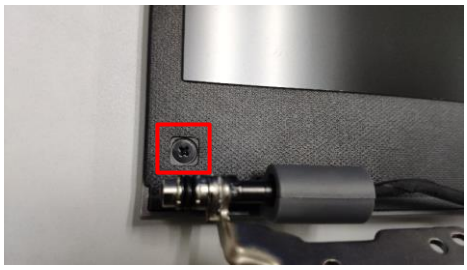
1. Remove 2 screw mylars.

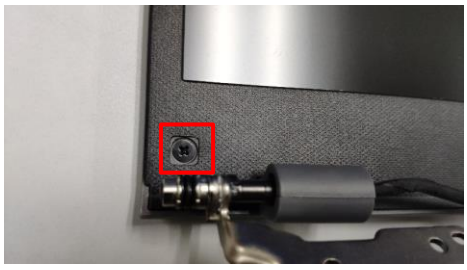






2. Remove 2 screws on the Bezel.
   Screw tightening torque: 2.5KG±0.2kgf



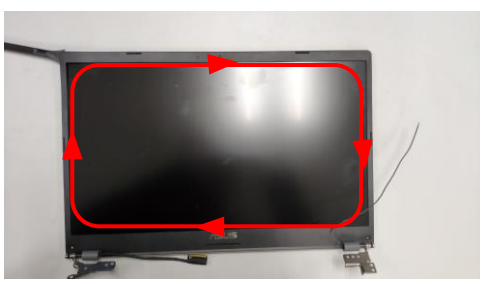




SCREW M2.5*3.5L

3. Use plastic blade to pry up the edge , take the LCD front bezel out .

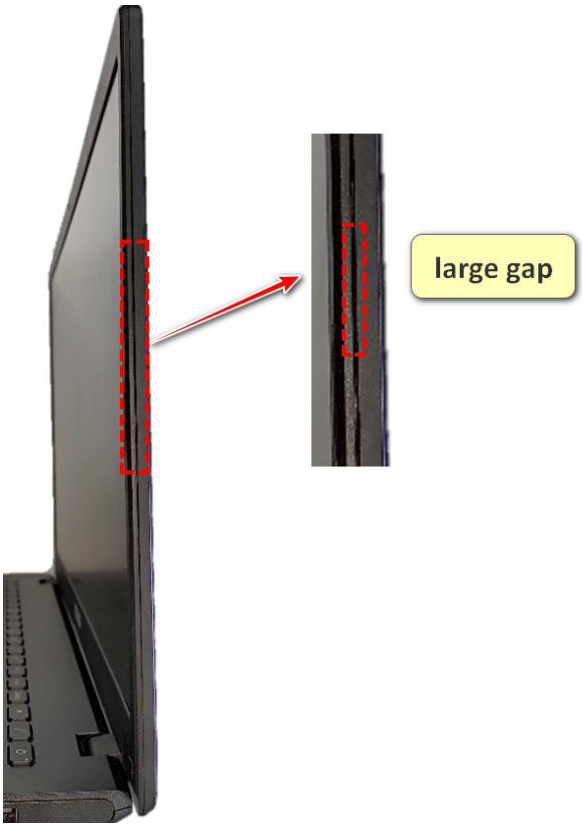






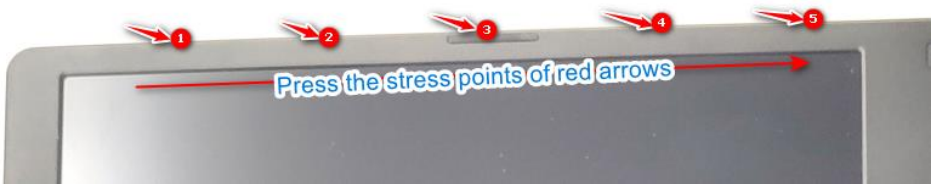
Assembly Notice:

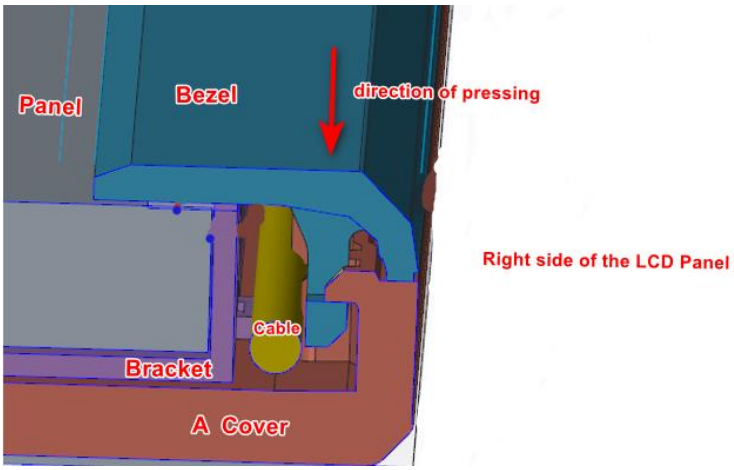
Because of the LCD Bracket issue, there is a question which is “Large Gap Between LCD Cover and Bezel” after you assemble the LCD Bezel.



Please follow below steps to assemble LCD Bezel:

1. Press the stress points of red arrows on the bezel edge to assemble the bezel.

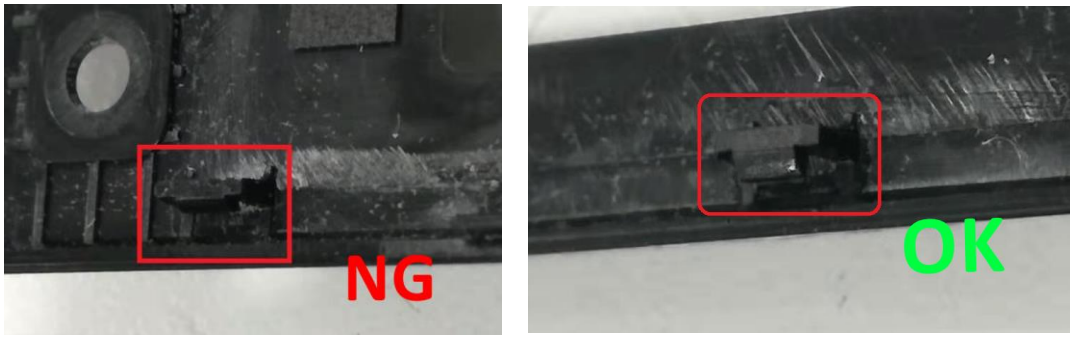




2. Rotate the LCD Panel to confirm the "Gap Between LCD Cover and Bezel". If the gap is large, please repeat the step 1 to narrow the gap.



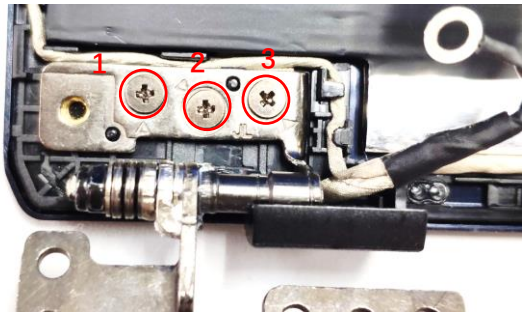
If you find the hook of Bezel damage, please change new one.

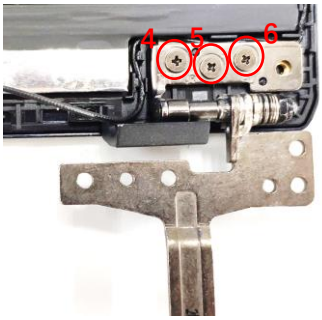


4. Follow below numbers to remove 6 screws on the hinges.

Assembly Notice: follow the reverse numbers to lock screws.

Screw tightening torque (Kg F-cm): 2.0KG±0.2kgf.







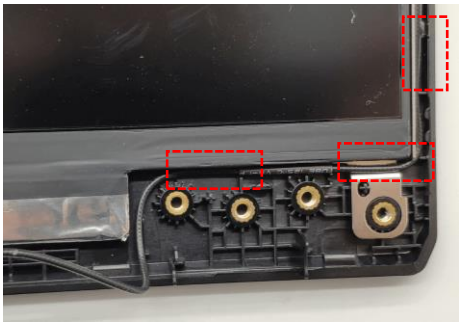


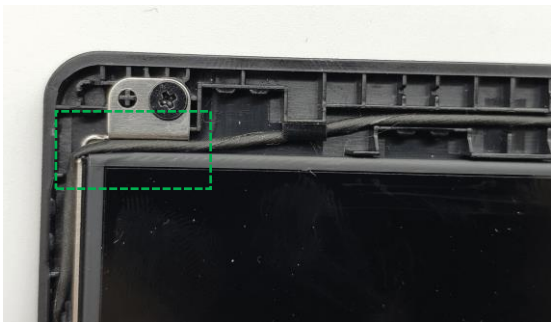
SCREW M2.5*3L

Notice: If you need to replace hinges, please make sure hinge R and hinge L are the same vendor.

5. Disconnect and arrange the EDP Cable and MAIN Antenna.
   Please arrange the cable well when you assemble them.







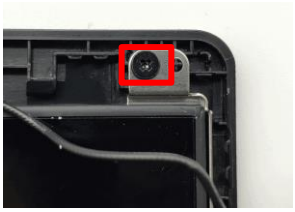


6. Remove 2 screws on the bracket.

Assembly Notice: follow the reverse numbers to lock screws.

Screw tightening torque (Kg F-cm): 2.0KG±0.2kgf.

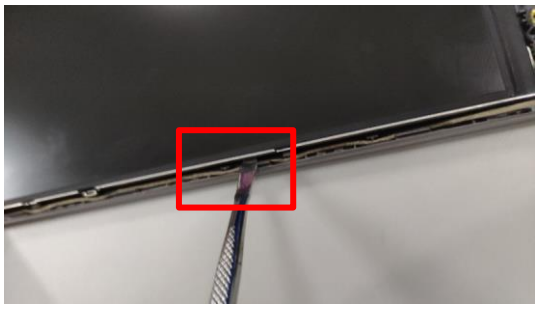


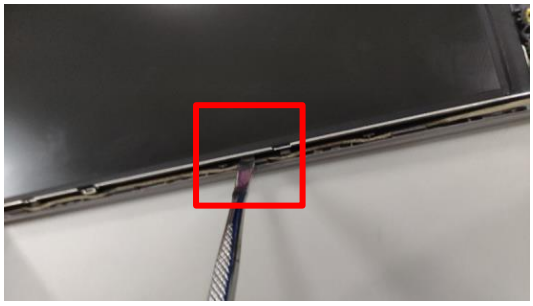




SCREW M2*2.5L

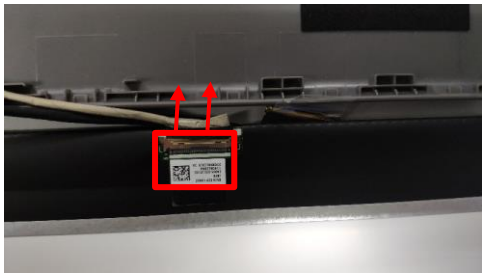
7. Pry out the LCD Bracket and rotate the LCD carefully.





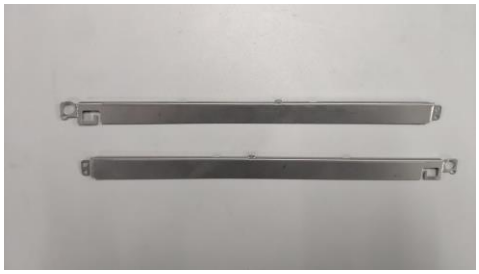


8. Disconnect the EDP Cable and take out the LCD Bracket carefully.



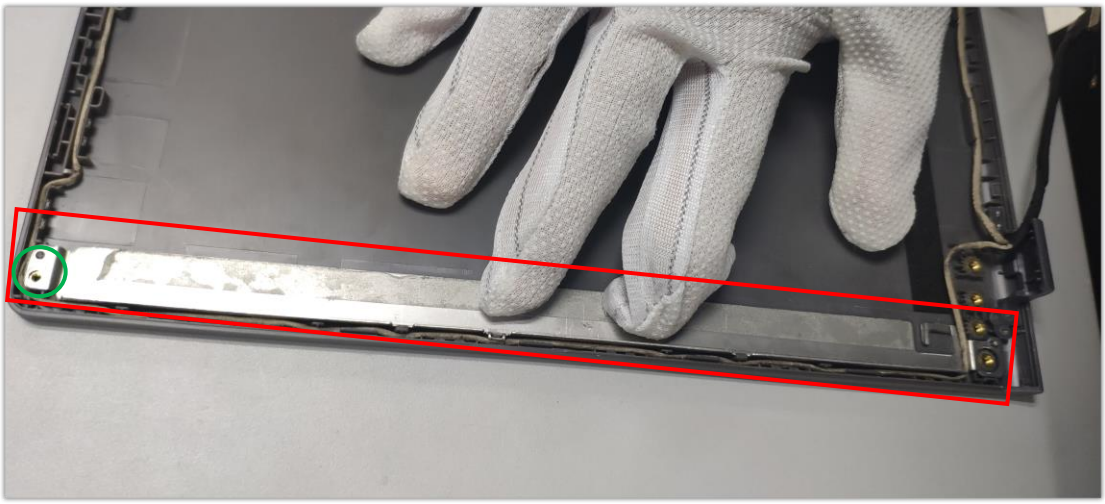


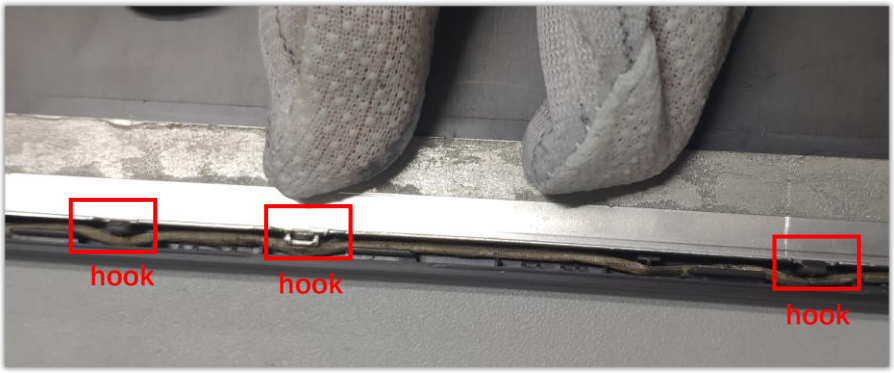




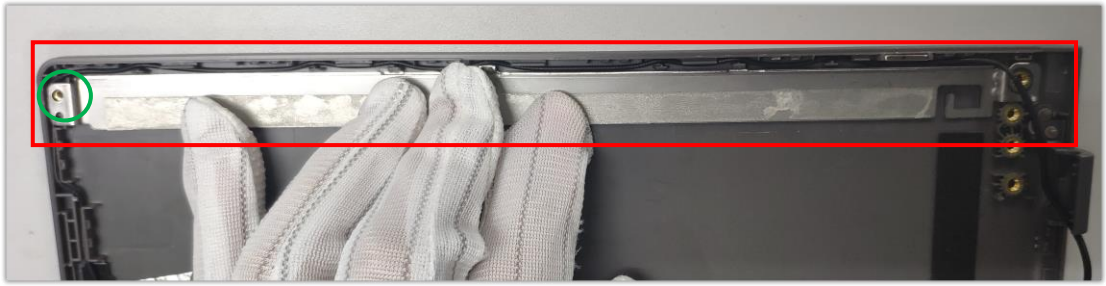
- **Assembly Notice:**

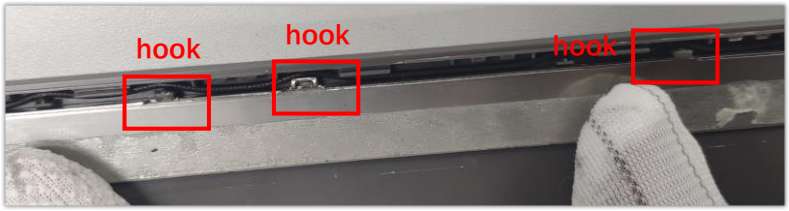
1. **Insert the left LCD Bracket into the left LCD Cover slot by pressuring, then lock the screw(M2*2.5).**





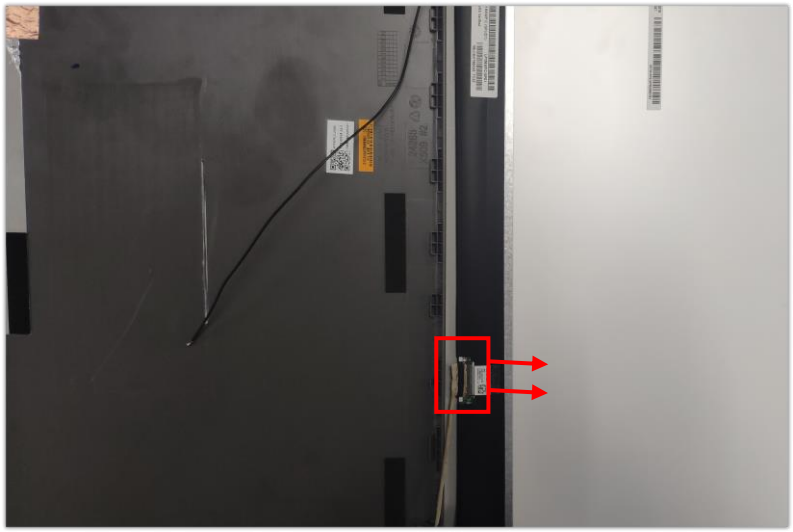
2. **Insert the right LCD Bracket into the right LCD Cover slot by pressuring, then lock the screw.**





- **The bracket has the adhesive.**
  please change a new bracket when you assemble it.

3. **Connect the EDP Cable.**

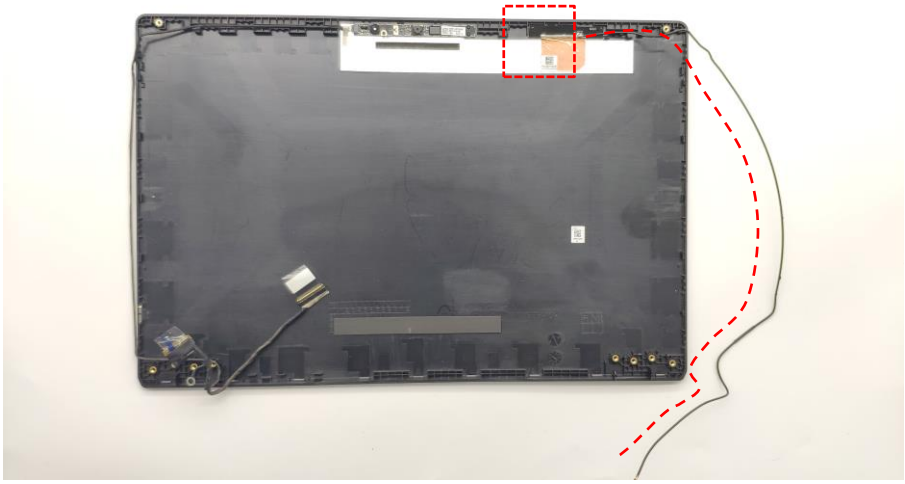


4. **Rotate the LCD Panel and insert it into LCD Bracket carefully.**



9. Tear up the foil and take out the Antenna Cable .

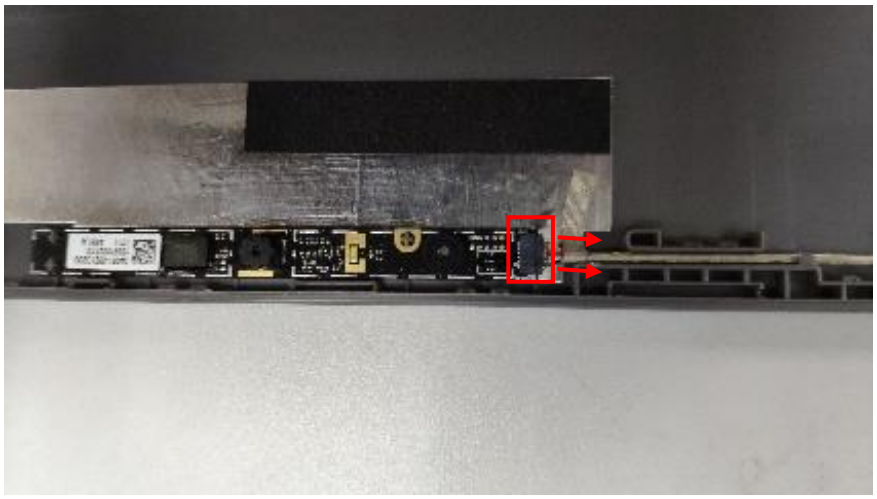
Assembly Notice: Please well arrange the cable and put it in the hook slot as below.







10. Disconnect the EDP Cable and remove it.

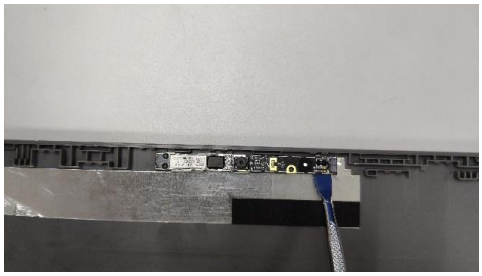


Assembly Notice: Please well arrange the EDP Cable and put it in the hook slot as below.





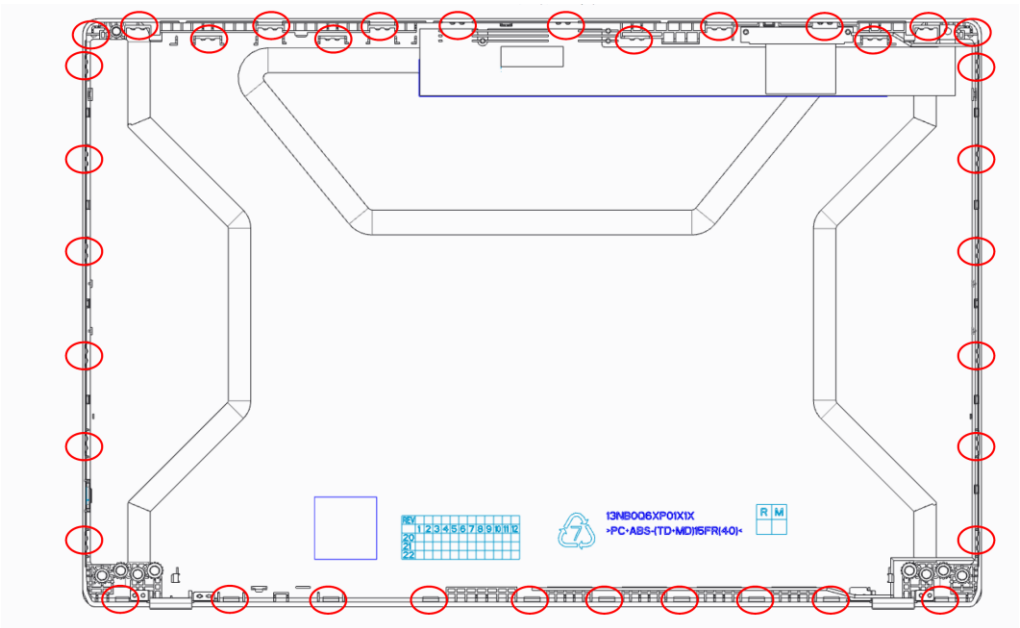
11. Take out the camera.

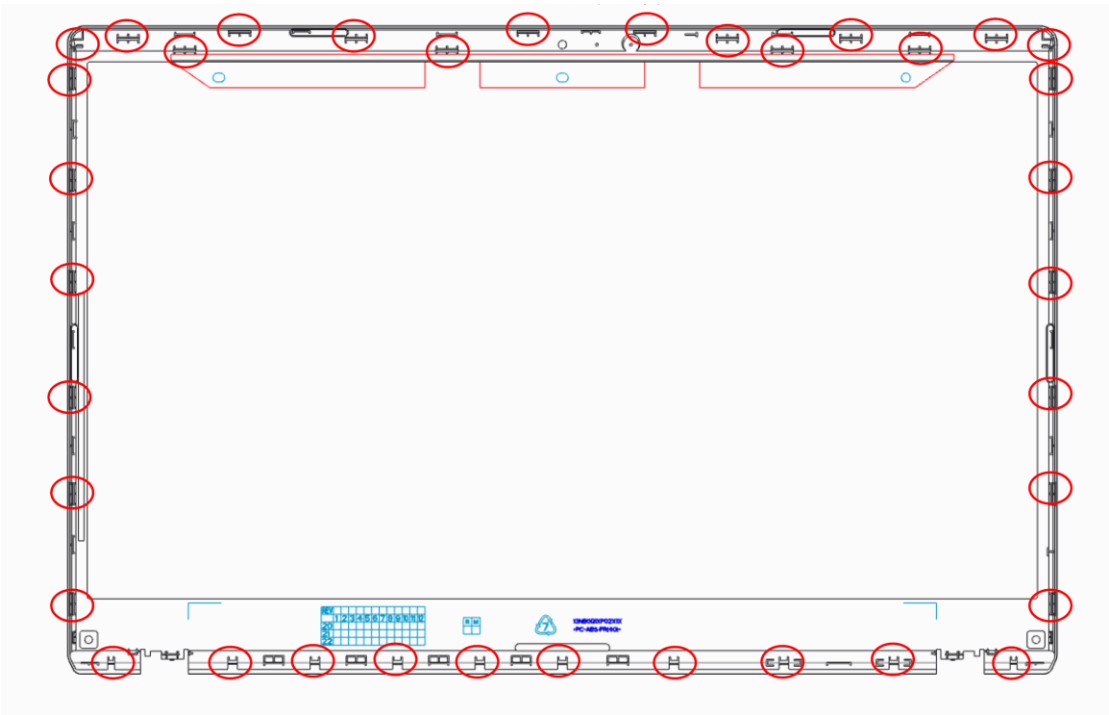




Snaps as below

For Plastic SKU





Parts:

- Total screw * 10
- LCD BEZEL SCREW MYLAR *2
- LCD BEZEL SUB ASSY *1
- HINGE L*1
- HINGE R*1
- LCD BRACKET R ASM//TYT KS*1
- LCD BRACKET L ASM//TYT KS *1
- LCD COVER SUB ASSY *1
- WIFI MAIN ANTENNA*1
- LCD panel *1
- CAMERA *1
- EDP CABLE*1
- (Actual part name depends on different SKU.)

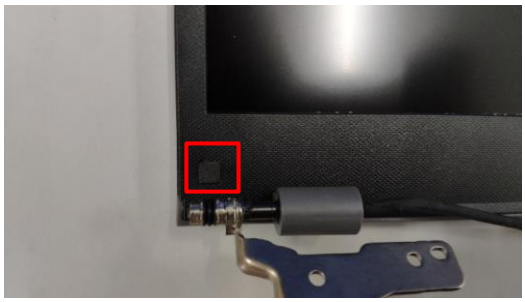
BACK

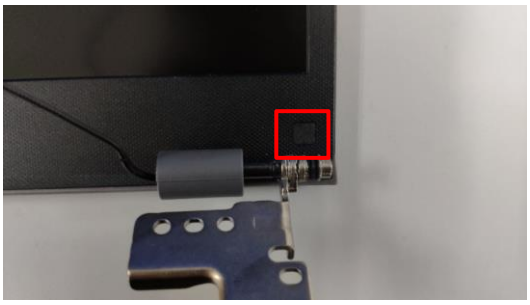
LCD Module for Metal SKU

The illustrations below show how to remove the LCD Module.

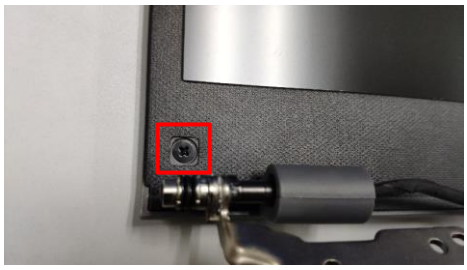
1. Remove 2 screw mylars.

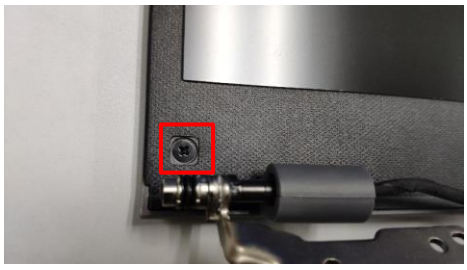






2. Remove 2 screws on the Bezel.
   Screw tightening torque: 2.5KG±0.2kgf



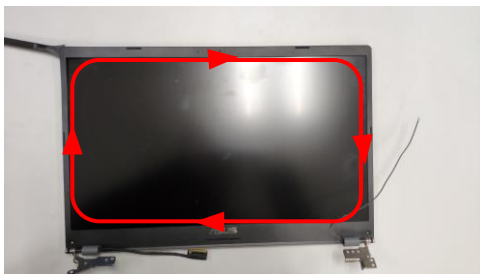




SCREW M2.5*3.5L

3. Use plastic blade to pry up the edge , take the LCD front bezel out .

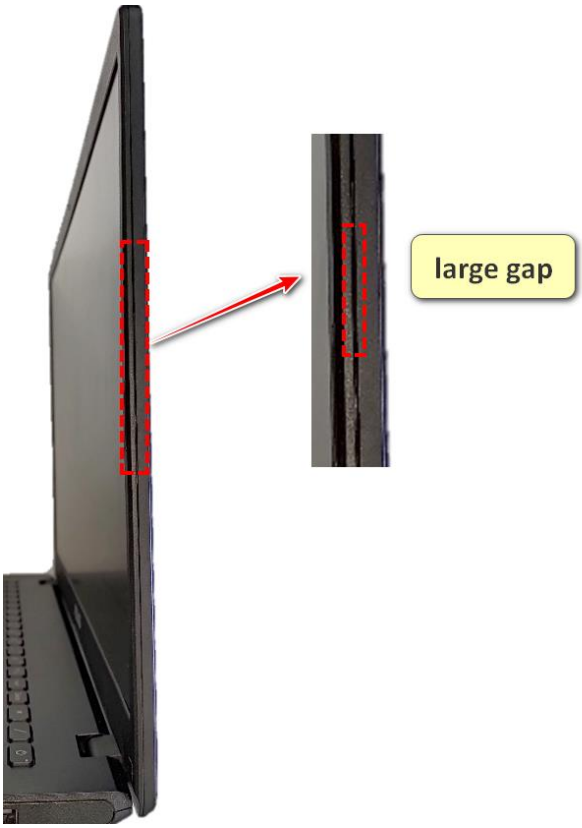






Assembly Notice:

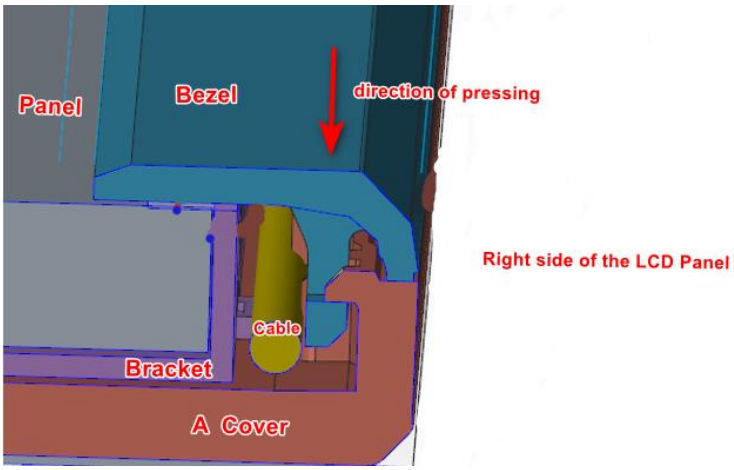
Because of the LCD Bracket issue, there is a question which is “Large Gap Between LCD Cover and Bezel” after you assemble the LCD Bezel.



Please follow below steps to assemble LCD Bezel:

3. Press the stress points of red arrows on the bezel edge to assemble the bezel.

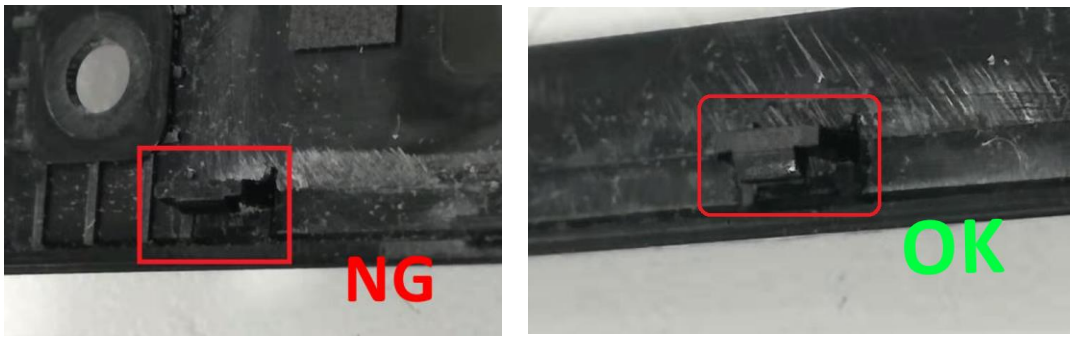




4. Rotate the LCD Panel to confirm the "Gap Between LCD Cover and Bezel". If the gap is large, please repeat the step 1 to narrow the gap.

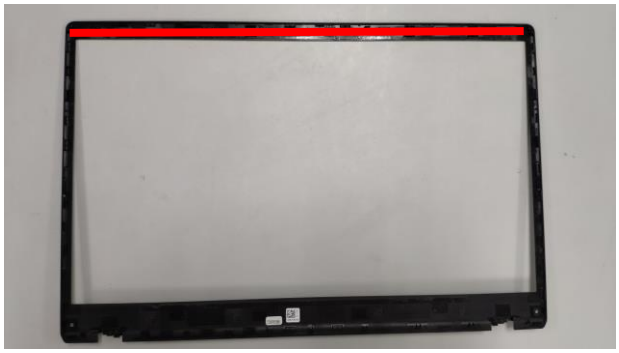


If you find the hook of Bezel damage, please change new one.



Notice:

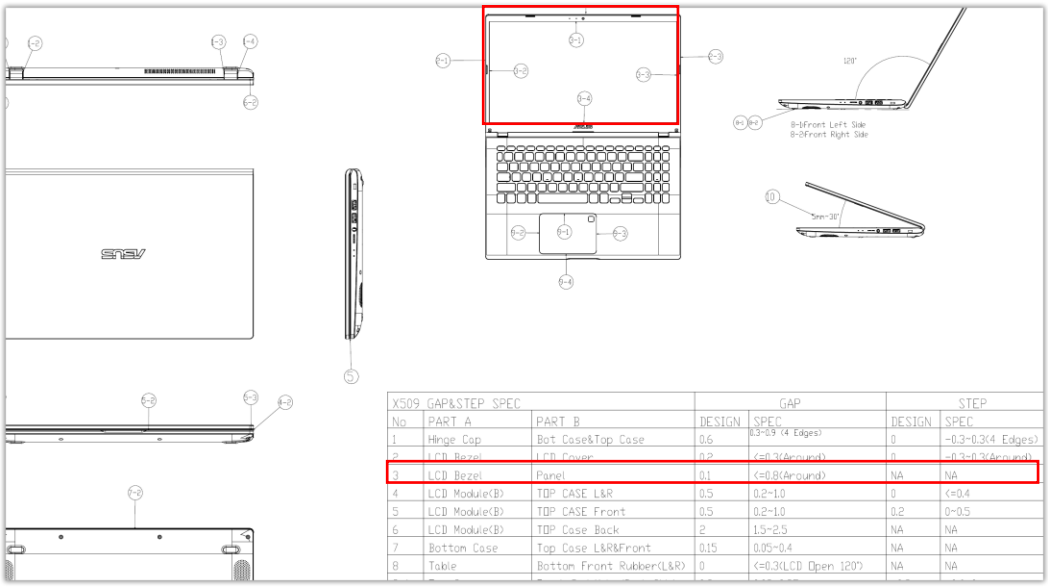
1. The bezel has 1 LCD Bezel Tapes, please stick new one when you assemble it.
   The position of the tape as below:



◆ X513FP LCD BEZEL ADHESIVE UP

Use the thinner plastic blade to pry up the edge .

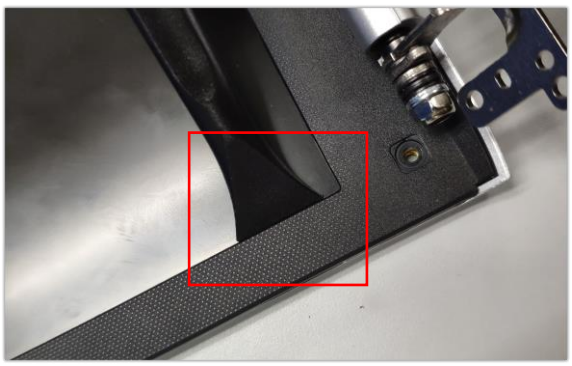
The plastic blade thickness : Please refer to the Gap Step of LCD Bezel to Panel on the last page.

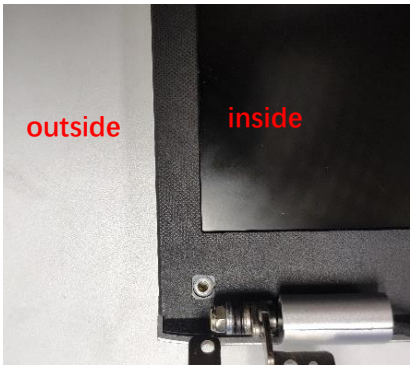


X509 GAP&STEP SPEC			GAP		STEP	
No	PART A	PART B	DESIGN	SPEC	DESIGN	SPEC
1	Hinge Cap	Bot Case&Top Case	0.6	0.3~0.9 (4 Edges)	0	-0.3~0.3(4 Edges)
2	LCD Bezel	LCD Cover	0.2	<=0.3(Around)	0	-0.3~0.3(Around)
3	LCD Bezel	Panel	0.1	<=0.8(Around)	NA	NA
4	LCD Module(B)	TOP CASE L&R	0.5	0.2~1.0	0	<=0.4
5	LCD Module(B)	TOP CASE Front	0.5	0.2~1.0	0.2	0~0.5
6	LCD Module(B)	TOP Case Back	2	1.5~2.5	NA	NA
7	Bottom Case	Top Case L&R&Front	0.15	0.05~0.4	NA	NA
8	Table	Bottom Front Rubber(L&R)	0	<=0.3(LCD Open 120°)	NA	NA

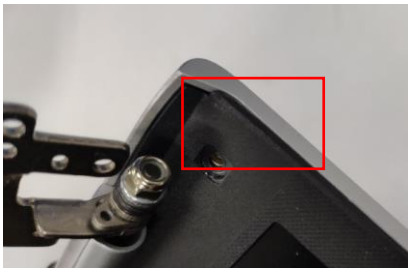
Tips :

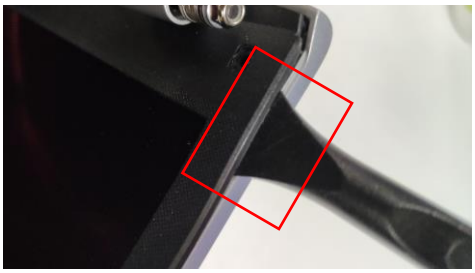
Usually, it is hard to pry up the inside edge follow below position directly.





First, Use the thinner plastic blade to pry up the red frame area of outside edge.





Second, insert the thinner plastic blade into the gap and don't push too hard, disconnect the hooks follow the direction of the red arrow slowly.





4. Follow below numbers to remove 6 screws and take out the hinges .

Assembly Notice: follow the reverse numbers to lock screws.

Screw tightening torque (Kg F-cm): 2.5KG±0.2kgf.





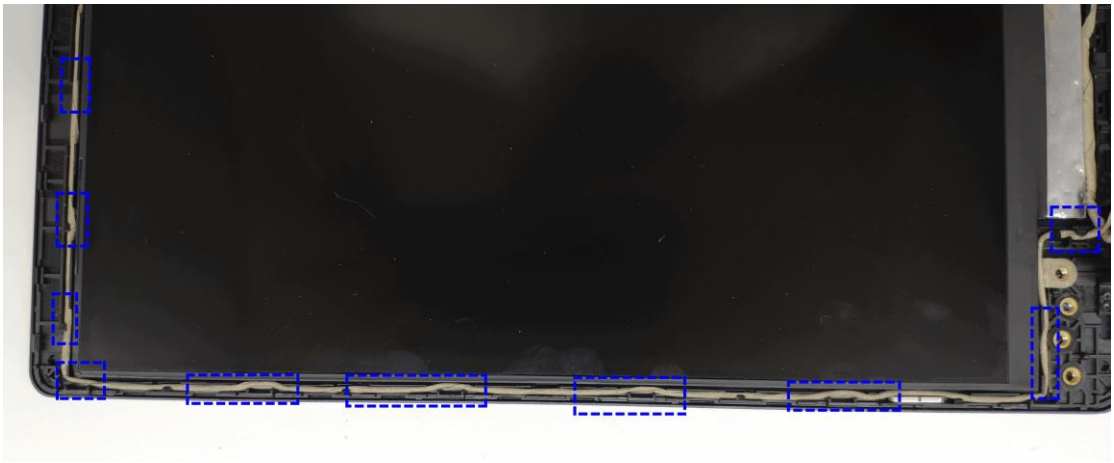

SCREW M2.5*3L

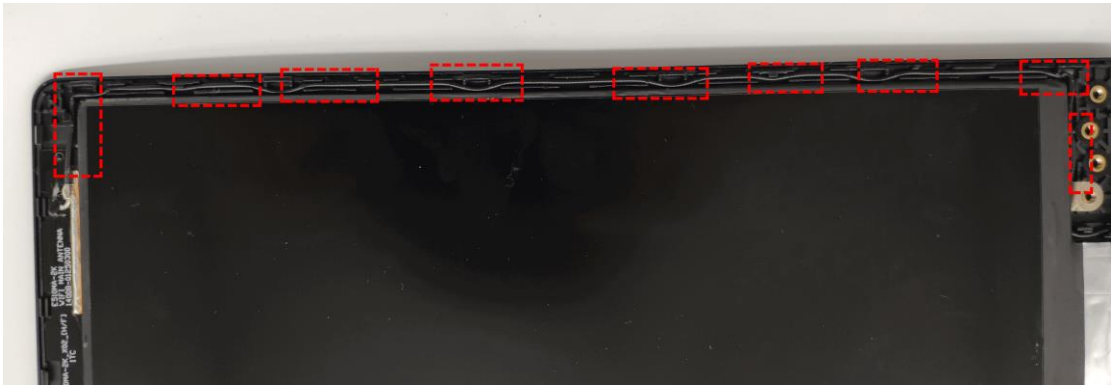
Notice: If you need to replace hinges, please make sure hinge R and hinge L are the same vendor .

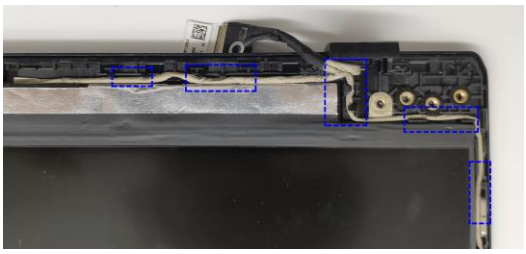
5. Disconnect and arrange the EDP Cable and MAIN Antenna.

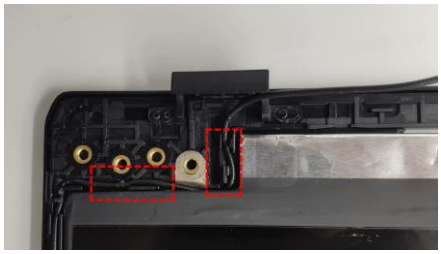
Please arrange the cable well when you assemble them.



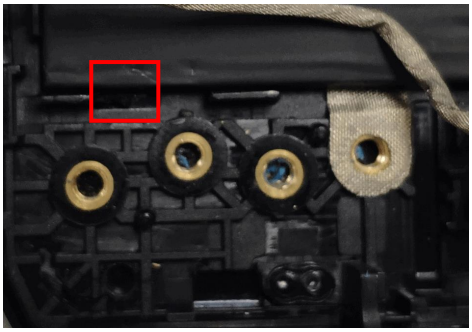


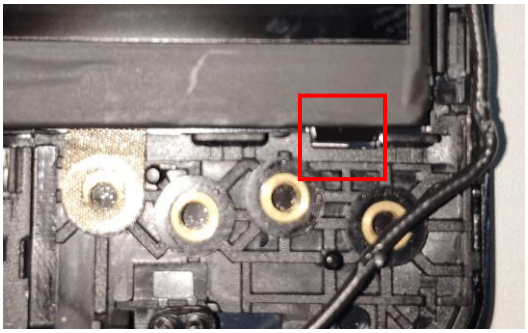


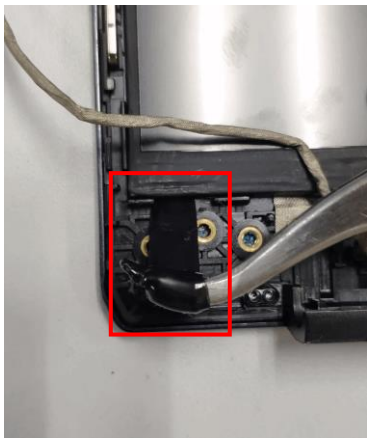


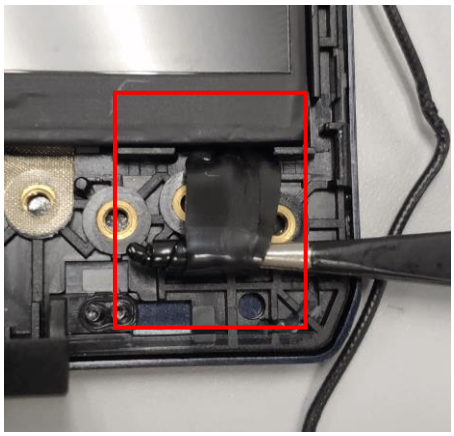


6. Pull out the easy-pull glue (adhesive) in left and right side gently, take out the panel.





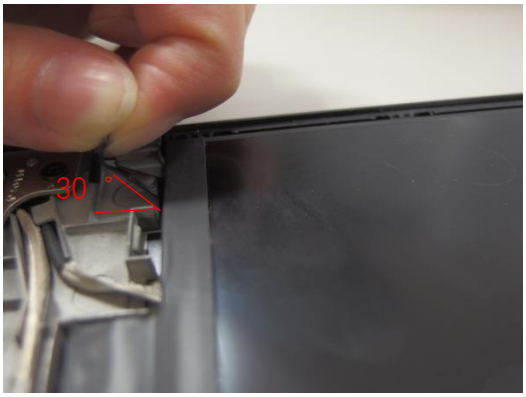






Notice : Please slowly pull the adhesive up about 30 degree.





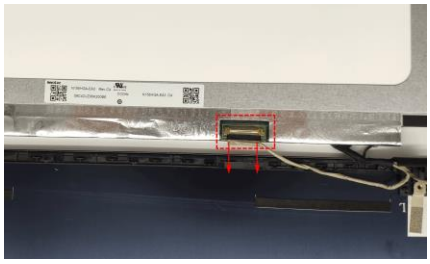
The position of the adhesive as below : please stick new ones when you assemble it.







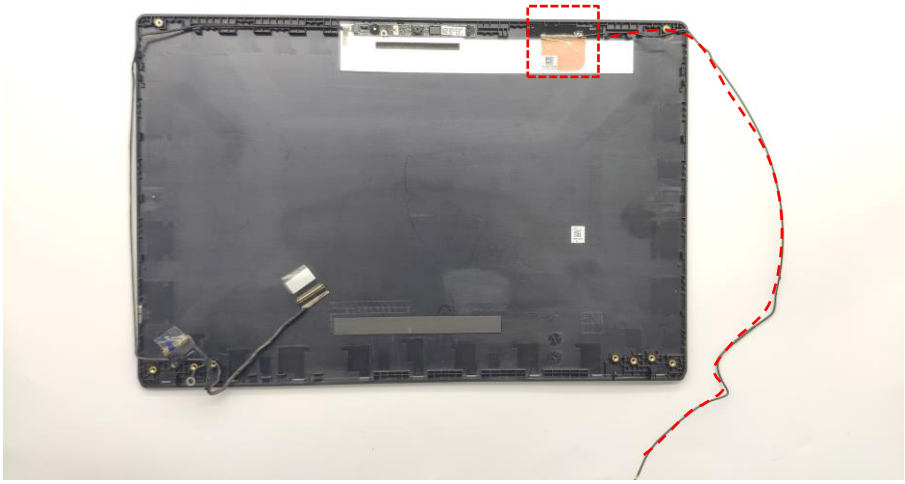
7. Disconnect the EDP Cable and take out the LCD Bracket carefully.





Tear up the foil and take out the Antenna Cable .

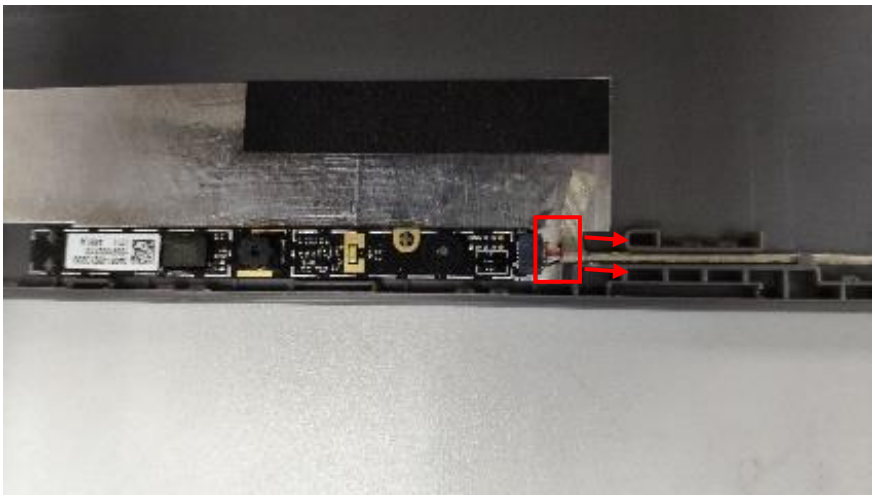
Assembly Notice: Please well arrange the cable and put it in the hook slot as below.







12. Disconnect the EDP Cable and remove it.

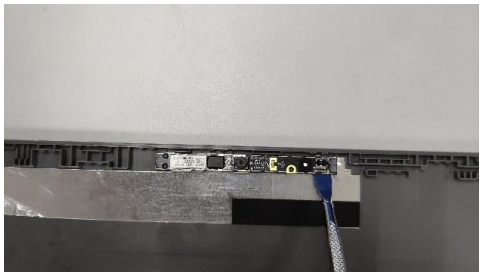


Assembly Notice: Please well arrange the EDP Cable and put it in the hook slot as below.





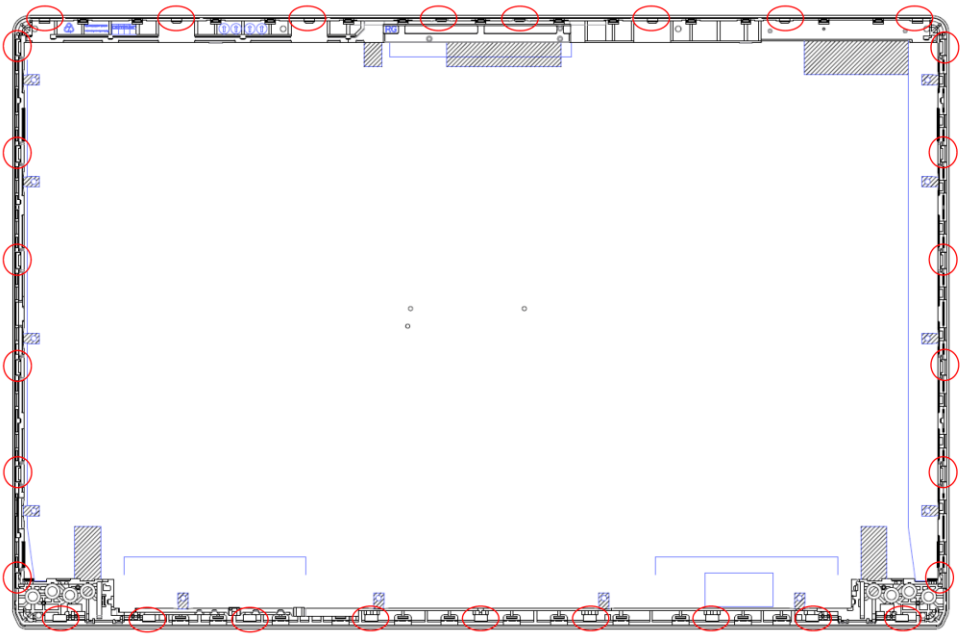
13. Take out the camera.

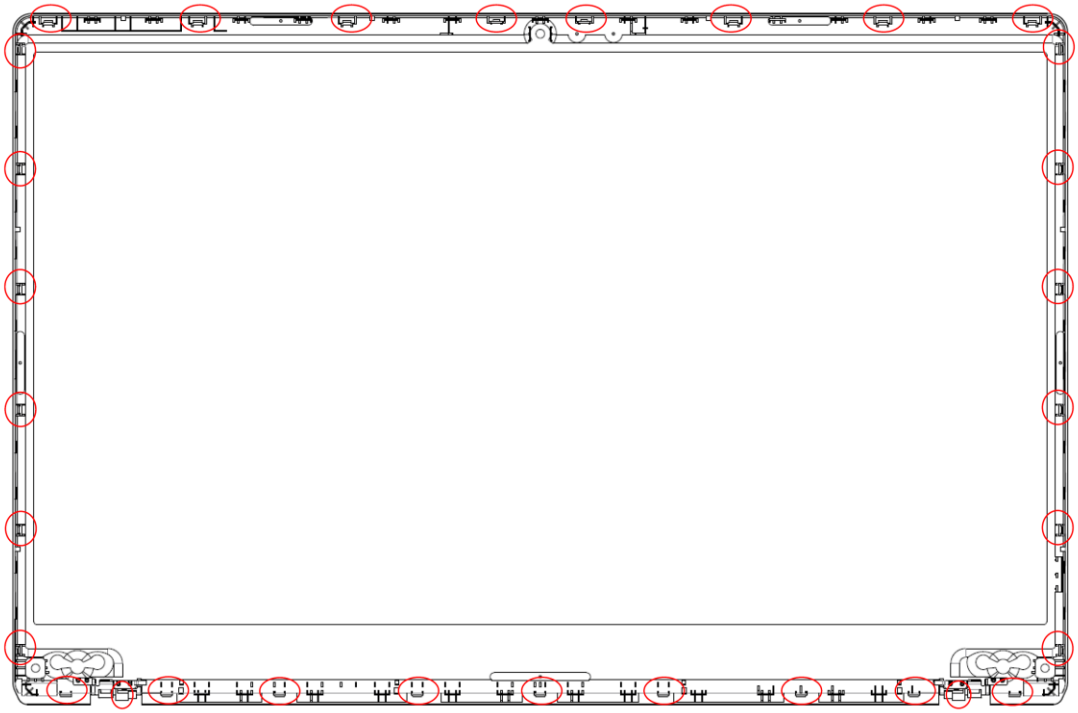




Snap as below:

For Metal SKU





Parts:

- Total screw * 8
- LCD BEZEL SCREW MYLAR *2
- LCD BEZEL SUB ASSY *1
- HINGE L*1
- HINGE R*1
- LCD COVER SUB ASSY *1
- WIFI MAIN ANTENNA*1
- LCD panel *1
- CAMERA *1
- EDP CABLE*1
- (Actual part name depends on different SKU.)