A graphic for Chapter 2, featuring the word "Chapter" in a bold, black, sans-serif font at the top, and a large, white, stylized number "2" centered below it, all set against a light gray square background.

Disassembly and Assembly

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.

A SUS X510 Series Notebook consists of various modules. This chapter describes the procedure for the complete notebook disassembly and assembly (**Assemble process please look up from the last page**). In addition, in between procedures, the detailed disassembly (assembly) procedure of individual modules will be provided for your service needs.

The disassembly procedure consists of the following steps:

- [Service overview](#)
- [Appropriate Tools](#)
- [Bottom Case Module](#)
- [HDD Module](#)
- [WLAN Module](#)
- [Battery Module](#)
- [SSD Module](#)
- [Thermal Assy & FAN Module](#)
- [Memory Module](#)
- [IO Board](#)
- [HDDBoard](#)
- [Motherboard Module](#)
- [Speaker Module](#)
- [Touchpad Module](#)
- [LCD Module](#)

Service Overview

Please pay special attention to the cautions below to prevent any damages to the notebook and also please be sure to select the appropriate tools described in this section to perform any services desired.

Precautions

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

1. Be sure that the notebook is powered down.
2. Disconnect the AC plug from the notebook.
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 °C 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


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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 (PN: 20LT0-00050000)



Tweezers

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

**Thickness gauge (PN: 20LT0-0002J000)**

Thickness compass specification 0.05mm-1.5mm

Use it to measure the gap.



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Bottom Case Module

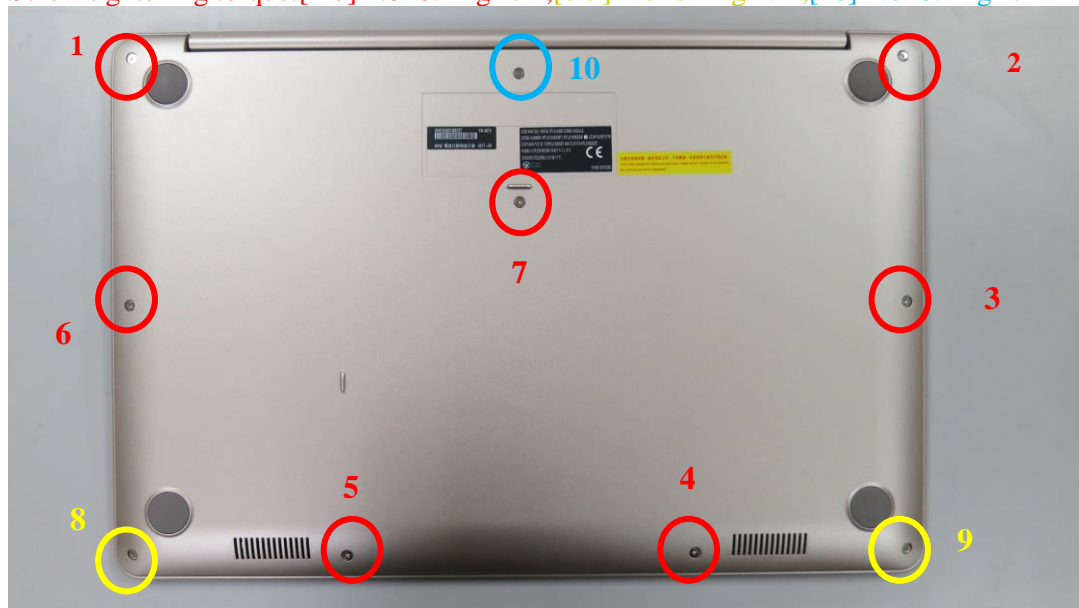
The illustrations below show how to remove the Bottom Case Module.

Remove Bottom Case Module

1. Follow below numbers to remove 10 screws on the Bottom Case.

Assembly Notice: follow the reverse numbers to lock screws.

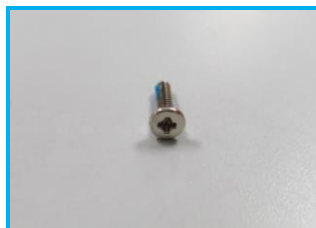
Screw tightening torque:[1-7] 2.0±0.2 kgf-cm,[8-9] 2.0±0.2 kgf-cm,[10] 2.0±0.2 kgf-cm



SCREW M2*6L (K) W-NI,NY



SCREW M2*3L D4.5 (K) W-NI NY

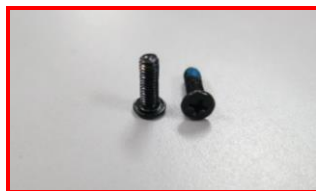


SCREW M2*8.5L(4.5,0.75) (K)#1

2. Remove 2 rubber cover on the bottom case and remove 2 screws under it.
Be careful to use tweezers to avoid scratching the cover.

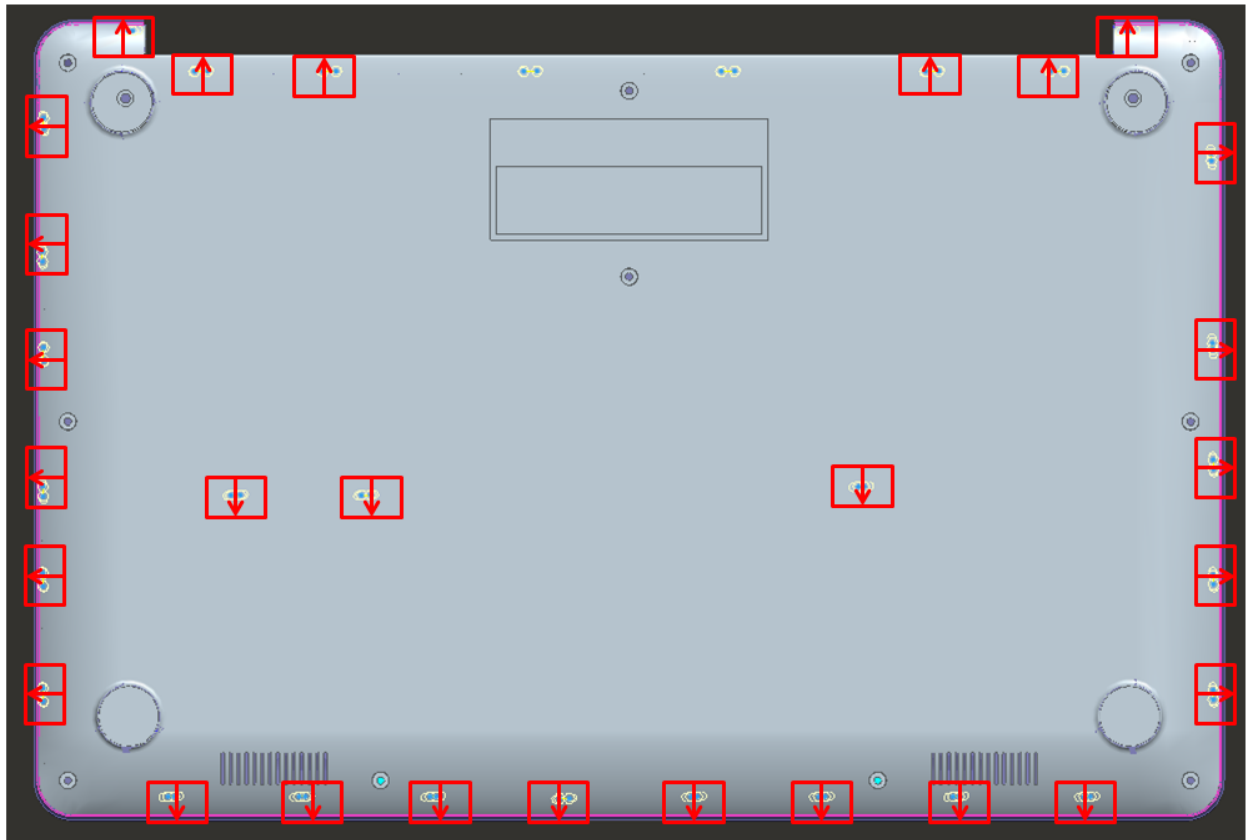


Assembly Notice: Screw tightening torque: 3.0 ± 0.2 kgf-cm



SCREW M2.5*8L (K) B-ZN,NY

3. Using a plastic blade to pry up the bottom case away by following the hook position below.



Parts:

- Total screw * 12
- X510UA-1A BOT CASE ASSY * 1

(Actual part name depends on different SKU.)

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HDD Module

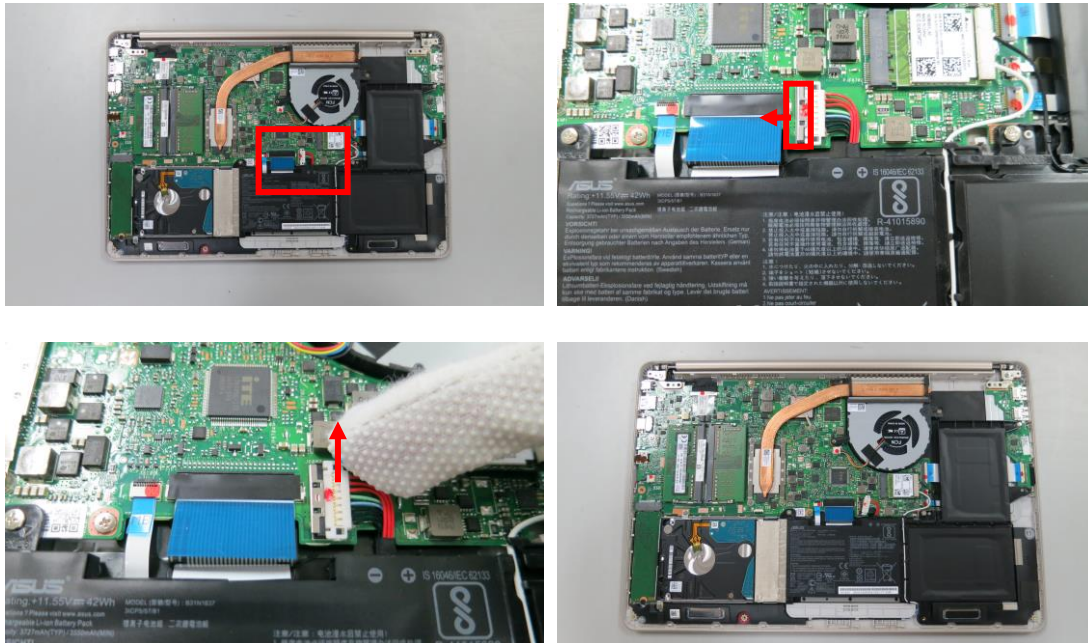
The illustrations below show how to remove the HDD from the notebook.

Remove HDD Module

1. Disconnect the battery cable.

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

Disconnect the battery cable by hand instead of using a tweezer , in order to avoid short circuit.

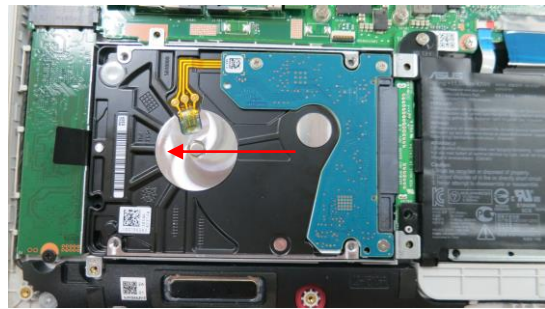
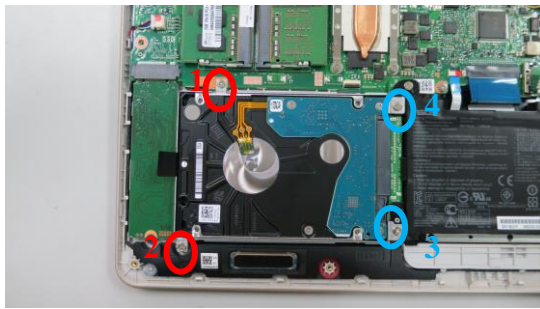


2. Tear up the mylar and follow below numbers to remove 4 screws and take HDD module away.

Assembly Notice: follow the reverse numbers to lock screws.

Screw tightening torque: [1-2]2.0±0.25kgf-cm, [3-4]2.0±0.25kgf-cm





SCREW M2*6L (K) W-NI,NY

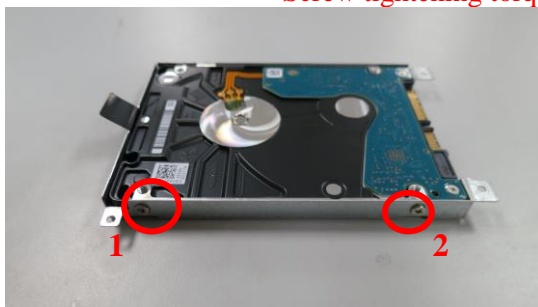


SCREW M2*3L D4.5 (K) W-NI NY

3. Follow below numbers to remove 4 screws on the bracket.

Assembly Notice: follow the reverse numbers to lock screws.

Screw tightening torque: 2.5+0.5kgf-cm





SCREW M3*3L (K)
W-NI,NY

Parts:

- Total screw * 8
- X510UA HDD SATA3 2.5' 2T5 * 1
- X510UA HDD RF GASKET* 1
- X510UA-1A HDD MYLAR* 1

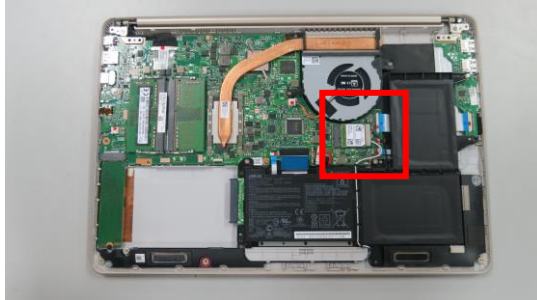
(Actual part name depends on different SKU.)

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WLAN Module

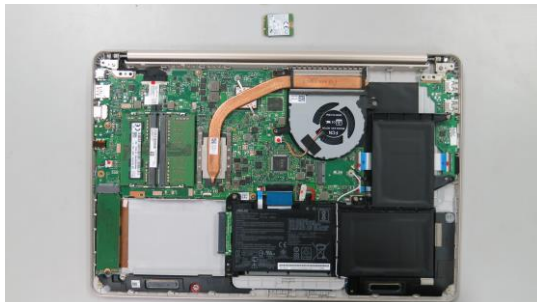
The illustrations below show how to remove the WLAN Module from the notebook.

1. Disconnect the antenna cable.

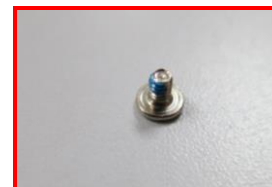


2. Remove 1 screw on the WLAN card and take the WLAN card away.

Screw tightening torque: $2.0 \pm 0.2 \text{ kgf-cm}$



SCREW M2*3L D4.5 (K) W-NI NY



Parts:

- Total screw * 1
- 802.11AC+BT4.2(2*2)M.2_WW_MSQ * 1

(Actual part name depends on different SKU.)

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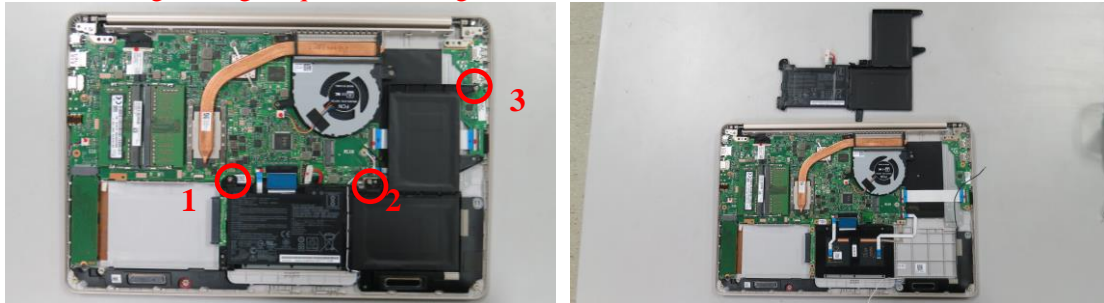
Battery Module

The illustrations below show how to remove the battery from the notebook.

1. Follow below numbers to remove 3 screws on the battery and take the battery away.

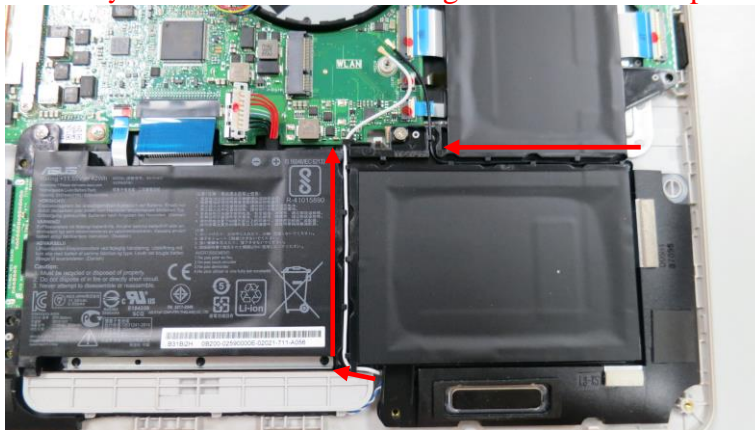
Assembly Notice: follow the reverse numbers to lock screws.

Screw tightening torque: 2.0+0.5kgf-cm



SCREW M2*6L (K) W-NI,NY

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



Parts:

- Total screw * 3
- X510UA BATT 3CELL 42WH* 1

(Actual part name depends on different SKU.)

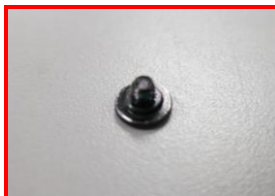
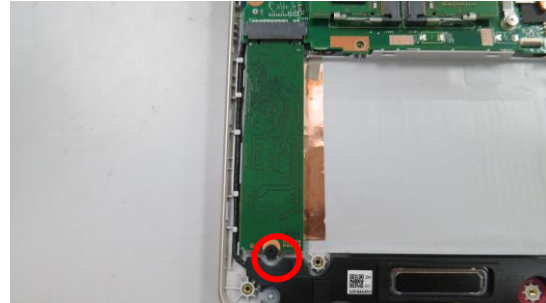
[BACK](#)

SSD Module

The illustration below shows how to remove the SSD module.

1. Remove 1 screw from SSD and take it away.

Screw tightening torque: $2.0 \pm 0.2 \text{kgf-cm}$



SCREW M2*1.8L+0.7(5.7,0.8)
(K)

Parts:

- Total screw * 1
- X510UA SSD M2 2280 S3 512G*1

(Actual part name depends on different SKU.)

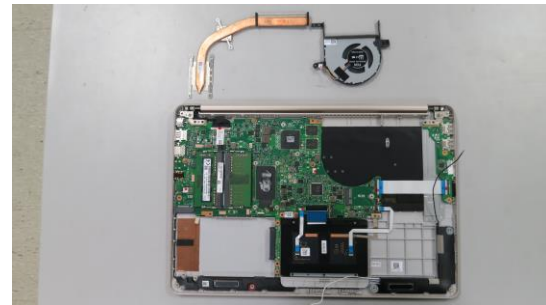
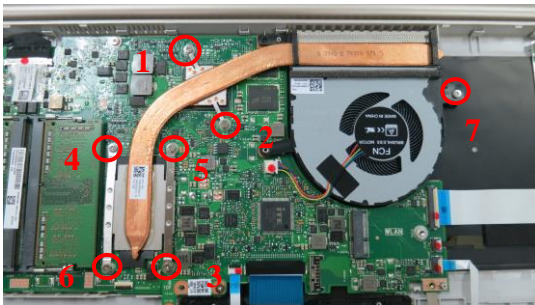
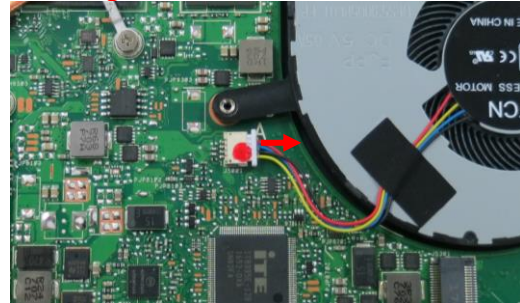
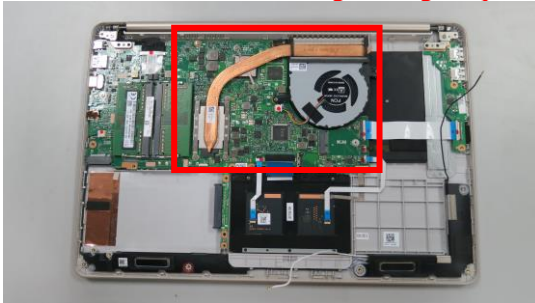
[BACK](#)

Thermal Assy & FAN Module

1. Use a plastic blade to disconnect the FAN cable and follow the numbers to remove 7 screws on the thermal module and take it away.

Assembly Notice: follow the reverse numbers to lock screws.

Screw tightening torque: $2.0 \pm 0.25 \text{kgf-cm}$



SCREW M2*3L D4.5 (K) W-NI NY

Notice: If the CPU or GPU Thermal pad is melt, please change a new one.

13NB0C10T03011 K401UQK TH PAD 25*12//翰興

13GNWU10T010-1 UL50A TH CPU PAD//APUS

Parts:

- Total screw * 7
- X510UQ TH MOD ASSY * 1
- X510UQ THERMAL FAN * 1

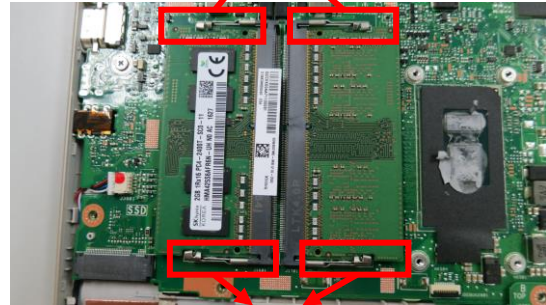
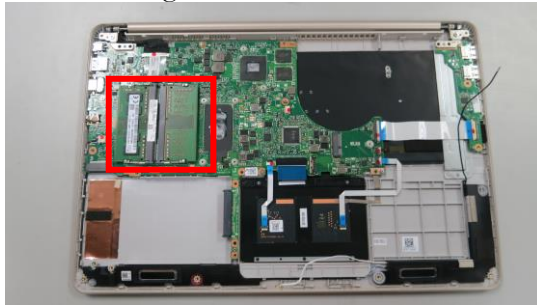
(Actual part name depends on different SKU.)

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Memory Module

The illustrations below show how to remove and disassemble the memory of the notebook.

1. Pull four latches here to pop the Memory module up at 45° angles, and then pull out the module at that angle.



2. Take the memory away.



Parts:

- X510UA DDR4 2400 8G * 2

(Actual part name depends on different SKU.)

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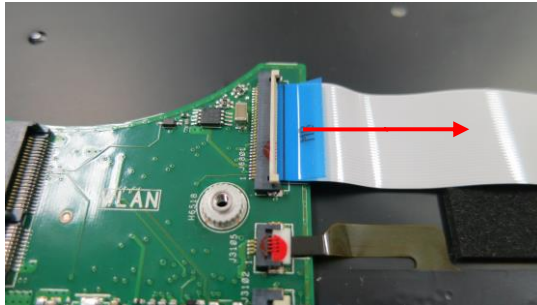
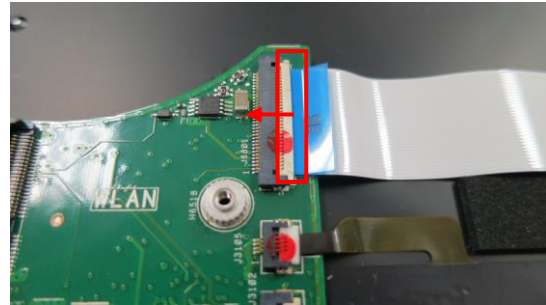
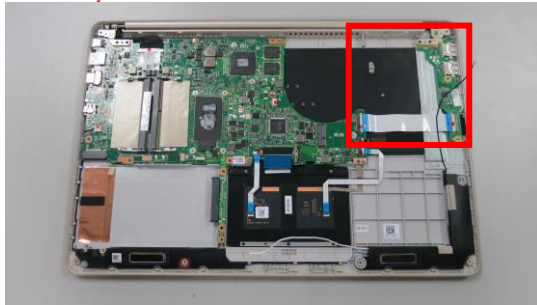
IO Board

The illustrations below show how to disassemble and remove the IO Board.

1. Disconnect IO FFC from MB.

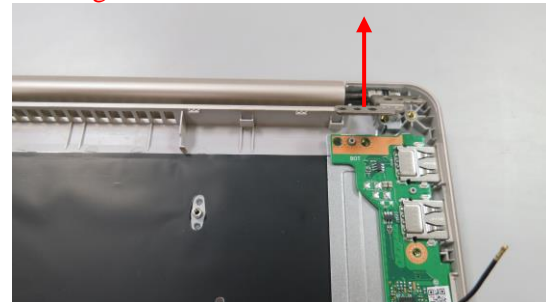
Assembly notice: 1) Insert FFC to the bottom until just accord with the line when lock the latch.

2) Please check whether the appearance of FFC/FPC is intact (not broken) and press the cable carefully before assembly.



2. Remove 1 screw from hinge, pull up the hinge and take the IO board away.

Assembly Notice: Screw tightening torque: $3.0 \pm 0.25 \text{kgf-cm}$

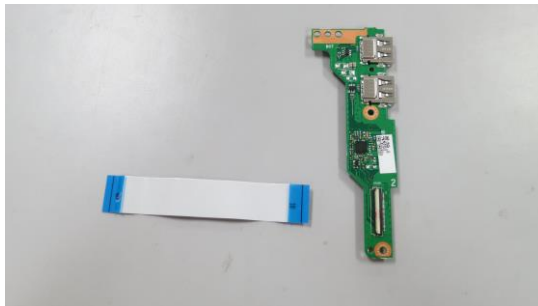
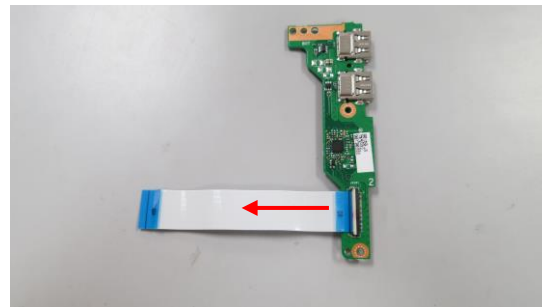
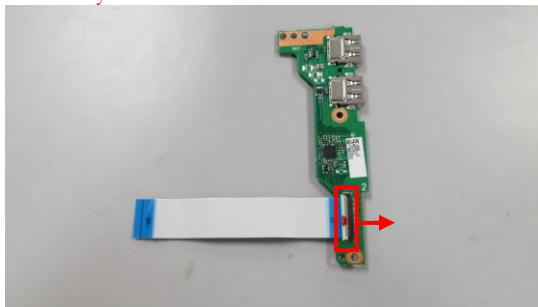




SCREW M2.5*4 (K) W-NI #1 NY

3. Disconnect the IO FFC from the IO Board.

Assembly notice: 1) Insert FFC to the bottom until just accord with the line when lock the latch.
2) Please check whether the appearance of FFC/FPC is intact (not broken) and press the cable carefully before assembly.



Parts:

- Total screw * 1
- X510UQ IO_BD.* 1
- X510UA IO FFC 32P 0.5P L91.5 * 1

(Actual part name depends on different SKU.)

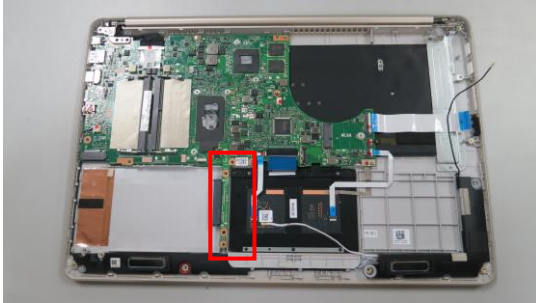
[BACK](#)

HDD Board

The illustrations below show how to disassemble and remove the HDD Board.

1. Remove 1 screw from hdd board and take the it away.

Assembly Notice: Screw tightening torque: $2.0 \pm 0.25 \text{kgf-cm}$



SCREW M2*3L D4.5 (K)
W-NI NY

Parts:

- Total screw * 1
- X510UQ HDD_BD. * 1

(Actual part name depends on different SKU.)

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Motherboard Module

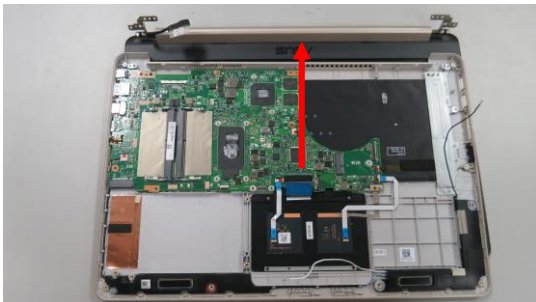
The illustrations below show how to disassemble and remove the Motherboard Module.

1. Disconnect LVDS cable from MB.



2. Remove 1 screw from hinge and take LCD away.

Assembly Notice: Screw tightening torque: $3.0 \pm 0.25 \text{kgf-cm}$





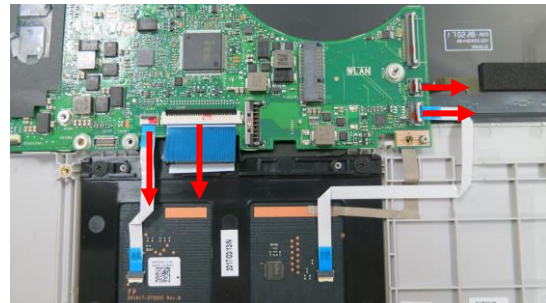
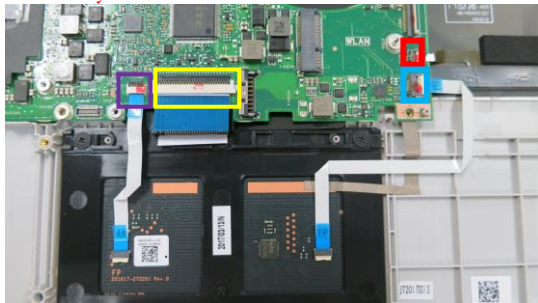
SCREW M2.5*4 (K) W-NI #1 NY

3. Disconnect Speaker cable.



4. Disconnect **KB FPC** and **KB LED FPC** and **TP FFC** and **FP FFC**.

Assembly notice: 1) Insert FFC to the bottom until just accord with the line when lock the latch.
2) Please check whether the appearance of FFC/FPC is intact (not broken) and press the cable carefully before assembly.



5. Remove 2 screws on the MB.

Assembly Notice: follow the reverse numbers to lock screws.

Screw tightening torque: $2.0 \pm 0.25 \text{kgf-cm}$



SCREW M2*3L D4.5 (K) W-NI NY

Parts:

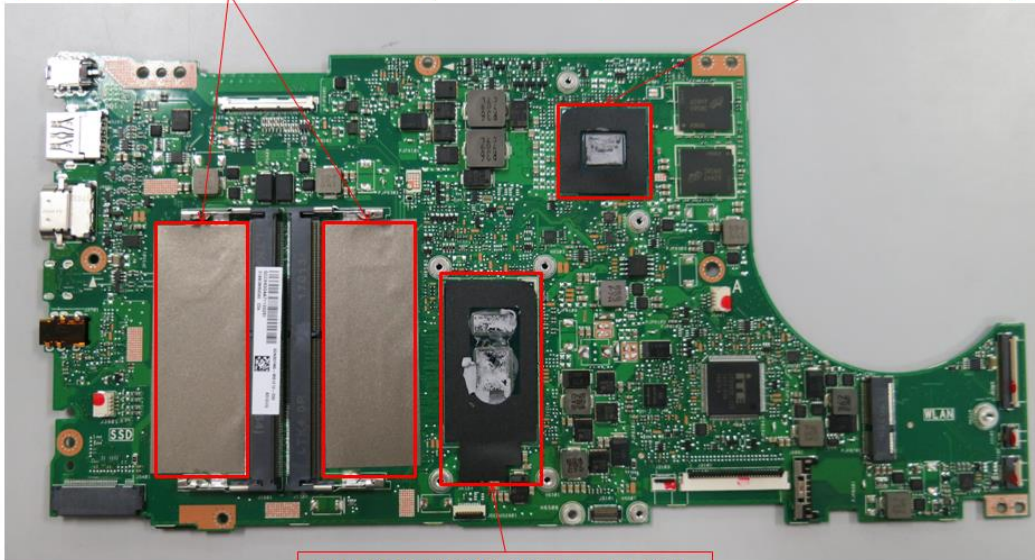
- Total screw * 3
- X510UQ MB._0G/I7-7500U/AS * 1

(Actual part name depends on different SKU.)

Notice: These two pictures for your reference for mylar/gasket/sponge etc.. of MB.

13NB0FQ0T05011 X510UA MB DDR
ABSORBER // TENYI

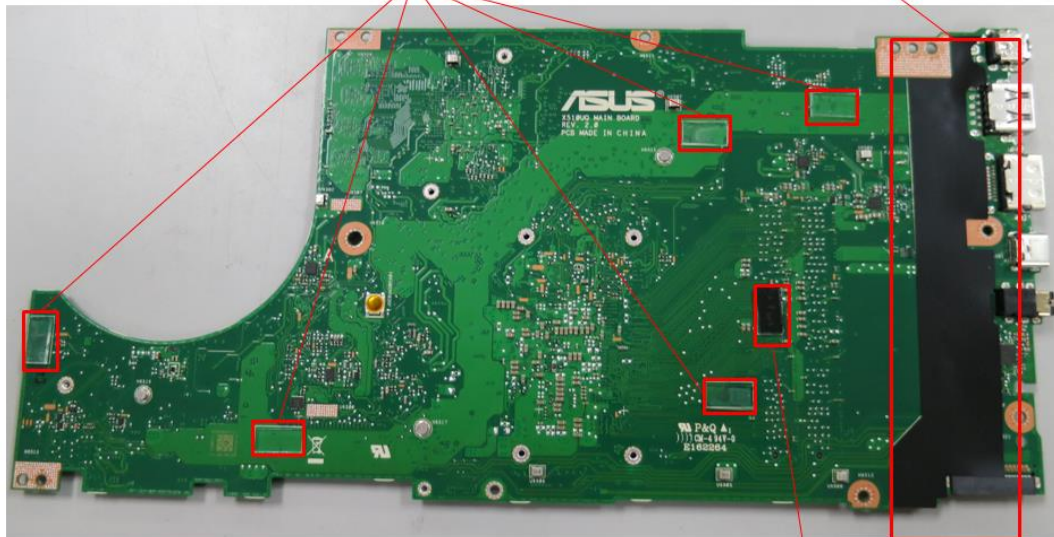
13NB0FM0L01021 X510UQ-1A GPU
MYLAR // TECH SUN



13NB0FQ1L11021 X510UA-1A CPU
MYLAR // TECH SUN

13NB0FQ0L07011 X510UA-1A MB
MYLAR //TENYI

13NB0FQ0L07011 X510UA-1A
MB MYLAR //TENYI

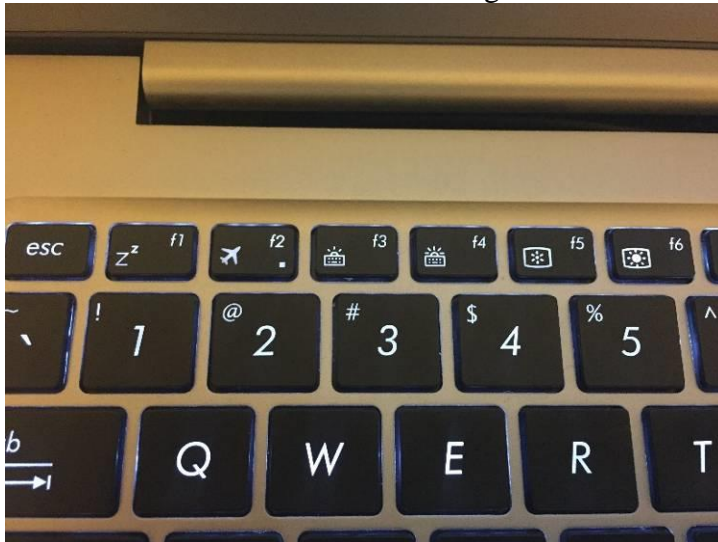


13NB0FQ0L08011 X510UA MB
SUPPORT PC MYLAR16//TENYI

Notice: If the machine is with backlight K/B, after change the mainboard, please pay attention for below instructions.

1. How to judge with backlight K/B?

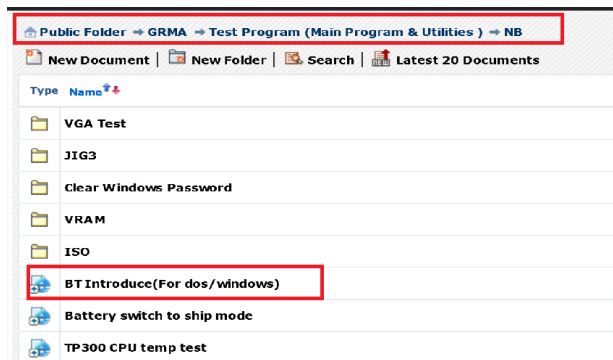
Please check KB whether with backlight if F3/F4 can adjust brightness.



2. How to enable backlight?

Please refer to instructions from SIP to enable K/B backlight. SIP path is as below.

http://sip.asus.com/document/DisplayDocument.aspx?folder_type=PUB&doc_id=97003

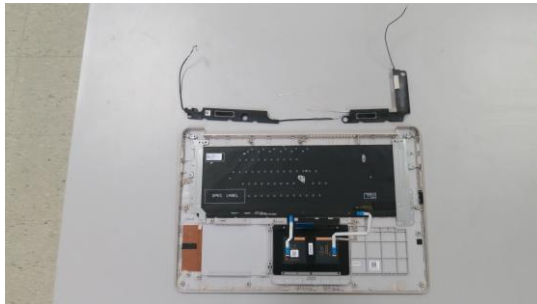


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Speaker Module

The illustrations below show how to disassemble and remove Speaker Module.

Take the speaker away.



Parts:

- SPEAKER GL553VW *1
- X510UA_ASAP_SPK_WIFI_ANTENNA

(Actual part name depends on different SKU.)

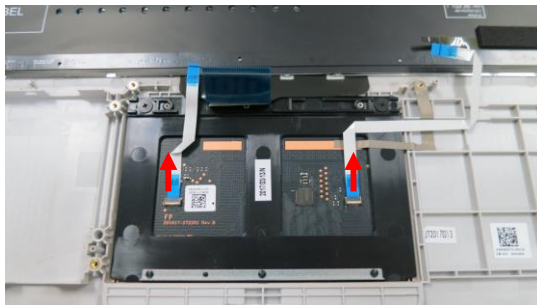
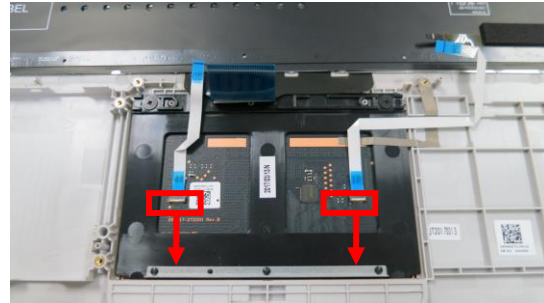
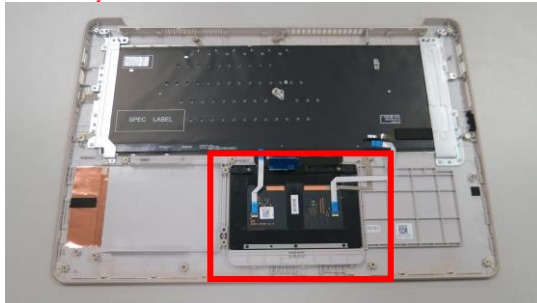
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Touchpad Module

The illustrations below show how to disassemble and remove the touchpad Module.

1. Disconnect the TP FFC and FP FFC on the Touchpad.

Assembly notice: 1) Insert FFC to the bottom until just accord with the line when lock the latch.
2) Please check whether the appearance of FFC/FPC is intact (not broken) and press the cable carefully before assembly.



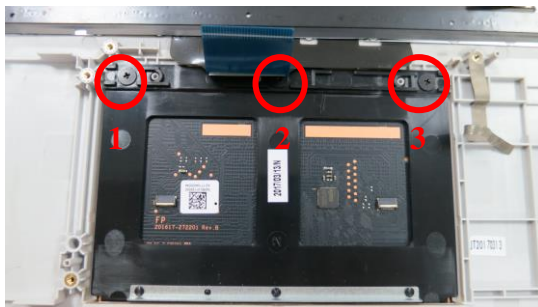
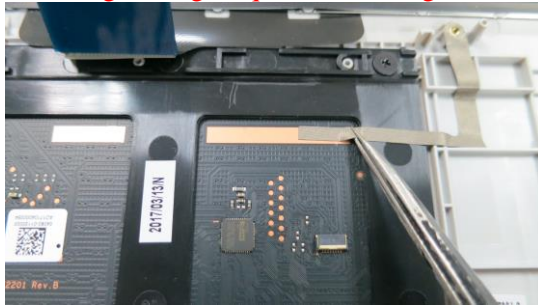
The following is an example picture for broken FFC:



2. Tear up the mylar and remove 3 screws from Touchpad.

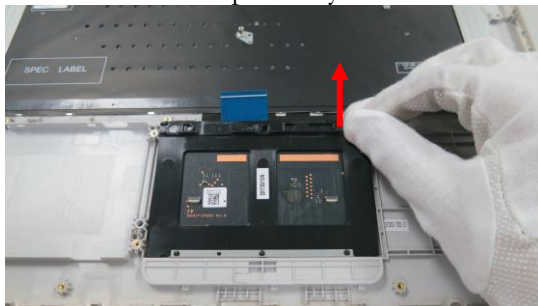
Assembly notice: follow the reverse numbers to lock screws.

Screw tightening torque: $2.5 \pm 0.25 \text{kgf-cm}$



SCREW M2*2.5L K B-NI
#1 NY

3. Take the touchpad away.



4. Remove touchpad mylar from touchpad.

Assembly Notice: Please assemble touchpad to top case and then paste the touchpad mylar.



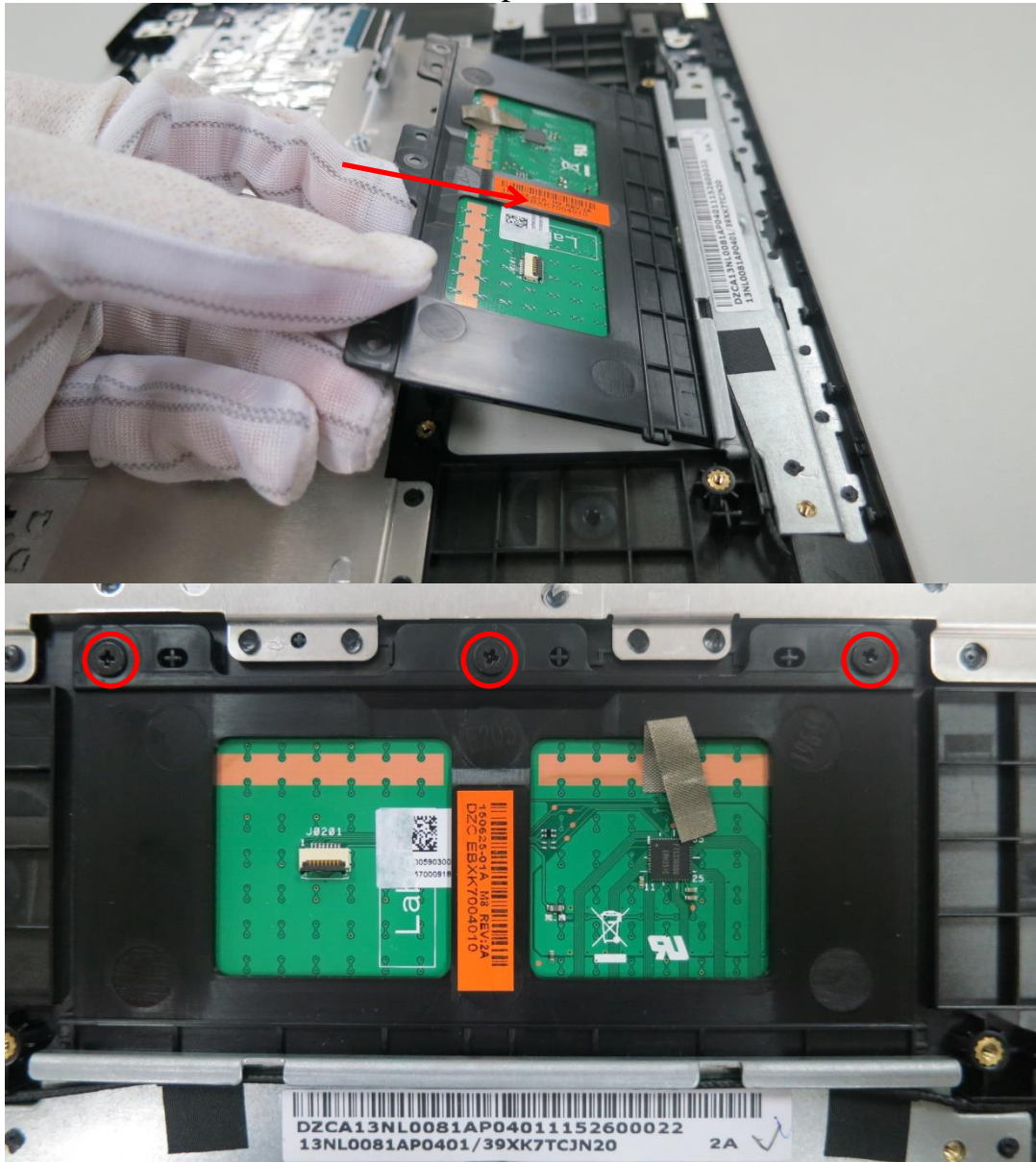
Parts:

- Total screw * 3
- X510UQ-1A TOUCHPAD MODULLE * 1
- X510UA TP FFC 8P 0.5MM L126.5 * 1
- X510UA FP FFC 8P 0.5P L62* 1
- X510UA-1A FP MYLAR* 1

(Actual part name depends on different SKU.)

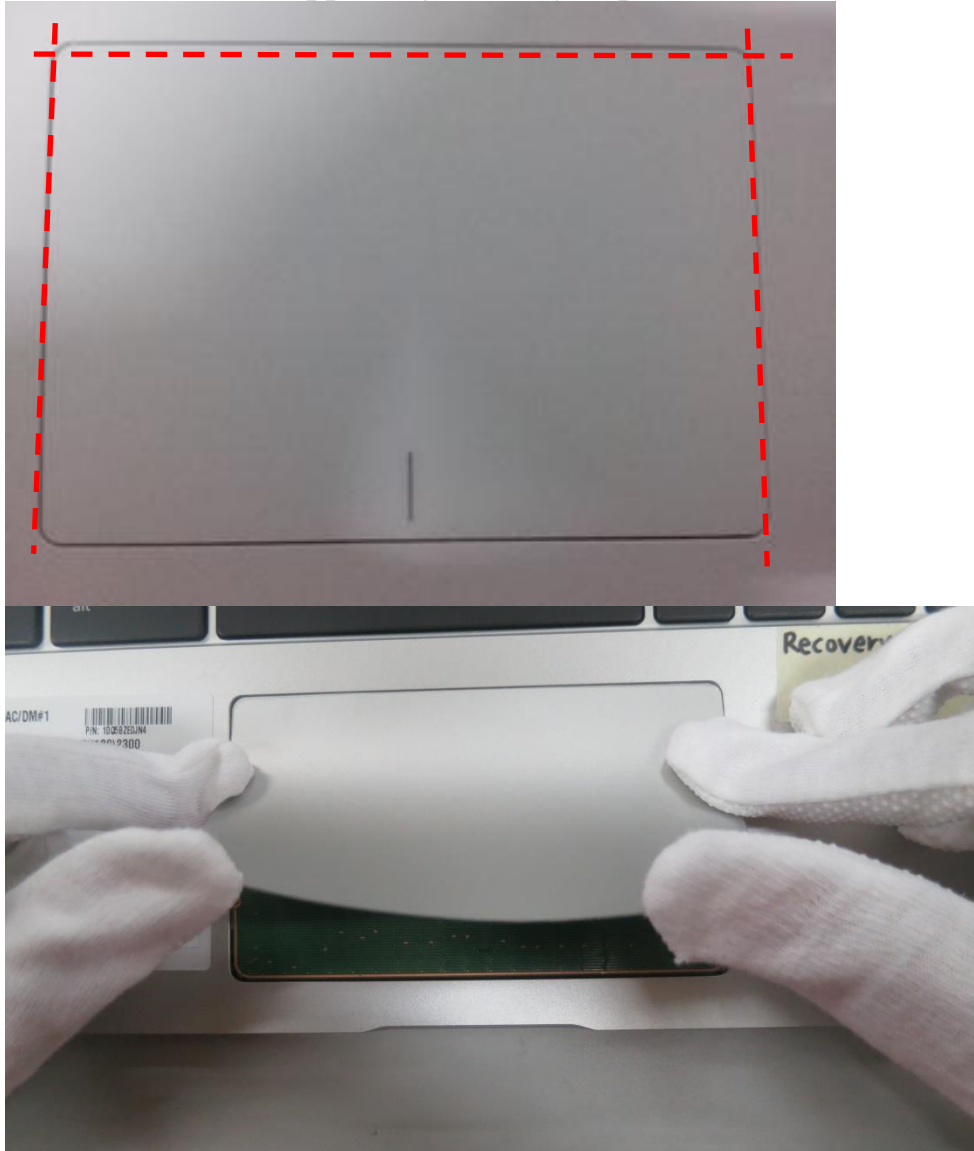
Touchpad Mylar assembly SOP

1. Install the TP module on the top case and lock the screws.



2. Paste 1 TP Mylar on the TP PCB.

Notice: Red line marked place is the anchor point. Please align the upper left corner and upper edge when you paste



3. Use the roller or hands press TP Mylar.



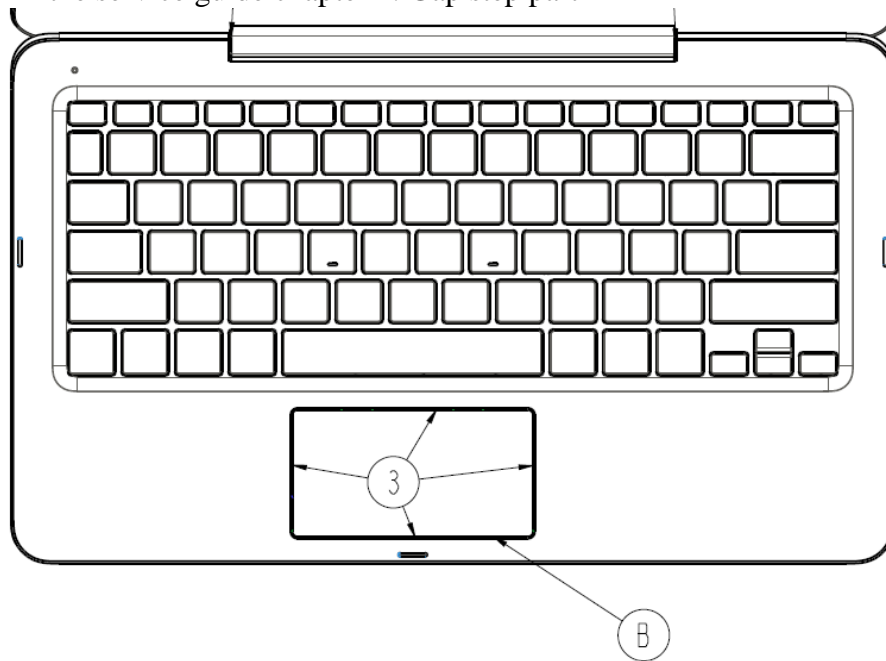
4. Check the gap value between TP Mylar and top case in the range.



Notice: The machine assembly technique is similar, but the specific values (such as: gap value) of each model is different, please refer to the service guide: gap step.

How to get the gap value (Sample: T302CHI)

1. In the service guide chapter 2. Gap step part



T302CHI-GAP			
ITEM	DESCRIPTION	DESIGN VALUE	ACCEPTABLE VALUE
1	THE GAP BETWEEN "HINGE" AND "BOTTOM CASE" (HINGE SIDE)	0.6	0.25~0.9
2	THE GAP BETWEEN "LCD COVER" AND "LCD PANEL" (AROUND)	0.1	0~0.5
3	THE GAP BETWEEN "TOP CASE" AND "TOUCH PAD" (AROUND)	0.2	0.1~0.4
4	THE GAP BETWEEN "TOP CASE" AND "BOTTOM CASE"(AROUND)	0.05	0~0.4
5	THE GAP BETWEEN "LCD MODULE" AND "SYSTEM" (FRONT SIDE)	1	0.3~0.9
6	THE GAP BETWEEN "LCD MODULE" AND "SYSTEM" (BACK LEFT SIDE)	0.6	0.5~1.1
7	THE GAP BETWEEN "LCD MODULE" AND "SYSTEM" (BACK RIGHT SIDE)	0.6	0.5~1.1

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LCD Module

The illustrations below show how to remove and disassemble the LCD Module of the notebook.

1. Pull the hinge cap to the right direction and remove it.



2. Remove 6 screws and take hinge cover away.

Assembly Notice: follow the reverse numbers to lock screws.

Screw tightening torque: 3.0 ± 0.2 kgf-cm

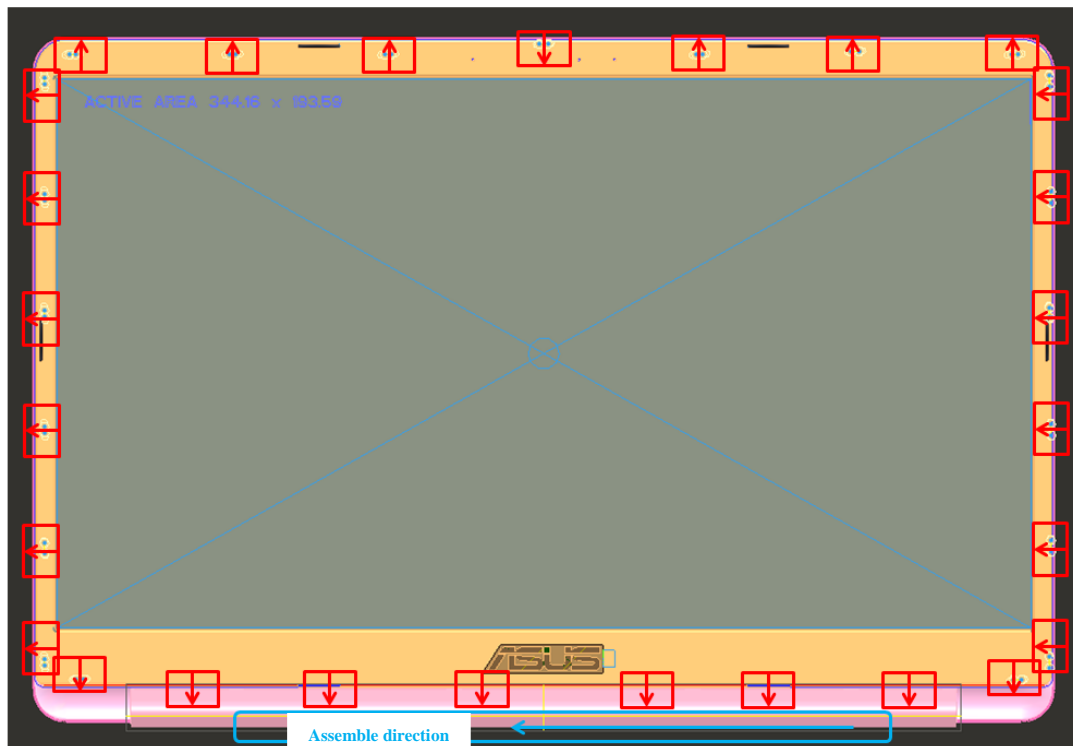


SCREW M2.5*4 (K) W-NI
#1 NY

- Use disassembly tool to pry up the edge of the bezel. Then take LCD bezel away.



Snaps as follows:



- Remove 4 screws from LCD Cover and take panel away.

Assembly Notice: follow the reverse numbers to lock screws.

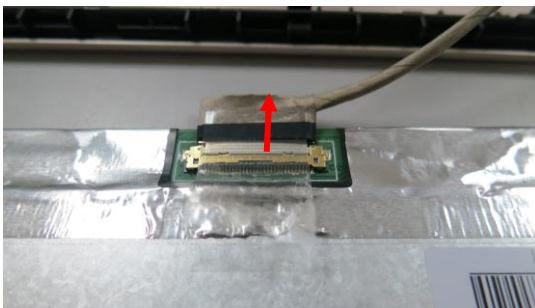
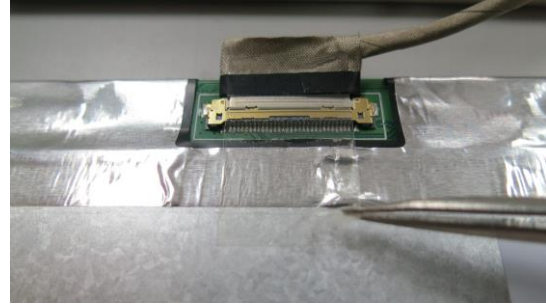
Screw tightening torque: 2.0 ± 0.2 kgf-cm





SCREW M2*2L (K)W-NI
NY(φ5.0)

5. Tear up the Mylar and disconnect the LVDS cable.

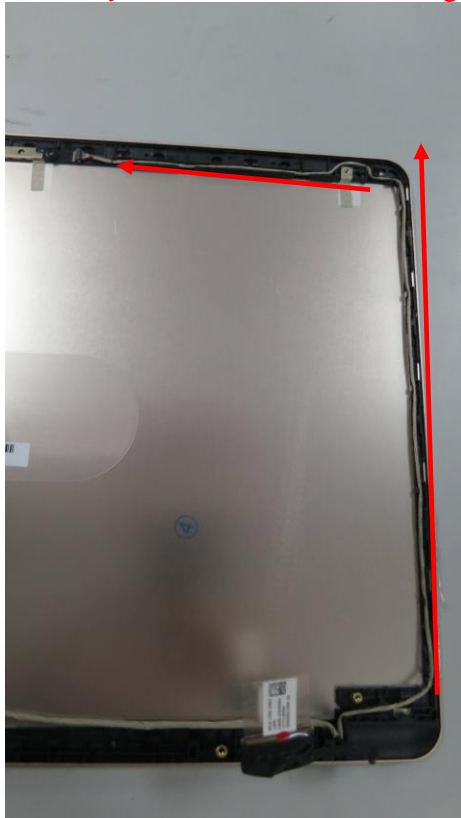


6. Disconnect camera cable and use a plastic plade to pry the camera.





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



Parts

- Total screw *10
- X510UA-1A LCD BEZEL ASSY *1
- X510UA-1A LCD COVER ASSY *1
- LCD 15.6" FHD WV US EDP *1
- X510UA CAMERA MODULE VGA *1
- X510UA-1A HINGE L *1
- X510UA-1A HINGE R *1
- X510UA-1A LVDS CABLE EDP *1

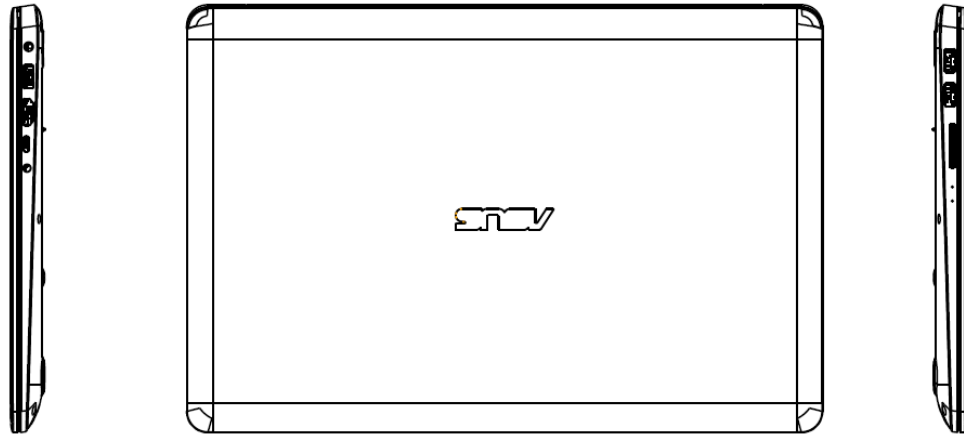
(Actual part name depends on different SKU.)

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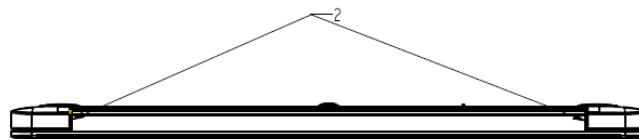
Screw torque table

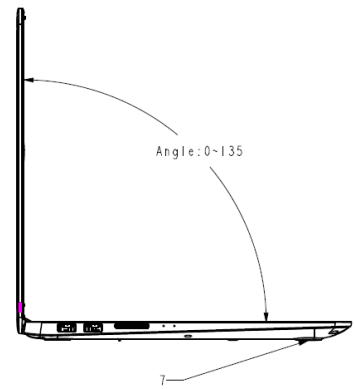
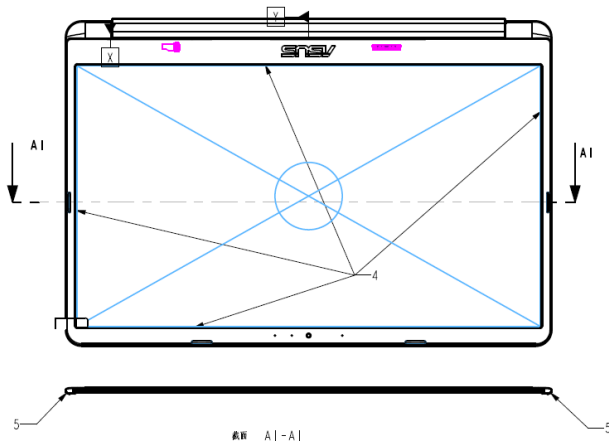
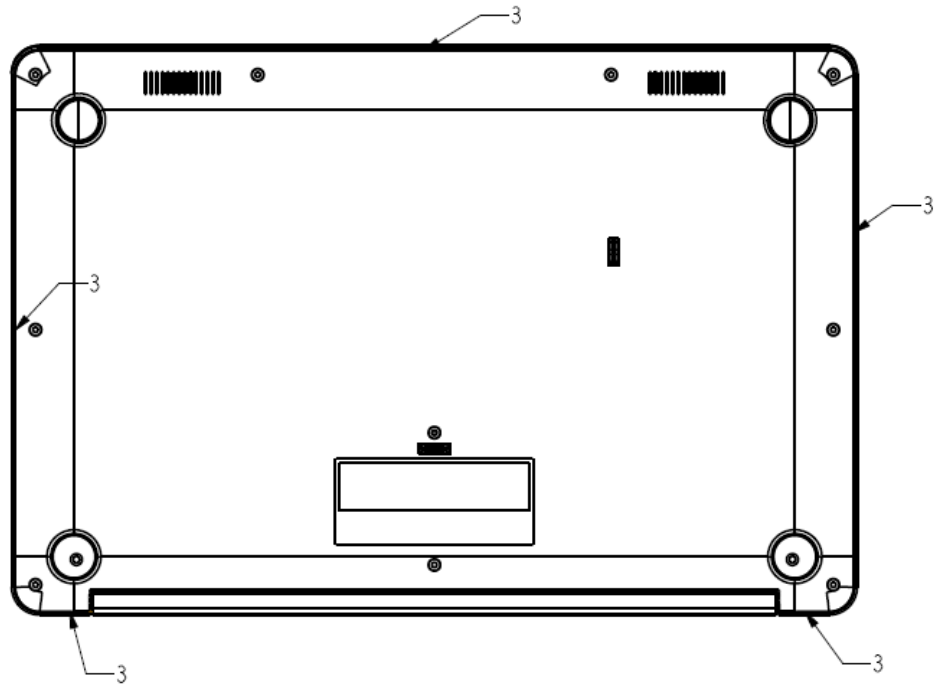
PART NAME	Quantity	Torque	
M2*2L (K)W-NI NY(ϕ 5.0)	4	2.0kg_cm	The LCD Panel to NT Lcd cover assy
M2.5*4 (K) W-NI #1 NY	6	3.0kg_cm	The Hinge R/L to NT Lcd cover assy
M2*2L (6.2,0.5) (K) #1	3	2.0kg_cm	The TP holer to Top case assy
M2.5*4 (K) W-NI #1 NY	2	3.0kg_cm	The LCD assy Hinge to System assy
M2*3L D4.5 (K) W-NI NY	2	2.0kg_cm	The MB to Top case assy
M2*3L D4.5 (K) W-NI NY	1	2.0kg_cm	The HDD BKT To MB to Top case assy
M2*3L D4.5 (K) W-NI NY	1	2.0kg_cm	The HDD Board To MB
M2*6L (K) W-NI,NY	1	2.0kg_cm	The HDD Board To Top case assy
M2*6L (K) W-NI,NY	2	2.0kg_cm	The HDD BKT To HDD Board toTop case assy
M2*3L D4.5 (K) W-NI NY	1	2.0kg_cm	The HDD BKT To MB toTop case assy
M2*6L (K) W-NI,NY	1	2.0kg_cm	The Battery assy to Top case assy
M2*6L (K) W-NI,NY	1	2.0kg_cm	The Battery assy to IO Board to Top case assy
M2*3L D4.5 (K) W-NI NY	1	2.0kg_cm	The Thermal FAN to Top case assy
M2*1.8L+0.7(5.7,0.8) (K)	1	1.2kg_cm	The SSD card to Top casy asst
M3*3L (K) W-NI,NY	4	2.5kg_cm	The HDD BKT assy to HDD module
M2*3L D4.5 (K) W-NI NY	6	2.0kg_cm	The Thermal sink to MB
M2*3L D4.5 (K) W-NI NY	1	2.0kg_cm	The WLAN card to MB
M2*6L (K) W-NI,NY	7	2.0kg_cm	The Bottom case assy to System assy
M2*3L D4.5 (K) W-NI NY	2	2.0kg_cm	
M2.5*8L (K) B-ZN,NY	2	3.0kg_cm	
M2*8.5L(4.5,0.75) (K)#1	1	2.0kg_cm	

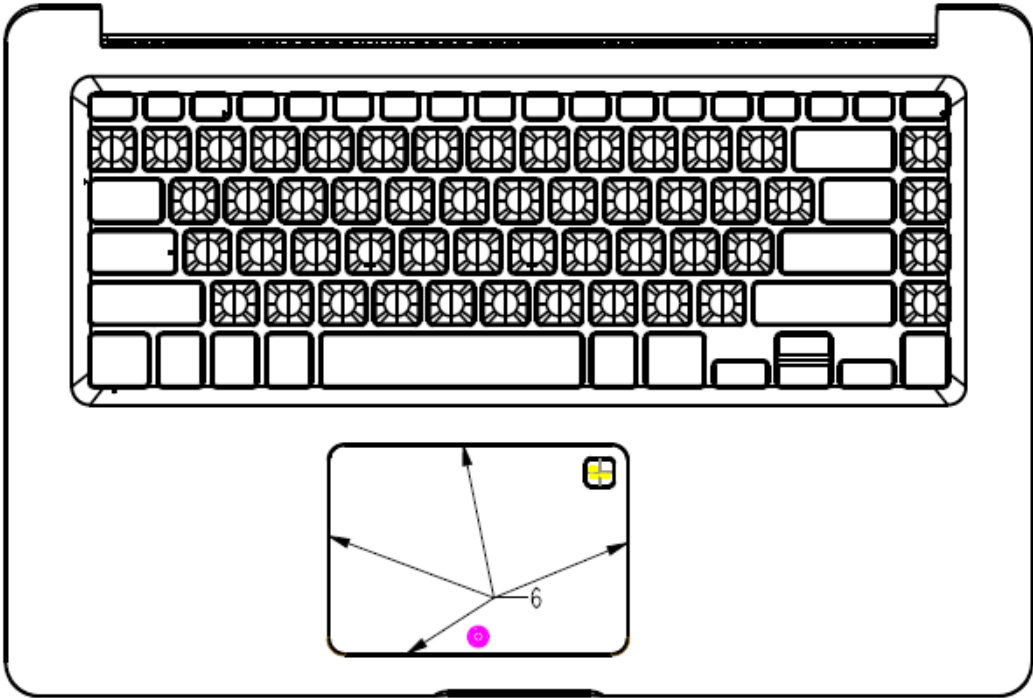
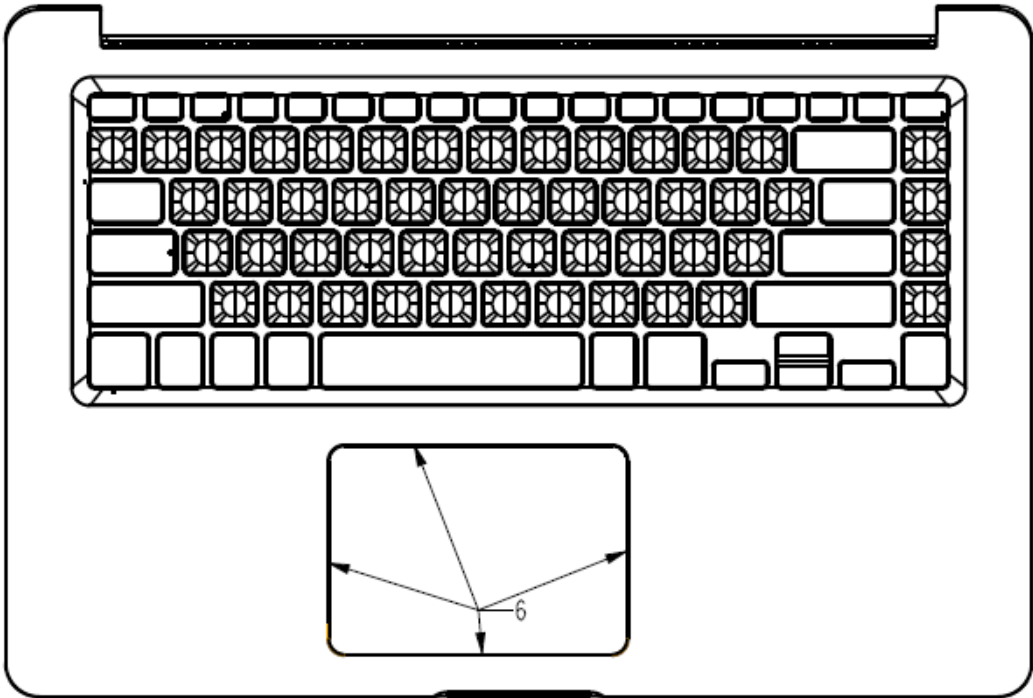
Gap Step



比例 0,500







No.	Part 1	Part 2	Gap	Step
1	Lcd module	System module	Max 0.8	Max 0.5
2	Hinge Cap	Top Case	0.9(+0.3, -0.3)	Max 0.3
3	Bottom Case	Top Case	Max 0.3	Max 0.3
4	Lcd Bezel	Lcd Panel	Max 0.8	None
5	Lcd Cover	Lcd Bezel	Max 0.3	Max 1.3
6	Touch Pad	Top Case	0.2(-0.15, + 0.2)	0.2(+0.2, -0.2)
7	Rubber Foot	DESKTOP	Max 0.3	None

MATERIAL(SPEC)						QUANTITY/SET 1 PC.	ASUSTek COMPUTER INC.					
FINISH						SCALE 1/1				DESCRIPTION		
SELECT V						UNIT	X510UR Gap, Step Spec					
DIM	TOL	A	B	C	D	EXTRA				MODEL NO.		
										DRAWING NO.		
-8	±0.03	±0.05	±0.10	±0.20						PART NO.		
8-25	±0.05	±0.08	±0.20	±0.30						DESIGNED		
25-80	±0.08	±0.12	±0.30	±0.40						CHECKED		
80-250	±0.12	±0.20	±0.40	±0.50			APPROVED					
250-	±0.20	±0.30	±0.50	±0.60			Jack Sun 2017/3/20					

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