SONY
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Working Instructions
- mechanical -

Sony Xperia Ion

LT28i,LT28h

LT28at

1261-4718 Rev 6

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For general information about mechanical repair related issues, refer to 1220-1333: Generic Repair Manual - mechanical

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1.1 LT28at

Exterior Views

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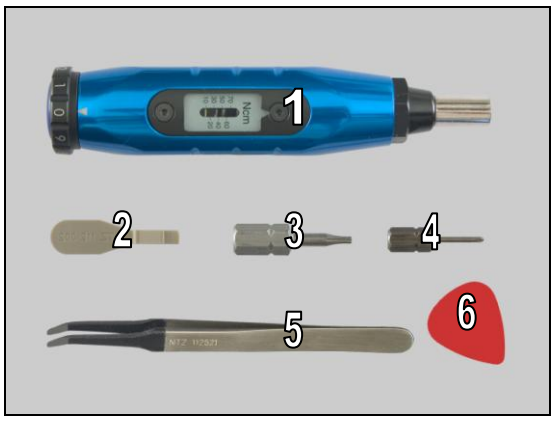
2 Tools

SPECIAL TOOLS

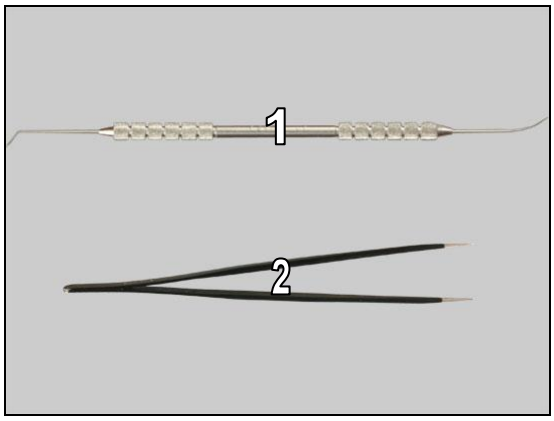
1. Torque Screwdriver
2. Front Opening Tool
3. Bits (T5)
4. Bits (JCIS No 0)
5. Flex Film Assembly Tool
6. Guitar Pick



For part no's on the tools above, refer to the 'Tools Catalogue/Matrix'!

STANDARD TOOLS

1. Dentist Hook
2. Tweezers



3 Disassembly

The disassembly is done in the following order:

1. Cover Rear Top (a) & SIM Tray (b)
2. Cover Rear Bottom (a) & Label Core Unit (b)
3. Cover Rear Sub Assy
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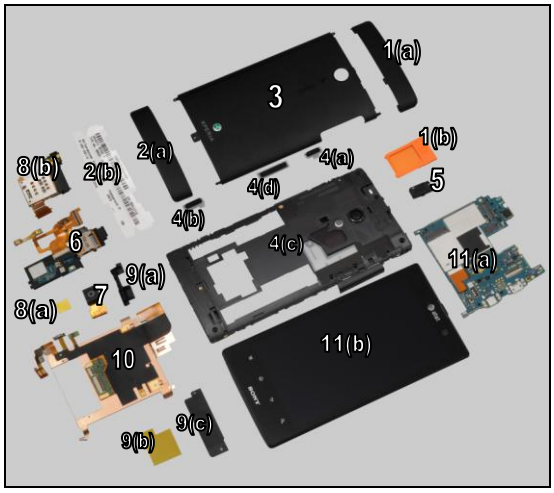
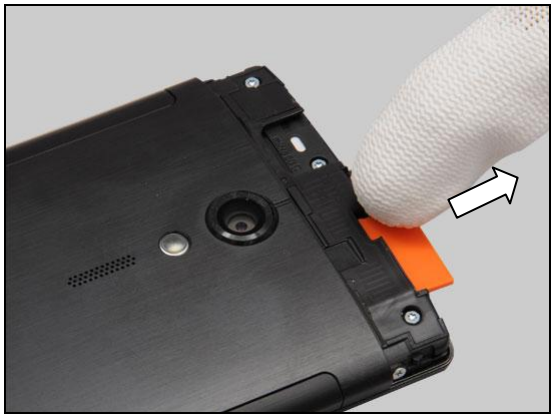
5. Audio Jack
6. Carrier NFC Assy
7. Camera
8. Sheet RCV Flex ZIF (a) & FPC Top Flex Assy (b)
9. Carrier Holder Bottom (a) & Sheet Touch ZIF (b) & Sheet LCM FPC (c)
10. FPC Bottom Flex Assy
11. Main PBA (a) & Cover Front Assy (b)



3.1 Cover Rear Top & SIM Tray

Push upwards to unsnap the hooks of the Cover Rear Top gently and remove it.

Pull out the SIM Tray with finger.



3.2 Cover Rear Bottom & Label Core Unit

Insert a Guitar Pick as shown in picture and gently slide back and forth to release the hooks of the Cover Rear Bottom.

Disassembly

Remove the Cover Rear Bottom.

Carefully peel off the Label Core Unit by using a Flex Film Assembly Tool.

Do not damage the antenna under the Label Core Unit!

Scrap! Not to be reused!

3.3 Cover Rear Sub Assy

Remove the two screws M1.4X2.0 by using a screwdriver with Bits (JCIS No 0).

Scrap! Not to be reused!

Remove the two screws M1.4X2.0 on the opposite side by using a screwdriver with Bits (JCIS No 0).

Scrap! Not to be reused!

Disassembly

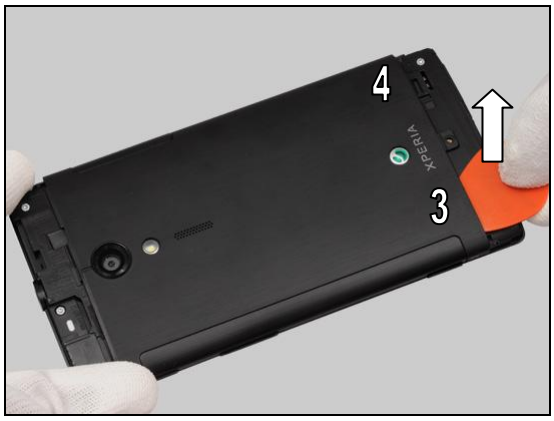
Remove the screw M1.4X2.0 by using a screwdriver with Bits (JCIS No 0).

Scrap! Not to be reused!

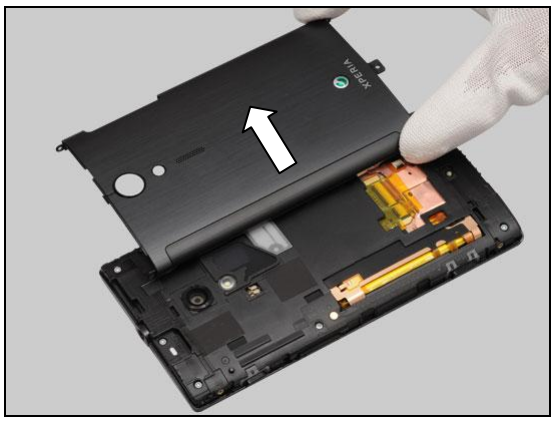
There are four snap hooks securing the Cover Rear Sub Assy.

Insert a Guitar Pick and gently pull upwards to release the two hooks as shown in picture.

Do the same on the opposite side to release the two hooks as shown in picture.

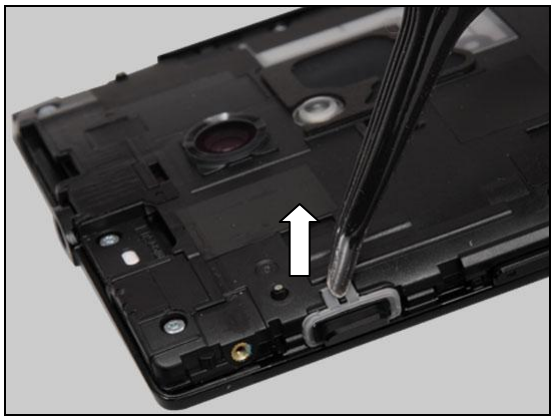


Remove the Cover Rear Sub Assy.

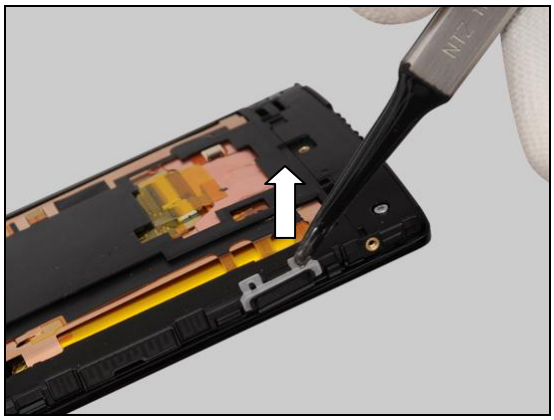


3.4 Key On/Off &Key Camera &Frame Rear Assy &Key Volume

Remove the Key On/Off.

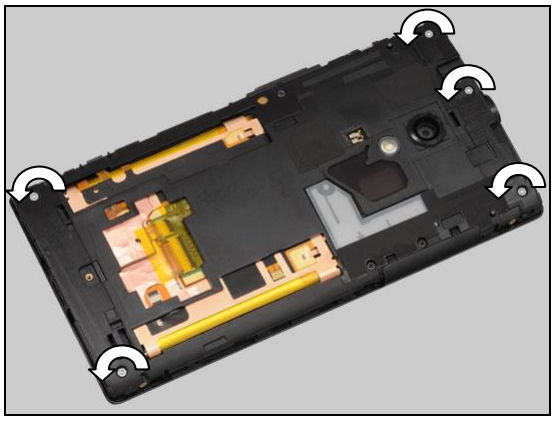


Remove the Key camera.



Remove the five screws Other Len:4.0 Diam:1.4 by using a screwdriver with Bits (T5).

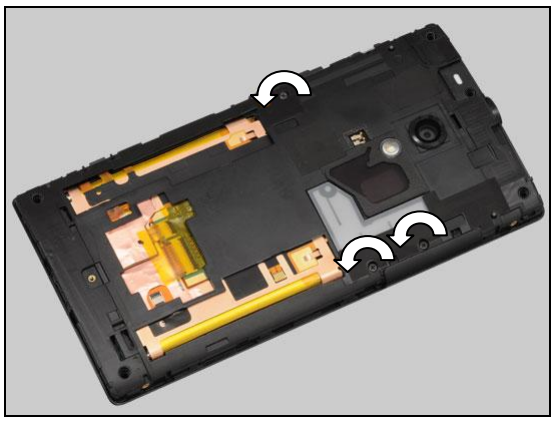
Scrap! Not to be reused!



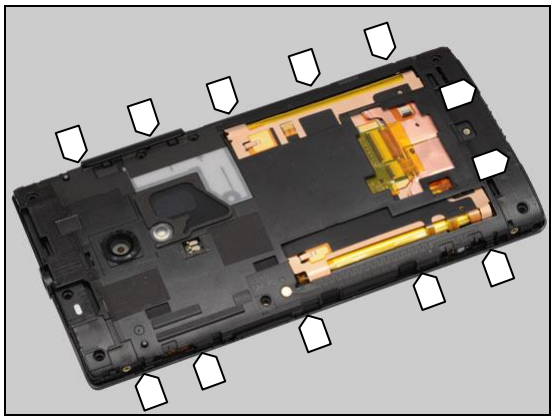
Disassembly

Remove the screws Other Len:3.0 Diam:1.4 by using a screwdriver with Bits (JCIS No 0).

Scrap! Not to be reused!

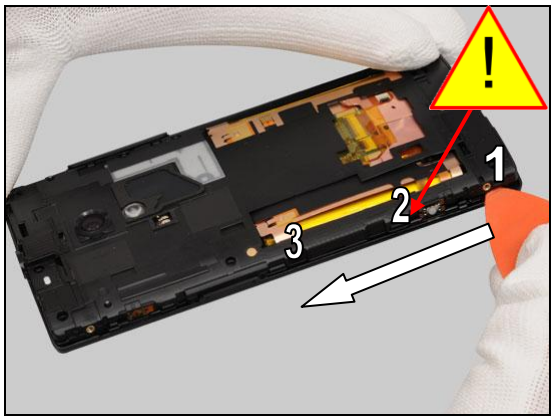


There are twelve snap hooks securing the Frame Rear Assy.

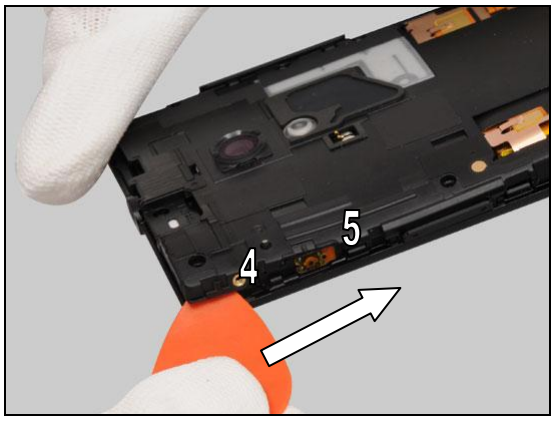


Insert a Guitar Pick as shown in picture and carefully slide along to release the three hooks of this side as indicated by the arrow.

Be careful! Do not damage the Frame Rear Assy!

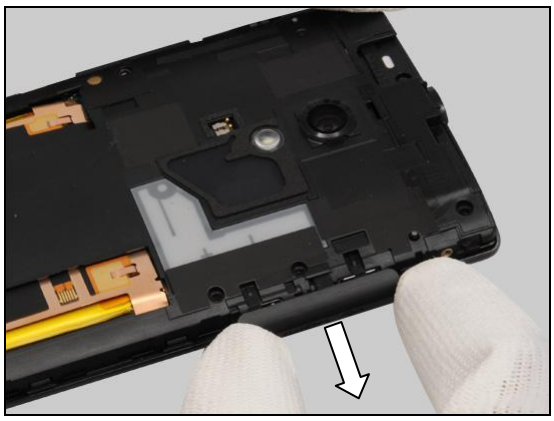


Do the same to release the two hooks as indicated by the arrow.



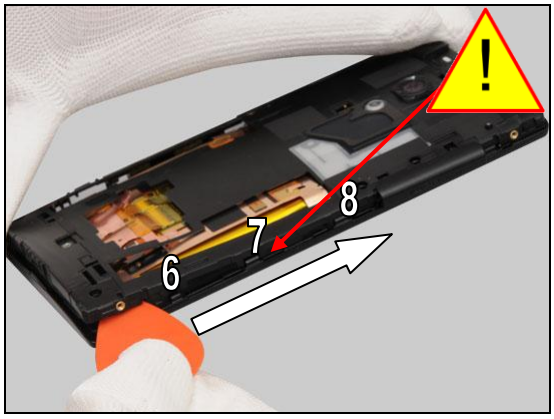
Disassembly

Gently pull to unsnap the Cap USB HDMI as shown in picture.

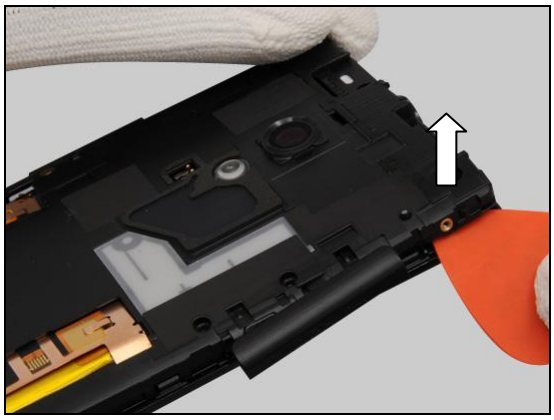


Do the same on the opposite side to release the three hooks as shown.

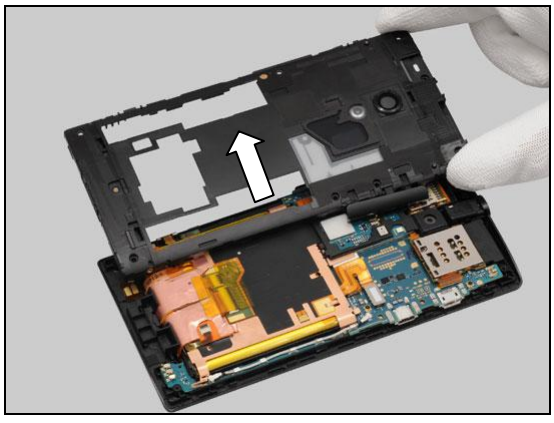
Be careful! Do not damage the Frame Rear Assy!



Insert the Guitar Pick and gently push upwards to release the Frame Rear Assy.

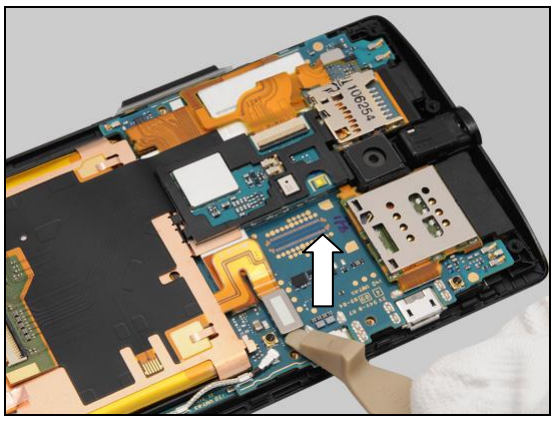


Remove the Frame Rear Assy.

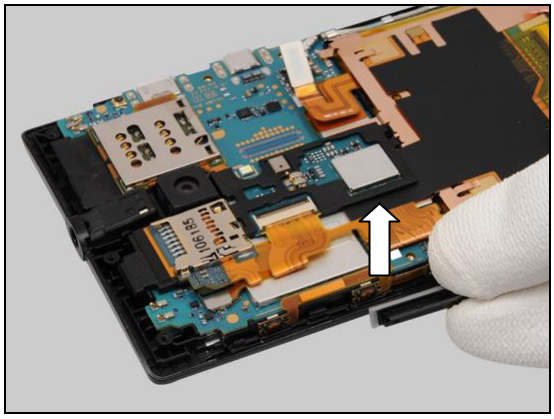


Disassembly

Disconnect the BtB connector of the Battery 1900mAh first!

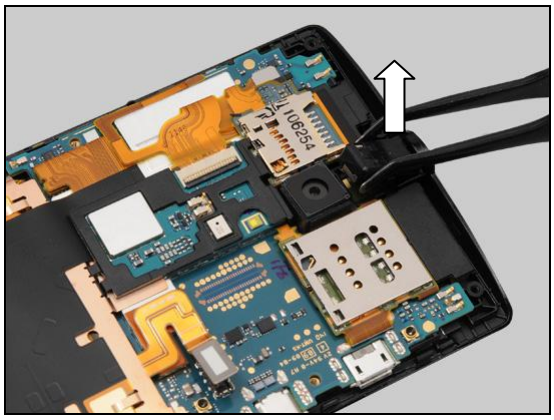


Remove the Key Volume.



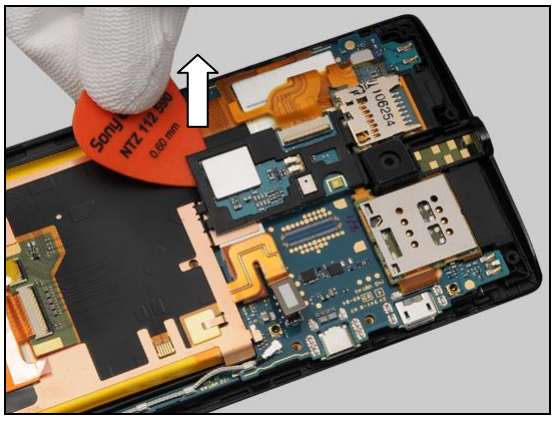
3.5 Audio Jack

Gently remove the Audio Jack by using a Flex Film Assembly Tool.



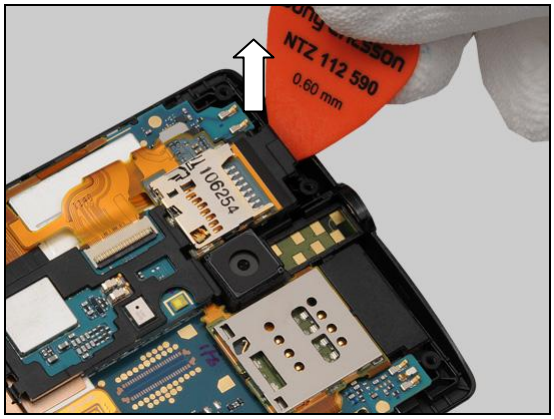
3.6 Carrier NFC Assy

Insert a Guitar Pick and gently pull upwards to release the hooks of the Carrier NFC Assy.

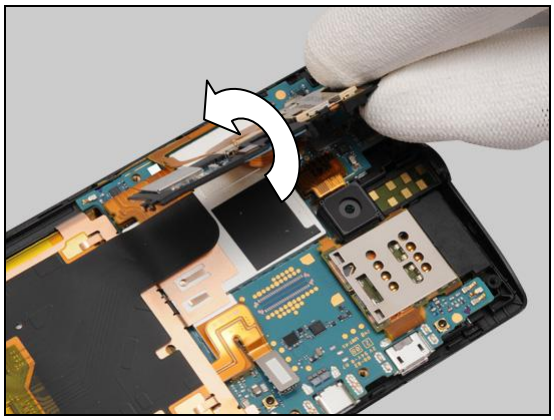


Disassembly

Do the same to release the hook of this side.

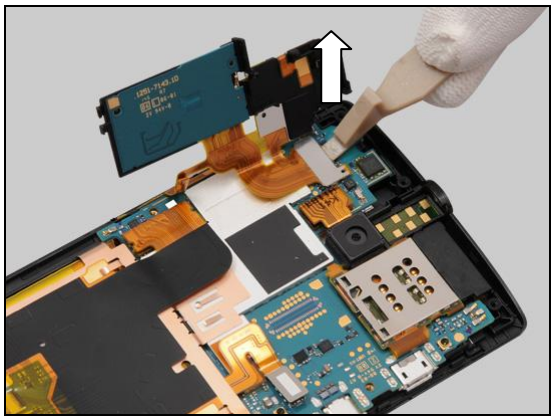


Turn it over.

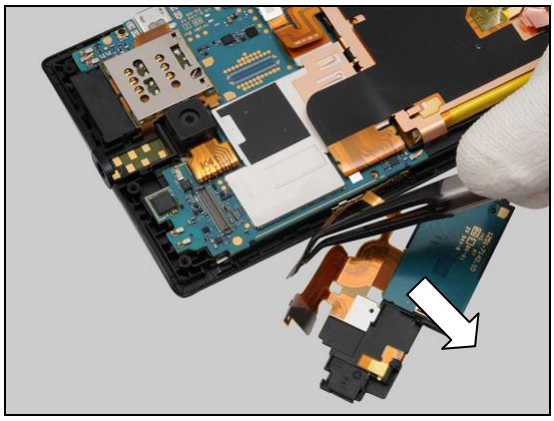


Unsnap the BtB connector.

Do not damage the components on the Main PBA!



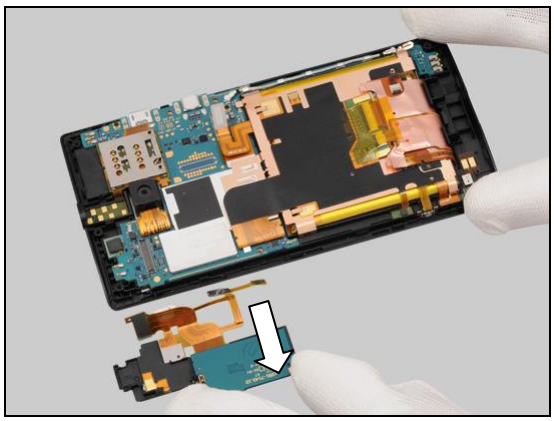
Gently remove the switch keys as shown in picture by using a Flex Film Assembly Tool.



Disassembly

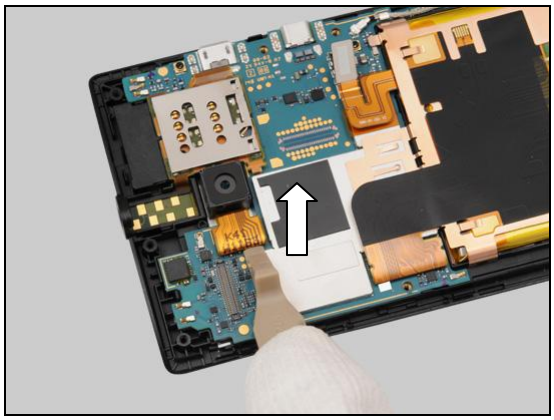
Remove the Carrier NFC Assy.

Scrap the FPC Side Key! Not to be reused!



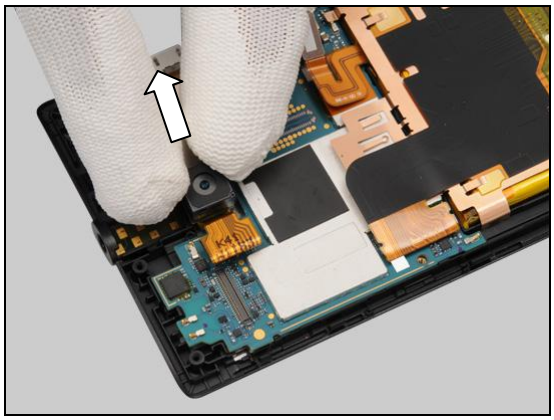
3.7 Camera

Use a Front Opening Tool to disconnect the BtB connector.



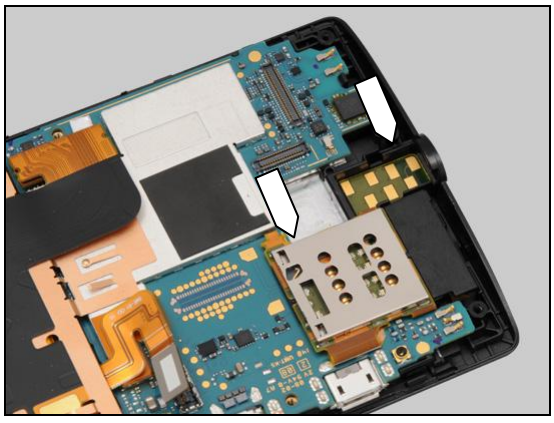
Remove the Camera.

Do not touch the lens!



3.8 Sheet RCV Flex ZIF & FPC Top Flex Assy

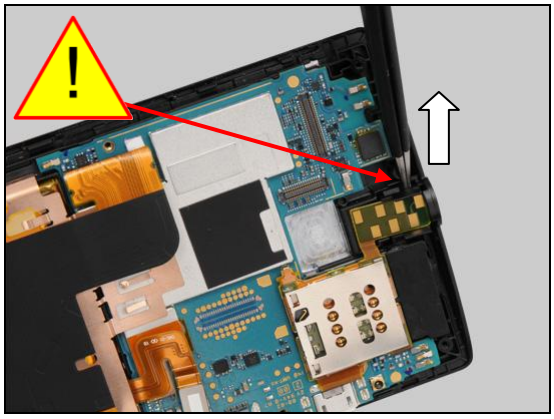
There are two hooks securing the FPC Top Flex Assy.



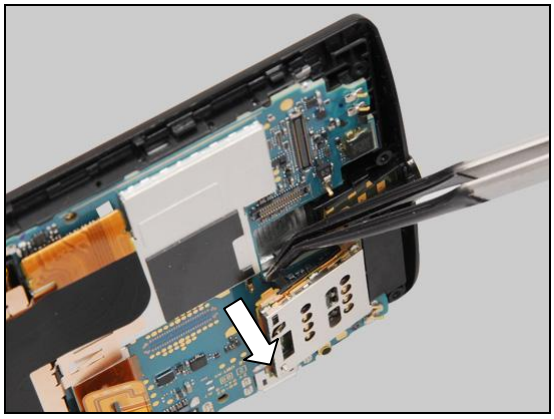
Disassembly

Insert a pair of Tweezers as shown in picture and gently pull upwards to release the FPC from the Audio Jack socket.

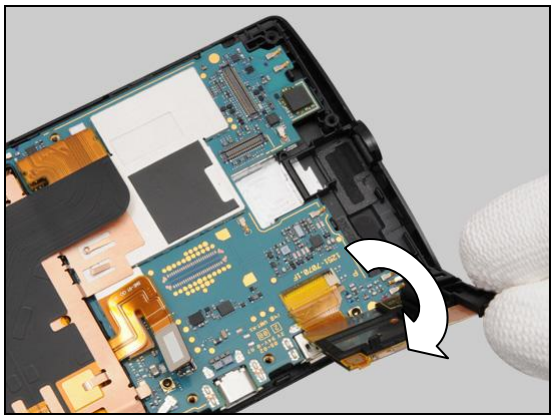
Be careful! Do not damage the Cover Front Assy!



Insert a Flex Film Assembly Tool from this side to release the hook as shown.

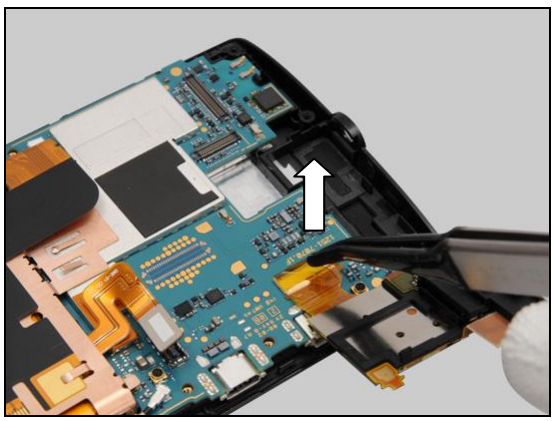


Turn the FPC Top Flex Assy over.

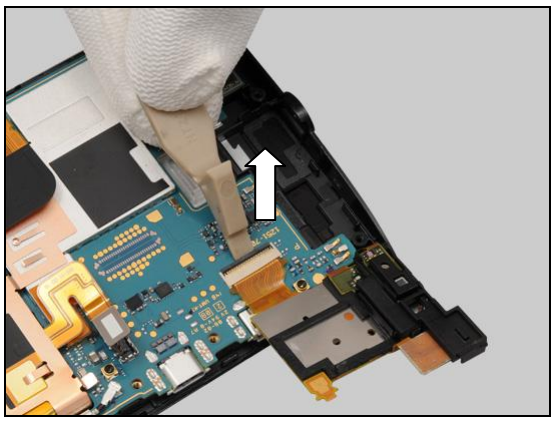


Gently peel off the Sheet RCV Flex ZIF.

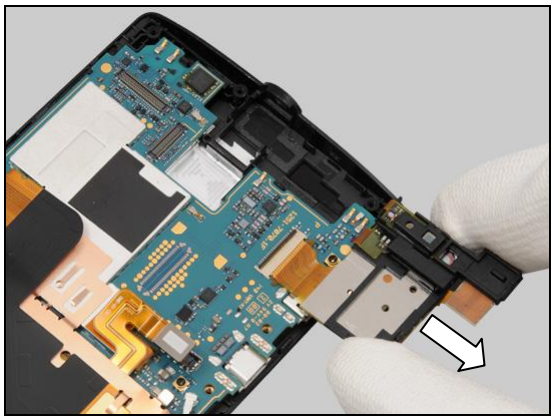
Scrap! Not to be reused!



Unlock the ZIF connector.

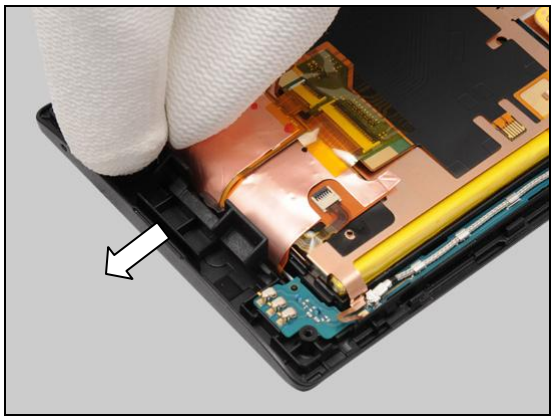


Remove the FPC Top Flex Assy.

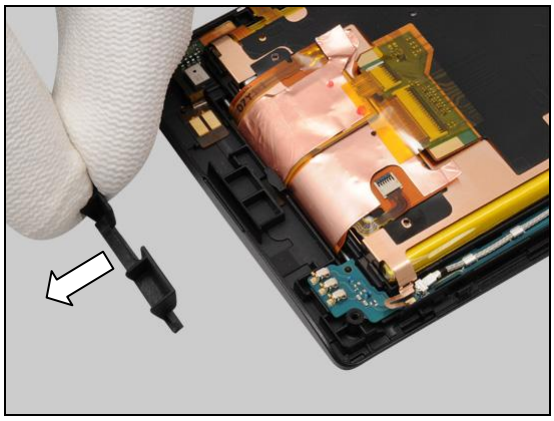


3.9 Carrier Holder Bottom & Sheet Touch ZIF & Sheet LCM FPC

Pull outward to release the Carrier Holder Bottom from the hook of this side as shown.



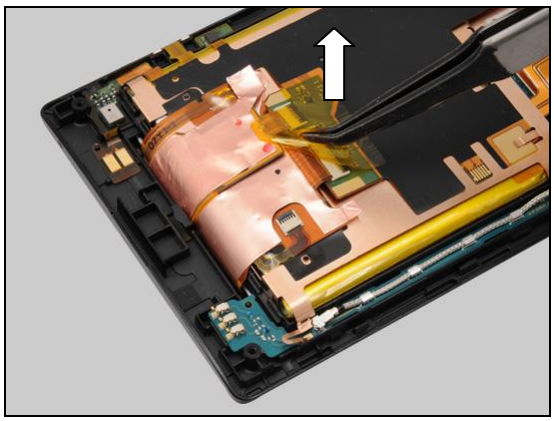
Remove the Carrier Holder Bottom.



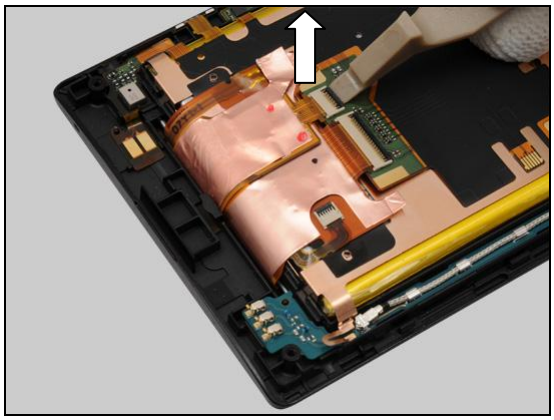
Disassembly

Gently peel off the Sheet Touch ZIF and remove it by using a Flex Film Assembly Tool.

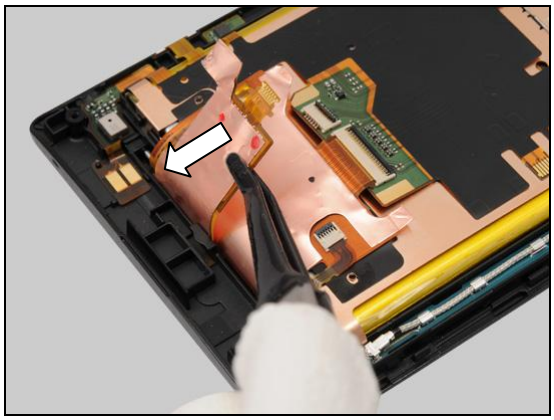
Scrap! Not to be reused!



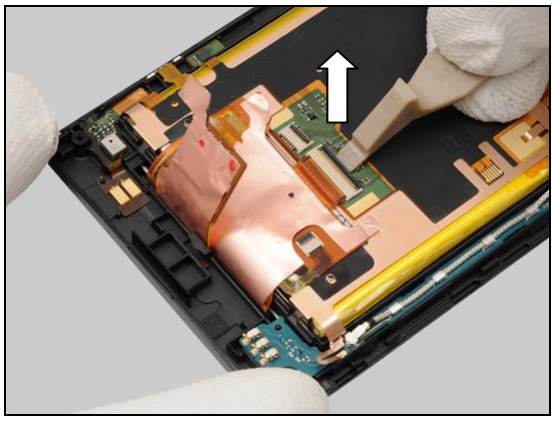
Unlock the ZIF connector by using a Front Opening Tool.



Release the touch screen FPC by using a Flex Film Assembly Tool.

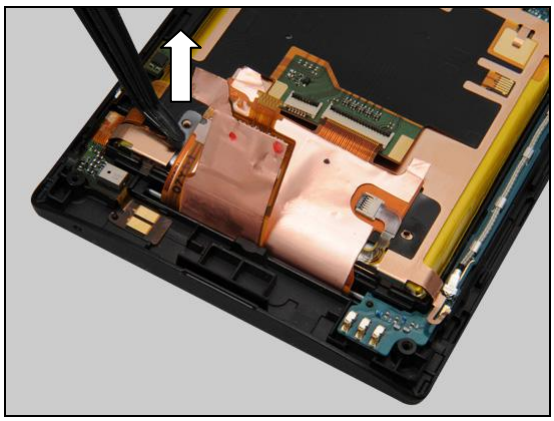


Unlock the ZIF connector as shown.

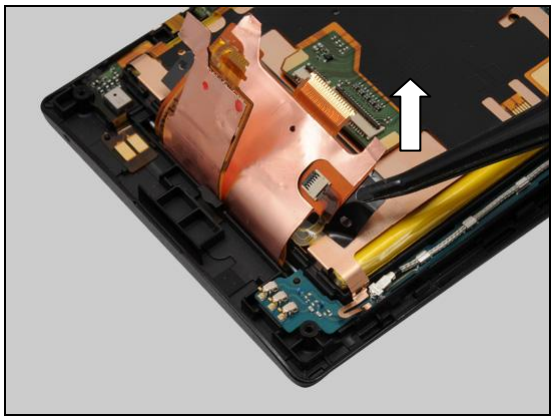


Disassembly

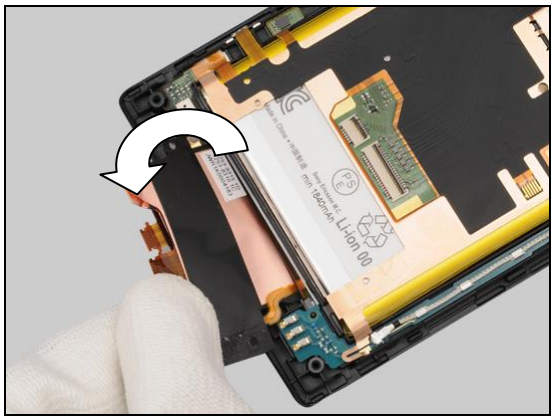
Gently detach this side of the Sheet LCM FPC from the Sheet Metal Battery Plate as shown.



Do the same to the other side.

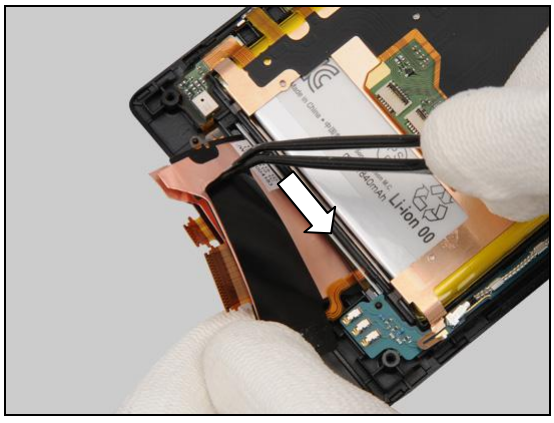


Turn it over.



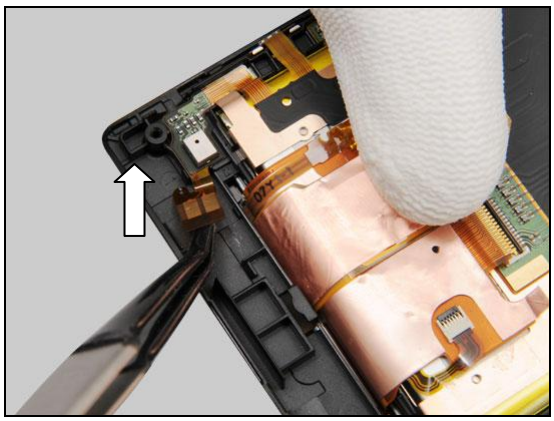
Gently peel off the Sheet LCM FPC by using a Flex Film Assembly Tool.

Scrap! Not to be reused!

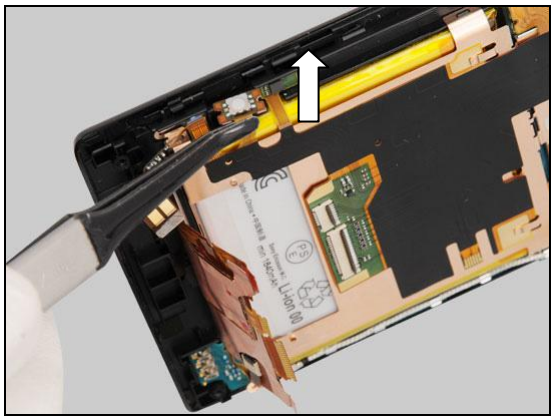


3.10 FPC Bottom Flex Assy

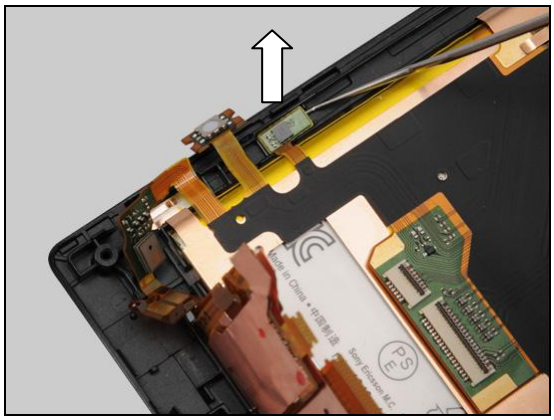
Gently detach the FPC by using a Flex Film Assembly Tool as shown in picture.



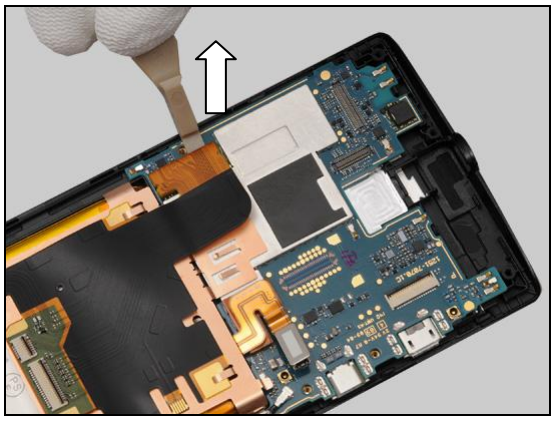
Use a Flex Film Assembly Tool to release the camera switch as shown.



Carefully insert a Dentist Hook as shown in picture to release the FPC from the cavity.

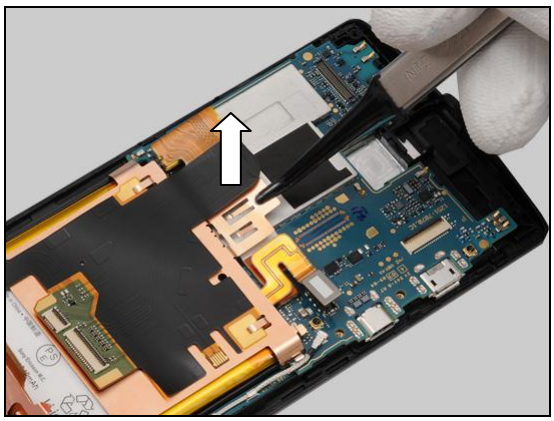


Unsnap the BtB connector.

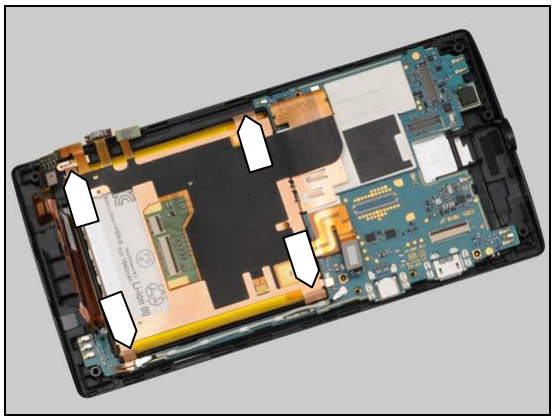


Disassembly

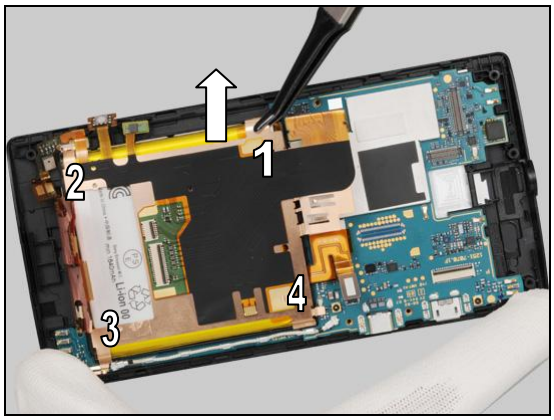
Gently detach the Sheet Metal Battery Plate from the shield can.



There are four snap hooks securing the Sheet Metal Battery Plate

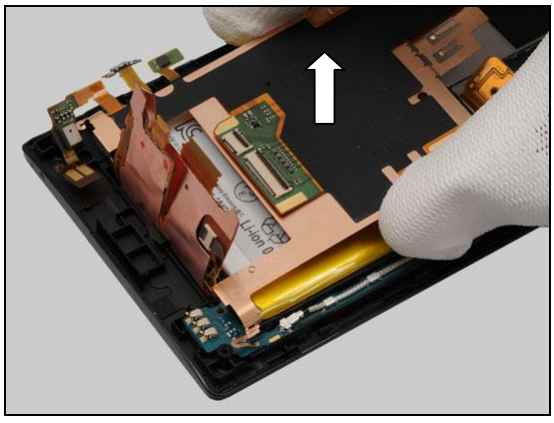


Gently lift up to release the four hooks as shown in the picture.



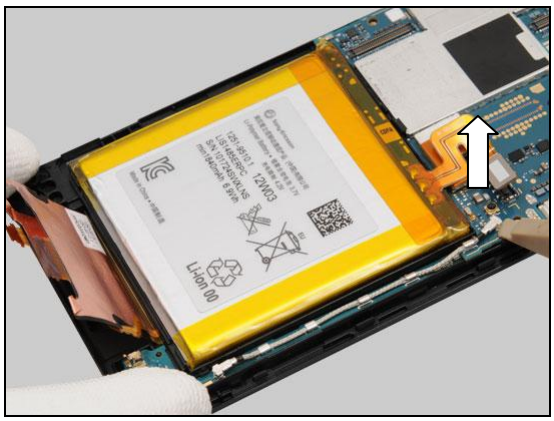
Remove the FPC Bottom Flex Assy with fingers.

Scrap! Not to be reused!

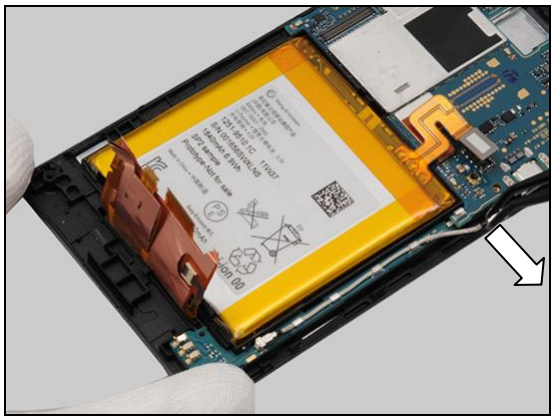


3.11 Main PBA & Cover Front Assy

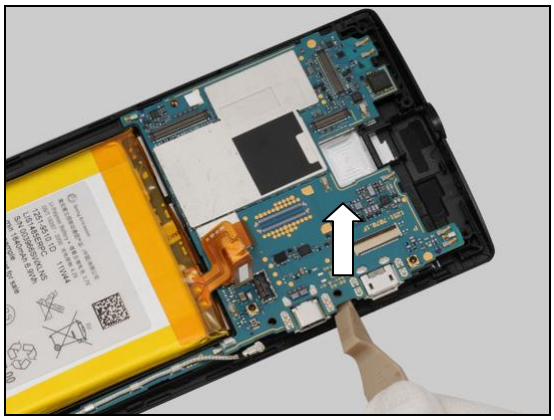
Unsnap the connector of the Cable RF by using a Front Opening Tool.



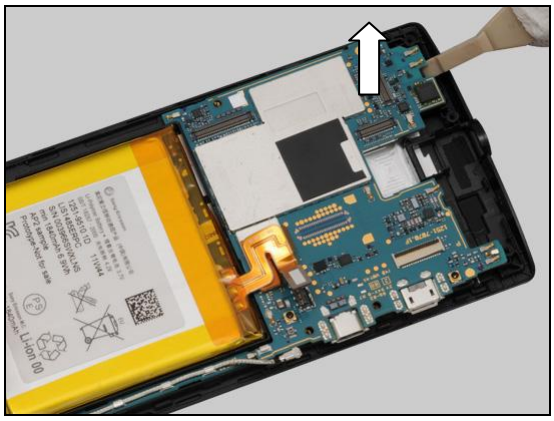
Gently release the Cable RF from the hook of the Main PBA as shown by using a Flex Film Assembly Tool.



Insert a Front Opening Tool as shown in picture and pull upwards to release the hook of this side.



Do the same with the hooks of this side as shown.



Disassembly

Remove the Main PBA.

4 Replacement

4.1 Cover Rear Top

Follow the 3.1 Cover Rear Top Disassembly instructions!

Prepare a new Cover Rear Top.

Follow the 5.11 Cover Rear Top Reassembly instructions!

4.2 SIM Tray

Follow the 3.1 Disassembly instructions!

Prepare a new SIM Tray.

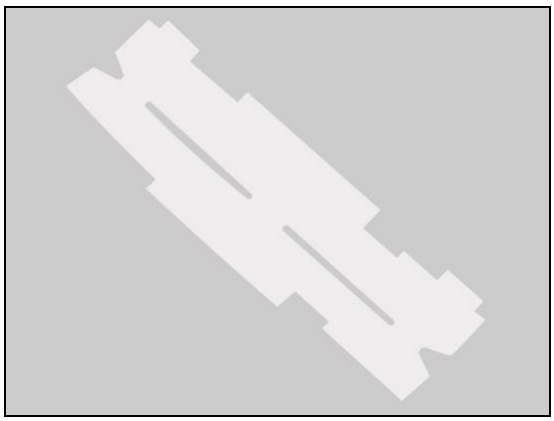
Follow the 5.11 Reassembly instructions!

4.3 Cover Rear Bottom

Follow the 3.2 Cover Rear Bottom Disassembly instructions!

Prepare a new Cover Rear Bottom.

Follow the 5.10 Cover Rear Bottom Reassembly instructions!



4.4 Label Core Unit

Carry out the Removal as described below!
Prepare a new Label Core Unit.
Carry out the Installation as described below.

REMOVAL

Insert a Guitar Pick as shown in picture and gently slide back and forth to release the hooks of the Cover Rear Bottom.

Remove the Cover Rear Bottom.

Read the old Mobile Phone Label and write the information into the ‘LabelMake’ program before removal.

Replacement: Label Core Unit

Carefully peel off the Label Core Unit by using a Flex Film Assembly Tool.

Do not damage the antenna under the Label Core Unit!

Scrap! Not to be reused!

INSTALLATION

Check that the label format is properly loaded in the Zebra printer and write a new Label using the 'Label Make' software.

Attach a new Label Core Unit on its proper position as indicated by the blue lines.

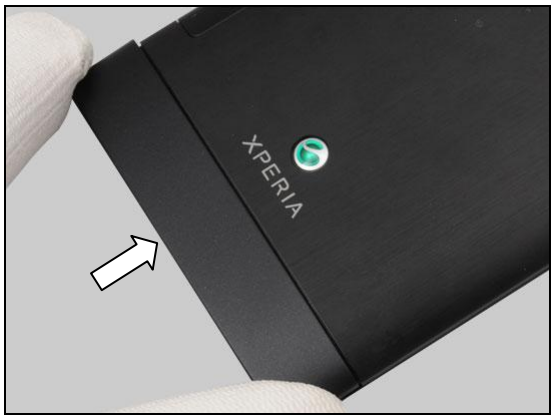
Press along to secure its attachment and position.

Fold the bottom of the Label Core Unit along the broken line.

Replacement: Label Core Unit

Prepare the Cover Rear Bottom.

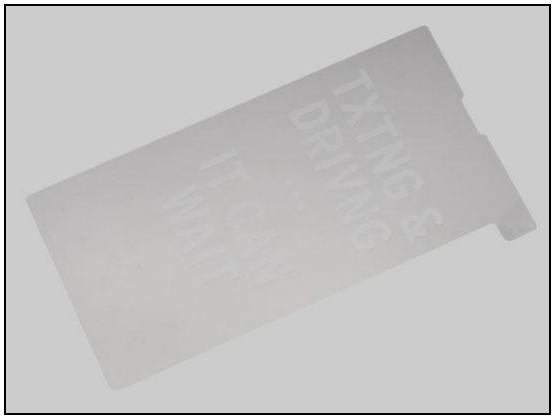
Place the Cover Rear Bottom on the proper position.



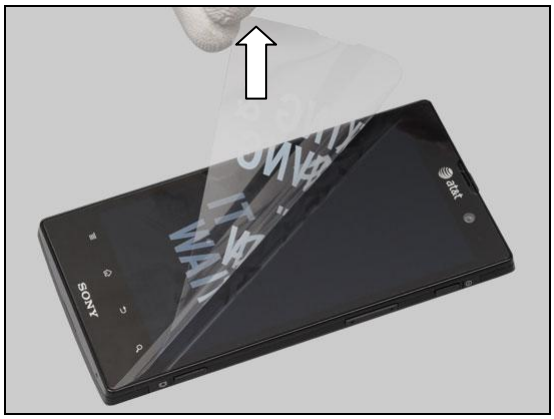
Press to snap the hooks.

Replacement

4.5 Sheet Protection Window



Carry out the Removal as described below.
Prepare a new Sheet Protection Window.
Carry out the Installation as described below.



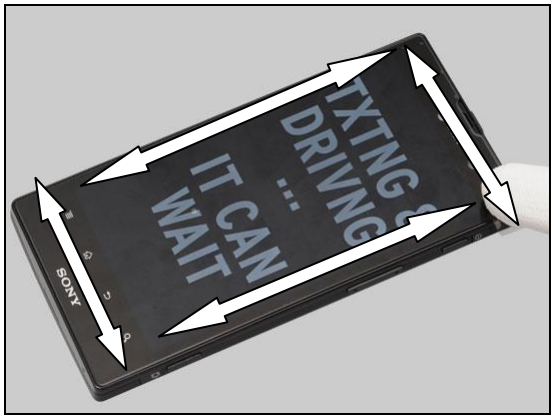
REMOVAL

Peel off the Sheet Protection Window to remove it.

Scrap! Not to be reused!

INSTALLATION

Clean the touch screen and attach a new Sheet Protection Window on its proper position as shown.



Press along to secure its attachment.

Replacement

4.6 Cap USB HDMI

Carry out the Removal as described below.
Prepare a new Cap USB HDMI.
Carry out the Installation as described below.

REMOVAL

Unsnap the hooks of the Cap USB HDMI with fingers as shown in picture.

Pull to remove it.

INSTALLATION

Insert the Cap USB HDMI into the slot.

Replacement: Cap USB HDMI

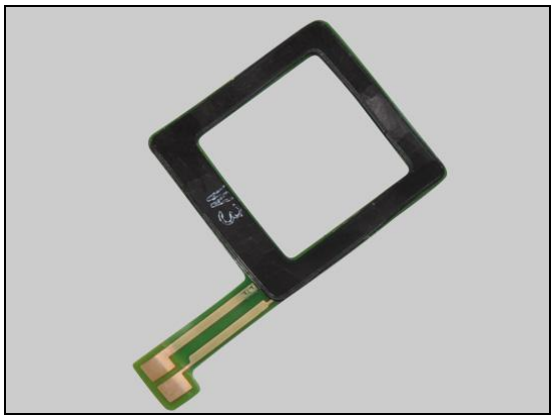
Push it to secure its position.

4.7 Cover Rear Sub Assy

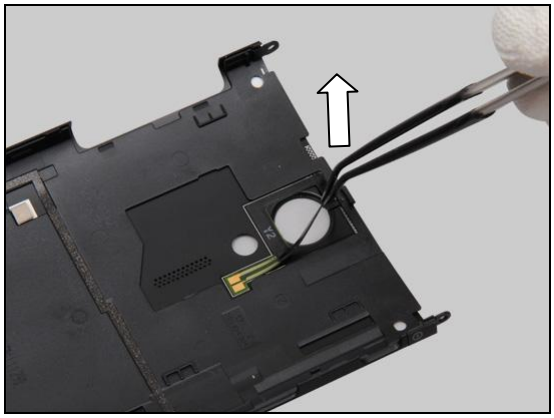
Follow the 3.1 – 3.3 Disassembly instructions!
Prepare a new Cover Rear Sub Assy.
Follow the 4.8 Installation instructions!
Follow the 5.9 – 5.11 Reassembly instructions!

Replacement

4.8 Antenna NFC Flex



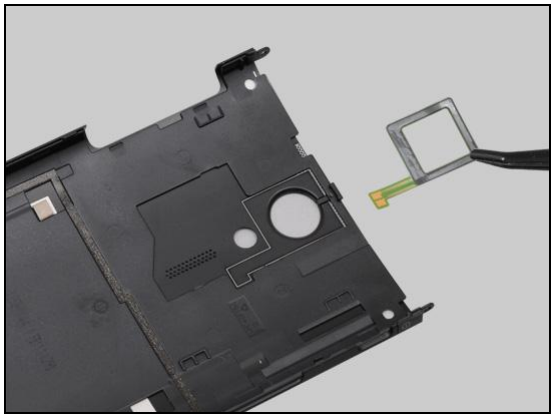
Follow the 3.1 – 3.3 Disassembly instructions!
Carry out the Removal as described below.
Prepare a new Antenna NFC Flex.
Carry out the Installation as described below.
Follow the 5.9 – 5.11 Reassembly instructions!



REMOVAL

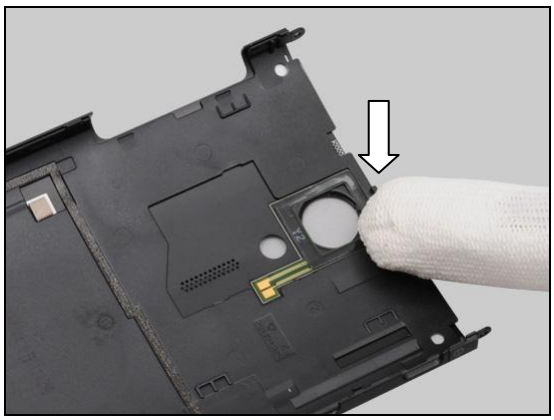
Peel off the Antenna NFC Flex by using a Flex Film Assembly Tool.

Scrap! Not to be reused!



INSTALLATION

Place a new Antenna NFC Flex on its proper position as indicated by the guide line.

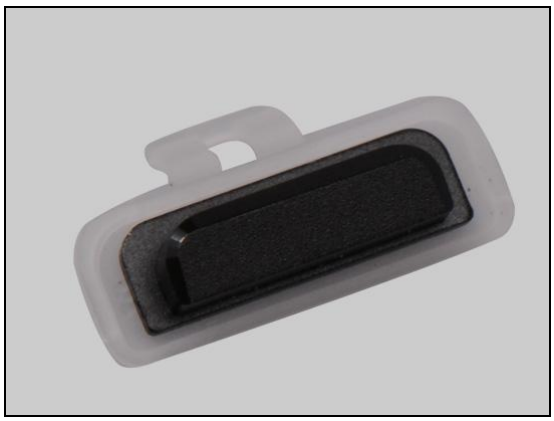


Press along to secure its position.

Replacement

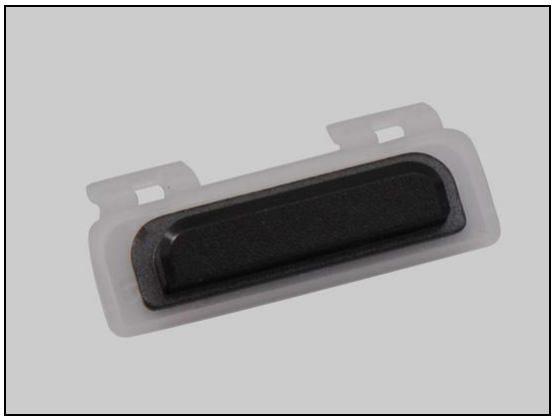
4.9 Key On/Off

Follow the 3.1 – 3.4 Disassembly instructions!
Prepare a new Key On/Off.
Follow the 5.8 – 5.11 Reassembly instructions!



4.10 Key Camera

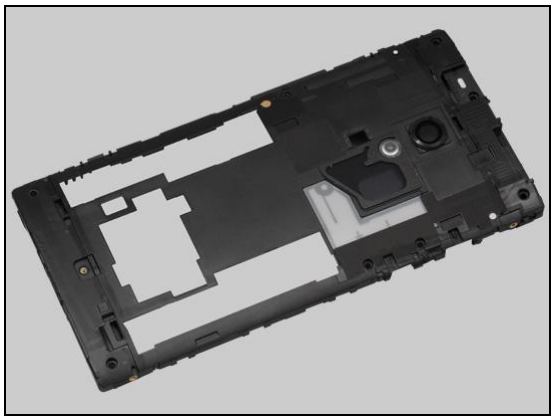
Follow the 3.1 – 3.4 Disassembly instructions!
Prepare a new Key Camera.
Follow the 5.8 – 5.11 Reassembly instructions!



4.11 Frame Rear Assy

Follow the 3.1 – 3.4 Disassembly instructions!
Follow the 4.6, 4.12 and 4.15 Removal instructions!
Prepare a new Frame Rear Assy.
Follow the 4.12, 4.15 and 4.6 Installation instructions!
Follow the 5.8 – 5.11 Reassembly instructions!

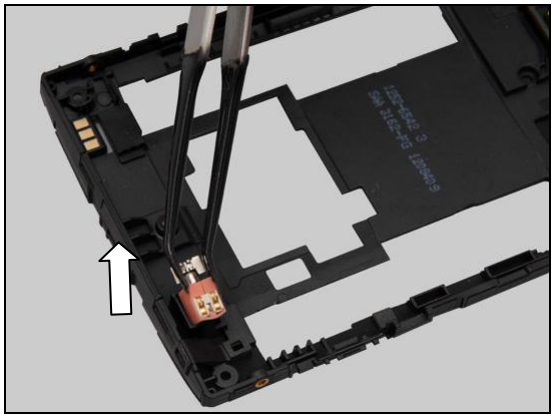
The gasket Mic on the Frame Rear Assy must be removed following 4.26 Rubber Mic- removal and installation instruction!



Replacement

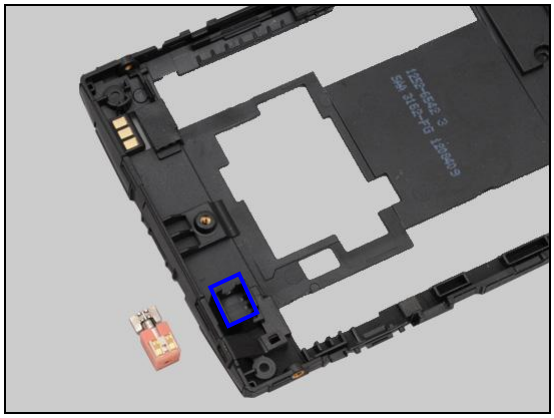
4.12 Vibrator

Follow the 3.1 – 3.4 Disassembly instructions!
Carry out the Removal as described below.
Prepare a new Vibrator.
Carry out the Installation as described below.
Follow the 5.8 – 5.11 Reassembly instructions!



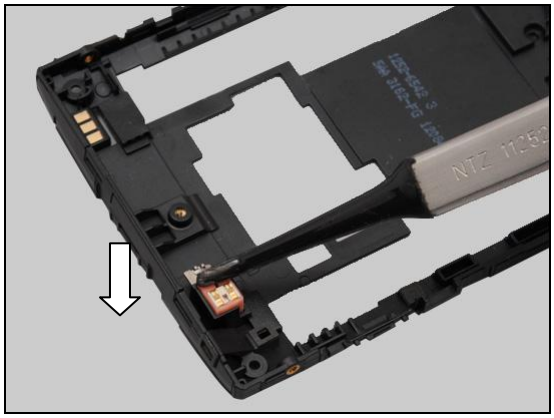
REMOVAL

Lift up to remove the Vibrator from the cavity.



INSTALLATION

Place a new Vibrator in the cavity.

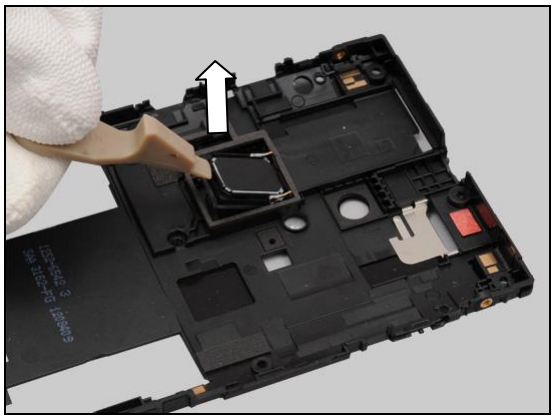


Press to secure its position.

Replacement

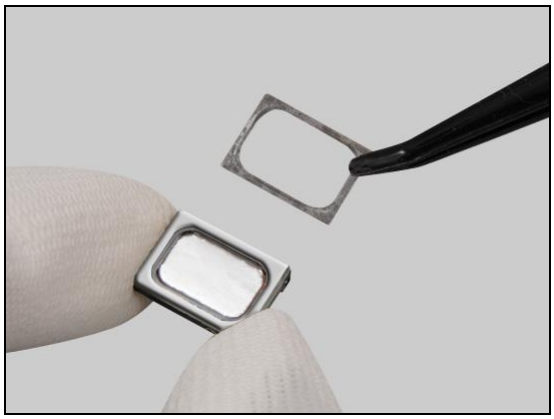
4.13 Loudspeaker & Adhesive Speaker

Follow the 3.1 – 3.4 Disassembly instructions!
Carry out the Removal as described below.
Prepare a new Loudspeaker and a new Adhesive Speaker.
Carry out the Installation as described below.
Follow the 4.14 Installation instructions!
Follow the 5.8 – 5.11 Reassembly instructions!



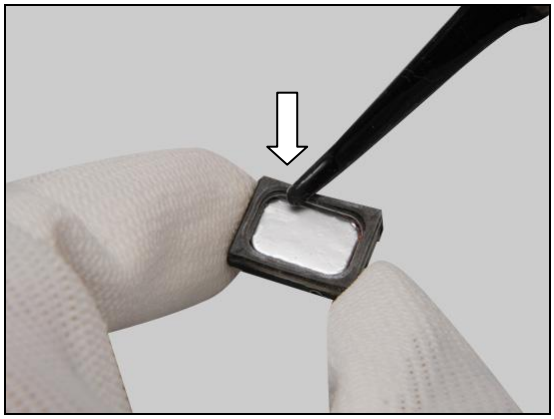
REMOVAL

Detach to remove the Loudspeaker from the cavity by using a Front Opening Tool.



INSTALLATION

Place a new Adhesive speaker on the new Loudspeaker.

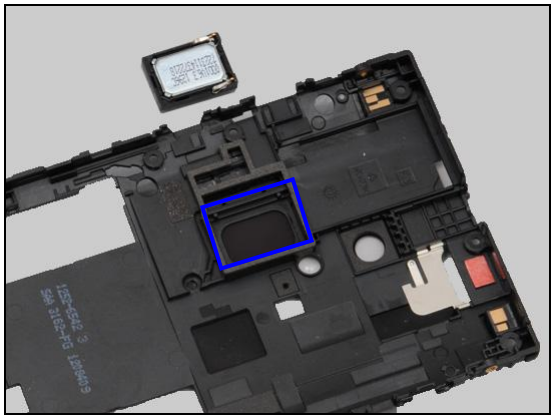


Press to secure its attachment.

Replacement: Loudspeaker & Adhesive Speaker

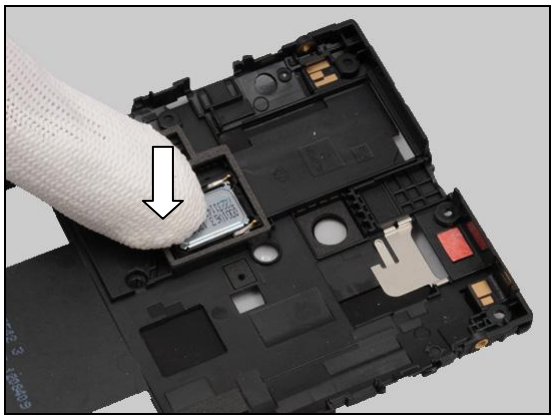
Place it in the cavity.

Note the orientation of the Rubber Conductive GND to be installed!



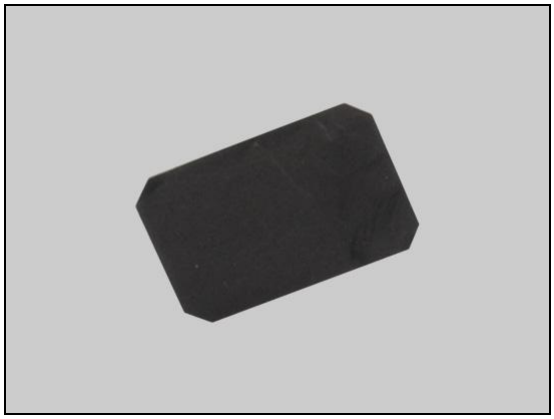
Press to secure its attachment and position.

Do not touch the pins!

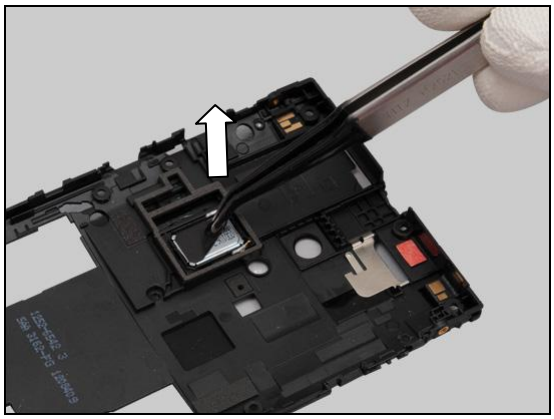


Replacement

4.14 Sheet Speaker



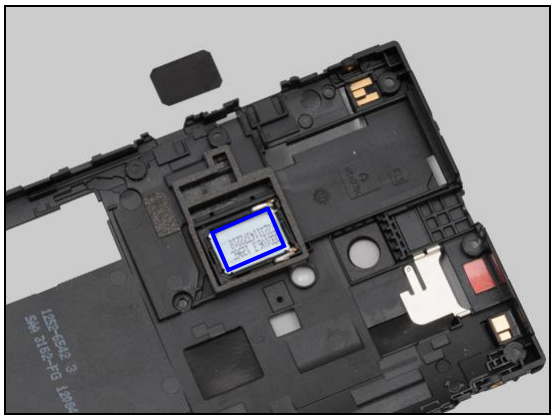
Follow the 3.1 – 3.4 Disassembly instructions!
Carry out the Removal as described below.
Prepare a new Sheet Speaker.
Carry out the Installation as described below.
Follow the 5.8 – 5.11 Reassembly instructions!



REMOVAL

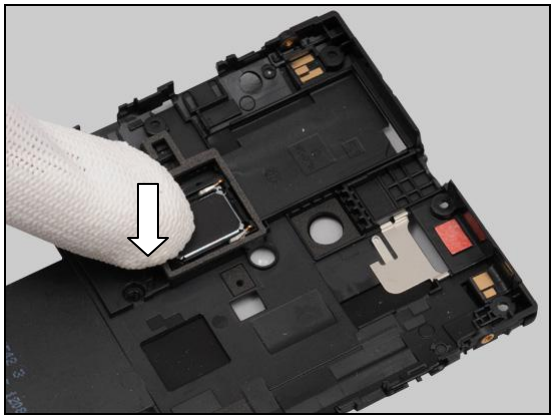
Gently peel off the Sheet Speaker to remove it by using a Flex Film Assembly Tool.

Scrap! Not to be reused!



INSTALLATION

Place a new Sheet Speaker on the Loudspeaker as indicated by the blue rectangle.



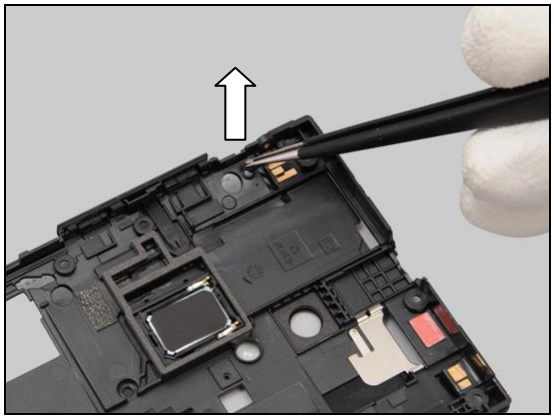
Press to secure its attachment.

Do not touch the pins!

Replacement

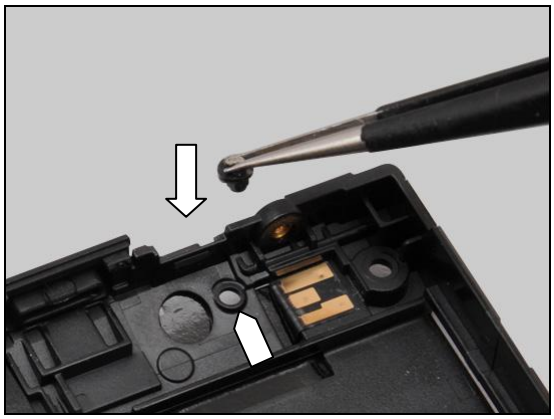
4.15 Rubber Conductive GND

Follow the 3.1 – 3.4 Disassembly instructions!
Carry out the Removal as described below.
Prepare a new Rubber Conductive GND.
Carry out the Installation as described below.
Follow the 5.8 – 5.11 Reassembly instructions!



REMOVAL

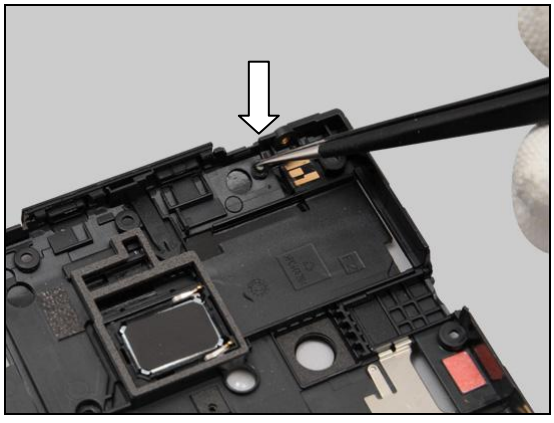
Remove the Rubber Conductive GND by using a pair of Tweezers.



INSTALLATION

Insert a new Rubber Conductive GND in the hole.

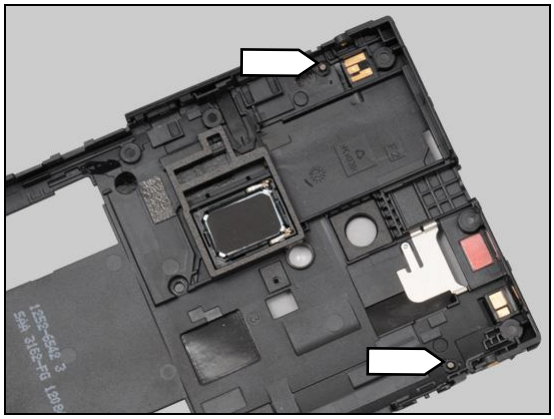
Note the orientation of the Rubber Conductive GND to be installed!



Press to secure its position.

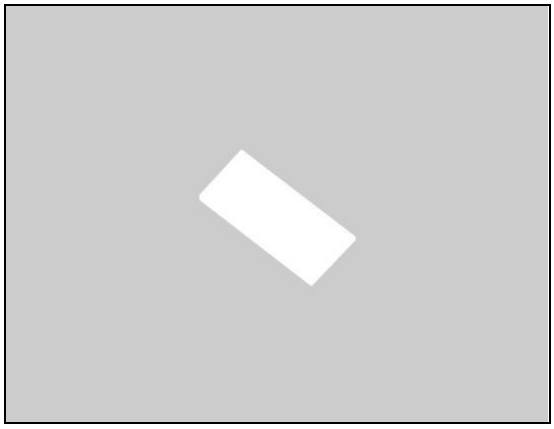
Replacement: Rubber Conductive GND

There are two Rubber Conductive GNDs.
Do the same to the other if need!

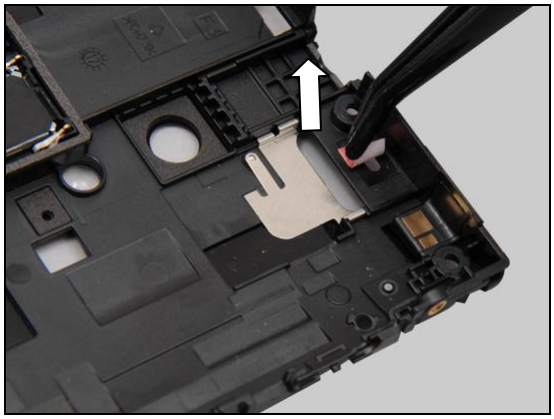


Replacement

4.16 Water Indicator



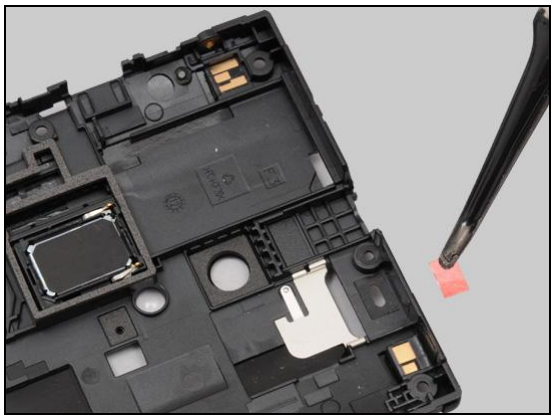
Follow the 3.1 – 3.4 Disassembly instructions!
Carry out the Removal as described below.
Prepare a new Water indicator.
Carry out the Installation as described below.
Follow the 5.8 – 5.11 Reassembly instructions!



REMOVAL

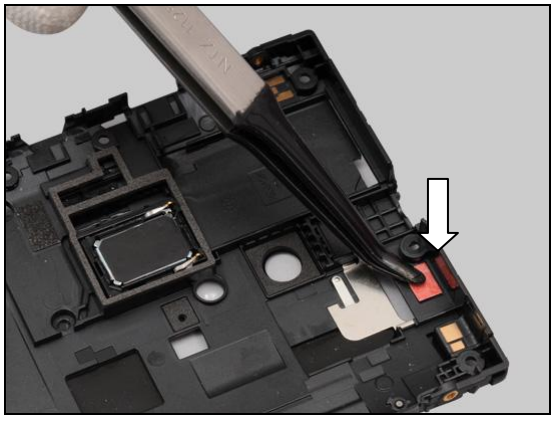
Detach to remove the Water indicator.

Scrap! Not to be reused!



INSTALLATION

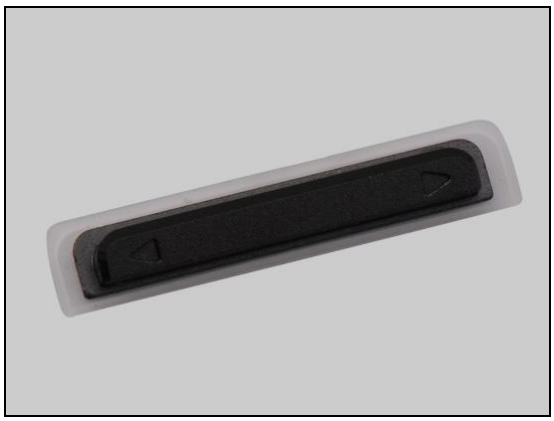
Place a new Water indicator on the correct position as indicated by the guide line.



Press to secure its position.

4.17 Key Volume

Follow the 3.1 – 3.4 Disassembly instructions!
Prepare a new Key Volume.
Follow the 5.8 – 5.11 Reassembly instructions!

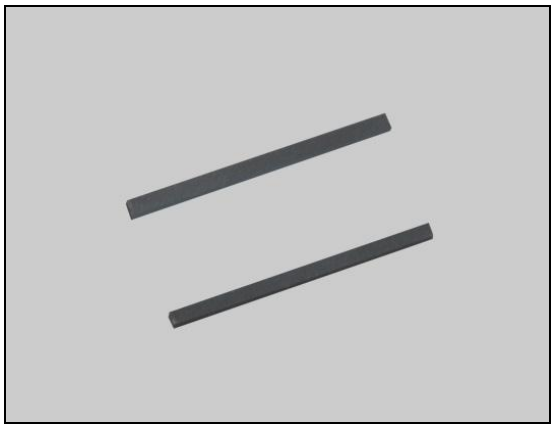


4.18 Audio Jack

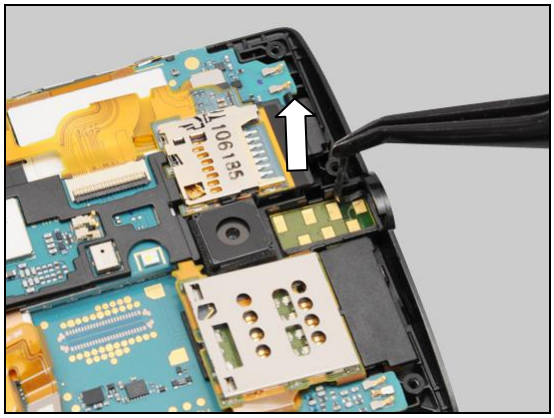
Follow the 3.1 – 3.5 Disassembly instructions!
Prepare a new Audio Jack.
Follow the 5.7 – 5.11 Reassembly instructions!

Replacement

4.19 Gasket Audio Jack



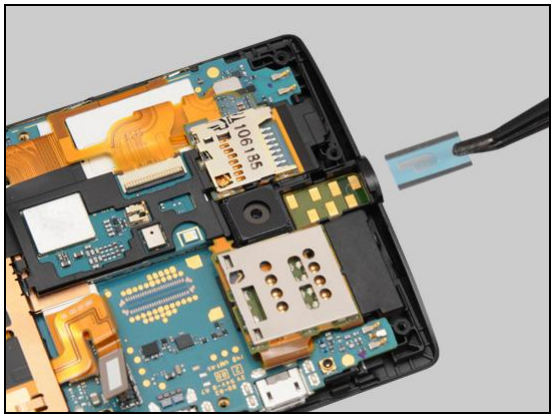
Follow the 3.1 – 3.5 Disassembly instructions!
Carry out the Removal as described below.
Prepare a new Gasket Audio Jack.
Carry out the Installation as described below.
Follow the 5.7 – 5.11 Reassembly instructions!



REMOVAL

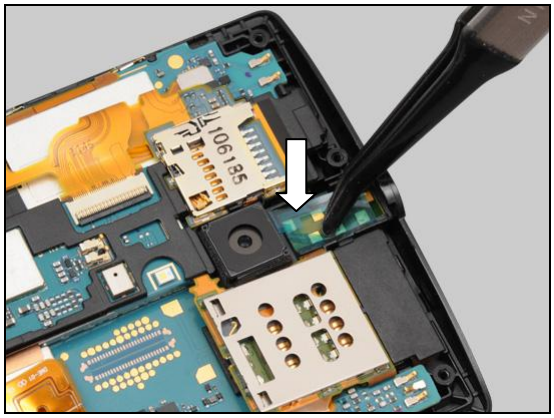
Detach to remove the Gasket Audio Jack.

Scrap! Not to be reused!



INSTALLATION

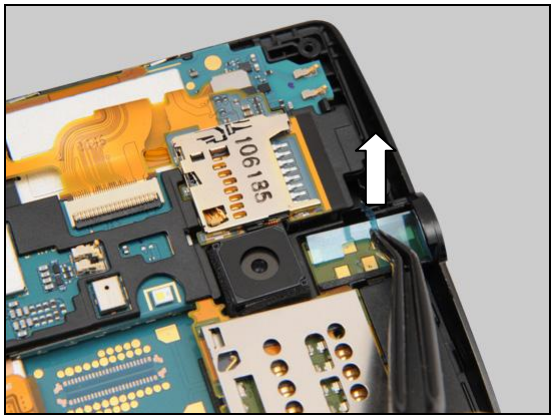
Attach a new Gasket Audio Jack in the cavity as shown.



Press to secure its position.

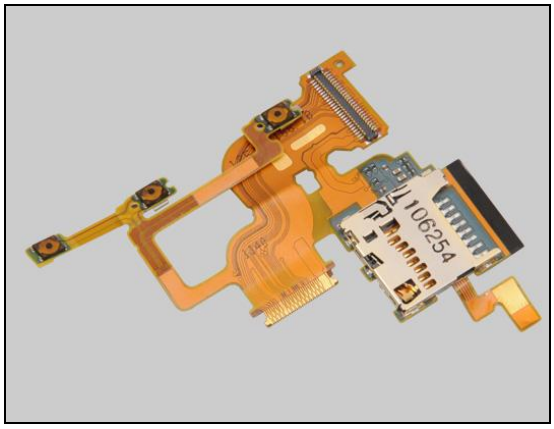
Replacement: Gasket Audio Jack

Peel off the protective film.

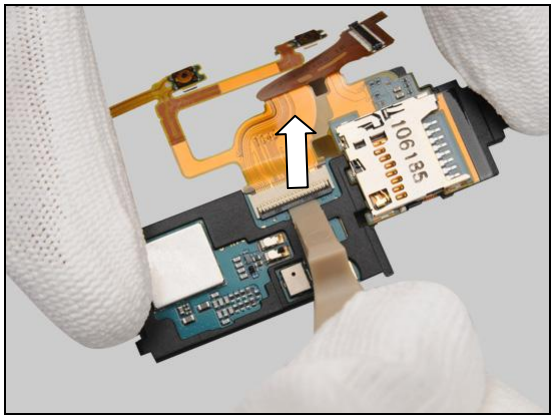


Replacement

4.20 FPC Side Key

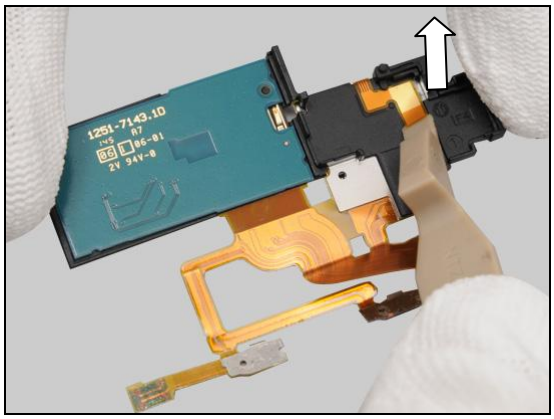


Follow the 3.1 – 3.6 Disassembly instructions!
Carry out the Removal as described below.
Prepare a new FPC Side Key.
Carry out the Installation as described below.
Follow the 5.6 – 5.11 Reassembly instructions!

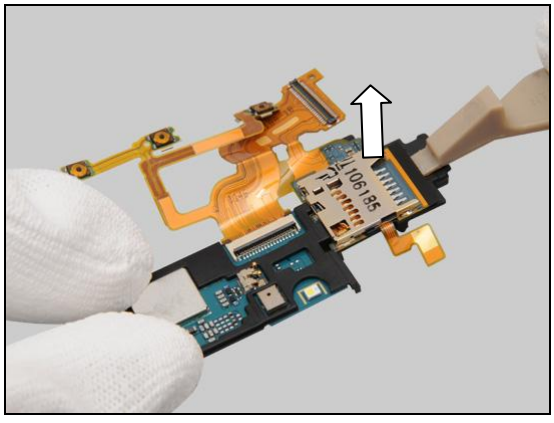


REMOVAL

Unlock the ZIF connector.



Turn it over and gently detach the FPC of this side as shown.

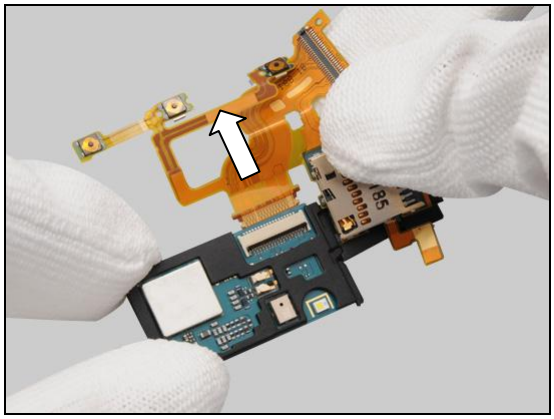


Gently insert the Front Opening Tool as shown to release this side.

Scrap! Not to be reused!

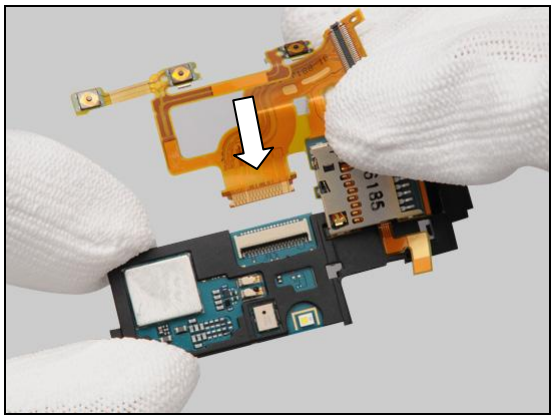
Replacement: FPC Side Key

Remove it.

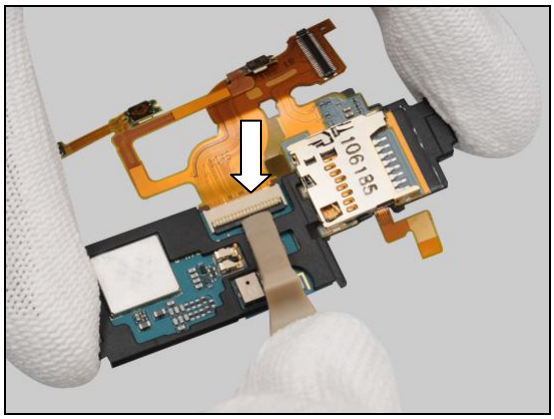


INSTALLATION

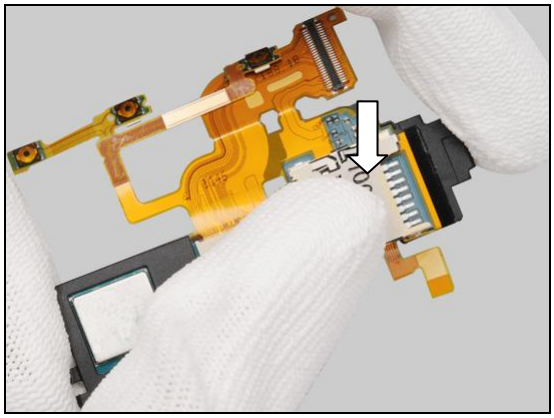
Insert a new FPC Side Key into the ZIF connector.



Lock it.

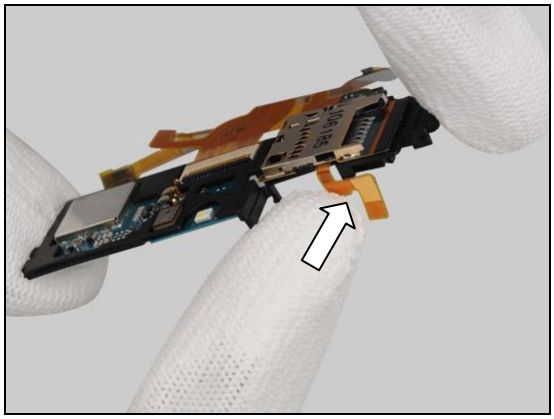


Press along to secure its position and attachment.

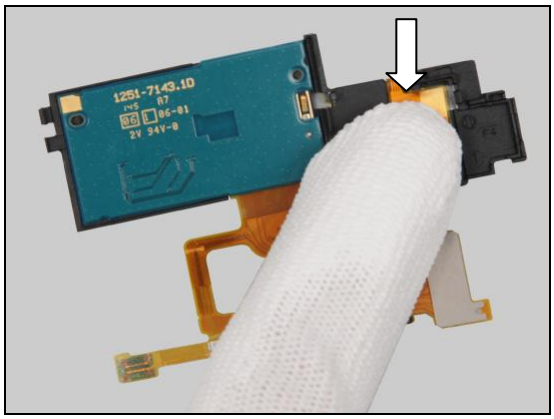


Replacement: FPC Side Key

Push the FPC to turn it over.

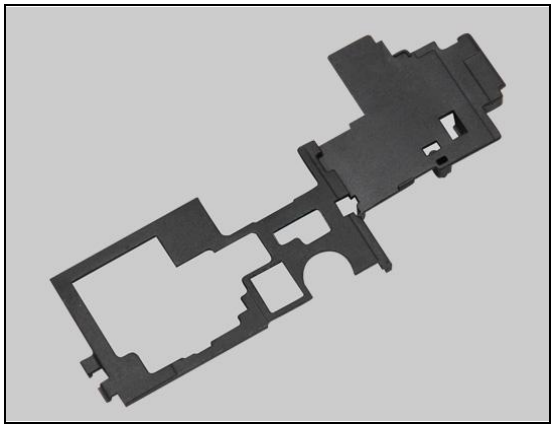


Press to make it securely attached.

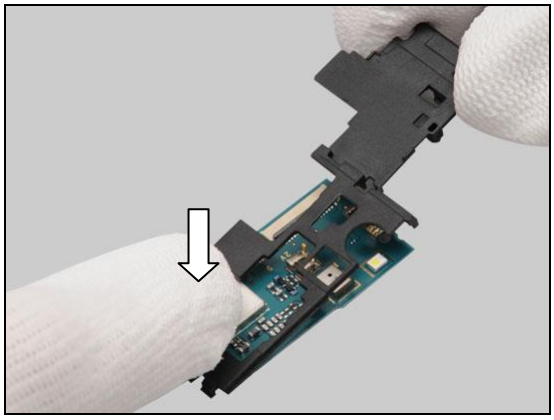


Replacement

4.21 Carrier NFC Sub PBA



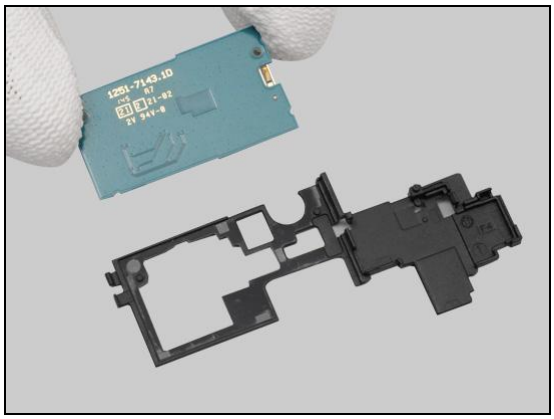
Follow the 3.1 – 3.6 Disassembly instructions!
Follow the 4.20 Removal instructions!
Carry out the Removal as described below.
Prepare a new Carrier NFC Sub PBA.
Carry out the Installation as described below.
Follow the 4.20 Installation instructions!
Follow the 5.6 – 5.11 Reassembly instructions!



REMOVAL

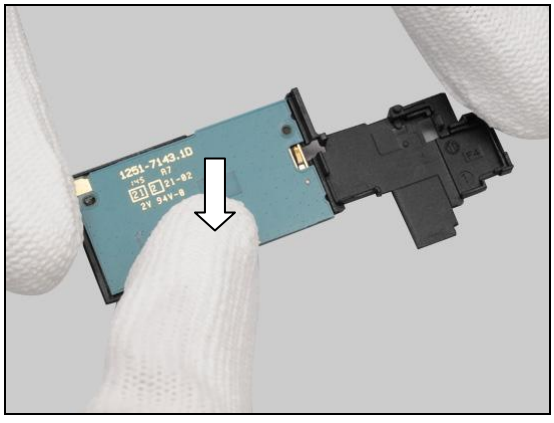
Push the shield can as shown in picture to release the PBA Sub NFC Assy from the Carrier NFC Sub PBA.

Scrap! Not to be reused!



INSTALLATION

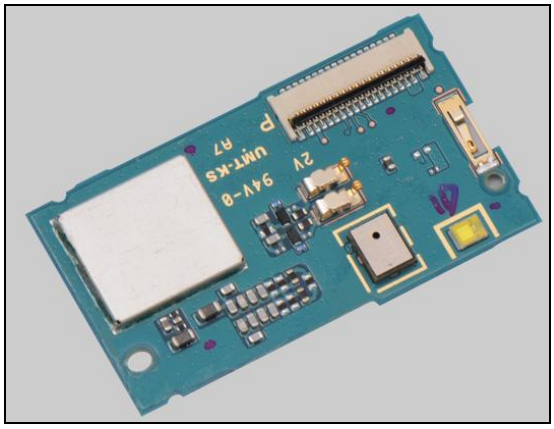
Prepare a new Carrier NFC Sub PBA and securely place the PBA Sub NFC Assy on it.



Press along to secure its attachment.

Replacement

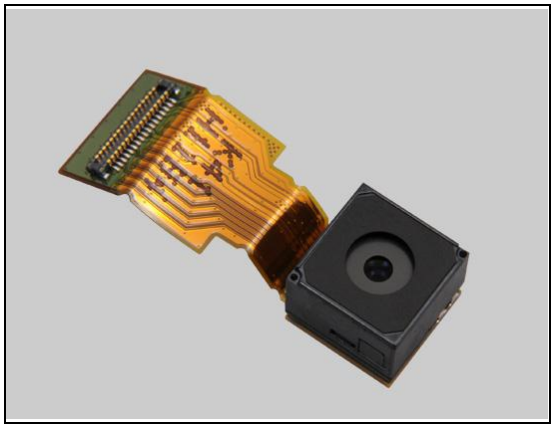
4.22 PBA Sub NFC Assy



Follow the 3.1 – 3.6 Disassembly instructions!
Prepare a new PBA Sub NFC Assy.
Follow the 4.21 and 4.20 Installation instructions!
Follow the 5.6 – 5.11 Reassembly instructions!

Replacement

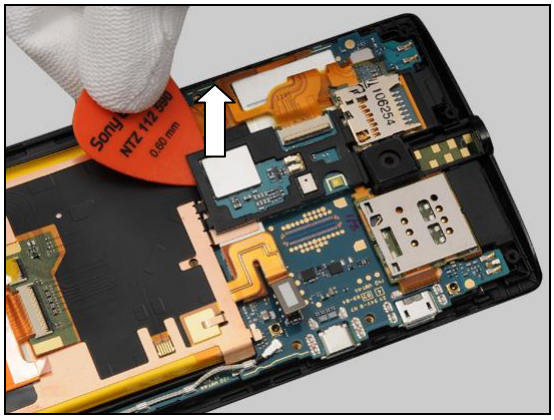
4.23 Camera & Gasket Camera



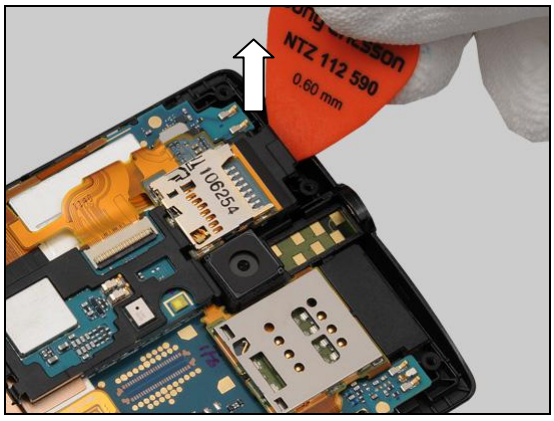
Follow the 3.1 – 3.5 Disassembly instructions!
Carry out the Removal as described below.
Prepare a new Camera and a new Gasket Camera.
Carry out the Installation as described below.
Follow the 5.7 – 5.11 Reassembly instructions!

REMOVAL

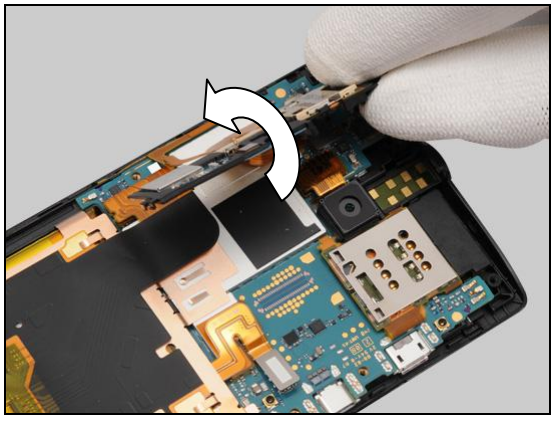
Insert a Guitar Pick and gently pull upwards to release the hooks of the Carrier NFC Assy.



Do the same to release the hook of this side.

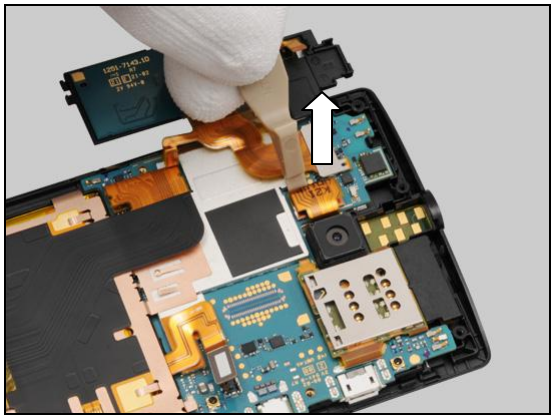


Turn it over.

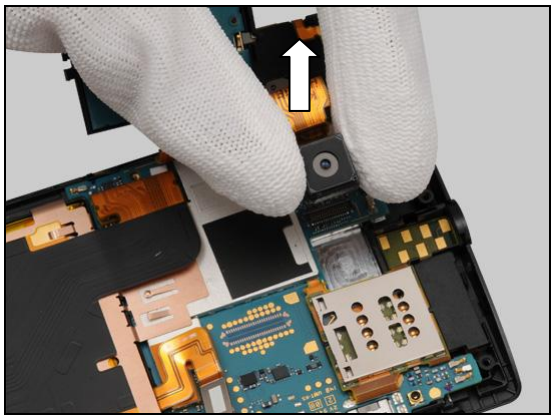


Replacement: Camera & Gasket Camera

Unsnap the BtB connector of the Camera.

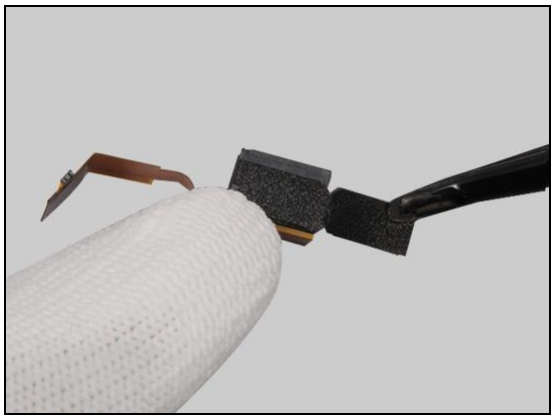


Remove the Camera.

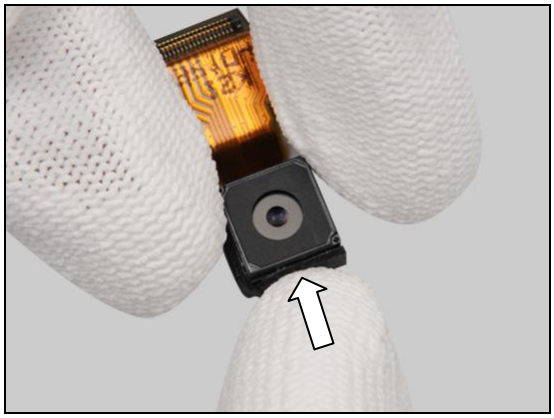


INSTALLATION

Attach a new Gasket Camera on a new Camera as shown.

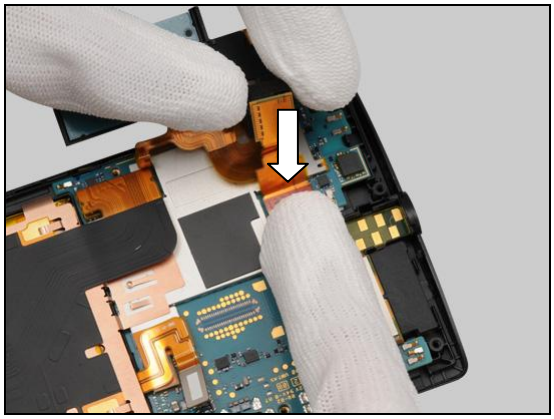


Press to secure its attachment and position.

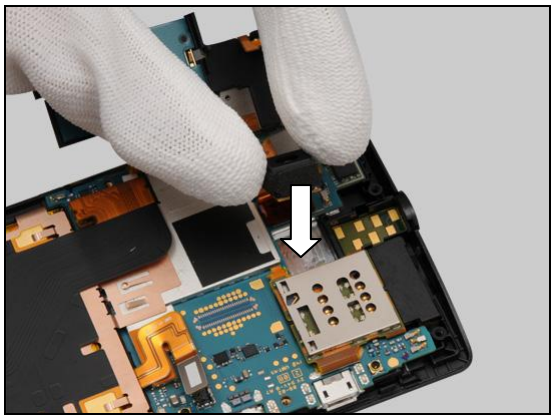


Replacement: Camera & Gasket Camera

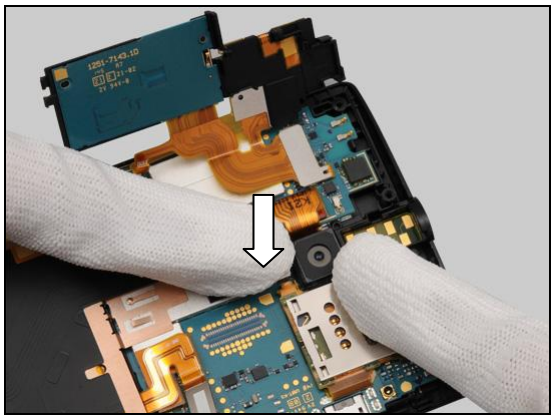
Press to snap the BtB connector.



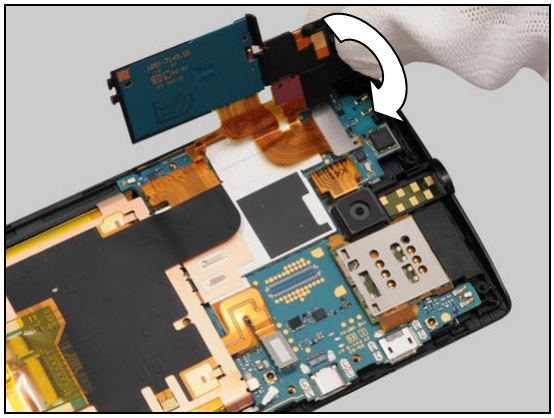
Gently push it into the cavity.



Press to secure its position.

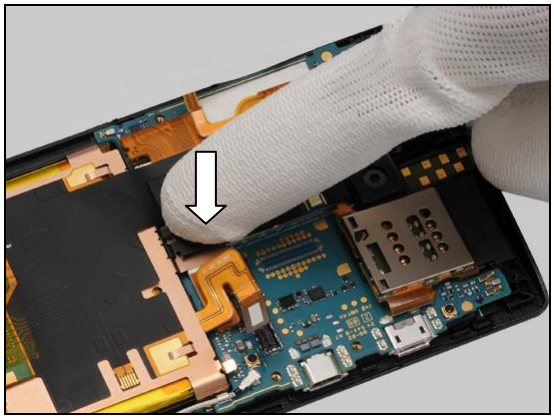


Turn it over.

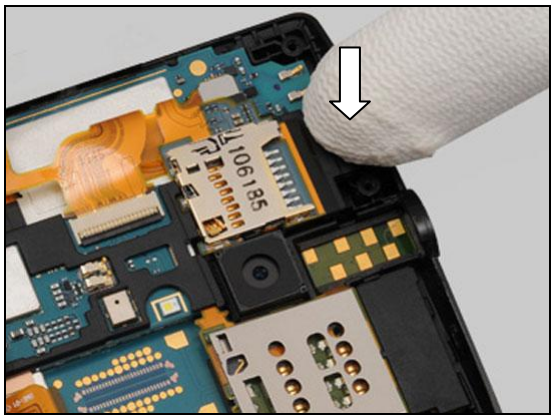


Replacement: Camera & Gasket Camera

Press this side to insert the hooks into the holes.

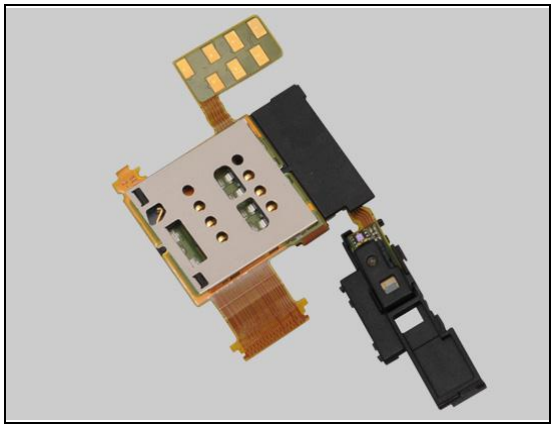


Press to snap the hook of this side.



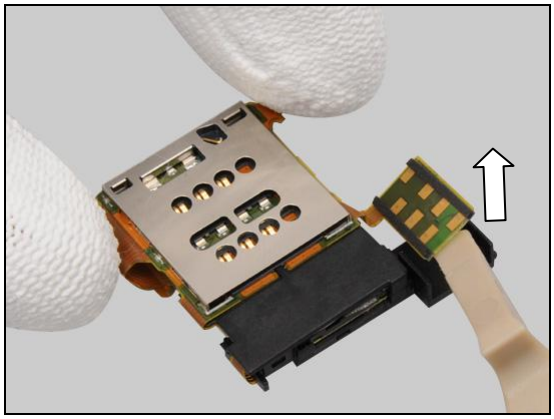
Replacement

4.24 FPC Top Flex

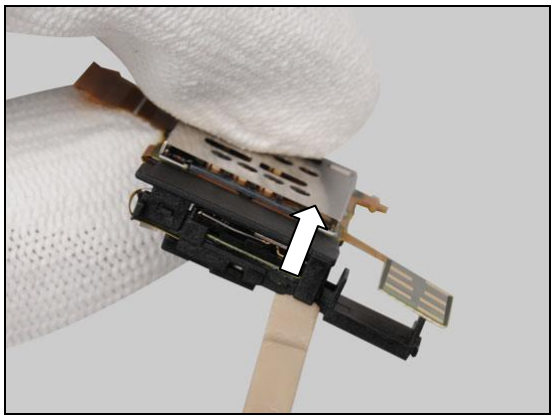


Follow the 3.1 – 3.8 Disassembly instructions!
Carry out the Removal as described below.
Prepare a new FPC Top Flex.
Carry out the Installation as described below.
Follow the 5.4 – 5.6 Reassembly instructions!
Follow the 4.19 Installation instructions!
Follow the 5.7 – 5.11 Reassembly instructions!

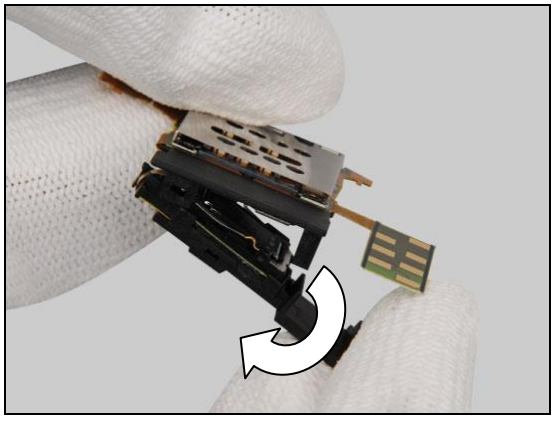
REMOVAL



Release this side of the FPC Top Flex from the cavity by using a Front Opening Tool.



Unsnap the hook of the FPC Top Flex as shown.

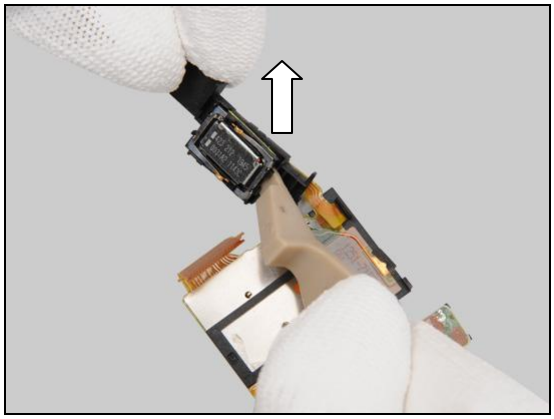


Turn it over.

Replacement: FPC Top Flex

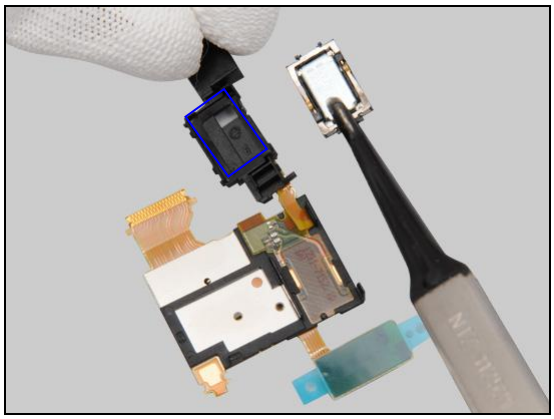
Gently release the Ear Speaker from the cavity and remove it.

Scrap the FPC Top Flex! Not to be reused!

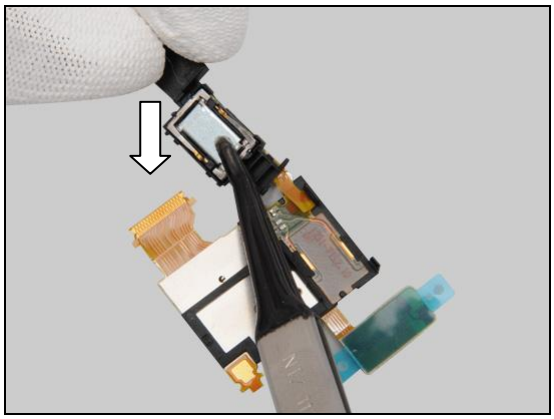


INSTALLATION

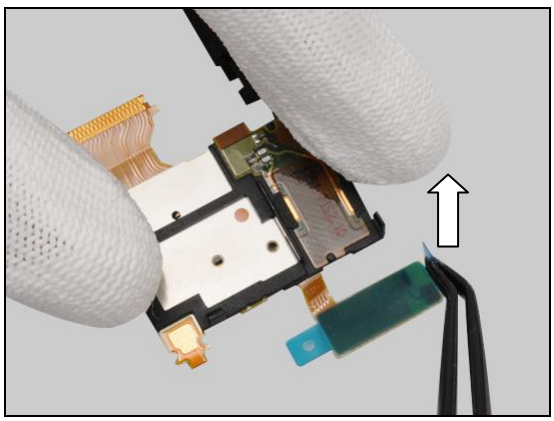
Prepare a new FPC Top Flex and place the Ear Speaker into the cavity.



Press to secure its position.

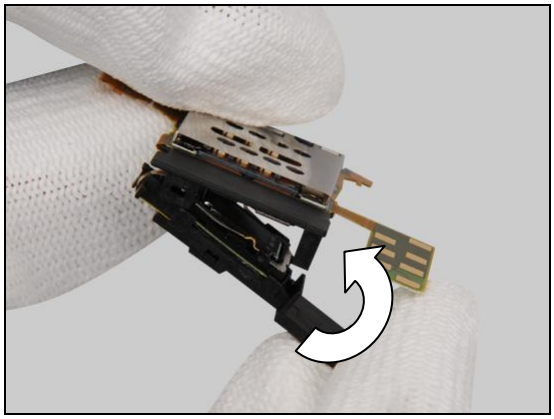


Peel off the protective film.

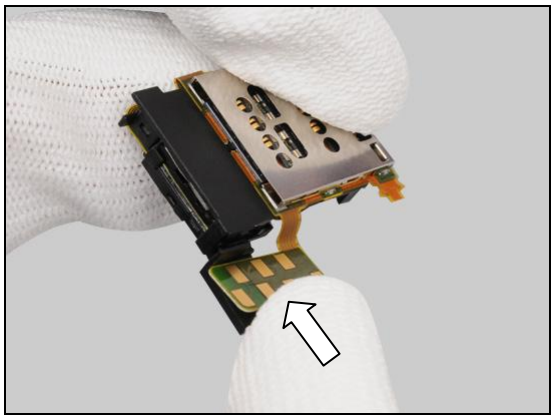


Replacement: FPC Top Flex

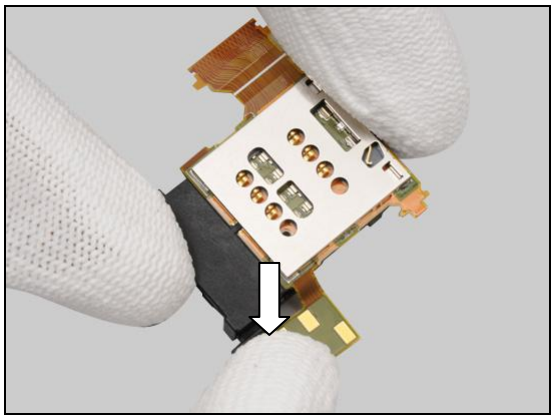
Turn it over.



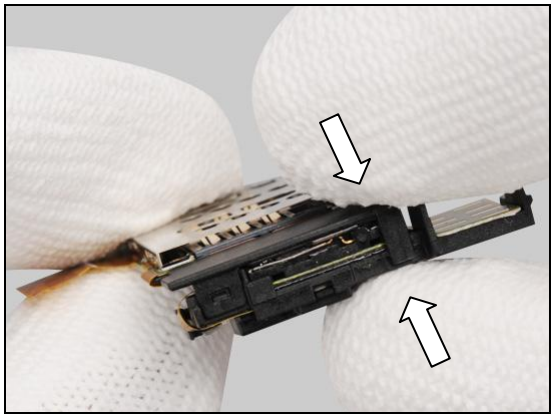
Push the FPC into the cavity.



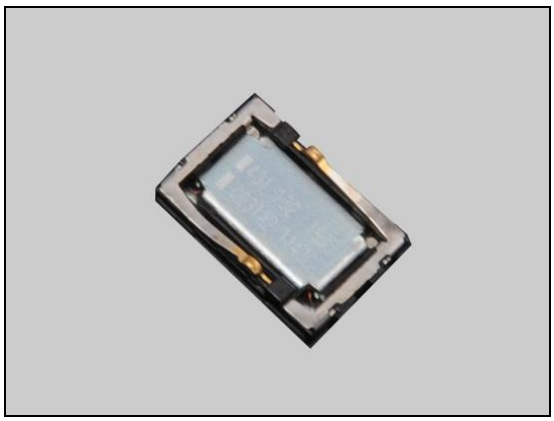
Press along to secure its attachment.



Press to snap the hook.



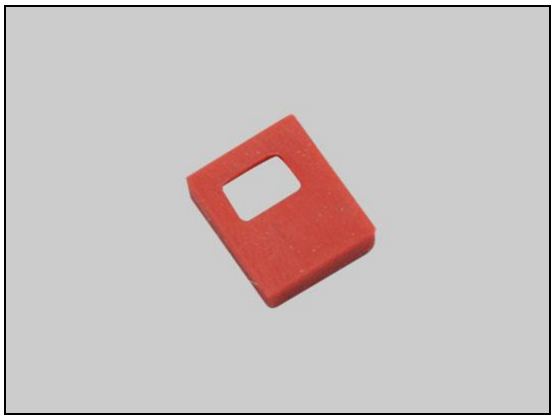
4.25 Ear Speaker



Follow the 3.1 – 3.8 Disassembly instructions!
Prepare a new Ear Speaker.
Follow the 4.24 Installation instructions!
Follow the 5.4 – 5.6 Reassembly instructions!
Follow the 4.19 Installation instructions!
Follow the 5.7 – 5.11 Reassembly instructions!

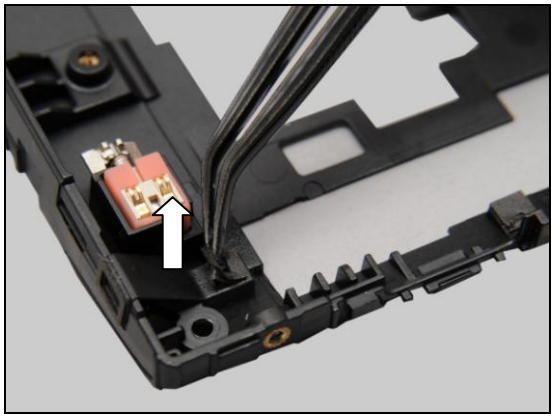
Replacement

4.26 Rubber Mic



Follow the 3.1 – 3.4 Disassembly instructions!
Carry out the Removal as described below.
Prepare a new Rubber Mic.
Carry out the Installation as described below.
Follow the 5.8 – 5.11 Reassembly instructions!

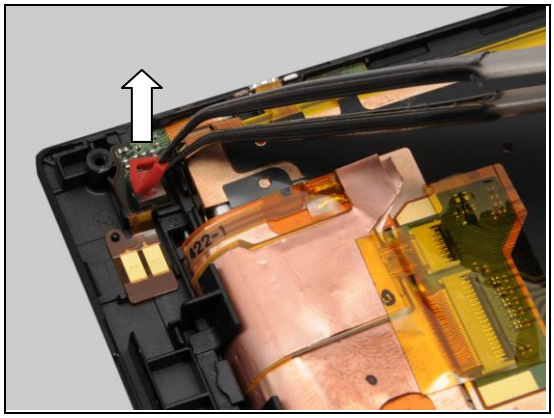
REMOVAL



Detach to remove the gasket Mic on the Frame Rear Cover as shown in picture by using a Flex Film Assembly Tool.

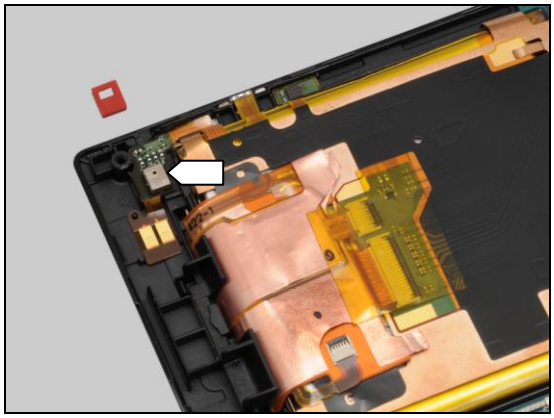
The gasket Mic must be removed!

If no gasket Mic attached on the Frame Rear Cover, skip this step!



Detach to remove the Rubber Mic by using a Flex Film Assembly Tool.

If no Rubber Mic attached on the microphone, skip this step!



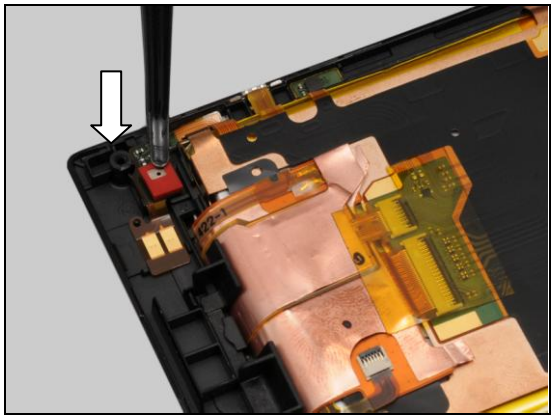
INSTALLATION

Place a new Rubber Mic on the microphone.

Note the orientation of the Rubber Mic to be installed!

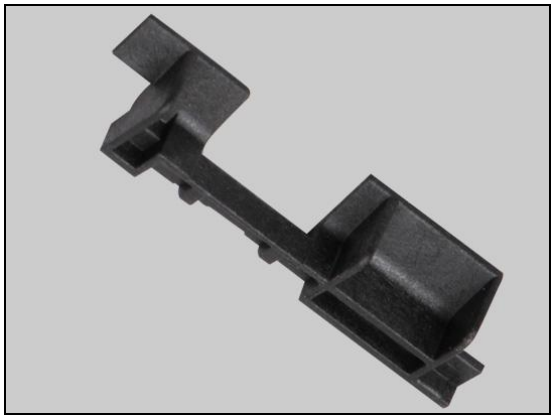
Replacement: Rubber Mic

Press to secure its position.

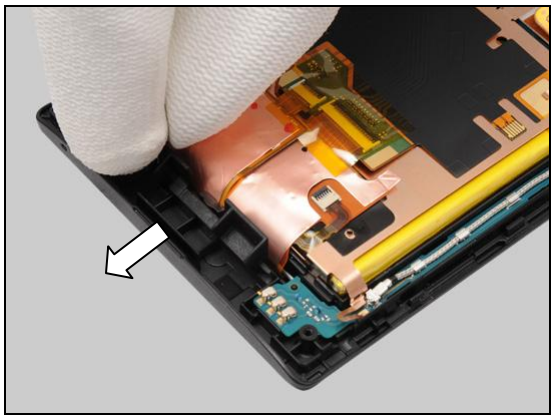


Replacement

4.27 Carrier Holder Bottom

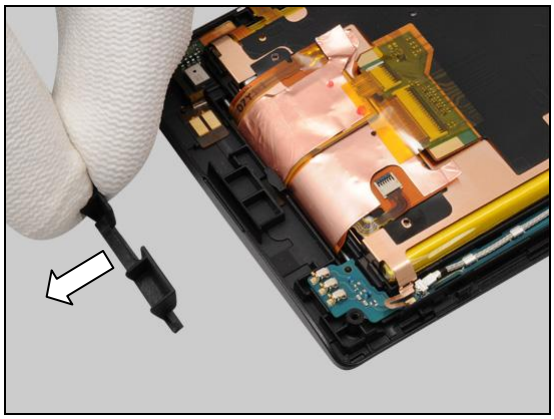


Follow the 3.1 – 3.4 Disassembly instructions!
Carry out the Removal as described below.
Prepare a new Carrier Holder Bottom.
Carry out the Installation as described below.
Follow the 5.8 – 5.11 Reassembly instructions!

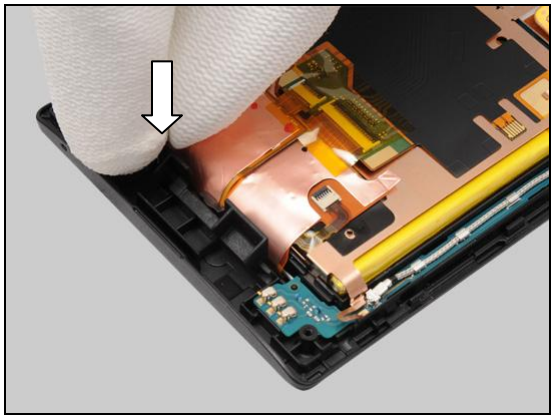


REMOVAL

Pull outward to release the Carrier Holder Bottom from the hook of this side as shown.



Remove the Carrier Holder Bottom.

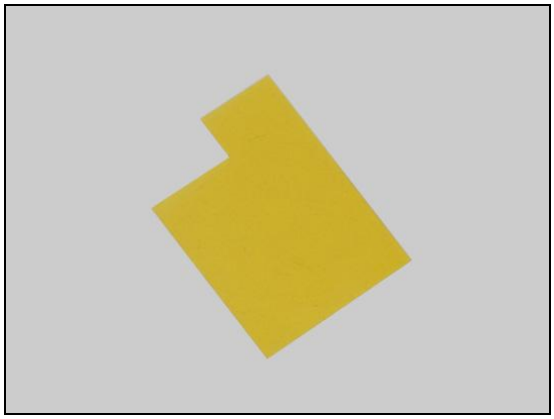


INSTALLATION

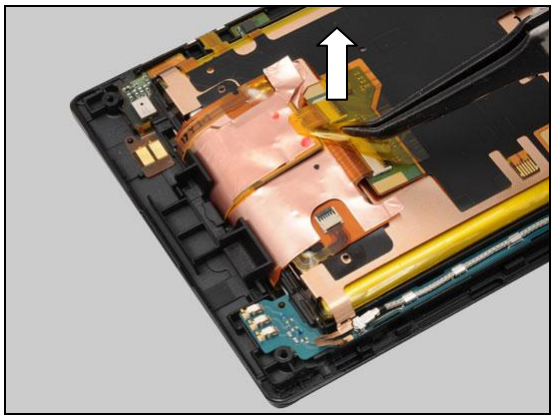
Insert a new Carrier Holder Bottom into its cavity as shown and secure its position.

Replacement

4.28 Sheet Touch ZIF



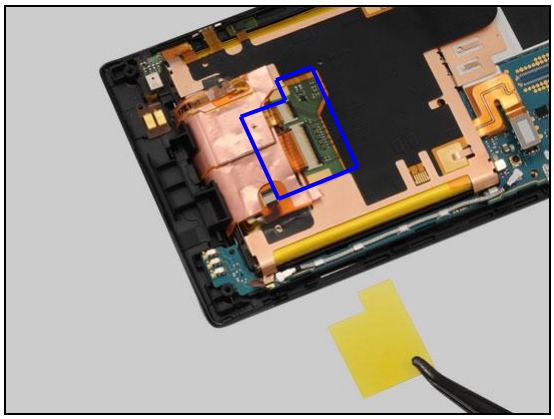
Follow the 3.1 – 3.4 Disassembly instructions!
Carry out the Removal as described below.
Prepare a new Sheet Touch ZIF.
Carry out the Installation as described below.
Follow the 5.8 – 5.11 Reassembly instructions!



REMOVAL

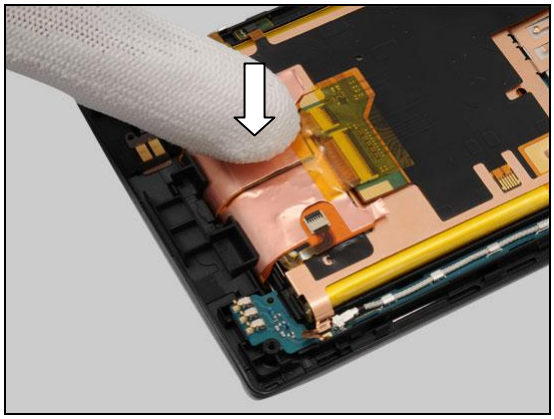
Gently peel off the Sheet Touch ZIF and remove it by using a Flex Film Assembly Tool.

Scrap! Not to be reused!



INSTALLATION

Place a new Sheet Touch ZIF on its correct position as indicated by the blue line.

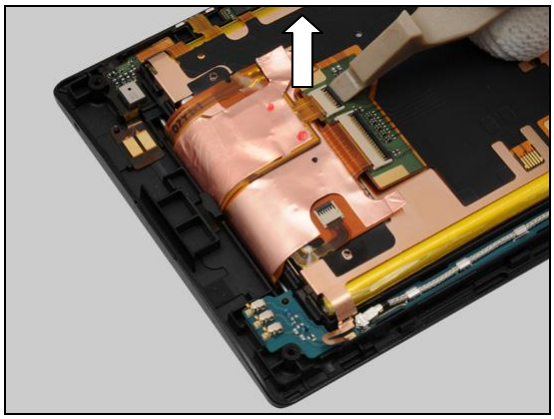


Press along to secure its attachment.

Replacement

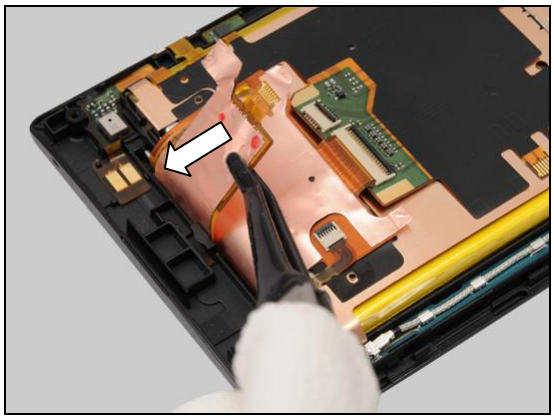
4.29 Sheet LCM FPC

Follow the 3.1 – 3.4 Disassembly instructions!
Follow the 4.27 and 4.28 Removal instructions!
Carry out the Removal as described below.
Prepare a new Sheet LCM FPC.
Carry out the Installation as described below.
Follow the 4.27 and 4.28 Installation instructions!
Follow the 5.8 – 5.11 Reassembly instructions!

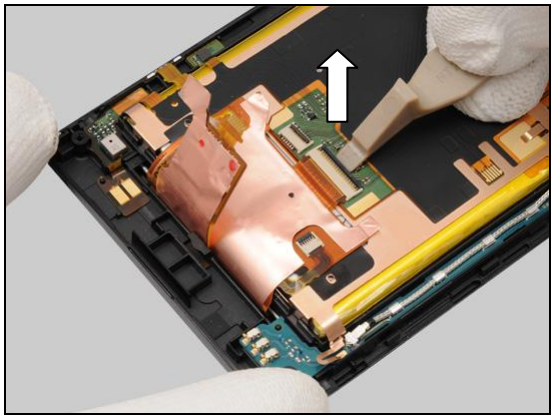


REMOVAL

Unlock the ZIF connector by using a Front Opening Tool.



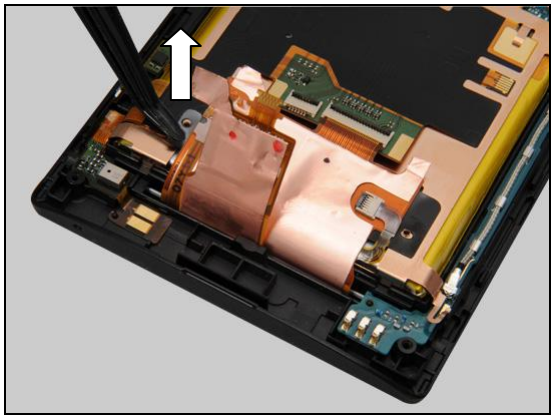
Release the touch screen FPC by using a Flex Film Assembly Tool.



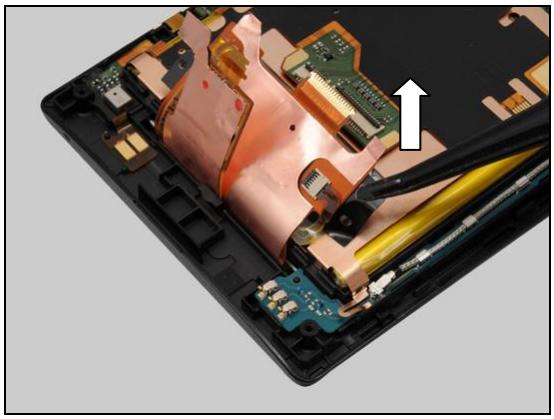
Unlock the ZIF connector as shown.

Replacement: Sheet LCM FPC

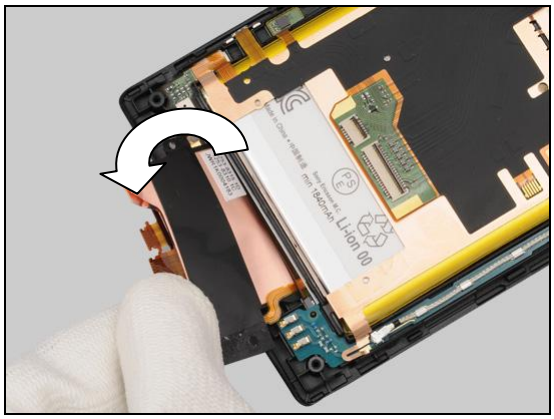
Gently detach this side of the Sheet LCM FPC from the Sheet Metal Battery Plate as shown.



Do the same to the other side.

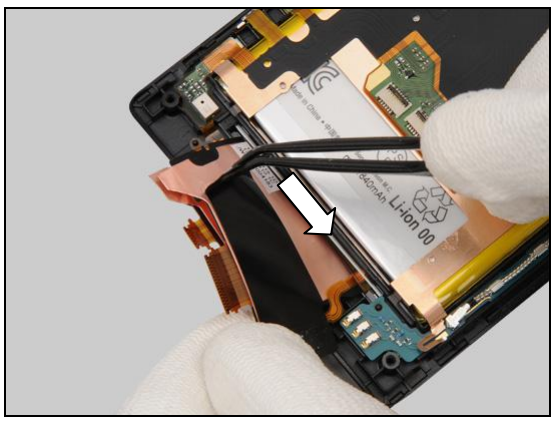


Turn it over.



Gently peel off the Sheet LCM FPC by using a Flex Film Assembly Tool.

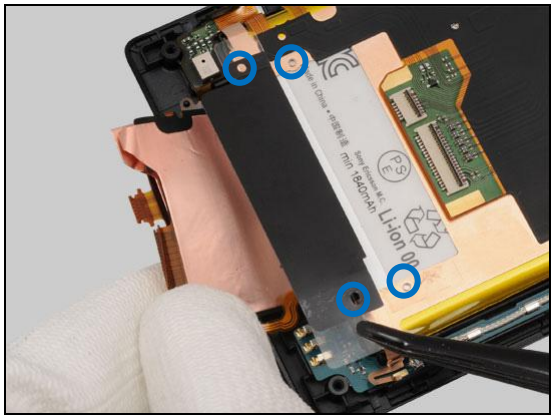
Scrap! Not to be reused!



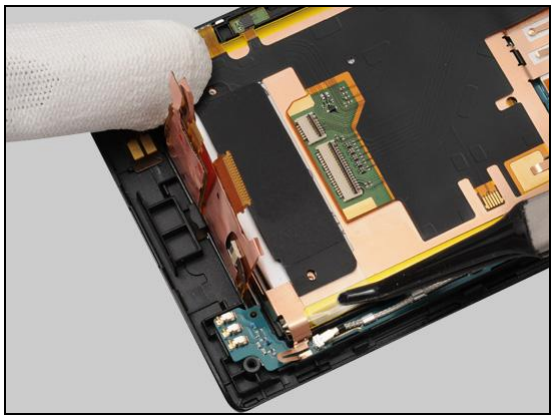
Replacement: Sheet LCM FPC

INSTALLATION

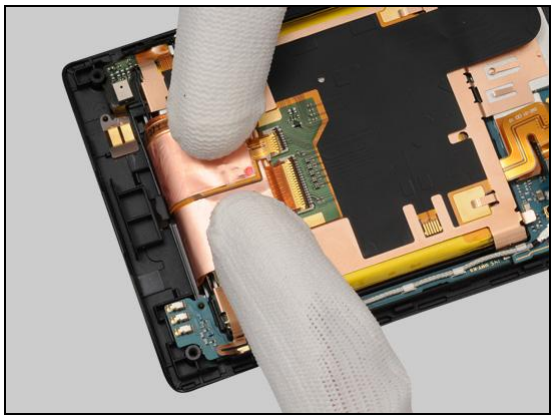
Prepare a new Sheet LCM FPC and align it as indicated by the holes.



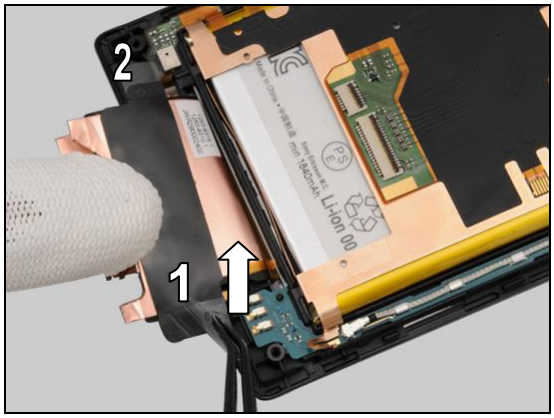
Securely place the Sheet LCM FPC on the Sheet Metal Battery Plate.



Press to secure its attachment.

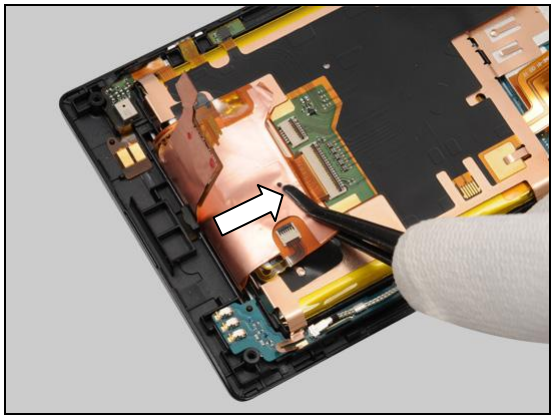


Peel off the two protective films.

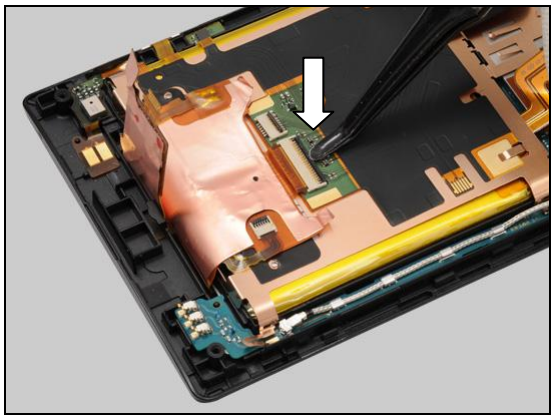


Replacement: Sheet LCM FPC

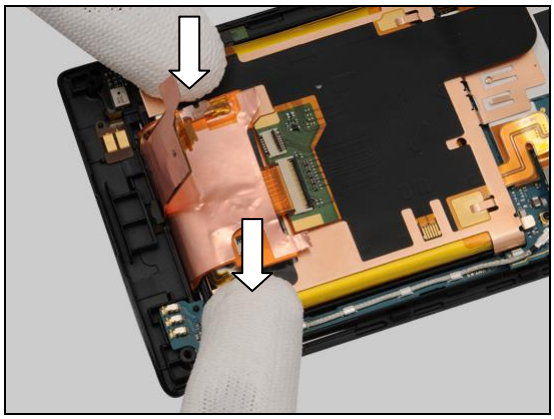
Insert the LCD FPC into the ZIF connector.



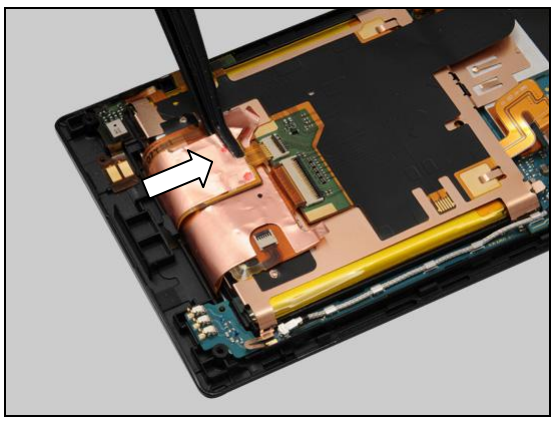
Lock it.



Press along the two sides of the Sheet LCM FPC to secure its attachment.

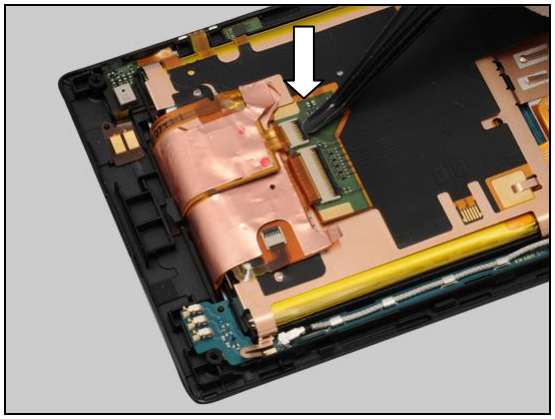


Insert the touch panel FPC into the ZIF connector.



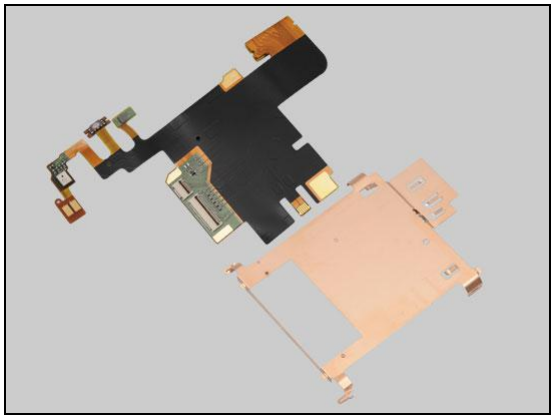
Replacement: Sheet LCM FPC

Lock it.



Replacement

4.30 FPC Bottom Flex & Sheet Metal Battery Plate



Follow the 3.1 – 3.6 Disassembly instructions!

Follow the 4.28 and 4.29 Removal instructions!

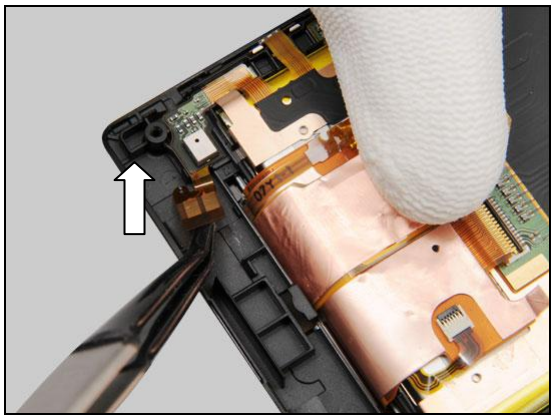
Carry out the Removal as described below.

Prepare a new FPC Bottom Flex and a new Sheet Metal Battery Plate.

Carry out the Installation as described below.

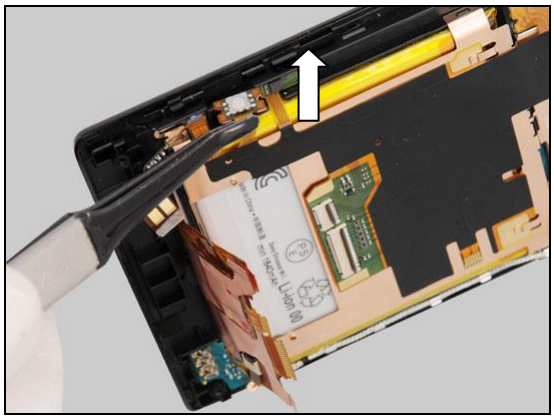
Follow the 4.29 and 4.28 Installation instructions!

Follow the 5.6 – 5.11 Reassembly instructions!

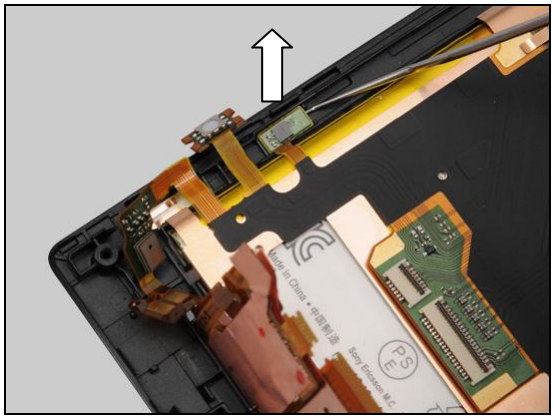


REMOVAL

Gently detach the FPC by using a Flex Film Assembly Tool as shown in picture.



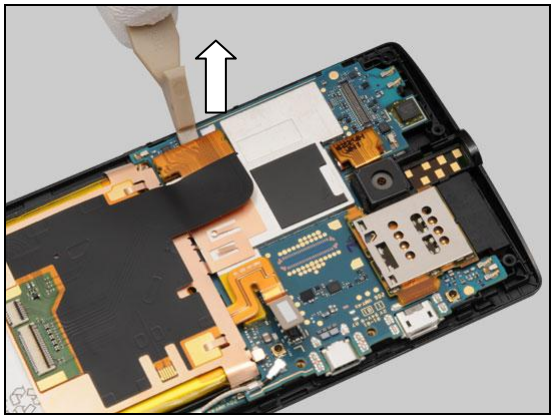
Use a Flex Film Assembly Tool to release the camera switch as shown.



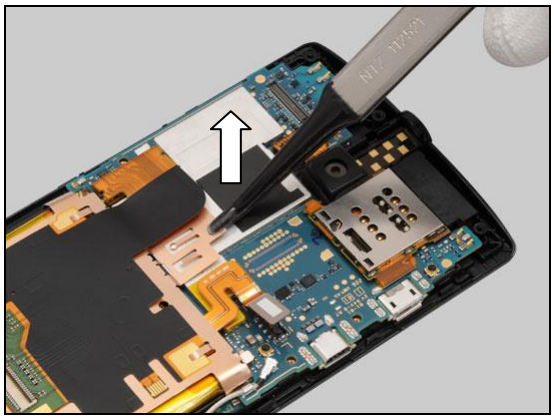
Carefully insert a Dentist Hook as shown in picture to release the FPC from the cavity.

Replacement: FPC Bottom Flex & Sheet Metal Battery Plate

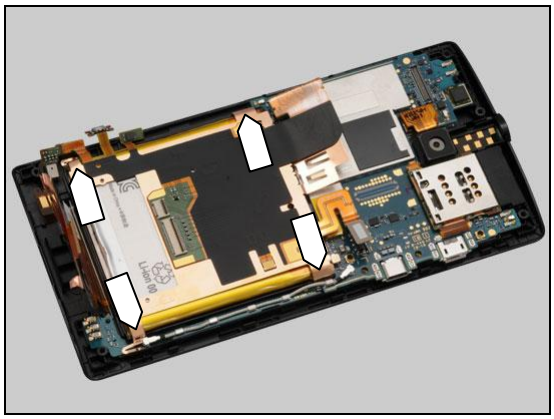
Unsnap the BtB connector.



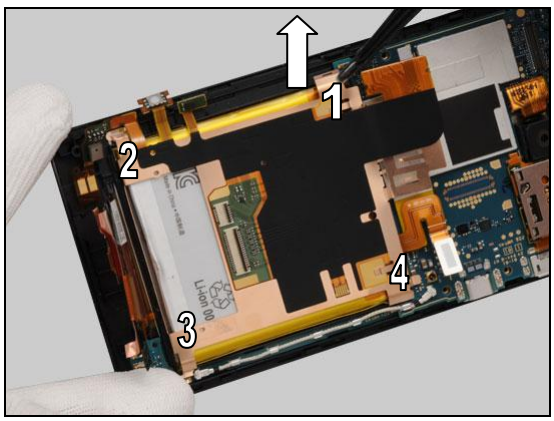
Gently detach the Sheet Metal Battery Plate from the shield can.



There are four snap hooks securing the Sheet Metal Battery Plate



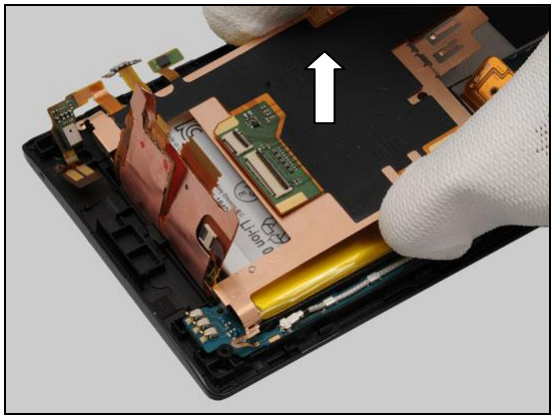
Gently lift up to release the four hooks of the Sheet Metal Battery Plate.



Replacement: FPC Bottom Flex & Sheet Metal Battery Plate

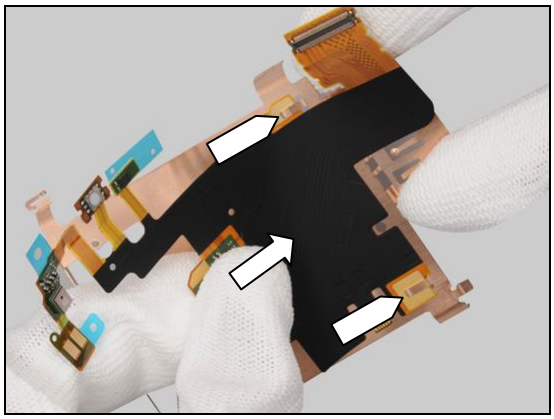
Remove the Sheet Metal Battery Plate with fingers.

Scrap! Not to be reused!

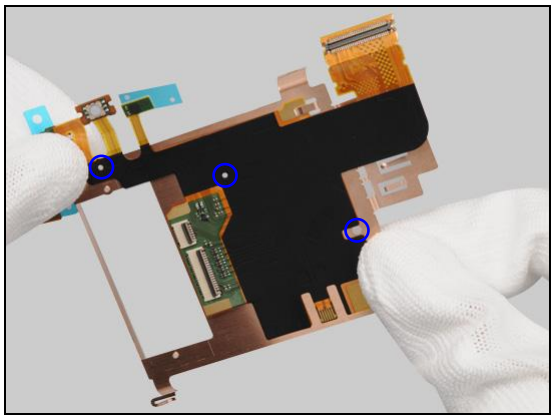


INSTALLATION

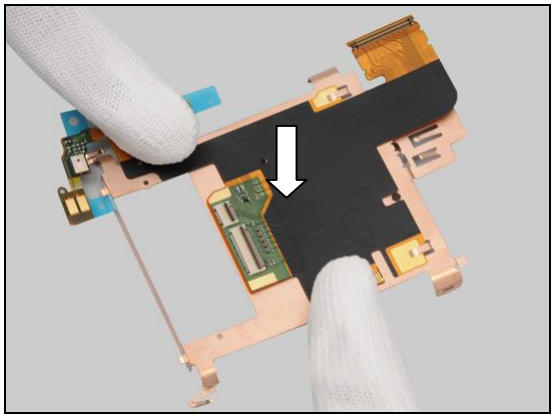
Insert the two sides into the clip as indicated by the pointers.



Securely attached the FPC Bottom Flex on its position as indicated by the holes.

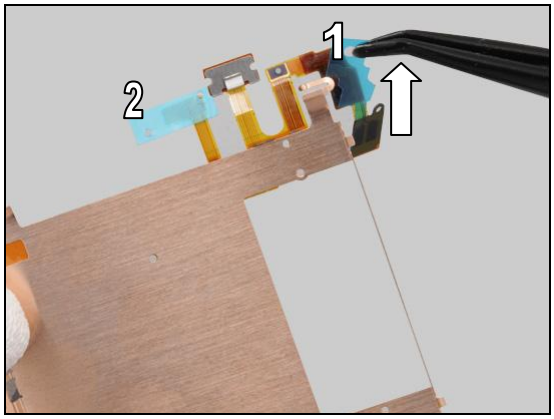


Press along to secure its attachment and position.

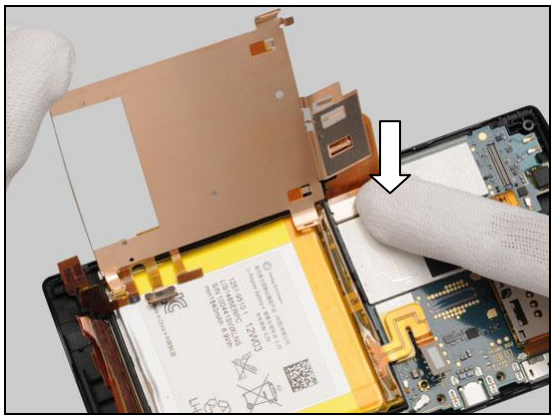


Replacement: FPC Bottom Flex & Sheet Metal Battery Plate

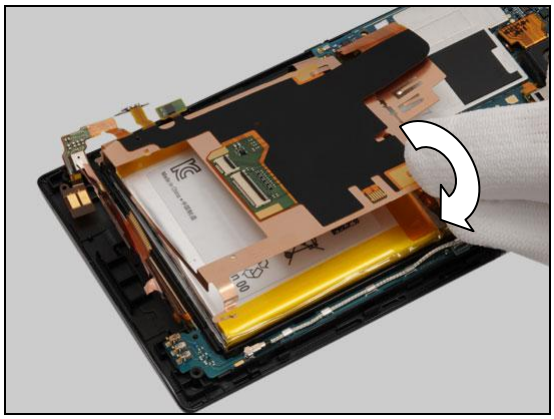
Peel off the two protective films.



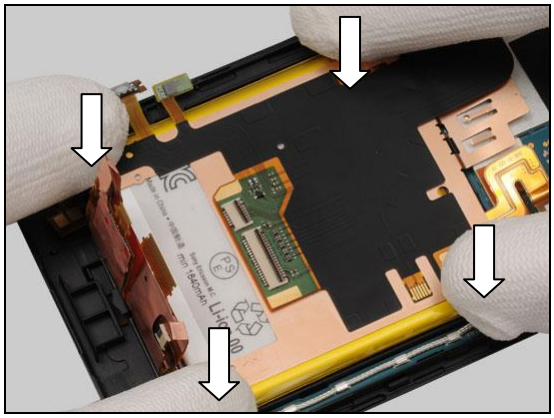
Snap the BtB connector.



Turn it over.

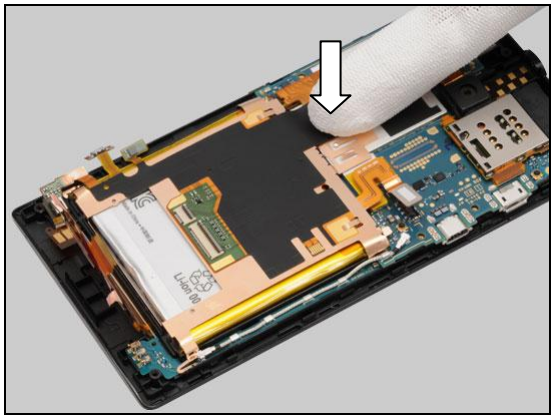


Press to snap the hooks.

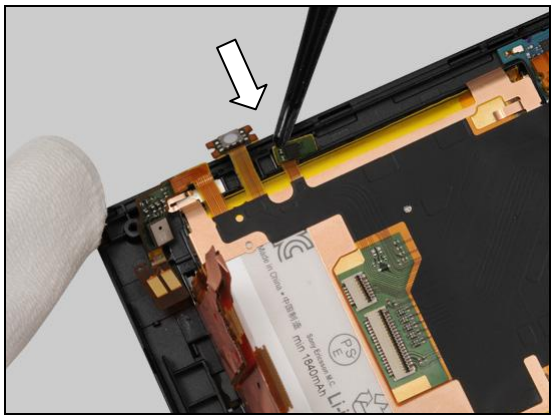


Replacement: FPC Bottom Flex & Sheet Metal Battery Plate

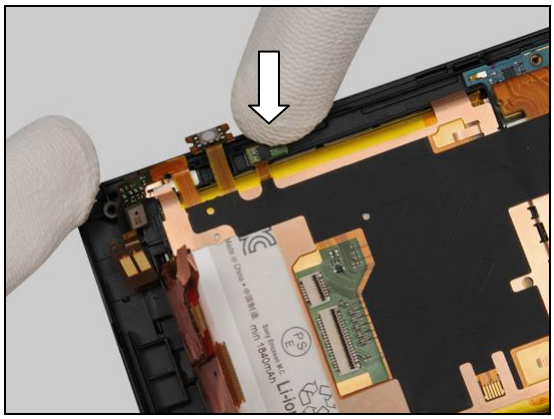
Press along to secure its attachment.



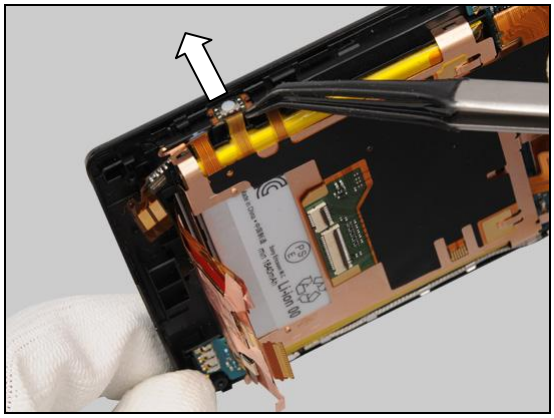
Push the FPC into the cavity by using a Flex Film Assembly Tool.



Press to secure its position.



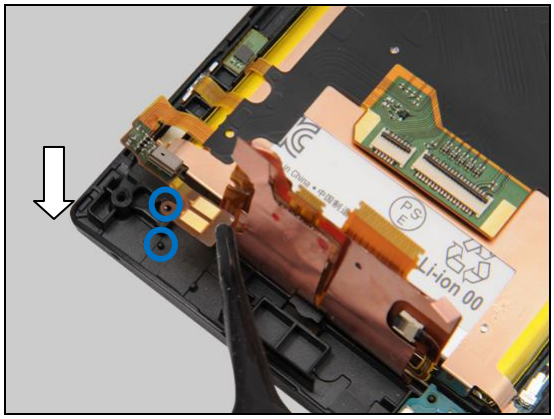
Push the switch into the cavity as shown in picture.



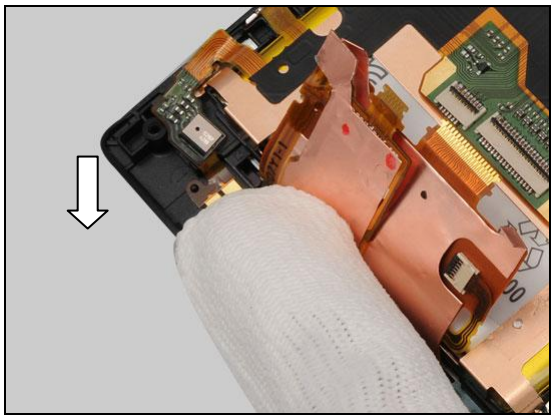
Replacement: FPC Bottom Flex & Sheet Metal Battery Plate

Securely place the FPC on its proper position as indicated by the peg and hole.

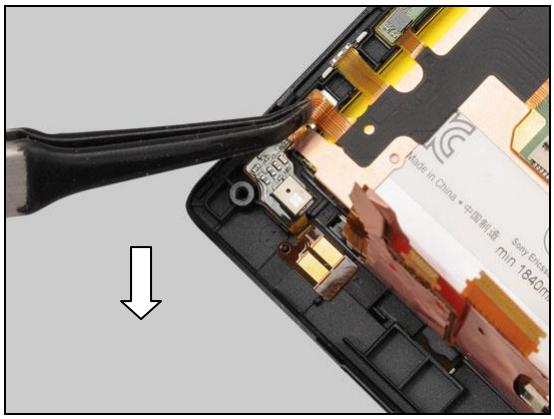
Do not touch the pads on the FPC!



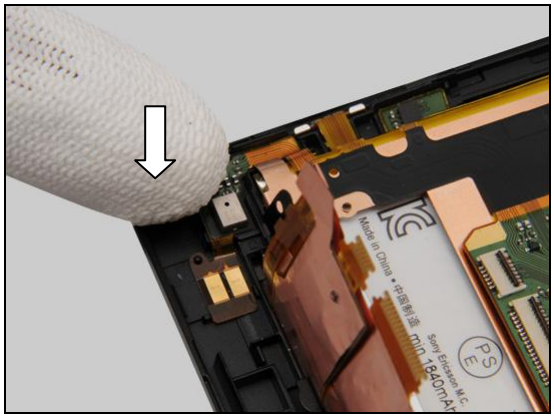
Press to secure its attachment.



Gently push the FPC into the cavity by using a Flex Film Assembly Tool.

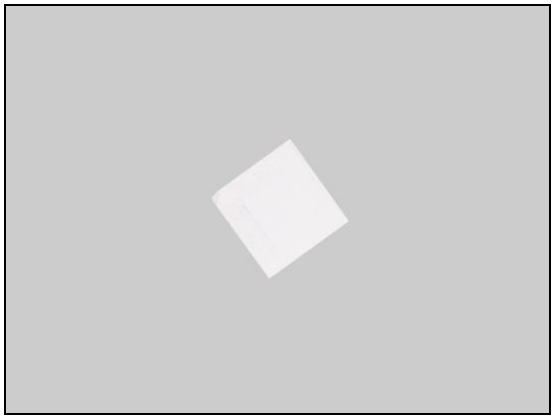


Press along to secure its position.

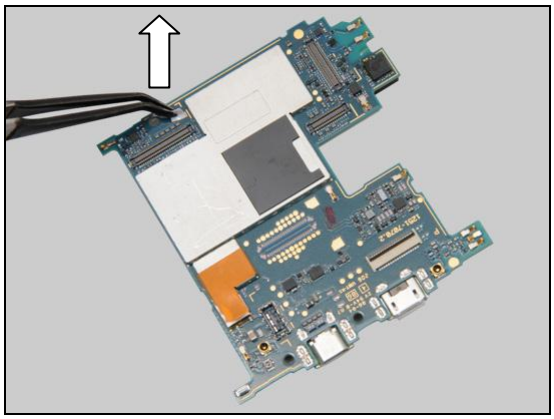


Replacement

4.31 Liquid Indicator



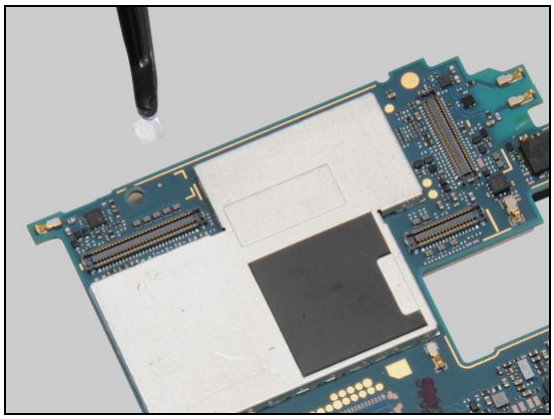
Follow the 3.1 – 3.11 Disassembly instructions!
Carry out the Removal as described below.
Prepare a new Liquid Indicator.
Carry out the Installation as described below.
Follow the 5.1 – 5.11 Reassembly instructions!



REMOVAL

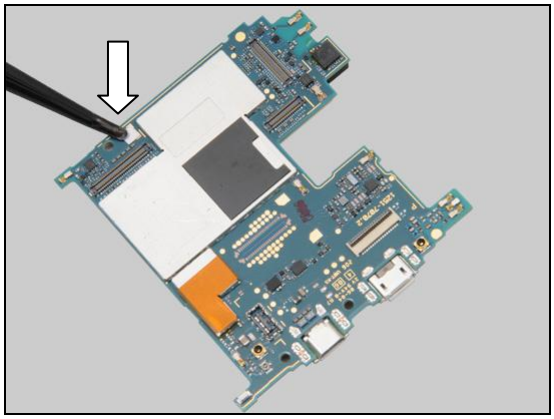
Remove the Liquid Indicator by using a Flex Film Assembly Tool.

Scrap! Not to be reused!



INSTALLATION

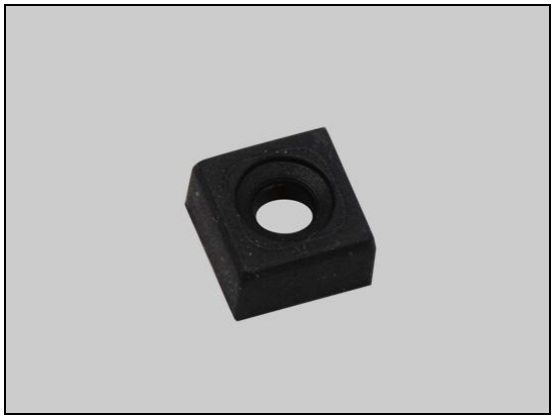
Attach a new Liquid Indicator on the Main PBA as indicated by the golden line.



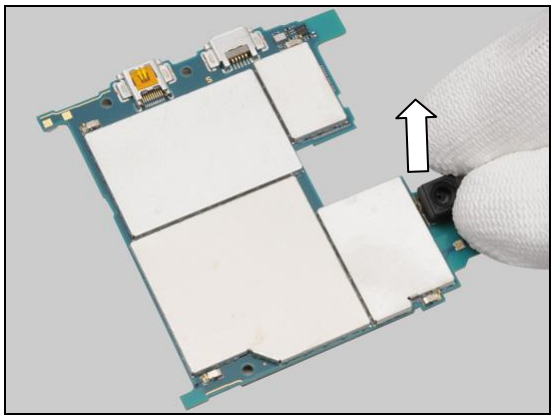
Press to secure its position and attachment.

Replacement

4.32 Rubber Chat Camera

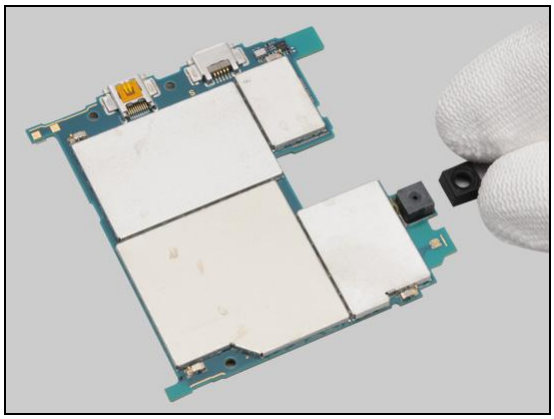


Follow the 3.1 – 3.11 Disassembly instructions!
Carry out the Removal as described below.
Prepare a new Rubber Chat Camera.
Carry out the Installation as described below.
Follow the 5.1 – 5.11 Reassembly instructions!



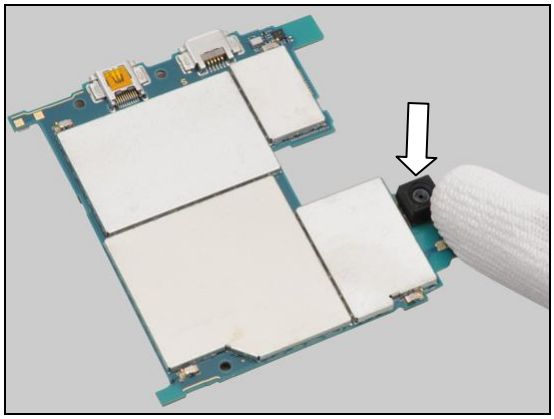
REMOVAL

Remove the Rubber Chat Camera with fingers.



INSTALLATION

Place a new Rubber Chat Camera on the chat camera.

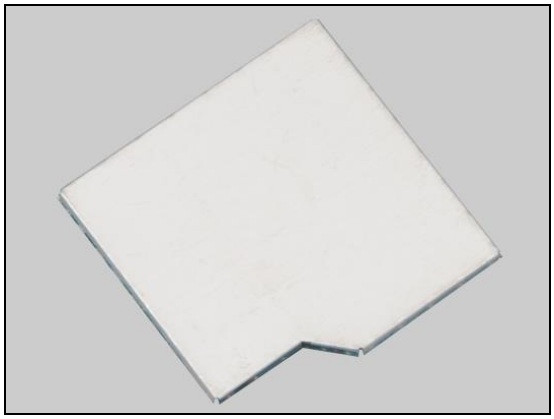


Press to secure its attachment.

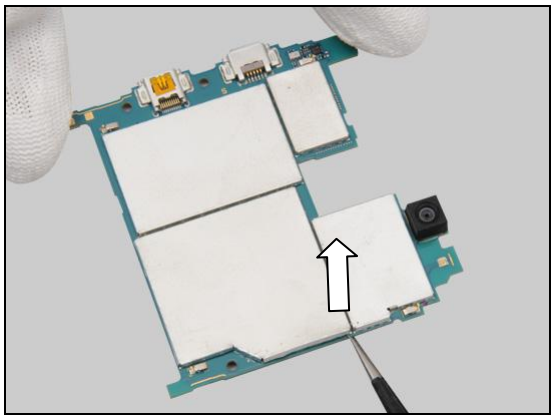
Do not touch the lens!

Replacement

4.33 Shield Can Lid APQ



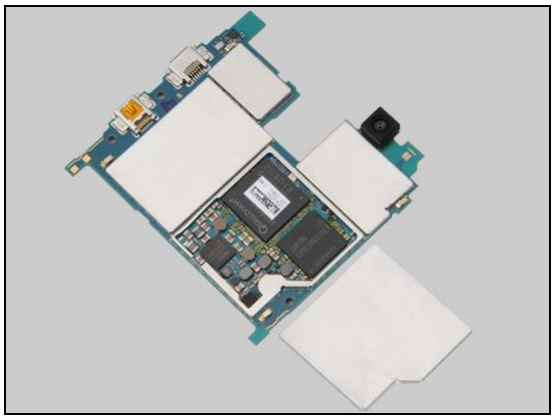
Follow the 3.1 – 3.11 Disassembly instructions!
Carry out the Removal as described below.
Prepare a new Shield Can Lid APQ.
Carry out the Installation as described below.
Follow the 5.1 – 5.11 Reassembly instructions!



REMOVAL

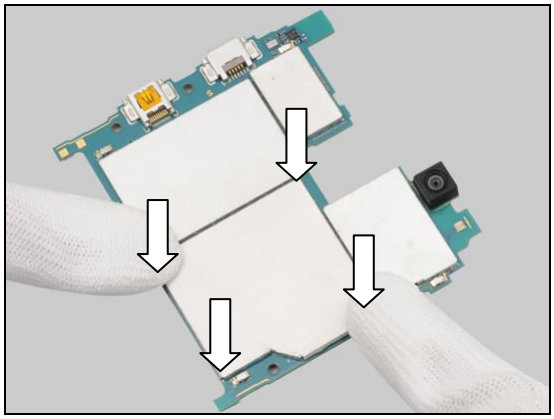
Unsnap the corners of the Shield Can Lid APQ by using a pair of Tweezers and pull upwards to remove it.

Scrap! Not to be reused!



INSTALLATION

Prepare a new Shield Can Lid APQ.

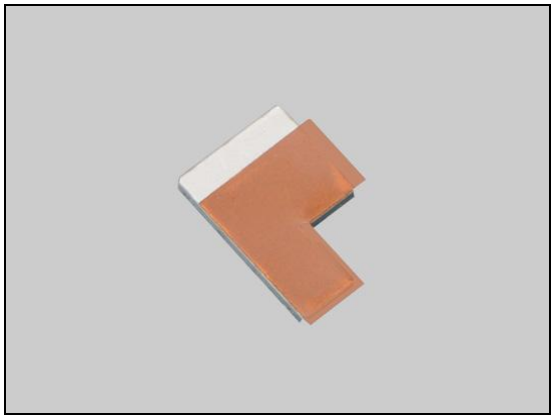


Press to snap it.

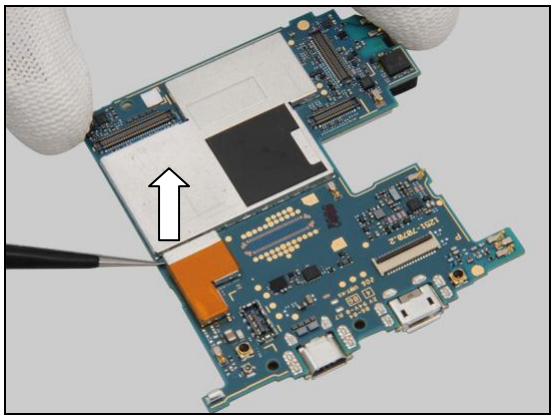
Only the edge of the Shield Can is allowed to press.

Replacement

4.34 Shield Can Lid Charger



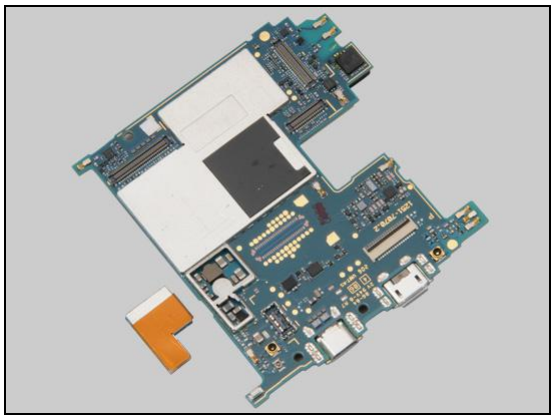
Follow the 3.1 – 3.11 Disassembly instructions!
Carry out the Removal as described below.
Prepare a Shield Can Lid Charger.
Carry out the Installation as described below.
Follow the 5.1 – 5.11 Reassembly instructions!



REMOVAL

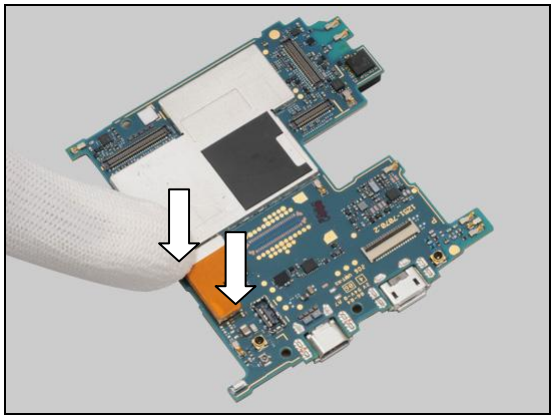
Unsnap the corners of the Shield Can Lid Charger by using a pair of Tweezers and pull upwards to remove it.

Scrap! Not to be reused!



INSTALLATION

Prepare a new Shield Can Lid Charger.



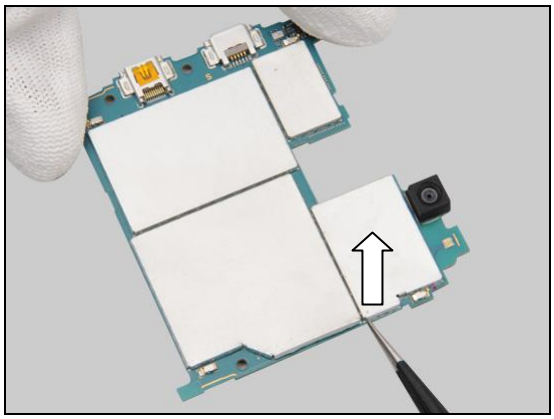
Press to snap it.

Only the edge of the Shield Can is allowed to press.

Replacement

4.35 Shield Can Lid eMMC

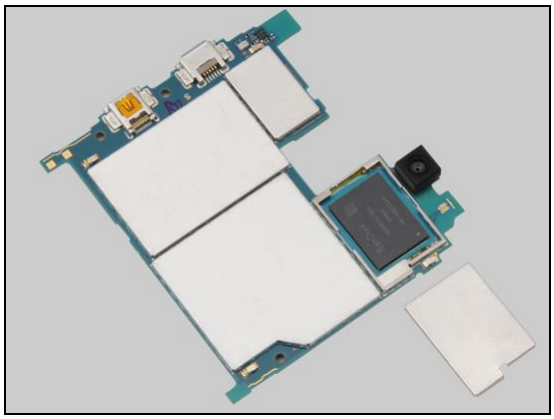
Follow the 3.1 – 3.11 Disassembly instructions!
Carry out the Removal as described below.
Prepare a new Shield Can Lid eMMC.
Carry out the Installation as described below.
Follow the 5.1 – 5.11 Reassembly instructions!



REMOVAL

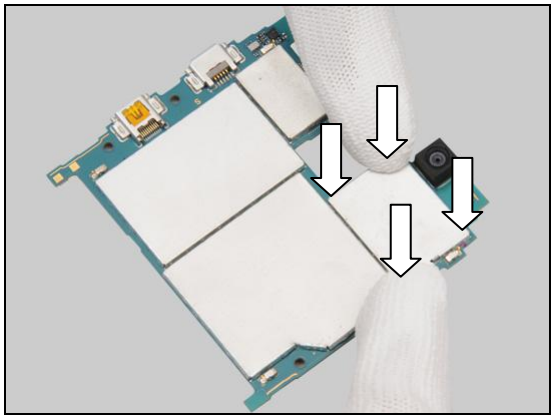
Unsnap the corners of the Shield Can Lid eMMC by using a pair of Tweezers and pull upwards to remove it.

Scrap! Not to be reused!



INSTALLATION

Prepare a new Shield Can Lid eMMC.

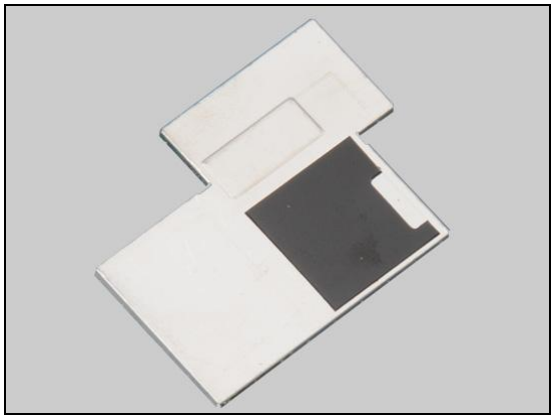


Press to snap it.

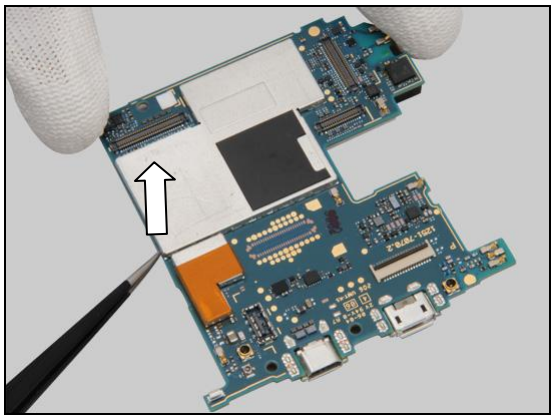
Only the edge of the Shield Can is allowed to press.

Replacement

4.36 Shield Can Lid MDM



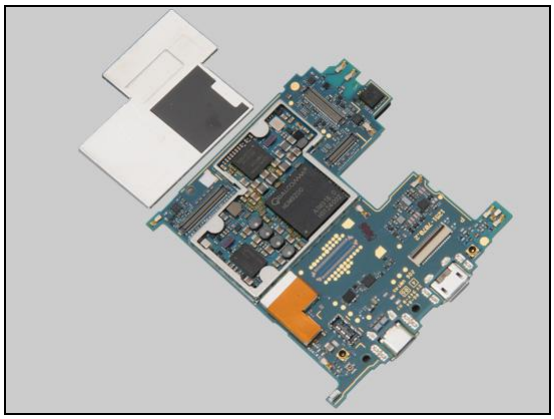
Follow the 3.1 – 3.11 Disassembly instructions!
Carry out the Removal as described below.
Prepare a new Shield Can Lid MDM.
Carry out the Installation as described below.
Follow the 5.1 – 5.11 Reassembly instructions!



REMOVAL

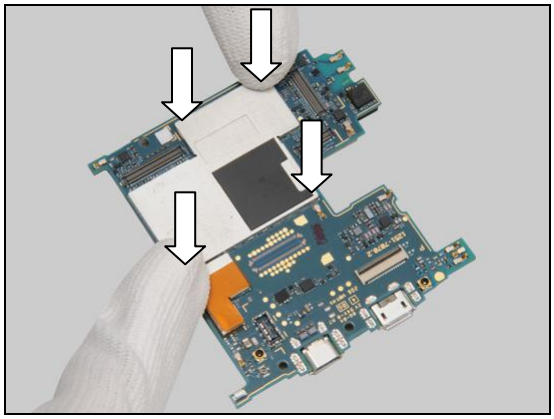
Unsnap the corners of the Shield Can Lid MDM by using a pair of Tweezers and pull upwards to remove it.

Scrap! Not to be reused!



INSTALLATION

Prepare a new Shield Can Lid MDM.

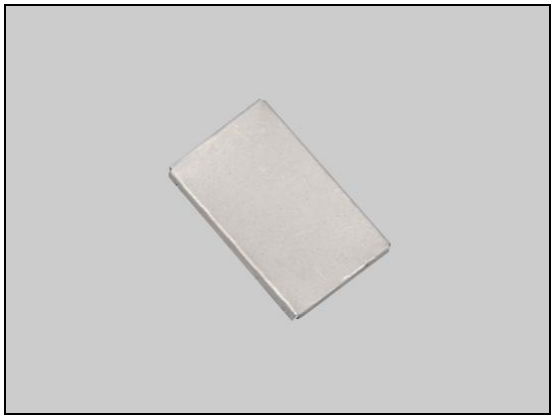


Press to snap it.

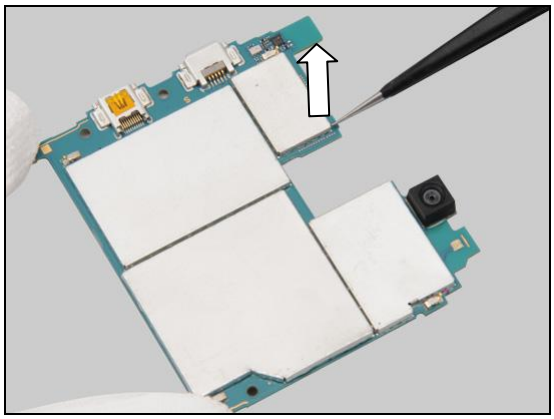
Only the edge of the Shield Can is allowed to press.

Replacement

4.37 Shield Can Lid Non Cell



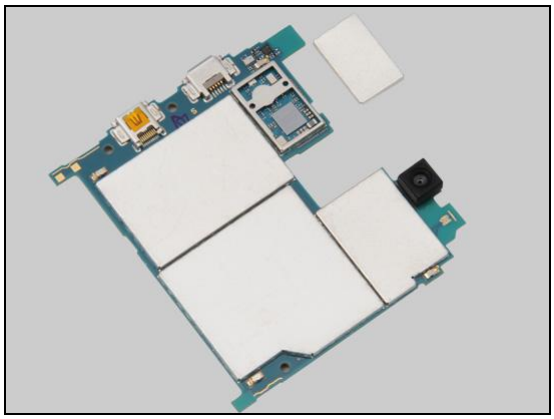
Follow the 3.1 – 3.11 Disassembly instructions!
Carry out the Removal as described below.
Prepare a new Shield Can Lid Non Cell.
Carry out the Installation as described below.
Follow the 5.1 – 5.11 Reassembly instructions!



REMOVAL

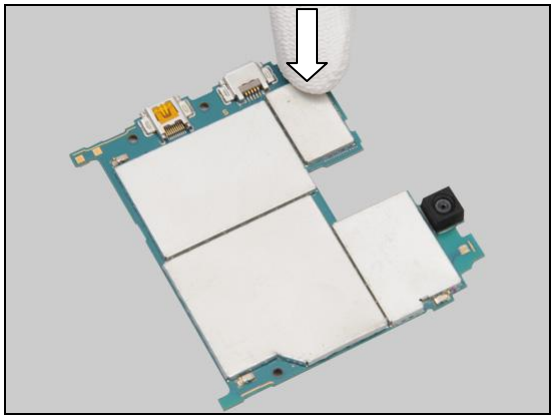
Unsnap the corners of the Shield Can Lid Non Cell by using a pair of Tweezers and pull upwards to remove it.

Scrap! Not to be reused!



INSTALLATION

Prepare a new Shield Can Lid Non Cell.

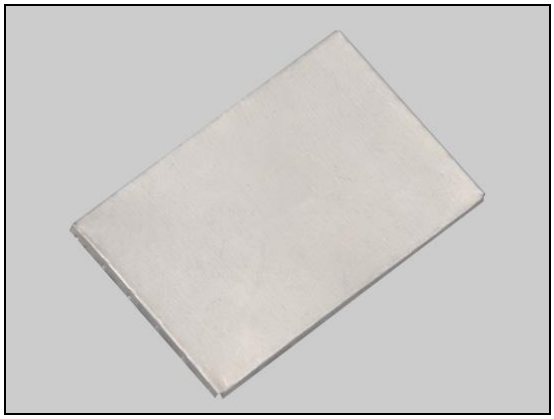


Press to snap it.

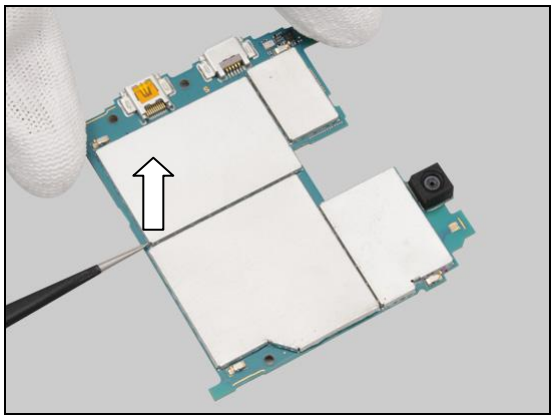
Only the edge of the Shield Can is allowed to press.

Replacement

4.38 Shield Can Lid RF



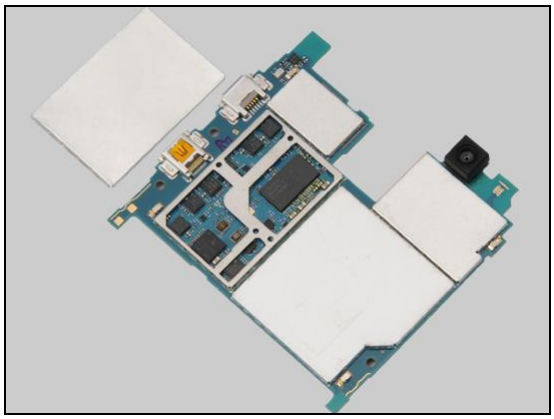
Follow the 3.1 – 3.11 Disassembly instructions!
Carry out the Removal as described below.
Prepare a new Shield Can Lid RF.
Carry out the Installation as described below.
Follow the 5.1 – 5.11 Reassembly instructions!



REMOVAL

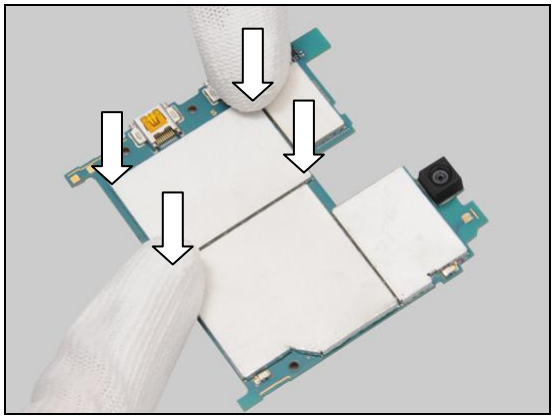
Unsnap the corners of the Shield Can Lid RF by using a pair of Tweezers and pull upwards to remove it.

Scrap! Not to be reused!



INSTALLATION

Prepare a new Shield Can Lid RF.

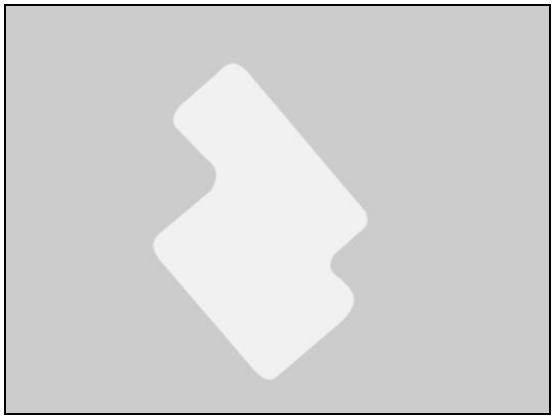


Press to snap it.

Only the edge of the Shield Can is allowed to press.

Replacement

4.39 Foil Adhesive Double Side



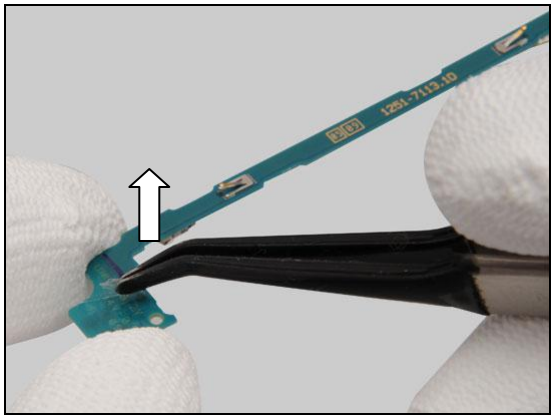
Follow the 3.1 – 3.11 Disassembly instructions!
Carry out the Removal as described below.
Prepare a new Foil Adhesive Double Side.
Carry out the Installation as described below.
Follow the 5.1 – 5.11 Reassembly instructions!

REMOVAL

Gently detach the PBA Sub Antenna Assy from the cavity by using a Front Opening Tool.

Remove it from the cavity with fingers.

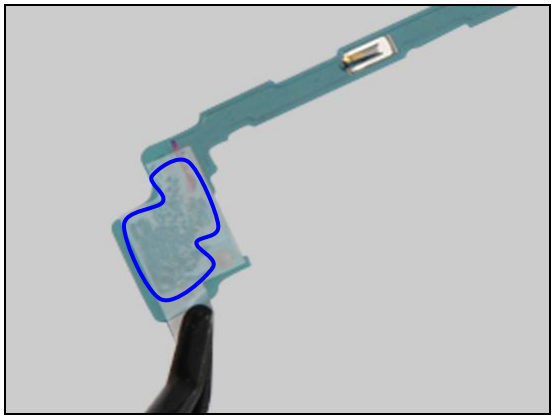
Gently peel off the Foil Adhesive Double Side.



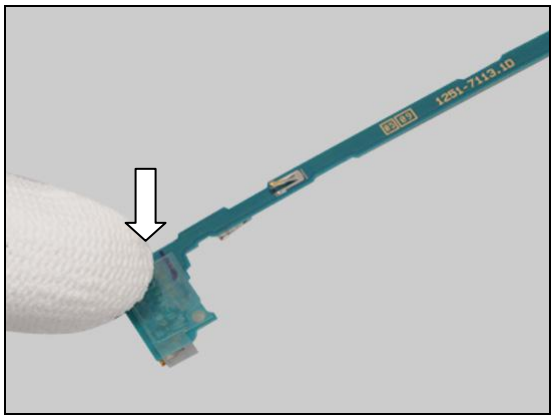
Replacement: Foil Adhesive Double Side

INSTALLATION

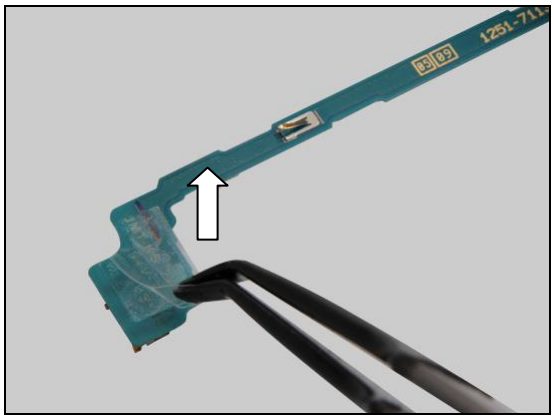
Place a new Foil Adhesive Double Side on the correct position.



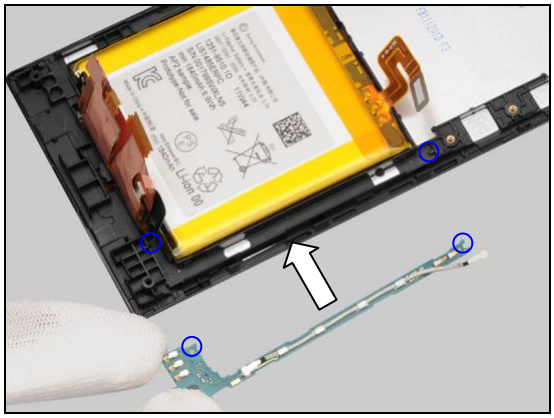
Press to secure its attachment.



Peel off the protective film.

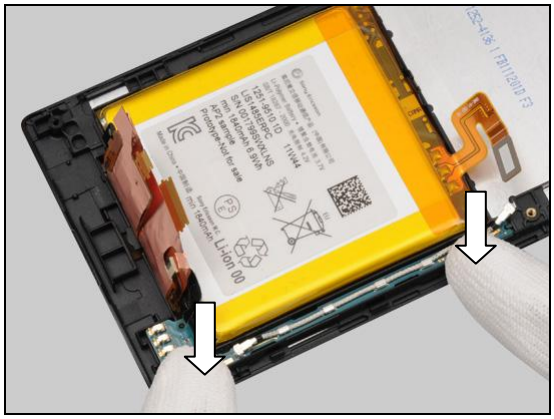


Place the PBA Sub Antenna Assy into the cavity as indicated by the pegs and holes.



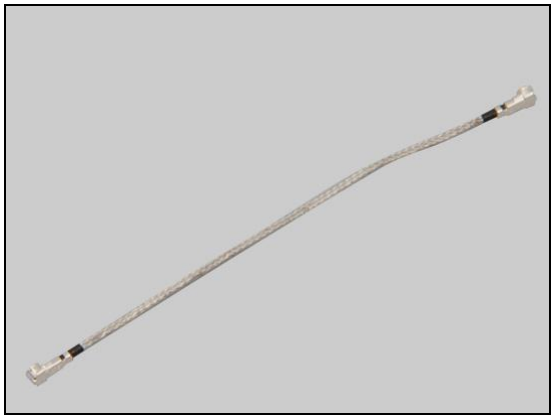
Replacement: Foil Adhesive Double Side

Press along to secure its attachment.

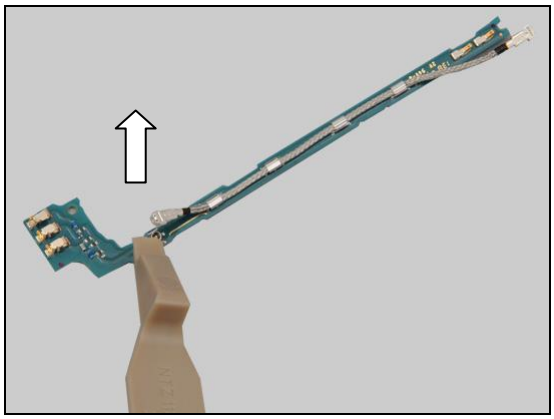


Replacement

4.40 Cable RF



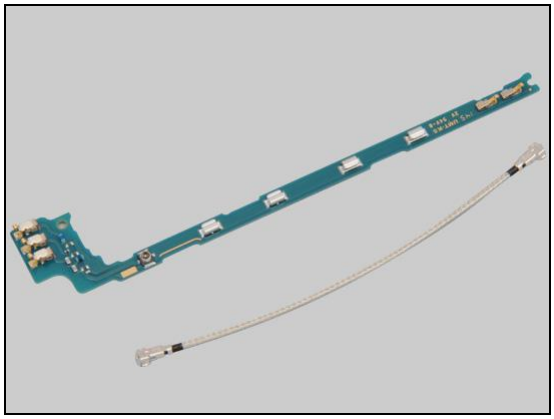
Follow the 3.1 – 3.11 Disassembly instructions!
Follow the 4.39 Removal Instructions!
Carry out the Removal as described below.
Prepare a new Cable RF.
Carry out the Installation as described below.
Follow the 4.39 Installation Instructions!
Follow the 5.1 – 5.11 Reassembly instructions!



REMOVAL

Disconnect this end of the Cable RF.

Gently remove the Cable RF from the hooks of the PBA Sub Antenna Assy.

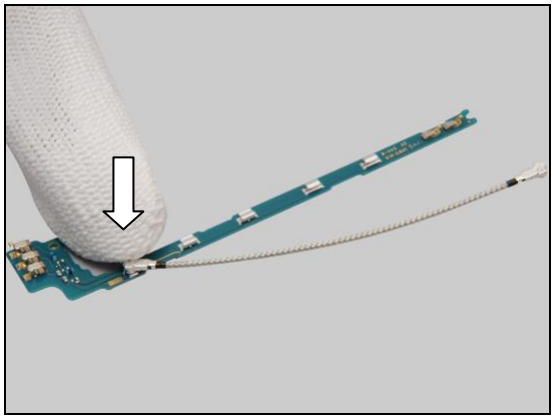


INSTALLATION

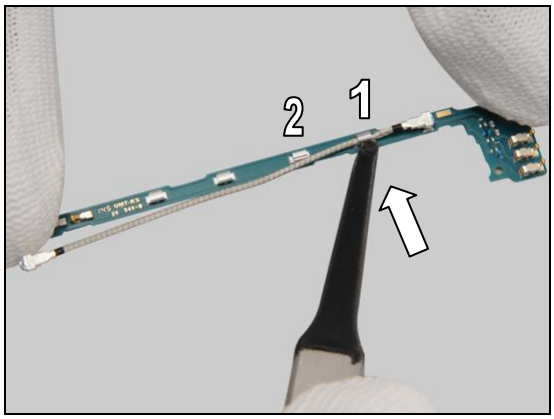
Prepare a new Cable RF and the PBA Sub Antenna Assy.

Replacement: Cable RF

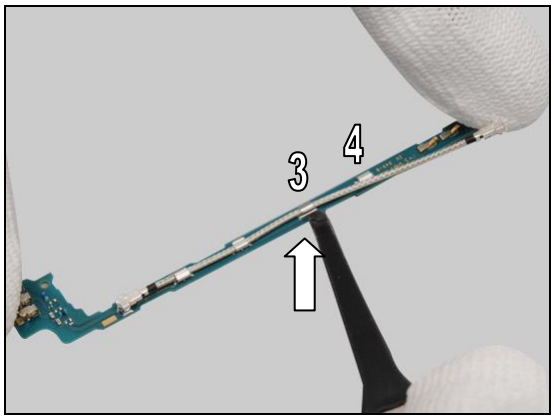
Connect this end of the Cable RF.



Insert the Cable RF into the two hooks as shown.

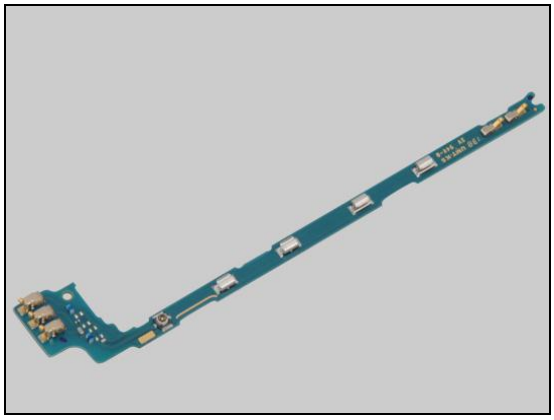


Turn the PBA Sub Antenna Assy over and insert the Cable RF into the two hooks.



Replacement

4.41 PBA Sub Antenna Assy



Follow the 3.1 – 3.11 Disassembly instructions!
Follow the 4.39 and 4.40 Removal instructions!
Carry out the Removal as described below.
Prepare a new PBA Sub Antenna Assy.
Carry out the Installation as described below.
Follow the 4.40 and 4.39 Installation instructions!
Follow the 5.1 – 5.11 Reassembly instructions!

Replacement

4.42 Battery 1900mAh & Cover Front Assy

Follow the 3.1 – 3.11 Disassembly instructions!

Follow the 4.39 Removal instructions!

Prepare a new Battery 1900mAh and a new Cover Front Assy.

Carry out the Installation as described below.

Follow the 4.39 Installation instructions!

Follow the 5.1 – 5.11 Reassembly instructions!

REMOVAL

Scrap the Battery 1900mAh and the Cover Front Assy! Not to be reused!

INSTALLATION

Place a new Battery 1900mAh on the socket.

Press along to secure its attachment.

4.43 Board Swap - Replacement

Follow the 3.1 – 3.11 Disassembly instructions!

Replace the Swap Board.

Reuse the Camera.

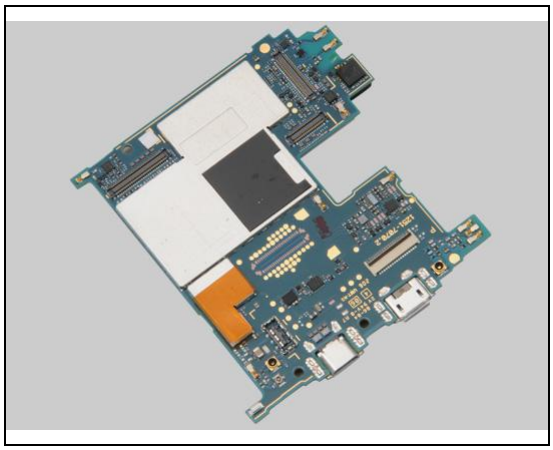
Follow the 4.32 Installation instructions!

Follow the 5.1 – 5.11 Reassembly instructions!

Place the unit on flat desk, tartup the unit to initialize settings, and wait 4 minutes before performs Customize Phone in Emma.

Please DO NOT move the phone during starting up until "Select Language" menu is shown on the display!

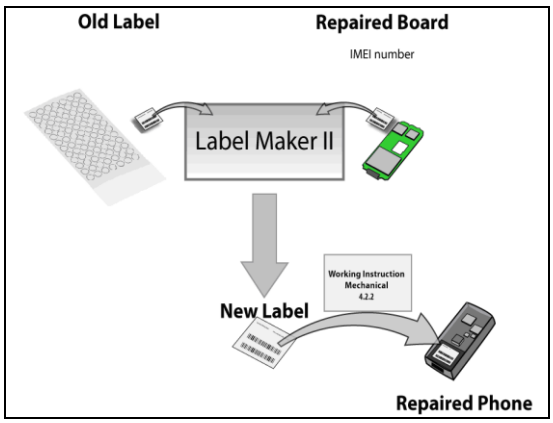
After "Select Language" menu, turn off the phone.



4.44 Board Swap – Change Label

CHANGE LABEL

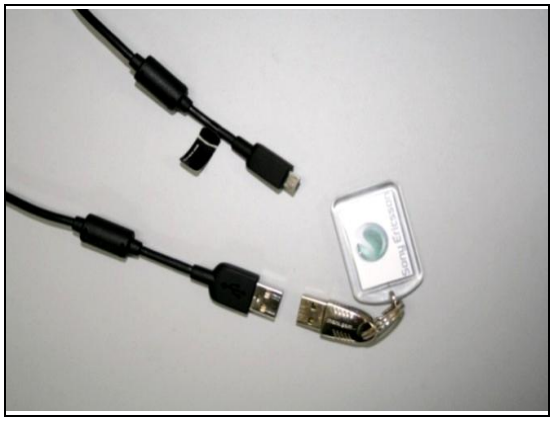
Follow the instructions in the Generic Repair Manual – Build swap for change of label.



4.45 Board Swap – Customize of Software

CUSTOMIZE OF SOFTWARE

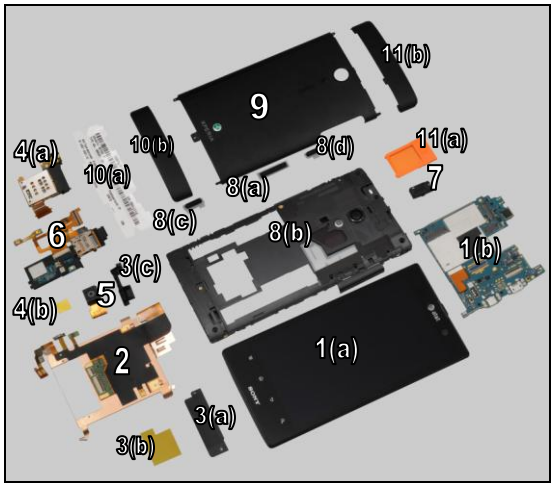
Follow the instructions in the Generic Repair Manual – Build swap for customization of the software.



5 Reassembly

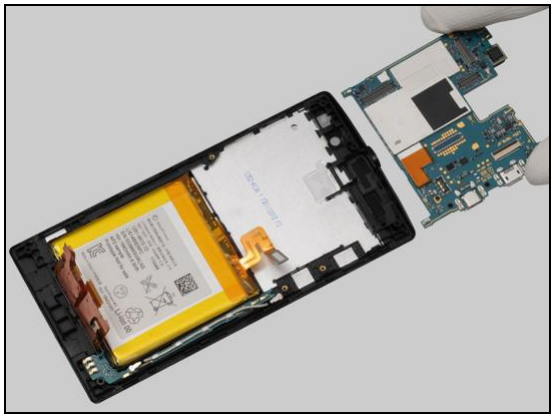
The reassembly is done in the following order:

1. Cover Front Assy (a) & Main PBA (b)
2. FPC Bottom Flex Assy
3. Sheet LCM FPC (a) & Sheet Touch ZIF (b) & Carrier Holder Bottom (c)
4. FPC Top Flex Assy (a) & Sheet RCV Flex ZIF (b)
5. Camera
6. Carrier NFC Assy
7. Audio Jack
8. Key Volume (a) & Frame Rear Assy (b) & Key Camera (c) & Key On/Off (d)
9. Cover Rear Sub Assy
10. Label Core Unit (a) & Cover Rear Bottom (b)
11. SIM Tray (a) & Cover Rear Top (b)

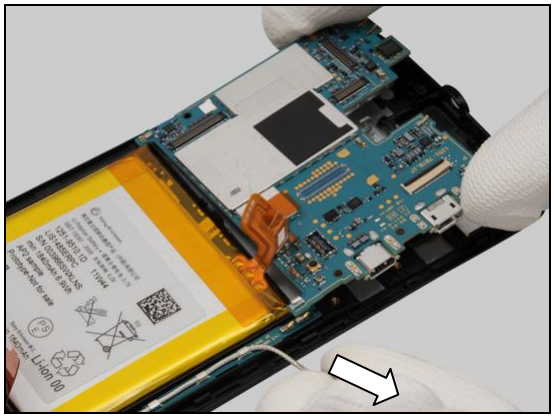


5.1 Cover Front Assy & Main PBA

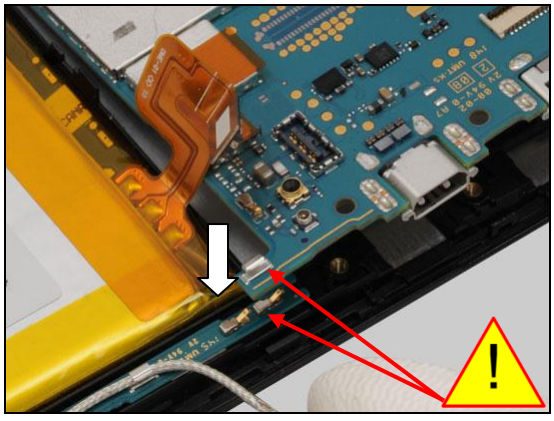
Prepare the Cover Front Assy and the Main PBA.



Place the Main PBA on its proper position and gently pull outwards the Cable RF as shown to make it keep away from the Cover Front Assy.



Securely place the corner of the Main PBA onto the pins of the PBA Sub Antenna Assy as shown in picture.

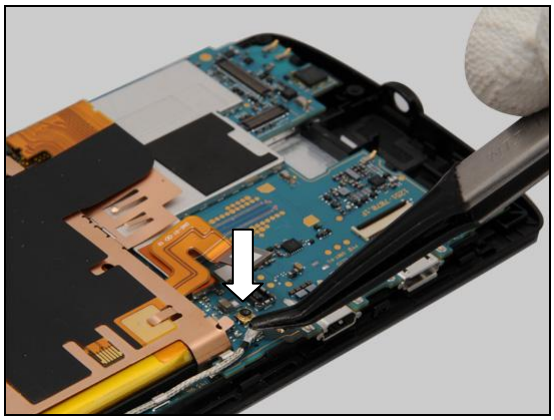


Reassembly

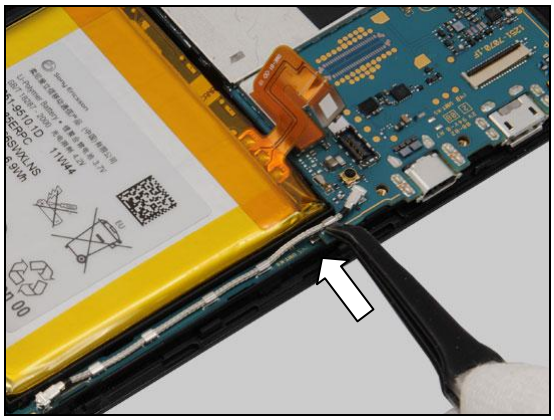
Press the main PBA to snap the hooks as shown.

Do not press the pins on the Main PBA!

Connect this end of the Cable RF.



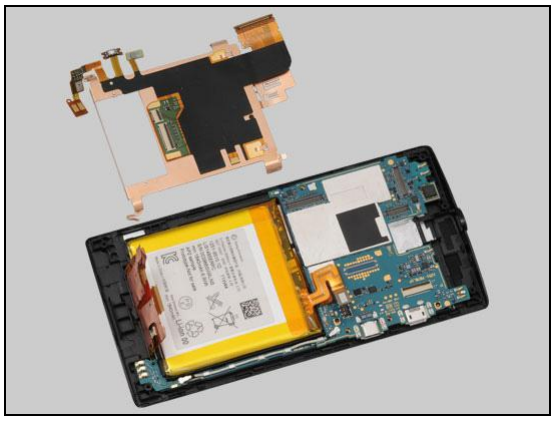
Gently push against the Cable RF to snap it into the hook of the Main PBA.



5.2 FPC Bottom Flex Assy

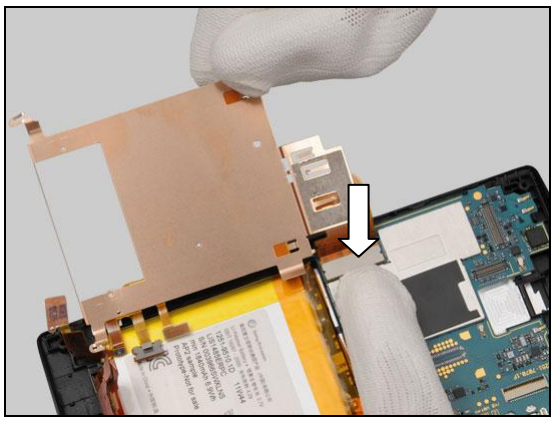
Follow the 4.29 Installation instructions!

Prepare a new FPC Bottom Flex Assy.

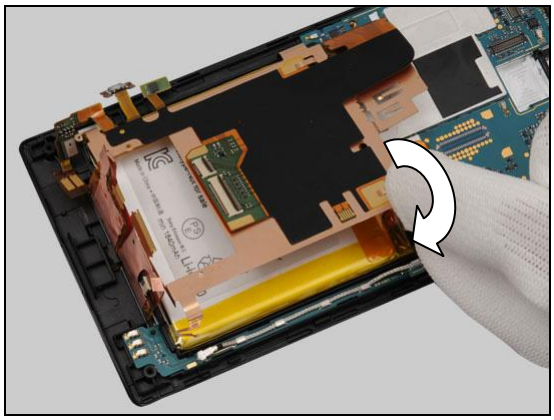


Reassembly

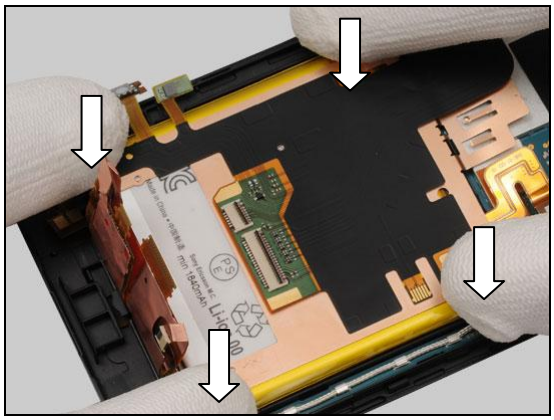
Snap the BtB connector.



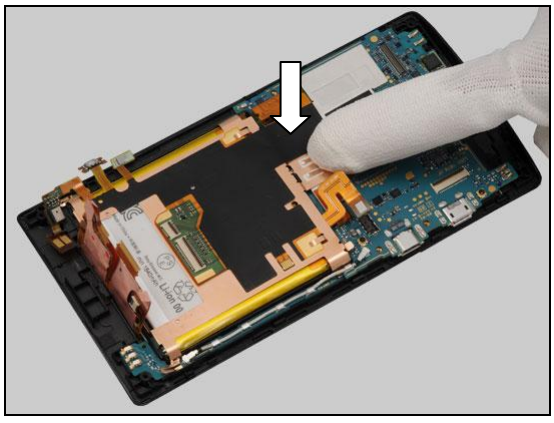
Turn it over.



Press to snap the hooks.

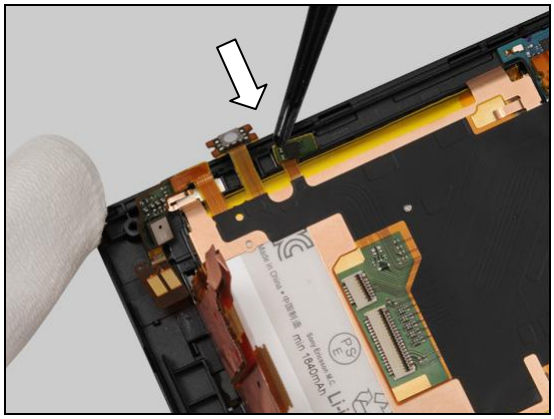


Press along to secure its attachment.

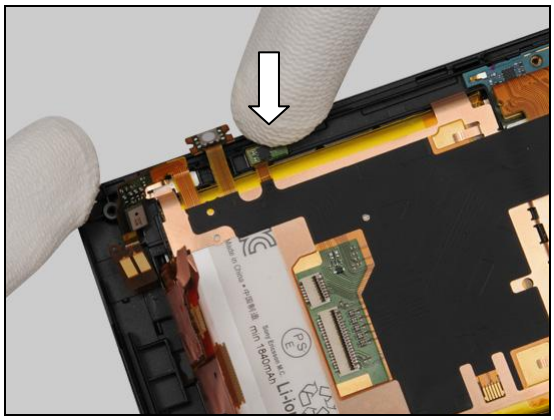


Reassembly

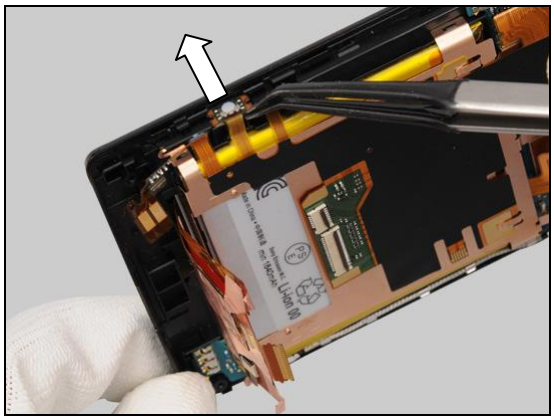
Push the FPC into the cavity by using a Flex Film Assembly Tool.



Press to secure its position.

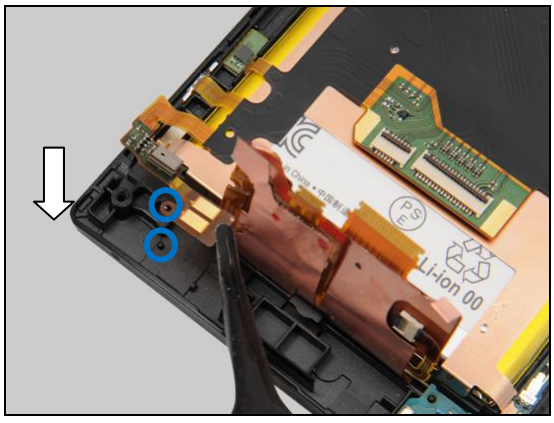


Push the switch into the cavity as shown in picture.

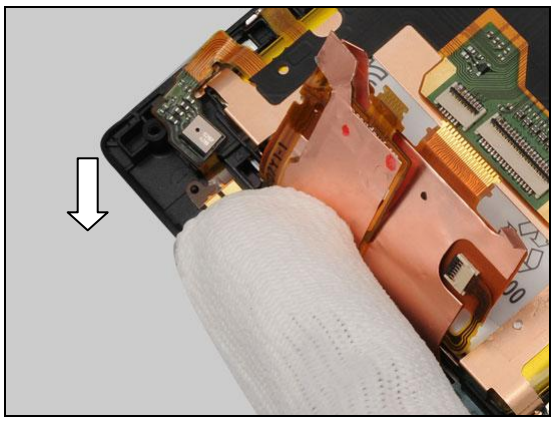


Securely place the FPC on its proper position as indicated by the peg and hole.

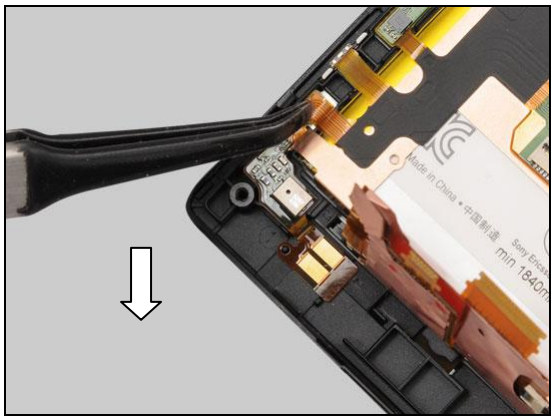
Do not touch the pads on the FPC!



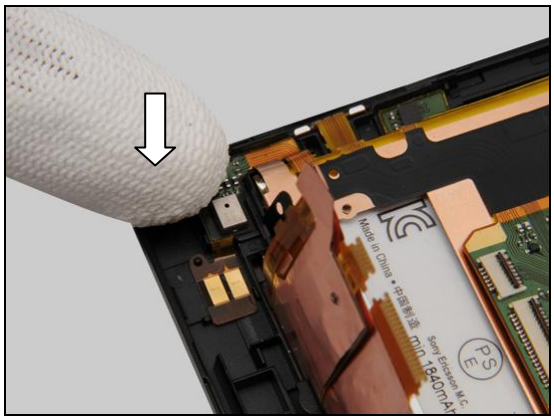
Press to secure its attachment.



Gently push the FPC into the cavity by using a Flex Film Assembly Tool.

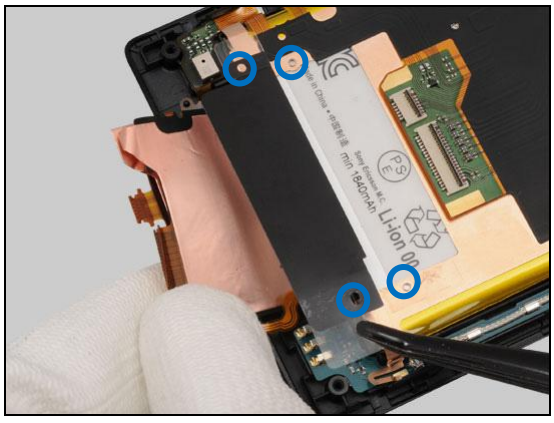


Press along to secure its position.



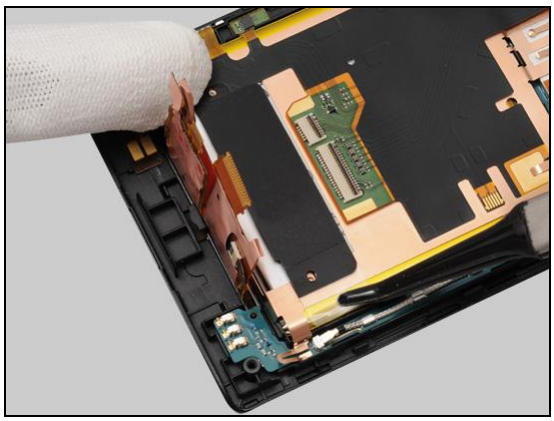
5.3 Sheet LCM FPC &Sheet Touch ZIF &Carrier Holder Bottom

Prepare a new Sheet LCM FPC and align it as indicated by the holes.

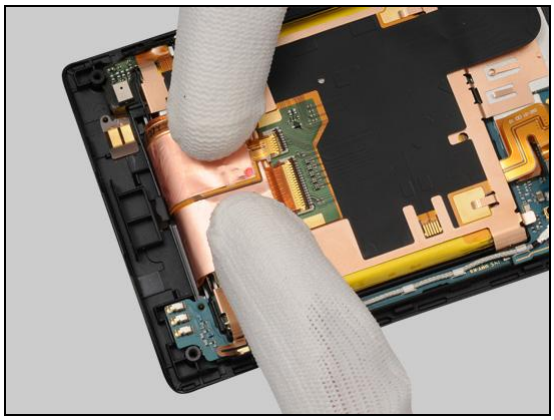


Reassembly

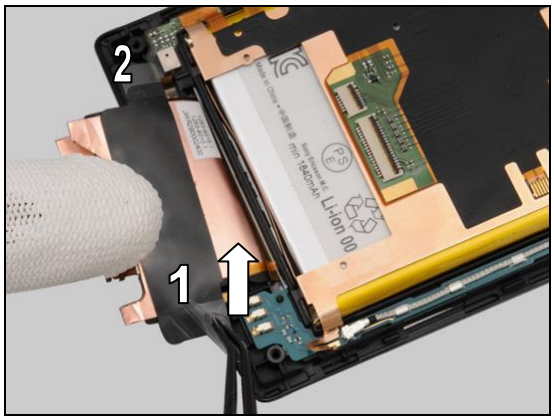
Securely place the Sheet LCM FPC on the Sheet Metal Battery Plate.



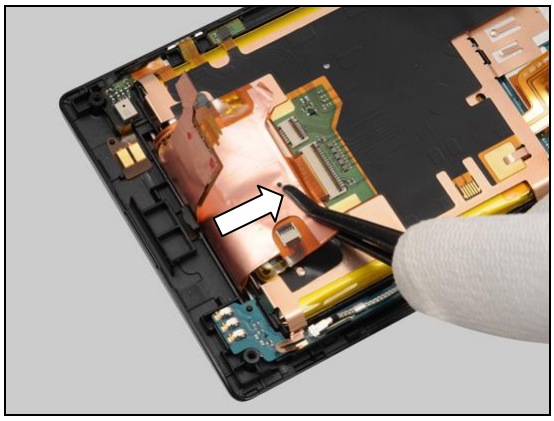
Press to secure its attachment.



Peel off the two protective films.

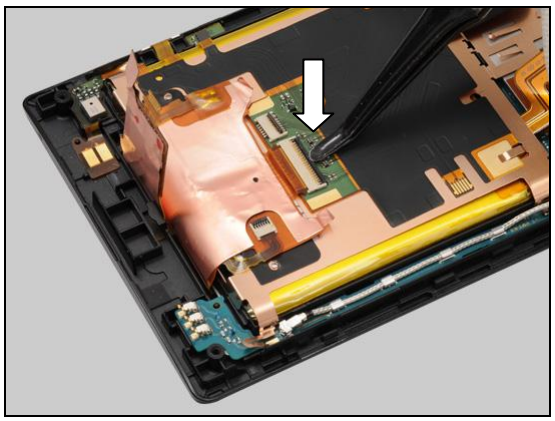


Insert the LCD FPC into the ZIF connector.

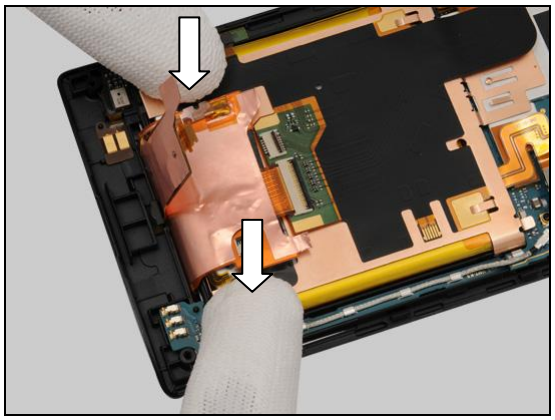


Reassembly

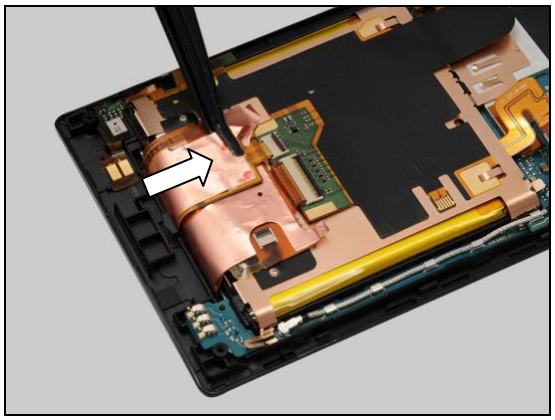
Lock it.



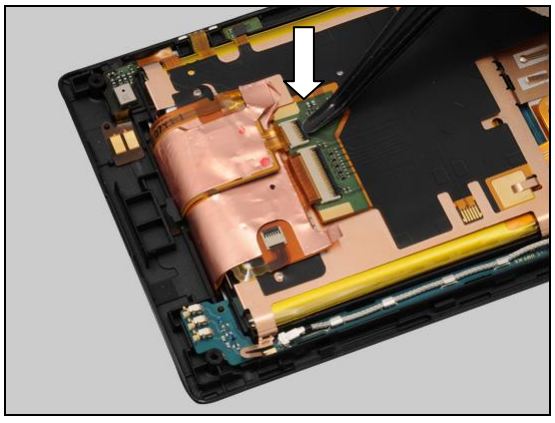
Press along the two sides of the Sheet LCM FPC to secure its attachment.



Insert the touch panel FPC into the ZIF connector.

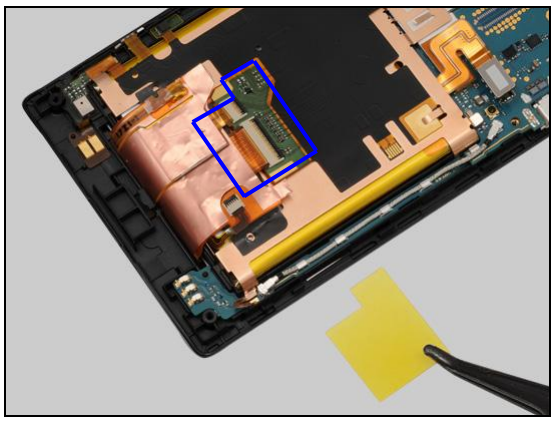


Lock it.

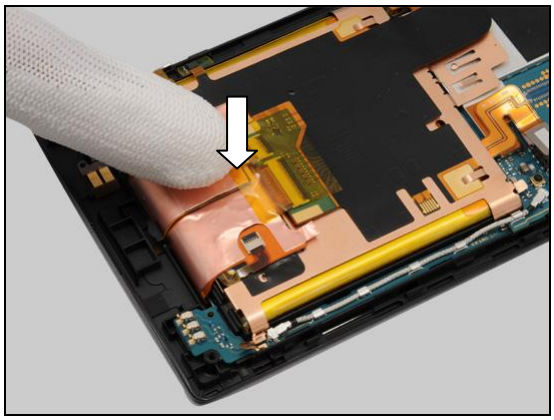


Reassembly

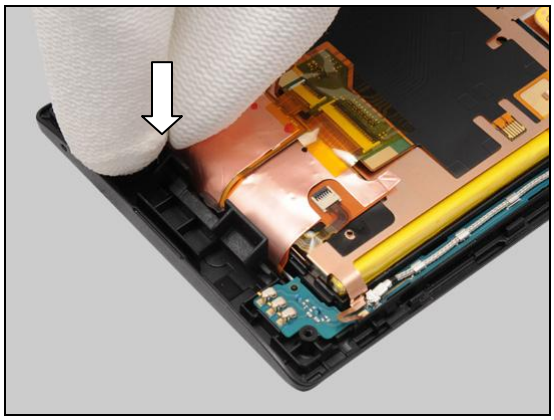
Place a new Sheet Touch ZIF on its correct position as indicated by the blue line.

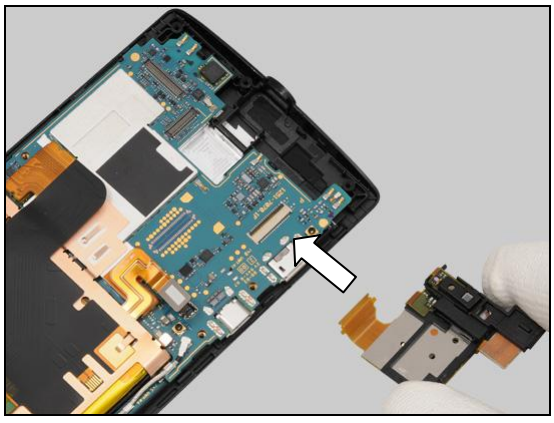


Press along to secure its attachment.



Insert the Carrier Holder Bottom into its cavity as shown and secure its position.



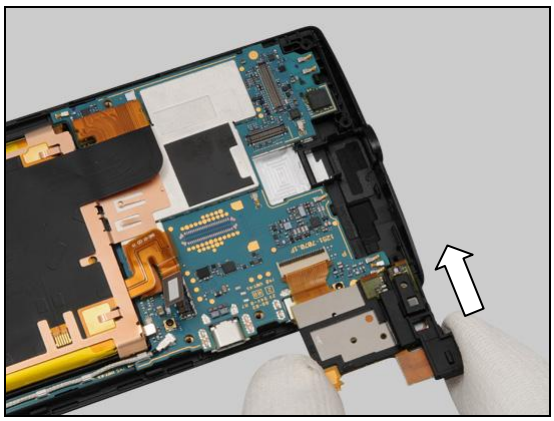


5.4 FPC Top Flex Assy

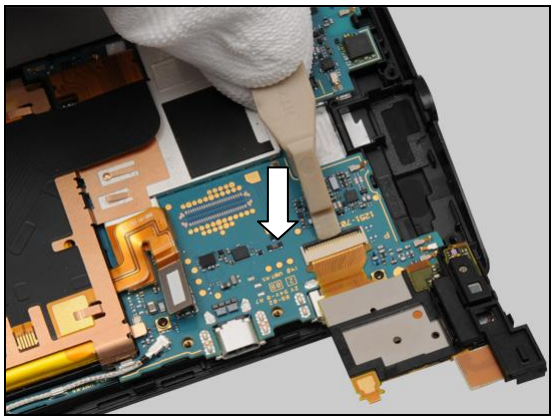
Prepare the FPC Top Flex Assy.

Reassembly

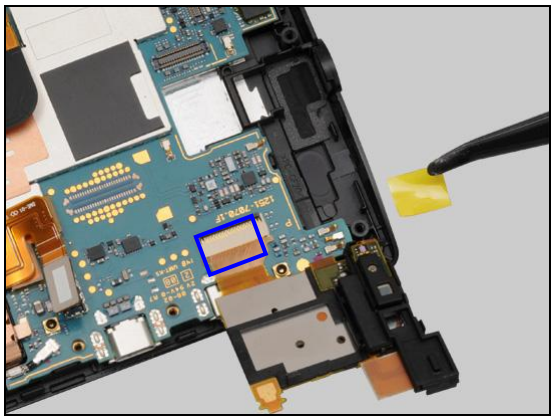
Insert the FPC into the ZIF connector as shown.



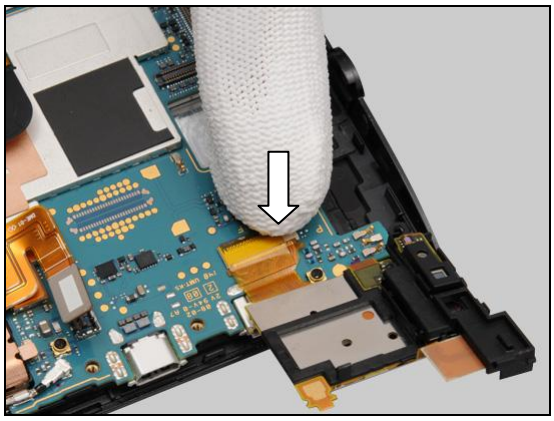
Lock it.



Attach a new Sheet RCV Flex ZIF on the proper position as indicated by the blue rectangle.

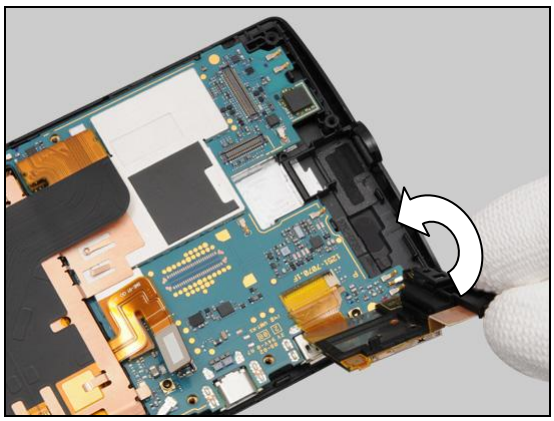


Press along to secure its attachment.

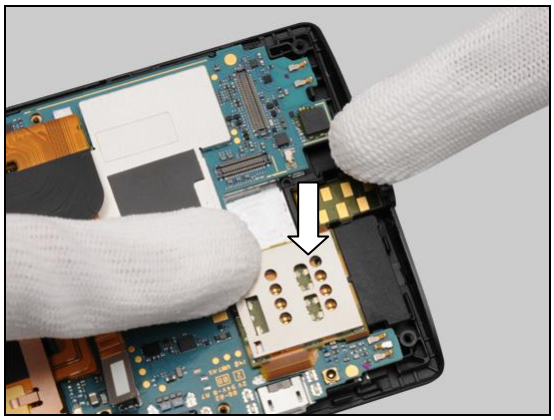


Reassembly

Turn it over.

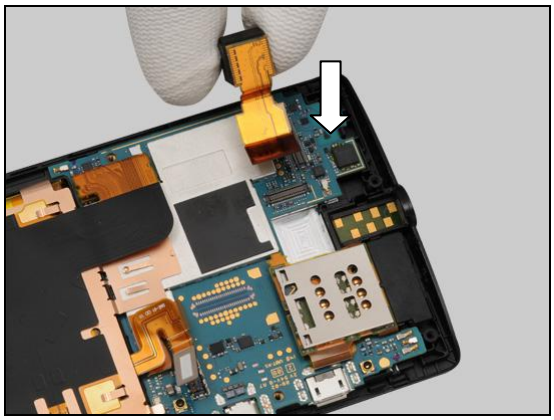


Press to snap the hooks and secure its attachment.

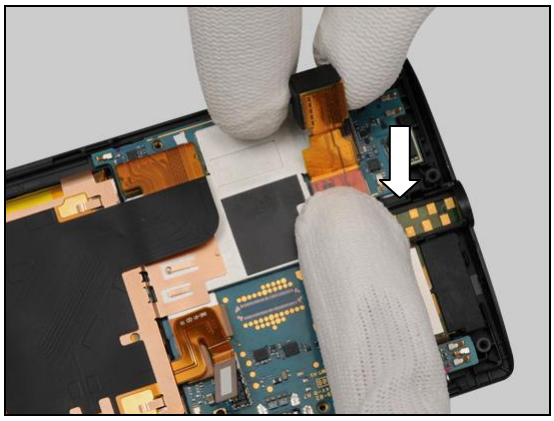


5.5 Camera

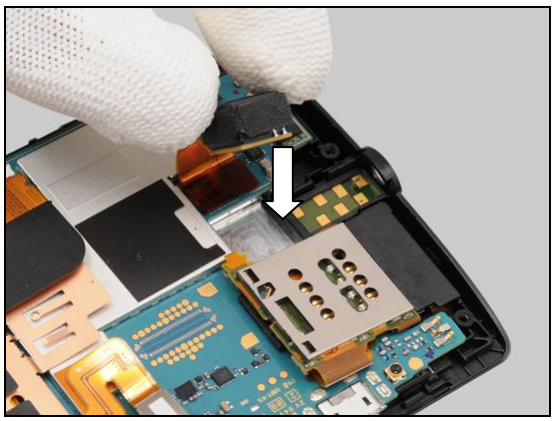
Prepare the Camera.



Snap the BtB connector.

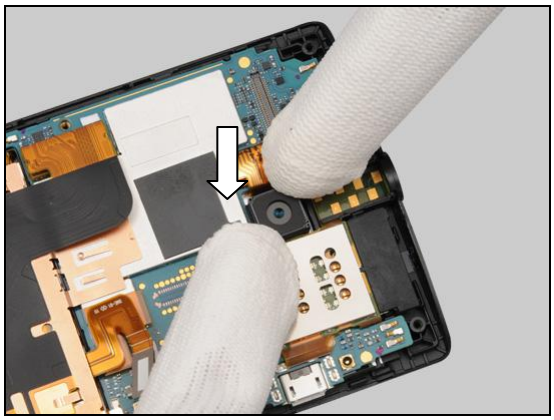


Gently push it into the cavity.



Press to secure its position.

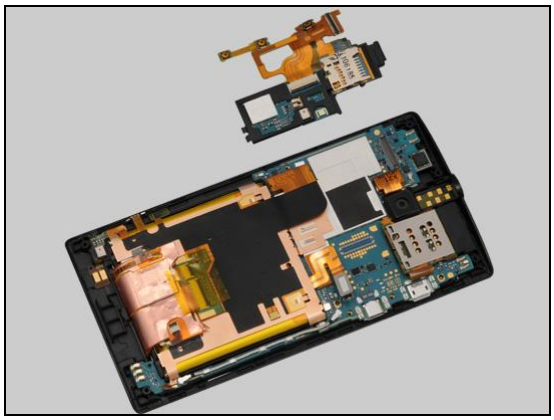
Do not touch the camera lens!



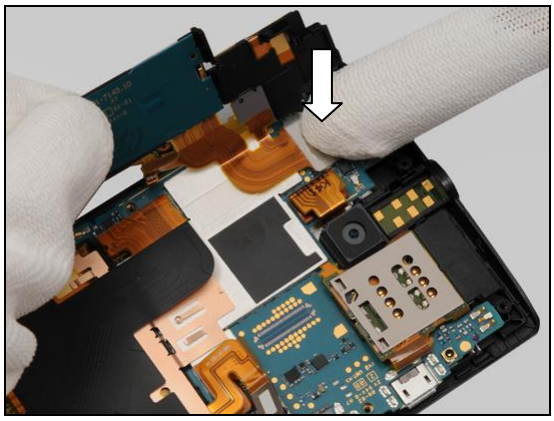
5.6 Carrier NFC Assy

Follow the 4.20 Removal and Installation instructions to replace a new FPC Side Key!

Prepare the new Carrier NFC Assy.

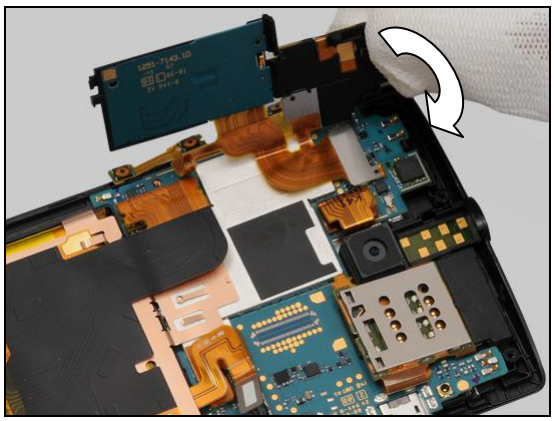


Snap the BtB connector.

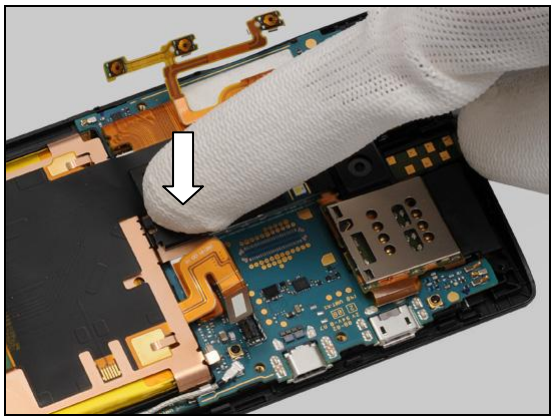


Reassembly

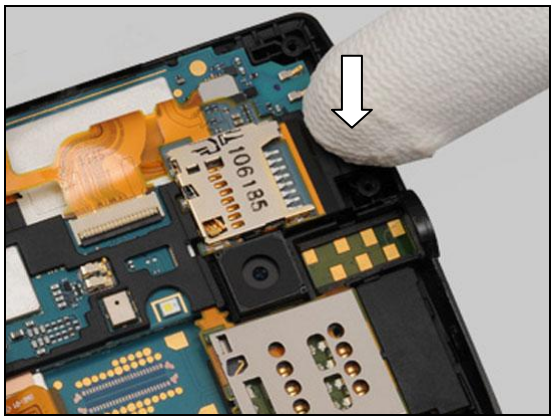
Turn it over.



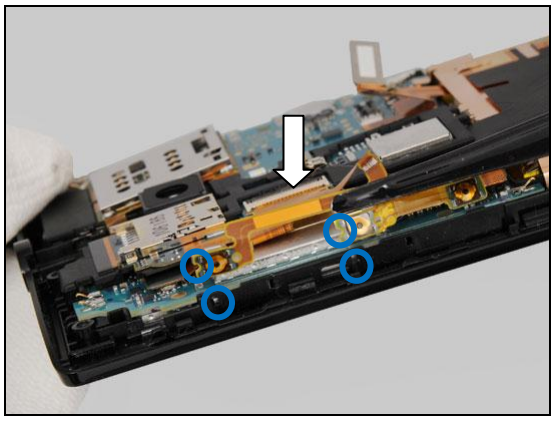
Press this side to insert the hooks into the holes as shown.



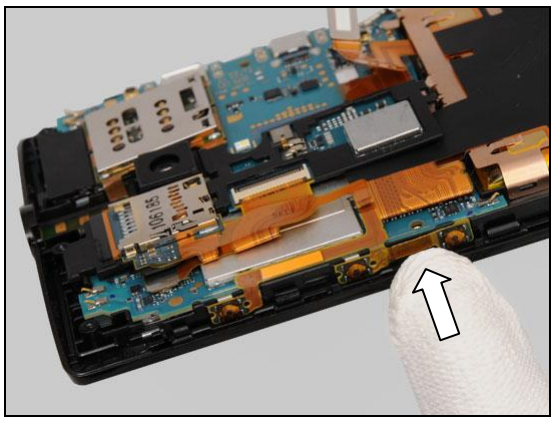
Press to snap the hook of this side.



Securely place the switches on the front unit as indicated by the holes.

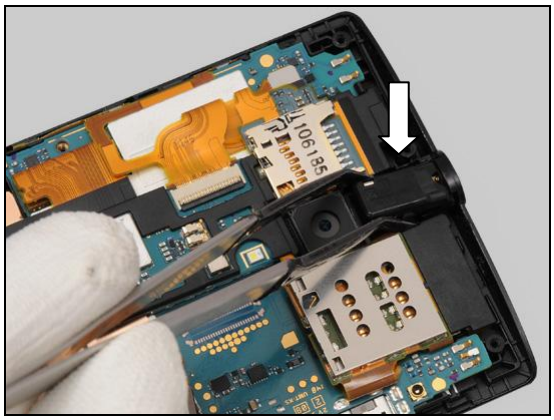


Press along to secure its attachment and position.

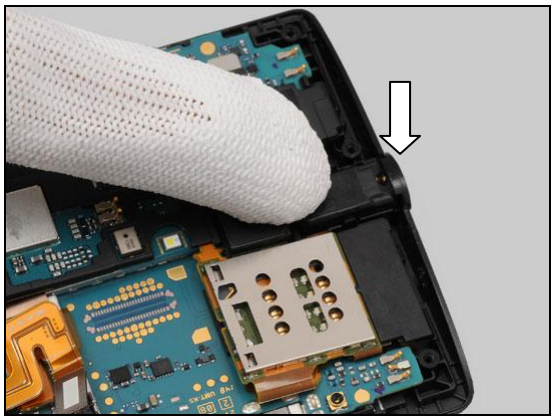


5.7 Audio Jack

Place the Audio Jack into its socket by using a Flex Film Assembly Tool.



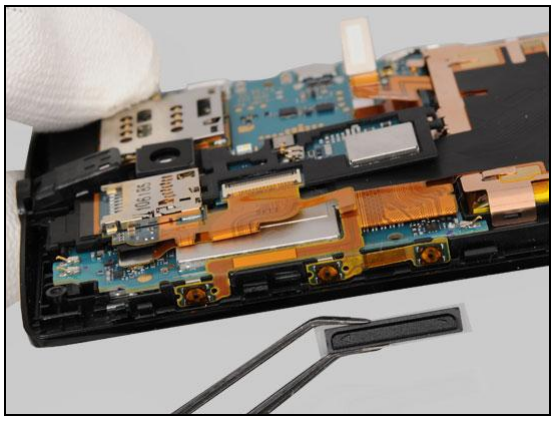
Press to secure its position.



5.8 Key Volume &Frame Rear Assy &Key Camera &Key On/Off

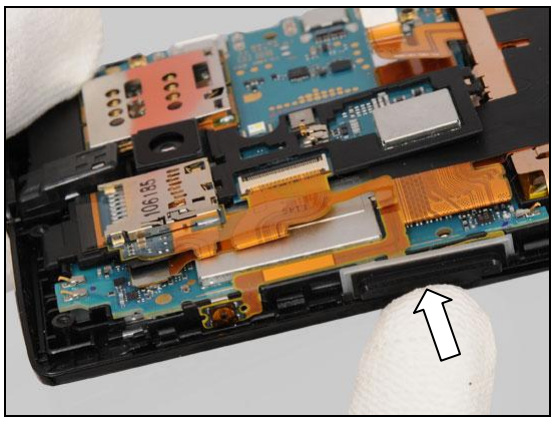
Place the Key Volume on the proper position.

Note the orientation of the Key Volume to be installed!

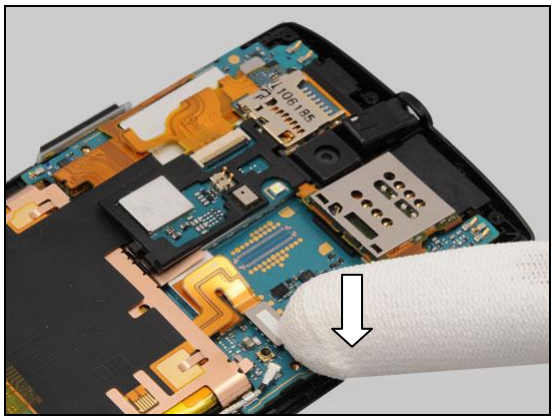


Reassembly

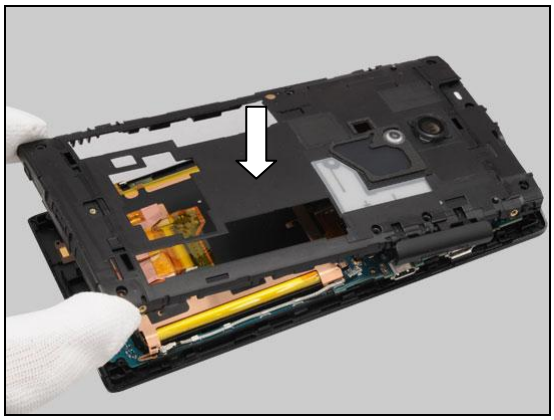
Press it to make it securely mounted.



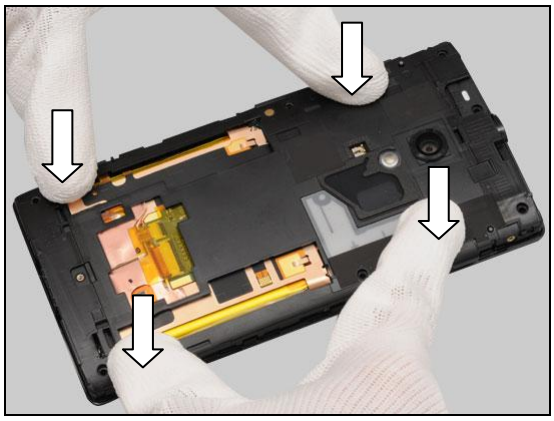
Snap the BtB connector.



Place the Frame Rear Assy on the front unit.

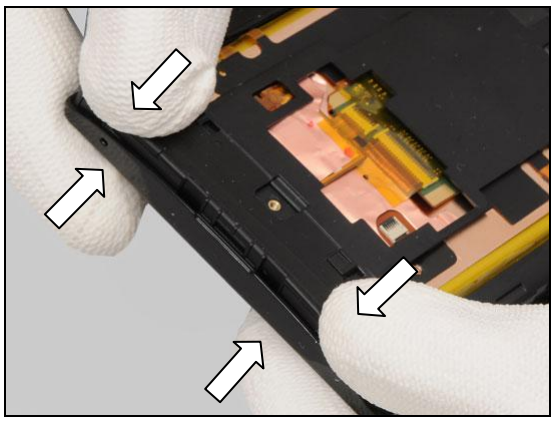


Press to snap the hooks.

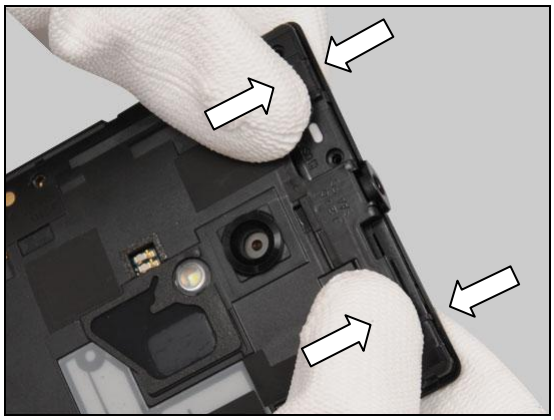


Reassembly

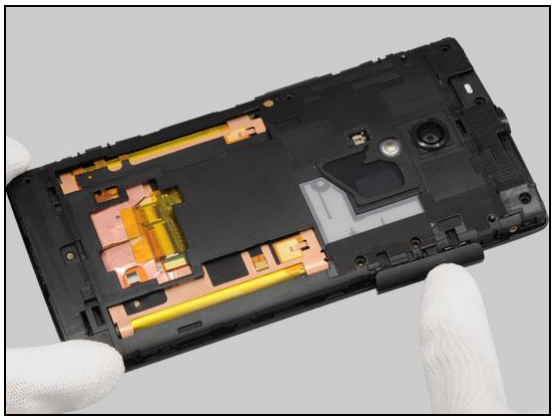
Press this side to secure its position.



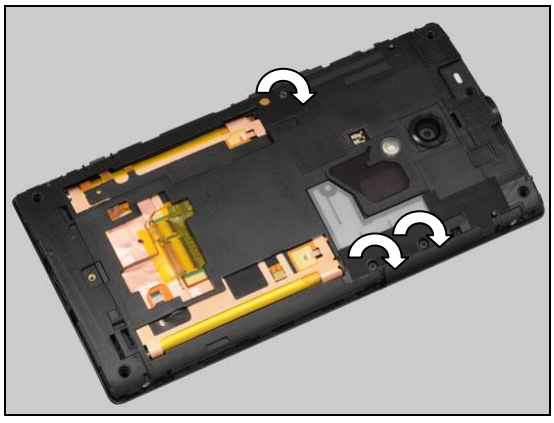
Press the opposite side.



Push the Cap USB HDMI to secure its position.

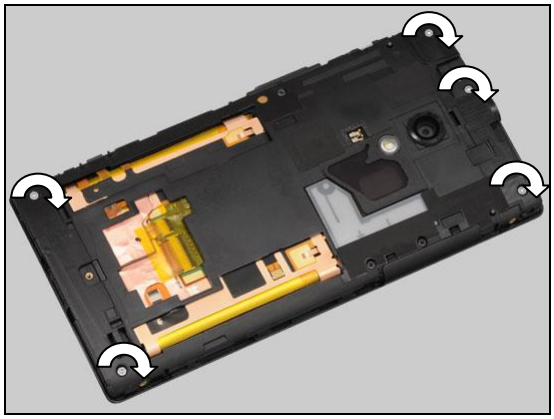


Apply 14 ± 2 Ncm torque when tightening the three screws with Bits (JCIS No 0).



Reassembly

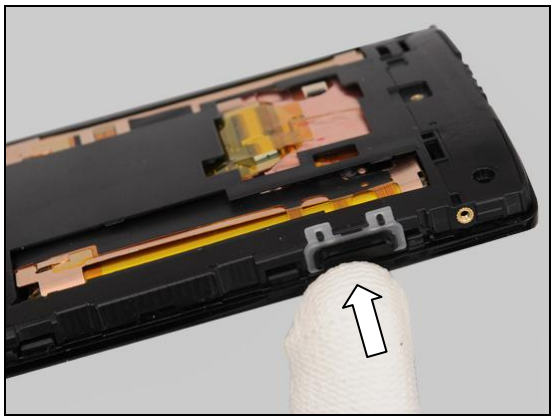
Apply 14 ± 2 Ncm torque when tightening the five screws with Bits (T5).



Place the Key Camera on its correct position.

Note the orientation of the Key Camera to be installed!

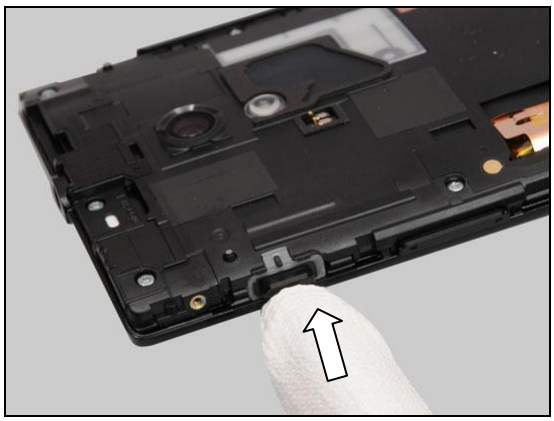
Press it to make it securely mounted.



Place the Key On/Off on its correct position.

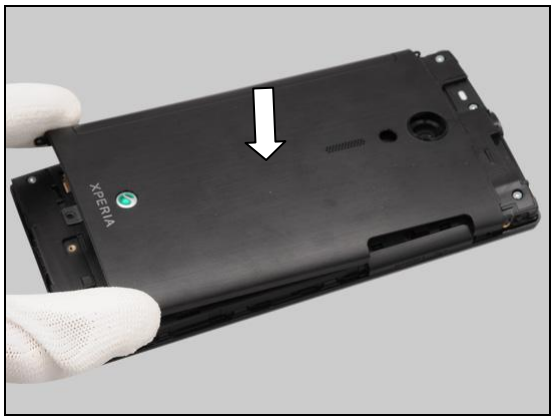
Note the orientation of the Key On/Off to be installed!

Press it to make it securely mounted.

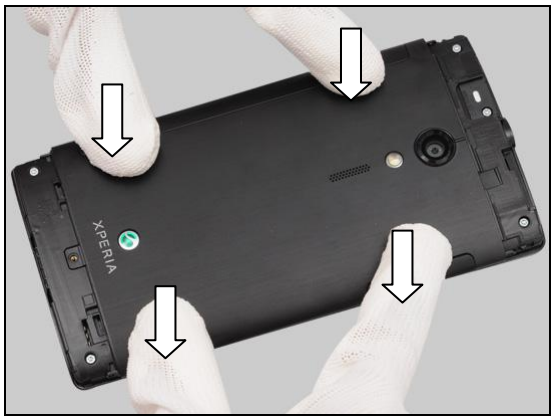


5.9 Cover Rear Sub Assy

Place the Cover Rear Sub Assy on the front unit.



Press to snap the hooks of it.



Apply 10 ± 2 Ncm torque when tightening the screw with Bits (JCIS No.0).

Reassembly

Apply 10 ± 2 Ncm torque when tightening the two screws with Bits (JCIS No.0).

Apply 10 ± 2 Ncm torque when tightening the two screws with Bits (JCIS No.0).

5.10 Label Core Unit & Cover Rear Bottom

Attach a new Label Core Unit on its proper position as indicated by the blue lines.

Press along to secure its attachment and position.

Reassembly

Fold the bottom of the Label Core Unit along the broken line.

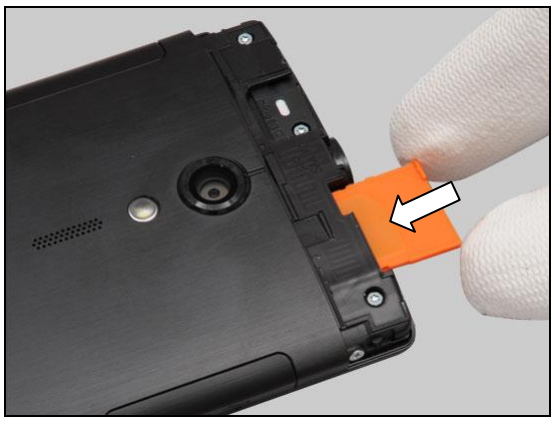
Prepare the Cover Rear Bottom.

Place the Cover Rear Bottom on the proper position.

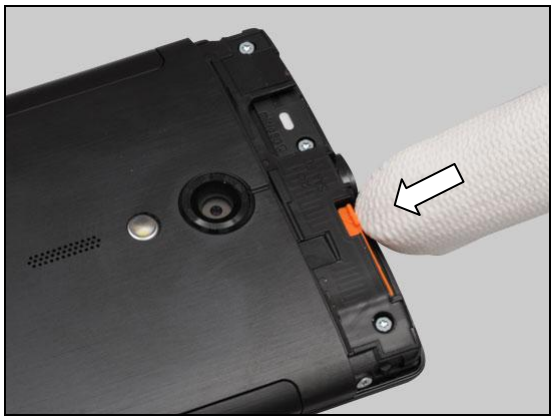
Press to snap the hooks.

5.11 SIM Tray & Cover Rear Top

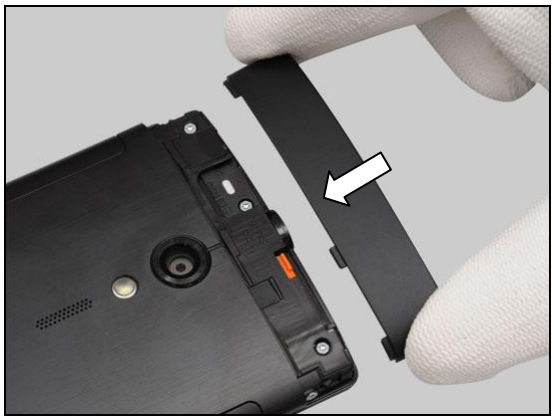
Insert the SIM Tray into the slot.



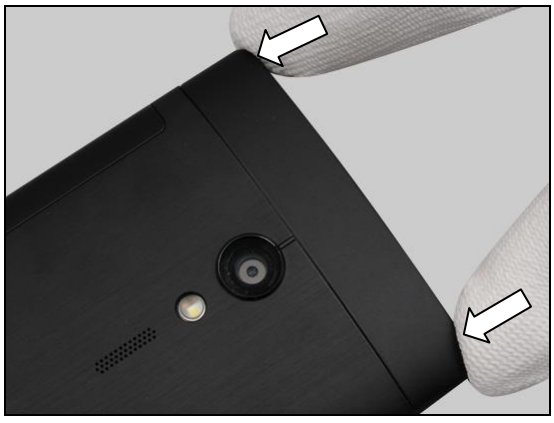
Push it into the bottom of the slot.



Place the Cover Rear Top on the proper position.



Push it to snap the hooks.



6 Revision History

Rev.	Date	Changes / Comments
1	2012-May-18	Initial release
2	2012-July-25	Added LT28h
3	2012-July-27	Update the chapter 4.42
4	2012-Aug-20	Words adjusted
5	2012-Aug-30	Update the Board Swap chapter
6	2012-Sep-6	Added Rubber Mic

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Test Instructions

- mechanical -

Sony Xperia Ion

LT28i, LT28h

LT28at

1261-4720 Rev 2

CONTENTS

For general information about test procedures, refer to
1220-1333: Generic Repair Manual - mechanical

1 Pre-Test Preparations

1.1 Hardware

1.1.1 Water indicator inspection

Before starting any tests the liquid intrusion indicator has to be checked.

The Water Indicator is located as shown in this picture after the Cover Rear Top is removed.

If affected (red color) - handle the phone according to the local directives.

If not affected by liquid, proceed to the ‘Pre-Test Preparation’ below.

Pre-Test Preparations

1.2 Software

1.2.1 Software update

1.2.1.1 Software version verification

Check the software version of the phone for fault verification. The latest improvements are found on the support pages under the support news
http://www.sonyericsson.com/cws/marketingurlportal?pageid=key.SupportZone.Overview

- Start up the phone
  - Note: Make sure the phone is in call setup.
- Press the following keypad combination: *#*#7378423#*#*
- Select 'Service info'
- Select 'Software info'
- Check the software file revisions and, if needed, update as described below:

For more information, refer to 1220-1333: Generic Repair Manual - mechanical

1.2.1.2 Software version update

Mandatory first repair action!
Use the USB cable to connect with the Micro USB connector of the phone for this purpose!

Ensure the phone is powered off and proceed as follows:

- Open the Emma application and log in.
- Press and hold the volume down key on the phone, connect the phone to the USB cable and then release the volume down key.
- Select the appropriate service and follow the on-screen instructions.

Note:For phones with eMMC flash memory (built in "SD card" memory), the only service which erase this eMMC memory is Service's "Refurbish" and "Customize". See also emma User Guide info. http://emma.extranet.sonyericsson.com/documents/emma_user_guide.pdf (see "Service Types" and "Aspects of large files")

In Swap flow, when change a phone from Customer A to Customer B, always use the service Customization script.

2 Tests

2.1 Service Test Mode

Note: Make sure the phone is in call setup when pressing these touching keypads to get into the Service menu!

Start up the phone and enter the service menus:

- Press the following keypad combination: *#*#7378423#*#*

- Select ‘Service tests’
- Select one of the tests and follow the test instructions as described below
- To stop the test and return to the ‘Service tests’ menu, press the Back key

For more information, refer to 1220-1333: Generic Repair Manual - mechanical

The following pictures will show a simplified basic phone for a general visualization of the service tests!

2.2 Service Tests

2.2.1 Keyboard & Switch

Text Note: The Home Key and On/Off key are not part of the keyboard test, but are in the Manual tests.
To return to the Service Test Menu, wait for 8 seconds.

Press all keys on the:
-Back key
-Menu key
-Search key
-Auto Focus Key*(half pressed)*/Camera key*(fully pressed)*
-Volume up key
-Volume down key

2.2.2 Touch Screen

Move a finger across the touch screen, a line will be drawn as it touches.

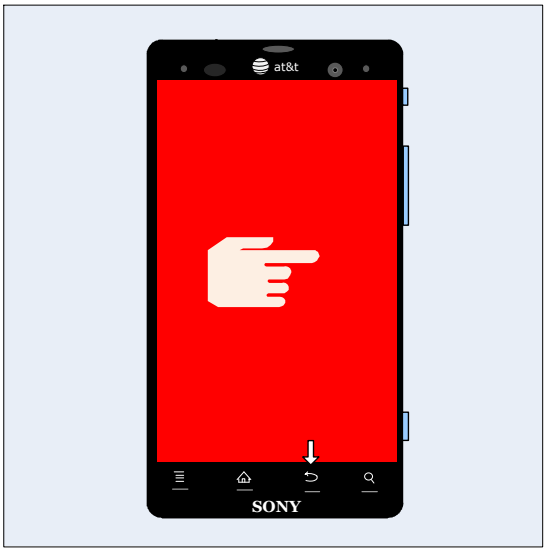
Press the Back key to return to the Service Test Menu.

2.2.3 Display

Minor variations in the display's brightness and color may occur between phones.
There may be tiny bright dots on the display, called defective pixels and which occur when individual dots have malfunctioned and cannot be adjusted.
Two defective pixels are considered to be acceptable.

Touch the display using a finger. With every touch, the display will show six test patterns of White, black, red, green, blue and rainbow colors on the full screen.
Make sure that there are no missing segments and that the colors and contrast are OK.

Press the Back key to return to the Service Test Menu.



Tests: Service Tests

2.2.4 LED/Illumination

Check that the:

- Display Backlight illumination goes from low to high strength back to low again.
- Notification LED on the top right corner changes, showing four colors in the following sequence: red, red, green, green, blue, blue and off.
- The underlines backlight illumination of menu, home and back keys goes from low to high strength back to low again.

Press the Back key to return to the Service Test Menu.

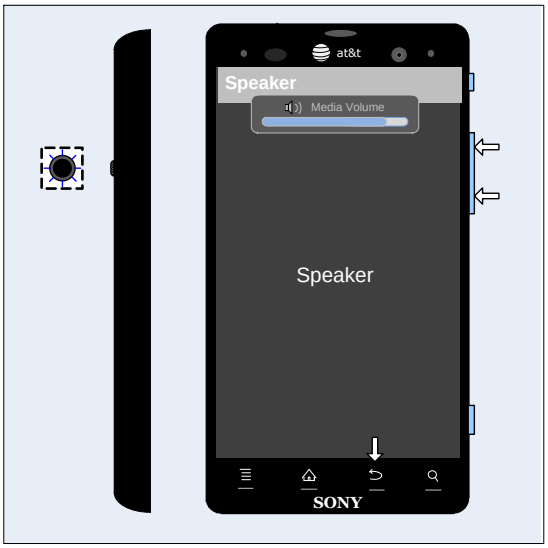
2.2.5 Speaker

Do not hold the phone close to an ear during this test!

Make sure that the sound from the speaker port on the middle top back side of the phone is emitted loud and clear and that the test includes maximum volume.

Press the volume up/volume down key to adjust the speaker volume.

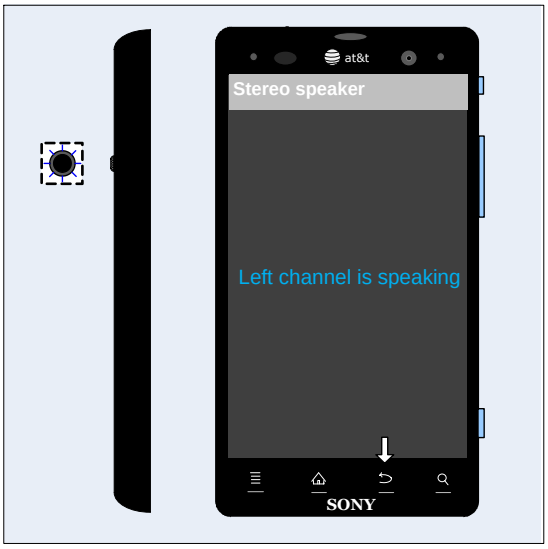
Press the Back key to return to the Service Test Menu.



2.2.6 Stereo speaker

N/A

Press the Back key to return to the Service Test Menu.

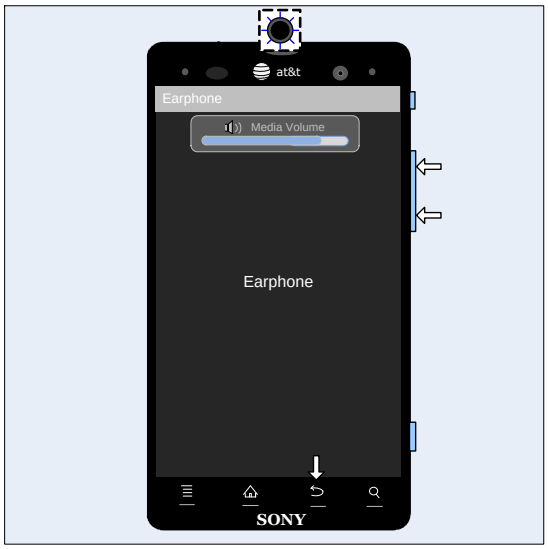


2.2.7 Earphone

Make sure that the sound from the Earphone port on the top of the phone is emitted loud and clear and that the test include maximum volume.

Press the volume up/volume down key to adjust the earphone volume.

Press the Back key to return to the Service Test Menu.



2.2.8 Microphone

The previous 'Speaker' test must have been successfully carried out before doing this test!

The phone will start to record and after approximately ten seconds the sound is played back through the Speaker.

Speak into the microphone during the 'Microphone Recording' phase.

Check the quality by listening to the recording from the Speaker during the 'Playing recorded sound' phase at maximum volume.

Press the Back key to return to the Service Test Menu.

2.2.9 Secondary Microphone

The previous 'Speaker' test must have been successfully carried out before doing this test!

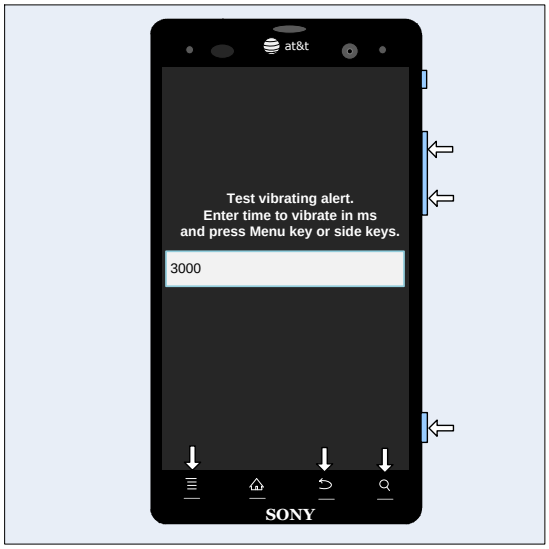
The phone will start to record and after approximately ten seconds the sound is played back through the Speaker.

Speak into the secondary microphone during the 'Microphone Recording' phase.

Check the quality by listening to the recording from the Speaker during the 'Playing recorded sound' phase at maximum volume.

Press the Back key to return to the Service Test Menu.

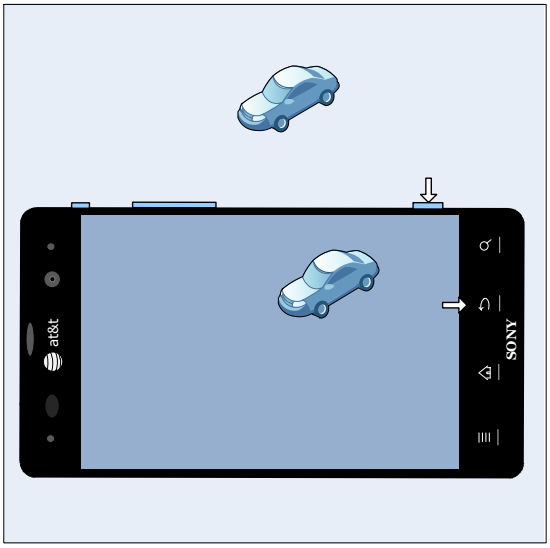
2.2.10 Vibrator



Press the menu key, search key or side keys to start the vibrator test.
It is possible to modify the duration of this test.

Press the Back key to return to the Service Test Menu.

2.2.11 Camera



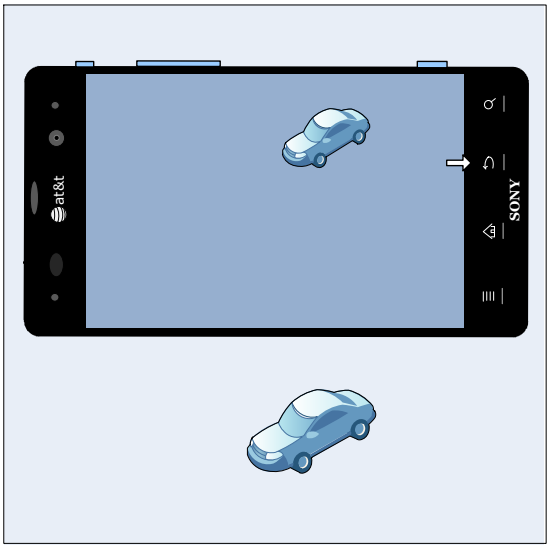
Minor variations in image appearance may occur between phones, but is not uncommon and should not be regarded as an indication of a defective camera module!

Aim the camera (located at the back of the phone) at an object and check the quality of the image shown in the display.
Press the 'Camera' key to preview the photo's auto focus quality.

Photos are taken but not saved during this test!

Press the Back key to return to the Service Test Menu.

2.2.12 Secondary Camera



Minor variations in image appearance may occur between phones, but is not uncommon and should not be regarded as an indication of a defective camera module!

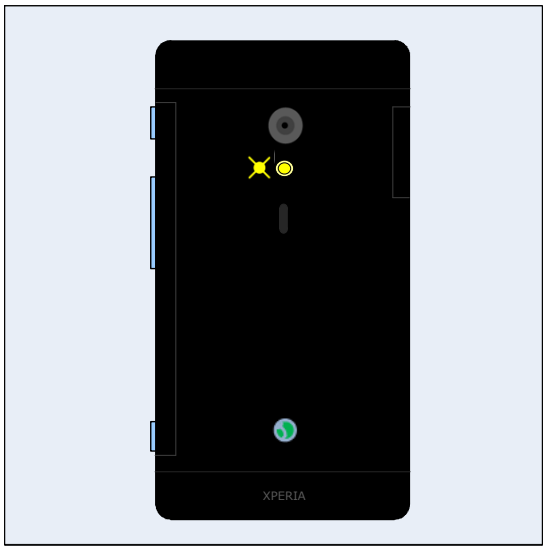
Aim the camera (located in front of the phone) at an object and check the quality of the image shown in the display.

Press the Back key to return to the Service Test Menu.

2.2.13 Flash LED

Check the Flash LED at the back side of phone to see whether it's turned on.

Press the Back key to return to the Service Test Menu.



2.2.14 Bluetooth

During this test, the distance between the phone and the target Bluetooth device must be 1.5 to 5 meters!

Make sure the target Bluetooth device is enabled and visible always!

The Bluetooth test will be done in following sequences:

Step 1: Enable Bluetooth; wait 4-5 seconds, shows OK;

There is a permission request, select 'Yes'.

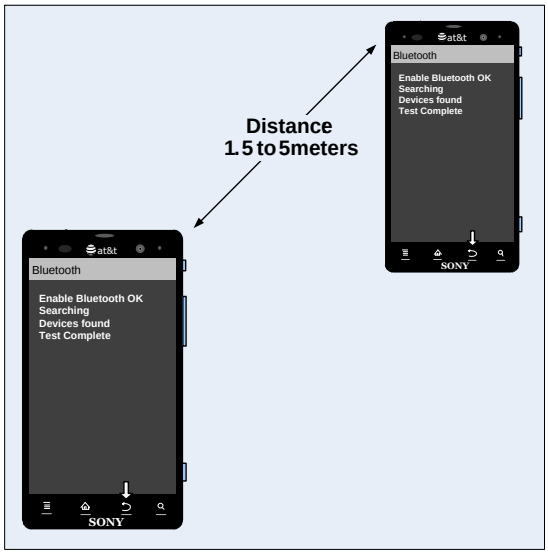
Step 2: Searching;

Step 3: Show the Device Found list;

Step 4: Select the Target Bluetooth Device, and type the PIN code to pair;

Step 5: Type the Pairing PIN code on the Target Bluetooth Device also, when successful, it shows "Test Complete".

Press the Back key to return to the Service Test Menu.



Tests: Service Tests

2.2.15 WLAN

Make sure there's a WLAN network before performing this test.

The WLAN test will be done in following sequences:
Step 1: Enable WLAN; wait 4-5 seconds, shows OK;
Step 2: Searching;
Step 3: Access points found list;
Step 4: Select the Target WLAN network, and type the password to get connected;
Step 5: Enter a web address (e.g. Google.com)
Step 6: When connection succeeded, it shows "Test Complete".
Press the Back key to return to the Service Test Menu.

2.2.16 NFC

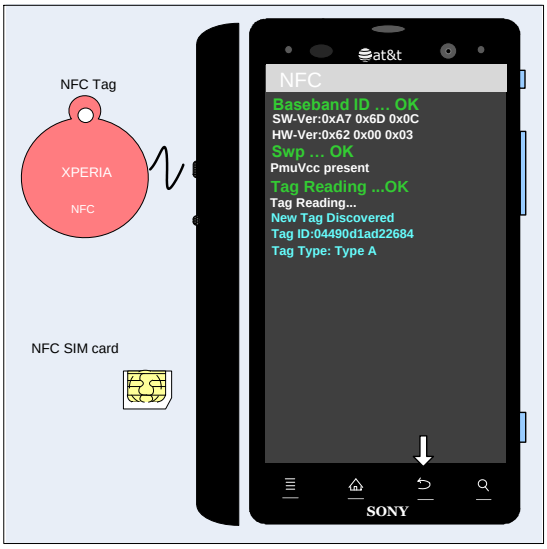
A NFC SIM card 3FF should be inserted in the phone before the start of this test!

The NFC test will be done in following sequences:

1. Step 1: Select "NFC"
2. Step 2: NFC Diag Test
3. Step 3: After "Tag Reading…Enabled" can be seen on the display, bring a NFC Tag close to the camera lens.

   Don't touch each other to avoid Rear Cover scratch.

Press the Back key two times to return to service test menu.



2.2.17 GPS

Enter the GPS Location Test, and wait for the GPS location data.

Press the Back key to return to the Service Test Menu.

For GPS testing, refer to 1220-1333: Generic Repair Manual – mechanical

Tests: Service Tests

2.2.18 Compass

Do calibration with hand movements as shown in the phone, and then check the actual direction with measured value. (Yaw:0=North, 90=East, 180=South, 270=West)

Press the Back key to return to the Service Test Menu.

2.2.19 Accelerometer

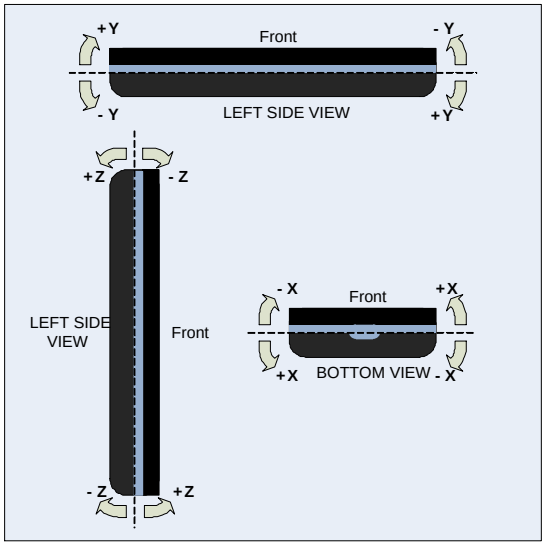
The accelerometer test displays the actual position of the phone as a 3D coordinate X: Y: Z.

Press the Back key to return to the Service Test Menu.

By tilting the phone in various directions, the X: Y: Z values will change in size and polarity depending on the angle and direction as shown in the adjacent picture.

Check by tilting the phone that the X: Y: Z values shown in the display are in accordance with the tilting shown in the picture.

Press the Back key to return to the Service Test Menu.



2.2.20 Gyroscope

The gyroscope test displays the actual position of the phone as a 3D coordinate X: Y: Z.

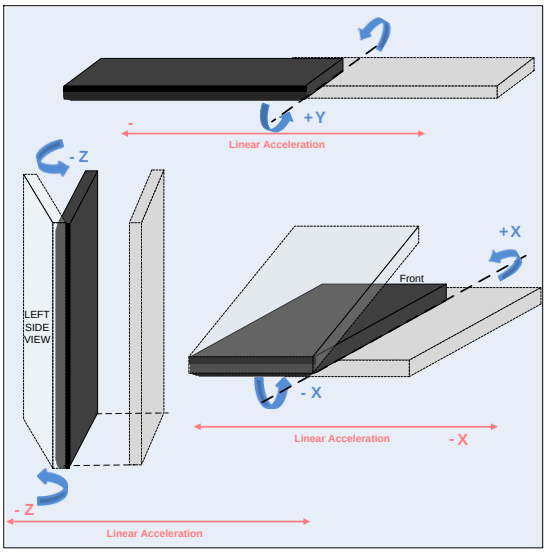
Check by moving the phone that the X: Y: Z values shown in the display are in accordance with the moving.

Press the Back key to return to the Service Test Menu.

Check “Gravity Values” “Linear Acceleration Values” “Rotation Vector Values” and “Gyroscope Values” by moving the phone:

“Gravity Values” can be refer to Accelerometer;
“Linear Acceleration Values” and “Rotation Vector Values” are in accordance with the action shown in the picture.
“Gyroscope Values” are updated while moving the phone.

Press the Back key to return to the Service Test Menu.



2.2.21 Ambient Light Sensor

The Ambient light test states a value. The value should increase when the window gets more light and decrease when the window gets less light.

Press the Back key to return to the Service Test Menu.

Tests: Service Tests

2.2.22 Proximity switch

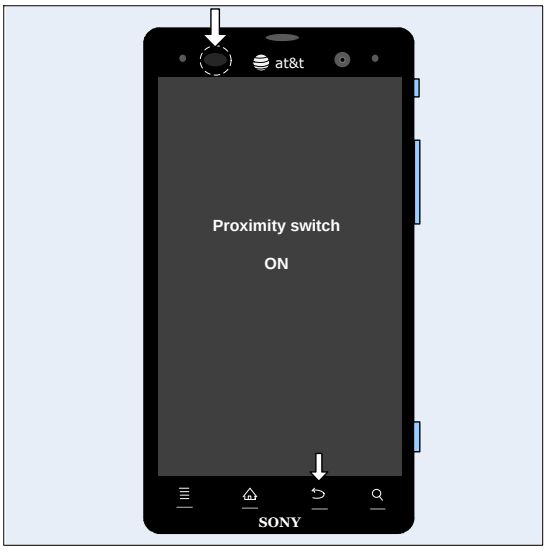
The previous 'Speaker' test should have been successfully carried out before doing this test!

Make sure the phone is not in 'silent mode' before performing this test.

When entering into the test, the screen shows 'Proximity switch OFF' and a tone is emitted.

When covering the proximity switch area (on the right side of the Ear Speaker), the screen will show 'Proximity switch ON' with a different type of tone.

Press the Back key to return to the Service Test Menu.



2.2.23 Pressure Sensor

N/A.

This test is not available for this product!

2.2.24 Water Proof test

N/A.

This test is not available for this product!

2.2.25 Real time clock

During the actual test the text ‘Real time clock test’ is displayed, and then followed by a message stating whether the test was OK or not.

Press the Back key to return to the Service Test Menu.

2.2.26 Total call time

The total call time is displayed in the format HH:MM:SS (hours: minutes: seconds).

Press the Back key to return to the Service Test Menu.

2.2.27 Storage

Memory Storage status

- Internal Mass Storage is ‘Inserted/Mounted’ as shown on the screen!

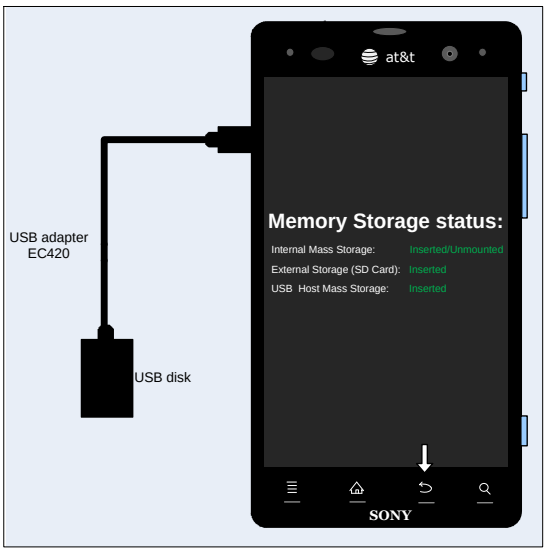
A memory card should be inserted in the phone before starting this test!

- External Storage (SD Card) is ‘Inserted’ as shown on the screen!

Attach USB Adaptor between phone and an USB disk as shown in picture.

- The USB Host Mass Storage status is shown on the screen.

Press the Back key to return to the Service Test Menu.



Tests: Service Tests

2.2.28 Security

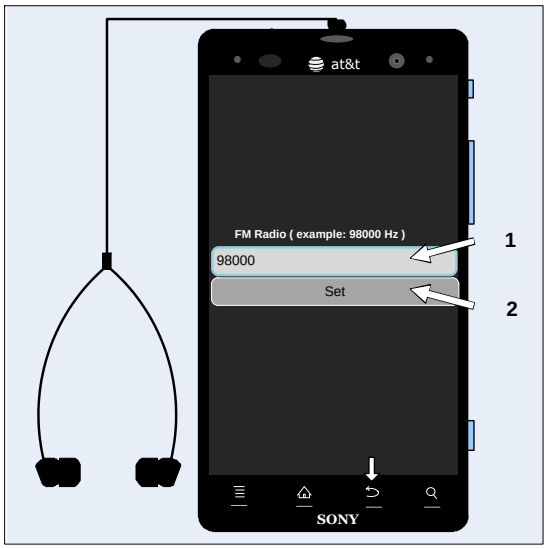
The DRM keys are shown in the display.
There may be different content shown based on different market software versions.

Press the Back key to return to the Service Test Menu.

2.2.29 FM radio

Verify that the phone can detect a radio station:
Connect a headset and then set your local radio station in Hz.
Verify that the reception and sound quality is normal.

Press the Back key to return to the Service Test Menu.



2.2.30 Battery Health Test

- This test is intended to verify the battery health status when the consumer has complained about the charging or standby time before trying to replace the battery.
- When entering the battery health test menu, the screen will have:

  Green writing and say ‘Good, no need to replace it’ if the battery is OK and red writing and say ‘Bad, need to replace it’ if the battery is not OK.

Press the Back key to return to the Service Test Menu.

Tests: Service Tests

2.2.31 Flip slider counter

N/A.

This test is not available for this product!

Press the Back key to return to the Service Test Menu.

2.2.32 Verify certificates

N/A.

Press the Back key to return to the Service Test Menu.

2.2.33 IrDA Test

N/A.

This test is not available for this product!

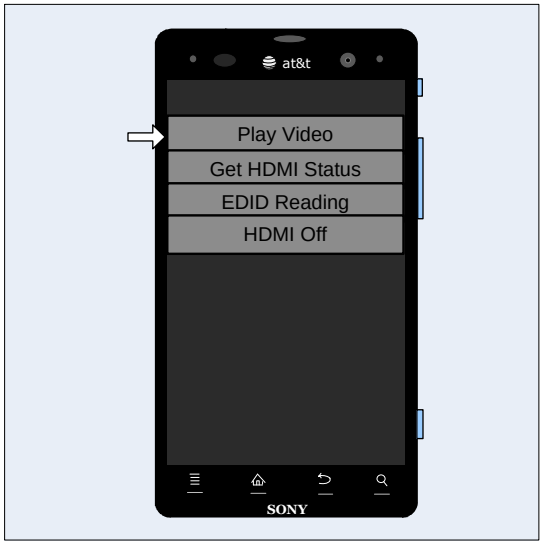
2.2.34 HDMI Test

Press HDMI On.

(HDMI Settings is usually not needed since the unit should be in automatic resolution and the HDMI TV out monitor should set the resolution automatic. If you get no picture on the HDMI TV out monitor you can try different resolutions under HDMI Settings)

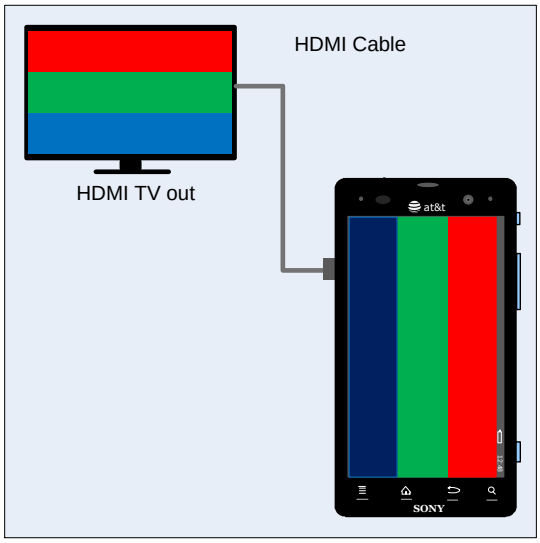
Attach HDMI cable between phone and HDMI TV out.

Press HDMI Play.



Receive a test tone and a red-green-blue test picture in the HDMI TV out Monitor and phone.

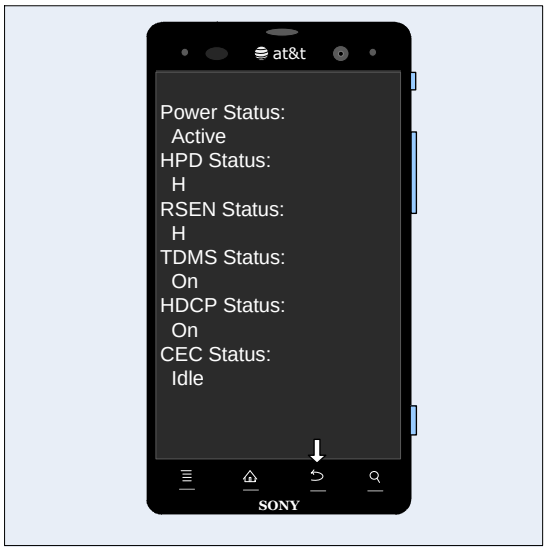
Note: If the HDMI TV out Monitor doesn't automatically indentify the picture, the Monitor may require to set the HDMI port chosen as source manually in the Monitors menus.



Tests: Service Tests

Press Get HDMI Status:
You should now get:
Power Status: Active
HPD Status: H
RSEN Status: H
TDMS Status: On
HDCP Status: On
CEC Status: Idle

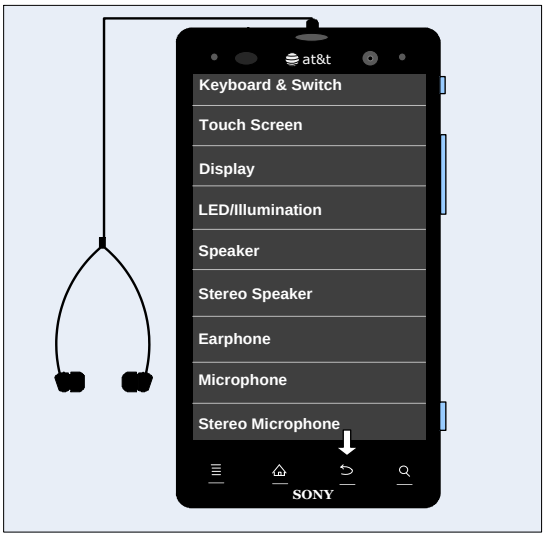
Press the Back key to return to the Service Test Menu.



2.2.35 Audio Jack test

Connect a CTIA headset.
Repeat the test of “2.2.5 Speaker”, “2.2.7 Earphone” and “2.2.8 Microphone”.

Make sure that the sound from Headset earphone ports are emitted loud and clear.



2.3 Manual Tests

2.3.1 SIM

Verify that the phone can detect a SIM card:

- Insert a SIM card, and start the phone.
- If the SIM card is detected by the phone, the start-up procedure will continue.
- Pull down the Status Bar (put finger next to the receiver and drag the menu down from the Status Bar)
- To see SIM card operator name.
- The SIM card operator name will be displayed above the Time clock when phone is in Lock status.
- If not detected, the message ‘Emergency call only’ will be displayed instead in the pull down Status Bar.
- Press Back key to return to Standby Menu.

2.3.2 On/Off key test

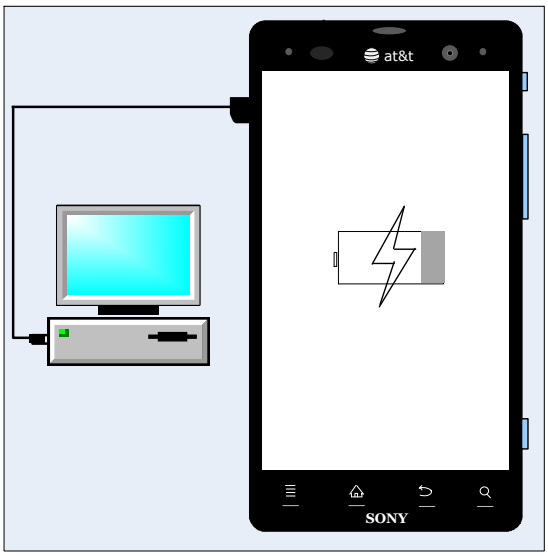
Press the On/Off key for a long time to turn the phone on or off.
Press the On/Off key for a short time to enter Sleep mode

- or to exit Sleep mode.

2.3.3 Home key test

Whatever the phone shows now during operation, press the Home key for the phone go directly back to the Stand by screen.

2.3.4 Charging via USB (Charger or Computer)



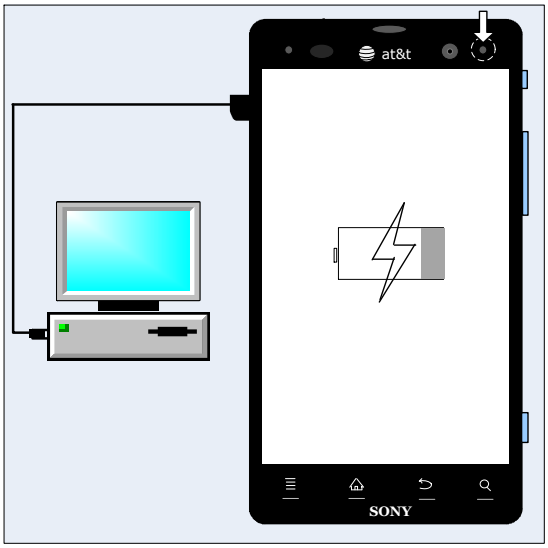
Verify that the phone can charge the battery by a USB port:

Ensure that no computer application, such as PC Suite or Emma, is active!

Do not start the phone.

- Connect a USB cable from a computer or charger to the phone.
- Verify that the phone is being charged by the notification LED and Battery icon in the display.

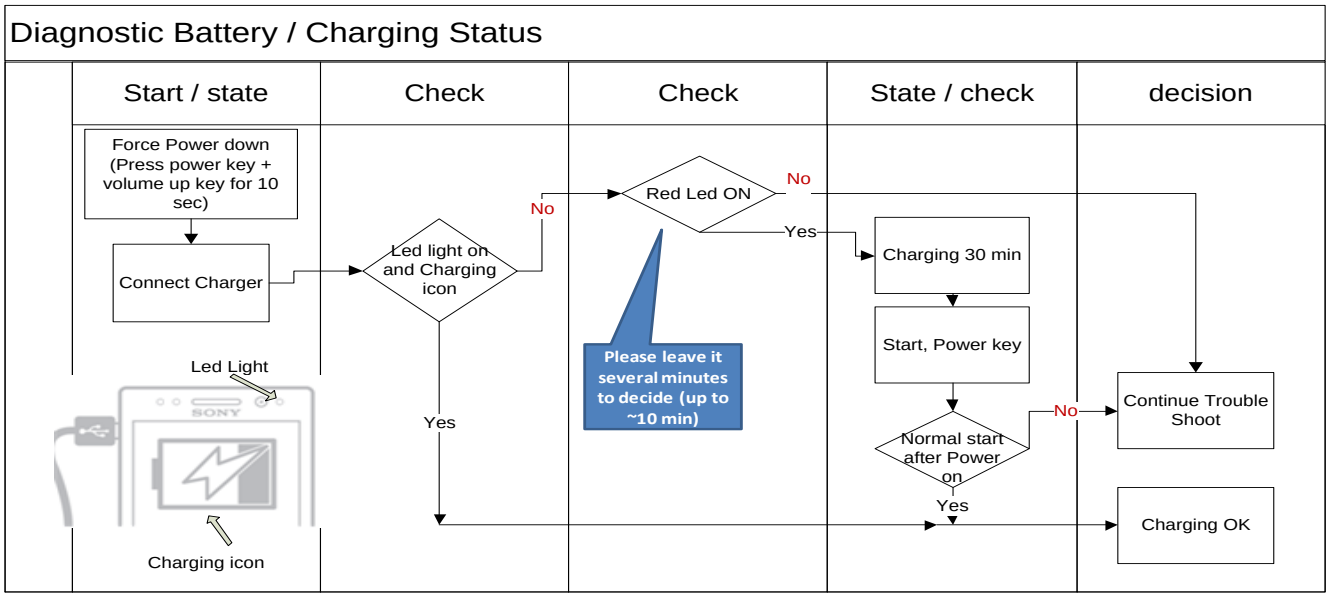
Remove the USB cable from the connector and verify that the notification LED and Battery icon no longer indicates charging.



The Notification LED colour status is depended on battery remaining capacity:

- Red: Battery level is between 1% and 10%;
- Orange: Battery level is between 11% and 89%;
- Green: Battery is between 90% and 100%;

If above fails, perform below Diagnostic battery / Charging Status check.
Perform a force shut down (Press Power key + Volume Up for 10sec). If phones vibrate three times the shutdown is performed. If no vibration is detected, the battery might be discharged.



2.4 Network Test

Generally it is requested to check all mobile technologies supported by a phone. Therefore a live network signal must be available!

2.4.1 On-the-air call to mobile

If a live network is available you need an activated SIM, USIM or USIM with LTE capabilities depending on which network technology to test (no Test SIM Cards).

2.4.1.1 How to specify the relevant mobile network a phone should log on?

For LT28at variant, press the following keys: *#*#info#*#* to select phone information→ set preferred network type →GSM only /WCSMA only/ LTE only for the separate test.

GSM

Go to the phone menu and select "GSM only":
Press Menu key→*Settings* ⇨ *Wireless & networks* ⇨ *Mobile networks* ⇨ *Network Mode* ⇨ *GSM only*
To verify phone's radio functions (GSM), follow the test procedure as described in chapter 2.4.1.2.

UMTS

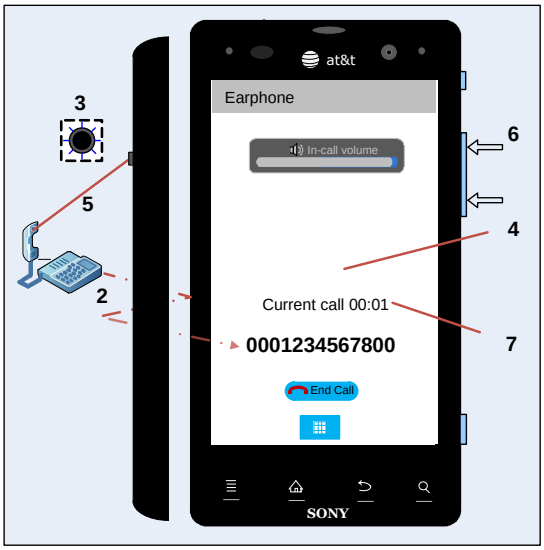
Go to the phone menu and select "WCDMA only":
Press Menu key→*Settings* ⇨ *Wireless & networks* ⇨ *Mobile networks* ⇨ *Network Mode* ⇨ *WCDMA only*
Switch off the phone and then start it up again to enable search for an available UMTS signal.
Ensure that the UMTS/3G icon now is visible at the top of the display.
To verify phone's radio functions (UMTS), follow the test procedure as described in chapter 2.4.1.2.

LTE

Go to the phone menu and set:
Press Menu key→*Settings* ⇨ *Wireless & networks*⇨ *Mobile networks* ⇨ *Network Mode*⇨ *LTE only*
Switch off the phone and then start it up again to enable search for an available LTE signal.
Ensure that the 4G LTE icon now is visible at the top of the display.
To verify phone's radio functions (USIM with LTE capabilities), follow the test procedure as described in chapter 2.4.1.3.

2.4.1.2 Procedure when testing GSM and UMTS

1. Select corresponding mobile technology as described in chapter 2.4.1.1
2. Set up a call from a landline phone (PSTN).
3. Check that there is a ring signal.
4. Check that the display backlight illuminates.
5. Answer the call and check the sound quality in both phones.
6. Adjust the volume up and down with the side keys and verify that the sound level is altered.
7. End the call and check that the elapsed time is displayed and that the termination is done properly.



Tests: Network Test

2.4.1.3 Procedure when testing LTE (data connection only)

1. Select corresponding mobile technology as described in chapter 2.4.1.1.
2. To verify phone's radio functions, open the browser.
3. Enter *www.sonymobile.com* if not done by default.
4. Select your relevant country if not done by default.
5. Select "Software".
6. Select a phone model.
7. Press "Download for PC" button.
8. Press "Download PC Companion" button.
9. Monitor download via task bar if download is completed.
10. Open Settings menu and select "Storage".
11. Choose "Downloads".
12. Mark PC Companion files and delete by pressing Recycle Bin icon.

3 Revision History

Rev.	Date	Changes / Comments
1	2012-May-18	Initial release
2	2012-July-25	Added LT28h

SONY
make.believe

Troubleshooting Guide

- mechanical -

Sony Xperia Ion

LT28i,LT28h

LT28at

1261-4721 Rev 3

CONTENTS

1 Problem Areas

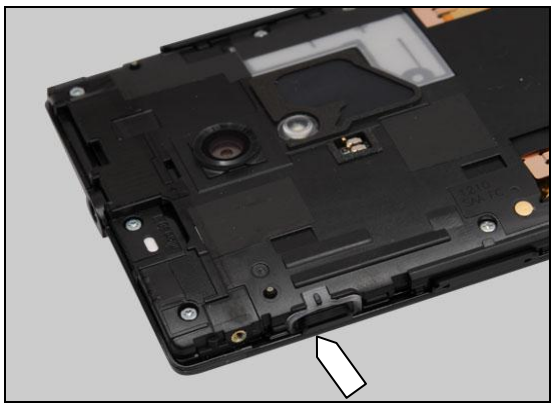
1.1 Power

1.1.1 Will not power on or will switch off randomly

Check:
Check whether the phone vibrates by pressing the key on/off.

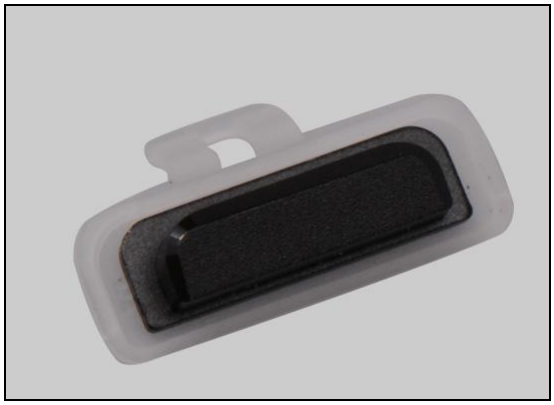
Action:
1. If activation of the Vibrator is detected, refer to section 1.4 'Display'.

2. If NO activation of the Vibrator is detected, check that the battery is charging when connected to a charger.
Follow Test Instruction (Charging via USB), Diagnostic Battery / Charging status.

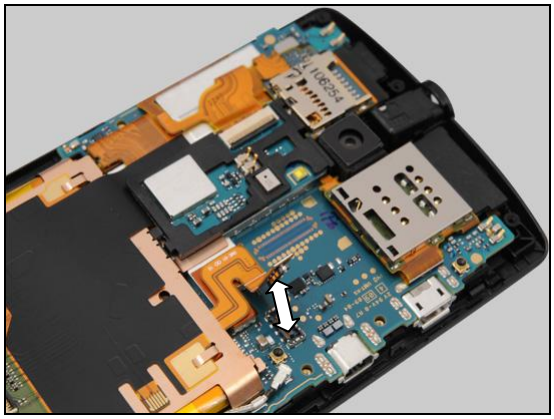


Check:
Inspect the Key On/Off.

Action:
1. If dirty – clean it.



2. If damaged – replace it.



Check:
Inspect the BtB connector of battery to the PBA.

Action:
1. If not properly connected – disconnect and reconnect.

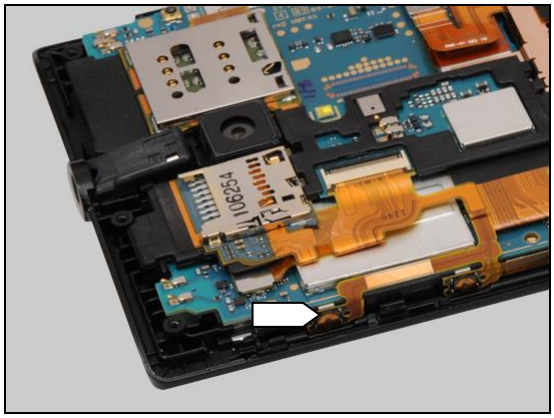
2. If dirty or oxidized – clean the both sides of the BtB connector.

3. Check current draw in off mode by using "Dummy Battery" (max 1 mA).

Problem Areas: Power

Check:
Inspect the Battery 1900mAh.

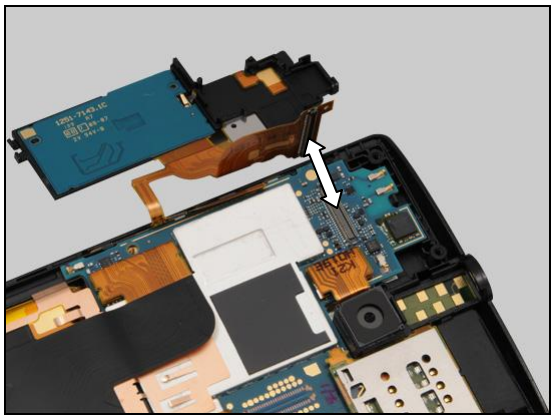
Action:
If the battery or its BtB connector is damaged – replace the Battery 1900mAh.



Note: Ensure the BtB connector of battery is disconnected in the following steps!

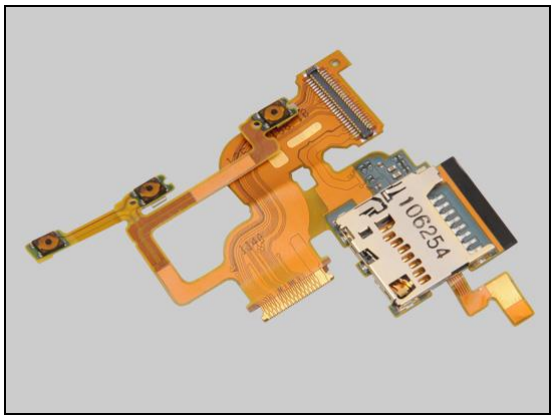
Check:
Inspect the key on/off switch and FPC of the FPC Side Key.

Action:
If dirty – clean it.



Check:
Inspect the BtB connector of FPC Side Key to the PBA.

Action:
1. If not properly connected – disconnect and reconnect.
2. If dirty or oxidized – clean the both sides of the BtB connector.



3. If the key on/off switch, the FPC or the BtB connector of FPC Side Key is damaged – replace the FPC Side Key.
4. Replace board.

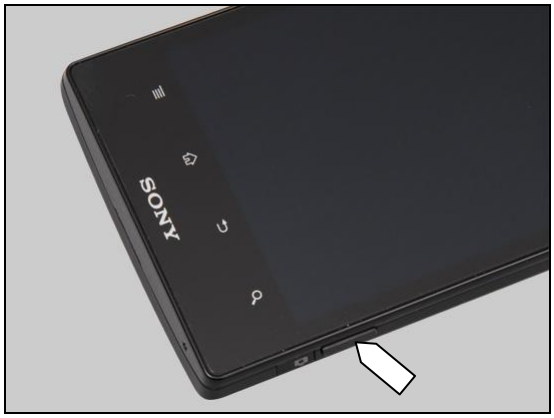
Problem Areas

1.2 Keys

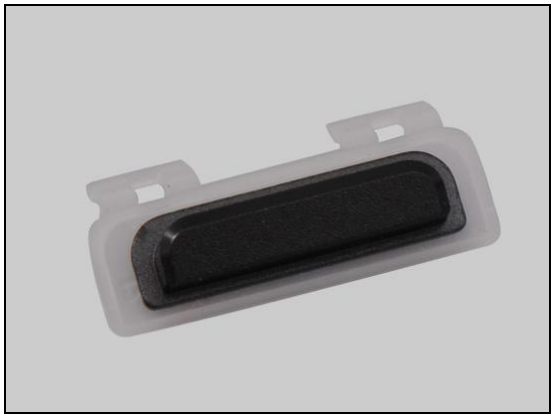
1.2.1 Menu, Home, Back and Search Keys

Check:
Inspect the menu, home, back and search keys on the Cover Front.
Action:
1. Refer to the section 1.3 ‘Touch Screen’.
2. Replace board.

1.2.2 Key Camera

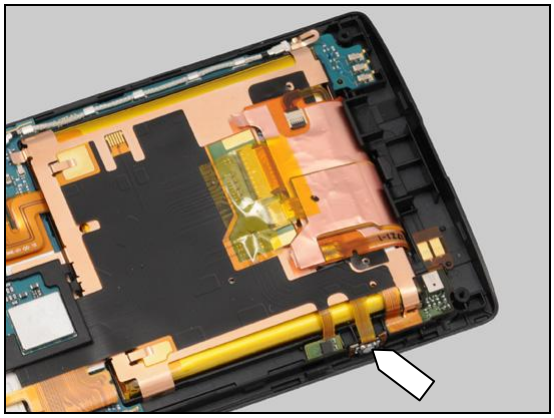


Check:
Inspect the Key Camera.
Action:
1. If dirty – clean it.



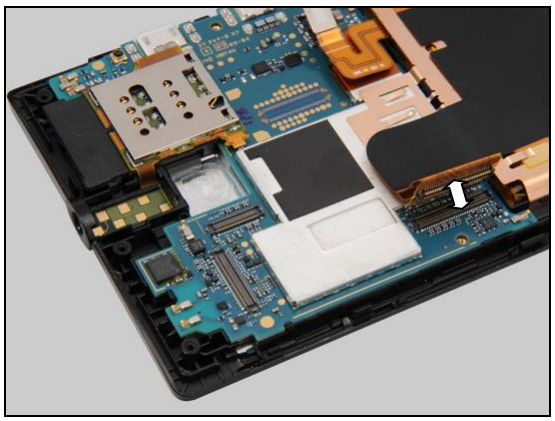
2. If damaged – replace it.

Note: Ensure the BtB connector of battery is disconnected in the following steps!



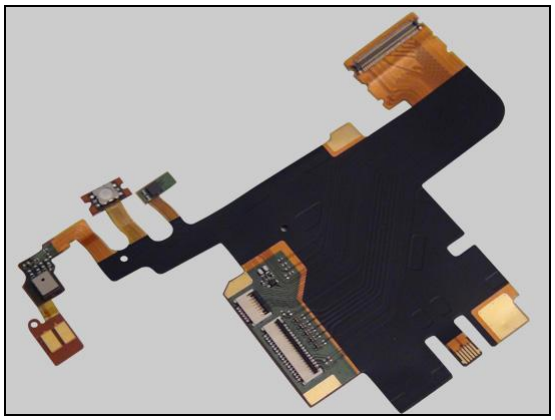
Check:
Inspect the key camera switch.
Action:
If dirty – clean it.

Problem Areas: Keys



Check:
Inspect the BtB connector of FPC Bottom Flex to the PBA.

Action:
1. If not properly connected – disconnect and reconnect.
2. If dirty or oxidized – clean the both sides of the BtB connector.

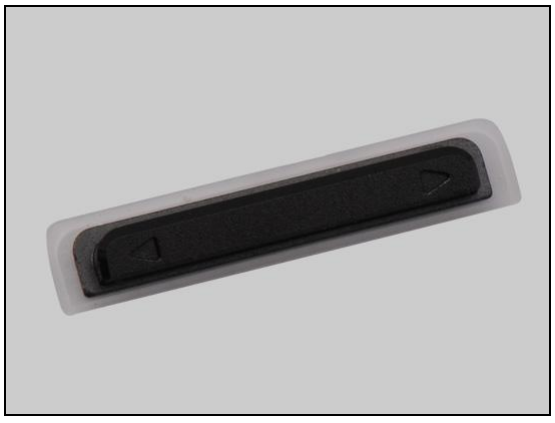


3. If the key camera switch, the FPC or the BtB connector of FPC Bottom Flex is damaged – replace the FPC Bottom Flex.
4. Replace board.

1.2.3 Key Volume

Check:
Inspect the Key Volume.

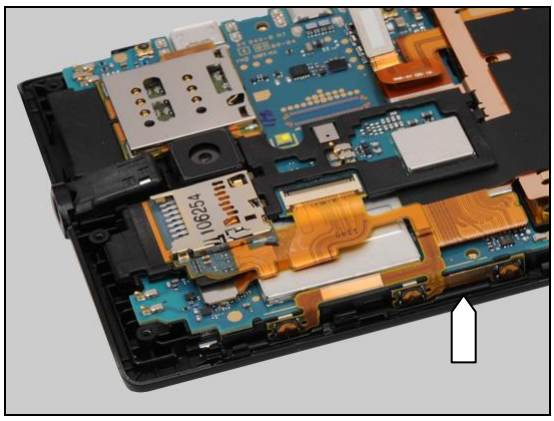
Action:
1. If dirty – clean it.



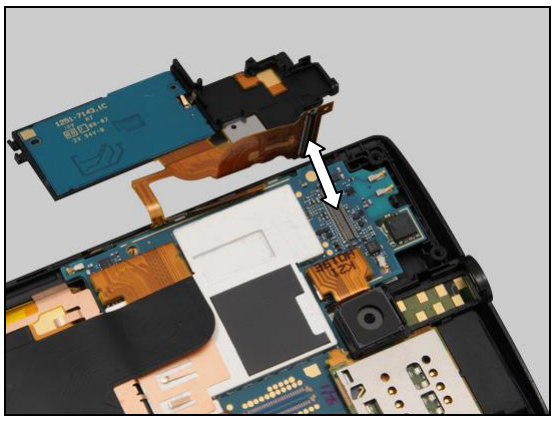
2. If damaged – replace it.

Problem Areas: Keys

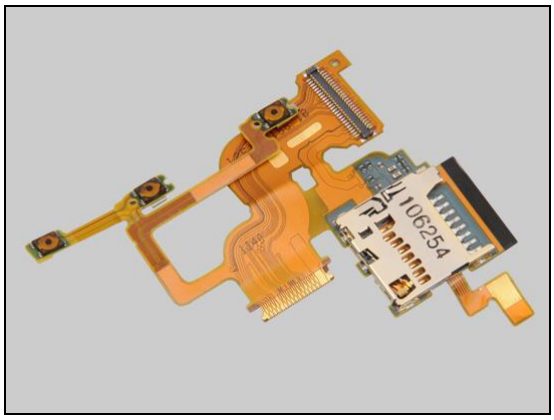
Check:
Inspect the key volume switch and the FPC Side Key.
Action:
If dirty – clean it.



Check:
Inspect the BtB connector of FPC Side Key to the PBA.
Action:
1. If not properly connected – disconnect and reconnect.
2. If dirty or oxidized – clean the both sides of the BtB connector.



3. If the key volume switch, the FPC or the BtB connector of FPC Side Key is damaged – replace the FPC Side Key.
4. Replace board.

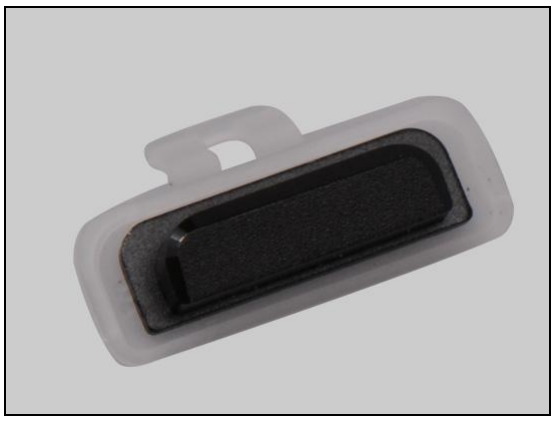


1.2.4 Key On/Off

Check:
Inspect the Key On/Off.
Action:
1. If dirty – clean it.

Problem Areas: Keys

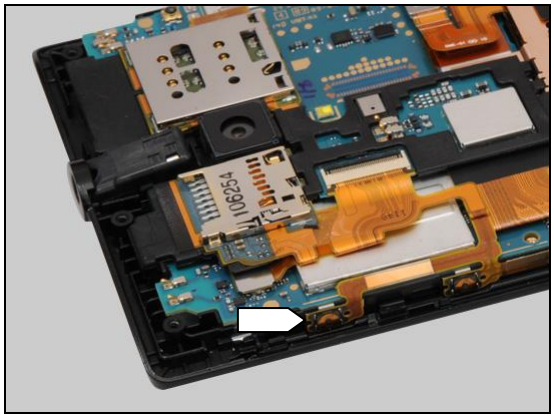
2. If damaged – replace it.



Note: Ensure the BtB connector of battery is disconnected in the following steps!

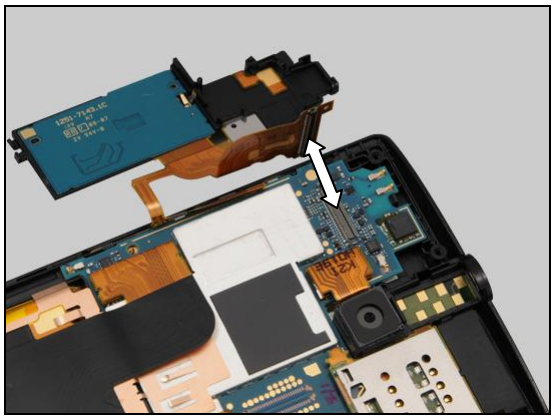
Check:
Inspect the key on/off switch.

Action:
If dirty – clean it.

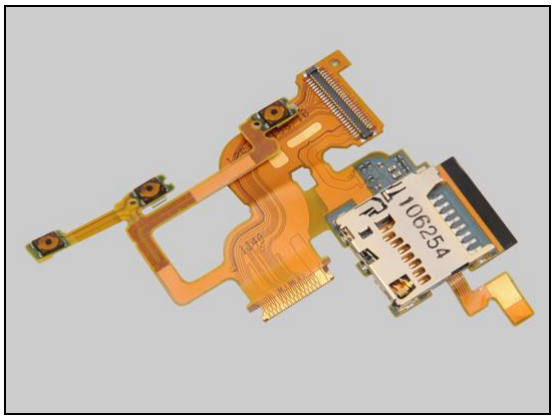


Check:
Inspect the BtB connector of FPC Side Key to the PBA.

Action:
1. If not properly connected – disconnect and reconnect.
2. If dirty or oxidized – clean the both sides of the BtB connector.



3. If the key on/off switch, the FPC or the BtB connector of FPC Side Key is damaged – replace the FPC Side Key.
4. Replace board.



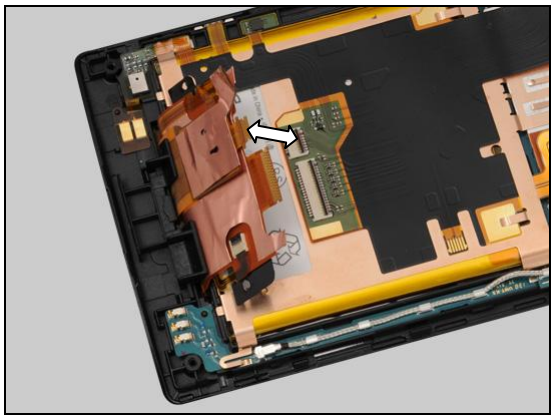
Problem Areas

1.3 Touch Screen

1.3.1 Touch Screen malfunction

Check:
Inspect the touch screen.

Action:
If dirty – clean it.

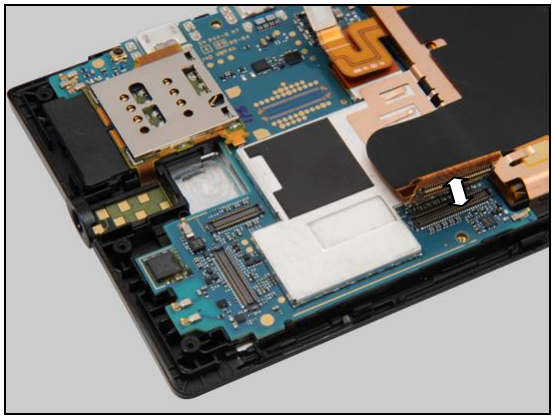


Note: Ensure the BtB connector of battery is disconnected in the following steps!

Check:
Inspect the both sides of the ZIF connector on the FPC Bottom Flex and the touch panel FPC of Cover Front Assy.

Action:
1. If not properly connected – disconnect and reconnect.
2. If dirty or oxidized – clean it.

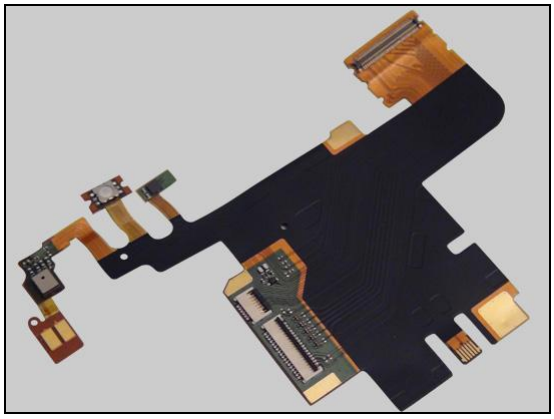
3. If the touch panel FPC or the touch screen is damaged – replace the Cover Front Assy.



Check:
Inspect the BtB connector of FPC Bottom Flex to the PBA.

Action:
1. If not properly connected – disconnect and reconnect.
2. If dirty or oxidized – clean the both sides of the BtB connector.

Problem Areas: Touch Screen



3. If the ZIF connector, the BtB connector or FPC of FPC Bottom Flex is damaged – replace the FPC Bottom Flex.
4. Replace board.

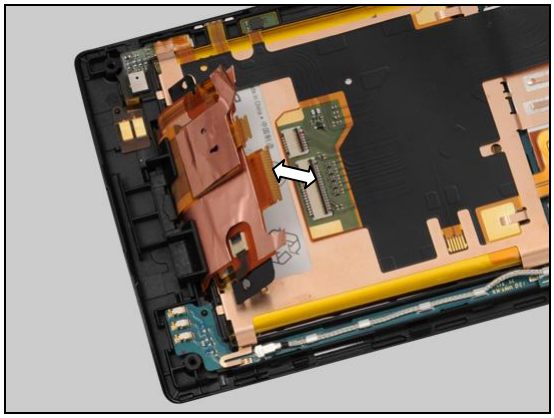
Problem Areas

1.4 Display

1.4.1 Graphics & Illumination

Check:
Check whether the phone vibrates after the Key On/Off has been pressed.

Action:
If the activation described above is not detected, refer to section 1.1 ‘Power’.



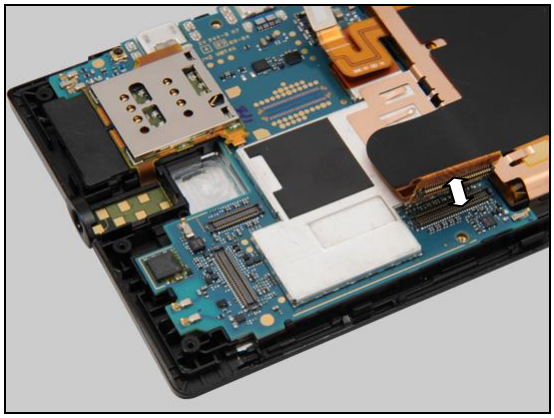
Note: Ensure the BtB connector of battery is disconnected in the following steps!

Check:
Inspect the both sides of the ZIF connector on the FPC Bottom Flex and the LCD FPC of Cover Front Assy.

Action:
1. If not properly connected – disconnect and reconnect.
2. If dirty or oxidized – clean it.

Check:
Inspect the LCD.

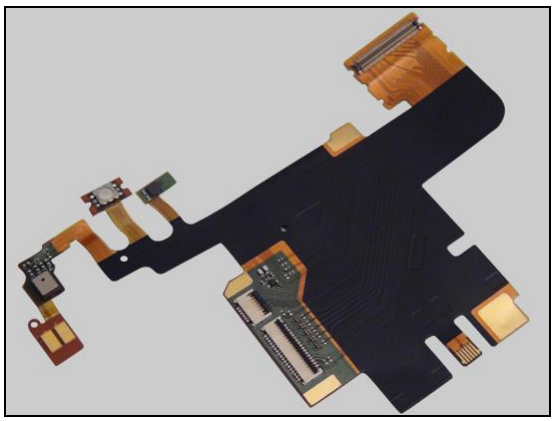
Action:
1. If dirty – clean it.
2. If the LCD or the LCD FPC is damaged – replace the Cover Front Assy.



Check:
Inspect the BtB connector of FPC Bottom Flex to the PBA.

Action:
1. If not properly connected – disconnect and reconnect.
2. If dirty or oxidized – clean the both sides of the BtB connector.

Problem Areas: Display



3. If the ZIF connector, the BtB connector or FPC of FPC Bottom Flex is damaged – replace the FPC Bottom Flex.
4. Replace board.

Problem Areas:

1.5 LED/Illumination

1.5.1 LED/Illumination

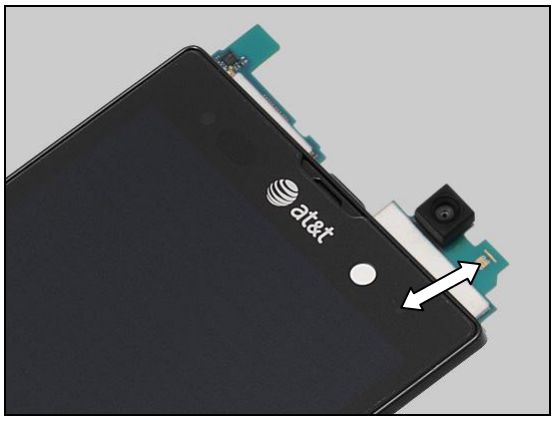
Check:
Inspect the external window area of the RGB LED on the Cover Front Assy.

Action:
1. If dirty – clean it.

2. If the external window area is damaged – replace the Cover Front Assy.

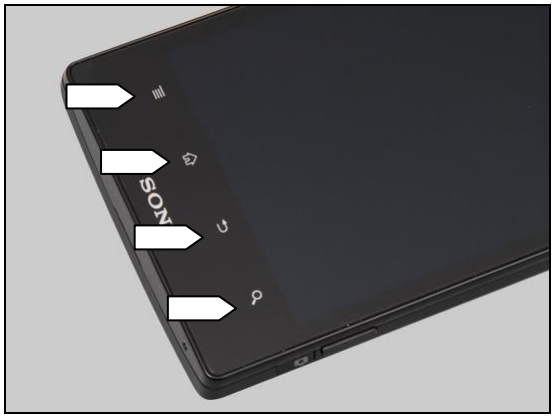
Check:
Inspect the RGB LED on the PBA.

Action:
1. If dirty or clogged – clean it.
2. Replace board.



Problem Areas: Illumination

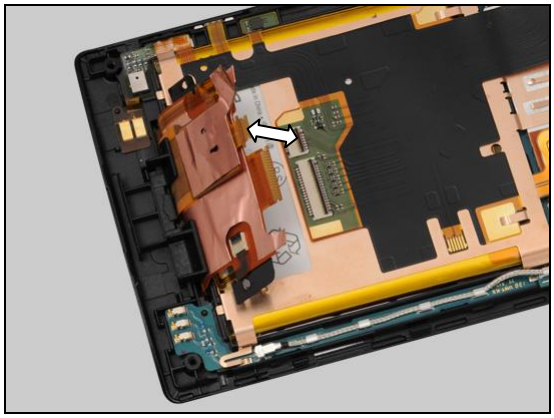
1.5.2 Menu, Home, Back, and Search keys Illumination



Check:
Inspect the illumination window of the menu, home, back and search keys on the Cover Front Assy.

Action:
If dirty – clean them.

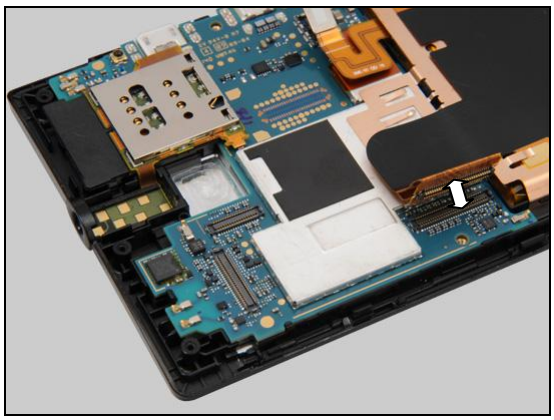
Note: Ensure the BtB connector of battery is disconnected in the following steps!



Check:
Inspect the both sides of the ZIF connector on the FPC Bottom Flex and the touch panel FPC of Cover Front Assy.

Action:
1. If not properly connected – disconnect and reconnect.
2. If dirty or oxidized – clean it.

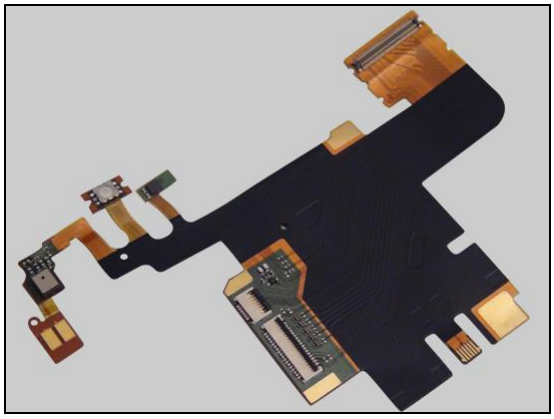
3. If the touch panel FPC or the illumination window of the keys is damaged – replace the Cover Front Assy.



Check:
Inspect the BtB connector of FPC Bottom Flex to the PBA.

Action:
1. If not properly connected – disconnect and reconnect.
2. If dirty or oxidized – clean the both sides of the BtB connector.

Problem Areas: Illumination



3. If the ZIF connector, the BtB connector or FPC of FPC Bottom Flex is damaged – replace the FPC Bottom Flex.
4. Replace board.

Problem Areas

1.6 Speaker

1.6.1 Loudspeaker

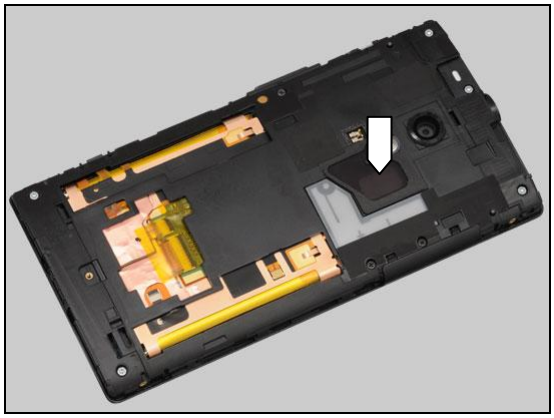
Check:
Inspect the Loudspeaker‘s external port on the Cover Rear Sub Assy.

Action:
1. If the loudspeaker external port is clogged – clean it.

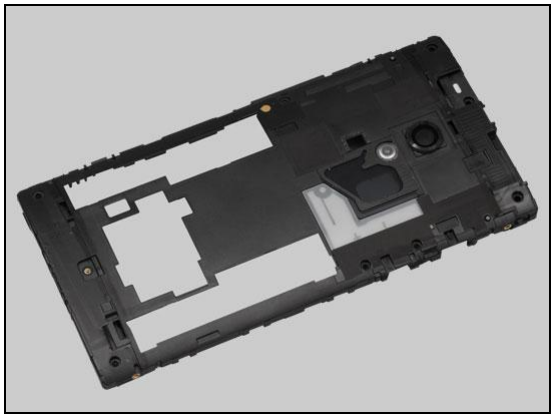
2. If the loudspeaker external port is damaged – replace the Cover Rear Sub Assy.

Check:
Inspect the gasket loudspeaker on the Frame Rear Assy.

Action:
1. If dirty – clean it.



2. If the gasket is damaged – replace the Frame Rear Assy.

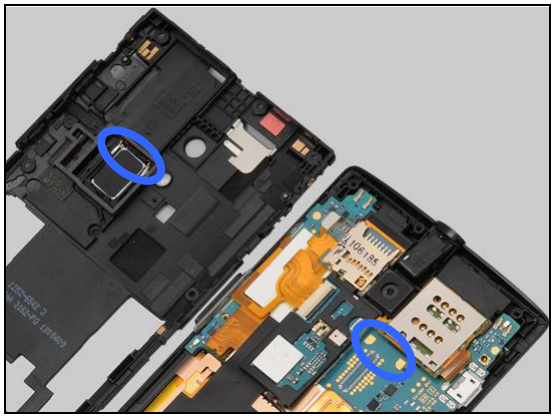


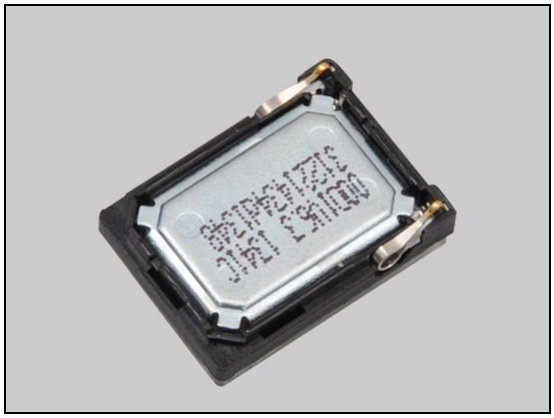
Problem Areas: Speaker

Note: Ensure the BtB connector of battery is disconnected in the following steps!

Check:
Inspect the Loudspeaker's pins and the pads on the Main PBA.

Action:
1. If dirty – clean them.





2. If the pins of the Loudspeaker are damaged – replace the Loudspeaker.
3. Replace board.

Problem Areas

1.7 Earphone

1.7.1 Earphone

Check:
Inspect the Ear Speaker‘s external port on the Cover Front Assy.

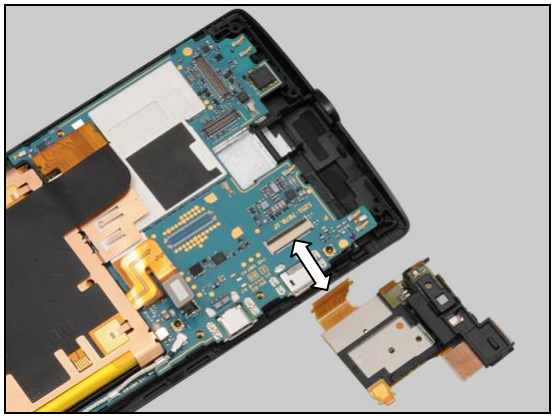
Action:
1. If clogged – clean it.

2. If the port is damaged – replace the Cover Front Assy.

Note: Ensure the BtB connector of battery is disconnected in the following steps!

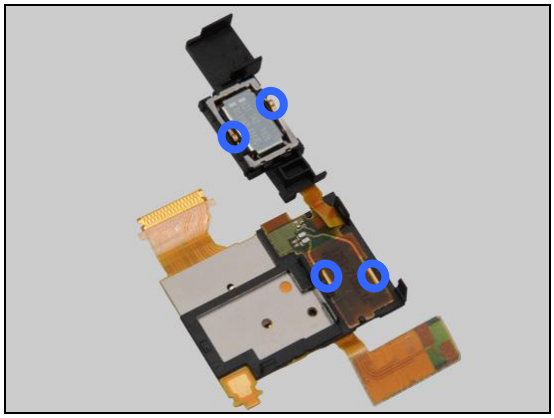
Check:
Inspect the both sides of the ZIF connector on the Main PBA and the FPC Top Flex.

Action:
1. If not properly connected – disconnect and reconnect.
2. If dirty or oxidized – clean it.



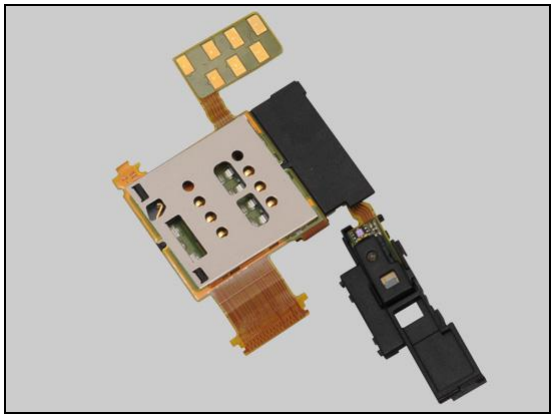
Check:
Inspect the Earspeaker’s pins and the pads on the FPC Top Flex.

Action:
1. If dirty – clean them.

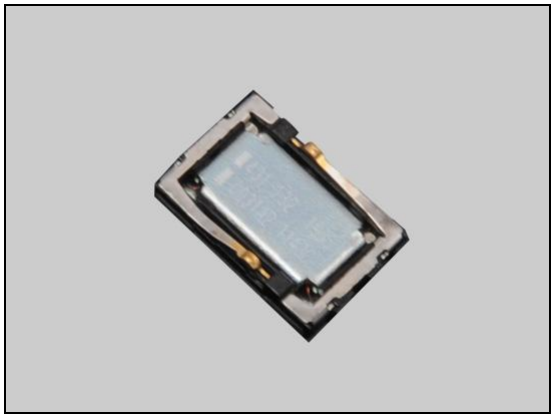


Problem Areas: Earphone

2. If the ZIF connector or the pads of FPC Top Flex is damaged – replace the FPC Top Flex.



3. If the pins are damaged – replace the Earspeaker.
4. Replace board.



Problem Areas

1.8 Microphone

1.8.1 Microphone

Check:
Inspect the Microphone's external port on the Cover Front Assy.

Action:
1. If clogged – clean the port.

2. If the port is damaged – replace the Cover Front Assy.

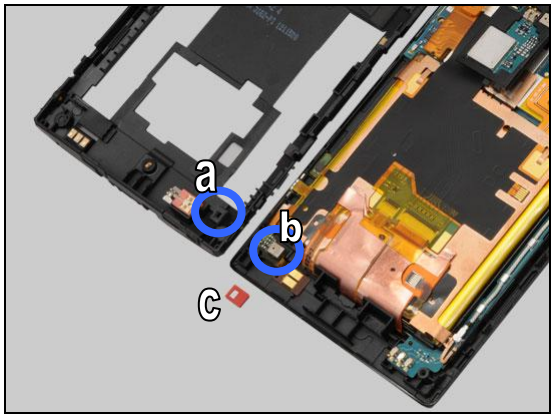
Note: Ensure the BtB connector of battery is disconnected in the following steps!

Check:
Inspect the gasket Mic (a),the microphone (b) and rubber Mic (c)

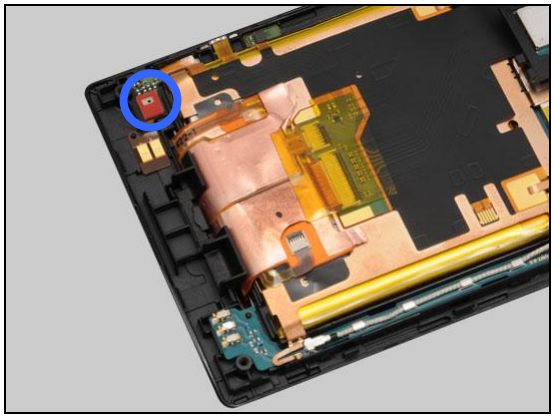
Action:

1. If there has gasket Mic (a) – remove it.

The gasket Mic(a) must be removed!

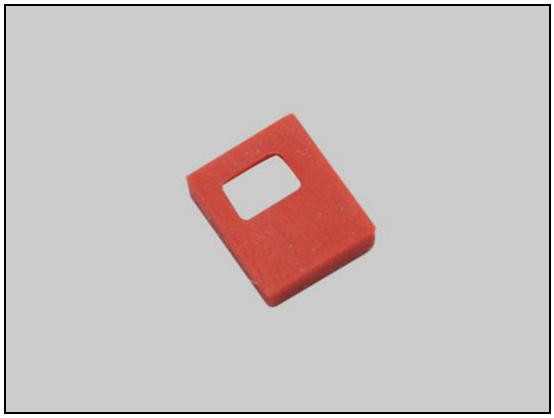


2. If there is no Rubber Mic (c) on microphone (b) – assemble a rubber Mic (c) as show in the picture.



Problem Areas: Microphone

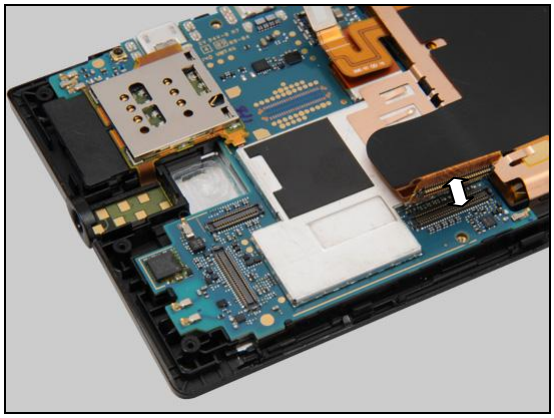
3. If the Rubber Mic is damaged –replace it.



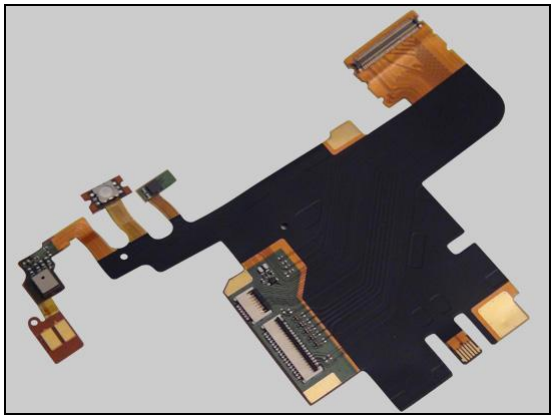
Check:
Inspect the BtB connector of FPC Bottom Flex to the PBA.

Action:

1. If not properly connected – disconnect and reconnect.
2. If dirty or oxidized – clean the both sides of the BtB connector.



3. If the BtB connector or the Microphone of FPC Bottom Flex is damaged – replace the FPC Bottom Flex.
4. Replace board.



Problem Areas: Microphone

1.8.2 Secondary Microphone

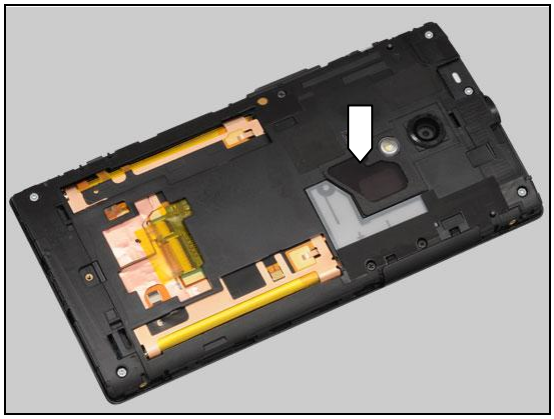
Check:
Inspect the secondary microphone‘s external port on the Cover Rear Sub Assy.

Action:
1. If clogged – clean the port.

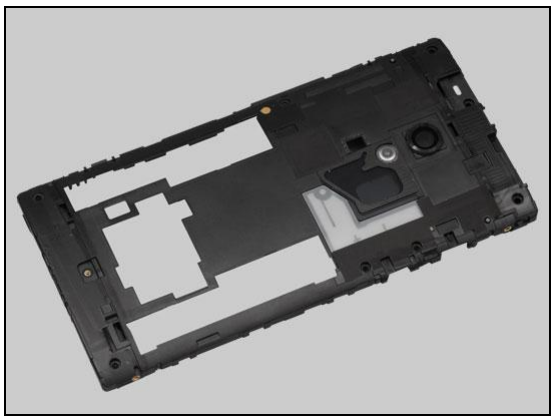
2. If the port is damaged – replace the Cover Rear Sub Assy.

Check:
Inspect the mesh of the secondary microphone on the Frame Rear Assy.

Action:
1. If dirty – clean it.



2. If the mesh is damaged – replace the Frame Rear Assy.



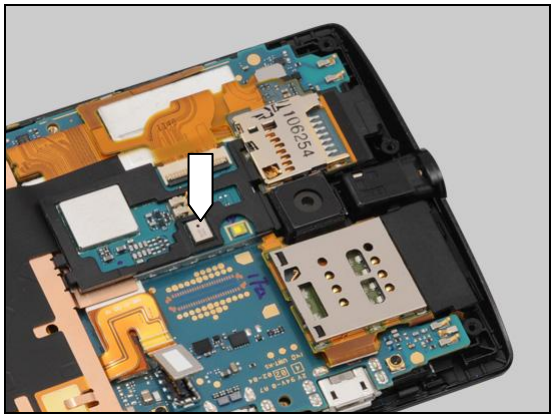
Problem Areas: Microphone

Note: Ensure the BtB connector of battery is disconnected in the following steps!

Check:
Inspect the secondary microphone on the PBA Sub NFC Assy.

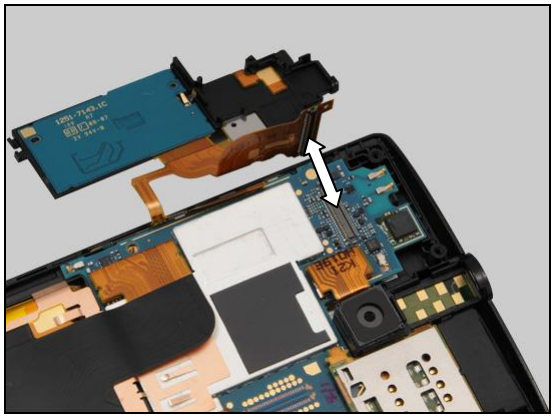
Action:
If dirty – clean it.

Liquid is not allowed!



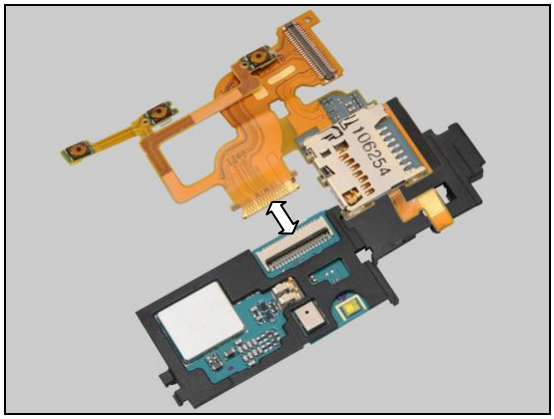
Check:
Inspect the BtB connector of FPC Side Key to the PBA.

Action:
1. If not properly connected – disconnect and reconnect.
2. If dirty or oxidized – clean the both sides of the BtB connector.

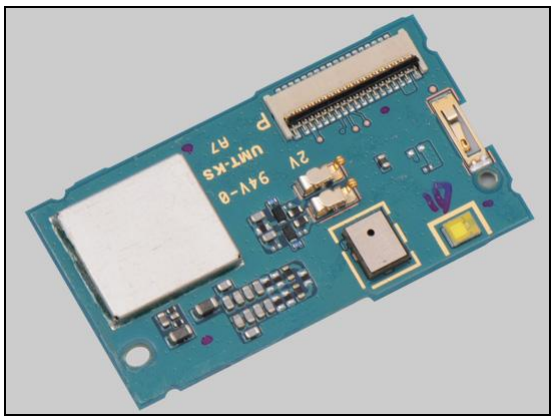


Check:
Inspect the ZIF connector of FPC Side Key to the PBA Sub NFC Assy.

Action:
1. If not properly connected – disconnect and reconnect.
2. If dirty or oxidized – clean the both sides of the ZIF connector.



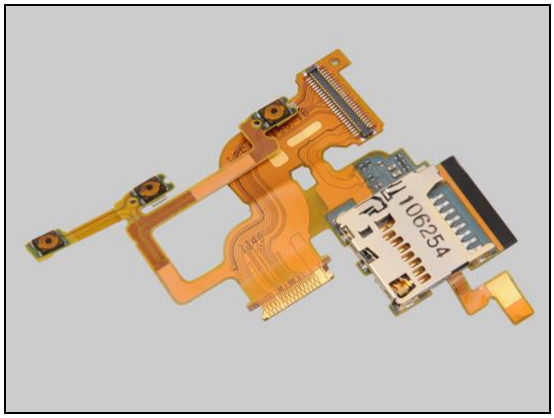
3. If the secondary microphone or the ZIF connector of PBA Sub NFC Assy is damaged – replace the PBA Sub NFC Assy.



Problem Areas: Microphone

4. If the ZIF connector, the BtB connector or FPC of FPC Side Key is damaged – replace the FPC Side Key.

5 Replace board.



Problem Areas

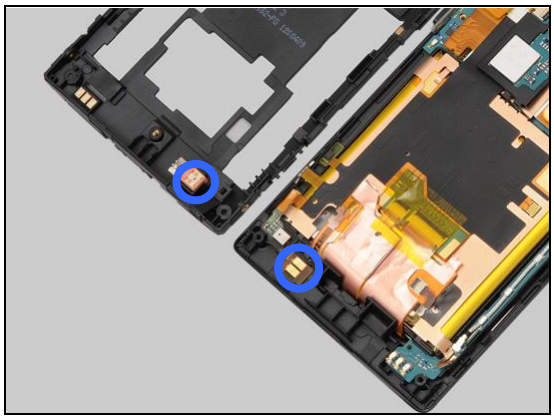
1.9 Vibrator

1.9.1 Vibrator not generating alerts

Note: Ensure the BtB connector of battery is disconnected in the following steps!

Check:
Inspect the Vibrator's pins and the pads on the FPC Bottom Flex.

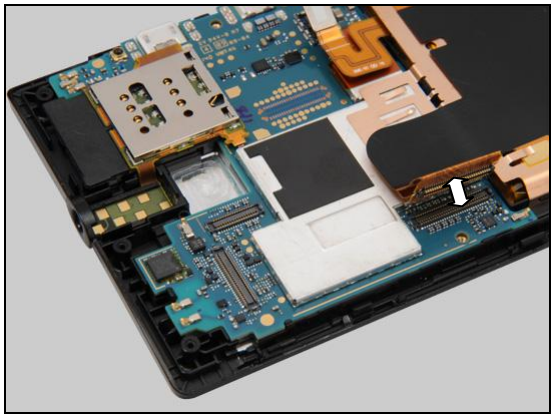
Action:
1. If dirty or clogged – clean them.



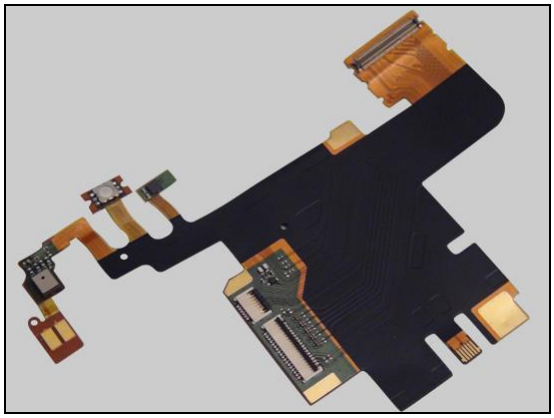
2. If the Vibrator or its pins is damaged – replace the Vibrator.

Check:
Inspect the BtB connector of FPC Bottom Flex to the PBA.

Action:
1. If not properly connected – disconnect and reconnect.
2. If dirty or oxidized – clean the both sides of the BtB connector.



3. If the pads or the BtB connector is damaged – replace the FPC Bottom Flex.
4. Replace board.



Problem Areas

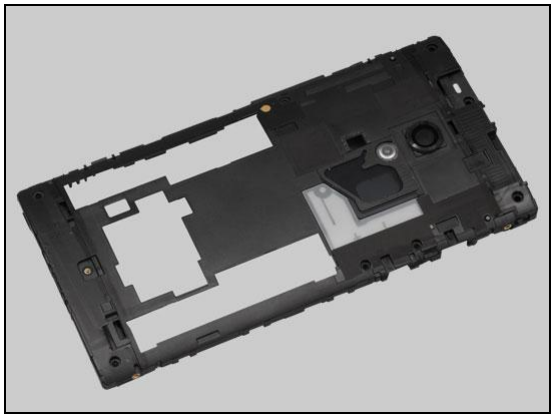
1.10 Camera

1.10.1 Camera defects

Check:
Inspect the external area of camera window.

Action:
1. If dirty – clean it.

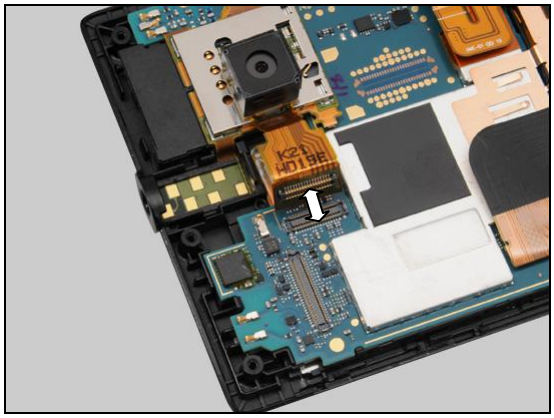
2. If the camera window scratched or damaged – replace the Frame Rear Assy.



Note: Ensure the BtB connector of battery is disconnected in the following steps!

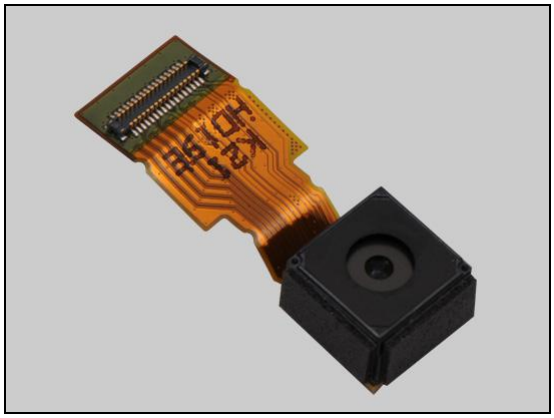
Check:
Inspect the both side of the BtB connector on the PBA and the Camera.

Action:
1. If not properly connected – disconnect and reconnect.
2. If dirty or oxidized – clean both sides of the BtB connector.



Check:
Inspect the Camera.

Action:
1. If the Camera is damaged – replace it.
2. Replace board.



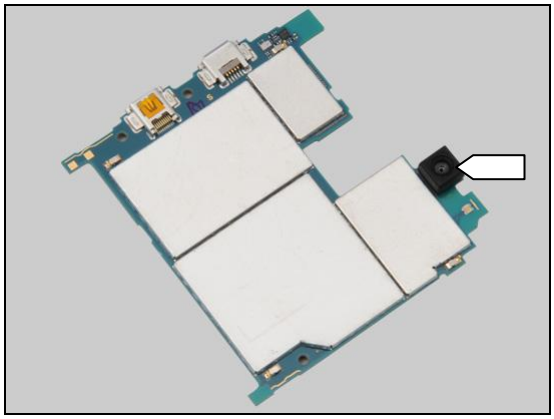
Problem Areas

1.10.2 Video Call Camera defects

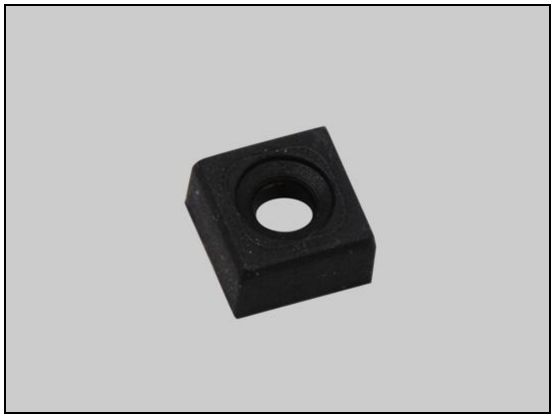
Check:
Inspect the external area of the video camera window.
Action:
1. If dirty – clean it.

2. If scratched or damaged – replace the Cover Front Assy.

Check:
Inspect the Rubber Chat Camera.
Action:
1. If dirty or clogged – clean it.
2. If not properly mounted – remount it.



3. If damaged – replace it.
4. Replace board.



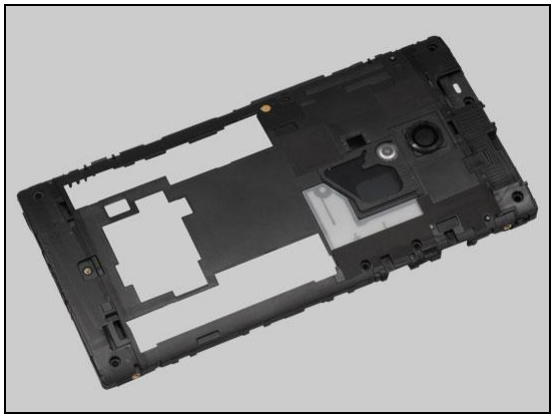
Problem Areas

1.11 Flash LED

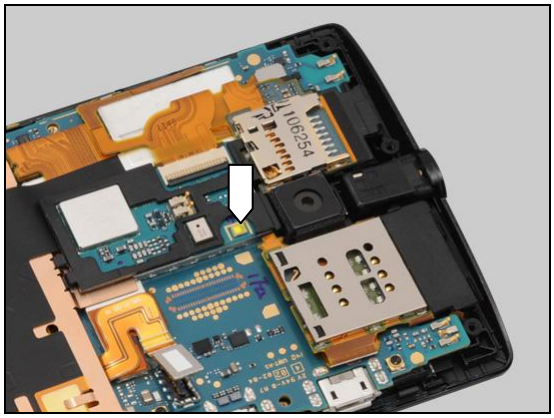
1.11.1 Flash LED not flashing

Check:
Inspect the external area of the flash LED window.

Action:
1. If dirty – clean the window.



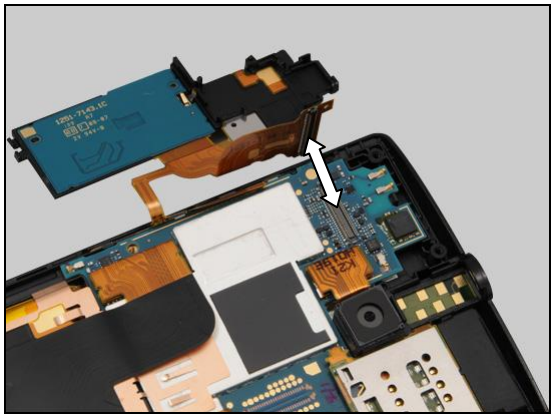
2. If scratched or damaged – replace it.



Note: Ensure the BtB connector of battery is disconnected in the following steps!

Check:
Inspect the flash LED on the PBA Sub NFC Assy.

Action:
If dirty – clean it.



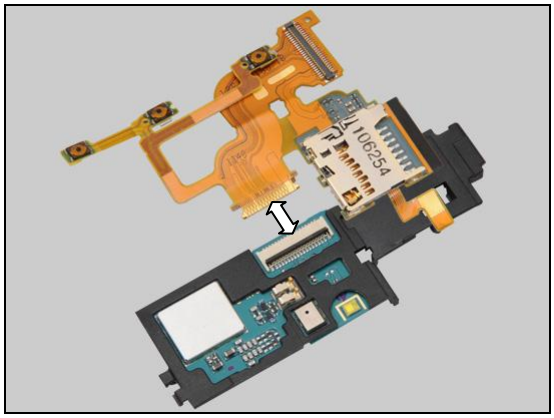
Check:
Inspect the BtB connector of FPC Side Key to the PBA.

Action:
1. If not properly connected – disconnect and reconnect.
2. If dirty or oxidized – clean the both sides of the BtB connector.

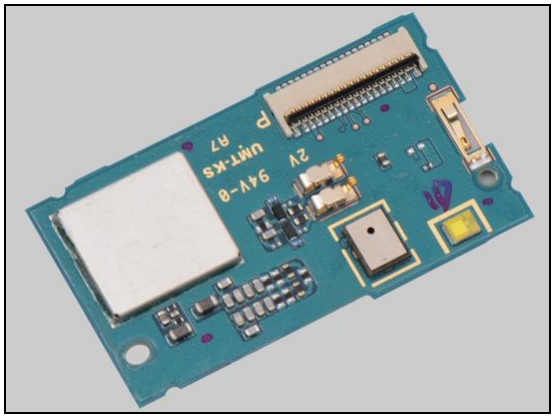
Problem Areas: Flash LED

Check:
Inspect the ZIF connector of the FPC Side Key to the PBA Sub NFC Assy.

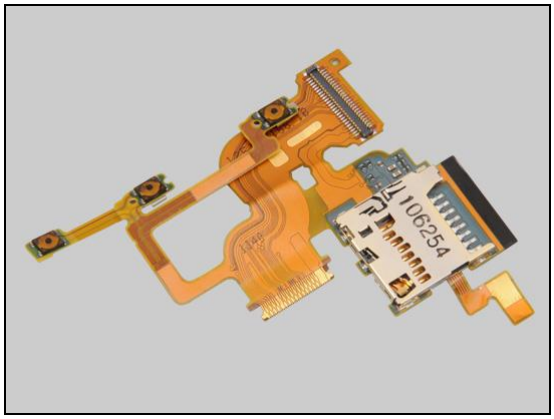
Action:
1. If not properly connected – disconnect and reconnect.
2. If dirty or oxidized – clean the both sides of the ZIF connector.



3. If the flash LED or the ZIF connector of PBA Sub NFC Assy is damaged – replace the PBA Sub NFC Assy.



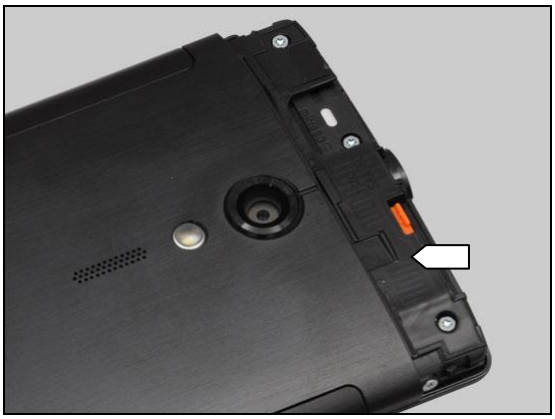
4. If the ZIF connector, the BtB connector or FPC of FPC Side Key is damaged – replace the FPC Side Key.
5. Replace board.



Problem Areas

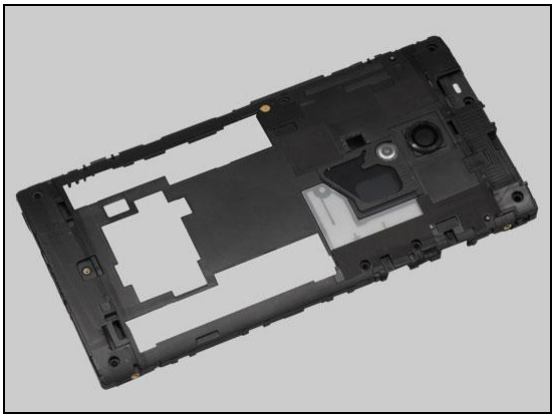
1.12 Bluetooth and WLAN

1.12.1 Bluetooth or WLAN connection failure



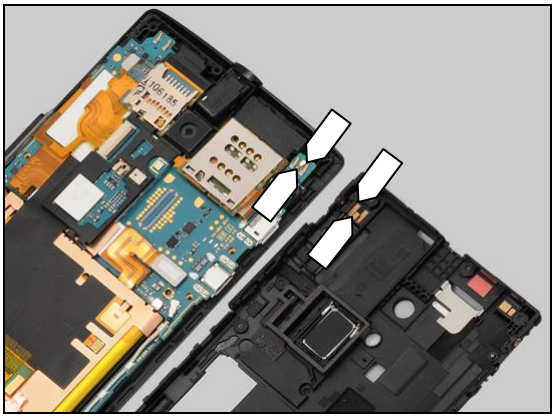
Check:
Inspect the WLAN and Bluetooth antenna on the Frame Rear Assy.

Action:
1. If dirty – clean it.



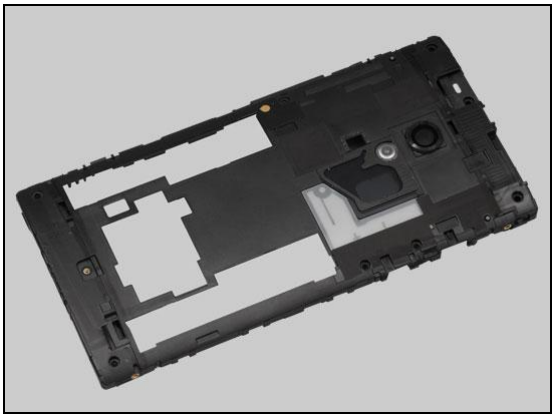
2. If the antenna is damaged – replace the Frame Rear Assy.

Note: Ensure the BtB connector of battery is disconnected in the following steps!



Check:
Inspect the WLAN and Bluetooth antenna contact pads on the Frame Rear Assy and the contact pins on the PBA.

Action:
1. If dirty or oxidized – clean the pads and pins.



2. If the pads are damaged – replace the Frame Rear Assy.
3. Replace board.

Problem Areas

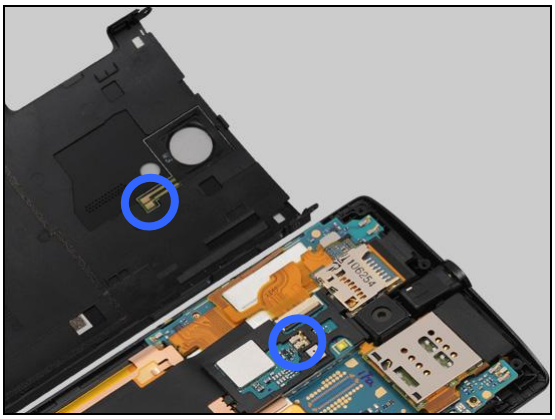
1.13 NFC

1.13.1 NFC malfunctions

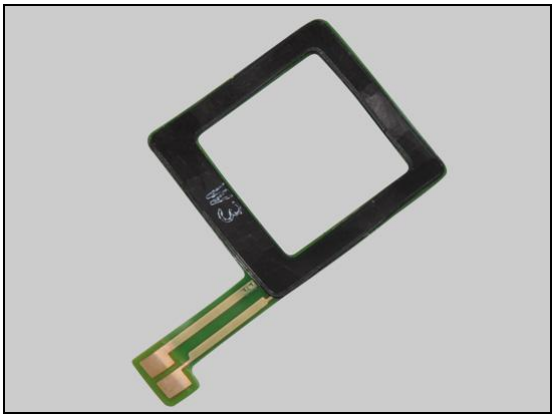
Note: Ensure the BtB connector of battery is disconnected in the following steps!

Check:
Inspect the NFC antenna contact pads on the Cover Rear Sub Assy and the contact pins on the PBA.

Action:
1. If dirty or oxidized – clean the pads and pins.

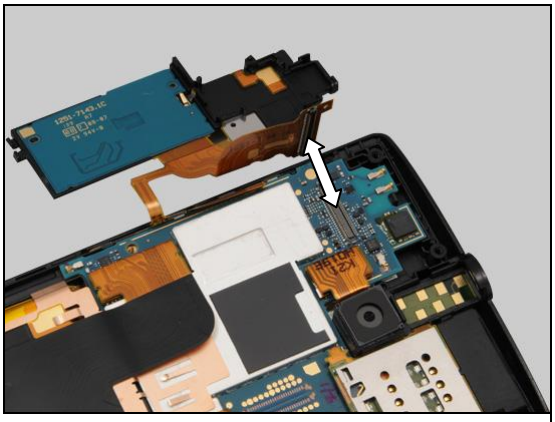


2. If the pads are damaged – replace the Antenna NFC Flex.



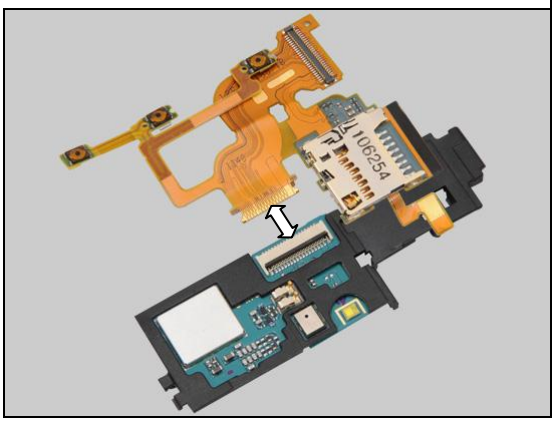
Check:
Inspect the BtB connector of FPC Side Key to the PBA.

Action:
1. If not properly connected – disconnect and reconnect.
2. If dirty or oxidized – clean the both sides of the BtB connector.



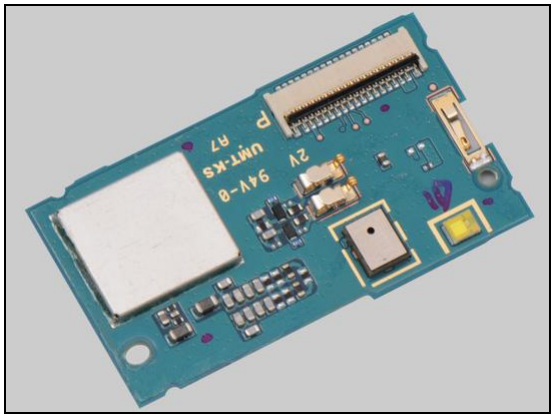
Check:
Inspect the ZIF connector of FPC Side Key to the PBA Sub NFC Assy.

Action:
1. If not properly connected – disconnect and reconnect.
2. If dirty or oxidized – clean the both sides of the ZIF connector.

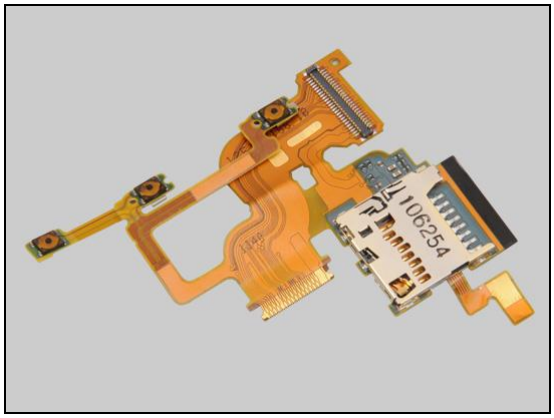


Problem Areas: NFC

3. If the pins or the ZIF connector of PBA Sub NFC Assy is damaged – replace the PBA Sub NFC Assy.



4. If the ZIF connector, the BtB connector or FPC of FPC Side Key is damaged – replace the FPC Side Key.
5. Replace board.



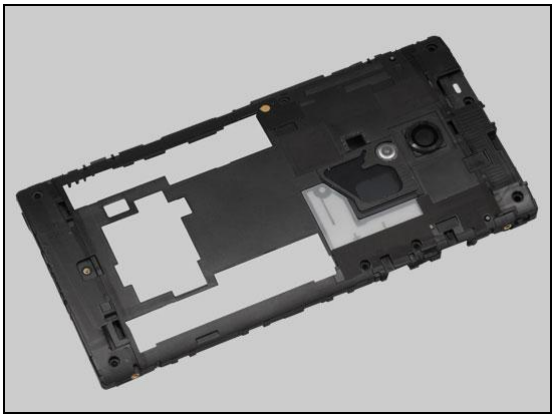
Problem Areas

1.14 GPS

1.14.1 GPS malfunctions

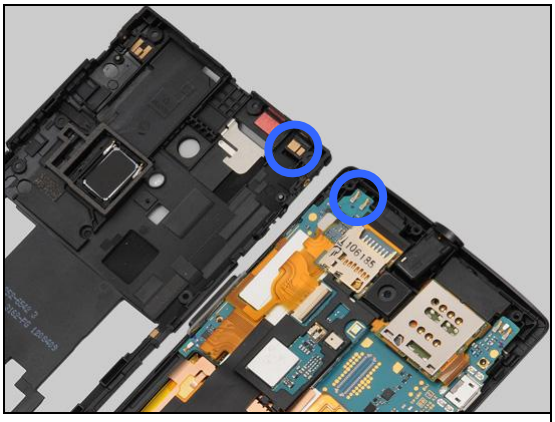
Check:
Inspect the GPS antenna on the Frame Rear Assy.

Action:
1. If dirty – clean it.



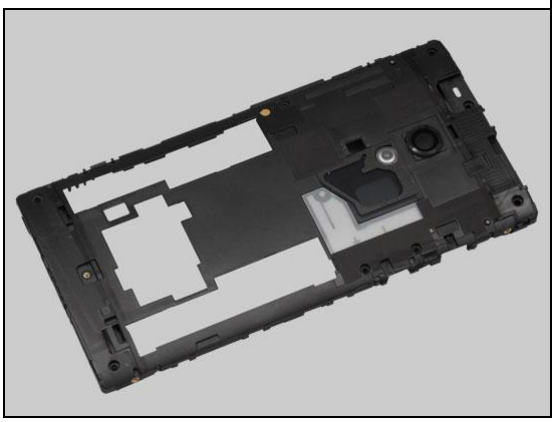
2. If the antenna is damaged – replace the Frame Rear Assy.

Note: Ensure the BtB connector of battery is disconnected in the following steps!



Check:
Inspect the GPS antenna contact pads on the Frame Rear Assy and the contact pins on the PBA.

Action:
1. If dirty or oxidized – clean the pads and pins.



2. If the pads are damaged – replace the Frame Rear Assy.
3. Replace board.

Problem Areas

1.15 Compass

1.15.1 Compass fails

Action:
Replace board.

Problem Areas

1.16 Accelerometer

1.16.1 Accelerometer test fails

Action:
Replace board.

Problem Areas

1.17 Gyroscope

1.17.1 Gyroscope test fails

Action:
Replace board.

Problem Areas

1.18 Ambient Light Sensor

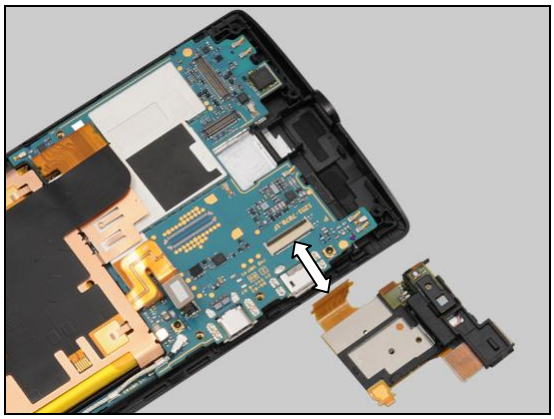
1.18.1 Light Sensor malfunctions

Check:
Inspect the external window area of light sensor on the Cover Front Assy.

Action:
1. If clogged – clean it.

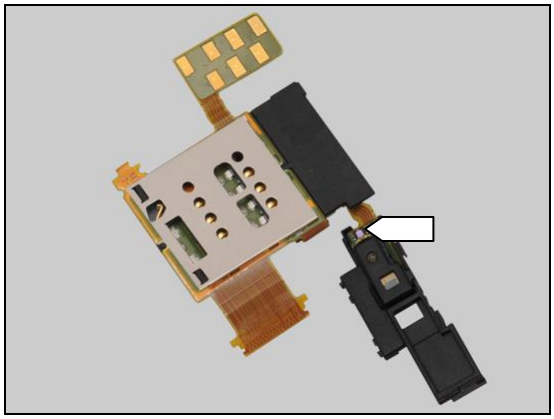
2. If scratched or damaged – replace the Cover Front Assy.

Note: Ensure the BtB connector of battery is disconnected in the following steps!



Check:
Inspect the both sides of the ZIF connector on the Main PBA and the FPC Top Flex.

Action:
1. If not properly connected – disconnect and reconnect.
2. If dirty or oxidized – clean it.



Check:
Inspect the light sensor on the FPC Top Flex.

Action:
1. If dirty – clean it.
2. If the light sensor or the connector is damaged – replace the FPC Top Flex.
3. Replace board.

Problem Areas

1.19 Proximity Switch

1.19.1 Proximity switch malfunctions

Check:
Inspect the proximity switch window area and the proximity sensor window area on the Cover Front Assy.

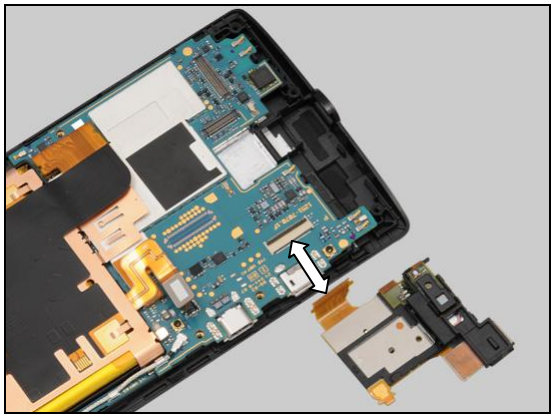
Action:
1. If dirty – clean it.

2. If scratched or damaged – replace the Cover Front Assy.

Note: Ensure the BtB connector of battery is disconnected in the following steps!

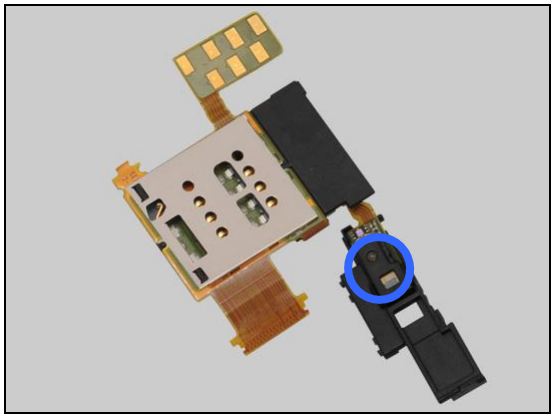
Check:
Inspect the both sides of the ZIF connector on the Main PBA and the FPC Top Flex.

Action:
1. If not properly connected – disconnect and reconnect.
2. If dirty or oxidized – clean it.



Check:
Inspect the proximity switch and proximity sensor on the FPC Top Flex.

Action:
1. If dirty – clean it.
2. If the connector, the proximity switch or the proximity sensor damaged – replace the FPC Top Flex.
3. Replace board.



Problem Areas

1.20 Pressure Sensor

1.20.1 Pressure Sensor test fails

Action:

N/A. This test is not applicable for this product.

Problem Areas

1.21 Water Proof

1.21.1 Water Proof fails

Action:
N/A. No water proof functions in the phone.

Problem Areas

1.22 Real Time Clock

1.22.1 Real Time Clock test fails

Action:
Replace board.

Problem Areas

1.23 Total call time

1.23.1 Total call time fails

Action:
Replace board.

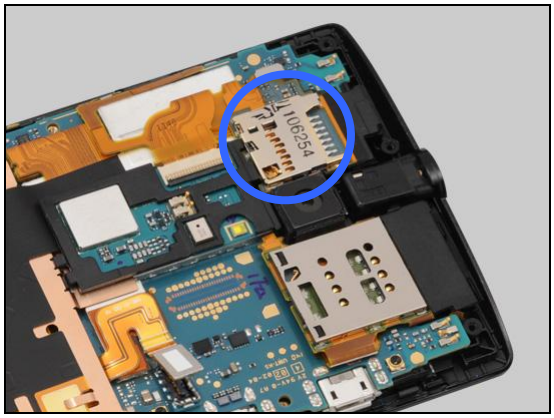
Problem Areas

1.24 External Memory

1.24.1 Memory Card not detected

Check:
Inspect the external port of the memory card holder and check if a memory card can be properly inserted.

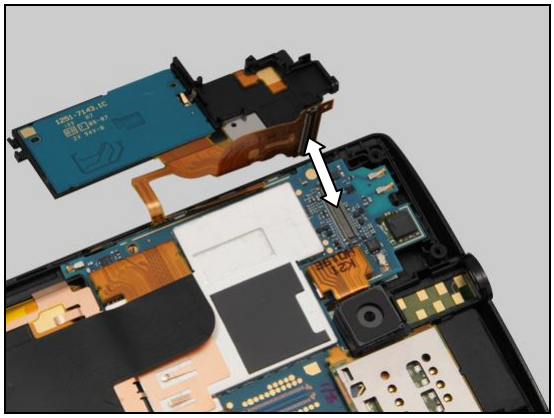
Action:
If dirty or clogged – clean the external port.



Note: Ensure the BtB connector of battery is disconnected in the following steps!

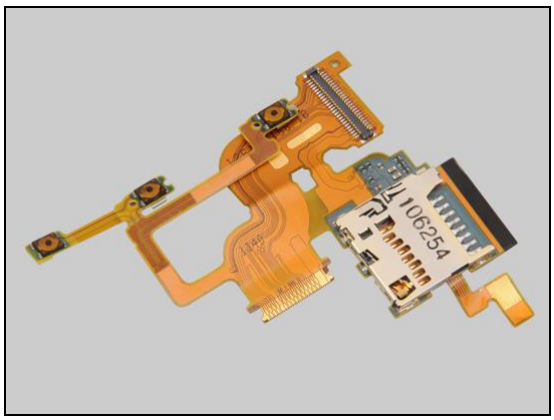
Check:
Inspect the memory card holder on the PFC Side Key.

Action:
If dirty or clogged – clean the holder.



Check:
Inspect the BtB connector of FPC Side Key to the PBA.

Action:
1. If not properly connected – disconnect and reconnect.
2. If dirty or oxidized – clean the both sides of the BtB connector.



3. If the memory card holder or the BtB connector of FPC Side Key is damaged – replace the FPC Side Key.
4. Replace board.

Problem Areas

1.25 Security

1.25.1 Security fails

Action:
Replace board.

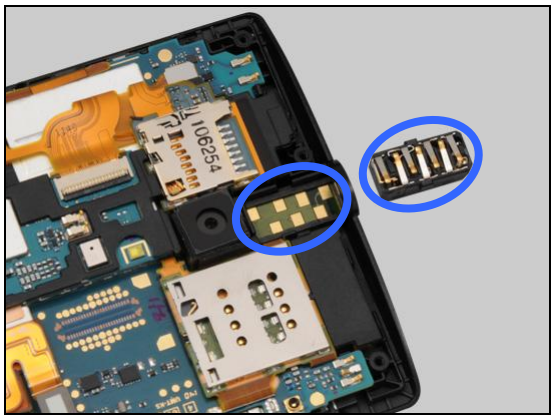
Problem Areas

1.26 FM Radio

1.26.1 No/Poor FM Radio reception

Check:
Inspect the Audio Jack.

Action:
If dirty or oxidized – clean it.

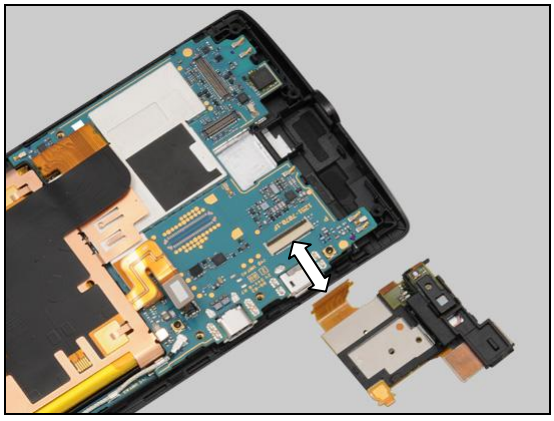


Note: Ensure the BtB connector of battery is disconnected in the following steps!

Check:
Inspect the contact pins on the Audio Jack and the contact pads on the FPC Top Flex.

Action:
1. If dirty or oxidized – clean the pads and pins.

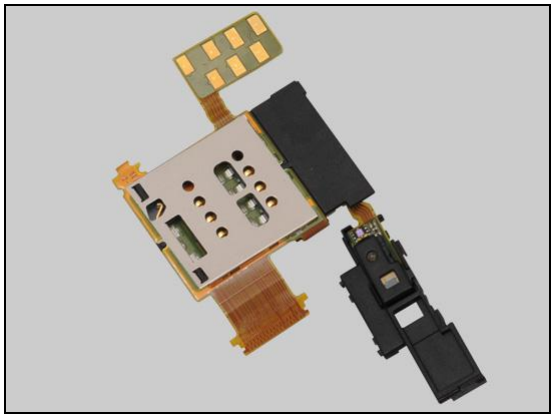
2. If the pins are damaged – replace the Audio Jack.



Check:
Inspect the both sides of the ZIF connector on the Main PBA and the FPC Top Flex.

Action:
1. If not properly connected – disconnect and reconnect.
2. If dirty or oxidized – clean it.

Problem Areas: FM Radio



3. If the pads or the connector of FPC Top Flex is damaged – replace the FPC Top Flex.
4. Replace board.

Problem Areas

1.27 Flip slider counter

1.27.1 Flip slider counter fails

Action:

N/A. No slider phone.

Problem Areas

1.28 Verify Certificates

1.28.1 Verify certificates fails

Action:
Replace board.

Problem Areas

1.29 IrDA Test

1.29.1 IrDA test fails

Action:

N/A. No IrDA in the phone.

Problem Areas

1.30 HDMI Test

1.30.1 HDMI test fails

Check:

Inspect the HDMI connector.

Action:

1. If dirty or oxidized – clean the connector.
2. Replace board.

Problem Areas

1.31 Connector Ground Test

1.31.1 Connector ground test fails

Action:

N/A. This test is not applicable for this product.

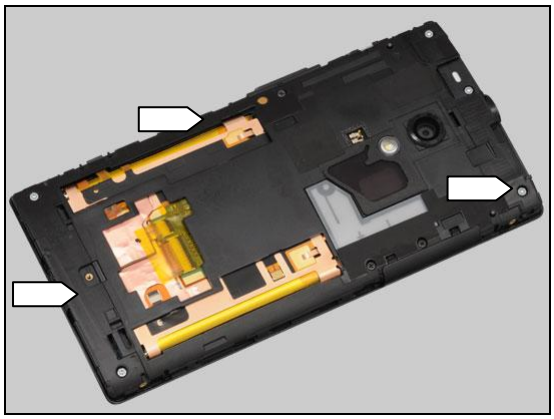
Problem Areas

1.32 Network & Signal

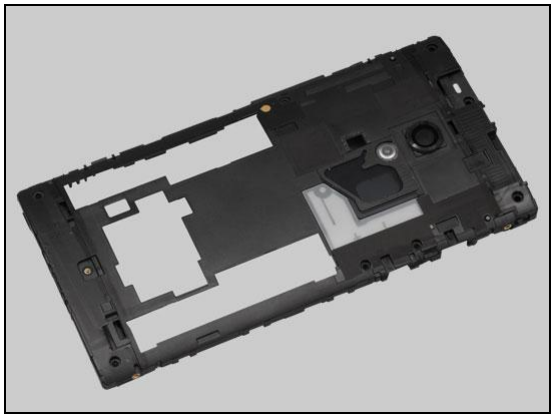
1.32.1 No/Poor signal

Check:
Inspect the main antenna on the Frame Rear Assy.

Action:
1. If dirty – clean it.



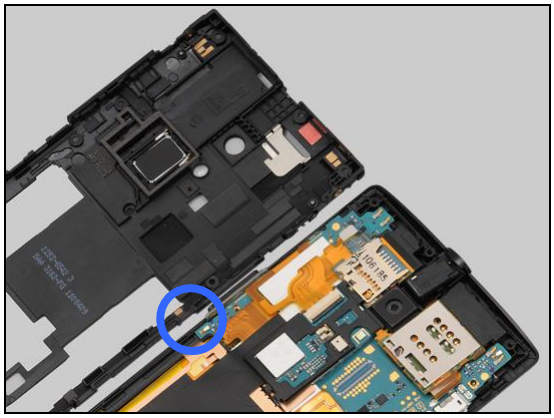
2. If the main antenna is damaged – replace Frame Rear Assy.



Note: Ensure the BtB connector of battery is disconnected in the following steps!

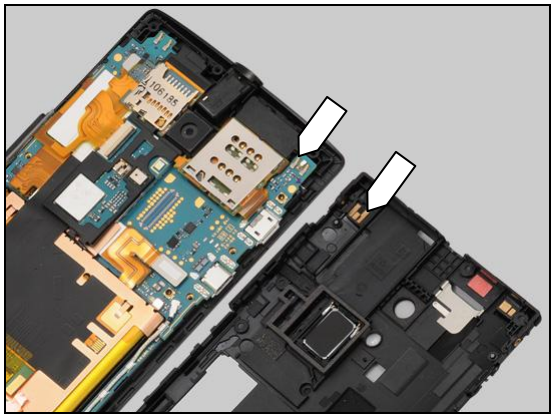
Check:
Inspect the main antenna contact pin on the PBA Sub Antenna Assy and contact pad on the Frame Rear Assy.

Action:
If dirty or oxidized – clean the pad and pin.

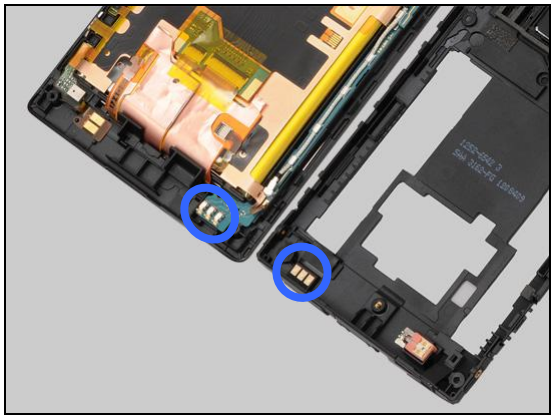


Check:
Inspect the main antenna contact pin on the PBA Sub Antenna Assy and contact pad on the Frame Rear Assy.

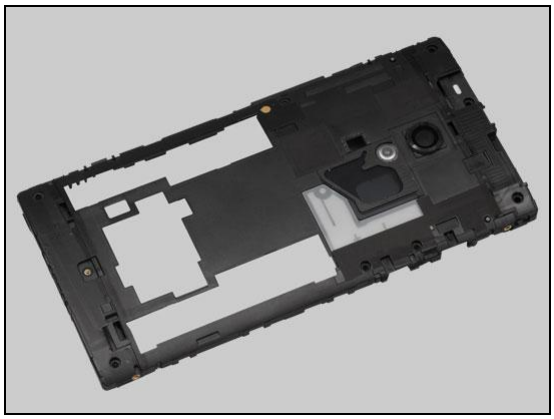
Action:
If dirty or oxidized – clean the pad and pin.



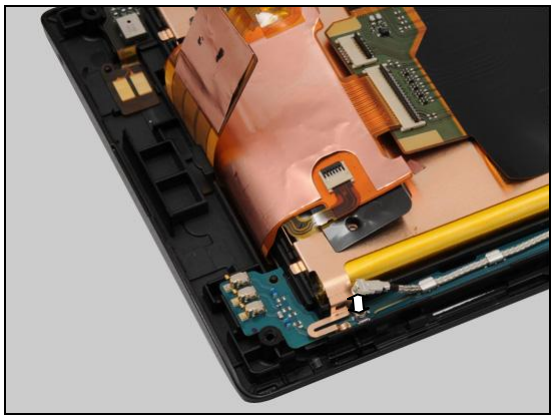
Problem Areas: Network & Signal



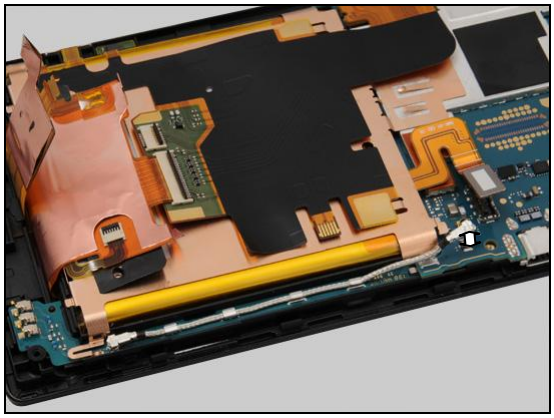
Check:
Inspect the main antenna contact pins on the PBA Sub Antenna Assy and contact pads on the Frame Rear Assy.
Action:
1. If dirty or oxidized – clean the pads and pins.



2. If the pads are damaged – replace Frame Rear Assy.



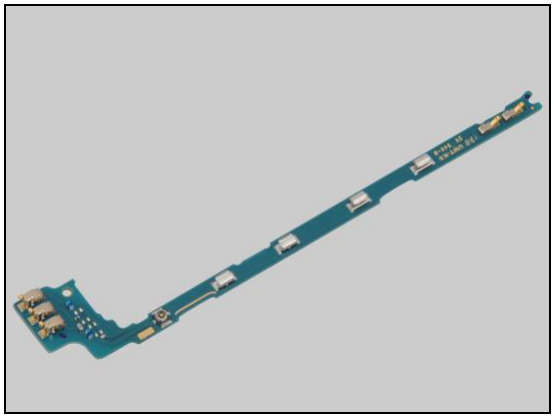
Check:
Inspect the connector on the PBA Sub Antenna Assy to the Cable RF.
Action:
If not properly connected – disconnect and reconnect it.



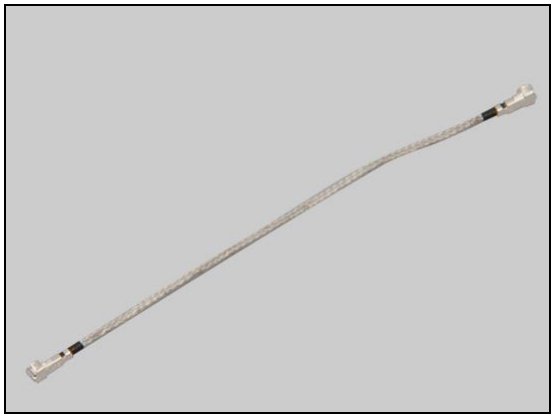
Check:
Inspect the connector of Cable RF to the Main PBA.
Action:
1. If not properly connected – disconnect and reconnect it.

Problem Areas: Network & Signal

2. If the connector, the pins or the PBA of PBA Sub Antenna Assy is damaged – replace the PBA Sub Antenna Assy.

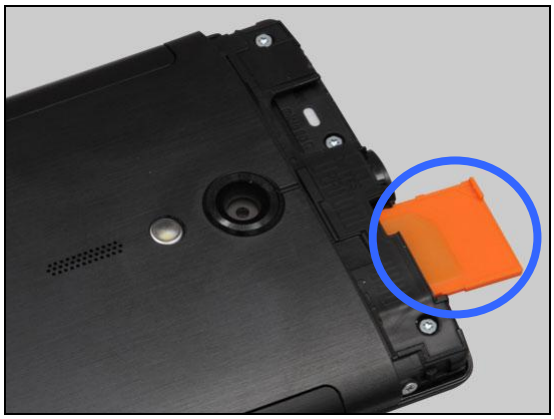


3. If the Cable RF is damaged – replace it.
4. Replace board.



Problem Areas

1.33 SIM



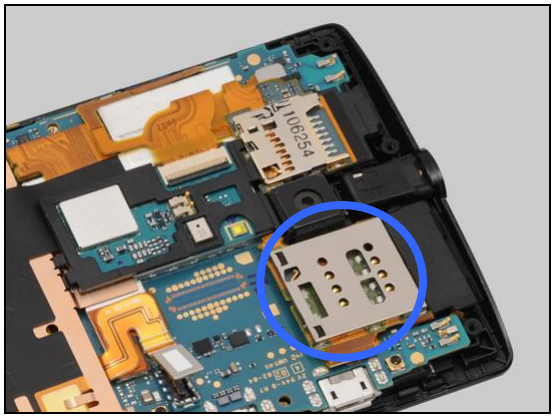
1.33.1 SIM not detected

Check:
Inspect the SIM Tray.

Action:
1. If dirty – clean it

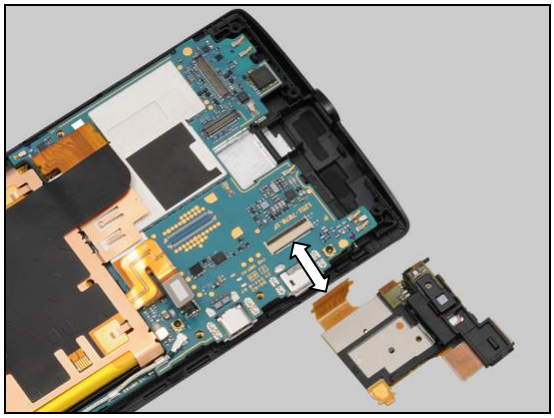
2. If damaged – replace it.

Note: Ensure the BtB connector of battery is disconnected in the following steps!



Check:
Inspect the SIM card holder.

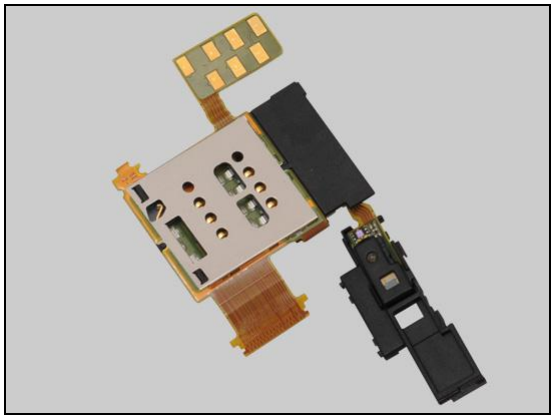
Action:
If dirty or oxidized – clean the holder.



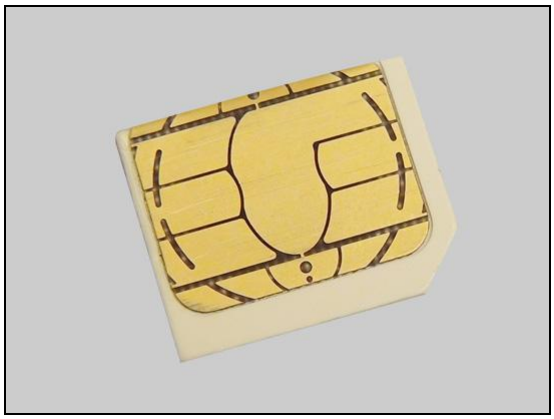
Check:
Inspect the both sides of the ZIF connector on the Main PBA and the FPC Top Flex.

Action:
1. If not properly connected – disconnect and reconnect.
2. If dirty or oxidized – clean it.

Problem Areas: SIM



3. If the SIM card holder or the ZIF connector of FPC Top Flex is damaged – replace the FPC Top Flex.
4. Replace board.



1.33.2 Incorrect SIM indicated

Check:

Check whether the phone is locked to a particular operator and whether the correct operator SIM is being used.

Action:

1. Use a proper operator SIM or test SIM.
2. Replace board.

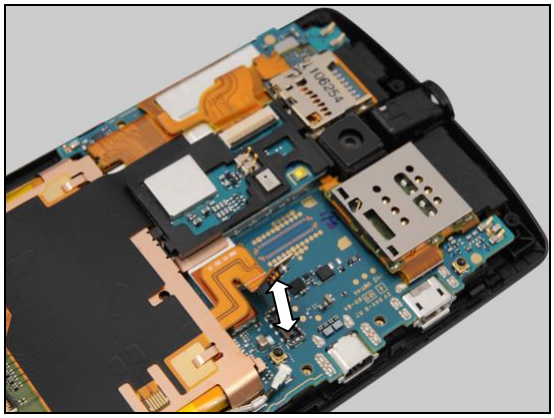
Problem Areas

1.34 Charging

1.34.1 Battery will not charge

Check:
Inspect the USB connector.

Action:
If dirty or oxidized – clean the connector.



Check:
Inspect the BtB connector of battery to the PBA.

Action:

1. If not properly connected – disconnect and reconnect.
2. If dirty or oxidized – clean the both sides of the BtB connector.

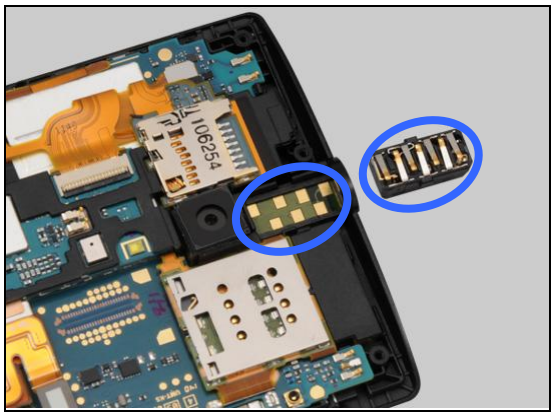
3. If the battery or its BtB connector is damaged – replace the Battery 1900mAh.
4. Replace board.

Problem Areas

1.35 HandsFree by Wire

1.35.1 Connection to Portable HandsFree fails

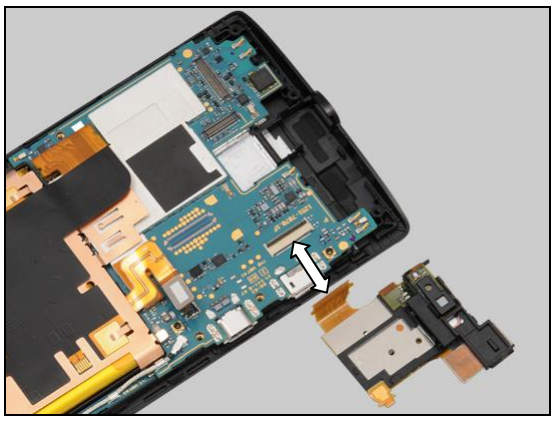
Check:
Inspect the Audio Jack.
Action:
If dirty or oxidized – clean the connector.



Note: Ensure the BtB connector of battery is disconnected in the following steps!

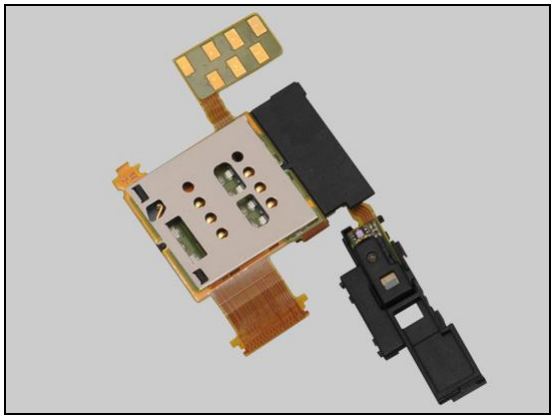
Check:
Inspect the contact pins on the Audio Jack and the contact pads on the FPC Top Flex.
Action:
1. If dirty or oxidized – clean the pads and pins.

2. If the pins are damaged – replace the Audio Jack.



Check:
Inspect the both sides of the ZIF connector on the Main PBA and the FPC Top Flex.
Action:
1. If not properly connected – disconnect and reconnect.
2. If dirty or oxidized – clean it.

Problem Areas: HandsFree by Wire



3. If the pads or the ZIF connector of FPC Top Flex is damaged – replace the FPC Top Flex.
4. Replace board.

Problem Areas

1.36 Data Communication

1.36.1 Data transfer via System Connector fails

Check:

Inspect the USB connector.

Action:

1. If dirty or oxidized – clean the connector.
2. Replace board.

2 Revision History

Rev.	Date	Changes / Comments
1	2012-May-18	Initial release
2	2012-July-25	Added LT28h
3	2012-Sep-6	Update the chapter of Microphone

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Repair Movies
- mechanical -

Sony Xperia Ion

LT28i, LT28h

LT28at

1261-4724 Rev 2

CONTENTS

To view the embedded repair movies in this document, Acrobat Reader version 8 (or later) and Flash Player version 8 (or later) must be installed on your computer.

For best picture quality, select "Actual size" or "100%" as zoom level in Acrobat Reader.
To magnify while keeping an acceptable picture quality, increase the zoom level to 200%.

If the movies appear to be jerky or blurred when viewing on-line, this is probably caused by the connection speed being too slow.
In that case, right-click with the mouse on the document name and select Save Target As to download the repair movie document for off-line viewing.

For general information about repair movies, refer to

1220-1333: Generic Repair Manual - mechanical

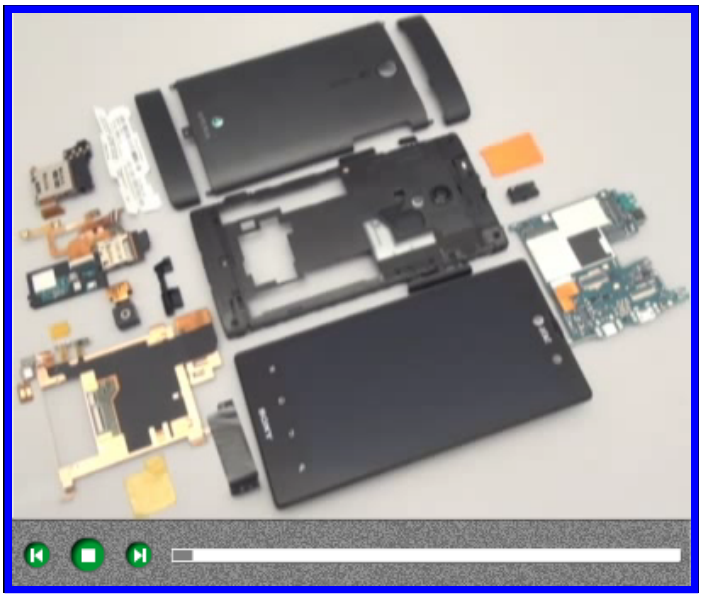
1 Movies

1.1 Disassembly

- Cover Rear Top (a) & SIM Tray (b)
- Cover Rear Bottom (a) & Label Core Unit (b)
- Cover Rear Sub Assy
- Key On/Off (a) & Key Camera (b) & Frame Rear Assy (c) & Key Volume (d)
- Audio Jack
- Carrier NFC Assy
- Camera
- Sheet RCV Flex ZIF (a) & FPC Top Flex Assy (b)
- Carrier Holder Bottom (a) & Sheet Touch ZIF (b) & Sheet LCM FPC (c)
- FPC Bottom Flex Assy
- Main PBA (a) & Cover Front Assy (b)

1.2 Reassembly

- Cover Front Assy (a) & Main PBA (b)
- FPC Bottom Flex Assy
- Sheet LCM FPC (a) & Sheet Touch ZIF (b) & Carrier Holder Bottom (c)
- FPC Top Flex Assy (a) & Sheet RCV Flex ZIF (b)
- Camera
- Carrier NFC Assy
- Audio Jack
- Key Volume (a) & Frame Rear Assy (b) & Key Camera (c) & Key On/Off (d)
- Cover Rear Sub Assy
- Label Core Unit (a) & Cover Rear Bottom (b)
- SIM Tray (a) & Cover Rear Top (b)



2 Revision History

Rev.	Date	Changes / Comments
1	2012-May-18	Initial release
2	2012-July-25	Added LT28h

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Part List
- mechanical -

Sony Xperia Ion

LT28i,LT28h

LT28at

1261-4727 Rev 3

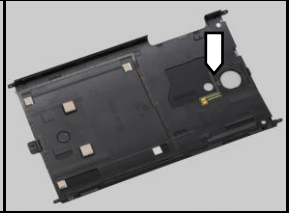
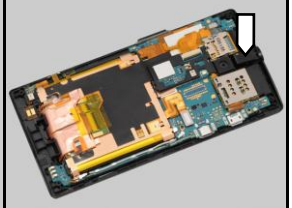
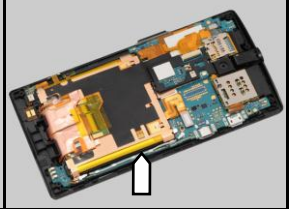
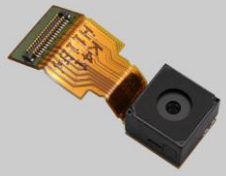
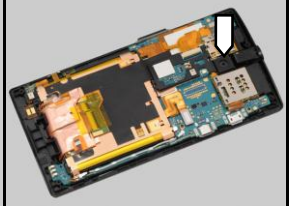
CONTENTS

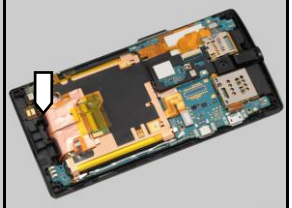
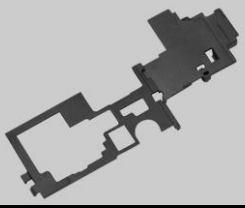
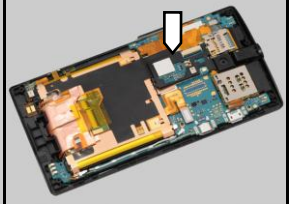
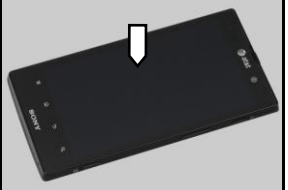
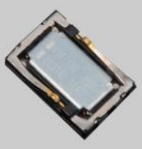
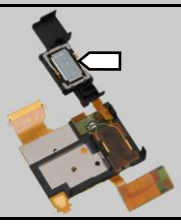
1 Part List

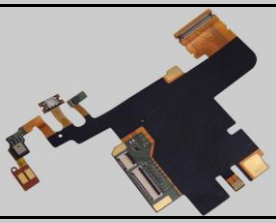
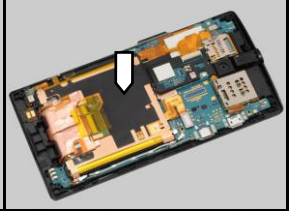
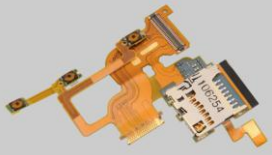
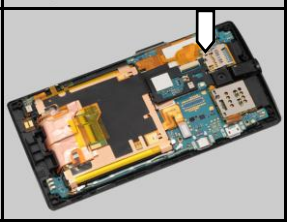
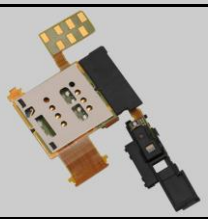
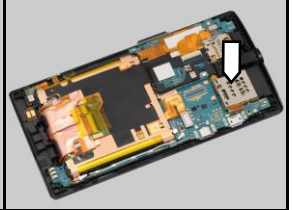
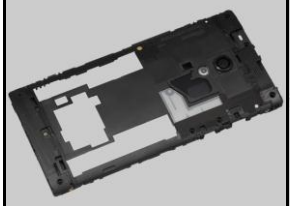
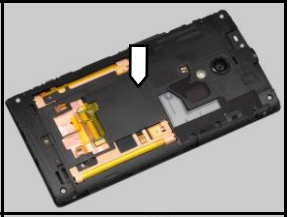
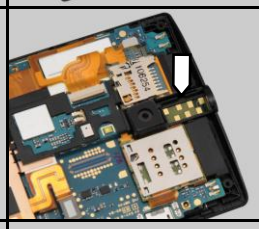
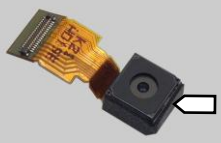
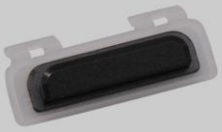
The following parts are available for order in ‘E-star’.

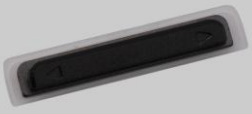
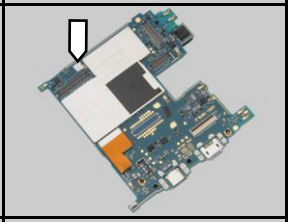
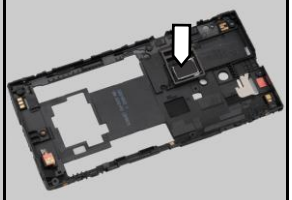
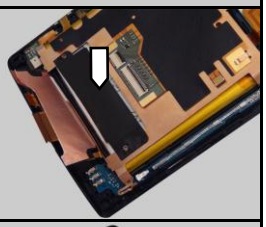
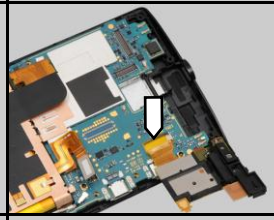
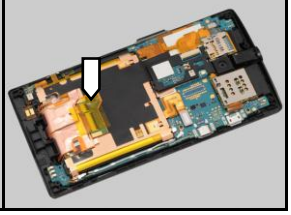
The ‘E-star’ name of a part may often be complex and even confusing, so the name of certain parts mentioned in the Working Instructions, Repair Movies and Troubleshooting Guide are often referred to by a simple descriptive name for better understanding.

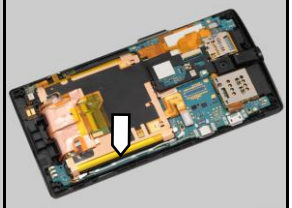
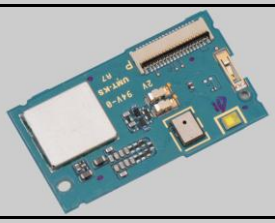
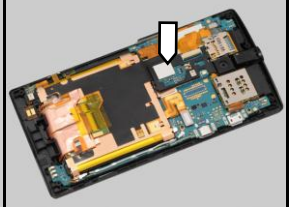
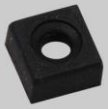
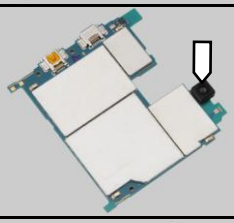
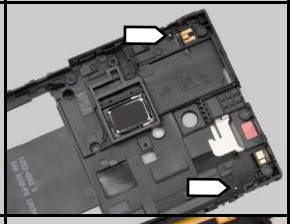
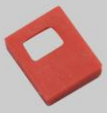
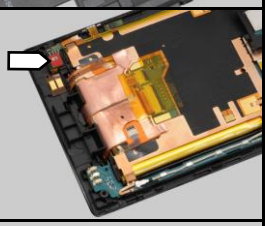
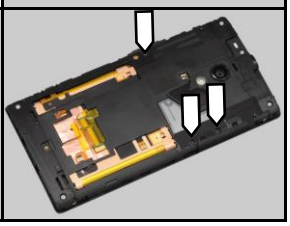
Both names (designations) will in that case be included in this Part List, where the name being used in the documents mentioned above is underlined, e.g. Battery Cover.

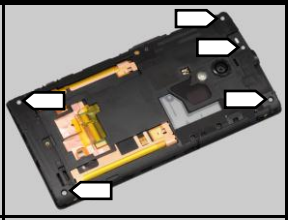
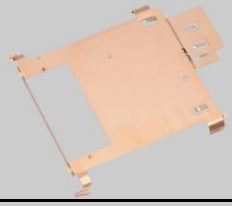
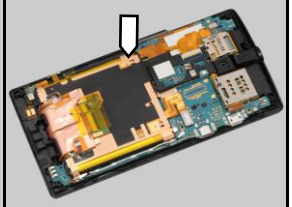
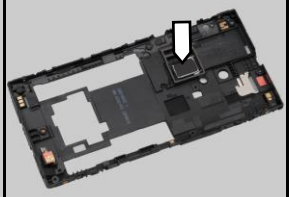
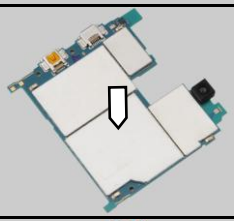
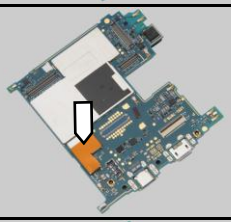
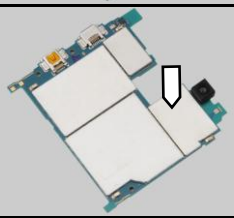
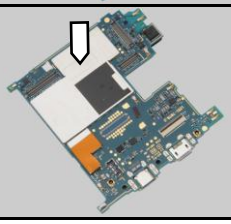
Designation	Part No.	Part	Location
Adhesive Speaker	1255-7735		
Antenna NFC Flex	1251-9598		
Audio Jack	1242-3994		
Battery 1900mAh	1251-9510		
Cable RF	1252-5836		
Camera FICTIVE Camera 13.1M	1252-3510		
Cap USB HDMI Cap Plastic USB HDMI Black Cap Plastic USB HDMI Red	 1252-4188 1265-6938		

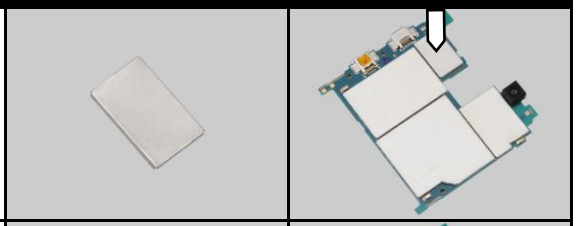
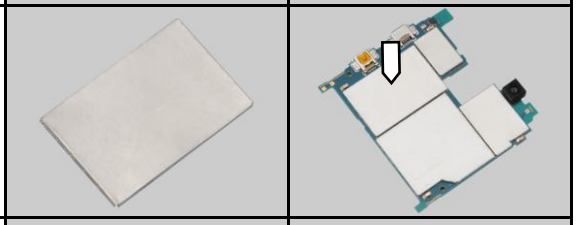
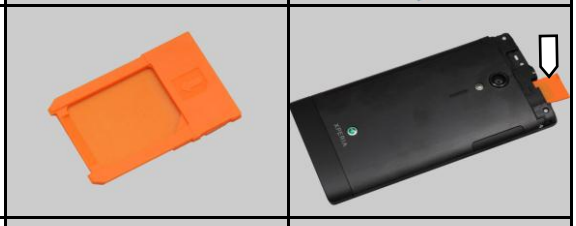
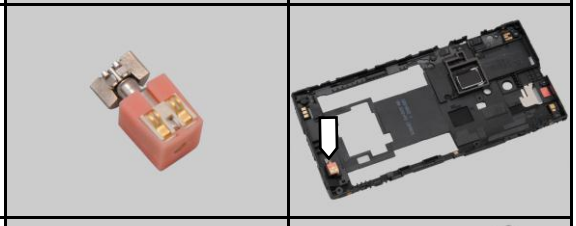
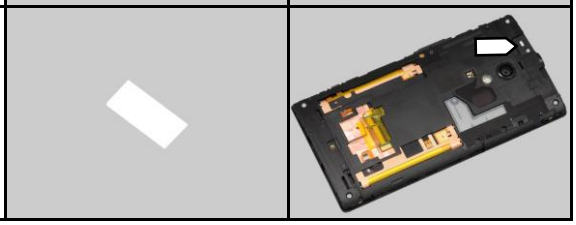
Designation	Part No.	Part	Location
Carrier Holder Bottom	1252-8254		
Carrier NFC Sub PBA	1252-4217		
<u>Cover Front Assy</u> Cover Front Assy Black ATT	1257-6359		
<u>Cover Front Assy</u> Cover Front Assy Black	1264-3311		
<u>Cover Rear Bottom</u> Cover Plastic Rear Bottom Black Cover Plastic Rear Bottom Red	1252-4152 1265-6936		
<u>Cover Rear Sub Assy</u> Cover Metal Rear Sub Assy Black Cover Metal Rear Sub Assy Red	1252-4144 1265-6943		
<u>Cover Rear Top</u> Cover Plastic Rear Top Black Cover Plastic Rear Top Red	1252-4151 1265-6933		
Ear Speaker	1226-7255		

Designation	Part No.	Part	Location
Foil Adhesive Double Side	1252-8854		
FPC Bottom Flex	1251-7170		
FPC Side Key	1251-7188		
FPC Top Flex	1252-4223		
Frame Rear Assy Frame Rear Assy Black Frame Rear Assy Black RoW Frame Rear Assy Red RoW	 1252-6542 1264-7408 1265-7142		
Gasket Audio Jack	1252-4189		
Gasket Camera	1256-4462		
Key Camera Key Camera Key Camera Red	 1256-2145 1265-6889		

Designation	Part No.	Part	Location
Key On/Off Key On/Off Key On/Off Red	 1256-2138 1265-6931		
Key Volume Key Volume Key Volume Red	 1256-2141 1265-6891		
Label Core Unit	1255-2162		
Liquid Indicator	1001-0084		
Loudspeaker Loudspeaker 11x15	1001-0324		
Sheet LCM FPC	1255-0538		
Sheet RCV Flex ZIF	1263-9478		
Sheet Touch ZIF	1255-8613		

Designation	Part No.	Part	Location
PBA Sub Antenna Assy PBA Sub Antenna Assy PBA Sub Antenna Assy RoW	 1251-7091 1264-7611		
PBA Sub NFC Assy	1251-7123		
Rubber Chat Camera	1252-4195		
Rubber Conductive GND	1261-1491		
Rubber Mic	1267-2148		
Screw M1.4X2.0	1230-6681		 
Screw Other Len:3.0 Diam:1.4	1248-2360		

Designation	Part No.	Part	Location
Screw Other Len:4.0 Diam:1.4	1227-2716		
Sheet Metal Battery Plate	1252-4233		
Sheet Protection Window (only for ATT)	1248-9107		
Sheet Speaker	1252-8531		
Shield Can Lid APQ	1252-8233		
Shield Can Lid Charger	1252-8241		
Shield Can Lid eMMC	1252-8229		
Shield Can Lid MDM	1252-8243		

Designation	Part No.	Part	Location
Shield Can Lid Non Cell	1252-8235		
Shield Can Lid RF	1252-8238		
SIM Tray	1263-8998		
Vibrator	1245-2711		
Water Indicator	1239-5490		

2 Revision History

Rev.	Date	Changes / Comments
1	2012-May-18	Initial release
2	2012-July-25	Added LT28h
3	2012-Sep-6	Added Rubber Mic

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Go/No Go Test

- electrical -

Sony Xperia Ion

LT28i,LT28h

LT28at

1261-4732 *Rev 3*

CONTENTS

LT28i and LT28at all bands is ONLY implemented in CMWrun

LT28h. LT28at and LT28i no LTE is ONLY implemented in SERPII.

1 Go/No Go Testing

For more information on Antenna Coupler and Cable in shield box testing, refer to 1220-1336: Generic Repair Manual – electrical, section 'Setup Go/NoGo Test'!

For part no's on the equipment below, refer to the 'Tools Catalogue/Matrix'!

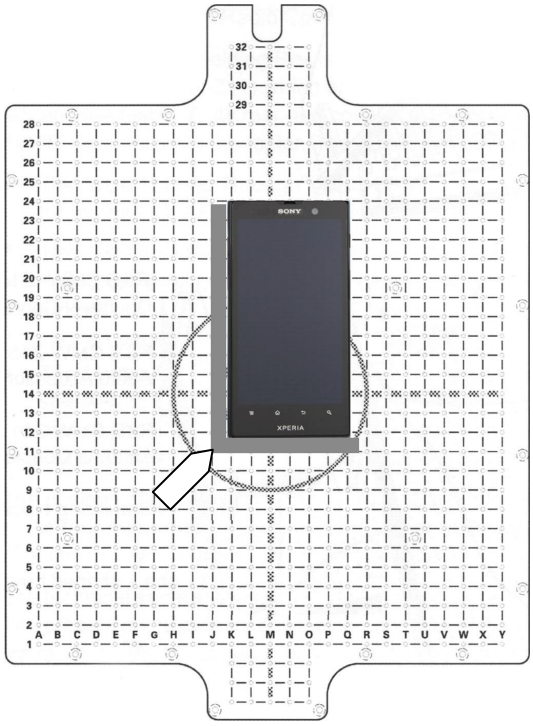
1.1 Antenna Coupler LT28at and LT28i all bands.

The following equipment has to be used:

- Rohde & Schwartz RF Shield Package
  - Rohde & Schwartz RF Shield Box CMW-Z11
  - Rohde & Schwartz RF Coupler
  - Grid Positioning Holder
- RF Test Cable Flexible 1M
- RF Adapter for RF Shield Box
- Micro USIM Card, instrument specific

GSM-850/900/1800/1900
WCDMA-850/1700/1900/2100
LTE BAND-4/17

Put the grid positioning holder with its reference point in position **J11** and place the phone as shown in the adjacent picture.



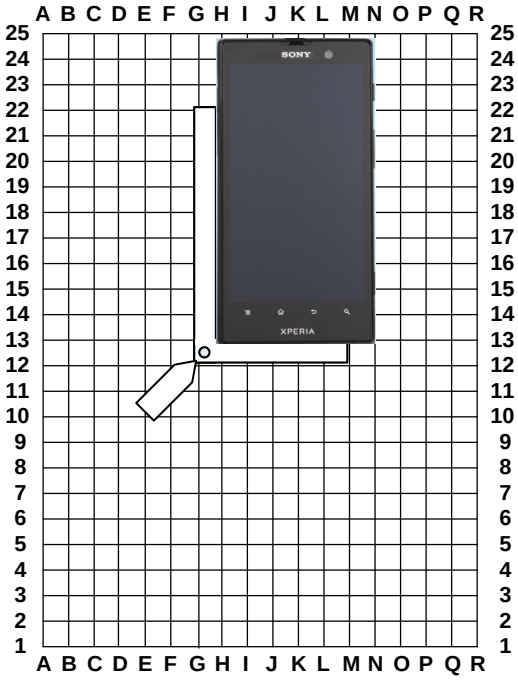
1.2 Antenna Coupler LT28h. LT28i and LT28at no LTE.

The following equipment has to be used:

- Rohde & Schwartz RF Shield Package
  - Rohde & Schwartz RF Shield Box CMU-Z11
  - Rohde & Schwartz RF Coupler
  - Grid Positioning Holder
- RF Test Cable Flexible 1M
- RF Adapter for RF Shield Box
- Micro USIM Card, instrument specific

GSM-850/900/1800/1900
WCDMA-850/900/1700/1900/2100

Put the grid positioning holder with its reference point in position **G12** and place the phone as shown in the adjacent picture.



Go/NoGo Testing

Follow the directions stated in 'Go/NoGo Test Script Parameters' to be found in 1220-1336: Generic Repair Manual – electrical, together with the 'Attenuation Factors' below!

This phone is available in tree versions, LT28at, LT28i and LT28h including the following bands:

LT28at:
GSM-850/900/1800/1900
WCDMA-850/1900/2100
LTE-Band-4/17

LT28i
GSM-850/900/1800/1900
WCDMA-850/1700/1900/2100
LTE-Band-4/17

LT28h
GSM-850/900/1800/1900
WCDMA-850/900/1700/1900/2100

1.3 Attenuation Factors

The attenuation values listed below in 1.3.1 and 1.3.2 is valid only when the equipment listed on the previous pages is being used!

1.3.1 Loss Values – Antenna Coupler CMW-Z11

Band	Channel	Attenuation LT28i Rx	Attenuation LT28i Tx	Attenuation LT28at Rx	Attenuation LT28at Tx
GSM 850	Low	10	5.92	10	6.72
	Mid	12	6.73	12	6.73
	High	11	7.22	11	7.72
GSM 900	Low	10	8.84	10	8.84
	Mid	12	9.06	12	9.06
	High	11	9.98	11	9.98
GSM 1800	Low	14	18.24	14	17.54
	Mid	14	18.24	14	19.84
	High	16	14.48	16	14.48
GSM 1900	Low	21	14.52	21	14.52
	Mid	21	16.07	21	16.07
	High	21	17.33	21	18.83
WCDMA 850	Low	11	5.90	11	6.80
	Mid	12	6.80	12	6.80
	High	12	7.70	12	7.70
WCDMA 1700	Low	20	18.31		
	Mid	24	23.11		
	High	24	17.15		
WCDMA 1900	Low	10	13.75	10	13.75
	Mid	12	15.60	12	15.60
	High	10	17.55	10	17.55
WCDMA 2100	Low	20	17.93	20	17.93
	Mid	22	17.29	22	17.79
	High	22	17.22	22	17.22
LTE BAND 4	Low	19	20.54	19	19.34
	Mid	19	24.09	19	22.59
	High	18	18.95	18	19.75
LTE BAND 17	Low	13	7.12	13	7.12
	Mid	13	7.39	13	7.39
	High	13	6.87	13	7.67

1.3.2 Loss Values – Antenna Coupler CMU-Z11

Band	Channel	Attenuation LT28h Rx	Attenuation LT28h Tx	Attenuation LT28i Rx	Attenuation LT28i Tx	Attenuation LT28at Rx	Attenuation LT28at Tx
GSM 850	Low	6.00	10.76	4.00	9.13	6.00	9.13
	Mid	4.00	9.61	5.50	8.14	7.50	8.14
	High	6.00	8.65	5.00	7.65	5.00	7.65
GSM 900	Low	4.00	6.05	9.50	9.56	9.50	9.56
	Mid	4.00	7.66	7.00	11.92	6.00	10.92
	High	4.00	8.15	6.00	11.79	6.00	11.79
GSM 1800	Low	11.00	13.35	9.50	13.60	9.50	13.60
	Mid	11.00	12.23	11.00	11.62	11.00	10.62
	High	11.00	11.01	12.00	11.77	12.00	11.77
GSM 1900	Low	10.00	14.48	14.50	13.59	11.50	19.59
	Mid	10.00	13.36	13.00	12.95	10.00	14.95
	High	10.00	12.68	14.50	11.81	10.50	13.81
WCDMA 850	Low	7.00	8.99	5.50	9.06	5.50	9.06
	Mid	8.00	8.13	5.00	8.61	5.00	8.61
	High	7.00	7.01	5.00	7.27	5.00	7.27
WCDMA 900	Low	6.00	6.18				
	Mid	8.00	5.71				
	High	7.00	5.98				
WCDMA 1700	Low	12.50	13.17	11.50	13.06		
	Mid	12.00	12.14	11.00	11.61		
	High	14.00	10.98	11.00	10.27		
WCDMA 1900	Low	11.50	13.00	12.00	12.33	12.00	14.33
	Mid	14.00	13.44	13.50	13.00	13.50	14.00
	High	14.00	11.83	13.50	12.37	13.50	12.37
WCDMA 2100	Low	13.00	10.41	10.00	10.06	10.00	11.06
	Mid	12.00	12.51	10.50	11.60	10.50	12.60
	High	15.00	12.61	10.50	12.73	10.50	12.73

2 Revision History

Rev.	Date	Changes / Comments
1	2012-May-18	Initial release
2	2012-June-1	Adjust WCDMA Band2 Mid Channel loss value
3	2012-Aug-16	LT28h added .LT28i and LT28at no LTE added.

SONY
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Customization
- build swap -

Sony Xperia Ion

LT28i,LT28h

LT28at

1266-2375 Rev 2

CONTENTS

For general information about Customization and Swap, refer to 1221-5655: Generic Repair Manual – build swap

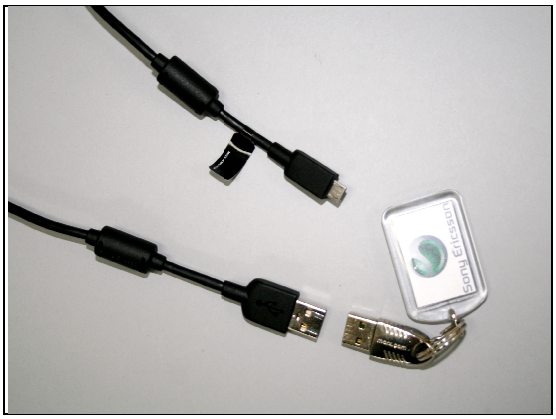
1 Emma Login & Script Execution

In order to change a phone from Customer A to Customer B you must run a ‘Customization Script’ followed by an ‘Activation Script’.

Start by launching the Emma application.

Connect the Micro USB to USB cable to one of the computer’s USB ports but do not connect the cable to the phone.

The USB Activation Dongle has to be inserted into one of the computer’s USB ports to be able to log in.



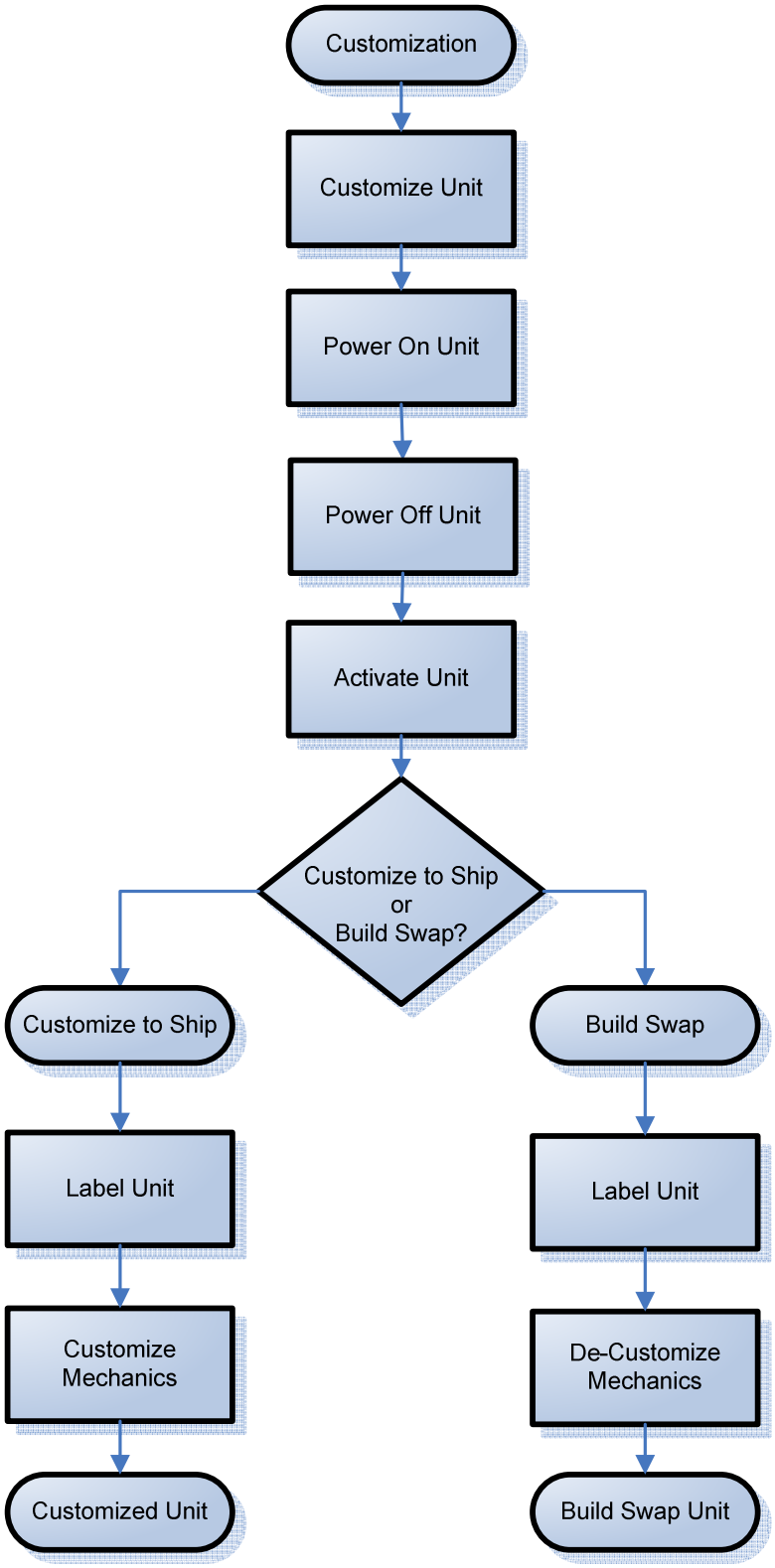
To execute a ‘Customization’ or ‘Activation’ you need to be properly logged on to the Emma application by using your User ID and Password.

To execute a ‘Customization Script’ or ‘Activation Script’ (or any other function):

- check that the phone is powered off
- press and keep the ”Volume Down” key down on the phone
- connect the phone to the USB Cable
- release the ” Volume Down” key

When executing an ‘Activation Script’ you will be prompted for the PIN of your USB Activation Dongle.

2 Customization Workflow



Customization Workflow

The primary reason for the customization process is to create a customized unit.
A customized unit is a unit that is ready to ship as a final swap unit.
The second reason for customization is to create “build swap” units and this can be done by selecting the ‘Service Exchange Unit’ customization script for the particular model.
The instruction steps below refer to the flowchart on previous page.

2.1 Customize Unit

After following the steps in section 1, ‘Emma Login & Script Execution’, you can customize a phone as follows:

- look for the Customize script for the desired Sales Item
- if that script is not available locally, select ‘Server search’ for a complete list of available scripts.

When creating a ‘build swap’ unit, select “LT28 Service Exchange Unit” as the customization scripts!

- choose the desired script
- the application will download all necessary software to run the script and then flash that software to the phone
- after successful update, disconnect the phone from the USB Cable

NOTE: For phones with eMMC flash memory (built in “SD card” memory), the only service which erase this eMMC memory is Service’s “Refurbish” and “Customize”. See also emma User Guide info. http://emma.extranet.sonyericsson.com/documents/emma_user_guide.pdf (see “Service Types” and “Aspects of large files”)

In Swap flow, when change a phone from Customer A to Customer B, always use the service Customization script.

Customization Workflow

2.2 Power on unit

Press the **key On/Off** to power on the unit, Place unit on flat desk and wait 4 minutes until system boot up has been completed.

Please DO NOT move the unit during starting up until "Select Language" menu is shown on the display!

Customization Workflow

2.3 Customize to Ship or Build Swap

Is the unit a customized unit to be shipped?
Yes – proceed to 2.2.1 Customize to Ship
No – go to 2.2.2 Build Swap

2.3.1 Customize to Ship

2.3.1.1 Label Unit

Print two Core Unit labels by using 'LabelMake'.

Place one label on the phone as described *in 1261-4718: Working Instructions – mechanical*.

Place the second label on the Exchange Unit Box.

'LabelMake' instructions to be found on CSPN under 'LabelMake'!

2.3.1.2 Customize Mechanics

If necessary, apply the proper custom mechanical parts (co-branding, keyboard, etc.) for the variant being created in accordance with the *Cross Reference List* by following the instructions of *1261-4718: Working Instructions – mechanical*

2.3.2 Build Swap

2.3.2.1 Label Unit

Using a red marker, label the unit with the correct Exchange Unit number.

Refer to the *Cross Reference List* for the appropriate variant, which should be based on the non-customizable mechanics of the unit.

2.3.2.2 De-Customize Unit

Remove any co-branding as described in *1261-4718: Working Instructions – mechanical*

3 Revision History

Rev	Date	Changes / Comments
1	2012-May-18	Initial release
2	2012-July-25	Added LT28h