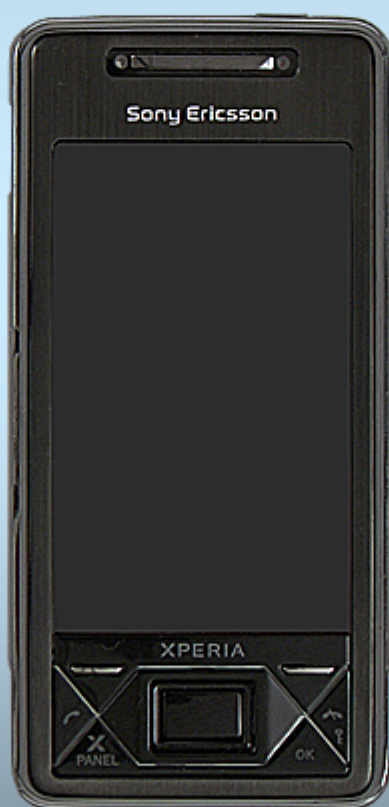




Sony Ericsson

# Working Instructions

## - mechanical -



X1

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# 1 Exterior Views

## 1.1 X1





## 2 Tools

The following tools are required for the repair instructions of this document:

- Torque screwdriver (or equivalent)
- Torx bit no. 6
- Front opening tool
- JCIS bit
- Guitar pick
- Tweezers



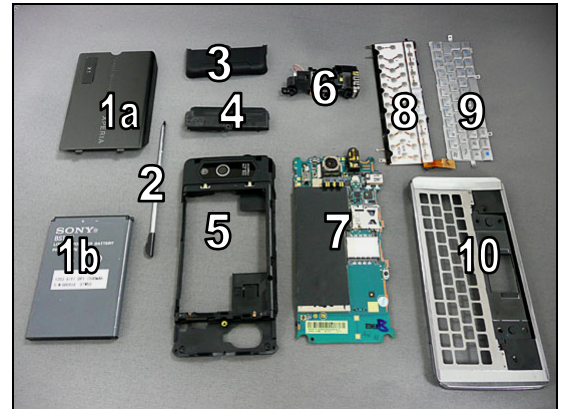


## 3 Disassembly

### 3.1 Rear Unit

The disassembly is done in the following order:

1. Battery Cover & Battery
2. Stylus
3. Antenna Cover
4. Main Antenna
5. Rear Bottom Housing
6. BT & GPS Antenna ass'y
7. Main Board
8. FPC Qwerty Keyboard
9. Keypad Qwerty
10. Keypad Cover



#### 3.1.1 Battery Cover & Battery

Grab the battery cover with your thumb and forefinger.



Lift up the battery cover and take it out.



Put you finger at here,





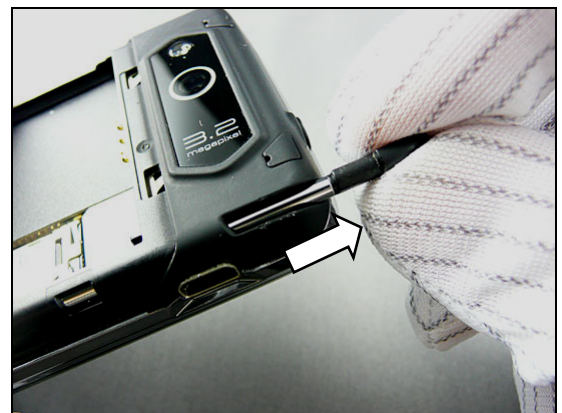
## Disassembly: Rear Unit

Raise and remove the battery.



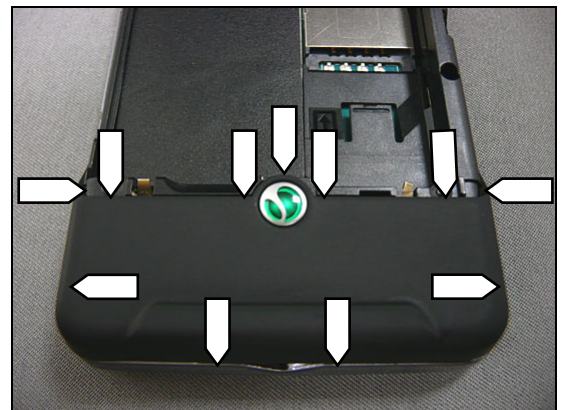
### 3.1.2 Stylus

Use your finger to pull out the stylus.

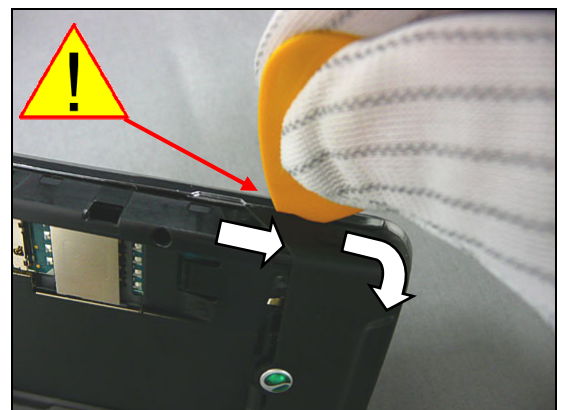


### 3.1.3 Antenna Cover

There are eleven snap hooks located here that have to be unlatched.



Insert the guitar pick as shown in picture and slide it along the arrow to unlatch the two snap hooks. If necessary, slide back and forth until two hooks are unlatched.





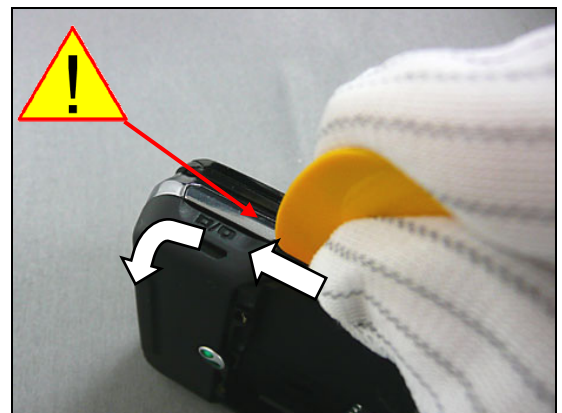


## Disassembly: Rear Unit

Insert the guitar pick as shown in picture and slide it along the arrow to unlatch the two snap hooks. If necessary, slide back and forth until two hooks are unlatched.



Do the same on opposite site.



Lift up the antenna cover and take it out.



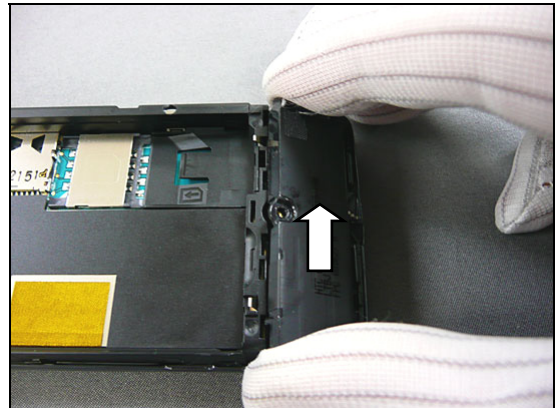
### 3.1.4 Main Antenna

Use Philips screw driver to remove one screw.



## Disassembly: Rear Unit

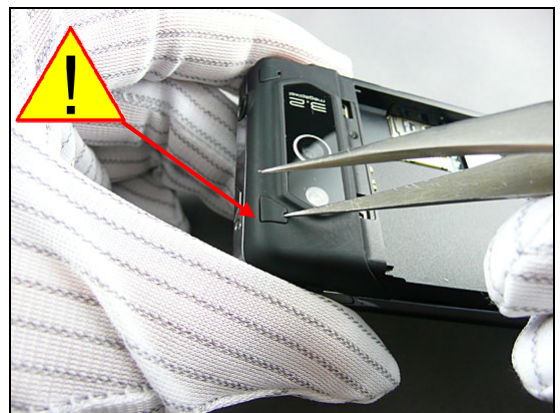
Grab the main antenna and take it out.



### 3.1.5 Rear Bottom Housing

Carefully insert ESD tweezers under one of screw caps and then remove it.

**Be careful not to scratch the rear bottom housing.**



Do the same with second screw cap.

**Be careful not to scratch the rear bottom housing.**

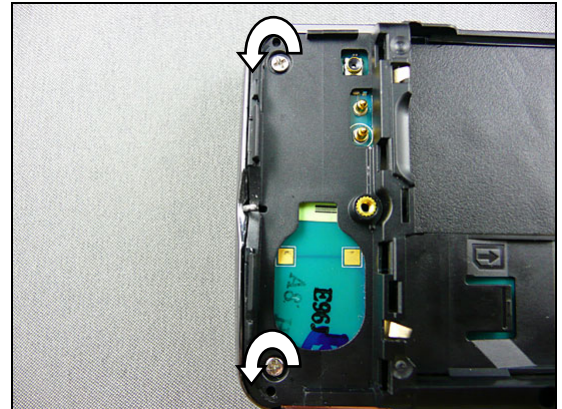


Use Torx bit no 6 to remove two screws.

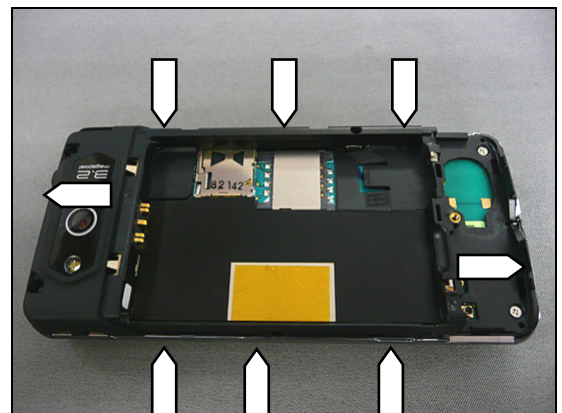


## Disassembly: Rear Unit

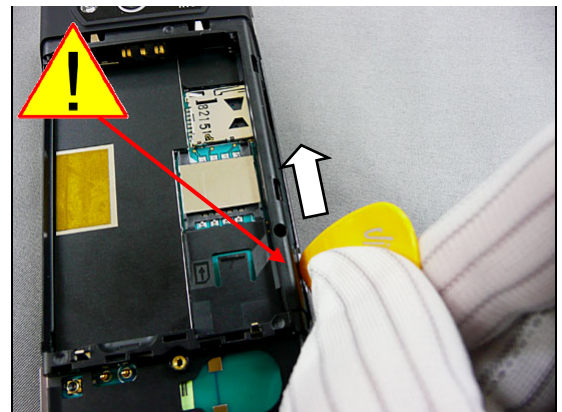
Use Philips screw driver to remove two screws.



There are eight snap hooks located here that have to be unlatched.



Insert the guitar pick as shown in picture and slide it along the arrow to unlatch three snap hooks. If necessary, slide back and forth until three hooks are unlatched.



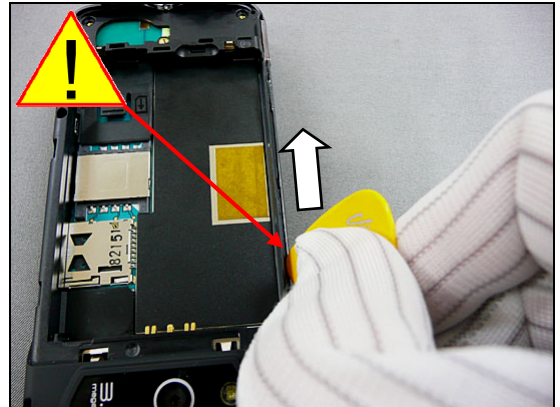
Insert the guitar pick as shown in picture and slide it along the arrow to unlatch one snap hook. If necessary, slide back and forth until the hook is unlatched.



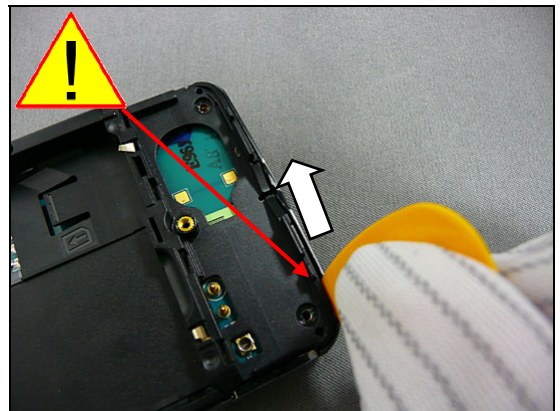


## Disassembly: Rear Unit

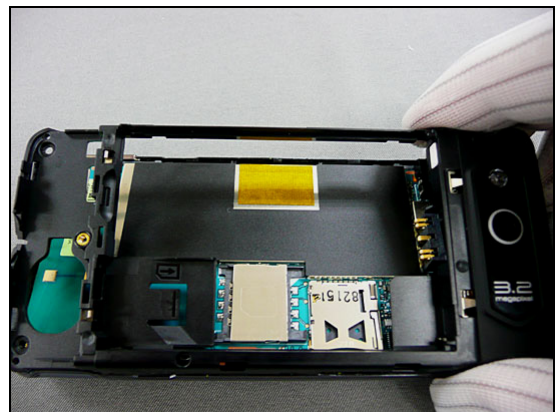
Do the same on the opposite side.



Do the same on the opposite side.



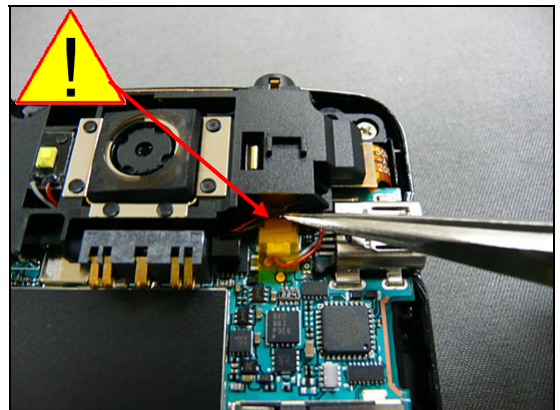
Lift up the housing and take it out.



### 3.1.6 BT & GPS Antenna ass'y

Use ESD tweezers to remove capton tape.

**The capton tape cannot be re-used and must be scrapped.**

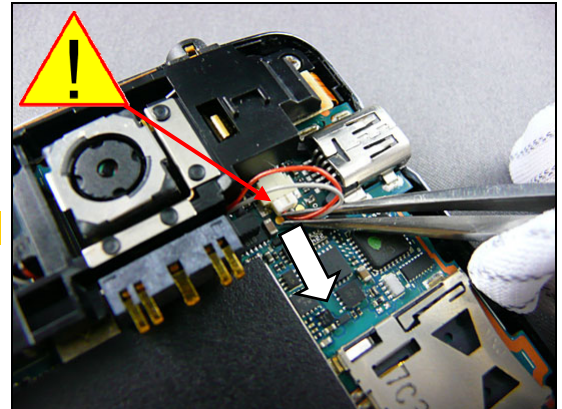




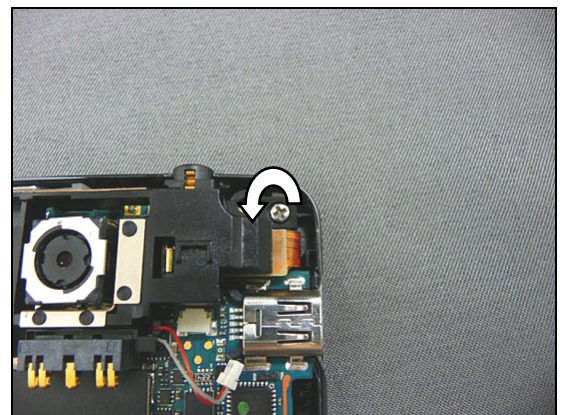
## Disassembly: Rear Unit

Use ESD tweezers to disconnect the flash light cable.

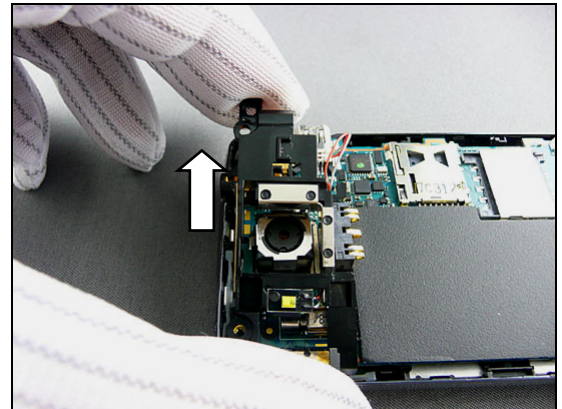
**Be careful not to damage the electrical component.**



Use Philips screw driver to remove one screw.

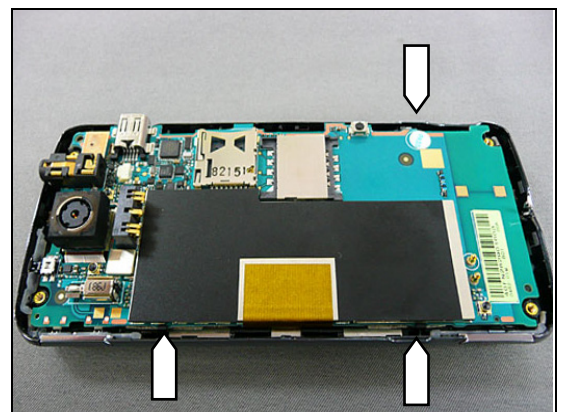


Lift up the BT & GPS antenna ass'y and take it out.



### 3.1.7 Main board

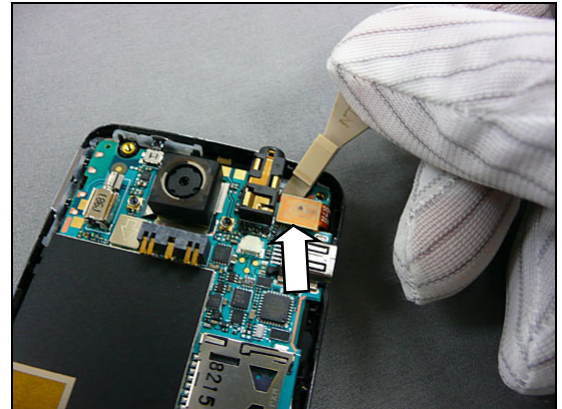
There are three hooks located here that have to be unlatched.



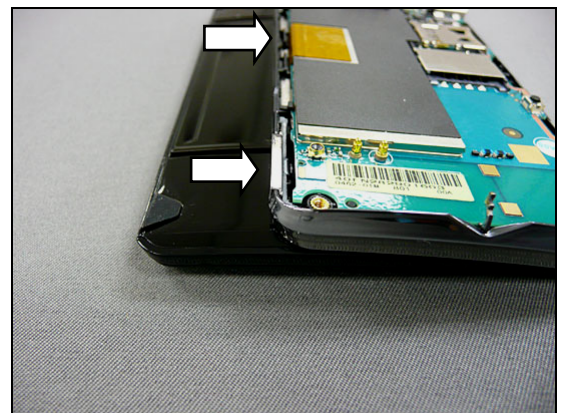


## Disassembly: Rear Unit

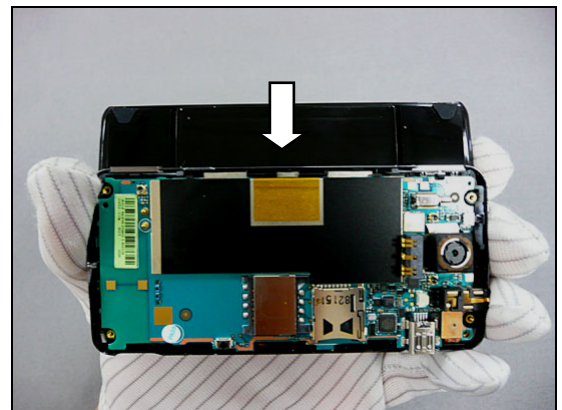
Use front opening tool to disconnect QWERTY cable.



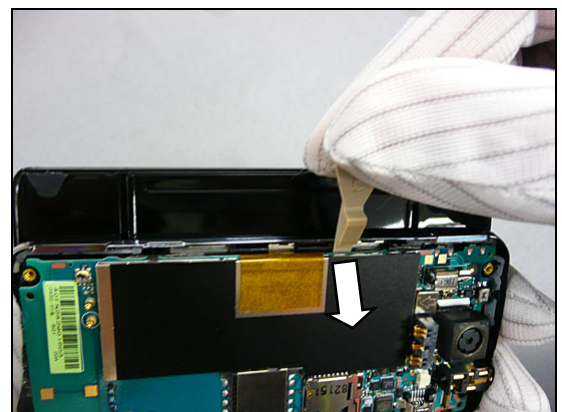
Slide the lower unit in middle area as shown in photo.



Use your thumb and forefinger to hold it in the middle area as shown in photo.



Insert the front opening tool as shown in photo to unlatch the snap hooks of black mylar site.

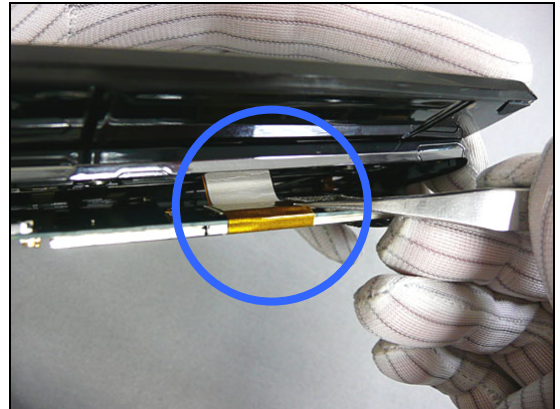




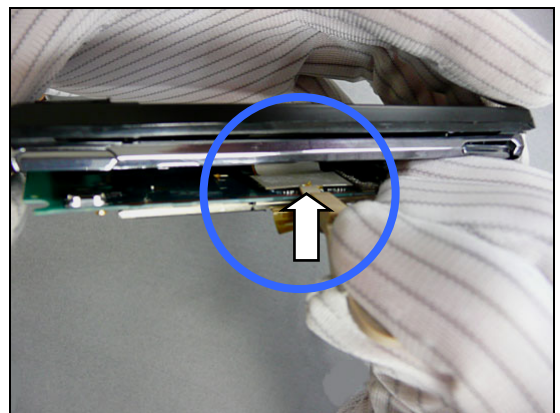


## Disassembly: Rear Unit

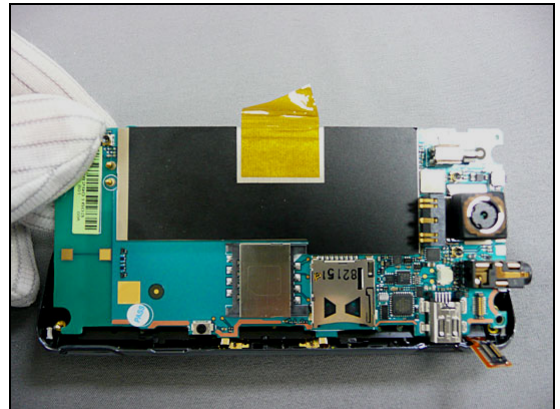
Carefully use ESD tweezers to release capton tap on the Rigid-Flex PCB connector.



Use front opening tool to disconnect Rigid-Flex PCB.

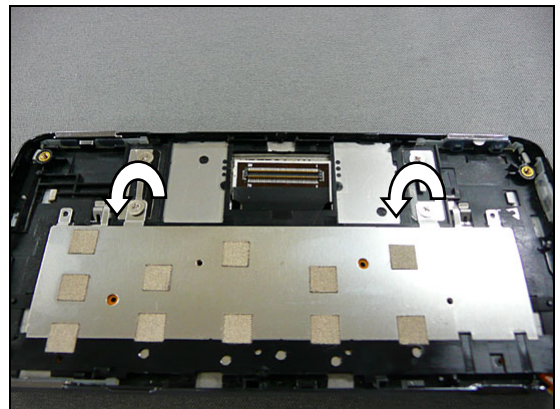


Lift up the main board and take it out.



### 3.1.8 FPC QWERTY Keyboard ass'y

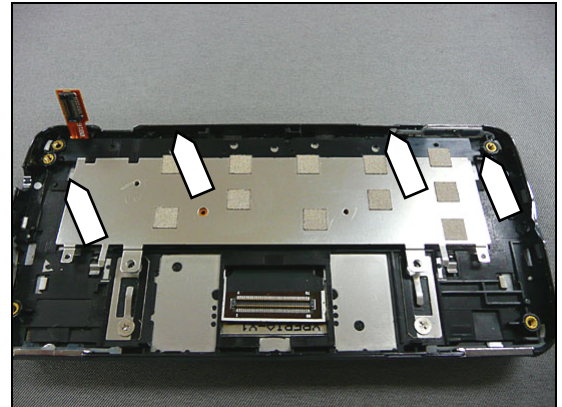
Use Philips screw driver to remove two screws.



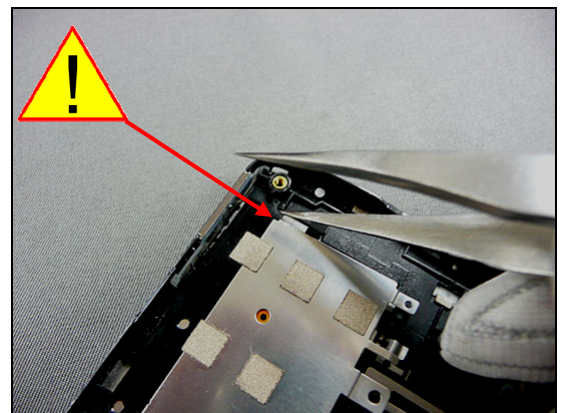


## Disassembly: Rear Unit

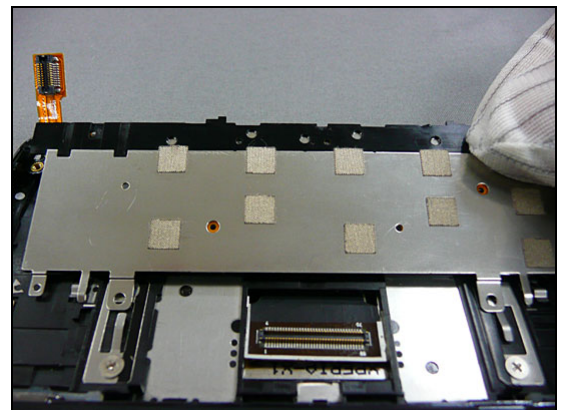
There are four hooks located here that have to be unlatched.



Use ESD tweezers to release one of hooks.

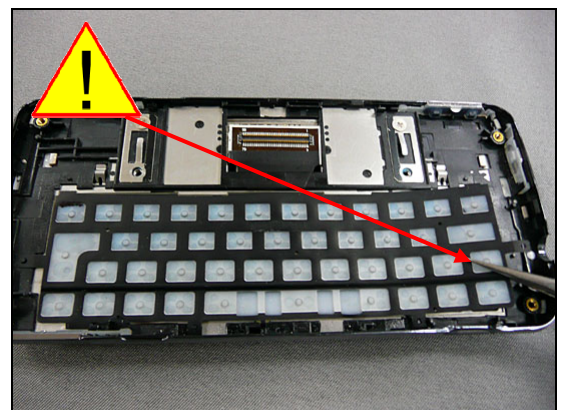


Lift up the FPC qwerty keyboard and then take it out.



### 3.1.9 Keypad Qwerty

Carefully, use ESD tweezers to lift up the keypad qwerty.

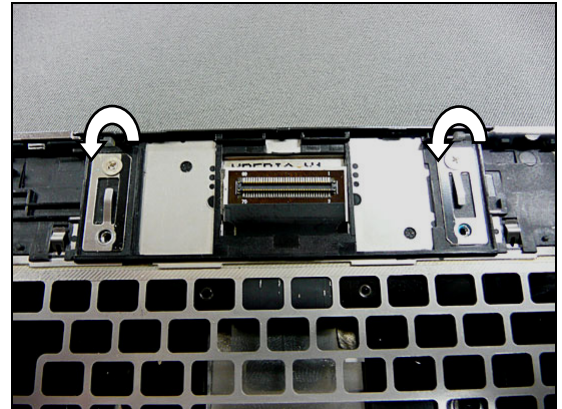




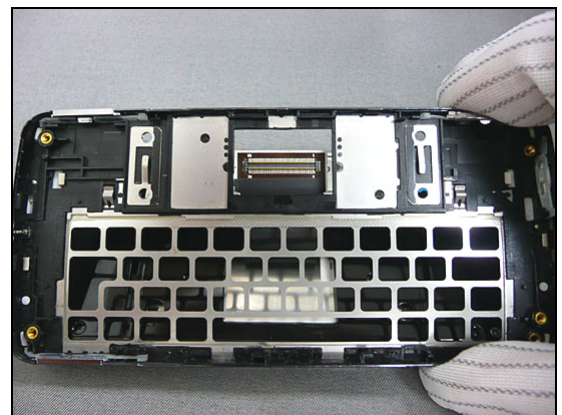
## Disassembly: Rear Unit

### 3.1.10 Keypad Cover

Use Philips screw driver to remove two screws.



Lift up the keypad cover and take it out.



To make it completely separated from the upper unit.





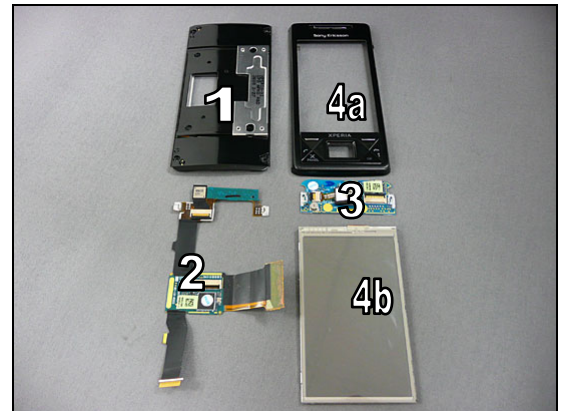


## Disassembly

### 3.2 Front Unit

The disassembly is done in the following order:

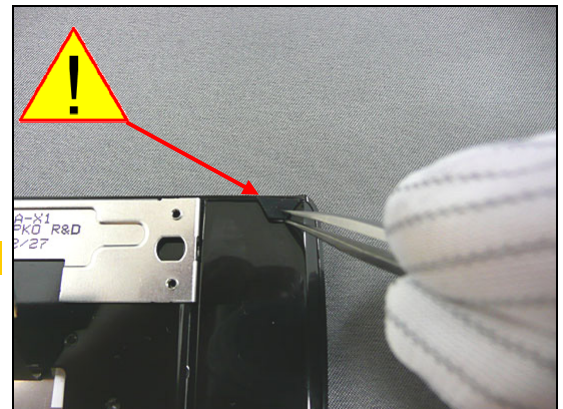
1. Rear Display Housing
2. Rigid-Flex PCB ass'y
3. Navi Board PCB
4. Front Cover ass'y & Display 3.0" TFT



#### 3.2.1 Rear Display Housing

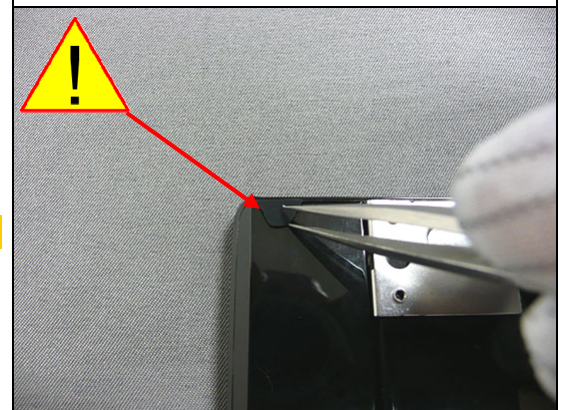
Carefully use ESD tweezers to remove one of screw cover.

**Be careful not to scratch the rear display housing.**

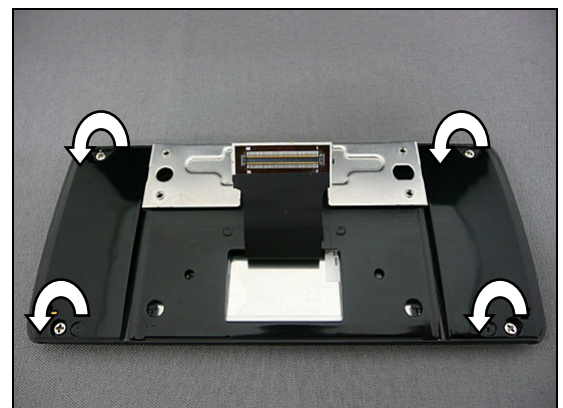


And then second screw cover.

**Be careful not to scratch the rear display housing.**

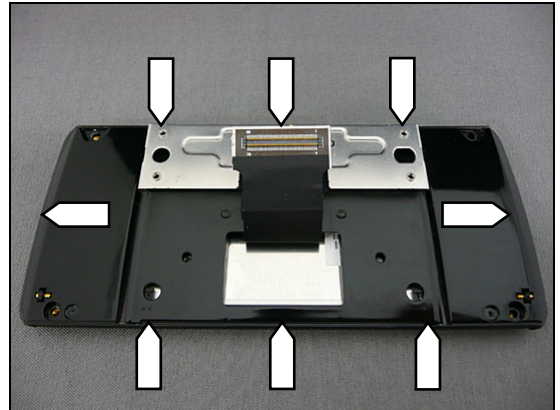


Use Philips screw driver to remove four screws.

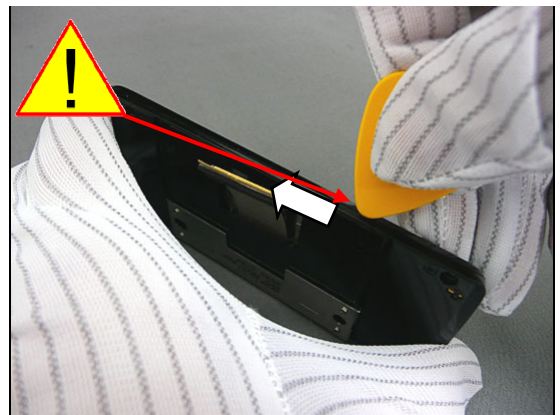


## Disassembly: Front Unit

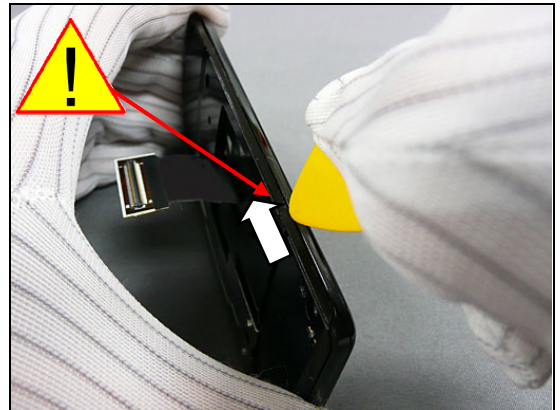
There are eight snap hooks located here that have to be unlatched.



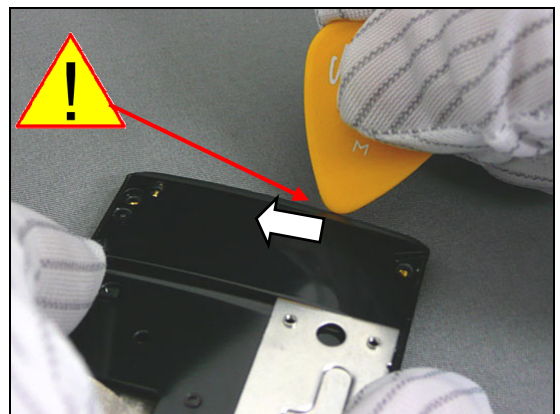
Insert the guitar pick as shown in picture and slide it along the arrow direction to unlatch the three snap hooks. If necessary, slide back and forth until all three hooks are unlatched.



Do the same on the opposite side.



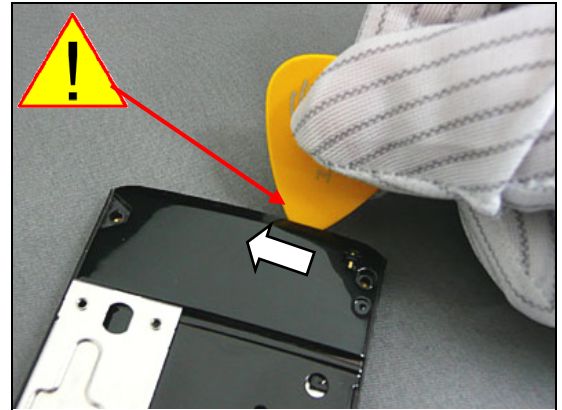
Insert the guitar pick as shown in picture and slide it along the arrow direction to unlatch the one snap hook. If necessary, slide back and forth until the snap hook is unlatched.



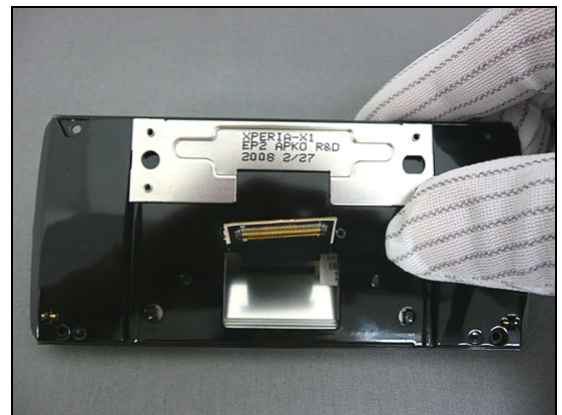


## Disassembly: Front Unit

Do the same on the opposite side.

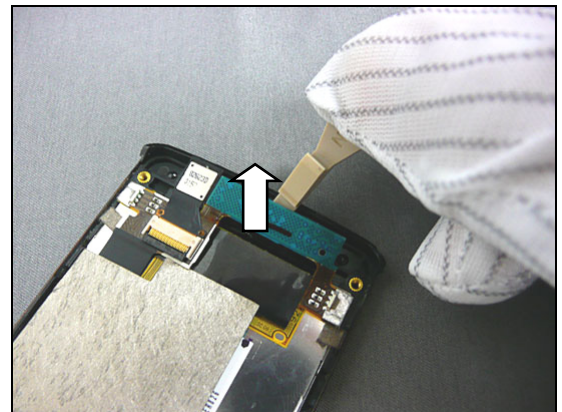


Lift up the rear display housing and take it out.

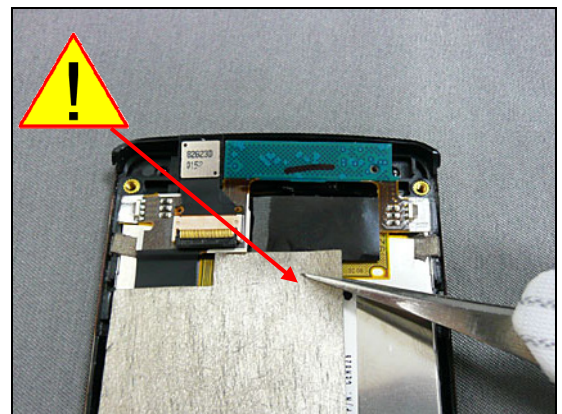


### 3.2.2 Rigid-Flex PCB ass'y

Use front opening tool to release ear speaker site of Rigid-Flex PCB.



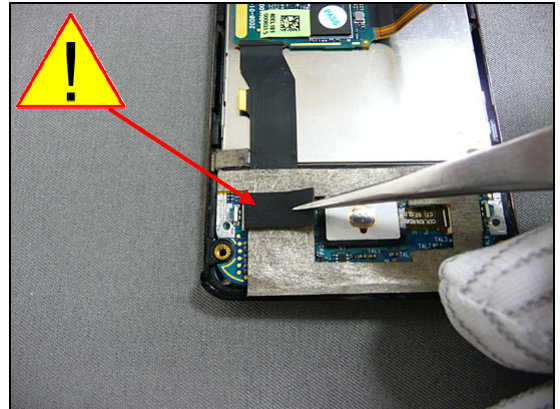
Carefully, use ESD tweezers to remove the EMI gasket with conductive fabric.





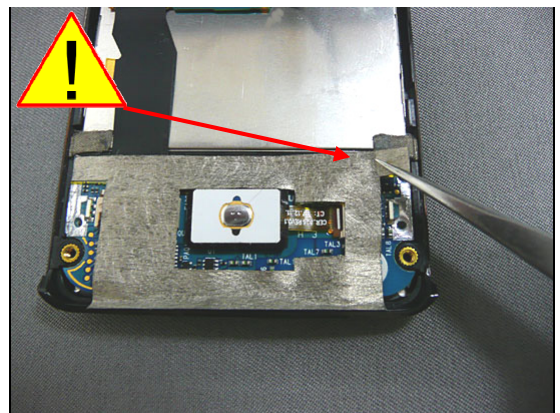
## Disassembly: Front Unit

Carefully, use ESD tweezers to remove the black poron.

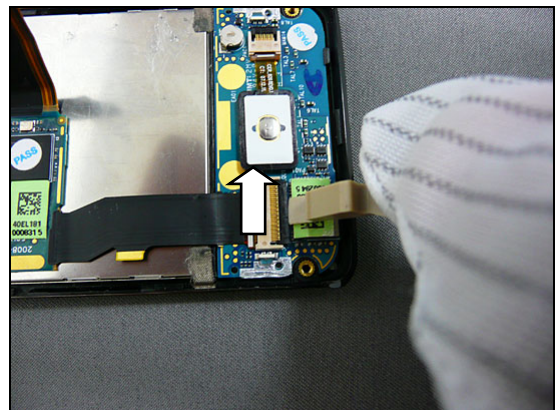


Carefully, use ESD tweezers to remove the EMI gasket.

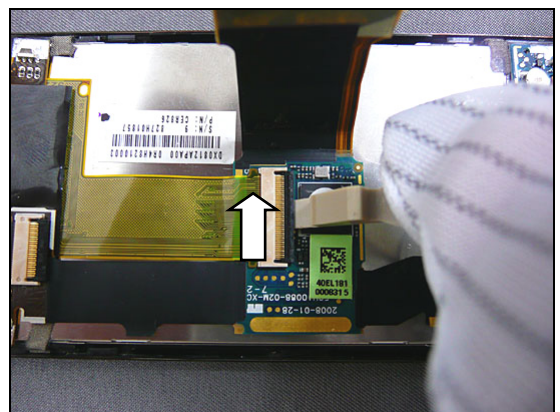
**Be careful not to damage electrical component.**



Use front opening tool to disconnect Rigid-Flex PCB and navi board.

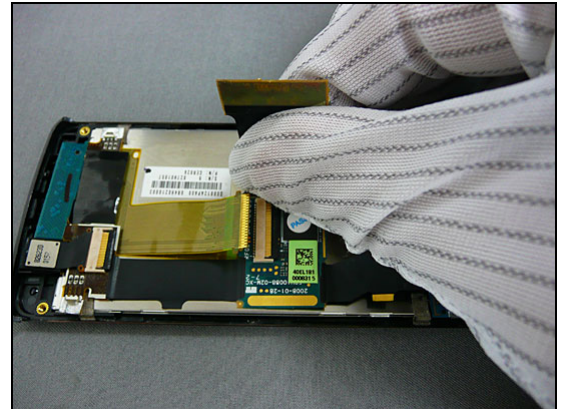


Use front opening tool to disconnect LCM FPC and Rigid-Flex PCB.



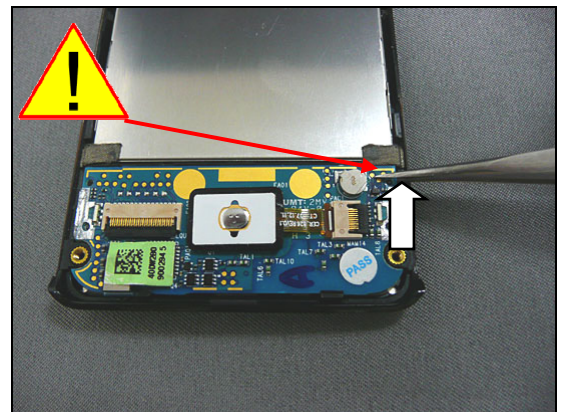
## Disassembly: Front Unit

Lift up the Rigid-Flex PCB and take it out.



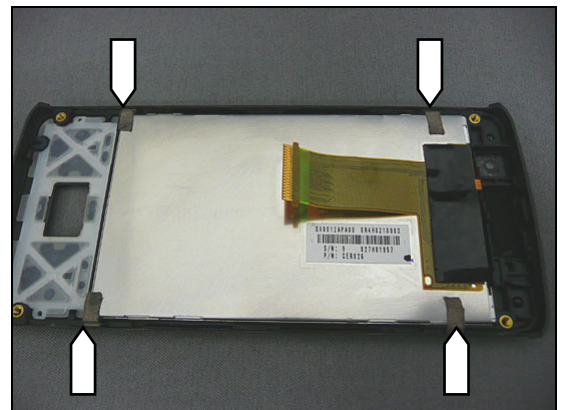
### 3.2.3 Navi Board PCB

Use ESD tweezers to lift up the navi board and take it out.

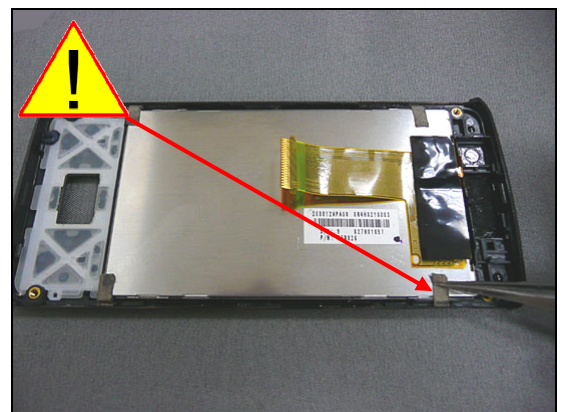


### 3.2.4 Front Cover ass'y & Display 3.0" TFT

There are four gaskets located here that have to be separated from 3.0" TFT.

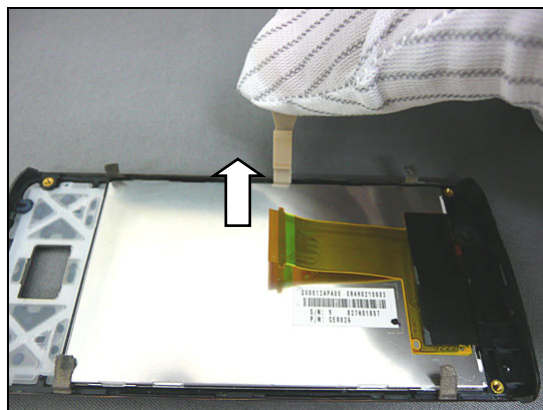


Carefully, use ESD tweezers to release four mylars.



## Disassembly: Front Unit

Use front opening tool to lift up the 3.0" TFT and then take it out.





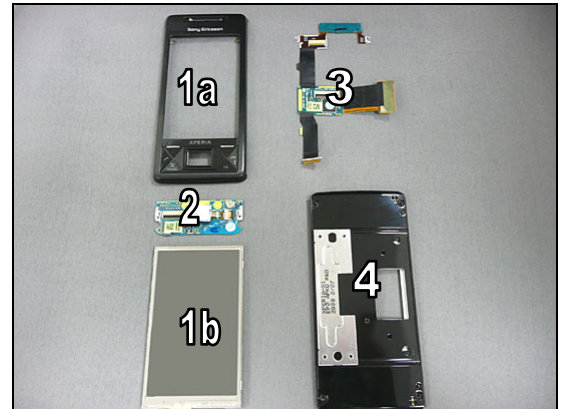


## 4 Reassembly

### 4.1 Front Unit

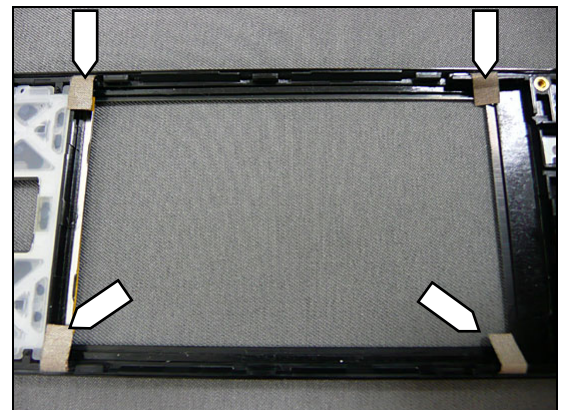
The Reassembly is done in the following order:

1. Front Cover ass'y & Display 3.0" TFT
2. Navi Board PCB
3. Rigid-Flex PCB ass'y
4. Rear Display Housing

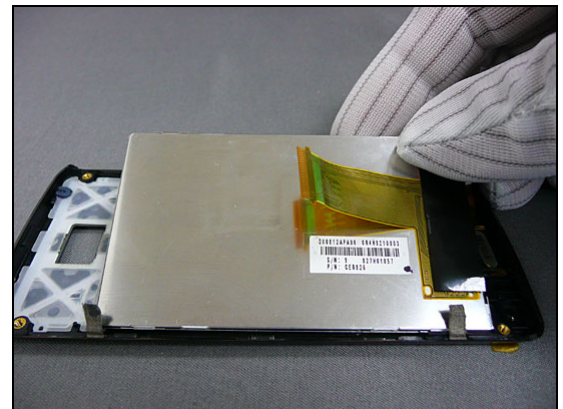


#### 4.1.1 Front Cover ass'y & Display 3.0" TFT

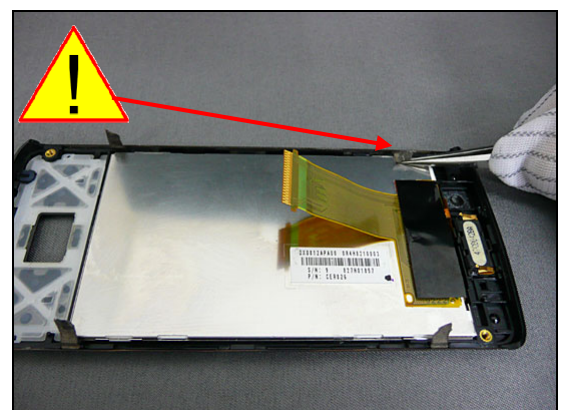
There are four gaskets that have to stick on the 3.0" TFT.



Place 3.0" TFT into front cover by your fingers.



Carefully, use ESD tweezers to stick four gaskets.

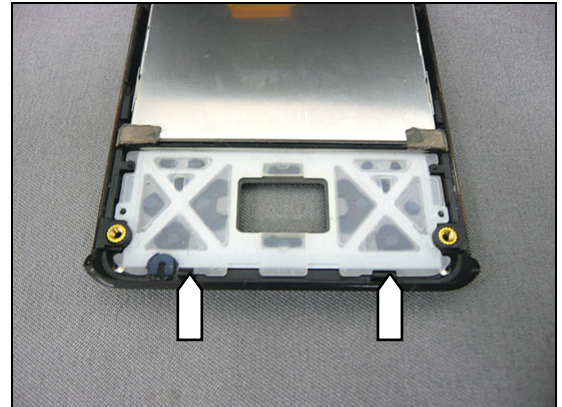




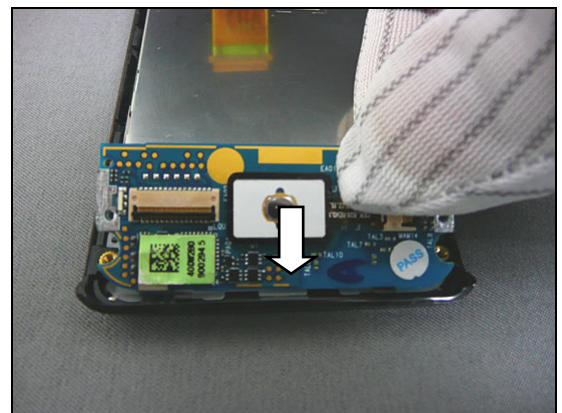
## Reassembly: Front Unit

### 4.1.2 Navi Board PCB

There are two hooks located here that have to place navi board under the hooks.

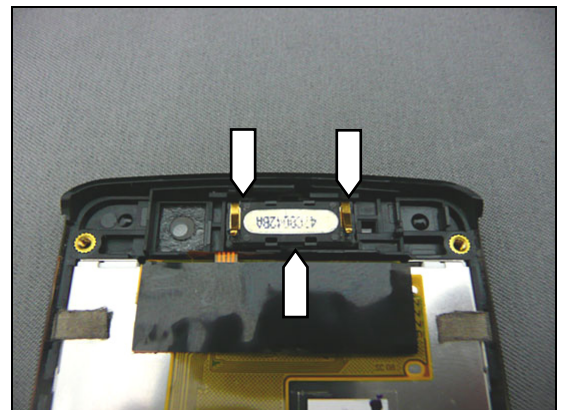


Place navi board on the front cover.



### 4.1.3 Rigid-Flex PCB ass'y

There are three hooks located here that have to place receiver side of Rigid-Flex PCB under the hooks.



Place receiver side of Rigid-Flex PCB on the front cover.

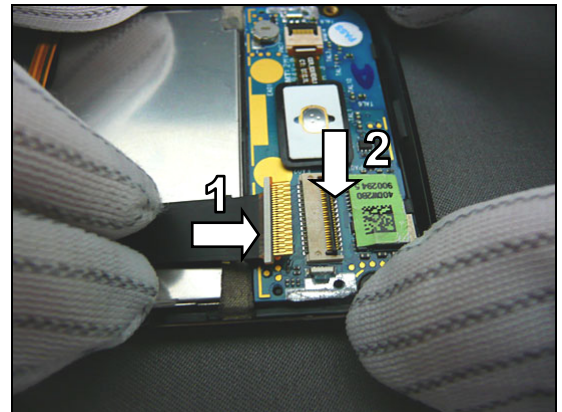




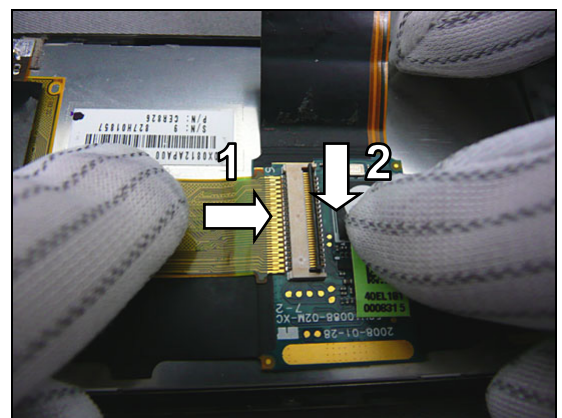


## Reassembly: Front Unit

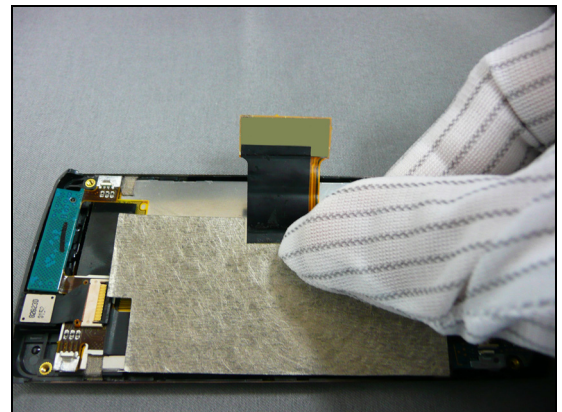
Follow the sequence shown in photo. Connect Rigid-Flex PCB and navi board and then press the black hook to latch connector.



Follow the sequence shown in photo. Connect Rigid-Flex PCB and LCM FPC and then press the black hook to latch connector.



Stick one gasket on the Rigid-Flex PCB and make sure the gasket is well sticking.



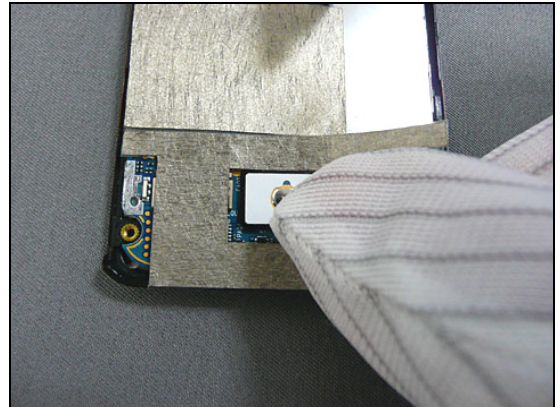
Stick Conductive Fabric on the main board connector side of Rigid-Flex PCB.



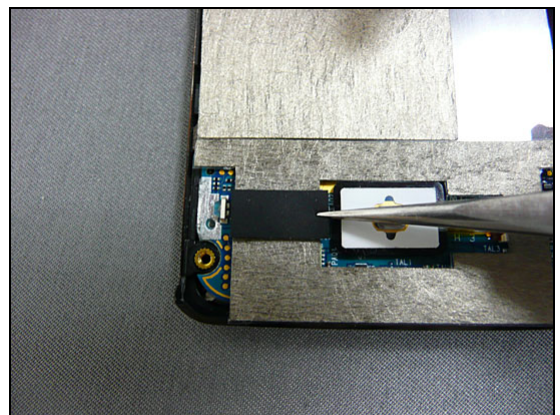


## Reassembly: Front Unit

Stick one EMI gasket on the navi board.



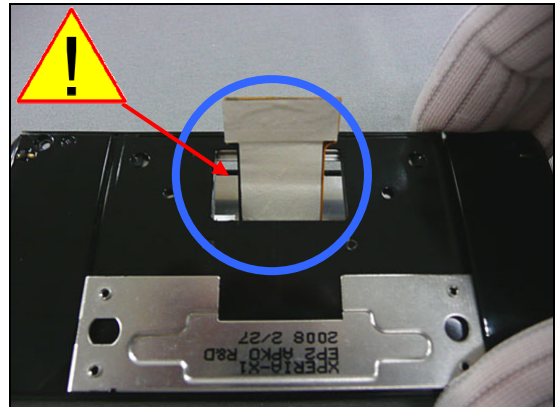
Carefully, use ESD tweezers to stick the black poron.



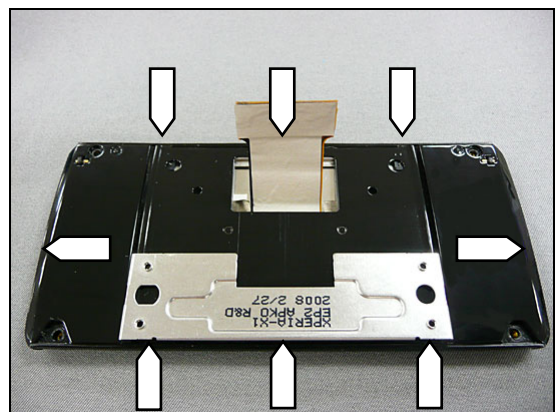
### 4.1.4 Rear Display Housing

Combine front cover and rear display housing.

**The Rigid-Flex PCB has to cross through the hole of rear display housing.**



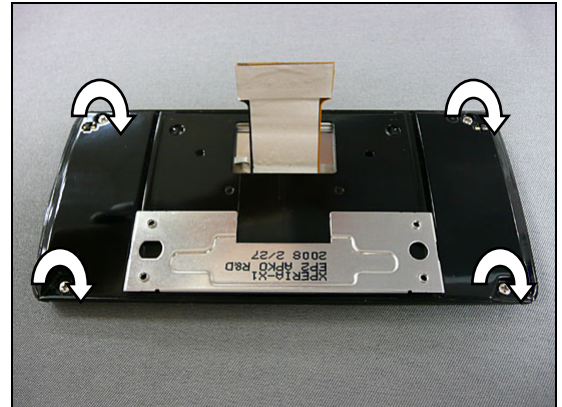
Ensure eight snap hooks that shown in photo are well latched.





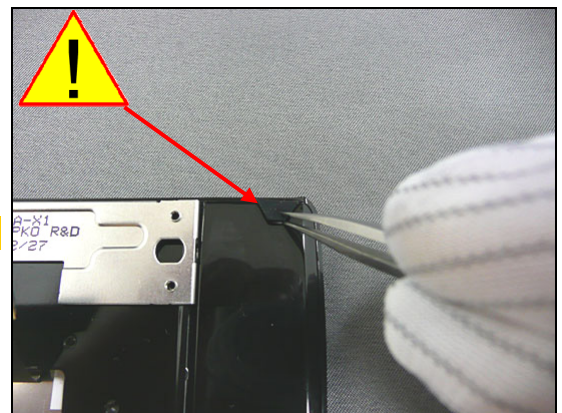
## Reassembly: Front Unit

Use  $7.85 \pm 0.5$  Ncm ( $0.8 \pm 0.05$  kgf-cm) torque to tighten the four screws with Philips screw driver.



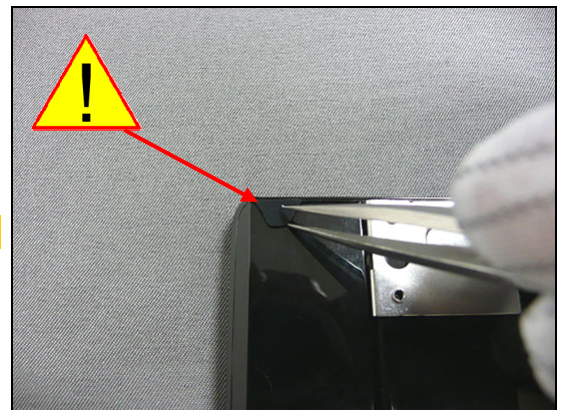
Use ESD tweezers to place screw cover.

**Be careful not to damage rear display housing.**



Do the same with second screw cover.

**Be careful not to damage rear display housing.**





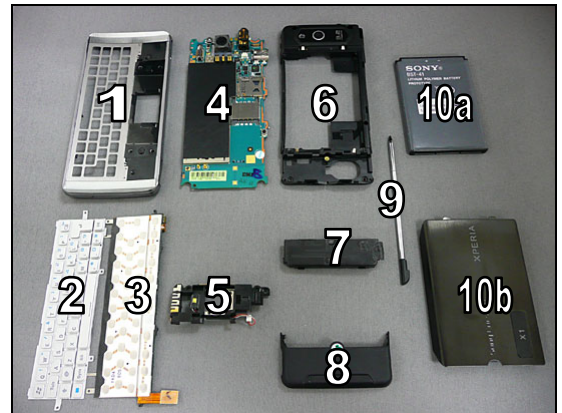


## Reassembly

### 4.2 Rear Unit

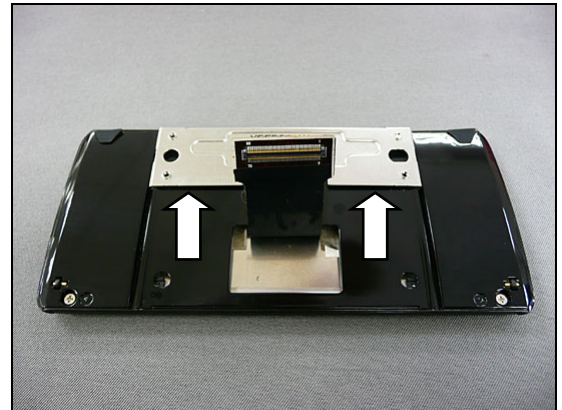
The reassembly is done in the following order:

1. Keypad Cover
2. Keypad Qwerty
3. FPC Qwerty Keyboard
4. Main Board
5. BT & GPS Antenna ass'y
6. Rear Bottom Housing
7. Main Antenna
8. Antenna Cover
9. Stylus
10. Battery Cover & Battery

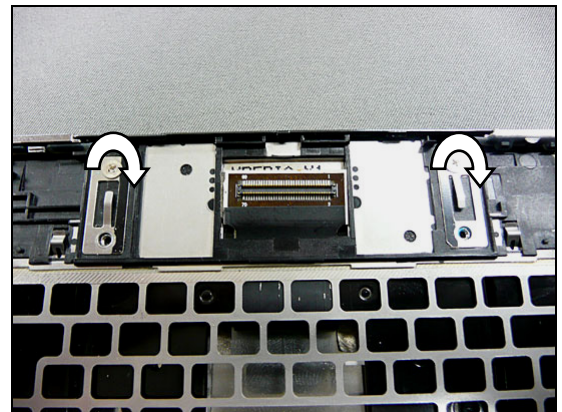


#### 4.2.1 Keypad Cover

Move the silver bracket to the upper area as shown in photo.

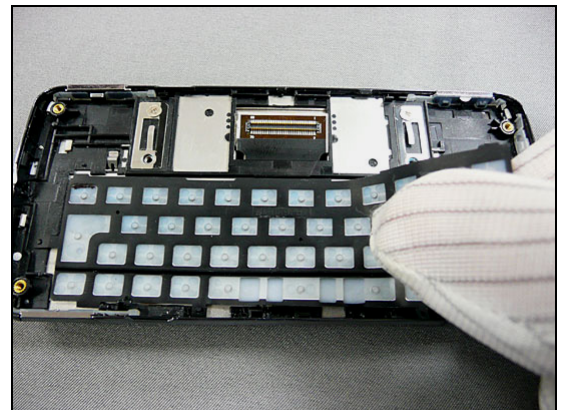


Place keypad cover and use  $7.85 \pm 0.5$  Ncm ( $0.8 \pm 0.05$  kgf-cm) torque to tighten the two screws with Philips screw driver.



#### 4.2.2 Keypad QWERTY

Place keypad Qwerty into keypad cover.



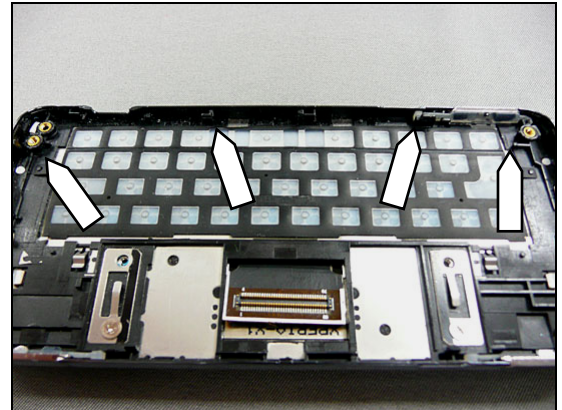




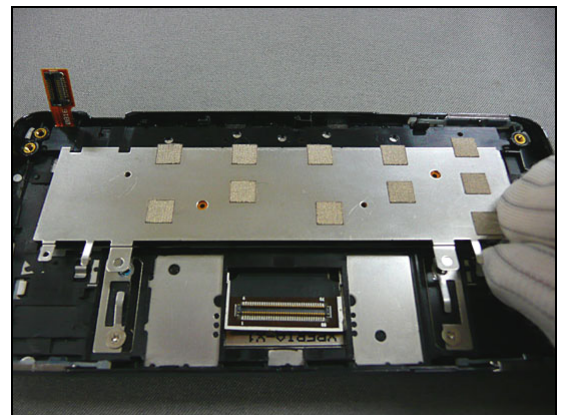
## Reassembly: Rear Unit

### 4.2.3 FPC Qwerty Keyboard ass'y

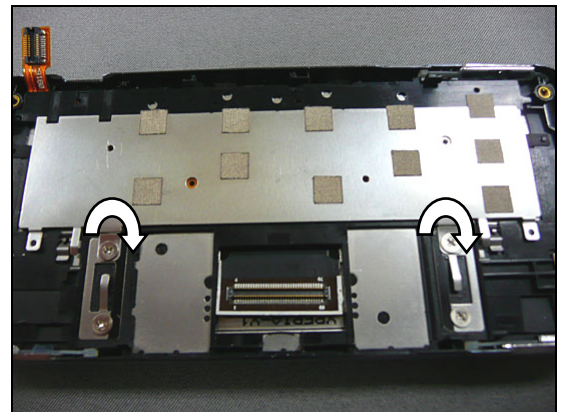
There are four hooks located here that FPC Qwerty keyboard has to be latched.



Place FPC Qwerty keyboard and make sure the FPC Qwerty keyboard is well placed.

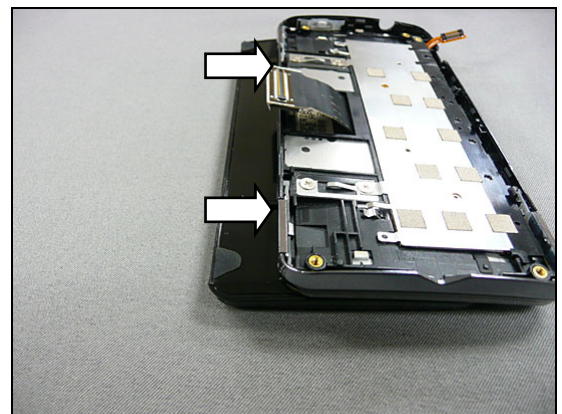


Use  $7.85 \pm 0.5$  Ncm ( $0.8 \pm 0.05$  kgf-cm) torque to tighten the two screws with Philips screw driver.



### 4.2.4 Main Board

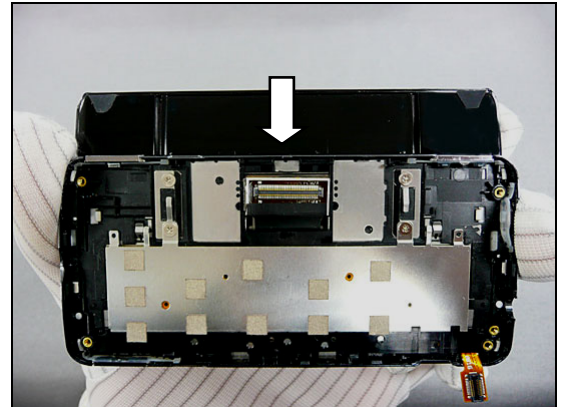
Slide the lower unit in the middle area as shown in photo.



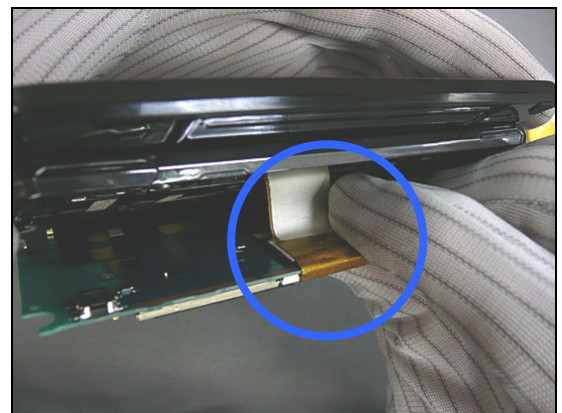


## Reassembly: Rear Unit

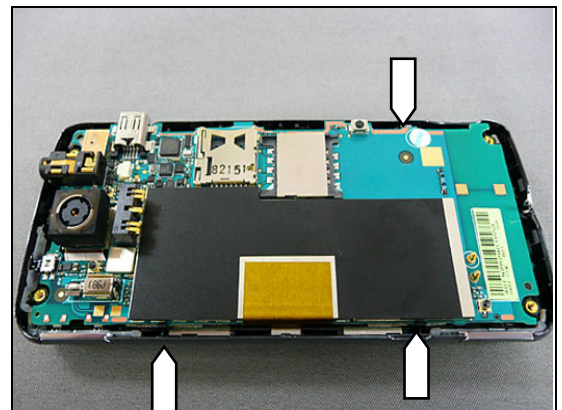
Hold it in the middle area by your fingers as shown in photo.



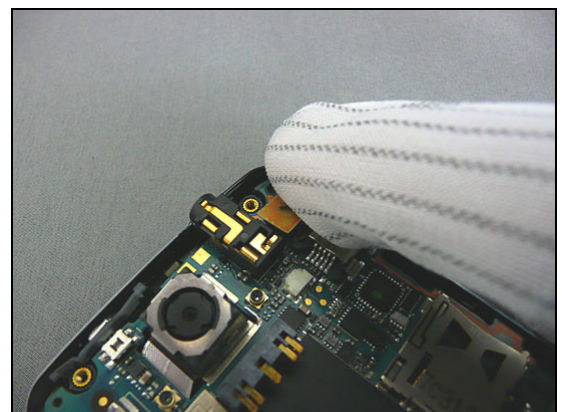
Use your fingers to connect Rigid-Flex PCB cable and main board and then stick the capton tape.



Place main board on the keypad cover and check three hooks that shown in photo are well latched.



Connect FPC Qwerty Keyboard and main board.



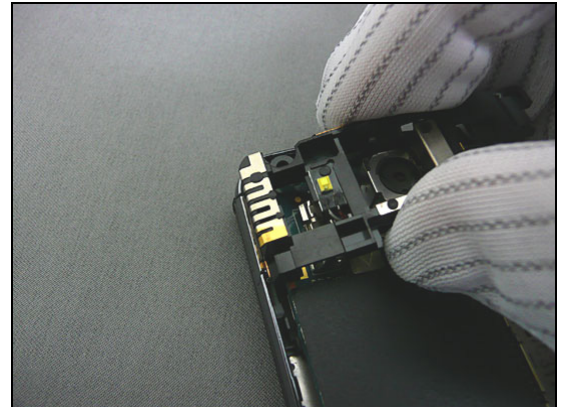




## Reassembly: Rear Unit

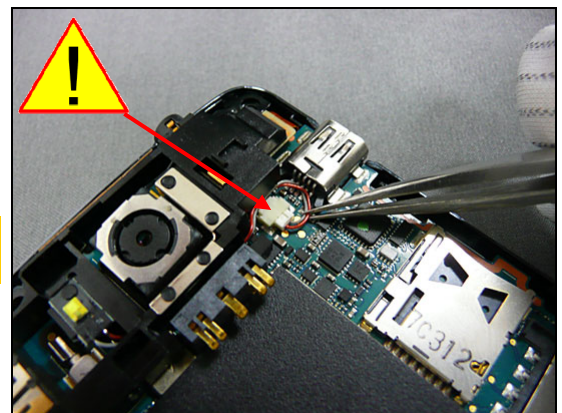
### 4.2.5 BT & GPS Antenna ass'y

Place BT & GPS antenna on the main board.

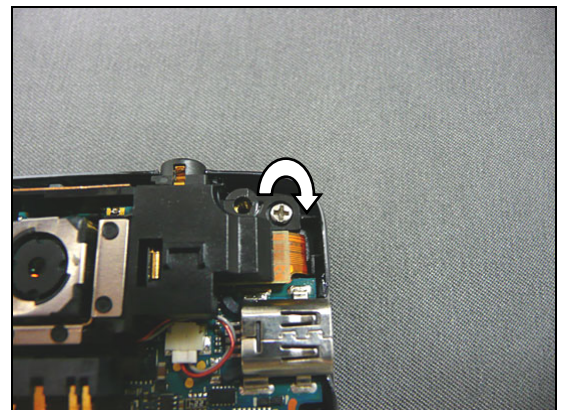


Use ESD tweezers to connect flash light cable and main board.

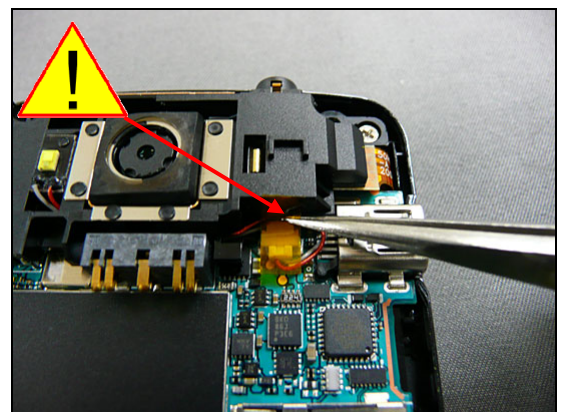
**Ensure the cable is under antenna and be careful not to damage the electrical component.**



Use  $7.85 \pm 0.5$  Ncm ( $0.8 \pm 0.05$  kgf-cm) torque to tighten the screw with Philips screw driver.



Stick one capton tape on the connector.

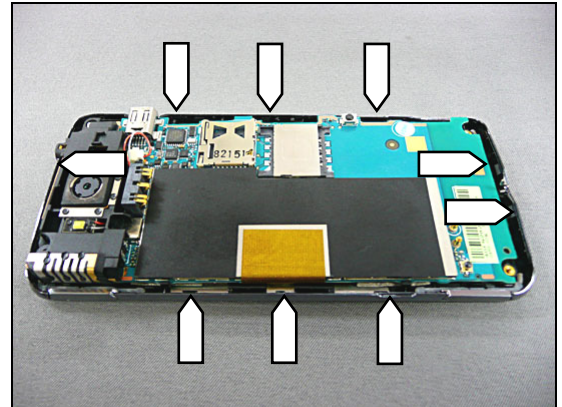




## Reassembly: Rear Unit

### 4.2.6 Rear Bottom Housing

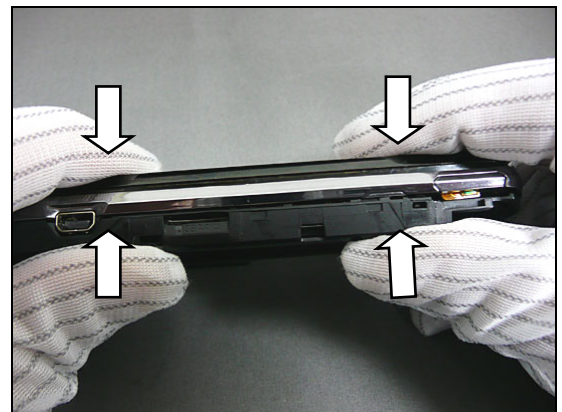
There are nine snap hooks located here that have to be latched.



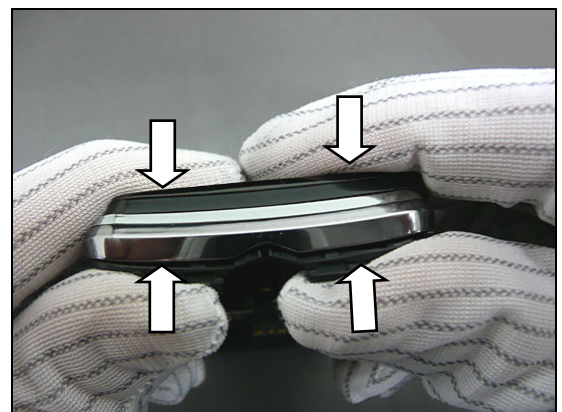
First snap the rear bottom housing and keypad cover at power button side as shown in photo.



And then snap the rear bottom housing and keypad cover at USB connector side as shown in photo.



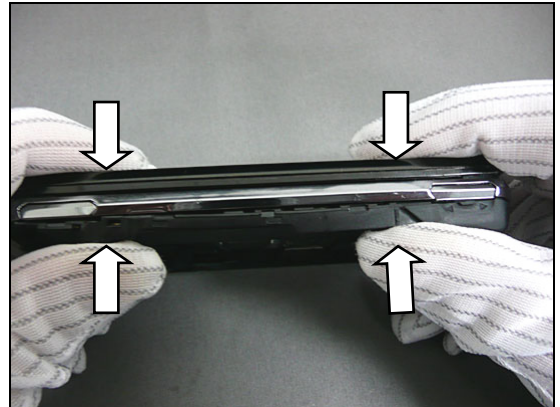
And then snap the rear bottom housing and keypad cover at main antenna area as shown in photo.



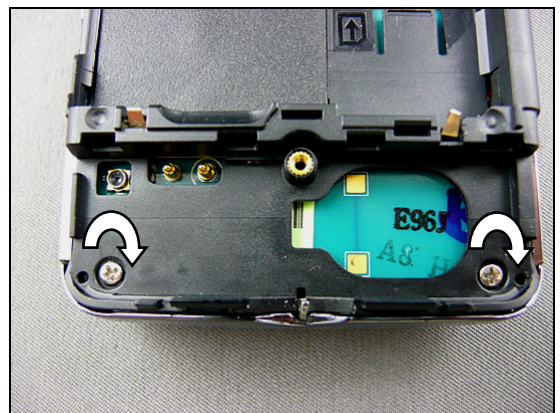


## Reassembly: Rear Unit

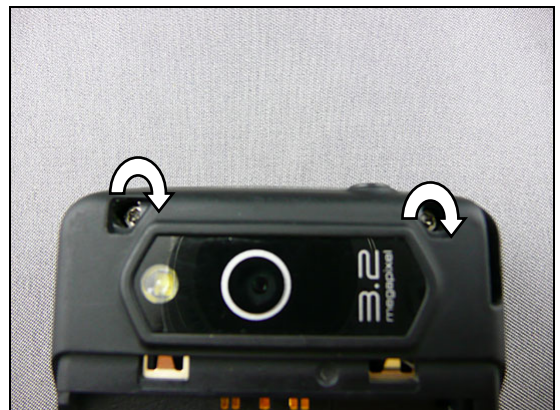
And then snap the rear bottom housing and keypad cover at camera side as shown in photo.



Use  $10.1 \pm 0.5$  Ncm ( $1.03 \pm 0.05$  kgf-cm) torque to tighten two screws with Philips screw driver.



Use  $10.1 \pm 0.5$  Ncm ( $1.03 \pm 0.05$  kgf-cm) torque to tighten two screws with Torx bit 6.



Use ESD tweezers to place first screw cap.





## Reassembly: Rear Unit

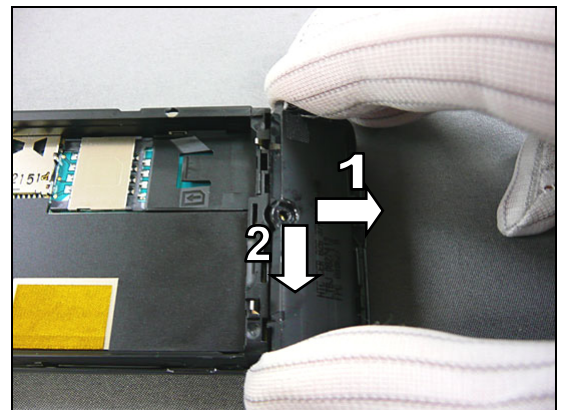
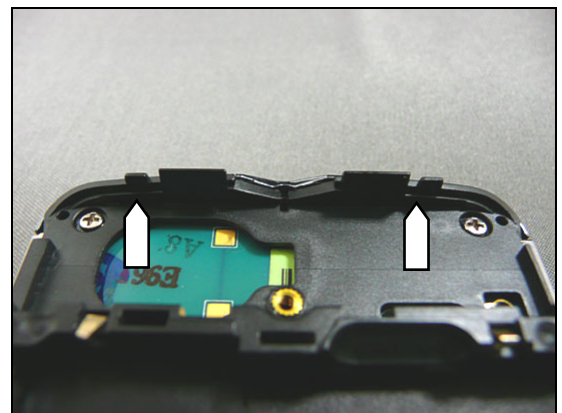
And then second one.

### 4.2.7 Main Antenna

There are two hooks located here that main antenna have to latch them.

Follow the sequence as shown in photo. First place main antenna to rear bottom housing at bottom area and then press it.

Use  $10.1 \pm 0.5$  Ncm ( $1.03 \pm 0.05$  kgf-cm) torque to tighten one screw with Philips screw driver.



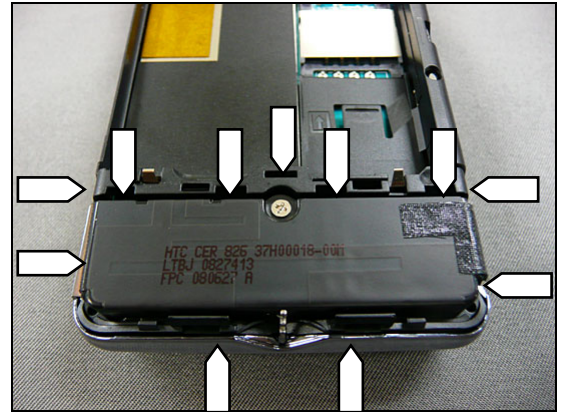




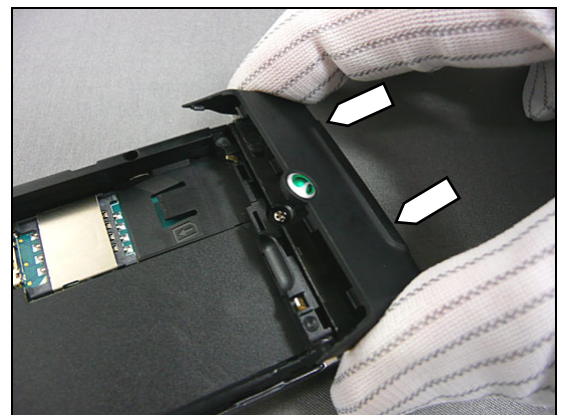
## Reassembly: Rear Unit

### 4.2.8 Antenna Cover

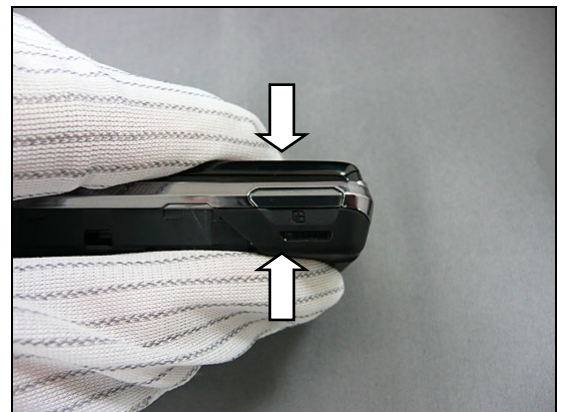
There are eleven snap hooks located here that have to be latched.



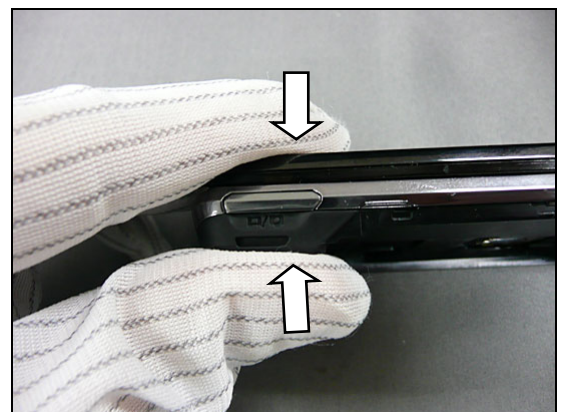
First snap main antenna cover to rear bottom housing at bottom area as shown in photo.



And then snap left side of main antenna cover.



And then snap camera area of main antenna cover.



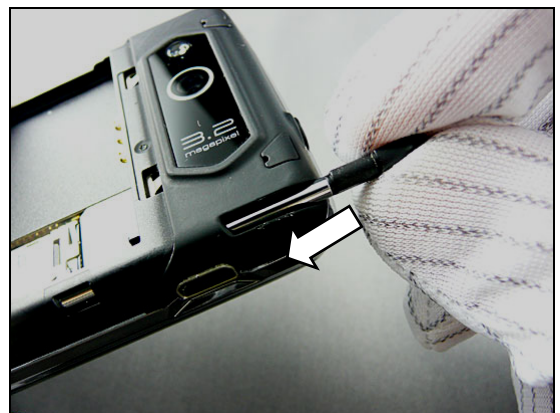
## Reassembly: Rear Unit

And then snap the remaining side.



### 4.2.9 Stylus

Insert the stylus into the phone.

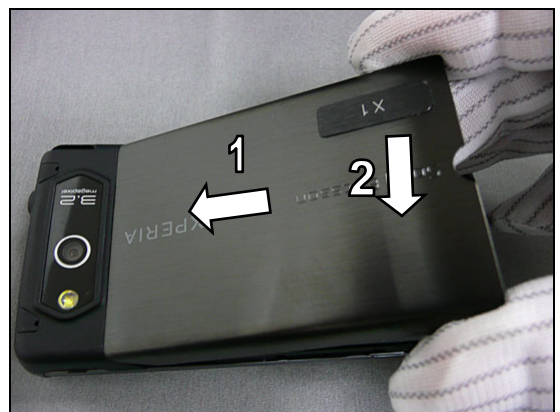


### 4.2.10 Battery Cover & Battery

Follow the sequence shown in photo. Insert the battery and push it toward the top of the phone and then press the battery.



Follow the sequence shown in photo. Insert the battery cover and push it toward the top of the phone and then press the battery.







## 5 Replacement

### 5.1 Battery Cover

*Follow the 3.1.1 Disassembly instructions!*

Prepare the new Battery cover.

*Follow the 4.1.10 Reassembly instructions!*



### 5.2 Battery

*Follow the 3.1.1 Disassembly instructions!*

Prepare the new Battery.

*Follow the 4.1.10 Reassembly instructions!*



### 5.3 Stylus

*Follow the 3.1.2 Disassembly instructions!*

Prepare the new stylus.

*Follow the 4.1.9 Reassembly instructions!*



### 5.4 Antenna Cover

*Follow the 3.1.1– 3.1.3 Disassembly instructions!*

Prepare the new antenna cover.

*Follow the 4.2.8 – 4.2.10 Reassembly instructions!*







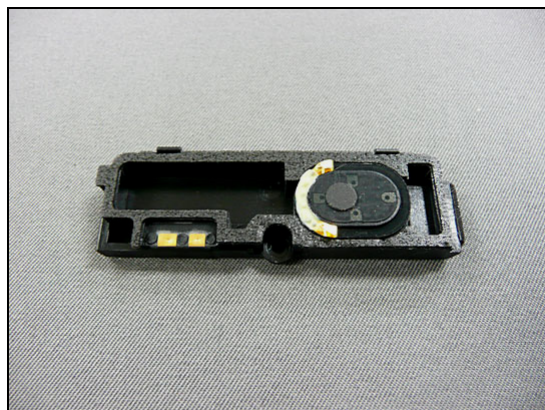
## Replacement

### 5.5 Main Antenna

*Follow the 3.1.1– 3.1.4 Disassembly instructions!*

Prepare the new main antenna.

*Follow the 4.2.7 Reassembly instructions!*



### 5.6 Screw Cap

*Follow the 3.1.5 Disassembly instructions!*

Prepare the new screw caps.

*Follow the 4.2.6 Reassembly instructions!*



### 5.7 Rear Bottom Housing

*Follow the 3.1.1 – 3.1.5 Disassembly instructions!*

Prepare the rear bottom housing.

*Follow the 4.2.6 – 4.2.10 Reassembly instructions!*

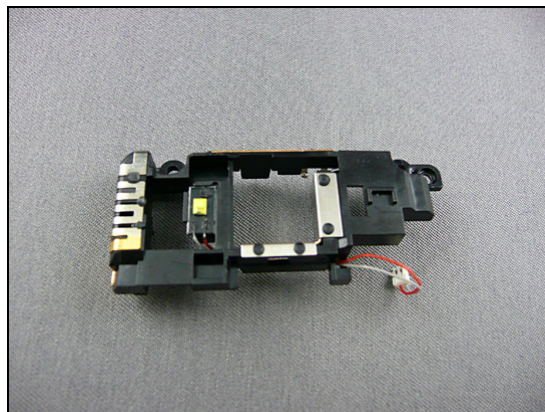


### 5.8 BT & GPS Antenna ass'y

*Follow the 3.1.1 – 3.1.6 Disassembly instructions!*

Prepare the new BT & GPS antenna.

*Follow the 4.2.5 – 4.2.10 Reassembly instructions!*





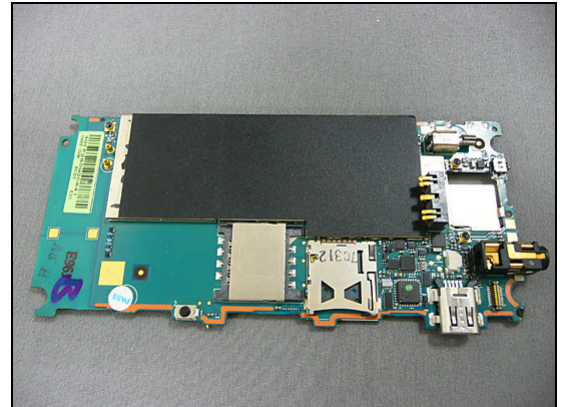
## Replacement

### 5.9 Main Board

*Follow the 3.1.1 – 3.1.7 Disassembly instructions!*

Prepare the new main board.

*Follow the 4.2.4 – 4.2.10 Reassembly instructions!*

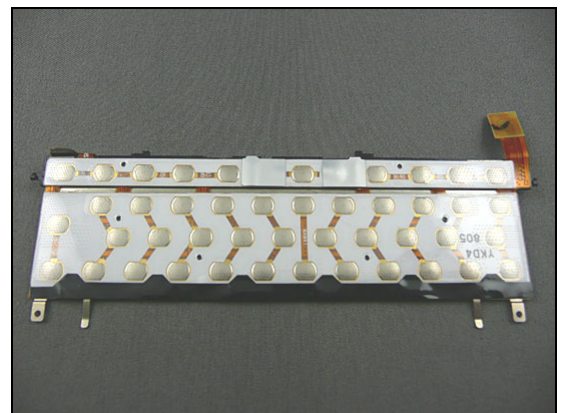


### 5.10 FPC Qwerty Keyboard ass'y

*Follow the 3.1.1 – 3.1.8 Disassembly instructions!*

Prepare the new FPC Qwerty keyboard.

*Follow the 4.2.3 – 4.2.10 Reassembly instructions!*



### 5.11 Keypad Qwerty

*Follow the 3.1.1 – 3.1.9 Disassembly instructions!*

Prepare the new keypad Qwerty.

*Follow the 4.2.2 – 4.2.10 Reassembly instructions!*



### 5.12 Keypad Cover

*Follow the 3.1.1 – 3.1.10 Disassembly instructions!*

Prepare the new keypad cover.

*Follow the 4.2.1 – 4.2.10 Reassembly instructions!*







## Replacement

### 5.13 Front Cover ass'y

*Follow the 3.1.1 – 3.2.4 Disassembly instructions!*

Prepare the new front cover.

*Follow the 4.1.1 – 4.2.10 Reassembly instructions!*



### 5.14 Display 3.0" TFT

*Follow the 3.1.1 – 3.2.4 Disassembly instructions!*

Prepare the new display 3.0" TFT.

*Follow the 4.1.1 – 4.2.10 Reassembly instructions!*







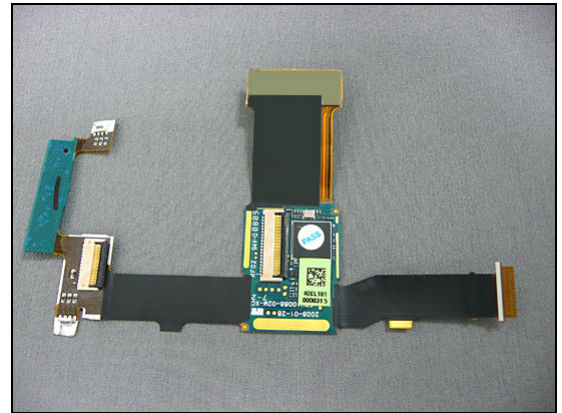
## Replacement

### 5.15 Rigid-Flex PCB ass'y

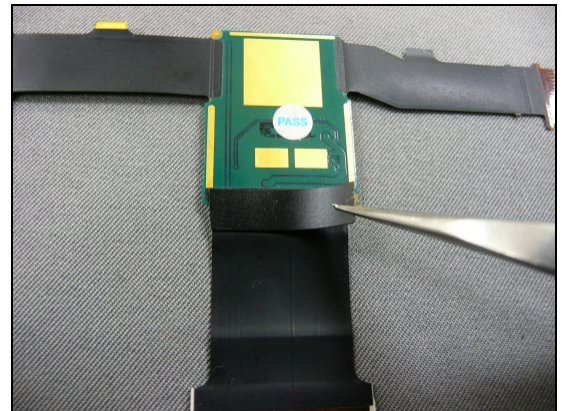
*Follow the 3.1.1 – 3.2.2 Disassembly instructions!*

Carry out the steps as described below.

*Follow the 4.1.3 – 4.2.10 Reassembly instructions!*



Stick one mylar on the rigid-flex PCB.



## Replacement

### 5.16 Camera 3.2 Mpixel

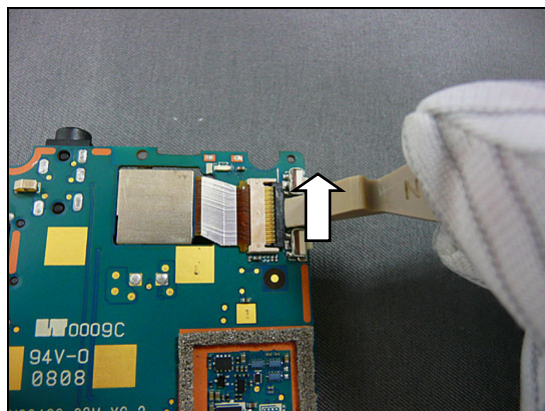
*Follow the 3.1.1 – 3.1.7 Disassembly instructions!*

Carry out the replacement as described below.

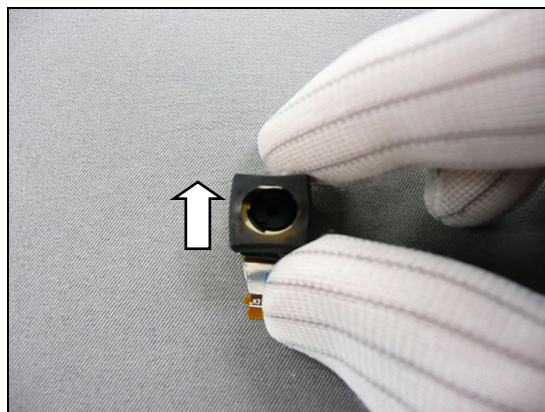
*Follow the 4.2.4 – 4.2.10 Reassembly instructions!*

#### REMOVAL

Use front opening tool to release connector and then take it out.

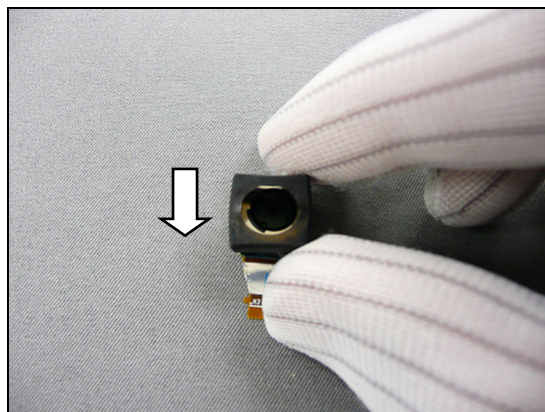


Use your fingers to remove main camera rubber.



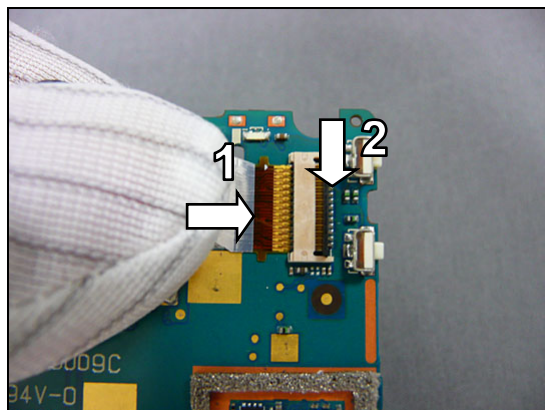
#### INSTALLATION

Use your fingers to place main camera rubber.



## Replacement: Camera 3.2 Mpixel

Follow the sequence shown in photo. Connect main camera and main board and then press the black hook.





## Replacement

### 5.17 Camera 0.16 Mpixel

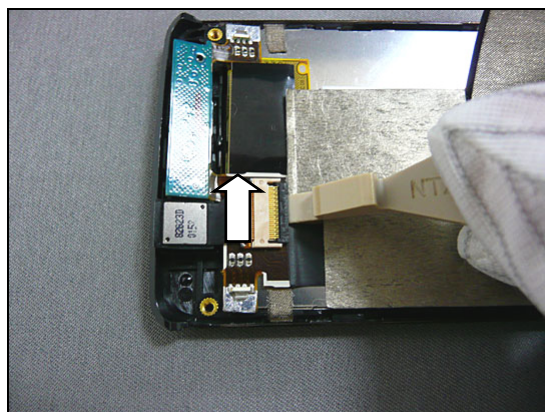
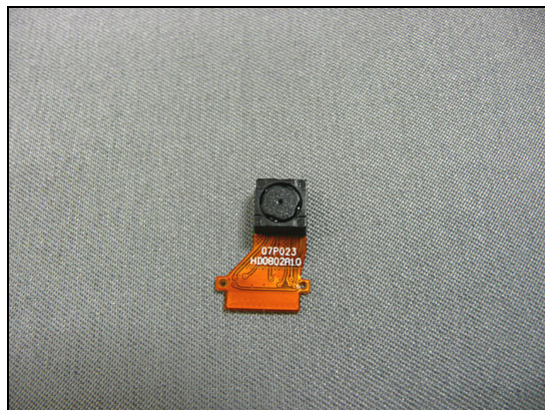
*Follow the 3.1.1 – 3.2.1 Disassembly instructions!*

Carry out the replacement as described below.

*Follow the 4.1.4 – 4.2.10 Reassembly instructions!*

#### REMOVAL

Use front opening tool to release connector and then take it out.

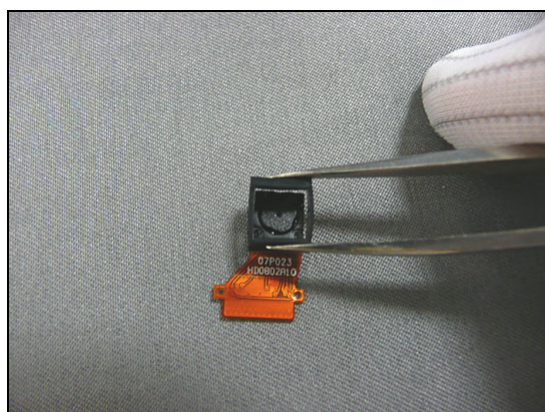


Use ESD tweezers to remove 2<sup>nd</sup> camera rubber



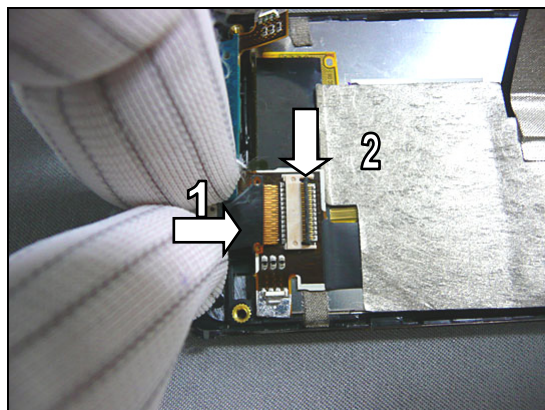
#### INSTALLATION

Use ESD tweezers to place 2<sup>nd</sup> camera rubber.



## Replacement: Camera 0.16 Mpixel

Follow the sequence shown in photo. Connect 2<sup>nd</sup> camera and Rigid-Flex PCB and then press the black hook.





## Replacement

### 5.18 Rear Display Housing

*Follow the 3.1.1 – 3.2.1 Disassembly instructions!*

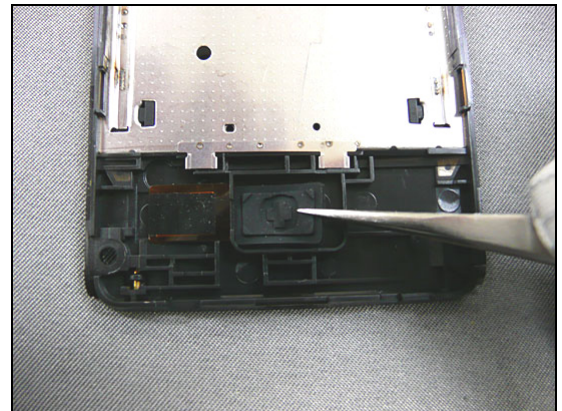
Carry out the replacement as described below.

*Follow the 4.1.4 – 4.2.10 Reassembly instructions!*



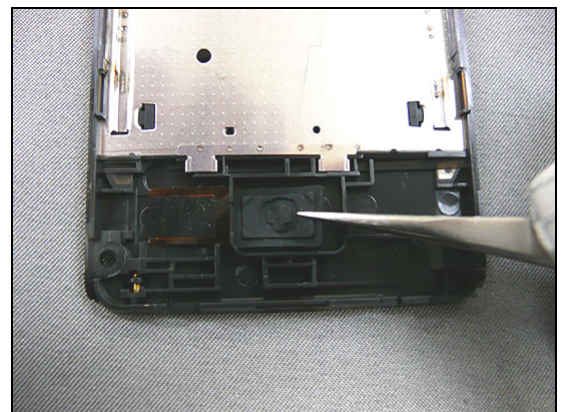
#### REMOVAL

Use ESD tweezers to remove optical joystick rubber.



#### INSTALLATION

Use ESD tweezers to place optical joystick rubber.







## Replacement

### 5.19 Ear Speaker

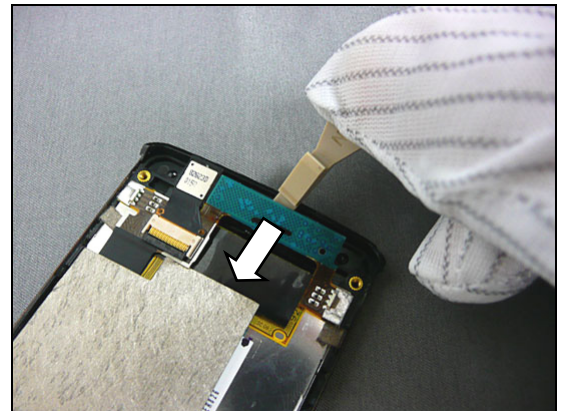
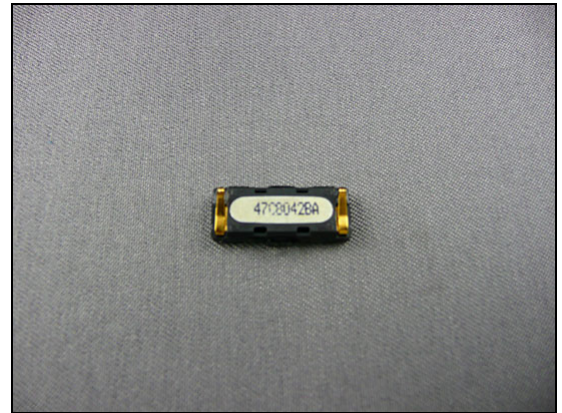
*Follow the 3.1.1 – 3.2.1 Disassembly instructions!*

Carry out the replacement as described below.

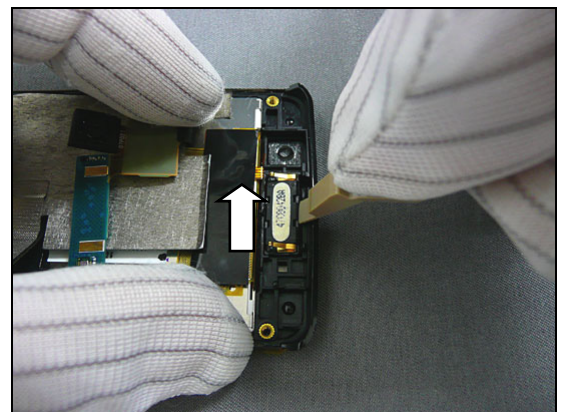
*Follow the 4.2.4 – 4.2.10 Reassembly instructions!*

#### REMOVAL

Use front opening tool to release ear speaker site of Rigid-Flex PCB.

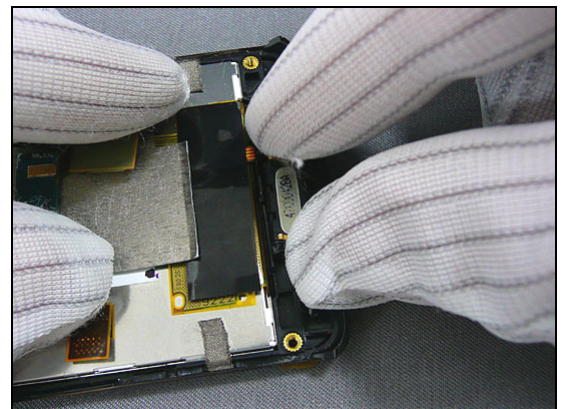


Use front opening tool to lift up the ear speaker and take it out.



#### INSTALLATION

Place ear speaker into front cover ass'y.



## Replacement: Ear Speaker

Place ear speaker side of Rigid-Flex PCB on the front cover.





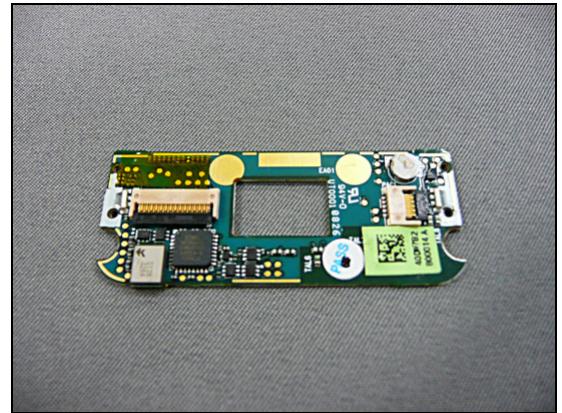
## Replacement

### 5.20 Navi Board PCB

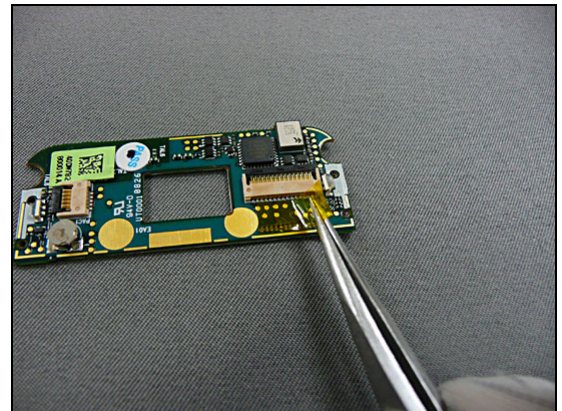
*Follow the 3.1.1 – 3.2.3 Disassembly instructions!*

Carry out the steps as described below.

*Follow the 4.1.2 – 4.2.10 Reassembly instructions!*



Stick one capton mylar on the navi board as shown photo.







## Replacement

### 5.21 Optical Joystick Switch

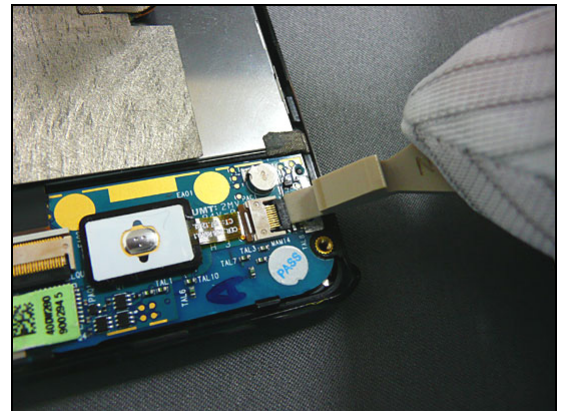
*Follow the 3.1.1 – 3.2.1 Disassembly instructions!*

Carry out the replacement as described below.

*Follow the 4.1.4 – 4.2.10 Reassembly instructions!*

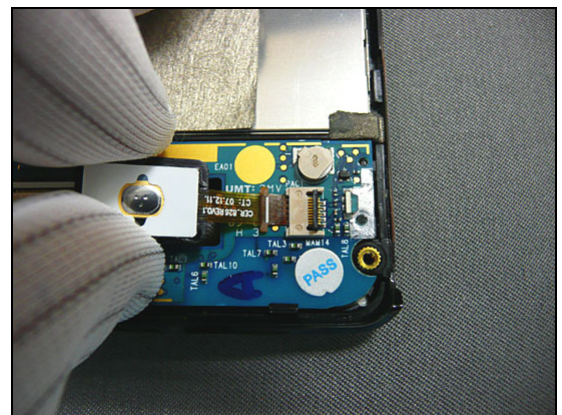
#### REMOVAL

Use front opening tool to disconnect the optical joystick switch and take it out.



#### INSTALLATION

Install an optical joystick switch and then press black hook.





## 6 Revision History

| Rev. | Date        | Changes / Comments |
|------|-------------|--------------------|
| 1    | 2008-Sep-25 | Initial release    |