



# Working Instruction, Mechanical

Applicable for T650 and T658

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# 1 Introduction

## 1.1 T650



## 1.2 Equipment

### SPECIAL TOOLS

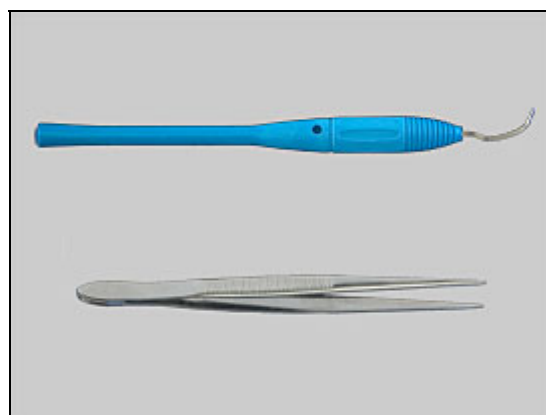
- NTZ 122 459 Torque screwdriver (or equivalent)
- NTZ 122 288 Torx bit no. 6
- NTZ 112 1052 JCIS bit
- NTZ 112 302/2 Front opening tool
- NTZ 122 521 Flex film assembly tool
- NTZ 112 1077 Vga camera tool
- 1201-9362 3Mpixel Camera removal tool
- NTZ 112 590 Guitar pick



### STANDARD TOOLS

Standard tools have to be locally purchased

- Dentist hook
- ESD tweezers



### LABEL EQUIPMENT

The following special equipment is required when replacing or installing a new label:

- Hot air flow solder station
- Zebra printer connected to computer



### OTHER EQUIPMENT

- ESD-wristband
- ESD-gloves
- Isopropyl alcohol
- Air blower





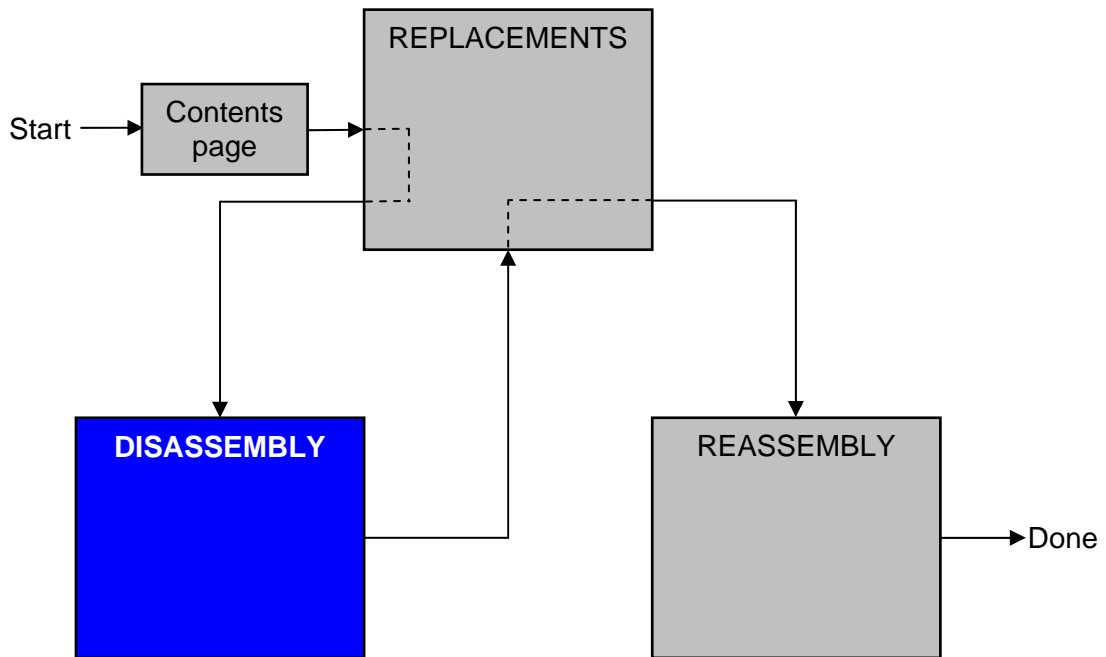
## 1.3 General cautions

The following cautions are considered to be generic for all phone models and will not be repeated in the Disassembly, Replacements and Reassembly sections:

- **TURN OFF THE PHONE AND REMOVE THE SIM CARD AND THE MEMORY CARD BEFORE STARTING THE DISASSEMBLY!**
- **KEEP ALL CONTACT SURFACES CLEAN!**
- **BE CAREFUL WHEN USING TOOLS LIKE THE DENTIST HOOK, TWEEZERS, OPENING TOOLS, GUITAR PICK ETC. TO AVOID SCRATCHES OR DAMAGES TO THE EXTERIOR AND INTERIOR PARTS OF THE PHONE!**
- **BE CAREFUL NOT TO DAMAGE ANY CONTACT SPRINGS!**
- **REMEMBER TO REMOVE THE PROTECTION FOILS ON NEW PARTS SUCH AS THE LCD!**
- **NEVER TOUCH THE DISPLAY GLASS!**
- **USE AIR BLOW EQUIPMENT TO KEEP THE FRONT WINDOW AND DISPLAY MODULE DUST FREE!**

## 2 Disassembly

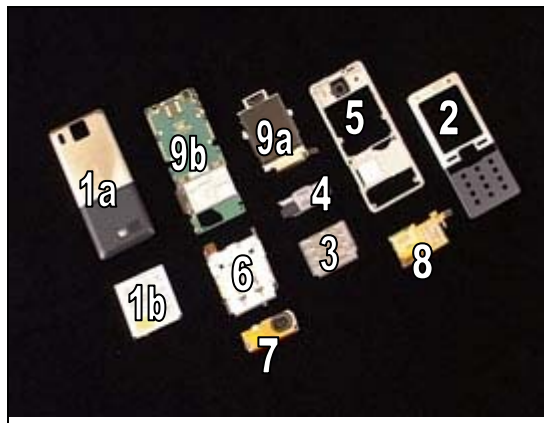
When you are going to replace a part being listed in *Replacements*, the instruction of that section usually begins by directing you to this *Disassembly* section with a specification of the instructions you have to carry out in order to disassemble the phone as far as needed before returning to *Replacements* for the actual replacement.



## 2.1 Overview

The disassembly is done in the following order:

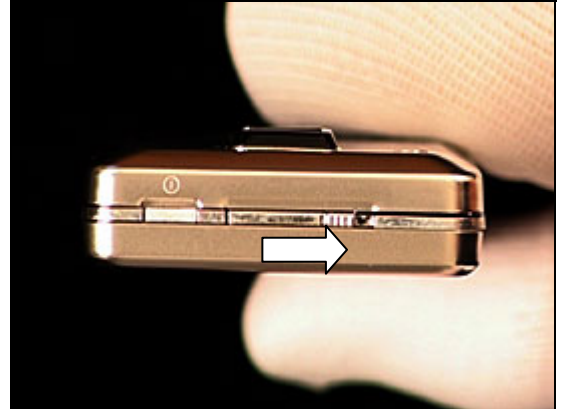
1. Cover rear Assembly (a) & Battery (b)
2. Front Cover
3. Keyboard Universal Numeric
4. Navigation Keypad
5. Frame Assembly
6. Keyfoil complete
7. Loudspeaker
8. Holder M2 and SIM assy
9. Display (a) & PBA (b)



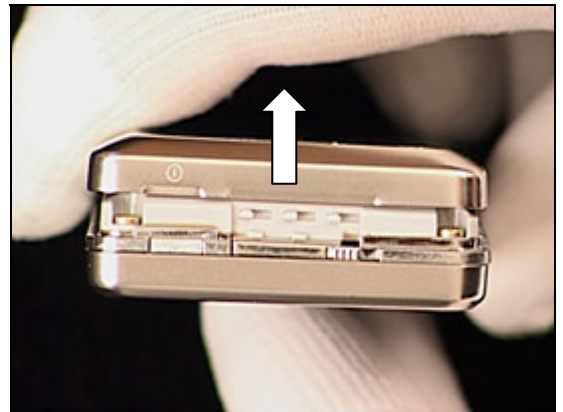


## 2.1.1 Cover rear Assembly & Battery

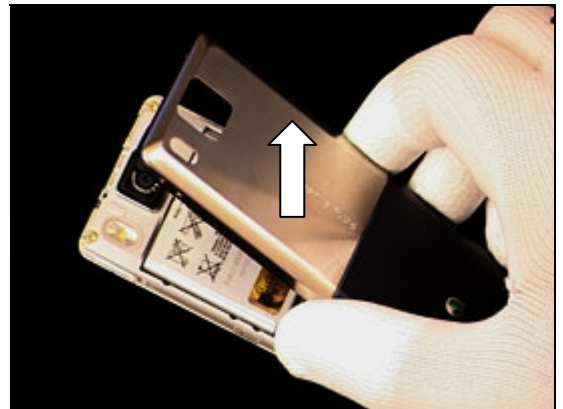
Release the Battery Cover.



Lift up the battery cover.



Remove the Battery Cover.



Grab the Battery and pull it up.





## **Cover rear Assembly & Battery** *continued*

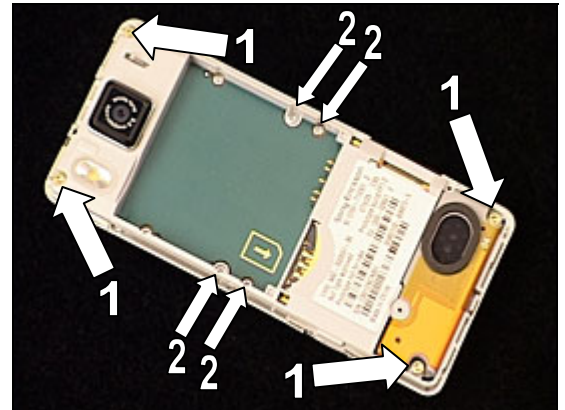
Remove the Battery.





## 2.1.2 Front Cover

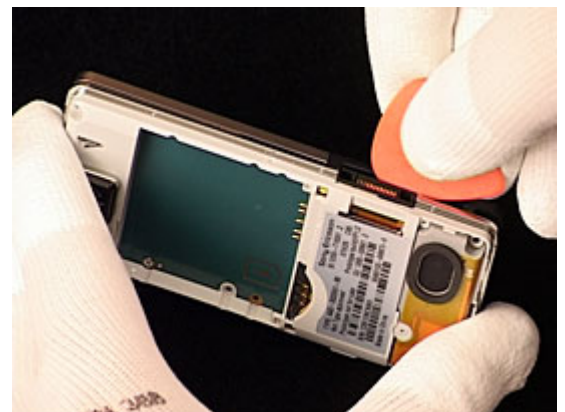
Use Torx bit no 6 to remove the four screws numbered 1.  
Use JCIS to remove the four screws numbered 2.



Use a guitar pick and slide upwards and downwards.



Start on the opposite side and do the same thing to release the Front cover from the Frame assembly.



Use your fingers and wiggle the Front Cover upwards to release it from the Frame assembly.



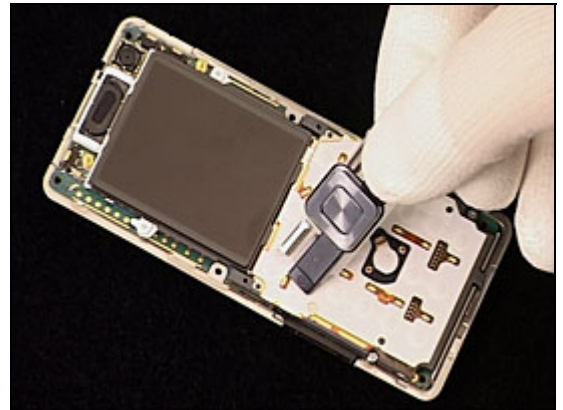
### **2.1.3 Keyboard Universal Numeric**

Remove the Keyboard Universal Numeric with your fingers.



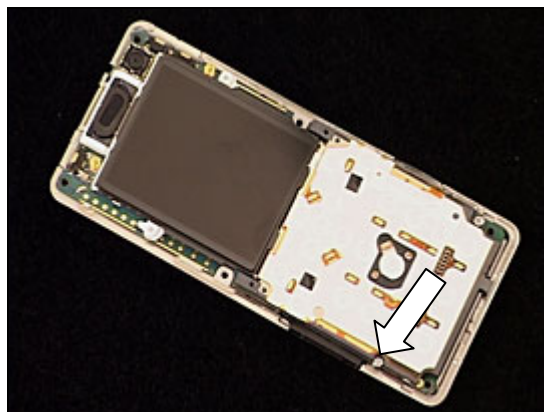
## **2.1.4 Navigation keypad**

Remove the Navigation keypad with your fingers.

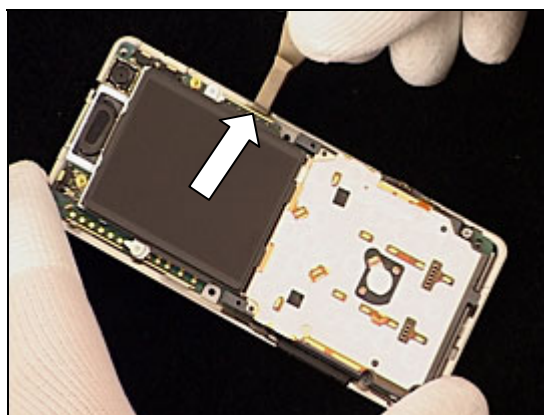


## 2.1.5 Frame assembly

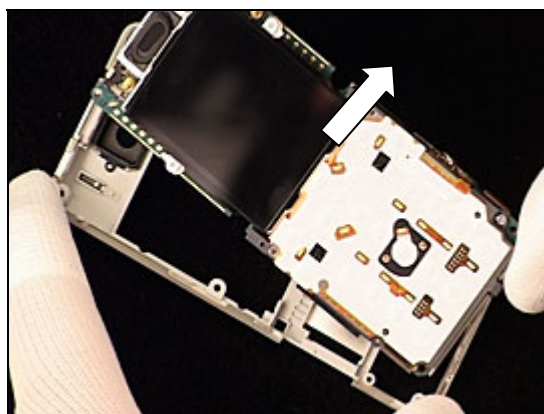
Use JCIS to remove the screw.



Use the front opening tool to loose the Core Unit from the Frame.



Gently remove the Core Unit from the Frame assembly.





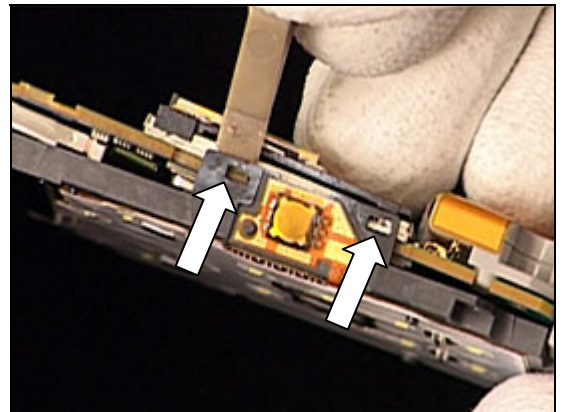


## 2.1.6 Keyfoil complete

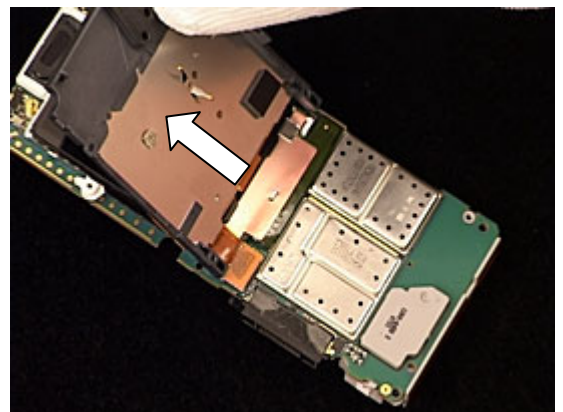
Use JCIS to remove the screw.



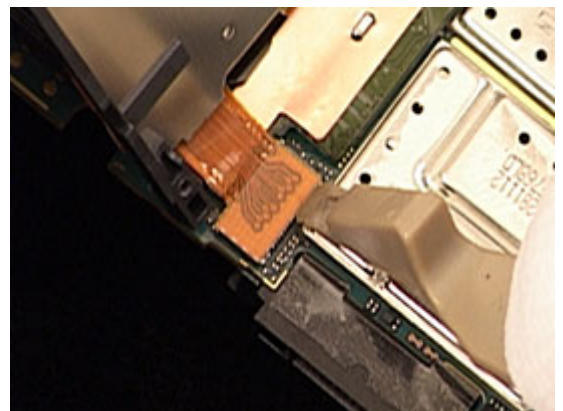
Use the front opening tool to release the two latches indicated.



Lift up the Keyfoil complete against the Display.



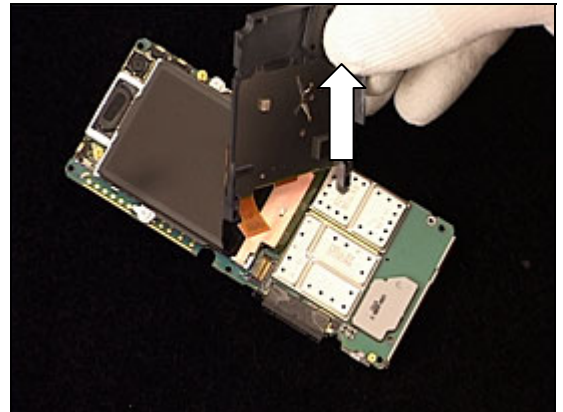
Use a front opening tool and pull it upwards to disconnect the Keyfoil complete from the BtB connector.





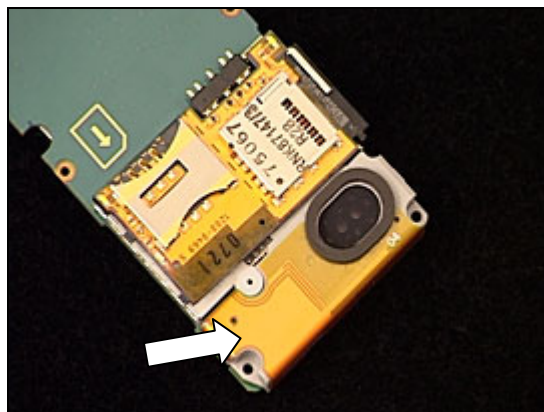
## **Keyfoil complete** *continued*

Remove the Keyfoil complete with your fingers.

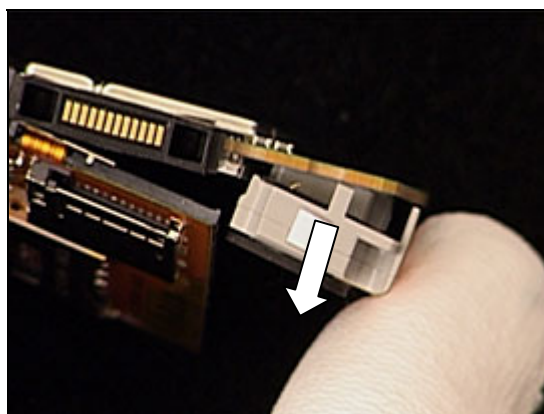
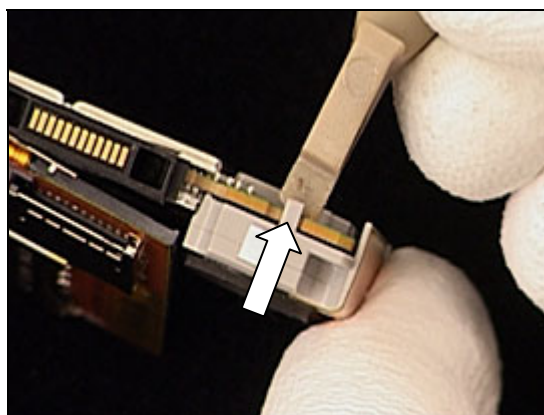


## 2.1.7 Loudspeaker

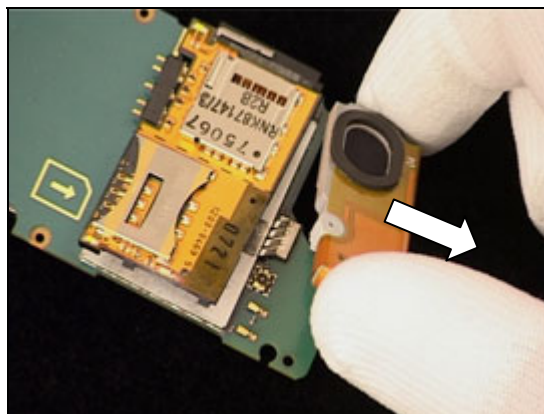
Lift up this part of the Loudspeaker.



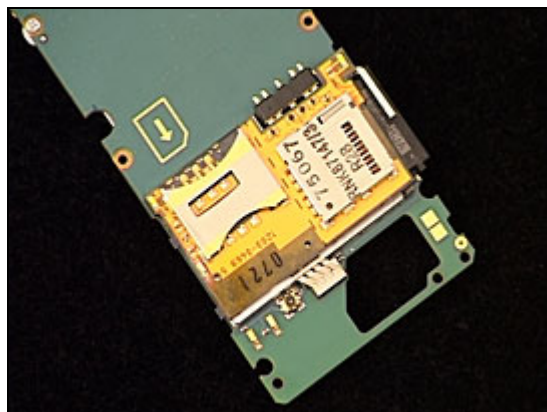
Use the front opening tool to release the latch indicated.



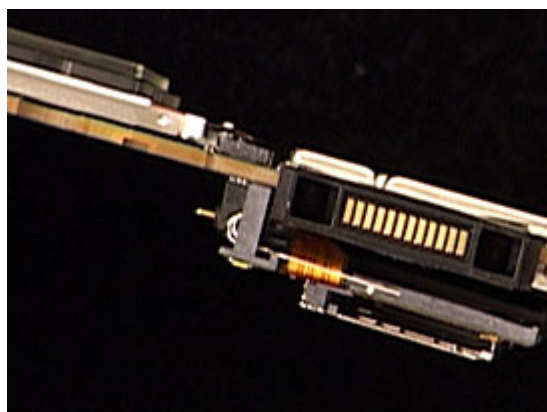
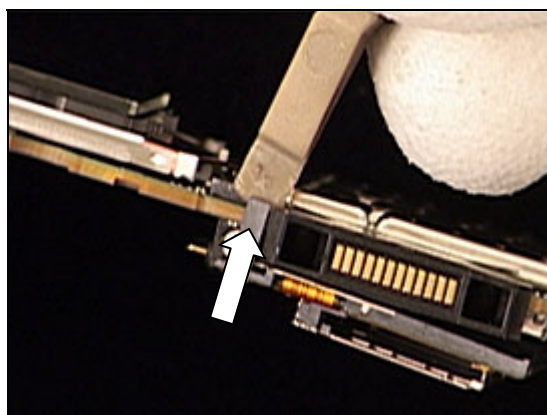
Remove the Loudspeaker with your fingers.



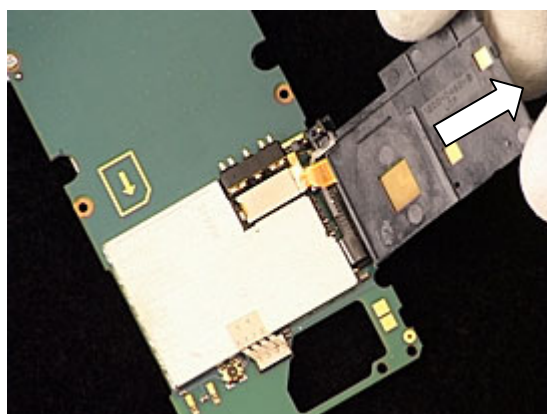
## 2.1.8 Holder M2 and SIM assy



Use the front opening tool to release the latch indicated.

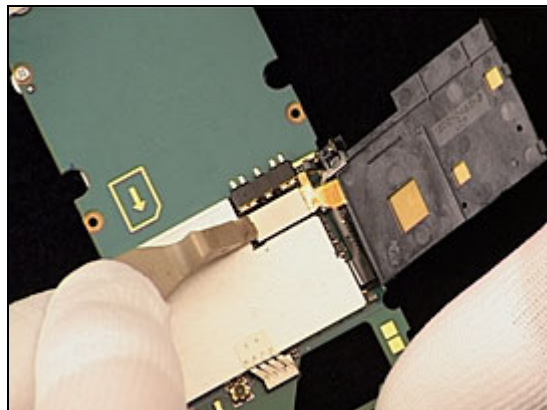


Lift up the Holder against the System connector

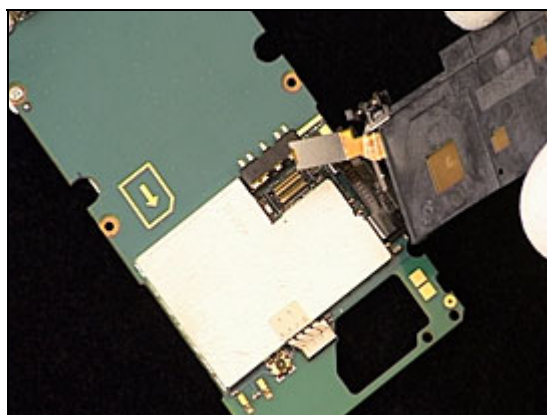


## Holder M2 and SIM assy *continued*

Use a front opening tool and pull it upwards to disconnect the Holder from the BtB connector.

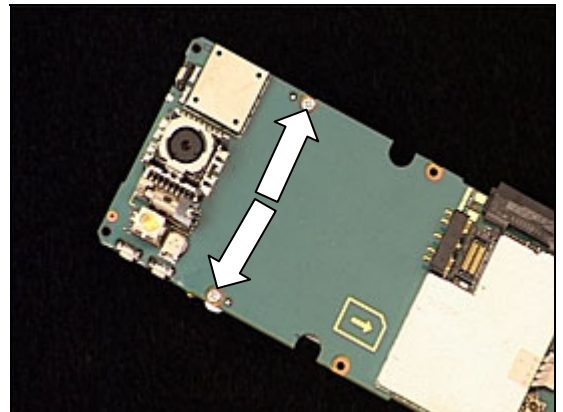


Remove the Holder from the PBA.

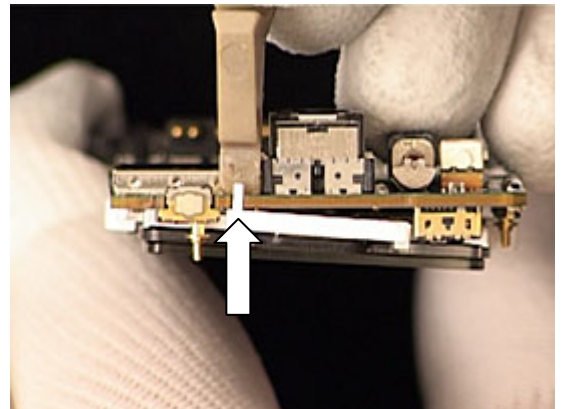


## 2.1.9 Display & PBA

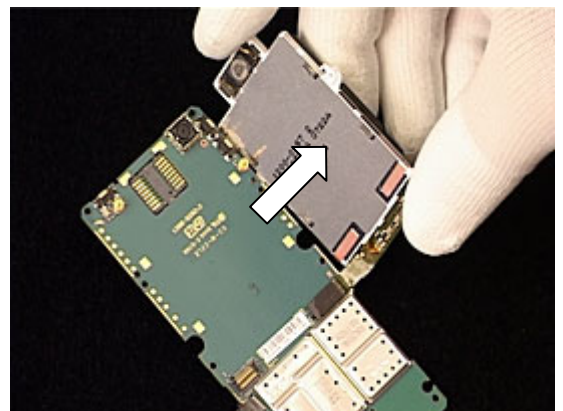
Use JCIS to remove the two screws.



Use the front opening tool to release the latch indicated.



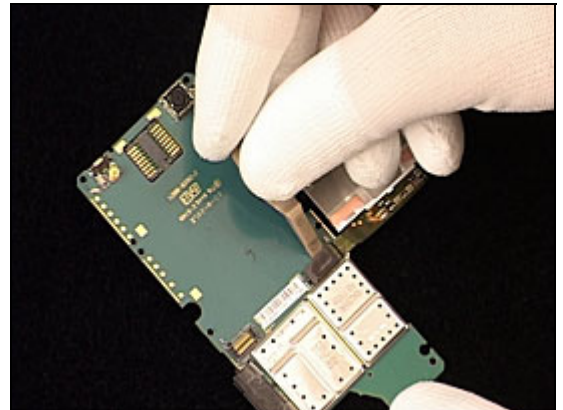
Lift up the Display to the right.



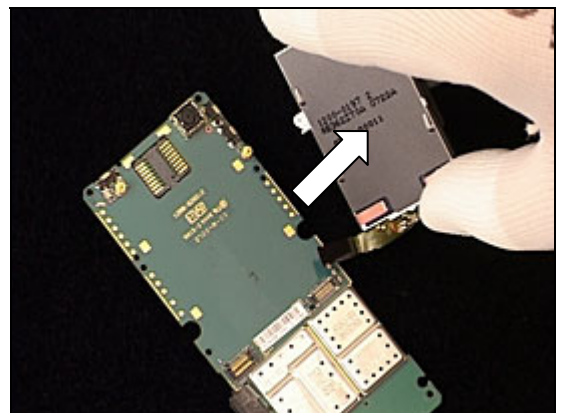


## Display & PBA *continued*

Use a front opening tool and pull it upwards to disconnect the Display from the BtB connector.



Remove the Display from the PBA.





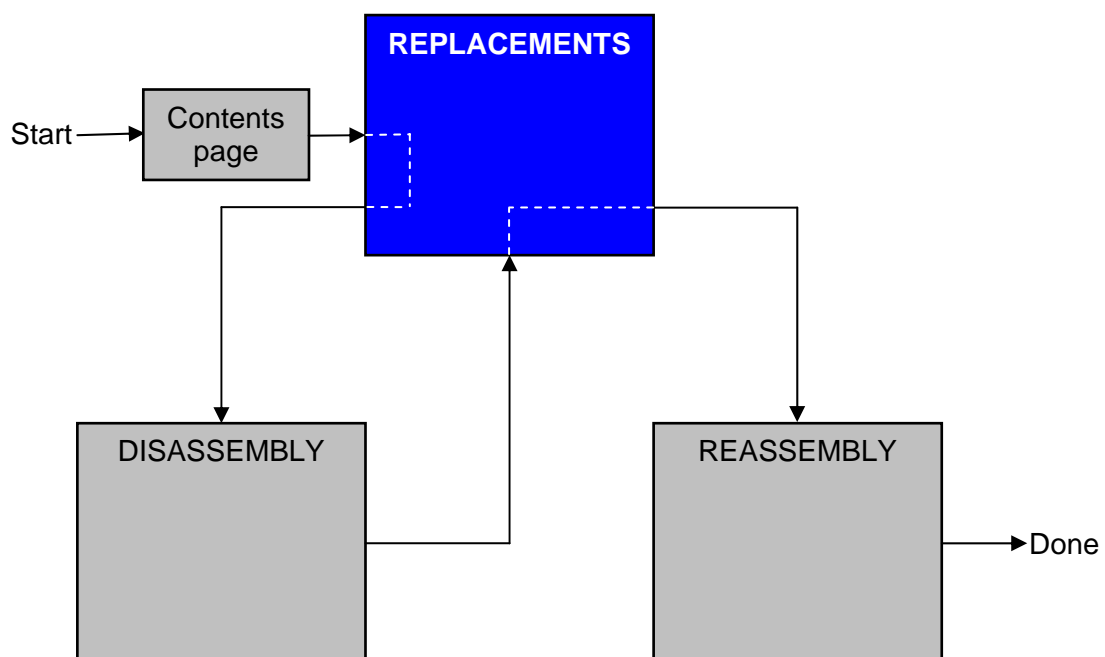
### 3 Replacements

Search for the part to be replaced on the Contents page and go to that instruction to be found in this *Replacements* section.

The instruction usually begins by directing you to the *Disassembly* section with a specification of the instructions you have to carry out in order to disassemble the phone as far as needed before the actual replacement.

Go back to this *Replacements* section and carry out the instruction.

The instruction usually ends by directing you to the *Reassembly* section with a specification of the instructions you have to carry out in order to reassemble the phone.





### **3.1 Cover rear Assembly**

*Follow the 2.1.1 Disassembly instructions!*

Prepare the new Cover rear Assembly.

*Follow the 4.1.9 Reassembly instructions!*

### **3.2 Battery**

*Follow the 2.1.1 Disassembly instructions!*

Prepare the new MS Cover.

*Follow the 4.1.9 Reassembly instructions!*

### **3.3 Keyboard Universal Generic**

*Follow the 2.1.1 – 2.1.3 Disassembly instructions!*

Prepare the new Keyboard Universal Generic.

*Follow the 4.1.7 – 4.1.9 Reassembly instructions!*

### **3.4 Navigation keypad**

*Follow the 2.1.1 – 2.1.4 Disassembly instructions!*

Prepare the new Navigation keypad.

*Follow the 4.1.6 – 4.1.9 Reassembly instructions!*

### **3.5 Frame Assembly**

*Follow the 2.1.1 – 2.1.5 Disassembly instructions!*

Prepare the new Frame Assembly.

*Follow the 4.1.5 – 4.1.9 Reassembly instructions!*

### **3.6 Keyfoil complete**

*Follow the 2.1.1 – 2.1.6 Disassembly instructions!*

Prepare the new Keyfoil Complete.

*Follow the 4.1.4 – 4.1.9 Reassembly instructions!*

### **3.7 Loudspeaker**

*Follow the 2.1.1 – 2.1.7 Disassembly instructions!*

Prepare the new Loudspeaker.

*Follow the 4.1.3 – 4.1.9 Reassembly instructions!*

## **3.8 Holder M2 and SIM assy**

*Follow the 2.1.1 – 2.1.8 Disassembly instructions!*

Prepare the new Holder M2 and SIM assy.

*Follow the 4.1.2 – 4.1.9 Reassembly instructions!*

## **3.9 Display**

*Follow the 2.1.1 – 2.1.9 Disassembly instructions!*

Prepare the new Display.

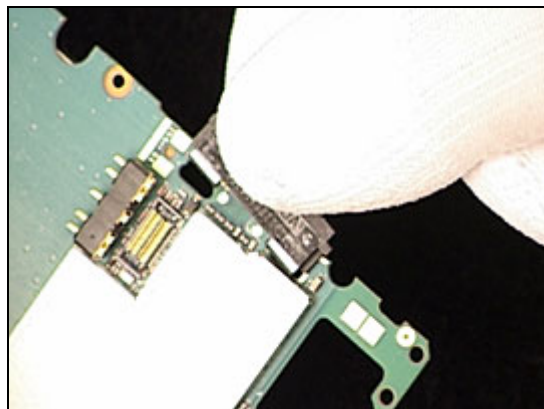
*Follow the 4.1.1 – 4.1.9 Reassembly instructions!*

## 3.10 System Connector

### REMOVAL

*Follow the 2.1.1 – 2.1.8 Disassembly instructions!*

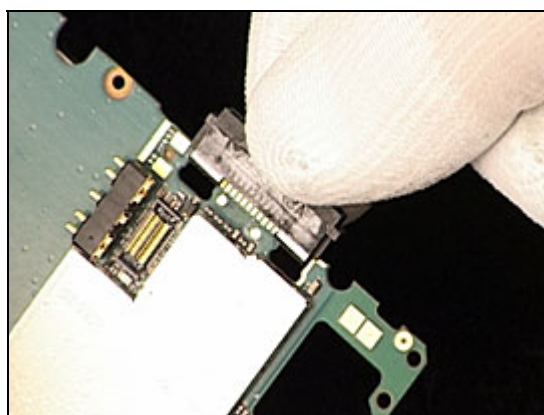
Use your fingers to remove the System Connector.



### INSTALLATION

Use your fingers to position the System Connector.

*Follow the 4.1.2 – 4.1.9 Reassembly instructions!*





## 3.11 Camera protection lens & Camera protection lens gasket

### REMOVAL

*Follow the 2.1.1 – 2.1.5 Disassembly instructions!*

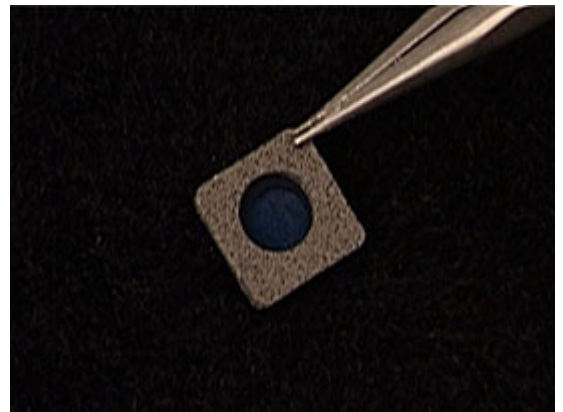
*Use your fingers to remove the Camera protection lens.*



*Take a new Camera protection lens*



Use tweezers to assemble the Camera protection lens gasket on the Camera protection lens.



### INSTALLATION

Use tweezers to position the Camera protection lens.

Follow the 4.1.5 – 4.1.9 Reassembly instructions!



## 3.12 Camera 3Mpixel

### REMOVAL

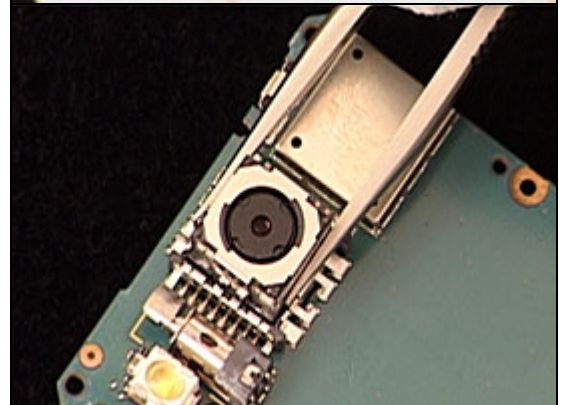
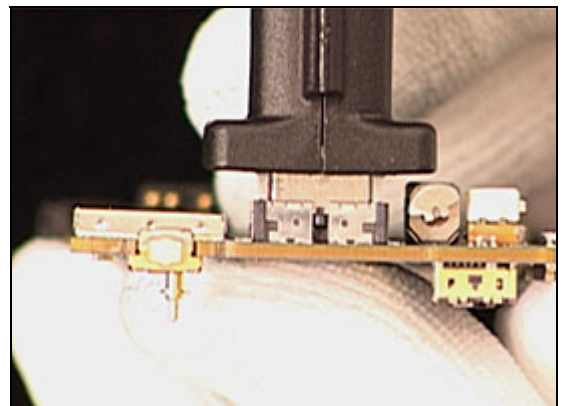
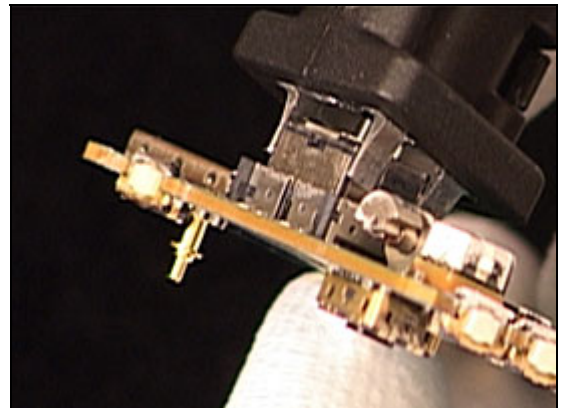
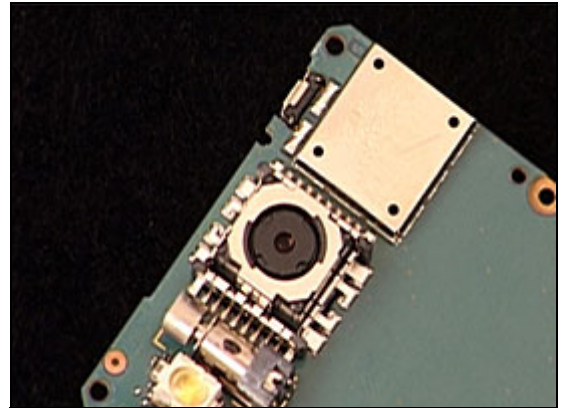
*Follow the 2.1.1 – 2.1.5 Disassembly instructions!*

Use 3Mpixel camera removal tool to remove Camera 3Mpixel.

Position the 3Mpixel camera tool according to the picture.

Push the 3Mpixel camera tool to bottom and wiggle the tool side to side before lifting the tool up.

Use tweezers to remove the 3Mpixel camera







### 3.13 Camera 3Mpixel *continued*

#### INSTALLATION

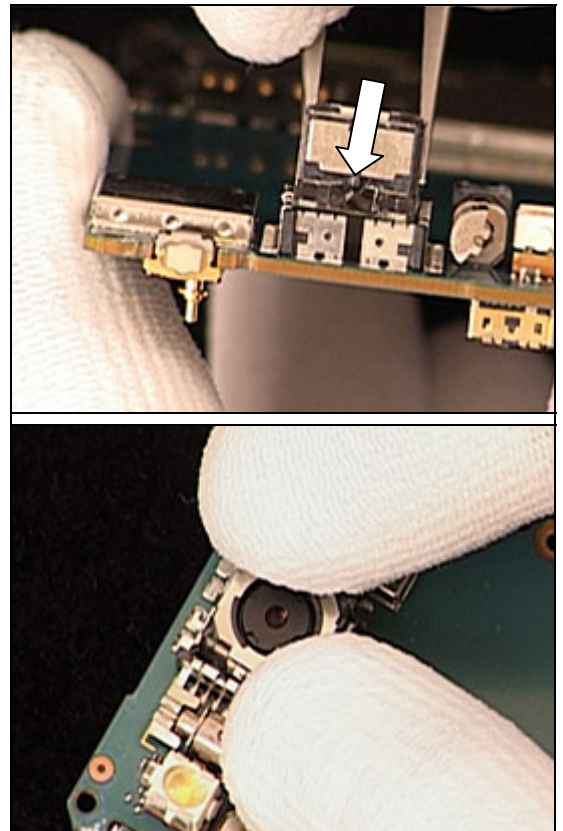
Notice the small slot in the socket and the small slot in the Camera 3Mpixel.

Use tweezers to position the Camera 3Mpixel

Press gently on the top of the Camera 3Mpixel until it snaps into place.

**CAUTION! DO NOT TOUCH THE LENS**

*Follow the 4.1.5 – 4.1.9 Reassembly instructions!*

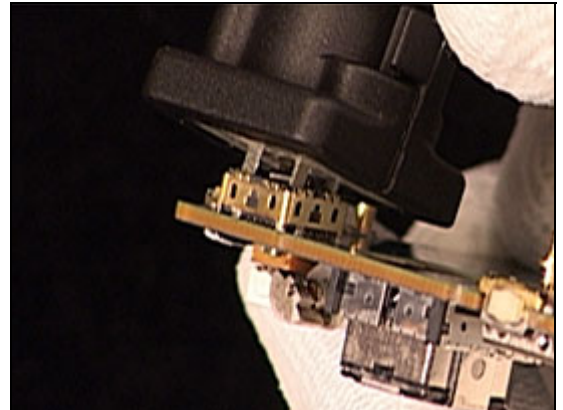


## 3.14 VGA Camera – **Only T650**

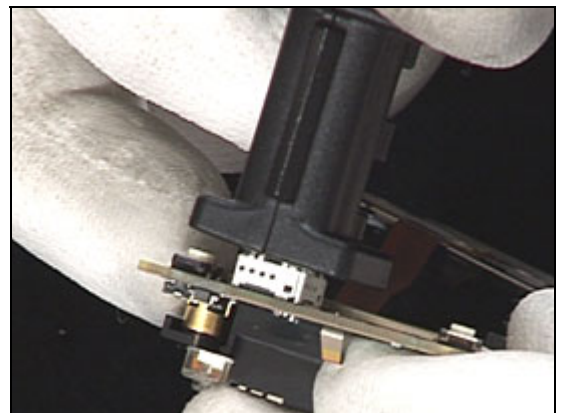
### REMOVAL

*Follow the 2.1.1 – 2.1.9 Disassembly instructions!*

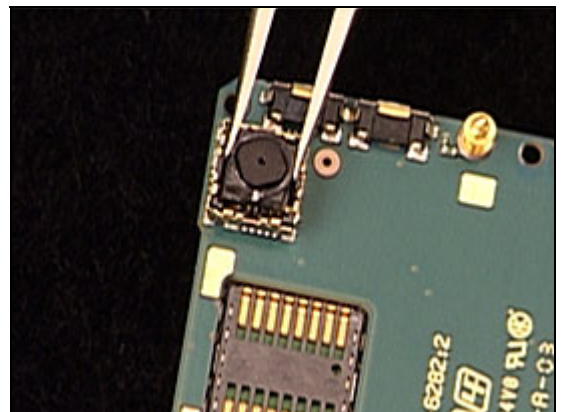
Use VGA camera removal tool to remove VGA Camera.



Push the VGA camera tool to bottom and wiggle the tool side to side before lifting the tool up.

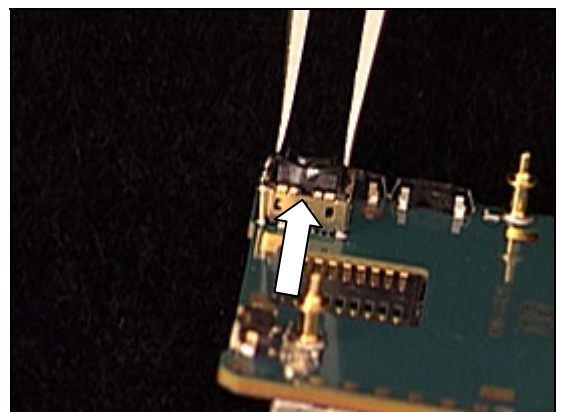


Use tweezers to remove the VGA camera



### INSTALLATION

Notice the small slot in the socket and the small slot in the VGA camera.



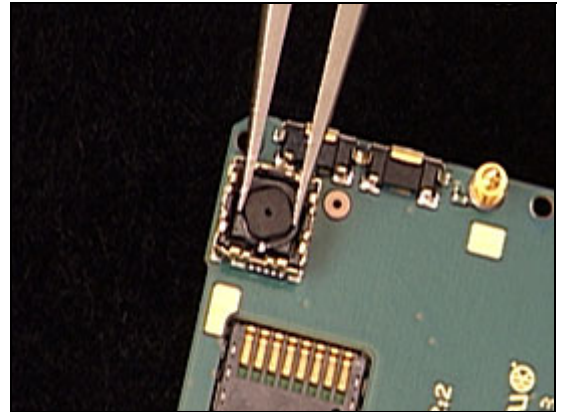


## **VGA Camera *continued***

Use tweezers to position the VGA camera

Press gently on the top of the *VGA camera* until it snaps into place.

Follow the 4.1.1 – 4.1.9 Reassembly instructions!



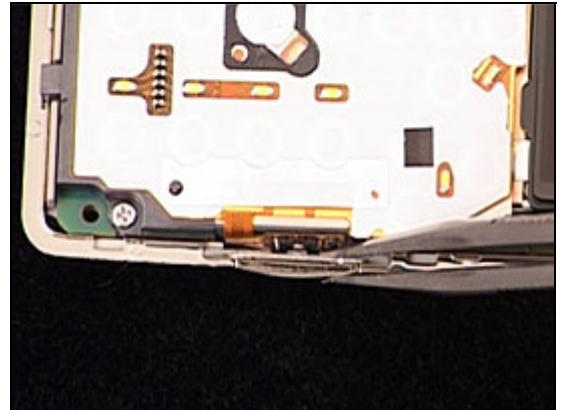


## 3.15 Camera Key

### REMOVAL

*Follow the 2.1.1 – 2.1.2 Disassembly instructions!*

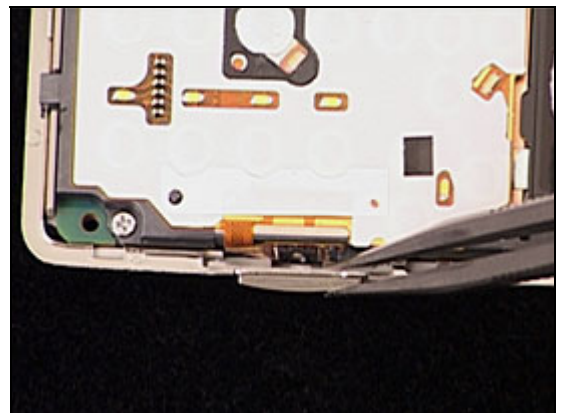
Use tweezers to remove the Camera key.



### INSTALL

Use tweezers to position the Camera key.

*Follow the 4.1.8 – 4.1.9 Reassembly instructions!*

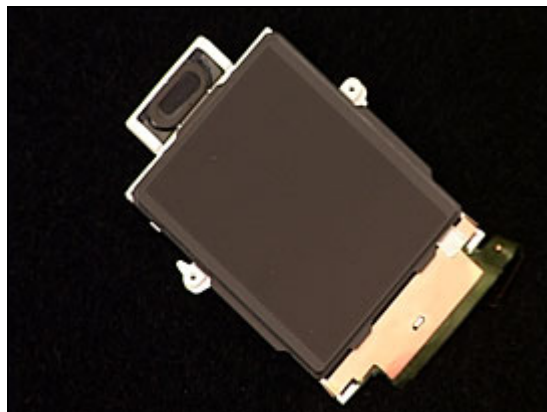


## 3.16 Ear Speaker

### REMOVAL

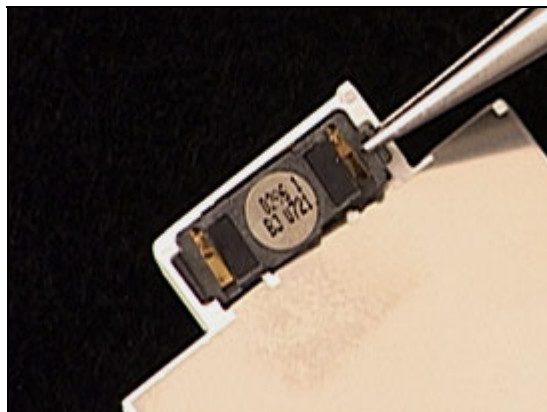
*Follow the 2.1.1 – 2.1.9 Disassembly instructions!*

Use your fingers to remove the Ear speaker.



### INSTALLATION

Use tweezers to position the Ear speaker.



#### **DO NOT TOUCH THE EAR SPEAKER SPRINGS!**

Use a front opening tool to press the Ear speaker into its cavity.

*Follow the 4.1.1 – 4.1.9 Reassembly instructions!*



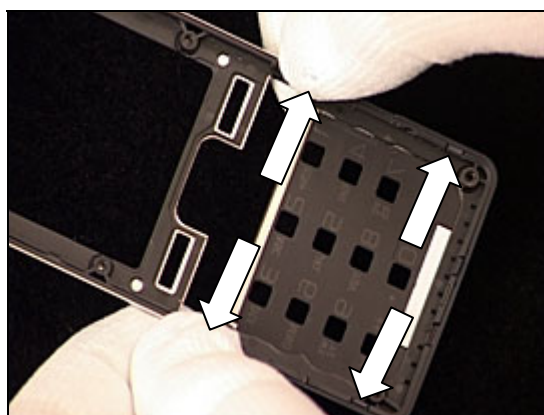
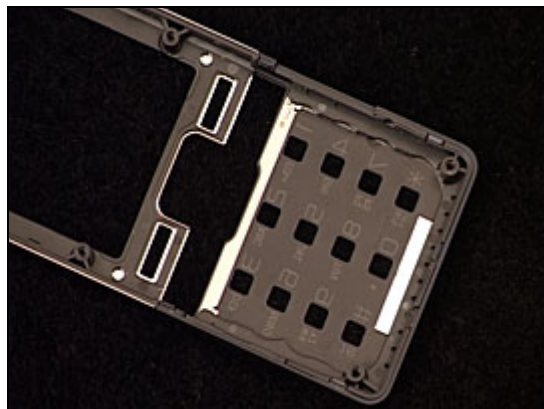


## 3.17 Cover front keyplate

### REMOVAL

Follow the 2.1.1 – 2.1.2 Disassembly instructions!

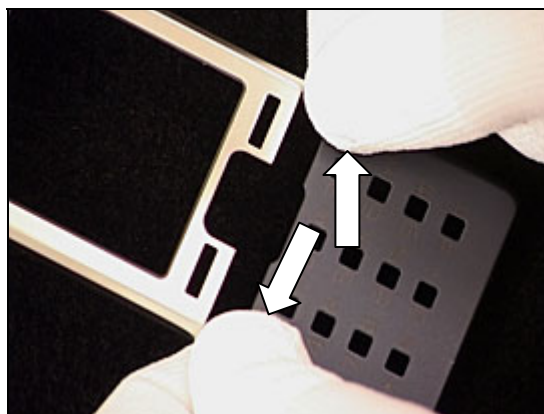
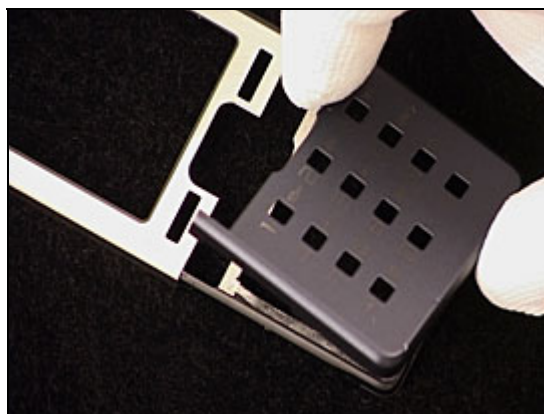
Use your fingers and unsnap the Cover front keyplate from the Cover front.



### INSTALLATION

**Note** It is very important that you follow the instruction below

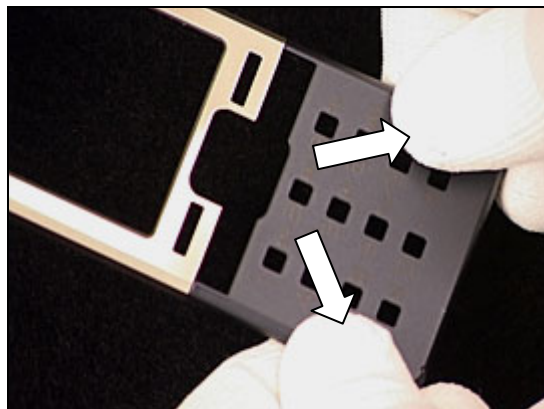
Use your fingers and press for 10 seconds.



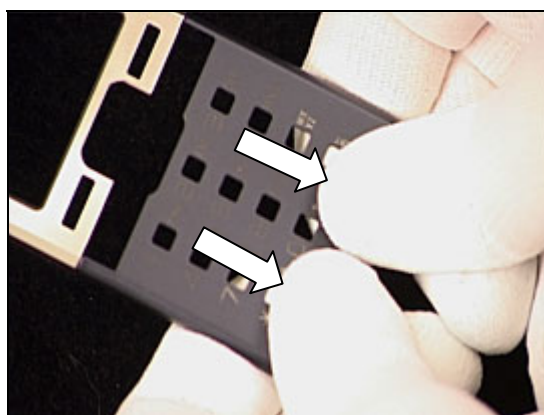


## Cover front keyplate *continued*

Use your fingers and press for 10 seconds.

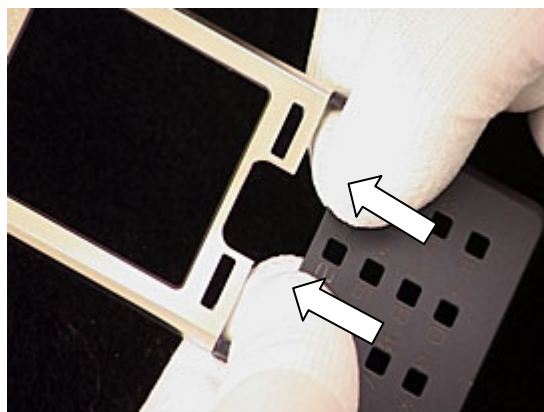


Use your fingers and press for 10 seconds.



Use your fingers and press for 10 seconds.

*Follow the 4.1.8 – 4.1.9 Reassembly instructions!*



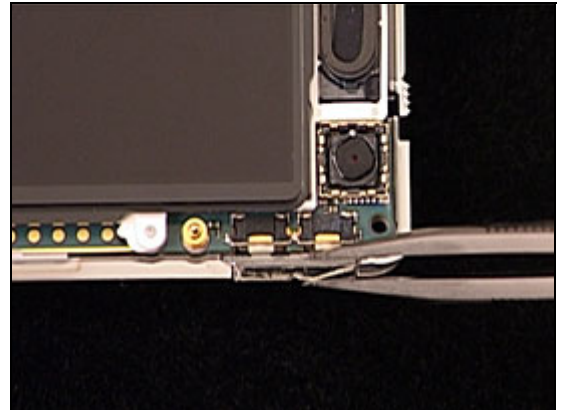


## 3.18 Volume Key

### REMOVAL

*Follow the 2.1.1 – 2.1.2 Disassembly instructions!*

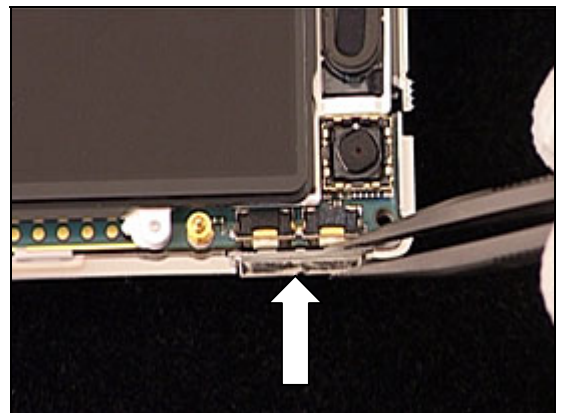
Use tweezers to remove the Volume key.



### INSTALLATION

Use tweezers to position the Volume key.

*Follow the 4.1.8 – 4.1.9 Reassembly instructions!*

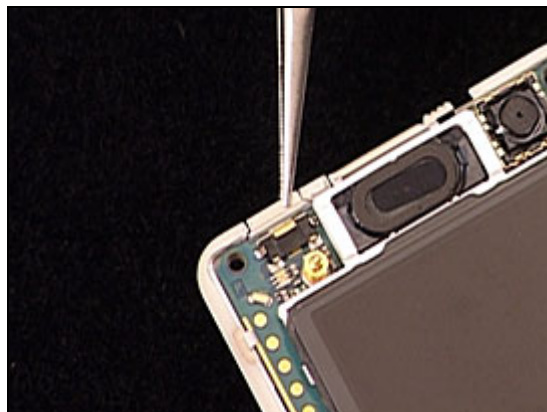


## 3.19 On/Off Key

### REMOVAL

*Follow the 2.1.1 – 2.1.2 Disassembly instructions!*

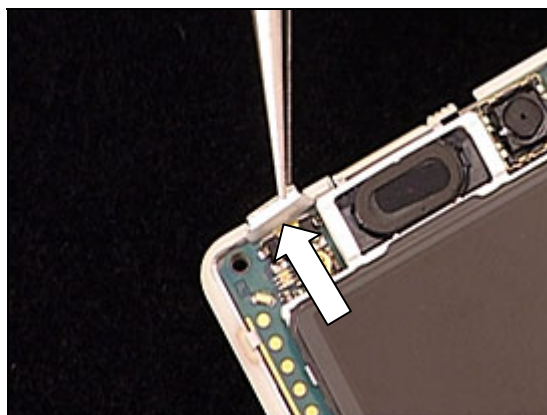
Use tweezers to remove the On/Off key.



### INSTALLATION

Use tweezers to position the On/Off key.

*Follow the 4.1.8 – 4.1.9 Reassembly instructions!*





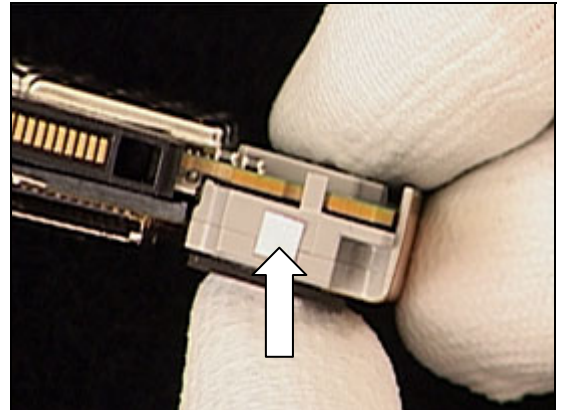
## 3.20 Liquid Indicator

### INSPECTION

There is one Liquid Indicator located at the position of the arrow

To get access to and to inspect the indicators:

*Follow 2.1.1 – 2.1.5 Disassembly instructions!*



### REMOVAL

Remove the activated Liquid Indicator with the dentist hook and the tweezers.

### INSTALLATION

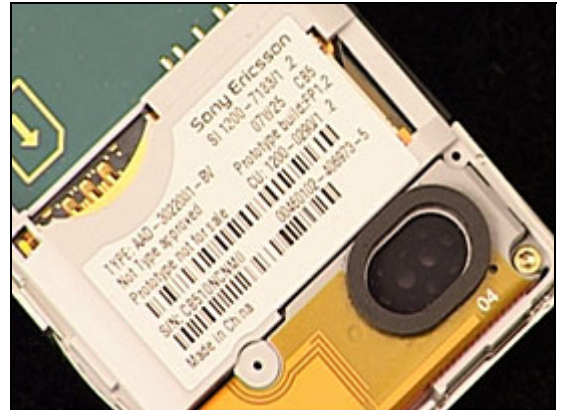
Attach the new *Liquid Indicator* with the tweezers and the dentist hook.

*Follow the 4.1.5 – 4.1.9 Reassembly instructions!*

## 3.21 KRH Label

*Follow the 2.1.1 Disassembly instructions!*

- Read the old label and/or write the information into the “Label make” program before removal
- Note the position of the label before removal
- Heat up the label by using hot air, if needed
- Carefully remove the label without causing scratches
- If there still are residues, clean the surface with isopropyl alcohol



- Check that the proper label format is loaded in the Zebra printer
- Write a new label by using the program “Label make” and check that the printing is OK
- Take the new label and place it onto the frame as in the adjacent picture

**ONE LABEL ONLY IS ALLOWED!**

*Follow the 4.1.9 Reassembly instructions!*

## 3.22 Plug (External Antenna)

*Follow the 2.1.1 Disassembly instructions!*

### REMOVAL

Use a dentist hook to remove the Plug (External antenna).



### INSTALLATION

Use tweezers to position the Plug (External antenna).

*Follow the 4.1.9 Reassembly instructions!*

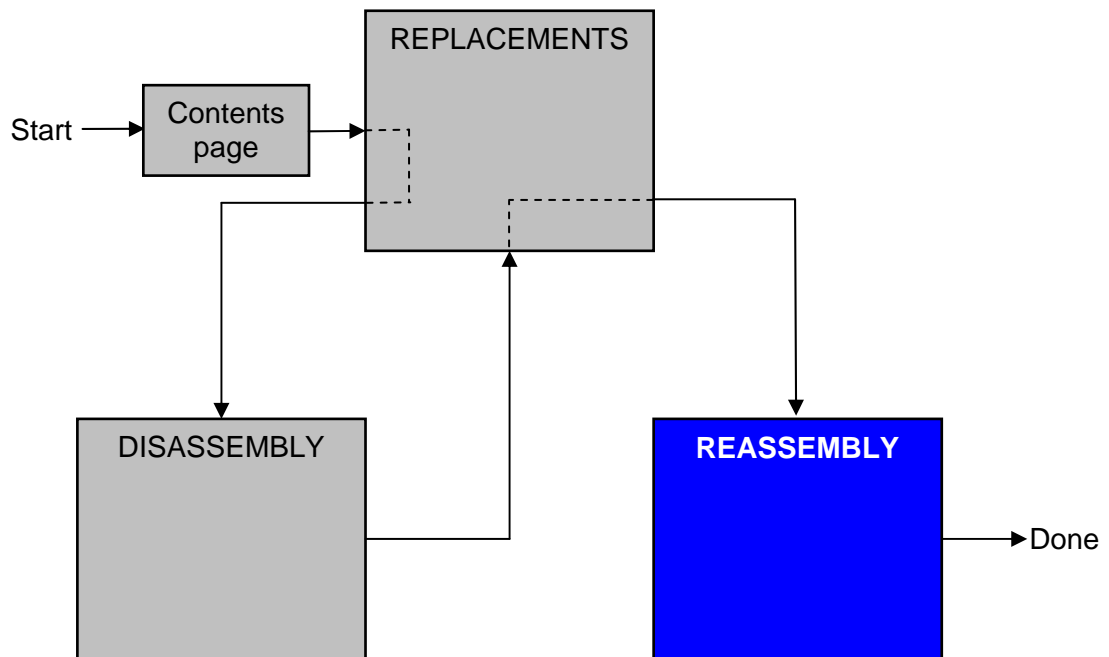






## 4 Reassembly

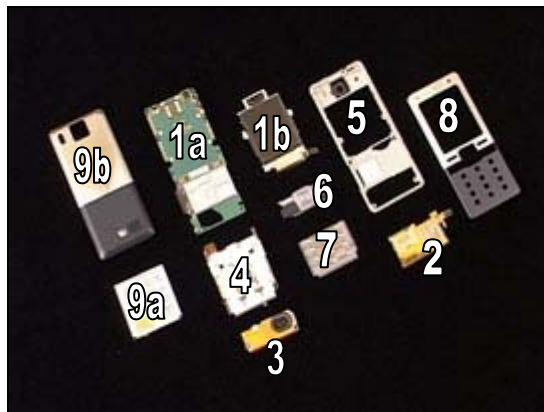
After replacing a part being listed in Replacements, the instruction of that section usually ends by directing you to this Reassembly section with a specification of the instructions you have to carry out in order to reassemble the phone.



## 4.1 Overview

The reassembly is done in the following order:

1. PBA (a) & Display (b)
2. Holder M2 and SIM assy
3. Loudspeaker
4. Keyfoil complete
5. Frame assembly
6. Navigation keypad
7. Keyboard Universal Numeric
8. Front Cover
9. Battery (a) & Cover rear assembly (b)



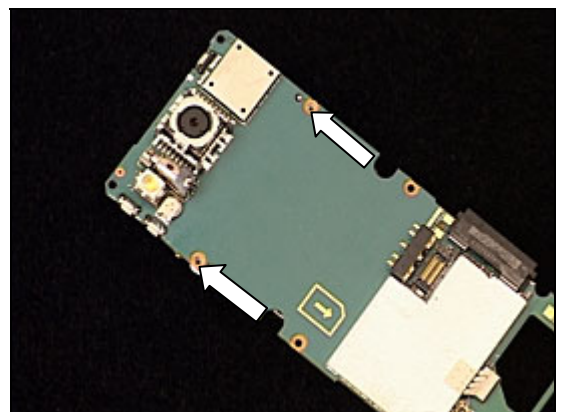
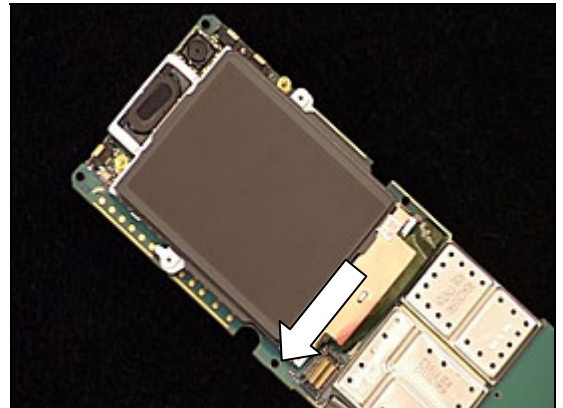
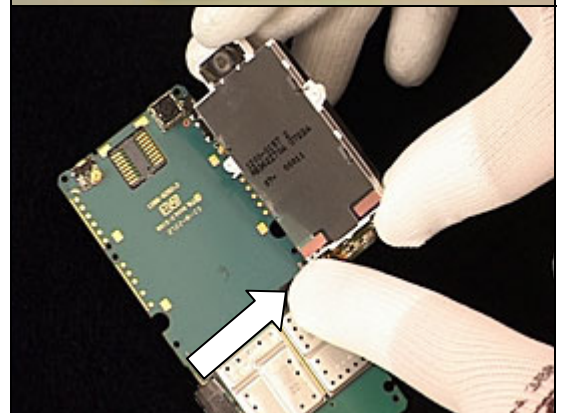
### 4.1.1 PBA & Display

**Note!** Before mounting the Display fold the copper tape without using sharp instruments.  
Make sure that it is folded 180 degrees.

Plug the LCD flex film into the BtB connector on the PBA with your fingers.

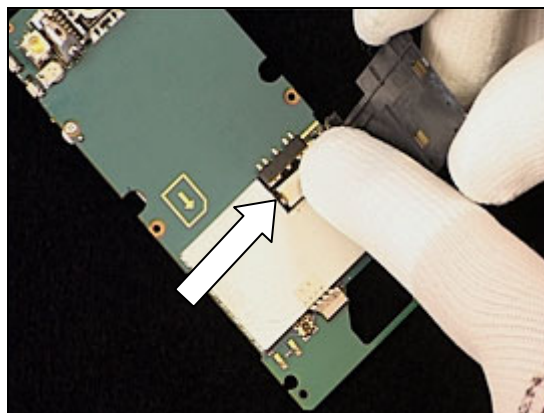
Fold down the Display over the PBA.

Install two silver screws with torque screwdriver at 11 Ncm with a JCIS.

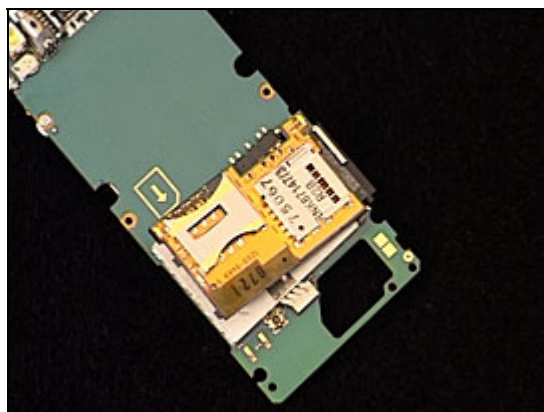


### 4.1.2 Holder M2 and SIM assy

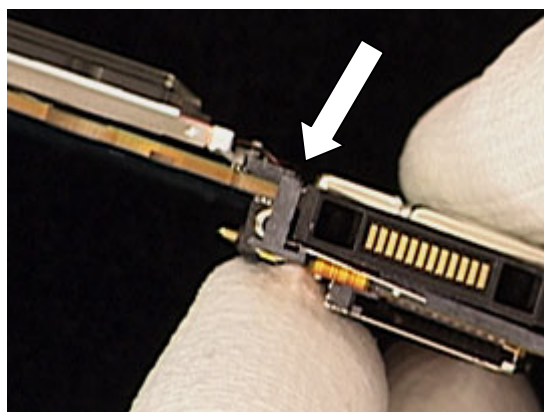
Plug the Holder flex film into the BtB connector on the PBA with your fingers.



Fold down the Holder over the PBA.

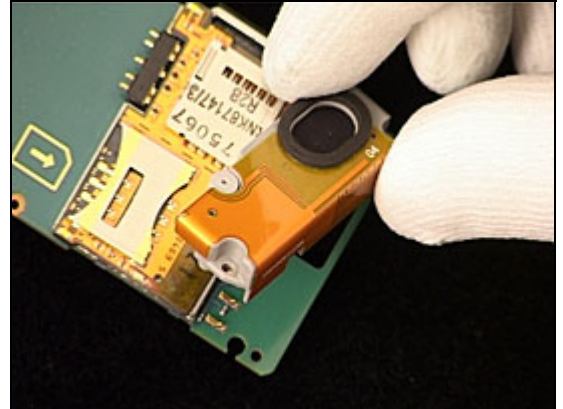


Snap the latch of the Holder M2 and SIM assy.

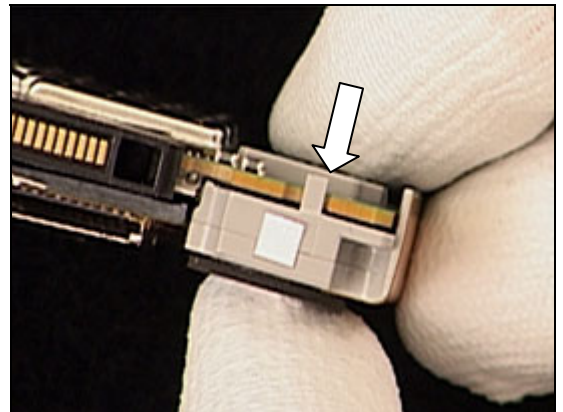


### **4.1.3 Loudspeaker**

Position the Loudspeaker on the PBA with your fingers.

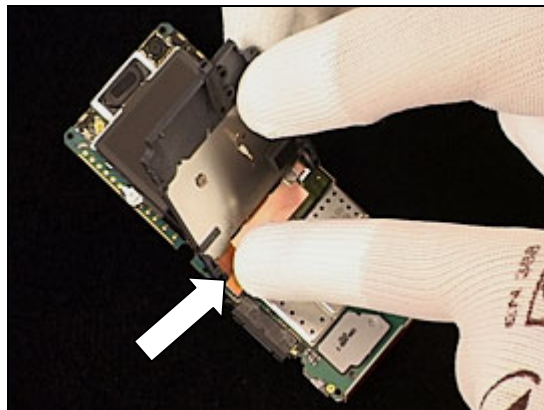


Snap the latch of the Loudspeaker.



## 4.1.4 Keyfoil Complete

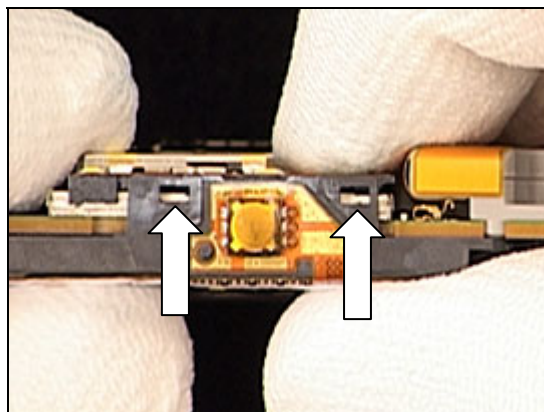
Plug the Keyfoil complete flex film into the BtB connector on the PBA with your fingers.



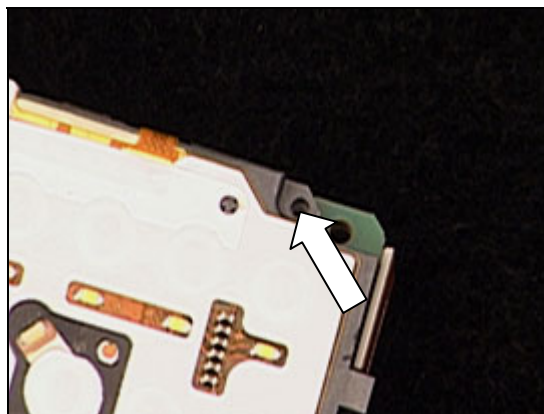
Fold down the Keyfoil complete over the PBA.



Snap the latch of the Key foil complete.



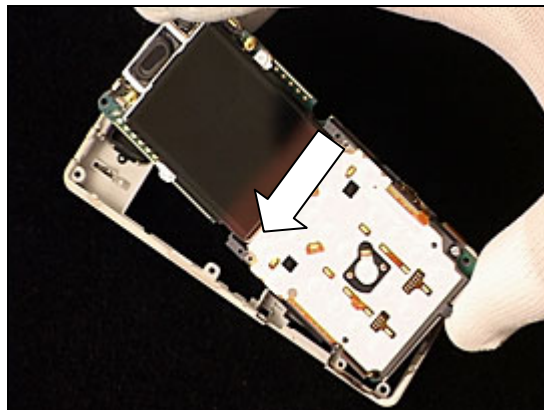
Install one silver screw with torque screwdriver at 11 Ncm with a JCIS.





## 4.1.5 Frame assembly

Insert the PBA into the Frame assembly.



Use your fingers to snap the PBA and Frame assembly together.

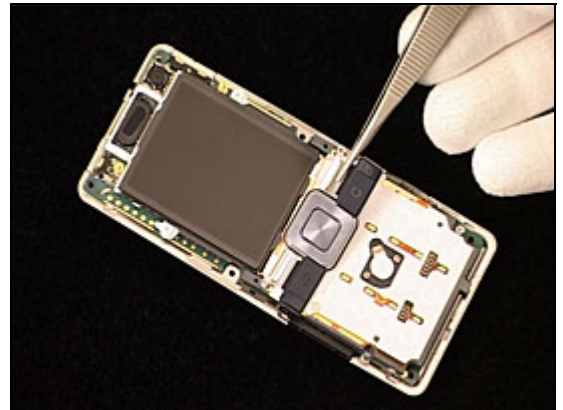


Install one silver screw with torque screwdriver at 11 Ncm with a JCIS.



## **4.1.6 Navigation keypad**

Use tweezers to position the Navigation keypad.



## **4.1.7 Keyboard Universal Numeric**

Use tweezers to position the Keyboard Universal Numeric.





## 4.1.8 Front Cover

Use your fingers to position the Front Cover.



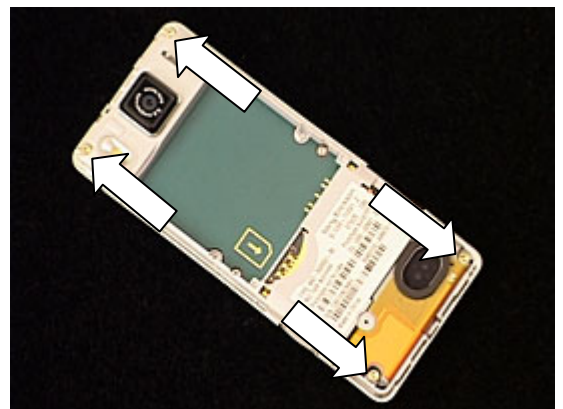
Use your fingers to snap the phone together.



Install four silver screws with torque screwdriver at 11 Ncm with a JCIS.



Install four golden screws with torque screwdriver at 17 Ncm with a T6 bit.



## 4.1.9 Battery & Cover rear Assembly

Insert the contact end of the battery into the cavity.



Press the battery down in the cavity.



Position the battery cover with bottom first.



Use your fingers to snap the Cover rear.





## 5 Revision history

<b>Rev.</b>	<b>Date</b>	<b>Changes / Comments</b>
A	2007-08-16	Initial release
2	2007-12-19	Added new picture in chapter 4.1.1