

# **NOKIA**

## **X5-00**

### **Service Manual**

### **Level 1&2**

	<p><b>Transceiver characteristics</b></p> <p><b>Modes:</b></p> <p>TD-SCDMA : 2.0G</p> <p>GSM: 900/1800/1900MHz, EDGE,HSDPA</p> <p><b>Main Display:</b></p> <p>2.4"</p> <p>240*320</p> <p>16 million colors</p> <p>QVGA</p> <p><b>Operating System:</b></p> <p>Series 60</p> <p><b>Connectors:</b></p> <p>Micro-USB connector</p> <p>Audio jack</p>
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	DC jack		
	<b>Transceiver with BL-4C 860mAh Li-Ion battery pack</b>		
	Talk time	Standby time	Note
	250 min (TD-SCDMA) 200 min (GSM) 150 min (VT)	210 hrs (TD-SCDMA) 200 hrs (GSM)	Depends on network parameters



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## Amendment record sheet

Amendment No	Date	Inserted by	Comments
Version 0.1	1/2010	Fu Qian	

The purpose of this document is to guide technicians of Nokia service levels 1 and 2 workshop to carry out services to Nokia products. This Service Manual is Company confidential and to be used by authorized Nokia service suppliers. Nokia also provides other guidance documents (e.g. Service Bulletins) for service suppliers, and please regularly follow them and comply with the given instructions.

While every endeavor has been made to ensure the accuracy of this document, some errors may exist. If any errors are found or if you have further suggestions, please notify Nokia in writing by sending letters or mails to the following:

**Nokia Care Academy**

<mailto:Service.Manuals@nokia.com>

Please keep in mind that this documentation is continuously being updated, and watch out for the newest version.





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The availability of particular products may vary by region.

### **IMPORTANT**

This document is intended for use by qualified service personnel only.

## **Warnings and cautions**

Please refer to the phone's user guide for instructions relating to operation, care and maintenance including important safety information. Note also the following:

### **WARNINGS**

- CARE MUST BE TAKEN ON INSTALLATION IN VEHICLES FITTED WITH ELECTRONIC ENGINE MANAGEMENT SYSTEMS AND ANTI-SKID BRAKING SYSTEMS. UNDER CERTAIN

10

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FAULT CONDITIONS, EMITTED RF ENERGY CAN AFFECT THEIR OPERATION. IF NECESSARY, CONSULT THE VEHICLE DEALER/MANUFACTURER TO DETERMINE THE IMMUNITY OF VEHICLE ELECTRONIC SYSTEMS TO RF ENERGY.

- THE HANDPORTABLE TELEPHONE MUST NOT BE OPERATED IN AREAS LIKELY TO CONTAIN POTENTIALLY EXPLOSIVE ATMOSPHERES, EG PETROL STATIONS (SERVICE STATIONS), BLASTING AREAS ETC.
- OPERATION OF ANY RADIO TRANSMITTING EQUIPMENT, INCLUDING CELLULAR TELEPHONES, MAY INTERFERE WITH THE FUNCTIONALITY OF INADEQUATELY PROTECTED MEDICAL DEVICES. CONSULT A PHYSICIAN OR THE MANUFACTURER OF THE MEDICAL DEVICE IF YOU HAVE ANY QUESTIONS. OTHER ELECTRONIC EQUIPMENT MAY ALSO BE SUBJECT TO INTERFERENCE.

## **CAUTIONS**

- Servicing and alignment must be undertaken by qualified personnel only.
- Ensure that all work is carried out at in anti-static workstation and that an anti-static wrist strap is worn.
- Use only approved components as specified in the parts list.
- Ensure that all components, modules screws and insulators are correctly re-fitted after servicing and alignment.

- Ensure that all cables and wires are correctly repositioned.

## For your safety

### **QUALIFIED SERVICE**

Only qualified personnel may install or repair mobile terminal equipment.

### **ACCESSORIES AND BATTERIES**

Use only approved accessories and batteries. Do not connect incompatible products.

### **CONNECTING TO OTHER DEVICES**

When connecting to any other device, read its user's guide for detailed safety instructions. Do not connect incompatible products.

## ESD production



Nokia requires that product service points have sufficient ESD protection (against static electricity) when servicing products.

Any product of which the covers are removed must be handled

with ESD protection. The SIM card can be replaced without ESD protection if the product is otherwise ready for use.

To replace the covers ESD protection must be applied.

All electronic parts of the product are susceptible to ESD. Resistors, too, can be damaged by static electricity discharge.

All ESD sensitive parts must be packed in metallized protective bags during shipping and handling outside any ESD Protected Area (EPA).

Every repair action involving opening the product or handling the product components must be done under ESD protection.

ESD protected spare part packages MUST NOT be opened/closed out of an ESD Protected Area.

For more information and local requirements about ESD protection and ESD Protected Area, contact your local Nokia After Market Services representative.

## Care and maintenance

This product is of superior design and craftsmanship and should be treated with care.

The suggestions below will help you to fulfill any warranty obligations and to enjoy this product for many years.

Keep the phone and all its parts and accessories out of the reach of small children.

Keep the phone dry. Precipitation, humidity and all types of liquids or moisture can contain minerals that will corrode electronic circuits.

Do not use or store the phone in dusty, dirty areas. Its moving parts can be damaged.

Do not store the phone in hot areas. High temperatures can shorten the life of electronic devices, damage batteries, and warp or melt certain plastics.

Do not store the phone in cold areas. When it warms up (to its normal temperature),

moisture can form inside, which may damage electronic circuit boards.

Do not drop, knock or shake the phone. Rough handling can break internal circuit boards.

Do not use harsh chemicals, cleaning solvents, or strong detergents to clean the phone.

Do not paint the phone. Paint can clog the moving parts and prevent proper operation.

Use only the supplied or an approved replacement antenna. Unauthorized antennas, modifications or attachments could damage the phone and may violate regulations governing radio devices.

All of the above suggestions apply equally to the product, battery, charger or any accessory.



## Battery information

Note that a new battery's full performance is achieved only after two or three complete charge and discharge cycles!

The battery can be charged and discharged hundreds of times but it will eventually wear out. When the operating time (talk-time and standby time) is noticeably shorter than normal, it is time to buy a new battery.

Use only batteries approved by the phone manufacturer and recharge the battery only with the chargers approved by the manufacturer. Unplug the charger when not in use.

Do not leave the battery connected to a charger for longer than a week, since overcharging may shorten its lifetime. If left unused a fully charged battery will

discharge itself over time.

Temperature extremes can affect the ability of your battery to charge.

For good operation times with Ni-Cd/NiMH batteries, discharge the battery from time to time by leaving the product switched on until it turns itself off (or by using the battery discharge facility of any approved accessory available for the product). Do not attempt to discharge the battery by any other means.

Use the battery only for its intended purpose.

Never use any charger or battery that is damaged.

Do not short-circuit the battery. Accidental short-circuiting can occur when a metallic object (coin, clip or pen) causes direct connection of the + and – terminals of the battery (metal strips on the battery) for example when you carry a spare battery in your pocket or purse. Short-circuiting the terminals may damage the battery or the connecting object.

Leaving the battery in hot or cold places, such as in a closed car in summer or winter conditions, will reduce the capacity and lifetime of the battery. Always try to keep the battery between 15°C and 25°C (59°F and 77°F). A phone with a hot or cold battery may temporarily not work, even when the battery is fully charged. Batteries' performance is particularly limited in temperatures well below freezing.

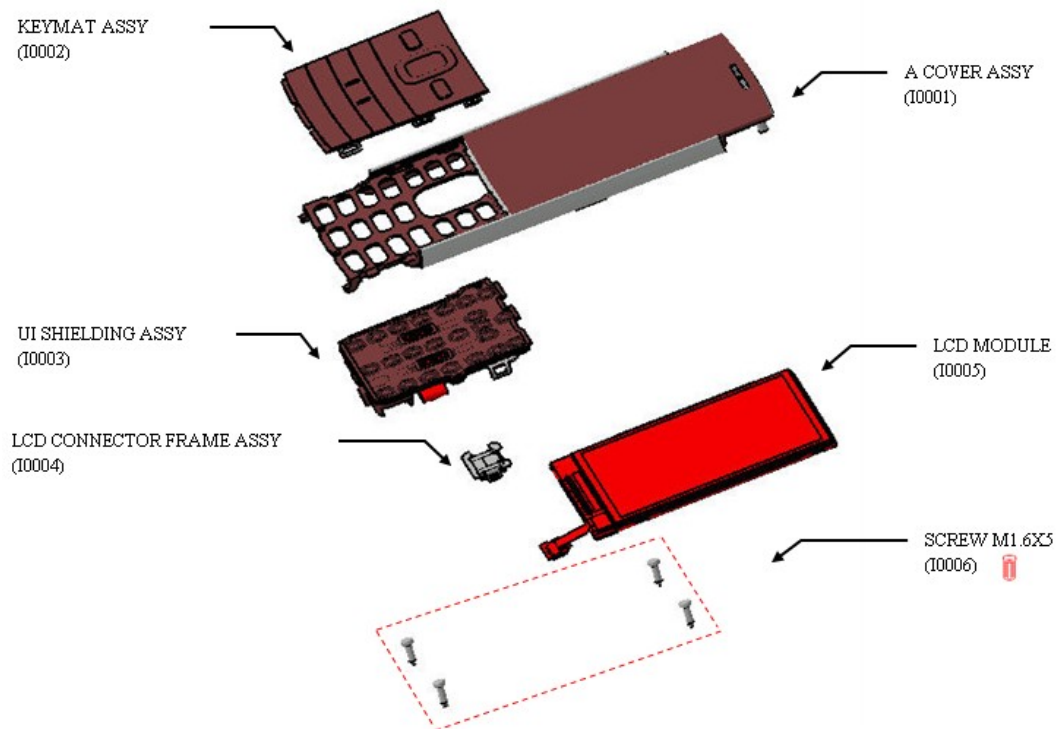
Do not dispose of batteries in a fire!

Dispose of batteries according to local regulations (e.g. recycling). Do not dispose as household waste.

## Exploded view

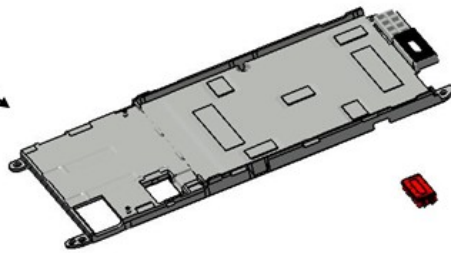
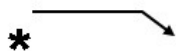
Refer to the image below for the recommended ecologically sound disposal of components. Colorized components show the different categories.

Refer to the corresponding ITEM/CIRCUIT REF in the Spare Parts Service Bulletins on the Nokia Online (NOL) website.



**A1=C COVER ASSY**  
(10007 - 10008)

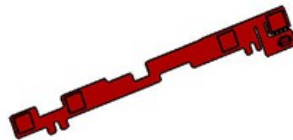
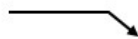
SHIELDING  
(10007) \*



EARPIECE WITH ADHESIVE  
(10008)



SIDE KEY FPCA  
(10009)

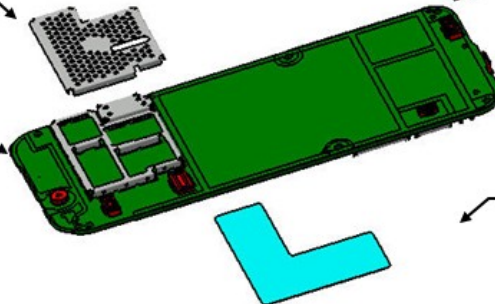


**A2=LIGHT SWAP**  
(10010 - 10014)

TD RF SHIELDING COVER  
(10012)



LIGHT SWAP PWB  
(10013) \*



2ND CAMERA RUBBER  
(10010)



2ND CAMERA PCBA WITH FRAME  
(10011)



PRODUCT LABEL  
(10014)



ANTENNA MODULE ASSY  
(10016)

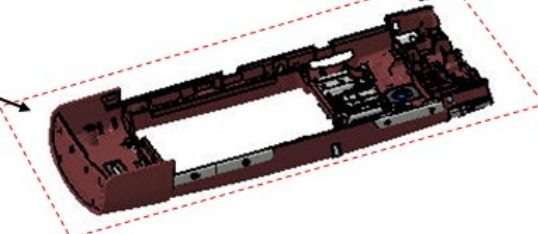


5M CAMERA MODULE  
(10015)



**A3=D COVER ASSY WITH  
FLASH LED PCBA**  
(10017 - 10020)

D Cover  
(10020) \*



AUDIO JACK  
(10017)

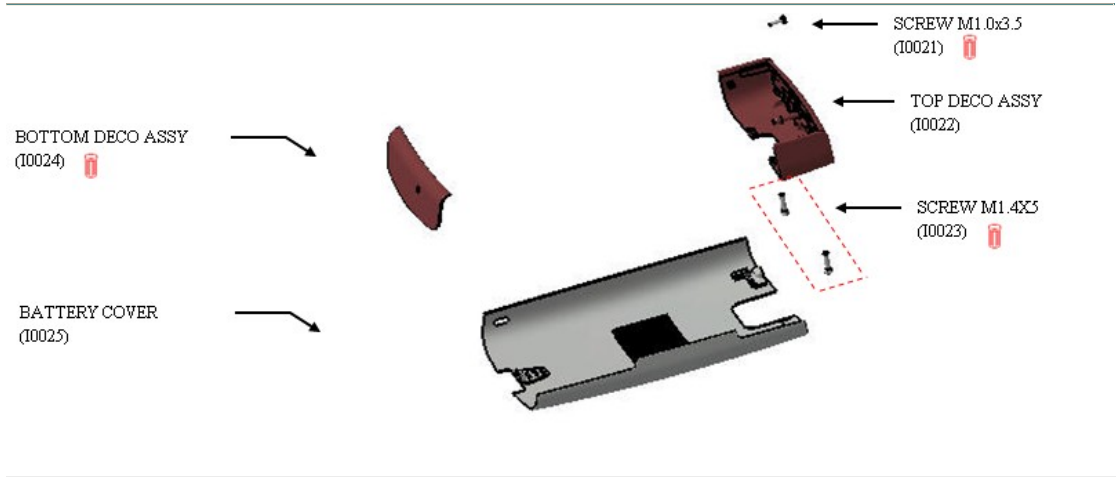


DC JACK  
(10018)








Flash LED PWB  
(10019) \*






A1=SLIDE FRONT ASM  
 A2=LIGHT SWAP PACKAGE  
 A3=base\_rear\_hsg\_asm  
 A4=td\_gsm\_antenna\_frame\_asm

PLASTIC	METAL	ELECTRO	PWB	* =Only available as assembly  =These parts can not be reused after removal
				

## Service devices

PICTURE	DESCRIPTION	
 <p>NOKIA Standard Toolkit V2</p>	V2	Nokia Standard toolkit
	SS-88	Camera removal tool
 <p>FLS-5</p>	FLS-5	<p>Dongle and flash device incorporated into one package, developed specifically for POS use.</p>

 <p>CA-101 100cm</p>	CA-101	Data service cable
	CA-100C	Charging Cable
	WH-102	Headset
	<p>This cable provides a connection from the USB port of the personal computer or notebook to the micro USB connector of the phone and allows Point of Sale (POS) locations to flash the mobile terminal.</p>	
	<p>This is used to disassemble DC jack</p>	
	<p>This is used to disassemble audio jack</p>	

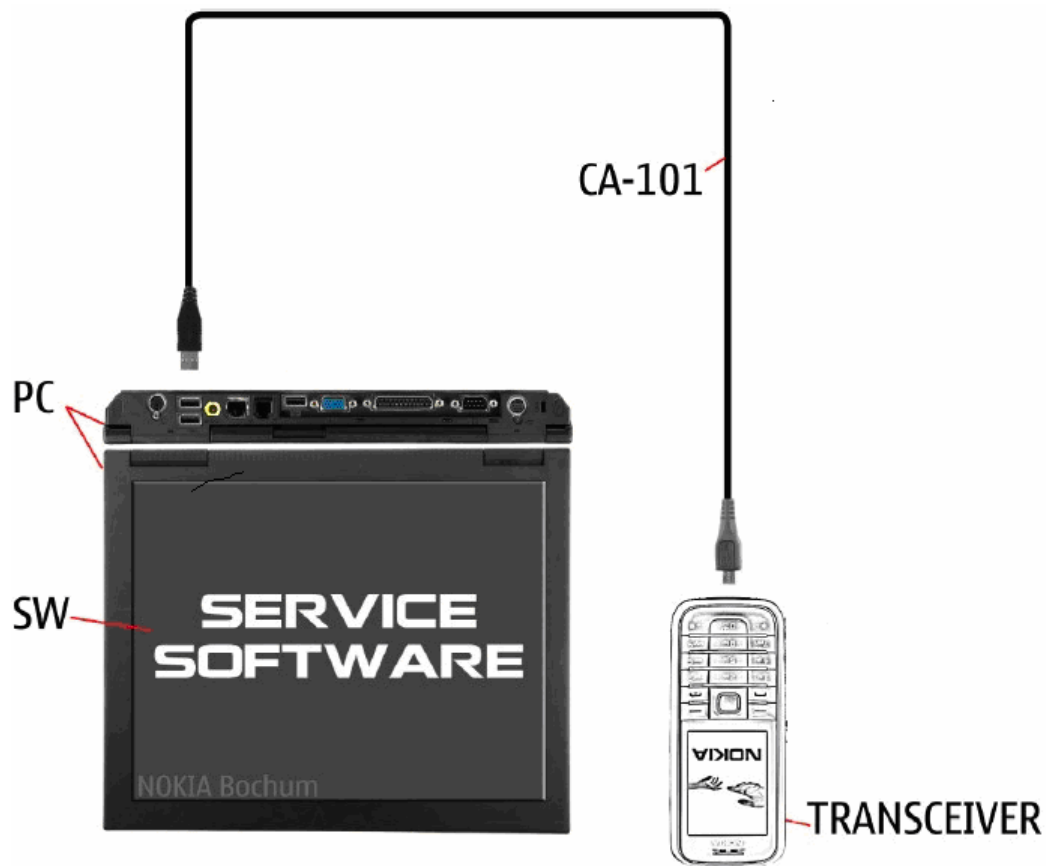


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## Software update

### Point of Sales Flashing

Check always for the latest version of flash software, which is available on Nokia Online.



For instructions, refer to Care Suite User Guide.

## Disassembly instructions

1



2



Release BATTERY COVER and remove it in arrow direction.

3



Open USB Door.

4



Unscrew the cross-slot screw.

5



Use the SRT-6 to release the first clip of the TOP COVER.

6



Open the second clip on the opposite side of the TOP COVER.

7

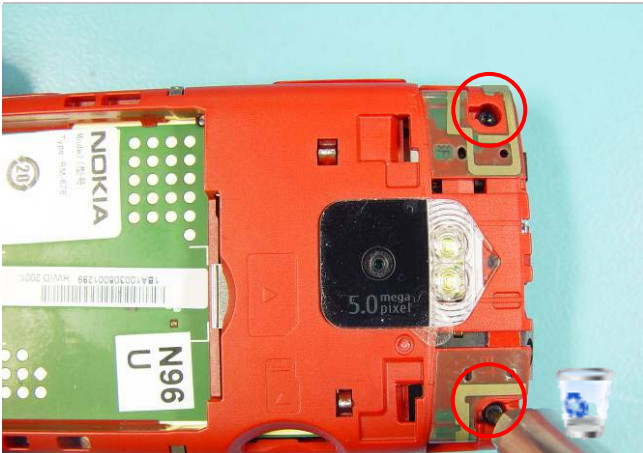


8



Remove the TOP COVER in arrow direction as shown.

9



Unscrew the two 4IP torx plus screws.

10



There are two dig hole for A Cover disassembly

11



Release the first clip of the A-COVER with SS-93.

12



Release the second clip.

13



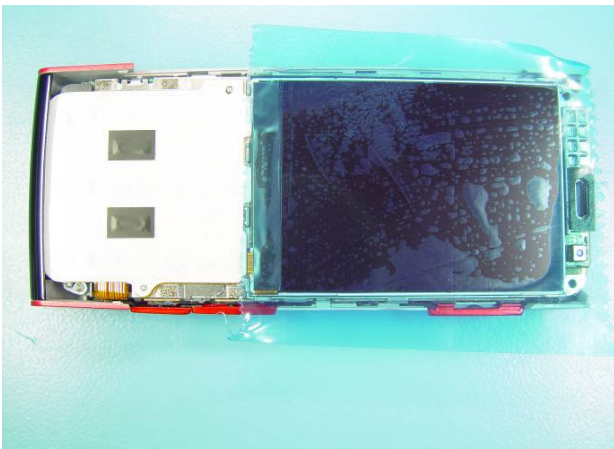
Push the A cover Assy to another side to release the clip on the other side

14



Remove A-COVER in arrow direction.

15



Protect the LCD with a protection foil.

16



Take the A-COVER and release the first of the six clips with an SS-93.

17



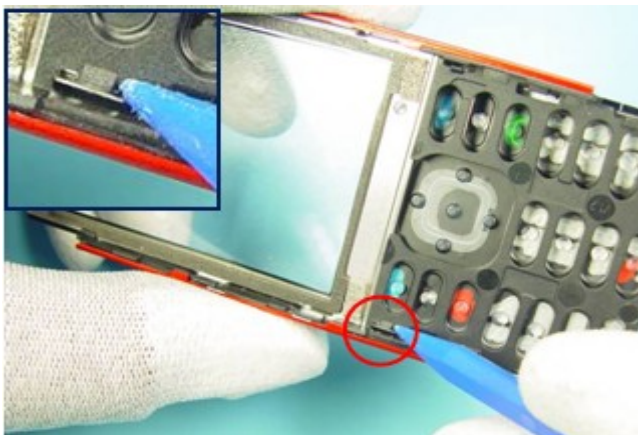
Then the second clip.

18



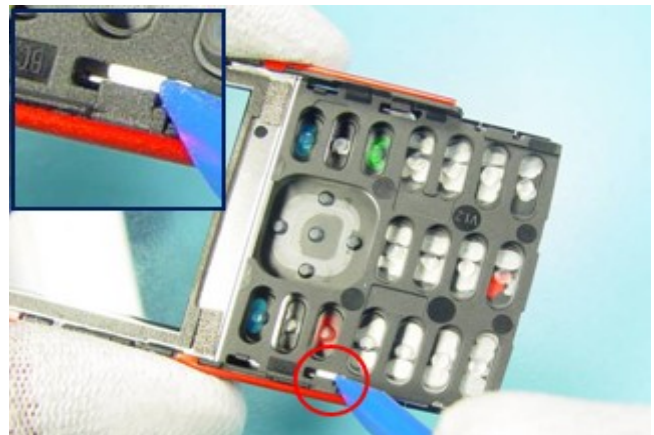
The third clip.

19



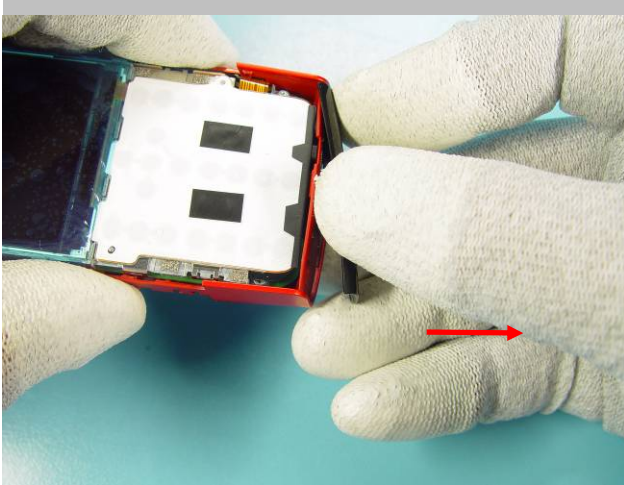
The fourth clip.

20



The fifth clip.

21



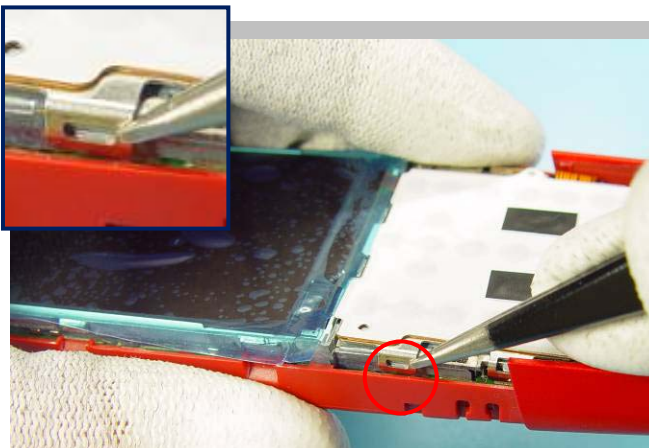
Remove the Bottom Deco in arrow direction.

22



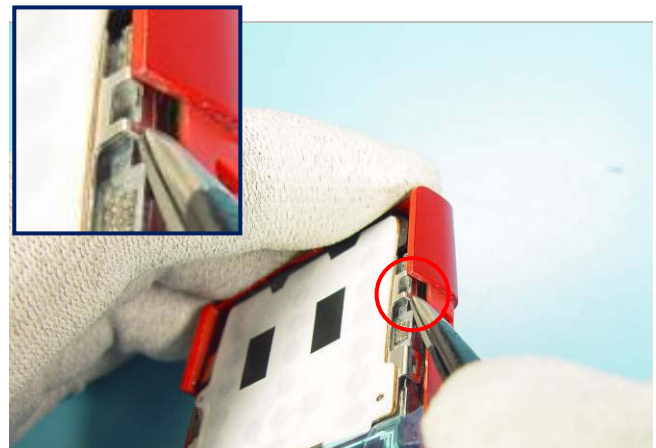
Remove adhesive residues from D-Cover.

23



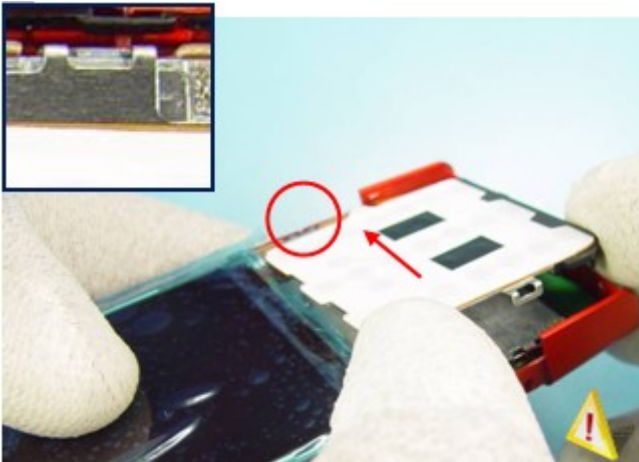
Use the tweezers to open the first clip of the UI SHIELDING

24



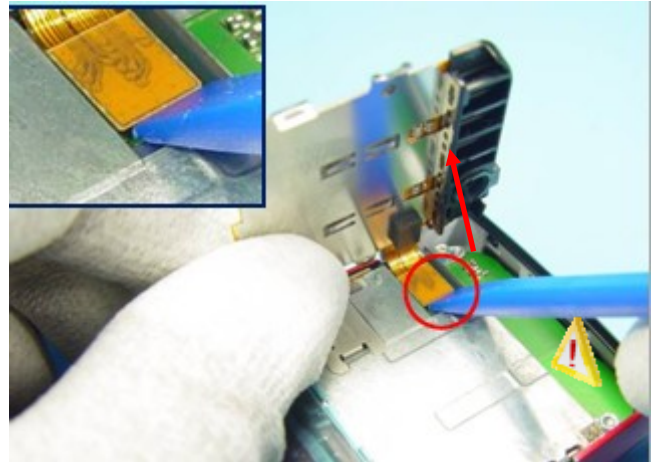
Open the second clip of the UI SHIELDING.

25



Push UI SHIELDING lightly in arrow direction and simultaneously lift up the UI SHIELDING.

26



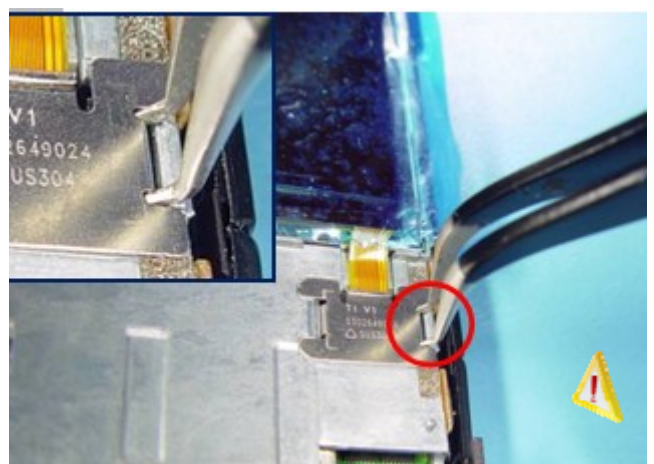
Release the UI FPC ASM connector with SS-93 carefully.

27



Remove the UI FPC ASM with tweezers carefully.

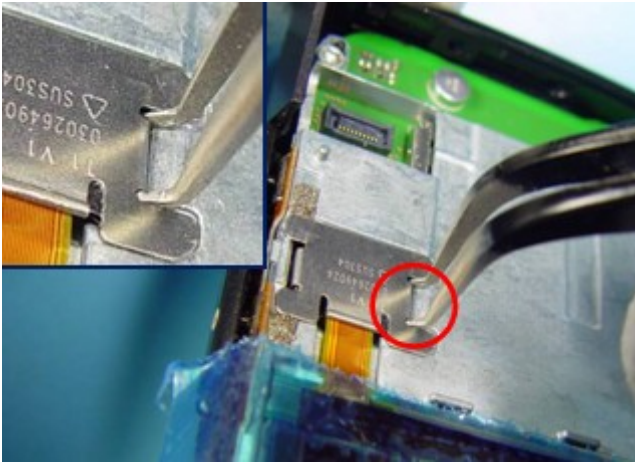
28



Lift up LCD CONNECTOR SHIELDING with an angled tweezers lightly on right-hand side.



29



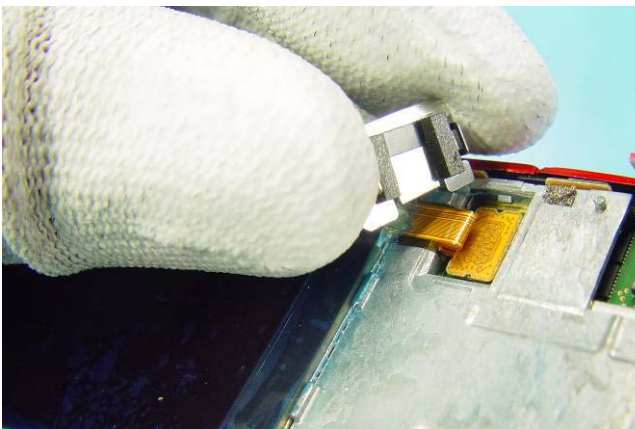
Then lift up LCD CONNECTOR SHIELDING with an angled tweezers on left-hand side

30



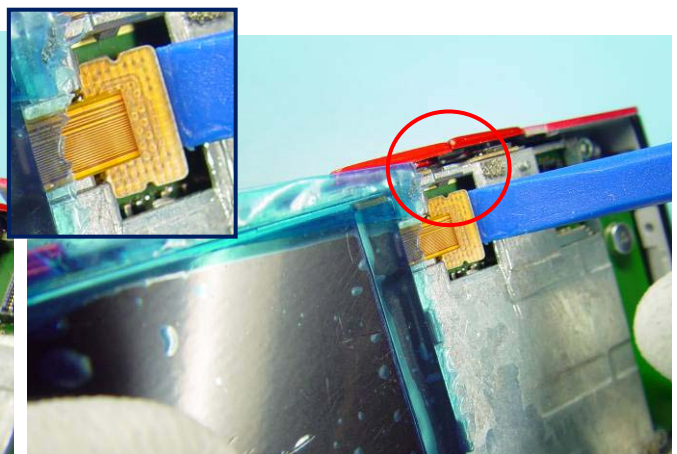
And remove the LCD CONNECTOR SHIELDING

31



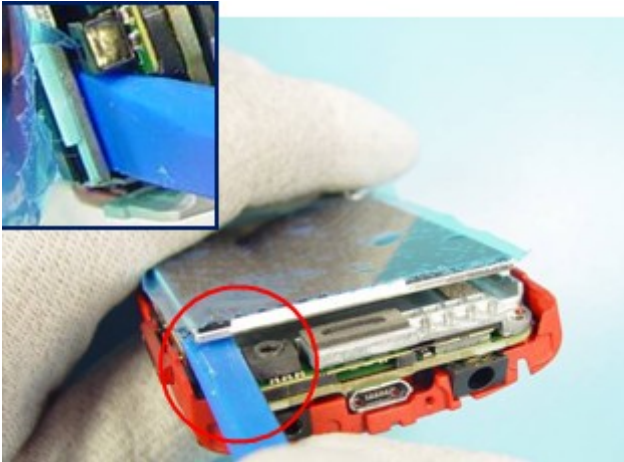
Remove the LCD CONNECTOR SHIELDING.

32



Open the connector of the LCD MODULE with an SS-93 tool.

33



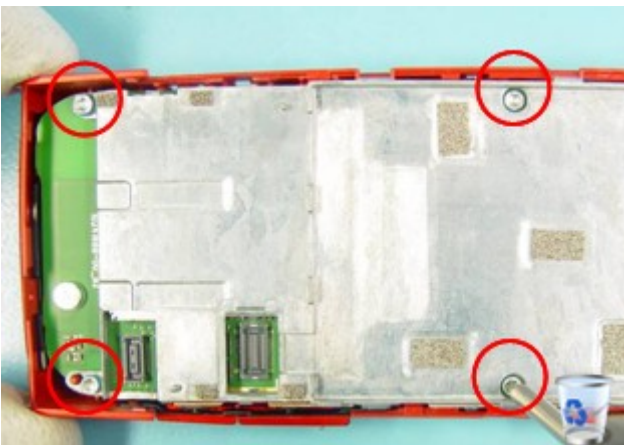
Use an SS-93 tool to lift up the LCD MODULE.

34



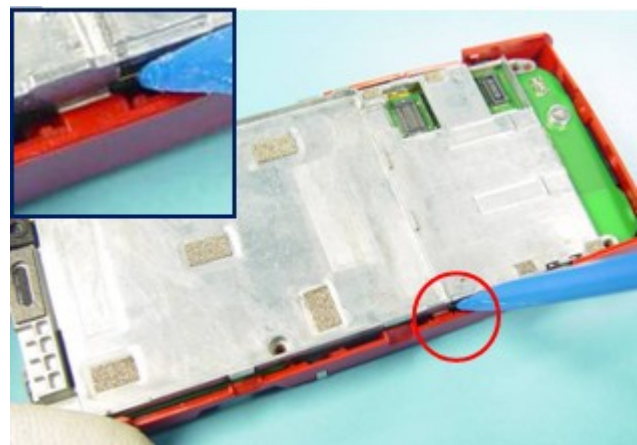
Remove the LCD MODULE.

35



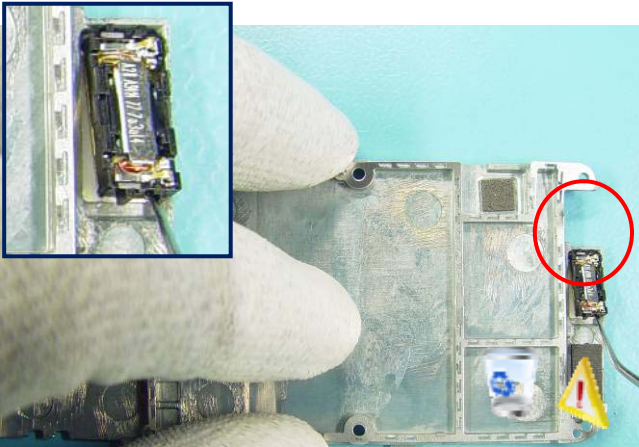
Unscrew the four 6IP torx plus screws.

36



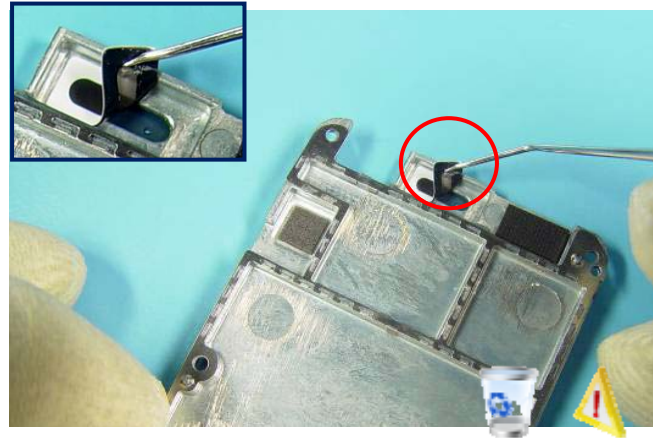
Use an SS-93 tool to release the SHIELDING and remove it.

37



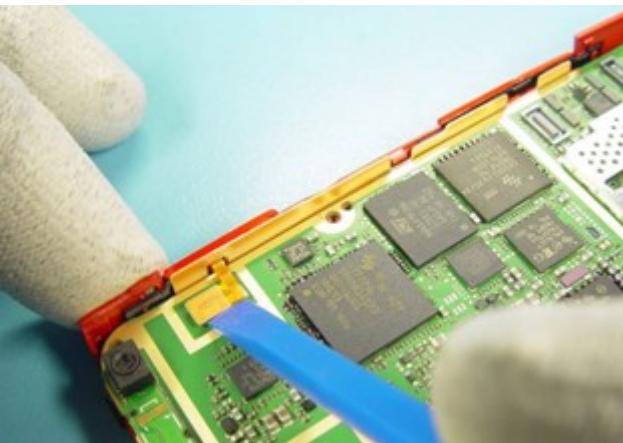
Use the dental tool to lift up the EARPIECE and remove it.

38



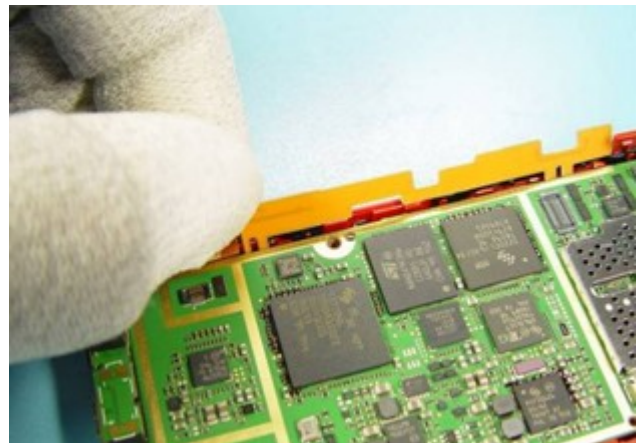
Lift up the adhesive and dust-net combination. Remove the adhesive and dust-net combination.

39



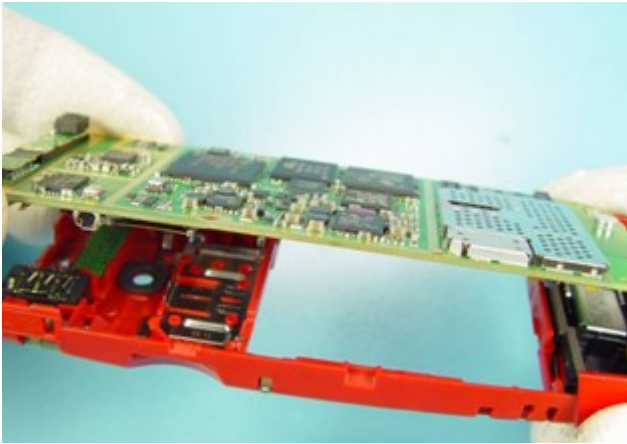
Open the connector of the SIDE KEY FLEX with an SS 93 tool.

40



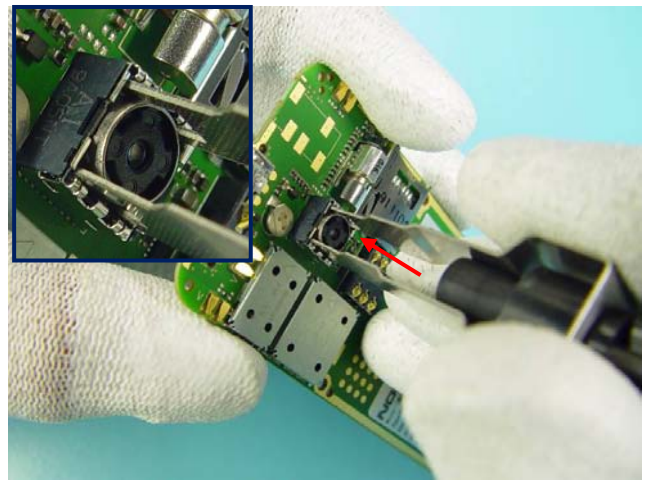
Remove the SIDE KEY FLEX.

41



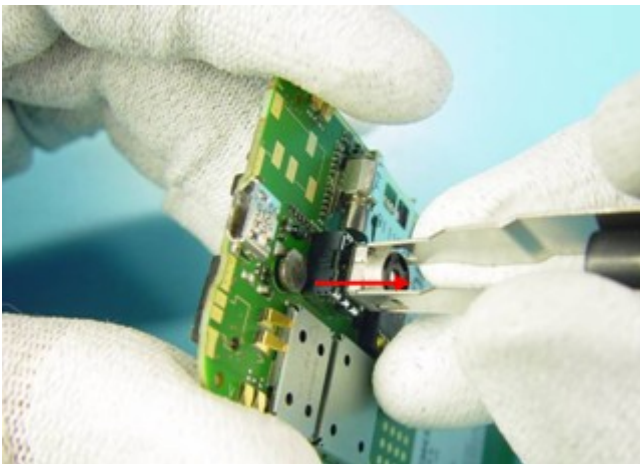
Lift up PWB and remove it in arrow direction.

42



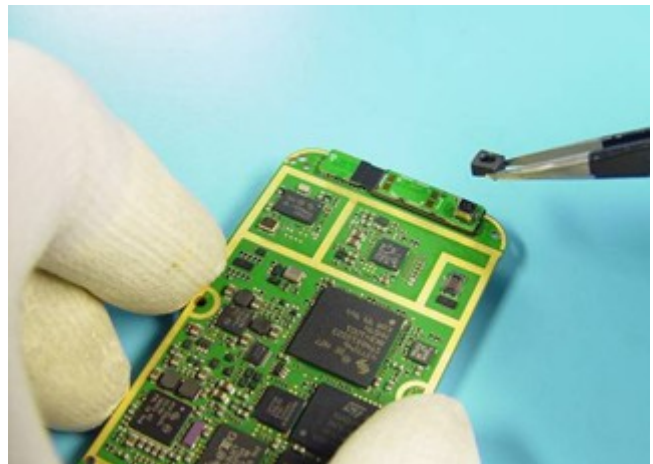
Use the SS-88 to disassemble the CAMERA.....

43



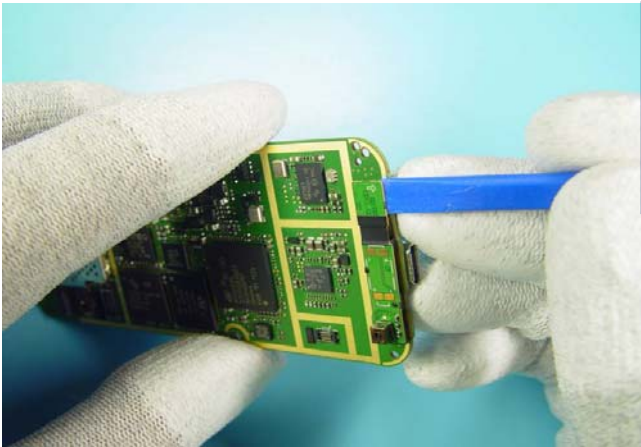
....out of the camera socket.

44



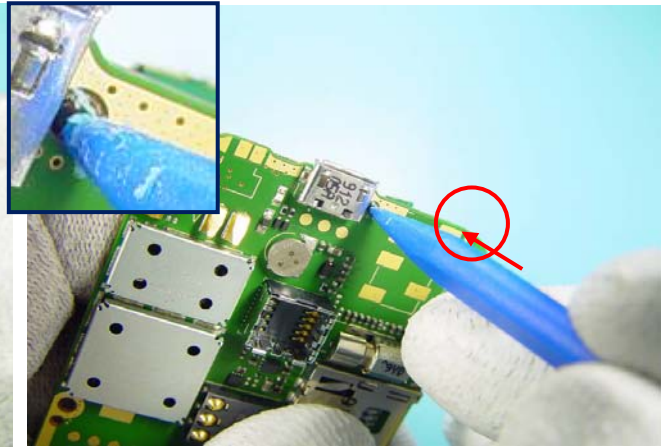
Remove the FRONT CAMERA RUBBER with a tweezers.

45



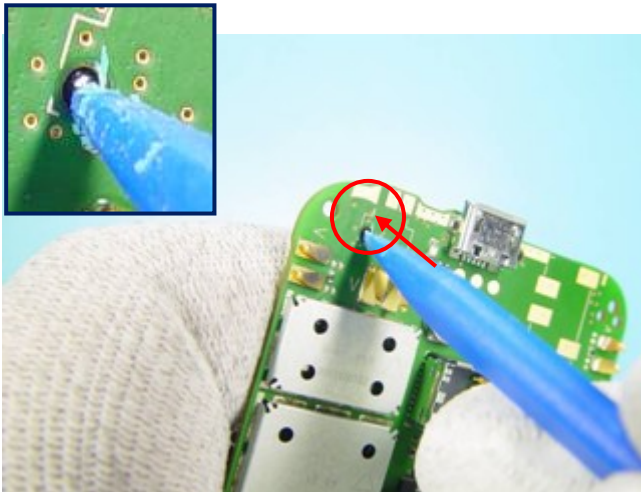
Open the connector of the FRONT CAMERA PWB with the SS-63.

46



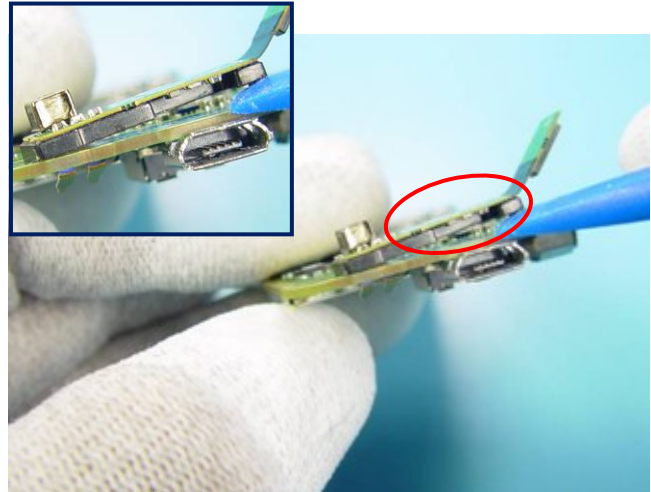
Use the peak of the SS-93 tool to release the first guiding pin by press it down as shown.

47



Do the same with the second guiding pin.

48



Lift up the FRONT CAMERA PWB with an SS-93 tool and remove it.

49



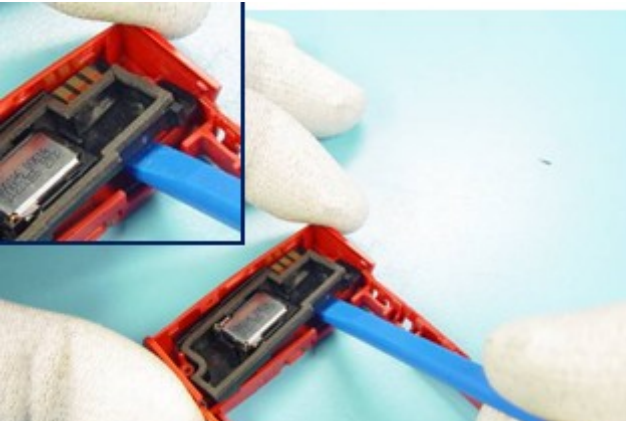
Release the AUDIO JACK with a plug and remove it.

50



Release the DC JACK with a plug and remove it.

51



Release the SECOND CAMERA PCBA connector.

52

**End of disassembling!**

End

**Note:** To assemble the mobile terminal, follow the “Disassembly Instructions” in reverse order.

## Assembly and disassembly hints

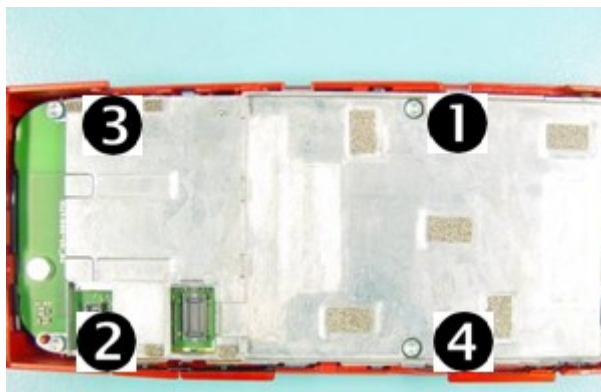
### Order for screw assembly



Torque: 4.5 Ncm



Torque: 14 Ncm

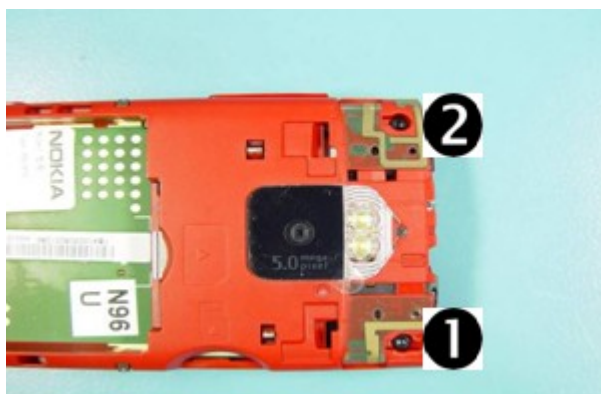


Torque: 14 Ncm

**Order for screw disassembly**

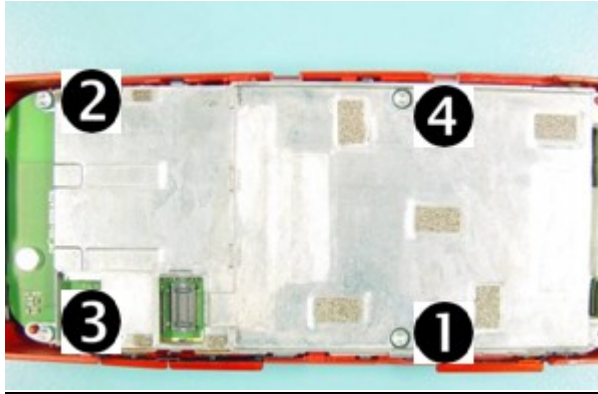


Torque: 4.5 Ncm



Torque: 14 Ncm





Torque: 14 Ncm