

## SERVICE MANUAL Level 1&2

# Nokia Oro C7-00s

(RM-749)



### Transceiver characteristics

#### Band

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

#### Display:

3.5-inch nHD resolution (640 x 360), OLED

#### Camera:

8 Mpix full focus camera, dual LED flash, 10x Digital zoom

#### Operating System:

Symbian Anna

#### Connections:

WCDMA DL 384 kbps HSDPA 10 Mbps; UL 384 kbps  
HSUPA 2 Mbps  
GSM GPRS class 33, GSM EGPRS class 33, DTM 11  
WLAN IEEE802.11 b/g/n with UPnP support  
USB 2.0 high-speed through micro USB connector  
Bluetooth wireless technology 2.1 + EDR and 3.0  
Nokia 3.5 mm AV connector for audio and TV

#### Transceiver with BL-5K battery pack

| Talk time                        | Standby                          |
|----------------------------------|----------------------------------|
| <b>GSM:</b><br>Up to 9.6 hours   | <b>GSM:</b><br>Up to 555 hours   |
| <b>WCDMA:</b><br>Up to 5.3 hours | <b>WCDMA:</b><br>Up to 656 hours |

#### Note:

Talk times are dependent on network parameters and phone settings

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## CHANGE HISTORY

| Status   | Version No. | Date       | Comments                                         |
|----------|-------------|------------|--------------------------------------------------|
| Approved | 1.0         | 11.05.2011 | First approved version                           |
| Approved | 2.0         | 06.06.2011 | Updated screw torque in Assembly hints picture 5 |

The purpose of this document is to help NOKIA service levels 1 and 2 workshop technicians to carry out service to NOKIA products. This Service Manual is to be used only by authorized NOKIA service suppliers, and the content of it is confidential. Please note that NOKIA provides also other guidance documents (e.g. Service Bulletins) for service suppliers, follow these regularly and comply with the given instructions.

While every endeavor has been made to ensure the accuracy of this document, some errors may exist. If you find any errors or if you have further suggestions, please notify NOKIA using the address below:

**Nokia Care Academy**  
[service.manuals@nokia.com](mailto:service.manuals@nokia.com)

Please keep in mind also that this documentation is continuously being updated and modified, so watch always 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.

## 2. 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:

### 2.1 Warnings

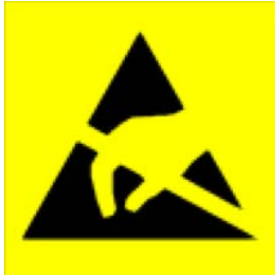
1. CARE MUST BE TAKEN ON INSTALLATION IN VEHICLES FITTED WITH ELECTRONIC ENGINE MANAGEMENT SYSTEMS AND ANTI-SKID BRAKING SYSTEMS. UNDER CERTAIN FAULT CONDITIONS, EMITTED RF ENERGY CAN AFFECT THEIR OPERATION. IF NECESSARY, CONSULT THE VEHICLE DEALER/MANUFACTURER TO DETERMINE THE IMMUNITY OF VEHICLE ELECTRONIC SYSTEMS TO RF ENERGY.
2. THE HANDPORTABLE TELEPHONE MUST NOT BE OPERATED IN AREAS LIKELY TO CONTAIN POTENTIALLY EXPLOSIVE ATMOSPHERES, EG PETROL STATIONS (SERVICE STATIONS), BLASTING AREAS ETC.
3. 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.

### 2.2 Cautions

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

### 3. ESD PROTECTION

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



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.

#### 4. CARE AND MAINTENANCE

This product is of superior design and craftsmanship and should be treated with care. The suggestions below will help you to fulfil 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. Unauthorised 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.

## 5. BATTERY INFORMATION

Note: 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 which 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. Shortcircuiting the terminals may damage the battery or the connecting object.

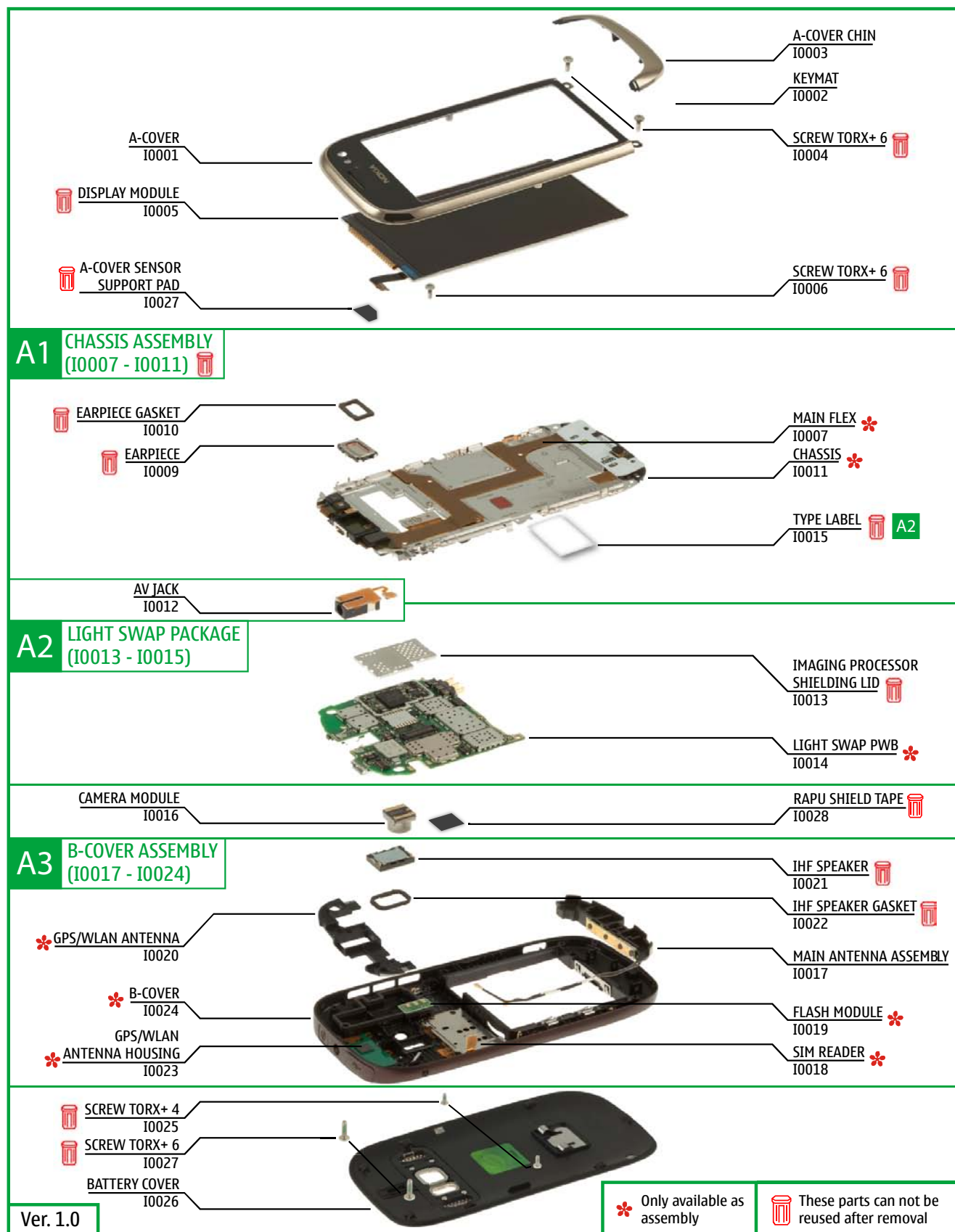
Leaving the battery in hot or cold places, such as in a closed car in summer or winter conditions, will reduce the capacity and lifetime of the battery. Always try to keep the battery between 15°C and 25°C (59°F and 77°F).

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 batteries in a fire! Dispose of batteries according to local regulations (e.g. recycling).

Do not dispose as household waste.

## 6. EXPLODED VIEW



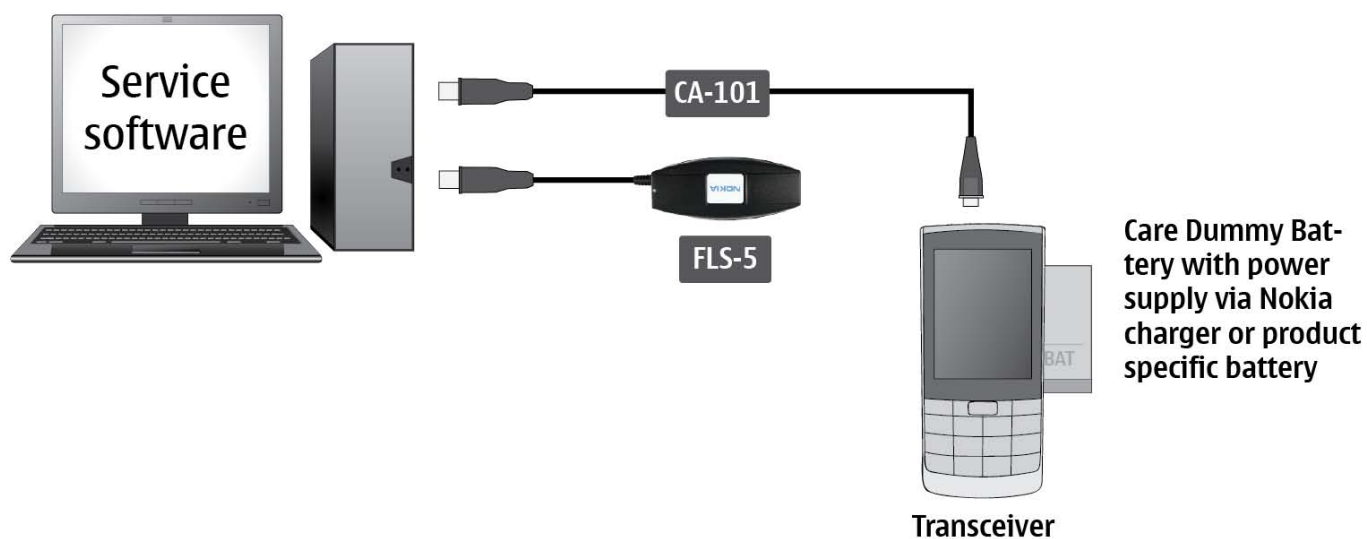
## 7. SERVICE DEVICES

|                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                              |                                                                                                                        |
|----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
|  <p>FLS-5</p> <p>FLS-5 Flash Device</p>                     |  <p>CA-101D Service Cable</p>                                                                                                                                                                                                                               |  <p>AC-10 Travel Charger</p>        |
|  <p>BL-5K Battery</p>                                      |  <p><b>Nokia Standard Toolkit (v2)</b><br/>For more information, refer to the Service Bulletin (SB-011) on Nokia Online. Supplier or manufacturer contacts for tool re-order can be found in “Recommended service equipment” document on Nokia Online.</p> |  <p>SS-210 Camera Removal Tool</p> |
|  <p>SS-231 RF Connector<br/>Disassembly/Assembly Tool</p> |  <p>SS-250 Display Removal Tool</p>                                                                                                                                                                                                                       |                                                                                                                        |

## 8. SOFTWARE UPDATE

### Flash concept (Point of Sale)

To use the FLS-5 Flash Dongle, follow the user guide inside the sales package. Please check always for the latest version of flash software, which is available on Nokia Online.



## 9. DISASSEMBLY INSTRUCTIONS



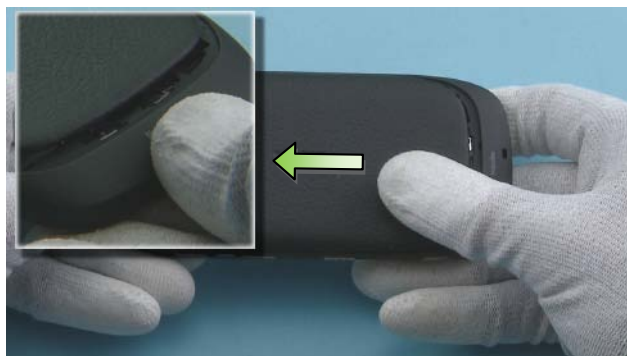
1) Nokia Oro disassembly.



2) For disassembling you need the Nokia Standard Toolkit version 2, camera removal tool SS-210, SS-231, display removal tool SS-250, DC plug and AV plug.



3) Protect the A-COVER with protective film.



4) Slide to the direction shown to release the BATTERY COVER.



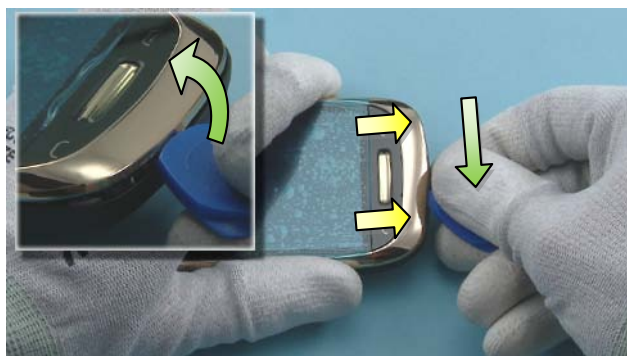
5) Remove the BATTERY COVER. If there is a battery inserted, remove it also.



6) Unscrew the two TORX+ size 4 gold (3.2 mm long) screws in the order shown. Do not use them again. Discard them.



7) Unscrew the two TORX+ size 4 gold (5 mm long) screws in the order shown. Do not use them again. Discard them.



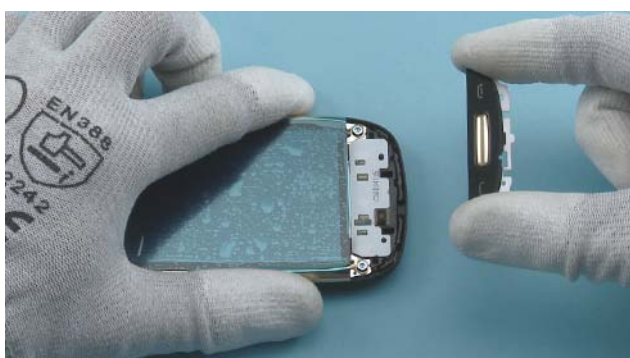
8) Slide the SRT-6 to direction shown to release the A-COVER CHIN clips. The SRT-6 needs to be rotated gently so that the B-COVER is moved slightly away from the A-COVER CHIN.



9) Remove the A-COVER CHIN by pulling it to the direction shown.



10) Use the sharp end of the SS-93 as shown to release the KEYMAT.



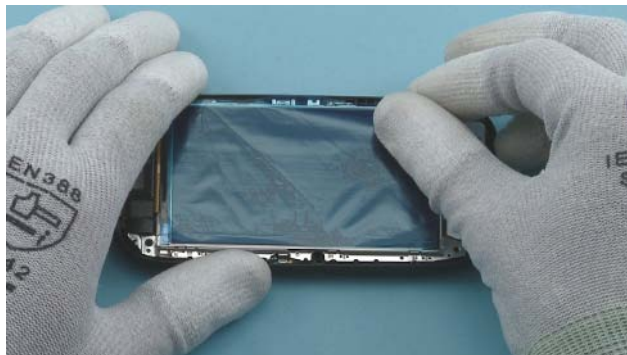
11) Remove the KEYMAT.



12) Unscrew the two TORX+ size 6 screws in the order shown. Do not use them again. Discard them.



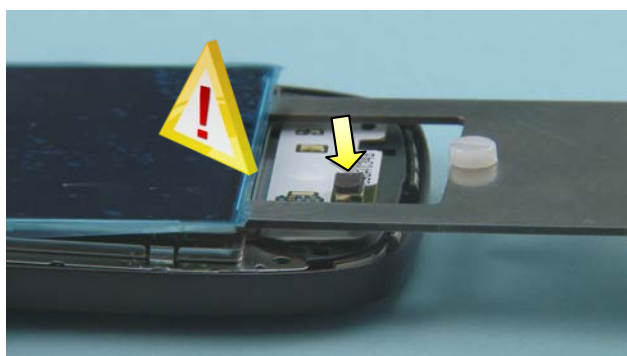
13) Turn the A-COVER around carefully. Be careful not to damage the flex.



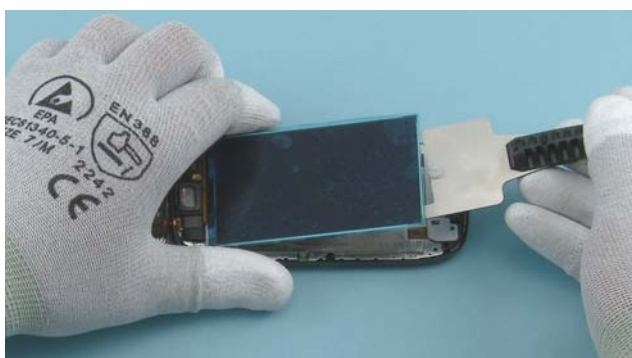
14) Protect the DISPLAY with protective film.



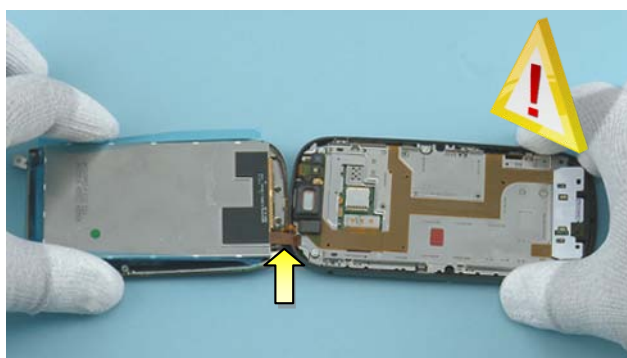
15) Then use the display removal tool SS-250 to release the DISPLAY very carefully. Note the alignment of the display removal tool SS-250.



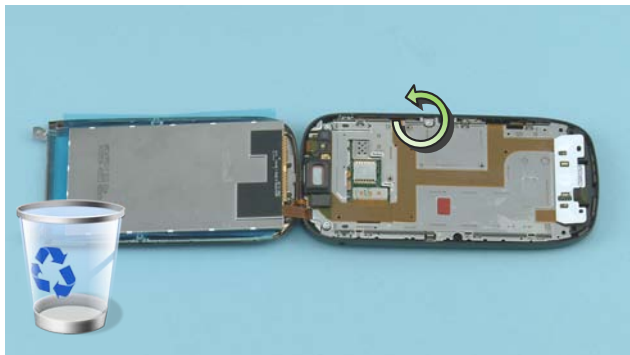
16) Carefully push in the SS-250, but be aware not to damage the MICROPHONE.



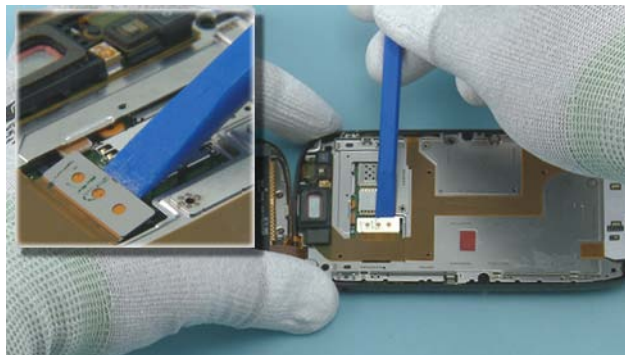
17) Lift up the SS-250 and turn the DISPLAY over.



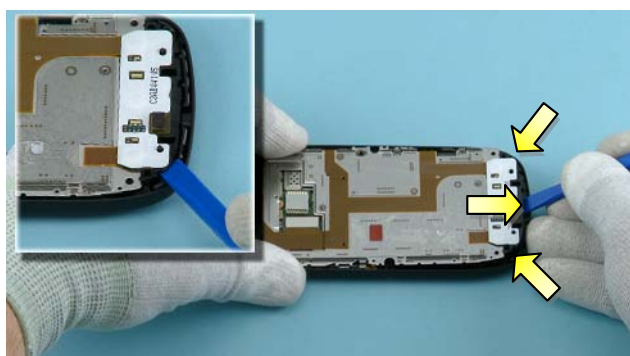
18) While turning the DISPLAY over, be careful not to damage the DISPLAY flex.



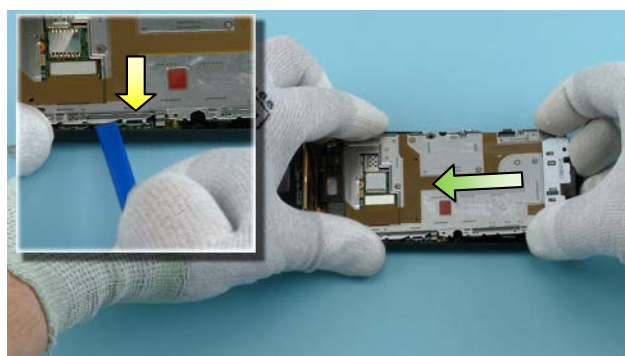
19) Unscrew the TORX+ size 6 screw. Do not use it again. Discard it.



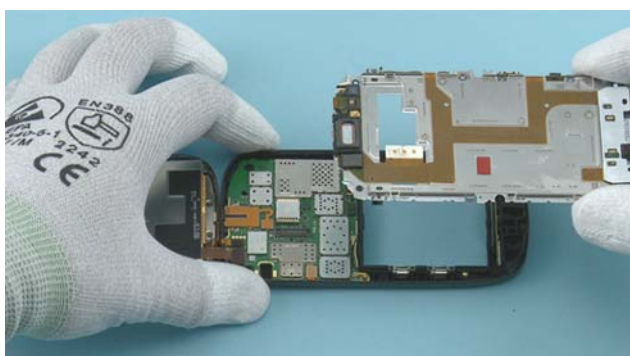
20) Use the SS-93 to open the MAIN FLEX connector. Note that CHASSIS ASSEMBLY is Level 3 service level.



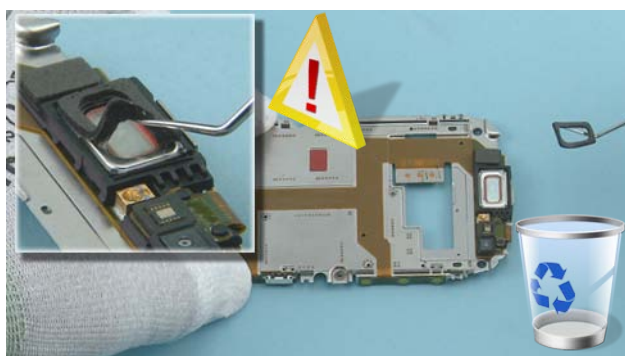
21) Use the SS-93 to release the CHASSIS from the shown places at the bottom end. Start from the corners.



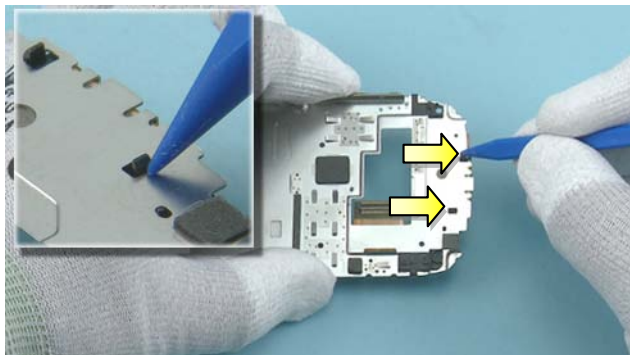
22) Release also the clip in the shown place. Gently push the CHASSIS to direction shown so that the clip under the CHASSIS is released.



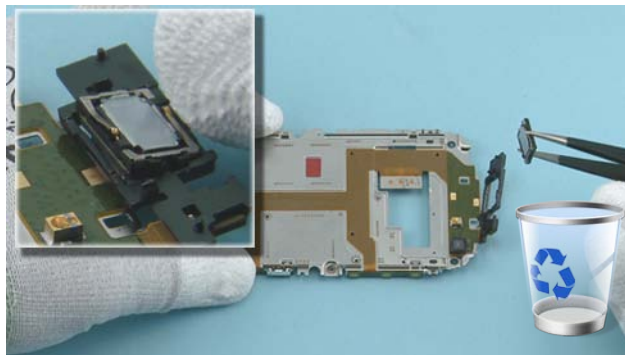
23) Lift up the CHASSIS.



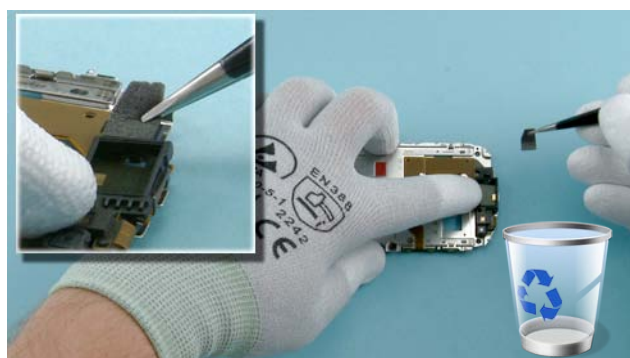
24) Remove the EARPIECE GASKET with the dental tool. Do not use it again. Discard it. Be careful not to injure yourself with the sharp end of the dental tool!



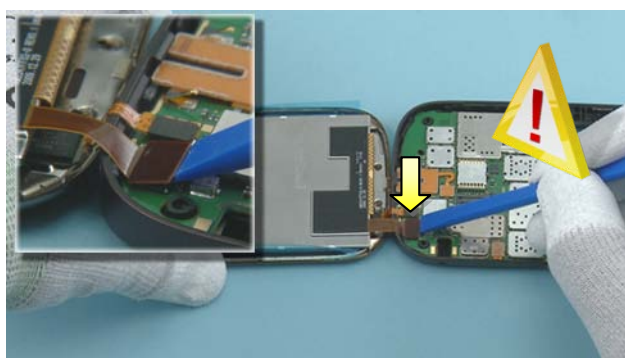
25) Use the sharp end of the SS-93 to release the clips holding the EARPIECE.



26) Use the tweezers to remove the EARPIECE. Do not use it again. Discard it.



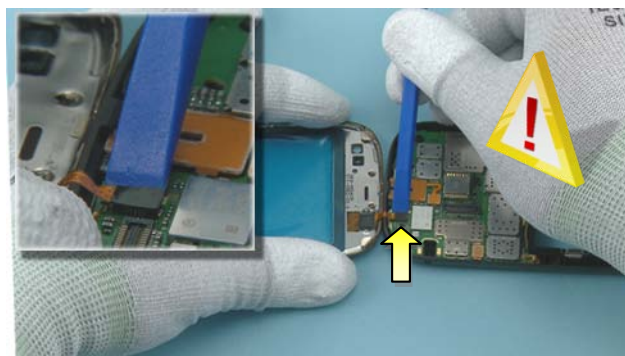
27) Use the tweezers to remove the A-COVER SENSOR SUPPORT PAD. Do not use it again. Discard it.



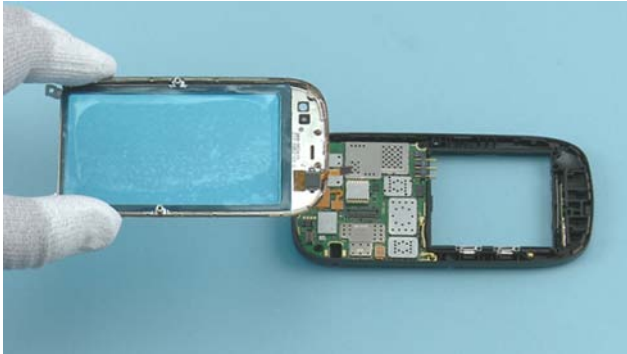
28) Use the SS-93 to release the DISPLAY connector. While opening the connector, be careful not to damage the connector or any nearby components.



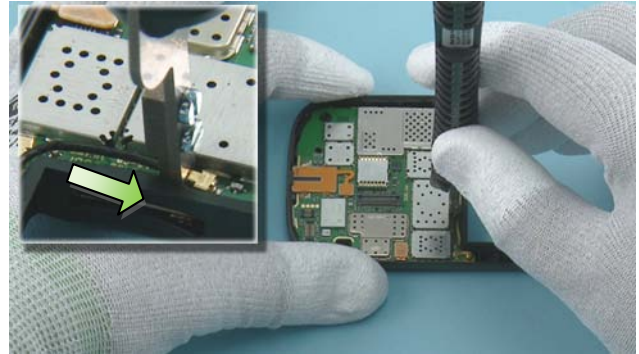
29) Remove the DISPLAY.



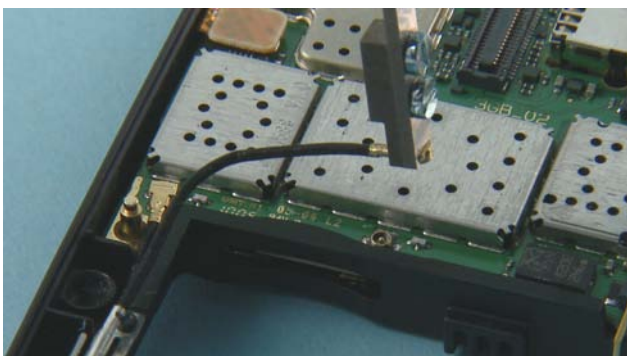
30) Use the SS-93 to release the TOUCH PANEL connector. While opening the connector, be careful not to damage the connector or any nearby components.



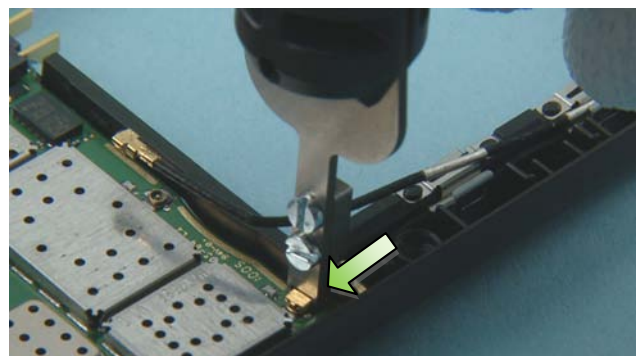
31) Remove the A-COVER.



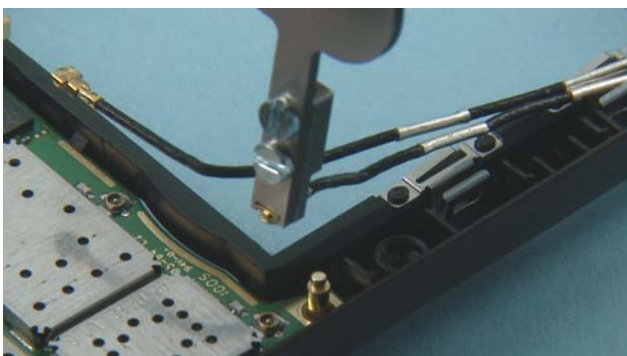
32) Lock the SS-231 to the top MAIN ANTENNA connector.



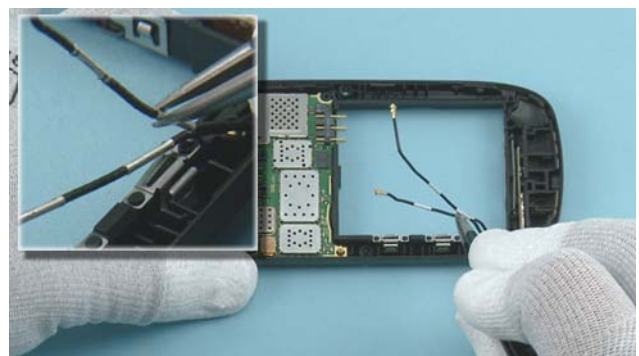
33) Lift up the MAIN ANTENNA connector.



34) Lock the SS-231 to the bottom MAIN ANTENNA connector.



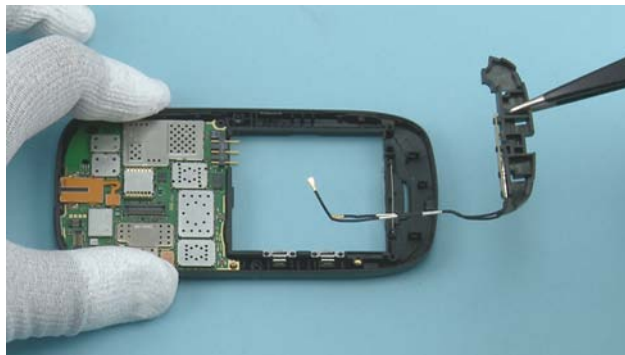
35) Lift up the bottom MAIN ANTENNA connector.



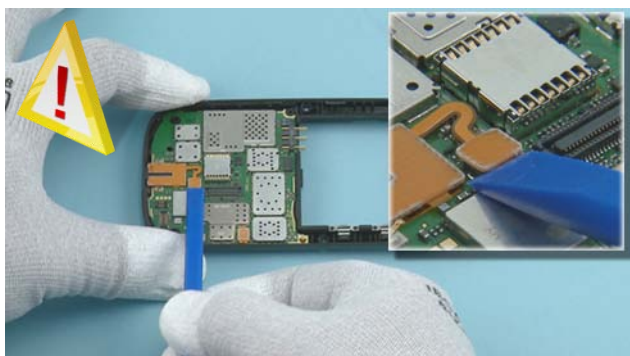
36) Use the tweezers to release the MAIN ANTENNA connectors from the holding clips.



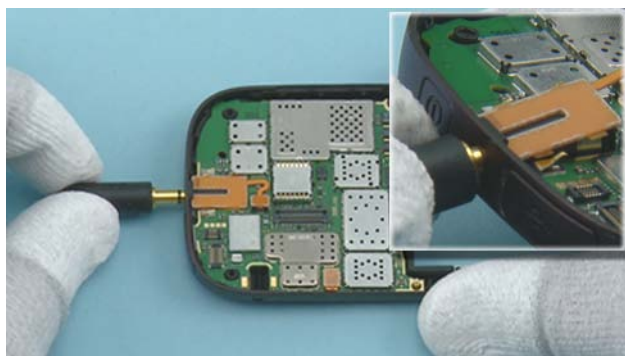
37) Insert the dental tool to the shown place and lever out the MAIN ANTENNA.



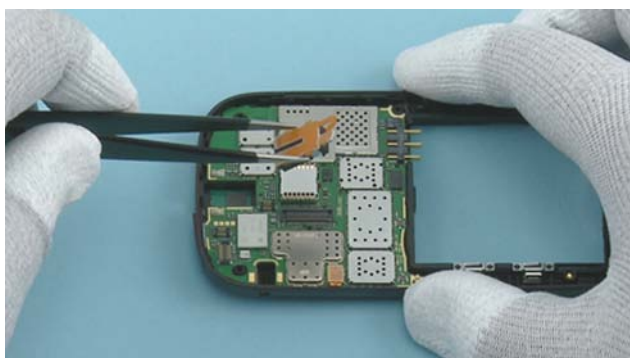
38) Remove the MAIN ANTENNA with the tweezers.



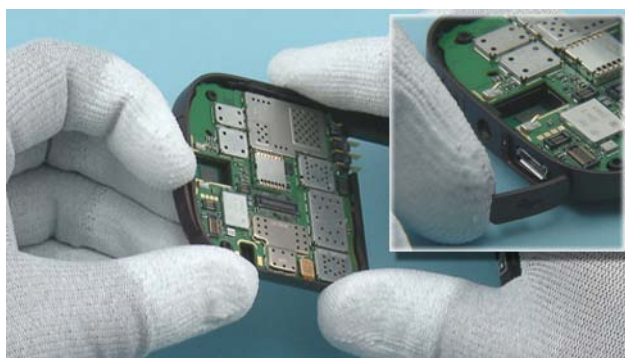
39) Use the SS-93 to release the AV JACK connector. Be careful not to damage any nearby components. Note that LIGHT SWAP PACKAGE is Level 3 service level.



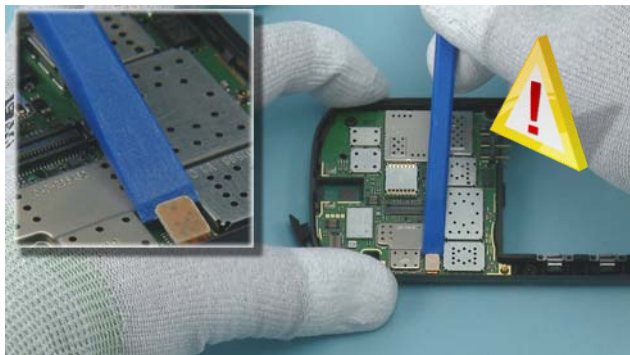
40) Use the AV plug to lever out the AV JACK.



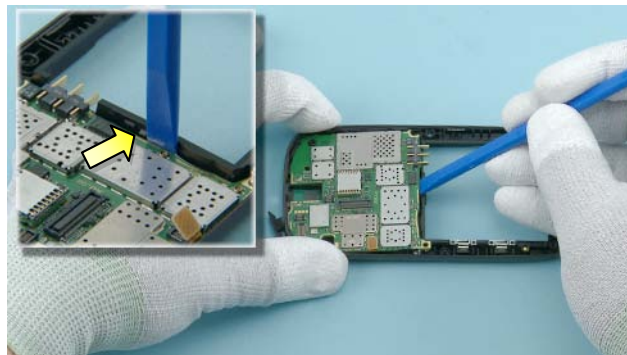
41) Remove the AV JACK with the tweezers.



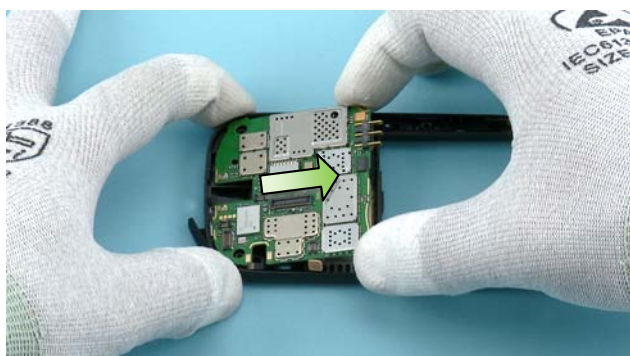
42) Open the USB DOOR.



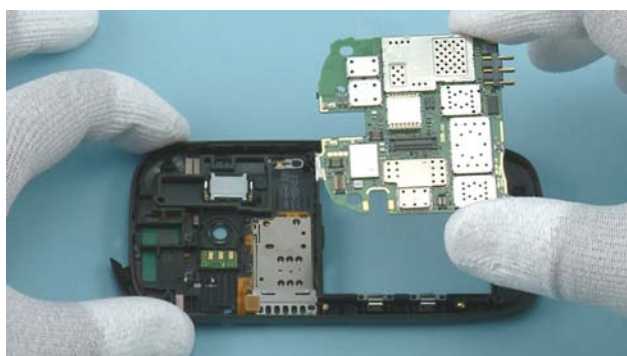
43) Use the SS-93 to release the SIM CARD READER connector. Be careful not to damage any nearby components.



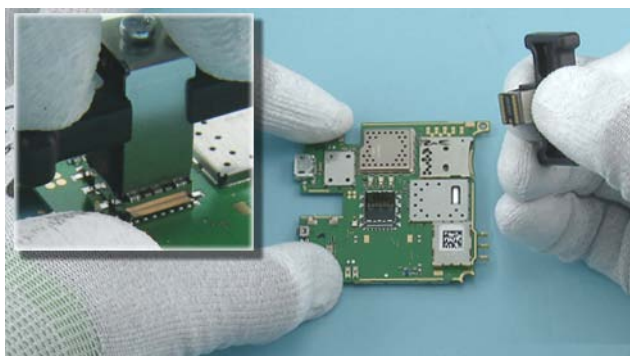
44) Use the SS-93 to release the clip holding the ENGINE BOARD. The B-COVER needs to be flexed gently to release the shown clip.



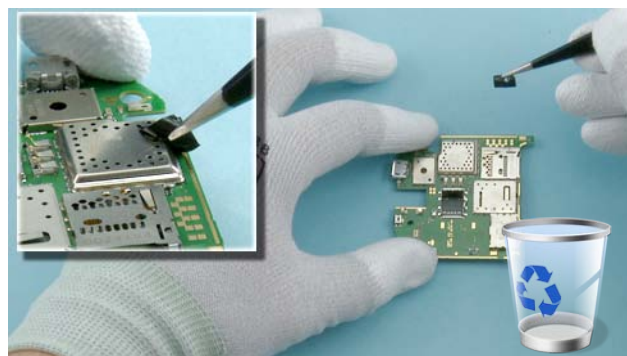
45) Lift up the ENGINE BOARD as shown and pull it to the direction shown so that the USB connector is released properly.



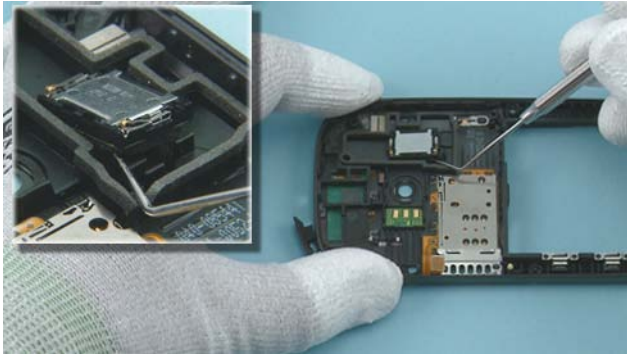
46) Remove the ENGINE BOARD.



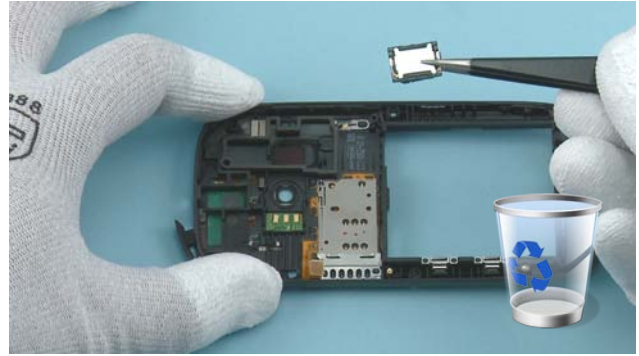
47) Use the SS-210 to remove the CAMERA MODULE.



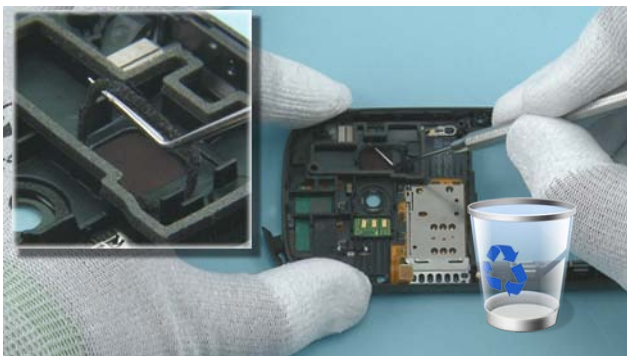
48) Use the tweezers to remove the RAPU SHIELD TAPE. Do not use it again. Discard it.



49) Use the dental tool to lift up the IHF SPEAKER.



50) Remove it with the tweezers. Do not use it again. Discard it.



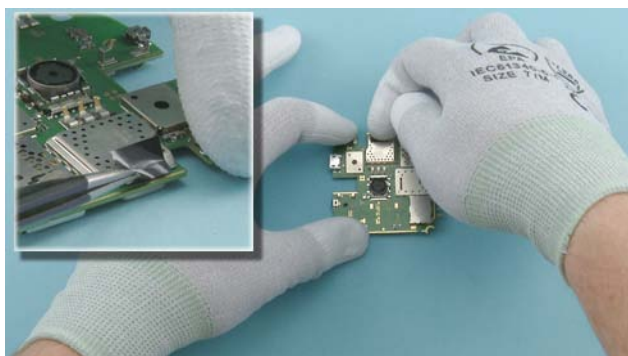
51) Remove the IHF SPEAKER GASKET with the dental tool. Do not use it again. Discard it.



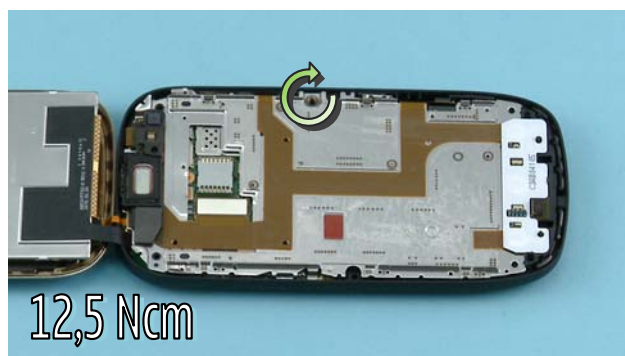
52) Nokia Oro disassembly is now complete.

-END OF DISASSEMBLY-

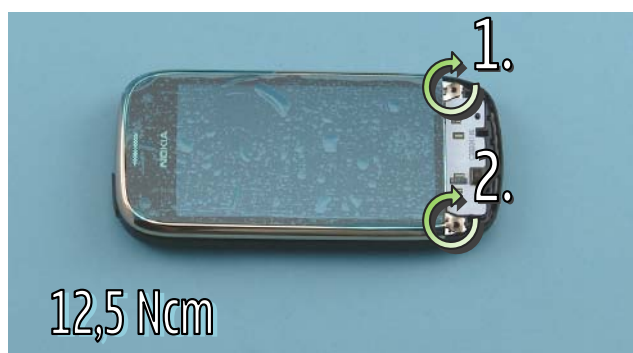
## 10. ASSEMBLY HINTS



1) Use the tweezers to place the RAPU SHIELD TAPE. Carefully press the RAPU SHIELD TAPE with fingers to activate the adhesive.



2) Tighten this TORX + size 6 screw to the torque of 12,5 Ncm.



3) Tighten these two TORX + size 6 screws to the torque of 12,5 Ncm in the order shown.



4) Tighten these two TORX + size 4 gold (3,2 mm long) screws to the torque of 12 Ncm in the order shown.



5) Tighten these two TORX + size 4 gold (5 mm long) screws to the torque of 13 Ncm in the order shown.

## 11. SOLDER COMPONENTS

