

SERVICE MANUAL

Level 1&2

NOKIA

C7-00

RM-675 / RM-691

Transceiver characteristics

Band

GSM 850/900/1800/1900
WCDMA 850/900/1700/1900/2100 (RM-675)
WCDMA 850/900/1700/2100 (RM-691)

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^3

Connections:

WCDMA DL 384 kbps HSDPA 10 Mbps; UL 384 kbps HSUPA 2 Mbps
GSM CS data 9.6 kbps / 14.4 kbps / HSCSD MSC6
GSM GPRS class 32, GSM EGPRS class 32, 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
Nokia 3.5 mm AV connector for audio and TV

Transceiver with BL-5K battery pack

Talk time	Standby
GSM: Up to 7.8 hours	GSM: Up to 632 hours
WCDMA: Up to 4.9 hours	WCDMA: Up to 546 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	30.8.2010	First approved version
Approved	2.0	14.9.2010	First published version
Approved	3.0	7.10.2010	Removed Imaging processor shielding lid disassembly procedure
Approved	4.0	28.1.2011	Updated disassembly picture story, step 41: AV JACK is reusable. Removed trashcan and edited text
Approved	5.0	18.2.2011	Added RM-691 information Updated exploded view, added the A-COVER SENSOR SUPPORT PAD I0027 and the RAPU SHIELD TAPE I0028 Updated disassembly picture story, added removing of the A-COVER SENSOR SUPPORT PAD and the RAPU SHIELD TAPE. Updated assembly picture story, added assembling of the A-COVER SENSOR SUPPORT PAD and the RAPU SHIELD TAPE.
Approved	6.0	7.3.2011	Updated exploded view to match version 5.0 changes

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

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.

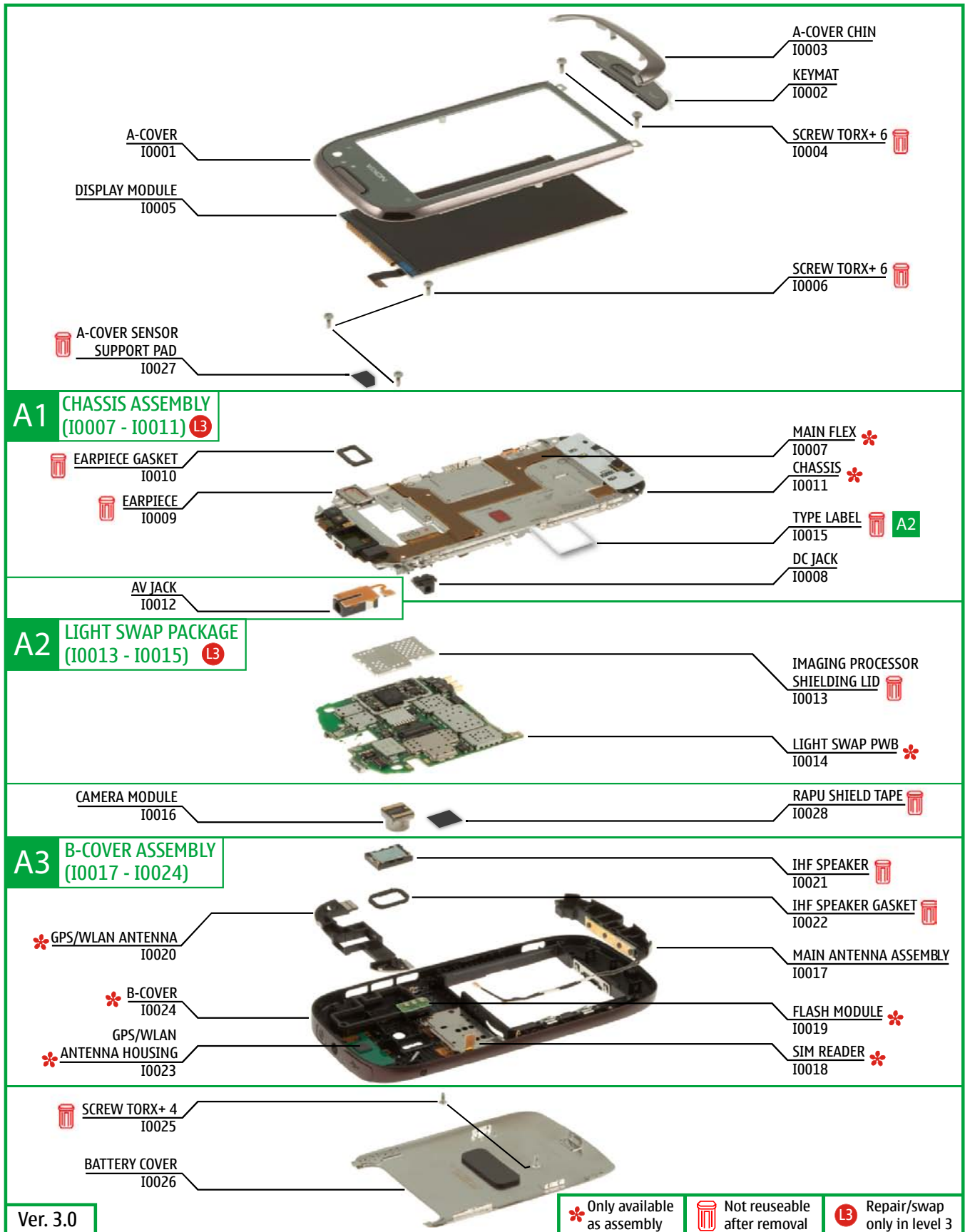
Leaving the battery in hot or cold places, such as in a closed car in summer or winter conditions, will reduce the capacity and lifetime of the battery. Always try to keep the battery between 15°C and 25°C (59°F and 77°F).

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



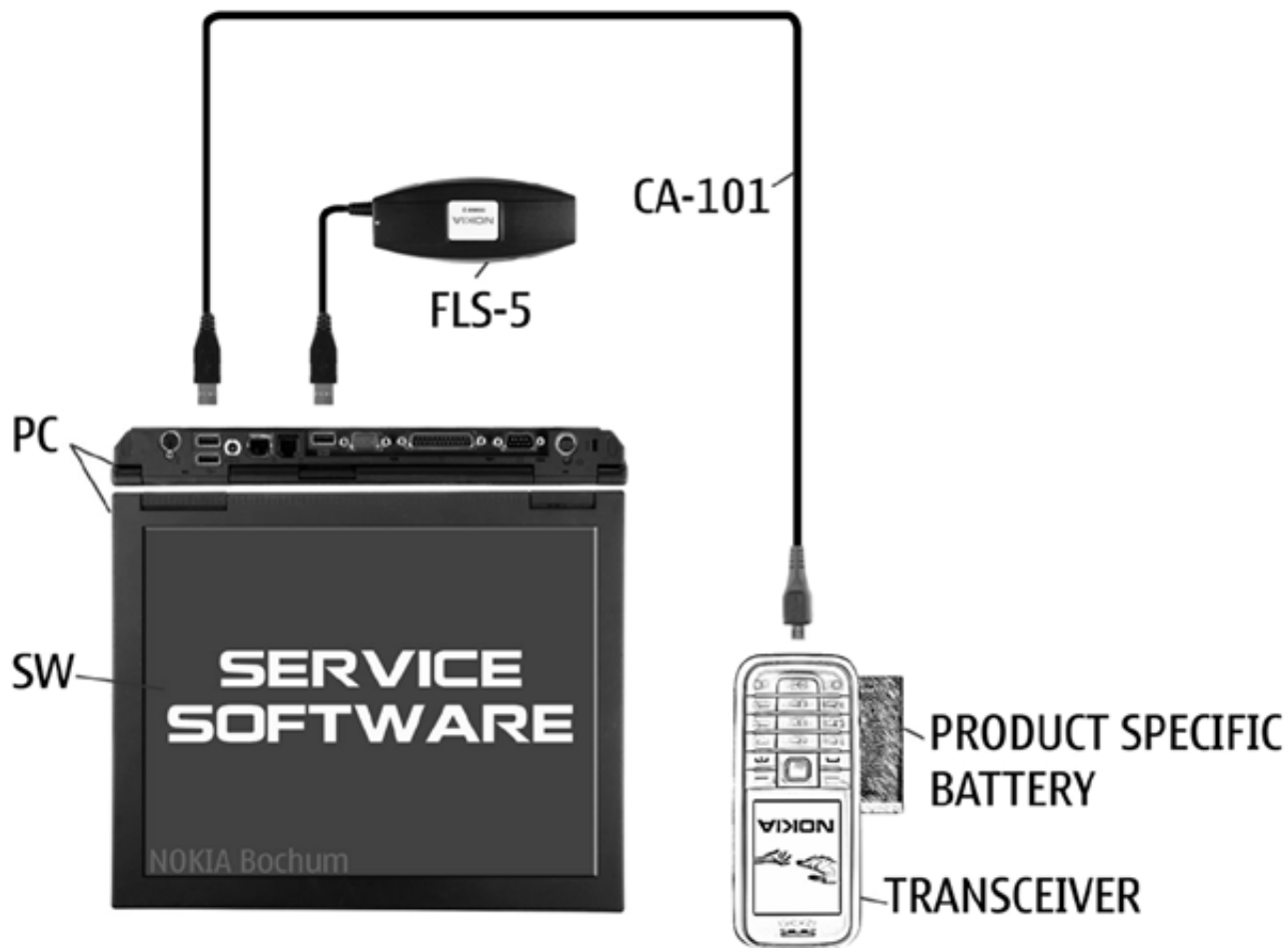
7. SERVICE DEVICES

 <p>FLS-5</p> <p>FLS-5 Flash Device</p>	 <p>CA-101D Service Cable</p>	 <p>AC-15 Travel Charger</p>
 <p>BL-5K Battery</p>	 <p>Nokia Standard Toolkit (v2) 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 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 C7-00 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) Push the release button to detach the BATTERY COVER.



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



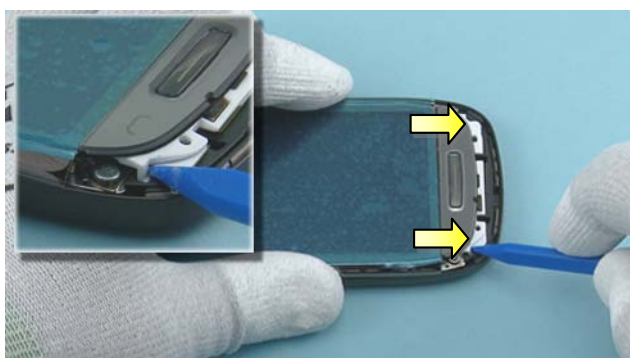
6) Unscrew the two TORX+ size 4 screws in the order shown. Do not use them again!



7) Slide the SRT-6 to direction shown to release the A-COVER CHIN clips.



8) Remove the A-COVER CHIN by pulling it into direction shown.



9) Use the sharp end of the SS-93 to release the KEYMAT.



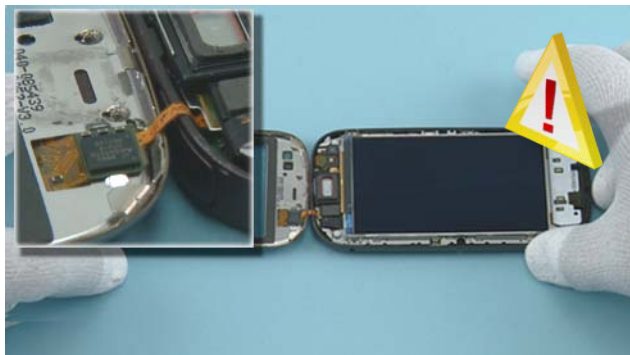
10) Remove the KEYMAT.



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



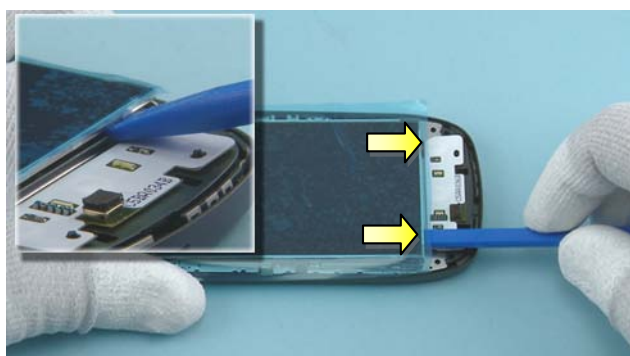
12) Release the A-COVER by sliding it very gently to the direction shown.



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



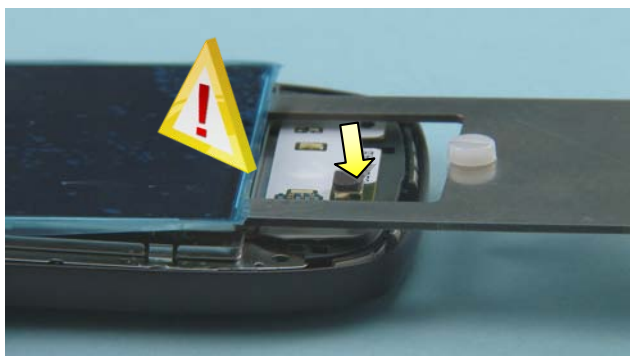
14) Protect the DISPLAY with protective film.



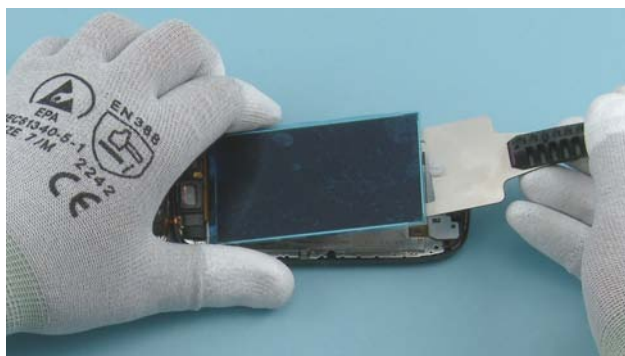
15) Use the SS-93 to carefully lift up the shown end of the DISPLAY.



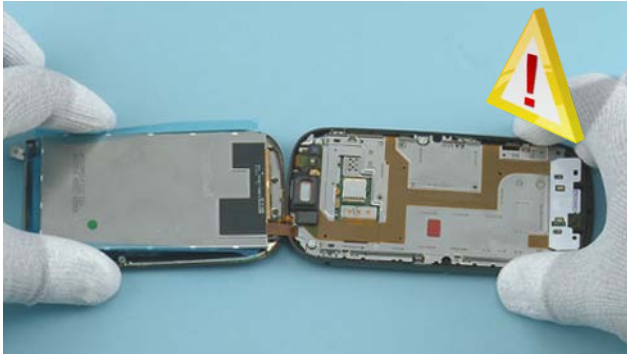
16) Then use the display removal tool SS-250 to release the DISPLAY very carefully. Note the alignment of the display removal tool SS-250.



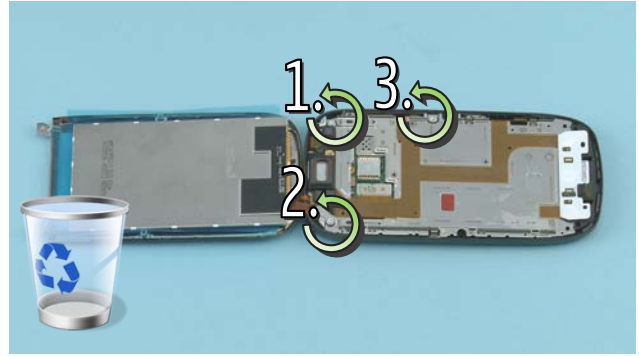
17) Carefully push in the SS-250, but be aware not to damage the MICROPHONE.



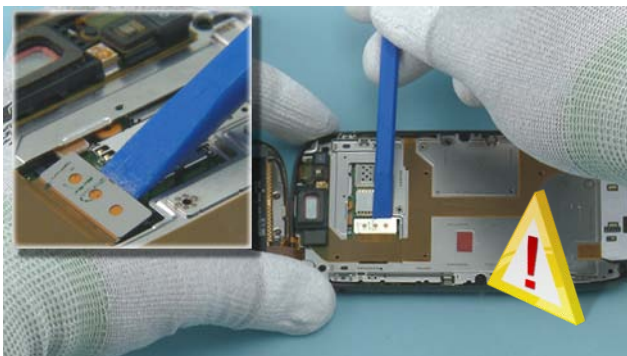
18) Lift up the SS-250 and turn the DISPLAY over.



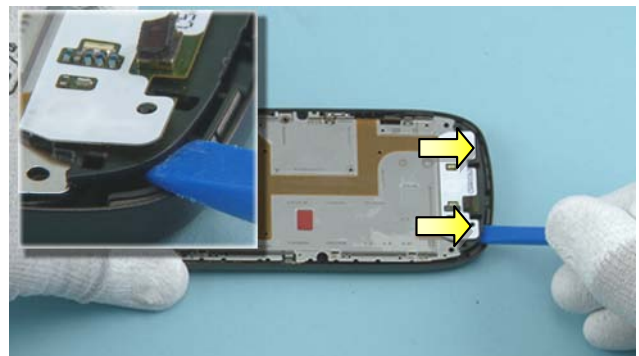
19) While turning the DISPLAY over, be careful not to damage the DISPLAY flex.



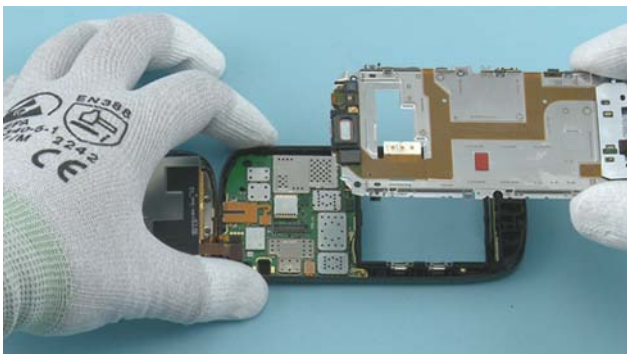
20) Unscrew the three TORX+ size 6 screws in the order shown. Do not use them again. Discard them.



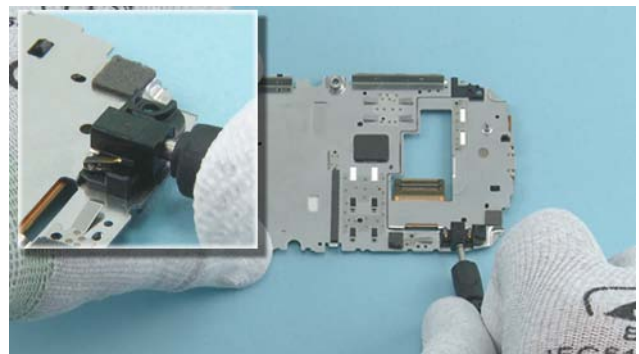
21) Use the SS-93 to open the MAIN FLEX connector. Note that CHASSIS ASSEMBLY is Level 3 service level.



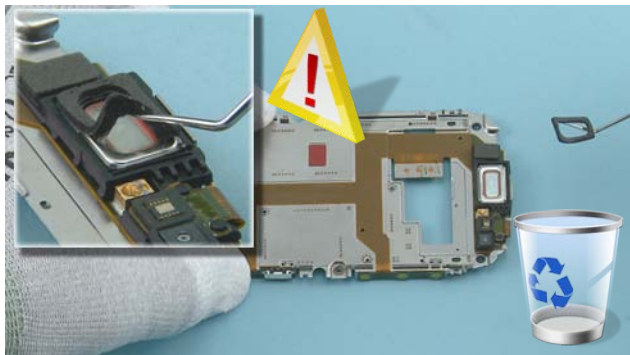
22) Use the SS-93 to release the CHASSIS.



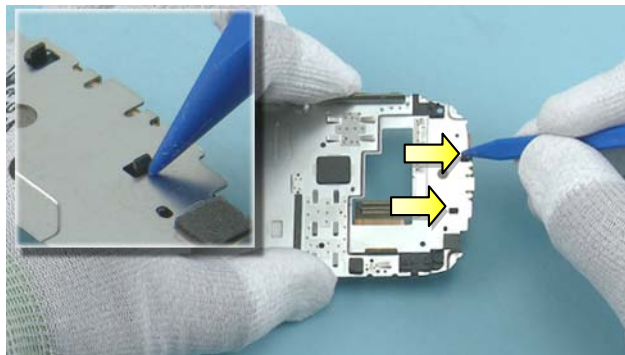
23) Lift up the CHASSIS.



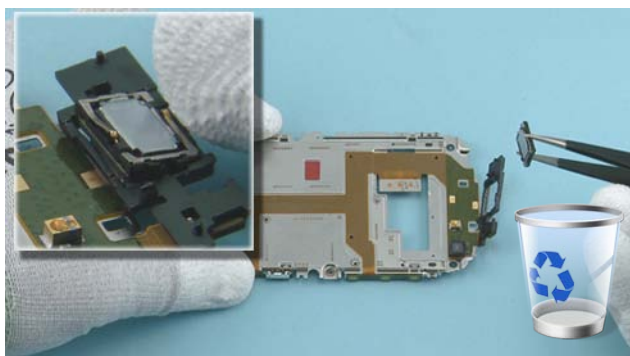
24) Use a DC plug to remove the DC JACK.



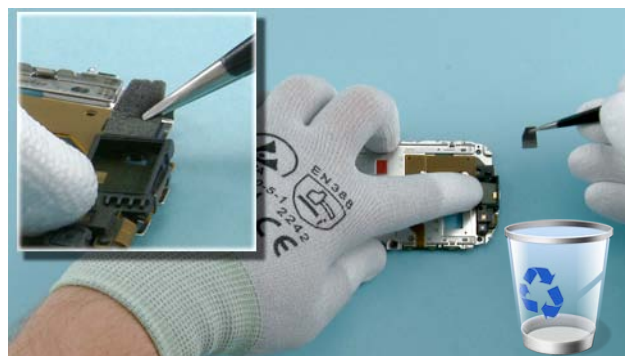
25) Remove the EARPIECE GASKET with the dental tool. Do not use it again. Discard it. Be careful not to injure yourself with the sharp end of the dental tool!



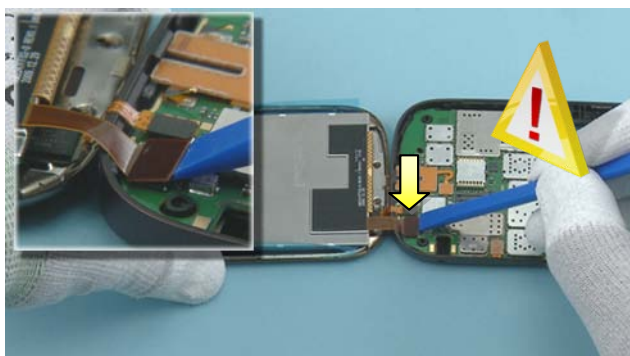
26) Use the sharp end of the SS-93 to release the clips holding the EARPIECE.



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



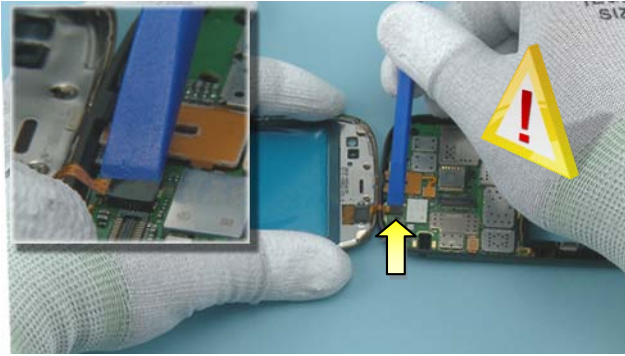
28) Use the tweezers to remove the A-COVER SENSOR SUPPORT PAD. Do not use it again. Discard it.



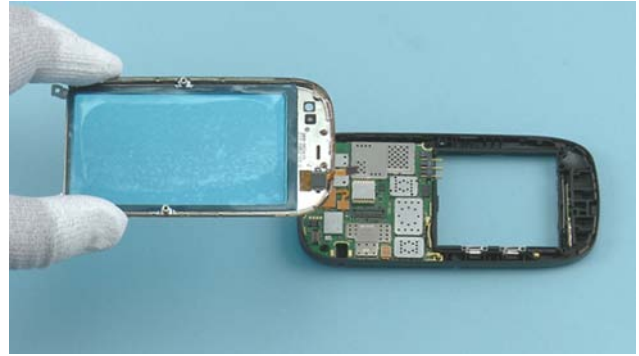
29) Use the SS-93 to release the DISPLAY connector. While opening the connector, be careful not to damage the connector or any nearby components.



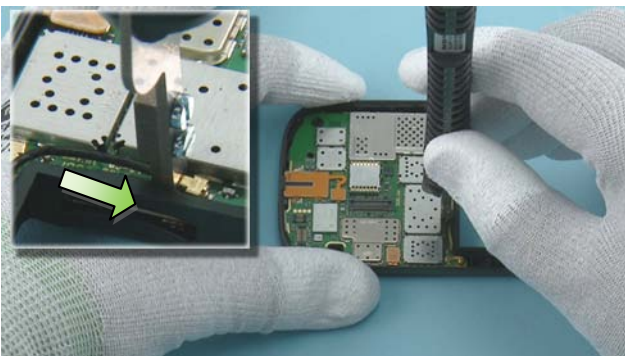
30) Remove the DISPLAY.



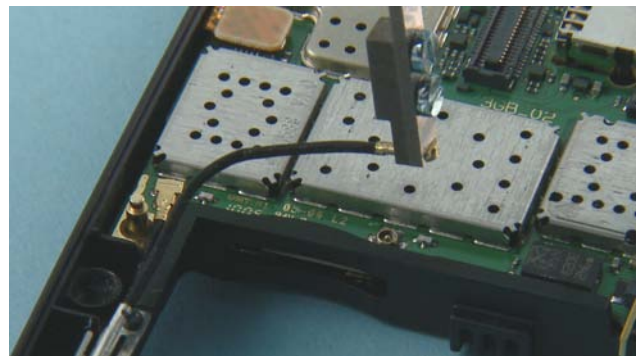
31) Use the SS-93 to release the TOUCH PANEL connector. While opening the connector, be careful not to damage the connector or any nearby components.



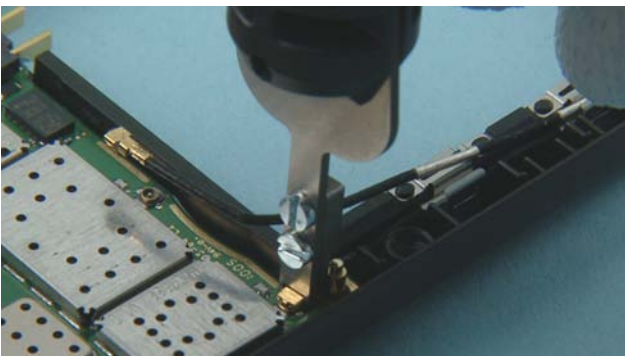
32) Remove the A-COVER.



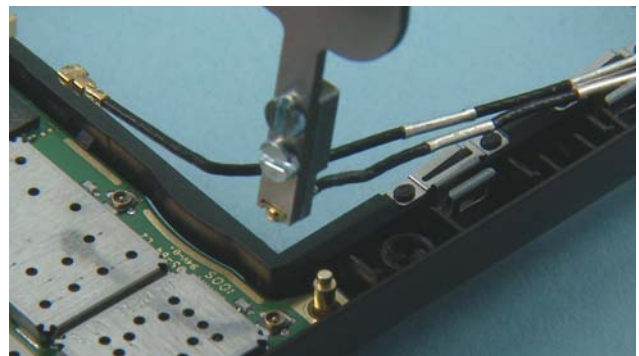
33) Lock the SS-231 to the top MAIN ANTENNA connector.



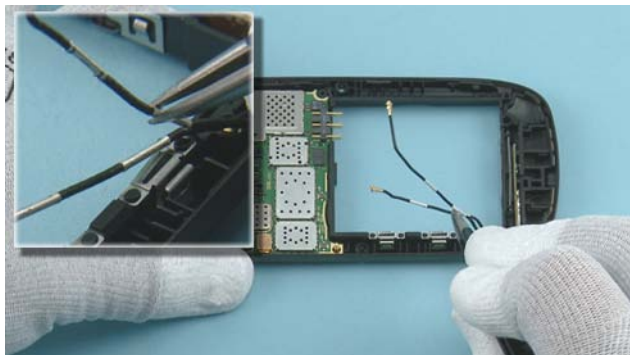
34) Lift up the MAIN ANTENNA connector.



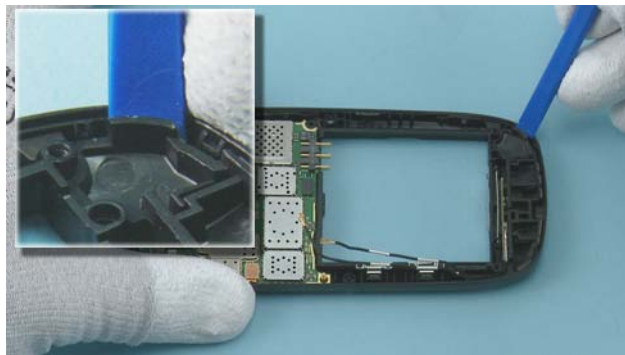
35) Lock the SS-231 to the bottom MAIN ANTENNA connector.



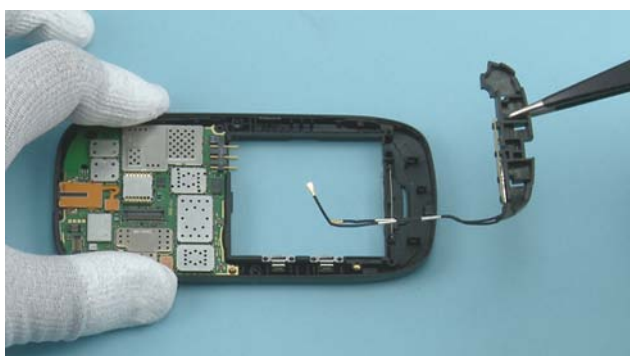
36) Lift up the bottom MAIN ANTENNA connector.



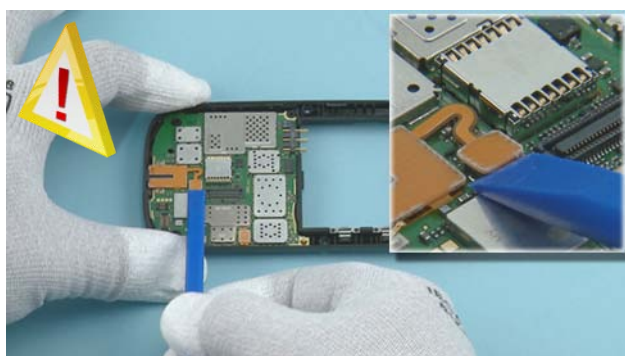
37) Use the tweezers to release the MAIN ANTENNA connectors from the holding clips.



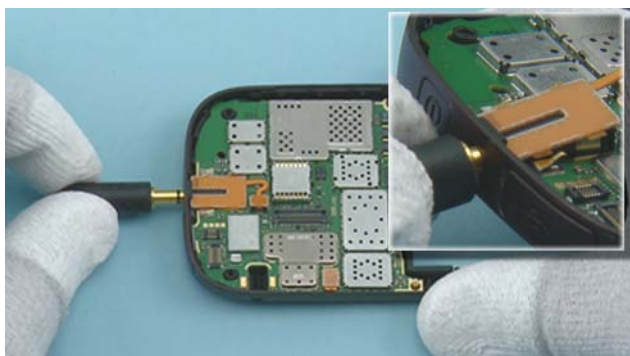
38) Use the SS-93 to lever out the MAIN ANTENNA.



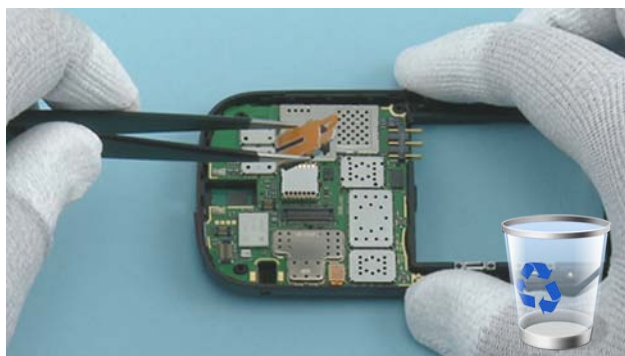
39) Remove the MAIN ANTENNA with the tweezers.



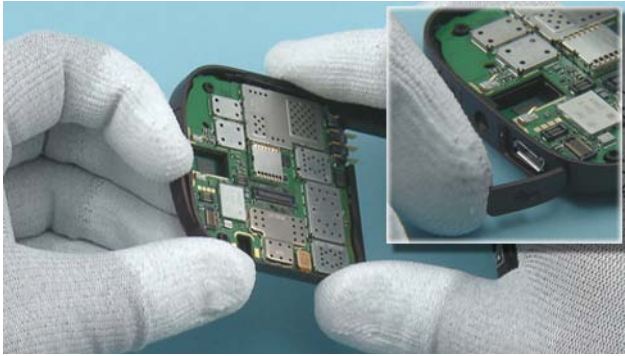
40) Use the SS-93 to release the AV JACK connector. Be careful not to damage any nearby components. Note that LIGHT SWAP PACKAGE is Level 3 service level.



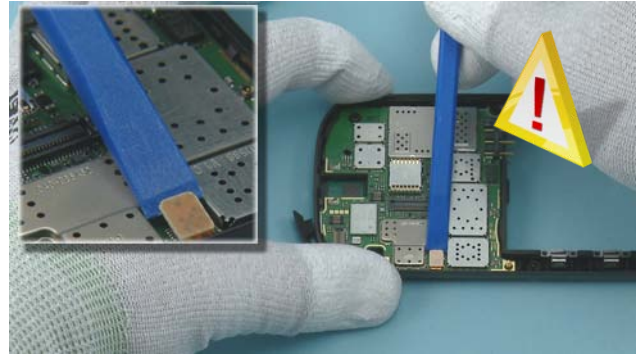
41) Use the AV plug to lever out the AV JACK.



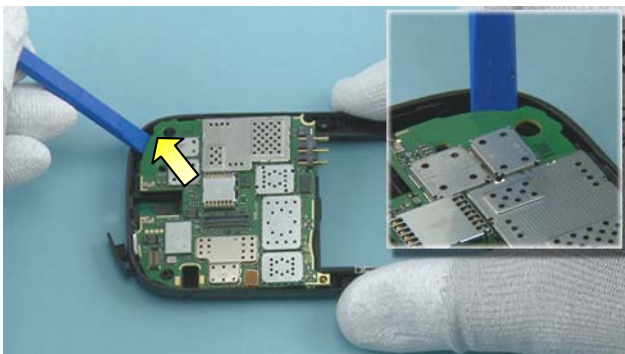
42) Remove the AV JACK with the tweezers. Do not use it again. Discard it.



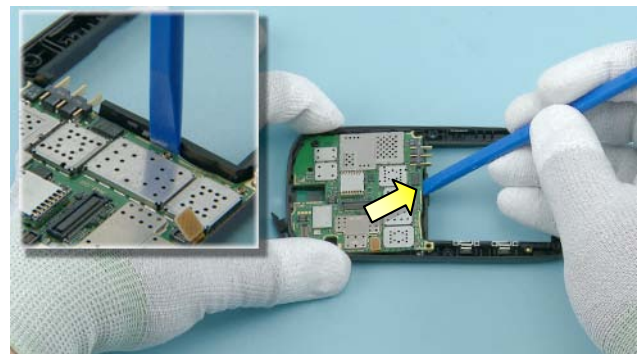
43) Open the USB DOOR.



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



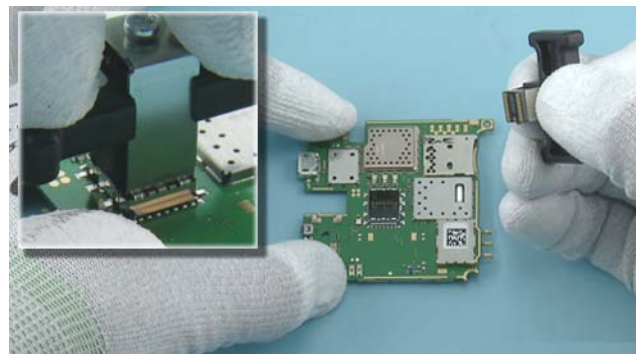
45) Use the SS-93 to release the first clip holding the bottom end of the ENGINE BOARD.



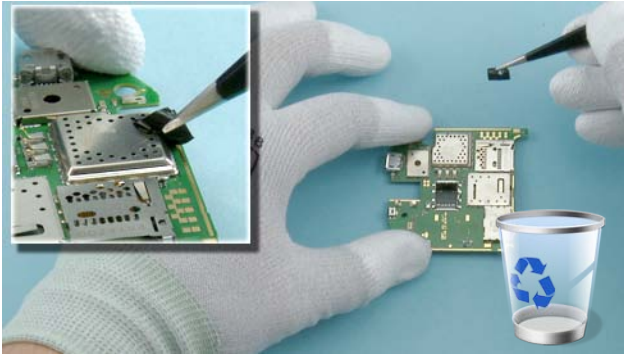
46) Use the SS-93 to release the second clip holding the ENGINE BOARD.



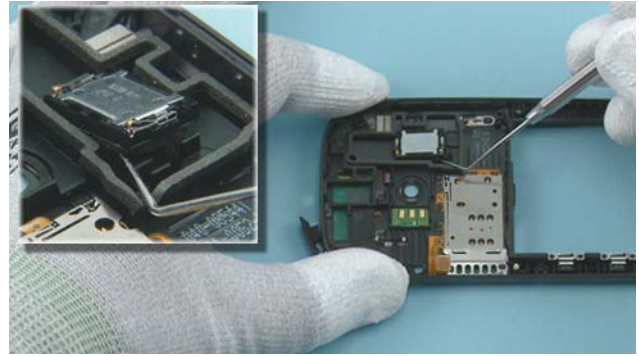
47) Remove the ENGINE BOARD.



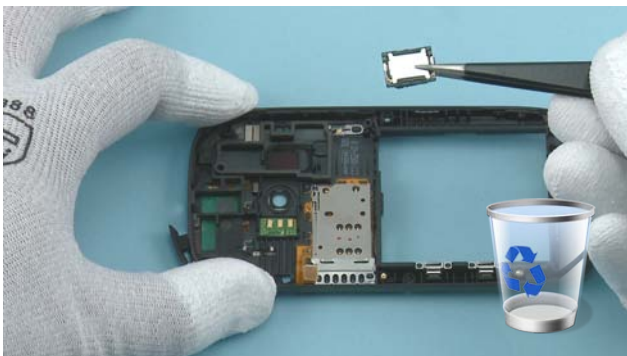
48) Use the SS-210 to remove the CAMERA MODULE.



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



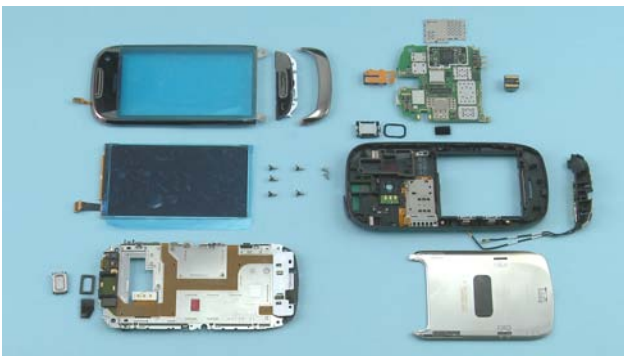
50) Use the dental tool to lift up the IHF SPEAKER.



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



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



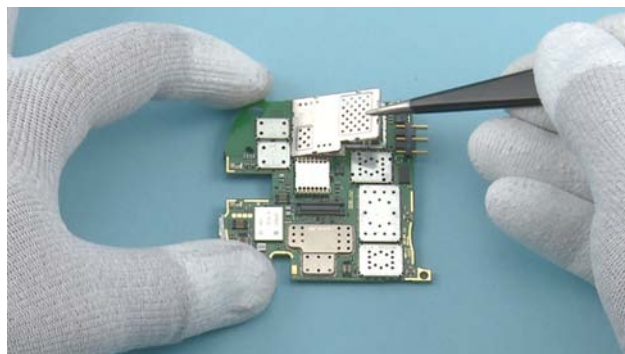
53) Nokia C7-00 disassembly is now complete.

-END OF DISASSEMBLY-

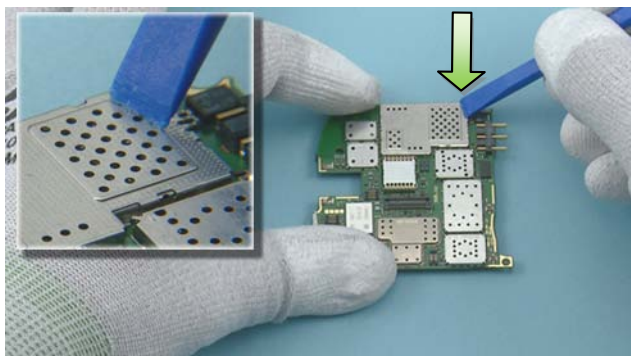
10. ASSEMBLY INSTRUCTIONS



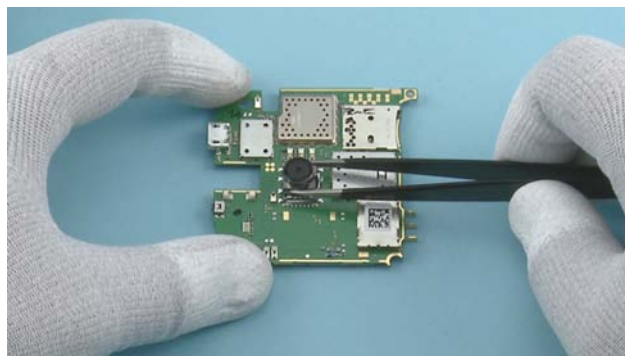
For assembly, you will need the Nokia Standard Toolkit version 2, and the RF connector assembly tool SS-231.



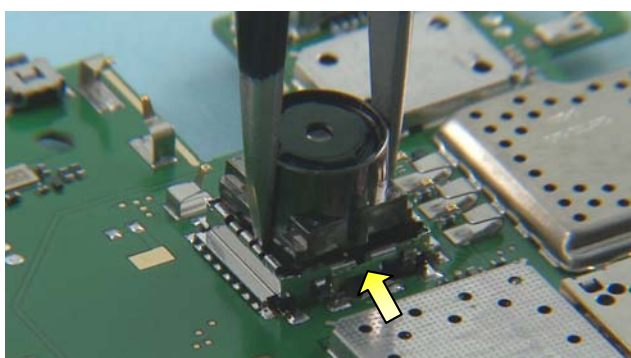
1) Place the IMAGING PROCESSOR SHIELDING LID with the tweezers.



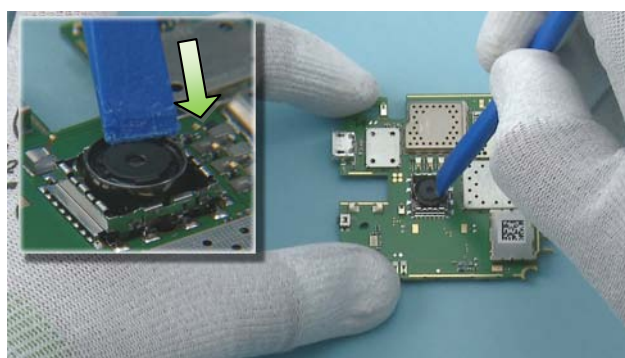
2) Press the shielding lid down gently with the SS-93 to attach it to the ENGINE BOARD.



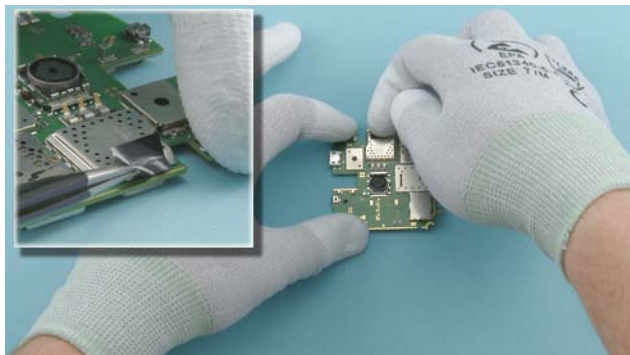
3) Place the CAMERA MODULE with the tweezers.



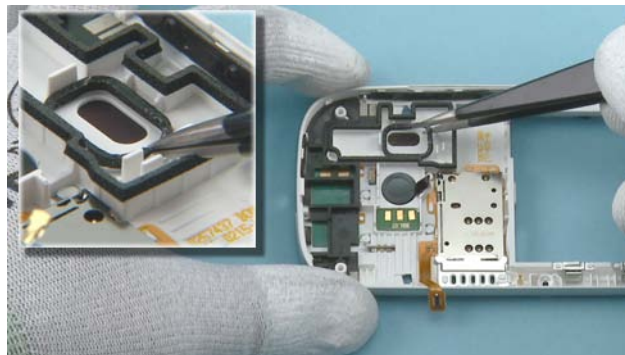
4) When inserting the CAMERA MODULE, check that the shown clip is on the same side as the guiding notch.



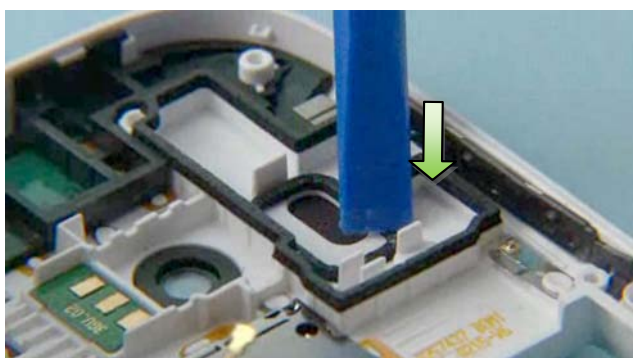
5) Press the CAMERA MODULE down carefully with the SS-93 to attach the camera retaining clips.



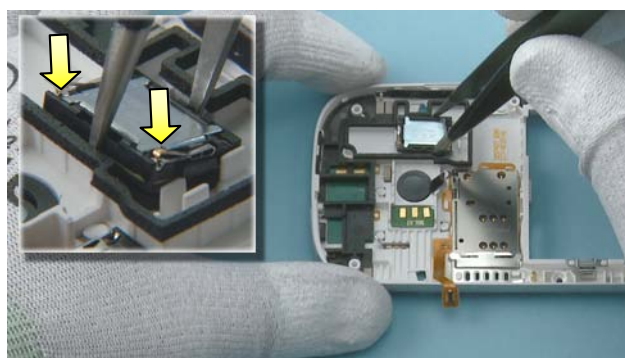
6) Use the tweezers to place the RAPU SHIELD TAPE. Carefully press the RAPU SHIELD TAPE with fingers to activate the adhesive.



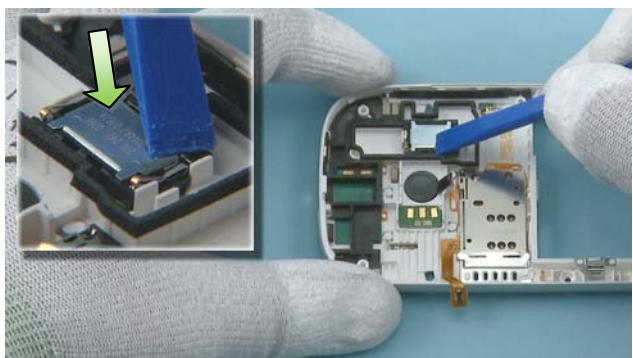
7) Place the IHF SPEAKER GASKET with the tweezers.



8) Press it down carefully with the SS-93 to activate the adhesive.



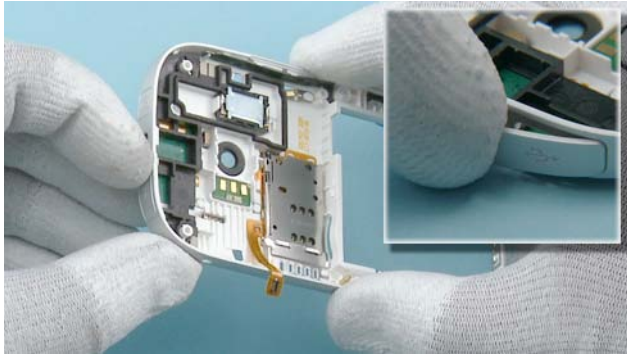
9) When placing the IHF SPEAKER, make sure that the springs are pointing towards the camera.



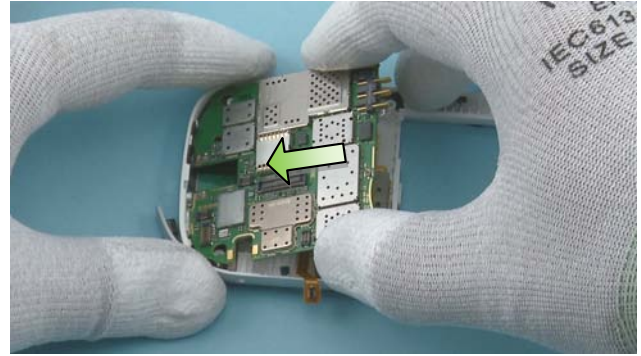
10) Press the IHF SPEAKER down carefully with the SS-93 to activate the adhesive.



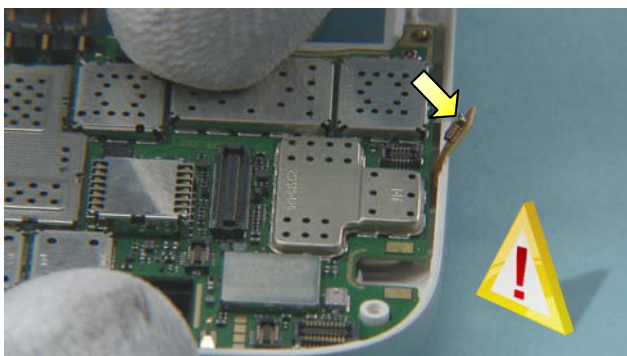
11) Remove the camera lens protective film with the tweezers.



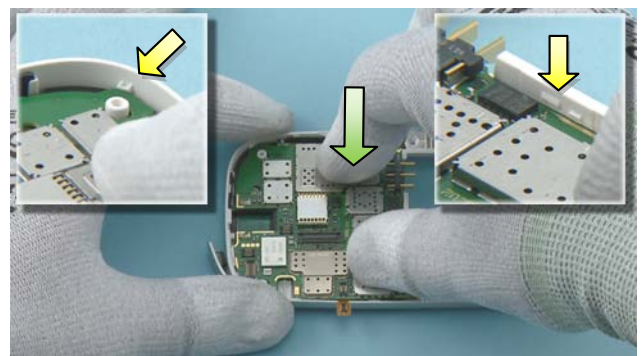
12) Open the USB DOOR.



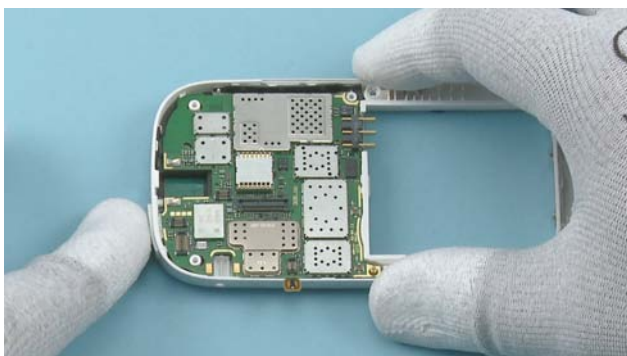
13) Insert the ENGINE BOARD to the B-COVER as shown.



14) Before lowering the ENGINE BOARD, make sure that the SIM CARD READER connector is not left under the ENGINE BOARD and is not damaged.



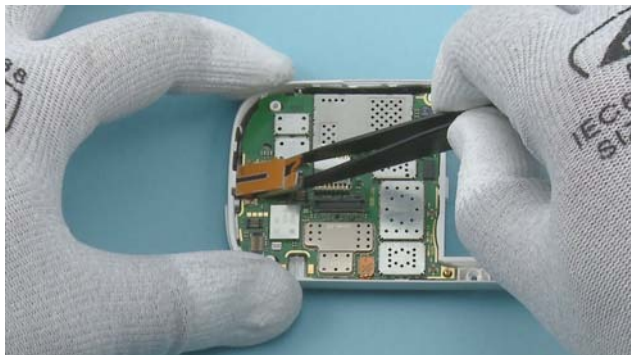
15) Press the ENGINE BOARD gently to fasten the clips as shown.



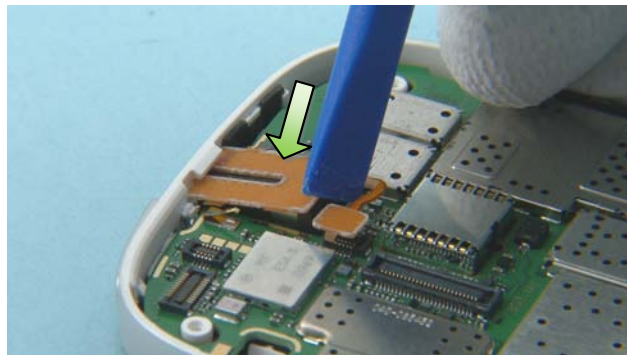
16) Close the USB DOOR.



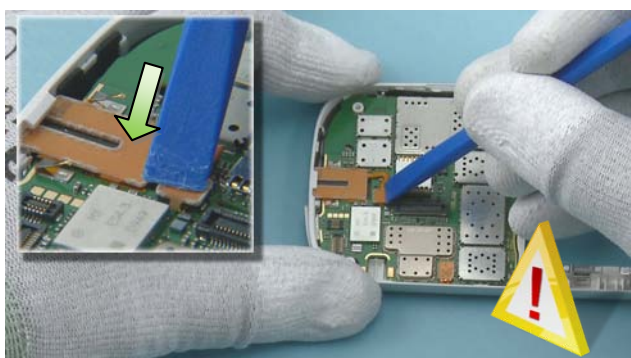
17) Connect the SIM CARD READER connector with the SS-93. Be careful not to damage the connector or components nearby!



18) Place the AV JACK with the tweezers.



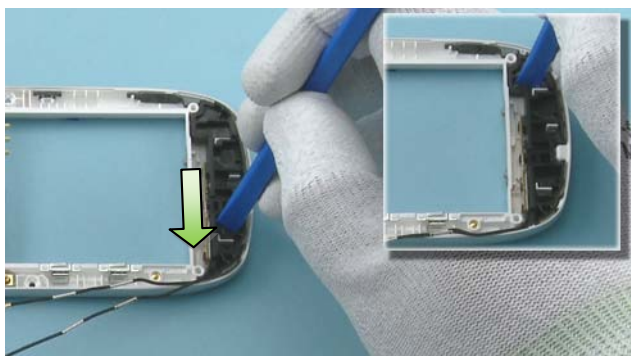
19) Press the AV JACK with the SS-93 to the direction shown until it snaps into place.



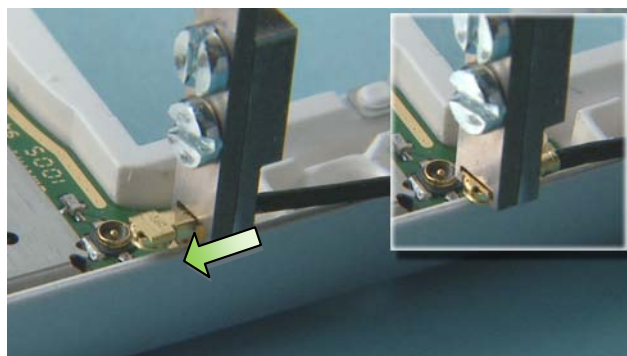
20) Connect the AV JACK connector with the SS-93. Be careful not to damage the connector!



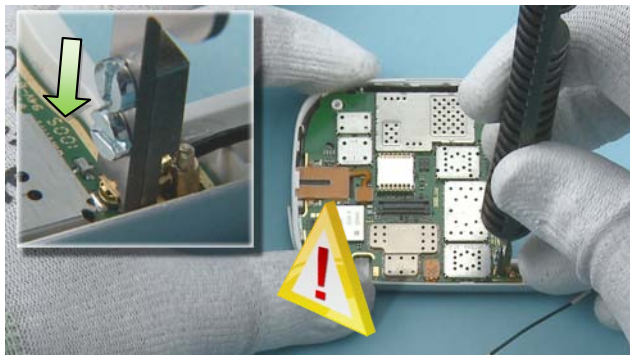
21) Place the MAIN ANTENNA with the tweezers.



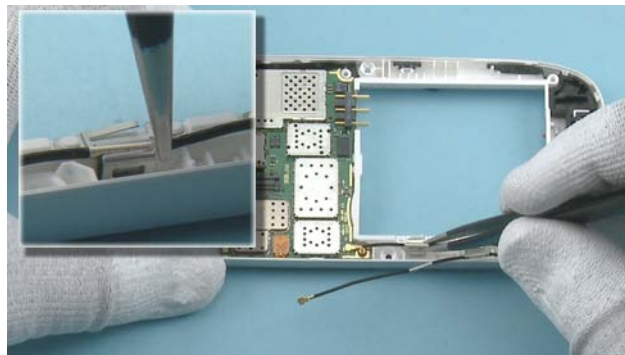
22) Lock the MAIN ANTENNA to its place by pressing down with the SS-93.



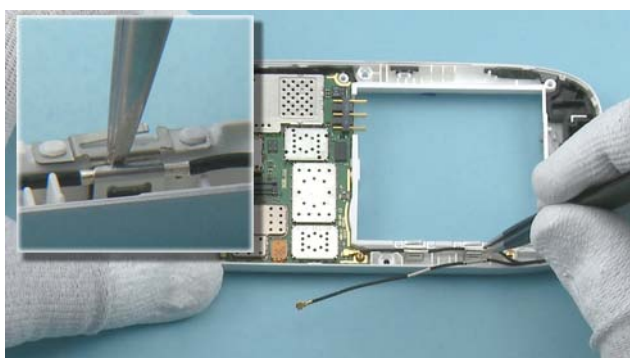
23) Lock the SS-231 to the shorter of the two MAIN ANTENNA connectors as shown in the picture.



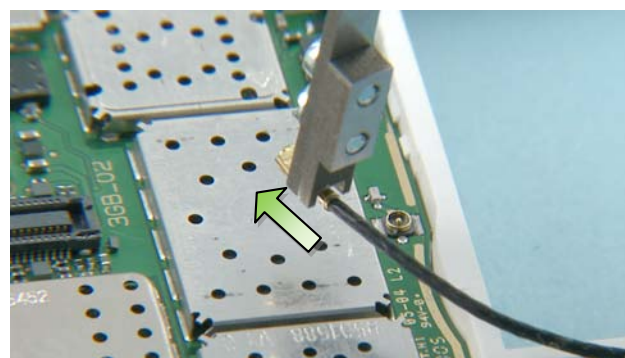
24) Place the SS-231 on top of the connector and push gently to connect the MAIN ANTENNA connector. Be careful not to damage the connector!



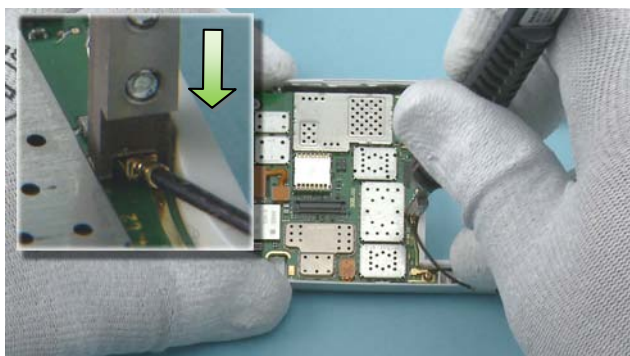
25) Use the tweezers to place the MAIN ANTENNA connector cable into the first clip.



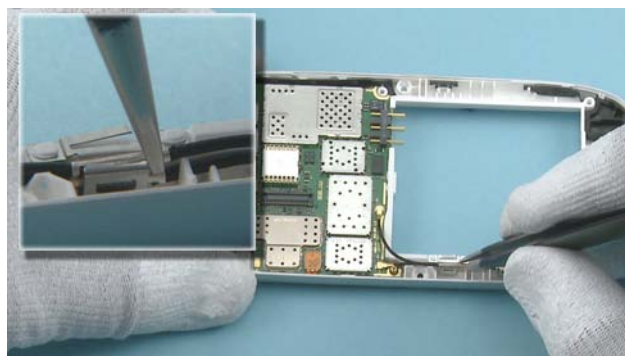
26) Place the MAIN ANTENNA connector cable into the second clip.



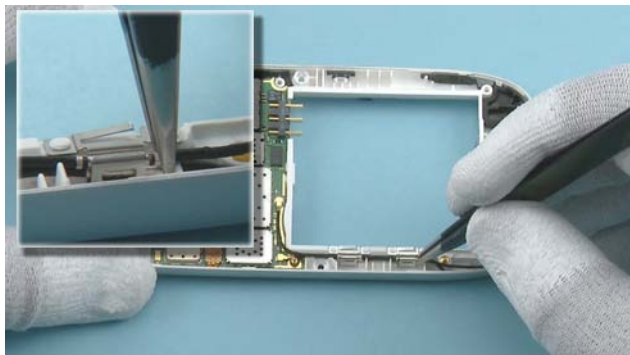
27) Use the same procedure as with the previous connector to connect the second MAIN ANTENNA connector.



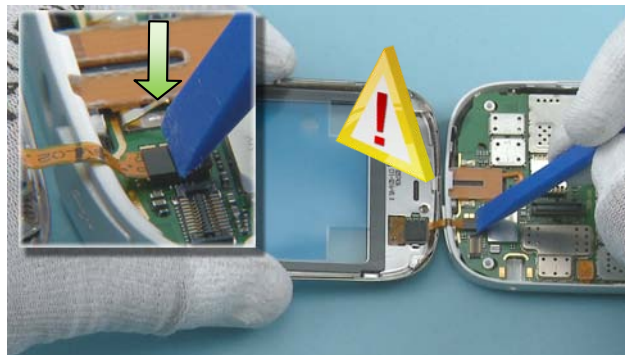
28) Attach the connector with the SS-231.



29) Place the MAIN ANTENNA connector cable into the first clip with the tweezers.



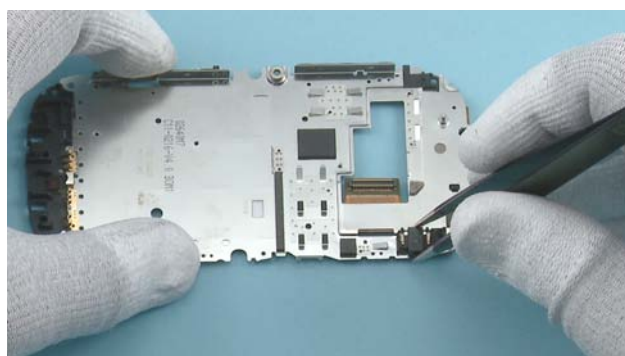
30) Place the MAIN ANTENNA connector cable into the second clip.



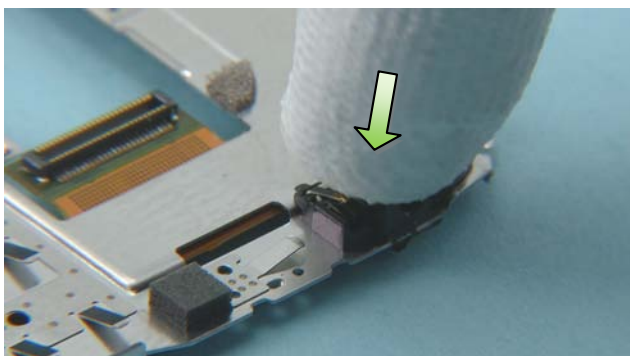
31) Hold the A-COVER as shown and connect the connector with the SS-93. Be careful not to damage the connector, the flex or any nearby components!



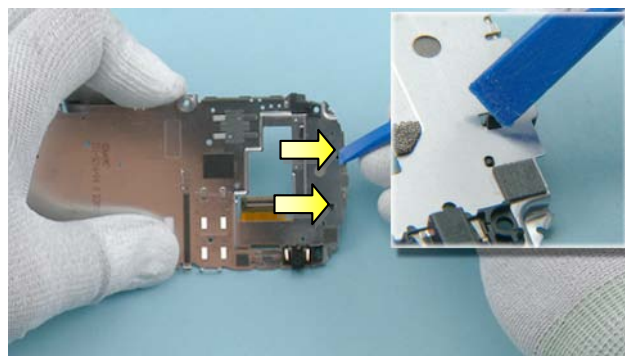
32) Hold the DISPLAY as shown and connect the connector with the SS-93. Be careful not to damage the connector, the flex or any nearby components!



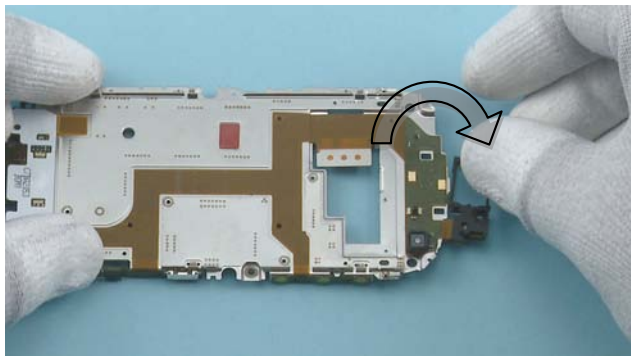
33) Place the DC JACK into the CHASSIS with the tweezers.



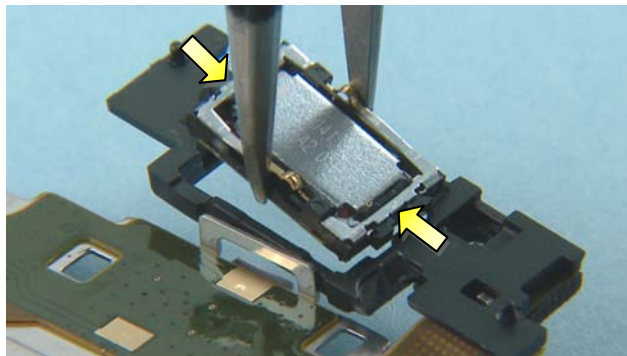
34) Push down the DC JACK to activate the adhesive.



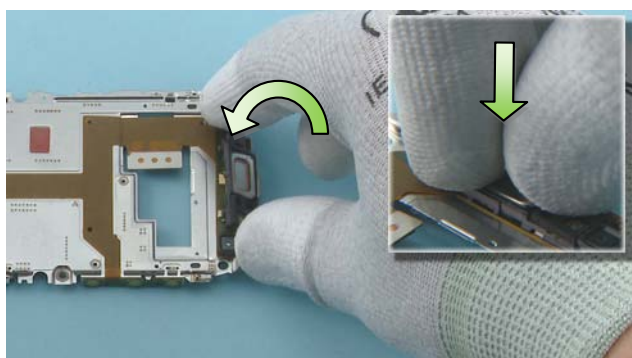
35) Open the two EARPIECE HOLDER clips with the SS-93 and turn the CHASSIS over.



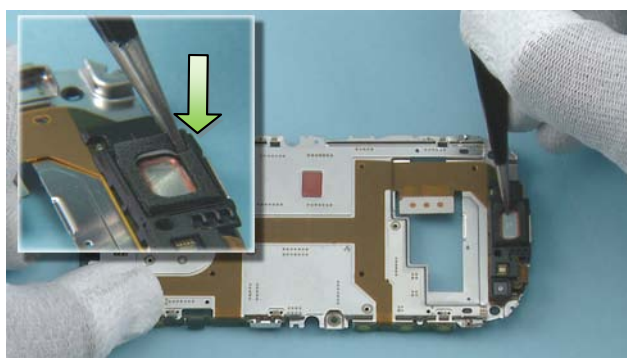
36) Turn over the EARPIECE HOLDER.



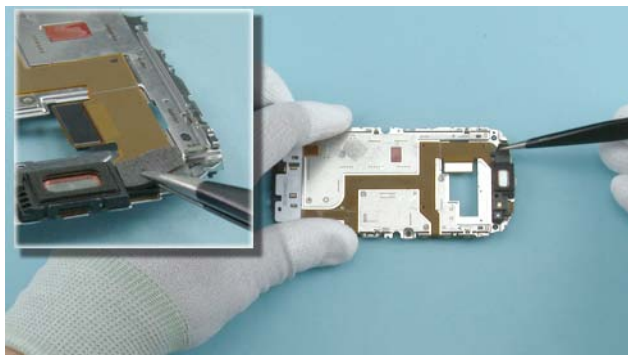
37) Place the EARPIECE to the EARPIECE HOLDER with the tweezers. Make sure that the EARPIECE is placed correctly.



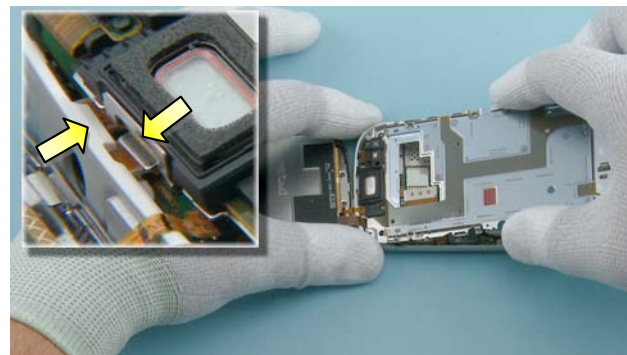
38) Turn over the EARPIECE HOLDER and press it gently to attach the clips.



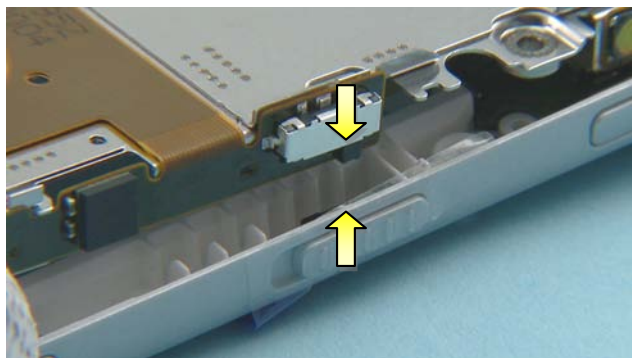
39) Place the EARPIECE GASKET with the tweezers and press it slightly to activate the adhesive.



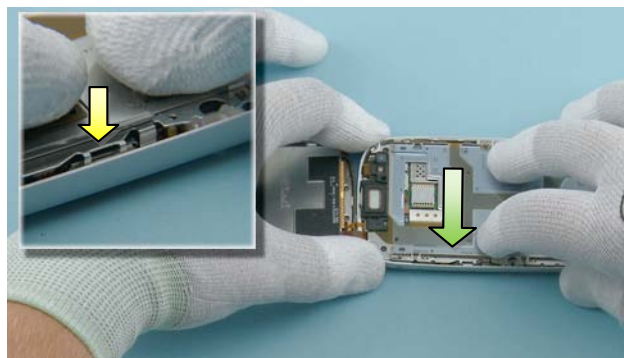
40) Place the A-COVER SENSOR SUPPORT PAD with the tweezers as shown.



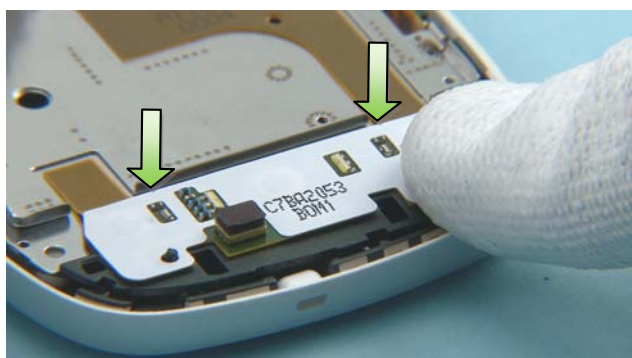
41) Place the top side of the CHASSIS next to the B-COVER so that the CHASSIS clip is placed under the B-COVER clip. Set down the CHASSIS.



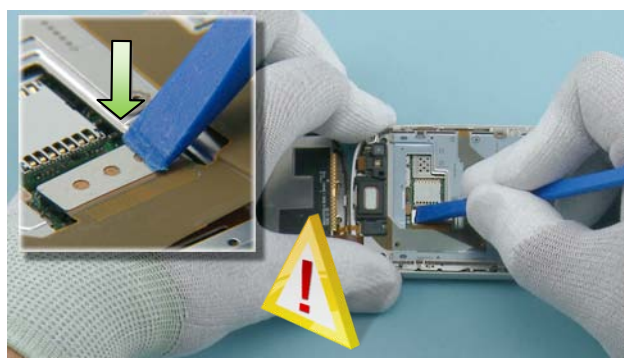
42) Make sure that the LOCK KEY is in the correct position.



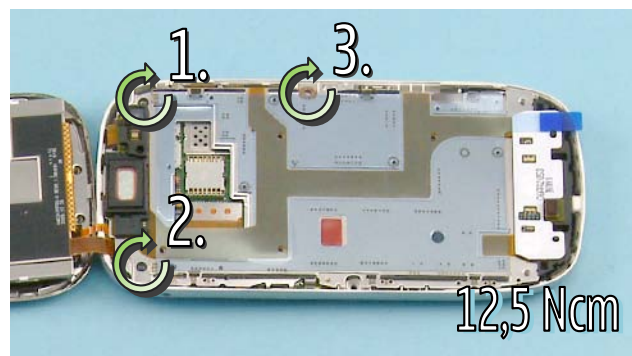
43) Apply pressure to the side indicated on the picture to lock the clip.



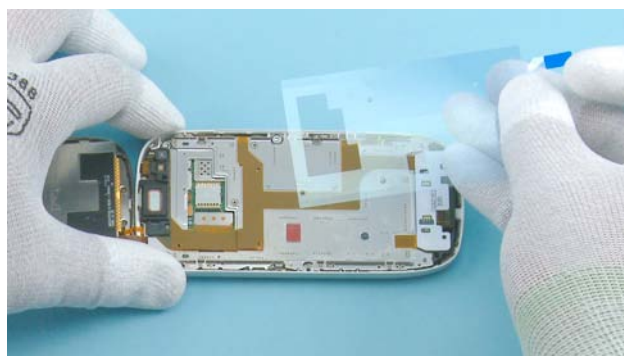
44) Press down also from the bottom end of the CHASSIS to lock the remaining clips.



45) Use the SS-93 to connect the MAIN FLEX connector. Be careful not to damage the connector!



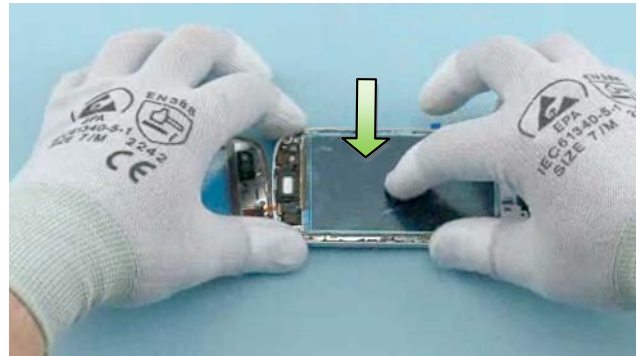
46) Tighten these three TORX + size 6 screws to the torque of 12,5 Ncm in the order shown.



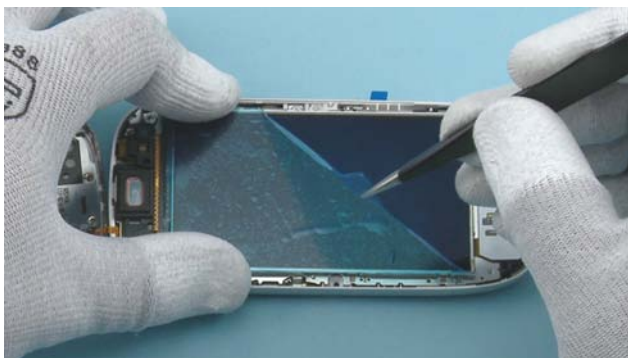
47) Remove the adhesive protective film from the CHASSIS.



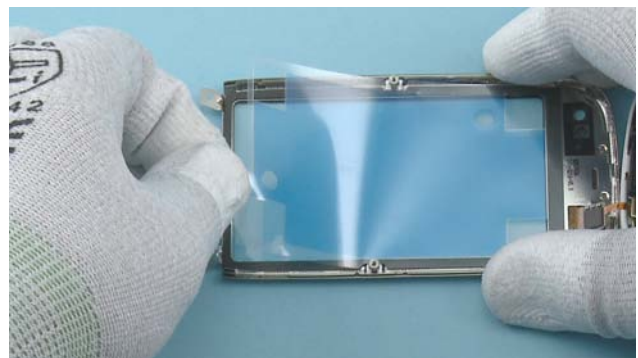
48) Turn over the DISPLAY. Be careful not to damage the flex!



49) Press the DISPLAY gently down into its place.



50) Remove the protective film from the DISPLAY with the tweezers.



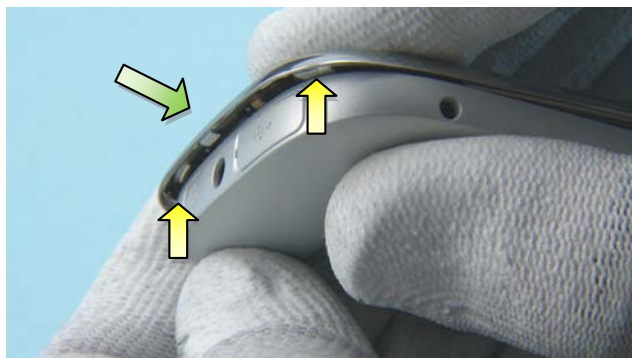
51) Remove the protective film from the A-COVER.



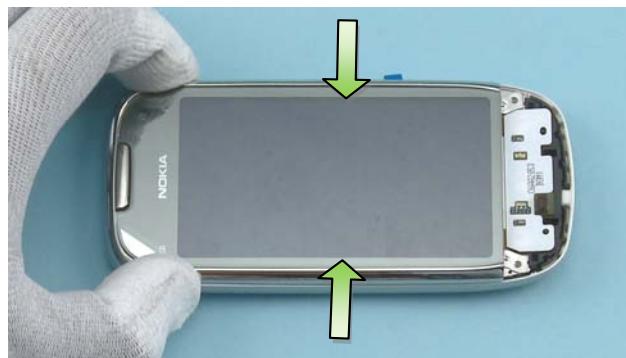
52) Turn over the A-COVER. Be careful not to damage the flex!



53) Place the A-COVER as shown and make sure that the A-COVER flex does not go between the edges of the A-COVER and the B-COVER.



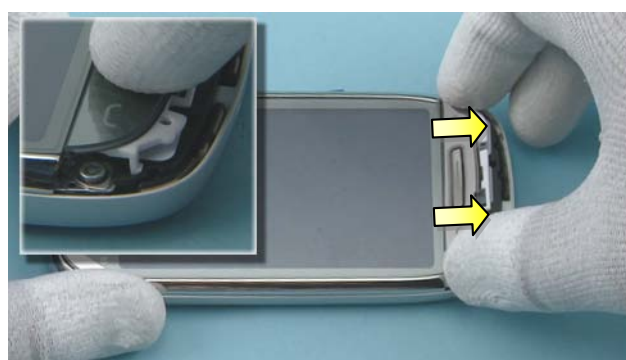
54) Then carefully push the A-COVER to the direction shown to fasten these clips.



55) Press the A-COVER from the sides.



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



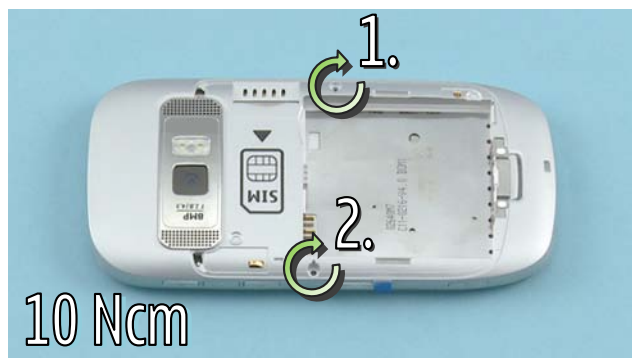
57) Place the KEYMAT into place and press it to lock its clips.



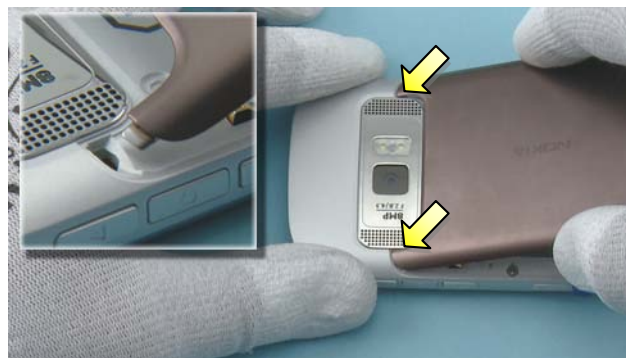
58) Push the A-COVER CHIN into place.



59) Press the A-COVER CHIN from the top to lock the two clips on the bottom end.



60) Tighten the two TORX + size 4 screws to the torque of 10 Ncm in the order shown.



61) When assembling the BATTERY COVER, first place the top part.



62) Then set down the bottom end and press it gently to lock it.



63) Finally, remove the LOCK KEY protective film.

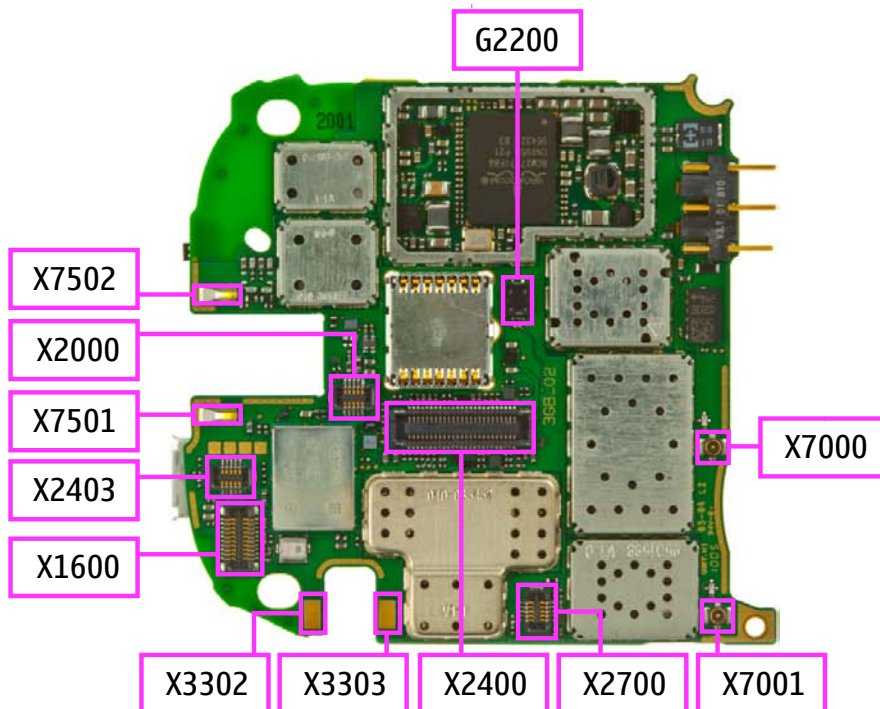


64) The Nokia C7-00 assembly procedure is now complete.

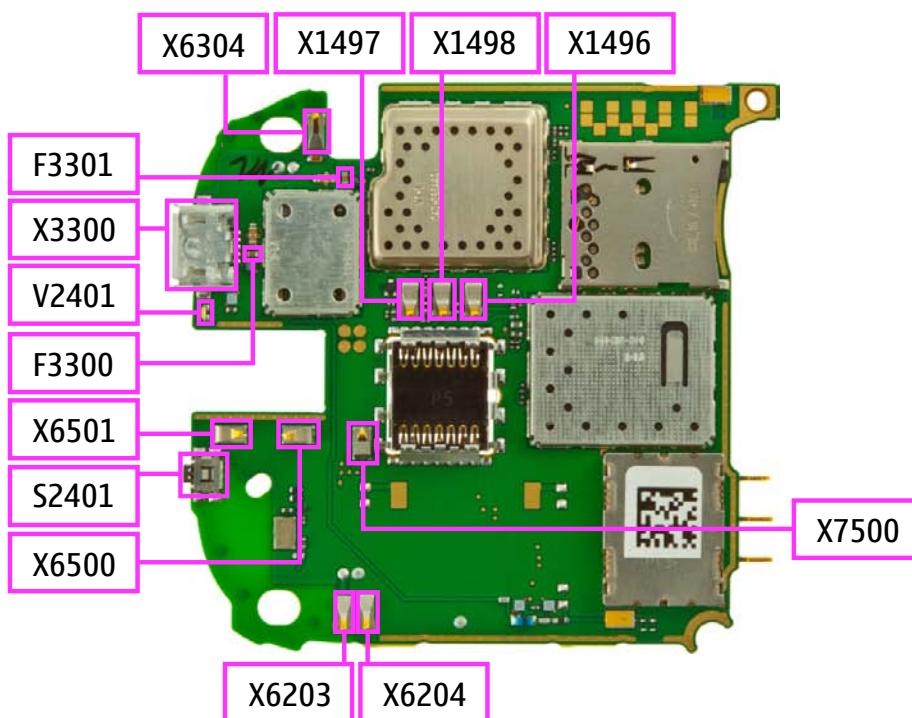
-END OF ASSEMBLY-

11. SOLDER COMPONENTS

TOP



BOTTOM



Ver. 1.0