

SERVICE MANUAL Level 1&2

NOKIA E5-00

RM-632 / RM-634



Transceiver characteristics

Band:

GSM 850/900/1800/1900 + EDGE
WCDMA 900/1900/2100 (RM-632)
WCDMA 850/1900/2100 (RM-634)

Display:

QVGA (320 x 240 pixels) 2.36" screen up to 262k colors

Camera:

5 Mpix camera with zoom up to 4 x (digital)

Operating System:

Symbian v. 9.3
S60 3rd Edition, Feature Pack 2

Connections:

Bluetooth 2.0 + EDR
High Speed Micro USB with charging
3.5 mm AV connector
2.0 mm DC charger plug
Micro SD card up to 32 GB
WLAN 802.11 b/g
A-GPS

Transceiver with BL-4D battery pack

Talk time	Standby
GSM: Up to 7.5 hours	GSM: Up to 600 hours
WCDMA: Up to 4.8 hours	WCDMA: Up to 552 hours

Note:

Talk times are dependant on network parameters and phone settings

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Change history

Status	Version No.	Date	Comments
Approved	1.0	25.05.2010	First approved version

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.

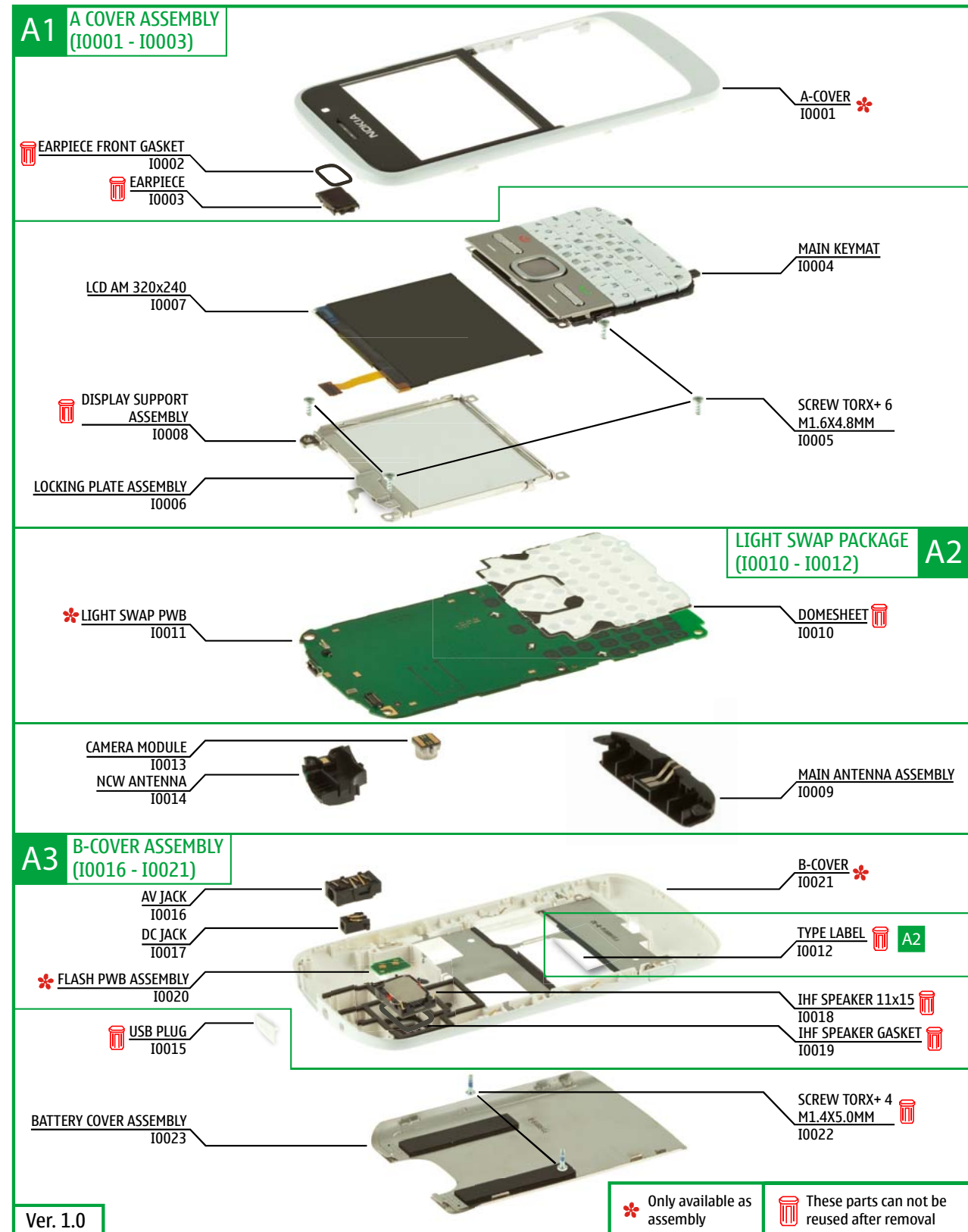
Leaving the battery in hot or cold places, such as in a closed car in summer or winter conditions, will reduce the capacity and lifetime of the battery. Always try to keep the battery between 15°C and 25°C (59°F and 77°F).

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



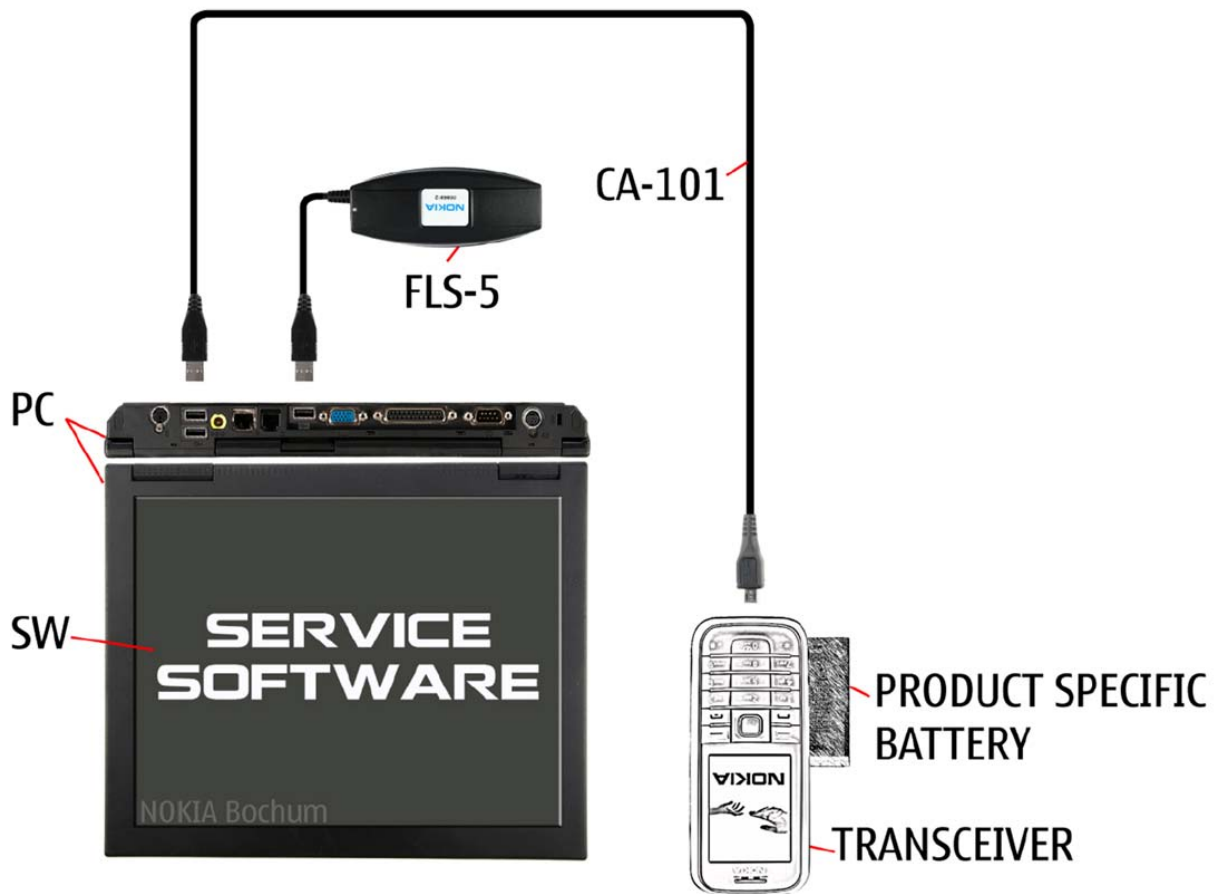
7. SERVICE DEVICES

 <p>FLS-5</p> <p>FLS-5 Flash Device</p>	 <p>CA-101 100cm</p> <p>CA-101 Service Cable</p>	 <p>AC-8E Travel Charger</p>
 <p>BL-4D Battery</p>	 <p>SS-88 Camera Removal tool</p>	 <p>NMP 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>

8. SW-UPDATE

Flash concept (Point of Sales)

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



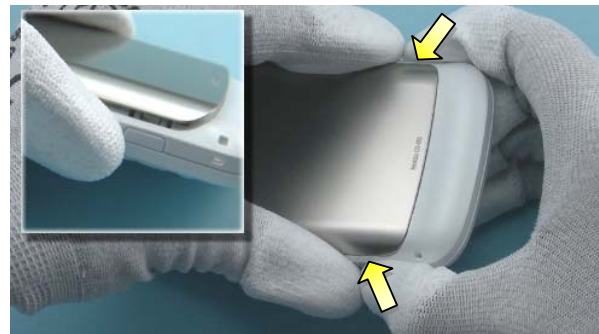
1) Nokia E5-00 disassembly.



2) You must use the Nokia Standard Toolkit version 2. You will also need the camera removal tool SS-88, AV plug and the DC plug.



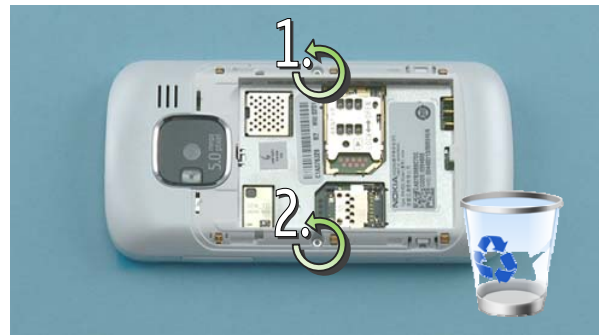
3) Protect the A-COVER window with a protective film.



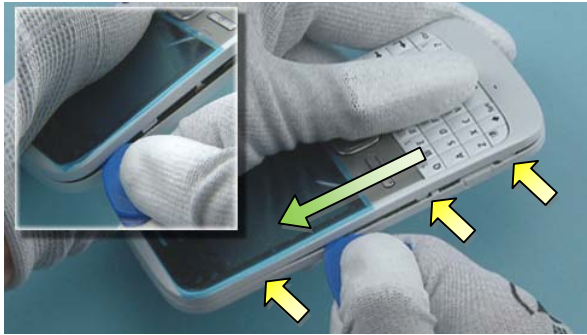
4) Release the BATTERY COVER ASSEMBLY by pressing the release buttons on both sides.



5) Remove the BATTERY COVER ASSEMBLY by first lifting up the bottom end. Then pull the BATTERY COVER ASSEMBLY in the direction shown.



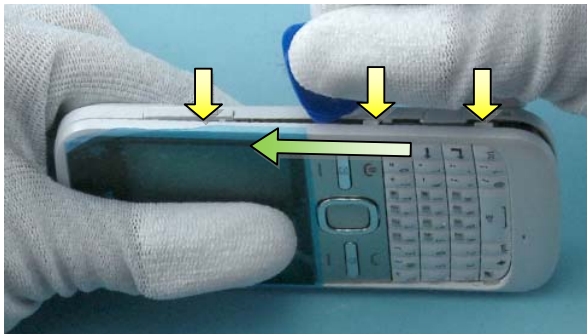
6) Unscrew the two TORX+ size 4 screws in the order shown. Do not use them again!



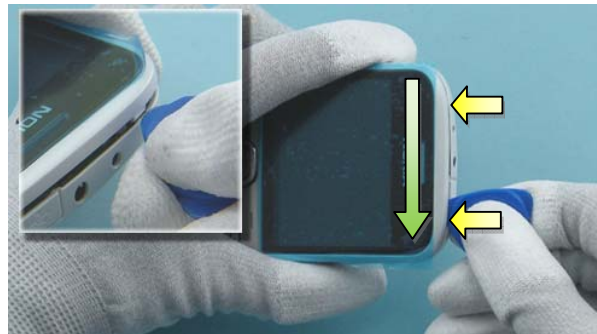
7) To detach the A-COVER ASSEMBLY, first release the three clips on the left side by sliding the SRT-6 to the direction shown.



8) Then release the two clips on the bottom side.



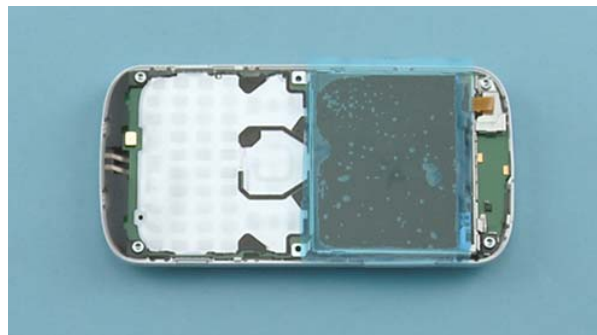
9) Continue to slide the SRT-6 in the direction shown to release the three clips on the right side.



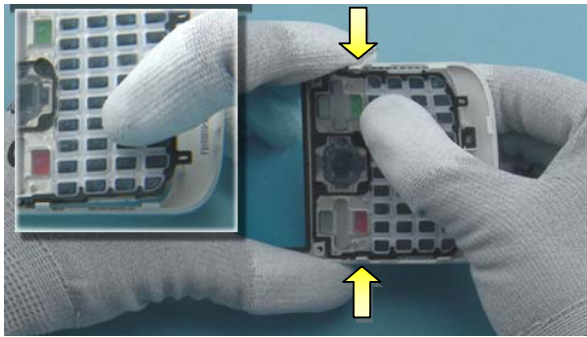
10) Finally release the two clips on the top side.



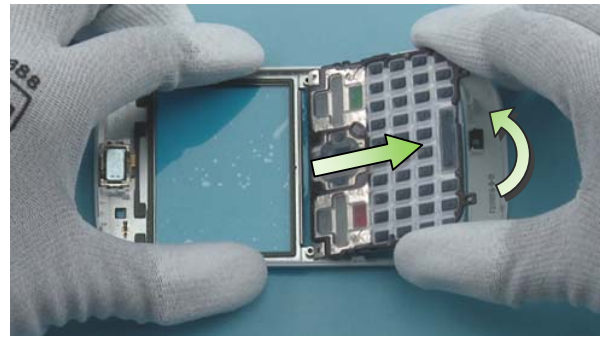
11) The display gasket in the A-COVER is lightly glued to the LCD. Loosen the adhesive by carefully lifting up the A-COVER. The A-COVER can now be separated.



12) Protect the LCD with a protective film.



13) Release the clips holding the MAIN KEYMAT on both sides.



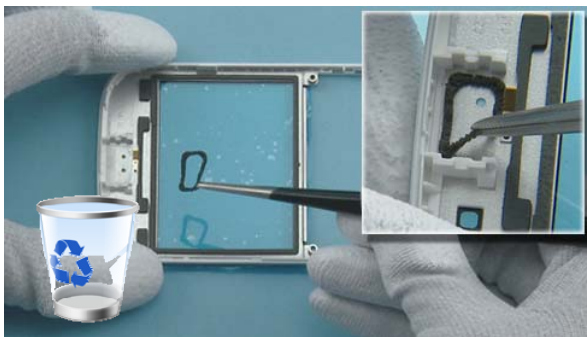
14) Lift up the bottom end of the MAIN KEYMAT. Pull out the MAIN KEYMAT in the direction shown and remove it.



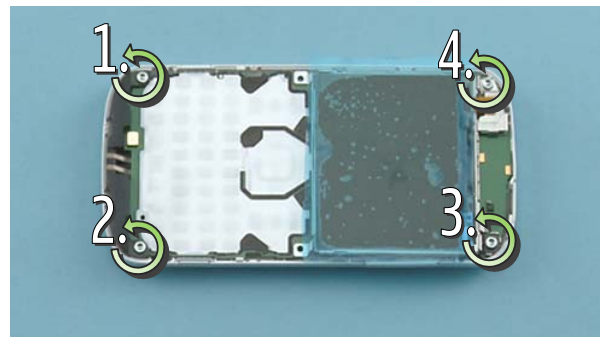
15) Use the SS-93 to release the EARPIECE.



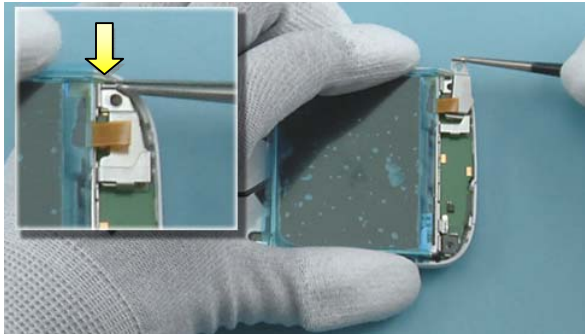
16) Remove the EARPIECE with the tweezers. Do not use it again.



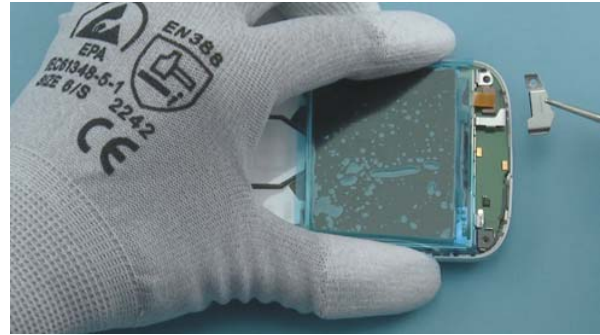
17) Use the tweezers to remove the EARPIECE FRONT GASKET. Discard the EARPIECE FRONT GASKET.



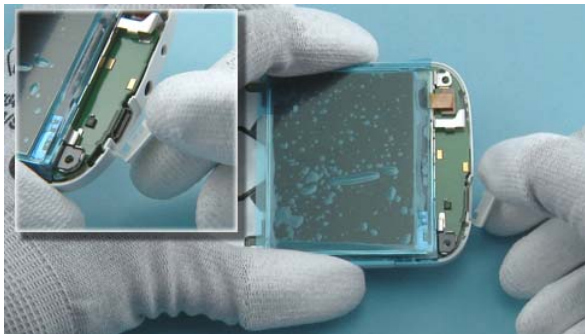
18) Unscrew the four TORX+ size 6 screws in the order shown. Note that these screws can be reused. Do not discard them!



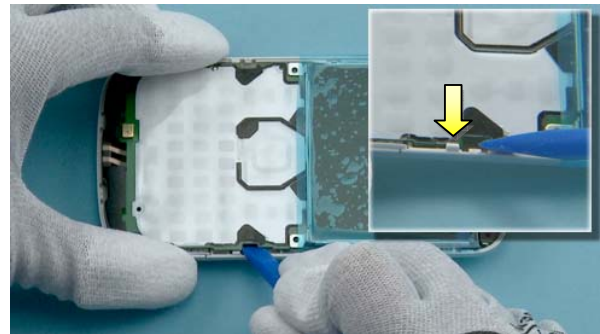
19) Release the clip holding the LOCKING PLATE ASSEMBLY with the tweezers. Lift up the locking plate as shown.



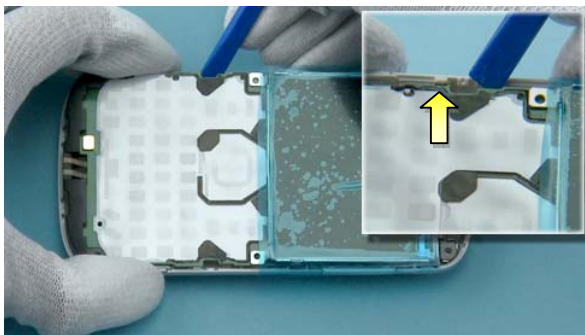
20) Remove the LOCKING PLATE ASSEMBLY with the tweezers.



21) Open the USB PLUG.



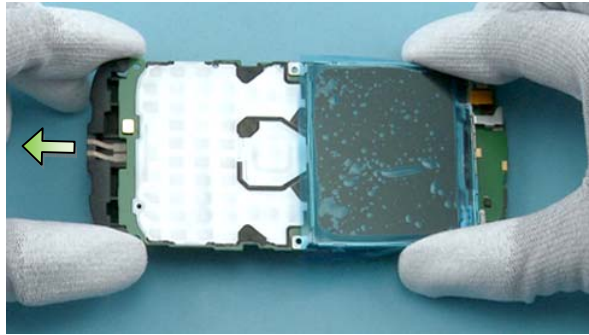
22) To remove the LIGHT SWAP PWB, use the SS-93 to release the first clip ...



23) ... and the second clip on the other side holding the LIGHT SWAP PWB.



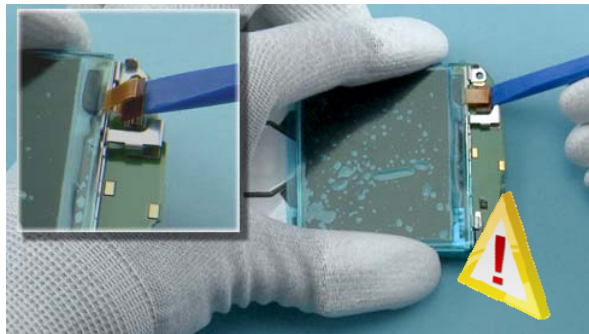
24) Lift up the LIGHT SWAP PWB and remove it.



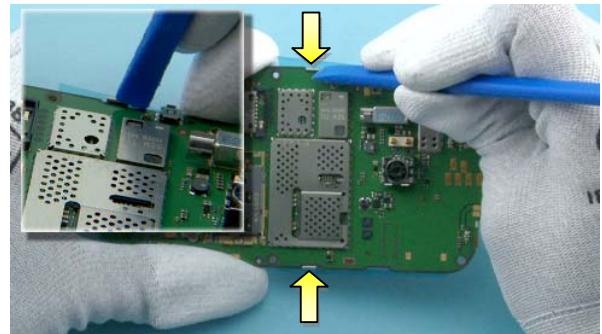
25) To release the MAIN ANTENNA ASSEMBLY, pull it to the direction shown.



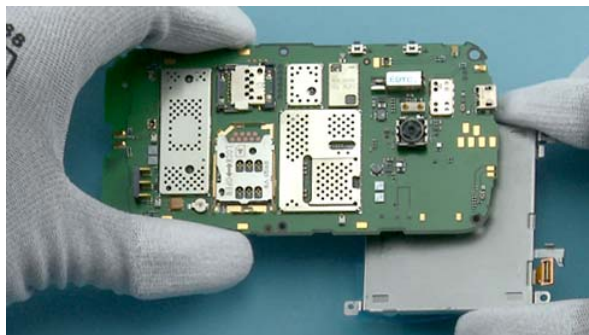
26) Remove the MAIN ANTENNA ASSEMBLY.



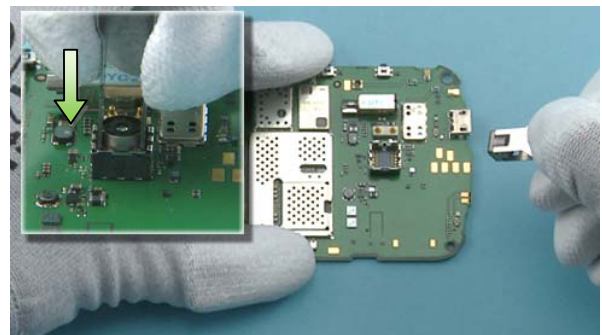
27) Use the SS-93 to open the LCD CONNECTOR.
Be careful not to damage the connector!



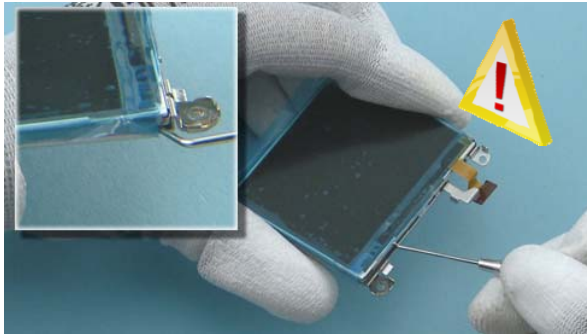
28) Release the two clips holding the DISPLAY
SUPPORT ASSEMBLY with the SS-93.



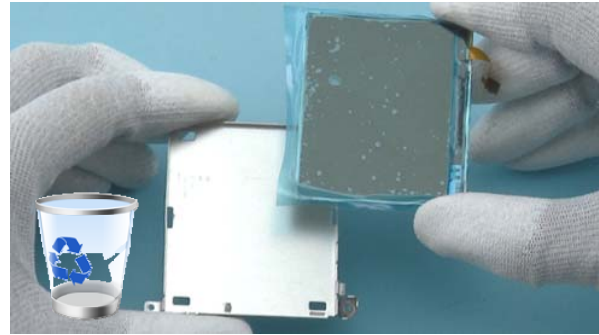
29) Separate the DISPLAY SUPPORT ASSEMBLY.



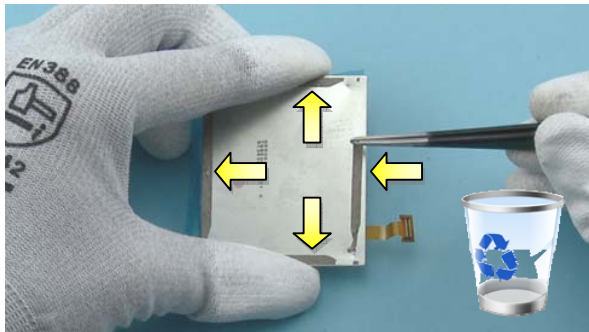
30) Push the camera removal tool SS-88 down until
the camera retaining clips are released. Lift up the
SS-88 and remove the CAMERA MODULE.



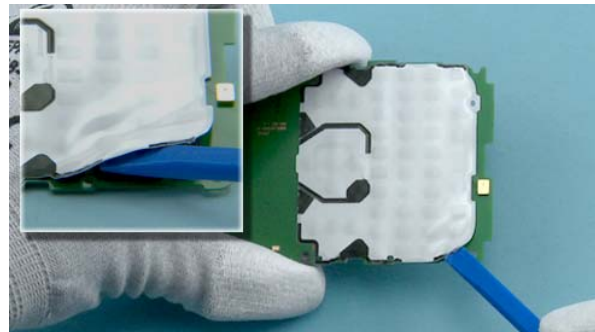
31) To release the LCD, use the dental tool to carefully loosen the adhesive. Be careful not to break the LCD or injure yourself with the sharp end of the dental tool!



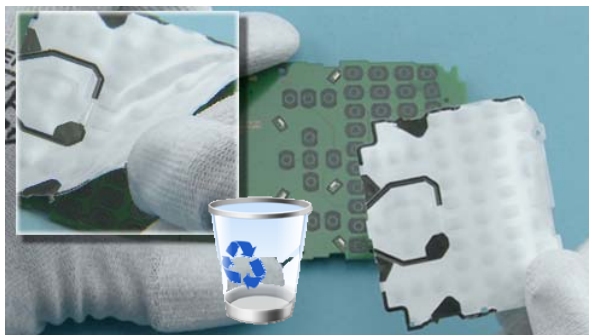
32) Remove the DISPLAY SUPPORT ASSEMBLY. Do not use it again.



33) Remove the adhesive from the LCD with the tweezers. Do not use the adhesive again.



34) Use the SS-93 to lift up one corner of the DOMESHEET.



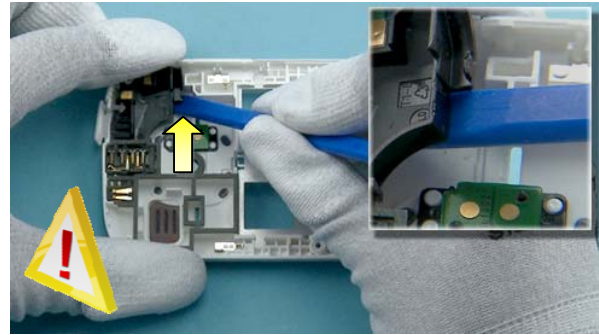
35) Peel off and remove the DOMESHEET. Discard the removed DOMESHEET.



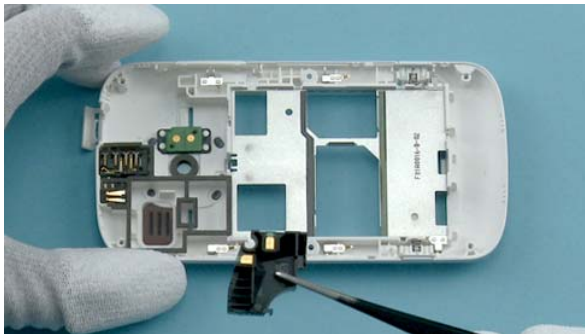
36) Use the SS-93 to release the IHF SPEAKER. Remove the IHF SPEAKER with the tweezers. Do not use it again.



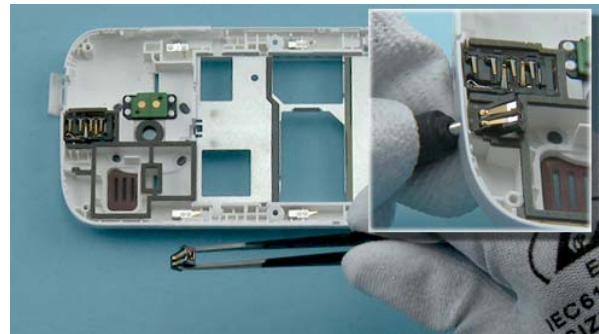
37) Use the tweezers to remove the IHF SPEAKER GASKET. Do not use it again.



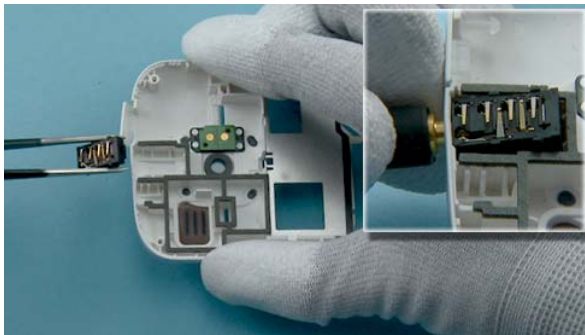
38) Use the SS-93 to carefully release the clip holding the NCW ANTENNA. Lift up the NCW ANTENNA with the SS-93.



39) Remove the NCW ANTENNA.



40) Release the DC JACK with the DC plug and remove it with the tweezers.



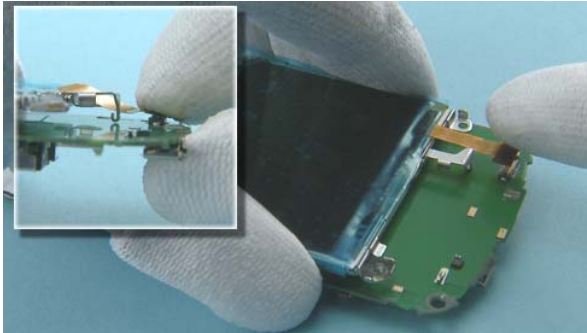
41) Release the AV JACK with the AV plug and remove it with the tweezers.



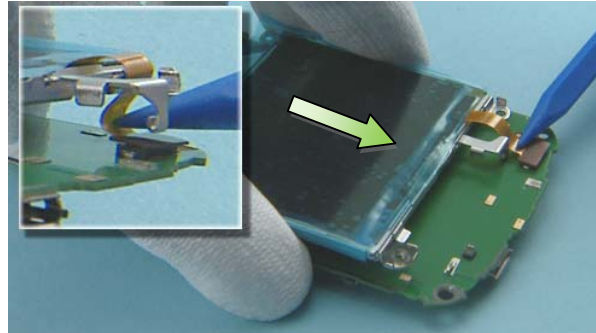
42) Nokia E5-00 disassembly is now complete.

-END OF DISASSEMBLY-

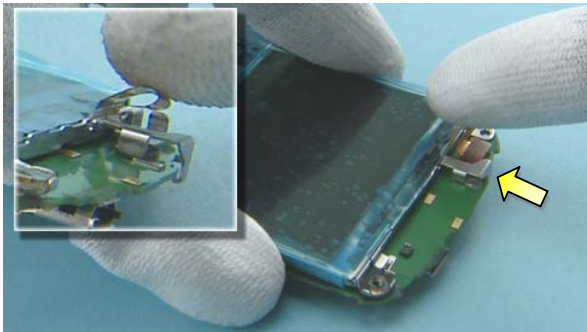
10. ASSEMBLY HINTS



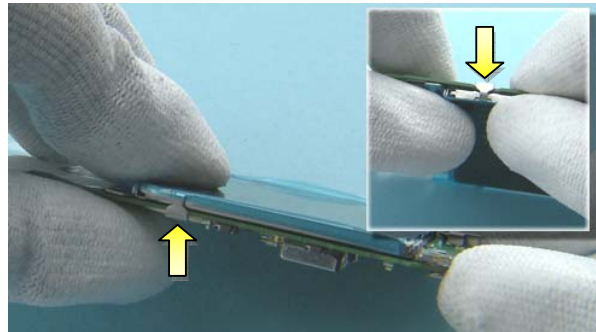
1) Connect the LCD connector to the engine board.



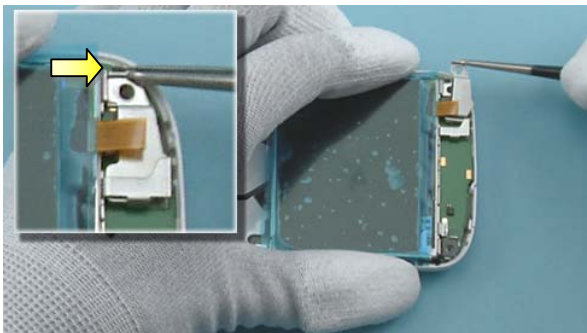
2) Use the SS-93 to carefully bend the LCD flex while pushing the LCD carefully forward.



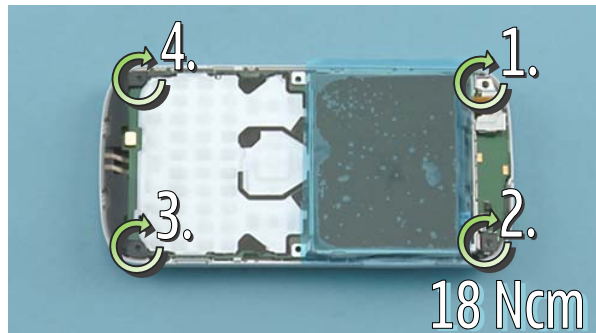
3) Position the top clip and carefully press down the LCD flex.



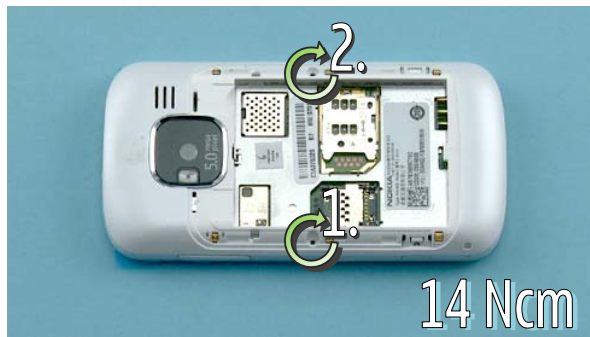
4) Press down the clips on both sides.



5) Slide the LOCKING PLATE ASSEMBLY between the LCD connector and the bent flex. Press down the shown clip to lock the LOCKING PLATE ASSEMBLY.



6) Tighten the four TORX + size 6 screws to the torque of 18 Ncm in the order shown.



7) Tighten the two TORX + size 4 screws to the torque of 14 Ncm in the order shown.

11. SOLDER COMPONENTS

