

# SERVICE MANUAL Level 1&2



### RM-626

#### **Transceiver characteristics**

#### Band

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

### **Display**

4" AMOLED, up to 16 million colors, 16:9 widescreen aspect ratio, 640x360 pixel resolution

#### Camera

8 Mpix Full Focus (EDOF) camera with dual led flash

#### **Operating System**

Symbian<sup>3</sup>

#### **Connections:**

HDMI connector with Dolby Digital plus, analog TV out with stereo audio via 3.5 mm AV connector, Micro USB 2.0 with OTG support, Bluetooth 2.1 + EDR and 3.0, WLAN 802.11 b/g/n



Transceiver with BL-4D battery pack

Talk time	Standby	
GSM:	GSM:	
Up to 9 hours	Up to 430 hours	
WCDMA:	WCDMA:	
Up to 5 hours	Up to 470 hours	

#### Note:

Talk times are dependent on network parameters and phone settings



### **Table of contents**

		YRIGHT	
2.		RNINGS AND CAUTIONS	
2		WARNINGS	
2	2.2	CAUTIONS	5
3.	ESD	PROTECTION	6
4.	CARI	E AND MAINTENANCE	7
5.	BAT	TERY INFORMATION	8
		LODED VIEW	
		VICE DEVICES	
8.	SOF	TWARE UPDATE	12
9.	DISA	ASSEMBLY INSTRUCTIONS	13
10.	ASSI	EMBLY INSTRUCTIONS	25
11	SOLI	DER COMPONENTS	38



#### **CHANGE HISTORY**

Status	Version No.	Date	Comments
Approved	1.0	18.11.2010	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.



#### 1. COPYRIGHT

Copyright © 2010 Nokia. All rights reserved.

Reproduction, transfer, distribution or storage of part or all of the contents in this document in any form without the prior written permission of Nokia is prohibited.

Nokia, Nokia Connecting People, and Nokia X and Y are trademarks or registered trademarks of Nokia Corporation. Other product and company names mentioned herein may be trademarks or tradenames of their respective owners.

Nokia operates a policy of continuous development. Nokia reserves the right to make changes and improvements to any of the products described in this document without prior notice.

Under no circumstances shall Nokia be responsible for any loss of data or income or any special, incidental, consequential or indirect damages howsoever caused.

The contents of this document are provided "as is". Except as required by applicable law, no warranties of any kind, either express or implied, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose, are made in relation to the accuracy, reliability or contents of this document. Nokia reserves the right to revise this document or withdraw it at any time without prior notice.

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

- 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).

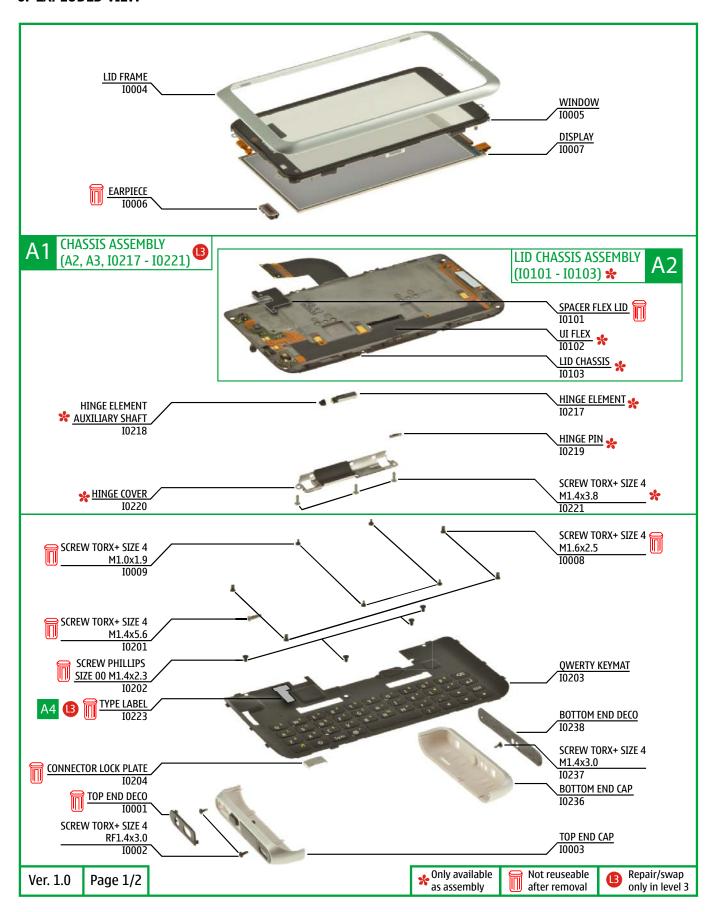
A phone with a hot or cold battery may temporarily not work, even when the battery is fully charged. Batteries' performance is particularly limited in temperatures well below freezing.

Do not dispose batteries in a fire! Dispose of batteries according to local regulations (e.g. recycling).

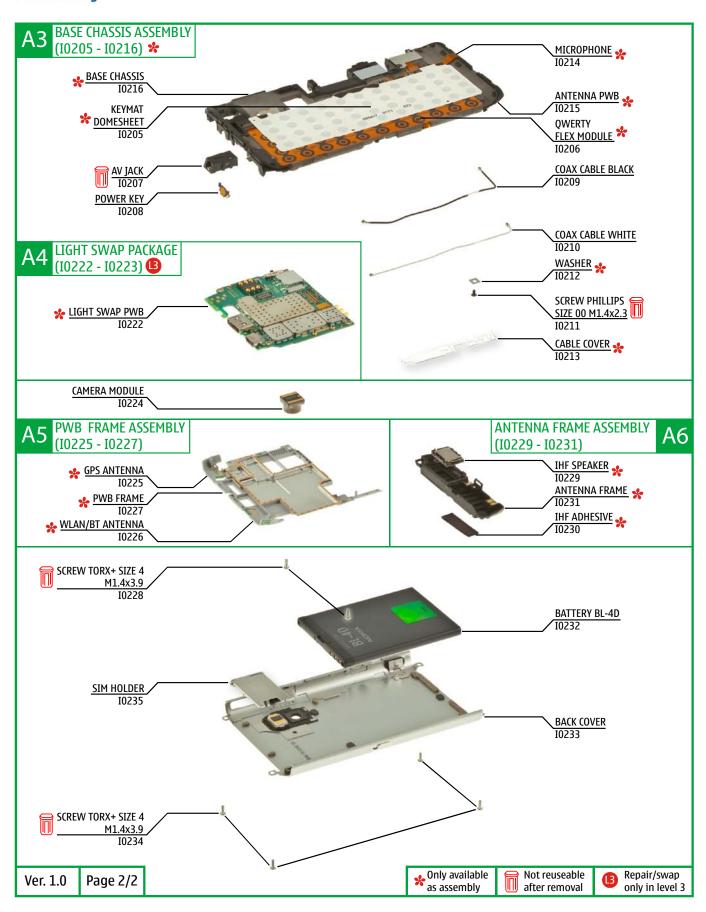
Do not dispose as household waste.



#### 6. EXPLODED VIEW









#### 7. SERVICE DEVICES

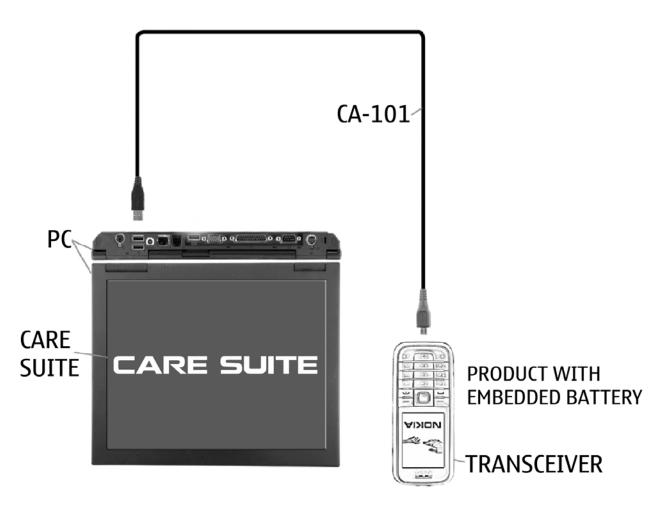




#### 8. SOFTWARE UPDATE

#### 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 E7-00 disassembly.



2) You must use the Nokia Standard Toolkit version 2. You will also need the SS-231 RF Connector tool, SS-210 Camera Removal tool and an AV plug.



3) Protect the WINDOW with protective film.



4) Pull out the SIM HOLDER with the SRT-6 and remove it.



5) Open the HDMI door.

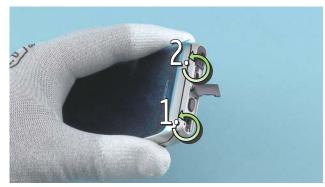


6) Use the SRT-6 to release the TOP END DECO as shown.





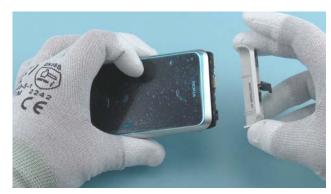
7) The TOP END DECO is not reusable. Discard it.



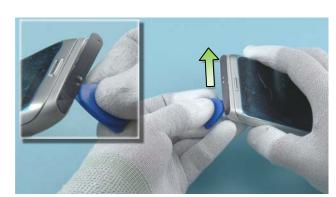
8) Unscrew the two Torx+ size 4 screws in the order shown.



9) Release the TOP END CAP by pushing it to the direction shown.



10) Remove the TOP END CAP.



11) To release the BOTTOM END DECO, slide the SRT-6 under it to the direction shown.

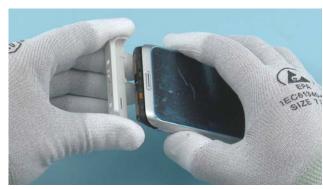


12) Remove the BOTTOM END DECO.





13) Unscrew the shown Torx+ size 4 screw.



14) Pull out and remove the BOTTOM END CAP.



15) Unscrew the shown Torx+ size 4 screw. Do not use it again. Discard it.



16) Slide the device open.



17) Then turn the display part of the device as shown.



18) Unscrew the four Phillips size 00 screws in the order shown. Do not use them again. Discard them.





19) Remove the QWERTY KEYMAT.



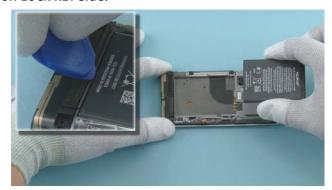
20) Close the device and unscrew the four Torx+ size 4 screws in the order shown. These screws cannot be used again. Discard them.



21) To release the BACK COVER, insert the SRT-6 between the BACK COVER and the BASE CHASSIS. Then slide the SRT-6 to the direction shown. Do this ONLY on LOCK KEY side!



22) Lift up and remove the BACK COVER.



23) Lift up the BATTERY with the SRT-6 and remove it.



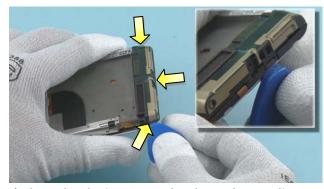
24) Open the device as shown. Release the CONNECTOR LOCK PLATE carefully with the dental tool. Be careful not to injure yourself or the connector under the CONNECTOR LOCK PLATE with the sharp end of the dental tool!



25) Remove the CONNECTOR LOCK PLATE with the tweezers. The CONNECTOR LOCK PLATE cannot be reused. Discard it.



26) Open the QWERTY FLEX MODULE connector with the dental tool. Be careful not to damage the connector or any nearby components!



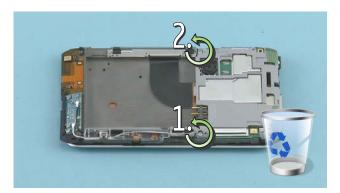
27) Close the device. Open the three shown clips holding the ANTENNA FRAME ASSEMBLY by using the SRT-6.



28) The ANTENNA FRAME ASSEMBLY can be now separated.

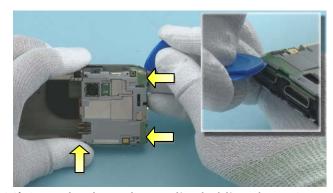


29) Use the dental tool to lever out the IHF SPEAKER. Remove the IHF SPEAKER with the tweezers.

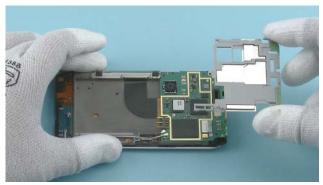


30) Unscrew the two Torx+ size 4 screws in the order shown. Do not use them again. Discard them.





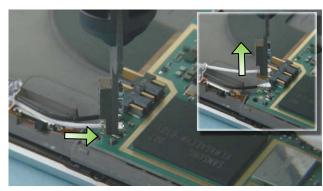
31) Open the three shown clips holding the ENGINE BOARD FRAME ASSEMBLY with the SRT-6 as shown.



32) Remove the ENGINE BOARD FRAME ASSEMBLY.



33) Use the RF connector tool SS-231 to release the two coax cables. First place the tool on top of the cable.



34) Then slide it to direction shown to lock it to the connector. Pull up the SS-231 to release the cable.



35) Use the same procedure on the second cable connector.

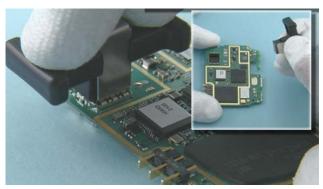


36) Turn the ENGINE BOARD carefully around. Open the UI FLEX connector with the SRT-6. Be careful not to damage the connector or nearby components!

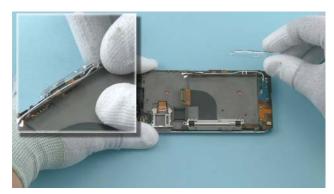




37) The ENGINE BOARD can now be separated.



38) Use the camera removal tool SS-210 to release the CAMERA MODULE. Lift up and remove the CAMERA MODULE.



39) Remove the CABLE COVER.



40) Unscrew the shown Phillips size 00 screw. This screw cannot be reused. Discard it.

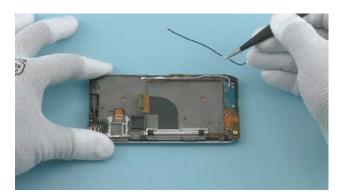


41) Remove also the WASHER with the tweezers.

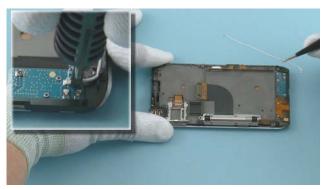


42) Use the SS-231 to release the other end of the BLACK COAX CABLE.

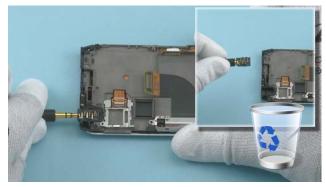




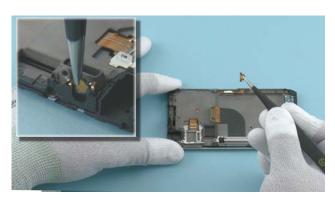
43) Remove the BLACK COAX CABLE with the tweezers.



44) Release also the WHITE COAX CABLE connector with the SS-231. Remove it with the tweezers.



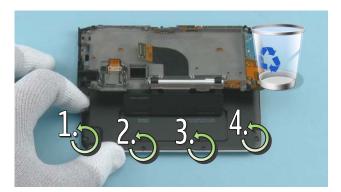
45) Use the AV plug to lift up and release the AV JACK. Discard the AV JACK.



46) Use the tweezers to lift up and remove the POWER KEY.



47) Open up the device as shown and unscrew the four Torx+ size 4 screws in the order shown. Do not use them again. Discard them.



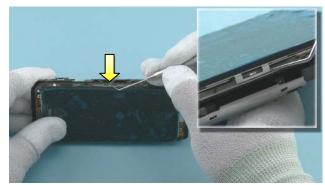
48) Turn the BASE CHASSIS ASSEMBLY to the other side as shown and unscrew the four Torx+ size 4 screws in the order shown. Do not use them again. Discard them.



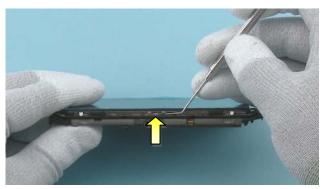
49) Close the device. Release the LID FRAME by lifting up from one of its corners.



50) Then release all the other sides and remove the LID FRAME.



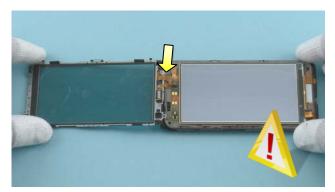
51) Release the clip holding the WINDOW with the DENTAL TOOL.



52) Release also the second clip on the opposite side.



53) Lift up the WINDOW very carefully with the SRT-6 from both sides. Be careful not to damage the WINDOW flex! Note that only the WINDOW has to be lifted. The DISPLAY should remain on its place.

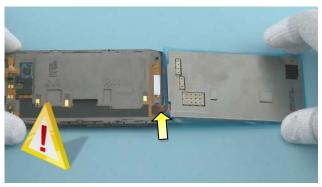


54) Turn around the WINDOW. While turning the WINDOW, be careful not to damage the WINDOW flex.

## **NOKIA** Care



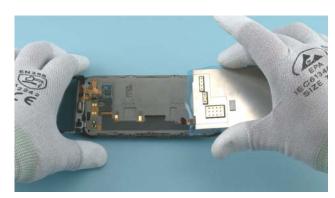
55) Protect the DISPLAY with protective film.



56) Lift up the DISPLAY and turn it around. While turning the DISPLAY, be careful not to damage the DISPLAY flex.



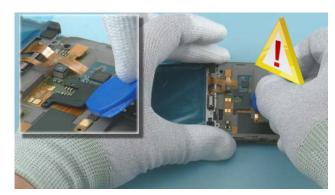
57) Open the DISPLAY connector with the SS-93. Be careful not to damage the connector!



58) Remove the DISPLAY.



59) Protect the other side of the WINDOW with protective film.

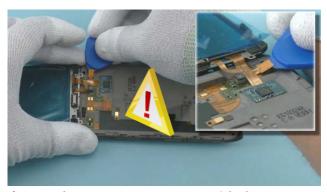


60) Use the SRT-6 to release the SPACER FLEX LID. Be careful not to damage the components nearby!

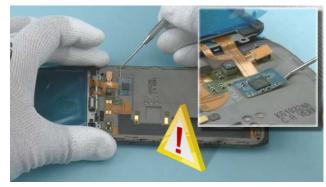




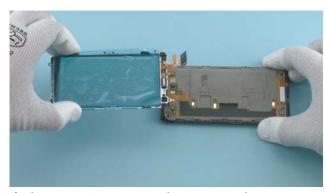
61) Remove the SPACER FLEX LID with the tweezers. Do not use it again. Discard it.



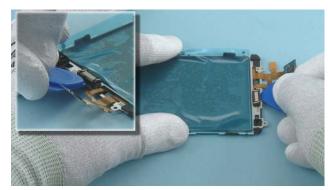
62) Open the WINDOW connector with the SRT-6. Be careful not to damage the connector.



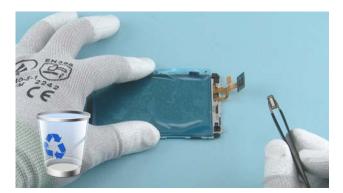
63) Release the shown part of the WINDOW flex with the dental tool. Be very careful not to damage the flex while releasing it.



64) The WINDOW can now be separated.



65) Release the EARPIECE with the SRT-6.



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





67) The Nokia E7-00 disassembly is now complete.

-END OF DISASSEMBLY-



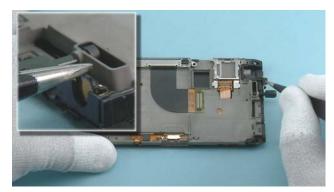
#### **10. ASSEMBLY INSTRUCTIONS**



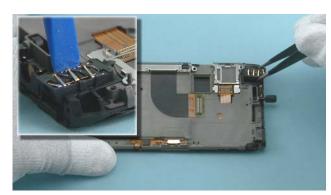
1) Nokia E7-00 assembly.



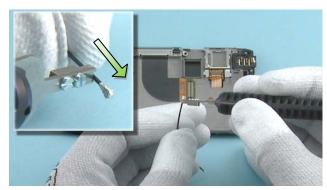
2) You must use the Nokia Standard Toolkit version 2. You will also need the SS-231 RF Connector tool.



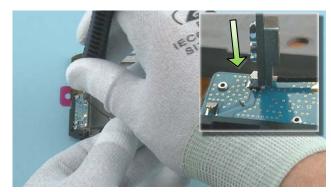
3) Place the POWER KEY with the tweezers.



4) Place the AV JACK with the tweezers, and push it with the SS-93 as shown to lock it in its place.

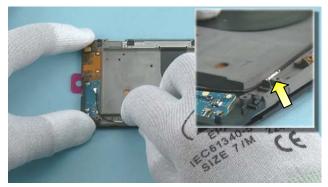


5) Slide the SS-231 to direction shown to lock it to the BLACK COAX CABLE connector.

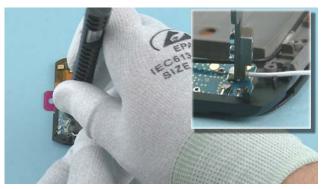


6) Push the connector to its place with the SS-231. Make sure BLACK COAX CABLE is connected to the shown connector.

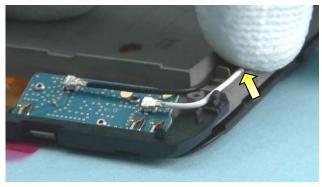




7) Carefully bend the BLACK COAX CABLE to its place as shown. Make sure that the metal shell of the cable is placed in the shown place.



8) To connect the WHITE COAX CABLE, use the same procedure as with the BLACK COAX CABLE.



9) Carefully bend the WHITE COAX CABLE to its place as shown. Make also sure that the metal shell of the WHITE COAX CABLE is in the shown place.



10) Place the WASHER to its place with the tweezers.

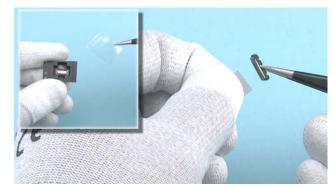


11) Tighten the Phillips size 00 screw to the torque of 10 Ncm.



12) Push the CABLE COVER to its place. Make sure that cables are inside the CABLE COVER.

# **NOKIA** Care



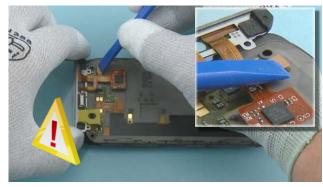
13) Open up the EARPIECE package. Remove the EARPIECE protective film.



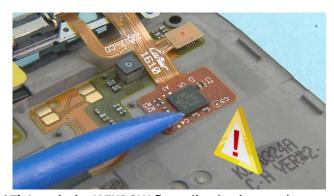
14) Use the shown guiding markings on the WINDOW to place the EARPIECE with the tweezers and push it down with the SS-93 to activate the adhesive.



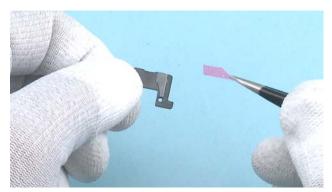
15) Remove the WINDOW flex adhesive protective film.



16) Connect the WINDOW connector by gently pressing it with the SS-93. Be careful not to damage the connector or any nearby components.

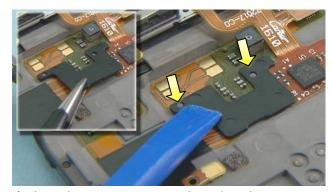


17) Attach the WINDOW flex adhesive by gently pressing with the SS-93. Be careful not to damage the connector or any nearby components.



18) Remove the SPACER FLEX LID adhesive protective film.

## **NOKIA** Care



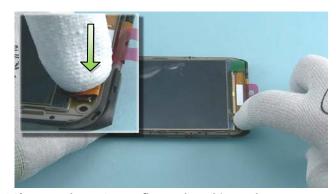
19) Place the SPACER FLEX LID by using the two shown guiding pins. Activate the SPACER FLEX LID adhesive by carefully pressing it with the SS-93.



20) Connect the DISPLAY connector with the SS-93. Be careful not to damage any nearby components.



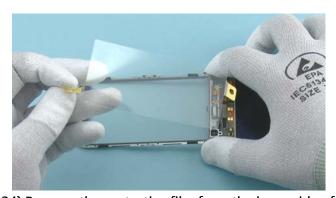
21) Turn around the DISPLAY. Be careful not to damage the DISPLAY flex while turning the DISPLAY.



22) Press the DISPLAY flex to bend it as shown.

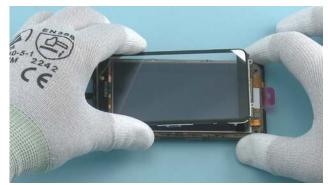


23) Remove the DISPLAY protective film.

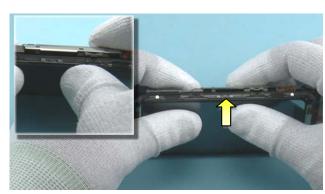


24) Remove the protective film from the inner side of the WINDOW.

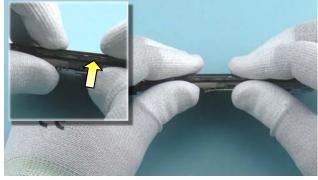




25) Turn the WINDOW over. While turning the WINDOW, make sure that the WINDOW connector stays connected and the WINDOW flex remains undamaged.



26) Press from side of the device as shown, to lock the shown clip holding the WINDOW in the LID CHASSIS ASSEMBLY.



27) Press also from the other side of the device as shown, to lock the shown clip holding the WINDOW in the LID CHASSIS ASSEMBLY.



28) Place the LID FRAME onto the WINDOW and press from all sides of the LID FRAME to attach it to the LID CHASSIS ASSEMBLY.



29) Slide open the device. Tighten these two TORX + size 4 screws to the torque of 5 Ncm in the order shown.



30) Tighten these two TORX + size 4 screws to the torque of 12 Ncm in the order shown.





31) Remove the protective film.



32) Pull out and remove the HINGE PIN to release the BASE CHASSIS ASSEMBLY.



33) Tighten these two TORX + size 4 screws to the torque of 5 Ncm in the order shown.



34) Tighten these two TORX + size 4 screws to the torque of 12 Ncm in the order shown.



35) Remove the DUMMY KEYMAT with the tweezers and close the device.

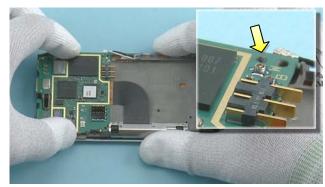


36) Move the two coaxial cables to the side, so that they are not damaged while assembling the ENGINE BOARD.

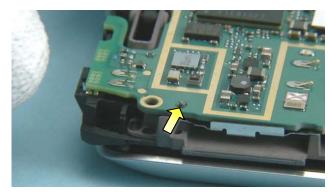
## **NOKIA** Care



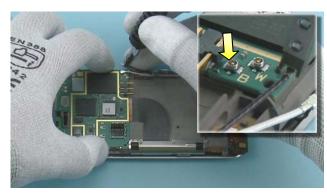
37) Connect the UI FLEX connector. Be careful not to damage connector or any nearby components.



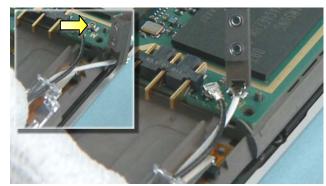
38) Lower down the ENGINE BOARD and check that the guiding pin is aligned correctly.



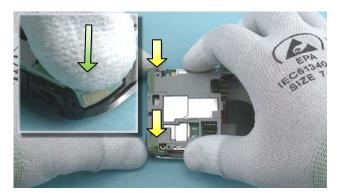
39) Check also the second guiding pin on the other side of the engine board.



40) Use the SS-231 and the same procedure as before to connect the BLACK COAX CABLE connector to the connector marked with a letter B.

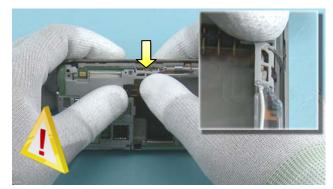


41) Use the SS-231 to connect the WHITE COAX CABLE connector to the connector marked with a letter W.



42) Place the ENGINE BOARD FRAME ASSEMBLY onto the ENGINE BOARD. Press from the shown places to lock it to its place.

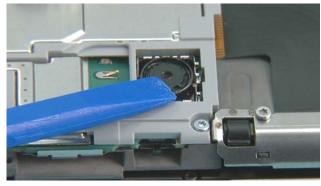




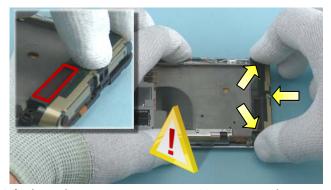
43) Finally press from shown place to lock the remaining holder. Make sure that the cables are not damaged while attaching the ENGINE BOARD FRAME ASSEMBLY.



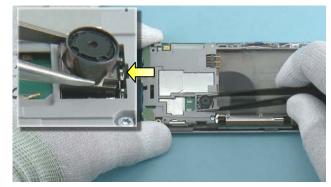
45) Tighten the two TORX + size 4 screws to the torque of 12 Ncm in the order shown.



47) Press gently the CAMERA MODULE with the SS-93 to attach the camera retaining clips.



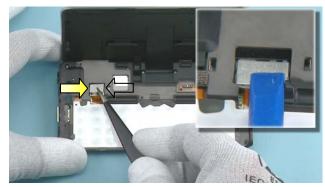
44) Place the ANTENNA FRAME ASSEMBLY as shown. Press the ANTENNA FRAME ASSEMBLY to lock the shown three clips. Be aware not to press from the IHF ADHESIVE area marked with red rectangle.



46) Place the CAMERA MODULE with the tweezers as shown. Make sure the CAMERA MODULE guiding is aligned with the guiding in the camera gasket.



48) Open up the device. Connect the QWERTY connector with the SS-93. Be careful not to damage the connector.



49) Place the CONNECTOR LOCK PLATE to its place. Press the CONNECTOR LOCK PLATE with the SS-93 to attach the two clips holding it.



50) Close the device and insert the BATTERY to its place.



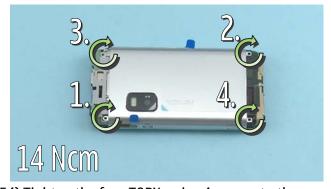
51) Remove the camera window protective film from the inner side of the BACK COVER.



52) Insert the shown side of the BACK COVER into BASE CHASSIS ASSEMBLY.



53) Then press from the opposite side to lock the BACK COVER to the BASE CHASSIS ASSEMBLY.



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



55) Slide open the device. Slide the QWERTY KEYMAT edge under the BACK COVER EDGE as shown.



56) Tighten the four Phillips size 00 screws to the torque of 8 Ncm in the order shown.



57) Close the device. Push the BOTTOM END CAP into its place and make sure that both sides are correctly placed and there is no gap visible.



58) Tighten the TORX + size 4 screw to the torque of 10 Ncm.



59) Take new BOTTOM END DECO.



60) Attach the BOTTOM END DECO onto the BOTTOM END CAP as shown. Press the BOTTOM END DECO to activate the adhesive.





61) Tighten the TORX + size 4 screw to the torque of 10 Ncm.



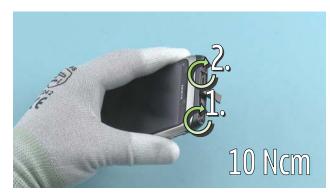
62) Remove the protective film from the TOP END CAP.



63) Open the HDMI door.



64) Push the TOP END CAP into its place as shown. Make sure the TOP END CAP is correctly in its place and there are no gaps visible.



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



66) Close the HDMI door.





67) Remove the protective film from TOP END DECO.



68) Remove the protective film also from the other side.



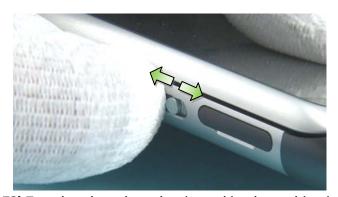
69) Place the TOP END DECO as shown. Push the TOP END DECO to lock it into its place.



70) Remove the volume key protective film.



71) Push in the SIM HOLDER.



72) Test that the volume key is working by pushing it in both directions few times.

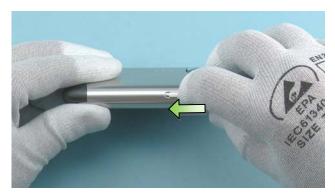




73) Remove the protective film from the back cover.



74) Remove the lock key protective film.



75) Test that the lock key is working by pushing it few times.



76) Now the Nokia E7-00 assembly procedure is complete.

-END OF ASSEMBLY-



#### 11. SOLDER COMPONENTS

