

SERVICE MANUAL Level 1&2

NOKIA N86 8MP

RM-484 / RM-485 / RM-486



Transceiver characteristics

Band:

RM-484:

WCDMA 900/1900/2100 + WLAN + GSM/ GPRS/ EGPRS
GSM 850/900/1800/1900 MHz

RM-485:

WCDMA 850/1900/2100 + WLAN + GSM/ GPRS/ EGPRS
GSM 850/900/1800/1900 MHz

RM-486:

GSM/ GPRS/ EGPRS 850/900/1800/1900 MHz

Display:

2.6" QVGA 320x240 AM OLED, 16 M colours

Keypad:

Alphanumeric keypad and Multimedia keypad

Camera:

8 MP AF Carl Zeiss, Dual LED Flash with Heptagon
micro-optics lens, secondary camera CIF

Operating System:

S60 3rd edition, feature pack 3 (PPD 53.32 R3)

Connections:

2 mm charger, 3,5 mm AV connector, Bluetooth 2.0
EDR, Micro USB 2,0, A-GPS, WLAN 802.11b/g, TV out

Transceiver with BL-5K battery pack

Talk time	Standby	Note
GSM: Up to 6.3 hours	GSM: Up to 315 hours	Talk times are dependant on network parameters and phone settings
WCDMA: Up to 3.9 hours	WCDMA: Up to 275 hours	

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1. CHANGE HISTORY

Status	Version No.	Date	Comments
Approved	1.0	22.04.2009	

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:

CMO Operation & Logistics
Training and Vendor Development
Multimedia Creation & Support
<mailto:Service.Manuals@nokia.com>

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

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The availability of particular products may vary by region.

IMPORTANT

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

3. 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:

3.1 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.

3.2 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

4. 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.

5. 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.

6. 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).

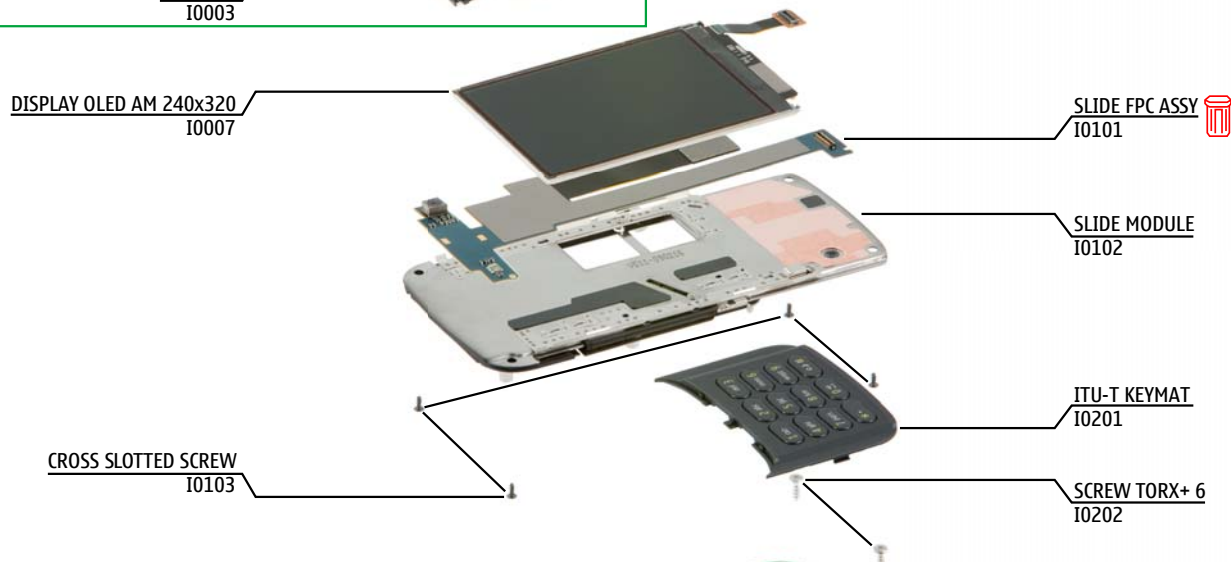
A phone with a hot or cold battery may temporarily not work, even when the battery is fully charged. Batteries' performance is particularly limited in temperatures well below freezing.

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

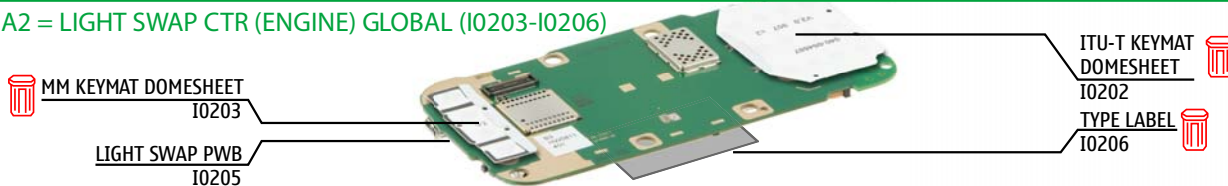
Do not dispose as household waste.

7. EXPLODED VIEW

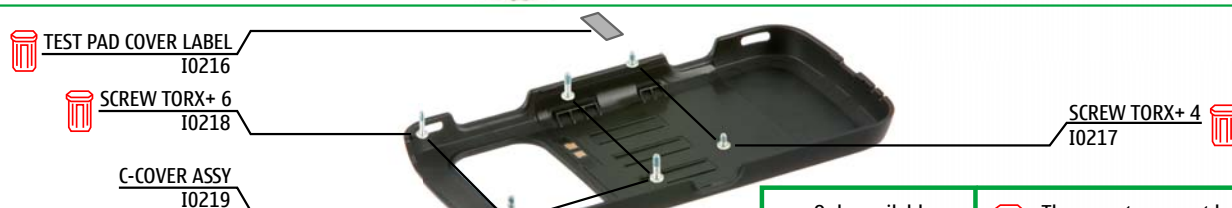
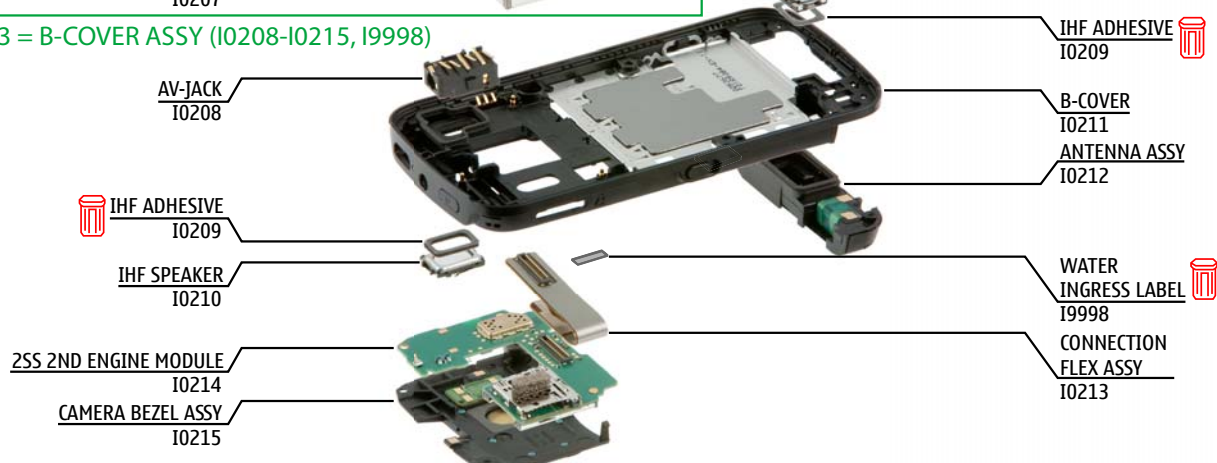
A1 = A-COVER ASSY (I0001-I0004)



A2 = LIGHT SWAP CTR (ENGINE) GLOBAL (I0203-I0206)



A3 = B-COVER ASSY (I0208-I0215, I9998)



Ver. 1.0

* Only available as assembly

These parts can not be reused after removal

8. SERVICE DEVICES

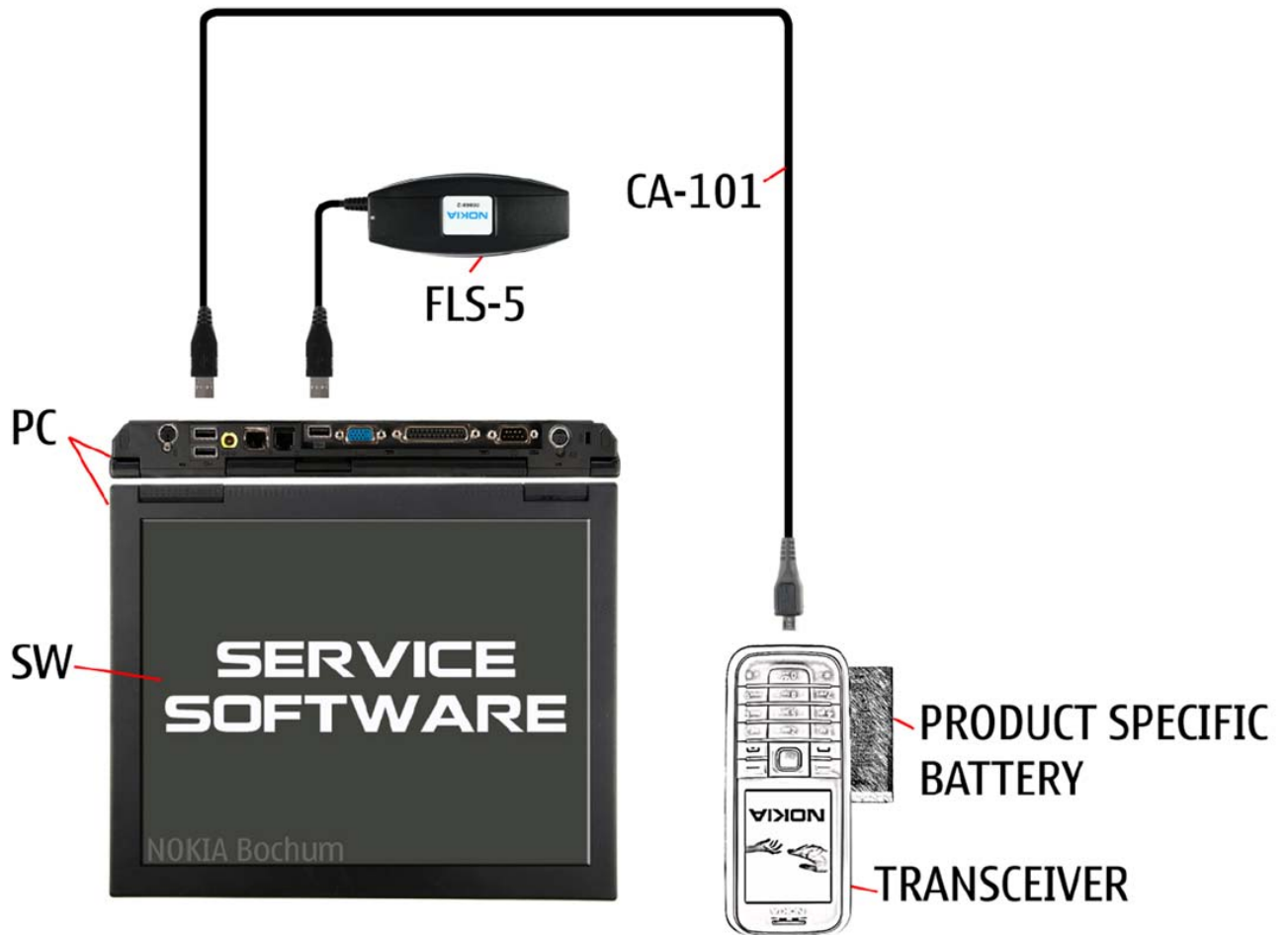
 <p>FLS-5</p> <p>FLS-5 Flash Device</p>	 <p>CA-101 100cm</p> <p>CA-101 Service Cable</p>	 <p>AC-10 Travel Charger</p>
 <p>BL-5K Battery</p>	 <p>SS-182 Camera Removal Tool</p>	 <p>NMP standard toolkit (v2) For more information, refer to the Service Bulletin (SB-011) on NOKIA Online. Supplier or manufacturer contacts for tool re-order can be found in "Recommended service equipment" document on NOKIA Online.</p>

9. 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.



10. DISASSEMBLY INSTRUCTION



1) Nokia N86 8MP disassembly



1) You must use the Nokia Standard Toolkit version 2 and the SS-182 camera removal tool.



3) Protect the front cover with a protective film.



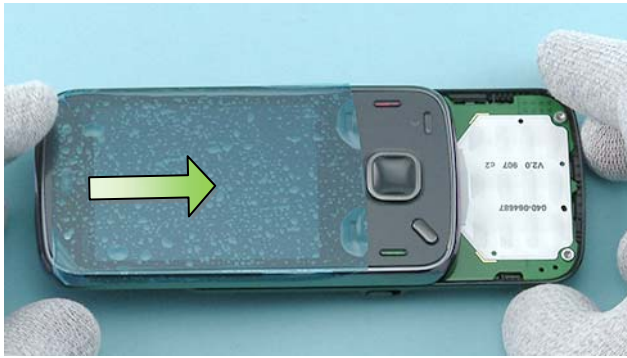
4) Release the BATTERY COVER and remove it.



5) Turn the phone and slide it open.



6) Use the SS-93 to release the keymat and remove it by pulling it.



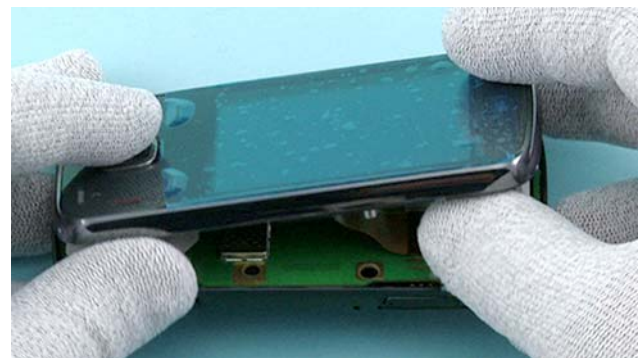
7) Close the slide.



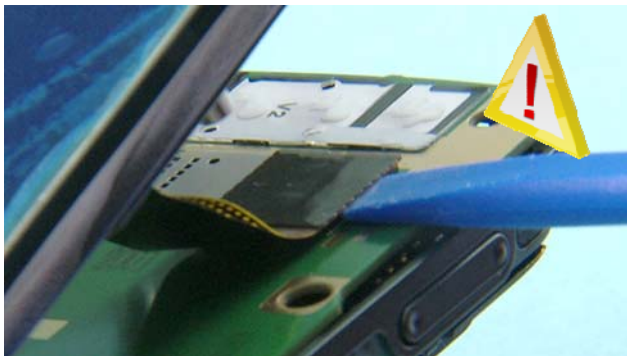
8) Unscrew the four TORX+ size 6 screws in the order shown. Do not use them again.



9) Then unscrew these two TORX + size 4 screws in the order shown. Do not use them again.



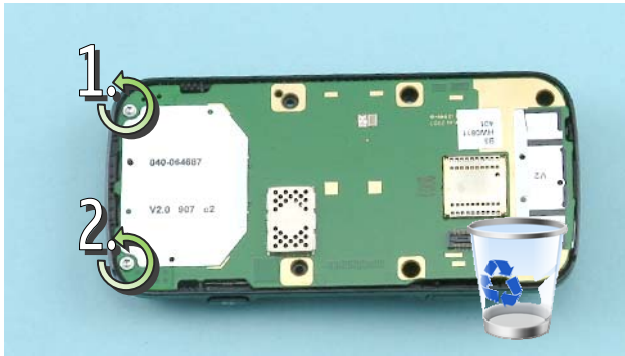
10) Lift the upper block to gain access to the SLIDE FPC Assy connector.



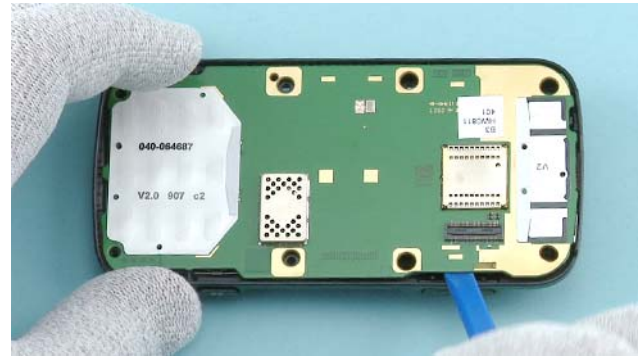
11) Disconnect the SLIDE FPC Assy from the engine board. Be careful to not to damage the connector or nearby components.



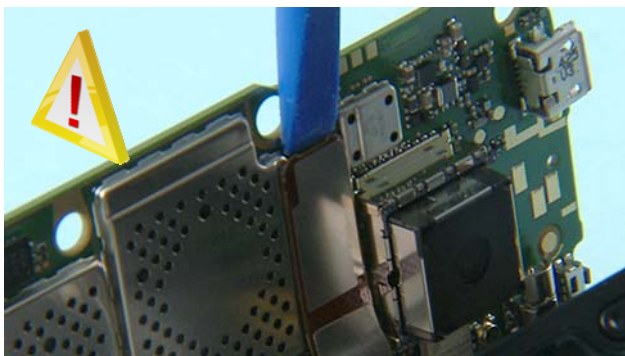
12) Remove the upper block.



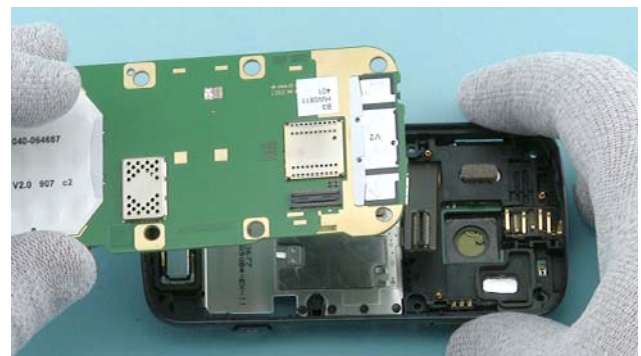
13) Unscrew the two TORX + size 6 screws in the order shown. Do not use them again.



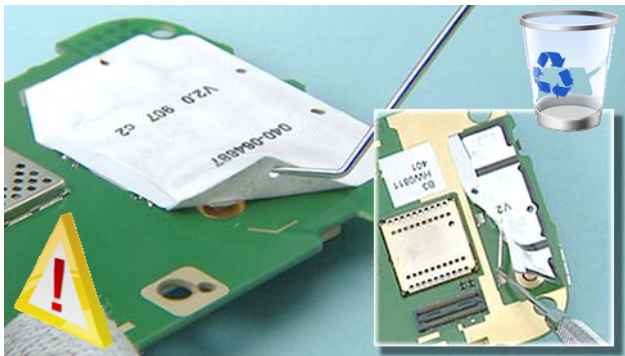
14) Carefully lift up the LIGHT SWAP PWB to gain access to the CONNECTION FLEX ASSY.



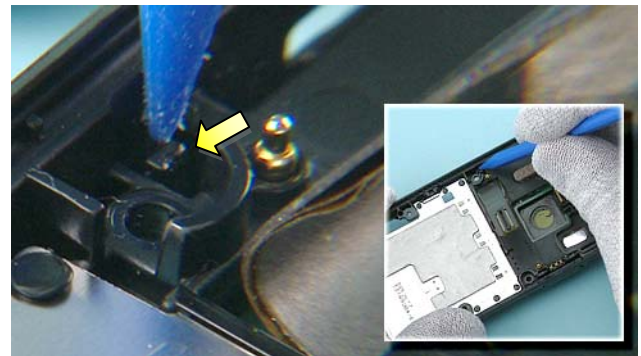
15) Carefully disconnect the CONNECTION FLEX from the PWB with the SS-93.



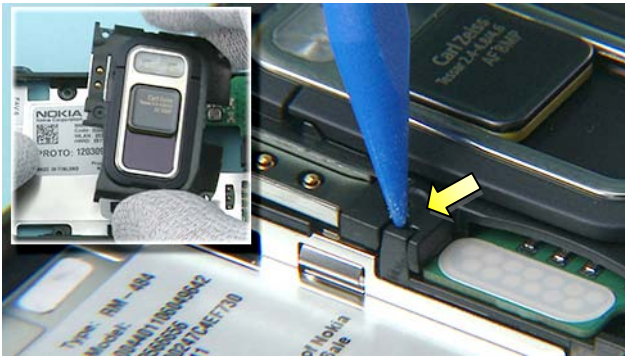
16) The LIGHT SWAP PWB can now be removed.



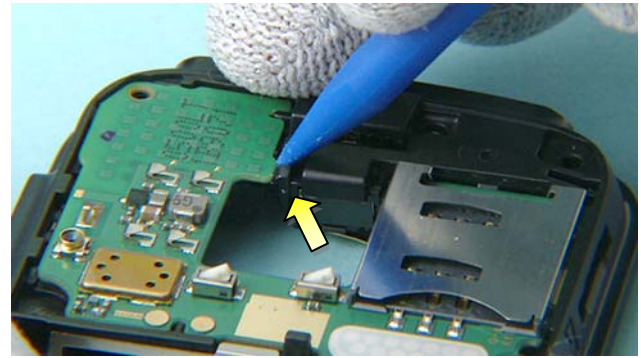
17) Release the ITU-T DOMESHEET and the MM DOMESHEET with the dental tool and peel them off. Do not use them again.



18) Detach the first clip of the CAMERA BEZEL assembly with the sharp end of the SS-93.



19) Turn the lower block and release the second clip of the CAMERA BEZEL assembly. Then remove the assembly.



20) Use the sharp end of the SS-93 to release the 2SS 2ND ENGINE MODULE from B-COVER ASSY.



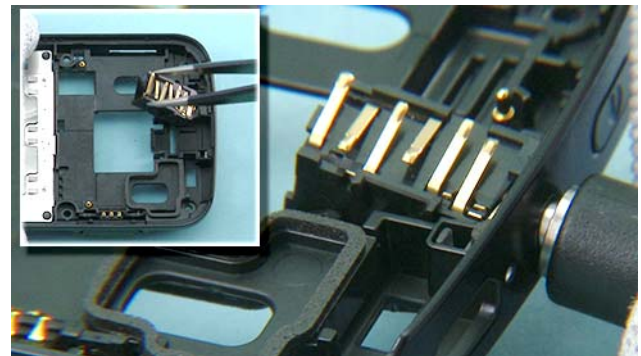
21) Be careful not to damage the CONNECTION FLEX, while removing the 2nd engine module.



22) Use the dental tool to release the IHF speaker. The IHF adhesive cannot be reused.



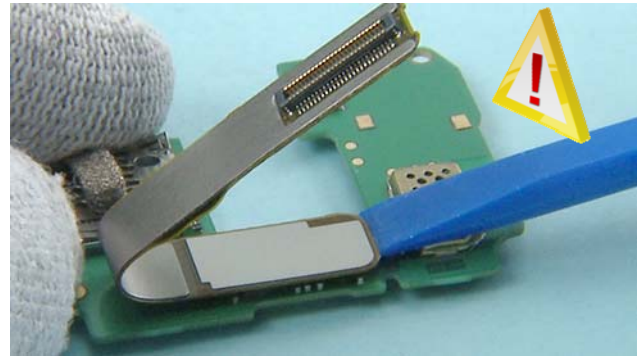
23) Use the dental tool to release the second IHF speaker. The IHF adhesive cannot be reused.



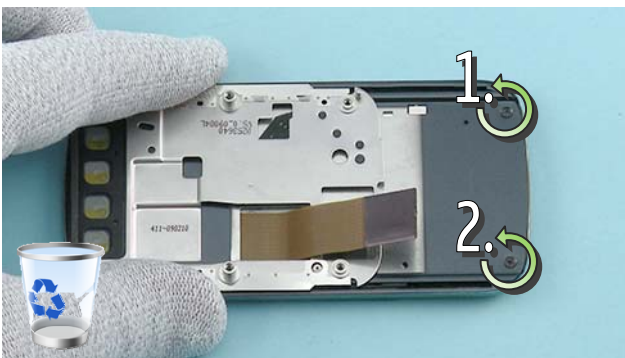
24) Push out the AV connector with the AV plug and remove the connector with the tweezers.



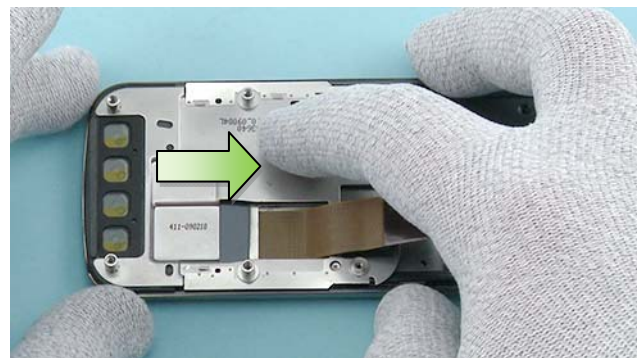
25) Use the SS-93 to detach the antenna and then remove it.



26) Disconnect the CONNECTION FLEX from the 2SS 2ND ENGINE MODULE with the SS-93. Be careful with the components around the connector!



27) Unscrew the two Phillips size 00 screws in the order shown. Do not use them again.



28) Drag the slide to the opposite side.



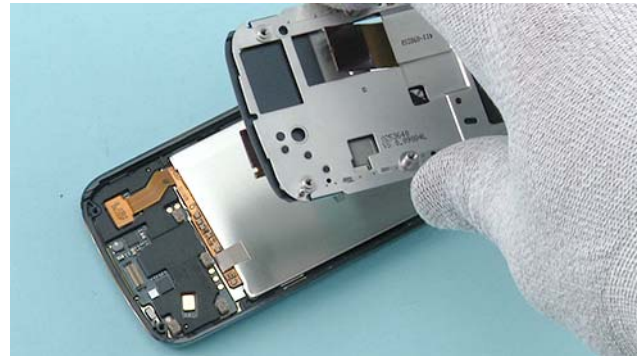
29) Then unscrew these two Phillips size 00 screws in the order shown. These screws cannot be used again.



30) Detach the SLIDE MODULE from the A-COVER assy by lifting it up with the SS-93.



31) Lift up the SLIDE MODULE slightly and use the SS-93 to disconnect the SLIDE FPC assembly. Be careful to not to damage the connector.



32) The slide assy can now be removed.



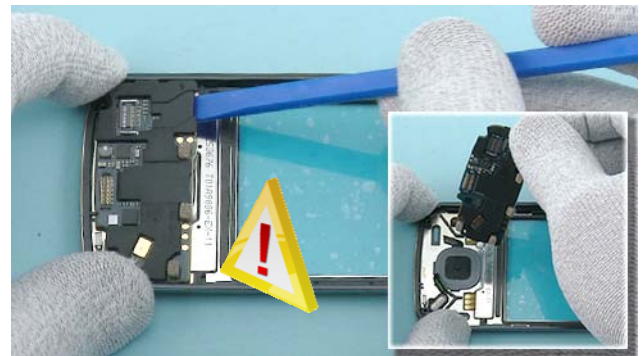
33) Disconnect the LCD connector with the SS-93.



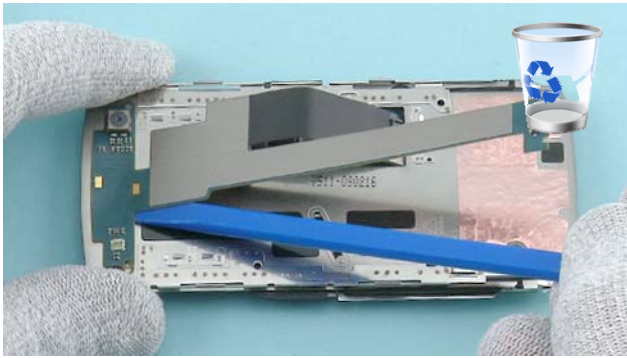
34) Lift the LCD up with the SS-93 and remove the LCD.



35) Lift up the EARPIECE with the dental tool and then remove it. Remove the DUSTNET EARPIECE with the tweezers. It cannot be reused.



36) Carefully detach the S 60 FPC assembly with the SS-93 and remove the assembly.



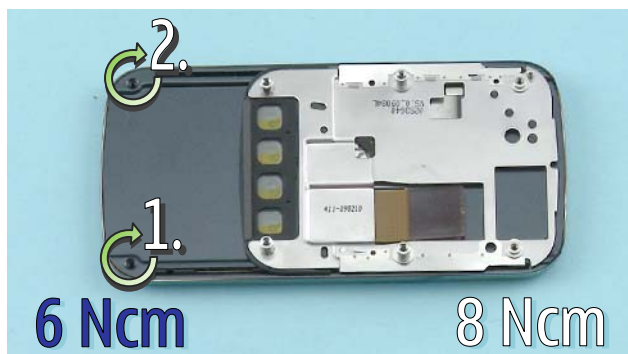
37) Release the SLIDE FPC ASSY with the SS-93. Do not use it again. Discard it.



38) Nokia N86 8MP disassembly is now complete.

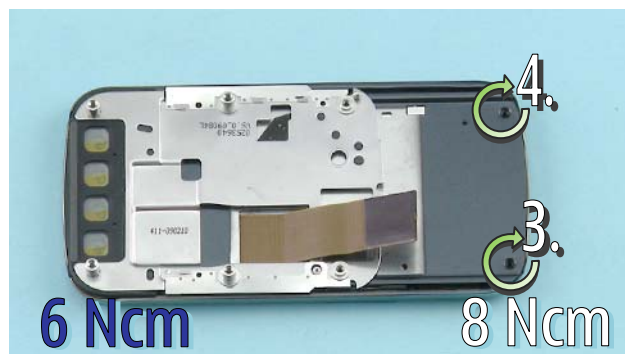
-END OF DISASSEMBLY-

11. ASSEMBLY HINTS



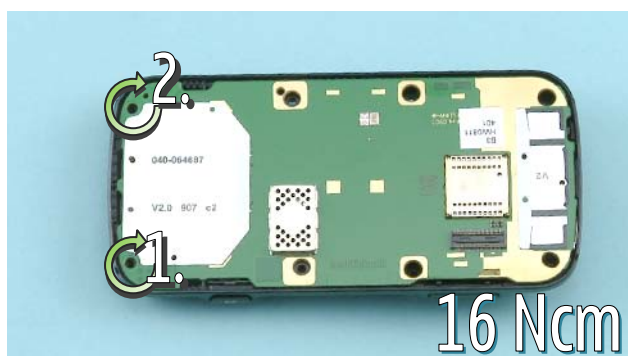
1) INDIGO VARIANT: Tighten the two Phillips size 00 screws to the torque of 6 Ncm in the order shown.

WHITE VARIANT: Tighten the two Phillips size 00 screws to the torque of 8 Ncm in the order shown.

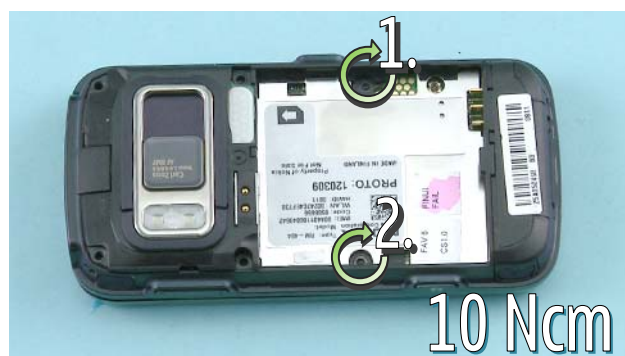


2) Drag the slide to the opposite direction.
INDIGO VARIANT: Tighten the two Phillips size 00 screws to the torque of 6 Ncm in the order shown.

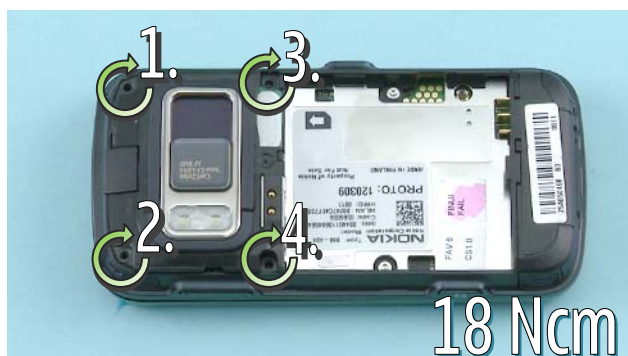
WHITE VARIANT: Tighten the two Phillips size 00 screws to the torque of 8 Ncm in the order shown.



3) Tighten the two TORX + size 6 screws to the torque of 16 Ncm in the order shown.



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



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

12. SOLDER COMPONENTS

Solder components only for Level 2

