

SERVICE MANUAL

Level 1&2

NOKIA

N85

RM-333

RM-334

RM-335



Transceiver characteristics

Band:

RM-333: WCDMA/HSDPA 900/1900/2100, EGSM 850/900/1800/1900

RM-334: WCDMA/HSDPA 850/1900/2100, EGSM 850/900/1800/1900

RM-335: EGSM 850/900/1800/1900 MHz

Display:

2,6" QVGA (240 x 320 pixels) Active Matrix OLED with 16 million colours

Camera:

Main camera: 5 MP with 20 x digital zoom

Secondary camera with 2 x digital zoom

Operating System:

Symbian 9.3, Series 60 3rd Edition Feature Pack 2

Connections:

Bluetooth 2.0 + EDR, WLAN – IEEE 802.11 g/b with UPnP support, 3.5 mm AV connector, Micro USB (USB2.0 High Speed and charging), MicroSD (hot swappable)

Transceiver with battery pack

Talk time	Standby	Note
GSM: Up to 6.9 hours	GSM: Up to 363 hours	Depends on network parameters and phone settings
WCDMA: Up to 4.5 h	WCDMA: Up to 363 hours	
VoIP: Up to 9 h	WLAN: Up to 172 h	

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1. CHANGE HISTORY

Status	Version No.	Date	Comments
Draft	0.1	08.09.2008	Initial draft
Draft	0.2	09.09.2008	Review corrections
Approved	1.0	09.09.2008	Approved

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. Short-circuiting 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).

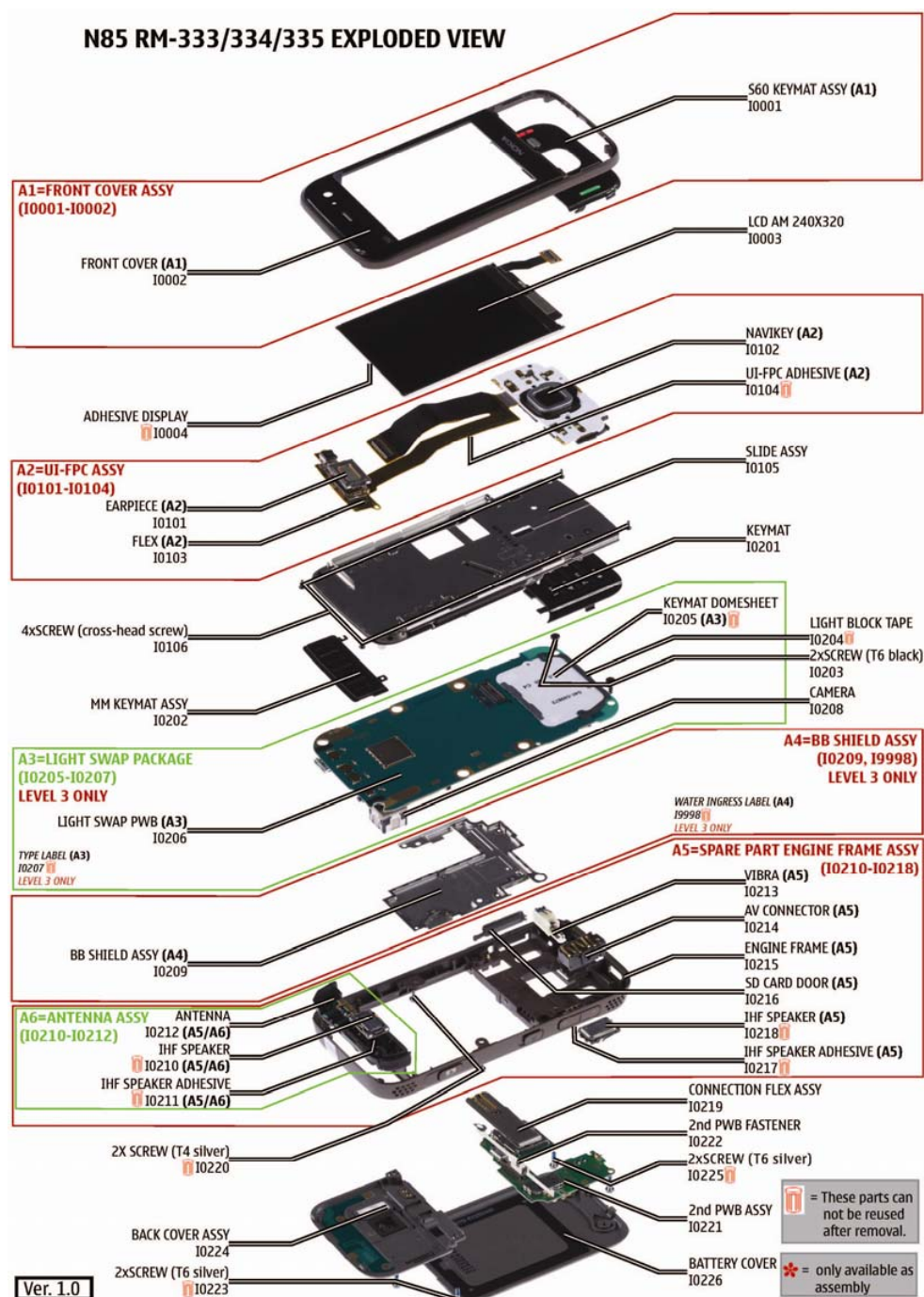
A phone with a hot or cold battery may temporarily not work, even when the battery is fully charged. Batteries' performance is particularly limited in temperatures well below freezing.

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


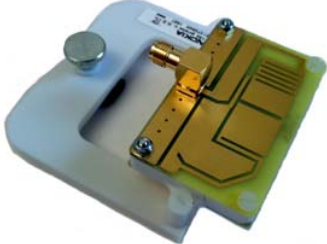
Do not dispose as household waste.

7. EXPLODED VIEW

See corresponding ITEM/CIRCUIT REF in the Spare Parts Service Bulletins on NOL.



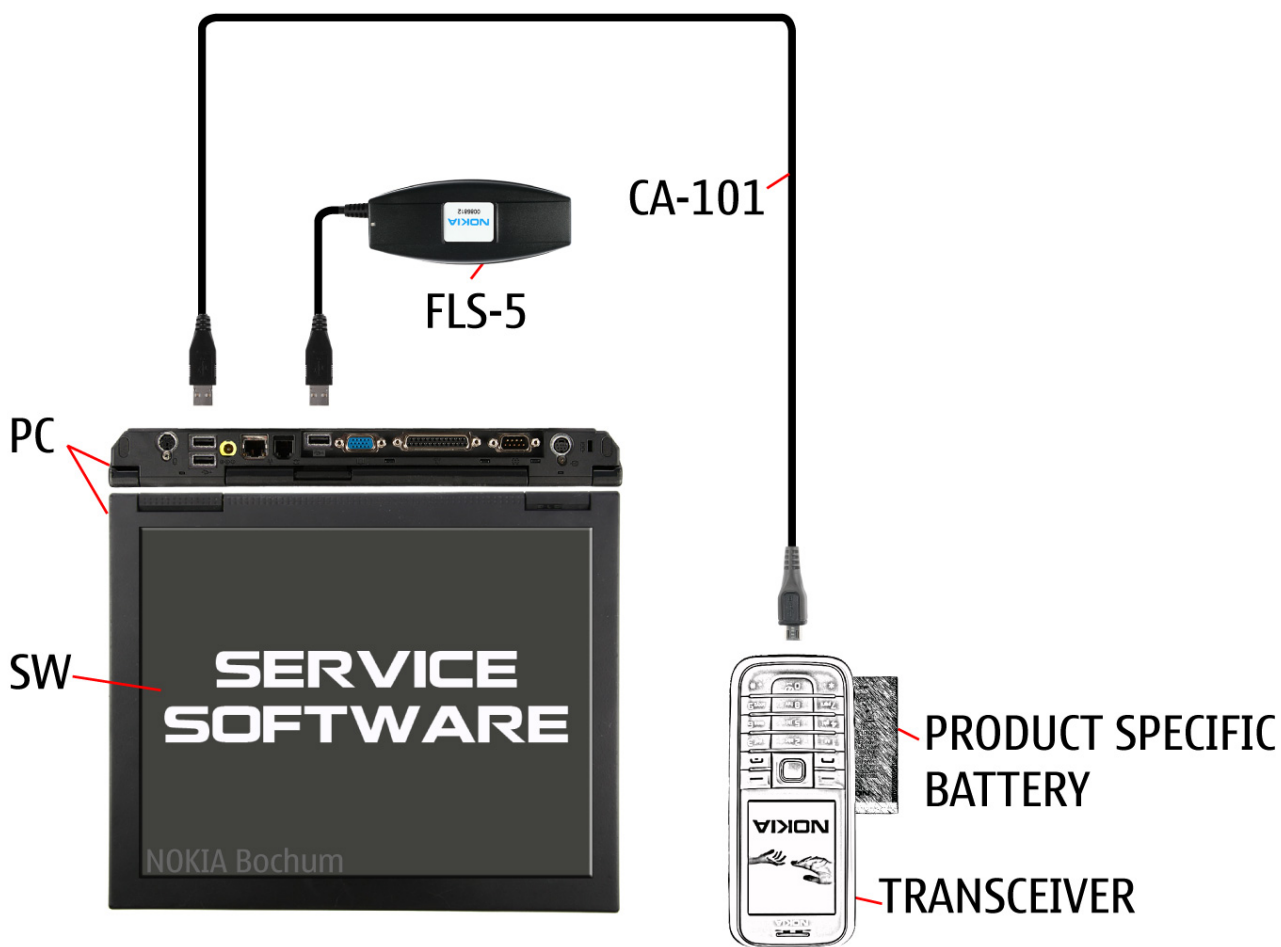
8. SERVICE DEVICES

 <p>FLS-5</p> <p>FLS-5 Flash Device</p>	 <p>CA-101 100cm</p> <p>CA-101 Service Cable</p>
 <p>MJ-161 Module Jig</p>	 <p>FS-73 Product-specific Adapter</p>
 <p>SA-154 Coupler</p>	 <p>SS-157 Domesheet Alignment Jig</p>
 <p>SS-100</p> <p>SS-100 Camera Removal Tool</p>	 <p>Standard Nokia Toolkit</p>

9. SW-UPDATE

Flash concept – (Point of Sales)

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



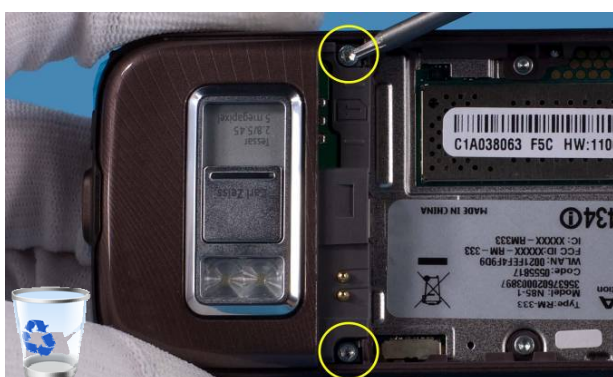
10. DISASSEMBLY INSTRUCTION



1) Push button and unlock the **BATTERY COVER**.



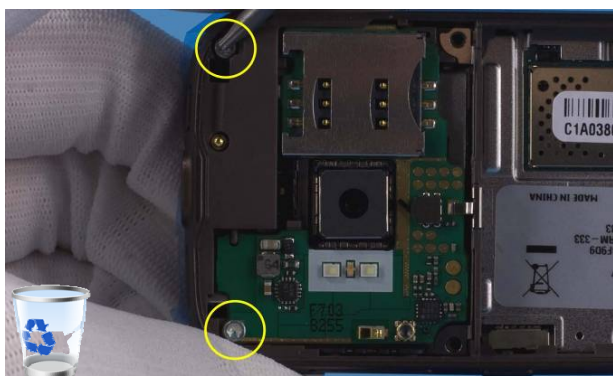
2) Lift up and remove the **BATTERY COVER**.



3) Unscrew the two screws using a TORX 6+ screwdriver.



4) After releasing the screws remove the **BACK COVER**.



5) Use TORX 6+ screwdriver to unscrew the two screws.



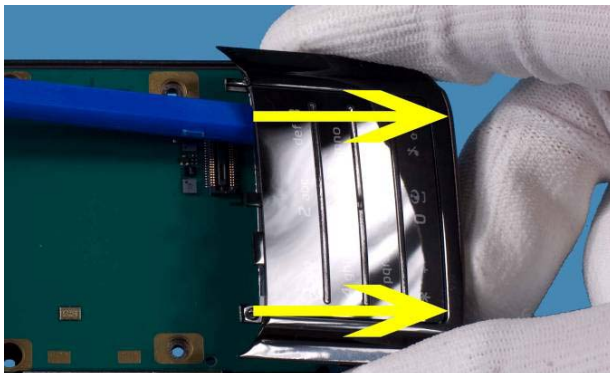
6) Unscrew the two screws with a TORX 4+ screwdriver.



7) Lift up the upper block and use SS-93 tool to release the connector of the LCD.



8) Remove upper block.



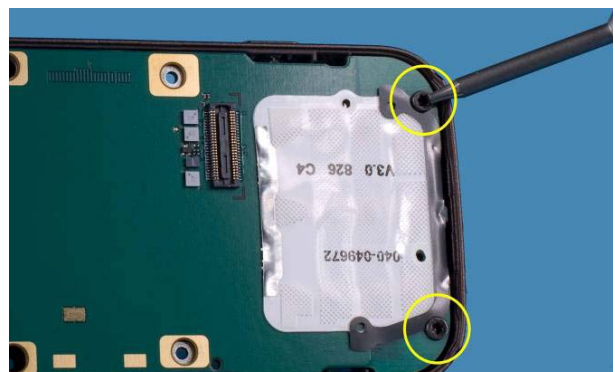
9) Use SS-93 tool to release the **KEYMAT** on both sides as shown in the picture.



10) Remove the **KEYMAT**.



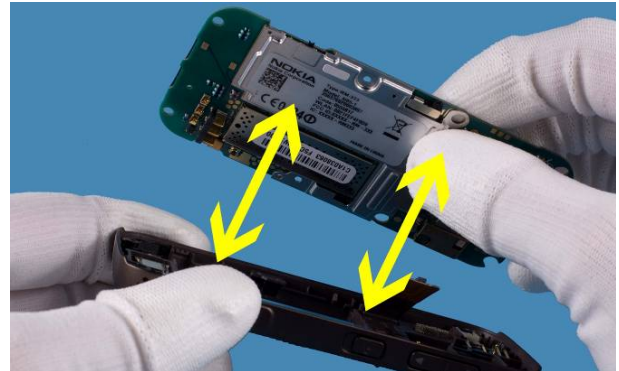
11) Remove the **MM KEYMAT**.



12) Unscrew the two TORX 6+ screws.



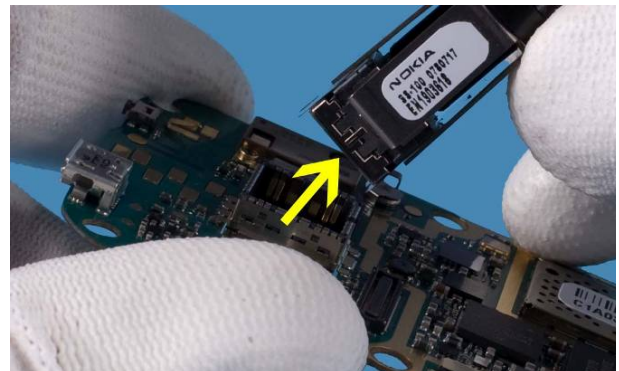
13) Carefully lift up the **PWB** and open the connector using SS-93 tool.



14) Remove the **PWB**.



15) Separate the **BB SHIELD** from **PWB**.



16) Remove the **CAMERA** with SS-100 tool.



17) Use a dental pick to release the **LIGHT BLOCK TAPE**.



18) Peel off **LIGHT BLOCK TAPE**. Do not use it again.



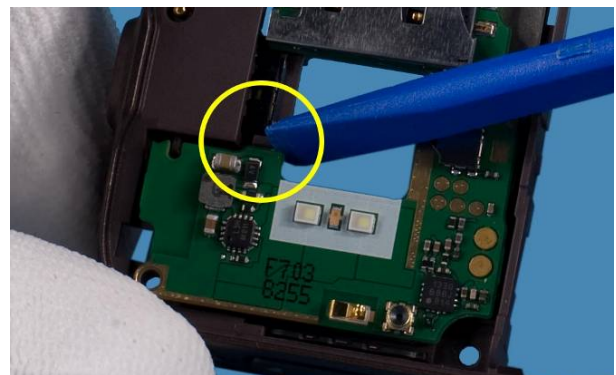
19) Release the **DOMESHEET** with a dental pick.



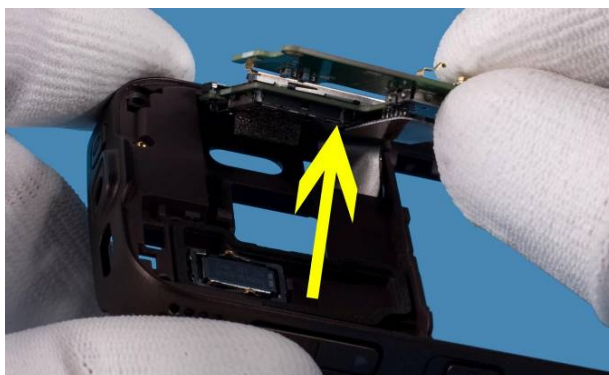
20) Remove the **DOMESHEET**.



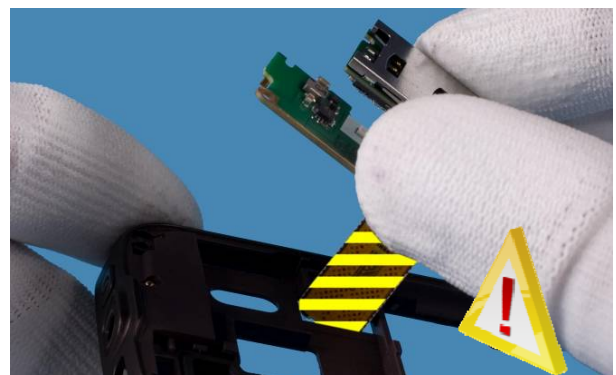
21) Use a dental pick to release the **2nd PWB FASTENER**.



22) Release the **2nd PWB** with SS-93 tool.



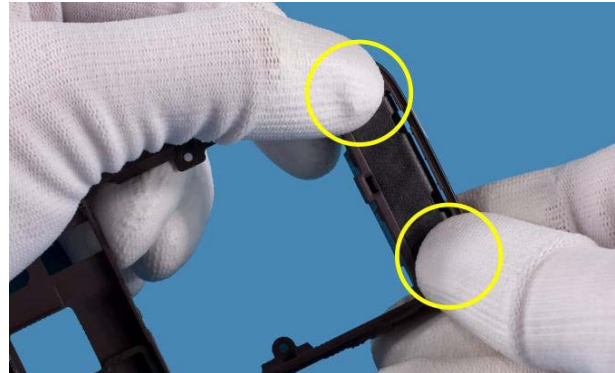
23) Lift up the **2nd PWB**.



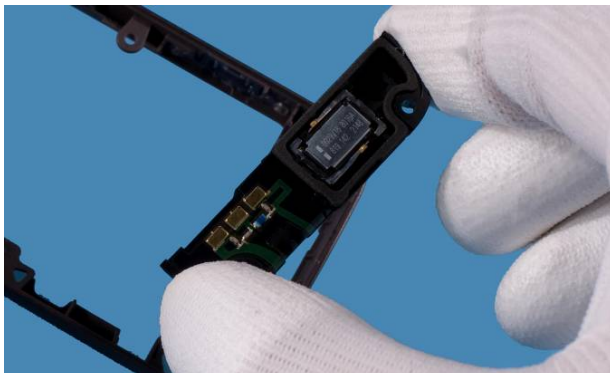
24) Remove the **2nd PWB**. Be careful with the **CONNECTION FLEX**.



25) Open the connector of the **CONNECTION FLEX** and remove it.



26) Press out the **ANTENNA**.



27) Remove the **ANTENNA**.



28) Use SS-93 tool to remove the **IHF SPEAKER**.



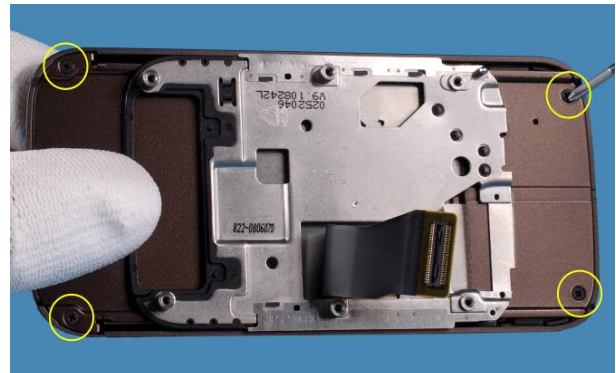
29) Remove the **VIBRA** using SS-93 tool.



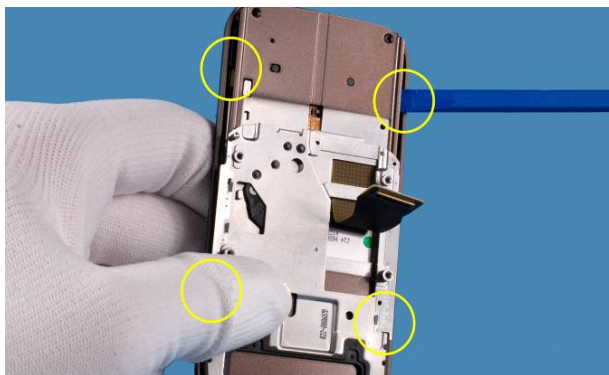
30) Press out the **AV CONNECTOR**.



31) Remove the **IHF SPEAKER**.



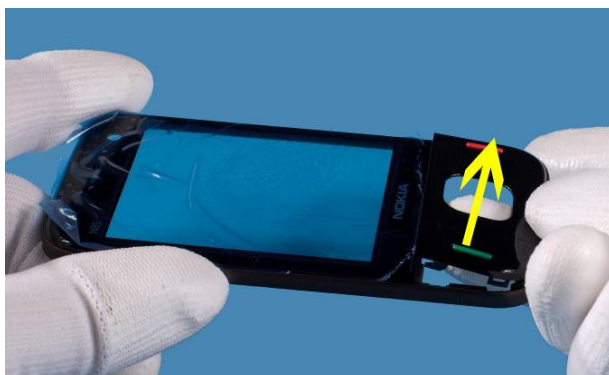
32) Unscrew the four crosshead screws.



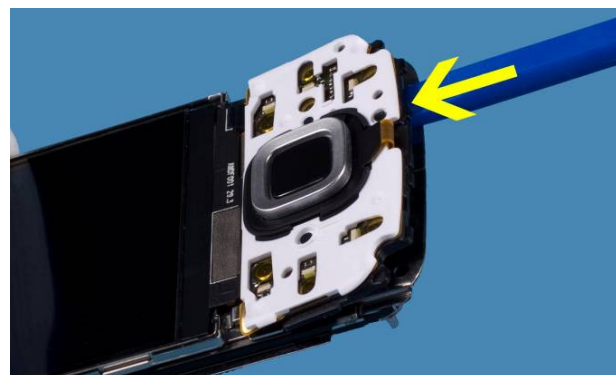
33) Use SS-93 tool to detach the snaps of the **A-COVER**.



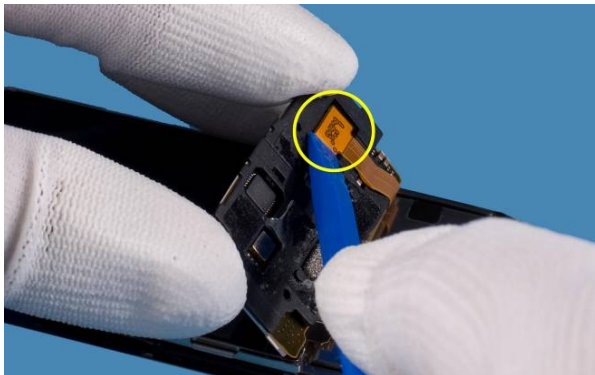
34) Remove the **A-COVER**.



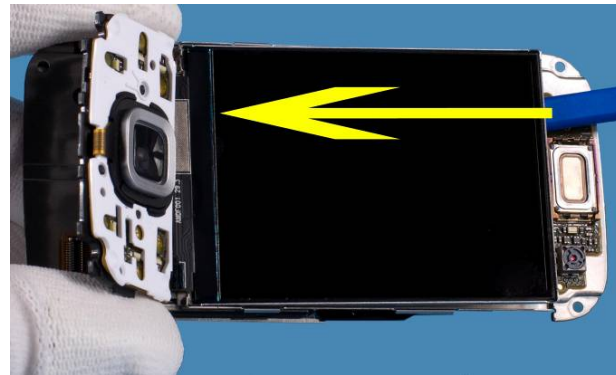
35) Press out the **S60 KEYMAT**.



36) Release the **UI-FPC ASSY** with SS-93 tool.



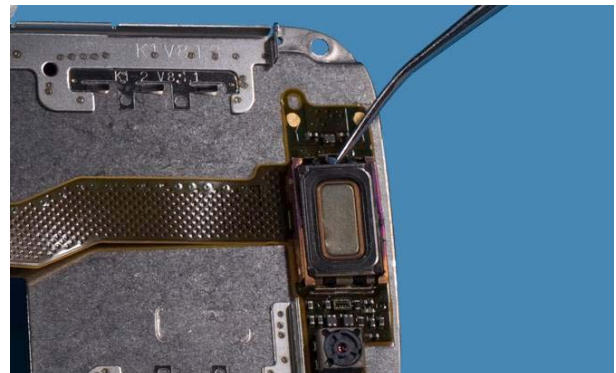
37) Lift up **UI-FPC ASSY** and open the connector of the **LCD**.



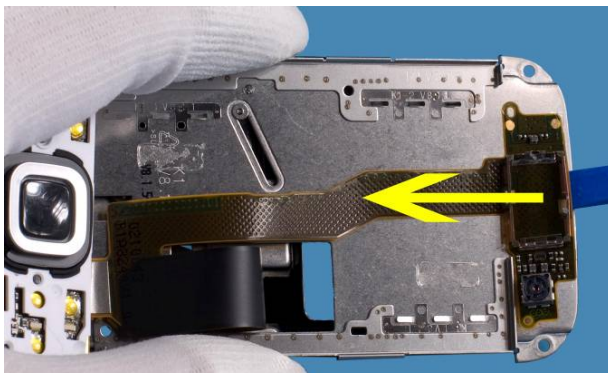
38) Use **SS-93** tool to release **LCD**.



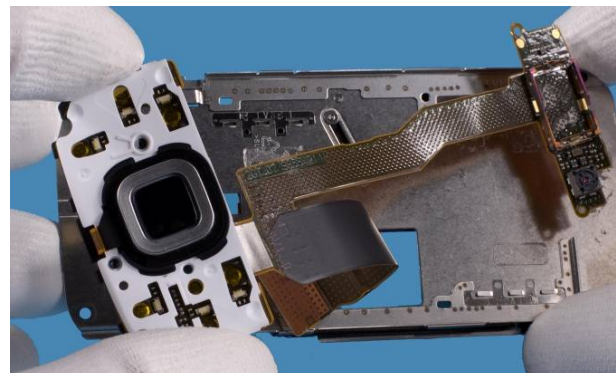
39) Remove the **LCD**.



40) Remove the **EARPIECE**.



41) Detach the **UI-FPC ASSY**.


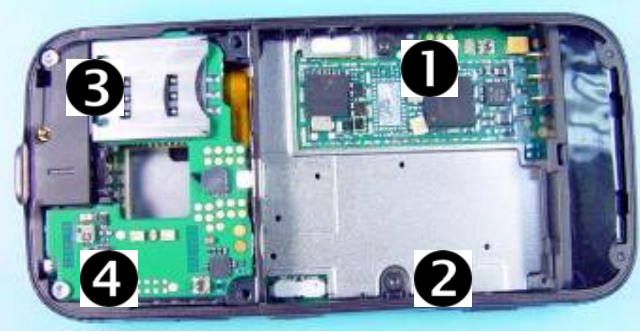

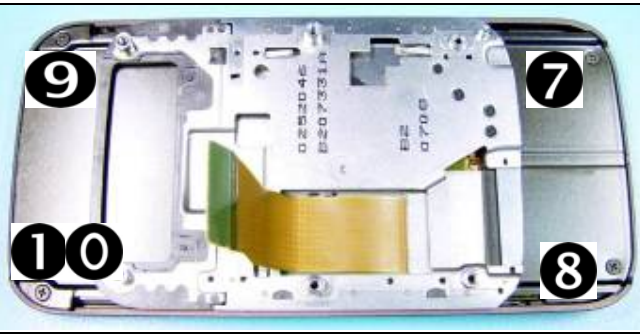


42) Remove the **UI-FPC ASSY**.

11. ASSEMBLY HINTS

- When setting the Back Cover Assy on the Engine Frame Assy, check that the camera lid is in the closed position. If the camera lid is not closed, the camera switch on the 2nd PWB assy will break.
- When setting the Engine PWB on the Engine Frame, make sure that the key lock switch in the Engine Frame is pushed towards the top half of the phone. If the key lock switch is not in the correct position, the switch on the PWB will break.
- When assembling the UI (that is, Slide Assy, UI-FPC and the Display), you must use the SS-157 Assembly Jig. Without the SS-157 tool, placing the UI-FPC is difficult.

11.1 Screw order and torque

	
<p>1) Tighten the screws to the torque of 18 Ncm in the order shown.</p>	<p>2) Tighten screws 1 and 2 to the torque of 6 Ncm and screws 3 and 4 to the torque of 18 Ncm in the order shown.</p>
	
<p>3) Tighten the screws to the torque of 18 Ncm in the order shown.</p>	<p>4) Tighten the screws to the torque of 6 Ncm in the order shown.</p>

12. SOLDER COMPONENTS

N85 RM-333/RM-334/RM-335 Components overview

Solder components only for Level 2

