

SERVICE MANUAL

Level 1&2

NOKIA

6210

NAVIGATOR



Transceiver characteristics

Band:

RM-367: WCDMA 900/2100 HSDPA and GSM/EDGE 850/900/1800/1900

RM-386: GSM/EDGE 850/900/1800/1900

RM-408: WCDMA 850/2100 HSDPA and GSM/EDGE 850/900/1800/1900

RM-419: WCDMA 850/1900 HSDPA and GSM/EDGE 850/900/1800/1900

Display:

2.4" QVGA (240 x 320 pixels) TFT colour display, 16 million colours

Camera:

3.2 mpix, 4 x digital zoom

Operating System:

S60 3.2

Connections:

Bluetooth 2.0, 2.5 mm AV connector, High Speed Micro USB Interface to PC, 2.0 mm charger connection, MicroSD card (hot swap)

Transceiver with battery pack

Talk time	Standby	Note
GSM: Up to 3.6 hours	GSM: Up to 244 hours	Depends on network parameters and phone settings
WCDMA: Up to 2.6 hours	WCDMA: Up to 231 hours	

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1. CHANGE HISTORY

Status	Version No.	Date	Comments
Draft	0.1	25.6.2008	Initial draft
Approved.	1.0	2.7.2008	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).

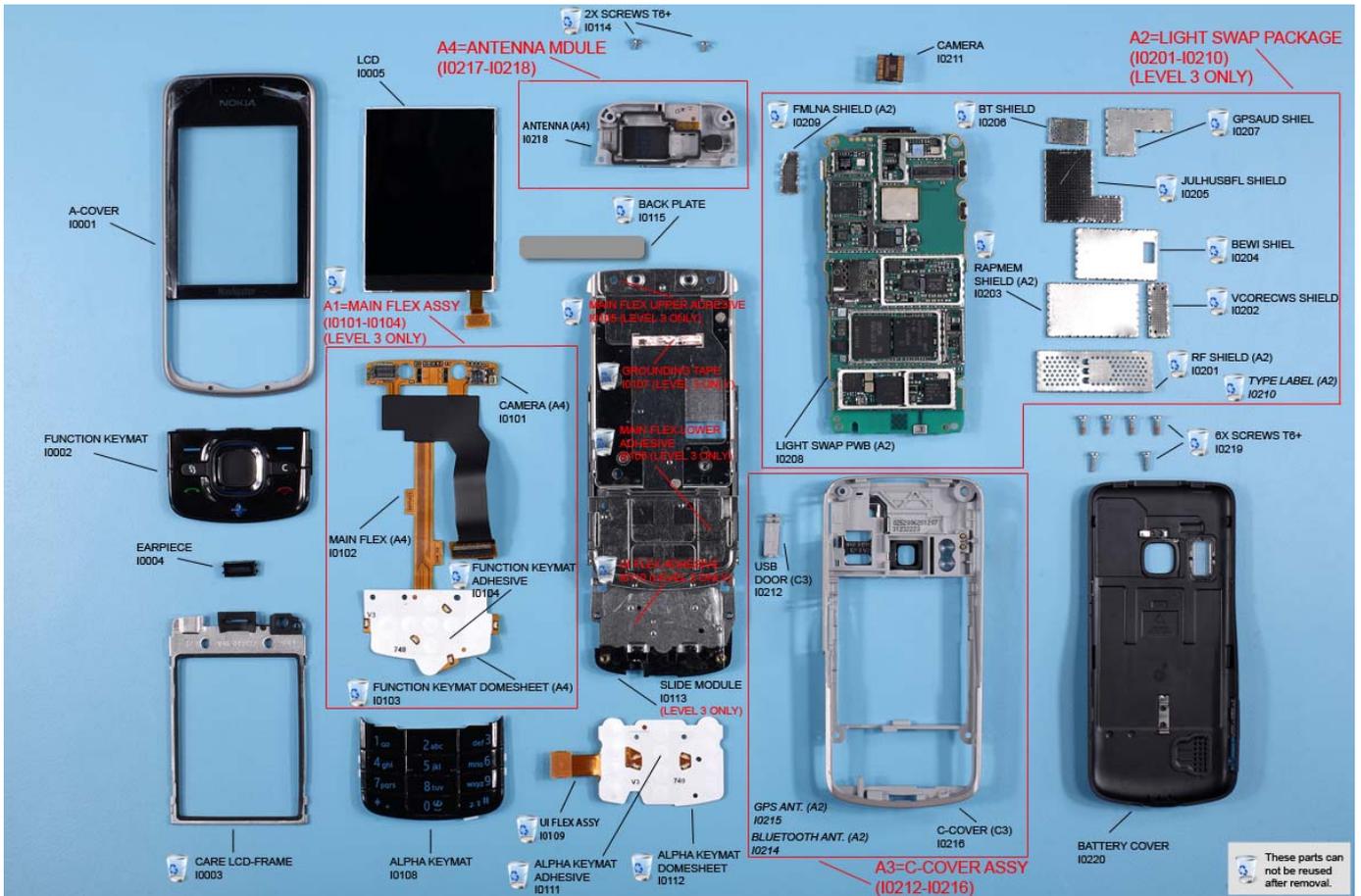
A phone with a hot or cold battery may temporarily not work, even when the battery is fully charged. Batteries' performance is particularly limited in temperatures well below freezing.

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

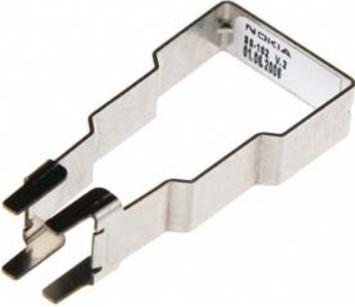
Do not dispose as household waste.

7. SPARE PARTS OVERVIEW

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



8. SERVICE DEVICES

 <p>FLS-5</p> <p>FLS-5 incl. Driver and User Guide Dongle and flash device incorporated into one package, developed specifically for POS use.</p>	 <p>Charger AC-8</p>
 <p>CA-101 100cm</p> <p>CA-101</p> <p>Service Cable to connect the PC with the Micro USB connector</p>	 <p>SS-102</p> <p>Camera removal tool. One side is for disassembly, the other side for assembly.</p>
 <p>RJ-230</p> <p>RJ-230</p> <p>Soldering Jig</p>	 <p>BL-5F</p> <p>Internal battery BL-5F</p> <p>Inserted under the back cover, this Li-Ion battery provides power in a lightweight package.</p>



0772040

Nokia Standard Toolkit (V2)

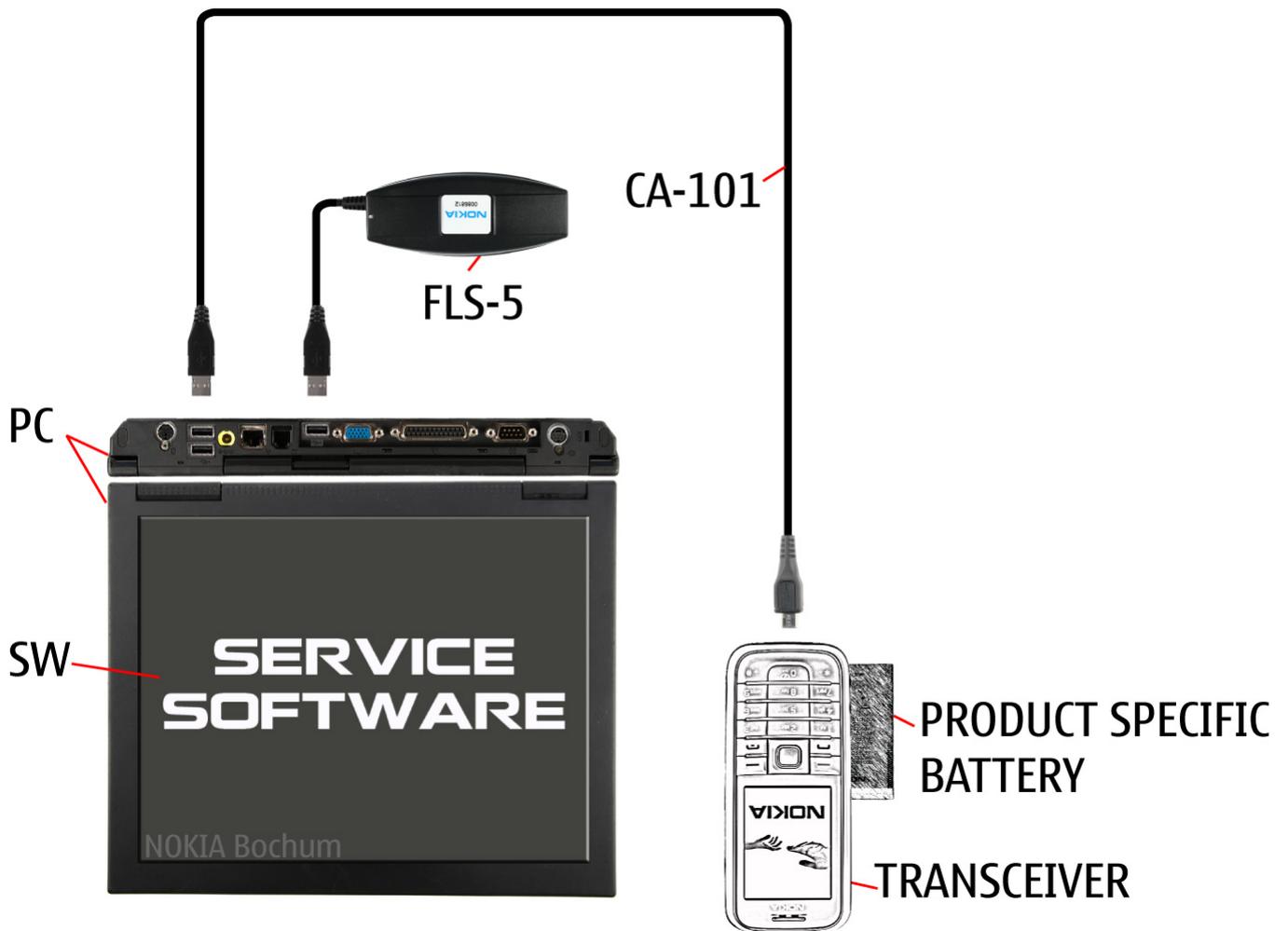
For more information, refer to the Service Bulletin (SB-011) on Nokia Online.

Supplier or manufacturer contacts for tool re-order can be found in "Recommended service equipment" document on Nokia Online.

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

Note! There is glue on the screws. Using an electric torx driver is recommended during the disassembly in order to not damage the screw caps.



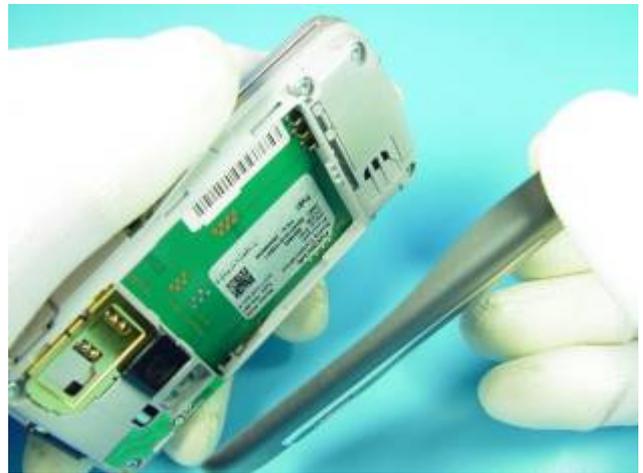
Nokia 6210 Navigator disassembly.



You need the Nokia Standard Tool kit version 2.



1) Unlock and remove the Battery Cover.



2) Remove the battery if not already done.



3) Unscrew the four T6+ screws.



4) Remove the Antenna Module Assy.



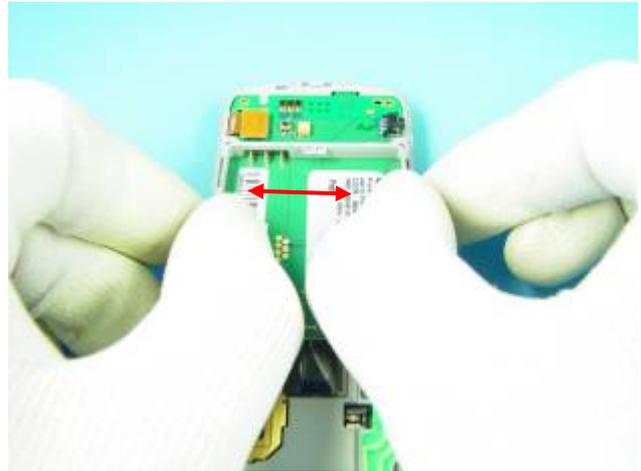
5) Unscrew the two T6+ screws.



6) Release the Alpha Keymat.
Start from snap on the bottom (number 1 in the picture) and continue with right side of snap (number 2). Finally release the hook on the top right side (number 3) and remove the keyboard.



7) Remove the Alpha Keymat carefully in the direction as shown.
Note! There is adhesive on the bottom of the keymat.



8) Press the C-Cover in the direction shown in the picture.



9) Lift up the C-Cover.



10) Remove it in the direction shown in the picture.
Handle the connector with care.



11) Close the slide and open the Connector of the UI Flex.



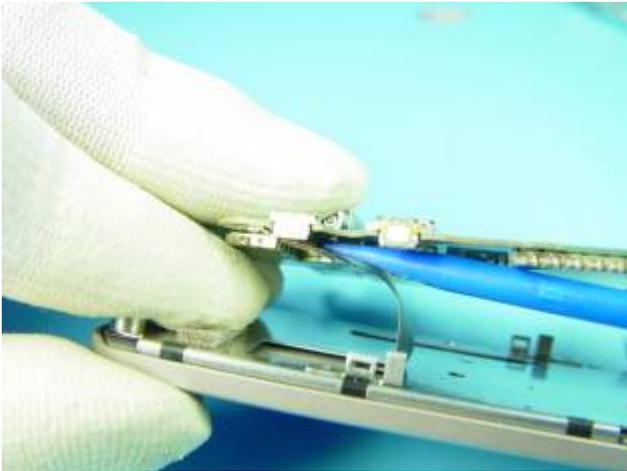
12) There are two hooks to fix the PWB.



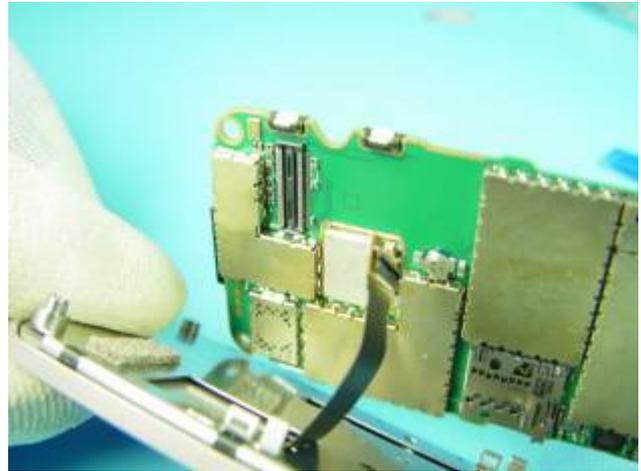
13) Use the SS-93 to release the PWB.



14) Release the PWB.



15) Open the connector of the Main Flex.



16) Remove the PWB.



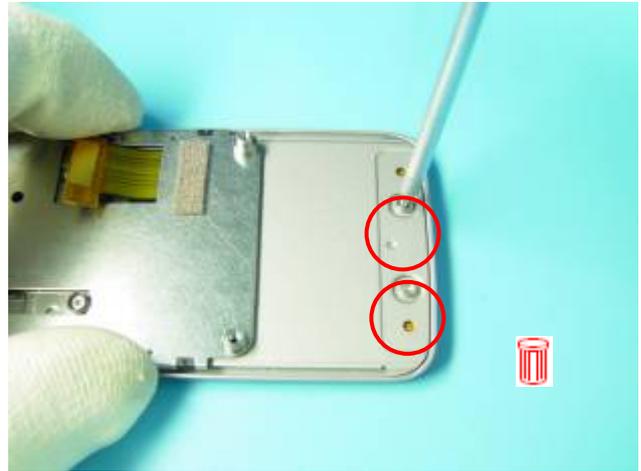
17) Peel off the UI Flex Assy.



18) Peel off the Back Plate with SS-93.



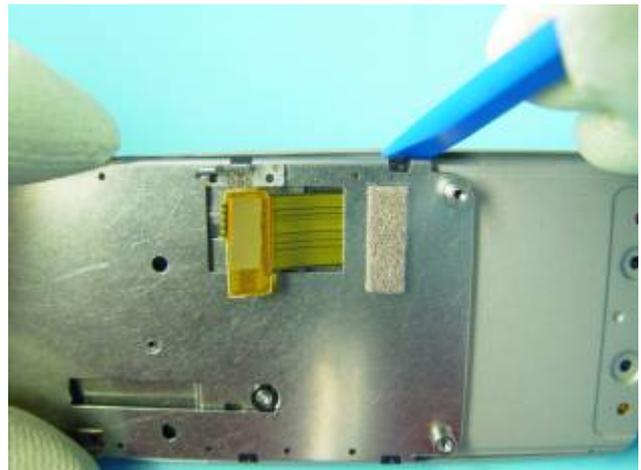
19) Remove the Back Plate. Do not use it again.



20) Unscrew the two T6+ screws. Discard these screws.



21) Carefully release the A-Cover.



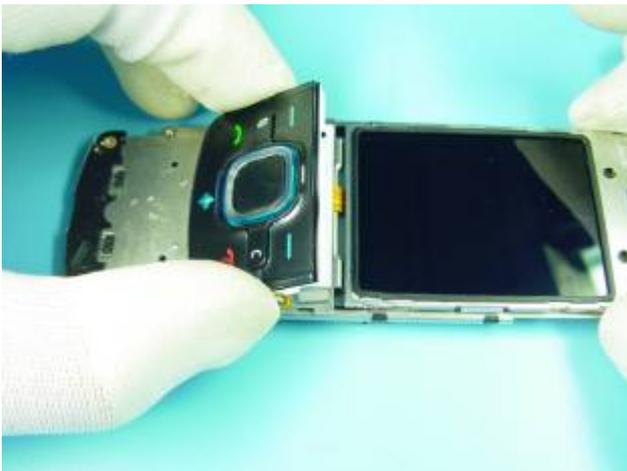
22) Use the SS-93 tool to release it.



23) Lift up the A-Cover Assy.



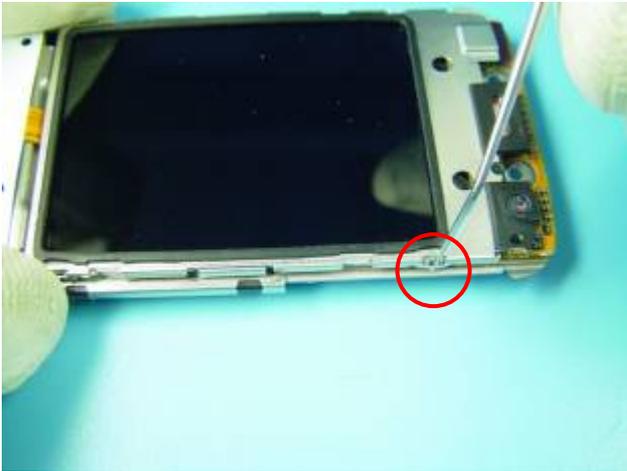
24) Remove the A-Cover Assy in the direction shown in the picture.



25) Lift up the Function Keymat carefully.
Note! There is adhesive on the bottom of the keymat.



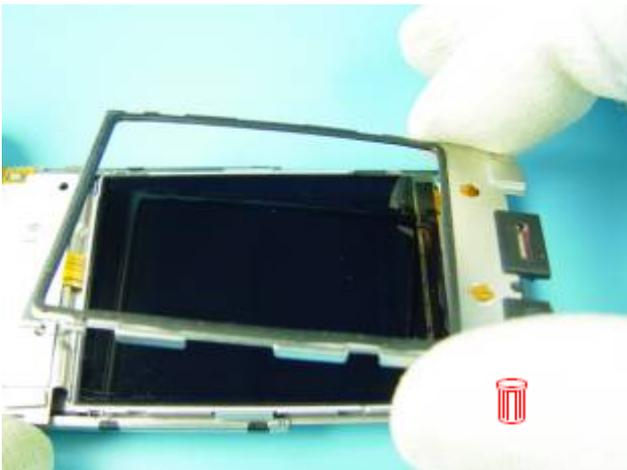
26) Remove it in the direction shown in the picture.



27) Release the latches of the LCD Shield.



28) Use the dental pick to release them.



29) Remove the LCD Shield. Do not use it again.

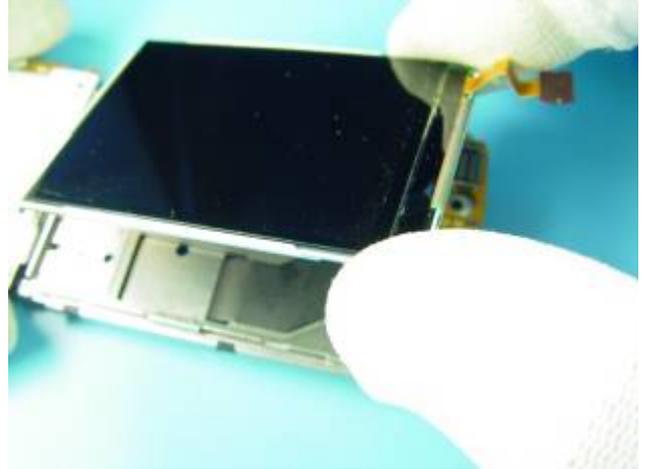


30) Push out the Earpiece.

Note! The earpiece is available separately as a spare part.



31) Open the connector of the LCD.



32) Remove the LCD according to the instructions in steps 32.1 and 32.2.



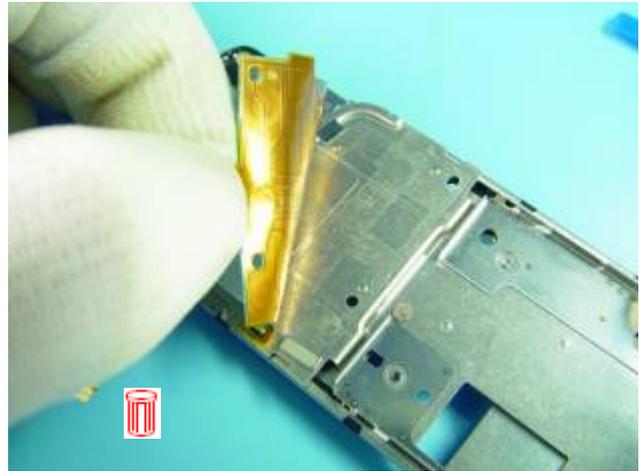
32.1) Remove the LCD from the top part with the blue opening tool.
Note! Be careful not to damage the flex under the LCD. The correct place is near the secondary camera (see picture).



32.2) You can also remove the LCD carefully one side at a time from the frame openings (see picture) with a knife or any other sharp tool.

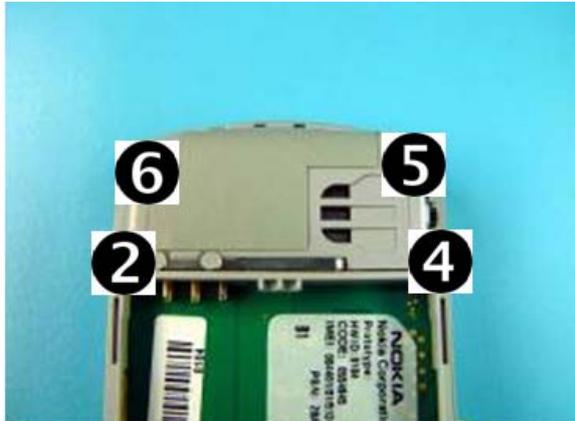


33) Lift up the Main Flex Assy from top side at first.

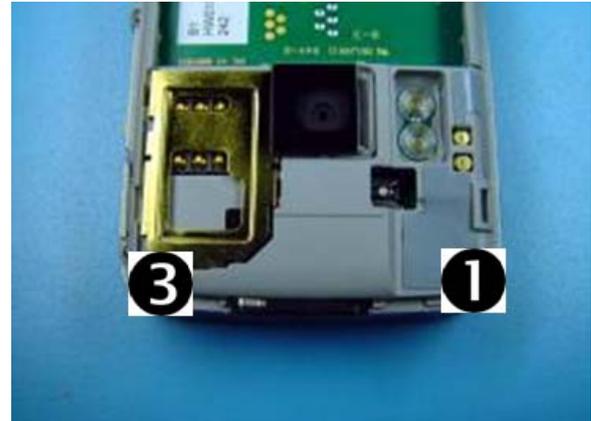


34) Peel off the Main Flex Assy and remove it.

11. ASSEMBLY HINTS



1) Tighten the screws to the torque of 17 Ncm in the order shown.



2) Tighten the screws to the torque of 17 Ncm in the order shown.



3) Tighten the screws to the torque of 12 Ncm. The order of 7 and 8 can be chosen freely.

11.1 Assembling the Alpha Keymat

1. Start with the hooks on upper side.
2. Then, press the right and left side snaps carefully (by sliding a little) in place one by one.
3. Press the lower right side snap in place (by sliding a little) and be careful not to damage the snap.
4. Continue with the left side snap by pressing keyboard so that you can hear a snapping sound.
5. Press the keymat with fingers for a few seconds (minimum of 3 seconds) to activate the glue.

11.2 Assembling the Function Keymat

1. Start from the hooks on the bottom of the keymat and continue by pressing the keymat in place.

Note! Do not damage the guiding pins.

2. Check that keymat edges are symmetrically in place.
3. After A-cover assembly, press the keymat for a few seconds (minimum of 3 seconds) to activate the glue on the domesheet.

Note! For example, when doing LCD and A-cover re-work: Because adhesive has been used, there is no need to remove the function keyboard unnecessarily.

If the function keyboard or domesheet is broken, remove the A-cover first!

Note!

- Adhesive on the domesheet must be renewed before Alpha and Function keymat assembly.
- Always remove the old adhesives carefully as otherwise the keyboard may not function properly.
- Alignment of the keymat adhesives should be done according to the holes on the slide modules!
- Check visually and test functionality.

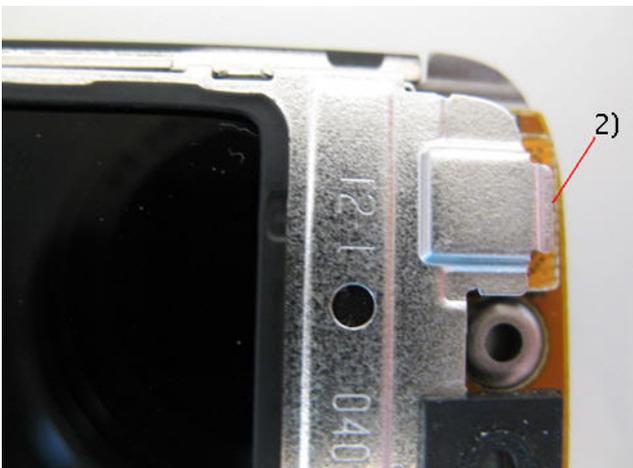
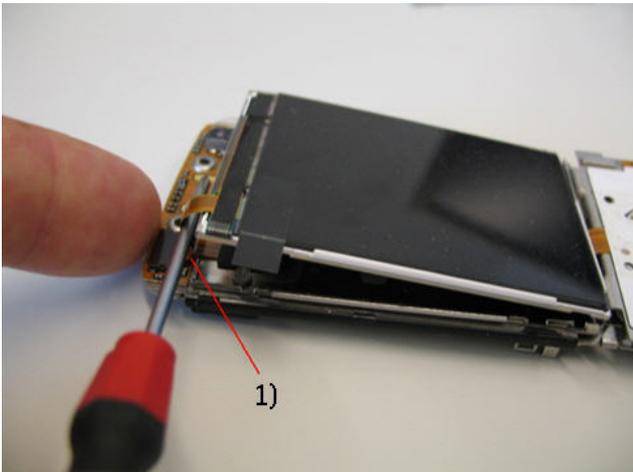
11.3 Main Flex and UI flex assembly

Carefully remove all of the old adhesives from the slide and flex modules before the assembly of a new one.

Note! Align the new flex with the holes on the slidemodule.

11.4 LCD Flex assembly

Note! In order not to damage LCD flex, special attention must be taken to notice when bending the flex to correct position! Follow the below instructions and all the time, avoid any sharp curves when bending the flex!



1. First attach the LCD connector and place the LCD into the correct place on the slide module starting from the lower part of the LCD (see picture).
2. If necessary, use a screw driver or other tool for bending the flex carefully to its initial position. Make sure that the first curve from the connector (number 1 in the picture) is good enough so that the flex will not go under the LCD.
3. Carefully press the LCD flex down a little so that the LCD frame can be assembled. At all times, avoid sharp edges on the flex, which would cause damage to the flex. Do not press the flex hard on top of the connector, because it can cause sharp curves and break the flex.
4. Carefully place the LCD frame to the correct position. The frame will lead the flex to its final position.
5. Finally, check that the flex is not squeezed under the edges of the frame (number 2 in the picture). The flex must be completely within the pocket shape of the frame.

12. SOLDER COMPONENTS

Nokia 6210 Navigator (RM-367, RM-386, RM-408, RM-419) Components overview

Solder components only for Level 2

