

# SERVICE MANUAL

## Level 1&2

**NOKIA**  
**6124**  
CLASSIC

RM-422

RM-448

**NOKIA**  
**6122c**

RM-425



### Transceiver characteristics:

#### Band:

**EGSM:** Quad-band 850/900/1800/1900MHz

**RM-422:** WCDMA/HSDPA: 900/2100MHz

**RM-448:** WCDMA/HSDPA: 800/2100MHz

**RM-425:** WCDMA/HSDPA: -----

#### Display:

**LCD:** 5.08cm (2.0") QVGA (320x240 pixel); 16M colors

#### Camera:

**Camera:** 2.0 Megapixel SMIA85 with integrated flash

**RM-422/448:** 2nd Camera CIF+

#### Operating System:

Series 60

#### Connections:

**Wireless:** Bluetooth,

**Connector:** Mini USB Connector; 2.5mm AV Connector

#### Memory:

MicroSD™ (max 4GB)

### Transceiver with BL-5B Li-Ion battery pack

Talk time	Standby	Note
up to 3.1 h	up to 9 days	Depends on network parameters

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## 1. CHANGE HISTORY

Status	Version No.	Date	Comments
Draft	0.1	07.Feb.2008	Initial draft
Approved	1.0	07.Apr.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.

## 2. COPYRIGHT

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**IMPORTANT**

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

### 3. WARNINGS AND CAUTIONS

#### 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:

#### 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.

#### 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.

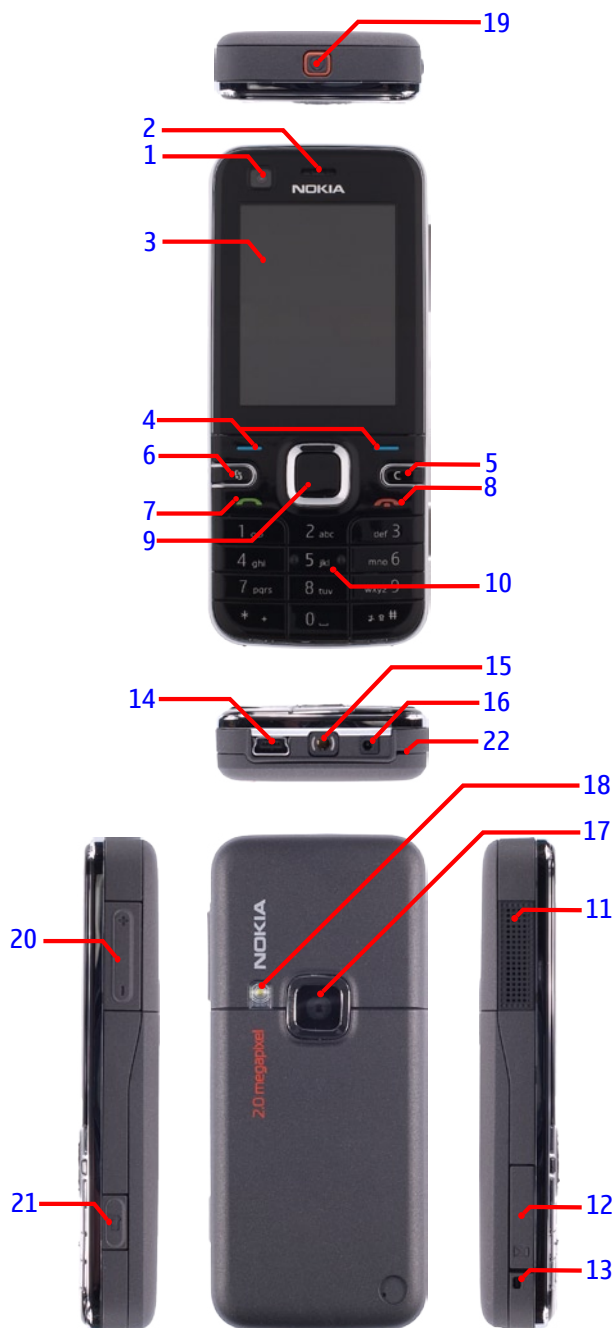
Do not short-circuit the battery. Accidental short-circuiting can occur when a metallic object (coin, clip or pen) causes direct connection of the + and - terminals of the battery (metal strips on the battery) for example when you carry a spare battery in your pocket or purse. Short-circuiting the terminals 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. PRODUCT CONTROLS & INTERFACES OVERVIEW

### 6124c RM-422/RM-448 / 6122c RM-425 Product Controls & Interfaces



- 1 — Secondary camera lens (RM-422/RM-448 only)
- 2 — Earpiece
- 3 — Display
- 4 — Left and right selection keys
- 5 — Clear key c
- 6 — Menu key 
- 7 — Call key
- 8 — End key
- 9 — Navi™ scroll key. Hereinafter referred to as the scroll key.
- 10 — Number keys
- 11 — Monospeaker
- 12 — MicroSD card slot
- 13 — Strap holder
- 14 — USB connector
- 15 — Nokia AV 2.5 mm connector
- 16 — Charger connector
- 17 — Main camera lens
- 18 — Camera flash
- 19 — Power key
- 20 — Volume keys
- 21 — Camera key
- 22 — Microphone

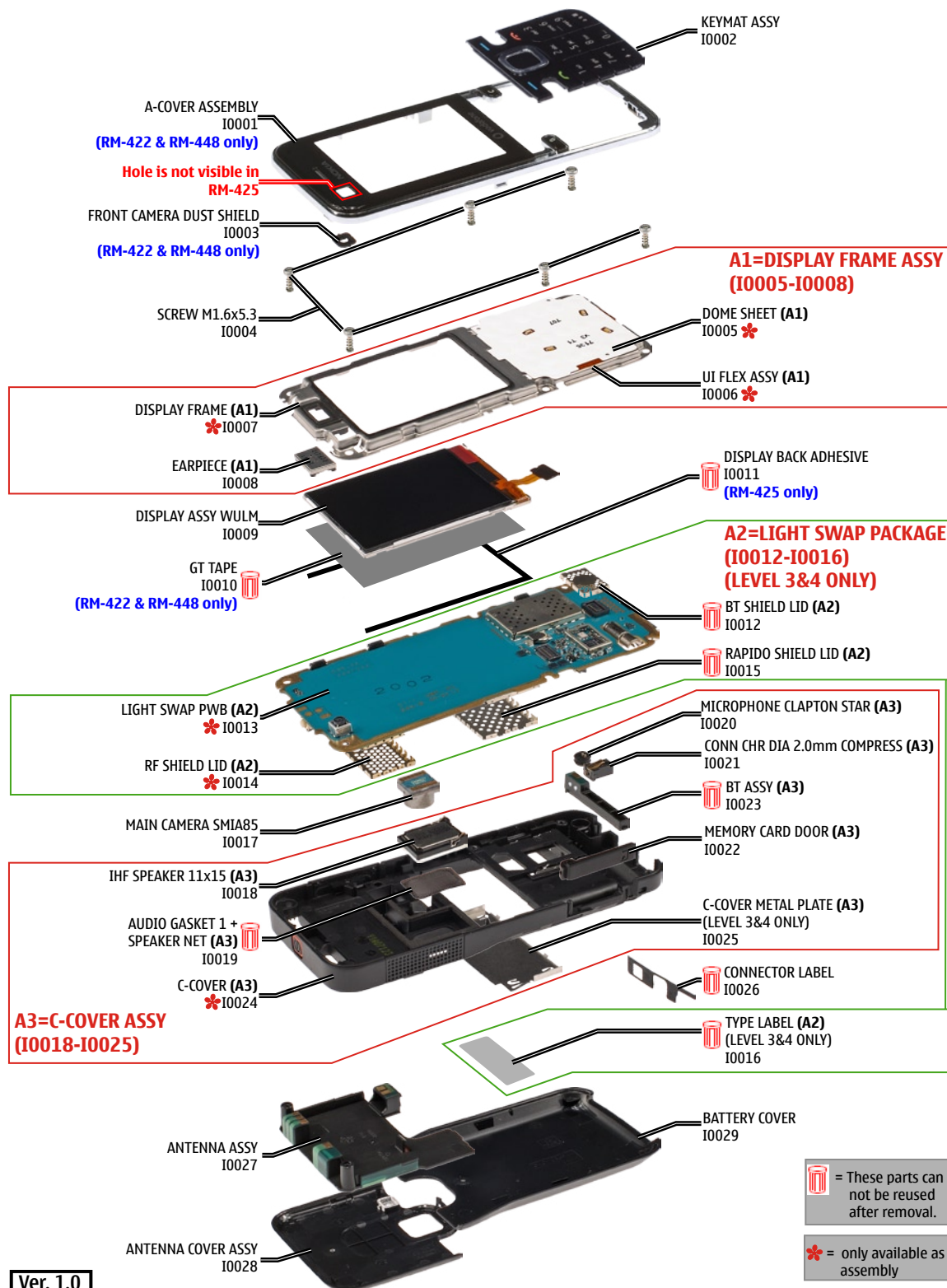
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## 8. EXPLODED VIEW

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

### 6124c RM-422/RM-448 / 6122c RM-425 EXPLODED VIEW

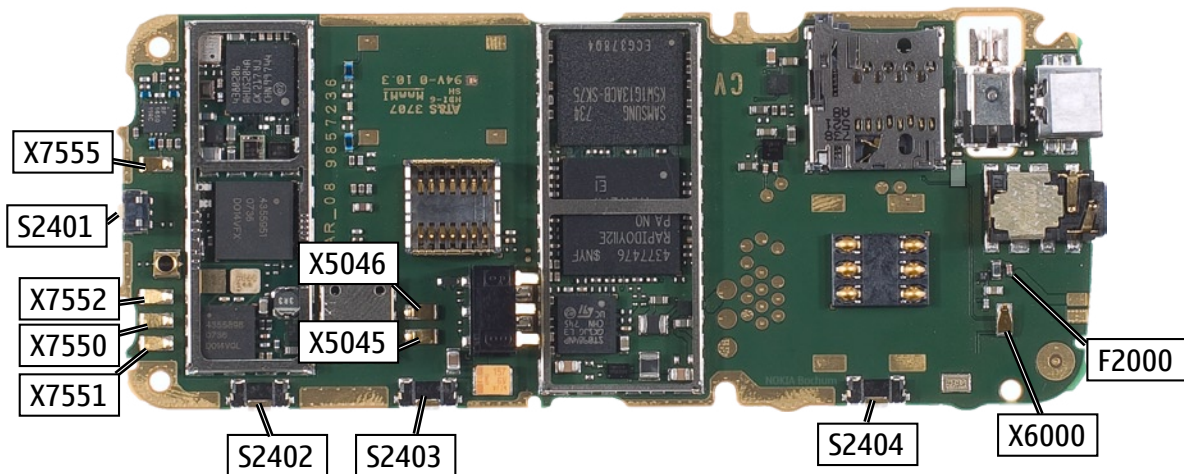
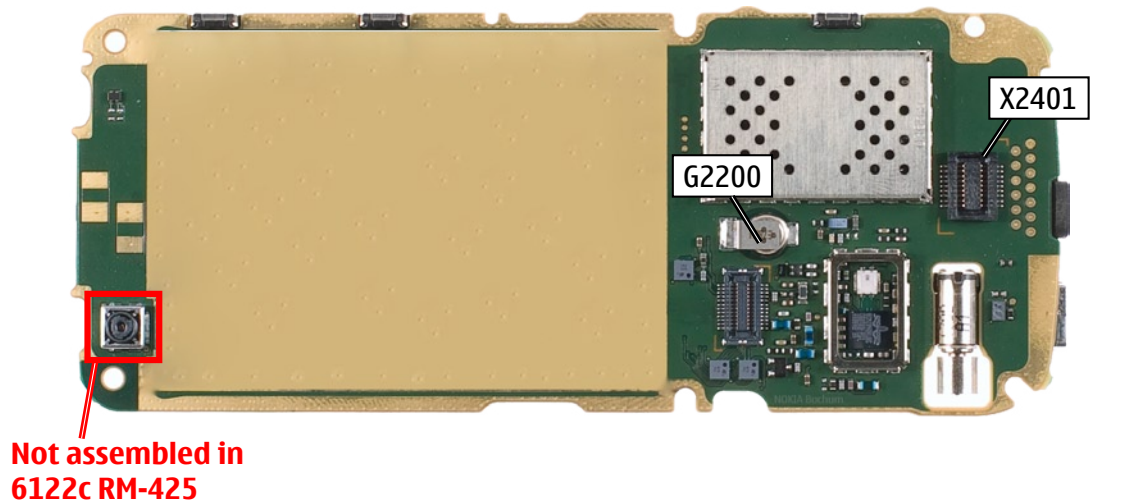


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## 9. LEVEL 2 SOLDER COMPONENTS

6124c RM-422/RM-448 / 6122c RM-425  
Level 2 solder components

**Solder components only for LEVEL 2**



Ver. 1.0



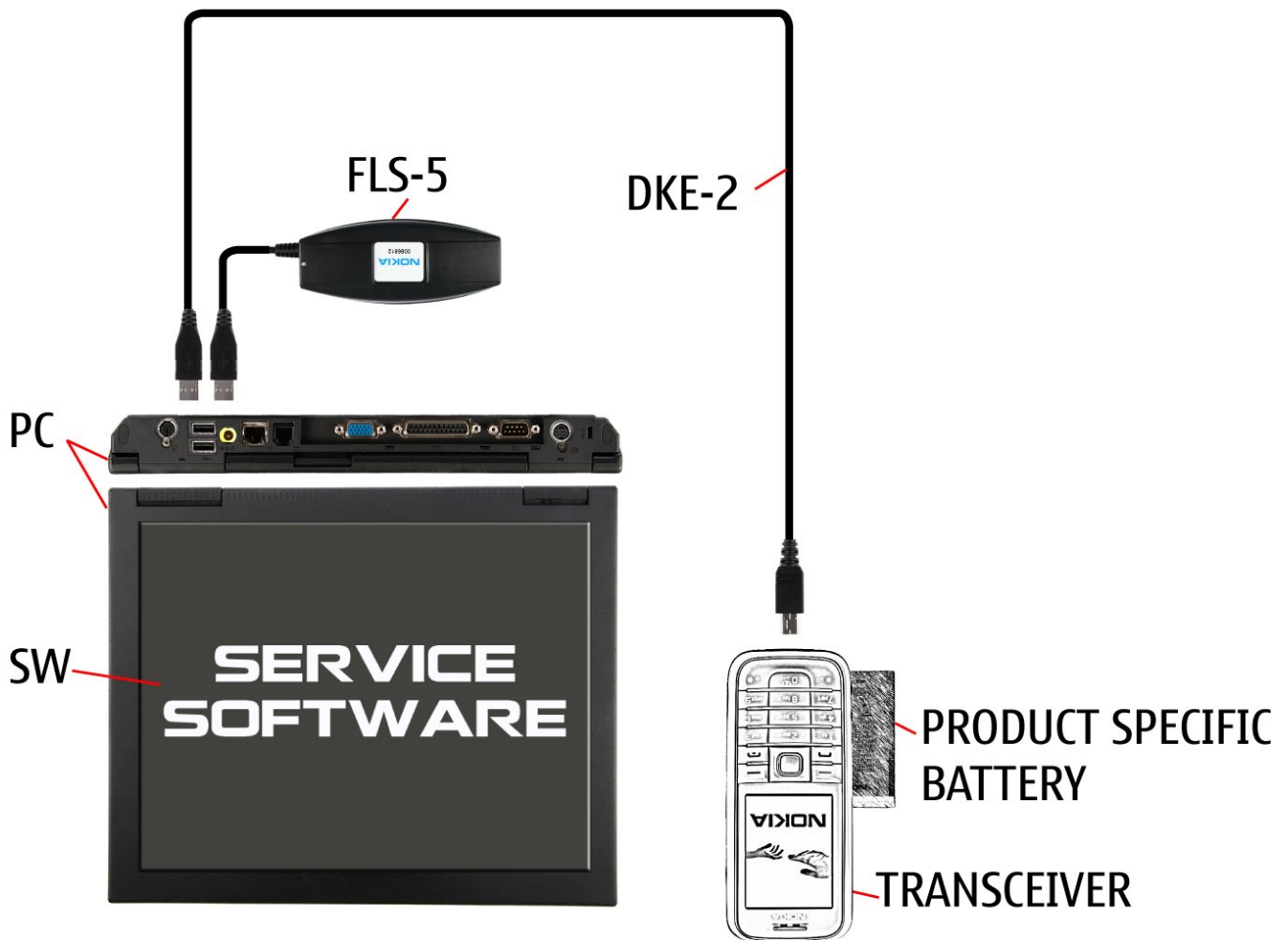
## 10.SERVICE DEVICES

 <p><b>FLS-5</b></p> <p><b>FLS-5 incl. ACF-8, Driver and User Guide</b> Dongle and flash device incorporated into one package, developed specifically for POS use.</p>	 <p><b>ACF-8</b> Universal Power Supply is used to power FLS-4S.</p>	 <p><b>Travel Charger AC-4</b> Small and lightweight charger for fast charging of your phone battery.</p>
 <p><b>DKE-2</b> Service Cable to connect the PC with the mini USB connector.</p>	 <p><b>SS-102</b> Camera removal tool. One side is for disassembly, the other side for assembly.</p>	<p><b>RJ-176</b></p>  <p><b>RJ-176</b> Soldering Jig</p>
<p><b>BL-5B</b></p>  <p><b>Internal Battery BL-5B</b> Inserted under the back cover, this Li-Ion battery provides power in a lightweight package.</p>		 <p><b>0772040</b> <b>NMP Standard Toolkit (V2)</b> For more informations 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>

## 11.SW-UPDATE

### Flash Concept – (Point of Sales)

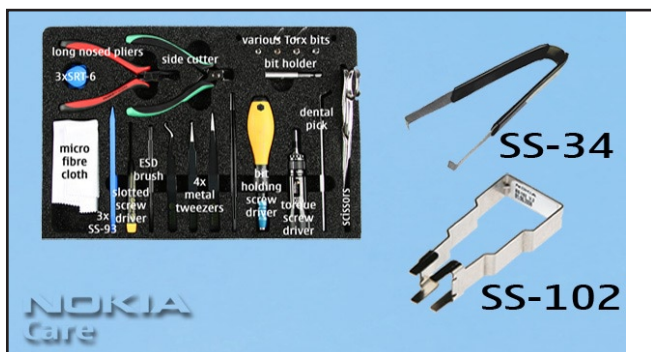
To use FLS-5 Flash Dongle you have to follow the user guide inside the sales package. Please check always for the latest version of flash software, which is available on [NOKIA Online](#).



## 12.DISASSEMBLY INSTRUCTION



1. Nokia 6124 classic, Disassembly.



2. You will need the Nokia Standard Toolkit version 2 as well as the opening tool SS-34 and the camera removal tool SS-102.



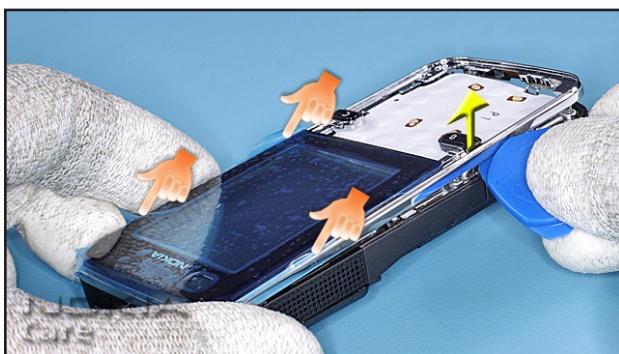
3. Unlock and remove the BATTERY COVER. Remove the Battery if inserted.



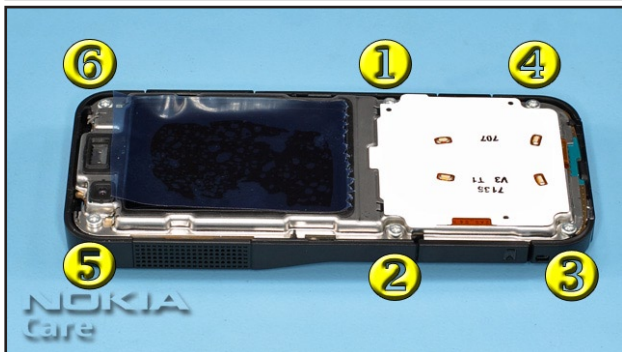
4. Place the SS-93 between the C-COVER and the ANTENNA COVER ASSY, and release the clips beginning on the shown side.



5. Remove the KEYMAT with the SS-93 in the order shown.



6. The A-COVER is attached with clips to the C-COVER. Unlock the clips on the shown side first. Avoid damaging the clips.

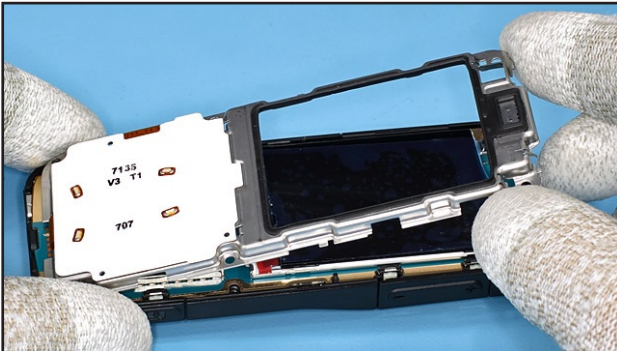


7. Undo the SCREWS in the order shown and remove them.

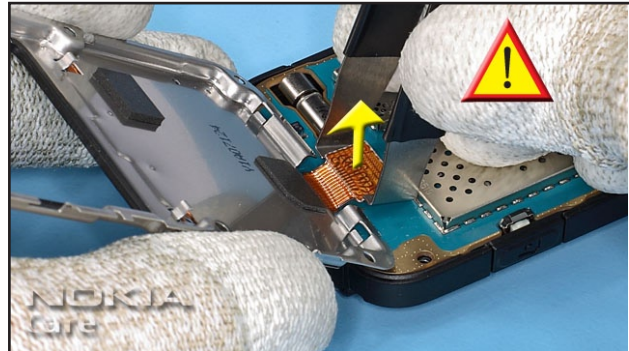


8. Remove the FRONT CAMERA GASKET.

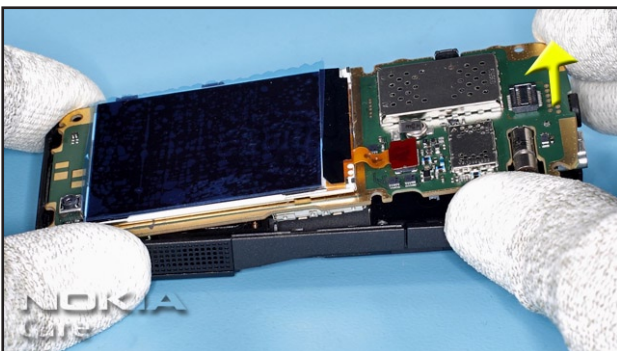




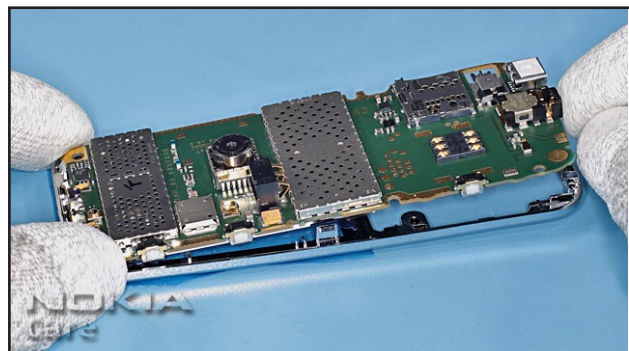
9. Gently lift the DISPLAY FRAME, paying attention to the UI FLEX.



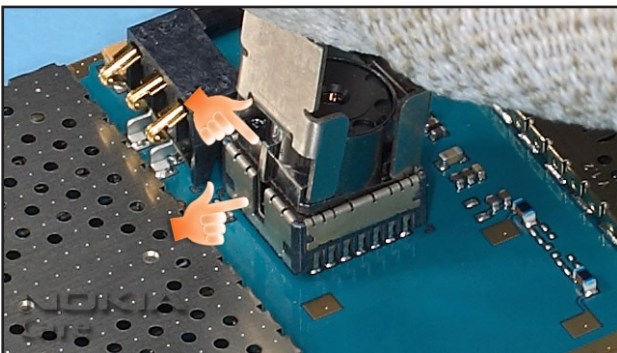
10. Carefully open the UI FLEX connector with the SS-34 and remove the DISPLAY FRAME.



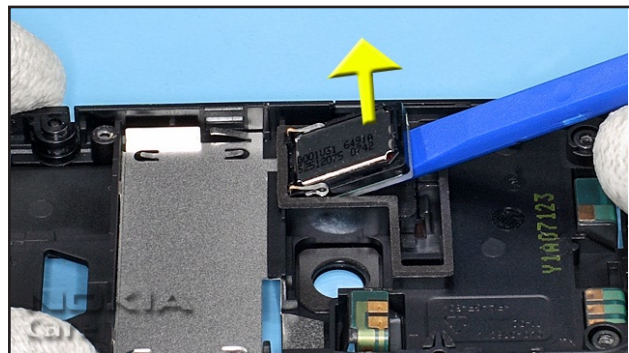
11. Remove the PWB with the Display from the C-COVER ASSY.



12. Use the A-COVER ASSY as a support when removing the MAIN CAMERA. Protect all sensitive surfaces with a film.



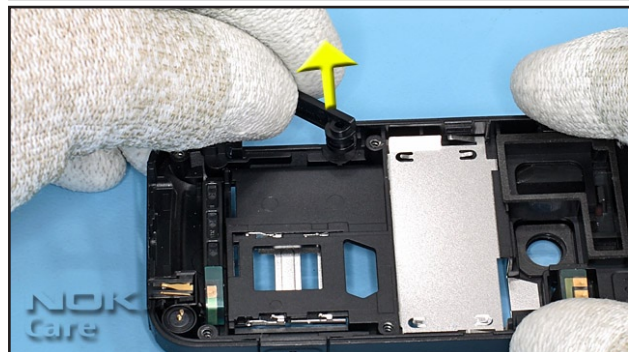
13. Unlock and remove the MAIN CAMERA.



14. Remove the IHF SPEAKER.

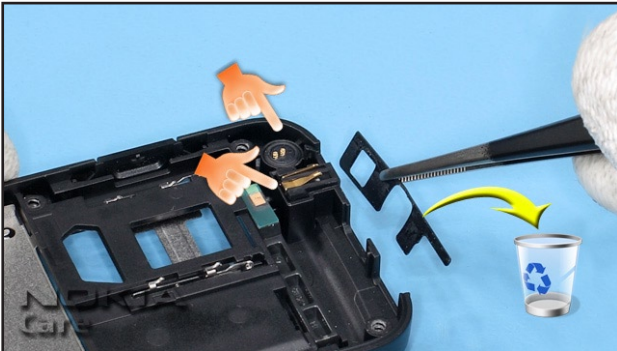


15. Remove the AUDIO GASKET and discard it. Ensure that no adhesive remains.



16. Open the MEMORY CARD DOOR and remove it.





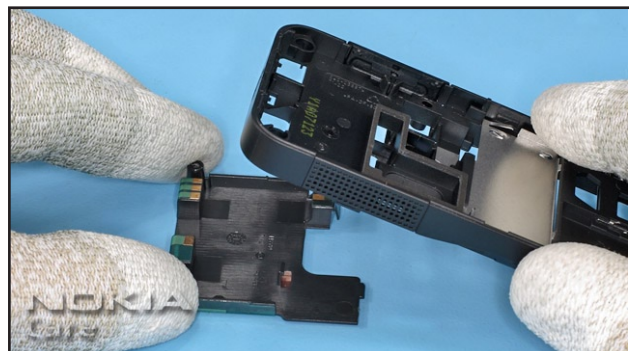
17. Remove the CONNECTOR LABEL and discard it.



18. Lift the BT ASSY with the SS-93 as shown and discard it.



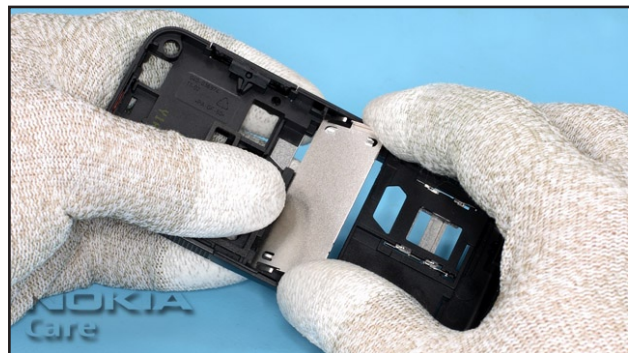
19. Release the both clips of the ANTENNA ASSY with the opening tool.



20. Now, the ANTENNA ASSY can be removed easily.



21. Unlock the two hooks of the C-COVER METAL PLATE.



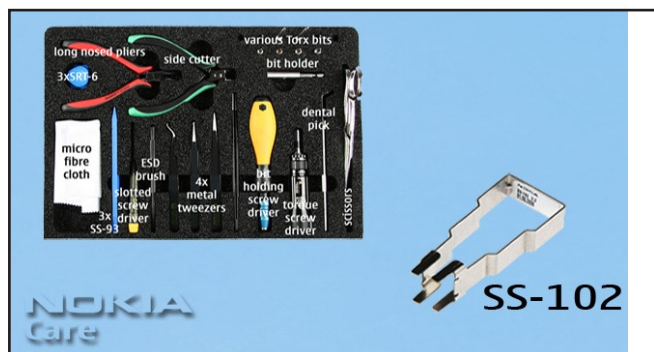
22. Remove the C-COVER METAL PLATE from the C-COVER. The disassembly procedure is now complete.



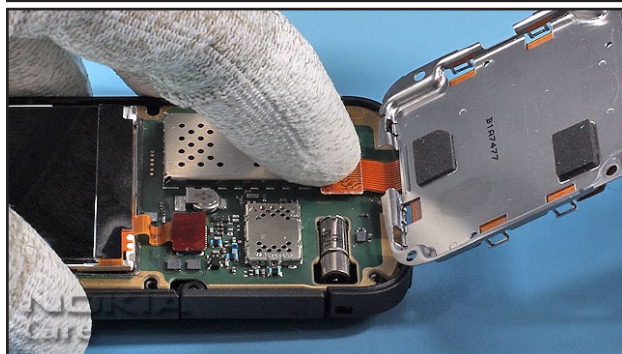
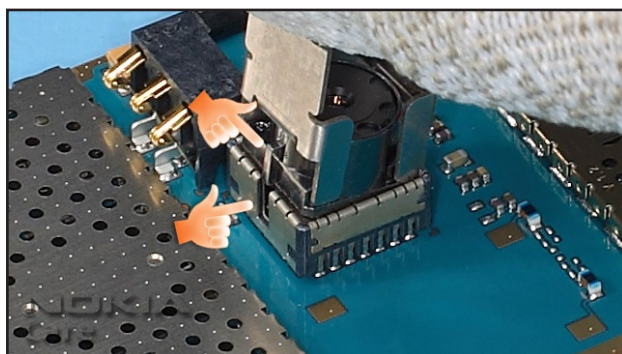
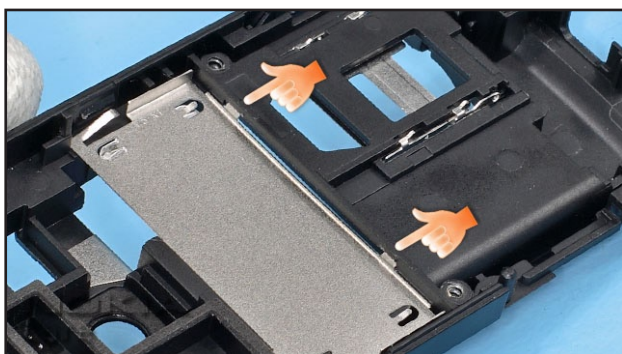
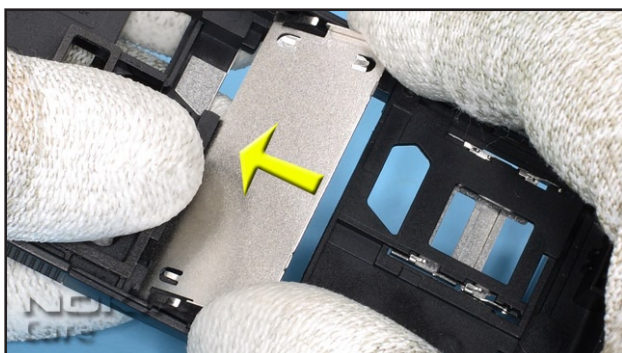
## 13.ASSEMBLY INSTRUCTION



1. Nokia 6124 classic, Assembly hints.



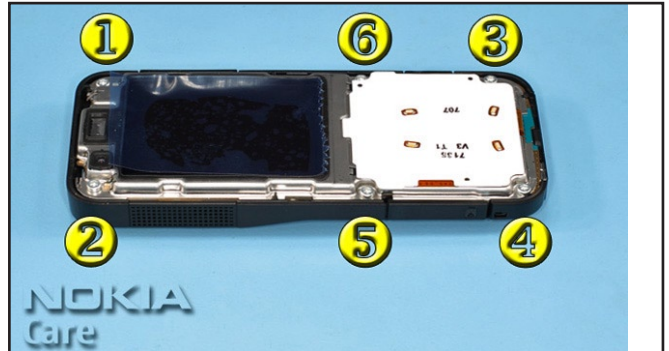
2. You will need the Nokia Standard Toolkit version 2 as well as the camera removal tool SS-102.







9. Fit the FRONT CAMERA DUST SHIELD.



10. Tighten the six screws to the torque of 23Ncm in the order shown.



11. Fit the KEYMAT starting with the shown side.

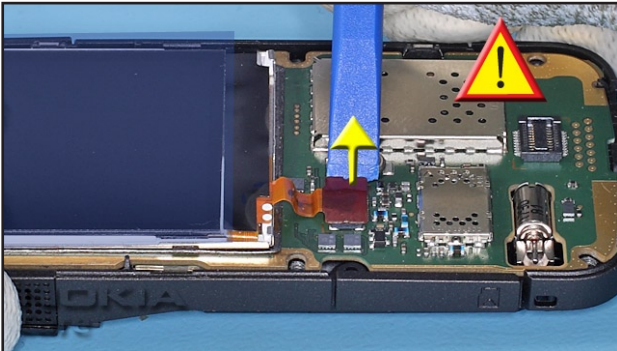


12. Press the KEYMAT into its place. Ensure that the KEYMAT is secured correctly.

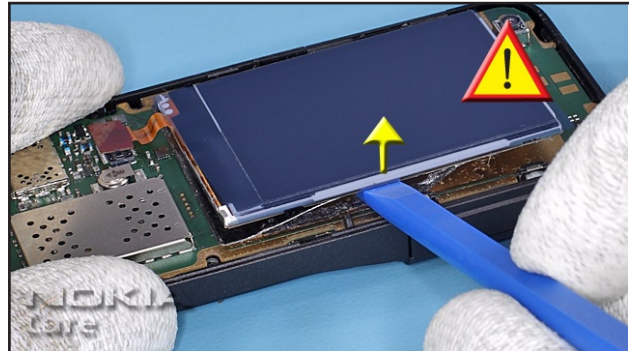


13. Always use a new CONNECTOR LABEL when assembling the unit.

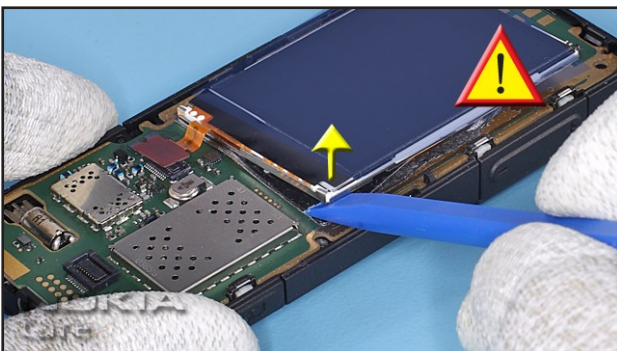
## 14.GT-TAPE EXCHANGE - DISASSEMBLY



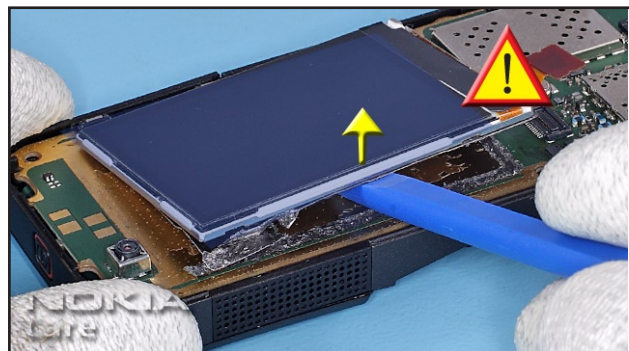
1. Carefully open the LCD connector.



2. Place the SS-93 between the LCD and the PWB and carefully lift the Display.



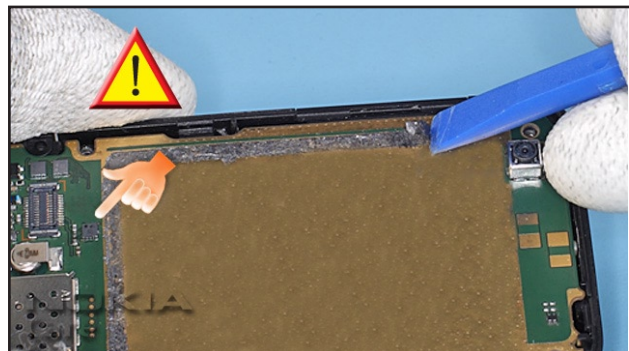
3. Now, gently lift the shown corner of the LCD.



4. Lift the LCD on the other side and remove it from the PWB.



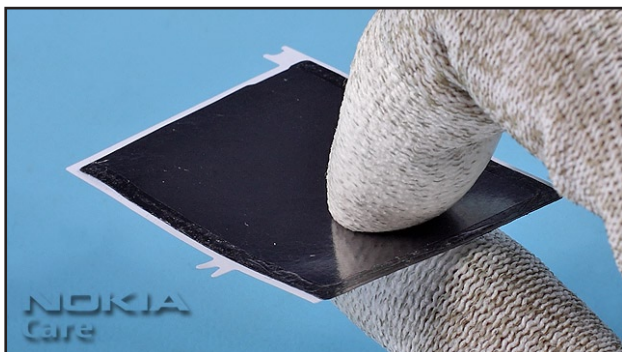
5. Remove the GT-Tape from the LCD. Ensure that no residues remain.



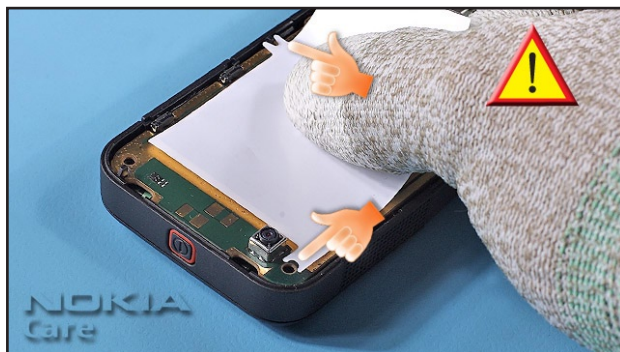
6. Gently remove the adhesive residues with the SS-93. Ensure that no residues remain.



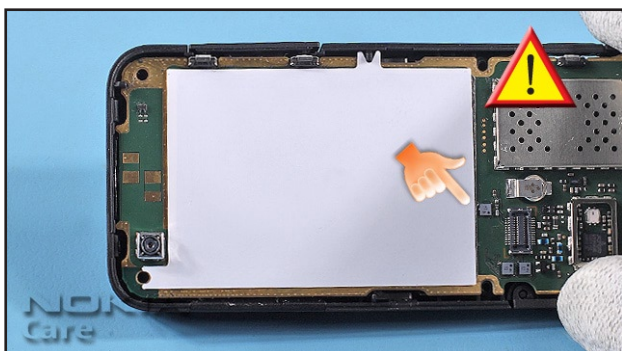
## 15.GT-TAPE EXCHANGE - ASSEMBLY



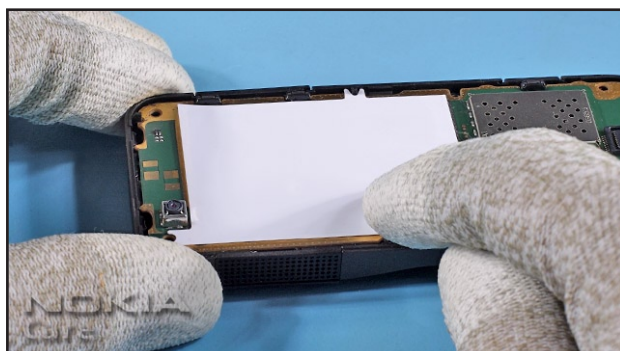
1. Hold the GT-Tape as shown. Do not touch the adhesive when fitting the GT-Tape.



2. Place the GT-Tape onto the PWB using the markings.



3. Check the correct position of the GT-Tape. Ensure that the GT-Tape is not touching the electrical components.



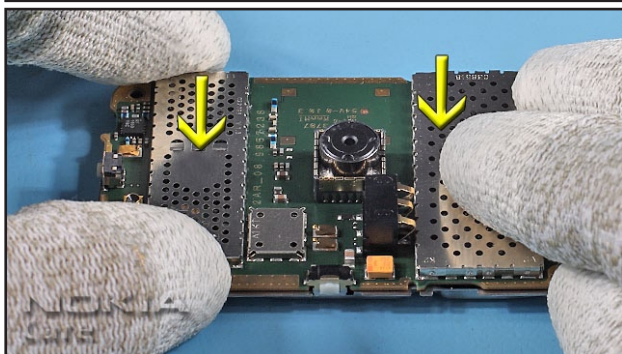
4. Carefully press the GT-Tape onto the PWB.



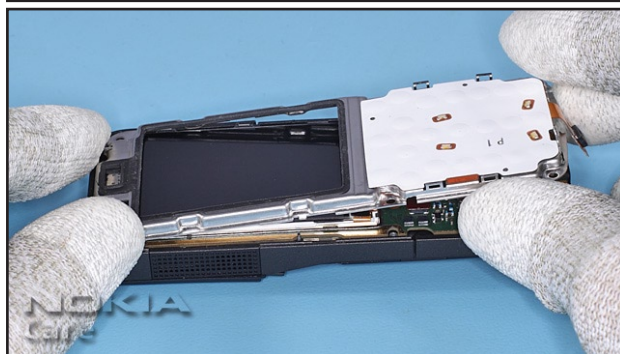
5. Remove the protective film from the GT-Tape as shown.



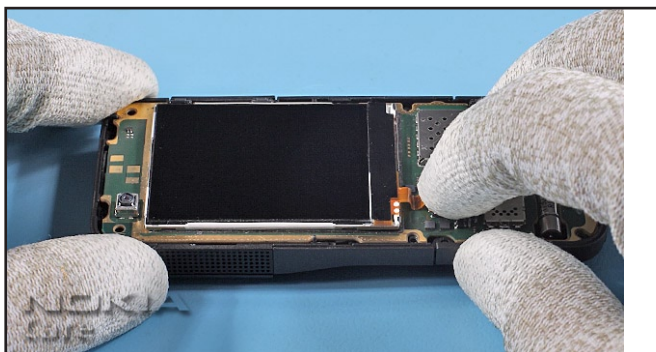
6. Use the Display Frame as a support for centering of the Display.



7. Align the screw openings of the PWB with the screw openings of the DISPLAY FRAME ASSY and carefully press the parts together.






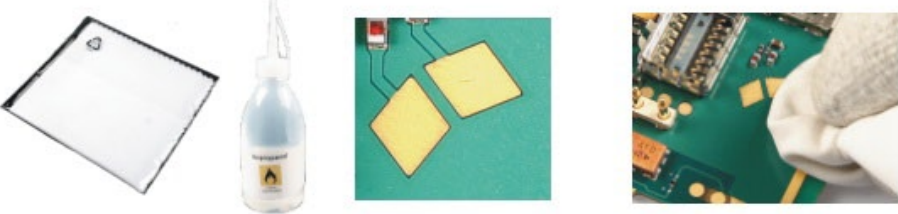



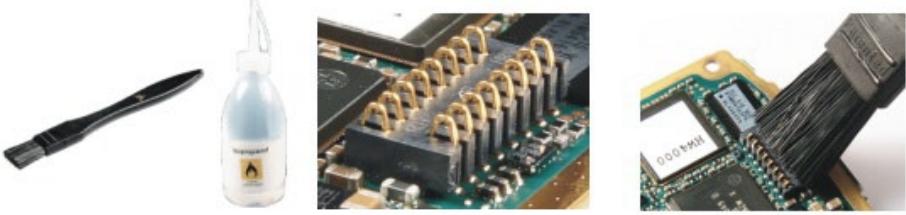

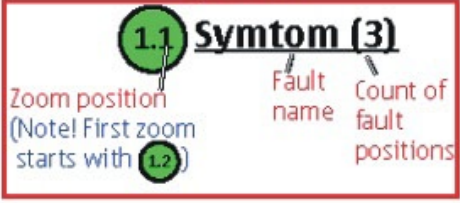
8. Place the parts onto the C-COVER and remove the DISPLAY FRAME ASSY.



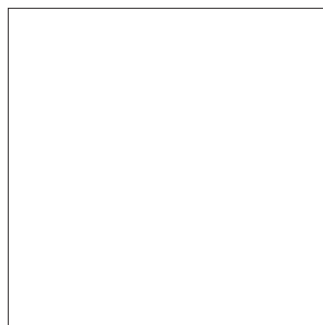
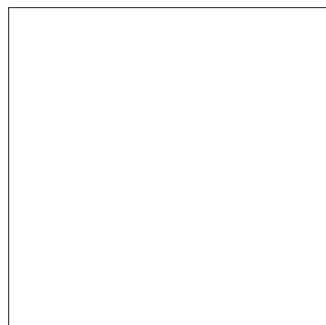
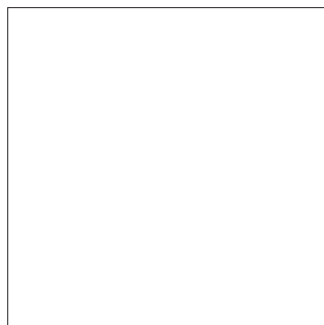
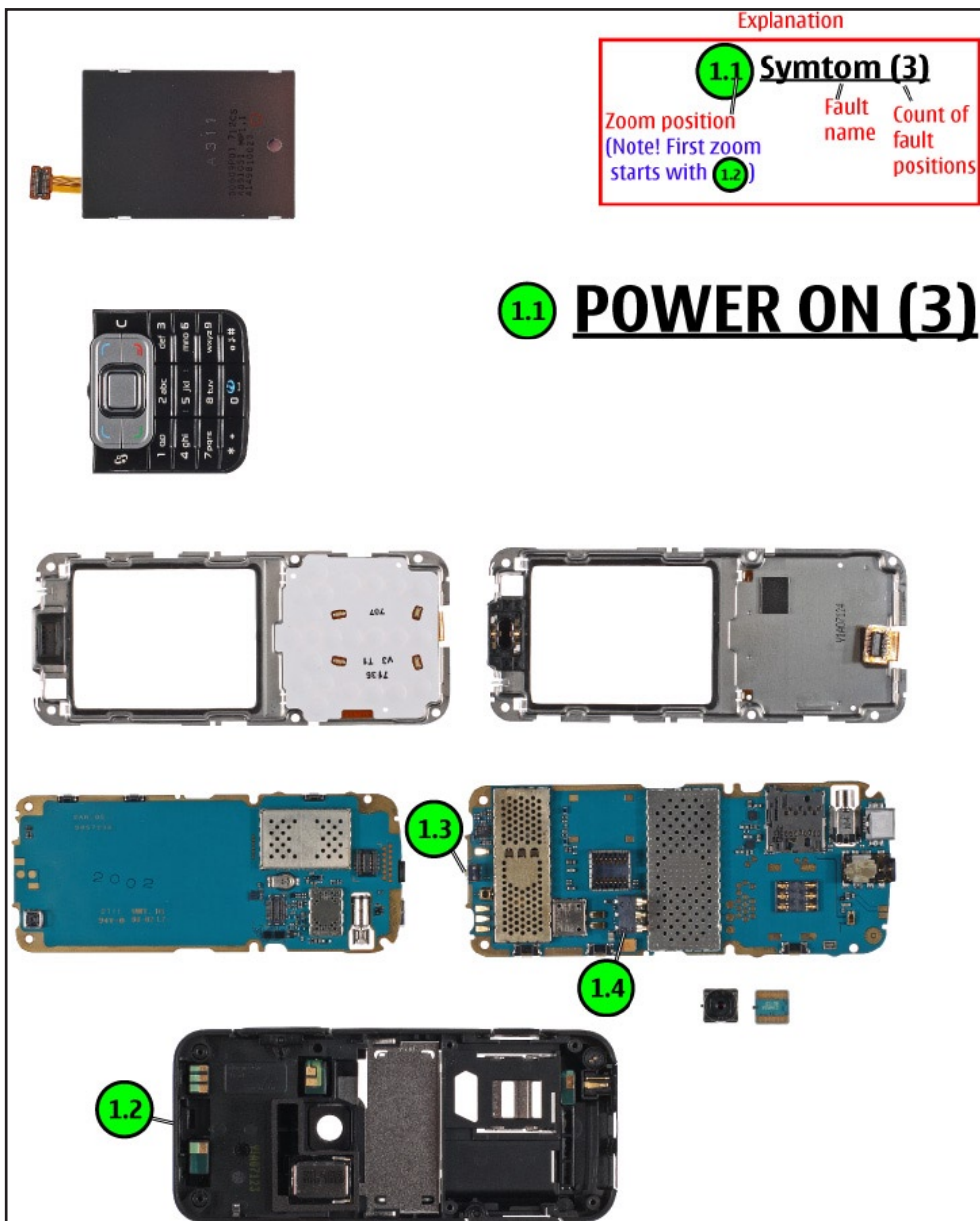
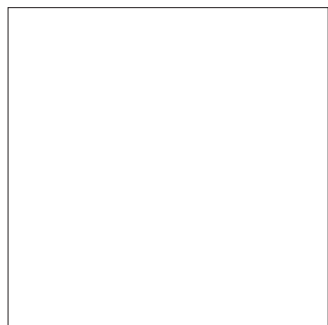
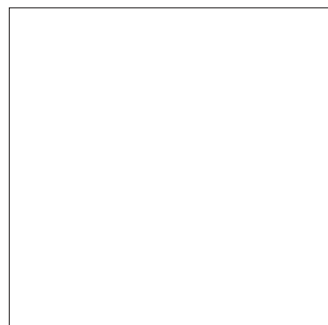
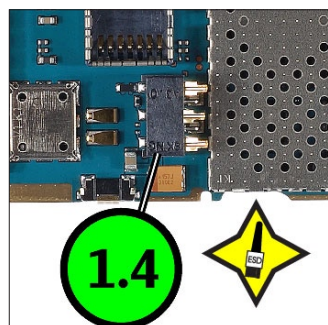
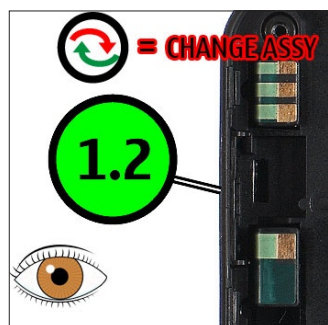
9. Close the DISPLAY connector.



## 16.LEGEND FOR QUICK TROUBLE SHOOTER

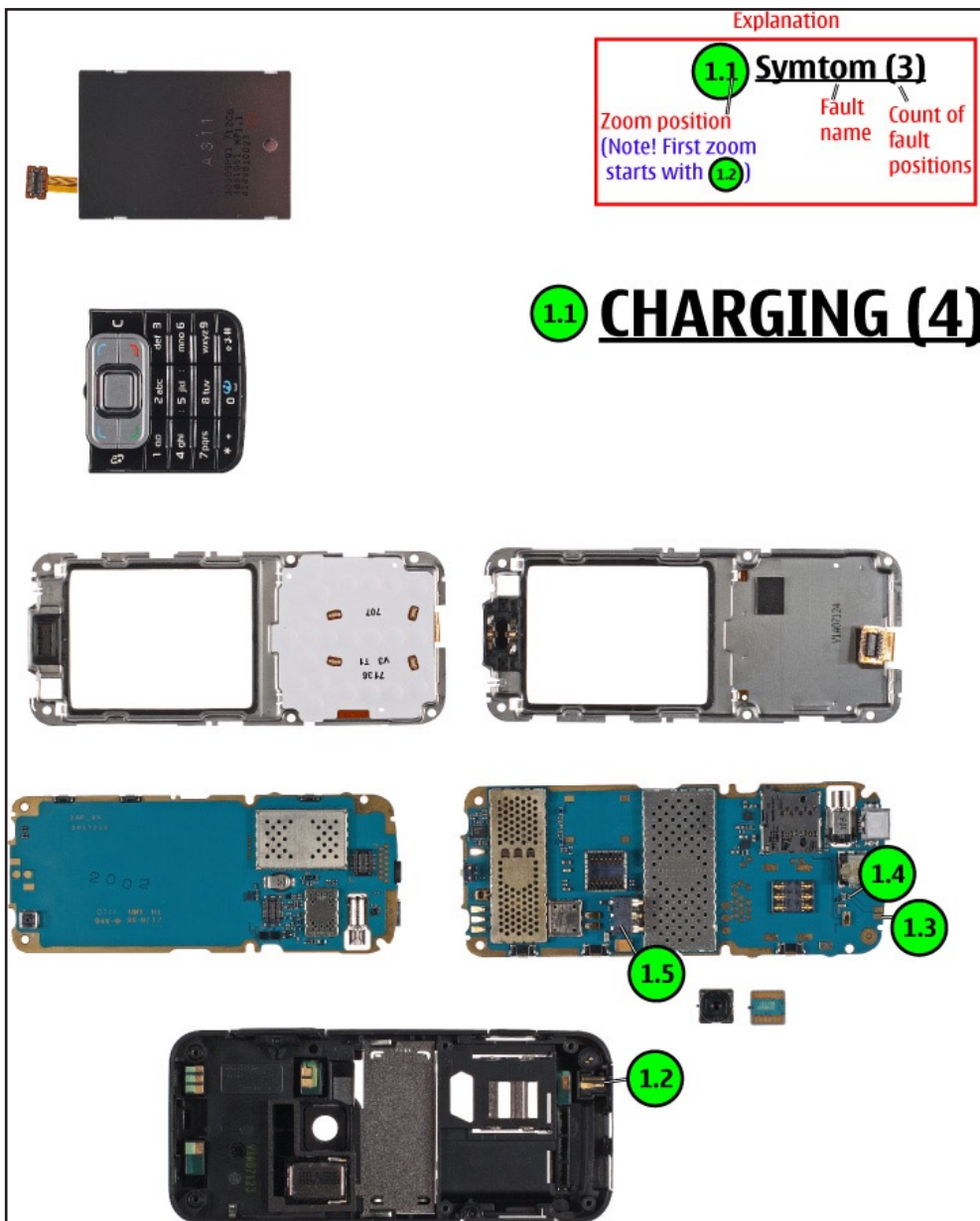
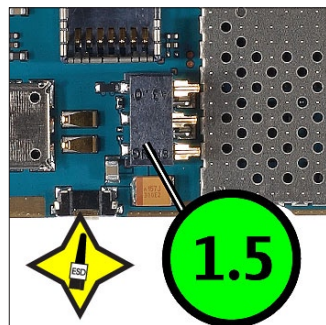
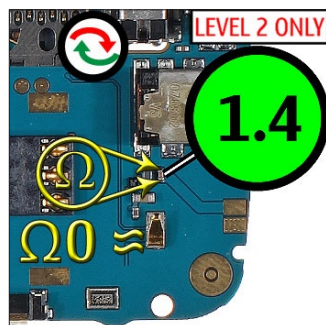
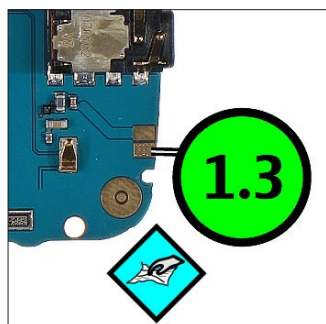
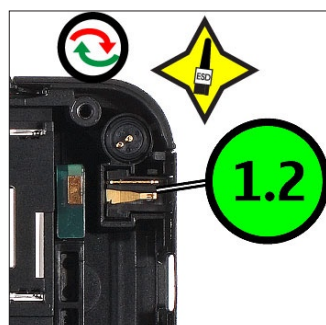
Legend for Quick Troubleshooter	
This legend is valid for all parts of the Quick Troubleshooter	
Follow the steps until the problem is solved. If this doesn't help, you are not authorized to go forward.	
	Check the mechanical condition of the component (bent, broken or missing).
	Only marked components can be replaced. If additionally " <b>=CHANGE ASSY</b> " appears, then change the whole assembly (e.g. A4=D-COVER ASSEMBLY).
	<p><b>Cloth usage:</b> Check pads or contacts for optical and mechanical condition particularly regarding to corrosion. Clean it if necessary.</p> 
	<p>Measure component for electrical functionality and change, if needed. (Level 2 only)</p> 
	<p><b>ESD Brush usage:</b> Check contacts for optical and mechanical condition particularly regarding to corrosion. Clean it if necessary.</p> 
	<p>Explanation</p>  <p>1.1 Zoom position (Note! First zoom starts with 1.2)</p> <p>1.2 Fault name</p> <p>3 Count of fault positions</p>

## 17. QUICK TROUBLE SHOOTER - POWER ON

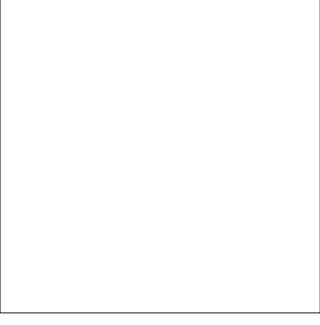
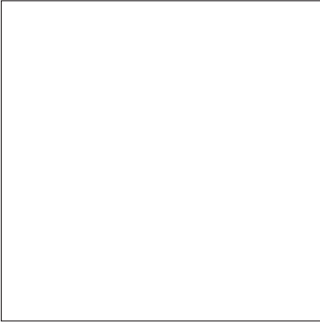
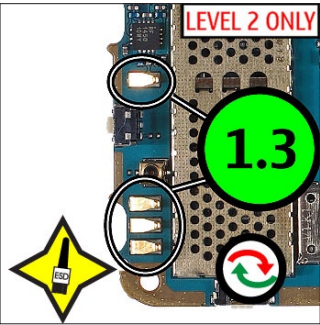
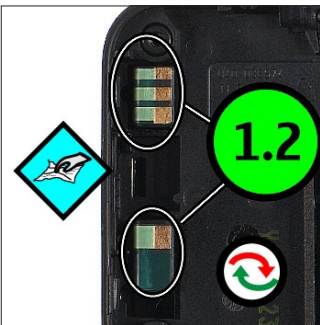




## 18. QUICK TROUBLE SHOOTER - CHARGING



19.QUICK TROUBLE SHOOTER - NO SERVICE

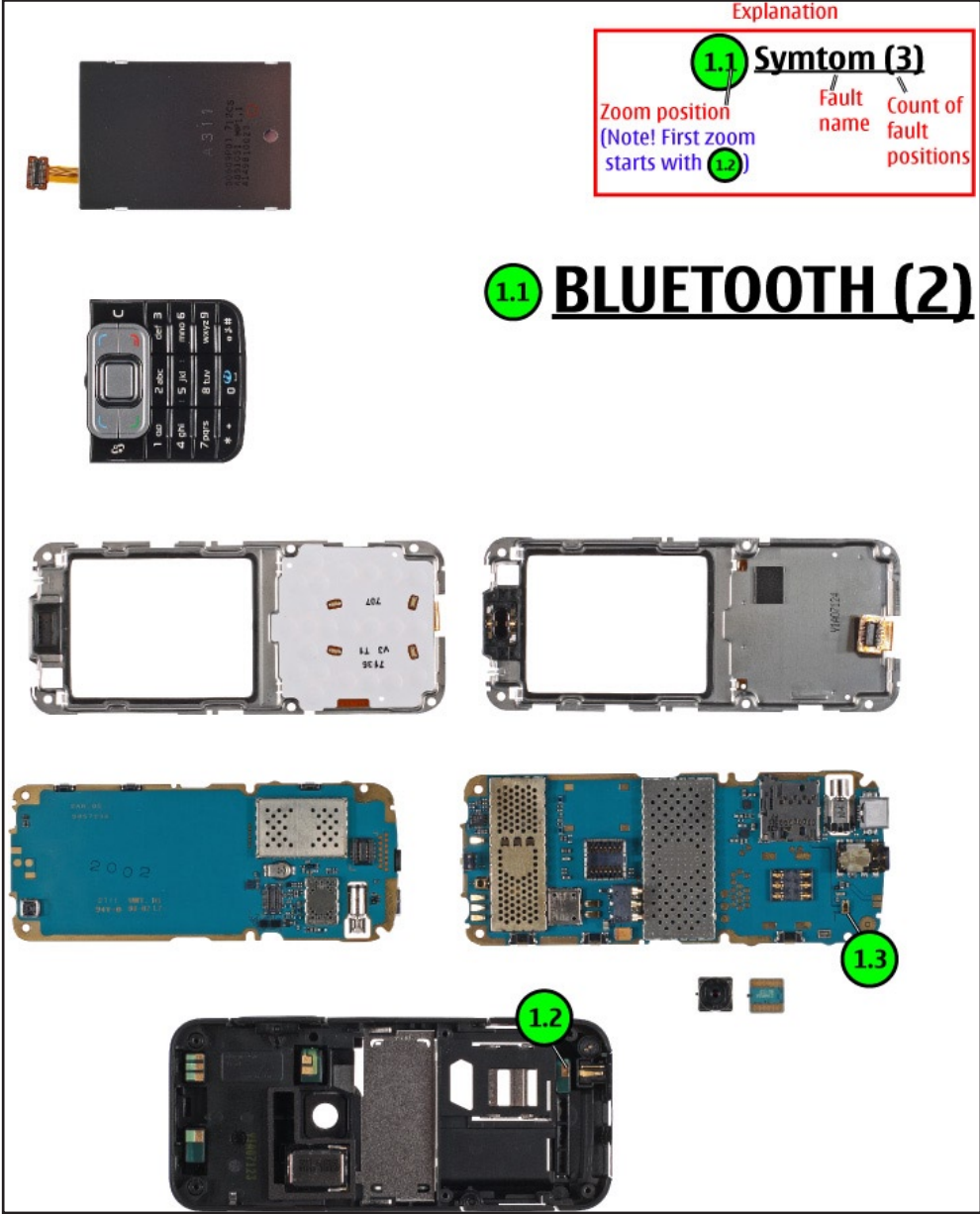
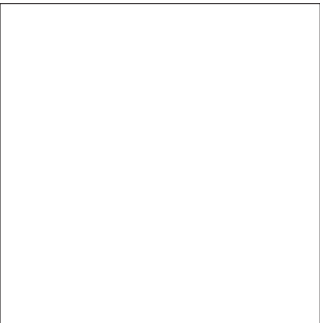
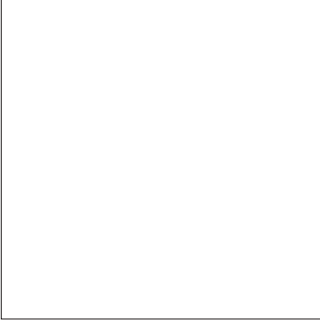
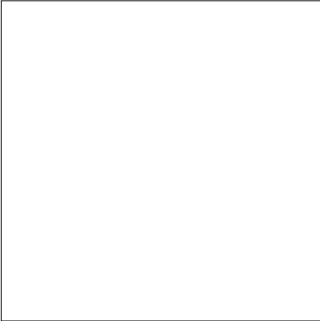
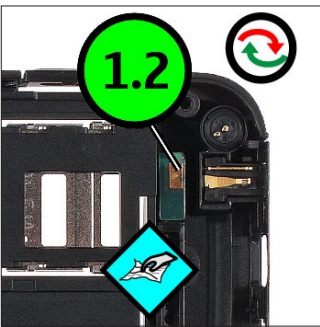


Explanation

1.1	Symtom (3)
Zoom position (Note! First zoom starts with 1.2)	Fault name Count of fault positions

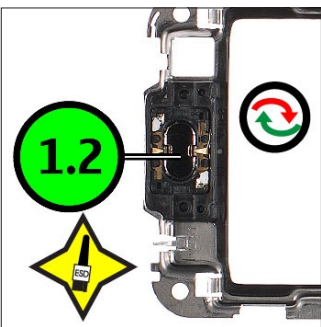
1.1 NO SERVICE (2)

20.QUICK TROUBLE SHOOTER - BLUETOOTH

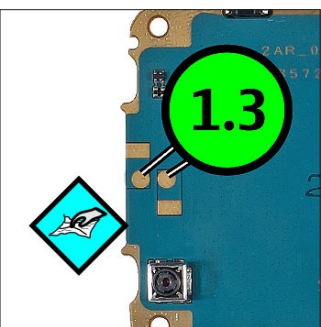





21.QUICK TROUBLE SHOOTER - EARPIECE




1.2



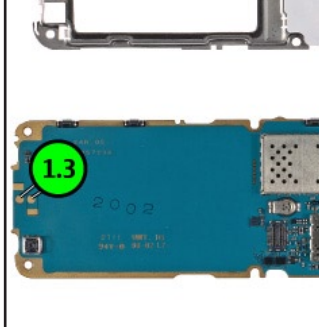
1.3



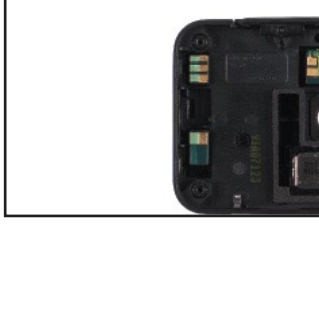
1.1



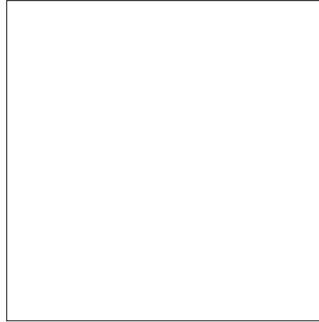
1.2



1.3



1.4



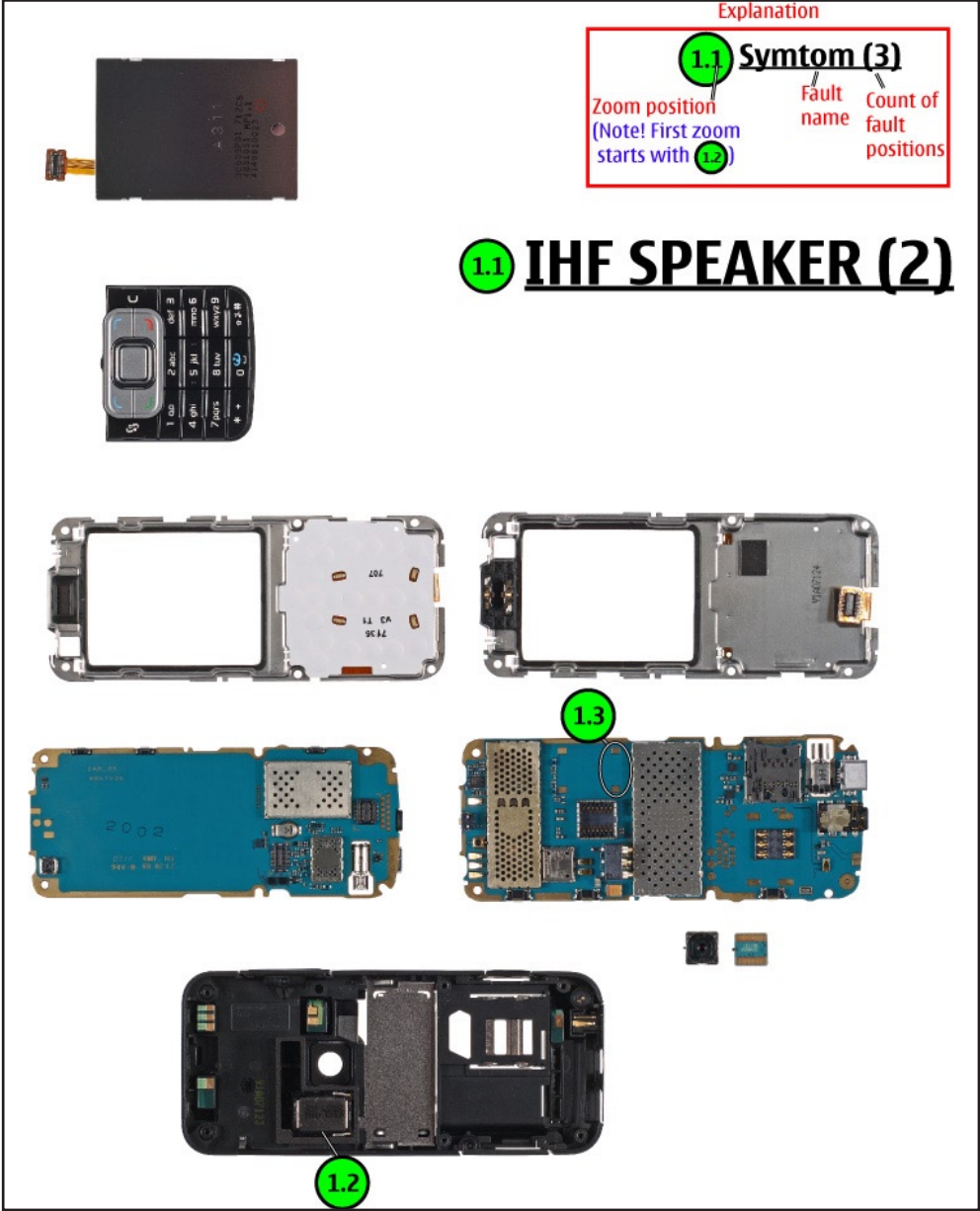
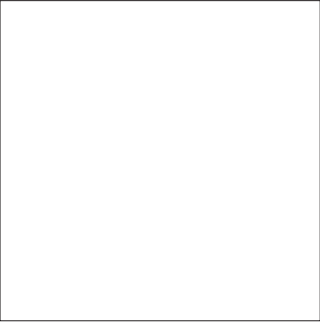
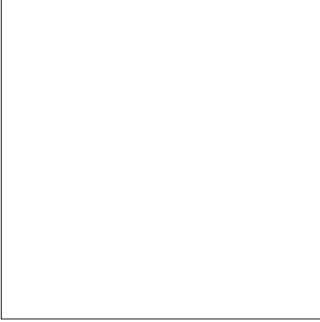
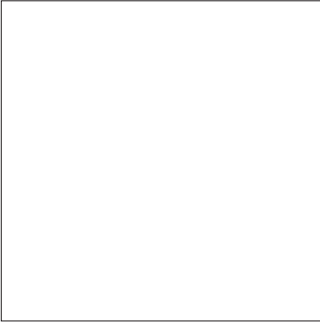
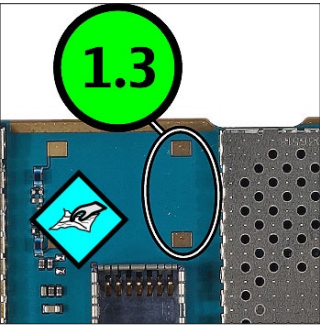
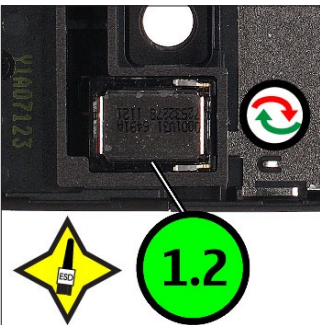
1.5

Explanation

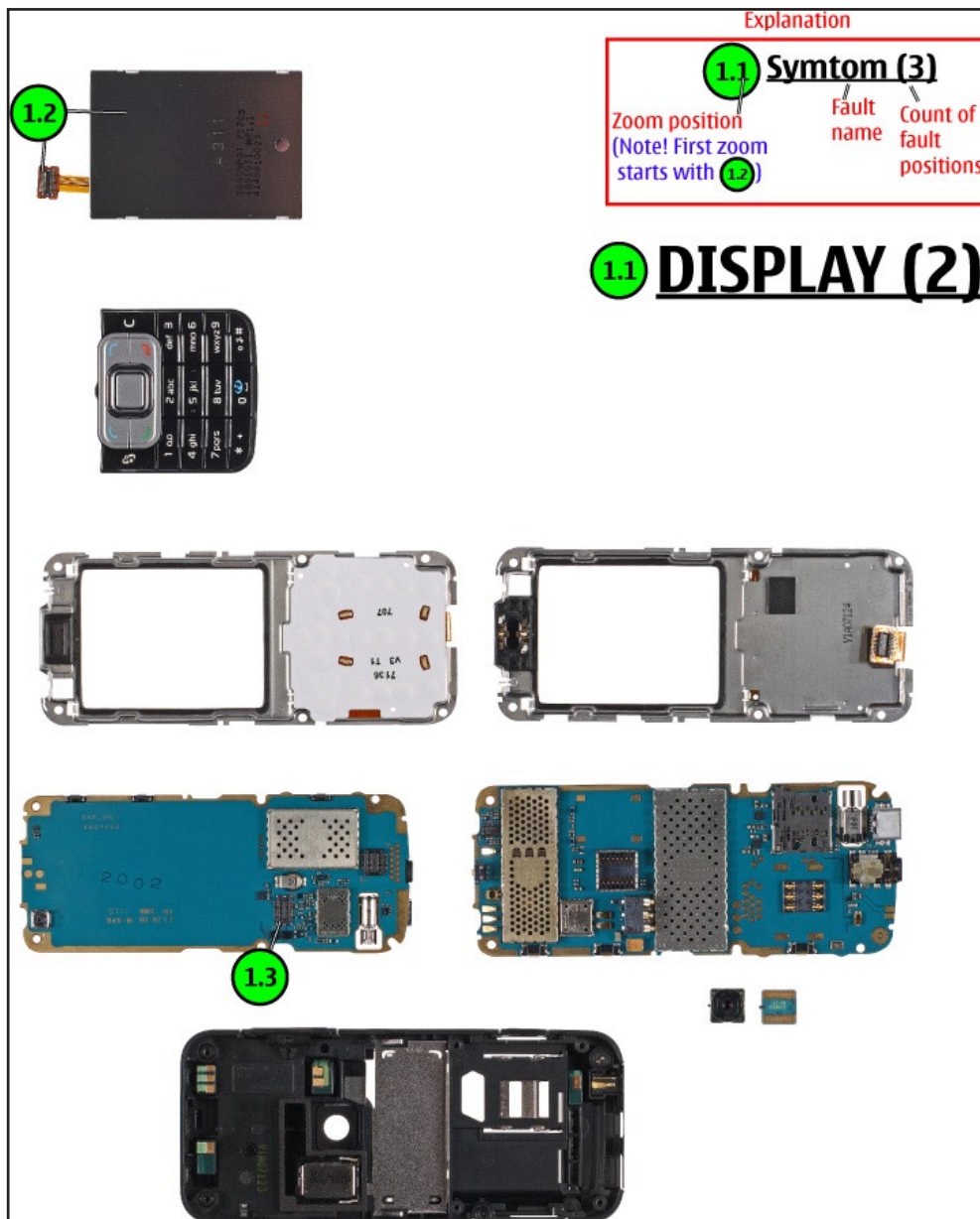
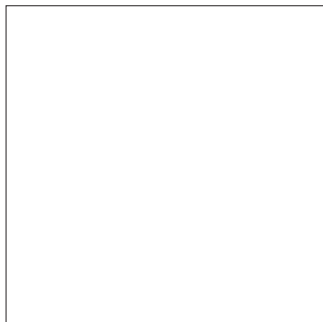
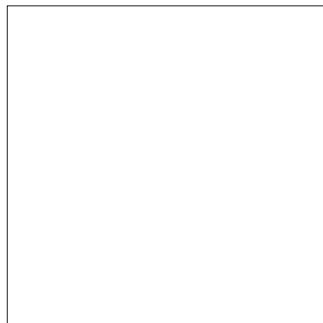
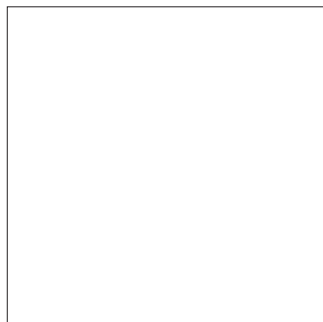
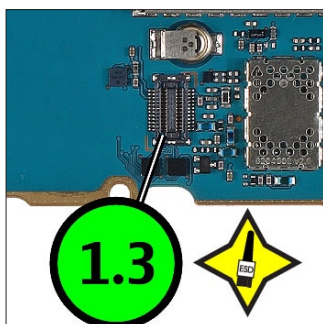
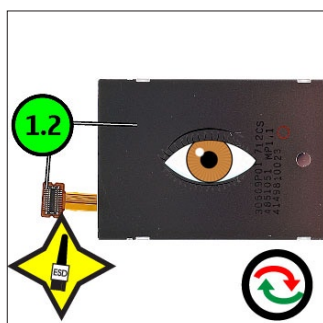
1.1	Symtom (3)
Zoom position (Note! First zoom starts with 1.2)	Fault name Count of fault positions

1.1 **EARPIECE (2)**

22.QUICK TROUBLE SHOOTER - IHF SPEAKER

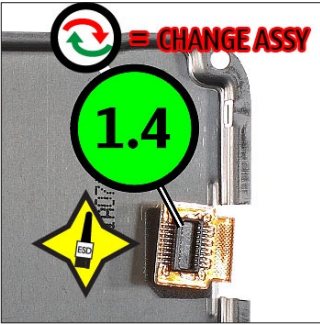


## 23. QUICK TROUBLE SHOOTER - DISPLAY





24.QUICK TROUBLE SHOOTER - KEYMAT

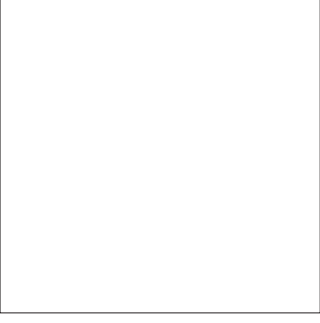
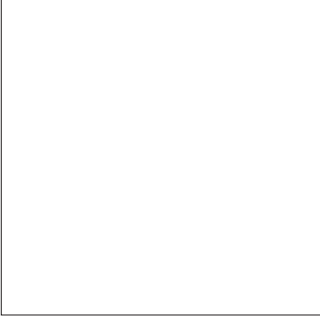
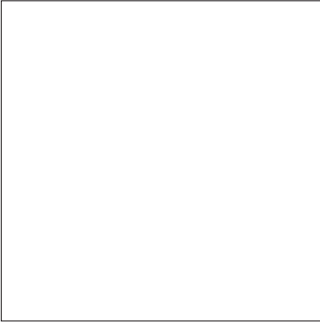
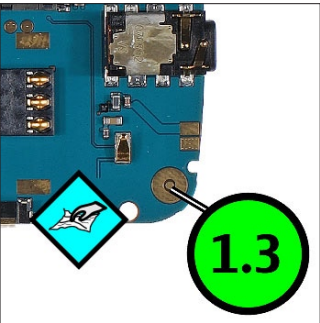
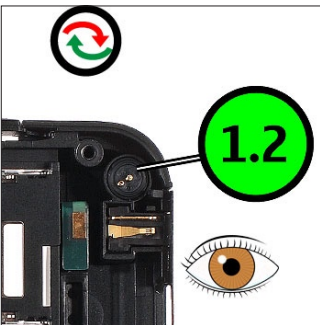


Explanation

1.1	Symtom (3)
Zoom position (Note! First zoom starts with 1.2)	Fault name
	Count of fault positions

1.1 **KEYMAT (4)**

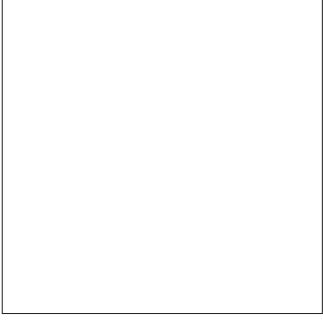
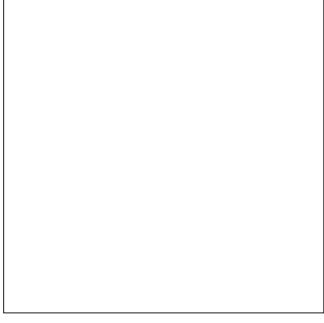
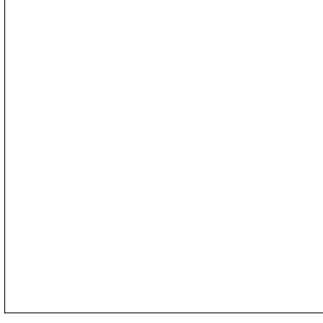
25.QUICK TROUBLE SHOOTER - MICROPHONE



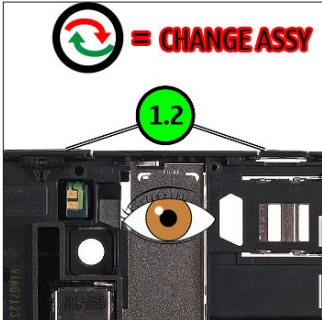
Explanation

1.1	Symtom (3)
Zoom position (Note! First zoom starts with 1.2)	Fault name
	Count of fault positions

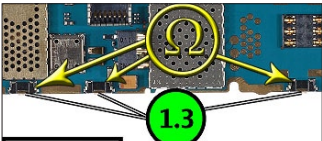
1.1 **MICROPHONE (2)**

A large assembly diagram showing various components of the phone's microphone system. At the top left is a microphone module. Below it is a keypad. In the center are two views of the phone's metal frame. Below the frames are two views of the mainboard: the left one shows the back with the microphone, and the right one shows the front with the microphone. At the bottom is a view of the phone's internal chassis with the microphone. Callouts include '1.1' for the microphone module, '1.2' for the microphone on the chassis, and '1.3' for the microphone on the mainboard.

## 26. QUICK TROUBLE SHOOTER - VOLUME/CAMERA KEYS



**1.2**



**1.3**

How to measure 2-pol switch (built-in)

open  $\approx \infty \Omega$

pressed  $\approx 0 \Omega$

MEASURE OPEN AND PRESSED STATE

**LEVEL 2 ONLY**

Explanation



**1.1 Symptom (3)**

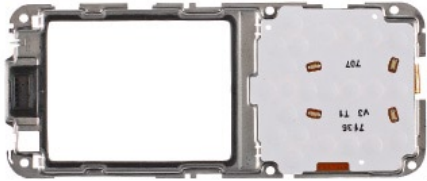
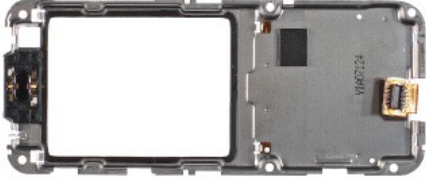
Zoom position (Note! First zoom starts with **1.2**)


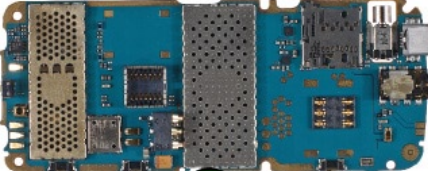
Fault name


Count of fault positions

# VOLUME/CAMERA KEYS (2)





## 27. QUICK TROUBLE SHOOTER - FLASH LIGHT

