

SERVICE MANUAL

Level 1&2

NOKIA 3110 CLASSIC

NOKIA 3109 CLASSIC

RM-237

RM-274

**Transceiver characteristics:****Band:** Tri-band phone for EGSM 900/1800/1900MHz**Display:** Active TFT color display with 262.144 colors,
resolution 128 x 160 pixel**Camera:****RM-237 only:** 1.3 Megapixel camera with 8x digital zoom**Operating System:** Series 40**Bluetooth****IRDA****FM radio (RM-237 only)****Connector:** mini USB Connector**Memory Card:** microSD™**Transceiver with BL-5c Li-Ion battery pack**

Talk time	Standby	Note
up to 4h	up to 16,5days	Depends on network parameters

Environmental characteristics:

- Lead-free soldered

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CHANGE HISTORY

Status	Version No.	Date	Comments
Draft	0.1	03.Jan.2007	Initial draft
Approved	1.0	06.Mrz.2007	Approval
Approved	2.0	16.Mrz.2007	Disassembly/Assembly Hints updated
Approved	3.0	21.Mrz.2007	2 missing screws added to Exploded- and Spare Parts overview
Approved	4.0	14.May.2007	3109c RM-274 added

1. INTRODUCTION

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:

<mailto:cc-ts-rc.documentation@nokia.com>

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

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.

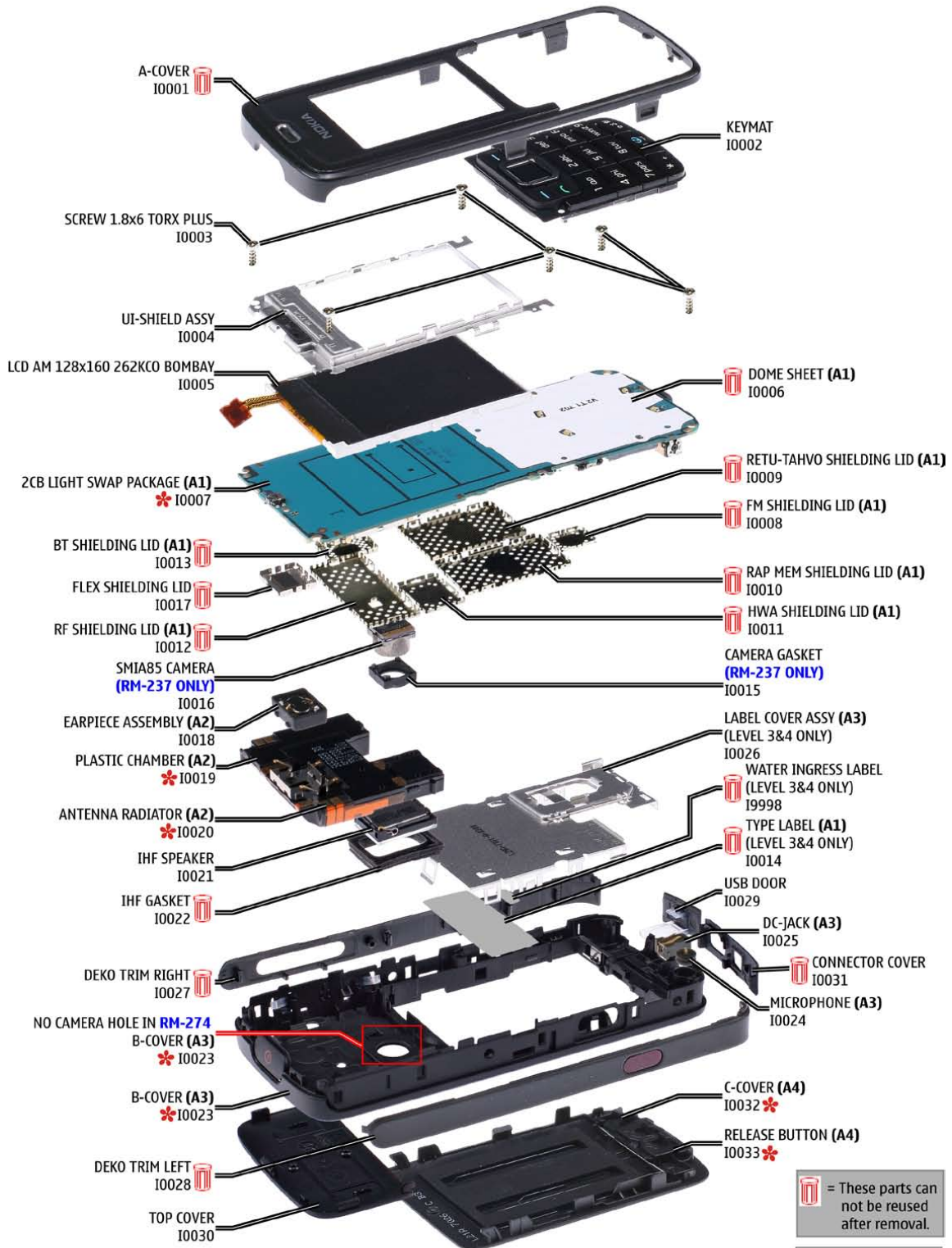


Electrostatic discharge can easily damage the sensitive components of electronic products. Therefore every Service Supplier has to take care of all precautions, which are mentioned in the service level related "Service Partner Requirements", available on NOKIA Online. Also see ESD Protection Requirements in this Service Manual.

2. EXPLODED VIEW

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

3110c RM-237 / 3109c RM-274 EXPLODED VIEW



= These parts can not be reused after removal.

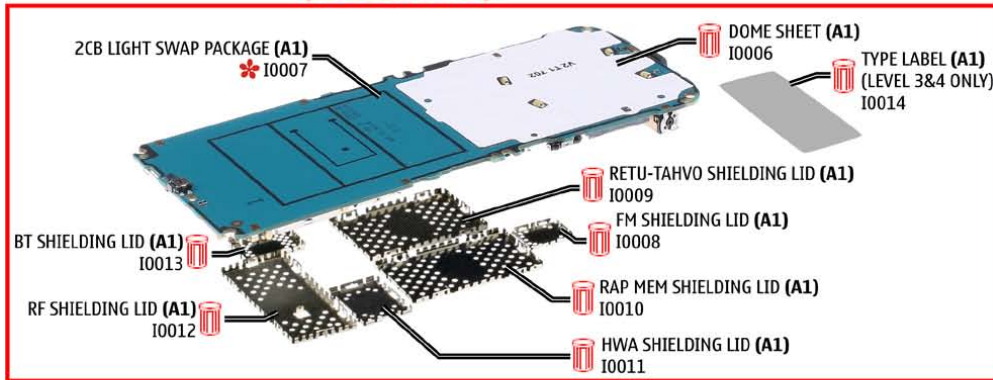
* = only available as assembly

Ver. 4.0

3. SPARE PARTS OVERVIEW

3110c RM-237 / 3109c RM-274 SPARE PARTS OVERVIEW

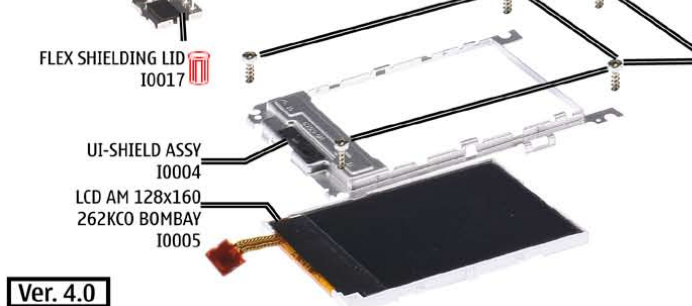
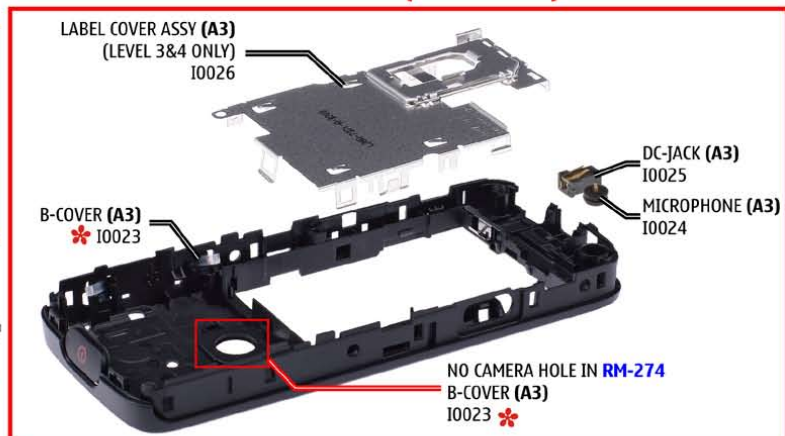
**A1= 2CB LIGHT SWAP PACKAGE (I0006-I0014)
(LEVEL 3&4 ONLY)**



A2=ANTENNA MODULE ASSY (I0018-I0020)



A3=B-COVER ASSY (I0023-I0026)



= These parts can not be reused after removal.

= only available as assembly

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4. GENERAL RECYCLING RECOMMENDATION

NOKIA

CMO Operations & Logistics
Training and Vendor Development
Multimedia Creation & Support

Confidential

13.11.2006

MGR

General Recycling recommendation

100% - only one Material
(Example components)

METAL

PLASTIC

Mixed components
(Example components)

ELECTRO-MIX

ELECTRO-MIX: Most components made of Glass, Ceramics, Glassfiberreinforced epoxy.
ALL fractions containing any copper should be send to ELECTRO-MIX!!!

METAL - MIX

METAL-MIX: Most components made of Metal

BATTERY

BATTERY: Chemicals, Plastic and Ceramics

PLASTIC-MIX

PLASTIC-MIX: Most components made of Plastic

Some of these options can be utilized directly and some need pretreatment as for instance dismantling, grinding, milling, etc.
For sorting the waste into fractions for recycling, your recycler will offer you more specific information, but a **GENERAL RULE** is:

Electronic Equipment: There are recyclers that can process this "multimaterial" for high recycling yields.

Metals: Fractions containing metals must always be collected and sent for (metal) material recycling.

Plastics: Pure plastics fractions (i.e. covers) can be sent for (plastics) materials recycling.

Mixed Plastic/Metals: A metal fraction contaminated with plastics does not represent a problem for metal recycling/recovery whereas recycling/recovery of plastics is generally sensitive for contamination by other materials.

● ELECTRO ● METAL ● PLASTIC ● BATTERY

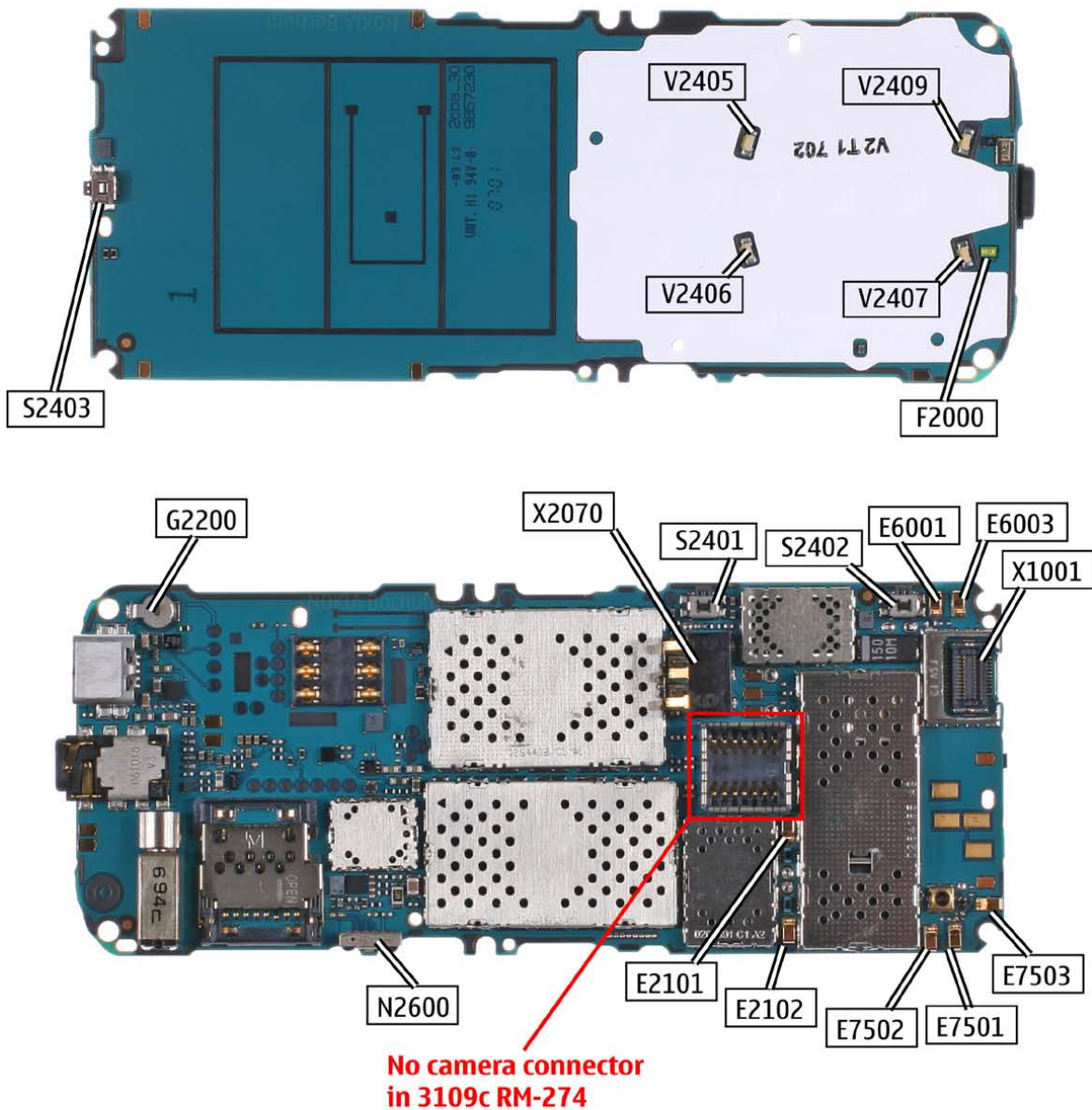
Ver. 3.0

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5. LEVEL 2 SOLDER COMPONENTS

3110c RM-237 / 3109c RM-274 Level 2 solder components

Solder components only for LEVEL 2



Ver. 2.0

6. SERVICE TOOLS

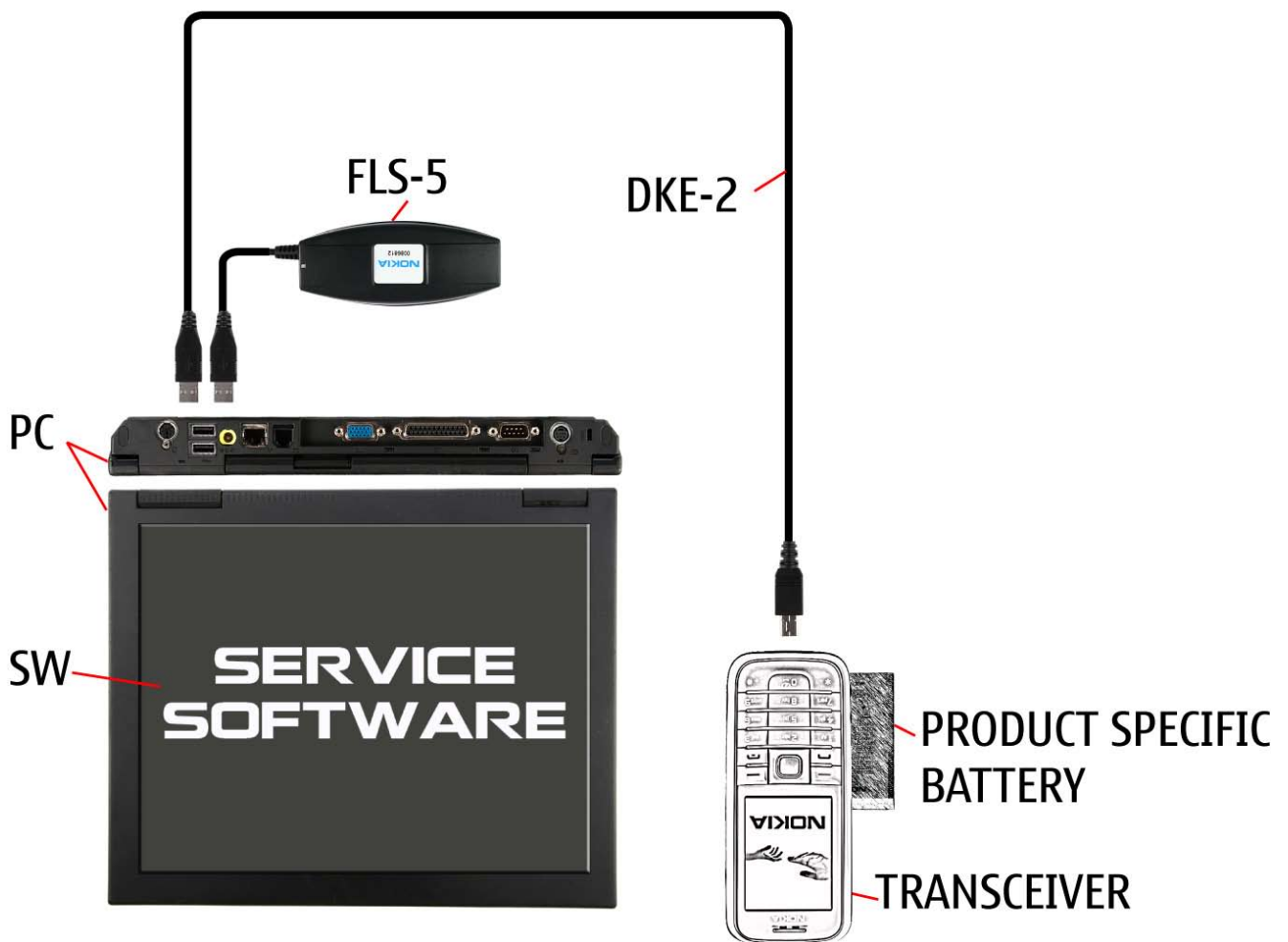
 <p>FLS-5</p>	<p>FLS-5 incl. ACF-8, Driver and User Guide Dongle and flash device incorporated into one package, developed specifically for POS use.</p>
	<p>ACF-8 Universal Power Supply is used to power FLS-4S.</p>
	<p>Travel Charger AC-4 Small and lightweight charger for fast charging of your phone battery.</p>
	<p>Internal Battery BL-5c Inserted under the back cover, this Li-Ion battery provides power in a lightweight package.</p>
 <p>SS-45</p>	<p>SS-45 Camera removal tool. One side is for disassembly, the other side for assembly. (Only for RM-237)</p>
	<p>DKE-2 Service Cable to connect the PC with the mini USB connector.</p>

<p>RJ-148</p> 	<p>RJ-148 Soldering Jig</p>
	<p>Lead-free Solder Wire Mandatory for lead-free products (Level 2 only).</p>
	<p>0772040 NMP Standard Toolkit (V2)</p> <p>For more informations refer to the Service Bulletin (SB-011) on NOKIA Online.</p> <p>Supplier or manufacturer contacts for tool re-order can be found in “Recommended service equipment” document on NOKIA Online.</p>

7. SW-UPDATE

Flash Concept – (Point of Sales)

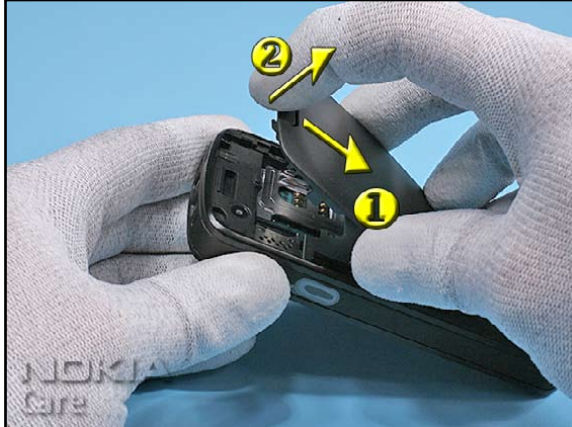
To use FLS-5 Flash Dongle you have to follow the user guide inside the sales package. Please check always for the latest version of flash software, which is available on [NOKIA Online](#).



8. DISASSEMBLY INSTRUCTION



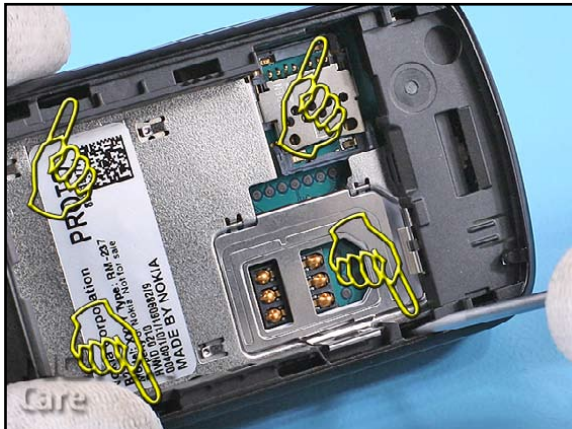
1. Needed tools: A Torx driver, a Torx Plus© size 6 bit, a torque driver, the SS-93 opening tool, a dental pick, flat bladed screwdriver, metal tweezers, the SS-45 camera opening tool (RM-237 only), the SRT-6 and the DC plug.



2. Unlock and open the C-COVER ASSEMBLY.



3. First unlock the A-COVER with the SRT-6 at the lower side and lift it a bit.



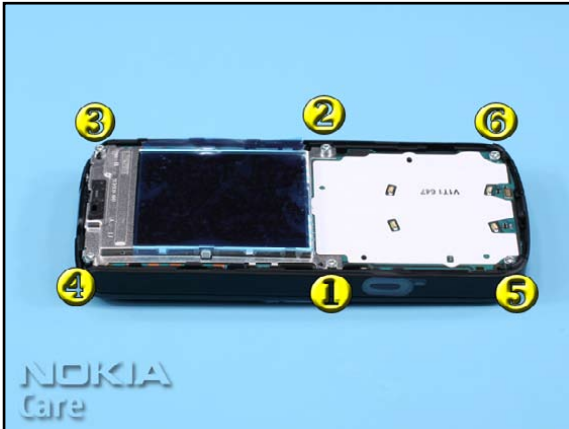
4. Release the marked clips with the flat bladed screwdriver...



5. ...and then, carefully separate the A-COVER from the unit by slightly the SRT-6 along the edges of the cover.



6. Remove the Keymat and discard the A-COVER.



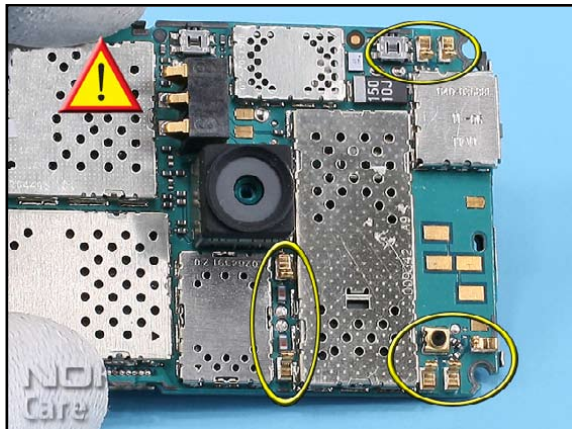
7. Unlock the screws in the order shown.



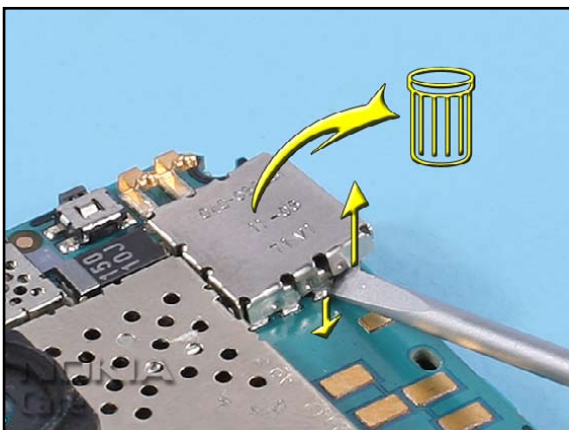
8. Lift the Engine Module a bit as shown.



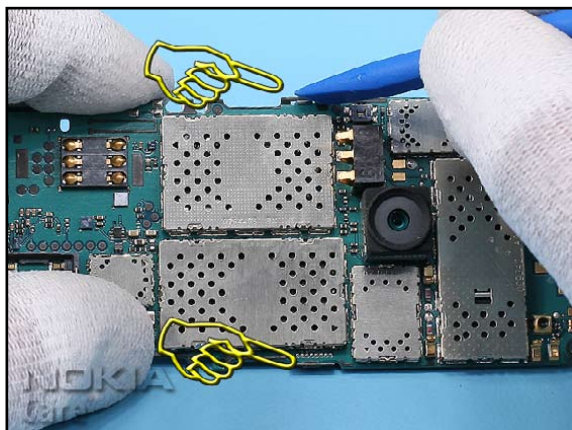
9. Gently, remove the ENGINE MODULE. Avoid damaging the guide pin of the B-COVER.



10. Take a special care to the spring contacts on the ENGINE MODULE.



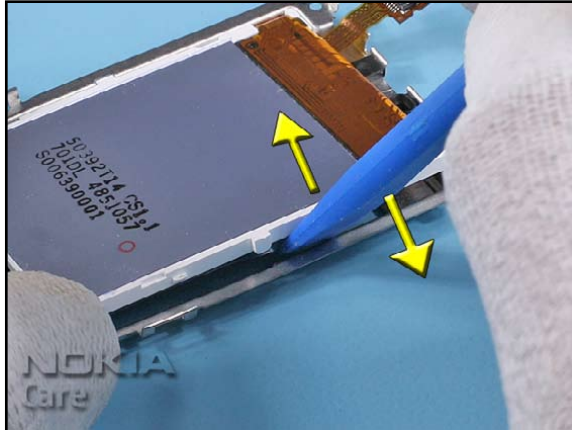
11. Use a flat bladed screwdriver to open the FLEX SHIELDING LID. Do not touch the spring contacts with the tool. Discard the FLEX SHIELDING LID after removal.



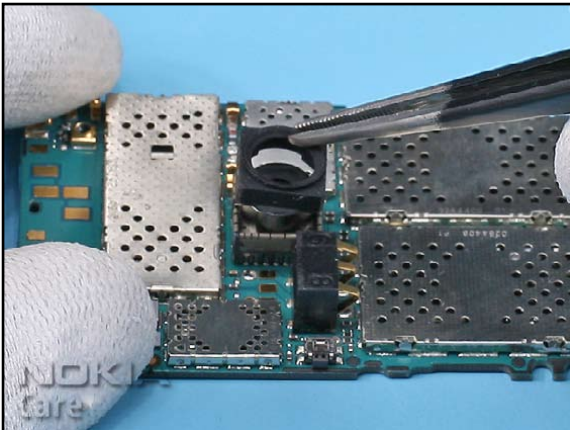
12. Unlock the UI-SHIELD ASSY.



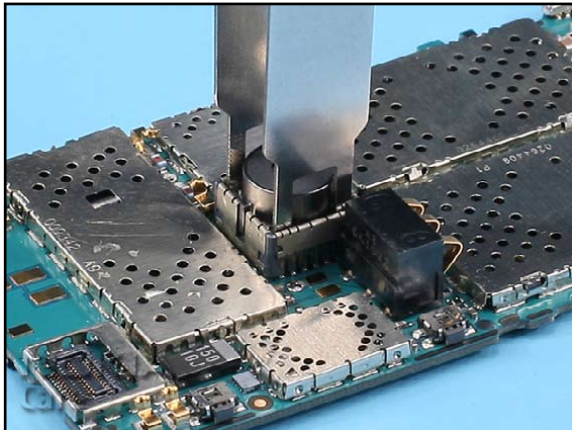
13. Turn the UI-SHIELD ASSY to the position shown and carefully open the LCD connector.



14. Unlock and remove the LCD from the UI-SHIELD ASSY.



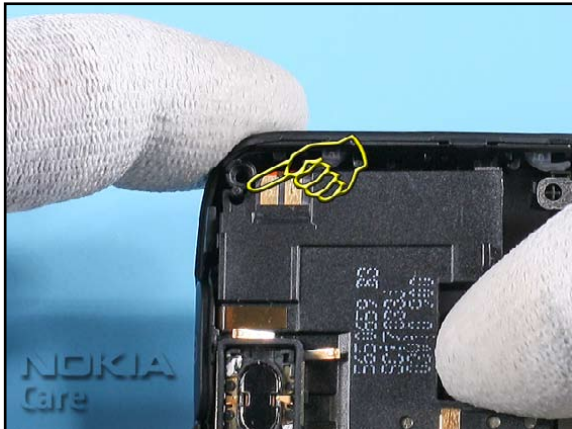
15. (RM-237 only) Remove the CAMERA GASKET.



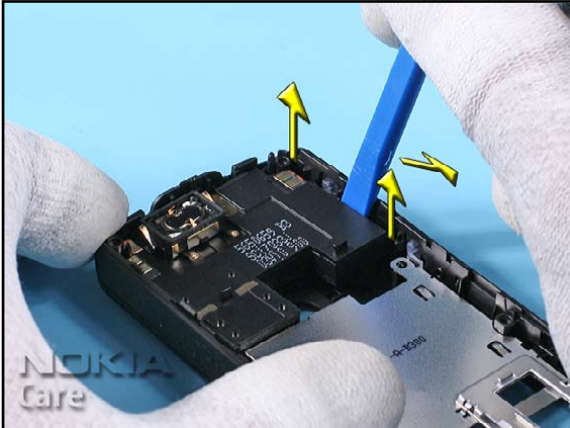
16. (RM-237 only) Remove the CAMERA with the SS-45.



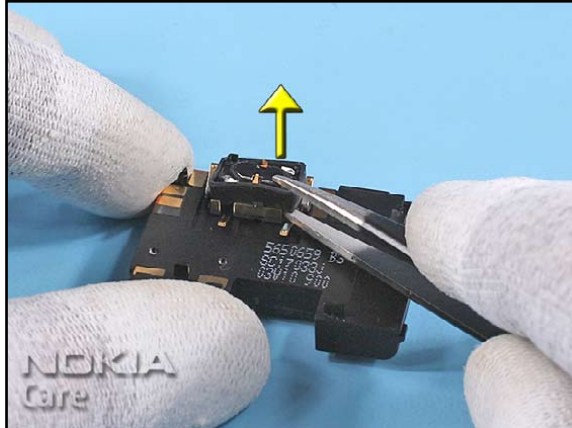
17. Remove the USB DOOR.



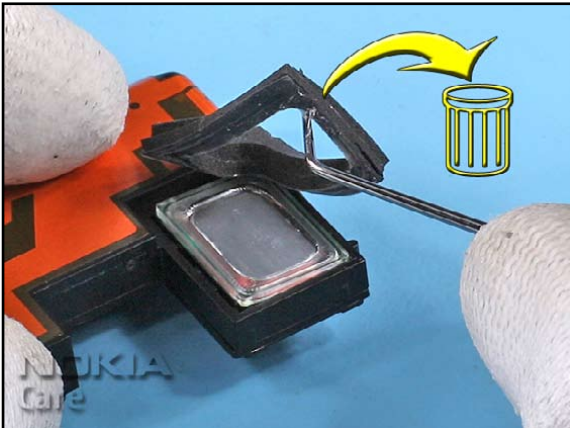
18. Take care to the guide pin when removing the ANTENNA MODULE ASSY.



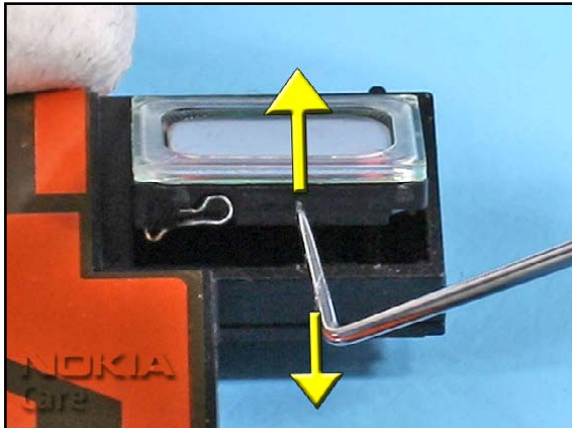
19. Use the SS-93 as a lever to remove the ANTENNA MODULE ASSY.



20. Remove the EARPIECE ASSEMBLY.



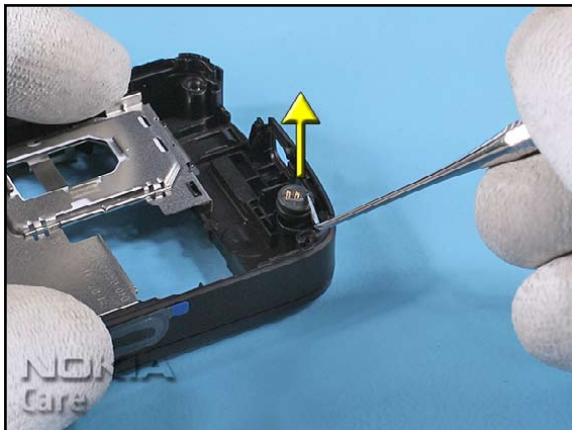
21. Use the dental pick to remove the IHF GASKET. Discard the IHF GASKET after removal.



22. Lift the IHF SPEAKER from its guidance and remove it.



23. Use the DC plug to remove the DC-JACK.



24. Remove the MICROPHONE with the dental pick.



25. Open the SIM door...



26. ...and unlock the LABEL COVER ASSY beginning at the shown side.



27. Turn the B-COVER and release the three snaps in front of SIM door.



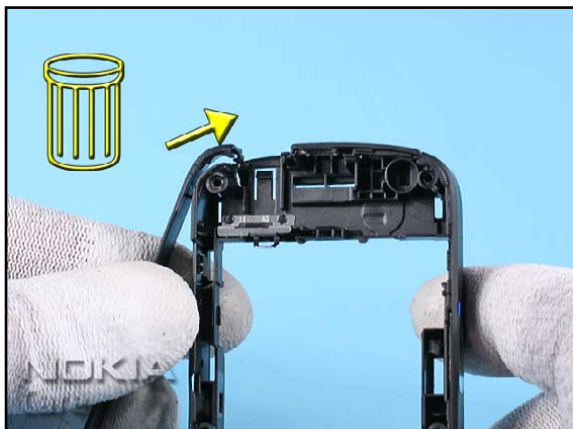
28. Do the same on the other side.



29. Finally, release the both clips on the lower side of the B-COVER and remove the LABEL COVER ASSY.



30. Release the clips of the DECO TRIM RIGHT...



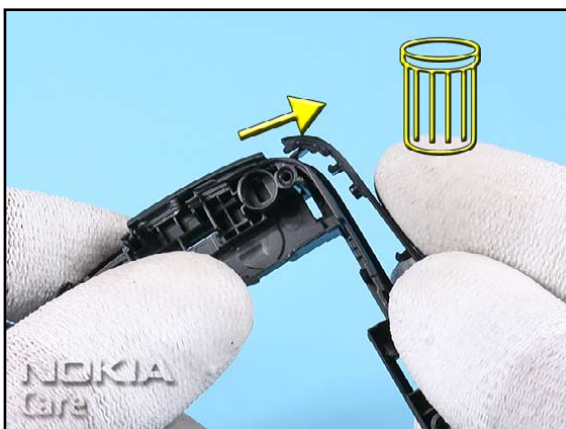
31. ...and discard it after removal.



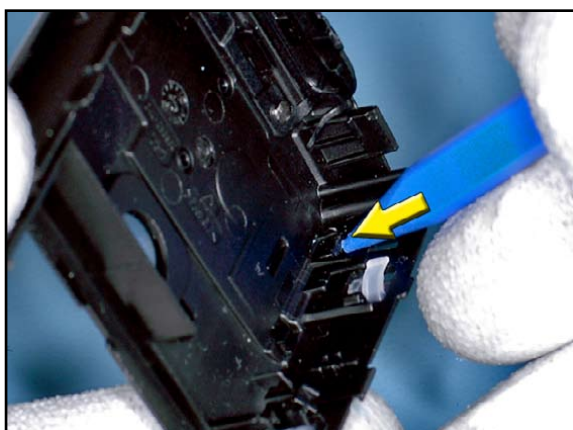
32. Release the clips of the DECO TRIM LEFT.



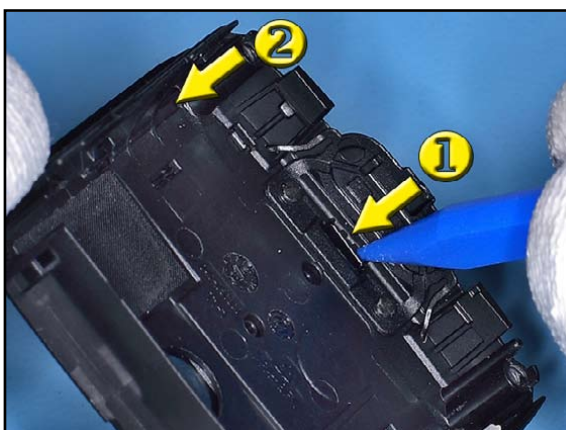
33. Separate the other side of the DECO TRIM from the B-COVER...



34. ...and discard it after removal.



35. Unlock the first snap of the TOP COVER with the SS-93.



36. Now unlock the other two snaps in the order shown.



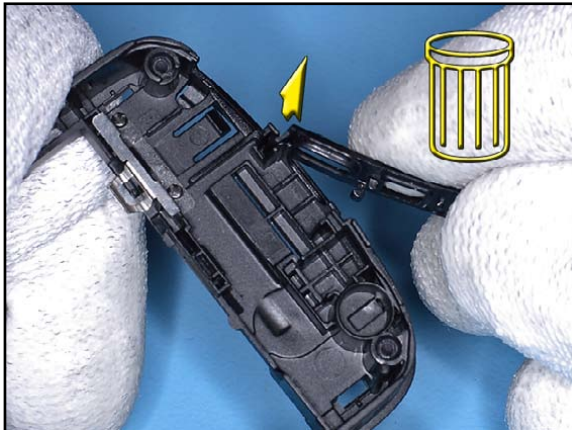
37. Remove the TOP COVER from the B-COVER.



38. Release the snap from the CONNECTOR in the edge with the dental tool.



39. Now unlock the second snap ...

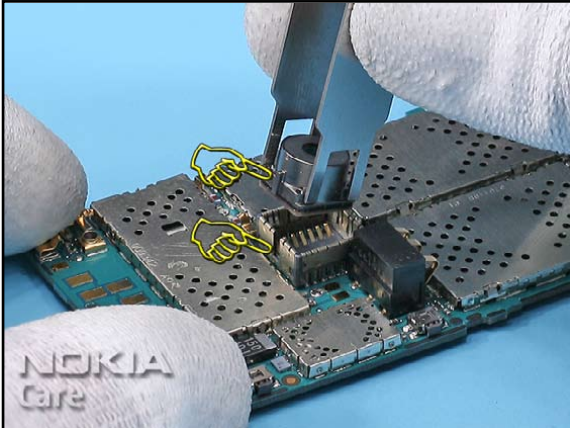


40. ...and remove the CONNECTOR COVER by lifting it up.

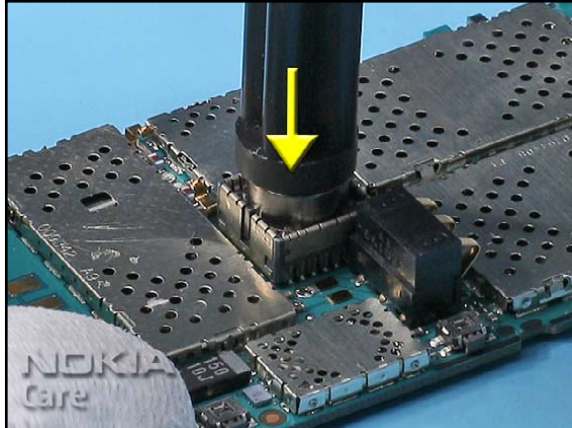


41. The disassembly procedure is now complied.

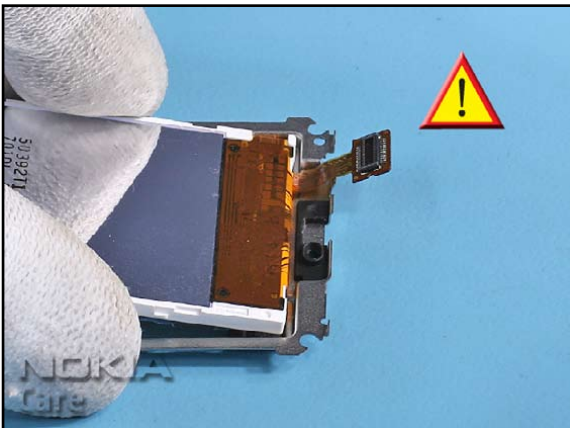
9. ASSEMBLY HINTS



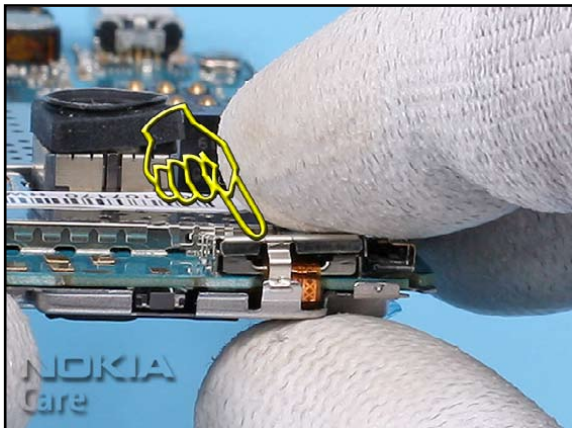
1. **(RM-237 only)** Note the right position of the guide when inserting the CAMERA.



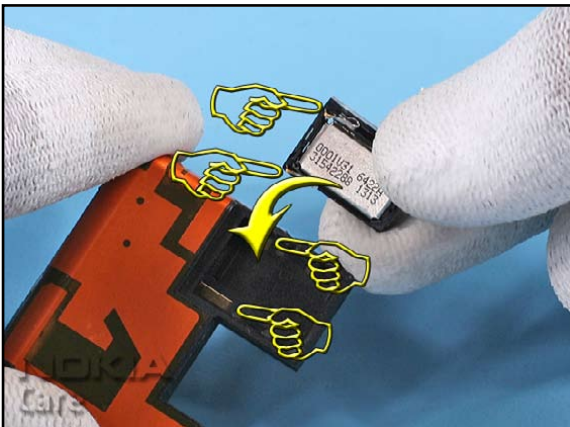
2. **(RM-237 only)** Turn the SS-45 and gently press the CAMERA in to place.



3. Place the LCD into the UI-SHIELD ASSY. Note the right position of the LCD flex.



4. Always use a new FLEX SHIELDING LID. Note the right position when assembling.



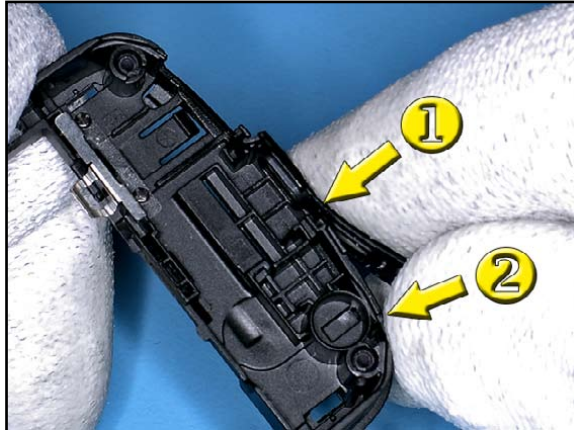
5. Place the IHF SPEAKER into its holding. Make sure that the spring contacts are in the right place.



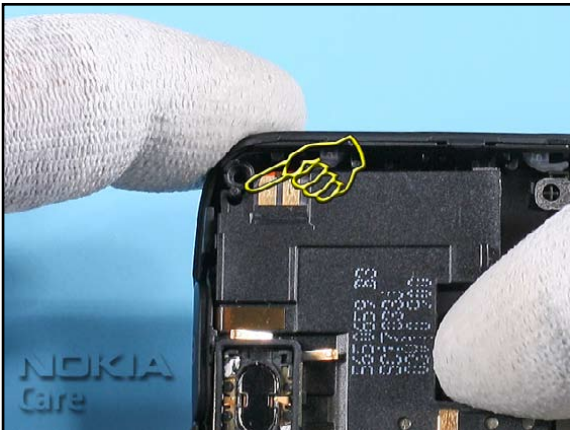
6. Fit the IHF GASKET exactly into its position avoiding touching the IHF SPEAKER.



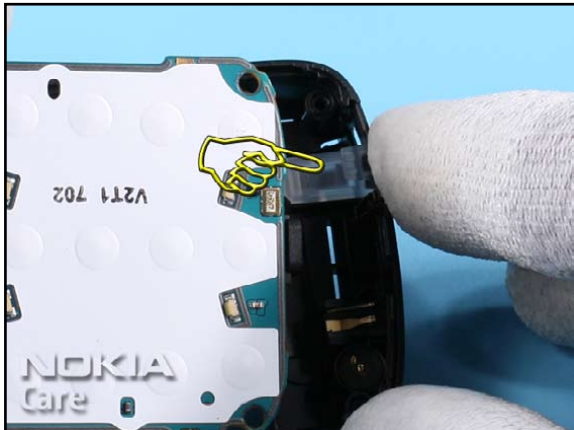
7. First slide the CONNECTOR COVER from top into the guiding from the B-COVER.



8. Bent the CONNECTOR COVER a bit and close the snaps in the order shown.



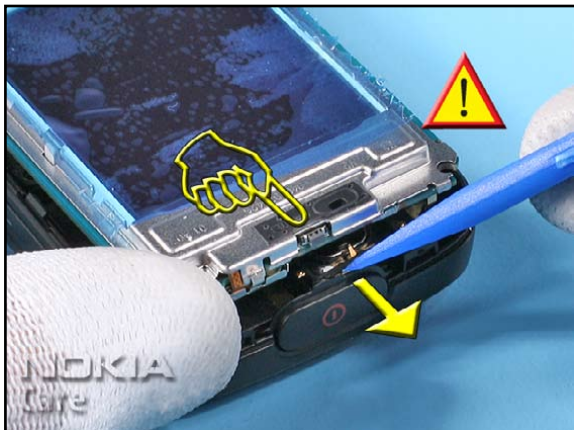
9. Note the guide pin of the B-COVER when inserting the ANTENNA MODULE.



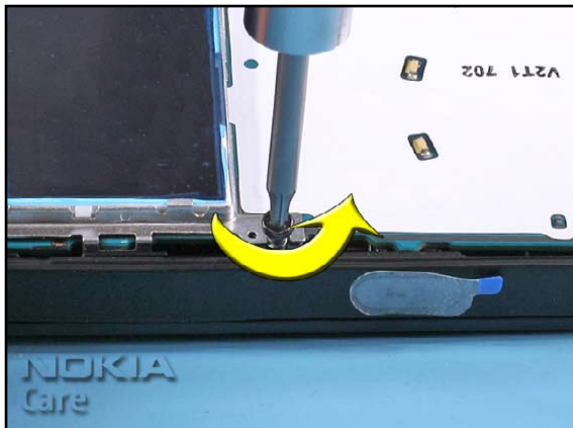
10. Hold the USB DOOR in place while fitting the ENGINE MODULE...



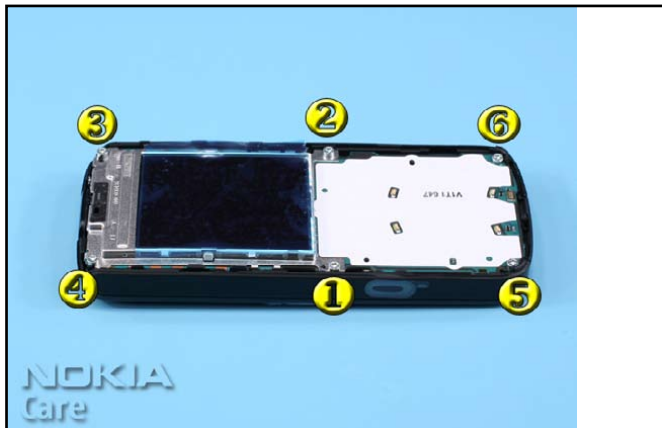
11. Take care to the guide pin of the B-COVER.



12. First, bend back the power key a bit to avoid damaging of the power switch and then place the ENGINE MODULE onto the B-COVER.

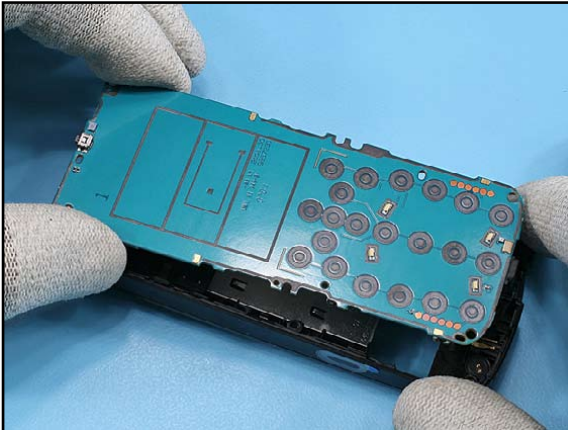


13. To avoid damaging the plastic threads, first turn the screws slightly left to engage the thread...



14. ...and then tighten the screws to the torque of 21Ncm in the order shown.

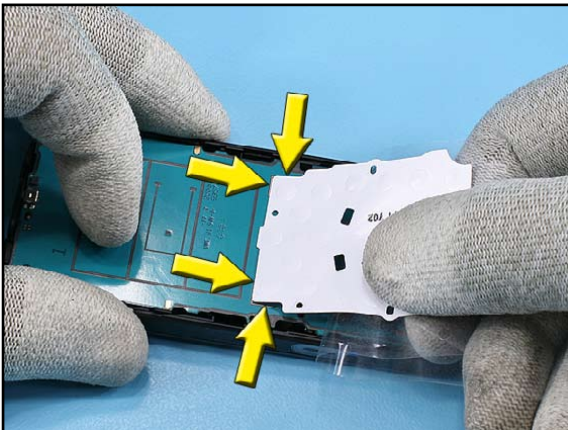
10. DOME SHEET ALIGNMENT INSTRUCTION



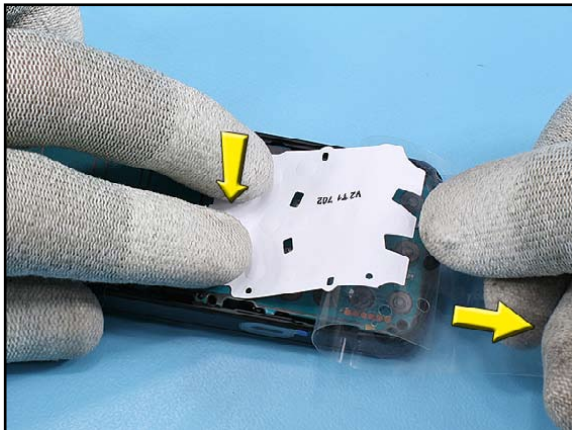
1. Place the 2CB ENGINE MODULE onto the B-COVER ASSY.



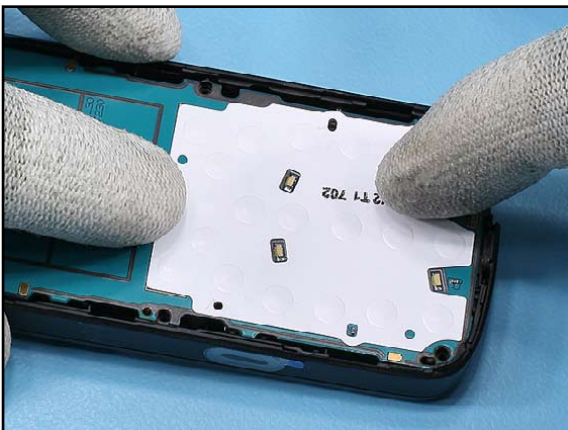
2. Find the two corner markers. Check if the surface of the 2CB ENGINE MODULE is clean and no residue is remaining.



3. Use a new DOME SHEET and flip back a part of the protective film. Align the DOME SHEET with the corner markings and ...



4. ... affix it whilst removing the protective film.












5. Press the DOME SHEET evenly onto the 2CB ENGINE MODULE to make sure that it is glued correctly.

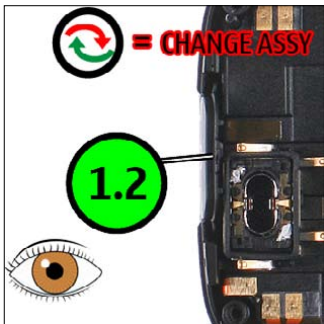
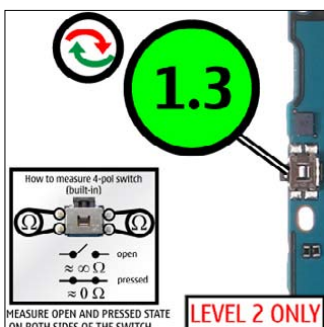


6. Check the correct placement and be sure that the two holes in the DOME SHEET are aligned with ones in the 2CB ENGINE MODULE.

11.LEGEND FOR QUICK TROUBLE SHOOTER

Legend for Quick Trouble Shooter	
This legend is valid for all parts of the Quick Trouble Shooter	
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 " =CHANGE ASSY " appears, then change the whole assembly (e.g. A4=D-COVER ASSEMBLY).
	Cloth usage: Check pads or contacts for optical and mechanical condition particularly regarding to corrosion. Clean it if necessary. 
	Measure component for electrical functionality and change, if needed. (Level 2 only) 
	ESD Brush usage: Check contacts for optical and mechanical condition particularly regarding to corrosion. Clean it if necessary. 
	<p>Explanation</p> <div style="border: 1px solid red; padding: 5px; display: inline-block;"> <p>1.1 Syntom (3)</p> <p>Zoom position (Note! First zoom starts with 1.2)</p> <p>Fault name</p> <p>Count of fault positions</p> </div>

12. QUICK TROUBLE SHOOTER - POWER ON

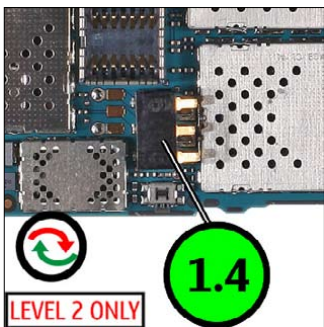



How to measure 4-pin switch (built-in)

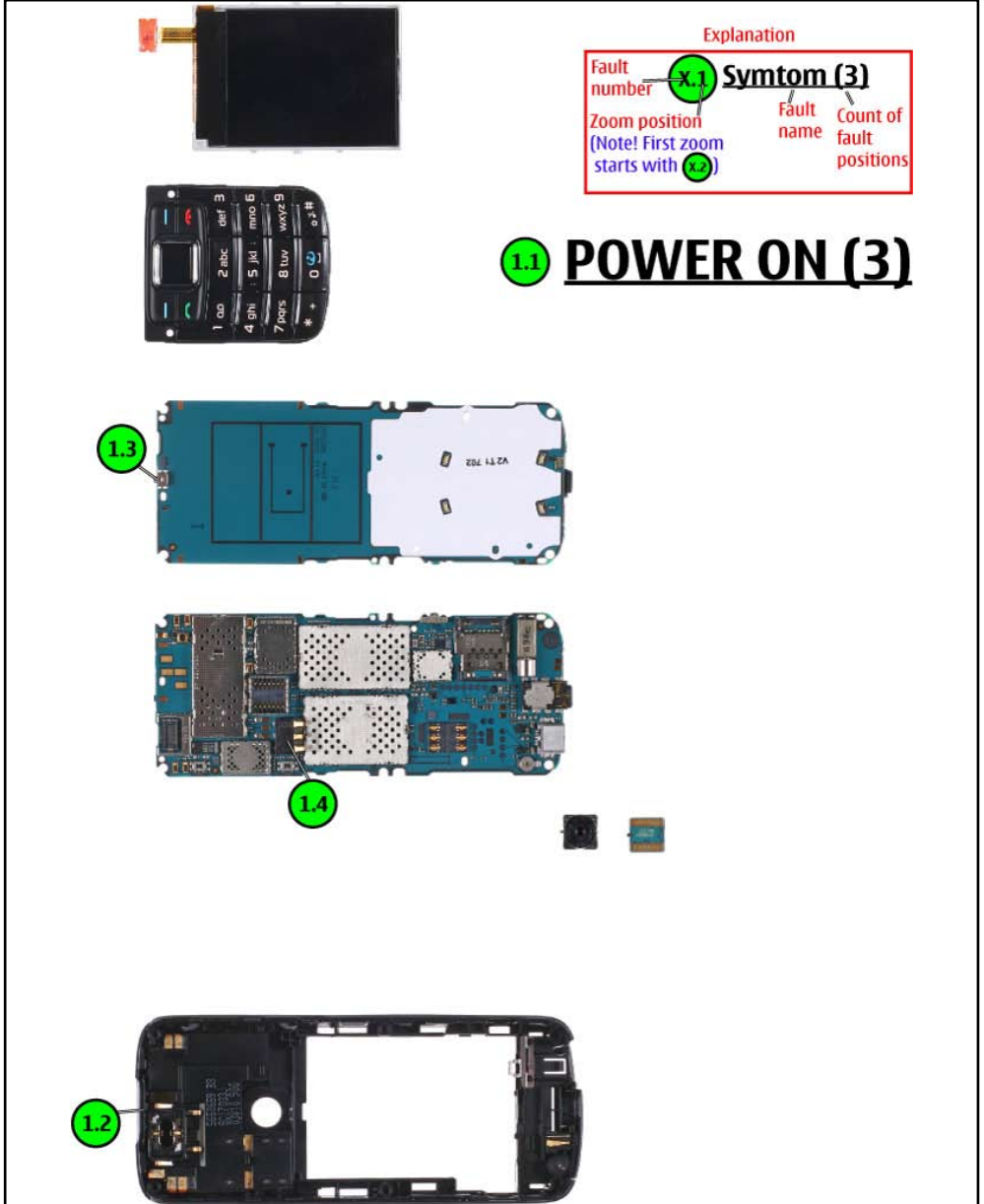
- open: $\approx \infty \Omega$
- pressed: $\approx 0 \Omega$

MEASURE OPEN AND PRESSED STATE ON BOTH SIDES OF THE SWITCH

LEVEL 2 ONLY



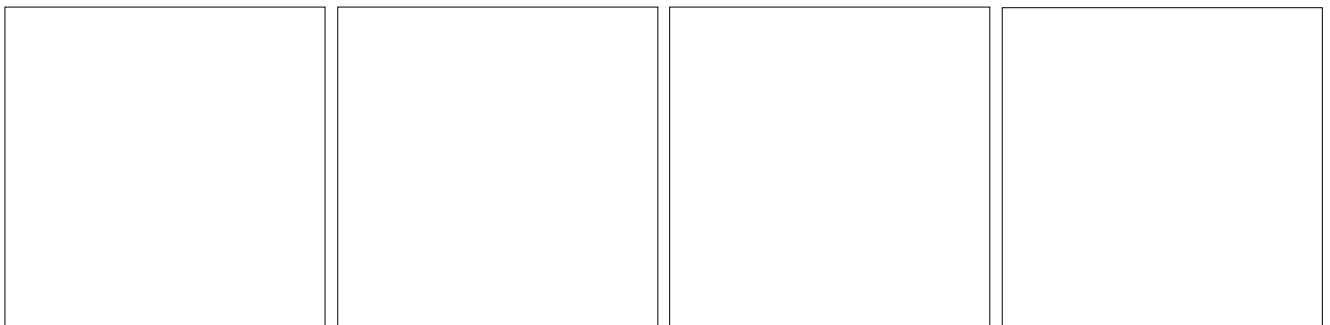
LEVEL 2 ONLY



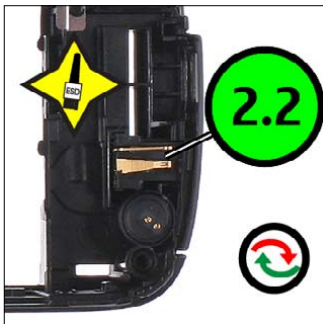
Explanation

Fault number	X.1	Symptom (3)	Fault name	Count of fault positions
Zoom position (Note! First zoom starts with X.2)	X.2			

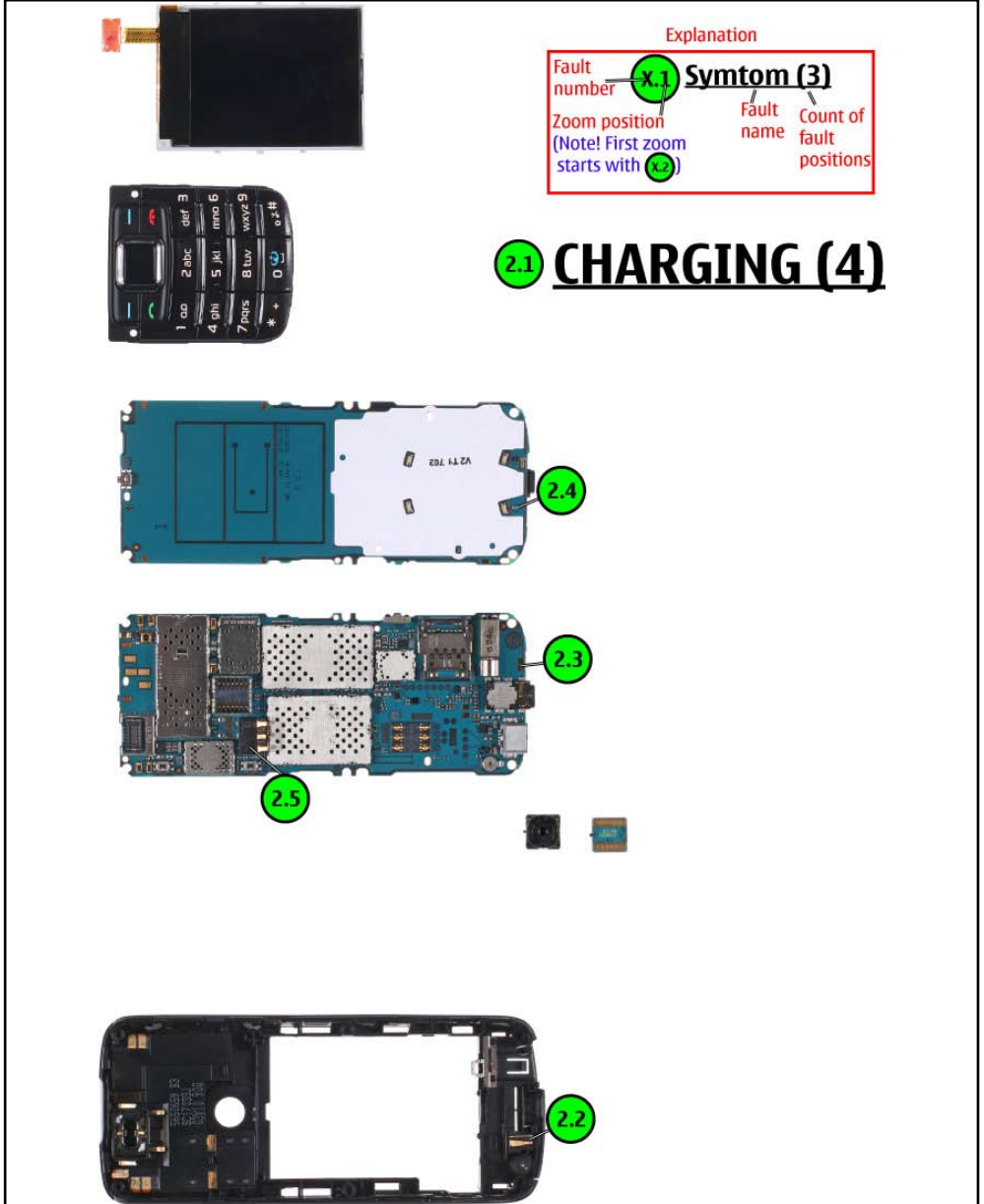
1.1 POWER ON (3)



13. QUICK TROUBLE SHOOTER - CHARGING



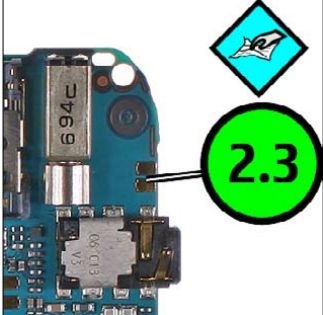
2.2




Explanation

Fault number	x.1	Symtom (3)	
Zoom position (Note! First zoom starts with x.2)		Fault name	Count of fault positions

2.1 CHARGING (4)




2.3



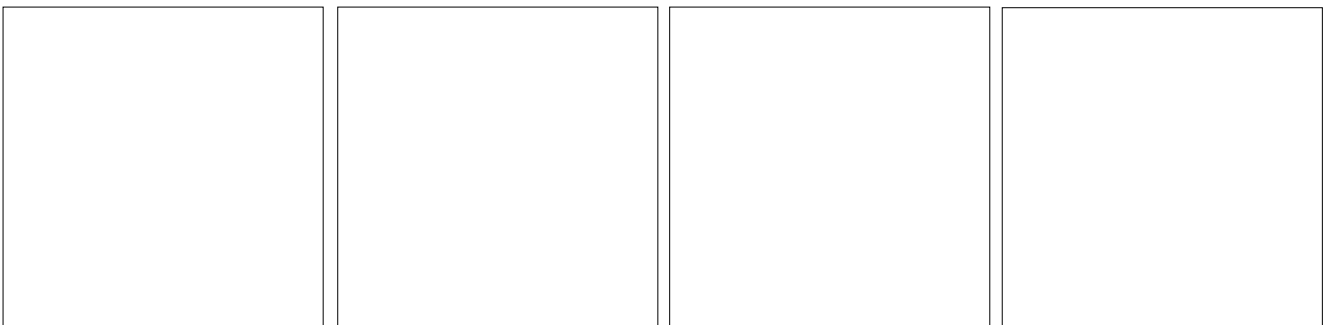
2.4

LEVEL 2 ONLY

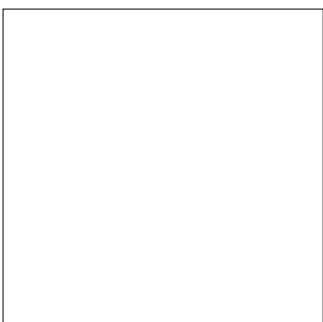
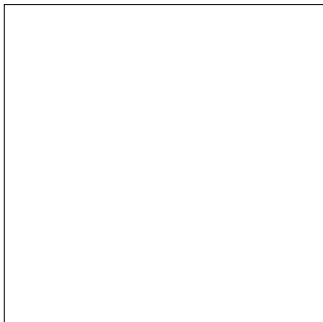
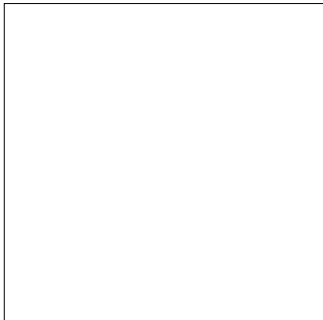
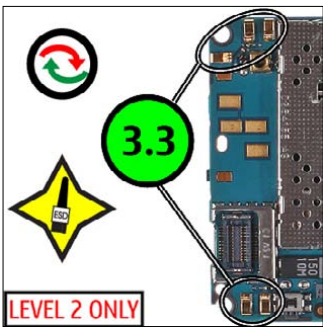
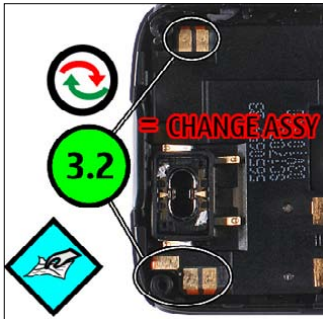


2.5

LEVEL 2 ONLY



14. QUICK TROUBLE SHOOTER - NO SERVICE

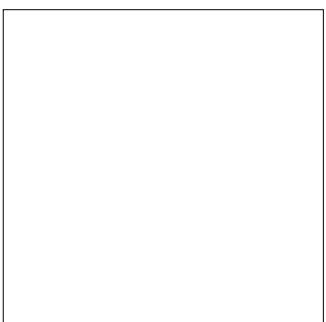
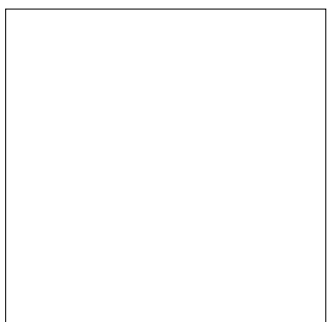
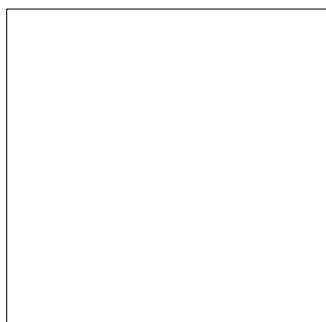


Explanation

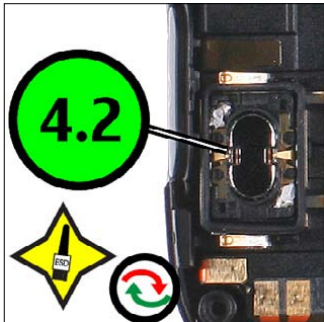
Fault number	3.1	Symtom (3)	
Zoom position (Note! First zoom starts with	3.2)	Fault name	Count of fault positions

3.1

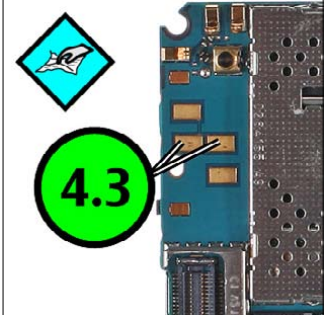
NO SERVICE (2)



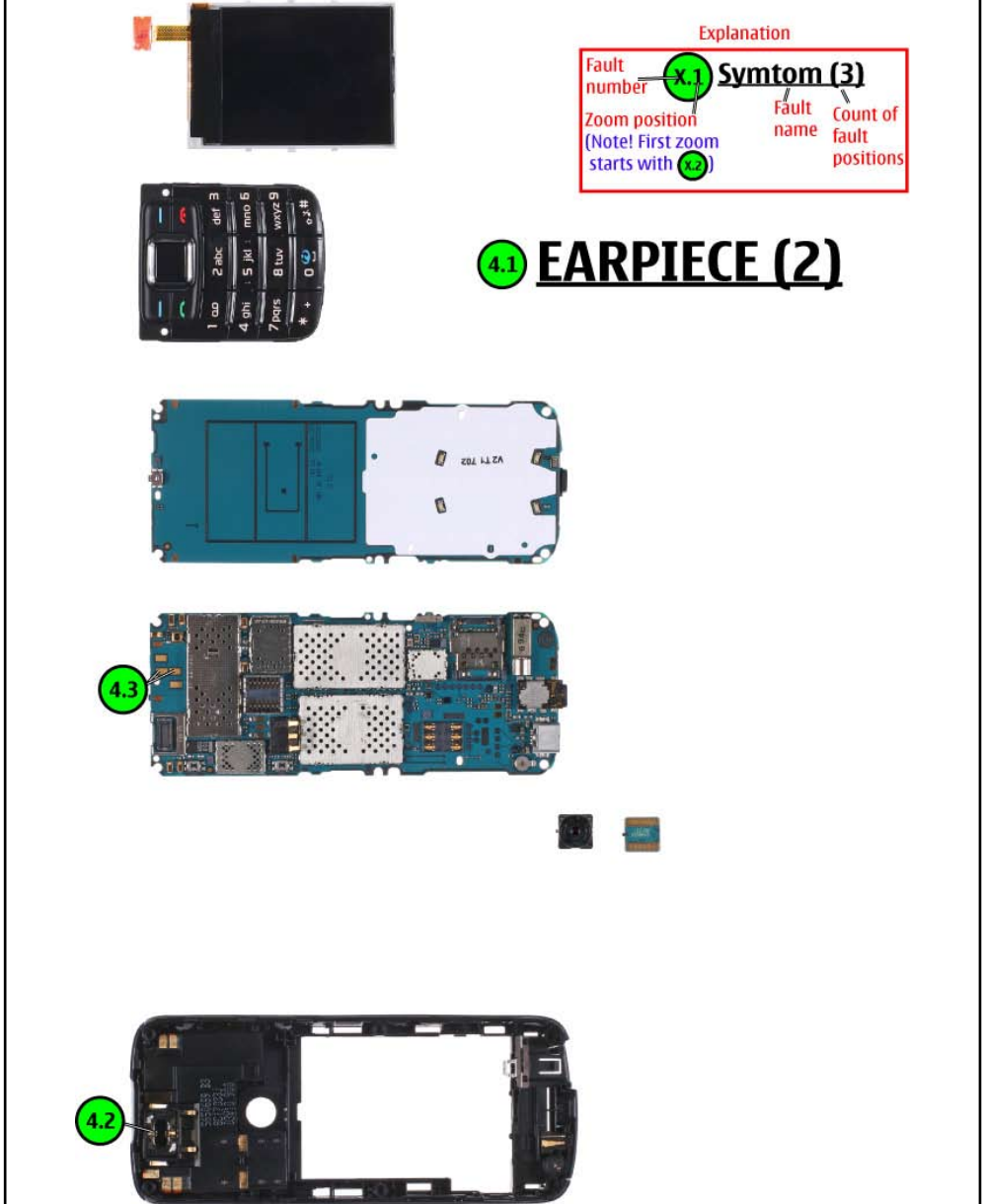
15. QUICK TROUBLE SHOOTER - EARPIECE



4.2



4.3

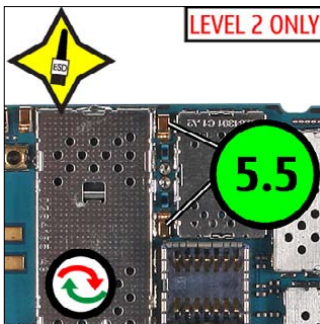
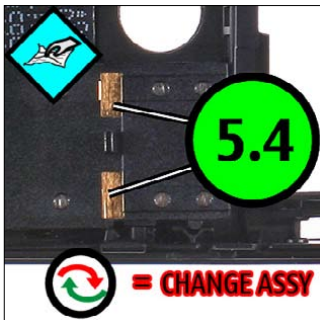
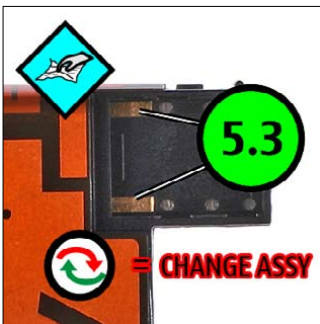
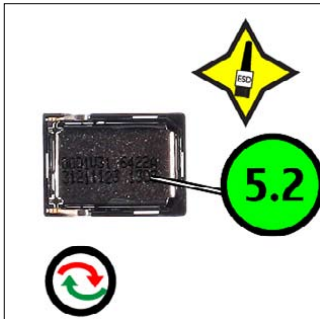


Explanation

Fault number	X.1	Symtom (3)
Zoom position (Note! First zoom starts with X.2)	X.2	
	Fault name	Count of fault positions

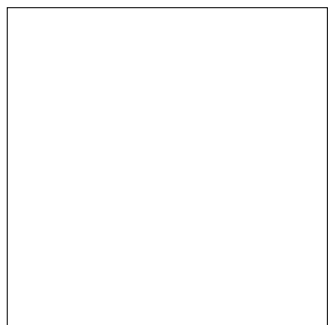
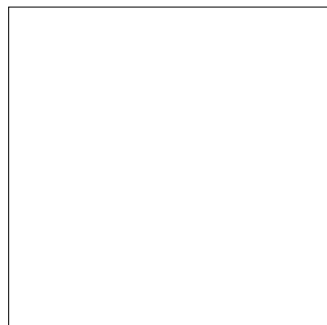
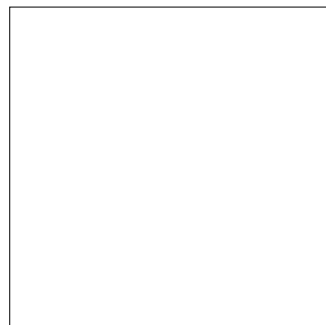
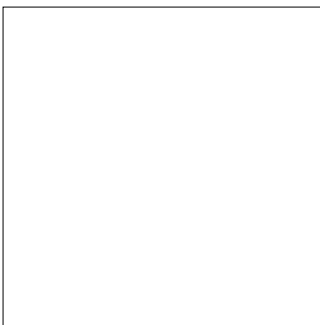
4.1 EARPIECE (2)

16. QUICK TROUBLE SHOOTER - IHF SPEAKER

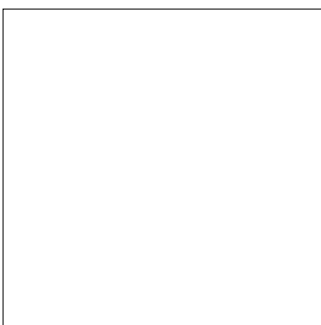
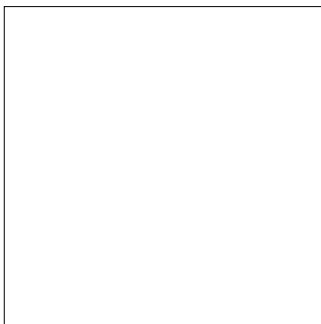
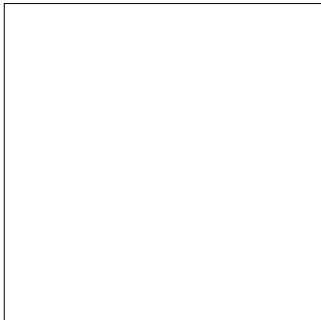
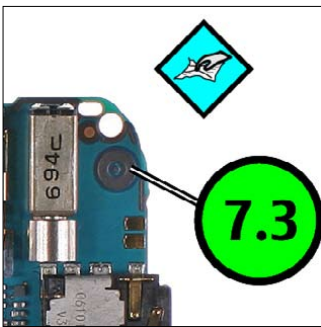




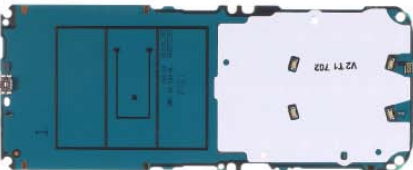
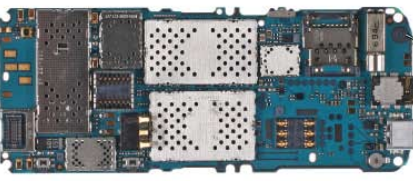


Explanation		
Fault number	x.1	Symtom (3)
Zoom position (Note! First zoom starts with x2)	Fault name	Count of fault positions

5.1 IHF SPEAKER (4)



18. QUICK TROUBLE SHOOTER - MICROPHONE

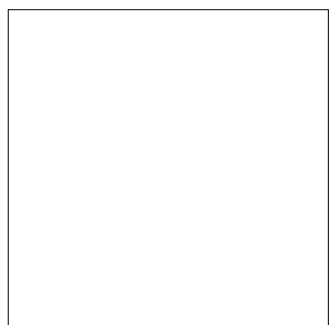
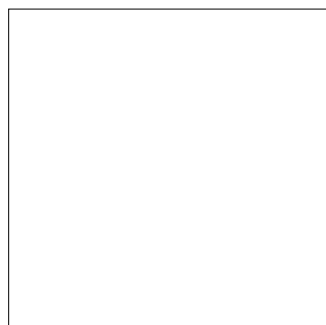
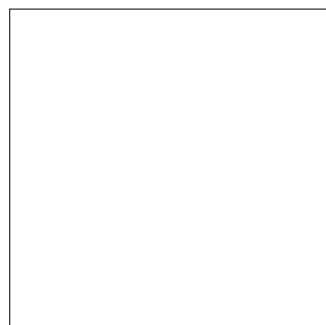


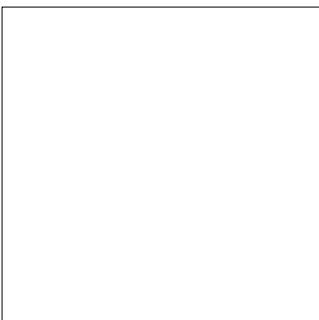
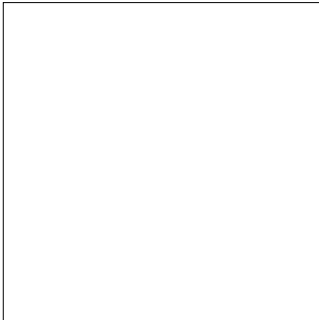
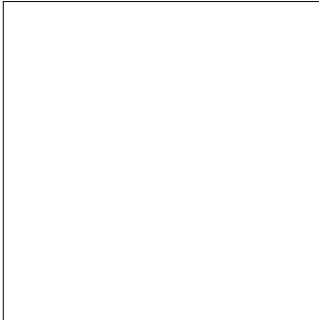
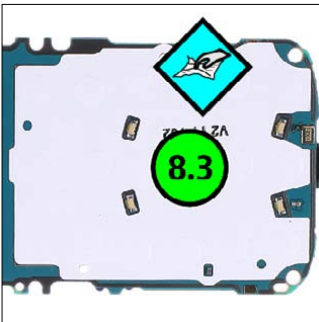
Explanation

Fault number	X.1	Symtom (3)	
Zoom position (Note! First zoom starts with X2)	X2	Fault name	Count of fault positions

7.1 **MICROPHONE (2)**



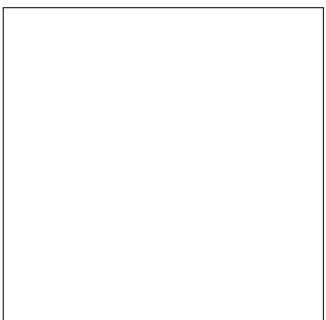
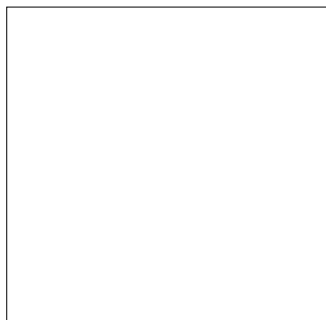
19. QUICK TROUBLE SHOOTER - KEYMAT



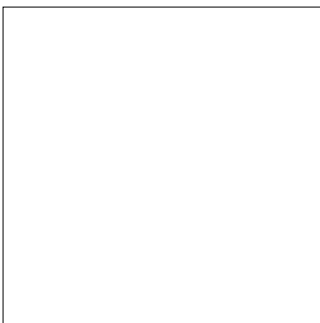
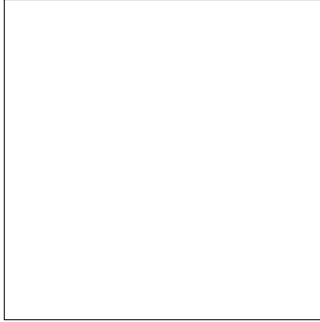
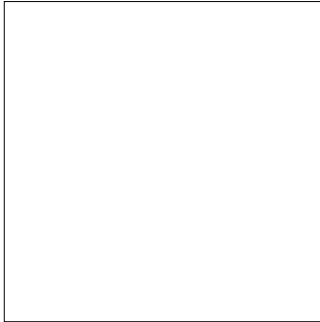
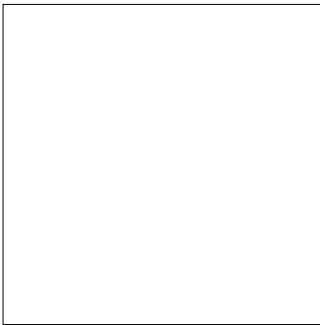
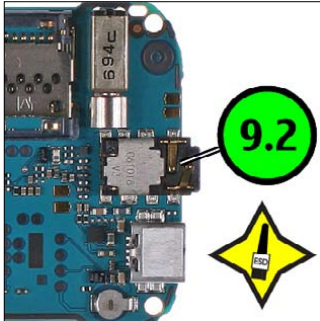
Explanation

Fault number	X.1	Symtom (3)
Zoom position (Note! First zoom starts with X.2)	X.2	
Fault name		Count of fault positions

8.1 KEYMAT (2)



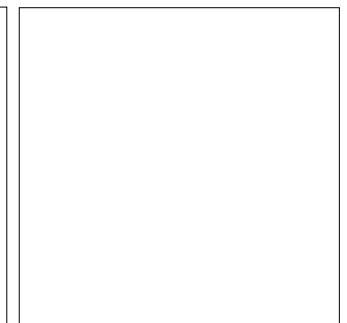
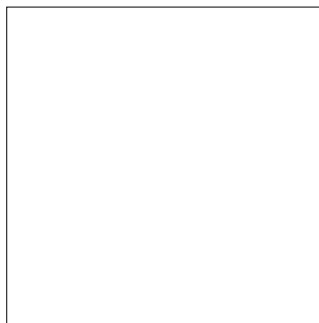
20. QUICK TROUBLE SHOOTER - AV CONNECTOR



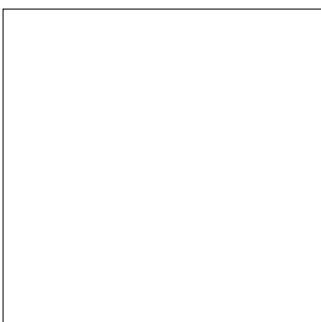
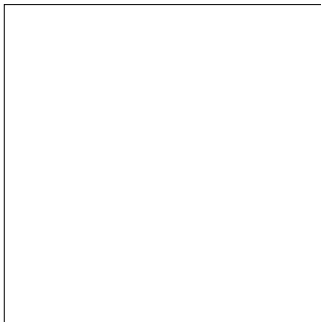
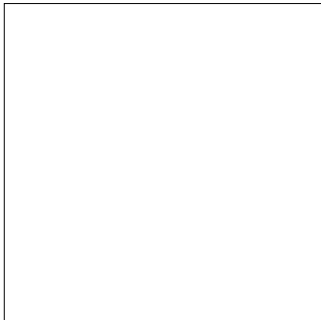
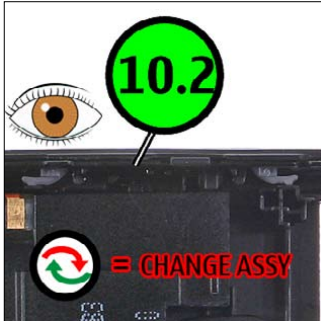
9.1 AV CONNECTOR (1)

Explanation

Fault number	x.1	Symtom (3)
Zoom position (Note! First zoom starts with x.z)	x.z	
	Fault name	Count of fault positions



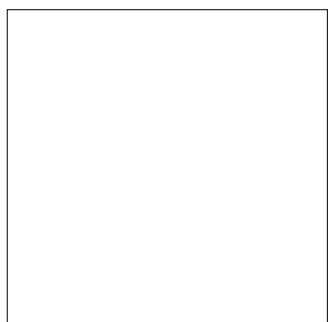
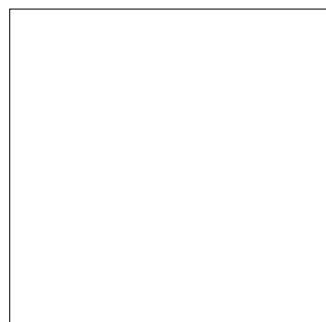
21. QUICK TROUBLE SHOOTER - VOLUME KEYS



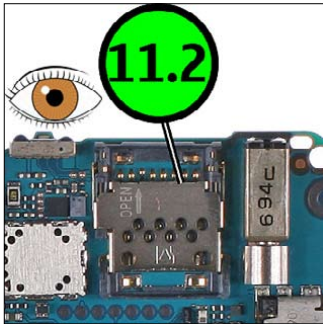
Explanation

Fault number	x.1	Symtom (3)
Zoom position (Note! First zoom starts with	x.2)	Fault name
		Count of fault positions

10.1 VOLUME KEYS (2)

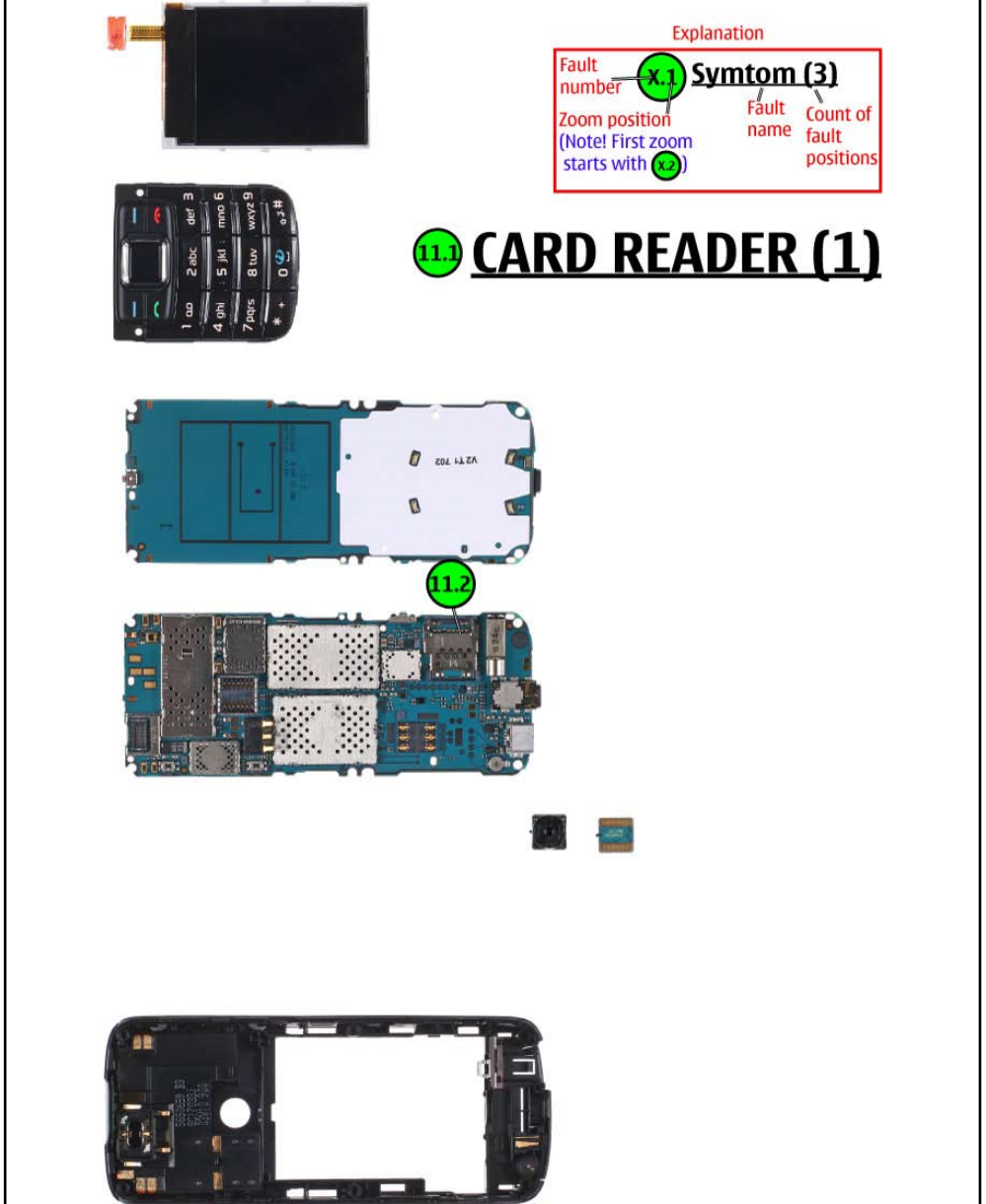


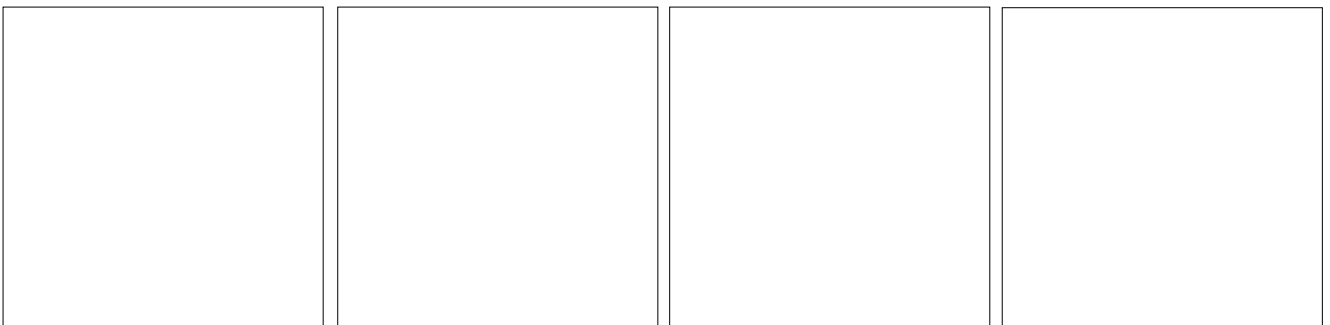
22. QUICK TROUBLE SHOOTER - CARD READER



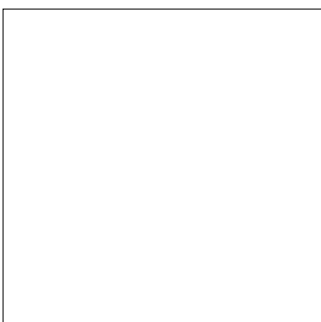
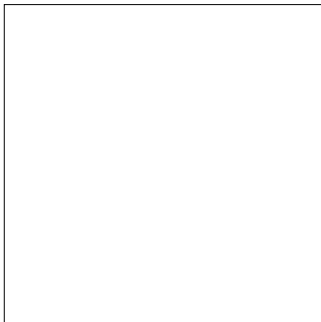
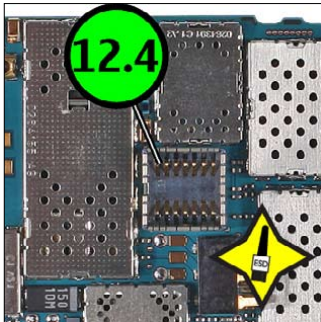
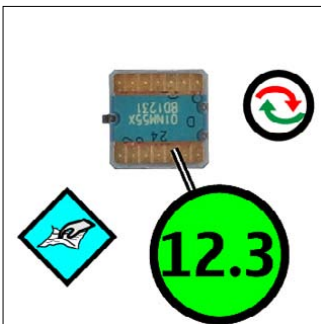
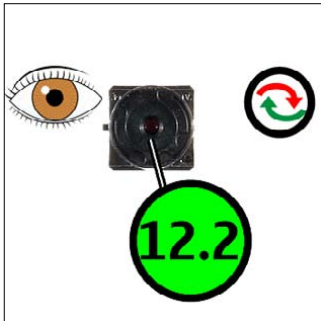
Fault number	Explanation
X.1	Symtom (3)
Zoom position (Note! First zoom starts with X.2)	Fault name
	Count of fault positions

11.1 CARD READER (1)





23. QUICK TROUBLE SHOOTER - CAMERA (RM-237 only)



Explanation

Fault number	Symptom (3)	Fault name	Count of fault positions
X.1			
X.2			

12.1 CAMERA (3)

12.2

12.3