

SERVICE MANUAL Level 1&2

NOKIA 2660

RM-292

RM-293



Transceiver characteristics:

Band:

RM-292: -EGSM: Dual-band 900/1800MHz

RM-293: -GSM: Dual-band 850/1900MHz

Display:

Main LCD: 128x160 pixel; 65k colors

Front LCD: 96x68 pixel; black & blue colors

Camera:

Operating System:

Series 40

Connections:

Wireless: Bluetooth

Connector: Easy Flash II Connector

Memory card:

Transceiver with BL-4B Li-Ion battery pack

Talk time	Standby	Note
up to 7h	up to 14.5days	Depends on network parameters

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1. CHANGE HISTORY

Status	Version No.	Date	Comments
Draft	0.1	10.May.2007	Initial draft

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.Manual@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.

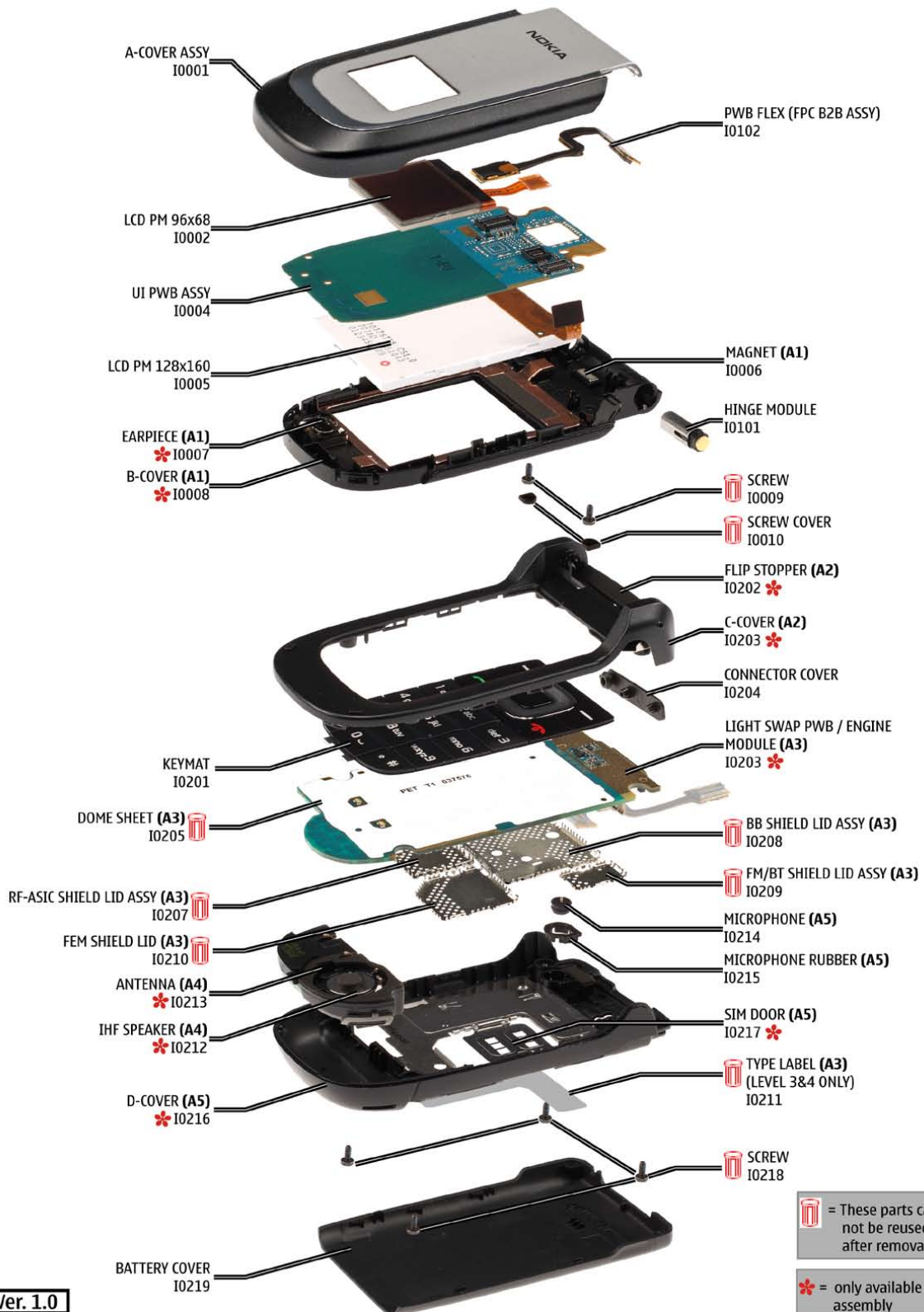
Leaving the battery in hot or cold places, such as in a closed car in summer or winter conditions, will reduce the capacity and lifetime of the battery. Always try to keep the battery between 15°C and 25°C (59°F and 77°F). A phone with a hot or cold battery may temporarily not work, even when the battery 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. EXPLODED VIEW

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

2660 RM-292/RM-293 EXPLODED VIEW



Ver. 1.0

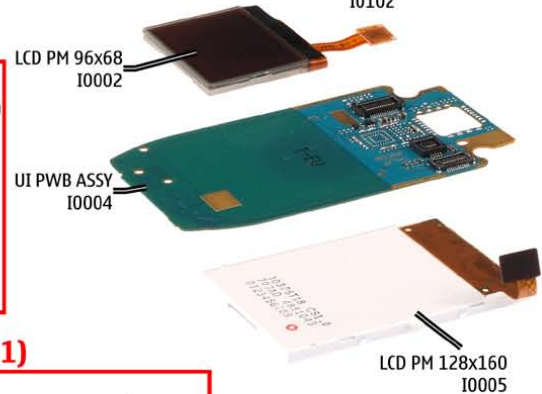
8. SPARE PARTS OVERVIEW

2660 RM-292/RM-293 SPARE PARTS OVERVIEW

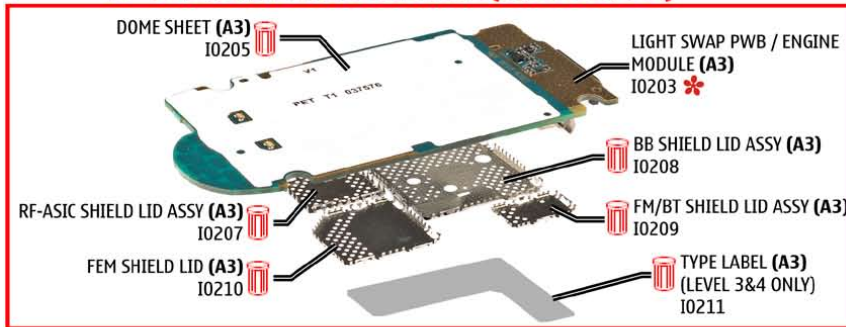
A1=B-COVER ASSY (I0006-I0008)



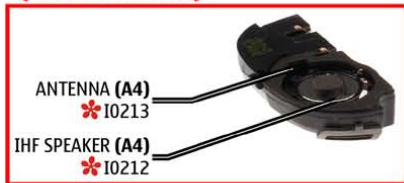
A2=C-COVER ASSY (I0202-I0203)



A3=2CP LIGHT SWAP PACKAGE (I0205-I0211)



A4=ANTENNA MODULE FOR EU (I0212-I0215)



A5=D-COVER ASSY (I0214-I0217)



Ver. 1.0

= These parts can not be reused after removal.

= only available as assembly

9. HANDLING WASTE / RECYCLING IN NOKIA REPAIR SERVICE

Please refer to the document

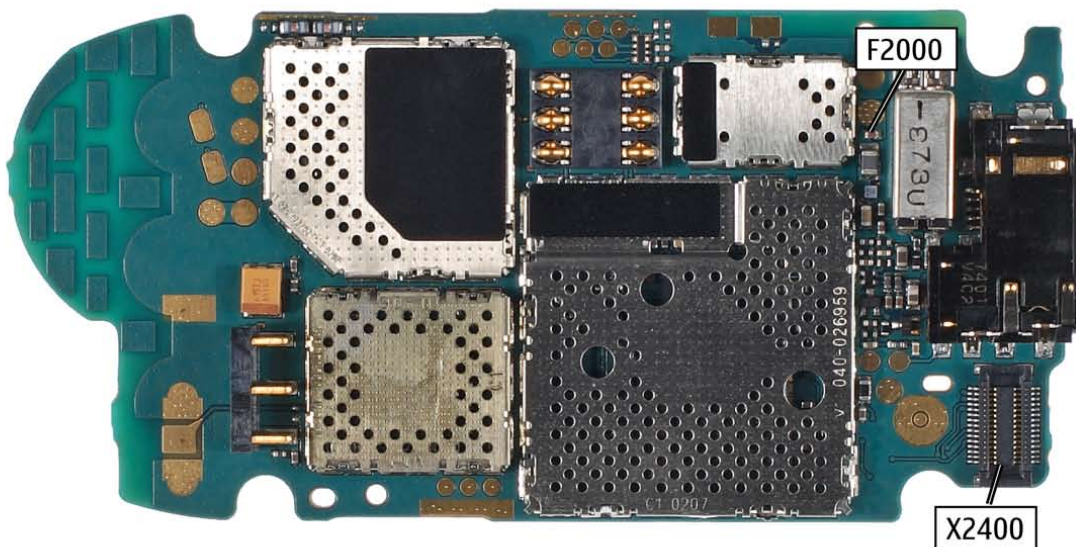
“Handling Waste in NOKIA Repair Service”

on your local delivery server e.g. NOL.

10.LEVEL 2 SOLDER COMPONENTS

2660 RM-292 / RM-293 Level 2 solder components

Solder components only for LEVEL 2



Ver. 1.0

11.SERVICE TOOLS

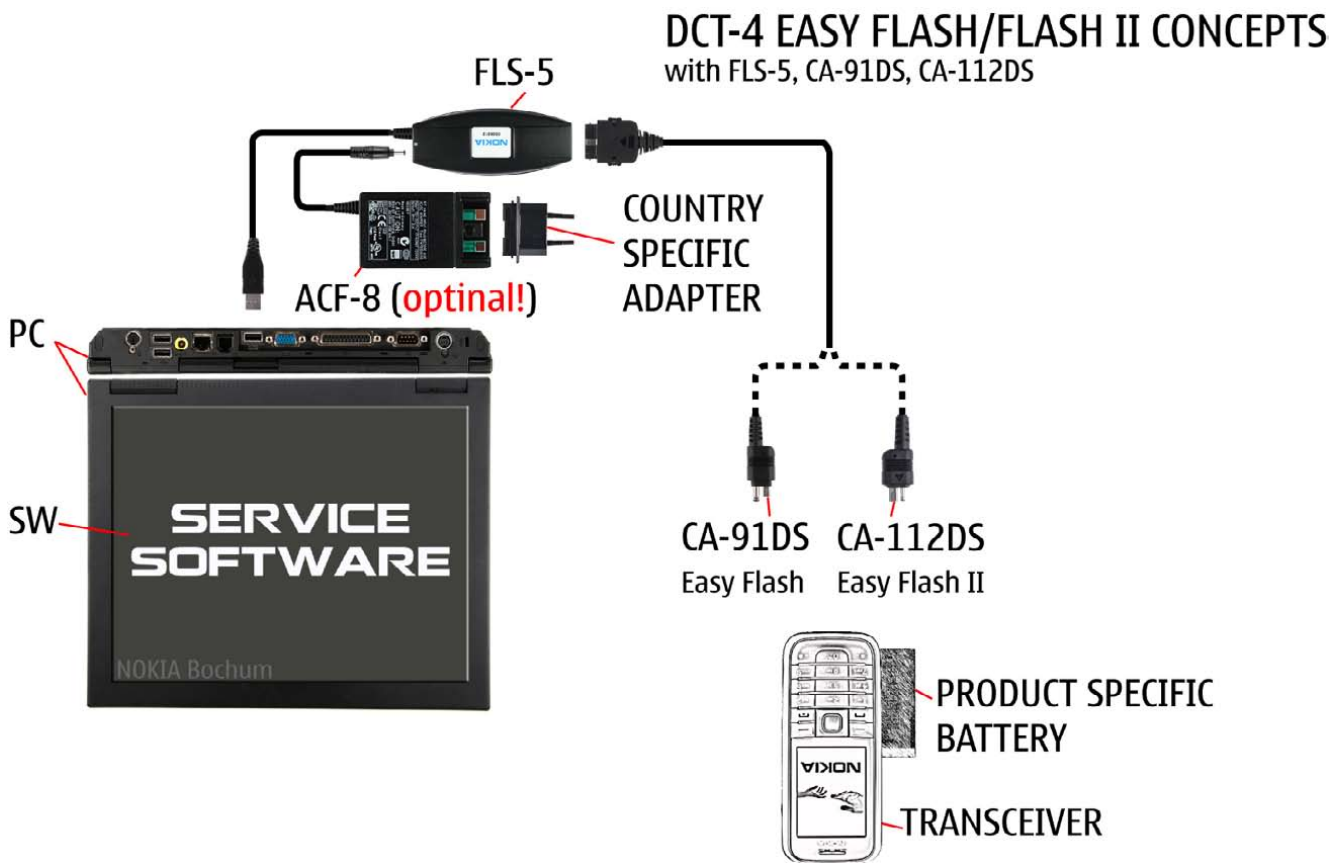
 <p>FLS-5</p> <p>FLS-5 incl. ACF-8, Driver and User Guide Dongle and flash device incorporated into one package, developed specifically for POS use.</p>	 <p>ACF-8 Universal Power Supply is used to power FLS-4S.</p>	 <p>Travel Charger AC-4 Small and lightweight charger for fast charging of your phone battery.</p>
 <p>CA-112DS 100cm</p> <p>CA-112DS Service Cable to connect the PC with the Easy Flash II connector.</p>		<p>RJ-188</p>  <p>RJ-188 Soldering Jig</p>
 <p>Internal Battery BL-4B Inserted under the back cover, this Li-Ion battery provides power in a lightweight package.</p>	 <p>Lead-free Solder Wire Mandatory for lead-free products (Level 2 only).</p>	 <p>0772040 NMP Standard Toolkit (V2) 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>

12.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](#).

For flashing use the CA-112DS cable.




13. UPPER BLOCK DISASSEMBLY



NOKIA 2660

Upper Block Disassembly


1. Nokia 2660 Upper Block Disassembly.



2. You will need the Nokia Standard Toolkit version 2 as well as the hinge opening tool SS-6. Also refer to the General Mechanical Guideline Video for additional hints about the tools and component handling.



3. Remove the battery if inserted. Cover all sensitive surfaces with the protective film. Remove the SCREW COVER and discard them.



4. Unscrew the two screws in the order shown and discard them.



5. Unlock the A-COVER ASSY with the SS-93 starting at the hinge side.



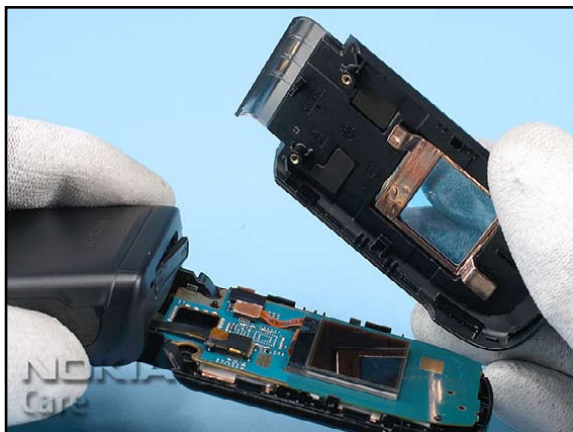
6. Release the snaps on the right side of the upper block.



7. Do the same on the left side.



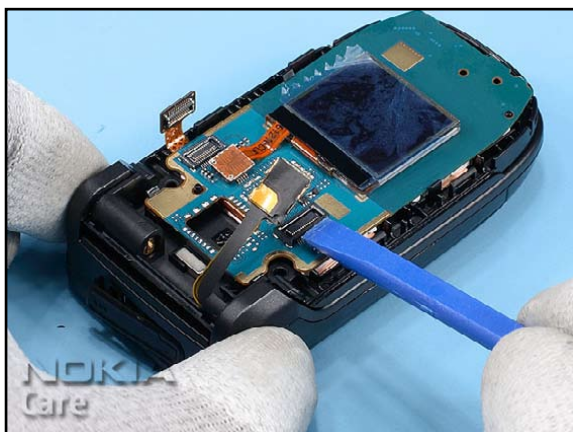
8. Carefully unlock the A-COVER on the top.



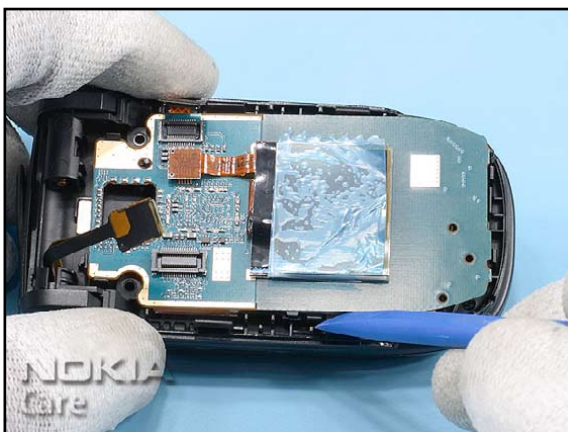
9. Remove the A-COVER ASSY.



10. Gently open the connector of the LCD PM 128x160 with the SS-93.



11. Carefully open the PWB FLEX connector. Avoid damaging surrounding components.



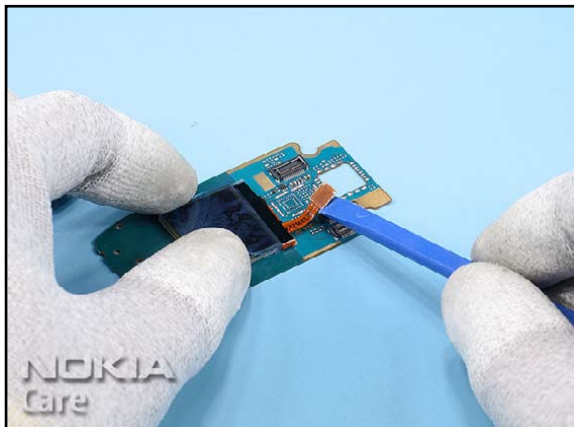
12. Unlock the UI PWB ASSY with the SS-93.



13. Remove the UI PWB ASSY from the B-COVER.



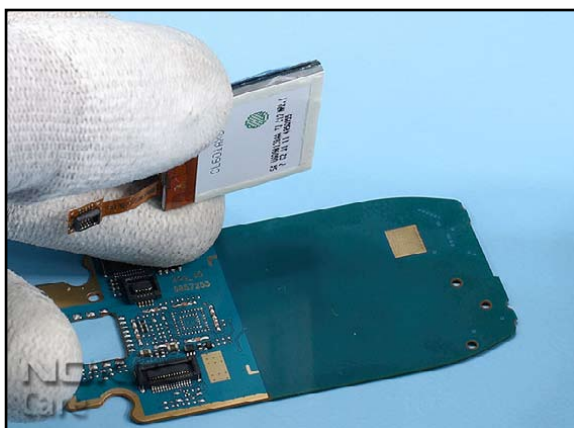
14. Remove the LCD PM 128X160.



15. Gently open the connector of the LCD PM 96x68 with the SS-93. Take care to the surrounding components.



16. Carefully separate the LCD PM 96x68 from the UI PWB ASSY.



17. Ensure that no adhesive residues remain. The Disassembly procedure is now finished.

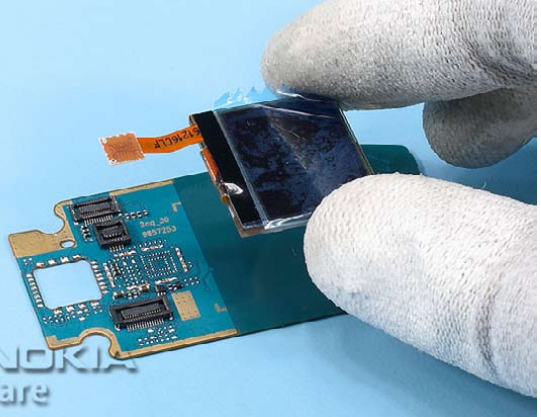
14. UPPER BLOCK ASSEMBLY HINTS



NOKIA
2660

Upper Block
Assembly
Hints


1. Nokia 2660 Upper Block Assembly Hints.




2. Align the LCD PM 96X68 exactly with the marking corner on the UI PWB ASSY and close the LCD connector.



3. Place the UI PWB ASSY onto the B-COVER paying attention to the guide pins of the B-COVER.



4. Always use new screws when assembling the unit.



5. Tighten the screws to the torque of 15Ncm in the order shown.



6. Finally fit the new SCREW COVER.

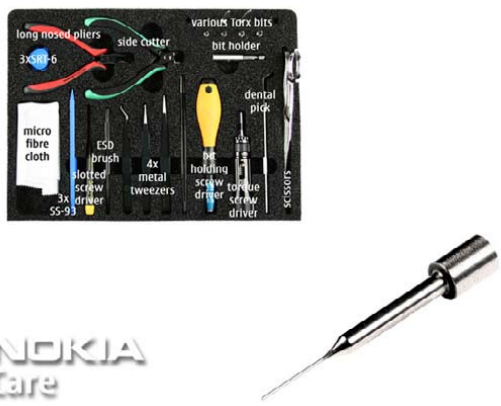
15. LOWER BLOCK DISASSEMBLY



NOKIA 2660

Lower Block Disassembly

1. Nokia 2660 Lower Block Disassembly.



2. You will need the Nokia Standard Toolkit version 2 as well as the hinge opening tool SS-6. Also refer to the General Mechanical Guideline Video for additional hints about the tools and component handling.



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



4. Undo the four screws in the order shown.



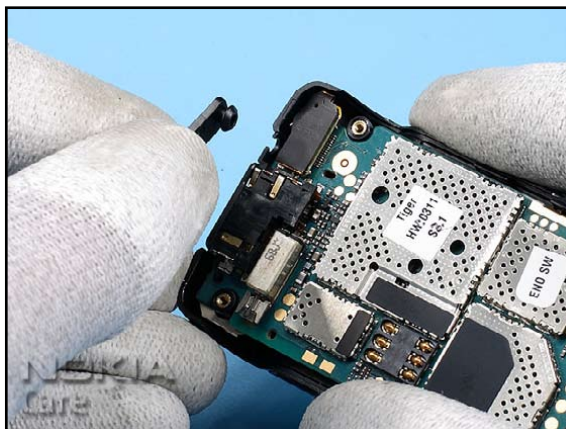
5. Open the Lower Block with the SS-93 starting on the hinge side.



6. Also open the snaps on the left and right side of the Lower Block.



7. Separate the D-COVER from the C-COVER.



8. Open the CONNECTOR COVER and remove it.



9. Gently open the PWB FLEX connector with the SS-93. Avoid damaging surrounding components.



10. Remove the ENGINE MODULE.



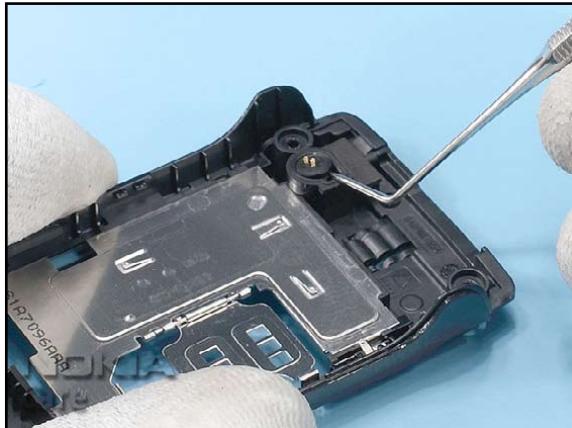
11. Remove the KEYMAT.



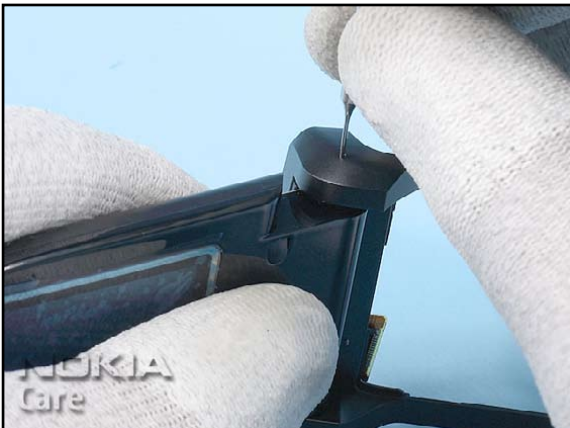
12. Unlock the ANTENNA MODULE with SS-93...



13. ...and remove it from the D-COVER.



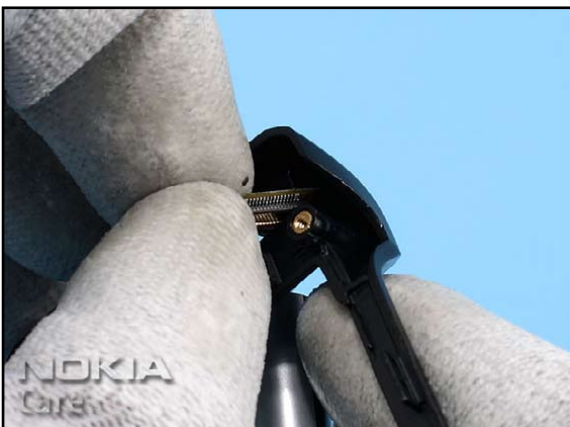
14. Remove the MICROPHONE.



15. Insert the hinge opening tool into the hole of the HINGE as shown and carefully unlock the HINGE MODULE.



16. Gently open the Hinge but do not separate the parts yet.



17. Carefully move the PWB FLEX into the hole of the C-COVER...



18. ... as shown in the picture.



19. Press the end of the PWB FLEX (FPC B2B ASSY) into the direction shown.



20. Turn around the Upper Block and the C-COVER and remove the end of the PWB FLEX (FPC B2B ASSY).



21. Now, separate the C-COVER from the Upper Block.



22. Push out the HINGE MODULE from the B-COVER...



23. ...and remove it. The disassembly procedure is now finished.

16. LOWER BLOCK ASSEMBLY HINTS



**NOKIA
2660**

Lower Block
Assembly
Hints

1. Nokia 2660 Lower Block Assembly Hints.



2. Very gently, put the PWB FLEX into the slot of the C-COVER. Avoid squeezing the flex.




3. Insert the HINGE MODULE into the B-COVER. Push down the HINGE spring and maneuver it into the recess of the C-COVER.



4. Check the mechanical functionality of the Hinge.



5. Fit the KEYMAT before starting the assembly procedure.






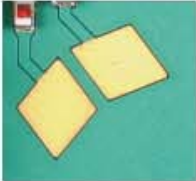














6. Always use new screws when assembling the unit.



7. Tighten the four screws to the torque of 15Ncm in the order shown.

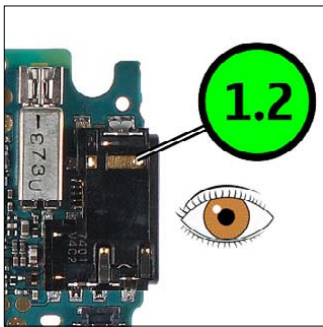
17.LEGEND FOR QUICK TROUBLE SHOOTER

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 " =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;">  Syptom (3) Zoom position (Note! First zoom starts with ) Fault name Count of fault positions </div>

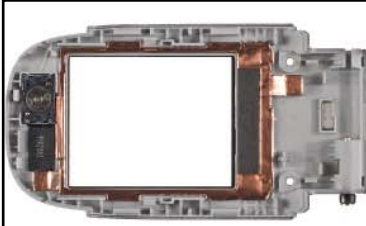
18. QUICK TROUBLE SHOOTER - POWER ON

<p>1.2</p>	<div style="text-align: right; border: 1px solid red; padding: 5px; width: fit-content; margin: 0 auto;"> <p>Explanation</p> <p>1.1 Symtom (3)</p> <p>Zoom position (Note! First zoom starts with 1.2)</p> <p>Fault name</p> <p>Count of fault positions</p> </div> <p style="text-align: center; font-size: 2em; font-weight: bold; margin-top: 20px;">1.1 POWER ON (3)</p>		
<p>1.3</p>			
<p>1.4</p>			

19. QUICK TROUBLE SHOOTER - CHARGING



1.2

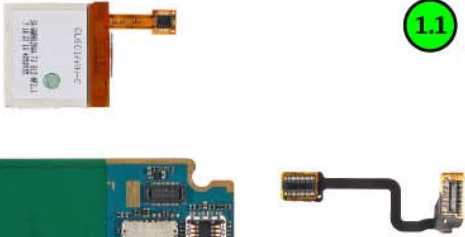
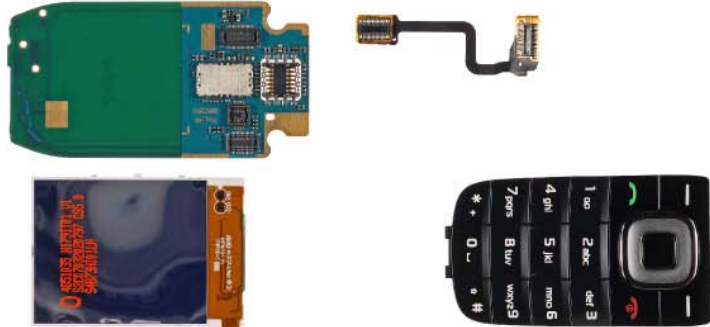
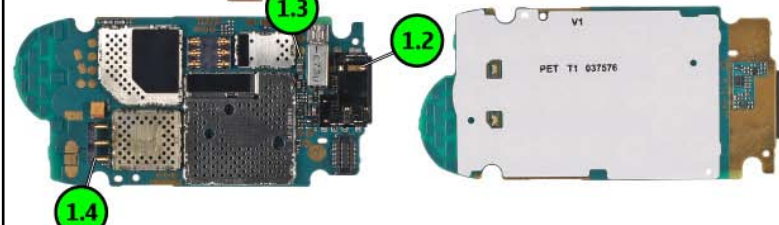



Explanation


1.1 Symtom (3)

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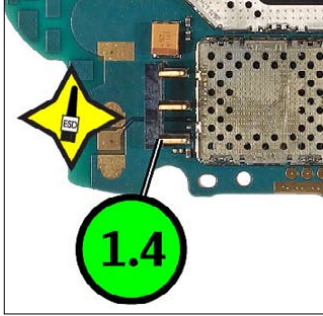
1.1 CHARGING (3)

LEVEL 2 ONLY

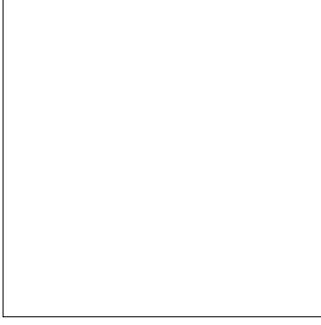
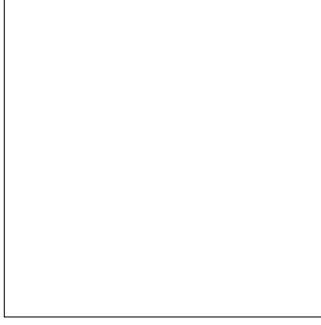
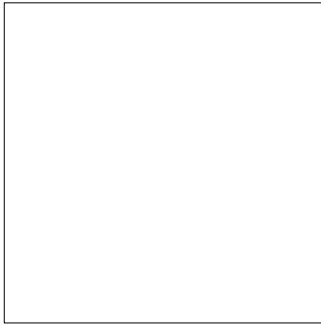
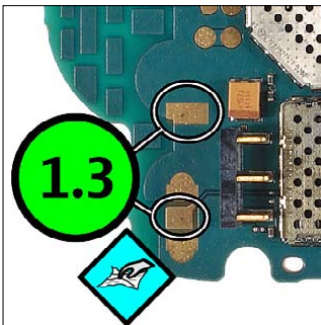
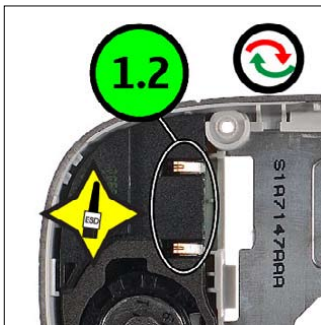


1.3



1.4

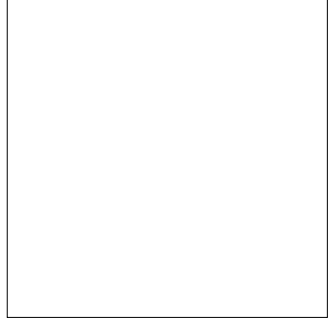
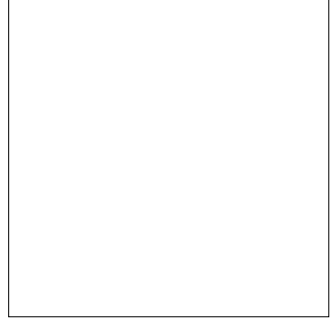
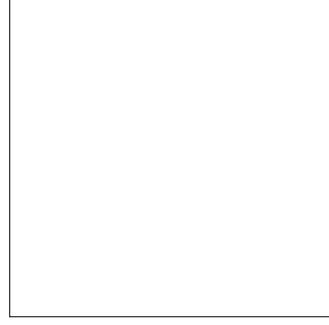
20. QUICK TROUBLE SHOOTER - NO SERVICE



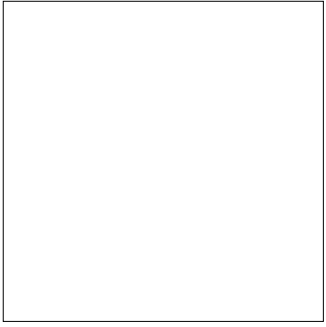
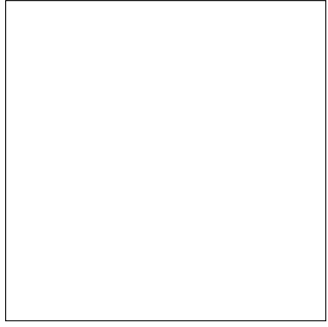
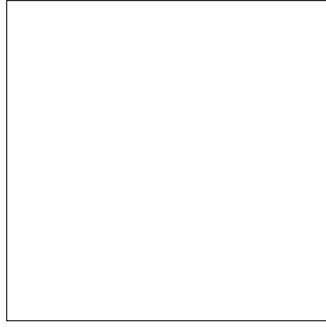
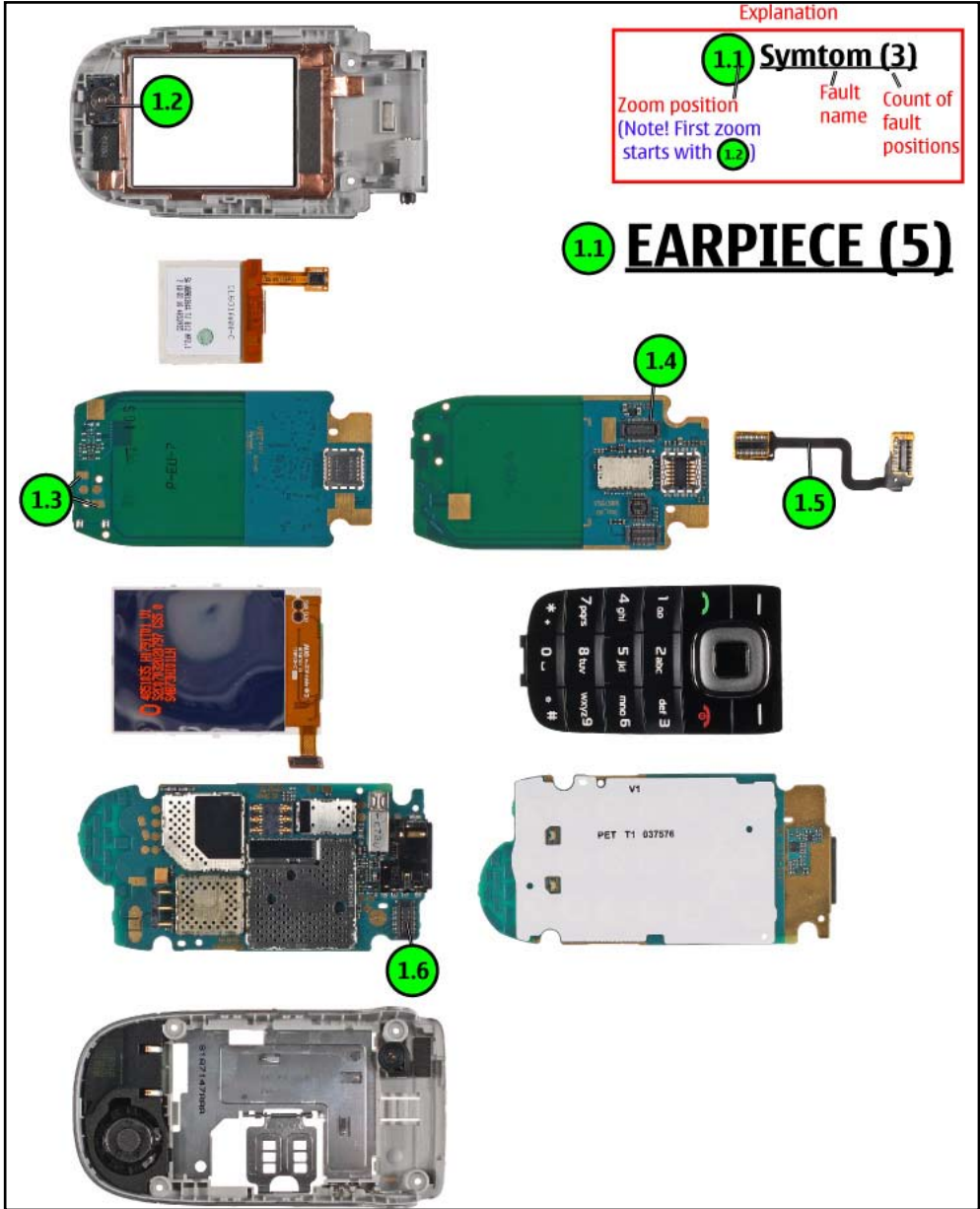
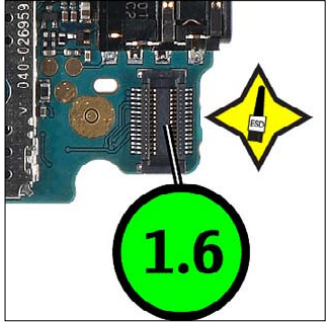
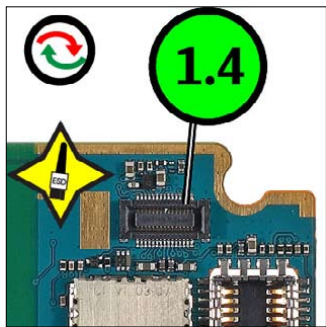
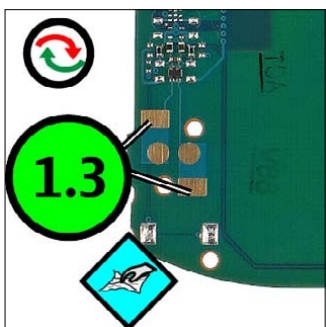
Explanation

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

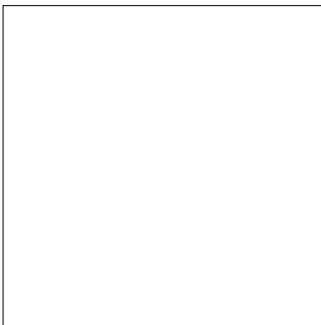
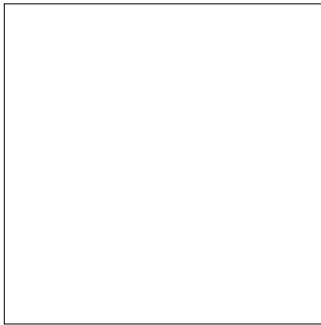
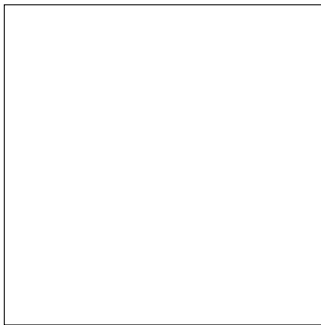
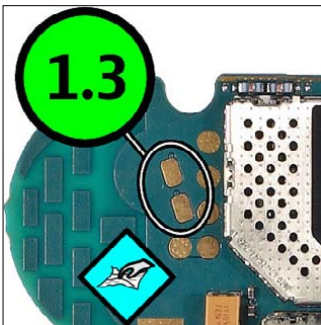
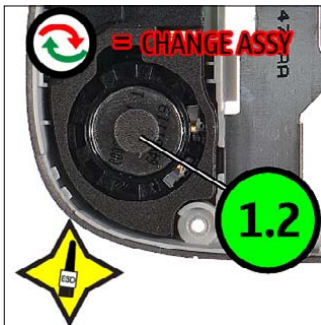
1.1 **NO SERVICE (2)**



21. QUICK TROUBLE SHOOTER - EARPIECE



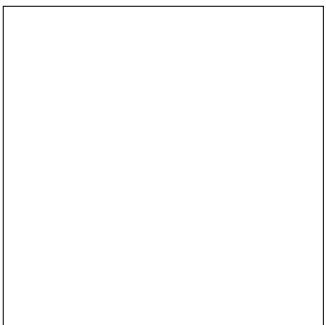
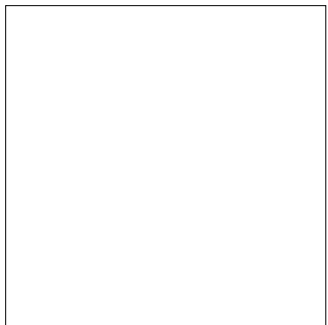
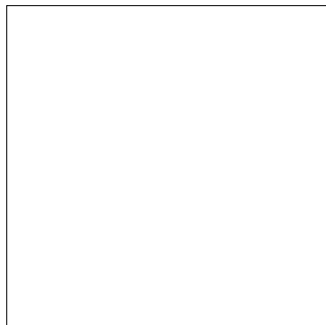
22. QUICK TROUBLE SHOOTER - IHF SPEAKER



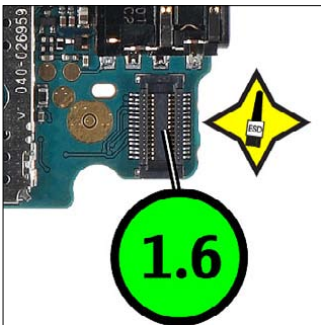
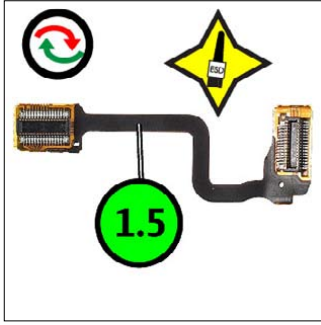
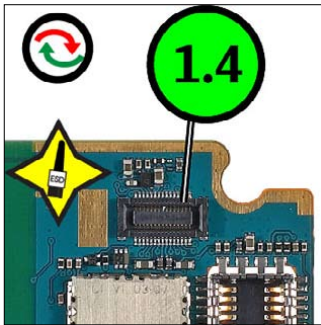
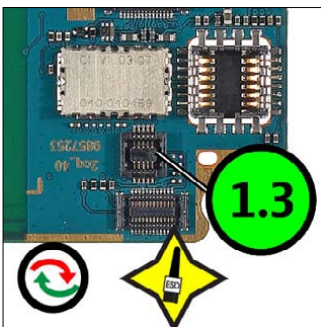
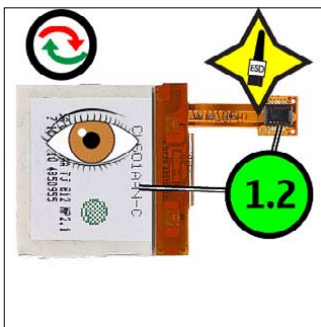
Explanation

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

1.1 **IHF SPEAKER (2)**



23. QUICK TROUBLE SHOOTER - DISPLAY (LCD PM 96X68)



Explanation

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

1.1 **LCD PM 96x68 (5)**

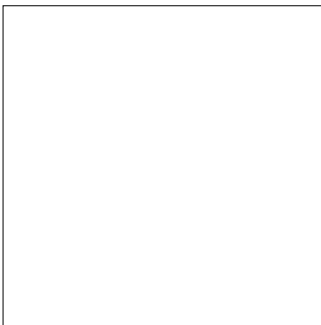
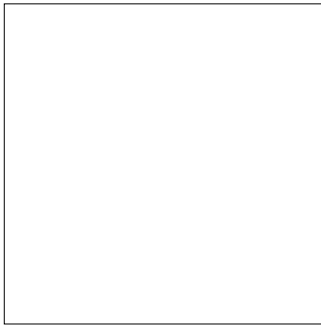
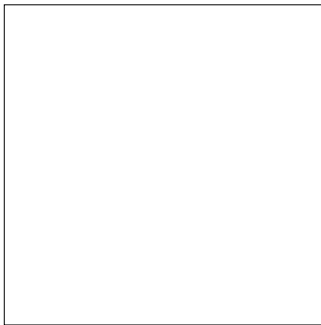
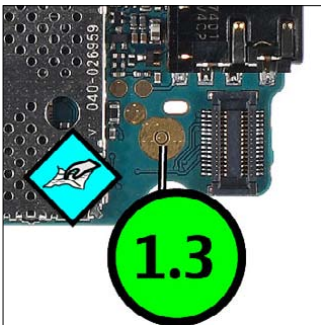
The main assembly diagram shows the phone's internal components with numbered callouts: 1.1 (LCD PM 96x68), 1.2 (LCD assembly), 1.3 (Mainboard), 1.4 (Mainboard component), 1.5 (Cable), and 1.6 (Mainboard component).

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24. QUICK TROUBLE SHOOTER - DISPLAY (LCD PM 128X160)

<p>1.2</p>	<p style="text-align: right;">Explanation</p> <table border="1" style="float: right; margin-right: 20px;"> <tr> <td style="text-align: center;">1.1</td> <td>Syptom (3)</td> </tr> <tr> <td style="text-align: center;">Zoom position (Note! First zoom starts with 1.2)</td> <td style="text-align: center;">Fault name Count of fault positions</td> </tr> </table> <p style="font-size: 2em; font-weight: bold;">1.1 <u>LCD PM 128x160 (5)</u></p>		1.1	Syptom (3)	Zoom position (Note! First zoom starts with 1.2)	Fault name Count of fault positions
1.1	Syptom (3)					
Zoom position (Note! First zoom starts with 1.2)	Fault name Count of fault positions					
<p>1.3</p>	<p>1.4</p>	<p>1.5</p>				
<p>1.4</p>	<p>1.2</p>	<p>1.3</p>				
<p>1.5</p>	<p>1.6</p>	<p>1.6</p>				
<p>1.6</p>						

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)

