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# SERVICE MANUAL Level 1&2 NOCIONAL SERVICE MANUAL

RM-217

RM-222



#### **Transceiver characteristics:**

Band:

-RM-217: Tri-band EDGE phone for EGSM 900/1800/1900MHz
-RM-222: Tri-band EDGE phone for EGSM 850/1800/1900MHz
Camera: 2.0 Megapixel, 8x digital zoom
Display: 5.08cm (2inch) QVGA display with 16.7M true colors, resolution 240 x 320 pixel
Operating System: Series 40
Bluetooth
FM stereo radio
Memory card: microSD
Connector: mini USB Connector

#### Transceiver with BL-4c Li-Ion battery pack

Talk time	Standby	Note
up to 3.5h	up to 14.5days	Depends on network parameters

#### **Environmental characteristics:**

Lead-free soldered

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СМО О	perations & Logistics		MGR
	ng and Vendor Development Nedia Creation & Support	CONFIDENTIAL	09.Jan.2007
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## **CHANGE HISTORY**

38

Status	Version No.	Date	Comments
Draft	0.1	24.Nov.2006	Initial draft
Approved	1.0	9.Jan.2007	Approval



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#### **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 VEHI-CLE 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 MANUFACTUR-ER 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.

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## 2. GENERAL REPAIR INFORMATION

In this section the technician will get some general hints how to carry out repairs:

- To familiarize oneself with NOKIA product read the tutorials or user guide on <u>www.nokia.com</u> -->Support--> Phones, by selecting the Phone Model.
- Before starting the repair you must take care of ESD precautions like being in your ESD Protected Area and connecting your wristband.
- Use gloves to avoid corrosion and fingerprints.
- Protect windows and displays with a film to avoid dust and scratches.
- When cleaning the LCD Module any lint-free cloth can be used (e.g. Micro-Fibre cloth).
- When cleaning the pads you have to use a soft cloth/ESD brush and Isopropanol. It is not allowed to use a glass fiber pencil because it scratches the surface and will lead later on to corrosion.
- Mechanical parts (except shielding lids and bent parts), which didn't repair the failure, can be reused, if they are not soldered.
- When removing the shielding lids make sure to replace them with new ones, otherwise the high-frequency leakage can have an influence on the device.
- Always use original NOKIA spare parts.
- Check the soldering joints of the parts, which are concerned regarding the indicated error (e.g. soldered connectors or switches) and resolder them if necessary (Level 2 only).
- Remove redundant soldering flux after repair.
- Meet the torque requirements when assembling the unit (see also the document "torques for transceiver assembly" on NOKIA Partner Web Site/NOKIA Online).
- Always use your own equipment for testing where you are sure that it works. E.g. if the customer complains
  about charger function, please test the phone with your own charger to be sure if phone or charger causes the
  malfunction.
- A SIM card is needed for all GoNoGo tests.
- When doing the fault log entries, always note the Item code, which caused the malfunction. Also, fill in the appropriate part code from the assembly, if needed.
- Please be aware that some malfunctions could be software related and solved by an update.
- There are several documents available on NOL, which have to be followed:
- •
- First, take care for the latest content pages of Service Bulletins, which are always available for each folder on NOKIA Online. This is also important to recognize, if existing documents have become invalid.
- •
- The service level indicator at the bottom of each document tells the appropriate destination.

Downloads > Support Library >

- 1. Instructions
- 2. General Service Bulletins
- 3. Product related documents
- 4. Spare Part Service Bulletins
- 5. Service Tools Service Bulletins
- 6. Common Software Service Bulletins etc,...

Use General SB-217 as a reference or overview.

Please also check NOKIA Online (NOL) for latest news and files on a regular basis.



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#### 3. PATHFINDER FOR WORKSHOP STAFF

#### This is the NOL page (NOKIA Online) which is currently available in Europa, Middle East and Africa only!

In addition to the information in this Service Manual, there are several instructions and information, which have to be followed. Main documentation database is <u>NOKIA Online</u> with the purpose of serving different multimedia content, like video clips or interactive tutorials.

It is mandatory to watch for newest technical and organizational information on a daily basis to be updated as required (see **"Latest files in Support Library"**). Every new information has to be processed and implemented as soon as possible.

When logged into NOL you can also find needed information in different folder like:

#### **Support Library**



Service Manuals Service Bulletins Software Repair Information

#### Level 1&2 e-learning (former NOKIA CarePoint) on NOKIA Online

Former NOKIA CarePoint content, such as	Product	Troubleshootiı t information – Disassembly,		can be found on <b>NOKIA Online</b>
Nokia 1100 Technical Training - Microsoft Inter		A ? Helf	az X	<u>NOKIA Online</u>
Home Overview & Guides Disassembly a	Nokia 1100 Techni	ical Training Jick overview of the Nokia 11	100 phone and support for	Care Services
NDIKLA NDIKLA	Overview & Guides	Disassembly & Assembly	Troubleshooting	Training
07 C ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	Get a quick overview of the phone and how to use it.	Learn how to remove and reassemble the mechanical parts of the phone.	Fixes for most common problems with the Nokia phone.	Phone Models
	Copyright © Nokia 2004. • Legal I	notice		

Level 1&2 e-learning courses offer a quick overview of the NOKIA phone and support for how to repair and use the phone:

Overview & Guides	Disassembly & Assembly	Troubleshooting
Basic information about the phone, features and technologies	Instructions how to disassemble and assemble the phone	Step-by-step instructions on how to locate and repair the most common problems with the phone
		problems with the phone

To reduce the server traffic it is recommended to download newest version of huge files like videos, Phoenix packages or Service Manuals only once and distribute it internally for further use.

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6300 RM-217 / 6300b RM-222 EXPLODED VIEW

#### 4. EXPLODED VIEW

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

#### A-COVER ASSY 10001 **KEYMAT** 10002 SCREW 1.6x4.5 TORX PLUS 10003 **UI SHIELD ASSEMBLY** 10004 LCD MODULE DOMESHEET (A1) 10005 10006 1YW LIGHT SWAP PWB (A1) (FOR RM-222 NOT AVAILABLE) 10007 RETU-TAHVO SHIELDING LID (A1) 1YW LIGHT SWAP PWB (A1) 10009 \* (RM-217) FM SHIELDING LID (A1) 10007 10008 BT SHIELDING LID (A1) 10013 RAP MEM SHIELDING LID (A1) FLEX SHIELDING LID ASSY 10010 10017 RF SHIELDING LID (A1) 10012 HW ACC SHIELD LID (A1) 10011 CAMERA I0016 CAMERA GASKET 10015 PLASTIC CHAMBER (A2) LABEL COVER ASSY (A3) **%** I0019 (LEVEL 3&4 ONLY) 10030 EARPIECE ASSEMBLY (A2) WATER INGRESS LABEL I0018 19998 TYPE LABEL (A3) ANTENNA RADIATOR (A2) (LEVEL 3&4 ONLY) **%**I0021 10014 IHF SPEAKER (A2) USB DOOR (A3) 10020 10029 SIDE WINDOW RIGHT (A3) DC-JACK (A3) I0025 10028 POWER KEY (A3) MICROPHONE (A3) 10023 10027 VOLUME KEY (A3) I0024 B-COVER (A3) **%**I0022 SCREW M1.6x4.5 REMFORM TORX PLUS I0031 LED-WINDOW LEFT (A3) C-COVER I0026 10032 = These parts can not be reused after removal. 檺 = only available as Ver. 3.0 assembly

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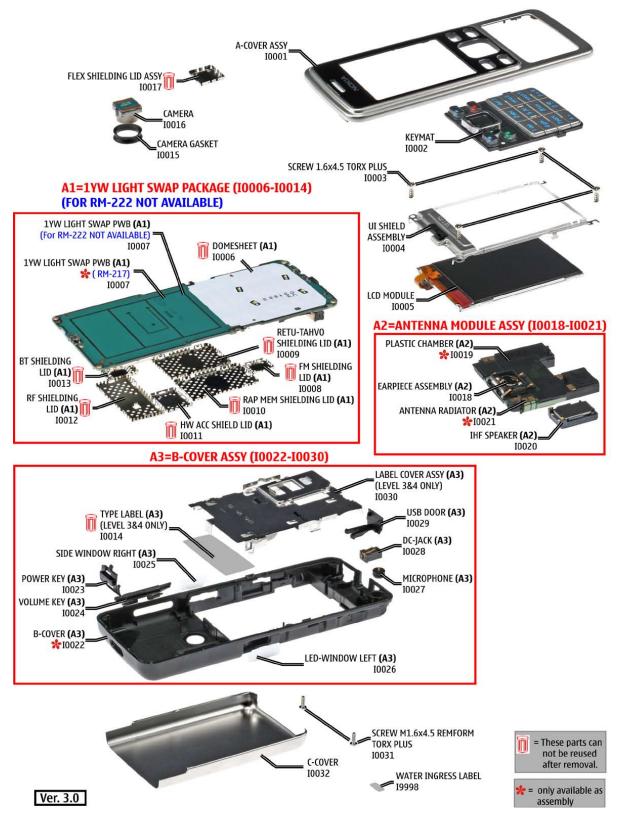
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#### 5. SPARE PARTS OVERVIEW

#### 6300 RM-217 / 6300b RM-222 SPARE PARTS OVERVIEW



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## 6. GENERAL RECYCLING RECOMMENDATION

NOKIA Confidential 13.11.2006 **CMO Operations & Logistics** MGR Training and Vendor Development **Multimedia Creation & Support General Recycling recommendation** 100% - only one Material **Mixed components** (Example components) (Example components) ELECTRO-MI DISPLAY METAL FRAME **UI ENGINE MODULE** SUB DISPLAY SCREWS **VIBRA MOTOR** MAIN SHIELDING LID DISPLAY UPPER COVER RF SHIELDING LID ITD **CAMERA MODULE** FLEX ASSEMBLY **EL DOME SHEET** CAMERA PLASTIC CONNECTOR ENGINE MODULE MAIN CAMERA LOCKING SMALL KEYS COVER MECHANISM **IHF SPEAKER** LOWER COVER KEVMAT **BT ANTENNA ASSEMBLY** FLASH ASSEMBLY ANTENNA (COPPER) (COPPER) **BATTERY COVER RO-MIX: Most components made of Glass.** Ceramics, Glassfiberreinforced epoxy. ALL fractions containing any copper should be send to ECTRO-MIX!!! **PLASTIC-MIX** FOAM SHIFI D COVER COAX CABLE ETAL-MIX: Most UPPER COVER components made of Metal BATTERY METAL SHIELD DC-JACK HALL SENSOR LOWER COVER MAGNET BATTERY **PLASTIC-MIX: Most** BATTERY: Chemicals, components made of Plastic Plastic and Ceramics

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 <u>GENERAL RULE</u> is:

**Elecronic 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

ELECTRO 🔵 METAL 🔵 PLASTIC 😑 BATTERY

Vor	20
ver.	5.0

materials.

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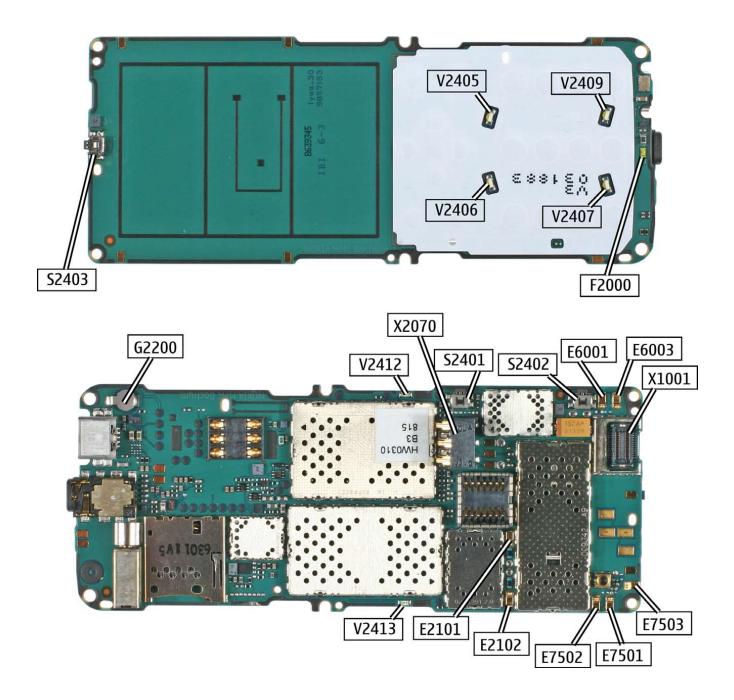
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#### 7. LEVEL 2 SOLDER COMPONENTS

## N6300 RM-217/ 6300b RM-222 Components overview Solder components only for LEVEL 2



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#### 8. NOKIA ONLINE (NOL)

## NOL is the database where you can find the latest corresponding Service Bulletins (spare parts, SWAP units and service tools).

This will ensure, that you are using up-to-date order codes only.

Therefore Service Bulletins have to be checked from NOL on daily basis.

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Support Library Warranty In	fo Service Points Training	l internet in the second s		
:	Support Library			
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Latest files	Select category:	Phones	×	
» Browse files	Select subcategory:	XXXX XXXX (XXXX)	•	
	Select subcategory	Service Bulletins		
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#### 9. SERVICE TOOLS

	1
FLS-5	<b>FLS-5 incl. ACF-8, Driver and User Guide</b> Dongle and flash device incorporated into one package, devel- oped specifically for POS use.
	<b>ACF-8</b> Universal Power Supply is used to power FLS-4S.
	<b>Travel Charger AC-4</b> Small and lightweight charger for fast charging of your phone battery.
	<b>Internal Battery BL-4c</b> Inserted under the back cover, this Li-Ion battery provides power in a lightweight package.
	<b>SS-45</b> Camera removal tool.
	<b>DKE-2</b> Service Cable to connect the PC with the mini USB connector.
SS-101	<b>SS-101</b> Domesheet alignment jig



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RJ-148	<b>RJ-148</b> Soldering Jig
1000 100 1000 1	<b>Lead-free Solder Wire</b> Mandatory for lead-free products (Level 2 only).
<section-header><section-header><section-header></section-header></section-header></section-header>	<b>0772040 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 " <b>Recommended service equipment</b> " document on NOKIA Online.



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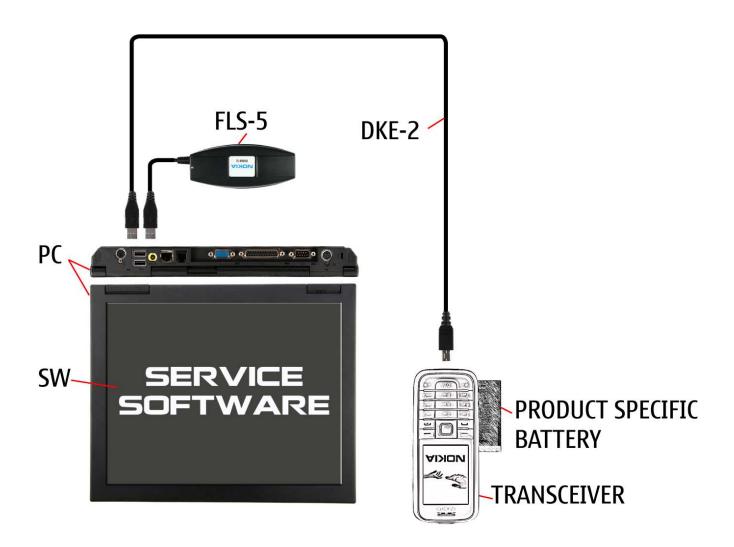
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#### **10.SW-UPDATE**

#### 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**.





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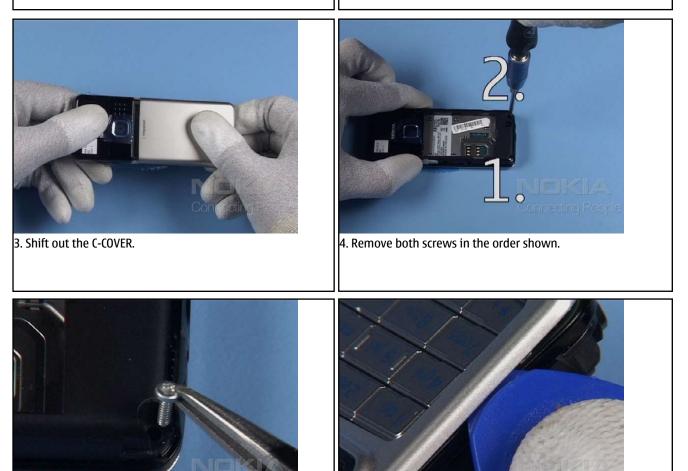
**11.DISASSEMBLY - HINTS** 



L. Needed tools: SR1-6, metal tweezers, SS-93, SS-45 camera removal tool, a straight bladed screwdriver, dental pick, bit holder with a torx plus size 6 bit, a torque driver, DC plug



2. Always cover the windows with a protective film.



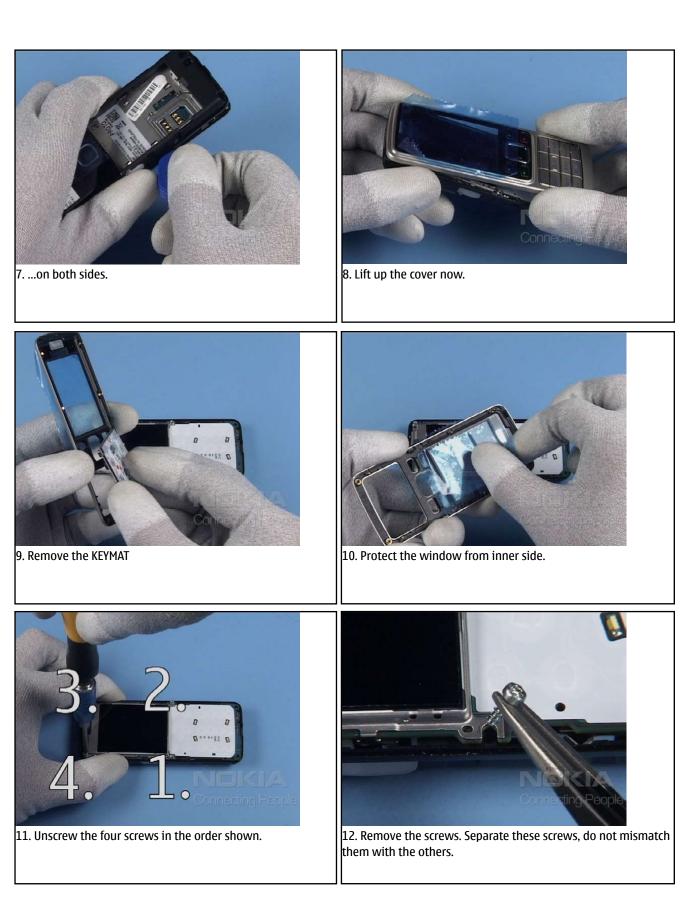
6. Unlock the plastic clips of the A-COVER with the SRT-6...

5. Remove the screws.



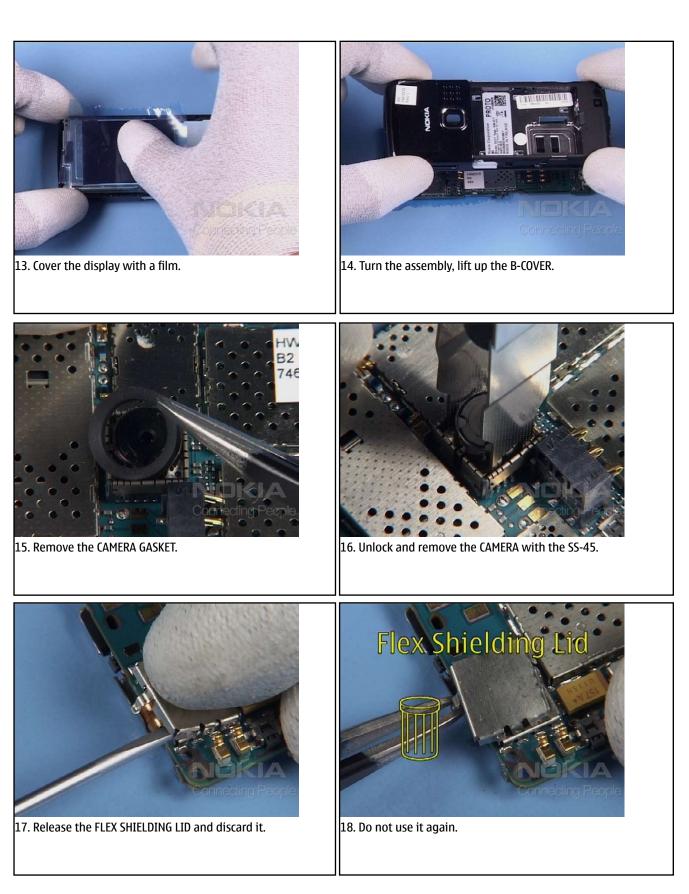
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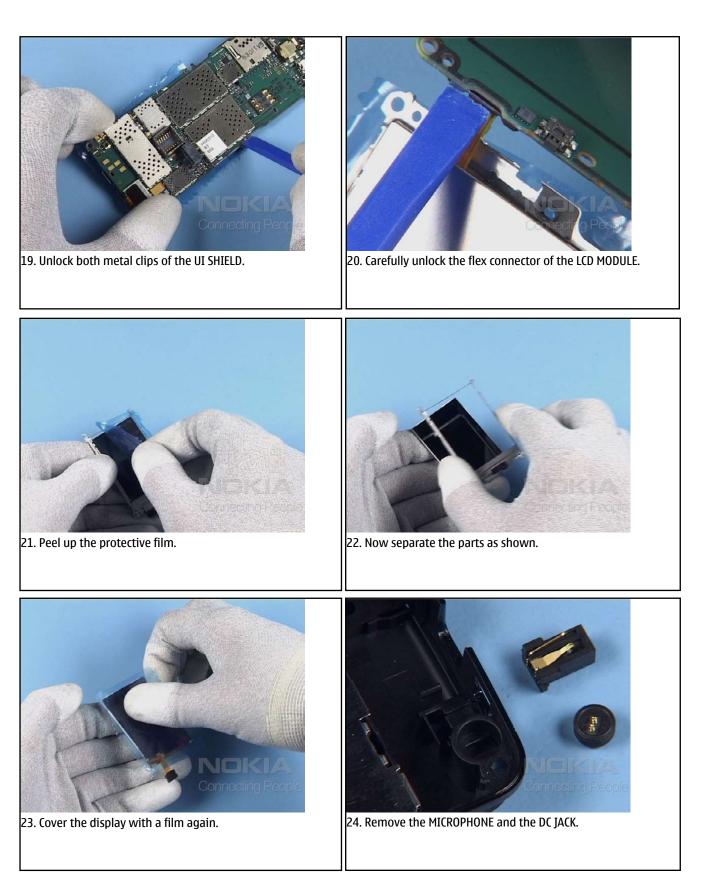
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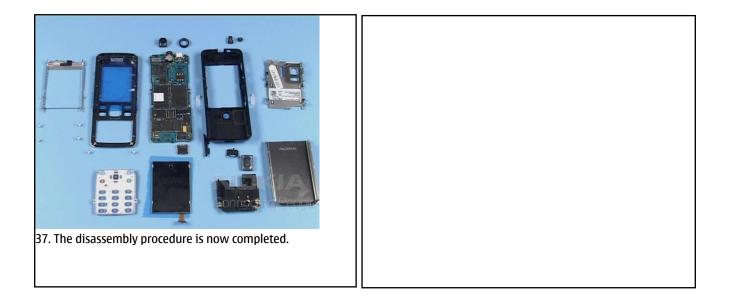
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## **12.ASSEMBLY - HINTS**





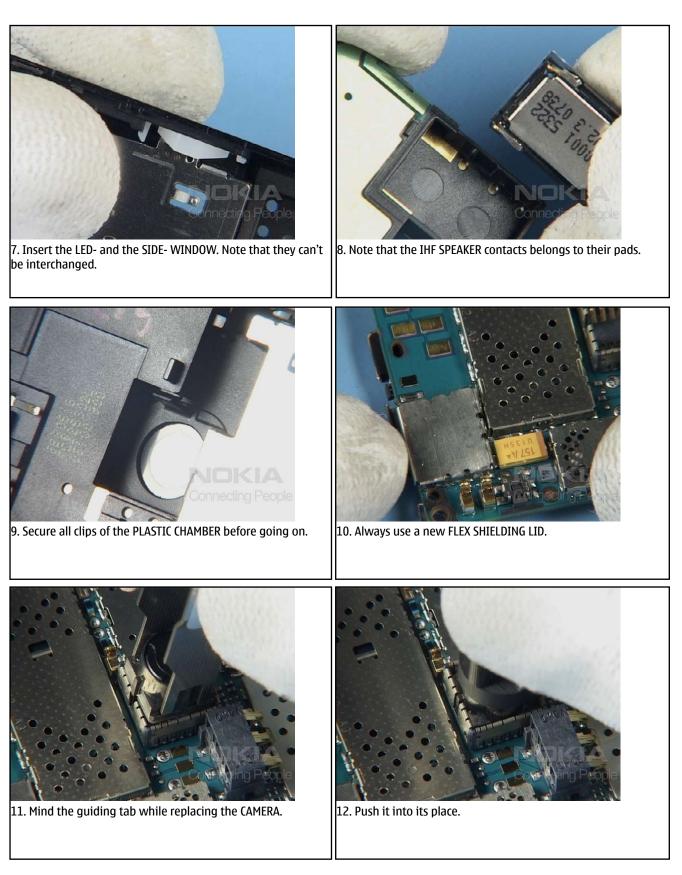
5. Close the SIM lid.





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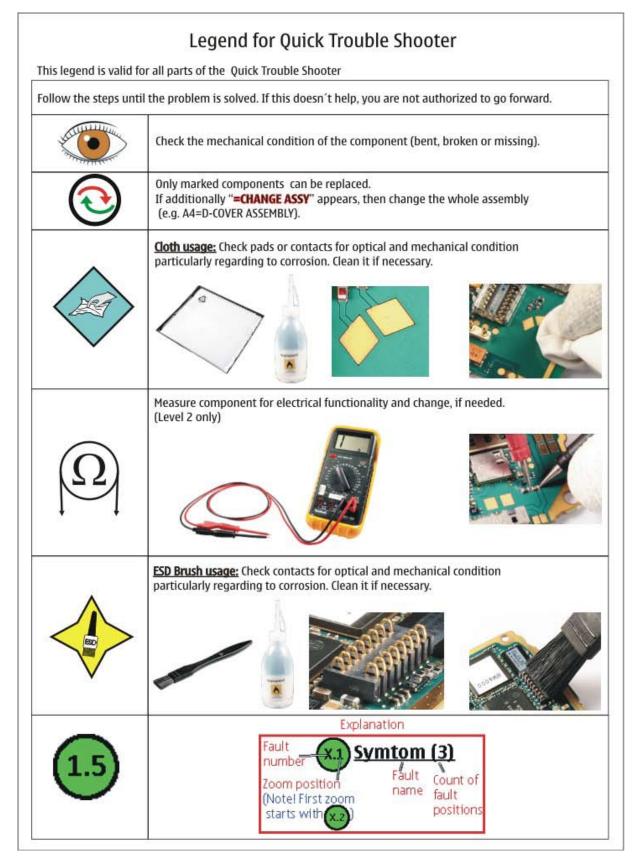
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## **13.LEGEND FOR QUICK TROUBLE SHOOTER**

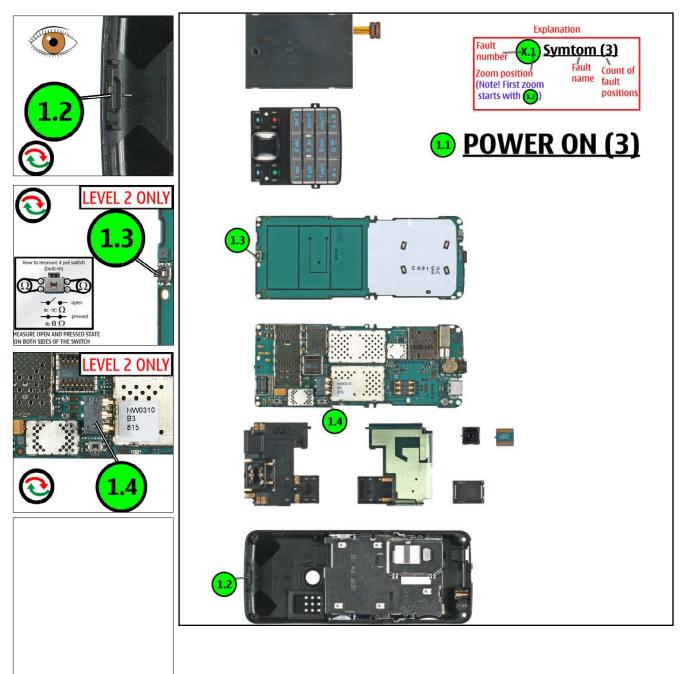




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#### **14.QUICK TROUBLE SHOOTER - POWER ON**



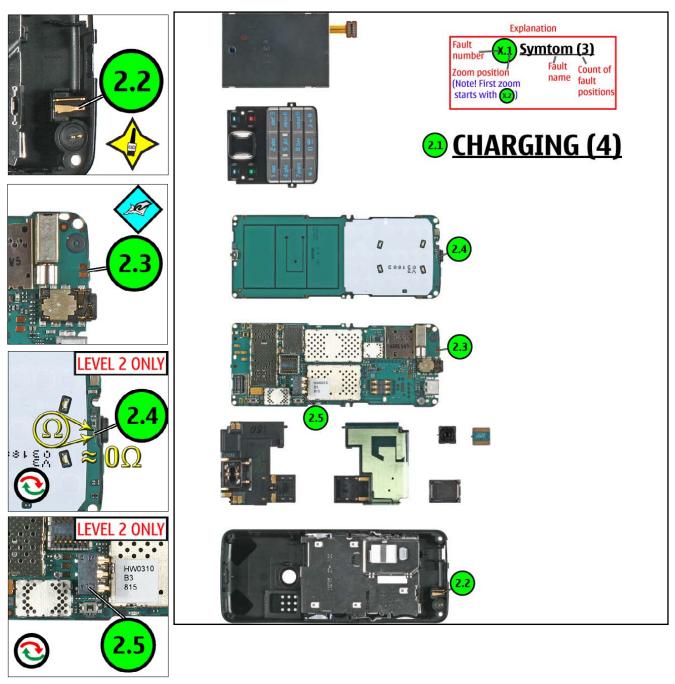


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## **15.QUICK TROUBLE SHOOTER - CHARGING**



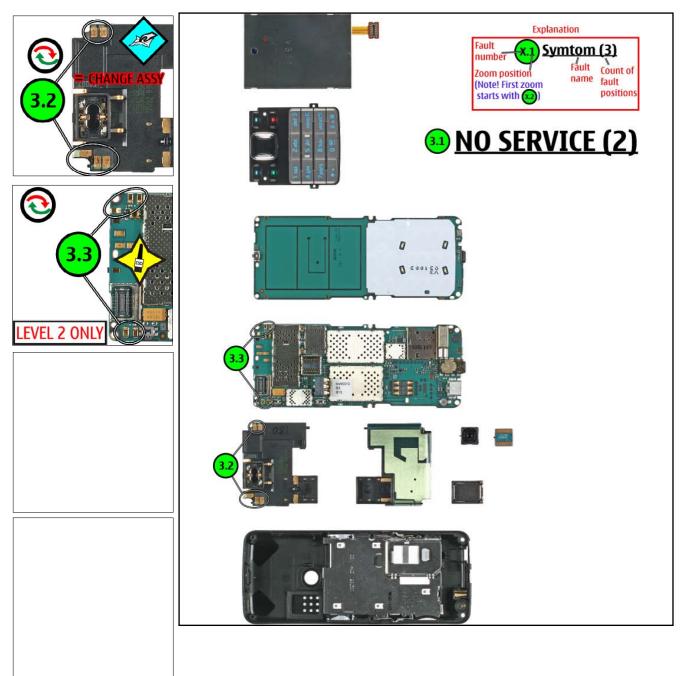




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## **16.QUICK TROUBLE SHOOTER - NO SERVICE**



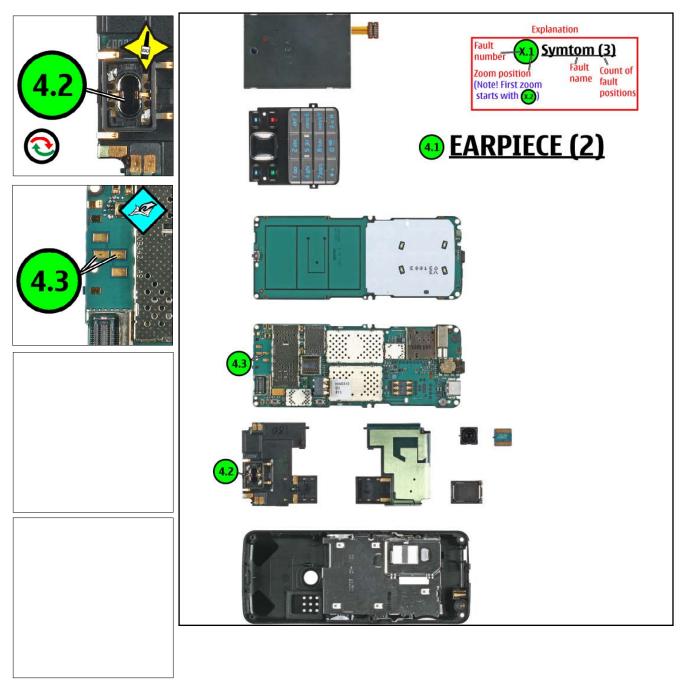



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#### **17.QUICK TROUBLE SHOOTER - EARPIECE**

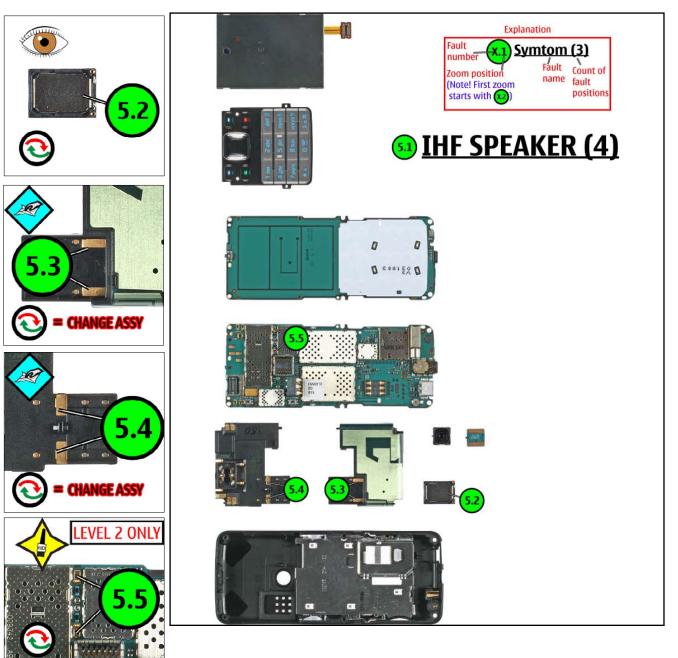


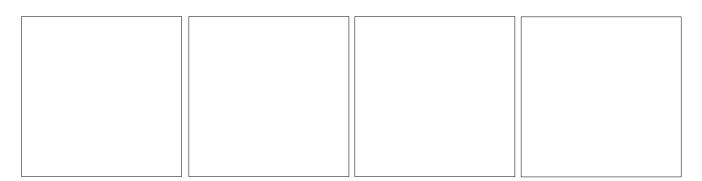


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## **18.QUICK TROUBLE SHOOTER - IHF SPEAKER**





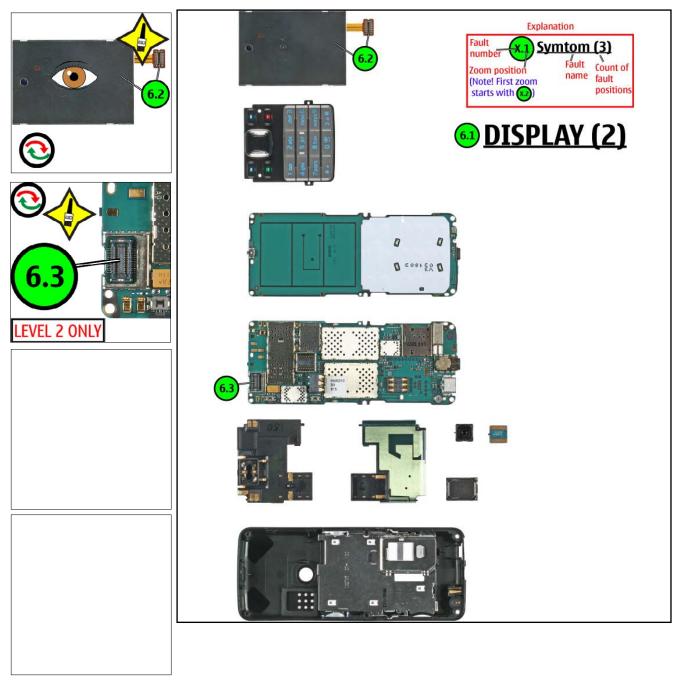


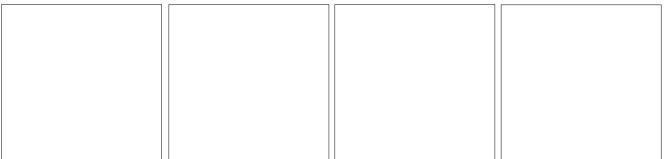
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#### **19.QUICK TROUBLE SHOOTER - DISPLAY**

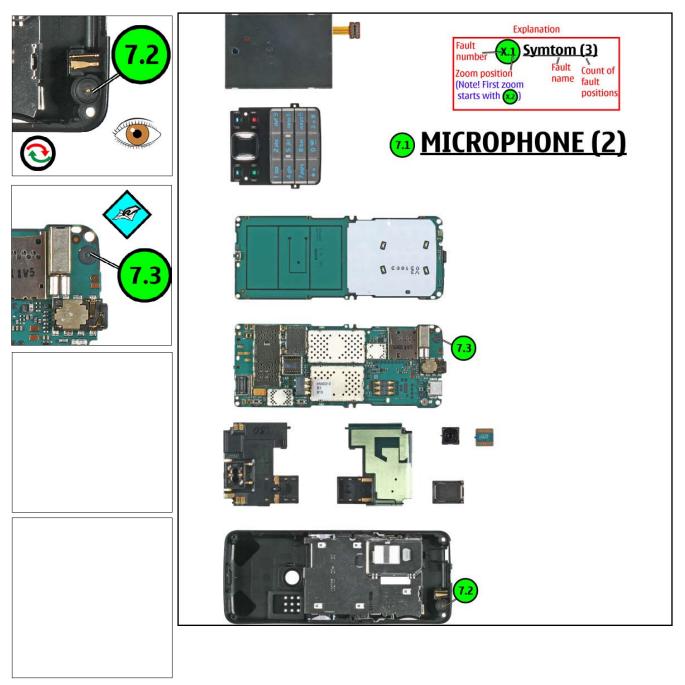






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## **20.QUICK TROUBLE SHOOTER - MICROPHONE**



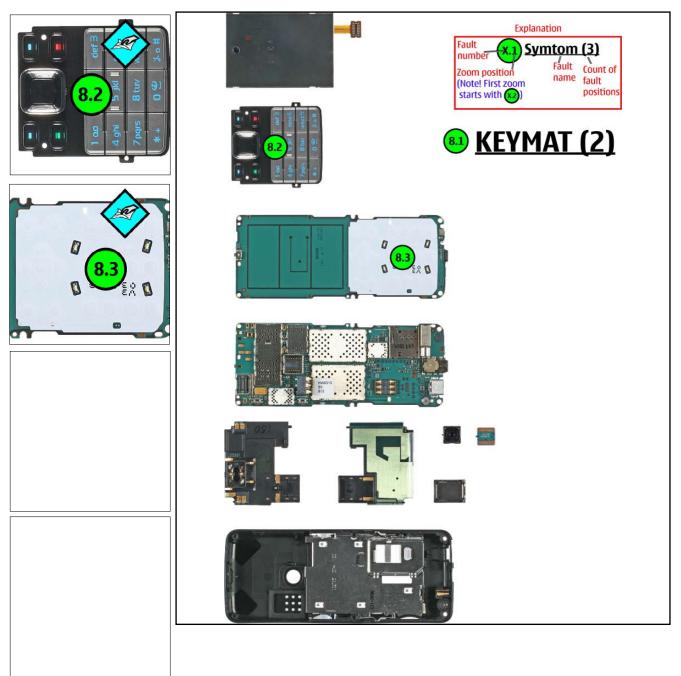


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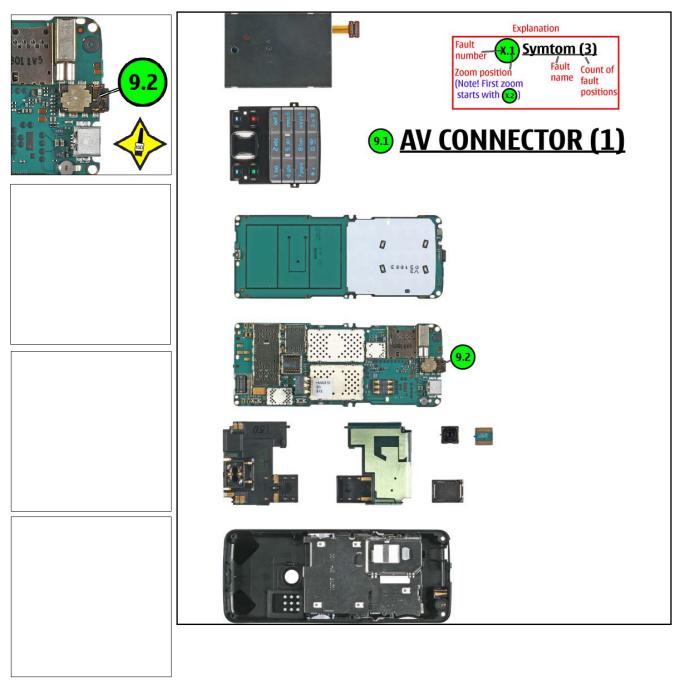
## **21.QUICK TROUBLE SHOOTER - KEYMAT**





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## **22.QUICK TROUBLE SHOOTER - AV CONNECTOR**

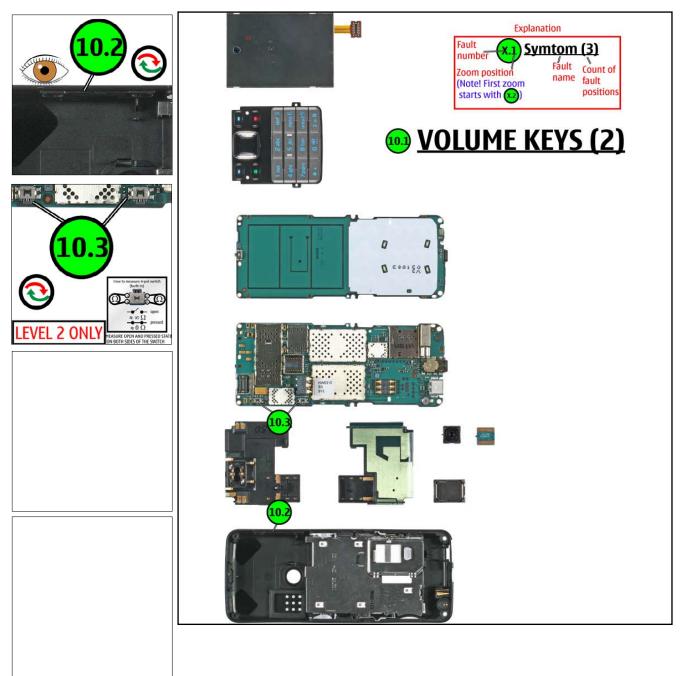




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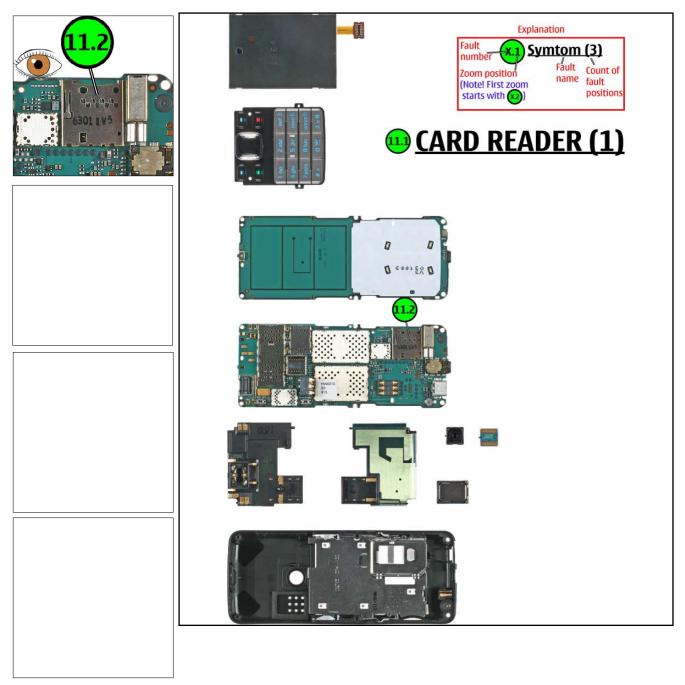
## **23.QUICK TROUBLE SHOOTER - VOLUME KEYS**





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## 24.QUICK TROUBLE SHOOTER - CARD READER



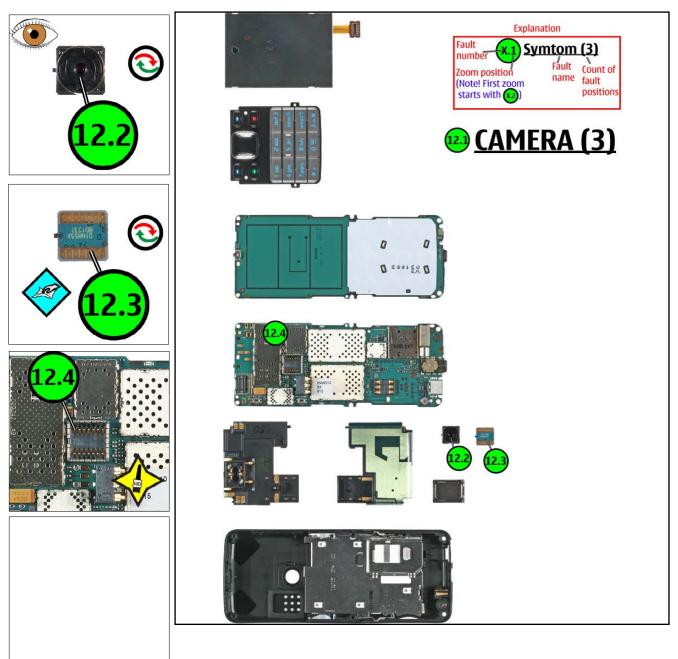


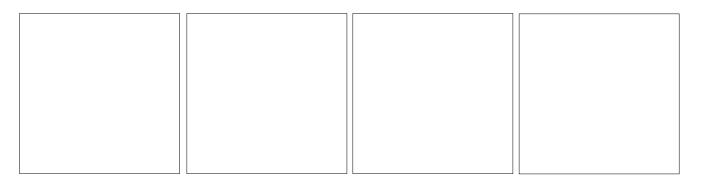
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## **25.QUICK TROUBLE SHOOTER - CAMERA**







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## 26.GONOGO TEST

To test the Camera and Bluetooth functionality refer to the phone User's guide.

The User's Guide is available on www.nokia.com.

Before starting the GoNoGo test, check that camera window is clean. If not, clean the window with cloth.



#### **Bluetooth test**

You need another Bluetooth device (e.g. 6230) to do a GoNoGo test.

Make sure that Bluetooth is activated in the reference unit. The distance of the devices should be not more than 5m from each other.







Test unit

Reference unit, Bluetooth activated



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## **27.BATTERY TEST**

A battery tester lets you test the capacity of NOKIA batteries.

Please refer to the actual information on NOKIA Online.





http://www.astratec.co.uk/

http://www.cadex.com/